

2016 Groundwater Quality Survey

MCD staff collected samples from 12 monitoring wells in order to evaluate groundwater quality (see Figure 1). The wells selected for the study are installed in unconfined sand and gravel aquifers with permeable soils at the surface. Seven of the wells are screened at shallow (< 50 feet) depths. Table 1 summarizes depths and screened intervals for all of the monitoring wells in this survey. All of the wells are surrounded by land use that has the potential to release contaminants into the aquifer. The goal of the study is to provide a better understanding of human impacts on groundwater quality across the buried valley aquifer.

MCD equipped each well with a bladder pump installed within the screened interval of the well. The bladder pumps allow low-flow purging techniques to be used (Puls and Barcelona, 1996).

MCD staff collected samples on two occasions in 2016; once between May 3 and 27 (spring 2016) and once between October 3 and 13 (fall 2016). The wells were sampled for a range of compounds including major ions, metals, pesticides, radionuclides, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). The sampling team collected duplicate samples from one location during each sampling event to evaluate laboratory precision. Field blanks were also collected to assess potential contamination from field conditions during sampling.

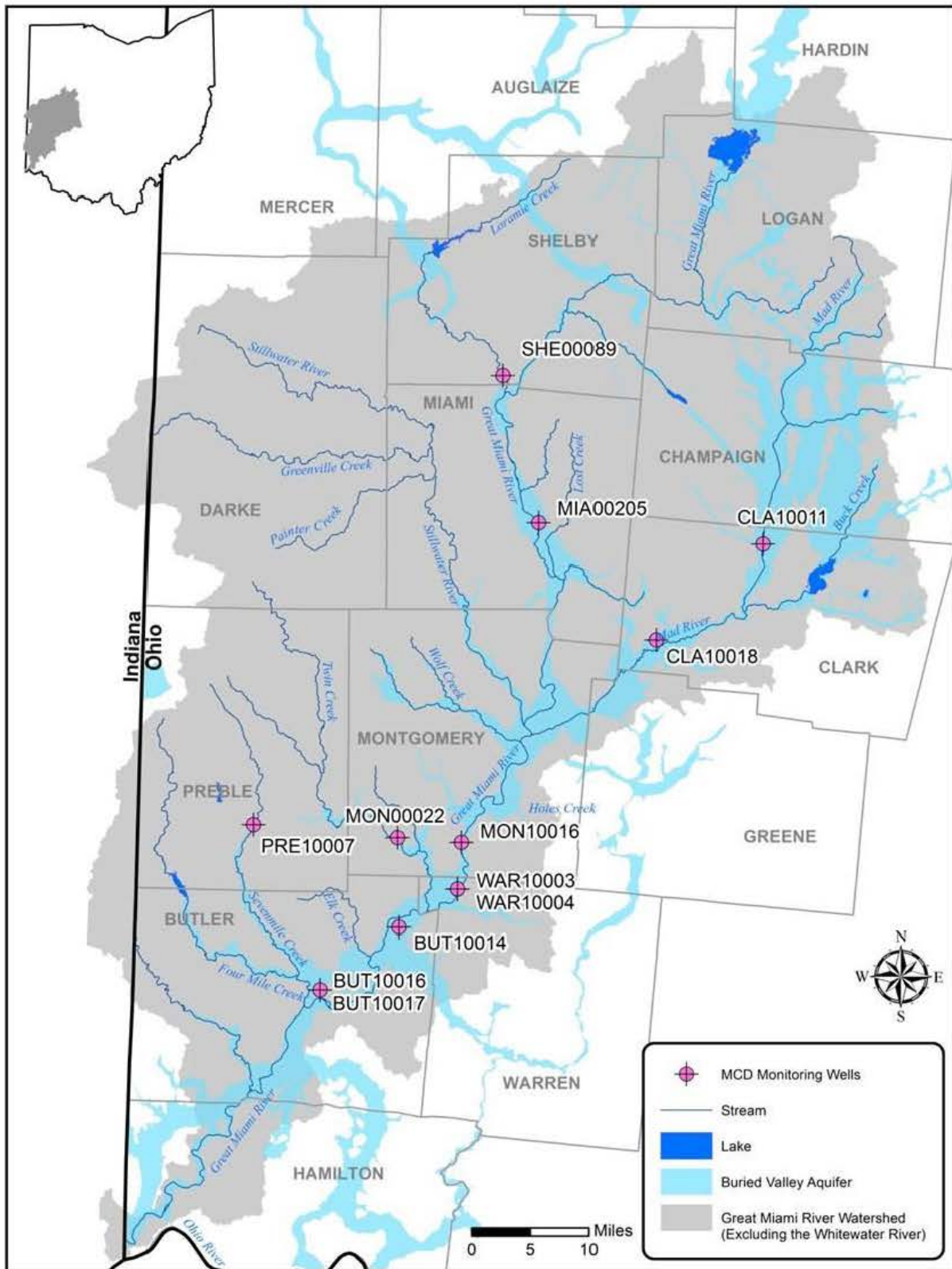
Table 1 – Construction details for groundwater quality monitoring wells

Monitoring Well ID	Casing Diameter (in)	Well Depth (ft)	Screened Interval (ft)	Aquifer Screened
BUT10014	2	40	35 - 40	Sand and Gravel
BUT10016	2	65	60 - 65	Sand and Gravel
BUT10017	2	39	34 - 39	Sand and Gravel
CLA10011	2	60	55 - 60	Sand and Gravel
CLA10018	2	16	11 - 16	Sand and Gravel
MIA00205	2	24	19 - 24	Sand and Gravel
MON00022	2	15	10 - 15	Sand and Gravel
MON10016	2	108	88 - 108	Sand and Gravel
PRE10007	2	60	40 - 60	Sand and Gravel
SHE00089	2	43	38 - 43	Sand and Gravel
WAR10003	2	67	62 - 67	Sand and Gravel
WAR10004	2	32.5	27.5 – 32.5	Sand and Gravel

MCD compared the results of this study to federal drinking water standards and health based screening levels. Drinking water standards are generally more stringent than other standards, so groundwater that meets drinking water standards should be suitable for other uses.

National Primary Drinking Water Regulations for parameters are legally enforceable standards by the USEPA that apply to public water systems. Primary standards set maximum contaminant levels (MCLs) that help protect public health by limiting the contaminant levels in drinking

Figure 1 – Locations of groundwater quality monitoring well sites



water. National Secondary Drinking Water Standards are advisable guidelines addressing secondary maximum contaminant levels (SMCLs) that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. The USEPA recommends, but does not require, that water systems incorporate secondary standards. The USEPA Office of Water also publishes non enforceable health-based screening levels (HBSLs) for some constituents which may pose potential human-health concerns but do not yet have an enforceable standard. HBSLs are used as a supplement for evaluating contaminants in drinking water in a human-health context.

Results

Appendix A contains all analytical results for this groundwater quality survey. In summary, the results of the groundwater quality study show samples collected from 8 of the 12 monitoring wells met all human health-based drinking water standards including MCLs and HBSLs for both sampling events (see Table 2). At least one analyte in groundwater samples from monitoring wells BUT10014, BUT10016, BUT10017, and CLA10018 exceeded an MCL or HBSL. Spring and fall groundwater samples collected from monitoring well BUT10014 exceeded the MCL for Trichloroethene (TCE). The spring groundwater sample collected from monitoring well BUT10016 exceeded the HBSL for manganese and molybdenum but the fall groundwater sample only exceeded the HBSL for manganese. The fall groundwater sample collected from monitoring well BUT10017 exceeded the MCL for bis(2-ethylhexyl)phthalate (DEHP). Nitrate concentrations in the fall groundwater sample collected from monitoring well CLA10018 exceeded the MCL. DEHP, nitrate, TCE, manganese, and molybdenum were the only analytes detected at concentrations exceeding human-health-based drinking water standards.

Samples collected from 8 of the 12 monitoring wells exceeded an SMCL for at least one analyte in the spring sampling event (see Table 2). Analytes present above an SMCL occurred in groundwater samples from 9 of the 12 monitoring wells for the fall event. Analytes present at concentrations exceeding SMCLs included iron, manganese, and total dissolved solids.

There were also detections of analytes which reflected anthropogenic sources of contaminants that did not exceed any regulatory standards. These contaminants included chloride, sodium, and n-butylbenzene. Chloride and sodium are present in groundwater naturally, but human activities can elevate the concentration of these elements well above background levels. The compound n-butylbenzene is a manufactured hydrocarbon compound and its presence in groundwater likely reflects human activities on land over the buried valley aquifer.

VOCs

DEHP is a member of a group of the compound class known as phthalates which are plasticizers used to make polyvinyl chloride (PVC). The MCL for DEHP is 6 µg/L. DEHP was detected in the fall groundwater samples from monitoring wells BUT10017 and PRE10007 at concentrations of 16.2 and 1.15 µg/L respectively. DEHP was not detected in any groundwater samples collected during the spring sampling event.

TCE is a VOC used primarily to remove grease from fabricated metal parts. The MCL for trichloroethene is 5 µg/L. TCE was detected in both the spring and fall groundwater samples well BUT10014 at concentrations of 22.8 and 22.0 µg/L respectively. Well BUT10014 is located at Smith Park in Middletown close to the former Aeronca Air Products site, a site which underwent environmental cleanup activities (Robinson and Richter, 2012).

N-butylbenzene is an aromatic hydrocarbon used to manufacture plastics and as a solvent. The compound was detected in groundwater samples from monitoring wells PRE10007 and WAR10003 at concentrations of 1.13 and 1.12 µg/L respectively during the spring sampling event. The compound was not detected in any groundwater samples from the fall sampling event. There are no published human health standards for n-butylbenzene in drinking water.

Nutrients

The nitrate concentration measured in the fall groundwater sample collected from monitoring well CLA10018 exceeded the MCL of 10 mg/L. Nitrate concentrations in all of the remaining samples were below the drinking MCL, although concentrations in groundwater samples from wells BUT10017 and CLA10018 indicated impact from anthropogenic sources for both sampling events. Common sources of nitrates in groundwater include fertilizers, sewage and septic tanks, and animal waste.

Metals

The trace metal molybdenum was present in the spring groundwater sample collected from monitoring well BUT10016 at a concentration of 0.0473 mg/L which exceeds the drinking water HBSL of 0.04 mg/L. None of the molybdenum concentrations measured in fall groundwater samples exceeded the HBSL. Molybdenum is present naturally in groundwater from the buried valley aquifer system.

Nuisance Contaminants

Iron, manganese, and total dissolved solids are generally considered to be “nuisance” contaminants. These contaminants are present naturally in groundwater from the buried valley aquifer system. However, their presence does not typically pose a health threat. They can, however, have adverse aesthetic impacts causing water to appear cloudy or colored. They can also adversely impact plumbing fixtures, stain laundry, and cause taste and odor issues. The SMCL for Iron is 0.3 mg/L. Groundwater samples collected from wells BUT10016, CLA10011, MON10016, PRE10007, and WAR10003 exceeded this standard for both sampling events in 2016.

The SMCL for manganese is 0.05 mg/L. Manganese concentrations in groundwater samples collected from wells BUT10016, CLA10011, MIA00205, MON10016, SHE00089, and WAR10003 exceeded this standard for both sampling events. Manganese also has a HBSL of 0.3 mg/L. Manganese concentrations in both spring and fall groundwater samples collected from well BUT10016 exceeded this standard.

The SMCL for total dissolved solids is 500 mg/L. Groundwater samples collected from wells BUT10014, CLA10011, MON00022, MON10016, and WAR10003 had concentrations which exceeded this standard for at least one of the two sampling events.

Chloride and Sodium

Chloride has an SMCL of 250 mg/L. There are no drinking water benchmarks for sodium. Background levels of chloride in the buried valley aquifer system typically do not exceed 50 mg/L (Spieker, 1968), and (Debrewer et al, 2000). Chloride concentrations measured in groundwater samples from monitoring wells BUT10014, MON10016, and WAR10003 were well above 50 mg/L and likely reflect anthropogenic sources. Sodium concentrations in groundwater samples from the three wells were also higher than other MCD monitoring wells. Anthropogenic sources of chloride and sodium include road salt applications for deicing and private and municipal wastewater from homes with water softeners.

Conclusions

While the sample set of this study was small and the results cannot be used to generalize about the health of the entire buried valley aquifer, the results can be used to better understand which contaminants are likely to be the most significant in terms of impacting regional groundwater quality in the buried valley aquifer system. Furthermore, when the results of this study are placed in context with previous studies a clearer picture of groundwater quality in the aquifer begins to emerge. Overall, the results of this MCD groundwater quality study and previous studies show anthropogenic contaminants such as nitrate, chloride, and VOCs are more prevalent in groundwater samples from sensitive aquifer settings such as shallow unconfined sand and gravel aquifers (Ohio Environmental Protection Agency, 2015), (Rowe et al, 2004), and (Stuck, 2016). These findings underscore the importance of managing land use over the buried valley aquifer in order to preserve the quality of the water resource. Proactive source water protection programs are a must for communities in the region that hope to sustain the quality of their groundwater resources.

Table 2 – Summary of significant detections of constituents in groundwater

Spring 2016		Benchmark		Sample Sites					
Parameter	Units	Type	Value	BUT10014	BUT10016	BUT10017	CLA10011	CLA10018	MIA00205
Chloride	mg/L	SMCL	250	87.0					
Nitrogen, Nitrate-Nitrite	mg/L	MCL	10			6.26		8.25	
Iron	mg/L	SMCL	0.3		1.58		2.85		
Manganese	mg/L	HBSL, SMCL	0.3, 0.05		0.403		0.0640		0.100
Molybdenum	mg/L	HBSL	0.04		0.0473				
Sodium	mg/L	-	-	50.8					
Total Dissolved Solids	mg/L	SMCL	500				522		
n-Butylbenzene	µg/L	-	-						
Trichloroethene	µg/L	MCL	5	22.8					

Spring 2016		Benchmark		Sample Sites					
Parameter	Units	Type	Value	MON00022	MON10016	PRE10007	SHE00089	WAR10003	WAR10004
Chloride	mg/L	SMCL	250		77.1			87.7	
Nitrogen, Nitrate-Nitrite	mg/L	MCL	10						
Iron	mg/L	SMCL	0.3		0.955	1.47		1.97	
Manganese	mg/L	HBSL, SMCL	0.3, 0.05		0.0894		0.253	0.0594	
Molybdenum	mg/L	HBSL	0.04						
Sodium	mg/L	-	-		50.7			37.6	
Total Dissolved Solids	mg/L	SMCL	500	660				546	
n-Butylbenzene	µg/L	-	-			1.13		1.12	
Trichloroethene	µg/L	MCL	5						

MCL – Maximum Contaminant Level set by USPEA

SMCL – Secondary Maximum Contaminant Level set by USEPA

HBSL – Non enforceable Health Based Screening Level based on (1) latest USEPA Office of Water policies for establishing drinking water benchmarks and (2) most recent USEPA peer reviewed toxicity information

NA – Not analyzed

Numbers in bold exceed a benchmark

Samples from sites in red exceeded at least one MCL or HBSL

Table 2 – Summary of significant detections of constituents in groundwater

Fall 2016		Benchmark		Sample Sites					
Parameter	Units	Type	Value	BUT10014	BUT10016	BUT10017	CLA10011	CLA10018	MIA00205
Chloride	mg/L	SMCL	250	76.4					
Nitrogen, Nitrate-Nitrite	mg/L	MCL	10			4.93		13.0	
Iron	mg/L	SMCL	0.3		1.68		3.04		
Manganese	mg/L	HBSL, SMCL	0.3, 0.05		0.401		0.0630		0.0929
Sodium	mg/L	-	-	49.4					
Total Dissolved Solids	mg/L	SMCL	500	621			517		
Bis(2-ethylhexyl)phthalate	µg/L	MCL	6			16.2			
Trichloroethene	µg/L	MCL	5	22.0					

Fall 2016		Benchmark		Sample Sites					
Parameter	Units	Type	Value	MON00022	MON10016	PRE10007	SHE00089	WAR10003	WAR10004
Chloride	mg/L	SMCL	250		106			88.7	
Nitrogen, Nitrate-Nitrite	mg/L	MCL	10						
Iron	mg/L	SMCL	0.3		0.410	1.83		1.96	
Manganese	mg/L	HBSL, SMCL	0.3, 0.05		0.0761		0.246	0.0530	
Sodium	mg/L	-	-		65.5			35.3	
Total Dissolved Solids	mg/L	SMCL	500	679	562			573	
Bis(2-ethylhexyl)phthalate	µg/L	MCL	6			1.15			
Trichloroethene	µg/L	MCL	5						

MCL – Maximum Contaminant Level set by USPEA

SMCL – Secondary Maximum Contaminant Level set by USEPA

HBSL – Non enforceable Health Based Screening Level based on (1) latest USEPA Office of Water policies for establishing drinking water benchmarks and (2) most recent USEPA peer reviewed toxicity information

NA – Not analyzed

Numbers in bold exceed a benchmark

Samples from sites in red exceeded at least one MCL or HBSL

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Appendix A

Spring 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
Dissolved Oxygen	mg/L	Field Measured			—	—	3.42	0.12	10.13	0.07	5.94	0.34
pH	S.U.	Field Measured			SMCL	6.5 - 8.5	7.06	7.29	7.15	7.06	7.23	7.15
Specific Conductance	mS/cm	Field Measured			—	—	1041	596	637	783	679	679
Temperature	°C	Field Measured			—	—	13.54	12.51	12.64	11.75	11.12	11.20
Ammonia	mg/L	EPA 350.1	0.200	0.0732	—	—	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Chloride	mg/L	SM 4500-CL-E	2.00	0.806	SMCL	250	87.0	11.7	9.84	24.4	17.8	17.0
Fluoride	mg/L	SM 4500 F-C	0.200	0.0174	MCL	4	< 0.200	0.227	< 0.200	0.290	0.217	< 0.200
Nitrite Nitrogen as NO ₂ -N	mg/L	SM 4500 NO ₃ -F	0.100	0.0210	MCL	1	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Nitrogen, Nitrate-Nitrite	mg/L	SM 4500 NO ₃ -F	0.100	0.0157	MCL	10	1.18	< 0.100	6.26	< 0.100	8.25	1.43
Nitrogen, Total Kjeldahl	mg/L	EPA 351.2	0.500	0.165	—	—	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500
Phosphorus	mg/L	SW 6010B	0.100	0.00452	—	—	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Silica	mg/L	EPA 200.7/SW 6010	0.107	0.00296	—	—	11.4	12.4	9.12	16.2	8.86	9.39
Sulfate	mg/L	EPA 375.4 Modified	10.0	3.80	SMCL	250	51.4	68.7	95.7	84.8	54.3	54.3
Total Hardness	mg/L	EPA 200.7	0.662	0.0850	—	—	409	284	297	401	339	346
Total Orthophosphate, as P	mg/L	SM 4500 P-F	0.100	0.0218	—	—	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Aluminum	mg/L	SW 6010B	0.100	0.00561	MCL	0.2	< 0.100	0.101	< 0.100	< 0.100	< 0.100	< 0.100
Antimony	mg/L	SW 7041	0.0030 0	0.00110	MCL	0.006	< 0.00300	< 0.00300	< 0.00300	< 0.00300	< 0.00300	< 0.00300
Arsenic	mg/L	SW 7060A	0.0030 0	0.00076 3	MCL	0.01	< 0.00300	< 0.00600	< 0.00300	< 0.00576	< 0.00300	< 0.00300
Barium	mg/L	SW 6010B	0.0050 0	0.00074 7	MCL	2	0.250	0.228	0.0433	0.0542	0.0725	0.116
Beryllium	mg/L	SW 6010B	0.0005 00	0.00002 36	MCL	0.004	< 0.000500	< 0.000500	< 0.000500	< 0.000500	< 0.000500	< 0.000500
Boron	mg/L	SW 6010B	0.100	0.00328	HBSL	6000	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Cadmium	mg/L	SW 7131A	0.0002 00	0.00007 02	MCL	0.005	< 0.000200	< 0.000200	< 0.000200	< 0.000200	< 0.000200	< 0.000200
Calcium	mg/L	SW 6010B	0.100	0.0174	—	—	109	70.7	78.1	98.2	77.2	92.7
Chromium, Hexavalent	mg/L	SM 3500 Cr B	0.0100	0.00480	MCL	0.1	< 0.00400	< 0.00400	< 0.00400	< 0.00400	< 0.00400	< 0.00400
Cobalt	mg/L	SW 6010B	0.0050 0	0.00081 5	—	—	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Copper	mg/L	SW 6010B	0.0050 0	0.00056 6	SMCL	1	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500

Spring 2016												
Parameter	Units	Method	PQL	MDL	Benchmark		BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
					Type	Value						
Iron	mg/L	SW 6010B	0.0500	0.00534	SMCL	0.3	< 0.0500	1.58	< 0.0500	2.85	< 0.0500	< 0.0500
Lead	mg/L	SW 7421	0.0020	0.00073	MCL	0.015	<	<	<	<	<	<
Lithium	mg/L	SW 6010B	0.0050	0.00003	—	—	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200
Magnesium	mg/L	SW 6010B	0.0050	0.00003	—	—	<	<	<	<	<	<
Manganese	mg/L	SW 6010B	0	15	—	—	0.00500	0.00500	0.00500	0.00500	0.00500	0.00500
Molybdenum	mg/L	SW 6010B	0.100	0.0101	—	—	33.1	26.2	24.8	37.9	35.5	27.7
Nickel	mg/L	SW 6010B	0.0050	0.00153	HBSL, SMCL	0.3, 0.05	<	0.403	<	0.0640	<	0.100
Potassium	mg/L	SW 6010B	0.0100	0.00207	HBSL	0.04	< 0.0100	0.0473	0.0167	0.0322	< 0.0100	0.0217
Silver	mg/L	SW 6010B	0.0050	0.00118	HBSL	0.1	<	<	<	<	<	<
Sodium	mg/L	SW 6010B	1.00	0.0397	—	—	4.93	1.33	2.67	< 1.00	1.77	1.26
Strontium	mg/L	SW 6010B	0.0020	0.00038	HBSL	0.1	<	<	<	<	<	<
Thallium	mg/L	SW 6010B	0	4	HBSL	0.1	0.00200	0.00200	0.00200	0.00200	0.00200	0.00200
Vanadium	mg/L	SW 6010B	1.00	0.0631	—	—	50.8	6.86	10.1	4.64	8.58	7.88
Zinc	mg/L	SW 6010B	0.0050	0.00052	HBSL	4	0.785	0.435	0.164	0.328	2.28	0.388
Alkalinity, Total (As CaCO3)	mg/L	SW 7841/EPA 279.2	0.0010	0.00040	MCL	0.002	<	<	<	<	<	<
Biochemical Oxygen Demand	mg/L	SW 6010B	0.0050	0.00051	—	—	0.00500	0.00500	0.00500	0.00500	0.00500	0.00500
Carbonaceous Biological Oxygen Demand	mg/L	SW 6010B	0	7	—	—	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100
Chemical Oxygen Demand	mg/L	SW 6010B	0.0100	0.00138	HBSL	2	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100
Cyanide, Total	mg/L	SM 2320B	25.0	25.0	—	—	378	253	285	327	306	125
Phenolics, Total Recoverable	mg/L	SM 5210B	2.00	2.00	—	—	< 2.00	< 2.00	< 2.00	< 2.00	2.13	< 2.00
Total Dissolved Solids (Residue, Filterable)	mg/L	EPA 405.1/SM 5210	2.00	2.00	—	—	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	2.95
Total Organic Carbon	mg/L	HACH 8000	5.00	4.68	—	—	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
E. coli	MPN/100 mL	EPA 335.4	0.0100	0.00195	MCL	0.2	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100
2,4,5-T	ug/L	EPA 420.4	0.0100	0.00336	—	—	0.0160	< 0.0100	< 0.0100	< 0.0100	0.0200	< 0.0100
2,4,5-TP (Silvex)	ug/L	SM 2540C	5.00	1.67	SMCL	500	199	359	370	522	385	411
2,4-D	ug/L	SM 5310C	1.00	0.142	—	—	1.28	< 1.00	< 1.00	1.05	1.31	0.750
2,4-DB	ug/L	Colilert	1.00		MCL	0	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
4,4'-DDD	ug/L	SW 8151	0.118	0.0477	HBSL	70			< 0.118	< 0.118		
	ug/L	SW 8151	0.119	0.0249	—	—			< 0.119	< 0.119		
	ug/L	SW 8151	0.125	0.0439	MCL	70			< 0.118	< 0.118		
	ug/L	SW 8151	0.118	0.0417	HHBP	210			< 0.118	< 0.118		
	ug/L	SW 8081	0.0500	0.0153	HBSL	1			< 0.0500	< 0.0500		

Spring 2016				Benchmark			BUT100	BUT100	BUT100	CLA100	CLA100	MIA002
Parameter	Units	Method	PQL	MDL	Type	Value	14	16	17	11	18	05
4,4'-DDE	ug/L	SW 8081	0.0500	0.0168	HBSL	0.1			< 0.0500	< 0.0500		
4,4'-DDT	ug/L	SW 8081	0.0500	0.0217	HBSL	0.00000 72			< 0.0500	< 0.0500		
Aldrin	ug/L	SW 8081	0.0500	0.0168	HBSL	0.002			< 0.0500	< 0.0500		
alpha-BHC	ug/L	SW 8081	0.0500	0.0217	HBSL	0.006			< 0.0500	< 0.0500		
alpha-Chlordane	ug/L	SW 8081	0.0500	0.0153	—	—			< 0.0500	< 0.0500		
Aroclor 1016	ug/L	SW 8082	0.500	0.238	HBSL	0.5			< 0.500	< 0.500		
Aroclor 1221	ug/L	SW 8082	0.500	0.124	—	—			< 0.500	< 0.500		
Aroclor 1232	ug/L	SW 8082	0.500	0.232	—	—			< 0.500	< 0.500		
Aroclor 1242	ug/L	SW 8082	0.500	0.233	—	—			< 0.500	< 0.500		
Aroclor 1248	ug/L	SW 8082	0.500	0.147	—	—			< 0.500	< 0.500		
Aroclor 1254	ug/L	SW 8082	0.500	0.196	HBSL	0.1			< 0.500	< 0.500		
Aroclor 1260	ug/L	SW 8082	0.500	0.249	—	—			< 0.500	< 0.500		
beta-BHC	ug/L	SW 8081	0.0500	0.0238	HBSL	0.02			< 0.0500	< 0.0500		
Chlordane	ug/L	SW 8081	0.500	0.211	MCL	2			< 0.500	< 0.500		
Dalapon	ug/L	SW 8151	0.228	0.0445	MCL	200			< 0.228	< 0.228		
delta-BHC	ug/L	SW 8081	0.0500	0.0217	—	—			< 0.0500	< 0.0500		
Dicamba	ug/L	SW 8151	0.118	0.0427	HBSL	3000			< 0.118	< 0.118		
Dichloroprop	ug/L	SW 8151	0.118	0.0361	HBSL	300			< 0.118	< 0.118		
Dieldrin	ug/L	SW 8081	0.0500	0.0153	HBSL	0.002			< 0.0500	< 0.0500		
Dinoseb	ug/L	SW 8151	0.118	0.0563	MCL	7			< 0.118	< 0.118		
Endosulfan I	ug/L	SW 8081	0.0500	0.0119	HHBP	42			< 0.0500	< 0.0500		
Endosulfan II	ug/L	SW 8081	0.0500	0.0181	—	—			< 0.0500	< 0.0500		
Endosulfan sulfate	ug/L	SW 8081	0.0500	0.0238	—	—			< 0.0500	< 0.0500		
Endrin	ug/L	SW 8081	0.0500	0.0153	MCL	2			< 0.0500	< 0.0500		
Endrin aldehyde	ug/L	SW 8081	0.0500	0.0168	—	—			< 0.0500	< 0.0500		
Endrin ketone	ug/L	SW 8081	0.0500	0.0247	—	—			< 0.0500	< 0.0500		
gamma-BHC	ug/L	SW 8081	0.0500	0.0168	—	—			< 0.0500	< 0.0500		
gamma-Chlordane	ug/L	SW 8081	0.0500	0.0217	—	—			< 0.0500	< 0.0500		
Heptachlor	ug/L	SW 8081	0.0500	0.0181	MCL	0.4			< 0.0500	< 0.0500		
Heptachlor epoxide	ug/L	SW 8081	0.0500	0.0217	MCL	0.2			< 0.0500	< 0.0500		
MCPA	ug/L	SW 8151	23.4	8.15	HBSL	140			< 23.4	< 23.4		
MCPP	ug/L	SW 8151	23.5	5.24	—	—			< 23.5	< 23.5		

Spring 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
Methoxychlor	ug/L	SW 8081	0.0500	0.0247	MCL	40			< 0.0500	< 0.0500		
Toxaphene	ug/L	SW 8081	0.500	0.210	MCL	3			< 0.500	< 0.500		
Radon	pCi/L	SM 7500-Rn-B	100	NR	MCL	300			384	173		
Uranium, Total	µg/L	EPA 200.8	0.001	NR	MCL	30			<0.001	<0.001		
1,2,4,5-Tetrachlorobenzene	ug/L	SW 8270C	5.00	0.411	—	—			< 5.00	< 5.00		
1,2,4-Trichlorobenzene	ug/L	SW 8270C	5.00	0.312	MCL	70			< 5.00	< 5.00		
1,2-Dichlorobenzene	ug/L	SW 8270C	5.00	0.388	MCL	600			< 5.00	< 5.00		
1,2-Diphenylhydrazine	ug/L	SW 8270C	5.00	0.386	HBSL	0.04			< 5.00	< 5.00		
1,3,5-Trinitrobenzene	ug/L	SW 8270C	5.00	0.878	—	—			< 5.00	< 5.00		
1,3-Dichlorobenzene	ug/L	SW 8270C	5.00	0.319	HBSL	600			< 5.00	< 5.00		
1,4-Dichlorobenzene	ug/L	SW 8270C	5.00	0.341	MCL	75			< 5.00	< 5.00		
1-Methylnaphthalene	ug/L	SW 8270C	5.00	0.382	—	—			< 5.00	< 5.00		
2,3,4,6-Tetrachlorophenol	ug/L	SW 8270C	10.0	0.269	—	—			< 10.0	< 10.0		
2,4,5-Trichlorophenol	ug/L	SW 8270C	5.00	0.717	—	—			< 5.00	< 5.00		
2,4,6-Trichlorophenol	ug/L	SW 8270C	5.00	0.445	HBSL	2			< 5.00	< 5.00		
2,4-Dichlorophenol	ug/L	SW 8270C	5.00	0.448	HBSL	20			< 5.00	< 5.00		
2,4-Dimethylphenol	ug/L	SW 8270C	5.00	0.402	HBSL	100			< 5.00	< 5.00		
2,4-Dinitrophenol	ug/L	SW 8270C	10.0	0.956	HBSL	10			< 10.0	< 10.0		
2,4-Dinitrotoluene	ug/L	SW 8270C	5.00	0.521	HBSL	0.05			< 5.00	< 5.00		
2,6-Dichlorophenol	ug/L	SW 8270C	5.00	0.319	—	—			< 5.00	< 5.00		
2,6-Dinitrotoluene	ug/L	SW 8270C	5.00	0.501	HBSL	0.05			< 5.00	< 5.00		
2-Chloronaphthalene	ug/L	SW 8270C	5.00	0.427	HBSL	600			< 5.00	< 5.00		
2-Chlorophenol	ug/L	SW 8270C	5.00	0.226	HBSL	40			< 5.00	< 5.00		
2-Methylnaphthalene	ug/L	SW 8270C	5.00	0.0625	HBSL	30			< 5.00	< 5.00		
2-Methylphenol	ug/L	SW 8270C	5.00	0.871	—	—			< 5.00	< 5.00		
2-Nitrophenol	ug/L	SW 8270C	5.00	0.385	—	—			< 5.00	< 5.00		
3 & 4-Methylphenol	ug/L	SW 8270C	5.00	0.727	—	—			< 5.00	< 5.00		
4,6-Dinitro-2-methylphenol	ug/L	SW 8270C	10.0	0.435	—	—			< 10.0	< 10.0		
4-Bromophenyl phenyl ether	ug/L	SW 8270C	5.00	0.279	—	—			< 5.00	< 5.00		
4-Chloro-3-methylphenol	ug/L	SW 8270C	5.00	0.293	—	—			< 5.00	< 5.00		
4-Chlorophenyl phenyl ether	ug/L	SW 8270C	5.00	0.476	—	—			< 5.00	< 5.00		
4-Nitrophenol	ug/L	SW 8270C	5.00	0.470	—	—			< 5.00	< 5.00		

Spring 2016					Benchmark		BUT100	BUT100	BUT100	CLA100	CLA100	MIA002
Parameter	Units	Method	PQL	MDL	Type	Value	14	16	17	11	18	05
Acenaphthene	ug/L	SW 8270C	5.00	0.0350	HBSL	400			< 5.00	< 5.00		
Acenaphthylene	ug/L	SW 8270C	5.00	0.0696	—	—			< 5.00	< 5.00		
Acetophenone	ug/L	SW 8270C	5.00	0.273	HBSL	700			< 5.00	< 5.00		
Aniline	ug/L	SW 8270C	5.00	0.396	—	—			< 5.00	< 5.00		
Anthracene	ug/L	SW 8270C	5.00	0.0504	HBSL	2000			< 5.00	< 5.00		
Benz(a)anthracene	ug/L	SW 8270C	0.260	0.0840	—	—			< 0.260	< 0.260		
Benzidine	ug/L	SW 8270C	5.00	0.662	HBSL	0.0002			< 5.00	< 5.00		
Benzo(a)pyrene	ug/L	SW 8270C	0.200	0.0820	MCL	0.2			< 0.200	< 0.200		
Benzo(b)fluoranthene	ug/L	SW 8270C	0.170	0.0527	—	—			< 0.170	< 0.170		
Benzo(g,h,i)perylene	ug/L	SW 8270C	5.00	0.0923	—	—			< 5.00	< 5.00		
Benzo(k)fluoranthene	ug/L	SW 8270C	1.70	0.0574	—	—			< 1.70	< 1.70		
Benzyl Alcohol	ug/L	SW 8270C	5.00	0.384	—	—			< 5.00	< 5.00		
Bis(2-chloroethoxy)methane	ug/L	SW 8270C	5.00	0.450	—	—			< 5.00	< 5.00		
bis-(2-Chloroethyl)ether	ug/L	SW 8270C	5.00	0.428	HBSL	0.03			< 5.00	< 5.00		
Bis(2-chloroisopropyl)ether	ug/L	SW 8270C	5.00	0.495	HBSL	300			< 5.00	< 5.00		
Bis(2-ethylhexyl)phthalate	ug/L	SW 8270C	1.00	0.334	MCL	6			< 1.00	< 1.00		
Butyl benzyl phthalate	ug/L	SW 8270C	5.00	0.247	HBSL	1000			< 5.00	< 5.00		
Chrysene	ug/L	SW 8270C	5.00	0.0625	—	—			< 5.00	< 5.00		
Dibenz(a,h)anthracene	ug/L	SW 8270C	0.20	0.0742	—	—			< 0.20	< 0.20		
Dibenzofuran	ug/L	SW 8270C	5.00	0.254	—	—			< 5.00	< 5.00		
Diethyl phthalate	ug/L	SW 8270C	5.00	0.374	HBSL	6000			< 5.00	< 5.00		
Dimethyl phthalate	ug/L	SW 8270C	5.00	0.462	—	—			< 5.00	< 5.00		
Di-n-butyl phthalate	ug/L	SW 8270C	5.00	0.415	HBSL	700			< 5.00	< 5.00		
Di-n-octyl phthalate	ug/L	SW 8270C	5.00	0.342	—	—			< 5.00	< 5.00		
Fluoranthene	ug/L	SW 8270C	5.00	0.0540	HBSL	300			< 5.00	< 5.00		
Fluorene	ug/L	SW 8270C	5.00	0.0598	HBSL	300			< 5.00	< 5.00		
Hexachlorobenzene	ug/L	SW 8270C	5.00	0.276	MCL	1			< 5.00	< 5.00		
Hexachlorobutadiene	ug/L	SW 8270C	5.00	0.463	HBSL	0.9			< 5.00	< 5.00		
Hexachlorocyclopentadiene	ug/L	SW 8270C	5.00	0.337	MCL	50			< 5.00	< 5.00		
Hexachloroethane	ug/L	SW 8270C	5.00	0.359	HBSL	0.9			< 5.00	< 5.00		
Hexachloropropene	ug/L	SW 8270C	5.00	0.501	—	—			< 5.00	< 5.00		
Indeno(1,2,3-cd)pyrene	ug/L	SW 8270C	0.220	0.0566	—	—			< 0.220	< 0.220		

Spring 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
Isophorone	ug/L	SW 8270C	5.00	0.214	HBSL	60			< 5.00	< 5.00		
m-Dinitrobenzene	ug/L	SW 8270C	5.00	0.262	—	—			< 5.00	< 5.00		
Naphthalene	ug/L	SW 8270C	5.00	0.0651	HBSL	100			< 5.00	< 5.00		
Nitrobenzene	ug/L	SW 8270C	5.00	0.314	HBSL	10			< 5.00	< 5.00		
N-Nitrosodimethylamine	ug/L	SW 8270C	5.00	0.376	—	—			< 5.00	< 5.00		
N-Nitroso-di-n-butylamine	ug/L	SW 8270C	5.00	0.384	—	—			< 5.00	< 5.00		
N-Nitrosodi-n-propylamine	ug/L	SW 8270C	5.00	0.346	HBSL	0.005			< 5.00	< 5.00		
N-Nitrosodiphenylamine	ug/L	SW 8270C	5.00	0.602	HBSL	7			< 5.00	< 5.00		
Pentachlorobenzene	ug/L	SW 8270C	5.00	0.289	—	—			< 5.00	< 5.00		
Pentachloronitrobenzene	ug/L	SW 8270C	5.00	0.582	—	—			< 5.00	< 5.00		
Pentachlorophenol	ug/L	SW 8270C	1.00	0.429	MCL	1			< 5.00	< 5.00		
Phenanthrene	ug/L	SW 8270C	5.00	0.0745	—	—			< 5.00	< 5.00		
Phenol	ug/L	SW 8270C	5.00	0.263	HBSL	2000			< 5.00	< 5.00		
Pyrene	ug/L	SW 8270C	5.00	0.0613	HBSL	200			< 5.00	< 5.00		
Pyridine	ug/L	SW 8270C	5.00	0.454	—	—			< 5.00	< 5.00		
1,1,1,2-Tetrachloroethane	ug/L	SW 8260B	1.00	0.220	HBSL	1	< 1.00		< 1.00	< 5.00		
1,1,1-Trichloroethane	ug/L	SW 8260B	1.00	0.283	MCL	200	< 1.00		< 1.00	< 5.00		
1,1,2,2-Tetrachloroethane	ug/L	SW 8260B	1.00	0.230	HBSL	1	< 1.00		< 1.00	< 5.00		
1,1,2-Trichloroethane	ug/L	SW 8260B	1.00	0.337	MCL	5	< 1.00		< 1.00	< 5.00		
1,1-Dichloroethane	ug/L	SW 8260B	1.00	0.274	—	—	< 1.00		< 1.00	< 5.00		
1,1-Dichloroethene	ug/L	SW 8260B	1.00	0.224	MCL	7	< 1.00		< 1.00	< 5.00		
1,1-Dichloropropene	ug/L	SW 8260B	1.00	0.213	—	—	< 1.00		< 1.00	< 5.00		
1,2,3-Trichlorobenzene	ug/L	SW 8260B	1.00	0.228	—	—	< 1.00		< 1.00	< 5.00		
1,2,3-Trichloropropane	ug/L	SW 8260B	1.00	0.271	HBSL	30	< 1.00		< 1.00	< 5.00		
1,2,4-Trichlorobenzene	ug/L	SW 8260B	1.00	0.214	MCL	70	< 1.00		< 1.00	< 5.00		
1,2,4-Trimethylbenzene	ug/L	SW 8260B	1.00	0.194	—	—	< 1.00		< 1.00	< 5.00		
1,2-Dibromo-3-chloropropane	ug/L	SW 8260B	5.00	0.869	MCL	0.2	< 5.00		< 5.00	< 10.0		
1,2-Dibromoethane	ug/L	SW 8260B	1.00	0.192	MCL	0.05	< 1.00		< 1.00	< 5.00		
1,2-Dichlorobenzene	ug/L	SW 8260B	1.00	0.570	MCL	600	< 1.00		< 1.00	< 5.00		
1,2-Dichloroethane	ug/L	SW 8260B	1.00	0.300	MCL	5	< 1.00		< 1.00	< 5.00		
1,2-Dichloropropane	ug/L	SW 8260B	1.00	0.230	MCL	5	< 1.00		< 1.00	< 5.00		
1,3,5-Trimethylbenzene	ug/L	SW 8260B	1.00	0.199	—	—	< 1.00		< 1.00	< 5.00		

Spring 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
1,3-Dichlorobenzene	ug/L	SW 8260B	1.00	0.197	HBSL	600	< 1.00		< 1.00	< 5.00		
1,3-Dichloropropane	ug/L	SW 8260B	1.00	0.237	—	—	< 1.00		< 1.00	< 5.00		
1,4-Dichlorobenzene	ug/L	SW 8260B	1.00	0.214	MCL	75	< 1.00		< 1.00	< 5.00		
2,2-Dichloropropane	ug/L	SW 8260B	1.00	0.262	—	—	< 1.00		< 1.00	< 5.00		
2-Butanone	ug/L	SW 8260B	10.0	2.75	—	—	< 10.0		< 10.0	< 20.0		
2-Chlorotoluene	ug/L	SW 8260B	1.00	0.217	—	—	< 1.00		< 1.00	< 5.00		
2-Hexanone	ug/L	SW 8260B	10.0	0.0779	HBSL	40	< 10.0		< 10.0	< 20.0		
4-Chlorotoluene	ug/L	SW 8260B	1.00	0.241	HBSL	100	< 1.00		< 1.00	< 5.00		
4-Isopropyltoluene	ug/L	SW 8260B	1.00	0.182	—	—	< 1.00		< 1.00	< 5.00		
4-Methyl-2-pentanone	ug/L	SW 8260B	10.0	1.91	—	—	< 10.0		< 10.0	< 20.0		
Acetone	ug/L	SW 8260B	20.0	3.76	HBSL	6000	< 20.0		< 20.0	< 20.0		
Acetonitrile	ug/L	SW 8260B	20.0	2.41	—	—	< 20.0		< 20.0	< 40.0		
Acrolein	ug/L	SW 8260B	10.0	1.49	HBSL	4	< 10.0		< 10.0	< 20.0		
Acrylonitrile	ug/L	SW 8260B	10.0	0.388	HBSL	0.06	< 10.0		< 10.0	< 20.0		
Allyl chloride	ug/L	SW 8260B	1.00	0.250	—	—	< 1.00		< 1.00	< 5.00		
Benzene	ug/L	SW 8260B	1.00	0.269	MCL	5	< 1.00		< 1.00	< 5.00		
Bromobenzene	ug/L	SW 8260B	1.00	0.221	HBSL	60	< 1.00		< 1.00	< 5.00		
Bromochloromethane	ug/L	SW 8260B	1.00	0.293	HBSL	90	< 1.00		< 1.00	< 5.00		
Bromodichloromethane	ug/L	SW 8260B	1.00	0.232	MCL	80	< 1.00		< 1.00	< 5.00		
Bromoform	ug/L	SW 8260B	1.00	0.231	MCL	80	< 1.00		< 1.00	< 5.00		
Bromomethane	ug/L	SW 8260B	1.00	0.494	HHBP	140	< 1.00		< 1.00	< 5.00		
Carbon Disulfide	ug/L	SW 8260B	10.0	0.242	HBSL	700	< 10.0		< 10.0	< 20.0		
Carbon Tetrachloride	ug/L	SW 8260B	1.00	0.241	MCL	5	< 1.00		< 1.00	< 5.00		
Chlorobenzene	ug/L	SW 8260B	1.00	0.265	MCL	100	< 1.00		< 1.00	< 5.00		
Chloroethane	ug/L	SW 8260B	1.00	0.261	—	—	< 1.00		< 1.00	< 5.00		
Chloroform	ug/L	SW 8260B	1.00	0.269	MCL	80	< 1.00		< 1.00	< 5.00		
Chloromethane	ug/L	SW 8260B	1.00	0.318	—	—	< 1.00		< 1.00	< 5.00		
cis-1,2-Dichloroethene	ug/L	SW 8260B	1.00	0.296	MCL	70	< 1.00		< 1.00	< 5.00		
cis-1,3-Dichloropropene	ug/L	SW 8260B	1.00	0.234	HBSL	0.3	< 1.00		< 1.00	< 5.00		
Dibromochloromethane	ug/L	SW 8260B	1.00	0.645	MCL	80	< 1.00		< 1.00	< 5.00		
Dibromomethane	ug/L	SW 8260B	1.00	0.299	—	—	< 1.00		< 1.00	< 5.00		
Dichlorodifluoromethane	ug/L	SW 8260B	1.00	0.242	HBSL	1000	< 1.00		< 1.00	< 5.00		

Spring 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
Ethylbenzene	ug/L	SW 8260B	1.00	0.168	MCL	700	< 1.00		< 1.00	< 5.00		
Hexachlorobutadiene	ug/L	SW 8260B	1.00	0.277	HBSL	0.9	< 1.00		< 1.00	< 5.00		
Iodomethane	ug/L	SW 8260B	10.0	1.10	—	—	< 10.0		< 10.0	< 10.0		
Isopropylbenzene	ug/L	SW 8260B	1.00	0.204	HBSL	700	< 1.00		< 1.00	< 5.00		
m,p-Xylene	ug/L	SW 8260B	5.00	0.410	MCL	10000	< 5.00		< 5.00	< 10.0		
Methyl tert-Butyl Ether	ug/L	SW 8260B	5.00	0.239	—	—	< 5.00		< 5.00	< 10.0		
Methylene Chloride	ug/L	SW 8260B	1.00	0.164	MCL	5	< 1.00		< 1.00	< 5.00		
Naphthalene	ug/L	SW 8260B	5.00	0.212	HBSL	100	< 5.00		< 5.00	< 5.00		
n-Butylbenzene	ug/L	SW 8260B	1.00	0.167	—	—	< 1.00		< 1.00	< 5.00		
n-Hexane	ug/L	SW 8260B	5.00	0.225	—	—	< 5.00		< 5.00	< 5.00		
n-Propylbenzene	ug/L	SW 8260B	1.00	0.204	—	—	< 1.00		< 1.00	< 5.00		
o-Xylene	ug/L	SW 8260B	1.00	0.220	MCL	10000	< 1.00		< 1.00	< 5.00		
sec-Butylbenzene	ug/L	SW 8260B	1.00	0.193	—	—	< 1.00		< 1.00	< 5.00		
Styrene	ug/L	SW 8260B	1.00	0.210	MCL	100	< 1.00		< 1.00	< 5.00		
tert-Butylbenzene	ug/L	SW 8260B	1.00	0.193	—	—	< 1.00		< 1.00	< 5.00		
Tetrachloroethene	ug/L	SW 8260B	1.00	0.230	MCL	5	< 1.00		< 1.00	< 5.00		
Toluene	ug/L	SW 8260B	1.00	0.231	MCL	1000	< 1.00		< 1.00	< 5.00		
trans-1,2-Dichloroethene	ug/L	SW 8260B	1.00	0.225	MCL	100	< 1.00		< 1.00	< 5.00		
trans-1,3-Dichloropropene	ug/L	SW 8260B	1.00	0.203	HBSL	0.3	< 1.00		< 1.00	< 5.00		
Trichloroethene	ug/L	SW 8260B	1.00	0.295	MCL	5	22.8		< 1.00	< 5.00		
Trichlorofluoromethane	ug/L	SW 8260B	1.00	0.250	HBSL	2000	< 1.00		< 1.00	< 5.00		
Vinyl acetate	ug/L	SW 8260B	1.00	0.282	—	—	< 1.00		< 1.00	< 10.0		
Vinyl Chloride	ug/L	SW 8260B	1.00	0.224	MCL	2	< 1.00		< 1.00	< 1.00		

Spring 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	PRE100 07	MON000 22	MON100 16	SHE000 89	WAR100 03	WAR100 04
Dissolved Oxygen	mg/L	Field Measured			—	—	0.15	0.56	0.10	0.30	0.09	2.13
pH	S.U.	Field Measured			SMCL	6.5 - 8.5	7.18	6.93	7.29	7.23	7.14	7.35
Specific Conductance	mS/cm	Field Measured			—	—	720	985	847	659	969	606
Temperature	°C	Field Measured			—	—	12.27	11.61	12.96	11.77	14.02	14.55
Ammonia	mg/L	EPA 350.1	0.200	0.0732	—	—	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200

Spring 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	PRE100 07	MON000 22	MON100 16	SHE000 89	WAR100 03	WAR100 04
Chloride	mg/L	SM 4500-CL-E	2.00	0.806	SMCL	250	36.1	9.76	77.1	5.86	87.7	38.4
Fluoride	mg/L	SM 4500 F-C	0.200	0.0174	MCL	4	< 0.200	0.212	< 0.200	0.470	< 0.200	0.220
Nitrite Nitrogen as NO2-N	mg/L	SM 4500 NO3-F	0.100	0.0210	MCL	1	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Nitrogen, Nitrate-Nitrite	mg/L	SM 4500 NO3-F	0.100	0.0157	MCL	10	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	0.206
Nitrogen, Total Kjeldahl	mg/L	EPA 351.2	0.500	0.165	—	—	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500
Phosphorus	mg/L	SW 6010B	0.100	0.00452	—	—	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Silica	mg/L	EPA 200.7/SW 6010	0.107	0.00296	—	—	9.65	6.92	9.72	11.7	12.6	7.51
Sulfate	mg/L	EPA 375.4 Modified	10.0	3.80	SMCL	250	166	181	33.8	39.3	189	27.4
Total Hardness	mg/L	EPA 200.7	0.662	0.0850	—	—	330	497	306	325	395	244
Total Orthophosphate, as P	mg/L	SM 4500 P-F	0.100	0.0218	—	—	0.131	< 0.100	< 0.100	< 0.100	0.104	< 0.100
Aluminum	mg/L	SW 6010B	0.100	0.00561	MCL	0.2	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Antimony	mg/L	SW 7041	0.0030 0	0.00110	MCL	0.006	< 0.00300	< 0.00300	< 0.00300	< 0.00300	< 0.00300	< 0.00300
Arsenic	mg/L	SW 7060A	0.0030 0	0.00076 3	MCL	0.01	< 0.00300	< 0.00300	< 0.00300	< 0.00300	< 0.00300	< 0.00300
Barium	mg/L	SW 6010B	0.0050 0	0.00074 7	MCL	2	0.248	0.0847	0.100	0.146	0.216	0.0602
Beryllium	mg/L	SW 6010B	0.0005 00	0.00002 36	MCL	0.004	< 0.000500	< 0.000500	< 0.000500	< 0.000500	< 0.000500	< 0.000500
Boron	mg/L	SW 6010B	0.100	0.00328	HBSL	6000	< 0.100	< 0.100	< 0.100	< 0.100	0.206	< 0.100
Cadmium	mg/L	SW 7131A	0.0002 00	0.00007 02	MCL	0.005	< 0.000200	< 0.000200	< 0.000200	< 0.000200	< 0.000200	< 0.000200
Calcium	mg/L	SW 6010B	0.100	0.0174	—	—	74.8	133	76.9	76.8	93.1	53.5
Chromium, Hexavalent	mg/L	SM 3500 Cr B	0.0100	0.00480	MCL	0.1	< 0.00400	< 0.00400	< 0.00400	< 0.00400	< 0.00400	< 0.00400
Cobalt	mg/L	SW 6010B	0.0050 0	0.00081 5	—	—	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Copper	mg/L	SW 6010B	0.0050 0	0.00056 6	SMCL	1	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Iron	mg/L	SW 6010B	0.0500	0.00534	SMCL	0.3	1.47	0.0553	0.955	0.0793	1.97	< 0.0500
Lead	mg/L	SW 7421	0.0020 0	0.00073 8	MCL	0.015	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200
Lithium	mg/L	SW 6010B	0.0050 0	0.00003 15	—	—	< 0.00500	0.00880	< 0.00500	< 0.00500	0.00506	< 0.00500
Magnesium	mg/L	SW 6010B	0.100	0.0101	—	—	34.6	40.2	27.6	32.4	39.5	26.8
Manganese	mg/L	SW 6010B	0.0050 0	0.00153	HBSL, SMCL	0.3, 0.05	0.0213	0.0116	0.0894	0.253	0.0594	< 0.00500
Molybdenum	mg/L	SW 6010B	0.0100	0.00207	HBSL	0.04	0.0221	0.0171	< 0.0100	0.0210	0.0181	0.0123

Spring 2016				Benchmark								
Parameter	Units	Method	PQL	MDL	Type	Value	PRE100 07	MON000 22	MON100 16	SHE000 89	WAR100 03	WAR100 04
Nickel	mg/L	SW 6010B	0.0050 0	0.00118	HBSL	0.1	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Potassium	mg/L	SW 6010B	1.00	0.0397	—	—	2.27	3.15	2.69	1.30	2.55	2.45
Silver	mg/L	SW 6010B	0.0020 0	0.00038 4	HBSL	0.1	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200
Sodium	mg/L	SW 6010B	1.00	0.0631	—	—	18.3	7.33	50.7	11.8	37.6	25.0
Strontium	mg/L	SW 6010B	0.0050 0	0.00052 7	HBSL	4	1.11	0.435	0.431	0.727	1.09	0.437
Thallium	mg/L	SW 7841/EPA 279.2	0.0010 0	0.00040 7	MCL	0.002	< 0.00100	< 0.00100	< 0.00100	< 0.00100	< 0.00100	< 0.00100
Vanadium	mg/L	SW 6010B	0.0050 0	0.00051 7	—	—	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Zinc	mg/L	SW 6010B	0.0100	0.00138	HBSL	2	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100
Alkalinity, Total (As CaCO3)	mg/L	SM 2320B	25.0	25.0	—	—	295	350	281	327	300	232
Biochemical Oxygen Demand	mg/L	SM 5210B	2.00	2.00	—	—	< 2.00	< 10.0	< 2.00	< 2.00	< 2.00	< 2.00
Carbonaceous Biological Oxygen Demand	mg/L	EPA 405.1/SM 5210	2.00	2.00	—	—	< 2.00	8.04	< 2.00	< 2.00	< 2.00	< 2.00
Chemical Oxygen Demand	mg/L	HACH 8000	5.00	4.68	—	—	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
Cyanide, Total	mg/L	EPA 335.4	0.0100	0.00195	MCL	0.2	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100
Phenolics, Total Recoverable	mg/L	EPA 420.4	0.0100	0.00336	—	—	0.0270	0.0220	< 0.0100	0.0110	< 0.0100	< 0.0100
Total Dissolved Solids (Residue, Filterable)	mg/L	SM 2540C	5.00	1.67	SMCL	500	385	660	495	384	546	343
Total Organic Carbon	mg/L	SM 5310C	1.00	0.142	—	—	< 1.00	1.34	< 1.00	1.12	< 1.00	< 1.00
E. coli	MPN/100 mL	Colilert	1.00		MCL	0	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
2,4,5-T	ug/L	SW 8151	0.118	0.0477	HBSL	70	< 0.118				< 0.118	
2,4,5-TP (Silvex)	ug/L	SW 8151	0.119	0.0249	—	—	< 0.119				< 0.119	
2,4-D	ug/L	SW 8151	0.125	0.0439	MCL	70	< 0.118				< 0.118	
2,4-DB	ug/L	SW 8151	0.118	0.0417	HHBP	210	< 0.118				< 0.118	
4,4'-DDD	ug/L	SW 8081	0.0500	0.0153	HBSL	1	< 0.0500				< 0.0500	
4,4'-DDE	ug/L	SW 8081	0.0500	0.0168	HBSL	0.1	< 0.0500				< 0.0500	
4,4'-DDT	ug/L	SW 8081	0.0500	0.0217	HBSL	0.00000 72	< 0.0500				< 0.0500	
Aldrin	ug/L	SW 8081	0.0500	0.0168	HBSL	0.002	< 0.0500				< 0.0500	
alpha-BHC	ug/L	SW 8081	0.0500	0.0217	HBSL	0.006	< 0.0500				< 0.0500	
alpha-Chlordane	ug/L	SW 8081	0.0500	0.0153	—	—	< 0.0500				< 0.0500	
Aroclor 1016	ug/L	SW 8082	0.500	0.238	HBSL	0.5	< 0.500				< 0.500	
Aroclor 1221	ug/L	SW 8082	0.500	0.124	—	—	< 0.500				< 0.500	

Spring 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	PRE100 07	MON000 22	MON100 16	SHE000 89	WAR100 03	WAR100 04
Aroclor 1232	ug/L	SW 8082	0.500	0.232	—	—	< 0.500				< 0.500	
Aroclor 1242	ug/L	SW 8082	0.500	0.233	—	—	< 0.500				< 0.500	
Aroclor 1248	ug/L	SW 8082	0.500	0.147	—	—	< 0.500				< 0.500	
Aroclor 1254	ug/L	SW 8082	0.500	0.196	HBSL	0.1	< 0.500				< 0.500	
Aroclor 1260	ug/L	SW 8082	0.500	0.249	—	—	< 0.500				< 0.500	
beta-BHC	ug/L	SW 8081	0.0500	0.0238	HBSL	0.02	< 0.0500				< 0.0500	
Chlordane	ug/L	SW 8081	0.500	0.211	MCL	2	< 0.500				< 0.500	
Dalapon	ug/L	SW 8151	0.228	0.0445	MCL	200	< 0.228				< 0.228	
delta-BHC	ug/L	SW 8081	0.0500	0.0217	—	—	< 0.0500				< 0.0500	
Dicamba	ug/L	SW 8151	0.118	0.0427	HBSL	3000	< 0.118				< 0.118	
Dichloroprop	ug/L	SW 8151	0.118	0.0361	HBSL	300	< 0.118				< 0.118	
Dieldrin	ug/L	SW 8081	0.0500	0.0153	HBSL	0.002	< 0.0500				< 0.0500	
Dinoseb	ug/L	SW 8151	0.118	0.0563	MCL	7	< 0.118				< 0.118	
Endosulfan I	ug/L	SW 8081	0.0500	0.0119	HHBP	42	< 0.0500				< 0.0500	
Endosulfan II	ug/L	SW 8081	0.0500	0.0181	—	—	< 0.0500				< 0.0500	
Endosulfan sulfate	ug/L	SW 8081	0.0500	0.0238	—	—	< 0.0500				< 0.0500	
Endrin	ug/L	SW 8081	0.0500	0.0153	MCL	2	< 0.0500				< 0.0500	
Endrin aldehyde	ug/L	SW 8081	0.0500	0.0168	—	—	< 0.0500				< 0.0500	
Endrin ketone	ug/L	SW 8081	0.0500	0.0247	—	—	< 0.0500				< 0.0500	
gamma-BHC	ug/L	SW 8081	0.0500	0.0168	—	—	< 0.0500				< 0.0500	
gamma-Chlordane	ug/L	SW 8081	0.0500	0.0217	—	—	< 0.0500				< 0.0500	
Heptachlor	ug/L	SW 8081	0.0500	0.0181	MCL	0.4	< 0.0500				< 0.0500	
Heptachlor epoxide	ug/L	SW 8081	0.0500	0.0217	MCL	0.2	< 0.0500				< 0.0500	
MCPA	ug/L	SW 8151	23.4	8.15	HBSL	140	< 23.4				< 23.4	
MCPP	ug/L	SW 8151	23.5	5.24	—	—	< 23.5				< 23.5	
Methoxychlor	ug/L	SW 8081	0.0500	0.0247	MCL	40	< 0.0500				< 0.0500	
Toxaphene	ug/L	SW 8081	0.500	0.210	MCL	3	< 0.500				< 0.500	
Radon	pCi/L	SM 7500-Rn-B	100	NR	MCL	300	150					
Uranium, Total	µg/L	EPA 200.8	0.001	NR	MCL	30	<0.001					
1,2,4,5-Tetrachlorobenzene	ug/L	SW 8270C	5.00	0.411	—	—	< 5.00				< 5.00	
1,2,4-Trichlorobenzene	ug/L	SW 8270C	5.00	0.312	MCL	70	< 5.00				< 5.00	
1,2-Dichlorobenzene	ug/L	SW 8270C	5.00	0.388	MCL	600	< 5.00				< 5.00	

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Parameter	Units	Method	PQL	MDL	Type	Value	PRE100 07	MON000 22	MON100 16	SHE000 89	WAR100 03	WAR100 04
1,2-Diphenylhydrazine	ug/L	SW 8270C	5.00	0.386	HBSL	0.04	< 5.00				< 5.00	
1,3,5-Trinitrobenzene	ug/L	SW 8270C	5.00	0.878	—	—	< 5.00				< 5.00	
1,3-Dichlorobenzene	ug/L	SW 8270C	5.00	0.319	HBSL	600	< 5.00				< 5.00	
1,4-Dichlorobenzene	ug/L	SW 8270C	5.00	0.341	MCL	75	< 5.00				< 5.00	
1-Methylnaphthalene	ug/L	SW 8270C	5.00	0.382	—	—	< 5.00				< 5.00	
2,3,4,6-Tetrachlorophenol	ug/L	SW 8270C	10.0	0.269	—	—	< 10.0				< 10.0	
2,4,5-Trichlorophenol	ug/L	SW 8270C	5.00	0.717	—	—	< 5.00				< 5.00	
2,4,6-Trichlorophenol	ug/L	SW 8270C	5.00	0.445	HBSL	2	< 5.00				< 5.00	
2,4-Dichlorophenol	ug/L	SW 8270C	5.00	0.448	HBSL	20	< 5.00				< 5.00	
2,4-Dimethylphenol	ug/L	SW 8270C	5.00	0.402	HBSL	100	< 5.00				< 5.00	
2,4-Dinitrophenol	ug/L	SW 8270C	10.0	0.956	HBSL	10	< 10.0				< 10.0	
2,4-Dinitrotoluene	ug/L	SW 8270C	5.00	0.521	HBSL	0.05	< 5.00				< 5.00	
2,6-Dichlorophenol	ug/L	SW 8270C	5.00	0.319	—	—	< 5.00				< 5.00	
2,6-Dinitrotoluene	ug/L	SW 8270C	5.00	0.501	HBSL	0.05	< 5.00				< 5.00	
2-Chloronaphthalene	ug/L	SW 8270C	5.00	0.427	HBSL	600	< 5.00				< 5.00	
2-Chlorophenol	ug/L	SW 8270C	5.00	0.226	HBSL	40	< 5.00				< 5.00	
2-Methylnaphthalene	ug/L	SW 8270C	5.00	0.0625	HBSL	30	< 5.00				< 5.00	
2-Methylphenol	ug/L	SW 8270C	5.00	0.871	—	—	< 5.00				< 5.00	
2-Nitrophenol	ug/L	SW 8270C	5.00	0.385	—	—	< 5.00				< 5.00	
3 & 4-Methylphenol	ug/L	SW 8270C	5.00	0.727	—	—	< 5.00				< 5.00	
4,6-Dinitro-2-methylphenol	ug/L	SW 8270C	10.0	0.435	—	—	< 10.0				< 10.0	
4-Bromophenyl phenyl ether	ug/L	SW 8270C	5.00	0.279	—	—	< 5.00				< 5.00	
4-Chloro-3-methylphenol	ug/L	SW 8270C	5.00	0.293	—	—	< 5.00				< 5.00	
4-Chlorophenyl phenyl ether	ug/L	SW 8270C	5.00	0.476	—	—	< 5.00				< 5.00	
4-Nitrophenol	ug/L	SW 8270C	5.00	0.470	—	—	< 5.00				< 5.00	
Acenaphthene	ug/L	SW 8270C	5.00	0.0350	HBSL	400	< 5.00				< 5.00	
Acenaphthylene	ug/L	SW 8270C	5.00	0.0696	—	—	< 5.00				< 5.00	
Acetophenone	ug/L	SW 8270C	5.00	0.273	HBSL	700	< 5.00				< 5.00	
Aniline	ug/L	SW 8270C	5.00	0.396	—	—	< 5.00				< 5.00	
Anthracene	ug/L	SW 8270C	5.00	0.0504	HBSL	2000	< 5.00				< 5.00	
Benz(a)anthracene	ug/L	SW 8270C	0.260	0.0840	—	—	< 0.260				< 0.260	
Benzidine	ug/L	SW 8270C	5.00	0.662	HBSL	0.0002	< 5.00				< 5.00	

Spring 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	PRE100 07	MON000 22	MON100 16	SHE000 89	WAR100 03	WAR100 04
Benzo(a)pyrene	ug/L	SW 8270C	0.200	0.0820	MCL	0.2	< 0.200				< 0.200	
Benzo(b)fluoranthene	ug/L	SW 8270C	0.170	0.0527	—	—	< 0.170				< 0.170	
Benzo(g,h,i)perylene	ug/L	SW 8270C	5.00	0.0923	—	—	< 5.00				< 5.00	
Benzo(k)fluoranthene	ug/L	SW 8270C	1.70	0.0574	—	—	< 1.70				< 1.70	
Benzyl Alcohol	ug/L	SW 8270C	5.00	0.384	—	—	< 5.00				< 5.00	
Bis(2-chloroethoxy)methane	ug/L	SW 8270C	5.00	0.450	—	—	< 5.00				< 5.00	
bis-(2-Chloroethyl)ether	ug/L	SW 8270C	5.00	0.428	HBSL	0.03	< 5.00				< 5.00	
Bis(2-chloroisopropyl)ether	ug/L	SW 8270C	5.00	0.495	HBSL	300	< 5.00				< 5.00	
Bis(2-ethylhexyl)phthalate	ug/L	SW 8270C	1.00	0.334	MCL	6	< 1.00				< 1.00	
Butyl benzyl phthalate	ug/L	SW 8270C	5.00	0.247	HBSL	1000	< 5.00				< 5.00	
Chrysene	ug/L	SW 8270C	5.00	0.0625	—	—	< 5.00				< 5.00	
Dibenz(a,h)anthracene	ug/L	SW 8270C	0.20	0.0742	—	—	< 0.20				< 0.20	
Dibenzofuran	ug/L	SW 8270C	5.00	0.254	—	—	< 5.00				< 5.00	
Diethyl phthalate	ug/L	SW 8270C	5.00	0.374	HBSL	6000	< 5.00				< 5.00	
Dimethyl phthalate	ug/L	SW 8270C	5.00	0.462	—	—	< 5.00				< 5.00	
Di-n-butyl phthalate	ug/L	SW 8270C	5.00	0.415	HBSL	700	< 5.00				< 5.00	
Di-n-octyl phthalate	ug/L	SW 8270C	5.00	0.342	—	—	< 5.00				< 5.00	
Fluoranthene	ug/L	SW 8270C	5.00	0.0540	HBSL	300	< 5.00				< 5.00	
Fluorene	ug/L	SW 8270C	5.00	0.0598	HBSL	300	< 5.00				< 5.00	
Hexachlorobenzene	ug/L	SW 8270C	5.00	0.276	MCL	1	< 5.00				< 5.00	
Hexachlorobutadiene	ug/L	SW 8270C	5.00	0.463	HBSL	0.9	< 5.00				< 5.00	
Hexachlorocyclopentadiene	ug/L	SW 8270C	5.00	0.337	MCL	50	< 5.00				< 5.00	
Hexachloroethane	ug/L	SW 8270C	5.00	0.359	HBSL	0.9	< 5.00				< 5.00	
Hexachloropropene	ug/L	SW 8270C	5.00	0.501	—	—	< 5.00				< 5.00	
Indeno(1,2,3-cd)pyrene	ug/L	SW 8270C	0.220	0.0566	—	—	< 0.220				< 0.220	
Isophorone	ug/L	SW 8270C	5.00	0.214	HBSL	60	< 5.00				< 5.00	
m-Dinitrobenzene	ug/L	SW 8270C	5.00	0.262	—	—	< 5.00				< 5.00	
Naphthalene	ug/L	SW 8270C	5.00	0.0651	HBSL	100	< 5.00				< 5.00	
Nitrobenzene	ug/L	SW 8270C	5.00	0.314	HBSL	10	< 5.00				< 5.00	
N-Nitrosodimethylamine	ug/L	SW 8270C	5.00	0.376	—	—	< 5.00				< 5.00	
N-Nitroso-di-n-butylamine	ug/L	SW 8270C	5.00	0.384	—	—	< 5.00				< 5.00	
N-Nitrosodi-n-propylamine	ug/L	SW 8270C	5.00	0.346	HBSL	0.005	< 5.00				< 5.00	

Spring 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	PRE100 07	MON000 22	MON100 16	SHE000 89	WAR100 03	WAR100 04
N-Nitrosodiphenylamine	ug/L	SW 8270C	5.00	0.602	HBSL	7	< 5.00				< 5.00	
Pentachlorobenzene	ug/L	SW 8270C	5.00	0.289	—	—	< 5.00				< 5.00	
Pentachloronitrobenzene	ug/L	SW 8270C	5.00	0.582	—	—	< 5.00				< 5.00	
Pentachlorophenol	ug/L	SW 8270C	1.00	0.429	MCL	1	< 5.00				< 1.00	
Phenanthrene	ug/L	SW 8270C	5.00	0.0745	—	—	< 5.00				< 5.00	
Phenol	ug/L	SW 8270C	5.00	0.263	HBSL	2000	< 5.00				< 5.00	
Pyrene	ug/L	SW 8270C	5.00	0.0613	HBSL	200	< 5.00				< 5.00	
Pyridine	ug/L	SW 8270C	5.00	0.454	—	—	< 5.00				< 5.00	
1,1,1,2-Tetrachloroethane	ug/L	SW 8260B	1.00	0.220	HBSL	1	< 1.00				< 1.00	
1,1,1-Trichloroethane	ug/L	SW 8260B	1.00	0.283	MCL	200	< 1.00				< 1.00	
1,1,2,2-Tetrachloroethane	ug/L	SW 8260B	1.00	0.230	HBSL	1	< 1.00				< 1.00	
1,1,2-Trichloroethane	ug/L	SW 8260B	1.00	0.337	MCL	5	< 1.00				< 1.00	
1,1-Dichloroethane	ug/L	SW 8260B	1.00	0.274	—	—	< 1.00				< 1.00	
1,1-Dichloroethene	ug/L	SW 8260B	1.00	0.224	MCL	7	< 1.00				< 1.00	
1,1-Dichloropropene	ug/L	SW 8260B	1.00	0.213	—	—	< 1.00				< 1.00	
1,2,3-Trichlorobenzene	ug/L	SW 8260B	1.00	0.228	—	—	< 1.00				< 1.00	
1,2,3-Trichloropropane	ug/L	SW 8260B	1.00	0.271	HBSL	30	< 1.00				< 1.00	
1,2,4-Trichlorobenzene	ug/L	SW 8260B	1.00	0.214	MCL	70	< 1.00				< 1.00	
1,2,4-Trimethylbenzene	ug/L	SW 8260B	1.00	0.194	—	—	< 1.00				< 1.00	
1,2-Dibromo-3-chloropropane	ug/L	SW 8260B	5.00	0.869	MCL	0.2	< 5.00				< 5.00	
1,2-Dibromoethane	ug/L	SW 8260B	1.00	0.192	MCL	0.05	< 1.00				< 1.00	
1,2-Dichlorobenzene	ug/L	SW 8260B	1.00	0.570	MCL	600	< 1.00				< 1.00	
1,2-Dichloroethane	ug/L	SW 8260B	1.00	0.300	MCL	5	< 1.00				< 1.00	
1,2-Dichloropropane	ug/L	SW 8260B	1.00	0.230	MCL	5	< 1.00				< 1.00	
1,3,5-Trimethylbenzene	ug/L	SW 8260B	1.00	0.199	—	—	< 1.00				< 1.00	
1,3-Dichlorobenzene	ug/L	SW 8260B	1.00	0.197	HBSL	600	< 1.00				< 1.00	
1,3-Dichloropropane	ug/L	SW 8260B	1.00	0.237	—	—	< 1.00				< 1.00	
1,4-Dichlorobenzene	ug/L	SW 8260B	1.00	0.214	MCL	75	< 1.00				< 1.00	
2,2-Dichloropropane	ug/L	SW 8260B	1.00	0.262	—	—	< 1.00				< 1.00	
2-Butanone	ug/L	SW 8260B	10.0	2.75	—	—	< 10.0				< 10.0	
2-Chlorotoluene	ug/L	SW 8260B	1.00	0.217	—	—	< 1.00				< 1.00	
2-Hexanone	ug/L	SW 8260B	10.0	0.0779	HBSL	40	< 10.0				< 10.0	

Spring 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	PRE100 07	MON000 22	MON100 16	SHE000 89	WAR100 03	WAR100 04
4-Chlorotoluene	ug/L	SW 8260B	1.00	0.241	HBSL	100	< 1.00				< 1.00	
4-Isopropyltoluene	ug/L	SW 8260B	1.00	0.182	—	—	< 1.00				< 1.00	
4-Methyl-2-pentanone	ug/L	SW 8260B	10.0	1.91	—	—	< 10.0				< 10.0	
Acetone	ug/L	SW 8260B	20.0	3.76	HBSL	6000	< 20.0				< 20.0	
Acetonitrile	ug/L	SW 8260B	20.0	2.41	—	—	< 20.0				< 20.0	
Acrolein	ug/L	SW 8260B	10.0	1.49	HBSL	4	< 10.0				< 10.0	
Acrylonitrile	ug/L	SW 8260B	10.0	0.388	HBSL	0.06	< 10.0				< 10.0	
Allyl chloride	ug/L	SW 8260B	1.00	0.250	—	—	< 1.00				< 1.00	
Benzene	ug/L	SW 8260B	1.00	0.269	MCL	5	< 1.00				< 1.00	
Bromobenzene	ug/L	SW 8260B	1.00	0.221	HBSL	60	< 1.00				< 1.00	
Bromochloromethane	ug/L	SW 8260B	1.00	0.293	HBSL	90	< 1.00				< 1.00	
Bromodichloromethane	ug/L	SW 8260B	1.00	0.232	MCL	80	< 1.00				< 1.00	
Bromoform	ug/L	SW 8260B	1.00	0.231	MCL	80	< 1.00				< 1.00	
Bromomethane	ug/L	SW 8260B	1.00	0.494	HHBP	140	< 1.00				< 1.00	
Carbon Disulfide	ug/L	SW 8260B	10.0	0.242	HBSL	700	< 10.0				< 10.0	
Carbon Tetrachloride	ug/L	SW 8260B	1.00	0.241	MCL	5	< 1.00				< 1.00	
Chlorobenzene	ug/L	SW 8260B	1.00	0.265	MCL	100	< 1.00				< 1.00	
Chloroethane	ug/L	SW 8260B	1.00	0.261	—	—	< 1.00				< 1.00	
Chloroform	ug/L	SW 8260B	1.00	0.269	MCL	80	< 1.00				< 1.00	
Chloromethane	ug/L	SW 8260B	1.00	0.318	—	—	< 1.00				< 1.00	
cis-1,2-Dichloroethene	ug/L	SW 8260B	1.00	0.296	MCL	70	< 1.00				< 1.00	
cis-1,3-Dichloropropene	ug/L	SW 8260B	1.00	0.234	HBSL	0.3	< 1.00				< 1.00	
Dibromochloromethane	ug/L	SW 8260B	1.00	0.645	MCL	80	< 1.00				< 1.00	
Dibromomethane	ug/L	SW 8260B	1.00	0.299	—	—	< 1.00				< 1.00	
Dichlorodifluoromethane	ug/L	SW 8260B	1.00	0.242	HBSL	1000	< 1.00				< 1.00	
Ethylbenzene	ug/L	SW 8260B	1.00	0.168	MCL	700	< 1.00				< 1.00	
Hexachlorobutadiene	ug/L	SW 8260B	1.00	0.277	HBSL	0.9	< 1.00				< 1.00	
Iodomethane	ug/L	SW 8260B	10.0	1.10	—	—	< 10.0				< 10.0	
Isopropylbenzene	ug/L	SW 8260B	1.00	0.204	HBSL	700	< 1.00				< 1.00	
m,p-Xylene	ug/L	SW 8260B	5.00	0.410	MCL	10000	< 5.00				< 5.00	
Methyl tert-Butyl Ether	ug/L	SW 8260B	5.00	0.239	—	—	< 5.00				< 5.00	
Methylene Chloride	ug/L	SW 8260B	1.00	0.164	MCL	5	< 1.00				< 1.00	

Spring 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	PRE100 07	MON000 22	MON100 16	SHE000 89	WAR100 03	WAR100 04
Naphthalene	ug/L	SW 8260B	5.00	0.212	HBSL	100	< 5.00				< 5.00	
n-Butylbenzene	ug/L	SW 8260B	1.00	0.167	—	—	1.13				1.12	
n-Hexane	ug/L	SW 8260B	5.00	0.225	—	—	< 5.00				< 5.00	
n-Propylbenzene	ug/L	SW 8260B	1.00	0.204	—	—	< 1.00				< 1.00	
o-Xylene	ug/L	SW 8260B	1.00	0.220	MCL	10000	< 1.00				< 1.00	
sec-Butylbenzene	ug/L	SW 8260B	1.00	0.193	—	—	< 1.00				< 1.00	
Styrene	ug/L	SW 8260B	1.00	0.210	MCL	100	< 1.00				< 1.00	
tert-Butylbenzene	ug/L	SW 8260B	1.00	0.193	—	—	< 1.00				< 1.00	
Tetrachloroethene	ug/L	SW 8260B	1.00	0.230	MCL	5	< 1.00				< 1.00	
Toluene	ug/L	SW 8260B	1.00	0.231	MCL	1000	< 1.00				< 1.00	
trans-1,2-Dichloroethene	ug/L	SW 8260B	1.00	0.225	MCL	100	< 1.00				< 1.00	
trans-1,3-Dichloropropene	ug/L	SW 8260B	1.00	0.203	HBSL	0.3	< 1.00				< 1.00	
Trichloroethene	ug/L	SW 8260B	1.00	0.295	MCL	5	< 1.00				< 1.00	
Trichlorofluoromethane	ug/L	SW 8260B	1.00	0.250	HBSL	2000	< 1.00				< 1.00	
Vinyl acetate	ug/L	SW 8260B	1.00	0.282	—	—	< 1.00				< 1.00	
Vinyl Chloride	ug/L	SW 8260B	1.00	0.224	MCL	2	< 1.00				< 1.00	

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
Dissolved Oxygen	mg/L	YSI sonde			—	—	1.72	0.17	8.73	0.40	5.17	0.16
pH	S.U.	YSI sonde			SMCL	6.5 - 8.5	7.22	7.28	7.18	6.87	7.22	7.12
Specific Conductance	mS/cm	YSI sonde			—	—	991	495	621	655	647	568
Temperature	°C	YSI sonde			—	—	14.92	13.03	12.75	12.17	16.91	13.31
Ammonia	mg/L	EPA 350.1	0.200	0.0732	—	—	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Chloride	mg/L	SM 4500-CL-E	2.00	0.806	SMCL	250	76.4	12.6	< 0.0100	21.7	18.2	15.0
Fluoride	mg/L	SM 4500 F-C	0.200	0.0174	MCL	4	< 0.200	0.250	0.275	0.380	0.265	0.370
Nitrite Nitrogen as NO2-N	mg/L	SM 4500 NO3-F	0.100	0.0210	MCL	1	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	0.221
Nitrogen, Nitrate-Nitrite	mg/L	SM 4500 NO3-F	0.100	0.0157	MCL	10	1.02	< 0.100	4.93	< 0.100	13.0	1.47
Nitrogen, Total Kjeldahl	mg/L	EPA 351.2	0.500	0.165	—	—	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500
Phosphorus	mg/L	SW 6010B	0.100	0.00452	—	—	< 0.100	0.105	< 0.100	< 0.100	< 0.100	< 0.100
Silica	mg/L	EPA 200.7/SW	0.107	0.00296	—	—	13.3	16.6	12.1	17.9	11.7	11.7

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
		6010										
Sulfate	mg/L	EPA 375.4 Modified	10.0	3.80	SMCL	250	150	52.3	58.0	142	93.4	84.8
Total Hardness	mg/L	EPA 200.7	0.662	0.0850	—	—	410	293	327	407	331	347
Total Orthophosphate, as P	mg/L	SM 4500 P-F	0.100	0.0218	—	—	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Aluminum	mg/L	SW 6010B	0.100	0.00561	MCL	0.2	< 0.100	0.105	< 0.100	< 0.100	< 0.100	< 0.100
Antimony	mg/L	SW 7041	0.0030 0	0.00110	MCL	0.006	< 0.00300	< 0.00300	< 0.00300	< 0.00300	< 0.00300	< 0.00300
Arsenic	mg/L	SW 7060A	0.0030 0	0.00076 3	MCL	0.01	< 0.00300	< 0.00422	< 0.00300	< 0.00550	< 0.00300	< 0.00300
Barium	mg/L	SW 6010B	0.0050 0	0.00074 7	MCL	2	0.244	0.222	0.0494	0.0541	0.0764	0.113
Beryllium	mg/L	SW 6010B	0.0005 00	0.00002 36	MCL	0.004	< 0.000500	< 0.000500	< 0.000500	< 0.000500	< 0.000500	< 0.000500
Boron	mg/L	SW 6010B	0.100	0.00328	HBSL	6000	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Cadmium	mg/L	SW 7131A	0.0002 00	0.00007 02	MCL	0.005	< 0.000200	< 0.000200	< 0.000200	< 0.000200	< 0.000200	< 0.000200
Calcium	mg/L	SW 6010B	0.100	0.0174	—	—	112	73.9	86.1	100	78.8	97.9
Chromium, Hexavalent	mg/L	SM 3500 Cr B	0.0100	0.00480	MCL	0.1	< 0.00400	< 0.00400	< 0.00400	< 0.00400	< 0.00400	< 0.00400
Cobalt	mg/L	SW 6010B	0.0050 0	0.00081 5	—	—	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Copper	mg/L	SW 6010B	0.0050 0	0.00056 6	SMCL	1	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Iron	mg/L	SW 6010B	0.0500	0.00534	SMCL	0.3	< 0.0500	1.68	0.190	3.04	< 0.0500	< 0.0500
Lead	mg/L	SW 7421	0.0020 0	0.00073 8	MCL	0.015	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200
Lithium	mg/L	SW 6010B	0.0050 0	0.00003 15	—	—	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Magnesium	mg/L	SW 6010B	0.100	0.0101	—	—	31.7	26.2	27.1	38.0	32.6	25.0
Manganese	mg/L	SW 6010B	0.0050 0	0.00153	HBSL, SMCL	0.3, 0.05	< 0.00500	0.401	< 0.00500	0.0630	< 0.00500	0.0929
Molybdenum	mg/L	SW 6010B	0.0100	0.00207	HBSL	0.04	< 0.0100	< 0.0100	< 0.0100	< 0.0100	0.0121	< 0.0100
Nickel	mg/L	SW 6010B	0.0050 0	0.00118	HBSL	0.1	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Potassium	mg/L	SW 6010B	1.00	0.0397	—	—	4.25	1.38	3.15	< 1.00	2.04	1.28
Silver	mg/L	SW 6010B	0.0020 0	0.00038 4	HBSL	0.1	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200
Sodium	mg/L	SW 6010B	1.00	0.0631	—	—	49.4	6.51	21.9	4.57	7.90	7.46
Strontium	mg/L	SW 6010B	0.0050 0	0.00052 7	HBSL	4	0.709	0.434	0.173	0.334	2.34	0.328

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
Thallium	mg/L	SW 7841/EPA 279.2	0.0010 0	0.00040 7	MCL	0.002	< 0.00100	< 0.00100	< 0.00100	< 0.00100	< 0.00100	< 0.00100
Vanadium	mg/L	SW 6010B	0.0050 0	0.00051 7	—	—	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Zinc	mg/L	SW 6010B	0.0100	0.00138	HBSL	2	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100
Alkalinity, Total (As CaCO3)	mg/L	SM 2320B	25.0	25.0	—	—	386	231	289	318	280	297
Biochemical Oxygen Demand	mg/L	SM 5210B	2.00	2.00	—	—	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00
Carbonaceous Biological Oxygen Demand	mg/L	EPA 405.1/SM 5210	2.00	2.00	—	—	< 2.00	< 2.00	< 2.00	2.62	< 2.00	< 2.00
Chemical Oxygen Demand	mg/L	HACH 8000	5.00	4.68	—	—	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
Cyanide, Total	mg/L	EPA 335.4	0.0100	0.00195	MCL	0.2	< 0.0100	< 0.0100	36.9	< 0.0100	< 0.0100	< 0.0100
Phenolics, Total Recoverable	mg/L	EPA 420.4	0.0100	0.00336	—	—	0.0210	< 0.0100	< 0.0100	< 0.0100	0.0180	0.0130
Total Dissolved Solids (Residue, Filterable)	mg/L	SM 2540C	5.00	1.67	SMCL	500	621	174	428	517	404	378
Total Organic Carbon	mg/L	SM 5310C	1.00	0.142	—	—	1.34	0.94	0.95	1.20	< 1.00	0.93
E. coli	MPN/100 mL	Colilert	1.00		MCL	0	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
2,4,5-T	ug/L	SW 8151	0.118	0.0477	HBSL	70			< 0.118	< 0.118		
2,4,5-TP (Silvex)	ug/L	SW 8151	0.119	0.0249	—	—			< 0.119	< 0.119		
2,4-D	ug/L	SW 8151	0.125	0.0439	MCL	70			< 0.118	< 0.118		
2,4-DB	ug/L	SW 8151	0.118	0.0417	HHBP	210			< 0.118	< 0.118		
4,4'-DDD	ug/L	SW 8081	0.0500	0.0153	HBSL	1			< 0.0500	< 0.0500		
4,4'-DDE	ug/L	SW 8081	0.0500	0.0168	HBSL	0.1			< 0.0500	< 0.0500		
4,4'-DDT	ug/L	SW 8081	0.0500	0.0217	HBSL	0.00000 72			< 0.0500	< 0.0500		
Aldrin	ug/L	SW 8081	0.0500	0.0168	HBSL	0.002			< 0.0500	< 0.0500		
alpha-BHC	ug/L	SW 8081	0.0500	0.0217	HBSL	0.006			< 0.0500	< 0.0500		
alpha-Chlordane	ug/L	SW 8081	0.0500	0.0153	—	—			< 0.0500	< 0.0500		
Aroclor 1016	ug/L	SW 8082	0.500	0.238	HBSL	0.5			< 0.500	< 0.500		
Aroclor 1221	ug/L	SW 8082	0.500	0.124	—	—			< 0.500	< 0.500		
Aroclor 1232	ug/L	SW 8082	0.500	0.232	—	—			< 0.500	< 0.500		
Aroclor 1242	ug/L	SW 8082	0.500	0.233	—	—			< 0.500	< 0.500		
Aroclor 1248	ug/L	SW 8082	0.500	0.147	—	—			< 0.500	< 0.500		
Aroclor 1254	ug/L	SW 8082	0.500	0.196	HBSL	0.1			< 0.500	< 0.500		
Aroclor 1260	ug/L	SW 8082	0.500	0.249	—	—			< 0.500	< 0.500		
beta-BHC	ug/L	SW 8081	0.0500	0.0238	HBSL	0.02			< 0.0500	< 0.0500		

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
Chlordane	ug/L	SW 8081	0.500	0.211	MCL	2			< 0.500	< 0.500		
delta-BHC	ug/L	SW 8081	0.0500	0.0217	—	—			< 0.0500	< 0.0500		
Dicamba	ug/L	SW 8151	0.118	0.0427	HBSL	3000			< 0.118	< 0.118		
Dichloroprop	ug/L	SW 8151	0.118	0.0361	HBSL	300			< 0.118	< 0.118		
Dieldrin	ug/L	SW 8081	0.0500	0.0153	HBSL	0.002			< 0.0500	< 0.0500		
Dinoseb	ug/L	SW 8151	0.118	0.0563	MCL	7			< 0.118	< 0.118		
Endosulfan I	ug/L	SW 8081	0.0500	0.0119	HHBP	42			< 0.0500	< 0.0500		
Endosulfan II	ug/L	SW 8081	0.0500	0.0181	—	—			< 0.0500	< 0.0500		
Endosulfan sulfate	ug/L	SW 8081	0.0500	0.0238	—	—			< 0.0500	< 0.0500		
Endrin	ug/L	SW 8081	0.0500	0.0153	MCL	2			< 0.0500	< 0.0500		
Endrin aldehyde	ug/L	SW 8081	0.0500	0.0168	—	—			< 0.0500	< 0.0500		
Endrin ketone	ug/L	SW 8081	0.0500	0.0247	—	—			< 0.0500	< 0.0500		
gamma-BHC	ug/L	SW 8081	0.0500	0.0168	—	—			< 0.0500	< 0.0500		
gamma-Chlordane	ug/L	SW 8081	0.0500	0.0217	—	—			< 0.0500	< 0.0500		
Heptachlor	ug/L	SW 8081	0.0500	0.0181	MCL	0.4			< 0.0500	< 0.0500		
Heptachlor epoxide	ug/L	SW 8081	0.0500	0.0217	MCL	0.2			< 0.0500	< 0.0500		
MCPA	ug/L	SW 8151	23.4	8.15	HBSL	140			< 23.4	< 23.4		
MCPPP	ug/L	SW 8151	23.5	5.24	—	—			< 23.5	< 23.5		
Methoxychlor	ug/L	SW 8081	0.0500	0.0247	MCL	40			< 0.0500	< 0.0500		
Toxaphene	ug/L	SW 8081	0.500	0.210	MCL	3			< 0.500	< 0.500		
Radon	pCi/L	SM 7500-Rn-B	100	NR	MCL	300			380	206		
Uranium, Total	µg/L	EPA 200.8	0.001	NR	MCL	30			0.24	0.20		
1,2,4,5-Tetrachlorobenzene	ug/L	SW 8270C	5.00	0.411	—	—			< 5.00	< 5.00		
1,2,4-Trichlorobenzene	ug/L	SW 8270C	5.00	0.312	MCL	70			< 5.00	< 5.00		
1,2-Dichlorobenzene	ug/L	SW 8270C	5.00	0.388	MCL	600			< 5.00	< 5.00		
1,2-Diphenylhydrazine	ug/L	SW 8270C	5.00	0.386	HBSL	0.04			< 5.00	< 5.00		
1,3,5-Trinitrobenzene	ug/L	SW 8270C	5.00	0.878	—	—			< 5.00	< 5.00		
1,3-Dichlorobenzene	ug/L	SW 8270C	5.00	0.319	HBSL	600			< 5.00	< 5.00		
1,4-Dichlorobenzene	ug/L	SW 8270C	5.00	0.341	MCL	75			< 5.00	< 5.00		
1-Methylnaphthalene	ug/L	SW 8270C	5.00	0.382	—	—			< 5.00	< 5.00		
2,3,4,6-Tetrachlorophenol	ug/L	SW 8270C	10.0	0.269	—	—			< 10.0	< 10.0		
2,4,5-Trichlorophenol	ug/L	SW 8270C	5.00	0.717	—	—			< 5.00	< 5.00		

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
2,4,6-Trichlorophenol	ug/L	SW 8270C	5.00	0.445	HBSL	2			< 5.00	< 5.00		
2,4-Dichlorophenol	ug/L	SW 8270C	5.00	0.448	HBSL	20			< 5.00	< 5.00		
2,4-Dimethylphenol	ug/L	SW 8270C	5.00	0.402	HBSL	100			< 5.00	< 5.00		
2,4-Dinitrophenol	ug/L	SW 8270C	10.0	0.956	HBSL	10			< 10.0	< 10.0		
2,4-Dinitrotoluene	ug/L	SW 8270C	5.00	0.521	HBSL	0.05			< 5.00	< 5.00		
2,6-Dichlorophenol	ug/L	SW 8270C	5.00	0.319	—	—			< 5.00	< 5.00		
2,6-Dinitrotoluene	ug/L	SW 8270C	5.00	0.501	HBSL	0.05			< 5.00	< 5.00		
2-Chloronaphthalene	ug/L	SW 8270C	5.00	0.427	HBSL	600			< 5.00	< 5.00		
2-Chlorophenol	ug/L	SW 8270C	5.00	0.226	HBSL	40			< 5.00	< 5.00		
2-Methylnaphthalene	ug/L	SW 8270C	5.00	0.0625	HBSL	30			< 5.00	< 5.00		
2-Methylphenol	ug/L	SW 8270C	5.00	0.871	—	—			< 5.00	< 5.00		
2-Nitrophenol	ug/L	SW 8270C	5.00	0.385	—	—			< 5.00	< 5.00		
3 & 4-Methylphenol	ug/L	SW 8270C	5.00	0.727	—	—			< 5.00	< 5.00		
4,6-Dinitro-2-methylphenol	ug/L	SW 8270C	10.0	0.435	—	—			< 10.0	< 10.0		
4-Bromophenyl phenyl ether	ug/L	SW 8270C	5.00	0.279	—	—			< 5.00	< 5.00		
4-Chloro-3-methylphenol	ug/L	SW 8270C	5.00	0.293	—	—			< 5.00	< 5.00		
4-Chlorophenyl phenyl ether	ug/L	SW 8270C	5.00	0.476	—	—			< 5.00	< 5.00		
4-Nitrophenol	ug/L	SW 8270C	5.00	0.470	—	—			< 5.00	< 5.00		
Acenaphthene	ug/L	SW 8270C	5.00	0.0350	HBSL	400			< 5.00	< 5.00		
Acenaphthylene	ug/L	SW 8270C	5.00	0.0696	—	—			< 5.00	< 5.00		
Acetophenone	ug/L	SW 8270C	5.00	0.273	HBSL	700			< 5.00	< 5.00		
Aniline	ug/L	SW 8270C	5.00	0.396	—	—			< 5.00	< 5.00		
Anthracene	ug/L	SW 8270C	5.00	0.0504	HBSL	2000			< 5.00	< 5.00		
Benz(a)anthracene	ug/L	SW 8270C	0.260	0.0840	—	—			< 0.260	< 0.260		
Benzidine	ug/L	SW 8270C	5.00	0.662	HBSL	0.0002			< 5.00	< 5.00		
Benzo(a)pyrene	ug/L	SW 8270C	0.200	0.0820	MCL	0.2			< 0.200	< 0.200		
Benzo(b)fluoranthene	ug/L	SW 8270C	0.170	0.0527	—	—			< 0.170	< 0.170		
Benzo(g,h,i)perylene	ug/L	SW 8270C	5.00	0.0923	—	—			< 5.00	< 5.00		
Benzo(k)fluoranthene	ug/L	SW 8270C	1.70	0.0574	—	—			< 1.70	< 1.70		
Benzyl Alcohol	ug/L	SW 8270C	5.00	0.384	—	—			< 5.00	< 5.00		
Bis(2-chloroethoxy)methane	ug/L	SW 8270C	5.00	0.450	—	—			< 5.00	< 5.00		
bis-(2-Chloroethyl)ether	ug/L	SW 8270C	5.00	0.428	HBSL	0.03			< 5.00	< 5.00		

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Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
Bis(2-chloroisopropyl)ether	ug/L	SW 8270C	5.00	0.495	HBSL	300			< 5.00	< 5.00		
Bis(2-ethylhexyl)phthalate	ug/L	SW 8270C	1.00	0.334	MCL	6			16.2	< 1.00		
Butyl benzyl phthalate	ug/L	SW 8270C	5.00	0.247	HBSL	1000			< 5.00	< 5.00		
Chrysene	ug/L	SW 8270C	5.00	0.0625	—	—			< 5.00	< 5.00		
Dibenz(a,h)anthracene	ug/L	SW 8270C	0.200	0.0742	—	—			< 0.200	0.390		
Dibenzofuran	ug/L	SW 8270C	5.00	0.254	—	—			< 5.00	< 5.00		
Diethyl phthalate	ug/L	SW 8270C	5.00	0.374	HBSL	6000			< 5.00	< 5.00		
Dimethyl phthalate	ug/L	SW 8270C	5.00	0.462	—	—			< 5.00	< 5.00		
Di-n-butyl phthalate	ug/L	SW 8270C	5.00	0.415	HBSL	700			< 5.00	< 5.00		
Di-n-octyl phthalate	ug/L	SW 8270C	5.00	0.342	—	—			< 5.00	< 5.00		
Fluoranthene	ug/L	SW 8270C	5.00	0.0540	HBSL	300			< 5.00	< 5.00		
Fluorene	ug/L	SW 8270C	5.00	0.0598	HBSL	300			< 5.00	< 5.00		
Hexachlorobenzene	ug/L	SW 8270C	5.00	0.276	MCL	1			< 5.00	< 5.00		
Hexachlorobutadiene	ug/L	SW 8270C	5.00	0.463	HBSL	0.9			< 5.00	< 5.00		
Hexachlorocyclopentadiene	ug/L	SW 8270C	5.00	0.337	MCL	50			< 5.00	< 5.00		
Hexachloroethane	ug/L	SW 8270C	5.00	0.359	HBSL	0.9			< 5.00	< 5.00		
Hexachloropropene	ug/L	SW 8270C	5.00	0.501	—	—			< 5.00	< 5.00		
Indeno(1,2,3-cd)pyrene	ug/L	SW 8270C	0.220	0.0566	—	—			< 0.220	0.300		
Isophorone	ug/L	SW 8270C	5.00	0.214	HBSL	60			< 5.00	< 5.00		
m-Dinitrobenzene	ug/L	SW 8270C	5.00	0.262	—	—			< 5.00	< 5.00		
Naphthalene	ug/L	SW 8270C	5.00	0.0651	HBSL	100			< 5.00	< 5.00		
Nitrobenzene	ug/L	SW 8270C	5.00	0.314	HBSL	10			< 5.00	< 5.00		
N-Nitrosodimethylamine	ug/L	SW 8270C	5.00	0.376	—	—			< 5.00	< 5.00		
N-Nitroso-di-n-butylamine	ug/L	SW 8270C	5.00	0.384	—	—			< 5.00	< 5.00		
N-Nitrosodi-n-propylamine	ug/L	SW 8270C	5.00	0.346	HBSL	0.005			< 5.00	< 5.00		
N-Nitrosodiphenylamine	ug/L	SW 8270C	5.00	0.602	HBSL	7			< 5.00	< 5.00		
Pentachlorobenzene	ug/L	SW 8270C	5.00	0.289	—	—			< 5.00	< 5.00		
Pentachloronitrobenzene	ug/L	SW 8270C	5.00	0.582	—	—			< 5.00	< 5.00		
Pentachlorophenol	ug/L	SW 8270C	1.00	0.429	MCL	1			< 5.00	< 5.00		
Phenanthrene	ug/L	SW 8270C	5.00	0.0745	—	—			< 5.00	< 5.00		
Phenol	ug/L	SW 8270C	5.00	0.263	HBSL	2000			< 5.00	< 5.00		
Pyrene	ug/L	SW 8270C	5.00	0.0613	HBSL	200			< 5.00	< 5.00		

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
Pyridine	ug/L	SW 8270C	5.00	0.454	—	—			< 5.00	< 5.00		
1,1,1,2-Tetrachloroethane	ug/L	SW 8260B	1.00	0.220	HBSL	1	< 5.00		< 5.00	< 5.00		
1,1,1-Trichloroethane	ug/L	SW 8260B	1.00	0.283	MCL	200	< 5.00		< 5.00	< 5.00		
1,1,2,2-Tetrachloroethane	ug/L	SW 8260B	1.00	0.230	HBSL	1	< 5.00		< 5.00	< 5.00		
1,1,2-Trichloroethane	ug/L	SW 8260B	1.00	0.337	MCL	5	< 5.00		< 5.00	< 5.00		
1,1-Dichloroethane	ug/L	SW 8260B	1.00	0.274	—	—	< 5.00		< 5.00	< 5.00		
1,1-Dichloroethene	ug/L	SW 8260B	1.00	0.224	MCL	7	< 5.00		< 5.00	< 5.00		
1,1-Dichloropropene	ug/L	SW 8260B	1.00	0.213	—	—	< 5.00		< 5.00	< 5.00		
1,2,3-Trichlorobenzene	ug/L	SW 8260B	1.00	0.228	—	—	< 5.00		< 5.00	< 5.00		
1,2,3-Trichloropropane	ug/L	SW 8260B	1.00	0.271	HBSL	30	< 5.00		< 5.00	< 5.00		
1,2,4-Trichlorobenzene	ug/L	SW 8260B	1.00	0.214	MCL	70	< 5.00		< 5.00	< 5.00		
1,2,4-Trimethylbenzene	ug/L	SW 8260B	1.00	0.194	—	—	< 5.00		< 5.00	< 5.00		
1,2-Dibromo-3-chloropropane	ug/L	SW 8260B	5.00	0.869	MCL	0.2	< 10.0		< 10.0	< 10.0		
1,2-Dibromoethane	ug/L	SW 8260B	1.00	0.192	MCL	0.05	< 5.00		< 5.00	< 5.00		
1,2-Dichlorobenzene	ug/L	SW 8260B	1.00	0.570	MCL	600	< 5.00		< 5.00	< 5.00		
1,2-Dichloroethane	ug/L	SW 8260B	1.00	0.300	MCL	5	< 5.00		< 5.00	< 5.00		
1,2-Dichloropropane	ug/L	SW 8260B	1.00	0.230	MCL	5	< 5.00		< 5.00	< 5.00		
1,3,5-Trimethylbenzene	ug/L	SW 8260B	1.00	0.199	—	—	< 5.00		< 5.00	< 5.00		
1,3-Dichlorobenzene	ug/L	SW 8260B	1.00	0.197	HBSL	600	< 5.00		< 5.00	< 5.00		
1,3-Dichloropropane	ug/L	SW 8260B	1.00	0.237	—	—	< 5.00		< 5.00	< 5.00		
1,4-Dichlorobenzene	ug/L	SW 8260B	1.00	0.214	MCL	75	< 5.00		< 5.00	< 5.00		
2,2-Dichloropropane	ug/L	SW 8260B	1.00	0.262	—	—	< 5.00		< 5.00	< 5.00		
2-Butanone	ug/L	SW 8260B	10.0	2.75	—	—	< 20.0		< 20.0	< 20.0		
2-Chlorotoluene	ug/L	SW 8260B	1.00	0.217	—	—	< 5.00		< 5.00	< 5.00		
2-Hexanone	ug/L	SW 8260B	10.0	0.0779	HBSL	40	< 20.0		< 20.0	< 20.0		
4-Chlorotoluene	ug/L	SW 8260B	1.00	0.241	HBSL	100	< 5.00		< 5.00	< 5.00		
4-Isopropyltoluene	ug/L	SW 8260B	1.00	0.182	—	—	< 5.00		< 5.00	< 5.00		
4-Methyl-2-pentanone	ug/L	SW 8260B	10.0	1.91	—	—	< 20.0		< 20.0	< 20.0		
Acetone	ug/L	SW 8260B	20.0	3.76	HBSL	6000	< 20.0		< 20.0	< 20.0		
Acetonitrile	ug/L	SW 8260B	20.0	2.41	—	—	< 40.0		< 40.0	< 40.0		
Acrolein	ug/L	SW 8260B	10.0	1.49	HBSL	4	< 20.0		< 20.0	< 20.0		
Acrylonitrile	ug/L	SW 8260B	10.0	0.388	HBSL	0.06	< 20.0		< 20.0	< 20.0		

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
Allyl chloride	ug/L	SW 8260B	1.00	0.250	—	—	< 5.00		< 5.00	< 5.00		
Benzene	ug/L	SW 8260B	1.00	0.269	MCL	5	< 5.00		< 5.00	< 5.00		
Bromobenzene	ug/L	SW 8260B	1.00	0.221	HBSL	60	< 5.00		< 5.00	< 5.00		
Bromochloromethane	ug/L	SW 8260B	1.00	0.293	HBSL	90	< 5.00		< 5.00	< 5.00		
Bromodichloromethane	ug/L	SW 8260B	1.00	0.232	MCL	80	< 5.00		< 5.00	< 5.00		
Bromoform	ug/L	SW 8260B	1.00	0.231	MCL	80	< 5.00		< 5.00	< 5.00		
Bromomethane	ug/L	SW 8260B	1.00	0.494	HHBP	140	< 5.00		< 5.00	< 5.00		
Carbon Disulfide	ug/L	SW 8260B	10.0	0.242	HBSL	700	< 20.0		< 20.0	< 20.0		
Carbon Tetrachloride	ug/L	SW 8260B	1.00	0.241	MCL	5	< 5.00		< 5.00	< 5.00		
Chlorobenzene	ug/L	SW 8260B	1.00	0.265	MCL	100	< 5.00		< 5.00	< 5.00		
Chloroethane	ug/L	SW 8260B	1.00	0.261	—	—	< 5.00		< 5.00	< 5.00		
Chloroform	ug/L	SW 8260B	1.00	0.269	MCL	80	< 5.00		< 5.00	< 5.00		
Chloromethane	ug/L	SW 8260B	1.00	0.318	—	—	< 5.00		< 5.00	< 5.00		
cis-1,2-Dichloroethene	ug/L	SW 8260B	1.00	0.296	MCL	70	< 5.00		< 5.00	< 5.00		
cis-1,3-Dichloropropene	ug/L	SW 8260B	1.00	0.234	HBSL	0.3	< 5.00		< 5.00	< 5.00		
Dibromochloromethane	ug/L	SW 8260B	1.00	0.645	MCL	80	< 5.00		< 5.00	< 5.00		
Dibromomethane	ug/L	SW 8260B	1.00	0.299	—	—	< 5.00		< 5.00	< 5.00		
Dichlorodifluoromethane	ug/L	SW 8260B	1.00	0.242	HBSL	1000	< 5.00		< 5.00	< 5.00		
Ethylbenzene	ug/L	SW 8260B	1.00	0.168	MCL	700	< 5.00		< 5.00	< 5.00		
Hexachlorobutadiene	ug/L	SW 8260B	1.00	0.277	HBSL	0.9	< 5.00		< 5.00	< 5.00		
Iodomethane	ug/L	SW 8260B	10.0	1.10	—	—	< 10.0		< 10.0	< 10.0		
Isopropylbenzene	ug/L	SW 8260B	1.00	0.204	HBSL	700	< 5.00		< 5.00	< 5.00		
m,p-Xylene	ug/L	SW 8260B	5.00	0.410	MCL	10000	< 10.0		< 10.0	< 10.0		
Methyl tert-Butyl Ether	ug/L	SW 8260B	5.00	0.239	—	—	< 10.0		< 10.0	< 10.0		
Methylene Chloride	ug/L	SW 8260B	1.00	0.164	MCL	5	< 5.00		< 5.00	< 5.00		
Naphthalene	ug/L	SW 8260B	5.00	0.212	HBSL	100	< 5.00		< 5.00	< 5.00		
n-Butylbenzene	ug/L	SW 8260B	1.00	0.167	—	—	< 5.00		< 5.00	< 5.00		
n-Hexane	ug/L	SW 8260B	5.00	0.225	—	—	< 5.00		< 5.00	< 5.00		
n-Propylbenzene	ug/L	SW 8260B	1.00	0.204	—	—	< 5.00		< 5.00	< 5.00		
o-Xylene	ug/L	SW 8260B	1.00	0.220	MCL	10000	< 5.00		< 5.00	< 5.00		
sec-Butylbenzene	ug/L	SW 8260B	1.00	0.193	—	—	< 5.00		< 5.00	< 5.00		
Styrene	ug/L	SW 8260B	1.00	0.210	MCL	100	< 5.00		< 5.00	< 5.00		

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	BUT100 14	BUT100 16	BUT100 17	CLA100 11	CLA100 18	MIA002 05
tert_Butylbenzene	ug/L	SW 8260B	1.00	0.193	—	—	< 5.00		< 5.00	< 5.00		
Tetrachloroethene	ug/L	SW 8260B	1.00	0.230	MCL	5	< 5.00		< 5.00	< 5.00		
Toluene	ug/L	SW 8260B	1.00	0.231	MCL	1000	< 5.00		< 5.00	< 5.00		
trans-1,2-Dichloroethene	ug/L	SW 8260B	1.00	0.225	MCL	100	< 5.00		< 5.00	< 5.00		
trans-1,3-Dichloropropene	ug/L	SW 8260B	1.00	0.203	HBSL	0.3	< 5.00		< 5.00	< 5.00		
Trichloroethene	ug/L	SW 8260B	1.00	0.295	MCL	5	22.0		< 5.00	< 5.00		
Trichlorofluoromethane	ug/L	SW 8260B	1.00	0.250	HBSL	2000	< 5.00		< 5.00	< 5.00		
Vinyl acetate	ug/L	SW 8260B	1.00	0.282	—	—	< 10.0		< 10.0	< 10.0		
Vinyl Chloride	ug/L	SW 8260B	1.00	0.224	MCL	2	< 1.00		< 1.00	< 1.00		

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	MON000 22	MON100 16	PRE100 07	SHE000 89	WAR100 03	WAR100 04
Dissolved Oxygen	mg/L	YSI sonde			—	—	0.29	0.09	0.10	0.19	0.08	0.54
pH	S.U.	YSI sonde			SMCL	6.5 - 8.5	6.83	7.22	7.19	7.07	7.38	7.55
Specific Conductance	mS/cm	YSI sonde			—	—	1055	966	689	553	921	574
Temperature	°C	YSI sonde			—	—	18.01	13.86	12.70	12.07	14.31	14.82
Ammonia	mg/L	EPA 350.1	0.200	0.0732	—	—	< 0.200	< 0.200	< 0.200	< 0.200	0.253	< 0.200
Chloride	mg/L	SM 4500-CL-E	2.00	0.806	SMCL	250	15.8	106	27.1	7.28	88.7	41.3
Fluoride	mg/L	SM 4500 F-C	0.200	0.0174	MCL	4	< 0.200	0.200	0.235	0.300	0.230	0.270
Nitrite Nitrogen as NO2-N	mg/L	SM 4500 NO3-F	0.100	0.0210	MCL	1	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Nitrogen, Nitrate-Nitrite	mg/L	SM 4500 NO3-F	0.100	0.0157	MCL	10	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Nitrogen, Total Kjeldahl	mg/L	EPA 351.2	0.500	0.165	—	—	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500
Phosphorus	mg/L	SW 6010B	0.100	0.00452	—	—	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Silica	mg/L	EPA 200.7/SW 6010	0.107	0.00296	—	—	10.6	12.2	13.4	13.1	16.5	10.2
Sulfate	mg/L	EPA 375.4 Modified	10.0	3.80	SMCL	250	304	50.6	188	105	81.5	30.5
Total Hardness	mg/L	EPA 200.7	0.662	0.0850	—	—	566	344	347	336	401	253
Total Orthophosphate, as P	mg/L	SM 4500 P-F	0.100	0.0218	—	—	< 0.100	< 0.100	< 0.100	< 0.100	0.119	< 0.100
Aluminum	mg/L	SW 6010B	0.100	0.00561	MCL	0.2	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Antimony	mg/L	SW 7041	0.0030 0	0.00110	MCL	0.006	< 0.00300	< 0.00300	< 0.00300	< 0.00300	< 0.00300	< 0.00300

Fall 2016		Benchmark										
Parameter	Units	Method	PQL	MDL	Type	Value	MON000 22	MON100 16	PRE100 07	SHE000 89	WAR100 03	WAR100 04
Arsenic	mg/L	SW 7060A	0.0030 0	0.00076 3	MCL	0.01	< 0.00300	< 0.00300	0.00590	< 0.00300	< 0.00300	< 0.00300
Barium	mg/L	SW 6010B	0.0050 0	0.00074 7	MCL	2	0.103	0.115	0.209	0.138	0.204	0.0552
Beryllium	mg/L	SW 6010B	0.0005 00	0.00002 36	MCL	0.004	< 0.000500	< 0.000500	< 0.000500	< 0.000500	< 0.000500	< 0.000500
Boron	mg/L	SW 6010B	0.100	0.00328	HBSL	6000	< 0.100	< 0.100	< 0.100	< 0.100	0.200	< 0.100
Cadmium	mg/L	SW 7131A	0.0002 00	0.00007 02	MCL	0.005	< 0.000200	< 0.000200	< 0.000200	< 0.000200	< 0.000200	< 0.000200
Calcium	mg/L	SW 6010B	0.100	0.0174	—	—	154	89.0	83.6	83.4	97.6	57.5
Chromium, Hexavalent	mg/L	SM 3500 Cr B	0.0100	0.00480	MCL	0.1	< 0.00400	< 0.00400	< 0.00400	< 0.00400	< 0.00400	< 0.00400
Cobalt	mg/L	SW 6010B	0.0050 0	0.00081 5	—	—	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Copper	mg/L	SW 6010B	0.0050 0	0.00056 6	SMCL	1	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Iron	mg/L	SW 6010B	0.0500	0.00534	SMCL	0.3	< 0.0500	0.410	1.83	< 0.0500	1.96	< 0.0500
Lead	mg/L	SW 7421	0.0020 0	0.00073 8	MCL	0.015	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200
Lithium	mg/L	SW 6010B	0.0050 0	0.00003 15	—	—	0.0121	< 0.00500	< 0.00500	< 0.00500	0.00504	< 0.00500
Magnesium	mg/L	SW 6010B	0.100	0.0101	—	—	43.9	29.7	33.5	31.1	38.2	26.5
Manganese	mg/L	SW 6010B	0.0050 0	0.00153	HBSL, SMCL	0.3, 0.05	0.0379	0.0761	0.0189	0.246	0.0530	< 0.00500
Molybdenum	mg/L	SW 6010B	0.0100	0.00207	HBSL	0.04	< 0.0100	< 0.0100	< 0.0100	0.0104	< 0.0100	< 0.0100
Nickel	mg/L	SW 6010B	0.0050 0	0.00118	HBSL	0.1	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Potassium	mg/L	SW 6010B	1.00	0.0397	—	—	4.54	2.88	2.05	1.27	2.41	2.46
Silver	mg/L	SW 6010B	0.0020 0	0.00038 4	HBSL	0.1	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200
Sodium	mg/L	SW 6010B	1.00	0.0631	—	—	9.52	65.5	14.1	9.23	35.3	24.6
Strontium	mg/L	SW 6010B	0.0050 0	0.00052 7	HBSL	4	0.480	0.506	1.26	0.664	1.03	0.417
Thallium	mg/L	SW 7841/EPA 279.2	0.0010 0	0.00040 7	MCL	0.002	< 0.00100	< 0.00100	< 0.00100	< 0.00100	< 0.00100	< 0.00100
Vanadium	mg/L	SW 6010B	0.0050 0	0.00051 7	—	—	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Zinc	mg/L	SW 6010B	0.0100	0.00138	HBSL	2	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100
Alkalinity, Total (As CaCO3)	mg/L	SM 2320B	25.0	25.0	—	—	328	309	289	305	280	220
Biochemical Oxygen Demand	mg/L	SM 5210B	2.00	2.00	—	—	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00
Carbonaceous Biological Oxygen Demand	mg/L	EPA 405.1/SM 5210	2.00	2.00	—	—	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	MON000 22	MON100 16	PRE100 07	SHE000 89	WAR100 03	WAR100 04
Chemical Oxygen Demand	mg/L	HACH 8000	5.00	4.68	—	—	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
Cyanide, Total	mg/L	EPA 335.4	0.0100	0.00195	MCL	0.2	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100
Phenolics, Total Recoverable	mg/L	EPA 420.4	0.0100	0.00336	—	—	0.0430	0.0590	< 0.0100	0.0180	0.0140	0.0160
Total Dissolved Solids (Residue, Filterable)	mg/L	SM 2540C	5.00	1.67	SMCL	500	679	562	416	372	573	398
Total Organic Carbon	mg/L	SM 5310C	1.00	0.142	—	—	1.43	0.55	0.45	1.40	0.53	0.29
E. coli	MPN/100 mL	Colilert	1.00		MCL	0	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
2,4,5-T	ug/L	SW 8151	0.118	0.0477	HBSL	70			< 0.118		< 0.118	
2,4,5-TP (Silvex)	ug/L	SW 8151	0.119	0.0249	—	—			< 0.119		< 0.119	
2,4-D	ug/L	SW 8151	0.125	0.0439	MCL	70			< 0.118		< 0.118	
2,4-DB	ug/L	SW 8151	0.118	0.0417	HHBP	210			< 0.118		< 0.118	
4,4'-DDD	ug/L	SW 8081	0.0500	0.0153	HBSL	1			< 0.0500		< 0.0500	
4,4'-DDE	ug/L	SW 8081	0.0500	0.0168	HBSL	0.1			< 0.0500		< 0.0500	
4,4'-DDT	ug/L	SW 8081	0.0500	0.0217	HBSL	0.00000 72			< 0.0500		< 0.0500	
Aldrin	ug/L	SW 8081	0.0500	0.0168	HBSL	0.002			< 0.0500		< 0.0500	
alpha-BHC	ug/L	SW 8081	0.0500	0.0217	HBSL	0.006			< 0.0500		< 0.0500	
alpha-Chlordane	ug/L	SW 8081	0.0500	0.0153	—	—			< 0.0500		< 0.0500	
Aroclor 1016	ug/L	SW 8082	0.500	0.238	HBSL	0.5			< 0.500		< 0.500	
Aroclor 1221	ug/L	SW 8082	0.500	0.124	—	—			< 0.500		< 0.500	
Aroclor 1232	ug/L	SW 8082	0.500	0.232	—	—			< 0.500		< 0.500	
Aroclor 1242	ug/L	SW 8082	0.500	0.233	—	—			< 0.500		< 0.500	
Aroclor 1248	ug/L	SW 8082	0.500	0.147	—	—			< 0.500		< 0.500	
Aroclor 1254	ug/L	SW 8082	0.500	0.196	HBSL	0.1			< 0.500		< 0.500	
Aroclor 1260	ug/L	SW 8082	0.500	0.249	—	—			< 0.500		< 0.500	
beta-BHC	ug/L	SW 8081	0.0500	0.0238	HBSL	0.02			< 0.0500		< 0.0500	
Chlordane	ug/L	SW 8081	0.500	0.211	MCL	2			< 0.500		< 0.500	
delta-BHC	ug/L	SW 8081	0.0500	0.0217	—	—			< 0.0500		< 0.0500	
Dicamba	ug/L	SW 8151	0.118	0.0427	HBSL	3000			< 0.118		< 0.118	
Dichloroprop	ug/L	SW 8151	0.118	0.0361	HBSL	300			< 0.118		< 0.118	
Dieldrin	ug/L	SW 8081	0.0500	0.0153	HBSL	0.002			< 0.0500		< 0.0500	
Dinoseb	ug/L	SW 8151	0.118	0.0563	MCL	7			< 0.118		< 0.118	
Endosulfan I	ug/L	SW 8081	0.0500	0.0119	HHBP	42			< 0.0500		< 0.0500	

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	MON000 22	MON100 16	PRE100 07	SHE000 89	WAR100 03	WAR100 04
Endosulfan II	ug/L	SW 8081	0.0500	0.0181	—	—			< 0.0500		< 0.0500	
Endosulfan sulfate	ug/L	SW 8081	0.0500	0.0238	—	—			< 0.0500		< 0.0500	
Endrin	ug/L	SW 8081	0.0500	0.0153	MCL	2			< 0.0500		< 0.0500	
Endrin aldehyde	ug/L	SW 8081	0.0500	0.0168	—	—			< 0.0500		< 0.0500	
Endrin ketone	ug/L	SW 8081	0.0500	0.0247	—	—			< 0.0500		< 0.0500	
gamma-BHC	ug/L	SW 8081	0.0500	0.0168	—	—			< 0.0500		< 0.0500	
gamma-Chlordane	ug/L	SW 8081	0.0500	0.0217	—	—			< 0.0500		< 0.0500	
Heptachlor	ug/L	SW 8081	0.0500	0.0181	MCL	0.4			< 0.0500		< 0.0500	
Heptachlor epoxide	ug/L	SW 8081	0.0500	0.0217	MCL	0.2			< 0.0500		< 0.0500	
MCPA	ug/L	SW 8151	23.4	8.15	HBSL	140			< 23.4		< 23.4	
MCPP	ug/L	SW 8151	23.5	5.24	—	—			< 23.5		< 23.5	
Methoxychlor	ug/L	SW 8081	0.0500	0.0247	MCL	40			< 0.0500		< 0.0500	
Toxaphene	ug/L	SW 8081	0.500	0.210	MCL	3			< 0.500		< 0.500	
Radon	pCi/L	SM 7500-Rn-B	100	NR	MCL	300			271		210	
Uranium, Total	µg/L	EPA 200.8	0.001	NR	MCL	30			0.41		0.33	
1,2,4,5-Tetrachlorobenzene	ug/L	SW 8270C	5.00	0.411	—	—			< 5.00		< 5.00	
1,2,4-Trichlorobenzene	ug/L	SW 8270C	5.00	0.312	MCL	70			< 5.00		< 5.00	
1,2-Dichlorobenzene	ug/L	SW 8270C	5.00	0.388	MCL	600			< 5.00		< 5.00	
1,2-Diphenylhydrazine	ug/L	SW 8270C	5.00	0.386	HBSL	0.04			< 5.00		< 5.00	
1,3,5-Trinitrobenzene	ug/L	SW 8270C	5.00	0.878	—	—			< 5.00		< 5.00	
1,3-Dichlorobenzene	ug/L	SW 8270C	5.00	0.319	HBSL	600			< 5.00		< 5.00	
1,4-Dichlorobenzene	ug/L	SW 8270C	5.00	0.341	MCL	75			< 5.00		< 5.00	
1-Methylnaphthalene	ug/L	SW 8270C	5.00	0.382	—	—			< 5.00		< 5.00	
2,3,4,6-Tetrachlorophenol	ug/L	SW 8270C	10.0	0.269	—	—			< 10.0		< 10.0	
2,4,5-Trichlorophenol	ug/L	SW 8270C	5.00	0.717	—	—			< 5.00		< 5.00	
2,4,6-Trichlorophenol	ug/L	SW 8270C	5.00	0.445	HBSL	2			< 5.00		< 5.00	
2,4-Dichlorophenol	ug/L	SW 8270C	5.00	0.448	HBSL	20			< 5.00		< 5.00	
2,4-Dimethylphenol	ug/L	SW 8270C	5.00	0.402	HBSL	100			< 5.00		< 5.00	
2,4-Dinitrophenol	ug/L	SW 8270C	10.0	0.956	HBSL	10			< 10.0		< 10.0	
2,4-Dinitrotoluene	ug/L	SW 8270C	5.00	0.521	HBSL	0.05			< 5.00		< 5.00	
2,6-Dichlorophenol	ug/L	SW 8270C	5.00	0.319	—	—			< 5.00		< 5.00	
2,6-Dinitrotoluene	ug/L	SW 8270C	5.00	0.501	HBSL	0.05			< 5.00		< 5.00	

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	MON000 22	MON100 16	PRE100 07	SHE000 89	WAR100 03	WAR100 04
2-Chloronaphthalene	ug/L	SW 8270C	5.00	0.427	HBSL	600			< 5.00		< 5.00	
2-Chlorophenol	ug/L	SW 8270C	5.00	0.226	HBSL	40			< 5.00		< 5.00	
2-Methylnaphthalene	ug/L	SW 8270C	5.00	0.0625	HBSL	30			< 5.00		< 5.00	
2-Methylphenol	ug/L	SW 8270C	5.00	0.871	—	—			< 5.00		< 5.00	
2-Nitrophenol	ug/L	SW 8270C	5.00	0.385	—	—			< 5.00		< 5.00	
3 & 4-Methylphenol	ug/L	SW 8270C	5.00	0.727	—	—			< 5.00		< 5.00	
4,6-Dinitro-2-methylphenol	ug/L	SW 8270C	10.0	0.435	—	—			< 10.0		< 10.0	
4-Bromophenyl phenyl ether	ug/L	SW 8270C	5.00	0.279	—	—			< 5.00		< 5.00	
4-Chloro-3-methylphenol	ug/L	SW 8270C	5.00	0.293	—	—			< 5.00		< 5.00	
4-Chlorophenyl phenyl ether	ug/L	SW 8270C	5.00	0.476	—	—			< 5.00		< 5.00	
4-Nitrophenol	ug/L	SW 8270C	5.00	0.470	—	—			< 5.00		< 5.00	
Acenaphthene	ug/L	SW 8270C	5.00	0.0350	HBSL	400			< 5.00		< 5.00	
Acenaphthylene	ug/L	SW 8270C	5.00	0.0696	—	—			< 5.00		< 5.00	
Acetophenone	ug/L	SW 8270C	5.00	0.273	HBSL	700			< 5.00		< 5.00	
Aniline	ug/L	SW 8270C	5.00	0.396	—	—			< 5.00		< 5.00	
Anthracene	ug/L	SW 8270C	5.00	0.0504	HBSL	2000			< 5.00		< 5.00	
Benz(a)anthracene	ug/L	SW 8270C	0.260	0.0840	—	—			< 0.260		< 0.260	
Benzidine	ug/L	SW 8270C	5.00	0.662	HBSL	0.0002			< 5.00		< 5.00	
Benzo(a)pyrene	ug/L	SW 8270C	0.200	0.0820	MCL	0.2			< 0.200		< 0.200	
Benzo(b)fluoranthene	ug/L	SW 8270C	0.170	0.0527	—	—			< 0.170		< 0.170	
Benzo(g,h,i)perylene	ug/L	SW 8270C	5.00	0.0923	—	—			< 5.00		< 5.00	
Benzo(k)fluoranthene	ug/L	SW 8270C	1.70	0.0574	—	—			< 1.70		< 1.70	
Benzyl Alcohol	ug/L	SW 8270C	5.00	0.384	—	—			< 5.00		< 5.00	
Bis(2-chloroethoxy)methane	ug/L	SW 8270C	5.00	0.450	—	—			< 5.00		< 5.00	
bis-(2-Chloroethyl)ether	ug/L	SW 8270C	5.00	0.428	HBSL	0.03			< 5.00		< 5.00	
Bis(2-chloroisopropyl)ether	ug/L	SW 8270C	5.00	0.495	HBSL	300			< 5.00		< 5.00	
Bis(2-ethylhexyl)phthalate	ug/L	SW 8270C	1.00	0.334	MCL	6			1.15		175	
Butyl benzyl phthalate	ug/L	SW 8270C	5.00	0.247	HBSL	1000			< 5.00		< 5.00	
Chrysene	ug/L	SW 8270C	5.00	0.0625	—	—			< 5.00		< 5.00	
Dibenz(a,h)anthracene	ug/L	SW 8270C	0.200	0.0742	—	—			< 0.200		< 0.200	
Dibenzofuran	ug/L	SW 8270C	5.00	0.254	—	—			< 5.00		< 5.00	
Diethyl phthalate	ug/L	SW 8270C	5.00	0.374	HBSL	6000			< 5.00		< 5.00	

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	MON000 22	MON100 16	PRE100 07	SHE000 89	WAR100 03	WAR100 04
Dimethyl phthalate	ug/L	SW 8270C	5.00	0.462	—	—			< 5.00		< 5.00	
Di-n-butyl phthalate	ug/L	SW 8270C	5.00	0.415	HBSL	700			< 5.00		< 5.00	
Di-n-octyl phthalate	ug/L	SW 8270C	5.00	0.342	—	—			< 5.00		< 5.00	
Fluoranthene	ug/L	SW 8270C	5.00	0.0540	HBSL	300			< 5.00		< 5.00	
Fluorene	ug/L	SW 8270C	5.00	0.0598	HBSL	300			< 5.00		< 5.00	
Hexachlorobenzene	ug/L	SW 8270C	5.00	0.276	MCL	1			< 5.00		< 5.00	
Hexachlorobutadiene	ug/L	SW 8270C	5.00	0.463	HBSL	0.9			< 5.00		< 5.00	
Hexachlorocyclopentadiene	ug/L	SW 8270C	5.00	0.337	MCL	50			< 5.00		< 5.00	
Hexachloroethane	ug/L	SW 8270C	5.00	0.359	HBSL	0.9			< 5.00		< 5.00	
Hexachloropropene	ug/L	SW 8270C	5.00	0.501	—	—			< 5.00		< 5.00	
Indeno(1,2,3-cd)pyrene	ug/L	SW 8270C	0.220	0.0566	—	—			< 0.220		< 0.220	
Isophorone	ug/L	SW 8270C	5.00	0.214	HBSL	60			< 5.00		< 5.00	
m-Dinitrobenzene	ug/L	SW 8270C	5.00	0.262	—	—			< 5.00		< 5.00	
Naphthalene	ug/L	SW 8270C	5.00	0.0651	HBSL	100			< 5.00		< 5.00	
Nitrobenzene	ug/L	SW 8270C	5.00	0.314	HBSL	10			< 5.00		< 5.00	
N-Nitrosodimethylamine	ug/L	SW 8270C	5.00	0.376	—	—			< 5.00		< 5.00	
N-Nitroso-di-n-butylamine	ug/L	SW 8270C	5.00	0.384	—	—			< 5.00		< 5.00	
N-Nitrosodi-n-propylamine	ug/L	SW 8270C	5.00	0.346	HBSL	0.005			< 5.00		< 5.00	
N-Nitrosodiphenylamine	ug/L	SW 8270C	5.00	0.602	HBSL	7			< 5.00		< 5.00	
Pentachlorobenzene	ug/L	SW 8270C	5.00	0.289	—	—			< 5.00		< 5.00	
Pentachloronitrobenzene	ug/L	SW 8270C	5.00	0.582	—	—			< 5.00		< 5.00	
Pentachlorophenol	ug/L	SW 8270C	1.00	0.429	MCL	1			< 5.00		< 5.00	
Phenanthrene	ug/L	SW 8270C	5.00	0.0745	—	—			< 5.00		< 5.00	
Phenol	ug/L	SW 8270C	5.00	0.263	HBSL	2000			< 5.00		< 5.00	
Pyrene	ug/L	SW 8270C	5.00	0.0613	HBSL	200			< 5.00		< 5.00	
Pyridine	ug/L	SW 8270C	5.00	0.454	—	—			< 5.00		< 5.00	
1,1,1,2-Tetrachloroethane	ug/L	SW 8260B	1.00	0.220	HBSL	1			< 1.00		< 5.00	
1,1,1-Trichloroethane	ug/L	SW 8260B	1.00	0.283	MCL	200			< 5.00		< 5.00	
1,1,2,2-Tetrachloroethane	ug/L	SW 8260B	1.00	0.230	HBSL	1			< 5.00		< 5.00	
1,1,2-Trichloroethane	ug/L	SW 8260B	1.00	0.337	MCL	5			< 5.00		< 5.00	
1,1-Dichloroethane	ug/L	SW 8260B	1.00	0.274	—	—			< 5.00		< 5.00	
1,1-Dichloroethene	ug/L	SW 8260B	1.00	0.224	MCL	7			< 5.00		< 5.00	

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	MON000 22	MON100 16	PRE100 07	SHE000 89	WAR100 03	WAR100 04
1,1-Dichloropropene	ug/L	SW 8260B	1.00	0.213	—	—			< 5.00		< 5.00	
1,2,3-Trichlorobenzene	ug/L	SW 8260B	1.00	0.228	—	—			< 5.00		< 5.00	
1,2,3-Trichloropropane	ug/L	SW 8260B	1.00	0.271	HBSL	30			< 5.00		< 5.00	
1,2,4-Trichlorobenzene	ug/L	SW 8260B	1.00	0.214	MCL	70			< 5.00		< 5.00	
1,2,4-Trimethylbenzene	ug/L	SW 8260B	1.00	0.194	—	—			< 5.00		< 5.00	
1,2-Dibromo-3-chloropropane	ug/L	SW 8260B	5.00	0.869	MCL	0.2			< 5.00		< 10.0	
1,2-Dibromoethane	ug/L	SW 8260B	1.00	0.192	MCL	0.05			< 10.0		< 5.00	
1,2-Dichlorobenzene	ug/L	SW 8260B	1.00	0.570	MCL	600			< 5.00		< 5.00	
1,2-Dichloroethane	ug/L	SW 8260B	1.00	0.300	MCL	5			< 5.00		< 5.00	
1,2-Dichloropropane	ug/L	SW 8260B	1.00	0.230	MCL	5			< 5.00		< 5.00	
1,3,5-Trimethylbenzene	ug/L	SW 8260B	1.00	0.199	—	—			< 5.00		< 5.00	
1,3-Dichlorobenzene	ug/L	SW 8260B	1.00	0.197	HBSL	600			< 5.00		< 5.00	
1,3-Dichloropropane	ug/L	SW 8260B	1.00	0.237	—	—			< 5.00		< 5.00	
1,4-Dichlorobenzene	ug/L	SW 8260B	1.00	0.214	MCL	75			< 5.00		< 5.00	
2,2-Dichloropropane	ug/L	SW 8260B	1.00	0.262	—	—			< 5.00		< 5.00	
2-Butanone	ug/L	SW 8260B	10.0	2.75	—	—			< 5.00		< 20.0	
2-Chlorotoluene	ug/L	SW 8260B	1.00	0.217	—	—			< 20.0		< 5.00	
2-Hexanone	ug/L	SW 8260B	10.0	0.0779	HBSL	40			< 5.00		< 20.0	
4-Chlorotoluene	ug/L	SW 8260B	1.00	0.241	HBSL	100			< 20.0		< 5.00	
4-Isopropyltoluene	ug/L	SW 8260B	1.00	0.182	—	—			< 5.00		< 5.00	
4-Methyl-2-pentanone	ug/L	SW 8260B	10.0	1.91	—	—			< 5.00		< 20.0	
Acetone	ug/L	SW 8260B	20.0	3.76	HBSL	6000			< 20.0		< 20.0	
Acetonitrile	ug/L	SW 8260B	20.0	2.41	—	—			< 20.0		< 40.0	
Acrolein	ug/L	SW 8260B	10.0	1.49	HBSL	4			< 40.0		< 20.0	
Acrylonitrile	ug/L	SW 8260B	10.0	0.388	HBSL	0.06			< 20.0		< 20.0	
Allyl chloride	ug/L	SW 8260B	1.00	0.250	—	—			< 20.0		< 5.00	
Benzene	ug/L	SW 8260B	1.00	0.269	MCL	5			< 5.00		< 5.00	
Bromobenzene	ug/L	SW 8260B	1.00	0.221	HBSL	60			< 5.00		< 5.00	
Bromochloromethane	ug/L	SW 8260B	1.00	0.293	HBSL	90			< 5.00		< 5.00	
Bromodichloromethane	ug/L	SW 8260B	1.00	0.232	MCL	80			< 5.00		< 5.00	
Bromoform	ug/L	SW 8260B	1.00	0.231	MCL	80			< 5.00		< 5.00	
Bromomethane	ug/L	SW 8260B	1.00	0.494	HHBP	140			< 5.00		< 5.00	

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	MON000 22	MON100 16	PRE100 07	SHE000 89	WAR100 03	WAR100 04
Carbon Disulfide	ug/L	SW 8260B	10.0	0.242	HBSL	700			< 5.00		< 20.0	
Carbon Tetrachloride	ug/L	SW 8260B	1.00	0.241	MCL	5			< 20.0		< 5.00	
Chlorobenzene	ug/L	SW 8260B	1.00	0.265	MCL	100			< 5.00		< 5.00	
Chloroethane	ug/L	SW 8260B	1.00	0.261	—	—			< 5.00		< 5.00	
Chloroform	ug/L	SW 8260B	1.00	0.269	MCL	80			< 5.00		< 5.00	
Chloromethane	ug/L	SW 8260B	1.00	0.318	—	—			< 5.00		< 5.00	
cis-1,2-Dichloroethene	ug/L	SW 8260B	1.00	0.296	MCL	70			< 5.00		< 5.00	
cis-1,3-Dichloropropene	ug/L	SW 8260B	1.00	0.234	HBSL	0.3			< 5.00		< 5.00	
Dibromochloromethane	ug/L	SW 8260B	1.00	0.645	MCL	80			< 5.00		< 5.00	
Dibromomethane	ug/L	SW 8260B	1.00	0.299	—	—			< 5.00		< 5.00	
Dichlorodifluoromethane	ug/L	SW 8260B	1.00	0.242	HBSL	1000			< 5.00		< 5.00	
Ethylbenzene	ug/L	SW 8260B	1.00	0.168	MCL	700			< 5.00		< 5.00	
Hexachlorobutadiene	ug/L	SW 8260B	1.00	0.277	HBSL	0.9			< 5.00		< 5.00	
Iodomethane	ug/L	SW 8260B	10.0	1.10	—	—			< 5.00		< 10.0	
Isopropylbenzene	ug/L	SW 8260B	1.00	0.204	HBSL	700			< 10.0		< 5.00	
m,p-Xylene	ug/L	SW 8260B	5.00	0.410	MCL	10000			< 5.00		< 10.0	
Methyl tert-Butyl Ether	ug/L	SW 8260B	5.00	0.239	—	—			< 10.0		< 10.0	
Methylene Chloride	ug/L	SW 8260B	1.00	0.164	MCL	5			< 10.0		< 5.00	
Naphthalene	ug/L	SW 8260B	5.00	0.212	HBSL	100			< 5.00		< 5.00	
n-Butylbenzene	ug/L	SW 8260B	1.00	0.167	—	—			< 5.00		< 5.00	
n-Hexane	ug/L	SW 8260B	5.00	0.225	—	—			< 5.00		< 5.00	
n-Propylbenzene	ug/L	SW 8260B	1.00	0.204	—	—			< 5.00		< 5.00	
o-Xylene	ug/L	SW 8260B	1.00	0.220	MCL	10000			< 5.00		< 5.00	
sec-Butylbenzene	ug/L	SW 8260B	1.00	0.193	—	—			< 5.00		< 5.00	
Styrene	ug/L	SW 8260B	1.00	0.210	MCL	100			< 5.00		< 5.00	
tert-Butylbenzene	ug/L	SW 8260B	1.00	0.193	—	—			< 5.00		< 5.00	
Tetrachloroethene	ug/L	SW 8260B	1.00	0.230	MCL	5			< 5.00		< 5.00	
Toluene	ug/L	SW 8260B	1.00	0.231	MCL	1000			< 5.00		< 5.00	
trans-1,2-Dichloroethene	ug/L	SW 8260B	1.00	0.225	MCL	100			< 5.00		< 5.00	
trans-1,3-Dichloropropene	ug/L	SW 8260B	1.00	0.203	HBSL	0.3			< 5.00		< 5.00	
Trichloroethene	ug/L	SW 8260B	1.00	0.295	MCL	5			< 5.00		< 5.00	
Trichlorofluoromethane	ug/L	SW 8260B	1.00	0.250	HBSL	2000			< 5.00		< 5.00	

Fall 2016					Benchmark							
Parameter	Units	Method	PQL	MDL	Type	Value	MON000 22	MON100 16	PRE100 07	SHE000 89	WAR100 03	WAR100 04
Vinyl acetate	ug/L	SW 8260B	1.00	0.282	—	—			< 5.00		< 10.0	
Vinyl Chloride	ug/L	SW 8260B	1.00	0.224	MCL	2			< 10.0		< 1.00	