Chemical Analysis Report

NE-DIST-2019-07-25-01

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

Event Description: **Lake LVI Stella, Asbury, Estella**
Request ID: **RQ-2019-07-22-09**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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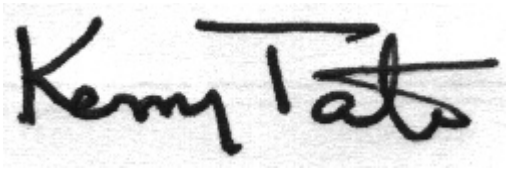
Date Certified: 08-AUG-2019 08:59



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 by the Florida Department of Health Environmental Laboratory Certification Program 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: NORTH LAKE ASBURY CENTER **Collection Date/Time: 07/24/2019 10:15**

Field ID: G2NE1199 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2105895	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P367923	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P368186	
		Sulfate	4.5		mg SO4/L	P368188	
	SM 2120 B	Color (true)	11		PCU	P368024	
	SM 2320 B-97	Total Alkalinity	35		mg CaCO3/L	P368234	
	SM 2540 C-97	TDS	78		mg/L	P368266	
	SM 2540 D-97	TSS	2	U	mg/L	P368110	
	SM 4500 F-C-97	Fluoride	0.047	I	mg F/L	P368237	
2105896	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P368488	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35		mg N/L	P368087	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P367989	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P367985	
	SM 5310 B-00	Organic Carbon	4.0		mg C/L	P368052	
2105897	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P367944	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of analytical difficulties.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367923

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368186

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368188

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368488

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368087

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367989

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367985

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367944

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

Reference Method: SM 2120 B
Batch ID: P368024

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P368234

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

Reference Method: SM 2540 C-97
Batch ID: P368266

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P368110

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P368237

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P368052

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: P368186

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368188

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368488

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368087

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367989

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367944

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

Reference Method: SM 2120 B
Batch ID: P368024

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

Reference Method: SM 2320 B-97
Batch ID: P368234

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P368237

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P368052

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105895	Chloride	97.9		P	90 - 110
2106021	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105895	Sulfate	100		P	90 - 110
2106021	Sulfate	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368488

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105797	Ammonia-N	109	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105868	Kjeldahl Nitrogen	103	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367989

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105816	NO2NO3-N	93.5	94.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105896	Total-P	101	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105949	O-Phosphate-P	96.0	96.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P368237

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105867	Fluoride	96.4	97.0	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P368052

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105686	Organic Carbon	98.9	97.8	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105998	Turbidity	2.56	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368186

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106021	Chloride	1.05	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106021	Sulfate	0.912	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105797	Ammonia-N	0.0502	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105868	Kjeldahl Nitrogen	2.25	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105816	NO2NO3-N	0.563	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105896	Total-P	3.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105949	O-Phosphate-P	0.623	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2120 B
Batch ID: P368024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106014	Color (true)	2.47	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P368234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105867	Total Alkalinity	0.337	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P368266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106018	TDS	5.34	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P368237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105867	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P368052

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105686	Organic Carbon	0.663	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 180.1 Rev. 2.0
Run ID: A93031
Included Lab Sample IDs: 2105895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A93035
Included Lab Sample IDs: 2105897

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.1	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A93050
Included Lab Sample IDs: 2105896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A93064
Included Lab Sample IDs: 2105895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	90 - 115

Reference Method: SM 5310 B-00
Run ID: A93079
Included Lab Sample IDs: 2105896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.6	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A93094
Included Lab Sample IDs: 2105896

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A93125
Included Lab Sample IDs: 2105896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.4	93.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A93147
Included Lab Sample IDs: 2105895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.7	97.6	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A93171
Included Lab Sample IDs: 2105895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A93171
Included Lab Sample IDs: 2105895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A93281
Included Lab Sample IDs: 2105896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	93.3	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					2.56	
EPA 300.0 Rev. 2.1	Chloride	96.8	104	97.9		1.05	
	Sulfate	100	98.4	100		0.912	
EPA 350.1 Rev. 2.0	Ammonia-N	104	109	109			0.0502
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	103	106			2.25
EPA 353.2 Rev. 2.0	NO2NO3-N	100	93.5	94.5			0.563
EPA 365.1 Rev. 2.0	Total-P	99.9	101	97.6			3.28
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.2	96.0	96.6			0.623
SM 2120 B	Color (true)	103				2.47	
SM 2320 B-97	Total Alkalinity	103				0.337	
SM 2540 C-97	TDS					5.34	
SM 4500 F-C-97	Fluoride	95.5	96.4	97.0			0.473
SM 5310 B-00	Organic Carbon	100	98.9	97.8			0.663

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2105895
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2105895
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2105895
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2105896
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2105896
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2105896
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2105896
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2105897
SM 2120 B / E31780	True Color measured at 450 nm	2105895
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2105895
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2105895
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2105895
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2105895
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2105896

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	07/25/2019			07/25/2019 15:23	Samantha Davila	2105895
EPA 300.0 Rev. 2.1	07/25/2019			07/30/2019 16:43	Jhamieka S. Greenwood	2105895
EPA 350.1 Rev. 2.0	07/25/2019			08/05/2019 16:46	Virginia P. Brown	2105896
EPA 351.2 Rev. 2.0	07/25/2019	07/29/2019 13:00	Adrian Shelby	07/30/2019 11:17	Joseph Suarez	2105896
EPA 353.2 Rev. 2.0	07/25/2019			07/26/2019 10:47	Beverly Y. Sanders	2105896
EPA 365.1 Rev. 2.0	07/25/2019	07/26/2019 11:58	Vijayalakshmi Reddy	07/29/2019 11:34	Lipi Saha	2105896
EPA 365.1 Rev. 2.0 dissolved	07/25/2019			07/25/2019 16:43	Jhamieka S. Greenwood	2105897
SM 2120 B	07/25/2019			07/25/2019 16:42	Madeline Funaro	2105895
SM 2320 B-97	07/25/2019			07/31/2019 02:43	Dale L. Simmons	2105895
SM 2540 C-97	07/25/2019			07/26/2019 16:00	Blanca Fach	2105895
SM 2540 D-97	07/25/2019			07/26/2019 16:00	Blanca Fach	2105895
SM 4500 F-C-97	07/25/2019			07/31/2019 02:43	Dale L. Simmons	2105895
SM 5310 B-00	07/25/2019			07/26/2019 21:14	Madeline Funaro	2105896