Wood Environment & Infrastructure Solutions, Inc.
271 Mill Road, 3rd Floor
Chelmsford, MA 01824
USA
T: 978-692-9090
www.woodplc.com

April 22, 2021

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 Groundwater Sampling – March 8, 2021
Former Gorham Manufacturing Facility
333 Adelaide Avenue, Providence, Rhode Island
Wood Project No. 3652210306

Dear Mr. Martella:

This letter summarizes the March 8, 2021 collection and analysis of groundwater samples from monitoring well MW-D within Parcel C at the Former Gorham Manufacturing Site in Providence, Rhode Island (Figure 1). This activity was performed to supplement historic periodic groundwater testing done between July 2015 and September 2017. The 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. The groundwater investigations identified low levels of volatile organic compounds (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, tetrachloroethylene and trichloroethylene (PCE/TCE) were present at low levels in groundwater from 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.

RIDEM's Order of Approval required Textron to monitor Parcel C/C-1 groundwater following completion of the remedial action in December 2015, 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 (April 2016 groundwater monitoring report). 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. Since September 2016, only MW-D has been sampled; it has been sampled eight times (September and December 2016, March and September 2017, and April and October 2019, March and September 2020).

At the time of the Parcel C Closure Report submittal in May 2017, TCE and 1,1-dichloroethene (1,1-DCE) were the only analytes present above their respective GB Groundwater Objectives in MW-D. In 2016 and 2017, TCE had been detected at concentrations ranging from 1.4 milligrams per liter (mg/L) to 3.32 mg/l, above its GB Groundwater Objective of 0.54 mg/L. Concentrations of 1,1-DCE ranged from 0.002 mg/L to 0.0149 mg/l; some of these results exceeded the GB Groundwater Criteria of 0.007 mg/L. Concentration trends for both analytes were generally decreasing during 2017.

On April 11, 2019, Wood sampled the one remaining groundwater monitoring well, MW-D (Figure 2). Sample collection included a duplicate groundwater sample from MW-D. The results were presented in a letter report dated May 9, 2019. All April 2019 VOC results, including those for 1,1-DCE and TCE, were below the GB Groundwater Objectives, continuing the decreasing trend observed in 2017.

On October 17, 2019, Wood again sampled monitoring well MW-D, including a duplicate sample. VOC results for 1,1-DCE and TCE increased to slightly above their respective RI GB standard, but remained below their MassDEP GW-3 standard. The results for the two compounds continued to show a gradual long-term downward trend since 2016.

In 2020, the one remaining groundwater monitoring well was sampled twice. APTIM sampled on March 6 and Wood sampled the well on September 2, including a duplicate sample. VOC results for 1,1-DCE and TCE continued to have a gradual downward trend. Results for 1,1-DCE were below both the GB Groundwater Objective and the MassDEP GW-3 Standard while TCE results were still above its GB Groundwater Objective but remained below its MassDEP GW-3 standard.

March 2021 Activities

On March 8, 2021, Wood sampled the one remaining groundwater monitoring well, MW-D (Figure 2), using the U.S. Environmental Protection Agency (USEPA) low-flow methodology. The one sample was submitted under chain-of-custody control to an off-site laboratory for VOC analysis by USEPA Method 8260B. Field data records for this groundwater sampling event are included in **Appendix A**.

Groundwater Sampling Results

Table 1 summarizes the historic VOC concentrations detected in MW-D including the March 2021 groundwater sampling event. VOC concentrations detected in Parcel C (including MW-D) are compared to the GB Groundwater Objectives, as well as the MassDEP GW-3 Standards. The analytical laboratory report for the March 2021 groundwater sampling event is included in **Appendix B**.

As shown in **Table 1**, results from the March 2021 sampling round show that only TCE was detected and the concentration was slightly higher than in the September 2020 sample. The TCE concentration was above its GB Groundwater Objective but remained below its MassDEP GW-3 standard. Historically ,1,1, -DCE is the other compound detected in MW-D. This compound was not detected in the March 2021 sample consistent with the downward trend from past events.

Groundwater Monitoring Approach

Based on the extensive groundwater data collected, VOC concentrations within the northwestern area of Parcel C have been reduced. In 2016 and 2017, only MW-D continued to exhibit exceedances of GB Groundwater Objectives, in particular TCE and 1,1-DCE. Concentrations of those analytes had reduced to below their respective criteria by April 2019, likely as a result of continued biodegradation and natural attenuation in the groundwater. Subsequent to concentrations rebounding slightly above the criteria in October 2019, they have either stayed steady or decreased in the last three sampling rounds (March 2020, September 2020, and March 2021) The results continued to show an overall downward trend since 2016.

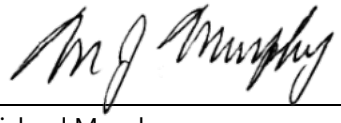
The Parcel C/C-1 area is currently being used by the City of Providence School Department as a soccer field. No buildings are planned in the area of MW-D which is located within the woods on the downhill side of a detention basin. The final Environmental Land Use Restrictions (ELUR) and Soil Management Plan (SMP) has been signed by the City of Providence and filed in the Providence Land Evidence Records. A copy of this signed ELUR and SMP was submitted to RIDEM for their records. The ELUR includes the provision preventing 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 provision addresses the potential future vapor intrusion issue associated with the RIDEM GB Groundwater Objective.

Textron proposes to continue monitoring the groundwater quality at MW-D on a semi-annual basis, pending continued compliance with RIDEM's GB Groundwater Objectives. The next scheduled sampling event is for September 2021. A report will be prepared and submitted to the RIDEM in October 2021, to update the status of this one monitoring well and it will include a recommendation concerning the continuation of the semi-annual monitoring of this well.

Please contact Greg Simpson, Textron, (401-457-2635) or Greg Avenia, Wood, (401-648-9243) if we can provide additional information or answer any questions concerning these groundwater monitoring data and planned future sampling of MW-D.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.



Michael Murphy
Principal Scientist

Gregory Avenia, PE, CFM
Project Manager

Enclosures: Table 1 – Summary of Parcel C/C-1 Groundwater Results 1989 – 2020
Figure 1 – Site Location Map
Figure 2 – Parcel C/C-1 Site Map
Appendix A – Field Data Record September 2020 Sampling Event
Appendix B – Laboratory Report September 2020 Sampling Event

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

Tables

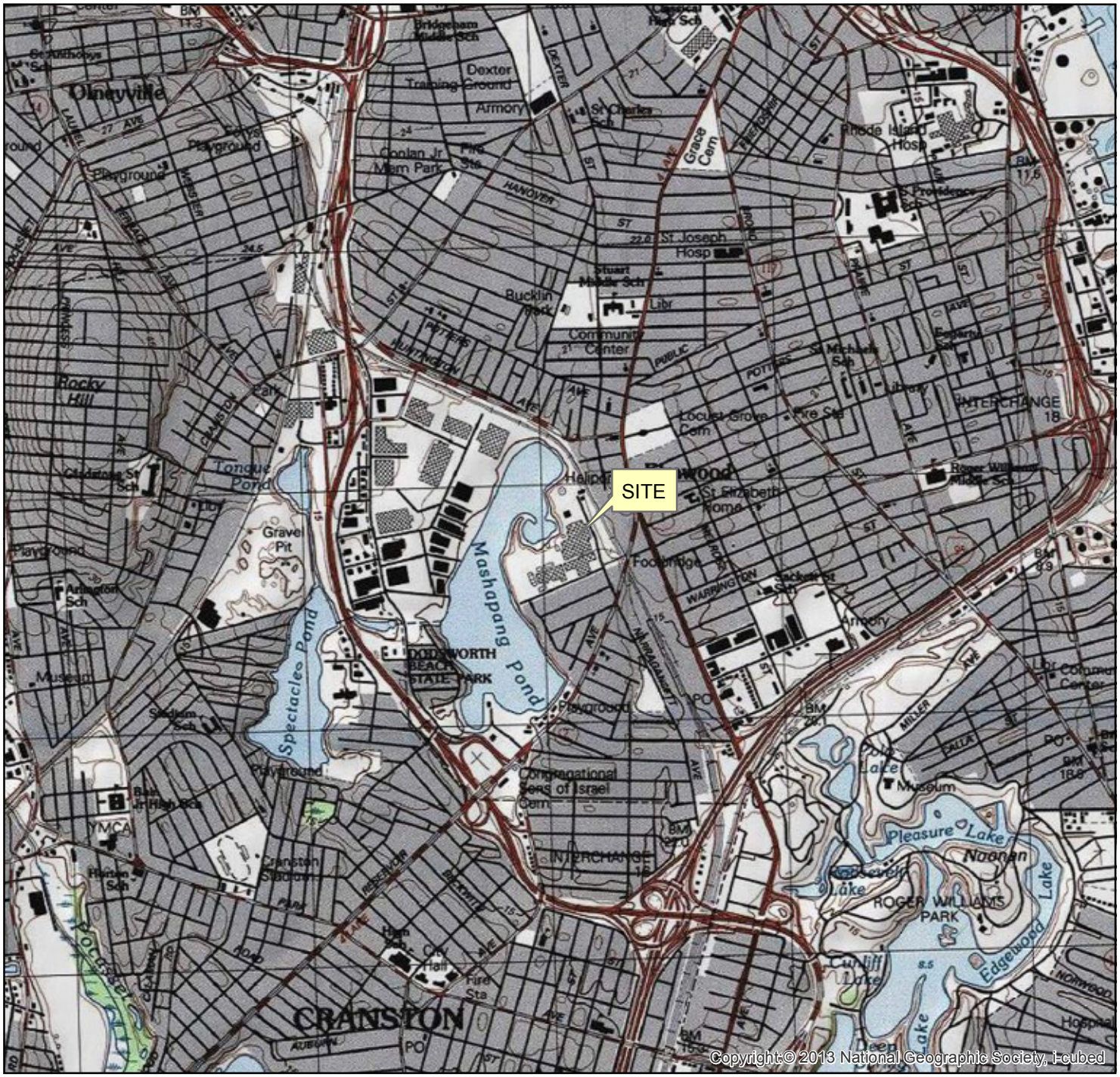
Table 1
MW-D/B-4
Groundwater Results 1989 - 2021
Former Gorham Manufacturing Site
Providence, RI

				Location:	MW-D/B-4																																																													
				Sample Date:	4/13/1989		9/21/1994		10/15/1997		12/9/1998		2/19/2010		7/15/2015				12/17/2015		2/10/2016				4/28/2016				7/6/2016				9/26/2016				12/9/2016				3/27/2017				9/7/2017				4/11/2019				10/17/2019				3/6/2020				9/2/2020		3/8/2021			
				Sample ID:	MW-D		GMMWXX		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		MW-D		DUP-01		MW-D		DUP-1		MW-D		Dup-01		MW-D		DUP-1		MW-D		DUP-1		MW-D		DUP-1		MW-D-		MW-D		Dup-1	
Group	Analyte	Units	RI GB	GW 3	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1-VOC	1,1,1,2-Tetrachloroethane	MG/L	NA	50							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	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	0.025	U	0.001	U	0.001	U
	1,1,1-Trichloroethane	MG/L	3.1	20	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	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	0.001	U	0.025	U	0.001	U	0.001	U
	1,1,2,2-Tetrachloroethane	MG/L	NA	50							0.001	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.012	U	0.0005	U	0.0005	U
	1,1,2-Trichloroethane	MG/L	NA	50							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	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	0.025	U	0.001	U	0.001	U
	1,1-Dichloroethane	MG/L	NA	20	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	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	0.001	U	0.025	U	0.001	U	0.001	U
	1,1-Dichloroethene	MG/L	0.007	30	0.01	U	0.01	U	0.005	U	0.001	U	0.0011		0.0026		0.0025		0.0114		0.0065		0.0069		0.002		0.0019		0.0049		0.0048		0.0148		0.0149		0.0093		0.0089		0.0078		0.0079		0.0071	J	0.0064	J	0.0018		0.0016		0.0086		0.0081		0.0051		0.0048		0.025	U	0.0054		0.0054	
	1,1-Dichloropropene	MG/L	NA	NA							0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.05	U	0.002	U	0.002	U
	1,2,3-Trichlorobenzene	MG/L	NA	NA					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	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	0.12	U	0.001	U	0.001	U
	1,2,3-Trichloropropane	MG/L	NA	NA							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	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	0.05	U	0.001	U	0.001	U
	1,2,4-Trichlorobenzene	MG/L	NA	50							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	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	0.025	U	0.001	U	0.001	U
	1,2,4-Trimethylbenzene	MG/L	NA	NA					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	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	0.025	U	0.001	U	0.001	U
	1,2-Dibromo-3-chloropropane	MG/L	0.002	NA							0.002	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	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	0.005	U	0.12	U	0.005	U	0.005	U
	1,2-Dibromoethane (EDB)	MG/L	NA	50							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	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	0.012	U	0.001	U	0.001	U
	1,2-Dichlorobenzene	MG/L	NA	2							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	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	0.025	U	0.001	U	0.001	U
	1,2-Dichloroethane	MG/L	0.11	20	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	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	0.001	U	0.025	U	0.001	U	0.001	U
	1,2-Dichloroethene (total)	MG/L	NA	NA	0.057																																																													
	1,2-Dichloropropane	MG/L	3	50							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	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	0.025	U	0.001	U	0.001	U
	1,3,5- TRICHLOROBENZENE	mg/L	NA	NA																																																											0.025	U				
	1,3,5-Trimethylbenzene	MG/L	NA	NA							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	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	0.025	U	0.001	U	0.001	U
	1,3-Dichlorobenzene	MG/L	NA	50							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	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	0.025	U	0.001	U	0.001	U
	1,3-Dichloropropane	MG/L	NA	NA							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	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	0.012	U	0.001	U	0.001	U
	1,4-Dichlorobenzene	MG/L	NA	8							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	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	0.025	U	0.001	U	0.001	U
	1,4-Dioxane	MG/L	NA	50									0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	R	0.5	R	1.2	U	0.5	U	0.5	U
	1-Chlorohexane	MG/L	NA	NA									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	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
	2,2-Dichloropropane	MG/L	NA	NA							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	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	0.025	U	0.001	U	0.001	U
	2-Butanone	MG/L	NA	50			0.1	U			0.02	U	0.025	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.5	U	0.01	U	0.01	U
	2-Chlorotoluene	MG/L	NA	NA							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	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	0.025	U	0.001	U	0.001	U
	2-Hexanone	MG/L	NA	NA							0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.25	U	0.01	U	0.01	U
	4-Chlorotoluene	MG/L	NA	NA							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	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	0.025	U	0.001	U	0.001	U
	4-Isopropyltoluene	MG/L	NA	NA							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	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	0.025	U	0.001	U	0.001	U
	4-Methyl-2-Pentanone	MG/L	NA	50							0.01	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.25	U	0.025	U	0.025	U
	Acetone	MG/L	NA	50	0.05	U	0.1	U	0.1	U	0.02	U	0.025	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	1.2	U	0.01	U	0.01	U
	Acrylonitrile	mg/L	NA	NA																																																											0.12	U				
	Benzene	MG/L	0.14	10	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	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	0.001	U	0.025	U	0.001	U	0.001	U
	Bromobenzene	MG/L	NA	NA							0.001	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.025	U	0.002	U	0.002	U
	Bromochloromethane	MG/L	NA	NA							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	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	0.025	U	0.001	U	0.001	U
	Bromodichloromethane	MG/L	NA	50							0.001	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.012	U	0.0006	U	0.0006	U
	Bromoform	MG/L	NA	50							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	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	0.025	U	0.001	U	0.001	U
	Bromomethane	MG/L	NA	0.8							0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.05	U	0.002	U	0.002	U
	Carbon disulfide	MG/L	NA	NA							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	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	0.12	U	0.001	U	0.001	U
	Carbon tetrachloride	MG/L	0.07	5							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	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	0.12	U	0.001	U	0.001	U
	Chlorobenzene	MG/L	3.2	1							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	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	0.025	U	0.001	U	0.001	U
	Chloroethane	MG/L	NA	NA							0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.05	U	0.002	U	0.002	U
	Chloroform	MG/L	NA	20	0.01	U	0.01	U	0.005	U	0.002		0.0002	J	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	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	0.05	U	0.001	U	0.001	U
	Chloromethane	MG/L	NA	NA							0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.05	U	0.002	U	0.002	U
	cis-1,2-Dichloroethene	MG/L	2.4	50			0.088		0.101		0.07		0.0392		0.0506		0.0466		0.136		0.0742		0.0791		0.0294		0.0258		0.0827		0.0858		0.132		0.166		0.099		0.0965		0.188	J	0.111	J	0.0988		0.0984		0.0268		0.0251		0.0974		0.0946		0.0845		0.0833		0.058		0.0748		0.0756	
	cis-1,3-Dichloropropene	MG/L	NA	NA							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	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	0.012	U	0.0004	U	0.0004	U
	Dibromochloromethane	MG/L	NA	50							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	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	0.012	U	0.001	U	0.001	U
	Dibromomethane	MG/L	NA	NA							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	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	0.025	U	0.001	U	0.001	U
	Dichlorodifluoromethane	MG/L	NA	NA							0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.05	U	0.002	U	0.002	U
	Diethyl ether	MG/L	NA	NA									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	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	0.05	U	0.001	U	0.001	U
	Diisopropyl ether	MG/L	NA	NA									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	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	0.012	U	0.001	U	0.001	U
	Ethyl tertiary-butyl ether	MG/L	NA	NA									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	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	0.012	U	0.001	U	0.001	U
	Ethylbenzene	MG/L	1.6	5	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	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	0.001	U	0.025	U	0.001	U	0.001	U
	Hexachlorobutadiene	MG/L	NA	3					0.005	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.015	U	0.0006	U	0.0006	U
	Hexachloroethane	MG/L	NA	50									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	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
	Isopropylbenzene	MG/L	NA	NA							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	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	0.025	U	0.001	U	0.001	U
	m,p-Xylene	MG/L	NA	5									0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.05	U	0.002	U	0.002	U
	METHYL ACETATE	mg/L	NA	NA																																																											0.025	U				
	Methyl Cyclohexane	mg/L	NA	NA																																																											0.025	U				
	Methylene chloride	MG/L	NA	50	0.01	U	0.01	U	0.005	U	0.001	U	0.004	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.12	U	0.002	U	0.002	U
	Methyl-t-butyl ether	MG/L	5	50							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	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	0.025	U	0.001	U	0.001	U
	Naphthalene	MG/L	NA	20					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	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	0.001	U	0.05	U	0.001	U	0.001	U
	n-Butylbenzene	MG/L	NA	NA							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	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	0.025	U	0.001	U	0.001	U
	n-Propyl Benzene	MG/L	NA	NA							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	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	0.025	U	0.001	U	0.001	U
	o-Xylene	MG/L	NA	5									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	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	0.025	U	0.001	U	0.001	U
	sec-Butylbenzene	MG/L	NA	NA							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	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	0.025	U	0.001	U	0.001	U
	Styrene	MG/L	2.2	6							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	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	0.025	U	0.001	U	0.001	U
	t-Butyl alcohol	mg/L	NA	NA																																																											0.5	U				
	tert-Butylbenzene	MG/L	NA	NA							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	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	0.025	U	0.001	U	0.001	U
	Tertiary-amyl methyl ether	MG/L	NA	NA									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	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	0.012	U	0.001	U	0.001	U
	Tetrachloroethene	MG/L	0.15	30	0.013		0.016		0.012		0.008		0.0044		0.0017		0.0016		0.0037		0.0023		0.0024		0.001	U	0.001	U	0.0035		0.0034		0.0068		0.0067		0.0051		0.0047		0.0046		0.0046		0.0035		0.0038		0.0016		0.0016		0.0034		0.0031		0.0024		0.002		0.025	U	0.0012		0.0012	
	Tetrahydrofuran	MG/L	NA	NA							0.001	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	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	0.005	U	0.25	U	0.005	U	0.005	U
	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	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	0.001	U	0.025	U	0.001	U	0.001	U
	trans-1,2-Dichloroethene	MG/L	2.8	50			0.01	U	0.005	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		0.0046		0.0043		0.0037		0.0035		0.0029		0.0032		0.001	U	0.001	U	0.0046		0.0045		0.0024		0.0025		0.025	U	0.0023		0.0022	
	trans-1,2-Dichloroethene	MG/L	2.8	50							0.001	U																																																						
	trans-1,3-Dichloropropene	MG/L	NA	NA							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	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	0.012	U	0.0004	U	0.0004	U
	trans-1,4-Dichloro-2-butene	mg/L	NA	NA																																																											0.05	U				
	Trichloroethene	MG/L	0.54	5	0.28		0.298		0.37		0.272		0.761		0.826		0.851		3.06		1.73		1.71		0.499		0.514		1.36		1.68		2.81		3.32		2.19		2.2		2.6		2.55		1.71		1.66		0.464		0.473		2.1		1.98		1.28		1.45		1.5		1.45		1.47	
	Trichlorofluoromethane	MG/L	NA	NA							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	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	0.05	U	0.001	U	0.001	U
	Trichlorotrifluoroethane	mg/L	NA	NA																																																											0.025	U				
	Trihalomethanes, Tota	MG/L	NA	NA									0.0036	U	0.001	U	0.001	U																																														
	Vinyl acetate	MG/L	NA	NA									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	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			0.005	U	0.005	U
	Vinyl chloride	MG/L	NA	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		0.0043		0.0041		0.0046		0.0037		0.0054		0.0057		0.0015		0.0014		0.0038		0.0037		0.0039		0.0034		0.05	U	0.0025		0.0025	
	Xylenes, Total	MG/L	NA	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	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.025	U	0.002	U	0.002	U

Notes:
mg/L - milligrams per liter
NS - No Standard Established
U - Not detected
J - Estimated Value
D - Dilution
R = Rejected data during data validation
Yellow highlighted cells exceed the applicable GB Criteria

Prepared By: AKN 3/24/21
Reviewed By:

Figures



Location of Site

SITE LOCATION MAP

Former Gorham
Manufacturing Site

333 Adelaide Avenue
Providence, Rhode Island

Notes & Sources

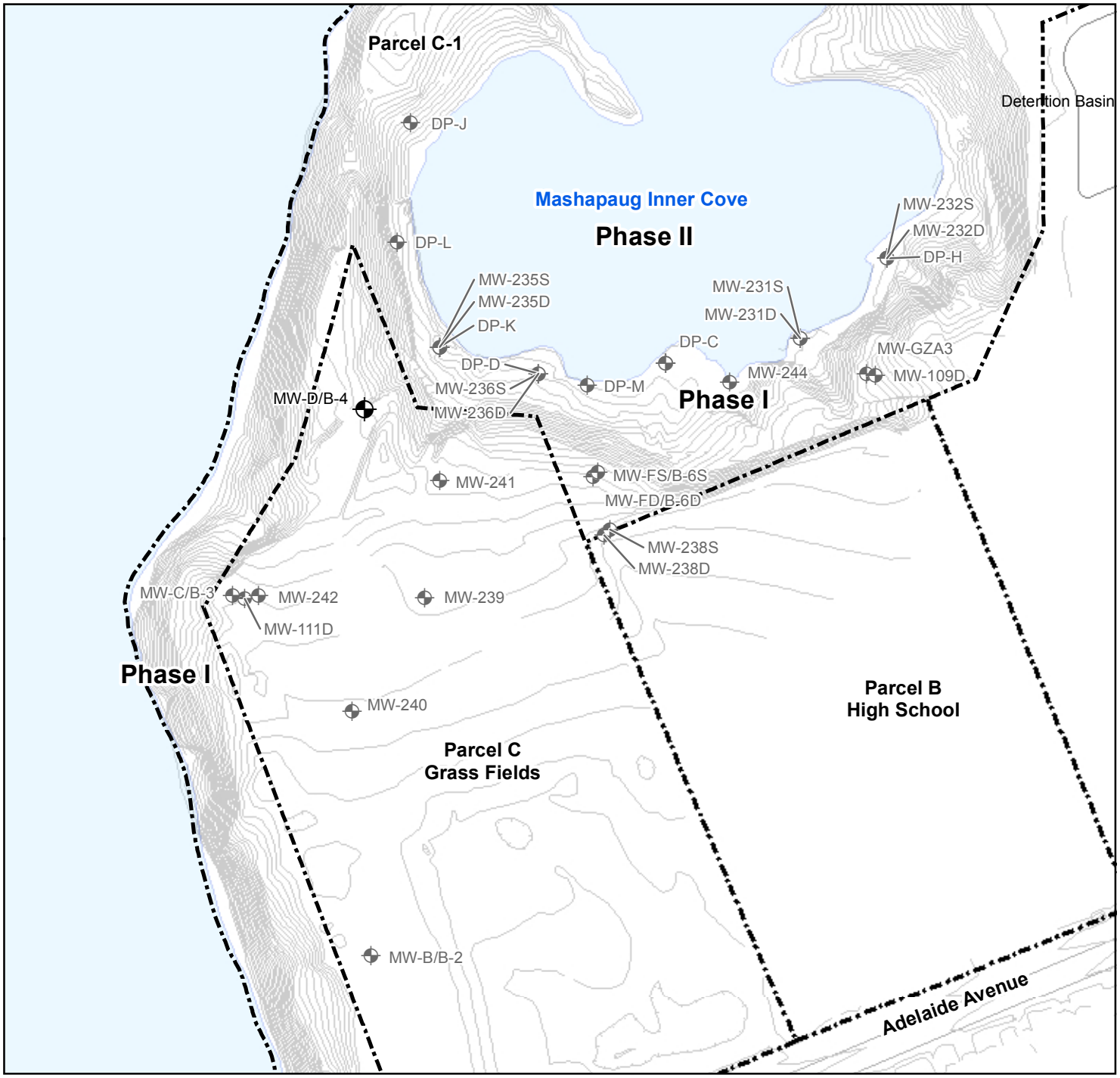
0 1,000 2,000
Feet

N

wood.
Wood Environment &
Infrastructure Solutions, Inc.
271 Mill Road
Chelmsford, MA 01824
(978) 692-9090

FIGURE
1

H:\Textron-Gorham\Providence_RI\Task7\MXD\Fig1_SiteLocus.mxd May 08, 2019 DWN: emily.gardiner CHKD: AKN



PARCEL C: MW-D

Former Gorham Manufacturing Site

333 Adelaide Avenue
Providence, Rhode Island

Legend

- Existing Monitoring Well
- Abandoned Monitoring Well
- Approximate Site Boundary
- Mashapaug Pond
- Elevation Contour

Location of Site

Notes & Sources

0 140 Feet

N

wood.
Wood Environment & Infrastructure Solutions, Inc.
271 Mill Road
Chelmsford, MA 01824
(978) 692-9090

FIGURE
2

H:\Textron-Gorham\Providence_RI\Task7\MXD\Fig1_ParcelC_MW-D.mxd May 08, 2019 DWN: emily.gardiner CHKD: HWC

Appendix A

Field Data Record September 2020 Sampling Event

WOOD.

PAGE 1 OF 1

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT: Testing Ground
SAMPLE ID: ~~MW-D~~ MW-D
TIME START: 1156 END: 1330
WELL ID: MW-D
SITE TYPE: RIDEM
JOB NUMBER: 60522030C
DATE: 3/9/21
BOTTLE TIME: 1325

WATER LEVEL / PUMP SETTINGS

QC SAMPLE COLLECTED: Dup-1
INITIAL DEPTH TO WATER: 20.57 FT.
FINAL DEPTH TO WATER: 20.59 FT.
DRAWDOWN VOLUME: 0 GAL
(initial - final x 0.16 (2-inch) or x 0.65 (4-inch))
TOTAL VOL PURGED: GAL
(purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml)

MEASUREMENT POINT
[Y] TOP OF WELL RISER
[ ] TOP OF PROTECTIVE CASING
[ ] OTHER

WELL DEPTH (TOR): 38.50 FT.
SCREEN LENGTH: 10 FT.
RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: 0.01

PROTECTIVE CASING STICKUP (FROM GROUND): / FT.
PID AMBIENT AIR: / PPMV
PID WELL MOUTH: / PPMV
PRESSURE TO PUMP: / PSI
REFILL TIMER SETTING: / SEC.

PROTECTIVE CASING / WELL DIFFERENCE: / FT.
WELL DIAMETER: 2 IN.

WELL INTEGRITY:

	YES	NO	N/A
CAP	✓		
CASING			
LOCKED		✓	
COLLAR			✓

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
1156	20.57	200 - start purge							~37'	
1206	20.57	200	12.1	359	5.79	1.10	32.4	90.1		
1216	20.57	200	12.1	339	5.90	0.19	4.81	82.0		
1221	20.57	200	12.0	336	5.83	0.13	2.22	81.1		
1226	20.57	200	12.0	333	5.84	0.33	1.11	77.7		
1231	20.57	200	12.0	330	5.87	0.29	1.10	57.7		
1236	20.57	200	12.1	329	5.89	0.27	1.21	44.5		
1241	20.57	200	12.1	325	5.89	0.26	1.00	38.6		
1246	20.57	200	11.9	325	5.90	0.24	1.02	30.9		
1251	20.57	200	12.0	325	5.90	0.24	1.11	26.5		
1256	20.57	200	11.8	323	5.90	0.22	1.03	19.3		
1301	20.57	200	11.9	320	5.91	0.22	1.04	-7.3		
1306	20.57	200	12.0	320	5.91	0.21	1.06	-7.3		
1311	20.57	200	12.0	318	5.91	0.21	1.21	-13.5		
1316	20.57	200	12.0	314	5.91	0.20	1.10	-19.3		
1321	20.57	200	11.9	312	5.89	0.21	1.0	-18.2	✓	

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
[ ] QED BLADDER
[ ] SIMCO BLADDER
[X] GEOPUMP

TYPE OF TUBING
[ ] TEFLON OR TEFLON LINED
[ ] HIGH DENSITY POLYETHYLENE
[X] LDPE

TYPE OF PUMP MATERIAL
[ ] POLYVINYL CHLORIDE
[ ] STAINLESS STEEL
[X] SILICON (Dedicated)

TYPE OF BLADDER MATERIAL
[ ] TEFLON
[ ] OTHER

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
[X] VOC	8260	HCl/MeOH	3 x 40ml	[X]

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES (NO)
NUMBER OF GALLONS GENERATED: _____

SIGNATURE:

NOTES:

Collect Dup

wood.

Prepared by:
Checked by:

FIELD INSTRUMENTATION CALIBRATION RECORD

PROJECT NAME:	Textron Gorham	TASK NO:	DATE: 3/8/21
PROJECT NUMBER:	36522 1036	FIELD CREW:	
PROJECT LOCATION:	Providence, RI	SAMPLER NAME:	Mark Maggio[illegible]
WEATHER CONDITIONS (AM):	Sunny, temp 50s	SAMPLER SIGNATURE:	[signature]
WEATHER CONDITIONS (PM):	"	CHECKED BY:	DATE:

MULTI-PARAMETER WATER QUALITY METER

METER TYPE: YSI
MODEL NO.: 556
UNIT ID NO.:

AM CALIBRATION — Start Time: 1116 End Time: 1125

PM CALIBRATION CHECK — Start Time: End Time:

	Units	Standard Value (AM)	Meter Value (AM)	*Acceptance Criteria (AM)	Standard Value (PM)	Meter Value (PM)	*Acceptance Criteria (PM)
pH (4)	SU	4.0	4.60	+/- 0.1 pH Units			
pH (7)	SU	7.0	7.05	+/- 0.1 pH Units	7.0	7.11	+/- 0.3 pH Units
pH (10)	SU	10.0	—	+/- 0.1 pH Units			
Redox	+/- mV	~~240~~ 238	245.1	+/- 10 mV	~~240~~ 238	230	+/- 10 mV
Sp. Conductivity	µS/cm	~~1413~~ 1000	1001	+/- 3% of standard	~~1413~~ 1000	1003	+/- 5% of standard
DO (saturated)	%	100	112.4	+/- 2% of standard		103.1	%
DO (saturated)	mg/L[1] (see Chart 1)			+/- 0.2 mg/L			+/- 0.5 mg/L of sat. value
DO (<0.1)	mg/L	<0.1		< 0.5 mg/L	DO (<0.1)		< 0.5 mg/L
Temperature	°C		14.3			14.21	°C
Baro. Press.	mmHg		777.3			777.1	mmHg

TURBIDITY METER

METER TYPE: Geotech
MODEL NO.:
UNIT ID NO.:

	Units	Standard Value	Meter Value	Standard Value (PM)	Meter Value (PM)	*Acceptance Criteria (PM)
Standard	NTU	~~10~~ 0.01	0.02	~~10~~ 0.01	0.03	+/- 5% of standard
Standard	NTU	20	20	20	21	
Standard	NTU	100	100	100	103	
Standard	NTU	800	812	800	817	

PHOTOIONIZATION DETECTOR

METER TYPE:
MODEL NO.:
UNIT ID NO.:

	Units	Standard Value	Meter Value	Standard Value (PM)	Meter Value (PM)	*Acceptance Criteria (PM)
Background	ppmv	<0.1		<0.1		within 5 ppmv of BG
Span Gas	ppmv	100		100		+/- 10% of standard

O_2-LEL 4 GAS METER

METER TYPE:
MODEL NO.:
UNIT ID NO.:

	Units	Standard Value	Meter Value	Standard Value (PM)	Meter Value (PM)	*Acceptance Criteria (PM)
Methane	%	50		50		+/- 10% of standard
O_2	%	20.9		20.9		
H_2S	ppmv	25		25		
CO	ppmv	50		50		

OTHER METER

METER TYPE:
MODEL NO.:
UNIT ID NO.:

See Notes Below for Additional Information

☐ Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.

☐ Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above**.

MATERIALS RECORD

Deionized Water Source:
Lot#/Date Produced:
Trip Blank Source: Lab
Sample Preservatives Source: Lab
Disposable Filter Type: 0.45µm
Calibration Fluids / Standard Source:
- DO Calibration Fluid (<0.1 mg/L)
- Other
- Other
- Other

	Cal. Standard Lot Number	Exp. Date
pH (4)	0GK445	11/22
pH (7)	0GK870	11/22
pH (10)	—	—
ORP	0G1912	6/21
Conductivity	0GL248	12/21
0.~~10~~ Turb. Stan.	243 D	9/21
20 Turb. Stan.	239 D	5/21
100 Turb. Stan.	239D	5/21
800 Turb. Stan.	243D	9/21
PID Span Gas		
O_2-LEL Span Gas		
DO		

NOTES:

wood.

* = Unless otherwise noted, calibration procedures and acceptance criteria are in general accordance with USEPA Region 1 SOPs for Field Instrument Calibration (EQASOP-Field Calibration) and Low Stress Purging and Sampling (EQASOP-GW001), each dated 1/19/2010. Additional acceptance criteria obtained from instrument specific manufacturer recommendations.

** = If meter reading is not within acceptance criteria, clean/replace probe and re-calibrate, or use calibrated back-up meter if available. If project requirements necessitate use of the instrument, clearly document any deviations from acceptance criteria on all data sheets and log book entries.

1 = DO Saturated standard value is calculated based on Oxygen Solubility at Indicated Pressure Chart from the USEPA Region 1 SOP for Field Instrument Calibration (EQASOP-Field Calibration), dated 1/19/2010.

Appendix B

Laboratory Report, September 2020 Sampling Event

CERTIFICATE OF ANALYSIS

Denise King
Wood Environment and Infrastructure Solutions, Inc
271 Mill Road
Chelmsford, MA 01824

RE: Textron Gorham - Groundwater (3652210306)
ESS Laboratory Work Order Number: 21C0400

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 1:30 pm, Mar 18, 2021

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 TNI and relative state standards, 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: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 21C0400

SAMPLE RECEIPT

The following samples were received on March 11, 2021 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
21C0400-01	MW-D	Ground Water	8260B
21C0400-02	Dup-1	Ground Water	8260B

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater ESS Laboratory Work Order: 21C0400

PROJECT NARRATIVE

8260B Volatile Organic Compounds
DC11227-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Acetone (26% @ 25%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

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: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 21C0400

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
8015C - 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
MADEP 18-2.1 - 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
5035A - 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: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater
Client Sample ID: MW-D
Date Sampled: 03/08/21 13:25
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 21C0400
ESS Laboratory Sample ID: 21C0400-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,1-Dichloroethane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,1-Dichloroethene	**0.0054** (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,1-Dichloropropene	ND (0.0020)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,2-Dibromoethane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,2-Dichloroethane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,2-Dichloropropane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,3-Dichloropropane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1,4-Dioxane - Screen	ND (0.500)		8260B		1	03/12/21 14:47	D1C0227	DC11227
1-Chlorohexane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
2,2-Dichloropropane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
2-Butanone	ND (0.0100)		8260B		1	03/12/21 14:47	D1C0227	DC11227
2-Chlorotoluene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
2-Hexanone	ND (0.0100)		8260B		1	03/12/21 14:47	D1C0227	DC11227
4-Chlorotoluene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
4-Isopropyltoluene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Acetone	ND (0.0100)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Benzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Bromobenzene	ND (0.0020)		8260B		1	03/12/21 14:47	D1C0227	DC11227

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater
Client Sample ID: MW-D
Date Sampled: 03/08/21 13:25
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 21C0400
ESS Laboratory Sample ID: 21C0400-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Bromodichloromethane	ND (0.0006)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Bromoform	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Bromomethane	ND (0.0020)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Carbon Disulfide	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Carbon Tetrachloride	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Chlorobenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Chloroethane	ND (0.0020)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Chloroform	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Chloromethane	ND (0.0020)		8260B		1	03/12/21 14:47	D1C0227	DC11227
cis-1,2-Dichloroethene	**0.0748** (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Dibromochloromethane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Dibromomethane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Dichlorodifluoromethane	ND (0.0020)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Diethyl Ether	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Di-isopropyl ether	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Ethylbenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Hexachlorobutadiene	ND (0.0006)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Hexachloroethane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Isopropylbenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Methylene Chloride	ND (0.0020)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Naphthalene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
n-Butylbenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
n-Propylbenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
sec-Butylbenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Styrene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
tert-Butylbenzene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Tetrachloroethene	**0.0012** (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater
Client Sample ID: MW-D
Date Sampled: 03/08/21 13:25
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 21C0400
ESS Laboratory Sample ID: 21C0400-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Toluene	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
trans-1,2-Dichloroethene	**0.0023** (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Trichloroethene	**1.45** (0.0500)		8260B		50	03/15/21 15:48	D1C0227	DC11227
Trichlorofluoromethane	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Vinyl Acetate	ND (0.0050)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Vinyl Chloride	**0.0025** (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Xylene O	ND (0.0010)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Xylene P,M	ND (0.0020)		8260B		1	03/12/21 14:47	D1C0227	DC11227
Xylenes (Total)	ND (0.00200)		8260B		1	03/12/21 14:47		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*103 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater
Client Sample ID: Dup-1
Date Sampled: 03/08/21 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 21C0400
ESS Laboratory Sample ID: 21C0400-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,1-Dichloroethane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,1-Dichloroethene	**0.0054** (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,1-Dichloropropene	ND (0.0020)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,2-Dibromoethane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,2-Dichloroethane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,2-Dichloropropane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,3-Dichloropropane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1,4-Dioxane - Screen	ND (0.500)		8260B		1	03/12/21 15:13	D1C0227	DC11227
1-Chlorohexane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
2,2-Dichloropropane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
2-Butanone	ND (0.0100)		8260B		1	03/12/21 15:13	D1C0227	DC11227
2-Chlorotoluene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
2-Hexanone	ND (0.0100)		8260B		1	03/12/21 15:13	D1C0227	DC11227
4-Chlorotoluene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
4-Isopropyltoluene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Acetone	ND (0.0100)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Benzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Bromobenzene	ND (0.0020)		8260B		1	03/12/21 15:13	D1C0227	DC11227

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater
Client Sample ID: Dup-1
Date Sampled: 03/08/21 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 21C0400
ESS Laboratory Sample ID: 21C0400-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Bromodichloromethane	ND (0.0006)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Bromoform	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Bromomethane	ND (0.0020)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Carbon Disulfide	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Carbon Tetrachloride	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Chlorobenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Chloroethane	ND (0.0020)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Chloroform	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Chloromethane	ND (0.0020)		8260B		1	03/12/21 15:13	D1C0227	DC11227
cis-1,2-Dichloroethene	**0.0756** (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Dibromochloromethane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Dibromomethane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Dichlorodifluoromethane	ND (0.0020)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Diethyl Ether	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Di-isopropyl ether	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Ethylbenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Hexachlorobutadiene	ND (0.0006)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Hexachloroethane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Isopropylbenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Methylene Chloride	ND (0.0020)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Naphthalene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
n-Butylbenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
n-Propylbenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
sec-Butylbenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Styrene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
tert-Butylbenzene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Tetrachloroethene	**0.0012** (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater
Client Sample ID: Dup-1
Date Sampled: 03/08/21 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 21C0400
ESS Laboratory Sample ID: 21C0400-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Toluene	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
trans-1,2-Dichloroethene	**0.0022** (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Trichloroethene	**1.47** (0.0500)		8260B		50	03/15/21 16:13	D1C0227	DC11227
Trichlorofluoromethane	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Vinyl Acetate	ND (0.0050)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Vinyl Chloride	**0.0025** (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Xylene O	ND (0.0010)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Xylene P,M	ND (0.0020)		8260B		1	03/12/21 15:13	D1C0227	DC11227
Xylenes (Total)	ND (0.00200)		8260B		1	03/12/21 15:13		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*104 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*102 %*		*70-130*
Surrogate: Toluene-d8	*100 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 21C0400

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DC11227 - 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: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 21C0400

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DC11227 - 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							
Surrogate: 1,2-Dichloroethane-d4	*0.0270*		mg/L	*0.02500*		*108*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0238*		mg/L	*0.02500*		*95*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0257*		mg/L	*0.02500*		*103*	*70-130*			
Surrogate: Toluene-d8	*0.0252*		mg/L	*0.02500*		*101*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0098	0.0010	mg/L	0.01000		98	70-130			
1,1,1-Trichloroethane	0.0100	0.0010	mg/L	0.01000		100	70-130			
1,1,2,2-Tetrachloroethane	0.0102	0.0005	mg/L	0.01000		102	70-130			
1,1,2-Trichloroethane	0.0099	0.0010	mg/L	0.01000		99	70-130			
1,1-Dichloroethane	0.0102	0.0010	mg/L	0.01000		102	70-130			
1,1-Dichloroethene	0.0105	0.0010	mg/L	0.01000		105	70-130			
1,1-Dichloropropene	0.0103	0.0020	mg/L	0.01000		103	70-130			
1,2,3-Trichlorobenzene	0.0105	0.0010	mg/L	0.01000		105	70-130			
1,2,3-Trichloropropane	0.0094	0.0010	mg/L	0.01000		94	70-130			
1,2,4-Trichlorobenzene	0.0104	0.0010	mg/L	0.01000		104	70-130			

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 21C0400

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DC11227 - 5030B										
1,2,4-Trimethylbenzene	0.0102	0.0010	mg/L	0.01000		102	70-130			
1,2-Dibromo-3-Chloropropane	0.0091	0.0050	mg/L	0.01000		91	70-130			
1,2-Dibromoethane	0.0104	0.0010	mg/L	0.01000		104	70-130			
1,2-Dichlorobenzene	0.0097	0.0010	mg/L	0.01000		97	70-130			
1,2-Dichloroethane	0.0100	0.0010	mg/L	0.01000		100	70-130			
1,2-Dichloropropane	0.0101	0.0010	mg/L	0.01000		101	70-130			
1,3,5-Trimethylbenzene	0.0103	0.0010	mg/L	0.01000		103	70-130			
1,3-Dichlorobenzene	0.0098	0.0010	mg/L	0.01000		98	70-130			
1,3-Dichloropropane	0.0102	0.0010	mg/L	0.01000		102	70-130			
1,4-Dichlorobenzene	0.0098	0.0010	mg/L	0.01000		98	70-130			
1,4-Dioxane - Screen	0.201	0.500	mg/L	0.2000		100	0-332			
1-Chlorohexane	0.0101	0.0010	mg/L	0.01000		101	70-130			
2,2-Dichloropropane	0.0102	0.0010	mg/L	0.01000		102	70-130			
2-Butanone	0.0499	0.0100	mg/L	0.05000		100	70-130			
2-Chlorotoluene	0.0098	0.0010	mg/L	0.01000		98	70-130			
2-Hexanone	0.0491	0.0100	mg/L	0.05000		98	70-130			
4-Chlorotoluene	0.0100	0.0010	mg/L	0.01000		100	70-130			
4-Isopropyltoluene	0.0099	0.0010	mg/L	0.01000		99	70-130			
4-Methyl-2-Pentanone	0.0517	0.0250	mg/L	0.05000		103	70-130			
Acetone	0.0565	0.0100	mg/L	0.05000		113	70-130			
Benzene	0.0100	0.0010	mg/L	0.01000		100	70-130			
Bromobenzene	0.0098	0.0020	mg/L	0.01000		98	70-130			
Bromochloromethane	0.0099	0.0010	mg/L	0.01000		99	70-130			
Bromodichloromethane	0.0102	0.0006	mg/L	0.01000		102	70-130			
Bromoform	0.0089	0.0010	mg/L	0.01000		89	70-130			
Bromomethane	0.0098	0.0020	mg/L	0.01000		98	70-130			
Carbon Disulfide	0.0106	0.0010	mg/L	0.01000		106	70-130			
Carbon Tetrachloride	0.0098	0.0010	mg/L	0.01000		98	70-130			
Chlorobenzene	0.0096	0.0010	mg/L	0.01000		96	70-130			
Chloroethane	0.0099	0.0020	mg/L	0.01000		99	70-130			
Chloroform	0.0101	0.0010	mg/L	0.01000		101	70-130			
Chloromethane	0.0092	0.0020	mg/L	0.01000		92	70-130			
cis-1,2-Dichloroethene	0.0102	0.0010	mg/L	0.01000		102	70-130			
cis-1,3-Dichloropropene	0.0093	0.0004	mg/L	0.01000		93	70-130			
Dibromochloromethane	0.0096	0.0010	mg/L	0.01000		96	70-130			
Dibromomethane	0.0100	0.0010	mg/L	0.01000		100	70-130			
Dichlorodifluoromethane	0.0097	0.0020	mg/L	0.01000		97	70-130			
Diethyl Ether	0.0101	0.0010	mg/L	0.01000		101	70-130			
Di-isopropyl ether	0.0103	0.0010	mg/L	0.01000		103	70-130			
Ethyl tertiary-butyl ether	0.0098	0.0010	mg/L	0.01000		98	70-130			
Ethylbenzene	0.0099	0.0010	mg/L	0.01000		99	70-130			
Hexachlorobutadiene	0.0104	0.0006	mg/L	0.01000		104	70-130			
Hexachloroethane	0.0095	0.0010	mg/L	0.01000		95	70-130			
Isopropylbenzene	0.0099	0.0010	mg/L	0.01000		99	70-130			
Methyl tert-Butyl Ether	0.0101	0.0010	mg/L	0.01000		101	70-130			

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 21C0400

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DC11227 - 5030B										
Methylene Chloride	0.0097	0.0020	mg/L	0.01000		97	70-130			
Naphthalene	0.0092	0.0010	mg/L	0.01000		92	70-130			
n-Butylbenzene	0.0104	0.0010	mg/L	0.01000		104	70-130			
n-Propylbenzene	0.0101	0.0010	mg/L	0.01000		101	70-130			
sec-Butylbenzene	0.0099	0.0010	mg/L	0.01000		99	70-130			
Styrene	0.0098	0.0010	mg/L	0.01000		98	70-130			
tert-Butylbenzene	0.0100	0.0010	mg/L	0.01000		100	70-130			
Tertiary-amyl methyl ether	0.0100	0.0010	mg/L	0.01000		100	70-130			
Tetrachloroethene	0.0074	0.0010	mg/L	0.01000		74	70-130			
Tetrahydrofuran	0.0096	0.0050	mg/L	0.01000		97	70-130			
Toluene	0.0100	0.0010	mg/L	0.01000		100	70-130			
trans-1,2-Dichloroethene	0.0102	0.0010	mg/L	0.01000		102	70-130			
trans-1,3-Dichloropropene	0.0093	0.0004	mg/L	0.01000		93	70-130			
Trichloroethene	0.0099	0.0010	mg/L	0.01000		99	70-130			
Trichlorofluoromethane	0.0102	0.0010	mg/L	0.01000		102	70-130			
Vinyl Acetate	0.0101	0.0050	mg/L	0.01000		101	70-130			
Vinyl Chloride	0.0104	0.0010	mg/L	0.01000		104	70-130			
Xylene O	0.0102	0.0010	mg/L	0.01000		102	70-130			
Xylene P,M	0.0210	0.0020	mg/L	0.02000		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0254*		mg/L	*0.02500*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0252*		mg/L	*0.02500*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0257*		mg/L	*0.02500*		*103*	*70-130*			
Surrogate: Toluene-d8	*0.0247*		mg/L	*0.02500*		*99*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0099	0.0010	mg/L	0.01000		99	70-130	1	25	
1,1,1-Trichloroethane	0.0102	0.0010	mg/L	0.01000		102	70-130	2	25	
1,1,2,2-Tetrachloroethane	0.0107	0.0005	mg/L	0.01000		107	70-130	4	25	
1,1,2-Trichloroethane	0.0102	0.0010	mg/L	0.01000		102	70-130	3	25	
1,1-Dichloroethane	0.0104	0.0010	mg/L	0.01000		104	70-130	2	25	
1,1-Dichloroethene	0.0107	0.0010	mg/L	0.01000		107	70-130	2	25	
1,1-Dichloropropene	0.0107	0.0020	mg/L	0.01000		107	70-130	3	25	
1,2,3-Trichlorobenzene	0.0105	0.0010	mg/L	0.01000		105	70-130	0	25	
1,2,3-Trichloropropane	0.0098	0.0010	mg/L	0.01000		98	70-130	5	25	
1,2,4-Trichlorobenzene	0.0105	0.0010	mg/L	0.01000		105	70-130	1	25	
1,2,4-Trimethylbenzene	0.0104	0.0010	mg/L	0.01000		104	70-130	3	25	
1,2-Dibromo-3-Chloropropane	0.0096	0.0050	mg/L	0.01000		96	70-130	5	25	
1,2-Dibromoethane	0.0107	0.0010	mg/L	0.01000		107	70-130	3	25	
1,2-Dichlorobenzene	0.0099	0.0010	mg/L	0.01000		99	70-130	3	25	
1,2-Dichloroethane	0.0103	0.0010	mg/L	0.01000		103	70-130	3	25	
1,2-Dichloropropane	0.0105	0.0010	mg/L	0.01000		105	70-130	4	25	
1,3,5-Trimethylbenzene	0.0105	0.0010	mg/L	0.01000		105	70-130	1	25	
1,3-Dichlorobenzene	0.0100	0.0010	mg/L	0.01000		100	70-130	2	25	
1,3-Dichloropropane	0.0106	0.0010	mg/L	0.01000		106	70-130	3	25	
1,4-Dichlorobenzene	0.0100	0.0010	mg/L	0.01000		100	70-130	1	25	
1,4-Dioxane - Screen	0.209	0.500	mg/L	0.2000		105	0-332	4	200	

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 21C0400

Quality Control Data

8260B Volatile Organic Compounds

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch DC11227 - 5030B										
1-Chlorohexane	0.0106	0.0010	mg/L	0.01000		106	70-130	4	25	
2,2-Dichloropropane	0.0104	0.0010	mg/L	0.01000		104	70-130	2	25	
2-Butanone	0.0525	0.0100	mg/L	0.05000		105	70-130	5	25	
2-Chlorotoluene	0.0101	0.0010	mg/L	0.01000		101	70-130	3	25	
2-Hexanone	0.0520	0.0100	mg/L	0.05000		104	70-130	6	25	
4-Chlorotoluene	0.0103	0.0010	mg/L	0.01000		103	70-130	3	25	
4-Isopropyltoluene	0.0101	0.0010	mg/L	0.01000		101	70-130	2	25	
4-Methyl-2-Pentanone	0.0542	0.0250	mg/L	0.05000		108	70-130	5	25	
Acetone	0.0435	0.0100	mg/L	0.05000		87	70-130	26	25	D+
Benzene	0.0103	0.0010	mg/L	0.01000		103	70-130	3	25	
Bromobenzene	0.0101	0.0020	mg/L	0.01000		101	70-130	3	25	
Bromochloromethane	0.0099	0.0010	mg/L	0.01000		99	70-130	0.4	25	
Bromodichloromethane	0.0105	0.0006	mg/L	0.01000		105	70-130	3	25	
Bromoform	0.0090	0.0010	mg/L	0.01000		90	70-130	1	25	
Bromomethane	0.0103	0.0020	mg/L	0.01000		103	70-130	5	25	
Carbon Disulfide	0.0109	0.0010	mg/L	0.01000		109	70-130	3	25	
Carbon Tetrachloride	0.0100	0.0010	mg/L	0.01000		100	70-130	2	25	
Chlorobenzene	0.0098	0.0010	mg/L	0.01000		98	70-130	2	25	
Chloroethane	0.0108	0.0020	mg/L	0.01000		108	70-130	9	25	
Chloroform	0.0104	0.0010	mg/L	0.01000		104	70-130	3	25	
Chloromethane	0.0099	0.0020	mg/L	0.01000		99	70-130	7	25	
cis-1,2-Dichloroethene	0.0106	0.0010	mg/L	0.01000		106	70-130	4	25	
cis-1,3-Dichloropropene	0.0095	0.0004	mg/L	0.01000		95	70-130	2	25	
Dibromochloromethane	0.0098	0.0010	mg/L	0.01000		98	70-130	1	25	
Dibromomethane	0.0102	0.0010	mg/L	0.01000		102	70-130	2	25	
Dichlorodifluoromethane	0.0100	0.0020	mg/L	0.01000		100	70-130	3	25	
Diethyl Ether	0.0105	0.0010	mg/L	0.01000		105	70-130	3	25	
Di-isopropyl ether	0.0107	0.0010	mg/L	0.01000		107	70-130	3	25	
Ethyl tertiary-butyl ether	0.0101	0.0010	mg/L	0.01000		101	70-130	3	25	
Ethylbenzene	0.0101	0.0010	mg/L	0.01000		101	70-130	2	25	
Hexachlorobutadiene	0.0104	0.0006	mg/L	0.01000		104	70-130	0.3	25	
Hexachloroethane	0.0097	0.0010	mg/L	0.01000		97	70-130	3	25	
Isopropylbenzene	0.0102	0.0010	mg/L	0.01000		102	70-130	2	25	
Methyl tert-Butyl Ether	0.0104	0.0010	mg/L	0.01000		104	70-130	3	25	
Methylene Chloride	0.0102	0.0020	mg/L	0.01000		102	70-130	4	25	
Naphthalene	0.0093	0.0010	mg/L	0.01000		93	70-130	1	25	
n-Butylbenzene	0.0106	0.0010	mg/L	0.01000		106	70-130	2	25	
n-Propylbenzene	0.0103	0.0010	mg/L	0.01000		103	70-130	3	25	
sec-Butylbenzene	0.0101	0.0010	mg/L	0.01000		101	70-130	2	25	
Styrene	0.0100	0.0010	mg/L	0.01000		100	70-130	2	25	
tert-Butylbenzene	0.0103	0.0010	mg/L	0.01000		103	70-130	2	25	
Tertiary-amyl methyl ether	0.0104	0.0010	mg/L	0.01000		104	70-130	4	25	
Tetrachloroethene	0.0076	0.0010	mg/L	0.01000		76	70-130	2	25	
Tetrahydrofuran	0.0101	0.0050	mg/L	0.01000		101	70-130	5	25	
Toluene	0.0102	0.0010	mg/L	0.01000		102	70-130	2	25	

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 21C0400

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DC11227 - 5030B										
trans-1,2-Dichloroethene	0.0105	0.0010	mg/L	0.01000		105	70-130	3	25	
trans-1,3-Dichloropropene	0.0094	0.0004	mg/L	0.01000		94	70-130	1	25	
Trichloroethene	0.0101	0.0010	mg/L	0.01000		101	70-130	2	25	
Trichlorofluoromethane	0.0103	0.0010	mg/L	0.01000		103	70-130	1	25	
Vinyl Acetate	0.0104	0.0050	mg/L	0.01000		104	70-130	3	25	
Vinyl Chloride	0.0112	0.0010	mg/L	0.01000		112	70-130	7	25	
Xylene O	0.0105	0.0010	mg/L	0.01000		105	70-130	3	25	
Xylene P,M	0.0216	0.0020	mg/L	0.02000		108	70-130	3	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0257*		mg/L	*0.02500*		*103*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0253*		mg/L	*0.02500*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0261*		mg/L	*0.02500*		*104*	*70-130*			
Surrogate: Toluene-d8	*0.0250*		mg/L	*0.02500*		*100*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater ESS Laboratory Work Order: 21C0400

Notes and Definitions

U	Analyte included in the analysis, but not detected
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
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
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: Wood Environment and Infrastructure Solutions, In
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 21C0400

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

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

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

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

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Wood Env and Infrastructure Solutions, Inc - KPB

Shipped/Delivered Via: ESS Courier

ESS Project ID: 21C0400
Date Received: 3/11/2021
Project Due Date: 3/18/2021
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 0.4 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
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)
1	142192	Yes	N/A	Yes	VOA Vial	HCl	
1	142193	Yes	N/A	Yes	VOA Vial	HCl	
1	142194	Yes	N/A	Yes	VOA Vial	HCl	
2	142195	Yes	N/A	Yes	VOA Vial	HCl	
2	142196	Yes	N/A	Yes	VOA Vial	HCl	
2	142197	Yes	N/A	Yes	VOA Vial	HCl	

2nd Review
Were all containers scanned into storage/lab? Initials SB
Are barcode labels on correct containers? (Yes) / No
Are all Flashpoint stickers attached/container ID # circled? Yes / No / (NA)
Are all Hex Chrome stickers attached? Yes / No / (NA)
Are all QC stickers attached? Yes / No / (NA)
Are VOA stickers attached if bubbles noted? Yes / No / (NA)

Completed By: Taylor Davis Date & Time: 3/11/21 1641

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Wood Env and Infrastructure Solutions, Inc - KPB

ESS Project ID: 21C0400

Date Received: 3/11/2021

Reviewed By: Amber Garcia

Date & Time: 3/11/21 17:00

ESS LABORATORY

185 Frances Avenue
Cranston, RI 02921
Phone: 401-461-7181
Fax: 401-461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 2100400 | Page 1 of 1

Turn Time: ☐ >5 ☑ 5 ☐ 4 ☐ 3 ☐ 2 ☐ 1 ☐ Same Day

Regulatory State: RI Criteria:

Is this project for any of the following?:
☐ CT RCP ☐ MA MCP ☑ RGP ☐ Permit ☐ 401 WQ

ELECTRONIC DELIVERABLES (Final Reports are PDF)
☐ Limit Checker ☐ State Forms ☐ EQuIS
☑ Excel ☐ Hard Copy ☐ Enviro Data
☐ CLP-Like Package ☐ Other (Specify) →

CLIENT INFORMATION

Client: Wood E+D
Address: 275 Promenade Street
Providence, RI
Phone: 401-648-9243
Email Distribution List: Denise.King@wood.plc

PROJECT INFORMATION

Project Name: Textron Gorham
Project Location: Providence, RI
Project Number: 365210306
Project Manager: Greg Avenia
Bill to: See PM
PO#:
Quote#:

Client acknowledges that sampling is compliant with all EPA / State regulatory programs

REQUESTED ANALYSES

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC (8260)	Total Number of Bottles
1	3/8/21	1325	water	GW	MW-D	X	3
2	3/8/21	—	water	GW	Dup-1	X	3

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial — ✓
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 7
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* — 2

Sampled by: Mark Maggiore

Chain needs to be filled out neatly and completely for on time delivery.

Comments: * Please specify "Other" preservative and containers types in this space

0.4

All samples submitted are subject to ESS Laboratory's payment terms and conditions.

Dissolved Filtration
☐ Lab Filter

Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
	3/9/21	1000			3/11/21	15:49	Taylor Davis 1549 3/11/21
Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)