

Chemical Analysis Report

WQ-ASSESS-2017-02-07-01

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

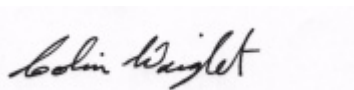
Event Description: **Megginnis Arm, Tallavanna, Little River, Swamp Creek,
Salem Branch**
Request ID: **RQ-2017-02-06-34**
Customer: **WQ-ASSESS**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
Division Of Water Facilities, FL DEP
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400
Attn: Curtis Musson

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Certified by: Colin Wright, Program Administrator

Date Certified: 06-MAR-2017 13:37

A handwritten signature in black ink, appearing to read "Colin Wright", is placed over a light blue rectangular 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 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: Quincy Creek upstream of SR 268

Collection Date/Time: 02/07/2017 09:25

Field ID: G1WA0051-02072017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1870253	EPA 180.1 Rev. 2.0	Turbidity	9.2		NTU	P319448	
	EPA 300.0 Rev. 2.1	Chloride	6.0		mg Cl/L	P319981	
		Sulfate	1.2		mg SO4/L	P319984	
	SM 2120 B	Color (true)	52		PCU	P319438	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P319868	
	SM 2540 C-97	TDS	28		mg/L	P319719	
	SM 2540 D-97	TSS	8	I	mg/L	P319576	
	SM 4500 F-C-97	Fluoride	0.080	I	mg F/L	P319873	
1870255	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P319775	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P319547	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.31		mg N/L	P319810	
	EPA 365.1 Rev. 2.0	Total-P	0.091		mg P/L	P319550	
	SM 5310 B-00	Organic Carbon	3.8		mg C/L	P319573	
1870257	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.041		mg P/L	P319431	

Ref. Method and Comment:

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

Sample Location: Megginnis Arm Run Downstream of Sharer

Collection Date/Time: 02/07/2017 12:45

Field ID: G1WA0033-02072017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1870254	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P319448	
	EPA 300.0 Rev. 2.1	Chloride	47		mg Cl/L	P319981	
		Sulfate	2.4		mg SO4/L	P319984	
	SM 2120 B	Color (true)	16		PCU	P319438	
	SM 2320 B-97	Total Alkalinity	59		mg CaCO3/L	P319770	
	SM 2540 C-97	TDS	128		mg/L	P319719	
	SM 2540 D-97	TSS	8	I	mg/L	P319576	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P319732	
1870256	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P319639	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P319547	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P319810	
	EPA 365.1 Rev. 2.0	Total-P	0.077		mg P/L	P319552	
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P319573	
1870258	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.043		mg P/L	P319431	

Ref. Method and Comment:

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: Total-P: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Little River 100 meters upstream of SR 12

Collection Date/Time: 02/07/2017 10:15

Field ID: G1WA0020-02072017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1870259	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P319448	
	EPA 300.0 Rev. 2.1	Chloride	6.9		mg Cl/L	P319981	

Field ID: G1WA0020-02072017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1870259	EPA 300.0 Rev. 2.1	Sulfate	1.8		mg SO4/L	P319984	
	SM 2120 B	Color (true)	69	A	PCU	P319440	
	SM 2320 B-97	Total Alkalinity	14		mg CaCO3/L	P319868	
	SM 2540 C-97	TDS	52		mg/L	P319719	
	SM 2540 D-97	TSS	8	I	mg/L	P319576	
	SM 4500 F-C-97	Fluoride	0.086	I	mg F/L	P319873	
1870261	EPA 350.1 Rev. 2.0	Ammonia-N	0.19		mg N/L	P319639	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P319547	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.7		mg N/L	P319809	
	EPA 365.1 Rev. 2.0	Total-P	0.076		mg P/L	P319552	
	SM 5310 B-00	Organic Carbon	6.1		mg C/L	P319573	
1870263	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P319431	
1870278	EPA 8321B	Sucralose**	0.025	I	ug/L	P319242	
	USGS O-2060-01	Diuron	0.0050	I	ug/L	P319088	
		Fenuron	0.0080	U	ug/L	P319088	
		Imidacloprid	0.0044	I	ug/L	P319088	
		Linuron	0.0040	U	ug/L	P319088	
		Acetaminophen**	0.0040	U	ug/L	P319088	
		Carbamazepine**	4.0E-04	U	ug/L	P319088	
		Primidone**	0.0080	U	ug/L	P319088	
		Fluridone**	4.0E-04	U	ug/L	P319088	

Ref. Method and Comment:

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: Total-P: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Swamp Creek upstream of Railroad

Collection Date/Time: 02/07/2017 11:15

Field ID: G1WA0052-02072017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1870260	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P319448	
	EPA 300.0 Rev. 2.1	Chloride	8.3	A	mg Cl/L	P319981	
		Sulfate	2.8	A	mg SO4/L	P319984	
	SM 2120 B	Color (true)	93	A	PCU	P319439	
	SM 2320 B-97	Total Alkalinity	16		mg CaCO3/L	P319871	
	SM 2540 C-97	TDS	46		mg/L	P319719	
	SM 2540 D-97	TSS	5	I	mg/L	P319576	
	SM 4500 F-C-97	Fluoride	0.092	I	mg F/L	P319875	
1870262	EPA 350.1 Rev. 2.0	Ammonia-N	0.42		mg N/L	P319775	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P319547	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.2		mg N/L	P319810	
	EPA 365.1 Rev. 2.0	Total-P	0.079		mg P/L	P319552	
	SM 5310 B-00	Organic Carbon	7.4		mg C/L	P319573	
1870264	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.042		mg P/L	P319431	
1870279	EPA 8321B	Sucralose**	0.074		ug/L	P319242	
	USGS O-2060-01	Diuron	0.0056	I	ug/L	P319088	

Field ID: G1WA0052-02072017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1870279	USGS O-2060-01	Fenuron	0.0080	U	ug/L	P319088	
		Imidacloprid	0.0040	U	ug/L	P319088	
		Linuron	0.0040	U	ug/L	P319088	
		Acetaminophen**	0.0040	U	ug/L	P319088	
		Carbamazepine**	4.0E-04	U	ug/L	P319088	
		Primidone**	0.0080	U	ug/L	P319088	
		Fluridone**	4.0E-04	U	ug/L	P319088	

Ref. Method and Comment:

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: Total-P: The precision data is unavailable due to the low analyte concentration in the QC sample.

USGS O-2060-01: Results confirmed in re-extraction.

Sample Location: Salem Branch downstream of SR 159

Collection Date/Time: 02/07/2017 10:50

Field ID: G1WA0053-02072017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1870280	EPA 8321B	Sucralose**	0.062		ug/L	P319242	
	USGS O-2060-01	Diuron	0.27		ug/L	P319088	
		Fenuron	0.0080	U	ug/L	P319088	
		Imidacloprid	0.0040	U	ug/L	P319088	
		Linuron	0.0040	U	ug/L	P319088	
		Acetaminophen**	0.0040	U	ug/L	P319088	
		Carbamazepine**	4.0E-04	U	ug/L	P319088	
		Primidone**	0.0080	U	ug/L	P319088	
		Fluridone**	4.0E-04	U	ug/L	P319088	

Ref. Method and Comment:

USGS O-2060-01: Indaziflam = 0.029 ug/L.

Sample Location: Quincy Creek upstream of SR 268

Collection Date/Time: 02/07/2017 09:25

Field ID: G1WA0051-02072017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1870277	EPA 200.7 Rev. 4.4	Calcium	6.83		mg/L	P319629	
		Iron	1.36E+03		ug/L	P319629	
		Magnesium	1.96		mg/L	P319629	
		Potassium	0.59	I	mg/L	P319629	
		Sodium	3.5		mg/L	P319629	
		Zinc	5.0	U	ug/L	P319629	
	EPA 200.8 Rev. 5.4	Arsenic	0.60		ug/L	P319629	
		Cadmium	0.020	U	ug/L	P319629	
		Chromium	0.65	I	ug/L	P319629	
		Copper	0.23	I	ug/L	P319629	
		Lead	0.34		ug/L	P319629	
		Nickel	0.20	U	ug/L	P319629	
		Silver	0.010	U	ug/L	P319629	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319448

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P319629

Component	Result	Code	Units
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: P319629

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: P319981

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P319984

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319639

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319775

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: P319547

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319809

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319810

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319550

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319552

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319431

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

Reference Method: EPA 8321B
Batch ID: P319242

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P319438

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P319439

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P319440

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P319770

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

Reference Method: SM 2320 B-97
Batch ID: P319868

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

Reference Method: SM 2320 B-97
Batch ID: P319871

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

Reference Method: SM 2540 C-97
Batch ID: P319719

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P319576

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P319732

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P319873

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P319875

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: P319573

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

Reference Method: USGS O-2060-01

Batch ID: P319088

Component	Result	Code	Units
Acetaminophen	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0080	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P319629

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	99.4		P	85 - 115
Iron	96.9		P	85 - 115
Magnesium	98.3		P	85 - 115
Potassium	98.9		P	85 - 115
Sodium	103		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P319629

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	97.0		P	85 - 115
Cadmium	97.3		P	85 - 115
Chromium	95.2		P	85 - 115
Copper	96.7		P	85 - 115
Lead	97.4		P	85 - 115
Nickel	98.1		P	85 - 115
Silver	95.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P319981

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P319984

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P319984

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P319639

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P319775

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P319547

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P319809

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P319810

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P319550

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P319552

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: P319431

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	103		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P319242

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	75.7		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P319770

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P319868

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P319871

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P319732

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P319873

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	93.3		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P319875

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P319573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P319088

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	119		P	40 - 140
Carbamazepine	120		P	40 - 140
Diuron	87.6		P	40 - 140
Fenuron	98.4		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01

Batch ID: P319088

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluridone	90.0		P	40 - 140
Imidacloprid	106		P	40 - 160
Linuron	88.8		P	40 - 140
Primidone	98.4		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P319629

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870222	Calcium	103		P	80 - 120
1870222	Iron	95.6		P	80 - 120
1870222	Magnesium	93.9		P	80 - 120
1870222	Potassium	99.0		P	80 - 120
1870222	Sodium	99.9		P	80 - 120
1870222	Zinc	101		P	80 - 120
1870672	Calcium	103		P	80 - 120
1870672	Iron	101	99.2	P/P	80 - 120
1870672	Magnesium	101		P	80 - 120
1870672	Potassium	108		P	80 - 120
1870672	Sodium	102		P	80 - 120
1870672	Zinc	101	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P319629

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870222	Arsenic	98.9		P	80 - 120
1870222	Cadmium	100		P	80 - 120
1870222	Chromium	94.9		P	80 - 120
1870222	Copper	97.1		P	80 - 120
1870222	Lead	97.6		P	80 - 120
1870222	Nickel	97.0		P	80 - 120
1870222	Silver	96.4		P	80 - 120
1870672	Arsenic	107	106	P/P	80 - 120
1870672	Cadmium	108	104	P/P	80 - 120
1870672	Chromium	101	99.3	P/P	80 - 120
1870672	Copper	104	103	P/P	80 - 120
1870672	Lead	107	106	P/P	80 - 120
1870672	Nickel	103	102	P/P	80 - 120
1870672	Silver	104	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P319981

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870259	Chloride	101		P	90 - 110
1870260	Chloride	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P319984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870259	Sulfate	98.4		P	90 - 110
1870260	Sulfate	99.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P319639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870256	Ammonia-N	96.6	94.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P319775

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870255	Ammonia-N	90.5	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P319547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870229	Kjeldahl Nitrogen	97.6	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P319809

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870261	NO2NO3-N	105	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P319810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870255	NO2NO3-N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P319550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870224	Total-P	93.1	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P319552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870360	Total-P	98.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P319431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870257	O-Phosphate-P	106	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P319242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870854	Sucralose	84.3	87.4	P/P	40 - 140

Reference Method: SM 4500 F-C-97
 Batch ID: P319732

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870254	Fluoride	98.5	99.1	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P319873

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870729	Fluoride	98.0	98.0	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P319875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870714	Fluoride	96.5	95.9	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P319573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870141	Organic Carbon	96.0	95.4	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P319088

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869371	Acetaminophen	85.6	89.2	P/P	40 - 140
1869371	Carbamazepine	93.2	93.6	P/P	40 - 140
1869371	Diuron	71.2	72.0	P/P	40 - 140
1869371	Fenuron	78.4	80.8	P/P	40 - 140
1869371	Fluridone	70.4	72.8	P/P	40 - 140
1869371	Imidacloprid	148	146	P/P	40 - 160
1869371	Linuron	75.6	88.0	P/P	40 - 140
1869371	Primidone	83.6	82.0	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P319448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870288	Turbidity	1.12	Sample	P	0 - 20

Quality Assurance Report

Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P319629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870672	Calcium	0.0694	Spike	P	0 - 20
1870672	Iron	1.62	Spike	P	0 - 20
1870672	Magnesium	0.336	Spike	P	0 - 20
1870672	Potassium	0.208	Spike	P	0 - 20
1870672	Sodium	0.132	Spike	P	0 - 20
1870672	Zinc	2.15	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P319629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870672	Arsenic	1.56	Spike	P	0 - 20
1870672	Cadmium	3.82	Spike	P	0 - 20
1870672	Chromium	1.49	Spike	P	0 - 20
1870672	Copper	1.12	Spike	P	0 - 20
1870672	Lead	1.10	Spike	P	0 - 20
1870672	Nickel	1.47	Spike	P	0 - 20
1870672	Silver	1.65	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P319981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870260	Chloride	0.0590	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P319984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870260	Sulfate	1.11	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P319639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870256	Ammonia-N	1.72	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P319775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870255	Ammonia-N	5.50	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P319547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870229	Kjeldahl Nitrogen	3.89	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P319809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870261	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P319810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870255	NO2NO3-N	0.194	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P319550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870224	Total-P	2.77	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P319431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870257	O-Phosphate-P	1.64	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P319242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870854	Sucralose	3.61	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P319438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870150	Color (true)	3.24	Sample	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P319439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870260	Color (true)	2.22	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P319440

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870259	Color (true)	14.3	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P319770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870218	Total Alkalinity	0.0924	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P319868

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870729	Total Alkalinity	0.266	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P319871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870714	Total Alkalinity	0.209	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P319719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870199	TDS	5.79	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P319732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870254	Fluoride	0.480	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P319873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870729	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P319875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870714	Fluoride	0.487	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00

Batch ID: P319573

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870141	Organic Carbon	0.446	Spike	P	0 - 20

Reference Method: USGS O-2060-01

Batch ID: P319088

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869371	Acetaminophen	4.12	Spike	P	0 - 30
1869371	Carbamazepine	0.428	Spike	P	0 - 30
1869371	Diuron	1.12	Spike	P	0 - 30
1869371	Fenuron	3.02	Spike	P	0 - 30
1869371	Fluridone	3.35	Spike	P	0 - 30
1869371	Imidacloprid	1.09	Spike	P	0 - 30
1869371	Linuron	15.2	Spike	P	0 - 30
1869371	Primidone	1.93	Spike	P	0 - 30

* 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: 1870278

Field Sample ID: G1WA0020-02072017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	112	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	95.4	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	90.0	P	40 - 160
USGS O-2060-01	Diuron-d6	57.4	P	40 - 150
USGS O-2060-01	Primidone-d5	77.0	P	40 - 150

Lab Sample ID: 1870279

Field Sample ID: G1WA0052-02072017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	107	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	92.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	94.4	P	40 - 160
USGS O-2060-01	Diuron-d6	55.2	P	40 - 150
USGS O-2060-01	Primidone-d5	67.8	P	40 - 150

Lab Sample ID: 1870280

Field Sample ID: G1WA0053-02072017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	108	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	86.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	98.0	P	40 - 160
USGS O-2060-01	Diuron-d6	60.2	P	40 - 150

Quality Assurance Report Surrogates

Lab Sample ID: 1870280
 Field Sample ID: G1WA0053-02072017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Primidone-d5	90.4	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Run ID: A74326
 Included Lab Sample IDs: 1870257, 1870258, 1870263, 1870264

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

Reference Method: SM 2120 B
 Run ID: A74327
 Included Lab Sample IDs: 1870253, 1870254, 1870259, 1870260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	85 - 115
Color (true)	102	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
 Run ID: A74328
 Included Lab Sample IDs: 1870253, 1870254, 1870259, 1870260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.5	100	P/P	95 - 105

Reference Method: SM 5310 B-00
 Run ID: A74366
 Included Lab Sample IDs: 1870255, 1870256, 1870261, 1870262

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	96.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A74388
 Included Lab Sample IDs: 1870256, 1870261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.3	98.6	P/P	90 - 110
Ammonia-N	98.6	95.8	P/P	90 - 110

Reference Method: USGS O-2060-01
 Run ID: A74390
 Included Lab Sample IDs: 1870278, 1870279, 1870280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	103	134	P/P	60 - 150
Acetaminophen	134	127	P/P	60 - 150
Carbamazepine	128	140	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A74390

Included Lab Sample IDs: 1870278, 1870279, 1870280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Carbamazepine	96.0	128	P/P	60 - 150
Diuron	105	118	P/P	60 - 150
Diuron	118	118	P/P	60 - 150
Fenuron	105	115	P/P	60 - 150
Fenuron	115	116	P/P	60 - 150
Fluridone	102	107	P/P	60 - 150
Fluridone	107	108	P/P	60 - 150
Imidacloprid	93.6	101	P/P	60 - 150
Imidacloprid	94.0	93.6	P/P	60 - 150
Linuron	86.8	96.8	P/P	60 - 150
Linuron	98.4	86.8	P/P	60 - 150
Primidone	104	94.4	P/P	60 - 150
Primidone	94.4	104	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A74419

Included Lab Sample IDs: 1870278, 1870279, 1870280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	97.9	119	P/P	60 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74426

Included Lab Sample IDs: 1870255, 1870256, 1870261, 1870262

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	98.4	P/P	90 - 110
Kjeldahl Nitrogen	98.4	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A74429

Included Lab Sample IDs: 1870254

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	98.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74444

Included Lab Sample IDs: 1870254

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74447

Included Lab Sample IDs: 1870255, 1870262

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.8	98.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74449

Included Lab Sample IDs: 1870255, 1870256, 1870261, 1870262

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.3	97.8	P/P	90 - 110
Total-P	98.2	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74457

Included Lab Sample IDs: 1870255, 1870256, 1870261, 1870262

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
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74479

Included Lab Sample IDs: 1870253, 1870259, 1870260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	105	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A74479

Included Lab Sample IDs: 1870253, 1870259, 1870260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	94.2	P/P	90 - 110
Fluoride	94.2	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A74527

Included Lab Sample IDs: 1870253, 1870254, 1870259, 1870260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	101	P/P	90 - 110
Chloride	104	101	P/P	90 - 110
Sulfate	102	97.4	P/P	90 - 110
Sulfate	91.9	97.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A74549

Included Lab Sample IDs: 1870277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.9	95.3	P/P	90 - 110
Iron	94.6	92.4	P/P	90 - 110
Magnesium	96.8	94.6	P/P	90 - 110
Potassium	97.0	95.6	P/P	90 - 110
Zinc	101	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4
 Run ID: A74596
 Included Lab Sample IDs: 1870277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	98.3	98.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
 Run ID: A74724
 Included Lab Sample IDs: 1870277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.2	96.5	P/P	90 - 110
Cadmium	96.6	97.3	P/P	90 - 110
Chromium	94.3	94.4	P/P	90 - 110
Copper	97.4	98.1	P/P	90 - 110
Lead	94.4	95.5	P/P	90 - 110
Nickel	97.4	98.6	P/P	90 - 110
Silver	95.2	96.7	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						1.12	
EPA 200.7 Rev. 4.4	Calcium	99.4		103	103			0.0694
	Iron	96.9		95.6	101	99.2		1.62
	Magnesium	98.3		93.9	101			0.336
	Potassium	98.9		99.0	108			0.208
	Sodium	103		99.9	102			0.132
	Zinc	100		101	101	104		2.15
EPA 200.8 Rev. 5.4	Arsenic	97.0		98.9	107	106		1.56
	Cadmium	97.3		100	108	104		3.82
	Chromium	95.2		94.9	101	99.3		1.49
	Copper	96.7		97.1	104	103		1.12
	Lead	97.4		97.6	107	106		1.10
	Nickel	98.1		97.0	103	102		1.47
	Silver	95.4		96.4	104	102		1.65
EPA 300.0 Rev. 2.1	Chloride	102		102	101		0.0590	
	Sulfate	98.1		99.5	98.4		1.11	
EPA 350.1 Rev. 2.0	Ammonia-N	97.0		96.6	94.6			1.72
	Ammonia-N	101		90.5	99.5			5.50
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107		97.6	102			3.89
EPA 353.2 Rev. 2.0	NO2NO3-N	106		105	105			0.0
	NO2NO3-N	104		102				0.194
EPA 365.1 Rev. 2.0	Total-P	96.3		93.1	95.8			2.77
	Total-P	97.4		98.4				
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103		106	104			1.64
EPA 8321B	Sucralose	75.7		84.3	87.4			3.61
SM 2120 B	Color (true)						3.24	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 2120 B	Color (true)				2.22	
	Color (true)				14.3	
SM 2320 B-97	Total Alkalinity	103			0.0924	
	Total Alkalinity	104			0.266	
	Total Alkalinity	104			0.209	
SM 2540 C-97	TDS				5.79	
SM 4500 F-C-97	Fluoride	96.4	98.5	99.1		0.480
	Fluoride	93.3	98.0	98.0		0.0
	Fluoride	94.3	96.5	95.9		0.487
SM 5310 B-00	Organic Carbon	96.2	96.0	95.4		0.446
USGS O-2060-01	Acetaminophen	119	85.6	89.2		4.12
	Carbamazepine	120	93.2	93.6		0.428
	Diuron	87.6	71.2	72.0		1.12
	Fenuron	98.4	78.4	80.8		3.02
	Fluridone	90.0	70.4	72.8		3.35
	Imidacloprid	106	148	146		1.09
	Linuron	88.8	75.6	88.0		15.2
	Primidone	98.4	83.6	82.0		1.93

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1870253, 1870254, 1870259, 1870260
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1870277
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1870277
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1870253, 1870254, 1870259, 1870260
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1870253, 1870254, 1870259, 1870260
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1870255, 1870256, 1870261, 1870262
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1870255, 1870256, 1870261, 1870262
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1870255, 1870256, 1870261, 1870262
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1870255, 1870256, 1870261, 1870262
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1870257, 1870258, 1870263, 1870264
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1870278, 1870279, 1870280
SM 2120 B / E31780	True Color measured at 450 nm	1870253, 1870254, 1870259, 1870260
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1870253, 1870254, 1870259, 1870260
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1870253, 1870254, 1870259, 1870260
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1870253, 1870254, 1870259, 1870260
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1870253, 1870254, 1870259, 1870260
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1870255, 1870256, 1870261, 1870262
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1870278, 1870279, 1870280

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	02/07/2017			02/07/2017 19:50	Julie Michelle Frank	1870253, 1870254, 1870259, 1870260
EPA 200.7 Rev. 4.4	02/07/2017	02/09/2017	Elliott D. Healy	02/16/2017	Joshua Ayres	1870277
	02/07/2017	02/09/2017	Elliott D. Healy	02/20/2017	Joshua Ayres	1870277
EPA 200.8 Rev. 5.4	02/07/2017	02/09/2017	Elliott D. Healy	02/26/2017	Robert K Palmer	1870277
EPA 300.0 Rev. 2.1	02/07/2017			02/15/2017	Ping Hua	1870253, 1870254, 1870259, 1870260
EPA 350.1 Rev. 2.0	02/07/2017			02/09/2017	Sofia Elnemr	1870256, 1870261
	02/07/2017			02/10/2017	Sofia Elnemr	1870255, 1870262
EPA 351.2 Rev. 2.0	02/07/2017	02/09/2017	Adrian Shelby	02/13/2017	Joseph Suarez	1870255, 1870256, 1870261, 1870262
EPA 353.2 Rev. 2.0	02/07/2017			02/14/2017	Beverly Y. Sanders	1870255, 1870256, 1870261, 1870262
EPA 365.1 Rev. 2.0	02/07/2017	02/09/2017	Adrian Shelby	02/13/2017	Lipi Saha	1870255, 1870256, 1870261, 1870262
EPA 365.1 Rev. 2.0 dissolved	02/07/2017			02/07/2017 16:32	Lipi Saha	1870257
	02/07/2017			02/07/2017 16:55	Lipi Saha	1870258
	02/07/2017			02/07/2017 16:56	Lipi Saha	1870263
	02/07/2017			02/07/2017 16:57	Lipi Saha	1870264
EPA 8321B	02/07/2017	02/09/2017	Mohammad Ghaffari	02/10/2017	Mohammad Ghaffari	1870278, 1870279, 1870280
SM 2120 B	02/07/2017			02/07/2017 22:16	Julie Michelle Frank	1870253
	02/07/2017			02/07/2017 22:17	Julie Michelle Frank	1870254
	02/07/2017			02/07/2017 22:22	Julie Michelle Frank	1870260
	02/07/2017			02/07/2017 22:26	Julie Michelle Frank	1870259
SM 2320 B-97	02/07/2017			02/14/2017	Dale L. Simmons	1870253, 1870254, 1870259
	02/07/2017			02/15/2017	Dale L. Simmons	1870260
SM 2540 C-97	02/07/2017			02/08/2017	Christopher Armour	1870253, 1870254, 1870259, 1870260
SM 2540 D-97	02/07/2017			02/08/2017	Christopher Armour	1870253, 1870254, 1870259, 1870260
SM 4500 F-C-97	02/07/2017			02/13/2017	Dale L. Simmons	1870254
	02/07/2017			02/14/2017	Dale L. Simmons	1870253, 1870259
	02/07/2017			02/15/2017	Dale L. Simmons	1870260
SM 5310 B-00	02/07/2017			02/08/2017	Julie Michelle Frank	1870255, 1870256, 1870261, 1870262
USGS O-2060-01	02/07/2017	02/09/2017	Hoor Shaik	02/10/2017	Juyoung Kim	1870278, 1870279, 1870280