

November 11, 2016

Mr. Joseph T. Martella II, Senior Engineer  
Rhode Island Department of Environmental Management  
Office of Waste Management  
Site Remediation Program  
235 Promenade Street  
Providence, Rhode Island 02908

**RE: Parcel C-1 Phase II Area – Mashapaug Pond and Cove, Phase III Area – Northeast Upland and Parcel C Remedial Action Work Plan - Parcel C Groundwater Sampling Former Gorham Manufacturing Facility  
333 Adelaide Avenue, Providence, Rhode Island  
AMEC Project No. 3652150040.03**

Dear Mr. Martella:

This letter summarizes the September 26, 2016 collection of groundwater samples from Parcel C/C-1 at the Former Gorham Manufacturing Site in Providence, Rhode Island (Figure 1). This activity was performed to supplement groundwater testing done in July and December 2015, and February, April and July 2016. This groundwater sampling was conducted in accordance with the Remedial Action Work Plan (RAWP) dated March 11, 2015 and the corresponding Rhode Island Department of Environmental Management (RIDEM) July 9, 2015 Order of Approval (Order of Approval).

### **Background**

Extensive groundwater investigations were previously conducted throughout the upland portions of the Former Gorham Manufacturing Site property, including Parcel C, and within the Mashapaug Inner and Outer Coves (MACTEC, 2006a). The groundwater investigations identified low levels of VOCs in groundwater immediately upgradient of and along the southern shore of the Inner Cove (Parcels C and C-1).

Based on 2006-2010 groundwater data low-level tetrachloroethylene and trichloroethylene (PCE/TCE) groundwater impacts are present in the northwestern corner of Parcel C. Groundwater and Inner Cove sediment data collected during the same period (2006-2010) demonstrated that a clear trend of decreasing contaminant concentrations within the groundwater had occurred over time (AMEC 2014, 2015).

RIDEM's Order of Approval requires Textron to monitor Parcel C/C-1 groundwater following completion of the remedial action, by sampling six wells (MW-235S, MW-236S, MW-237S, MW-D, MW-241, and MW-FS) until data from three consecutive sampling rounds demonstrate that Parcel C groundwater is compliant with RIDEM's GB Groundwater Objectives with no increasing concentrations of VOCs, and that Parcel C-1 groundwater is compliant with the Massachusetts Department of Environmental Protection (MassDEP) GW-3 Standards with no increasing concentrations of VOCs. The April 2016 sampling event confirmed that both MW-FS and MW-

237S met the required criteria of three consecutive decreasing rounds of groundwater data and data below the MassDEP GW-3 Standards. These two wells were eliminated from the groundwater monitoring program, as stated in our April 2016 groundwater monitoring report dated May 24, 2016. Three more wells were eliminated from monitoring following the July 2016 sampling round, including MW-235S, MW-236S, and MW-241, in accordance with the Order of Approval. This sixth round of groundwater sampling was exclusive to the one remaining groundwater monitoring well MW-D located on Parcel C.

### **Work Activities Conducted**

Amec Foster Wheeler Environment and Infrastructure, Inc., (Amec Foster Wheeler) gauged the depth to water in 13 monitoring wells located along the southern shoreline of the Inner Cove on September 26, 2016. These well locations and the groundwater contours for September 26, 2016 are shown on Figure 2 and include MW-235S, MW-236S, MW-237S, MW-238S/D, MW-231S/D, MW-244, MW-D, MW-241, MW-FS, GZA-3 and MW-109D.

Amec Foster Wheeler then sampled the one remaining groundwater monitoring well - MW-D (Figure 2) using the U.S. Environmental Protection Agency (USEPA) low-flow methodology. Sample collection included a duplicate groundwater sample from MW-D. Samples from this September 26, 2016 round were submitted under chain-of-custody control to an off-site laboratory for VOC analysis by USEPA Method 8260B. Field data records for the groundwater sampling event are included in Appendix A.

### **Groundwater Sampling Results**

Table 1 summarizes the historic VOC concentrations detected in MW-D including the September 2016 groundwater sampling event. VOC concentrations detected in Parcel C (MW-D) are measured against the RIDEM GB standards. The analytical laboratory report for the July 2016 groundwater sampling event is included in Appendix B.

As shown in Table 1, both TCE and 1,1-dichloroethene (DCE) exceeded the GB criteria in September 2016. 1,1-DCE was below the GB criteria through July 2016, but increased this sampling round. The concentration of TCE within MW-D has been increasing since April 2016 when it was below the GB criteria to its highest concentration in September 2016 (2.81D/3.32D mg/L (GB Criteria 0.54 mg/L).

### **Groundwater Monitoring Approach**

Based on the extensive groundwater data collected, VOC concentrations within the northwestern area of Parcel C have been reduced. Only MW-D exceeds the RIDEM GB criteria for TCE and 1,1-DCE. As shown in Table 1, continued biodegradation of VOCs via natural attenuation is occurring in the groundwater. Planned reuse of the Parcel C/C-1 area by the City of Providence School Department is a soccer field. No buildings are planned in the area of MW-D and it is currently located within the woods on the downhill side of a detention basin. The Draft Environmental Land Use Restrictions (ELUR) within the February 2016 Remedial Action Completion Report include the provision restricting the use of the groundwater for potable and non-potable use and that no subsurface structures can be constructed over the groundwater without prior approval from RIDEM. This ELUR will be signed and filed by the City of Providence within the Providence Land Use Records, pending RIDEM approval of the ELUR.

Textron will continue to monitor the groundwater quality at MW-D on a quarterly basis in December 2016 and March 2017 to better understand the site conditions, pending compliance with RIDEM's GB Groundwater Objectives and no increasing trends of VOCs. A report will be prepared and submitted to the RIDEM in December 2016 and March 2017 to update the status of this monitoring well.

Please contact the Greg Simpson (401-457-2635) or David Heislein (978-392-5327) if we can provide additional information or answer any questions concerning these groundwater monitoring data and planned sampling of MW-D in December 2016 and March 2017.

Sincerely,

**Amec Foster Wheeler Environment & Infrastructure, Inc.**



Lauren Gosnell  
Project Scientist



David E. Heislein  
Senior Project Manager

Enclosures: Table 1 – Summary of Parcel C/C-1 Groundwater Results 1989 – 2016  
Figure 1 – Site Location Map  
Figure 2 – Parcel C/C-1 Groundwater Contours September 2016  
Appendix A – Field Data Record September 2016 Sampling Event  
Appendix B – Laboratory Reports – September 2016 Sampling Event

cc: Robert Azar, Deputy Director - Providence Planning & Development  
G. Simpson, Textron, Inc. (Electronic)  
Knight Memorial Library Repository  
Amec Foster Wheeler Project File

## Table



**Table 1**  
**Groundwater Results 1989 - 2016**  
**Former Goreham Manufacturing Site**  
**Providence, RI**

Location:		MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4		
Sample ID:		MW-D	GMMWXXDXXX01XX	MW-D	MW-D	GWMWD	MW-D	DUP-01	MW-D	MW-D	DUP-1	MW-D	Dup-01	MW-D	Dup-01	MW-D	Dup-01		
Sample Date:		4/13/1989	9/21/1994	10/15/1997	12/9/1998	2/19/2010	7/15/2015	7/15/2015	12/17/2015	2/10/2016	2/10/2016	4/28/2016	4/28/2016	7/6/2016	7/6/2016	9/26/2016	9/26/2016		
Parameter Name	Units	GB	GW-3																
Toluene	MG/L	1.7	40	0.01 U	0.01 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		
trans-1,2-Dichloroethene	MG/L	2.8	50		0.01 U	0.005 U	0.001 U	0.0004 J	0.0015	0.0013	0.004	0.0027	0.0031	0.0011	0.001 U	0.0019	0.0023	0.0058	0.0056
trans-1,3-Dichloropropene	MG/L	NS	NS			0.0005 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
Trichloroethene	MG/L	0.54	5	0.28	0.298	0.37	0.272	0.761 D	0.826 D	0.851 D	3.06 D	1.73 D	1.71 D	0.499 D	0.514 D	1.36 D	1.68 D	2.81 D	3.32 D
Trichlorofluoromethane	MG/L	NS	NS			0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trihalomethanes, Total	MG/L	NS	NS					0.0036 U	0.001 U	0.001 U									
Vinyl acetate	MG/L	NS	NS					0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Vinyl chloride	MG/L	NS	50	0.02 U	0.02 U	0.01 U	0.003	0.003	0.0033	0.003	0.0034	0.0024	0.001 U	0.001	0.001	0.0045	0.0045	0.0062	0.006
Xylenes, Total	MG/L	NS	5	0.01 U	0.02 U	0.005 U	0.001 U	0.003 U	0.002 U	0.002 U								0.002 U	0.002 U
Aluminum	MG/L	NS	NS		0.3														
Antimony	MG/L	NS	8		0.1 U														
Arsenic	MG/L	NS	0.9		0.01 U														
Barium	MG/L	NS	50		0.2 U														
Beryllium	MG/L	NS	0.2		0.01 U														
Cadmium	MG/L	NS	0.004		0.005 U														
Calcium	MG/L	NS	NS		49.3														
Chromium	MG/L	NS	0.3		0.05 U														
Cobalt	MG/L	NS	NS		0.05 U														
Copper	MG/L	NS	NS		0.02 U														
Iron	MG/L	NS	NS		0.1 U														
Lead	MG/L	NS	0.01		0.016	0.005 U													
Magnesium	MG/L	NS	NS		15.7														
Manganese	MG/L	NS	NS		0.47														
Mercury	MG/L	NS	0.02		0.0005 U														
Nickel	MG/L	NS	0.2		0.04 U														
Potassium	MG/L	NS	NS		1.8														
Selenium	MG/L	NS	0.1		0.01 U														
Silver	MG/L	NS	0.007		0.01 U														
Sodium	MG/L	NS	NS		25.1														
Thallium	MG/L	NS	3		0.01 U														
Vanadium	MG/L	NS	4		0.05 U														
Zinc	MG/L	NS	0.9		0.05														
Total Cyanide	MG/L	NS	0.03		0.01 U														

Notes:

mg/L - milligrams per liter

NS - No Standard Established

U - Not detected

J - Estimated Value

D - Dilution

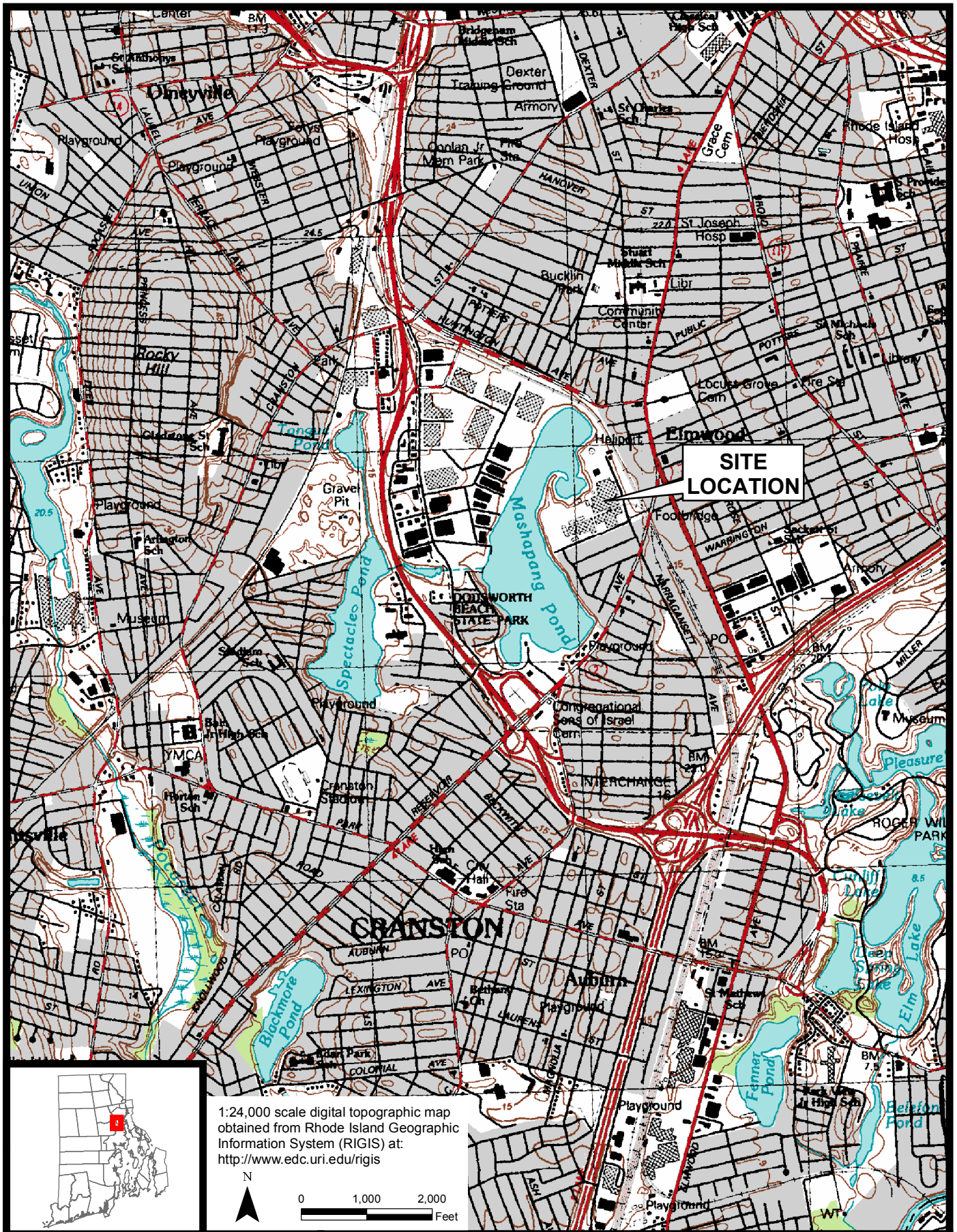
Ambient Water Quality Criteria (AWQC) does not apply to the above

volatile organic compounds.

Yellow highlighted cells exceed the applicable GB Criteria

## Figures





Former Gorham Manufacturing Site  
 333 Adelaide Avenue  
 Providence, RI

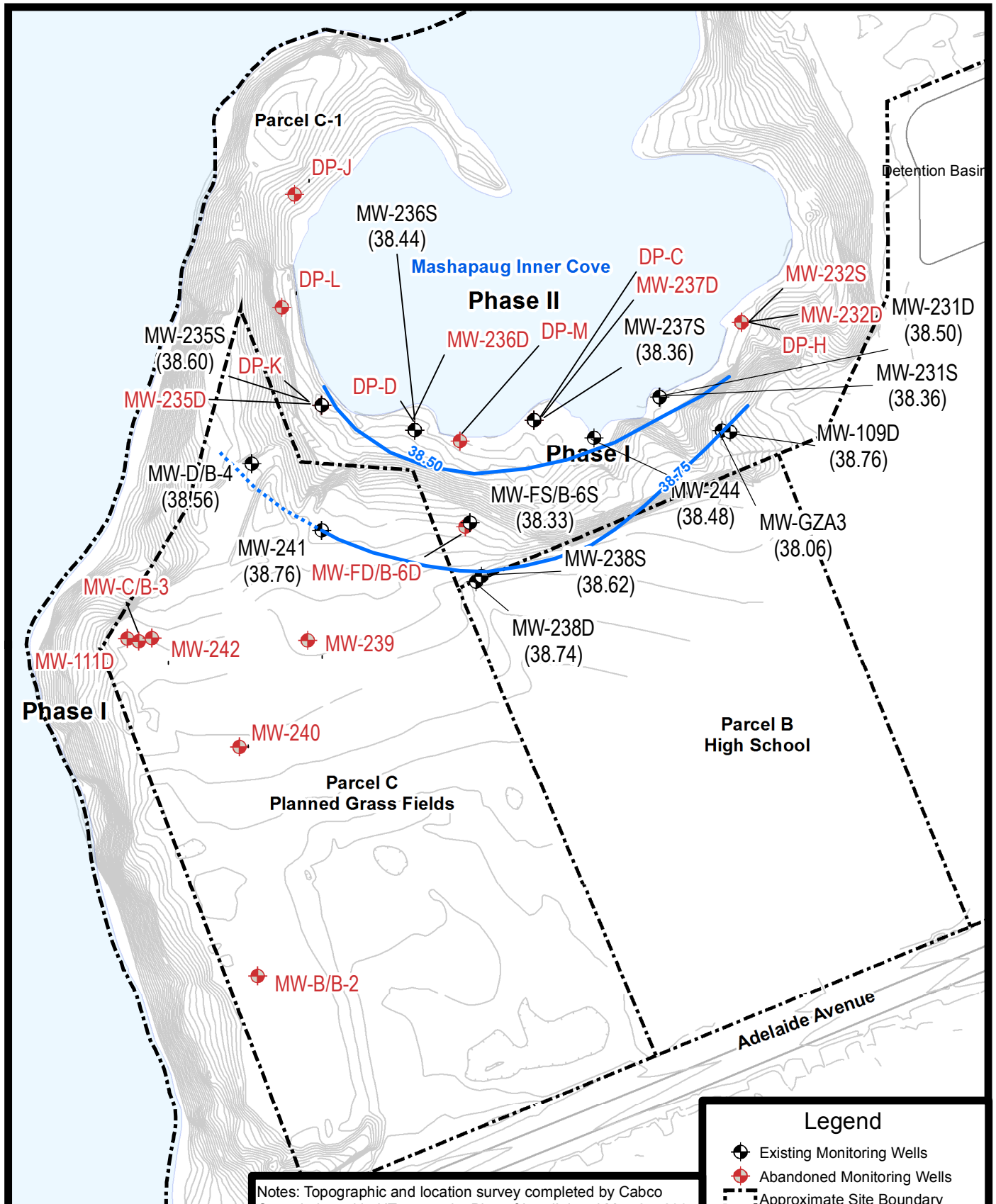


Site Location Map

Project 3652-15-0040

Figure 1

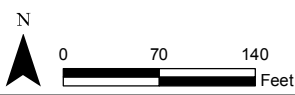




Notes: Topographic and location survey completed by Cabco Consult, Inc. titled 'Topographic Plan of Land' dated May 24, 2007  
 Parcel B topography and field survey completed by Edward Rowse Architects Titled "Providence High School, Gorham Mills, Providence Rhode Island, Site Plan" dated 2007.

**Legend**

- Existing Monitoring Wells
- Abandoned Monitoring Wells
- Approximate Site Boundary
- Elevation
- Groundwater Contour
- Inferred Groundwater Contour



Former Gorham Manufacturing Site  
 333 Adelaide Avenue  
 Providence, RI



Parcel C/C-1 Groundwater Contours  
 September 26, 2016  
 Project 3652-15-0040 Figure 2

## Appendix A

**FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING**

PROJECT: testion bor-horn WELL ID: MU-D  
 SAMPLE ID: MU-P SITE TYPE: Industrial DATE: 9-26-14  
 TIME START: 9:21 END: 10:15 JOB NUMBER: 365215-0040 BOTTLE TIME: 1005

**WATER LEVEL / PUMP SETTINGS**

QC SAMPLE COLLECTED: Dp - AS / MSB

MEASUREMENT POINT:  TOP OF WELL RISER  TOP OF PROTECTIVE CASING  OTHER \_\_\_\_\_

PROTECTIVE CASING STICKUP (FROM GROUND): \_\_\_\_\_ FT.

PROTECTIVE CASING / WELL DIFFERENCE: \_\_\_\_\_ FT.

INITIAL DEPTH TO WATER: 21.70 FT.

WELL DEPTH (TOR): 32 FT.

PID AMBIENT AIR: \_\_\_\_\_ PPMV

WELL DIAMETER: 2 IN.

FINAL DEPTH TO WATER: 21.70 FT.

SCREEN LENGTH: \_\_\_\_\_ FT.

PID WELL MOUTH: \_\_\_\_\_ PPMV

WELL INTEGRITY: CAP  YES  NO  N/A  
 CASING LOCKED  YES  NO  N/A  
 COLLAR  YES  NO  N/A

DRAWDOWN VOLUME (initial - final x 0.16 [2-inch] or x 0.65 [4-inch]): 0 GAL.

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: 0.01

PRESSURE TO PUMP: \_\_\_\_\_ PSI

TOTAL VOL. PURGED: 23 GAL.

REFILL TIMER SETTING: \_\_\_\_\_ SEC.

DISCHARGE TIMER SETTING: \_\_\_\_\_ SEC.

**PURGE DATA**

TIME (5 min.)	DEPTH TO WATER (ft.) (0.3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP. (deg. C) (3%)	SPEC. COND. (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS. O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
921	21.70	200	Start Purge			0.78				
931	21.70	200	12.18	712	6.96	2050	3.94	141	30	
940	21.70	200	12.20	671	7.02	0.59	3.77	179		
945	21.70	200	12.22	664	7.03	0.40	3.43	154		
950	21.70	200	12.21	663	7.03	1.00	1.88	144		
955	21.70	200	12.24	658	7.02	1.01	1.65	138		
1000	21.70	200	12.27	658	7.01	1.02	1.66	135		
1005	- collect sample									

**EQUIPMENT DOCUMENTATION**

TYPE OF PUMP:  QED BLADDER  SIMCO BLADDER  GEOPUMP

TYPE OF TUBING:  TEFLON OR TEFLON LINED  HIGH DENSITY POLYETHYLENE  LDPE

TYPE OF PUMP MATERIAL:  POLYVINYL CHLORIDE  STAINLESS STEEL  SILICON (Dedicated)

TYPE OF BLADDER MATERIAL:  TEFLON  OTHER \_\_\_\_\_

**ANALYTICAL PARAMETERS**


To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
<input checked="" type="checkbox"/> VOCs	8260B	HCL / 4 DEG. C	3 X 40 mL VOA Vial	<input checked="" type="checkbox"/> VOCs
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

**PURGE OBSERVATIONS**

PURGE WATER CONTAINERIZED: YES  NO

NUMBER OF GALLONS GENERATED: ~2.0

NOTES:

amec foster wheeler 

SIGNATURE: 

Prepared by: \_\_\_\_\_  
Checked by: \_\_\_\_\_

## Appendix B



*CERTIFICATE OF ANALYSIS*

Denise King  
AMEC Foster Wheeler  
271 Mill Road  
Chelmsford, MA 01824

**RE: Tectron Gorham - Groundwater (3652150040)**  
**ESS Laboratory Work Order Number: 1609548**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard  
Laboratory Director

**REVIEWED**  
*By ESS Laboratory at 2:09 pm, Oct 03, 2016*

**Analytical Summary**

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.





*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**SAMPLE RECEIPT**

The following samples were received on September 26, 2016 for the analyses specified on the enclosed Chain of Custody Record.

<b>Lab Number</b>	<b>Sample Name</b>	<b>Matrix</b>	<b>Analysis</b>
1609548-01	MW-D	Ground Water	8260B
1609548-02	Dup-01	Ground Water	8260B



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**PROJECT NARRATIVE**

**8260B Volatile Organic Compounds**

- CI62728-MS1 [Due to high target values, matrix spike analyte\(s\) is masked \(MT\).](#)  
cis-1,2-Dichloroethene (-9% @ 70-130%), Trichloroethene (-15300% @ 70-130%)
- CI62728-MS1 [Matrix Spike recovery is above upper control limit \(M+\).](#)  
1,2-Dichloropropane (178% @ 70-130%)
- CI62728-MS1 [Matrix Spike recovery is below lower control limit \(M-\).](#)  
1,1-Dichloroethene (68% @ 70-130%), Tetrachloroethene (67% @ 70-130%)
- CI62728-MS1 [Reported above the quantitation limit; Estimated value \(E\).](#)  
cis-1,2-Dichloroethene , Trichloroethene
- CI62728-MSD1 [Due to high target values, matrix spike analyte\(s\) is masked \(MT\).](#)  
cis-1,2-Dichloroethene (-10% @ 70-130%), Trichloroethene (-15500% @ 70-130%)
- CI62728-MSD1 [Matrix Spike recovery is above upper control limit \(M+\).](#)  
1,2-Dichloropropane (180% @ 70-130%)
- CI62728-MSD1 [Matrix Spike recovery is below lower control limit \(M-\).](#)  
1,1-Dichloroethene (69% @ 70-130%)
- CI62728-MSD1 [Reported above the quantitation limit; Estimated value \(E\).](#)  
cis-1,2-Dichloroethene , Trichloroethene
- CZI0380-CCV1 [Continuing Calibration %Diff/Drift is below control limit \(CD-\).](#)  
Bromomethane (34% @ 30%)

**No other observations noted.**

**End of Project Narrative.**

**DATA USABILITY LINKS**

- [Definitions of Quality Control Parameters](#)
- [Semivolatile Organics Internal Standard Information](#)
- [Semivolatile Organics Surrogate Information](#)
- [Volatile Organics Internal Standard Information](#)
- [Volatile Organics Surrogate Information](#)
- [EPH and VPH Alkane Lists](#)



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**CURRENT SW-846 METHODOLOGY VERSIONS**

**Analytical Methods**

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

**Prep Methods**

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater  
Client Sample ID: MW-D  
Date Sampled: 09/26/16 10:05  
Percent Solids: N/A  
Initial Volume: 5  
Final Volume: 5  
Extraction Method: 5030B

ESS Laboratory Work Order: 1609548  
ESS Laboratory Sample ID: 1609548-01  
Sample Matrix: Ground Water  
Units: mg/L  
Analyst: GEM

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,1-Dichloroethane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
<b>1,1-Dichloroethene</b>	<b>0.0148</b> (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,1-Dichloropropene	ND (0.0020)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,2-Dibromoethane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,2-Dichloroethane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,2-Dichloropropane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,3-Dichloropropane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1,4-Dioxane - Screen	ND (0.500)		8260B		1	09/27/16 17:42	CZI0360	CI62728
1-Chlorohexane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
2,2-Dichloropropane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
2-Butanone	ND (0.0100)		8260B		1	09/27/16 17:42	CZI0360	CI62728
2-Chlorotoluene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
2-Hexanone	ND (0.0100)		8260B		1	09/27/16 17:42	CZI0360	CI62728
4-Chlorotoluene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
4-Isopropyltoluene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Acetone	ND (0.0100)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Benzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Bromobenzene	ND (0.0020)		8260B		1	09/27/16 17:42	CZI0360	CI62728



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater  
Client Sample ID: MW-D  
Date Sampled: 09/26/16 10:05  
Percent Solids: N/A  
Initial Volume: 5  
Final Volume: 5  
Extraction Method: 5030B

ESS Laboratory Work Order: 1609548  
ESS Laboratory Sample ID: 1609548-01  
Sample Matrix: Ground Water  
Units: mg/L  
Analyst: GEM

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Bromodichloromethane	ND (0.0006)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Bromoform	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Bromomethane	ND (0.0020)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Carbon Disulfide	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Carbon Tetrachloride	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Chlorobenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Chloroethane	ND (0.0020)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Chloroform	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Chloromethane	ND (0.0020)		8260B		1	09/27/16 17:42	CZI0360	CI62728
<b>cis-1,2-Dichloroethene</b>	<b>0.132</b> (0.0500)		8260B		50	09/28/16 14:21	CZI0360	CI62728
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Dibromochloromethane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Dibromomethane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Dichlorodifluoromethane	ND (0.0020)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Diethyl Ether	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Di-isopropyl ether	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Ethylbenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Hexachlorobutadiene	ND (0.0006)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Hexachloroethane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Isopropylbenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Methylene Chloride	ND (0.0020)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Naphthalene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
n-Butylbenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
n-Propylbenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
sec-Butylbenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Styrene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
tert-Butylbenzene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
<b>Tetrachloroethene</b>	<b>0.0068</b> (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728





*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
 Client Project ID: Textron Gorham - Groundwater  
 Client Sample ID: MW-D  
 Date Sampled: 09/26/16 10:05  
 Percent Solids: N/A  
 Initial Volume: 5  
 Final Volume: 5  
 Extraction Method: 5030B

ESS Laboratory Work Order: 1609548  
 ESS Laboratory Sample ID: 1609548-01  
 Sample Matrix: Ground Water  
 Units: mg/L  
 Analyst: GEM

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Toluene	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
<b>trans-1,2-Dichloroethene</b>	<b>0.0058</b> (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	09/27/16 17:42	CZI0360	CI62728
<b>Trichloroethene</b>	<b>2.81</b> (0.0500)		8260B		50	09/28/16 14:21	CZI0360	CI62728
Trichlorofluoromethane	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Vinyl Acetate	ND (0.0050)		8260B		1	09/27/16 17:42	CZI0360	CI62728
<b>Vinyl Chloride</b>	<b>0.0062</b> (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Xylene O	ND (0.0010)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Xylene P,M	ND (0.0020)		8260B		1	09/27/16 17:42	CZI0360	CI62728
Xylenes (Total)	ND (0.0020)		8260B		1	09/27/16 17:42		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	99 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	94 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	100 %		70-130
<i>Surrogate: Toluene-d8</i>	99 %		70-130



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
 Client Project ID: Textron Gorham - Groundwater  
 Client Sample ID: Dup-01  
 Date Sampled: 09/26/16 00:00  
 Percent Solids: N/A  
 Initial Volume: 5  
 Final Volume: 5  
 Extraction Method: 5030B

ESS Laboratory Work Order: 1609548  
 ESS Laboratory Sample ID: 1609548-02  
 Sample Matrix: Ground Water  
 Units: mg/L  
 Analyst: GEM

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,1-Dichloroethane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
<b>1,1-Dichloroethene</b>	<b>0.0149</b> (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,1-Dichloropropene	ND (0.0020)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,2-Dibromoethane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,2-Dichloroethane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,2-Dichloropropane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,3-Dichloropropane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1,4-Dioxane - Screen	ND (0.500)		8260B		1	09/28/16 18:37	CZI0380	CI62839
1-Chlorohexane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
2,2-Dichloropropane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
2-Butanone	ND (0.0100)		8260B		1	09/28/16 18:37	CZI0380	CI62839
2-Chlorotoluene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
2-Hexanone	ND (0.0100)		8260B		1	09/28/16 18:37	CZI0380	CI62839
4-Chlorotoluene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
4-Isopropyltoluene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Acetone	ND (0.0100)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Benzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Bromobenzene	ND (0.0020)		8260B		1	09/28/16 18:37	CZI0380	CI62839



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater  
Client Sample ID: Dup-01  
Date Sampled: 09/26/16 00:00  
Percent Solids: N/A  
Initial Volume: 5  
Final Volume: 5  
Extraction Method: 5030B

ESS Laboratory Work Order: 1609548  
ESS Laboratory Sample ID: 1609548-02  
Sample Matrix: Ground Water  
Units: mg/L  
Analyst: GEM

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Bromodichloromethane	ND (0.0006)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Bromoform	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Bromomethane	ND (0.0020)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Carbon Disulfide	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Carbon Tetrachloride	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Chlorobenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Chloroethane	ND (0.0020)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Chloroform	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Chloromethane	ND (0.0020)		8260B		1	09/28/16 18:37	CZI0380	CI62839
<b>cis-1,2-Dichloroethene</b>	<b>0.166</b> (0.0500)		8260B		50	09/29/16 16:02	CZI0380	CI62839
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Dibromochloromethane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Dibromomethane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Dichlorodifluoromethane	ND (0.0020)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Diethyl Ether	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Di-isopropyl ether	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Ethylbenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Hexachlorobutadiene	ND (0.0006)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Hexachloroethane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Isopropylbenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Methylene Chloride	ND (0.0020)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Naphthalene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
n-Butylbenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
n-Propylbenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
sec-Butylbenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Styrene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
tert-Butylbenzene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
<b>Tetrachloroethene</b>	<b>0.0067</b> (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
 Client Project ID: Textron Gorham - Groundwater  
 Client Sample ID: Dup-01  
 Date Sampled: 09/26/16 00:00  
 Percent Solids: N/A  
 Initial Volume: 5  
 Final Volume: 5  
 Extraction Method: 5030B

ESS Laboratory Work Order: 1609548  
 ESS Laboratory Sample ID: 1609548-02  
 Sample Matrix: Ground Water  
 Units: mg/L  
 Analyst: GEM

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Toluene	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
<b>trans-1,2-Dichloroethene</b>	<b>0.0056</b> (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	09/28/16 18:37	CZI0380	CI62839
<b>Trichloroethene</b>	<b>3.32</b> (0.0500)		8260B		50	09/29/16 16:02	CZI0380	CI62839
Trichlorofluoromethane	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Vinyl Acetate	ND (0.0050)		8260B		1	09/28/16 18:37	CZI0380	CI62839
<b>Vinyl Chloride</b>	<b>0.0060</b> (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Xylene O	ND (0.0010)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Xylene P,M	ND (0.0020)		8260B		1	09/28/16 18:37	CZI0380	CI62839
Xylenes (Total)	ND (0.0020)		8260B		1	09/28/16 18:37		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	99 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	95 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	99 %		70-130
<i>Surrogate: Toluene-d8</i>	102 %		70-130



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch C162728 - 5030B**

**Blank**

1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							





CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch C162728 - 5030B**

Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Xylenes (Total)	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0242		mg/L	0.02500		97	70-130			
Surrogate: 4-Bromofluorobenzene	0.0237		mg/L	0.02500		95	70-130			
Surrogate: Dibromofluoromethane	0.0242		mg/L	0.02500		97	70-130			
Surrogate: Toluene-d8	0.0254		mg/L	0.02500		102	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	8.93		ug/L	10.00		89	70-130			
1,1,1-Trichloroethane	9.31		ug/L	10.00		93	70-130			
1,1,2,2-Tetrachloroethane	9.29		ug/L	10.00		93	70-130			
1,1,2-Trichloroethane	8.62		ug/L	10.00		86	70-130			
1,1-Dichloroethane	9.50		ug/L	10.00		95	70-130			
1,1-Dichloroethene	9.35		ug/L	10.00		94	70-130			
1,1-Dichloropropene	9.76		ug/L	10.00		98	70-130			
1,2,3-Trichlorobenzene	9.89		ug/L	10.00		99	70-130			
1,2,3-Trichloropropane	9.09		ug/L	10.00		91	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8260B Volatile Organic Compounds**

**Batch C162728 - 5030B**

1,2,4-Trichlorobenzene	9.51		ug/L	10.00		95	70-130			
1,2,4-Trimethylbenzene	8.74		ug/L	10.00		87	70-130			
1,2-Dibromo-3-Chloropropane	8.80		ug/L	10.00		88	70-130			
1,2-Dibromoethane	9.04		ug/L	10.00		90	70-130			
1,2-Dichlorobenzene	9.31		ug/L	10.00		93	70-130			
1,2-Dichloroethane	9.47		ug/L	10.00		95	70-130			
1,2-Dichloropropane	9.36		ug/L	10.00		94	70-130			
1,3,5-Trimethylbenzene	9.32		ug/L	10.00		93	70-130			
1,3-Dichlorobenzene	9.09		ug/L	10.00		91	70-130			
1,3-Dichloropropane	9.77		ug/L	10.00		98	70-130			
1,4-Dichlorobenzene	9.39		ug/L	10.00		94	70-130			
1,4-Dioxane - Screen	291		ug/L	200.0		145	0-332			
1-Chlorohexane	8.47		ug/L	10.00		85	70-130			
2,2-Dichloropropane	8.65		ug/L	10.00		86	70-130			
2-Butanone	49.1		ug/L	50.00		98	70-130			
2-Chlorotoluene	8.75		ug/L	10.00		88	70-130			
2-Hexanone	51.9		ug/L	50.00		104	70-130			
4-Chlorotoluene	8.61		ug/L	10.00		86	70-130			
4-Isopropyltoluene	9.27		ug/L	10.00		93	70-130			
4-Methyl-2-Pentanone	48.4		ug/L	50.00		97	70-130			
Acetone	51.2		ug/L	50.00		102	70-130			
Benzene	9.41		ug/L	10.00		94	70-130			
Bromobenzene	9.54		ug/L	10.00		95	70-130			
Bromochloromethane	9.54		ug/L	10.00		95	70-130			
Bromodichloromethane	9.13		ug/L	10.00		91	70-130			
Bromoform	8.48		ug/L	10.00		85	70-130			
Bromomethane	11.0		ug/L	10.00		110	70-130			
Carbon Disulfide	9.87		ug/L	10.00		99	70-130			
Carbon Tetrachloride	8.88		ug/L	10.00		89	70-130			
Chlorobenzene	9.05		ug/L	10.00		90	70-130			
Chloroethane	9.89		ug/L	10.00		99	70-130			
Chloroform	9.16		ug/L	10.00		92	70-130			
Chloromethane	10.3		ug/L	10.00		103	70-130			
cis-1,2-Dichloroethene	9.55		ug/L	10.00		96	70-130			
cis-1,3-Dichloropropene	9.49		ug/L	10.00		95	70-130			
Dibromochloromethane	9.01		ug/L	10.00		90	70-130			
Dibromomethane	9.25		ug/L	10.00		92	70-130			
Dichlorodifluoromethane	8.53		ug/L	10.00		85	70-130			
Diethyl Ether	9.92		ug/L	10.00		99	70-130			
Di-isopropyl ether	9.58		ug/L	10.00		96	70-130			
Ethyl tertiary-butyl ether	9.31		ug/L	10.00		93	70-130			
Ethylbenzene	9.12		ug/L	10.00		91	70-130			
Hexachlorobutadiene	10.4		ug/L	10.00		104	70-130			
Hexachloroethane	8.55		ug/L	10.00		86	70-130			
Isopropylbenzene	7.73		ug/L	10.00		77	70-130			



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch C162728 - 5030B**

Methyl tert-Butyl Ether	9.57		ug/L	10.00		96	70-130			
Methylene Chloride	9.16		ug/L	10.00		92	70-130			
Naphthalene	9.55		ug/L	10.00		96	70-130			
n-Butylbenzene	9.28		ug/L	10.00		93	70-130			
n-Propylbenzene	9.12		ug/L	10.00		91	70-130			
sec-Butylbenzene	9.05		ug/L	10.00		90	70-130			
Styrene	9.01		ug/L	10.00		90	70-130			
tert-Butylbenzene	9.00		ug/L	10.00		90	70-130			
Tertiary-amyl methyl ether	9.34		ug/L	10.00		93	70-130			
Tetrachloroethene	9.47		ug/L	10.00		95	70-130			
Tetrahydrofuran	9.84		ug/L	10.00		98	70-130			
Toluene	9.35		ug/L	10.00		94	70-130			
trans-1,2-Dichloroethene	9.52		ug/L	10.00		95	70-130			
trans-1,3-Dichloropropene	8.70		ug/L	10.00		87	70-130			
Trichloroethene	9.10		ug/L	10.00		91	70-130			
Trichlorofluoromethane	9.09		ug/L	10.00		91	70-130			
Vinyl Acetate	8.26		ug/L	10.00		83	70-130			
Vinyl Chloride	9.96		ug/L	10.00		100	70-130			
Xylene O	9.05		ug/L	10.00		90	70-130			
Xylene P,M	18.4		ug/L	20.00		92	70-130			
Xylenes (Total)	27.4		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0246		mg/L	0.02500		98	70-130			
Surrogate: 4-Bromofluorobenzene	0.0241		mg/L	0.02500		96	70-130			
Surrogate: Dibromofluoromethane	0.0244		mg/L	0.02500		98	70-130			
Surrogate: Toluene-d8	0.0257		mg/L	0.02500		103	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	8.74		ug/L	10.00		87	70-130	2	25	
1,1,1-Trichloroethane	9.24		ug/L	10.00		92	70-130	0.8	25	
1,1,2,2-Tetrachloroethane	9.56		ug/L	10.00		96	70-130	3	25	
1,1,2-Trichloroethane	9.00		ug/L	10.00		90	70-130	4	25	
1,1-Dichloroethane	9.45		ug/L	10.00		94	70-130	0.5	25	
1,1-Dichloroethene	9.50		ug/L	10.00		95	70-130	2	25	
1,1-Dichloropropene	9.64		ug/L	10.00		96	70-130	1	25	
1,2,3-Trichlorobenzene	9.62		ug/L	10.00		96	70-130	3	25	
1,2,3-Trichloropropane	9.10		ug/L	10.00		91	70-130	0.1	25	
1,2,4-Trichlorobenzene	9.26		ug/L	10.00		93	70-130	3	25	
1,2,4-Trimethylbenzene	8.74		ug/L	10.00		87	70-130	0	25	
1,2-Dibromo-3-Chloropropane	8.49		ug/L	10.00		85	70-130	4	25	
1,2-Dibromoethane	9.02		ug/L	10.00		90	70-130	0.2	25	
1,2-Dichlorobenzene	9.24		ug/L	10.00		92	70-130	0.8	25	
1,2-Dichloroethane	9.26		ug/L	10.00		93	70-130	2	25	
1,2-Dichloropropane	9.07		ug/L	10.00		91	70-130	3	25	
1,3,5-Trimethylbenzene	9.05		ug/L	10.00		90	70-130	3	25	
1,3-Dichlorobenzene	9.01		ug/L	10.00		90	70-130	0.9	25	
1,3-Dichloropropane	9.84		ug/L	10.00		98	70-130	0.7	25	



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8260B Volatile Organic Compounds**

**Batch C162728 - 5030B**

1,4-Dichlorobenzene	9.32		ug/L	10.00		93	70-130	0.7	25	
1,4-Dioxane - Screen	262		ug/L	200.0		131	0-332	10	200	
1-Chlorohexane	8.65		ug/L	10.00		86	70-130	2	25	
2,2-Dichloropropane	8.62		ug/L	10.00		86	70-130	0.3	25	
2-Butanone	49.4		ug/L	50.00		99	70-130	0.5	25	
2-Chlorotoluene	8.95		ug/L	10.00		90	70-130	2	25	
2-Hexanone	54.5		ug/L	50.00		109	70-130	5	25	
4-Chlorotoluene	8.72		ug/L	10.00		87	70-130	1	25	
4-Isopropyltoluene	9.22		ug/L	10.00		92	70-130	0.5	25	
4-Methyl-2-Pentanone	48.3		ug/L	50.00		97	70-130	0.3	25	
Acetone	49.1		ug/L	50.00		98	70-130	4	25	
Benzene	9.30		ug/L	10.00		93	70-130	1	25	
Bromobenzene	9.66		ug/L	10.00		97	70-130	1	25	
Bromochloromethane	9.22		ug/L	10.00		92	70-130	3	25	
Bromodichloromethane	9.12		ug/L	10.00		91	70-130	0.1	25	
Bromoform	8.57		ug/L	10.00		86	70-130	1	25	
Bromomethane	11.0		ug/L	10.00		110	70-130	0.6	25	
Carbon Disulfide	9.95		ug/L	10.00		100	70-130	0.8	25	
Carbon Tetrachloride	8.92		ug/L	10.00		89	70-130	0.4	25	
Chlorobenzene	9.14		ug/L	10.00		91	70-130	1	25	
Chloroethane	9.90		ug/L	10.00		99	70-130	0.1	25	
Chloroform	9.16		ug/L	10.00		92	70-130	0	25	
Chloromethane	10.1		ug/L	10.00		101	70-130	2	25	
cis-1,2-Dichloroethene	9.38		ug/L	10.00		94	70-130	2	25	
cis-1,3-Dichloropropene	9.52		ug/L	10.00		95	70-130	0.3	25	
Dibromochloromethane	8.94		ug/L	10.00		89	70-130	0.8	25	
Dibromomethane	9.19		ug/L	10.00		92	70-130	0.7	25	
Dichlorodifluoromethane	8.40		ug/L	10.00		84	70-130	2	25	
Diethyl Ether	9.87		ug/L	10.00		99	70-130	0.5	25	
Di-isopropyl ether	9.62		ug/L	10.00		96	70-130	0.4	25	
Ethyl tertiary-butyl ether	9.38		ug/L	10.00		94	70-130	0.7	25	
Ethylbenzene	9.16		ug/L	10.00		92	70-130	0.4	25	
Hexachlorobutadiene	9.36		ug/L	10.00		94	70-130	11	25	
Hexachloroethane	7.98		ug/L	10.00		80	70-130	7	25	
Isopropylbenzene	7.67		ug/L	10.00		77	70-130	0.8	25	
Methyl tert-Butyl Ether	9.26		ug/L	10.00		93	70-130	3	25	
Methylene Chloride	9.26		ug/L	10.00		93	70-130	1	25	
Naphthalene	9.57		ug/L	10.00		96	70-130	0.2	25	
n-Butylbenzene	9.19		ug/L	10.00		92	70-130	1	25	
n-Propylbenzene	9.11		ug/L	10.00		91	70-130	0.1	25	
sec-Butylbenzene	8.96		ug/L	10.00		90	70-130	1	25	
Styrene	9.02		ug/L	10.00		90	70-130	0.1	25	
tert-Butylbenzene	9.14		ug/L	10.00		91	70-130	2	25	
Tertiary-amyl methyl ether	9.34		ug/L	10.00		93	70-130	0	25	
Tetrachloroethene	9.18		ug/L	10.00		92	70-130	3	25	



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch C162728 - 5030B**

Tetrahydrofuran	10.1		ug/L	10.00		101	70-130	3	25	
Toluene	9.48		ug/L	10.00		95	70-130	1	25	
trans-1,2-Dichloroethene	9.32		ug/L	10.00		93	70-130	2	25	
trans-1,3-Dichloropropene	8.67		ug/L	10.00		87	70-130	0.3	25	
Trichloroethene	9.00		ug/L	10.00		90	70-130	1	25	
Trichlorofluoromethane	8.04		ug/L	10.00		80	70-130	12	25	
Vinyl Acetate	8.49		ug/L	10.00		85	70-130	3	25	
Vinyl Chloride	9.95		ug/L	10.00		100	70-130	0.1	25	
Xylene O	9.01		ug/L	10.00		90	70-130	0.4	25	
Xylene P,M	18.6		ug/L	20.00		93	70-130	1	25	
Xylenes (Total)	27.6		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0244		mg/L	0.02500		98	70-130			
Surrogate: 4-Bromofluorobenzene	0.0235		mg/L	0.02500		94	70-130			
Surrogate: Dibromofluoromethane	0.0245		mg/L	0.02500		98	70-130			
Surrogate: Toluene-d8	0.0256		mg/L	0.02500		102	70-130			

**Matrix Spike Source: 1609548-01**

1,1,1,2-Tetrachloroethane	8.04		ug/L	10.00	0.00	80	70-130			
1,1,1-Trichloroethane	9.74		ug/L	10.00	0.00	97	70-130			
1,1,2,2-Tetrachloroethane	9.73		ug/L	10.00	0.00	97	70-130			
1,1,2-Trichloroethane	10.0		ug/L	10.00	0.430	96	70-130			
1,1-Dichloroethane	10.7		ug/L	10.00	0.00	107	70-130			
1,1-Dichloroethene	21.5		ug/L	10.00	14.8	68	70-130			M-
1,1-Dichloropropene	10.2		ug/L	10.00	0.00	102	70-130			
1,2,3-Trichlorobenzene	9.49		ug/L	10.00	0.00	95	70-130			
1,2,3-Trichloropropane	9.04		ug/L	10.00	0.00	90	70-130			
1,2,4-Trichlorobenzene	9.19		ug/L	10.00	0.00	92	70-130			
1,2,4-Trimethylbenzene	8.83		ug/L	10.00	0.00	88	70-130			
1,2-Dibromo-3-Chloropropane	7.52		ug/L	10.00	0.00	75	70-130			
1,2-Dibromoethane	8.64		ug/L	10.00	0.00	86	70-130			
1,2-Dichlorobenzene	9.33		ug/L	10.00	0.00	93	70-130			
1,2-Dichloroethane	10.4		ug/L	10.00	0.00	104	70-130			
1,2-Dichloropropane	17.8		ug/L	10.00	0.00	178	70-130			M+
1,3,5-Trimethylbenzene	9.29		ug/L	10.00	0.00	93	70-130			
1,3-Dichlorobenzene	9.29		ug/L	10.00	0.00	93	70-130			
1,3-Dichloropropane	9.54		ug/L	10.00	0.00	95	70-130			
1,4-Dichlorobenzene	9.66		ug/L	10.00	0.00	97	70-130			
1,4-Dioxane - Screen	258		ug/L	200.0	0.00	129	0-332			
1-Chlorohexane	7.65		ug/L	10.00	0.00	76	70-130			
2,2-Dichloropropane	8.51		ug/L	10.00	0.00	85	70-130			
2-Butanone	55.6		ug/L	50.00	0.00	111	70-130			
2-Chlorotoluene	8.94		ug/L	10.00	0.00	89	70-130			
2-Hexanone	49.8		ug/L	50.00	0.00	100	70-130			
4-Chlorotoluene	8.91		ug/L	10.00	0.00	89	70-130			
4-Isopropyltoluene	9.15		ug/L	10.00	0.00	92	70-130			
4-Methyl-2-Pentanone	50.1		ug/L	50.00	0.00	100	70-130			



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch C162728 - 5030B**

Acetone	56.6		ug/L	50.00	1.38	110	70-130			
Benzene	10.0		ug/L	10.00	0.330	97	70-130			
Bromobenzene	9.26		ug/L	10.00	0.00	93	70-130			
Bromochloromethane	9.95		ug/L	10.00	0.00	100	70-130			
Bromodichloromethane	9.14		ug/L	10.00	0.00	91	70-130			
Bromoform	7.52		ug/L	10.00	0.00	75	70-130			
Bromomethane	8.28		ug/L	10.00	0.00	83	70-130			
Carbon Disulfide	11.1		ug/L	10.00	0.00	111	70-130			
Carbon Tetrachloride	8.55		ug/L	10.00	0.00	86	70-130			
Chlorobenzene	8.77		ug/L	10.00	0.00	88	70-130			
Chloroethane	11.1		ug/L	10.00	0.00	111	70-130			
Chloroform	10.4		ug/L	10.00	0.630	97	70-130			
Chloromethane	10.9		ug/L	10.00	0.00	109	70-130			
cis-1,2-Dichloroethene	131		ug/L	10.00	132	NR	70-130			E, MT
cis-1,3-Dichloropropene	9.41		ug/L	10.00	0.00	94	70-130			
Dibromochloromethane	8.29		ug/L	10.00	0.00	83	70-130			
Dibromomethane	9.68		ug/L	10.00	0.00	97	70-130			
Dichlorodifluoromethane	9.84		ug/L	10.00	0.00	98	70-130			
Diethyl Ether	11.2		ug/L	10.00	0.00	112	70-130			
Di-isopropyl ether	10.9		ug/L	10.00	0.00	109	70-130			
Ethyl tertiary-butyl ether	9.88		ug/L	10.00	0.00	99	70-130			
Ethylbenzene	8.49		ug/L	10.00	0.00	85	70-130			
Hexachlorobutadiene	9.06		ug/L	10.00	0.00	91	70-130			
Hexachloroethane	7.22		ug/L	10.00	0.00	72	70-130			
Isopropylbenzene	7.94		ug/L	10.00	0.00	79	70-130			
Methyl tert-Butyl Ether	9.83		ug/L	10.00	0.00	98	70-130			
Methylene Chloride	10.7		ug/L	10.00	0.00	107	70-130			
Naphthalene	9.38		ug/L	10.00	0.130	92	70-130			
n-Butylbenzene	9.11		ug/L	10.00	0.00	91	70-130			
n-Propylbenzene	9.00		ug/L	10.00	0.00	90	70-130			
sec-Butylbenzene	9.05		ug/L	10.00	0.00	90	70-130			
Styrene	8.27		ug/L	10.00	0.00	83	70-130			
tert-Butylbenzene	9.21		ug/L	10.00	0.00	92	70-130			
Tertiary-amyl methyl ether	9.47		ug/L	10.00	0.00	95	70-130			
Tetrachloroethene	13.5		ug/L	10.00	6.80	67	70-130			M-
Tetrahydrofuran	8.97		ug/L	10.00	0.00	90	70-130			
Toluene	9.86		ug/L	10.00	0.00	99	70-130			
trans-1,2-Dichloroethene	15.1		ug/L	10.00	5.82	92	70-130			
trans-1,3-Dichloropropene	8.59		ug/L	10.00	0.00	86	70-130			
Trichloroethene	1280		ug/L	10.00	2810	NR	70-130			E, MT
Trichlorofluoromethane	10.1		ug/L	10.00	0.00	101	70-130			
Vinyl Acetate	7.99		ug/L	10.00	0.00	80	70-130			
Vinyl Chloride	14.6		ug/L	10.00	6.20	84	70-130			
Xylene O	8.32		ug/L	10.00	0.00	83	70-130			
Xylene P,M	17.1		ug/L	20.00	0.00	85	70-130			



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch C162728 - [CALC]**

Xylenes (Total)	25.4		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0252		mg/L	0.02500		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.0208		mg/L	0.02500		83	70-130			
Surrogate: Dibromofluoromethane	0.0255		mg/L	0.02500		102	70-130			
Surrogate: Toluene-d8	0.0237		mg/L	0.02500		95	70-130			

**Matrix Spike Dup Source: 1609548-01**

1,1,1,2-Tetrachloroethane	9.33		ug/L	10.00	0.00	93	70-130	15	30	
1,1,1-Trichloroethane	9.62		ug/L	10.00	0.00	96	70-130	1	30	
1,1,2,2-Tetrachloroethane	10.3		ug/L	10.00	0.00	103	70-130	5	30	
1,1,2-Trichloroethane	10.0		ug/L	10.00	0.430	96	70-130	0	30	
1,1-Dichloroethane	10.6		ug/L	10.00	0.00	106	70-130	1	30	
1,1-Dichloroethene	21.6		ug/L	10.00	14.8	69	70-130	2	30	M-
1,1-Dichloropropene	10.0		ug/L	10.00	0.00	100	70-130	1	30	
1,2,3-Trichlorobenzene	9.70		ug/L	10.00	0.00	97	70-130	2	30	
1,2,3-Trichloropropane	9.30		ug/L	10.00	0.00	93	70-130	3	30	
1,2,4-Trichlorobenzene	9.65		ug/L	10.00	0.00	96	70-130	5	30	
1,2,4-Trimethylbenzene	9.06		ug/L	10.00	0.00	91	70-130	3	30	
1,2-Dibromo-3-Chloropropane	7.86		ug/L	10.00	0.00	79	70-130	4	30	
1,2-Dibromoethane	9.78		ug/L	10.00	0.00	98	70-130	12	30	
1,2-Dichlorobenzene	9.64		ug/L	10.00	0.00	96	70-130	3	30	
1,2-Dichloroethane	10.3		ug/L	10.00	0.00	103	70-130	0.1	30	
1,2-Dichloropropane	18.0		ug/L	10.00	0.00	180	70-130	1	30	M+
1,3,5-Trimethylbenzene	9.49		ug/L	10.00	0.00	95	70-130	2	30	
1,3-Dichlorobenzene	9.27		ug/L	10.00	0.00	93	70-130	0.2	30	
1,3-Dichloropropane	10.8		ug/L	10.00	0.00	108	70-130	13	30	
1,4-Dichlorobenzene	9.92		ug/L	10.00	0.00	99	70-130	3	30	
1,4-Dioxane - Screen	270		ug/L	200.0	0.00	135	0-332	4	200	
1-Chlorohexane	8.77		ug/L	10.00	0.00	88	70-130	14	30	
2,2-Dichloropropane	8.41		ug/L	10.00	0.00	84	70-130	1	30	
2-Butanone	55.0		ug/L	50.00	0.00	110	70-130	1	30	
2-Chlorotoluene	9.17		ug/L	10.00	0.00	92	70-130	3	30	
2-Hexanone	56.4		ug/L	50.00	0.00	113	70-130	12	30	
4-Chlorotoluene	9.11		ug/L	10.00	0.00	91	70-130	2	30	
4-Isopropyltoluene	9.70		ug/L	10.00	0.00	97	70-130	6	30	
4-Methyl-2-Pentanone	51.1		ug/L	50.00	0.00	102	70-130	2	30	
Acetone	60.3		ug/L	50.00	1.38	118	70-130	7	30	
Benzene	10.3		ug/L	10.00	0.330	100	70-130	3	30	
Bromobenzene	10.2		ug/L	10.00	0.00	102	70-130	10	30	
Bromochloromethane	10.2		ug/L	10.00	0.00	102	70-130	3	30	
Bromodichloromethane	9.43		ug/L	10.00	0.00	94	70-130	3	30	
Bromoform	8.30		ug/L	10.00	0.00	83	70-130	10	30	
Bromomethane	8.95		ug/L	10.00	0.00	90	70-130	8	30	
Carbon Disulfide	11.2		ug/L	10.00	0.00	112	70-130	2	30	
Carbon Tetrachloride	8.78		ug/L	10.00	0.00	88	70-130	3	30	
Chlorobenzene	9.85		ug/L	10.00	0.00	98	70-130	12	30	





CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch CI62728 - 5030B**

Chloroethane	11.0		ug/L	10.00	0.00	110	70-130	0.8	30	
Chloroform	10.2		ug/L	10.00	0.630	95	70-130	2	30	
Chloromethane	11.4		ug/L	10.00	0.00	114	70-130	4	30	
cis-1,2-Dichloroethene	131		ug/L	10.00	132	NR	70-130	NR	30	E, MT
cis-1,3-Dichloropropene	9.63		ug/L	10.00	0.00	96	70-130	2	30	
Dibromochloromethane	9.40		ug/L	10.00	0.00	94	70-130	13	30	
Dibromomethane	9.68		ug/L	10.00	0.00	97	70-130	0	30	
Dichlorodifluoromethane	9.94		ug/L	10.00	0.00	99	70-130	1	30	
Diethyl Ether	11.6		ug/L	10.00	0.00	116	70-130	3	30	
Di-isopropyl ether	10.7		ug/L	10.00	0.00	107	70-130	2	30	
Ethyl tertiary-butyl ether	9.92		ug/L	10.00	0.00	99	70-130	0.4	30	
Ethylbenzene	9.68		ug/L	10.00	0.00	97	70-130	13	30	
Hexachlorobutadiene	9.63		ug/L	10.00	0.00	96	70-130	6	30	
Hexachloroethane	7.33		ug/L	10.00	0.00	73	70-130	2	30	
Isopropylbenzene	8.21		ug/L	10.00	0.00	82	70-130	3	30	
Methyl tert-Butyl Ether	9.87		ug/L	10.00	0.00	99	70-130	0.4	30	
Methylene Chloride	10.9		ug/L	10.00	0.00	109	70-130	2	30	
Naphthalene	9.44		ug/L	10.00	0.130	93	70-130	0.6	30	
n-Butylbenzene	9.49		ug/L	10.00	0.00	95	70-130	4	30	
n-Propylbenzene	9.51		ug/L	10.00	0.00	95	70-130	6	30	
sec-Butylbenzene	9.37		ug/L	10.00	0.00	94	70-130	3	30	
Styrene	9.22		ug/L	10.00	0.00	92	70-130	11	30	
tert-Butylbenzene	9.36		ug/L	10.00	0.00	94	70-130	2	30	
Tertiary-amyl methyl ether	9.70		ug/L	10.00	0.00	97	70-130	2	30	
Tetrachloroethene	15.2		ug/L	10.00	6.80	83	70-130	23	30	
Tetrahydrofuran	10.1		ug/L	10.00	0.00	101	70-130	12	30	
Toluene	10.1		ug/L	10.00	0.00	101	70-130	2	30	
trans-1,2-Dichloroethene	14.5		ug/L	10.00	5.82	87	70-130	6	30	
trans-1,3-Dichloropropene	8.79		ug/L	10.00	0.00	88	70-130	2	30	
Trichloroethene	1260		ug/L	10.00	2810	NR	70-130	NR	30	E, MT
Trichlorofluoromethane	10.4		ug/L	10.00	0.00	104	70-130	4	30	
Vinyl Acetate	8.26		ug/L	10.00	0.00	83	70-130	3	30	
Vinyl Chloride	14.6		ug/L	10.00	6.20	84	70-130	0.1	30	
Xylene O	9.45		ug/L	10.00	0.00	94	70-130	13	30	
Xylene P,M	19.4		ug/L	20.00	0.00	97	70-130	13	30	
Xylenes (Total)	28.8		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0252		mg/L	0.02500		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.0236		mg/L	0.02500		94	70-130			
Surrogate: Dibromofluoromethane	0.0259		mg/L	0.02500		103	70-130			
Surrogate: Toluene-d8	0.0262		mg/L	0.02500		105	70-130			

**Batch CI62839 - 5030B**

Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
 Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch C162839 - 5030B**

1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler  
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ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch C162839 - 5030B**

Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Xylenes (Total)	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0247		mg/L	0.02500		99	70-130			
Surrogate: 4-Bromofluorobenzene	0.0227		mg/L	0.02500		91	70-130			
Surrogate: Dibromofluoromethane	0.0246		mg/L	0.02500		98	70-130			
Surrogate: Toluene-d8	0.0252		mg/L	0.02500		101	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	8.14		ug/L	10.00		81	70-130			
1,1,1-Trichloroethane	9.11		ug/L	10.00		91	70-130			
1,1,2,2-Tetrachloroethane	9.66		ug/L	10.00		97	70-130			
1,1,2-Trichloroethane	9.34		ug/L	10.00		93	70-130			
1,1-Dichloroethane	9.55		ug/L	10.00		96	70-130			
1,1-Dichloroethene	9.63		ug/L	10.00		96	70-130			
1,1-Dichloropropene	9.94		ug/L	10.00		99	70-130			
1,2,3-Trichlorobenzene	9.48		ug/L	10.00		95	70-130			
1,2,3-Trichloropropane	8.74		ug/L	10.00		87	70-130			
1,2,4-Trichlorobenzene	9.31		ug/L	10.00		93	70-130			
1,2,4-Trimethylbenzene	8.62		ug/L	10.00		86	70-130			
1,2-Dibromo-3-Chloropropane	8.39		ug/L	10.00		84	70-130			
1,2-Dibromoethane	9.15		ug/L	10.00		92	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
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ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8260B Volatile Organic Compounds**

**Batch C162839 - 5030B**

1,2-Dichlorobenzene	9.17		ug/L	10.00		92	70-130			
1,2-Dichloroethane	9.58		ug/L	10.00		96	70-130			
1,2-Dichloropropane	9.40		ug/L	10.00		94	70-130			
1,3,5-Trimethylbenzene	9.09		ug/L	10.00		91	70-130			
1,3-Dichlorobenzene	8.88		ug/L	10.00		89	70-130			
1,3-Dichloropropane	9.89		ug/L	10.00		99	70-130			
1,4-Dichlorobenzene	9.23		ug/L	10.00		92	70-130			
1,4-Dioxane - Screen	282		ug/L	200.0		141	0-332			
1-Chlorohexane	8.17		ug/L	10.00		82	70-130			
2,2-Dichloropropane	8.62		ug/L	10.00		86	70-130			
2-Butanone	50.1		ug/L	50.00		100	70-130			
2-Chlorotoluene	8.86		ug/L	10.00		89	70-130			
2-Hexanone	53.0		ug/L	50.00		106	70-130			
4-Chlorotoluene	8.70		ug/L	10.00		87	70-130			
4-Isopropyltoluene	9.19		ug/L	10.00		92	70-130			
4-Methyl-2-Pentanone	47.6		ug/L	50.00		95	70-130			
Acetone	50.6		ug/L	50.00		101	70-130			
Benzene	9.51		ug/L	10.00		95	70-130			
Bromobenzene	9.56		ug/L	10.00		96	70-130			
Bromochloromethane	9.52		ug/L	10.00		95	70-130			
Bromodichloromethane	9.01		ug/L	10.00		90	70-130			
Bromoform	8.26		ug/L	10.00		83	70-130			
Bromomethane	7.55		ug/L	10.00		76	70-130			
Carbon Disulfide	9.98		ug/L	10.00		100	70-130			
Carbon Tetrachloride	8.67		ug/L	10.00		87	70-130			
Chlorobenzene	9.14		ug/L	10.00		91	70-130			
Chloroethane	9.31		ug/L	10.00		93	70-130			
Chloroform	9.21		ug/L	10.00		92	70-130			
Chloromethane	9.80		ug/L	10.00		98	70-130			
cis-1,2-Dichloroethene	9.35		ug/L	10.00		94	70-130			
cis-1,3-Dichloropropene	9.21		ug/L	10.00		92	70-130			
Dibromochloromethane	8.58		ug/L	10.00		86	70-130			
Dibromomethane	9.24		ug/L	10.00		92	70-130			
Dichlorodifluoromethane	8.60		ug/L	10.00		86	70-130			
Diethyl Ether	9.96		ug/L	10.00		100	70-130			
Di-isopropyl ether	9.96		ug/L	10.00		100	70-130			
Ethyl tertiary-butyl ether	9.35		ug/L	10.00		94	70-130			
Ethylbenzene	9.09		ug/L	10.00		91	70-130			
Hexachlorobutadiene	9.70		ug/L	10.00		97	70-130			
Hexachloroethane	7.26		ug/L	10.00		73	70-130			
Isopropylbenzene	7.74		ug/L	10.00		77	70-130			
Methyl tert-Butyl Ether	9.02		ug/L	10.00		90	70-130			
Methylene Chloride	9.74		ug/L	10.00		97	70-130			
Naphthalene	9.31		ug/L	10.00		93	70-130			
n-Butylbenzene	9.19		ug/L	10.00		92	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8260B Volatile Organic Compounds**

**Batch C162839 - 5030B**

n-Propylbenzene	9.07		ug/L	10.00		91	70-130			
sec-Butylbenzene	9.00		ug/L	10.00		90	70-130			
Styrene	8.97		ug/L	10.00		90	70-130			
tert-Butylbenzene	8.91		ug/L	10.00		89	70-130			
Tertiary-amyl methyl ether	9.28		ug/L	10.00		93	70-130			
Tetrachloroethene	9.27		ug/L	10.00		93	70-130			
Tetrahydrofuran	9.72		ug/L	10.00		97	70-130			
Toluene	9.50		ug/L	10.00		95	70-130			
trans-1,2-Dichloroethene	9.69		ug/L	10.00		97	70-130			
trans-1,3-Dichloropropene	8.46		ug/L	10.00		85	70-130			
Trichloroethene	9.43		ug/L	10.00		94	70-130			
Trichlorofluoromethane	8.69		ug/L	10.00		87	70-130			
Vinyl Acetate	9.05		ug/L	10.00		90	70-130			
Vinyl Chloride	10.2		ug/L	10.00		102	70-130			
Xylene O	8.86		ug/L	10.00		89	70-130			
Xylene P,M	18.4		ug/L	20.00		92	70-130			
Xylenes (Total)	27.2		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0257		mg/L	0.02500		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.0238		mg/L	0.02500		95	70-130			
Surrogate: Dibromofluoromethane	0.0253		mg/L	0.02500		101	70-130			
Surrogate: Toluene-d8	0.0257		mg/L	0.02500		103	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	8.41		ug/L	10.00		84	70-130	3	25	
1,1,1-Trichloroethane	9.22		ug/L	10.00		92	70-130	1	25	
1,1,2,2-Tetrachloroethane	9.56		ug/L	10.00		96	70-130	1	25	
1,1,2-Trichloroethane	9.16		ug/L	10.00		92	70-130	2	25	
1,1-Dichloroethane	9.63		ug/L	10.00		96	70-130	0.8	25	
1,1-Dichloroethene	10.0		ug/L	10.00		100	70-130	4	25	
1,1-Dichloropropene	9.71		ug/L	10.00		97	70-130	2	25	
1,2,3-Trichlorobenzene	9.23		ug/L	10.00		92	70-130	3	25	
1,2,3-Trichloropropane	8.83		ug/L	10.00		88	70-130	1	25	
1,2,4-Trichlorobenzene	9.05		ug/L	10.00		90	70-130	3	25	
1,2,4-Trimethylbenzene	8.84		ug/L	10.00		88	70-130	3	25	
1,2-Dibromo-3-Chloropropane	8.10		ug/L	10.00		81	70-130	4	25	
1,2-Dibromoethane	8.97		ug/L	10.00		90	70-130	2	25	
1,2-Dichlorobenzene	9.38		ug/L	10.00		94	70-130	2	25	
1,2-Dichloroethane	9.67		ug/L	10.00		97	70-130	0.9	25	
1,2-Dichloropropane	9.58		ug/L	10.00		96	70-130	2	25	
1,3,5-Trimethylbenzene	8.87		ug/L	10.00		89	70-130	2	25	
1,3-Dichlorobenzene	8.97		ug/L	10.00		90	70-130	1	25	
1,3-Dichloropropane	9.71		ug/L	10.00		97	70-130	2	25	
1,4-Dichlorobenzene	9.27		ug/L	10.00		93	70-130	0.4	25	
1,4-Dioxane - Screen	256		ug/L	200.0		128	0-332	9	200	
1-Chlorohexane	8.05		ug/L	10.00		80	70-130	1	25	
2,2-Dichloropropane	8.49		ug/L	10.00		85	70-130	2	25	



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8260B Volatile Organic Compounds**

**Batch C162839 - 5030B**

2-Butanone	51.3		ug/L	50.00		103	70-130	2	25	
2-Chlorotoluene	8.93		ug/L	10.00		89	70-130	0.8	25	
2-Hexanone	52.4		ug/L	50.00		105	70-130	1	25	
4-Chlorotoluene	8.86		ug/L	10.00		89	70-130	2	25	
4-Isopropyltoluene	9.09		ug/L	10.00		91	70-130	1	25	
4-Methyl-2-Pentanone	49.1		ug/L	50.00		98	70-130	3	25	
Acetone	52.4		ug/L	50.00		105	70-130	4	25	
Benzene	9.41		ug/L	10.00		94	70-130	1	25	
Bromobenzene	9.84		ug/L	10.00		98	70-130	3	25	
Bromochloromethane	9.28		ug/L	10.00		93	70-130	3	25	
Bromodichloromethane	9.11		ug/L	10.00		91	70-130	1	25	
Bromoform	7.89		ug/L	10.00		79	70-130	5	25	
Bromomethane	7.96		ug/L	10.00		80	70-130	5	25	
Carbon Disulfide	10.2		ug/L	10.00		102	70-130	2	25	
Carbon Tetrachloride	8.62		ug/L	10.00		86	70-130	0.6	25	
Chlorobenzene	9.05		ug/L	10.00		90	70-130	1	25	
Chloroethane	10.6		ug/L	10.00		106	70-130	13	25	
Chloroform	9.26		ug/L	10.00		93	70-130	0.5	25	
Chloromethane	10.5		ug/L	10.00		105	70-130	7	25	
cis-1,2-Dichloroethene	9.62		ug/L	10.00		96	70-130	3	25	
cis-1,3-Dichloropropene	9.18		ug/L	10.00		92	70-130	0.3	25	
Dibromochloromethane	8.40		ug/L	10.00		84	70-130	2	25	
Dibromomethane	9.15		ug/L	10.00		92	70-130	1	25	
Dichlorodifluoromethane	8.83		ug/L	10.00		88	70-130	3	25	
Diethyl Ether	10.3		ug/L	10.00		103	70-130	3	25	
Di-isopropyl ether	9.87		ug/L	10.00		99	70-130	0.9	25	
Ethyl tertiary-butyl ether	9.27		ug/L	10.00		93	70-130	0.9	25	
Ethylbenzene	8.96		ug/L	10.00		90	70-130	1	25	
Hexachlorobutadiene	9.01		ug/L	10.00		90	70-130	7	25	
Hexachloroethane	7.53		ug/L	10.00		75	70-130	4	25	
Isopropylbenzene	7.68		ug/L	10.00		77	70-130	0.8	25	
Methyl tert-Butyl Ether	9.31		ug/L	10.00		93	70-130	3	25	
Methylene Chloride	9.89		ug/L	10.00		99	70-130	2	25	
Naphthalene	9.31		ug/L	10.00		93	70-130	0	25	
n-Butylbenzene	8.96		ug/L	10.00		90	70-130	3	25	
n-Propylbenzene	9.02		ug/L	10.00		90	70-130	0.6	25	
sec-Butylbenzene	8.93		ug/L	10.00		89	70-130	0.8	25	
Styrene	8.76		ug/L	10.00		88	70-130	2	25	
tert-Butylbenzene	8.97		ug/L	10.00		90	70-130	0.7	25	
Tertiary-amyl methyl ether	9.32		ug/L	10.00		93	70-130	0.4	25	
Tetrachloroethene	9.14		ug/L	10.00		91	70-130	1	25	
Tetrahydrofuran	10.0		ug/L	10.00		100	70-130	3	25	
Toluene	9.47		ug/L	10.00		95	70-130	0.3	25	
trans-1,2-Dichloroethene	9.88		ug/L	10.00		99	70-130	2	25	
trans-1,3-Dichloropropene	8.55		ug/L	10.00		86	70-130	1	25	



*CERTIFICATE OF ANALYSIS*

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ESS Laboratory Work Order: 1609548

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch C162839 - 5030B**

Trichloroethene	9.23		ug/L	10.00		92	70-130	2	25	
Trichlorofluoromethane	8.22		ug/L	10.00		82	70-130	6	25	
Vinyl Acetate	8.96		ug/L	10.00		90	70-130	1	25	
Vinyl Chloride	10.2		ug/L	10.00		102	70-130	0.1	25	
Xylene O	8.70		ug/L	10.00		87	70-130	2	25	
Xylene P,M	18.1		ug/L	20.00		90	70-130	1	25	
Xylenes (Total)	26.8		mg/L							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0251</i>		mg/L	<i>0.02500</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0231</i>		mg/L	<i>0.02500</i>		<i>92</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>0.0252</i>		mg/L	<i>0.02500</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0253</i>		mg/L	<i>0.02500</i>		<i>101</i>	<i>70-130</i>			





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ESS Laboratory Work Order: 1609548

**Notes and Definitions**

- U Analyte included in the analysis, but not detected
- MT Due to high target values, matrix spike analyte(s) is masked (MT).
- M+ Matrix Spike recovery is above upper control limit (M+).
- M- Matrix Spike recovery is below lower control limit (M-).
- E Reported above the quantitation limit; Estimated value (E).
- D Diluted.
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



*CERTIFICATE OF ANALYSIS*

Client Name: AMEC Foster Wheeler  
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1609548

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

[http://www.ct.gov/dph/lib/dph/environmental\\_health/environmental\\_laboratories/pdf/OutOfStateCommercialLaboratories.pdf](http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf)

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

[http://datamine2.state.nj.us/DEP\\_OPRA/OpraMain/pi\\_main?mode=pi\\_by\\_site&sort\\_order=PI\\_NAMEA&Select+a+Site:=58715](http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715)

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

[http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory\\_accreditation\\_program/590095](http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095)

## ESS Laboratory Sample and Cooler Receipt Checklist

Client: AMEC Foster Wheeler - KPB/HDM

ESS Project ID: 1609548

Date Received: 9/26/2016

Shipped/Delivered Via: Client

Project Due Date: 10/3/2016

Days for Project: 5 Day

1. Air bill manifest present?  No

Air No.: NA

6. Does COC match bottles?  Yes

2. Were custody seals present?  No

7. Is COC complete and correct?  Yes

3. Is radiation count <100 CPM?  Yes

8. Were samples received intact?  Yes

4. Is a Cooler Present?  Yes

Temp: 5.3 Iced with: Ice

9. Were labs informed about short holds & rushes? Yes / No (NA)

5. Was COC signed and dated by client?  Yes

10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No

ESS Sample IDs: \_\_\_\_\_

Analysis: \_\_\_\_\_

TAT: \_\_\_\_\_

12. Were VOAs received? Yes / No

a. Air bubbles in aqueous VOAs? Yes / No

b. Does methanol cover soil completely? Yes / No (NA)

13. Are the samples properly preserved? Yes / No

a. If metals preserved upon receipt: Date: \_\_\_\_\_

Time: \_\_\_\_\_ By: \_\_\_\_\_

b. Low Level VOA vials frozen: Date: \_\_\_\_\_

Time: \_\_\_\_\_ By: \_\_\_\_\_

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No

a. Was there a need to contact the client? Yes / No

Who was contacted? \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ By: \_\_\_\_\_

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	69820	Yes	No	Yes	VOA Vial - HCl	HCL	
01	69821	Yes	No	Yes	VOA Vial - HCl	HCL	
01	69822	Yes	No	Yes	VOA Vial - HCl	HCL	
01	69823	Yes	No	Yes	VOA Vial - HCl	HCL	
01	69824	Yes	No	Yes	VOA Vial - HCl	HCL	
01	69825	Yes	No	Yes	VOA Vial - HCl	HCL	
01	69826	Yes	No	Yes	VOA Vial - HCl	HCL	
01	69827	Yes	No	Yes	VOA Vial - HCl	HCL	
01	69828	Yes	No	Yes	VOA Vial - HCl	HCL	
02	69829	Yes	No	Yes	VOA Vial - HCl	HCL	
02	69830	Yes	No	Yes	VOA Vial - HCl	HCL	
02	69831	Yes	No	Yes	VOA Vial - HCl	HCL	

**2nd Review**

Are barcode labels on correct containers? Yes / No

Completed By: [Signature] Date & Time: 9/26/16 1210

Reviewed By: [Signature] Date & Time: 9/26/16 1305

Delivered By: [Signature] Date & Time: 9/26/16 1305

# ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston, RI 02910-2211

Tel. (401) 461-7181 Fax (401) 461-4486

www.esslaboratory.com

# CHAIN OF CUSTODY

Turn Time  Standard  Other \_\_\_\_\_

Regulatory State: MA (R) CT NH NJ NY ME Other \_\_\_\_\_

Is this project for any of the following: (please circle)  
 MA-MCP Navy USACE CT DEP Other \_\_\_\_\_

Project # 36521500-0 Project Name Jeton Gushun

Address 271 Mill Rd. Chelmsford, MA PO # 01821 Sec PA

City Chelmsford State MA Fax \_\_\_\_\_

Tel. 978-692-9090 email: Denise.Kim@ameslab.com

ESS Lab # 1609548

Reporting Limits - \_\_\_\_\_

Electronic Deliverables Excel Access PDF

## Analysis

VOC

40-1 Y

40-1 Y

40-1 Y

40-1 Y

40-1 Y

40-1 Y

40-1 Y

40-1 Y

40-1 Y

40-1 Y

40-1 Y

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40-1 Y

40-1 Y

40-1 Y

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present  Yes  No Internal Use Only   Pickup

Seals Intact  Yes  No NA: \_\_\_\_\_

Cooler Temperature: 5.3° / 0E

Sampled by: \_\_\_\_\_

Comments: \_\_\_\_\_

Relinquished by: (Signature, Date & Time) \_\_\_\_\_

Relinquished by: (Signature, Date & Time) \_\_\_\_\_

Relinquished by: (Signature, Date & Time) \_\_\_\_\_

Relinquished by: (Signature, Date & Time) \_\_\_\_\_

Relinquished by: (Signature, Date & Time) \_\_\_\_\_

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Relinquished by: (Signature, Date & Time) \_\_\_\_\_

Relinquished by: (Signature, Date & Time) \_\_\_\_\_

Relinquished by: (Signature, Date & Time) \_\_\_\_\_

Please fax to the laboratory all changes to Chain of Custody

1 (White) Lab Copy

2 (Yellow) Client Receipt

\* By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA