OBG

FINAL REPORT

Groundwater IRM
2nd Quarter 2016
Groundwater Monitoring Report

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Evendale, Ohio

Prepared for:
GE Aviation

August 2016

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1. INTRODUCTION

O'Brien & Gere Engineers, Inc. (OBG) has prepared this report on behalf of the General Electric Company (GE) to present the results of groundwater monitoring activities conducted during April through June 2016 (herein referred to as Second Quarter 2016), at the GE Aviation facility located in Evendale, Ohio. The quarterly monitoring event was conducted in accordance with the approach and methods outlined in the *Interim Remedial Measure (IRM) Performance Monitoring Plan* (PMP) prepared by OBG (OBG, 2010). In addition, the First Semiannual 2016 Site-wide groundwater sampling event was performed from June 7 through 13, 2016, in accordance with the approach and methods outlined in the *Quarterly Groundwater Monitoring Plan (Work Plan)* (OBG, 2009b). The quarterly monitoring of IRM performance and semiannual monitoring of Site-wide groundwater concentrations were performed as part of the Resource Conservation and Recovery Act (RCRA) Corrective Action Program at the Facility.

IRM performance monitoring is conducted quarterly to evaluate the temporal effect on groundwater conditions of a groundwater IRM. The groundwater IRM, which includes the operation of seven groundwater extraction wells and a groundwater treatment plant (GWTP), has been installed on the southern portion of the GE Aviation manufacturing facility (Facility) in Evendale, Ohio, within an area known as the former Air Force Plant 36 (AFP 36) (**Figure 1**). The groundwater IRM was initiated under a RCRA Corrective Action Permit with the objective of mitigating off-site migration of chlorinated volatile organic compounds (CVOCs), while minimizing the risk of cross-contamination between water-bearing units and/or reducing the effectiveness of biodegradation processes.

The IRM performance monitoring data are evaluated and reported after each quarterly sampling event, including evaluations of quality assurance, cross-contamination potential, and significant short-term anomalies. A summary of the performance monitoring assessment for Second Quarter 2016, including responses to the key study questions outlined in the PMP, is provided in **Table 1**. Relevant details from the Second Quarter 2016 event are provided herein. Long-term trends and overall remediation progress will be evaluated and reported annually, at the end of each year.

Site-wide groundwater monitoring is conducted semiannually to evaluate the distribution of CVOCs over time and to evaluate the natural attenuation of CVOCs. During the semiannual site-wide sampling, groundwater is sampled from wells located throughout the Facility and off-property. The data are evaluated for flow direction and long-term concentration trends. These trends are reported annually, at the end of each year.

2. METHODS

The groundwater monitoring network (**Figure 1**) consists of a total of 115 wells completed in three water-bearing units (Perched Zone, Upper Sand and Gravel [USG], and Lower Sand and Gravel [LSG]). Currently, this network is primarily utilized to support two programs: 1) the PMP, for monitoring of IRM performance, and 2) Site-wide monitoring of flow direction, water quality, and CVOC attenuation.

As outlined in the PMP, the general scope of groundwater monitoring activities includes:

- Groundwater level monitoring using manual measurements, as well as pressure transducer measurements. Monitoring was conducted using a total of 66 wells completed in the Perched Zone (21 wells), USG (23 wells), and LSG (22 wells). **Table 2** identifies the wells utilized for groundwater level monitoring.
- Groundwater quality sampling using passive diffusion bag samplers (PDBs) for analysis of VOCs and in-situ field bioparameters (*e.g.,* dissolved oxygen [DO] and oxidation-reduction potential [ORP]), in accordance with the PMP. Groundwater samples were collected from a total of 43 wells completed in the Perched Zone (11 wells; AF-13P was not sampled due to leaking passive bag), USG (17 wells), and LSG (15 wells) (**Table 3**).
- Monthly sampling of groundwater from actively pumping extraction wells for analysis of VOCs.
- Evaluation of data from groundwater level and quality monitoring, including statistical analysis to assess hydrogeologic conditions of stability (equilibrium) and potential cross-contamination between the water-bearing units.

Well completion data for groundwater level and quality monitoring are summarized in **Tables 2** and **3**, respectively. Methods and procedures for groundwater monitoring were conducted in accordance with the U.S. Environmental Protection Agency (USEPA) approved Sampling and Analysis Plan (SAP) (OBG, 2009a) and the PMP. Additional details on field methods are provided in Groundwater IRM, Quarterly Groundwater Monitoring Report – 3rd Qtr – 2012 (OBG, 2013a) and Groundwater IRM, Quarterly Groundwater Monitoring Report – 4th Qtr – 2012, Annual Summary – 2012 (OBG, 2013b).

Field quality control (QC) samples included trip blanks, field duplicates, and matrix spike/matrix spike duplicates (MS/MSDs). The QC samples were prepared in accordance with Section 3.3 of the SAP, using the frequencies specified in the Quality Assurance Project Plan (QAPP) tables contained in the SAP. Laboratory QA measures are identified in the SAP.

The Site-wide groundwater monitoring was performed at 35 monitoring wells. The wells are sampled using PDBs for analysis of VOCs and field bioparameters in accordance with the USEPA-approved *Quarterly Groundwater Monitoring Plan (Work Plan)*(OBG, 2009b). Groundwater samples were collected from 35 wells completed in the Perched Zone (13 wells), USG (11 wells), and LSG (11 wells; OSMW-5D was not sampled due to damaged flush mounted cover bolts) (**Tables 2** and **3** and **Figure 1**). Approximately 50% of these wells are included in the groundwater IRM monitoring program.

3. SUMMARY OF MONITORING RESULTS

Groundwater monitoring during the Second Quarter 2016 consisted of the collection and analysis of groundwater level and quality data to evaluate the occurrence of cross-contamination and significant short-term anomalies. A summary of the performance monitoring assessment is presented in **Table 1** and additional details are provided below.

The Second Quarter 2016 laboratory analytical results for VOCs underwent Level A data review and verification by OBG (**Appendix A-1**), and data validation for the First Site-wide 2016 data (**Appendix A-2**), which includes 19 wells completed in the Perched Zone (4 wells), USG (8 wells), and LSG (7 wells) that are also part of the Second Quarter 2016 groundwater sampling event. An electronic copy of the laboratory analytical report is included in the attached CD (**Appendix B**).

3.1 GROUNDWATER PUMPING SYSTEM

- During the Second Quarter 2016 the overall IRM system average flow rate was 226 gallons per minute (gpm) and the run-time was approximately 97%. Extraction well average flow rates for the Second Quarter 2016 include:
  - Perched Zone – 24 gpm (EW-5P) to 44 gpm (EW-2P and EW-4P)
  - USG – 10 gpm (EW-7S)
  - LSG – 30 gpm (EW-3D) and 48 gpm (EW-8D).

3.2 GROUNDWATER ELEVATIONS

- Groundwater elevation data were used to create hydrographs (**Figures 5** through **7**) and calculate vertical hydraulic gradients between select nested wells for trend and statistical analyses. The results of these analyses were used to evaluate the potential occurrence of cross-contamination between water-bearing units and equilibrium conditions (as summarized in **Table 1**) as well as estimate the capture zone of each extraction well (**Figures 2** through **4**).

3.3 GROUNDWATER QUALITY

3.3.1 IRM Performance Monitoring

- Groundwater quality data for Second Quarter 2016 are provided in **Table 4**. Groundwater quality data were summarized via time-series plots for individual and nested monitoring wells (**Figures 8** through **10**). In addition, statistical analyses were conducted to assess pumping risk associated with vertical and/or lateral cross-contamination (**Table 5**). Groundwater quality data and associated intrawell statistical analyses do not show significant trends or triggers in VOC concentrations indicative of cross-contamination, with the following noted exceptions:
  - OSMW-10D showed a change from no detections (<1 µg/l) to detections of 1,1,1-TCA (13 µ/l), 1,1-DCA (7.2 µ/l), TCE (24 µ/l) and cis-1,2-DCE (12 µg/l) during this quarterly event.
  - TMW-2D showed an increase in cis-1,2-DCE concentration from 650 µg/l to 730 ug/l in the last quarterly event and remains in the range of peak concentrations measured since 2012. This well is located near the edge of the estimated capture zone of EW-3D and may reflect local variations in groundwater flow direction. The observed changes will continue to be evaluated.
- Groundwater quality data for extraction wells and IRM system influent samples indicate steady or decreasing concentrations of CVOCs (**Figure 11**).

3.3.2 Semiannual Site-Wide Monitoring

Historical groundwater analytical results from the sampled wells are summarized in **Table 4** and in three figures graphically depicting concentrations of TCE, cis-1,2-DCE, 1,1-DCE, VC, TCA, DCA, and total VOCs in the Perched zone (**Figure 8**), USG (**Figure 9**), and LSG (**Figure 10**).

For the majority of monitoring wells sampled during the June 2016 Site-wide event, the results for these wells compare favorably (*i.e.,* stable or declining trends) with historical data, falling below previous maximum concentrations or within the range of typical variation for the historical groundwater data (particularly recent historical data since 2009) with the following exceptions:

- **USG**
  - OSMW-8S – the concentration of 1,1-DCA increased slightly and remains in the range of peak concentrations measured since 2014. However, cis-1,2-DCE and VC decreased slightly since the last Site-wide sampling event.
- **LSG**
  - OSMW-8D - concentrations decreased, yet remain in the range of peak concentrations measured since 2013.

CVOC concentrations for the majority of wells north of former AFP36 (*e.g.*, AOC LDMW-1S, AOC PSTMW-1SR, AOC PSTMW-2S) and further south (OSMW-5S/D) continue to show decreasing or stable concentrations (within the range of typical variation for the historical groundwater data) with the following exceptions:

- OSMW-5S – the VC concentration increased slightly, and cis 1,2-DCE concentrations remain elevated.

4. REFERENCES

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U.S. Environmental Protection Agency, 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Unified Guidance. EPA 530-R-09-007. March 2009.

Tables

	PRIMARY DATA GROUP	KEY QUESTIONS	YES	NO	COMMENTS
	Hydrographs/Trends	Significant trends identified?[1]	√		Groundwater levels decreased overall in the Perched, USG, and LSG due to seasonal effects; however, water levels increased slightly through about the first week of April 2016, before decreasing thereafter.
		Perched	√		No noticeable rise in water levels due to heavy rainfall events on May 8-14, 2016, June 5, 2016, and June 21-23, 2016. However, recovery and drawdown curves are noticeable within the LSG in response to the cycling of EW-3D, and also due to IRM treatment system shutdowns, especially on April 19-21, 2016.
		USG	√		
		LSG	√		
			√		Slight increase in drawdowns overall in the Perched, USG, and LSG compared to 1Q-16, but not resulting in significant change in capture zones. Very limited for USG due to reduced pumping rate and cycling of EW-7S; however, with the end of Pilot Study pumping rate is back to about 10 gpm. Increase in drawdowns in Perched due to repair of EW-6P and in the LSG due to end of cycling of EW-8D for Pilot Study.
	Vertical Gradients	Active pumping maintaining gradient reversal?		√	No for the following wells: AF-11S/D - due to reduction in EW-7S pumping; OSMW-4S/D - due to reduction in EW-7S pumping.
		Statistically significant increasing (downward vertical) trends? [1]	√		Yes, except the correlation between the background water levels (GM-9 series) in the Perched, USG, and LSG are affected by greater response in the USG and LSG to less rainfall than in the Perched (*i.e.* , Perched water levels are decreasing slower than USG and LSG water levels).
	Equilibrium/Capture Zones	**Steady state/equilibrium maintained?**	√		Slight increase in drawdowns overall compared to 1Q-16
		Capture zone maintained at or near design?	√		Except for USG where capture zone is smaller than designed; also slight reduction in EW-3D capture zone due to cycling, but still greater than designed
GROUNDWATER QUALITY					
	Chemical Trends	Significant trends identified?			
		Perched		√	AF-5P - increased, likely due to plume movement within capture zone
		USG		√	AF-5S and AF-7S - increased and will continue to be monitored closely
		LSG		√	TMW-2D cis-1,2-DCE increased; OSMW-10D increased slightly; OSMW-11D increased - continue to monitor
		Field bioparameters - indicative of cross-contamination?		√	
		Field bioparameters - reduced biodegradation effectiveness?		√	AF-4P, AF-4S, AF-5P, AF-5S, AF-6S, AF-7P, AF-7S, AF-7D, AF-9S, AF-11S, AF-11D, AF-13S, AF-19S, AF-19D, AF-25P, OSMW-1P, OSMW-1S, OSMW-1D, OSMW-3S, OSMW-3D, OSMW-4S, OSMW-4D, OSMW-6D, OSMW-9S, OSMW-9D, OSMW-10P, OSMW-11P, OSMW-11S, OSMW-11D, OSMW-12P, OSMW-13P, PMW-2D, PMW-3D, PMW-4D, and TMW-2S - DO and/or ORP increased; and pH generally decreased - continue to monitor
	Vertical Cross-Contamination	**Nested wells - vertical cross-contamination?**		√	
	Lateral Cross-Contamination	**Potential off-site sources inhibiting remediation?**		√	
	Influent Concentrations	Significant trends identified?[1]		√	EW-4P - TCE Group decreasing trend based on TCE concentrations, and may be an indication of significant source reduction in the southern (downgradient) portion of the Perched extraction system: EW-7S - TCA Group increasing trend based on very low concentrations (<2 ppb), and is not a concern
		Statistical trends - Stable (no significant trends)?	√		Except for EW-4P, which may indicate significant source reduction in the southern (downgradient) portion of the Perched extraction system
		Is continued pumping beneficial?	√		
		Statistical trends - Decreasing (significant negative trend)?	√		
		Optimize or re-evaluate?		√	Except for EW-7S and EW-8D; and possibly EW-4P

Note
Key questions in **BOLD** are PMP Problem Study Questions
1 - Statistical data analysis including trend analysis is conducted on the quarterly data; however, the backup for these analyses are only provided in the Annual Summary reports
2 - "Elevated" is relative to either recent or historical values

Table 2 - Well Completion Data - Groundwater Level Monitoring

Water-Bearing Zone	Well ID - Groundwater Level Monitoring			Transducer[3]	Northing (feet)	Easting (feet)	Ground Surface Elev (ft msl)	TOC Elevation (ft msl)	Inner Casing Diameter (inches)	Well Screen				Total Depth (ft bTOC)[4]
	Hydraulic Control Monitoring	Progress Monitoring[1]	Semiannual Monitoring[2]							Top (ft bgs)	Top (ft msl)	Bottom (ft bgs)	Bottom (ft msl)	
Perched														
	AF-2P	AF-2P	AF-2P		456379.19	1418008.71	562.10	563.39	2.00	28.00	534.10	33.00	529.10	34.46
			AF-3P		456297.40	1417884.19	560.40	561.82	2.00	21.00	539.40	31.00	529.40	32.42
	AF-4P	AF-4P		T	456180.93	1417877.42	560.40	561.90	2.00	24.50	535.90	34.50	525.90	36.21
	AF-5P	AF-5P	AF-5P		455882.90	1417831.43	559.80	561.22	2.00	28.00	531.80	33.00	526.80	34.75
	AF-6P	AF-6P			456059.85	1417402.52	559.80	561.68	2.00	27.70	532.10	32.70	527.10	35.34
	AF-7P	AF-7P	AF-7P	T	455478.24	1417577.30	559.80	561.21	2.00	31.50	528.30	36.50	523.30	37.43
	AF-10P	AF-10P			456127.64	1416977.53	559.90	561.48	2.00	17.40	542.50	22.40	537.50	23.68
	AF-12P	AF-12P			456295.77	1416183.22	574.20	575.05	2.00	14.50	559.70	19.50	554.70	20.78
	AF-13P	AF-13P			456494.02	1416526.13	565.40	566.82	2.00	35.37	530.03	45.37	520.03	32.45
		AF-14P			456528.73	1416790.19	559.53	558.54	2.00	17.50	542.03	27.50	532.03	28.92
	AF-24P		AF-24P		456451.17	1417576.18	559.82	558.89	2.00	26.23	533.59	36.23	523.59	35.40
	AF-25P	AF-25P	AF-25P	T	456074.92	1417500.43	558.40	558.08	2.00	23.27	535.13	33.27	525.13	33.10
	AF-26P				456122.18	1417674.94	558.30	557.78	2.00	30.96	527.34	40.96	517.34	35.44
			AOC LDMW-1S		457924.00	1417429.00	556.20	555.81	2.00	13.29	542.91	23.29	532.91	22.90
			AOC PSTMW-1SR		459022.76	1417784.33	556.91		2.00					
			AOC PSTMW-2S		458993.37	1417998.15	559.90	559.70	2.00	18.50	541.40	28.50	531.40	24.50
	GM-3P				457074.62	1418304.17	559.50	559.24	2.00	19.30	540.20	29.30	530.20	29.3[4]
	GM-9P	GM-9P		T	457104.10	1417217.11	560.30	559.95	2.00	18.00	542.30	28.00	532.30	27.65
			H-221		454547.97	1417264.66	554.70	554.37	2.00	20.00	534.70	30.00	524.70	28.65
	OSMW-1P	OSMW-1P	OSMW-1P	T	455078.23	1417736.02	551.50	554.09	2.00	20.00	531.50	30.00	521.50	32.53
	OSMW-2P	OSMW-2P	OSMW-2P		455601.82	1417822.50	554.80	557.01	2.00	27.00	527.80	37.00	517.80	38.87
	OSMW-10P	OSMW-10P		T	455020.27	1417400.34	555.82	558.57	2.00	20.00	535.82	30.00	525.82	32.57
	OSMW-11P	OSMW-11P			455459.30	1418006.45	552.04	551.71	2.00	13.00	539.04	23.00	529.04	22.93
	OSMW-12P				455880.25	1418332.91	553.66	553.35	2.00	14.70	538.96	24.70	528.96	24.63
	OW-1P				455883.50	1417685.55	559.42	559.75	2.00	30.00	529.42	35.00	524.42	35[4]
	PMW-3P	PMW-3P		T	455249.65	1417470.90	557.41	560.10	2.00	16.00	541.41	26.00	531.41	29.07
	PMW-5P	PMW-5P			1417293.42	455489.81	559.11	558.71	2.00	20.15	538.96	30.15	528.96	29.75
	PMW-6P	PMW-6P			1417456.08	455769.69	561.50	561.10	2.00	28.57	532.93	38.57	522.93	38.17
	TMW-1P	TMW-1P		T	455737.69	1417702.75	559.77	562.12	2.00	22.00	537.77	32.00	527.77	33.84
	TMW-2P	TMW-2P			455595.65	1416931.21	556.94	559.71	2.00	28.50	528.44	33.50	523.44	38.45

See notes on page 3.

Water-Bearing Zone	Well ID - Groundwater Level Monitoring			Transducer[3]	Northing (feet)	Easting (feet)	Ground Surface Elev (ft msl)	TOC Elevation (ft msl)	Inner Casing Diameter (inches)	Well Screen				Total Depth (ft bTOC)[4]
	Hydraulic Control Monitoring	Progress Monitoring[1]	Semiannual Monitoring[2]							Top (ft bgs)	Top (ft msl)	Bottom (ft bgs)	Bottom (ft msl)	
USG														
	AF-4S	AF-4S		T	456183.67	1417879.81	560.30	562.22	2.00	43.00	517.30	53.00	507.30	54.03
	AF-5S	AF-5S	AF-5S		455887.32	1417833.15	559.60	561.60	2.00	41.00	518.60	51.00	508.60	51.92
	AF-6S	AF-6S			456056.40	1417402.71	560.10	562.67	2.00	41.00	519.10	51.00	509.10	52.80
	AF-7S	AF-7S	AF-7S	T	455482.27	1417577.68	559.70	562.02	2.00	45.00	514.70	55.00	504.70	56.68
	AF-8S	AF-8S			455524.80	1417088.16	559.10	561.08	2.00	50.00	509.10	50.00	499.10	60.00
	AF-9S	AF-9S	AF-9S	T	455790.53	1416793.04	562.00	564.19	2.00	50.00	512.00	60.00	502.00	61.75
	AF-10S	AF-10S			456134.19	1416979.21	559.90	561.98	2.00	61.00	498.90	71.00	488.90	67.75
	AF-11S	AF-11S		T	456094.23	1416577.99	564.70	565.20	2.00	53.00	511.70	63.00	501.70	63.27
	AF-12S	AF-12S			456295.87	1416186.19	574.00	575.41	2.00	64.00	510.00	74.00	500.00	72.31
	AF-13S	AF-13S			456488.94	1416522.95	565.20	567.91	2.00	46.50	518.70	56.50	508.70	56.5[4]
	AF-14S	AF-14S			456526.22	1416788.87	559.50	558.56	2.00	56.50	503.00	66.50	493.00	66.5[4]
	AF-19S	AF-19S		T	455823.23	1417037.78	561.60	563.87	2.00	52.40	509.20	62.40	499.20	64.65
	AF-20S	AF-20S			455927.77	1416940.35	559.80	562.47	2.00	59.00	500.80	69.00	490.80	71.57
	GM-9S	GM-9S		T	457108.81	1417214.23	561.00	560.13	2.00	43.00	518.00	53.00	508.00	52.09
	OSMW-1S	OSMW-1S	OSMW-1S	T	455082.59	1417738.59	551.50	554.14	2.00	41.00	510.50	51.00	500.50	52.84
	OSMW-3S	OSMW-3S	OSMW-3S	T	455309.01	1417107.64	557.10	559.91	2.00	54.00	503.10	64.00	493.10	66.60
	OSMW-4S	OSMW-4S	OSMW-4S	T	456144.10	1416386.57	565.50	565.10	2.00	65.00	500.50	75.00	490.50	75.84
			OSMW-5S		453589.27	1416137.49	576.70	576.44	2.00	63.80	512.90	73.80	502.90	73.54
			OSMW-6S		455149.40	1416267.11	586.61	586.38	2.00	80.00	506.61	90.00	496.61	88.78
			OSMW-8S		454625.51	1415147.34	584.64	584.33	2.00	77.41	507.23	87.41	497.23	86.70
	OSMW-9S	OSMW-9S			455705.63	1415409.73	594.66	594.37	2.00	88.80	505.86	98.80	495.86	101.30
	OSMW-10S	OSMW-10S		T	455019.93	1417400.39	555.82	558.59	2.00	47.20	508.62	57.20	498.62	58.20
	OSMW-11S	OSMW-11S			455459.42	1418006.57	552.04	551.64	2.00	37.25	514.79	47.25	504.79	47.20
	PMW-3S	PMW-3S		T	455249.82	1417470.89	557.41	560.12	2.00	44.80	512.61	54.80	502.61	57.40
	TMW-1S	TMW-1S	TMW-1S	T	455739.88	1417703.19	559.78	561.63	2.00	48.30	511.48	58.30	501.48	59.75
	TMW-2S	TMW-2S	TMW-2S		455597.25	1416929.92	557.01	560.15	2.00	40.00	517.01	50.00	507.01	53.08

See notes on page 3.

Water-Bearing Zone	Well ID - Groundwater Level Monitoring			Transducer[3]	Northing (feet)	Easting (feet)	Ground Surface Elev (ft msl)	TOC Elevation (ft msl)	Inner Casing Diameter (inches)	Well Screen				Total Depth (ft bTOC)[4]
	Hydraulic Control Monitoring	Progress Monitoring[1]	Semiannual Monitoring[2]							Top (ft bgs)	Top (ft msl)	Bottom (ft bgs)	Bottom (ft msl)	
LSG														
	AF-1D				456927.14	1417977.19	559.80	559.78	4.00	108.00	451.80	118.00	441.80	118.00
	AF-5D		AF-5D		455889.87	1417834.37	559.50	561.66	2.00	100.00	459.50	110.00	449.50	108.1
	AF-7D	AF-7D	AF-7D	T	455489.28	1417578.92	559.70	561.23	4.00	109.00	450.70	119.00	440.70	118.77
	AF-8D				455517.69	1417091.88	559.00	560.73	4.00	86.00	473.00	96.00	463.00	93.72
	AF-9D	AF-9D		T	455794.33	1416786.95	562.20	563.93	4.00	78.00	484.20	88.00	474.20	93.30
	AF-11D	AF-11D		T	456087.97	1416583.70	564.90	566.27	4.00	92.00	472.90	102.00	462.90	101.79
	AF-12D	AF-12D			456297.35	1416191.94	573.30	575.45	4.00	102.00	471.30	112.00	461.30	111.85
	AF-15D	AF-15D			456991.44	1416851.88	559.80	560.95	4.00	103.00	456.80	113.00	446.80	112.86
	AF-16D				457003.87	1417280.19	560.40	561.83	4.00	91.00	469.40	101.00	459.40	102.57
	AF-17D	AF-17D			456484.75	1417467.78	560.30	561.37	4.00	90.00	470.30	100.00	460.30	99.48
	AF-19D	AF-19D		T	455818.36	1417039.55	561.70	564.10	2.00	81.20	480.50	91.20	470.50	93.40
	AF-20D	AF-20D			455933.76	1416941.09	559.80	562.52	2.00	81.10	478.70	91.10	468.70	93.56
	AF-21D	AF-21D	AF-21D		455941.03	1416777.12	560.00	559.61	2.00	80.00	480.00	90.00	470.00	90.11
	GM-3D				457163.25	1418266.08	560.80	562.47	4.00	138.00	422.80	148.00	412.80	148.00
	GM-5D				457241.00	1416754.00	562.00	564.07	4.00	126.43	455.57	116.43	445.57	116.75[4]
	GM-9D	GM-9D		T	457107.93	1417219.35	561.00	560.06	4.00	100.00	461.00	110.00	451.00	109.30
	H-223	H-223			454519.10	1417253.00	555.00	555.60	2.00	154.50	400.50	164.50	390.50	161.51
	OSMW-1D	OSMW-1D	OSMW-1D	T	455082.67	1417738.40	551.10	554.16	2.00	80.00	471.10	90.00	461.10	92.75
	OSMW-3D	OSMW-3D	OSMW-3D	T	455309.10	1417107.28	557.10	559.91	2.00	131.00	426.10	141.00	416.10	143.31
	OSMW-4D	OSMW-4D	OSMW-4D	T	456143.93	1416386.96	565.50	565.14	2.00	127.00	438.50	137.00	428.50	135.94
			OSMW-5D		452875.51	1416398.42	560.53	560.25	2.00	121.00	439.53	131.00	429.53	130.72
	OSMW-6D	OSMW-6D	OSMW-6D		455147.40	1416265.11	586.38	586.08	2.00	149.77	436.61	159.77	426.61	162.20
	OSMW-7D	OSMW-7D	OSMW-7D		456711.82	1415686.05	592.44	592.09	2.00	141.00	451.44	151.00	441.44	148.80
			OSMW-8D		454625.45	1415147.03	584.64	584.34	2.00	175.30	409.34	185.30	399.34	187.20
	OSMW-9D	OSMW-9D			455705.86	1415409.84	594.66	594.39	2.00	166.00	428.66	176.00	418.66	175.60
	OSMW-10D	OSMW-10D		T	455020.11	1417400.16	555.82	558.61	2.00	130.00	425.82	140.00	415.82	142.63
	OSMW-11D				455459.26	1418006.71	552.04	551.72	2.00	81.00	471.04	91.00	461.04	90.30
	OSMW-11DD				455459.02	1418006.62	552.04	551.68	2.00	140.00	412.04	150.00	402.04	149.83
	OSMW-12D				455880.20	1418333.14	553.66	553.29	2.00	123.00	430.66	133.00	420.66	133.76
	OSMW-12DD				455880.36	1418333.21	553.66	553.18	2.00	141.00	412.66	151.00	402.66	149.20
	OSMW-13D				455241.33	1417853.92	552.03	551.82	2.00	96.00	456.03	106.00	446.03	103.65
	OSMW-13DD				455241.62	1417854.06	552.03	551.70	2.00	142.00	410.03	152.00	400.03	151.84
	OW-3D				455360.77	1417112.74	557.72	557.43	2.00	135.00	422.72	140.00	417.72	140[4]
	OW-4D				455422.91	1417165.94	559.68	559.41	2.00	135.00	424.68	140.00	419.68	140[4]
	PMW-2D	PMW-2D			456024.30	1417902.40	560.05	562.47	2.00	125.00	435.05	135.00	425.05	139.70
	PMW-3D	PMW-3D		T	455249.80	1417471.07	557.41	560.04	2.00	126.00	431.41	136.00	421.41	139.75
	PMW-4D	PMW-4D			456424.32	1416617.44	564.33	567.25	2.00	130.00	434.33	140.00	424.33	142.51
	TMW-1D		TMW-1D		455740.26	1417702.92	559.78	562.02	2.00	94.30	465.48	104.30	455.48	106.45
	TMW-2D	TMW-2D	TMW-2D		455597.15	1416930.07	557.01	559.86	2.00	117.30	439.71	127.30	429.71	129.32

Notes:
1) Quarterly Progress Monitoring in the Perched, USG, and LSG.
2) Semiannual sampling occurs in the second and fourth quarters
3) T = Transducer; Blank = Manual.
4) 'ft bTOC' = Feet Below Top of Casing; Total depths for the following wells GM-3P, OW-1P, AF-13S, AF-14S, GM-5D, OW-3D, OW-4D are measured from ground surface
5) 'ft bgs' = Feet Below Ground Surface.
6) 'ft msl' = Feet Relative to Mean Sea Level.

Table 3 - Well Completion Data - Groundwater Quality Monitoring

Water-Bearing Zone	Well ID - VOC Sampling			Northing (feet)	Easting (feet)	Ground Surface Elev (ft msl)	TOC Elevation (ft msl)	Inner Casing Diameter (inches)	Well Screen				Total Depth (ft bTOC)[3]
	Hydraulic Control Monitoring	Progress Monitoring[1]	Semiannual Monitoring[2]						Top (ft bgs)	Top (ft msl)	Bottom (ft bgs)	Bottom (ft msl)	
Perched													
			AF-2P	456379.19	1418008.71	562.10	563.39	2.00	28.00	534.10	33.00	529.10	34.46
			AF-3P	456297.40	1417884.19	560.40	561.82	2.00	21.00	539.40	31.00	529.40	32.42
	AF-4P	AF-4P		456180.93	1417877.42	560.40	561.90	2.00	24.50	535.90	34.50	525.90	36.21
		AF-5P	AF-5P	455882.90	1417831.43	559.80	561.22	2.00	28.00	531.80	33.00	526.80	34.75
	AF-7P	AF-7P	AF-7P	455478.24	1417577.30	559.80	561.21	2.00	31.50	528.30	36.50	523.30	37.43
	AF-13P	AF-13P		456494.02	1416526.13	565.40	566.82	2.00	35.37	530.03	45.37	520.03	32.45
			AF-24P	456451.17	1417576.18	559.82	558.89	2.00	26.23	533.59	36.23	523.59	35.40
	AF-25P	AF-25P	AF-25P	456074.92	1417500.43	558.40	558.08	2.00	23.27	535.13	33.27	525.13	33.10
			AOC LDMW-1S	457924.00	1417429.00	556.20	555.81	2.00	13.29	542.91	23.29	532.91	22.90
			AOC PSTMW-1SR	459022.76	1417784.33	556.91		2.00					
			AOC PSTMW-2S	458993.37	1417998.15	559.90	559.70	2.00	18.50	541.40	28.50	531.40	24.50
			H-221	454547.97	1417264.66	554.70	554.37	2.00	20.00	534.70	30.00	524.70	28.65
		OSMW-1P	OSMW-1P	455078.23	1417736.02	551.50	554.09	2.00	20.00	531.50	30.00	521.50	32.53
			OSMW-2P	455601.82	1417822.50	554.80	557.01	2.00	27.00	527.80	37.00	517.80	38.87
		OSMW-10P		455020.27	1417400.34	555.82	558.57	2.00	20.00	535.82	30.00	525.82	32.57
		OSMW-11P		455459.30	1418006.45	552.04	551.71	2.00	13.00	539.04	23.00	529.04	22.93
		OSMW-12P		455880.25	1418332.91	553.66	553.35	2.00	14.70	538.96	24.70	528.96	24.63
		OSMW-13P		455241.47	1417854.22	552.03	551.75	2.00	22.00	530.03	32.00	520.03	32.45
	PMW-3P	PMW-3P		455249.65	1417470.90	557.41	560.10	2.00	16.00	541.41	26.00	531.41	29.07
	TMW-1P	TMW-1P		455737.69	1417702.75	559.77	562.12	2.00	22.00	537.77	32.00	527.77	33.84
USG													
	AF-4S	AF-4S		456183.67	1417879.81	560.30	562.22	2.00	43.00	517.30	53.00	507.30	54.03
		AF-5S	AF-5S	455887.32	1417833.15	559.60	561.60	2.00	41.00	518.60	51.00	508.60	51.92
	AF-6S	AF-6S		456056.4	1417402.71	560.10	562.67	2.00	41.00	519.10	51.00	509.10	52.80
	AF-7S	AF-7S	AF-7S	455482.27	1417577.68	559.70	562.02	2.00	45.00	514.70	55.00	504.70	56.68
	AF-9S	AF-9S	AF-9S	455790.53	1416793.04	562.00	564.19	2.00	50.00	512.00	60.00	502.00	61.75
	AF-11S	AF-11S		456094.23	1416577.99	564.70	565.20	2.00	53.00	511.70	63.00	501.70	63.27
	AF-13S	AF-13S		456488.94	1416522.95	565.20	567.91	2.00	45.60	519.60	55.60	509.60	55.6[3]
	AF-19S	AF-19S		455823.23	1417037.78	561.60	563.87	2.00	52.40	509.20	62.40	499.20	64.65
	OSMW-1S	OSMW-1S	OSMW-1S	455082.59	1417738.59	551.50	554.14	2.00	41.00	510.50	51.00	500.50	52.84
	OSMW-3S	OSMW-3S	OSMW-3S	455309.01	1417107.64	557.10	559.91	2.00	54.00	503.10	64.00	493.10	66.60
	OSMW-4S	OSMW-4S	OSMW-4S	456144.10	1416386.57	565.50	565.10	2.00	65.00	500.50	75.00	490.50	75.84
			OSMW-5S	453589.27	1416137.49	576.70	576.44	2.00	63.80	512.90	73.80	502.90	73.54
			OSMW-6S	455149.40	1416267.11	586.61	586.38	2.00	80.00	506.61	90.00	496.61	88.78
			OSMW-8S	454625.51	1415147.34	584.64	584.33	2.00	77.41	507.23	87.41	497.23	86.70
		OSMW-9S		455705.63	1415409.73	594.66	594.37	2.00	88.80	505.86	98.80	495.86	101.30
		OSMW-10S		455019.93	1417400.39	555.82	558.59	2.00	47.20	508.62	57.20	498.62	58.20
		OSMW-11S		455459.42	1418006.57	552.04	551.64	2.00	37.25	514.79	47.25	504.79	47.20
	PMW-3S	PMW-3S		455249.82	1417470.89	557.41	560.12	2.00	44.80	512.61	54.80	502.61	57.40
	TMW-1S	TMW-1S	TMW-1S	455739.88	1417703.19	559.78	561.63	2.00	48.30	511.48	58.30	501.48	59.75
	TMW-2S	TMW-2S	TMW-2S	455597.25	1416929.92	557.01	560.15	2.00	40.00	517.01	50.00	507.01	53.08

See notes on page 2.

Water-Bearing Zone	Well ID - VOC Sampling			Northing (feet)	Easting (feet)	Ground Surface Elev (ft msl)	TOC Elevation (ft msl)	Inner Casing Diameter (inches)	Well Screen				Total Depth (ft bTOC)[3]
	Hydraulic Control Monitoring	Progress Monitoring[1]	Semiannual Monitoring[2]						Top (ft bgs)	Top (ft msl)	Bottom (ft bgs)	Bottom (ft msl)	
LSG													
			AF-5D	455889.87	1417834.37	559.50	561.66	2.00	100.00	459.50	110.00	449.50	108.10
	AF-7D	AF-7D	AF-7D	455489.28	1417578.92	559.70	561.23	4.00	109.00	450.70	119.00	440.70	118.77
	AF-9D			455794.33	1416786.95	562.20	563.93	4.00	78.00	484.20	88.00	474.20	93.30
	AF-11D	AF-11D		456087.97	1416583.70	564.90	566.27	4.00	92.00	472.90	102.00	462.90	101.79
	AF-19D	AF-19D		455818.36	1417039.55	561.70	564.10	2.00	81.20	480.50	91.20	470.50	93.40
			AF-21D	455941.03	1416777.12	560.00	559.61	2.00	80.00	480.00	90.00	470.00	90.11
	OSMW-1D	OSMW-1D	OSMW-1D	455082.67	1417738.40	551.10	554.16	2.00	80.00	471.10	90.00	461.10	92.75
	OSMW-3D	OSMW-3D	OSMW-3D	455309.10	1417107.28	557.10	559.91	2.00	131.00	426.10	141.00	416.10	143.31
	OSMW-4D	OSMW-4D	OSMW-4D	456143.93	1416386.96	565.50	565.14	2.00	127.00	438.50	137.00	428.50	135.94
			OSMW-5D	452875.51	1416398.42	560.53	560.25	2.00	121.00	439.53	131.00	429.53	130.72
		OSMW-6D	OSMW-6D	455147.40	1416265.11	586.38	586.08	2.00	149.77	436.61	159.77	426.61	162.20
			OSMW-7D	456711.82	1415686.05	592.44	592.09	2.00	141.00	451.44	151.00	441.44	148.80
			OSMW-8D	454625.45	1415147.03	584.64	584.34	2.00	175.30	409.34	185.30	399.34	187.20
	OSMW-9D	OSMW-9D		455705.86	1415409.84	594.66	594.39	2.00	166.00	428.66	176.00	418.66	175.60
	OSMW-10D	OSMW-10D		455020.11	1417400.16	555.82	558.61	2.00	130.00	425.82	140.00	415.82	142.63
		OSMW-11D		455459.26	1418006.71	552.04	551.72	2.00	81.00	471.04	91.00	461.04	90.30
		PMW-2D		456024.30	1417902.40	560.05	562.47	2.00	125.00	435.05	135.00	425.05	139.70
	PMW-3D	PMW-3D		455249.80	1417471.07	557.41	560.04	2.00	126.00	431.41	136.00	421.41	139.75
	PMW-4D	PMW-4D		456424.32	1416617.44	564.33	567.25	2.00	130.00	434.33	140.00	424.33	142.51
		TMW-1D	TMW-1D	455740.26	1417702.92	559.78	562.02	2.00	94.30	465.48	104.30	455.48	106.45
	TMW-2D	TMW-2D	TMW-2D	455597.15	1416930.07	557.01	559.86	2.00	117.30	439.71	127.30	429.71	129.32

Notes:
1) Quarterly Progress Monitoring in the Perched, USG, and LSG.
2) Semiannual sampling occurs in the second and fourth quarters.
3) 'ft bTOC' = Feet Below Top of Casing; Total depth for AF-13S is measured from ground surface
4) 'ft bgs' = Feet Below Ground Surface.
5) 'ft msl' = Feet Relative to Mean Sea Level.

Table 4 - Summary of Groundwater Sampling Results (2Q-16) - Detected Parameters Only

Location		AF-11D	AF-11S	AF-13S	AF-19D	AF-19S	AF-21D	AF-24P	AF-25P	AF-2P	AF-3P
Sample Date		6/9/2016	6/7/2016	6/8/2016	6/9/2016	6/8/2016	6/9/2016	6/8/2016	6/8/2016	6/8/2016	6/8/2016
FIELD PARAMETERS	**units**										
dtw											
pH	S.U.	7.69	6.98	10.25	7.29	6.77	8.72	6.88	6.48	7.31	7.12
Conductivity (mS/cm)	mS/cm	0.601	0.714	0.306	0.786	1.089	0.5	3.946	2.984	1.151	1.614
DO (mg/L)	mg/L	0.84	0.46	4.50	1.29	0.52	0.73	0.30	0.54	0.81	0.45
Temperature (oC)	Deg C	15.80	16.63	16.50	15.97	15.93	15.85	18.05	17.60	14.68	15.53
ORP (mV)	mV	-117.8	-94.1	20.8	-106.7	-74.3	-99.9	-6.4	82.5	29.7	38.5
DETECTABLE VOCs	**units**										
1,1,1-Trichloroethane	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	350	340	2.6	11
1,1-Dichloroethane	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	72	61	7.6	0.88 J
1,1-Dichloroethene	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	41	34	< 1	< 1
2-Butanone	ug/l	< 10	< 10	< 10	< 10	< 10	< 10	< 50	< 200 UJ	< 10	< 10
Acetone	ug/l	5.2 J	3.4 J	4.2 J	< 10	3.8 J	< 10 UJ	< 50 UJ	< 200 UJ	< 10 UJ	< 10 UJ
Benzene	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5	< 20	< 1	< 1
Chloroethane	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5	< 20	< 1	< 1
Chloroform	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3.2 J	< 20	< 1	< 1
cis-1,2-Dichloroethene	ug/l	1.3	< 1.0	13	< 1.0	< 1.0	< 1.0	100	< 20	< 1	1.3
Tetrachloroethene	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	8.7	< 20	< 1	5.7
trans-1,2-Dichloroethene	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	71	< 20	< 1	< 1
Trichloroethene	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	510	410	35	34
Vinyl Chloride	ug/l	1	3	1.2	< 1.0	6.6	1.9	21	< 20	< 1	< 1

Notes:

1) J = Estimated
2) F1 = MS and/or MSD Recovery is outside acceptance limits.
3) NM = Not Measured
4) UJ = Reporting Limit is Estimated.
5) * = DO for OSMW-8S was higher than normal.
6) See Table 3 for listing of semiannual wells

Location		AF-4P	AF-4S	AF-5D	AF-5P	AF-5S	AF-6S	AF-7D	AF-7P	AF-7S	AF-9S
Sample Date		6/7/2016	6/7/2016	6/9/2016	6/8/2016	6/8/2016	6/7/2016	6/13/2016	6/13/2016	6/13/2016	6/8/2016
FIELD PARAMETERS	**units**										
dtw											
pH	S.U.	6.57	7.02	7.32	7.00	6.99	7.03	7.41	7.20	7.39	7.01
Conductivity (mS/cm)	mS/cm	1.249	1.016	0.928	1.654	1.347	0.926	1.097	1.422	0.962	0.995
DO (mg/L)	mg/L	0.68	0.62	0.00	0.25	0.18	0.49	0.70	0.87	0.90	0.63
Temperature (oC)	Deg C	15.49	15.38	14.43	14.82	15.51	18.27	14.76	17.58	17.41	16.23
ORP (mV)	mV	133.6	-127.8	-90.7	48.1	-85.6	-87.5	-129.0	-90.2	-146.9	-102.5
DETECTABLE VOCs	**units**										
1,1,1-Trichloroethane	ug/l	28	< 1.0	< 1.0	58 F1	< 1	< 1.0	< 1.0	< 1.0	< 10	< 1
1,1-Dichloroethane	ug/l	5.4	< 1.0	< 1.0	5.2	5.6	< 1.0	< 1.0	1	7 J	< 1
1,1-Dichloroethene	ug/l	0.52 J	< 1.0	< 1.0	1.5 J	< 1	< 1.0	< 1.0	< 1.0	< 10	< 1
2-Butanone	ug/l	< 10	< 10	1.5 J	< 50	< 10	< 10	< 10	< 10	< 100	< 10
Acetone	ug/l	< 10	5.1 J	22 J	< 50 UJ	< 10 UJ	3.5 J	< 10	< 10	< 100	< 10 UJ
Benzene	ug/l	< 1.0	0.67 J	< 1.0	< 5	0.41 J	< 1.0	< 1.0	< 1.0	< 10	< 1
Chloroethane	ug/l	< 1.0	< 1.0	< 1.0	< 5	1.7	< 1.0	< 1.0	< 1.0	< 10	< 1
Chloroform	ug/l	0.5 J	< 1.0	< 1.0	< 5	< 1	< 1.0	< 1.0	< 1.0	< 10	< 1
cis-1,2-Dichloroethene	ug/l	3.6	< 1.0	< 1.0	5.4	19	< 1.0	< 1.0	< 1.0	420	< 1
Tetrachloroethene	ug/l	8.7	< 1.0	< 1.0	< 5	< 1	< 1.0	< 1.0	< 1.0	< 10	< 1
trans-1,2-Dichloroethene	ug/l	< 1.0	< 1.0	< 1.0	< 5	< 1	< 1.0	< 1.0	< 1.0	< 10	< 1
Trichloroethene	ug/l	73	< 1.0	< 1.0	160 J	< 1	< 1.0	< 1.0	< 1.0	< 10	< 1
Vinyl Chloride	ug/l	< 1.0	< 1.0	< 1.0	< 5	93	3.2	< 1.0	1.7	510	< 1

Notes:

1) J = Estimated
2) F1 = MS and/or MSD Recovery is outside acceptance limits.
3) NM = Not Measured
4) UJ = Reporting Limit is Estimated.
5) * = DO for OSMW-8S was higher than normal.
6) See Table 3 for listing of semiannual wells

Location Sample Date		AOC LDMW-1S 6/8/2016	AOC PSTMW-1SR 6/8/2016	AOC PSTMW-2S 6/8/2016	H-221 6/10/2016	OSMW-10D 6/9/2016	OSMW-10P 6/7/2016	OSMW-10S 6/7/2016	OSMW-11D 6/9/2016	OSMW-11P 6/8/2016
FIELD PARAMETERS	**units**									
dtw										
pH	S.U.	7.24	7.35	7.59	7.28	7.15	6.70	6.80	7.25	6.86
Conductivity (mS/cm)	mS/cm	3.565	4.93	4.022	1.157	1.067	1.744	1.529	1.332	1.737
DO (mg/L)	mg/L	0.31	0.96	0.75	0.67	1.20	0.51	0.26	2.89	0.44
Temperature (oC)	Deg C	18.52	15.46	15.90	15.73	14.74	16.92	16.98	14.43	14.98
ORP (mV)	mV	48.0	59.6	80.6	-10.6	-72.9	-96.0	-59.5	-78.2	-37.8
DETECTABLE VOCs	**units**									
1,1,1-Trichloroethane	ug/l	150	< 1	20	12	13	3.1	3	0.84 J	< 1.0
1,1-Dichloroethane	ug/l	130	< 1	< 1	3.3	7.2	15	2.2	19	0.78 J
1,1-Dichloroethene	ug/l	21	< 1	0.45 J	< 1.0	0.85 J	< 1.0	< 1.0	2.4	< 1.0
2-Butanone	ug/l	< 50	< 10	< 10	< 10	< 10	2.6 J	< 10	< 10	< 10
Acetone	ug/l	< 50 UJ	< 10 UJ	< 10 UJ	< 10 UJ	4.3 J	< 13 U	5.3 J	< 10	3.6 J
Benzene	ug/l	< 5	< 1	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	ug/l	< 5	< 1	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	ug/l	3.4 J	< 1	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	ug/l	< 5	< 1	< 1	1.1	12	27	7.6	130	1.1
Tetrachloroethene	ug/l	1.8 J	< 1	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	ug/l	< 5	< 1	< 1	< 1.0	< 1.0	< 1.0	< 1.0	3.1	< 1.0
Trichloroethene	ug/l	190	< 1	2.8	34	24	40	21	22	< 1.0
Vinyl Chloride	ug/l	< 5	< 1	< 1	< 1.0	< 1.0	< 1.0	< 1.0	2.9	< 1.0

Notes:

1) J = Estimated
2) F1 = MS and/or MSD Recovery is outside acceptance limits.
3) NM = Not Measured
4) UJ = Reporting Limit is Estimated.
5) * = DO for OSMW-8S was higher than normal.
6) See Table 3 for listing of semiannual wells

Location Sample Date		OSMW-11S 6/8/2016	OSMW-12P 6/8/2016	OSMW-13P 6/8/2016	OSMW-1D 6/10/2016	OSMW-1P 6/8/2016	OSMW-1S 6/8/2016	OSMW-2P 6/8/2016	OSMW-3D 6/9/2016	OSMW-3S 6/8/2016	OSMW-4D 6/9/2016
FIELD PARAMETERS	**units**										
dtw											
pH	S.U.	6.83	7.23	7.05	7.60	6.78	6.94	7.12	6.70	5.82	7.21
Conductivity (mS/cm)	mS/cm	1.925	1.079	1.684	1.024	2.97	1.647	1.489	0.957	0.865	0.42
DO (mg/L)	mg/L	0.31	0.48	0.65	0.79	0.51	0.26	0.53	0.78	0.46	2.10
Temperature (oC)	Deg C	14.81	13.80	15.63	15.17	15.02	15.26	15.44	14.93	16.59	15.74
ORP (mV)	mV	-31.3	19.0	35.5	-119.2	26.6	-108.2	-67.9	-90.3	120.3	-88.1
DETECTABLE VOCs	**units**										
1,1,1-Trichloroethane	ug/l	< 2.0	2.3	< 1.0	< 1.0	< 1	< 2	< 1	< 1.0	< 1	< 1.0
1,1-Dichloroethane	ug/l	20	2.1	2.6	1.6	2.3	1.8 J	5.6	1.6	< 1	0.54 J
1,1-Dichloroethene	ug/l	2.4	< 1.0	< 1.0	< 1.0	< 1	< 2	< 1	< 1.0	< 1	< 1.0
2-Butanone	ug/l	< 20	< 10	< 10	< 10	< 10	< 20 UJ	< 10	< 10	< 10	< 10
Acetone	ug/l	< 20	4.9 J	4.7 J	< 10 UJ	< 10 UJ	< 20 UJ	< 10 UJ	< 10 UJ	< 10	< 10 UJ
Benzene	ug/l	< 2.0	< 1.0	< 1.0	< 1.0	< 1	< 2	0.44 J	0.7 J	< 1	< 1.0
Chloroethane	ug/l	< 2.0	< 1.0	< 1.0	< 1.0	< 1	< 2	< 1	< 1.0	< 1	< 1.0
Chloroform	ug/l	< 2.0	< 1.0	< 1.0	< 1.0	< 1	< 2	< 1	< 1.0	< 1	< 1.0
cis-1,2-Dichloroethene	ug/l	170	< 1.0	1.7	3.8	< 1	44	15	30	< 1	< 1.0
Tetrachloroethene	ug/l	< 2.0	< 1.0	< 1.0	< 1.0	< 1	< 2	< 1	< 1.0	< 1	< 1.0
trans-1,2-Dichloroethene	ug/l	4.2	< 1.0	< 1.0	< 1.0	< 1	< 2	< 1	7.7	< 1	< 1.0
Trichloroethene	ug/l	29	3.2	< 1.0	< 1.0	< 1	< 2	< 1	< 1.0	< 1	< 1.0
Vinyl Chloride	ug/l	2.1	< 1.0	< 1.0	14	< 1	93	23	40	< 1	1.7

Notes:

1) J = Estimated
2) F1 = MS and/or MSD Recovery is outside acceptance limits.
3) NM = Not Measured
4) UJ = Reporting Limit is Estimated.
5) * = DO for OSMW-8S was higher than normal.
6) See Table 3 for listing of semiannual wells

Table 4 - Summary of Groundwater Sampling Results (2Q-16) - Detected Parameters Only

Location Sample Date		OSMW-4S 6/9/2016	OSMW-5S 6/13/2016	OSMW-6D 6/13/2016	OSMW-6S 6/13/2016	OSMW-7D 6/13/2016	OSMW-8D 6/9/2016	OSMW-8S 6/9/2016	OSMW-9D 6/9/2016	OSMW-9S 6/9/2016	PMW-2D 6/9/2016
FIELD PARAMETERS	**units**										
dtw											
pH	S.U.	8.39	7.13	11.16	11.65	7.02	NM	11.56	7.49	7.12	7.23
Conductivity (mS/cm)	mS/cm	0.475	1.084	0.523	0.88	0.309	NM	0.707	0.703	0.932	0.93
DO (mg/L)	mg/L	1.94	0.65	1.01	2.77	1.25	NM	6.50 *	0.93	2.62	0.00
Temperature (oC)	Deg C	16.13	15.67	15.89	16.84	15.10	NM	16.21	15.55	16.14	13.91
ORP (mV)	mV	31.7	-103.9	-17.3	-60.5	-89.8	NM	-76.8	-88.2	-93.6	-77.0
DETECTABLE VOCs	**units**										
1,1,1-Trichloroethane	ug/l	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	ug/l	< 1	2.8	1.8	0.76 J	< 1.0	< 1.0	11	< 1.0	0.43 J	< 1.0
1,1-Dichloroethene	ug/l	< 1	0.29 J	< 1.0	0.85 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone	ug/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acetone	ug/l	< 10 UJ	< 10	< 10	< 10	< 10	< 10 UJ	< 10 UJ	3.1 J	< 10	< 10
Benzene	ug/l	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	ug/l	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	ug/l	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	ug/l	< 1	16	8.1	5.8	< 1.0	3.2	2.4	< 1.0	15	< 1.0
Tetrachloroethene	ug/l	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	ug/l	< 1	1.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	ug/l	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	ug/l	< 1	8	37	1.8	6.8	49	2.2	11	37	< 1.0

Notes:

1) J = Estimated
2) F1 = MS and/or MSD Recovery is outside acceptance limits.
3) NM = Not Measured
4) UJ = Reporting Limit is Estimated.
5) * = DO for OSMW-8S was higher than normal.
6) See Table 3 for listing of semiannual wells

Location		PMW-3D	PMW-3P	PMW-3S	PMW-4D	TMW-1D	TMW-1P	TMW-1S	TMW-2D	TMW-2S
Sample Date		6/9/2016	6/7/2016	6/7/2016	6/9/2016	6/9/2016	6/7/2016	6/7/2016	6/9/2016	6/8/2016
FIELD PARAMETERS	**units**									
dtw										
pH	S.U.	7.41	6.61	6.92	12.12	7.14	6.69	6.58	7.31	7.06
Conductivity (mS/cm)	mS/cm	0.742	0.896	0.728	1.322	0.912	2.447	1.813	1.167	1.143
DO (mg/L)	mg/L	2.79	0.29	0.18	2.16	1.72	0.30	0.42	0.53	0.60
Temperature (oC)	Deg C	14.74	16.70	17.02	15.69	15.10	16.68	16.36	14.93	15.98
ORP (mV)	mV	-87.3	-86.6	-99.2	-93.4	-91.3	-91.6	-122.4	-121.1	-84.6
DETECTABLE VOCs	**units**									
1,1,1-Trichloroethane	ug/l	< 1.0	< 5.0	1.7	< 1.0	< 1.0	140	< 1	< 10	< 1
1,1-Dichloroethane	ug/l	2.4	38	3.6	< 1.0	< 1.0	37	2	< 10	< 1
1,1-Dichloroethene	ug/l	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	13	< 1	< 10	< 1
2-Butanone	ug/l	< 10	< 50	< 10	< 10	< 10	< 40	< 10	< 100	< 10
Acetone	ug/l	3.9 J	< 50	5.1 J	4.6 J	< 10 UJ	< 40	< 10 UJ	< 100 UJ	< 10 UJ
Benzene	ug/l	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1	< 10	< 1
Chloroethane	ug/l	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1	< 10	< 1
Chloroform	ug/l	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	1.4 J	< 1	< 10	< 1
cis-1,2-Dichloroethene	ug/l	2.6	130	10	< 1.0	< 1.0	41	38	730	1.5
Tetrachloroethene	ug/l	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1	< 10	< 1
trans-1,2-Dichloroethene	ug/l	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 4.0	< 1	190	< 1
Trichloroethene	ug/l	< 1.0	9	3.9	< 1.0	< 1.0	170	< 1	7.5 J	< 1
Vinyl Chloride	ug/l	5.6	6.8	6.3	2.8	< 1.0	8.2	72	20	< 1

Notes:

1) J = Estimated
2) F1 = MS and/or MSD Recovery is outside acceptance limits.
3) NM = Not Measured
4) UJ = Reporting Limit is Estimated.
5) * = DO for OSMW-8S was higher than normal.
6) See Table 3 for listing of semiannual wells

Table 5 - Summary of Groundwater Chemical Cross-Contamination Analyses

			6/8/2016			
Well ID	TCA_grp UTL Value (µmol/L)	TCE_grp UTL Value (µmol/L)	TCA Group Values (µmol/L)	TCE Group Values (µmol/L)	TCA Group Comparison	TCE Group Comparison
AF-11D	.0092	2.3875	0.0000	0.0294	ACCEPT	ACCEPT
AF-13S	.0359	0.0359	0.0000	0.1533	ACCEPT	REJECT[2]
AF-19D	.0359	.0359	0.0000	0.0000	ACCEPT	ACCEPT
AF-19S	.0359	.0359	0.0000	0.1056	ACCEPT	REJECT[2]
AF-4P	2.0047	3.6624	0.2698	0.6428	ACCEPT	ACCEPT
AF-6S	.0359	.0359	0.0000	0.0512	ACCEPT	ACCEPT
TMW-1P	3.1442	5.8024	1.5574	1.8424	ACCEPT	ACCEPT
AF-11S	.0842	3.1943	0.0000	0.0480	ACCEPT	ACCEPT
AF-21D	.0070	.5265	0.0000	0.0304	ACCEPT	ACCEPT
AF-24P	18.0821	9.9566	3.7741	6.0171	ACCEPT	ACCEPT
AF-25P	12.3782	11.3839	3.5158	3.1070	ACCEPT	ACCEPT
AF-2P	.1073	.5533	0.0963	0.2652	ACCEPT	ACCEPT
AF-3P	.9429	1.6063	0.0913	0.3054	ACCEPT	ACCEPT
AF-4S	1.1853	5.9427	0.0000	0.0000	ACCEPT	ACCEPT
AF-5D	0.0155	0.0044	0.0000	0.0000	ACCEPT	ACCEPT
AF-5P	1.3739	4.5782	0.5028	1.2682	ACCEPT	ACCEPT
AF-5S	2.5715	9.0739	0.0829	1.6840	ACCEPT	ACCEPT
AF-7D	.0240	.0261	0.0000	0.0000	ACCEPT	ACCEPT
AF-7P	10.8813	9.7516	0.0101	0.0272	ACCEPT	ACCEPT
AF-7S	.7677	31.8240	0.0707	12.4924	ACCEPT	ACCEPT
AF-9S	.0694	.7894	0.0000	0.0000	ACCEPT	ACCEPT
AOC LDMW-1S	66.8780	21.1752	2.6547	1.4507	ACCEPT	ACCEPT
AOC PSTMW-2S	.6589	.2892	0.1546	0.0212	ACCEPT	ACCEPT
H-221	.7940	1.0121	0.1233	0.2690	ACCEPT	ACCEPT
OSMW-10D	0.1633	.1269	0.1790	0.3056	REJECT	REJECT
OSMW-10P	3.9915	2.7868	0.1748	0.5816	ACCEPT	ACCEPT
OSMW-10S	3.5411	1.2163	0.0447	0.2375	ACCEPT	ACCEPT
OSMW-11D	.7604	8.2552	0.2231	1.5860	ACCEPT	ACCEPT
OSMW-11P	.0232	0.0066	0.0079	0.0113	ACCEPT	REJECT[2]
OSMW-11S	1.0371	11.9864	0.2269	2.0502	ACCEPT	ACCEPT
OSMW-12P	.0529	.0352	0.0385	0.0242	ACCEPT	ACCEPT
OSMW-13P	.0510	.0688	0.0263	0.0175	ACCEPT	ACCEPT
OSMW-1D	1.0602	23.5751	0.0162	0.2632	ACCEPT	ACCEPT
OSMW-1P	.0386	.0383	0.0232	0.0000	ACCEPT	ACCEPT
OSMW-1S	1.8189	54.1122	0.0182	1.9419	ACCEPT	ACCEPT
OSMW-2P	.1552	.8655	0.0566	0.5227	ACCEPT	ACCEPT
OSMW-3D	0.0969	13.9650	0.0162	1.0289	ACCEPT	ACCEPT
OSMW-3S	.0952	.8117	0.0000	0.0000	ACCEPT	ACCEPT
OSMW-4D	.1902	1.2387	0.0055	0.0272	ACCEPT	ACCEPT
OSMW-4S	.1184	7.8398	0.0000	0.0000	ACCEPT	ACCEPT
OSMW-5S	0.0186	.1804	0.0313	0.3044	REJECT[2]	REJECT
OSMW-6D	.8025	3.8001	0.0182	0.6756	ACCEPT	ACCEPT
OSMW-6S	1.1900	2.0246	0.0164	0.0886	ACCEPT	ACCEPT
OSMW-7D	.0359	.1744	0.0000	0.1088	ACCEPT	ACCEPT
OSMW-8D	0.0034	0.6823	0.0000	0.8170	ACCEPT	REJECT
OSMW-8S	.0268	1.3407	0.1112	0.0600	REJECT	ACCEPT

Table 5 - Summary of Groundwater Chemical Cross-Contamination Analyses

			6/8/2016			
Well ID	TCA_grp UTL Value (µmol/L)	TCE_grp UTL Value (µmol/L)	TCA Group Values (µmol/L)	TCE Group Values (µmol/L)	TCA Group Comparison	TCE Group Comparison
OSMW-9D	.0359	.4657	0.0000	0.1760	ACCEPT	ACCEPT
OSMW-9S	.0327	6.9411	0.0043	0.7467	ACCEPT	ACCEPT
PMW-2D	.0021	.0359	0.0000	0.0000	ACCEPT	ACCEPT
PMW-3D	3.1451	2.5338	0.0243	0.1164	ACCEPT	ACCEPT
PMW-3P	2.5478	4.0693	0.3840	1.5179	ACCEPT	ACCEPT
PMW-3S	2.3156	2.3051	0.0491	0.2335	ACCEPT	ACCEPT
PMW-4D	.0359	.1228	0.0000	0.0448	ACCEPT	ACCEPT
TMW-1D	.0359	0.0093	0.0000	0.0000	ACCEPT	ACCEPT
TMW-1S	.2465	10.5703	0.0202	1.5440	ACCEPT	ACCEPT
TMW-2D	.0454	9.8486	0.0000	9.8663	ACCEPT	REJECT
TMW-2S	.0039	.0254	0.0000	0.0155	ACCEPT	ACCEPT

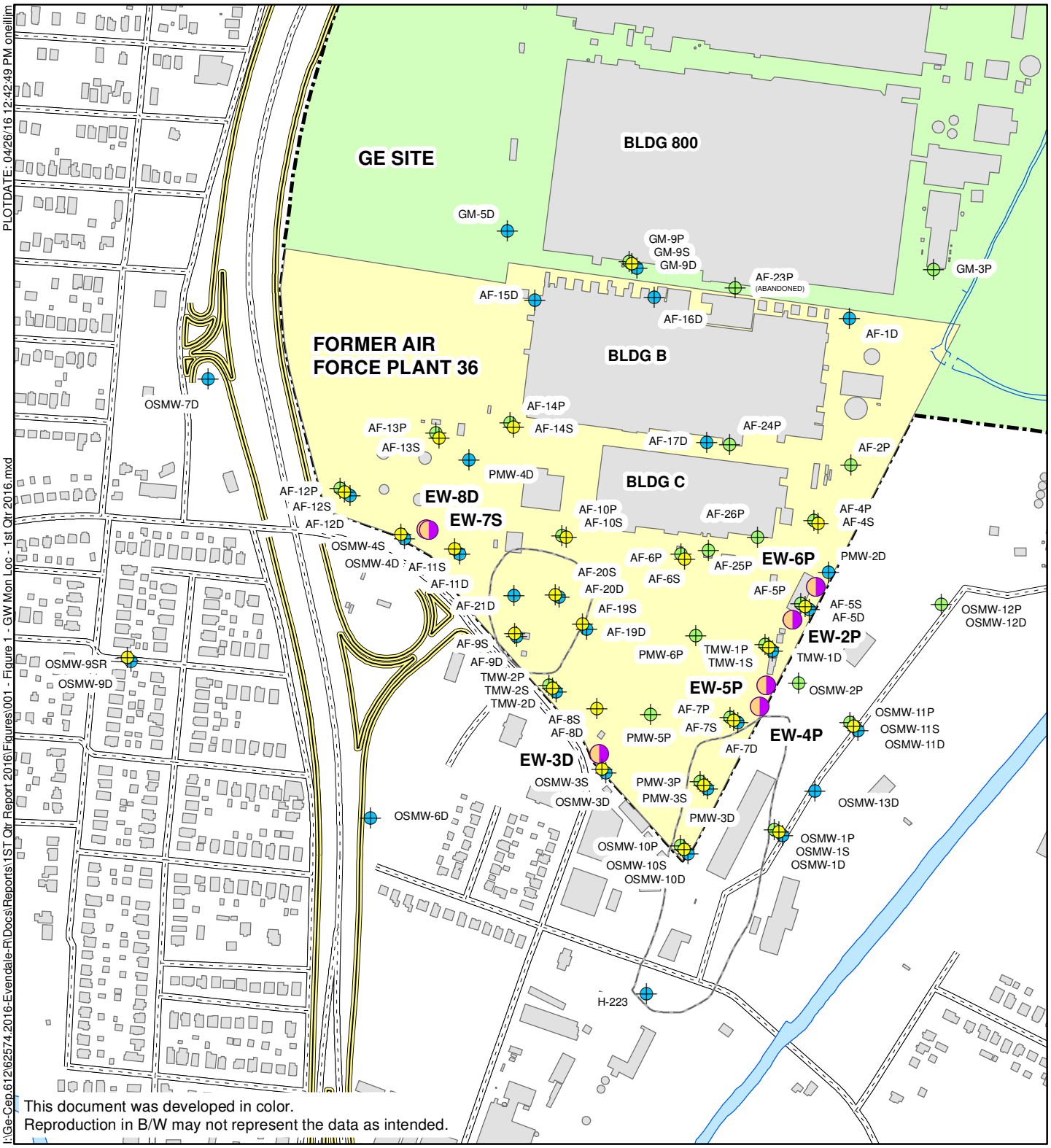
Footnotes: ACCEPT - current concentrations are below baseline UTL value (not indicative of cross-contamination)

REJECT - current concentrations are above baseline UTL value (evaluate the potential for cross-contamination, except as noted below)

1. The methodology for calculating the upper tolerance limit (UTL) is included in the Performance Monitoring Plan.
2. The intrawell analysis for AF-13S (TCE Group), AF-19S (TCE Group), and OSMW-11P (TCE Group) were triggered because the analysis compared the TCA and TCE Group values to UTL values that were developed from non-detectable or low detections of baseline concentrations. In cases where the UTL baseline is developed from non-detectable or low detections false positives can be triggered by a slight increase in CVOCs and are not an indication of vertical or lateral cross-contamination.

Figures

FIGURE 1



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LEGEND

- PERCHED MONITORING WELL LOCATION
- USG MONITORING WELL LOCATION
- LSG MONITORING WELL LOCATION
- EXTRACTION WELL

GE
EVENDALE, OHIO

GROUNDWATER IRM MONITORING LOCATIONS

N

0 200 400 800
Feet

March 2016
62574.002

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 2

C:\TEMP\2nd Qtr Report 2016\Figures\002 - Figure 2 - Perched - 2nd Qtr 2016.mxd

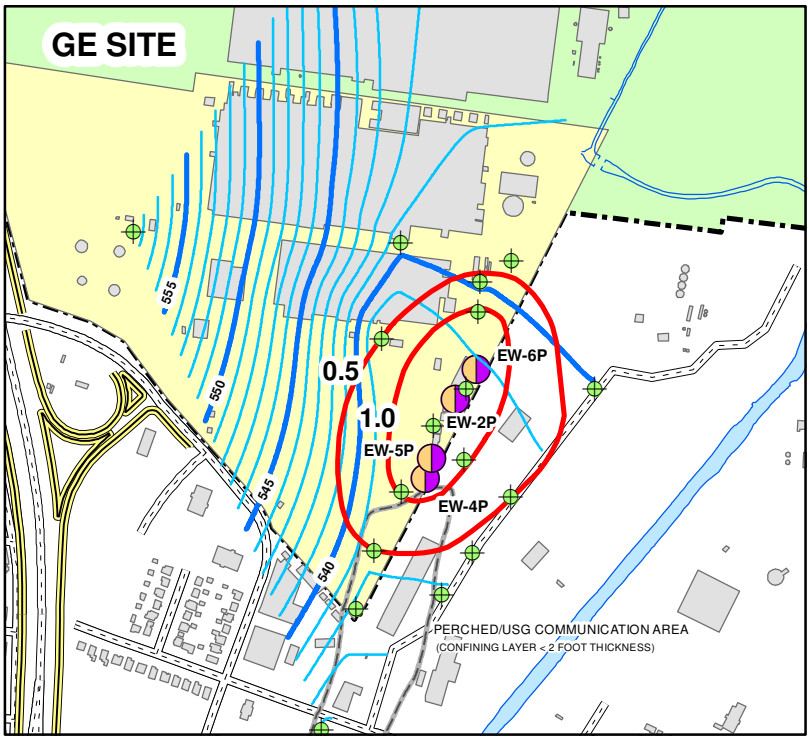
Perched Zone

Approximate Drawdown (ft)
June 1, 2016

Based on Manual & Transducer Measurements

Estimated Drawdown (feet)

Groundwater Contour (feet)

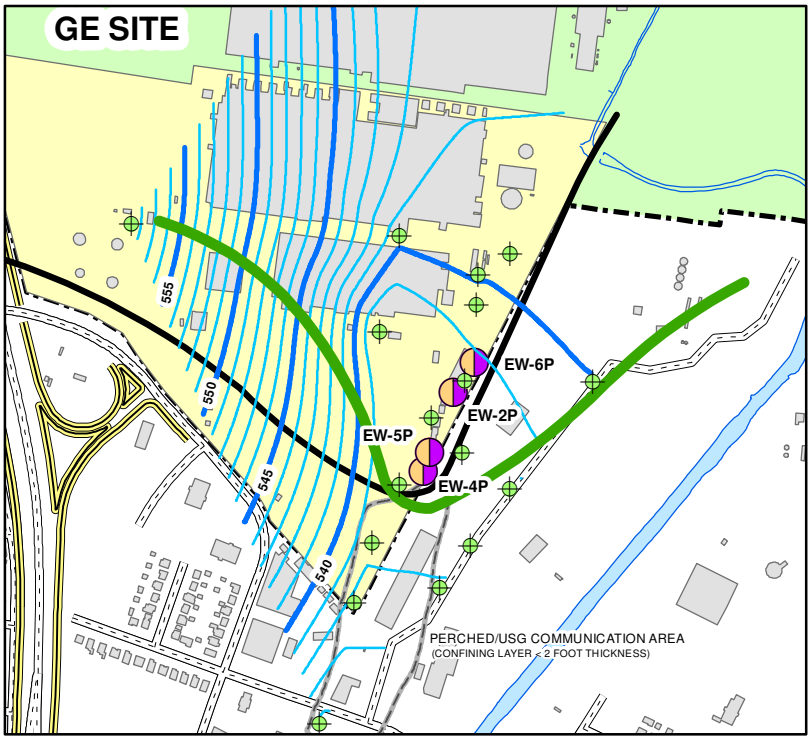


Perched Zone

Design Capture Zone (320 gpm)

Apparent Capture Zone (138 gpm) 2nd Qtr 2016

Groundwater Contour (feet)



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GE
EVENDALE, OHIO

PERCHED ZONE ESTIMATED DRAWDOWN AND CAPTURE ZONE

N

0 400 800 1,600
Feet

JUNE 2016
62574.002

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 3

I:\Ge-Cep.612\62574.2016-Evendale-R\Docs\Reports\2nd Qtr Report 2016\Figures\003 - Figure 3 - USG - 2nd Qtr 2016.mxd

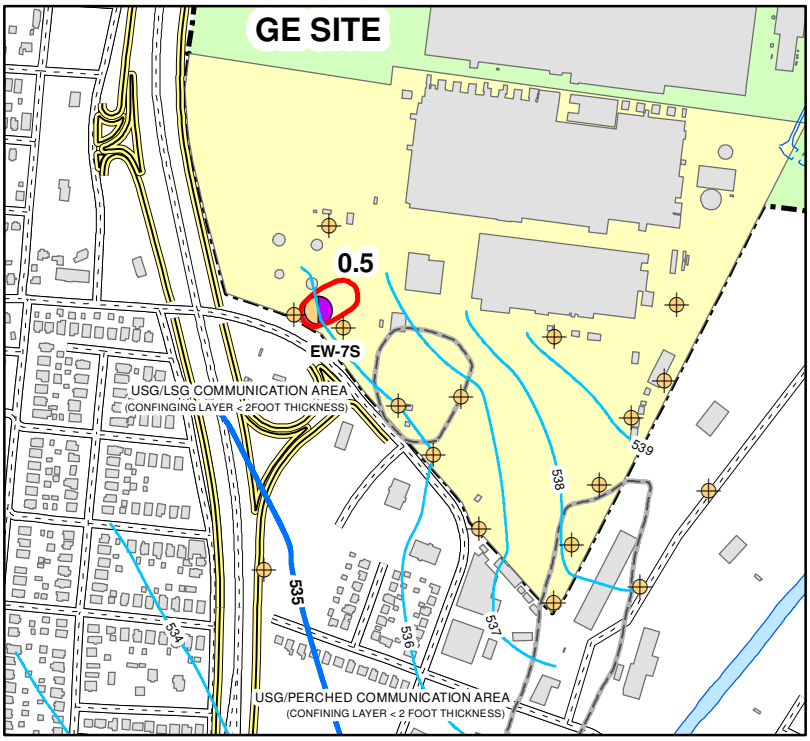
USG Zone

Approximate Drawdown (ft)
June 1, 2016

Based on Manual & Transducer Measurements

Estimated Drawdown (feet)

Groundwater Contour (feet)

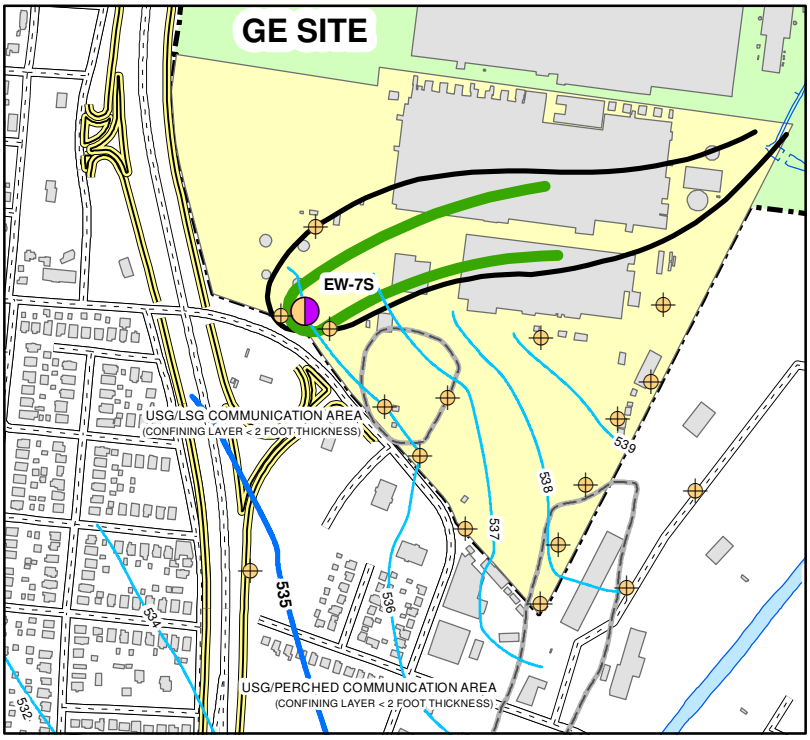


USG Zone

Design Capture Zone (80 gpm)

Apparent Capture Zone (10 gpm) 2nd Qtr 2016

Groundwater Contour (feet)



PLOTDATE: 08/01/16 Oneiljim

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GE
EVENDALE, OHIO

N

USG
ESTIMATED DRAWDOWN AND CAPTURE ZONE

0 400 800 1,600
Feet

JUNE 2016
62574.002

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 4

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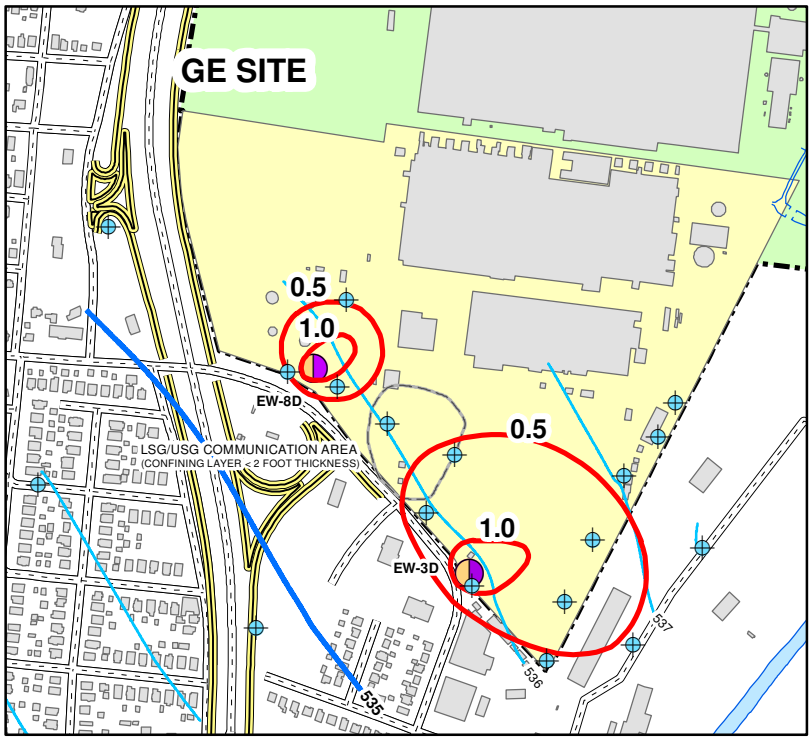
LSG Zone

Approximate Drawdown (ft)
June 1, 2016

Based on Manual & Transducer Measurements

Estimated Drawdown (feet)

Groundwater Contour (feet)

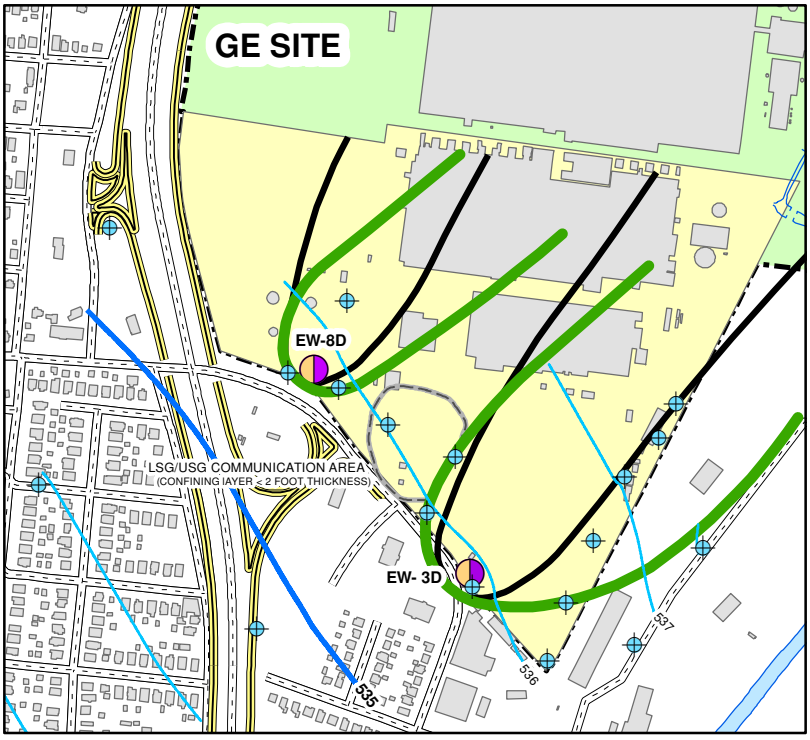


LSG Zone

Design Capture Zone (160 gpm)

Apparent Capture Zone (78 gpm)
2nd Qtr 2016

Groundwater Contour (feet)



PLOTDATE: 7/29/2016 ONeilJM

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GE
EVENDALE, OHIO

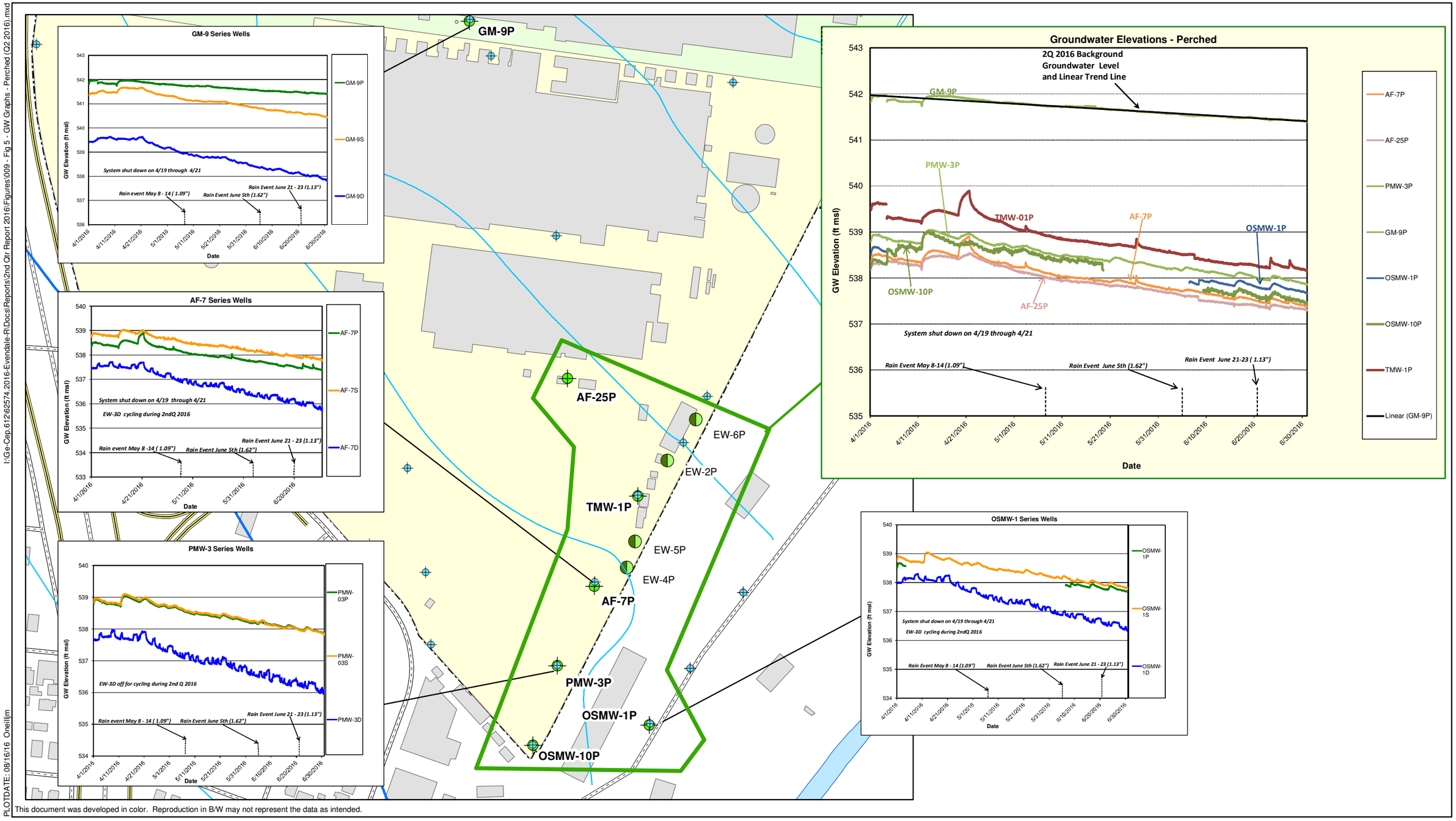
N

LSG
ESTIMATED DRAWDOWN AND CAPTURE ZONE

JUNE 2016
62574.002

0 400 800 1,600
Feet

O'BRIEN & GERE ENGINEERS, INC.



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PLOTDATE: 08/16/16 Oneilljm

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LEGEND

- PERCHED MONITORING WELL
- PERCHED EXTRACTION WELL

GE
EVENDALE, OHIO

0 100 200 400 600 800
Feet

N

GROUNDWATER ELEVATION HYDROGRAPHS PERCHED ZONE

2016 2nd QUARTER

O'BRIEN & GERE ENGINEERS, INC.

JUNE 2016
612/62574-009

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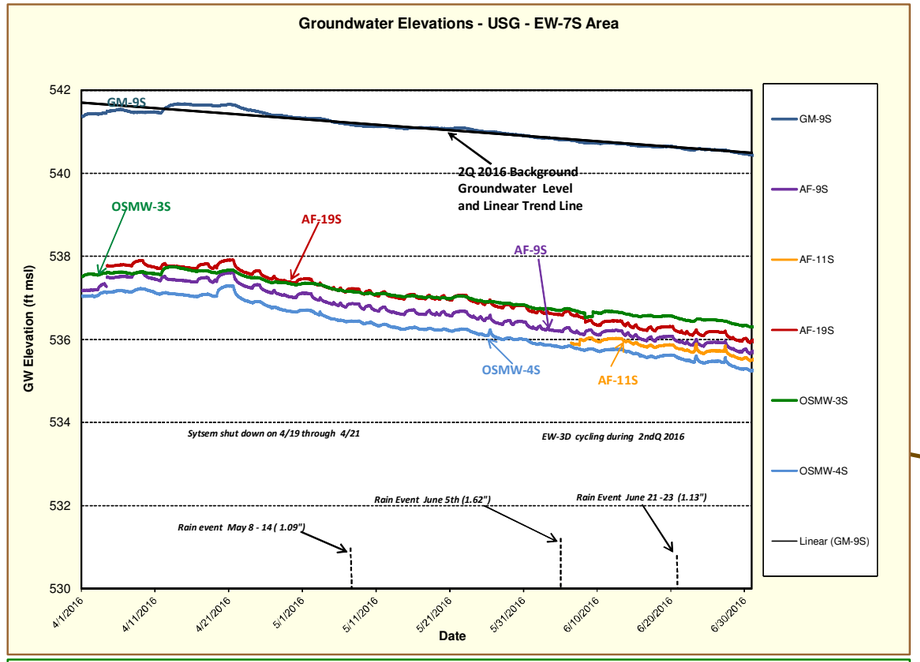
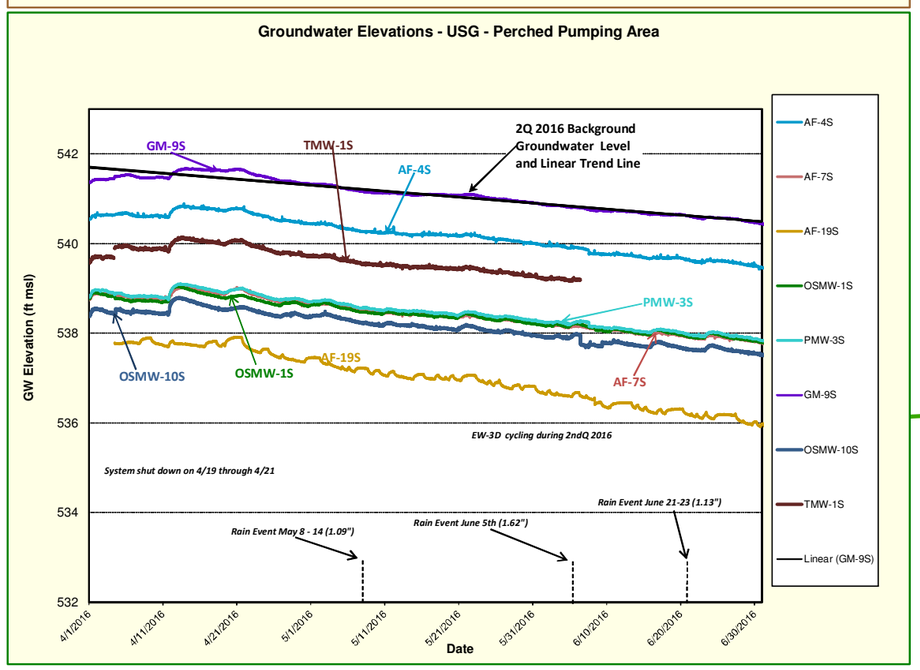
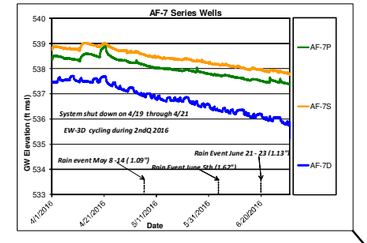
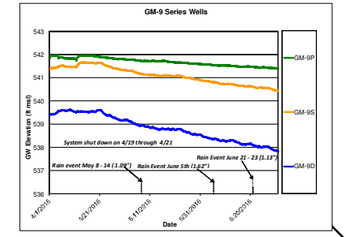
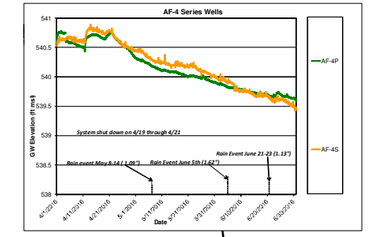
FIGURE 6

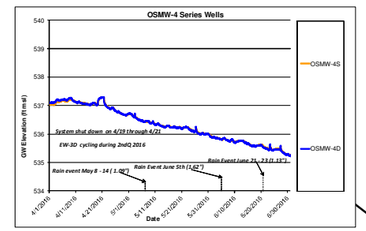


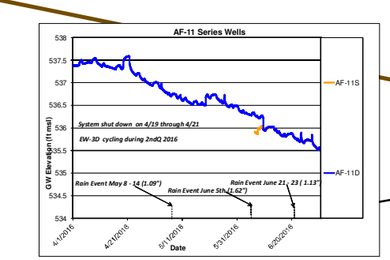


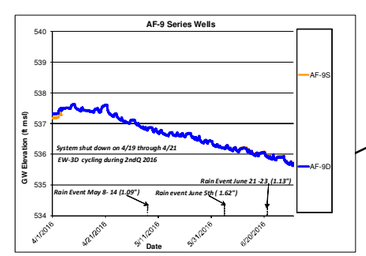


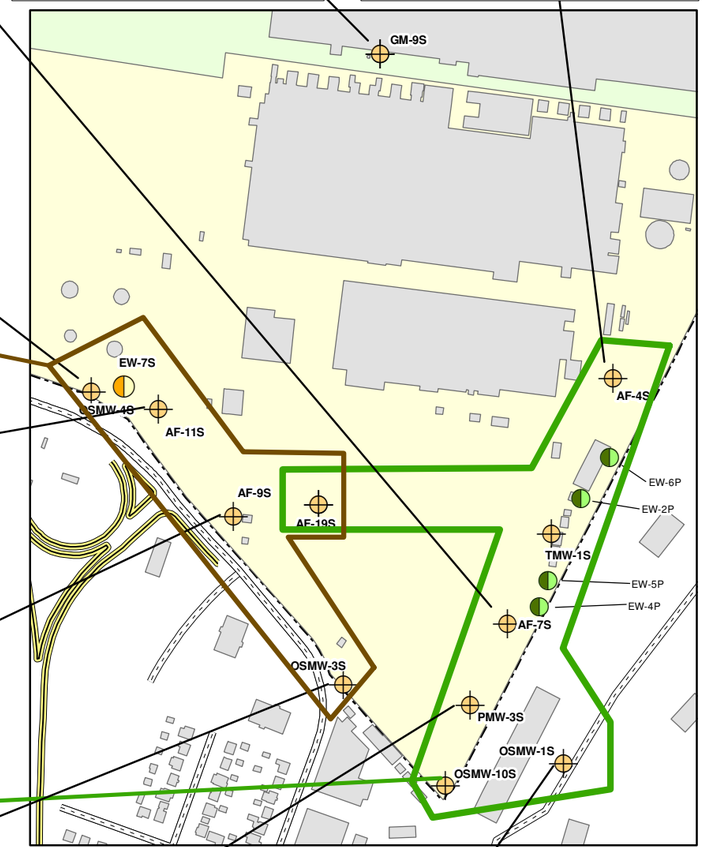


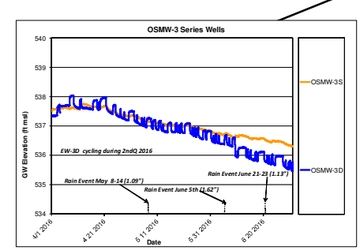


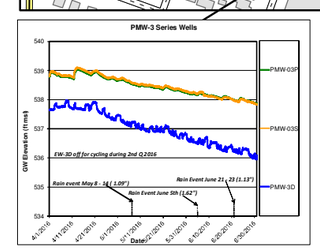


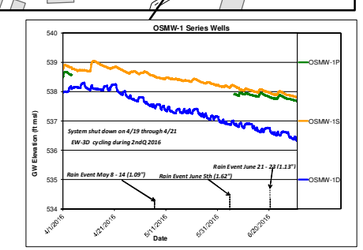












LEGEND

- USG MONITORING WELL
- USG EXTRACTION WELL
- PERCHED EXTRACTION WELL

GE
EVENDALE, OHIO

0 100 200 400 600 800
Feet

N

GROUNDWATER ELEVATION HYDROGRAPHS USG

2016 2nd QUARTER

O'BRIEN & GERE ENGINEERS, INC.

JUNE 2016
612/62574-010

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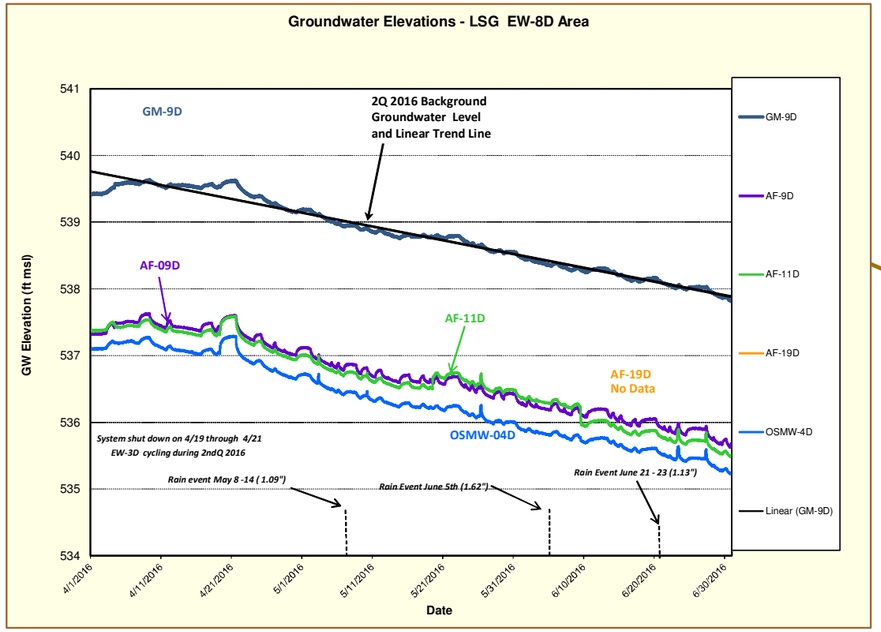
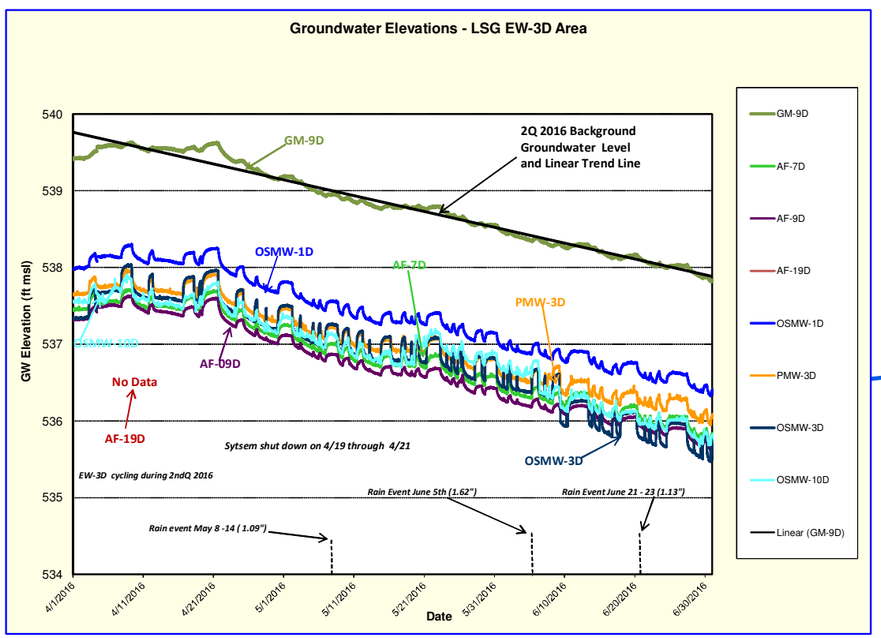
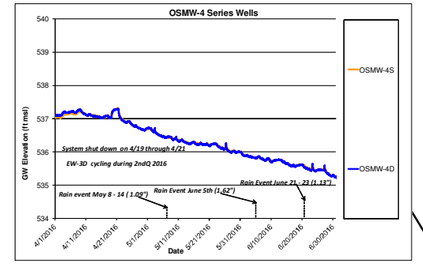
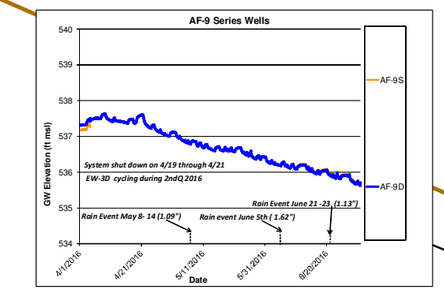
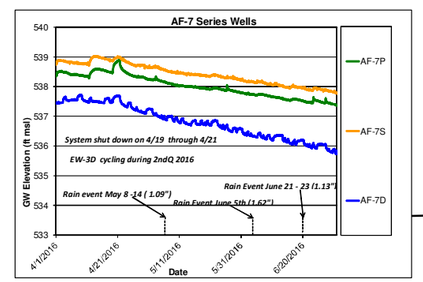
FIGURE 7

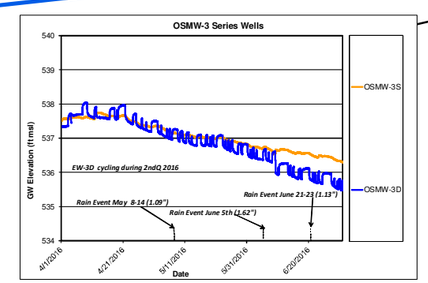


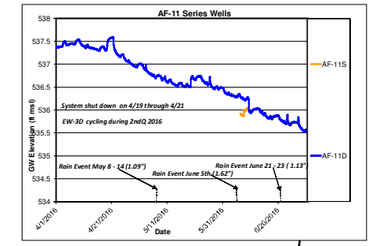


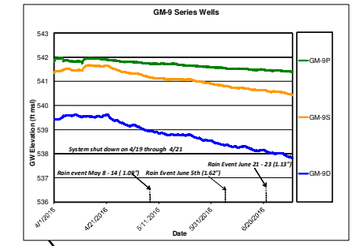


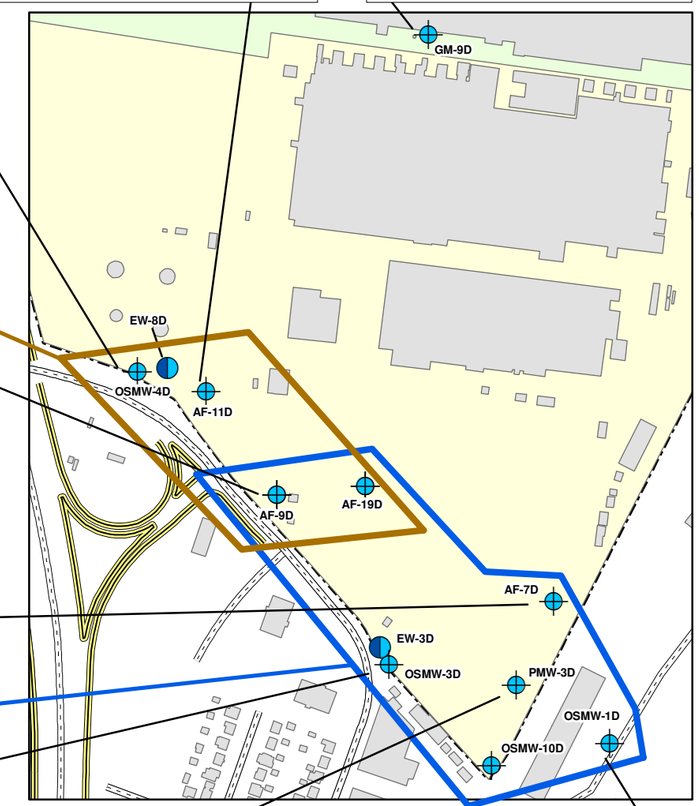


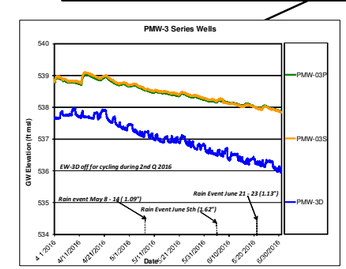


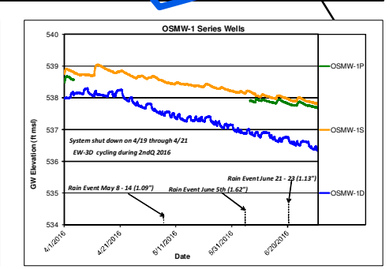












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LEGEND

- LSG MONITORING WELL
- LSG EXTRACTION WELL

GE
EVENDALE, OHIO

0 100 200 400 600 800
Feet

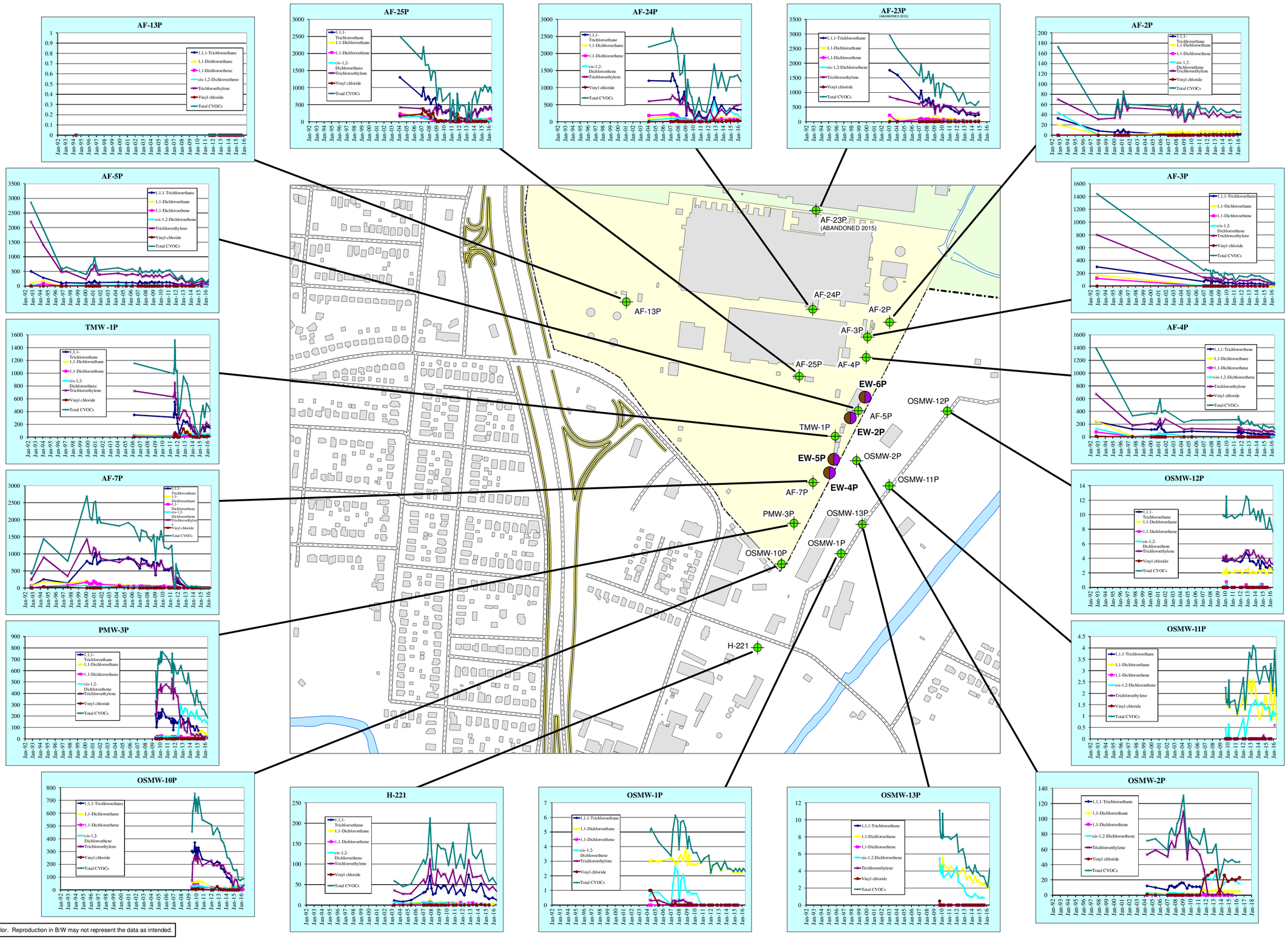
N

GROUNDWATER ELEVATION HYDROGRAPHS LSG

2016 2nd QUARTER

O'BRIEN & GERE ENGINEERS, INC.

JUNE 2016
612/62574-011



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LEGEND

PERCHED ZONE MONITORING WELL - GROUNDWATER SAMPLE COLLECTED FOR ANALYTICAL ANALYSIS

PERCHED ZONE EXTRACTION WELL

GRAPH KEY

- 1,1,1-TRICHLOROETHANE
- 1,1-DICHLOROETHANE
- 1,1-DICHLOROETHENE
- CIS-1,2-DICHLOROETHENE
- TRICHLOROETHYLENE
- VINYL CHLORIDE
- TOTAL CVOCS

NOTES:
1. RESULTS ARE SHOWN IN ug/l.
2. NON-DETECTED RESULTS ARE SHOWN AT THE X AXIS.
3. CONCENTRATION SCALE MAY VARY BY GRAPH.

GE
EVENDALE, OHIO

0 250 500 1,000
Feet

N

PERCHED ZONE HISTORICAL GROUNDWATER ANALYTICAL RESULTS FOR IRM MONITORING WELLS

JUNE 2016
612\60698-005

O'BRIEN & GERE ENGINEERS, INC.

I:\Ge-Cep.612\62574.2016-Evendale-R\Docs\Reports\2nd Qtr Report 2016\Figures\005 - Figure 8 - Perched Wells and Charts 2016 Q2.mxd

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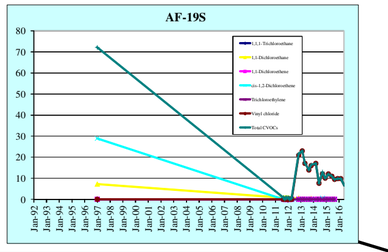
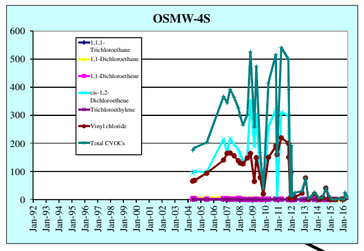
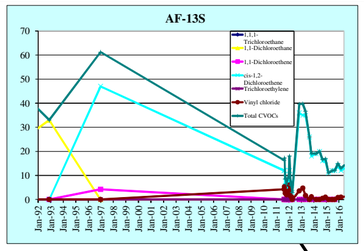
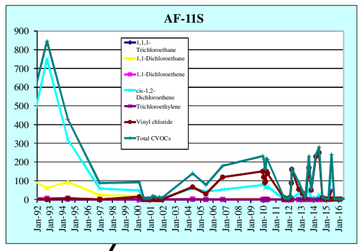
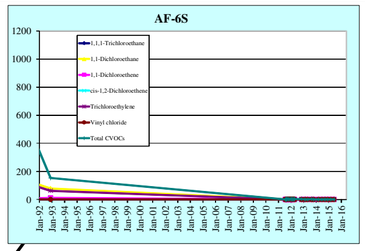
C:\TEMP\2nd Qtr Report 2016\Figures\006 - Figure 9 - USG Wells and Charts 2016 Q1.mxd

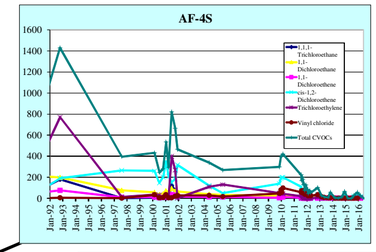


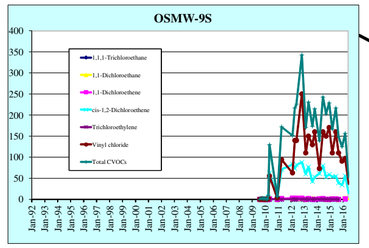


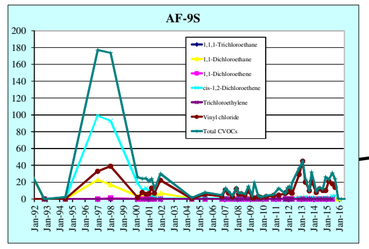


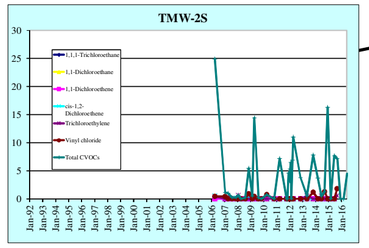


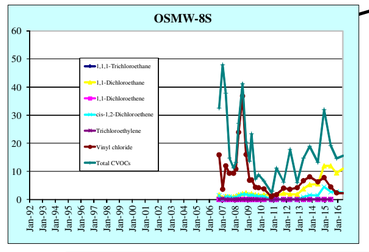


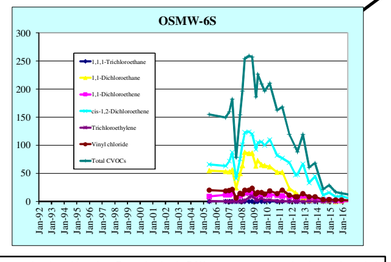


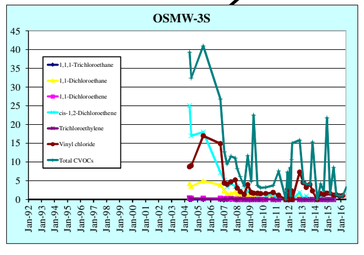


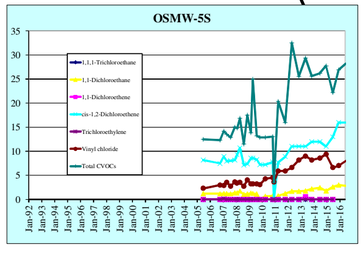


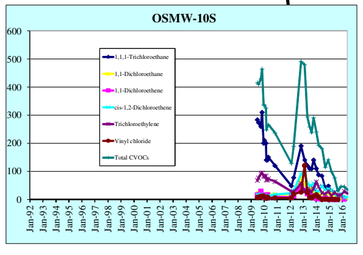


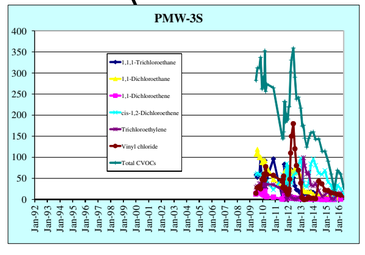


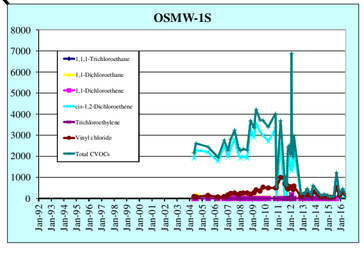


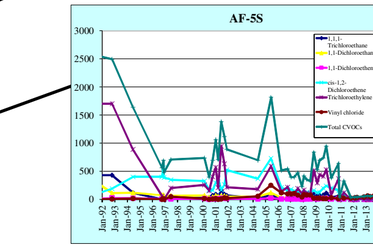


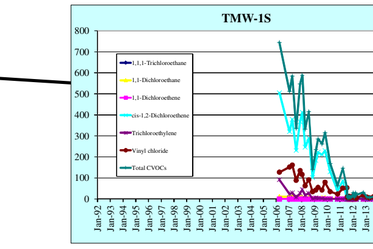


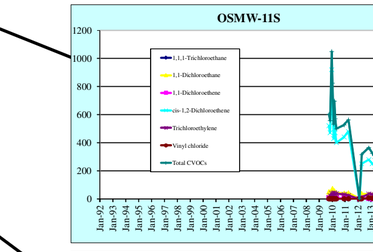


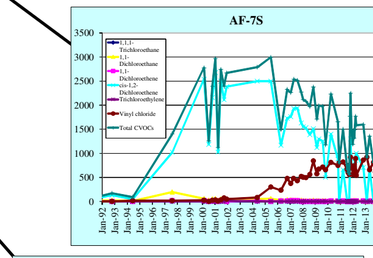


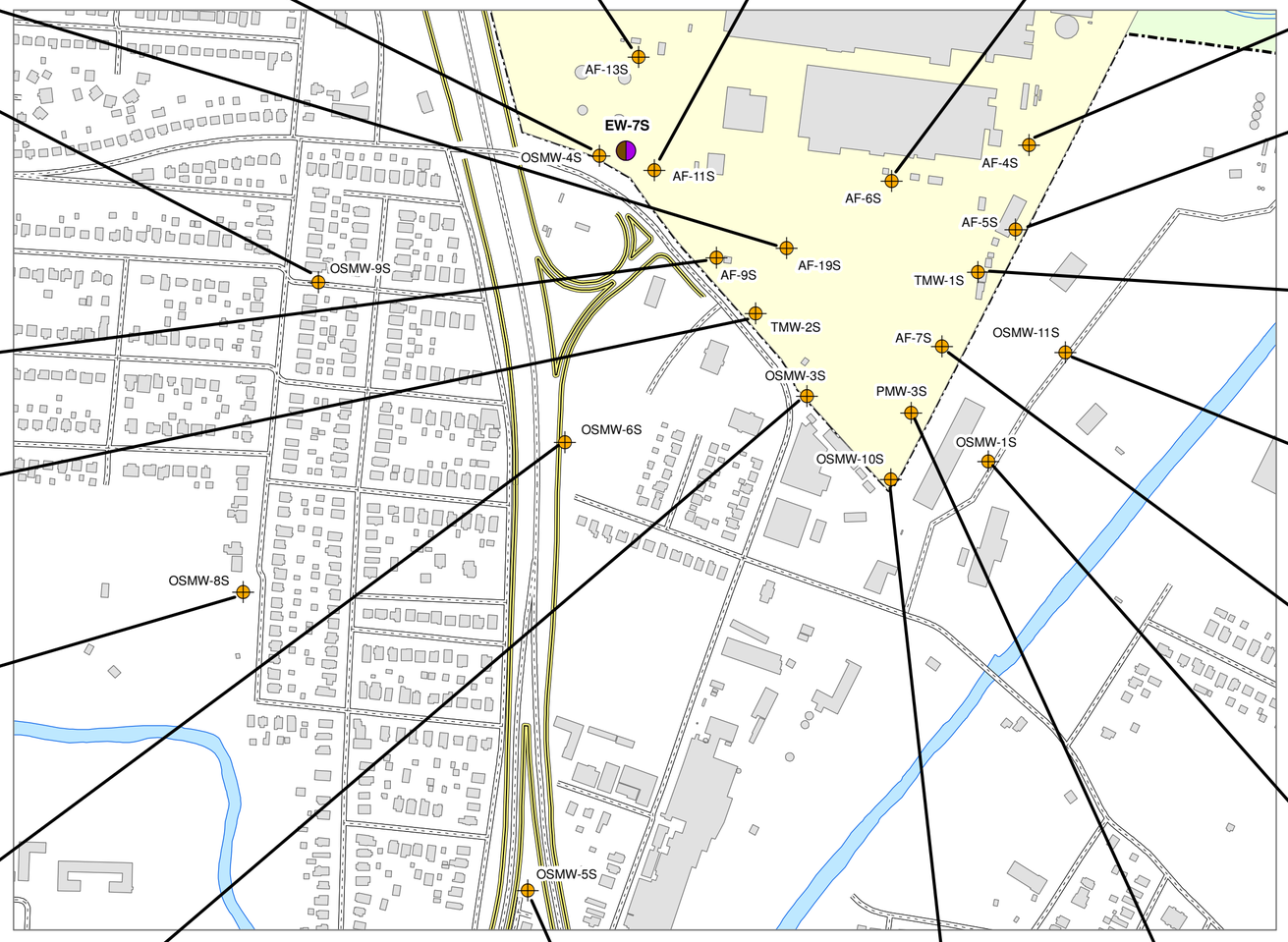












PLOTDATE: 07/29/16 3:06:54 PM ONeilJM

This document was developed in color. Reproduction in B/W may not represent the data as intended.

LEGEND

USG MONITORING WELL - GROUNDWATER SAMPLE COLLECTED FOR ANALYTICAL ANALYSIS

USG EXTRACTION WELL

GRAPH KEY

- 1,1,1-TRICHLOROETHANE
- 1,1-DICHLOROETHANE
- 1,1-DICHLOROETHENE
- CIS-1,2-DICHLOROETHENE
- TRICHLOROETHYLENE
- VINYL CHLORIDE
- TOTAL CVOCS

NOTES:
1. RESULTS ARE SHOWN IN ug/l.
2. NON-DETECTED RESULTS ARE SHOWN AT THE X AXIS.
3. CONCENTRATION SCALE MAY VARY BY GRAPH.

GE
EVENDALE, OHIO

0 250 500 1,000
Feet

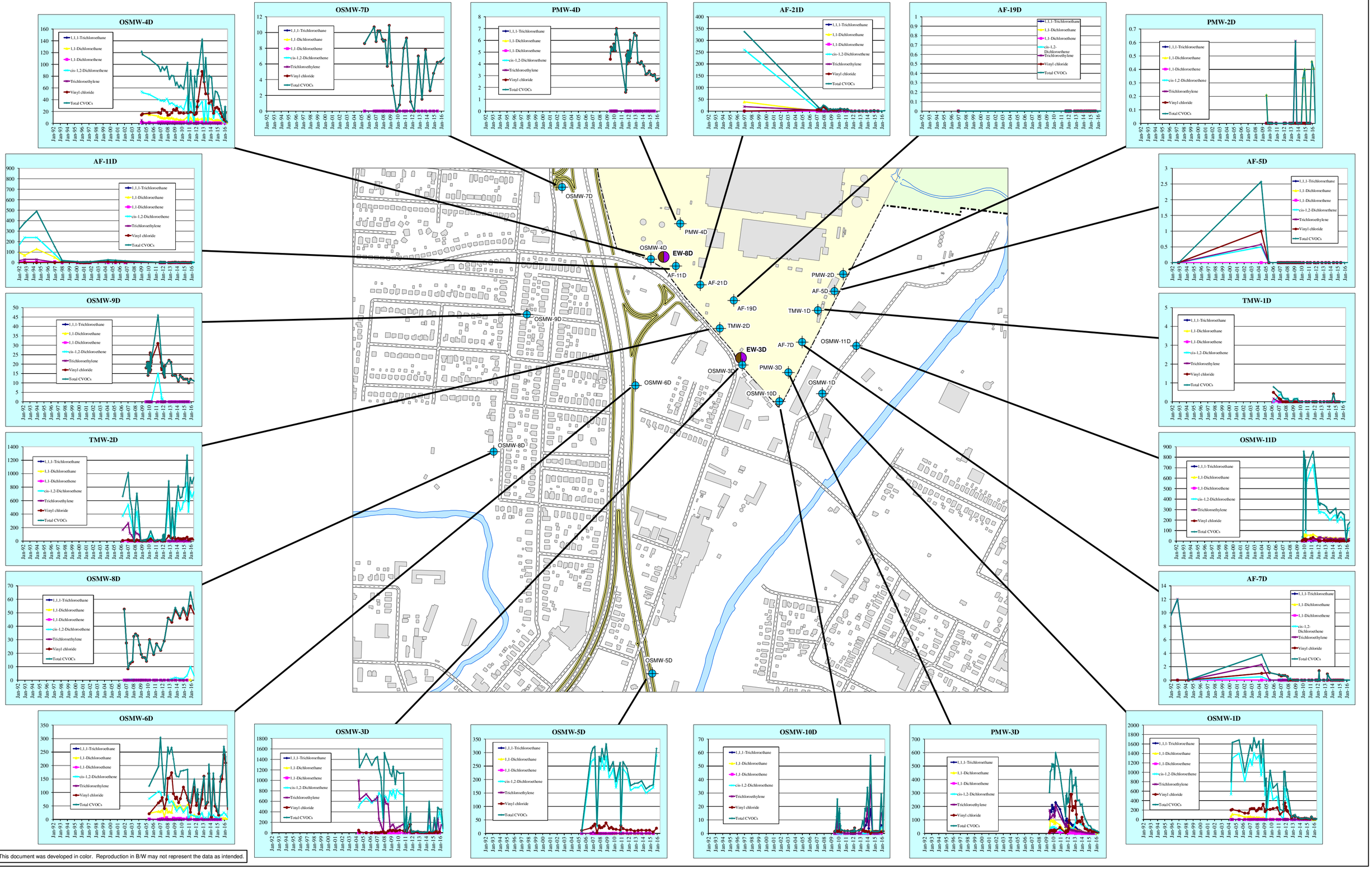
N

UPPER SAND AND GRAVEL (USG) HISTORICAL GROUNDWATER ANALYTICAL RESULTS FOR IRM MONITORING WELLS

JUNE 2016
612\60698-006

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 10



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LEGEND

PERCHED ZONE MONITORING WELL - GROUNDWATER SAMPLE COLLECTED FOR ANALYTICAL ANALYSIS

PERCHED ZONE EXTRACTION WELL

GRAPH KEY

- 1,1,1-TRICHLOROETHANE
- 1,1-DICHLOROETHANE
- 1,1-DICHLOROETHENE
- CIS-1,2-DICHLOROETHENE
- TRICHLOROETHYLENE
- VINYL CHLORIDE
- TOTAL CVOCS

NOTES:
1. RESULTS ARE SHOWN IN ug/l.
2. NON-DETECTED RESULTS ARE SHOWN AT THE X AXIS.
3. CONCENTRATION SCALE MAY VARY BY GRAPH.

GE
EVENDALE, OHIO

0 250 500 1,000
Feet

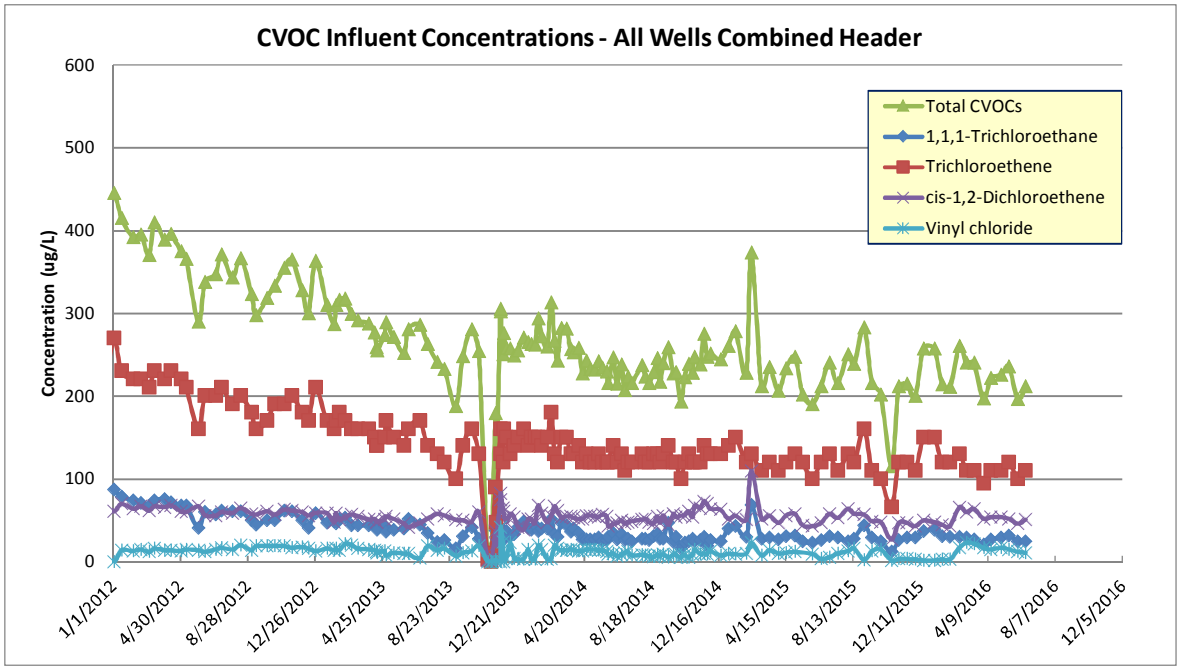
N

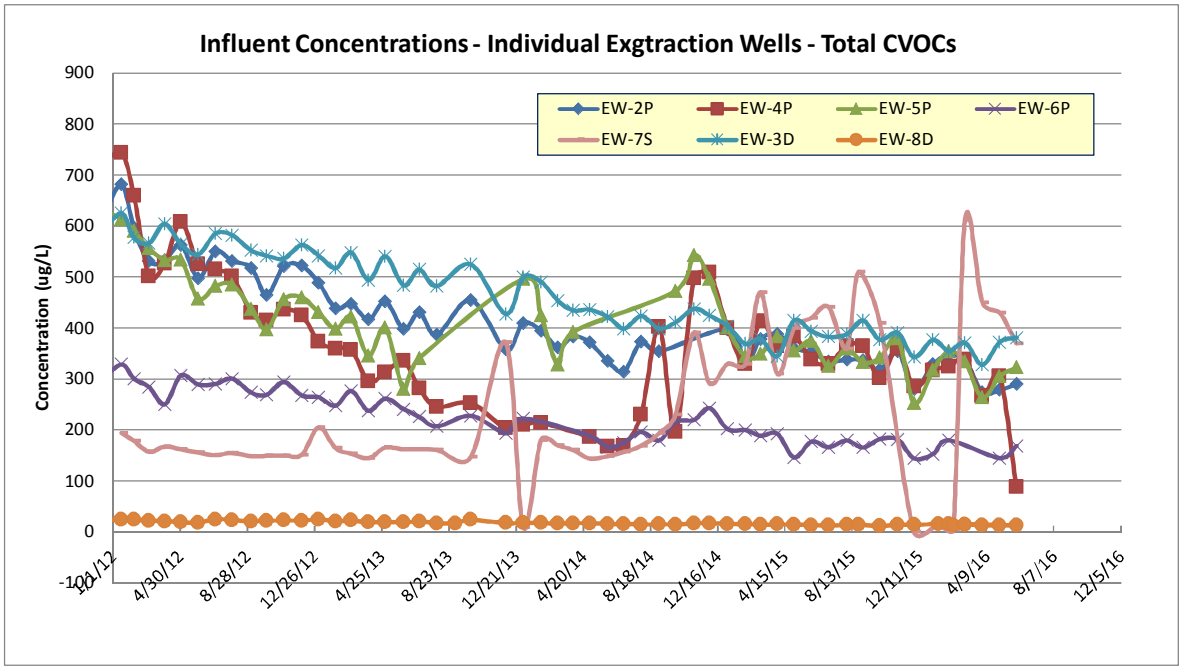
LOWER SAND AND GRAVEL (LSG) HISTORICAL GROUNDWATER ANALYTICAL RESULTS FOR IRM MONITORING WELLS

JUNE 2016
612\60698-007

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 11
Total CVOC Concentration Plots – Extraction Wells





Appendices

Appendix A-1 – IRM Groundwater Sampling Program QA/QC Results and Data Validation

APPENDIX A-1
QUALITY ASSURANCE/QUALITY CONTROL SUMMARY

Level A data verification was performed by O'Brien & Gere Engineers, Inc. to assess groundwater IRM performance monitoring data quality for samples collected during the Second Quarter 2016 (June 7, 2016 through June 9, 2016). Data verification was performed in accordance with the *IRM Performance Monitoring Plan* dated December 2010. The data verification level (Level A) for the performance samples was selected based upon data use (screening and trend analysis) and the quality of the laboratory data. Data verification was utilized to confirm the quality of the laboratory (TestAmerica Buffalo, Inc. (TA Buffalo) of Amherst, New York), which has an established record of acceptable quality for target analyte data from the routine groundwater IRM performance monitoring program. The Level A data verification included review of: (1) laboratory documentation, (2) chain-of-custody (COC) documentation, (3) target analyte results, (4) laboratory data qualifiers, (5) laboratory quantitation limits and method detection limits, (6) laboratory blank analysis, and (7) quality control samples.

The results of the Level A data verification indicated the following:

- Laboratory documentation was complete.
- Chain-of-custody (COC) documentation was complete.
- Target analyte results and data qualifiers were reported in accordance with the project requirements.
- Laboratory blank analysis did not indicate evidence of artifacts from the sampling or analytical process; therefore, the associated data is usable as reported.
- Acetone was detected at a concentration of 6.8 µg/l in trip blanks (Trip Blank-060816 and Trip Blank) associated with batches 307465 and 306055; however, none of the affected samples contained acetone above their respective detection limits; except in OSMW-10P where the concentration for acetone was 13 µg/l. Acetone is a common laboratory contaminant and its detection in OSMW-10P has been qualified as non-detect (U) at 13 µg/l based on the USEPA functional guidelines for data validation for VOCs because of the detection of acetone in the associated trip blank (Trip Blank). Therefore; the associated data is usable as reported and/or qualified.
- Laboratory quantitation limits are within the limits listed in the QAPP, except for acetone and 2-butanone which were reported as 10 µg/l (SAP QLs are 5 µg/l). The reporting limits for acetone and 2-butanone reported by TA Buffalo were revised from 5 µg/l to 10 µg/l.
- The matrix spike/matrix spike duplicate (MS/MSD) recoveries were within control limits.
- The surrogate recoveries for the samples were within control limits.
- The continuing calibration verification (CCV) results were within control limits, except for the CCV associated with batch 306055 due to recovery above the upper control limit (*i.e.*, high biased) for 2-Butanone. The samples associated with this CCV were non-detects for the affected analyte; therefore, the associated data is usable as reported. The CCV associated with analytical batch 307089 exhibited a low biased recovery outside acceptance criteria for Chloromethane. A reporting limit (RL) standard was analyzed, and the target analyte was detected. The samples associated with this CCV were non-detects for the affected analyte, therefore; the associated data is usable as reported.
- The laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) were within control limits.
- Four samples were diluted to bring the target analytes into the calibration range: TMW-1P-060716, PMW-3P-060716, OSMW-11S-060816, and OSMW-11D-060916. Elevated reporting limits are provided.

The overall usability for the performance monitoring data is acceptable for the intended use.

Appendix A-2 – Second Semiannual Groundwater Sampling Program Data Validation Report

MEMORANDUM

FROM:	Karen Storne	**cc:**	T. Finch R. Boone
RE:	GE Aviation, Semiannual Groundwater Monitoring Program Data Validation Report		
FILE:	10361/62574.090.016		
DATE:	August 26, 2016		

This Data Validation Report presents the results of data validation performed for samples collected by O'Brien & Gere in June 2016 as part of the of the General Electric (GE) Semiannual Groundwater Monitoring program at the Evendale, Ohio facility.

TestAmerica Buffalo, Inc. (TA Buffalo) of Amherst, New York performed the laboratory analyses for this sampling event. The laboratory packages contained summary forms for quality control analysis and supportive raw data.

The analysis performed for this sampling event is summarized in Table 1.

Table 1. ***Analytical Methods and References***

Parameter	Method	Reference
VOCs	USEPA Methods 5030C/8260C	1, 2

Note:

1. USEPA. 2006. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-84*. Washington D.C.

VOCs indicates volatile organic compounds.

Source: O'Brien & Gere

The samples listed in the attached Table 2 were submitted for data validation. Table 3 presents the specific data validation approach applied to data generated for this investigation. Definitions of laboratory QA/QC terms are presented in Table 4.

Full validation was performed on the samples collected for this sampling event.

The analytical data generated for this investigation were evaluated by O'Brien & Gere using the quality assurance/quality control (QA/QC) information presented in the method and the following document:

- O'Brien & Gere. 2009. *Sampling and Analysis Plan (SAP), General Electric Company, Evendale, Ohio.* Farmington Hills, Michigan.

Data affected by excursions from criteria presented in the method and the SAP is qualified using professional judgment and guidance provided in the following document:

- USEPA. 2008*. USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-08-01.* Washington D.C.

The application of these validation guidelines has been modified to reflect the requirements of the method utilized by the laboratory.

The data validation included evaluating the following parameters:

- SAP compliance
- Chain-of-custody records
- Sample shipment
- Sample collection
- Holding times and sample preservation
- Calibrations
- Blank analysis
- Matrix spike/matrix spike duplicate (MS/MSD) analysis
- Laboratory control sample (LCS) analysis
- Field duplicate analysis
- Surrogate recoveries
- Internal standards performance
- Gas chromatography/mass spectrometry (GC/MS) instrument check
- Target analyte quantification, identification, and quantitation limits (QLs)
- Documentation completeness

The following sections of this memorandum present the results of the comparison of the analytical data to the QA/QC criteria specified in methods and the SAP and the qualifiers assigned to the data when the QA/QC criteria were not met. Additional observations are also presented in the following sections.

SAP COMPLIANCE

The target analyte list reported by TA Buffalo was consistent with the revised target list provided for this project.

For the target analytes reported by TA Buffalo, the laboratory QLs were less than or equal to the SAP QLs, with the following exceptions: the laboratory QLs for acetone and 2-butaone were reported as 10 ug/L and the SAP QLs are listed as 5 ug/L.

CHAIN-OF-CUSTODY RECORDS

Sample H-221-061016 was received by the laboratory and was analyzed and reported for this sampling event as requested by the OBG project team but the sample was not listed on the chain-of-custody record.

Sample AF-19D-060916 was re-named as TMW-2D-060916 as requested by the OBG project team.

VOC DATA EVALUATION SUMMARY

The following QA/QC parameters were found to meet method and validation criteria or did not result in additional qualification of sample results:

- Sample shipment
- Sample collection
- Holding times and sample preservation
- LCS analysis
- Field duplicate analysis
- Surrogate recoveries
- Internal standards performance
- GC/MS instrument check
- Target analyte identification

- Documentation completeness

Excursions from method or validation criteria and additional observations are described below.

I. Blank analysis

The following results were qualified as non-detected (U) due to minor blank representative excursions:

- Acetone in samples OSMW-3S-060816, TMW-2S-060816, OSMW-1P—060816, OSMW-4S-060816, AOC PST-MW1SR, OSMW-3D-060916, OSMW-4D-060916, OSMW-1D-061016, OSMW-6S-061316, OSMW-6D-061316, AF-7D-061316, AF-7P-061316 and DUP-01-061316 [AF-7D-061316].

II. Calibrations

The following results were qualified as approximate (UJ, J) due to minor calibration accuracy excursions:

- Acetone in samples TRIP BLANK-060816, OSMW-3S-060816, AF-25P-060816, TMW-1S-060716, AF-9S—060816, TMW-2S-060816, AF-24P-060816, AF-2P-060816, AF-3P-060816, AF-5P-060816, AF-5S-060816, OSMW-1P—060816, OSMW-1S-060816, OSMW-2P-060816, OSMW-4S-060816, AOC PST-MW2S, AOC PST-MW1SR, AOC LD-MW1S, Trip Blank-060916, OSMW-3D-060916, TMW-1D-060916, AF-5D-060916, DUP-01-060916 [AF-5D-060916], TMW-2D-060916, AF-21D-060916, OSMW-4D-060916, OSMW-8S-060916, OSMW-8D-060916, OSMW-1D-061016 and H-221-061016.
- 2-Butanone in samples AF-25P-060816 and OSMW-1S-060816.
- Chloromethane in samples Trip Blank-060916, OSMW-3D-060916, TMW-1D-060916, AF-5D-060916, DUP-01-060916 [AF-5D-060916], TMW-2D-060916, AF-21D-060916, OSMW-4D-060916, OSMW-8S-060916 and OSMW-8D-060916.
- Carbon disulfide in samples OSMW-1D-061016 and H-221-061016.

III. MS/MSD analysis

The following result was qualified as approximate (J) due to a minor MS/MSD accuracy excursion:

- Trichloroethene in sample AF-5P-060816.

IV. Target analyte quantitation and QLs

Sample results for VOCs were reported using undiluted and diluted analyses due to elevated concentrations of target analytes.

The laboratory applied the qualifier "J" when the analyte concentration was greater than the MDL but less than the QL. This qualifier has been retained during the validation process to indicate that the result is considered to be approximate.

DATA USABILITY

This section evaluates data usability for samples based on QA/QC criteria established by the methods as listed in Table 1. Major deficiencies in the data generation process result in data being rejected, indicating that the data is considered unusable for either quantitative or qualitative purposes. Data were not rejected for this sampling event. Minor deficiencies in the data generation process result in sample data being characterized as approximate or non-detected. Data were qualified as approximate and non-detected for this sampling event.

A discussion of the data quality with regard to the parameters evaluated follows:

Precision: Data were not rejected for precision excursions.

Sensitivity: Dilutions were performed for analysis, which resulted in elevated QLs reported for this project.

Accuracy: Data were not rejected due to accuracy excursions.

Representativeness: Data were not rejected due to representativeness excursions.

Comparability: Standardized analytical methods, QLs, reference materials, and data deliverables were used throughout the data generation process for this project.

Completeness: Overall data usability with respect to completeness is 100 percent for the data set. Therefore, the data were identified as usable for qualitative and quantitative purposes.

Table 2. Sample Cross Reference Table

Laboratory	Date Collecte	Laboratory ID	Client ID	Matrix	Analysis Requested
TA Buffalo	6/8/2016	480-101423-1	TRIP BLANK-060816	Aqueous	VOC's
TA Buffalo	6/8/2016	480-101423-2	OSMW-3S-060816	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-3	AF-25P-060816	Groundwater	VOC's
TA Buffalo	6/7/2016	480-101423-4	TMW-1S-060716	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-5	AF-9S--060816	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-6	TMW-2S-060816	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-7	AF-24P-060816	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-8	AF-2P-060816	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-9	AF-3P-060816	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-10	AF-5P-060816	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-11	AF-5S-060816	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-12	OSMW-1P--060816	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-13	OSMW-1S-060816	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-14	OSMW-2P-060816	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-15	OSMW-4S-060816	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-16	AOC PST-MW2S	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-17	AOC PST-MW1SR	Groundwater	VOC's
TA Buffalo	6/8/2016	480-101423-18	AOC LD-MW1S	Groundwater	VOC's
TA Buffalo	6/9/2016	480-101531-1	Trip Blank-060916	Aqueous	VOC's
TA Buffalo	6/9/2016	480-101531-2	OSMW-3D-060916	Groundwater	VOC's
TA Buffalo	6/9/2016	480-101531-3	TMW-1D-060916	Groundwater	VOC's
TA Buffalo	6/9/2016	480-101531-4	AF-5D-060916	Groundwater	VOC's
TA Buffalo	6/9/2016	480-101531-4MS	AF-5D-060916 MS	Groundwater	VOC's
TA Buffalo	6/9/2016	480-101531-4MSD	AF-5D-060916 MSD	Groundwater	VOC's
TA Buffalo	6/9/2016	480-101531-5	DUP-01-060916 [AF-5D-060916	Groundwater	VOC's
TA Buffalo	6/9/2016	480-101531-6	*TMW-2D-060916	Groundwater	VOC's
TA Buffalo	6/9/2016	480-101531-7	AF-21D-060916	Groundwater	VOC's
TA Buffalo	6/9/2016	480-101531-8	OSMW-4D-060916	Groundwater	VOC's
TA Buffalo	6/9/2016	480-101531-9	OSMW-8S-060916	Groundwater	VOC's
TA Buffalo	6/9/2016	480-101531-10	OSMW-8D-060916	Groundwater	VOC's
TA Buffalo	6/10/2016	480-101531-11	OSMW-1D-061016	Groundwater	VOC's
TA Buffalo	6/10/2016	480-101531-22	**H-221-061016	Groundwater	VOC's
TA Buffalo	6/13/2016	480-101591-1	Trip Blank-061316	Aqueous	VOC's
TA Buffalo	6/13/2016	480-101591-2	OSMW-5S-061316	Groundwater	VOC's
TA Buffalo	6/13/2016	480-101591-3	OSMW-6S-061316	Groundwater	VOC's
TA Buffalo	6/13/2016	480-101591-4	OSMW-6D-061316	Groundwater	VOC's
TA Buffalo	6/13/2016	480-101591-5	OSMW-7D-061316	Groundwater	VOC's
TA Buffalo	6/13/2016	480-101591-6	AF-7D-061316	Groundwater	VOC's
TA Buffalo	6/13/2016	480-101591-6MS	AF-7D-061316 MS	Groundwater	VOC's
TA Buffalo	6/13/2016	480-101591-6MSD	AF-7D-061316 MSD	Groundwater	VOC's
TA Buffalo	6/13/2016	480-101591-7	AF-7S-061316	Groundwater	VOC's
TA Buffalo	6/13/2016	480-101591-8	AF-7P-061316	Groundwater	VOC's
TA Buffalo	6/13/2016	480-101591-9	DUP-01-061316 [AF-7D-061316	Groundwater	VOC's

Note:
TA Buffalo indicates TestAmerica of Amherst, New York
VOCs indicates volatile organic compounds.
MS/MSD indicates matrix spike/matrix spike duplicate.
The location in brackets indicates the field duplicate sampling location.
* Indicates original sample was labeled AF-19D-060916.
** Indicates sample was not listed on the chain-of-custody record.

O'BRIEN & GERE

O'Brien & Gere Data validation approach using USEPA National Functional Guidelines for Non-CLP Methods	
Laboratory Methods and Data Validation Approach	The O'Brien & Gere data validation approach utilizes the methods applied by the laboratory to evaluate data. USEPA National Functional Guidelines address data validation of Contract Laboratory Program (CLP) methods. If excursions from the method quality control requirements are identified, O'Brien & Gere applies a similar approach as used in the USEPA National Functional Guidelines (1999) to apply validation qualifiers to the data associated with the excursions.
General Validation Approach	The validation approach taken by O'Brien & Gere is a conservative one; qualifiers are applied to sample data to indicate both major and minor excursions so that data associated with any type of excursion are identified to the data user. Major excursions result in data being rejected (R), indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor excursions result in sample data being qualified as approximate (J, UJ, JN) or non-detected (U) that is otherwise usable for quantitative or qualitative purposes.
	Excursions are subdivided into excursions that are within the laboratory's control and those that are a result of site conditions. Excursions involving laboratory control sample recovery, calibration response, method blank excursions, low or high spike recovery due to inaccurate spiking solutions or poor instrument response, holding times, interpretation errors, and quantitation errors are within the control of the laboratory. Excursions resulting from matrix spike recovery, serial dilution recovery, surrogate, and internal standard performance due to interference from the matrix of the samples are examples of those excursions that are due to site conditions and are not within the laboratory's control if the laboratory has followed proper method procedures, including performing appropriate cleanup techniques.
Applying professional judgment	USEPA National Functional Guidelines allow professional judgment to be used when applying qualifiers in some cases. When utilizing professional judgment, justification for actions taken will either be provided in the associated report or will be available upon request.
Validation Parameter	**O'Brien & Gere Data Validation Approach based on:** • **USEPA. 2008*. USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,* EPA-540-R-08-01. Washington D.C.** • **USEPA. 2010*. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,* EPA-540-R-10-011. Washington D.C.**
Validation Qualifiers - Organics	**U - The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the quantitation limit (QL).** **J - The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the QL).** **NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.** **UJ - The analyte was not detected at a level greater than or equal to the QL. However, the QL is approximate and may be inaccurate or imprecise.** **R - The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.** **C - This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).** **X - This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.**
Cooler Temperature	Results for samples submitted for organic analyses that are impacted by coolers that did not contain ice, or if the ice melted upon receipt and the cooler temperatures are greater than 10°C, are qualified as approximate (UJ, J). If samples are delivered to the laboratory the same day as sample collection and samples did not have sufficient time to reach 10°C, samples are not qualified, unless proper preservation was not provided for samples between sample collection and sample receipt at the laboratory. Results for samples received at ambient temperature involved in extended shipment-day issues may be rejected, applying professional judgment.
Holding Time for Organics	Results for samples properly preserved and analyzed outside of but less than two times the holding time window established in the method or the QAPP for preparation and/or analysis are qualified as approximate (UJ, J). Non-detected results for samples properly preserved and analyzed greater than two times the holding time window for preparation and/or analysis are rejected (R). Detected results for samples properly preserved and analyzed greater than two times the holding time window for preparation and/or analysis are qualified as approximate (J).

O'Brien & Gere Data validation approach using USEPA National Functional Guidelines for Non-CLP Methods	
	The entire sample target list for a VOC sample impacted by a holding time excursion is qualified.
Calibration Actions for VOCs	Due to relative standard deviation (RSD) calibration excursions, detected results for analytes in samples associated with the calibration are qualified as approximate (J). Non-detected results associated with RSD excursions may be qualified as approximate (UJ) based on professional judgment. If the RSD calibration excursion is greater than 90 for VOC, detected results for analytes in samples associated with the calibration are qualified as approximate (J) and non-detected results may be rejected (R), applying professional judgment. Due to %D calibration verification excursions, detected and non-detected results for analytes in samples associated with the calibration are qualified as approximate (J, UJ). The response direction and detection of target analytes in associated sample may be considered in applying qualifiers. For response factor excursions, detected results are qualified as approximate (J) and non-detected results are rejected (R). For initial calibration verifications (ICV) excursions, detected and non-detected results for analytes in samples associated with the calibration are qualified as approximate (J, UJ). The response direction and detection of target analytes in associated sample may be considered in applying qualifiers.
VOCs Instrument Performance Evaluation	IP requirements may not apply when Selected Ion Monitoring (SIM) is used for analysis. Refer to the laboratory SOP. If IP fails 12 hour clock time frequency or ion abundance criteria, associated sample result are rejected (R).
VOCs Calibration Evaluation (8260C)	VOC target analytes are evaluated using the criteria of 20 percent relative standard deviation (%RSD) or correlation coefficient of 0.990 for initial calibration curves. Calibration verifications are evaluated using a criterion of 20 percent difference (%D. Initial calibrations and calibration verifications are also evaluated using the response factor (RF) criteria described in the method. If criterion are not specified in the method, the RF of 0.05 is applied, using professional judgment for poor responding analytes. ICV recoveries are evaluated using laboratory control limits if available or 70 to 130%.
Associating samples with Field and Laboratory QC Samples	Trip blanks are associated with samples in the same sample cooler.
	Equipment blanks (Rinsate blanks) are associated with samples collected in the same day (or sampling event) using the same sample collection equipment and decontamination solutions. When sampling equipment or decontamination solutions are changed, a new equipment blank should be collected. Each sample should be associated with one equipment blank, which is collected as close to the sample collection date/time as possible. Use professional judgment.
	Field blanks are associated with the sample containers used to collect samples. When sampling container lots are changed, a new field blank should be collected.
	Method blanks are associated with samples prepared at the same time (if preparation is required) or analyzed in the same analytical batch as the samples. Method blanks should reflect the sample matrix type (aqueous, low level solid, medium level solid).
	LCSs are associated with samples prepared at the same time (if preparation is required) or analyzed in the same analytical batch as the samples.
	MS/MSD and laboratory duplicate samples are collected in the field. The laboratory must prepare using project samples. MS/MSDs and laboratory duplicates are associated with samples prepared at the same time or close to the same time (if preparation is required) with the same matrix type.
	Field duplicates are collected in the field and are associated with samples of the same matrix type.
	In the case that insufficient QC samples are provided due to field or laboratory problems, use professional judgment to associate each sample with a QC sample that reflects the sample matrix and analysis conditions. If insufficient QC samples are available to properly associate samples, record the impact in the DV notes.
Evaluation and Action for MS/MSD, LCS, Surrogate and Laboratory Duplicate Data for VOCs	The laboratory control limit (CL) is used to assess MS/MSD, LCS, surrogate and laboratory duplicate data. Refer to Region II guidelines if laboratory control limits are not available.
	In the case that excursions are identified in more than one quality control sample of the same matrix within one sample delivery group, samples are batched according to sample preparation or analysis date and qualified accordingly (see batching description above).
	If percent recoveries are less than laboratory CLs but greater than 10%, non-detected and detected results are qualified as approximate (UJ, J).
	If percent recoveries are greater than laboratory CLs, detected results are qualified as approximate (J).

O'Brien & Gere Data validation approach using USEPA National Functional Guidelines for Non-CLP Methods	
	If percent recoveries are less than 10%, detected results are qualified as approximate (J) and non-detected results are qualified as rejected (R).
	If RPDs for MSDs or laboratory duplicates are outside of laboratory CLs, detected results are qualified as approximate (J). Non-detected results may not be qualified, applying professional judgment.
Evaluation and Actions for Blank Results (Method, Field, Equipment, Instrument, Storage) for VOC Data	Blanks are not qualified due to contamination of another blank. Sample results qualified as non-detected (U) are treated as hits when qualifying for surrogate or calibration excursions. The following approach is utilized for applying qualifiers, using twice the quantitation limit (QL) for methylene chloride, 2-butanone, acetone: 1. For blank results less than the QL, samples with concentrations less than the QL are reported at the QL and qualified as non-detected (U). Samples with concentrations greater than or equal to the QL are not qualified or may apply the Blank Rule Option. 2. For blank results greater than the QL, samples with concentrations less than the QL are reported at the QL and qualified as non-detected (U). Samples with concentrations greater than or equal to the QL and less than the blank contamination level are reported and qualified as non-detected (U). Samples with concentrations greater than or equal to the QL and greater than or equal to the blank contamination level are not qualified or may apply the Blank Rule Option. 3. For blank results equal to the QL, sample concentrations less than the QL are reported at the QL value and qualified as non-detected (U). Samples greater than or equal to the QL are not qualified or may apply the Blank Rule Option. 4. For gross contamination in blanks (saturated peaks, interference peaks, poor baselines), all associated sample detected results are rejected (R) or qualified as non-detected (U) using professional judgment. Blank Rule Option: If methylene chloride, acetone or 2-butanone is detected in the sample at a concentration that is less than ten times the concentration in the associated blank, the sample result is qualified as "U". If other target analytes are detected in the sample at a concentration that is less than five times the concentration detected in the associated blank, the sample result is qualified as "U".
Evaluation of MS/MSD, Surrogate, and Field Duplicate Data for VOCs	Qualification is performed only when both MS and MSD recoveries are outside of laboratory CLs.
	Organic data are rejected (R) in the case that both MS/MSD recoveries are less than 10%.
	Qualification is not performed if MS/MSD or surrogate recoveries are outside of laboratory CLs with an analysis that applied a dilution factor of 10 times or more.
	Qualification of data associated with MS/MSD or field duplicate excursions is limited to the un-spiked sample or the field duplicate pair, respectively.
	Field duplicate data are evaluated against relative percent difference (RPD) criteria of less than 50 percent for aqueous samples and less than 100 percent for soils when results are greater than or equal to five times the QL. When a field duplicate result is less than five times the QL, a control limit of plus or minus two times the QL (difference criterion) is applied. If RPDs or differences are outside of criterion, detected and non-detected results are qualified as approximate (UJ, J) to indicate minor excursions.
Evaluation of Internal Standards for VOCs	Internal standard recoveries are evaluated using control limits of from 50% of the lower standard area to 100% of the upper standard area of the associated calibration verification standard. The results associated with internal standard area recoveries 25% or greater but less than 50% are qualified as approximate (J, UJ). Non-detected results associated with internal standard area recoveries less than 25% are rejected (R), using professional judgment.
General Inorganic MS/MSD, LCS, Duplicate Data	Laboratory established control limits are used to assess duplicate, MS/MSD, and LCS data.
	In the case that excursions are identified in more than one quality control sample of the same matrix within one sample delivery group, samples are batched according to sample preparation or analysis date and qualified accordingly.
	Qualification of inorganic data for MS/MSD analyses is performed when either MS or MSD percent recoveries are outside of laboratory control limits.
	For inorganic analyses, if RPDs for MS/MSDs, laboratory duplicates, or field duplicates are outside of laboratory control limits, associated detected and non-detected results are qualified as approximate (UJ, J).

O'Brien & Gere Data validation approach using USEPA National Functional Guidelines for Non-CLP Methods	
	Detected sample results associated with recoveries that are greater than the laboratory control limits are qualified as approximate biased high ($J^{(+)}$).
	Detected sample results associated with recoveries that both are greater than the laboratory control limits and less than the laboratory control limits or with one recovery outside of laboratory control limits, are qualified as approximate (J).
	Detected sample results associated with recoveries that are less than the laboratory control limits are qualified as approximate biased low ($J^{(-)}$).
	Non-detected sample results associated with recoveries that are less than the laboratory control limits but greater than or equal to 30 percent are qualified as approximate (UJ).
	Non-detected sample results associated with recoveries that are less than 30 percent are qualified as rejected (R).
Serial Dilution Data	Serial dilution results are evaluated by the laboratory for data with initial sample concentrations that are greater than 50 times the instrument detection limit (IDL), in accordance with the validation guidelines. Qualifiers are applied to data that exceeded the ten percent difference based on the laboratory evaluation summary form provided.
Total and Dissolved Concentration Comparisons	Total and dissolved metal concentrations are compared to a criterion of less than or equal to 10% using the equation dissolved –total/dissolved times 100. Sample results outside of the criterion are qualified as approximate (J).
Inorganic Blank Data	Concentrations in the associated samples greater than the QL but f less than five times the associated blank concentration are qualified as undetected (U) when blank concentrations are less than the QL. For concentrations in the samples below the QL, the concentration is replaced with the QL and qualified as undetected (U).
	Non-detected concentrations in the associated samples associated with a negative blank concentration are qualified as approximate (UJ).
	Concentrations in the associated samples of greater than the QL but less than ten times the method or calibration blank concentration, when the calibration or method blank concentration is greater than the QL, are rejected (R).
	If analytes are detected in equipment blanks, sample concentrations less than the QL are replaced with the QL and qualified as undetected (U). Sample concentrations greater than the QL and less than five times the equipment blank concentration are qualified as undetected (U).
Source O'Brien & Gere	

Table 4. Laboratory QA/QC analyses definitions.	
QA/QC Term	**Definition**
Quantitation limit	The level above which numerical results may be obtained with a specified degree of confidence; the minimum concentration of an analyte in a specific matrix that can be identified and quantified above the method detection limit and within specified limits of precision and bias during routine analytical operating conditions.
Method detection limit	The minimum concentration of an analyte that undergoes preparation similar to the environmental samples and can be reported with a stated level of confidence that the analyte concentration is greater than zero.
Instrument detection limit	The lowest concentration of a metal target analyte that, when directly inputted and processed on a specific analytical instrument, produces a signal/response that is statistically distinct from the signal/response arising from equipment "noise" alone.
Gas chromatography/mass spectrometry (GC/MS) instrument performance check	Performed to verify mass resolution, identification, and to some degree, instrument sensitivity. These criteria are not sample specific; conformance is determined using standard materials.
Calibration	Compliance requirements for satisfactory instrument calibration are established to verify that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of analysis and calibration verifications document satisfactory maintenance and adjustment of the instrument on a day-to-day basis.
Relative Response Factor	A measure of the relative mass spectral response of an analyte compared to its internal standard. Relative Response Factors are determined by analysis of standards and are used in the calculation of concentrations of analytes in samples.
Relative standard deviation	The standard deviation divided by the mean; a unit-free measure of variability.
Correlation coefficient	A measure of the strength of the relationship between two variables.
Relative Percent Difference	Used to compare two values; the relative percent difference is based on the mean of the two values, and is reported as an absolute value, i.e., always expressed as a positive number or zero.
Percent Difference	Used to compare two values; the percent difference indicates both the direction and the magnitude of the comparison, i.e., the percent difference may be either negative, positive, or zero.
Percent Recovery	The act of determining whether or not the methodology measures all of the target analytes contained in a sample.
Calibration blank	Consists of acids and reagent water used to prepare metal samples for analysis. This type of blank is analyzed to evaluate whether contamination is occurring during the preparation and analysis of the sample.
Method blank	A water or soil blank that undergoes the preparation procedures applied to a sample (i.e., extraction, digestion, clean-up). These samples are analyzed to examine whether sample preparation, clean-up, and analysis techniques result in sample contamination.
Field/equipment	Collected and submitted for laboratory analysis, where appropriate. Field/equipment blanks are handled in the same manner as environmental samples. Equipment/field blanks are analyzed to assess contamination introduced during field sampling procedures.
Trip blank	Consist of samples of analyte-free water that have undergone shipment from the sampling site to the laboratory in coolers with the environmental samples submitted for volatile organic compound (VOC) analysis. Trip blanks will be analyzed for VOCs to determine if contamination has taken place during sample handling and/or shipment. Trip blanks will be utilized at a frequency of one each per cooler sent to the laboratory for VOC analysis.
Internal standards performance	Compounds not found in environmental samples which are spiked into samples and quality control samples at the time of sample preparation for organic analyses. Internal standards must meet retention time and recovery criteria specified in the analytical method. Internal standards are used as the basis for quantitation of the target analytes.
Surrogate recovery	Compounds similar in nature to the target analytes but not expected to be detected in the environmental media which are spiked into environmental samples, blanks, and quality control samples prior to sample preparation for organic analyses. Surrogates are used to evaluate analytical efficiency by measuring recovery.
Laboratory control sample Matrix spike blank analyses	Standard solutions that consist of known concentrations of the target analytes spiked into laboratory analyte-free water or sand. They are prepared or purchased from a certified manufacturer from a source independent from the calibration standards to provide an independent verification of the calibration procedure. They are prepared and analyzed following the same procedures employed for environmental sample analysis to assess method accuracy independently of sample matrix effects.
Laboratory duplicate	Two or more representative portions taken from one homogeneous sample by the analyst and analyzed in the same laboratory.
Matrix	The material of which the sample is composed or the substrate containing the analyte of interest, such as drinking water, waste water, air, soil/sediment, biological material.
Matrix Spike (MS)	An aliquot of a matrix (water or soil) fortified (spiked) with known quantities of specific target analytes and subjected to the entire analytical procedure in order to indicate the appropriateness of the method for the matrix by measuring recovery.
Matrix spike duplicate (MSD)	A second aliquot of the same matrix as the matrix spike that is spiked in order to determine the precision of the method.
Retention time	The time a target analyte is retained on a GC column before elution. The identification of a target analyte is dependent on a target compound's retention time falling within the specified retention time window established for that compound.
Relative retention time	The ratio of the retention time of a compound to that of a standard.
Source O'Brien & Gere	

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: **TRIP BLANK-060816**

Lab Sample ID: 480-101423-1
Client Matrix: Water

Date Sampled: 06/08/2016 0000
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0356.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1146			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1146				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	7.9 J	J	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	100		73 - 120
Dibromofluoromethane (Surr)	100		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: OSMW-3S-060816

Lab Sample ID: 480-101423-2
Client Matrix: Water

Date Sampled: 06/08/2016 0900
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0357.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1209			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1209				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	~~3.2~~	J U	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	103		73 - 120
Dibromofluoromethane (Surr)	104		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: AF-25P-060816

Lab Sample ID: 480-101423-3
Client Matrix: Water

Date Sampled: 06/08/2016 0905
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306746	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0411.D
Dilution:	20			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2016 1146			Final Weight/Volume:	5 mL
Prep Date:	06/15/2016 1146				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	340		16	20
1,1,2,2-Tetrachloroethane	ND		4.2	20
1,1,2-Trichloroethane	ND		4.6	20
1,1-Dichloroethane	61		7.6	20
1,1-Dichloroethene	34		5.8	20
1,2-Dichloroethane	ND		4.2	20
1,2-Dichloropropane	ND		14	20
2-Hexanone	ND		25	100
2-Butanone (MEK)	ND UJ		26	200
4-Methyl-2-pentanone (MIBK)	ND		42	100
Acetone	ND UJ		60	200
Benzene	ND		8.2	20
Bromodichloromethane	ND		7.8	20
Bromoform	ND		5.2	20
Bromomethane	ND		14	20
Carbon disulfide	ND		3.8	20
Carbon tetrachloride	ND		5.4	20
Chlorobenzene	ND		15	20
Dibromochloromethane	ND		6.4	20
Chloroethane	ND		6.4	20
Chloroform	ND		6.8	20
Chloromethane	ND		7.0	20
cis-1,2-Dichloroethene	ND		16	20
cis-1,3-Dichloropropene	ND		7.2	20
Ethylbenzene	ND		15	20
Methylene Chloride	ND		8.8	20
Styrene	ND		15	20
Tetrachloroethene	ND		7.2	20
Toluene	ND		10	20
trans-1,2-Dichloroethene	ND		18	20
trans-1,3-Dichloropropene	ND		7.4	20
Trichloroethene	410		9.2	20
Vinyl chloride	ND		18	20
Xylenes, Total	ND		13	40

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	102		73 - 120
Dibromofluoromethane (Surr)	103		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: TMW-1S-060716

Lab Sample ID. 480-101423-4
Client Matrix: Water

Date Sampled: 06/07/2016 1347
Date Received. 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0359.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1257			Final Weight/Volume.	5 mL
Prep Date.	06/14/2016 1257				

DL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1 1,2,2-Tetrachloroethane	ND		0.21	1 0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	2.0		0.38	1.0
1,1-Dichloroethene	ND		0.29	1 0
1,2-Dichloroethane	ND		0.21	1 0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND U		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0 27	1.0
Chlorobenzene	ND		0 75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	38		0 81	1 0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	72		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		66 - 137
Toluene-d8 (Surr)	99		71 - 126
4-Bromofluorobenzene (Surr)	102		73 - 120
Dibromofluoromethane (Surr)	104		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: AF-9S--060816

Lab Sample ID. 480-101423-5
Client Matrix: Water

Date Sampled: 06/08/2016 0940
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0360.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date.	06/14/2016 1320			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1320				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND UJ		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		66 - 137
Toluene-d8 (Surr)	102		71 - 126
4-Bromofluorobenzene (Surr)	103		73 - 120
Dibromofluoromethane (Surr)	98		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: TMW-25-060816

Lab Sample ID: 480-101423-6
Client Matrix: Water

Date Sampled: 06/08/2016 0955
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0361.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1344			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1344				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	~~3.0~~	J ~~J~~ U	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	1.5		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		66 - 137
Toluene-d8 (Surr)	100		71 - 126
4-Bromofluorobenzene (Surr)	102		73 - 120
Dibromofluoromethane (Surr)	102		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: AF-24P-060816

Lab Sample ID: 480-101423-7
Client Matrix: Water

Date Sampled: 06/08/2016 1020
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0362.D
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1407			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1407				

DQ

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	350		4.1	5.0
1,1,2,2-Tetrachloroethane	ND		1.1	5.0
1,1,2-Trichloroethane	ND		1.2	5.0
1,1-Dichloroethane	72		1.9	5.0
1,1-Dichloroethene	41		1.5	5.0
1,2-Dichloroethane	ND		1.1	5.0
1,2-Dichloropropane	ND		3.6	5.0
2-Hexanone	ND		6.2	25
2-Butanone (MEK)	ND		6.6	50
4-Methyl-2-pentanone (MIBK)	ND		11	25
Acetone	ND UJ		15	50
Benzene	ND		2.1	5.0
Bromodichloromethane	ND		2.0	5.0
Bromoform	ND		1.3	5.0
Bromomethane	ND		3.5	5.0
Carbon disulfide	ND		0.95	5.0
Carbon tetrachloride	ND		1.4	5.0
Chlorobenzene	ND		3.8	5.0
Dibromochloromethane	ND		1.6	5.0
Chloroethane	ND		1.6	5.0
Chloroform	3.2	J	1.7	5.0
Chloromethane	ND		1.8	5.0
cis-1,2-Dichloroethene	100		4.1	5.0
cis-1,3-Dichloropropene	ND		1.8	5.0
Ethylbenzene	ND		3.7	5.0
Methylene Chloride	ND		2.2	5.0
Styrene	ND		3.7	5.0
Tetrachloroethene	8.7		1.8	5.0
Toluene	ND		2.6	5.0
trans-1,2-Dichloroethene	71		4.5	5.0
trans-1,3-Dichloropropene	ND		1.9	5.0
Trichloroethene	90 ~~510~~	~~E~~	2.3	~~5.0~~ 10
Vinyl chloride	21		4.5	5.0
Xylenes, Total	ND		3.3	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		66 - 137
Toluene-d8 (Surr)	100		71 - 126
4-Bromofluorobenzene (Surr)	101		73 - 120
Dibromofluoromethane (Surr)	105		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: AF-24P-060816

Lab Sample ID: 480-101423-7
Client Matrix: Water

Date Sampled: 06/08/2016 1020
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306746	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0414.D
Dilution:	10			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2016 1259	Run Type:	DL	Final Weight/Volume:	5 mL
Prep Date:	06/15/2016 1259				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	340		8.2	10
1,1,2,2-Tetrachloroethane	ND		2.1	10
1,1,2-Trichloroethane	ND		2.3	10
1,1-Dichloroethane	73		3.8	10
1,1-Dichloroethene	41		2.9	10
1,2-Dichloroethane	ND		2.1	10
1,2-Dichloropropane	ND		7.2	10
2-Hexanone	ND		12	50
2-Butanone (MEK)	ND		13	100
4-Methyl-2-pentanone (MIBK)	ND		21	50
Acetone	ND		30	100
Benzene	ND		4.1	10
Bromodichloromethane	ND		3.9	10
Bromoform	ND		2.6	10
Bromomethane	ND		6.9	10
Carbon disulfide	ND		1.9	10
Carbon tetrachloride	ND		2.7	10
Chlorobenzene	ND		7.5	10
Dibromochloromethane	ND		3.2	10
Chloroethane	ND		3.2	10
Chloroform	4.0	J	3.4	10
Chloromethane	ND		3.5	10
cis-1,2-Dichloroethene	100		8.1	10
cis-1,3-Dichloropropene	ND		3.6	10
Ethylbenzene	ND		7.4	10
Methylene Chloride	ND		4.4	10
Styrene	ND		7.3	10
Tetrachloroethene	11		3.6	10
Toluene	ND		5.1	10
trans-1,2-Dichloroethene	71		9.0	10
trans-1,3-Dichloropropene	ND		3.7	10
Trichloroethene	510		4.6	10
Vinyl chloride	20		9.0	10
Xylenes, Total	ND		6.6	20

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97		66 - 137
Toluene-d8 (Surr)	100		71 - 126
4-Bromofluorobenzene (Surr)	104		73 - 120
Dibromofluoromethane (Surr)	101		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: AF-2P-060816

Lab Sample ID: 480-101423-8
Client Matrix: Water

Date Sampled: 06/08/2016 1045
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0363.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1431			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1431				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	2.6		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	7.6		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND	UJ	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	35		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		66 - 137
Toluene-d8 (Surr)	100		71 - 126
4-Bromofluorobenzene (Surr)	102		73 - 120
Dibromofluoromethane (Surr)	104		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: AF-3P-060816

Lab Sample ID: 480-101423-9
Client Matrix: Water

Date Sampled: 06/08/2016 1057
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0364.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1455			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1455				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	11		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	0.88	J	0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND UJ		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	1.3		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	5.7		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	34		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		66 - 137
Toluene-d8 (Surr)	100		71 - 126
4-Bromofluorobenzene (Surr)	102		73 - 120
Dibromofluoromethane (Surr)	105		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: **AF-SP-060816**

Lab Sample ID: 480-101423-10
Client Matrix: Water

Date Sampled: 06/08/2016 1107
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0365 D
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1519			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1519				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	58	~~F1~~	4.1	5.0
1,1,2,2-Tetrachloroethane	ND		1.1	5.0
1,1,2-Trichloroethane	ND		1.2	5.0
1,1-Dichloroethane	5.2		1.9	5.0
1,1-Dichloroethene	1.5	J	1.5	5.0
1,2-Dichloroethane	ND		1.1	5.0
1,2-Dichloropropane	ND		3.6	5.0
2-Hexanone	ND		6.2	25
2-Butanone (MEK)	ND		6.6	50
4-Methyl-2-pentanone (MIBK)	ND		11	25
Acetone	ND UJ		15	50
Benzene	ND		2.1	5.0
Bromodichloromethane	ND		2.0	5.0
Bromoform	ND		1.3	5.0
Bromomethane	ND		3.5	5.0
Carbon disulfide	ND		0.95	5.0
Carbon tetrachloride	ND		1.4	5.0
Chlorobenzene	ND		3.8	5.0
Dibromochloromethane	ND		1.6	5.0
Chloroethane	ND		1.6	5.0
Chloroform	ND		1.7	5.0
Chloromethane	ND		1.8	5.0
cis-1,2-Dichloroethene	5.4		4.1	5.0
cis-1,3-Dichloropropene	ND		1.8	5.0
Ethylbenzene	ND		3.7	5.0
Methylene Chloride	ND		2.2	5.0
Styrene	ND		3.7	5.0
Tetrachloroethene	ND		1.8	5.0
Toluene	ND		2.6	5.0
trans-1,2-Dichloroethene	ND		4.5	5.0
trans-1,3-Dichloropropene	ND		1.9	5.0
Trichloroethene	J 160	~~F1~~	2.3	5.0
Vinyl chloride	ND		4.5	5.0
Xylenes, Total	ND		3.3	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	100		73 - 120
Dibromofluoromethane (Surr)	105		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: AF-5S-060816

Lab Sample ID: 480-101423-11
Client Matrix: Water

Date Sampled: 06/08/2016 1112
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0366.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1543			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1543				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	5.6		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND UJ		3.0	10
Benzene	0.41	J	0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	1.7		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	19		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	93		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		66 - 137
Toluene-d8 (Surr)	102		71 - 126
4-Bromofluorobenzene (Surr)	102		73 - 120
Dibromofluoromethane (Surr)	105		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: OSMW-1P--060816

Lab Sample ID: 480-101423-12
Client Matrix: Water

Date Sampled: 06/08/2016 1131
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0367.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1607			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1607				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	2.3		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	~~6.0~~ J	U	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	103		73 - 120
Dibromofluoromethane (Surr)	103		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: OSMW-1S-060816

Lab Sample ID: 480-101423-13
Client Matrix Water

Date Sampled: 06/08/2016 1140
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306746	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0415.D
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/15/2016 1323			Final Weight/Volume:	5 mL
Prep Date:	06/15/2016 1323				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		1.6	2.0
1,1,2,2-Tetrachloroethane	ND		0.42	2.0
1,1,2-Trichloroethane	ND		0.46	2.0
1,1-Dichloroethane	1.8	J	0.76	2.0
1,1-Dichloroethene	ND		0.58	2.0
1,2-Dichloroethane	ND		0.42	2.0
1,2-Dichloropropane	ND		1.4	2.0
2-Hexanone	ND		2.5	10
2-Butanone (MEK)	ND UJ		2.6	20
4-Methyl-2-pentanone (MIBK)	ND		4.2	10
Acetone	ND UJ		6.0	20
Benzene	ND		0.82	2.0
Bromodichloromethane	ND		0.78	2.0
Bromoform	ND		0.52	2.0
Bromomethane	ND		1.4	2.0
Carbon disulfide	ND		0.38	2.0
Carbon tetrachloride	ND		0.54	2.0
Chlorobenzene	ND		1.5	2.0
Dibromochloromethane	ND		0.64	2.0
Chloroethane	ND		0.64	2.0
Chloroform	ND		0.68	2.0
Chloromethane	ND		0.70	2.0
cis-1,2-Dichloroethene	44		1.6	2.0
cis-1,3-Dichloropropene	ND		0.72	2.0
Ethylbenzene	ND		1.5	2.0
Methylene Chloride	ND		0.88	2.0
Styrene	ND		1.5	2.0
Tetrachloroethene	ND		0.72	2.0
Toluene	ND		1.0	2.0
trans-1,2-Dichloroethene	ND		1.8	2.0
trans-1,3-Dichloropropene	ND		0.74	2.0
Trichloroethene	ND		0.92	2.0
Vinyl chloride	93		1.8	2.0
Xylenes, Total	ND		1.3	4.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		66 - 137
Toluene-d8 (Surr)	100		71 - 126
4-Bromofluorobenzene (Surr)	103		73 - 120
Dibromofluoromethane (Surr)	106		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: OSMW-2P-060816

Lab Sample ID: 480-101423-14
Client Matrix: Water

Date Sampled: 06/08/2016 1150
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0369.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1655			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1655				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	5.6		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Benzene	0.44	J	0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	15		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	23		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	103		73 - 120
Dibromofluoromethane (Surr)	104		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: OSMW-4S-060816

Lab Sample ID: 480-101423-15
Client Matrix: Water

Date Sampled: 06/08/2016 1318
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0370.D
Dilution:	1.0			Initial Weight/Volume	5 mL
Analysis Date:	06/14/2016 1719			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1719				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	J ~~4.3~~	~~J~~ U	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	102		73 - 120
Dibromofluoromethane (Surr)	104		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: AOC PST-MW2S

Lab Sample ID: 480-101423-16
Client Matrix: Water

Date Sampled: 06/08/2016 1407
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0371.D
Dilution:	1 0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1742			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1742				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	20		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	0.45	J	0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1 2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1 3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND UJ		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0 19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0 32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0 36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	2.8		0.46	1.0
Vinyl chloride	ND		0 90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		66 - 137
Toluene-d8 (Surr)	99		71 - 126
4-Bromofluorobenzene (Surr)	101		73 - 120
Dibromofluoromethane (Surr)	101		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: **AOC PST-MW1SR**

Lab Sample ID: 480-101423-17
Client Matrix: Water

Date Sampled: 06/08/2016 1416
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0372.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1807			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1807				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	J ~~4.7~~	~~J~~ U	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		66 - 137
Toluene-d8 (Surr)	99		71 - 126
4-Bromofluorobenzene (Surr)	103		73 - 120
Dibromofluoromethane (Surr)	102		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101423-1
Sdg Number: 480-101423-1

Client Sample ID: AOC LD-MW1S

Lab Sample ID: 480-101423-18
Client Matrix: Water

Date Sampled: 06/08/2016 1430
Date Received: 06/09/2016 0945

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-306531	Instrument ID:	HP5975T
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	T0373.D
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/14/2016 1831			Final Weight/Volume:	5 mL
Prep Date:	06/14/2016 1831				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	150		4.1	5.0
1,1,2,2-Tetrachloroethane	ND		1.1	5.0
1,1,2-Trichloroethane	ND		1.2	5.0
1,1-Dichloroethane	130		1.9	5.0
1,1-Dichloroethene	21		1.5	5.0
1,2-Dichloroethane	ND		1.1	5.0
1,2-Dichloropropane	ND		3.6	5.0
2-Hexanone	ND		6.2	25
2-Butanone (MEK)	ND		6.6	50
4-Methyl-2-pentanone (MIBK)	ND		11	25
Acetone	ND		15	50
Benzene	ND		2.1	5.0
Bromodichloromethane	ND		2.0	5.0
Bromoform	ND		1.3	5.0
Bromomethane	ND		3.5	5.0
Carbon disulfide	ND		0.95	5.0
Carbon tetrachloride	ND		1.4	5.0
Chlorobenzene	ND		3.8	5.0
Dibromochloromethane	ND		1.6	5.0
Chloroethane	ND		1.6	5.0
Chloroform	3.4	J	1.7	5.0
Chloromethane	ND		1.8	5.0
cis-1,2-Dichloroethene	ND		4.1	5.0
cis-1,3-Dichloropropene	ND		1.8	5.0
Ethylbenzene	ND		3.7	5.0
Methylene Chloride	ND		2.2	5.0
Styrene	ND		3.7	5.0
Tetrachloroethene	1.8	J	1.8	5.0
Toluene	ND		2.6	5.0
trans-1,2-Dichloroethene	ND		4.5	5.0
trans-1,3-Dichloropropene	ND		1.9	5.0
Trichloroethene	190		2.3	5.0
Vinyl chloride	ND		4.5	5.0
Xylenes, Total	ND		3.3	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107		66 - 137
Toluene-d8 (Surr)	98		71 - 126
4-Bromofluorobenzene (Surr)	100		73 - 120
Dibromofluoromethane (Surr)	105		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101531-1
Sdg Number: 480-101531-1

Client Sample ID: **Trip Blank-060916**

Lab Sample ID: 480-101531-1TB
Client Matrix: Water

Date Sampled: 06/09/2016 0000
Date Received: 06/11/2016 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307089	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C5176.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/17/2016 0025			Final Weight/Volume:	5 mL
Prep Date:	06/17/2016 0025				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	5.1 J	J	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND UJ		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107		66 - 137
Toluene-d8 (Surr)	93		71 - 126
4-Bromofluorobenzene (Surr)	93		73 - 120
Dibromofluoromethane (Surr)	107		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101531-1
Sdg Number: 480-101531-1

Client Sample ID: OSMW-3D-060916

Lab Sample ID: 480-101531-2
Client Matrix: Ground Water

Date Sampled: 06/09/2016 0930
Date Received: 06/11/2016 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307089	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C5177.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/17/2016 0050			Final Weight/Volume:	5 mL
Prep Date:	06/17/2016 0050				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	1.6		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	~~4.8~~ J	J	~~3.0~~	10
Benzene	0.70	J	0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND UJ		0.35	1.0
cis-1,2-Dichloroethene	30		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	7.7		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	40		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		66 - 137
Toluene-d8 (Surr)	96		71 - 126
4-Bromofluorobenzene (Surr)	94		73 - 120
Dibromofluoromethane (Surr)	107		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101531-1
Sdg Number: 480-101531-1

Client Sample ID: **TMW-1D-060916**

Lab Sample ID: 480-101531-3
Client Matrix: Ground Water

Date Sampled: 06/09/2016 1035
Date Received: 06/11/2016 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307089	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C5178.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/17/2016 0115			Final Weight/Volume:	5 mL
Prep Date:	06/17/2016 0115				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND	UJ	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND	UJ	0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		66 - 137
Toluene-d8 (Surr)	94		71 - 126
4-Bromofluorobenzene (Surr)	92		73 - 120
Dibromofluoromethane (Surr)	109		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101531-1
Sdg Number: 480-101531-1

Client Sample ID: AF-5D-060916

Lab Sample ID: 480-101531-4
Client Matrix: Ground Water

Date Sampled: 06/09/2016 1000
Date Received: 06/11/2016 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307089	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C5179.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/17/2016 0140			Final Weight/Volume:	5 mL
Prep Date:	06/17/2016 0140				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	1.5	J	1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	22 J		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND UJ		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		66 - 137
Toluene-d8 (Surr)	95		71 - 126
4-Bromofluorobenzene (Surr)	92		73 - 120
Dibromofluoromethane (Surr)	107		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101531-1
Sdg Number: 480-101531-1

Client Sample ID: **DUP-01-060916**

Lab Sample ID: 480-101531-5
Client Matrix: Water

Date Sampled: 06/09/2016 1200
Date Received: 06/11/2016 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307089	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C5180.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/17/2016 0205			Final Weight/Volume:	5 mL
Prep Date:	06/17/2016 0205				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	1.4	J	1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	23 J		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND UJ		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		66 - 137
Toluene-d8 (Surr)	95		71 - 126
4-Bromofluorobenzene (Surr)	94		73 - 120
Dibromofluoromethane (Surr)	110		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101531-1
Sdg Number: 480-101531-1

Client Sample ID: TMW-2D-060916

Lab Sample ID: 480-101531-6
Client Matrix: Water

Date Sampled: 06/09/2016 1300
Date Received: 06/11/2016 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307089	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C5181.D
Dilution:	10			Initial Weight/Volume:	5 mL
Analysis Date:	06/17/2016 0230			Final Weight/Volume:	5 mL
Prep Date:	06/17/2016 0230				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		8.2	10
1,1,2,2-Tetrachloroethane	ND		2.1	10
1,1,2-Trichloroethane	ND		2.3	10
1,1-Dichloroethane	ND		3.8	10
1,1-Dichloroethene	ND		2.9	10
1,2-Dichloroethane	ND		2.1	10
1,2-Dichloropropane	ND		7.2	10
2-Hexanone	ND		12	50
2-Butanone (MEK)	ND		13	100
4-Methyl-2-pentanone (MIBK)	ND		21	50
Acetone	ND UJ		30	100
Benzene	ND		4.1	10
Bromodichloromethane	ND		3.9	10
Bromoform	ND		2.6	10
Bromomethane	ND		6.9	10
Carbon disulfide	ND		1.9	10
Carbon tetrachloride	ND		2.7	10
Chlorobenzene	ND		7.5	10
Dibromochloromethane	ND		3.2	10
Chloroethane	ND		3.2	10
Chloroform	ND		3.4	10
Chloromethane	ND UJ		3.5	10
cis-1,2-Dichloroethene	730		8.1	10
cis-1,3-Dichloropropene	ND		3.6	10
Ethylbenzene	ND		7.4	10
Methylene Chloride	ND		4.4	10
Styrene	ND		7.3	10
Tetrachloroethene	ND		3.6	10
Toluene	ND		5.1	10
trans-1,2-Dichloroethene	190		9.0	10
trans-1,3-Dichloropropene	ND		3.7	10
Trichloroethene	7.5	J	4.6	10
Vinyl chloride	20		9.0	10
Xylenes, Total	ND		6.6	20

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		66 - 137
Toluene-d8 (Surr)	95		71 - 126
4-Bromofluorobenzene (Surr)	94		73 - 120
Dibromofluoromethane (Surr)	106		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101531-1
Sdg Number: 480-101531-1

Client Sample ID: AF-21D-060916

Lab Sample ID: 480-101531-7
Client Matrix: Ground Water

Date Sampled: 06/09/2016 1318
Date Received: 06/11/2016 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307089	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C5182 D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/17/2016 0255			Final Weight/Volume:	5 mL
Prep Date:	06/17/2016 0255				

DUP

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND UJ		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND UJ		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	1.9		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		66 - 137
Toluene-d8 (Surr)	93		71 - 126
4-Bromofluorobenzene (Surr)	93		73 - 120
Dibromofluoromethane (Surr)	111		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101531-1
Sdg Number: 480-101531-1

Client Sample ID: OSMW-4D-060916

Lab Sample ID: 480-101531-8
Client Matrix: Ground Water

Date Sampled: 06/09/2016 1345
Date Received: 06/11/2016 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307089	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C5183.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/17/2016 0320			Final Weight/Volume:	5 mL
Prep Date:	06/17/2016 0320				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	0.54	J	0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	J ~~3.3~~	J UL	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	UJ ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	1.7		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		66 - 137
Toluene-d8 (Surr)	94		71 - 126
4-Bromofluorobenzene (Surr)	94		73 - 120
Dibromofluoromethane (Surr)	107		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101531-1
Sdg Number: 480-101531-1

Client Sample ID: OSMW-8S-060916

Lab Sample ID: 480-101531-9
Client Matrix: Ground Water

Date Sampled: 06/09/2016 1555
Date Received: 06/11/2016 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307089	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C5184.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/17/2016 0345			Final Weight/Volume:	5 mL
Prep Date:	06/17/2016 0345				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	11		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND UJ		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND UJ		0.35	1.0
cis-1,2-Dichloroethene	2.4		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	2.2		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108		66 - 137
Toluene-d8 (Surr)	94		71 - 126
4-Bromofluorobenzene (Surr)	92		73 - 120
Dibromofluoromethane (Surr)	111		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101531-1
Sdg Number: 480-101531-1

Client Sample ID: OSMW-8D-060916

Lab Sample ID: 480-101531-10
Client Matrix: Ground Water

Date Sampled: 06/09/2016 1620
Date Received: 06/11/2016 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307089	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C5185.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/17/2016 0410			Final Weight/Volume:	5 mL
Prep Date:	06/17/2016 0410				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND UJ		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND UJ		0.35	1.0
cis-1,2-Dichloroethene	3.2		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	49		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108		66 - 137
Toluene-d8 (Surr)	96		71 - 126
4-Bromofluorobenzene (Surr)	91		73 - 120
Dibromofluoromethane (Surr)	112		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101531-1
Sdg Number: 480-101531-1

Client Sample ID: OSMW-1D-061016

Lab Sample ID: 480-101531-11
Client Matrix: Ground Water

Date Sampled: 06/10/2016 1100
Date Received: 06/11/2016 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307341	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C5268.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/18/2016 1315			Final Weight/Volume:	5 mL
Prep Date:	06/18/2016 1315				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	1.6		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	J ~~3.1~~ U	J	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND UJ		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	3.8		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	14		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		66 - 137
Toluene-d8 (Surr)	93		71 - 126
4-Bromofluorobenzene (Surr)	93		73 - 120
Dibromofluoromethane (Surr)	109		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101531-1
Sdg Number: 480-101531-1

Client Sample ID: H-221-061016

Lab Sample ID: 480-101531-22
Client Matrix: Ground Water

Date Sampled: 06/10/2016 1115
Date Received: 06/11/2016 0900

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307341	Instrument ID:	HP5973C
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	C5269.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/18/2016 1340			Final Weight/Volume:	5 mL
Prep Date:	06/18/2016 1340				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	12		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	3.3		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND	UJ	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND	UJ	0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	1.1		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	34		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		66 - 137
Toluene-d8 (Surr)	94		71 - 126
4-Bromofluorobenzene (Surr)	95		73 - 120
Dibromofluoromethane (Surr)	110		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101591-1
Sdg Number: 480-101591-1

Client Sample ID: **Trip Blank-061316**

Lab Sample ID: 480-101591-1TB
Client Matrix: Water

Date Sampled: 06/13/2016 0000
Date Received: 06/14/2016 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307794	Instrument ID:	HP5973N
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	N4849.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/22/2016 0324			Final Weight/Volume:	5 mL
Prep Date:	06/22/2016 0324				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	6.7	J	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		66 - 137
Toluene-d8 (Surr)	100		71 - 126
4-Bromofluorobenzene (Surr)	100		73 - 120
Dibromofluoromethane (Surr)	102		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101591-1
Sdg Number: 480-101591-1

Client Sample ID: OSMW-5S-061316

Lab Sample ID: 480-101591-2
Client Matrix: Ground Water

Date Sampled: 06/13/2016 0935
Date Received: 06/14/2016 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307794	Instrument ID:	HP5973N
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	N4850.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/22/2016 0351			Final Weight/Volume:	5 mL
Prep Date:	06/22/2016 0351				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	2.8		0.38	1.0
1,1-Dichloroethene	0.29	J	0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	16		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	1.1		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	8.0		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		66 - 137
Toluene-d8 (Surr)	101		71 - 126
4-Bromofluorobenzene (Surr)	102		73 - 120
Dibromofluoromethane (Surr)	104		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101591-1
Sdg Number: 480-101591-1

Client Sample ID: OSMW-6S-061316

Lab Sample ID: 480-101591-3
Client Matrix: Ground Water

Date Sampled: 06/13/2016 1030
Date Received: 06/14/2016 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch.	480-307794	Instrument ID:	HP5973N
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	N4851.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/22/2016 0418			Final Weight/Volume:	5 mL
Prep Date:	06/22/2016 0418				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	0.76	J	0.38	1.0
1,1-Dichloroethene	0.85	J	0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	~~3.4~~	~~J~~ U	3.0	10
Benzene	ND		0.41	~~1.0~~
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	5.8		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	1.8		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		66 - 137
Toluene-d8 (Surr)	101		71 - 126
4-Bromofluorobenzene (Surr)	101		73 - 120
Dibromofluoromethane (Surr)	101		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101591-1
Sdg Number: 480-101591-1

Client Sample ID: OSMW-6D-061316

Lab Sample ID: 480-101591-4
Client Matrix: Ground Water

Date Sampled: 06/13/2016 1040
Date Received: 06/14/2016 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307794	Instrument ID:	HP5973N
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	N4852.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/22/2016 0444			Final Weight/Volume:	5 mL
Prep Date:	06/22/2016 0444				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	1.8		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	~~44~~	U	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	8.1		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	37		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		66 - 137
Toluene-d8 (Surr)	100		71 - 126
4-Bromofluorobenzene (Surr)	102		73 - 120
Dibromofluoromethane (Surr)	103		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101591-1
Sdg Number: 480-101591-1

Client Sample ID: OSMW-7D-061316

Lab Sample ID: 480-101591-5
Client Matrix: Ground Water

Date Sampled: 06/13/2016 0955
Date Received: 06/14/2016 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307794	Instrument ID:	HP5973N
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	N4853.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/22/2016 0511			Final Weight/Volume:	5 mL
Prep Date:	06/22/2016 0511				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	ND		3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	6.8		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		66 - 137
Toluene-d8 (Surr)	101		71 - 126
4-Bromofluorobenzene (Surr)	103		73 - 120
Dibromofluoromethane (Surr)	99		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101591-1
Sdg Number: 480-101591-1

Client Sample ID: AF-7D-061316

Lab Sample ID: 480-101591-6
Client Matrix: Ground Water

Date Sampled: 06/13/2016 1110
Date Received: 06/14/2016 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307794	Instrument ID:	HP5973N
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	N4854.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/22/2016 0538			Final Weight/Volume:	5 mL
Prep Date:	06/22/2016 0538				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	~~4.8~~	U	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		66 - 137
Toluene-d8 (Surr)	101		71 - 126
4-Bromofluorobenzene (Surr)	101		73 - 120
Dibromofluoromethane (Surr)	105		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101591-1
Sdg Number: 480-101591-1

Client Sample ID: AF-7S-061316

Lab Sample ID: 480-101591-7
Client Matrix: Ground Water

Date Sampled: 06/13/2016 1135
Date Received: 06/14/2016 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: 5030C
Dilution: 10
Analysis Date: 06/22/2016 1438
Prep Date: 06/22/2016 1438

Analysis Batch: 480-307860
Prep Batch: N/A

Instrument ID: HP5973N
Lab File ID: N4871.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		8.2	10
1,1,2,2-Tetrachloroethane	ND		2.1	10
1,1,2-Trichloroethane	ND		2.3	10
1,1-Dichloroethane	7.0	J	3.8	10
1,1-Dichloroethene	ND		2.9	10
1,2-Dichloroethane	ND		2.1	10
1,2-Dichloropropane	ND		7.2	10
2-Hexanone	ND		12	50
2-Butanone (MEK)	ND		13	100
4-Methyl-2-pentanone (MIBK)	ND		21	50
Acetone	ND		30	100
Benzene	ND		4.1	10
Bromodichloromethane	ND		3.9	10
Bromoform	ND		2.6	10
Bromomethane	ND		6.9	10
Carbon disulfide	ND		1.9	10
Carbon tetrachloride	ND		2.7	10
Chlorobenzene	ND		7.5	10
Dibromochloromethane	ND		3.2	10
Chloroethane	ND		3.2	10
Chloroform	ND		3.4	10
Chloromethane	ND		3.5	10
cis-1,2-Dichloroethene	420		8.1	10
cis-1,3-Dichloropropene	ND		3.6	10
Ethylbenzene	ND		7.4	10
Methylene Chloride	ND		4.4	10
Styrene	ND		7.3	10
Tetrachloroethene	ND		3.6	10
Toluene	ND		5.1	10
trans-1,2-Dichloroethene	ND		9.0	10
trans-1,3-Dichloropropene	ND		3.7	10
Trichloroethene	ND		4.6	10
Vinyl chloride	510		9.0	10
Xylenes, Total	ND		6.6	20

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97		66 - 137
Toluene-d8 (Surr)	100		71 - 126
4-Bromofluorobenzene (Surr)	103		73 - 120
Dibromofluoromethane (Surr)	100		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101591-1
Sdg Number: 480-101591-1

Client Sample ID: AF-7P-061316

Lab Sample ID: 480-101591-8
Client Matrix: Ground Water

Date Sampled: 06/13/2016 1150
Date Received: 06/14/2016 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307860	Instrument ID:	HP5973N
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	N4872.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/22/2016 1505			Final Weight/Volume:	5 mL
Prep Date:	06/22/2016 1505				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	1.0		0.38	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	~~4.4~~	U ~~J~~	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	1.7		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		66 - 137
Toluene-d8 (Surr)	100		71 - 126
4-Bromofluorobenzene (Surr)	104		73 - 120
Dibromofluoromethane (Surr)	105		60 - 140

Client: O'Brien & Gere Inc of North America

Job Number: 480-101591-1
Sdg Number: 480-101591-1

Client Sample ID: DUP-01-061316

Lab Sample ID: 480-101591-9
Client Matrix: Water

Date Sampled: 06/13/2016 1200
Date Received: 06/14/2016 1000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-307860	Instrument ID:	HP5973N
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	N4873.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	06/22/2016 1532			Final Weight/Volume:	5 mL
Prep Date:	06/22/2016 1532				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.82	1.0
1,1,2,2-Tetrachloroethane	ND		0.21	1.0
1,1,2-Trichloroethane	ND		0.23	1.0
1,1-Dichloroethane	ND		0.36	1.0
1,1-Dichloroethene	ND		0.29	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.72	1.0
2-Hexanone	ND		1.2	5.0
2-Butanone (MEK)	ND		1.3	10
4-Methyl-2-pentanone (MIBK)	ND		2.1	5.0
Acetone	~~4.7~~	U	3.0	10
Benzene	ND		0.41	1.0
Bromodichloromethane	ND		0.39	1.0
Bromoform	ND		0.26	1.0
Bromomethane	ND		0.69	1.0
Carbon disulfide	ND		0.19	1.0
Carbon tetrachloride	ND		0.27	1.0
Chlorobenzene	ND		0.75	1.0
Dibromochloromethane	ND		0.32	1.0
Chloroethane	ND		0.32	1.0
Chloroform	ND		0.34	1.0
Chloromethane	ND		0.35	1.0
cis-1,2-Dichloroethene	ND		0.81	1.0
cis-1,3-Dichloropropene	ND		0.36	1.0
Ethylbenzene	ND		0.74	1.0
Methylene Chloride	ND		0.44	1.0
Styrene	ND		0.73	1.0
Tetrachloroethene	ND		0.36	1.0
Toluene	ND		0.51	1.0
trans-1,2-Dichloroethene	ND		0.90	1.0
trans-1,3-Dichloropropene	ND		0.37	1.0
Trichloroethene	ND		0.46	1.0
Vinyl chloride	ND		0.90	1.0
Xylenes, Total	ND		0.66	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		66 - 137
Toluene-d8 (Surr)	99		71 - 126
4-Bromofluorobenzene (Surr)	99		73 - 120
Dibromofluoromethane (Surr)	104		60 - 140

Appendix B – Analytical Laboratory Reports

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