NEW YORK
STATE OF
OPPORTUNITY

Department of
Environmental
Conservation

SITE MANAGEMENT

2018 ANNUAL REPORT

WORK ASSIGNMENT D007622-08.1

STUART OLVER HOLTZ SITE
HENRIETTA (T)

SITE NO. 828079
MONROE (C), NY

Prepared for:
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York

Basil Seggos, Commissioner

DIVISION OF ENVIRONMENTAL REMEDIATION

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OCTOBER 2018

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257 WEST GENESEE STREET

BUFFALO, NEW YORK 14202

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1.0 INTRODUCTION

1.1 General

This Site Management Annual Report for the calendar year 2018 has been prepared under New York State Department of Environmental Conservation (NYSDEC) Work Assignment No. D007622-08.1 for the Stuart Olver Holtz Site (Site). The purpose of this report is to provide a record of the post-remediation monitoring and maintenance activities at the Site. The May 2018 sampling event is the first post-remediation monitoring event since remedial activities were completed in 2016. This report is the first report as called for by Section 7.1 of the Site Management Plan (SMP) (URS, 2018).

1.2 Project Background

The Site is listed on the NYSDEC's registry of inactive hazardous waste sites as Site #828079. A Remedial Investigation (RI) was completed in September 1996; the Feasibility Study (FS) was completed in October 1996; and a Record of Decision (ROD) was issued on March 31, 1997. In October 2005, the NYSDEC issued an Explanation of Significant Differences (ESD), modifying the ROD. A Supplemental Investigation Summary Report was issued in April 2009; a Focused FS was issued in January 2014, and remedial actions were undertaken in two phases at the Site during the period of April 2011 through October 2016. Additional background information for the Site and a summary of the completed remedial actions are provided in Section 2.0.

2.0 SITE DESCRIPTION

The Site is located at 39 Commerce Drive in the Town of Henrietta, Monroe County, New York (Figure 1). The Site is comprised of two parcels, identified as section, block, lot numbers 161.15-1-4 and 161.15-1-5 on the Monroe County Tax Map. The Site is an approximately 3.8-acre area and is bounded by Commerce Drive to the north, various commercial properties on West Henrietta Road to the east, Ruby Gordon Furniture Store to the south, and Pullman Manufacturing to the west (Figure 2). The east branch of Red Creek, which flows north at its nearest point to the Site, is approximately 700 feet to the east.

A single story 64,000 square-foot building was previously located on the eastern portion of the Site. The building was demolished in December 2005, but the concrete slab was left in place. The remaining portions of the Site consist of parking areas/driveways, grass-covered areas and weeds/scrub/brush-covered areas. A vegetated drainage swale is located just beyond the west property boundary. Trees along the south property boundary were planted in October 2016 as part of Site remediation.

An RI/FS was completed at the Site in the September/October 1996. Chlorinated solvents were identified as contaminants of concern (COCs) in groundwater. The ROD, signed in March 1997, specified that a shallow groundwater collection trench was to be constructed. Collected groundwater would pass through a passive groundwater treatment system and then be discharged to a publicly operated treatment works. The ROD also called for the excavation and off-site disposal of remaining contaminated soil and capping of the area. Periodic sampling of the bedrock groundwater was also required.

The remedial design (RD) began in November of 1999. A pilot test conducted in 2000 evaluated in-situ chemical oxidation (ISCO). The pilot test was determined to be successful, and, based on the results from the pilot study, the ROD was modified in October 2005 by the ESD to include ISCO and bioremediation instead of the pump and treat technology that was included in the 1997 ROD. In order to safely address the source area underneath the building, it was necessary to demolish the structure. Demolition of the building was completed in December 2005.

A supplemental investigation, completed in April 2009, further delineated the source of soil impacts and the groundwater plume. The remedial design included the remedial components presented in the modified ROD. ISCO was started in the summer of 2011. A total of three rounds of injections were completed by November 2011. Groundwater results obtained after each injection indicated that the concentration of chlorinated solvents had decreased. NYSDEC decided to inject molasses to address residual chlorinated solvent contamination. The results of the groundwater samples obtained after the first injection of molasses showed that the contamination concentration has declined significantly at most locations.

A Focused FS was completed in January 2014 to address residual impacts. Based on the findings of the Focused FS, NYSDEC decided to implement an alternative that included additional injections using direct-push techniques to address the remaining contamination. The additional injections were completed in May 2014 and the results from the subsequent groundwater sampling indicated that the concentrations of COCs had decreased except for three locations. Additional sampling was conducted to assess future action. In a February 10, 2014 memo to evaluate the asphalt drainage swale component of the remedy, phytoremediation was selected to address residual groundwater impacts between the Site and the Ruby Gordon Furniture Store. Thirty trees were planted along the south property boundary in October 2016.

In April 2018, an SMP was prepared that outlines annual Site inspection and groundwater monitoring requirements (URS, 2018). The activities discussed below are the procedures and resulting data from the 2018 annual Site inspection and groundwater monitoring event.

3.0 MONITORING ACTIVITIES

Monitoring activities performed on May 2, 2018 consisted of the collection of groundwater samples from 21 on-site and four off-site overburden monitoring wells (Figure 3).

3.1 Groundwater Monitoring

Groundwater level measurements, recorded prior to sampling, are provided in Table 1. A potentiometric surface map based on the water level measurements from the overburden wells, using a 2.0-foot contour interval, is provided in Figure 4. Flow is generally from the east to the west, with flow components to the south, west, north, and northwest.

3.2 Groundwater Sampling

The monitoring wells were sampled using HydraSleeve™ or SuperSleeve™ procedures detailed in Field Sampling Plan located in Appendix I of the SMP. Since the sampling method does not require purging until stabilization, water quality parameters (i.e., pH, temperature, specific conductivity, dissolved oxygen, turbidity, and oxygen reduction potential) were not collected. A copy of the sampling field notes is provided in Appendix A.

The groundwater samples were delivered by URS under chain-of custody to the NYSDEC call-out laboratory, TestAmerica Laboratories, Inc. (TestAmerica), located in Amherst, New York. The groundwater samples were analyzed for target compound list volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C.

Groundwater samples from upgradient (URS-08 and URS-09); source area (URS-02, URS-03, URS-15, SW-32, and SW-33); and downgradient (URS-04, URS-05, and URS-13) monitoring wells were also analyzed for emerging contaminants as follows:

- Per- and polyfluoroalkyl substances (PFASs) by USEPA Method 537, modified; and
- 1,4-dioxane by Method 8260C selected ion monitoring.

Samples for 1,4-dioxane and PFAS were shipped by TestAmerica Amherst to the TestAmerica Edison, New Jersey and West Sacramento, California facilities, respectively. Each

TestAmerica facility is New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) accredited for the analytical parameters performed.

A sample could not be collected from URS-04 due to an obstruction just below the top of water. Due to the limited volume collected using the SuperSleeve™, PFAS was the only parameter submitted for analysis from URS-09.

NYSDEC Analytical Services Protocol Category B data deliverables provided by the laboratory were validated by URS in accordance with the requirements outlined in *Guidance for Data Deliverables and the Development of Data Usability Summary Reports (DUSR), Appendix 2B, DER-10/Technical Guidance for Site Investigation and Remediation* (NYSDEC, 2010). Data summary tables and Form Is are provided in the DUSR prepared by URS and include the reporting limit for each non-detected compound. A copy of the DUSR is provided in Appendix B. An electronic data deliverable was submitted to the NYSDEC in the NYSDEC's EQuIS format.

3.2.1 Groundwater Results

A summary of the detected VOCs in the May 2018 groundwater samples are provided in Table 2 and the emerging contaminant results are provided in Table 3. The data in Table 2 are compared to Class GA groundwater standards and guidance values as presented in the *Technical and Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (NYSDEC 1998; revised April 2000 and June 2004). The data in Table 3 are compared to USEPA Advisory Limits (USEPA, 2016). Results exceeding TOGS 1.1.1 Class GA groundwater standards or guidance values and EPA Advisory Limits are indicated with a circle. The locations of detected compounds that have exceeded their respective criteria are shown on Figure 5. A statistical summary of detected compounds in groundwater is provided in Table 4.

The analytical results for the May 2018 monitoring event are summarized as follows:

- The following compounds exceeded TOGS 1.1.1 Class GA groundwater standards at one or more location: 1,1,1-trichloroethane (1,1,1-TCA); 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113); 1,1-dichloroethane (1,1-DCA); 1,1-dichloroethene (1,1-DCE); 1,2-dichloroethane (1,2-DCA); cis-1,2-dichloroethene (cis-1,2-DCE); trans-

1,2-dichloroethene (trans-1,2-DCE); chloroethane (CA); tetrachloroethene (PCE); trichloroethene (TCE); and vinyl chloride (VC). Per the ROD, all the compounds listed above, except CFC-113 and chloroethane, are considered COCs in groundwater.

- One or more of the above-listed chlorinated VOCs exceeded criteria at the following monitoring well and piezometer locations: B-4/PZ-01; MW-05; OW-03S; OW-04S; OW-05S; OW-06S; OW-07S; SW-32; SW-33; SW-37; URS-01; URS-03; URS-11; URS-15; and URS-16.

- 1,1,1-TCA, PCE, and TCE are considered primary or parent products and the remaining compounds, except CFC-113, are considered degradation or daughter products.

- The highest concentration of 1,1,1-TCA was detected in SW-32 (630,000 µg/L); the highest concentration of PCE was detected in URS-16 (2,600 µg/L), and the highest concentration of TCE was detected in URS-01 (780 µg/L).

- Degradation products of 1,1,1-TCA, PCE, and TCE were detected at concentrations higher than the parent compound concentrations at several locations (OW-03S, OW-06S, OW-07S, SW-33, SW-37, URS-01, URS-11, URS-15 and URS-16).

- The Focused FS defined significant groundwater contamination as generally two or more contaminants with concentrations exceeding 1,000 µg/L. In May 2018, locations with two or more contaminants having concentrations greater than 1,000 µg/L were OW-07S, SW-32, SW-33, SW-37, URS-01, URS-11, URS-15 and URS-16. COCs with concentrations greater than 1,000 µg/L include 1,1,1-TCA, 1,1-DCA, cis-1,2-DCE, chloroethane, PCE, and vinyl chloride.

- In the FS, the remedial treatment zone was defined as all areas with total VOC concentrations above 50,000 µg/L (see Figure 3). In May 2018, total VOCs exceeded 50,000 µg/L only at location SW-32 (720,000 µg/L).

- Compared to historical results, concentrations of COCs decreased at most locations, as shown in Table 5. Locations OW-04S, OW-06S, SW-33, URS-01, URS-03, URS-11, and URS-15 exhibited increased concentrations of degradation products compared to the previous sampling at those locations. 1,1,1-TCA and/or TCE

concentrations increased an order of magnitude or more at locations OW-04S, URS-01, and URS-03.

- 1,4-Dioxane was detected in six of the eight locations sampled for this compound (SW-32, SW-33, URS-02, URS-03, URS-13 and URS-15). Concentrations ranged from 2.2 µg/L (URS-13) to 8,000 µg/L (SW-32). The two locations with highest concentrations, SW-32 and SW-33, are within the treatment zone. The next highest concentration was detected in downgradient well URS-02 (1,800 µg/L). Detected concentrations in the remaining three wells were below 90 µg/L.

  1,4-Dioxane was used as a stabilizer for 1,1,1-TCA (USEPA, 2017). 1,1,1-TCA is a COC at this Site.

- PFASs were detected in every location sampled for this parameter group. Perfluorooctanesulfonic acid (PFOS) was detected above the USEPA Advisory Limit (USEPA, 2016) of 70 nanograms per liter (ng/L) only in URS-09 (187 ng/L). Perfluorooctanonic acid (PFOA) was detected above the USEPA Advisory Limit of 70 ng/L only in URS-13 (112 ng/L). Total PFOA and PFOS in samples SW-33, URS-03, URS-08, URS-09, URS-13 and URS-15 exceeded the USEPA Advisory Limit of 70 ng/L with concentrations ranging from 72.6 (URS-03) to 192 ng/L ((URS-09). The highest individual and total PFOA and PFOS concentrations were detected in upgradient/sidegradient well URS-09 and upgradient well URS-13.

  Historical operations at the Site include metals plating. A major fire at the facility occurred in December 1974 (GZA, 1996). Metals plating facilities and firefighting foams commonly used PFAS-containing formulations (ITRC, 2017).

4.0 SITE MAINTENANCE

4.1 Monitoring Well Inspections

URS performed a well inspection during the May 2018 monitoring event. Most of the wells appeared to be in good condition, with exception of the following:

- The curb box for URS-04 was damaged and needs to be replaced. During sampling, it was also noted that there is an obstruction in the well just below the water table.
- OW-07S has no outer casing, exposing the 4-inch diameter PVC riser and J-Plug. This well needs an outer casing installed.
- B1/PZ-03, OW-07S, OW-04S, URS-05, URS-06 and URS-13 need to be re-labeled.
- The locking cap/cover to URS-09 is detached from the outer well casing. A new exterior wells casing with locking cam needs to be installed.
- The cover to URS-06 is secured with bolts requiring an Allen wrench. These bolts should be replaced with standard stainless steel 9/16" bolts.

The monitoring well inspection forms are provided in Appendix C.

4.2 Site Inspection

URS performed a Site inspection during the May 2018 Site visit. The inspection included an examination of the following items: evidence of site-wide disturbance, evidence of surface soil disturbance, evidence of excavation, evidence of building construction, and evidence of change in Site use. There was no evidence of site-wide disturbance, surface soil disturbance, excavation, building construction, or change in Site use. All items associated with the inspection were found to be in good order. A copy of the completed Site inspection form is provided in Appendix D.

4.3 Maintenance Performed

4.3.1 Monitoring Well Maintenance

No monitoring well maintenance was performed during the May 2018 Site visit.

4.3.2 Routine Maintenance

No routine maintenance was performed at the time this report was prepared.

4.3.3 Intermittent Maintenance

No intermittent maintenance was performed during the May 2018 Site visit.

5.0 IDENTIFICATION, AND ASSESSMENT OF ENGINEERING AND INSTITUTIONAL CONTROLS

5.1 Engineering Control Systems

Site remediation included planting 15 poplar and 15 willow trees near the southern border of the Site as a phytoremediation approach to address drainage in this area and to reduce migration of groundwater contamination to the adjacent Ruby Gordon property. The trees were inspected in May 2018 in accordance with the Monitoring and Sampling Plan. The trees appeared to be healthy at the time of the inspection.

5.2 Institutional Controls

A series of ICs is required by the ROD to: implement, maintain and monitor Engineering Controls; prevent future exposure to remaining contamination; and, limit the use and development of the Site to commercial or industrial uses only. Adherence to these ICs is required by the Environmental Easement and implemented under the SMP. ICs may not be discontinued without an amendment to, or extinguishment of, the Environmental Easement. The ICs are implemented to the extent of the Site boundary, which is shown on Figure 2. The site-specific ICs are:

- The property may be used for commercial or industrial use.
- All ECs must be operated and maintained as specified in the SMP.
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Monroe Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the NYSDEC.
- Groundwater and other environmental or public health monitoring must be performed as defined in the SMP.
- Data and information pertinent to Site management must be reported at the frequency and in a manner as defined in the SMP.

- All future activities that will disturb remaining contaminated material must be conducted in accordance with the SMP.
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP.
- Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC (Site) boundary shown in Figure 2, and any potential impacts that are identified must be monitored or mitigated.
- Periodic monitoring of the indoor air and sumps at the Ruby Gordon building to confirm that the sump covers are in place.

6.0 SUMMARY AND RECOMMENDATIONS

6.1 Groundwater Hydraulic Monitoring

The May 2018 monitoring shows that groundwater flow is from the east with some flow components to the south, west, north, and northwest.

6.2 Groundwater Quality Monitoring

Three monitoring wells have concentrations of COCs that exceed 1,000 µg/L - 1,1,1-TCA at SW-32 and SW-37, and PCE at URS-16. The remaining COCs with concentrations greater than 1,000 µg/L (i.e., 1,1-DCE, cis-1,2-DCE, CA, and VC) are PCE, TCE, or 1,1,1-TCA degradation products. The May 2018 data show that COC concentrations, in general, are decreasing compared to historical data. Several locations exhibited increased concentrations of COCs, but most of those increases were degradation products, which would be expected as a result of natural attenuation. Insufficient post-remediation data is available from locations OW-04S, URS-01, and URS-03, where 1,1,1-TCA and/or TCE showed increased concentrations, to determine if those increases are a trend or the result of seasonal variation.

For the emerging contaminants, concentrations of PFASs detected were above their criteria in six of the nine samples. The concentrations of 1,4-dioxane in samples from SW-32, SW-33 and URS-02 were notable, in the low parts per million range. The presence of 1,4-dioxane is possibly associated with solvents used at the Site. Continued monitoring for these analytes is recommended in future monitoring events.

6.3 Monitoring Well Maintenance

The following monitoring well maintenance activities are recommended:

- replace the curb box for URS-04;
- remove the obstruction in URS-04;
- install an outer casing with locking cap for OW-07S;
- install a new outer casing with locking cap for URS-09;
- replace bolts to the cover of URS-06 with standard stainless steel 9/16" bolts; and

- re-label B1/PZ-03, OW-07S, OW-04S, URS-05, URS-06 and URS-13.

6.4 Site Maintenance

No needed maintenance items were noted during the May 2018 Site inspection.

7.0 REFERENCES

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URS Corporation – New York (URS). 2009. *Supplemental Investigation Summary Report, Stuart Olver Holtz Site, Site No. 8-28-079, Henrietta (T), Monroe (C) NY.* April.

URS. 2014a. *Focused Feasibility Study Report, Stuart Olver Holtz Site, Site No. 828079, Final.* January.

URS 2014b. *Stuart Olver Holtz Site (#8-28-079) Asphalt Drainage Swale Evaluation.* February 10

URS. 2018. *Stuart Olver Holtz Site Management Plan.* June.

TABLES

TABLE 1
GROUNDWATER ELEVATION MEASUREMENTS
STUART OLVER HOLTZ SITE

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
B1/PZ-03 PZ	1123913.793	751258.2088			527.97		5/2/2018 0850	8.32	519.65	0.00		
B4/PZ-01 PZ	1123613.144	751118.1692			530.75		5/2/2018 1100	7.87	522.88	0.00		
MW-05 MNW	1123798.575	751154.1309	527.4		530.31		5/2/2018 1120	6.73	523.58	0.00		
OW-03S MNW	1123872.990	751118.5955	523.3		527.25		5/2/2018 1132	5.31	521.94	0.00		
OW-04S MNW	1123652.253	751055.8861	530.0		531.81		5/2/2018 1110	7.94	523.87	0.00		
OW-05S MNW	1123966.227	751364.401	526.9		528.79		5/2/2018 0845	8.32	520.47	0.00		
OW-06S MNW	1123597.261	751240.4279	529.0		531.00		5/2/2018 1050	5.47	525.53	0.00		
OW-07S MNW	1123711.506	751320.401	528.1		527.51		5/2/2018 0935	3.27	524.24	0.00		
SW-32 MNW	1123716.389	751357.815	528.11	530.98	530.49		5/2/2018 0940	3.84	526.65	0.00		
SW-33 MNW	1123721.278	751384.386	531.33	534.14	533.62		5/2/2018 0944	6.75	526.87	0.00		
SW-37 MNW	1123694.431	751402.008	531.33	534.28	533.77		5/2/2018 0950	5.98	527.79	0.00		
URS-01 MNW	1123711.506	751214.7767	527.47	530.12	529.93		5/2/2018 1056	4.69	525.24	0.00		
URS-02 MNW	1123739.943	751129.4642	528.0	530.71	530.48		5/2/2018 1115	5.95	524.53	0.00		

NM - No Measurement

Type:
MNW Monitoring Well
PZ Piezometer

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TABLE 1
GROUNDWATER ELEVATION MEASUREMENTS
STUART OLVER HOLTZ SITE

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
URS-03 MNW	1123859.110	751308.214	527.78	530.12	530.20		5/2/2018 0815	5.95	524.25	0.00		
URS-04 MNW	1124029.735	751302.797	526.50	526.50	526.21		5/2/2018 0930	8.26	517.95	0.00		
URS-05 MNW	1123859.110	750869.464	524.63	524.63	524.26		5/2/2018 1155	3.62	520.64	0.00		
URS-06 MNW	1123696.610	750977.7976	525.4	525.40	525.09		5/2/2018 1300	0.50	524.59	0.00		
URS-08 MNW	1123779.214	751531.6517	531.53	534.10	533.99		5/2/2018 1015	4.35	529.64	0.00		
URS-09 MNW	1123888.902	751565.505	531.80	534.38	534.11		5/2/2018 1017	5.39	528.72	0.00		
URS-11 MNW	1123676.297	751377.276	531.90	534.68	534.51		5/2/2018 0952	6.90	527.61	0.00		
URS-12 MNW	1123708.797	751430.089	531.92	534.61	534.50		5/2/2018 0954	5.93	528.57	0.00		
URS-13 MNW	1123516.506	751022.4851	525.5	525.49	525.18		5/2/2018 1315	2.42	522.76	0.00		
URS-14 MNW	1123879.422	751226.964	526.82	529.66	529.74		5/2/2018 0830	6.22	523.52	0.00		
URS-15 MNW	1123616.881	751385.891	527.95	530.96	530.37		5/2/2018 1046	3.05	527.32	0.00		
URS-16 MNW	1123815.882	751104.895	528.66	531.78	531.25		5/2/2018 1130	7.98	523.27	0.00		

NM - No Measurement

Type:
MNW Monitoring Well
PZ Piezometer

TABLE 2
SUMMARY OF DETECTED COMPOUNDS IN MAY 2018 GROUNDWATER SAMPLES
STUART OLVER HOLTZ SITE

Location ID			B1/PZ-03	B4/PZ-01	MW-05	OW-03S	OW-04S
Sample ID			B1/PZ-3	B4/PZ-01	MW-05	OW-3S	OW-04S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/02/18	05/02/18	05/02/18	05/02/18	05/02/18
Parameter	Units	Criteria*					
Volatile Organic Compounds							
1,1,1-Trichloroethane	UG/L	5		27	22		930
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L	5					
1,1,2-Trichloroethane	UG/L	1		0.24 J			
1,1-Dichloroethane	UG/L	5		15	74	350	910
1,1-Dichloroethene	UG/L	5		5.8	8.5 J	41	240
1,2-Dichloroethane	UG/L	0.6		0.22 J			
1,2-Dichloroethene (cis)	UG/L	5		2.7	210	360	130
1,2-Dichloroethene (trans)	UG/L	5					
Chloroethane	UG/L	5		0.66 J			
Chloromethane	UG/L	5					
Methyl tert-butyl ether	UG/L	10			3.5 J		
Tetrachloroethene	UG/L	5			640	5.9 J	
Trichloroethene	UG/L	5		2.4	200	140	25
Vinyl chloride	UG/L	2					
Total Volatile Organic Compounds	UG/L	-	ND	54.02	1,158	896.9	2,235

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, Revised April 2000, Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

- - No Standard or guidance value

Empty cell - Not detected D - Result reported from a secondary dilution analysis. J - The reported concentration is an estimated value

Only Detected Results Reported.

TABLE 2
SUMMARY OF DETECTED COMPOUNDS IN MAY 2018 GROUNDWATER SAMPLES
STUART OLVER HOLTZ SITE

Location ID			OW-05S	OW-06S	OW-06S	OW-07S	OW-07S
Sample ID			OW-5S	FD2-050218	OW-6S	FD1-050218	OW-7S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/02/18	05/02/18	05/02/18	05/02/18	05/02/18
Parameter	Units	Criteria*		Field Duplicate (1-1)		Field Duplicate (1-1)	
Volatile Organic Compounds							
1,1,1-Trichloroethane	UG/L	5	0.89 J				
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L	5	1.5				
1,1,2-Trichloroethane	UG/L	1					
1,1-Dichloroethane	UG/L	5	14	26	28	1,400	1,300
1,1-Dichloroethene	UG/L	5	4.8				
1,2-Dichloroethane	UG/L	0.6					
1,2-Dichloroethene (cis)	UG/L	5	11	520	550	10,000	10,000
1,2-Dichloroethene (trans)	UG/L	5			9.4 J		
Chloroethane	UG/L	5					
Chloromethane	UG/L	5					
Methyl tert-butyl ether	UG/L	10					
Tetrachloroethene	UG/L	5		21	20		
Trichloroethene	UG/L	5	33	20	19	230 J	210
Vinyl chloride	UG/L	2		17	19	1,900	1,800
Total Volatile Organic Compounds	UG/L	-	65.19	604	645.4	13,530	13,310

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, Revised April 2000, Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

- - No Standard or guidance value.

Empty cell - Not detected. D - Result reported from a secondary dilution analysis. J - The reported concentration is an estimated value

Only Detected Results Reported

TABLE 2
SUMMARY OF DETECTED COMPOUNDS IN MAY 2018 GROUNDWATER SAMPLES
STUART OLVER HOLTZ SITE

Location ID			SW-32	SW-33	SW-37	URS-01	URS-02
Sample ID			SW-32	SW-33	SW-37	URS-01	URS-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/02/18	05/02/18	05/02/18	05/02/18	05/02/18
Parameter	**Units**	**Criteria***					
Volatile Organic Compounds							
1,1,1-Trichloroethane	UG/L	5	630,000		1,200	420	
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L	5				82	
1,1,2-Trichloroethane	UG/L	1					
1,1-Dichloroethane	UG/L	5	90,000	20,000 J	7,700	2,700 D	4.6
1,1-Dichloroethene	UG/L	5				160	
1,2-Dichloroethane	UG/L	0.6				5.7 J	
1,2-Dichloroethene (cis)	UG/L	5			6,200	3,700 D	
1,2-Dichloroethene (trans)	UG/L	5					
Chloroethane	UG/L	5		16,000 J		160	2.6 J
Chloromethane	UG/L	5					
Methyl tert-butyl ether	UG/L	10					7.4
Tetrachloroethene	UG/L	5					
Trichloroethene	UG/L	5				780	
Vinyl chloride	UG/L	2			2,700	1,500	
Total Volatile Organic Compounds	UG/L	-	720,000	36,000	17,800	9,507.7	14.6

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, Revised April 2000, Class GA.

Flags assigned during chemistry validation are shown.

(oval) Concentration Exceeds Criteria

- - No Standard or guidance value.

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Only Detected Results Reported

TABLE 2
SUMMARY OF DETECTED COMPOUNDS IN MAY 2018 GROUNDWATER SAMPLES
STUART OLVER HOLTZ SITE

Location ID			URS-03	URS-05	URS-06	URS-08	URS-11
Sample ID			URS-03	URS-05	URS-06	URS-08	URS-11
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/02/18	05/02/18	05/02/18	05/02/18	05/02/18
Parameter	**Units**	**Criteria***					
Volatile Organic Compounds							
1,1,1-Trichloroethane	UG/L	5	640			0.96 J	
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L	5	140				
1,1,2-Trichloroethane	UG/L	1					
1,1-Dichloroethane	UG/L	5	210			1.0	6,100
1,1-Dichloroethene	UG/L	5	16				
1,2-Dichloroethane	UG/L	0.6					
1,2-Dichloroethene (cis)	UG/L	5	35				
1,2-Dichloroethene (trans)	UG/L	5					
Chloroethane	UG/L	5					22,000
Chloromethane	UG/L	5					400 J
Methyl tert-butyl ether	UG/L	10					
Tetrachloroethene	UG/L	5	5.1 J				
Trichloroethene	UG/L	5	37				
Vinyl chloride	UG/L	2	14				
Total Volatile Organic Compounds	UG/L	-	1,097.1	ND	ND	1.96	28,500

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, Revised April 2000, Class GA.

Flags assigned during chemistry validation are shown

Concentration Exceeds Criteria

- - No Standard or guidance value.

Empty cell - Not detected. D - Result reported from a secondary dilution analysis. J - The reported concentration is an estimated value.

Only Detected Results Reported.

TABLE 2
SUMMARY OF DETECTED COMPOUNDS IN MAY 2018 GROUNDWATER SAMPLES
STUART OLVER HOLTZ SITE

Location ID			URS-12	URS-13	URS-14	URS-15	URS-16
Sample ID			URS-12	URS-13	URS-14	URS-15	URS-16
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/02/18	05/02/18	05/02/18	05/02/18	05/02/18
Parameter	**Units**	**Criteria***					
Volatile Organic Compounds							
1,1,1-Trichloroethane	UG/L	5					
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L	5					
1,1,2-Trichloroethane	UG/L	1					
1,1-Dichloroethane	UG/L	5				640	260
1,1-Dichloroethene	UG/L	5				31	
1,2-Dichloroethane	UG/L	0.6					
1,2-Dichloroethene (cis)	UG/L	5				2,300 D	1,800
1,2-Dichloroethene (trans)	UG/L	5				120	
Chloroethane	UG/L	5				120	
Chloromethane	UG/L	5					
Methyl tert-butyl ether	UG/L	10		0.37 J			
Tetrachloroethene	UG/L	5					2,600
Trichloroethene	UG/L	5				13 J	630
Vinyl chloride	UG/L	2				2,000 D	95
Total Volatile Organic Compounds	UG/L	-	ND	0.37	ND	5,224	5,385

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations June 1998, Revised April 2000, Class GA.

Flags assigned during chemistry validation are shown.

( ) Concentration Exceeds Criteria

- - No Standard or guidance value.

Empty cell - Not detected. D - Result reported from a secondary dilution analysis. J - The reported concentration is an estimated value.

Only Detected Results Reported.

TABLE 3
SUMMARY OF DETECTED EMERGING CONTAMINANTS IN GROUNDWATER SAMPLES
STUART OLVER HOLTZ SITE

Location ID			SW-32	SW-33	URS-02	URS-03	URS-05
Sample ID			SW-32	SW-33	URS-02	URS-03	URS-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/02/18	05/02/18	05/02/18	05/02/18	05/02/18
Parameter	**Units**	**Criteria***					
Volatile Organic Compounds							
1,4-Dioxane	UG/L	-	8,000	3,400 J	1,800	62	
Per- and Polyfluoroalkyl Substances							
Perfluorobutanesulfonic acid (PFBS)	NG/L	-	8.49 NJ		2.29	0.96 J	1.36 J
Perfluorobutanoic acid (PFBA)	NG/L	-	98.5	64.8	14.6	8.85	63.7
Perfluorodecanoic acid (PFDA)	NG/L	-	2.26	1.21 J		3.39	
Perfluorododecanoic acid (PFDoA)	NG/L	-				1.65 J	
Perfluoro-1-heptanesulfonate (PFHPS)	NG/L	-	0.77 J	0.81 J		0.64 J	
Perfluoroheptanoic acid (PFHpA)	NG/L	-	12.0	18.7	2.50	4.88	1.65 J
Perfluorohexanesulfonic acid (PFHxS)	NG/L	-	3.56	4.95		2.43	
Perfluorohexanoic acid (PFHxA)	NG/L	-	37.7	73.8	6.97	9.45	2.52
Perfluorononanoic acid (PFNA)	NG/L	-	1.73 J	2.80	0.44 J	2.19 J	0.63 J
Perfluorooctane sulfonamide (FOSA)	NG/L	-				0.43 J	
Perfluorooctanesulfonic acid (PFOS)	NG/L	70	36.0	58.8	7.49	56.7	12.6
Perfluorooctanoic acid (PFOA)	NG/L	70	31.7	58.5	4.80	15.9	2.19
Perfluoropentanoic acid (PFPA)	NG/L	-	37.1	60.0	8.95	9.21	2.24
Perfluorotetradecanoic acid (PFTeA)	NG/L	-					
Perfluoroundecanoic acid (PFUnA)	NG/L	-					
Total PFOA and PFOS	NG/L	70	67.7	117.3	12.29	72.6	14.79

*Criteria- USEPA Drinking Water Health Advisory (USEPA, May 2016)

Flags assigned during chemistry validation are shown.

(oval) Concentration Exceeds Criteria

Only Detected Results Reported.

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[MATRIX] = 'WG' AND [LOGDATE] = #5/2/2018# AND ([PRCCODE] = 'PFC' OR [PARNAME] = '1,4-Dioxane'

TABLE 3
SUMMARY OF DETECTED EMERGING CONTAMINANTS IN GROUNDWATER SAMPLES
STUART OLVER HOLTZ SITE

Location ID			URS-08	URS-09	URS-13	URS-15
Sample ID			URS-08	URS-09	URS-13	URS-15
Matrix			Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-
Date Sampled			05/02/18	05/02/18	05/02/18	05/02/18
Parameter	**Units**	**Criteria***				
Volatile Organic Compounds						
1,4-Dioxane	UG/L	-		NA	2.2	89
Per- and Polyfluoroalkyl Substances						
Perfluorobutanesulfonic acid (PFBS)	NG/L	-	1.20 J	1.37 J	4.71	
Perfluorobutanoic acid (PFBA)	NG/L	-	18.9	7.75	64.6	34.2
Perfluorodecanoic acid (PFDA)	NG/L	-	5.64	1.44 J	11.4	0.70 J
Perfluorododecanoic acid (PFDoA)	NG/L	-			1.22 J	
Perfluoro-1-heptanesulfonate (PFHPS)	NG/L	-	1.0 J	1.13 J	2.02	0.95 J
Perfluoroheptanoic acid (PFHpA)	NG/L	-	11.5	2.30	71.0	18.5
Perfluorohexanesulfonic acid (PFHxS)	NG/L	-	2.79	3.01	9.27	4.58
Perfluorohexanoic acid (PFHxA)	NG/L	-	25.6	4.84	119	55.3
Perfluorononanoic acid (PFNA)	NG/L	-	2.93	0.83 J	36.4	2.07
Perfluorooctane sulfonamide (FOSA)	NG/L	-				
Perfluorooctanesulfonic acid (PFOS)	NG/L	70	65.6	187	51.4	46.0
Perfluorooctanoic acid (PFOA)	NG/L	70	25.9	5.12	112	33.8
Perfluoropentanoic acid (PFPA)	NG/L	-	25.6	2.08 J	133	49.0
Perfluorotetradecanoic acid (PFTeA)	NG/L	-				0.62 J
Perfluoroundecanoic acid (PFUnA)	NG/L	-			1.58 J	
Total PFOA and PFOS	NG/L	70	91.5	192.12	163.4	79.8

*Criteria- USEPA Drinking Water Health Advisory (USEPA, May 2016)

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN GROUNDWATER SAMPLES
STUART OLVER HOLTZ SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value
					Min	Max	Avg		
Volatile Organic Compounds									
1,1,1-Trichloroethane	UG/L	5	25	9	0.890	6.30E+05	7.04E+04	7	SW-32
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L	5	25	3	1.50	140.0	74.50	2	URS-03
1,1,2-Trichloroethane	UG/L	1	25	1	0.240	0.240	0.240	0	B4/PZ-01
1,1-Dichloroethane	UG/L	5	25	19	1.00	9.00E+04	6,933	17	SW-32
1,1-Dichloroethene	UG/L	5	25	8	4.80	240.0	63.39	7	OW-04S
1,2-Dichloroethane	UG/L	0.6	25	2	0.220	5.70	2.96	1	URS-01
1,2-Dichloroethene (cis)	UG/L	5	25	14	2.70	10,000	2,556	13	OW-07S
1,2-Dichloroethene (trans)	UG/L	5	25	2	9.40	120.0	64.70	2	URS-15
Chloroethane	UG/L	5	25	6	0.660	2.20E+04	6,381	4	URS-11
Chloromethane	UG/L	5	25	1	400.0	400.0	400.0	1	URS-11
Methyl tert-butyl ether	UG/L	10	25	3	0.370	7.40	3.76	0	URS-02
Tetrachloroethene	UG/L	5	25	6	5.10	2,600	548.7	6	URS-16
Trichloroethene	UG/L	5	25	13	2.40	780.0	180.0	12	URS-01
Vinyl chloride	UG/L	2	25	9	14.00	2,700	1,116	9	SW-37

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, Revised April 2000, Class GA.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 4
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN GROUNDWATER SAMPLES
STUART OLVER HOLTZ SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value
					Min	Max	Avg		
Volatile Organic Compounds									
1,4-Dioxane	UG/L	-	8	6	2.20	8,000	2,226	0	SW-32
Per- and Polyfluoroalkyl Substances									
Perfluorobutanesulfonic acid (PFBS)	NG/L	-	9	7	0.960	8.49	2.91	0	SW-32
Perfluorobutanoic acid (PFBA)	NG/L	-	9	9	7.75	98.50	41.77	0	SW-32
Perfluorodecanoic acid (PFDA)	NG/L	-	9	7	0.700	11.40	3.72	0	URS-13
Perfluorododecanoic acid (PFDoA)	NG/L	-	9	2	1.22	1.65	1.44	0	URS-03
Perfluoro-1-heptanesulfonate (PFHPS)	NG/L	-	9	7	0.640	2.02	1.05	0	URS-13
Perfluoroheptanoic acid (PFHpA)	NG/L	-	9	9	1.65	71.00	15.89	0	URS-13
Perfluorohexanesulfonic acid (PFHxS)	NG/L	-	9	7	2.43	9.27	4.37	0	URS-13
Perfluorohexanoic acid (PFHxA)	NG/L	-	9	9	2.52	119.0	37.24	0	URS-13
Perfluorononanoic acid (PFNA)	NG/L	-	9	9	0.440	36.40	5.56	0	URS-13
Perfluorooctane sulfonamide (FOSA)	NG/L	-	9	1	0.430	0.430	0.430	0	URS-03
Perfluorooctanesulfonic acid (PFOS)	NG/L	70	9	9	7.49	187.0	57.95	1	URS-09
Perfluorooctanoic acid (PFOA)	NG/L	70	9	9	2.19	112.0	32.21	1	URS-13
Perfluoropentanoic acid (PFPA)	NG/L	-	9	9	2.08	133.0	36.35	0	URS-13
Perfluorotetradecanoic acid (PFTeA)	NG/L	-	9	1	0.620	0.620	0.620	0	URS-15
Perfluoroundecanoic acid (PFUnA)	NG/L	-	9	1	1.58	1.58	1.58	0	URS-13
Total PFOA and PFOS	NG/L	70	9	9	12.30	192.0	90.08	6	URS-09

*Criteria- USEPA Drinking Water Health Advisory (USEPA, May 2016)

Concentration Exceeds Criteria

Only Detected Results Reported

TABLE 5
HISTORICAL RESULTS OF COMPOUNDS DETECTED IN GROUNDWATER SAMPLES
STUART OLVER HOLTZ SITE

Location ID		1/PZ-03	4/PZ-01		MW-05	OW-03S		OW-04S		OW-05S		OW-06S		OW-07S	
Date Sampled		05/02/18	04/30/13	05/02/18	05/02/18	04/29/13	05/02/18	01/20/14	05/02/18	04/29/13	05/02/18	01/20/14	05/02/18	02/27/15	05/02/18
Parameter	**Units**														
Volatile Organic Compounds (VOCs)															
1,1,1-Trichloroethane	UG/L		380	27	22			140	***930***	25	0.89	25		70,000	
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L									19	1.5				
1,1,2-Trichloroethane	UG/L		2.1	0.24											
1,1-Dichloroethane	UG/L		170	15	74	690	350	190	***910***	96	14	89	28	7,000	1,400
1,1-Dichloroethene	UG/L		81	5.8	8.5	100	41	61	***240***	39	4.8			8,900	
1,2-Dichloroethane	UG/L		2.2	0.22				0.50							
1,2-Dichloroethene (cis)	UG/L		32	2.7	210	980	360	23	***130***	91	11	180	***550***	35,000	10,000
1,2-Dichloroethene (trans)	UG/L		3.7									18	9.4		
Acetone	UG/L											37			
Carbon disulfide	UG/L														
Chloroethane	UG/L		40	0.66								22			
Chloroform	UG/L														
Chloromethane	UG/L														
Isopropylbenzene (Cumene)	UG/L		1.0												
Methyl ethyl ketone (2-Butanone)	UG/L											70			
Methyl tert-butyl ether	UG/L				3.5										
Methylene chloride	UG/L		2.0					7.6		4.5		20		1,200	
Tetrachloroethene	UG/L		1.8		640	220	5.9					39	21		
Toluene	UG/L														
Trichloroethene	UG/L		19	2.4	200	450	140	7.5	***25***	230	33	27	20	4,800	230
Vinyl chloride	UG/L		6.5			49						770	19	5,900	1,900
Total VOCs	UG/L	ND	741	54	1,158	2,489	897	430	***2,235***	505	65	1,297	647	132,800	13,530

< or ND = Not detected. Results in bold and italics are higher than previous result.

TABLE 5
HISTORICAL RESULTS OF COMPOUNDS DETECTED IN GROUNDWATER SAMPLES
STUART OLVER HOLTZ SITE

Location ID		SW-32		SW-33		SW-37		URS-01		URS-02	URS-03		URS-05	URS-06	URS-08
Date Sampled		02/27/15	05/02/18	02/27/15	05/02/18	02/27/15	05/02/18	04/29/13	05/02/18	05/02/18	04/29/13	05/02/18	05/02/18	05/02/18	05/02/18
Parameter	Units														
Volatile Organic Compounds (VOCs)															
1,1,1-Trichloroethane	UG/L	1,100,000	630,000	970,000		8,500	1,200	< 16	***420***		39	***640***			0.96
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L			2,400				< 4.2	***82***		120	***140***			
1,1,2-Trichloroethane	UG/L														
1,1-Dichloroethane	UG/L	100,000	90,000	21,000	20,000	18,000	7,700	910	***2,700***	4.6	88	***210***			1.0
1,1-Dichloroethene	UG/L	80,000		68,000		1,100		< 20	***160***		< 2.9	***16***			
1,2-Dichloroethane	UG/L			100				<4.2	***5.7***						
1,2-Dichloroethene (cis)	UG/L			5,800		52,000	6,200	29	***3,700***		10	***35***			
1,2-Dichloroethene (trans)	UG/L					940									
Acetone	UG/L										78				
Carbon disulfide	UG/L														
Chloroethane	UG/L			1,500	***16,000***			1,200	160	2.6	130				
Chloroform	UG/L			77											
Chloromethane	UG/L														
Isopropylbenzene (Cumene)	UG/L														
Methyl ethyl ketone (2-Butanone)	UG/L			940				310			2,600				
Methyl tert-butyl ether	UG/L									7.4					
Methylene chloride	UG/L	130,000		5,600				17			11				
Tetrachloroethene	UG/L			310							< 3.6	***5.1***			
Toluene	UG/L			740											
Trichloroethene	UG/L			780		3,800		14	***780***		14	***37***			
Vinyl chloride	UG/L			7,600		1,900	***2,700***	24	***1,500***		< 9	***14***			
Total VOCs	UG/L	1,410,000	720,000	1,084,847	36,000	86,240	17,800	2,504	***9,508***	15	3,090	1,097	ND	ND	2.0

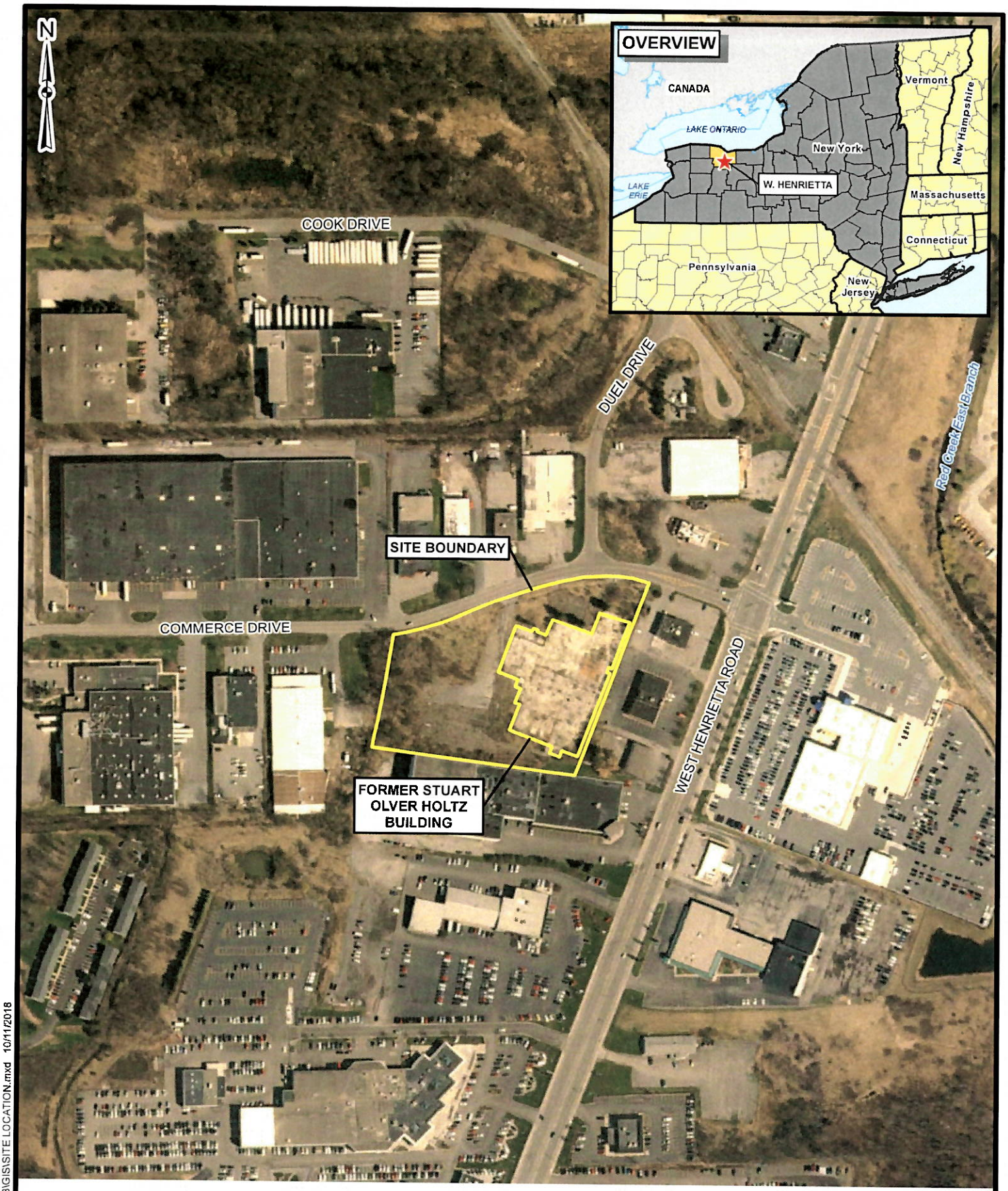
< or ND = Not detected. Results in bold and italics are higher than previous result.

TABLE 5
HISTORICAL RESULTS OF COMPOUNDS DETECTED IN GROUNDWATER SAMPLES
STUART OLVER HOLTZ SITE

Location ID		URS-11		URS-12		URS-13	URS-14	URS-15		URS-16	
Date Sampled		02/27/15	05/02/18	01/20/14	05/02/18	05/02/18	05/02/18	01/20/14	05/02/18	01/20/14	05/02/18
Parameter	Units										
Volatile Organic Compounds (VOCs)											
1,1,1-Trichloroethane	UG/L	29,000						78			
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L							22			
1,1,2-Trichloroethane	UG/L										
1,1-Dichloroethane	UG/L	20,000	6,100	16				1,700	640	130	***260***
1,1-Dichloroethene	UG/L	3,200						13	***31***	27	
1,2-Dichloroethane	UG/L										
1,2-Dichloroethene (cis)	UG/L	4,100		25				330	***2,300***	2,100	1,800
1,2-Dichloroethene (trans)	UG/L			61				86	***120***		
Acetone	UG/L			730				64			
Carbon disulfide	UG/L			15							
Chloroethane	UG/L	1,400	***22,000***					150	120		
Chloroform	UG/L										
Chloromethane	UG/L	< 350	***400***								
Isopropylbenzene (Cumene)	UG/L										
Methyl ethyl ketone (2-Butanone)	UG/L	7,200		2,900				240			
Methyl tert-butyl ether	UG/L					0.37				13	
Methylene chloride	UG/L	6,800		25				46		38	
Tetrachloroethene	UG/L									6,600	2,600
Toluene	UG/L										
Trichloroethene	UG/L	960		11				< 9.2	***13***	1,400	630
Vinyl chloride	UG/L			22				820	***2,000***	270	95
Total VOCs	UG/L	72,660	28,500	3,805	ND	0.37	ND	3,549	***5,224***	10,578	5,385

< or ND = Not detected. Results in bold and italics are higher than previous result.

FIGURES



Source: ESRI World Imagery

300 0 300 Feet

URS	STUART OLVER HOLTZ SITE LOCATION	FIGURE 1

J:\Projects\11174465 00000\DBG\S\SITE LOCATION.mxd 10/11/2018

J:\Projects\11174465.00000\DB\GIS\SITE PLAN (REV2).mxd 10/17/2018

URS

STUART OLVER HOLTZ SITE
SITE PLAN

FIGURE 2

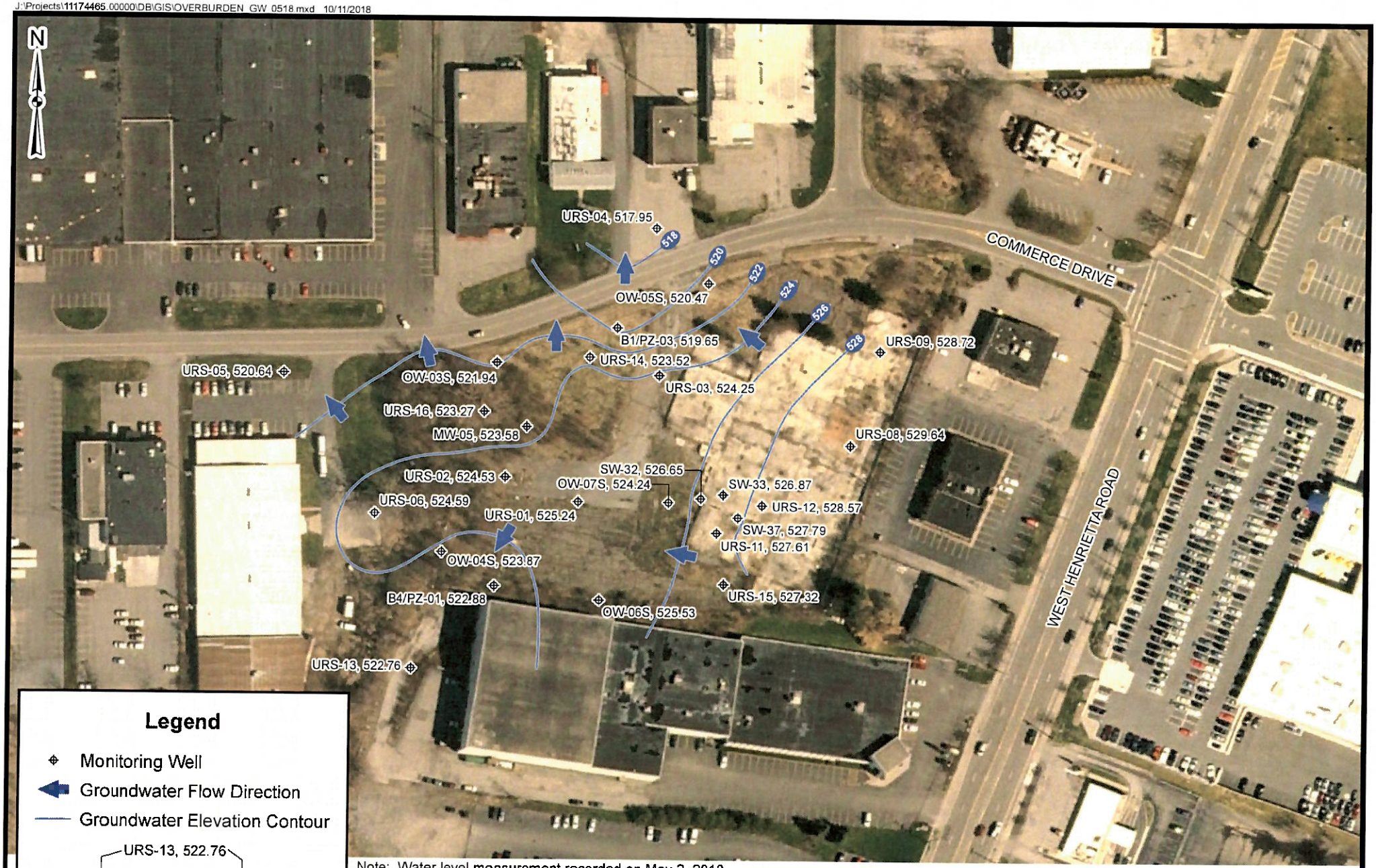
J:\Projects\11174465 00000\DB\GIS\MONITORING WELLS.mxd 10/11/2018

URS

STUART OLVER HOLTZ SITE
MONITORING WELLS

FIGURE 3

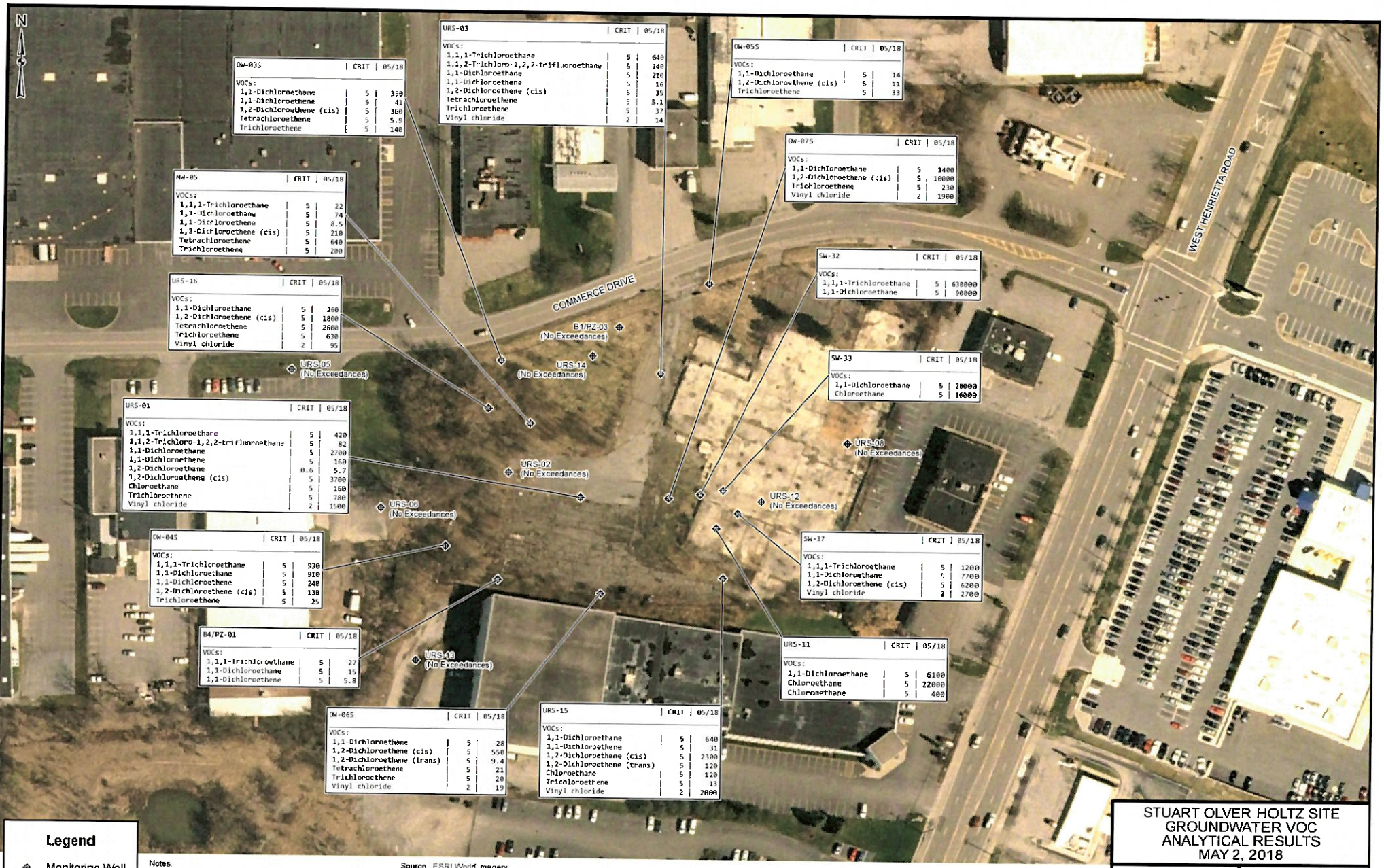
J:\Projects\11174465.00000\DB\GIS\OVERBURDEN_GW_0518.mxd 10/11/2018

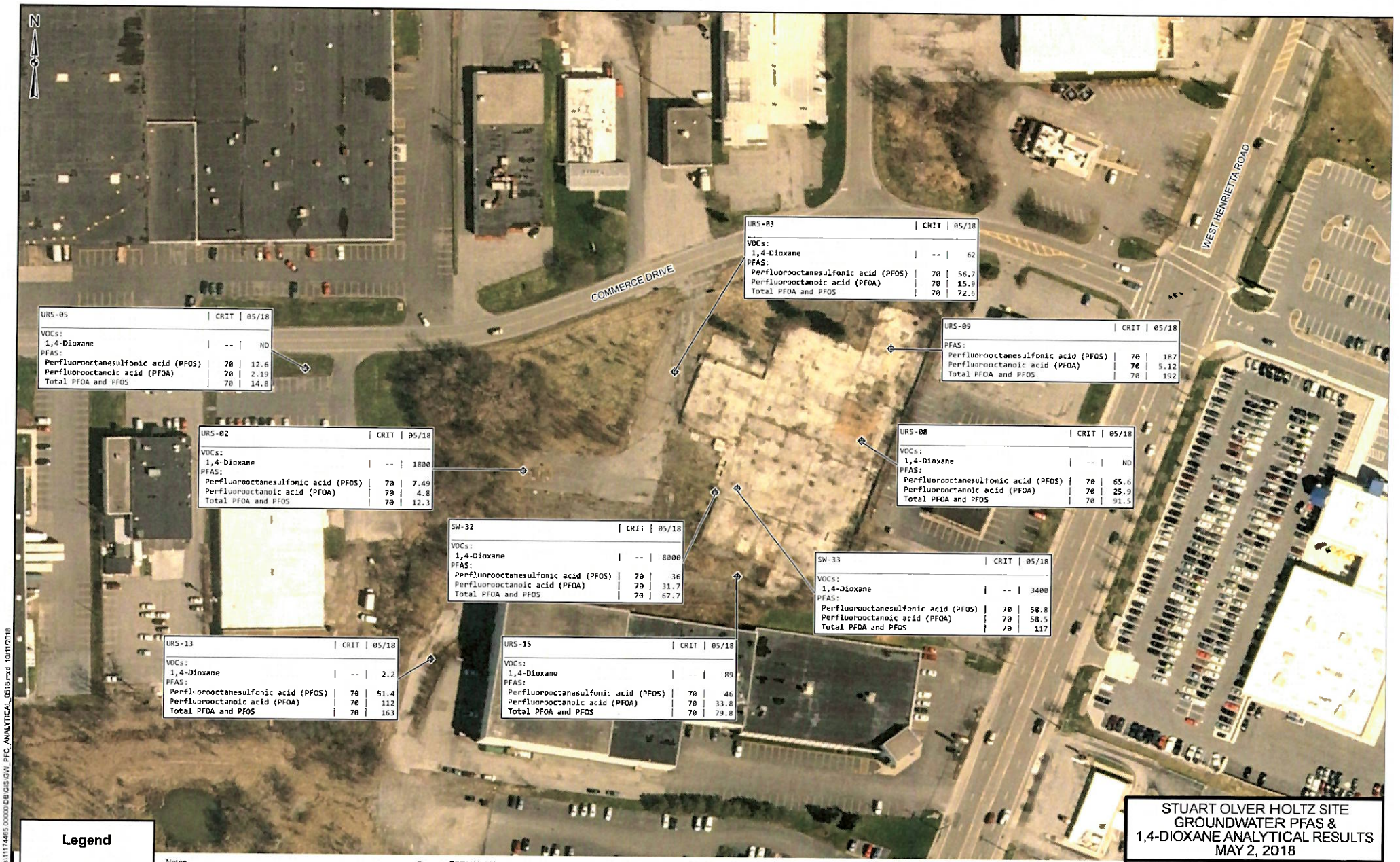


URS

STUART OLVER HOLTZ SITE
OVERBURDEN GROUNDWATER CONTOUR MAP
MAY 2, 2018

FIGURE 4


N
OW-03S | CRIT | 05/18
VOCs:
1,2-Dichloroethane | 5 | 350
1,1-Dichloroethene | 5 | 41
1,2-Dichloroethene (cis) | 5 | 360
Tetrachloroethene | 5 | 5.9
Trichloroethene | 5 | 140
URS-03 | CRIT | 05/18
VOCs:
1,1,1-Trichloroethane | 5 | 640
1,1,2-Trichloro-1,2,2-trifluoroethane | 5 | 140
1,1-Dichloroethene | 5 | 210
1,2-Dichloroethene (cis) | 5 | 35
Tetrachloroethene | 5 | 5.1
Trichloroethene | 5 | 37
Vinyl chloride | 2 | 14
OW-05S | CRIT | 05/18
VOCs:
1,1-Dichloroethane | 5 | 14
1,2-Dichloroethene (cis) | 5 | 11
Trichloroethene | 5 | 33
OW-07S | CRIT | 05/18
VOCs:
1,1-Dichloroethane | 5 | 1400
1,2-Dichloroethene (cis) | 5 | 10000
Trichloroethene | 5 | 230
Vinyl chloride | 2 | 1900
MW-05 | CRIT | 05/18
VOCs:
1,1,1-Trichloroethane | 5 | 22
1,1-Dichloroethene | 5 | 74
1,1-Dichloroethene | 5 | 8.5
1,2-Dichloroethene (cis) | 5 | 210
Tetrachloroethene | 5 | 640
Trichloroethene | 5 | 200
SW-32 | CRIT | 05/18
VOCs:
1,1,1-Trichloroethane | 5 | 630000
1,1-Dichloroethane | 5 | 90000
URS-16 | CRIT | 05/18
VOCs:
1,1-Dichloroethane | 5 | 260
1,2-Dichloroethene (cis) | 5 | 1800
Tetrachloroethene | 5 | 2600
Trichloroethene | 5 | 630
Vinyl chloride | 2 | 95
COMMERCE DRIVE
WEST HENRIETTA ROAD
B1/PZ-03 (No Exceedances)
URS-05 (No Exceedances)
URS-14 (No Exceedances)
SW-33 | CRIT | 05/18
VOCs:
1,1-Dichloroethane | 5 | 20000
Chloroethane | 5 | 16000
URS-01 | CRIT | 05/18
VOCs:
1,1,1-Trichloroethane | 5 | 420
1,1,2-Trichloro-1,2,2-trifluoroethane | 5 | 82
1,1-Dichloroethane | 5 | 2700
1,1-Dichloroethene | 5 | 160
1,2-Dichloroethane | 0.6 | 5.7
1,2-Dichloroethene (cis) | 5 | 3700
Chloroethane | 5 | 150
Trichloroethene | 5 | 780
Vinyl chloride | 2 | 1500
URS-08 (No Exceedances)
URS-02 (No Exceedances)
URS-12 (No Exceedances)
URS-06 (No Exceedances)
OW-04S | CRIT | 05/18
VOCs:
1,1,1-Trichloroethane | 5 | 930
1,1-Dichloroethane | 5 | 910
1,1-Dichloroethene | 5 | 240
1,2-Dichloroethene (cis) | 5 | 130
Trichloroethene | 5 | 25
SW-37 | CRIT | 05/18
VOCs:
1,1,1-Trichloroethane | 5 | 1200
1,1-Dichloroethene | 5 | 7700
1,2-Dichloroethene (cis) | 5 | 6200
Vinyl chloride | 2 | 2700
B4/PZ-01 | CRIT | 05/18
VOCs:
1,1,1-Trichloroethane | 5 | 27
1,1-Dichloroethene | 5 | 15
1,1-Dichloroethene | 5 | 5.8
URS-13 (No Exceedances)
URS-11 | CRIT | 05/18
VOCs:
1,1-Dichloroethane | 5 | 6100
Chloroethane | 5 | 22000
Chloromethane | 5 | 400
OW-06S | CRIT | 05/18
VOCs:
1,1-Dichloroethane | 5 | 28
1,2-Dichloroethene (cis) | 5 | 550
1,2-Dichloroethene (trans) | 5 | 9.4
Tetrachloroethene | 5 | 21
Trichloroethene | 5 | 20
Vinyl chloride | 2 | 19
URS-15 | CRIT | 05/18
VOCs:
1,1-Dichloroethane | 5 | 640
1,1-Dichloroethene | 5 | 31
1,2-Dichloroethene (cis) | 5 | 2300
1,2-Dichloroethene (trans) | 5 | 120
Chloroethane | 5 | 120
Trichloroethene | 5 | 13
Vinyl chloride | 2 | 2000
Legend
Monitoring Well
Notes:
1 Concentrations in µg/L
2 CRIT - Criteria. NYSDEC TOGS (1.1.1), Class GA, 2000
Source: ESRI World Imagery
100 0 100 Feet
STUART OLVER HOLTZ SITE
GROUNDWATER VOC
ANALYTICAL RESULTS
MAY 2, 2018
URS
FIGURE 5
J:\Projects\11174465\0000\GIS\GW_VOC_ANALYTICAL_0518.mxd 10/11/2018


N
COMMERCE DRIVE
WEST HENRIETTA ROAD
URS-05 | CRIT | 05/18
VOCs:
1,4-Dioxane | -- | ND
PFAS:
Perfluorooctanesulfonic acid (PFOS) | 70 | 12.6
Perfluorooctanoic acid (PFOA) | 70 | 2.19
Total PFOA and PFOS | 70 | 14.8
URS-03 | CRIT | 05/18
VOCs:
1,4-Dioxane | -- | 62
PFAS:
Perfluorooctanesulfonic acid (PFOS) | 70 | 56.7
Perfluorooctanoic acid (PFOA) | 70 | 15.9
Total PFOA and PFOS | 70 | 72.6
URS-09 | CRIT | 05/18
PFAS:
Perfluorooctanesulfonic acid (PFOS) | 70 | 187
Perfluorooctanoic acid (PFOA) | 70 | 5.12
Total PFOA and PFOS | 70 | 192
URS-02 | CRIT | 05/18
VOCs:
1,4-Dioxane | -- | 1800
PFAS:
Perfluorooctanesulfonic acid (PFOS) | 70 | 7.49
Perfluorooctanoic acid (PFOA) | 70 | 4.8
Total PFOA and PFOS | 70 | 12.3
URS-08 | CRIT | 05/18
VOCs:
1,4-Dioxane | -- | ND
PFAS:
Perfluorooctanesulfonic acid (PFOS) | 70 | 65.6
Perfluorooctanoic acid (PFOA) | 70 | 25.9
Total PFOA and PFOS | 70 | 91.5
SW-32 | CRIT | 05/18
VOCs:
1,4-Dioxane | -- | 8000
PFAS:
Perfluorooctanesulfonic acid (PFOS) | 70 | 36
Perfluorooctanoic acid (PFOA) | 70 | 31.7
Total PFOA and PFOS | 70 | 67.7
SW-33 | CRIT | 05/18
VOCs:
1,4-Dioxane | -- | 3400
PFAS:
Perfluorooctanesulfonic acid (PFOS) | 70 | 58.8
Perfluorooctanoic acid (PFOA) | 70 | 58.5
Total PFOA and PFOS | 70 | 117
URS-13 | CRIT | 05/18
VOCs:
1,4-Dioxane | -- | 2.2
PFAS:
Perfluorooctanesulfonic acid (PFOS) | 70 | 51.4
Perfluorooctanoic acid (PFOA) | 70 | 112
Total PFOA and PFOS | 70 | 163
URS-15 | CRIT | 05/18
VOCs:
1,4-Dioxane | -- | 89
PFAS:
Perfluorooctanesulfonic acid (PFOS) | 70 | 46
Perfluorooctanoic acid (PFOA) | 70 | 33.8
Total PFOA and PFOS | 70 | 79.8
Legend
Monitoring Well
Notes
1 1,4 Dioxane in µg/L, PFAS in ng/L, ND - Not Detected
2 CRIT - Criteria USEPA Drinking Water Health Advisory, 2016
Source ESRI World Imagery
100 0 100 Feet
STUART OLVER HOLTZ SITE
GROUNDWATER PFAS &
1,4-DIOXANE ANALYTICAL RESULTS
MAY 2, 2018
URS
FIGURE 6
J:\Projects\11174485.00000\DB\GIS\GW_FIG_ANALYTICAL_0618.mxd 10/11/2018

APPENDIX A

FIELD NOTES

AECOM

Job NYSDEC SOH | Project No. | Page ___ of ___ | Sheet 1 of 1
Description | Computed by | Date 5/2/18
Checked by | Date
Reference

07:55 - KSM + DM on site, went through THA
08:15 - Began DTW collection + sampling, details below

	Collected	Sample Time	Notes	DTW	DTW Time
PFAS	UAS-03	13:36	Poly tubing in well	5.95	08:15
	UAS-14	13:47	↓	6.22	08:30
	OW-5S	13:55	↓	8.32	08:45
	B1/PZ-3	14:00	↓	5.96	08:50
PFAS	UAS-04	—	Curb box broken, couldn't sample, obstruction	8.26	09:30
FD1-050218 -	OW-7S	14:10	Poly tubing in well	3.27	09:35
PFAS	SW-32	14:20	↓	3.84	09:40
MS/MSD PFAS -	SW-33	14:30	↓ for MS/MSD no PFAS + 5 x VOA vials	6.75	09:44
	SW-37	15:00	↓	5.98	09:50
	UAS-11	15:05	↓	6.90	09:52
	UAS-12	15:10	↓	5.93	09:54
PFAS -	UAS-08	15:15	↓	4.35	10:15
PFAS -	UAS-09	15:20	↓ ~~PFAS~~ only PFAS collected	5.39	10:17
PFAS -	UAS-15	15:40	↓	3.05	10:46
FD2-050218 -	OW-6S	15:50	↓	5.47	10:50
	UAS-01	15:57	↓	4.69	10:56
	B4/PZ-1	16:05	↓	7.87	11:00
	OW-4S	16:10	↓	7.94	11:10
PFAS	- UAS-02	16:15	↓	5.95	11:15
	MW-5	16:20	↓	6.73	11:20
	UAS-16	16:25	↓	7.98	11:30
	OW-3S	16:30	↓	5.31	11:32
PFAS	- UAS-05	16:50	No tubing	3.62	11:55
	UAS-06	17:10	Tubing in well	0.50	13:10
PFAS	- UAS-13	17:20	No tubing	2.42	13:15

EB-050218 @ 16:46
FB-050218 @ 16:50

17:25 - Finished ~~cleanup~~, sampling, began cleanup, couldn't survey due to Trimble issues
17:45 - KSM + DM off site

[signature]