

Chemical Analysis Report

CEN-DIST-2017-11-17-01

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

Event Description: **Rouse / Drawdy**
Request ID: **RQ-2017-11-13-57**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact
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Certified by: Colin Wright, Program Administrator

Date Certified: 11-DEC-2017 11:12

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray 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 and Nutrients.

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: LAKE ROUSE @ NW CORNER OF LAKE

Collection Date/Time: 11/16/2017 10:46

Field ID: G2CE0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947426	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P335563	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P335684	
		Sulfate	6.1		mg SO4/L	P335686	
	SM 2120 B	Color (true)	120		PCU	P335549	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P335850	
	SM 2540 C-97	TDS	78		mg/L	P335833	
	SM 2540 D-97	TSS	3	I	mg/L	P335840	
	SM 4500 F-C-97	Fluoride	0.043	I	mg F/L	P335853	RPD
1947432	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P336254	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P336127	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P335938	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P335883	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P336100	
1947438	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P335554	
1947473	EPA 200.7 Rev. 4.4	Calcium	12.8		mg/L	P335750	
		Iron	79	I	ug/L	P335750	
		Magnesium	1.24		mg/L	P335750	
		Potassium	2.0		mg/L	P335750	
		Sodium	10.8		mg/L	P335750	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P335750	
		Arsenic	1.29		ug/L	P335750	
		Cadmium	0.020	U	ug/L	P335750	
		Chromium	0.40	U	ug/L	P335750	
		Copper	0.79	I	ug/L	P335750	
		Lead	0.16	I	ug/L	P335750	
		Nickel	0.20	U	ug/L	P335750	
		Silver	0.010	U	ug/L	P335750	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE ROUSE @ NE CORNER OF LAKE

Collection Date/Time: 11/16/2017 10:54

Field ID: G2CE0101

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947427	EPA 180.1 Rev. 2.0	Turbidity	2.5	A	NTU	P335564	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P336483	
		Sulfate	6.0		mg SO4/L	P336486	
	SM 2120 B	Color (true)	110		PCU	P335549	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P335850	
	SM 2540 C-97	TDS	83		mg/L	P335833	
	SM 2540 D-97	TSS	2	I	mg/L	P335840	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P335853	RPD
1947433	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P336254	

Field ID: G2CE0101

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947433	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P336127	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P335938	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P335883	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P336100	
1947439	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P335554	
1947474	EPA 200.7 Rev. 4.4	Calcium	13.1		mg/L	P335750	
		Iron	86	I	ug/L	P335750	
		Magnesium	1.27		mg/L	P335750	
		Potassium	2.0		mg/L	P335750	
		Sodium	11.1		mg/L	P335750	
		Zinc	5.0	U	ug/L	P335750	
	EPA 200.8 Rev. 5.4	Arsenic	1.31		ug/L	P335750	
		Cadmium	0.020	U	ug/L	P335750	
		Chromium	0.40	U	ug/L	P335750	
		Copper	0.79	I	ug/L	P335750	
		Lead	0.16	I	ug/L	P335750	
		Nickel	0.20	U	ug/L	P335750	
		Silver	0.010	U	ug/L	P335750	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE ROUSE @ SE CORNER OF LAKE

Collection Date/Time: 11/16/2017 11:04

Field ID: G2CE0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947428	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P335564	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P336483	
		Sulfate	6.0		mg SO4/L	P336486	
	SM 2120 B	Color (true)	110		PCU	P335549	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P335850	
	SM 2540 C-97	TDS	82		mg/L	P335833	
	SM 2540 D-97	TSS	3	I	mg/L	P335840	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P335853	RPD
1947434	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P336254	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P336127	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.031		mg N/L	P335938	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P335883	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P336100	
1947440	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P335554	
1947475	EPA 200.7 Rev. 4.4	Calcium	12.7		mg/L	P335750	
		Iron	88	I	ug/L	P335750	
		Magnesium	1.27		mg/L	P335750	
		Potassium	1.9		mg/L	P335750	
		Sodium	10.8		mg/L	P335750	

Field ID: G2CE0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947475	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P335750	
	EPA 200.8 Rev. 5.4	Arsenic	1.27		ug/L	P335750	
		Cadmium	0.020	U	ug/L	P335750	
		Chromium	0.40	U	ug/L	P335750	
		Copper	0.73	I	ug/L	P335750	
		Lead	0.16	I	ug/L	P335750	
		Nickel	0.20	U	ug/L	P335750	
		Silver	0.010	U	ug/L	P335750	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE ROUSE @ SW CORNER OF LAKE

Collection Date/Time: 11/16/2017 11:13

Field ID: G2CE0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947429	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P335564	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P336483	
		Sulfate	6.0		mg SO4/L	P336486	
	SM 2120 B	Color (true)	110		PCU	P335550	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P335850	
	SM 2540 C-97	TDS	99		mg/L	P335834	
	SM 2540 D-97	TSS	2	I	mg/L	P335841	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P335853	RPD
	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P336254	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P336127	
1947435	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P335938	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P335976	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P336100	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	I	mg P/L	P335554	
	dissolved						
1947476	EPA 200.7 Rev. 4.4	Calcium	12.7		mg/L	P335750	
		Iron	82	I	ug/L	P335750	
		Magnesium	1.24		mg/L	P335750	
		Potassium	1.9		mg/L	P335750	
		Sodium	10.8		mg/L	P335750	
		Zinc	5.0	U	ug/L	P335750	
	EPA 200.8 Rev. 5.4	Arsenic	1.26		ug/L	P335750	
		Cadmium	0.020	U	ug/L	P335750	
		Chromium	0.40	U	ug/L	P335750	
		Copper	0.74	I	ug/L	P335750	
		Lead	0.16	I	ug/L	P335750	
		Nickel	0.20	U	ug/L	P335750	
		Silver	0.010	U	ug/L	P335750	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE DRAWDY @ 150m NNE OF CENTER

Collection Date/Time: 11/16/2017 12:09

Field ID: G2CE0079

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947430	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P335564	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P335870	
		Sulfate	7.5		mg SO4/L	P335871	
	SM 2120 B	Color (true)	320		PCU	P335550	
	SM 2320 B-97	Total Alkalinity	5.9		mg CaCO3/L	P335850	
	SM 2540 C-97	TDS	127		mg/L	P335834	
	SM 2540 D-97	TSS	3	I	mg/L	P335841	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P335853	RPD
1947436	EPA 350.1 Rev. 2.0	Ammonia-N	0.25		mg N/L	P336255	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P336127	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.061		mg N/L	P335938	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P335976	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P336100	
1947442	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P335555	
1947477	EPA 200.7 Rev. 4.4	Calcium	6.24		mg/L	P335750	
		Iron	270		ug/L	P335750	
		Magnesium	2.18		mg/L	P335750	
		Potassium	2.9		mg/L	P335750	
		Sodium	12.6		mg/L	P335750	
		Zinc	5.0	U	ug/L	P335750	
	EPA 200.8 Rev. 5.4	Arsenic	1.35		ug/L	P335750	
		Cadmium	0.020	U	ug/L	P335750	
		Chromium	0.52	I	ug/L	P335750	
		Copper	1.45		ug/L	P335750	
		Lead	0.25		ug/L	P335750	
		Nickel	0.23	I	ug/L	P335750	
		Silver	0.010	U	ug/L	P335750	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE DRAWDY @ 150m S OF CENTER

Collection Date/Time: 11/16/2017 12:21

Field ID: G2CE0078

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947431	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P335564	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P335870	
		Sulfate	7.6		mg SO4/L	P335871	
	SM 2120 B	Color (true)	320		PCU	P335550	
	SM 2320 B-97	Total Alkalinity	5.7		mg CaCO3/L	P335850	
	SM 2540 C-97	TDS	119		mg/L	P335834	
	SM 2540 D-97	TSS	2	I	mg/L	P335841	
	SM 4500 F-C-97	Fluoride	0.038	I	mg F/L	P335853	RPD
1947437	EPA 350.1 Rev. 2.0	Ammonia-N	0.24		mg N/L	P336255	

Field ID: G2CE0078

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947437	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P336127	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.062		mg N/L	P335938	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P335976	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P336100	
1947443	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P335555	
1947478	EPA 200.7 Rev. 4.4	Calcium	6.32		mg/L	P335750	
		Iron	280		ug/L	P335750	
		Magnesium	2.21		mg/L	P335750	
		Potassium	2.9		mg/L	P335750	
		Sodium	12.8		mg/L	P335750	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P335750	
		Arsenic	1.37		ug/L	P335750	
		Cadmium	0.020	U	ug/L	P335750	
		Chromium	0.51	I	ug/L	P335750	
		Copper	1.45		ug/L	P335750	
		Lead	0.25		ug/L	P335750	
		Nickel	0.23	I	ug/L	P335750	
		Silver	0.010	U	ug/L	P335750	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P335563

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P335564

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P335750

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335750

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: P335684

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335686

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335870

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335871

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336483

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336486

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336254

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336255

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336127

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335938

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335883

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335976

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335554

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335555

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

Reference Method: SM 2120 B
Batch ID: P335549

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P335550

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P335850

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

Reference Method: SM 2540 C-97
Batch ID: P335833

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P335834

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P335840

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P335841

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P335853

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P336100

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: P335750

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	102		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	104		P	85 - 115
Sodium	102		P	85 - 115
Zinc	97.0		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335750

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	104		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	102		P	85 - 115
Copper	102		P	85 - 115
Lead	103		P	85 - 115
Nickel	104		P	85 - 115
Silver	107		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335686

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335870

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335871

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336483

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336486

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336254

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336255

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: P336127

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335938

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335883

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335976

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335554

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335555

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

Reference Method: SM 2320 B-97
Batch ID: P335850

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

Reference Method: SM 4500 F-C-97
Batch ID: P335853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.5		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P336100

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P335750

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947324	Calcium	100		P	80 - 120
1947324	Iron	99.9		P	80 - 120
1947324	Magnesium	99.4		P	80 - 120
1947324	Potassium	101		P	80 - 120
1947324	Sodium	98.8		P	80 - 120
1947324	Zinc	97.7		P	80 - 120
1947419	Calcium	98.4	98.8	P/P	80 - 120
1947419	Iron	97.5	97.8	P/P	80 - 120
1947419	Magnesium	103	102	P/P	80 - 120
1947419	Potassium	100	101	P/P	80 - 120
1947419	Sodium	97.3	97.4	P/P	80 - 120
1947419	Zinc	96.1	96.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P335750

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947324	Arsenic	105		P	80 - 120
1947324	Cadmium	107		P	80 - 120
1947324	Chromium	102		P	80 - 120
1947324	Copper	102		P	80 - 120
1947324	Lead	104		P	80 - 120
1947324	Nickel	104		P	80 - 120
1947324	Silver	106		P	80 - 120
1947419	Arsenic	106	108	P/P	80 - 120
1947419	Cadmium	107	109	P/P	80 - 120
1947419	Chromium	105	106	P/P	80 - 120
1947419	Copper	105	106	P/P	80 - 120
1947419	Lead	106	107	P/P	80 - 120
1947419	Nickel	106	106	P/P	80 - 120
1947419	Silver	108	108	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P335684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947161	Chloride	95.6		P	90 - 110
1947426	Chloride	93.7		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947161	Sulfate	96.3		P	90 - 110
1947426	Sulfate	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947447	Chloride	101		P	90 - 110
1947448	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335871

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947447	Sulfate	98.6		P	90 - 110
1947448	Sulfate	98.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1950124	Chloride	97.7		P	90 - 110
1950231	Chloride	98.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1950124	Sulfate	98.4		P	90 - 110
1950231	Sulfate	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336254

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947375	Ammonia-N	96.0	95.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947554	Ammonia-N	99.3	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336127

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947386	Kjeldahl Nitrogen	92.4	98.4	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947384	NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947361	Total-P	96.6	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335976

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947449	Total-P	102	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947390	O-Phosphate-P	96.7	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947503	O-Phosphate-P	100	97.5	P/P	90 - 110

Reference Method: SM 5310 B-00
Batch ID: P336100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947375	Organic Carbon	95.0	94.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P335563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947360	Turbidity	10.8	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P335564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947427	Turbidity	2.43	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P335750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947419	Calcium	0.310	Spike	P	0 - 20
1947419	Iron	0.292	Spike	P	0 - 20
1947419	Magnesium	0.187	Spike	P	0 - 20
1947419	Potassium	0.261	Spike	P	0 - 20
1947419	Sodium	0.0790	Spike	P	0 - 20
1947419	Zinc	0.687	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947419	Arsenic	1.60	Spike	P	0 - 20
1947419	Cadmium	1.41	Spike	P	0 - 20
1947419	Chromium	1.58	Spike	P	0 - 20
1947419	Copper	1.07	Spike	P	0 - 20
1947419	Lead	1.62	Spike	P	0 - 20
1947419	Nickel	0.0672	Spike	P	0 - 20
1947419	Silver	0.196	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947161	Chloride	0.489	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947161	Sulfate	0.618	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947447	Chloride	0.549	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947447	Sulfate	0.302	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1950124	Chloride	0.265	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1950124	Sulfate	0.142	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947375	Ammonia-N	0.503	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947554	Ammonia-N	0.592	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336127

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947386	Kjeldahl Nitrogen	5.63	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947384	NO2NO3-N	0.547	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947361	Total-P	1.30	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947449	Total-P	4.29	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947390	O-Phosphate-P	0.0989	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947503	O-Phosphate-P	2.31	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P335549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947374	Color (true)	0.0525	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P335550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947444	Color (true)	0.0695	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P335850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947553	Total Alkalinity	0.418	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P335833

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947497	TDS	4.03	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P335834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947501	TDS	3.02	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P335853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947553	Fluoride	11.5	Spike	F	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P336100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947375	Organic Carbon	0.577	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A80230
Included Lab Sample IDs: 1947426

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

Reference Method: SM 2120 B
Run ID: A80364
Included Lab Sample IDs: 1947426, 1947427, 1947428, 1947429, 1947430, 1947431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	103	P/P	85 - 115
Color (true)	104	104	P/P	85 - 115
Color (true)	105	105	P/P	85 - 115
Color (true)	105	105	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A80365
Included Lab Sample IDs: 1947438, 1947439, 1947440, 1947441, 1947442, 1947443

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	97.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A80367
Included Lab Sample IDs: 1947426, 1947427, 1947428, 1947429, 1947430, 1947431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105
Turbidity	99.5	101	P/P	95 - 105

Reference Method: SM 2320 B-97
Run ID: A80493
Included Lab Sample IDs: 1947426, 1947427, 1947428, 1947429, 1947430, 1947431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	100	P/P	90 - 110
Total Alkalinity	99.8	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A80493

Included Lab Sample IDs: 1947426, 1947427, 1947428, 1947429, 1947430, 1947431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	101	P/P	90 - 110
Fluoride	101	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A80499

Included Lab Sample IDs: 1947473, 1947474, 1947475, 1947476, 1947477, 1947478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	96.7	97.0	P/P	90 - 110
Calcium	97.0	97.2	P/P	90 - 110
Iron	96.1	96.2	P/P	90 - 110
Iron	97.2	96.1	P/P	90 - 110
Magnesium	96.6	96.8	P/P	90 - 110
Magnesium	97.6	96.6	P/P	90 - 110
Potassium	98.4	98.8	P/P	90 - 110
Potassium	98.6	98.4	P/P	90 - 110
Sodium	96.7	97.1	P/P	90 - 110
Sodium	97.1	98.1	P/P	90 - 110
Zinc	99.4	99.5	P/P	90 - 110
Zinc	99.5	99.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A80506

Included Lab Sample IDs: 1947430, 1947431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	110	P/P	90 - 110
Sulfate	102	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A80537

Included Lab Sample IDs: 1947432, 1947433, 1947434, 1947435, 1947436, 1947437

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80548

Included Lab Sample IDs: 1947432, 1947433, 1947434

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A80570

Included Lab Sample IDs: 1947473, 1947474, 1947475, 1947476, 1947477, 1947478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	104	103	P/P	90 - 110
Cadmium	104	103	P/P	90 - 110
Chromium	102	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A80570

Included Lab Sample IDs: 1947473, 1947474, 1947475, 1947476, 1947477, 1947478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	105	105	P/P	90 - 110
Lead	104	103	P/P	90 - 110
Nickel	106	105	P/P	90 - 110
Silver	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80597

Included Lab Sample IDs: 1947435, 1947436, 1947437

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

Reference Method: SM 5310 B-00

Run ID: A80598

Included Lab Sample IDs: 1947432, 1947433, 1947434, 1947435, 1947436, 1947437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.7	97.4	P/P	90 - 110
Organic Carbon	97.4	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80615

Included Lab Sample IDs: 1947432, 1947433, 1947434, 1947435, 1947436, 1947437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.7	97.0	P/P	90 - 110
Kjeldahl Nitrogen	97.0	92.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80655

Included Lab Sample IDs: 1947432, 1947433, 1947434, 1947435, 1947436, 1947437

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A80735

Included Lab Sample IDs: 1947427, 1947428, 1947429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Sulfate	100	102	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			Precision	
			LCS	SMP	MS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					10.8	
	Turbidity					2.43	
EPA 200.7 Rev. 4.4	Calcium	103	100	98.4	98.8		0.310
	Iron	102	99.9	97.5	97.8		0.292
	Magnesium	106	99.4	103	102		0.187
	Potassium	104	101	100	101		0.261
	Sodium	102	98.8	97.3	97.4		0.0790
	Zinc	97.0	97.7	96.1	96.8		0.687
EPA 200.8 Rev. 5.4	Arsenic	104	105	106	108		1.60
	Cadmium	105	107	107	109		1.41
	Chromium	102	102	105	106		1.58
	Copper	102	102	105	106		1.07
	Lead	103	104	106	107		1.62
	Nickel	104	104	106	106		0.0672
	Silver	107	106	108	108		0.196
EPA 300.0 Rev. 2.1	Chloride	96.5	95.6	93.7		0.489	
	Chloride	100	101	101		0.549	
	Chloride	97.5	97.7	98.6		0.265	
	Sulfate	97.7	96.3	96.2		0.618	
	Sulfate	98.9	98.6	98.5		0.302	
	Sulfate	98.5	98.4	99.7		0.142	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	96.0	95.5			0.503
	Ammonia-N	101	99.3	98.5			0.592
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	92.4	98.4			5.63
EPA 353.2 Rev. 2.0	NO2NO3-N	103	100				0.547
EPA 365.1 Rev. 2.0	Total-P	95.5	96.6	97.9			1.30
	Total-P	103	102	107			4.29
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	96.7	96.8			0.0989
	O-Phosphate-P	102	100	97.5			2.31
SM 2120 B	Color (true)					0.0525	
	Color (true)					0.0695	
SM 2320 B-97	Total Alkalinity	103				0.418	
SM 2540 C-97	TDS					4.03	
	TDS					3.02	
SM 4500 F-C-97	Fluoride	97.5					11.5
SM 5310 B-00	Organic Carbon	95.0	95.0	94.4			0.577

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1947473, 1947474, 1947475, 1947476, 1947477, 1947478
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1947473, 1947474, 1947475, 1947476, 1947477, 1947478
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1947432, 1947433, 1947434, 1947435, 1947436, 1947437
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1947432, 1947433, 1947434, 1947435, 1947436, 1947437

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1947432, 1947433, 1947434, 1947435, 1947436, 1947437
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1947432, 1947433, 1947434, 1947435, 1947436, 1947437
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1947438, 1947439, 1947440, 1947441, 1947442, 1947443
SM 2120 B / E31780	True Color measured at 450 nm	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1947432, 1947433, 1947434, 1947435, 1947436, 1947437

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	11/17/2017			11/17/2017 16:59	Tanya Welborn	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
EPA 200.7 Rev. 4.4	11/17/2017	11/21/2017	Elliott D. Healy	11/22/2017	Martin Acosta	1947473, 1947474, 1947475, 1947476, 1947477, 1947478
EPA 200.8 Rev. 5.4	11/17/2017	11/21/2017	Elliott D. Healy	11/27/2017	Nadine Brooks	1947473
	11/17/2017	11/21/2017	Elliott D. Healy	11/28/2017	Nadine Brooks	1947474, 1947475, 1947476, 1947477, 1947478
EPA 300.0 Rev. 2.1	11/17/2017			11/17/2017	Irina Carbone	1947426
	11/17/2017			11/21/2017	Julia Storbeck	1947430, 1947431
	11/17/2017			12/06/2017	Julia Storbeck	1947427, 1947428, 1947429
EPA 350.1 Rev. 2.0	11/17/2017			12/01/2017	Sofia Elnemr	1947432, 1947433, 1947434, 1947435, 1947436, 1947437
EPA 351.2 Rev. 2.0	11/17/2017	11/30/2017	Adrian Shelby	11/30/2017	Joseph Suarez	1947432, 1947433, 1947434, 1947435, 1947436, 1947437
EPA 353.2 Rev. 2.0	11/17/2017			11/28/2017	Beverly Y. Sanders	1947432, 1947433, 1947434, 1947435, 1947436, 1947437
EPA 365.1 Rev. 2.0	11/17/2017	11/27/2017	Sima Feizi	11/28/2017	Lipi Saha	1947432, 1947433, 1947434
	11/17/2017	11/28/2017	Sima Feizi	11/29/2017	Lipi Saha	1947435, 1947436, 1947437
EPA 365.1 Rev. 2.0 dissolved	11/17/2017			11/17/2017 15:14	Megan Treadwell	1947438, 1947439
	11/17/2017			11/17/2017 15:19	Megan Treadwell	1947440
	11/17/2017			11/17/2017 15:20	Megan Treadwell	1947441, 1947442
	11/17/2017			11/17/2017 15:21	Megan Treadwell	1947443
SM 2120 B	11/17/2017			11/17/2017 15:08	Tanya Welborn	1947426, 1947427
	11/17/2017			11/17/2017 15:09	Tanya Welborn	1947428
	11/17/2017			11/17/2017 15:12	Tanya Welborn	1947429
	11/17/2017			11/17/2017 15:41	Tanya Welborn	1947430
	11/17/2017			11/17/2017 15:44	Tanya Welborn	1947431
SM 2320 B-97	11/17/2017			11/23/2017	Dale L. Simmons	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
SM 2540 C-97	11/17/2017			11/20/2017	Yijie Li	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
SM 2540 D-97	11/17/2017			11/20/2017	Yijie Li	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
SM 4500 F-C-97	11/17/2017			11/23/2017	Dale L. Simmons	1947426, 1947427, 1947428, 1947429, 1947430, 1947431
SM 5310 B-00	11/17/2017			11/29/2017	Ping Hua	1947432, 1947433, 1947434, 1947435, 1947436, 1947437