

Chemical Analysis Report

CEN-DIST-2018-03-27-02

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

Event Description: **Lou / Lil Weir / Blue Cove**
Request ID: **RQ-2018-02-26-58**
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

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 20-APR-2018 13:45

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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: Lake Blue Cove @ 150m SW of Center (1329V) Collection Date/Time: 03/26/2018 10:22

Field ID: G4CE0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1978033	EPA 180.1 Rev. 2.0	Turbidity	1.9	A	NTU	P342271	
	EPA 300.0 Rev. 2.1	Chloride	3.1		mg Cl/L	P342508	
		Sulfate	0.20	U	mg SO4/L	P342512	MS
	SM 2120 B	Color (true)	7.9		PCU	P342265	
	SM 2320 B-97	Total Alkalinity	37		mg CaCO3/L	P342981	
	SM 2540 C-97	TDS	63		mg/L	P342577	
	SM 2540 D-97	TSS	3	I	mg/L	P342632	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P343645	
1978036	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P342767	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P342310	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P342338	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P342498	
	SM 5310 B-00	Organic Carbon	7.5		mg C/L	P342876	
1978039	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P342316	

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 Lou - Center of Lake (2775D)

Collection Date/Time: 03/26/2018 12:06

Field ID: G1CE0040

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1978034	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P342271	
	EPA 300.0 Rev. 2.1	Chloride	9.1		mg Cl/L	P342508	
		Sulfate	3.7		mg SO4/L	P342512	MS
	SM 2120 B	Color (true)	330		PCU	P342265	
	SM 2320 B-97	Total Alkalinity	4.1		mg CaCO3/L	P342981	
	SM 2540 C-97	TDS	98		mg/L	P342577	
	SM 2540 D-97	TSS	2	I	mg/L	P342632	
	SM 4500 F-C-97	Fluoride	0.047	I	mg F/L	P343645	
1978037	EPA 350.1 Rev. 2.0	Ammonia-N	0.065		mg N/L	P342767	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P342310	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.088		mg N/L	P342338	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P342498	
	SM 5310 B-00	Organic Carbon	31		mg C/L	P342876	
1978040	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P342316	

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: Little Lake Weir @ Center (2790B)

Collection Date/Time: 03/26/2018 13:42

Field ID: G1CE0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1978035	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P342271	
	EPA 300.0 Rev. 2.1	Chloride	47		mg Cl/L	P342508	
		Sulfate	8.7		mg SO4/L	P342512	MS

Field ID: G1CE0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1978035	SM 2120 B	Color (true)	16		PCU	P342265	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P342981	
	SM 2540 C-97	TDS	148	A	mg/L	P342577	
	SM 2540 D-97	TSS	7	IA	mg/L	P342632	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P343645	
1978038	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P342767	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P342310	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P342338	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P342498	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P342876	
1978041	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P342316	

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: P342271

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P342508

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P342512

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P342767

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P342310

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P342338

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342498

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342316

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

Reference Method: SM 2120 B
Batch ID: P342265

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P342981

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

Reference Method: SM 2540 C-97
Batch ID: P342577

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P342632

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P343645

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P342876

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: P342508

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342508

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342512

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P342767

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342338

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: P342498

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342316

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

Reference Method: SM 2320 B-97
Batch ID: P342981

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.8		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P343645

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	91 - 105

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P342876

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342508

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1978002	Chloride	100	98.2	P/P	90 - 110
1978208	Chloride	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1978002	Sulfate	101	99.9	P/P	90 - 110
1978208	Sulfate	88.7		F	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P342767

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1978036	Ammonia-N	94.0	95.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1978007	Kjeldahl Nitrogen	108	110	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1978036	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342498

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1978038	Total-P	103	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1977942	O-Phosphate-P	98.0	98.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P343645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1978282	Fluoride	97.0	97.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P342876

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1978005	Organic Carbon	97.2	95.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P342271

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978033	Turbidity	1.60	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342508

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978002	Chloride	1.79	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978002	Sulfate	1.24	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P342767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978036	Ammonia-N	1.05	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978007	Kjeldahl Nitrogen	1.02	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978036	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978038	Total-P	5.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1977942	O-Phosphate-P	0.509	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P342265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978099	Color (true)	10.3	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P342981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978282	Total Alkalinity	0.435	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P342577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978035	TDS	4.75	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P343645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978282	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P342876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978005	Organic Carbon	1.41	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: SM 2120 B

Run ID: A82875

Included Lab Sample IDs: 1978033, 1978034, 1978035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.3	99.6	P/P	85 - 115
Color (true)	99.3	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A82876

Included Lab Sample IDs: 1978033, 1978034, 1978035

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A82892

Included Lab Sample IDs: 1978033, 1978034, 1978035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.4	101	P/P	90 - 110
Sulfate	99.8	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A82895

Included Lab Sample IDs: 1978039, 1978040, 1978041

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	101	P/P	90 - 110
O-Phosphate-P	101	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A82906

Included Lab Sample IDs: 1978036, 1978037, 1978038

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A82956

Included Lab Sample IDs: 1978036, 1978037, 1978038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	102	P/P	90 - 110
Kjeldahl Nitrogen	102	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A82977

Included Lab Sample IDs: 1978036

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83000

Included Lab Sample IDs: 1978037, 1978038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83041

Included Lab Sample IDs: 1978036, 1978037, 1978038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	98.2	P/P	90 - 110
Ammonia-N	98.8	98.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A83069

Included Lab Sample IDs: 1978036, 1978037, 1978038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	95.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A83098

Included Lab Sample IDs: 1978033, 1978034, 1978035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.2	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A83315

Included Lab Sample IDs: 1978033, 1978034, 1978035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	102	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					1.60	
EPA 300.0 Rev. 2.1	Chloride	98.7	100	98.2	97.2		1.79
	Sulfate	98.9	101	99.9	88.7		1.24

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 350.1 Rev. 2.0	Ammonia-N	93.8	94.0	95.1		1.05
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.8	108	110		1.02
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	105	106	106		0.0
EPA 365.1 Rev. 2.0	Total-P	101	103	97.7		5.15
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	98.0	98.5		0.509
SM 2120 B	Color (true)				10.3	
SM 2320 B-97	Total Alkalinity	99.8			0.435	
SM 2540 C-97	TDS				4.75	
SM 4500 F-C-97	Fluoride	96.7	97.0	97.0		0.0
SM 5310 B-00	Organic Carbon	97.5	97.2	95.8		1.41

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1978033, 1978034, 1978035
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1978033, 1978034, 1978035
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1978033, 1978034, 1978035
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1978036, 1978037, 1978038
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1978036, 1978037, 1978038
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1978036, 1978037, 1978038
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1978036, 1978037, 1978038
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1978039, 1978040, 1978041
SM 2120 B / E31780	True Color measured at 450 nm	1978033, 1978034, 1978035
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1978033, 1978034, 1978035
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1978033, 1978034, 1978035
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1978033, 1978034, 1978035
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1978033, 1978034, 1978035
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1978036, 1978037, 1978038

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	03/27/2018			03/27/2018 15:15	DeAsia Armster	1978033, 1978034, 1978035
EPA 300.0 Rev. 2.1	03/27/2018			03/30/2018 01:13	Lipi Saha	1978033
	03/27/2018			03/30/2018 01:24	Lipi Saha	1978034
	03/27/2018			03/30/2018 01:36	Lipi Saha	1978035
EPA 350.1 Rev. 2.0	03/27/2018			04/04/2018 12:25	Ping Hua	1978036
	03/27/2018			04/04/2018 12:30	Ping Hua	1978037
	03/27/2018			04/04/2018 12:39	Ping Hua	1978038
EPA 351.2 Rev. 2.0	03/27/2018	03/28/2018 10:40	Adrian Shelby	03/30/2018 10:26	Joseph Suarez	1978036
	03/27/2018	03/28/2018 10:40	Adrian Shelby	03/30/2018 10:28	Joseph Suarez	1978037
	03/27/2018	03/28/2018 10:40	Adrian Shelby	03/30/2018 10:33	Joseph Suarez	1978038
EPA 353.2 Rev. 2.0	03/27/2018			03/28/2018 12:24	Lauren Bottorf	1978036
	03/27/2018			03/28/2018 12:31	Lauren Bottorf	1978037
	03/27/2018			03/28/2018 12:32	Lauren Bottorf	1978038
EPA 365.1 Rev. 2.0	03/27/2018	03/30/2018 13:51	Sima Feizi	04/02/2018 09:33	Beverly Y. Sanders	1978036
	03/27/2018	03/30/2018 13:51	Sima Feizi	04/02/2018 13:12	Beverly Y. Sanders	1978037
	03/27/2018	03/30/2018 13:51	Sima Feizi	04/02/2018 13:13	Beverly Y. Sanders	1978038
EPA 365.1 Rev. 2.0 dissolved	03/27/2018			03/27/2018 15:45	Megan Treadwell	1978040, 1978041
	03/27/2018			03/27/2018 15:59	Megan Treadwell	1978039
SM 2120 B	03/27/2018			03/27/2018 15:42	Tanya Welborn	1978033
	03/27/2018			03/27/2018 15:44	Tanya Welborn	1978035
	03/27/2018			03/27/2018 16:04	Tanya Welborn	1978034
SM 2320 B-97	03/27/2018			04/05/2018 17:44	Dale L. Simmons	1978033
	03/27/2018			04/05/2018 17:54	Dale L. Simmons	1978034
	03/27/2018			04/05/2018 18:03	Dale L. Simmons	1978035
SM 2540 C-97	03/27/2018			03/28/2018 15:49	Yijie Li	1978033, 1978034, 1978035
SM 2540 D-97	03/27/2018			03/28/2018 15:49	Yijie Li	1978033, 1978034, 1978035
SM 4500 F-C-97	03/27/2018			04/17/2018 15:45	Dale L. Simmons	1978033
	03/27/2018			04/17/2018 15:49	Dale L. Simmons	1978034
	03/27/2018			04/17/2018 15:53	Dale L. Simmons	1978035
SM 5310 B-00	03/27/2018			04/05/2018 04:01	Julia Storbeck	1978036
	03/27/2018			04/05/2018 04:16	Julia Storbeck	1978037
	03/27/2018			04/05/2018 04:31	Julia Storbeck	1978038