

Chemical Analysis Report

NW-DIST-2020-03-04-02

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

Event Description: **Crestview Run**
Request ID: **RQ-2020-03-02-34**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Colin Wright, Program Administrator

Date Certified: 24-MAR-2020 16:43

A handwritten signature in black ink, appearing to read "Colin Wright", is shown on a light-colored background.

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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Deadfall Creek upstream of Old River Rd

Collection Date/Time: 03/03/2020 10:15

Field ID: G4NW0491

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162011	EPA 180.1 Rev. 2.0	Turbidity	2.2	A	NTU	P380054	
	EPA 300.0 Rev. 2.1	Chloride	3.0		mg Cl/L	P380389	
		Sulfate	1.2		mg SO4/L	P380392	
		Color (true)	30	A	PCU	P380130	
	SM 2320 B-2011	Total Alkalinity	1.0	I	mg CaCO3/L	P380591	
	SM 2540 C-2011	TDS	18	I	mg/L	P380757	
	SM 2540 D-2011	TSS	2	I	mg/L	P380547	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P380595	MS
2162014	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P380469	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.14	I	mg N/L	P380183	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P380286	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P380363	
	SM 5310 B-2011	Organic Carbon	2.8		mg C/L	P380171	
2162017	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380063	
2162039	EPA 200.7 Rev. 4.4	Barium	12.0		ug/L	P380311	
		Calcium	0.87		mg/L	P380311	
		Iron	210		ug/L	P380311	
		Magnesium	0.54		mg/L	P380311	
		Potassium	0.30	U	mg/L	P380311	
		Sodium	1.7	I	mg/L	P380311	
		Zinc	5.0	U	ug/L	P380311	
	EPA 200.8 Rev. 5.4	Aluminum	136		ug/L	P380311	
		Antimony	0.050	U	ug/L	P380311	
		Arsenic	0.16	I	ug/L	P380311	
		Boron**	6.4	I	ug/L	P380311	
		Cadmium	0.020	U	ug/L	P380311	
		Chromium	0.40	U	ug/L	P380311	
		Copper	0.40	U	ug/L	P380311	
		Lead	0.20	U	ug/L	P380311	
		Nickel	0.50	U	ug/L	P380311	
		Selenium	0.20	U	ug/L	P380311	
		Silver	0.010	U	ug/L	P380311	
		Thallium	0.10	U	ug/L	P380311	
		Hardness	4.4		mg/L	P380311	
	SM 2340B						

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Deadfall Creek upstream of Shockley Springs Rd **Collection Date/Time: 03/03/2020 10:35**

Field ID: G4NW0490

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162020	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P380054	
	EPA 300.0 Rev. 2.1	Chloride	2.8		mg Cl/L	P380389	
		Sulfate	1.3		mg SO4/L	P380392	
	SM 2120 B-2011	Color (true)	28	A	PCU	P380132	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P380591	
	SM 2540 C-2011	TDS	15	U	mg/L	P380757	
	SM 2540 D-2011	TSS	2	I	mg/L	P380547	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P380595	MS
2162021	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P380469	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.15	I	mg N/L	P380183	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P380287	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P380363	
	SM 5310 B-2011	Organic Carbon	2.9		mg C/L	P380171	
2162022	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380063	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Panther Creek upstream John Riley Barnhill Road

Collection Date/Time: 03/03/2020 11:00

Field ID: G4NW0296

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162037	EPA 8321B	2,4-D	0.0020	U	ug/L	P380128	
		Acesulfame K**	0.10	U	ug/L	P380189	MS
		AMPA**	0.10	U	ug/L	P380189	
		Sucralose**	0.010	I	ug/L	P380189	
		Acetaminophen**	0.0080	U	ug/L	P380128	
		Acetamiprid**	0.0020	U	ug/L	P380128	
		Endothall**	0.25	U	ug/L	P380189	
		Glufosinate**	0.10	U	ug/L	P380189	
		Glyphosate**	0.10	U	ug/L	P380189	
		Afidopyropen**	0.0020	UJ	ug/L	P380128	
		Bentazon	8.0E-04	U	ug/L	P380128	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P380128	
		Carbamazepine**	8.0E-04	U	ug/L	P380128	
		Clothianidin**	0.0020	U	ug/L	P380128	
		Dinotefuran**	0.0020	U	ug/L	P380128	
		Diuron	0.0020	U	ug/L	P380128	
		Fenuron	0.016	U	ug/L	P380128	
		Fluridone**	8.0E-04	U	ug/L	P380128	
		Imazapyr**	0.0040	U	ug/L	P380128	
		Hydrocodone**	0.0020	U	ug/L	P380128	
		Ibuprofen**	0.020	U	ug/L	P380128	
		Imidacloprid	0.0020	U	ug/L	P380128	
		Linuron	0.0040	U	ug/L	P380128	
		Mandestrobin**	0.0020	UJ	ug/L	P380128	
		MCPP	0.0020	U	ug/L	P380128	
		Naproxen**	0.0080	U	ug/L	P380128	RPD
		Primidone**	0.0040	U	ug/L	P380128	
		Pyraclostrobin**	0.0020	U	ug/L	P380128	
		Thiamethoxam**	0.0020	U	ug/L	P380128	
		Tolfenpyrad**	0.0020	U	ug/L	P380128	
		Triclopyr**	0.0040	U	ug/L	P380128	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Big Horse Creek upstream of Old River Road

Collection Date/Time: 03/03/2020 11:45

Field ID: G4NW0298

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162038	EPA 8321B	2,4-D	0.0020	U	ug/L	P380207	
		Acesulfame K**	0.10	U	ug/L	P380189	MS
		AMPA**	0.10	U	ug/L	P380189	
		Sucralose**	0.012	I	ug/L	P380189	
		Acetaminophen**	0.0080	U	ug/L	P380207	
		Acetamiprid**	0.0020	U	ug/L	P380207	
		Endothall**	0.25	U	ug/L	P380189	
		Glufosinate**	0.10	U	ug/L	P380189	
		Glyphosate**	0.10	U	ug/L	P380189	
		Afidopyropen**	0.0020	UJ	ug/L	P380207	
		Bentazon	8.0E-04	U	ug/L	P380207	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P380207	
		Carbamazepine**	8.0E-04	U	ug/L	P380207	
		Clothianidin**	0.0020	U	ug/L	P380207	
		Dinotefuran**	0.0020	U	ug/L	P380207	
		Diuron	0.0020	U	ug/L	P380207	
		Fenuron	0.016	U	ug/L	P380207	
		Fluridone**	8.0E-04	U	ug/L	P380207	
		Imazapyr**	0.0040	U	ug/L	P380207	
		Hydrocodone**	0.0020	U	ug/L	P380207	
		Ibuprofen**	0.020	U	ug/L	P380207	
		Imidacloprid	0.0020	U	ug/L	P380207	
		Linuron	0.0040	U	ug/L	P380207	
		Mandestrobin**	0.0020	UJ	ug/L	P380207	
		MCPP	0.0020	U	ug/L	P380207	
		Naproxen**	0.0080	U	ug/L	P380207	
		Primidone**	0.0040	U	ug/L	P380207	
		Pyraclostrobin**	0.0020	U	ug/L	P380207	
		Thiamethoxam**	0.0020	U	ug/L	P380207	
		Tolfenpyrad**	0.0020	U	ug/L	P380207	
		Triclopyr**	0.0040	U	ug/L	P380207	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Sample Location: Baggett Creek upstream of Keyser Mill Road

Collection Date/Time: 03/03/2020 12:45

Field ID: G4NW0335

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162012	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P380054	
	EPA 300.0 Rev. 2.1	Chloride	4.2		mg Cl/L	P380389	
		Sulfate	0.76		mg SO4/L	P380392	
		Color (true)	16		PCU	P380132	
	SM 2120 B-2011	Total Alkalinity	3.0		mg CaCO3/L	P380591	
	SM 2540 C-2011	TDS	17	I	mg/L	P380757	
	SM 2540 D-2011	TSS	2	I	mg/L	P380547	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P380595	MS
2162015	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P380469	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P380183	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.74		mg N/L	P380287	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P380363	
	SM 5310 B-2011	Organic Carbon	1.4		mg C/L	P380171	
2162018	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380063	
2162040	EPA 200.7 Rev. 4.4	Barium	34.8		ug/L	P380311	
		Calcium	1.17		mg/L	P380311	
		Iron	330		ug/L	P380311	
		Magnesium	1.22		mg/L	P380311	
		Potassium	0.59	I	mg/L	P380311	
		Sodium	2.3		mg/L	P380311	
		Zinc	5.0	U	ug/L	P380311	
	EPA 200.8 Rev. 5.4	Aluminum	63		ug/L	P380311	
		Antimony	0.050	U	ug/L	P380311	
		Arsenic	0.19	I	ug/L	P380311	
		Boron**	9.1		ug/L	P380311	
		Cadmium	0.020	U	ug/L	P380311	
		Chromium	0.40	U	ug/L	P380311	
		Copper	0.40	U	ug/L	P380311	
		Lead	0.20	U	ug/L	P380311	
		Nickel	0.50	U	ug/L	P380311	
		Selenium	0.20	U	ug/L	P380311	
	SM 2340B	Silver	0.010	U	ug/L	P380311	
		Thallium	0.10	U	ug/L	P380311	
		Hardness	7.9		mg/L	P380311	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Baggett Creek upstream of Hwy 90

Collection Date/Time: 03/03/2020 13:10

Field ID: G4NW0336

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162013	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P380054	
	EPA 300.0 Rev. 2.1	Chloride	3.7		mg Cl/L	P380389	
		Sulfate	1.1		mg SO4/L	P380392	
		Color (true)	27		PCU	P380132	
	SM 2120 B-2011	Total Alkalinity	7.8		mg CaCO3/L	P380591	
	SM 2540 C-2011	TDS	19	I	mg/L	P380757	
	SM 2540 D-2011	TSS	2	I	mg/L	P380547	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P380595	MS
2162016	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P380469	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.17	I	mg N/L	P380183	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.44		mg N/L	P380287	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P380363	
	SM 5310 B-2011	Organic Carbon	2.4		mg C/L	P380171	
2162019	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380063	
2162041	EPA 200.7 Rev. 4.4	Barium	22.3		ug/L	P380311	
		Calcium	2.48		mg/L	P380311	
		Iron	320		ug/L	P380311	
		Magnesium	1.32		mg/L	P380311	
		Potassium	0.52	I	mg/L	P380311	
		Sodium	2.3		mg/L	P380311	
		Zinc	5.0	U	ug/L	P380311	
	EPA 200.8 Rev. 5.4	Aluminum	104		ug/L	P380311	
		Antimony	0.050	U	ug/L	P380311	
		Arsenic	0.20		ug/L	P380311	
		Boron**	9.6		ug/L	P380311	
		Cadmium	0.020	U	ug/L	P380311	
		Chromium	0.40	U	ug/L	P380311	
		Copper	0.40	I	ug/L	P380311	
		Lead	0.20	U	ug/L	P380311	
		Nickel	0.53	I	ug/L	P380311	
		Selenium	0.20	U	ug/L	P380311	
	SM 2340B	Silver	0.010	U	ug/L	P380311	
		Thallium	0.10	U	ug/L	P380311	
		Hardness	11.6		mg/L	P380311	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380054

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380311

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380311

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380389

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380392

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380469

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380183

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380286

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380287

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380363

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380063

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

Reference Method: EPA 8321B
Batch ID: P380128

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
 Batch ID: P380128

Component	Result	Code	Units
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
 Batch ID: P380189

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
 Batch ID: P380207

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011
 Batch ID: P380130

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B-2011
Batch ID: P380132

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P380591

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P380757

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P380547

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P380595

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P380171

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: P380311

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	98.4		P	85 - 115
Iron	99.4		P	85 - 115
Magnesium	100		P	85 - 115
Potassium	96.2		P	85 - 115
Sodium	94.8		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380311

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.6		P	85 - 115
Antimony	90.0		P	85 - 115
Arsenic	98.1		P	85 - 115
Boron	97.3		P	85 - 115
Cadmium	95.3		P	85 - 115
Chromium	97.2		P	85 - 115
Copper	101		P	85 - 115
Lead	92.6		P	85 - 115
Nickel	99.0		P	85 - 115
Selenium	96.7		P	85 - 115
Silver	97.5		P	85 - 115
Thallium	97.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380389

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380392

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380183

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P380286

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P380287

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P380363

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P380063

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

Reference Method: EPA 8321B
 Batch ID: P380128

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	127		P	30 - 160
Acetaminophen	109		P	30 - 160
Acetamiprid	91.6		P	30 - 160
Afidopyropen	81.1		P	30 - 160
Bentazon	89.6		P	30 - 160
Benzovindiflupyr	80.6		P	30 - 160
Carbamazepine	93.1		P	30 - 160
Clothianidin	93.9		P	30 - 160
Dinotefuran	114		P	30 - 160
Diuron	74.0		P	30 - 160
Fenuron	102		P	30 - 160
Fluridone	76.1		P	30 - 160
Hydrocodone	88.9		P	30 - 160
Ibuprofen	82.1		P	30 - 160
Imazapyr	93.5		P	30 - 160
Imidacloprid	99.2		P	30 - 160
Linuron	71.5		P	30 - 160
Mandestrobin	84.5		P	30 - 160
MCPP	120		P	30 - 160
Naproxen	102		P	30 - 160
Primidone	92.7		P	30 - 160
Pyraclostrobin	81.0		P	30 - 160
Thiamethoxam	95.3		P	30 - 160
Tolfenpyrad	40.0		P	30 - 160
Triclopyr	102		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P380189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	112		P	40 - 150
AMPA	111		P	40 - 150
Endothall	89.9		P	40 - 150
Glufosinate	115		P	40 - 150
Glyphosate	118		P	40 - 140
Sucralose	94.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P380207

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	123		P	30 - 160
Acetaminophen	98.1		P	30 - 160
Acetamiprid	109		P	30 - 160
Afidopyropen	109		P	30 - 160
Bentazon	81.3		P	30 - 160
Benzovindiflupyr	88.2		P	30 - 160
Carbamazepine	108		P	30 - 160
Clothianidin	101		P	30 - 160
Dinotefuran	105		P	30 - 160
Diuron	87.3		P	30 - 160
Fenuron	106		P	30 - 160
Fluridone	80.5		P	30 - 160
Hydrocodone	91.6		P	30 - 160
Ibuprofen	89.2		P	30 - 160
Imazapyr	105		P	30 - 160
Imidacloprid	118		P	30 - 160
Linuron	82.7		P	30 - 160
Mandestrobin	85.7		P	30 - 160
MCPP	120		P	30 - 160
Naproxen	87.3		P	30 - 160
Primidone	103		P	30 - 160
Pyraclostrobin	85.4		P	30 - 160
Thiamethoxam	113		P	30 - 160
Tolfenpyrad	58.2		P	30 - 160
Triclopyr	123		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P380130

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P380132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P380591

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P380595

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P380171

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380311

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162490	Barium	102		P	80 - 120
2162490	Calcium	99.0		P	80 - 120
2162490	Iron	103		P	80 - 120
2162490	Magnesium	101		P	80 - 120
2162490	Potassium	94.4		P	80 - 120
2162490	Sodium	97.0		P	80 - 120
2162490	Zinc	103		P	80 - 120
2162659	Barium	103	103	P/P	80 - 120
2162659	Calcium	100	100	P/P	80 - 120
2162659	Iron	102	104	P/P	80 - 120
2162659	Magnesium	104	104	P/P	80 - 120
2162659	Potassium	96.1	97.6	P/P	80 - 120
2162659	Sodium	93.6	92.6	P/P	80 - 120
2162659	Zinc	105	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380311

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162490	Aluminum	97.4		P	80 - 120
2162490	Antimony	90.3		P	80 - 120
2162490	Arsenic	99.9		P	80 - 120
2162490	Boron	95.8		P	80 - 120
2162490	Cadmium	97.1		P	80 - 120
2162490	Chromium	98.8		P	80 - 120
2162490	Copper	105		P	80 - 120
2162490	Lead	94.0		P	80 - 120
2162490	Nickel	104		P	80 - 120
2162490	Selenium	100		P	80 - 120
2162490	Silver	97.6		P	80 - 120
2162490	Thallium	105		P	80 - 120
2162659	Aluminum	93.0	91.8	P/P	80 - 120
2162659	Antimony	89.4	90.0	P/P	80 - 120
2162659	Arsenic	97.4	97.5	P/P	80 - 120
2162659	Boron	94.9	95.6	P/P	80 - 120
2162659	Cadmium	96.9	96.5	P/P	80 - 120
2162659	Chromium	95.8	96.5	P/P	80 - 120
2162659	Copper	102	101	P/P	80 - 120
2162659	Lead	93.1	92.4	P/P	80 - 120
2162659	Nickel	99.9	99.9	P/P	80 - 120
2162659	Selenium	96.4	94.5	P/P	80 - 120
2162659	Silver	95.5	95.5	P/P	80 - 120
2162659	Thallium	95.6	97.6	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161984	Chloride	96.5		P	90 - 110
2162070	Chloride	96.2		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161984	Sulfate	98.6		P	90 - 110
2162070	Sulfate	96.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161949	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380183

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162071	Kjeldahl Nitrogen	100	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380286

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161941	NO2NO3-N	96.4	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380287

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162021	NO2NO3-N	99.6	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380363

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162014	Total-P	108	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380063

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162017	O-Phosphate-P	99.2	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P380128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161361	2,4-D	83.4	106	P/P	30 - 160
2161361	Acetaminophen	126	117	P/P	30 - 160
2161361	Acetamiprid	83.3	86.3	P/P	30 - 160
2161361	Afidopyropen	87.2	88.0	P/P	30 - 160
2161361	Bentazon	42.6	42.9	P/P	30 - 160
2161361	Benzovindiflupyr	86.6	80.7	P/P	30 - 160
2161361	Carbamazepine	73.9	74.2	P/P	30 - 160
2161361	Clothianidin	91.9	92.4	P/P	30 - 160
2161361	Dinotefuran	143	134	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P380128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161361	Diuron	65.1	61.0	P/P	30 - 160
2161361	Fenuron	77.1	74.8	P/P	30 - 160
2161361	Fluridone	79.9	65.1	P/P	30 - 160
2161361	Hydrocodone	88.4	85.6	P/P	30 - 160
2161361	Ibuprofen	78.2	67.9	P/P	30 - 160
2161361	Imidacloprid	157	145	P/P	30 - 160
2161361	Linuron	66.0	61.7	P/P	30 - 160
2161361	Mandestrobin	86.2	81.0	P/P	30 - 160
2161361	MCP	125	104	P/P	30 - 160
2161361	Naproxen	105	68.3	P/P	30 - 160
2161361	Primidone	96.6	89.8	P/P	30 - 160
2161361	Pyraclostrobin	99.5	83.6	P/P	30 - 160
2161361	Thiamethoxam	138	136	P/P	30 - 160
2161361	Tolfenpyrad	47.2	46.0	P/P	30 - 160
2161361	Triclopyr	105	99.7	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P380189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161916	Acesulfame K	21.9	22.4	F/F	40 - 150
2161916	AMPA	88.9	87.7	P/P	40 - 150
2161916	Endothall	102	126	P/P	40 - 150
2161916	Glufosinate	103	100	P/P	40 - 150
2161916	Glyphosate	71.1	83.7	P/P	40 - 140
2161916	Sucralose	73.4	47.3	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P380207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162038	2,4-D	122	127	P/P	30 - 160
2162038	Acetaminophen	100	94.5	P/P	30 - 160
2162038	Acetamiprid	111	85.2	P/P	30 - 160
2162038	Afidopyropen	98.4	107	P/P	30 - 160
2162038	Bentazon	73.8	68.0	P/P	30 - 160
2162038	Benzovindiflupyr	89.8	79.1	P/P	30 - 160
2162038	Carbamazepine	82.4	99.8	P/P	30 - 160
2162038	Clothianidin	103	105	P/P	30 - 160
2162038	Dinotefuran	121	107	P/P	30 - 160
2162038	Diuron	95.1	80.7	P/P	30 - 160
2162038	Fenuron	102	92.9	P/P	30 - 160
2162038	Fluridone	85.2	85.7	P/P	30 - 160
2162038	Hydrocodone	98.7	93.5	P/P	30 - 160
2162038	Ibuprofen	84.8	80.0	P/P	30 - 160
2162038	Imazapyr	121	107	P/P	30 - 160
2162038	Imidacloprid	151	148	P/P	30 - 160
2162038	Linuron	84.3	70.2	P/P	30 - 160
2162038	Mandestrobin	85.0	77.3	P/P	30 - 160
2162038	MCP	122	118	P/P	30 - 160
2162038	Naproxen	82.9	80.7	P/P	30 - 160
2162038	Primidone	110	98.1	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P380207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162038	Pyraclostrobin	83.7	83.7	P/P	30 - 160
2162038	Thiamethoxam	144	136	P/P	30 - 160
2162038	Tolfenpyrad	58.2	54.1	P/P	30 - 160
2162038	Triclopyr	125	139	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P380595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162608	Fluoride	110	110	F/F	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P380171

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162014	Organic Carbon	97.8	98.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162011	Turbidity	7.11	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162659	Barium	0.0822	Spike	P	0 - 20
2162659	Calcium	0.0701	Spike	P	0 - 20
2162659	Iron	1.58	Spike	P	0 - 20
2162659	Magnesium	0.531	Spike	P	0 - 20
2162659	Potassium	1.44	Spike	P	0 - 20
2162659	Sodium	0.652	Spike	P	0 - 20
2162659	Zinc	0.304	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162659	Aluminum	0.917	Spike	P	0 - 20
2162659	Antimony	0.674	Spike	P	0 - 20
2162659	Arsenic	0.0432	Spike	P	0 - 20
2162659	Boron	0.713	Spike	P	0 - 20
2162659	Cadmium	0.429	Spike	P	0 - 20
2162659	Chromium	0.725	Spike	P	0 - 20
2162659	Copper	0.949	Spike	P	0 - 20
2162659	Lead	0.773	Spike	P	0 - 20
2162659	Nickel	0.0115	Spike	P	0 - 20
2162659	Selenium	2.05	Spike	P	0 - 20
2162659	Silver	0.0103	Spike	P	0 - 20
2162659	Thallium	2.04	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162070	Chloride	0.680	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162070	Sulfate	0.352	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161949	Ammonia-N	0.596	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162071	Kjeldahl Nitrogen	1.71	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380286

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161941	NO2NO3-N	0.425	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380287

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162021	NO2NO3-N	0.391	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380363

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162014	Total-P	3.74	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380063

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162017	O-Phosphate-P	0.903	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P380128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161361	2,4-D	22.3	Spike	P	0 - 30
2161361	Acetaminophen	7.86	Spike	P	0 - 30
2161361	Acetamiprid	3.60	Spike	P	0 - 30
2161361	Afidopyropen	0.972	Spike	P	0 - 30
2161361	Bentazon	0.354	Spike	P	0 - 30
2161361	Benzovindiflupyr	7.01	Spike	P	0 - 30
2161361	Carbamazepine	0.359	Spike	P	0 - 30
2161361	Clothianidin	0.562	Spike	P	0 - 30
2161361	Dinotefuran	6.70	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P380128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161361	Diuron	6.47	Spike	P	0 - 30
2161361	Fenuron	3.00	Spike	P	0 - 30
2161361	Fluridone	19.0	Spike	P	0 - 30
2161361	Hydrocodone	3.30	Spike	P	0 - 30
2161361	Ibuprofen	14.2	Spike	P	0 - 30
2161361	Imazapyr	2.13	Spike	P	0 - 30
2161361	Imidacloprid	7.96	Spike	P	0 - 30
2161361	Linuron	6.70	Spike	P	0 - 30
2161361	Mandestrobin	6.29	Spike	P	0 - 30
2161361	MCP	18.9	Spike	P	0 - 30
2161361	Naproxen	42.3	Spike	F	0 - 30
2161361	Primidone	7.29	Spike	P	0 - 30
2161361	Pyraclostrobin	17.3	Spike	P	0 - 30
2161361	Thiamethoxam	1.24	Spike	P	0 - 30
2161361	Tolfenpyrad	2.52	Spike	P	0 - 30
2161361	Triclopyr	5.53	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P380189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161916	Acesulfame K	2.32	Spike	P	0 - 30
2161916	AMPA	0.809	Spike	P	0 - 30
2161916	Endothall	21.7	Spike	P	0 - 30
2161916	Glufosinate	3.17	Spike	P	0 - 30
2161916	Glyphosate	5.63	Spike	P	0 - 30
2161916	Sucralose	27.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P380207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162038	2,4-D	3.53	Spike	P	0 - 30
2162038	Acetaminophen	5.85	Spike	P	0 - 30
2162038	Acetamiprid	26.5	Spike	P	0 - 30
2162038	Afidopyropen	8.59	Spike	P	0 - 30
2162038	Bentazon	8.10	Spike	P	0 - 30
2162038	Benzovindiflupyr	12.7	Spike	P	0 - 30
2162038	Carbamazepine	19.0	Spike	P	0 - 30
2162038	Clothianidin	2.48	Spike	P	0 - 30
2162038	Dinotefuran	12.1	Spike	P	0 - 30
2162038	Diuron	16.3	Spike	P	0 - 30
2162038	Fenuron	9.50	Spike	P	0 - 30
2162038	Fluridone	0.552	Spike	P	0 - 30
2162038	Hydrocodone	5.40	Spike	P	0 - 30
2162038	Ibuprofen	5.81	Spike	P	0 - 30
2162038	Imazapyr	13.0	Spike	P	0 - 30
2162038	Imidacloprid	2.34	Spike	P	0 - 30
2162038	Linuron	18.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P380207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162038	Mandestrobin	9.53	Spike	P	0 - 30
2162038	MCP	2.84	Spike	P	0 - 30
2162038	Naproxen	2.71	Spike	P	0 - 30
2162038	Primidone	11.4	Spike	P	0 - 30
2162038	Pyraclostrobin	0.0311	Spike	P	0 - 30
2162038	Thiamethoxam	5.80	Spike	P	0 - 30
2162038	Tolfenpyrad	7.33	Spike	P	0 - 30
2162038	Triclopyr	10.8	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
 Batch ID: P380130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162011	Color (true)	3.96	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
 Batch ID: P380132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162020	Color (true)	1.99	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
 Batch ID: P380591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162608	Total Alkalinity	0.283	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
 Batch ID: P380757

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161966	TDS	0.722	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P380595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162608	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
 Batch ID: P380171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162014	Organic Carbon	0.312	Spike	P	0 - 20

Quality Assurance Report Precision

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2162037
Field Sample ID: G4NW0296

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	110	P	30 - 160
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	109	P	30 - 160
EPA 8321B	Diuron-d6	58.3	P	30 - 160
EPA 8321B	Endothall-d6	77.1	P	30 - 160
EPA 8321B	Endothall-d6	77.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	99.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	99.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.6	P	30 - 160
EPA 8321B	Primidone-d5	94.9	P	30 - 160
EPA 8321B	Sucralose-d6	95.3	P	30 - 160
EPA 8321B	Sucralose-d6	95.3	P	30 - 160

Lab Sample ID: 2162038
Field Sample ID: G4NW0298

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	124	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	108	P	30 - 160
EPA 8321B	Diuron-d6	100	P	30 - 160
EPA 8321B	Endothall-d6	95.4	P	30 - 160
EPA 8321B	Endothall-d6	95.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	102	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	102	P	30 - 160
EPA 8321B	Ibuprofen-d3	82.1	P	30 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Sucralose-d6	87.4	P	30 - 160
EPA 8321B	Sucralose-d6	87.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97995

Included Lab Sample IDs: 2162011, 2162012, 2162013, 2162020

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	98.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97998

Included Lab Sample IDs: 2162017, 2162018, 2162019, 2162022

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.4	96.1	P/P	90 - 110
O-Phosphate-P	97.5	96.4	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A98019

Included Lab Sample IDs: 2162011, 2162012, 2162013, 2162020

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115
Color (true)	103	102	P/P	90 - 115

Reference Method: SM 5310 B-2011

Run ID: A98030

Included Lab Sample IDs: 2162014, 2162015, 2162016, 2162021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	98.5	P/P	90 - 110
Organic Carbon	98.5	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98061

Included Lab Sample IDs: 2162014, 2162015, 2162016, 2162021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98063

Included Lab Sample IDs: 2162037, 2162038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	107	98.4	P/P	60 - 160
Endothall	130	114	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98065

Included Lab Sample IDs: 2162014, 2162015, 2162016, 2162021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.0	99.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98096

Included Lab Sample IDs: 2162011, 2162012, 2162013, 2162020

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.8	98.8	P/P	90 - 110
Chloride	98.8	99.0	P/P	90 - 110
Chloride	99.0	98.6	P/P	90 - 110
Sulfate	97.9	98.8	P/P	90 - 110
Sulfate	98.8	99.1	P/P	90 - 110
Sulfate	99.1	98.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98104

Included Lab Sample IDs: 2162039, 2162040, 2162041

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	101	P/P	90 - 110
Calcium	99.2	97.8	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	102	100	P/P	90 - 110
Potassium	99.7	99.3	P/P	90 - 110
Sodium	98.9	98.7	P/P	90 - 110
Zinc	101	99.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98125

Included Lab Sample IDs: 2162037, 2162038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	121	83.3	P/P	40 - 200
Glufosinate	124	120	P/P	40 - 200
Glyphosate	125	116	P/P	40 - 200

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98131

Included Lab Sample IDs: 2162014, 2162015, 2162016, 2162021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	99.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98137

Included Lab Sample IDs: 2162039, 2162040, 2162041

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	98.4	P/P	90 - 110
Aluminum	98.4	102	P/P	90 - 110
Arsenic	100	99.6	P/P	90 - 110
Arsenic	101	100	P/P	90 - 110
Boron	100	99.3	P/P	90 - 110
Boron	99.3	99.3	P/P	90 - 110
Cadmium	96.1	95.8	P/P	90 - 110
Cadmium	96.4	96.1	P/P	90 - 110
Chromium	96.7	97.2	P/P	90 - 110
Chromium	97.2	96.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98137

Included Lab Sample IDs: 2162039, 2162040, 2162041

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	101	102	P/P	90 - 110
Copper	102	101	P/P	90 - 110
Lead	95.4	95.7	P/P	90 - 110
Lead	95.7	95.4	P/P	90 - 110
Nickel	102	103	P/P	90 - 110
Nickel	102	102	P/P	90 - 110
Selenium	97.1	97.2	P/P	90 - 110
Selenium	98.9	97.1	P/P	90 - 110
Silver	94.2	94.2	P/P	90 - 110
Silver	94.8	94.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98160

Included Lab Sample IDs: 2162037, 2162038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	94.3	99.8	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98172

Included Lab Sample IDs: 2162039, 2162040, 2162041

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	90.6	91.0	P/P	90 - 110
Thallium	91.0	91.4	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A98174

Included Lab Sample IDs: 2162011, 2162012, 2162013, 2162020

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A98174

Included Lab Sample IDs: 2162011, 2162012, 2162013, 2162020

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98197

Included Lab Sample IDs: 2162039, 2162040, 2162041

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	90.9	91.1	P/P	90 - 110
Antimony	91.7	90.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98211

Included Lab Sample IDs: 2162014, 2162015, 2162016, 2162021

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

Reference Method: EPA 8321B

Run ID: A98214

Included Lab Sample IDs: 2162037, 2162038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	77.9	80.1	P/P	50 - 150
2,4-D	80.1	93.6	P/P	50 - 150
Acetaminophen	104	128	P/P	60 - 160
Acetaminophen	117	98.7	P/P	60 - 160
Acetamiprid	117	114	P/P	50 - 150
Acetamiprid	95.9	101	P/P	50 - 150
Afidopyropen	114	120	P/P	50 - 150
Afidopyropen	93.4	84.6	P/P	50 - 150
Bentazon	112	133	P/P	50 - 160
Bentazon	132	134	P/P	50 - 160
Benzovindiflupyr	111	106	P/P	50 - 150
Benzovindiflupyr	91.1	92.5	P/P	50 - 150
Carbamazepine	116	110	P/P	60 - 150
Carbamazepine	91.5	102	P/P	60 - 150
Clothianidin	117	105	P/P	60 - 150
Clothianidin	95.7	104	P/P	60 - 150
Dinotefuran	105	110	P/P	50 - 150
Dinotefuran	106	107	P/P	50 - 150
Diuron	121	118	P/P	60 - 150
Diuron	89.6	90.8	P/P	60 - 150
Fenuron	109	97.8	P/P	60 - 150
Fenuron	92.9	95.8	P/P	60 - 150
Fluridone	110	103	P/P	60 - 160
Fluridone	73.7	85.3	P/P	60 - 160
Hydrocodone	110	112	P/P	60 - 150
Hydrocodone	95.4	105	P/P	60 - 150
Ibuprofen	85.0	70.8	P/P	50 - 160
Ibuprofen	88.1	96.9	P/P	50 - 160
Imazapyr	100	84.8	P/P	50 - 150
Imazapyr	89.8	89.2	P/P	50 - 150
Imidacloprid	103	104	P/P	60 - 150
Imidacloprid	89.4	88.3	P/P	60 - 150
Linuron	100	104	P/P	60 - 150
Linuron	117	109	P/P	60 - 150
Mandestrobin	84.2	83.5	P/P	50 - 150
Mandestrobin	97.5	100	P/P	50 - 150
MCPP	70.3	72.4	P/P	50 - 150
MCPP	72.4	75.3	P/P	50 - 150
Naproxen	126	72.7	P/P	50 - 160
Naproxen	79.6	121	P/P	50 - 160
Primidone	87.2	103	P/P	60 - 150
Primidone	92.0	83.8	P/P	60 - 150
Pyraclostrobin	111	106	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98214

Included Lab Sample IDs: 2162037, 2162038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	97.1	96.9	P/P	60 - 150
Thiamethoxam	116	110	P/P	50 - 150
Thiamethoxam	93.6	101	P/P	50 - 150
Tolfenpyrad	112	116	P/P	60 - 150
Tolfenpyrad	80.4	82.3	P/P	60 - 150
Triclopyr	106	105	P/P	50 - 150
Triclopyr	87.6	81.9	P/P	50 - 150

* 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						7.11	
EPA 200.7 Rev. 4.4	Barium	101	102	103	103			0.0822
	Calcium	98.4	99.0	100	100			0.0701
	Iron	99.4	103	102	104			1.58
	Magnesium	100	101	104	104			0.531
	Potassium	96.2	94.4	96.1	97.6			1.44
	Sodium	94.8	97.0	93.6	92.6			0.652
	Zinc	102	103	105	105			0.304
EPA 200.8 Rev. 5.4	Aluminum	96.6	93.0	91.8	97.4			0.917
	Antimony	90.0	89.4	90.0	90.3			0.674
	Arsenic	98.1	97.4	97.5	99.9			0.0432
	Boron	97.3	94.9	95.6	95.8			0.713
	Cadmium	95.3	96.9	96.5	97.1			0.429
	Chromium	97.2	95.8	96.5	98.8			0.725
	Copper	101	102	101	105			0.949
	Lead	92.6	93.1	92.4	94.0			0.773
	Nickel	99.0	99.9	99.9	104			0.0115
	Selenium	96.7	96.4	94.5	100			2.05
	Silver	97.5	95.5	95.5	97.6			0.0103
	Thallium	97.0	95.6	97.6	105			2.04
EPA 300.0 Rev. 2.1	Chloride	97.6	96.2	96.5			0.680	
	Sulfate	98.9	96.0	98.6			0.352	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	101	100				0.596
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	100	97.7				1.71
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.4	96.8				0.425
	NO2NO3-N	100	99.6	100				0.391
EPA 365.1 Rev. 2.0	Total-P	104	108	104				3.74
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	99.2	100				0.903
EPA 8321B	2,4-D	127	83.4	106				22.3
	2,4-D	123	122	127				3.53
	Acesulfame K	112	22.4	21.9				2.32
	Acetaminophen	109	126	117				7.86
	Acetaminophen	98.1	100	94.5				5.85
	Acetamiprid	91.6	83.3	86.3				3.60
	Acetamiprid	109	111	85.2				26.5
	Afidopyropen	81.1	87.2	88.0				0.972
	Afidopyropen	109	98.4	107				8.59
	AMPA	111	88.9	87.7				0.809
	Bentazon	89.6	42.6	42.9				0.354
	Bentazon	81.3	73.8	68.0				8.10
	Benzovindiflupyr	80.6	86.6	80.7				7.01
	Benzovindiflupyr	88.2	89.8	79.1				12.7
	Carbamazepine	93.1	73.9	74.2				0.359
	Carbamazepine	108	82.4	99.8				19.0
	Clothianidin	93.9	91.9	92.4				0.562
	Clothianidin	101	103	105				2.48
	Dinotefuran	114	143	134				6.70
	Dinotefuran	105	121	107				12.1
	Diuron	74.0	65.1	61.0				6.47
	Diuron	87.3	95.1	80.7				16.3
	Endothall	89.9	126	102				21.7
	Fenuron	102	77.1	74.8				3.00
	Fenuron	106	102	92.9				9.50
	Fluridone	76.1	79.9	65.1				19.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Fluridone	80.5	85.2	85.7			0.552
	Glufosinate	115	103	100			3.17
	Glyphosate	118	71.1	83.7			5.63
	Hydrocodone	88.9	88.4	85.6			3.30
	Hydrocodone	91.6	98.7	93.5			5.40
	Ibuprofen	82.1	78.2	67.9			14.2
	Ibuprofen	89.2	84.8	80.0			5.81
	Imazapyr	93.5					2.13
	Imazapyr	105	121	107			13.0
	Imidacloprid	99.2	157	145			7.96
	Imidacloprid	118	151	148			2.34
	Linuron	71.5	66.0	61.7			6.70
	Linuron	82.7	84.3	70.2			18.2
	Mandestrobin	84.5	86.2	81.0			6.29
	Mandestrobin	85.7	85.0	77.3			9.53
	MCPP	120	125	104			18.9
	MCPP	120	122	118			2.84
	Naproxen	102	105	68.3			42.3
	Naproxen	87.3	82.9	80.7			2.71
	Primidone	92.7	96.6	89.8			7.29
	Primidone	103	110	98.1			11.4
	Pyraclostrobin	81.0	99.5	83.6			17.3
	Pyraclostrobin	85.4	83.7	83.7			0.0311
	Sucralose	94.9	73.4	47.3			27.9
	Thiamethoxam	95.3	138	136			1.24
	Thiamethoxam	113	144	136			5.80
	Tolfenpyrad	40.0	47.2	46.0			2.52
	Tolfenpyrad	58.2	58.2	54.1			7.33
	Triclopyr	102	105	99.7			5.53
	Triclopyr	123	125	139			10.8
SM 2120 B-2011	Color (true)	101				3.96	
	Color (true)	101				1.99	
SM 2320 B-2011	Total Alkalinity	102				0.283	
SM 2540 C-2011	TDS					0.722	
SM 4500 F-C-2011	Fluoride	101	110	110			0.0
SM 5310 B-2011	Organic Carbon	101	97.8	98.1			0.312

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2162011, 2162012, 2162013, 2162020
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2162039, 2162040, 2162041
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2162039, 2162040, 2162041
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2162011, 2162012, 2162013, 2162020
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2162011, 2162012, 2162013, 2162020
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2162014, 2162015, 2162016, 2162021
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2162014, 2162015, 2162016, 2162021
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2162014, 2162015, 2162016, 2162021
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2162014, 2162015, 2162016, 2162021
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2162017, 2162018, 2162019, 2162022

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2162037, 2162038
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2162037, 2162038
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2162011, 2162012, 2162013, 2162020
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2162011, 2162012, 2162013, 2162020
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2162039, 2162040, 2162041
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2162011, 2162012, 2162013, 2162020
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2162011, 2162012, 2162013, 2162020
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2162011, 2162012, 2162013, 2162020
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2162014, 2162015, 2162016, 2162021

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	03/04/2020			03/04/2020 16:33	Yen Ta	2162011, 2162012, 2162013, 2162020
EPA 200.7 Rev. 4.4	03/04/2020	03/09/2020 17:00	Elliott D. Healy	03/10/2020 13:48	Vijayalakshmi Reddy	2162039
	03/04/2020	03/09/2020 17:00	Elliott D. Healy	03/10/2020 13:54	Vijayalakshmi Reddy	2162040
	03/04/2020	03/09/2020 17:00	Elliott D. Healy	03/10/2020 13:59	Vijayalakshmi Reddy	2162041
EPA 200.8 Rev. 5.4	03/04/2020	03/09/2020 17:00	Elliott D. Healy	03/11/2020 22:07	Alexander Thompson	2162039
	03/04/2020	03/09/2020 17:00	Elliott D. Healy	03/11/2020 22:14	Alexander Thompson	2162040
	03/04/2020	03/09/2020 17:00	Elliott D. Healy	03/11/2020 23:02	Alexander Thompson	2162041
	03/04/2020	03/09/2020 17:00	Elliott D. Healy	03/12/2020 20:19	Alexander Thompson	2162039
	03/04/2020	03/09/2020 17:00	Elliott D. Healy	03/12/2020 20:23	Alexander Thompson	2162040
	03/04/2020	03/09/2020 17:00	Elliott D. Healy	03/12/2020 20:50	Alexander Thompson	2162041
	03/04/2020	03/09/2020 17:00	Elliott D. Healy	03/13/2020 14:40	Justin Cutchin	2162039
	03/04/2020	03/09/2020 17:00	Elliott D. Healy	03/13/2020 14:47	Justin Cutchin	2162040
	03/04/2020	03/09/2020 17:00	Elliott D. Healy	03/13/2020 15:25	Justin Cutchin	2162041
EPA 300.0 Rev. 2.1	03/04/2020			03/10/2020 16:25	Lipi Saha	2162013
	03/04/2020			03/10/2020 17:01	Lipi Saha	2162020
	03/04/2020			03/10/2020 20:03	Lipi Saha	2162011
	03/04/2020			03/10/2020 20:15	Lipi Saha	2162012
EPA 350.1 Rev. 2.0	03/04/2020			03/09/2020 15:13	Ping Hua	2162014
	03/04/2020			03/09/2020 15:14	Ping Hua	2162015
	03/04/2020			03/09/2020 15:16	Ping Hua	2162016
	03/04/2020			03/09/2020 15:17	Ping Hua	2162021
EPA 351.2 Rev. 2.0	03/04/2020	03/06/2020 12:12	Sima Feizi	03/09/2020 13:15	Jhamieka S. Greenwood	2162014
	03/04/2020	03/06/2020 12:12	Sima Feizi	03/09/2020 13:17	Jhamieka S. Greenwood	2162015
	03/04/2020	03/06/2020 12:12	Sima Feizi	03/09/2020 13:18	Jhamieka S. Greenwood	2162016
	03/04/2020	03/06/2020 12:12	Sima Feizi	03/09/2020 13:20	Jhamieka S. Greenwood	2162021
EPA 353.2 Rev. 2.0	03/04/2020			03/09/2020 10:40	Beverly Y. Sanders	2162014
	03/04/2020			03/09/2020 10:47	Beverly Y. Sanders	2162015
	03/04/2020			03/09/2020 10:53	Beverly Y. Sanders	2162016
	03/04/2020			03/09/2020 10:54	Beverly Y. Sanders	2162021
EPA 365.1 Rev. 2.0	03/04/2020	03/10/2020 13:53	Yen Ta	03/13/2020 13:51	Benjamin T. Nordmann	2162014
	03/04/2020	03/10/2020 13:53	Yen Ta	03/13/2020 13:59	Benjamin T. Nordmann	2162015
	03/04/2020	03/10/2020 13:53	Yen Ta	03/13/2020 14:00	Benjamin T. Nordmann	2162016
	03/04/2020	03/10/2020 13:53	Yen Ta	03/13/2020 14:01	Benjamin T. Nordmann	2162021
EPA 365.1 Rev. 2.0 dissolved	03/04/2020			03/04/2020 16:05	Carlos Miranda	2162017
	03/04/2020			03/04/2020 16:17	Carlos Miranda	2162018, 2162019
	03/04/2020			03/04/2020 16:18	Carlos Miranda	2162022
EPA 8321B	03/04/2020	03/06/2020 10:00	Hoor Shaik	03/13/2020 17:02	Juyoung Kim	2162037
	03/04/2020	03/06/2020 13:00	Rebecca Ware	03/06/2020 16:56	Rebecca Ware	2162037
	03/04/2020	03/06/2020 13:00	Rebecca Ware	03/06/2020 17:09	Rebecca Ware	2162038
	03/04/2020	03/06/2020 13:00	Rebecca Ware	03/09/2020 11:57	Rebecca Ware	2162037

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	03/04/2020	03/06/2020 13:00	Rebecca Ware	03/09/2020 12:08	Rebecca Ware	2162038
	03/04/2020	03/06/2020 13:00	Rebecca Ware	03/11/2020 18:41	Rebecca Ware	2162037
	03/04/2020	03/06/2020 13:00	Rebecca Ware	03/11/2020 18:53	Rebecca Ware	2162038
	03/04/2020	03/09/2020 09:00	Hoor Shaik	03/13/2020 21:04	Juyoung Kim	2162038
SM 2120 B-2011	03/04/2020			03/04/2020 17:49	Madeline Gruver	2162011
	03/04/2020			03/04/2020 19:13	Madeline Gruver	2162012
	03/04/2020			03/04/2020 19:14	Madeline Gruver	2162013
	03/04/2020			03/04/2020 19:15	Madeline Gruver	2162020
SM 2320 B-2011	03/04/2020			03/12/2020 09:43	Dale L. Simmons	2162011
	03/04/2020			03/12/2020 09:57	Dale L. Simmons	2162012
	03/04/2020			03/12/2020 10:08	Dale L. Simmons	2162013
	03/04/2020			03/12/2020 10:18	Dale L. Simmons	2162020
SM 2340B	03/04/2020			03/10/2020 13:48	Vijayalakshmi Reddy	2162039
	03/04/2020			03/10/2020 13:54	Vijayalakshmi Reddy	2162040
	03/04/2020			03/10/2020 13:59	Vijayalakshmi Reddy	2162041
SM 2540 C-2011	03/04/2020			03/09/2020 15:13	Yijie Li	2162011, 2162012, 2162013, 2162020
SM 2540 D-2011	03/04/2020			03/09/2020 15:13	Yijie Li	2162011, 2162012, 2162013, 2162020
SM 4500 F-C-2011	03/04/2020			03/12/2020 09:43	Dale L. Simmons	2162011
	03/04/2020			03/12/2020 09:57	Dale L. Simmons	2162012
	03/04/2020			03/12/2020 10:08	Dale L. Simmons	2162013
	03/04/2020			03/12/2020 10:18	Dale L. Simmons	2162020
SM 5310 B-2011	03/04/2020			03/05/2020 21:43	Lauren Lees	2162014
	03/04/2020			03/05/2020 23:30	Lauren Lees	2162015
	03/04/2020			03/05/2020 23:44	Lauren Lees	2162016
	03/04/2020			03/06/2020 00:01	Lauren Lees	2162021