PARSONS

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MEMORANDUM

March 17, 2022

To: New York State Department of Environmental Conservation

From: Thomas Drachenberg, Parsons

Subject: Dunn C&D Landfill Fall 2021 Sampling Results

This memo summarizes the results of the Fall 2021 surface water sampling event performed at the Dunn C&D Landfill in Rennselaer, NY

November 2021 Surface Water Sampling Event

Surface water samples were collected on November 30, 2021 as a follow-up to the May 2021 sampling event. Samples were collected from the same surface water locations used for the previous event, which consisted of the following:

- Five locations in Quackenderry Creek (SW-01, SW-02, SW-04, SW-05, and SW-06)
- One location within a small unnamed tributary (SW-03)
- From an on-site stormwater basin (SW-07)

Surface water samples were submitted for laboratory analysis for PFAS, 1,4 dioxane, volatile and semi-volatile organics, inorganics (metals and mercury), as well as general chemistry parameters.

PFOA was observed above the criterion of 10 ng/L at SW-03, with a result of 11 ng/L. The highest concentration of PFOS was 8.4 ng/L at SW-03, which is below the criterion. The highest concentration of PFAS in surface water was 12 ng/L of perfluorohexanoic acid (PFHxA), which was observed in SW-03.

The highest concentration of 1,4 dioxane, 0.14 ug/L, was observed at SW-07. All concentrations of 1,4 dioxane in surface water were below the criterion of 1 ug/L.

Surface water sample locations are shown on **Figure 1**. Validated analytical results for surface water samples are included in **Table 1**.

Quality Control and Data Validation

Data validation was performed on the groundwater, surface water, and leachate samples referenced above in accordance with the analytical methodologies, USEPA SOPs, and *Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs* (2021) guidance. All data were considered usable following data validation.

All validated analytical results for quality control samples are included in **Table 1**. A Data Usability and Summary Report (DUSR) has been prepared for this site and is included as **Attachment 1**.

Enc: Figure 1 – Site Plan
Table 1 – Surface Water Sampling Results (November 2021)
Attachment 1 – Data Usability Summary Report (November 2021)

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Plotted By: PRS

Plot Date: 3/17/2021

Figure 1

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Dunn C&D LF
Sample Locations

Inactive Landfill Initiative

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301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 * 315-451-9560

Document Path: P:\NYSDEC Program\450619 - WA #33 - Inactive Landfill Initiative\9.0 Reports\Site Specific Work Plans\Region 4\Dunn C&D LF\Figure 1_rev04.pdf

Table 1
Validated Surface Water Sample Results
November 2021

							Location Description									
							Location ID	4-REN-004-005-01	4-REN-004-005-09	4-REN-004-SW-01	4-REN-004-SW-02	4-REN-004-SW-03	4-REN-004-SW-04	4-REN-004-SW-05	4-REN-004-SW-06	4-REN-004-SW-07
							Sample ID	4-REN-004-005-04	4-REN-004-005-10	4-REN-004-005-04	4-REN-004-005-05	4-REN-004-005-03	4-REN-004-005-02	4-REN-004-005-07	4-REN-004-005-06	4-REN-004-005-08
							Matrix	WQ	WQ	WS	WS	WS	WS	WS	WS	WS
							Lab Sample ID	R2112553-001	R2112553-009	R2112553-004	R2112553-005	R2112553-003	R2112553-002	R2112553-007	R2112553-006	R2112553-008
							Sample Date	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021
							Sample Type Code	FB	TB	N	N	N	N	N	N	N
Analytical Method	Chemical Name	cas_rn	fraction	Unit	NYSDEC Class GA	New York State MCL										
1,4 Dioxane																
BNA5IM	1,4-Dioxane (P-Dioxane)	123-91-1	T	ug/l	-	1				0.031 J	0.037 J	0.044	0.035 J	0.028 J	0.034 J	0.14
Per- and Polyfluoroalkyl Substances																
E537	2-(N-methyl perfluorooctanesulfonamido) acetic acid	2355-31-9	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	4.3 U	4.1 U	4.4 U	4.5 U	4.9 U
E537	6:2 Fluorotelomer sulfonate	27619-97-2	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	4.3 U	4.1 U	0.56 J	4.5 U	2.7 J
E537	8:2 Fluorotelomer sulfonate	39108-34-4	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	4.3 U	4.1 U	4.4 U	4.5 U	4.9 U
E537	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	2991-50-6	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	4.3 U	4.1 U	4.4 U	4.5 U	4.9 U
E537	Perfluorobutanesulfonic acid (PFBS)	375-73-5	T	ng/l	-	-	0.36 J		NA	2.6 J	2.4 J	2.5 J	2.6 J	8	1.2 J	2.8 J
E537	Perfluorobutanoic Acid	375-22-4	T	ng/l	-	-	4.5 U		NA	2.4 J	4.4	7.8	2.7 J	5.9	2.2 J	13
E537	Perfluorodecane Sulfonic Acid	335-77-3	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	4.3 U	4.1 U	4.4 U	4.5 U	4.9 U
E537	Perfluorodecanoic acid (PFDA)	335-76-2	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	4.3 U	4.1 U	4.4 U	4.5 U	4.9 U
E537	Perfluorododecanoic acid (PFDoA)	307-55-1	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	4.3 U	4.1 U	4.4 U	4.5 U	4.9 U
E537	Perfluoroheptane Sulfonate (PFHPS)	375-92-8	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	0.5 J	4.1 U	4.4 U	4.5 U	4.9 U
E537	Perfluoroheptanoic acid (PFHpA)	375-85-9	T	ng/l	-	-	4.5 U		NA	0.83 J	0.66 J	6.2	1.2 J	1.3 J	1.5 J	2.8 J
E537	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	T	ng/l	-	-	4.5 U		NA	4.1 U	1.8 J	8.3	3.3 J	2.4 J	4.5 U	4.9 U
E537	Perfluorohexanoic acid (PFHxA)	307-24-4	T	ng/l	-	-	9.2 U		NA	9.2 U	9.2 U	12	9.2 U	9.2 U	9.2 U	11
E537	Perfluorononanoic acid (PFNA)	375-95-1	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	1.3 J	4.1 U	4.4 U	4.5 U	4.9 U
E537	Perfluorooctane Sulfonamide (FOSA)	754-91-6	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	4.3 U	4.1 U	4.4 U	4.5 U	4.9 U
E537	Perfluorooctanesulfonic acid (PFOS)	1763-23-1	T	ng/l	-	10	1.8 U		NA	2.5	0.71 J	8.4	2.6	2.7	1.5 J	1.5 J
E537	Perfluorooctanoic acid (PFOA)	335-67-1	T	ng/l	-	10	1.8 U		NA	3	1.7 J	11	3	4	2.1	3.9
E537	Perfluoropentanoic Acid (PFPeA)	2706-90-3	T	ng/l	-	-	4.5 U		NA	1.8 J	4.2 U	12	2.3 J	5.4	4.5 U	18
E537	Perfluorotetradecanoic acid (PFTA)	376-06-7	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	4.3 U	4.1 U	4.4 U	4.5 U	4.9 U
E537	Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	4.3 U	4.1 U	4.4 U	4.5 U	4.9 U
E537	Perfluoroundecanoic Acid (PFUnA)	2058-94-8	T	ng/l	-	-	4.5 U		NA	4.1 U	4.2 U	4.3 U	4.1 U	4.4 U	4.5 U	4.9 U
Volatile Organics																
SW8260C	1,1,1,2-Tetrachloroethane	630-20-6	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	1,1,1-Trichloroethane (TCA)	71-55-6	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	1,1,2,2-Tetrachloroethane	79-34-5	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	1,1,2-Trichloroethane	79-00-5	T	ug/l	1	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	1,1-Dichloroethane	75-34-3	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	1,1-Dichloroethene	75-35-4	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	1,2,3-Trichloropropane	96-18-4	T	ug/l	0.04	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	1,2-Dibromo-3-Chloropropane	96-12-8	T	ug/l	0.04	-	NA	2 U		2 U	2 U	2 U	2 U	2 U	2 U	2 U
SW8260C	1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	T	ug/l	0.0006	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	1,2-Dichlorobenzene	95-50-1	T	ug/l	3	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	1,2-Dichloroethane	107-06-2	T	ug/l	0.6	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	1,2-Dichloropropane	78-87-5	T	ug/l	1	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	1,4-Dichlorobenzene	106-46-7	T	ug/l	3	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	2-Hexanone	591-78-6	T	ug/l	50	-	NA	5 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U
SW8260C	Acetone	67-64-1	T	ug/l	50	-	NA	5 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U
SW8260C	Acrylonitrile	107-13-1	T	ug/l	5	-	NA	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U
SW8260C	Benzene	71-43-2	T	ug/l	1	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Bromochloromethane	74-97-5	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Bromodichloromethane	75-27-4	T	ug/l	50	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Bromoform	75-25-2	T	ug/l	50	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Bromomethane	74-83-9	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Carbon Disulfide	75-15-0	T	ug/l	60	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Carbon Tetrachloride	56-23-5	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Chlorobenzene	108-90-7	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Chloroethane	75-00-3	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Chloroform	67-66-3	T	ug/l	7	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Chloromethane	74-87-3	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Cis-1,2-Dichloroethylene	156-59-2	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Cis-1,3-Dichloropropene	10061-01-5	T	ug/l	0.4	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Dibromochloromethane	124-48-1	T	ug/l	50	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Dibromomethane	74-95-3	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Ethylbenzene	100-41-4	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Iodomethane (Methyl Iodide)	74-88-4	T	ug/l	5	-	NA	5 UJ		5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
SW8260C	m,p-Xylene	179601-23-1	T	ug/l	5	-	NA	2 U		2 U	2 U	2 U	2 U	2 U	2 U	2 U
SW8260C	Methyl Ethyl Ketone (2-Butanone)	78-93-3	T	ug/l	50	-	NA	5 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U
SW8260C	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	T	ug/l	-	-	NA	5 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U
SW8260C	Methylene Chloride	75-09-2	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	O-Xylene (1,2-Dimethylbenzene)	95-47-6	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Styrene	100-42-5	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Tetrachloroethylene (PCE)	127-18-4	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Toluene	108-88-3	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Trans-1,2-Dichloroethene	156-60-5	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Trans-1,3-Dichloropropene	10061-02-6	T	ug/l	0.4	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Trans-1,4-Dichloro-2-Butene	110-57-6	T	ug/l	5	-	NA	1 UJ		1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
SW8260C	Trichloroethylene (TCE)	79-01-6	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Trichlorofluoromethane	75-69-4	T	ug/l	5	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Vinyl Acetate	108-05-4	T	ug/l	-	-	NA	2 UJ		2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
SW8260C	Vinyl Chloride	75-01-4	T	ug/l	2	-	NA	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U
SW8260C	Xylenes, Total	XYLENES	T	ug/l	5	-	NA	3 U		3 U	3 U	3 U	3 U	3 U	3 U	3 U
Semivolatile Organics																
SW8270D	Acenaphthene	83-32-9	T	ug/l	20	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Acenaphthylene	208-96-8	T	ug/l	-	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Anthracene	120-12-7	T	ug/l	50	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Benzo(A)Anthracene	56-55-3	T	ug/l	0.002	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Benzo(A)Pyrene	50-32-8	T	ug/l	0	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Benzo(B)Fluoranthene	205-99-2	T	ug/l	0.002	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Benzo(G,H,I)Perylene	191-24-2	T	ug/l	-	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Benzo(K)Fluoranthene	207-08-9	T	ug/l	0.002	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Chrysene	218-01-9	T	ug/l	0.002	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Dibenz(A,H)Anthracene	53-70-3	T	ug/l	-	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Fluoranthene	206-44-0	T	ug/l	50	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Fluorene	86-73-7	T	ug/l	50	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Indeno(1,2,3-C,D)Pyrene	193-39-5	T	ug/l	0.002	-	NA	NA		0.21 UJ	0.2 UJ	0.19 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ
SW8270D	Naphthalene	91-20-3	T	ug/l	10	-	NA	NA		0.21 U	0.065 J	0.19 U	0.2 U	0.2 U	0.078 J	0.064 J
SW8270D	Phenanthrene	85-01-8	T	ug/l	50	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
SW8270D	Pyrene	129-00-0	T	ug/l	50	-	NA	NA		0.21 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U
Inorganics																
SW6010	Aluminum	7429-90-5	T	ug/l	-	-	NA	NA		100 U	100 U	42.4 J	51.3 J	258	30.9 J	467
SW6010	Antimony	7440-36-0	T	ug/l	3	-	NA	NA		60 U	60 U	60 U	60 U	60 U	60 U	60 U
SW6010	Arsenic	7440-38-2	T	ug/l	25	-	NA	NA		10 U	10 U	10 U	10 U	10 U	10 U	10 U
SW6010	Barium	7440-39-3	T	ug/l	1000	-	NA	NA		86.2	40.8	32.4	83.9	35.2	88.7	36.3
SW6010	Beryllium	7440-41-7	T	ug/l	3	-	NA	NA		3 U	3 U	3 U	3 U	3 U	3 U	3 U
SW6010	Boron	7440-42-8	T	ug/l	1000	-	NA	NA		28.8 J	12.7 J	38.5 J	30.4 J	39.4 J	200 U	60 J
SW6010	Cadmium	7440-43-9	T	ug/l	5	-	NA	NA		5 U	5 U	5 U	5 U	5 U	5 U	5 U
SW6010	Calcium	7440-70-2	T	ug/l	-	-	NA	NA		93900	95400	103000	94700	80100	78300	45500
SW6010	Chromium, Total	7440-47-3	T	ug/l	50	-	NA	NA		10 U	10 U	10 U	10 U	10 U	10 U	10 U
SW6010	Cobalt	7440-48-4	T	ug/l	-	-	NA	NA		50 U	50 U	50 U	50 U	50 U	50 U	50 U
SW6010	Copper	7440-50-8	T	ug/l	200	-	NA	NA		20 U	20 U	20 U	20 U	20 U	20 U	20 U
SW6010	Iron	7439-89-6	T	ug/l	300	-	NA	NA		141	100 U	107	227	250	221	389
SW6010	Lead	7439-92-1	T	ug/l	25	-	NA	NA		50 U	50 U	50 U	50 U	50 U	50 U	50 U
SW6010	Magnesium	7439-95-4	T	ug/l	35000	-	NA	NA		35600	26200	23600	33900	16600	16700	8010
SW6010	Manganese	7439-96-5	T	ug/l	300	-	NA	NA		114	22.8	242	136	23.2	117	22.9
SW6010	Nickel	7440-02-0	T	ug/l	100	-	NA	NA		3.3 J	4.1 J	4.2 J	3.3 J	3.1 J	4.2 J	40 U
SW6010	Potassium	7440-09-7	T	ug/l	-	-	NA	NA		2370	2350	3350	2410	3040	2240	3760
SW6010	Selenium	7782-49-2	T	ug/l	10	-	NA	NA		10 U	10 U	10 U	10 U	10 U	10 U	10 U
SW6010	Silver	7440-22-4	T	ug/l	50	-	NA	NA		10 U	10 U	10 U	10 U	10 U	10 U	10 U
SW6010	Sodium	7440-23-5	T	ug/l	20000	-	NA	NA		134000	72000	55800	129000	53700	110000	12600
SW6010	Thallium	7440-28-0	T	ug/l	0.5	-	NA	NA		10 U	10 U	10 U	10 U	10 U	10 U	10 U
SW6010	Vanadium	7440-62-2	T	ug/l	-	-	NA	NA		50 U	50 U	50 U	50 U	50 U	50 U	50 U
SW6010	Zinc	7440-66-6	T	ug/l	2000	-	NA	NA		3.7 J	14.1 J	20 U	2.7 J	3.2 J	9 J	3.3 J
SW7470	Mercury	7439-97-6	T	ug/l	0.7	-	NA	NA		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
General Chemistry																
E300.0	Bromide	24959-67-9	T	mg/l	2	-	NA	NA		1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table 1
Validated Surface Water Sample Results
November 2021

						Location Description				
						Location ID			4-REN-004-SW-01	4-REN-004-SW-02
						Sample ID	4-REN-004-005-01	4-REN-004-005-09	4-REN-004-005-04	4-REN-004-005-05
						Matrix	WQ	WQ	WS	WS
						Lab Sample ID	R2112553-001	R2112553-009	R2112553-004	R2112553-005
						Sample Date	11/30/2021	11/30/2021	11/30/2021	11/30/2021
						Sample Type Code	FB	TB	N	N
Analytical Method	Chemical Name	cas_rn	fraction	Unit	NYSDEC Class GA	New York State MCL				
E300.0	Chloride (As Cl)	16887-00-6	T	mg/l	250	-	NA	NA	222	103
E300.0	Sulfate (As SO4)	14808-79-8	T	mg/l	250	-	NA	NA	108	41.3
E350.1	Nitrogen, Ammonia (As N)	7664-41-7	T	mg/l	2	-	NA	NA	0.05 U	0.05 U
E410.4	COD - Chemical Oxygen Demand	COD	T	mg/l	-	-	NA	NA	5 U	5 U
SM 2320 B	Alkalinity, Total (As CaCO3)	ALK	T	mg/l	-	-	NA	NA	243	309
SM 2340 C	Hardness (As CaCO3)	HARD	T	mg/l	-	-	NA	NA	367	333
SM2540C	Total Dissolved Solids (Residue, Filterable)	TDS	D	mg/l	-	-	NA	NA	765	532
SM5310C	Total Organic Carbon	TOC	T	mg/l	-	-	NA	NA	2.3	3.7

Analytical Method	Chemical Name	4-REN-004-SW-03	4-REN-004-SW-04	4-REN-004-SW-05	4-REN-004-SW-06	4-REN-004-SW-07
	Sample ID	4-REN-004-005-03	4-REN-004-005-02	4-REN-004-005-07	4-REN-004-005-06	4-REN-004-005-08
	Matrix	WS	WS	WS	WS	WS
	Lab Sample ID	R2112553-003	R2112553-002	R2112553-007	R2112553-006	R2112553-008
	Sample Date	11/30/2021	11/30/2021	11/30/2021	11/30/2021	11/30/2021
	Sample Type Code	N	N	N	N	N
E300.0	Chloride (As Cl)	81.5	224	54.2	177	27.9
E300.0	Sulfate (As SO4)	34.9	99.7	16.6	27.7	53.7
E350.1	Nitrogen, Ammonia (As N)	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
E410.4	COD - Chemical Oxygen Demand	5 U	5 U	5 U	5 U	5 U
SM 2320 B	Alkalinity, Total (As CaCO3)	337	248	286	222	87.4
SM 2340 C	Hardness (As CaCO3)	350	383	263	250	164
SM2540C	Total Dissolved Solids (Residue, Filterable)	512	759	399	562	219
SM5310C	Total Organic Carbon	4.3	2.2	3.7	2.2	3.1

Notes:
[1] New York State Department of Environmental Conservation, 6NYCRR Part 703 and Technical and Operational Guidance Series (1.1.1) Class GA Standards and Guidance Values, Revised 1998
[2] New York State Department of Health, State Sanitary Code (SSC) 10NYCRR Part 5 maximum contaminant levels for PFOA, PFOS, and 1,4 Dioxane
Orange Highlighting = Exceeds NYSDEC Class GA Standards and Guidance Values
Blue Highlighting = Exceeds NYS MCL
NA = Not analyzed, NC = criteria exists
Qualifiers: B = Compound was found in the blank and sample, BJ = Compound was found in the blank and sample at the estimated value, J = Estimated value, J- = Estimated biased low, J+ = Estimated biased high,
Matrix ID: WQ = Water Quality Control Matric, WG = Groundwater, WS = Surface Water
Sample Type Code: N = Normal Environmental Sample, FD = Field Duplicate, EB = Equipment Blank, FB = Field Blank, TB = Trip Blank
Fraction: Due to turbidity being >50 NTU, total and dissolved metals samples were collected in the field. T = Total (unfiltered), D = Dissolved (filtered), NA = Not Applicable
Results validated.

DATA USABILITY SUMMARY REPORT

NOVEMBER 2021 SURFACE WATER SAMPLING REGION 4 – DUNN C&D LANDFILL

WORK ASSIGNMENT # D009811-02

Prepared For:

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

New York State Department of Environmental Conservation
Division of Environmental Remediation
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FEBRUARY 2022

TABLE OF CONTENTS

LIST OF ATTACHMENTS

SECTION 1 DATA USABILITY SUMMARY

Surface water samples were collected from the Dunn C&D Landfill site on November 30, 2021. Analytical results from these samples were validated and reviewed by Parsons for usability with respect to the following requirements:

- Project Work Plan,
- USEPA analytical methodologies,
- USEPA Region II Standard Operating Procedures (SOPs) for organic and inorganic data review, and
- *Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs*, dated January 2021.

The analytical laboratory for this project was ALS in Rochester, New York and Kelso, Washington. This laboratory is certified to perform project analyses through the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP).

1.1 Laboratory Data Packages

The laboratory data package turnaround time, defined as the time from sample receipt by the laboratory to receipt of the analytical data packages by Parsons, was 35 days for the project samples. The data packages received from ALS were paginated, complete, and overall were of good quality. Comments on specific quality control (QC) and other requirements are discussed in detail in the attached data validation report which is summarized in Section 2.

1.2 Sampling and Chain-of-Custody

The samples were collected, properly preserved, shipped under a chain-of-custody (COC) record, and received at ALS within one day of sampling. All samples were received intact and in good condition at the laboratory.

1.3 Laboratory Analytical Methods

Surface water and leachate samples that were collected from the site were analyzed for baseline volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), 1,4-dioxane, per- and polyfluoroalkyl substances (PFAS), baseline metals, and modified baseline leachate indicators. Summaries of issues concerning these laboratory analyses are presented in Subsections 1.3.1 through 1.3.5. The data qualifications resulting from the data validation review and statements on the laboratory analytical precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) are discussed in Section 2. The laboratory data were reviewed and may be qualified with the following validation flags:

"U" - not detected at the value given,
"UJ" - estimated and not detected at the value given,
"J" - estimated at the value given,
"J+" - estimated biased high at the value given,
"J-" - estimated biased low at the value given,
"N" - presumptive evidence at the value given, and
"R" - unusable value.

The validated laboratory data were tabulated and are presented in Attachment A.

1.3.1 Volatile Organic Analysis

The surface water samples were analyzed for baseline VOCs using the USEPA SW-846 8260C analytical method. Certain reported results for these samples were qualified as estimated based upon instrument calibrations. The reported VOC analytical results were 100% complete (i.e., usable) for the project data presented by ALS. PARCCS requirements were met.

1.3.2 PAHs and 1,4-Dioxane Organic Analysis

The surface water samples were analyzed for PAHs and 1,4-dioxane using the USEPA SW-846 8270D and 8270D SIM analytical method. Certain reported results for these samples were qualified as estimated based upon laboratory control sample (LCS) recoveries. The reported PAHs and 1,4-dioxane analytical results were considered 100% complete (i.e., usable) for the project data presented by ALS. PARCCS requirements were met.

1.3.3 PFAS Organic Analysis

The surface water samples were analyzed for PFAS using the modified USEPA 537.1 analytical method. The reported results for these samples did not require qualification resulting from data validation. The reported PFAS analytical results were considered 100% complete (i.e., usable) for the project data presented by ALS. PARCCS requirements were met.

1.3.4 Metals Analysis

The surface water samples were analyzed for baseline metals using the USEPA SW-846 6010C/7470A analytical methods. The reported results for these samples did not require qualification resulting from data validation. The reported metals analytical results were considered 100% complete (i.e., usable) for the project data presented by ALS. PARCCS requirements were met.

1.3.5 General Chemistry Analysis

The surface water samples were analyzed for the modified baseline leachate indicators of bromide, chloride, and sulfate using the USEPA 300.0 analytical method; ammonia using the USEPA 350.1 analytical method; chemical oxygen demand (COD) using the USEPA 410.4 analytical method; total alkalinity using the SM2320B analytical method; hardness using the SM2340C analytical method; total dissolved solids (TDS) using the SM2540C analytical method; and total organic carbon (TOC) using the SM5310C analytical method. The reported results for these samples did not require qualification resulting from data validation. The reported leachate indicator analytical results were considered 100% complete (i.e., usable) for the project data presented by ALS. PARCCS requirements were met.

SECTION 2 DATA VALIDATION REPORT

2.1 Surface Water

Data review has been completed for data packages generated by ALS containing surface water samples collected from the site. Analytical results from these samples were contained within sample delivery group (SDG) R2112553. All of these samples were properly preserved, shipped under a COC record, and received intact by the analytical laboratory. The validated laboratory data are presented in Attachment A.

Data validation was performed for all samples in accordance with the analytical methodologies, the most current editions of the USEPA Region II SOPs for organic and inorganic data review, and the *Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs*, dated January 2021. This data validation and usability report is presented by analysis type.

2.1.1 Volatiles

The following items were reviewed for compliancy in the volatile analysis:

- Custody documentation
- Holding times
- Surrogate recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) precision and accuracy
- Laboratory control sample (LCS) recoveries
- Laboratory method blank and trip blank contamination
- GC/MS instrument performance
- Initial and continuing calibrations
- Internal standard area counts and retention times
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols with the exception of initial and continuing calibrations as discussed below.

Initial and Continuing Calibrations

All initial calibration compounds were compliant with minimum average relative response factors (RRFs) of 0.05 (0.01 for poor performers) and maximum percent relative standard deviations (%RSDs) of 20% (40% for poor performers) with the exception of iodomethane (21.2%RSD) in the initial calibration associated with all samples. Therefore, results for this compound which were nondetects were considered estimated and qualified "UJ" for the affected samples.

All continuing calibration compounds were compliant with minimum relative response factors (RRFs) of 0.05 (0.01 for poor performers) and percent differences (%Ds) within ±20% (±40% for poor performers) with the exception of vinyl acetate (32.1%D) and trans-1,4-dichloro-2-butene (-23.6%D) in the continuing calibration associated with all samples. Therefore, results for these compounds which were nondetects were considered estimated and qualified "UJ" for the affected samples.

Usability

All volatile sample results were considered usable following data validation.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, comparability, and sensitivity. The volatile data presented by ALS were 100% complete (i.e., usable). The validated volatile laboratory data are tabulated and presented in Attachment A.

2.1.2 PAHs and 1,4-Dioxane

The following items were reviewed for compliancy in the PAHs and 1,4-dioxane analysis:

- Custody documentation
- Holding times
- Surrogate recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) precision and accuracy
- Laboratory control sample (LCS) recoveries
- Laboratory method blank contamination
- GC/MS instrument performance
- Initial and continuing calibrations
- Internal standard area counts and retention times
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols with the exception of LCS recoveries as discussed below.

LCS Recoveries

All LCS recoveries were considered acceptable and within QC limits with the exception of the low LCS recovery for indeno(1,2,3-cd)pyrene (48%R; QC limit 55-129%R) associated with all samples. Therefore, results for this compound which were nondetects were considered estimated and qualified "UJ" for the affected samples.

Usability

All PAHs and 1,4-dioxane sample results were considered usable following data validation.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, comparability, and sensitivity. The PAHs and 1,4-dioxane data presented by ALS were 100% complete (i.e., usable). The validated PAHs and 1,4-dioxane laboratory data are tabulated and presented in Attachment A.

2.1.3 PFAS

The following items were reviewed for compliancy in the PFAS analysis:

- Custody documentation
- Holding times
- Surrogate recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) precision and accuracy
- Laboratory control sample (LCS) recoveries
- Laboratory method blank and equipment/field blank contamination
- Instrument performance

- Initial and continuing calibrations
- Internal standard responses
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols with the exception of blank contamination as discussed below.

Blank Contamination

The QC field blank associated with all samples contained PFBS below the reporting limit at a concentration of 0.36 ng/L. Validation qualification was not required for the affected samples.

Usability

All PFAS sample results were considered usable following data validation.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, comparability, and sensitivity. The PFAS data presented by ALS were 100% complete (i.e., usable). The validated PFAS laboratory data are tabulated and presented in Attachment A.

2.1.4 Metals

The following items were reviewed for compliancy in the metals analysis:

- Custody documentation
- Holding times
- Initial and continuing calibration verifications
- Initial and continuing calibration blank, and preparation blank contamination
- Interference check sample (ICS) recoveries
- MS/MSD recoveries
- LCS recoveries
- Laboratory duplicate precision
- Serial dilutions
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols.

Usability

All metals sample results were considered usable following data validation.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, comparability, and sensitivity. The metals data presented by ALS were 100% complete (i.e., usable). The validated metals laboratory data are tabulated and presented in Attachment A.

2.1.5 Leachate Indicators

The following items were reviewed for compliancy in the general chemistry analysis:

- Custody documentation
- Holding times
- Initial and continuing calibration verifications
- Initial and continuing calibration blank, and preparation blank contamination
- MS/MSD recoveries
- LCS recoveries
- Laboratory duplicate precision
- Sample result verification and identification
- Quantitation limits
- Data completeness

These items were considered compliant and acceptable in accordance with the validation protocols.

Usability

All leachate indicator sample results were considered usable following data validation.

Summary

The quality assurance objectives for measurement data included considerations for precision, accuracy, representativeness, completeness, comparability, and sensitivity. The leachate indicator data presented by ALS were 100% complete (i.e., usable). The validated laboratory data are tabulated and presented in Attachment A.

ATTACHMENT A – VALIDATED LABORATORY DATA

						Location Description	4-REN-004-005-01			4-REN-004-005-09			4-REN-004-SW-01			4-REN-004-SW-02			4-REN-004-SW-03		
						Location ID	4-REN-004-005-01			4-REN-004-005-09			4-REN-004-005-04			4-REN-004-005-05			4-REN-004-005-03		
						Sample ID	4-REN-004-005-01			4-REN-004-005-09			4-REN-004-005-04			4-REN-004-005-05			4-REN-004-005-03		
						Matrix	WQ			WQ			WS			WS			WS		
						Lab Sample ID	R2112553-001			R2112553-009			R2112553-004			R2112553-005			R2112553-003		
						Sample Date	11/30/2021			11/30/2021			11/30/2021			11/30/2021			11/30/2021		
						Sample Type Code	FB			TB			N			N			N		
Analytical Method	Chemical Name	cas_rn	fraction	Unit	NYSDEC Class GA	New York State MCL															
BNASIM	1,4-Dioxane (P-Dioxane)	123-91-1	T	ug/l		1							0.031	J		0.037	J		0.044		
E300.0	Bromide	24959-67-9	T	mg/l	2								1	U		1	U		1	U	
E300.0	Chloride (As Cl)	16887-00-6	T	mg/l	250								222			103			81.5		
E300.0	Sulfate (As SO4)	14808-79-8	T	mg/l	250								108			41.3			34.9		
E350.1	Nitrogen, Ammonia (As N)	7664-41-7	T	mg/l	2								0.05	U		0.05	U		0.05	U	
E410.4	COD - Chemical Oxygen Demand	COD	T	mg/l									5	U		5	U		5	U	
E537	2-(N-methyl perfluorooctanesulfonamido) acetic acid	2355-31-9	T	ng/l			4.5	U					4.1	U		4.2	U		4.3	U	
E537	6:2 Fluorotelomer sulfonate	27619-97-2	T	ng/l			4.5	U					4.1	U		0.91	J		0.6	J	
E537	8:2 Fluorotelomer sulfonate	39108-34-4	T	ng/l			4.5	U					4.1	U		4.2	U		4.3	U	
E537	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	2991-50-6	T	ng/l			4.5	U					4.1	U		4.2	U		4.3	U	
E537	Perfluorobutanesulfonic acid (PFBS)	375-73-5	T	ng/l			0.36	J					2.6	J		2.4	J		2.5	J	
E537	Perfluorobutanoic Acid	375-22-4	T	ng/l			4.5	U					2.4	J		4.4			7.8		
E537	Perfluorodecane Sulfonic Acid	335-77-3	T	ng/l			4.5	U					4.1	U		4.2	U		4.3	U	
E537	Perfluorodecanoic acid (PFDA)	335-76-2	T	ng/l			4.5	U					4.1	U		4.2	U		4.3	U	
E537	Perfluorododecanoic acid (PFDoA)	307-55-1	T	ng/l			4.5	U					4.1	U		4.2	U		4.3	U	
E537	Perfluoroheptane Sulfonate (PFHPS)	375-92-8	T	ng/l			4.5	U					4.1	U		4.2	U		0.5	J	
E537	Perfluoroheptanoic acid (PFHpA)	375-85-9	T	ng/l			4.5	U					0.83	J		0.66	J		6.2		
E537	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	T	ng/l			4.5	U					4.1	U		1.8	J		8.3		
E537	Perfluorohexanoic acid (PFHxA)	307-24-4	T	ng/l			9.2	U					9.2	U		9.2	U		12		
E537	Perfluorononanoic acid (PFNA)	375-95-1	T	ng/l			4.5	U					4.1	U		4.2	U		1.3	J	
E537	Perfluorooctane Sulfonamide (FOSA)	754-91-6	T	ng/l			4.5	U					4.1	U		4.2	U		4.3	U	
E537	Perfluorooctanesulfonic acid (PFOS)	1763-23-1	T	ng/l		10	1.8	U					2.5			0.71	J		8.4		
E537	Perfluorooctanoic acid (PFOA)	335-67-1	T	ng/l		10	1.8	U					3			1.7	J		11		
E537	Perfluoropentanoic Acid (PFPeA)	2706-90-3	T	ng/l			4.5	U					1.8	J		4.2	U		12		
E537	Perfluorotetradecanoic acid (PFTA)	376-06-7	T	ng/l			4.5	U					4.1	U		4.2	U		4.3	U	
E537	Perfluorotridecanoic Acid (PFTriA)	72629-94-8	T	ng/l			4.5	U					4.1	U		4.2	U		4.3	U	
E537	Perfluoroundecanoic Acid (PFUnA)	2058-94-8	T	ng/l			4.5	U					4.1	U		4.2	U		4.3	U	
SM 2320 B	Alkalinity, Total (As CaCO3)	ALK	T	mg/l									243			309			337		
SM 2340 C	Hardness (As CaCO3)	HARD	T	mg/l									367			333			350		
SM2540C	Total Dissolved Solids (Residue, Filterable)	TDS	D	mg/l									765			532			512		
SM5310C	Total Organic Carbon	TOC	T	mg/l									2.3			3.7			4.3		
SW6010	Aluminum	7429-90-5	T	ug/l									100	U		100	U		42.4	J	
SW6010	Antimony	7440-36-0	T	ug/l	3								60	U		60	U		60	U	
SW6010	Arsenic	7440-38-2	T	ug/l	25								10	U		10	U		10	U	
SW6010	Barium	7440-39-3	T	ug/l	1000								86.2			40.8			32.4		
SW6010	Beryllium	7440-41-7	T	ug/l	3								3	U		3	U		3	U	
SW6010	Boron	7440-42-8	T	ug/l	1000								28.8	J		12.7	J		38.5	J	
SW6010	Cadmium	7440-43-9	T	ug/l	5								5	U		5	U		5	U	
SW6010	Calcium	7440-70-2	T	ug/l									93900			95400			103000		
SW6010	Chromium, Total	7440-47-3	T	ug/l	50								10	U		10	U		10	U	
SW6010	Cobalt	7440-48-4	T	ug/l									50	U		50	U		50	U	
SW6010	Copper	7440-50-8	T	ug/l	200								20	U		20	U		20	U	
SW6010	Iron	7439-89-6	T	ug/l	300								141			100	U		107		
SW6010	Lead	7439-92-1	T	ug/l	25								50	U		50	U		50	U	
SW6010	Magnesium	7439-95-4	T	ug/l	35000								35600			26200			23600		
SW6010	Manganese	7439-96-5	T	ug/l	300								114			22.8			242		
SW6010	Nickel	7440-02-0	T	ug/l	100								3.3	J		4.1	J		4.2	J	
SW6010	Potassium	7440-09-7	T	ug/l									2370			2350			3350		
SW6010	Selenium	7782-49-2	T	ug/l	10								10	U		10	U		10	U	

						Location Description	4-REN-004-005-01			4-REN-004-005-09		4-REN-004-SW-01		4-REN-004-SW-02		4-REN-004-SW-03				
						Location ID	4-REN-004-005-04													
						Sample ID	WQ			WQ		WS		WS		WS				
						Matrix	R2112553-001			R2112553-009		R2112553-004		R2112553-005		R2112553-003				
						Lab Sample ID	11/30/2021			11/30/2021		11/30/2021		11/30/2021		11/30/2021				
						Sample Date	FB			TB		N		N		N				
						Sample Type Code														
Analytical Method	Chemical Name	cas_rn	fraction	Unit	NYSDEC Class GA	New York State MCL														
SW6010	Silver	7440-22-4	T	ug/l	50							10	U	10	U	10	U			
SW6010	Sodium	7440-23-5	T	ug/l	20000							134000		72000		55800				
SW6010	Thallium	7440-28-0	T	ug/l	0.5							10	U	10	U	10	U			
SW6010	Vanadium	7440-62-2	T	ug/l								50	U	50	U	50	U			
SW6010	Zinc	7440-66-6	T	ug/l	2000							3.7	J	14.1	J	20	U			
SW7470	Mercury	7439-97-6	T	ug/l	0.7							0.2	U	0.2	U	0.2	U			
SW8260C	1,1,1,2-Tetrachloroethane	630-20-6	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	1,1,1-Trichloroethane (TCA)	71-55-6	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	1,1,2,2-Tetrachloroethane	79-34-5	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	1,1,2-Trichloroethane	79-00-5	T	ug/l	1					1	U	1	U	1	U	1	U			
SW8260C	1,1-Dichloroethane	75-34-3	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	1,1-Dichloroethene	75-35-4	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	1,2,3-Trichloropropane	96-18-4	T	ug/l	0.04					1	U	1	U	1	U	1	U			
SW8260C	1,2-Dibromo-3-Chloropropane	96-12-8	T	ug/l	0.04					2	U	2	U	2	U	2	U			
SW8260C	1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	T	ug/l	0.0006					1	U	1	U	1	U	1	U			
SW8260C	1,2-Dichlorobenzene	95-50-1	T	ug/l	3					1	U	1	U	1	U	1	U			
SW8260C	1,2-Dichloroethane	107-06-2	T	ug/l	0.6					1	U	1	U	1	U	1	U			
SW8260C	1,2-Dichloropropane	78-87-5	T	ug/l	1					1	U	1	U	1	U	1	U			
SW8260C	1,4-Dichlorobenzene	106-46-7	T	ug/l	3					1	U	1	U	1	U	1	U			
SW8260C	2-Hexanone	591-78-6	T	ug/l	50					5	U	5	U	5	U	5	U			
SW8260C	Acetone	67-64-1	T	ug/l	50					5	U	5	U	5	U	5	U			
SW8260C	Acrylonitrile	107-13-1	T	ug/l	5					10	U	10	U	10	U	10	U			
SW8260C	Benzene	71-43-2	T	ug/l	1					1	U	1	U	1	U	1	U			
SW8260C	Bromochloromethane	74-97-5	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Bromodichloromethane	75-27-4	T	ug/l	50					1	U	1	U	1	U	1	U			
SW8260C	Bromoform	75-25-2	T	ug/l	50					1	U	1	U	1	U	1	U			
SW8260C	Bromomethane	74-83-9	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Carbon Disulfide	75-15-0	T	ug/l	60					1	U	1	U	1	U	1	U			
SW8260C	Carbon Tetrachloride	56-23-5	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Chlorobenzene	108-90-7	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Chloroethane	75-00-3	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Chloroform	67-66-3	T	ug/l	7					1	U	1	U	1	U	1	U			
SW8260C	Chloromethane	74-87-3	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Cis-1,2-Dichloroethylene	156-59-2	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Cis-1,3-Dichloropropene	10061-01-5	T	ug/l	0.4					1	U	1	U	1	U	1	U			
SW8260C	Dibromochloromethane	124-48-1	T	ug/l	50					1	U	1	U	1	U	1	U			
SW8260C	Dibromomethane	74-95-3	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Ethylbenzene	100-41-4	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Iodomethane (Methyl Iodide)	74-88-4	T	ug/l	5					5	UJ	5	UJ	5	UJ	5	UJ			
SW8260C	m,p-Xylene	179601-23-1	T	ug/l	5					2	U	2	U	2	U	2	U			
SW8260C	Methyl Ethyl Ketone (2-Butanone)	78-93-3	T	ug/l	50					5	U	5	U	5	U	5	U			
SW8260C	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	T	ug/l						5	U	5	U	5	U	5	U			
SW8260C	Methylene Chloride	75-09-2	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	O-Xylene (1,2-Dimethylbenzene)	95-47-6	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Styrene	100-42-5	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Tetrachloroethylene (PCE)	127-18-4	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Toluene	108-88-3	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Trans-1,2-Dichloroethene	156-60-5	T	ug/l	5					1	U	1	U	1	U	1	U			
SW8260C	Trans-1,3-Dichloropropene	10061-02-6	T	ug/l	0.4					1	U	1	U	1	U	1	U			

						Location Description											
						Location ID											
						Sample ID	4-REN-004-005-01			4-REN-004-005-09		4-REN-004-SW-01 4-REN-004-005-04		4-REN-004-SW-02 4-REN-004-005-05		4-REN-004-SW-03 4-REN-004-005-03	
						Matrix	WQ			WQ		WS		WS		WS	
						Lab Sample ID	R2112553-001			R2112553-009		R2112553-004		R2112553-005		R2112553-003	
						Sample Date	11/30/2021			11/30/2021		11/30/2021		11/30/2021		11/30/2021	
						Sample Type Code	FB			TB		N		N		N	
Analytical Method	Chemical Name	cas_rn	fraction	Unit	NYSDEC Class GA	New York State MCL											
SW8260C	Trans-1,4-Dichloro-2-Butene	110-57-6	T	ug/l	5				1	UJ	1	UJ	1	UJ	1	UJ
SW8260C	Trichloroethylene (TCE)	79-01-6	T	ug/l	5				1	U	1	U	1	U	1	U
SW8260C	Trichlorofluoromethane	75-69-4	T	ug/l	5				1	U	1	U	1	U	1	U
SW8260C	Vinyl Acetate	108-05-4	T	ug/l					2	UJ	2	UJ	2	UJ	2	UJ
SW8260C	Vinyl Chloride	75-01-4	T	ug/l	2				1	U	1	U	1	U	1	U
SW8260C	Xylenes, Total	XYLENES	T	ug/l	5				3	U	3	U	3	U	3	U
SW8270D	Acenaphthene	83-32-9	T	ug/l	20						0.21	U	0.2	U	0.19	U
SW8270D	Acenaphthylene	208-96-8	T	ug/l							0.21	U	0.2	U	0.19	U
SW8270D	Anthracene	120-12-7	T	ug/l	50						0.21	U	0.2	U	0.19	U
SW8270D	Benzo(A)Anthracene	56-55-3	T	ug/l	0.002						0.21	U	0.2	U	0.19	U
SW8270D	Benzo(A)Pyrene	50-32-8	T	ug/l	0						0.21	U	0.2	U	0.19	U
SW8270D	Benzo(B)Fluoranthene	205-99-2	T	ug/l	0.002						0.21	U	0.2	U	0.19	U
SW8270D	Benzo(G,H,I)Perylene	191-24-2	T	ug/l							0.21	U	0.2	U	0.19	U
SW8270D	Benzo(K)Fluoranthene	207-08-9	T	ug/l	0.002						0.21	U	0.2	U	0.19	U
SW8270D	Chrysene	218-01-9	T	ug/l	0.002						0.21	U	0.2	U	0.19	U
SW8270D	Dibenz(A,H)Anthracene	53-70-3	T	ug/l							0.21	U	0.2	U	0.19	U
SW8270D	Fluoranthene	206-44-0	T	ug/l	50						0.21	U	0.2	U	0.19	U
SW8270D	Fluorene	86-73-7	T	ug/l	50						0.21	U	0.2	U	0.19	U
SW8270D	Indeno(1,2,3-C,D)Pyrene	193-39-5	T	ug/l	0.002						0.21	UJ	0.2	UJ	0.19	UJ
SW8270D	Naphthalene	91-20-3	T	ug/l	10						0.21	U	0.065	J	0.19	U
SW8270D	Phenanthrene	85-01-8	T	ug/l	50						0.21	U	0.2	U	0.19	U
SW8270D	Pyrene	129-00-0	T	ug/l	50						0.21	U	0.2	U	0.19	U

							Location Description	4-REN-004-SW-04		4-REN-004-SW-05		4-REN-004-SW-06		4-REN-004-SW-07	
							Location ID	4-REN-004-005-02		4-REN-004-005-07		4-REN-004-005-06		4-REN-004-005-08	
							Sample ID	WS		WS		WS		WS	
							Matrix	R2112553-002		R2112553-007		R2112553-006		R2112553-008	
							Lab Sample ID	11/30/2021		11/30/2021		11/30/2021		11/30/2021	
							Sample Date	N		N		N		N	
							Sample Type Code								
Analytical Method	Chemical Name	cas_rn	fraction	Unit	NYSDEC Class GA	New York State MCL									
BNASIM	1,4-Dioxane (P-Dioxane)	123-91-1	T	ug/l		1		0.035	J	0.028	J	0.034	J	0.14	
E300.0	Bromide	24959-67-9	T	mg/l	2			1	U	1	U	1	U	1	U
E300.0	Chloride (As Cl)	16887-00-6	T	mg/l	250			224		54.2		177		27.9	
E300.0	Sulfate (As SO4)	14808-79-8	T	mg/l	250			99.7		16.6		27.7		53.7	
E350.1	Nitrogen, Ammonia (As N)	7664-41-7	T	mg/l	2			0.05	U	0.05	U	0.05	U	0.05	U
E410.4	COD - Chemical Oxygen Demand	COD	T	mg/l				5	U	5	U	5	U	5	U
E537	2-(N-methyl perfluorooctanesulfonamido) acetic acid	2355-31-9	T	ng/l				4.1	U	4.4	U	4.5	U	4.9	U
E537	6:2 Fluorotelomer sulfonate	27619-97-2	T	ng/l				4.1	U	0.56	J	4.5	U	2.7	J
E537	8:2 Fluorotelomer sulfonate	39108-34-4	T	ng/l				4.1	U	4.4	U	4.5	U	4.9	U
E537	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	2991-50-6	T	ng/l				4.1	U	4.4	U	4.5	U	4.9	U
E537	Perfluorobutanesulfonic acid (PFBS)	375-73-5	T	ng/l				2.6	J	8		1.2	J	2.8	J
E537	Perfluorobutanoic Acid	375-22-4	T	ng/l				2.7	J	5.9		2.2	J	13	
E537	Perfluorodecane Sulfonic Acid	335-77-3	T	ng/l				4.1	U	4.4	U	4.5	U	4.9	U
E537	Perfluorodecanoic acid (PFDA)	335-76-2	T	ng/l				4.1	U	4.4	U	4.5	U	4.9	U
E537	Perfluorododecanoic acid (PFDoA)	307-55-1	T	ng/l				4.1	U	4.4	U	4.5	U	4.9	U
E537	Perfluoroheptane Sulfonate (PFHPS)	375-92-8	T	ng/l				4.1	U	4.4	U	4.5	U	4.9	U
E537	Perfluoroheptanoic acid (PFHpA)	375-85-9	T	ng/l				1.2	J	1.3	J	1.5	J	2.8	J
E537	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	T	ng/l				3.3	J	2.4	J	4.5	U	4.9	U
E537	Perfluorohexanoic acid (PFHxA)	307-24-4	T	ng/l				9.2	U	9.2	U	9.2	U	11	
E537	Perfluorononanoic acid (PFNA)	375-95-1	T	ng/l				4.1	U	4.4	U	4.5	U	4.9	U
E537	Perfluorooctane Sulfonamide (FOSA)	754-91-6	T	ng/l				4.1	U	4.4	U	4.5	U	4.9	U
E537	Perfluorooctanesulfonic acid (PFOS)	1763-23-1	T	ng/l		10		2.6		2.7		1.5	J	1.5	J
E537	Perfluorooctanoic acid (PFOA)	335-67-1	T	ng/l		10		3		4		2.1		3.9	
E537	Perfluoropentanoic Acid (PFPeA)	2706-90-3	T	ng/l				2.3	J	5.4		4.5	U	18	
E537	Perfluorotetradecanoic acid (PFTA)	376-06-7	T	ng/l				4.1	U	4.4	U	4.5	U	4.9	U
E537	Perfluorotridecanoic Acid (PFTriA)	72629-94-8	T	ng/l				4.1	U	4.4	U	4.5	U	4.9	U
E537	Perfluoroundecanoic Acid (PFUnA)	2058-94-8	T	ng/l				4.1	U	4.4	U	4.5	U	4.9	U
SM 2320 B	Alkalinity, Total (As CaCO3)	ALK	T	mg/l				248		286		222		87.4	
SM 2340 C	Hardness (As CaCO3)	HARD	T	mg/l				383		263		250		164	
SM2540C	Total Dissolved Solids (Residue, Filterable)	TDS	D	mg/l				759		399		562		219	
SM5310C	Total Organic Carbon	TOC	T	mg/l				2.2		3.7		2.2		3.1	
SW6010	Aluminum	7429-90-5	T	ug/l				51.3	J	258		30.9	J	467	
SW6010	Antimony	7440-36-0	T	ug/l	3			60	U	60	U	60	U	60	U
SW6010	Arsenic	7440-38-2	T	ug/l	25			10	U	10	U	10	U	10	U
SW6010	Barium	7440-39-3	T	ug/l	1000			83.9		35.2		88.7		36.3	
SW6010	Beryllium	7440-41-7	T	ug/l	3			3	U	3	U	3	U	3	U
SW6010	Boron	7440-42-8	T	ug/l	1000			30.4	J	39.4	J	200	U	60	J
SW6010	Cadmium	7440-43-9	T	ug/l	5			5	U	5	U	5	U	5	U
SW6010	Calcium	7440-70-2	T	ug/l				94700		80100		78300		45500	
SW6010	Chromium, Total	7440-47-3	T	ug/l	50			10	U	10	U	10	U	10	U
SW6010	Cobalt	7440-48-4	T	ug/l				50	U	50	U	50	U	50	U
SW6010	Copper	7440-50-8	T	ug/l	200			20	U	20	U	20	U	20	U
SW6010	Iron	7439-89-6	T	ug/l	300			227		250		221		389	
SW6010	Lead	7439-92-1	T	ug/l	25			50	U	50	U	50	U	50	U
SW6010	Magnesium	7439-95-4	T	ug/l	35000			33900		16600		16700		8010	
SW6010	Manganese	7439-96-5	T	ug/l	300			136		23.2		117		22.9	
SW6010	Nickel	7440-02-0	T	ug/l	100			3.3	J	3.1	J	4.2	J	40	U
SW6010	Potassium	7440-09-7	T	ug/l				2410		3040		2240		3760	
SW6010	Selenium	7782-49-2	T	ug/l	10			10	U	10	U	10	U	10	U

						Location Description	4-REN-004-SW-04			4-REN-004-SW-05			4-REN-004-SW-06			4-REN-004-SW-07		
						Location ID	4-REN-004-005-02			4-REN-004-005-07			4-REN-004-005-06			4-REN-004-005-08		
						Sample ID	WS			WS			WS			WS		
						Matrix	R2112553-002			R2112553-007			R2112553-006			R2112553-008		
						Lab Sample ID	11/30/2021			11/30/2021			11/30/2021			11/30/2021		
						Sample Date	N			N			N			N		
						Sample Type Code												
Analytical Method	Chemical Name	cas_rn	fraction	Unit	NYSDEC Class GA	New York State MCL													
SW6010	Silver	7440-22-4	T	ug/l	50		10	U		10	U		10	U		10	U		
SW6010	Sodium	7440-23-5	T	ug/l	20000		129000			53700			110000			12600			
SW6010	Thallium	7440-28-0	T	ug/l	0.5		10	U		10	U		10	U		10	U		
SW6010	Vanadium	7440-62-2	T	ug/l			50	U		50	U		50	U		50	U		
SW6010	Zinc	7440-66-6	T	ug/l	2000		2.7	J		3.2	J		9	J		3.3	J		
SW7470	Mercury	7439-97-6	T	ug/l	0.7		0.2	U		0.2	U		0.2	U		0.2	U		
SW8260C	1,1,1,2-Tetrachloroethane	630-20-6	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	1,1,1-Trichloroethane (TCA)	71-55-6	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	1,1,2,2-Tetrachloroethane	79-34-5	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	1,1,2-Trichloroethane	79-00-5	T	ug/l	1		1	U		1	U		1	U		1	U		
SW8260C	1,1-Dichloroethane	75-34-3	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	1,1-Dichloroethene	75-35-4	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	1,2,3-Trichloropropane	96-18-4	T	ug/l	0.04		1	U		1	U		1	U		1	U		
SW8260C	1,2-Dibromo-3-Chloropropane	96-12-8	T	ug/l	0.04		2	U		2	U		2	U		2	U		
SW8260C	1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	T	ug/l	0.0006		1	U		1	U		1	U		1	U		
SW8260C	1,2-Dichlorobenzene	95-50-1	T	ug/l	3		1	U		1	U		1	U		1	U		
SW8260C	1,2-Dichloroethane	107-06-2	T	ug/l	0.6		1	U		1	U		1	U		1	U		
SW8260C	1,2-Dichloropropane	78-87-5	T	ug/l	1		1	U		1	U		1	U		1	U		
SW8260C	1,4-Dichlorobenzene	106-46-7	T	ug/l	3		1	U		1	U		1	U		1	U		
SW8260C	2-Hexanone	591-78-6	T	ug/l	50		5	U		5	U		5	U		5	U		
SW8260C	Acetone	67-64-1	T	ug/l	50		5	U		5	U		5	U		5	U		
SW8260C	Acrylonitrile	107-13-1	T	ug/l	5		10	U		10	U		10	U		10	U		
SW8260C	Benzene	71-43-2	T	ug/l	1		1	U		1	U		1	U		1	U		
SW8260C	Bromochloromethane	74-97-5	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Bromodichloromethane	75-27-4	T	ug/l	50		1	U		1	U		1	U		1	U		
SW8260C	Bromoform	75-25-2	T	ug/l	50		1	U		1	U		1	U		1	U		
SW8260C	Bromomethane	74-83-9	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Carbon Disulfide	75-15-0	T	ug/l	60		1	U		1	U		1	U		1	U		
SW8260C	Carbon Tetrachloride	56-23-5	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Chlorobenzene	108-90-7	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Chloroethane	75-00-3	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Chloroform	67-66-3	T	ug/l	7		1	U		1	U		1	U		1	U		
SW8260C	Chloromethane	74-87-3	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Cis-1,2-Dichloroethylene	156-59-2	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Cis-1,3-Dichloropropene	10061-01-5	T	ug/l	0.4		1	U		1	U		1	U		1	U		
SW8260C	Dibromochloromethane	124-48-1	T	ug/l	50		1	U		1	U		1	U		1	U		
SW8260C	Dibromomethane	74-95-3	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Ethylbenzene	100-41-4	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Iodomethane (Methyl Iodide)	74-88-4	T	ug/l	5		5	UJ		5	UJ		5	UJ		5	UJ		
SW8260C	m,p-Xylene	179601-23-1	T	ug/l	5		2	U		2	U		2	U		2	U		
SW8260C	Methyl Ethyl Ketone (2-Butanone)	78-93-3	T	ug/l	50		5	U		5	U		5	U		5	U		
SW8260C	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	T	ug/l			5	U		5	U		5	U		5	U		
SW8260C	Methylene Chloride	75-09-2	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	O-Xylene (1,2-Dimethylbenzene)	95-47-6	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Styrene	100-42-5	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Tetrachloroethylene (PCE)	127-18-4	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Toluene	108-88-3	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Trans-1,2-Dichloroethene	156-60-5	T	ug/l	5		1	U		1	U		1	U		1	U		
SW8260C	Trans-1,3-Dichloropropene	10061-02-6	T	ug/l	0.4		1	U		1	U		1	U		1	U		

						Location Description	4-REN-004-SW-04		4-REN-004-SW-05		4-REN-004-SW-06		4-REN-004-SW-07	
						Location ID	4-REN-004-005-02		4-REN-004-005-07		4-REN-004-005-06		4-REN-004-005-08	
						Sample ID	WS		WS		WS		WS	
						Matrix	R2112553-002		R2112553-007		R2112553-006		R2112553-008	
						Lab Sample ID	11/30/2021		11/30/2021		11/30/2021		11/30/2021	
						Sample Date	N		N		N		N	
						Sample Type Code								
Analytical Method	Chemical Name	cas_rn	fraction	Unit	NYSDEC Class GA	New York State MCL								
SW8260C	Trans-1,4-Dichloro-2-Butene	110-57-6	T	ug/l	5		1	UJ	1	UJ	1	UJ	1	UJ
SW8260C	Trichloroethylene (TCE)	79-01-6	T	ug/l	5		1	U	1	U	1	U	1	U
SW8260C	Trichlorofluoromethane	75-69-4	T	ug/l	5		1	U	1	U	1	U	1	U
SW8260C	Vinyl Acetate	108-05-4	T	ug/l			2	UJ	2	UJ	2	UJ	2	UJ
SW8260C	Vinyl Chloride	75-01-4	T	ug/l	2		1	U	1	U	1	U	1	U
SW8260C	Xylenes, Total	XYLENES	T	ug/l	5		3	U	3	U	3	U	3	U
SW8270D	Acenaphthene	83-32-9	T	ug/l	20		0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Acenaphthylene	208-96-8	T	ug/l			0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Anthracene	120-12-7	T	ug/l	50		0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Benzo(A)Anthracene	56-55-3	T	ug/l	0.002		0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Benzo(A)Pyrene	50-32-8	T	ug/l	0		0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Benzo(B)Fluoranthene	205-99-2	T	ug/l	0.002		0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Benzo(G,H,I)Perylene	191-24-2	T	ug/l			0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Benzo(K)Fluoranthene	207-08-9	T	ug/l	0.002		0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Chrysene	218-01-9	T	ug/l	0.002		0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Dibenz(A,H)Anthracene	53-70-3	T	ug/l			0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Fluoranthene	206-44-0	T	ug/l	50		0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Fluorene	86-73-7	T	ug/l	50		0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Indeno(1,2,3-C,D)Pyrene	193-39-5	T	ug/l	0.002		0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ
SW8270D	Naphthalene	91-20-3	T	ug/l	10		0.2	U	0.2	U	0.078	J	0.064	J
SW8270D	Phenanthrene	85-01-8	T	ug/l	50		0.2	U	0.2	U	0.2	U	0.2	U
SW8270D	Pyrene	129-00-0	T	ug/l	50		0.2	U	0.2	U	0.2	U	0.2	U