GOLDER

REPORT

2019 GROUNDWATER MONITORING SUMMARY REPORT

Former Electrolux Home Products, Inc. Facility

Jefferson, Iowa

Submitted to:

Electrolux Home Products, Inc.

10200 David Taylor Drive
Charlotte, NC 28262

Submitted by:

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January 2020

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GOLDER

January 22, 2020 Project No.: 191-31867

Aaron Swartley, Director EHS Electrolux North America
Electrolux Home Products, Inc.
10200 David Taylor Drive
Charlotte, NC 28262

**RE: 2019 GROUNDWATER MONITORING SUMMARY REPORT
FORMER ELECTROLUX HOME PRODUCTS, INC. FACILITY
JEFFERSON, IOWA**

Dear Aaron:

Golder Associates Inc. (Golder) is pleased to present this 2019 Groundwater Monitoring Summary Report for the former Electrolux Home Products, Inc. facility located in Jefferson, Iowa (Site), which summarizes groundwater monitoring activities completed during 2019. Please contact the undersigned if you have any questions.

Sincerely,

GOLDER ASSOCIATES INC.

James S. Peace, PG
Senior Hydrogeologist

Alistair P. T. Macdonald, CPG, LSP
Senior Program Leader and Principal

Attachments

cc: Andrew Stienecker – Electrolux Home Products, Inc.
Doug Ucci – BSI EHS Services and Solutions
Doug Arnold – Alston & Bird LLP

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1.0 INTRODUCTION

The former Electrolux Home Products, Inc. (Electrolux) manufacturing facility is located at 601 East Central Street in Jefferson, Greene County, Iowa (Site, see Figure 1). Approximately 7.5 acres of the 20.75-acre property owned by Electrolux was used for manufacturing (herein referred as the "facility" or "former manufacturing area"). Electrolux previously leased the remainder of the property, south and east of the facility for agricultural use (see Figure 2). The agricultural leases have since been terminated. The former manufacturing area was previously improved by a 75,542 square-foot single-story manufacturing/office/warehouse building constructed in 1960, with additions constructed in 1973, 1984, 1988, and 1992 (see Figure 3).

The Site was developed in 1960 to manufacture dishwasher motor transmissions. Electrolux closed the facility in March 2011, decommissioned and removed the manufacturing equipment and other items from the facility buildings, and demolished the buildings. The concrete building slabs, parking areas, perimeter chain-link fence, and sidewalks are still in place.

2.0 GROUNDWATER MONITORING

Golder sampled groundwater in 2019 in accordance with the Groundwater Monitoring Plan (GMP) dated June 7, 2017 (Golder, 2017) on November 5, 6 and 7, 2019. The groundwater monitoring event included:

- Collecting a round of water level measurements from seven monitoring wells screened in the yellow/brown/dark gray till and one monitoring well screened in the Pleistocene Sand and Gravel unit prior to groundwater sampling.
- Collecting groundwater samples from seven of the eight monitoring wells illustrated in Figure 3. Golder was unable to collect a groundwater sample from monitoring well MW-47D because the manhole cover bolts were excessively rusted and could not be removed at the time of the sampling visit.
- Submitting the groundwater and Quality Assurance/Quality Control (QA/QC) samples to state-certified laboratories for analysis of volatile organic compounds (VOCs) and monitored natural attenuation (MNA) parameters including dissolved gases (methane, ethane, and ethene), chloride, sulfate, sulfide, alkalinity, iron, manganese, and total organic carbon (TOC).

Golder collected groundwater samples using a bladder pump and EPA low-flow sampling techniques in accordance with the GMP. Each well was purged under low-flow conditions until field water quality parameters stabilized to within 10% of the previous reading. Flow rates ranged from 100 milliliters per minute (ml/min) to 800 ml/min. Golder collected the groundwater samples following the stabilization of field water quality parameters. A copy of the groundwater collection forms is provided in Appendix A. Following sample collection, Golder placed the samples on ice and shipped the VOC and MNA (except dissolved gases) samples to Eurofins TestAmerica Laboratories, Inc. in Cedar Falls, Iowa (Eurofins) and the dissolved gases to Pace Analytical Services in Pittsburgh, Pennsylvania (Pace) via FedEx.

2.1 Summary of Analytical Results

Groundwater analytical results for 2019 and previous sampling events are summarized in Table 1 (VOCs and field water quality parameters) and Table 2 (MNA parameters). United States Environmental Protection Agency (USEPA) Maximum Concentration Levels (EPA MCLs) and/or Iowa Department of Natural Resources (IDNR) statewide groundwater standards are included in Table 1 to provide a frame-of-reference for data evaluation. Laboratory analytical reports are provided in Appendix B.

The 2019 analytical results are consistent with previous results. The CVOC-impacted groundwater remains on Site and has not impacted the Pleistocene Sand and Gravel unit. MNA data indicates that natural attenuation is occurring on Site.

2.2 Quality Assurance/Quality Control

An integral component of the sampling program is the implementation of a QA/QC program. Golder collected the following field QA/QC samples to confirm sample collection, handling, and storage methods are adequate to assess sample integrity:

- Golder collected one field duplicate. Golder calculated the relative percent difference (RPD) value for each analyzed parameter from the sample collected from MW-65 in November 2019. The RPDs were within the tolerance interval of 20%.
- Golder collected an equipment blank during the monitoring event. Pace detected methane below the laboratory reporting limit in the equipment blank collected in November 2019. However, all associated sample results were detected above the laboratory reporting limit and not affected by the blank detection.
- Golder included a VOC trip blank with the VOC samples. Eurofins did not detect any VOCs at concentrations above the laboratory reporting limits in the trip blank.

Golder reviewed the chain-of-custody forms for completeness and lapses in chain-of-custody protocols. Golder found the forms complete and did not identify lapses in custody. Eurofins and Pace received each of the coolers at temperatures of 6°Celsius (C) or cooler, consistent with current EPA protocols that specify a temperature range of 4°C ±2°C.

TestAmerica noted that certain VOC results for samples MW-66 and MW-56D were reanalyzed outside of the analytical holding time due to instrument failure. The holding time for the VOC analysis is 14 days, these samples were analyzed 25 days after sample collection and 23 days after receipt at the laboratory. The affected VOCs were not detected above the laboratory reporting limit and historically have been non-detect at these locations.

3.0 CLOSING

Golder completed the 2019 annual monitoring event in accordance with the GMP. The 2019 analytical data are consistent with previous results confirming that the groundwater plume is stable and naturally attenuating. The horizontal and vertical extent of CVOC-impacted groundwater is well understood and remains on Site. The United States Environmental Protection Agency (USEPA) confirmed Electrolux's findings that groundwater impacts have not migrated beyond the Site boundary by completing two groundwater assessment studies performed by their subcontractor Toeroek Associates, Inc. (Toeroek) including:

- *Groundwater Sampling Event Report of Findings, Rev. 01*, Former Electrolux, Inc. Facility, Jefferson, Iowa, Contract No. EP-W-13-002, Task Order 035, Technical Directive No. 4, June 2, 2017.
- *Monitoring Well Installation and Groundwater Sampling Event Final Report of Findings*, Former Electrolux, Inc. Facility, Jefferson, Iowa, Contract No. EP-W-13-002, Task Order 035, Technical Directive No. 8, July 26, 2018.

CVOCs have never been detected in the Pleistocene Sand and Gravel unit groundwater samples (MW-67) at concentrations above the laboratory reporting limits. Electrolux will continue annual groundwater monitoring in accordance with the GMP, scheduled for the fourth quarter 2020.

4.0 REFERENCES

Golder Associates, 2017, "Groundwater Monitoring Plan, Former Electrolux Home Products, Inc. Facility, Jefferson, Iowa" June 7, 2017.

Golder Associates, 2017, "Groundwater Monitoring Summary Report, Former Electrolux Home Products, Inc. Facility, Jefferson, Iowa" January 23, 2018

Toeroek Associates, Inc., 2017 "Groundwater Sampling Event Report of Findings, Rev. 01, Former Electrolux, Inc. Facility, Jefferson, Iowa, Contract No. EP-W-13-002, Task Order 035, Technical Directive No. 4" June 2, 2017.

Toeroek Associates, Inc., 2018 "Monitoring Well Installation and Groundwater Sampling Event Final Report of Findings, Former Electrolux, Inc. Facility, Jefferson, Iowa, Contract No. EP-W-13-002, Task Order 035, Technical Directive No. 8" July 26, 2018.

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TABLES

Table 1: Summary of Detected Constituents in Groundwater
Former Electrolux Manufacturing Facility
Jefferson, Iowa

			Yellow-Brown Till																										
			MW-43D												MW-46														
			Dec 2012	Mar 2013		Oct 2013	Apr 2014	Jul 2014	Oct 2014	Jul 2017	Nov 2017	Jul 2018	Nov 2018	Nov 2019	Dec 2012		Mar 2013	Oct 2013	Apr 2014	Jul 2014		Oct 2014	Jul 2017	Nov 2017		Jul 2018	Nov 2018	Nov 2019
Analyte	**MCL**	**Iowa DNR**	N	FD	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	FD	N	N	FD	N	N	N	N
Volatile Organic Compounds (ug/L)																													
Tetrachloroethene	**5**	**1,700**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	**13.2**	**10.5**	**<10**	**14.7**	1.23	<10	**11.5**	**<100**	**23.4**	18.4	<100	11.6	<100	<100
Trichloroethene	**5**	**76**	**9.13**	4.7	4.7	2.28	<1	<1	<1	<1	<1	<1	3.03	<1	**16,100**	**15,400**	**2,140**	**15,900**	**1,640**	**313**	**21,000**	**14,700**	**19,700**	14,900	13,300	10,200	14,300	23,200
cis-1,2-Dichloroethene	**70**	**350**	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.23	12.1	<1	**38.7**	<100	**290**	**1,950**	**424**	**74.5**	**359**	**883**	**1,230**	522	**445**	**569**	**359**	**1,350**
Vinyl Chloride	**2**	**10**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	**3.59**	<1	<1	<1	<10	1.05	<1	<10	<10	<100	<10	1.09	<100	<100	<100	**<100**
1,1,1-Trichloroethane	**200**	70,000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<10	<100	<1	<1	<100	<1	<100	<100
1,1,2-Trichloroethane	**5**	61	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<10	<100	<1	<1	<100	<1	<100	**<100**
1,1-Dichloroethane	NS	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<10	<100	<1	<1	<100	<1	<100	<100
1,1-Dichloroethene	**7**	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	5.85	6.44	**<20**	**10.4**	**2.61**	**<20**	**<20**	**<200**	**12.3**	8.79	**<200**	6.04	<100	**<200**
1,2-Dichloroethane	**5**	38	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<10	<100	<1	<1	<100	<1	<100	**<100**
2-Butanone	NS	21,000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<100	<100	<1000	<10	<10	<1000	<10	<1000	<1000
Acetone	NS	32,000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<100	<100	<1000	<10	<10	<1000	<10	<1000	<1000
Benzene	**5**	64	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<5	<5	**<50**	<0.5	<0.5	<50	<0.5	<50	**<50**
Carbon Disulfide	NS	3,500	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<10	<100	<1	<1	<100	<1	<100	<100
Chloroform	**80**	NS	7.99	3.4	3.56	1.81	<1	<1	<1	<1	<1	<1	<3	<3	1.72	1.88	<10	<1	<1	<10	<10	<100	<1	<1	<100	<3	<300	**<300**
Toluene	1,000	5,000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<10	<100	<1	<1	<100	<1	<100	<100
trans-1,2-Dichloroethene	**100**	**700**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.11	4.09	<10	23.7	3.71	<10	<10	<100	15.3	7.55	<100	<100	<100	<100
Xylenes, Total	10,000	50,000	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<30	<3	<3	<30	<30	<300	<3	<3	<300	<3	<300	<300

Notes:
ug/L= Microgram per liter
MCL = Environmental Protection Agency's Maximum Contaminant Level 1
Iowa DNR = Statewide Groundwater Standard
Bold = Result above MCL and/or Iowa DNR
NS = No standard
NR = Not recorded
N = Normal sample
E = Result exceeded calibration range and is an estimated value
H = Samples analyzed beyond the specified holding time
FD = Field duplicate sample
NC = Not collected - the manhole cover was rusted shut

Table 1: Summary of Detected Constituents in Groundwater
Former Electrolux Manufacturing Facility
Jefferson, Iowa

			Yellow-Brown Till																																	
			MW-47D																MW-56D						MW-57											
			Dec 2012		Mar 2013	Oct 2013	Apr 2014		Jul 2014	Oct 2014	Dec 2014	Mar 2015	Jul 2017	Nov 2017	Jul 2018		Nov 2018	Nov 2019	Mar 2013	Jul 2017	Nov 2017	Jul 2018	Nov 2018	Nov 2019	Mar 2013	Apr 2014		Jul 2014	Oct 2014	Jul 2017	Nov 2017	Jul 2018	Nov 2018	Nov 2019
Analyte	**MCL**	**Iowa DNR**	N	FD	N	N	N	FD	N	N	N	N	N	N	N	FD	N		N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
Volatile Organic Compounds (ug/L)																																				
Tetrachloroethene	**5**	**1,700**	**<1000**	**<1000**	**<100**	**6.98**	3.56	3.47	<100	**4.04**	<100	4.84	3.91	<100	2.13	2.35	<10	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	1.02	<10	<1	<10	<10
Trichloroethene	**5**	**76**	**43,300**	**42,700**	**32,000**	**10,200**	**43,100**	**43,200**	**25,300**	**26,700**	**25,500**	**28,800**	**25,800**	**18,500**	**15,000**	**15,200**	**20,500**	NC	<1	<1	<1	<1	<1	<1	**672**	**865**	**953**	**1,100**	**853**	**919**	**576**	**689**	**543**	520
cis-1,2-Dichloroethene	**70**	**350**	**5,480**	**4,900**	**7,340**	**5,500**	**21,900**	**19,500**	**20,900**	**28,800**	**35,700**	**37,000**	**94,400**	**84,000**	**70,900**	**74,400**	**79,000**	NC	<1	<1	<1	<1	<1	<1	4.34	8.11	7.91	<10	8.78	6.53	<10	13.7	<10	<10
Vinyl Chloride	**2**	**10**	<1000	<1000	<100	**134**	**392**	**388**	**492**	**567**	**503**	**491**	**1,500**	**3,310**	**10,600**	**11,100**	**11,600**	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<1	<10	<10
1,1,1-Trichloroethane	**200**	70,000	<1000	<1000	<100	<1	<1	<1	<100	<1	<100	<1	<1	<100	<1	<1	<10	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<1	<10	<10
1,1,2-Trichloroethane	**5**	61	<1000	<1000	<100	<1	<1	<1	<100	<1	<100	<1	<1	<100	<1	<1	<10	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<1	<10	<10
1,1-Dichloroethane	NS	700	<1000	<1000	<100	<1	<1	<1	<100	<1	<100	<1	<1	<100	<1	<1	<10	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<1	<10	<10
1,1-Dichloroethene	**7**	**180**	<2000	<2000	<200	**116**	**175**	**176**	<200	**123**	<200	**110**	**158**	**<200**	**168**	**162**	**141**	NC	<2	<2	<2	<2	<2	<2 H	<2	2.97	2.64	<20	<2	<2	<20	<2	<20	<20
1,2-Dichloroethane	**5**	38	<1000	<1000	<100	<1	<1	<1	<100	<1	<100	<1	<1	<100	<1	<1	<10	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<1	<10	<10
2-Butanone	NS	21,000	<10000	<10000	<1000	<10	<10	<10	<1000	<10	<1000	<10	<10	<1000	<10	<10	<100	NC	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<100	<10	<100	<100
Acetone	NS	32,000	<10000	<10000	<1000	<10	<10	<10	<1000	<10	<1000	<10	<10	<1000	<10	<10	<100	NC	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<100	<10	<100	<100
Benzene	**5**	**64**	**<500**	**<500**	**<50**	<0.5	<0.5	<0.5	<50	<0.5	<50	<0.5	<0.5	<50	0.581	0.554	<5	NC	<0.5	<0.5	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<5	<0.5	<5	<5
Carbon Disulfide	NS	3,500	<1000	<1000	<100	<1	<1	<1	<100	<1	<100	<1	<1	<100	<1	<1	<10	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<1	<10	<10
Chloroform	**80**	NS	**<1000**	**<1000**	**<100**	<1	<1	<1	<100	<1	<100	<1	<1	<100	<1	<1	<30	NC	1.86	<1	<1	<1	<3	<3	<1	<1	<1	<10	<1	<1	<10	<1	<30	<30
Toluene	1,000	5,000	<1000	<1000	<100	<1	<1	<1	<100	<1	<100	<1	<1	<100	<1	<1	<10	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<1	<10	<10
trans-1,2-Dichloroethene	**100**	**700**	**<1000**	**<1000**	<100	**183**	**343**	**161**	<100	**577**	**124**	**321**	**417**	**356**	**545**	**704**	**464**	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<10	<1	<10	<10
Xylenes, Total	10,000	50,000	<3000	<3000	<300	<3	<3	<3	<300	<3	<300	<3	<3	<300	<3	<3	<30	NC	<3	<3	<3	<3	<3	<3	<3	<3	<3	<30	<3	<3	<30	<3	<30	<30

Notes:
ug/L= Microgram per liter
MCL = Environmental Protection Agency's Maximum Contaminant Level 1
Iowa DNR = Statewide Groundwater Standard
Bold = Result above MCL and/or Iowa DNR
NS = No standard
NR = Not recorded
N = Normal sample
E = Result exceeded calibration range and is an estimated value
H = Samples analyzed beyond the specified holding time
FD = Field duplicate sample
NC = Not collected - the manhole cover was rusted shut

Table 1: Summary of Detected Constituents in Groundwater
Former Electrolux Manufacturing Facility
Jefferson, Iowa

			Yellow-Brown Till							
			MW-66							
Analyte	MCL	Iowa DNR	Nov 2015	Jul 2016		Jul 2017	Nov 2017	Jul 2018	Nov 2018	Nov 2019
			N	N	FD	N	N	N	N	N
Volatile Organic Compounds (ug/L)										
Tetrachloroethene	**5**	**1,700**	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	**5**	**76**	3.94	**6.38**	**5.79**	**7.85**	**11.5**	**11.3**	**16.7**	**17.2**
cis-1,2-Dichloroethene	**70**	**350**	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl Chloride	**2**	**10**	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	**200**	70,000	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	**5**	61	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	NS	700	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	**7**	**180**	<2	<2	<2	<2	<2	<2	<2	<2 H
1,2-Dichloroethane	**5**	38	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone	NS	21,000	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	NS	32,000	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	**5**	64	<0.5	<0.5	<0.5	<0.5	0.5	0.5	<.5	<0.5
Carbon Disulfide	NS	3,500	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	**80**	NS	<1	<1	<1	<1	<1	<1	<3	<3
Toluene	1,000	5,000	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	**100**	**700**	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, Total	10,000	50,000	<3	<3	<3	<3	<3	<3	<3	<3

	Dark Gray Till																					
	MW-65																					
Analyte	Oct 2013	Apr 2014	Jul 2014	Oct 2014		Dec 2014		Mar 2015		Jul 2016	Jul 2017	Nov 2017	Jul 2018	Nov 2018	Nov 2018	Nov 2019	Nov 2019
	N	N	N	FD	N	N	FD	N	FD	N	N	N	N	N	FD	N	FD
Volatile Organic Compounds (ug/L)																	
Tetrachloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	**<10**	<1
Trichloroethene	<1	2.42	**44.7**	**799**	**826**	**1,730**	**1,530**	**2,370**	**2,360**	**2,420**	**1,670**	**3,230**	**3,440**	**2,860**	**3,010**	**2,000**	**1950 E**
cis-1,2-Dichloroethene	<1	1.27	2.17	15	17.1	22.9	20.8	29.7	28.1	61.3	**760**	**121**	**318**	**283**	**279**	**686**	**680 E**
Vinyl Chloride	<1	<1	<1	<1	<1	1.41	1.32	1.89	1.9	<1	1.53	**2.1**	<100	**48.8**	**46.5**	**168**	**193**
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	**<10**	<1
1,1-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<1
1,1-Dichloroethene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<20	**<20**	<2
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	**<10**	<1
2-Butanone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<100	<100	<10
Acetone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<100	<100	<10
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.736	<0.5	0.5	<0.5	<5	<5	<5	0.659
Carbon Disulfide	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<1
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<30	<30	<30	<3
Toluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<1
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.99	11.3	10.6	<100	17.4	16.4	33.4	32.9
Xylenes, Total	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<30	<30	<30	<3

	Pleistocene Sand and Gravel								
	MW-67								
Analyte	Nov 2015		Jul 2016	Jul 2017		Nov 2017	Jul 2018	Nov 2018	Nov 2019
	N	FD	N	N	FD	N	N	N	N
Volatile Organic Compounds (ug/L)									
Tetrachloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl Chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	0.5	<0.5	<0.5
Carbon Disulfide	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	2.05	2.2	<1	<1	<1	<1	<1	<3	<3
Toluene	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes, Total	<3	<3	<3	<3	<3	<3	<3	<3	<3

Notes:
ug/L= Microgram per liter
MCL = Environmental Protection Agency's Maximum Contaminant Level 1
Iowa DNR = Statewide Groundwater Standard
Bold = Result above MCL and/or Iowa DNR
NS = No standard
NR = Not recorded
N = Normal sample
E = Result exceeded calibration range and is an estimated value
H = Samples analyzed beyond the specified holding time
FD = Field duplicate sample
NC = Not collected - the manhole cover was rusted shut

Prepared by: KNG
Checked by: ERW
Reviewed by:

Table 2: Summary of Evidence of Natural Degradation of CVOCs
Former Electrolux Manufacturing Facility
Jefferson, Iowa

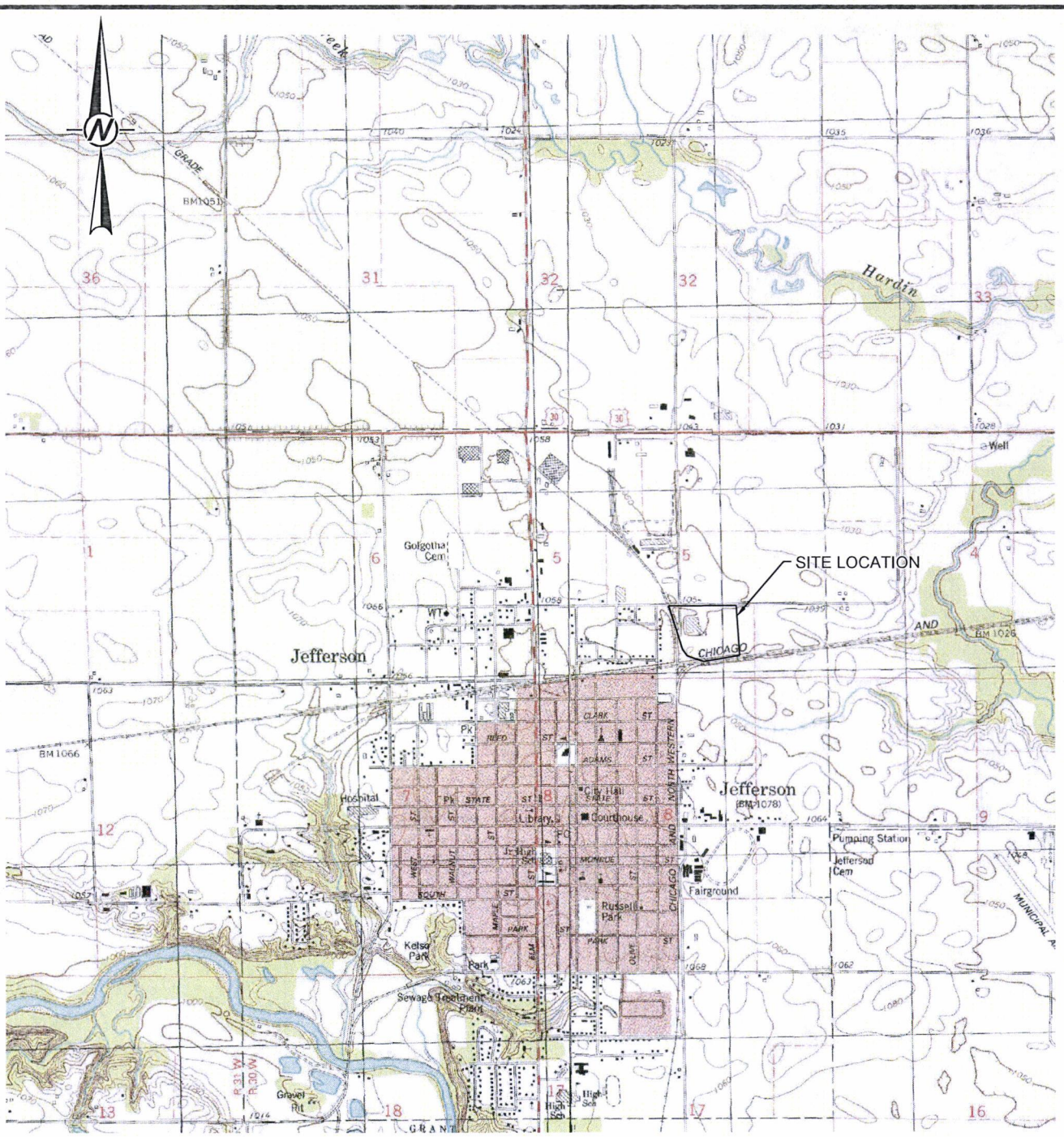
Well Screen Geology	Well ID	Sample Date	Sample Type	Dissolved Gases (ug/L)			Metals (mg/L)		Natural Attenuation Parameters (mg/L)				Field Parameters				
				Methane	Ethane	Ethene	Iron	Manganese	Alkalinity	Sulfate	Chloride	TOC	pH	Specific conductance (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)
Yellow-Brown Till	MW-43D	Oct 2013	N	2.9	0.32	4.3	<0.1	1.19	NA	26.3	NA	2.63	7.06	0.782	15.07	-76	0.26
		Apr 2014	N	2.5	0.24	0.3	0.255	0.454	NA	20.1	11	2.25	7.34	0.715	12.25	56.2	2.35
		Jul 2014	N	0.59	0.032	0.033	<0.1	0.21	NA	21.1	12.3	1.9	6.92	0.721	13.86	191.5	0.72
		Oct 2014	N	3.8	0.47	0.14	<0.1	0.862	NA	15.2	10.9	1.89	7.03	0.741	14.2	-81.4	0.24
		Jul 2017	N	1.1	0.13	0.011 J	<0.5	0.676	386	15.4	9.54	1.48	7.34	0.729	17.72	114.6	2.78
		Jul 2018	N	0.44 J	0.028 J	0.017 J	<0.5	0.7	355	18.2	11.1	1.61	6.79	0.851	16.58	183.6	0.3
		Nov 2019	N	1.6	0.11	0.065 J	0.604	0.917	262	13.9	8.98	2.77	7.18	0.5177	13.2	-23.8	0.29
	MW-46	Oct 2013	N	20	2.2	2.5	0.391	0.653	NA	22.8	NA	1.82	6.81	0.719	17.2	-94.5	0.2
		Apr 2014	N	12	1.1	0.48	0.21	0.643	NA	27.7	<5	2.08	7.11	0.692	12.6	-3.1	0.02
		Jul 2014	FD	0.4	0.15	0.037	0.252	0.0433	NA	16.8	<5	2.97	-	-	-	-	-
		Jul 2014	N	7.1	0.73	0.45	0.136	0.79	NA	25.4	<5	1.42	6.93	0.762	14.98	-24.4	0.33
		Oct 2014	N	7.1	1.4	0.88	0.234	0.772	NA	22	<5	1.69	6.93	0.77	15.3	-79.2	0.14
		Jul 2017	N	2.8	2	1.2	<0.5	0.792	427	24.1	<5	1.16	7.06	0.88	21.19	4.2	0.55
		Jul 2018	N	1.2	0.92	0.45	<0.5	0.782	395	31.8	<5	1.35	6.99	0.825	15.49	134.9	0.5
		Nov 2019	N	2.0	0.66	1.6	<0.5	0.759	406	27.3	<5	1.65	7.09	0.783	12	12.1	0.35
	MW-47D	Oct 2013	N	98	3.4	140	0.474	0.705	NA	16.3	NA	2.12	7.06	1.462	19.58	-25.7	0.24
		Apr 2014	FD	160	2.9	280	1.7	0.747	NA	25	143	2.52	-	-	-	-	-
		Apr 2014	N	160	2.7	270	0.613	0.729	NA	25.4	144	2.42	6.98	1.238	13.62	-26.3	0.4
		Jul 2014	N	140	2.3	220	0.82	0.697	NA	19.8	144	2.67	7.02	1.119	19.04	50.4	0.32
		Oct 2014	N	180	2.8	280	1.32	0.692	NA	13.1	147	2.03	6.89	1.33	16.8	-122.9	0.17
		Dec 2014	N	NA	NA	NA	1.43	0.723	416	12.5	203	2.03	7.25	1.34	12.47	-26	0
		Mar 2015	N	NA	NA	NA	2.04	0.718	454	9.86	155	2.05	6.74	1.31	12.38	-41	0
		Jul 2017	N	450	5.7	540	5.6	0.755	391	9.29	228	3.12	7.13	1.65	18.9	-72.4	0.62
		Jul 2018	N	720	6.8	2,000	4.08	0.766	316	8.89	268	6.29	6.84	1.608	19.03	-41	0.31
		Jul 2018	FD	590	5.6	1,800	3.79	0.762	321	8.78	261	5.9	-	-	-	-	-
		Nov 2019	-	-	-	-	-	-	-	-	-	-	NC	NC	NC	NC	NC
	MW-56D	Jul 2017	N	0.35 J	0.013 J	0.029 J	<0.5	0.278	350	137	<5	2.12	7.46	0.887	14.71	64.7	3.77
		Jul 2018	N	0.50 J	0.0087 J	0.13	<0.5	0.676	375	141	<5	1.48	6.44	1	15.65	177.8	0.29
		Nov 2019	N	1.2	0.054 J	0.59	<0.5	1.06	401	137	<5	1.5	7.1	0.924	10.8	12.9	0.29
	MW-57	Apr 2014	FD	2	0.033	0.12	0.202	0.648	NA	55.1	15	2.12	-	-	-	-	-
		Apr 2014	N	2	0.098	0.11	0.217	0.701	NA	54.4	15.1	1.89	7.07	0.792	12.06	11.3	0.38
		Jul 2014	N	1.6	0.025	0.091	0.175	0.686	NA	55.6	15.6	1.76	6.97	0.821	14.11	12.8	0.42
		Oct 2014	N	2	0.044	0.17	0.368	0.616	NA	47	14.6	2.07	6.93	0.792	15.2	-74	0.16
		Jul 2017	N	2.8	0.024 J	0.05 J	1.33	0.619	391	55.2	17.4	2.02	7.15	0.846	14.68	-15.6	0.23
		Jul 2018	N	4.2	0.020 J	0.056 J	2.29	0.68	341	66.6	20.4	2.53	6.71	0.942	16.43	49.4	0.34
		Nov 2019	N	3.6	0.1	0.027 J	1.51	0.84	322	52.6	17.4	2.77	7.09	0.722	13.3	9.2	3.87
	MW-66	Jul 2017	N	1.8	0.046 J	0.5	<0.5	0.621	443	46.4	<5	<1	6.99	0.805	14.24	-22.8	0.6
		Jul 2018	N	1.9	0.054 J	0.19	<0.5	0.613	400	51.7	<5	1.47	6.76	0.881	15.71	84.9	0.27
		Nov 2019	N	1.7	0.035 J	0.16	<0.5	0.68	421	49.3	<5	1.65	7	0.815	10.5	-62.5	0.5
Dark Gray Till	MW-65	Oct 2013	N	91	0.6	0.42	24.3	1.61	NA	8.24	NA	4.36	6.67	0.757	18.97	-63.4	0.43
		Apr 2014	N	110	0.38	3	1.76	0.378	NA	2.16	3.18	4.1	6.98	0.777	15.9	-212.4	0.23
		Jul 2014	N	84	0.18	0.25	1.67	0.352	NA	<5	7.33	3.47	6.92	0.912	17.73	-65.5	1.57
		Oct 2014	FD	44	0.12	0.34	2.92	0.349	NA	1.88	2.23	3.96	-	-	-	-	-
		Oct 2014	N	36	0.1	0.29	3.06	0.369	NA	1.98	3.02	3.92	7.02	0.94	16.3	-67.2	5.96
		Dec 2014	N	NA	NA	NA	4.91	0.345	530	1.98	2.26	4.46	7.2	0.951	5.63	-4	0
		Dec 2014	FD	NA	NA	NA	4.91	0.335	539	2.01	2.38	4.41	-	-	-	-	-
		Mar 2015	N	NA	NA	NA	4.53	0.345	585	1.65	2.32	3.81	6.69	0.998	3.58	-67	0
		Mar 2015	FD	NA	NA	NA	4.15	0.328	579	1.69	2.26	3.83	-	-	-	-	-
		Jul 2017	N	890	0.33	4	2.84	0.299	567	<5	<5	3.74	7.04	0.98	18.5	-118.4	0.45
		Jul 2018	N	190	0.37	6.8	3.12	0.297	518	<5	<5	3.56	6.8	1.002	17.78	-50	0.09
		Nov 2019	FD	140	0.21	30	2.1	0.322	505	<5	<5	4	-	-	-	-	-
		Nov 2019	N	150	0.22	33	2	0.305	520	<5	<5	4.19	6.97	0.944	13.6	-95.1	0.12
Pleistocene Sand and Gravel	MW-67	Jul 2017	FD	2.1	0.041 J	0.1	0.643	1.99	484	73.4	<5	1.71	-	-	-	-	-
		Jul 2017	N	2.1	0.038 J	0.096 J	0.63	1.93	489	71.8	<5	1.68	7.01	0.909	17.1	-52.4	0.86
		Jul 2018	N	3.0	0.032 J	0.17	0.619	1.65	449	80.5	<5	1.74	6.46	0.999	13.87	40.8	0.44
		Nov 2019	N	1.9	0.024 J	0.1	0.623	1.69	450	78.5	<5	2.12	7.11	0.939	10.9	-28.5	0.23

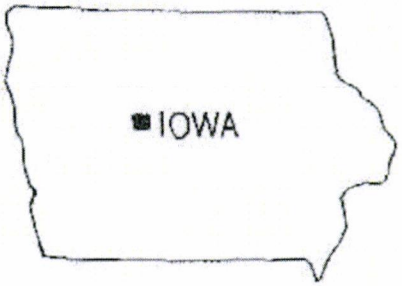
Notes:
ALK = Alkalinity, Total
FD = field duplicate sample
N = normal sample
TOC = Total Organic Carbon
VOCs = Volatile Organic Compounds
J = Estimated detection
NA = Not analyzed for

mS/cm = MilliSiemens per centimeter
mg/L = Milligrams per liter
mV = Millivolts
ORP = Oxidation-Reduction Potential
DO = Dissolved Oxygen
°C = Degrees Celsius
NC = Not collected - the manhole cover was rusted shut

Prepared by: KNG
Checked by: ERW
Reviewed by:

FIGURES





0 1/4 1/2 3/4
SCALE MILE

PROJECT
FORMER ELECTROLUX HOME PRODUCTS FACILITY
JEFFERSON, IOWA

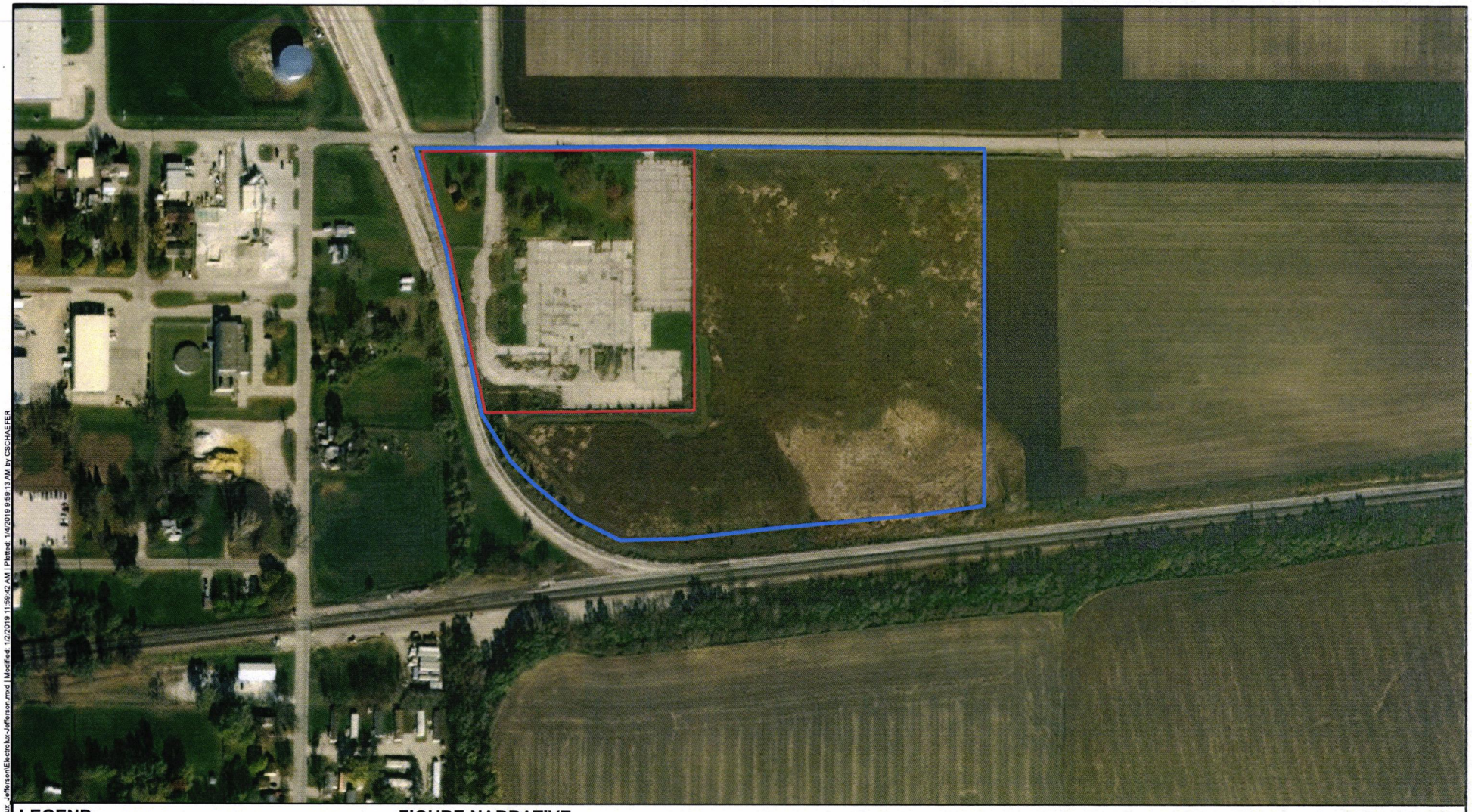
TITLE
SITE LOCATION MAP

GOLDER

PROJECT No.		103-87305	FILE No.	10387305M001
DESIGN	JSP	2018-01-08	SCALE	AS SHOWN
CADD	RWC	2018-01-08	FIGURE	
CHECK	DFS	2018-01-08		1
REVIEW	APTM	2018-01-08		

REFERENCE
Base maps taken from U.S.G.S map titled, "East Jefferson, Iowa" and "West Jefferson, Iowa", dated 1986.

J:\Drawings\2010\103-87305 Electrolux Jefferson, Iowa\ST_MI\PRODUCTION\10387305M001.dwg | Layout: 1 SITE LOCATION MAP | Modified: AZumbado 01/09/2020 2:10 PM | Plotted: AZumbado 01/09/2020



LEGEND

- Approximate Site Property Boundary
- Former Manufacturing Area

REFERENCES

1. Imagery of Jefferson Iowa taken from the United States Department of Agriculture - Farm Service Agency, 2009 National Agriculture Imagery Program. Photo Date: 2010.

2. North American Datum 1983 Iowa State Plane North in Feet

FIGURE NARRATIVE

This figure shows the approximate site property boundary and developed portion of the site. The site property boundary is an approximation and has not been surveyed by a licensed surveyor.

0 100 200 400 Feet

N

GOLDER

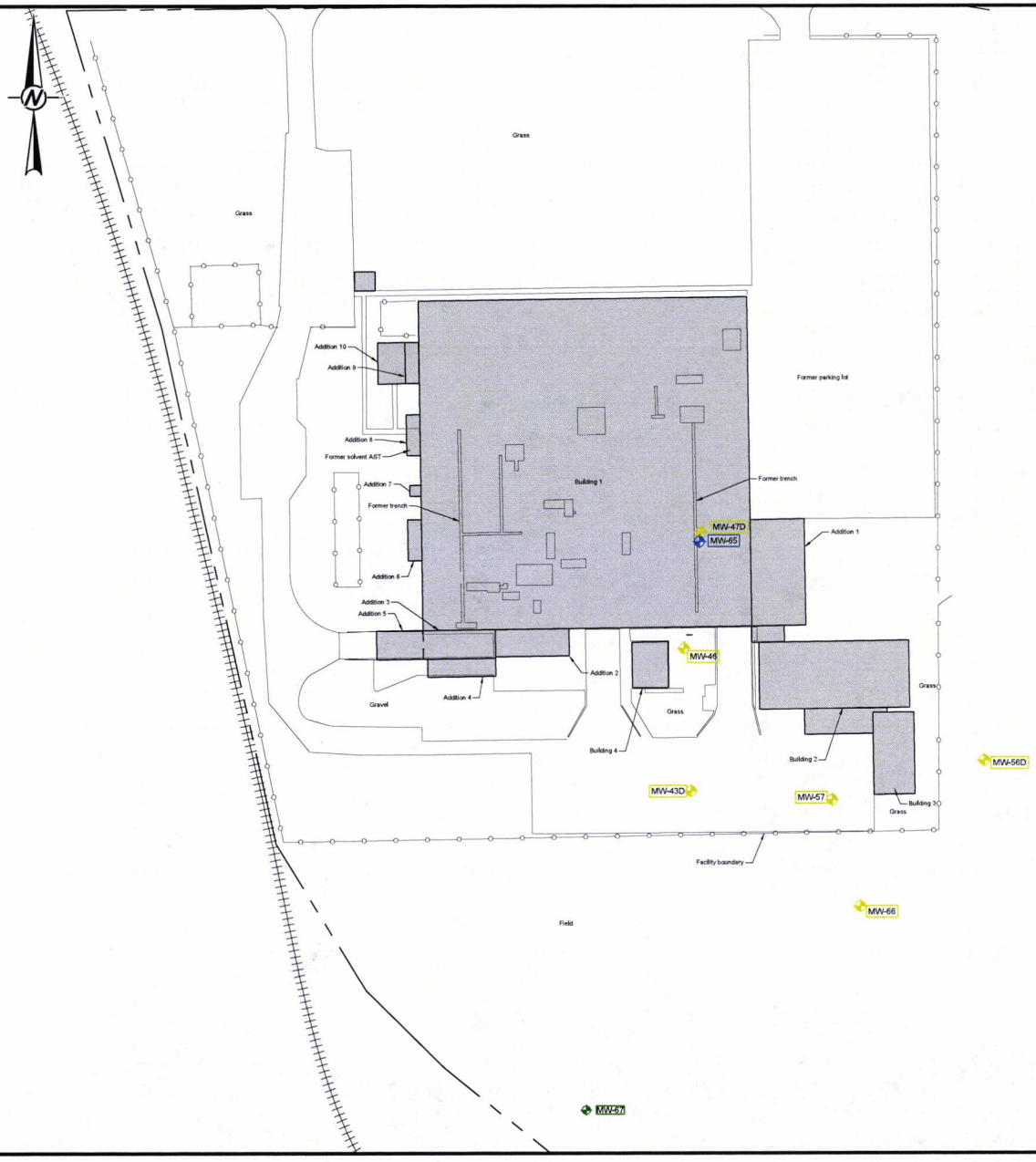
FILE No.	Electrolux_Jefferson	SCALE	AS SHOWN
PROJECT No.	103-87305 REV. 0	DATE	01/08/2017
		DESIGN	CDS
		GIS	SHL
		CHECK	DFS
		REVIEW	APTM

Site Vicinity Map

Electrolux Home Products - Jefferson, IA

FIGURE 2

Map: V:\001 GIS Projects\2010\electrolux_Jefferson\Electrolux_Jefferson.mxd | Modified: 1/2/2019 11:59:42 AM | Plotted: 1/4/2019 9:59:13 AM by CSCHAEFER



LEGEND

- Approximate Site Property Boundary
- Fence
- Edge of gravel
- MW-59 — Monitoring well screened in Yellow/Brown Till
- MW-62 — Monitoring well screened in Dark Grey Till
- MW-67 — Monitoring well screened in Pleistocene Sand and Gravel
- Former Buildings (slab remains)

NOTES

1.) BM #1 elev. = 1052.49 (NAVD 88) center top non-operating bolt on fire hydrant Northwest of main building.

2.) JEO consulting group did not find useful NGS monuments in the Jefferson area. A USGS 24,000k Topographic map elevation (1054.00) at the intersection of Mulberry Street and East Central Street as the assumed NAVD 88 elevation. This elevation agreed with the elevation generated from Geoid-09.

3.) The coordinates for this site are approximate Iowa State Plane North 1401 with a ground scale factor of 1.0000463418.

REFERENCES

Basemap taken from JEO Consulting Group, Inc. drawing titled, "Electrolux Home Products base map", dated 11/21/10, revised May 2012.

FIGURE NARRATIVE

This figure shows the former buildings and monitoring wells subject to semi-annual sampling at the former Electrolux Home Products facility in Jefferson, Iowa. The features shown on the concrete slab are locations of former concrete-lined floor pits and drains.

0 30 60 90
SCALE FEET

PROJECT
FORMER ELECTROLUX HOME PRODUCTS FACILITY
JEFFERSON, IOWA

TITLE
SITE PLAN ILLUSTRATING MONITORING WELL LOCATIONS

GOLDER

PROJECT No.		103-8730501	FILE No.	10387305M003_8_rev
DESIGN	DFS	2018-06-29	SCALE	AS SHOWN
CADD	RWC	2018-06-29	FIGURE	3
CHECK	DFS	2018-06-29		
REVIEW	APTM	2018-06-29		

J:\Drawings\2018\103-87305 Electrolux Jefferson, Iowa\ST_APPRODUCTION\10387305M003_8_rev.dwg | Layout: Site | Modified: AZumbado 01/08/2020 2:11 PM | Plotted: AZumbado 01/08/2020

APPENDIX A

Groundwater Collection Forms

GROUNDWATER SAMPLE COLLECTION FORM

GOLDER

SITE DESCRIPTION

Project Name: Electrolux/Jefferson/IA
Project Number: 19131867
Location: Jefferson, Iowa

WEATHER CONDITIONS

Temperature: 74°F
Wind: 10 mph W
Precipitation: NA

SAMPLE DESCRIPTION

Sample ID: MW-43D
Date: 11/7/19
Time at Well Site: 1205
Time of Sample Collection: 1335
Sampled by: SJD
Sampling Method: Bladder Pump
Type of Sampling Equipment: 1/4-inch x 1/4-inch Poly tubing

FIELD BLANK NOTES

Field Blank Name:
Field Blank /Rinse Water type:
Lot Number:
Analyses:

VOLUME OF WATER TO BE PURGED

Casing Inside Diameter: 2 inches
Casing Volume: 0.163 gal/ft
Column of Water in Well: 34.65 feet
Volume of Water in Well: 5.648 gallons
Well Volumes to Purge:
Min. Volume to be Purged: gallons
Method of Purging: Bladder Pump
Well Purged Dry?: Yes No

COLUMN OF WATER IN WELL BEFORE PURGE

Total Depth of Well: 40.75 ft TOC
Depth to Water : 6.10 ft TOC
Column of Water in Well: 34.65 ft
Depth to Water after Purge: 14.02 ft TOC

Appearance of Sample: Clear with orange flecks

WELL PURGE CONTROL

	Purge 1	Purge 2	Purge 3	Purge 4	Purge 5	Purge 6	
Time:	1305	1310	1315	1320	1325	1330	1335
Volume Removed ~~(liters)~~ gal:	0.75	0.95	1.05	1.20	1.40	1.5	1.75
pH:	7.34	7.33	7.28	7.22	7.23	7.14	7.18
Specific Conductance (uS/cm):	452.3	451.5	452.6	466.8	431.4	500.9	517.7
Temperature (Degrees C):	13.6	13.5	13.3	13.4	13.3	13.0	13.2
Turbidity (NTU):	26.1	28.4	27.2	22.5	19.9	19.7	15.9
ORP (millivolts):	-28.2	-24.7	-18.9	-15.4	-17.0	-16.5	-23.8
DO (mg/l) :	11.7	0.71	0.53	0.43	0.38	0.41	0.29

Starting Purge Time: 1250
Ending Purge Time: 1335

Average Purge Rate: 130 ml/min
Total Volume Purged: 1.5 ~~liters~~ gallons

SAMPLE CONTAINERS REQUIRED

Analysis	Container Number, Type and Size	Filter	Preservative and Source
Volatiles (8260C)	(2) 40 ml vials	NA	HCL
Inert Gases	(3) 40 ml vials	NA	Trisodium phosphate
Total Organic Carbon	(2) 40 ml vials	NA	H2SO4
ALK, Chloride, and Sulfate	(1) Liter Plastic	NA	None
Iron and Manganese	(1) 250 ml Plastic	NA	Nitric
Sulfide	(1) 500 ml Plastic	NA	Zn Acetate/NaOH

Chain of Custody #:
Shuttle ID:
Trip Blank ID:
Lab Name: TestAmerica
~~Air Bill #:~~ Courier

REMARKS: 2" - 0.163 gal/ft 1" - 0.014 gal/ft
1.5" - 0.0918 gal/ft

Field Team Leader: Samantha DiCenso

GROUNDWATER SAMPLE COLLECTION FORM

GOLDER

SITE DESCRIPTION

Project Name: Electrolux/Jefferson/IA
Project Number: 19131867
Location: Jefferson, Iowa

WEATHER CONDITIONS

Temperature: 12°F
Wind: 6 mph W
Precipitation: NA

SAMPLE DESCRIPTION

Sample ID: MW-46
Date: 11/7/19
Time at Well Site: 0830
Time of Sample Collection: 1100
Sampled by: SJD
Sampling Method: Bladder Pump
Type of Sampling Equipment: 1/4-inch x 1/4-inch Poly tubing

x had to man MPSO

FIELD BLANK NOTES

Field Blank Name:
Field Blank /Rinse Water type:
Lot Number:
Analyses:

VOLUME OF WATER TO BE PURGED

Casing Inside Diameter: 2 inches
Casing Volume: 0.163 gal/ft
Column of Water in Well: 34.62 feet
Volume of Water in Well: 5.643 gallons
Well Volumes to Purge:
Min. Volume to be Purged: gallons
Method of Purging: Bladder Pump
Well Purged Dry?: Yes No

COLUMN OF WATER IN WELL BEFORE PURGE

Total Depth of Well: 41.17 ft TOC
Depth to Water : 7.08 ft TOC
Column of Water in Well: 34.62 ft
Depth to Water after Purge: 8.59 ft TOC

Appearance of Sample: Clear

WELL PURGE CONTROL

	Purge 1	Purge 2	Purge 3	Purge 4	Purge 5	Purge 6		
Time:	1025	1030	1035	1040	1045	1050	1055	1100
Volume Removed (~~liters~~ gal):	0.55	0.70	0.80	1.0	1.15	1.25	1.35	1.65
pH:	7.09	7.04	7.12	7.11	7.09	7.12	7.08	7.09
Specific Conductance (uS/cm):	745	748	766	770	783	786	783	783
Temperature (Degrees C):	11.5	12.1	12.4	12.0	12.2	12.2	12.1	12.0
Turbidity (NTU):	71.8	61.7	48.4	41.1	35.7	24.0	20.3	10.62
ORP (millivolts):	61.3	57.2	35.7	28.1	21.4	15.5	16.3	12.1
DO (mg/l) :	1.25	0.83	0.55	0.47	0.32	0.35	0.29	0.35

Starting Purge Time: 1010
Ending Purge Time: 1100

Average Purge Rate: 100 ml/min
Total Volume Purged: 1.65 ~~litere~~ gallons

SAMPLE CONTAINERS REQUIRED

Analysis	Container Number, Type and Size	Filter	Preservative and Source
Volatiles (8260C)	(2) 40 ml vials	NA	HCL
Inert Gases	(3) 40 ml vials	NA	Trisodium phosphate
Total Organic Carbon	(2) 40 ml vials	NA	H2SO4
ALK, Chloride, and Sulfate	(1) Liter Plastic	NA	None
Iron and Manganese	(1) 250 ml Plastic	NA	Nitric
Sulfide	(1) 500 ml Plastic	NA	Zn Acetate/NaOH

Chain of Custody #:
Shuttle ID:
Trip Blank ID:
Lab Name: Test America
~~Air Bill #:~~ Courier

REMARKS: 2" - 0.163 gal/ft 1" - 0.014 gal/ft
1.5" - 0.0918 gal/ft

Field Team Leader: Samantha DiCenso

GROUNDWATER SAMPLE COLLECTION FORM

GOLDER

SITE DESCRIPTION

Project Name: Electrolux/Jefferson/IA
Project Number: 19131867
Location: Jefferson, Iowa

WEATHER CONDITIONS

Temperature: 35°F
Wind: 5 mph WNW
Precipitation: NA

SAMPLE DESCRIPTION

Sample ID: MW-56D
Date: 11/5/19
Time at Well Site: 1050
Time of Sample Collection: 1255
Sampled by: SSD
Sampling Method: Bladder Pump
Type of Sampling Equipment: 1/4-inch x 1/4-inch Poly tubing

FIELD BLANK NOTES

Field Blank Name:
Field Blank /Rinse Water type:
Lot Number:
Analyses:

VOLUME OF WATER TO BE PURGED

Casing Inside Diameter: 2 inches
Casing Volume: 0.163 gal/ft
Column of Water in Well: 31.52 feet
Volume of Water in Well: 5.138 gallons
Well Volumes to Purge: 0.5
Min. Volume to be Purged: 2.75 gallons
Method of Purging: Bladder Pump
Well Purged Dry?: Yes No

COLUMN OF WATER IN WELL BEFORE PURGE

Total Depth of Well: 39.75 ft TOC
Depth to Water : 8.23 ft TOC
Column of Water in Well: 31.52 ft
Depth to Water after Purge: 23.99 ft TOC

Appearance of Sample: Clear

WELL PURGE CONTROL

	Purge 1	Purge 2	Purge 3	Purge 4	Purge 5	Purge 6		
Time:	1125	1135	1145	1155	1210	1225	1240	1255
Volume Removed (liters):	0.75	1.25	1.5	1.75	2.25	2.75	3.10	3.5
pH:	7.09	7.08	7.07	7.07	7.09	7.11	7.09	7.10
Specific Conductance (uS/cm):	0.942	0.939	0.937	0.936	0.935	0.929	0.926	0.924
Temperature (Degrees C):	11.8	11.4	11.4	11.4	11.4	11.2	11.3	10.8
Turbidity (NTU):	3.70	4.51	5.15	5.51	5.01	6.16	5.02	4.29
ORP (millivolts):	57.9	46.2	37.9	31.5	23.2	17.3	14.6	12.9
DO (mg/l) :	0.90	0.22	0.13	0.13	0.15	0.14	0.19	0.29

Starting Purge Time: 1110
Ending Purge Time: 1255

Average Purge Rate: 700 ml/min
Total Volume Purged: 3.5 ~~liters~~ gallons

SAMPLE CONTAINERS REQUIRED

Analysis	Container Number, Type and Size	Filter	Preservative and Source
Volatiles (8260C)	(2) 40 ml vials	NA	HCL
Inert Gases	(3) 40 ml vials	NA	Trisodium phosphate
Total Organic Carbon	(2) 40 ml vials	NA	H2SO4
ALK, Chloride, and Sulfate	(1) Liter Plastic	NA	None
Iron and Manganese	(1) 250 ml Plastic	NA	Nitric
Sulfide	(1) 500 ml Plastic	NA	Zn Acetate/NaOH

Chain of Custody #:
Shuttle ID:
Trip Blank ID:
Lab Name: Test America
Air Bill #: Courier

REMARKS: 2" - 0.163 gal/ft 1" - 0.014 gal/ft
1.5" - 0.0918 gal/ft

Field Team Leader: Samantha DiCenso

GROUNDWATER SAMPLE COLLECTION FORM

GOLDER

SITE DESCRIPTION

Project Name: Electrolux/Jefferson/IA
Project Number: 19131867
Location: Jefferson, Iowa

WEATHER CONDITIONS

Temperature: 35°F
Wind: 15 mph NNE
Precipitation: light snow

SAMPLE DESCRIPTION

Sample ID: MW-57
Date: 11/6/19
Time at Well Site: 1410
Time of Sample Collection: 1518
Sampled by: SJD
Sampling Method: Bladder Pump
Type of Sampling Equipment: 1/4-inch x 1/4-inch Poly tubing

FIELD BLANK NOTES

Field Blank Name: Rinsate Blank 01
Field Blank /Rinse Water type: Distilled Water
Lot Number:
Analyses: See table below (same as sample)

VOLUME OF WATER TO BE PURGED

Casing Inside Diameter: 2 inches
Casing Volume: 0.163 gal/ft
Column of Water in Well: 29.70 feet
Volume of Water in Well: 4.841 gallons
Well Volumes to Purge:
Min. Volume to be Purged: gallons
Method of Purging: Bladder Pump
Well Purged Dry?: Yes No

COLUMN OF WATER IN WELL BEFORE PURGE

Total Depth of Well: 35.40 ft TOC
Depth to Water : 5.70 ft TOC
Column of Water in Well: 29.70 ft
Depth to Water after Purge: 7.72 ft TOC

Appearance of Sample:

WELL PURGE CONTROL

Pump slipped

	Purge 1	Purge 2	Purge 3	Purge 4	Purge 5	Purge 6		
Time:	1443	1448	1453	1458	1503	1508	1513	1518
Volume Removed (liters):	0.25	0.5	0.75	1.0	1.25	1.6	2.0	2.45
pH:	7.30	7.29	7.25	7.17	7.14	7.13	7.16	7.09
Specific Conductance (uS/cm):	556	580	570	694	720	672	635	722
Temperature (Degrees C):	13.8	13.7	13.4	13.4	13.4	13.2	13.1	13.3
Turbidity (NTU):	23.5	31.8	20.3	13.7	10.12	—	—	
ORP (millivolts):	2.5	5.8	9.8	11.4	12.3	4.8	14.1	9.2
DO (mg/l) :	2.13	3.22	4.39	3.32	3.20	5.87	6.04	3.87

Starting Purge Time: 1438
Ending Purge Time: 1518
Average Purge Rate: 210 ml/min
Total Volume Purged: 2.5 liters

SAMPLE CONTAINERS REQUIRED

Analysis	Container Number, Type and Size	Filter	Preservative and Source
Volatiles (8260C)	(2) 40 ml vials	NA	HCL
Inert Gases	(3) 40 ml vials	NA	Trisodium phosphate
Total Organic Carbon	(2) 40 ml vials	NA	H2SO4
ALK, Chloride, and Sulfate	(1) Liter Plastic	NA	None
Iron and Manganese	(1) 250 ml Plastic	NA	Nitric
Sulfide	(1) 500 ml Plastic	NA	Zn Acetate/NaOH

Chain of Custody #:
Shuttle ID:
Trip Blank ID:
Lab Name: TestAmerica
~~Air Bill #:~~ Courier

REMARKS: 2" - 0.163 gal/ft 1" - 0.014 gal/ft
1.5" - 0.0918 gal/ft

Rinsate Blank 01 collected @ 1604

Field Team Leader: Samantha DiCenzo

GROUNDWATER SAMPLE COLLECTION FORM

GOLDER

SITE DESCRIPTION

Project Name: Electrolux/Jefferson/IA
Project Number: 19131867
Location: Jefferson, Iowa

WEATHER CONDITIONS

Temperature: 40°F
Wind: 15 mph NNE
Precipitation: NA

SAMPLE DESCRIPTION

Sample ID: MW-65
Date: 11/6/19
Time at Well Site: 1220
Time of Sample Collection: 1313
Sampled by: SJD
Sampling Method: Bladder Pump
Type of Sampling Equipment: 1/4-inch x 1/4-inch Poly tubing

FIELD BLANK NOTES

~~Field Blank Name:~~
~~Field Blank /Rinse Water type:~~
~~Lot Number:~~
~~Analyses:~~

VOLUME OF WATER TO BE PURGED

Casing Inside Diameter: 2 inches
Casing Volume: 0.163 gal/ft
Column of Water in Well: 47.72 feet
Volume of Water in Well: 7.778 gallons
Well Volumes to Purge:
Min. Volume to be Purged: gallons
Method of Purging: Bladder Pump
Well Purged Dry?: Yes No

COLUMN OF WATER IN WELL BEFORE PURGE

Total Depth of Well: 72.89 ft TOC
Depth to Water : 25.17 ft TOC
Column of Water in Well: 47.72 ft
Depth to Water after Purge: 34.67 ft TOC

Appearance of Sample: Clear

WELL PURGE CONTROL

	Purge 1	Purge 2	Purge 3	Purge 4	Purge 5	Purge 6
Time:	1248	1253	1258	1303	1308	1313
Volume Removed (~~liters~~ gal):	0.75	0.95	1.15	1.30	1.60	1.75
pH:	7.00	6.98	7.00	6.98	6.98	6.97
Specific Conductance (uS/cm):	946	944	945	944	944	944
Temperature (Degrees C):	13.8	13.7	13.7	13.7	13.8	13.6
Turbidity (NTU):	0.40	0.39	0.34	0.41	0.48	0.50
ORP (millivolts):	-79.5	-82.7	-85.4	-88.0	-92.2	-95.1
DO (mg/l) :	0.63	0.16	0.13	0.10	0.10	0.12

Starting Purge Time: 1228
Ending Purge Time: 1313

Average Purge Rate: 150 ml/min
Total Volume Purged: 1.75 ~~liters~~ gal

SAMPLE CONTAINERS REQUIRED

Analysis	Container Number, Type and Size	Filter	Preservative and Source
Volatiles (8260C)	(2) 40 ml vials	NA	HCL
Inert Gases	(3) 40 ml vials	NA	Trisodium phosphate
Total Organic Carbon	(2) 40 ml vials	NA	H2SO4
ALK, Chloride, and Sulfate	(1) Liter Plastic	NA	None
Iron and Manganese	(1) 250 ml Plastic	NA	Nitric
Sulfide	(1) 500 ml Plastic	NA	Zn Acetate/NaOH

Chain of Custody #:
Shuttle ID:
Trip Blank ID:
Lab Name: Test America
~~Air Bill #:~~ Courier

REMARKS: 2" - 0.163 gal/ft 1" - 0.014 gal/ft
1.5" - 0.0918 gal/ft

Field Duplicate 01 collected

Field Team Leader: Samantha DiLenso

GROUNDWATER SAMPLE COLLECTION FORM

GOLDER

SITE DESCRIPTION

Project Name: Electrolux/Jefferson/IA
Project Number: 19131867
Location: Jefferson, Iowa

WEATHER CONDITIONS

Temperature: 35°F
Wind: 5 mph WNW
Precipitation: NA

SAMPLE DESCRIPTION

Sample ID: MW-66
Date: 11/5/19
Time at Well Site: 1355
Time of Sample Collection: 1530
Sampled by: SJD
Sampling Method: Bladder Pump
Type of Sampling Equipment: 1/4-inch x 1/4-inch Poly tubing

FIELD BLANK NOTES

Field Blank Name:
Field Blank /Rinse Water type:
Lot Number:
Analyses:

VOLUME OF WATER TO BE PURGED

Casing Inside Diameter: 2 inches
Casing Volume: 0.163 gal/ft
Column of Water in Well: 42.02 feet
Volume of Water in Well: 6.85 gallons
Well Volumes to Purge:
Min. Volume to be Purged: gallons
Method of Purging: Bladder Pump
Well Purged Dry?: Yes No

COLUMN OF WATER IN WELL BEFORE PURGE

Total Depth of Well: 55.0 ft TOC
Depth to Water : 12.98 ft TOC
Column of Water in Well: 42.02 ft
Depth to Water after Purge: 15.21 ft TOC

Appearance of Sample: Clear

WELL PURGE CONTROL

	Purge 1	Purge 2	Purge 3	Purge 4	Purge 5	Purge 6
Time:	1500	1510	1520	1530	1540	1550
Volume Removed (~~liters~~ gal):	0.75	1.0	1.10	1.35	1.60	1.85
pH:	7.05	7.02	7.03	7.00	6.99	7.00
Specific Conductance (uS/cm):	0.819	0.817	0.819	0.817	0.816	0.815
Temperature (Degrees C):	10.9	10.6	10.5	10.7	10.5	10.5
Turbidity (NTU):	7.52	7.47	7.32	5.63	6.12	5.11
ORP (millivolts):	-60.2	-58.5	-60.7	-59.3	-60.8	-62.5
DO (mg/l) :	0.84	0.92	0.83	0.61	0.59	0.50

Starting Purge Time: 1430
Ending Purge Time: 1550

Average Purge Rate: 100 ml/min
Total Volume Purged: 1.85 ~~liters~~ gallons

SAMPLE CONTAINERS REQUIRED

Analysis	Container Number, Type and Size	Filter	Preservative and Source
Volatiles (8260C)	(2) 40 ml vials	NA	HCL
Inert Gases	(3) 40 ml vials	NA	Trisodium phosphate
Total Organic Carbon	(2) 40 ml vials	NA	H2SO4
ALK, Chloride, and Sulfate	(1) Liter Plastic	NA	None
Iron and Manganese	(1) 250 ml Plastic	NA	Nitric
Sulfide	(1) 500 ml Plastic	NA	Zn Acetate/NaOH

Chain of Custody #:
Shuttle ID:
Trip Blank ID:
Lab Name: Test America
~~Air Bill #:~~ Courier

REMARKS: 2" - 0.163 gal/ft 1" - 0.014 gal/ft
1.5" - 0.0918 gal/ft

Field Team Leader: Samantha DiCenso

GROUNDWATER SAMPLE COLLECTION FORM

GOLDER

SITE DESCRIPTION

Project Name: Electrolux/Jefferson/IA
Project Number: 19131867
Location: Jefferson, Iowa

WEATHER CONDITIONS

Temperature: 38°F
Wind: 8 mph NNE
Precipitation: NA

SAMPLE DESCRIPTION

Sample ID: MW-67
Date: 11/6/19
Time at Well Site: 0850
Time of Sample Collection: 1040
Sampled by: SSD
Sampling Method: Bladder Pump
Type of Sampling Equipment: 1/4-inch x 1/4-inch Poly tubing

FIELD BLANK NOTES

Field Blank Name:
Field Blank /Rinse Water type:
Lot Number:
Analyses:

VOLUME OF WATER TO BE PURGED

Casing Inside Diameter: 2 inches
Casing Volume: 0.163 gal/ft
Column of Water in Well: 44.96 feet
Volume of Water in Well: 7.328 gallons
Well Volumes to Purge:
Min. Volume to be Purged: gallons
Method of Purging: Bladder Pump
Well Purged Dry?: Yes No

COLUMN OF WATER IN WELL BEFORE PURGE

Total Depth of Well: 97.0 ft TOC
Depth to Water : 52.04 ft TOC
Column of Water in Well: 44.96 ft
Depth to Water after Purge: 52.04 ft TOC

Appearance of Sample: Clear

WELL PURGE CONTROL

	Purge 1	Purge 2	Purge 3	Purge 4	Purge 5	Purge 6
Time:	0940	0955	1010	1020	1030	1040
Volume Removed ~~(liters)~~ gal:	0.5	1.0	1.5	2.0	2.5	3.25
pH:	7.07	7.09	7.10	7.07	7.06	7.11
Specific Conductance (uS/cm):	892	926	934	936	938	939
Temperature (Degrees C):	10.9	10.9	10.8	10.7	10.8	10.9
Turbidity (NTU):	0.82	0.35	0.35	0.22	0.19	0.40
ORP (millivolts):	26.6	-9.3	-17.4	-20.5	-22.6	-28.5
DO (mg/l) :	0.89	1.12	0.92	0.48	0.29	0.23

Starting Purge Time: 0920
Ending Purge Time: 1040
Average Purge Rate: 175 ml/min
Total Volume Purged: 3.25 ~~liters~~ gal

SAMPLE CONTAINERS REQUIRED

Analysis	Container Number, Type and Size	Filter	Preservative and Source
Volatiles (8260C)	(2) 40 ml vials	NA	HCL
Inert Gases	(3) 40 ml vials	NA	Trisodium phosphate
Total Organic Carbon	(2) 40 ml vials	NA	H2SO4
ALK, Chloride, and Sulfate	(1) Liter Plastic	NA	None
Iron and Manganese	(1) 250 ml Plastic	NA	Nitric
Sulfide	(1) 500 ml Plastic	NA	Zn Acetate/NaOH

Chain of Custody #:
Shuttle ID:
Trip Blank ID:
Lab Name: Test America
~~Air Bill #:~~ Courier

REMARKS: 2" - 0.163 gal/ft 1" - 0.014 gal/ft
1.5" - 0.0918 gal/ft

MS and MSD collected

Field Team Leader: Samantha Dilenso

CALIBRATION FORM

GOLDER

GAI Project Name: Electrolux/Jefferson/IA **Project Number:** 19131867

Golder Personnel Present: Samantha DiCenso

Date: 11/5/19

Meter Type: YSI ProPlus

Model Number:

S/N

Specific Conductivity **Lot #:** 9GB 674 **Expire Date:** 2/23/20

Standard	Unit		Meter reading		Time	
1.413	mS/cm		1.412	11/5/19	0816	Initial
			1.418	11/6/19	0835	Check
			1.419	11/7/19	0740	Check

Acceptable Range 1.342-1.484

Dissolved Oxygen

Baro Pressure	Temp °C	% D.O.	mg / L D.O.	D.O. Charge	Time		
		101.4			0825	Initial	11/5/19
		99.8			0835	Check	11/6/19
		108.7			0750	Check	11/7/19

pH

4.01 Buffer: Lot #: 2B01B02 **Exp. Date:** 1/31/20 **7.01 Buffer: Lot #:** 3GB34 **Exp. Date:** 2/28/20

Standard	Meter reading		Meter reading		Meter reading	
	Initial	11/5/19	Check	11/6/19	Check	11/7/19
Time	0758	Acceptable Range	0800		0730	
4.01	3.95	3.81-4.21	3.84		3.89	
7.01	7.03	6.75-7.36	6.98		7.00	
10.00	10.23	9.50-10.50	10.20		10.21	

10.00 Buffer: Lot #: 3GA543 **Exp. Date:** 1/31/20

ORP **Lot#:** 0153 **Expire Date:** 1/30/20

Standard	Meter reading		Meter reading		Meter reading	
	Initial	11/5/19	Check	11/6/19	Check	11/7/19
Time	0820	Acceptable Range	0830		0745	
240.0	240.0	228-252	238.5		239.2	

Turbidity

Meter Type: **LaMotte**

Model Number: **20/20**

S/N

Standard	Meter reading		Meter reading		Meter reading	
	Initial	11/5/19	Check	11/6/19	Check	11/7/19
Time	0850	Acceptable Range	0755		0800	
1.00	0.62	0.95-1.05	1.0		0.95	
10.00	10.2	9.50-10.5	10.9		10.14	

Comments:

Sampler Signature: Date:

APPENDIX B

Laboratory Analytical Reports

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-169575-1
Laboratory Sample Delivery Group: 191-31867
Client Project/Site: Electrolux - Jefferson, IA
Revision: 1

For:
Golder Associates Inc.
670 North Commercial Street
Suite 103
Manchester, New Hampshire 03101

Attn: James Peace

Authorized for release by:
1/8/2020 10:19:03 AM

Shawn Hayes, Senior Project Manager
(319)229-8211
shawn.hayes@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 310-169575-1

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative
310-169575-1

Comments
No additional comments.

Receipt
The samples were received on 11/8/2019 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were -0.4° C and 0.3° C.

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 310-261368 recovered above the upper control limit for Bromochloromethane (29.5 %D) and Methyl tert-butyl ether (31.9 %D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCV 310-261368/3).

Method 8260C: The continuing calibration verification (CCV) associated with batch 310-261368 recovered above the upper control limit for Ethyl Chloride (29.5 %D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The following sample is impacted: (CCV 310-261368/4).

Method 8260C: The continuing calibration verification (CCV) associated with batch 310-261599 recovered above the upper control limit for N-Propylbenzene(20.9%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCV 310-261599/3).

Method 8260C: Trichloroethene and cis-1,2-Dichloroethene recovered outside the calibration range. Results are considered an estimate: Field Duplicate 01 (310-169575-8)

Method 8260C: The continuing calibration verification (CCV) associated with batch 310-261602 recovered above the upper control limit for 1,2,3-Trichloropropane(22.3%D) and 1.1.2.2-Tetrachloroethane(20.6%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCV 310-261602/3).

Method 8260C: The laboratory control sample (LCS) for analytical batch 310-261602 recovered outside control limits for the following analyte: 1,2,3-Trichloropropane. This analyte was biased high in the LCS and not detected in the associated samples; therefore, the data have been reported.

Method 8260C: The continuing calibration verification (CCV) associated with batch 310-261368 recovered above the upper control limit for 1,1-Dichloroethene (-21.5 %D) and Bromomethane (-50.3 %D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCV 310-261368/4).

Method 8260C: Reanalysis of the following samples were performed outside of the analytical holding time due to instrument failure: MW-66 (310-169575-2) and MW-56D (310-169575-5).

Method 8260C: The continuing calibration verification (CCV) analyzed in batch 310-262825 was outside the method criteria for the following analyte: Bromomethane (-62.7 %D). A LCS standard was analyzed with the affected samples and found to be acceptable using CCV criteria.

Method 8260C: The method blank for preparation batch analytical batch 310-262825 contained Bromomethane above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

Job ID: 310-169575-1 (Continued)

Laboratory: Eurofins TestAmerica, Cedar Falls (Continued)

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-169575-1	MW-67	Water	11/06/19 10:40	11/08/19 09:20	
310-169575-2	MW-66	Water	11/05/19 15:50	11/08/19 09:20	
310-169575-3	MW-65	Water	11/06/19 13:13	11/08/19 09:20	
310-169575-4	MW-57	Water	11/06/19 15:18	11/08/19 09:20	
310-169575-5	MW-56D	Water	11/05/19 12:55	11/08/19 09:20	
310-169575-6	MW-46	Water	11/07/19 11:00	11/08/19 09:20	
310-169575-7	MW-43D	Water	11/07/19 13:35	11/08/19 09:20	
310-169575-8	Field Duplicate 01	Water	11/06/19 00:00	11/08/19 09:20	
310-169575-9	Rinsate Blank 01	Water	11/06/19 16:04	11/08/19 09:20	
310-169575-10	Trip Blank	Water	11/07/19 00:00	11/08/19 09:20	

Detection Summary

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-67 — Lab Sample ID: 310-169575-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	78.5		5.00		mg/L	5		9056A	Total/NA
Iron	0.623		0.500		mg/L	1		6010C	Total/NA
Manganese	1.69		0.0100		mg/L	1		6010C	Total/NA
Total Organic Carbon - Duplicates	2.12		1.00		mg/L	1		9060	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	450		5.00		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	450		5.00		mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-66 — Lab Sample ID: 310-169575-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	17.2		1.00		ug/L	1		8260C	Total/NA
Sulfate	49.3		5.00		mg/L	5		9056A	Total/NA
Manganese	0.680		0.0100		mg/L	1		6010C	Total/NA
Total Organic Carbon - Duplicates	1.65		1.00		mg/L	1		9060	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	421		5.00		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	421		5.00		mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-65 — Lab Sample ID: 310-169575-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	686		10.0		ug/L	10		8260C	Total/NA
trans-1,2-Dichloroethene	33.4		10.0		ug/L	10		8260C	Total/NA
Trichloroethene	2000		10.0		ug/L	10		8260C	Total/NA
Vinyl chloride	168		10.0		ug/L	10		8260C	Total/NA
Iron	2.00		0.500		mg/L	1		6010C	Total/NA
Manganese	0.305		0.0100		mg/L	1		6010C	Total/NA
Total Organic Carbon - Duplicates	4.19		1.00		mg/L	1		9060	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	520		5.00		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	520		5.00		mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-57 — Lab Sample ID: 310-169575-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	520		10.0		ug/L	10		8260C	Total/NA
Chloride	17.4		5.00		mg/L	5		9056A	Total/NA
Sulfate	52.6		5.00		mg/L	5		9056A	Total/NA
Iron	1.51		0.500		mg/L	1		6010C	Total/NA
Manganese	0.840		0.0100		mg/L	1		6010C	Total/NA
Total Organic Carbon - Duplicates	2.77		1.00		mg/L	1		9060	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	322		5.00		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	322		5.00		mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-56D — Lab Sample ID: 310-169575-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	137		5.00		mg/L	5		9056A	Total/NA
Manganese	1.06		0.0100		mg/L	1		6010C	Total/NA
Total Organic Carbon - Duplicates	1.50		1.00		mg/L	1		9060	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	401		5.00		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	401		5.00		mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-46 — Lab Sample ID: 310-169575-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1350		100		ug/L	100		8260C	Total/NA
Trichloroethene	23200		100		ug/L	100		8260C	Total/NA
Sulfate	27.3		5.00		mg/L	5		9056A	Total/NA
Manganese	0.759		0.0100		mg/L	1		6010C	Total/NA
Total Organic Carbon - Duplicates	1.65		1.00		mg/L	1		9060	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	406		5.00		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	406		5.00		mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-43D — Lab Sample ID: 310-169575-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.98		5.00		mg/L	5		9056A	Total/NA
Sulfate	13.9		5.00		mg/L	5		9056A	Total/NA
Iron	0.604		0.500		mg/L	1		6010C	Total/NA
Manganese	0.917		0.0100		mg/L	1		6010C	Total/NA
Total Organic Carbon - Duplicates	2.77		1.00		mg/L	1		9060	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	262		5.00		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	262		5.00		mg/L	1		SM 2320B	Total/NA

Client Sample ID: Field Duplicate 01 — Lab Sample ID: 310-169575-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.659		0.500		ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	680	E	1.00		ug/L	1		8260C	Total/NA
trans-1,2-Dichloroethene	32.9		1.00		ug/L	1		8260C	Total/NA
Trichloroethene	1950	E	1.00		ug/L	1		8260C	Total/NA
Vinyl chloride	193		1.00		ug/L	1		8260C	Total/NA
Iron	2.10		0.500		mg/L	1		6010C	Total/NA
Manganese	0.322		0.0100		mg/L	1		6010C	Total/NA
Total Organic Carbon - Duplicates	4.00		1.00		mg/L	1		9060	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	505		5.00		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	505		5.00		mg/L	1		SM 2320B	Total/NA

Client Sample ID: Rinsate Blank 01 — Lab Sample ID: 310-169575-9

No Detections.

Client Sample ID: Trip Blank — Lab Sample ID: 310-169575-10

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-67

Date Collected: 11/06/19 10:40
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			11/20/19 13:29	1
Benzene	<0.500		0.500		ug/L			11/20/19 13:29	1
Bromobenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
Bromochloromethane	<5.00		5.00		ug/L			11/20/19 13:29	1
Bromodichloromethane	<1.00		1.00		ug/L			11/20/19 13:29	1
Bromoform	<5.00		5.00		ug/L			11/20/19 13:29	1
Bromomethane	<4.00		4.00		ug/L			11/20/19 13:29	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/20/19 13:29	1
n-Butylbenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
sec-Butylbenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
tert-Butylbenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
Carbon disulfide	<1.00		1.00		ug/L			11/20/19 13:29	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/20/19 13:29	1
Chlorobenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/20/19 13:29	1
Chloroethane	<4.00		4.00		ug/L			11/20/19 13:29	1
Chloroform	<3.00		3.00		ug/L			11/20/19 13:29	1
Chloromethane	<3.00		3.00		ug/L			11/20/19 13:29	1
2-Chlorotoluene	<1.00		1.00		ug/L			11/20/19 13:29	1
4-Chlorotoluene	<1.00		1.00		ug/L			11/20/19 13:29	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/20/19 13:29	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/20/19 13:29	1
Dibromomethane	<1.00		1.00		ug/L			11/20/19 13:29	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			11/20/19 13:29	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/20/19 13:29	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/20/19 13:29	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/20/19 13:29	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/20/19 13:29	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/20/19 13:29	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/20/19 13:29	1
1,3-Dichloropropane	<1.00		1.00		ug/L			11/20/19 13:29	1
2,2-Dichloropropane	<4.00		4.00		ug/L			11/20/19 13:29	1
1,1-Dichloropropene	<1.00		1.00		ug/L			11/20/19 13:29	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/20/19 13:29	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/20/19 13:29	1
Ethylbenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
Hexachlorobutadiene	<5.00		5.00		ug/L			11/20/19 13:29	1
Hexane	<1.00		1.00		ug/L			11/20/19 13:29	1
Isopropylbenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
p-Isopropyltoluene	<1.00		1.00		ug/L			11/20/19 13:29	1
Methylene Chloride	<5.00		5.00		ug/L			11/20/19 13:29	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			11/20/19 13:29	1
Naphthalene	<5.00		5.00		ug/L			11/20/19 13:29	1
N-Propylbenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
Styrene	<1.00		1.00		ug/L			11/20/19 13:29	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/20/19 13:29	1

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-67
Date Collected: 11/06/19 10:40
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/20/19 13:29	1
Tetrachloroethene	<1.00		1.00		ug/L			11/20/19 13:29	1
Toluene	<1.00		1.00		ug/L			11/20/19 13:29	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			11/20/19 13:29	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			11/20/19 13:29	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/20/19 13:29	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/20/19 13:29	1
Trichloroethene	<1.00		1.00		ug/L			11/20/19 13:29	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/20/19 13:29	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/20/19 13:29	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			11/20/19 13:29	1
Vinyl chloride	<1.00		1.00		ug/L			11/20/19 13:29	1
Xylenes, Total	<3.00		3.00		ug/L			11/20/19 13:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/20/19 13:29*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*11/20/19 13:29*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/20/19 13:29*	*1*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			11/13/19 15:13	5
Sulfate	**78.5**		5.00		mg/L			11/13/19 15:13	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.623**		0.500		mg/L		11/11/19 08:24	11/12/19 11:57	1
Manganese	**1.69**		0.0100		mg/L		11/11/19 08:24	11/12/19 11:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00		mg/L			11/11/19 02:04	1
Total Organic Carbon - Duplicates	**2.12**		1.00		mg/L			11/18/19 20:55	1
Total Alkalinity as CaCO3 to pH 4.!	**450**		5.00		mg/L			11/19/19 16:38	1
Bicarbonate Alkalinity as CaCO3	**450**		5.00		mg/L			11/19/19 16:38	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Phenolphthalein Alkalinity as CaCO3 tc pH 8.3	<5.00		5.00		mg/L			11/19/19 16:38	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-66

Date Collected: 11/05/19 15:50
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-2

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			11/19/19 21:30	1
Benzene	<0.500		0.500		ug/L			11/19/19 21:30	1
Bromobenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
Bromochloromethane	<5.00		5.00		ug/L			11/19/19 21:30	1
Bromodichloromethane	<1.00		1.00		ug/L			11/19/19 21:30	1
Bromoform	<5.00		5.00		ug/L			11/19/19 21:30	1
Bromomethane	<4.00	H	4.00		ug/L			11/30/19 02:51	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/19/19 21:30	1
n-Butylbenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
sec-Butylbenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
tert-Butylbenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
Carbon disulfide	<1.00		1.00		ug/L			11/19/19 21:30	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/19/19 21:30	1
Chlorobenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/19/19 21:30	1
Chloroethane	<4.00		4.00		ug/L			11/19/19 21:30	1
Chloroform	<3.00		3.00		ug/L			11/19/19 21:30	1
Chloromethane	<3.00		3.00		ug/L			11/19/19 21:30	1
2-Chlorotoluene	<1.00		1.00		ug/L			11/19/19 21:30	1
4-Chlorotoluene	<1.00		1.00		ug/L			11/19/19 21:30	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/19/19 21:30	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/19/19 21:30	1
Dibromomethane	<1.00		1.00		ug/L			11/19/19 21:30	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			11/19/19 21:30	1
1,1-Dichloroethane	<1.00	*	1.00		ug/L			11/19/19 21:30	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/19/19 21:30	1
1,1-Dichloroethene	<2.00	H	2.00		ug/L			11/30/19 02:51	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/19/19 21:30	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/19/19 21:30	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/19/19 21:30	1
1,3-Dichloropropane	<1.00		1.00		ug/L			11/19/19 21:30	1
2,2-Dichloropropane	<4.00	H	4.00		ug/L			11/30/19 02:51	1
1,1-Dichloropropene	<1.00		1.00		ug/L			11/19/19 21:30	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/19/19 21:30	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/19/19 21:30	1
Ethylbenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
Hexachlorobutadiene	<5.00		5.00		ug/L			11/19/19 21:30	1
Hexane	<1.00		1.00		ug/L			11/19/19 21:30	1
Isopropylbenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
p-Isopropyltoluene	<1.00		1.00		ug/L			11/19/19 21:30	1
Methylene Chloride	<5.00		5.00		ug/L			11/19/19 21:30	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			11/19/19 21:30	1
Naphthalene	<5.00		5.00		ug/L			11/19/19 21:30	1
N-Propylbenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
Styrene	<1.00		1.00		ug/L			11/19/19 21:30	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/19/19 21:30	1

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-66
Date Collected: 11/05/19 15:50
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/19/19 21:30	1
Tetrachloroethene	<1.00		1.00		ug/L			11/19/19 21:30	1
Toluene	<1.00		1.00		ug/L			11/19/19 21:30	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			11/19/19 21:30	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			11/19/19 21:30	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/19/19 21:30	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/19/19 21:30	1
Trichloroethene	**17.2**		1.00		ug/L			11/19/19 21:30	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/19/19 21:30	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/19/19 21:30	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			11/19/19 21:30	1
Vinyl chloride	<1.00		1.00		ug/L			11/19/19 21:30	1
Xylenes, Total	<3.00		3.00		ug/L			11/19/19 21:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/19/19 21:30*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/30/19 02:51*	*1*
Dibromofluoromethane (Surr)	*116*		*80 - 120*		*11/19/19 21:30*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*11/30/19 02:51*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/19/19 21:30*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*11/30/19 02:51*	*1*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			11/13/19 08:40	5
Sulfate	**49.3**		5.00		mg/L			11/13/19 08:40	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.500		0.500		mg/L		11/11/19 08:24	11/12/19 12:06	1
Manganese	**0.680**		0.0100		mg/L		11/11/19 08:24	11/12/19 12:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00		mg/L			11/11/19 02:15	1
Total Organic Carbon - Duplicates	**1.65**		1.00		mg/L			11/18/19 15:49	1
Total Alkalinity as CaCO3 to pH 4.!	**421**		5.00		mg/L			11/14/19 11:50	1
Bicarbonate Alkalinity as CaCO3	**421**		5.00		mg/L			11/14/19 11:50	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/14/19 11:50	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/14/19 11:50	1
Phenolphthalein Alkalinity as CaCO3 tc pH 8.3	<5.00		5.00		mg/L			11/14/19 11:50	1

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-65
Date Collected: 11/06/19 13:13
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<100		100		ug/L			11/20/19 20:08	10
Benzene	<5.00		5.00		ug/L			11/20/19 20:08	10
Bromobenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
Bromochloromethane	<50.0		50.0		ug/L			11/20/19 20:08	10
Bromodichloromethane	<10.0		10.0		ug/L			11/20/19 20:08	10
Bromoform	<50.0		50.0		ug/L			11/20/19 20:08	10
Bromomethane	<40.0		40.0		ug/L			11/20/19 20:08	10
2-Butanone (MEK)	<100		100		ug/L			11/20/19 20:08	10
n-Butylbenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
sec-Butylbenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
tert-Butylbenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
Carbon disulfide	<10.0		10.0		ug/L			11/20/19 20:08	10
Carbon tetrachloride	<20.0		20.0		ug/L			11/20/19 20:08	10
Chlorobenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
Chlorodibromomethane	<50.0		50.0		ug/L			11/20/19 20:08	10
Chloroethane	<40.0		40.0		ug/L			11/20/19 20:08	10
Chloroform	<30.0		30.0		ug/L			11/20/19 20:08	10
Chloromethane	<30.0		30.0		ug/L			11/20/19 20:08	10
2-Chlorotoluene	<10.0		10.0		ug/L			11/20/19 20:08	10
4-Chlorotoluene	<10.0		10.0		ug/L			11/20/19 20:08	10
1,2-Dibromo-3-Chloropropane	<50.0		50.0		ug/L			11/20/19 20:08	10
1,2-Dibromoethane (EDB)	<10.0		10.0		ug/L			11/20/19 20:08	10
Dibromomethane	<10.0		10.0		ug/L			11/20/19 20:08	10
1,2-Dichlorobenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
1,3-Dichlorobenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
1,4-Dichlorobenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
Dichlorodifluoromethane	<30.0		30.0		ug/L			11/20/19 20:08	10
1,1-Dichloroethane	<10.0		10.0		ug/L			11/20/19 20:08	10
1,2-Dichloroethane	<10.0		10.0		ug/L			11/20/19 20:08	10
1,1-Dichloroethene	<20.0		20.0		ug/L			11/20/19 20:08	10
cis-1,2-Dichloroethene	**686**		10.0		ug/L			11/20/19 20:08	10
trans-1,2-Dichloroethene	**33.4**		10.0		ug/L			11/20/19 20:08	10
1,2-Dichloropropane	<10.0		10.0		ug/L			11/20/19 20:08	10
1,3-Dichloropropane	<10.0		10.0		ug/L			11/20/19 20:08	10
2,2-Dichloropropane	<40.0		40.0		ug/L			11/20/19 20:08	10
1,1-Dichloropropene	<10.0		10.0		ug/L			11/20/19 20:08	10
cis-1,3-Dichloropropene	<50.0		50.0		ug/L			11/20/19 20:08	10
trans-1,3-Dichloropropene	<50.0		50.0		ug/L			11/20/19 20:08	10
Ethylbenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
Hexachlorobutadiene	<50.0		50.0		ug/L			11/20/19 20:08	10
Hexane	<10.0		10.0		ug/L			11/20/19 20:08	10
Isopropylbenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
p-Isopropyltoluene	<10.0		10.0		ug/L			11/20/19 20:08	10
Methylene Chloride	<50.0		50.0		ug/L			11/20/19 20:08	10
Methyl tert-butyl ether	<10.0		10.0		ug/L			11/20/19 20:08	10
Naphthalene	<50.0		50.0		ug/L			11/20/19 20:08	10
N-Propylbenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
Styrene	<10.0		10.0		ug/L			11/20/19 20:08	10
1,1,1,2-Tetrachloroethane	<10.0		10.0		ug/L			11/20/19 20:08	10

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-65
Date Collected: 11/06/19 13:13
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<10.0		10.0		ug/L			11/20/19 20:08	10
Tetrachloroethene	<10.0		10.0		ug/L			11/20/19 20:08	10
Toluene	<10.0		10.0		ug/L			11/20/19 20:08	10
1,2,3-Trichlorobenzene	<50.0		50.0		ug/L			11/20/19 20:08	10
1,2,4-Trichlorobenzene	<50.0		50.0		ug/L			11/20/19 20:08	10
1,1,1-Trichloroethane	<10.0		10.0		ug/L			11/20/19 20:08	10
1,1,2-Trichloroethane	<10.0		10.0		ug/L			11/20/19 20:08	10
Trichloroethene	**2000**		10.0		ug/L			11/20/19 20:08	10
Trichlorofluoromethane	<40.0		40.0		ug/L			11/20/19 20:08	10
1,2,3-Trichloropropane	<10.0		10.0		ug/L			11/20/19 20:08	10
1,2,4-Trimethylbenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
1,3,5-Trimethylbenzene	<10.0		10.0		ug/L			11/20/19 20:08	10
Vinyl chloride	**168**		10.0		ug/L			11/20/19 20:08	10
Xylenes, Total	<30.0		30.0		ug/L			11/20/19 20:08	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/20/19 20:08*	*10*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*11/20/19 20:08*	*10*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/20/19 20:08*	*10*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			11/13/19 08:57	5
Sulfate	<5.00		5.00		mg/L			11/13/19 08:57	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**2.00**		0.500		mg/L		11/11/19 08:24	11/12/19 12:08	1
Manganese	**0.305**		0.0100		mg/L		11/11/19 08:24	11/12/19 12:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00		mg/L			11/11/19 02:18	1
Total Organic Carbon - Duplicates	**4.19**		1.00		mg/L			11/18/19 21:31	1
Total Alkalinity as CaCO3 to pH 4.!	**520**		5.00		mg/L			11/19/19 16:38	1
Bicarbonate Alkalinity as CaCO3	**520**		5.00		mg/L			11/19/19 16:38	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Phenolphthalein Alkalinity as CaCO3 tc pH 8.3	<5.00		5.00		mg/L			11/19/19 16:38	1

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-57
Date Collected: 11/06/19 15:18
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-4
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<100		100		ug/L			11/20/19 20:33	10
Benzene	<5.00		5.00		ug/L			11/20/19 20:33	10
Bromobenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
Bromochloromethane	<50.0		50.0		ug/L			11/20/19 20:33	10
Bromodichloromethane	<10.0		10.0		ug/L			11/20/19 20:33	10
Bromoform	<50.0		50.0		ug/L			11/20/19 20:33	10
Bromomethane	<40.0		40.0		ug/L			11/20/19 20:33	10
2-Butanone (MEK)	<100		100		ug/L			11/20/19 20:33	10
n-Butylbenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
sec-Butylbenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
tert-Butylbenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
Carbon disulfide	<10.0		10.0		ug/L			11/20/19 20:33	10
Carbon tetrachloride	<20.0		20.0		ug/L			11/20/19 20:33	10
Chlorobenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
Chlorodibromomethane	<50.0		50.0		ug/L			11/20/19 20:33	10
Chloroethane	<40.0		40.0		ug/L			11/20/19 20:33	10
Chloroform	<30.0		30.0		ug/L			11/20/19 20:33	10
Chloromethane	<30.0		30.0		ug/L			11/20/19 20:33	10
2-Chlorotoluene	<10.0		10.0		ug/L			11/20/19 20:33	10
4-Chlorotoluene	<10.0		10.0		ug/L			11/20/19 20:33	10
1,2-Dibromo-3-Chloropropane	<50.0		50.0		ug/L			11/20/19 20:33	10
1,2-Dibromoethane (EDB)	<10.0		10.0		ug/L			11/20/19 20:33	10
Dibromomethane	<10.0		10.0		ug/L			11/20/19 20:33	10
1,2-Dichlorobenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
1,3-Dichlorobenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
1,4-Dichlorobenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
Dichlorodifluoromethane	<30.0		30.0		ug/L			11/20/19 20:33	10
1,1-Dichloroethane	<10.0		10.0		ug/L			11/20/19 20:33	10
1,2-Dichloroethane	<10.0		10.0		ug/L			11/20/19 20:33	10
1,1-Dichloroethene	<20.0		20.0		ug/L			11/20/19 20:33	10
cis-1,2-Dichloroethene	<10.0		10.0		ug/L			11/20/19 20:33	10
trans-1,2-Dichloroethene	<10.0		10.0		ug/L			11/20/19 20:33	10
1,2-Dichloropropane	<10.0		10.0		ug/L			11/20/19 20:33	10
1,3-Dichloropropane	<10.0		10.0		ug/L			11/20/19 20:33	10
2,2-Dichloropropane	<40.0		40.0		ug/L			11/20/19 20:33	10
1,1-Dichloropropene	<10.0		10.0		ug/L			11/20/19 20:33	10
cis-1,3-Dichloropropene	<50.0		50.0		ug/L			11/20/19 20:33	10
trans-1,3-Dichloropropene	<50.0		50.0		ug/L			11/20/19 20:33	10
Ethylbenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
Hexachlorobutadiene	<50.0		50.0		ug/L			11/20/19 20:33	10
Hexane	<10.0		10.0		ug/L			11/20/19 20:33	10
Isopropylbenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
p-Isopropyltoluene	<10.0		10.0		ug/L			11/20/19 20:33	10
Methylene Chloride	<50.0		50.0		ug/L			11/20/19 20:33	10
Methyl tert-butyl ether	<10.0		10.0		ug/L			11/20/19 20:33	10
Naphthalene	<50.0		50.0		ug/L			11/20/19 20:33	10
N-Propylbenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
Styrene	<10.0		10.0		ug/L			11/20/19 20:33	10
1,1,1,2-Tetrachloroethane	<10.0		10.0		ug/L			11/20/19 20:33	10

Client Sample ID: MW-57

Date Collected: 11/06/19 15:18
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-4

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<10.0		10.0		ug/L			11/20/19 20:33	10
Tetrachloroethene	<10.0		10.0		ug/L			11/20/19 20:33	10
Toluene	<10.0		10.0		ug/L			11/20/19 20:33	10
1,2,3-Trichlorobenzene	<50.0		50.0		ug/L			11/20/19 20:33	10
1,2,4-Trichlorobenzene	<50.0		50.0		ug/L			11/20/19 20:33	10
1,1,1-Trichloroethane	<10.0		10.0		ug/L			11/20/19 20:33	10
1,1,2-Trichloroethane	<10.0		10.0		ug/L			11/20/19 20:33	10
Trichloroethene	**520**		10.0		ug/L			11/20/19 20:33	10
Trichlorofluoromethane	<40.0		40.0		ug/L			11/20/19 20:33	10
1,2,3-Trichloropropane	<10.0		10.0		ug/L			11/20/19 20:33	10
1,2,4-Trimethylbenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
1,3,5-Trimethylbenzene	<10.0		10.0		ug/L			11/20/19 20:33	10
Vinyl chloride	<10.0		10.0		ug/L			11/20/19 20:33	10
Xylenes, Total	<30.0		30.0		ug/L			11/20/19 20:33	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/20/19 20:33*	*10*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*11/20/19 20:33*	*10*
Toluene-d8 (Surr)	*98*		*80 - 120*		*11/20/19 20:33*	*10*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**17.4**		5.00		mg/L			11/13/19 09:14	5
Sulfate	**52.6**		5.00		mg/L			11/13/19 09:14	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**1.51**		0.500		mg/L		11/11/19 08:24	11/12/19 12:13	1
Manganese	**0.840**		0.0100		mg/L		11/11/19 08:24	11/12/19 12:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00		mg/L			11/11/19 02:22	1
Total Organic Carbon - Duplicates	**2.77**		1.00		mg/L			11/18/19 21:48	1
Total Alkalinity as CaCO3 to pH 4.!	**322**		5.00		mg/L			11/19/19 16:38	1
Bicarbonate Alkalinity as CaCO3	**322**		5.00		mg/L			11/19/19 16:38	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Phenolphthalein Alkalinity as CaCO3 tc pH 8.3	<5.00		5.00		mg/L			11/19/19 16:38	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-56D

Date Collected: 11/05/19 12:55
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-5

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			11/19/19 21:53	1
Benzene	<0.500		0.500		ug/L			11/19/19 21:53	1
Bromobenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
Bromochloromethane	<5.00		5.00		ug/L			11/19/19 21:53	1
Bromodichloromethane	<1.00		1.00		ug/L			11/19/19 21:53	1
Bromoform	<5.00		5.00		ug/L			11/19/19 21:53	1
Bromomethane	<4.00	H	4.00		ug/L			11/30/19 03:14	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/19/19 21:53	1
n-Butylbenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
sec-Butylbenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
tert-Butylbenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
Carbon disulfide	<1.00		1.00		ug/L			11/19/19 21:53	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/19/19 21:53	1
Chlorobenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/19/19 21:53	1
Chloroethane	<4.00		4.00		ug/L			11/19/19 21:53	1
Chloroform	<3.00		3.00		ug/L			11/19/19 21:53	1
Chloromethane	<3.00		3.00		ug/L			11/19/19 21:53	1
2-Chlorotoluene	<1.00		1.00		ug/L			11/19/19 21:53	1
4-Chlorotoluene	<1.00		1.00		ug/L			11/19/19 21:53	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/19/19 21:53	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/19/19 21:53	1
Dibromomethane	<1.00		1.00		ug/L			11/19/19 21:53	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			11/19/19 21:53	1
1,1-Dichloroethane	<1.00	*	1.00		ug/L			11/19/19 21:53	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/19/19 21:53	1
1,1-Dichloroethene	<2.00	H	2.00		ug/L			11/30/19 03:14	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/19/19 21:53	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/19/19 21:53	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/19/19 21:53	1
1,3-Dichloropropane	<1.00		1.00		ug/L			11/19/19 21:53	1
2,2-Dichloropropane	<4.00	H	4.00		ug/L			11/30/19 03:14	1
1,1-Dichloropropene	<1.00		1.00		ug/L			11/19/19 21:53	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/19/19 21:53	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/19/19 21:53	1
Ethylbenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
Hexachlorobutadiene	<5.00		5.00		ug/L			11/19/19 21:53	1
Hexane	<1.00		1.00		ug/L			11/19/19 21:53	1
Isopropylbenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
p-Isopropyltoluene	<1.00		1.00		ug/L			11/19/19 21:53	1
Methylene Chloride	<5.00		5.00		ug/L			11/19/19 21:53	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			11/19/19 21:53	1
Naphthalene	<5.00		5.00		ug/L			11/19/19 21:53	1
N-Propylbenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
Styrene	<1.00		1.00		ug/L			11/19/19 21:53	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/19/19 21:53	1

Client Sample ID: MW-56D

Date Collected: 11/05/19 12:55
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-5

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/19/19 21:53	1
Tetrachloroethene	<1.00		1.00		ug/L			11/19/19 21:53	1
Toluene	<1.00		1.00		ug/L			11/19/19 21:53	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			11/19/19 21:53	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			11/19/19 21:53	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/19/19 21:53	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/19/19 21:53	1
Trichloroethene	<1.00		1.00		ug/L			11/19/19 21:53	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/19/19 21:53	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/19/19 21:53	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			11/19/19 21:53	1
Vinyl chloride	<1.00		1.00		ug/L			11/19/19 21:53	1
Xylenes, Total	<3.00		3.00		ug/L			11/19/19 21:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/19/19 21:53*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/30/19 03:14*	*1*
Dibromofluoromethane (Surr)	*119*		*80 - 120*		*11/19/19 21:53*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/30/19 03:14*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/19/19 21:53*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/30/19 03:14*	*1*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			11/13/19 09:31	5
Sulfate	**137**		5.00		mg/L			11/13/19 09:31	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.500		0.500		mg/L		11/11/19 08:24	11/12/19 12:15	1
Manganese	**1.06**		0.0100		mg/L		11/11/19 08:24	11/12/19 12:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00		mg/L			11/11/19 02:26	1
Total Organic Carbon - Duplicates	**1.50**		1.00		mg/L			11/18/19 22:04	1
Total Alkalinity as CaCO3 to pH 4.!	**401**		5.00		mg/L			11/18/19 10:40	1
Bicarbonate Alkalinity as CaCO3	**401**		5.00		mg/L			11/18/19 10:40	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/18/19 10:40	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/18/19 10:40	1
Phenolphthalein Alkalinity as CaCO3 tc pH 8.3	<5.00		5.00		mg/L			11/18/19 10:40	1

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-46
Date Collected: 11/07/19 11:00
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-6
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<1000		1000		ug/L			11/21/19 08:37	100
Benzene	<50.0		50.0		ug/L			11/21/19 08:37	100
Bromobenzene	<100		100		ug/L			11/21/19 08:37	100
Bromochloromethane	<500		500		ug/L			11/21/19 08:37	100
Bromodichloromethane	<100		100		ug/L			11/21/19 08:37	100
Bromoform	<500		500		ug/L			11/21/19 08:37	100
Bromomethane	<400		400		ug/L			11/21/19 08:37	100
2-Butanone (MEK)	<1000		1000		ug/L			11/21/19 08:37	100
n-Butylbenzene	<100		100		ug/L			11/21/19 08:37	100
sec-Butylbenzene	<100		100		ug/L			11/21/19 08:37	100
tert-Butylbenzene	<100		100		ug/L			11/21/19 08:37	100
Carbon disulfide	<100		100		ug/L			11/21/19 08:37	100
Carbon tetrachloride	<200		200		ug/L			11/21/19 08:37	100
Chlorobenzene	<100		100		ug/L			11/21/19 08:37	100
Chlorodibromomethane	<500		500		ug/L			11/21/19 08:37	100
Chloroethane	<400		400		ug/L			11/21/19 08:37	100
Chloroform	<300		300		ug/L			11/21/19 08:37	100
Chloromethane	<300		300		ug/L			11/21/19 08:37	100
2-Chlorotoluene	<100		100		ug/L			11/21/19 08:37	100
4-Chlorotoluene	<100		100		ug/L			11/21/19 08:37	100
1,2-Dibromo-3-Chloropropane	<500		500		ug/L			11/21/19 08:37	100
1,2-Dibromoethane (EDB)	<100		100		ug/L			11/21/19 08:37	100
Dibromomethane	<100		100		ug/L			11/21/19 08:37	100
1,2-Dichlorobenzene	<100		100		ug/L			11/21/19 08:37	100
1,3-Dichlorobenzene	<100		100		ug/L			11/21/19 08:37	100
1,4-Dichlorobenzene	<100		100		ug/L			11/21/19 08:37	100
Dichlorodifluoromethane	<300		300		ug/L			11/21/19 08:37	100
1,1-Dichloroethane	<100		100		ug/L			11/21/19 08:37	100
1,2-Dichloroethane	<100		100		ug/L			11/21/19 08:37	100
1,1-Dichloroethene	<200		200		ug/L			11/21/19 08:37	100
cis-1,2-Dichloroethene	**1350**		100		ug/L			11/21/19 08:37	100
trans-1,2-Dichloroethene	<100		100		ug/L			11/21/19 08:37	100
1,2-Dichloropropane	<100		100		ug/L			11/21/19 08:37	100
1,3-Dichloropropane	<100		100		ug/L			11/21/19 08:37	100
2,2-Dichloropropane	<400		400		ug/L			11/21/19 08:37	100
1,1-Dichloropropene	<100		100		ug/L			11/21/19 08:37	100
cis-1,3-Dichloropropene	<500		500		ug/L			11/21/19 08:37	100
trans-1,3-Dichloropropene	<500		500		ug/L			11/21/19 08:37	100
Ethylbenzene	<100		100		ug/L			11/21/19 08:37	100
Hexachlorobutadiene	<500		500		ug/L			11/21/19 08:37	100
Hexane	<100		100		ug/L			11/21/19 08:37	100
Isopropylbenzene	<100		100		ug/L			11/21/19 08:37	100
p-Isopropyltoluene	<100		100		ug/L			11/21/19 08:37	100
Methylene Chloride	<500		500		ug/L			11/21/19 08:37	100
Methyl tert-butyl ether	<100		100		ug/L			11/21/19 08:37	100
Naphthalene	<500		500		ug/L			11/21/19 08:37	100
N-Propylbenzene	<100		100		ug/L			11/21/19 08:37	100
Styrene	<100		100		ug/L			11/21/19 08:37	100
1,1,1,2-Tetrachloroethane	<100		100		ug/L			11/21/19 08:37	100

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-46

Date Collected: 11/07/19 11:00
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-6

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<100		100		ug/L			11/21/19 08:37	100
Tetrachloroethene	<100		100		ug/L			11/21/19 08:37	100
Toluene	<100		100		ug/L			11/21/19 08:37	100
1,2,3-Trichlorobenzene	<500		500		ug/L			11/21/19 08:37	100
1,2,4-Trichlorobenzene	<500		500		ug/L			11/21/19 08:37	100
1,1,1-Trichloroethane	<100		100		ug/L			11/21/19 08:37	100
1,1,2-Trichloroethane	<100		100		ug/L			11/21/19 08:37	100
Trichloroethene	**23200**		100		ug/L			11/21/19 08:37	100
Trichlorofluoromethane	<400		400		ug/L			11/21/19 08:37	100
1,2,3-Trichloropropane	<100	*	100		ug/L			11/21/19 08:37	100
1,2,4-Trimethylbenzene	<100		100		ug/L			11/21/19 08:37	100
1,3,5-Trimethylbenzene	<100		100		ug/L			11/21/19 08:37	100
Vinyl chloride	<100		100		ug/L			11/21/19 08:37	100
Xylenes, Total	<300		300		ug/L			11/21/19 08:37	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/21/19 08:37*	*100*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*11/21/19 08:37*	*100*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/21/19 08:37*	*100*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			11/13/19 09:48	5
Sulfate	**27.3**		5.00		mg/L			11/13/19 09:48	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.500		0.500		mg/L		11/11/19 08:24	11/12/19 12:16	1
Manganese	**0.759**		0.0100		mg/L		11/11/19 08:24	11/12/19 12:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00		mg/L			11/11/19 02:29	1
Total Organic Carbon - Duplicates	**1.65**		1.00		mg/L			11/18/19 22:41	1
Total Alkalinity as CaCO3 to pH 4.!	**406**		5.00		mg/L			11/19/19 16:38	1
Bicarbonate Alkalinity as CaCO3	**406**		5.00		mg/L			11/19/19 16:38	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Phenolphthalein Alkalinity as CaCO3 tc pH 8.3	<5.00		5.00		mg/L			11/19/19 16:38	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-43D

Date Collected: 11/07/19 13:35
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-7

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			11/21/19 02:00	1
Benzene	<0.500		0.500		ug/L			11/21/19 02:00	1
Bromobenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
Bromochloromethane	<5.00		5.00		ug/L			11/21/19 02:00	1
Bromodichloromethane	<1.00		1.00		ug/L			11/21/19 02:00	1
Bromoform	<5.00		5.00		ug/L			11/21/19 02:00	1
Bromomethane	<4.00		4.00		ug/L			11/21/19 02:00	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/21/19 02:00	1
n-Butylbenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
sec-Butylbenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
tert-Butylbenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
Carbon disulfide	<1.00		1.00		ug/L			11/21/19 02:00	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/21/19 02:00	1
Chlorobenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/21/19 02:00	1
Chloroethane	<4.00		4.00		ug/L			11/21/19 02:00	1
Chloroform	<3.00		3.00		ug/L			11/21/19 02:00	1
Chloromethane	<3.00		3.00		ug/L			11/21/19 02:00	1
2-Chlorotoluene	<1.00		1.00		ug/L			11/21/19 02:00	1
4-Chlorotoluene	<1.00		1.00		ug/L			11/21/19 02:00	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/21/19 02:00	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/21/19 02:00	1
Dibromomethane	<1.00		1.00		ug/L			11/21/19 02:00	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			11/21/19 02:00	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/21/19 02:00	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/21/19 02:00	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/21/19 02:00	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/21/19 02:00	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/21/19 02:00	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/21/19 02:00	1
1,3-Dichloropropane	<1.00		1.00		ug/L			11/21/19 02:00	1
2,2-Dichloropropane	<4.00		4.00		ug/L			11/21/19 02:00	1
1,1-Dichloropropene	<1.00		1.00		ug/L			11/21/19 02:00	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/21/19 02:00	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/21/19 02:00	1
Ethylbenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
Hexachlorobutadiene	<5.00		5.00		ug/L			11/21/19 02:00	1
Hexane	<1.00		1.00		ug/L			11/21/19 02:00	1
Isopropylbenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
p-Isopropyltoluene	<1.00		1.00		ug/L			11/21/19 02:00	1
Methylene Chloride	<5.00		5.00		ug/L			11/21/19 02:00	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			11/21/19 02:00	1
Naphthalene	<5.00		5.00		ug/L			11/21/19 02:00	1
N-Propylbenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
Styrene	<1.00		1.00		ug/L			11/21/19 02:00	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/21/19 02:00	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: MW-43D

Date Collected: 11/07/19 13:35
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-7

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/21/19 02:00	1
Tetrachloroethene	<1.00		1.00		ug/L			11/21/19 02:00	1
Toluene	<1.00		1.00		ug/L			11/21/19 02:00	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			11/21/19 02:00	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			11/21/19 02:00	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/21/19 02:00	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/21/19 02:00	1
Trichloroethene	<1.00		1.00		ug/L			11/21/19 02:00	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/21/19 02:00	1
1,2,3-Trichloropropane	<1.00	*	1.00		ug/L			11/21/19 02:00	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			11/21/19 02:00	1
Vinyl chloride	<1.00		1.00		ug/L			11/21/19 02:00	1
Xylenes, Total	<3.00		3.00		ug/L			11/21/19 02:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/21/19 02:00*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*11/21/19 02:00*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/21/19 02:00*	*1*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.98**		5.00		mg/L			11/13/19 10:04	5
Sulfate	**13.9**		5.00		mg/L			11/13/19 10:04	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.604**		0.500		mg/L		11/11/19 08:24	11/12/19 12:18	1
Manganese	**0.917**		0.0100		mg/L		11/11/19 08:24	11/12/19 12:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00		mg/L			11/11/19 02:33	1
Total Organic Carbon - Duplicates	**2.77**		1.00		mg/L			11/18/19 22:57	1
Total Alkalinity as CaCO3 to pH 4.!	**262**		5.00		mg/L			11/19/19 16:38	1
Bicarbonate Alkalinity as CaCO3	**262**		5.00		mg/L			11/19/19 16:38	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Phenolphthalein Alkalinity as CaCO3 tc pH 8.3	<5.00		5.00		mg/L			11/19/19 16:38	1

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: Field Duplicate 01

Lab Sample ID: 310-169575-8

Date Collected: 11/06/19 00:00
Matrix: Water
Date Received: 11/08/19 09:20

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			11/20/19 13:54	1
Benzene	**0.659**		0.500		ug/L			11/20/19 13:54	1
Bromobenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
Bromochloromethane	<5.00		5.00		ug/L			11/20/19 13:54	1
Bromodichloromethane	<1.00		1.00		ug/L			11/20/19 13:54	1
Bromoform	<5.00		5.00		ug/L			11/20/19 13:54	1
Bromomethane	<4.00		4.00		ug/L			11/20/19 13:54	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/20/19 13:54	1
n-Butylbenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
sec-Butylbenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
tert-Butylbenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
Carbon disulfide	<1.00		1.00		ug/L			11/20/19 13:54	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/20/19 13:54	1
Chlorobenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/20/19 13:54	1
Chloroethane	<4.00		4.00		ug/L			11/20/19 13:54	1
Chloroform	<3.00		3.00		ug/L			11/20/19 13:54	1
Chloromethane	<3.00		3.00		ug/L			11/20/19 13:54	1
2-Chlorotoluene	<1.00		1.00		ug/L			11/20/19 13:54	1
4-Chlorotoluene	<1.00		1.00		ug/L			11/20/19 13:54	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/20/19 13:54	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/20/19 13:54	1
Dibromomethane	<1.00		1.00		ug/L			11/20/19 13:54	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			11/20/19 13:54	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/20/19 13:54	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/20/19 13:54	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/20/19 13:54	1
cis-1,2-Dichloroethene	**680**	**E**	1.00		ug/L			11/20/19 13:54	1
trans-1,2-Dichloroethene	**32.9**		1.00		ug/L			11/20/19 13:54	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/20/19 13:54	1
1,3-Dichloropropane	<1.00		1.00		ug/L			11/20/19 13:54	1
2,2-Dichloropropane	<4.00		4.00		ug/L			11/20/19 13:54	1
1,1-Dichloropropene	<1.00		1.00		ug/L			11/20/19 13:54	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/20/19 13:54	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/20/19 13:54	1
Ethylbenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
Hexachlorobutadiene	<5.00		5.00		ug/L			11/20/19 13:54	1
Hexane	<1.00		1.00		ug/L			11/20/19 13:54	1
Isopropylbenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
p-Isopropyltoluene	<1.00		1.00		ug/L			11/20/19 13:54	1
Methylene Chloride	<5.00		5.00		ug/L			11/20/19 13:54	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			11/20/19 13:54	1
Naphthalene	<5.00		5.00		ug/L			11/20/19 13:54	1
N-Propylbenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
Styrene	<1.00		1.00		ug/L			11/20/19 13:54	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/20/19 13:54	1

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: Field Duplicate 01

Lab Sample ID: 310-169575-8

Date Collected: 11/06/19 00:00
Date Received: 11/08/19 09:20

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/20/19 13:54	1
Tetrachloroethene	<1.00		1.00		ug/L			11/20/19 13:54	1
Toluene	<1.00		1.00		ug/L			11/20/19 13:54	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			11/20/19 13:54	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			11/20/19 13:54	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/20/19 13:54	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/20/19 13:54	1
Trichloroethene	**1950**	**E**	1.00		ug/L			11/20/19 13:54	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/20/19 13:54	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/20/19 13:54	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			11/20/19 13:54	1
Vinyl chloride	**193**		1.00		ug/L			11/20/19 13:54	1
Xylenes, Total	<3.00		3.00		ug/L			11/20/19 13:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/20/19 13:54*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*11/20/19 13:54*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/20/19 13:54*	*1*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			11/13/19 10:21	5
Sulfate	<5.00		5.00		mg/L			11/13/19 10:21	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**2.10**		0.500		mg/L		11/11/19 08:24	11/12/19 12:20	1
Manganese	**0.322**		0.0100		mg/L		11/11/19 08:24	11/12/19 12:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00		mg/L			11/11/19 02:36	1
Total Organic Carbon - Duplicates	**4.00**		1.00		mg/L			11/18/19 23:13	1
Total Alkalinity as CaCO3 to pH 4.!	**505**		5.00		mg/L			11/19/19 16:38	1
Bicarbonate Alkalinity as CaCO3	**505**		5.00		mg/L			11/19/19 16:38	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Phenolphthalein Alkalinity as CaCO3 tc pH 8.3	<5.00		5.00		mg/L			11/19/19 16:38	1

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: Rinsate Blank 01

Lab Sample ID: 310-169575-9

Date Collected: 11/06/19 16:04
Date Received: 11/08/19 09:20

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			11/20/19 13:04	1
Benzene	<0.500		0.500		ug/L			11/20/19 13:04	1
Bromobenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
Bromochloromethane	<5.00		5.00		ug/L			11/20/19 13:04	1
Bromodichloromethane	<1.00		1.00		ug/L			11/20/19 13:04	1
Bromoform	<5.00		5.00		ug/L			11/20/19 13:04	1
Bromomethane	<4.00		4.00		ug/L			11/20/19 13:04	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/20/19 13:04	1
n-Butylbenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
sec-Butylbenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
tert-Butylbenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
Carbon disulfide	<1.00		1.00		ug/L			11/20/19 13:04	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/20/19 13:04	1
Chlorobenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/20/19 13:04	1
Chloroethane	<4.00		4.00		ug/L			11/20/19 13:04	1
Chloroform	<3.00		3.00		ug/L			11/20/19 13:04	1
Chloromethane	<3.00		3.00		ug/L			11/20/19 13:04	1
2-Chlorotoluene	<1.00		1.00		ug/L			11/20/19 13:04	1
4-Chlorotoluene	<1.00		1.00		ug/L			11/20/19 13:04	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/20/19 13:04	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/20/19 13:04	1
Dibromomethane	<1.00		1.00		ug/L			11/20/19 13:04	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			11/20/19 13:04	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/20/19 13:04	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/20/19 13:04	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/20/19 13:04	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/20/19 13:04	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/20/19 13:04	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/20/19 13:04	1
1,3-Dichloropropane	<1.00		1.00		ug/L			11/20/19 13:04	1
2,2-Dichloropropane	<4.00		4.00		ug/L			11/20/19 13:04	1
1,1-Dichloropropene	<1.00		1.00		ug/L			11/20/19 13:04	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/20/19 13:04	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/20/19 13:04	1
Ethylbenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
Hexachlorobutadiene	<5.00		5.00		ug/L			11/20/19 13:04	1
Hexane	<1.00		1.00		ug/L			11/20/19 13:04	1
Isopropylbenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
p-Isopropyltoluene	<1.00		1.00		ug/L			11/20/19 13:04	1
Methylene Chloride	<5.00		5.00		ug/L			11/20/19 13:04	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			11/20/19 13:04	1
Naphthalene	<5.00		5.00		ug/L			11/20/19 13:04	1
N-Propylbenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
Styrene	<1.00		1.00		ug/L			11/20/19 13:04	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/20/19 13:04	1

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: Rinsate Blank 01

Lab Sample ID: 310-169575-9

Date Collected: 11/06/19 16:04
Date Received: 11/08/19 09:20

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/20/19 13:04	1
Tetrachloroethene	<1.00		1.00		ug/L			11/20/19 13:04	1
Toluene	<1.00		1.00		ug/L			11/20/19 13:04	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			11/20/19 13:04	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			11/20/19 13:04	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/20/19 13:04	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/20/19 13:04	1
Trichloroethene	<1.00		1.00		ug/L			11/20/19 13:04	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/20/19 13:04	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/20/19 13:04	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			11/20/19 13:04	1
Vinyl chloride	<1.00		1.00		ug/L			11/20/19 13:04	1
Xylenes, Total	<3.00		3.00		ug/L			11/20/19 13:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/20/19 13:04*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*11/20/19 13:04*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/20/19 13:04*	*1*

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			11/14/19 22:17	1
Sulfate	<1.00		1.00		mg/L			11/14/19 22:17	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.500		0.500		mg/L		11/11/19 08:24	11/12/19 12:21	1
Manganese	<0.0100		0.0100		mg/L		11/11/19 08:24	11/12/19 12:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	<5.00		5.00		mg/L			11/12/19 15:12	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/12/19 15:12	1
Phenolphthalein Alkalinity as CaCO3	<5.00		5.00		mg/L			11/12/19 15:12	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/12/19 15:12	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/12/19 15:12	1
Sulfide	<1.00		1.00		mg/L			11/11/19 02:40	1
Total Organic Carbon - Duplicates	<1.00		1.00		mg/L			11/18/19 23:30	1

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: Trip Blank

Date Collected: 11/07/19 00:00
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-10

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			11/21/19 00:45	1
Benzene	<0.500		0.500		ug/L			11/21/19 00:45	1
Bromobenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
Bromochloromethane	<5.00		5.00		ug/L			11/21/19 00:45	1
Bromodichloromethane	<1.00		1.00		ug/L			11/21/19 00:45	1
Bromoform	<5.00		5.00		ug/L			11/21/19 00:45	1
Bromomethane	<4.00		4.00		ug/L			11/21/19 00:45	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/21/19 00:45	1
n-Butylbenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
sec-Butylbenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
tert-Butylbenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
Carbon disulfide	<1.00		1.00		ug/L			11/21/19 00:45	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/21/19 00:45	1
Chlorobenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/21/19 00:45	1
Chloroethane	<4.00		4.00		ug/L			11/21/19 00:45	1
Chloroform	<3.00		3.00		ug/L			11/21/19 00:45	1
Chloromethane	<3.00		3.00		ug/L			11/21/19 00:45	1
2-Chlorotoluene	<1.00		1.00		ug/L			11/21/19 00:45	1
4-Chlorotoluene	<1.00		1.00		ug/L			11/21/19 00:45	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/21/19 00:45	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/21/19 00:45	1
Dibromomethane	<1.00		1.00		ug/L			11/21/19 00:45	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			11/21/19 00:45	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/21/19 00:45	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/21/19 00:45	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/21/19 00:45	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/21/19 00:45	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/21/19 00:45	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/21/19 00:45	1
1,3-Dichloropropane	<1.00		1.00		ug/L			11/21/19 00:45	1
2,2-Dichloropropane	<4.00		4.00		ug/L			11/21/19 00:45	1
1,1-Dichloropropene	<1.00		1.00		ug/L			11/21/19 00:45	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/21/19 00:45	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/21/19 00:45	1
Ethylbenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
Hexachlorobutadiene	<5.00		5.00		ug/L			11/21/19 00:45	1
Hexane	<1.00		1.00		ug/L			11/21/19 00:45	1
Isopropylbenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
p-Isopropyltoluene	<1.00		1.00		ug/L			11/21/19 00:45	1
Methylene Chloride	<5.00		5.00		ug/L			11/21/19 00:45	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			11/21/19 00:45	1
Naphthalene	<5.00		5.00		ug/L			11/21/19 00:45	1
N-Propylbenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
Styrene	<1.00		1.00		ug/L			11/21/19 00:45	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/21/19 00:45	1

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: Trip Blank
Date Collected: 11/07/19 00:00
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-10
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/21/19 00:45	1
Tetrachloroethene	<1.00		1.00		ug/L			11/21/19 00:45	1
Toluene	<1.00		1.00		ug/L			11/21/19 00:45	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			11/21/19 00:45	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			11/21/19 00:45	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/21/19 00:45	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/21/19 00:45	1
Trichloroethene	<1.00		1.00		ug/L			11/21/19 00:45	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/21/19 00:45	1
1,2,3-Trichloropropane	<1.00	*	1.00		ug/L			11/21/19 00:45	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			11/21/19 00:45	1
Vinyl chloride	<1.00		1.00		ug/L			11/21/19 00:45	1
Xylenes, Total	<3.00		3.00		ug/L			11/21/19 00:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*11/21/19 00:45*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*11/21/19 00:45*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/21/19 00:45*	*1*

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
E	Result exceeded calibration range.
H	Sample was prepped or analyzed beyond the specified holding time

General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Surrogate Summary

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)
310-169575-1	MW-67	97	105	99
310-169575-1 MS	MW-67	106	99	102
310-169575-1 MSD	MW-67	107	99	103
310-169575-2	MW-66	99	116	99
310-169575-2	MW-66	99	99	98
310-169575-3	MW-65	97	109	99
310-169575-4	MW-57	97	108	98
310-169575-5	MW-56D	97	119	99
310-169575-5	MW-56D	98	98	100
310-169575-6	MW-46	96	108	101
310-169575-7	MW-43D	97	105	99
310-169575-8	Field Duplicate 01	98	104	102
310-169575-9	Rinsate Blank 01	97	104	99
310-169575-10	Trip Blank	94	105	100
LCS 310-261368/5	Lab Control Sample	99	118	103
LCS 310-261368/6	Lab Control Sample	97	117	103
LCS 310-261599/6	Lab Control Sample	107	99	103
LCS 310-261599/7	Lab Control Sample	101	101	101
LCS 310-261602/6	Lab Control Sample	105	96	103
LCS 310-261602/7	Lab Control Sample	97	104	99
LCS 310-262825/5	Lab Control Sample	100	95	103
LCS 310-262825/6	Lab Control Sample	97	100	101
MB 310-261368/7	Method Blank	96	118	98
MB 310-261599/5	Method Blank	98	104	99
MB 310-261602/5	Method Blank	97	105	97
MB 310-262825/7	Method Blank	100	106	118

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-261368/7
Matrix: Water
Analysis Batch: 261368

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			11/19/19 20:23	1
Benzene	<0.500		0.500		ug/L			11/19/19 20:23	1
Bromobenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
Bromochloromethane	<5.00		5.00		ug/L			11/19/19 20:23	1
Bromodichloromethane	<1.00		1.00		ug/L			11/19/19 20:23	1
Bromoform	<5.00		5.00		ug/L			11/19/19 20:23	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/19/19 20:23	1
n-Butylbenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
sec-Butylbenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
tert-Butylbenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
Carbon disulfide	<1.00		1.00		ug/L			11/19/19 20:23	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/19/19 20:23	1
Chlorobenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/19/19 20:23	1
Chloroethane	<4.00		4.00		ug/L			11/19/19 20:23	1
Chloroform	<3.00		3.00		ug/L			11/19/19 20:23	1
Chloromethane	<3.00		3.00		ug/L			11/19/19 20:23	1
2-Chlorotoluene	<1.00		1.00		ug/L			11/19/19 20:23	1
4-Chlorotoluene	<1.00		1.00		ug/L			11/19/19 20:23	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/19/19 20:23	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/19/19 20:23	1
Dibromomethane	<1.00		1.00		ug/L			11/19/19 20:23	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			11/19/19 20:23	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/19/19 20:23	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/19/19 20:23	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/19/19 20:23	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/19/19 20:23	1
1,3-Dichloropropane	<1.00		1.00		ug/L			11/19/19 20:23	1
1,1-Dichloropropene	<1.00		1.00		ug/L			11/19/19 20:23	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/19/19 20:23	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/19/19 20:23	1
Ethylbenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
Hexachlorobutadiene	<5.00		5.00		ug/L			11/19/19 20:23	1
Hexane	<1.00		1.00		ug/L			11/19/19 20:23	1
Isopropylbenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
p-Isopropyltoluene	<1.00		1.00		ug/L			11/19/19 20:23	1
Methylene Chloride	<5.00		5.00		ug/L			11/19/19 20:23	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			11/19/19 20:23	1
Naphthalene	<5.00		5.00		ug/L			11/19/19 20:23	1
N-Propylbenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
Styrene	<1.00		1.00		ug/L			11/19/19 20:23	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/19/19 20:23	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/19/19 20:23	1
Tetrachloroethene	<1.00		1.00		ug/L			11/19/19 20:23	1
Toluene	<1.00		1.00		ug/L			11/19/19 20:23	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-261368/7
Matrix: Water
Analysis Batch: 261368

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			11/19/19 20:23	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			11/19/19 20:23	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/19/19 20:23	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/19/19 20:23	1
Trichloroethene	<1.00		1.00		ug/L			11/19/19 20:23	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/19/19 20:23	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/19/19 20:23	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			11/19/19 20:23	1
Vinyl chloride	<1.00		1.00		ug/L			11/19/19 20:23	1
Xylenes, Total	<3.00		3.00		ug/L			11/19/19 20:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*11/19/19 20:23*	*1*
Dibromofluoromethane (Surr)	*118*		*80 - 120*		*11/19/19 20:23*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*11/19/19 20:23*	*1*

Lab Sample ID: LCS 310-261368/5
Matrix: Water
Analysis Batch: 261368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	40.0	39.45		ug/L		99	50 - 150
Benzene	20.0	16.83		ug/L		84	77 - 120
Bromobenzene	20.0	17.84		ug/L		89	70 - 120
Bromochloromethane	20.0	26.05		ug/L		130	73 - 132
Bromodichloromethane	20.0	18.06		ug/L		90	73 - 120
Bromoform	20.0	16.98		ug/L		85	57 - 120
2-Butanone (MEK)	40.0	39.09		ug/L		98	50 - 150
n-Butylbenzene	20.0	17.67		ug/L		88	63 - 120
sec-Butylbenzene	20.0	18.72		ug/L		94	64 - 120
tert-Butylbenzene	20.0	18.32		ug/L		92	64 - 120
Carbon disulfide	20.0	17.27		ug/L		86	65 - 122
Carbon tetrachloride	20.0	17.15		ug/L		86	72 - 126
Chlorobenzene	20.0	17.67		ug/L		88	74 - 120
Chlorodibromomethane	20.0	17.50		ug/L		88	66 - 120
Chloroform	20.0	19.44		ug/L		97	78 - 121
2-Chlorotoluene	20.0	18.08		ug/L		90	71 - 120
4-Chlorotoluene	20.0	18.28		ug/L		91	71 - 120
1,2-Dibromo-3-Chloropropane	20.0	18.75		ug/L		94	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.70		ug/L		94	71 - 125
Dibromomethane	20.0	20.37		ug/L		102	76 - 125
1,2-Dichlorobenzene	20.0	18.14		ug/L		91	66 - 120
1,3-Dichlorobenzene	20.0	18.66		ug/L		93	67 - 120
1,4-Dichlorobenzene	20.0	17.49		ug/L		87	68 - 120
1,2-Dichloroethane	20.0	19.06		ug/L		95	75 - 123
cis-1,2-Dichloroethene	20.0	16.55		ug/L		83	77 - 120
trans-1,2-Dichloroethene	20.0	15.80		ug/L		79	75 - 122

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-261368/5
Matrix: Water
Analysis Batch: 261368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloropropane	20.0	18.22		ug/L		91	75 - 123
1,3-Dichloropropane	20.0	17.96		ug/L		90	75 - 123
1,1-Dichloropropene	20.0	16.66		ug/L		83	77 - 124
cis-1,3-Dichloropropene	20.0	16.98		ug/L		85	70 - 120
trans-1,3-Dichloropropene	20.0	15.18		ug/L		76	69 - 120
Ethylbenzene	20.0	17.78		ug/L		89	73 - 120
Hexachlorobutadiene	20.0	18.23		ug/L		91	50 - 150
Hexane	20.0	14.97		ug/L		75	50 - 150
Isopropylbenzene	20.0	17.73		ug/L		89	69 - 120
p-Isopropyltoluene	20.0	17.48		ug/L		87	68 - 120
Methylene Chloride	20.0	16.89		ug/L		84	50 - 150
Methyl tert-butyl ether	20.0	21.78		ug/L		109	72 - 121
Naphthalene	20.0	18.34		ug/L		92	50 - 150
N-Propylbenzene	20.0	17.89		ug/L		89	70 - 120
Styrene	20.0	18.13		ug/L		91	70 - 120
1,1,1,2-Tetrachloroethane	20.0	17.37		ug/L		87	72 - 120
1,1,2,2-Tetrachloroethane	20.0	19.01		ug/L		95	63 - 122
Tetrachloroethene	20.0	16.81		ug/L		84	72 - 129
Toluene	20.0	17.08		ug/L		85	74 - 120
1,2,3-Trichlorobenzene	20.0	18.10		ug/L		91	50 - 150
1,2,4-Trichlorobenzene	20.0	18.00		ug/L		90	59 - 120
1,1,1-Trichloroethane	20.0	17.71		ug/L		89	76 - 127
1,1,2-Trichloroethane	20.0	18.18		ug/L		91	69 - 127
Trichloroethene	20.0	17.04		ug/L		85	77 - 123
1,2,3-Trichloropropane	20.0	18.97		ug/L		95	66 - 120
1,2,4-Trimethylbenzene	20.0	18.49		ug/L		92	67 - 120
1,3,5-Trimethylbenzene	20.0	18.31		ug/L		92	68 - 120
Xylenes, Total	40.0	35.31		ug/L		88	69 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*118*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCS 310-261368/6
Matrix: Water
Analysis Batch: 261368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroethane	20.0	19.46		ug/L		97	69 - 129
Chloromethane	20.0	14.40		ug/L		72	50 - 150
Dichlorodifluoromethane	20.0	11.70		ug/L		58	50 - 150
Trichlorofluoromethane	20.0	13.71		ug/L		69	68 - 146
Vinyl chloride	20.0	13.96		ug/L		70	67 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*117*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-261368/6
Matrix: Water
Analysis Batch: 261368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 120

Lab Sample ID: MB 310-261599/5
Matrix: Water
Analysis Batch: 261599

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			11/20/19 11:25	1
Benzene	<0.500		0.500		ug/L			11/20/19 11:25	1
Bromobenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
Bromochloromethane	<5.00		5.00		ug/L			11/20/19 11:25	1
Bromodichloromethane	<1.00		1.00		ug/L			11/20/19 11:25	1
Bromoform	<5.00		5.00		ug/L			11/20/19 11:25	1
Bromomethane	<4.00		4.00		ug/L			11/20/19 11:25	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/20/19 11:25	1
n-Butylbenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
sec-Butylbenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
tert-Butylbenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
Carbon disulfide	<1.00		1.00		ug/L			11/20/19 11:25	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/20/19 11:25	1
Chlorobenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/20/19 11:25	1
Chloroethane	<4.00		4.00		ug/L			11/20/19 11:25	1
Chloroform	<3.00		3.00		ug/L			11/20/19 11:25	1
Chloromethane	<3.00		3.00		ug/L			11/20/19 11:25	1
2-Chlorotoluene	<1.00		1.00		ug/L			11/20/19 11:25	1
4-Chlorotoluene	<1.00		1.00		ug/L			11/20/19 11:25	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/20/19 11:25	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/20/19 11:25	1
Dibromomethane	<1.00		1.00		ug/L			11/20/19 11:25	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			11/20/19 11:25	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/20/19 11:25	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/20/19 11:25	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/20/19 11:25	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/20/19 11:25	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/20/19 11:25	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/20/19 11:25	1
1,3-Dichloropropane	<1.00		1.00		ug/L			11/20/19 11:25	1
2,2-Dichloropropane	<4.00		4.00		ug/L			11/20/19 11:25	1
1,1-Dichloropropene	<1.00		1.00		ug/L			11/20/19 11:25	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/20/19 11:25	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/20/19 11:25	1
Ethylbenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
Hexachlorobutadiene	<5.00		5.00		ug/L			11/20/19 11:25	1
Hexane	<1.00		1.00		ug/L			11/20/19 11:25	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-261599/5
Matrix: Water
Analysis Batch: 261599

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
p-Isopropyltoluene	<1.00		1.00		ug/L			11/20/19 11:25	1
Methylene Chloride	<5.00		5.00		ug/L			11/20/19 11:25	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			11/20/19 11:25	1
Naphthalene	<5.00		5.00		ug/L			11/20/19 11:25	1
N-Propylbenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
Styrene	<1.00		1.00		ug/L			11/20/19 11:25	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/20/19 11:25	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/20/19 11:25	1
Tetrachloroethene	<1.00		1.00		ug/L			11/20/19 11:25	1
Toluene	<1.00		1.00		ug/L			11/20/19 11:25	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			11/20/19 11:25	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			11/20/19 11:25	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/20/19 11:25	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/20/19 11:25	1
Trichloroethene	<1.00		1.00		ug/L			11/20/19 11:25	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/20/19 11:25	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/20/19 11:25	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			11/20/19 11:25	1
Vinyl chloride	<1.00		1.00		ug/L			11/20/19 11:25	1
Xylenes, Total	<3.00		3.00		ug/L			11/20/19 11:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/20/19 11:25*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*11/20/19 11:25*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/20/19 11:25*	*1*

Lab Sample ID: LCS 310-261599/6
Matrix: Water
Analysis Batch: 261599

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	40.0	43.86		ug/L		110	50 - 150
Benzene	20.0	22.20		ug/L		111	77 - 120
Bromobenzene	20.0	22.39		ug/L		112	70 - 120
Bromochloromethane	20.0	21.76		ug/L		109	73 - 132
Bromodichloromethane	20.0	22.77		ug/L		114	73 - 120
Bromoform	20.0	20.33		ug/L		102	57 - 120
2-Butanone (MEK)	40.0	44.69		ug/L		112	50 - 150
n-Butylbenzene	20.0	22.38		ug/L		112	63 - 120
sec-Butylbenzene	20.0	22.20		ug/L		111	64 - 120
tert-Butylbenzene	20.0	22.12		ug/L		111	64 - 120
Carbon disulfide	20.0	21.61		ug/L		108	65 - 122
Carbon tetrachloride	20.0	22.14		ug/L		111	72 - 126
Chlorobenzene	20.0	22.51		ug/L		113	74 - 120
Chlorodibromomethane	20.0	21.54		ug/L		108	66 - 120
Chloroform	20.0	22.76		ug/L		114	78 - 121

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-261599/6
Matrix: Water
Analysis Batch: 261599

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chlorotoluene	20.0	23.03		ug/L		115	71 - 120
4-Chlorotoluene	20.0	23.07		ug/L		115	71 - 120
1,2-Dibromo-3-Chloropropane	20.0	22.09		ug/L		110	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.69		ug/L		108	71 - 125
Dibromomethane	20.0	21.92		ug/L		110	76 - 125
1,2-Dichlorobenzene	20.0	21.81		ug/L		109	66 - 120
1,3-Dichlorobenzene	20.0	21.86		ug/L		109	67 - 120
1,4-Dichlorobenzene	20.0	21.87		ug/L		109	68 - 120
1,1-Dichloroethane	20.0	22.22		ug/L		111	75 - 125
1,2-Dichloroethane	20.0	22.45		ug/L		112	75 - 123
1,1-Dichloroethene	20.0	21.92		ug/L		110	75 - 124
cis-1,2-Dichloroethene	20.0	22.44		ug/L		112	77 - 120
trans-1,2-Dichloroethene	20.0	21.97		ug/L		110	75 - 122
1,2-Dichloropropane	20.0	23.02		ug/L		115	75 - 123
1,3-Dichloropropane	20.0	22.08		ug/L		110	75 - 123
2,2-Dichloropropane	20.0	26.72		ug/L		134	50 - 150
1,1-Dichloropropene	20.0	22.80		ug/L		114	77 - 124
cis-1,3-Dichloropropene	20.0	21.38		ug/L		107	70 - 120
trans-1,3-Dichloropropene	20.0	20.91		ug/L		105	69 - 120
Ethylbenzene	20.0	22.33		ug/L		112	73 - 120
Hexachlorobutadiene	20.0	21.09		ug/L		105	50 - 150
Hexane	20.0	24.47		ug/L		122	50 - 150
Isopropylbenzene	20.0	22.77		ug/L		114	69 - 120
p-Isopropyltoluene	20.0	22.20		ug/L		111	68 - 120
Methylene Chloride	20.0	22.04		ug/L		110	50 - 150
Methyl tert-butyl ether	20.0	21.88		ug/L		109	72 - 121
Naphthalene	20.0	19.00		ug/L		95	50 - 150
N-Propylbenzene	20.0	23.38		ug/L		117	70 - 120
Styrene	20.0	23.19		ug/L		116	70 - 120
1,1,1,2-Tetrachloroethane	20.0	21.00		ug/L		105	72 - 120
1,1,2,2-Tetrachloroethane	20.0	22.60		ug/L		113	63 - 122
Tetrachloroethene	20.0	23.40		ug/L		117	72 - 129
Toluene	20.0	22.03		ug/L		110	74 - 120
1,2,3-Trichlorobenzene	20.0	21.26		ug/L		106	50 - 150
1,2,4-Trichlorobenzene	20.0	20.05		ug/L		100	59 - 120
1,1,1-Trichloroethane	20.0	22.50		ug/L		112	76 - 127
1,1,2-Trichloroethane	20.0	22.70		ug/L		113	69 - 127
Trichloroethene	20.0	22.74		ug/L		114	77 - 123
1,2,3-Trichloropropane	20.0	22.13		ug/L		111	66 - 120
1,2,4-Trimethylbenzene	20.0	22.03		ug/L		110	67 - 120
1,3,5-Trimethylbenzene	20.0	22.38		ug/L		112	68 - 120
Xylenes, Total	40.0	46.11		ug/L		115	69 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-261599/7
Matrix: Water
Analysis Batch: 261599

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromomethane	20.0	20.08		ug/L		100	38 - 150
Chloroethane	20.0	22.64		ug/L		113	69 - 129
Chloromethane	20.0	22.61		ug/L		113	50 - 150
Dichlorodifluoromethane	20.0	24.03		ug/L		120	50 - 150
Trichlorofluoromethane	20.0	23.83		ug/L		119	68 - 146
Vinyl chloride	20.0	24.37		ug/L		122	67 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: 310-169575-1 MS
Matrix: Water
Analysis Batch: 261599

Client Sample ID: MW-67
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	<10.0		50.0	52.69		ug/L		105	31 - 150
Benzene	<0.500		25.0	25.07		ug/L		100	59 - 120
Bromobenzene	<1.00		25.0	27.84		ug/L		111	51 - 120
Bromochloromethane	<5.00		25.0	27.01		ug/L		108	55 - 135
Bromodichloromethane	<1.00		25.0	27.19		ug/L		109	53 - 120
Bromoform	<5.00		25.0	27.51		ug/L		110	42 - 120
2-Butanone (MEK)	<10.0		50.0	57.05		ug/L		114	49 - 150
n-Butylbenzene	<1.00		25.0	26.36		ug/L		105	24 - 120
sec-Butylbenzene	<1.00		25.0	26.23		ug/L		105	29 - 120
tert-Butylbenzene	<1.00		25.0	26.35		ug/L		105	35 - 120
Carbon disulfide	<1.00		25.0	24.09		ug/L		96	43 - 122
Carbon tetrachloride	<2.00		25.0	25.23		ug/L		101	47 - 126
Chlorobenzene	<1.00		25.0	26.60		ug/L		106	52 - 120
Chlorodibromomethane	<5.00		25.0	27.38		ug/L		110	48 - 120
Chloroform	<3.00		25.0	26.37		ug/L		105	50 - 130
2-Chlorotoluene	<1.00		25.0	27.98		ug/L		112	47 - 120
4-Chlorotoluene	<1.00		25.0	28.33		ug/L		113	44 - 120
1,2-Dibromo-3-Chloropropane	<5.00		25.0	28.30		ug/L		113	32 - 150
1,2-Dibromoethane (EDB)	<1.00		25.0	27.28		ug/L		109	52 - 127
Dibromomethane	<1.00		25.0	25.98		ug/L		104	61 - 130
1,2-Dichlorobenzene	<1.00		25.0	27.63		ug/L		111	46 - 120
1,3-Dichlorobenzene	<1.00		25.0	27.75		ug/L		111	45 - 120
1,4-Dichlorobenzene	<1.00		25.0	27.26		ug/L		109	45 - 120
1,1-Dichloroethane	<1.00		25.0	25.60		ug/L		102	50 - 127
1,2-Dichloroethane	<1.00		25.0	27.26		ug/L		109	55 - 128
1,1-Dichloroethene	<2.00		25.0	24.29		ug/L		97	47 - 124
cis-1,2-Dichloroethene	<1.00		25.0	25.26		ug/L		101	46 - 130
trans-1,2-Dichloroethene	<1.00		25.0	24.98		ug/L		100	51 - 122
1,2-Dichloropropane	<1.00		25.0	26.76		ug/L		107	57 - 125
1,3-Dichloropropane	<1.00		25.0	26.54		ug/L		106	58 - 130
2,2-Dichloropropane	<4.00		25.0	24.66		ug/L		99	43 - 150

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-169575-1 MS
Matrix: Water
Analysis Batch: 261599

Client Sample ID: MW-67
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloropropene	<1.00		25.0	25.26		ug/L		101	51 - 124
cis-1,3-Dichloropropene	<5.00		25.0	24.81		ug/L		99	51 - 120
trans-1,3-Dichloropropene	<5.00		25.0	24.58		ug/L		98	51 - 122
Ethylbenzene	<1.00		25.0	26.30		ug/L		105	46 - 120
Hexachlorobutadiene	<5.00		25.0	24.31		ug/L		97	19 - 150
Hexane	<1.00		25.0	23.55		ug/L		94	13 - 150
Isopropylbenzene	<1.00		25.0	26.49		ug/L		106	39 - 120
p-Isopropyltoluene	<1.00		25.0	26.78		ug/L		107	36 - 120
Methylene Chloride	<5.00		25.0	24.70		ug/L		99	50 - 150
Methyl tert-butyl ether	<1.00		25.0	26.57		ug/L		106	62 - 121
Naphthalene	<5.00		25.0	25.88		ug/L		104	20 - 150
N-Propylbenzene	<1.00		25.0	27.26		ug/L		109	41 - 120
Styrene	<1.00		25.0	28.13		ug/L		113	42 - 120
1,1,1,2-Tetrachloroethane	<1.00		25.0	26.81		ug/L		107	50 - 120
1,1,2,2-Tetrachloroethane	<1.00		25.0	30.08		ug/L		120	49 - 129
Tetrachloroethene	<1.00		25.0	26.95		ug/L		108	40 - 129
Toluene	<1.00		25.0	25.08		ug/L		100	52 - 120
1,2,3-Trichlorobenzene	<5.00		25.0	27.27		ug/L		109	33 - 150
1,2,4-Trichlorobenzene	<5.00		25.0	25.05		ug/L		100	33 - 122
1,1,1-Trichloroethane	<1.00		25.0	25.37		ug/L		101	50 - 127
1,1,2-Trichloroethane	<1.00		25.0	28.24		ug/L		113	50 - 131
Trichloroethene	<1.00		25.0	24.92		ug/L		100	54 - 123
1,2,3-Trichloropropane	<1.00		25.0	31.38		ug/L		126	42 - 134
1,2,4-Trimethylbenzene	<1.00		25.0	27.06		ug/L		108	32 - 122
1,3,5-Trimethylbenzene	<1.00		25.0	26.99		ug/L		108	35 - 120
Xylenes, Total	<3.00		50.0	53.82		ug/L		108	37 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: 310-169575-1 MSD
Matrix: Water
Analysis Batch: 261599

Client Sample ID: MW-67
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	<10.0		50.0	53.86		ug/L		108	31 - 150	2	24
Benzene	<0.500		25.0	26.30		ug/L		105	59 - 120	5	21
Bromobenzene	<1.00		25.0	28.75		ug/L		115	51 - 120	3	23
Bromochloromethane	<5.00		25.0	27.77		ug/L		111	55 - 135	3	24
Bromodichloromethane	<1.00		25.0	28.33		ug/L		113	53 - 120	4	21
Bromoform	<5.00		25.0	28.72		ug/L		115	42 - 120	4	24
2-Butanone (MEK)	<10.0		50.0	59.14		ug/L		118	49 - 150	4	20
n-Butylbenzene	<1.00		25.0	28.36		ug/L		113	24 - 120	7	23
sec-Butylbenzene	<1.00		25.0	28.42		ug/L		114	29 - 120	8	23
tert-Butylbenzene	<1.00		25.0	28.56		ug/L		114	35 - 120	8	23
Carbon disulfide	<1.00		25.0	24.85		ug/L		99	43 - 122	3	25

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-169575-1 MSD
Matrix: Water
Analysis Batch: 261599

Client Sample ID: MW-67
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride	<2.00		25.0	25.89		ug/L		104	47 - 126	3	21
Chlorobenzene	<1.00		25.0	27.90		ug/L		112	52 - 120	5	21
Chlorodibromomethane	<5.00		25.0	29.02		ug/L		116	48 - 120	6	23
Chloroform	<3.00		25.0	27.24		ug/L		109	50 - 130	3	20
2-Chlorotoluene	<1.00		25.0	29.48		ug/L		118	47 - 120	5	23
4-Chlorotoluene	<1.00		25.0	29.76		ug/L		119	44 - 120	5	24
1,2-Dibromo-3-Chloropropane	<5.00		25.0	31.95		ug/L		128	32 - 150	12	24
1,2-Dibromoethane (EDB)	<1.00		25.0	28.71		ug/L		115	52 - 127	5	22
Dibromomethane	<1.00		25.0	27.11		ug/L		108	61 - 130	4	21
1,2-Dichlorobenzene	<1.00		25.0	29.50		ug/L		118	46 - 120	7	23
1,3-Dichlorobenzene	<1.00		25.0	29.47		ug/L		118	45 - 120	6	25
1,4-Dichlorobenzene	<1.00		25.0	28.86		ug/L		115	45 - 120	6	22
1,1-Dichloroethane	<1.00		25.0	26.58		ug/L		106	50 - 127	4	23
1,2-Dichloroethane	<1.00		25.0	27.98		ug/L		112	55 - 128	3	21
1,1-Dichloroethene	<2.00		25.0	24.84		ug/L		99	47 - 124	2	24
cis-1,2-Dichloroethene	<1.00		25.0	26.24		ug/L		105	46 - 130	4	22
trans-1,2-Dichloroethene	<1.00		25.0	26.18		ug/L		105	51 - 122	5	23
1,2-Dichloropropane	<1.00		25.0	27.30		ug/L		109	57 - 125	2	21
1,3-Dichloropropane	<1.00		25.0	28.13		ug/L		113	58 - 130	6	25
2,2-Dichloropropane	<4.00		25.0	26.05		ug/L		104	43 - 150	5	22
1,1-Dichloropropene	<1.00		25.0	26.85		ug/L		107	51 - 124	6	22
cis-1,3-Dichloropropene	<5.00		25.0	26.18		ug/L		105	51 - 120	5	22
trans-1,3-Dichloropropene	<5.00		25.0	26.07		ug/L		104	51 - 122	6	25
Ethylbenzene	<1.00		25.0	27.34		ug/L		109	46 - 120	4	23
Hexachlorobutadiene	<5.00		25.0	26.09		ug/L		104	19 - 150	7	27
Hexane	<1.00		25.0	24.33		ug/L		97	13 - 150	3	21
Isopropylbenzene	<1.00		25.0	28.09		ug/L		112	39 - 120	6	22
p-Isopropyltoluene	<1.00		25.0	28.46		ug/L		114	36 - 120	6	27
Methylene Chloride	<5.00		25.0	25.72		ug/L		103	50 - 150	4	23
Methyl tert-butyl ether	<1.00		25.0	27.80		ug/L		111	62 - 121	5	21
Naphthalene	<5.00		25.0	27.90		ug/L		112	20 - 150	8	34
N-Propylbenzene	<1.00		25.0	28.79		ug/L		115	41 - 120	5	24
Styrene	<1.00		25.0	29.41		ug/L		118	42 - 120	4	25
1,1,1,2-Tetrachloroethane	<1.00		25.0	27.57		ug/L		110	50 - 120	3	21
1,1,2,2-Tetrachloroethane	<1.00		25.0	32.03		ug/L		128	49 - 129	6	20
Tetrachloroethene	<1.00		25.0	28.07		ug/L		112	40 - 129	4	21
Toluene	<1.00		25.0	26.32		ug/L		105	52 - 120	5	23
1,2,3-Trichlorobenzene	<5.00		25.0	29.08		ug/L		116	33 - 150	6	27
1,2,4-Trichlorobenzene	<5.00		25.0	26.74		ug/L		107	33 - 122	7	27
1,1,1-Trichloroethane	<1.00		25.0	27.04		ug/L		108	50 - 127	6	21
1,1,2-Trichloroethane	<1.00		25.0	29.10		ug/L		116	50 - 131	3	22
Trichloroethene	<1.00		25.0	26.09		ug/L		104	54 - 123	5	20
1,2,3-Trichloropropane	<1.00		25.0	32.52		ug/L		130	42 - 134	4	23
1,2,4-Trimethylbenzene	<1.00		25.0	29.24		ug/L		117	32 - 122	8	26
1,3,5-Trimethylbenzene	<1.00		25.0	28.79		ug/L		115	35 - 120	6	25
Xylenes, Total	<3.00		50.0	57.07		ug/L		114	37 - 120	6	34

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-169575-1 MSD
Matrix: Water
Analysis Batch: 261599

Client Sample ID: MW-67
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		80 - 120
Dibromofluoromethane (Surr)	99		80 - 120
Toluene-d8 (Surr)	103		80 - 120

Lab Sample ID: MB 310-261602/5
Matrix: Water
Analysis Batch: 261602

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			11/20/19 23:30	1
Benzene	<0.500		0.500		ug/L			11/20/19 23:30	1
Bromobenzene	<1.00		1.00		ug/L			11/20/19 23:30	1
Bromochloromethane	<5.00		5.00		ug/L			11/20/19 23:30	1
Bromodichloromethane	<1.00		1.00		ug/L			11/20/19 23:30	1
Bromoform	<5.00		5.00		ug/L			11/20/19 23:30	1
Bromomethane	<4.00		4.00		ug/L			11/20/19 23:30	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/20/19 23:30	1
n-Butylbenzene	<1.00		1.00		ug/L			11/20/19 23:30	1
sec-Butylbenzene	<1.00		1.00		ug/L			11/20/19 23:30	1
tert-Butylbenzene	<1.00		1.00		ug/L			11/20/19 23:30	1
Carbon disulfide	<1.00		1.00		ug/L			11/20/19 23:30	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/20/19 23:30	1
Chlorobenzene	<1.00		1.00		ug/L			11/20/19 23:30	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/20/19 23:30	1
Chloroethane	<4.00		4.00		ug/L			11/20/19 23:30	1
Chloroform	<3.00		3.00		ug/L			11/20/19 23:30	1
Chloromethane	<3.00		3.00		ug/L			11/20/19 23:30	1
2-Chlorotoluene	<1.00		1.00		ug/L			11/20/19 23:30	1
4-Chlorotoluene	<1.00		1.00		ug/L			11/20/19 23:30	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/20/19 23:30	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/20/19 23:30	1
Dibromomethane	<1.00		1.00		ug/L			11/20/19 23:30	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 23:30	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 23:30	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/20/19 23:30	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			11/20/19 23:30	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/20/19 23:30	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/20/19 23:30	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/20/19 23:30	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/20/19 23:30	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/20/19 23:30	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/20/19 23:30	1
1,3-Dichloropropane	<1.00		1.00		ug/L			11/20/19 23:30	1
2,2-Dichloropropane	<4.00		4.00		ug/L			11/20/19 23:30	1
1,1-Dichloropropene	<1.00		1.00		ug/L			11/20/19 23:30	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/20/19 23:30	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/20/19 23:30	1
Ethylbenzene	<1.00		1.00		ug/L			11/20/19 23:30	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-261602/5
Matrix: Water
Analysis Batch: 261602

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	<5.00		5.00		ug/L			11/20/19 23:30	1
Hexane	<1.00		1.00		ug/L			11/20/19 23:30	1
Isopropylbenzene	<1.00		1.00		ug/L			11/20/19 23:30	1
p-Isopropyltoluene	<1.00		1.00		ug/L			11/20/19 23:30	1
Methylene Chloride	<5.00		5.00		ug/L			11/20/19 23:30	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			11/20/19 23:30	1
Naphthalene	<5.00		5.00		ug/L			11/20/19 23:30	1
N-Propylbenzene	<1.00		1.00		ug/L			11/20/19 23:30	1
Styrene	<1.00		1.00		ug/L			11/20/19 23:30	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/20/19 23:30	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/20/19 23:30	1
Tetrachloroethene	<1.00		1.00		ug/L			11/20/19 23:30	1
Toluene	<1.00		1.00		ug/L			11/20/19 23:30	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			11/20/19 23:30	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			11/20/19 23:30	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/20/19 23:30	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/20/19 23:30	1
Trichloroethene	<1.00		1.00		ug/L			11/20/19 23:30	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/20/19 23:30	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/20/19 23:30	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			11/20/19 23:30	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			11/20/19 23:30	1
Vinyl chloride	<1.00		1.00		ug/L			11/20/19 23:30	1
Xylenes, Total	<3.00		3.00		ug/L			11/20/19 23:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/20/19 23:30*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*11/20/19 23:30*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*11/20/19 23:30*	*1*

Lab Sample ID: LCS 310-261602/6
Matrix: Water
Analysis Batch: 261602

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	40.0	44.88		ug/L		112	50 - 150
Benzene	20.0	21.11		ug/L		106	77 - 120
Bromobenzene	20.0	21.74		ug/L		109	70 - 120
Bromochloromethane	20.0	22.00		ug/L		110	73 - 132
Bromodichloromethane	20.0	22.43		ug/L		112	73 - 120
Bromoform	20.0	21.46		ug/L		107	57 - 120
2-Butanone (MEK)	40.0	47.24		ug/L		118	50 - 150
n-Butylbenzene	20.0	20.90		ug/L		104	63 - 120
sec-Butylbenzene	20.0	21.54		ug/L		108	64 - 120
tert-Butylbenzene	20.0	21.60		ug/L		108	64 - 120
Carbon disulfide	20.0	19.96		ug/L		100	65 - 122
Carbon tetrachloride	20.0	21.64		ug/L		108	72 - 126
Chlorobenzene	20.0	21.66		ug/L		108	74 - 120

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-261602/6
Matrix: Water
Analysis Batch: 261602

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorodibromomethane	20.0	21.72		ug/L		109	66 - 120
Chloroform	20.0	22.33		ug/L		112	78 - 121
2-Chlorotoluene	20.0	22.39		ug/L		112	71 - 120
4-Chlorotoluene	20.0	22.57		ug/L		113	71 - 120
1,2-Dibromo-3-Chloropropane	20.0	22.75		ug/L		114	50 - 150
1,2-Dibromoethane (EDB)	20.0	22.52		ug/L		113	71 - 125
Dibromomethane	20.0	21.50		ug/L		108	76 - 125
1,2-Dichlorobenzene	20.0	21.62		ug/L		108	66 - 120
1,3-Dichlorobenzene	20.0	21.70		ug/L		108	67 - 120
1,4-Dichlorobenzene	20.0	21.37		ug/L		107	68 - 120
1,1-Dichloroethane	20.0	20.97		ug/L		105	75 - 125
1,2-Dichloroethane	20.0	22.92		ug/L		115	75 - 123
1,1-Dichloroethene	20.0	20.60		ug/L		103	75 - 124
cis-1,2-Dichloroethene	20.0	21.36		ug/L		107	77 - 120
trans-1,2-Dichloroethene	20.0	20.73		ug/L		104	75 - 122
1,2-Dichloropropane	20.0	22.51		ug/L		113	75 - 123
1,3-Dichloropropane	20.0	21.80		ug/L		109	75 - 123
2,2-Dichloropropane	20.0	20.36		ug/L		102	50 - 150
1,1-Dichloropropene	20.0	21.46		ug/L		107	77 - 124
cis-1,3-Dichloropropene	20.0	20.61		ug/L		103	70 - 120
trans-1,3-Dichloropropene	20.0	20.41		ug/L		102	69 - 120
Ethylbenzene	20.0	21.66		ug/L		108	73 - 120
Hexachlorobutadiene	20.0	19.91		ug/L		100	50 - 150
Hexane	20.0	20.15		ug/L		101	50 - 150
Isopropylbenzene	20.0	21.74		ug/L		109	69 - 120
p-Isopropyltoluene	20.0	21.19		ug/L		106	68 - 120
Methylene Chloride	20.0	20.01		ug/L		100	50 - 150
Methyl tert-butyl ether	20.0	21.91		ug/L		110	72 - 121
Naphthalene	20.0	20.13		ug/L		101	50 - 150
N-Propylbenzene	20.0	22.16		ug/L		111	70 - 120
Styrene	20.0	22.38		ug/L		112	70 - 120
1,1,1,2-Tetrachloroethane	20.0	21.37		ug/L		107	72 - 120
1,1,2,2-Tetrachloroethane	20.0	23.61		ug/L		118	63 - 122
Tetrachloroethene	20.0	22.44		ug/L		112	72 - 129
Toluene	20.0	21.23		ug/L		106	74 - 120
1,2,3-Trichlorobenzene	20.0	21.55		ug/L		108	50 - 150
1,2,4-Trichlorobenzene	20.0	19.54		ug/L		98	59 - 120
1,1,1-Trichloroethane	20.0	22.03		ug/L		110	76 - 127
1,1,2-Trichloroethane	20.0	22.74		ug/L		114	69 - 127
Trichloroethene	20.0	21.60		ug/L		108	77 - 123
1,2,3-Trichloropropane	20.0	24.44	*	ug/L		122	66 - 120
1,2,4-Trimethylbenzene	20.0	21.70		ug/L		108	67 - 120
1,3,5-Trimethylbenzene	20.0	21.75		ug/L		109	68 - 120
Xylenes, Total	40.0	44.28		ug/L		111	69 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-261602/6
Matrix: Water
Analysis Batch: 261602

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 120

Lab Sample ID: LCS 310-261602/7
Matrix: Water
Analysis Batch: 261602

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromomethane	20.0	20.09		ug/L		100	38 - 150
Chloroethane	20.0	23.95		ug/L		120	69 - 129
Chloromethane	20.0	20.46		ug/L		102	50 - 150
Dichlorodifluoromethane	20.0	23.94		ug/L		120	50 - 150
Trichlorofluoromethane	20.0	24.29		ug/L		121	68 - 146
Vinyl chloride	20.0	25.06		ug/L		125	67 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	104		80 - 120
Toluene-d8 (Surr)	99		80 - 120

Lab Sample ID: MB 310-262825/7
Matrix: Water
Analysis Batch: 262825

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	23.85		4.00		ug/L			11/29/19 20:08	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/29/19 20:08	1
2,2-Dichloropropane	<4.00		4.00		ug/L			11/29/19 20:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		11/29/19 20:08	1
Dibromofluoromethane (Surr)	106		80 - 120		11/29/19 20:08	1
Toluene-d8 (Surr)	118		80 - 120		11/29/19 20:08	1

Lab Sample ID: LCS 310-262825/5
Matrix: Water
Analysis Batch: 262825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	20.0	21.08		ug/L		105	75 - 124
2,2-Dichloropropane	20.0	17.28		ug/L		86	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	95		80 - 120
Toluene-d8 (Surr)	103		80 - 120

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-262825/6
Matrix: Water
Analysis Batch: 262825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromomethane	20.0	10.20		ug/L		51	38 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-260945/3
Matrix: Water
Analysis Batch: 260945

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			11/13/19 05:34	1
Sulfate	<1.00		1.00		mg/L			11/13/19 05:34	1

Lab Sample ID: LCS 310-260945/4
Matrix: Water
Analysis Batch: 260945

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.17		mg/L		102	90 - 110
Sulfate	10.0	10.18		mg/L		102	90 - 110

Lab Sample ID: 310-169575-1 MS
Matrix: Water
Analysis Batch: 260945

Client Sample ID: MW-67
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	<5.00		25.0	28.28		mg/L		113	80 - 120
Sulfate	78.5		25.0	101.2		mg/L		91	80 - 120

Lab Sample ID: 310-169575-1 MSD
Matrix: Water
Analysis Batch: 260945

Client Sample ID: MW-67
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	<5.00		25.0	25.48		mg/L		102	80 - 120	10	15
Sulfate	78.5		25.0	100.6		mg/L		89	80 - 120	1	15

Lab Sample ID: MB 310-261092/3
Matrix: Water
Analysis Batch: 261092

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			11/14/19 21:45	1
Sulfate	<1.00		1.00		mg/L			11/14/19 21:45	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 310-261092/42
Matrix: Water
Analysis Batch: 261092

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.11		mg/L		101	90 - 110
Sulfate	10.0	10.02		mg/L		100	90 - 110

Lab Sample ID: 310-169575-9 MS
Matrix: Water
Analysis Batch: 261092

Client Sample ID: Rinsate Blank 01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	<1.00		5.00	5.001		mg/L		100	80 - 120
Sulfate	<1.00		5.00	5.078		mg/L		102	80 - 120

Lab Sample ID: 310-169575-9 MSD
Matrix: Water
Analysis Batch: 261092

Client Sample ID: Rinsate Blank 01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	<1.00		5.00	4.996		mg/L		100	80 - 120	0	15
Sulfate	<1.00		5.00	5.074		mg/L		101	80 - 120	0	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 310-260376/1-A
Matrix: Water
Analysis Batch: 260619

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 260376

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.500		0.500		mg/L		11/11/19 08:24	11/12/19 11:54	1
Manganese	<0.0100		0.0100		mg/L		11/11/19 08:24	11/12/19 11:54	1

Lab Sample ID: LCS 310-260376/2-A
Matrix: Water
Analysis Batch: 260619

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 260376

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	2.00	2.083		mg/L		104	80 - 120
Manganese	1.00	0.9709		mg/L		97	80 - 120

Lab Sample ID: 310-169575-1 MS
Matrix: Water
Analysis Batch: 260619

Client Sample ID: MW-67
Prep Type: Total/NA
Prep Batch: 260376

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.623		2.00	2.688		mg/L		103	75 - 125
Manganese	1.69		1.00	2.594		mg/L		90	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 310-169575-1 MSD — **Client Sample ID: MW-67**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 260619 — **Prep Batch: 260376**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	0.623		2.00	2.738		mg/L		106	75 - 125	2	20
Manganese	1.69		1.00	2.687		mg/L		99	75 - 125	4	20

Method: 2320B - Alkalinity (Low Level)

Lab Sample ID: MB 310-260654/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 260654

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	<5.00		5.00		mg/L			11/12/19 15:12	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/12/19 15:12	1
Phenolphthalein Alkalinity as CaCO3	<5.00		5.00		mg/L			11/12/19 15:12	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/12/19 15:12	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/12/19 15:12	1

Lab Sample ID: LCS 310-260654/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 260654

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3	1060	963.0		mg/L		91	90 - 110

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-514584/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 514584

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00		mg/L			11/11/19 01:28	1

Lab Sample ID: LCS 500-514584/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 514584

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	4.14	3.819		mg/L		92	80 - 120

Lab Sample ID: 310-169575-1 MS — **Client Sample ID: MW-67**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 514584

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	<1.00		4.14	3.380		mg/L		82	75 - 125

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: 310-169575-1 MSD — **Client Sample ID: MW-67**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 514584

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	<1.00		4.14	3.770		mg/L		91	75 - 125	11	20

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-516186/36 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 516186

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.00		1.00		mg/L			11/18/19 16:26	1

Lab Sample ID: MB 500-516186/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 516186

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.00		1.00		mg/L			11/18/19 08:23	1

Lab Sample ID: LCS 500-516186/37 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 516186

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.32		mg/L		103	80 - 120

Lab Sample ID: LCS 500-516186/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 516186

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.62		mg/L		106	80 - 120

Lab Sample ID: 310-169575-1 MS — **Client Sample ID: MW-67**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 516186

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	2.12		10.0	12.07		mg/L		100	75 - 125

Lab Sample ID: 310-169575-1 MSD — **Client Sample ID: MW-67**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 516186

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	2.12		10.0	12.13		mg/L		100	75 - 125	0	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 310-260921/1
Matrix: Water
Analysis Batch: 260921

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	<5.00		5.00		mg/L			11/14/19 11:50	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/14/19 11:50	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/14/19 11:50	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/14/19 11:50	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3	<5.00		5.00		mg/L			11/14/19 11:50	1

Lab Sample ID: LCS 310-260921/2
Matrix: Water
Analysis Batch: 260921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	1060	1015		mg/L		96	90 - 110

Lab Sample ID: MB 310-261249/1
Matrix: Water
Analysis Batch: 261249

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	<5.00		5.00		mg/L			11/18/19 10:40	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/18/19 10:40	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/18/19 10:40	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/18/19 10:40	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3	<5.00		5.00		mg/L			11/18/19 10:40	1

Lab Sample ID: LCS 310-261249/2
Matrix: Water
Analysis Batch: 261249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	1060	1040		mg/L		98	90 - 110

Lab Sample ID: MB 310-261517/1
Matrix: Water
Analysis Batch: 261517

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	<5.00		5.00		mg/L			11/19/19 16:38	1
Bicarbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Carbonate Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Hydroxide Alkalinity as CaCO3	<5.00		5.00		mg/L			11/19/19 16:38	1
Phenolphthalein Alkalinity as CaCO3 to pH 8.3	<5.00		5.00		mg/L			11/19/19 16:38	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 310-261517/2
Matrix: Water
Analysis Batch: 261517

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	1060	965.3		mg/L		91	90 - 110

Lab Sample ID: 310-169575-1 MS
Matrix: Water
Analysis Batch: 261517

Client Sample ID: MW-67
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	450		106	554.4	4	mg/L		98	66 - 124

Lab Sample ID: 310-169575-1 MSD
Matrix: Water
Analysis Batch: 261517

Client Sample ID: MW-67
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	450		106	554.4	4	mg/L		98	66 - 124	0	17

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

GC/MS VOA

Analysis Batch: 261368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-2	MW-66	Total/NA	Water	8260C	
310-169575-5	MW-56D	Total/NA	Water	8260C	
MB 310-261368/7	Method Blank	Total/NA	Water	8260C	
LCS 310-261368/5	Lab Control Sample	Total/NA	Water	8260C	
LCS 310-261368/6	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 261599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-1	MW-67	Total/NA	Water	8260C	
310-169575-3	MW-65	Total/NA	Water	8260C	
310-169575-4	MW-57	Total/NA	Water	8260C	
310-169575-8	Field Duplicate 01	Total/NA	Water	8260C	
310-169575-9	Rinsate Blank 01	Total/NA	Water	8260C	
MB 310-261599/5	Method Blank	Total/NA	Water	8260C	
LCS 310-261599/6	Lab Control Sample	Total/NA	Water	8260C	
LCS 310-261599/7	Lab Control Sample	Total/NA	Water	8260C	
310-169575-1 MS	MW-67	Total/NA	Water	8260C	
310-169575-1 MSD	MW-67	Total/NA	Water	8260C	

Analysis Batch: 261602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-6	MW-46	Total/NA	Water	8260C	
310-169575-7	MW-43D	Total/NA	Water	8260C	
310-169575-10	Trip Blank	Total/NA	Water	8260C	
MB 310-261602/5	Method Blank	Total/NA	Water	8260C	
LCS 310-261602/6	Lab Control Sample	Total/NA	Water	8260C	
LCS 310-261602/7	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 262825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-2	MW-66	Total/NA	Water	8260C	
310-169575-5	MW-56D	Total/NA	Water	8260C	
MB 310-262825/7	Method Blank	Total/NA	Water	8260C	
LCS 310-262825/5	Lab Control Sample	Total/NA	Water	8260C	
LCS 310-262825/6	Lab Control Sample	Total/NA	Water	8260C	

HPLC/IC

Analysis Batch: 260945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-1	MW-67	Total/NA	Water	9056A	
310-169575-2	MW-66	Total/NA	Water	9056A	
310-169575-3	MW-65	Total/NA	Water	9056A	
310-169575-4	MW-57	Total/NA	Water	9056A	
310-169575-5	MW-56D	Total/NA	Water	9056A	
310-169575-6	MW-46	Total/NA	Water	9056A	
310-169575-7	MW-43D	Total/NA	Water	9056A	
310-169575-8	Field Duplicate 01	Total/NA	Water	9056A	
MB 310-260945/3	Method Blank	Total/NA	Water	9056A	
LCS 310-260945/4	Lab Control Sample	Total/NA	Water	9056A	
310-169575-1 MS	MW-67	Total/NA	Water	9056A	

HPLC/IC (Continued)

Analysis Batch: 260945 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-1 MSD	MW-67	Total/NA	Water	9056A	

Analysis Batch: 261092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-9	Rinsate Blank 01	Total/NA	Water	9056A	
MB 310-261092/3	Method Blank	Total/NA	Water	9056A	
LCS 310-261092/42	Lab Control Sample	Total/NA	Water	9056A	
310-169575-9 MS	Rinsate Blank 01	Total/NA	Water	9056A	
310-169575-9 MSD	Rinsate Blank 01	Total/NA	Water	9056A	

Metals

Prep Batch: 260376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-1	MW-67	Total/NA	Water	3010A	
310-169575-2	MW-66	Total/NA	Water	3010A	
310-169575-3	MW-65	Total/NA	Water	3010A	
310-169575-4	MW-57	Total/NA	Water	3010A	
310-169575-5	MW-56D	Total/NA	Water	3010A	
310-169575-6	MW-46	Total/NA	Water	3010A	
310-169575-7	MW-43D	Total/NA	Water	3010A	
310-169575-8	Field Duplicate 01	Total/NA	Water	3010A	
310-169575-9	Rinsate Blank 01	Total/NA	Water	3010A	
MB 310-260376/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-260376/2-A	Lab Control Sample	Total/NA	Water	3010A	
310-169575-1 MS	MW-67	Total/NA	Water	3010A	
310-169575-1 MSD	MW-67	Total/NA	Water	3010A	

Analysis Batch: 260619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-1	MW-67	Total/NA	Water	6010C	260376
310-169575-2	MW-66	Total/NA	Water	6010C	260376
310-169575-3	MW-65	Total/NA	Water	6010C	260376
310-169575-4	MW-57	Total/NA	Water	6010C	260376
310-169575-5	MW-56D	Total/NA	Water	6010C	260376
310-169575-6	MW-46	Total/NA	Water	6010C	260376
310-169575-7	MW-43D	Total/NA	Water	6010C	260376
310-169575-8	Field Duplicate 01	Total/NA	Water	6010C	260376
310-169575-9	Rinsate Blank 01	Total/NA	Water	6010C	260376
MB 310-260376/1-A	Method Blank	Total/NA	Water	6010C	260376
LCS 310-260376/2-A	Lab Control Sample	Total/NA	Water	6010C	260376
310-169575-1 MS	MW-67	Total/NA	Water	6010C	260376
310-169575-1 MSD	MW-67	Total/NA	Water	6010C	260376

General Chemistry

Analysis Batch: 260654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-9	Rinsate Blank 01	Total/NA	Water	2320B	
MB 310-260654/1	Method Blank	Total/NA	Water	2320B	
LCS 310-260654/2	Lab Control Sample	Total/NA	Water	2320B	

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

General Chemistry

Analysis Batch: 260921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-2	MW-66	Total/NA	Water	SM 2320B	
MB 310-260921/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-260921/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 261249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-5	MW-56D	Total/NA	Water	SM 2320B	
MB 310-261249/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-261249/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 261517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-1	MW-67	Total/NA	Water	SM 2320B	
310-169575-3	MW-65	Total/NA	Water	SM 2320B	
310-169575-4	MW-57	Total/NA	Water	SM 2320B	
310-169575-6	MW-46	Total/NA	Water	SM 2320B	
310-169575-7	MW-43D	Total/NA	Water	SM 2320B	
310-169575-8	Field Duplicate 01	Total/NA	Water	SM 2320B	
MB 310-261517/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-261517/2	Lab Control Sample	Total/NA	Water	SM 2320B	
310-169575-1 MS	MW-67	Total/NA	Water	SM 2320B	
310-169575-1 MSD	MW-67	Total/NA	Water	SM 2320B	

Analysis Batch: 514584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-1	MW-67	Total/NA	Water	9034	
310-169575-2	MW-66	Total/NA	Water	9034	
310-169575-3	MW-65	Total/NA	Water	9034	
310-169575-4	MW-57	Total/NA	Water	9034	
310-169575-5	MW-56D	Total/NA	Water	9034	
310-169575-6	MW-46	Total/NA	Water	9034	
310-169575-7	MW-43D	Total/NA	Water	9034	
310-169575-8	Field Duplicate 01	Total/NA	Water	9034	
310-169575-9	Rinsate Blank 01	Total/NA	Water	9034	
MB 500-514584/1	Method Blank	Total/NA	Water	9034	
LCS 500-514584/2	Lab Control Sample	Total/NA	Water	9034	
310-169575-1 MS	MW-67	Total/NA	Water	9034	
310-169575-1 MSD	MW-67	Total/NA	Water	9034	

Analysis Batch: 516186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-169575-1	MW-67	Total/NA	Water	9060	
310-169575-2	MW-66	Total/NA	Water	9060	
310-169575-3	MW-65	Total/NA	Water	9060	
310-169575-4	MW-57	Total/NA	Water	9060	
310-169575-5	MW-56D	Total/NA	Water	9060	
310-169575-6	MW-46	Total/NA	Water	9060	
310-169575-7	MW-43D	Total/NA	Water	9060	
310-169575-8	Field Duplicate 01	Total/NA	Water	9060	
310-169575-9	Rinsate Blank 01	Total/NA	Water	9060	
MB 500-516186/36	Method Blank	Total/NA	Water	9060	

General Chemistry (Continued)

Analysis Batch: 516186 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-516186/4	Method Blank	Total/NA	Water	9060	
LCS 500-516186/37	Lab Control Sample	Total/NA	Water	9060	
LCS 500-516186/5	Lab Control Sample	Total/NA	Water	9060	
310-169575-1 MS	MW-67	Total/NA	Water	9060	
310-169575-1 MSD	MW-67	Total/NA	Water	9060	

Client Sample ID: MW-67
Lab Sample ID: 310-169575-1

Date Collected: 11/06/19 10:40
Matrix: Water
Date Received: 11/08/19 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	261599	11/20/19 13:29	TCH	TAL CF
Total/NA	Analysis	9056A		5	260945	11/13/19 15:13	ACJ	TAL CF
Total/NA	Prep	3010A			260376	11/11/19 08:24	HED	TAL CF
Total/NA	Analysis	6010C		1	260619	11/12/19 11:57	CTB	TAL CF
Total/NA	Analysis	9034		1	514584		CLB	TAL CHI
					(Start)	11/11/19 02:04		
					(End)	11/11/19 02:07		
Total/NA	Analysis	9060		1	516186	11/18/19 20:55	MTB	TAL CHI
Total/NA	Analysis	SM 2320B		1	261517	11/19/19 16:38	MDK	TAL CF

Client Sample ID: MW-66
Lab Sample ID: 310-169575-2

Date Collected: 11/05/19 15:50
Matrix: Water
Date Received: 11/08/19 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	261368	11/19/19 21:30	SJN	TAL CF
Total/NA	Analysis	8260C		1	262825	11/30/19 02:51	SJN	TAL CF
Total/NA	Analysis	9056A		5	260945	11/13/19 08:40	ACJ	TAL CF
Total/NA	Prep	3010A			260376	11/11/19 08:24	HED	TAL CF
Total/NA	Analysis	6010C		1	260619	11/12/19 12:06	CTB	TAL CF
Total/NA	Analysis	9034		1	514584		CLB	TAL CHI
					(Start)	11/11/19 02:15		
					(End)	11/11/19 02:18		
Total/NA	Analysis	9060		1	516186	11/18/19 15:49	MTB	TAL CHI
Total/NA	Analysis	SM 2320B		1	260921	11/14/19 11:50	MDK	TAL CF

Client Sample ID: MW-65
Lab Sample ID: 310-169575-3

Date Collected: 11/06/19 13:13
Matrix: Water
Date Received: 11/08/19 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	261599	11/20/19 20:08	TCH	TAL CF
Total/NA	Analysis	9056A		5	260945	11/13/19 08:57	ACJ	TAL CF
Total/NA	Prep	3010A			260376	11/11/19 08:24	HED	TAL CF
Total/NA	Analysis	6010C		1	260619	11/12/19 12:08	CTB	TAL CF
Total/NA	Analysis	9034		1	514584		CLB	TAL CHI
					(Start)	11/11/19 02:18		
					(End)	11/11/19 02:22		
Total/NA	Analysis	9060		1	516186	11/18/19 21:31	MTB	TAL CHI
Total/NA	Analysis	SM 2320B		1	261517	11/19/19 16:38	MDK	TAL CF

Client Sample ID: MW-57

Lab Sample ID: 310-169575-4

Date Collected: 11/06/19 15:18
Date Received: 11/08/19 09:20

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	261599	11/20/19 20:33	TCH	TAL CF
Total/NA	Analysis	9056A		5	260945	11/13/19 09:14	ACJ	TAL CF
Total/NA	Prep	3010A			260376	11/11/19 08:24	HED	TAL CF
Total/NA	Analysis	6010C		1	260619	11/12/19 12:13	CTB	TAL CF
Total/NA	Analysis	9034		1	514584		CLB	TAL CHI
					(Start)	11/11/19 02:22		
					(End)	11/11/19 02:26		
Total/NA	Analysis	9060		1	516186	11/18/19 21:48	MTB	TAL CHI
Total/NA	Analysis	SM 2320B		1	261517	11/19/19 16:38	MDK	TAL CF

Client Sample ID: MW-56D

Lab Sample ID: 310-169575-5

Date Collected: 11/05/19 12:55
Date Received: 11/08/19 09:20

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	261368	11/19/19 21:53	SJN	TAL CF
Total/NA	Analysis	8260C		1	262825	11/30/19 03:14	SJN	TAL CF
Total/NA	Analysis	9056A		5	260945	11/13/19 09:31	ACJ	TAL CF
Total/NA	Prep	3010A			260376	11/11/19 08:24	HED	TAL CF
Total/NA	Analysis	6010C		1	260619	11/12/19 12:15	CTB	TAL CF
Total/NA	Analysis	9034		1	514584		CLB	TAL CHI
					(Start)	11/11/19 02:26		
					(End)	11/11/19 02:29		
Total/NA	Analysis	9060		1	516186	11/18/19 22:04	MTB	TAL CHI
Total/NA	Analysis	SM 2320B		1	261249	11/18/19 10:40	MDK	TAL CF

Client Sample ID: MW-46

Lab Sample ID: 310-169575-6

Date Collected: 11/07/19 11:00
Date Received: 11/08/19 09:20

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		100	261602	11/21/19 08:37	TCH	TAL CF
Total/NA	Analysis	9056A		5	260945	11/13/19 09:48	ACJ	TAL CF
Total/NA	Prep	3010A			260376	11/11/19 08:24	HED	TAL CF
Total/NA	Analysis	6010C		1	260619	11/12/19 12:16	CTB	TAL CF
Total/NA	Analysis	9034		1	514584		CLB	TAL CHI
					(Start)	11/11/19 02:29		
					(End)	11/11/19 02:33		
Total/NA	Analysis	9060		1	516186	11/18/19 22:41	MTB	TAL CHI
Total/NA	Analysis	SM 2320B		1	261517	11/19/19 16:38	MDK	TAL CF

Client Sample ID: MW-43D

Lab Sample ID: 310-169575-7
Matrix: Water

Date Collected: 11/07/19 13:35
Date Received: 11/08/19 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	261602	11/21/19 02:00	TCH	TAL CF
Total/NA	Analysis	9056A		5	260945	11/13/19 10:04	ACJ	TAL CF
Total/NA	Prep	3010A			260376	11/11/19 08:24	HED	TAL CF
Total/NA	Analysis	6010C		1	260619	11/12/19 12:18	CTB	TAL CF
Total/NA	Analysis	9034		1	514584		CLB	TAL CHI
					(Start)	11/11/19 02:33		
					(End)	11/11/19 02:36		
Total/NA	Analysis	9060		1	516186	11/18/19 22:57	MTB	TAL CHI
Total/NA	Analysis	SM 2320B		1	261517	11/19/19 16:38	MDK	TAL CF

Client Sample ID: Field Duplicate 01

Lab Sample ID: 310-169575-8
Matrix: Water

Date Collected: 11/06/19 00:00
Date Received: 11/08/19 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	261599	11/20/19 13:54	TCH	TAL CF
Total/NA	Analysis	9056A		5	260945	11/13/19 10:21	ACJ	TAL CF
Total/NA	Prep	3010A			260376	11/11/19 08:24	HED	TAL CF
Total/NA	Analysis	6010C		1	260619	11/12/19 12:20	CTB	TAL CF
Total/NA	Analysis	9034		1	514584		CLB	TAL CHI
					(Start)	11/11/19 02:36		
					(End)	11/11/19 02:40		
Total/NA	Analysis	9060		1	516186	11/18/19 23:13	MTB	TAL CHI
Total/NA	Analysis	SM 2320B		1	261517	11/19/19 16:38	MDK	TAL CF

Client Sample ID: Rinsate Blank 01

Lab Sample ID: 310-169575-9
Matrix: Water

Date Collected: 11/06/19 16:04
Date Received: 11/08/19 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	261599	11/20/19 13:04	TCH	TAL CF
Total/NA	Analysis	9056A		1	261092	11/14/19 22:17	ACJ	TAL CF
Total/NA	Prep	3010A			260376	11/11/19 08:24	HED	TAL CF
Total/NA	Analysis	6010C		1	260619	11/12/19 12:21	CTB	TAL CF
Total/NA	Analysis	2320B		1	260654	11/12/19 15:12	LBB	TAL CF
Total/NA	Analysis	9034		1	514584		CLB	TAL CHI
					(Start)	11/11/19 02:40		
					(End)	11/11/19 02:44		
Total/NA	Analysis	9060		1	516186	11/18/19 23:30	MTB	TAL CHI

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Client Sample ID: Trip Blank

Date Collected: 11/07/19 00:00
Date Received: 11/08/19 09:20

Lab Sample ID: 310-169575-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	261602	11/21/19 00:45	TCH	TAL CF

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Laboratory: Eurofins TestAmerica, Cedar Falls

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	101044	11-01-20
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-20
Georgia	State	IA100001 (OR)	09-29-20
Illinois	NELAP	200024	11-29-19 *
Illinois	NELAP	200024	11-29-19 *
Iowa	State	007	12-01-19 *
Iowa	State Program	007	12-01-19 *
Kansas	NELAP	E-10341	01-31-20
Minnesota	NELAP	019-999-319	12-31-19
Minnesota (Petrofund)	State Program	3349	08-22-21
North Dakota	State	R-186	09-30-20
Oregon	NELAP	IA100001	09-29-20
USDA	US Federal Programs	P330-19-00003	01-02-22

Laboratory: Eurofins TestAmerica, Chicago

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2903	04-30-20
Georgia	State	N/A	04-30-20
Georgia (DW)	State	939	04-30-20
Hawaii	State	NA	04-30-20
Illinois	NELAP	IL00035	04-30-20
Indiana	State	C-IL-02	04-30-20
Iowa	State	082	05-01-20
Kansas	NELAP	E-10161	11-01-20
Kentucky (UST)	State	AI # 108083	04-30-20
Kentucky (WW)	State	KY90023	12-31-19
Louisiana	NELAP	02046	06-30-20
Mississippi	State	NA	04-30-20
New York	NELAP	12019	04-01-20
North Carolina (WW/SW)	State	291	12-31-19
North Dakota	State	R-194	04-30-20
Oklahoma	State	8908	08-31-20
South Carolina	State	77001003	04-30-20
USDA	US Federal Programs	P330-18-00018	02-11-21
Wisconsin	State	999580010	08-31-20
Wyoming	State	8TMS-Q	04-30-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Golder Associates Inc.
Project/Site: Electrolux - Jefferson, IA

Job ID: 310-169575-1
SDG: 191-31867

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL CF
9056A	Anions, Ion Chromatography	SW846	TAL CF
6010C	Metals (ICP)	SW846	TAL CF
2320B	Alkalinity (Low Level)	SM	TAL CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9060	Organic Carbon, Total (TOC)	SW846	TAL CHI
SM 2320B	Alkalinity	SM	TAL CF
3010A	Preparation, Total Metals	SW846	TAL CF
5030B	Purge and Trap	SW846	TAL CF

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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310-169575 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Golder Associates Inc.

City/State: CITY Manchester STATE NH | Project: Electrolux - Jefferson, IA

Receipt Information

Date/Time Received: DATE 11/8/19 TIME 0920 | Received By: JC

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID: AB-9

Multiple Coolers? ☒ Yes ☒ No JC 11-8-19 *If yes:* Cooler # 1 of 2

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

All vials accounted for

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: ☐ NONE

Thermometer ID: M | Correction Factor (°C): -0.1

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.3 | Corrected Temp (°C): -0.4

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☒ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

MW-65 1 H_2SO_4 vial received broken

MW-56 on COC, MW-56D on vials + bottles

eurofins | Environment Testing TestAmerica

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Golder Associates Inc.

City/State: CITY Manchester STATE NH | Project: Electrolux - Jefferson, IA

Receipt Information

Date/Time Received: DATE 11/8/19 TIME 0920 | Received By: JC

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID: AB-44

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: M | Correction Factor (°C): -0.1

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.4 | Corrected Temp (°C): 0.3

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica Cedar Falls
704 Enterprise Drive
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

TestAmerica Des Moines SC
214

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Samantha DiCenso	Lab PM: Hayes, Shawn M	Carrier Tracking No(s):	COC No:
Client Contact: James Peace	Phone:	E-Mail: shawn.hayes@testamericainc.com		Page: 1 of 2
Company: Golder Associates Inc.				Job #:
Address: 670 North Commercial Street Suite 103	Due Date Requested:			
City: Manchester	TAT Requested (days):			
State, Zip: NH, 03101				
Phone:	PO #:			
Email: jpeace@golder.com	WO #:			
Project Name: Electrolux - Jefferson, IA	Eurofins TestAmerica Project #: 31002428			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C Volatile Standard Sublist	9060A Total Organic Carbon	2320B Alkalinities All and 9056A Chloride and Sulfate	6010C Iron and Manganese	9034 Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	S	N	D	CB		
MW-67	11/6/19	1040	G	W			✓	✓	✓	✓	✓		
MS	↓	1040	↓	↓		Y	✓	✓	✓	✓	✓		
MSD	↓	1040	↓	↓		Y	✓	✓	✓	✓	✓		
MW-66	11/5/19	1550	↓	↓			✓	✓	✓	✓	✓		
MW-65	11/6/19	1313	↓	↓			✓	✓	✓	✓	✓		
MW-57	↓	1518	↓	↓			✓	✓	✓	✓	✓		
MW-56	11/5/19	1255	↓	↓			✓	✓	✓	✓	✓		
MW-46	11/7/19	1100	↓	↓			✓	✓	✓	✓	✓		
MW-43D	↓	1335	↓	↓			✓	✓	✓	✓	✓		
Field Duplicate 01	11/6/19	—	↓	↓			✓	✓	✓	✓	✓		
Rinsate Blank 01	11/6/19	1604	↓	↓			✓	✓	✓	✓	✓		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Samantha DiCenso	11/7/19 1700	Golder	DLS	11/8/19 0920	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Eurofins TestAmerica Cedar Falls
704 Enterprise Drive
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

TestAmerica Des Moines SC
214

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Samantha DiLenso	Lab PM: Hayes, Shawn M	Carrier Tracking No(s):	COC No:
Client Contact: James Peace	Phone:	E-Mail: shawn.hayes@testamericainc.com		Page: 2 of 2
Company: Golder Associates Inc.				Job #:
Address: 670 North Commercial Street Suite 103	Due Date Requested:			
City: Manchester	TAT Requested (days):			
State, Zip: NH, 03101				
Phone:	PO #:			
Email: jpeace@golder.com	WO #:			
Project Name: Electrolux - Jefferson, IA	Eurofins TestAmerica Project #: 31002428			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C Volatile Standard Sublist	9060A Total Organic Carbon	2320B Alkalinities All and 9056A Chloride and Sulfate	6010C Iron and Manganese	9034 Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	S	N	D	CB		
Trip Blank							✓						

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Samantha DiLenso	11/7/19 1700	Golder	[illegible]	11/8/19 0920	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
MW-67	310-169575-A-1	Plastic 250ml - with Nitric Acid			
MW-67	310-169575-B-1	Plastic 500ml - with Zn Acetate and			
MW-66	310-169575-A-2	Plastic 250ml - with Nitric Acid			
MW-66	310-169575-B-2	Plastic 500ml - with Zn Acetate and			
MW-65	310-169575-A-3	Plastic 250ml - with Nitric Acid			
MW-65	310-169575-B-3	Plastic 500ml - with Zn Acetate and			
MW-57	310-169575-A-4	Plastic 250ml - with Nitric Acid			
MW-57	310-169575-B-4	Plastic 500ml - with Zn Acetate and			
MW-56	310-169575-A-5	Plastic 250ml - with Nitric Acid			
MW-56	310-169575-B-5	Plastic 500ml - with Zn Acetate and			
MW-46	310-169575-A-6	Plastic 250ml - with Nitric Acid			
MW-46	310-169575-B-6	Plastic 500ml - with Zn Acetate and			
MW-43D	310-169575-A-7	Plastic 250ml - with Nitric Acid			
MW-43D	310-169575-B-7	Plastic 500ml - with Zn Acetate and			
Field Duplicate 01	310-169575-A-8	Plastic 250ml - with Nitric Acid			
Field Duplicate 01	310-169575-B-8	Plastic 500ml - with Zn Acetate and			
Rinsate Blank 01	310-169575-A-9	Plastic 250ml - with Nitric Acid			
Rinsate Blank 01	310-169575-B-9	Plastic 500ml - with Zn Acetate and			

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hayes, Shawn M	Carrier Tracking No(s):	COC No 310-21852.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: shawn.hayes@testamericainc.com	State of Origin: Iowa	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note).		Job #: 310-169575-1
Address: 2417 Bond Street, ,	Due Date Requested: 11/20/2019			
City: University Park	TAT Requested (days):			
State, Zip: IL, 60484				
Phone: 708-534-5200(Tel) 708-534-5211(Fax)	PO #:			
Email:	WO #:			
Project Name: Electrolux - Jefferson, IA	Project #: 31002428			
Site:	SSOW#:			

310-169575 COC

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/ Sulfide	9060/ Total Organic Carbon	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-67 (310-169575-1)	11/6/19	10:40 Central		Water			X	X	3	
MW-67 (310-169575-1MS)	11/6/19	10:40 Central	MS	Water			X	X	3	
MW-67 (310-169575-1MSD)	11/6/19	10:40 Central	MSD	Water			X	X	3	
MW-66 (310-169575-2)	11/5/19	15:50 Central		Water			X	X	3	
MW-65 (310-169575-3)	11/6/19	13:13 Central		Water			X	X	2	
MW-57 (310-169575-4)	11/6/19	15:18 Central		Water			X	X	3	
MW-56 (310-169575-5)	11/5/19	12:55 Central		Water			X	X	3	
MW-46 (310-169575-6)	11/7/19	11:00 Central		Water			X	X	3	
MW-43D (310-169575-7)	11/7/19	13:35 Central		Water			X	X	3	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
T Delk	11/8/19 1540		Shawn Scott	11/9/19 0950	TA-CHI
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 1.8-7.2.8

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hayes, Shawn M	Carrier Tracking No(s):	COC No: 310-21852.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: shawn.hayes@testamericainc.com	State of Origin: Iowa	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 310-169575-1
Address: 2417 Bond Street, ,	Due Date Requested: 11/20/2019			
City: University Park	TAT Requested (days):			
State, Zip: IL, 60484				
Phone: 708-534-5200(Tel) 708-534-5211(Fax)	PO #:			
Email:	WO #:			
Project Name: Electrolux - Jefferson, IA	Project #: 31002428			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/ Sulfide	9060/ Total Organic Carbon	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Field Duplicate 01 (310-169575-8)	11/6/19	Central		Water			X	X	3	
Rinsate Blank 01 (310-169575-9)	11/6/19	16:04 Central		Water			X	X	3	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	11/8/19 1540		[signature]	11/9/19 0950	TA-CFL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.8-7.2.8

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 310-169575-1
SDG Number: 191-31867

Login Number: 169575
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins TestAmerica, Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	MW56 on COC and MW56D on containers
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 310-169575-1
SDG Number: 191-31867

Login Number: 169575
List Number: 2
Creator: Scott, Sherri L

List Source: Eurofins TestAmerica, Chicago
List Creation: 11/09/19 12:09 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

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220 William Pitt Way
Pittsburgh, PA 15238
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November 20, 2019

Jim Peace
Golder Associates
670 N Commercial St
Suite 103
Manchester, NH 03101

RE: **ELECTROLUX - JEFFERSON IA**
Pace Workorder: 32066

Dear Jim Peace:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, November 08, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/20/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 24

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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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SAMPLE SUMMARY

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID	Sample ID	Matrix	Date Collected	Date Received
320660001	MW-67	Water	11/6/2019 10:40	11/8/2019 10:45
320660002	MW-67 MS	Water	11/6/2019 10:40	11/8/2019 10:45
320660003	MW-67 MSD	Water	11/6/2019 10:40	11/8/2019 10:45
320660004	MW-66	Water	11/5/2019 15:50	11/8/2019 10:45
320660005	MW-65	Water	11/6/2019 13:13	11/8/2019 10:45
320660006	MW-57	Water	11/6/2019 15:18	11/8/2019 10:45
320660007	MW-56D	Water	11/5/2019 12:55	11/8/2019 10:45
320660008	MW-46	Water	11/7/2019 11:00	11/8/2019 10:45
320660009	MW-43D	Water	11/7/2019 13:35	11/8/2019 10:45
320660010	FIELD DUPLICATE 01	Water	11/6/2019 00:00	11/8/2019 10:45
320660011	RINSATE BLANK 01	Water	11/6/2019 16:04	11/8/2019 10:45

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PROJECT SUMMARY

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Workorder Comments

The container pH for samples 32066 (0001-0010) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

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ANALYTICAL RESULTS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID: **320660001** Date Received: 11/8/2019 10:45 Matrix: Water
Sample ID: **MW-67** Date Collected: 11/6/2019 10:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**1.9**	ug/l	0.50	0.094	1	11/18/2019 06:43	TD	n
Ethane	**0.024J**	ug/l	0.10	0.011	1	11/18/2019 06:43	TD	n
Ethene	**0.10 U**	ug/l	0.10	0.0080	1	11/18/2019 06:43	TD	n

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ANALYTICAL RESULTS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID: **320660002** Date Received: 11/8/2019 10:45 Matrix: Water
Sample ID: **MW-67 MS** Date Collected: 11/6/2019 10:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**43**	ug/l	0.50	0.094	1	11/18/2019 08:26	TD	n
Ethane	**79**	ug/l	0.10	0.011	1	11/18/2019 08:26	TD	n
Ethene	**75**	ug/l	0.10	0.0080	1	11/18/2019 08:26	TD	n

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ANALYTICAL RESULTS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID: **320660003** Date Received: 11/8/2019 10:45 Matrix: Water
Sample ID: **MW-67 MSD** Date Collected: 11/6/2019 10:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**43**	ug/l	0.50	0.094	1	11/18/2019 08:40	TD	n
Ethane	**79**	ug/l	0.10	0.011	1	11/18/2019 08:40	TD	n
Ethene	**76**	ug/l	0.10	0.0080	1	11/18/2019 08:40	TD	n

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ANALYTICAL RESULTS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID: **320660004** Date Received: 11/8/2019 10:45 Matrix: Water
Sample ID: **MW-66** Date Collected: 11/5/2019 15:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**1.7**	ug/l	0.50	0.094	1	11/18/2019 06:17	TD	n
Ethane	**0.035J**	ug/l	0.10	0.011	1	11/18/2019 06:17	TD	n
Ethene	**0.16**	ug/l	0.10	0.0080	1	11/18/2019 06:17	TD	n

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ANALYTICAL RESULTS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID: **320660005** Date Received: 11/8/2019 10:45 Matrix: Water
Sample ID: **MW-65** Date Collected: 11/6/2019 13:13

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**150**	ug/l	0.50	0.094	1	11/18/2019 06:29	TD	n
Ethane	**0.22**	ug/l	0.10	0.011	1	11/18/2019 06:29	TD	n
Ethene	**33**	ug/l	0.10	0.0080	1	11/18/2019 06:29	TD	n

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ANALYTICAL RESULTS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID: **320660006** Date Received: 11/8/2019 10:45 Matrix: Water
Sample ID: **MW-57** Date Collected: 11/6/2019 15:18

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**3.6**	ug/l	0.50	0.094	1	11/18/2019 06:57	TD	n
Ethane	**0.10 U**	ug/l	0.10	0.011	1	11/18/2019 06:57	TD	n
Ethene	**0.027J**	ug/l	0.10	0.0080	1	11/18/2019 06:57	TD	n

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ANALYTICAL RESULTS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID: **320660007** Date Received: 11/8/2019 10:45 Matrix: Water
Sample ID: **MW-56D** Date Collected: 11/5/2019 12:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**1.2**	ug/l	0.50	0.094	1	11/18/2019 07:10	TD	n
Ethane	**0.054J**	ug/l	0.10	0.011	1	11/18/2019 07:10	TD	n
Ethene	**0.59**	ug/l	0.10	0.0080	1	11/18/2019 07:10	TD	n

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ANALYTICAL RESULTS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID: **320660008** Date Received: 11/8/2019 10:45 Matrix: Water
Sample ID: **MW-46** Date Collected: 11/7/2019 11:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**2.0**	ug/l	0.50	0.094	1	11/18/2019 07:26	TD	n
Ethane	**0.66**	ug/l	0.10	0.011	1	11/18/2019 07:26	TD	n
Ethene	**1.6**	ug/l	0.10	0.0080	1	11/18/2019 07:26	TD	n

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ANALYTICAL RESULTS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID: **320660009** Date Received: 11/8/2019 10:45 Matrix: Water
Sample ID: **MW-43D** Date Collected: 11/7/2019 13:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**1.6**	ug/l	0.50	0.094	1	11/18/2019 07:40	TD	n
Ethane	**0.11**	ug/l	0.10	0.011	1	11/18/2019 07:40	TD	n
Ethene	**0.065J**	ug/l	0.10	0.0080	1	11/18/2019 07:40	TD	n

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ANALYTICAL RESULTS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID: **320660010** Date Received: 11/8/2019 10:45 Matrix: Water

Sample ID: **FIELD DUPLICATE 01** Date Collected: 11/6/2019 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**140**	ug/l	0.50	0.094	1	11/18/2019 07:54	TD	n
Ethane	**0.21**	ug/l	0.10	0.011	1	11/18/2019 07:54	TD	n
Ethene	**30**	ug/l	0.10	0.0080	1	11/18/2019 07:54	TD	n

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ANALYTICAL RESULTS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID: **320660011** Date Received: 11/8/2019 10:45 Matrix: Water

Sample ID: **RINSATE BLANK 01** Date Collected: 11/6/2019 16:04

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**0.15J**	ug/l	0.50	0.094	1	11/18/2019 08:56	TD	n
Ethane	**0.10 U**	ug/l	0.10	0.011	1	11/18/2019 08:56	TD	n
Ethene	**0.10 U**	ug/l	0.10	0.0080	1	11/18/2019 08:56	TD	n

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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA

Workorder: 32066 ELECTROLUX - JEFFERSON IA

QC Batch: DISG/7922 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 320660001, 320660002, 320660003, 320660004, 320660005, 320660006, 320660007, 320660008, 320660009, 320660010, 320660011

METHOD BLANK: 64420

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	0.50 U	0.50	n
Ethane	ug/l	0.10 U	0.10	n
Ethene	ug/l	0.10 U	0.10	n

LABORATORY CONTROL SAMPLE & LCSD: 64422 64424

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	690	710	92	95	80-120	2.6	20	n
Ethane	ug/l	38	36	36	94	94	80-120	0.084	20	n
Ethene	ug/l	35	34	34	96	95	80-120	0.46	20	n

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64440 64441 Original: 320660001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK											
Methane	ug/l	1.9	40	43	43	101	102	70-130	0.04	20	n
Ethane	ug/l	0.024	76	79	79	104	105	70-130	0.52	20	n
Ethene	ug/l	0	71	75	76	107	108	70-130	1.1	20	n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 32066 ELECTROLUX - JEFFERSON IA

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 32066 ELECTROLUX - JEFFERSON IA

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
320660001	MW-67			AM20GAX	DISG/7922
320660002	MW-67 MS			AM20GAX	DISG/7922
320660003	MW-67 MSD			AM20GAX	DISG/7922
320660004	MW-66			AM20GAX	DISG/7922
320660005	MW-65			AM20GAX	DISG/7922
320660006	MW-57			AM20GAX	DISG/7922
320660007	MW-56D			AM20GAX	DISG/7922
320660008	MW-46			AM20GAX	DISG/7922
320660009	MW-43D			AM20GAX	DISG/7922
320660010	FIELD DUPLICATE 01			AM20GAX	DISG/7922
320660011	RINSATE BLANK 01			AM20GAX	DISG/7922

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CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

32066

ALL SHADED AREAS are for LAB USE ONLY ERf 11/8/19

Company: Golder Associates

Billing Information:

Address: 670 N. Commercial St., ste 103

Report To: James Peace

Email To: James Peace

Copy To:

Site Collection Info/Address:

Customer Project Name/Number: Electrolux - Jefferson IA

State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET

Phone:
Email: jpeace@golder.com

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [ ] No

Collected By (print): Samantha DiCenso

Purchase Order #:
Quote #:

DW PWS ID #:
DW Location Code:

Collected By (signature): Samantha DiCenso

Turnaround Date Required:

Immediately Packed on Ice: [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive: _____
[ ] Hold: _____

Rush:
[ ] Same Day [ ] Next Day
[ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day
(Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis: _____

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips: _____
Sample pH Acceptable Y N NA
pH Strips: _____
Sulfide Present Y N NA
Lead Acetate Strips: _____

LAB USE ONLY:
Lab Sample # / Comments:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

	Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Inert Gases (MEE)
1	MW-67	W	G			11/6/19	1040		3	✓
2	MS						1040		3	✓
3	MSD						1040		3	✓
4	MW-66					11/5/19	1550		3	✓
5	MW-65					11/6/19	1313		3	✓
6	MW-57						1578		3	✓
7	MW-56					11/5/19	1255		3	✓
8	MW-46					11/7/19	1100		3	✓
9	MW-43D						1335		3	✓
10	Field Duplicate #1					11/6/19	—		3	✓

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: bubblewrap

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 7808 1861 2324 4425

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: 0.1 oC
Cooler 1 Therm Corr. Factor: _____ oC
Cooler 1 Corrected Temp: _____ oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Samantha DiCenso / Golder	11/7/19 1700	[signature] PAS	11.8.19 1045
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 2

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CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

32066

ALL SHADED AREAS are for LAB USE ONLY ERJ 11/8/19

Company: Golder Associates

Address: 670 N. Commercial ~~Sta~~ Ste. 103

Report To: James Peace

Copy To:

Customer Project Name/Number: Electrolux - Jefferson IA

Billing Information:

Email To: James Peace

Site Collection Info/Address:

State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET

Phone:
Email: jpeace@golder.com

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [ ] No

Collected By (print): Samantha DiCerso

Purchase Order #:
Quote #:

DW PWS ID #:
DW Location Code:

Collected By (signature): Samantha DiCerso

Turnaround Date Required:

Immediately Packed on Ice: [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive: _____
[ ] Hold: _____

Rush:
[ ] Same Day [ ] Next Day
[ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day
(Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Inert gases (MEE)
Rinsate Blank #1	W	G			11/6/19	1604		3	✓

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips: _____	
Sample pH Acceptable	Y N NA
pH Strips: _____	
Sulfide Present	Y N NA
Lead Acetate Strips: _____	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: bubble wrap

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2808 1861 9364 2324426

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: 0.1 oC
Cooler 1 Therm Corr. Factor: _____ oC
Cooler 1 Corrected Temp: _____ oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Samantha DiCerso / Golder	11/7/19 1700	Lon PHS	11.8.19 1045
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 2 of: 2

NON-CONFORMANCE FORM

PAES Work Order #: 32066

Date: 11.8.19 Time of Receipt: 1045 Receiver: LY

Client: Golder

REASON FOR NON-CONFORMANCE:

1. MS. 2 vials left. One broke
2. MSD: 1 vial left. Two broke.
3. MW-57 & MW-46: One vial broke.
4. MW-56: Vials ID was MW-56D.

ACTION TAKEN:

Client name: Golder Date: 11/8/19 Time: 17:03

Emailed client to notify.

Customer Service Initials: SRP Date: 11/8/19

F-PAE-Q-014-rev.00, 20 Nov2014

Emma Louis - Re: Electrolux Jefferson IA Samples 320606

From: "Peace, Jim" <jim_peace@golder.com>
To: Emma Louis <Emma.Louis@pacelabs.com>, "DiCenso, Samantha" <Samantha_DiCe...
Date: 11/8/2019 5:47 PM
Subject: Re: Electrolux Jefferson IA Samples

Hi, Emma.

Thanks for the update. MW-56D please

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: Emma Louis <Emma.Louis@pacelabs.com>
Date: 11/8/19 5:07 PM (GMT-05:00)
To: "Peace, Jim" <jim_peace@golder.com>
Subject: Electrolux Jefferson IA Samples

EXTERNAL EMAIL

Hi Jim,

Sample receiving noted the following.

1. MS: 2 vials are left. 1 broke. We will use the remaining vials and qualify as needed.
2. MSD: 1 vial left. 2 vials broke. We will use the remaining vial and qualify as needed.
3. MW-57 & MW-46: 1 vial broke. We will use the remaining vials.
4. MW-56: Vials ID was MW-56D. Please confirm the correct sample ID.

Thank you

Emma Louis
Project Coordinator
Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Emma.Louis@pacelabs.com
412-826-2378 (Direct) | 412-826-5245 (Main)
www.pacelabs.com

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