PRECISION
ENVIRONMENTAL SERVICES, INC.
831 RT. 67, LOT 38 A
BALLSTON SPA, NY 12020
TEL: 518-885-4399
FAX: 518-885-4416
CERTIFIED WOMEN-OWNED BUSINESS ENTERPRISE

25 YEARS 1991 - 2016

December 7, 2023

Via Electronic Mail: BrittanyOBrien-Drake@dec.ny.gov

Ms. Britany O'Brien-Drake
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7014

RE: Report of Findings
Old Orchard Street PFAS Spill, Nike Base Fire Training Center
Investigation Findings Report
NYSDEC Spill No.: 2006090

Ms. O'Brien-Drake:

Precision Environmental Services, Inc. (PES), has prepared this letter report to document subsurface investigative activities (hereafter referred to as 'the Site') (see – Figure 1, for site location detail). The work described within this report was performed on behalf of the New York State Department of Environmental Conservation (NYSDEC) and completed in accordance with Prime Contract C100614. Work tasks completed and documented within this report include soil boring advancement with sampling, storm water and sediment sampling and monitoring well installation and sampling to identify the possible presence of Per- and Polyfluoroalkyl Substances (PFAS).

Subsurface Soil Characterization

During June 19 through 22, 2023 PES and Enviroprobe performed subsurface investigative work at the Site by installing eleven (10) soil borings using direct push technology (see Figure 2). Enviroprobe utilized a Geoprobe® 7822DT to advance the borings, collecting soil samples with 5-foot macro core sample liners. A PES geologist subsequently logged the soil types, documented the presence of saturated soil at depth and presence of volatile organic vapors in the soil using a calibrated photo-ionization detector (PID). The soil consisted primarily of sand and gravel with lesser amounts of silt. Shallow bedrock was encountered for each boring location, ranging from 2-feet below ground surface or bgs (B-9) to 14-feet bgs (B-10/MW-4). No elevated PID readings were recorded. Boring logs are included as Attachment A. Soil cuttings were placed in three drums at the Site for future disposal.

Representative soil samples were collected at all boring locations. Soil samples were collected from the ground surface to 2-inches, 2-inches to 12-inches and then at or just above observed groundwater. Samples were collected using PFAS-free equipment, then analyzed for PFAS using Method 1633. Select samples were also analyzed by the Synthetic Precipitation Leaching

Procedure (SPLP) by Method 1633. Equipment blanks were collected each day, using laboratory provided PFAS-free water. Con-Test/Pace Analytical performed the laboratory analysis.

PFAS detections were recorded in all nine, sampled borings. The highest Perfluorooctanesulfonic acid (PFOS) detection was recorded in soil boring B-5 for the 11 to 12-foot sample at 29 parts per billion (ppb). The highest Perfluorooctanoic acid (PFOA) detection was recorded in soil boring B-2 for the 5 to 7-foot sample at 1.5 ppb. Both represented the only detections exceeding NYSDEC Objectives to Protect Groundwater. A complete summary of these results is provided on Tables 1A through 1B and Figure 3. Complete Con-Test/Pace Analytical data package is included as Attachment B.

Storm Water and Sediment

On June 22, 2023, PES collected one storm water (Storm3) and co-located sediment sample (Sed3) at the Site (see Figure 2). On June 30, 2023, PES collected five sediments samples (Sed1, Sed2, Sed4, Sed5 and Sed6); however, no storm water was present at this locations for sampling. The one storm water sample was collected with a one-time use, PFAS free bailer, filling directly into laboratory supplied containers. Sediment samples were collected using a pre-cleaned stainless steel hand auger, along with stainless steel bowls and spoons. Prior to and following each sample the equipment was decontaminated (cleaned) using an Alconox® wash followed by rinse with laboratory supplied PFAS free water. Samples were collected, then analyzed for PFAS using Method 1633. Equipment blanks were collected, using laboratory provided PFAS free water. Con-Test/Pace Analytical performed the laboratory analysis.

PFOS was detected at 21 nanograms per liter or parts per trillion (ppt) at Storm 3. This detection exceeds the NYSDEC Raw Water Source, Human Health protection guidance value of 2.7 ppt. A complete summary of these results is provided in Table 2. Complete Con-Test/Pace Analytical data package is included as Attachment B. PFAS detections were reported above method detection levels for all six sediment samples with detections of PFOS and PFOA ranging from 0.38 ug/kg to 1.3 ug/kg and from 0.085 ug/kg to 2.5 ug/kg, respectively. A complete summary of these results is provided in Table 2. Complete Con-Test/Pace Analytical data package is included as Attachment B.

Groundwater Monitoring Well Installation and Sampling

Well Installation

Monitoring wells were installed in borings B-1, B-2, B-3, and B-10 and identified as MW-1, MW-2, MW-3, and MW-4, respectively. Enviroprobe installed 2-inch PVC monitoring wells using 4.25-inch hollow stem augers (HSA) to final depth. Well screen (0.010) was used at all four monitoring well locations, each placed above or on the bedrock surface where moist soil was encountered. Saturated soils were not observed across the Site. Boring logs are attached showing well construction details (Attachment A).

Well Development

On June 30, 2023, PES returned to the Site to develop the four, newly installed monitoring wells (MW-1 through MW-4). Monitoring wells MW-3 and MW-4 were completely dry, while MW-1 had just 0.25-feet of water in the screen (Table 3). This well did not have adequate volume to develop.

PES was successful developing MW-2, removing approximately 4 gallons of cloudy, light brown groundwater. Monitoring well MW-2 was developed with a dedicated, PFAS free bailer. Development water was placed in a drum at the Site for future disposal.

Well Sampling and Results

On July 5, 2023, PES returned to the Site to gauge and collect PFAS groundwater samples from the monitoring wells. PES planned to samples using low flow techniques, however, the lack of water in MW-3 and MW-4, along with minimal water in MW-1 prohibited sampling these wells all together. As with development earlier, MW-2 contained enough water to sample, approximately 4-feet. A decision was made to purge minimal water with a PFAS free bailer to ensure the well didn't dry out before sampling could occur. Purge water was placed in a drum onsite for future disposal. The groundwater sample from MW-2 was obtained by aseptic techniques to prevent cross-contamination, labeled, and placed on iced storage for subsequent submission under chain of custody to Con-Test for analysis using PFAS Method 1633.Bottle and chain of custody labelling was incorrect. The laboratory reported sample results for MW-1, when in fact MW-2 is the well sampled. PFAS analytes were detected at the MW-2 location (Table 4). PFOS and PFOA were detected exceeding groundwater guidance values with detections of 44 ppt (Class GA 2.7 ppt) and 840 ppt (Class GA 6.7 ppt), respectively.

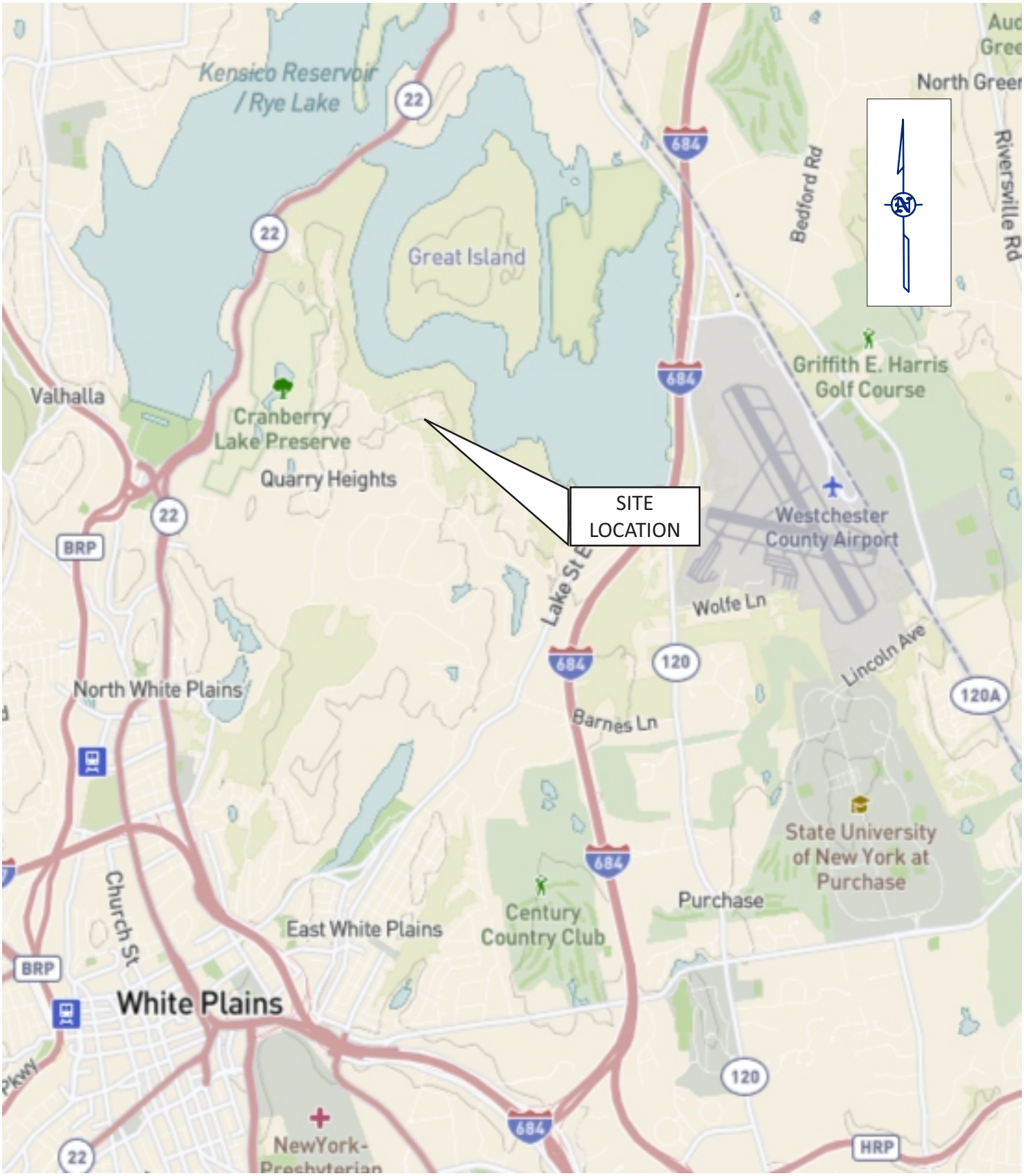
Should you have any questions regarding the above report, please feel free to contact the undersigned at 518-885-4399.

Sincerely.
PRECISION ENVIRONMENTAL SERVICES, INC.

Brian Neumann
Project Manager

Enclosures:
Figures 1 through 3
Tables 1 through 4
Attachment A: Boring Logs
Attachment B: Laboratory Analytical Reports

Figures



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Old Orchard Street PFAS Spill
100 Park Lane, Harrison, NY

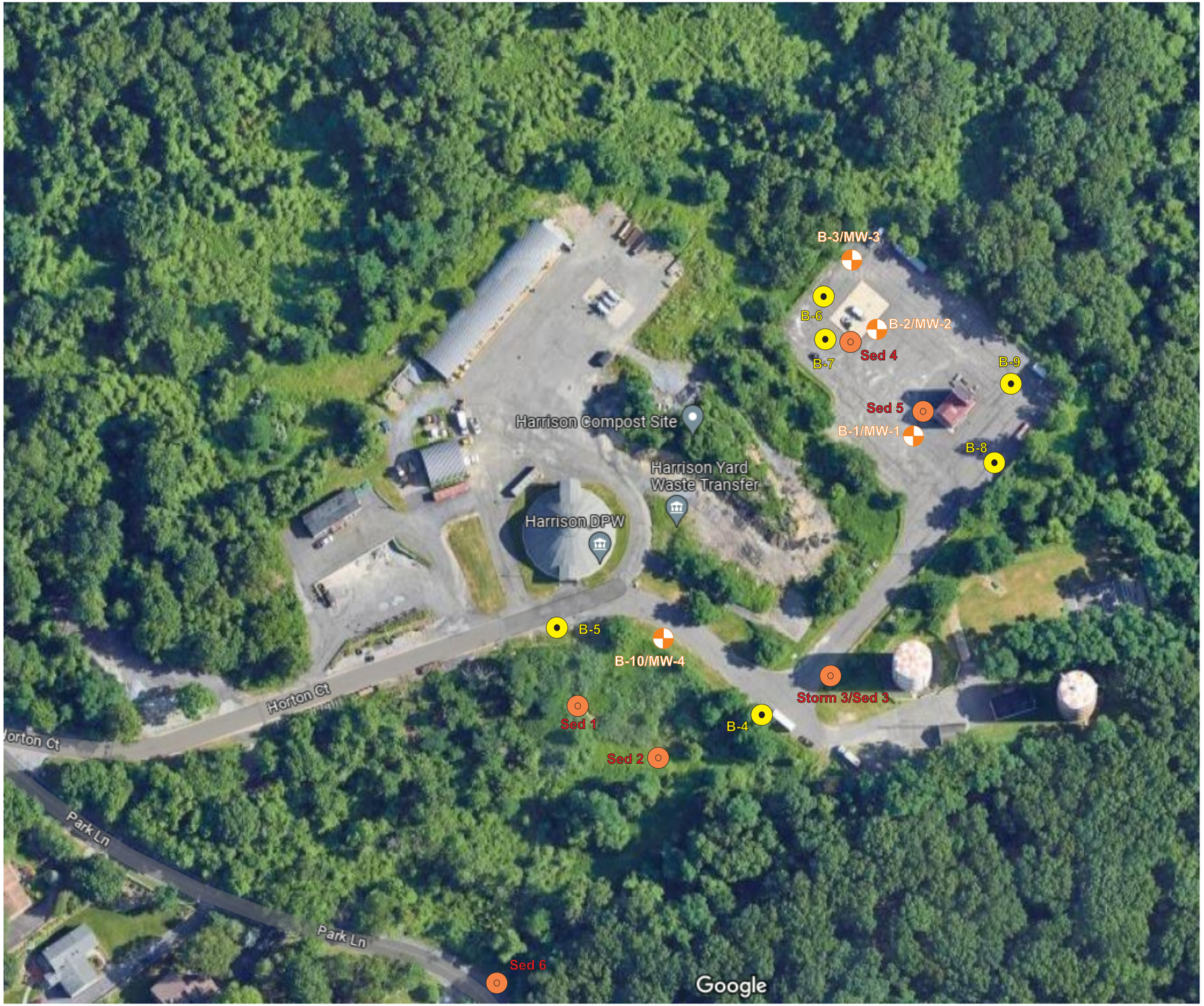
NYSDEC Spill #: 2006090

Date: Oct 2023

Map Courtesy of USGS

Figure: 1

SITE LOCATION MAP



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Sample Locations
Old Orchard Street PFAS Spill, Nike Base Fire Training Center

Spill No. 2006090

SITE #: 2006090	
LOCATION: 100 Park Ln, West Harrison, NY	
DATE: 9.23	REVISED BY: JJJ
FIGURE: 2	SCALE: AS SHOWN

LEGEND

B-1/MW-1 - Soil Boring & Monitoring Well

B-1 - Soil Boring

Storm 3/Sed 3 - Storm Water and/or Sediment

100’
SCALE
(Feet)

NOTES:

- BASE MAP COMPOSED FROM 2011 AERIAL IMAGERY PROVIDED COURTESY GOOGLE MAPS
- ALL LOCATIONS ARE APPROXIMATE

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CERTIFIED WOMEN-OWNED BUSINESS ENTERPRISE

Soil Results
Old Orchard Street PFAS Spill, Nike Base Fire Training Center

Spill No. 2006090

SITE #: 2006090

LOCATION: 100 Park Ln, West Harrison, NY

DATE: 10.23	**REVISED BY:** BN
FIGURE: 3	**SCALE:** AS SHOWN

LEGEND

B-1/MW-1 - Soil Boring & Monitoring Well

B-1 - Soil Boring

Storm 3/Sed 3 - Storm Water & Sediment

100’
SCALE
(Feet)

NOTES:

- BASE MAP COMPOSED FROM 2011 AERIAL IMAGERY PROVIDED COURTESY GOOGLE MAPS
- ALL LOCATIONS ARE APPROXIMATE

Tables

TABLE 1A

Summary of Soil Boring Data
Old Orchard Street PFAS Spill
NYSDEC Spill No. 2006090

		Sample Identification																	
		B-1, 2"-12"	B-1, 2"-12" BY SPLP 1312 (ng/L)	B-1, 1'-2'	B-1, 5'-5.5'	B-1, 5'-5.5' BY SPLP 1312 (ng/L)	B-2, 2"-12"	B-2, 1'-2'	B-2, 1'-2' by SPLP 1312 (ng/L)	B-2, 5'-7'	B-3, 2"-12"	B-3, 1'-2'	B-3, 10'-11.5'	B-3, 10'-11.5' by SPLP 1312 (ng/L)	B-6, 2"-12"	B-6, 1'-2'	B-6, 6'-7'	NYS Raw Water Source, Human Health Protection	NYS Cleanup Objectives-Protection of Groundwater (ppb)
Sample Collection Date		6/19/2023					6/19/2023				6/19/2023				6/19/2023				
Analyte	**Method**																		
Perfluorobutanoic acid (PFBA)	**Draft Method 1633 and 1312 SPLP (highlighted in green)**	ND	ND	ND	ND	ND	0.43	0.22	**16**	0.67	0.22	0.22	0.16	3.2	0.23	0.31	ND	--	--
Perfluoropentanoic acid (PFPeA)		**0.034**	ND	ND	0.036	0.73	**1.7**	**0.64**	**58**	**4**	**0.45**	0.28	0.22	**6.5**	**0.69**	**1.10**	0.14	--	--
Perfluorohexanoic acid (PFHxA)		ND	ND	ND	ND	1.1	**0.8**	**0.24**	**27**	**1.9**	**0.25**	0.18	0.16	**4.2**	**0.36**	**0.52**	0.074	--	--
Perfluoroheptanoic acid (PFHpA)		ND	ND	ND	ND	ND	**0.5**	**0.21**	**17**	**1.5**	0.16	0.14	0.12	**3.2**	**0.37**	**0.49**	0.071	--	--
Perfluorooctanoic acid (PFOA)		ND	ND	0.04	0.071	1.7	**0.48**	0.084	**11**	**1.5**	0.078	0.2	0.089	**2.1**	0.11	0.18	0.061	*6.7*	*0.8*
Perfluorononanoic acid (PFNA)		ND	ND	ND	0.073	0.72	**0.44**	0.04	**7.1**	**0.54**	0.035	0.13	0.026	0.93	0.19	0.13	0.062	--	--
Perfluorodecanoic acid (PFDA)		ND	ND	0.038	0.05	0.38	**2.6**	0.071	**32**	**0.27**	0.15	**0.29**	0.026	0.76	**0.61**	**0.21**	0.023	--	--
Perfluoroundecanoic acid (PFUnA)		0.042	ND	ND	0.072	ND	**0.64**	ND	**8.3**	**0.26**	0.13	0.12	ND	ND	**0.25**	0.032	ND	--	--
Perfluorododecanoic acid (PFDoA)		0.023	ND	0.022	0.031	ND	**1.2**	ND	**15**	0.16	**0.6**	ND	ND	ND	**0.23**	0.03	ND	--	--
Perfluorotridecanoic acid (PFTriA)		ND	ND	ND	0.031	ND	0.13	ND	0.72	0.11	0.2	ND	ND	ND	0.036	ND	ND	--	--
Perfluorotetradecanoic acid (PFTeA)		ND	ND	0.019	0.22	ND	**0.35**	ND	1.1	0.09	**0.26**	ND	ND	ND	0.043	ND	ND	--	--
Perfluorobutanesulfonic acid (PFBS)		ND	ND	ND	ND	ND	0.059	ND	ND	ND	ND	ND	ND	ND	0.17	ND	ND	--	--
Perfluorohexanesulfonic acid (PFHxS)		ND	ND	ND	0.036	ND	ND	ND	ND	0.11	ND	0.051	ND	ND	0.03	ND	ND	--	--
Perfluorooctanesulfonic acid (PFOS)		ND	ND	**0.36**	**0.36**	**5.1**	0.15	0.11	1.3	**1.1**	ND	**0.58**	0.046	1.2	0.10	**0.28**	0.095	*2.7*	*1.0*
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		ND	ND	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		0.065	ND	0.042	ND	ND	0.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--
6:2 FTS		ND	ND	ND	ND	ND	**3.6**	0.34	**83**	**1.4**	**0.93**	**3.4**	**1.8**	**43**	0.37	0.29	0.088	--	--
8:2 FTS		ND	ND	ND	ND	ND	**2**	ND	**38**	0	1	**1.3**	0	6.40	0.10	0.095	ND	--	--
Total incl PFOA & PFOS		**0.164**	**0.000**	**0.571**	**0.980**	**9.730**	**14.839**	**1.955**	**315.520**	**13.720**	**4.113**	**6.891**	**2.897**	**71.490**	**3.884**	**3.667**	**0.614**	--	--
pH	**Method 9045**	--	--	--	9.9	--	**7.90**	--	--	--	--	--	--	**8.60**	--	--	--	--	--
Total Organic Carbon (mg/Kg)	**Lloyd Khan**	--	--	--	12,000	--	**25,000**	--	--	--	--	--	--	**730**	--	--	--	--	--

NOTES:

Sampling performed by Precision Environmental Services, Inc.
Only those analytes detected at one or more locations are presented
All values are reported in ug/kg - parts per billion (ppb), unless otherwise noted
Analytical Facility - Pace Analytical
ND indicates values reported below the laboratory minimum detection limits
Values in **BOLD** indicate values reported above the laboratory minimum detection limits
BLUE highlight indicates result is estimated

TABLE 1B
Summary of Soil Boring Data
Old Orchard Street PFAS Spill
NYSDEC Spill No. 2006090

		Sample Identification																	
		B-7, 2"-12"	B-7, 1'-2'	B-7, 3'-4"	B-8, 2"-12"	B-8, 1'-2'	B-8, 2'-3'	B-9, 2"-12"	B-9, 1'-2'	B-4, 0"-2"	B-4, 2"-12"	B-4, 2"-12" by SPLP 1312 (ng/L)	B-4, 9'-10'	B-5, 0"-2"	B-5, 2"-12"	B-5, 2"-12" by SPLP 1312 (ng/L)	B-5, 11'-12'	NYS Raw Water Source, Human Health Protection	NYS Cleanup Objectives- Protection of Groundwater (ppb)
Sample Collection Date		6/19/2023			6/19/2023			6/19/2023		6/22/2023				6/22/2023					
Analyte	**Method**																		
Perfluorobutanoic acid (PFBA)	Draft Method 1633 and 1312 SLP (highlighted in green)	ND	ND	ND	ND	ND	ND	0.18	ND	0.21	ND	ND	ND	0.16	0.15	ND	ND	--	--
Perfluoropentanoic acid (PFPeA)		0.039	ND	0.27	0.034	ND	0.049	0.19	0.09	0.08	0.026	ND	0.16	0.061	0.071	ND	0.035	--	--
Perfluorohexanoic acid (PFHxA)		ND	ND	ND	0.026	ND	ND	0.12	0.052	0.078	0.016	**0.65**	0.12	0.052	0.077	**0.47**	0.016	--	--
Perfluoroheptanoic acid (PFHpA)		ND	ND	0.017	ND	ND	ND	0.18	0.06	0.048	ND	ND	0.063	0.024	0.059	**0.63**	0.021	--	--
Perfluorooctanoic acid (PFOA)		ND	ND	0.068	ND	ND	0.06	0.061	ND	0.085	0.029	**0.76**	0.17	0.053	0.1	**1.0**	0.2	*6.7*	*1.1*
Perfluorononanoic acid (PFNA)		ND	ND	ND	ND	ND	0.072	0.04	0.03	0.077	ND	**0.71**	0.051	0.056	0.12	**0.83**	0.051	--	--
Perfluorodecanoic acid (PFDA)		ND	ND	0.033	0.021	ND	0.073	0.072	ND	0.13	0.038	**0.46**	0.032	0.11	0.13	**0.37**	0.031	--	--
Perfluoroundecanoic acid (PFUnA)		ND	ND	0.024	ND	ND	ND	ND	ND	0.15	0.043	ND	0.033	0.14	0.12	ND	ND	--	--
Perfluorododecanoic acid (PFDoA)		0.029	ND	0.033	ND	ND	ND	0.033	ND	0.079	0.026	ND	ND	0.092	0.075	ND	ND	--	--
Perfluorotridecanoic acid (PFTriA)		ND	ND	ND	ND	ND	ND	ND	ND	0.063	ND	ND	ND	0.07	0.06	ND	ND	--	--
Perfluorotetradecanoic acid (PFTeA)		ND	ND	ND	ND	ND	ND	0.022	ND	0.052	0.023	ND	ND	0.059	0.048	ND	ND	--	--
Perfluorobutanesulfonic acid (PFBS)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--
Perfluorohexanesulfonic acid (PFHxS)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.49**	0.095	ND	ND	ND	**0.33**	--	--
Perfluorooctanesulfonic acid (PFOS)		0.082	ND	**0.27**	0.066	0.053	**1.1**	0.089	0.11	**0.67**	**0.38**	**7.1**	**0.9**	**0.36**	**0.75**	**2.5**	**29**	*2.7*	*3.7*
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		0.36	ND	0.16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)		0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		0.065	0.056	ND	ND	0.072	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.2**	ND	--	--
6:2 FTS		ND	ND	ND	0.12	0.29	ND	0.49	0.37	0.12	0.21	ND	0.29	0.18	0.15	ND	0.12	--	--
8:2 FTS		ND	ND	ND	ND	ND	ND	0.21	0.3	ND	ND	ND	ND	ND	ND	ND	ND	--	--
Total incl PFOA & PFOS		**0.755**	**0.056**	**0.875**	**0.267**	**0.415**	**1.354**	**1.687**	**1.052**	**1.842**	**0.791**	**1.914**	**1.914**	**1.417**	**1.910**	**7.000**	**29.804**		--
pH	**Method 9045**	--	--	--	--	--	--	--	--	--	**8.6**	--	--	--	**8**	--	--	--	--
Total Organic Carbon (mg/Kg)	**Lloyd Khan**	--	--	--	--	--	--	--	--	--	**3,200**	--	--	--	**5,700**	--	--	--	--

NOTES:
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Analytical Facility - Pace Analytical
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BLUE highlight indicates result is estimated

TABLE 2
Summary of Surface Water & Sediment Data
Old Orchard Street PFAS Spill
NYSDEC Spill No. 2006090

		Sample Identification								
		Storm 3	NYS Raw Water Source Guidance Levels (Human Health)	Sed 1	Sed 2	Sed 3	Sed 4	Sed 5	Sed 6	NYS Levels
Sample Collection Date		June 22, 2023		June 22, 2023					June 30, 2023	
Analyte	Method									
Perfluorobutanoic acid (PFBA)	Draft Method 1633	9	*NA*	ND	0.28	ND	**0.82**	0.24	ND	*NA*
Perfluoropentanoic acid (PFPeA)		8.6	*NA*	0.067	**0.45**	0.037	**2**	**0.56**	ND	*NA*
Perfluorohexanoic acid (PFHxA)		**7.6**	*NA*	0.049	**0.23**	0.019	**1.1**	**0.44**	ND	*NA*
Perfluoroheptanoic acid (PFHpA)		4.8	*NA*	ND	**0.31**	ND	**0.92**	**0.32**	ND	*NA*
Perfluorooctanoic acid (PFOA)		**6**	*6.7*	0.085	**0.43**	ND	**2.5**	**0.66**	ND	*NA*
Perfluorononanoic acid (PFNA)		1.6	*NA*	0.056	**0.28**	ND	**1.5**	**0.38**	ND	*NA*
Perfluorodecanoic acid (PFDA)		2.3	*NA*	0.065	**0.54**	ND	**4.3**	**1.8**	ND	*NA*
Perfluoroundecanoic acid (PFUnA)		ND	*NA*	0.076	**0.6**	ND	**2.5**	**2**	ND	*NA*
Perfluorododecanoic acid (PFDoA)		ND	*NA*	0.084	**0.65**	0.027	**8**	**4**	ND	*NA*
Perfluorotridecanoic acid (PFTriA)		ND	*NA*	0.058	**0.33**	ND	**1.7**	**2.3**	ND	*NA*
Perfluorotetradecanoic acid (PFTeA)		ND	*NA*	0.06	**0.39**	0.04	**4.4**	**3.4**	**0.03**	*NA*
Perfluorobutanesulfonic acid (PFBS)		3.1	*NA*	ND	ND	ND	0.069	0.11	ND	*NA*
Perfluorohexanesulfonic acid (PFHxS)		2.9	*NA*	ND	0.11	ND	ND	ND	ND	*NA*
Perfluoroheptanesulfonic acid (PFHpS)		ND	*NA*	ND	ND	ND	ND	ND	ND	*NA*
Perfluorodecanesulfonic acid (PFDS)		ND	*NA*	ND	ND	ND	ND	0.045	ND	*NA*
Perfluorononanesulfonic acid (PFNS)		ND	*NA*	ND	ND	ND	**0.92**	ND	ND	*NA*
Perfluorooctanesulfonic acid (PFOS)		**21**	*2.7*	**0.38**	**1.3**	**0.28**	**1.1**	**0.38**	**0.50**	*NA*
Perfluorooctanesulfonamide (FOSA)		ND	*NA*	ND	ND	ND	**0.35**	0.13	ND	*NA*
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		ND	*NA*	ND	ND	ND	**0.29**	0.11	ND	*NA*
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		ND	*NA*	ND	ND	ND	**0.71**	0.12	ND	*NA*
N-methylperfluorooctanesulfonamidoethanol (NMeFOSE)		ND	*NA*	ND	ND	ND	**0.21**	ND	ND	*NA*
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)		ND	*NA*	ND	ND	ND	0.18	ND	ND	*NA*
6:2 FTS		ND	*NA*	ND	0.099	ND	0.61	**0.86**	ND	*NA*
8:2 FTS		ND	*NA*	ND	ND	ND	**2**	**1.6**	ND	*NA*
Total incl PFOA & PFOS		**66.90**	*NA*	**0.98**	**6.00**	**0.40**	**36.18**	**19.46**	**0.53**	*NA*

NOTES:
Sampling performed by Precision Environmental Services, Inc.
All Surface Water values are reported in ng/L - parts per trillion (ppt)
All Sediment values are reported in ug/kg - parts per billion (ppb)
Analytical Facility - Pace Analytical
ND indicates values reported below the laboratory minimum detection limits
Values in **BOLD** indicate values reported above the laboratory minimum detection limits
BLUE highlight indicates result is estimated

TABLE 3

Summary of Monitoring Well Data (Gauging Results)
Old Orchard Street PFAS Spill
NYSDEC Spill No. 2006090

Monitor Well ID	Depth to Water From Top of Casing 6/30/2023	Depth to Bottom From TOC 6/30/2023	Depth to Water From Top of Casing 7/5/2023	Depth to Bottom From TOC 7/5/2023
MW-1	4.68	4.93	4.85	4.92
MW-2	1.83	5.82	1.60	5.81
MW-3	Dry	10.02	Dry	10.02
MW-4	Dry	13.48	Dry	13.48

NOTE:

All Values are expressed in feet.

TABLE 4

Summary of Water Well Data
Old Orchard Street PFAS Spill
NYSDEC Spill No. 2006090

		Sample Identification	
		MW-2	NYS Class GA Guidance Values
Sample Collection Date		July 5, 2023	
Analyte	Method		
Perfluorobutanoic acid (PFBA)	Draft Method 1633	**1,100.0**	--
Perfluoropentanoic acid (PFPeA)		**4,900.0**	--
Perfluorohexanoic acid (PFHxA)		**2,100.0**	--
Perfluoroheptanoic acid (PFHpA)		**2,400.0**	--
Perfluorooctanoic acid (PFOA)		**840.0**	*6.7*
Perfluorononanoic acid (PFNA)		**220.0**	--
Perfluorodecanoic acid (PFDA)		**160.0**	--
Perfluoroundecanoic acid (PFUnA)		**14.0**	--
Perfluorododecanoic acid (PFDoA)		**1.4**	--
Perfluorotridecanoic acid (PFTriA)		ND	--
Perfluorotetradecanoic acid (PFTeA)		ND	--
Perfluorobutanesulfonic acid (PFBS)		**4.3**	--
Perfluorohexanesulfonic acid (PFHxS)		**6.5**	--
Perfluoroheptanesulfonic acid (PFHpS)		ND	--
Perfluorodecanesulfonic acid (PFDS)		ND	--
Perfluorooctanesulfonic acid (PFOS)		**44.0**	*2.7*
Perfluorooctanesulfonamide (FOSA)		**2.2**	--
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		ND	--
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		**1.5**	--
6:2 FTS		**490.0**	--
8:2 FTS		**190.0**	--
Total incl PFOA & PFOS		**12,473.9**	--

NOTES:

Sampling performed by Precision Environmental Services, Inc.
All values are reported in ng/L - parts per trillion (ppt)
Analytical Facility - Pace Analytical
ND indicates values reported below the laboratory minimum detection limits
Values in **BOLD** indicate values reported above the laboratory minimum detection limits
Green highlighting indicates NYS exceedence

Attachment A – Boring Logs

PRECISION ENVIRONMENTAL SERVICES, INC.

831 RT. 67, LOT 38 A
BALLSTON SPA, NY 12020
TEL: 518-885-4399
FAX: 518-885-4416

CERTIFIED WOMEN-OWNED BUSINESS ENTERPRISE

DRILLING LOG

Page ___ of ___

Well/ Boring No.: B-1/mw-1

Project: Old Orchard St. PBS Spill 2006890 Client: NYSDEC

Project No: Spill 2006890 Location: 100 Park Lane, W Harrison (W. Castle)

Driller: Brandon Carpenter Logged by: Cappellano

Drilling Contractor: Environmental Probe Service Inc Drilling Method: GeoProbe/Direct Push

Date Drilled: 6-19-23 Date Developed: —

TOC Elevation: N/A Total Depth of Hole: 6'

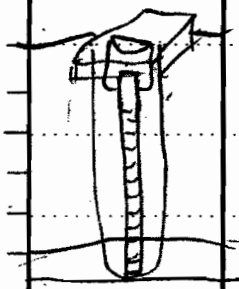
Boring Diameter: 6", 4 1/2 auger Screen Diameter: 2" Length: 4.5

Slot Size: #10 Riser Diameter: 2" Length: 1.5

Type: PVC sch. 40 Sand Pack: 5.5'-1.2" Bentonite Seal: 0.5'

Protective Casing: 8" Road box Flush Choke Seal

~830 am

Depth (ft.)	Well Construction	% Recovery	Sample Type/ #	PID (ppm)	Description / Soil Classification
					Asphalt
0		3'	0-2'	19.3	black STG FILL, dry
1					" " black
2					B-1, 2-12"
3			2-4'		B-1, 2-12" DUPLICATE
4					B-1, 1-2'
5		0.5'	4-6'	10.6	Face brick (same) dry to moist, dark brown
6					Refusal @ 5.5'
7			6-8'		B-1, 5-5.5' (From bottom of auger)
8					
9	Screen 1.5-5.5'		8-10'		B-1, 5-5.5 (ph, TOC)
10					B-1, 5-5.5 (pH TOC) DUPLICATE
11	riser 0.5-1.5'		10-12'		well set 6/20/23
12					
13			12-14'		
14	4' sand				
15	2" 00 sand		14-16'		
16					
17	bentonite 1"		16-18'		
18	6				
19	Conc pad		18-20'		
20	8" road box 9/16" bolts				
21			20-22'		
22					
23			22-24'		
24					
25			24-26'		
26					
27			26-28'		
28					
29			28-30'		
30					

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DRILLING LOG

Page____of____

Well/ Boring No.: B-2/MW-2

Project: Old Orchard St PFAS Client: NYSDEC

Project No: Spill Location: 100 Park Lane North Castle/Armonk

Driller: Brandon Carpenter Logged by: C. Cappellano

Drilling Contractor: Enviroprobe ~~PES~~ Drilling Method: GeoProbe/Direct Push

Date Drilled: 6-19 Date Developed: —

TOC Elevation: N/A Total Depth of Hole: 6.5'

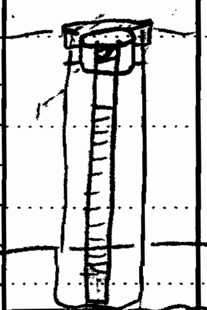
Boring Diameter: 6", 4 1/4 Augers Screen Diameter: 2" Length: 5'

Slot Size: #10 Riser Diameter: 2" Length: 1.5'

Type: PVC sched. 40 Sand Pack: #1 1/2", #00 2" 0.5-1.5' Bentonite Seal: 3/8 chip 0-0.5'

Protective Casing: Flush Roadbox

~9:45 Am



Depth (ft.)	Well Construction	% Recovery	Sample Type/ #	PID (ppm)	Description / Soil Classification
					Fill, dark brown, plastic sheet, organics, S+G based, stone fragments + stone dust
0					
1		2'5"	0-2'	0	B-2, 2-12"
2					B-2, 1-2'
3			2-4'		
4					
5			4-6'		
6				0	~~Sand~~ + silt + clay, dark brown, organics,
7			6-8'		ground stone at 6'
8	Screen 1.5-6.5	1.7"			very moist (6-6.7)
9	riser 0-1.5		8-10'		6.7 refusal B-2, 5-7'
10	Sand 0.5-1.5				
11	1" chole sand		10-12'		~~Fill~~ brick frag S+G Based ~~mch frag~~
12	bentonite to				
13	surface		12-14'		Well set 6/60
14	8" roadbox				
15	conc. PAD		14-16'		
16					
17			16-18'		
18					
19			18-20'		
20					
21			20-22'		
22					
23			22-24'		
24					
25			24-26'		
26					
27			26-28'		
28					
29			28-30'		
30					

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CERTIFIED WOMEN-OWNED BUSINESS ENTERPRISE

DRILLING LOG

Page ___ of ___

Well/ Boring No.: B-3/MW-3

Project: Old Orchard St. PFAS Client: NYSDEC
Project No: Spill 2006090 Location: 100 Park Lane, N. Castle (W. Harrison)
Driller: Brandon Carpenter Logged by: C. Coppellano
Drilling Contractor: EARTH PROBE Drilling Method: GeoProbe/Direct Push
Date Drilled: 6-19 Date Developed: —
TOC Elevation: — Total Depth of Hole: 11.9'
Boring Diameter: 6", 4¼ AUGERS Screen Diameter: 2" Length: 9', 2.9'-11.9'
Slot Size: #10 Riser Diameter: 2" Length: 2.9' (0'-2.9')
Type: Sch. 40 PVC Sand Pack: #1 Bentonite Seal: ___
Protective Casing: Flush Rd. Box w/ PAD #00

~10:30

Depth (ft.)	Well Construction	% Recovery	Sample Type/ #	PID (ppm)	Description / Soil Classification
					ASPHALT
0		4		0	FILL, Asphalt brick frag, gray
1			0-2'		
2					
3			2-4'		
4					
5			4-6'		
6		3.5		0	FILL, Silt + sand gray, very moist
7			6-8'		
8					
9			8-10'		
10					
11			10-12'		SILT + SAND, gray, rock fragments + dust at tip moist
12					
13	11.9 TD		12-14'		refusal @ 11.5'
14	Screen 2.9-11.9				
15	(9' screen)		14-16'		well end 11.9' set 6/21 ~10:15
16					
17			16-18'		
18					
19			18-20'		
20					
21			20-22'		
22					
23			22-24'		
24					
25			24-26'		
26					
27			26-28'		
28					
29			28-30'		
30					

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DRILLING LOG

Well/ Boring No.: B-4/MW-4

Project: Old Orchard St, PFAS Client: NYSDEC

Project No: Spill 2006090 Location: 100 Park Lane, N. Castle (W Harrison)

Driller: Brandon Carpenter Logged by: C. Cappellano

Drilling Contractor: Environmental Soil Inf. Drilling Method: GeoProbe/Direct Push

Date Drilled: 6-22 (WED) Date Developed: —

TOC Elevation: — Total Depth of Hole: 10.0

Boring Diameter: 2 1/4 Screen Diameter: ___ Length: ___

Slot Size: ___ Riser Diameter: ___ Length: ___

Type: ___ Sand Pack: ___ Bentonite Seal: ___

Protective Casing: ___

Depth (ft.)	Well Construction	% Recovery	Sample Type/ #	PID (ppm)	Description / Soil Classification
					GRASS SURFACE
0					FILL
1			0-2'	0	8" brown topsoil
2	NO WELL (dry bore)	4'			2' brown silty sand w/gravel dry
3			2-4'		2' black asphaltic looking mat'l, dry (FILL)
4					
5			4-6'		
6					FILL. brown to dark brown (mixed) STG based
7			6-8'	0	fill w/ rock dust + asphalt fragments
8					dry
9			8-10'		
10					end @ 10' w/ refusal
11			10-12'		
12					
13			12-14'		
14					
15			14-16'		
16					
17			16-18'		
18					
19			18-20'		
20					
21			20-22'		
22					
23			22-24'		
24					
25			24-26'		
26					
27			26-28'		
28					
29			28-30'		
30					

PRECISION
ENVIRONMENTAL SERVICES, INC.
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DRILLING LOG

Well/ Boring No.: B-5/MW-5

Project: Old Orchard St. PFAS Client: NYSDEC
Project No: Spill 2006090 Location: 100 Pell Lane, N. Castle (W Harrison)
Driller: Brandon Carpenter Logged by: C. Cappellano
Drilling Contractor: Environmental Pesticides Inc Drilling Method: GeoProbe/Direct Push
Date Drilled: 6-22 Date Developed: ___
TOC Elevation: ___ Total Depth of Hole: 12.0'
Boring Diameter: ___ Screen Diameter: ___ Length: ___
Slot Size: ___ Riser Diameter: ___ Length: ___
Type: ___ Sand Pack: ___ Bentonite Seal: ___
Protective Casing: ___

Start 1:00

Depth (ft.)	Well Construction	% Recovery	Sample Type/ #	PID (ppm)	Description / Soil Classification
0					grass surface
1		4.5	0-2'	0	brown SILTY SAND, Possible Fill 0-4.5'
2					4.5-5.0 black asphalt like mat'l
3			2-4'		dry
4					
5			4-6'		
6					Gray Sandy Silt with some gravel
7		3	6-8'	0	moist to wet at 9.5' some organics
8					
9			8-10'		
10		2		0	similar, crushed rock dust, wet
11			10-12'		slight swamp odor
12					refusal @ 12'
13			12-14'		
14					
15			14-16'		
16					
17			16-18'		
18					
19			18-20'		
20					
21			20-22'		
22					
23			22-24'		
24					
25			24-26'		
26					
27			26-28'		
28					
29			28-30'		
30					

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CERTIFIED WOMEN-OWNED BUSINESS ENTERPRISE

DRILLING LOG

Well/ Boring No.: B-6

Project: Old Orchard St, PFAS Client: NYSDEC
Project No: Spill 2006090 Location: 100 Park lane, N. Castle (Williamson)
Driller: Brandon Carpenter Logged by: C. Cappellano
Drilling Contractor: Enviroprobe ~~PES~~ Drilling Method: GeoProbe/Direct Push
Date Drilled: 6-19 Date Developed: —
TOC Elevation: — Total Depth of Hole: 7'
Boring Diameter: 2.14 Screen Diameter: — Length: —
Slot Size: — Riser Diameter: — Length: —
Type: — Sand Pack: — Bentonite Seal: —
Protective Casing: —

12:35pm

Depth (ft.)	Well Construction	% Recovery	Sample Type/ #	PID (ppm)	Description / Soil Classification
					Asphalt
0					
1	NO WELL	4	0-2'	0	FILL; black-brown-gray, brick fragments, S+G based fill, moist at 4.5-5
2					
3			2-4'		B-6, 2-12" B-6, 1-2'
4					
5			4-6'		
6					SAND & SILT w/ stone, Gray, rock dust, rock Frag
7			6-8'	0	
8		2.5			refusal 7.0 B-6, 6-7'
9			8-10'		
10					
11			10-12'		
12					
13			12-14'		
14					
15			14-16'		
16					
17			16-18'		
18					
19			18-20'		
20					
21			20-22'		
22					
23			22-24'		
24					
25			24-26'		
26					
27			26-28'		
28					
29			28-30'		
30					

PRECISION
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CERTIFIED WOMEN-OWNED BUSINESS ENTERPRISE

DRILLING LOG

Well/ Boring No.: B-7

Project: Old Orchard St. PFAS Client: NYSDEC

Project No: SPILL 2006090 Location: 100 Park Lane, N. Castle (W. Harrison)

Driller: Brandon Carpenter Logged by: ___

Drilling Contractor: PES Drilling Method: GeoProbe/Direct Push

Date Drilled: 6-19 Date Developed: -

TOC Elevation: - Total Depth of Hole: 4'

Boring Diameter: 2 1/4" Screen Diameter: - Length: -

Slot Size: - Riser Diameter: - Length: -

Type: - Sand Pack: - Bentonite Seal: -

Protective Casing: ___

1:05

Depth (ft.)	Well Construction	% Recovery	Sample Type/ #	PID (ppm)	Description / Soil Classification
					ASPHALT
					FILL; S+G based, moist, rock frag + dust, brick frag
0					
1		4'	0-2'	0	B-7, 2-12"
2					B-7 1-2'
3	NO WELL SET		2-4'		Refusal @ 4' B-7, 3-4'
4					
5			4-6'		
6					
7			6-8'		
8					
9			8-10'		
10					
11			10-12'		
12					
13			12-14'		
14					
15			14-16'		
16					
17			16-18'		
18					
19			18-20'		
20					
21			20-22'		
22					
23			22-24'		
24					
25			24-26'		
26					
27			26-28'		
28					
29			28-30'		
30					

PRECISION
ENVIRONMENTAL SERVICES, INC.
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CERTIFIED WOMEN-OWNED BUSINESS ENTERPRISE

DRILLING LOG

Well/ Boring No.: B-8

Project: Old Orchard Shopping Client: NYSDEC

Project No: SPILL 2006090 Location: 100 Park Lane, N. Castle (Williamson)

Driller: Brandon Carpenter Logged by: C. Capplano

Drilling Contractor: PES Drilling Method: GeoProbe/Direct Push

Date Drilled: 6-19-21 Date Developed: —

TOC Elevation: — Total Depth of Hole: 3'

Boring Diameter: 2 1/4" Screen Diameter: — Length: —

Slot Size: — Riser Diameter: — Length: —

Type: — Sand Pack: — Bentonite Seal: —

Protective Casing: —

~1:40

Depth (ft.)	Well Construction	% Recovery	Sample Type/ #	PID (ppm)	Description / Soil Classification
0		8	0-2'	9.8	FILL, Same B-8, 2'-12" B-8, 1'-2' B-8, 2'-3' Refusal @ 3' No odor
1					
2	NO WELL SET				
3			2-4'		
4					
5			4-6'		
6					
7			6-8'		
8					
9			8-10'		
10					
11			10-12'		
12					
13			12-14'		
14					
15			14-16'		
16					
17			16-18'		
18					
19			18-20'		
20					
21			20-22'		
22					
23			22-24'		
24					
25			24-26'		
26					
27			26-28'		
28					
29			28-30'		
30					

PRECISION
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CERTIFIED WOMEN-OWNED BUSINESS ENTERPRISE

DRILLING LOG

Well/ Boring No.: B-9

Project: Old Orchard St. PFAS Client: NYSDEC

Project No: Spill 2206090 Location: 100 Park Lane, N. Castle (W. Harrison)

Driller: Brandon Carpenter Logged by: C. Cappellano

Drilling Contractor: Environmental PES Drilling Method: GeoProbe/Direct Push

Date Drilled: 6-9 Date Developed: —

TOC Elevation: — Total Depth of Hole: 2

Boring Diameter: 2¼ Screen Diameter: — Length: —

Slot Size: — Riser Diameter: — Length: —

Type: — Sand Pack: — Bentonite Seal: —

Protective Casing: —

1:55

Depth (ft.)	Well Construction	% Recovery	Sample Type/ #	PID (ppm)	Description / Soil Classification
0					Fill, brick frag, rock frag brown/gray dry
1	NO WELL		0-2'		
2					refusal @ 2'
3			2-4'		
4					
5			4-6'		
6					
7			6-8'		
8					
9			8-10'		
10					
11			10-12'		
12					
13			12-14'		
14					
15			14-16'		
16					
17			16-18'		
18					
19			18-20'		
20					
21			20-22'		
22					
23			22-24'		
24					
25			24-26'		
26					
27			26-28'		
28					
29			28-30'		
30					

PRECISION
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DRILLING LOG

Well/ Boring No.: B-10/MW-4

Project: Old Orchard St PRAS Client: NYSDEC

Project No: SPILL 2006090 Location: 100 Park Lane, N. Castle (W Harrison)

Driller: Brandon Carpenter Logged by: C. Cappellano

Drilling Contractor: Environmental Services Drilling Method: GeoProbe/Direct Push

Date Drilled: 6-23 Date Developed: —

TOC Elevation: — Total Depth of Hole: 14'

Boring Diameter: 6" 4¼ Augers Screen Diameter: 2" Length: ___

Slot Size: #10 Riser Diameter: 2" Length: ___

Type: Sched 40 PVC Sand Pack: #1 #00 Bentonite Seal: ___

Protective Casing: Flush Rdby in PAD

Depth (ft.)	Well Construction	% Recovery	Sample Type/ #	PID (ppm)	Description / Soil Classification
0					Grass
1		3.5	0-2'		SILTY SAND FILL 0-4.5' brown black asphalt 4.5-5.0' layer dry
2					
3			2-4'		
4					
5			4-6'		
6					SANDY SILT FILL w/some gravel, gray-brown
7		3.5	6-8'		moist to wet at 9.5', some organics
8					
9			8-10'		
10					
11			10-12'		SILT, wet, brown
12					
13			12-14'		
14					
15	bentonite 0.5-2.5		14-16'		Refusal at 14'
16					
17			16-18'		
18	Sand 00 2.5-3.0				
19			18-20'		
20	Sand #1 3'-14'				
21			20-22'		
22	Flush Rdby				
23	Conc pad		22-24'		
24					
25			24-26'		
26					
27			26-28'		
28					
29			28-30'		
30					

Attachment B – Laboratory Data Packages