July 2019

Site Characterization Investigation Work Plan
Hudson Valley Regional Airport Site
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, Jim McIver, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Draft Site Characterization Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

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SITE CHARACTERIZATION WORK PLAN
HUDSON VALLEY REGIONAL AIRPORT SITE
18 GRIFFITH WAY, TOWN OF WAPPINGER
DUTCHESS COUNTY, NEW YORK

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ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
AFFF	Aqueous film forming foam
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, PURPOSE & SCOPE

This document constitutes the Site Characterization Work Plan (SCWP) 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, Site Map – Sampling Locations, and Site Map – Sampling at AAG Hangars are included as Figures 1, 2 and 3.

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 2106.

This SCWP was developed 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). In addition, this SCWP incorporates the specific requirements for this site characterization as set forth in the NYSDEC's comment letter dated August 21, 2018 and April 12, 2019. The NYSDEC letters are included as Exhibit 1.

1.1 Background

By letter dated September 15, 2017, NYSDEC informed Dutchess County that NYSDEC had classified the Site as a "P-site" based on the detection of perfluorinated compounds in a water supply well located on the Site and low concentrations in nearby off-site water supply wells. The water samples were collected by the New York State Department of Health (NYSDOH). This letter also stated that an investigation was required to be conducted in accordance with NYSDEC's technical requirements for a site characterization. The NYSDEC letter and results of the NYSDOH sampling are included as Exhibit 2.

1.2 Purpose

The purpose of this SCWP is to establish an environmental baseline and conceptual model for the Site with the intent of acquiring sufficient data for determining if further Site investigation is necessary.

1.3 Scope of Work

The following scope of work is proposed to develop an initial environmental baseline and conceptual model for the Site.

- Conduct a Records Search in accordance with Appendix 3A of DER-10 to identify potential Areas of Concern (AOC). The records search involved the review and summation of available records for the Site, a Site reconnaissance and interviews with pertinent Site personnel knowledgeable of past and present Site operations. 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; past and present administrative, civil and criminal enforcement actions for alleged violations of environmental law; and areas of historic fill placement within the Site. The Records Search Report was submitted for NYSDEC review and comment in May 2018.
- Conduct a Site Characterization (SC) investigation that will include the collection of soil, sediment, stormwater, surface water, and drinking water samples for subjective and laboratory analysis; the advancement of test borings for the collection of soil samples for subjective and laboratory analyses and installation of monitoring wells; and the collection of groundwater samples for laboratory analysis from the newly installed monitoring wells, existing monitoring wells and on-Site water supply wells. This SCWP presents the objectives, scope and rationale for the SC investigation.
- Generate a Site Characterization Report (SCR) in general accordance with Section 3.13: Site Characterization Report of DER-10. The components of the SCR will generally include the findings of the records search; the physical setting of the Site

and surrounding areas; a technical overview of data collected during the SC investigation; and the findings and recommendations.

2.0 PROJECT ORGANIZATION

The following identifies pertinent personnel that are involved in the Site Characterization (SC) of the Site.

Dutchess County
Marcus J. Molinaro
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3.0 OBJECTIVES, SCOPE & RATIONALE

3.1 Objectives

The SC investigation is being conducted to evaluate the physical setting and environmental quality of the Site, and will be used, along with information contained in the Records Search Report, to construct a conceptual model of environmental conditions at the Site.

The potential compounds of concern identified by the NYSDEC are perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS), which were reportedly detected in a water supply well located on the Site and in nearby residential water supply wells.

PFOS and PFOA are members of the class of substances called poly & perfluoroalkyl substances (PFAS). PFOA, PFOS and other PFAS compounds have been produced and used in commercial products and industrial processes for over 60 years. Known commercial uses of PFAS include: stain-resistant coatings for clothing, leather, upholstery and carpets; oil-resistant coatings for food contact paper; aviation hydraulic fluids; fire-fighting foams; paints, adhesives, waxes, polishes, and other products. Known industrial uses of PFAS include surfactants, emulsifiers, wetting agents, additives, and coatings. Additionally, PFOA is used as a processing aid (emulsifier) in the production of PTFE and other fluoropolymers and fluoroelastomers, which are used as non-stick coatings on cookware, membranes for waterproof/breathable clothing, electrical wire casing, fire and chemical resistant tubing, plumbing thread seal tape, and AFFF firefighting foam.

3.2 Project Standards, Criteria and Guidance

The SC investigation will include the collection of soil, sediment, surface water, stormwater, drinking water, and groundwater samples for laboratory analysis for 1,4-Dioxane, PFAS (21 compounds), Volatile Organic Compounds, Semi-Volatile Organic Compounds, Metals, Pesticides, and Polychlorinated biphenyls. Chemicals constituting the PFAS list are presented in Exhibit 3. The sampling schedule presented as Table 1 in the tables section at the rear of this work plan provides a list of the various samples that will be collected and analyzed as a function of this SCWP.

NYSDEC has not established regulatory standard or guidance values for PFOA or PFOS, in soils. In addition, Regulatory standards and guidance values have not been developed for the other PFAS: therefore, analytical results for these PFAS are being collected at the request of the NYSDEC for information purposes only.

NYSDEC has not established a regulatory standard or guidance value for PFOA or PFOS in groundwater. The PFOA and PFOS chemical constituents of the PFAS list will be compared to the May 2016, USEPA PFOA and PFOS Drinking Water Health Advisory of 70 part per trillion. Regulatory standards and guidance values have not been developed for the remaining PFAS and, therefore, analytical results for these PFAS are being collected at the request of the NYSDEC for information purposes only.

3.3 Scope & Rationale

The SC investigation will include the collection of soil, sediment, surface water stormwater, and groundwater samples for subjective and laboratory analyses. The following sections detail the scope and rationale of the investigation. The sampling locations are depicted on Figure 2 and 3: Site Map – Sampling Locations, and Site Map - Sampling Locations AAG Hangars, respectively.

3.3.1 Source Materials Quality Control

PFAS (including PFOA) are found in several everyday items (see Section 3.1) that may be introduced inadvertently during the SC investigation. As a check for cross-contamination, quality control samples will be collected from source materials and equipment that are anticipated to be used for the investigation. These include water used by the drilling contractor for drilling and equipment decontamination; augers, rods, sampling barrels, totes and tanks used by the drilling contractor; filter sand used as monitoring well sand pack; monitoring well construction materials (polyvinyl chloride [PVC] riser and screen); and bottled water used as final decontamination rinse water if not laboratory grade supplied water. The samples will be collected and analyzed for the PFAS. Analytical results will be reviewed prior to Site mobilization. Mobilization to the Site will be permitted if the analytical results indicate the PFAS is below detection limits or at concentrations that are not expected to cross-contaminate environmental samples. Source equipment including driller rods, sampling barrels, totes and tanks will be segregated by the driller and will not be used for any other purpose by the drilling contractor from the time that the quality control samples are collected to the time that the equipment is mobilized to the Site for the investigation.

3.3.2 Site Investigation

The surface and subsurface conditions (i.e. soil, sediment, surface water, stormwater, drinking water and groundwater) will be investigated across the Site as depicted in Figures 2 and 3.

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. <u>AOC-1, Firefighting AFFF Testing Area:</u> AFFF testing areas at the end of East/West runways 15 and 33. To assess if any impacts to soil and groundwater at the end of runway 15 and 33, one soil boring/monitoring well will be installed at each location. The borings/monitoring wells will be 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 will be utilized and the test borings will be converted into permanent monitoring wells. Test borings will be advanced to depths of approximately five (5) feet below the elevation of the shallow water table, which is anticipated to be approximately 4 to 6 feet below ground surface. The soil and groundwater samples will be analyzed for PFAS and 1,4-Dioxane.

2. <u>AOC – 2, Former Balefill Landfill:</u> The former 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. Therefore, the assessment of groundwater at the Balefill landfill will utilize two existing monitoring wells which will be sampled for PFAS, Polychlorinated biphenyls (PCBs), Semi-Volatile Organic Compounds (SVOCs), pesticides, and 1,4-Dioxane. The wells to be sampled are MW-2S andMW-3S, which are 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, will be 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 to the ground surface on the shoulder of Jackson Road, just south of the intersection with Citation Drive. The spill occurred on Dutchess County Airport property and AFFF was utilized during the emergency response action to the spill. 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 will be completed in the down gradient vicinity of the former spill area, on the airport property. The soil and groundwater will be analyzed for PFAS, 1,4-Dioxane, TAL metals, 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 Sites general stormwater SPDES permit. Stormwater and sediment samples will be collected at six outfalls to the north of the North/South runway and analyzed for PFAS and 1,4-Dioxane. A stormwater and sediment sample collected at the southern outfall, located adjacent to the main terminal and New Hackensack Road, will be analyzed for NYSDECs full suite of Target Compound List / Target Analyte List (TCL/TAL) constituents and cyanide.

6. AOC-6, AAG hangars (former IBM Hanger, Site No. 314078 and Flagship Hangar, Site No. 314101): The two hangars that AAG currently leases from Dutchess County Airport are also known as the former Flagship Hangar and former IBM Hangar. The two hangars are each designated as NYSDEC inactive hazardous waste sites due to the presence of chlorinated volatile organic compounds (CVOCs) in groundwater and soils: a) former IBM hangar, Class 4 site and b) former Flagship hangar, Class 2 site.

   In March 2003, a Record of Decision was issued by the NYSDEC, for the former Flagship Hangar (Site No. 314101). The selected remedy consisted of installation of deeper air-sparging points to clean up naphthalene in the lower reaches of the groundwater column. The enhanced system commenced operation in October 2003 and was shut down in 2007 with the NYSDEC approval. A Site Management Plan was approved in 2011. Several attempts by NYSDEC at putting institutional controls on the site in 2013 were unsuccessful.

   Though substantial investigative work and remedial efforts have occurred to address the CVOCs, the AAG potable well (at the former IBM hangar) currently exhibits the highest PFAS levels recorded in the area. This well will be sampled and analyzed for PFAS, 1,4-Dioxane, SVOCs, PCBs, and metals.

   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 will be collected from existing overburden monitoring wells (A-21G, A-21S, A-21R, MW-1, MW-4, MW-5, and MW-6). Samples collected from the existing monitoring wells will be 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 with residual AFFF. One test boring/monitoring well will be completed in the down gradient vicinity of the buildings septic system leach field. The leach

field approximate location is proximal to the western corner of the building as depicted in historical records. This boring/monitoring well will assess the environmental quality of soil and groundwater near the building. A Geoprobe will be utilized and the test boring will be converted into a monitoring well. Test boring will be advanced to a depth of approximately five (5) feet below the elevation of the shallow water table, which is anticipated to be approximately 4 to 6 feet below ground surface. The soil and groundwater samples will be 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 analyzed at least twice a year for analytes as listed in table 9B of the NYS Sanitary Code. A water sample will be collected from the well and analyzed for PFAS, 1,4-Dioxane, SVOCs, PCBs and metals.

8. <u>AOC-8, Fire pond</u>: 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 will be collected from the fire pond and analyzed for PFAS and 1,4-Dioxane.

9. <u>AOC-9, North/South Runway</u>: To assess possible impacts to soil and groundwater at the end of runway 6 and 24, one soil boring/monitoring well will be installed at each location. At each location, a Geoprobe will be utilized and the test borings will be converted into permanent monitoring wells. Test borings will be advanced to depths of approximately five (5) feet below the elevation of the shallow water table, which is anticipated to be approximately 4 to 6 feet below ground surface. The soil and

groundwater samples collected will be analyzed for PFAS, 1,4-Dioxane, and the full suite of TCL/TAL constituents and cyanide.

10. Off-Site Locations: In addition to the AOCs identified above, as part of this investigation three off-site drinking water wells will be re-sampled for PFAS and 1,4-Dioxane. The location of these three drinking wells, denoted as Locations A, B, and C (Well No.1), are shown on Figure 2. If requested and approved by the NYSDEC and NYSDOH, up to five additional off-site drinking water wells will be sampled and analyzed for PFAS and 1,4-Dioxane.

The horizontal locations/coordinates of the test borings/monitoring wells that are sampled during this investigation will be established by survey, in order to establish groundwater elevation.

3.3.3 Soil Sampling

During the installation of the proposed soil borings, soil samples will be collected continuously with decontaminated sampling barrels to the termination depths of the borings. The recovered soil samples will be visually classified by a geologist/scientist in general conformance with the Unified Soil Classification System, and subjectively assessed for impacts on the basis of organoleptic perception (sight and smell) and with a photoionization detector (PID).

Three (3) soil samples will be collected from test borings installed at the end of runways 15, 33, 6, and 24, adjacent to the Airport Maintenance building, and the Jackson Spill road area for laboratory analyses. One grab surface soil sample will be collected from 0 to 2 inches (inclusive of the vegetative zone) and one subsurface soil sample from 2 to 12 inches (below the root zone). One (1) grab soil sample will also be collected from the depth interval above the shallow water table that appears subjectively impacted based on organoleptic perception and PID headspace analysis. If the recovered soil samples collected above the water table do not appear subjectively impacted, a sample will then be collected of soils immediately above the shallow water table. The soil samples will be analyzed for constituents 3.3.2. The analyses of the samples will be performed by Alpha Analytical, Inc., a NYSDOH certified ELAP laboratory.

3.3.4 Installation of Monitoring Wells

The test borings, installed in the areas outlined in the section 3.3.2, will be converted to permanent groundwater monitoring wells to facilitate the collection of groundwater samples for laboratory analysis. The monitoring wells will be constructed with one and a quarter inch diameter Schedule 40 PVC casing & well screen. The placement of the screen section will be such that it straddles the groundwater table. The monitoring wells will be protected at the ground surface via the installation of curb boxes set within concrete pads.

At the time the monitoring wells are sampled, depth to groundwater measurements will be recorded for the purpose of determining the direction of groundwater movement across the site. For the purpose of determining the direction of groundwater movement, the elevations of the top of the well casings will be established utilizing a benchmark previously used in prior on-site investigations.

<u>Well Development</u>

Each monitoring well will be developed by over pumping in order to remove any accumulated fine sediment within the well and to establish a hydraulic connection with the surrounding aquifer. A minimum of 24-hours will elapse between the installation and development of the monitoring wells. Monitoring wells will be developed by surging and purging until the water is clear, when field measured turbidity values are below 5 NTU's and/or the turbidity values have stabilized, or when 10 well volumes are removed. During well development, pH, temperature, turbidity, and specific conductance will be measured and recorded. Purge water will be containerized in New York State Department of Transportation (NYSDOT) approved 55-gallon drums, labeled, and stored in a secure location at the Site. The laboratory results for the soil and groundwater samples will be used to profile the material and to determine the method for treatment and/or disposal of the purge water.

3.3.5 Groundwater Sampling

Prior to sampling, the water level in the monitoring well will be measured, and the monitoring well will be purged and allowed to recover to near static conditions. Groundwater samples will be collected employing low flow sampling techniques with a Geodic Geopump™ Series II peristaltic pump or equal for field and laboratory analyses. The field parameters to be determined are pH, temperature, turbidity, specific conductance, and oxidation-reduction potential (ORP). The groundwater sampling information will be recorded on a Groundwater Services Field Log. A separate log will be completed for each monitoring well sampled. Logs will be dated and signed by the person making the entries and will be submitted to the project manager for inclusion in the project files.

The groundwater samples collected from the new and existing monitoring wells will be analyzed for PFAS and 1,4-Dioxane. Samples collected for investigation of the Balefill Landfill and Dutchess County Landfill will be additionally analyzed for SVOCs, pesticides and PCBs. Samples collected for investigation of the Jackson Road Spill area will be additionally analyzed for pesticides, PCBs and metals. Samples collected near the end of runways 6 and 24, and adjacent to the Airport Maintenance building will be additionally analyzed for the full suite of TCL/TAL constituents.

3.3.6 Stormwater and Sediment Sampling from Outfalls

Stormwater and sediment samples from seven outfall locations will be analyzed for PFAS and 1,4 Dioxane. Stormwater and sediment samples collected at the southern outfall, adjacent to the main terminal, will be additionally analyzed for the full suite of NYSDEC TCL/TAL constituents and cyanide. See the Field Sampling Plan on procedures for collection and sampling of the stormwater and sediment samples from the Outfalls.

3.3.7 Sediment and Surface Water Sampling from Fire Pond

The sediment and surface water samples collected from the fire pond on-Site will be analyzed for PFAS and 1,4-Dioxane. See the Field Sampling Plan on procedures for collection and sampling of the stormwater and sediment samples from the Outfalls.

3.4 Field Quality Control

Field Quality Control samples include Equipment Blanks, Duplicates, and Matrix Spike/Matrix Spike Duplicates (MS/MSD). Quality Control samples will be prepared for each media type at a ratio of one (1) set of Quality Control samples per each 20 media samples collected. Laboratory prepared Trip Blanks will be submitted with aqueous samples requiring analysis for PFAS and VOCs. Field Trip Blanks will be submitted with aqueous samples requiring analysis for PFAS.

3.5 Laboratory Reporting and Data Validation

The laboratory will generate NYSDEC ASP Category B data deliverable packages of the analytical data obtained during the investigation. A Data Usability Summary Report (DUSR) of the analytical data will be prepared to confirm that the data meets the project specific criteria for data quality and data use. The DUSR will be completed by an independent data validator and will be conducted in accordance with Appendix 2B of DER-10 entitled *Guidance for Data Deliverables and the Development of Data Usability Summary Reports.*

4.0 SUPPLEMENTAL PLANS

4.1 Field Sampling Plan

The field activities for this project will include collection and laboratory analysis of soil, groundwater, stormwater, surface water, drinking water and sediment samples. The procedures relative to implementation of these field activities are presented in the Field Sampling Plan (FSP) in Appendix A, which also conforms to the Quality Assurance Project Plan (QAPP) presented in Appendix B. The FSP and related Standard Operating Procedures (SOPs) describe the various methods and techniques to be followed during the completion of the sampling activities, instrument operation and calibration, and chain of custody procedures.

4.2 Quality Assurance/ Quality Control Plan

The QAPP describes the quality assurance and quality control procedures to be followed from the time media samples are collected to the time they are analyzed by the environmental analytical laboratory and evaluated by a third party according to the NYSDEC DUSR guidelines. The QAPP is presented in Appendix B of this SCWP.

The QAPP will be followed by field personnel during the SC investigation activities and media sampling events. It will also be used by the project management team and Quality Assurance Officer to assure the data collected and generated is representative and accurate. The laboratory results will be reported in NYSDEC ASP Category B data deliverable packages, which will be subjected to data validation in accordance with NYSDEC's DUSR guidelines to determine if the data is valid and usable.

4.3 Health and Safety Plan

A Site-specific Health and Safety Plan (HASP) has been prepared for this project to address Site worker health and safety issues. The HASP is presented in Appendix C and will be used by field personnel. The HASP includes the NYS Department of Health Community Air Monitoring Plan (CAMP), in accordance with DER-10 Appendix 1A, which will be implemented for ground intrusive activities. Although the plan addresses the planned Site activities, subcontractors will be required to develop their own HASP for work they will perform, as well, in compliance with 29 CFR Part 1910.120. During implementation of the SC investigation, C.T. Male's on-site employees and the subcontractor's on-site employees will have completed the appropriate OSHA HAZWOPER training with ensuing refresher courses, as applicable.

5.0 REPORTING AND SCHEDULE

5.1 Reporting

Upon completion of field activities and receipt and independent validation of the analytical laboratory data, a Draft SC Report (SCR) will be prepared. The Draft SCR will summarize and discuss the investigations completed as well as the technical rationale for deviations from the approved SCWP, if any. The report will present the investigations at the Site, analytical results of samples collected and analyzed, and interpretations of the analytical data. A groundwater contour map will be prepared, and together with the analytical data and evaluation of subsurface conditions via the test boring program, the

Site's conceptual model will be constructed. Data obtained in the Records Search Report will also be incorporated into the Draft SCR to further refine the Site's conceptual model.

5.2 Schedule

The investigation will be initiated approximately four weeks following approval to proceed by the NYSDEC Project Manager. The draft SCR would be available in approximately 3-5 months following project initiation.

6.0 SUBMITTALS

Communications will be transmitted by email, United States Postal Service, private courier, or hand delivered to the following individuals. Final documents, as they become available, will also be submitted to the following individuals:

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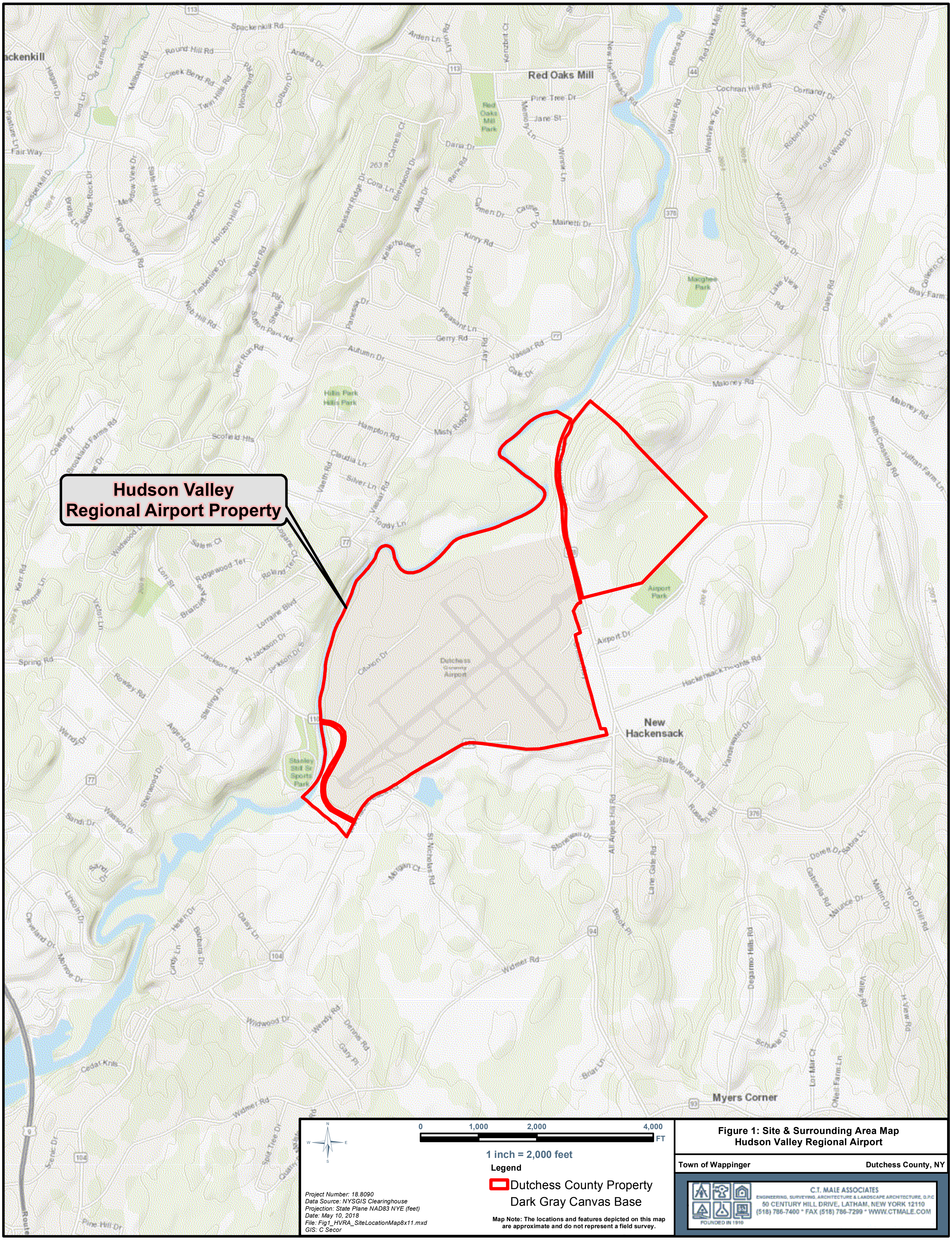
FIGURES

FIGURE 1

SITE LOCATION MAP



Project Number: 18.8090
Data Source: NYSGIS 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

C.T. MALE ASSOCIATES
ENGINEERING, SURVEYING, ARCHITECTURE & LANDSCAPE ARCHITECTURE, D.P.C.
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FOUNDED IN 1910

FIGURE 2

SITE MAP – SAMPLING LOCATIONS

Figure 2: Site Map - Sampling Locations
Dutchess County Airport

Town of Wappinger | Dutchess County, NY

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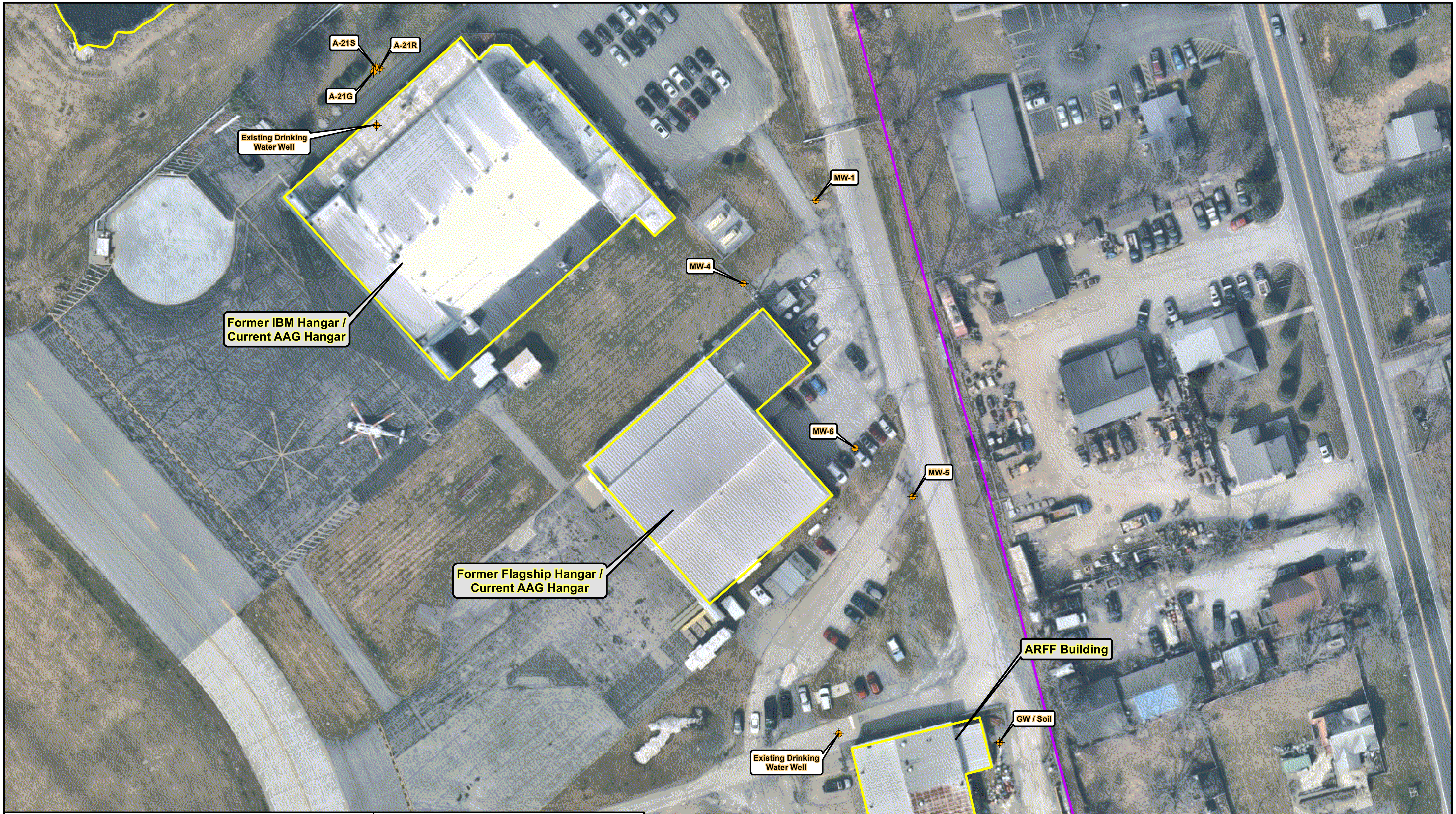
FIGURE 3

SITE MAP – SAMPLING LOCATIONS, AAG HANGARS & ARRF BLDG.



*drinking water wells also sampled for SVOCs, PCBs, metals

Legend

Dutchess County Property

Sampling Locations analyzed for PFAS and 1, 4-Dioxane

Project Number: 18.8090
Data Source: NYSGIS Clearinghouse
Projection: State Plane NAD83 NYE (feet)
Date: May 22, 2019
File: Fig3_HVRA_MWLocations11x17.mxd
GIS: C Secor

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

Figure 3: Site Map - Sampling Locations
AAG Hangars & ARFF Building
Dutchess County Airport

Town of Wappinger **Dutchess County, NY**

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TABLE 1

SAMPLING SCHEDULE

TABLE 1: SAMPLING PLAN
HUDSON VALLEY REGIONAL AIRPORT
18 GRIFFITH WAY, WAPPINGER, NEW YORK
SITE CHARACTERIZATION WORK PLAN

Sample Type	Sample Location	Area of Concern	Analytical Parameters							
			PFAS	1,4 Dioxane	TCL VOC	TCL SVOC	TCL Pesticides	TCL PCBs	TAL Metals	CN
Groundwater	Balefill Landfill, existing monitoring wells, 2S and 3S	AOC-2	X	X		X	X	X		
Groundwater	Dutchess County landfill, existing downgradient wells MW-15, MW-20 and MW-29	AOC-3	X	X		X	X	X		
Soil	AFFF testing areas, end of runways 15 and 33, in grass area, 1 boring/well at each runway location	AOC-1	X	X						
Groundwater			X	X						
Stormwater	Stormwater Outfalls to the north of the North/South runway six existing locations	AOC-5	X	X						
Sediment			X	X						
Stormwater	Southern Stormwater Outfall, adjacent to main terminal; one existing location		X	X	X	X	X	X	X	X
Sediment			X	X	X	X	X	X	X	X
Surface Water	Fire Pond, two surface water and two sediment samples	AOC-8	X	X						
Sediment			X	X						
Soil	ARFF & Maintenance Bldg., 1 boring/well	AOC-7	X	X	X	X	X	X	X	X
Groundwater			X	X	X	X	X	X	X	X
Drinking Water	ARFF & Maintenance Bldg., sample existing drinking water well		X	X		X		X	X	X
Groundwater	AAG Hangars (former Flagship & former IBM hanger), existing shallow and bedrock wells: MW-21S, MW-21R, MW-21G, MW-1, MW-4, MW-5, and MW-6	AOC-6	X	X						
Drinking Water	AAG Hangar - former IBM hanger, existing drinking water well		X	X		X		X	X	X
Soil	Jackson Road, former petroleum spill site, 1 boring location	AOC-4	X	X			X	X	X	X
Groundwater			X	X			X	X	X	X
Soil	West and East end of the North/South Runway	AOC-9	X	X	X	X	X	X	X	X
Groundwater			X	X	X	X	X	X	X	X
Drinking Water	Three off site wells and up to five extra as requested by NYSDEC/NYDOH		X	X						

NOTES:
1. Depth of soil sampling is summarized in site characterization work plan.

APPENDIX A

FIELD SAMPLING PLAN

July 2019

Field Sampling Plan
Hudson Valley Regional Airport Site
18 Griffith Way
Town of Wappinger
Dutchess County, New York
NYSDEC Site # 314129

Prepared for:

COUNTY OF DUTCHESS
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Poughkeepsie, New York 12603

Prepared by:

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C.T. Male Project No: 18.8090

FIELD SAMPLING PLAN
HUDSON VALLEY REGIONAL AIRPORT SITE
TOWN OF WAPPINGER, DUTCHESS COUNTY, NEW YORK

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Page

1.0 INTRODUCTION

This document is the Field Sampling Plan (FSP) for the Site Characterization (SC) to be conducted at the Hudson Valley Regional Airport property located at 18 Griffith Way in the Town of Wappinger, Dutchess County, New York (the "Site"). It has been developed in accordance with the SC Work Plan (SCWP) as prepared by C.T. Male Associates Engineering, Surveying, Architecture, & Landscape Architecture & Geology, D.P.C. (C.T. Male). A description of the property, background information, objectives, and the proposed scope of work, are presented in the referenced SCWP.

This FSP is a supplement to the SCWP in that it presents the standard field sampling and data gathering procedures to be followed during implementation of the field activity portion of the scope of work. This plan addresses sampling locations and frequencies, drilling methods including advancement of soil borings and installation of monitoring wells, decontamination procedures, various media sampling procedures, field screening and testing procedures, field instrumentation operating procedures, field measurements, sample handling and chain of custody procedures, and water level measurement procedures. The applicable portions of the SCWP that coincide with the FSP will be provided to, and followed by the field team. This FSP is intended to be applicable to field sampling activities conducted by C.T. Male and its subcontractors.

Included in this FSP are forms that are an integral part of the Quality Assurance Project Plan (QAPP). The field sampling and data gathering procedures presented in this FSP are incorporated into the QAPP by reference. The FSP and the QAPP document the laboratory quality assurance/quality control procedures to be followed during analysis of samples collected in the field so that valid data of a known quality is generated.

The FSP has been prepared, in part, in general accordance with the following New York State Department of Environmental Conservation (NYSDEC) and United States Environmental Protection Agency (USEPA) guidance documents:

- NYSDEC, DER-10, Technical Guidance for Site Investigation and Remediation, and Appendices, May 2010.
- 6 NYCRR Part 375 Environmental Remediation Programs Subparts 375-1 to 375-4 and 375-6, Effective December 14, 2006.

- NYSDEC, Department of Water, Technical and Operational Guidance Series (TOGS): TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998, and errata and addendum sheets.

- Screening and Assessment of Contaminated Sediment; NYSDEC Division of Fish, Wildlife and Marine Resources Bureau of Habitat; June 24, 2014.

- New York State Department of Health (NYSDOH) regulations and guidelines.

- A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001, USEPA, December 1987, revised 2005.

2.0 MEDIA SAMPLING AND OVERVIEW OF FIELD ACTIVITIES

2.1 Media Sampling

Based on the SCWP, sampling may include volatile organic vapor screening, subjective media assessment, laboratory analyses, and for geologic and hydrogeologic characterization of the project Site. The environmental media that may be sampled includes:

- Shallow Soil,
- Subsurface Soil,
- Sediment,
- Surface Water,
- Drinking Water,
- Groundwater, and
- Investigative Derived Waste.

2.2 Overview of Field Activities

The potential field activities are summarized in this FSP and details of each activity are provided within the referenced standard operating procedures (SOPs).

Field Report Forms applicable to their corresponding field activity (i.e., test boring log, monitoring well construction log, water level record, etc.) are referenced in their respective SOPs.

3.0 SITE INVESTIGATION OVERVIEW

3.1 General

The proposed Site investigation includes: collection and laboratory analysis of quality control samples of source materials and rinse blanks of equipment that will be imported onto the Site to conduct the investigations; collection and laboratory analysis of surface water and sediment samples from on-Site water bodies; collection of shallow and deep soil samples for subjective and laboratory analysis; conversion of select test borings into monitoring wells; installation of monitoring wells and characterization of the Site's subsurface; collection and laboratory analysis of groundwater samples from the installed and existing monitoring and drinking water wells; collection of water levels; and sampling of investigative derived waste for disposal. The SOPs referenced in the preceding sections have been developed for the various investigative activities that may be performed during course of the project.

3.2 Source Materials and Field Quality Control Samples

As per- and polyfluoroalkyl substances (PFAS) are found in several everyday items, samples will be collected from source materials imported onto the Site to aid in the investigation and sampling of the Site. Field Quality Control samples may include Equipment Blanks, Duplicates, Field blanks, and Matrix Spike/Matrix Spike Duplicates (MS/MSD). The types of field quality control samples to be collected and the sampling method and rationale are detailed in the QAPP. The SOP for this field activity is SOP 'Collection of Quality Control Samples'.

3.3 Observation of Drilling Operations and Monitoring Well Installations

Drilling, monitoring well installation and other associated field work involved in the investigations to be performed by C.T. Male and their subcontractors will be observed by full-time, on-site, C.T. Male representatives. These representatives will be responsible for the collection of soil samples, soil classification, field screening of soil samples, recording of drilling and sampling data, recording of groundwater data, deciding on the final drilling depths and monitoring well screened intervals (with input from the project manager), recording the monitoring well construction procedures, and monitoring the decontamination procedures. Field reports will be prepared that document the daily activities and their conformance to the work plan in accordance with the SOP,' Note Taking and Field Logs'. The project manager will be kept informed of the progress of work and any problems encountered during the investigations so appropriate corrective action can be implemented in consultation with Dutchess County and NYSDEC.

3.4 Drilling and Sampling

There are several different drilling techniques that can be utilized to aid in the collection of soil samples and for installation of monitoring wells. These include direct-push, hollow stem auger and rotosonic and air rotary drilling techniques. The drilling technique to be used for the investigation is outlined in the SCWP. C.T. Male personnel will observe the drilling subcontractor and the drilling subcontractor will follow their SOPs for the drilling technique(s) specified in the work plan.

3.4.1 Soil Classification

Soils collected during drilling activities will be visually classified in the field using the Unified Soil Classification System in general accordance with ASTM D-2488, Standard Practice for Description and Identification of Soils. The soil description may include matrix and clast descriptions, moisture content, color, appearance, odor, behavior of the material and other pertinent observations. This information will be recorded on a subsurface exploration log form along with the boring identification and elevation, date started and completed, sampling intervals, standard penetration values, length of recovered sample and depth of first groundwater encountered. During the drilling, a photoionization detector (PID) meter will be used to monitor the volatile organic vapors exiting the borehole and soil cuttings, and of all recovered subsurface samples. These visual observations and field measurements will be recorded in accordance with the SOPs 'Drilling and Associated Sampling Methods', SOP 'Organic Vapor and Air Monitoring', and SOP 'Surface and Subsurface Soil Sampling'.

3.4.2 Borehole Abandonment and Drill Cuttings

During drilling activities, drill cuttings will need to be properly managed. Drill cuttings from borings that will not be converted to a monitoring well(s) meeting the conditions listed in NYSDEC DER-10, section 3.3(e), will be placed within the borehole from which they were generated. As per DER-10, drill cuttings and soil that are not used to backfill a borehole will be transferred to labeled DOT 17H approved 55-gallon open top steel drums which will be staged at a secure location within the Site pending off-site disposal. The contents of the drums will be subsequently characterized and profiled for off-site disposal.

3.5 Monitoring Well Installation in the Overburden

The installation of monitoring wells in the overburden groundwater may be used to identify hydrogeologic characteristics, groundwater constituents, contaminants of concern, contaminant plume transport, and the hydraulic relationship between the Site and localized groundwater flow. The SOP for this field activity is included in Attachment A as SOP #6: Monitoring Well Installation.

Monitoring wells will be installed within select boreholes that are typically completed utilizing direct-push and hollow stem auger drilling methods. For the direct-push boreholes, typically one (1)-inch diameter monitoring wells with slotted screens will be installed in the open boreholes. For the hollow stem auger boreholes, typically two (2)-inch diameter monitoring wells with slotted screens will be installed within the flush hollow stem augers or casing in accordance with standard practices. Monitoring well depths, and screen lengths and depths will be calculated by the environmental scientist/geologist by maintaining accurate measurements of screen and casing placed in the borehole. CT Male personnel will complete the Monitoring Well Construction Log forms for the monitoring wells in accordance with SOP 'Monitoring Well Installation'.

3.6 Monitoring Well Development

Once installed, each monitoring well will be developed by pumping/bailing in order to remove any accumulated fine sediment within the well and to establish a hydraulic connection with the surrounding aquifer. Wells will be developed at an appropriate time interval (at least 24 hours) post-installation using pumping techniques. Monitoring of temperature, conductivity, pH, and turbidity for defining stabilization will be completed. The SOP for this field activity is 'Monitoring Well Development'.

3.7 Decontamination of Drilling and Sampling/Gauging Equipment

Drilling equipment including augers, rods, plugs, samplers, tools, drill unit and any piece of equipment that can come in contact with the formation will be cleaned with a high temperature/high pressure steam cleaner prior (water used from decontamination will be reviewed ahead of time for testing for PFAS to ensure the water would not bias the sampling) to the start of work and between each boring to prevent cross-contamination between borings. The equipment will also be cleaned using the same procedure at completion of the work to prevent any contamination from leaving the Site. The SOP for this field activity is 'Equipment Decontamination Procedures'.

4.0 GROUNDWATER SAMPLING PROCEDURES

4.1 Groundwater Sampling

During groundwater sampling, acceptable techniques and protocol during the collection and transportation of groundwater samples are required to minimize the potential for sample variation from well to well. Quality control measures will be instituted as discussed in this document and the QAPP as a check on the procedures being utilized so that the quality of the data can be assessed. The groundwater samples will be analyzed in the laboratory by standard methods following the QA/QC procedures outlined in the QAPP.

Periodic monitoring/sampling events may be conducted. The SOP for this field activity is 'Groundwater Sampling Procedures'.

4.2 Water level Measurements, Immiscible Layers, Total Well Depth in Well

Prior to sampling, static water heights will be measured using a water level indicator to determine the standing water column height. Water levels will be collected from all wells that are slated for sampling prior to initiating the purging/water sampling. The water column height and depth of the well are used to calculate the well water volume. Non-vented well caps will be removed for a period of ten minutes to allow the water column to reach static conditions prior to taking the water level measurements.

Any light non-aqueous phase liquid (LNAPL) level and/or dense non-aqueous phase liquid (DNAPL) level, if encountered, will also be measured utilizing LNAPL and DNAPL specific water level meters. The SOP for obtaining water, LNAPL and DNAPL levels are included in the SOP 'Measuring Static Water Level, Immiscible Layers (DNAPL and LNAPL), and Total Well Depth in Water'.

4.3 Well Purging Procedures

Prior to groundwater sampling, it is necessary to purge the wells. Purging of the wells allows for a fresh representative sample to be collected from the well by removing stagnant water.

The wells will be purged employing pumping techniques utilizing a peristaltic pump with new factory sealed tubing that will be dedicated to each well. The SOP for this field activity is 'Collection of Groundwater Samples Using Low Flow Purging and Sampling'.

As per DER-10, purge water from the monitoring wells will be placed in DOT approved 55-gallon drums, labeled and stored in a secure location within the Site. The laboratory analyses results of the soil and groundwater samples will be used to profile the waste and to determine the proper method of treatment or disposal for the material.

4.4 Well Stabilization

Well stabilization is conducted to verify the groundwater sample is representative of aquifer conditions. A well is considered stabilized after the groundwater stabilization parameter measurements are within acceptable limits for three (3) consecutive readings. The procedures for conducting well stabilization are provided in the SOP 'Field Water Quality Measurements and Calibration'.

4.5 Sample Collection

Prior to sample collection, the wells will be purged, the groundwater within the wells allowed to recover to at least 80% of their initial static water level, and have achieved water quality parameter stabilization. Slow recharging wells will be allowed to recover for a period of up to four (4) hours before sampling. Recovery times and water depths will be recorded in accordance with the SOPs. The SOP for this field activity is 'Groundwater Sampling Procedures'.

4.5.1 Low Flow Sampling

Low flow sampling is a method of collecting samples from a well that does not require purging volumes of water from the well and relies on natural flow of formation water through the well. Using this method, the water flowing into and through the well is representative of the groundwater within the formation surrounding the screen and this representative groundwater sample can be obtained by slowly pumping.

Low-flow sampling methods emphasize minimal stress to the groundwater by low water-level drawdown and low pumping rates in order to collect samples with minimal alterations to water chemistry (U.S. Environmental Protection Agency [EPA], 2002; ASTM D6771-02). Low-flow sampling is typically conducted using positive displacement pumps, submersible pumps, or peristaltic pumps. Commonly used low-flow pumps include the QED Sample Pro® bladder pump, Geotech® bladder pumps, Grundfos Redi-Flo 2® submersible pump, and the Geotech Geopump™ Series II peristaltic pump. The use of low flow sampling and the type of pump to be used will be specified in the SCWP. Pumps that are to be used on-site will be reviewed prior to use to ensure they would not bias the PFAS sampling due to their construction and parts. The SOP for this field activity is 'Collection of Groundwater Samples Using Low Flow Purging and Sampling'.

4.5.2 Field Analyses

Groundwater field analyses will include pH, temperature, specific conductivity, oxidation-reduction potential (ORP) and turbidity. The field analyses will be measured immediately upon collection of each sample since the values of these parameters can change with time.

The pH, temperature, specific conductivity and ORP of a sample are measured with a portable unit capable of measuring all four (4) parameters concurrently and will be completed in accordance SOP 'Field Water Quality Measurements and Calibration'. The portable unit automatically adjusts to compensate for the temperature of the sample. The turbidity of a sample is measured with a separate portable unit. The pH, temperature, specific conductivity, ORP and turbidity will be recorded on a Groundwater Services Field Log. These units will be calibrated to known standards prior to the start of field activities every day. Measurement and operating procedures for these field analyses are presented in Section 7.0 of this FSP.

4.5.3 Analytical Groundwater Sampling

The groundwater samples will be subjected to laboratory analysis to assist in characterizing the environmental quality of the Site. The samples will be transferred from the sampling equipment directly into the designated sampling containers. The sampling containers for volatile organics analyses will be filled first to minimize volatilization of the sample. The laboratory analytical method, container type, sample holding times, and preservation of the samples are outlined in the QAPP and the SCWP. The SOPs for this field activity are 'Groundwater Sampling', 'Chain of Custody Procedures' and 'Domestic Transport of Samples to Laboratories in the USA'.

these field analyses are presented in Section 7.0 of this FSP.

4.5.4 Drinking Water samples from private wells or public water supply

The collection of drinking water samples from residential or private wells with or without point-of entry-treatment (POET) systems, or public water supply systems will entail specific procedures to be completed for these types of wells. The SOP for this field activity is 'Point of Entry Treatment (POET) sampling'.

5.0 SOIL SAMPLING PROCEDURES

5.1 Shallow and Deep Soil Sampling

Shallow and deep soil sampling will be completed as outlined in the SCWP. Shallow soil samples will be collected employing a hand auger. Deep soil samples will be collected using a spilt spoon sampler during conventional hollow stem auger drilling and/or a macro-core sampler during direct-push drilling. The collected soils will be logged in accordance with ASTM D2488 (visual-manual method) and screened for signs of obvious environmental impacts (*e.g.,* staining, sheen, odor, discoloration, or the presence of headspace as measured by a photoionization detector). The shallow and deep soil sample collection procedures will follow the SCWP and QAPP. The SOP for this field activity is 'Surface and Subsurface Soil Sampling'.

5.2 Analytical Soil Sampling

The soil samples will be subjected to laboratory analysis to assist in characterizing the environmental quality of the Site. The samples will be extracted from the sampling equipment in a timely fashion such that the sample has limited exposure to the outside air, thus reducing the chance for volatilization. The sampling containers for volatile organics analyses will be filled first to minimize volatilization of the sample. The laboratory analytical method, container type, sample holding times, and preservation of the samples are outlined in the QAPP and the SCWP. The SOP for this field activity is 'Surface and Subsurface Soil Sampling'.

6.0 SURFACE WATER SAMPLING PROCEDURES

Surface water samples will be collected from the water bodies identified in the SCWP. The surface water samples will either be collected directly into the sampling containers or disposable sampling equipment (e.g., disposable bailer) may be used to collect the samples for transfer into the sampling containers. If the samples are collected directly into the sampling containers, the field sampler will use care so as not to wash out any sampling container fixative.

6.1 Analytical Surface Water Sampling

The surface water samples will be subjected to laboratory analysis to assist in characterizing the environmental quality of the Site. The samples will be extracted from the sampling equipment (if used in place of direct collection into the sampling containers) in a timely fashion such that the sample has limited exposure to the outside air reducing the chance for volatilization. The sampling containers for volatile organics analyses will be filled first to minimize volatilization of the sample. The laboratory analytical method, container type, sample holding times, and preservation of the sample are outlined in the QAPP and the SCWP. The SOP for this field activity is 'Surface Water Sampling'.

7.0 SEDIMENT SAMPLING PROCEDURES

Sediment samples will be collected from the water bodies identified in the SCWP. The sediment samples will be collected using a decontaminated hand auger and/or macro-core sampler. Reasonable attempts will be made by the field sampler to collect a six (6) inch long sediment core at each sampling location.

7.1 Analytical Sediment Sampling

The sediment samples will be subjected to laboratory analysis to assist in characterizing the environmental quality of the Site. The samples will be extracted from the sampling equipment in a timely fashion such that the sample has limited exposure to the outside air reducing the chance for volatilization. The sampling containers for volatile organics analyses will be filled first to minimize volatilization of the sample. The laboratory analytical method, container type, sample holding times, and preservation of the sample are outlined in the QAPP and the SCWP. The SOP for this field activity is 'Sediment, Sludge, and Sewage Sampling'.

8.0 QUALITY CONTROL

8.1 Source Materials

Because PFAS (including perfluorooctanoic acid [PFOA] and perfluorooctanesulfonic acid [PFOS]) are found in many everyday items, samples will be collected for laboratory analysis of source materials that are anticipated to be imported onto the Site for the investigation. The samples will be collected and the analytical results reviewed prior to importation of the materials onto the Site. Source materials that may be sampled include water used by the drilling contractor for advancement of test borings, construction of monitoring wells and decontamination of drilling and sampling equipment; water used by the sampling technician to decontaminate sampling equipment; totes and tanks used by the drilling contractor for temporary storage of drilling water; drill rig augers, casing and rods used by the drilling contractor for advancement of the test borings; monitoring well construction materials (PVC riser and screen) used by the drilling contractor for construction of the monitoring wells; filter sand used by the drilling contractor for the monitoring well sand pack; and rinse (deionized) water used as a final rinse for decontaminating non-disposable sampling equipment. As a note, water imported onto the Site for investigation/sampling purposes shall be identified by it source.

8.2 Field Quality Control

Field Quality Control samples may include Equipment Blanks, Duplicates, Field blanks, and Matrix Spike/Matrix Spike Duplicates (MS/MSD). The types of field quality control samples to be collected and the sampling method and rationale are detailed in the QAPP. The SOP for this field activity is 'Collection of Quality Control Samples'.

9.0 FIELD INSTRUMENTATION OPERATING PROCEDURES

9.1 General

The field instruments that may be utilized during implementation of the Site investigations are: Photoionization Detector (PID) or Flame Ionization Detector (FID) for air monitoring of total VOCs in ambient air; PID or FID for headspace analysis of soil samples for total VOCs; and a temperature/pH/specific conductivity/ORP meter and turbidity meter for field analysis of groundwater samples. The field instruments used will be calibrated and operated in accordance with the manufacturer's instructions and the procedures identified in the SOP 'Field Quality Measurements and Calibration'.

9.2 Photoionization and Flame Ionization Detector

A PID meter and data logger with a 10.6 eV lamp will be utilized to measure total VOCs. If the ionization potential of the compound being measured is expected to be greater than 11.7eV, a FID meter may be utilized in place of the PID meter. The instrument is calibrated at the factory upon purchase and annually thereafter using certified service shops who utilize standards of benzene and isobutylene. Prior to use in the field, the instrument will be calibrated in accordance with the manufacturer's instructions using a disposable cylinder containing isobutylene obtained from a reputable supplier. The calibration value varies by the manufacturer, however, 100 parts per million (ppm) is commonly utilized. During use, the PID or FID meter will be calibrated at least once every 8 hours. The calibration procedure is contained in the PID or FID meter User's Manual.

Care will be taken when handling and using the PID or FID meter to prevent any debris from entering the sample line which will affect the instrument's operation. If this occurs, the field personnel will clean the unit or replace it with a functional PID or FID meter.

9.3 Air Monitoring for Potential Contaminant Exposure

Air monitoring for potential exposure to airborne contaminants is typically conducted using a PID, FID, Combustible Gas Indicator (CGI) (measuring oxygen level and explosive atmosphere), MultiRae Plus meter (measuring oxygen level, explosive atmosphere, PID, and hydrogen sulfide), or dust/aerosol meter. The SOP for this field activity is 'Organic Vapor Monitoring and Air Monitoring'.

9.4 Temperature, PH, Specific Conductivity and ORP Meter

The instrument used to measure temperature, pH, specific conductivity and ORP will be equipped with automatic temperature control for accurate adjustment to the temperatures of the samples and calibration standards. Prior to collecting the pH, specific conductivity and/or ORP readings, the instrument will be calibrated prior to use each day to ensure accuracy. The standard operating procedure for this field activity is 'Field Water Quality Measurements'.

10.0 SAMPLE HANDLING AND CHAIN OF CUSTODY PROCEDURES

The purpose of this procedure is to describe how to properly handle the sampling containers and how to document information on a Chain-of-Custody (COC) form. A COC is a legally binding document that includes sample identification and laboratory analyses required, and documents possession of samples from the time they are obtained until they arrive at the laboratory. The SOP for this field activity is 'Chain of Custody Procedures'.

11.0 WATER LEVEL MEASUREMENT PROCEDURES

Water levels will be measured in the monitoring wells using a water level indicator probe. The water levels will be measured from the surveyed reference point to the nearest 0.01 foot. Water levels will be measured progressively from upgradient monitoring wells to downgradient monitoring wells, attempting to measure water levels from the well with the lowest concentration of target compounds to the well with the highest concentration of target compounds.

To avoid possible cross contamination of the wells, the water level indicator will be decontaminated prior to and following the water measurement at each individual well. The water level indicator will be decontaminated by rinsing it with imported water, vigorously scrubbing with a brush and laboratory-grade standard detergent (e.g., Alconox®) and imported water, then rinsing it in accordance with the SOP 'Equipment Decontamination Procedures'.

The procedure for measuring the static water level and the total well depth in a groundwater well is included in SOP 'Measuring Static Water Level, Immiscible Layers (DNAPL and LNAPL), and Total Well Depth in Water'.

12.0 INVESTIGATIVE DERIVED WASTE, STORAGE, SAMPLING AND DISPOSAL

Investigative Derived Waste (IDW) will be containerized in appropriately sized compatible containers, properly stored, profiled and ultimately transported to a disposal facility permitted to accept the waste in accordance with NYSDEC DER-10 procedures and this FSP. The SOP for this field activity is 'Sampling and Disposal of Investigative Derived Waste'.

APPENDIX B

QUALITY ASSURANCE PROJECT PLAN

July 2019

Quality Assurance Project Plan
Hudson Valley Regional Airport Site
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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(845) 454-4400

C.T. Male Associates Project No: 18.8090

QUALITY ASSURANCE PROJECT PLAN
HUDSON VALLEY REGIONAL AIRPORT SITE
TOWN OF WAPPINGER, DUTCHESS COUNTY

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ACRONYM LIST

ARARs – Applicable or relevant and appropriate requirements

COC – Chain-of-custody

DQO – Data quality objective

HASP – Health & Safety Plan

LCS – Laboratory control sample

MDL – Method detection limit

MS – Matrix spike

NYSDEC – New York State Department of Environmental Conservation

PFAS – Per- and polyfluoroalkyl substances

PFOA – Perfluorooctanoic acid

PFOS – Perfluorooctanesulfonic acid

PCB – Polychlorinated biphenyl

PARCCS– Precision, accuracy, representativeness, completeness, comparability, and sensitivity

PT – Proficiency testing

QA – Quality assurance

QAM – Quality Assurance Manual

QAPP – Quality Assurance Project Plan

QC – Quality control

RPD – Relative percent difference

SVOC – Semi-volatile organic compound

SOP – Standard operating procedure

TAL – Target Analyte List

TCL – Target Compound List

TOC – Total organic carbon

UFP – Uniform Federal Policy

USEPA – United States Environmental Protection Agency

VOC – Volatile organic compound

WWTP – Wastewater Treatment Plant

1.0 INTRODUCTION

C.T. Male Associates Engineering, Surveying, Architecture & Landscape Architecture & Geology, D.P.C. (C.T. Male) has prepared this Quality Assurance Project Plan (QAPP) for the Site Characterization Investigation (SCI) to be conducted by Dutchess County at the Hudson Valley Regional Airport property addressed as 18 Griffith Way in the Town of Wappinger, Dutchess County, New York (the "Site"). The QAPP was prepared in accordance with the United States Environmental Protection Agency (USEPA) Intergovernmental Data Quality Task Force's environmental requirements as specified in the Uniform Federal Policy (UFP) QAPP guidance document Part 2A Revised (March 2012) and addresses QAPP elements described in *EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5* and *EPA Guidance for Quality Assurance Project Plans, EPA QA/G-5*.

This project-specific QAPP provides the details of the organizations and the project management, objectives, data acquisition, data assessment, oversight and data review procedures associated with the project conducted on and off the Site. Protocols for sample collection, handling, storage, chain-of-custody (COC), laboratory and/or field analyses, data evaluation and validation, and reporting are addressed. Some project details are included in the SCI work plan. Field activities performed under this QAPP will be conducted in accordance with the applicable Field Sampling Plan and the Site-Specific Health & Safety Plan (HASP).

1.1 Site History and Background

The Site is located at 18 Griffith Way in the Town of Wappinger, Dutchess County, New York. The Site is approximately 510.8 acres in size and has primarily been used as an airport since the 1930's. The airport occupies the majority of the Site and is currently referred to as the Hudson Valley Regional Airport. Two (2) closed landfills are located on northern and northeastern portions of the Site, and two NYSDEC inactive hazardous waste sites are located on the eastern portion of the site, that are currently used a airport hangars.

The Site has been designated as a potential inactive hazardous waste disposal site (P-Site #314129) by the New York State Department of Environmental Conservation

(NYSDEC) based on the detection of perfluorinated compounds in a water supply well located on the Site and low concentrations in nearby off-site water supply wells.

2.0 QAPP WORKSHEET #1 & 2 – TITLE AND APPROVAL PAGE

1. **Project Identifying Information**
   a. **Site name/project name:** Hudson Valley Regional Airport
   b. **Site location/number:** 18 Griffith Way, Town of Wappinger, Dutchess County, New York / NYSDEC Site ID No. 314129
2. **Lead Organization**
   a. **Lead Organization:** Dutchess County
      i. **Project Manager (name/title/signature/date):**

         ____

         Robert H. Balkind, P.E. / Commissioner, Dep't. of Public Works
3. **State Regulatory Agency:** New York State Department of Environmental Conservation (NYSDEC)
      i. **Project Manager (name/title/signature/date):**

         ____

         Matthew Hubicki,PE/ Project Manager - NYSDEC
4. **Other Stakeholders (as needed)**
   a. **Consulting Engineers:** C.T. Male Associates
      i. **Project Principal (name/title/signature/date):**

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         Daniel Reilly, PE / Project Principal

      ii. **Project Manager (name/title/signature/date):**

         ____

         Kirk Moline P.G. / Project Manager

iii. Quality Assurance (QA) Manager (name/title/signature/date):

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Jeff Marx, P.E. / Sr. Environmental Engineer

iv. Health & Safety Manager (name/title/signature/date):

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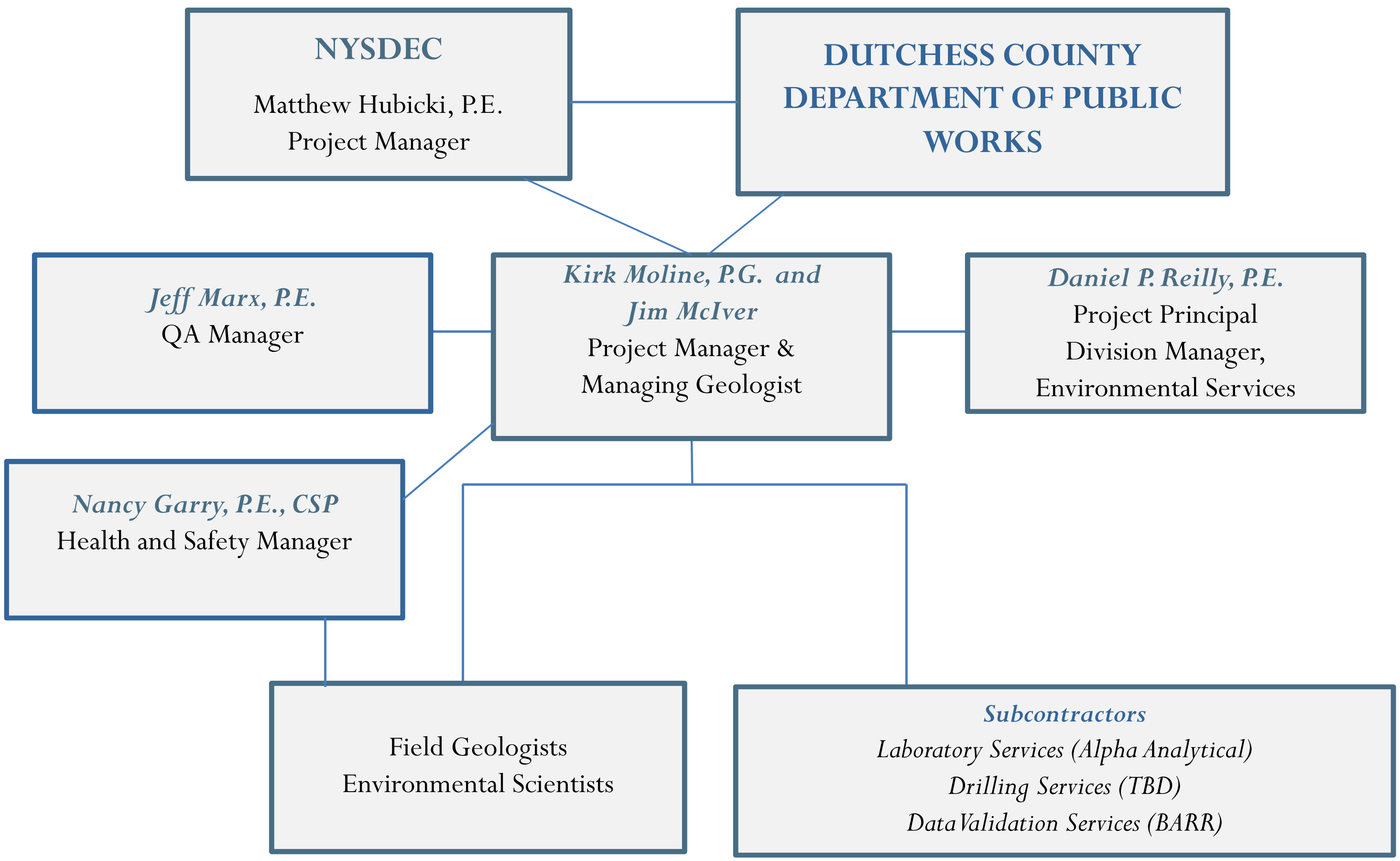
Nancy Garry, PE, CSP / Sr. Environmental Engineer

3.0 QAPP WORKSHEET #3 & 5 – PROJECT ORGANIZATIONAL AND QAPP DISTRIBUTION

This section identifies the reporting relationships between organizations involved in the project, including the lead organization and contractors and subcontractor organizations. It also includes recipients of controlled copies of the QAPP. Contractors and subcontractors shown on this chart are responsible for document control within their organizations. Site-specific work plans may identify other personnel in similar roles.

C.T. MALE PROJECT ORGANIZATION – HUDSON VALLEY REGIONAL AIRPORT



4.0 QAPP WORKSHEET #4, 7 & 8 – PERSONNEL QUALIFICATIONS AND SIGN-OFF SHEET

This section identifies project personnel associated with each organization, contractor, and subcontractor participating in responsible roles. This includes the project manager, QA Manager, project contacts for organizations involved in the project, the project health & safety manager, field operation personnel, and the analytical services provider. This worksheet also lists individuals' project titles or roles; qualifications; and any specialized/non-routine training, certifications, or clearances required by the project. Signatures indicate personnel have read and agree to implement this QAPP as written and that the QAPP will be kept on-file at each organization.

ORGANIZATION: C.T. Male Associates (C.T. Male)

Name	**Title/Role**	**Education/Experience**	**Specialized Training/ Certifications**	**Signature/Date**
Daniel Reilly, P.E.	Project Principal	See resumé included in Attachment A.	See resumé included in Attachment A.	
Kirk Moline, P.G.	Project Manager	See resumé included in Attachment A.	See resumé included in Attachment A.	
Nancy Garry, P.E., CSP	Health & Safety Manager	See resumé included in Attachment A.	See resumé included in Attachment A.	
Jeff Marx, P.E.	QA Manager	See resumé included in Attachment A.	See resumé included in Attachment A.	

ORGANIZATION: Alpha Analytical, Inc. of Mansfield, Massachusetts (Alpha)

Name	**Title/Role**	**Specialized Training/ Certifications**	**Signature/Date**
Candace Fox	Project Manager	Training as required by laboratory QA Manual	
Jim Todaro	QA Manager	Training as required by laboratory QA Manual	

5.0 QAPP WORKSHEET #6 – COMMUNICATION PATHWAYS

Communication pathways for this project are shown below.

Communication Driver	Organization	Name	Contact Information	Procedure (Timing, pathway, etc.)
Regulatory Agency Interface	NYSDEC	Matthew Hubicki	Office (O): 518-402-9605 matthew.hubicki@dec.ny.gov	C.T. Male will contact Dutchess County and the regulatory agency (NYSDEC) via email if issues with the implementation of this QAPP occur impacting data quality, when comments to the submittals occur, and when new field sampling plans are identified for implementation.
	C.T. Male	Kirk Moline	O: 518-786-7400 k.moline@ctmale.com	
	Dutchess County	Robert Balkind	O: 845-486-2085 rbalkind@dutchessny.gov	
Laboratory Problems/ Corrective Actions	C.T. Male	Jeff Marx	O: 518-786-7548 j.marx@ctmale.com	C.T. Male QA Manager will be the contact for the laboratories should the laboratories experience issues with project samples. Barr Engineering Co. will contact the laboratories if issues are discovered from data validation.
	Barr	Ward Swanson	O: 952-832-2660 wswanson@barr.com	
	Alpha	Candace Fox	O: 717-556-7250 cfox@alphalab.com	
Field Problems/ Corrective Actions	C.T. Male	Kirk Moline	O: 518-786-7502 k.moline@ctmale.com	C.T. Male field staff will contact the C.T. Male Project Manager to discuss difficulties encountered during field activities. C.T. Male Project Manager will coordinate with their office's QA Manager, as needed and appropriate.

Communication Driver	Organization	Name	Contact Information	Procedure (Timing, pathway, etc.)
Safety Issues	C.T. Male	Nancy Garry	O: 518-786-7451 n.garry@ctmale.com	C.T. Male field staff will contact the C.T. Male Project Manager/Health & Safety Manager and work may stop until safety issues are cleared. NYSDEC may be contacted if safety issues delay obtaining/reporting of data.
Field Activity Modifications	NYSDEC	Matthew Hubicki	O: 518-402-9605 matthew.hubicki@dec.ny.gov	Dutchess County and C.T. Male will propose modifications to current sampling program via periodic updates or otherwise as needed. Reduction of testing parameters or frequencies will be performed in consultation with and approval from NYSDEC.
	C.T. Male	Kirk Moline	O: 518-786-7400 k.moline@ctmale.com	
	Dutchess County	Robert Balkind	O: 845-486-2085 rbalkind@dutchessny.gov	

6.0 QAPP WORKSHEET #9 – PROJECT SCOPING SESSION PARTICIPANTS SHEET

As noted in the introduction, investigation activities will be conducted in accordance with a Site Characterization Work Plan that has been approved by the NYSDEC. The sampling and analysis activities implemented as part of additional investigations or studies will follow the protocols set forth in this QAPP. Additionally, this QAPP will be updated as needed based on the planned sampling and analysis activities.

7.0 QAPP WORKSHEET #10 – SITE MODEL

The scope of work was developed based on the Site's topography, land use and facility operations. The NYSDEC is requiring potential chemical parameters of concern to be analyzed based on current Site use. The Site has been designated as a potential inactive hazardous waste disposal site (P-Site) by the New York State Department of Environmental Conservation (NYSDEC) based on the presence of PFOA and PFOS in the Site's potable water at concentrations exceeding regulatory standards.

Parameters that will be analyzed to evaluate the environmental quality of the Site's media include per- and polyfluoroalkyl Substances (PFAS). The laboratories performing the analytical services are depicted in Table 1, which includes their addresses and the list of parameters that the laboratories will perform.

The sample type, laboratory analysis, sampling method and sampling rationale for the samples collected during the site investigations are summarized in the site-specific work plans.

The proposed sampling activities are summarized below and are described in more detail in the SCI Work Plan and FSP.

- Collection of shallow soil samples for subjective and laboratory analysis.
- Collection of surface water and sediment samples from water bodies for laboratory analysis.
- Advancement of boreholes to collect subsurface soil samples and to install temporary and/or permanent monitoring wells in the overburden groundwater.
- Development of the newly installed monitoring wells. Purging and collection of groundwater samples for laboratory analysis from the newly installed overburden monitoring wells and from existing monitoring wells.
- Collection of quality control source and field samples for laboratory analysis.
- Collection of equipment and material rinse blank samples.
- Collection of investigation-derived waste samples for laboratory analysis.

8.0 QAPP WORKSHEET #11 – PROJECT/DATA QUALITY OBJECTIVES

Data Quality Objectives (DQOs) are qualitative and quantitative statements that clearly state the objective of a proposed project, define the most appropriate type of data to collect, determine the appropriate conditions for data collection, and specify acceptable decision error limits that establish the quantity and quality of data needed for decision making.

DQOs for measurements during this project will be addressed in terms of the data quality indicators: precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS). The numerical PARCCS parameters will be determined from the project DQOs to ensure that they are met. The DQOs and resulting PARCCS parameters will require that the sampling be performed using standard methods with properly operated and calibrated equipment, and conducted by trained personnel and are summarized in Worksheet #12.

9.0 QAPP WORKSHEET #12 – MEASUREMENT PERFORMANCE CRITERIA TABLE

This worksheet displays the data quality indicator, QC activity, matrix, and measurement performance criteria for both the sampling and analytical measurement systems.

<table>
<tr><th>Data Quality Indicator</th><th>QC sample or measurement performance activity</th><th>Matrix</th><th>Measurement Performance Criteria</th></tr>
<tr><td>Precision (field)</td><td>Field duplicate samples</td><td>Water, sediment and soil</td><td>Values > 5x RL; RPD ≤ 30%</td></tr>
<tr><td>Precision (laboratory)</td><td>Laboratory duplicate samples</td><td>As required by the method</td><td>Values > RL; method-specific (See Table 2)</td></tr>
<tr><td rowspan="2">Overall accuracy/bias (field and laboratory) /representativeness</td><td>Field, equipment, rinsate blanks</td><td>Water, sediment and soil</td><td rowspan="2">No target analyte concentrations ≥ RL</td></tr>
<tr><td>Laboratory Trip blanks</td><td>Water (PFAS)</td></tr>
<tr><td>Overall accuracy/bias (laboratory)</td><td>Method blanks</td><td>Water, sediment and soil</td><td>No target analyte concentrations ≥ RL</td></tr>
<tr><td>Analytical accuracy/bias/precision (laboratory)</td><td>Laboratory control samples (LCS) and LCS duplicates</td><td>Water, sediment and soil</td><td>Water, sediment and soil - analyte-specific (See Table 2)</td></tr>
<tr><td>Analytical accuracy/bias/precision (laboratory)</td><td>Matrix Spikes (MS) and MS duplicates</td><td>Water, sediment and soil</td><td>Analyte-specific (See Table 2)</td></tr>
<tr><td>Analytical accuracy/bias (laboratory)</td><td>Surrogate recoveries</td><td>Water, sediment and soil</td><td>Analyte-specific (See Table 2)</td></tr>
<tr><td>Sensitivity</td><td>Samples reported to method detection limit (MDL)</td><td>All</td><td>Analyte-specific (See Table 2)</td></tr>
<tr><td>Completeness</td><td>See Worksheet #34</td><td>All</td><td>See Worksheet #34</td></tr>
</table>

10.0 QAPP WORKSHEET #13 – SECONDARY DATA USES AND LIMITATIONS TABLE

Secondary data and information that will be used for the project and their originating sources are identified. Analytical data obtained prior to this QAPP is presented.

Data type	**Source**	**Data uses relative to current project**	**Factors affecting the reliability of data and limitations on data use**
Initial Site characterization	C. T. Male	Data used to characterize historical uses and operations on Site.	Data collected from EDR database, public databases and Site reconnaissance. No limitations on data use.
Laboratory analytical data from on- and off-site water supply wells sampling	NYSDOH	Used by NYSDEC to determine that investigation is needed at the Site.	Several samples received at the analytical laboratory for Perfluorinated Chemicals (PFCs) analysis exceeded the method specification temperature of 10^{0}C.

11.0 QAPP WORKSHEET #14 & 16 – PROJECT TASKS & SCHEDULE TABLE

Listed are the project activities as well as the QA assessments that will be performed during the course of the project.

Activities	Organization	Dates		Deliverable(s)	Anticipated Deliverable Due Date
		Anticipated Date(s) of Initiation	Anticipated Date of Completion		
Well drilling and installing / soil probe sampling	C. T. Male			Field reports and sample results	Ongoing
Collecting soil, sediment, surface water and groundwater samples	C. T. Male			Field reports and sample results	Ongoing
Chemical analysis	Alpha			Laboratory reports	Ongoing
Data evaluation / validation	Barr Engineering, Co.			Interim summary report	Ongoing
Summarizing data	C. T. Male			Telephone, email, progress reports	Ongoing
Site characterization report	C. T. Male			Notification to NYSDEC	Ongoing

12.0 QAPP WORKSHEET #15 – PROJECT ACTION LIMITS AND LABORATORY-SPECIFIC DETECTION/QUANTITATION LIMITS

Analytical data quality objectives are used to ensure that the analysis will accurately and adequately identify the contaminants of concern. The applicable or relevant and appropriate requirements (ARARs) are related to defining satisfactory cleanup efforts. To be able to evaluate the data generated with respect to potential ARARs, the samples will be reported to the MDL. The analytical methods selected for this project are designed to achieve ARAR values. The laboratory limits for specific parameters are included in Table 2.

13.0 QAPP WORKSHEET #17 – SAMPLING DESIGN AND RATIONALE

The design and rationale of the sampling program is outlined in Worksheet #10 and will be specified in the site-specific work plans.

14.0 QAPP WORKSHEET #18 – SAMPLING LOCATIONS AND METHODS

The site-specific work plans will provide specific detail regarding the individual sample locations and methods.

15.0 QAPP WORKSHEET #19 & 30 – SAMPLE CONTAINERS, PRESERVATION, AND HOLD TIMES TABLE

Sample Parameters, Matrix, Containers, Preservation, Hold Times per Analytical Group

Analytical Group	Matrix	Containers (number, size & type per sample)(1)	Preservation	Preparation/ Analytical Holding Time(2)
PFAS	Water, sediment and soil	250 mL HDPE	Cool ≤6ºC, Trizma (drinking water only)	14 days (water), 28 days (soil, sediment, wipe, other) until extraction; analysis within 28 days of extraction

(1) Container types and sizes listed are for guidance only. Laboratories may use different containers or combine analyses into larger volume containers.
(2) Holding time starts from date of collection unless otherwise noted.
Note: Laboratory standard operating procedures (SOPs) are retained at each laboratory's place of business and are available upon request for review.

16.0 QAPP WORKSHEET #20 – FIELD QUALITY CONTROL SUMMARY

The site-specific work plans may provide additional detail on the sample type, parameter, frequency, and sampling methods of field QC samples. Internal laboratory quality control checks will be those specified in EPA Methods or in the most recent NYSDEC ASP for the analytical method performed.

The laboratory will be responsible for performing what is necessary for complying with appropriate standards and certifications of the selected EPA method and NYSDEC ASP requirements. The laboratory quality control acceptance criterion is method specific and will be the laboratory's responsibility to meet the most recent NYSDEC ASP criteria.

At a minimum the following field quality control samples will be collected.

Matrix	**Analytical Group**	**No. of Field Duplicate Pairs**	**No. of MS/MSD**	**No. of Laboratory Trip Blanks**	**No. of Field Blanks**	**No. of Equip./Rinsate Blanks**
Surface water, groundwater, drinking water, sediment and soil	All analytical groups, except where noted	1 per 20 samples for each matrix	1 per 20 samples for each matrix	1 per each aqueous sample set for PFAS analyses	1 per each aqueous sample set for PFAS analyses	1 sample for PFAS per source material brought to the site 1 sample after each soil boring/well location of drilling equipment

17.0 QAPP WORKSHEET #21 – PROJECT SAMPLING SOP REFERENCES

The field activities for this Site will include collecting soil, sediment, surface water and groundwater samples for laboratory analysis. The procedures relative to implementing these field activities are included in the site-specific work plans.

18.0 QAPP WORKSHEET #22 – FIELD EQUIPMENT CALIBRATION, MAINTENANCE, TESTING, AND INSPECTION

The field equipment calibration, maintenance, testing, and inspection information are included in the site-specific work plans.

19.0 QAPP WORKSHEET #23 – ANALYTICAL AND VALIDATION SOPS

The laboratories' SOPs and the data validation SOPs are retained at each place of business and are available upon request for review.

20.0 QAPP WORKSHEET #24 – ANALYTICAL INSTRUMENT CALIBRATION

The analytical instrument calibration information is included in the laboratory Quality Assurance Manual (QAM) and/or the appropriate SOP. These documents are retained at each laboratory's place of business and are available upon request for review.

21.0 QAPP WORKSHEET #25 – ANALYTICAL INSTRUMENT AND EQUIPMENT MAINTENANCE, TESTING, AND INSPECTION

The analytical instrument and equipment maintenance, testing, and inspection information are included in the laboratory Quality Assurance Manual (QAM) and/or the appropriate SOP. These documents are retained at each laboratory's place of business and are available upon request for review.

22.0 QAPP WORKSHEET #26 & 27 – SAMPLE HANDLING, CUSTODY, AND DISPOSAL

Sampling Organization: C.T. Male Associates
Laboratories: Alpha of Mansfield, MA
Method of sample delivery (shipper/carrier): Alpha courier/FedEx/UPS
Number of days from reporting until sample disposal: As documented in laboratory QAM.

The field sampling plan describes the various methods and techniques to be followed during the completion of the sampling activities, instrument operation and calibration, and chain of custody procedures.

23.0 QAPP WORKSHEET #28 –ANALYTICAL QUALITY CONTROL AND CORRECTIVE ACTION

The analytical quality control and corrective action information are included in the laboratory QAM and/or the appropriate SOP. These documents are retained at each laboratory's place of business and are available upon request for review. Corrective action may be requested of the laboratories if issues arise that affect the quality of the data.

24.0 QAPP WORKSHEET #29 – PROJECT DOCUMENTS AND RECORDS TABLE

The documents and records that will be generated for the project including, but not limited to, sample collection and field measurement, analysis, and data assessment, are noted below.

Sample Collection Documents and Records	Generation	Verification	Where Maintained
Field Documents Field Notes Field Sample Forms COC Records Field Instrument Calibration Logs Sampling Notes Photographs Health and Safety Plan	C. T Male Field Staff	C. T. Male Project Manager	Field documents generated by C.T. Male field staff will be maintained in the project file located at C. T. Male offices.
Project Report Documents Project sign-off forms Project report submittals	C. T Male Project Staff	C. T. Male Project Manager	Report documents will be maintained in the project file located at C. T. Male offices which are kept following C. T. Male's policies.
Laboratory Documents Sample receipt, custody, and tracking record Equipment calibration logs (electronically stored) Sample preparation logs (electronically stored) Analysis Run Logs (electronically stored) Raw data	Laboratory Project Manager	Laboratory Quality Assurance Manager	As detailed in the laboratory QAM(s), data is typically retained for a period of 5 years from the report date.
Correspondence	C. T. Male Project Staff	C. T. Male Project Manager	Project communications regarding the work plans, QAPP and schedule will be kept at C. T. Male offices, following C. T. Male's Records Management protocols.

Laboratory Data Deliverables							
Laboratory Record	**PFAS**	**VOCs**	**SVOCs (including 1,4 dioxane)**	**Pesticides**	**PCBs**	**Metals**	**Other (non-organic)**
Narrative	X	X	X	X	X	X	X
COC and any additional receiving documentation	X	X	X	X	X	X	X
Sample Results	X	X	X	X	X	X	X
QC Results	X	X	X	X	X	X	X
Raw Data (including but not limited to the following where appropriate - preparation logs, tune checks, ICALs, DDT/Endrin breakdown, instrument logs, tailing factor, chromatograms)	X	X	X	X	X	X	X

25.0 QAPP WORKSHEET #31, 32, & 33 – ASSESSMENTS AND CORRECTIVE ACTION TABLE

Assessments:

Assessment Type	Responsible Party & Organization	Number/ Frequency	Estimated Dates	Assessment Deliverable	Deliverable due date
Review of field procedures	C.T. Male - QA Manager and/or Project Manager for work completed by C.T. Male	As warranted	As warranted	On-site audit	1 Month from completion
Review of field notes/deviations from work plans	C.T. Male – QA Manager and/or Project Manager for work completed by C.T. Male	Every event/report	Ongoing	Documentation of review	Ongoing
Review of COCs	C.T. Male - QA Manager / Laboratory for samples collected by C.T. Male	Every event/report	Within 5 days of receipt	Documentation of review	Ongoing
Review/validation analytical reports	Barr Engineering Co.	Level IIA (NYSDEC ASP Category B) every event/report and Level IV (NYSDEC ASP Category B) determined on a case by case basis.	Ongoing	Documentation of review	Ongoing

Assessment Response and Corrective Action:

Assessment Type	Responsibility for responding to assessment findings	Assessment Response Documentation	Timeframe for Response	Responsibility for Implementing Corrective Action	Responsible for monitoring
Review of field procedures	C.T. Male - QA Manager and/or Project Manager	Written report	30 days	Project Manager and/or QA Manager, C.T. Male	Project Manager and/or QA Manager, C.T. Male
Review of field notes/deviations from work plans	C.T. Male – Project Manager	Note in field notes, project file, retained in correspondence	Immediately to within 3 days of deviation	Project Manager and/or QA Manager, C.T. Male	QA Manager, C.T. Male
Review of COCs	C.T. Male - QA Manager / Laboratory	Note on COC	Immediately to within 3 days of discrepancy	QA Manager, C.T. Male	QA Manager, C.T. Male
Review analytical reports	CT Male – QA Manager	QA/QC Summary Sheet	Immediately to within 3 days of discrepancy	QA Manager, C.T. Male Project Manager, Laboratory	QA Manager, C.T. Male Project Manager, Laboratory
Review Validation Analytical Reports	Laboratory / Barr Engineering, Co.	QA/QC Summary Sheet	Immediately to within 3 days of discrepancy	QA Manager, C.T. Male Project Manager, Laboratory	QA Manager, C.T. Male Project Manager, Laboratory

26.0 QAPP WORKSHEET #34 – DATA VERIFICATION AND VALIDATION INPUTS TABLE

The following worksheets define the data verification and validation process. This worksheet describes how each item will be verified. Worksheets #35 and #36 describe when specific activities will occur, what documentation is necessary and identifies the person(s) responsible for field and analytical data respectively.

Item	Description	Verification (completeness)	Validation (conformance to specifications)
	Planning Documents/Records		
1	Approved QAPP	X	
2	Contract	X	
3	Field SOPs	X	
4	Laboratory SOPs	X	
	Field Records		
5	Field notes	X	X
6	Equipment calibration records	X	X
7	COC forms	X	X
8	Sampling diagrams/surveys	X	X
9	Relevant correspondence	X	X
10	Change orders/deviations	X	X
11	Field audit reports	X	X
12	Field corrective action reports	X	X
	Analytical Data Package		
13	Cover sheet (laboratory identifying information)	X	X
14	Case narrative	X	X
15	Internal laboratory COC	X	X
16	Sample receipt records	X	X
17	Sample chronology (i.e., dates and times of receipt, preparation, and analysis)	X	X
18	Definition of laboratory qualifiers	X	X
19	Results reporting forms	X	X
20	QC sample results	X	X
21	Compound(s) identified and reported in proper units	X	X
22	Labeled sample chromatograms (organics)	X	X
23	Electronic data deliverable	X	X

Item	Description	Verification (completeness)	Validation (conformance to specifications)
24	Communication records	X	X
25	MDL/RL establishment and verification	X	X
26	Standards traceability	X	X
27	Instrument calibration records	X	X
28	Corrective action reports	X	X
29	Raw data	X	X

27.0 QAPP WORKSHEET #35 – DATA VERIFICATION PROCEDURES TABLE

Described below are the processes that will be followed to validate project field data.

Records Reviewed	Requirement Documents	Process Description	Responsible Person, Organization
Field notes and forms	QAPP, Field SOPs	Verify that records are present and complete for each day of field activities. Verify that planned samples were collected and that sample collection locations are documented. Verify that changes/exceptions are documented and reported in accordance with requirements. Verify that required field monitoring was performed and results are documented.	C.T. Male Project Manager for work completed by C.T. Male field staff.
COC forms	QAPP, Field SOPs	Verify the completeness of COC records. Examine entries for consistency with the field notes. Verify that required signatures and dates are present. Check for transcription errors.	C.T. Male Project Manager for work completed by C.T. Male field staff.

28.0 QAPP WORKSHEET #36 – DATA VALIDATION PROCEDURES

The data validator is responsible for review of the analytical data generated for this Site. The data validator will review analytical data and prepare a report documenting if the analytical data is valid and usable. The report will also present data rejection and qualification, where necessary, based on laboratory performance. The data validation will conform to NYSDEC DER-10, Appendix 2B, Data Usability Summary Reports (DUSR).

External data validation will be performed by an independent data validator who will utilize the applicable analytical method, standard laboratory practices and where applicable, NYSDEC ASP Category B Data Deliverable, the USEPA National and Regional Validation Guidelines/Procedures to determine the applicable qualifications of the data. This will include an evaluation of the laboratory raw data which may include but is not limited to the following:

- Analytical holding times
- Instrument performance checks
- Initial and continuing calibration
- Blanks
- Laboratory control samples
- Deuterated/surrogate compounds
- Matrix spike and spike duplicate samples
- Internal standards
- Target compound identification
- Target compound quantitation
- System performance
- Overall assessment of data

The validator will then prepare a DUSR of the review. The data validation company for this project is Barr Engineering, Co.

29.0 QAPP WORKSHEET #37 – DATA USABILITY ASSESSMENT

Described below are the procedures / methods / activities that will be used to determine whether data are of the right type, quality, and quantity to support environmental decision making for the project. Also noted are how data quality issues will be addressed and how limitations on the use of the data will be handled.

Personnel (organization and position/title) responsible for participating in the data usability assessment:

For work completed by C.T. Male - C.T. Male Project Manager, C.T. Male QA Manager

The usability of the data will be assessed based on a review of the field measurements and laboratory results. The laboratory results will be reviewed by the laboratory prior to submittal and by the C.T. Male QA Manager upon receipt.

Step 1	**Review the project's objectives and sampling design** Review the key outputs defined during systematic planning (i.e., DQOs) to make sure they are still applicable. Review the sampling design for consistency with stated objectives. This step provides the context for interpreting the data in subsequent steps.
Step 2	**Review the data verification and data validation outputs** Review available QA reports, including the data verification and/or data validation reports. Perform basic calculations and summarize the data (using graphs, maps, tables, etc.). Look for patterns, trends, and anomalies (i.e., unexpected results). Review deviations from planned activities (e.g., number and locations of samples, holding time exceedances, damaged samples, and SOP deviations) and determine their impacts on the data usability. Evaluate implications of unacceptable QC sample results.
Step 3	**Verify the assumptions of the selected statistical method** Verify whether underlying assumptions for selected statistical methods (if documented in the QAPP) are valid. Common assumptions include the distributional form of the data, independence of the data, dispersion characteristics, homogeneity, etc. Depending on the robustness of the statistical method, minor deviations from assumptions usually are not critical to statistical analysis and data interpretation. If serious deviations from assumptions are discovered, then another statistical method may need to be selected.

Step 4	**Implement the statistical method** Implement the specified statistical procedures for analyzing the data and review underlying assumptions. For decision projects that involve hypothesis testing (e.g., "concentrations of lead in groundwater are below the action level") consider the consequences for selecting the incorrect alternative; for estimation projects (e.g., establishing a boundary for surface soil contamination), consider the tolerance for uncertainty in measurements.
Step 5	**Document data usability and draw conclusions** Determine if the data can be used as intended, considering implications of deviations and corrective actions. Discuss data quality indicators. Assess the performance of the sampling design and identify limitations on data use. Update the conceptual site model and document conclusions in the site investigation report.

30.0 REFERENCES

Intergovernmental Data Quality Task Force Uniform Federal Policy (UFP), 2012. *Uniform Federal Policy for Quality Assurance Project Plans – Part 2A (Revised).* EPA-505-B-04-900C. March 2012.

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TABLES

Table 1
Laboratory Analyses
Hudson Valley Regional Airport, Town of Wappinger, NY QAPP

Alpha Analytical, Inc. (Alpha) 320 Forbes Boulevard Mansfield, MA 02048	<u>Matrices</u> PFAS (soil, water) – EPA 537 modified TCL VOCs (soil and water) – EPA 8260 TCL SVOCs (soil and water) – EPA 8270 1,4-dioxane (water) – EPA 8270 SIM TCL Pesticides (soil and water) – EPA 8081 TCL PCBs (soil and water) – EPA 8082 Metals (soil and water) – EPA 6010 / EPA 6020 Total Organic Carbon (TOC)(soil) – SM5310 PCB Homologs (soil) – EPA 680 pH (soil) – EPA 9045 modified % moisture (soil) – SM 2540 G -1997 %Moisture Calc

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
TCL Volatiles - EPA 8260C/5035 High&Low (SOIL)										
Methylene chloride	75-09-2	10	1.65	ug/kg	70-130	30	70-130	30	30	
1,1-Dichloroethane	75-34-3	1.5	0.27	ug/kg	70-130	30	70-130	30	30	
Chloroform	67-66-3	1.5	0.37	ug/kg	70-130	30	70-130	30	30	
Carbon tetrachloride	56-23-5	1	0.345	ug/kg	70-130	30	70-130	30	30	
1,2-Dichloropropane	78-87-5	3.5	0.228	ug/kg	70-130	30	70-130	30	30	
Dibromochloromethane	124-48-1	1	0.176	ug/kg	70-130	30	70-130	30	30	
1,1,2-Trichloroethane	79-00-5	1.5	0.313	ug/kg	70-130	30	70-130	30	30	
Tetrachloroethene	127-18-4	1	0.302	ug/kg	70-130	30	70-130	30	30	
Chlorobenzene	108-90-7	1	0.348	ug/kg	70-130	30	70-130	30	30	
Trichlorofluoromethane	75-69-4	5	0.417	ug/kg	70-139	30	70-139	30	30	
1,2-Dichloroethane	107-06-2	1	0.246	ug/kg	70-130	30	70-130	30	30	
1,1,1-Trichloroethane	71-55-6	1	0.35	ug/kg	70-130	30	70-130	30	30	
Bromodichloromethane	75-27-4	1	0.308	ug/kg	70-130	30	70-130	30	30	
trans-1,3-Dichloropropene	10061-02-6	1	0.208	ug/kg	70-130	30	70-130	30	30	
cis-1,3-Dichloropropene	10061-01-5	1	0.231	ug/kg	70-130	30	70-130	30	30	
1,3-Dichloropropene, Total	542-75-6	1	0.208	ug/kg				30	30	
1,3-Dichloropropene, Total	542-75-6	1	0.208	ug/kg				30	30	
Bromoform	75-25-2	4	0.237	ug/kg	70-130	30	70-130	30	30	
1,1,2,2-Tetrachloroethane	79-34-5	1	0.298	ug/kg	70-130	30	70-130	30	30	
Benzene	71-43-2	1	0.193	ug/kg	70-130	30	70-130	30	30	
Toluene	108-88-3	1.5	0.195	ug/kg	70-130	30	70-130	30	30	
Ethylbenzene	100-41-4	1	0.17	ug/kg	70-130	30	70-130	30	30	
Chloromethane	74-87-3	5	0.436	ug/kg	52-130	30	52-130	30	30	
Bromomethane	74-83-9	2	0.338	ug/kg	57-147	30	57-147	30	30	
Vinyl chloride	75-01-4	2	0.315	ug/kg	67-130	30	67-130	30	30	
Chloroethane	75-00-3	2	0.316	ug/kg	50-151	30	50-151	30	30	
1,1-Dichloroethene	75-35-4	1	0.372	ug/kg	65-135	30	65-135	30	30	
trans-1,2-Dichloroethene	156-60-5	1.5	0.241	ug/kg	70-130	30	70-130	30	30	
Trichloroethene	79-01-6	1	0.302	ug/kg	70-130	30	70-130	30	30	
1,2-Dichlorobenzene	95-50-1	5	0.182	ug/kg	70-130	30	70-130	30	30	
1,3-Dichlorobenzene	541-73-1	5	0.218	ug/kg	70-130	30	70-130	30	30	
1,4-Dichlorobenzene	106-46-7	5	0.182	ug/kg	70-130	30	70-130	30	30	
Methyl tert butyl ether	1634-04-4	2	0.153	ug/kg	66-130	30	66-130	30	30	
p/m-Xylene	179601-23-1	2	0.351	ug/kg	70-130	30	70-130	30	30	
o-Xylene	95-47-6	2	0.338	ug/kg	70-130	30	70-130	30	30	
Xylene (Total)	1330-20-7	2	0.338	ug/kg				30	30	
Xylene (Total)	1330-20-7	2	0.338	ug/kg				30	30	
cis-1,2-Dichloroethene	156-59-2	1	0.342	ug/kg	70-130	30	70-130	30	30	
1,2-Dichloroethene (total)	540-59-0	1	0.241	ug/kg				30	30	
1,2-Dichloroethene (total)	540-59-0	1	0.241	ug/kg				30	30	
Styrene	100-42-5	2	0.401	ug/kg	70-130	30	70-130	30	30	
Dichlorodifluoromethane	75-71-8	10	0.5	ug/kg	30-146	30	30-146	30	30	
Acetone	67-64-1	10	2.29	ug/kg	54-140	30	54-140	30	30	

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
TCL Volatiles - EPA 8260C/5035 High&Low (SOIL)										
Carbon disulfide	75-15-0	10	1.1	ug/kg	59-130	30	59-130	30	30	
2-Butanone	78-93-3	10	0.69	ug/kg	70-130	30	70-130	30	30	
4-Methyl-2-pentanone	108-10-1	10	0.244	ug/kg	70-130	30	70-130	30	30	
2-Hexanone	591-78-6	10	0.666	ug/kg	70-130	30	70-130	30	30	
Bromochloromethane	74-97-5	5	0.357	ug/kg	70-130	30	70-130	30	30	
1,2-Dibromoethane	106-93-4	4	0.199	ug/kg	70-130	30	70-130	30	30	
n-Butylbenzene	104-51-8	1	0.228	ug/kg	70-130	30	70-130	30	30	
sec-Butylbenzene	135-98-8	1	0.217	ug/kg	70-130	30	70-130	30	30	
tert-Butylbenzene	98-06-6	5	0.247	ug/kg	70-130	30	70-130	30	30	
1,2-Dibromo-3-chloropropane	96-12-8	5	0.396	ug/kg	68-130	30	68-130	30	30	
Isopropylbenzene	98-82-8	1	0.194	ug/kg	70-130	30	70-130	30	30	
p-Isopropyltoluene	99-87-6	1	0.202	ug/kg	70-130	30	70-130	30	30	
Naphthalene	91-20-3	5	0.138	ug/kg	70-130	30	70-130	30	30	
n-Propylbenzene	103-65-1	1	0.215	ug/kg	70-130	30	70-130	30	30	
1,2,3-Trichlorobenzene	87-61-6	5	0.251	ug/kg	70-130	30	70-130	30	30	
1,2,4-Trichlorobenzene	120-82-1	5	0.215	ug/kg	70-130	30	70-130	30	30	
1,3,5-Trimethylbenzene	108-67-8	5	0.161	ug/kg	70-130	30	70-130	30	30	
1,2,4-Trimethylbenzene	95-63-6	5	0.186	ug/kg	70-130	30	70-130	30	30	
Methyl Acetate	79-20-9	20	0.463	ug/kg	51-146	30	51-146	30	30	
Cyclohexane	110-82-7	20	0.433	ug/kg	59-142	30	59-142	30	30	
1,4-Dioxane	123-91-1	40	14.4	ug/kg	65-136	30	65-136	30	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	20	0.514	ug/kg	50-139	30	50-139	30	30	
Methyl cyclohexane	108-87-2	4	0.24	ug/kg	70-130	30	70-130	30	30	
1,2-Dichloroethane-d4	*17060-07-0*									*70-130*
Toluene-d8	*2037-26-5*									*70-130*
4-Bromofluorobenzene	*460-00-4*									*70-130*
Dibromofluoromethane	*1868-53-7*									*70-130*
TCL Semivolatiles - EPA 8270D (SOIL)										
Acenaphthene	83-32-9	133.6	17.3012	ug/kg	31-137	50	31-137	50	50	
1,2,4-Trichlorobenzene	120-82-1	167	19.1048	ug/kg	38-107	50	38-107	50	50	
Hexachlorobenzene	118-74-1	100.2	18.704	ug/kg	40-140	50	40-140	50	50	
Bis(2-chloroethyl)ether	111-44-4	150.3	22.6452	ug/kg	40-140	50	40-140	50	50	
2-Chloronaphthalene	91-58-7	167	16.5664	ug/kg	40-140	50	40-140	50	50	
1,2-Dichlorobenzene	95-50-1	167	29.9932	ug/kg	40-140	50	40-140	50	50	
1,3-Dichlorobenzene	541-73-1	167	28.724	ug/kg	40-140	50	40-140	50	50	
1,4-Dichlorobenzene	106-46-7	167	29.1582	ug/kg	28-104	50	28-104	50	50	
3,3'-Dichlorobenzidine	91-94-1	167	44.422	ug/kg	40-140	50	40-140	50	50	
2,4-Dinitrotoluene	121-14-2	167	33.4	ug/kg	40-132	50	40-132	50	50	
2,6-Dinitrotoluene	606-20-2	167	28.6572	ug/kg	40-140	50	40-140	50	50	
Fluoranthene	206-44-0	100.2	19.1716	ug/kg	40-140	50	40-140	50	50	
4-Chlorophenyl phenyl ether	7005-72-3	167	17.869	ug/kg	40-140	50	40-140	50	50	
4-Bromophenyl phenyl ether	101-55-3	167	25.4842	ug/kg	40-140	50	40-140	50	50	
Bis(2-chloroisopropyl)ether	108-60-1	200.4	28.5236	ug/kg	40-140	50	40-140	50	50	

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
TCL Semivolatiles - EPA 8270D (SOIL)										
Bis(2-chloroethoxy)methane	111-91-1	180.36	16.7334	ug/kg	40-117	50	40-117	50	50	
Hexachlorobutadiene	87-68-3	167	24.4488	ug/kg	40-140	50	40-140	50	50	
Hexachlorocyclopentadiene	77-47-4	477.62	151.302	ug/kg	40-140	50	40-140	50	50	
Hexachloroethane	67-72-1	133.6	27.0206	ug/kg	40-140	50	40-140	50	50	
Isophorone	78-59-1	150.3	21.6766	ug/kg	40-140	50	40-140	50	50	
Naphthalene	91-20-3	167	20.3406	ug/kg	40-140	50	40-140	50	50	
Nitrobenzene	98-95-3	150.3	24.716	ug/kg	40-140	50	40-140	50	50	
NitrosoDiPhenylAmine(NDPA)/DPA	86-30-6	133.6	19.0046	ug/kg	36-157	50	36-157	50	50	
n-Nitrosodi-n-propylamine	621-64-7	167	25.7848	ug/kg	32-121	50	32-121	50	50	
Bis(2-Ethylhexyl)phthalate	117-81-7	167	57.782	ug/kg	40-140	50	40-140	50	50	
Butyl benzyl phthalate	85-68-7	167	42.084	ug/kg	40-140	50	40-140	50	50	
Di-n-butylphthalate	84-74-2	167	31.6632	ug/kg	40-140	50	40-140	50	50	
Di-n-octylphthalate	117-84-0	167	56.78	ug/kg	40-140	50	40-140	50	50	
Diethyl phthalate	84-66-2	167	15.4642	ug/kg	40-140	50	40-140	50	50	
Dimethyl phthalate	131-11-3	167	35.07	ug/kg	40-140	50	40-140	50	50	
Benzo(a)anthracene	56-55-3	100.2	18.8042	ug/kg	40-140	50	40-140	50	50	
Benzo(a)pyrene	50-32-8	133.6	40.748	ug/kg	40-140	50	40-140	50	50	
Benzo(b)fluoranthene	205-99-2	100.2	28.1228	ug/kg	40-140	50	40-140	50	50	
Benzo(k)fluoranthene	207-08-9	100.2	26.72	ug/kg	40-140	50	40-140	50	50	
Chrysene	218-01-9	100.2	17.368	ug/kg	40-140	50	40-140	50	50	
Acenaphthylene	208-96-8	133.6	25.7848	ug/kg	40-140	50	40-140	50	50	
Anthracene	120-12-7	100.2	32.565	ug/kg	40-140	50	40-140	50	50	
Benzo(ghi)perylene	191-24-2	133.6	19.6392	ug/kg	40-140	50	40-140	50	50	
Fluorene	86-73-7	167	16.2324	ug/kg	40-140	50	40-140	50	50	
Phenanthrene	85-01-8	100.2	20.3072	ug/kg	40-140	50	40-140	50	50	
Dibenzo(a,h)anthracene	53-70-3	100.2	19.3052	ug/kg	40-140	50	40-140	50	50	
Indeno(1,2,3-cd)Pyrene	193-39-5	133.6	23.2798	ug/kg	40-140	50	40-140	50	50	
Pyrene	129-00-0	100.2	16.5998	ug/kg	35-142	50	35-142	50	50	
Biphenyl	92-52-4	380.76	38.744	ug/kg	54-104	50	54-104	50	50	
4-Chloroaniline	106-47-8	167	30.394	ug/kg	40-140	50	40-140	50	50	
2-Nitroaniline	88-74-4	167	32.1976	ug/kg	47-134	50	47-134	50	50	
3-Nitroaniline	99-09-2	167	31.4962	ug/kg	26-129	50	26-129	50	50	
4-Nitroaniline	100-01-6	167	69.138	ug/kg	41-125	50	41-125	50	50	
Dibenzofuran	132-64-9	167	15.7982	ug/kg	40-140	50	40-140	50	50	
2-Methylnaphthalene	91-57-6	200.4	20.1736	ug/kg	40-140	50	40-140	50	50	
Acetophenone	98-86-2	167	20.6746	ug/kg	14-144	50	14-144	50	50	
2,4,6-Trichlorophenol	88-06-2	100.2	31.6632	ug/kg	30-130	50	30-130	50	50	
P-Chloro-M-Cresol	59-50-7	167	24.883	ug/kg	26-103	50	26-103	50	50	
2-Chlorophenol	95-57-8	167	19.7394	ug/kg	25-102	50	25-102	50	50	
2,4-Dichlorophenol	120-83-2	150.3	26.8536	ug/kg	30-130	50	30-130	50	50	
2,4-Dimethylphenol	105-67-9	167	55.11	ug/kg	30-130	50	30-130	50	50	
2-Nitrophenol	88-75-5	360.72	62.792	ug/kg	30-130	50	30-130	50	50	
4-Nitrophenol	100-02-7	233.8	68.136	ug/kg	11-114	50	11-114	50	50	

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
TCL Semivolatiles - EPA 8270D (SOIL)										
2,4-Dinitrophenol	51-28-5	801.6	77.822	ug/kg	4-130	50	4-130	50	50	
4,6-Dinitro-o-cresol	534-52-1	434.2	80.16	ug/kg	10-130	50	10-130	50	50	
Pentachlorophenol	87-86-5	133.6	36.74	ug/kg	17-109	50	17-109	50	50	
Phenol	108-95-2	167	25.217	ug/kg	26-90	50	26-90	50	50	
2-Methylphenol	95-48-7	167	25.885	ug/kg	30-130.	50	30-130.	50	50	
3-Methylphenol/4-Methylphenol	106-44-5	240.48	26.1522	ug/kg	30-130	50	30-130	50	50	
2,4,5-Trichlorophenol	95-95-4	167	31.9972	ug/kg	30-130	50	30-130	50	50	
Benzoic Acid	65-85-0	541.08	169.004	ug/kg	10-110	50	10-110	50	50	
Benzyl Alcohol	100-51-6	167	51.102	ug/kg	40-140	50	40-140	50	50	
Carbazole	86-74-8	167	16.2324	ug/kg	54-128	50	54-128	50	50	
2-Fluorophenol	*367-12-4*									*25-120*
Phenol-d6	*13127-88-3*									*10-120*
Nitrobenzene-d5	*4165-60-0*									*23-120*
2-Fluorobiphenyl	*321-60-8*									*30-120*
2,4,6-Tribromophenol	*118-79-6*									*10-136*
4-Terphenyl-d14	*1718-51-0*									*18-120*
TCL Pesticides - EPA 8081B (SOIL)										
Delta-BHC	319-86-8	7.992	1.5651	ug/kg	30-150	30	30-150	50	50	
Lindane	58-89-9	3.33	1.48851	ug/kg	30-150	30	30-150	50	50	
Alpha-BHC	319-84-6	3.33	0.94572	ug/kg	30-150	30	30-150	50	50	
Beta-BHC	319-85-7	7.992	3.0303	ug/kg	30-150	30	30-150	50	50	
Heptachlor	76-44-8	3.996	1.79154	ug/kg	30-150	30	30-150	50	50	
Aldrin	309-00-2	7.992	2.81385	ug/kg	30-150	30	30-150	50	50	
Heptachlor epoxide	1024-57-3	14.985	4.4955	ug/kg	30-150	30	30-150	50	50	
Endrin	72-20-8	3.33	1.3653	ug/kg	30-150	30	30-150	50	50	
Endrin aldehyde	7421-93-4	9.99	3.4965	ug/kg	30-150	30	30-150	50	50	
Endrin ketone	53494-70-5	7.992	2.05794	ug/kg	30-150	30	30-150	50	50	
Dieldrin	60-57-1	4.995	2.4975	ug/kg	30-150	30	30-150	50	50	
4,4'-DDE	72-55-9	7.992	1.84815	ug/kg	30-150	30	30-150	50	50	
4,4'-DDD	72-54-8	7.992	2.85048	ug/kg	30-150	30	30-150	50	50	
4,4'-DDT	50-29-3	14.985	6.4269	ug/kg	30-150	30	30-150	50	50	
Endosulfan I	959-98-8	7.992	1.88811	ug/kg	30-150	30	30-150	50	50	
Endosulfan II	33213-65-9	7.992	2.67066	ug/kg	30-150	30	30-150	50	50	
Endosulfan sulfate	1031-07-8	3.33	1.58508	ug/kg	30-150	30	30-150	50	50	
Methoxychlor	72-43-5	14.985	4.662	ug/kg	30-150	30	30-150	50	50	
Toxaphene	8001-35-2	149.85	41.958	ug/kg	30-150	30	30-150	50	50	
cis-Chlordane	5103-71-9	9.99	2.78388	ug/kg	30-150	30	30-150	50	50	
trans-Chlordane	5103-74-2	9.99	2.63736	ug/kg	30-150	30	30-150	50	50	
Chlordane	57-74-9	64.935	26.4735	ug/kg	30-150	30	30-150	50	50	
2,4,5,6-Tetrachloro-m-xylene	*877-09-8*									*30-150*
Decachlorobiphenyl	*2051-24-3*									*30-150*
TCL PCBs - EPA 8082A (SOIL)										
Aroclor 1016	12674-11-2	33.5	3.7989	ug/kg	40-140	50	40-140	50	50	

TABLE 2A: PARAMETERS - METHODS, LIMITS, ACCURACY, AND PRECISION (SOIL)
Hudson Valley Regional Airport, Town of Wappinger, NY

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
TCL PCBs - EPA 8082A (SOIL)										
Aroclor 1221	11104-28-2	33.5	5.0987	ug/kg	40-140	50	40-140	50	50	
Aroclor 1232	11141-16-5	33.5	3.2964	ug/kg	40-140	50	40-140	50	50	
Aroclor 1242	53469-21-9	33.5	4.1004	ug/kg	40-140	50	40-140	50	50	
Aroclor 1248	12672-29-6	33.5	3.7587	ug/kg	40-140	50	40-140	50	50	
Aroclor 1254	11097-69-1	33.5	2.7336	ug/kg	40-140	50	40-140	50	50	
Aroclor 1260	11096-82-5	33.5	3.4974	ug/kg	40-140	50	40-140	50	50	
Aroclor 1262	37324-23-5	33.5	2.7537	ug/kg	40-140	50	40-140	50	50	
Aroclor 1268	11100-14-4	33.5	2.3718	ug/kg	40-140	50	40-140	50	50	
PCBs, Total	1336-36-3	33.5	1.541	ug/kg				50	50	
PCBs, Total	1336-36-3	33.5	1.541	ug/kg				50	50	
2,4,5,6-Tetrachloro-m-xylene	*877-09-8*									*30-150*
Decachlorobiphenyl	*2051-24-3*									*30-150*
METALS by 6010C/7471B (SOIL)										
Aluminum, Total	7429-90-5	4	1.08	mg/kg	48-151		75-125	20	20	
Antimony, Total	7440-36-0	2	0.152	mg/kg	1-208		75-125	20	20	
Arsenic, Total	7440-38-2	0.4	0.0832	mg/kg	79-121		75-125	20	20	
Barium, Total	7440-39-3	0.4	0.0696	mg/kg	83-117		75-125	20	20	
Beryllium, Total	7440-41-7	0.2	0.0132	mg/kg	83-117		75-125	20	20	
Cadmium, Total	7440-43-9	0.4	0.0392	mg/kg	83-117		75-125	20	20	
Calcium, Total	7440-70-2	4	1.4	mg/kg	81-119		75-125	20	20	
Chromium, Total	7440-47-3	0.4	0.0384	mg/kg	80-120		75-125	20	20	
Cobalt, Total	7440-48-4	0.8	0.0664	mg/kg	84-115		75-125	20	20	
Copper, Total	7440-50-8	0.4	0.1032	mg/kg	81-118		75-125	20	20	
Iron, Total	7439-89-6	2	0.3612	mg/kg	45-155		75-125	20	20	
Lead, Total	7439-92-1	2	0.1072	mg/kg	81-117		75-125	20	20	
Magnesium, Total	7439-95-4	4	0.616	mg/kg	76-124		75-125	20	20	
Manganese, Total	7439-96-5	0.4	0.0636	mg/kg	81-117		75-125	20	20	
Mercury, Total	7439-97-6	0.08	0.016896	mg/kg	72-128		80-120	20	20	
Nickel, Total	7440-02-0	1	0.0968	mg/kg	83-117		75-125	20	20	
Potassium, Total	7440-09-7	100	5.76	mg/kg	71-129		75-125	20	20	
Selenium, Total	7782-49-2	0.8	0.1032	mg/kg	78-122		75-125	20	20	
Silver, Total	7440-22-4	0.4	0.1132	mg/kg	75-124		75-125	20	20	
Sodium, Total	7440-23-5	80	1.26	mg/kg	72-127		75-125	20	20	
Thallium, Total	7440-28-0	0.8	0.126	mg/kg	80-120		75-125	20	20	
Vanadium, Total	7440-62-2	0.4	0.0812	mg/kg	78-122		75-125	20	20	
Zinc, Total	7440-66-6	2	0.1172	mg/kg	82-118		75-125	20	20	
CYANIDE by 9010C/9012B (SOIL)										
Cyanide, Total	57-12-5	1	0.212	mg/kg	80-120	35	75-125	35	35	

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
PFAS - EPA 537(M)-Isotope Dilution (WATER)										
Perfluorobutanoic Acid (PFBA)	375-22-4	2	0.1312	ng/l	50-150	30	50-150	30	30	
Perfluoropentanoic Acid (PFPeA)	2706-90-3	2	0.0856	ng/l	50-150	30	50-150	30	30	
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	2	0.11	ng/l	50-150	30	50-150	30	30	
Perfluorohexanoic Acid (PFHxA)	307-24-4	2	0.1264	ng/l	50-150	30	50-150	30	30	
Perfluoroheptanoic Acid (PFHpA)	375-85-9	2	0.0924	ng/l	50-150	30	50-150	30	30	
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	2	0.1076	ng/l	50-150	30	50-150	30	30	
Perfluorooctanoic Acid (PFOA)	335-67-1	2	0.0504	ng/l	50-150	30	50-150	30	30	
Perfluorononanoic Acid (PFNA)	375-95-1	2	0.1008	ng/l	50-150	30	50-150	30	30	
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	2	0.1116	ng/l	50-150	30	50-150	30	30	
Perfluorodecanoic Acid (PFDA)	335-76-2	2	0.1904	ng/l	50-150	30	50-150	30	30	
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	2	0.2908	ng/l	50-150	30	50-150	30	30	
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA	2355-31-9	2	0.2504	ng/l	50-150	30	50-150	30	30	
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	2	0.1912	ng/l	50-150	30	50-150	30	30	
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	2	0.2224	ng/l	50-150	30	50-150	30	30	
Perfluorooctanesulfonamide (FOSA)	754-91-6	2	0.2268	ng/l	50-150	30	50-150	30	30	
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	2	0.3728	ng/l	50-150	30	50-150	30	30	
Perfluorododecanoic Acid (PFDoA)	307-55-1	2	0.0916	ng/l	50-150	30	50-150	30	30	
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	2	0.0904	ng/l	50-150	30	50-150	30	30	
Perfluorotetradecanoic Acid (PFTA)	376-06-7	2	0.072	ng/l	50-150	30	50-150	30	30	
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)		2	0.194	ng/l	50-150	30	50-150	30	30	
Perfluoroheptanesulfonic Acid (PFHpS)		2	0.155	ng/l	50-150	30	50-150	30	30	
Perfluoro[13C4]Butanoic Acid (MPFBA)	*NONE*									*50-150*
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	*NONE*									*50-150*
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	*NONE*									*50-150*
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	*NONE*									*50-150*
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	*NONE*									*50-150*
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	*NONE*									*50-150*
Perfluoro[13C8]Octanoic Acid (M8PFOA)	*NONE*									*50-150*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6	*NONE*									*50-150*
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	*NONE*									*50-150*
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	*NONE*									*50-150*
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	*NONE*									*50-150*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8	*NONE*									*50-150*
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (	*NONE*									*50-150*
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	*NONE*									*50-150*
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	*NONE*									*50-150*
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d	*NONE*									*50-150*
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	*NONE*									*50-150*
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	*NONE*									*50-150*
TCL Volatiles - EPA 8260C (WATER)										
Methylene chloride	75-09-2	2.5	0.7	ug/l	70-130	20	70-130	20	20	
1,1-Dichloroethane	75-34-3	2.5	0.7	ug/l	70-130	20	70-130	20	20	
Chloroform	67-66-3	2.5	0.7	ug/l	70-130	20	70-130	20	20	

TABLE 2B: PARAMETERS - METHODS, LIMITS, ACCURACY AND PRECISION (WATER)
Hudson Valley Regional Airport, Town of Wappinger, NY

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
TCL Volatiles - EPA 8260C (WATER)										
Carbon tetrachloride	56-23-5	0.5	0.134	ug/l	63-132	20	63-132	20	20	
1,2-Dichloropropane	78-87-5	1	0.137	ug/l	70-130	20	70-130	20	20	
Dibromochloromethane	124-48-1	0.5	0.149	ug/l	63-130	20	63-130	20	20	
1,1,2-Trichloroethane	79-00-5	1.5	0.5	ug/l	70-130	20	70-130	20	20	
Tetrachloroethene	127-18-4	0.5	0.181	ug/l	70-130	20	70-130	20	20	
Chlorobenzene	108-90-7	2.5	0.7	ug/l	75-130	20	75-130	20	20	
Trichlorofluoromethane	75-69-4	2.5	0.7	ug/l	62-150	20	62-150	20	20	
1,2-Dichloroethane	107-06-2	0.5	0.132	ug/l	70-130	20	70-130	20	20	
1,1,1-Trichloroethane	71-55-6	2.5	0.7	ug/l	67-130	20	67-130	20	20	
Bromodichloromethane	75-27-4	0.5	0.192	ug/l	67-130	20	67-130	20	20	
trans-1,3-Dichloropropene	10061-02-6	0.5	0.164	ug/l	70-130	20	70-130	20	20	
cis-1,3-Dichloropropene	10061-01-5	0.5	0.144	ug/l	70-130	20	70-130	20	20	
1,3-Dichloropropene, Total	542-75-6	0.5	0.144	ug/l				20	20	
1,3-Dichloropropene, Total	542-75-6	0.5	0.144	ug/l				20	20	
Bromoform	75-25-2	2	0.65	ug/l	54-136	20	54-136	20	20	
1,1,2,2-Tetrachloroethane	79-34-5	0.5	0.167	ug/l	67-130	20	67-130	20	20	
Benzene	71-43-2	0.5	0.159	ug/l	70-130	20	70-130	20	20	
Toluene	108-88-3	2.5	0.7	ug/l	70-130	20	70-130	20	20	
Ethylbenzene	100-41-4	2.5	0.7	ug/l	70-130	20	70-130	20	20	
Chloromethane	74-87-3	2.5	0.7	ug/l	64-130	20	64-130	20	20	
Bromomethane	74-83-9	2.5	0.7	ug/l	39-139	20	39-139	20	20	
Vinyl chloride	75-01-4	1	0.0714	ug/l	55-140	20	55-140	20	20	
Chloroethane	75-00-3	2.5	0.7	ug/l	55-138	20	55-138	20	20	
1,1-Dichloroethene	75-35-4	0.5	0.169	ug/l	61-145	20	61-145	20	20	
trans-1,2-Dichloroethene	156-60-5	2.5	0.7	ug/l	70-130	20	70-130	20	20	
Trichloroethene	79-01-6	0.5	0.175	ug/l	70-130	20	70-130	20	20	
1,2-Dichlorobenzene	95-50-1	2.5	0.7	ug/l	70-130	20	70-130	20	20	
1,3-Dichlorobenzene	541-73-1	2.5	0.7	ug/l	70-130	20	70-130	20	20	
1,4-Dichlorobenzene	106-46-7	2.5	0.7	ug/l	70-130	20	70-130	20	20	
Methyl tert butyl ether	1634-04-4	2.5	0.7	ug/l	63-130	20	63-130	20	20	
p/m-Xylene	179601-23-1	2.5	0.7	ug/l	70-130	20	70-130	20	20	
o-Xylene	95-47-6	2.5	0.7	ug/l	70-130	20	70-130	20	20	
Xylene (Total)	1330-20-7	2.5	0.7	ug/l				20	20	
Xylene (Total)	1330-20-7	2.5	0.7	ug/l				20	20	
cis-1,2-Dichloroethene	156-59-2	2.5	0.7	ug/l	70-130	20	70-130	20	20	
1,2-Dichloroethene (total)	540-59-0	2.5	0.7	ug/l				20	20	
1,2-Dichloroethene (total)	540-59-0	2.5	0.7	ug/l				20	20	
Styrene	100-42-5	2.5	0.7	ug/l	70-130	20	70-130	20	20	
Dichlorodifluoromethane	75-71-8	5	1	ug/l	36-147	20	36-147	20	20	
Acetone	67-64-1	5	1.46	ug/l	58-148	20	58-148	20	20	
Carbon disulfide	75-15-0	5	1	ug/l	51-130	20	51-130	20	20	
2-Butanone	78-93-3	5	1.94	ug/l	63-138	20	63-138	20	20	
4-Methyl-2-pentanone	108-10-1	5	1	ug/l	59-130	20	59-130	20	20	

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
TCL Volatiles - EPA 8260C (WATER)										
2-Hexanone	591-78-6	5	1	ug/l	57-130	20	57-130	20	20	
Bromochloromethane	74-97-5	2.5	0.7	ug/l	70-130	20	70-130	20	20	
1,2-Dibromoethane	106-93-4	2	0.65	ug/l	70-130	20	70-130	20	20	
n-Butylbenzene	104-51-8	2.5	0.7	ug/l	53-136	20	53-136	20	20	
sec-Butylbenzene	135-98-8	2.5	0.7	ug/l	70-130	20	70-130	20	20	
tert-Butylbenzene	98-06-6	2.5	0.7	ug/l	70-130	20	70-130	20	20	
1,2-Dibromo-3-chloropropane	96-12-8	2.5	0.7	ug/l	41-144	20	41-144	20	20	
Isopropylbenzene	98-82-8	2.5	0.7	ug/l	70-130	20	70-130	20	20	
p-Isopropyltoluene	99-87-6	2.5	0.7	ug/l	70-130	20	70-130	20	20	
Naphthalene	91-20-3	2.5	0.7	ug/l	70-130	20	70-130	20	20	
n-Propylbenzene	103-65-1	2.5	0.7	ug/l	69-130	20	69-130	20	20	
1,2,3-Trichlorobenzene	87-61-6	2.5	0.7	ug/l	70-130	20	70-130	20	20	
1,2,4-Trichlorobenzene	120-82-1	2.5	0.7	ug/l	70-130	20	70-130	20	20	
1,3,5-Trimethylbenzene	108-67-8	2.5	0.7	ug/l	64-130	20	64-130	20	20	
1,2,4-Trimethylbenzene	95-63-6	2.5	0.7	ug/l	70-130	20	70-130	20	20	
Methyl Acetate	79-20-9	2	0.234	ug/l	70-130	20	70-130	20	20	
Cyclohexane	110-82-7	10	0.271	ug/l	70-130	20	70-130	20	20	
1,4-Dioxane	123-91-1	250	60.8	ug/l	56-162	20	56-162	20	20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	2.5	0.7	ug/l	70-130	20	70-130	20	20	
Methyl cyclohexane	108-87-2	10	0.396	ug/l	70-130	20	70-130	20	20	
1,2-Dichloroethane-d4	*17060-07-0*									*70-130*
Toluene-d8	*2037-26-5*									*70-130*
4-Bromofluorobenzene	*460-00-4*									*70-130*
Dibromofluoromethane	*1868-53-7*									*70-130*
TCL Semivolatiles - EPA 8270D (WATER)										
Acenaphthene	83-32-9	2	0.591	ug/l	37-111	30	37-111	30	30	
1,2,4-Trichlorobenzene	120-82-1	5	0.661	ug/l	39-98	30	39-98	30	30	
Hexachlorobenzene	118-74-1	2	0.579	ug/l	40-140	30	40-140	30	30	
Bis(2-chloroethyl)ether	111-44-4	2	0.669	ug/l	40-140	30	40-140	30	30	
2-Chloronaphthalene	91-58-7	2	0.64	ug/l	40-140	30	40-140	30	30	
1,2-Dichlorobenzene	95-50-1	2	0.732	ug/l	40-140	30	40-140	30	30	
1,3-Dichlorobenzene	541-73-1	2	0.688	ug/l	40-140	30	40-140	30	30	
1,4-Dichlorobenzene	106-46-7	2	0.708	ug/l	36-97	30	36-97	30	30	
3,3'-Dichlorobenzidine	91-94-1	5	1.39	ug/l	40-140	30	40-140	30	30	
2,4-Dinitrotoluene	121-14-2	5	0.845	ug/l	48-143	30	48-143	30	30	
2,6-Dinitrotoluene	606-20-2	5	1.12	ug/l	40-140	30	40-140	30	30	
Fluoranthene	206-44-0	2	0.568	ug/l	40-140	30	40-140	30	30	
4-Chlorophenyl phenyl ether	7005-72-3	2	0.625	ug/l	40-140	30	40-140	30	30	
4-Bromophenyl phenyl ether	101-55-3	2	0.731	ug/l	40-140	30	40-140	30	30	
Bis(2-chloroisopropyl)ether	108-60-1	2	0.696	ug/l	40-140	30	40-140	30	30	
Bis(2-chloroethoxy)methane	111-91-1	5	0.626	ug/l	40-140	30	40-140	30	30	
Hexachlorobutadiene	87-68-3	2	0.717	ug/l	40-140	30	40-140	30	30	
Hexachlorocyclopentadiene	77-47-4	20	7.84	ug/l	40-140	30	40-140	30	30	

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
TCL Semivolatiles - EPA 8270D (WATER)										
Hexachloroethane	67-72-1	2	0.682	ug/l	40-140	30	40-140	30	30	
Isophorone	78-59-1	5	0.601	ug/l	40-140	30	40-140	30	30	
Naphthalene	91-20-3	2	0.68	ug/l	40-140	30	40-140	30	30	
Nitrobenzene	98-95-3	2	0.753	ug/l	40-140	30	40-140	30	30	
NitrosoDiPhenylAmine(NDPA)/DPA	86-30-6	2	0.644	ug/l	40-140	30	40-140	30	30	
n-Nitrosodi-n-propylamine	621-64-7	5	0.7	ug/l	29-132	30	29-132	30	30	
Bis(2-Ethylhexyl)phthalate	117-81-7	3	0.91	ug/l	40-140	30	40-140	30	30	
Butyl benzyl phthalate	85-68-7	5	1.26	ug/l	40-140	30	40-140	30	30	
Di-n-butylphthalate	84-74-2	5	0.689	ug/l	40-140	30	40-140	30	30	
Di-n-octylphthalate	117-84-0	5	1.14	ug/l	40-140	30	40-140	30	30	
Diethyl phthalate	84-66-2	5	0.628	ug/l	40-140	30	40-140	30	30	
Dimethyl phthalate	131-11-3	5	0.65	ug/l	40-140	30	40-140	30	30	
Benzo(a)anthracene	56-55-3	2	0.61	ug/l	40-140	30	40-140	30	30	
Benzo(a)pyrene	50-32-8	2	0.539	ug/l	40-140	30	40-140	30	30	
Benzo(b)fluoranthene	205-99-2	2	0.635	ug/l	40-140	30	40-140	30	30	
Benzo(k)fluoranthene	207-08-9	2	0.597	ug/l	40-140	30	40-140	30	30	
Chrysene	218-01-9	2	0.543	ug/l	40-140	30	40-140	30	30	
Acenaphthylene	208-96-8	2	0.658	ug/l	45-123	30	45-123	30	30	
Anthracene	120-12-7	2	0.645	ug/l	40-140	30	40-140	30	30	
Benzo(ghi)perylene	191-24-2	2	0.611	ug/l	40-140	30	40-140	30	30	
Fluorene	86-73-7	2	0.619	ug/l	40-140	30	40-140	30	30	
Phenanthrene	85-01-8	2	0.613	ug/l	40-140	30	40-140	30	30	
Dibenzo(a,h)anthracene	53-70-3	2	0.548	ug/l	40-140	30	40-140	30	30	
Indeno(1,2,3-cd)Pyrene	193-39-5	2	0.707	ug/l	40-140	30	40-140	30	30	
Pyrene	129-00-0	2	0.569	ug/l	26-127	30	26-127	30	30	
Biphenyl	92-52-4	2	0.757	ug/l	40-140	30	40-140	30	30	
4-Chloroaniline	106-47-8	5	0.632	ug/l	40-140	30	40-140	30	30	
2-Nitroaniline	88-74-4	5	1.14	ug/l	52-143	30	52-143	30	30	
3-Nitroaniline	99-09-2	5	1.22	ug/l	25-145	30	25-145	30	30	
4-Nitroaniline	100-01-6	5	1.3	ug/l	51-143	30	51-143	30	30	
Dibenzofuran	132-64-9	2	0.656	ug/l	40-140	30	40-140	30	30	
2-Methylnaphthalene	91-57-6	2	0.72	ug/l	40-140	30	40-140	30	30	
Acetophenone	98-86-2	5	0.847	ug/l	39-129	30	39-129	30	30	
2,4,6-Trichlorophenol	88-06-2	5	0.681	ug/l	30-130	30	30-130	30	30	
P-Chloro-M-Cresol	59-50-7	2	0.617	ug/l	23-97	30	23-97	30	30	
2-Chlorophenol	95-57-8	2	0.631	ug/l	27-123	30	27-123	30	30	
2,4-Dichlorophenol	120-83-2	5	0.769	ug/l	30-130	30	30-130	30	30	
2,4-Dimethylphenol	105-67-9	5	1.64	ug/l	30-130	30	30-130	30	30	
2-Nitrophenol	88-75-5	10	1.52	ug/l	30-130	30	30-130	30	30	
4-Nitrophenol	100-02-7	10	1.77	ug/l	10-80	30	10-80	30	30	
2,4-Dinitrophenol	51-28-5	20	5.47	ug/l	20-130	30	20-130	30	30	
4,6-Dinitro-o-cresol	534-52-1	10	2.1	ug/l	20-164	30	20-164	30	30	
Pentachlorophenol	87-86-5	10	3.43	ug/l	9-103	30	9-103	30	30	

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
TCL Semivolatiles - EPA 8270D (WATER)										
Phenol	108-95-2	5	1.89	ug/l	12-110	30	12-110	30	30	
2-Methylphenol	95-48-7	5	1.02	ug/l	30-130	30	30-130	30	30	
3-Methylphenol/4-Methylphenol	106-44-5	5	1.11	ug/l	30-130	30	30-130	30	30	
2,4,5-Trichlorophenol	95-95-4	5	0.715	ug/l	30-130	30	30-130	30	30	
Benzoic Acid	65-85-0	50	12.9	ug/l	10-164	30	10-164	30	30	
Benzyl Alcohol	100-51-6	2	0.725	ug/l	26-116	30	26-116	30	30	
Carbazole	86-74-8	2	0.627	ug/l	55-144	30	55-144	30	30	
2-Fluorophenol	*367-12-4*									*21-120*
Phenol-d6	*13127-88-3*									*10-120*
Nitrobenzene-d5	*4165-60-0*									*23-120*
2-Fluorobiphenyl	*321-60-8*									*15-120*
2,4,6-Tribromophenol	*118-79-6*									*10-120*
4-Terphenyl-d14	*1718-51-0*									*41-149*
1,4 Dioxane - EPA 8270D-SIM (ug/L) (WATER)										
1,4-Dioxane	123-91-1	0.15	0.075	ug/l	40-140	30	40-140	30	30	
1,4-Dioxane-d8	*17647-74-4*									*15-110*
1,4-Dioxane-d8 (IS)	17647-74-4			ug/l						
TCL Pesticides - EPA 8081B (WATER)										
Delta-BHC	319-86-8	0.02	0.00467	ug/l	30-150	20	30-150	30	30	
Lindane	58-89-9	0.02	0.00434	ug/l	30-150	20	30-150	30	30	
Alpha-BHC	319-84-6	0.02	0.00439	ug/l	30-150	20	30-150	30	30	
Beta-BHC	319-85-7	0.02	0.0056	ug/l	30-150	20	30-150	30	30	
Heptachlor	76-44-8	0.02	0.0031	ug/l	30-150	20	30-150	30	30	
Aldrin	309-00-2	0.02	0.00216	ug/l	30-150	20	30-150	30	30	
Heptachlor epoxide	1024-57-3	0.02	0.00415	ug/l	30-150	20	30-150	30	30	
Endrin	72-20-8	0.04	0.00429	ug/l	30-150	20	30-150	30	30	
Endrin aldehyde	7421-93-4	0.04	0.0081	ug/l	30-150	20	30-150	30	30	
Endrin ketone	53494-70-5	0.04	0.00477	ug/l	30-150	20	30-150	30	30	
Dieldrin	60-57-1	0.04	0.00429	ug/l	30-150	20	30-150	30	30	
4,4'-DDE	72-55-9	0.04	0.00381	ug/l	30-150	20	30-150	30	30	
4,4'-DDD	72-54-8	0.04	0.00464	ug/l	30-150	20	30-150	30	30	
4,4'-DDT	50-29-3	0.04	0.00432	ug/l	30-150	20	30-150	30	30	
Endosulfan I	959-98-8	0.02	0.00345	ug/l	30-150	20	30-150	30	30	
Endosulfan II	33213-65-9	0.04	0.00519	ug/l	30-150	20	30-150	30	30	
Endosulfan sulfate	1031-07-8	0.04	0.00481	ug/l	30-150	20	30-150	30	30	
Methoxychlor	72-43-5	0.2	0.00684	ug/l	30-150	20	30-150	30	30	
Toxaphene	8001-35-2	0.2	0.0627	ug/l	30-150	20	30-150	30	30	
cis-Chlordane	5103-71-9	0.02	0.00666	ug/l	30-150	20	30-150	30	30	
trans-Chlordane	5103-74-2	0.02	0.00627	ug/l	30-150	20	30-150	30	30	
Chlordane	57-74-9	0.2	0.0463	ug/l	30-150	20	30-150	30	30	
2,4,5,6-Tetrachloro-m-xylene	*877-09-8*									*30-150*
Decachlorobiphenyl	*2051-24-3*									*30-150*

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria
TCL PCBs - EPA 8082A (WATER)										
Aroclor 1016	12674-11-2	0.083	0.019588	ug/l	40-140	50	40-140	50	50	
Aroclor 1221	11104-28-2	0.083	0.031872	ug/l	40-140	50	40-140	50	50	
Aroclor 1232	11141-16-5	0.083	0.027058	ug/l	40-140	50	40-140	50	50	
Aroclor 1242	53469-21-9	0.083	0.029548	ug/l	40-140	50	40-140	50	50	
Aroclor 1248	12672-29-6	0.083	0.022576	ug/l	40-140	50	40-140	50	50	
Aroclor 1254	11097-69-1	0.083	0.034611	ug/l	40-140	50	40-140	50	50	
Aroclor 1260	11096-82-5	0.083	0.01992	ug/l	40-140	50	40-140	50	50	
Aroclor 1262	37324-23-5	0.083	0.017098	ug/l	40-140	50	40-140	50	50	
Aroclor 1268	11100-14-4	0.083	0.027058	ug/l	40-140	50	40-140	50	50	
PCBs, Total	1336-36-3	0.083	0.017098	ug/l				50	50	
PCBs, Total	1336-36-3	0.083	0.017098	ug/l				50	50	
2,4,5,6-Tetrachloro-m-xylene	*877-09-8*									*30-150*
Decachlorobiphenyl	*2051-24-3*									*30-150*
METALS by 6020A/7471B (WATER)										
Aluminum, Total	7429-90-5	0.01	0.00327	mg/l	80-120		75-125	20	20	
Antimony, Total	7440-36-0	0.004	0.000429	mg/l	80-120		75-125	20	20	
Arsenic, Total	7440-38-2	0.0005	0.000165	mg/l	80-120		75-125	20	20	
Barium, Total	7440-39-3	0.0005	0.000173	mg/l	80-120		75-125	20	20	
Beryllium, Total	7440-41-7	0.0005	0.000107	mg/l	80-120		75-125	20	20	
Cadmium, Total	7440-43-9	0.0002	0.0000599	mg/l	80-120		75-125	20	20	
Calcium, Total	7440-70-2	0.1	0.0394	mg/l	80-120		75-125	20	20	
Chromium, Total	7440-47-3	0.001	0.000178	mg/l	80-120		75-125	20	20	
Cobalt, Total	7440-48-4	0.0005	0.000163	mg/l	80-120		75-125	20	20	
Copper, Total	7440-50-8	0.001	0.000384	mg/l	80-120		75-125	20	20	
Iron, Total	7439-89-6	0.05	0.0191	mg/l	80-120		75-125	20	20	
Lead, Total	7439-92-1	0.001	0.000343	mg/l	80-120		75-125	20	20	
Magnesium, Total	7439-95-4	0.07	0.0242	mg/l	80-120		75-125	20	20	
Manganese, Total	7439-96-5	0.001	0.00044	mg/l	80-120		75-125	20	20	
Mercury, Total	7439-97-6	0.0002	0.000066	mg/l	80-120		75-125	20	20	
Nickel, Total	7440-02-0	0.002	0.000556	mg/l	80-120		75-125	20	20	
Potassium, Total	7440-09-7	0.1	0.0309	mg/l	80-120		75-125	20	20	
Selenium, Total	7782-49-2	0.005	0.00173	mg/l	80-120		75-125	20	20	
Silver, Total	7440-22-4	0.0004	0.000163	mg/l	80-120		75-125	20	20	
Sodium, Total	7440-23-5	0.1	0.0293	mg/l	80-120		75-125	20	20	
Thallium, Total	7440-28-0	0.0005	0.000143	mg/l	80-120		75-125	20	20	
Vanadium, Total	7440-62-2	0.005	0.00157	mg/l	80-120		75-125	20	20	
Zinc, Total	7440-66-6	0.01	0.00341	mg/l	80-120		75-125	20	20	
CYANIDE by 9010c/9012B (WATER)										
Cyanide, Total	57-12-5	0.005	0.0018	mg/l	85-115	20	80-120	20	20	

ATTACHMENT A

PERSONNEL RESUMES

Kirk Moline, P.G., CEI, CES
Managing Geologist/Principal

Education:
Bachelor of Arts, Geological Science, SUNY Potsdam, Potsdam, NY

Professional Background:
Licensed Professional Geologist – NY

Environmental Assessment Association
- Certified Environmental Inspector
- Certified Environmental Specialist

Professional Affiliations:
Board Member, Town of Wilton Zoning Board of Appeals, 2005-2006

Vice Chair, Town of Wilton Water & Sewer Authority, 2006-Present

Continuing Education:

ASTM 1527-05 Phase I ESA Training and Certification

ASTM Risk Based Corrective Action Certification

Environmental Due Diligence in Real Estate and Commercial Transactions

Principals and Practice of Forced Air Remediation

Groundwater Pollution and Hydrology

REI Site Assessment of Real Estate for Hazardous Waste

OSHA 1910.120 HAZWOPER and Annual 8 Hour Certification

Hazardous Waste Management, Environmental Law, RPI

Mr. Moline has been with C. T. Male for over 20 years serving as a Senior Project Manager/Hydrogeologist. His experience is broad and has primarily focused on hazardous waste and petroleum spill site investigation and remediation, environmental site assessments, and exploration and development of municipal and private water supplies. With the passing of the 1996 NYS Clean Air Clean Water Environmental Bond Act, Mr. Moline has served as the Project Manager on many Environmental Restoration Program Projects, and several Brownfield Cleanup Program project sites. His experience also includes management of over 1,000 environmental site assessments, nearly 200 Phase II environmental site assessments, vapor intrusion assessments solid waste landfill closure hydrogeologic investigations, mineral resource evaluations, geophysical surveying, and expert witness testimony.

Notable Project Experience:

NYSDEC ERP & BCP Projects
- 188 Warburton & 33 Ashburton BCPs, Yonkers, NY
- Former Grand Union BCP, Fort Edward, NY
- Long Energy Site BCP Application, Albany, NY
- 312 Broadway & 314 Clinton Street, Schenectady, NY
- Pan American Tannery, Independent Leather & Risedorph Tannery, Gloversville, NY
- Durkee Street Parking Lot, Plattsburgh, NY
- South Troy Industrial Park, Troy, NY
- 99 North Main Street, 104 & 107 South Main Street, Dolgeville, NY
- 400 Broadway, Saranac Lake, NY
- Former Dix Avenue Drive-In Theater, Kingsbury, NY
- Former CP Rail Yard, Plattsburgh, NY
- South Troy Industrial Park, Troy, NY
- Public School #6, Yonkers, NY

Environmental Site Assessment Phase I & II
- Managed and performed over 3,000 assessments
- Land Reutilization Corp. of the Capital Region – Phase I ESAs & NEPA Reviews
- Albany County Land Bank, Multiple Phase I ESAs
- Petroleum Spill Investigation, Johnstown, NY
- Burgess Terminal, Scotia, NY
- Former YMCA, Saratoga Springs, NY
- Former IGA Supermarket, Greenwich, NY
- Former Texaco Terminal, Bethlehem, NY

Daniel P. Reilly, P.E.
Division Manager - Environmental Services
Director of Operations

Professional Background:
Licensed Professional Engineer – New York

Education:
Bachelor of Science, Environmental Engineering, Rensselaer Polytechnic Institute, Troy, NY

Professional Affiliations:
Eastern NY Chapter Air & Waste Management Association

Specialized Training:
OSHA 40-Hour Health & Safety Training

Mr. Reilly joined C.T. Male Associates in 1993 as an Environmental Engineer. He was subsequently offered and accepted responsibilities as an Owner and Principal, which includes the responsibility of representing the firm at many community and professional functions. In 2012 Mr. Reilly was promoted to Operations Manager of the Environmental Services Division, and was subsequently promoted to Division Manager of Environmental Services and the firm's Director of Operations. Mr. Reilly is responsible for the personnel, production and operations of the Environmental Services Group and for coordinating similar functions within the other Divisions. He manages and supervises a staff of 22 employees consisting of licensed professional engineers, certified geologists/hydro-geologists, industrial hygienists, scientists, and support staff. He is responsible for aligning appropriate staff to accommodate the production demands of many active projects within the Group. He also prepares and reviews proposals, budgets and contract documents, and performs quality reviews of project deliverables.

Mr. Reilly has managed two NYSOGS Term Contracts. Projects under these contracts have included:

- Renovation of a Historic Rest Area Building as the First Taste NY Facility, Todd Hill Rest Area
- Water System Improvements, Bedford Hills Correctional Facility
- WWTP, I684 Rest Area
- Replace Water Main, Clinton Correctional Facility
- Clean Waste Water Treatment Plant Building 44 Lagoons, Green Haven Correctional Facility
- Provide Lead Abatement of Water Storage Tank, Bedford Hill Correctional Facility
- Study to Evaluate Leach Field, Region 1 Duanesburg MSH
- Install Water Meters and Water Meter Pits, Hudson Correctional Facility
- Replace Water Distribution System, Elmira Correctional Facility
- Asbestos, Lead and Bird Dropping Sampling & Design Services, Eastern Correctional Facility

C. T. Male Associates

Jeffrey A. Marx, P.E.
Senior Environmental Engineer

Professional Background:
Licensed Professional Engineer in the State of New York

NYSDOL Licensed Asbestos Project Designer

Education:
Bachelor of Science Civil Engineering, Rochester Institute of Technology, Rochester, New York, 1994

Professional Affiliations:
American Society of Civil Engineers, Hudson Mohawk Section, Member

The Practicing Institute of Engineering, Inc., Member and Evaluator

The Foundation for Engineering Education, Inc., Engineers Week Steering Committee

American Foundation for Suicide Prevention Volunteer & Safe Talk Trained

Specialized Training:
OSHA 40-Hour Health & Safety Training

OSHA 10-Hour Construction Safety Training

Mr. Marx joined C.T. Male in 1997 as an environmental engineer. His responsibilities include development and implementation of environmental field investigations for NYS Brownfield, Environmental Restoration and Spills Programs, tank assessment and closures, design of vapor intrusion mitigation systems, various media sampling, hazardous waste sampling, management and disposal, environmental site assessments, remedial system monitoring and QA/QC of the firm's environmental instrumentation. Mr. Marx also prepares Remedial Investigation Reports, Final Engineering Reports, Site Management Plans, Alternative Analysis Reports, Spill Prevention, Control and Countermeasures Plans and Fuel System Assessment Reports, Industrial SPDES Stormwater Pollution Prevention Plans and Best Management Practice Plans. He develops engineering and construction costs estimates, authors and edits technical specifications, observes and manages remedial construction activities and provides environmental compliance assistance for Notice of Violations (NOV).

He is a shareholder in the firm, Chairman of our Technical Specifications Committee, and a member of the Safety Committee.

Mr. Marx enjoys mentoring the younger community through involvement in engineering capstone projects, high school career fairs, Future City, and a local engineer's week event that includes a high school model bridge competition.

Notable Project Experience:

NYSDEC ERP & BCP
- Former Chalmers Knitting Mill ERP, Amsterdam, NY
- USAI Lighting BCP, New Windsor, NY
- Former Grand Union Site BCP, Fort Edward, NY
- 312 Broadway ERP, Schenectady, NY

Phase I & II ESA's, Tank Closures & Remediation
- Golub Corporation, Multiple Sites, Phase I ESAs
- Confidential Site, Buried Drums Assessment & Removal, Malta, NY
- Agri-Mark, Inc. Tank Closure, Chateaugay, NY
- Residence Basement Oil Spill, Averill Park, NY

SPCC, SWPP & BMP Plans, NOV Assistance & PBS Compliance
- Regeneron Environmental Compliance Assistance
- SWM International, ICP/SWPP Plan, Ancram, NY
- GlaxoSmithKline, SWPP Plan and BMP Plan, Durham

Vapor Intrusion Mitigation
- Co-Generation Plant, Rensselaer, NY
- Monument Square, Albany, NY
- Tapestry, Troy, NY

Nancy E. Garry, P.E., C.S.P.
Senior Environmental Engineer

Professional Background:
Licensed Professional Engineer – New York

Certified Safety Professional

Education:
Master of Arts, Environmental Engineering, Rensselaer Polytechnic Institute, Troy, NY

Bachelor of Arts, Chemistry/Biology, College of St. Rose, Albany, NY

Professional Affiliations:
NYS Society of Professional Engineers

Capital District Chapter, NYS Society of Professional Engineers, Director 2017-2019

Specialized Training:
OSHA 40-Hour Health & Safety Training

OSHA 10-Hour Construction Safety & Health

Ms. Garry joined C.T. Male in 2017 as a Senior Environmental Engineer. She has over 20 years experience in site investigation and remediation projects and environmental compliance. Ms. Garry also has extensive experience in OSHA and environmental, health and safety on-site compliance for industrial and government clients.

Ms. Garry is responsible for projects including Clean Air Act assessments and compliance; Risk Management Plans; chemical and petroleum bulk storage assessments and compliance; environmental audits; Phase 1 & 2 environmental site assessments; and various environmental engineering projects.

Notable Project Experience:

NYSDEC ERP & BCP

- Former Stevens & Thompson Paper Mill, Greenwich, NY, BCP
- Scolite Site, City of Troy, NY, ERP
- South Troy Waterfront, Troy, NY, NYS BOA (Brownfield Opportunity Assessment)
- Sawmill Place Remediation Area A, B, and C, Wallkill, NY, BCP
- Mechanicville Light Industrial Park, City of Mechanicville, NY, ERP
- 37 Commonwealth Drive, Wyandanch, NY, ERP

Ms. Garry has managed a three year NYSOGS and a seven year NYSDEC Term Contract. Projects under these contracts have included:

- Tank design packages for the removal and installation of ASTs for back up fuel sources and fueling stations at numerous Department of Corrections and Community Supervision facilities throughout NYS.
- Three NYSDOT former spills sites that required remediation, ongoing monitoring, and spill closure.
- Managed approx. twenty five projects under the NYSDEC contract that included site characterizations, remedial investigations, feasibility studies, and site management throughout NYS.

Experience

Ward Swanson has 20 years of experience in environmental quality assurance and quality control. He has assisted on some of most complex analytical issues faced by industry and regulatory authorities related to the preservation or restoration of the environment. Ward is a nationally recognized expert on laboratory regulations, analytical methodology and certification updates, and internal database quality. He leads Barr's data quality management team, which is responsible for reviewing and reporting more than four million dollars of analytical data for Barr's clients each year. Ward's responsibilities include annual examination and improvements to the quality management system, implementing the company laboratory audit program, development of quality assurance project plans (QAPPs), reviewing and updating all Barr standard operating procedures, and overseeing Barr's analytical system operations.

Ward often coordinates with laboratories to implement specialty analysis for unique site conditions. Examples of that work include hydrocarbon fingerprinting, low-level mercury analysis, dioxin/furan analysis, and emerging chemicals of environmental concern such as perfluorochemicals.

Example of Ward's experience includes:

- Preparing over 30 QAPPs for state and federal programs in the past 10 years, including several for U.S. Environmental Protection Agency brownfields grant programs. These have included:
  - Working with the Hennepin County environmental staff to write and implement one of the first QAPPs to be used in piloting the USPA brownfields grant program in this region for site investigation and cleanup. Continues to work with the County to provide data validation and QAPP amendments to assure that their QAPP remains a usable document that is applicable for their investigation and clean-up efforts.
  - Working with the Fond du Lac Indian Reservation environmental staff to develop and implement a QAPP for the investigation and cleanup of potentially contaminated properties located on and near their reservation.
  - Assisting the City of Duluth to develop and implement an investigation and cleanup grant QAPP to address multiple potentially contaminated properties in the Duluth area.
  - Working with the City of New Brighton to develop a QAPP for the investigation and cleanup grant program for efforts related to large redevelopment projects within the city limits.
- Working in an expert witness capacity for a legal dispute involving sampling and analytical issues around the placement of power lines near private property. This project involved giving an expert opinion on the laboratory analysis and laboratory analytical technique.

- Serving as quality assurance officer for the laboratory of Flint Hills Resources' refinery in Rosemount, Minnesota. Responsibilities include performing audits, upgrading quality systems such as data management, and data handling.
- Serving as project manager for groundwater monitoring for a former boiler ash landfill in Cottage Grove, Minnesota. Work included coordinating sample collection and reporting for compliance with Minnesota solid waste rules.

Examples of Ward's experience prior to his joining Barr include:

- Acting as operations manager for Matrix Technologies, Inc., a company that specializes in direct-push sampling and mobile laboratory services for site assessment data gathering. Responsibilities included project management, laboratory direction, chemist training, quality control, chemical inventory control, and establishing laboratory standard operating procedures.
- Operating a gas chromatograph (GC), HPLC, UV-Vis Spectrophotometer, IR, total halogen analyzer, as well as software such as HP Chemstation, EZ Chrome, and Apex Chromatography Software.

Education

B.A., Chemistry, Gustavus Adolphus College, 1991

Memberships

Former president, Minnesota Chromatography Forum

Former treasurer, Minnesota Laboratory Association

Presentations/ Publications

"The Use of Isotopically Labeled Perfluorooctanic Acid as a Quality Assurance Tool in Measuring the Effectiveness of Multimatrix Sampling and Analysis for Ammonium Perfluorooctanate." Coauthor. Presentation at the 26th Annual Society of Environmental Toxicology and Chemistry North America Meeting. 2005.

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DANA BAKER PASI
Environmental Scientist

BARR

Experience

Dana Baker Pasi has more than four years of experience providing technical support for data quality assurance and related services. She often coordinates with field staff and laboratories to implement analysis for site-specific conditions. Prior to this, Dana had three years of experience as an environmental data management technician at Barr, which included assisting with data entry and verification of laboratory data into EQuIS databases; producing database documentation; and preparing and sending out monitoring reports for several remediation sites. Dana's work at Barr has included:

- Coordinating sample events for a variety of environmental remediation and investigation sites, including railways, former manufactured-gas-plant sites, mining sites, landfill sites, pipelines, and voluntary investigation and cleanup sites. Responsibilities include acting as lab liaison, performing laboratory sampling audits, and examining analytical data to data-quality-control measures.
- Preparing quality assurance project plans (QAPPs) and sampling and analysis plans (SAPs); validating analytical data under both contract laboratory program (CLP) and non-CLP data management guidelines; coordinating laboratory analysis and services; and preparing analytical data validation reports.
- Assisting with the data management team for internal database quality and training new staff on quality assurance/quality control (QA/QC) systems.
- Preparing analytical cost estimates and work orders.
- Providing guidance to client's regarding industrial stormwater compliance.
- Following method-specific quality assurance criteria.
- Following the USEPA's Contract Laboratory Program National Functional Guidelines for data validation.

Prior to joining Barr, Dana served as a pharmacy technician for a hospital in St. Paul, Minnesota. She also served as a research administrator for the Mount Sinai School of Medicine in New York City, including working as senior administrator on a $14 million government contract, which included working alongside NIH officials to mediate various protocols, compiling semi-annual progress reports, and organizing and administering lectures and conferences.

Education

BS, Biology, University of Minnesota, 2005

Training

Data Evaluation for Vapor Intrusion Studies, Air & Waste Management Association (2014)

Introduction to Risk Assessment Guidance, United States Environmental Protection Agency (2011)

Minnesota Wastewater Operators Association Annual Laboratory Training, Minnesota Department of Health (2011)

Industrial Stormwater Sampling and Monitoring Training, Minnesota Pollution Control Agency (2011)

Introduction to Groundwater Investigations, United States Environmental Protection Agency (2010)

EQuIS Power User Training, EarthSoft (2009)

TERRI A. OLSON
Senior Data Quality Specialist

Experience

Terri Olson has 31 years of experience working with analytical laboratory data. She is currently a senior consultant whose responsibilities include performing periodic review and auditing of analytical facilities and their procedures; evaluating laboratory data; and reviewing and making improvements to Barr's quality management system, which includes updates to Barr's standard operating procedures for field work and data evaluation and quality management plan. She has considerable experience with the wide variety of regulatory methods used for environmental analyses and has worked with many of the mining analyses. Terri's project work at Barr has included:

- Working directly with state and federal regulatory agencies in developing and revising quality assurance project plans (QAPPs).
- Reviewing sampling and analysis plans, QAPPs, and data evaluation reports.
- Evaluating analytical data under both contract laboratory program (CLP) and non-CLP guidelines.
- Coordinating laboratory analysis and services for air, water, wild rice, and soil projects.
- Preparing analytical data evaluation reports.
- Troubleshooting data issues for clients.
- Assisting with the quality management system for a client's National Pollutant Discharge Elimination System (NPDES) laboratory.
- Conducting technical laboratory and field-sampling audits.

Prior to working at Barr, Terri's work experience included:

- Serving as client manager for an analytical laboratory in St. Paul, Minnesota. Responsibilities include:
- Coordinating client needs and requirements with laboratory capabilities.
- Setting up projects with information specific to client needs to reduce potential issues when analyzing and reporting.
- Reviewing QAPPs.
- Reviewing data within reports and acting on any discrepancies found.
- Generating laboratory reports and invoices.
- Serving as LIMS manager for an analytical laboratory in St. Paul, Minnesota. Responsibilities include:
  - Setting up analyses and clients using Promium LIMS.
  - Training new employees on use of the LIMS for sample receiving, project management, invoicing, and reporting.
  - Preparing report, bid, and invoice formats using Crystal Reports.
  - Interfacing with vendor to develop and maintain custom EDD formats.
  - Training employees on new features within LIMS updates.

- Serving as QA/QC coordinator for an analytical laboratory in St. Paul, Minnesota. Responsibilities include:
  - Implementing ISO 9001:2000 standards.
  - Managing the control of documents and records.
  - Implementing laboratory certifications and accreditations.
  - Assuring documentation and resolution of corrective actions and client complaints.
  - Coordinating proficiency-testing program.
  - Updating and reviewing control limits.
  - Reviewing and revising quality assurance manual.
  - Monitoring and coordinating review of standard operating procedures.
  - Coordinating and conducting internal audits.
  - Coordinating outside auditing processes and providing required follow-up.
  - Developing Excel spreadsheets for calculations and charting.
  - Reviewing and signing various laboratory reports.
  - Training and supervising QA/QC assistants.
  - Conducting training sessions on QA topics.
- Serving as lab administrator for an analytical laboratory in LaCrosse, Wisconsin. Responsibilities included:
  - Implementing and supervising all internal processes necessary from sample receipt to report distribution.
  - Developing standard forms for lab reports and invoices.
  - Responding to client requests for quotes, status, results, and interpretation.
  - Assisting in coordinating and facilitating work of support staff.
- Serving as quality control coordinator and microbiologist for an analytical laboratory in LaCrosse, Wisconsin. Responsibilities included:
  - Reviewing results prior to final submittal to the laboratory director.
  - Tracking analyst qualifications and corrective action statements.
  - Performing internal audits on data.
  - Updating control and warning limits.
  - Creating QC spreadsheets for clients.
  - Serving as liaison for state certification audits.
  - Training and supervising student interns.
  - Analyzing proficiency samples for compliance.
  - Developing immunoassay techniques.

Education

BS, Microbiology, University of Wisconsin – LaCrosse, 1984
minor: Chemistry

Training

Elements of Analytical Laboratory Data Quality (2015)

Mechanics of Project Management (2015)

ISO/IEC 17025 Internal Auditor Training & Workshop (2014)

ISO/IEC 17025 Measurement Uncertainty Workshop (2014)

Understanding Water Chemistry for Practical Application (2013)

40 Hour OSHA HAZWOPER (2012)

Internal Auditor Training Instructor for ISO 9001:2008 (2010)

Internal Auditor Training Instructor for ISO 9001:2000 (2008)

LIMS Management Training (2004)

Internal Auditor Training for ISO 9001:2000 (2003)

Affiliations

Minnesota Laboratory Association (2001-2006); Secretary (December 2002-April 2005)

Minnesota Rules Advisory Committee (2001-2006)

MN-ELAP Advisory Committee (2012)

MPCA Laboratory Registration Steering Committee (2012-present

MN-ELAP Assessor Selection Committee (February 2013-December 2014)

ATTACHMENT B

CERTIFICATIONS

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Lead on Air Filter	EPA 40 CFR Part 50 App. G	AE	x	Y	
NY	PCBs and Aroclors	EPA TO-10A	AE	x	Y	
NY	Acenaphthene	EPA TO-13A Full Scan	AE	x	Y	
NY	Acenaphthylene	EPA TO-13A Full Scan	AE	x	Y	
NY	Anthracene	EPA TO-13A Full Scan	AE	x	Y	
NY	Benzo(a)anthracene	EPA TO-13A Full Scan	AE	x	Y	
NY	Benzo(a)pyrene	EPA TO-13A Full Scan	AE	x	Y	
NY	Benzo(b)fluoranthene	EPA TO-13A Full Scan	AE	x	Y	
NY	Benzo(ghi)perylene	EPA TO-13A Full Scan	AE	x	Y	
NY	Benzo(k)fluoranthene	EPA TO-13A Full Scan	AE	x	Y	
NY	Chrysene	EPA TO-13A Full Scan	AE	x	Y	
NY	Dibenzo(a,h)anthracene	EPA TO-13A Full Scan	AE	x	Y	
NY	Fluoranthene	EPA TO-13A Full Scan	AE	x	Y	
NY	Fluorene	EPA TO-13A Full Scan	AE	x	Y	
NY	Indeno(1,2,3-cd)pyrene	EPA TO-13A Full Scan	AE	x	Y	
NY	Naphthalene	EPA TO-13A Full Scan	AE	x	Y	
NY	Phenanthrene	EPA TO-13A Full Scan	AE	x	Y	
NY	Pyrene	EPA TO-13A Full Scan	AE	x	Y	
NY	1,1,1-Trichloroethane	EPA TO-15	AE	x	Y	
NY	1,1,2,2-Tetrachloroethane	EPA TO-15	AE	x	Y	
NY	1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA TO-15	AE	x	Y	
NY	1,1,2-Trichloroethane	EPA TO-15	AE	x	Y	
NY	1,1-Dichloroethane	EPA TO-15	AE	x	Y	
NY	1,1-Dichloroethene	EPA TO-15	AE	x	Y	
NY	1,2,4-Trichlorobenzene	EPA TO-15	AE	x	Y	
NY	1,2,4-Trimethylbenzene	EPA TO-15	AE	x	Y	
NY	1,2-Dibromo-3-Chloropropane (DBCP)	EPA TO-15	AE	x	Y	
NY	1,2-Dibromoethane (EDB)	EPA TO-15	AE	x	Y	
NY	1,2-Dichlorobenzene	EPA TO-15	AE	x	Y	
NY	1,2-Dichloroethane	EPA TO-15	AE	x	Y	
NY	1,2-Dichloropropane	EPA TO-15	AE	x	Y	
NY	1,2-Dichlorotetrafluoroethane	EPA TO-15	AE	x	Y	
NY	1,3,5-Trimethylbenzene	EPA TO-15	AE	x	Y	
NY	1,3-Butadiene	EPA TO-15	AE	x	Y	
NY	1,3-Dichlorobenzene	EPA TO-15	AE	x	Y	
NY	1,4-Dichlorobenzene	EPA TO-15	AE	x	Y	
NY	1,4-Dioxane	EPA TO-15	AE	x	Y	
NY	2,2,4-Trimethylpentane	EPA TO-15	AE	x	Y	
NY	2-Butanone	EPA TO-15	AE	x	Y	
NY	2-Chlorotoluene	EPA TO-15	AE	x	Y	
NY	3-Chloropropene	EPA TO-15	AE	x	Y	
NY	4-Methyl-2-Pentanone	EPA TO-15	AE	x	Y	
NY	Acetaldehyde	EPA TO-15	AE	x	Y	
NY	Acetone	EPA TO-15	AE	x	Y	
NY	Acetonitrile	EPA TO-15	AE	x	Y	
NY	Acrolein	EPA TO-15	AE	x	Y	
NY	Acrylonitrile	EPA TO-15	AE	x	Y	
NY	Benzene	EPA TO-15	AE	x	Y	
NY	Benzyl Chloride	EPA TO-15	AE	x	Y	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Bromodichloromethane	EPA TO-15	AE	x	Y	
NY	Bromoform	EPA TO-15	AE	x	Y	
NY	Bromomethane	EPA TO-15	AE	x	Y	
NY	Carbon Disulfide	EPA TO-15	AE	x	Y	
NY	Carbon Tetrachloride	EPA TO-15	AE	x	Y	
NY	Chlorobenzene	EPA TO-15	AE	x	Y	
NY	Chloroethane	EPA TO-15	AE	x	Y	
NY	Chloroform	EPA TO-15	AE	x	Y	
NY	Chloromethane	EPA TO-15	AE	x	Y	
NY	cis-1,2-Dichloroethene	EPA TO-15	AE	x	Y	
NY	cis-1,3-Dichloropropene	EPA TO-15	AE	x	Y	
NY	Cyclohexane	EPA TO-15	AE	x	Y	
NY	Dibromochloromethane	EPA TO-15	AE	x	Y	
NY	Dichlorodifluoromethane	EPA TO-15	AE	x	Y	
NY	Ethylbenzene	EPA TO-15	AE	x	Y	
NY	Hexachlorobutadiene	EPA TO-15	AE	x	Y	
NY	Isopropyl Alcohol	EPA TO-15	AE	x	Y	
NY	Isopropylbenzene	EPA TO-15	AE	x	Y	
NY	m+p-Xylene	EPA TO-15	AE	x	Y	
NY	Methyl Alcohol (methanol)	EPA TO-15	AE	x	Y	
NY	Methyl Methacrylate	EPA TO-15	AE	x	Y	
NY	Methyl tert-butyl ether	EPA TO-15	AE	x	Y	
NY	Methylene Chloride	EPA TO-15	AE	x	Y	
NY	Naphthalene	EPA TO-15	AE	x	Y	
NY	n-Heptane	EPA TO-15	AE	x	Y	
NY	n-Hexane	EPA TO-15	AE	x	Y	
NY	o-Xylene	EPA TO-15	AE	x	Y	
NY	Styrene	EPA TO-15	AE	x	Y	
NY	Tert-Butyl Alcohol	EPA TO-15	AE	x	Y	
NY	Tetrachloroethene	EPA TO-15	AE	x	Y	
NY	Toluene	EPA TO-15	AE	x	Y	
NY	Total Xylenes	EPA TO-15	AE	x	Y	
NY	Trans-1,2-Dichloroethene	EPA TO-15	AE	x	Y	
NY	Trans-1,3-Dichloropropene	EPA TO-15	AE	x	Y	
NY	Trichloroethene	EPA TO-15	AE	x	Y	
NY	Trichlorofluoromethane	EPA TO-15	AE	x	Y	
NY	Vinyl acetate	EPA TO-15	AE	x	Y	
NY	Vinyl Bromide	EPA TO-15	AE	x	Y	
NY	Vinyl Chloride	EPA TO-15	AE	x	Y	
NY	Turbidity	EPA 180.1	DW	Y	x	
NY	Aluminum	EPA 200.7	DW	x	Y	
NY	Barium	EPA 200.7	DW	x	Y	
NY	Beryllium	EPA 200.7	DW	x	Y	
Ny	Boron	EPA 200.7	DW	x	Y	
NY	Cadmium	EPA 200.7	DW	x	Y	
NY	Calcium	EPA 200.7	DW	x	Y	
NY	Calcium Hardness	EPA 200.7	DW	x	Y	
NY	Chromium	EPA 200.7	DW	x	Y	
NY	Copper	EPA 200.7	DW	x	Y	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Iron	EPA 200.7	DW	x	Y	
NY	Magnesium	EPA 200.7	DW	x	Y	
NY	Manganese	EPA 200.7	DW	x	Y	
NY	Nickel	EPA 200.7	DW	x	Y	
NY	Potassium	EPA 200.7	DW	x	Y	
NY	Silver	EPA 200.7	DW	x	Y	
NY	Sodium	EPA 200.7	DW	x	Y	
Ny	Vanadium	EPA 200.7	DW	x	Y	
NY	Zinc	EPA 200.7	DW	x	Y	
NY	Aluminum	EPA 200.8	DW	x	Y	
NY	Antimony	EPA 200.8	DW	x	Y	
NY	Arsenic	EPA 200.8	DW	x	Y	
NY	Barium	EPA 200.8	DW	x	Y	
NY	Beryllium	EPA 200.8	DW	x	Y	
NY	Cadmium	EPA 200.8	DW	x	Y	
NY	Copper	EPA 200.8	DW	x	Y	
NY	Lead	EPA 200.8	DW	x	Y	
Ny	Manganese	EPA 200.8	DW	x	Y	
NY	Nickel	EPA 200.8	DW	x	Y	
NY	Selenium	EPA 200.8	DW	x	Y	
NY	Silver	EPA 200.8	DW	x	Y	
NY	Thallium	EPA 200.8	DW	x	Y	
NY	Vanadium	EPA 200.8	DW	x	Y	
NY	Zinc	EPA 200.8	DW	x	Y	
NY	Mercury	EPA 245.1	DW	x	Y	
NY	Chloride	EPA 300.0	DW	Y	x	
NY	Fluoride	EPA 300.0	DW	Y	x	
NY	Sulfate	EPA 300.0	DW	Y	x	
NY	Perchlorate	EPA 332.0	DW	Y	x	
NY	1,2-Dibromo-3-Chloropropane (DBCP)	EPA 504.1	DW	Y	x	
NY	1,2-Dibromoethane (EDB)	EPA 504.1	DW	Y	x	
NY	1,1,1,2-Tetrachloroethane	EPA 524.2	DW	Y	x	
NY	1,1,1-Trichloroethane	EPA 524.2	DW	Y	x	
NY	1,1,2,2-Tetrachloroethane	EPA 524.2	DW	Y	x	
NY	1,1,2-Trichloroethane	EPA 524.2	DW	Y	x	
NY	1,1-Dichloroethane	EPA 524.2	DW	Y	x	
NY	1,1-Dichloroethene	EPA 524.2	DW	Y	x	
NY	1,1-Dichloropropene	EPA 524.2	DW	Y	x	
NY	1,2,3-Trichlorobenzene	EPA 524.2	DW	Y	x	
NY	1,2,3-Trichloropropane	EPA 524.2	DW	Y	x	
NY	1,2,4-Trichlorobenzene	EPA 524.2	DW	Y	x	
NY	1,2,4-Trimethylbenzene	EPA 524.2	DW	Y	x	
NY	1,2-Dichlorobenzene	EPA 524.2	DW	Y	x	
NY	1,2-Dichloroethane	EPA 524.2	DW	Y	x	
NY	1,2-Dichloropropane	EPA 524.2	DW	Y	x	
NY	1,3,5-Trimethylbenzene	EPA 524.2	DW	Y	x	
NY	1,3-Dichlorobenzene	EPA 524.2	DW	Y	x	
NY	1,3-Dichloropropane	EPA 524.2	DW	Y	x	
NY	1,4-Dichlorobenzene	EPA 524.2	DW	Y	x	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	2,2-Dichloropropane	EPA 524.2	DW	Y	x	
NY	2-Chlorotoluene	EPA 524.2	DW	Y	x	
NY	4-Chlorotoluene	EPA 524.2	DW	Y	x	
NY	Benzene	EPA 524.2	DW	Y	x	
NY	Bromobenzene	EPA 524.2	DW	Y	x	
NY	Bromochloromethane	EPA 524.2	DW	Y	x	
NY	Bromodichloromethane	EPA 524.2	DW	Y	x	
NY	Bromoform	EPA 524.2	DW	Y	x	
NY	Bromomethane	EPA 524.2	DW	Y	x	
NY	Carbon Tetrachloride	EPA 524.2	DW	Y	x	
NY	Chlorobenzene	EPA 524.2	DW	Y	x	
NY	Chloroethane	EPA 524.2	DW	Y	x	
NY	Chloroform	EPA 524.2	DW	Y	x	
NY	Chloromethane	EPA 524.2	DW	Y	x	
NY	cis-1,2-Dichloroethene	EPA 524.2	DW	Y	x	
NY	cis-1,3-Dichloropropene	EPA 524.2	DW	Y	x	
NY	Dibromochloromethane	EPA 524.2	DW	Y	x	
NY	Dibromomethane	EPA 524.2	DW	Y	x	
NY	Dichlorodifluoromethane	EPA 524.2	DW	Y	x	
NY	Ethylbenzene	EPA 524.2	DW	Y	x	
NY	Hexachlorobutadiene	EPA 524.2	DW	Y	x	
NY	Isopropylbenzene	EPA 524.2	DW	Y	x	
NY	Methyl tert-butyl ether	EPA 524.2	DW	Y	x	
NY	Methylene chloride	EPA 524.2	DW	Y	x	
NY	Naphthalene	EPA 524.2	DW	Y	x	
NY	n-Butylbenzene	EPA 524.2	DW	Y	x	
NY	n-Propylbenzene	EPA 524.2	DW	Y	x	
NY	p-Isopropyltoluene	EPA 524.2	DW	Y	x	
NY	sec-Butylbenzene	EPA 524.2	DW	Y	x	
NY	Styrene	EPA 524.2	DW	Y	x	
NY	Tert-Butylbenzene	EPA 524.2	DW	Y	x	
NY	Tetrachloroethene	EPA 524.2	DW	Y	x	
NY	Toluene	EPA 524.2	DW	Y	x	
NY	Total Trihalomethanes	EPA 524.2	DW	Y	x	
NY	Total Xylenes	EPA 524.2	DW	Y	x	
NY	Trans-1,2-Dichloroethene	EPA 524.2	DW	Y	x	
NY	Trans-1,3-Dichloropropene	EPA 524.2	DW	Y	x	
NY	Trichloroethene	EPA 524.2	DW	Y	x	
NY	Trichlorofluoromethane	EPA 524.2	DW	Y	x	
NY	Vinyl chloride	EPA 524.2	DW	Y	x	
NY	Perfluoro-n-octanoic acid (PFOA)	EPA 537	DW	x	Y	
NY	Perfluorooctanesulfonic acid (PFOS)	EPA 537	DW	x	Y	
NY	Color	SM 2120B	DW	Y	x	
NY	Turbidity	SM 2130B	DW	Y	x	
NY	Odor	SM 2150B	DW	Y	x	
NY	Alkalinity	SM 2320B	DW	Y	x	
NY	Specific Conductance	SM 2510B	DW	Y	x	
NY	Total Dissolved Solids	SM 2540C	DW	Y	x	
NY	Cyanide, Distillation	SM 4500 CN C	DW	Y	x	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Cyanide, Total	SM 4500 CN E	DW	Y	x	
NY	Fluoride	SM 4500 F-C	DW	Y	x	
NY	Nitrate-N	SM 4500 NO3-F	DW	Y	x	
NY	Nitrite-N	SM 4500 NO3-F	DW	Y	x	
NY	Total Organic Carbon	SM 5310C	DW	Y	x	
NY	Heterotrophic Plate Count	SM 9215B	DW	Y	x	
NY	Coliform, Total	SM 9223B	DW	Y	x	
NY	E. Coli	SM 9223B	DW	Y	x	P/A
NY	E. Coli	SM 9223B	DW	Y	x	Enumeration
NY	Specific Conductance	EPA 120.1	NPW	Y	x	
NY	Mercury	EPA 1631E	NPW	x	Y	
NY	Oil & Grease	EPA 1664A	NPW	Y	x	
NY	Oil & Grease (TPH)	EPA 1664A	NPW	Y	x	
NY	Turbidity	EPA 180.1	NPW	Y	x	
NY	Aluminum	EPA 200.7	NPW	x	Y	
NY	Antimony	EPA 200.7	NPW	x	Y	
NY	Arsenic	EPA 200.7	NPW	x	Y	
NY	Barium	EPA 200.7	NPW	x	Y	
NY	Beryllium	EPA 200.7	NPW	x	Y	
NY	Boron	EPA 200.7	NPW	x	Y	
NY	Cadmium	EPA 200.7	NPW	x	Y	
NY	Calcium	EPA 200.7	NPW	x	Y	
NY	Chromium	EPA 200.7	NPW	x	Y	
NY	Cobalt	EPA 200.7	NPW	x	Y	
NY	Copper	EPA 200.7	NPW	x	Y	
NY	Iron	EPA 200.7	NPW	x	Y	
NY	Lead	EPA 200.7	NPW	x	Y	
NY	Magnesium	EPA 200.7	NPW	x	Y	
NY	Manganese	EPA 200.7	NPW	x	Y	
NY	Molybdenum	EPA 200.7	NPW	x	Y	
NY	Nickel	EPA 200.7	NPW	x	Y	
NY	Potassium	EPA 200.7	NPW	x	Y	
NY	Selenium	EPA 200.7	NPW	x	Y	
NY	Silica, Dissolved	EPA 200.7	NPW	x	Y	
NY	Silver	EPA 200.7	NPW	x	Y	
NY	Sodium	EPA 200.7	NPW	x	Y	
NY	Strontium	EPA 200.7	NPW	x	Y	
NY	Thallium	EPA 200.7	NPW	x	Y	
NY	Tin	EPA 200.7	NPW	x	Y	
NY	Titanium	EPA 200.7	NPW	x	Y	
NY	Total Hardness (CaCO3)	EPA 200.7	NPW	x	Y	
NY	Vanadium	EPA 200.7	NPW	x	Y	
NY	Zinc	EPA 200.7	NPW	x	Y	
NY	Aluminum	EPA 200.8	NPW	x	Y	
NY	Antimony	EPA 200.8	NPW	x	Y	
NY	Arsenic	EPA 200.8	NPW	x	Y	
NY	Barium	EPA 200.8	NPW	x	Y	
NY	Beryllium	EPA 200.8	NPW	x	Y	
NY	Cadmium	EPA 200.8	NPW	x	Y	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Chromium	EPA 200.8	NPW	x	Y	
NY	Cobalt	EPA 200.8	NPW	x	Y	
NY	Copper	EPA 200.8	NPW	x	Y	
NY	Lead	EPA 200.8	NPW	x	Y	
NY	Manganese	EPA 200.8	NPW	x	Y	
NY	Molybdenum	EPA 200.8	NPW	x	Y	
NY	Nickel	EPA 200.8	NPW	x	Y	
NY	Selenium	EPA 200.8	NPW	x	Y	
NY	Silver	EPA 200.8	NPW	x	Y	
NY	Thallium	EPA 200.8	NPW	x	Y	
NY	Vanadium	EPA 200.8	NPW	x	Y	
NY	Zinc	EPA 200.8	NPW	x	Y	
NY	Mercury	EPA 245.1	NPW	x	Y	
NY	Bromide	EPA 300.0	NPW	Y	x	
NY	Chloride	EPA 300.0	NPW	Y	x	
NY	Fluoride	EPA 300.0	NPW	Y	x	
NY	Nitrate-N	EPA 300.0	NPW	Y	x	
NY	Sulfate	EPA 300.0	NPW	Y	x	
NY	Acid Digestion of Waters	EPA 3005A	NPW	x	Y	
NY	Microwave Acid Digestion	EPA 3015A	NPW	x	Y	
NY	Acid Digestion of Waters	EPA 3020A	NPW	x	Y	
NY	Ammonia	EPA 350.1	NPW	Y	x	
NY	Nitrogen, Total Kjeldahl	EPA 351.1	NPW	Y	x	
NY	Separatory Funnel Extraction	EPA 3510C	NPW	Y	Y	
NY	Nitrate-N	EPA 353.2	NPW	Y	x	
NY	Nitrate-Nitrite	EPA 353.2	NPW	Y	x	
NY	Chemical Oxygen Demand	EPA 410.4	NPW	Y	x	
NY	Total Phenolics	EPA 420.1	NPW	Y	x	
NY	Purge & Trap Aqueous	EPA 5030C	NPW	Y	x	
NY	Aluminum	EPA 6010C	NPW	x	Y	
NY	Antimony	EPA 6010C	NPW	x	Y	
NY	Arsenic	EPA 6010C	NPW	x	Y	
NY	Barium	EPA 6010C	NPW	x	Y	
NY	Beryllium	EPA 6010C	NPW	x	Y	
NY	Boron	EPA 6010C	NPW	x	Y	
NY	Cadmium	EPA 6010C	NPW	x	Y	
NY	Calcium	EPA 6010C	NPW	x	Y	
NY	Chromium	EPA 6010C	NPW	x	Y	
NY	Cobalt	EPA 6010C	NPW	x	Y	
NY	Copper	EPA 6010C	NPW	x	Y	
NY	Iron	EPA 6010C	NPW	x	Y	
NY	Lead	EPA 6010C	NPW	x	Y	
NY	Magnesium	EPA 6010C	NPW	x	Y	
NY	Manganese	EPA 6010C	NPW	x	Y	
NY	Molybdenum	EPA 6010C	NPW	x	Y	
NY	Nickel	EPA 6010C	NPW	x	Y	
NY	Potassium	EPA 6010C	NPW	x	Y	
NY	Selenium	EPA 6010C	NPW	x	Y	
NY	Silver	EPA 6010C	NPW	x	Y	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Sodium	EPA 6010C	NPW	x	Y	
NY	Strontium	EPA 6010C	NPW	x	Y	
NY	Thallium	EPA 6010C	NPW	x	Y	
NY	Tin	EPA 6010C	NPW	x	Y	
NY	Vanadium	EPA 6010C	NPW	x	Y	
NY	Zinc	EPA 6010C	NPW	x	Y	
NY	Aluminum	EPA 6020A	NPW	x	Y	
NY	Antimony	EPA 6020A	NPW	x	Y	
NY	Arsenic	EPA 6020A	NPW	x	Y	
NY	Barium	EPA 6020A	NPW	x	Y	
NY	Beryllium	EPA 6020A	NPW	x	Y	
NY	Boron	EPA 6020A	NPW	x	Y	
NY	Cadmium	EPA 6020A	NPW	x	Y	
NY	Calcium	EPA 6020A	NPW	x	Y	
NY	Chromium	EPA 6020A	NPW	x	Y	
NY	Cobalt	EPA 6020A	NPW	x	Y	
NY	Copper	EPA 6020A	NPW	x	Y	
NY	Iron	EPA 6020A	NPW	x	Y	
NY	Lead	EPA 6020A	NPW	x	Y	
NY	Magnesium	EPA 6020A	NPW	x	Y	
NY	Manganese	EPA 6020A	NPW	x	Y	
NY	Molybdenum	EPA 6020A	NPW	x	Y	
NY	Nickel	EPA 6020A	NPW	x	Y	
NY	Potassium	EPA 6020A	NPW	x	Y	
NY	Selenium	EPA 6020A	NPW	x	Y	
NY	Silver	EPA 6020A	NPW	x	Y	
NY	Strontium	EPA 6020A	NPW	x	Y	
NY	Thallium	EPA 6020A	NPW	x	Y	
NY	Tin	EPA 6020A	NPW	x	Y	
NY	Titanium	EPA 6020A	NPW	x	Y	
NY	Vanadium	EPA 6020A	NPW	x	Y	
NY	Zinc	EPA 6020A	NPW	x	Y	
NY	4,4'-DDD	EPA 608	NPW	Y	x	
NY	4,4'-DDE	EPA 608	NPW	Y	x	
NY	4,4'-DDT	EPA 608	NPW	Y	x	
NY	Aldrin	EPA 608	NPW	Y	x	
NY	Alpha-BHC	EPA 608	NPW	Y	x	
NY	Beta-BHC	EPA 608	NPW	Y	x	
NY	Chlordane	EPA 608	NPW	Y	x	
NY	Delta-BHC	EPA 608	NPW	Y	x	
NY	Dieldrin	EPA 608	NPW	Y	x	
NY	Endosulfan I	EPA 608	NPW	Y	x	
NY	Endosulfan II	EPA 608	NPW	Y	x	
NY	Endosulfan Sulfate	EPA 608	NPW	Y	x	
NY	Endrin	EPA 608	NPW	Y	x	
NY	Endrin Aldehyde	EPA 608	NPW	Y	x	
NY	Heptachlor	EPA 608	NPW	Y	x	
NY	Heptachlor Epoxide	EPA 608	NPW	Y	x	
NY	Lindane (gamma-BHC)	EPA 608	NPW	Y	x	

Alpha Analytical

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Methoxychlor	EPA 608	NPW	Y	x	
NY	PCB-1016	EPA 608	NPW	Y	x	
NY	PCB-1221	EPA 608	NPW	Y	x	
NY	PCB-1232	EPA 608	NPW	Y	x	
NY	PCB-1242	EPA 608	NPW	Y	x	
NY	PCB-1248	EPA 608	NPW	Y	x	
NY	PCB-1254	EPA 608	NPW	Y	x	
NY	PCB-1260	EPA 608	NPW	Y	x	
NY	Toxaphene	EPA 608	NPW	Y	x	
NY	1,1,1-Trichloroethane	EPA 624	NPW	Y	x	
NY	1,1,2,2-Tetrachloroethane	EPA 624	NPW	Y	x	
NY	1,1,2-Trichloroethane	EPA 624	NPW	Y	x	
NY	1,1-Dichloroethane	EPA 624	NPW	Y	x	
NY	1,1-Dichloroethene	EPA 624	NPW	Y	x	
NY	1,2-Dichlorobenzene	EPA 624	NPW	Y	x	
NY	1,2-Dichloroethane	EPA 624	NPW	Y	x	
NY	1,2-Dichloropropane	EPA 624	NPW	Y	x	
NY	1,3-Dichlorobenzene	EPA 624	NPW	Y	x	
NY	1,4-Dichlorobenzene	EPA 624	NPW	Y	x	
NY	2-Chloroethyl Vinyl ether	EPA 624	NPW	Y	x	
NY	Acetone	EPA 624	NPW	Y	x	
NY	Acrolein	EPA 624	NPW	Y	x	
NY	Acrylonitrile	EPA 624	NPW	Y	x	
NY	Benzene	EPA 624	NPW	Y	x	
NY	Bromodichloromethane	EPA 624	NPW	Y	x	
NY	Bromoform	EPA 624	NPW	Y	x	
NY	Bromomethane	EPA 624	NPW	Y	x	
NY	Carbon Tetrachloride	EPA 624	NPW	Y	x	
NY	Chlorobenzene	EPA 624	NPW	Y	x	
NY	Chloroethane	EPA 624	NPW	Y	x	
NY	Chloroform	EPA 624	NPW	Y	x	
NY	Chloromethane	EPA 624	NPW	Y	x	
NY	cis-1,2-Dichloroethene	EPA 624	NPW	Y	x	
NY	cis-1,3-Dichloropropene	EPA 624	NPW	Y	x	
NY	Dibromochloromethane	EPA 624	NPW	Y	x	
NY	Dichlorodifluoromethane	EPA 624	NPW	Y	x	
NY	Ethylbenzene	EPA 624	NPW	Y	x	
NY	Methylene Chloride	EPA 624	NPW	Y	x	
NY	Methyl tert-butyl ether	EPA 624	NPW	Y	x	
NY	Styrene	EPA 624	NPW	Y	x	
NY	Tert-Butyl Alcohol	EPA 624	NPW	Y	x	
NY	Tetrachloroethene	EPA 624	NPW	Y	x	
NY	Toluene	EPA 624	NPW	Y	x	
NY	Total Xylenes	EPA 624	NPW	Y	x	
NY	Trans-1,2-Dichloroethene	EPA 624	NPW	Y	x	
NY	Trans-1,3-Dichloropropene	EPA 624	NPW	Y	x	
NY	Trichloroethene	EPA 624	NPW	Y	x	
NY	Trichlorofluoromethane	EPA 624	NPW	Y	x	
NY	Vinyl Acetate	EPA 624	NPW	Y	x	

Alpha Analytical **Summary of Certification**

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Vinyl Chloride	EPA 624	NPW	Y	x	
NY	1,2,4-Trichlorobenzene	EPA 625	NPW	Y	x	
NY	2,4,5-Trichlorophenol	EPA 625	NPW	Y	x	
NY	2,4,6-Trichlorophenol	EPA 625	NPW	Y	x	
NY	2,4-Dichlorophenol	EPA 625	NPW	Y	x	
NY	2,4-Dimethylphenol	EPA 625	NPW	Y	x	
NY	2,4-Dinitrophenol	EPA 625	NPW	Y	x	
NY	2,4-Dinitrotoluene (2,4-DNT)	EPA 625	NPW	Y	x	
NY	2,6-Dinitrotoluene (2,6-DNT)	EPA 625	NPW	Y	x	
NY	2-Chloronaphthalene	EPA 625	NPW	Y	x	
NY	2-Chlorophenol	EPA 625	NPW	Y	x	
NY	2-Methyl-4,6-dinitrophenol	EPA 625	NPW	Y	x	
NY	2-Methylphenol	EPA 625	NPW	Y	x	
NY	2-Nitrophenol	EPA 625	NPW	Y	x	
NY	3,3-Dichlorobenzidine	EPA 625	NPW	Y	x	
NY	3-Methylphenol	EPA 625	NPW	Y	x	
NY	4-Bromophenyl phenyl ether	EPA 625	NPW	Y	x	
NY	4-Chloro-3-methylphenol	EPA 625	NPW	Y	x	
NY	4-Chlorophenyl phenyl ether	EPA 625	NPW	Y	x	
NY	4-Methylphenol	EPA 625	NPW	Y	x	
NY	4-Nitrophenol	EPA 625	NPW	Y	x	
NY	Acenaphthene	EPA 625	NPW	Y	x	
NY	Acenaphthylene	EPA 625	NPW	Y	x	
NY	Acetophenone	EPA 625	NPW	Y	x	
NY	Aniline	EPA 625	NPW	Y	x	
NY	Anthracene	EPA 625	NPW	Y	x	
NY	Benzidine	EPA 625	NPW	Y	x	
NY	Benzo(a)anthracene	EPA 625	NPW	Y	x	
NY	Benzo(a)pyrene	EPA 625	NPW	Y	x	
NY	Benzo(b)fluoranthene	EPA 625	NPW	Y	x	
NY	Benzo(ghi)perylene	EPA 625	NPW	Y	x	
NY	Benzo(k)fluoranthene	EPA 625	NPW	Y	x	
NY	Bis(2-chloroethoxy) methane	EPA 625	NPW	Y	x	
NY	Bis(2-chloroethyl) ether	EPA 625	NPW	Y	x	
NY	Bis(2-chloroisopropyl) ether	EPA 625	NPW	Y	x	
NY	Bis(2-ethylhexyl) phthalate	EPA 625	NPW	Y	x	
NY	Butyl Benzyl phthalate	EPA 625	NPW	Y	x	
NY	Carbazole	EPA 625	NPW	Y	x	
NY	Chrysene	EPA 625	NPW	Y	x	
NY	Dibenzo(a,h)anthracene	EPA 625	NPW	Y	x	
NY	Diethyl phthalate	EPA 625	NPW	Y	x	
NY	Dimethyl phthalate	EPA 625	NPW	Y	x	
NY	Di-n-butyl phthalate	EPA 625	NPW	Y	x	
NY	Di-n-octyl phthalate	EPA 625	NPW	Y	x	
NY	Fluoranthene	EPA 625	NPW	Y	x	
NY	Fluorene	EPA 625	NPW	Y	x	
NY	Hexachlorobenzene	EPA 625	NPW	Y	x	
NY	Hexachlorobutadiene	EPA 625	NPW	Y	x	
NY	Hexachlorocyclopentadiene	EPA 625	NPW	Y	x	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Hexachloroethane	EPA 625	NPW	Y	x	
NY	Indeno(1,2,3-cd)pyrene	EPA 625	NPW	Y	x	
NY	Isophorone	EPA 625	NPW	Y	x	
NY	Naphthalene	EPA 625	NPW	Y	x	
NY	N-Decane	EPA 625	NPW	Y	x	
NY	Nitrobenzene	EPA 625	NPW	Y	x	
NY	N-Nitrosodimethylamine	EPA 625	NPW	Y	x	
NY	N-Nitrosodi-n-propylamine	EPA 625	NPW	Y	x	
NY	N-Nitrosodiphenylamine	EPA 625	NPW	Y	x	
NY	N-Octadecane	EPA 625	NPW	Y	x	
NY	Pentachlorophenol	EPA 625	NPW	Y	x	
NY	Phenanthrene	EPA 625	NPW	Y	x	
NY	Phenol	EPA 625	NPW	Y	x	
NY	Pyrene	EPA 625	NPW	Y	x	
NY	Pyridine	EPA 625	NPW	Y	x	
NY	Chromium VI	EPA 7196A	NPW	Y	x	
NY	Mercury	EPA 7470A	NPW	x	Y	
NY	1,2-Dibromoethane (EDB)	EPA 8011	NPW	Y	x	
NY	1,2-Dibromo-3-Chloropropane (DBCP)	EPA 8011	NPW	Y	x	
NY	Diesel Range Organics	EPA 8015C	NPW	Y	x	
NY	Gasoline Range Organics	EPA 8015C	NPW	Y	x	
NY	Amyl alcohol	EPA 8015D	NPW	x	Y	
NY	Diesel Range Organics	EPA 8015D	NPW	x	Y	
NY	Ethyl alcohol	EPA 8015D	NPW	x	Y	
NY	Ethylene glycol	EPA 8015D	NPW	x	Y	
NY	Gasoline Range Organics	EPA 8015D	NPW	x	Y	
NY	Iso-butyl Alcohol	EPA 8015D	NPW	x	Y	
NY	Methyl Alcohol (methanol)	EPA 8015D	NPW	x	Y	
NY	Tert-Butyl Alcohol	EPA 8015D	NPW	x	Y	
NY	4,4'-DDD	EPA 8081B	NPW	Y	Y	
NY	4,4'-DDE	EPA 8081B	NPW	Y	Y	
NY	4,4'-DDT	EPA 8081B	NPW	Y	Y	
NY	Aldrin	EPA 8081B	NPW	Y	Y	
NY	alpha-BHC	EPA 8081B	NPW	Y	Y	
NY	alpha-Chlordane	EPA 8081B	NPW	Y	Y	
NY	beta-BHC	EPA 8081B	NPW	Y	Y	
NY	Chlordane	EPA 8081B	NPW	Y	Y	
NY	delta-BHC	EPA 8081B	NPW	Y	Y	
NY	Dieldrin	EPA 8081B	NPW	Y	Y	
NY	Endosulfan I	EPA 8081B	NPW	Y	Y	
NY	Endosulfan II	EPA 8081B	NPW	Y	Y	
NY	Endosulfan Sulfate	EPA 8081B	NPW	Y	Y	
NY	Endrin	EPA 8081B	NPW	Y	Y	
NY	Endrin Aldehyde	EPA 8081B	NPW	Y	Y	
NY	Endrin Ketone	EPA 8081B	NPW	Y	Y	
NY	gamma-Chlordane	EPA 8081B	NPW	Y	Y	
NY	Heptachlor	EPA 8081B	NPW	Y	Y	
NY	Heptachlor Epoxide	EPA 8081B	NPW	Y	Y	
NY	Hexachlorobenzene	EPA 8081B	NPW	x	Y	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Lindane (gamma-BHC)	EPA 8081B	NPW	Y	Y	
NY	Methoxychlor	EPA 8081B	NPW	Y	Y	
NY	Mirex	EPA 8081B	NPW	x	Y	
NY	Toxaphene	EPA 8081B	NPW	Y	Y	
NY	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB	EPA 8082A	NPW	x	Y	
NY	2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	EPA 8082A	NPW	x	Y	
NY	2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128)	EPA 8082A	NPW	x	Y	
NY	2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)	EPA 8082A	NPW	x	Y	
NY	2,2',3,5'-Tetrachlorobiphenyl (PCB 44)	EPA 8082A	NPW	x	Y	
NY	2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	EPA 8082A	NPW	x	Y	
NY	2,2',5-Trichlorobiphenyl (PCB 18)	EPA 8082A	NPW	x	Y	
NY	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	EPA 8082A	NPW	x	Y	
NY	2,3',4,4'-Tetrachlorobiphenyl (PCB 66)	EPA 8082A	NPW	x	Y	
NY	PCB-1016	EPA 8082A	NPW	Y	Y	
NY	PCB-1221	EPA 8082A	NPW	Y	Y	
NY	PCB-1232	EPA 8082A	NPW	Y	Y	
NY	PCB-1242	EPA 8082A	NPW	Y	Y	
NY	PCB-1248	EPA 8082A	NPW	Y	Y	
NY	PCB-1254	EPA 8082A	NPW	Y	Y	
NY	PCB-1260	EPA 8082A	NPW	Y	Y	
NY	PCB-1262	EPA 8082A	NPW	Y	Y	
NY	PCB-1268	EPA 8082A	NPW	Y	Y	
NY	2,4,5-T	EPA 8151A	NPW	Y	x	
NY	2,4,5-TP (Silvex)	EPA 8151A	NPW	Y	x	
NY	2,4-D	EPA 8151A	NPW	Y	x	
NY	2,4-DB	EPA 8151A	NPW	Y	x	
NY	Dalapon	EPA 8151A	NPW	Y	x	
NY	Dicamba	EPA 8151A	NPW	Y	x	
NY	Dichloroprop	EPA 8151A	NPW	Y	x	
NY	Dinoseb	EPA 8151A	NPW	Y	x	
NY	1,1,1,2-Tetrachloroethane	EPA 8260C	NPW	Y	x	
NY	1,1,1-Trichloroethane	EPA 8260C	NPW	Y	x	
NY	1,1,2,2-Tetrachloroethane	EPA 8260C	NPW	Y	x	
NY	1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C	NPW	Y	x	
NY	1,1,2-Trichloroethane	EPA 8260C	NPW	Y	x	
NY	1,1-Dichloroethane	EPA 8260C	NPW	Y	x	
NY	1,1-Dichloroethene	EPA 8260C	NPW	Y	x	
NY	1,1-Dichloropropene	EPA 8260C	NPW	Y	x	
NY	1,2,3-Trichlorobenzene	EPA 8260C	NPW	Y	x	
NY	1,2,3-Trichloropropane	EPA 8260C	NPW	Y	x	
NY	1,2,4-Trichlorobenzene	EPA 8260C	NPW	Y	x	
NY	1,2,4-Trimethylbenzene	EPA 8260C	NPW	Y	x	
NY	1,2-Dibromo-3-Chloropropane (DBCP)	EPA 8260C	NPW	Y	x	
NY	1,2-Dibromoethane (EDB)	EPA 8260C	NPW	Y	x	
NY	1,2-Dichlorobenzene	EPA 8260C	NPW	Y	x	
NY	1,2-Dichloroethane	EPA 8260C	NPW	Y	x	
NY	1,2-Dichloropropane	EPA 8260C	NPW	Y	x	
NY	1,3,5-Trimethylbenzene	EPA 8260C	NPW	Y	x	
NY	1,3-Dichlorobenzene	EPA 8260C	NPW	Y	x	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	1,3-Dichloropropane	EPA 8260C	NPW	Y	x	
NY	1,4-Dichlorobenzene	EPA 8260C	NPW	Y	x	
NY	1,4-Dioxane	EPA 8260C	NPW	Y	x	
NY	1-Butanol	EPA 8260C	NPW	Y	x	
NY	2,2-Dichloropropane	EPA 8260C	NPW	Y	x	
NY	2-Butanone	EPA 8260C	NPW	Y	x	
NY	2-Chloroethyl Vinyl ether	EPA 8260C	NPW	Y	x	
NY	2-Chlorotoluene	EPA 8260C	NPW	Y	x	
NY	2-Hexanone	EPA 8260C	NPW	Y	x	
NY	4-Chlorotoluene	EPA 8260C	NPW	Y	x	
NY	4-Methyl-2-Pentanone	EPA 8260C	NPW	Y	x	
NY	Acetone	EPA 8260C	NPW	Y	x	
NY	Acrolein	EPA 8260C	NPW	Y	x	
NY	Acrylonitrile	EPA 8260C	NPW	Y	x	
NY	Benzene	EPA 8260C	NPW	Y	x	
NY	Bromobenzene	EPA 8260C	NPW	Y	x	
NY	Bromochloromethane	EPA 8260C	NPW	Y	x	
NY	Bromodichloromethane	EPA 8260C	NPW	Y	x	
NY	Bromoform	EPA 8260C	NPW	Y	x	
NY	Bromomethane	EPA 8260C	NPW	Y	x	
NY	Carbon Disulfide	EPA 8260C	NPW	Y	x	
NY	Carbon Tetrachloride	EPA 8260C	NPW	Y	x	
NY	Chlorobenzene	EPA 8260C	NPW	Y	x	
NY	Chloroethane	EPA 8260C	NPW	Y	x	
NY	Chloroform	EPA 8260C	NPW	Y	x	
NY	Chloromethane	EPA 8260C	NPW	Y	x	
NY	cis-1,2-Dichloroethene	EPA 8260C	NPW	Y	x	
NY	cis-1,3-Dichloropropene	EPA 8260C	NPW	Y	x	
NY	Cyclohexane	EPA 8260C	NPW	Y	x	
NY	Dibromochloromethane	EPA 8260C	NPW	Y	x	
NY	Dibromomethane	EPA 8260C	NPW	Y	x	
NY	Dichlorodifluoromethane	EPA 8260C	NPW	Y	x	
NY	Diethyl ether	EPA 8260C	NPW	Y	x	
NY	Diisopropyl ether	EPA 8260C	NPW	Y	x	
NY	Ethanol	EPA 8260C	NPW	Y	x	
NY	Ethyl acetate	EPA 8260C	NPW	Y	x	
NY	Ethyl Methacrylate	EPA 8260C	NPW	Y	x	
NY	Ethylbenzene	EPA 8260C	NPW	Y	x	
NY	Hexachlorobutadiene	EPA 8260C	NPW	Y	x	
NY	Isopropyl Alcohol	EPA 8260C	NPW	Y	x	
NY	Isopropylbenzene	EPA 8260C	NPW	Y	x	
NY	m+p-Xylene	EPA 8260C	NPW	Y	x	
NY	Methyl Acetate	EPA 8260C	NPW	Y	x	
NY	Methyl Cyclohexane	EPA 8260C	NPW	Y	x	
NY	Iodomethane (Methyl Iodide)	EPA 8260C	NPW	Y	x	
NY	Methyl Methacrylate	EPA 8260C	NPW	Y	x	
NY	Methyl tert-butyl ether	EPA 8260C	NPW	Y	x	
NY	Methylene Chloride	EPA 8260C	NPW	Y	x	
NY	Naphthalene	EPA 8260C	NPW	Y	x	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	n-Butylbenzene	EPA 8260C	NPW	Y	x	
NY	n-Propylbenzene	EPA 8260C	NPW	Y	x	
NY	o-Xylene	EPA 8260C	NPW	Y	x	
NY	p-Isopropyltoluene	EPA 8260C	NPW	Y	x	
NY	sec-Butylbenzene	EPA 8260C	NPW	Y	x	
NY	Styrene	EPA 8260C	NPW	Y	x	
NY	Tert-Amyl Methyl Ether (TAME)	EPA 8260C	NPW	Y	x	
NY	Tert-Butyl Alcohol	EPA 8260C	NPW	Y	x	
NY	tert-butyl Ethyl Ether	EPA 8260C	NPW	Y	x	
NY	Tert-Butylbenzene	EPA 8260C	NPW	Y	x	
NY	Tetrachloroethene	EPA 8260C	NPW	Y	x	
NY	Tetrahydrofuran	EPA 8260C	NPW	Y	x	
NY	Toluene	EPA 8260C	NPW	Y	x	
NY	Total Xylenes	EPA 8260C	NPW	Y	x	
NY	Trans-1,2-Dichloroethene	EPA 8260C	NPW	Y	x	
NY	Trans-1,3-Dichloropropene	EPA 8260C	NPW	Y	x	
NY	Trans-1,4-Dichloro-2-butene	EPA 8260C	NPW	Y	x	
NY	Trichloroethene	EPA 8260C	NPW	Y	x	
NY	Trichlorofluoromethane	EPA 8260C	NPW	Y	x	
NY	Vinyl acetate	EPA 8260C	NPW	Y	x	
NY	Vinyl Chloride	EPA 8260C	NPW	Y	x	
NY	1,1'-Biphenyl	EPA 8270D	NPW	x	Y	
NY	1,2,4,5-Tetrachlorobenzene	EPA 8270D	NPW	Y	Y	
NY	1,2,4-Trichlorobenzene	EPA 8270D	NPW	Y	Y	
NY	1,2-Dichlorobenzene	EPA 8270D	NPW	Y	Y	
NY	1,2-Diphenylhydrazine	EPA 8270D	NPW	Y	Y	
NY	1,3-Dichlorobenzene	EPA 8270D	NPW	Y	Y	
NY	1,4-Dichlorobenzene	EPA 8270D	NPW	Y	Y	
NY	1,4-Dioxane	EPA 8270D	NPW	x	Y	
NY	2,3,4,6-Tetrachlorophenol	EPA 8270D	NPW	Y	Y	
NY	2,4,5-Trichlorophenol	EPA 8270D	NPW	Y	Y	
NY	2,4,6-Trichlorophenol	EPA 8270D	NPW	Y	Y	
NY	2,4-Dichlorophenol	EPA 8270D	NPW	Y	Y	
NY	2,4-Dimethylphenol	EPA 8270D	NPW	Y	Y	
NY	2,4-Dinitrophenol	EPA 8270D	NPW	Y	Y	
NY	2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D	NPW	Y	Y	
NY	2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D	NPW	Y	Y	
NY	2-Chloronaphthalene	EPA 8270D	NPW	Y	Y	
NY	2-Chlorophenol	EPA 8270D	NPW	Y	Y	
NY	2-Methyl-4,6-dinitrophenol	EPA 8270D	NPW	Y	Y	
NY	2-Methylnaphthalene	EPA 8270D	NPW	Y	Y	
NY	2-Methylphenol	EPA 8270D	NPW	Y	Y	
NY	2-Nitroaniline	EPA 8270D	NPW	Y	Y	
NY	2-Nitrophenol	EPA 8270D	NPW	Y	Y	
NY	3,3-Dichlorobenzidine	EPA 8270D	NPW	Y	Y	
NY	3-Methylphenol	EPA 8270D	NPW	Y	Y	
NY	3-Nitroaniline	EPA 8270D	NPW	Y	Y	
NY	4-Bromophenyl phenyl ether	EPA 8270D	NPW	Y	Y	
NY	4-Chloro-3-methylphenol	EPA 8270D	NPW	Y	Y	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	4-Chloroaniline	EPA 8270D	NPW	Y	Y	
NY	4-Chlorophenyl phenyl ether	EPA 8270D	NPW	Y	Y	
NY	4-Methylphenol	EPA 8270D	NPW	Y	Y	
NY	4-Nitroaniline	EPA 8270D	NPW	Y	Y	
NY	4-Nitrophenol	EPA 8270D	NPW	Y	Y	
NY	Acenaphthene	EPA 8270D	NPW	Y	Y	
NY	Acenaphthylene	EPA 8270D	NPW	Y	Y	
NY	Acetophenone	EPA 8270D	NPW	Y	x	
NY	Aniline	EPA 8270D	NPW	Y	Y	
NY	Anthracene	EPA 8270D	NPW	Y	Y	
NY	Atrazine	EPA 8270D	NPW	Y	x	
NY	Benzaldehyde	EPA 8270D	NPW	Y	Y	
NY	Benzidine	EPA 8270D	NPW	Y	Y	
NY	Benzo(a)anthracene	EPA 8270D	NPW	Y	Y	
NY	Benzo(a)pyrene	EPA 8270D	NPW	Y	Y	
NY	Benzo(b)fluoranthene	EPA 8270D	NPW	Y	Y	
NY	Benzo(ghi)perylene	EPA 8270D	NPW	Y	Y	
NY	Benzo(k)fluoranthene	EPA 8270D	NPW	Y	Y	
NY	Benzoic Acid	EPA 8270D	NPW	Y	Y	
NY	Benzyl alcohol	EPA 8270D	NPW	Y	Y	
NY	Biphenyl	EPA 8270D	NPW	Y	x	
NY	Bis(2-chloroethoxy) methane	EPA 8270D	NPW	Y	Y	
NY	Bis(2-chloroethyl) ether	EPA 8270D	NPW	Y	Y	
NY	Bis(2-chloroisopropyl) ether	EPA 8270D	NPW	Y	Y	
NY	Bis(2-ethylhexyl) phthalate	EPA 8270D	NPW	Y	Y	
NY	Butyl Benzyl phthalate	EPA 8270D	NPW	Y	Y	
NY	Caprolactam	EPA 8270D	NPW	Y	Y	
NY	Carbazole	EPA 8270D	NPW	Y	Y	
NY	Chrysene	EPA 8270D	NPW	Y	Y	
NY	Cresols, Total	EPA 8270D	NPW	Y	x	
NY	Dibenzo(a,h)anthracene	EPA 8270D	NPW	Y	Y	
NY	Dibenzofuran	EPA 8270D	NPW	Y	Y	
NY	Diethyl phthalate	EPA 8270D	NPW	Y	Y	
NY	Dimethyl phthalate	EPA 8270D	NPW	Y	Y	
NY	Di-n-butyl phthalate	EPA 8270D	NPW	Y	Y	
NY	Di-n-octyl phthalate	EPA 8270D	NPW	Y	Y	
NY	Diphenylamine	EPA 8270D	NPW	Y	x	
NY	Fluoranthene	EPA 8270D	NPW	Y	Y	
NY	Fluorene	EPA 8270D	NPW	Y	Y	
NY	Hexachlorobenzene	EPA 8270D	NPW	Y	Y	
NY	Hexachlorobutadiene	EPA 8270D	NPW	Y	Y	
NY	Hexachlorocyclopentadiene	EPA 8270D	NPW	Y	Y	
NY	Hexachloroethane	EPA 8270D	NPW	Y	Y	
NY	Indeno(1,2,3-cd)pyrene	EPA 8270D	NPW	Y	Y	
NY	Isophorone	EPA 8270D	NPW	Y	x	
NY	Naphthalene	EPA 8270D	NPW	Y	Y	
NY	Nitrobenzene	EPA 8270D	NPW	Y	Y	
NY	N-Nitrosodimethylamine	EPA 8270D	NPW	Y	Y	
NY	N-Nitrosodi-n-propylamine	EPA 8270D	NPW	Y	Y	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	N-Nitrosodiphenylamine	EPA 8270D	NPW	Y	Y	
NY	Parathion	EPA 8270D	NPW	Y	x	
NY	Pentachlorophenol	EPA 8270D	NPW	Y	Y	
NY	Phenanthrene	EPA 8270D	NPW	Y	Y	
NY	Phenol	EPA 8270D	NPW	Y	Y	
NY	Pyrene	EPA 8270D	NPW	Y	Y	
NY	Pyridine	EPA 8270D	NPW	Y	Y	
NY	Thionazin	EPA 8270D	NPW	Y	x	
NY	Acenaphthene	EPA 8270D-SIM	NPW	Y	Y	
NY	Acenaphthylene	EPA 8270D-SIM	NPW	Y	Y	
NY	Anthracene	EPA 8270D-SIM	NPW	Y	Y	
NY	Benzo(a)anthracene	EPA 8270D-SIM	NPW	Y	Y	
NY	Benzo(a)anthracene	EPA 8270D-SIM	NPW	Y	x	
NY	Benzo(a)pyrene	EPA 8270D-SIM	NPW	Y	Y	
NY	Benzo(a)pyrene	EPA 8270D-SIM	NPW	Y	x	
NY	Benzo(b)fluoranthene	EPA 8270D-SIM	NPW	Y	Y	
NY	Benzo(b)fluoranthene	EPA 8270D-SIM	NPW	Y	x	
NY	Benzo(ghi)perylene	EPA 8270D-SIM	NPW	Y	Y	
NY	Benzo(k)fluoranthene	EPA 8270D-SIM	NPW	Y	x	
NY	Benzo(k)fluoranthene	EPA 8270D-SIM	NPW	Y	Y	
NY	Chrysene	EPA 8270D-SIM	NPW	Y	Y	
NY	Dibenzo(a,h)anthracene	EPA 8270D-SIM	NPW	Y	Y	
NY	Dibenzo(a,h)anthracene	EPA 8270D-SIM	NPW	Y	x	
NY	Fluoranthene	EPA 8270D-SIM	NPW	Y	Y	
NY	Fluorene	EPA 8270D-SIM	NPW	Y	Y	
NY	Indeno(1,2,3-cd)pyrene	EPA 8270D-SIM	NPW	Y	Y	
NY	Indeno(1,2,3-cd)pyrene	EPA 8270D-SIM	NPW	Y	x	
NY	Naphthalene	EPA 8270D-SIM	NPW	Y	Y	
NY	Phenanthrene	EPA 8270D-SIM	NPW	Y	Y	
NY	Pyrene	EPA 8270D-SIM	NPW	Y	Y	
NY	Formaldehyde	EPA 8315A	NPW	Y	x	
NY	Cyanide - Amenable, Distillation	EPA 9010C	NPW	Y	x	
NY	Cyanide, Distillation	EPA 9010C	NPW	Y	x	
NY	Total Cyanide	EPA 9012B	NPW	Y	x	
NY	Total Cyanide	EPA 9014	NPW	Y	x	
NY	Sulfide	EPA 9030B	NPW	Y	x	
NY	Phenolics	EPA 9065	NPW	Y	x	
NY	Ethane	EPA RSK-175	NPW	x	Y	
NY	Ethene	EPA RSK-175	NPW	x	Y	
NY	Methane	EPA RSK-175	NPW	x	Y	
NY	Propane	EPA RSK-175	NPW	x	Y	
NY	Nitrogen, Total Kjeldahl	Lachat 10-107-06-2	NPW	Y	x	
NY	Cyanide, Total	Lachat 10-204-00-1-X	NPW	Y	x	
NY	Color	SM 2120B	NPW	Y	x	
NY	Turbidity	SM 2130B	NPW	Y	x	
NY	Acidity	SM 2310B	NPW	Y	x	
NY	Alkalinity	SM 2320B	NPW	Y	x	
NY	Total Hardness (CaCO3)	SM 2340B	NPW	x	Y	
NY	Specific Conductance	SM 2510B	NPW	Y	x	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Total Residue	SM 2540B	NPW	Y	x	
NY	Total Dissolved Solids	SM 2540C	NPW	Y	x	
NY	Total Suspended Solids	SM 2540D	NPW	Y	x	
NY	Volatile Solids	SM 2540E	NPW	Y	x	
NY	Total Settleable Solids	SM 2540F	NPW	Y	x	
NY	Chromium VI	SM 3500 Cr B	NPW	Y	x	
NY	Sulfate	SM 4500 SO4-E	NPW	Y	x	
NY	Chloride	SM 4500 CL-E	NPW	Y	x	
NY	Cyanide, Total	SM 4500 CN E	NPW	Y	x	
NY	Fluoride Preliminary Distillation	SM 4500 F-B	NPW	Y	x	
NY	Fluoride	SM 4500 F-C	NPW	Y	x	
NY	Ammonia	SM 4500 NH3 B	NPW	Y	x	
NY	Ammonia	SM 4500 NH3-H	NPW	Y	x	
NY	Nitrogen, Total Kjeldahl	SM 4500 NH3-H	NPW	Y	x	
NY	Nitrogen, Total Kjeldahl (Distillation)	SM 4500Norg-C	NPW	Y	x	
NY	Nitrite-N	SM 4500 NO2-B	NPW	Y	x	
NY	Nitrate-N	SM 4500 NO3-F	NPW	Y	x	
NY	Nitrate-N	SM 4500 NO3-F	NPW	Y	x	
NY	Nitrate-Nitrite	SM 4500 NO3-F	NPW	Y	x	
NY	Orthophosphate	SM 4500 P-E	NPW	Y	x	
NY	Total Phosphorus (Digestion)	SM 4500 P-B	NPW	Y	x	
NY	Total Phosphorus	SM 4500 P-E	NPW	Y	x	
NY	Sulfide	SM 4500 S2-D	NPW	Y	x	
NY	Sulfate	SM 4500 SO4-E	NPW	Y	x	
NY	Biochemical Oxygen Demand	SM 5210B	NPW	Y	x	
NY	Biochemical Oxygen Demand - Carbonaceous	SM 5210B	NPW	Y	x	
NY	Chemical Oxygen Demand	SM 5220D	NPW	Y	x	
NY	Total Organic Carbon	SM 5310C	NPW	Y	x	
NY	Surfactants (MBAS)	SM 5540C	NPW	Y	x	
NY	Heterotrophic Plate Count	SM 9215B	NPW	Y	x	
NY	Coliform, Total MPN	SM 9221B	NPW	Y	x	
NY	Coliform, Fecal MPN	SM 9221C	NPW	Y	x	
NY	Coliform, Fecal MPN	SM 9221E	NPW	Y	x	
NY	Coliform, Total MF	SM 9222B	NPW	Y	x	
Ny	Titanium	EPA 6010C	NPW	x	Y	
NY	Flashpoint	EPA 1010A	SCM	Y	x	
NY	Ignitability	EPA 1030	SCM	Y	x	
NY	TCLP	EPA 1311	SCM	Y	Y	
NY	SPLP	EPA 1312	SCM	Y	x	
NY	Microwave Acid Digestion	EPA 3050B	SCM	Y	Y	
NY	Microwave Acid Digestion	EPA 3051A	SCM	Y	Y	
NY	Chromium VI Digestion	EPA 3060A	SCM	x	Y	
NY	Soxhlet Extraction	EPA 3540C	SCM	Y	Y	
NY	Microwave Acid Digestion	EPA 3546	SCM	Y	x	
NY	Microscale Solvent Extraction (MSE)	EPA 3570	SCM	x	Y	
NY	Waste Dilution	EPA 3580A	SCM	Y	Y	
NY	Purge & Trap Soil Low/High	EPA 5035A	SCM	Y	x	
NY	Aluminum	EPA 6010C	SCM	x	Y	
NY	Antimony	EPA 6010C	SCM	x	Y	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Arsenic	EPA 6010C	SCM	x	Y	
NY	Barium	EPA 6010C	SCM	x	Y	
NY	Beryllium	EPA 6010C	SCM	x	Y	
NY	Boron	EPA 6010C	SCM	x	Y	
NY	Cadmium	EPA 6010C	SCM	x	Y	
NY	Calcium	EPA 6010C	SCM	x	Y	
NY	Chromium	EPA 6010C	SCM	x	Y	
NY	Cobalt	EPA 6010C	SCM	x	Y	
NY	Copper	EPA 6010C	SCM	x	Y	
NY	Iron	EPA 6010C	SCM	x	Y	
NY	Lead	EPA 6010C	SCM	x	Y	
NY	Magnesium	EPA 6010C	SCM	x	Y	
NY	Manganese	EPA 6010C	SCM	x	Y	
NY	Molybdenum	EPA 6010C	SCM	x	Y	
NY	Nickel	EPA 6010C	SCM	x	Y	
NY	Potassium	EPA 6010C	SCM	x	Y	
NY	Selenium	EPA 6010C	SCM	x	Y	
NY	Silver	EPA 6010C	SCM	x	Y	
NY	Sodium	EPA 6010C	SCM	x	Y	
NY	Strontium	EPA 6010C	SCM	x	Y	
NY	Thallium	EPA 6010C	SCM	x	Y	
NY	Tin	EPA 6010C	SCM	x	Y	
NY	Titanium	EPA 6010C	SCM	x	Y	
NY	Vanadium	EPA 6010C	SCM	x	Y	
NY	Zinc	EPA 6010C	SCM	x	Y	
NY	Aluminum	EPA 6020A	SCM	x	Y	
NY	Antimony	EPA 6020A	SCM	x	Y	
NY	Arsenic	EPA 6020A	SCM	x	Y	
NY	Barium	EPA 6020A	SCM	x	Y	
NY	Beryllium	EPA 6020A	SCM	x	Y	
NY	Boron	EPA 6020A	SCM	x	Y	
NY	Cadmium	EPA 6020A	SCM	x	Y	
NY	Calcium	EPA 6020A	SCM	x	Y	
NY	Chromium	EPA 6020A	SCM	x	Y	
NY	Cobalt	EPA 6020A	SCM	x	Y	
NY	Copper	EPA 6020A	SCM	x	Y	
NY	Iron	EPA 6020A	SCM	x	Y	
NY	Lead	EPA 6020A	SCM	x	Y	
NY	Magnesium	EPA 6020A	SCM	x	Y	
NY	Manganese	EPA 6020A	SCM	x	Y	
NY	Molybdenum	EPA 6020A	SCM	x	Y	
NY	Nickel	EPA 6020A	SCM	x	Y	
NY	Potassium	EPA 6020A	SCM	x	Y	
NY	Selenium	EPA 6020A	SCM	x	Y	
NY	Silver	EPA 6020A	SCM	x	Y	
NY	Sodium	EPA 6020A	SCM	x	Y	
NY	Strontium	EPA 6020A	SCM	x	Y	
NY	Thallium	EPA 6020A	SCM	x	Y	
NY	Tin	EPA 6020A	SCM	x	Y	

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State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Vanadium	EPA 6020A	SCM	x	Y	
NY	Zinc	EPA 6020A	SCM	x	Y	
NY	Chromium VI	EPA 7196A	SCM	Y	x	
NY	Mercury	EPA 7471B	SCM	x	Y	
NY	Mercury	EPA 7474	SCM	x	Y	
NY	Diesel Range Organics	EPA 8015C	SCM	Y	x	
NY	Gasoline Range Organics	EPA 8015C	SCM	Y	x	
NY	Diesel Range Organics	EPA 8015D	SCM	x	Y	
NY	Ethylene glycol	EPA 8015D	SCM	x	Y	
NY	Gasoline Range Organics	EPA 8015D	SCM	x	Y	
NY	Iso-butyl Alcohol	EPA 8015D	SCM	x	Y	
NY	Tert-Butyl Alcohol	EPA 8015D	SCM	x	Y	
NY	4,4'-DDD	EPA 8081B	SCM	Y	Y	
NY	4,4'-DDE	EPA 8081B	SCM	Y	Y	
NY	4,4'-DDT	EPA 8081B	SCM	Y	Y	
NY	Aldrin	EPA 8081B	SCM	Y	Y	
NY	alpha-BHC	EPA 8081B	SCM	Y	Y	
NY	alpha-Chlordane	EPA 8081B	SCM	Y	x	
NY	beta-BHC	EPA 8081B	SCM	Y	Y	
NY	Chlordane	EPA 8081B	SCM	Y	Y	
NY	delta-BHC	EPA 8081B	SCM	Y	Y	
NY	Dieldrin	EPA 8081B	SCM	Y	Y	
NY	Endosulfan I	EPA 8081B	SCM	Y	Y	
NY	Endosulfan II	EPA 8081B	SCM	Y	Y	
NY	Endosulfan Sulfate	EPA 8081B	SCM	Y	Y	
NY	Endrin	EPA 8081B	SCM	Y	Y	
NY	Endrin Aldehyde	EPA 8081B	SCM	Y	Y	
NY	Endrin Ketone	EPA 8081B	SCM	Y	Y	
NY	gamma-Chlordane	EPA 8081B	SCM	Y	Y	
NY	Heptachlor	EPA 8081B	SCM	Y	Y	
NY	Heptachlor Epoxide	EPA 8081B	SCM	Y	Y	
NY	Lindane (gamma-BHC)	EPA 8081B	SCM	Y	Y	
NY	Methoxychlor	EPA 8081B	SCM	Y	Y	
NY	Mirex	EPA 8081B	SCM	x	Y	
NY	Toxaphene	EPA 8081B	SCM	Y	Y	
NY	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB	EPA 8082A	SCM	x	Y	
NY	2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	EPA 8082A	SCM	x	Y	
NY	2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128)	EPA 8082A	SCM	x	Y	
NY	2,2',3,4,4',5,5'-Heptacholorbiphenyl (PCB 180)	EPA 8082A	SCM	x	Y	
NY	2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183)	EPA 8082A	SCM	x	Y	
NY	2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)	EPA 8082A	SCM	x	Y	
NY	2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187)	EPA 8082A	SCM	x	Y	
NY	2,2',3,4,5,5'-Hexachlorobiphenyl (PCB 141)	EPA 8082A	SCM	x	Y	
NY	2,2',3,4,5'-Pentachlorobiphenyl (PCB 87)	EPA 8082A	SCM	x	Y	
NY	2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151)	EPA 8082A	SCM	x	Y	
NY	2,2',3,5'-Tetrachlorobiphenyl (PCB 44)	EPA 8082A	SCM	x	Y	
NY	2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153)	EPA 8082A	SCM	x	Y	
NY	2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)	EPA 8082A	SCM	x	Y	
NY	2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	EPA 8082A	SCM	x	Y	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	2,2',5-Trichlorobiphenyl (PCB 18)	EPA 8082A	SCM	x	Y	
NY	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	EPA 8082A	SCM	x	Y	
NY	2,3',4,4'-Tetrachlorobiphenyl (PCB 66)	EPA 8082A	SCM	x	Y	
NY	2,3-Dichlorobiphenyl (PCB 5)	EPA 8082A	SCM	x	Y	
NY	2,4'-Trichlorobiphenyl (PCB 31)	EPA 8082A	SCM	x	Y	
NY	2-Chlorobiphenyl (PCB 1)	EPA 8082A	SCM	x	Y	
NY	PCB-1016	EPA 8082A	SCM	Y	Y	
NY	PCB-1221	EPA 8082A	SCM	Y	Y	
NY	PCB-1232	EPA 8082A	SCM	Y	Y	
NY	PCB-1242	EPA 8082A	SCM	Y	Y	
NY	PCB-1248	EPA 8082A	SCM	Y	Y	
NY	PCB-1254	EPA 8082A	SCM	Y	Y	
NY	PCB-1260	EPA 8082A	SCM	Y	Y	
NY	PCB-1262	EPA 8082A	SCM	Y	Y	
NY	PCB-1268	EPA 8082A	SCM	Y	Y	
NY	PCBs in Oil	EPA 8082A	SCM	Y	x	
NY	2,4,5-T	EPA 8151A	SCM	Y	x	
NY	2,4,5-TP (Silvex)	EPA 8151A	SCM	Y	x	
NY	2,4-D	EPA 8151A	SCM	Y	x	
NY	2,4-DB	EPA 8151A	SCM	Y	x	
NY	Dalapon	EPA 8151A	SCM	Y	x	
NY	Dicamba	EPA 8151A	SCM	Y	x	
NY	Dichloroprop	EPA 8151A	SCM	Y	x	
NY	Dinoseb	EPA 8151A	SCM	Y	x	
NY	MCPA	EPA 8151A	SCM	Y	x	
NY	MCPP	EPA 8151A	SCM	Y	x	
NY	1,1,1,2-Tetrachloroethane	EPA 8260C	SCM	Y	x	
NY	1,1,1-Trichloroethane	EPA 8260C	SCM	Y	x	
NY	1,1,2,2-Tetrachloroethane	EPA 8260C	SCM	Y	x	
NY	1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C	SCM	Y	x	
NY	1,1,2-Trichloroethane	EPA 8260C	SCM	Y	x	
NY	1,1-Dichloroethane	EPA 8260C	SCM	Y	x	
NY	1,1-Dichloroethene	EPA 8260C	SCM	Y	x	
NY	1,1-Dichloropropene	EPA 8260C	SCM	Y	x	
NY	1,2,3-Trichloropropane	EPA 8260C	SCM	Y	x	
NY	1,2,4-Trichlorobenzene	EPA 8260C	SCM	Y	x	
NY	1,2,4-Trimethylbenzene	EPA 8260C	SCM	Y	x	
NY	1,2-Dibromo-3-Chloropropane (DBCP)	EPA 8260C	SCM	Y	x	
NY	1,2-Dibromoethane (EDB)	EPA 8260C	SCM	Y	x	
NY	1,2-Dichlorobenzene	EPA 8260C	SCM	Y	x	
NY	1,2-Dichloroethane	EPA 8260C	SCM	Y	x	
NY	1,2-Dichloropropane	EPA 8260C	SCM	Y	x	
NY	1,3,5-Trimethylbenzene	EPA 8260C	SCM	Y	x	
NY	1,3-Dichlorobenzene	EPA 8260C	SCM	Y	x	
NY	1,3-Dichloropropane	EPA 8260C	SCM	Y	x	
NY	1,4-Dichlorobenzene	EPA 8260C	SCM	Y	x	
NY	1,4-Dioxane	EPA 8260C	SCM	Y	x	
NY	2,2-Dichloropropane	EPA 8260C	SCM	Y	x	
NY	2-Butanone	EPA 8260C	SCM	Y	x	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	2-Chloroethyl Vinyl ether	EPA 8260C	SCM	Y	x	
NY	2-Chlorotoluene	EPA 8260C	SCM	Y	x	
NY	2-Hexanone	EPA 8260C	SCM	Y	x	
NY	4-Chlorotoluene	EPA 8260C	SCM	Y	x	
NY	4-Methyl-2-Pentanone	EPA 8260C	SCM	Y	x	
NY	Acetone	EPA 8260C	SCM	Y	x	
NY	Acrolein	EPA 8260C	SCM	Y	x	
NY	Acrylonitrile	EPA 8260C	SCM	Y	x	
NY	Benzene	EPA 8260C	SCM	Y	x	
NY	Bromobenzene	EPA 8260C	SCM	Y	x	
NY	Bromochloromethane	EPA 8260C	SCM	Y	x	
NY	Bromodichloromethane	EPA 8260C	SCM	Y	x	
NY	Bromoform	EPA 8260C	SCM	Y	x	
NY	Bromomethane	EPA 8260C	SCM	Y	x	
NY	Carbon Disulfide	EPA 8260C	SCM	Y	x	
NY	Carbon Tetrachloride	EPA 8260C	SCM	Y	x	
NY	Chlorobenzene	EPA 8260C	SCM	Y	x	
NY	Chloroethane	EPA 8260C	SCM	Y	x	
NY	Chloroform	EPA 8260C	SCM	Y	x	
NY	Chloromethane	EPA 8260C	SCM	Y	x	
NY	cis-1,2-Dichloroethene	EPA 8260C	SCM	Y	x	
NY	cis-1,3-Dichloropropene	EPA 8260C	SCM	Y	x	
NY	Cyclohexane	EPA 8260C	SCM	Y	x	
NY	Dibromochloromethane	EPA 8260C	SCM	Y	x	
NY	Dibromomethane	EPA 8260C	SCM	Y	x	
NY	Dichlorodifluoromethane	EPA 8260C	SCM	Y	x	
NY	Diethyl ether	EPA 8260C	SCM	Y	x	
NY	Ethyl acetate	EPA 8260C	SCM	Y	x	
NY	Ethyl Methacrylate	EPA 8260C	SCM	Y	x	
NY	Ethylbenzene	EPA 8260C	SCM	Y	x	
NY	Hexachlorobutadiene	EPA 8260C	SCM	Y	x	
NY	Isopropylbenzene	EPA 8260C	SCM	Y	x	
NY	m+p-Xylene	EPA 8260C	SCM	Y	x	
NY	Methyl Acetate	EPA 8260C	SCM	Y	x	
NY	Methyl Cyclohexane	EPA 8260C	SCM	Y	x	
NY	Methyl tert-butyl ether	EPA 8260C	SCM	Y	x	
NY	Methylene Chloride	EPA 8260C	SCM	Y	x	
NY	Naphthalene	EPA 8260C	SCM	Y	x	
NY	n-Butanol	EPA 8260C	SCM	Y	x	
NY	n-Butylbenzene	EPA 8260C	SCM	Y	x	
NY	n-Propylbenzene	EPA 8260C	SCM	Y	x	
NY	o-Xylene	EPA 8260C	SCM	Y	x	
NY	p-Isopropyltoluene	EPA 8260C	SCM	Y	x	
NY	sec-Butylbenzene	EPA 8260C	SCM	Y	x	
NY	Styrene	EPA 8260C	SCM	Y	x	
NY	Tert-Butyl Alcohol	EPA 8260C	SCM	Y	x	
NY	Tert-Butylbenzene	EPA 8260C	SCM	Y	x	
NY	Tetrachloroethene	EPA 8260C	SCM	Y	x	
NY	Toluene	EPA 8260C	SCM	Y	x	

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Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Total Xylenes	EPA 8260C	SCM	Y	x	
NY	Trans-1,2-Dichloroethene	EPA 8260C	SCM	Y	x	
NY	Trans-1,3-Dichloropropene	EPA 8260C	SCM	Y	x	
NY	Trans-1,4-Dichloro-2-butene	EPA 8260C	SCM	Y	x	
NY	Trichloroethene	EPA 8260C	SCM	Y	x	
NY	Trichlorofluoromethane	EPA 8260C	SCM	Y	x	
NY	Vinyl Acetate	EPA 8260C	SCM	Y	x	
NY	Vinyl Chloride	EPA 8260C	SCM	Y	x	
NY	1,1'-Biphenyl	EPA 8270D	SCM	x	Y	
NY	1,2,4,5-Tetrachlorobenzene	EPA 8270D	SCM	Y	Y	
NY	1,2,4-Trichlorobenzene	EPA 8270D	SCM	Y	Y	
NY	1,2-Dichlorobenzene	EPA 8270D	SCM	Y	Y	
NY	1,2-Diphenylhydrazine	EPA 8270D	SCM	Y	Y	
NY	1,3-Dichlorobenzene	EPA 8270D	SCM	Y	Y	
NY	1,4-Dichlorobenzene	EPA 8270D	SCM	Y	Y	
NY	2,3,4,6-Tetrachlorophenol	EPA 8270D	SCM	Y	Y	
NY	2,4,5-Trichlorophenol	EPA 8270D	SCM	Y	Y	
NY	2,4,6-Trichlorophenol	EPA 8270D	SCM	Y	Y	
NY	2,4-Dichlorophenol	EPA 8270D	SCM	Y	Y	
NY	2,4-Dimethylphenol	EPA 8270D	SCM	Y	Y	
NY	2,4-Dinitrophenol	EPA 8270D	SCM	Y	Y	
NY	2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D	SCM	Y	x	
NY	2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D	SCM	Y	x	
NY	2-Chloronaphthalene	EPA 8270D	SCM	Y	Y	
NY	2-Chlorophenol	EPA 8270D	SCM	Y	Y	
NY	2-Methyl-4,6-dinitrophenol	EPA 8270D	SCM	Y	Y	
NY	2-Methylnaphthalene	EPA 8270D	SCM	Y	Y	
NY	2-Methylphenol	EPA 8270D	SCM	Y	Y	
NY	2-Nitroaniline	EPA 8270D	SCM	Y	Y	
NY	2-Nitrophenol	EPA 8270D	SCM	Y	Y	
NY	3,3-Dichlorobenzidine	EPA 8270D	SCM	Y	Y	
NY	3-Methylphenol	EPA 8270D	SCM	Y	Y	
NY	3-Nitroaniline	EPA 8270D	SCM	Y	Y	
NY	4-Bromophenyl phenyl ether	EPA 8270D	SCM	Y	Y	
NY	4-Chloro-3-methylphenol	EPA 8270D	SCM	Y	Y	
NY	4-Chlorophenyl phenyl ether	EPA 8270D	SCM	Y	Y	
NY	4-Methylphenol	EPA 8270D	SCM	Y	Y	
NY	4-Nitroaniline	EPA 8270D	SCM	Y	Y	
NY	4-Nitrophenol	EPA 8270D	SCM	Y	Y	
NY	Acenaphthene	EPA 8270D	SCM	Y	Y	
NY	Acenaphthylene	EPA 8270D	SCM	Y	Y	
NY	Acetophenone	EPA 8270D	SCM	Y	Y	
NY	Aniline	EPA 8270D	SCM	Y	Y	
NY	Anthracene	EPA 8270D	SCM	Y	Y	
NY	Atrazine	EPA 8270D	SCM	Y	x	
NY	Benzaldehyde	EPA 8270D	SCM	Y	Y	
NY	Benzidine	EPA 8270D	SCM	Y	Y	
NY	Benzo(a)anthracene	EPA 8270D	SCM	Y	Y	
NY	Benzo(a)pyrene	EPA 8270D	SCM	Y	Y	

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Benzo(b)fluoranthene	EPA 8270D	SCM	Y	Y	
NY	Benzo(ghi)perylene	EPA 8270D	SCM	Y	Y	
NY	Benzo(k)fluoranthene	EPA 8270D	SCM	Y	Y	
NY	Benzoic Acid	EPA 8270D	SCM	Y	Y	
NY	Benzyl alcohol	EPA 8270D	SCM	Y	Y	
NY	Biphenyl	EPA 8270D	SCM	Y	x	
NY	Bis(2-chloroethoxy) methane	EPA 8270D	SCM	Y	Y	
NY	Bis(2-chloroethyl) ether	EPA 8270D	SCM	Y	Y	
NY	Bis(2-chloroisopropyl) ether	EPA 8270D	SCM	Y	Y	
NY	Bis(2-ethylhexyl) phthalate	EPA 8270D	SCM	Y	Y	
NY	Butyl Benzyl phthalate	EPA 8270D	SCM	Y	Y	
NY	Caprolactam	EPA 8270D	SCM	Y	Y	
NY	Carbazole	EPA 8270D	SCM	Y	Y	
NY	Chrysene	EPA 8270D	SCM	Y	Y	
NY	Dibenzo(a,h)anthracene	EPA 8270D	SCM	Y	Y	
NY	Dibenzofuran	EPA 8270D	SCM	Y	Y	
NY	Diethyl phthalate	EPA 8270D	SCM	Y	Y	
NY	Dimethyl phthalate	EPA 8270D	SCM	Y	Y	
NY	Di-n-butyl phthalate	EPA 8270D	SCM	Y	Y	
NY	Di-n-octyl phthalate	EPA 8270D	SCM	Y	Y	
NY	Diphenylamine	EPA 8270D	SCM	Y	x	
NY	Fluoranthene	EPA 8270D	SCM	Y	Y	
NY	Fluorene	EPA 8270D	SCM	Y	Y	
NY	Hexachlorobenzene	EPA 8270D	SCM	Y	Y	
NY	Hexachlorobutadiene	EPA 8270D	SCM	Y	x	
NY	Hexachlorocyclopentadiene	EPA 8270D	SCM	Y	Y	
NY	Hexachloroethane	EPA 8270D	SCM	Y	Y	
NY	Indeno(1,2,3-cd)pyrene	EPA 8270D	SCM	Y	Y	
NY	Isophorone	EPA 8270D	SCM	Y	Y	
NY	Naphthalene	EPA 8270D	SCM	Y	Y	
NY	Nitrobenzene	EPA 8270D	SCM	Y	Y	
NY	N-Nitrosodimethylamine	EPA 8270D	SCM	Y	Y	
NY	N-Nitrosodi-n-propylamine	EPA 8270D	SCM	Y	Y	
NY	N-Nitrosodiphenylamine	EPA 8270D	SCM	Y	Y	
NY	Parathion	EPA 8270D	SCM	Y	x	
NY	Pentachloronitrobenzene	EPA 8270D	SCM	Y	Y	
NY	Pentachlorophenol	EPA 8270D	SCM	Y	Y	
NY	Phenanthrene	EPA 8270D	SCM	Y	Y	
NY	Phenol	EPA 8270D	SCM	Y	Y	
NY	Pyrene	EPA 8270D	SCM	Y	Y	
NY	Pyridine	EPA 8270D	SCM	Y	Y	
NY	Acenaphthene	EPA 8270D-SIM	SCM	Y	x	
NY	Acenaphthylene	EPA 8270D-SIM	SCM	Y	x	
NY	Anthracene	EPA 8270D-SIM	SCM	Y	x	
NY	Benzo(a)anthracene	EPA 8270D-SIM	SCM	Y	x	
NY	Benzo(a)pyrene	EPA 8270D-SIM	SCM	Y	x	
NY	Benzo(b)fluoranthene	EPA 8270D-SIM	SCM	Y	x	
NY	Benzo(ghi)perylene	EPA 8270D-SIM	SCM	Y	x	
NY	Benzo(k)fluoranthene	EPA 8270D-SIM	SCM	Y	x	

Alpha Analytical

Summary of Certification

State	Parameter	Method	Matrix	Alpha Westboro	Alpha Mansfield	Notes
NY	Chrysene	EPA 8270D-SIM	SCM	Y	x	
NY	Dibenzo(a,h)anthracene	EPA 8270D-SIM	SCM	Y	x	
NY	Fluoranthene	EPA 8270D-SIM	SCM	Y	x	
NY	Fluorene	EPA 8270D-SIM	SCM	Y	x	
NY	Indeno(1,2,3-cd)pyrene	EPA 8270D-SIM	SCM	Y	x	
NY	Naphthalene	EPA 8270D-SIM	SCM	Y	x	
NY	Phenanthrene	EPA 8270D-SIM	SCM	Y	x	
NY	Pyrene	EPA 8270D-SIM	SCM	Y	x	
NY	Cyanide - Amenable, Distillation	EPA 9010C	SCM	Y	x	
NY	Cyanide, Distillation	EPA 9010C	SCM	Y	x	
NY	Cyanide, Total	EPA 9012B	SCM	Y	x	
NY	Cyanide, Total	EPA 9014	SCM	Y	x	
NY	Extractable Organic Halides (EOX)	EPA 9023	SCM	Y	x	
NY	Sulfate	EPA 9038	SCM	Y	x	
NY	pH	EPA 9040C	SCM	Y	x	
NY	pH	EPA 9045D	SCM	Y	x	
NY	Specific Conductance	EPA 9050A	SCM	Y	x	
NY	Total Organic Carbon	EPA 9060	SCM	x	Y	
NY	Total Phenolics	EPA 9065	SCM	Y	x	
NY	Oil & Grease	EPA 9071B	SCM	Y	x	
NY	Chloride	EPA 9251	SCM	Y	x	
NY	Total Organic Carbon	Lloyd Kahn	SCM	x	Y	

APPENDIX C

HEALTH & SAFETY PLAN

July 2019

SITE SPECIFIC
HEALTH & SAFETY PLAN

Hudson Valley Regional Airport Site
18 Griffith Way
Town of Wappinger
Dutchess County, New York
NYSDEC Site #314129

Prepared by:

C.T. MALE ASSOCIATES
12 Raymond Avenue
Poughkeepsie, New York 12603
(845) 454-4400

C.T. Male Associates Project No: 18.8090

SITE SPECIFIC HEALTH & SAFETY PLAN
HUDSON VALLEY REGIONAL AIRPORT SITE
18 GRIFFITH WAY, TOWN OF WAPPINGER
DUTCHESS COUNTY, NEW YORK

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1.0 GENERAL

1.1 Overview

This Health and Safety Plan (HASP) has been prepared for use during implementation of a Site Characterization Investigation (SCI) at the Hudson Valley Regional Airport Site ("the Site") located at 18 Griffith Way in the Town of Wappinger, Dutchess County, New York.

A designated Health and Safety Officer (HSO) will be responsible for implementing this HASP during the completion of the SCI field work. All persons or parties who enter the work area (support zone, decontamination zone or exclusion zone) must review, sign and comply with this HASP. A partial list of individuals authorized to enter the exclusion zone at the Site is presented in Section 13.0 of this HASP. Others may be added to the list as needed. A copy of this HASP will be maintained at the Site throughout the duration of the project. A complete description of the SCI work is presented in the SC Work Plan. A brief description of the proposed scope of work is outlined below:

<u>Remedial Investigation:</u>

- Collection of shallow soil and sediment samples for classification and submission for laboratory analyses;
- Collection of surface water samples for submission for laboratory analyses;
- Collection of groundwater samples from existing wells on-Site for laboratory analyses;
- Collection of drinking water samples from existing wells for laboratory analysis;
- Oversee the drilling of soil borings and installation of groundwater monitoring wells;
- Collection of subsurface soil samples from the soil borings for classification and submission for laboratory analyses;
- Installation and development of newly installed monitoring wells;
- Groundwater purging and sampling for laboratory analyses from newly installed and existing monitoring wells;

- Collection of quality control samples of source, aqueous and solid materials for laboratory analysis;
- Sampling locations and monitoring well location and elevation survey;
- Other unforeseen environmental conditions which may be encountered during the SCI work

1.2 Contact Names & Numbers

For this project, the following project contacts have been assigned.

DUTCHESS COUNTY CONTACTS:

EHS MANAGER:	Robert H. Balkind, P.E., Commissioner Dutchess County Department of Public Works 626 Dutchess Turnpike Poughkeepsie, New York 12603	 845.486.2085 (O)

CONSULTANT CONTACTS:

CONSULTING ENGINEER:	C.T. Male Associates 12 Raymond Avenue Poughkeepsie, New York 12603	518.786.7400
	Jim McIver, Managing Geologist	845.454.4400 (O) 845.594.1788 (C)
	Kirk Moline PG, Project Manager	518.786.7502 (O) 518.265.1708 (C)
	Nancy Garry, PE, CSP Health & Safety Officer	 518.786.7541 (O)
	Jon Dippert, HSO Designee	518.786.7563 (O) 518.469.1183 (C)

STATE CONTACTS:

NYSDEC	Matthew Hubbicki, Project Manager 625 Broadway Albany, NY 12233-7014	 518.402.9605 (O)
NYSDOH	Angela Martin, Project Manager Empire State Plaza	

	Corning Tower, Room 1787 Albany, NY 12237	518.473.4671 (O)

EMERGENCY PHONE NUMBERS:

PERSONAL INJURY OR EMERGENCY:	MidHudson Regional Hospital 241 North Road Poughkeepsie, New York 12601 (approx. 20 minutes)	845.483.5000
FIRE DEPARTMENT:	Emergency	911
	New Hackensack Fire Company 217 Myers Corners Road Wappinger Falls, New York 12590	845.297.3897
POLICE:	Emergency	911
	Dutchess County Sheriff 150 N. Hamilton Street Poughkeepsie, New York 12601	845.486.3800
NYS Police	Emergency	911
	NYS Police Department 18 Middlebush Road Wappinger Falls, New York 12590	845.298.0398
UPSTATE NEW YORK REGIONAL POISON CONTROL CENTER:	University Hospital Upstate Medical University SUNY Health Science Center 750 East Adams Street Syracuse, New York 13201	(800) 222-1222
NATIONAL RESPONSE CENTER:	c/o United States Coast Guard (G-OPF) 2100 2nd Street, Southwest - Room 2611 Washington, DC 20593-0001	(800) 424-8802
NYSDEC SPILL HOTLINE:		(800) 457-7362

2.0 HEATLH AND SAFETY PERSONNEL

The Health and Safety Officer (HSO) will be responsible for implementation of the HASP and the delegation of health and safety duties. The HSO will coordinate the resolution of safety issues that arise during site work. When field operations require only Level D protection, it will not be necessary for the HSO to be present on-site at all times. When the HSO is not present on-site, a designee will be authorized to perform the duties of the HSO, and the designee will be responsible for implementation of the HASP.

The HSO or designee has authority to stop work upon their determination of an imminent safety hazard, emergency situation or other potentially dangerous situations (e.g. weather conditions). Authorization to resume work will be issued by the HSO.

3.0 SITE LOCATION AND DESCRIPTION

The Hudson Valley Regional Airport Site is addressed as 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. Route 376 transects the northeastern portion of the Site. Jackson Road transects the southwestern portion of the Site.

The majority of the Site consists of an active airport that is owned and operated by Dutchess County. Two (2) closed landfills occupy northern portions of the Site. The landfills were reportedly used for the disposal of municipal wastes and have been designated as inactive hazardous waste sites by the NYS Department of Environmental Conservation (DEC). Two (2) hangars located on the southeastern portion of the Site, and currently occupied by Associated Aircraft Group, have been designated as inactive hazardous waste sites in relation to the discharge of spent solvents and petroleum to the Site's media.

The Site's topography is relatively flat within portions of the Site containing the aircraft runways and Site buildings. The topography slopes downwards towards Wappinger Creek on northern and western portions of the Site. The topography slopes sharply upwards on the northeastern portion of the Site containing the former Dutchess County landfill.

Public water and sewer are not available to the Site. Wappinger Creek is located adjacent to the Site's northern and western property boundaries. The Creek flows in a general southwesterly direction towards the Hudson River. An unnamed water body is located on the southeastern portion of the Site adjacent north of the hangars occupied by the Associated Aircraft Group. The water body appears to discharge into an unnamed creek that flows in a general northeasterly direction to low lying areas to the northeast of the Site.

4.0 POTENTIAL SITE CONTAMINANTS

Contaminants that may be encountered during the SCI include volatile and semi-volatile organic compounds, solvents, PCBs, metals, and per- and polyfluoroalkyl substances (PFAS) in soil, sediment, surface water, drinking water and groundwater.

5.0 HAZARD ASSESSMENT

5.1 General

The hazard assessment, use of specific protective equipment, and monitoring associated with each field work task of the SCI to be conducted at the subject Site are presented in following subsections.

For this project, C.T. Male will be subcontracting portions of the SCI activities. Each subcontractor will be responsible for developing and implementing a site specific health and safety plan for their activities, for protection of their employees, and use of personal protective equipment. The subcontractor will also be responsible for developing and following their own Respiratory Protection Program, as applicable.

5.2 Media Sampling

5.2.1 Soil, Sediment, Surface Water, Drinking Water and Groundwater Sampling

Soil, sediment, surface water, drinking water and groundwater sampling are planned for the Site. The potential hazards to personnel during this work are dermal contact. Level D protection should be sufficient to protect against dermal contact during handling of soils, sediment and water. If organic vapors are present at the action levels described in Section 5.4, on the basis of organic vapor monitoring of the area during the work, it may be necessary to upgrade to Level C respiratory protection.

5.3 Subsurface Work

Exploratory test borings (including the installation of monitoring wells) into soils are planned for the site. The potential hazards to personnel during this work are dermal contact. Level D protection should be sufficient to protect against dermal contact during drilling of and/or handling of the subsurface soils and groundwater. If organic vapors are present at the action levels described in Section 5.4, on the basis of organic vapor monitoring of the area during the work, it may be necessary to upgrade to Level C respiratory protection.

5.4 Air Monitoring

During ground intrusive activities, the ambient air in the work area will be monitored with a photoionization detection meter (total volatile compounds – MiniRAE 2000 or 3000) prior to the start of work and periodically as conditions warrant. If a concentration of 10 ppm (sustained for 5 minutes) of total volatile compounds is detected within the work area on the instrument, relative to an isobutylene standard (used to calibrate the instrument), work will cease immediately and the workers shall shut down equipment and leave the area immediately. The level of personal protective equipment (PPE) protection will be evaluated prior to continuing work. If a PPE upgrade to Level C is required, it will include: a half face air purifying respirator equipped with combination organic vapor and particulate cartridges for 10-15 ppm exposure levels; and a full-face air purifying respirator for greater than 15 ppm to less than 50 ppm exposure levels, prior to continuing work. If a concentration greater than 50 ppm is encountered, work will cease immediately and the situation will be evaluated prior to continuation of work. Table 1 summarizes the action levels relative to the required respiratory protection.

Table 1
C.T. Male Action Levels & Required Respiratory Protection

Action Level	Level of PPE	Type of Respiratory Protection
0-10 parts per million	Level D	No respiratory protection
10-15 parts per million	Level C	Negative pressure half-face respirator
15-50 parts per million	Level C	Positive pressure full-face respirator
Greater than 50	Cease Work	Evaluate work procedures

-Facial hair is not permitted while wearing most respirators.

-Workers required to wear a respirator must have a minimum of OSHA 40 Hour training with current medical monitoring and fit test documentation.

5.5 Community Air Monitoring Plan

A site-specific Community Air Monitoring Plan (CAMP) will be followed for ground intrusive activities at the project site on the basis of the New York State Department of Health Generic Community Air Monitoring Plan, in with DER-10 Appendix 1A (Appendix A).

The intent of the CAMP is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-Site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The CAMP is not intended for use in establishing action levels for worker respiratory protection. The CAMP will monitor the air for dust and volatile organic compound vapors at the downwind perimeter of the work area. The action levels specified below will trigger increased monitoring, corrective actions to abate emissions, and/or work shutdown.

<u>Dust Monitoring</u>

Three (3) real-time particulate monitors capable of continuously measuring concentrations of particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) will be utilized. The instruments will be placed at temporary monitoring stations based on the prevailing wind direction each day, one upwind and two downwind of the designated work areas. The particulate monitoring instruments will be capable of displaying the short-term exposure limit (STEL) or 15-minute averaging period. The instrument readings will be field checked and/or the instruments will be equipped with telemetry units capable of transmitting the instrument readings to a designated manned computer work station at C.T. Male Associates' office. The dust monitors will be configured so that a warning will be transmitted to the computer work station should the STEL be exceeded. In the event that the STEL is exceeded, the person will promptly contact the field technician to determine the cause of the exceedance and the necessary corrective action. At the end of each day, the readings for each instrument will be downloaded to a PC and retained for future reference and reporting.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

Volatile Organic Compound Air Monitoring

C.T. Male Associates will monitor for VOCs at the downwind perimeter of the immediate work areas on a periodic basis with a MiniRAE 3000 handheld VOC monitor or equal. Upwind concentrations will also be measured at the start of the work day and periodically thereafter to evaluate the Site's background conditions. This unit is capable of displaying the STEL (15-minute averaging period) which will be field checked and recorded for comparison to the NYSDOH Generic Community Air Monitoring Plan action levels for VOCs, as listed below. The VOC readings (STEL) will be manually recorded for future reference and reporting. Instantaneous readings will be recorded periodically throughout the work day.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. Work activities will then be evaluated to determine the source and engineering controls required to reduce/eliminate organic vapors.

5.6 Hazard Identification and Control

The following Table 2 presents generalized hazards potentially involved with the tasks to be completed on this project. The table identifies general procedures to follow to prevent or reduce accident, injury or illness. Any worker on-site who identifies a potential hazard must report the condition to the HSO or designee, and initiate control of the hazardous condition.

Table 2
Potential Hazards and Control

Potential Hazard	Control
Vehicular and Aircraft Traffic	1. Wear safety vest when vehicular/aircraft hazards exist. 2. Use cones, flags, barricades, and caution tape to define work area. 3. Use vehicle to block work area. 4. Use vehicle caution lights in all areas within the Site. 5. Contact local and/or airport police for high traffic situations. 6. Airport personnel will need to approve location or activities each day and each time field personnel move to a new sampling location with the day's activities.
Slip, Trip, and Fall Protection	1. Assess work area to determine if there is a potential for falling. 2. Make sure work area is neat and tools are staged in one general area. 3. Wear steel-toe boots with adequate tread and always watch where the individual is walking. Carry flashlight when walking in poorly lighted areas.
Inclement Weather	1. Stop outdoor work during electrical storms and other extreme weather conditions such as extreme heat or cold temperatures.

Table 2 Potential Hazards and Control	
Potential Hazard	**Control**
	2. Take cover indoors or in vehicle. 3. Listen to local forecasts for warnings about specific weather hazards such as tornadoes, hurricanes, and flash floods.
Utility Lines Contact	1. Contact UFPO to have utility lines marked prior to any underground excavation, trenching or drilling. UFPO must be contacted at least 72 hours prior to work. 2. Refer to site drawings for utility locations. 3. Manually dig 3 to 5 feet below grade and 5 feet on each side of utility marked to avoid breaking utility lines.
Noise	1. Wear hearing protection when equipment such as a drill rig, excavator, jackhammer, or other heavy equipment is operating on-site. 2. Wear hearing protection in the vicinity of operating aircraft. 3. Wear hearing protection whenever you need to raise your voice above normal conversational speech due to a loud noise source; as this much noise indicates the need for protection. 4. Hearing protection is required when measured sound exceeds 85 decibels (dB) where employees stand or conduct work.
Electrical Shock	1. Maintain appropriate distance between heavy equipment and overhead utilities; 20 foot minimum clearance from power lines; and 10 foot minimum clearance from shielded power lines. 2. Contact local underground utility locating service prior to penetrating the ground surface.
Physical Injury	1. Wear hard hats and safety glasses at all times when on-site. 2. Maintain visual contact with equipment and aircraft operators and wear orange safety vest when heavy equipment and aircraft are operating on-site. 3. Avoid loose clothing when working around rotary equipment. 4. Keep hands and feet away from drilling augers/casing/samplers and excavation equipment tracks/tires. 5. Test emergency shut-off switches on drill rigs and excavation equipment regularly.

Table 2 Potential Hazards and Control	
Potential Hazard	**Control**
Back Injury	1. Use a mechanical lifting device or a lifting aid where appropriate. 2. Ensure the route is free of obstructions. 3. Bend at the knees and use leg muscles when lifting. 4. Use the buddy system if lifting heavy or awkward objects. 5. Do not twist or jerk your body when lifting.
Heat Stress	1. Increase water intake while working. 2. Avoid excessive alcohol intake the night before working in heat stress situations. 3. Increase number of rest breaks as necessary, and rest in a shaded area. 4. Watch for signs and symptoms of heat exhaustion and fatigue. 5. Rest in cool, dry areas. 6. In the event of heat stress or heat stroke, bring the victim to a cool environment and call 911.
Cold Stress	1. Wear cotton, wool or synthetics (polypropylene) undergarments to absorb perspiration from the body. 2. Wear additional layers of light clothing as needed for warmth. The layering effect holds in air, trapping body heat, and some layers could be removed as the temperature rises during the day. 3. Pay close attention to body signals and feelings (hypothermia symptoms), especially to the extremities. Correct any problem indicators by breaking from the work activity and moving to a rest area to warm up and add additional clothing. 4. Increase water intake while working. 5. Avoid excessive alcohol intake the night before working in cold conditions. 6. Increase the number of rest breaks as necessary, and rest in a warm area. 7. In the event of hypothermia or frost bite, bring the victim to a warm environment and call 911.
Fire Control	1. Smoking is not allowed on-site. 2. Keep flammable liquids in closed containers. 3. Isolate flammable and combustible materials from ignition sources.

Table 2 Potential Hazards and Control	
Potential Hazard	**Control**
	4. Keep fire extinguisher nearby and use only if deemed safe.
Media Sampling (water, soil, sediment, etc.)	1. Wear appropriate PPE to avoid skin, eye, and inhalation contact with contaminated media. 2. Stand upwind to minimize possible inhalation exposure, especially when opening monitoring wells or closed containers/vessels. 3. Conduct air monitoring, whenever necessary, to determine level of respiratory protection. 4. If necessary, employ engineering controls to assist in controlling chemical vapors. 5. When collecting samples on or near water bodies, wear a life jacket and employ the buddy system. 6. When collecting samples from water bodies, assess water conditions and the water current and ensure that the sampling vessel is stabilized.
Cleaning Equipment	1. Wear appropriate PPE to avoid skin and eye contact with Alconox or other cleaning materials. 2. Stand upwind to minimize possible inhalation exposure. 3. Properly dispose of spent chemical cleaning solutions and rinse accordingly.
Deer Ticks	1. Wear pants and long sleeve shirts. 2. Wear tick repellant coated pants and long sleeve shirts. 3. Use tick repellent. 4. Perform personal body checks for the presence of ticks. 5. Notify the Health and Safety Officer immediately if you have been bitten by a tick and contact your physician.
Note: A first aid kit and fire extinguisher will be located in the C.T. Male company vehicle.	

Response actions to personal exposure from on-site contaminants include skin contact, eye contact, inhalation, ingestion, and puncture or laceration. The recommended response actions are presented in Section 11.2.

6.0 TRAINING

Site specific training of workers and personnel will be conducted and provided by the HSO or designee prior to any on-site activity. The training will specifically address the activities, procedures, monitoring and equipment for the site operations. It will include area and facility layout, hazards, emergency services (police, hospital, fire, etc.), and review of this HASP. Questions by workers, field personnel, etc. will be addressed at this time. In addition, separate training may be provided by the Hudson Valley Regional Airport.

Workers and personnel conducting and/or supervising the project must have attended and successfully completed a 24- or 40-Hour Health and Safety Training Course for Hazardous Waste Operations and an annual 8-hour Refresher Course, as applicable. Workers must take part in an employer medical surveillance program in accordance with OSHA 1910.120 requirements, including that the workers have had a medical physical within one (1) year prior to the date the work begins and that they are physically able to wear a respirator.

Documentation of training and medical surveillance will be submitted to the HSO or designee prior to the start of any on-site work. A copy of the training certificates for C.T. Male personnel are maintained at C.T. Male's place of business and are available on request.

7.0 SITE ACCESS

The SCI will be conducted within and at the inside perimeter of the Site boundaries. Since the Site is an active airport, there is secure and controlled access to the Site. There is a possibility that workers from the airport or other services at the airport will be present at the time of the work. The work onsite will need to adhere to airport and FAA regulations. As such, the work area and exclusion zone will be considered as the following, dependent on the investigative tasks performed, and the regulations and operating procedures for the airport.

- Caution tape and/or cones will be used to delineate an approximate 10-30-foot square around each test boring location. All work and equipment will remain within the designated work area/exclusion zone until completion of the test boring and installation of the monitoring well.

- Caution tape or another appropriate means designated by airport personnel, will be used to delineate an approximate 10-foot square around each surface water, sediment sampling location, and each soil sampling location not originating from a test boring. All work and equipment will remain within the designated work area/exclusion zone until completion of the sampling. If a boat is utilized to aid in the collection of the surface water and sediment samples, then the boat will be considered as the designated work area/exclusion zone.

Only OSHA trained individuals who are qualified to do the work and have read and signed this Site specific HASP will be allowed within the work/exclusion zone. The HSO or designee will be responsible for limiting access to unauthorized individuals.

The Contamination Reduction Zone (decontamination area), and Support Zone (clean area, everywhere else) will be established outside the Exclusion Zone, as necessary. The exclusion, contamination reduction, and support zone during the SCI work have been identified and designated as follows:

<u>Work/Exclusion Zone</u> - The location of the work/exclusion zone will be determined in the field prior to the start of work and will vary depending on the work activities conducted. For the most part, the work/exclusion zone is anticipated to be defined

with caution tape and/or cones, and a boat, if used (see above). Only authorized persons with proper training and protective gear will be allowed to enter the work/exclusion zone.

Contamination Reduction Zone – If applicable, this zone will generally be a 30'± x 30'± area, marked off with stakes, colored flagging, cones, or equal method, containing the decontamination pad. The location will be determined in the field prior to the start of work and will vary depending on the area(s) the work is being conducted. This zone is where decontamination of personnel and equipment will take place, as necessary, on the basis of the work being performed.

Support Zone - Area outside of the contamination reduction zone; not including the work/exclusion zone. Unauthorized or untrained individuals must remain in this zone.

8.0 PERSONAL PROTECTION

8.1 Level of Protection

Based on an evaluation of the potential hazards, the minimum level of protection to be worn by workers during implementation of the SCI activities is defined as Level D protection, and will be controlled by the HSO or designee.

The minimum level D protective equipment will consist of field clothes, rubber gloves **(NITRILE and/or PVC ONLY)**, hard hats, safety glasses, and safety boots (steel-toe preferred). As appropriate, this level of protection may be modified to include protective suits **(NOT TYVEK)**, coveralls, leg chaps, or face shield for additional protection. Both full-face and half-face air purifying respirators should be readily available. Appropriate combination organic vapor and particulate cartridge filters will be available at the Site to use, if necessary, with the air purifying respirators.

If required, level C protective equipment will consist of the items listed for Level D protection with the added protection of full-face, air purifying (organic vapor and particulate) respirator, chemical resistant clothing **(NOT TYVEK)**, inner and outer chemically resistant gloves (i.e. nitrile and/or PVC), and chemical resistant safety overboots.

Level B is not anticipated, but if required, level B protective equipment will consist of the items listed for Level D protection except a self-contained breathing apparatus (SCBA) will be worn dependent on the level of contaminants present in the work zone, and protective suits **(NOT TYVEK)** will be required. When Site conditions warrant the need for level B protective equipment, work will cease and the project will be re-evaluated to determine the necessity for employing engineering controls to reduce or eliminate the potential contaminants of concern.

8.2 Safety Equipment

Basic emergency and first aid equipment will be available at an area within the Support Zone clearly marked and available or within C.T. Male's company vehicle (if allowed onsite). This shall include a first aid kit, fire extinguisher (if allowed by airport procedures), supply of potable water, soap and towels. The HSO or designee shall be equipped with a cellular phone in case of emergencies. If the cellular phone is not available, or is inoperable, a phone in the Hudson Valley Regional Airport facility or airport security personnel will be used.

9.0 COMMUNICATIONS

The HSO or designee will be equipped with a cellular phone in case of emergencies. If the cellular phone is not available, or is inoperable, or not allowed within certain places within the airport investigation area, a phone within the Hudson Valley Regional Airport facility phone will be used, or airport security. The HSO or designee shall notify the C.T. Male Project Manager as soon as safely possible in the event of an accident, injury or emergency action.

Hand signals for certain work tasks will be employed, as necessary, and the buddy system will be employed during drilling and installation of monitoring wells, and during open surface water and open water sediment sampling activities.

10.0 DECONTAMINATION PROCEDURES

10.1 Personnel Decontamination Procedures

Decontamination procedures will be carried out by all personnel leaving the Work/Exclusion Zone (except under emergency evacuation). The amount of decontamination performed will be dependent on the level of personal protection currently being worn within the exclusion zone.

1. Do not remove respiratory protection, if donned, until all steps have been completed.
2. Clean outer protective gloves and outer boots, if worn, with water (preferably with a pressurized washer) over designated wash tubs in the exclusion zone to remove the gross amount of contamination.
3. Deposit equipment used (tools, sampling devices, and containers) at designated drop stations - on plastic drop sheets or in plastic lined containers.
4. Rinse outer boots if worn and gloves with clean water in designated rinse tubs. Remove outer boots if worn and gloves and deposit in designated area to be determined in the field for use the next day or when necessary. If disposable outer boots are worn, remove and discard in designated container.
5. Remove hard hat & safety glasses, rinse with clean water as necessary and deposit in designated area for use the next day or when necessary.
6. Remove protective suit, if worn, and discard in designated container. Remove respirator at this time, if used; wash and rinse with clean water. Organic vapor and particulate cartridges, when used, will be replaced daily. Used cartridges will be discarded in the designated waste container. Remove inner gloves and discard in designated container.

10.2 Equipment and Sample Containers Decontamination

All decontamination will be completed by personnel in protective gear appropriate for the level of protection determined by the site HSO or designee. Manual sampling equipment including scoops, hand augers, and shovels which come into contact with the site's soils and sediment, will be cleaned with a tap water/detergent wash and a bottled water rinse. The sampling equipment will be decontaminated after each sample is collected at the Contaminant Reduction Zone (Decontamination Station). The sampling equipment wash and rinse water will be captured in plastic pails or tubs and ultimately transferred to labeled DOT 17H approved 55-gallon open top steel drums and staged on-site at a secure location.

Drill rig equipment (i.e., casing, drill rods, bits, core samplers) which comes into contact with the site's soils will be decontaminated with a high pressure/hot water wash and/or other methods within the Contaminant Reduction Area. The cleaning will be performed at the completion of each boring location. Equipment decontamination wastes will be transferred to labeled DOT 17H approved 55-gallon open top steel drums and staged on-site at a secure location.

Larger equipment (i.e., drill rig) which comes into contact with the site's soils will be decontaminated with a high pressure/hot water wash and/or other methods within a decontamination pad. The decontamination procedure will focus on portions of the equipment that has come into contact with the site's soils such as the tires and tracks. The cleaning will be performed prior to the equipment leaving the site. Equipment decontamination wastes will be transferred to labeled DOT 17H approved 55-gallon open top steel drums and staged on-site at a secure location.

If a boat is utilized for collection of surface water/sediment samples, portions of the boat that comes into contact with water will be decontaminated at the shoreline by scrubbing with a tap water/detergent wash and a distilled water rinse. The wash/rinse water will be allowed to discharge to the shoreline.

Exterior surfaces of sample containers will be wiped clean with disposable paper towels in the decontamination zone and transferred to a clean cooler for transportation or shipment to the analytical laboratory. Sample identities will be noted and checked off against the chain-of-custody record. The disposable paper towels will be placed in the designated disposal container and disposed of as solid waste.

11.0 EMERGENCY RESPONSE PROCEDURES

THE PROJECT EMERGENCY COORDINATOR IS:

Site Health and Safety Officer (HSO)	Jonathan Dippert

The following standard emergency procedures will be used by on-site personnel. The Project Manager and HSO shall be notified of any on-site emergencies and be responsible for assuring that the appropriate procedures are followed.

11.1 Personal Injury

Emergency first aid shall be administered on-site as deemed necessary and only by a trained individual, if available at the site. If a trained individual is not available on-site, decontaminate, if feasible, and transport individual to nearest medical facility (MidHudson Regional Hospital). The HSO will supply medical data sheets to appropriate medical personnel and be responsible for completing the incident report. If the HSO is injured or controlling the emergency situation, the medical data sheets are available in Appendix B of this Health and Safety Plan.

11.2 Personal Exposure

The recommended response to worker exposure from contaminants on-site includes the following:

SKIN CONTACT: Use generous amounts of soap and water. Wash/rinse affected area thoroughly, then provide appropriate medical attention, as necessary.

EYE CONTACT: Wash eyes thoroughly with potable water supply provided on site. Eyes should be rinsed for at least 15 minutes subsequent to chemical contamination. Provide medical attention, as necessary.

INHALATION: Move worker to fresh air and outside of the work zone and/or, if necessary, decontaminate and transport to hospital (MidHudson Regional Hospital). If respirator use is implemented at the time of inhalation, worker must not remove respirator until completely away from the work zone.

INGESTION: Decontaminate, if feasible, and transport to hospital (MidHudson Regional Hospital).

PUNCTURE WOUND OR
LACERATION: Provide first aid at the site and if wound needs medical attention, decontaminate, if feasible, and transport to hospital (MidHudson Regional Hospital).

If the affected worker is exposed to contaminants on-site and the injury or accident prevents decontamination of the individual, the emergency responders must be notified of this condition and the exposure must be kept to a minimum.

11.3 Potential or Actual Fire or Explosion

Immediately evacuate area in the event of potential or actual fire or explosion. Notify the local Fire and Police Departments, and other appropriate emergency response groups (i.e., airport security/police), as listed in Section 1.2. Perform off-site decontamination and contain wastes for proper disposal. If a fire or explosion occurs, all on-site personnel must meet in the designated area of the site (established by the HSO or designee) for an accurate head count.

11.4 Equipment Failure

Should there be any equipment failure, breakdown, etc. the Project Manager and HSO shall be contacted immediately. The Project Manager or the HSO will make every effort to replace or repair the equipment in a timely manner.

11.5 Spill Response

The site HSO or designee shall initiate a corrective action program with the subcontractors in the event of an accidental release of a hazardous material, suspected hazardous material or petroleum. The HSO or designee will act as the Emergency Coordinator with the subcontractors for the purposes of: spill prevention; identifying releases; implementing clean up measures; and notification of appropriate personnel.

The corrective action program will be implemented by the HSO and subcontractor to effectively control and minimize any impact accidental releases may have to the environment.

Effective control measures will include:

- Preliminary assessment of the release.
- Control of the release source.
- Containment of the released material.
- Effective clean-up of the released material.

Potential sources of accidental releases include: hydraulic oil spills or petroleum leaks from heavy equipment; cooling oils (potentially PCB containing) for electrical equipment handling and cleaning; and spills from drums, vats, vessels, and tanks. The HSO/Emergency Coordinator in conjunction with the subcontractor shall respond to an accidental release in the following manner:

- Identify the character, source, amount and area affected by the release.
- Have subcontractor take all reasonable steps to control the release.
- Notify facility personnel.
- Notify the NYSDEC Spill Hotline at 1-800-457-7362 if required.
- Contain the release with sorbent material which should include speedi-dry, spill socks and sorbent pads.
- Prevent the release from entering sensitive receptors (i.e., catch basins and surface water) using the specified sorbent material or sandbags.
- Coordinate cleanup of the released material.
- Oversee proper handling and storage of contaminated material for disposal.

At no time should personal health or safety be compromised or jeopardized in an attempt to control a release. All health and safety measures as outlined in this HASP should be adhered to.

12.0 ADDITIONAL WORK PRACTICES

Workers will be expected to adhere to the established safety practices. Work on the project will be conducted according to established protocol and guidelines for the safety and health of all involved. The following will be adhered to:

- Employ the buddy system when possible, and for those work tasks which require it. Establish and maintain communications.
- Minimize contact with potentially contaminated soil, sediment and water.
- Employ disposable items when possible to minimize risks during decontamination and possible cross-contamination during sample handling.
- Smoking, eating, or drinking after entering the work zone and before decontamination will not be allowed.
- Avoid heat and other work stress related to wearing personal protective equipment. Take breaks as necessary and drink plenty of fluids to prevent dehydration.
- Withdrawal from a suspected or actual hazardous situation to reassess procedures is the preferred course of action.
- The removal of facial hair (except mustaches) prior to working on-site will be required to allow for a proper respiratory face piece fit.
- The Project Manager, the HSO, and sampling personnel shall maintain records recording daily activities, meetings, facts, incidents, data, etc. relating to the project. These records will remain at the project site during the full duration of the project so that replacement personnel may add information while maintaining continuity. These daily records will become part of the permanent project file.

13.0 AUTHORIZATIONS

Personnel authorized to enter the exclusion zone at the Hudson Valley Regional Airport Site at 18 Griffith Way in the Town of Wappinger, Dutchess County, New York while operations are being conducted must be certified by the HSO. Authorization will involve completion of appropriate training courses and review and sign off of this HASP.

Personnel authorized to perform work on-site are as follows:

1. Kirk Moline C.T. Male
3. Steve Bieber C.T. Male
4. Jim McIver C.T. Male
5. Rosaura Andujar-McNeil C.T. Male
6. Jon Dippert C.T. Male
7. Nancy Garry C.T. Male
8. Dan Achtyl C.T. Male
9. Austin Lewandowski C.T. Male
10. Dan King C.T. Male
11. Keegan Donovan C.T. Male
12. Cliff Bondi C.T. Male
13. Robert Koslosky C.T. Male
14. Chris Ormsby C.T. Male
15. Brittany Winslow C.T. Male
16. Ryan Hubbard C.T. Male
17. David Lent C.T. Male

14.0 MEDICAL DATA SHEET

This medical data sheet will be completed by all on-site personnel and will be kept on-site during the duration of the project. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

PROJECT: Site Characterization Investigation to be conducted at the Hudson Valley Regional Airport Site located at 18 Griffith Way, Town of Wappinger, Dutchess County, New York.

Name ___________________________ Home Telephone _______________________

Address ____

Emergency Contact ____

Drug or Other Allergies ____

Particular Sensitivities ____

Do You Wear Contact Lenses ____

Provide a Checklist of Previous Illness or Exposure to Hazardous Chemicals

____

What Medications Are You Presently Using ___________________________________

____

Do You Have Any Physical or Medical Restrictions _____________________________

____

Are You Qualified to Wear Respirator (Provide Fit Test Results)__________________

Name, Address, and Telephone Number of Personal Physician:

____

____

____

15.0 FIELD TEAM REVIEW

Each field team member shall sign this section after site specific training is completed and before being permitted to work on-site.

I have read and understood this Site Specific Health and Safety Plan, and I will comply with the provisions contained therein.

PROJECT: Site Characterization Investigation
Hudson Valley Regional Airport Site
18 Griffith Way
Town of Wappinger
Dutchess County, New York

Name: Printed	Signature	Date

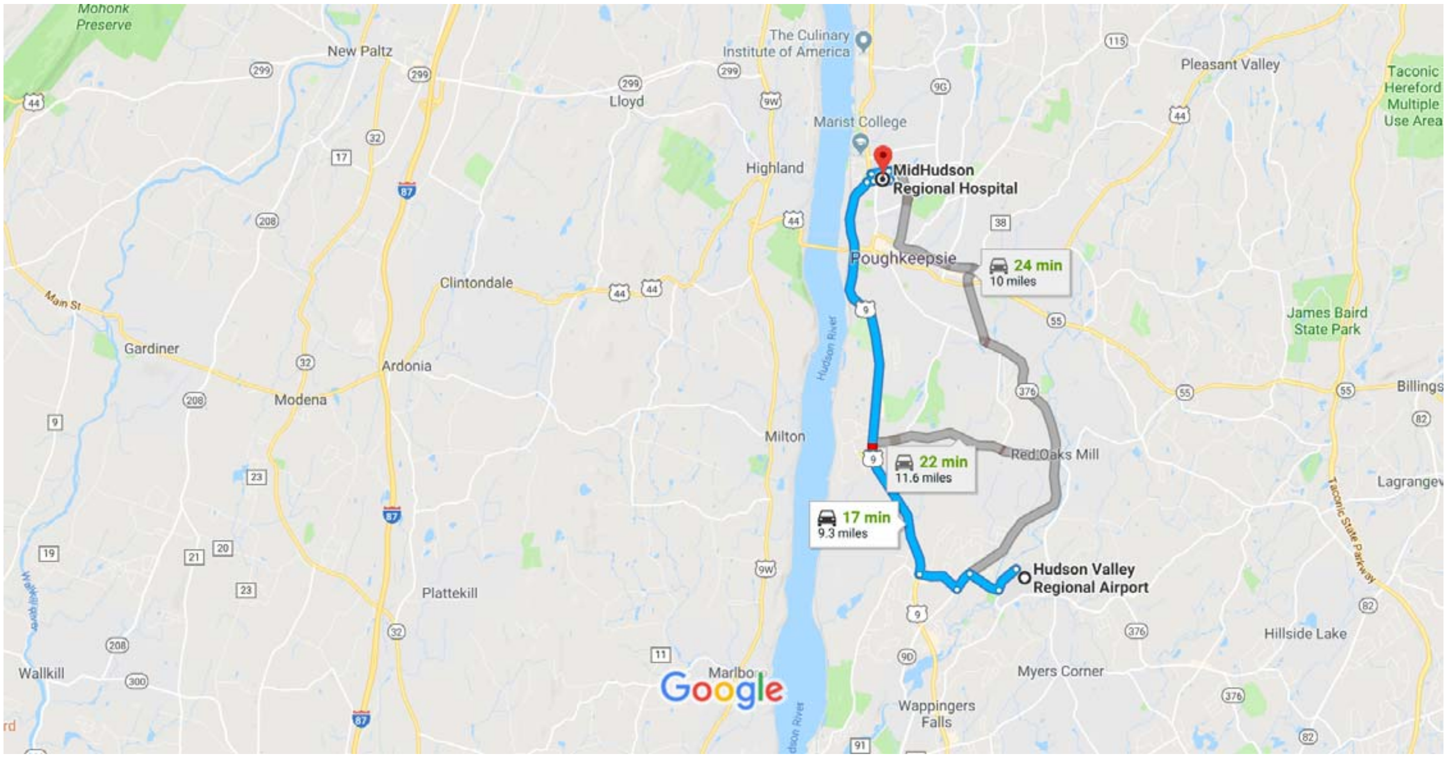
FIGURE 1

MAP SHOWING ROUTE TO MIDHUDSON REGIONAL HOSPITAL

Google Maps

Hudson Valley Regional Airport to MidHudson Regional Hospital, 241 North Rd, Poughkeepsie, NY 12601

Drive 9.3 miles, 17 min



Map data ©2018 Google 2 mi

Hudson Valley Regional Airport

263 New Hackensack Rd, Wappingers Falls, NY 12590

Take Jackson Rd and Spring Rd to U.S. 9 N in Poughkeepsie

5 min (2.0 mi)

1. Head southwest on Citation Dr toward Jackson Rd

0.4 mi

2. Turn right onto Jackson Rd

0.5 mi

3. Turn left onto Vassar Rd

0.3 mi

4. Turn right onto Spring Rd

0.7 mi

5. Turn right onto U.S. 9 N

10 min (6.6 mi)

Take North Rd, W Cedar St and Garden St Exd to your destination in Fairview

3 min (0.7 mi)

6. Turn right onto NY-9G N

0.1 mi

APPENDIX A

DER-10, APPENDIX A
NYSDOH GENERIC CAMP

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

<u>VOC Monitoring, Response Levels, and Actions</u>

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

<u>Particulate Monitoring, Response Levels, and Actions</u>

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

EXHIBIT 1

NYSDEC COMMENT LETTER DATED AUGUST 21, 2018 and APRIL 12, 2019

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau C
625 Broadway, 11th Floor, Albany, NY 12233-7014
P: (518) 402-9662 I F: (518) 402-9679
www.dec.ny.gov

Via e-mail and US Mail

August 21, 2018

Honorable Marcus J. Molinaro
County Executive, Dutchess County
22 Market Street
Poughkeepsie, NY 12601
countyexcec@dutchessny.gov

Mr. James M. Fedorchak, Esq.
County Attorney
22 Market Street
Poughkeepsie, NY 12601
jfedorchak@dutchessny.gov

RE: Site Characterization Work Plan and Records Search Report
Off-site Groundwater Well Monitoring & Survey
Dutchess County Airport/Hudson Valley Regional Site
State Superfund Site No. 314129
Wappinger (T), Dutchess County

Dear Mr. Molinaro and Mr. Fedorchak:

The New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health have reviewed the Site Characterization Work Plan (SCWP) and Records Search Reports for Dutchess County Airport (Hudson Valley Regional Airport) Site received June 1, 2018 and prepared by C. T. Male Associates on behalf of Dutchess County. The following modifications are requested for the SCWP:

1. The sample analysis must include volatile organic compounds, semi-volatile organic compounds, PCBs, pesticides, and inorganics (metals) including cyanide, in addition to the analysis for 1,4 dioxane and PFAS (21 compounds).

2. Pursuant to the executed Order, the Department also requires Dutchess County to perform follow-up PFAS monitoring of off-site potable wells along Route 376, New Hackensack Road, and Hackensack Heights Road that contained between 20 parts per trillion (ppt) and 70 ppt of PFOA and PFOS. See the attached letters. Provide a supplemental work plan and survey to address any other off-site potable wells.

3. Sampling for 1,4 dioxane and PFAS (21 compounds) should also be conducted for the Wappinger Supply Wells located to the northeast and southwest of the site on the enclosed maps. Provide a supplemental work plan and survey to address these off-site supply wells.

4. Page 4, the NYSDOH Project Manager needs to be updated from Krista Anders to:

   Angela Martin
   Public Health Specialist
   Bureau of Environmental Exposure Investigation
   New York State Department of Health
   Center for Environmental Health
   Corning Tower, Rm 1787
   Albany, NY 12237
   P: 518.473.4671 | F: 518.402.7859
   angela.martin@health.ny.gov

5. Page 5, please include brief status of the documented chlorinated spent solvent spill on the former Flagship Hangar Site (NYSDEC Site No. 314101).

6. Page 6, remove statement about EPA's site-specific action level for PFOA and PFOS of 1 ppm in soil.

7. Page 5 and page 7, Section 3.2 is listed twice. Please adjust and fix those section numbers.

8. Page 9, Item No. 6, include site numbers for former IBM Hangar Site No. 314078 and Flagship Hangar Site No. 314101.

9. Page 10, Item No. 7, please indicate if the water is consumed as a potable drinking water well or other purposes in the Airport Maintenance Building. Also, clarify if this well has ever been monitored or has any kind of treatment, POET, etc.

10. Section 3.2.3 Soil Sampling, 2nd paragraph, the text should indicate what soil samples are being taken, such as surface soil (0 to 2 inches) or subsurface soil (2 to 12 inches and deeper), and update the Field Sampling Plan for consistency.

11. Section 3.2.6 Stormwater Sampling and 3.2.7 Sediment and Surface Water Sampling, expand on how stormwater, surface water, and sediment samples will be collected in the text or reference in the Field Sampling Plan for details.

12. The Field Sampling Plan and the QAPP will need to be updated to be consistent with the SCWP (i.e., drinking water is not included, see comment no. 2 and 3).

In accordance with the Order on Consent and 6 NYCRR 375-1.6(d), please indicate within 15 days whether you will modify the SCWP and submit the modified work plan within 30 days. The modified SCWP should be submitted to the parties and in the formats specified in the Order on Consent, except for NYSDOH, please copy the following:

Christine Vooris, P.E. (electronic copy only)
New York State Department of Health
Bureau of Environmental Exposure Investigation
Empire State Plaza
Corning Tower Room 1787
Albany, N.Y. 12237
christine.vooris@health.ny.gov

Please contact me or the Department's project manager, Mr. Matthew Hubicki at your earliest convenience to discuss the next steps. Please be advised that the Department requires seven-day notice prior to the start of field work and requires an updated schedule on the proposed SCWP sampling.

Sincerely,

George W Heitzman

George W, Heitzman, P.E.
Assistant Director
Division of Environmental Remediation

Enclosures

ec: w/enclosures
Robert Balkind, Dutchess County Airport (rbalkind@dutchessny.gov)
Richard Thurston, Wappinger Supervisor (rthurston@townofwappinger.us)
Nancy Garry, CT Male (n.garry@ctmale.com)
Kirk Moline, CT Male (k.moline@ctmale.com)
Jim McIver, CT Male (j.mciver@ctmale.com)
Garry Bowitch, Bowitch & Coffey, LLC (bowitch@bcalbany.com)
Anil Vaidian, M.D., Dutchess Co. Commissioner Behavior & Health (avaidian@dutchessny.gov)
Marie Brule, Dutchess County Health (mbrule@dutchessny.gov)
Kelly Turturro, Regional Director, NYSDEC New Paltz Region 3
NYSDOH Bureau Director (beei@health.ny.gov)
Maureen Schuck, NYSDOH
Christine Westerman, NYSDOH MARO (Christine.westerman@health.ny.gov)
Angela Martin, NYSDOH
Matthew Hubicki, NYSDEC
George Heitzman/File

NEW YORK STATE OF OPPORTUNITY. | Department of Health

ANDREW M. CUOMO
Governor

HOWARD A. ZUCKER, M.D., J.D.
Commissioner

SALLY DRESLIN, M.S., R.N.
Executive Deputy Commissioner

June 4, 2018

LOCATION C

[redacted]

The Dutchess County Department of Behavioral & Community Health and New York State Department of Health (DOH) tested your regulated drinking water system for perfluorinated compounds (PFCs) including perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). This testing was done as follow-up to three previous sampling events that showed levels of PFOA and PFOS at concentrations greater than 20 parts per trillion (ppt) but less than the U.S. Environmental Protection Agency (EPA) health advisory level of 70 ppt (link provided below).

The results of this most recent sampling event on February 27, 2018 indicate that the concentrations of PFOA and PFOS have remained below 70 ppt. No actions are necessary to reduce exposure to PFOA and PFOS in the drinking water supply. Complete testing results are enclosed. Note that the standard battery of testing for PFOA and PFOS, as per U.S. EPA Method 537, includes four additional PFCs, which may have been detected in your system. DOH recommends that you make these testing results available to all water consumers as you would other testing results.

Please note that **DOH will be discontinuing PFOA and PFOS sampling efforts at your water system**. Based on the results of all previous sampling events, **DOH recommends that you continue to monitor your finished water for these compounds on an annual basis using a New York State Environmental Laboratory Accreditation Program (ELAP) certified laboratory.** The NYS ELAP has certified several laboratories to do the analysis for PFOA and PFOS. Costs and guidance for sampling can be obtained from these approved laboratories. For your convenience, attached is a list of ELAP approved laboratories for PFOA and PFOS.

If this monitoring shows that levels change by more than 20 ppt from the current levels, but remain below 70 ppt, you should consult with DOH about changing the monitoring frequency. If at any time levels increase to concentrations greater than 70 ppt, DOH should be informed immediately and consistent with EPA's health advisory level, it is recommended that consumers do not drink this water.

For your information, the newly formed New York State Drinking Water Quality Council (DWQC) has been established and will provide a recommendation to the DOH on a maximum contaminant level (MCL) for PFOA and PFOS. We expect their evaluation to be completed in the near future.

If you have any questions, please contact Dutchess County Department of Behavioral & Community Health at 845-486-3404, or the New York State Department of Health Bureau of Water Supply Protection at 518-402-7650; email: bpwsp@health.ny.gov.

Additional information is available at the U.S. EPA's website: https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.

Sincerely,

Lloyd R Wilson, Ph. D.
Director
Bureau of Water Supply Protection

cc: Christine Westerman, NYSDOH
Dutchess County Department of Behavioral & Community Health
Maureen Schuck, NYSDOH
[redacted]

New York State Environmental Laboratory Approval Program (ELAP):
Laboratories Certified to Perform PFOA and PFOS Testing
March 2018

NAME	CITY	STATE
EUROFINS EATON ANALYTICAL, INC	MONROVIA	CA
VISTA ANALYTICAL LABORATORY	EL DORADO HILLS	CA
TESTAMERICA INC. - SACRAMENTO	WEST SACRAMENTO	CA
BSK ASSOCIATES	FRESNO	CA
REGIONAL WATER AUTHORITY	NEW HAVEN	CT
PACE ANALYTICAL SERVICES, LLC - ORMOND BEACH FL	ORMOND BEACH	FL
SGS NORTH AMERICA INC. - ORLANDO	ORLANDO	FL
AMERICAN WATER CENTRAL LABORATORY	BELLEVILLE	IL
EUROFINS EATON ANALYTICAL, INC	SOUTH BEND	IN
CON-TEST ENVIRONMENTAL LAB	EAST LONGMEADOW	MA
ALPHA ANALYTICAL	WESTBOROUGH	MA
SGS NORTH AMERICA INC. - WILMINGTON	WILMINGTON	NC
SUFFOLK COUNTY WATER AUTHORITY LABORATORY	HAUPPAUGE	NY
NYSDOH ORG ANALYTICAL CHEMISTRY LAB	ALBANY	NY
MAXXAM ANALYTICS INTERNATIONAL CORPORATION	MISSISSAUGA	ON
EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL LLC	LANCASTER	PA
GEL LABORATORIES LLC	CHARLESTON	SC
TESTAMERICA INC. - SOUTH BURLINGTON	SOUTH BURLINGTON	VT
ALS ENVIRONMENTAL - KELSO	KELSO	WA

New York State Department of Health
Wadsworth Center

Biggs Laboratory
PO Box 509
Albany, NY 12201
CLIA# 33D0654341

David Axelrod Institute
120 New Scotland Avenue
Albany, NY 12208
CLIA# 33D2005937

Griffin Laboratory
5668 State Farm Road
Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1800013100-SR-1**
Report Date: **04/24/2018**
Report retrieved via NYSDOH Health Commerce System by czd01 on 04/26/2018

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Grab/Collection Date: 03/27/2018 10:35
Date received: 03/28/2018 11:45

[redacted]
Chlorinated: Yes

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. David Spink
Contact: Nicole Cairns 518-473-0323

Sample Id: EHS1800013100-01

Sample Type: Finished Water

Received Temperature (°C): **7.9**

Lab Tracking Id: KITCHEN

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 3/29/2018 Analysis Date: 4/6/2018

Perfluoroheptanoic acid (PFHpA):	**5.46 ng/L; Test associated with high surrogate recovery; positive results may be biased high.**	
Perfluorooctanoic acid (PFOA):	**4.43 ng/L; Test associated with high surrogate recovery; positive results may be biased high.**	NELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L; Test associated with high surrogate recovery; positive results may be biased high.**	
Perfluorobutanesulfonic acid (PFBS):	**4.93 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**26.9 ng/L**	
Perfluorooctanesulfonic acid (PFOS):	**9.59 ng/L**	NELAP

NELAP: National Environmental Laboratory Approval Program Accreditation

END OF REPORT

The Laboratory Director authorizes the release of this report. The results in this report relate only to the sample submitted to the laboratory.

LOCATION C

New York State Department of Health
Wadsworth Center

Biggs Laboratory
PO Box 509
Albany, NY 12201
CLIA# 33D0654341

David Axelrod Institute
120 New Scotland Avenue
Albany, NY 12208
CLIA# 33D2005937

Griffin Laboratory
5668 State Farm Road
Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1800013098-SR-1**
Report Date: **04/24/2018**
Report retrieved via NYSDOH Health Commerce System by czd01 on 04/26/2018

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Grab/Collection Date: 03/27/2018 10:25
Date received: 03/28/2018 11:45

[redacted]

Chlorinated: No

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. David Spink
Contact: Nicole Cairns 518-473-0323

Sample Id: EHS1800013098-01

Sample Type: Raw Water

Received Temperature (°C): **7.0**

Lab Tracking Id: RAW 2

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 3/29/2018 Analysis Date: 4/6/2018

Perfluoroheptanoic acid (PFHpA):	**<2.00 ng/L; Test associated with high surrogate recovery; positive results may be biased high.**	
Perfluorooctanoic acid (PFOA):	**<2.00 ng/L; Test associated with high surrogate recovery; positive results may be biased high.**	NELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L**	
Perfluorobutanesulfonic acid (PFBS):	**<1.77 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**<1.89 ng/L**	
Perfluorooctanesulfonic acid (PFOS):	**<1.91 ng/L; Test associated with low surrogate recovery; results may be biased low.**	NELAP

NELAP: National Environmental Laboratory Approval Program Accreditation

END OF REPORT

The Laboratory Director authorizes the release of this report. The results in this report relate only to the sample submitted to the laboratory.

LOCATION C

New York State Department of Health
Wadsworth Center

Biggs Laboratory
PO Box 509
Albany, NY 12201
CLIA# 33D0654341

David Axelrod Institute
120 New Scotland Avenue
Albany, NY 12208
CLIA# 33D2005937

Griffin Laboratory
5668 State Farm Road
Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1800013096-SR-1**
Report Date: **04/24/2018**
Report retrieved via NYSDOH Health Commerce System by czd01 on 04/26/2018

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Grab/Collection Date: 03/27/2018 10:20
Date received: 03/28/2018 11:45

[redacted]
Chlorinated: No

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. David Spink
Contact: Nicole Cairns 518-473-0323

Sample Id: EHS1800013096-01

Sample Type: Raw Water

Received Temperature (°C): **8.0**

Lab Tracking Id: RAW 1

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 3/29/2018 Analysis Date: 4/6/2018

Perfluoroheptanoic acid (PFHpA):	**6.31 ng/L; Test associated with high surrogate recovery; positive results may be biased high.**	
Perfluorooctanoic acid (PFOA):	**5.09 ng/L**	NELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L**	
Perfluorobutanesulfonic acid (PFBS):	**5.53 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**30.3 ng/L**	
Perfluorooctanesulfonic acid (PFOS):	**14.7 ng/L; Test associated with low surrogate recovery; results may be biased low.**	NELAP

NELAP: National Environmental Laboratory Approval Program Accreditation

END OF REPORT

The Laboratory Director authorizes the release of this report. The results in this report relate only to the sample submitted to the laboratory.

NEW YORK STATE OF OPPORTUNITY. | Department of Health

ANDREW M. CUOMO
Governor

HOWARD A. ZUCKER, M.D., J.D.
Commissioner

SALLY DRESLIN, M.S., R.N.
Executive Deputy Commissioner

February 21, 2018

[redacted]

Re: Private Well Water Sampling Results
Per- and Polyfluoroalkyl Substances
314129 Dutchess County Airport
Wappinger Falls, Dutchess County

[redacted]

The New York State Departments of Health and Environmental Conservation (collectively referred to as “the agencies”) recently collected a water sample from the private well on your property. The sample was tested for per- and polyfluoroalkyl substances (PFAS), including perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). This testing was completed as part of the agencies’ on-going environmental investigation of PFAS contamination associated with the referenced site. The purpose of the testing was to determine whether actions are needed to address exposures to PFOA and PFOS in your water supply. **Based on our review of your results, we recommend that additional sampling be completed to confirm the findings.**

The results for PFOA and PFOS are summarized in the table. Other PFAS were detected. Your complete testing results are enclosed.

Sample	PFOA* (parts per trillion; ppt)	PFOS* (ppt)	PFOA + PFOS* (ppt)
Private well	9.2	15	24.2

***BOLD** results indicate results above the United States Environmental Protection Agency’s (USEPA’s) lifetime health advisory level of 70 ppt for PFOA, PFOS, and PFOA/PFOS combined.

Although your results are below the USEPA’s lifetime health advisory level, we believe additional sampling is warranted to confirm the concentrations are not expected to exceed the USEPA’s lifetime health advisory level. The New York State Department of Environmental Conservation will contact you to discuss this sampling further.

If you have any questions about the sampling that was completed, or if you would like to discuss your results, please contact me at (518) 402-7860. For information on the USEPA’s lifetime health advisory for PFOA and PFOS, please visit their website at www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.

Sincerely,

Angela L. Martin
Public Health Specialist
Bureau of Environmental Exposure Investigation

Enclosure: Laboratory results report for [redacted]

ec: M. Schuck / e-File
C. Westerman – NYSDOH MARO
A. Vaidian, M.D., MPH – DCDOH
G. Heitzman / M. Hubicki – NYSDEC Central Office
E. Moore – NYSDEC Region 3

LOCATION B

Sample Results

Client: New York State D.E.C.
Project/Site: Dutchess County Airport #314129

TestAmerica Job ID: 320-31686-1

Client Sample ID: [redacted]
Date Collected: 09/19/17 11:42
Date Received: 09/20/17 09:45

Lab Sample ID: 320-31686-9
Matrix: Water

Method: 537 (modified)-Perfluorinated Hydrocarbons done by TestAmerica Sacramento

Analyte	Result	Qualifier	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	**3.8**		2.0	0.79	ng/L	09/22/17 08:36	09/27/17 11:50	1
Perfluorooctanoic acid (PFOA)	**9.2**		2.0	0.74	ng/L	09/22/17 08:36	09/27/17 11:50	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.64	ng/L	09/22/17 08:36	09/27/17 11:50	1
Perfluorobutanesulfonic acid (PFBS)	**13**		2.0	0.90	ng/L	09/22/17 08:36	09/27/17 11:50	1
Perfluorohexanesulfonic acid (PFHxS)	**3.0**		2.0	0.86	ng/L	09/22/17 08:36	09/27/17 11:50	1
Perfluorooctanesulfonic acid (PFOS)	**15**		2.0	1.3	ng/L	09/22/17 08:36	09/27/17 11:50	1

Isotope Dilution	%Recovery	Qualifier	Limit	Prepared	Analyzed	Dil Fac
13C4-PFHpA	114		25-150	09/22/17 08:36	09/27/17 11:50	1
13C4 PFOA	114		25-150	09/22/17 08:36	09/27/17 11:50	1
13C5 PFNA	100		25-150	09/22/17 08:36	09/27/17 11:50	1
18O2 PFHxS	105		25-150	09/22/17 08:36	09/27/17 11:50	1
13C4 PFOS	119		25-150	09/22/17 08:36	09/27/17 11:50	1
13C3-PFBS	109		25-150	09/22/17 08:36	09/27/17 11:50	1

%R: Percent Recovery
Dil Fac: Dilution Factor
MDL: Method Detection Limit
ND: Not detected at the reporting limit (or MDL or EDL if shown)
RL: Reporting Limit or Requested Limit (Radiochemistry)
ng/L: nanogram per liter

NEW YORK STATE OF OPPORTUNITY. | Department of Health

LOCATION A

ANDREW M. CUOMO
Governor

HOWARD A. ZUCKER, M.D., J.D.
Commissioner

SALLY DRESLIN, M.S., R.N.
Executive Deputy Commissioner

February 21, 2018

[redacted]

Re: Private Well Water Sampling Results
Per- and Polyfluoroalkyl Substances
314129 Dutchess County Airport
Wappinger Falls, Dutchess County

[redacted]

The New York State Departments of Health and Environmental Conservation (collectively referred to as "the agencies") recently collected a water sample from the private well on your property. The sample was tested for per- and polyfluoroalkyl substances (PFAS), including perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). This testing was completed as part of the agencies' on-going environmental investigation of PFAS contamination associated with the referenced site. The purpose of the testing was to determine whether actions are needed to address exposures to PFOA and PFOS in your water supply. **Based on our review of your results, we recommend that additional sampling be completed to confirm the findings.**

The results for PFOA and PFOS are summarized in the table. Other PFAS were detected. Your complete testing results are enclosed.

Sample	PFOA* (parts per trillion; ppt)	PFOS* (ppt)	PFOA + PFOS* (ppt)
Private well	21	28	49

*__BOLD__ results indicate results above the United States Environmental Protection Agency's (USEPA's) lifetime health advisory level of 70 ppt for PFOA, PFOS, and PFOA/PFOS combined.

Although your results are below the USEPA's lifetime health advisory level, we believe additional sampling is warranted to confirm the concentrations are not expected to exceed the USEPA's lifetime health advisory level. The New York State Department of Environmental Conservation will contact you to discuss this sampling further.

If you have any questions about the sampling that was completed, or if you would like to discuss your results, please contact me at (518) 402-7860. For information on the USEPA's lifetime health advisory for PFOA and PFOS, please visit their website at www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.

Sincerely,

Angela L. Martin
Public Health Specialist
Bureau of Environmental Exposure Investigation

Enclosure: [redacted]

ec: M. Schuck / e-File
C. Westerman – NYSDOH MARO
A. Vaidian, M.D., MPH – DCDOH
G. Heitzman / M. Hubicki – NYSDEC Central Office
E. Moore – NYSDEC Region 3

LOCATION A

Sample Results

Client: New York State D.E.C.
Project/Site: Dutchess County Airport #314129

TestAmerica Job ID: 320-31686-1

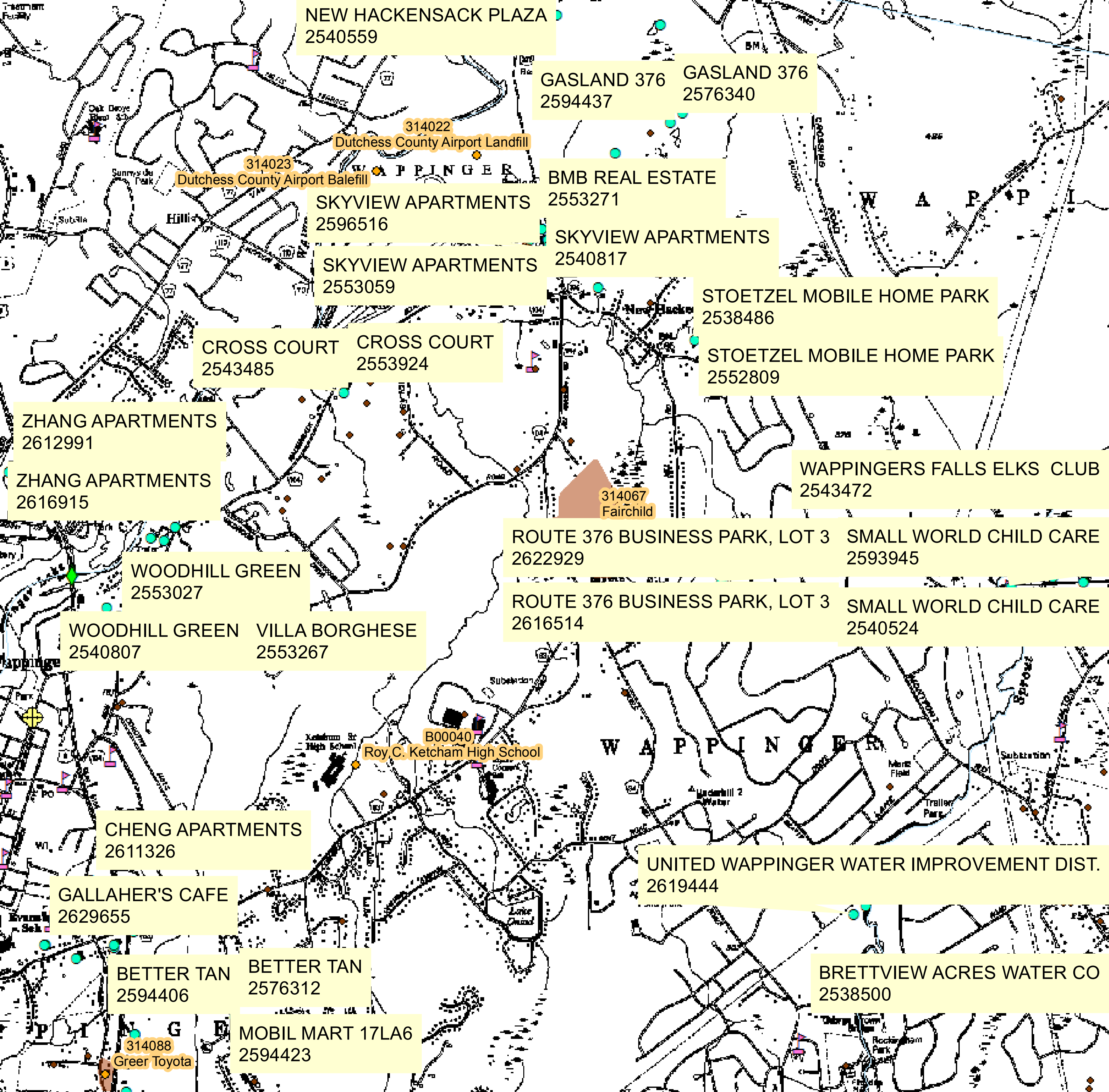
Client Sample ID: [redacted]
Date Collected: 09/19/17 10:24
Date Received: 09/20/17 09:45

Lab Sample ID: 320-31686-4
Matrix: Water

Method: 537 (modified)-Perfluorinated Hydrocarbons done by TestAmerica Sacramento

Analyte	Result	Qualifier	RL	MDL	Unit	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	**6.7**		2.0	0.80	ng/L	09/22/17 08:36	09/27/17 10:34	1
Perfluorooctanoic acid (PFOA)	**21**		2.0	0.75	ng/L	09/22/17 08:36	09/27/17 10:34	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.66	ng/L	09/22/17 08:36	09/27/17 10:34	1
Perfluorobutanesulfonic acid (PFBS)	**8.2**		2.0	0.92	ng/L	09/22/17 08:36	09/27/17 10:34	1
Perfluorohexanesulfonic acid (PFHxS)	**9.3**		2.0	0.87	ng/L	09/22/17 08:36	09/27/17 10:34	1
Perfluorooctanesulfonic acid (PFOS)	**28**		2.0	1.3	ng/L	09/22/17 08:36	09/27/17 10:34	1
Isotope Dilution	**%Recovery**	**Qualifier**	**Limit**			**Prepared**	**Analyzed**	**Dil Fac**
13C4-PFHpA	104		25-150			09/22/17 08:36	09/27/17 10:34	1
13C4 PFOA	97		25-150			09/22/17 08:36	09/27/17 10:34	1
13C5 PFNA	107		25-150			09/22/17 08:36	09/27/17 10:34	1
18O2 PFHxS	106		25-150			09/22/17 08:36	09/27/17 10:34	1
13C4 PFOS	115		25-150			09/22/17 08:36	09/27/17 10:34	1
13C3-PFBS	104		25-150			09/22/17 08:36	09/27/17 10:34	1

%R: Percent Recovery
Dil Fac: Dilution Factor
MDL: Method Detection Limit
ND: Not detected at the reporting limit (or MDL or EDL if shown)
RL: Reporting Limit or Requested Limit (Radiochemistry)
ng/L: nanogram per liter


NEW HACKENSACK PLAZA 2540559
GASLAND 376 2594437
GASLAND 376 2576340
314022 Dutchess County Airport Landfill
314023 Dutchess County Airport Balefill
BMB REAL ESTATE 2553271
SKYVIEW APARTMENTS 2596516
SKYVIEW APARTMENTS 2540817
SKYVIEW APARTMENTS 2553059
STOETZEL MOBILE HOME PARK 2538486
STOETZEL MOBILE HOME PARK 2552809
CROSS COURT 2543485
CROSS COURT 2553924
ZHANG APARTMENTS 2612991
ZHANG APARTMENTS 2616915
WAPPINGERS FALLS ELKS CLUB 2543472
314067 Fairchild
ROUTE 376 BUSINESS PARK, LOT 3 2622929
SMALL WORLD CHILD CARE 2593945
WOODHILL GREEN 2553027
ROUTE 376 BUSINESS PARK, LOT 3 2616514
SMALL WORLD CHILD CARE 2540524
WOODHILL GREEN 2540807
VILLA BORGHESE 2553267
B00040 Roy C. Ketcham High School
WAPPINGER
CHENG APARTMENTS 2611326
UNITED WAPPINGER WATER IMPROVEMENT DIST. 2619444
GALLAHER'S CAFE 2629655
BETTER TAN 2594406
BETTER TAN 2576312
BRETTVIEW ACRES WATER CO 2538500
MOBIL MART 17LA6 2594423
314088 Greer Toyota

VILLAGE CREST APARTMENTS 2540801
CREEKSIDE PLAZA 2553703
CREEKSIDE PLAZA 2543396
VILLAGE CREST APARTMENTS 2553043
NEW HACKENSACK PLAZA 2553677
NEW HACKENSACK PLAZA 2540559
VILLAGE CREST APARTMENTS 2553041
SOUTHEAST CONTAINER 2620211
SOUTHEAST CONTAINER 2553640
GASLAND 376 2594437
GASLAND 376 2576340
SCORIN (AKA THE FIELD) 2627520
314022
Dutchess County Airport Landfill
BMB REAL ESTATE 2553271
SKYVIEW APARTMENTS 2596516
ASSOCIATED AIRCRAFT GROUP 2625990
DUTCHESS COUNTY AIRPORT TERMINAL 2627406
Kinry Rd
Alfred Dr
Driveway
New Hackensack Rd
Macghee Rd
May Ct
Lakeview Rd
Daley Rd
Maloney Dr
Gerry Rd
Pleasant Ln
Vassar Rd
Jay Rd
Unnamed Street
Gale Dr
Autumn Dr
Pearlbush Ln
Misty Ridge Cir
Maloney Rd
Route 376
Airport Dr
Griffith Way
Hackensack Heights Rd

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Office of the General Counsel
625 Broadway, 14th Floor, Albany, New York 12233-1500
P: (518) 402-9185 | F: (518) 402-9018
www.dec.ny.gov

April 12, 2019

VIA EMAIL AND CERTIFIED MAIL

Gary S. Bowitch, Esq.
Bowitch & Coffey, LLC
17 Elk Street
Albany, NY 12207

Re: Site Characterization Work Plan
Dutchess County Airport
Site No. 314129

Dear Mr. Bowitch:

This letter responds to your November 8, 2018 letter regarding the scope of sampling and analysis to be conducted at and in the vicinity of the Dutchess County Airport, also known as the Hudson Valley Regional Airport (the "Airport").

As you requested, the New York State Department of Environmental Conservation (the "Department") has carefully considered the issues and positions you outlined in your letter. While the Department does not believe the County's Site Characterization Work Plan (SCWP) is approvable as submitted, the Department agrees that some of the sampling previously requested is not needed for the Site Characterization (SC) based on the availability of existing data.

Please note that, although the Department's designation of the Airport as a P-site was prompted by concerns about PFOA and/or PFOS contamination, the Department requires data for the full suite of contaminants as part of the SC. It is the Department's standard practice to require full suite sampling at P-sites. The Department has discretion to consider existing data as a substitute for new analysis of some contaminants, to the extent reliable data are available.

Figure 1, attached, illustrates the sampling the Department has determined is required for the SC for the Airport. Note that the triangles in the figure correspond to existing well locations, whereas circles denote surface water locations. Squares indicate locations where new wells are required. Figure 1 can be summarized as follows:

- The two on-site drinking water wells must be sampled for PFASs, SVOCs, PCBs, metals, and 1,4 Dioxane.
- Five existing monitoring wells (MW-2, MW-3S, MW-15, MW-20, and MW-29) must be sampled for PFASs, PCBs, SVOCs, pesticides, and 1,4 dioxane.
- Seven existing monitoring wells (MW-21S, MW-21R, MW-21G, MW-1, MW-4, MW-5, and MW-6) must be sampled for PFASs and 1,4 dioxane.
- Surface water and sediment at the southern outfall must be sampled for the full suite of contaminants.
- Surface water and sediment at the outfalls to the north and west, and two locations at the pond, must be sampled for PFASs and 1,4 dioxane.

- Groundwater and soil must be sampled for the full suite of contaminants at the southwestern end of runway number 6, at the northeastern end of runway number 24, and near the Aircraft Rescue and Firefighting Facilities (ARFF) building.
- Groundwater and soil must be sampled for PFASs and 1,4 dioxane at the end of runway numbers 15 and 33.
- Groundwater and soil at the Jackson Road gasoline spill area must be sampled for metals, pesticides, PCBs, PFASs, and 1,4 dioxane.

Although separate from the SC work, Figure 1 also notes that three off-site drinking water wells must be resampled for PFASs and 1,4 dioxane. Any drinking water wells in that off-site area that have not yet been sampled (if any) must also be sampled for PFASs and 1,4 dioxane.

The Department's determination regarding what sampling is required for the SC is driven by DER-10 (available on our public website at http://www.dec.ny.gov/regulations/67386.html) and the existence of reliable data from previous sampling efforts. As described in DER-10, the SC is intended to determine whether the P-site is a contaminated site requiring further investigation and remediation. The categories of contaminants identified by the SC may be used to guide the selection of analytes for such additional investigations.

As your letter noted, the County agrees with the Department that there is a need for a prompt investigation of actual and potential impacts from emerging contaminants at the Airport, and the County signed an Order on Consent with the Department in which the County agreed to conduct the needed SC. **The Department requests that the County revise its SCWP to satisfy the requirements described above and in Figure 1.** The Department views Figure 1 as illustrating the minimum sampling required for the SC. The Department is not opposed to additional sampling and may be amenable to slight modifications of the sampling locations shown in Figure 1.

Please let me know if you have any questions or concerns about the above.

Best regards,

Caryn Bower
Project Attorney


N
Sampling Requirements for Dutchess County Airport P-Site
On-site Drinking Water Well: PFAS, SVOCs, PCBs, Metals, & 1,4 Dioxane
Outfalls: Full Suite (including PFAS & 1,4 Dioxane) in Surface Water & Sediment
Outfalls/Pond: PFAS & 1,4 Dioxane in Surface Water & Sediment
MW/Soil: Full Suite (including PFAS & 1,4 Dioxane) in Groundwater & Soil
MW/Soil: PFAS & 1,4 Dioxane in Groundwater & Soil
Existing MWs: PFAS, PCBs, SVOCs, pesticides, & 1,4 Dioxane in Groundwater
MW/Soil: Metals, pesticides, PCBs, PFAS, & 1,4 Dioxane in Groundwater & Soil
Existing MWs: PFAS & 1,4 Dioxane in Groundwater
IRM Off-Site Sampling Requirements/POET
Off-site Drinking Water Well: PFAS & 1,4-dioxane
Note: Include any water wells missed, new, or requested to be sampled in this off-site area.
1,500 750 0 1,500 Feet
White Birch Ct
Misty Ridge Cir
Hampton Rd
Scofield Hts
Monitor Rd
Claudia Ln
Silver Ln
Toddy Ln
Willowbrook Hts
Route 376
Airport Dr
Dutchess Cnty Airport
Citation Dr
Griffith Way
Hackensack Heights Rd
Harbor Hill Rd
Vandewater Dr
Van Voorhis Dr
New Hackensack Rd
All Angels Hill Rd
Lane Gate Rd
Broadview Rd
FIGURE 1
Dutchess County Airport
Site No. 314129
Site Boundaries

EXHIBIT 2

NYSDEC LETTER LISTING SITE as P-SITE; NYSDEC ENVIRONMENTAL DATABASE LISTING; and NYSDOH DRINKING WATER WELL RESULTS

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau D
625 Broadway, 12th Floor, Albany, NY 12233-7013
P: (518) 402-9676 I F: (518) 402-9773
www.dec.ny.gov

September 15, 2017

Mr. Marcus J. Molinaro, County Executive
Dutchess County
22 Market Street
Poughkeepsie, NY 12601

Re: Potential Hazardous Waste Disposal Site

Dear Mr. Molinaro:

As required by subdivision 27-1305(2)(a) of the Environmental Conservation Law (ECL, quoted below), the New York State Department of Environmental Conservation (DEC) must investigate all suspected or known inactive hazardous waste disposal sites. The enclosed letter from New York State Department of Health identified certain perfluorinated compounds (PFCs) in a water supply well on the property referenced below. These compounds are known components of firefighting foams, and are listed as hazardous substances in New York State (6NYCRR Part 597). As a result of this finding, DEC suspects that hazardous waste may have been disposed of at the following location:

Site Name: Dutchess County Airport
Site Address: 18 Griffith Way, Wappingers Falls, NY 12590
DEC Site No.: 314129
Tax Map Identifier: 135689-6259-03-225301-0000

In addition, perfluorinated compounds have been detected in a nearby water supply well, which may be attributable to current or past operations on your property.

Therefore, this letter constitutes DEC's notification to you as the identified property owner that this property is considered a potential inactive hazardous waste disposal site. If DEC determines that hazardous waste has been disposed of on the property and that the hazardous waste poses a significant threat to public health or the environment, the property will be listed on the Registry of Inactive Hazardous Waste Disposal Sites (Registry). If you have any information that may be relevant to our investigation and pending determination, please forward it to DEC as soon as possible. Such information includes the locations of firefighting foam storage, use, and training activities; and the brand names of all aqueous film forming foam (AFFF) handled at the site.

This letter also serves as DEC's notification to you of the need to carry out an investigation in accordance with DEC's technical requirements for a site characterization. In addition to carrying out the investigation (which will include sampling on-site wells) there is a need to install a point of entry treatment system (POET) on the contaminated water supply well mentioned above, and provide bottled water until such time as that system is operational. Please contact George Heitzman, whose contact information is provided below, within 10 business days to discuss the necessary scope of the investigation and the installation of the POET. Also please have your attorney contact the DEC Project Attorney, Caryn Bower also identified below, to discuss entering into a legal agreement with DEC to carry out the necessary investigation.

Should you be unwilling or unable to conduct the needed study, if the site is determined to be an inactive hazardous waste disposal site and DEC incurs costs to investigate or remediate the site, DEC will seek to recover all costs from any responsible person.

A brief summary of the information currently available about the site is enclosed for your reference. This information is also available on DEC's environmental remediation database, by using our "Environmental Site Remediation Database Search" tool at: http://www.dec.ny.gov/cfmx/extapps/derexternal/index.cfm?pageid=3.

If you have any questions please feel free to contact me, at 518-402-9779 or susan.edwards@dec.ny.gov. To discuss the legal agreement required for the investigation of the site, contact Caryn Bower at 518-402-9186.

Sincerely,

Susan Edwards

Susan Edwards, P.E.
Director, Remedial Bureau D
Division of Environmental Remediation

Enclosure

ec: w/o enc. G. Heitzman
J. Moras
C. Bower

Environmental Conservation Law Section 27-1305(2)(a)

"The department shall conduct investigations of the sites listed in the registry and shall investigate areas or sites which it has reason to believe should be included in the registry. The purpose of these investigations shall be to develop the information required by subdivision one of this section to be included in the registry."

Environmental Site Remediation Database Search Details

Site Record

Administrative Information

Site Name: Dutchess County Airport
Site Code: 314129
Program: State Superfund Program
Classification: P *
EPA ID Number:

Location

DEC Region: 3
Address: 18 Griffith Way
City: Wappinger Falls Zip: 12590
County: Dutchess
Latitude:
Longitude:
Site Type:
Estimated Size: 510.8 Acres

Site Owner(s) and Operator(s)

Site Description

Location: The site is located in a rural area approximately 5 miles south of the City of Poughkeepsie. The site is the entire airport property which covers 510.8 acres. In 2017, the Dutchess County Airport was renamed the Hudson Valley Regional Airport. Site Features: The site property is a public use airport with a parking lot, airport terminal and various support buildings. Current Zoning: The site property is zoned airport development according to the Town zoning map. Surrounding properties are used for residential and commercial purposes with areas of open, unoccupied land. Past use of the Site: Originally built in the late 1930s, the airport is capable of handling small general aviation aircraft as well as larger business jets. Site Geology and Hydrogeology: This information will be provided once it is available.

Site Environmental Assessment

Initial sampling of groundwater at/near the facility has indicated the presence of perfluorinated compounds (PFCs) which require additional investigation. Once additional information is available this assessment will be updated.

Site Health Assessment

As information for this site becomes available, it will be reviewed by the NYSDOH to determine if site contamination presents public health exposure concerns.

---

* **Class P Sites:** "DEC offers this information with the caution that it should not be used to form conclusions about site contamination beyond what is implied by the classification of this site, namely, that there is a potential for concern about site contamination. Information regarding a Class P site (potential Registry site) is by definition preliminary in nature and unverified because the DEC's investigation of the site is not yet complete. Due to the preliminary nature of this information, significant conclusions or decisions should not be based solely upon this summary."

For more Information: E-mail Us

Refine This Search

New York State Department of Health
Wadsworth Center

LOCATION C

Biggs Laboratory
PO Box 509
Albany, NY 12201
CLIA# 33D0654341

David Axelrod Institute
120 New Scotland Avenue
Albany, NY 12208
CLIA# 33D2005937

Griffin Laboratory
5668 State Farm Road
Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1700040001-SR-1**

Report Date: **08/30/2017**

Report retrieved via NYSDOH Health Commerce System by hinrlc01 on 08/31/2017

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Submitter's Reference Number: 1313000A

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Composite Start: 08/03/2017 10:35
Composite Finish: 08/03/2017 10:35
Date received: 08/04/2017 11:30

[redacted]

Chlorinated: Yes
Field Free Chlorine Residual (mg/L): 1

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. K. Kannan
Contact: Dr. David Spink 518-486-2530

Sample Id: EHS1700040001-01

Sample Type: Finished Water

Received Temperature (°C): **6.6**

Lab Tracking Id: 1313000A

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 8/8/2017 Analysis Date: 8/10/2017

Perfluorobutanesulfonic acid (PFBS):	**6.80 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**39.7 ng/L**	
Perfluoroheptanoic acid (PFHpA):	**7.88 ng/L**	
Perfluorooctanoic acid (PFOA):	**6.34 ng/L**	NYSELAP
Perfluorooctanesulfonic acid (PFOS):	**13.4 ng/L**	NYSELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L**	

The purpose of our sampling is to analyze for PFOA and/or PFOS, as per ISO 25101:2009 (E) method. This test includes four additional Perfluorinated Chemicals (PFCs): perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluoronoanoic acid (PFNA) that have been validated by the laboratory. These other PFCs may have been detected at very low concentrations-EPA has not established health advisories for these chemicals. All six PFCs are effectively removed from drinking water by granular activated carbon filtration systems.

NYSELAP: Accredited by the New York State Environmental Laboratory Approval Program

END OF REPORT

The Laboratory Director authorizes the release of this report. The results in this report relate only to the sample submitted to the laboratory.

New York State Department of Health
Wadsworth Center

Biggs Laboratory
PO Box 509
Albany, NY 12201
CLIA# 33D0654341

David Axelrod Institute
120 New Scotland Avenue
Albany, NY 12208
CLIA# 33D2005937

Griffin Laboratory
5668 State Farm Road
Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1700040002-SR-1**

Report Date: **08/30/2017**

Report retrieved via NYSDOH Health Commerce System by hinrlc01 on 08/31/2017

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Submitter's Reference Number: 1313000B

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Composite Start: 08/03/2017 10:25
Composite Finish: 08/03/2017 10:25
Date received: 08/04/2017 11:30

[redacted]
WAPPINGER NY 12590
Chlorinated: No

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. K. Kannan
Contact: Dr. David Spink 518-486-2530

Sample Id: EHS1700040002-01

Sample Type: Raw Water

Received Temperature (°C): **5.5**

Lab Tracking Id: 1313000B

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 8/8/2017 Analysis Date: 8/10/2017

Perfluorobutanesulfonic acid (PFBS):	**8.10 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**48.6 ng/L**	
Perfluoroheptanoic acid (PFHpA):	**9.42 ng/L**	
Perfluorooctanoic acid (PFOA):	**7.56 ng/L**	NYSELAP
Perfluorooctanesulfonic acid (PFOS):	**17.3 ng/L**	NYSELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L**	

The purpose of our sampling is to analyze for PFOA and/or PFOS, as per ISO 25101:2009 (E) method. This test includes four additional Perfluorinated Chemicals (PFCs): perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluoronoanoic acid (PFNA) that have been validated by the laboratory. These other PFCs may have been detected at very low concentrations-EPA has not established health advisories for these chemicals. All six PFCs are effectively removed from drinking water by granular activated carbon filtration systems.

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New York State Department of Health
Wadsworth Center

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120 New Scotland Avenue
Albany, NY 12208
CLIA# 33D2005937

Griffin Laboratory
5668 State Farm Road
Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1700040003-SR-1**

Report Date: **08/30/2017**

Report retrieved via NYSDOH Health Commerce System by hinrlc01 on 08/31/2017

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Submitter's Reference Number: 1313000C

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Composite Start: 08/03/2017 10:30
Composite Finish: 08/03/2017 10:30
Date received: 08/04/2017 11:30

[redacted]

Chlorinated: Yes
Field Free Chlorine Residual (mg/L): 0.4

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. K. Kannan
Contact: Dr. David Spink 518-486-2530

Sample Id: EHS1700040003-01

Sample Type: Raw Water

Received Temperature (°C): **4.8**

Lab Tracking Id: 1313000C

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 8/8/2017 Analysis Date: 8/10/2017

Perfluorobutanesulfonic acid (PFBS):	**<1.77 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**<1.89 ng/L**	
Perfluoroheptanoic acid (PFHpA):	**<2.00 ng/L**	
Perfluorooctanoic acid (PFOA):	**<2.00 ng/L**	NYSELAP
Perfluorooctanesulfonic acid (PFOS):	**<1.91 ng/L**	NYSELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L**	

The purpose of our sampling is to analyze for PFOA and/or PFOS, as per ISO 25101:2009 (E) method. This test includes four additional Perfluorinated Chemicals (PFCs): perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluoronoanoic acid (PFNA) that have been validated by the laboratory. These other PFCs may have been detected at very low concentrations-EPA has not established health advisories for these chemicals. All six PFCs are effectively removed from drinking water by granular activated carbon filtration systems.

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New York State Department of Health
Wadsworth Center

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CLIA# 33D0654341

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Albany, NY 12208
CLIA# 33D2005937

Griffin Laboratory
5668 State Farm Road
Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1700040004-SR-1**

Report Date: **08/30/2017**

Report retrieved via NYSDOH Health Commerce System by hinrlc01 on 08/31/2017

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Submitter's Reference Number: 1322377A

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by:

Composite Start: 08/03/2017 11:20
Composite Finish: 08/03/2017 11:20
Date received: 08/04/2017 11:30

[redacted]

Chlorinated: No

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. K. Kannan
Contact: Dr. David Spink 518-486-2530

Sample Id: EHS1700040004-01

Sample Type: Raw Water

Received Temperature (°C): **11.2**

Lab Tracking Id: 1322377A

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 8/8/2017 Analysis Date: 8/10/2017

Perfluorobutanesulfonic acid (PFBS):	**<1.77 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**<1.89 ng/L**	
Perfluoroheptanoic acid (PFHpA):	**<2.00 ng/L**	
Perfluorooctanoic acid (PFOA):	**2.03 ng/L**	NYSELAP
Perfluorooctanesulfonic acid (PFOS):	**2.84 ng/L**	NYSELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L**	

The purpose of our sampling is to analyze for PFOA and/or PFOS, as per ISO 25101:2009 (E) method. This test includes four additional Perfluorinated Chemicals (PFCs): perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluorononanoic acid (PFNA) that have been validated by the laboratory. These other PFCs may have been detected at very low concentrations-EPA has not established health advisories for these chemicals. All six PFCs are effectively removed from drinking water by granular activated carbon filtration systems.

NOTES:

[1] Sample temperature upon receipt did not meet method specifications of 10 °C.

NYSELAP: Accredited by the New York State Environmental Laboratory Approval Program

END OF REPORT

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New York State Department of Health
Wadsworth Center

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CLIA# 33D2005937

Griffin Laboratory
5668 State Farm Road
Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1700040005-SR-1**

Report Date: **08/30/2017**

Report retrieved via NYSDOH Health Commerce System by hinrlc01 on 08/31/2017

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Submitter's Reference Number: 1322377B

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Composite Start: 08/03/2017 11:25
Composite Finish: 08/03/2017 11:25
Date received: 08/04/2017 11:30

[redacted]

Chlorinated: Yes
Field Free Chlorine Residual (mg/L): 0.5

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. K. Kannan
Contact: Dr. David Spink 518-486-2530

Sample Id: EHS1700040005-01

Sample Type: Finished Water

Received Temperature (°C): **9.9**

Lab Tracking Id: 1322377B

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 8/8/2017 Analysis Date: 8/10/2017

Perfluorobutanesulfonic acid (PFBS):	**<1.77 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**<1.89 ng/L**	
Perfluoroheptanoic acid (PFHpA):	**<2.00 ng/L**	
Perfluorooctanoic acid (PFOA):	**2.32 ng/L**	NYSELAP
Perfluorooctanesulfonic acid (PFOS):	**2.66 ng/L**	NYSELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L**	

The purpose of our sampling is to analyze for PFOA and/or PFOS, as per ISO 25101:2009 (E) method. This test includes four additional Perfluorinated Chemicals (PFCs): perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluoronoanoic acid (PFNA) that have been validated by the laboratory. These other PFCs may have been detected at very low concentrations-EPA has not established health advisories for these chemicals. All six PFCs are effectively removed from drinking water by granular activated carbon filtration systems.

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END OF REPORT

The Laboratory Director authorizes the release of this report. The results in this report relate only to the sample submitted to the laboratory.

New York State Department of Health
Wadsworth Center

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PO Box 509
Albany, NY 12201
CLIA# 33D0654341

David Axelrod Institute
120 New Scotland Avenue
Albany, NY 12208
CLIA# 33D2005937

Griffin Laboratory
5668 State Farm Road
Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1700040006-SR-1**

Report Date: **08/30/2017**

Report retrieved via NYSDOH Health Commerce System by hinrlc01 on 08/31/2017

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Submitter's Reference Number: 1322627A

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Composite Start: 08/03/2017 09:35
Composite Finish: 08/03/2017 09:35
Date received: 08/04/2017 11:30

[redacted]

Chlorinated: No

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. K. Kannan
Contact: Dr. David Spink 518-486-2530

Sample Id: EHS1700040006-01

Sample Type: Raw Water

Received Temperature (°C): **11.7**

Lab Tracking Id: 1322627A

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 8/8/2017 Analysis Date: 8/10/2017

Perfluorobutanesulfonic acid (PFBS):	**36.4 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**1130 ng/L**	
Perfluoroheptanoic acid (PFHpA):	**193 ng/L**	
Perfluorooctanoic acid (PFOA):	**234 ng/L**	NYSELAP
Perfluorooctanesulfonic acid (PFOS):	**1070 ng/L**	NYSELAP
Perfluorononanoic acid (PFNA):	**15.7 ng/L**	

The purpose of our sampling is to analyze for PFOA and/or PFOS, as per ISO 25101:2009 (E) method. This test includes four additional Perfluorinated Chemicals (PFCs): perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluoronoanoic acid (PFNA) that have been validated by the laboratory. These other PFCs may have been detected at very low concentrations-EPA has not established health advisories for these chemicals. All six PFCs are effectively removed from drinking water by granular activated carbon filtration systems.

NOTES:

[1] Sample temperature upon receipt did not meet method specifications of 10 °C.

NYSELAP: Accredited by the New York State Environmental Laboratory Approval Program

END OF REPORT

The Laboratory Director authorizes the release of this report. The results in this report relate only to the sample submitted to the laboratory.

New York State Department of Health
Wadsworth Center

Biggs Laboratory
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Albany, NY 12201
CLIA# 33D0654341

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120 New Scotland Avenue
Albany, NY 12208
CLIA# 33D2005937

Griffin Laboratory
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Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1700040007-SR-1**

Report Date: **08/30/2017**

Report retrieved via NYSDOH Health Commerce System by hinrlc01 on 08/31/2017

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Submitter's Reference Number: 1322627B

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Composite Start: 08/03/2017 09:40
Composite Finish: 08/03/2017 09:40
Date received: 08/04/2017 11:30

[redacted]

Chlorinated: No

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. K. Kannan
Contact: Dr. David Spink 518-486-2530

Sample Id: EHS1700040007-01

Sample Type: Finished Water

Received Temperature (°C): **12.0**

Lab Tracking Id: 1322627B

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 8/8/2017 Analysis Date: 8/10/2017

Perfluorobutanesulfonic acid (PFBS):	**33.1 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**856 ng/L**	
Perfluoroheptanoic acid (PFHpA):	**160 ng/L**	
Perfluorooctanoic acid (PFOA):	**149 ng/L**	NYSELAP
Perfluorooctanesulfonic acid (PFOS):	**389 ng/L**	NYSELAP
Perfluorononanoic acid (PFNA):	**6.89 ng/L**	

The purpose of our sampling is to analyze for PFOA and/or PFOS, as per ISO 25101:2009 (E) method. This test includes four additional Perfluorinated Chemicals (PFCs): perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluorononanoic acid (PFNA) that have been validated by the laboratory. These other PFCs may have been detected at very low concentrations-EPA has not established health advisories for these chemicals. All six PFCs are effectively removed from drinking water by granular activated carbon filtration systems.

NOTES:

[1] Sample temperature upon receipt did not meet method specifications of 10 °C.

NYSELAP: Accredited by the New York State Environmental Laboratory Approval Program

END OF REPORT

The Laboratory Director authorizes the release of this report. The results in this report relate only to the sample submitted to the laboratory.

New York State Department of Health
Wadsworth Center

Biggs Laboratory	David Axelrod Institute	Griffin Laboratory
PO Box 509	120 New Scotland Avenue	5668 State Farm Road
Albany, NY 12201	Albany, NY 12208	Slingerlands, NY 12159
CLIA# 33D0654341	CLIA# 33D2005937	CLIA# 33D2005935

Report No: **EHS1700040008-SR-1**

Report Date: **08/30/2017**

Report retrieved via NYSDOH Health Commerce System by hinrlc01 on 08/31/2017

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Submitter's Reference Number: 1330705A

[redacted]

Chlorinated: No

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Composite Start: 08/03/2017 09:55
Composite Finish: 08/03/2017 09:55
Date received: 08/04/2017 11:30

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. K. Kannan
Contact: Dr. David Spink 518-486-2530

Sample Id: EHS1700040008-01

Sample Type: Raw Water

Received Temperature (°C): **6.0**

Lab Tracking Id: 1330705A

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 8/8/2017 Analysis Date: 8/10/2017

Perfluorobutanesulfonic acid (PFBS):	**<1.77 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**<1.89 ng/L**	
Perfluoroheptanoic acid (PFHpA):	**<2.00 ng/L**	
Perfluorooctanoic acid (PFOA):	**<2.00 ng/L**	NYSELAP
Perfluorooctanesulfonic acid (PFOS):	**<1.91 ng/L**	NYSELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L**	

The purpose of our sampling is to analyze for PFOA and/or PFOS, as per ISO 25101:2009 (E) method. This test includes four additional Perfluorinated Chemicals (PFCs): perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluoronoanoic acid (PFNA) that have been validated by the laboratory. These other PFCs may have been detected at very low concentrations-EPA has not established health advisories for these chemicals. All six PFCs are effectively removed from drinking water by granular activated carbon filtration systems.

NYSELAP: Accredited by the New York State Environmental Laboratory Approval Program

END OF REPORT

The Laboratory Director authorizes the release of this report. The results in this report relate only to the sample submitted to the laboratory.

New York State Department of Health
Wadsworth Center

Biggs Laboratory	David Axelrod Institute	Griffin Laboratory
PO Box 509	120 New Scotland Avenue	5668 State Farm Road
Albany, NY 12201	Albany, NY 12208	Slingerlands, NY 12159
CLIA# 33D0654341	CLIA# 33D2005937	CLIA# 33D2005935

Report No: **EHS1700040009-SR-1**

Report Date: **08/30/2017**

Report retrieved via NYSDOH Health Commerce System by hinrlc01 on 08/31/2017

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Submitter's Reference Number: 1330705B

[redacted]

Chlorinated: No

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Composite Start: 08/03/2017 10:00
Composite Finish: 08/03/2017 10:00
Date received: 08/04/2017 11:30

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. K. Kannan
Contact: Dr. David Spink 518-486-2530

Sample Id: EHS1700040009-01

Sample Type: Finished Water

Received Temperature (°C): **9.1**

Lab Tracking Id: 1330705B

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 8/8/2017 Analysis Date: 8/10/2017

Perfluorobutanesulfonic acid (PFBS):	**<1.77 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**<1.89 ng/L**	
Perfluoroheptanoic acid (PFHpA):	**<2.00 ng/L**	
Perfluorooctanoic acid (PFOA):	**<2.00 ng/L**	NYSELAP
Perfluorooctanesulfonic acid (PFOS):	**<1.91 ng/L**	NYSELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L**	

The purpose of our sampling is to analyze for PFOA and/or PFOS, as per ISO 25101:2009 (E) method. This test includes four additional Perfluorinated Chemicals (PFCs): perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluoronoanoic acid (PFNA) that have been validated by the laboratory. These other PFCs may have been detected at very low concentrations-EPA has not established health advisories for these chemicals. All six PFCs are effectively removed from drinking water by granular activated carbon filtration systems.

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END OF REPORT

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New York State Department of Health
Wadsworth Center

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Albany, NY 12201
CLIA# 33D0654341

David Axelrod Institute
120 New Scotland Avenue
Albany, NY 12208
CLIA# 33D2005937

Griffin Laboratory
5668 State Farm Road
Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1700040010-SR-1**

Report Date: **08/30/2017**

Report retrieved via NYSDOH Health Commerce System by hinrlc01 on 08/31/2017

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Submitter's Reference Number: FRB1313000

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Composite Start: 08/03/2017 10:35
Composite Finish: 08/03/2017 10:35
Date received: 08/04/2017 11:30

[redacted]

Chlorinated: No

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. K. Kannan
Contact: Dr. David Spink 518-486-2530

Sample Id: EHS1700040010-01

Sample Type: Field Blank

Received Temperature (°C): **11.7**

Lab Tracking Id: FRB1313000

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 8/8/2017 Analysis Date: 8/10/2017

Perfluorobutanesulfonic acid (PFBS):	**<1.77 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**<1.89 ng/L**	
Perfluoroheptanoic acid (PFHpA):	**<2.00 ng/L**	
Perfluorooctanoic acid (PFOA):	**<2.00 ng/L**	NYSELAP
Perfluorooctanesulfonic acid (PFOS):	**<1.91 ng/L**	NYSELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L**	

The purpose of our sampling is to analyze for PFOA and/or PFOS, as per ISO 25101:2009 (E) method. This test includes four additional Perfluorinated Chemicals (PFCs): perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluoronoanoic acid (PFNA) that have been validated by the laboratory. These other PFCs may have been detected at very low concentrations-EPA has not established health advisories for these chemicals. All six PFCs are effectively removed from drinking water by granular activated carbon filtration systems.

NOTES:

[1] Sample temperature upon receipt did not meet method specifications of 10 °C.

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END OF REPORT

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New York State Department of Health
Wadsworth Center

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Albany, NY 12201
CLIA# 33D0654341

David Axelrod Institute
120 New Scotland Avenue
Albany, NY 12208
CLIA# 33D2005937

Griffin Laboratory
5668 State Farm Road
Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1700040011-SR-1**

Report Date: **08/30/2017**

Report retrieved via NYSDOH Health Commerce System by hinrlc01 on 08/31/2017

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Submitter's Reference Number: FRB1322377

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Composite Start: 08/03/2017 11:25
Composite Finish: 08/03/2017 11:25
Date received: 08/04/2017 11:30

[redacted]

Chlorinated: No

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. K. Kannan
Contact: Dr. David Spink 518-486-2530

Sample Id: EHS1700040011-01

Sample Type: Field Blank

Received Temperature (°C): **9.9**

Lab Tracking Id: FRB1322377

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 8/8/2017 Analysis Date: 8/10/2017

Perfluorobutanesulfonic acid (PFBS):	**<1.77 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**<1.89 ng/L**	
Perfluoroheptanoic acid (PFHpA):	**<2.00 ng/L**	
Perfluorooctanoic acid (PFOA):	**<2.00 ng/L**	NYSELAP
Perfluorooctanesulfonic acid (PFOS):	**<1.91 ng/L**	NYSELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L**	

The purpose of our sampling is to analyze for PFOA and/or PFOS, as per ISO 25101:2009 (E) method. This test includes four additional Perfluorinated Chemicals (PFCs): perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluoronoanoic acid (PFNA) that have been validated by the laboratory. These other PFCs may have been detected at very low concentrations-EPA has not established health advisories for these chemicals. All six PFCs are effectively removed from drinking water by granular activated carbon filtration systems.

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END OF REPORT

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CLIA# 33D2005937

Griffin Laboratory
5668 State Farm Road
Slingerlands, NY 12159
CLIA# 33D2005935

Report No: **EHS1700040012-SR-1**

Report Date: **08/30/2017**

Report retrieved via NYSDOH Health Commerce System by hinrlc01 on 08/31/2017

REQUESTED BY: DIRECTOR-CEHBWSP

DIRECTOR'S OFFICE
BUREAU OF WATER SUPPLY PROTECTION
ROOM 1110
CORNING TOWER - EMPIRE STATE PLAZA
ALBANY NY 12237

Submitter's Reference Number: FRB 1330705

Public Water Systems (BWSP)

County: DUTCHESS
City (or) Town: WAPPINGER
Submitted by: MICHAEL MCCORMACK
Collected by: MICHAEL MCCORMACK

Composite Start: 08/03/2017
Composite Finish: 08/03/2017 10:05
Date received: 08/04/2017 11:30

[redacted] FIELD BLANK FROM

Chlorinated: No

FINAL LABORATORY REPORT

Biggs Laboratory
NYS ELAP ID: 10763

Laboratory of Organic Analytical Chemistry
Lab Director: Dr. K. Kannan
Contact: Dr. David Spink 518-486-2530

Sample Id: EHS1700040012-01

Sample Type: Field Blank

Received Temperature (°C): **7.9**

Lab Tracking Id: FRB1330705

Perfluoroalkyl Substances (PFASs) in Drinking Water by Ultra Performance Liquid Chromatography (UPLC) Tandem Mass Spectrometry (MS/MS): ISO 25101

Start Date: 8/8/2017 Analysis Date: 8/10/2017

Perfluorobutanesulfonic acid (PFBS):	**<1.77 ng/L**	
Perfluorohexanesulfonic acid (PFHxS):	**<1.89 ng/L**	
Perfluoroheptanoic acid (PFHpA):	**<2.00 ng/L**	
Perfluorooctanoic acid (PFOA):	**<2.00 ng/L**	NYSELAP
Perfluorooctanesulfonic acid (PFOS):	**<1.91 ng/L**	NYSELAP
Perfluorononanoic acid (PFNA):	**<2.00 ng/L**	

The purpose of our sampling is to analyze for PFOA and/or PFOS, as per ISO 25101:2009 (E) method. This test includes four additional Perfluorinated Chemicals (PFCs): perfluorobutanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), perfluoronoanoic acid (PFNA) that have been validated by the laboratory. These other PFCs may have been detected at very low concentrations-EPA has not established health advisories for these chemicals. All six PFCs are effectively removed from drinking water by granular activated carbon filtration systems.

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EXHIBIT 3

PFAS LIST OF COMPOUNDS

Full PFC Target Analyte List

Perfluoroalkyl sulfonates	**Perfluorobutanesulfonic acid**	**PFBS**	**375-73-5**
	Perfluorohexanesulfonic acid	**PFHxS**	**355-46-4**
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanessulfonic acid	**PFOS**	**1763-23-1**
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	**PFHpA**	**375-85-9**
	Perfluorooctanoic acid	**PFOA**	**335-67-1**
	Perfluorononanoic acid	**PFNA**	**375-95-1**
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctanesulfonamides	Perfluroroctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

Bold entries depict the 6 original UCMR3 chemicals