

Chemical Analysis Report

CEN-DIST-2017-02-22-01

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

Event Description: **Lk Felter/Mirror Lk/Bear Lk**
Request ID: **RQ-2017-02-13-59**
Customer: **CEN-DIST**
Project ID: **SMP**

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

For additional information please contact
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 17-MAR-2017 14:51

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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: Mirror Lake @ Center of North Lobe

Collection Date/Time: 02/21/2017 09:12

Field ID: G1CE0041

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874533	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P320309	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P321226	
		Sulfate	28		mg SO4/L	P321228	
	SM 2120 B	Color (true)	11		PCU	P320323	
	SM 2320 B-97	Total Alkalinity	14		mg CaCO3/L	P320590	
	SM 2540 C-97	TDS	76	A	mg/L	P320845	
	SM 2540 D-97	TSS	3	I	mg/L	P320837	
	SM 4500 F-C-97	Fluoride	0.095	I	mg F/L	P320894	
1874536	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P320444	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P320368	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.095		mg N/L	P320552	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P320373	
	SM 5310 B-00	Organic Carbon	6.9		mg C/L	P320484	
1874539	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P320303	

Ref. Method and Comment:

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

Sample Location: Lake Felter @ Center

Collection Date/Time: 02/21/2017 09:59

Field ID: G1CE0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874534	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P320309	
	EPA 300.0 Rev. 2.1	Chloride	21	A	mg Cl/L	P321226	
		Sulfate	2.7	A	mg SO4/L	P321228	
	SM 2120 B	Color (true)	68	A	PCU	P320323	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P320590	
	SM 2540 C-97	TDS	102		mg/L	P320845	
	SM 2540 D-97	TSS	3	I	mg/L	P320837	
	SM 4500 F-C-97	Fluoride	0.084	I	mg F/L	P320894	
1874537	EPA 350.1 Rev. 2.0	Ammonia-N	0.31		mg N/L	P320607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P320368	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.076		mg N/L	P320552	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P320373	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P320484	
1874540	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P320303	

Ref. Method and Comment:

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

Sample Location: Bear Lake @ Center

Collection Date/Time: 02/21/2017 10:40

Field ID: G1CE0002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874535	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P320309	
	EPA 300.0 Rev. 2.1	Chloride	15	A	mg Cl/L	P321343	
		Sulfate	0.65	A	mg SO4/L	P321345	

Field ID: G1CE0002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874535	SM 2120 B	Color (true)	200		PCU	P320323	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P320590	
	SM 2540 C-97	TDS	65		mg/L	P320845	
	SM 2540 D-97	TSS	2	I	mg/L	P320837	
	SM 4500 F-C-97	Fluoride	0.050	I	mg F/L	P320894	
1874538	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P320607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P320368	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P320552	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P320374	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P320484	
1874541	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P320303	

Ref. Method and Comment:

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: P320309

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P321226

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P321228

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P321343

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P321345

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P320444

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: P320607

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320368

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320552

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320373

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320374

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320303

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

Reference Method: SM 2120 B
Batch ID: P320323

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P320590

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

Reference Method: SM 2540 C-97
Batch ID: P320845

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P320837

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P320894

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P320484

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: P321226

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321228

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	91.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321343

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: P321345

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	92.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320444

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	106		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320607

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320607

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320368

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320552

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: P320373

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320374

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320303

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

Reference Method: SM 2320 B-97
Batch ID: P320590

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P320894

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P320484

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874123	Chloride	100		P	90 - 110
1874534	Chloride	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321228

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874123	Sulfate	97.6		P	90 - 110
1874534	Sulfate	91.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874535	Chloride	97.0		P	90 - 110
1875342	Chloride	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874535	Sulfate	95.9		P	90 - 110
1875342	Sulfate	96.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874500	Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874745	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874536	Kjeldahl Nitrogen	96.6	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874538	NO2NO3-N	98.8	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320373

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
 Batch ID: P320373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874537	Total-P	94.8	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P320374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874549	Total-P	95.1	92.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P320303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874504	O-Phosphate-P	94.6	99.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P320894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872795	Fluoride	97.8	100	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P320484

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874000	Organic Carbon	94.4	93.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P320309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874460	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P321226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874534	Chloride	0.0595	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P321228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874534	Sulfate	0.0905	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874535	Chloride	0.0572	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874535	Sulfate	4.22	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874500	Ammonia-N	1.34	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874745	Ammonia-N	0.336	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874536	Kjeldahl Nitrogen	3.54	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874538	NO2NO3-N	0.917	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874537	Total-P	1.07	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874549	Total-P	2.29	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P320303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874504	O-Phosphate-P	4.42	Spike	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P320323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874534	Color (true)	1.10	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P320590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875084	Total Alkalinity	0.163	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P320845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874533	TDS	6.54	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P320894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872795	Fluoride	1.42	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P320484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874000	Organic Carbon	0.504	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 365.1 Rev. 2.0 dissolved
 Run ID: A74651
 Included Lab Sample IDs: 1874539, 1874540, 1874541

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A74653

Included Lab Sample IDs: 1874533, 1874534, 1874535

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	102	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A74656

Included Lab Sample IDs: 1874533, 1874534, 1874535

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.8	95.1	P/P	85 - 115
Color (true)	96.5	98.5	P/P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74696

Included Lab Sample IDs: 1874536

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74700

Included Lab Sample IDs: 1874536, 1874537, 1874538

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.5	P/P	90 - 110
Kjeldahl Nitrogen	97.7	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74716

Included Lab Sample IDs: 1874536, 1874537, 1874538

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.5	P/P	90 - 110
Total-P	99.5	99.8	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A74718

Included Lab Sample IDs: 1874536, 1874537, 1874538

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.2	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74741

Included Lab Sample IDs: 1874536, 1874537, 1874538

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A74752

Included Lab Sample IDs: 1874533, 1874534, 1874535

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	105	P/P	90 - 110
Total Alkalinity	105	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74758

Included Lab Sample IDs: 1874537, 1874538

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

Reference Method: SM 4500 F-C-97

Run ID: A74865

Included Lab Sample IDs: 1874533, 1874534, 1874535

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	98.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A74977

Included Lab Sample IDs: 1874533, 1874534, 1874535

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	99.6	P/P	90 - 110
Chloride	99.7	102	P/P	90 - 110
Sulfate	92.5	96.8	P/P	90 - 110
Sulfate	96.8	93.0	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				0.0	
EPA 300.0 Rev. 2.1	Chloride	99.0	97.2 100		0.0595	
	Chloride	98.8	97.0 98.8		0.0572	
	Sulfate	91.3	91.1 97.6		0.0905	
	Sulfate	92.7	95.9 96.6		4.22	
EPA 350.1 Rev. 2.0	Ammonia-N	106	102 100			1.34
	Ammonia-N	101	100 101			0.336
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	96.6 102			3.54
EPA 353.2 Rev. 2.0	NO2NO3-N	102	98.8 99.8			0.917
EPA 365.1 Rev. 2.0	Total-P	93.2	94.8 95.9			1.07
	Total-P	96.7	95.1 92.7			2.29
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7	94.6 99.5			4.42
SM 2120 B	Color (true)				1.10	
SM 2320 B-97	Total Alkalinity	104			0.163	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
					LCS	
SM 2540 C-97	TDS				6.54	
SM 4500 F-C-97	Fluoride	97.0	97.8	100		1.42
SM 5310 B-00	Organic Carbon	98.2	94.4	93.6		0.504

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1874533, 1874534, 1874535
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1874533, 1874534, 1874535
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1874533, 1874534, 1874535
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1874536, 1874537, 1874538
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1874536, 1874537, 1874538
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1874536, 1874537, 1874538
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1874536, 1874537, 1874538
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1874539, 1874540, 1874541
SM 2120 B / E31780	True Color measured at 450 nm	1874533, 1874534, 1874535
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1874533, 1874534, 1874535
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1874533, 1874534, 1874535
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1874533, 1874534, 1874535
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1874533, 1874534, 1874535
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1874536, 1874537, 1874538

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	02/22/2017			02/22/2017 15:55	Sima Feizi	1874533, 1874534, 1874535
EPA 300.0 Rev. 2.1	02/22/2017			03/08/2017	Elisa J Lutz	1874534
	02/22/2017			03/09/2017	Elisa J Lutz	1874533, 1874535
EPA 350.1 Rev. 2.0	02/22/2017			02/23/2017	Sofia Elnemr	1874536
	02/22/2017			02/27/2017	Sofia Elnemr	1874537, 1874538
EPA 351.2 Rev. 2.0	02/22/2017	02/23/2017	Adrian Shelby	02/24/2017	Joseph Suarez	1874536, 1874537, 1874538
EPA 353.2 Rev. 2.0	02/22/2017			02/27/2017	Beverly Y. Sanders	1874536, 1874537, 1874538
EPA 365.1 Rev. 2.0	02/22/2017	02/23/2017	Adrian Shelby	02/24/2017	Lipi Saha	1874536, 1874537, 1874538
EPA 365.1 Rev. 2.0 dissolved	02/22/2017			02/22/2017 14:53	Julia Storbeck	1874539
	02/22/2017			02/22/2017 14:54	Julia Storbeck	1874540
	02/22/2017			02/22/2017 14:55	Julia Storbeck	1874541
SM 2120 B	02/22/2017			02/22/2017 16:39	Julie Michelle Frank	1874533
	02/22/2017			02/22/2017 16:40	Julie Michelle Frank	1874534
	02/22/2017			02/22/2017 17:18	Julie Michelle Frank	1874535
SM 2320 B-97	02/22/2017			02/25/2017	Dale L. Simmons	1874533, 1874534, 1874535
SM 2540 C-97	02/22/2017			02/24/2017	Yijie Li	1874533, 1874534, 1874535
SM 2540 D-97	02/22/2017			02/24/2017	Yijie Li	1874533, 1874534, 1874535
SM 4500 F-C-97	02/22/2017			03/02/2017	Dale L. Simmons	1874533, 1874534, 1874535
SM 5310 B-00	02/22/2017			02/23/2017	Julie Michelle Frank	1874536, 1874537, 1874538