

Chemical Analysis Report

SE-DIST-2019-03-05-01

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

Event Description: **SMP-North Miami**

Request ID: **RQ-2019-02-04-73**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Matthew Sewell

For additional information please contact

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Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
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Certified by: Colin Wright, Program Administrator

Date Certified: 21-MAR-2019 10:54



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: C-8 BISCAYNE CANAL (BS-04 MIAMI-DADE)

Collection Date/Time: 03/04/2019 11:40

Field ID: G4SEBS04

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2067037	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P359925	
	EPA 300.0 Rev. 2.1	Chloride	71		mg Cl/L	P360555	
		Sulfate	15		mg SO4/L	P360559	
	SM 2120 B	Color (true)	26	A	PCU	P359900	
	SM 2320 B-97	Total Alkalinity	196	A	mg CaCO3/L	P360182	
	SM 2540 C-97	TDS	359	A	mg/L	P360370	
	SM 2540 D-97	TSS	2	UA	mg/L	P360261	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P360185	
2067038	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P360169	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P360068	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P360333	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P359993	
	SM 5310 B-00	Organic Carbon	8.9		mg C/L	P360399	
2067039	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P359950	

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: ARCH CREEK @ ENCHANTED FOREST

Collection Date/Time: 03/04/2019 12:10

Field ID: G4SE0120

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2067034	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P359925	
	EPA 300.0	Bromide	6.0		mg Br/L	P360482	
	SM 2320 B-97	Total Alkalinity	190		mg CaCO3/L	P360182	
	SM 2540 D-97	TSS	2	I	mg/L	P360265	
	SM 4500 F-C-97	Fluoride	0.36		mg F/L	P360185	
2067035	EPA 350.1 Rev. 2.0	Ammonia-N	0.64		mg N/L	P360168	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P360068	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P360317	
	EPA 365.1 Rev. 2.0	Total-P	0.063		mg P/L	P360075	
	SM 5310 B-00	Organic Carbon	5.3	Y	mg C/L	P360399	
2067036	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.037		mg P/L	P359955	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 5310 B-00: Sample was left out at room temperature overnight, should be stored at less than 6 degC.

Non-Conformance Report

NCR ID: 7537

Event(s)

SE-DIST-2019-03-05-01

Job(s)

TLH-2019-03-05-27

Sample(s)

2067035

Test(s)

NCR Type: CUSTODY

NCR Category: General

Observation: Sample not stored in the refrigerator the night of 03/11/2019.

Resolution: Sample returned to refrigerator the morning of 03/12/2019. All analyses requiring refrigeration that were prepared or, if preparation is not required, analyzed on or after 03/12/2019 are Y qualified for incorrect preservation.

Authorized by/Date: Colin Wright 3/21/2019

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 180.1 Rev. 2.0
Batch ID: P359925

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P360482

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360555

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360559

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360168

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360169

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360068

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360317

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360333

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: P359993

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360075

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359950

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359955

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

Reference Method: SM 2120 B
Batch ID: P359900

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P360182

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

Reference Method: SM 2540 C-97
Batch ID: P360370

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P360261

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P360265

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P360185

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P360399

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P360482

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360555

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360559

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360168

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360169

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360068

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360317

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360333

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359993

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360075

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359955

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.6		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P359900

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P360182

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P360185

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.6		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P360482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067489	Bromide	97.9	99.1	P/P	90 - 110
2067490	Bromide	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066998	Chloride	102		P	90 - 110
2067091	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066998	Sulfate	103		P	90 - 110
2067091	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066505	Ammonia-N	98.9	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067094	Ammonia-N	97.9	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067059	Kjeldahl Nitrogen	114	108	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360317

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067035	NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067038	NO2NO3-N	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067038	Total-P	98.5	93.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360075

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067354	Total-P	93.3	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067099	O-Phosphate-P	99.9	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067036	O-Phosphate-P	100	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P360185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067037	Fluoride	97.1	94.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064227	Organic Carbon	100	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066998	Turbidity	2.80	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P360482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067489	Bromide	0.902	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066998	Chloride	0.351	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066998	Sulfate	0.394	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066505	Ammonia-N	2.02	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067094	Ammonia-N	1.29	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067059	Kjeldahl Nitrogen	3.33	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067035	NO2NO3-N	0.262	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067038	NO2NO3-N	0.248	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067038	Total-P	4.68	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360075

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067354	Total-P	2.53	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067099	O-Phosphate-P	0.798	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067036	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P359900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067037	Color (true)	0.374	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P360182

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067037	Total Alkalinity	0.543	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P360370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067037	TDS	2.79	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P360185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067037	Fluoride	1.46	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P360399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064227	Organic Carbon	1.15	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: SM 2120 B

Run ID: A89803

Included Lab Sample IDs: 2067037

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89808

Included Lab Sample IDs: 2067034, 2067037

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89819

Included Lab Sample IDs: 2067036, 2067039

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.3	P/P	90 - 110
O-Phosphate-P	98.3	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89910

Included Lab Sample IDs: 2067035, 2067038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	99.6	P/P	90 - 110
Ammonia-N	99.9	99.1	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A89915

Included Lab Sample IDs: 2067034, 2067037

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89915

Included Lab Sample IDs: 2067034, 2067037

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89944

Included Lab Sample IDs: 2067035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89945

Included Lab Sample IDs: 2067035, 2067038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89946

Included Lab Sample IDs: 2067038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89976

Included Lab Sample IDs: 2067035, 2067038

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

Reference Method: SM 5310 B-00

Run ID: A89997

Included Lab Sample IDs: 2067035, 2067038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.4	93.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89999

Included Lab Sample IDs: 2067037

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Sulfate	103	103	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A90025

Included Lab Sample IDs: 2067034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	106	103	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					2.80	
EPA 300.0	Bromide	103	97.9	99.1	99.1		0.902
EPA 300.0 Rev. 2.1	Chloride	102	102	102		0.351	
	Sulfate	103	103	102		0.394	
EPA 350.1 Rev. 2.0	Ammonia-N	99.3	98.9	102			2.02
	Ammonia-N	98.5	97.9	99.8			1.29
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	114	108			3.33
EPA 353.2 Rev. 2.0	NO2NO3-N	96.5	98.5	98.0			0.262
	NO2NO3-N	98.0	97.0				0.248
EPA 365.1 Rev. 2.0	Total-P	103	98.5	93.9			4.68
	Total-P	98.2	93.3	95.8			2.53
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	99.9	101			0.798
	O-Phosphate-P	98.6	100	100			0.0
SM 2120 B	Color (true)	100				0.374	
SM 2320 B-97	Total Alkalinity	102				0.543	
SM 2540 C-97	TDS					2.79	
SM 4500 F-C-97	Fluoride	95.6	97.1	94.8			1.46
SM 5310 B-00	Organic Carbon	93.0	100	102			1.15

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2067034, 2067037
EPA 300.0 / E31780	Bromide in aqueous matrices	2067034
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2067037
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2067037
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2067035, 2067038
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2067035, 2067038
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2067035, 2067038
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2067035, 2067038
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2067036, 2067039
SM 2120 B / E31780	True Color measured at 450 nm	2067037
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2067034, 2067037
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2067037
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2067034, 2067037
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2067034, 2067037
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2067035, 2067038

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	03/05/2019			03/05/2019 17:28	Adrian Shelby	2067034, 2067037
EPA 300.0	03/05/2019			03/14/2019 13:35	Lipi Saha	2067034
EPA 300.0 Rev. 2.1	03/05/2019			03/15/2019 12:39	Lipi Saha	2067037
EPA 350.1 Rev. 2.0	03/05/2019			03/08/2019 12:32	Ping Hua	2067038
	03/05/2019			03/08/2019 14:04	Ping Hua	2067035
EPA 351.2 Rev. 2.0	03/05/2019	03/11/2019 13:00	Adrian Shelby	03/12/2019 09:42	Joseph Suarez	2067035
	03/05/2019	03/11/2019 13:00	Adrian Shelby	03/12/2019 09:43	Joseph Suarez	2067038
EPA 353.2 Rev. 2.0	03/05/2019			03/11/2019 08:45	Beverly Y. Sanders	2067035
	03/05/2019			03/12/2019 10:27	Beverly Y. Sanders	2067038
EPA 365.1 Rev. 2.0	03/05/2019	03/06/2019 14:00	Sima Feizi	03/12/2019 18:20	Rosalyn Ballman	2067038
	03/05/2019	03/06/2019 14:00	Sima Feizi	03/12/2019 18:50	Rosalyn Ballman	2067035
EPA 365.1 Rev. 2.0 dissolved	03/05/2019			03/05/2019 17:44	Jhamieka S. Greenwood	2067036
	03/05/2019			03/05/2019 17:58	Jhamieka S. Greenwood	2067039
SM 2120 B	03/05/2019			03/05/2019 15:21	Chelsea Hernandez	2067037
SM 2320 B-97	03/05/2019			03/09/2019 06:22	Lauren Lees	2067037
	03/05/2019			03/09/2019 11:03	Lauren Lees	2067034
SM 2540 C-97	03/05/2019			03/08/2019 15:41	Yijie Li	2067037
SM 2540 D-97	03/05/2019			03/08/2019 15:41	Yijie Li	2067034, 2067037
SM 4500 F-C-97	03/05/2019			03/09/2019 06:11	Lauren Lees	2067037
	03/05/2019			03/09/2019 11:03	Lauren Lees	2067034
SM 5310 B-00	03/05/2019			03/13/2019 08:10	Chelsea Hernandez	2067035
	03/05/2019			03/13/2019 08:26	Chelsea Hernandez	2067038