

Chemical Analysis Report

NE-DIST-2016-03-16-01

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

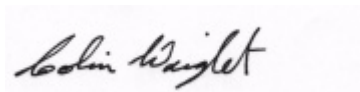
Event Description: **Gainesville South**
Request ID: **RQ-2016-03-14-15**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Certified by: Colin Wright, Environmental Administrator

Date Certified: 05-APR-2016 12:31

A handwritten signature in black ink, appearing to read "Colin Wright", is written on a light-colored 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 group are included in this report: 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: G3NE0013 Lochloosa slough 301

Collection Date/Time: 03/15/2016 10:10

Field ID: G3NE0013

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1780143	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P300514	
	EPA 300.0 Rev. 2.1	Chloride	6.9		mg Cl/L	P300559	
		Sulfate	0.45	I	mg SO4/L	P300561	
	SM 2120 B	Color (true)	280		PCU	P300495	
	SM 2320 B-97	Total Alkalinity	24		mg CaCO3/L	P300687	
	SM 2540 C-97	TDS	78		mg/L	P301165	
	SM 2540 D-97	TSS	4	I	mg/L	P300949	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P300690	
1780149	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P300974	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P300928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P300735	
	EPA 365.1 Rev. 2.0	Total-P	0.084		mg P/L	P300830	
	SM 5310 B-00	Organic Carbon	31		mg C/L	P300877	
1780155	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P300488	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: 20020131 Cross creek 325

Collection Date/Time: 03/15/2016 10:40

Field ID: 20020131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1780144	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P300514	
	EPA 300.0 Rev. 2.1	Chloride	9.0		mg Cl/L	P300559	
		Sulfate	2.1		mg SO4/L	P300561	
	SM 2120 B	Color (true)	210		PCU	P300495	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P300687	
	SM 2540 C-97	TDS	76		mg/L	P301166	
	SM 2540 D-97	TSS	8	I	mg/L	P300950	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P300690	
1780150	EPA 350.1 Rev. 2.0	Ammonia-N	0.058		mg N/L	P300974	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P300928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P300735	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P300830	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P300877	
1780156	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.048		mg P/L	P300488	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: 20020132 River styx at 346

Collection Date/Time: 03/15/2016 11:05

Field ID: 20020132 River styx at 346

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1780145	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P300514	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P300559	
		Sulfate	0.84		mg SO4/L	P300561	

Field ID: 20020132 River styx at 346

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1780145	SM 2120 B	Color (true)	270		PCU	P300495	
	SM 2320 B-97	Total Alkalinity	24		mg CaCO3/L	P300687	
	SM 2540 C-97	TDS	89		mg/L	P301166	
	SM 2540 D-97	TSS	6	I	mg/L	P300950	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P300690	
1780151	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P300974	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P300928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P300735	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P300830	
	SM 5310 B-00	Organic Carbon	33		mg C/L	P300877	
1780157	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.057		mg P/L	P300488	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: G3NE0015 Lochloosa fishcamp

Collection Date/Time: 03/15/2016 11:40

Field ID: G3NE0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1780146	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P300514	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P300653	
		Sulfate	1.6		mg SO4/L	P300655	
	SM 2120 B	Color (true)	410		PCU	P300495	
	SM 2320 B-97	Total Alkalinity	31		mg CaCO3/L	P300687	
	SM 2540 C-97	TDS	120		mg/L	P301166	
	SM 2540 D-97	TSS	2	I	mg/L	P300950	
1780152	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P300690	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P300974	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P300928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P300735	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P300830	
1780158	SM 5310 B-00	Organic Carbon	39		mg C/L	P300877	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.19		mg P/L	P300512	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: G3NE0014 W.Hawthrn fishcamp

Collection Date/Time: 03/15/2016 12:00

Field ID: G3NE0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1780147	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P300514	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P300653	
		Sulfate	1.7		mg SO4/L	P300655	
	SM 2120 B	Color (true)	380		PCU	P300495	
	SM 2320 B-97	Total Alkalinity	16		mg CaCO3/L	P300688	
	SM 2540 C-97	TDS	95		mg/L	P301166	
	SM 2540 D-97	TSS	4	I	mg/L	P300950	

Field ID: G3NE0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1780147	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P300691	
1780153	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P300974	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P300928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P300735	
	EPA 365.1 Rev. 2.0	Total-P	0.44		mg P/L	P300830	
	SM 5310 B-00	Organic Carbon	31		mg C/L	P300877	
1780159	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.36		mg P/L	P300512	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: 20020121 Prairie at Sr20

Collection Date/Time: 03/15/2016 12:30

Field ID: 20020121 Prairie at Sr20

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1780148	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P300514	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P300653	
		Sulfate	2.0		mg SO4/L	P300655	
	SM 2120 B	Color (true)	210		PCU	P300495	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P300688	
	SM 2540 C-97	TDS	92		mg/L	P301166	
	SM 2540 D-97	TSS	23		mg/L	P300950	
	SM 4500 F-C-97	Fluoride	0.096	I	mg F/L	P300691	
1780154	EPA 350.1 Rev. 2.0	Ammonia-N	0.080		mg N/L	P300974	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.6		mg N/L	P300928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P300735	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P300830	
	SM 5310 B-00	Organic Carbon	31		mg C/L	P300877	
1780160	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P300512	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P300514

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P300559

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300561

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300653

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300655

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300974

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300928

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300735

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300830

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300488

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300512

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P300495

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P300687

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

Reference Method: SM 2320 B-97
Batch ID: P300688

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

Reference Method: SM 2540 C-97
Batch ID: P301165

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P301166

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P300949

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P300950

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P300690

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P300691

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: P300877

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300559

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300561

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300653

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300655

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300974

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300928

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300735

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300830

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300830

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300488

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300512

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

Reference Method: SM 2320 B-97
Batch ID: P300687

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 105

Reference Method: SM 2320 B-97
Batch ID: P300688

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P300690

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	94 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P300691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P300877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300559

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780046	Chloride	105		P	90 - 110
1780047	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780046	Sulfate	102		P	90 - 110
1780047	Sulfate	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300653

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780147	Chloride	103	103	P/P	90 - 110
1780148	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300655

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780147	Sulfate	101	101	P/P	90 - 110
1780148	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780108	Ammonia-N	97.4	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780109	Kjeldahl Nitrogen	105	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780154	NO2NO3-N	99.0	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780108	Total-P	101	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300488

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300488

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780114	O-Phosphate-P	98.2	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780302	O-Phosphate-P	98.6	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P300690

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780046	Fluoride	95.5	97.1	P/P	94 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P300691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780201	Fluoride	99.6	101	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P300877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1780107	Organic Carbon	96.4	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P300514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780098	Turbidity	0.423	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780046	Chloride	0.0422	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780046	Sulfate	9.48	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780147	Chloride	0.194	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780147	Sulfate	0.126	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780108	Ammonia-N	0.908	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780109	Kjeldahl Nitrogen	0.510	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780154	NO2NO3-N	1.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780108	Total-P	3.06	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780114	O-Phosphate-P	0.816	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780302	O-Phosphate-P	1.61	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P300495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780101	Color (true)	1.52	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P300687

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780046	Total Alkalinity	0.404	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P300688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780201	Total Alkalinity	0.0829	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P301165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780181	TDS	3.64	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P301166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780201	TDS	2.17	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P300690

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780046	Fluoride	1.52	Spike	P	0 - 3.7

Reference Method: SM 4500 F-C-97
Batch ID: P300691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780201	Fluoride	0.979	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P300877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780107	Organic Carbon	0.754	Spike	P	0 - 20

Quality Assurance Report Precision

* 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: A68261

Included Lab Sample IDs: 1780143, 1780144, 1780145, 1780146, 1780147, 1780148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.6	100	P/P	90 - 110
Chloride	99.6	102	P/P	90 - 110
Sulfate	96.2	99.3	P/P	90 - 110
Sulfate	97.9	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A68262

Included Lab Sample IDs: 1780155, 1780156, 1780157

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	102	98.8	P/P	90 - 110
O-Phosphate-P	98.7	99.1	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A68263

Included Lab Sample IDs: 1780143, 1780144, 1780145, 1780146, 1780147, 1780148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.5	98.5	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A68269

Included Lab Sample IDs: 1780158, 1780159, 1780160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	99.2	P/P	90 - 110
O-Phosphate-P	99.2	98.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A68270

Included Lab Sample IDs: 1780143, 1780144, 1780145, 1780146, 1780147, 1780148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: SM 2320 B-97

Run ID: A68331

Included Lab Sample IDs: 1780143, 1780144, 1780145, 1780146, 1780147, 1780148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110
Total Alkalinity	104	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A68331

Included Lab Sample IDs: 1780143, 1780144, 1780145, 1780146, 1780147, 1780148

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68345

Included Lab Sample IDs: 1780149, 1780150, 1780151, 1780152, 1780153, 1780154

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

Reference Method: SM 5310 B-00

Run ID: A68400

Included Lab Sample IDs: 1780149, 1780150, 1780151, 1780152, 1780153, 1780154

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.3	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68408

Included Lab Sample IDs: 1780149, 1780150, 1780151, 1780152, 1780153, 1780154

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68434

Included Lab Sample IDs: 1780149, 1780150, 1780151, 1780152, 1780153, 1780154

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	101	P/P	90 - 110
Total-P	99.9	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68453

Included Lab Sample IDs: 1780149, 1780150, 1780151, 1780152, 1780153, 1780154

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	103	P/P	90 - 110
Kjeldahl Nitrogen	103	104	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements. Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				0.423	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision	
			LCS	SMP	MS		
EPA 300.0 Rev. 2.1	Chloride	105	105	105		0.0422	
	Chloride	102	103	103	103		0.194
	Sulfate	102	102	102		9.48	
	Sulfate	99.7	101	101	101		0.126
EPA 350.1 Rev. 2.0	Ammonia-N	102	97.4	98.8			0.908
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	105	106			0.510
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	99.0	97.5			1.37
EPA 365.1 Rev. 2.0	Total-P	99.2	101	97.2			3.06
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.2	99.2			0.816
	O-Phosphate-P	102	98.6	100			1.61
SM 2120 B	Color (true)					1.52	
SM 2320 B-97	Total Alkalinity	102				0.404	
	Total Alkalinity	103				0.0829	
SM 2540 C-97	TDS					3.64	
	TDS					2.17	
SM 4500 F-C-97	Fluoride	98.8	95.5	97.1			1.52
	Fluoride	99.8	99.6	101			0.979
SM 5310 B-00	Organic Carbon	96.7	96.4	95.2			0.754

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1780149, 1780150, 1780151, 1780152, 1780153, 1780154
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1780149, 1780150, 1780151, 1780152, 1780153, 1780154
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1780149, 1780150, 1780151, 1780152, 1780153, 1780154
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1780149, 1780150, 1780151, 1780152, 1780153, 1780154
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1780155, 1780156, 1780157, 1780158, 1780159, 1780160
SM 2120 B / E31780	True Color measured at 450 nm	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1780149, 1780150, 1780151, 1780152, 1780153, 1780154

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	03/16/2016			03/16/2016 16:50	Sima Feizi	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
EPA 300.0 Rev. 2.1	03/16/2016			03/17/2016	Ping Hua	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
EPA 350.1 Rev. 2.0	03/16/2016			03/23/2016	Diana M. Turner	1780149, 1780150, 1780151, 1780152, 1780153, 1780154
EPA 351.2 Rev. 2.0	03/16/2016	03/24/2016	Sofia Elnemr	03/27/2016	Rochelle Y Jackson	1780149, 1780150, 1780151, 1780152, 1780153, 1780154
EPA 353.2 Rev. 2.0	03/16/2016			03/21/2016	Diana M. Turner	1780149, 1780150, 1780151, 1780152, 1780153, 1780154
EPA 365.1 Rev. 2.0	03/16/2016	03/23/2016	Christopher Armour	03/24/2016	Lipi Saha	1780149, 1780150, 1780151, 1780152, 1780153, 1780154
EPA 365.1 Rev. 2.0 dissolved	03/16/2016			03/16/2016 14:22	Julia Storbeck	1780155
	03/16/2016			03/16/2016 14:40	Julia Storbeck	1780156, 1780157
	03/16/2016			03/16/2016 16:40	Julia Storbeck	1780159
	03/16/2016			03/16/2016 16:41	Julia Storbeck	1780160
	03/16/2016			03/16/2016 16:58	Julia Storbeck	1780158
SM 2120 B	03/16/2016			03/16/2016 15:47	Blanca Fach	1780143, 1780144
	03/16/2016			03/16/2016 15:48	Blanca Fach	1780145
	03/16/2016			03/16/2016 15:49	Blanca Fach	1780146
	03/16/2016			03/16/2016 15:50	Blanca Fach	1780147
	03/16/2016			03/16/2016 15:51	Blanca Fach	1780148
SM 2320 B-97	03/16/2016			03/18/2016	Dale L. Simmons	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
SM 2540 C-97	03/16/2016			03/21/2016	Yijie Li	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
SM 2540 D-97	03/16/2016			03/21/2016	Yijie Li	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
SM 4500 F-C-97	03/16/2016			03/18/2016	Dale L. Simmons	1780143, 1780144, 1780145, 1780146, 1780147, 1780148
SM 5310 B-00	03/16/2016			03/21/2016	Sofia Elnemr	1780149, 1780150, 1780151, 1780152, 1780153, 1780154