Chemical Analysis Report

NE-DIST-2016-08-11-02

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

Event Description: **Nassau East 2**
Request ID: **RQ-2016-08-08-14**
Customer: **NE-DIST**
Project ID: **SMP**

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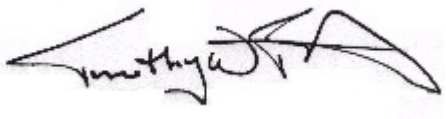
Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 29-AUG-2016 11:17



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: Thomas Creek 6 miles Below Prism **Collection Date/Time: 08/10/2016 10:27**

Field ID: G4NE0008 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1823284	EPA 180.1 Rev. 2.0	Turbidity	24		NTU	P309608	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P309761	
	SM 2540 D-97	TSS	67		mg/L	P310134	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P309762	
1823286	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P309746	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P309861	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P309920	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P309806	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P310262	
1823288	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P309603	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 08/22/2016.

Sample Location: Thomas Creek 6 miles Below Prism DUP **Collection Date/Time: 08/10/2016 10:37**

Field ID: G4NE0008 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1823285	EPA 180.1 Rev. 2.0	Turbidity	26		NTU	P309608	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P309761	
	SM 2540 D-97	TSS	68		mg/L	P310134	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P309762	
1823287	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P309746	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P309861	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P309920	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P309806	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P310264	
1823289	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.042		mg P/L	P309603	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 08/22/2016.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P309608

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P309746

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P309861

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309920

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309806

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309603

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

Reference Method: SM 2320 B-97
Batch ID: P309761

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

Reference Method: SM 2540 D-97
Batch ID: P310134

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P309762

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P310262

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P310264

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P309746

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P309861

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309920

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309806

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309603

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.8		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P309761

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P309762

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P310262

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.7		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P310264

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	104		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P309746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1823286	Ammonia-N	99.2	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P309861

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1823200	Kjeldahl Nitrogen	102	92.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1823286	NO2NO3-N	94.9	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309806

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1823384	Total-P	97.7	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309603

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1823195	O-Phosphate-P	96.3	95.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P309762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1823381	Fluoride	98.6	97.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P310262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1823238	Organic Carbon	99.2	103	P/P	85 - 115
1823238	Organic Carbon	99.4		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P310264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1823260	Organic Carbon	94.0	96.6	P/P	85 - 115

Quality Assurance Report
Precision

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P309608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1823235	Turbidity	5.13	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P309746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1823286	Ammonia-N	0.652	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P309861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1823200	Kjeldahl Nitrogen	6.83	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P309920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1823286	NO2NO3-N	0.513	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P309806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1823384	Total-P	2.90	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P309603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1823195	O-Phosphate-P	0.575	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P309761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1823381	Total Alkalinity	0.668	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P309762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1823381	Fluoride	0.940	Spike	P	0 - 3.0

Quality Assurance Report
Precision

Reference Method: SM 5310 B-00
Batch ID: P310262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1823238	Organic Carbon	0.0736	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P310264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1823260	Organic Carbon	2.41	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: A71083
Included Lab Sample IDs: 1823288, 1823289

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A71085
Included Lab Sample IDs: 1823284, 1823285

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A71129
Included Lab Sample IDs: 1823286, 1823287

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

Reference Method: SM 2320 B-97
Run ID: A71134
Included Lab Sample IDs: 1823284, 1823285

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.8	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A71134
Included Lab Sample IDs: 1823284, 1823285

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	98.0	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A71173
Included Lab Sample IDs: 1823286, 1823287

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.7	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A71195
Included Lab Sample IDs: 1823286, 1823287

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A71200
Included Lab Sample IDs: 1823286, 1823287

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.1	99.6	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A71302
Included Lab Sample IDs: 1823286, 1823287

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.3	100	P/P	90 - 110
Organic Carbon	99.9	91.8	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						5.13	
EPA 350.1 Rev. 2.0	Ammonia-N	95.6	99.2	99.9				0.652
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.9	102	92.1				6.83
EPA 353.2 Rev. 2.0	NO2NO3-N	103	94.9	95.4				0.513
EPA 365.1 Rev. 2.0	Total-P	95.7	97.7	101				2.90
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	96.3	95.7				0.575
SM 2320 B-97	Total Alkalinity	103					0.668	
SM 4500 F-C-97	Fluoride	96.1	98.6	97.3				0.940
SM 5310 B-00	Organic Carbon	99.7	99.2	99.4	103			0.0736
	Organic Carbon	104	94.0	96.6				2.41

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1823284, 1823285

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1823286, 1823287
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1823286, 1823287
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1823286, 1823287
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1823286, 1823287
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1823288, 1823289
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1823284, 1823285
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1823284, 1823285
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1823284, 1823285
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1823286, 1823287

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	08/11/2016			08/11/2016 16:15	Sima Feizi	1823284, 1823285
EPA 350.1 Rev. 2.0	08/11/2016			08/15/2016	Julie Michelle Frank	1823286, 1823287
EPA 351.2 Rev. 2.0	08/11/2016	08/17/2016	Sofia Elnemr	08/18/2016	Christopher Armour	1823286, 1823287
EPA 353.2 Rev. 2.0	08/11/2016			08/17/2016	Beverly Y. Sanders	1823286, 1823287
EPA 365.1 Rev. 2.0	08/11/2016	08/16/2016	Vijayalakshmi Reddy	08/17/2016	Lipi Saha	1823286, 1823287
EPA 365.1 Rev. 2.0 dissolved	08/11/2016			08/11/2016 15:28	Virginia P. Brown	1823288
	08/11/2016			08/11/2016 15:29	Virginia P. Brown	1823289
SM 2320 B-97	08/11/2016			08/15/2016	Dale L. Simmons	1823284, 1823285
SM 2540 D-97	08/11/2016			08/15/2016	Sima Feizi	1823284, 1823285
SM 4500 F-C-97	08/11/2016			08/15/2016	Dale L. Simmons	1823284, 1823285
SM 5310 B-00	08/11/2016			08/23/2016	Sofia Elnemr	1823286
	08/11/2016			08/24/2016	Sofia Elnemr	1823287