



December 29, 2020

Ms. Isabel Rodrigues Fredricks
US Environmental Protection Agency – Region 2
290 Broadway, 20th Floor
New York, NY 10007-1866

Re: 2020 Groundwater Monitoring Well Sampling Results
Jones Sanitation Superfund Site – Cardinal Road, Hyde Park, NY

Dear Ms. Rodrigues Fredricks:

At the request of USEPA, Henningson, Durham & Richardson Architecture and Engineering, P.C. (HDR) conducted a groundwater sampling program of select on-site monitoring wells during September 2020 in support of the Fourth Five-Year Review (FYR) Report for Jones Sanitation Site. The same eleven onsite wells were last sampled in 2015 in support of the Third FYR. As was the case for the 2015 sampling event, the results for 2020 indicate only trace levels of site related contaminants in a small subset of the onsite wells.

The attached Tables 1 – 4 and Figures 1 & 2 summarize the volatile organic compounds (VOCs), Target Analyte List (TAL) Metals (total and dissolved fractions), and emerging contaminants 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS) analyzed from the groundwater monitoring wells sampled during the September 10 – 15, 2020 sampling event. All data was tabulated and compared to New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) Class GA Groundwater Criteria or in the case of emerging contaminants available guidance values including drinking water standards. Table 4 summarizes those analytes detected at concentrations exceeding their applicable comparison criteria concentrations.

HDR collected eleven field samples from well pairs JSMW-1A/-1B, JSMW-3A/-3B, JSMW-4A/-4B, JSMW-5A/-5B, JSMW-8A/-8B and single well JSMW-6A. All eleven samples were analyzed for VOCs via EPA Method 8260C and TAL Metals via EPA Methods 6010B, 6020A, 7470A, and 7471B. Six field samples were collected from wells JSMW-1A, JSMW-3A, JSMW-4A, JSMW-5A, JSMW-6A, and JSMW-8A and were analyzed for PFAS via EPA Modified Method 537, and 1,4-dioxane via EPA Method 8270D Selected Ion Monitoring (SIM).

One field duplicate sample for all analyses was collected from groundwater monitoring well JSMW-4A. HDR collected one equipment blank from a new, dedicated high-density polyethylene (HDPE) bailer for all analyses. One trip blank for VOC analysis accompanied each shipment for a total of 3 trip blanks during the sampling event.

All groundwater and quality assurance/quality control (QA/QC) samples designated for laboratory analysis were hand delivered by HDR in accordance with standard chain-of-



custody (COC) protocols to the Eurofins TestAmerica laboratory service center in Albany, New York. The samples were then further transferred by the lab under COC protocols to their appropriate facilities for each analysis.

Well purging and sample collection was performed in accordance with the NYSDEC document *PFAS Groundwater Samples from Monitoring Wells Sample Protocol – Revision 1.2* dated August 9, 2018, for PFAS sample collection. This protocol was followed at each monitoring well to ensure consistency in the sampling program and eliminated the possibility of cross contamination. Sampling was conducted via standard three-well volume purging and sampling methods with appropriate PFAS-free sampling equipment (hand bailing using a PFAS sampling compliant HDPE bailer and bailer twine). Standard groundwater sampling water quality parameters were monitored while purging each well to verify that the samples were representative of groundwater from the monitored aquifers. Upon completion of sampling at each well, all purge and rinse waters were discharged to ground surface in the vicinity of the wellhead from which they were derived. Specific sampling procedures and protocols for VOCs and metals sampling are outlined in HDR's Long-Term Monitoring Plan (LTMP) for the Jones Sanitation Site that was submitted and approved by USEPA in 2002.

Based on the results from the 2020 groundwater sampling program, the following observations and trends were noted:

With only a couple notable exceptions, the occurrence and concentrations of site-related VOCs in groundwater continues to be very stable. A small number of VOCs were detected at low levels in eight of the eleven wells sampled during 2020, however those that were present in concentrations exceeding applicable standards were limited to wells JSMW-3B, JSMW-4A, JSMW-4B, and JSMW-8A. No VOCs were detected in wells JSMW-1A (upgradient shallow well), JSMW-5B, or JSMW-6A. Compounds detected at concentrations exceeding their respective NYSDEC Class GA groundwater standards included cis-1,2-dichloroethylene (cis-1,2-DCE), chlorobenzene, and 1,2-dichloroethane (1,2-DCA). The detections of cis-1,2-DCE at concentrations exceeding applicable standards occurred in wells JSMW-4A (2.6 µg/L) and JSMW-4B (0.93 µg/L) and these exceedances were not observed during the previous 2015 sampling event. All other exceedances were at concentrations very similar to those observed from previous sampling events. Various other VOC detections were made, typically for other chlorinated VOCs (e.g. tetrachloroethylene and trichloroethylene) and their breakdown products, at levels below their respective NYSDEC Class GA groundwater standards. Table 1 provides a comprehensive summary of the analytical data for VOCs in groundwater from the sampled wells and Figure 1 shows the occurrence of only those VOCs detected at concentrations exceeding their respective groundwater standards during the 2020 sampling program.

Results from the analysis of the samples for inorganic constituents in groundwater (total and dissolved (lab filtered) metals) were also quite consistent with those from previous sampling events. Site groundwater and monitor wells continue to exhibit elevated levels of sodium, iron, and manganese for many of the locations sampled throughout the various



sampling events. These widespread elevated concentrations are attributed to overall site geology and not considered to be site related contaminants of concern. As has been the case during previous sampling events, a few less commonly present metals were detected in various combinations of wells and total / dissolved fractions from the samples collected during the 2020 program. Thallium was detected in both total and dissolved samples from both the JSMW-3A and -3B shallow and deeper well pair at concentrations exceeding the applicable Class GA standard for this metal. Similarly, antimony concentrations exceeded standards in JSMW-3A, -3B, and -8A (for various sample fractions in each well). Both lead and zinc were present in the total fraction sample from JSMW-5A at concentrations exceeding their respective Class GA standards. The only other metals exceedance of note was a detection of chromium in upgradient well JSMW-1A. Given the location of this well at the very margin of the site property, this detection and exceedance is not considered to be related to site activities. In general, aside from the widespread detection and exceedances among constituents related to the site or geology or regionally specific background levels, it appears that there continues to be no significant or widespread presence of noteworthy inorganics / metals in the site groundwater. Table 2 summarizes the total and dissolved fraction samples results from the 2020 groundwater sampling program and Figure 1 also includes the summary of inorganic constituents detected at concentrations exceeding their applicable NYSDEC Class GA standards.

The 2020 groundwater sampling program included additional analysis to screen for the presence of several emerging contaminants that have not been assessed at this site. The emerging contaminants include 1,4-dioxane and PFAS related compounds. As emerging contaminants these compounds do not currently have established New York State Ambient Water Quality Standards (AWQS) or Federal Maximum Contaminant Levels (MCLs). New York State has recently adopted drinking water MCLs for 1,4-dioxane (1 ug/l), PFOS (10 ng/l) and PFOA (10 ng/l). USEPA guidance regarding PFAS related compounds includes a Lifetime Drinking Water Health Advisory (HA) of 70 ng/l for both PFOA and PFOS (combined or individually). Since the shallow groundwater aquifer at the Jones Sanitation Site is not used as source of drinking water the NYS MCLs and USEPA HA guidance are not applicable to the 2020 analytical results but can be used as screening levels to compare the data with. Further guidance found in the Guidelines for Sampling and Analysis of PFAS under NYSDEC's Part 375 Remedial Programs (NYSDEC, October 2020) provides additional screening levels of 100 ng/l for any other individual PFAS compound and a total PFAS concentration of 500 ng/l or less in groundwater.

The emerging contaminant 1,4-dioxane was not detected in any of the samples collected in 2020 (Table 1). The reporting detection limit for this compound for each sample was 0.2 ug/l (well below the NYS drinking water MCL). Since 1,4-dioxane was not detected in any of the samples it does not appear that this compound is of further concern in the shallow groundwater at this site.

PFAS compounds were detected in 6 of the 7 groundwater samples (the upgradient well JSMW-01A was ND) (Table 3 & Figure 2). Comparing the results to the screening levels



outlined above, PFOS was detected above the screening levels in JSMW-03A (118 ng/l), JSMW-04A (22.2 ng/l), the JSMW-04A field duplicate (22.7 ng/l), and JSMW-08A (15.3 ng/l). Perfluorooctanoic acid (PFOA) was detected above the screening level in one sample, JSMW-03A (25.4 ng/l). The PFOS and PFOA results at JSMW-03A were also found to be above the USEPA HA for PFOS and PFAS (70 ng/l) with a combined concentration of 143.4 ng/l. The results were also compared to the NYSDEC guidelines that provides screening levels of 100 ng/l for any other individual PFAS compound and a total PFAS concentration of 500 ng/l or less. Several other PFAS related compounds were detected in the groundwater samples but the results are all below the screening level of 100 ng/l for individual compounds. None of the groundwater samples were found to be above the screening level of 500 ng/l for total PFAS related compounds. Overall, the noted concentrations are not significantly above the screening levels and an additional assessment of the results will be completed once AWQS are established for these compounds.

If you have any questions, please do not hesitate to contact us. Data package and data validation report are available upon request.

Sincerely,

A handwritten signature in black ink that appears to read "Scott D. Englert".

Scott Englert
Hydrogeologist
HDR

CC:
Michael Lehtinen
George Karalus
Scott Fein

 Monitoring Wells

Notes:

Results were compared to NYSDEC TOGS Class GA Criteria. All results are in ug/l. Only exceedances are shown.

Qualifiers:

J - Estimated value. +/- indicates direction of bias.

T - An associated lab quality control sample is out of range.

Analyte	NYSDEC TOGS Class GA Criteria (ug/l)
Inorganics	
Antimony	3
Chromium, Total	50
Iron	300
Lead	25
Manganese	300
Sodium	20000
Thallium	0.5
Zinc	2000
VOCs	
1,2-Dichloroethane	0.6
Chlorobenzene	5
Cis-1,2-Dichloroethylene	5

0 Miles 0.04

JSMW-05A	JSMW-5A-20200911 9/11/2020
Inorganics	
Iron, Total	733
Lead, Total	35.3
Zinc, Total	2610

JSMW-04B	JSMW-4B-20200915 9/15/2020
VOCs	
1,2-Dichloroethane	0.93 J

JSMW-08A	JSMW-8A-20200910 9/10/2020
Inorganics	
Antimony, Dissolved	4.4 J
Iron, Total	6260
Manganese, Dissolved	1120 J
Manganese, Total	993
Sodium, Dissolved	27100 J
Sodium, Total	26200
Thallium, Dissolved	6.9 J
VOCs	
Chlorobenzene	6

JSMW-06A	JSMW-6A-20200911 9/11/2020
Inorganics	
Sodium, Dissolved	51800 J
Sodium, Total	50400

JSMW-01A	JSMW-1A-20200914 9/14/2020
Inorganics	
Chromium, Total	508
Iron, Total	2760

JSMW-08B	JSMW-8B-20200910 9/10/2020
Inorganics	
Iron, Total	3920
Manganese, Dissolved	410 J
Manganese, Total	400
Sodium, Dissolved	33800 J
Sodium, Total	36000

JSMW-03A	JSMW-3A-20200914 9/14/2020
Inorganics	
Antimony, Total	6.4 J
Iron, Dissolved	3120 J
Iron, Total	41200
Manganese, Dissolved	979 J
Manganese, Total	996 T
Thallium, Dissolved	7.1 J
Thallium, Total	7.8 J

JSMW-03B	JSMW-3B-20200914 9/14/2020
Inorganics	
Antimony, Dissolved	4.7 J
Antimony, Total	7 J
Iron, Total	8180
Manganese, Dissolved	1400 J
Manganese, Total	1480
Thallium, Dissolved	8.1 J
Thallium, Total	10.9 J
VOCs	
Chlorobenzene	13

JSMW-04A	JSMW-4A-20200915	JSMW-D-20200915 9/15/2020
Inorganics		
Iron		447
VOCs		
1,2-Dichloroethane	2.6 J+	2.3
Cis-1,2-Dichloroethylene	6 J+	5.5

C, New York State; GeoEye, Maxar, Microsoft

MONITORING WELL SAMPLING RESULTS (SEPTEMBER 2020): INORGANICS & VOCs

JONES SANITATION

FIGURE 1

 Monitoring Wells

Notes:

PFAS results were compared to NYSDEC Part 375 PFAS Guidelines. 1,4-Dioxane results were compared to the NYSDEC drinking water MCL. All results are in ng/l. Only exceedances are shown.

Analyte	NYSDEC Part 375 PFAS Guidelines
PFAS	
Perfluorooctanesulfonic acid (PFOS)	10
Perfluorooctanoic acid (PFOA)	10



0 Miles 0.04



New York State, GeoEye, Maxar, Microsoft

MONITORING WELL SAMPLING RESULTS (SEPTEMBER 2020): PFAS & 1,4-D

JONES SANITATION

FIGURE 2



				Location:		JSMW-01A		JSMW-01B		JSMW-03A		JSMW-03B		JSMW-04A		JSMW-04A		JSMW-04B		JSMW-05A			
				Sample:	JSMW-1A-20200914	9/14/2020	JSMW-1B-20200914	9/14/2020	JSMW-3A-20200914	9/14/2020	JSMW-3B-20200914	9/14/2020	JSMW-4A-20200915	9/15/2020	JSMW-D-20200915	9/15/2020	JSMW-4B-20200915	9/15/2020	JSMW-5A-20200911	9/11/2020			
Analyte	CAS	Fraction	NYSDEC TOGS Class GA Criteria	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual									
VOCs																							
1,1,1-Trichloroethane (TCA)	71-55-6	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
1,1,2,2-Tetrachloroethane	79-34-5	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
1,1,2-Trichloroethane	79-00-5	NA	1	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
1,1-Dichloroethane	75-34-3	NA	5	ug/l	1	U	1	U	1	U	0.3	J	0.31	J+	0.3	J	1	U	1	U	1	U	
1,1-Dichloroethene	75-35-4	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	UT	1	UT	1	UT	1	U	
1,2,4-Trichlorobenzene	120-82-1	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	UJ	1	UJ	1	UJ	1	U	
1,2-Dibromo-3-Chloropropane	96-12-8	NA	0.04	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	NA	0.0006	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
1,2-Dichlorobenzene	95-50-1	NA	3	ug/l	1	U	1	U	1	U	1.2			1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	107-06-2	NA	0.6	ug/l	1	U	1	U	1	U	1	U	1	U	2.6	J+	2.3		0.93	J	1	U	
1,2-Dichloropropane	78-87-5	NA	1	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
1,3-Dichlorobenzene	541-73-1	NA	3	ug/l	1	U	1	U	1	U	0.43	J	1	U	1	U	1	U	1	U	1	U	
1,3-Dichloropropene	542-75-6	NA	0.4	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
1,4-Dichlorobenzene	106-46-7	NA	3	ug/l	1	U	1	U	1	U	0.76	J	1	U	1	U	1	U	1	U	1	U	
2-Hexanone	591-78-6	NA	50	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	
Acetone	67-64-1	NA	50	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	
Benzene	71-43-2	NA	1	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Bromodichloromethane	75-27-4	NA	50	ug/l	1	U	1	U	1	U	1	U	1	U	1	UT	1	UT	1	UT	1	U	
Bromoform	75-25-2	NA	50	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Bromomethane	74-83-9	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Carbon Disulfide	75-15-0	NA	60	ug/l	1	U	1	U	1	U	0.81	J	13		0.97	J+	0.92	J	1	U	1	U	
Carbon Tetrachloride	56-23-5	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Chlorobenzene	108-90-7	NA	5	ug/l	1	U	1	U	0.81	J	13		0.97	J+	0.92	J	1	U	1	U	1	U	
Chloroethane	75-00-3	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Chloroform	67-66-3	NA	7	ug/l	1	U	0.37	J	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Chloromethane	74-87-3	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Cis-1,2-Dichloroethylene	156-59-2	NA	5	ug/l	1	U	1	U	1	U	1.6		6	J+	5.5		1.2		1	U	1	U	
Cis-1,3-Dichloropropene	10061-01-5	NA		ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Cyclohexane	110-82-7	NA		ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Dibromochloromethane	124-48-1	NA	50	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Dichlorodifluoromethane	75-71-8	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Ethylbenzene	100-41-4	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Isopropylbenzene (Cumene)	98-82-8	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Methyl Acetate	79-20-9	NA		ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	
Methyl Ethyl Ketone (2-Butanone)	78-93-3	NA	50	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	NA		ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	
Methylcyclohexane	108-87-2	NA		ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Methylene Chloride	75-09-2	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Styrene	100-42-5	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Tert-Butyl Methyl Ether	1634-04-4	NA	10	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Tetrachloroethylene (PCE)	127-18-4	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	4.2	J+	3.4		0.26	J	1	U	
Toluene	108-88-3	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Trans-1,2-Dichloroethene	156-60-5	NA	5	ug/l	1	U	1	U	1	U	1.1		1	U	1	U	1	U	1	U	1	U	
Trans-1,3-Dichloropropene	10061-02-6	NA		ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Trichloroethylene (TCE)	79-01-6	NA	5	ug/l	1	U	1	U	1	U	0.51	J	1.6	J+	1.4		1	U	1	U	1	U	
Trichlorofluoromethane	75-69-4	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	
Vinyl Chloride	75-01-4	NA	2	ug/l	1	U	1	U	1	U	0.5	J	0.4	J+	0.4	J	1	U	1	U	1	U	
Xylenes	1330-20-7	NA	5	ug/l	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	
SVOCs																							
1,4-Dioxane (P-Dioxane)	123-9																						

Notes

VALUE is non-detect.

VALUE exceeds NYS TOGS 1.1.1 Class GA Guidance Values.

VALUE is non-detect but the reporting limit exceeds the criteria.

				Location: Sample: Sample Date:	JSMW-05B JSMW-5B-20200911 9/11/2020		JSMW-06A JSMW-6A-20200911 9/11/2020		JSMW-08A JSMW-8A-20200910 9/10/2020		JSMW-08B JSMW-8B-20200910 9/10/2020		Equipment Blank JS-EB-20200911 9/11/2020		Trip Blank TB-20200911 9/11/2020		Trip Blank TB-20200914 9/14/2020		Trip Blank TB-20200915 9/15/2020	
Analyte	CAS	Fraction	NYSDEC TOGS Class GA Criteria	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOCs																				
1,1,1-Trichloroethane (TCA)	71-55-6	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	79-34-5	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	NA	1	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	75-34-3	NA	5	ug/l	1	U	1	U	0.3	J	0.32	J	1	U	1	U	1	U	1	U
1,1-Dichloroethene	75-35-4	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	UT
1,2,4-Trichlorobenzene	120-82-1	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	UJ
1,2-Dibromo-3-Chloropropane	96-12-8	NA	0.04	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	NA	0.0006	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	95-50-1	NA	3	ug/l	1	U	1	U	0.46	J	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	107-06-2	NA	0.6	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane	78-87-5	NA	1	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	541-73-1	NA	3	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichloropropene	542-75-6	NA	0.4	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	106-46-7	NA	3	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Hexanone	591-78-6	NA	50	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	NA	50	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Benzene	71-43-2	NA	1	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	75-27-4	NA	50	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	UT
Bromoform	75-25-2	NA	50	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	74-83-9	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	75-15-0	NA	60	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	56-23-5	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	108-90-7	NA	5	ug/l	1	U	1	U	6		0.42	J	1	U	1	U	1	U	1	U
Chloroethane	75-00-3	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform	67-66-3	NA	7	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	74-87-3	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,2-Dichloroethylene	156-59-2	NA	5	ug/l	1	U	1	U	0.29	J	1	U	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene	10061-01-5	NA		ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane	110-82-7	NA		ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	124-48-1	NA	50	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	75-71-8	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	100-41-4	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene (Cumene)	98-82-8	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Acetate	79-20-9	NA		ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Methyl Ethyl Ketone (2-Butanone)	78-93-3	NA	50	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	NA		ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Methylcyclohexane	108-87-2	NA		ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	75-09-2	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	100-42-5	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tert-Butyl Methyl Ether	1634-04-4	NA	10	ug/l	1	U	1	U	1	U	0.52	J	1	U	1	U	1	U	1	U
Tetrachloroethylene (PCE)	127-18-4	NA	5	ug/l	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	108-88-3	NA	5	ug/l	1	U	1</													

				Location:		JSMW-01A		JSMW-01B		JSMW-03A		JSMW-03B		JSMW-04A		JSMW-04A		JSMW-04B		JSMW-05A		JSMW-05B															
				Sample: JSMW-1A-20200914		9/14/2020		JSMW-1B-20200914		9/14/2020		JSMW-3A-20200914		9/14/2020		JSMW-3B-20200914		9/14/2020		JSMW-4A-20200915		9/15/2020		JSMW-D-20200915		9/15/2020		JSMW-4B-20200915		9/15/2020		JSMW-5A-20200911		9/11/2020		JSMW-5B-20200911	
Analyte	CAS	Fraction	NYSDEC TOGS Class GA Criteria	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual																			
Inorganics																																					
Aluminum	7429-90-5	D		ug/l	200	UJ	200	UJ	200	UJ	200	UJ	200	UJ	200	UJ																					
Aluminum	7429-90-5	T		ug/l	633		178	J	200	U	79	J	200	U	200	U	200	U	200	U	102	J	200	U	102	J	200	U									
Antimony	7440-36-0	D	3	ug/l	20	UJ	20	UJ	20	UJ	4.7	J	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ									
Antimony	7440-36-0	T	3	ug/l	20	U	20	U	6.4	J	7	J	20	U	20	U	20	U	20	U	20	U	20	U	20	U	20	U									
Arsenic	7440-38-2	D	25	ug/l	15	UJ	15	UJ	15	UJ	5.4	J	15	UJ	15	UJ	15	UJ	15	UJ	15	UJ	15	UJ	15	UJ	15	UJ									
Arsenic	7440-38-2	T	25	ug/l	15	U	3.4	J	3.6	J	10.1	J	15	U	15	U	15	U	15	U	15	U	15	U	15	U	15	U									
Barium	7440-39-3	D	1000	ug/l	200	UJ	52.6	J	70.4	J	91.8	J	70.7	J	71.3	J	148	J	87.5	J	280	J															
Barium	7440-39-3	T	1000	ug/l	41.9	J	58.5	J	135	J	111	J	73.6	J	70.7	J	137	J	88	J	256	J															
Beryllium	7440-41-7	D	3	ug/l	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ																					
Beryllium	7440-41-7	T	3	ug/l	0.43	J	0.2	J	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U									
Cadmium	7440-43-9	D	5	ug/l	4	UJ	4	UJ	4	UJ	4	UJ	4	UJ	4	UJ																					
Cadmium	7440-43-9	T	5	ug/l	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U									
Calcium	7440-70-2	D		ug/l	66200	J	86200	J	113000	J	84200	J	105000	J	109000	J	102000	J	94000	J	96800	J															
Calcium	7440-70-2	T		ug/l	72400		90400		113000		90200		114000		102000		95500		94300		92400																
Chromium, Total	7440-47-3	D	50	ug/l	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ																					
Chromium, Total	7440-47-3	T	50	ug/l	508		10	U	10	U	10	U	10	U	10	U																					
Cobalt	7440-48-4	D		ug/l	50	UJ	50	UJ	50	UJ	50	UJ	50	UJ	2.1	J																					
Cobalt	7440-48-4	T		ug/l	50	U	50	U	5.9	J	2.5	J																									
Copper	7440-50-8	D	200	ug/l	25	UJ	25	UJ	25	UJ	25	UJ	25	UJ	25	UJ																					
Copper	7440-50-8	T	200	ug/l	10.4	J	25	U	25	U	25	U	25	U	25	U																					
Iron	7439-89-6	D	300	ug/l	150	UJ	150	UJ	3120	J	150	UJ	150	UJ	150	UJ	150	UJ	150	UJ	150	UJ	150	UJ	150	UJ	150	UJ									
Iron	7439-89-6	T	300	ug/l	2760		277		41200		8180		259		447		106	J	733		94.3	J															
Lead	7439-92-1	D	25	ug/l	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ																					
Lead	7439-92-1	T	25	ug/l	5.2	J	2.9	J	4.2	J	3.9	J	10	U	10	U	10	U	10	U	10	U	10	U	10	U	35.3										
Magnesium	7439-95-4	D	35000	ug/l	3610	J	9700	J	10900	J	8240	J	8510	J	8830	J	13900	J	16900	J	12700	J															
Magnesium	7439-95-4	T	35000	ug/l	4140	J	10400		11100		8790		9150		8320		12900		16100		11700																
Manganese	7439-96-5	D																																			

				Location:	JSMW-06A	JSMW-08A	JSMW-08B	Equipment Blank		
				Sample:	JSMW-6A-20200911	JSMW-8A-20200910	JSMW-8B-20200910	JS-EB-20200911		
				Sample Date:	9/11/2020	9/10/2020	9/10/2020	9/11/2020		
Analyte	CAS	Fraction	NYSDEC TOGS Class GA Criteria	Units	Result	Qual	Result	Qual	Result	
Inorganics										
Aluminum	7429-90-5	D		ug/l	200	UJ	200	UJ	200	UJ
Aluminum	7429-90-5	T		ug/l	200	U	200	U	200	U
Antimony	7440-36-0	D	3	ug/l	20	UJ	4.4	J	20	UJ
Antimony	7440-36-0	T	3	ug/l	20	U	20	U	20	U
Arsenic	7440-38-2	D	25	ug/l	4.7	J	15	UJ	3.8	J
Arsenic	7440-38-2	T	25	ug/l	15	U	3.7	J	15	U
Barium	7440-39-3	D	1000	ug/l	143	J	113	J	190	J
Barium	7440-39-3	T	1000	ug/l	125	J	115	J	198	J
Beryllium	7440-41-7	D	3	ug/l	2	UJ	2	UJ	2	UJ
Beryllium	7440-41-7	T	3	ug/l	2	U	2	U	2	U
Cadmium	7440-43-9	D	5	ug/l	4	UJ	4	UJ	4	UJ
Cadmium	7440-43-9	T	5	ug/l	4	U	4	U	4	U
Calcium	7440-70-2	D		ug/l	115000	J	87800	J	91600	J
Calcium	7440-70-2	T		ug/l	107000		81300		94200	
Chromium, Total	7440-47-3	D	50	ug/l	10	UJ	10	UJ	10	UJ
Chromium, Total	7440-47-3	T	50	ug/l	10	U	10	U	10	U
Cobalt	7440-48-4	D		ug/l	50	UJ	50	UJ	50	UJ
Cobalt	7440-48-4	T		ug/l	50	U	50	U	50	U
Copper	7440-50-8	D	200	ug/l	25	UJ	25	UJ	25	UJ
Copper	7440-50-8	T	200	ug/l	25	U	25	U	25	U
Iron	7439-89-6	D	300	ug/l	150	UJ	150	UJ	150	UJ
Iron	7439-89-6	T	300	ug/l	168		6260		3920	
Lead	7439-92-1	D	25	ug/l	2.9	J	2.4	J	10	UJ
Lead	7439-92-1	T	25	ug/l	10	U	10	U	10	U
Magnesium	7439-95-4	D	35000	ug/l	9510	J	7170	J	10200	J
Magnesium	7439-95-4	T	35000	ug/l	8640		6480		10300	
Manganese	7439-96-5	D	300	ug/l	18.7	J	1120	J	410	J
Manganese	7439-96-5	T	300	ug/l	30.4		993		400	
Mercury	7439-97-6	D	0.7	ug/l	0.2	UJ	0.2	UJ	0.2	UJ
Mercury	7439-97-6	T	0.7	ug/l	0.2	U	0.2	U	0.2	U
Nickel	7440-02-0	D	100	ug/l	40	UJ	40	UJ	40	UJ
Nickel	7440-02-0	T	100	ug/l	40	U	40	U	40	U
Potassium	7440-09-7	D		ug/l	686	J	2700	J	2010	J
Potassium	7440-09-7	T		ug/l	813	J	2840	J	2280	J
Selenium	7782-49-2	D	10	ug/l	20	UJ	20	UJ	20	UJ
Selenium	7782-49-2	T	10	ug/l	20	U	20	U	20	U
Silver	7440-22-4	D	50	ug/l	10	UJ	10	UJ	10	UJ
Silver	7440-22-4	T	50	ug/l	10	U	10	U	10	U
Sodium	7440-23-5	D	20000	ug/l	51800	J	27100	J	33800	J
Sodium	7440-23-5	T	20000	ug/l	50400		26200		36000	
Thallium	7440-28-0	D	0.5	ug/l	20	UJ	6.9	J	20	UJ
Thallium	7440-28-0	T	0.5	ug/l	20	U	20	U	20	U
Vanadium	7440-62-2	D		ug/l	50	UJ	50	UJ	50	UJ
Vanadium	7440-62-2	T		ug/l	50	U	50	U	50	U
Zinc	7440-66-6	D	2000	ug/l	30	UJ	30	UJ	30	UJ
Zinc	7440-66-6	T	2000	ug/l	30	U	30	U	30	U

Notes:*VALUE* is non-detect.*VALUE* exceeds NYS TOGS 1.1.1 Class GA Guidance Values.*VALUE* is non-detect but the reporting limit exceeds the criteria.

				Location: Sample: Sample Date:	JSMW-01A JSMW-1A-20200914 9/14/2020	JSMW-03A JSMW-3A-20200914 9/14/2020	JSMW-04A JSMW-4A-20200915 9/15/2020	JSMW-04A JSMW-D-20200915 9/15/2020	JSMW-05A JSMW-5A-20200911 9/11/2020	JSMW-06A JSMW-6A-20200911 9/11/2020	JSMW-08A JSMW-8A-20200910 9/10/2020	Equipment Blank JS-EB-20200911 9/11/2020					
Analyte	CAS	Fraction	NYSDEC Part 375 PFAS Guidelines	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	
PFAS																	
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	39108-34-4	SPE3535	100	ng/l	1.78	U	1.72	U	1.71	U	1.72	U	1.73	U	1.69	U	
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	27619-97-2	SPE3535	100	ng/l	4.45	U	4.29	U	4.28	U	4.31	U	4.33	U	4.23	U	
N-ethyl perfluorooctanesulfonamidoacetic acid	2991-50-6	SPE3535	100	ng/l	4.45	U	6.49		1.23	J	1.45	J	4.33	U	4.23	U	
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2355-31-9	SPE3535	100	ng/l	4.45	U	5.67	T	2.62	J	2.59	J	4.33	U	4.23	U	
Perfluorobutanesulfonic acid (PFBS)	375-73-5	SPE3535	100	ng/l	1.78	U	2.54		0.94	J	0.92	J	1.73	U	1.69	U	
Perfluorobutanoic Acid	375-22-4	SPE3535	100	ng/l	4.45	U	5.84		2.64	J	2.51	J	1.37	J	4.23	U	
Perfluorodecanesulfonic acid (PFDS)	335-77-3	SPE3535	100	ng/l	1.78	U	1.72	U	1.71	U	1.72	U	1.73	U	1.69	U	
Perfluorodecanoic acid (PFDA)	335-76-2	SPE3535	100	ng/l	1.78	U	1.61	J	0.41	J	1.72	U	1.73	U	1.69	U	
Perfluorododecanoic acid (PFDoA)	307-55-1	SPE3535	100	ng/l	1.78	U	1.72	U	1.71	U	1.72	U	1.73	U	1.69	U	
Perfluoroheptanesulfonic acid (PFHps)	375-92-8	SPE3535	100	ng/l	1.78	U	1.98		0.42	J	0.41	J	1.73	U	1.69	U	
Perfluoroheptanoic acid (PFHpA)	375-85-9	SPE3535	100	ng/l	1.78	U	5.21		1.82		1.87		0.43	J	1.69	U	
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	SPE3535	100	ng/l	1.78	U	7.64		1.7	J	1.71	J	1.73	U	1.69	U	
Perfluorohexanoic acid (PFHxA)	307-24-4	SPE3535	100	ng/l	1.78	U	5.77		2.04		2.15		1.73	U	1.69	U	
Perfluoronanoic acid (PFNA)	375-95-1	SPE3535	100	ng/l	1.78	U	2.69		0.68	J	0.78	J	1.73	U	1.69	U	
Perfluorooctane Sulfonamide (FOSA)	754-91-6	SPE3535	100	ng/l	1.78	U	0.88	J	1.71	U	0.64	J	1.73	U	1.69	U	
Perfluoropentanoic Acid (PFPeA)	2706-90-3	SPE3535	100	ng/l	1.78	U	5.46		2.07		2.13		1.73	U	1.69	U	
Perfluorotetradecanoic acid (PFTA)	376-06-7	SPE3535	100	ng/l	1.78	U	1.72	U	1.71	U	1.72	U	1.73	U	1.69	U	
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	72629-94-8	SPE3535	100	ng/l	1.78	U	1.72	U	1.71	U	1.72	U	1.73	U	1.69	U	
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	SPE3535	100	ng/l	1.78	U	1.72	U	1.71	U	1.72	U	1.73	U	1.69	U	
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	SPE3535	10	ng/l	1.78	U	118		22.2		22.7		2.59		1.69	U	
Perfluorooctanoic acid (PFOA)	335-67-1	SPE3535	10	ng/l	1.78	U	25.4		8.24		7.7		1.94		1.69	U	
Total PFAS				500	ng/l	4.45	U	195.18		47.01		47.56		6.33		4.23	U
																34.98	
																4.45	U

Notes:

VALUE is non-detect.

VALUE exceeds the NYSDEC Part 375 PFAS Guidelines.

VALUE is non-detect but the reporting limit exceeds the criteria.

				Location:	JSMW-01A		JSMW-03A		JSMW-03B		JSMW-04A		JSMW-04A		JSMW-04B		JSMW-05A		JSMW-06A		JSMW-08A		JSMW-08B	
				Sample:	JSMW-1A-20200914		JSMW-3A-20200914		JSMW-3B-20200914		JSMW-4A-20200915		JSMW-D-20200915		JSMW-4B-20200915		JSMW-5A-20200911		JSMW-6A-20200911		JSMW-8A-20200910		JSMW-8B-20200910	
				Sample Date:	9/14/2020		9/14/2020		9/14/2020		9/15/2020		9/15/2020		9/15/2020		9/11/2020		9/11/2020		9/10/2020		9/10/2020	
Analyte	CAS	Fraction	NYSDEC TOGS Class GA Criteria	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Inorganics																								
Antimony	7440-36-0	D	3	ug/l	NE		NE		4.7	J	NE		NE		NE		NE		NE		4.4	J	NE	
Antimony	7440-36-0	T	3	ug/l	NE		6.4	J	7	J	NE		NE		NE		NE		NE		NE		NE	
Chromium, Total	7440-47-3	T	50	ug/l	508		NE		NE		NE		NE		NE		NE		NE		NE		NE	
Iron	7439-89-6	D	300	ug/l	NE		3120	J	NE		NE		NE		NE		NE		NE		NE		NE	
Iron	7439-89-6	T	300	ug/l	2760		41200		8180		NE		447		NE		733		NE		6260		3920	
Lead	7439-92-1	T	25	ug/l	NE		NE		NE		NE		NE		NE		35.3		NE		NE		NE	
Manganese	7439-96-5	D	300	ug/l	NE		979	J	1400	J	NE		NE		NE		NE		NE		1120	J	410	J
Manganese	7439-96-5	T	300	ug/l	NE		996	T	1480		NE		NE		NE		NE		NE		993		400	
Sodium	7440-23-5	D	20000	ug/l	NE		NE		NE		NE		NE		NE		NE		51800	J	27100	J	33800	J
Sodium	7440-23-5	T	20000	ug/l	NE		NE		NE		NE		NE		NE		NE		50400		26200		36000	
Thallium	7440-28-0	D	0.5	ug/l	NE		7.1	J	8.1	J	NE		NE		NE		NE		NE		6.9	J	NE	
Thallium	7440-28-0	T	0.5	ug/l	NE		7.8	J	10.9	J	NE		NE		NE		NE		NE		NE		NE	
Zinc	7440-66-6	T	2000	ug/l	NE		NE		NE		NE		NE		NE		NE		2610		NE		NE	
VOCs																								
1,2-Dichloroethane	107-06-2	NA	0.6	ug/l	NE		NE		2.6	J+	2.3		0.93	J	NE									
Chlorobenzene	108-90-7	NA	5	ug/l	NE		NE		13		NE		NE		NE		NE		NE		6		NE	
Cis-1,2-Dichloroethylene	156-59-2	NA	5	ug/l	NE		NE		NE		6	J+	5.5		NE									
PFAS																								
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	SPE3535	10	ng/l	NE		118		NE		22.2		22.7		NE		NE		NE		15.3		NE	
Perfluoroctanoic acid (PFOA)	335-67-1	SPE3535	10	ng/l	NE		25.4		NE		NE		NE		NE		NE		NE		NE		NE	

Notes:

NE = No Exceedance

VALUE exceeds NYS TOGS 1.1.1 Class GA Guidance Values.

Qualifiers	Definitions
B	Contamination in associated blank sample.
J	Estimated value. +/- indicates direction of bias.
T	An associated lab quality control sample is out of range.
U	Result was not detected. Reporting detection limit is listed instead.

Matrix	Applicable Criteria	Definitions
Groundwater	NYSDEC TOGS 1.1.1	TOGS 1.1.1 (a) 1,4-Dioxane Maximum Contaminant Levels (b) PFAS Guidelines (c)

References:

(a) New York State Division of Water Technical and Operational Guidance Series (1.1.1)
https://www.dec.ny.gov/docs/water_pdf/togs111.pdf

(b) NYS Register, July 24, 2019. Subpart 5-1 of Title 10 NYCRR, Section 5-1.52, Table 3 propose amendment. Notice of Adoption as amended, NYS Register August 26, 2020
<https://www.dos.ny.gov/info/register.htm>

(c) Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs
https://www.dec.ny.gov/docs/remediation_hudson_pdf/pfassamanaly.pdf

Notes:

* 1,4-Dioxane is compared to the New York State drinking water MCL.

*PFAS compounds are compared to NYSDEC Part 375 PFAS guidelines where applicable.

* Fraction:

T - total, for metals

D - dissolved, for metals

NA - not applicable

SPE3535 - prep method for PFAS