

Chemical Analysis Report

WAS-SECT-2018-01-31-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Black, Wards, Caney, Harbiwood, Little R., Meginis**

Request ID: **RQ-2018-01-29-33**

Customer: **WAS-SECT**

Project ID: **SMP**

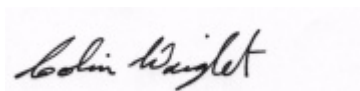
Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

This Report replaces the previous Report Serial Number: 0102541

Revision certified by: Colin Wright, Program Administrator

Date Certified: 03-APR-2018 15:41



Report Comments:

Added chromium and nickel to the component list after request from Curtis Musson.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Little River 100 meters upstream of US 90

Collection Date/Time: 01/31/2018 08:35

Field ID: G1WA0073

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963346	EPA 180.1 Rev. 2.0	Turbidity	20		NTU	P339092	
	EPA 300.0 Rev. 2.1	Chloride	8.2		mg Cl/L	P339227	
		Sulfate	2.7		mg SO4/L	P339230	
	SM 2120 B	Color (true)	45	A	PCU	P339098	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P339475	
	SM 2540 C-97	TDS	81		mg/L	P339571	
	SM 2540 D-97	TSS	13		mg/L	P339623	
	SM 4500 F-C-97	Fluoride	0.080	I	mg F/L	P339478	RPD
1963352	EPA 350.1 Rev. 2.0	Ammonia-N	0.097		mg N/L	P339675	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P339105	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.7		mg N/L	P339242	
	EPA 365.1 Rev. 2.0	Total-P	0.096		mg P/L	P339154	
	SM 5310 B-00	Organic Carbon	7.4		mg C/L	P339267	
1963358	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P339117	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Little River 100 meters upstream of US 90

Collection Date/Time: 01/31/2018 08:35

Field ID: G1WA0073

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963388	EPA 200.7 Rev. 4.4	Calcium	5.95		mg/L	P339319	
		Iron	1.60E+03		ug/L	P339319	
		Magnesium	2.52		mg/L	P340039	
		Potassium	1.6		mg/L	P339319	
		Sodium	6.2		mg/L	P339319	
		Zinc	5.0	U	ug/L	P339319	
	EPA 200.8 Rev. 5.4	Arsenic	0.61		ug/L	P339319	
		Cadmium	0.020	U	ug/L	P339319	
		Chromium	1.3	I	ug/L	P339319	
		Copper	0.82		ug/L	P339319	
		Lead	0.68		ug/L	P339319	
		Nickel	0.43	I	ug/L	P339319	
		Silver	0.010	U	ug/L	P339319	

Ref. Method and Comment:

EPA 200.8 Rev. 5.4: The lead result was confirmed on 02/27/2018.

Sample Location: Little River 100 meters upstream of US 90

Collection Date/Time: 01/31/2018 08:35

Field ID: G1WA0073

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963382	EPA 8321B	2,4-D	0.0047	I	ug/L	P339135	
		Sucralose**	0.23		ug/L	P339293	

Field ID: G1WA0073

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963382	EPA 8321B	Bentazon	8.0E-04	UJ	ug/L	P339135	MS
		MCP	0.0020	UJ	ug/L	P339135	MS
		Triclopyr**	0.0040	U	ug/L	P339135	
		Imidacloprid	0.0065	IJ	ug/L	P339135	MS
		Diuron	0.0020	U	ug/L	P339135	
		Primidone**	0.0040	U	ug/L	P339135	
		Linuron	0.0040	U	ug/L	P339135	
		Acetaminophen**	0.0080	U	ug/L	P339135	
		Fenuron	0.0080	U	ug/L	P339135	
		Carbamazepine**	6.6E-04	I	ug/L	P339135	
		Fluridone**	4.0E-04	U	ug/L	P339135	

Ref. Method and Comment:
EPA 8321B: Refer to the narrative for an explanation of QC Codes.

Sample Location: Megginnis Arm Run Downstream of Sharer

Collection Date/Time: 01/31/2018 09:25

Field ID: G1WA0033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963347	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P339092	
	EPA 300.0 Rev. 2.1	Chloride	8.3		mg Cl/L	P339227	
		Sulfate	2.0		mg SO4/L	P339230	
	SM 2120 B	Color (true)	17		PCU	P339096	
	SM 2320 B-97	Total Alkalinity	56		mg CaCO3/L	P339475	
	SM 2540 C-97	TDS	83		mg/L	P339572	
	SM 2540 D-97	TSS	2	I	mg/L	P339624	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P339478	RPD
1963353	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P339675	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P339105	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.058		mg N/L	P339242	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P339154	
	SM 5310 B-00	Organic Carbon	3.1		mg C/L	P339267	
1963359	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P339117	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Megginnis Arm Run Downstream of Sharer

Collection Date/Time: 01/31/2018 09:25

Field ID: G1WA0033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963383	EPA 8321B	2,4-D	0.0020	U	ug/L	P339135	
		Sucralose**	0.19		ug/L	P339293	
		Bentazon	8.0E-04	U	ug/L	P339135	MS
		MCP	0.0020	U	ug/L	P339135	MS
		Triclopyr**	0.0040	U	ug/L	P339135	

Field ID: G1WA0033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963383	EPA 8321B	Imidacloprid	0.036		ug/L	P339135	MS
		Diuron	0.0024	I	ug/L	P339135	
		Primidone**	0.0040	U	ug/L	P339135	
		Linuron	0.0040	U	ug/L	P339135	
		Acetaminophen**	0.19		ug/L	P339135	
		Fenuron	0.0080	U	ug/L	P339135	
		Carbamazepine**	4.0E-04	U	ug/L	P339135	
		Fluridone**	4.0E-04	U	ug/L	P339135	

Sample Location: Harbinwood Estates Drain

Collection Date/Time: 01/31/2018 10:00

Field ID: G1WA0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963348	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P339092	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P339227	
		Sulfate	1.0		mg SO4/L	P339230	
	SM 2120 B	Color (true)	26	A	PCU	P339096	
	SM 2320 B-97	Total Alkalinity	45		mg CaCO3/L	P339475	
	SM 2540 C-97	TDS	85		mg/L	P339572	
	SM 2540 D-97	TSS	3	I	mg/L	P339624	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P339478	RPD
1963354	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P339675	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32		mg N/L	P339105	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P339242	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P339154	
	SM 5310 B-00	Organic Carbon	4.5		mg C/L	P339267	
1963360	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.036		mg P/L	P339119	
	dissolved						

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Harbinwood Estates Drain

Collection Date/Time: 01/31/2018 10:00

Field ID: G1WA0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963389	EPA 200.7 Rev. 4.4	Calcium	13.2		mg/L	P339319	
		Iron	240		ug/L	P339319	
		Magnesium	4.70		mg/L	P340039	
		Potassium	2.7		mg/L	P339319	
		Sodium	6.7		mg/L	P339319	
		Zinc	5.0	U	ug/L	P339319	
	EPA 200.8 Rev. 5.4	Arsenic	0.48		ug/L	P339319	
		Cadmium	0.020	U	ug/L	P339319	
		Chromium	0.40	U	ug/L	P339319	
		Copper	0.41	I	ug/L	P339319	
		Lead	0.089	I	ug/L	P339319	

Field ID: G1WA0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963389	EPA 200.8 Rev. 5.4	Nickel	0.20	U	ug/L	P339319	
		Silver	0.010	U	ug/L	P339319	

Sample Location: Harbinwood Estates Drain

Collection Date/Time: 01/31/2018 10:00

Field ID: G1WA0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963384	EPA 8321B	2,4-D	0.0020	U	ug/L	P339135	
		Sucralose**	0.55		ug/L	P339293	
		Bentazon	8.0E-04	U	ug/L	P339135	MS
		MCP	0.0020	U	ug/L	P339135	MS
		Triclopyr**	0.0040	U	ug/L	P339135	
		Imidacloprid	0.0092		ug/L	P339135	MS
		Diuron	0.0020	U	ug/L	P339135	
		Primidone**	0.0042	I	ug/L	P339135	
		Linuron	0.0040	U	ug/L	P339135	
		Acetaminophen**	0.0080	U	ug/L	P339135	
		Fenuron	0.0080	U	ug/L	P339135	
		Carbamazepine**	4.0E-04	U	ug/L	P339135	
		Fluridone**	4.0E-04	U	ug/L	P339135	

Sample Location: Wards Creek upstream of bridge at CR 259

Collection Date/Time: 01/31/2018 11:00

Field ID: G1WA0002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963349	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P339092	
	EPA 300.0 Rev. 2.1	Chloride	6.3		mg Cl/L	P339227	
		Sulfate	0.20	U	mg SO4/L	P339230	
	SM 2120 B	Color (true)	77		PCU	P339096	
	SM 2320 B-97	Total Alkalinity	5.8		mg CaCO3/L	P339475	
	SM 2540 C-97	TDS	56		mg/L	P339572	
	SM 2540 D-97	TSS	2	I	mg/L	P339624	
	SM 4500 F-C-97	Fluoride	0.035	I	mg F/L	P339478	RPD
1963355	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P339675	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P339105	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P339242	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P339155	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P339267	
1963361	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.011		mg P/L	P339119	
	dissolved						

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Wards Creek upstream of bridge at CR 259

Collection Date/Time: 01/31/2018 11:00

Field ID: G1WA0002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963385	EPA 8321B	2,4-D	0.0020	U	ug/L	P339135	
		Sucralose**	0.011	I	ug/L	P339293	
		Bentazon	8.0E-04	U	ug/L	P339135	MS
		MCP	0.0020	U	ug/L	P339135	MS
		Triclopyr**	0.0040	U	ug/L	P339135	
		Imidacloprid	0.0020	U	ug/L	P339135	MS
		Diuron	0.0020	U	ug/L	P339135	
		Primidone**	0.0040	U	ug/L	P339135	
		Linuron	0.0040	U	ug/L	P339135	
		Acetaminophen**	0.0080	U	ug/L	P339135	
		Fenuron	0.0080	U	ug/L	P339135	
		Carbamazepine**	4.0E-04	U	ug/L	P339135	
		Fluridone**	4.0E-04	U	ug/L	P339135	

Sample Location: Caney Creek upstream of US 90

Collection Date/Time: 01/31/2018 11:35

Field ID: G1WA0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963350	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P339092	
	EPA 300.0 Rev. 2.1	Chloride	7.5		mg Cl/L	P339227	
		Sulfate	0.90		mg SO4/L	P339230	
	SM 2120 B	Color (true)	74		PCU	P339096	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P339475	
	SM 2540 C-97	TDS	72		mg/L	P339572	
	SM 2540 D-97	TSS	3	I	mg/L	P339624	
	SM 4500 F-C-97	Fluoride	0.081	I	mg F/L	P339478	RPD
1963356	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P339675	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P339105	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P339242	
	EPA 365.1 Rev. 2.0	Total-P	0.29		mg P/L	P339155	
	SM 5310 B-00	Organic Carbon	6.0		mg C/L	P339267	
1963362	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.24		mg P/L	P339119	
	dissolved						

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Caney Creek upstream of US 90

Collection Date/Time: 01/31/2018 11:35

Field ID: G1WA0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963390	EPA 200.7 Rev. 4.4	Calcium	8.05		mg/L	P339319	
		Iron	860		ug/L	P339319	
		Magnesium	2.47		mg/L	P340039	
		Potassium	1.7		mg/L	P339319	
		Sodium	4.9		mg/L	P339319	
		Zinc	5.0	U	ug/L	P339319	

Field ID: G1WA0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963390	EPA 200.8 Rev. 5.4	Arsenic	0.39		ug/L	P339319	
		Cadmium	0.020	U	ug/L	P339319	
		Chromium	0.76	I	ug/L	P339319	
		Copper	0.20	U	ug/L	P339319	
		Lead	0.16	I	ug/L	P339319	
		Nickel	0.30	I	ug/L	P339319	
		Silver	0.010	U	ug/L	P339319	

Sample Location: Caney Creek upstream of US 90

Collection Date/Time: 01/31/2018 11:35

Field ID: G1WA0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963386	EPA 8321B	2,4-D	0.0020	U	ug/L	P339135	
		Sucralose**	0.022	I	ug/L	P339293	
		Bentazon	8.0E-04	U	ug/L	P339135	MS
		MCP	0.0020	U	ug/L	P339135	MS
		Triclopyr**	0.0040	U	ug/L	P339135	
		Imidacloprid	0.0020	U	ug/L	P339135	MS
		Diuron	0.0020	U	ug/L	P339135	
		Primidone**	0.0040	U	ug/L	P339135	
		Linuron	0.0040	U	ug/L	P339135	
		Acetaminophen**	0.0080	U	ug/L	P339135	
		Fenuron	0.0080	U	ug/L	P339135	
		Carbamazepine**	0.0012	I	ug/L	P339135	
		Fluridone**	4.0E-04	U	ug/L	P339135	

Sample Location: Black Creek upstream of CR158

Collection Date/Time: 01/31/2018 12:10

Field ID: G1WA0072

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963351	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P339092	
	EPA 300.0 Rev. 2.1	Chloride	8.6		mg Cl/L	P339227	
		Sulfate	1.8		mg SO4/L	P339230	
	SM 2120 B	Color (true)	82		PCU	P339096	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P339475	
	SM 2540 C-97	TDS	66		mg/L	P339572	
	SM 2540 D-97	TSS	2	I	mg/L	P339624	
	SM 4500 F-C-97	Fluoride	0.077	I	mg F/L	P339478	RPD
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P339675	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P339105	
1963357	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P339242	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P339155	
	SM 5310 B-00	Organic Carbon	9.5		mg C/L	P339267	
	EPA 365.1 Rev. 2.0	O-Phosphate-P dissolved	0.030		mg P/L	P339119	

Field ID: G1WA0072

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment: EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.							

Sample Location: Black Creek upstream of CR158

Collection Date/Time: 01/31/2018 12:10

Field ID: G1WA0072

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963391	EPA 200.7 Rev. 4.4	Calcium	5.50		mg/L	P339319	
		Iron	580		ug/L	P339319	
		Magnesium	2.25		mg/L	P340039	
		Potassium	1.1	I	mg/L	P339319	
		Sodium	3.8		mg/L	P339319	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P339319	
		Arsenic	0.31		ug/L	P339319	
		Cadmium	0.020	U	ug/L	P339319	
		Chromium	0.82	I	ug/L	P339319	
		Copper	0.35	I	ug/L	P339319	
		Lead	0.18	I	ug/L	P339319	
		Nickel	0.56	I	ug/L	P339319	
		Silver	0.010	U	ug/L	P339319	

Sample Location: Black Creek upstream of CR158

Collection Date/Time: 01/31/2018 12:10

Field ID: G1WA0072

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963387	EPA 8321B	2,4-D	0.0020	U	ug/L	P339135	
		Sucralose**	0.048		ug/L	P339296	
		Bentazon	8.0E-04	U	ug/L	P339135	MS
		MCP	0.0020	U	ug/L	P339135	MS
		Triclopyr**	0.0040	U	ug/L	P339135	
		Imidacloprid	0.0081		ug/L	P339135	MS
		Diuron	0.0020	U	ug/L	P339135	
		Primidone**	0.0040	U	ug/L	P339135	
		Linuron	0.0040	U	ug/L	P339135	
		Acetaminophen**	0.0080	U	ug/L	P339135	
		Fenuron	0.0080	U	ug/L	P339135	
		Carbamazepine**	4.0E-04	U	ug/L	P339135	
		Fluridone**	4.0E-04	U	ug/L	P339135	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P339092

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P339319

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340039

Component	Result	Code	Units
Magnesium	0.040	U	mg/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339319

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339227

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339230

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339675

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339105

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339242

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339242

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339154

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339155

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339117

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339119

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P339135

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P339293

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P339296

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P339096

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P339098

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P339475

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P339571

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P339572

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P339623

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P339624

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P339478

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P339267

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P339319

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	114		P	85 - 115
Iron	112		P	85 - 115
Potassium	110		P	85 - 115
Sodium	112		P	85 - 115
Zinc	109		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340039

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Magnesium	99.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339319

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	105		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	100		P	85 - 115
Copper	101		P	85 - 115
Lead	101		P	85 - 115
Nickel	104		P	85 - 115
Silver	88.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339227

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339230

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339675

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.4		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	92.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339242

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339154

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339155

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339119

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P339135

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	68.1		P	40 - 150
Acetaminophen	96.9		P	30 - 150
Bentazon	82.7		P	30 - 150
Carbamazepine	95.0		P	40 - 150
Diuron	79.2		P	40 - 150
Fenuron	102		P	40 - 150
Fluridone	84.6		P	40 - 150
Imidacloprid	98.6		P	40 - 160
Linuron	89.4		P	40 - 150
MCPP	68.2		P	40 - 150
Primidone	107		P	40 - 150
Triclopyr	67.6		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P339293

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	93.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P339296

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	105		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P339475

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.7		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P339478

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P339267

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P339319

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963444	Calcium	107		P	80 - 120
1963444	Iron	113		P	80 - 120
1963444	Potassium	107		P	80 - 120
1963444	Sodium	105		P	80 - 120
1963444	Zinc	109		P	80 - 120
1963995	Calcium	114	112	P/P	80 - 120
1963995	Iron	115	111	P/P	80 - 120
1963995	Potassium	116	112	P/P	80 - 120
1963995	Sodium	112	108	P/P	80 - 120
1963995	Zinc	109	109	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963389	Magnesium	95.6		P	80 - 120
1963561	Magnesium	96.3	96.7	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339319

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963444	Arsenic	104		P	80 - 120
1963444	Cadmium	105		P	80 - 120
1963444	Chromium	103		P	80 - 120
1963444	Copper	97.5		P	80 - 120
1963444	Lead	102		P	80 - 120
1963444	Nickel	102		P	80 - 120
1963444	Silver	88.8		P	80 - 120
1963995	Arsenic	102	102	P/P	80 - 120
1963995	Cadmium	104	103	P/P	80 - 120
1963995	Chromium	101	100	P/P	80 - 120
1963995	Copper	99.5	100	P/P	80 - 120
1963995	Lead	101	100	P/P	80 - 120
1963995	Nickel	100	100	P/P	80 - 120
1963995	Silver	89.3	88.3	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963093	Chloride	93.5		P	90 - 110
1963161	Chloride	97.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339230

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963093	Sulfate	94.5		P	90 - 110
1963161	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339675

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963353	Ammonia-N	94.6	95.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963352	Kjeldahl Nitrogen	92.0	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963353	NO2NO3-N	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963353	Total-P	101	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963422	Total-P	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339119

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963338	O-Phosphate-P	96.8	97.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P339135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963382	2,4-D	50.4	52.5	P/P	40 - 150
1963382	Acetaminophen	109	107	P/P	30 - 150
1963382	Bentazon	29.7	30.0	F/F	30 - 150
1963382	Carbamazepine	86.3	83.9	P/P	40 - 150
1963382	Diuron	65.6	68.2	P/P	40 - 150
1963382	Fenuron	80.7	81.7	P/P	40 - 150
1963382	Fluridone	68.0	66.6	P/P	40 - 150
1963382	Imidacloprid	161	148	F/P	40 - 160
1963382	Linuron	78.2	77.6	P/P	40 - 150
1963382	MCPP	39.1	38.2	F/F	40 - 150
1963382	Primidone	109	104	P/P	40 - 150
1963382	Triclopyr	45.9	45.0	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P339293

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1962805	Sucralose	105	106	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P339296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963387	Sucralose	116	112	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P339478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963421	Fluoride	98.3	94.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P339267

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963163	Organic Carbon	101	98.6	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963205	Turbidity	0.308	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P339319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963995	Calcium	1.76	Spike	P	0 - 20
1963995	Iron	3.39	Spike	P	0 - 20
1963995	Potassium	2.70	Spike	P	0 - 20
1963995	Sodium	2.59	Spike	P	0 - 20
1963995	Zinc	0.451	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963561	Magnesium	0.333	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963995	Arsenic	0.0948	Spike	P	0 - 20
1963995	Cadmium	1.11	Spike	P	0 - 20
1963995	Chromium	0.500	Spike	P	0 - 20
1963995	Copper	0.665	Spike	P	0 - 20
1963995	Lead	0.627	Spike	P	0 - 20
1963995	Nickel	0.244	Spike	P	0 - 20
1963995	Silver	1.09	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963093	Chloride	0.138	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339675

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963353	Ammonia-N	1.07	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963352	Kjeldahl Nitrogen	7.18	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963353	NO2NO3-N	0.741	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963353	Total-P	0.768	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963422	Total-P	2.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963124	O-Phosphate-P	0.404	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339119

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963338	O-Phosphate-P	0.744	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P339135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963382	2,4-D	3.75	Spike	P	0 - 30
1963382	Acetaminophen	1.85	Spike	P	0 - 30
1963382	Bentazon	0.771	Spike	P	0 - 30
1963382	Carbamazepine	2.69	Spike	P	0 - 30
1963382	Diuron	3.84	Spike	P	0 - 30
1963382	Fenuron	1.13	Spike	P	0 - 30
1963382	Fluridone	2.17	Spike	P	0 - 30
1963382	Imidacloprid	7.68	Spike	P	0 - 30
1963382	Linuron	0.693	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P339135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963382	MCP	2.30	Spike	P	0 - 30
1963382	Primidone	4.59	Spike	P	0 - 30
1963382	Triclopyr	2.13	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P339293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1962805	Sucralose	1.57	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P339296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963387	Sucralose	3.87	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P339096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963348	Color (true)	3.22	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P339098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963346	Color (true)	1.23	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P339475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963421	Total Alkalinity	0.207	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P339571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963117	TDS	1.54	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P339572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P339572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963421	TDS	6.64	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P339478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963421	Fluoride	3.81	Spike	F	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P339267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963163	Organic Carbon	1.77	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 1963382
Field Sample ID: G1WA0073

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	49.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	103	P	30 - 160
EPA 8321B	Carbamazepine-d10	87.3	P	30 - 160
EPA 8321B	Diuron-d6	74.8	P	30 - 160
EPA 8321B	Primidone-d5	108	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	40 - 160

Lab Sample ID: 1963383
Field Sample ID: G1WA0033

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	42.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.0	P	30 - 160
EPA 8321B	Diuron-d6	77.6	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	95.8	P	40 - 160

Lab Sample ID: 1963384
Field Sample ID: G1WA0034

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	47.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	99.7	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1963384
Field Sample ID: G1WA0034

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbamazepine-d10	93.2	P	30 - 160
EPA 8321B	Diuron-d6	78.3	P	30 - 160
EPA 8321B	Primidone-d5	114	P	30 - 160
EPA 8321B	Sucralose-d6	98.7	P	40 - 160

Lab Sample ID: 1963385
Field Sample ID: G1WA0002

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	54.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.2	P	30 - 160
EPA 8321B	Diuron-d6	74.5	P	30 - 160
EPA 8321B	Primidone-d5	100	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	40 - 160

Lab Sample ID: 1963386
Field Sample ID: G1WA0014

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	55.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	120	P	30 - 160
EPA 8321B	Carbamazepine-d10	114	P	30 - 160
EPA 8321B	Diuron-d6	97.3	P	30 - 160
EPA 8321B	Primidone-d5	127	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	40 - 160

Lab Sample ID: 1963387
Field Sample ID: G1WA0072

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	56.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.8	P	30 - 160
EPA 8321B	Diuron-d6	81.3	P	30 - 160
EPA 8321B	Primidone-d5	110	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: 81775
Included Lab Sample IDs: 1963346, 1963347, 1963348, 1963349, 1963350, 1963351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	102	101	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A81765

Included Lab Sample IDs: 1963346, 1963347, 1963348, 1963349, 1963350, 1963351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A81766

Included Lab Sample IDs: 1963347, 1963348, 1963349, 1963350, 1963351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	105	103	P/P	85 - 115

Reference Method: SM 2120 B

Run ID: A81768

Included Lab Sample IDs: 1963346

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A81776

Included Lab Sample IDs: 1963358, 1963359, 1963360, 1963361, 1963362, 1963363

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	99.8	P/P	90 - 110
O-Phosphate-P	99.8	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81808

Included Lab Sample IDs: 1963356

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81813

Included Lab Sample IDs: 1963355

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81814

Included Lab Sample IDs: 1963352, 1963353, 1963354, 1963357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A81821

Included Lab Sample IDs: 1963352, 1963353, 1963354, 1963355, 1963356, 1963357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A81821

Included Lab Sample IDs: 1963352, 1963353, 1963354, 1963355, 1963356, 1963357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A81830

Included Lab Sample IDs: 1963352, 1963353, 1963354, 1963355, 1963356, 1963357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.6	P/P	90 - 110
Organic Carbon	97.6	99.2	P/P	90 - 110
Organic Carbon	98.8	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81840

Included Lab Sample IDs: 1963352, 1963353, 1963354, 1963355, 1963356, 1963357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	99.4	P/P	90 - 110
Kjeldahl Nitrogen	99.4	97.1	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A81901

Included Lab Sample IDs: 1963346, 1963347, 1963348, 1963349, 1963350, 1963351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.4	96.8	P/P	90 - 110
Total Alkalinity	97.9	94.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A81901

Included Lab Sample IDs: 1963346, 1963347, 1963348, 1963349, 1963350, 1963351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.2	97.6	P/P	90 - 110
Fluoride	97.6	97.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A81909

Included Lab Sample IDs: 1963388, 1963389, 1963390, 1963391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	95.4	95.4	P/P	90 - 110
Cadmium	97.0	96.9	P/P	90 - 110
Chromium	93.5	93.4	P/P	90 - 110
Copper	95.4	95.6	P/P	90 - 110
Lead	95.5	96.7	P/P	90 - 110
Nickel	95.2	96.0	P/P	90 - 110
Silver	93.8	94.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A81928

Included Lab Sample IDs: 1963382, 1963383, 1963384, 1963385, 1963386, 1963387

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	105	P/P	60 - 150
Sucralose	105	105	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A81930

Included Lab Sample IDs: 1963382, 1963383, 1963384, 1963385, 1963386, 1963387

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.4	95.4	P/P	50 - 150
Acetaminophen	122	125	P/P	60 - 150
Acetaminophen	125	116	P/P	60 - 150
Bentazon	123	129	P/P	50 - 150
Carbamazepine	113	113	P/P	60 - 150
Carbamazepine	113	115	P/P	60 - 150
Diuron	115	116	P/P	60 - 150
Diuron	116	115	P/P	60 - 150
Fenuron	107	107	P/P	60 - 150
Fenuron	107	108	P/P	60 - 150
Fluridone	109	114	P/P	60 - 160
Fluridone	113	109	P/P	60 - 160
Imidacloprid	106	106	P/P	60 - 150
Imidacloprid	111	106	P/P	60 - 150
Linuron	118	133	P/P	60 - 150
Linuron	135	118	P/P	60 - 150
MCPP	98.6	97.8	P/P	50 - 150
Primidone	110	120	P/P	60 - 150
Primidone	125	110	P/P	60 - 150
Triclopyr	106	100	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A81940

Included Lab Sample IDs: 1963388, 1963389, 1963390, 1963391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	104	P/P	90 - 110
Calcium	104	103	P/P	90 - 110
Iron	103	105	P/P	90 - 110
Iron	105	104	P/P	90 - 110
Potassium	101	102	P/P	90 - 110
Potassium	102	101	P/P	90 - 110
Sodium	101	103	P/P	90 - 110
Sodium	103	101	P/P	90 - 110
Zinc	103	104	P/P	90 - 110
Zinc	104	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81964

Included Lab Sample IDs: 1963352, 1963353, 1963354, 1963355, 1963356, 1963357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81964

Included Lab Sample IDs: 1963352, 1963353, 1963354, 1963355, 1963356, 1963357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A82127

Included Lab Sample IDs: 1963388, 1963389, 1963390, 1963391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Magnesium	97.8	96.8	P/P	90 - 110
Magnesium	99.4	97.8	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							0.308	
EPA 200.7 Rev. 4.4	Calcium	114		107	114	112			1.76
	Iron	112		113	115	111			3.39
	Magnesium	99.0		95.6	96.3	96.7			0.333
	Potassium	110		107	116	112			2.70
	Sodium	112		105	112	108			2.59
	Zinc	109		109	109	109			0.451
EPA 200.8 Rev. 5.4	Arsenic	105		104	102	102			0.0948
	Cadmium	105		105	104	103			1.11
	Chromium	100		103	101	100			0.500
	Copper	101		97.5	99.5	100			0.665
	Lead	101		102	101	100			0.627
	Nickel	104		102	100	100			0.244
	Silver	88.2		88.8	89.3	88.3			1.09
EPA 300.0 Rev. 2.1	Chloride	98.8		93.5	97.4			0.138	
	Sulfate	97.6		94.5	100				
EPA 350.1 Rev. 2.0	Ammonia-N	95.4		94.6	95.8				1.07
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	92.9		92.0	102				7.18
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	105		106	105				0.741
EPA 365.1 Rev. 2.0	Total-P	101		101	100				0.768
	Total-P	97.4		101	104				2.54
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101							0.404
	O-Phosphate-P	97.9		96.8	97.6				0.744
EPA 8321B	2,4-D	68.1		52.5	50.4				3.75
	Acetaminophen	96.9		109	107				1.85
	Bentazon	82.7		30.0	29.7				0.771
	Carbamazepine	95.0		86.3	83.9				2.69
	Diuron	79.2		65.6	68.2				3.84
	Fenuron	102		80.7	81.7				1.13
	Fluridone	84.6		68.0	66.6				2.17
	Imidacloprid	98.6		161	148				7.68

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Linuron	89.4	78.2	77.6		0.693
	MCPP	68.2	38.2	39.1		2.30
	Primidone	107	109	104		4.59
	Sucralose	93.2	105	106		1.57
	Sucralose	105	116	112		3.87
	Triclopyr	67.6	45.0	45.9		2.13
SM 2120 B	Color (true)				3.22	
	Color (true)				1.23	
SM 2320 B-97	Total Alkalinity	97.7			0.207	
SM 2540 C-97	TDS				1.54	
	TDS				6.64	
SM 4500 F-C-97	Fluoride	97.4	98.3	94.1		3.81
SM 5310 B-00	Organic Carbon	97.0	101	98.6		1.77

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1963388, 1963389, 1963390, 1963391
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1963388, 1963389, 1963390, 1963391
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1963352, 1963353, 1963354, 1963355, 1963356, 1963357
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1963352, 1963353, 1963354, 1963355, 1963356, 1963357
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1963352, 1963353, 1963354, 1963355, 1963356, 1963357
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1963352, 1963353, 1963354, 1963355, 1963356, 1963357
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1963358, 1963359, 1963360, 1963361, 1963362, 1963363
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1963382, 1963383, 1963384, 1963385, 1963386, 1963387
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1963382, 1963383, 1963384, 1963385, 1963386, 1963387
SM 2120 B / E31780	True Color measured at 450 nm	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1963352, 1963353, 1963354, 1963355, 1963356, 1963357

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	01/31/2018			01/31/2018 15:52	DeAsia Armster	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
EPA 200.7 Rev. 4.4	01/31/2018	02/05/2018	Elliott D. Healy	02/08/2018	Betina Topolski	1963388, 1963389, 1963390, 1963391
	01/31/2018	02/15/2018	Elliott D. Healy	02/16/2018	Betina Topolski	1963388, 1963389, 1963390, 1963391
EPA 200.8 Rev. 5.4	01/31/2018	02/05/2018	Elliott D. Healy	02/07/2018	Robert K Palmer	1963388, 1963389, 1963390, 1963391
EPA 300.0 Rev. 2.1	01/31/2018			02/01/2018	Julia Storbeck	1963346, 1963347, 1963348, 1963349
	01/31/2018			02/02/2018	Julia Storbeck	1963350, 1963351
EPA 350.1 Rev. 2.0	01/31/2018			02/09/2018	Julia Storbeck	1963352, 1963353, 1963354, 1963355, 1963356, 1963357
EPA 351.2 Rev. 2.0	01/31/2018	02/01/2018	Adrian Shelby	02/05/2018	Joseph Suarez	1963352, 1963353, 1963354, 1963355, 1963356, 1963357
EPA 353.2 Rev. 2.0	01/31/2018			02/02/2018	Lauren Bottorf	1963352, 1963353, 1963354, 1963355, 1963356, 1963357
EPA 365.1 Rev. 2.0	01/31/2018	02/01/2018	Sima Feizi	02/02/2018	Beverly Y. Sanders	1963352, 1963353, 1963354, 1963355, 1963356, 1963357
EPA 365.1 Rev. 2.0 dissolved	01/31/2018			01/31/2018 17:20	Megan Treadwell	1963358
	01/31/2018			01/31/2018 17:25	Megan Treadwell	1963359, 1963360
	01/31/2018			01/31/2018 17:26	Megan Treadwell	1963361
	01/31/2018			01/31/2018 17:27	Megan Treadwell	1963362
	01/31/2018			01/31/2018 17:28	Megan Treadwell	1963363
EPA 8321B	01/31/2018	02/01/2018	Hoor Shaik	02/04/2018	Julie Michelle Frank	1963382, 1963383, 1963384, 1963385, 1963386, 1963387
	01/31/2018	02/01/2018	Hoor Shaik	02/05/2018	Julie Michelle Frank	1963385, 1963386, 1963387
	01/31/2018	02/06/2018	Juyoung Kim	02/07/2018	Juyoung Kim	1963382, 1963383, 1963384, 1963385, 1963386, 1963387
SM 2120 B	01/31/2018			01/31/2018 16:17	Julia Storbeck	1963348
	01/31/2018			01/31/2018 16:18	Julia Storbeck	1963347, 1963349
	01/31/2018			01/31/2018 16:19	Julia Storbeck	1963350
	01/31/2018			01/31/2018 16:20	Julia Storbeck	1963351
	01/31/2018			01/31/2018 17:30	Julia Storbeck	1963346
SM 2320 B-97	01/31/2018			02/07/2018	Lauren Bottorf	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
SM 2540 C-97	01/31/2018			02/03/2018	Yijie Li	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
SM 2540 D-97	01/31/2018			02/03/2018	Yijie Li	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
SM 4500 F-C-97	01/31/2018			02/07/2018	Lauren Bottorf	1963346, 1963347, 1963348, 1963349, 1963350, 1963351
SM 5310 B-00	01/31/2018			02/03/2018	Megan Treadwell	1963352, 1963353, 1963354, 1963355, 1963356, 1963357