Chemical Analysis Report

CEN-DIST-2016-03-01-02

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

Event Description: **Lady Lake+D&B**
Request ID: **RQ-2016-02-29-45**
Customer: **CEN-DIST**
Project ID: **SMP**

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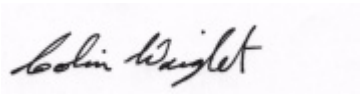
Certified by: Colin Wright, Environmental Administrator

Date Certified: 18-MAR-2016 09:56



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: LAKE LAKE **Collection Date/Time: 02/29/2016 12:15**

Field ID: G4CE0096 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775357	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P299551	
	EPA 300.0 Rev. 2.1	Chloride	9.0		mg Cl/L	P299648	
		Sulfate	7.1		mg SO4/L	P299650	
	SM 2120 B	Color (true)	12		PCU	P299531	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P300008	
	SM 2540 C-97	TDS	42		mg/L	P299886	
	SM 2540 D-97	TSS	2	U	mg/L	P299789	
	SM 4500 F-C-97	Fluoride	0.052	I	mg F/L	P300012	
1775360	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P300071	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P299727	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P299709	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P299745	
	SM 5310 B-00	Organic Carbon	6.7		mg C/L	P299695	
1775363	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P299516	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: LAKE LAKE **Collection Date/Time: 02/29/2016 12:25**

Field ID: G4CE0097 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775358	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P299551	
	EPA 300.0 Rev. 2.1	Chloride	9.0		mg Cl/L	P299735	
		Sulfate	7.3		mg SO4/L	P299738	
	SM 2120 B	Color (true)	12		PCU	P299531	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P300008	
	SM 2540 C-97	TDS	41		mg/L	P299887	
	SM 2540 D-97	TSS	3	I	mg/L	P299790	
	SM 4500 F-C-97	Fluoride	0.051	I	mg F/L	P300012	
1775361	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P300071	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P299727	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P299709	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P299745	
	SM 5310 B-00	Organic Carbon	7.0		mg C/L	P299695	
1775364	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P299516	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: FIELD BLANK **Collection Date/Time: 02/29/2016 12:35**

Field ID: BLANK Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775359	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P299551	

Field ID: BLANK Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775359	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P299735	
		Sulfate	0.20	U	mg SO4/L	P299738	
	SM 2120 B	Color (true)	2.5	U	PCU	P299531	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P300008	
	SM 2540 C-97	TDS	15	U	mg/L	P299884	
	SM 2540 D-97	TSS	2	U	mg/L	P299787	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P300012	
1775362	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P300071	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P299727	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P299804	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P299745	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P299695	
1775365	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P299516	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 351.2 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: P299551

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299648

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299650

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299735

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299738

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300071

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299727

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299709

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299804

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299745

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299516

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

Reference Method: SM 2120 B
Batch ID: P299531

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P300008

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

Reference Method: SM 2540 C-97
Batch ID: P299884

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P299886

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P299887

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P299787

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P299789

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P299790

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P300012

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P299695

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: P299648

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299650

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299650

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299735

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299738

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300071

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299727

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299709

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299804

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299745

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299516

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P300008

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P300012

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P299695

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775316	Chloride	103		P	90 - 110
1775317	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775316	Sulfate	101		P	90 - 110
1775317	Sulfate	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775377	Chloride	101	105	P/P	90 - 110
1775493	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299738

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775377	Sulfate	99.4	99.4	P/P	90 - 110
1775493	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775360	Ammonia-N	99.6	99.1	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775041	NO2NO3-N	96.0	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299804

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775241	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299745

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775322	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775330	O-Phosphate-P	102	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P300012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775634	Fluoride	96.3	99.1	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P299695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1774895	Organic Carbon	92.8	93.2	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P299551

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775315	Turbidity	9.87	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775316	Chloride	0.00612	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299650

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775316	Sulfate	0.356	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299735

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775377	Chloride	2.00	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299738

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775377	Sulfate	0.0346	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300071

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775360	Ammonia-N	0.526	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299727

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775322	Kjeldahl Nitrogen	8.54	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299709

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775041	NO2NO3-N	1.46	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299804

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775241	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299745

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775322	Total-P	1.39	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775330	O-Phosphate-P	1.07	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P299531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775320	Color (true)	1.42	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P300008

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775634	Total Alkalinity	0.0953	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P299884

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1774788	TDS	4.59	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P299886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1774946	TDS	2.23	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P299887

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775377	TDS	4.33	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P300012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775634	Fluoride	1.93	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P299695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1774895	Organic Carbon	0.204	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 365.1 Rev. 2.0 dissolved
Run ID: A67918
Included Lab Sample IDs: 1775363, 1775364, 1775365

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	99.1	P/P	90 - 110
O-Phosphate-P	99.1	99.3	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A67922
Included Lab Sample IDs: 1775357, 1775358, 1775359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.0	97.1	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A67932
Included Lab Sample IDs: 1775357, 1775358, 1775359

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A67933
Included Lab Sample IDs: 1775357, 1775358, 1775359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	103	P/P	90 - 110
Chloride	103	101	P/P	90 - 110
Sulfate	101	97.2	P/P	90 - 110
Sulfate	95.3	99.9	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A67982
Included Lab Sample IDs: 1775360, 1775361, 1775362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.3	95.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A67984
Included Lab Sample IDs: 1775360, 1775361

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A68011
Included Lab Sample IDs: 1775362

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A68042
Included Lab Sample IDs: 1775360, 1775361, 1775362

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

Reference Method: SM 2320 B-97
Run ID: A68093
Included Lab Sample IDs: 1775357, 1775358, 1775359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A68094
Included Lab Sample IDs: 1775357, 1775358, 1775359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	98.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A68112
Included Lab Sample IDs: 1775360, 1775361, 1775362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A68116
Included Lab Sample IDs: 1775360, 1775361, 1775362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	107	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						9.87	
EPA 300.0 Rev. 2.1	Chloride	104	103	104			0.0061	
	Chloride	103	101	105	104			2.00
	Sulfate	100	101	101			0.356	

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision		
						LCS	SMP	MS
EPA 300.0 Rev. 2.1	Sulfate	99.4	99.4	99.4	102			0.0346
EPA 350.1 Rev. 2.0	Ammonia-N	99.3	99.6	99.1				0.526
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104						8.54
EPA 353.2 Rev. 2.0	NO2NO3-N	105	96.0	97.6				1.46
	NO2NO3-N	104	104	104				0.0
EPA 365.1 Rev. 2.0	Total-P	108	106	107				1.39
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	102	104				1.07
SM 2120 B	Color (true)						1.42	
SM 2320 B-97	Total Alkalinity	101					0.0953	
SM 2540 C-97	TDS						4.59	
	TDS						2.23	
	TDS						4.33	
SM 4500 F-C-97	Fluoride	97.8	96.3	99.1				1.93
SM 5310 B-00	Organic Carbon	99.6	92.8	93.2				0.204

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1775357, 1775358, 1775359
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1775357, 1775358, 1775359
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1775357, 1775358, 1775359
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1775360, 1775361, 1775362
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1775360, 1775361, 1775362
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1775360, 1775361, 1775362
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1775360, 1775361, 1775362
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1775363, 1775364, 1775365
SM 2120 B / E31780	True Color measured at 450 nm	1775357, 1775358, 1775359
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1775357, 1775358, 1775359
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1775357, 1775358, 1775359
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1775357, 1775358, 1775359
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1775357, 1775358, 1775359
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1775360, 1775361, 1775362

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	03/01/2016			03/01/2016 15:06	Sima Feizi	1775357, 1775358, 1775359
EPA 300.0 Rev. 2.1	03/01/2016			03/03/2016	Ping Hua	1775357, 1775358, 1775359
EPA 350.1 Rev. 2.0	03/01/2016			03/09/2016	Diana M. Turner	1775360, 1775361, 1775362
EPA 351.2 Rev. 2.0	03/01/2016	03/04/2016	Christopher Armour	03/09/2016	Rochelle Y Jackson	1775360, 1775361, 1775362
EPA 353.2 Rev. 2.0	03/01/2016			03/03/2016	Peter D. Kaus	1775360, 1775361
	03/01/2016			03/04/2016	Virginia P. Brown	1775362
EPA 365.1 Rev. 2.0	03/01/2016	03/04/2016	Christopher Armour	03/07/2016	Lipi Saha	1775360, 1775361, 1775362
EPA 365.1 Rev. 2.0 dissolved	03/01/2016			03/01/2016 14:14	Julia Storbeck	1775365
	03/01/2016			03/01/2016 14:29	Julia Storbeck	1775363, 1775364
SM 2120 B	03/01/2016			03/01/2016 16:12	Rochelle Y Jackson	1775357
	03/01/2016			03/01/2016 16:13	Rochelle Y Jackson	1775358
	03/01/2016			03/01/2016 16:14	Rochelle Y Jackson	1775359
SM 2320 B-97	03/01/2016			03/08/2016	Dale L. Simmons	1775357, 1775358, 1775359
SM 2540 C-97	03/01/2016			03/02/2016	Yijie Li	1775357, 1775358, 1775359
SM 2540 D-97	03/01/2016			03/02/2016	Yijie Li	1775357, 1775358, 1775359
SM 4500 F-C-97	03/01/2016			03/07/2016	Dale L. Simmons	1775357, 1775358, 1775359
SM 5310 B-00	03/01/2016			03/02/2016	Sofia Elnemr	1775360, 1775361, 1775362