Chemical Analysis Report

NE-DIST-2020-03-11-01

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

Event Description: **Continuous Monitoring Event**
Request ID: **RQ-2020-02-10-28**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
Suite 100
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 31-MAR-2020 09:37

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: Unnamed Drain South Entrance **Collection Date/Time: 03/10/2020 11:05**

Field ID: G5NE0591 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2163912	EPA 180.1 Rev. 2.0	Turbidity	6.9		NTU	P380535	
	EPA 300.0 Rev. 2.1	Bromide	66		mg Br/L	P380677	
	SM 2320 B-2011	Total Alkalinity	116		mg CaCO3/L	P381064	
	SM 2540 D-2011	TSS	10		mg/L	P380984	
	SM 4500 F-C-2011	Fluoride	1.2		mg F/L	P381351	MS
2163913	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P380966	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24	I	mg N/L	P380632	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P381126	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P380798	
	SM 5310 B-2011	Organic Carbon	1.9	I	mg C/L	P380835	
2163914	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P380503	

Ref. Method and Comment:
SM 2540 D-2011: 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: P380535

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380677

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380966

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380632

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381126

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380798

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380503

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

Reference Method: SM 2320 B-2011
Batch ID: P381064

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

Reference Method: SM 2540 D-2011
Batch ID: P380984

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P381351

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P380835

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: P380677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380966

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380632

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381126

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: P380798

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380503

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

Reference Method: SM 2320 B-2011
Batch ID: P381064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P381351

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 104

Reference Method: SM 5310 B-2011
Batch ID: P380835

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: P380677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163647	Bromide	94.3	93.9	P/P	90 - 110
2163663	Bromide	94.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380966

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163734	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380632

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163741	Kjeldahl Nitrogen	98.8	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163734	NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163564	Total-P	99.8	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163735	O-Phosphate-P	97.7	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P381351

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2166025	Fluoride	102	105	P/F	91 - 105

Reference Method: SM 5310 B-2011
Batch ID: P380835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163409	Organic Carbon	98.2	96.7	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164373	Turbidity	7.45	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163647	Bromide	0.407	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380966

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163734	Ammonia-N	0.121	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163741	Kjeldahl Nitrogen	1.08	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163734	NO2NO3-N	0.990	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163564	Total-P	1.11	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163735	O-Phosphate-P	0.413	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P381064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2166025	Total Alkalinity	0.535	Sample	P	0 - 2.8

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P381351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2166025	Fluoride	1.92	Spike	P	0 - 2.0

Reference Method: SM 5310 B-2011
Batch ID: P380835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163409	Organic Carbon	1.41	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A98086
Included Lab Sample IDs: 2163912

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A98133
Included Lab Sample IDs: 2163914

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.3	96.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A98149
Included Lab Sample IDs: 2163912

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A98222
Included Lab Sample IDs: 2163913

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

Reference Method: SM 5310 B-2011
Run ID: A98257
Included Lab Sample IDs: 2163913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	95.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A98271
Included Lab Sample IDs: 2163913

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A98309
Included Lab Sample IDs: 2163913

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A98319
Included Lab Sample IDs: 2163913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.5	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-2011
Run ID: A98350
Included Lab Sample IDs: 2163912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A98463
Included Lab Sample IDs: 2163912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	101	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						7.45	
EPA 300.0 Rev. 2.1	Bromide	97.4	94.3	93.9	94.3			0.407
EPA 350.1 Rev. 2.0	Ammonia-N	99.3	101	101				0.121
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.6	98.8	100				1.08
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	100				0.990
EPA 365.1 Rev. 2.0	Total-P	105	99.8	97.6				1.11
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.6	97.7	98.5				0.413
SM 2320 B-2011	Total Alkalinity	102					0.535	
SM 4500 F-C-2011	Fluoride	96.7	102	105				1.92
SM 5310 B-2011	Organic Carbon	100	98.2	96.7				1.41

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2163912
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2163912
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2163913
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2163913
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2163913
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2163913
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2163914
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2163912
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2163912
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2163912
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2163913

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	03/11/2020			03/11/2020 19:16	Yen Ta	2163912
EPA 300.0 Rev. 2.1	03/11/2020			03/13/2020 21:47	Lipi Saha	2163912
EPA 350.1 Rev. 2.0	03/11/2020			03/19/2020 11:21	Ping Hua	2163913
EPA 351.2 Rev. 2.0	03/11/2020	03/13/2020 12:30	Sima Feizi	03/16/2020 15:51	Julia Storbeck	2163913
EPA 353.2 Rev. 2.0	03/11/2020			03/18/2020 09:43	Beverly Y. Sanders	2163913
EPA 365.1 Rev. 2.0	03/11/2020	03/17/2020 13:34	Yen Ta	03/19/2020 16:36	Benjamin T. Nordmann	2163913
EPA 365.1 Rev. 2.0 dissolved	03/11/2020			03/11/2020 15:30	Carlos Miranda	2163914
SM 2320 B-2011	03/11/2020			03/20/2020 15:37	Dale L. Simmons	2163912
SM 2540 D-2011	03/11/2020			03/13/2020 15:32	Yijie Li	2163912
SM 4500 F-C-2011	03/11/2020			03/25/2020 14:56	Dale L. Simmons	2163912
SM 5310 B-2011	03/11/2020			03/17/2020 15:10	Lauren Lees	2163913