Brownfield Cleanup Application # C360174

Westchester County Airport

Section III. #1

Investigation Data : PFAS Surface Soil Sample Results, March 2020

BROWNFIELD CLEANUP APPLICATION # C360174
WESTCHESTER COUNTY AIRPORT
APPLICATION SECTION III. PROPERTY'S ENVIRONMENTAL HISTORY

Priliminary Surfical Soil Sampling Results For PFAS - March 2020 (Investigation Report not available at this time)

Note - NYSDEC Part 375 Soil Cleanup Objectives for commercial use and protection of groundwater do not currently exist for PFAS.

Sample ID	SB-01 (0.5-1)	SB-02 (0-0.5)	SB-03 (0-0.5)	SB-05 (0-0.5)	SB-06 (0-0.5)	SB-08 (0-0.5)	SB-11 (0-0.5)	SB-12 (0-0.5)	SB-13 (0.5-1)	SB-15 (0.5-1)	SB-16 (0-0.5)
Lab ID	20C0161-01	20C0161-02	20C0304-01	20C0161-04	20C0161-05	20C0304-04	20C0304-02	20C0304-03	20C0423-02	20C0423-01	20C0423-05
Sampling Date	3/2/2020	3/2/2020	3/5/2020	3/3/2020	3/3/2020	3/4/2020	3/5/2020	3/5/2020	3/6/2020	3/6/2020	3/9/2020
Client Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Compound	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PFAS, NYSDEC Target List	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Dilution Factor	1	1	1	1	1	1	1	1	10	1	1
8:2 FTS	U	U	U	U	**0.98**	U	U	U	**76**	U	U
6:2 FTS	**0.682**	U	U	U	U	U	U	U	**55.3**	U	U
N-EtFOSAA	U	U	U	U	U	U	U	U	U	U	U
N-MeFOSAA	U	U	U	U	U	U	U	U	U	U	U
Perfluoro-1-decanesulfonic acid (PFDS)	U	U	U	U	U	U	U	U	U	U	U
Perfluoro-1-heptanesulfonic acid (PFHpS)	U	U	U	U	U	U	U	U	**10.3**	U	U
Perfluoro-1-octanesulfonamide (FOSA)	U	U	U	U	U	U	U	U	U	U	U
Perfluorobutanesulfonic acid (PFBS)	U	U	U	U	U	U	U	U	U	U	U
Perfluorodecanoic acid (PFDA)	U	U	U	U	**0.849**	U	U	U	**4.77**	U	U
Perfluorododecanoic acid (PFDoA)	U	U	U	U	U	U	U	U	**2.99**	U	U
Perfluoroheptanoic acid (PFHpA)	U	U	U	U	U	U	U	U	**0.997**	U	U
Perfluorohexanesulfonic acid (PFHxS)	**0.722**	U	U	U	U	U	**0.735**	U	**1.03**	U	**5.64**
Perfluorohexanoic acid (PFHxA)	U	U	U	U	U	U	U	U	**6.36**	U	**2.65**
Perfluoro-n-butanoic acid (PFBA)	U	U	U	U	**0.545**	U	U	U	**3.53**	U	**0.99**
Perfluorononanoic acid (PFNA)	U	U	U	U	U	U	U	U	**1.99**	U	U
Perfluorooctanesulfonic acid (PFOS)	**15.9**	**1.27**	**1.36**	**0.564**	**5.62**	**2.03**	**7.89**	**1.07**	**24.9**	**2.06**	**17.6**
Perfluorooctanoic acid (PFOA)	U	U	U	U	**0.629**	U	U	U	**2.98**	U	**0.593**
Perfluoropentanoic acid (PFPeA)	U	U	U	U	**0.682**	U	U	U	**2.26**	U	**0.907**
Perfluorotetradecanoic acid (PFTA)	U	U	U	U	U	U	U	U	**1.38**	U	U
Perfluorotridecanoic acid (PFTrDA)	U	U	U	U	U	U	U	**0.595**	**0.957**	U	U
Perfluoroundecanoic acid (PFUnA)	**0.596**	U	U	U	**0.816**	U	**0.703**	**1.19**	**1.55**	**0.769**	U

SB-01 = soil boring location 01; (0.5-1) = sample depth in feet below grade
ug/kg = micrograms per kilogram
8:2 FTS = 1H,1H,2H,2H-Perfluorodecanesulfonic acid
6:2 FTS = 1H,1H,2H,2H-Perfluorooctanesulfonic acid

SB-01 (0.5-1 ft)
Total PFAS: 17.9 ug/kg

SB-02 (0-0.5 ft)
Total PFAS: 1.27 ug/kg

SB-03 (0-0.5 ft)
Total PFAS: 1.36 ug/kg

SB-04 (0-0.5 ft)
Total PFAS: ND

SB-05 (0-0.5 ft)
Total PFAS: 0.56 ug/kg

SB-16 (0-0.5 ft)
Total PFAS: 28.4 ug/kg

FORMER AFFF BURN PIT

SB-15 (0.5-1 ft)
Total PFAS: 2.8 ug/kg

SB-14 (1-1.5 ft)
Total PFAS: ND

SB-06 (0-0.5 ft)
Total PFAS: 10.1 ug/kg

SB-07 (0-0.5 ft)
Total PFAS: ND

SB-08 (0-0.5 ft)
Total PFAS: 2.0 ug/kg

SB-09 (0-0.5 ft)
Total PFAS: ND

ACTIVE FIRE TRAINING & TESTING AREA

SB-13 (0.5-1 ft)
Total PFAS: 197.3 ug/kg

SB-12 (0-0.5 ft)
Total PFAS: 2.8 ug/kg

SB-10 (0-0.5 ft)
Total PFAS: ND

SB-11 (0-0.5 ft)
Total PFAS: 9.3 ug/kg

DETENTION BASIN A

DETENTION BASIN B

RYE LAKE

PRELIMINARY SURFACE SOIL SAMPLING RESULTS FOR PFAS
Samples Collected Between March 2 and 9, 2020
(results are in micrograms per kilogram or parts per billion)

Note: Reasonably anticipated property use is commercial. Commercial and protection of groundwater soil standards do not currently exist for PFAS.

Legend

Some usable data for VOCs and SVOCs. Some full suite sampling will be required to confirm no change in conditions and provide missing TAL data.

Some usable data for VOCs, SVOCs, metals, pesticides, PCBs. Some full suite sampling will be required to confirm no change in condtions and provide missing TAL data.

Soil Sample Location
Active Fire Training & Testing Area
Former AFFF Burn Pit
Detention Basin

1 inch = 700 feet
0 175 350 700 Feet

Subsurface Catch Basin
Open Catch Area
Property Boundary
Streams (USGS NHD)

N

FIRST ENVIRONMENT
91 Fulton Street
Boonton, New Jersey 07005

SITE CHARACTERIZATION
WESTCHESTER COUNTY AIRPORT
White Plains, Westchester County, New York

Revised	Drawn	Checked	Approved	Date
	LS	SG	SG	10/18/2019

K:\WESCHESTER AIRPORT\Site Characterization\Figure17_Proposed_SB_GW_Locations.mxd

Technical Report

prepared for:

WSP USA, Inc. (White Plains, NY)
4 Westchester Park Drive, Suite 175
White Plains NY, 10604
Attention: John Benvegna

Report Date: 03/13/2020
Client Project ID: Westchester County Airport (WCA)
York Project (SDG) No.: 20C0161

CT Cert. No. PH-0723 New Jersey Cert. No. CT005 and NY037 New York Cert. Nos. 10854 and 12058 PA Cert. No. 68-04440

120 RESEARCH DRIVE STRATFORD, CT 06615 ■ 132-02 89th AVENUE RICHMOND HILL, NY 11418
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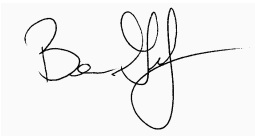
General Notes for York Project (SDG) No.: 20C0161

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By: 

Date: 03/13/2020

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: SB-01 (0.5-1)

York Sample ID: 20C0161-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0161	Westchester County Airport (WCA)	Soil	March 2, 2020 10:40 am	03/04/2020

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	9.80	1	EPA 8270D SIM Certifications: NELAC-NY10854	03/12/2020 07:53	03/12/2020 17:45	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*46.0 %*	*39-83.1*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
27619-97-2	* **1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)**	**0.682**		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	2.12	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
355-46-4	* **Perfluorohexanesulfonic acid (PFHxS)**	**0.722**		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
1763-23-1	* **Perfluorooctanesulfonic acid (PFOS)**	**15.9**		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT

Sample Information

Client Sample ID: SB-01 (0.5-1)

York Sample ID: 20C0161-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0161	Westchester County Airport (WCA)	Soil	March 2, 2020 10:40 am	03/04/2020

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT
2058-94-8	*** Perfluoroundecanoic acid (PFUnA)**	**0.596**		ug/kg dry	0.530	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:00	KT

Surrogate Recoveries	Result		Acceptance Range
Surrogate: M3PFBS	*71.6 %*		*25-150*
Surrogate: M5PFHxA	*83.8 %*		*25-150*
Surrogate: M4PFHpA	*74.8 %*		*25-150*
Surrogate: M3PFHxS	*75.6 %*		*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*86.8 %*		*25-150*
Surrogate: M6PFDA	*92.1 %*		*25-150*
Surrogate: M7PFUdA	*70.9 %*		*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*70.4 %*		*25-150*
Surrogate: M2PFTeDA	*63.1 %*		*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*79.9 %*		*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*67.6 %*		*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*79.2 %*		*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*44.9 %*		*10-150*
Surrogate: d3-N-MeFOSAA	*73.4 %*		*25-150*
Surrogate: d5-N-EtFOSAA	*86.4 %*		*25-150*
Surrogate: M2-6:2 FTS	*459 %*	PFSu-H	*25-150*
Surrogate: M2-8:2 FTS	*189 %*	PFSu-H	*25-150*
Surrogate: M9PFNA	*71.3 %*		*25-150*

Pesticides, 8081 target list

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		ug/kg dry	1.81	5	EPA 8081B Certifications:	03/10/2020 07:38 CTDOH,NELAC-NY10854,NJDEP,PADEP	03/11/2020 11:18	CM
72-55-9	4,4'-DDE	ND		ug/kg dry	1.81	5	EPA 8081B Certifications:	03/10/2020 07:38 CTDOH,NELAC-NY10854,NJDEP,PADEP	03/11/2020 11:18	CM

Sample Information

Client Sample ID: SB-02 (0-0.5) **York Sample ID:** 20C0161-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0161	Westchester County Airport (WCA)	Soil	March 2, 2020 1:00 pm	03/04/2020

Semi-Volatiles, 8270 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
129-00-0	**Pyrene**	**113**	J	ug/kg dry	89.5	179	2	EPA 8270D	03/10/2020 07:35	03/10/2020 21:18	KH
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*63.4 %*	*20-108*
4165-62-2	*Surrogate: SURR: Phenol-d5*	*64.5 %*	*23-114*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*73.1 %*	*22-108*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*64.6 %*	*21-113*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*110 %*	*19-110*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*90.0 %*	*24-116*

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	9.35	1	EPA 8270D SIM	03/12/2020 07:53	03/12/2020 18:02	KH
							Certifications: NELAC-NY10854			

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*44.0 %*	*39-83.1*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	3.84	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT

Sample Information

Client Sample ID: SB-02 (0-0.5)

York Sample ID: 20C0161-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0161	Westchester County Airport (WCA)	Soil	March 2, 2020 1:00 pm	03/04/2020

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**1.27**		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.960	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 20:27	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*65.7 %*	*25-150*
Surrogate: M5PFHxA	*73.8 %*	*25-150*
Surrogate: M4PFHpA	*63.7 %*	*25-150*
Surrogate: M3PFHxS	*71.6 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*77.2 %*	*25-150*
Surrogate: M6PFDA	*73.2 %*	*25-150*
Surrogate: M7PFUdA	*63.1 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*65.0 %*	*25-150*
Surrogate: M2PFTeDA	*56.0 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*75.8 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*65.8 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*71.5 %*	*25-150*

Sample Information

Client Sample ID: SB-05 (0-0.5) **York Sample ID:** 20C0161-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0161	Westchester County Airport (WCA)	Soil	March 3, 2020 8:30 am	03/04/2020

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	9.52	1	EPA 8270D SIM Certifications: NELAC-NY10854	03/06/2020 07:33	03/06/2020 13:48	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*54.0 %*	*39-83.1*

PFAS, NYSDEC Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	2.09	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**0.564**		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT

Sample Information

Client Sample ID: SB-05 (0-0.5) **York Sample ID:** 20C0161-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0161	Westchester County Airport (WCA)	Soil	March 3, 2020 8:30 am	03/04/2020

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:21	KT

Surrogate Recoveries	Result		Acceptance Range
Surrogate: M3PFBS	*61.8 %*		*25-150*
Surrogate: M5PFHxA	*67.4 %*		*25-150*
Surrogate: M4PFHpA	*62.6 %*		*25-150*
Surrogate: M3PFHxS	*68.4 %*		*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*78.2 %*		*25-150*
Surrogate: M6PFDA	*69.4 %*		*25-150*
Surrogate: M7PFUdA	*67.5 %*		*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*64.1 %*		*25-150*
Surrogate: M2PFTeDA	*49.5 %*		*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*70.4 %*		*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*63.4 %*		*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*70.4 %*		*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*36.2 %*		*10-150*
Surrogate: d3-N-MeFOSAA	*68.6 %*		*25-150*
Surrogate: d5-N-EtFOSAA	*78.9 %*		*25-150*
Surrogate: M2-6:2 FTS	*446 %*	PFSu-H	*25-150*
Surrogate: M2-8:2 FTS	*166 %*	PFSu-H	*25-150*
Surrogate: M9PFNA	*65.8 %*		*25-150*

Pesticides, 8081 target list

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		ug/kg dry	1.89	5	EPA 8081B Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/10/2020 07:38	03/11/2020 12:08	CM

Sample Information

Client Sample ID: SB-06 (0-0.5) **York Sample ID:** 20C0161-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0161	Westchester County Airport (WCA)	Soil	March 3, 2020 10:00 am	03/04/2020

Semi-Volatiles, 8270 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
129-00-0	**Pyrene**	**279**		ug/kg dry	46.5	92.7	2	EPA 8270D	03/10/2020 07:35	03/10/2020 22:46	KH
								Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*64.4 %*	*20-108*
4165-62-2	*Surrogate: SURR: Phenol-d5*	*65.6 %*	*23-114*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*74.2 %*	*22-108*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*66.0 %*	*21-113*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*92.5 %*	*19-110*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*72.5 %*	*24-116*

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	9.35	1	EPA 8270D SIM	03/06/2020 07:33	03/06/2020 14:05	KH
							Certifications: NELAC-NY10854			

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*58.0 %*	*39-83.1*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
39108-34-4	* **1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)**	**0.980**		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	2.09	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT

Sample Information

Client Sample ID: SB-06 (0-0.5) **York Sample ID:** 20C0161-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0161	Westchester County Airport (WCA)	Soil	March 3, 2020 10:00 am	03/04/2020

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
335-76-2	*** Perfluorodecanoic acid (PFDA)**	**0.849**		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
375-22-4	*** Perfluoro-n-butanoic acid (PFBA)**	**0.545**		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**5.62**		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
335-67-1	*** Perfluorooctanoic acid (PFOA)**	**0.629**		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
2706-90-3	*** Perfluoropentanoic acid (PFPeA)**	**0.682**		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT
2058-94-8	*** Perfluoroundecanoic acid (PFUnA)**	**0.816**		ug/kg dry	0.522	1	EPA 537m Certifications:	03/06/2020 12:29	03/12/2020 21:47	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*59.9 %*	*25-150*
Surrogate: M5PFHxA	*72.5 %*	*25-150*
Surrogate: M4PFHpA	*60.0 %*	*25-150*
Surrogate: M3PFHxS	*69.1 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*75.3 %*	*25-150*
Surrogate: M6PFDA	*76.2 %*	*25-150*
Surrogate: M7PFUdA	*65.4 %*	*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*67.6 %*	*25-150*
Surrogate: M2PFTeDA	*53.3 %*	*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*67.2 %*	*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*62.3 %*	*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*66.5 %*	*25-150*

Sample and Data Qualifiers Relating to This Work Order

S-HI	Surrogate recovery is above acceptance limits. No target compound is detected in sample.
S-08	The recovery of this surrogate was outside of QC limits.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data are acceptable.
QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
PFSu-H	The isotopically labeled surrogate recovered above lab control limits due to a matrix effect. Isotope Dilution was applied.
M-ICV2	The recovery for this element in the ICV was outside the 90-110% recovery criteria.
M-CRL	The RL check for this element recovered outside of control limits.
M-BLK	The target analyte was detected above the RL in the batch method blank. All samples showed >10x the concentration in the blank for this analyte. Data are reported.
J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
CCV-E	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).
B	Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.

Non-Dir. Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

Technical Report

prepared for:

WSP USA, Inc. (White Plains, NY)
4 Westchester Park Drive, Suite 175
White Plains NY, 10604
Attention: John Benvegna

Report Date: 03/16/2020
Client Project ID: Westchester County Airport (WCA)
York Project (SDG) No.: 20C0304

CT Cert. No. PH-0723 New Jersey Cert. No. CT005 and NY037 New York Cert. Nos. 10854 and 12058 PA Cert. No. 68-04440

120 RESEARCH DRIVE STRATFORD, CT 06615 ■ 132-02 89th AVENUE RICHMOND HILL, NY 11418
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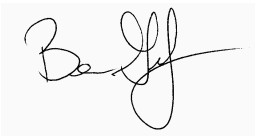
General Notes for York Project (SDG) No.: 20C0304

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By: 

Date: 03/16/2020

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: SB-03 (0-0.5) **York Sample ID:** 20C0304-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0304	Westchester County Airport (WCA)	Soil	March 5, 2020 9:40 am	03/06/2020

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	9.90	1	EPA 8270D SIM Certifications: NELAC-NY10854	03/12/2020 07:53	03/12/2020 18:37	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*44.0 %*	*39-83.1*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	2.20	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**1.36**		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT

Sample Information

Client Sample ID: SB-03 (0-0.5) **York Sample ID:** 20C0304-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0304	Westchester County Airport (WCA)	Soil	March 5, 2020 9:40 am	03/06/2020

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.550	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 04:18	KT

Surrogate Recoveries	Result		Acceptance Range
Surrogate: M3PFBS	*75.9 %*		*25-150*
Surrogate: M5PFHxA	*75.5 %*		*25-150*
Surrogate: M4PFHpA	*71.1 %*		*25-150*
Surrogate: M3PFHxS	*79.2 %*		*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*75.9 %*		*25-150*
Surrogate: M6PFDA	*66.6 %*		*25-150*
Surrogate: M7PFUdA	*57.1 %*		*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*49.9 %*		*25-150*
Surrogate: M2PFTeDA	*44.3 %*		*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*77.7 %*		*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*78.5 %*		*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*77.1 %*		*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*68.8 %*		*10-150*
Surrogate: d3-N-MeFOSAA	*104 %*		*25-150*
Surrogate: d5-N-EtFOSAA	*113 %*		*25-150*
Surrogate: M2-6:2 FTS	*500 %*	PFSu-H	*25-150*
Surrogate: M2-8:2 FTS	*325 %*	PFSu-H	*25-150*
Surrogate: M9PFNA	*67.8 %*		*25-150*

Semi-Volatiles, Tentatively Identified Cmpds.

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.00		ug/kg dry			2	EPA 8270D Certifications:	03/12/2020 16:57	03/13/2020 12:48	OW

Sample Information

Client Sample ID: SB-11 (0-0.5) **York Sample ID:** 20C0304-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0304	Westchester County Airport (WCA)	Soil	March 5, 2020 12:45 pm	03/06/2020

Semi-Volatiles, 8270 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
86-30-6	N-Nitrosodiphenylamine	ND		ug/kg dry	53.9	108	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/12/2020 16:57	03/13/2020 16:02	OW
87-86-5	Pentachlorophenol	ND	CCV-L	ug/kg dry	53.9	108	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/12/2020 16:57	03/13/2020 16:02	OW
85-01-8	Phenanthrene	ND		ug/kg dry	53.9	108	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/12/2020 16:57	03/13/2020 16:02	OW
108-95-2	Phenol	ND		ug/kg dry	53.9	108	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/12/2020 16:57	03/13/2020 16:02	OW
129-00-0	**Pyrene**	**63.6**	J	ug/kg dry	53.9	108	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/12/2020 16:57	03/13/2020 16:02	OW

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*68.5 %*	*20-108*
4165-62-2	*Surrogate: SURR: Phenol-d5*	*63.6 %*	*23-114*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*84.2 %*	*22-108*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*51.0 %*	*21-113*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*96.9 %*	*19-110*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*42.0 %*	*24-116*

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	9.80	1	EPA 8270D SIM Certifications: NELAC-NY10854	03/12/2020 07:53	03/12/2020 18:54	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*44.0 %*	*39-83.1*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT

Sample Information

Client Sample ID: SB-11 (0-0.5) **York Sample ID:** 20C0304-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0304	Westchester County Airport (WCA)	Soil	March 5, 2020 12:45 pm	03/06/2020

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	2.51	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
355-46-4	*** Perfluorohexanesulfonic acid (PFHxS)**	**0.735**		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**7.89**		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT
2058-94-8	*** Perfluoroundecanoic acid (PFUnA)**	**0.703**		ug/kg dry	0.626	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 05:39	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*78.7 %*	*25-150*
Surrogate: M5PFHxA	*80.0 %*	*25-150*
Surrogate: M4PFHpA	*70.6 %*	*25-150*
Surrogate: M3PFHxS	*92.2 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*78.0 %*	*25-150*
Surrogate: M6PFDA	*64.7 %*	*25-150*
Surrogate: M7PFUdA	*51.4 %*	*25-150*

Sample Information

Client Sample ID: SB-12 (0-0.5) **York Sample ID:** 20C0304-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0304	Westchester County Airport (WCA)	Soil	March 5, 2020 2:00 pm	03/06/2020

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	9.52	1	EPA 8270D SIM Certifications: NELAC-NY10854	03/12/2020 07:53	03/12/2020 19:11	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*44.0 %*	*39-83.1*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	2.19	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**1.07**		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT

Sample Information

Client Sample ID: SB-12 (0-0.5) **York Sample ID:** 20C0304-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0304	Westchester County Airport (WCA)	Soil	March 5, 2020 2:00 pm	03/06/2020

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
72629-94-8	*** Perfluorotridecanoic acid (PFTrDA)**	**0.595**		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT
2058-94-8	*** Perfluoroundecanoic acid (PFUnA)**	**1.19**		ug/kg dry	0.548	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:06	KT

Surrogate Recoveries	Result		Acceptance Range
Surrogate: M3PFBS	*76.2 %*		*25-150*
Surrogate: M5PFHxA	*75.9 %*		*25-150*
Surrogate: M4PFHpA	*77.1 %*		*25-150*
Surrogate: M3PFHxS	*81.2 %*		*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*72.5 %*		*25-150*
Surrogate: M6PFDA	*70.2 %*		*25-150*
Surrogate: M7PFUdA	*58.5 %*		*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*52.9 %*		*25-150*
Surrogate: M2PFTeDA	*40.4 %*		*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*84.8 %*		*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*76.5 %*		*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*83.5 %*		*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*63.4 %*		*10-150*
Surrogate: d3-N-MeFOSAA	*123 %*		*25-150*
Surrogate: d5-N-EtFOSAA	*110 %*		*25-150*
Surrogate: M2-6:2 FTS	*587 %*	PFSu-H	*25-150*
Surrogate: M2-8:2 FTS	*374 %*	PFSu-H	*25-150*
Surrogate: M9PFNA	*65.8 %*		*25-150*

Semi-Volatiles, Tentatively Identified Cmpds.

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.00		ug/kg dry			2	EPA 8270D Certifications:	03/12/2020 16:57	03/13/2020 16:34	OW

Sample Information

Client Sample ID: SB-08 (0-0.5) **York Sample ID:** 20C0304-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0304	Westchester County Airport (WCA)	Soil	March 4, 2020 8:00 am	03/06/2020

Semi-Volatiles, 8270 - Comprehensive

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
86-30-6	N-Nitrosodiphenylamine	ND		ug/kg dry	55.1	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/12/2020 16:57	03/13/2020 17:06	OW
87-86-5	Pentachlorophenol	ND	CCV-L	ug/kg dry	55.1	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/12/2020 16:57	03/13/2020 17:06	OW
85-01-8	Phenanthrene	ND		ug/kg dry	55.1	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/12/2020 16:57	03/13/2020 17:06	OW
108-95-2	Phenol	ND		ug/kg dry	55.1	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/12/2020 16:57	03/13/2020 17:06	OW
129-00-0	Pyrene	ND		ug/kg dry	55.1	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/12/2020 16:57	03/13/2020 17:06	OW

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*62.6 %*	*20-108*
4165-62-2	*Surrogate: SURR: Phenol-d5*	*58.3 %*	*23-114*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*72.6 %*	*22-108*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*66.6 %*	*21-113*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*94.3 %*	*19-110*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*67.2 %*	*24-116*

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	9.71	1	EPA 8270D SIM Certifications: NELAC-NY10854	03/12/2020 07:53	03/12/2020 19:28	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*44.0 %*	*39-83.1*

PFAS, NYSDEC Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT

Sample Information

Client Sample ID: SB-08 (0-0.5) **York Sample ID:** 20C0304-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0304	Westchester County Airport (WCA)	Soil	March 4, 2020 8:00 am	03/06/2020

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	2.41	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**2.03**		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.601	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 06:33	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*77.7 %*	*25-150*
Surrogate: M5PFHxA	*76.9 %*	*25-150*
Surrogate: M4PFHpA	*71.2 %*	*25-150*
Surrogate: M3PFHxS	*85.7 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*73.5 %*	*25-150*
Surrogate: M6PFDA	*69.2 %*	*25-150*
Surrogate: M7PFUdA	*62.6 %*	*25-150*

Sample and Data Qualifiers Relating to This Work Order

M-SRD1	The serial dilution for this element was outside control limits.
CCV-E	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).
CCV-H	The value reported is estimated due to its behavior during continuing calibration verification (>20% difference for average RF or >20% drift for linear or quadratic fit.) This value may be biased high.
CCV-L	The value reported is estimated due to its behavior during continuing calibration verification (>20% difference for average RF or >20% drift for linear or quadratic fit.) This value may be biased low.
J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
M-CRL	The RL check for this element recovered outside of control limits.
M-DUPS	The RPD between the native sample and the duplicate is outside of limits due to sample non-homogeneity
B	Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants.
M-SPKM	The spike recovery is not within acceptance windows due to sample non-homogeneity, or matrix interference.
VOA-Re	VOA sample for re-run was taken from a bulk sample container noncompliant with SW-846 5035A due to a depletion of a proper vial during analysis. Results below 200 ug/Kg may be biased low.
PFSu-H	The isotopically labeled surrogate recovered above lab control limits due to a matrix effect. Isotope Dilution was applied.
QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data are acceptable.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
S-GC	Two surrogates are used for this analysis. One surrogate recovered within control limits therefore the analysis is acceptable.
M-ICV2	The recovery for this element in the ICV was outside the 90-110% recovery criteria.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported

RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

Technical Report

prepared for:

WSP USA, Inc. (White Plains, NY)
4 Westchester Park Drive, Suite 175
White Plains NY, 10604
Attention: John Benvegna

Report Date: 03/18/2020
Client Project ID: Westchester County Airport (WCA)
York Project (SDG) No.: 20C0423

CT Cert. No. PH-0723 New Jersey Cert. No. CT005 and NY037 New York Cert. Nos. 10854 and 12058 PA Cert. No. 68-04440

120 RESEARCH DRIVE STRATFORD, CT 06615 ■ 132-02 89th AVENUE RICHMOND HILL, NY 11418
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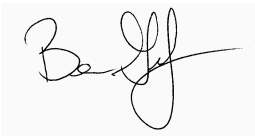
General Notes for York Project (SDG) No.: 20C0423

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By: 

Date: 03/18/2020

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: SB-15 (0.5-1)

York Sample ID: 20C0423-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0423	Westchester County Airport (WCA)	Soil	March 6, 2020 8:30 am	03/10/2020

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	9.71	1	EPA 8270D SIM Certifications: NELAC-NY10854	03/12/2020 07:53	03/12/2020 20:37	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*44.0 %*	*39-83.1*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	2.03	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
355-46-4	* Perfluorohexanesulfonic acid (PFHxS)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
307-24-4	* Perfluorohexanoic acid (PFHxA)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
375-22-4	* Perfluoro-n-butanoic acid (PFBA)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**2.06**		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
335-67-1	* Perfluorooctanoic acid (PFOA)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT

Sample Information

Client Sample ID: SB-15 (0.5-1) **York Sample ID:** 20C0423-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0423	Westchester County Airport (WCA)	Soil	March 6, 2020 8:30 am	03/10/2020

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
2706-90-3	* Perfluoropentanoic acid (PFPeA)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT
2058-94-8	*** Perfluoroundecanoic acid (PFUnA)**	**0.769**		ug/kg dry	0.507	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 08:21	KT

Surrogate Recoveries	Result		Acceptance Range
Surrogate: M3PFBS	*80.7 %*		*25-150*
Surrogate: M5PFHxA	*80.9 %*		*25-150*
Surrogate: M4PFHpA	*67.7 %*		*25-150*
Surrogate: M3PFHxS	*84.4 %*		*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*77.1 %*		*25-150*
Surrogate: M6PFDA	*66.8 %*		*25-150*
Surrogate: M7PFUdA	*62.4 %*		*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*57.2 %*		*25-150*
Surrogate: M2PFTeDA	*50.1 %*		*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*81.3 %*		*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*73.7 %*		*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*81.7 %*		*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*75.9 %*		*10-150*
Surrogate: d3-N-MeFOSAA	*91.6 %*		*25-150*
Surrogate: d5-N-EtFOSAA	*95.2 %*		*25-150*
Surrogate: M2-6:2 FTS	*616 %*	PFSu-H	*25-150*
Surrogate: M2-8:2 FTS	*264 %*	PFSu-H	*25-150*
Surrogate: M9PFNA	*67.1 %*		*25-150*

Semi-Volatiles, Tentatively Identified Cmpds.

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.00		ug/kg dry			2	EPA 8270D Certifications:	03/14/2020 11:19	03/16/2020 14:04	KH

Sample Information

Client Sample ID: SB-13 (0.5-1) **York Sample ID:** 20C0423-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0423	Westchester County Airport (WCA)	Soil	March 6, 2020 11:00 am	03/10/2020

Semi-Volatiles, 8270 - Comprehensive

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
86-30-6	N-Nitrosodiphenylamine	ND		ug/kg dry	46.4	92.6	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/14/2020 11:19	03/16/2020 14:33	KH
87-86-5	Pentachlorophenol	ND		ug/kg dry	46.4	92.6	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/14/2020 11:19	03/16/2020 14:33	KH
85-01-8	**Phenanthrene**	**840**		ug/kg dry	46.4	92.6	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/14/2020 11:19	03/16/2020 14:33	KH
108-95-2	Phenol	ND		ug/kg dry	46.4	92.6	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/14/2020 11:19	03/16/2020 14:33	KH
129-00-0	**Pyrene**	**1850**		ug/kg dry	46.4	92.6	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	03/14/2020 11:19	03/16/2020 14:33	KH

	Surrogate Recoveries	Result	Acceptance Range
367-12-4	*Surrogate: SURR: 2-Fluorophenol*	*56.2 %*	*20-108*
4165-62-2	*Surrogate: SURR: Phenol-d5*	*59.0 %*	*23-114*
4165-60-0	*Surrogate: SURR: Nitrobenzene-d5*	*63.4 %*	*22-108*
321-60-8	*Surrogate: SURR: 2-Fluorobiphenyl*	*63.3 %*	*21-113*
118-79-6	*Surrogate: SURR: 2,4,6-Tribromophenol*	*87.7 %*	*19-110*
1718-51-0	*Surrogate: SURR: Terphenyl-d14*	*97.4 %*	*24-116*

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	9.90	1	EPA 8270D SIM Certifications: NELAC-NY10854	03/12/2020 07:53	03/12/2020 20:54	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*46.0 %*	*39-83.1*

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
39108-34-4	* **1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)**	**76.0**		ug/kg dry	5.36	10	EPA 537m Certifications:	03/12/2020 18:12	03/16/2020 13:52	KT
27619-97-2	* **1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)**	**55.3**		ug/kg dry	5.36	10	EPA 537m Certifications:	03/12/2020 18:12	03/16/2020 13:52	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT

Sample Information

Client Sample ID: SB-13 (0.5-1)

York Sample ID: 20C0423-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0423	Westchester County Airport (WCA)	Soil	March 6, 2020 11:00 am	03/10/2020

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
375-92-8	*** Perfluoro-1-heptanesulfonic acid (PFHpS)**	**10.3**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	2.14	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
335-76-2	*** Perfluorodecanoic acid (PFDA)**	**4.77**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
307-55-1	*** Perfluorododecanoic acid (PFDoA)**	**2.99**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
375-85-9	*** Perfluoroheptanoic acid (PFHpA)**	**0.997**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
355-46-4	*** Perfluorohexanesulfonic acid (PFHxS)**	**1.03**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
307-24-4	*** Perfluorohexanoic acid (PFHxA)**	**6.36**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
375-22-4	*** Perfluoro-n-butanoic acid (PFBA)**	**3.53**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
375-95-1	*** Perfluorononanoic acid (PFNA)**	**1.99**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**24.9**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
335-67-1	*** Perfluorooctanoic acid (PFOA)**	**2.98**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
2706-90-3	*** Perfluoropentanoic acid (PFPeA)**	**2.26**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
376-06-7	*** Perfluorotetradecanoic acid (PFTA)**	**1.38**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
72629-94-8	*** Perfluorotridecanoic acid (PFTrDA)**	**0.957**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT
2058-94-8	*** Perfluoroundecanoic acid (PFUnA)**	**1.55**		ug/kg dry	0.536	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 09:14	KT

Surrogate Recoveries	Result	Acceptance Range
Surrogate: M3PFBS	*80.6 %*	*25-150*
Surrogate: M5PFHxA	*79.9 %*	*25-150*
Surrogate: M4PFHpA	*73.7 %*	*25-150*
Surrogate: M3PFHxS	*83.7 %*	*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*74.4 %*	*25-150*
Surrogate: M6PFDA	*53.9 %*	*25-150*
Surrogate: M7PFUdA	*54.1 %*	*25-150*

Sample Information

Client Sample ID: SB-16 (0-0.5) **York Sample ID:** 20C0423-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0423	Westchester County Airport (WCA)	Soil	March 9, 2020 10:50 am	03/10/2020

Semi-Volatiles, 1,4-Dioxane by 8270-SIM

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
123-91-1	1,4-Dioxane	ND		ug/kg	9.52	1	EPA 8270D SIM Certifications: NELAC-NY10854	03/12/2020 07:53	03/12/2020 21:45	KH

	Surrogate Recoveries	Result	Acceptance Range
17647-74-4	*Surrogate: 1,4-Dioxane-d8*	*42.0 %*	*39-83.1*

PFAS, NYSDEC Target List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
39108-34-4	* 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
27619-97-2	* 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
2991-50-6	* N-EtFOSAA	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
2355-31-9	* N-MeFOSAA	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
335-77-3	* Perfluoro-1-decanesulfonic acid (PFDS)	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
375-92-8	* Perfluoro-1-heptanesulfonic acid (PFHpS)	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
754-91-6	* Perfluoro-1-octanesulfonamide (FOSA)	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
375-73-5	* Perfluorobutanesulfonic acid (PFBS)	ND		ug/kg dry	2.37	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
335-76-2	* Perfluorodecanoic acid (PFDA)	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
307-55-1	* Perfluorododecanoic acid (PFDoA)	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
375-85-9	* Perfluoroheptanoic acid (PFHpA)	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
355-46-4	*** Perfluorohexanesulfonic acid (PFHxS)**	**5.64**		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
307-24-4	*** Perfluorohexanoic acid (PFHxA)**	**2.65**		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
375-22-4	*** Perfluoro-n-butanoic acid (PFBA)**	**0.990**		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
375-95-1	* Perfluorononanoic acid (PFNA)	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
1763-23-1	*** Perfluorooctanesulfonic acid (PFOS)**	**17.6**		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT

Sample Information

Client Sample ID: SB-16 (0-0.5) **York Sample ID:** 20C0423-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20C0423	Westchester County Airport (WCA)	Soil	March 9, 2020 10:50 am	03/10/2020

PFAS, NYSDEC Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: SPE PFAS Extraction-Soil-EPA 537m

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
335-67-1	*** Perfluorooctanoic acid (PFOA)**	**0.593**		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
2706-90-3	*** Perfluoropentanoic acid (PFPeA)**	**0.907**		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
376-06-7	* Perfluorotetradecanoic acid (PFTA)	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
72629-94-8	* Perfluorotridecanoic acid (PFTrDA)	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT
2058-94-8	* Perfluoroundecanoic acid (PFUnA)	ND		ug/kg dry	0.592	1	EPA 537m Certifications:	03/12/2020 18:12	03/14/2020 10:35	KT

Surrogate Recoveries	Result		Acceptance Range
Surrogate: M3PFBS	*67.1 %*		*25-150*
Surrogate: M5PFHxA	*70.4 %*		*25-150*
Surrogate: M4PFHpA	*62.8 %*		*25-150*
Surrogate: M3PFHxS	*72.3 %*		*25-150*
Surrogate: Perfluoro-n-[13C8]octanoic acid (M8PFOA)	*59.4 %*		*25-150*
Surrogate: M6PFDA	*29.2 %*		*25-150*
Surrogate: M7PFUdA	*25.2 %*		*25-150*
Surrogate: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	*24.4 %*	PFSu-L	*25-150*
Surrogate: M2PFTeDA	*19.3 %*		*10-150*
Surrogate: Perfluoro-n-[13C4]butanoic acid (MPFBA)	*84.3 %*		*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	*46.1 %*		*25-150*
Surrogate: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	*76.5 %*		*25-150*
Surrogate: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	*37.0 %*		*10-150*
Surrogate: d3-N-MeFOSAA	*45.4 %*		*25-150*
Surrogate: d5-N-EtFOSAA	*48.9 %*		*25-150*
Surrogate: M2-6:2 FTS	*475 %*	PFSu-H	*25-150*
Surrogate: M2-8:2 FTS	*209 %*	PFSu-H	*25-150*
Surrogate: M9PFNA	*44.6 %*		*25-150*

Semi-Volatiles, Tentatively Identified Cmpds.

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Tentatively Identified Compounds	0.00		ug/kg dry			2	EPA 8270D Certifications:	03/14/2020 11:19	03/16/2020 16:01	KH

Sample and Data Qualifiers Relating to This Work Order

SCAL-E	The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration (average Rf>20%).
QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
PFSu-L	The isotopically labeled surrogate recovered below lab control limits due to a matrix effect. Isotope Dilution was applied.
PFSu-H	The isotopically labeled surrogate recovered above lab control limits due to a matrix effect. Isotope Dilution was applied.
J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
CCV-E	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).
B	Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.
