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March 21, 2023

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Program Management, 12th Floor
625 Broadway
Albany, New York 12233-7012

Attention: Anthony Bollasina

Subject: **Phase I Remedial Investigation Data Summary Report**
W.F. Lake Corporation; Site Number 558042
Work Assignment # D009809-30
MACTEC Engineering and Geology, P.C., Project # 3616216155

Dear Mr. Bollasina:

This Phase I Remedial Investigation Data Summary Report (Report) has been prepared by MACTEC Engineering and Geology, P.C. (MACTEC) on behalf of the New York State Department of Environmental Conservation (NYSDEC) for the W.F. Lake Corporation site (Site) in Glens Falls, New York. Investigative activities of Phase I of the Remedial Investigation (RI) were completed under Work Assignment (WA) Issuance D009809-30 in accordance with the *Field Activities Plan, Remedial Investigation Phase I W.F. Lake Corporation; Site # 558042* issued April 2022 (MACTEC, 2022). The objective of the Phase I investigation was to evaluate data gaps identified during the Site Characterization (SC) and to further evaluate the nature and extent of soil, surface water, and groundwater contamination at the Site and adjacent properties.

The SC identified the highest on-site concentrations of per- and polyfluoroalkyl substances (PFAS) in shallow groundwater near the Site building, with the highest concentrations in soil generally found in locations east of the Site building (surface soil). The highest sediment concentrations were associated with the retention pond west of the facility.

Phase I Investigation Activities

MACTEC conducted Phase I field activities in Summer and Fall 2022 with the objective of addressing data gaps identified during the SC, including:

- the presence of PFAS in off-site soil, surface water, sediment, and overburden groundwater;
- confirming overburden thickness; and,
- confirming overburden groundwater flow direction; and,

Activities performed during Phase I included:

- the use of surface geophysics to evaluate subsurface lithology;
- shallow overburden well redevelopment and synoptic water level gauging;
- the installation of overburden groundwater monitoring wells; and,
- the sampling of on-site and off-site groundwater, surface water, sediment, and surface soil.

Overburden Well Installation

Based on concentrations of PFAS identified in shallow overburden groundwater during the SC, the interpreted groundwater flow direction from on-site wells, and results of the surface geophysical investigation, five additional overburden groundwater monitoring wells were installed. It should be noted that shallow overburden is generally defined as the uppermost 30 feet of overburden and is based on lithology encountered during the SC and Phase I of the RI. These wells were constructed in deep overburden at on-site and off-site locations (Figure 1). Groundwater monitoring wells were installed from June 27, 2022 to July 6, 2022 and were screened in deep overburden with one on-site well pair (MW-7S/-7D) consisting of both a shallow and deep overburden well (Figure 1). Deep overburden is generally defined as the portion of overburden greater than 30 feet in depth and above the top of bedrock. Deep overburden well screens were 10-feet in length and constructed at depths that ranged from 44-feet (bottom of screen) at MW-08 to 91.5-feet at MW-09.

Synoptic Water Level Gauging and Groundwater Flow

Following well completion, overburden monitoring wells were surveyed by a New York licensed land surveyor. Static water levels were gauged during the shallow overburden well redevelopment in May 2022 and during the August 2022 groundwater sampling event. Flow at the Site has been found to vary seasonally within shallow overburden with flow to the west during the Spring (May) and east during the Fall (August) as illustrated in Figure 2-1 and Figure 2-2, respectively. Initial overburden groundwater gauging and surface water analytical data suggest a somewhat radial flow

regime consistent with area topography and potential discharge to surface water in areas to the north, south, east, and west. Potentiometric data for deep overburden is only available for Fall (August) due to the installation of the deep overburden wells, with flow identified to the northwest (Figure 2-3). This flow within deep overburden is generally opposite that observed in shallow overburden (Figure 2-2) but is consistent with the deepening of bedrock to the north of the site as encountered during Phase I overburden drilling efforts. Additional groundwater potentiometric data will be collected during Phase II and be coordinated during mobilizations to the site.

Groundwater Sampling

Shallow overburden wells installed during the SC (MW-01 through MW-05) and overburden wells installed during Phase I (MW-06 through MW-09) were sampled using lowflow procedures in August 2022. Multiple PFAS compounds were detected in groundwater and results are presented in Table 1a and are shown on Figure 3. The predominant PFAS compound detected (perfluorooctanoic Acid [PFOA]) was detected in all media sampled. Concentrations of PFOA in groundwater ranged from 5 nanograms per liter (ng/L) at MW-04 to 28,000 ng/L at MW-08. The highest concentrations were detected in deep overburden groundwater south of the site at MW-08 with other off-site concentrations detected north (MW-09) and west (MW-06) of the site being generally lower than those reported in on-site monitoring wells. Monitoring wells MW-07S and MW-07D showed concentrations of PFOA at 19,000 ng/L and 190 ng/L, respectively. These two on-site wells were resampled in December 2022 with results being an order of magnitude lower at MW-07S (1,900 ng/L) and MW-07D (6.8 ng/L).

Surface Water and Sediment Sampling

Between June 28, 2022 and June 29, 2022, surface water was sampled for PFAS at five locations and sediment was collected at one location. These results are presented in Table 1b and illustrated on Figure 4. The samples were collected within unnamed surface water bodies west, south, and northeast of the Site. The unnamed tributary streams connect to a series of drainage ditches and stream features that collect runoff from the surrounding area and airport. These tributary streams eventually coalesce south of the site and discharge to Bond Creek. The highest detection of PFOA in surface water was found immediately west of the site at SW-05 (750 ng/L). Surface water samples collected off-site showed PFOA at concentrations ranging from 11 ng/L at SW-03 to 440 ng/L at SW-07 located 1,400 feet south and 1,000 feet northeast of the site, respectively.

Concentrations of 6:2 fluorotelomer sulfonic acid (6:2 FTS) were detected in surface water samples collected downstream of the Floyd Bennet Memorial Airport (SW-3, SW-04, and SW-08) with samples collected upstream of the airport at SW-05, SW-06, and SW-07 being non-detect for 6:2 FTS (Table 1b). PFOA concentrations were highest in those locations closest to the site (SW-05, SW-06, and SW-07) with concentrations lowest at those locations further downstream with detections of 6:2 FTS. Based on concentrations reported in surface water collected during Phase I it appears that the airport may be a contributing source of PFAS to surface water. This is observed in the PFAS chemical composition present in these samples visually displayed using radar plots in Figure 4.

Only one sediment sample (SED-08) was collected co-located with surface water location SW-08 (Table 1c). PFAS was not detected in sediment (SED-08); however, seven PFAS compounds including PFOA (15 ng/L) and 6:2 FTS (55 ng/L) were detected in surface water at SW-08.

Surface Soil Sampling

Between June 27, 2022 and June 29, 2022, a total of 18 surface soil samples were collected from nine off-site locations (two samples per location) from 0-2 inches and 2-12 inches below ground surface (Figure 5). The highest concentrations of PFAS were found at SB-09, located near shallow overburden monitoring well MW-05. PFOA was reported at concentrations of 30 micrograms per kilogram (ug/kg) and 16 ug/kg from 0-2 inches and 2-12 inches, respectively. Surface soil analytical results are presented in Table 1d.

Summary

PFAS is found within shallow and deep overburden groundwater, surface soil, and surface water at both on-site and off-site locations based on SC and Phase I results. Seasonal fluctuations in overburden groundwater flow observed to date and downward vertical gradients in overburden groundwater, as measured at on-site wells MW-07S/-07D, indicate that the downward transport of PFAS from the site to downgradient locations is occurring.

Concentrations of PFAS in overburden groundwater has not been fully delineated either on or off-Site, but the identification of two overburden hydrogeologic units during Phase I will be considered in ongoing RI activities.

March 2023

MACTEC looks forward to assisting the NYSDEC with this project. Please let us know if you have any questions or need any additional information.

Sincerely,

MACTEC Engineering and Geology, P.C.

A handwritten signature in black ink, appearing to read "Chris Buckman".

Christopher Buckman, P.G., L.G.
Project Manager

A handwritten signature in blue ink, appearing to read "Jean Firth".

Jean Firth, P.G.
Program Manager

Enclosures (2)

TABLE 1

PHASE I ANALYTICAL RESULTS

Table 1a
Phase I Groundwater Analytical Results - WF Lake Corporation

Sample ID		MW-01-GW-081022		MW-01-GW-081022-DUP		MW-02-GW-081022		MW-03-GW-081022		MW-04-GW-081122		MW-05-GW-081022	
Location ID		MW-01		MW-01		MW-02		MW-03		MW-04		MW-05	
Sample Date		8/10/2022		8/10/2022		8/10/2022		8/10/2022		8/11/2022		8/10/2022	
Screen Depth (feet bgs)		6-16		6-16		7-17		7-12		3.5-8.5		3.5-8.5	
Analytical Method		537.1M		537.1M		537.1M		537.1M		537.1M		537.1M	
Parameter Name	CAS Number	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Per- and Polyfluoroalkyl Substances (ng/L)													
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	113507-82-7	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
Hexafluoropropylene oxide dimer acid (HFPO-DA)	13252-13-6	22	J-	22	J-	6.7		1.4	J	1.9	U	2	
Nonafluoro-3,6-dioxahheptanoic acid (NFDHA)	151772-58-6	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4.3		4.3		4.2		5.8		1.9	U	2	U
Perfluoroundecanoic acid (PFUnA)	2058-94-8	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
N-Methylperfluoro-1-octanesulfonamidoacetic Acid	2355-31-9	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
Perfluoropentanoic acid (PFPeA)	2706-90-3	970		1100		200		84		1.9	U	65	
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
6:2 Fluorotelomersulfonic acid (6:2FTS A)	27619-97-2	1.9	UJ	1.9	UJ	1.8	UJ	1.9	UJ	1.9	U	1.8	UJ
N-Ethyl perfluorooctanesulfonamidoacetic acid	2991-50-6	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
Perfluoro-1-butanefulfonamide (FBSA)	30334-69-1	1.9	U	0.23	J	0.45	J	1.9	U	1.9	U	2	U
Perfluorohexanoic acid (PFHxA)	307-24-4	590		670		270		110		0.39	J	84	
Perfluorododecanoic acid (PFDoA)	307-55-1	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
Perfluorodecanoic acid (PFDA)	335-76-2	54	J+	59	J+	58		1.9	U	1.9	U	2	U
Perfluorodecanesulfonic acid (PFDS)	335-77-3	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	1.9	U	1.9	U	1.6	J	4.2		1.9	U	0.47	J
Perfluorobutanoic acid (PFBA)	375-22-4	250		280		67		39		1.9	U	24	
Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.79	J	0.88	J	1.2	J	1.7	J	1.9	U	0.58	J
Perfluoroheptanoic acid (PFHpA)	375-85-9	260		300		130		60		1.9	U	56	
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
Perfluorononanoic acid (PFNA)	375-95-1	73		84		17		11		1.9	U	2.8	
Perfluorotetradecanoic acid (PFTA)	376-06-7	1.9	U	1.9	U	1.8	UJ	1.9	U	1.9	U	2	U
Perfluoro-4-oxapentanoic acid (PFMPA)	377-73-1	12		14		3.6		1.6	J	1.9	U	0.68	J
8:2 Fluorotelomersulfonic acid (8:2FTS A)	39108-34-4	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
Perfluoro-1-hexanesulfonamide (FHxSA)	41997-13-1	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
Perfluoronananesulfonic acid (PFNS)	68259-12-1	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1.9	U	1.9	U	1.8	UJ	1.9	U	1.9	U	2	U
Perfluorooctanesulfonamide (FOSA)	754-91-6	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
9Cl-PF3ONS (F53B Major)	756426-58-1	1.9	UJ	1.9	UJ	1.8	UJ	1.9	UJ	1.9	UJ	2	UJ
4:2 Fluorotelomersulfonic acid (4:2FTS A)	757124-72-4	1.9	U	2	UJ	1.8	U	1.9	U	1.9	UJ	2	U
11Cl-PF3OUdS (F53B Minor)	763051-92-9	1.9	U	1.9	U	1.8	U	1.9	U	1.9	U	2	U
Perfluoro-5-oxahexanoic acid (PFMBA)	863090-89-5	1	J	1	J	0.69	J	1.9	U	1.9	U	2	U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	100		120		15		2.8		1.9	U	0.94	J
Perfluorooctanoic acid (PFOA)	335-67-1	2900		3300		1,600		2,000		5		1,400	

Notes:
U - Analyte Not Detected
J - Estimated Concentration
R - Data Rejected
J+ - Estimated Concentration Biased High
J- - Estimated Concentration Biased Low
UJ - Estimated Reporting Limit

Table 1a
Phase I Groundwater Analytical Results - WF Lake Corporation

MW-06-GW-081022		MW-07S-GW-081122		MW-07S-GW-121322		MW-07D-GW-081122		MW-07D-GW-121322		MW-08-GW-080922		MW-09-GW-080922	
MW-06		MW-07S		MW-07S		MW-07D		MW-07D		MW-08		MW-09	
8/9/2022		8/11/2022		12/13/2022		8/11/2022		12/13/2022		8/9/2022		8/9/2022	
44-54		20-30		20-30		58-68		58-68		34-44		81.5-91.5	
537.1M		537.1M		537.1M		537.1M		537.1M		537.1M		537.1M	
Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1.9	U	1.9	U	NA	NA	2	U	NA	NA	1.8	U	0.27	J
1.9	U	20	J	NA	NA	2	U	NA	NA	2	J	1.8	U
1.9	U	1.9	U	NA	NA	2	U	NA	NA	1.8	U	1.8	U
1.9	U	1.3	J	1.5	J	3.4		1.8	U	1.8	U	1.8	U
1.9	U	1.9	U	1.7	U	2	U	1.8	U	1.8	U	1.8	U
1.9	U	1.9	U	1.7	U	2	U	1.8	U	1.8	U	1.8	U
8.8		410		410	D	16		1.8	U	180		1.8	U
1.9	U	1.9	U	NA	NA	2	U	NA	NA	1.8	U	1.8	U
1.9	U	1.9	UJ	1.7	U	2	U	1.8	U	1.8	U	1.9	U
1.9	U	1.9	U	1.7	U	2	U	1.8	U	1.8	U	1.8	U
1.9	U	1.9	U	NA	NA	2	U	NA	NA	1.8	U	1.8	U
21		860		930	D	21		0.64	J	520		5	
1.9	U	1.9	U	1.7	U	2	U	1.8	U	1.8	U	1.8	U
1.9	U	1.9	U	1.7	U	1.6	J	1.8	U	1.8	U	1.8	U
1.9	U	1.9	U	1.7	U	2	U	1.8	U	1.8	U	1.8	U
1.9	U	3.3		3.4		1.8	J	1.8	U	1.1	J	1.8	U
5.6		140		110		10	J	50		45		1.5	J
0.4	J	1.7	J	1.4	J	1.1	J	1.8	U	3		1.8	U
20		740		840	D	20		0.69	J	590		5.3	
1.9	U	1.9	U	1.7	U	2	U	1.8	U	1.8	U	1.8	U
1.9	U	27		22		5.5		1.8	U	9.9		1.8	U
1.9	UJ	1.9	U	1.7	U	2	UJ	1.8	U	1.8	U	1.8	U
1.9	U	3.7		NA	NA	0.5	J	NA	NA	1.8	U	1.8	U
1.9	U	1.9	U	1.7	U	2	U	1.8	U	1.8	R	1.8	U
1.9	U	1.9	U	NA	NA	2	U	NA	NA	0.8	J	1.8	U
1.9	U	1.9	U	NA	NA	2	U	NA	NA	1.8	U	1.8	U
1.9	UJ	1.9	U	1.7	U	2	UJ	1.8	U	1.8	U	1.8	U
1.9	U	1.9	U	1.7	U	2	UJ	1.8	U	1.8	U	1.8	U
1.9	U	1.9	UJ	NA	NA	2	UJ	NA	NA	1.8	U	1.8	U
1.9	U	1.9	U	NA	NA	2	U	NA	NA	1.8	U	1.8	U
1.9	U	1.9	U	NA	NA	2	U	NA	NA	1.8	U	1.8	U
1.9	U	0.55	J	NA	NA	2	U	NA	NA	0.35	J	1.8	U
1.9	U	28		NA	NA	1.8	J	NA	NA	0.39	J	1.8	U
270		19000		1900	D	190		6.8		28,000		92	

Table 1b
Phase I Surface Water Analytical Results - WF Lake Corporation

Sample ID		SW-03-SW-062822		SW-03-SW-062822_DUP		SW-04-SW-062822		SW-05-SW-062922		SW-06-SW-062922		SW-06-SW-062922		SW-07-SW-062922		SW-08-SW-062922	
Location ID		SW-03		SW-03 (Field Duplicate)		SW-04		SW-05		SW-06		SW-06		SW-07		SW-08	
Sample Date		6/28/2022		6/28/2022		6/28/2022		6/29/2022		6/29/2022		6/29/2022		6/29/2022		6/29/2022	
Screen Depth (feet bgs)		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5	
Analytical Method		537.1M		537.1M		537.1M		537.1M		537.1M		537.1M		537.1M		537.1M	
Parameter Name	CAS Number	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Per- and Polyfluoroalkyl Substances (ng/L)																	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	113507-82-7	1.9	U	1.9	U	1.9	U	2	U	4.1	U	4.1	U	1.8	U	1.8	U
Hexafluoropropylene oxide dimer acid (HFPO-DA)	13252-13-6	1.9	U	1.9	U	1.9	U	3.1		4.1	U	4.1	U	0.43	J	1.8	U
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	151772-58-6	1.9	U	1.9	U	1.9	U	2	U	4.1	U	4.1	U	1.8	U	1.8	U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	1.2	J	2.2		3.3		2.8	J	1.5	J	1.5	J	5		1.4	J
Perfluoroundecanoic acid (PFUnA)	2058-94-8	0.52	J	0.56	J	3.6		1.6	J	4.1	U	4.1	U	0.42	J	0.34	J
N-Methylperfluoro-1-octanesulfonamidoacetic Acid	2355-31-9	1.9	U	1.9	U	1.9	U	2	U	4.1	U	4.1	U	1.8	U	1.8	U
Perfluoropentanoic acid (PFPeA)	2706-90-3	52		56		50		110		23		23		13		65	
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4	1.9	U	1.9	U	1.9	U	2	U	4.1	U	4.1	U	1.8	U	1.8	U
6:2 Fluorotelomersulfonic acid (6:2FTS A)	27619-97-2	37		48		33		1.6	U	4.1	U	4.1	U	1.8	U	55	
N-Ethyl perfluorooctanesulfonamidoacetic acid	2991-50-6	1.9	U	1.9	U	1.9	U	2	U	4.1	U	4.1	U	1.8	U	1.8	U
Perfluoro-1-butanefulfonamide (FBSA)	30334-69-1	1.9	U	1.9	U	1.9	U	0.25	J	0.45	J	0.45	J	1.8	U	1.8	U
Perfluorohexanoic acid (PFHxA)	307-24-4	27		28		28		100		20		20		19		36	
Perfluorododecanoic acid (PFDoA)	307-55-1	1.9	UJ	1.9	U	0.48	J	0.6	J	4.1	UJ	4.1	UJ	0.48	J	1.8	UJ
Perfluorooctanoic acid (PFOA)	335-67-1	11		12		25		750		420		420		440		15	
Perfluorodecanoic acid (PFDA)	335-76-2	1.9	U	1.9	U	1.2	J	32		1.3	J	1.3	J	0.74	J	1.8	U
Perfluorodecanesulfonic acid (PFDS)	335-77-3	1.9	UJ	1.9	UJ	1.9	UJ	1.6	J-	2.2	J-	2.2	J-	1.8	UJ	1.8	UJ
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	1.9	U	0.47	J	0.43	J	2	U	4.1	U	4.1	U	0.5	J	1.8	U
Perfluorobutanoic acid (PFBA)	375-22-4	14	J	15	J	15	J	45		15	J	15	J	12		18	J
Perfluorobutanesulfonic acid (PFBS)	375-73-5	2.4		2.6		3.5		1.5	J	2.1	J	2.1	J	1.3	J	2.7	
Perfluoroheptanoic acid (PFHpA)	375-85-9	8.3		8.8		8.5		34		21		21		20		10	
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8	1.9	U	1.9	U	1.9	U	2	U	4.1	U	4.1	U	1.8	U	1.8	U
Perfluorononanoic acid (PFNA)	375-95-1	1.1	J	1.4	J	1.8	J	14		2.8	J	2.8	J	1.3	J	1.2	J
Perfluorotetradecanoic acid (PFTA)	376-06-7	1.9	R	1.9	UJ	1.9	R	2	R	4.1	UJ	4.1	UJ	1.8	UJ	1.8	R
Perfluoro-4-oxapentanoic acid (PFMPA)	377-73-1	1.9	U	1.9	U	1.9	U	2		4.1	U	4.1	U	1.8	U	1.8	U
8:2 Fluorotelomersulfonic acid (8:2FTS A)	39108-34-4	1.9	U	1.9	U	1.9	U	2	U	4.1	U	4.1	U	1.8	U	1.8	U
Perfluoro-1-hexanesulfonamide (FHxSA)	41997-13-1	1.9	U	1.9	U	1.9	U	2	U	4.1	U	4.1	U	1.8	U	1.8	U
Perfluorononanesulfonic acid (PFNS)	68259-12-1	1.9	U	1.9	U	1.9	U	2	U	4.1	U	4.1	U	1.8	U	1.8	U
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1.9	R	1.9	UJ	0.31	J+	2	R	4.1	UJ	4.1	UJ	1.8	UJ	1.8	R
Perfluorooctanesulfonamide (FOSA)	754-91-6	1.9	UJ	1.9	UJ	1.9	UJ	2	UJ	4.1	U	4.1	U	1.8	UJ	1.8	UJ
9Cl-PF3ONS (F53B Major)	756426-58-1	1.9	U	1.9	U	1.9	U	2	U	4.1	U	4.1	U	1.8	U	1.8	U
4:2 Fluorotelomersulfonic acid (4:2FTS A)	757124-72-4	1.9	U	1.9	U	1.9	U	2	U	4.1	U	4.1	U	1.8	U	1.8	U
11Cl-PF3OUdS (F53B Minor)	763051-92-9	1.9	U	1.9	U	1.9	U	2	U	4.1	U	4.1	U	1.8	U	1.8	U
Perfluoro-5-oxahexanoic acid (PFMBA)	863090-89-5	1.9	U	1.9	U	1.9	U	0.5	J	4.1	U	4.1	U	1.8	U	1.8	U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	1.9	U	1.9	U	1.9	U	9.2		0.72	J	0.72	J	0.33	J	1.8	U

Notes:
U - Analyte Not Detected
J - Estimated Concentration
R - Data Rejected
J+ - Estimated Concentration Biased High
J- - Estimated Concentration Biased Low
UJ - Estimated Reporting Limit

Table 1c
Phase I Sediment Analytical Results - WF Lake Corporation

Sample ID		SED-08-SED-062922	
Location ID		SED-08	
Sample Date		6/29/2022	
Screen Depth (feet bgs)		0-0.25	
Analytical Method		537.1M	
Parameter Name	CAS Number	Result	Qualifier
Percent Solids	HLA0046	77.6	
Per- and Polyfluoroalkyl Substances (ug/kg)			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEA)	113507-82-7	0.99	U
Hexafluoropropylene oxide dimer acid (HFPO-DA)	13252-13-6	0.99	U
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	151772-58-6	0.99	U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.99	U
Perfluoroundecanoic acid (PFUnA)	2058-94-8	0.99	U
N-Methylperfluoro-1-octanesulfonamidoacetic Acid	2355-31-9	0.99	U
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.99	U
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4	0.99	U
6:2 Fluorotelomersulfonic acid (6:2FTS A)	27619-97-2	0.99	UJ
N-Ethyl perfluorooctanesulfonamidoacetic acid	2991-50-6	0.99	U
Perfluoro-1-butanefluoramide (FBFA)	30334-69-1	0.99	U
Perfluorohexanoic acid (PFHxA)	307-24-4	0.99	U
Perfluorododecanoic acid (PFDoA)	307-55-1	0.99	U
Perfluorooctanoic acid (PFOA)	335-67-1	0.99	U
Perfluorodecanoic acid (PFDA)	335-76-2	0.99	U
Perfluorodecanesulfonic acid (PFDS)	335-77-3	0.99	UJ
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	0.99	U
Perfluorobutanoic acid (PFBA)	375-22-4	0.99	U
Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.99	U
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.99	U
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8	0.99	U
Perfluorononanoic acid (PFNA)	375-95-1	0.99	U
Perfluorotetradecanoic acid (PFTA)	376-06-7	0.99	UJ
Perfluoro-4-oxapentanoic acid (PFMPA)	377-73-1	0.99	U
8:2 Fluorotelomersulfonic acid (8:2FTS A)	39108-34-4	0.99	U
Perfluoro-1-hexanesulfonamide (FHxSA)	41997-13-1	0.99	U
Perfluorononanesulfonic acid (PFNS)	68259-12-1	0.99	U
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.99	UJ
Perfluorooctanesulfonamide (FOSA)	754-91-6	0.99	U
9Cl-PF3ONS (F53B Major)	756426-58-1	0.99	U
4:2 Fluorotelomersulfonic acid (4:2FTS A)	757124-72-4	0.99	U
11Cl-PF3OUdS (F53B Minor)	763051-92-9	0.99	U
Perfluoro-5-oxahexanoic acid (PFMBA)	863090-89-5	0.99	U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	0.99	U

Notes:

- U - Analyte Not Detected
- J - Estimated Concentration
- R - Data Rejected
- J+ - Estimated Concentration Biased High
- J- - Estimated Concentration Biased Low
- UJ - Estimated Reporting Limit

Table 1d
Phase I Surface Soil Analytical Results - WF Lake Corporation

Sample ID		SB-09-0-2-062722		SB-09-0-2-062722-DUP		SB-09-2-12-062722		SB-09-2-12-062722-DUP		SB-10-0-2-062822		SB-10-0-2-062822		SB-10-2-12-062822		SB-10-2-12-062822	
Location ID		SB-09		SB-09 (Field Duplicate)		SB-09		SB-09		SB-10		SB-10		SB-10		SB-10	
Sample Date		6/27/2022		6/27/2022		6/27/2022		6/27/2022		6/28/2022		6/28/2022		6/28/2022		6/28/2022	
Screen Depth (feet bgs)		0-2		0-2		2-12		2-12		0-2		0-2		2-12		2-12	
Analytical Method		537.1M		537.1M		537.1M		537.1M		537.1M		SPLP		537.1M		537.1M	
Parameter Name	CAS Number	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Percent Solids	NA	60		59.5		73.7		74.3		62.7				78.4			
Per- and Polyfluoroalkyl Substances (ug/kg)																	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEA)	113507-82-7	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
Hexafluoropropylene oxide dimer acid (HFPO-DA)	13252-13-6	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	151772-58-6	0.74	UJ	0.71	UJ	0.56	UJ	0.57	UJ	0.71	UJ	50	U	0.55	U	50	U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.42	J	0.36	J	0.25	J	0.26	J	0.36	J-	50	U	0.55	U	50	U
Perfluoroundecanoic acid (PFUnA)	2058-94-8	0.38	J	0.28	J	0.56	U	0.57	U	1.6		50	U	0.55	U	50	U
N-Methylperfluoro-1-octanesulfonamidoacetic Acid	2355-31-9	0.74	UJ	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
Perfluoropentanoic acid (PFPeA)	2706-90-3	1.3		0.89		0.34	J	0.31	J	0.12	J-	50	U	0.09	J	50	U
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4	0.74	U	0.71	U	0.56	U	0.57	U	0.71	U	50	U	0.55	U	50	U
6:2 Fluorotelomersulfonic acid (6:2FTS A)	27619-97-2	0.74	UJ	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
N-Ethyl perfluorooctanesulfonamidoacetic acid	2991-50-6	0.74	UJ	0.71	U	0.56	UJ	0.57	U	0.71	UJ	50	U	0.55	U	50	U
Perfluoro-1-butanefulfonamide (FBSA)	30334-69-1	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
Perfluorohexanoic acid (PFHxA)	307-24-4	1		0.68	J	0.45	J	0.41	J	0.71	UJ	50	U	0.11	J	50	U
Perfluorododecanoic acid (PFDoA)	307-55-1	0.47	J	0.38	J	0.56	U	0.57	U	1.2		50	U	0.55	U	50	U
Perfluorooctanoic acid (PFOA)	335-67-1	30	J	21	J	16		14		4.5	J+	28	J	2.9		100	
Perfluorodecanoic acid (PFDA)	335-76-2	0.6	J	0.39	J	0.091	J	0.084	J	1.6		50	U	0.11	J	50	U
Perfluorodecanesulfonic acid (PFDS)	335-77-3	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	UJ	50	U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
Perfluorobutanoic acid (PFBA)	375-22-4	1.1		0.71		0.16	J	0.15	J	0.12	J-	50	U	0.55	U	50	U
Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.85		0.61	J	0.46	J	0.45	J	0.12	J-	50	U	0.089	J	50	U
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
Perfluorononanoic acid (PFNA)	375-95-1	0.45	J	0.33	J	0.13	J	0.094	J	0.27	J-	50	U	0.55	U	50	U
Perfluorotetradecanoic acid (PFTA)	376-06-7	0.17	J	0.71	UJ	0.56	UJ	0.57	UJ	0.3	J-	50	U	0.55	U	50	U
Perfluoro-4-oxapentanoic acid (PFMPA)	377-73-1	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
8:2 Fluorotelomersulfonic acid (8:2FTS A)	39108-34-4	0.74	UJ	0.71	U	0.56	U	0.57	U	0.71	U	50	U	0.55	U	50	U
Perfluoro-1-hexanesulfonamide (FHxSA)	41997-13-1	0.74	U	0.71	U	0.56	U	0.57	U	0.71	U	50	U	0.55	U	50	U
Perfluorononanesulfonic acid (PFNS)	68259-12-1	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.31	J+	0.19	J+	0.56	UJ	0.57	UJ	1.1	J-	50	U	0.55	U	50	U
Perfluorooctanesulfonamide (FOSA)	754-91-6	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
9CI-PF3ONS (F53B Major)	756426-58-1	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
4:2 Fluorotelomersulfonic acid (4:2FTS A)	757124-72-4	0.74	UJ	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
11CI-PF3OUdS (F53B Minor)	763051-92-9	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
Perfluoro-5-oxahexanoic acid (PFMBA)	863090-89-5	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	0.74	U	0.71	U	0.56	U	0.57	U	0.71	UJ	50	U	0.55	U	50	U

Notes:
U - Analyte Not Detected
J - Estimated Concentration
R - Data Rejected
J+ - Estimated Concentration Biased High
J- - Estimated Concentration Biased Low
UJ - Estimated Reporting Limit

Table 1d
Phase I Surface Soil Analytical Results - WF Lake Corporation

SB-11-0-2-062822		SB-11-2-12-062822		SB-12-0-2-062822		SB-12-0-2-062822		SB-12-2-12-062822		SB-12-2-12-062822		SB-13-0-2-062822		SB-13-2-12-062822		SB-14-0-2-062822		SB-14-0-2-062822		SB-14-2-12-062822		SB-14-2-12-062822	
SB-11		SB-11		SB-12		SB-12		SB-12		SB-12		SB-13		SB-13		SB-14		SB-14		SB-14		SB-14	
6/28/2022		6/28/2022		6/28/2022		6/28/2022		6/28/2022		6/28/2022		6/28/2022		6/28/2022		6/28/2022		6/28/2022		6/28/2022		6/28/2022	
0-2		2-12		0-2		0-2		2-12		2-12		0-2		2-12		0-2		0-2		2-12		2-12	
537.1M		537.1M		537.1M		SPLP		537.1M		SPLP		537.1M		537.1M		537.1M		SPLP		537.1M		SPLP	
Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
70.9		78.4		76.3				85				87.9		86.9		71.4				86.2			
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.55	J	0.13	J	0.43	J	50	U	0.28	J	50	U	0.48	U	0.96	U	0.39	J	50	U	0.14	J	50	U
0.74		0.56	U	0.37	J	50	U	0.1	J	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	UJ	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
1.9		0.39	J	0.61		50	U	0.66		13	J	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	UJ	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
1.6		0.52	J	0.48	J	50	U	0.92		35	J	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.39	J	0.56	U	0.18	J	50	U	0.08	J	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
14		7		1.4		36	J	3.7		160		0.85		0.51	J	0.61	U	50	U	0.5	U	50	U
1		0.093	J	0.5	J	50	U	0.22	J	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	UJ	0.56	UJ	0.57	UJ	50	U	0.52	UJ	50	U	0.48	UJ	0.96	UJ	0.61	UJ	50	U	0.5	UJ	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
1.1		0.14	J	0.51	J	50	U	0.46	J	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
1.4		0.53	J	0.24	J	50	U	0.6		26	J	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.54	J	0.11	J	0.24	J	50	U	0.22	J	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.12	J	0.56	U	0.57	UJ	50	U	0.52	U	50	U	0.48	U	0.96	UJ	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.31	J	0.56	U	0.17	J	50	U	0.52	U	50	U	0.48	U	0.96	UJ	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.6	U	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U
0.29	J	0.56	U	0.57	U	50	U	0.52	U	50	U	0.48	U	0.96	U	0.61	U	50	U	0.5	U	50	U

Table 1d
Phase I Surface Soil Analytical Results - WF Lake Corporation

SB-15-0-2-062922		SB-15-2-12-062922		SB-16-0-2-062922		SB-16-0-2-062922		SB-16-2-12-062922		SB-16-2-12-062922		SB-17-0-2-062922		SB-17-2-12-062922	
SB-15		SB-15		SB-16		SB-16		SB-16		SB-16		SB-17		SB-17	
6/29/2022		6/29/2022		6/29/2022		6/29/2022		6/29/2022		6/29/2022		6/29/2022		6/29/2022	
0-2		2-12		0-2		0-2		2-12		2-12		0-2		2-12	
537.1M		537.1M		537.1M		SPLP		537.1M		SPLP		537.1M		537.1M	
Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
72.4		82.7		91.7				93.6				84.4		89.4	
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.37	J	0.23	J	0.2	J	50	U	0.26	J	50	U	0.28	J	0.29	J
0.12	J	0.53	U	0.12	J	50	U	0.45	U	50	U	0.15	J	0.47	U
0.6	UJ	0.53	U	0.48	U	50	U	0.45	UJ	50	U	0.51	U	0.47	UJ
0.26	J	0.53	U	0.48	U	50	U	0.076	J	50	U	0.078	J	0.092	J
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	UJ	0.53	UJ	0.48	UJ	50	U	0.36	J	50	U	0.51	U	0.19	J
0.6	UJ	0.53	UJ	0.48	U	50	U	0.45	UJ	50	U	0.51	U	0.47	UJ
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.38	J	0.11	J	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
6.7		3		0.48	U	50	U	0.57	J	30	J	0.21	J	0.79	
0.16	J	0.53	U	0.11	J	50	U	0.45	U	50	U	0.1	J	0.47	UJ
0.6	U	0.53	UJ	0.48	UJ	50	U	0.45	UJ	50	U	0.51	UJ	0.47	UJ
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	UJ
0.5	J	0.11	J	0.34	J	50	U	0.24	J	50	U	0.4	J	0.24	J
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.36	J	0.11	J	0.073	J	50	U	0.45	U	50	U	0.095	J	0.077	J
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.27	J	0.11	J	0.12	J	50	U	0.12	J	50	U	0.13	J	0.1	J
0.6	UJ	0.53	UJ	0.48	UJ	50	U	0.45	UJ	50	U	0.51	U	0.47	UJ
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	UJ	0.53	UJ	0.48	UJ	50	U	0.45	UJ	50	U	0.51	U	0.47	UJ
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	UJ
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U
0.6	U	0.53	U	0.48	U	50	U	0.45	U	50	U	0.51	U	0.47	U

FIGURE 1
SITE MAP

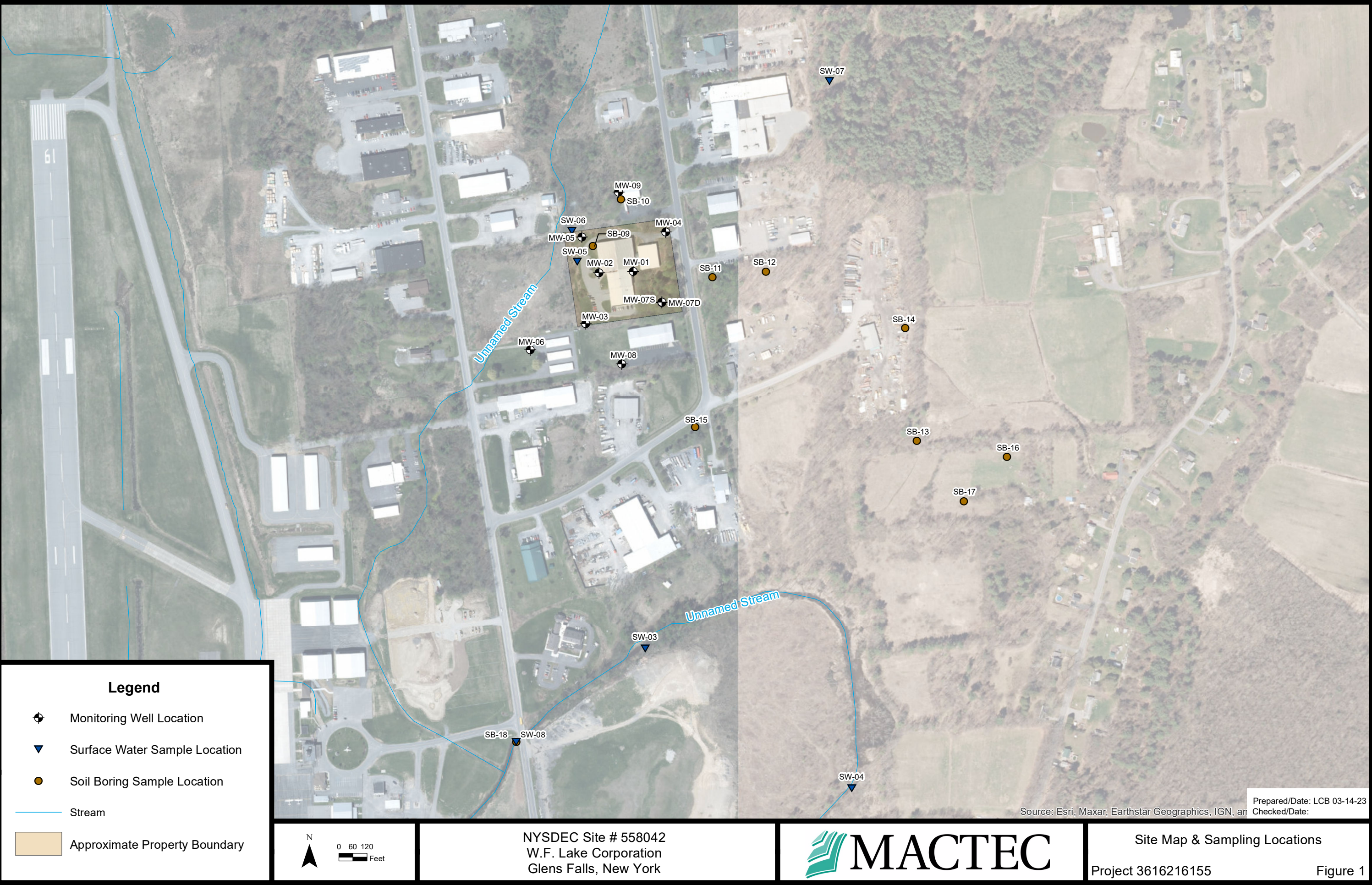


FIGURE 2-1
SHALLOW OVERBURDEN GROUNDWATER CONTOURS – MAY 2022

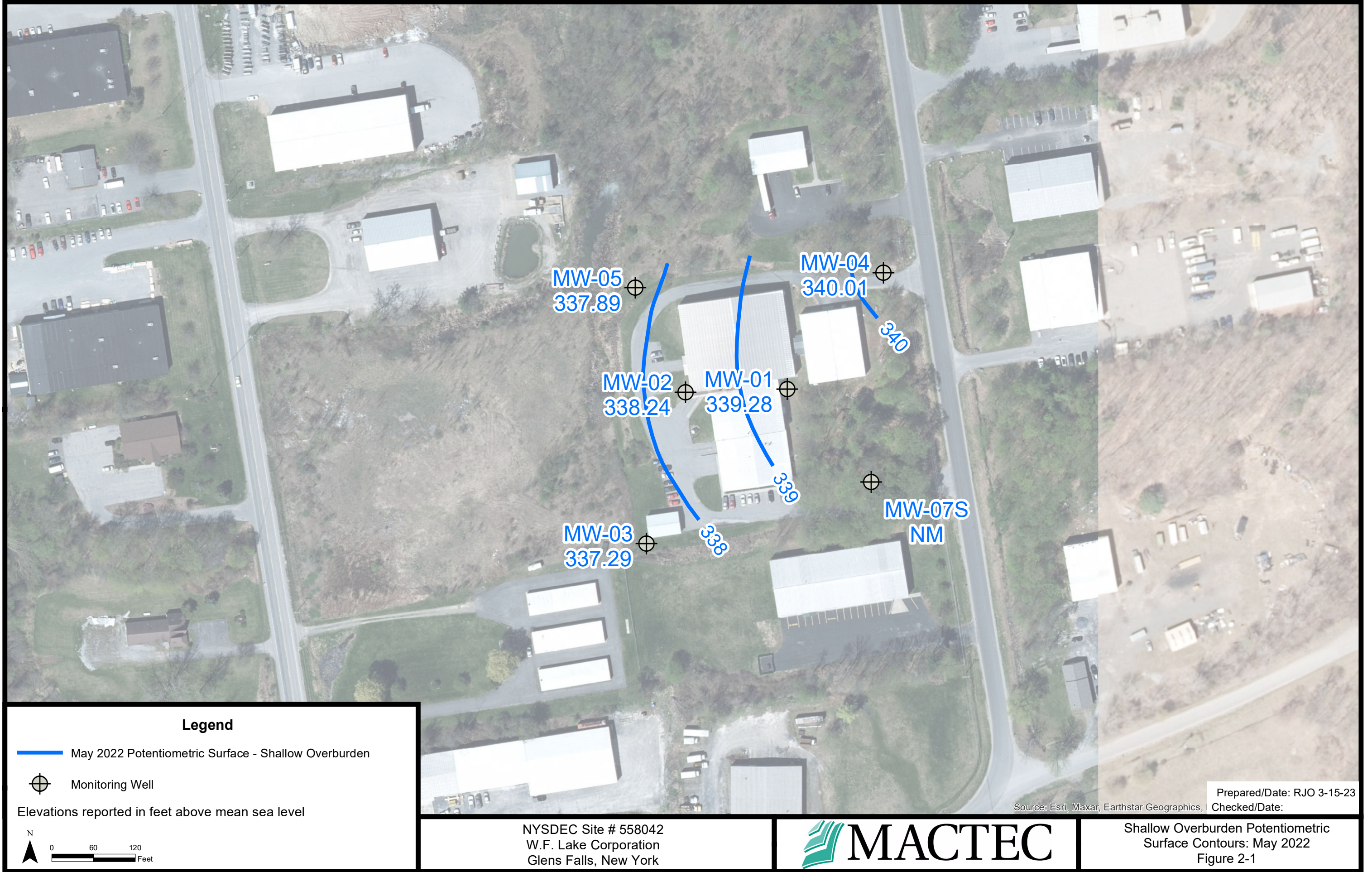


FIGURE 2-2
DEEP OVERBURDEN GROUNDWATER CONTOURS – MAY 2022

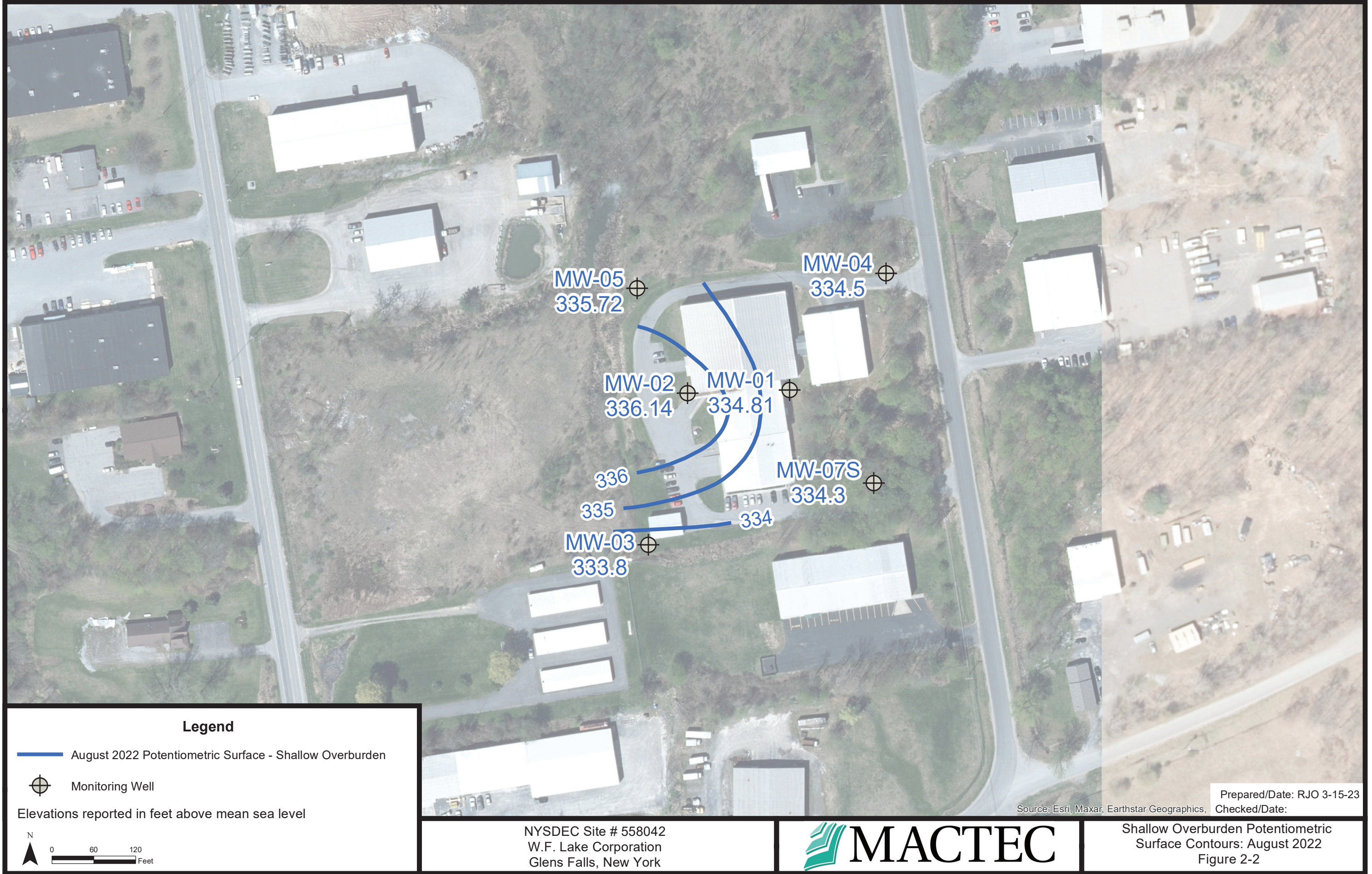


FIGURE 2-3
DEEP OVERBURDEN GROUNDWATER CONTOURS – AUGUST 2022

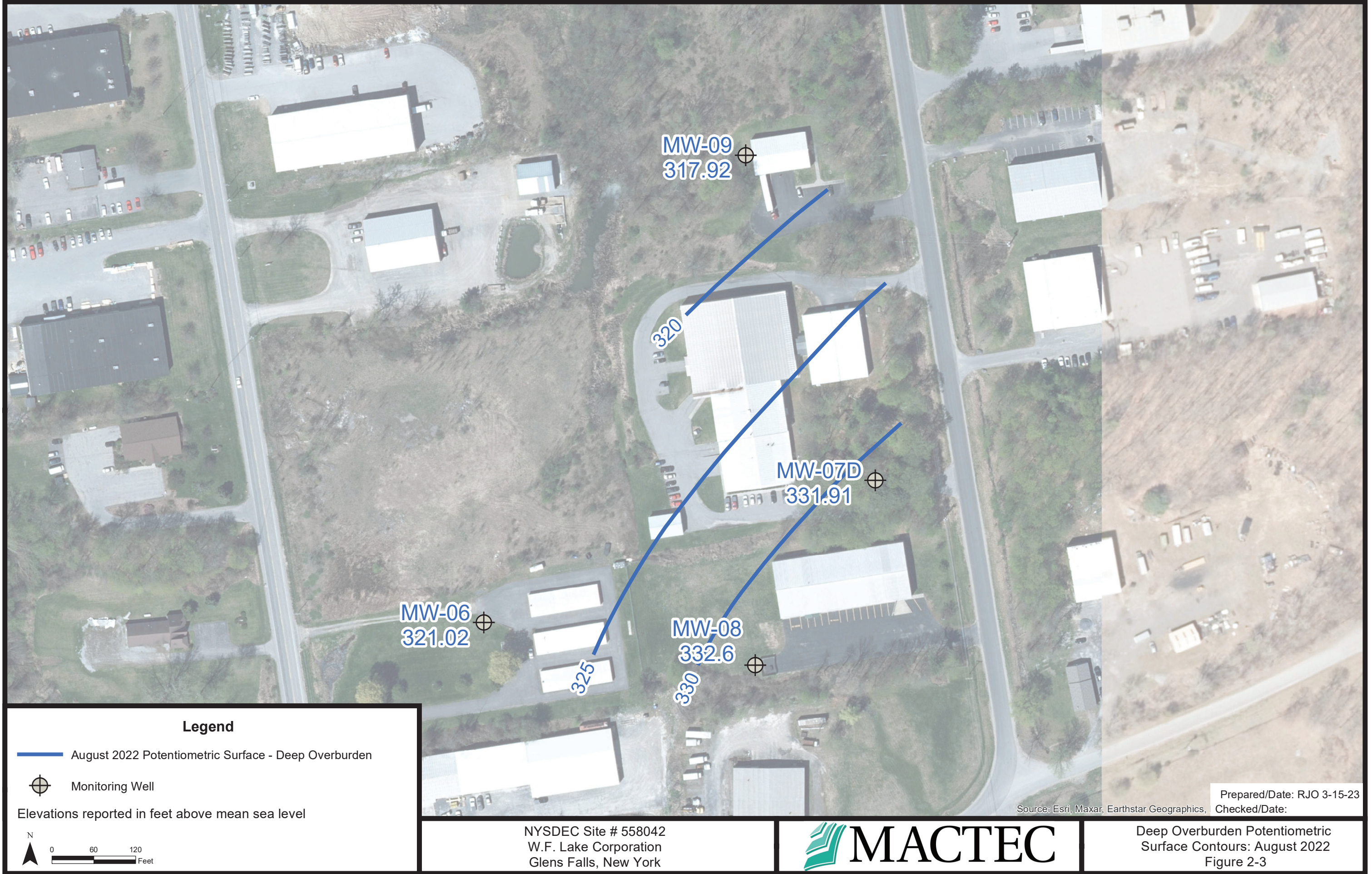


FIGURE 3
GROUNDWATER SAMPLE RESULTS

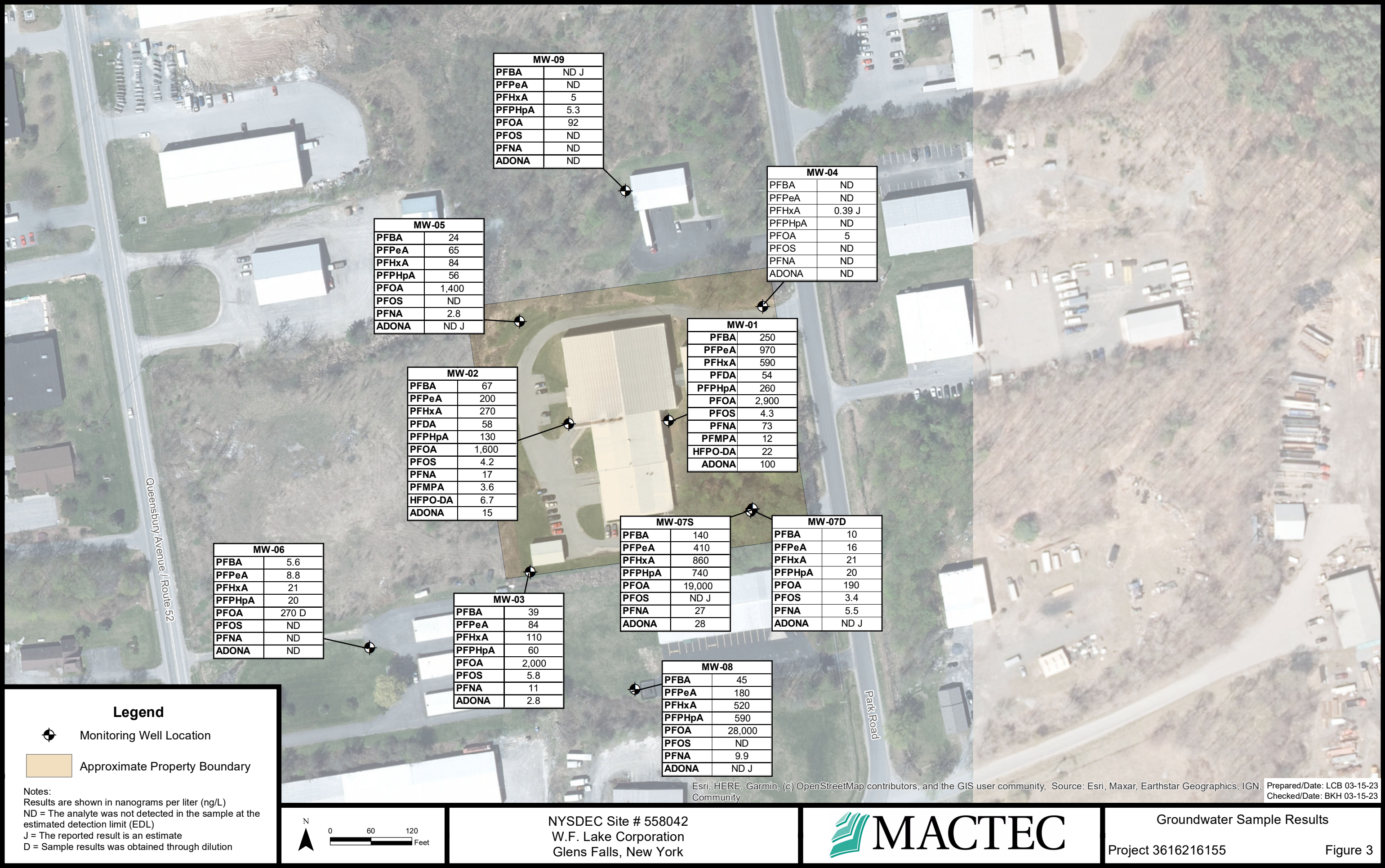


FIGURE 4
SURFACE WATER AND SEDIMENT SAMPLE RESULTS

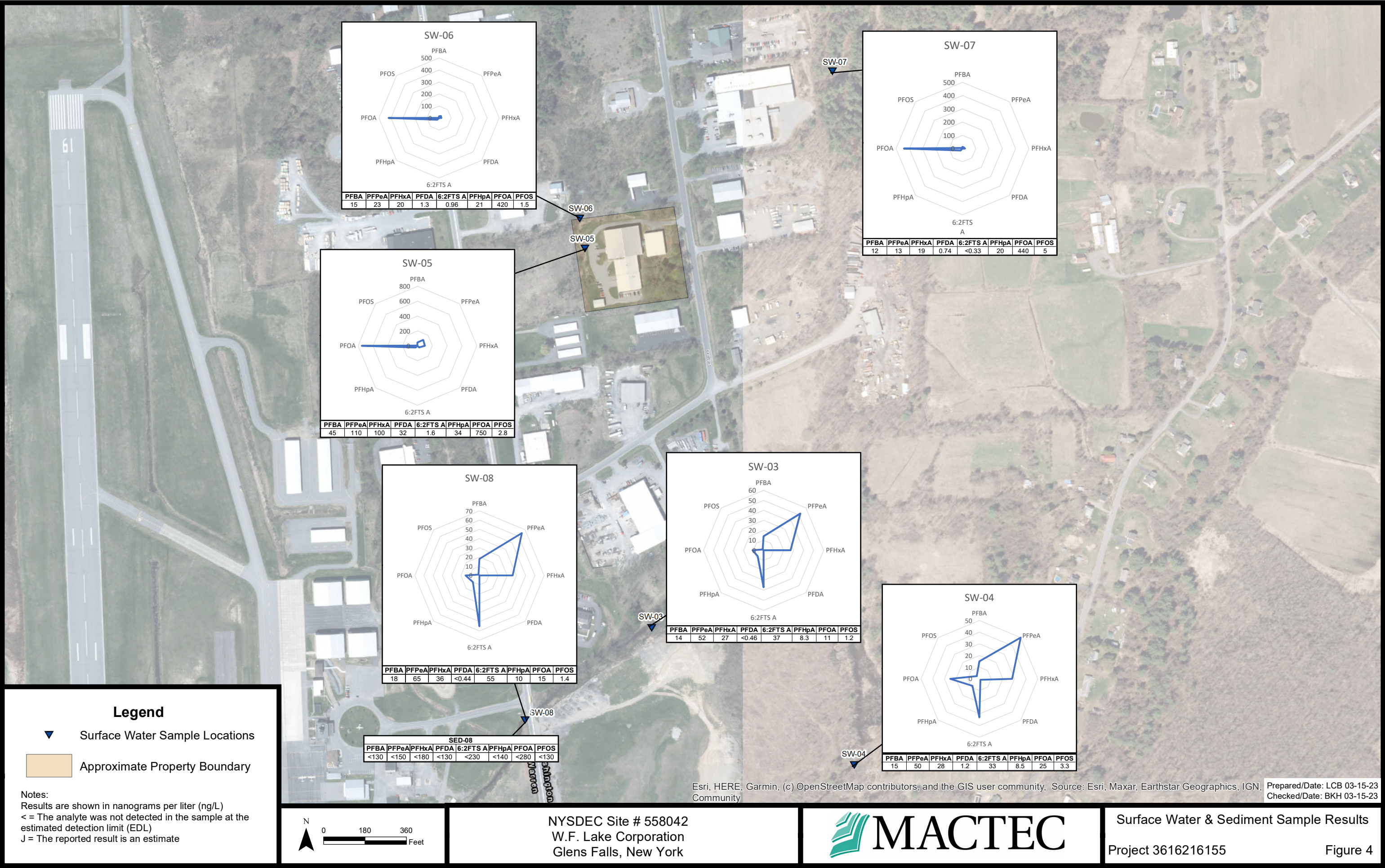


FIGURE 5
SURFACE SOIL SAMPLE RESULTS

