Chemical Analysis Report

SO-DIST-2016-02-09-01

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

Event Description: **SMP: Arbuckle Br. Arbuckle above Morgan**
Request ID: **RQ-2016-02-08-60**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901
Attn: Ben Paswater

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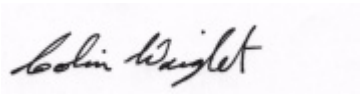
Certified by: Colin Wright, Environmental Administrator

Date Certified: 25-FEB-2016 10:44



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: ARBUCKLE BRANCH @ ARBUCKLE CREEK R Collection Date/Time: 02/08/2016 10:40

Field ID: SD020816-1 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1769765	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P298352	
	EPA 300.0 Rev. 2.1	Chloride	17	A	mg Cl/L	P298492	
		Sulfate	6.6	A	mg SO4/L	P298489	
	SM 2120 B	Color (true)	300		PCU	P298346	
	SM 2320 B-97	Total Alkalinity	5.9		mg CaCO3/L	P298434	
	SM 2540 C-97	TDS	96		mg/L	P298665	
	SM 2540 D-97	TSS	4	I	mg/L	P298594	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P298425	
1769768	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P298705	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P298580	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P298525	
	EPA 365.1 Rev. 2.0	Total-P	0.094		mg P/L	P298570	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P298464	
1769771	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.062		mg P/L	P298329	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: ARBUCKLE CR. ABOVE MORGAN HOLE BY RAMP Collection Date/Time: 02/08/2016 12:50

Field ID: SD020816-2 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1769766	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P298352	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P298492	
		Sulfate	16		mg SO4/L	P298489	
	SM 2120 B	Color (true)	170		PCU	P298346	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P298434	
	SM 2540 C-97	TDS	105		mg/L	P298665	
	SM 2540 D-97	TSS	3	I	mg/L	P298594	
	SM 4500 F-C-97	Fluoride	0.057	I	mg F/L	P298425	
1769769	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P298705	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P298580	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P298525	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P298570	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P298464	
1769772	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P298329	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: ARBUCKLE CREEK @ ARBUCKLE CR. ROAD Collection Date/Time: 02/08/2016 10:58

Field ID: SD020816-3 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1769767	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P298352	

Field ID: SD020816-3 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1769767	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P298492	
		Sulfate	11		mg SO4/L	P298489	
	SM 2120 B	Color (true)	220		PCU	P298346	
	SM 2320 B-97	Total Alkalinity	7.5		mg CaCO3/L	P298434	
	SM 2540 C-97	TDS	82		mg/L	P298665	
	SM 2540 D-97	TSS	2	I	mg/L	P298594	
	SM 4500 F-C-97	Fluoride	0.050	I	mg F/L	P298425	
1769770	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P298705	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P298580	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.042		mg N/L	P298525	
	EPA 365.1 Rev. 2.0	Total-P	0.067		mg P/L	P298570	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P298464	
1769773	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.044		mg P/L	P298329	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P298352

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298489

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298492

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298705

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298580

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298525

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298570

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298329

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

Reference Method: SM 2120 B
Batch ID: P298346

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P298434

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

Reference Method: SM 2540 C-97
Batch ID: P298665

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P298594

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P298425

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P298464

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: P298489

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298492

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298705

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298580

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298525

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298570

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298329

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

Reference Method: SM 2320 B-97
Batch ID: P298434

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P298425

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	94 - 108

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P298464

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.5		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769765	Sulfate	96.8		P	90 - 110
1769766	Sulfate	95.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769765	Chloride	99.6		P	90 - 110
1769766	Chloride	99.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298580

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769744	Kjeldahl Nitrogen	103	92.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298525

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769745	NO2NO3-N	97.1	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769768	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769706	O-Phosphate-P	102	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P298425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769677	Fluoride	96.6	97.2	P/P	94 - 107

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P298464

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1769670	Organic Carbon	98.4	100	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P298352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769733	Turbidity	1.69	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769765	Sulfate	0.159	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769765	Chloride	0.116	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P298705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769802	Ammonia-N	1.12	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298580

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769744	Kjeldahl Nitrogen	6.14	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769745	NO2NO3-N	1.08	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769768	Total-P	0.0589	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769706	O-Phosphate-P	0.204	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P298346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769742	Color (true)	0.0823	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P298434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769677	Total Alkalinity	3.92	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P298665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769743	TDS	6.03	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P298425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769677	Fluoride	0.490	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P298464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1769670	Organic Carbon	1.25	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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A67519
Included Lab Sample IDs: 1769765, 1769766, 1769767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.7	99.2	P/P	90 - 110
Chloride	99.2	99.1	P/P	90 - 110
Sulfate	95.3	97.2	P/P	90 - 110
Sulfate	97.2	93.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A67530
Included Lab Sample IDs: 1769771, 1769772, 1769773

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.5	99.5	P/P	90 - 110
O-Phosphate-P	99.4	97.5	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A67534
Included Lab Sample IDs: 1769765, 1769766, 1769767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.0	100	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A67535
Included Lab Sample IDs: 1769765, 1769766, 1769767

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

Reference Method: SM 4500 F-C-97
Run ID: A67560
Included Lab Sample IDs: 1769765, 1769766, 1769767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	100	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A67563
Included Lab Sample IDs: 1769765, 1769766, 1769767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.7	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A67574
Included Lab Sample IDs: 1769768, 1769769, 1769770

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	100	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A67589
Included Lab Sample IDs: 1769768, 1769769, 1769770

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A67626
Included Lab Sample IDs: 1769768, 1769769, 1769770

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	102	P/P	90 - 110
Kjeldahl Nitrogen	102	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A67627
Included Lab Sample IDs: 1769768, 1769770

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110
Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A67628
Included Lab Sample IDs: 1769769

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A67634
Included Lab Sample IDs: 1769768, 1769769, 1769770

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	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
EPA 180.1 Rev. 2.0	Turbidity					1.69	
EPA 300.0 Rev. 2.1	Chloride	101	99.6	99.8		0.116	
	Sulfate	98.5	96.8	95.3		0.159	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8					1.12
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.2	103	92.4			6.14
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	97.1	95.6			1.08
EPA 365.1 Rev. 2.0	Total-P	99.6	104	104			0.0589
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	102	102			0.204
SM 2120 B	Color (true)					0.0823	

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
SM 2320 B-97	Total Alkalinity	99.2				3.92	
SM 2540 C-97	TDS					6.03	
SM 4500 F-C-97	Fluoride	97.9	96.6	97.2			0.490
SM 5310 B-00	Organic Carbon	99.5	98.4	100			1.25

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1769765, 1769766, 1769767
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1769765, 1769766, 1769767
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1769765, 1769766, 1769767
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1769768, 1769769, 1769770
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1769768, 1769769, 1769770
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1769768, 1769769, 1769770
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1769768, 1769769, 1769770
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1769771, 1769772, 1769773
SM 2120 B / E31780	True Color measured at 450 nm	1769765, 1769766, 1769767
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1769765, 1769766, 1769767
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1769765, 1769766, 1769767
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1769765, 1769766, 1769767
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1769765, 1769766, 1769767
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1769768, 1769769, 1769770

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	02/09/2016			02/09/2016 14:17	Sima Feizi	1769765, 1769766, 1769767
EPA 300.0 Rev. 2.1	02/09/2016			02/11/2016	Ping Hua	1769765, 1769766, 1769767
EPA 350.1 Rev. 2.0	02/09/2016			02/16/2016	Diana M. Turner	1769768, 1769769, 1769770
EPA 351.2 Rev. 2.0	02/09/2016	02/15/2016	Christopher Armour	02/16/2016	Bryan A. Werth	1769768, 1769769, 1769770
EPA 353.2 Rev. 2.0	02/09/2016			02/12/2016	Diana M. Turner	1769768, 1769769, 1769770
EPA 365.1 Rev. 2.0	02/09/2016	02/15/2016	Christopher Armour	02/16/2016	Lipi Saha	1769768, 1769769, 1769770
EPA 365.1 Rev. 2.0 dissolved	02/09/2016			02/09/2016 14:36	Bryan A. Werth	1769771
	02/09/2016			02/09/2016 14:41	Bryan A. Werth	1769772
	02/09/2016			02/09/2016 14:42	Bryan A. Werth	1769773
SM 2120 B	02/09/2016			02/09/2016 14:44	Blanca Fach	1769765
	02/09/2016			02/09/2016 14:45	Blanca Fach	1769766
	02/09/2016			02/09/2016 14:46	Blanca Fach	1769767
SM 2320 B-97	02/09/2016			02/11/2016	Dale L. Simmons	1769765, 1769766, 1769767
SM 2540 C-97	02/09/2016			02/10/2016	Yijie Li	1769765, 1769766, 1769767
SM 2540 D-97	02/09/2016			02/10/2016	Yijie Li	1769765, 1769766, 1769767
SM 4500 F-C-97	02/09/2016			02/10/2016	Dale L. Simmons	1769765, 1769766, 1769767
SM 5310 B-00	02/09/2016			02/10/2016	Sofia Elnemr	1769768, 1769769, 1769770