Chemical Analysis Report

CEN-DIST-2018-01-31-01

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

Event Description: **Lk Lou / Lil Lk Weir**
Request ID: **RQ-2018-01-01-26**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
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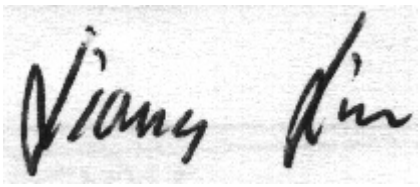
Certified by: Liang Lin, Environmental Administrator

Date Certified: 21-FEB-2018 14:09



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 Blue Cove @ 150M SW of Center **Collection Date/Time: 01/30/2018 10:13**

Field ID: G4CE0022 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963093	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P339090	
	EPA 300.0 Rev. 2.1	Chloride	2.8	A	mg Cl/L	P339227	
		Sulfate	0.20	UA	mg SO4/L	P339230	
	SM 2120 B	Color (true)	11		PCU	P339094	
	SM 2320 B-97	Total Alkalinity	35		mg CaCO3/L	P339474	
	SM 2540 C-97	TDS	61		mg/L	P339570	
	SM 2540 D-97	TSS	3	I	mg/L	P339622	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P339731	
1963096	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P339290	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P339103	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.34		mg N/L	P339147	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P339153	
	SM 5310 B-00	Organic Carbon	6.0		mg C/L	P339266	
1963099	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P339115	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Little Lake Weir @ Center **Collection Date/Time: 01/30/2018 11:36**

Field ID: G1CE0014 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963094	EPA 180.1 Rev. 2.0	Turbidity	4.9	A	NTU	P339091	
	EPA 300.0 Rev. 2.1	Chloride	45		mg Cl/L	P339227	
		Sulfate	8.4		mg SO4/L	P339230	
	SM 2120 B	Color (true)	18		PCU	P339094	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P339474	
	SM 2540 C-97	TDS	148		mg/L	P339570	
	SM 2540 D-97	TSS	5	I	mg/L	P339622	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P339731	
1963097	EPA 350.1 Rev. 2.0	Ammonia-N	0.071		mg N/L	P339290	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P339103	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P339147	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P339153	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P339266	
1963100	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P339115	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Lou - Center of Lake **Collection Date/Time: 01/30/2018 13:01**

Field ID: G1CE0040 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963095	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P339091	

Field ID: G1CE0040 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963095	EPA 300.0 Rev. 2.1	Chloride	8.6		mg Cl/L	P339227	
		Sulfate	4.1		mg SO4/L	P339230	
	SM 2120 B	Color (true)	280		PCU	P339094	
	SM 2320 B-97	Total Alkalinity	3.4		mg CaCO3/L	P339474	
	SM 2540 C-97	TDS	98		mg/L	P339570	
	SM 2540 D-97	TSS	2	I	mg/L	P339622	
	SM 4500 F-C-97	Fluoride	0.051	I	mg F/L	P339731	
1963098	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P339291	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P339103	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P339147	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P339153	
	SM 5310 B-00	Organic Carbon	28		mg C/L	P339266	
1963101	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P339115	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339090

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339091

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339227

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339230

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339290

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: P339291

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339103

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339147

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339153

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339115

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

Reference Method: SM 2120 B
Batch ID: P339094

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P339474

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

Reference Method: SM 2540 C-97
Batch ID: P339570

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P339622

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P339731

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P339266

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: P339227

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339230

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339290

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339291

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339103

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339147

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339153

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339153

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339115

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

Reference Method: SM 2320 B-97
Batch ID: P339474

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.0		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P339731

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P339266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963093	Chloride	93.5		P	90 - 110
1963161	Chloride	97.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339230

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963093	Sulfate	94.5		P	90 - 110
1963161	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963030	Ammonia-N	95.6	95.3	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339291

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963098	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963083	Kjeldahl Nitrogen	91.3	91.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963084	NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963084	Total-P	100	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963085	O-Phosphate-P	95.8	97.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P339731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963441	Fluoride	93.7	94.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P339266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963118	Organic Carbon	102	102	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963047	Turbidity	0.479	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963094	Turbidity	1.23	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963093	Chloride	0.138	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963030	Ammonia-N	0.298	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963098	Ammonia-N	0.828	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963083	Kjeldahl Nitrogen	0.152	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963084	NO2NO3-N	0.506	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963084	Total-P	1.78	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963085	O-Phosphate-P	1.27	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2120 B
Batch ID: P339094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963035	Color (true)	0.929	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P339474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1962768	Total Alkalinity	3.85	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P339570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963029	TDS	3.20	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P339731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963441	Fluoride	0.477	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P339266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963118	Organic Carbon	0.235	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: 81775
Included Lab Sample IDs: 1963093, 1963094, 1963095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	99.8	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81765
Included Lab Sample IDs: 1963093, 1963094, 1963095

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81765
Included Lab Sample IDs: 1963093, 1963094, 1963095

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

Reference Method: SM 2120 B
Run ID: A81766
Included Lab Sample IDs: 1963093, 1963094, 1963095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	104	P/P	85 - 115
Color (true)	103	105	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A81776
Included Lab Sample IDs: 1963099, 1963100, 1963101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A81787
Included Lab Sample IDs: 1963096, 1963097, 1963098

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A81808
Included Lab Sample IDs: 1963096

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A81813
Included Lab Sample IDs: 1963097, 1963098

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

Reference Method: SM 5310 B-00
Run ID: A81830
Included Lab Sample IDs: 1963096, 1963097, 1963098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	97.2	P/P	90 - 110
Organic Carbon	97.2	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A81832
Included Lab Sample IDs: 1963096, 1963097, 1963098

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A81832
Included Lab Sample IDs: 1963096, 1963097, 1963098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A81838
Included Lab Sample IDs: 1963096, 1963097, 1963098

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

Reference Method: SM 2320 B-97
Run ID: A81901
Included Lab Sample IDs: 1963093, 1963094, 1963095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.6	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A81981
Included Lab Sample IDs: 1963093, 1963094, 1963095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	99.5	P/P	90 - 110
Fluoride	99.5	100	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					0.479	
	Turbidity					1.23	
EPA 300.0 Rev. 2.1	Chloride	98.8	93.5	97.4		0.138	
	Sulfate	97.6	94.5	100			
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	95.6	95.3			0.298
	Ammonia-N	96.7	100	102			0.828
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	91.3	91.5			0.152
EPA 353.2 Rev. 2.0	NO2NO3-N	105	101				0.506
EPA 365.1 Rev. 2.0	Total-P	100	100	98.0			1.78
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.8	95.8	97.2			1.27
SM 2120 B	Color (true)					0.929	
SM 2320 B-97	Total Alkalinity	97.0				3.85	
SM 2540 C-97	TDS					3.20	
SM 4500 F-C-97	Fluoride	97.3	93.7	94.3			0.477
SM 5310 B-00	Organic Carbon	96.6	102	102			0.235

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1963093, 1963094, 1963095
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1963093, 1963094, 1963095
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1963093, 1963094, 1963095
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1963096, 1963097, 1963098
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1963096, 1963097, 1963098
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1963096, 1963097, 1963098
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1963096, 1963097, 1963098
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1963099, 1963100, 1963101
SM 2120 B / E31780	True Color measured at 450 nm	1963093, 1963094, 1963095
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1963093, 1963094, 1963095
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1963093, 1963094, 1963095
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1963093, 1963094, 1963095
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1963093, 1963094, 1963095
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1963096, 1963097, 1963098

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	01/31/2018			01/31/2018 15:52	DeAsia Armster	1963093, 1963094, 1963095
EPA 300.0 Rev. 2.1	01/31/2018			02/01/2018	Julia Storbeck	1963093, 1963094, 1963095
EPA 350.1 Rev. 2.0	01/31/2018			02/02/2018	Ping Hua	1963096, 1963097, 1963098
EPA 351.2 Rev. 2.0	01/31/2018	02/01/2018	Adrian Shelby	02/02/2018	Joseph Suarez	1963096, 1963097, 1963098
EPA 353.2 Rev. 2.0	01/31/2018			02/01/2018	Beverly Y. Sanders	1963096, 1963097, 1963098
EPA 365.1 Rev. 2.0	01/31/2018	02/01/2018	Sima Feizi	02/02/2018	Beverly Y. Sanders	1963096, 1963097, 1963098
EPA 365.1 Rev. 2.0 dissolved	01/31/2018			01/31/2018 17:04	Megan Treadwell	1963099
	01/31/2018			01/31/2018 17:05	Megan Treadwell	1963100
	01/31/2018			01/31/2018 17:06	Megan Treadwell	1963101
SM 2120 B	01/31/2018			01/31/2018 16:01	Julia Storbeck	1963093
	01/31/2018			01/31/2018 16:02	Julia Storbeck	1963094
	01/31/2018			01/31/2018 16:25	Julia Storbeck	1963095
SM 2320 B-97	01/31/2018			02/07/2018	Lauren Bottorf	1963093, 1963094, 1963095
SM 2540 C-97	01/31/2018			02/03/2018	Yijie Li	1963093, 1963094, 1963095
SM 2540 D-97	01/31/2018			02/03/2018	Yijie Li	1963093, 1963094, 1963095
SM 4500 F-C-97	01/31/2018			02/10/2018	Lauren Bottorf	1963093, 1963094, 1963095
SM 5310 B-00	01/31/2018			02/03/2018	Megan Treadwell	1963096, 1963097, 1963098