

Chemical Analysis Report

SO-DIST-2019-01-22-02

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

Event Description: **2019 SMP : Coral**
Request ID: **RQ-2019-01-14-37**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Nicole Reistad

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 11-FEB-2019 10:34

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

NON-CONFORMANCE REPORT INCLUDED

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: Coral Creek (East)

Collection Date/Time: 01/17/2019 11:50

Field ID: G2SD0039

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2055859	EPA 350.1 Rev. 2.0	Ammonia-N	0.023	Y	mg N/L	P358014	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67	Y	mg N/L	P357814	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012	Y	mg N/L	P357760	
	EPA 365.1 Rev. 2.0	Total-P	0.034	Y	mg P/L	P357722	
	SM 5310 B-00	Organic Carbon	7.9	Y	mg C/L	P357748	
2055860	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	IYQ	mg P/L	P357730	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 351.2 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 353.2 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 365.1 Rev. 2.0: Total-P: Sample temperature was outside the acceptable range when received at the laboratory.

SM 5310 B-00: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory.

Non-Conformance Report

NCR ID: 7448

Event(s)

SO-DIST-2019-01-22-02

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived one or more days late by FedEx, samples received outside of the acceptable temperature range.

Resolution: Customer Gary Snorey was contacted, email correspondence attached to sample submittal forms. Data will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 1/31/2019

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358014

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357814

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357760

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357722

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357730

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

Reference Method: SM 5310 B-00
Batch ID: P357748

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: P358014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357814

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: P357760

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357722

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: P357730

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

Reference Method: SM 5310 B-00
Batch ID: P357748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358014

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2056076	Ammonia-N	100	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357814

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055859	Kjeldahl Nitrogen	104	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357760

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055859	NO2NO3-N	99.3	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357722

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055859	Total-P	98.1	91.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357730

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055860	O-Phosphate-P	94.7	95.1	P/P	90 - 110

Reference Method: SM 5310 B-00
Batch ID: P357748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055498	Organic Carbon	97.6	97.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P358014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056076	Ammonia-N	1.82	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P357814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055859	Kjeldahl Nitrogen	1.52	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P357760

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055859	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P357722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055859	Total-P	6.52	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P357730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055860	O-Phosphate-P	0.391	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P357748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055498	Organic Carbon	0.285	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: A88975

Included Lab Sample IDs: 2055860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A88983

Included Lab Sample IDs: 2055859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88992

Included Lab Sample IDs: 2055859

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89035

Included Lab Sample IDs: 2055859

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89054

Included Lab Sample IDs: 2055859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.0	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89078

Included Lab Sample IDs: 2055859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	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 350.1 Rev. 2.0	Ammonia-N	94.9	100	103			1.82
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	104	106			1.52
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.5	99.3	98.8			0.475
EPA 365.1 Rev. 2.0	Total-P	101	98.1	91.7			6.52
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	94.7	95.1			0.391
SM 5310 B-00	Organic Carbon	99.8	97.6	97.2			0.285

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2055859
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2055859
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2055859
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2055859
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2055860
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2055859

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	01/22/2019			01/29/2019 12:48	Ping Hua	2055859
EPA 351.2 Rev. 2.0	01/22/2019	01/24/2019 12:00	Adrian Shelby	01/28/2019 11:34	Joseph Suarez	2055859
EPA 353.2 Rev. 2.0	01/22/2019			01/24/2019 10:27	Beverly Y. Sanders	2055859
EPA 365.1 Rev. 2.0	01/22/2019	01/23/2019 11:50	Sima Feizi	01/25/2019 17:40	Rosalyn Ballman	2055859
EPA 365.1 Rev. 2.0 dissolved	01/22/2019			01/23/2019 16:09	Jhamieka S. Greenwood	2055860
SM 5310 B-00	01/22/2019			01/23/2019 19:01	Megan Treadwell	2055859