10 Park Place | Bldg 1A, Suite 504
Butler, NJ 07405
Ph.: 973.334.0003 Fax: 973.334.0928
www.firstenvironment.com

March 10, 2023

Ms. Greta White
Project Manager, Remedial Bureau C
Division of Environmental Remediation
New York State Department of Environmental Conservation (NYSDEC)
625 Broadway
Harrison, NY 12233-7014

Re: NYSDEC Site No. 360174; BCP C361074
February – March 2023 Monthly Progress Report
Westchester County Airport, 240 Airport Road
Harrison, New York 10604

Dear Ms.White:

Actions Taken/Accomplishments (February 2023 – March 2023)

A schedule of completed and projected activities is included as Appendix A.

1. First Environment attended an on-site meeting with officials from Westchester County and the Westchester County Airport to discuss responses to the NYSDEC comments on the Remedial Action Work Plan (RIWP).
2. First Environment oversaw the excavation of affected soils as a result of the automobile accident at the intersection of Route 120 and Airport road on August 3, 2022. Seven drums of soil were generated, and a waste class sample was collected for laboratory analysis. Once the results of the waste class sample have been received, the drums will be transported and disposed of at the US Ecology Landfill in Michigan.
3. First Environment has transitioned from PFAS analysis using EPA modified method 537.1 in November to EPA method 1633 in December. EPA method 1633 analyzes 40 PFAS while the former method analyzes 21. Tables are being updated as required for reporting purposes.
4. Submitted 2023 Site Characterization Report to reflect NYSDEC comments.
5. First Environment identified an inadvertent dilution error in the results from the baseline data for the FMW-13R pilot test. The lab was notified and has corrected the laboratory data as shown in Table 1.
6. Figure 1 shows the groundwater contours from groundwater elevations collected in November 2022 with the locations of the injection points for the pilot test overlain on them.

March & April Planned Activities

1. First Environment received the NYSDEC's comments to the Remedial Investigation Workplan (RIWP) on February 7, 2023. First Environment will provide a response to the NYSDEC before submittal of the revised RIWP.
2. First Environment intends to continue performance monitoring of surface water leaving the end-of-pipe at Outfall 7 (OF-7) as well as New York City Department of Environment Projection (NYCDEP) gauging station (E-10) on a quarterly basis. We will concurrently record water level measurements in temporary wells along Airport Road and New King Street. The next monitoring event is planned for March 2023.
3. First Environment recently observed increased water flow from headwall 7021.1 that is contributing to OF-7. This increase in flow may have resulted in increased PFAS concentrations at OF-7. As a result, First Environment will further evaluate the presence of an increase in water flow and PFAS levels during the 1st quarter of 2023.
4. Groundwater samples will be collected on a quarterly basis for one year to determine the success of the pilot test. The first set of samples is scheduled to be collected mid-April of this year. Once collected, First Environment will evaluate and report the pilot test groundwater results.
5. First Environment continues to provide environmental technical support to the County's engineering team for the construction and installation of a water supply pipeline from Westchester Joint Water Works (WJWW). Contract 22-522 WCA Domestic Water System Improvements has been awarded to Triumph. The expectation is construction will initiate in June of 2023 with construction taking 8 to 12 months.
6. Continue to evaluate the larger application of the Fluoro-Sorb mat and permeable reactive barrier for use at OF-4 to reduce PFAS in surface water.
7. Evaluate foam fractionation technology to reduce PFAS in surface and groundwater.
8. First Environment is working with the Westchester County Public Works Transportation (WCPWT) to develop a permanent solution to correct the daylighting of groundwater to the storm sewer as shown in Figure 2.
9. After completing placement of the Fluoro-Sorb mat in December 2022, Pugni, a contractor retained by the WCPWT, reportedly repaired subsurface stormwater inlets to prevent groundwater from entering the storm sewer at inlets 7015.1, 7014.2, 7013, 7008, and 7007, as shown in Figure 3. The County will retain independent third party who specializes in the stormwater systems to evaluate the presence of groundwater leaks and, if identified, provide a solution to eliminate PFAS impacted groundwater from entering the stormwater system during the 1st and 2nd quarter 2023.

If you have any questions, please do not hesitate to call.

Regards,

FIRST ENVIRONMENT, INC.

Scott R. Green, P.G.
Director, Insurance Consulting Service Group

David Luer
Project Manager/Field Team Leader

Att.

c: B. Tod Delaney, Ph.D., P.E., BCEE - First Environment, Inc.
Arthur Clarke, J.D. - First Environment, Inc.
Hugh Greechan, Jr. P.E. - Westchester County Public Works & Transportation
John Nonna - Westchester County Attorney
April Gasparri – Westchester County Airport Manager
John Inserra - Westchester County Airport Environmental
John Benvegna - WSP
M.Hubicki, NYSDEC
K.Thompson, NYSDEC
M. Murphy, NYSDEC
K.Maloney, NYSDEC
D.Bendell/D.Pollock, NYSDEC
M. Doroski – NYSDOH
K. Kulow – NYSDOH

TABLES

Table 1 - Matting Placement Comparison
Westchester County Airport

	Sample ID	7016.1 Before		7016.1 After		7016.1		7014.2 Before		7014.2 After		7014.2	
	York ID	22L0405-01		22L0670-01		22L1383-07		22L0405-02		22L0670-02		22L1383-08	
	Sampling Date	12/6/2022 9:00:00 AM		12/9/2022 7:30:00 AM		12/28/2022 11:55:00 AM		12/6/2022 12:00:00 PM		12/9/2022 7:40:00 AM		12/28/2022 12:00:00 PM	
	Client Matrix	Water		Water		Water		Water		Water		Water	
Compound	**CAS Number**	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	7014.2	Q
PFAS, EPA 1633 Target List		ng/L		ng/L		ug/L		ng/L		ng/L		ug/L	
Dilution Factor		10		1		1		10		1		1	
11CL-PF3OUdS	763051-92-9						U						U
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	39108-34-4	20.8			U		U		U		U		U
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4						U						U
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	27619-97-2	24.8		6.4		7.67	J	6.0			U	7.31	J
3-Perfluoroheptyl propanoic acid (FHpPA)	812-70-4						U						U
3-Perfluoropentyl propanoic acid (FPePA)	914637-49-3						U						U
3-Perfluoropropyl propanoic acid (FPrPA)	356-02-5						U						U
9CL-PF3ONS	756426-58-1						U						U
ADONA	919005-14-4						U						U
HFPO-DA (Gen-X)	13252-13-6						U						U
N-EtFOSA	4151-50-2					3.23						0.420	
N-EtFOSAA	2991-50-6		U		U		U		U		U		U
N-EtFOSE	1691-99-2						U						U
N-MeFOSA	31506-32-8						U						U
N-MeFOSAA	2355-31-9		U		U		U		U		U		U
N-MeFOSE	24448-09-7						U						U
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	113507-82-7						U						U
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		U		U		U		U		U		U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	21.4			U		U	33.9			U	1.83	J
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1						U						U
Perfluoro-1-octanesulfonamide (FOSA)	754-91-6	3.5			U		U		U		U		U
Perfluoro-1-pentanesulfonate (PFPeS)	2706-91-4					2.12						5.55	
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	151772-58-6						U						U
Perfluoro-4-oxapentanoic acid (PFMPA)	377-73-1						U						U
Perfluoro-5-oxahexanoic acid (PFMBA)	863090-89-5						U						U
Perfluorobutanesulfonic acid (PFBS)	375-73-5	21.1		5.6		2.74		43.2			U	4.72	
Perfluorodecanoic acid (PFDA)	335-76-2		U		U		U	3.5			U		U
Perfluorododecanesulfonic acid (PFDoS)	79780-39-5						U						U
Perfluorododecanoic acid (PFDoA)	307-55-1		U		U		U		U		U		U
Perfluoroheptanoic acid (PFHpA)	375-85-9	41.4		9.8		8.98		73.6			U	16.4	
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	299.0	D	52.1		24.0		488.0	D	4.5		47.9	
Perfluorohexanoic acid (PFHxA)	307-24-4	68.8		17.4		15.9		126.0		4.2		39.0	
Perfluoro-n-butanoic acid (PFBA)	375-22-4	25.5		8.9		12.2		43.0		7.3		22.9	
Perfluorononanoic acid (PFNA)	375-95-1	8.4			U	1.92	J	38.9			U	4.22	
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	1,030.0	D	66.5		15.4		1,130.0	D	4.4		32.2	
Perfluorooctanoic acid (PFOA)	335-67-1	50.3		10.6		6.51		76.6			U	12.6	
Perfluoropentanoic acid (PFPeA)	2706-90-3	47.7		23.2		24.4		116.0		10.5		55.5	
Perfluorotetradecanoic acid (PFTA)	376-06-7		U		U		U		U		U		U
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	2.1			U		U		U		U	2.51	
Perfluoroundecanoic acid (PFUnA)	2058-94-8	3.2			U		U	9.9			U	1.83	J
NOTES:													
Any Regulatory Exceedences are color coded by Regulation		1,080.3		77.1		21.9		1,206.6		4.4		44.8	
		1,667.9		200.5		125.1		2,188.6		30.9		254.9	

Q is the Qualifier Column with definitions as follows:
D=result is from an analysis that required a dilution
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
B=analyte found in the analysis batch blank
E=result is estimated and cannot be accurately reported due to levels encountered or interferences
P=this flag is used for pesticide and PCB (Aroclor) target compounds when there is a % difference for detected concentrations that exceed method dictated limits between the two GC columns used for analysis
NT=this indicates the analyte was not a target for this sample
~=this indicates that no regulatory limit has been established for this analyte

Table 2 - PFAS and TOC Baseline for FMW-13R Pilot Test
Westchester County Airport

	Sample ID	FMW-13R		13R-A		13R-B		13R-C		13R-D		FB 1-3-23	
	York ID	23A0033-01		23A0033-02		23A0033-03		23A0033-04		23A0033-05		23A0033-06	
	Sampling Date	1/3/2023 10:19:00 AM		1/3/2023 10:25:00 AM		1/3/2023 10:32:00 AM		1/3/2023 10:45:00 AM		1/3/2023 11:00:00 AM		1/3/2023 10:40:00 AM	
	Client Matrix	Water		Water		Water		Water		Water		Water	
Compound	**CAS Number**	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Total Organic Carbon		ug/L		ug/L		ug/L		ug/L		ug/L			
Dilution Factor		1		1		1		1		1			
Total Organic Carbon (TOC)		1,000	U	1,180		1,000	U	1,000	U	1,000	U	NT	
PFAS, EPA 1633 Target List		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Dilution Factor		5		1		1		1		5		1	
11CL-PF3OUdS	763051-92-9		U		U		U		U		U		U
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	39108-34-4	7.03	J	7.17	J	7.11	J		U	7.08	J		U
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4		U		U		U		U		U		U
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	27619-97-2	217		246		346		139		295		14.4	
3-Perfluoroheptyl propanoic acid (FHpPA)	812-70-4		U		U		U		U		U		U
3-Perfluoropentyl propanoic acid (FPePA)	914637-49-3		U		U		U		U		U		U
3-Perfluoropropyl propanoic acid (FPrPA)	356-02-5	4.39	J		U		U		U		U		U
9CL-PF3ONS	756426-58-1		U		U		U		U		U		U
ADONA	919005-14-4		U		U		U		U		U		U
HFPO-DA (Gen-X)	13252-13-6		U		U		U		U		U		U
N-EtFOSA	4151-50-2	2.33	B	1.04	B	0.210	B	3.20	B	332	B	1.76	B
N-EtFOSAA	2991-50-6		U		U		U		U		U		U
N-EtFOSE	1691-99-2		U	100			U		U		U		U
N-MeFOSA	31506-32-8	1.76	J		U		U		U	1.77	J		U
N-MeFOSAA	2355-31-9		U		U		U		U		U		U
N-MeFOSE	24448-09-7		U		U		U		U		U		U
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	113507-82-7		U		U		U		U		U		U
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		U		U		U		U		U		U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	28.3		19.0		23.1		20.4		29.5			U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	2.08			U	1.78	J	1.74	J		U		U
Perfluoro-1-octanesulfonamide (FOSA)	754-91-6		U	1.79	J	1.78	J		U		U		U
Perfluoro-1-pentanesulfonate (PFPeS)	2706-91-4	85.5		71.6		74.0		66.5		111.0			U
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	151772-58-6		U		U		U		U		U		U
Perfluoro-4-oxapentanoic acid (PFMPA)	377-73-1		U		U		U		U		U		U
Perfluoro-5-oxahexanoic acid (PFMBA)	863090-89-5		U		U		U		U		U		U
Perfluorobutanesulfonic acid (PFBS)	375-73-5	36.2		32.4		29.5		27.9		39.0			U
Perfluorodecanoic acid (PFDA)	335-76-2	3.04		1.79	J	1.78	J	1.74	J	1.77	J		U
Perfluorododecanesulfonic acid (PFDoS)	79780-39-5		U		U		U		U		U		U
Perfluorododecanoic acid (PFDoA)	307-55-1		U	1.79	J		U		U		U		U
Perfluoroheptanoic acid (PFHpA)	375-85-9	230		253		254		217		301			U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	4,970	D	675		820		775		5,400	D	1.85	J
Perfluorohexanoic acid (PFHxA)	307-24-4	453		531		531		409		555		1.85	J
Perfluoro-n-butanoic acid (PFBA)	375-22-4	246		288		294		245		328			U
Perfluorononanoic acid (PFNA)	375-95-1	81.8		44.1		55.6		46.9		58.3			U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	5,630	D	502		624		619		860		1.85	J
Perfluorooctanoic acid (PFOA)	335-67-1	138		107		137		112		142		1.85	J
Perfluoropentanoic acid (PFPeA)	2706-90-3	950		1,150		1,120		862		1,220		3.71	J
Perfluorotetradecanoic acid (PFTA)	376-06-7		U	5.27			U		U		U		U
Perfluorotridecanoic acid (PFTrDA)	72629-94-8		U	7.75			U		U		U		U
Perfluoroundecanoic acid (PFUnA)	2058-94-8		U	1.79	J		U		U		U		U

NOTES:
Any Regulatory Exceedences are color coded by Regulation

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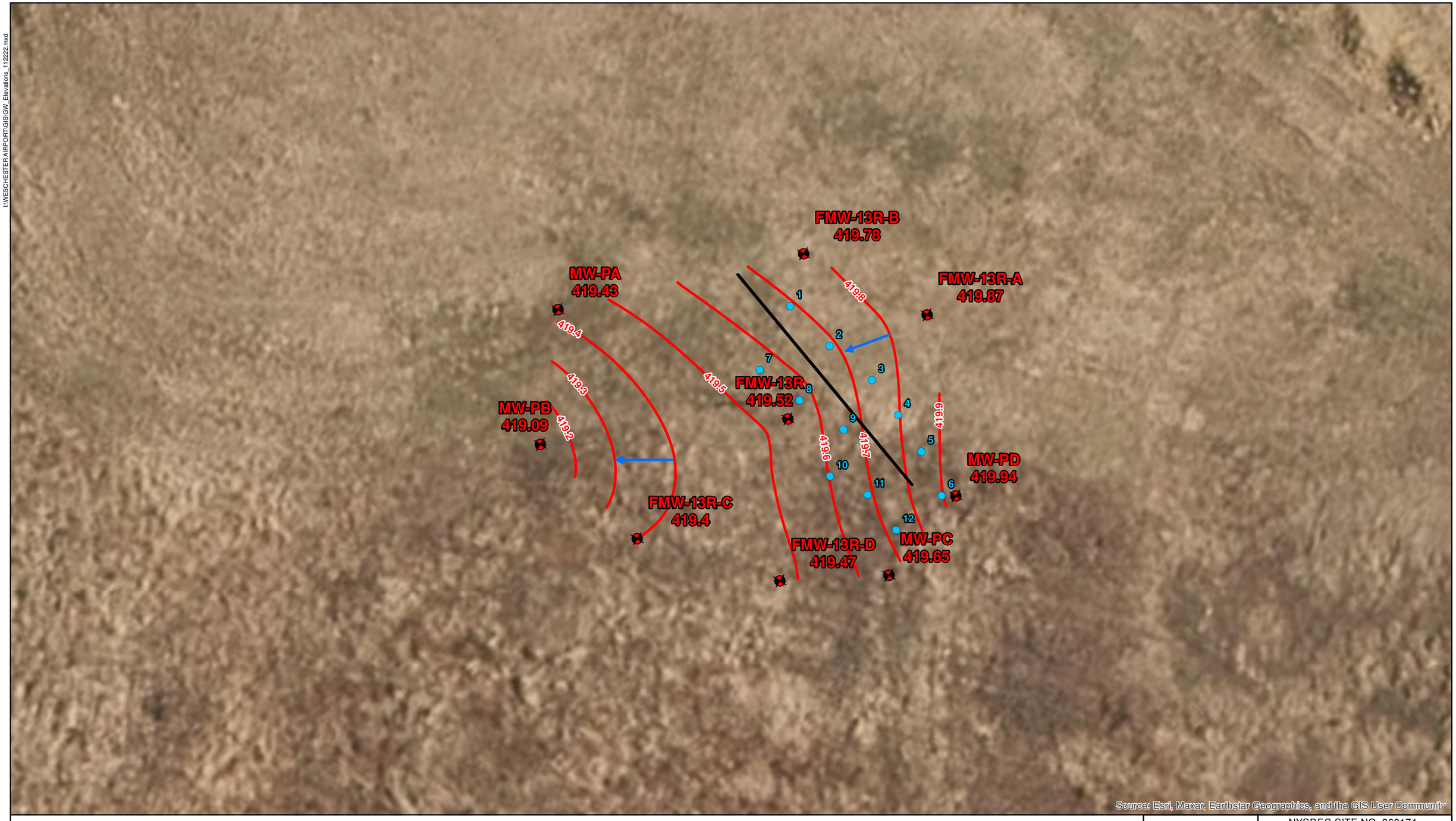
P=this flag is used for pesticide and PCB (Aroclor) target compounds when there is a % difference for detected concentrations that exceed method dictated limits between the two GC columns used for analysis
NT=this indicates the analyte was not a target for this sample
~=this indicates that no regulatory limit has been established for this analyte

FIGURES

I:\WESCHESTER AIRPORT\GIS\GW_Elevations_112222.mxd



Legend

- Injection Points
- Pilot Test Wells
- Groundwater Flow Direction
- Injection Permeable Reactive Barrier
- Groundwater Elevation Contours Nov 22, 2022

0 5 10 20 Feet

1 inch = 10 feet

N

FIRST ENVIRONMENT

10 Park Place, Bldg 1A, Suite 504
Butler, NJ 07405

NYSDEC SITE NO. 360174
WESTCHESTER COUNTY AIRPORT
White Plains, Westchester County, New York
FIGURE 1
GROUNDWATER ELEVATIONS:
NOVEMBER 22, 2022

Revised	Drawn	Checked	Approved	Date
	LS	DL	SG	3/3/2023

MH 7029.4
HAUL ROUTE
MH 7029.1
MH 7029.3
OF-7 TRUCK TRAFFIC
OF-7 TRUCK TRAFFIC
MH 7028
MH 7031
MH 7032
MH 7030
MH 7018
WORK AREA
HW 7001
HW 7003
HW 7002
MW 7004
OF-7
HAUL ROUTE
BLDG. 10
ELECTRIC SECURITY GATE
MH 7017
MH 7017.2
MH 7033
MH 7027.1
MH 7027
KPILE / MARSHALLING/ EQUIPMENT STAGING AREA
Anti Seep Collar
VAULT & VALVE
MW 7005
Anti Seep Collar
LIMIT OF DISTURBANCE (TYP.)
MH 7016
WORK AREA
WF-16
MH 7006
MH 7007
MH 7008
MH 7009
MH 7010
DOUBLE HUNG CANTILEVERED GATE
MH7019
MH 7011
MH 7013
SAWCUT LINE (TYP.)
MH 7012
MH 7014
MH 7015
7013.1
7014.1
7015.1
7014.2
WF-17
WETLAND AREA (SHADED) (TYP.)
ELECTRIC SECURITY GATE
GROUNDWATER DAYLIGHTING
MH7020
FORMER NYANG BURN PIT
MH7021
MH7022
MH7023
MH7024
WF-32
WF-33
MH 7025
MH 7026

Legend

- Section of Pipe Requiring Clearing
- Wetland

0 22.5 45 90 Feet

1 inch = 90 feet

N

Source: Provident Design Engineering PLLC, 2020 100% OF-7 Storm Sewer Design

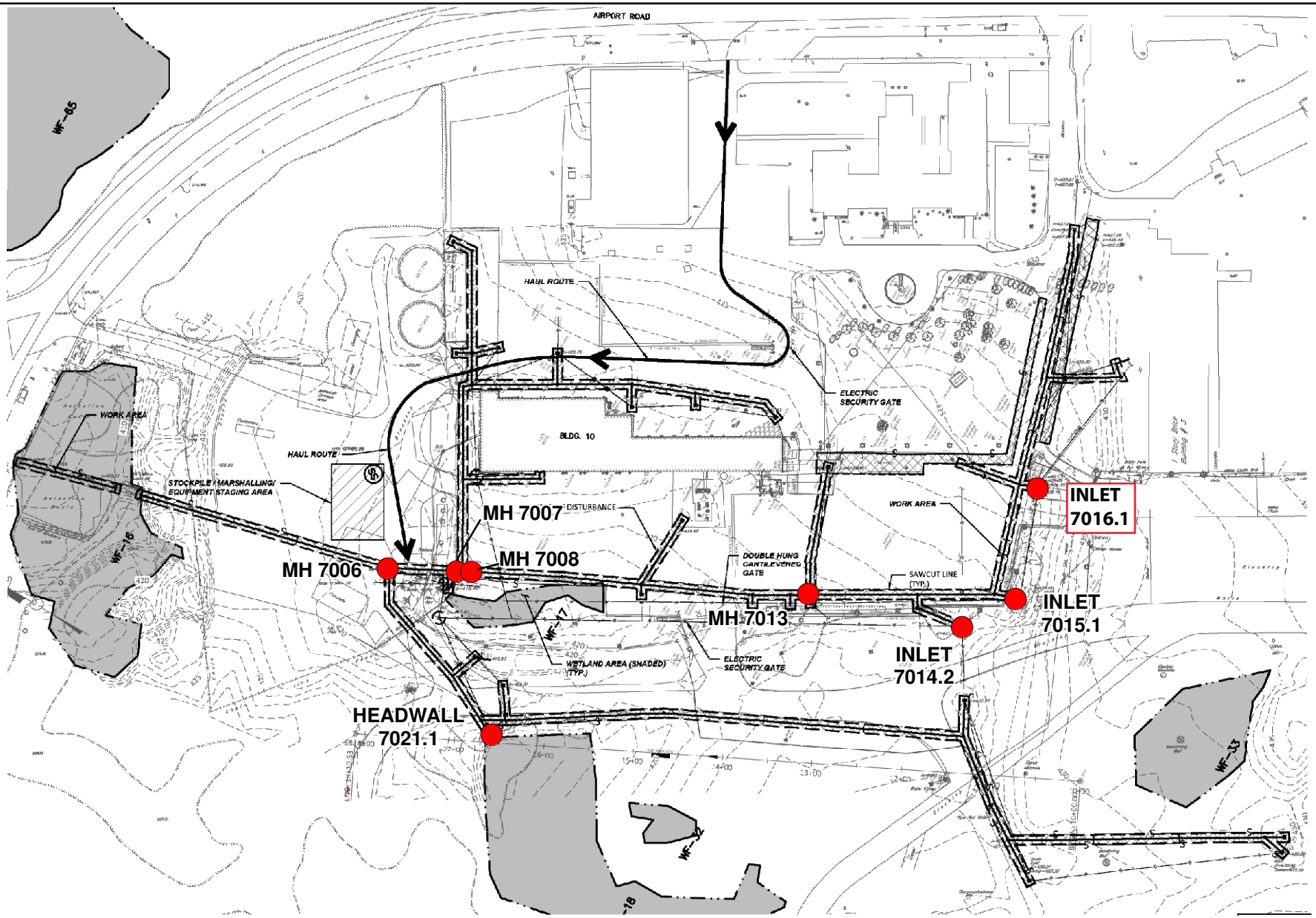
FIRST ENVIRONMENT

10 Park Place, Bldg 1A, Suite 504
Butler, NJ 07405

NYSDEC SITE NO. 360174
WESTCHESTER COUNTY AIRPORT
White Plains, Westchester County, New York
FIGURE 2
OF-7 STORM SEWER SEDIMENT CLEAN OUT

Revised	Drawn	Checked	Approved	Date
	ES	DL	SG	6/15/2022

K:\WESCHESTER AIRPORT\TRM\Workplan\Replacement_Stormwater_System_ToBeCleared_062022.mxd



Legend

- Leaking Manhole Structures

N
W E
S

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10 Park Place, Bldg 1A, Suite 504
Butler, NJ 07405

WESTCHESTER COUNTY AIRPORT

FIGURE 3
SYSTEM LEAKS AS OF
JULY 28, 2022

Revised	Drawn	Checked	Approved	Date
	CL			8/2/2022

H:\extest\Westchester County Airport - WEST\C028\Graphics\GIS\System_Leak_July28_2022.mxd

APPENDIX A

APPENDIX A
Work Activity Schedule
2022-2024

Milestone	Estimated Completion Date	Estimated Completion Percentage
OF-7 Storm Sewer Installation	May 13, 2022	100%
OF-7 Performance Monitoring	2nd Quarter 2023	90%
New King Street Workplan – Phase 1	January 24	100%
New King Street Workplan – Phase 2	April 2022	100%
Waterline Workplan	April 2022	100%
Waterline Completion	October 2024	0%
OF-4 IRM Pilot Test[1]	Summer 2023	50%
Remedial Investigation Workplan Submittal	July 2022	100%
GW Pilot Test Scope of Work[2]	Summer 2022	100%
GW Pilot Test	Winter 2022	100%
GW Pilot Test Performance Monitoring	Winter 2024	0%
Execution of RI workplan[3]	Spring/Summer 2023	0%
Remedial Action Alternatives Evaluation	2023-2024	0%
Remedial Action Selection Report	TBD	0%
Certificate of Completion	TBD	0%

Estimated task durations and completions are tentative and are subject to modification based on site work, progress, weather delays, and other considerations such as contractor availability or Airport access.

[1] Pilot test CETCO Fluor sorb at OF-7 – Evaluate the effectiveness of Flour sorb reducing PFOS and PFOA in surface water. Pilot test CETCO Fluor sorb at OF-7 before testing at OF-4.
[2] Scope of work submitted to the County approved September 2022
[3] Start date dependent upon workplan approval.