

Chemical Analysis Report

WQ-ASSESS-2017-05-02-01

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

Event Description: **Wakulla, Moriah, Caney, Wards**

Request ID: **RQ-2017-05-01-28**

Customer: **WQ-ASSESS**

Project ID: **SMP**

Send Reports to:

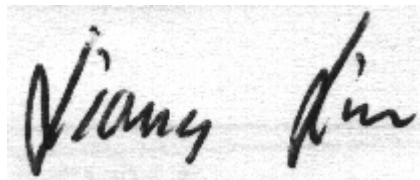
FL Dept. of Environmental Protection
Division Of Water Facilities, FL DEP
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400
Attn: curtis musson

For additional information please contact

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 02-JUN-2017 18:00

A handwritten signature in black ink, appearing to read "Liang Lin", 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 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: Wakulla River Below Highway 98 Bridge

Collection Date/Time: 05/01/2017 09:05

Field ID: G1WA0028_05022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895446	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P324455	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P324790	
		Sulfate	13		mg SO4/L	P324793	
	SM 2120 B	Color (true)	7.7		PCU	P324415	
	SM 2320 B-97	Total Alkalinity	148		mg CaCO3/L	P325152	
	SM 2540 C-97	TDS	193		mg/L	P325014	
	SM 2540 D-97	TSS	2	U	mg/L	P325255	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P325154	
1895449	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P324526	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P324756	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.36		mg N/L	P324678	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P324684	
	SM 5310 B-00	Organic Carbon	1.2		mg C/L	P324518	
1895452	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P324418	

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: Wakulla River above US 98

Collection Date/Time: 05/02/2017 09:40

Field ID: G1WA0046_05022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895447	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P324595	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P324965	
		Sulfate	11		mg SO4/L	P324968	
	SM 2120 B	Color (true)	6.4		PCU	P324416	
	SM 2320 B-97	Total Alkalinity	148		mg CaCO3/L	P325152	
	SM 2540 C-97	TDS	192		mg/L	P325014	
	SM 2540 D-97	TSS	3	I	mg/L	P325255	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P325154	
1895450	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P324526	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P324756	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.37		mg N/L	P324678	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P324684	
	SM 5310 B-00	Organic Carbon	1.2		mg C/L	P324518	
1895453	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P324418	

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: Moriah Creek 100 meters upstream of Newport Rd

Collection Date/Time: 05/02/2017 10:20

Field ID: G1WA0057_05022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895448	EPA 180.1 Rev. 2.0	Turbidity	0.20		NTU	P324595	
	EPA 300.0 Rev. 2.1	Chloride	4.3		mg Cl/L	P324965	

Field ID: G1WA0057_05022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895448	EPA 300.0 Rev. 2.1	Sulfate	1.1		mg SO4/L	P324968	
	SM 2120 B	Color (true)	31		PCU	P324416	
	SM 2320 B-97	Total Alkalinity	240		mg CaCO3/L	P325152	
	SM 2540 C-97	TDS	230		mg/L	P325014	
	SM 2540 D-97	TSS	2	I	mg/L	P325255	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P325154	
1895451	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P324526	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P324756	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324678	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P324684	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P324518	
1895454	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324418	

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: Caney Creek Upstream of US 90**Collection Date/Time: 05/02/2017 11:30****Field ID: G1WA0014_05022017**

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895455	EPA 180.1 Rev. 2.0	Turbidity	9.7		NTU	P324595	
	EPA 300.0 Rev. 2.1	Chloride	9.1	A	mg Cl/L	P324790	
		Sulfate	0.71	A	mg SO4/L	P324793	
	SM 2120 B	Color (true)	93	A	PCU	P324416	
	SM 2320 B-97	Total Alkalinity	49		mg CaCO3/L	P325152	
	SM 2540 C-97	TDS	82		mg/L	P325014	
	SM 2540 D-97	TSS	10		mg/L	P325255	
	SM 4500 F-C-97	Fluoride	0.087	I	mg F/L	P325154	
1895457	EPA 350.1 Rev. 2.0	Ammonia-N	0.072		mg N/L	P324526	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P324756	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P324678	
	EPA 365.1 Rev. 2.0	Total-P	0.69		mg P/L	P324684	
	SM 5310 B-00	Organic Carbon	8.1		mg C/L	P324518	
1895459	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.46		mg P/L	P324418	
1895475	EPA 200.7 Rev. 4.4	Calcium	10.9		mg/L	P324647	
		Iron	870		ug/L	P324647	
		Magnesium	4.22		mg/L	P324647	
		Potassium	6.4		mg/L	P324647	
		Sodium	7.5		mg/L	P324647	
		Zinc	5.0	U	ug/L	P324647	
	EPA 200.8 Rev. 5.4	Arsenic	0.96		ug/L	P324647	
		Cadmium	0.020	U	ug/L	P324647	
		Chromium	0.59	I	ug/L	P324647	
		Copper	0.62	I	ug/L	P324647	
		Lead	0.20		ug/L	P324647	
		Nickel	0.37	I	ug/L	P324647	

Field ID: G1WA0014_05022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895475	EPA 200.8 Rev. 5.4	Silver	0.010	U	ug/L	P324647	

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: Caney Creek Downstream of 158A

Collection Date/Time: 05/02/2017 12:48

Field ID: G1WA0060_05022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895456	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P324595	
	EPA 300.0 Rev. 2.1	Chloride	9.2		mg Cl/L	P324790	
		Sulfate	0.68		mg SO4/L	P324793	
	SM 2120 B	Color (true)	100		PCU	P324416	
	SM 2320 B-97	Total Alkalinity	50		mg CaCO3/L	P325152	
	SM 2540 C-97	TDS	80		mg/L	P325015	
	SM 2540 D-97	TSS	12		mg/L	P325256	
	SM 4500 F-C-97	Fluoride	0.075	I	mg F/L	P325154	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.093		mg N/L	P324526	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P324756	
1895458	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P324678	
	EPA 365.1 Rev. 2.0	Total-P	0.73		mg P/L	P324684	
	SM 5310 B-00	Organic Carbon	8.3		mg C/L	P324518	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.46		mg P/L	P324418	
	dissolved						

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: Caney Creek Upstream of US 90

Collection Date/Time: 05/02/2017 11:30

Field ID: G1WA0014_05022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895472	EPA 8321B	Sucralose**	0.012	I	ug/L	P324384	
	USGS O-2060-01	2,4-D	0.0050		ug/L	P324171	
		Diuron	8.0E-04	U	ug/L	P324171	
		Fenuron	0.0054	I	ug/L	P324171	
		Imidacloprid	8.0E-04	U	ug/L	P324171	MS
		Bentazon	8.0E-04	U	ug/L	P324171	
		Linuron	0.0040	U	ug/L	P324171	
		Acetaminophen**	0.0080	U	ug/L	P324171	
		MCP	8.0E-04	U	ug/L	P324171	
		Carbamazepine**	0.0036		ug/L	P324171	
		Triclopyr**	0.0040	U	ug/L	P324171	
		Primidone**	0.0040	U	ug/L	P324171	
		Fluridone**	4.0E-04	U	ug/L	P324171	

Sample Location: Wards Creek upstream of bridge at CR 259

Collection Date/Time: 05/02/2017 12:10

Field ID: G1WA0002_05022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G1WA0002_05022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895473	EPA 8321B	Sucralose**	0.010	U	ug/L	P324384	MS
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P324171	
		Diuron	8.0E-04	U	ug/L	P324171	
		Fenuron	0.0042	I	ug/L	P324171	
		Imidacloprid	8.0E-04	U	ug/L	P324171	
		Bentazon	8.0E-04	U	ug/L	P324171	
		Linuron	0.0040	U	ug/L	P324171	
		Acetaminophen**	0.0080	U	ug/L	P324171	
		MCP	8.0E-04	U	ug/L	P324171	
		Carbamazepine**	4.0E-04	U	ug/L	P324171	
		Triclopyr**	0.0040	U	ug/L	P324171	
		Primidone**	0.0040	U	ug/L	P324171	
		Fluridone**	4.0E-04	U	ug/L	P324171	

Sample Location: Caney Creek Downstream of 158A

Collection Date/Time: 05/02/2017 12:48

Field ID: G1WA0060_05022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895474	EPA 8321B	Sucralose**	0.010	U	ug/L	P324384	MS
	USGS O-2060-01	2,4-D	0.0060		ug/L	P324171	
		Diuron	8.0E-04	U	ug/L	P324171	
		Fenuron	0.0050	I	ug/L	P324171	
		Imidacloprid	8.0E-04	U	ug/L	P324171	
		Bentazon	8.0E-04	U	ug/L	P324171	
		Linuron	0.0040	U	ug/L	P324171	
		Acetaminophen**	0.0080	U	ug/L	P324171	
		MCP	8.0E-04	U	ug/L	P324171	
		Carbamazepine**	0.0044		ug/L	P324171	
		Triclopyr**	0.0040	U	ug/L	P324171	
		Primidone**	0.0040	U	ug/L	P324171	
		Fluridone**	4.0E-04	U	ug/L	P324171	

Sample Location: Wards Creek upstream of bridge at CR 259

Collection Date/Time: 05/02/2017 12:10

Field ID: G1WA0002_05022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895476	EPA 200.7 Rev. 4.4	Calcium	5.06		mg/L	P324647	
		Iron	1.85E+03		ug/L	P324647	
		Magnesium	1.81		mg/L	P324647	
		Potassium	0.68	I	mg/L	P324647	
		Sodium	2.8		mg/L	P324647	
		Zinc	5.0	U	ug/L	P324647	
	EPA 200.8 Rev. 5.4	Arsenic	0.49		ug/L	P324647	
		Cadmium	0.020	U	ug/L	P324647	
		Chromium	1.1	I	ug/L	P324647	

Field ID: G1WA0002_05022017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895476	EPA 200.8 Rev. 5.4	Copper	0.33	I	ug/L	P324647	
		Lead	0.22		ug/L	P324647	
		Nickel	0.79	I	ug/L	P324647	
		Silver	0.010	U	ug/L	P324647	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P324455

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P324595

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324647

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: P324647

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: P324790

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324793

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324965

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324968

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324526

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324756

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324678

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324684

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324418

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

Reference Method: EPA 8321B
Batch ID: P324384

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P324415

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P324416

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P325152

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

Reference Method: SM 2540 C-97
Batch ID: P325014

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P325015

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P325255

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P325256

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P325154

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P324518

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

Reference Method: USGS O-2060-01
Batch ID: P324171

Component	Result	Code	Units
2,4-D	8.0E-04	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: USGS O-2060-01

Batch ID: P324171

Component	Result	Code	Units
Diuron	8.0E-04	U	ug/L
Fenuron	0.0040	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	8.0E-04	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P324647

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	104		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	98.6		P	85 - 115
Sodium	90.9		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P324647

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	97.4		P	85 - 115
Chromium	98.8		P	85 - 115
Copper	98.9		P	85 - 115
Lead	97.6		P	85 - 115
Nickel	101		P	85 - 115
Silver	95.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P324790

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P324793

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P324965

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: P324965

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324968

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324526

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324756

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324678

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: P324684

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324418

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

Reference Method: EPA 8321B
Batch ID: P324384

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	112		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P325152

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97

Batch ID: P325154

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.4		P	92 - 103

Reference Method: SM 5310 B-00

Batch ID: P324518

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.0		P	85 - 115

Reference Method: USGS O-2060-01

Batch ID: P324171

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	69.0		P	40 - 140
Acetaminophen	43.4		P	40 - 140
Bentazon	47.0		P	40 - 140
Carbamazepine	114		P	40 - 140
Diuron	119		P	40 - 140
Fenuron	106		P	40 - 140
Fluridone	99.5		P	40 - 140
Imidacloprid	108		P	40 - 160
Linuron	106		P	40 - 140
MCP	74.2		P	40 - 140
Primidone	99.7		P	40 - 140
Triclopyr	74.9		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P324647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1894636	Calcium	104		P	80 - 120
1894636	Iron	107		P	80 - 120
1894636	Magnesium	110		P	80 - 120
1894636	Potassium	98.6		P	80 - 120
1894636	Sodium	102		P	80 - 120
1894636	Zinc	105		P	80 - 120
1895275	Calcium	103		P	80 - 120
1895275	Iron	106	104	P/P	80 - 120
1895275	Magnesium	110	108	P/P	80 - 120
1895275	Potassium	97.9	97.4	P/P	80 - 120
1895275	Sodium	102	101	P/P	80 - 120
1895275	Zinc	102	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P324647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1894636	Arsenic	103		P	80 - 120
1894636	Cadmium	100		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P324647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1894636	Chromium	99.6		P	80 - 120
1894636	Copper	99.1		P	80 - 120
1894636	Lead	100		P	80 - 120
1894636	Nickel	101		P	80 - 120
1894636	Silver	96.9		P	80 - 120
1895275	Arsenic	101	102	P/P	80 - 120
1895275	Cadmium	100	101	P/P	80 - 120
1895275	Chromium	102	102	P/P	80 - 120
1895275	Copper	99.5	101	P/P	80 - 120
1895275	Lead	101	101	P/P	80 - 120
1895275	Nickel	100	101	P/P	80 - 120
1895275	Silver	97.0	97.9	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324790

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895455	Chloride	101		P	90 - 110
1895456	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895455	Sulfate	102		P	90 - 110
1895456	Sulfate	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895492	Chloride	96.7		P	90 - 110
1895642	Chloride	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895492	Sulfate	93.3		P	90 - 110
1895642	Sulfate	95.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P324526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895254	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P324756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895450	Kjeldahl Nitrogen	101	95.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P324678

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895451	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P324684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895449	Total-P	97.7	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P324418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895452	O-Phosphate-P	95.1	97.7	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P324384

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895472	Sucralose	109	96.7	P/P	40 - 140

Reference Method: SM 4500 F-C-97
 Batch ID: P325154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896336	Fluoride	95.1	96.4	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P324518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895164	Organic Carbon	95.6	96.4	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P324171

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893801	2,4-D	64.9	67.1	P/P	40 - 140
1893801	Acetaminophen	87.4	91.4	P/P	40 - 140
1893801	Bentazon	52.8	56.6	P/P	40 - 140
1893801	Carbamazepine	103	107	P/P	40 - 140
1893801	Diuron	88.9	98.4	P/P	40 - 140
1893801	Fenuron	81.5	83.8	P/P	40 - 140
1893801	Fluridone	81.5	86.4	P/P	40 - 140
1893801	Imidacloprid	183	198	F/F	40 - 160
1893801	Linuron	97.5	95.9	P/P	40 - 140
1893801	MCP	57.6	61.7	P/P	40 - 140
1893801	Primidone	103	107	P/P	40 - 140
1893801	Triclopyr	58.8	63.5	P/P	40 - 140

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P324455

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895261	Turbidity	2.44	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P324595

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895410	Turbidity	1.97	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P324647

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895275	Calcium	0.279	Spike	P	0 - 20
1895275	Iron	1.57	Spike	P	0 - 20
1895275	Magnesium	1.01	Spike	P	0 - 20
1895275	Potassium	0.497	Spike	P	0 - 20
1895275	Sodium	0.544	Spike	P	0 - 20
1895275	Zinc	1.28	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P324647

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895275	Arsenic	0.450	Spike	P	0 - 20
1895275	Cadmium	1.26	Spike	P	0 - 20
1895275	Chromium	0.160	Spike	P	0 - 20
1895275	Copper	1.06	Spike	P	0 - 20
1895275	Lead	0.658	Spike	P	0 - 20
1895275	Nickel	1.25	Spike	P	0 - 20
1895275	Silver	0.878	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P324790

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895455	Chloride	0.0934	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P324793

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895455	Sulfate	8.56	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895492	Chloride	1.15	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895492	Sulfate	1.89	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895254	Ammonia-N	1.32	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895450	Kjeldahl Nitrogen	5.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324678

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895451	NO2NO3-N	1.45	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895449	Total-P	1.30	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895452	O-Phosphate-P	2.13	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P324384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895472	Sucralose	11.7	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P324415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895262	Color (true)	2.47	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P324416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895455	Color (true)	2.98	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P325152

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896336	Total Alkalinity	0.472	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P325014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895412	TDS	6.09	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P325015

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895492	TDS	8.11	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P325154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896336	Fluoride	0.960	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P324518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895164	Organic Carbon	0.431	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P324171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893801	2,4-D	3.17	Spike	P	0 - 30
1893801	Acetaminophen	4.09	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
 Batch ID: P324171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893801	Bentazon	6.47	Spike	P	0 - 30
1893801	Carbamazepine	3.95	Spike	P	0 - 30
1893801	Diuron	9.28	Spike	P	0 - 30
1893801	Fenuron	2.61	Spike	P	0 - 30
1893801	Fluridone	5.75	Spike	P	0 - 30
1893801	Imidacloprid	7.60	Spike	P	0 - 30
1893801	Linuron	1.56	Spike	P	0 - 30
1893801	MCP	6.98	Spike	P	0 - 30
1893801	Primidone	4.20	Spike	P	0 - 30
1893801	Triclopyr	7.72	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: 1895472
 Field Sample ID: G1WA0014_05022017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	104	P	40 - 150
USGS O-2060-01	2,4-D-d3	58.5	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	74.3	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	77.4	P	30 - 160
USGS O-2060-01	Diuron-d6	74.7	P	30 - 150
USGS O-2060-01	Primidone-d5	80.6	P	30 - 150

Lab Sample ID: 1895473
 Field Sample ID: G1WA0002_05022017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	98.0	P	40 - 150
USGS O-2060-01	2,4-D-d3	56.0	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	79.9	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	72.0	P	30 - 160
USGS O-2060-01	Diuron-d6	64.4	P	30 - 150
USGS O-2060-01	Primidone-d5	77.4	P	30 - 150

Lab Sample ID: 1895474
 Field Sample ID: G1WA0060_05022017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	95.5	P	40 - 150
USGS O-2060-01	2,4-D-d3	66.3	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	81.9	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	94.6	P	30 - 160
USGS O-2060-01	Diuron-d6	81.9	P	30 - 150
USGS O-2060-01	Primidone-d5	90.0	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A76130

Included Lab Sample IDs: 1895446, 1895447, 1895448, 1895455, 1895456

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	105	90.2	P/P	85 - 115
Color (true)	99.7	105	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A76131

Included Lab Sample IDs: 1895452, 1895453, 1895454, 1895459, 1895460

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	98.5	P/P	90 - 110
O-Phosphate-P	98.5	97.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A76139

Included Lab Sample IDs: 1895446

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	102	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A76148

Included Lab Sample IDs: 1895446, 1895455, 1895456

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	105	105	P/P	90 - 110
Chloride	106	106	P/P	90 - 110
Sulfate	104	99.1	P/P	90 - 110
Sulfate	104	98.4	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A76159

Included Lab Sample IDs: 1895449, 1895450, 1895451, 1895457, 1895458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76160

Included Lab Sample IDs: 1895449, 1895450, 1895451, 1895457, 1895458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	104	P/P	90 - 110
Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A76176

Included Lab Sample IDs: 1895447, 1895448, 1895455, 1895456

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76200

Included Lab Sample IDs: 1895449, 1895450, 1895451, 1895457, 1895458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76246

Included Lab Sample IDs: 1895457, 1895458

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76247

Included Lab Sample IDs: 1895449, 1895450, 1895451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	97.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A76253

Included Lab Sample IDs: 1895475, 1895476

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	94.8	94.1	P/P	90 - 110
Cadmium	93.5	92.9	P/P	90 - 110
Chromium	97.4	97.3	P/P	90 - 110
Copper	96.7	95.8	P/P	90 - 110
Lead	95.2	94.8	P/P	90 - 110
Nickel	96.5	95.7	P/P	90 - 110
Silver	95.2	95.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A76269

Included Lab Sample IDs: 1895447, 1895448

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	102	P/P	90 - 110
Sulfate	98.0	97.2	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A76364

Included Lab Sample IDs: 1895446, 1895447, 1895448, 1895455, 1895456

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

Reference Method: SM 4500 F-C-97

Run ID: A76364

Included Lab Sample IDs: 1895446, 1895447, 1895448, 1895455, 1895456

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A76364

Included Lab Sample IDs: 1895446, 1895447, 1895448, 1895455, 1895456

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A76428

Included Lab Sample IDs: 1895475, 1895476

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	102	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	101	100	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Sodium	98.9	100	P/P	90 - 110
Zinc	102	102	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A76477

Included Lab Sample IDs: 1895472, 1895473, 1895474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	87.6	97.0	P/P	50 - 150
Acetaminophen	103	117	P/P	60 - 150
Bentazon	78.4	90.0	P/P	50 - 150
Carbamazepine	92.0	124	P/P	60 - 150
Diuron	103	117	P/P	60 - 150
Fenuron	94.4	127	P/P	60 - 150
Fluridone	100	131	P/P	60 - 150
Imidacloprid	95.2	96.0	P/P	60 - 150
Linuron	84.4	92.0	P/P	60 - 150
MCP	86.4	95.0	P/P	50 - 150
Primidone	96.0	111	P/P	60 - 150
Triclopyr	86.4	92.0	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A76559

Included Lab Sample IDs: 1895472, 1895473, 1895474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	145	87.9	P/P	60 - 150
Sucralose	93.1	75.2	P/P	60 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A76793

Included Lab Sample IDs: 1895476

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

* 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						2.44	
	Turbidity						1.97	
EPA 200.7 Rev. 4.4	Calcium	102	104	103				0.279
	Iron	104	107	106	104			1.57
	Magnesium	109	110	110	108			1.01
	Potassium	98.6	98.6	97.9	97.4			0.497
	Sodium	90.9	102	102	101			0.544
	Zinc	100	105	102	101			1.28
EPA 200.8 Rev. 5.4	Arsenic	101	103	101	102			0.450
	Cadmium	97.4	100	100	101			1.26
	Chromium	98.8	99.6	102	102			0.160
	Copper	98.9	99.1	99.5	101			1.06
	Lead	97.6	100	101	101			0.658
	Nickel	101	101	100	101			1.25
	Silver	95.0	96.9	97.0	97.9			0.878
EPA 300.0 Rev. 2.1	Chloride	104	101	101			0.0934	
	Chloride	97.9	96.7	96.8			1.15	
	Sulfate	100	102	102			8.56	
	Sulfate	94.2	93.3	95.3			1.89	
EPA 350.1 Rev. 2.0	Ammonia-N	104	104	105				1.32
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	101	95.1				5.09
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	103				1.45
EPA 365.1 Rev. 2.0	Total-P	101	97.7	99.1				1.30
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.4	95.1	97.7				2.13
EPA 8321B	Sucralose	112	109	96.7				11.7
SM 2120 B	Color (true)						2.47	
	Color (true)						2.98	
SM 2320 B-97	Total Alkalinity	103					0.472	
SM 2540 C-97	TDS						6.09	
	TDS						8.11	
SM 4500 F-C-97	Fluoride	94.4	95.1	96.4				0.960
SM 5310 B-00	Organic Carbon	98.0	95.6	96.4				0.431
USGS O-2060-01	2,4-D	69.0	64.9	67.1				3.17
	Acetaminophen	43.4	87.4	91.4				4.09
	Bentazon	47.0	52.8	56.6				6.47
	Carbamazepine	114	103	107				3.95
	Diuron	119	88.9	98.4				9.28
	Fenuron	106	81.5	83.8				2.61
	Fluridone	99.5	81.5	86.4				5.75
	Imidacloprid	108	183	198				7.60
	Linuron	106	97.5	95.9				1.56
	MCPP	74.2	57.6	61.7				6.98
	Primidone	99.7	103	107				4.20
	Triclopyr	74.9	58.8	63.5				7.72

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1895446, 1895447, 1895448, 1895455, 1895456
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1895475, 1895476

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1895475, 1895476
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1895446, 1895447, 1895448, 1895455, 1895456
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1895446, 1895447, 1895448, 1895455, 1895456
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1895449, 1895450, 1895451, 1895457, 1895458
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1895449, 1895450, 1895451, 1895457, 1895458
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1895449, 1895450, 1895451, 1895457, 1895458
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1895449, 1895450, 1895451, 1895457, 1895458
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1895452, 1895453, 1895454, 1895459, 1895460
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1895472, 1895473, 1895474
SM 2120 B / E31780	True Color measured at 450 nm	1895446, 1895447, 1895448, 1895455, 1895456
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1895446, 1895447, 1895448, 1895455, 1895456
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1895446, 1895447, 1895448, 1895455, 1895456
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1895446, 1895447, 1895448, 1895455, 1895456
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1895446, 1895447, 1895448, 1895455, 1895456
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1895449, 1895450, 1895451, 1895457, 1895458
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1895472, 1895473, 1895474
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1895472, 1895473, 1895474

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	05/02/2017			05/02/2017 17:37	Blanca Fach	1895446
	05/02/2017			05/03/2017 16:36	Blanca Fach	1895447, 1895448, 1895455, 1895456
EPA 200.7 Rev. 4.4	05/02/2017	05/04/2017	Elliott D. Healy	05/12/2017	Martin Acosta	1895475, 1895476
	05/02/2017	05/04/2017	Elliott D. Healy	05/31/2017	Betina Topolski	1895476
EPA 200.8 Rev. 5.4	05/02/2017	05/04/2017	Elliott D. Healy	05/09/2017	Betina Topolski	1895475, 1895476
EPA 300.0 Rev. 2.1	05/02/2017			05/06/2017	Ping Hua	1895446, 1895455, 1895456
	05/02/2017			05/09/2017	Ping Hua	1895447, 1895448
EPA 350.1 Rev. 2.0	05/02/2017			05/03/2017	Julie Michelle Frank	1895449, 1895450, 1895451, 1895457, 1895458
EPA 351.2 Rev. 2.0	05/02/2017	05/08/2017	Adrian Shelby	05/10/2017	Joseph Suarez	1895449, 1895450, 1895451, 1895457, 1895458
EPA 353.2 Rev. 2.0	05/02/2017			05/05/2017	Beverly Y. Sanders	1895449, 1895450, 1895451, 1895457, 1895458
EPA 365.1 Rev. 2.0	05/02/2017	05/05/2017	Vijayalakshmi Reddy	05/08/2017	Lipi Saha	1895449, 1895450, 1895451, 1895457, 1895458
EPA 365.1 Rev. 2.0 dissolved	05/02/2017			05/02/2017 16:07	Lipi Saha	1895452
	05/02/2017			05/02/2017 16:09	Lipi Saha	1895453
	05/02/2017			05/02/2017 16:10	Lipi Saha	1895454
	05/02/2017			05/02/2017 16:18	Lipi Saha	1895459
	05/02/2017			05/02/2017 16:19	Lipi Saha	1895460
EPA 8321B	05/02/2017	05/17/2017	Mohammad Ghaffari	05/18/2017	Mohammad Ghaffari	1895472, 1895473, 1895474
SM 2120 B	05/02/2017			05/02/2017 16:38	Julia Storbeck	1895446
	05/02/2017			05/02/2017 16:42	Julia Storbeck	1895447, 1895455
	05/02/2017			05/02/2017 16:43	Julia Storbeck	1895448
	05/02/2017			05/02/2017 16:44	Julia Storbeck	1895456
SM 2320 B-97	05/02/2017			05/11/2017	Dale L. Simmons	1895446, 1895447, 1895448, 1895455, 1895456
SM 2540 C-97	05/02/2017			05/05/2017	Yijie Li	1895446, 1895447, 1895448, 1895455, 1895456
SM 2540 D-97	05/02/2017			05/05/2017	Yijie Li	1895446, 1895447, 1895448, 1895455, 1895456
SM 4500 F-C-97	05/02/2017			05/11/2017	Dale L. Simmons	1895446, 1895447, 1895448, 1895455, 1895456
SM 5310 B-00	05/02/2017			05/03/2017	Julie Michelle Frank	1895449, 1895450, 1895451, 1895457, 1895458
USGS O-2060-01	05/02/2017	05/03/2017	Hoor Shaik	05/15/2017	Juyoung Kim	1895472, 1895473, 1895474