HAMPTON BAYS FIRE DISTRICT SITE
69 WEST MONTAUK HIGHWAY
HAMPTON BAYS, NEW YORK 11946
SITE #152249

INTERIM REMEDIAL MEASURE WORK PLAN

SUBMITTED TO:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7016

ON BEHALF OF:

Hampton Bays Fire District
69 West Montauk Highway
Hampton Bays, New York 11946

PREPARED BY:

P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, New York 11716
Phone: 631-589-6353

Derek Ersbak, PG, Vice President dereke@pwgrosser.com
Brian Heflich, PE, Project Manager brianh@pwgrosser.com

PWGC Project Number: HBF2401

MARCH 2024

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HAMPTON BAYS FIRE DISTRICT SITE
69 WEST MONTAUK HIGHWAY, HAMPTON BAYS, NEW YORK 11946

TABLE OF CONTENTS **PAGE**

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FIGURES

APPENDICES

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ACRONYMS

ACRONYM	DEFINITION
AFFF	Aqueous Film Forming Foam
BUD	Beneficial Use Determination
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulations
CP	Cesspool
DER	Division of Environmental Remediation
DER-10	Technical Guidance for Site Investigation and Remediation
ELAP	Environmental Laboratory Approval Program
GV	Guidance Value
HASP	Health and Safety Plan
HBFD	Hampton Bays Fire District
HBWD	Hampton Bays Water District
IRM	Interim Remedial Measure
mg/kg	Milligram per kilogram
ng/L	Nanograms per liter
NTU	Nephelometric Turbidity Units
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PE	Professional Engineer
PFAS	Per- and polyfluoroalkyl substances
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
POGSCO	Protection of Groundwater Soil Cleanup Objective
POGSGV	Protection of Groundwater Soil Guidance Value
PVC	Polyvinyl Chloride
PWGC	P.W. Grosser Consulting, Inc.
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance / Quality Control
QEP	Qualified Environmental Professional
RCA	Recycled Concrete Aggregate
RE	Remedial Engineer
SD	Storm Drain
SS	Surface Soil
ST	Septic Tank
SVOC	Semi-Volatile Organic Compound
USEPA	United States Environmental Protection Agency
UUSCO	Unrestricted Use Soil Cleanup Objective
VOC	Volatile Organic Compound
WP	Work Plan

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PWGC
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CERTIFICATION

I, Brian Heflich, certify that I am currently a New York State registered professional engineer (PE), as defined in 6 New York Codes, Rules, and Regulations (NYCRR) Part 375, and that this Interim Remedial Measure (IRM) Work Plan (WP) was prepared in accordance with applicable statutes and regulations and in substantial conformance with the Division of Environmental (DER) Technical Guidance for Site Investigation and Remediation (DER-10).

Brian Heflich
PE Name

PE Signature

096470
PE License #

March 21, 2024
Date

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1.0 INTRODUCTION

This IRMWP has been prepared by P.W. Grosser Consulting, Inc. (PWGC) for the Hampton Bays Fire District (HBFD) Site, located in Hampton Bays, New York (site) to propose the removal of soil from the onsite sanitary systems, one storm drain, hot spot excavations to remove surface soils containing perfluorooctanesulfonic acid (PFOS) and/or perfluorooctanoic acid (PFOA) above its respective protection of groundwater soil guidance value (POGSGV), installation of one additional groundwater monitoring well and up to two rounds of groundwater monitoring. The proposed scope of work is based on data obtained during site characterization performed between January 29, 2018 and March 25, 2021 which identified the presence of contaminants of concern at the site.

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2.0 SITE DESCRIPTION AND HISTORY

2.1 Site Description

The site consists of one parcel located at 69 West Montauk Highway in Hampton Bays, New York. The site is located in the Town of Southampton and Suffolk County. The site is identified in the Suffolk County Tax Map as District 0900, Section 224.00, Block 01.00, Lot 19.001.

A Site Location Map is included as **Figure 1** and a Site Plan is included as **Figure 2**.

2.2 Site History

This site has been utilized as a fire house since 1930. The site is improved with two main buildings, which are used by the Fire District. A summary of the improvements is presented below.

- The two-story firehouse building was constructed in 1930 and additions to the east and west sides were completed in 1967 and 1983. The first floor of this building is used to store fire trucks and fire equipment and contains a laundry room. The second floor is used as office and recreational space. No aqueous film forming foam (AFFF) was stored in this building. This building is connected to a sanitary system, comprised of a septic tank (ST-2) and multiple leaching cesspools (CP-2, CP-3, and CP-4) located on the south side of the building (**Figure 3**).
- The one-story steel framed building was constructed in 1993 and is utilized as a maintenance building. This building is used to store ancillary fire equipment and vehicles along with AFFF. In May 2019, 17 5-gallon containers of AFFF, which were stored on a pallet in the northwestern portion of the building, were removed and properly disposed of by Innovative Recycling Technologies. These containers were full and unopened. This AFFF was replaced with Universal Green, which is a fluorine free product. This building contains a sanitary system consisting of a septic tank (ST-1) and a leaching cesspool (CP-1) located on the west side of the building (**Figure 3**).
- Small wooden structures exist on the western site boundary. These structures do not have permanent foundations and are utilized as concession stands during

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community events. These structures contain sinks that are connected to the sanitary system associated with the main firehouse building.

- Stormwater is managed onsite through a series of storm drains which either discharge directly to the subsurface or are interconnected and piped across Montauk Highway to a recharge basin. The location of the storm drains is shown on **Figure 3**.

2.3 Historical Environmental Summary

Investigations were undertaken at the site pursuant to the New York State Department of Environmental Conservation (NYSDEC) Order on Consent, dated November 9, 2017. The purpose of the investigations was to delineate the areal and vertical extent of contaminants in media at or emanating from the site, identify the sources of contamination, the migration pathways, and actual or potential receptors of contaminants, and collect and evaluate data to assess impacts to public health and the environment, including fish and wildlife resource impacts at the site.

2.3.1 Extent of Contamination in Soil

Eight soil borings were performed onsite and eight surface soils samples were collected. Additionally, soil samples were collected from the onsite storm drains and sanitary leaching cesspools. Sample locations are shown in **Figures 3** and **4**.

PFOS and/or PFOA were detected slightly above POGSGVs (1.0 µg/kg for PFOS and 0.8 µg/kg for PFOA) in the sanitary systems, one storm drain (SD-1), and three surface soil samples (SS-1, SS-5, and SS-6). These detections are not indicative of a significant release event.

The pesticide dieldrin was detected in the sample collected from boring SS-1 (0-2") at an estimated concentration of 0.0073 milligrams per kilogram (mg/kg), which exceeds the unrestricted use soil cleanup objective (UUSCO) of 0.005 mg/kg and the pesticide 4,4'-DDE was detected in the sample collected from boring SS-7 (0-2") at an estimated concentration of 0.0035 mg/kg, which exceeds the UUSCO of 0.0033 mg/kg. These are likely a result of historical pesticide applications.

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2.3.2 Extent of Contamination in Groundwater

Sixteen vertical profile groundwater sampling points and seventeen groundwater monitoring wells were installed and sampled. Sample locations are shown in **Figure 5**.

Concentrations of PFOS and/or PFOA were detected at concentrations exceeding the groundwater guidance value (GV) of 2.7 nanograms per liter (ng/L) for PFOS and 6.7 for PFOA in the groundwater samples/monitoring wells located onsite as well as up-gradient and down-gradient of the site. Concentrations are most elevated in the shallow groundwater south of the maintenance building.

Finally, vertical profile wells located downgradient of the Hampton Bays Water District (HBWD) well field do not indicate elevated concentrations of PFOS and/or PFOA with the exception of slight exceedances in the deepest interval from one of the two vertical profile wells. Therefore, PFOS and/or PFOA impacts in groundwater are predominantly limited to the area south of the maintenance building and to the HBWD well field.

PFOS and PFOA were likely released from a surface AFFF training release(s) which reached the water table and began to migrate horizontally and vertically through the water column. Additional treatment has been added to the HBWD well field to remove these contaminants. The plume concentrations significantly reduce down-gradient of the well field.

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3.0 INTERIM REMEDIAL MEASURE

The stratigraphy at the site consists primarily of sands with groundwater occurring between 38 and 46 feet below surface grade. The detection of PFAS in soil at the site at concentrations greater than the POGSGVs has the potential to continue to spread to deeper depths. While PWGC and the NYSDEC continue to develop the Proposed Remedial Action Plan and Record of Decision, PWGC recommends that an IRM be implemented at the site to remove PFAS in soil and evaluate groundwater conditions following removal.

The proposed IRM will consist of the following:

- Performance of a waste characterization / delineation soil sampling program.
- Excavation and removal of soil exceeding POGSGVs for PFAS in surface soils and soils within sanitary and drainage structures.
- Implementation of a community air monitoring plan (CAMP) during earth disturbing work.
- Appropriate handling, transportation and disposal of contaminated materials removed from the site in accordance with Federal, State and local rules and regulations for handling, transport, and disposal.
- Collection and analysis of end-point soil samples to evaluate the performance of the remedy to attainment of POGSGVs for PFOS and PFOA.
- Import and placement of materials to be used for fill and cover in compliance with: (1) chemical limits and other specifications, (2) Federal, State and local rules and regulations for handling and transport of material.
- Installation of one additional groundwater monitoring well.
- Performance of groundwater monitoring and sampling to evaluate groundwater conditions following removal of impacted soils.
- Submission of an IRM Report.

3.1 Waste Characterization / Delineation Soil Sampling Program

To characterize an area previously not evaluated, to further delineate the horizontal and vertical extents of soils exceeding POGSGVs, and to characterize materials for disposal, in-situ soil sampling will be performed, as necessary, and will follow the procedures outlined below.

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3.1.1 Surface Soils

Surface soil samples will be collected to further delineate the extent of previously documented impacts and to evaluate an area that was not previously investigated, where a reported backpack spray dispenser demonstration occurred within the grass or foliage areas along the western side of the property.

Initially, three surface soil samples will be collected along the western property boundary where grass or foliage is present to evaluate surface soil conditions. Proposed sample locations are shown in **Figure 6**. Should PFOS or PFOA be identified above POGSGVs, step out samples will be added until POGSGVs are no longer exceeded.

Samples collected to delineate the horizontal and vertical extents of contamination in surface soils will be collected as step outs from previously known points of impact. Initially, samples will be collected from the original three locations (SS-1, SS-5, and SS-6) where POGSGVs were exceeded and at locations 10 feet east, west, north, and south of each location. Since there is no additional data south of SS-5 and SS-6, three step outs to the south will be performed from these locations. Proposed sample locations are shown in **Figure 6**. Additional step outs will be added until POGSGVs are no longer exceeded. The data will also be utilized as the confirmatory end-point analytical data.

Shallow soil samples will be collected at each location from 0 to 2-inches (beneath the vegetative cover), from 6-inches to 12-inches, and from 18-inches to 24-inches utilizing a stainless-steel hand auger. Soil samples will be classified using the Unified Soil Classification System. Samples will be transferred to laboratory supplied glassware and packed in a cooler with ice and shipped under proper chain-of-custody procedures to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory and analyzed for Per- and polyfluoroalkyl substances (PFAS) by United States Environmental Protection Agency (USEPA) Method 1633. The 18-inches to 24-inches intervals shall be held pending review of the results of the shallower intervals.

In addition, grab and composite samples representative of the soils to be removed from the site shall be collected and analyzed for waste characterization analysis. The analysis shall conform to the frequency and procedures of the receiving facility once a facility is selected.

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3.1.2 Soils/Liquids in Sanitary / Drainage Structures

To evaluate current conditions of the sanitary and drainage structures, soil samples shall be collected from each onsite structure (ST-1, ST-2, CP-1 through CP-4, and SD-1 through SD-8). The structure locations are shown in **Figure 3**.

Soil samples will be collected at each location utilizing a stainless-steel hand auger. Soil samples will be classified using the Unified Soil Classification System. Samples will be transferred to laboratory supplied glassware and packed in a cooler with ice and shipped under proper chain-of-custody procedures to a NYSDOH ELAP certified laboratory and analyzed for PFAS by USEPA Method 1633.

In addition, grab and composite samples representative of the soils and liquids to be removed from the site shall be collected and analyzed for waste characterization analysis. The analysis shall conform to the frequency and procedures of the receiving facility once a facility is selected.

3.2 Surface Soil Remedial Excavations

Based upon historical investigations, soils on the site are impacted with PFOS and/or PFOA. A summary of the proposed remedial excavations is included below and shown on **Figure 7**. The extent of these excavations is subject to change based upon the results of the delineation soil sampling program outlined in Section 3.1.1.

- Remedial Excavation Area 1: Area 1 is estimated at 10 feet wide by 10 feet in length by six inches in depth centered on SS-1.
- Remedial Excavation Area 2: Area 2 is estimated at 10 feet wide by 10 feet in length by six inches in depth centered on SS-5.
- Remedial Excavation Area 3: Area 3 is estimated at 10 feet wide by 10 feet in length by six inches in depth centered on SS-6.

Soil removed during remediation activities will be directly loaded into trucks, to the extent feasible, and will be removed immediately from the site and disposed of at an offsite disposal facility, determined prior to the start of remediation activities.

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Following completion of excavation activities, endpoint soil sampling will be performed in compliance with DER-10 Section 5.4(b). Samples will be retrieved from the base and sidewalls of each excavation utilizing stainless-steel sampling equipment. Samples will be transferred to laboratory supplied glassware and packed in a cooler with ice and shipped under proper chain-of-custody procedures to a NYSDOH ELAP certified laboratory and analyzed for PFAS by USEPA Method 1633.

Analytical results for the endpoint samples will be compared to the POGSGVs. In the event an endpoint sample exceeds POGSGVs, the excavation shall be expanded and resampled until POGSGVs are obtained.

Following completion of surface soil excavations, a low permeable fill material or a liner will be installed to limit further mobilization of remaining contamination within the vadose zone, followed by clean fill material to grade. Fill material shall be characterized and approved for import and placement on the site in accordance with Section 4.6.5. Following backfill, the areas shall be restored to previous remedial conditions (e.g., seed and mulch).

3.3 Sanitary / Drainage System Remediation

The IRM activities will include the remediation of at least six structures (ST-2, CP-2, CP-3, ST-1, CP-1, and SD-1). Additional structures may be added pending the results of the sampling outlined in Section 3.1.2. A vacuum truck will be used to remove liquids from within the impacted structures. Liquids will be disposed of in accordance with federal, state, and local regulations. Following the removal of liquids, a vactor truck will be used to remove impacted sediments from the base of each structure until soils appear visibly clean, or a solid bottom is exposed with all solids removed to the extent feasible. Materials will not be removed from deeper than the bottom ring of each structure during this phase of work to maintain structural integrity of the structures.

To confirm soil remaining in the structures, if applicable, meets POGSGVs, endpoint samples will be collected from each of the remediated leaching pools. Samples will be retrieved from the base of each structure utilizing a stainless-steel hand auger. Samples will be transferred to laboratory supplied glassware and packed in a cooler with ice and

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shipped under proper chain-of-custody procedures to a NYSDOH ELAP certified laboratory and analyzed for PFAS by USEPA Method 1633.

Analytical results for the endpoint samples will be compared to the POGSGVs. If a solid bottom structure is encountered, the structure will be inspected for deficiencies in its integrity, such as cracks or holes.

Solid and liquid waste removed during remediation activities will be stored directly in the appropriate pump and vactor truck, respectively. Solid and liquid waste will be removed immediately from the site and disposed of at an offsite disposal facility, determined prior to the start of remediation activities.

Following completion of soil removal, the structures shall be backfilled, as necessary, with clean fill material. Fill material shall be characterized and approved for import and placement on the site in accordance with Section 4.6.5.

3.4 Groundwater Monitoring

Groundwater monitoring shall be performed to evaluate conditions following removal of soils exceeding POGSGVs from the site.

3.4.1 Groundwater Monitoring Well Network Inventory

The Remedial Contractor shall locate and assess the condition of the existing groundwater monitoring well network. Repairs and/or maintenance shall be performed as necessary to ensure the wells are in working order and properly protected. In the event a groundwater monitoring well cannot be located, it shall be replaced in kind.

3.4.2 Groundwater Monitoring Well Network Protection

Precautions shall be taken to ensure that the groundwater monitoring well network is not damaged during activities performed as part of this IRM. As shown in **Figure 5**, MW-5, MW-6, MW-11, and MW-12 are in close proximity to where surface soil excavations are planned to occur.

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Each groundwater monitoring well will be clearly flagged and have protection added around it, if determined necessary. In the unlikely event that a groundwater monitoring well is damaged during site activities, the groundwater monitoring well shall be decommissioned in accordance with NYSDEC's CP-43 Groundwater Monitoring Well Decommissioning Policy and replaced in kind.

3.4.3 Groundwater Monitoring Well Network Expansion

To supplement the existing groundwater monitoring well network, one additional groundwater monitoring well (MW-15D) shall be installed near VP-15.

The groundwater monitoring well will be installed using a drill rig outfitted for hollow stem augers or alternative method. The groundwater monitoring well will be constructed of two-inch diameter, schedule 40 polyvinyl chloride (PVC) casing and screen with 0.010-inch slot. The groundwater monitoring well will be constructed with a 5-foot screen section and riser to grade unless precluded by hydrogeologic conditions. The groundwater monitoring well annulus will be filled with #2 morie sand (or equivalent), to two feet above the well screen. The screen will be set at a depth of 95 to 100 feet. A two-foot fine sand layer will be installed above the screen followed by a two-foot bentonite seal. Above the bentonite layer, the annulus around the well will be filled with a cement/bentonite grout. A concrete surface pad (2 feet by 2 feet by 6-inch) will be installed. The well will be finished with a flush mount curb box. A groundwater monitoring well construction log will be prepared.

Following installation, the groundwater monitoring well will be developed by over-pumping to restore the hydraulic properties of the aquifer. Well development will continue until the turbidity of the groundwater is less than or equal to 50 Nephelometric Turbidity Units (NTUs), or when pH, temperature, and conductivity measurements stabilize. Stabilization is considered achieved when three consecutive readings of these field parameters are within five percent of each other over a period of 15 minutes. Monitoring well development water will be containerized for offsite disposal. The new groundwater monitoring well will be surveyed relative to an arbitrary onsite datum.

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3.4.4 Groundwater Monitoring Well Sampling/Reporting

Groundwater sampling will be performed on an annual basis for two years after completion of the soil removals. Groundwater samples will be collected from MW-3, MW-4, MW-5, MW-6, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-15D, and MW-16. An adjustable flow rate PFAS free pump or alternative method with high-density polyethylene (HDPE) tubing will be utilized to extract water from the groundwater monitoring wells. Groundwater samples will be collected in compliance with the USEPA Low Stress (Low Flow) Purging and Sampling Procedure for The Collection of Groundwater Samples From Monitoring Wells (September 2017).

Samples will be transferred to laboratory supplied glassware and packed in a cooler with ice and shipped under proper chain-of-custody procedures to a NYSDOH ELAP certified laboratory and analyzed for PFAS by USEPA Method 1633.

Analytical results shall be compared to the Class GA GVs specified in TOGS 1.1.1.

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4.0 INTERIM REMEDIAL MEASURE PROGRAM

4.1 Governing Documents

4.1.1 Health and Safety Plan

This cleanup plan includes a Health and Safety Plan (HASP) that is designed to protect community residents and on-site workers. The HASP is consistent with the requirements of NYSDEC DER–10, Occupational Safety and Health Administration (OSHA) (29 Code of Federal Regulations (CFR) 1910 and 1926) and Federal, State, and local authorities. The HASP will be followed during ground intrusive activities that may encounter contaminated soil at the site. A copy of the HASP is included as **Appendix A**.

4.1.2 Community Air Monitoring Plan

Real-time air monitoring for particulate levels at the perimeter of the work area will be performed in accordance with the CAMP included as **Appendix B**. Air monitoring locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and downwind monitoring station. Continuous monitoring will be performed for ground intrusive activities and during the handling of contaminated or potentially contaminated media. Ground intrusive activities include, but are not limited to, soil excavation and soil trucking. Exceedances of action levels observed during performance of the CAMP will be reported to the NYSDEC and NYSDOH Project Managers immediately.

4.1.2.1 Dust Control Plan

A dust suppression plan (included in the CAMP) that addresses dust management during intrusive work may include one or more of the items listed below:

- Dust suppression will be achieved using a dedicated water truck or other water source for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Vehicles will remain on paved surfaces, to the extent feasible.
- Steel plates will be used to drive on grass areas, when necessary.
- Truck tires will be washed/brushed off before trucks exit the site.

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4.1.3 Quality Assurance Project Plan

The Quality Assurance Project Plan (QAPP), included as **Appendix C**, presents the objectives, functional activities, methods, and Quality Assurance/Quality Control (QA/QC) requirements associated with sample collection and laboratory analysis for remedial activities.

The components of the QAPP include:

- Project Organization,
- Sampling requirements, including methodology, identification, quantity, volumes, locations, frequency, chain of custody procedures, and sample packaging,
- Field/Laboratory data control requirements,
- Equipment decontamination, and
- Field documentation.

4.2 Project Organization

The Remedial Engineer (RE) and Qualified Environmental Professional (QEP) for this project are Brian Heflich, PE and Derek Ersbak, PG, respectively. Principal personnel who will participate in the remedial action include an environmental scientist or engineer. The environmental scientist/engineer, under the supervision of the RE and QEP, will document that the remedial actions are implemented in accordance with this IRMWP, HASP, CAMP, and supporting documents, and promptly report deviations from these documents to the appropriate team members, the RE, and the QEP so that the issue can be rectified in a timely manner. The environmental scientist/engineer will report directly to the QEP and RE and will provide daily summary reports of the remedial activities.

4.3 Notification Requirements

Prior to the start of remedial activities, the HBFD or their representative will notify the NYSDEC. Notifications will be sent to the assigned NYSDEC and NYSDOH project managers. A confirmed start date will be provided a minimum of 7-days before commencement of work.

A pre-remediation meeting will take place with the NYSDEC, the HBFD, PWGC, and the contractor prior to the start of mobilization.

4.4 Remedial Preparation and Closeout

4.4.1 Mobilization

Mobilization will include the delivery of remedial equipment and materials to the subject site. Remedial workers will receive orientation and training in accordance with the HASP, CAMP, and established policies and procedures to be followed during the implementation of remedial activities. The remediation contractor and associated subcontractors will each receive a copy of the IRMWP, HASP, and CAMP and will be briefed on their contents.

4.4.2 Erosion and Sedimentation Controls

Erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff will be placed to protect the excavation work and adjacent areas during excavation activities. Stormwater control measures, such as straw hay bales or silt fence, will be utilized during excavation activities to prevent stormwater runoff from impacting excavation areas and neighboring properties.

4.4.3 Utility Markouts

The HBFD and its contractors are solely responsible for the identification of utilities that might be affected by work under the IRM and implementation of required, appropriate, or necessary health and safety measures during performance of work under this IRM. The HBFD and its contractors are solely responsible for safe execution of invasive and other work performed under this IRM. The HBFD and its contractors must obtain any Federal, State, or local permits or approvals pertinent to such work that may be required to perform work under this IRM. Approval of this IRMWP by NYSDEC does not constitute satisfaction of these requirements.

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4.4.4 Equipment and Material Staging

Equipment and materials staging areas will be designated during the remediation activities, in coordination with the Remediation Manager to facilitate remediation work and prevent cross-contamination.

4.4.5 Fencing

Temporary construction fencing shall be utilized, as needed, during excavation activities.

4.4.6 Traffic Control

Drivers of trucks leaving the subject site with soil/fill will be instructed to proceed without stopping in the vicinity of the subject site to prevent neighborhood impacts.

4.4.7 Demobilization

Following the completion of remedial activities at the subject site, equipment and remedial structures will be decontaminated and dismantled and removed from the subject site. Sediment and erosion control measures and solid wastes generated during remedial activities (e.g., polyethylene sheeting) will be properly disposed of.

4.5 Reporting

4.5.1 Daily Reports

Daily reports will be submitted to NYSDEC and NYSDOH Project Managers in a timely manner and will include:

- An update of progress made during the reporting day,
- Locations of work and quantities of material imported and exported from the subject site,
- References to alpha-numeric map for remedial activities,
- A summary of complaints with relevant details (names, phone numbers),
- A summary of CAMP finding, including excursions, and
- An explanation of notable conditions.

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Daily reports are not intended to be the mode of communication for notification to the NYSDEC of emergencies (accident, spill), requests for changes to the IRMWP or other sensitive or time critical information; however, such conditions must also be included in the daily reports. Emergency conditions and changes to the IRMWP will be addressed directly to NYSDEC Project Manager via personal communication.

Daily Reports will include a description of daily activities keyed to an alpha-numeric map for the subject site that identifies work areas. These reports will include a summary of air sampling results, dust problems and corrective actions, and complaints received from the public.

4.5.2 Complaint Management

Complaints from the public regarding nuisance or other conditions will be reported directly to the NYSDEC project manager and included in the daily reports.

4.5.3 Interim Remedial Measure Report

An IRM Report will be submitted to NYSDEC following implementation of the remedial action defined in this IRMWP. The IRM Report provides documentation that the remedial work required under this IRMWP has been completed and has been performed in compliance with this plan. The IRM Report will provide a comprehensive account of the locations and characteristics of material removed from the subject site. The IRM Report will include certifications, manifests, and bills of lading. The IRM Report will provide a description of the changes in the remedial action from the elements provided in the IRMWP. The IRM Report will provide a tabular summary of performance evaluation sampling results and material characterization results and other sampling and chemical analyses performed as part of the remedial action. The IRM Report will be prepared in conformance with DER-10.

4.6 Soil and Materials Management

Environmental scientists and/or engineers under direct supervision of the RE will monitor and document the handling and transporting of material removed from the subject site to a proper disposal facility as a regulated waste or as an unregulated waste, as applicable, and

will assist the remedial contractor in identifying impacted materials during excavation, determining materials suitable for direct load out versus temporary stockpiling, selection of samples for waste characterization, and determining the proper disposal facility.

Stockpiling of impacted soil is not anticipated; however, if stockpiles become necessary, separate stockpile areas will be constructed as needed for the various materials to be excavated or generated, with the intent to most efficiently manage and characterize the materials and to avoid co-mingling impacted materials with non-impacted soil.

4.6.1 Stockpile Methods (If Necessary)

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the subject site and available for inspection by NYSDEC.

When not actively in use, stockpiles will be kept covered with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Soil stockpiles will be continuously encircled with silt fences. Hay bales will be used as needed near catch basins, surface waters, and other discharge points.

Water will be available at suitable supply and pressure for use in dust control.

4.6.2 Materials Excavation and Load Out

Environmental scientists and/or engineers under direct supervision of the RE will oversee invasive work and the excavation and load-out of excavated material.

The HBFD and its contractors are solely responsible for safe execution of invasive and other work performed under this Plan.

Loaded vehicles leaving the subject site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and New York State Department of Transportation (NYSDOT) requirements (and other applicable transportation requirements).

Vehicles leaving the subject site will not be overloaded. The Remedial Contractor's representative will make reasonable efforts to ensure that vehicles are not loaded beyond their NYSDOT weight rating and that material is secured beneath the truck bed cover.

Locations where vehicles enter or exit the subject site shall be inspected daily for evidence of sediment tracking. A truck wash will be operated at the subject site, as necessary. The Remedial Contractor will be responsible for ensuring that outbound trucks will be washed at the truck wash before leaving the subject site until the remedial action is complete. The Remedial Contractor will be responsible for ensuring that egress points for truck and equipment transport from the subject site will be clean of dirt and other materials derived from the subject site during remediation. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to materials derived on the subject site.

4.6.3 Materials Transportation

Transport of materials will be performed by licensed haulers in accordance with appropriate Federal, State, and local regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during remediation.

Queuing of trucks will be performed on the subject site to the extent feasible in order to minimize disturbance to the neighboring properties.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

Trucks will be washed prior to leaving the subject site, as necessary. Truck wash waters will be collected and disposed of in an appropriate manner.

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4.6.4 Materials Disposal

The disposal locations are to be determined. Disposal locations established at a later date will be reported to the NYSDEC Project Manager.

Soil/fill/solid waste excavated and removed from the subject site will be treated as contaminated and regulated material and will be disposed in accordance with Federal, State (including 6NYCRR Part 360), and local regulations. If disposal of soil/fill from this site is proposed for unregulated disposal (i.e. clean soil removed for remediation purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated management of materials from this site is prohibited without formal NYSDEC approval.

Material that does not meet Track 1 UUSCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

The following documentation will be obtained and reported by the RE for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the subject site conforms with applicable laws: (1) a letter from the RE, HBFD, or designee, to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation project in New York State. The letter will provide the project identity and the name and phone number of the RE. The letter will include as an attachment a summary of chemical data for the material being transported (including characterization data); and (2) a letter from receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material. These documents will be included in the IRM Report.

The IRM Report will include an accounting of the destination of material removed from the subject site during this remedial action, including excavated soil, contaminated soil, fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of material must also include records and approvals for receipt of the material. This information will also be presented in a tabular form in the IRM Report. A

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Bill of Lading system or equivalent will be used for movement of non-hazardous wastes and contaminated soils. This information will be reported in the IRM Report.

Hazardous wastes derived from remedial activities will be stored, transported, and disposed of in compliance with applicable local, State, and Federal regulations.

Appropriately licensed haulers will be used for material removed and will be in compliance with applicable Federal, State, and local regulations.

Waste characterization will be performed for disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, and analytical results will be reported in the IRM Report. Data available for soil/material to be disposed at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

4.6.5 Backfill from Approved Sources

Materials proposed for import onto the subject site will be approved by the Remedial Engineer and will be in compliance with provisions in this IRMWP prior to receipt at the subject site.

The following potential sources may be used pending attainment of backfill and cover soil quality objectives:

- Clean soil from construction projects at non-industrial properties in compliance with applicable laws and regulations,
- Clean soil from roadway or other transportation-related projects in compliance with applicable laws and regulations, and
- Clean topsoil from local suppliers.

4.6.5.1 Source Screening, Testing, and Import

The imported, uncontaminated soil will be from an approved source/facility and will be evaluated by the RE to ensure:

- That a segregated stockpile is properly maintained at the source and will not be comingled with other material prior to importing the clean soil material at the subject site,

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- That the material does not include solid waste, including construction and demolition material, as it is prohibited,
- That screening for evidence of contamination by visual, olfactory and PID soil screening practices prior to testing at the source as well as upon importing to the subject site is completed, and
- That soil samples will be collected from the segregated stockpile at the source at a frequency specified in Table 5.4(e)10 of DER-10 or at an alternate frequency approved by the NYSDEC Project Manager and analyzed for the following Full List parameters:
    - Volatile Organic Compounds (VOCs) by USEPA Method 8260C
    - Semi-Volatile Organic Compounds (SVOCs) by USEPA Method 8270D
    - Metals by USEPA Method 6010C/7471B
    - Pesticides and Polychlorinated Biphenyls (PCBs) by USEPA Method 8081B/8082A
    - Trivalent and Hexavalent Chromium by USEPA Method 7196A
    - Total Cyanide by USEPA Method 9012B
    - Silvex by USEPA Method 8151A
    - PFAS by USEPA Method 1633
    - 1,4-Dioxane by USEPA Method 8270-SIM

Upon receipt of the segregated stockpile analytical results collected at the source, a Request to Import/Reuse Fill or Soil form will be submitted to the NYSDEC Project Manager for review/approval prior to importing. The report will include the following:

- Summary of number of samples collected and analyzed, tabulated data, and comparison to the Protection of Groundwater Soil Cleanup Objectives (POGSCOs) and POGSGVs,
- Analytical data sheets and chain of custody documentation,
- Summary of number of tons (number cubic of yards),
- Photographs from the segregated stockpile at the source with sample point locations identified,
- An affidavit from the source/facility on company letterhead stating that the segregated stockpile for number of tons (number of cubic yards) has been properly maintained at the source and complies with the requirements listed above, and

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- A copy of source/facility NYSDEC permit, if applicable.

The materials may be placed following approval of backfill by the NYSDEC.

Upon importing the approved soil, the following documentation will be presented in the IRM Report:

- Truck transportation slips from the source to the subject site,
- Confirmation of number of tons (number cubic of yards) of approved clean soil material imported to the subject site,
- Plan depicting areas where the approved clean soil has been placed, and
- Photographs documenting the importing and grading of the approved clean soil across the subject site.

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5.0 SCHEDULE

A schedule of remedial actions, including estimated dates for performance of work and deliverables, has been included in **Appendix D**.

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6.0 REFERENCES

Low Street (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, USEPA, September 19, 2017.

NYSDEC, Division of Environmental Restoration, 6 NYCRR Part 375, Environmental Remediation Programs, December 14, 2006.

NYSDEC, Division of Environmental Remediation, DER-10, Technical Guidance for Site Investigation and Remediation, May 2010.

NYSDEC, Division of Environmental Remediation, Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs, April 2023.

PWGC, Remedial Investigation Report / Feasibility Study, October 2022.

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FIGURES

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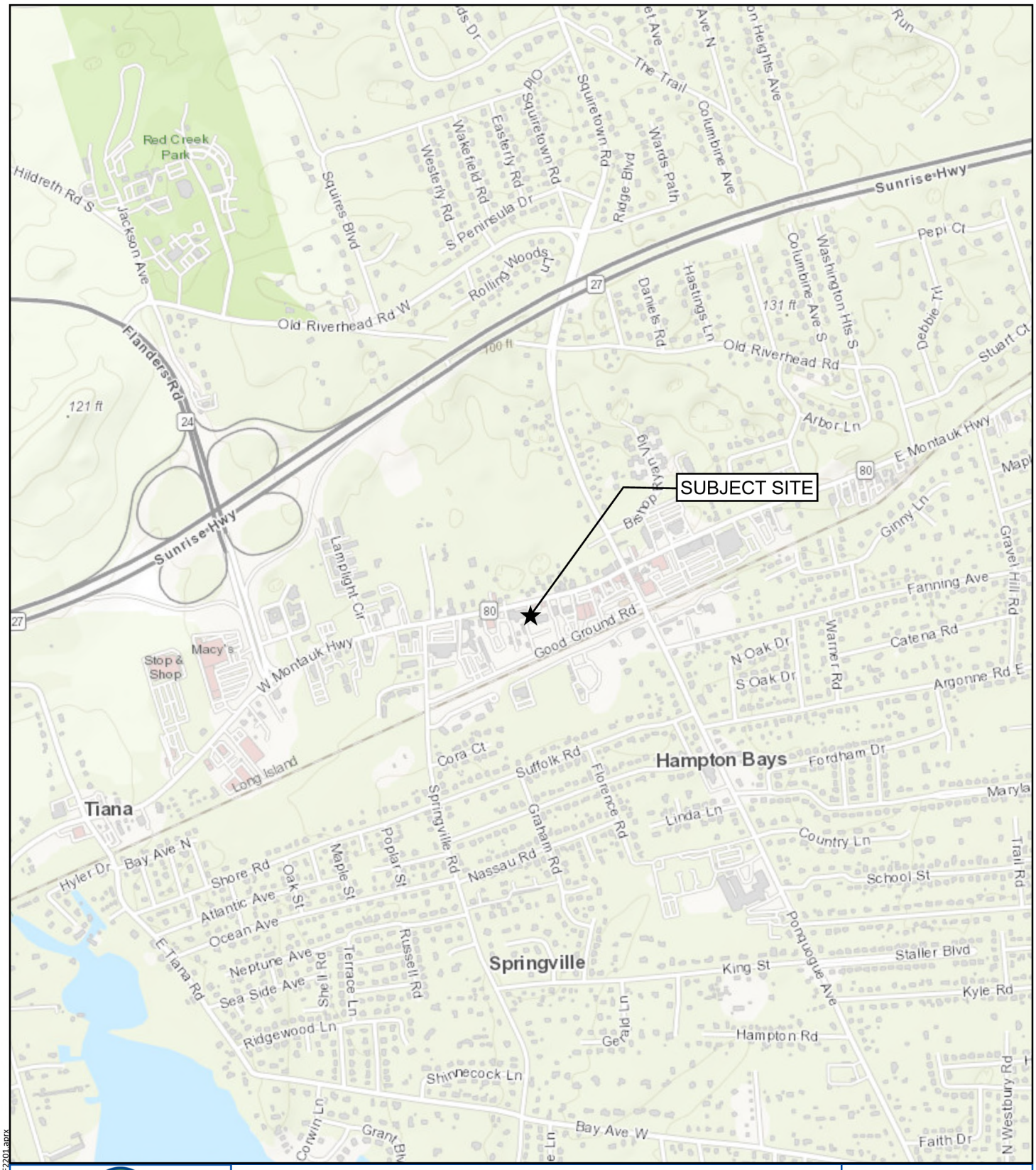

SITE LOCATION

Hampton Bays Fire District
69 W Montauk HWY
Hampton Bays, NY 11946

Miles
0 0.1 0.2 0.4 0.6 0.8

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CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

Project:	HBF2401
Date:	2/27/2024
Designed by:	DE
Drawn by:	PH
Approved by:	DE
Figure No:	1

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P.W. Grosser Consulting Engineer & Hydrogeologist, PC
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

DRAWING PREPARED FOR:

Hampton Bays Fire District
69 W Montauk HWY
Hampton Bays, NY 11946

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

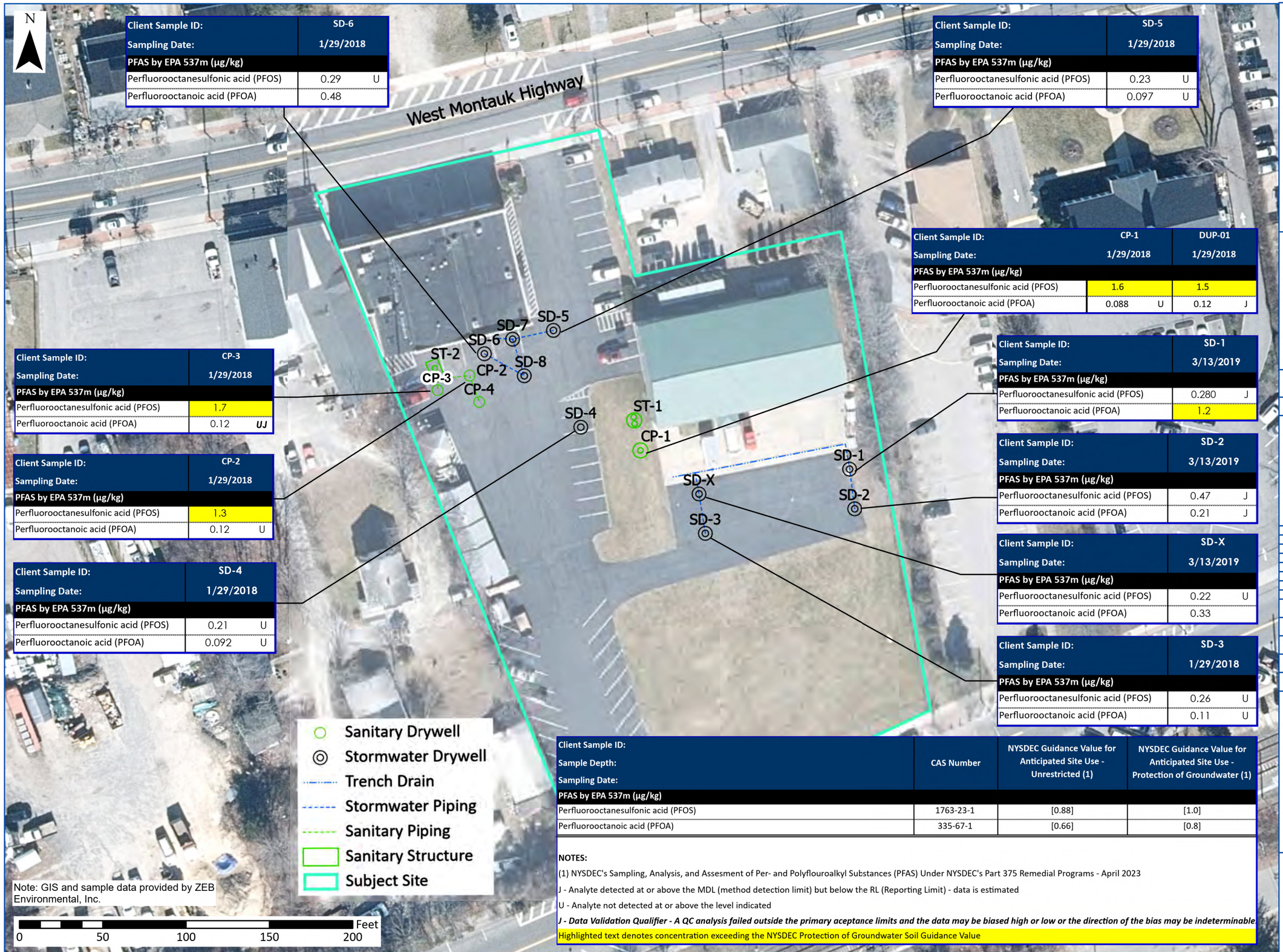
Project:	HBF2401	Designed by:	DE
Date:	2/27/2024	Drawn by:	PH
Scale:	AS SHOWN	Approved by:	DE

SITE PLAN

Hampton Bays Fire District
69 W Montauk HWY
Hampton Bays, NY 11946

FIGURE NO:

2



Client Sample ID:	SD-6	
Sampling Date:	1/29/2018	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.29	U
Perfluorooctanoic acid (PFOA)	0.48	

Client Sample ID:	SD-5	
Sampling Date:	1/29/2018	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.23	U
Perfluorooctanoic acid (PFOA)	0.097	U

Client Sample ID:	CP-1		DUP-01	
Sampling Date:	1/29/2018		1/29/2018	
PFAS by EPA 537m (µg/kg)				
Perfluorooctanesulfonic acid (PFOS)	1.6		1.5	
Perfluorooctanoic acid (PFOA)	0.088	U	0.12	J

Client Sample ID:	CP-3	
Sampling Date:	1/29/2018	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	1.7	
Perfluorooctanoic acid (PFOA)	0.12	***UJ***

Client Sample ID:	SD-1	
Sampling Date:	3/13/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.280	J
Perfluorooctanoic acid (PFOA)	1.2	

Client Sample ID:	CP-2	
Sampling Date:	1/29/2018	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	1.3	
Perfluorooctanoic acid (PFOA)	0.12	U

Client Sample ID:	SD-2	
Sampling Date:	3/13/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.47	J
Perfluorooctanoic acid (PFOA)	0.21	J

Client Sample ID:	SD-4	
Sampling Date:	1/29/2018	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.21	U
Perfluorooctanoic acid (PFOA)	0.092	U

Client Sample ID:	SD-X	
Sampling Date:	3/13/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.22	U
Perfluorooctanoic acid (PFOA)	0.33	

Client Sample ID:	SD-3	
Sampling Date:	1/29/2018	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.26	U
Perfluorooctanoic acid (PFOA)	0.11	U

Client Sample ID: Sample Depth: Sampling Date:	CAS Number	NYSDEC Guidance Value for Anticipated Site Use - Unrestricted (1)	NYSDEC Guidance Value for Anticipated Site Use - Protection of Groundwater (1)
PFAS by EPA 537m (µg/kg)			
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	[0.88]	[1.0]
Perfluorooctanoic acid (PFOA)	335-67-1	[0.66]	[0.8]

NOTES:

(1) NYSDEC's Sampling, Analysis, and Assesment of Per- and Polyflouroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs - April 2023

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

U - Analyte not detected at or above the level indicated

J - Data Validation Qualifier - A QC analysis failed outside the primary aceptance limits and the data may be biased high or low or the direction of the bias may be indeterminable

Highlighted text denotes concentration exceeding the NYSDEC Protection of Groundwater Soil Guidance Value

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CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

DRAWING PREPARED FOR:

Hampton Bays Fire District
69 W Montauk Hwy
Hampton Bays, NY 11946

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

Project:	HBF2401	Designed by:	DE
Date:	3/20/2024	Drawn by:	AM
Scale:	AS SHOWN	Approved by:	DE

STORMWATER & SANITARY SYSTEM SAMPLE RESULTS

Hampton Bays Fire District
69 W Montauk Hwy
Hampton Bays, NY 11946

FIGURE NO:

3

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Client Sample ID:	SS-1		DUP-01	
Sample Depth:	0-2"		0-2"	
Sampling Date:	3/15/2019		3/15/2019	
PFAS by EPA 537m (µg/kg)				
Perfluorooctanesulfonic acid (PFOS)	1.56		1.68	
Perfluorooctanoic acid (PFOA)	0.16	J	0.21	
Organochlorine Pesticides by USEPA Method 8081 in mg/kg				
Dieldrin	0.0073	*J*	0.0037	*J*

Client Sample ID:	SS-7	
Sample Depth:	0-2"	
Sampling Date:	5/25/2021	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.21	U
Perfluorooctanoic acid (PFOA)	0.089	U
Organochlorine Pesticides by USEPA Method 8081 in mg/kg		
4,4'-DDE	0.0035	J

Client Sample ID:	SS-2	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.78	
Perfluorooctanoic acid (PFOA)	0.19	J

Client Sample ID:	SS-6	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	1.65	
Perfluorooctanoic acid (PFOA)	0.43	

Client Sample ID:	CAS Number	NYSDEC Guidance Value for Anticipated Site Use - Unrestricted (3)	NYSDEC Value for Anticipated Site Use - Protection of Groundwater (3)
Sample Depth:			
Sampling Date:			
PFAS by EPA 537m (µg/kg)			
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	[0.88]	[1.0]
Perfluorooctanoic acid (PFOA)	335-67-1	[0.66]	[0.8]

Client Sample ID:	CAS Number	NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives (1)	NYSDEC Part 375 Residential Use Soil Cleanup Objectives (2)
Sample Elevation:			
Sampling Date:			
Organochlorine Pesticides by USEPA Method 8081 in mg/kg			
4,4'-DDE	72-55-9	0.0033	1.8
Dieldrin	60-57-1	0.005	0.039

NOTES:

(1) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestricted Use of Soil Cleanup Objective Table 375-6.8a

(2) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Restricted Use of Soil Cleanup Objective Table 375-6.8b

(3) NYDEC's Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYDEC's Part 375 Remedial Programs - April 2023

J - Analyte detected at or above the MDL (method detector limit) but below the RL (Reporting Limit) - data is estimated

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Highlighted text denotes concentration exceeding the NYSDEC Protection of Groundwater Soil Guidance Value

Highlighted Text denotes concentration exceeding the NYDEC UUSCO

Client Sample ID:	SS-8		DUP-02	
Sample Depth:	0-2"		0-2"	
Sampling Date:	5/25/2021		5/25/2021	
PFAS by EPA 537m (µg/kg)				
Perfluorooctanesulfonic acid (PFOS)	0.46	J	0.51	J
Perfluorooctanoic acid (PFOA)	0.091	U	0.11	U

Client Sample ID:	SS-3	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.86	
Perfluorooctanoic acid (PFOA)	0.17	J

Client Sample ID:	SS-4	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.55	
Perfluorooctanoic acid (PFOA)	0.26	

Client Sample ID:	SS-5	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	1.03	
Perfluorooctanoic acid (PFOA)	0.24	

Note: GIS and sample data provided by ZEB Environmental, Inc.

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P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

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SOIL SAMPLE RESULT

Hampton Bays Fire District
69 W Montauk Hwy
Hampton Bays, NY 11946

FIGURE NO:

4

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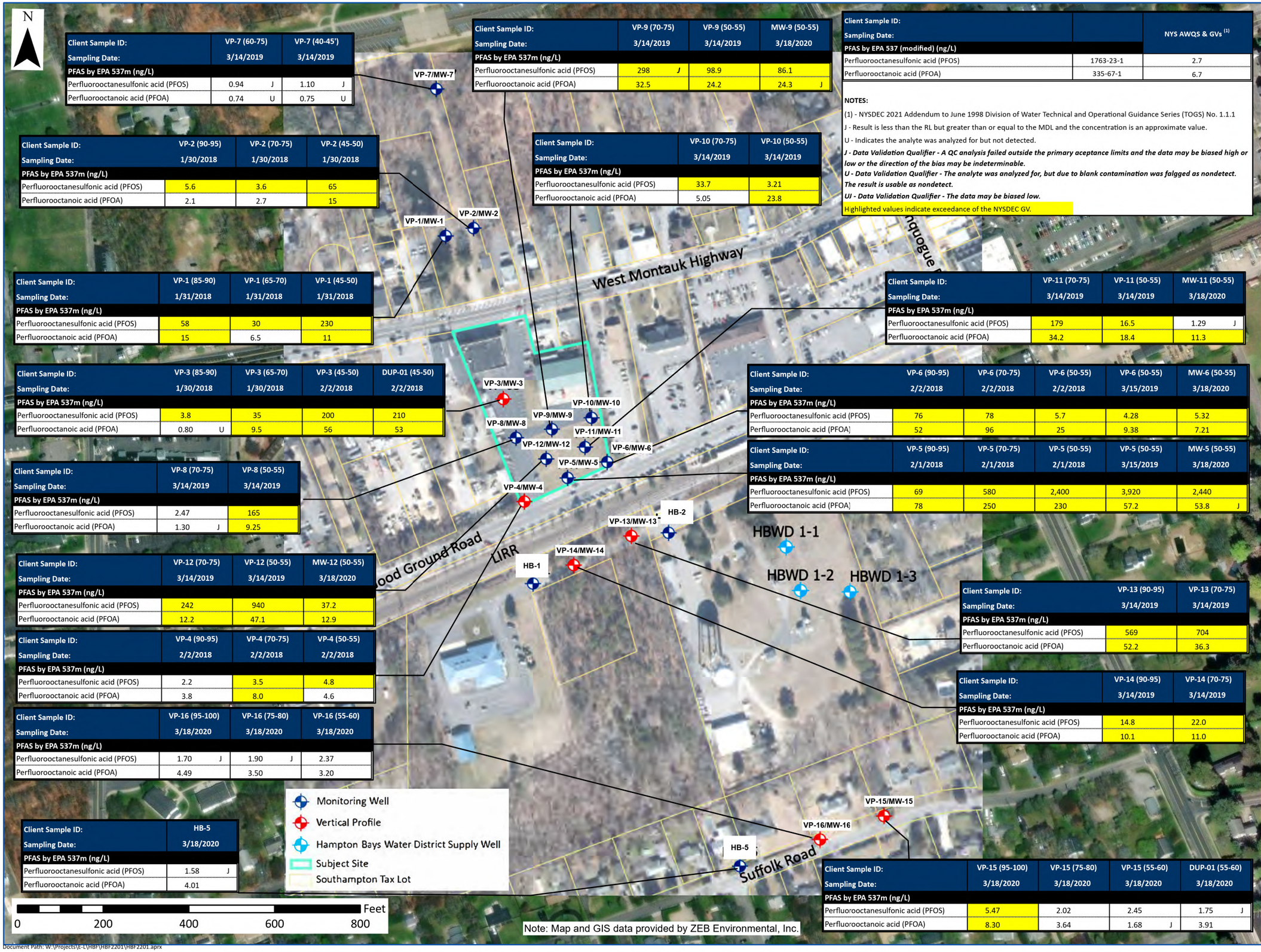

Client Sample ID:	VP-7 (60-75)		VP-7 (40-45')	
Sampling Date:	3/14/2019		3/14/2019	
PFAS by EPA 537m (ng/L)				
Perfluorooctanesulfonic acid (PFOS)	0.94	J	1.10	J
Perfluorooctanoic acid (PFOA)	0.74	U	0.75	U

Client Sample ID:	VP-9 (70-75)		VP-9 (50-55)	MW-9 (50-55)	
Sampling Date:	3/14/2019		3/14/2019	3/18/2020	
PFAS by EPA 537m (ng/L)					
Perfluorooctanesulfonic acid (PFOS)	298	J	98.9	86.1	
Perfluorooctanoic acid (PFOA)	32.5		24.2	24.3	J

Client Sample ID:		NYS AWQS & GVs [1]
Sampling Date:		
PFAS by EPA 537 (modified) (ng/L)		
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	2.7
Perfluorooctanoic acid (PFOA)	335-67-1	6.7

NOTES:

(1) - NYSDEC 2021 Addendum to June 1998 Division of Water Technical and Operational Guidance Series (TOGS) No. 1.1.1

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

U - Indicates the analyte was analyzed for but not detected.

J - Data Validation Qualifier - A QC analysis failed outside the primary aceptance limits and the data may be biased high or low or the direction of the bias may be indeterminable.

U - Data Validation Qualifier - The analyte was analyzed for, but due to blank contamination was falgged as nondetect. The result is usable as nondetect.

UJ - Data Validation Qualifier - The data may be biased low.

Highlighted values indicate exceedance of the NYSDEC GV.

Client Sample ID:	VP-2 (90-95)	VP-2 (70-75)	VP-2 (45-50)
Sampling Date:	1/30/2018	1/30/2018	1/30/2018
PFAS by EPA 537m (ng/L)			
Perfluorooctanesulfonic acid (PFOS)	5.6	3.6	65
Perfluorooctanoic acid (PFOA)	2.1	2.7	15

Client Sample ID:	VP-10 (70-75)	VP-10 (50-55)
Sampling Date:	3/14/2019	3/14/2019
PFAS by EPA 537m (ng/L)		
Perfluorooctanesulfonic acid (PFOS)	33.7	3.21
Perfluorooctanoic acid (PFOA)	5.05	23.8

Client Sample ID:	VP-1 (85-90)	VP-1 (65-70)	VP-1 (45-50)
Sampling Date:	1/31/2018	1/31/2018	1/31/2018
PFAS by EPA 537m (ng/L)			
Perfluorooctanesulfonic acid (PFOS)	58	30	230
Perfluorooctanoic acid (PFOA)	15	6.5	11

Client Sample ID:	VP-11 (70-75)	VP-11 (50-55)	MW-11 (50-55)	
Sampling Date:	3/14/2019	3/14/2019	3/18/2020	
PFAS by EPA 537m (ng/L)				
Perfluorooctanesulfonic acid (PFOS)	179	16.5	1.29	J
Perfluorooctanoic acid (PFOA)	34.2	18.4	11.3	

Client Sample ID:	VP-3 (85-90)	VP-3 (65-70)	VP-3 (45-50)	DUP-01 (45-50)
Sampling Date:	1/30/2018	1/30/2018	2/2/2018	2/2/2018
PFAS by EPA 537m (ng/L)				
Perfluorooctanesulfonic acid (PFOS)	3.8	35	200	210
Perfluorooctanoic acid (PFOA)	0.80 U	9.5	56	53

Client Sample ID:	VP-6 (90-95)	VP-6 (70-75)	VP-6 (50-55)	VP-6 (50-55)	MW-6 (50-55)
Sampling Date:	2/2/2018	2/2/2018	2/2/2018	3/15/2019	3/18/2020
PFAS by EPA 537m (ng/L)					
Perfluorooctanesulfonic acid (PFOS)	76	78	5.7	4.28	5.32
Perfluorooctanoic acid (PFOA)	52	96	25	9.38	7.21

Client Sample ID:	VP-5 (90-95)	VP-5 (70-75)	VP-5 (50-55)	VP-5 (50-55)	MW-5 (50-55)
Sampling Date:	2/1/2018	2/1/2018	2/1/2018	3/15/2019	3/18/2020
PFAS by EPA 537m (ng/L)					
Perfluorooctanesulfonic acid (PFOS)	69	580	2,400	3,920	2,440
Perfluorooctanoic acid (PFOA)	78	250	230	57.2	53.8 J

Client Sample ID:	VP-8 (70-75)	VP-8 (50-55)
Sampling Date:	3/14/2019	3/14/2019
PFAS by EPA 537m (ng/L)		
Perfluorooctanesulfonic acid (PFOS)	2.47	165
Perfluorooctanoic acid (PFOA)	1.30 J	9.25

Client Sample ID:	VP-13 (90-95)	VP-13 (70-75)
Sampling Date:	3/14/2019	3/14/2019
PFAS by EPA 537m (ng/L)		
Perfluorooctanesulfonic acid (PFOS)	569	704
Perfluorooctanoic acid (PFOA)	52.2	36.3

Client Sample ID:	VP-12 (70-75)	VP-12 (50-55)	MW-12 (50-55)
Sampling Date:	3/14/2019	3/14/2019	3/18/2020
PFAS by EPA 537m (ng/L)			
Perfluorooctanesulfonic acid (PFOS)	242	940	37.2
Perfluorooctanoic acid (PFOA)	12.2	47.1	12.9

Client Sample ID:	VP-14 (90-95)	VP-14 (70-75)
Sampling Date:	3/14/2019	3/14/2019
PFAS by EPA 537m (ng/L)		
Perfluorooctanesulfonic acid (PFOS)	14.8	22.0
Perfluorooctanoic acid (PFOA)	10.1	11.0

Client Sample ID:	VP-4 (90-95)	VP-4 (70-75)	VP-4 (50-55)
Sampling Date:	2/2/2018	2/2/2018	2/2/2018
PFAS by EPA 537m (ng/L)			
Perfluorooctanesulfonic acid (PFOS)	2.2	3.5	4.8
Perfluorooctanoic acid (PFOA)	3.8	8.0	4.6

Client Sample ID:	VP-16 (95-100)	VP-16 (75-80)	VP-16 (55-60)
Sampling Date:	3/18/2020	3/18/2020	3/18/2020
PFAS by EPA 537m (ng/L)			
Perfluorooctanesulfonic acid (PFOS)	1.70 J	1.90 J	2.37
Perfluorooctanoic acid (PFOA)	4.49	3.50	3.20

Client Sample ID:	VP-15 (95-100)	VP-15 (75-80)	VP-15 (55-60)	DUP-01 (55-60)
Sampling Date:	3/18/2020	3/18/2020	3/18/2020	3/18/2020
PFAS by EPA 537m (ng/L)				
Perfluorooctanesulfonic acid (PFOS)	5.47	2.02	2.45	1.75 J
Perfluorooctanoic acid (PFOA)	8.30	3.64	1.68 J	3.91

Client Sample ID:	HB-5
Sampling Date:	3/18/2020
PFAS by EPA 537m (ng/L)	
Perfluorooctanesulfonic acid (PFOS)	1.58 J
Perfluorooctanoic acid (PFOA)	4.01

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CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

Hampton Bays Fire District
69 W Montauk Hwy
Hampton Bays, NY 11946

DRAWING PREPARED FOR:

Hampton Bays Fire District
69 W Montauk Hwy
Hampton Bays, NY 11946

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

Project:	HBF2401	Designed by:	DE
Date:	2/27/2024	Drawn by:	PH
Scale:	AS SHOWN	Approved by:	DE

GROUNDWATER SAMPLE RESULTS

Hampton Bays Fire District
69 W Montauk Hwy
Hampton Bays, NY 11946

FIGURE NO:

5

Client Sample ID:	CAS Number	NYSDEC Guidance Value for Anticipated Site Use - Unrestricted (3)	NYSDEC Value for Anticipated Site Use - Protection of Groundwater (3)
Sample Depth:			
Sampling Date:			
PFAS by EPA 537m (µg/kg)			
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	[0.88]	[1.0]
Perfluorooctanoic acid (PFOA)	335-67-1	[0.66]	[0.8]
Client Sample ID:	**CAS Number**	**NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives (1)**	**NYSDEC Part 375 Residential Use Soil Cleanup Objectives (2)**
Sample Elevation:			
Sampling Date:			
Organochlorine Pesticides by USEPA Method 8081 in mg/kg			
4,4'-DDE	72-55-9	0.0033	1.8
Dieldrin	60-57-1	0.005	0.039

NOTES:

(1) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestricted Use of Soil Cleanup Objective Table 375-6.8a

(2) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Restricted Use of Soil Cleanup Objective Table 375-6.8b

(3) NYDEC's Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYDEC's Part 375 Remedial Programs - April 2023

J - Analyte detected at or above the MDL (method detector limit) but below the RL (Reporting Limit) - data is estimated

U - Analyte not detected at or above the level indicated

J - Data Validation Qualifier - A QC analysis failed outside the primary aceptance limits and the data may be biased high or low or the direction of the bias may be indeterminable

Highlighted text denotes concentration exceeding the NYSDEC Protection of Groundwater Soil Guidance Value

Highlighted Text denotes concentration exceeding the NYDEC UUSCO

Client Sample ID:	SS-1		DUP-01	
Sample Depth:	0-2"		0-2"	
Sampling Date:	3/15/2019		3/15/2019	
PFAS by EPA 537m (µg/kg)				
Perfluorooctanesulfonic acid (PFOS)	1.56		1.68	
Perfluorooctanoic acid (PFOA)	0.16	J	0.21	
Organochlorine Pesticides by USEPA Method 8081 in mg/kg				
Dieldrin	0.0073	*J*	0.0037	*J*

Client Sample ID:	SS-7	
Sample Depth:	0-2"	
Sampling Date:	5/25/2021	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.21	U
Perfluorooctanoic acid (PFOA)	0.089	U
Organochlorine Pesticides by USEPA Method 8081 in mg/kg		
4,4'-DDE	0.0035	J

Client Sample ID:	SS-2	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.78	
Perfluorooctanoic acid (PFOA)	0.19	J

Client Sample ID:	SS-6	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	1.65	
Perfluorooctanoic acid (PFOA)	0.43	

Client Sample ID:	SS-8		DUP-02	
Sample Depth:	0-2"		0-2"	
Sampling Date:	5/25/2021		5/25/2021	
PFAS by EPA 537m (µg/kg)				
Perfluorooctanesulfonic acid (PFOS)	0.46	J	0.51	J
Perfluorooctanoic acid (PFOA)	0.091	U	0.11	U

Client Sample ID:	SS-3	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.86	
Perfluorooctanoic acid (PFOA)	0.17	J

Client Sample ID:	SS-4	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.55	
Perfluorooctanoic acid (PFOA)	0.26	

Client Sample ID:	SS-5	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	1.03	
Perfluorooctanoic acid (PFOA)	0.24	

PWGC
CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

DRAWING PREPARED FOR:

Hampton Bays Fire District
69 W Montauk Hwy
Hampton Bays, NY 11946

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

Project:	HBF2401	Designed by:	DE
Date:	3/20/2024	Drawn by:	AM
Scale:	AS SHOWN	Approved by:	DE

Proposed Delineation Sample Locations

Hampton Bays Fire District
69 W Montauk Hwy
Hampton Bays, NY 11946

FIGURE NO:

6

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Client Sample ID:	CAS Number	NYSDEC Guidance Value for Anticipated Site Use - Unrestricted (3)	NYSDEC Value for Anticipated Site Use - Protection of Groundwater (3)
Sample Depth:			
Sampling Date:			
PFAS by EPA 537m (µg/kg)			
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	[0.88]	[1.0]
Perfluorooctanoic acid (PFOA)	335-67-1	[0.66]	[0.8]
Client Sample ID:	**CAS Number**	**NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives (1)**	**NYSDEC Part 375 Residential Use Soil Cleanup Objectives (2)**
Sample Elevation:			
Sampling Date:			
Organochlorine Pesticides by USEPA Method 8081 in mg/kg			
4,4'-DDE	72-55-9	0.0033	1.8
Dieldrin	60-57-1	0.005	0.039

NOTES:

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J - Analyte detected at or above the MDL (method detector limit) but below the RL (Reporting Limit) - data is estimated

U - Analyte not detected at or above the level indicated

J - Data Validation Qualifier - A QC analysis failed outside the primary aceptance limits and the data may be biased high or low or the direction of the bias may be indeterminable

Highlighted text denotes concentration exceeding the NYSDEC Protection of Groundwater Soil Guidance Value

Highlighted Text denotes concentration exceeding the NYDEC UUSCO

Client Sample ID:	SS-1		DUP-01	
Sample Depth:	0-2"		0-2"	
Sampling Date:	3/15/2019		3/15/2019	
PFAS by EPA 537m (µg/kg)				
Perfluorooctanesulfonic acid (PFOS)	1.56		1.68	
Perfluorooctanoic acid (PFOA)	0.16	J	0.21	
Organochlorine Pesticides by USEPA Method 8081 in mg/kg				
Dieldrin	0.0073	*J*	0.0037	*J*

Client Sample ID:	SS-7	
Sample Depth:	0-2"	
Sampling Date:	5/25/2021	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.21	U
Perfluorooctanoic acid (PFOA)	0.089	U
Organochlorine Pesticides by USEPA Method 8081 in mg/kg		
4,4'-DDE	0.0035	J

Client Sample ID:	SS-2	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.78	
Perfluorooctanoic acid (PFOA)	0.19	J

Client Sample ID:	SS-6	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	1.65	
Perfluorooctanoic acid (PFOA)	0.43	

Client Sample ID:	SS-8		DUP-02	
Sample Depth:	0-2"		0-2"	
Sampling Date:	5/25/2021		5/25/2021	
PFAS by EPA 537m (µg/kg)				
Perfluorooctanesulfonic acid (PFOS)	0.46	J	0.51	J
Perfluorooctanoic acid (PFOA)	0.091	U	0.11	U

Client Sample ID:	SS-3	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.86	
Perfluorooctanoic acid (PFOA)	0.17	J

Client Sample ID:	SS-4	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	0.55	
Perfluorooctanoic acid (PFOA)	0.26	

Client Sample ID:	SS-5	
Sample Depth:	0-2"	
Sampling Date:	3/15/2019	
PFAS by EPA 537m (µg/kg)		
Perfluorooctanesulfonic acid (PFOS)	1.03	
Perfluorooctanoic acid (PFOA)	0.24	

PWGC
CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

DRAWING PREPARED FOR:

Hampton Bays Fire District
69 W Montauk Hwy
Hampton Bays, NY 11946

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

Project:	HBF2401	Designed by:	DE
Date:	3/20/2024	Drawn by:	AM
Scale:	AS SHOWN	Approved by:	DE

Proposed Surface Soil Remediation Areas

Hampton Bays Fire District
69 W Montauk Hwy
Hampton Bays, NY 11946

FIGURE NO:

7

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APPENDIX A

P.W. GROSSER CONSULTING, INC • P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, PC
631.589.6353 • WWW.PWGROSSER.COM • PWGC.INFO@PWGROSSER.COM
BOHEMIA • MANHATTAN • SARATOGA SPRINGS • MONTICELLO, NY • SYRACUSE • SHELTON, CT

HAMPTON BAYS FIRE DISTRICT SITE
69 WEST MONTAUK HIGHWAY
HAMPTON BAYS, NEW YORK 11946
SITE #152249

HEALTH AND SAFETY PLAN

SUBMITTED TO:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7016

PREPARED FOR:

Hampton Bays Fire District
69 West Montauk Highway
Hampton Bays, New York 11050

PREPARED BY:

P.W. Grosser Consulting Inc.
630 Johnson Ave., Suite 7
Bohemia, New York 11716
Phone: 631-589-6353
Fax: 631-589-8705

Derek Ersbak, PG, Vice President DerekE@pwgrosser.com
Brian Heflich, PE, Project Manager BrianH@pwgrosser.com

PWGC Project Number: HBF2401

MARCH 2024

TABLE OF CONTENTS

Page

P.W. GROSSER CONSULTING, INC • P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, PC
631.589.6353 • WWW.PWGROSSER.COM • PWGC.INFO@PWGROSSER.COM
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FIGURES

APPENDICES

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631.589.6353 • WWW.PWGROSSER.COM • PWGC.INFO@PWGROSSER.COM
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STATEMENT OF COMMITMENT

On-site employees may be exposed to chemical contaminants of concern identified within the soil/fill during the planned interim remedial activities to be performed on the Hampton Bays Fire District Project located at 69 West Montauk Highway, Hampton Bays, New York ("Site"). P.W. Grosser Consulting, Inc.'s (PWGC's) policy is to minimize the possibility of work-related exposure through awareness and qualified supervision, health and safety training, use of appropriate personal protective equipment, and the following activity specific safety protocols contained in this Health and Safety Plan (HASP). PWGC has established a guidance program to implement this policy in a manner that protects personnel to the maximum reasonable extent.

This HASP describes emergency response procedures for actual and potential chemical hazards. Persons are to acknowledge that they understand the potential hazards and the contents of this Health and Safety policy by signing off on receipt of their individual copy of the document. Contractors and suppliers are retained as independent contractors and are responsible for ensuring the health and safety of their own employees as it relates to general construction practices.

P.W. GROSSER CONSULTING, INC • P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, PC
631.589.6353 • WWW.PWGROSSER.COM • PWGC.INFO@PWGROSSER.COM
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1.0 INTRODUCTION AND SITE ENTRY REQUIREMENTS

This document describes the health and safety guidelines developed by PWGC at the request of Hampton Bays Fire District for the proposed Site remediation to be performed at the site located at 69 West Montauk Highway, New York to protect on-site personnel, visitors, and the public from exposure to hazardous materials or wastes. In accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR Part 1910.120 Hazardous Waste Operations and Emergency Response Final rule, this HASP, including the attachments, addresses safety and health hazards relating to each phase PWGC on-site work activities, as detailed in the Interim Remedial Measure Work Plan (IRMWP) for the Site and is based on the best information available. The HASP may be revised by PWGC at the request of Hampton Bays Fire District upon receipt of new information regarding Site conditions. Changes will be documented by written amendments.

1.1 Site Safety Plan Acceptance, Acknowledgment, and Amendments

The project superintendent and the Site safety officer are responsible for informing personnel entering the work area of the contents of this plan and ensuring that each person signs the safety plan acknowledging the on-site hazards and procedures required to minimize exposure to adverse effects of these hazards. A copy of the Acknowledgement Form is included in **Appendix A**.

Site conditions may warrant an amendment to the HASP. Amendments to the HASP are acknowledged by completing forms included in **Appendix B.**

1.2 Daily Safety Meetings

Each day before work begins; the Site safety officer will hold safety (tailgate or tool box) meetings to ensure that on-site personnel understand the Site conditions and operating procedures and to address safety questions and concerns. Meeting minutes and attendance will be recorded. Project staff will discuss and remedy health and safety issues at these meetings.

1.3 Key Personnel - Roles and Responsibilities

The following key personnel are planned for this project:

- Project Manager – Mr. Derek Ersbak, PG
- Site Safety Officer – Ms. Kylie Benz or alternative

The project manager is responsible for overall project administration and, with guidance from the Site safety officer, for supervising the implementation of this HASP. The Site safety officer will conduct daily (tail gate or toolbox) safety meetings at the project Site and oversee daily safety issues. Each subcontractor and supplier (defined as an OSHA employer) is also responsible for the health and safety of its employees. If there is any dispute about health and safety or project activities, on-site personnel will attempt to resolve the issue. If the

issue cannot be resolved at the Site, then the project manager will be consulted.

If the incident involved a construction worker, the General Contractor or subcontractor that employed the worker must report every incident that occurred on every construction site subject to permitting by the Department. Regardless of whether the incident involved a violation of this Code or any other law or rule, the incident must be reported if it resulted in either:

- fatality to any individual, including a member of the general public or a construction worker; or,
- an injury to any individual, including a member of the general public or a construction worker, that requires transport by emergency medical services or requires immediate emergency care at a hospital or offsite medical clinic.

In addition to these reporting requirements, the project manager is responsible for ensuring that PWGC personnel assigned to the construction site have the appropriate training.

The Site safety officer is responsible for the following:

1. Educating personnel about information in this HASP and other safety requirements to be observed during site operations, including, but not limited to, designation of work zones and levels of protection and emergency procedures dealing with fire and first aid.
2. Coordinating Site safety decisions with the project manager.
3. Monitoring the condition and status of known on-site hazards specified in this HASP.
4. Maintaining records of safety problems, corrective measures and documentation of chemical exposures or physical injuries (the Site safety officer will document these conditions in a bound notebook and maintain a copy of the notebook on-site).
5. Reporting injuries/incidences that occur on Site, regardless of if it includes a PWGC employee or other person on the Site, to the project manager as soon as possible following the incident.

The person who observes safety concerns and potential hazards that have not been addressed in the daily safety meetings should immediately report their observations/concerns to the Site safety officer or appropriate key personnel.

P.W. GROSSER CONSULTING, INC • P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, PC
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2.0 SITE BACKGROUND AND SCOPE OF WORK

The site consists of one parcel located at 69 West Montauk Highway in Hampton Bays, New York. The site is located in the Town of Southampton and Suffolk County. The site is identified in the Suffolk County Tax Map as District 0900, Section 224.00, Block 01.00, Lot 19.001. This site has been utilized as a fire house since 1930. The site is improved with two main buildings, which are used by the Fire District, and is bounded by Montauk Highway to the north, Good Ground Road to the south, commercial and residential properties to the west, and commercial properties to the east. The Site is improved as follows:

- The two-story firehouse building was constructed in 1930 and additions to the east and west sides were completed in 1967 and 1983. The first floor of this building is used to store fire trucks and fire equipment and contains a laundry room. The second floor is used as office and recreational space. No aqueous film forming foam (AFFF) was stored in this building. This building is connected to a sanitary system, comprised of a septic tank (ST-2) and multiple leaching cesspools (CP-2, CP-3, and CP-4) located on the south side of the building.
- The one-story steel framed building was constructed in 1993 and is utilized as a maintenance building. This building is used to store ancillary fire equipment and vehicles along with AFFF. In May 2019, 17 5-gallon containers of AFFF, which were stored on a pallet in the northwestern portion of the building, were removed and properly disposed of by Innovative Recycling Technologies. These containers were full and unopened. This AFFF was replaced with Universal Green, which is a fluorine free product. This building contains a sanitary system consisting of a septic tank (ST-1) and a leaching cesspool (CP-1) located on the west side of the building.
- Small wooden structures exist on the western site boundary. These structures do not have permanent foundations and are utilized as concession stands during community events. These structures contain sinks that are connected to the sanitary system associated with the main firehouse building.
- Stormwater is managed onsite through a series of storm drains which either discharge directly to the subsurface or are interconnected and piped across Montauk Highway to a recharge basin.

The stratigraphy at the site consists primarily of sands with groundwater occurring between 38 and 46 feet below surface grade. The detection of Per- and Polyfluorinated Substances (PFAS) in soil at the site at concentrations greater than the protection of groundwater standard guidance values (POGSGVs) has the potential to continue to spread to deeper depths. While PWGC and the NYSDEC continue to develop the Proposed Remedial Action Plan and Record of Decision, PWGC recommends that an IRM be implemented at the site to remove PFAS in soil and evaluate groundwater conditions following removal.

The proposed IRM will consist of:

- Performance of a waste characterization / delineation soil sampling program.

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- Excavation and/or removal of soil exceeding POGSGVs for PFAS in surface soils and soils within sanitary and drainage structures.
- Implementation of a community air monitoring plan (CAMP) during earth disturbing work.
- Appropriate handling, transportation and disposal of contaminated materials removed from the subject property in accordance with Federal, State and local rules and regulations for handling, transport, and disposal.
- Collection and analysis of end-point soil samples to evaluate the performance of the remedy to attainment of POGSGVs for PFAS.
- Import and placement of materials to be used for fill and cover in compliance with: (1) chemical limits and other specifications, (2) Federal, State and local rules and regulations for handling and transport of material.
- Installation of one additional groundwater monitoring well.
- Performance of groundwater monitoring and sampling to evaluate groundwater conditions following removal of impacted soils.
- Submission of an IRM Report.

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3.0 POTENTIAL HAZARDS OF THE SITE

This section presents an assessment of the chemical, biological, and physical hazards that may be encountered.

3.1 Chemical Hazards

Soil and Groundwater analytical results detected concentrations of perfluoroocatane sulfonate (PFOS) and/or perfluorooctanoate (PFOA) above POGSGVs, and pesticides in exceedance the unrestricted use soil cleanup objectives (UUSCO).

Pesticides:

Soil concentrations of 4,4-DDE and Dieldrin exceeded UUSCOs.

PFAS

Groundwater concentrations of PFOS and/or PFOA were detected at concentrations exceeding the groundwater guidance value (GV) of 2.7 nanograms per liter (ng/L) for PFOS and 6.7 for PFOA.

Appendix C includes information sheets for the known and suspected chemicals that may be encountered at the Site.

3.2 Biological Hazards

Work will be performed in an urban setting. During the course of the project, there is potential for workers to come into contact with biological hazards such as animals or insects.

3.2.1 Animals

The Site is located in a predominantly urban area. It is possible that dogs, cats, and rodents may be present. Workers shall use discretion and avoid all contact with animals.

3.2.2 Insects

Insects, such as mosquitoes, ticks, bees, and wasps may be present during certain times of the year. Workers will be encouraged to wear appropriate repellents, if they don't contain PFAS compounds, and PPE, if deemed necessary, when working in areas where insects are expected to be present.

3.3 Physical Hazards

During the project, there is potential for workers to come into contact with physical hazards such as heat stress, cold stress, noise, fire, airplanes, and explosions.

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3.3.1 *Temperature Extremes*

Heat Stress

Heat stress is a significant potential hazard, which is greatly exacerbated with the use of personal protective equipment (PPE) in hot environments. The potential hazards of working in hot environments include dehydration, cramps, heat rash, heat exhaustion, and heat stroke.

Cold Stress

At certain times of the year, workers may be exposed to the hazards of working in cold environments. Potential hazards in cold environments include frostbite, trench foot or immersion foot, hypothermia as well as slippery surfaces, brittle equipment, and poor judgment.

PWGC's Heat/Cold Stress Protocols are specified in **Appendix D**.

3.3.2 *Steam, Heat, and Splashing*

Exposure to steam, heat, and splashing hazards can occur during steam cleaning activities. Splashing can also occur during well development and sampling activities. Exposure to steam, heat, and splashing can result in scalding or burns, eye injury, and puncture wounds.

3.3.3 *Noise*

Noise is a potential hazard associated with the operation of heavy equipment, drill rigs, pumps, and engines. Workers will wear hearing protection while in the work zone when these types of machinery are operating.

3.3.4 *Fire and Explosion*

When conducting excavation or drilling activities, the opportunity of encountering fire and explosion hazards may exist from encountering underground utilities, from the use of diesel engine equipment, propane, liquefied petroleum gas, and other potential ignition sources. During dry periods there is an increased chance of forest and brush fires starting at the job Site. No smoking will be permitted at the Site and all operations involving potential ignition sources will be monitored continuously (fire watch).

3.3.5 *Manual Lifting/Material Handling*

Manual lifting of heavy objects may be required. Failure to follow proper lifting technique can result in back injuries and strains. Back injuries are a serious concern as they are the most common workplace injury, often resulting in lost or restricted work time, and long treatment and recovery periods.

3.3.6 *Slips, Trips, and Falls*

Working in and around the Site will pose slip, trip, and fall hazards due to slippery surfaces that may be oil covered, or from rough terrain, surfaces that are steep inclines, surfaced debris, or surfaces which are wet from

rain or ice. Falls may result in twisted ankles, broken bones, head trauma, or back injuries.

3.3.7 Heavy Equipment Operation

Drilling equipment will be utilized for the installation of soil borings and groundwater monitoring wells and an excavator/backhoe may be used to complete shallow excavations where required. Working with or near heavy equipment poses many potential hazards, including electrocution, fire/explosion, being struck by or against, or pinched/caught/crushed by, and can result in serious physical harm. While deep excavations are not anticipated, should excavations extend beyond six feet in depth, a support of excavation and fall protection plan shall be submitted by the Remedial Contractor under separate cover.

3.3.8 Electrocution

Encountering underground utilities may pose electrical hazards to workers. Additionally, overhead electrical lines can be a concern during drilling operations. Potential adverse effects of electrical hazards include burns and electrocution, which could result in death.

4.0 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) shall be selected in accordance with OSHA 29 CFR 1910.120(c), (g), and 1910.132. Protective equipment shall be NIOSH approved and respiratory protection shall conform to OSHA 29 CFR Part 1910.133 and 1910.134 specifications; head protection shall conform to 1910.135; eye and face protection shall conform to 1910.133; and foot protection shall conform to 1910.136. The only true difference among the levels of protection from D through B is the addition of the type of respiratory protection. **It is anticipated that work will be performed in Level D PPE.**

4.1 Level D

Level D PPE shall be donned when the atmosphere contains no known hazards and work functions preclude splashes, immersion, or the potential for inhalation of, or contact with, hazardous concentrations of harmful chemicals. Level D PPE consists of:

- standard work uniform, coveralls, or tyvek, as needed;
- steel toe work boots;
- hard hat;
- gloves, as needed;
- safety glasses;
- hearing protection;
- equipment replacements are available as needed.

4.2 Level C

Level C PPE shall be donned when the concentrations of measured total organic vapors in the breathing zone exceed background concentrations (using a portable OVA, or equivalent), but are less than 5 ppm or when other, non-volatile, chemicals are elevated within a breathing zone that may warrant appropriate PPE to protect workers. The specifications on the air purifying respirator (APR) filters used must be appropriate for contaminants identified or expected to be encountered. Level C PPE shall be donned when the identified contaminants have adequate warning properties and criteria for using APR have been met. Level C PPE consists of:

- chemical resistant or coated tyvek coveralls;
- steel-toe work boots;
- chemical resistant over boots or disposable boot covers;

- disposable inner gloves (surgical gloves);
- disposable outer gloves;
- full face APR fitted with organic vapor/dust and mist filters or filters appropriate for the identified or expected contaminants;
- hard hat;
- splash shield, as needed; and,
- ankles/wrists taped with duct tape.

The Site safety officer will verify if Level C is appropriate by checking organic vapor concentrations using compound and/or class-specific detector tubes.

4.3 Level B

Level B PPE shall be donned when the contaminants have not been identified and/or the concentrations of unknown measured total organic vapors in the breathing zone exceed 5 ppm (using a portable OVA, or equivalent) or when other, non-volatile, chemicals are elevated within a breathing zone that may warrant appropriate PPE to protect workers. Level B PPE shall be donned if the immediately dangerous to life and health (IDLH) level of a known contaminant is exceeded. If a contaminant is identified or is expected to be encountered for which NIOSH and/or OSHA recommend the use of a positive pressure self-contained breathing apparatus (SCBA) when that contaminant is present, Level B PPE shall be donned even though the total organic vapors in the breathing zone may not exceed 5 ppm. Level B shall be donned for confined space entry, and when the atmosphere is oxygen deficient (oxygen less than 19.5%) or potentially oxygen deficient. If Level B PPE is required for a task, at least three people shall be donned in Level B at any one time during that task. PPE shall only be donned at the direction of the Site safety officer. Level B PPE consists of:

- supplied air SCBA or air line system with five minute egress system;
- chemical resistant coveralls;
- steel-toe work boots;
- chemical resistant over boots or disposable boot covers;
- disposable inner gloves;
- disposable outer gloves;
- hard hat; and,
- ankles/wrists taped.

The exact PPE ensemble is decided on a site-by-site basis by the PWGC Health and Safety Officer with the intent to provide the most protective and efficient worker PPE.

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5.0 CONTINGENCY PLAN/EMERGENCY RESPONSE PLAN

Site personnel must be prepared in the event of an emergency. Emergencies can take many forms: illnesses, injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather.

Emergency telephone numbers and a map to the hospital (**Figure 1**) will be posted in the command post. Site personnel should be familiar with the emergency procedures, and the locations of Site safety, first aid, and communication equipment. These will be outlined in the site-specific HASP.

5.1 Emergency Equipment On-site

Private telephones:	Site personnel.
Two-way radios:	Site personnel where necessary.
Emergency Alarms:	On-site vehicle horns*.
First aid kits:	On-site, in vehicles or office.
Fire extinguisher:	On-site, in office or on equipment.

* Horns: Air horns will be supplied to personnel at the discretion of the project superintendent or Site safety officer.

5.2 Emergency Telephone Numbers

General Emergencies	911
Hampton Bays Police	911
Stony Brook South Hampton Hospital	1-631-726-8200
NYSDEC Spills Division	1-800-457-7362
NYSDEC Hazardous Waste Division	1-631-444-0375
Fire Department	911
National Response Center	1-800-424-8802
Poison Control	1-212-764-7667
PWGC Headquarters	631-589-6353
Project Manager	631-589-6353

A copy of this page shall be posted in the office.

5.3 Personnel Responsibilities During an Emergency

The project manager is primarily responsible for responding to and correcting any emergency situations. However, in the absence of the project manager, the Site safety officer shall act as the project manager's on-site designee and perform the following tasks:

- Take appropriate measures to protect personnel;
- Ensure that appropriate federal, state, and local agencies are informed and emergency response plans are coordinated. In the event of fire or explosion, the local fire department should be summoned immediately. If toxic materials are released to the air, the local authorities should be informed in order to assess the need for evacuation;
- Ensure appropriate decontamination, treatment, or testing for exposed or injured personnel;
- Determine the cause of incidents and make recommendations to prevent recurrence; and,
- Ensure that all required reports have been prepared.

5.4 Medical Emergencies

A person who becomes ill or injured, first aid will be administered while waiting for an ambulance or paramedics. A Field Accident Report (**Appendix E**) must be filled out for any injury.

A person transporting an injured/exposed person to a clinic or hospital for treatment will take the directions to the hospital and information on the chemical(s) to which they may have been exposed.

5.5 Fire or Explosion

In the event of a fire or explosion, the local fire department will be summoned immediately. The Site safety officer or his designated alternate will advise the fire commander of the location, nature and identification of the hazardous materials on-site. If it is safe to do so, Site personnel may:

- use fire fighting equipment available on-site; or,
- remove or isolate flammable or other hazardous materials that may contribute to the fire.

5.6 Evacuation Routes

Evacuation routes established by work area locations for each Site will be reviewed prior to commencing Site operations. As the work areas change, the evacuation routes will be altered accordingly, and the new route will be reviewed.

Under extreme emergency conditions, evacuation is to be immediate without regard for equipment. The evacuation signal will be a continuous blast of a vehicle horn, if possible, and/or by verbal/radio communication. When evacuating the Site, personnel will follow these instructions:

- Keep upwind of smoke, vapors, or spill location.
- Exit through the decontamination corridor if possible.
- If evacuation through the decontamination corridor is not possible, personnel should remove

contaminated clothing once they are in a safe location and leave it near the exclusion zone or in a safe place.

- The Site safety officer will conduct a head count to ensure that all personnel have been evacuated safely. The head count will be correlated to the site and/or exclusion zone entry/exit log.
- If emergency Site evacuation is necessary, all personnel are to escape the emergency situation and decontaminate to the maximum extent practical.

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FIGURE

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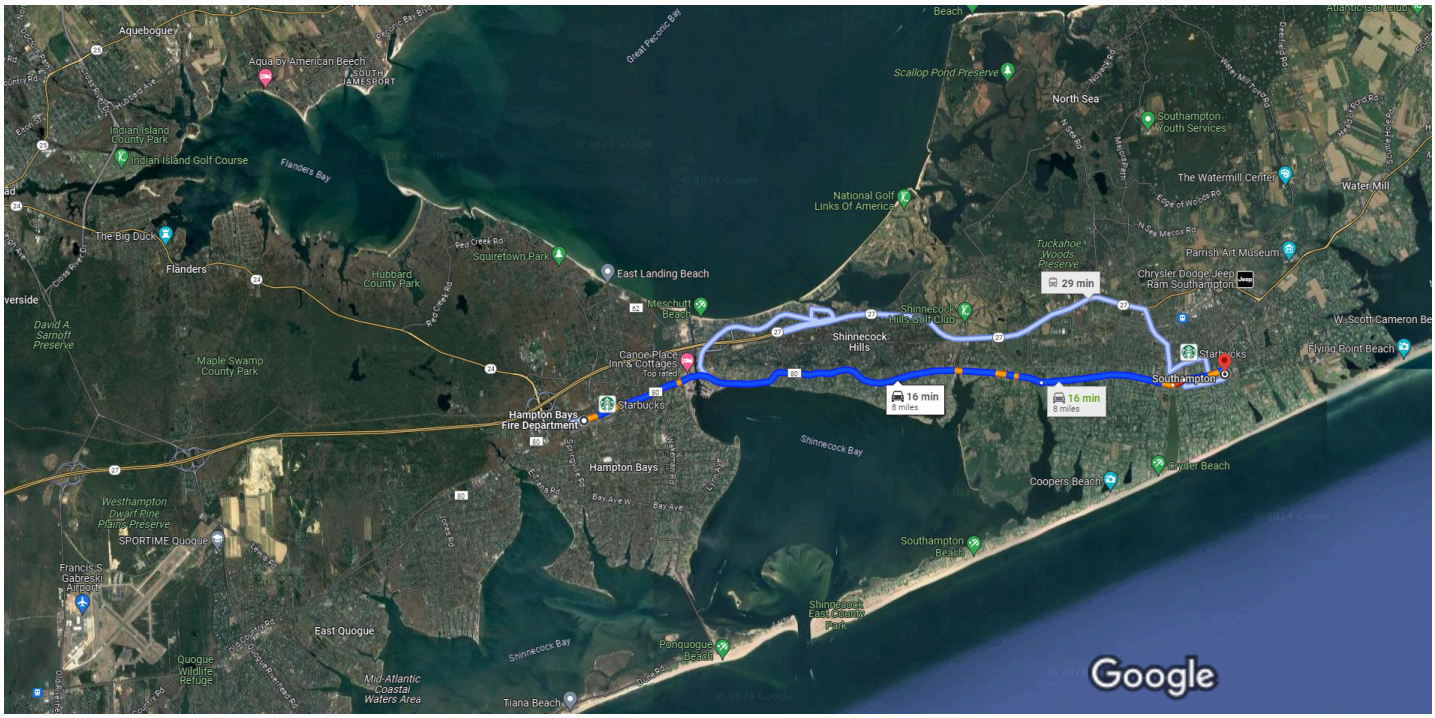
Google Maps

Hampton Bays Fire Department, 69 W Montauk Hwy, Hampton Bays, NY 11946 to Stony Brook Southampton Hospital, 240 Meeting House Ln, Southampton, NY 11968

Drive 8.0 miles, 16 min



Imagery ©2024 Airbus, Landsat / Copernicus, Maxar Technologies, New York GIS, USDA/FPAC/GEO, Map data ©2024 1 mi

Hampton Bays Fire Department
69 W Montauk Hwy, Hampton Bays, NY 11946

1. Head east on County Rd 80 E/Montauk Hwy
   Continue to follow Montauk Hwy
   5.7 mi
2. Continue onto Hill St
   1.6 mi
3. Hill St turns slightly left and becomes Jobs Ln
   0.2 mi
4. Continue straight onto Meeting House Ln
   Destination will be on the right
   0.5 mi

Stony Brook Southampton Hospital
240 Meeting House Ln, Southampton, NY 11968

APPENDIX A

SITE SAFETY PLAN ACCEPTANCE AND ACKNOWLEDGMENT FORM

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SITE SAFETY PLAN ACKNOWLEDGEMENT FORM

I have been informed and understand the procedures set forth in the health and safety plan and amendments:

Printed Name	Signature	Representing	Date

APPENDIX B

SITE SAFETY AMENDMENT FORM

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SITE SAFETY PLAN AMENDMENT FORM

SITE SAFETY PLAN AMENDMENT # _____: _____

SITE NAME: _____

REASON FOR AMENDMENT: _____

_____

_____

ALTERNATIVE PROCEDURES: _____

_____

_____

REQUIRED CHANGES IN PPE: _____

_____

_____

_____ _____

PROJECT SUPERINTENDENT DATE

_____ _____

HEALTH & SAFETY CONSULTANT DATE

_____ _____

SITE SAFETY OFFICER DATE

APPENDIX C

CHEMICAL HAZARDS

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Safety Data Sheet
acc. to OSHA HCS

Printing date 03/23/2019 Version Number 2 Reviewed on 03/23/2019

*
1 Identification

· **Product identifier**

· **Trade name: Perfluorooctanoic Acid (PFOA)**

· **Part number:** N-1588
· **CAS Number:**
335-67-1
· **EC number:**
206-397-9
· **Index number:**
607-704-00-2
· **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Agilent Technologies, Inc.
5301 Stevens Creek Blvd.
Santa Clara, CA 95051 USA

· **Information department:**
Telephone: 800-227-9770
e-mail: pdl-msds_author@agilent.com
· **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

*
2 Hazard(s) identification

· **Classification of the substance or mixture**


GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.
Repr. 1B H360 May damage fertility or the unborn child.
STOT RE 1 H372 Causes damage to the liver through prolonged or repeated exposure.


GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.


GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H332 Harmful if inhaled.

· **Label elements**
· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/23/2019 Version Number 2 Reviewed on 03/23/2019

Trade name: Perfluorooctanoic Acid (PFOA)

(Contd. of page 1)

· **Hazard pictograms**

GHS05 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
perfluorooctanoic acid (PFOA)
· **Hazard statements**
Harmful if swallowed or if inhaled.
Causes serious eye damage.
Suspected of causing cancer.
May damage fertility or the unborn child.
Causes damage to the liver through prolonged or repeated exposure.
· **Precautionary statements**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
Rinse mouth.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Immediately call a poison center/doctor.
IF exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *3
Fire = 0
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Perfluorooctanoic Acid (PFOA)

(Contd. of page 2)

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
335-67-1 perfluorooctanoic acid (PFOA)
· **Identification number(s)**
· **EC number:** 206-397-9
· **Index number:** 607-704-00-2

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Immediately call a doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

(Contd. on page 4)

(Contd. of page 3)

· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**
1.1 mg/m³

· **PAC-2:**
12 mg/m³

· **PAC-3:**
75 mg/m³

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
· **Information about protection against explosions and fires:** Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

*

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:** Not required.
· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.

(Contd. on page 5)

(Contd. of page 4)

· **Protection of hands:**
Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.
· **Material of gloves**
For normal use: nitrile rubber, 11-13 mil thickness
For direct contact with the chemical: butyl rubber, 12-15 mil thickness
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
· **Penetration time of glove material**
For normal use: nitrile rubber: 1 hour
For direct contact with the chemical: butyl rubber: >4 hours
· **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Solid
Color:	Not determined.
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined.
· **pH-value:**	Not applicable.
· **Change in condition**	
Melting point/Melting range:	55-56 °C (131-132.8 °F)
Boiling point/Boiling range:	190 °C (374 °F)
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Product is not flammable.
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Not determined.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure at 20 °C (68 °F):**	0.69 hPa (0.5 mm Hg)
· **Density at 20 °C (68 °F):**	0.9 g/cm³ (7.5105 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not applicable.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 5)

· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with Water at 20 °C (68 °F):**	3.4 g/l
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal
Solids content:	100.0 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	500 mg/kg
Inhalative	LC50/4 h	1.5 mg/L

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** Strong irritant with the danger of severe eye injury.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

2B

· **NTP (National Toxicology Program)**

Substance is not listed.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 6)

· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (Assessment by list): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**	
· **DOT, IMDG, IATA**	UN3261
· **UN proper shipping name**	
· **DOT**	Corrosive solid, acidic, organic, n.o.s. (perfluorooctanoic acid (PFOA))
· **IMDG, IATA**	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (perfluorooctanoic acid (PFOA))

(Contd. on page 8)

(Contd. of page 7)

· **Transport hazard class(es)**

· **IATA**

· **Class**	8 Corrosive substances
· **Label**	8
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Warning: Corrosive substances
· **Danger code (Kemler):**	80
· **EMS Number:**	F-A,S-B
· **Segregation groups**	Acids
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **DOT**	
· **Quantity limitations**	On passenger aircraft/rail: 25 kg On cargo aircraft only: 100 kg
· **IMDG**	
· **Limited quantities (LQ)**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· **UN "Model Regulation":**	UN 3261 CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (PERFLUOROOCTANOIC ACID (PFOA)), 8, III

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Sara**

· **Section 355 (extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Perfluorooctanoic Acid (PFOA)

(Contd. of page 8)

· **Chemicals known to cause reproductive toxicity for males:**
Substance is not listed.

· **Chemicals known to cause developmental toxicity:**
Substance is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)**
Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
Substance is not listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*
16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· **Date of preparation / last revision** 03/23/2019 / 1

· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Carc. 2: Carcinogenicity – Category 2
Repr. 1B: Reproductive toxicity – Category 1B
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

· *** Data compared to the previous version altered.**

Safety Data Sheet
acc. to OSHA HCS

Printing date 12/13/2016 *Reviewed on 12/13/2016*

1 Identification

· **Product identifier**

· **Product Name: Perfluoro-n-octane Sulfonate (PFOS)**

· **Part Number:** LCS-4951
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **Information department:** product safety department
· **Emergency telephone number:**
Emergency Phone Number (24 hours)
CHEMTREC (800-424-9300)
Outside US: 703-527-3887

2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.

GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.
Repr. 1 H360-H362 May damage fertility or the unborn child. May cause harm to breast-fed children.
STOT SE 1 H370 Causes damage to organs.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS02 GHS06 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
methanol
perfluorooctane sulfonic acid
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H351 Suspected of causing cancer.
H360-H362 May damage fertility or the unborn child. May cause harm to breast-fed children.
H370 Causes damage to organs.
· **Precautionary statements**
Avoid contact during pregnancy/while nursing.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Use explosion-proof electrical/ventilating/lighting/equipment.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 12/13/2016 Reviewed on 12/13/2016

Product Name: Perfluoro-n-octane Sulfonate (PFOS)

(Contd. of page 1)

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *3
Fire = 3
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
67-56-1	methanol	99.9%
1763-23-1	perfluorooctane sulfonic acid	0.1%

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
· **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Do not induce vomiting; immediately call for medical help.
· **Information for Doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** CO2, sand, extinguishing powder. Do not use water.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Product Name: Perfluoro-n-octane Sulfonate (PFOS)

(Contd. of page 2)

· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

67-56-1 methanol	
PEL	Long-term value: 260 mg/m³, 200 ppm
REL	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin
TLV	Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm Skin; BEI

· **Ingredients with biological limit values:**	
67-56-1 methanol	
BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**

Protective gloves

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 12/13/2016 Reviewed on 12/13/2016

Product Name: Perfluoro-n-octane Sulfonate (PFOS)

(Contd. of page 3)

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	According to product specification
· **Odor:**	Characteristic
· **Odour Threshold:**	Not applicable.
· **pH-value:**	Not applicable.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	64 °C (147 °F)
· **Flash point:**	11 °C (52 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	455 °C (851 °F)
· **Decomposition temperature:**	Not applicable.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· **Explosion limits:**	
Lower:	5.5 Vol %
Upper:	44.0 Vol %
· **Vapor pressure at 20 °C (68 °F):**	128 hPa (96 mm Hg)
· **Density at 20 °C (68 °F)**	0.79 g/cm³ (6.593 lbs/gal)
· **Relative density**	Not applicable.
· **Vapor density**	Not applicable.
· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not applicable.
· **Viscosity:**	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· **Solvent content:**	
Organic solvents:	99.9 %
VOC content:	99.9 %
Solids content:	0.1 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Product Name: Perfluoro-n-octane Sulfonate (PFOS)

(Contd. of page 4)

· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
67-56-1 methanol		
Oral	LD50	5628 mg/kg (rat)
Dermal	LD50	15800 mg/kg (rabbit)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN1230
· **UN proper shipping name**	
· **DOT**	Methanol

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 12/13/2016 *Reviewed on 12/13/2016*

Product Name: Perfluoro-n-octane Sulfonate (PFOS)

(Contd. of page 5)

· **ADR**	1230 Methanol
· **IMDG, IATA**	METHANOL
· **Transport hazard class(es)**	
· **DOT**	
	
· **Class**	3 Flammable liquids
· **Label**	3, 6.1
· **ADR**	
	
· **Class**	3 Flammable liquids
· **Label**	3+6.1
· **IMDG**	
	
· **Class**	3 Flammable liquids
· **Label**	3/6.1
· **IATA**	
	
· **Class**	3 Flammable liquids
· **Label**	3 (6.1)
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	II
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Warning: Flammable liquids
· **Danger code (Kemler):**	336
· **EMS Number:**	F-E,S-D
· **Stowage Category**	B
· **Stowage Code**	SW2 Clear of living quarters.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **IMDG**	
· **Limited quantities (LQ)**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **UN "Model Regulation":**	UN 1230 METHANOL, 3 (6.1), II

US

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Product Name: Perfluoro-n-octane Sulfonate (PFOS)

(Contd. of page 6)

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

67-56-1	methanol

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

67-56-1	methanol

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**

67-56-1	methanol	530 ppm

· **PAC-2:**

67-56-1	methanol	2,100 ppm

· **PAC-3:**

67-56-1	methanol	7200* ppm

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS02 GHS06 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
methanol
perfluorooctane sulfonic acid
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H351 Suspected of causing cancer.
H360-H362 May damage fertility or the unborn child. May cause harm to breast-fed children.
H370 Causes damage to organs.
· **Precautionary statements**
Avoid contact during pregnancy/while nursing.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Use explosion-proof electrical/ventilating/lighting/equipment.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 12/13/2016 *Reviewed on 12/13/2016*

Product Name: Perfluoro-n-octane Sulfonate (PFOS)

(Contd. of page 7)

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** product safety department
· **Contact:**
SPEX CertiPrep, LLC.
1-732-549-7144
· **Date of preparation / last revision** 12/13/2016 / -
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
Carc. 2: Carcinogenicity – Category 2
Repr. 1: Reproductive toxicity – Category 1
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/30/2019 Version Number 2 Reviewed on 03/30/2019

*

1 Identification

· **Product identifier**

· **Trade name: 4,4'-DDE Standard (1X1 mL)**

· **Part number:** PST-250A100A01
· **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Agilent Technologies, Inc.
5301 Stevens Creek Blvd.
Santa Clara, CA 95051 USA

· **Information department:**
Telephone: 800-227-9770
e-mail: pdl-msds_author@agilent.com
· **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

· **Classification of the substance or mixture**


GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.


GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Eye Irrit. 2A H319 Causes serious eye irritation.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**


GHS02 GHS07

· **Signal word** Danger

· **Hazard-determining components of labeling:**
acetonitrile
· **Hazard statements**
Highly flammable liquid and vapor.
Harmful if swallowed.
Causes serious eye irritation.
· **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Trade name: 4,4'-DDE Standard (1X1 mL)

(Contd. of page 1)

Use only non-sparking tools.
Take precautionary measures against static discharge.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
Rinse mouth.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 2
Fire = 3
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
75-05-8	acetonitrile	99.987%

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Immediately rinse with water.
· **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Trade name: 4,4'-DDE Standard (1X1 mL)

(Contd. of page 2)

· **After swallowing:** Immediately call a doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
75-05-8	acetonitrile	13 ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	6.5 mg/m³

· **PAC-2:**		
75-05-8	acetonitrile	50 ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	72 mg/m³

· **PAC-3:**		
75-05-8	acetonitrile	150 ppm
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	170 mg/m³

7 Handling and storage

· **Handling:**
· **Precautions for safe handling** No special precautions are necessary if used correctly.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Trade name: 4,4'-DDE Standard (1X1 mL)

(Contd. of page 3)

Protect against electrostatic charges.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
· **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
75-05-8 acetonitrile	
PEL	Long-term value: 70 mg/m³, 40 ppm
REL	Long-term value: 34 mg/m³, 20 ppm
TLV	Long-term value: 34 mg/m³, 20 ppm Skin

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.
· **Protection of hands:**
Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.
· **Material of gloves**
For normal use: nitrile rubber, 11-13 mil thickness
For direct contact with the chemical: butyl rubber, 12-15 mil thickness
· **Penetration time of glove material**
For normal use: nitrile rubber: 1 hour
For direct contact with the chemical: butyl rubber: >4 hours

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/30/2019 Version Number 2 Reviewed on 03/30/2019

Trade name: 4,4'-DDE Standard (1X1 mL)

(Contd. of page 4)

· **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Fluid
Color:	Colorless
· **Odor:**	Aromatic
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	-46 °C (-50.8 °F)
Boiling point/Boiling range:	81 °C (177.8 °F)
· **Flash point:**	2 °C (35.6 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	525 °C (977 °F)
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· **Explosion limits:**	
Lower:	4.4 Vol %
Upper:	16 Vol %
· **Vapor pressure at 20 °C (68 °F):**	0 hPa (0 mm Hg)
· **Density at 20 °C (68 °F):**	0.786 g/cm³ (6.55917 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.

(Contd. on page 6)

(Contd. of page 5)

· **Solvent content:**
VOC content: 0.00 %
0.0 g/l / 0.00 lb/gal
· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
ATE (Acute Toxicity Estimate)		
Oral	LD50	1,320 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	3,587 mg/L (mouse)

75-05-8 acetonitrile		
Oral	LD50	1,320 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	3,587 mg/L (mouse)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** Irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 6)

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

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14 Transport information

· **Not Regulated, De minimus Quantities**	-
· **UN-Number**	
· **DOT, IMDG, IATA**	UN1648
· **UN proper shipping name**	
· **DOT**	Acetonitrile mixture
· **IMDG, IATA**	ACETONITRILE mixture
· **Transport hazard class(es)**	
· **DOT, IMDG, IATA**	

· **Class**	3 Flammable liquids

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 7)

· **Label**	3
· **Packing group** · **DOT, IMDG, IATA**	II
· **Environmental hazards:**	Not applicable.
· **Special precautions for user** · **Danger code (Kemler):** · **EMS Number:** · **Stowage Category** · **Stowage Code**	Warning: Flammable liquids 33 F-E,S-D B SW2 Clear of living quarters.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **DOT** · **Quantity limitations**	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
· **IMDG** · **Limited quantities (LQ)** · **Excepted quantities (EQ)**	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **UN "Model Regulation":**	UN 1648 ACETONITRILE MIXTURE, 3, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

75-05-8	acetonitrile

· **TSCA (Toxic Substances Control Act):**

75-05-8	acetonitrile

· **Proposition 65**

· **Chemicals known to cause cancer:**

72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

· **Chemicals known to cause developmental toxicity:**

72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Trade name: 4,4'-DDE Standard (1X1 mL)

(Contd. of page 8)

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**		
75-05-8	acetonitrile	CBD, D
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	B2

· **TLV (Threshold Limit Value established by ACGIH)**		
75-05-8	acetonitrile	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· **Department issuing SDS:** Document Control / Regulatory
· **Contact:** regulatory@ultrasci.com
· **Date of preparation / last revision** 03/30/2019 / 1
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
· *** Data compared to the previous version altered.**

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/24/2019 Version Number 4 Reviewed on 03/08/2019

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1 Identification

· **Product identifier**

· **Trade name: Dieldrin**

· **Part number:** PST-400
· **CAS Number:**
60-57-1
· **EC number:**
200-484-5
· **Index number:**
602-049-00-9
· **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Agilent Technologies, Inc.
5301 Stevens Creek Blvd.
Santa Clara, CA 95051 USA

· **Information department:**
Telephone: 800-227-9770
e-mail: pdl-msds_author@agilent.com
· **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.
Acute Tox. 1 H310 Fatal in contact with skin.

GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.
STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.

· **Label elements**
· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**


GHS06 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
dieldrin (ISO)
· **Hazard statements**
Toxic if swallowed.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 1)

Fatal in contact with skin.
Suspected of causing cancer.
Causes damage to organs through prolonged or repeated exposure.

· **Precautionary statements**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapors/spray.
Do not get in eyes, on skin, or on clothing.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Immediately call a poison center/doctor.
Specific treatment (see on this label).
Rinse mouth.
If on skin: Wash with plenty of water.
IF exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
Take off immediately all contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 4
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 4
Fire = 0
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
60-57-1 dieldrin (ISO)
· **Identification number(s)**
· **EC number:** 200-484-5
· **Index number:** 602-049-00-9

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 2)

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
In case of irregular breathing or respiratory arrest provide artificial respiration.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Do not induce vomiting; immediately call for medical help.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Mount respiratory protective device.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**
0.3 mg/m³
· **PAC-2:**
6.8 mg/m³
· **PAC-3:**
450 mg/m³

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 3)

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
· **Information about protection against explosions and fires:** Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.
At this time, the other constituents have no known exposure limits.

60-57-1 dieldrin (ISO)	
PEL	Long-term value: 0.25 mg/m³ Skin
REL	Long-term value: 0.25 mg/m³ Skin; See Pocket Guide App. A
TLV	Long-term value: 0.1* mg/m³ Skin;*inhalable fraction and vapor

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.

(Contd. on page 5)

(Contd. of page 4)

· **Protection of hands:**
Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.
· **Material of gloves**
For normal use: nitrile rubber, 11-13 mil thickness
For direct contact with the chemical: butyl rubber, 12-15 mil thickness
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
· **Penetration time of glove material**
For normal use: nitrile rubber: 1 hour
For direct contact with the chemical: butyl rubber: >4 hours
· **Eye protection:**

Tightly sealed goggles

*

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Solid
Color:	Not determined.
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined.
· **pH-value:**	Not applicable.
· **Change in condition**	
Melting point/Melting range:	143-144 °C (289.4-291.2 °F)
Boiling point/Boiling range:	Undetermined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Product is not flammable.
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Not determined.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure at 20 °C (68 °F):**	0.000001 hPa (0 mm Hg)
· **Density at 20 °C (68 °F):**	1.75 g/cm³ (14.60375 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not applicable.

(Contd. on page 6)

(Contd. of page 5)

· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with Water:**	Insoluble.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal
Solids content:	100.0 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	38 mg/kg (mouse)
Dermal	LD50	10 mg/kg (rat)

60-57-1 dieldrin (ISO)

Oral	LD50	38 mg/kg (mouse)
		38 mg/kg (rat)
Dermal	LD50	10 mg/kg (rat)
		250 mg/kg (rabbit)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:** Danger through skin absorption.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

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(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 6)

· **NTP (National Toxicology Program)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 3 (Assessment by list): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

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14 Transport information

· **UN-Number**
· **DOT, IMDG, IATA** UN2811

· **UN proper shipping name**
· **DOT** Toxic solids, organic, n.o.s. (dieldrin (ISO))
· **IMDG, IATA** TOXIC SOLID, ORGANIC, N.O.S. (dieldrin (ISO))

· **Transport hazard class(es)**

· **DOT, IMDG, IATA**

· **Class** 6.1 Toxic substances

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 7)

· **Label**	6.1
· **Packing group** · **DOT, IMDG, IATA**	I
· **Environmental hazards:**	Not applicable.
· **Special precautions for user** · **Danger code (Kemler):** · **EMS Number:** · **Stowage Category**	Warning: Toxic substances 66 F-A,S-A B
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **DOT**	
· **Quantity limitations**	On passenger aircraft/rail: 5 kg On cargo aircraft only: 50 kg
· **Hazardous substance:**	1 lbs, 0.454 kg
· **IMDG**	
· **Limited quantities (LQ)**	0
· **Excepted quantities (EQ)**	Code: E5 Maximum net quantity per inner packaging: 1 g Maximum net quantity per outer packaging: 300 g
· **UN "Model Regulation":**	UN 2811 TOXIC SOLID, ORGANIC, N.O.S. (DIELDRIN (ISO)), 6.1, I, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**
Substance is not listed.

· **TSCA (Toxic Substances Control Act):**
Substance is not listed.

· **TSCA new (21st Century Act): (Substances not listed)**
60-57-1 dieldrin (ISO)

· **Proposition 65**

· **Chemicals known to cause cancer:**
Substance is listed.

· **Chemicals known to cause reproductive toxicity for females:**
Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**
Substance is not listed.

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 8)

· **Chemicals known to cause developmental toxicity:**
Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
B2

· **TLV (Threshold Limit Value established by ACGIH)**
(A4)

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
Substance is listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*
16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· **Department issuing SDS:** Document Control / Regulatory
· **Contact:** regulatory@ultrasci.com
· **Date of preparation / last revision** 03/24/2019 / 3
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 1: Acute toxicity – Category 1
Carc. 2: Carcinogenicity – Category 2
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
· *** Data compared to the previous version altered.**

APPENDIX D

HEAT AND COLD PROTOCOLS

P.W. GROSSER CONSULTING, INC • P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, PC
631.589.6353 • WWW.PWGROSSER.COM • PWGC.INFO@PWGROSSER.COM
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HEAT STRESS

Heat Stress (Hyperthermia)

Heat stress is the body's inability to regulate the core temperature. A worker's susceptibility to heat stress can vary according to his/her physical fitness, degree of acclimation to heat, humidity, age and diet.

1. Prior to site activity, the field team leader may make arrangements for heat stress monitoring (i.e., monitoring heart rate, body temperature, and body water loss) during actual site work if conditions warrant. In addition, the FTL is to ensure that each team member has been acclimatized to the prevailing environmental conditions, that personnel are aware of the signs and symptoms of heat sickness, that they have been adequately trained in first aid procedures, and that there are enough personnel on-site to rotate work assignments and schedule work during hours of reduced temperatures. Personnel should not consume alcoholic or caffeinated beverages but rather drink moderate levels of an electrolyte solution and eat well prior to commencing site work.

2. Although there is no specific test given during a baseline physical that would identify a person's intolerance to heat, some indicators are tobacco or medication use, dietary habits, body weight, and chronic conditions such as high blood pressure or diabetes.

3. *Heat cramps*, caused by profuse perspiration with inadequate fluid intake and salt replacement, most often afflict people in good physical condition who work in high temperature and humidity. Heat cramps usually come on suddenly during vigorous activity. Untreated, heat cramps may progress rapidly to heat exhaustion or heat stroke. First aid treatment: remove victim to a cool place and replace lost fluids with water.

4. Thirst is not an adequate indicator of heat exposure. Drinking fluid by itself does not indicate sufficient water replacement during heat exposure. A general rule, the amount of water administered should replace the amount of water lost, and it should be administered at regular intervals throughout the day. For every half pound of water lost, 8 ounces of water should be ingested. Water should be replaced by drinking 2 – 4 ounce servings during every rest period. A recommended alternative to water is an electrolyte drink split 50/50 with water.

5. *Heat exhaustion* results from salt and water loss along with peripheral pooling of blood. Like heat cramps, heat exhaustion tends to occur in persons in good physical health who are working in high temperatures and humidity. Heat exhaustion may come on suddenly as dizziness and collapse. Untreated, heat exhaustion may progress to heat stroke.

6. *Treatment for heat exhaustion*: Move the victim to a cool environment (e.g. air-conditioned room/car), lay victim down and fan him/her. If the air-conditioning is not available, remove the victim to a shaded area, remove shirt, and fan. If symptoms do not subside within an hour, notify 911 to transport to hospital.

7. *Heat stroke* results from the body's inability to dissipate excess heat. A true medical emergency that requires immediate care, it usually occurs when one ignores the signs of heat exhaustion and continues strenuous activities. Working when the relative humidity exceeds 60% is a particular problem. Workers in the early phase of heat stress may not be coherent of they will be confused, delirious or comatose. Changes in behavior, irritability and combativeness are useful early signs of heat stroke.

8. *Treatment of heat stroke*: Move the victim to a cool, air-conditioned environment. Place victim in a semi-reclined position with head elevated and strip to underclothing. Cool victim as rapidly as possible, applying ice packs to the arms and legs and massaging the neck and torso. Spray victim with tepid water and constantly fan to promote evaporation. Notify 911 to transport to hospital as soon as possible.

TABLE 1

SYMPTOMS OF HEAT STRESS

Heat cramps are caused by heavy sweating with inadequate fluid intake. Symptoms include;

- Muscle cramps
- Cramps in the hands, legs, feet and abdomen

Heat exhaustion occurs when body organs attempt to keep the body cool. Symptoms include;

- Pale, cool moist skin
- Core temperature elevated 1-2°
- Thirst
- Anxiety
- Rapid heart rate
- Heavy sweating
- Dizziness
- Nausea

Heat stroke is the most serious form of heat stress. Immediate action must be taken to cool the body before serious injury and death occur. Symptoms are;

- Red, hot, dry skin
- Lack of perspiration
- Seizures
- Dizziness and confusion
- Strong, rapid pulse
- Core temperature of 104° or above
- Coma

TABLE 2

HEAT STRESS INDICATORS

Heat stress indicator	When to measure	If Exceeds...	Action
Heart rate (pulse)	Beginning of rest period	110 beats per minute	Shorten next work period by 33%
Oral temperature	Beginning of rest period	99°F (after thermometer is under tongue for 3 minutes) 100.6°F	Shorten next work period by 33% Prohibit work in impermeable clothing
Body weight	1. Before workday begins (a.m.) 2. After workday ends (p.m.)		Increase fluid intake

COLD STRESS

Cold stress (Hypothermia)

In hypothermia the core body temperature drops below 95°F. Hypothermia can be attributed to a decrease in heat production, increased heat loss or both.

Prevention

Institute the following steps to prevent overexposure of workers to cold:

1. Maintain body core temperature at 98.6°F or above by encouraging workers to drink warm liquids during breaks (preferably not coffee) and wear several layers of clothing that can keep the body warm even when the clothing is wet.
2. Avoid frostbite by adequately covering hands, feet and other extremities. Clothing such as insulated gloves or mittens, earmuffs and hat liners should be worn. To prevent contact frostbite (from touching metal and cold surfaces below 20°F), workers should wear gloves. Tool handles should be covered with insulating material.
3. Adjust work schedules to provide adequate rest periods. When feasible, rotate personnel and perform work during the warmer hours of the day.
4. Provide heated shelter. Workers should remove their outer layer(s) of clothing while in the shelter to allow sweat to evaporate.
5. In the event that wind barriers are constructed around an intrusive operation (such as drilling), the enclosure must be properly vented to prevent the buildup of toxic or explosive gases or vapors. Care must be taken to keep a heat source away from flammable substances.
6. Using a wind chill chart such as the one in Table 3, obtain the equivalent chill temperature (ECT) based on actual wind speed and temperature. Refer to the ECT when setting up work warm-up schedules, planning appropriate clothing, etc. Workers should use warming shelters at regular intervals at or below an ECT of 20°F. For exposed skin, continuous exposure should not be permitted at or below an ECT of -25°F.

Frostbite

Personnel should be aware of symptoms of frostbite/hypothermia. If the following symptoms are noticed in any worker, he/she should immediately go to a warm shelter.

Condition	Skin Surface	Tissue Under Skin	Skin Color
Frostnip	Soft	Soft	Initially red, then white
Frostbite	Hard	Soft	White and waxy
Freezing	Hard	Hard	Blotchy, white to yellow-gray to gray

1. *Frostnip* is the incipient stage of frostbite, brought about by direct contact with a cold object or exposure of a body part to cool/cold air. Wind chill or cold water also can be major factors. This condition is not serious. Tissue damage is minor and the response to care is good. The tip of the nose, tips of ears, upper cheeks and fingers (all areas generally exposed) are most susceptible to frostnip.

2. *Treatment of frostnip*: Care for frostnip by warming affected areas. Usually the worker can apply warmth from his/her bare hands, blow warm air on the site, or, if the fingers are involved, hold them in the armpits. During recovery, the worker may complain of tingling or burning sensation, which is normal. If the condition does not respond to this simple care, begin treatment for frostbite.

3. *Frostbite*: The skin and subcutaneous layers become involved. If frostnip goes untreated, it becomes superficial frostbite. This condition is serious. Tissue damage may be serious. The worker must be transported to a medical facility for evaluation. The tip of the nose, tips of ears, upper cheeks and fingers (all areas generally exposed) are most susceptible to frostbite. The affected area will feel frozen, but only on the surface. The tissue below the surface must still be soft and have normal response to touch. *DO NOT* squeeze or poke the tissue. The condition of the deeper tissues can be determined by gently palpating the affected area. The skin will turn mottled or blotchy. It may also be white and then turn grayish-yellow.

4. *Treatment of frostbite*: When practical, transport victim as soon as possible. Get the worker inside and keep him/her warm. Do not allow any smoking or alcohol consumption. Thaw frozen parts by immersion, re-warming in a 100°F to 106°F water bath. Water temperature will drop rapidly, requiring additional warm water throughout the process. Cover the thawed part with a dry sterile dressing. Do not puncture or drain any blisters.

   NOTE: Never listen to myths and folk tales about the care of frostbite. *Never* rub a frostbitten or frozen area. *Never* rub snow on a frostbitten or frozen area. Rubbing the area may cause

serious damage to already injured tissues. Do not attempt to thaw a frozen area if there is any chance it will be re-frozen.

5. *General cooling/Hypothermia*: General cooling of the body is known as systemic hypothermia. This condition is not a common problem unless workers are exposed to cold for prolonged periods of time without any shelter.

Body Temperature	°C	Symptoms
99-96	37-35.5	Intense, uncontrollable shivering
95-91	35.5-32.7	Violent shivering persists. If victim is conscious, he has difficulty speaking.
90-86	32-30	Shivering decreases and is replaced by strong muscular rigidity. Muscle coordination is affected. Erratic or jerkey movements are produced. Thinking is less clear. General comprehension is dulled. There may be total amnesia. The worker is generally still able to maintain the appearance of psychological contact with his surroundings.
85-81	29.4-27.2	Victim becomes irrational, loses contact with his environment, and drifts into a stuporous state. Muscular rigidity continues. Pulse and respirations are slow and the worker may develop cardiac arrhythmias.
80-78	26.6-18.5	Victim becomes unconscious. He does not respond to the spoken word. Most reflexes cease to function. Heartbeat becomes erratic
Below 78	25.5	Cardiac and respiratory centers of the brain fail. Ventricular fibrillation occurs; probably edema and hemorrhage in the lungs; death.

6. *Treatment of hypothermia*: Keep worker dry. Remove any wet clothing and replace with dry clothes, or wrap person in dry blankets. Keep person at rest. Do not allow him/her to move around. Transport the victim to a medical facility as soon as possible.

TABLE 3[1]
COOLING POWER OF WIND ON EXPOSED FLESH EXPRESSED AS AN EQUIVALENT TEMPERATURE (UNDER CALM CONDITIONS)

Estimated wind Speed (in mph)	Actual Temperature Reading (°F)P											
	50	40	30	20	10	0	10	20	30	40	50	60
	Equivalent Chill Temperature (°F)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	15	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-146
(Wind speeds greater than 40 mph have little additional effect.)	LITTLE DANGER in < hr with dry skin. Maximum danger of false sense of security.				INCREASING DANGER Danger from freezing of exposed flesh within one minute			GREAT DANGER may freeze within 30 seconds.				Flesh
	Trench foot and imersion foot may occur at any point on this chart											

Developed by U.S. Army Research Institute of Environmental Medicine, Natick, MA.

(1) Reproduced from American Conference of Governmental Industrial Hygienists, Threshold Limit Values and Biological Exposure Indices for 1985-1986, p.01.

APPENDIX E

FIELD ACCIDENT REPORT

P.W. GROSSER CONSULTING, INC • P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, PC
631.589.6353 • WWW.PWGROSSER.COM • PWGC.INFO@PWGROSSER.COM
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FIELD ACCIDENT REPORT

This report is to be filled out by the designated Site Safety Officer after EVERY accident.

PROJECT NAME: _____ PROJECT. NO.: _____

Date of Accident: _____ Time: _____ Report By: _____

Type of Accident (Check One):

( ) Vehicular ( ) Personal ( ) Property

Name of Injured: _____ DOB or Age _____

How Long Employed: _____

Names of Witnesses: _____

Description of Accident: _____

_____

_____

Action Taken: _____

_____

_____

Did the Injured Lose Any Time? _____ How Much (Days/Hrs.)? _____

Was Safety Equipment in Use at the Time of the Accident (Hard Hat, Safety Glasses, Gloves, Safety Shoes, etc.)? _____

_____

_____

(If not, it is the EMPLOYEE'S sole responsibility to process his/her claims through his/her Health and Welfare Fund.)

INDICATE STREET NAMES, DESCRIPTION OF VEHICLES, AND NORTH ARROW

_____

_____

_____

APPENDIX B

P.W. GROSSER CONSULTING, INC • P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, PC
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HAMPTON BAYS FIRE DISTRICT SITE
69 WEST MONTAUK HIGHWAY
HAMPTON BAYS, NEW YORK 11946
SITE #152249

Community Air Monitoring Plan

Submitted To:

New York State Department of Environmental Conservation
Division of Environmental Remediation
47-20 21st Street
Long Island City, NY 11101

Prepared For:

Hampton Bays Fire District
69 Montauk Highway
Hampton Bays, New Yor, 11946

Prepared By:

P.W. Grosser Consulting Inc.
630 Johnson Avenue, Suite 7
Bohemia, NY 11716
Phone: 631-589-6353
Fax: 631-589-8705

Derek Ersbak, PG, Vice President — DerekE@pwgrosser.com
Brian Heflich, PE, Project Manager — BrianH@pwgrosser.com

PWGC Project Number: HBF2401

MARCH 2024

TABLE OF CONTENTS

P.W. GROSSER CONSULTING, INC • P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, PC
631.589.6353 • WWW.PWGROSSER.COM • PWGC.INFO@PWGROSSER.COM
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1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) provides measures for protection for on-site workers and the downwind community (i.e., off-site receptors including residences, businesses, and on-site workers not directly involved in the interim remedial measure) from potential airborne contaminant releases resulting from interim remedial activities performed at 69 West Montauk Highway, Hampton Bays, New York.

The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that the interim remedial measure or actions did not spread contamination off-site through the air.

Based on previous investigations at the site, the primary concerns for this site are PFAS that might be adhered to dust particulates.

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2.0 REGULATORY REQUIREMENTS

This CAMP was established in accordance with the following requirements:

- 29 Code of Federal Regulations (CFR) 1910.120(h): This regulation specifies that air shall be monitored to identify and quantify levels of airborne hazardous substances and health hazards, and to determine the appropriate level of protection for workers.
- New York State Department of Health's (NYSDOH) Generic Community Air Monitoring Plan: This guidance specifies that a community air-monitoring program shall be implemented to protect the surrounding community and to confirm that the work does not spread contamination off-site through the air.
- New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER)-10, Appendix 1B – Fugitive Dust and Particulate Monitoring. This guidance provides a basis for developing and implementing a fugitive dust suppression and particulate monitoring program as an element of a site's health and safety program.

3.0 AIR MONITORING

The following sections contain information describing the types, frequency and location of real-time monitoring.

This section addresses the real-time monitoring that will be conducted within the work area, and along the site perimeter, during intrusive activities such as excavation, drilling, soil sampling, etc.

3.1 Particulate Monitoring, Response-Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the work area at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of calculating 15-minute running average concentrations for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (µg/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 will be employed. Work will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 µg/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 µg/m^3 above the upwind level, work will be stopped, and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls

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631.589.6353 • WWW.PWGROSSER.COM • PWGC.INFO@PWGROSSER.COM
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are successful in reducing the downwind PM-10 particulate concentration to within 150 µg/m^3 of the upwind level and in preventing visible dust migration.

Readings will be recorded and be available for NYSDEC personnel to review.

3.2 Dust Control

Dust management during invasive on-site work will include, at a minimum:

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles.
- Exercise extra care during dry and high-wind periods.
- Use of gravel or RCA on egress and other roadways to provide a clean and dust-free road surface.

This dust control plan is capable of controlling emissions of dust. If nuisance dust emissions are identified, work will be halted, and the source of dusts will be identified and corrected. Work will not resume until nuisance dust emissions have been abated. NYSDEC will be notified of dust complaint events. Implementation of dust controls will be the responsibility of the contractor.

4.0 RECORD KEEPING

Copies of the CAMP monitoring logs for dust particulates will be provided in the applicable report documenting the work activities conducted (the daily reports). If dust suppression techniques were required, they will also be documented in the report. Daily reports will be submitted in a timely manner.

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631.589.6353 • WWW.PWGROSSER.COM • PWGC.INFO@PWGROSSER.COM
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APPENDIX C

P.W. GROSSER CONSULTING, INC • P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, PC
631.589.6353 • WWW.PWGROSSER.COM • PWGC.INFO@PWGROSSER.COM
BOHEMIA • MANHATTAN • SARATOGA SPRINGS • MONTICELLO, NY • SYRACUSE • SHELTON, CT

HAMPTON BAYS FIRE DISTRICT SITE
69 WEST MONTAUK HIGHWAY
HAMPTON BAYS, NEW YORK 11946
SITE #152249

QUALITY ASSURANCE PROJECT PLAN

SUBMITTED TO:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7016

PREPARED FOR:

Hampton Bays Fire District
69 West Montauk Highway
Hampton Bays, New York 11050

PREPARED BY:

P.W. Grosser Consulting Inc.
630 Johnson Ave., Suite 7
Bohemia, New York 11716
Phone: 631-589-6353
Fax: 631-589-8705

Derek Ersbak, PG, Vice President DerekE@pwgrosser.com
Brian Heflich, PE, Project Manager BrianH@pwgrosser.com

PWGC Project Number: HBF2401

MARCH 2024

QUALITY ASSURANCE PROJECT PLAN
69 WEST MONTAUK HIGHWAY
HAMPTON BAYS, NEW YORK 11946

TABLE OF CONTENTS PAGE

ACRONYM	DEFINITION
AFFF	Aqueous Film Forming Foam
ASP	Analytical Services Protocol
CP	Cesspool
DER	Division of Environmental Remediation
DER-10	Technical Guidance for Site Investigation and Remediation
DUSR	Data Usability Summary Report
ELAP	Environmental Laboratory Approval Program
HSM	Health and Safety Manager
IRM	Interim Remedial Measure
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCBs	Polychlorinated Biphenyls
PFAS	Per- and Poly-fluorinated Alkyl Substances
PID	Photoionization Detector
PPE	Personal Protective Equipment
PWGC	P.W. Grosser Consulting, Inc.
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
SDG	sample delivery group
SOP	Standard Operating Procedure
ST	Septic Tank
SVOC	Semivolatile Organic Compound
TAL	Target Analyte List
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WP	Work Plan

1.0 QUALITY ASSURANCE PROJECT PLAN

This Quality Assurance Project Plan (QAPP) presents the objectives, functional activities, methods, and quality assurance/quality control (QA/QC) requirements associated with sample collection and laboratory analysis for interim remedial activities at the 69 West Montauk Highway, Hampton Bays Site. The QAPP follows requirements detailed in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's (DER's) Technical Guidance for Site Investigation and Remediation (DER-10), Section 2.

The subject property is located at 69 West Montauk Highway in Hampton Bays, New York. The Site is located in Suffolk County. The Site is identified in the Suffolk County Tax Map as District 0900, Section 224.00, Block 01.00, Lot 19.001. This site has been utilized as a fire house since 1930. The site is improved with two main buildings, which are used by the Fire District, and is bounded by Montauk Highway to the north, Good Ground Road to the south, commercial and residential properties to the west, and commercial properties to the east.

The subject property has historically been used as follows:

- The two-story firehouse building was constructed in 1930 and additions to the east and west sides were completed in 1967 and 1983. The first floor of this building is used to store fire trucks and fire equipment and contains a laundry room. The second floor is used as office and recreational space. No aqueous film forming foam (AFFF) was stored in this building. This building is connected to a sanitary system, comprised of a septic tank (ST-2) and multiple leaching cesspools (CP-2, CP-3, and CP-4) located on the south side of the building.
- The one-story steel framed building was constructed in 1993 and is utilized as a maintenance building. This building is used to store ancillary fire equipment and vehicles along with AFFF. In May 2019, 17 5-gallon containers of AFFF, which were stored on a pallet in the northwestern portion of the building, were removed and properly disposed of by Innovative Recycling Technologies. These containers were full and unopened. This AFFF was replaced with Universal Green, which is a fluorine free product. This building contains a sanitary system consisting of a septic tank (ST-1) and a leaching cesspool (CP-1) located on the west side of the building.
- Small wooden structures exist on the western site boundary. These structures do not have permanent foundations and are utilized as concession stands during community events. These structures contain sinks that are connected to the sanitary system associated with the main firehouse building.

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631.589.6353 • WWW.PWGROSSER.COM • PWGC.INFO@PWGROSSER.COM
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- Stormwater is managed onsite through a series of storm drains which either discharge directly to the subsurface or are interconnected and piped across Montauk Highway to a recharge basin.

Investigations were undertaken at the site pursuant to the NYSDEC Order on Consent, dated November 9, 2017. The purpose of the investigations was to delineate the areal and vertical extent of contaminants in media at or emanating from the site, identify the sources of contamination, the migration pathways, and actual or potential receptors of contaminants, and collect and evaluate data to assess impacts to public health and the environment, including fish and wildlife resource impacts at the site.

While P.W. Grosser Consulting, Inc. (PWGC) and the NYSDEC continue to develop the Proposed Remedial Action Plan and Record of Decision, PWGC recommends that an Interim Remedial Measure (IRM) be implemented at the site to remove per- and polyfluoroalkyl substances (PFAS) in soil and evaluate groundwater conditions following removal.

The Applicant, Hampton Bays Fire District, is including this QAPP as an appendix to a IRM Work Plan (WP), which will be submitted to the NYSDEC.

2.0 PROJECT ORGANIZATION

The remedial efforts defined in the IRMWP will be implemented by PWGC on behalf of Hampton Bays Fire District. The following identifies the responsibilities of various organizations supporting the IRM:

- The NYSDEC Project Manager (Brian Jankauskas) will be responsible for reviewing and approving this work plan, coordinating approval of requested modifications, and providing guidance on regulatory requirements.
- The PWGC Program Manager (Brian Heflich) will provide technical expertise for review of the project plans, reports, and ongoing field activities.
- The PWGC Quality Assurance Manager (Andy Lockwood) will confirm the quality of work associated with the project is in accordance with all project plans.
- PWGC Project Manager (Derek Ersbak) will be responsible for the day-to-day project management, task leadership, and project engineering support and for the planning and implementation of remedial activities. The Project Manager is responsible for ensuring that the requirements of the IRMWP are implemented. The project manager will also act as the Site Health and Safety Manager (HSM).
- PWGC Field Team Leader (Kylie Benz or designee) will be responsible for sample collection, oversight of subcontractor personnel, and coordination of daily field activities. The Field Team Leader will act as the Site Health and Safety Officer (SHSO) ensuring implementation of the Site Construction Health and Safety Plan (CHASP).
- A New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory will be contracted to perform required analyses and reporting, including Analytical Services Protocol (ASP) Category B Deliverables, which will allow for data validation.
- An independent third-party data validator will be contracted to perform data validation and prepare a Data Usability Summary Report (DUSR) in accordance with Section 3.6.
- Remedial contractors will perform excavation, sanitary/drainage cleanout, surveying, drilling, and/or sampling at the direction of the Field Team Leader in accordance with the IRMWP.

Qualifications for the project team are included in the IRMWP.

3.0 LABORATORY ANALYSIS

The project is pursuing a Protection of Groundwater cleanup; all samples will be collected for PFAS.

Requirements for sample analysis are described below. All samples will be submitted to a NYSDOH ELAP certified laboratory for analysis. The name of the certified laboratory shall be provided to the NYSDEC Project Manager once selected. Analytical methods, preservation, container requirements, and holding times are summarized below.

ANALYTICAL METHODS

Analyte/ Analyte Group	Matrix	Method/ SOP	Container(s) (number, size & type per sample)	Preservation	Preparation Holding Time	Analytical Holding Time	Estimated Number of Samples to be Collected
PFAS	Soil	USEPA 1633	1 x 8 oz unpreserved plastic (HDPE) unlined cap	Cool < 4°C	14 days	28 days	103
TCL VOCs	Soil	USEPA 8260C	3 x 40 ml VOA, glass vial	1 x Methanol 2 x DI H_2O Cool < 4°C	48 Hours	14 Days	4
TCL SVOCs	Soil	USEPA 8270D	1 x 4oz, glass	Cool < 4°C	14 days	40 days	4
TAL Metals	Soil	USEPA 6010D/1311	1 x 2oz, glass	Cool ≤ 4 °C	180 days	180 days	4
Mercury	Soil	USEPA 7471B	1 x 2oz, glass	Cool ≤ 4 °C	28 days	28 days	4
Cyanide	Soil	USEPA 9010C/9012B	1 x 2oz, glass	Cool ≤ 4 °C	14 days	14 days	4
Cr+6	Soil	USEPA 7196A	1 x 2oz, glass	Cool ≤ 4 °C	28 days	28 days	4
PCBs	Soil	USEPA 8082A	1 x 4 oz, glass	Cool ≤ 4 °C	7 days	7 Days	4
Pesticides	Soil	USEPA 8081B	1 x 4 oz, glass	Cool ≤ 4 °C	7 days	7 days	4
1,4-dioxane*	Soil	USEPA 8270 (SIM)	1 x 4oz, glass	Cool ≤ 4 °C	2 days	14 days	4
PFAS	Water	USEPA 1633	2 x 500 mL unpreserved plastic (HDPE) unlined cap	Cool < 6°C	14 Days	28 Days	37
TCL VOCs	Water	USEPA 8260C	3 x 40 ml VOA Vials	HCL Cool < 6°C	None	14 Days	1
TCL SVOCs	Water	USEPA 8270D	2 x 250 ml amber glass	Cool < 6°C	7 Days	7 Days	1
TAL Metals	Water	USEPA 6010D	1 x 250 ml plastic	HNO3 Cool < 6°C	180 Days	180 Days	1
Mercury	Water	USEPA 7470	1 x 250 ml plastic	HNO3 Cool < 6°C	28 Days	28 Days	1

Note: The number of samples is subject to change depending on the need to conduct additional step outs.

3.1 Soil Samples

Soil samples will be collected as described in the IRMWP. The samples will be transferred to laboratory-supplied bottleware and packed in a cooler with ice and shipped under proper chain-of-custody procedures to a NYSDOH ELAP certified laboratory for analysis. Analysis will conform to NYSDEC ASP Category B data deliverables in accordance with NYSDEC DER-10, Appendix 2B, 1.0 (b), including calibration standards, surrogate recoveries, and chromatograms.

3.2 Groundwater Samples

Groundwater samples will be collected as described in the IRMWP. The samples will be transferred to laboratory-supplied bottleware and packed in a cooler with ice and shipped under proper chain-of-custody procedures to a NYSDOH ELAP certified laboratory for analysis. Analysis will conform to NYSDEC ASP Category B data deliverables in accordance with NYSDEC DER-10, Appendix 2B, 1.0 (b), including calibration standards, surrogate recoveries, and chromatograms.

3.3 Field/Laboratory Data Control Requirements

QC procedures will be followed in the field and at the laboratory to ensure that reliable data are obtained. When performing field sampling, care shall be taken to prevent the cross-contamination of sampling equipment, sample bottles, and other equipment that could compromise sample integrity. QC samples will include the following:

- Blind Duplicates – one per 20 environmental samples for each matrix sampled.
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) - one per 20 environmental samples for each matrix sampled.
- Equipment Blank – one per day for each matrix sampled where non-dedicated sampling equipment is utilized (such as a hand auger). It is anticipated that only disposable equipment will be utilized for collecting the samples.
- Trip Blank – one per day that VOCs are sampled.
- Field Blank – one per day that PFAS are sampled.

QA/QC Sample Type	Est. Total QA/QC Soil Samples	Est. Days of Soil Sampling	Est. Total QA/QC Water Samples	Est Days of Water Sampling
Blind Duplicate	5	TBD	2	4
MS/MSD	5	TBD	2	4
Equipment Blank	TBD	TBD	2	4
Field Blank	TBD	TBD	2	4
Trip Blank	N/A	N/A	N/A	N/A

QA/QC Sample analysis will conform to NYSDEC ASP Category B data deliverables in accordance with NYSDEC DER-10, Appendix 2B, 1.0 (b), including calibration standards, surrogate recoveries, and chromatograms.

3.4 Sample Identification

Each sample will be identified and labeled with a set of unique information relating to individual sample characteristics in accordance with PWGC's standard operating procedure (SOP) *Sample Identification Nomenclature.* Required information consists of Sample Designation, Depth, Date, Time, and Matrix. Examples of sample IDs are shown below.

- EP001 (bottom endpoint soil sample 001)
- SW001 (sidewall soil sample 001)

Sample frequency, locations, depths, and nomenclature may change subject to field decisions and professional judgment.

3.5 Chain-of-Custody, Sample Packaging and Shipment

Each day that samples are collected, a chain-of-custody/request for analysis form will be completed and submitted to the laboratory with samples to be analyzed. A copy of the chain-of-custody will be retained by the Project Manager. The chain-of-custody form will include the project name, sampler's signature, sample IDs, date and time of sample collection, and analyses requested.

Samples will be packaged and shipped in a manner that maintains sample preservation requirements during transport (i.e., ice to keep samples cool until receipt at the laboratory), ensures that sample holding times can be achieved by the laboratory, and prevents samples from being tampered with.

If a commercial carrier ships samples, a bill of lading (waybill) will be used as documentation of sample custody. Receipts for bills of lading and other documentation of shipment shall be maintained as part of the permanent custody documentation. Commercial carriers are not

required to sign the chain-of-custody form as long as it is enclosed in the shipping container and evidence tape (custody seal) remains in place on the shipping container.

3.6 Data Usability and Validation

The main purpose of the data is for use in defining the extent of contamination at the site, to aid in evaluation of potential human health and ecological exposure assessments, and to support remedial action decisions. Based upon this, data usability and validation will be performed as described below. Complete data packages will be archived in the project files, and if deemed necessary, additional validation can be performed using procedures in the following sections.

3.6.1 Data Usability and Validation Requirements

Data usability and validation are performed on analytical data sets, primarily to confirm that sampling and chain-of-custody documentation are complete, sample IDs can be tied to specific sampling locations, samples were analyzed within the required holding times, and analyses are reported in conformance with NYSDEC ASP, Category B data deliverable requirements as applicable to the method utilized.

3.6.2 Data Usability and Validation Methods

A designee of the PWGC Project Manager will complete a data usability evaluation for the data collected during the remedial activities and prepare a data usability summary report (DUSR) in accordance with NYSDEC DER-10, Appendix 2B.

Independent third-party data validation will be performed on 5% of the sample data or on one sample from each sample delivery group (SDG), whichever is greater. Data validation will be performed by a qualified subcontractor independent of the project (Laboratory Data Consultants of Carlsbad, California or similar). Upon selection, a resume for the chemist preparing the DUSR will be provided to the NYSDEC Project Manager.

4.0 FIELD EQUIPMENT CALIBRATION

Equipment will be inspected and approved by the Field Team Leader before being used. Monitoring equipment will be calibrated in accordance with PWGC's SOP *Equipment Calibration and Maintenance,* or to factory specifications, as appropriate. Monitoring equipment will be calibrated following manufacturers' recommended schedules. Daily field response checks and calibrations will be performed, as necessary (i.e. photoionization detector [PID] calibrations). Equipment calibrations will be documented in a designated field logbook in accordance with PWGC's SOP *Field Documentation.*

5.0 EQUIPMENT DECONTAMINATION

In order to minimize the potential for cross-contamination, non-dedicated sampling equipment shall be properly decontaminated prior to and between sampling/drilling locations.

5.1 General Procedures

Sampling equipment and probes will be decontaminated in an area covered with plastic sheeting near the sampling location and in accordance with PWGC's SOP *Sampling Equipment Decontamination.* Decontamination of sampling equipment shall be kept to a minimum, and wherever possible, dedicated sampling equipment shall be used. Personnel directly involved in equipment decontamination shall wear appropriate personal protective equipment (PPE).

5.2 Sampling Equipment

Sampling equipment (e.g., trowels, knives, split-spoons, bowls, hand augers, etc.) will be decontaminated prior to each use as follows:

- Laboratory-grade glassware detergent and tap water scrub to remove visual contamination
- Generous tap water rinse
- Distilled water rinse

5.3 Management of Derived Waste

Waste materials generated from the field operations may consist of purge water and miscellaneous solid materials such as PPE and supplies. Derived waste generated during field operations will be containerized, stored and disposed of in accordance with applicable regulations.

6.0 FIELD DOCUMENTATION

Documentation will take place on either appropriate forms or in a dedicated site PFAS free logbook in accordance with PWGC's SOP *Field Documentation.*

The primary purpose of the field logbook is to document the daily field activities and to provide descriptions of each activity. The logbook will contain waterproof pages that are consecutively numbered and be permanently bound with a hard cover. Permanent black or blue ink will be used to record information in the logbook. All entries in the field logbook will be recorded and dated by person making the entry. Errors in field documentation will be lined through, initialed, dated, and corrected. Upon completion of daily activities, unused portions of pages will be lined-through and initialed.

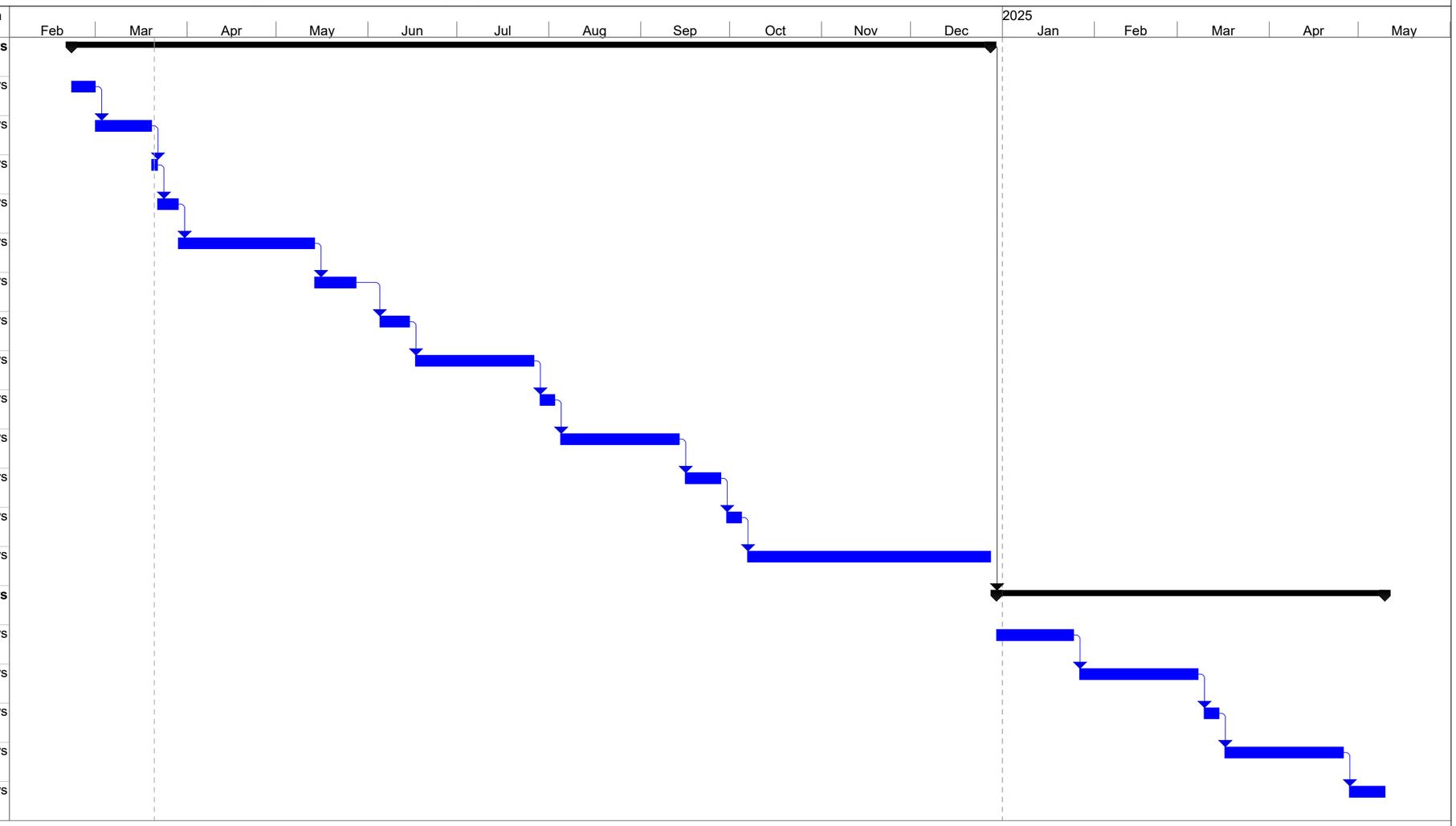
Some activities may be documented on forms in the same manner described for field logbook entries. Forms will be kept by the PWGC Field Team Leader during the field activities.

APPENDIX D

P.W. GROSSER CONSULTING, INC • P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, PC
631.589.6353 • WWW.PWGROSSER.COM • PWGC.INFO@PWGROSSER.COM
BOHEMIA • MANHATTAN • SARATOGA SPRINGS • MONTICELLO, NY • SYRACUSE • SHELTON, CT

Appendix D - 69 West Montauk Highway - Interim Remedial Measure Schedule

ID	Task Name	Duration
1	**Interim Remedial Measure**	**222 days**
2	Draft IRMWP	6 days
3	DEC Review of Draft IRMWP	13 days
4	Revise Draft IRMWP per DEC Comments	2 days
5	DEC Review of Revised IRMWP	5 days
6	45-day Public Comment Period	32 days
7	NYSDEC Issues Approval of IRMWP	10 days
8	EFC Grant Application	8 days
9	EFC GRANT Application Review	30 days
10	EFC Grant Award	5 days
11	Federal Contract Procurement Process	30 days
12	Issue Contract Award	10 days
13	Mobilization	5 days
14	Interim Remedial Activities (TBD)	60 days
15	**IRM Report**	**95 days**
16	Draft IRM Report	20 days
17	DEC Review of Draft IRM Report	30 days
18	Revise IRM Report per DEC Comments	5 days
19	DEC review of Revised IRM Report	30 days
20	DEC Issues IRM Report Fact Sheet	10 days



Project: 355 Exterior Street Site
Date: August 2020

Task	Project Summary	Inactive Summary	Manual Summary	External Milestone
Split	External Tasks	Manual Task	Start-only	Progress
Milestone	External Milestone	Duration-only	Finish-only	Deadline
Summary	Inactive Milestone	Manual Summary Rollup	External Tasks	