

Chemical Analysis Report

SO-DIST-2018-07-26-01

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

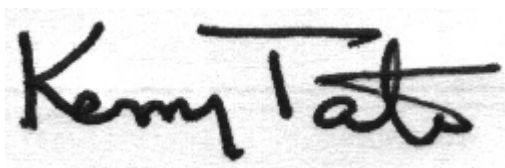
Event Description: **Highlands Streams**
Request ID: **RQ-2018-07-09-32**
Customer: **SO-DIST**
Project ID: **SMP**

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: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 14-AUG-2018 11:58

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Josephine Creek EofCR17

Collection Date/Time: 07/25/2018 10:15

Field ID: G4SD0104

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2011058	EPA 180.1 Rev. 2.0	Turbidity	2.3	A	NTU	P349235	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P349411	
		Sulfate	24		mg SO4/L	P349413	
	SM 2120 B	Color (true)	18		PCU	P349231	
	SM 2320 B-97	Total Alkalinity	16		mg CaCO3/L	P349482	
	SM 2540 C-97	TDS	103		mg/L	P349478	
	SM 2540 D-97	TSS	5	I	mg/L	P349434	
	SM 4500 F-C-97	Fluoride	0.055	I	mg F/L	P349486	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P349525	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P349391	
2011060	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P349408	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P349483	
	SM 5310 B-00	Organic Carbon	8.4		mg C/L	P349649	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P349239	
	dissolved						

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: Grassy Creek @ CR 621 E

Collection Date/Time: 07/25/2018 11:00

Field ID: G4SD0165

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2011059	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P349235	
	EPA 300.0 Rev. 2.1	Chloride	13	A	mg Cl/L	P349591	
		Sulfate	14	A	mg SO4/L	P349594	
	SM 2120 B	Color (true)	210		PCU	P349231	
	SM 2320 B-97	Total Alkalinity	7.5		mg CaCO3/L	P349482	
	SM 2540 C-97	TDS	97		mg/L	P349478	
	SM 2540 D-97	TSS	6	I	mg/L	P349434	
	SM 4500 F-C-97	Fluoride	0.057	I	mg F/L	P349486	
2011061	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P349525	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P349391	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P349408	
	EPA 365.1 Rev. 2.0	Total-P	0.065		mg P/L	P349483	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P349649	
2011063	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.027		mg P/L	P349240	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-97: 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: P349235

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349411

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349413

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349591

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349594

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349525

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349391

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349408

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349483

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349239

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349240

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

Reference Method: SM 2120 B
Batch ID: P349231

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P349482

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

Reference Method: SM 2540 C-97
Batch ID: P349478

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P349434

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P349486

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P349649

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: P349411

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349413

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349591

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349594

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349525

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: P349391

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349408

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: P349483

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349239

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.5		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349240

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

Reference Method: SM 2120 B
Batch ID: P349231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.4		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P349482

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P349486

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

Reference Method: SM 5310 B-00
Batch ID: P349649

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010616	Chloride	109		P	90 - 110
2010787	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010616	Sulfate	108		P	90 - 110
2010787	Sulfate	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349591

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011059	Chloride	98.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349594

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011059	Sulfate	96.6		P	90 - 110
2011141	Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349525

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011026	Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010996	Kjeldahl Nitrogen	90.3	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011060	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011060	Total-P	95.1	93.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349239

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2010938	O-Phosphate-P	96.3	96.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011072	O-Phosphate-P	96.5	97.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P349486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011483	Fluoride	96.8	95.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P349649

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011060	Organic Carbon	100	98.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P349235

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011058	Turbidity	6.03	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010616	Chloride	0.338	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010616	Sulfate	0.344	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011059	Chloride	1.90	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P349594

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011059	Sulfate	2.43	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P349525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011026	Ammonia-N	1.63	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010996	Kjeldahl Nitrogen	6.79	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011060	NO2NO3-N	0.464	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011060	Total-P	2.19	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010938	O-Phosphate-P	0.0848	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011072	O-Phosphate-P	0.504	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P349231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010989	Color (true)	0.591	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P349482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011483	Total Alkalinity	0.273	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P349478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2010992	TDS	3.06	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P349486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011483	Fluoride	0.959	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P349649

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011060	Organic Carbon	1.45	Spike	P	0 - 20

Quality Assurance Report

Precision

* 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: A85507

Included Lab Sample IDs: 2011058, 2011059

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	90 - 115
Color (true)	102	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A85508

Included Lab Sample IDs: 2011058, 2011059

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	104	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A85510

Included Lab Sample IDs: 2011062, 2011063

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.8	96.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A85559

Included Lab Sample IDs: 2011060, 2011061

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A85560

Included Lab Sample IDs: 2011058, 2011059

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	106	103	P/P	90 - 110
Chloride	97.1	99.5	P/P	90 - 110
Sulfate	108	103	P/P	90 - 110
Sulfate	97.6	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A85594

Included Lab Sample IDs: 2011060, 2011061

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	91.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A85607

Included Lab Sample IDs: 2011058, 2011059

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A85607

Included Lab Sample IDs: 2011058, 2011059

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A85621

Included Lab Sample IDs: 2011060, 2011061

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A85630

Included Lab Sample IDs: 2011061

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	94.4	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A85636

Included Lab Sample IDs: 2011060

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

Reference Method: SM 5310 B-00

Run ID: A85693

Included Lab Sample IDs: 2011060, 2011061

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.3	99.5	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					6.03	
EPA 300.0 Rev. 2.1	Chloride	105	109	103		0.338	
	Chloride	105	98.6			1.90	
	Sulfate	105	108	101		0.344	
	Sulfate	105	96.6	98.3		2.43	
EPA 350.1 Rev. 2.0	Ammonia-N	104	102	100			1.63
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	90.3	101			6.79
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	102			0.464
EPA 365.1 Rev. 2.0	Total-P	98.1	95.1	93.0			2.19
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5	96.3	96.2			0.0848
	O-Phosphate-P	98.2	96.5	97.3			0.504
SM 2120 B	Color (true)	98.4				0.591	
SM 2320 B-97	Total Alkalinity	103				0.273	
SM 2540 C-97	TDS					3.06	
SM 4500 F-C-97	Fluoride	94.8	96.8	95.4			0.959
SM 5310 B-00	Organic Carbon	97.6	100	98.1			1.45

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2011058, 2011059
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2011058, 2011059
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2011058, 2011059
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2011060, 2011061
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2011060, 2011061
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2011060, 2011061
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2011060, 2011061
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2011062, 2011063
SM 2120 B / E31780	True Color measured at 450 nm	2011058, 2011059
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2011058, 2011059
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2011058, 2011059
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2011058, 2011059
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2011058, 2011059
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2011060, 2011061

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	07/26/2018			07/26/2018 16:36	Blanca Fach	2011058, 2011059
EPA 300.0 Rev. 2.1	07/26/2018			07/31/2018 00:21	Lipi Saha	2011058
	07/26/2018			08/02/2018 11:43	Lipi Saha	2011059
EPA 350.1 Rev. 2.0	07/26/2018			08/01/2018 13:27	Ping Hua	2011060
	07/26/2018			08/01/2018 13:29	Ping Hua	2011061
EPA 351.2 Rev. 2.0	07/26/2018	07/30/2018 15:30	Adrian Shelby	07/31/2018 16:52	Joseph Suarez	2011060
	07/26/2018	07/30/2018 15:30	Adrian Shelby	07/31/2018 16:53	Joseph Suarez	2011061
EPA 353.2 Rev. 2.0	07/26/2018			07/30/2018 14:16	Lauren Bottorf	2011060
	07/26/2018			07/30/2018 14:22	Lauren Bottorf	2011061
EPA 365.1 Rev. 2.0	07/26/2018	08/01/2018 12:35	Sima Feizi	08/02/2018 08:48	Beverly Y. Sanders	2011061
	07/26/2018	08/01/2018 12:35	Sima Feizi	08/02/2018 11:36	Beverly Y. Sanders	2011060
EPA 365.1 Rev. 2.0 dissolved	07/26/2018			07/26/2018 17:31	Julia Storbeck	2011062
	07/26/2018			07/26/2018 17:32	Julia Storbeck	2011063
SM 2120 B	07/26/2018			07/26/2018 15:57	Tanya Welborn	2011058
	07/26/2018			07/26/2018 16:16	Tanya Welborn	2011059
SM 2320 B-97	07/26/2018			07/31/2018 22:23	Dale L. Simmons	2011058
	07/26/2018			07/31/2018 22:34	Dale L. Simmons	2011059
SM 2540 C-97	07/26/2018			07/27/2018 14:45	William L. Brown IV	2011058, 2011059
SM 2540 D-97	07/26/2018			07/27/2018 14:57	William L. Brown IV	2011058, 2011059
SM 4500 F-C-97	07/26/2018			07/31/2018 22:23	Dale L. Simmons	2011058
	07/26/2018			07/31/2018 22:34	Dale L. Simmons	2011059
SM 5310 B-00	07/26/2018			08/02/2018 14:14	Megan Treadwell	2011060
	07/26/2018			08/02/2018 15:11	Megan Treadwell	2011061