

Chemical Analysis Report

SE-DIST-2019-10-24-01

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

Event Description: **SMP-Kevin Run**
Request ID: **RQ-2019-10-21-19**
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
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: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 08-NOV-2019 10:02



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: Popash Slough @ 67th Dr.

Collection Date/Time: 10/23/2019 10:00

Field ID: G1SE0027

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131048	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P373095	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P373761	
		Sulfate	37		mg SO4/L	P373765	
	SM 2120 B	Color (true)	520		PCU	P373108	
	SM 2320 B-97	Total Alkalinity	53		mg CaCO3/L	P373310	
	SM 2540 C-97	TDS	434		mg/L	P373611	
	SM 2540 D-97	TSS	2	U	mg/L	P373221	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P373313	
2131049	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P373455	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P373354	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P373197	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P373252	
	SM 5310 B-00	Organic Carbon	37		mg C/L	P373403	
2131050	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.056		mg P/L	P373089	

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: Taylor Creek @ 441

Collection Date/Time: 10/23/2019 10:40

Field ID: G1SE0001

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131051	EPA 180.1 Rev. 2.0	Turbidity	2.3	A	NTU	P373096	
	EPA 300.0 Rev. 2.1	Chloride	78		mg Cl/L	P373761	
		Sulfate	72		mg SO4/L	P373765	
	SM 2120 B	Color (true)	75		PCU	P373109	
	SM 2320 B-97	Total Alkalinity	95	A	mg CaCO3/L	P373310	
	SM 2540 C-97	TDS	394		mg/L	P373611	
	SM 2540 D-97	TSS	2	I	mg/L	P373221	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P373313	
2131055	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P373455	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P373354	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P373197	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P373253	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P373403	
2131059	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.082		mg P/L	P373089	

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: Taylor Creek @ 39th St.

Collection Date/Time: 10/23/2019 10:50

Field ID: G1SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131052	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P373096	
	EPA 300.0 Rev. 2.1	Chloride	73		mg Cl/L	P373761	
		Sulfate	77		mg SO4/L	P373765	
	SM 2120 B	Color (true)	75		PCU	P373109	
	SM 2320 B-97	Total Alkalinity	87		mg CaCO3/L	P373310	
	SM 2540 C-97	TDS	380		mg/L	P373611	
	SM 2540 D-97	TSS	2	I	mg/L	P373221	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P373313	
2131056	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P373455	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P373354	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.017		mg N/L	P373198	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P373253	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P373403	
2131060	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.086		mg P/L	P373089	

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: Taylor Creek @ 98

Collection Date/Time: 10/23/2019 11:40

Field ID: G1SE0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131053	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P373096	
	EPA 300.0 Rev. 2.1	Chloride	69		mg Cl/L	P373761	
		Sulfate	34		mg SO4/L	P373765	
	SM 2120 B	Color (true)	110		PCU	P373109	
	SM 2320 B-97	Total Alkalinity	168		mg CaCO3/L	P373310	
	SM 2540 C-97	TDS	403		mg/L	P373611	
	SM 2540 D-97	TSS	11		mg/L	P373221	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P373313	
2131057	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P373455	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P373354	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P373198	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P373253	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P373403	
2131061	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.092		mg P/L	P373089	

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: L-63 Canal @ SE 86th Blvd

Collection Date/Time: 10/23/2019 12:15

Field ID: G1SE0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131054	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P373096	
	EPA 300.0 Rev. 2.1	Chloride	95		mg Cl/L	P373761	
		Sulfate	24		mg SO4/L	P373765	
	SM 2120 B	Color (true)	250		PCU	P373109	
	SM 2320 B-97	Total Alkalinity	72		mg CaCO3/L	P373310	
	SM 2540 C-97	TDS	342	A	mg/L	P373611	
	SM 2540 D-97	TSS	3	IA	mg/L	P373221	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P373313	
2131058	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P373455	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P373354	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.044		mg N/L	P373198	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P373253	
	SM 5310 B-00	Organic Carbon	32		mg C/L	P373403	
2131062	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P373089	

Ref. Method and Comment:

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: P373095

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373096

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373761

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373765

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373455

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373354

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373197

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373198

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373252

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
Batch ID: P373253

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373089

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

Reference Method: SM 2120 B
Batch ID: P373108

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P373109

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P373310

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P373611

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P373221

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P373313

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P373403

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: P373761

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373765

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373455

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373354

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373197

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373198

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: P373252

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373253

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373089

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P373108

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	96.9		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P373109

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

Reference Method: SM 2320 B-97
Batch ID: P373310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P373313

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

Reference Method: SM 5310 B-00
Batch ID: P373403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373761

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131020	Chloride	99.1		P	90 - 110
2131094	Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131020	Sulfate	98.3		P	90 - 110
2131094	Sulfate	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131112	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131024	Kjeldahl Nitrogen	95.1	98.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373197

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2130996	NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373198

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131056	NO2NO3-N	98.6	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131024	Total-P	94.4	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131081	Total-P	101	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373089

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131016	O-Phosphate-P	95.8	96.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P373313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131051	Fluoride	96.5	96.5	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P373403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131044	Organic Carbon	102	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373095

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131022	Turbidity	7.50	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131051	Turbidity	9.94	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131020	Chloride	0.669	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131020	Sulfate	0.748	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131112	Ammonia-N	0.803	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131024	Kjeldahl Nitrogen	3.06	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373197

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2130996	NO2NO3-N	0.197	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373198

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131056	NO2NO3-N	0.468	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131024	Total-P	6.96	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131081	Total-P	1.77	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131016	O-Phosphate-P	0.871	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P373108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131038	Color (true)	3.65	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P373109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131111	Color (true)	2.69	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P373310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131051	Total Alkalinity	0.347	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P373611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131054	TDS	1.46	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P373313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131051	Fluoride	0.0	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P373403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131044	Organic Carbon	0.0377	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95219

Included Lab Sample IDs: 2131050, 2131059, 2131060, 2131061, 2131062

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.2	99.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95225

Included Lab Sample IDs: 2131048, 2131051, 2131052, 2131053, 2131054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105
Turbidity	99.0	98.5	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A95231

Included Lab Sample IDs: 2131048, 2131051, 2131052, 2131053, 2131054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.3	P/P	90 - 115
Color (true)	98.2	101	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95272

Included Lab Sample IDs: 2131049, 2131055, 2131056, 2131057, 2131058

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95299

Included Lab Sample IDs: 2131049, 2131055, 2131056, 2131057, 2131058

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

Reference Method: SM 2320 B-97

Run ID: A95300

Included Lab Sample IDs: 2131048, 2131051, 2131052, 2131053, 2131054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A95300

Included Lab Sample IDs: 2131048, 2131051, 2131052, 2131053, 2131054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	98.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A95339

Included Lab Sample IDs: 2131049, 2131055, 2131056, 2131057, 2131058

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	106	P/P	90 - 110
Organic Carbon	106	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95359

Included Lab Sample IDs: 2131049, 2131055, 2131056, 2131057, 2131058

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95437

Included Lab Sample IDs: 2131049, 2131055, 2131056, 2131057, 2131058

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	97.6	P/P	90 - 110
Kjeldahl Nitrogen	97.6	95.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A95511

Included Lab Sample IDs: 2131048, 2131051, 2131052, 2131053, 2131054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	101	102	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	MS
EPA 180.1 Rev. 2.0	Turbidity				7.50	
	Turbidity				9.94	
EPA 300.0 Rev. 2.1	Chloride	99.1	99.1	98.3	0.669	
	Sulfate	99.1	98.3	98.7	0.748	
EPA 350.1 Rev. 2.0	Ammonia-N	100	99.8	101		0.803
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.1	95.1	98.3		3.06
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	98.0			0.197
	NO2NO3-N	98.5	98.6	98.2		0.468
EPA 365.1 Rev. 2.0	Total-P	101	94.4	102		6.96
	Total-P	99.7	101	99.6		1.77
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	95.8	96.9		0.871
SM 2120 B	Color (true)	96.9			3.65	
	Color (true)	98.4			2.69	
SM 2320 B-97	Total Alkalinity	104			0.347	
SM 2540 C-97	TDS				1.46	
SM 4500 F-C-97	Fluoride	96.1	96.5	96.5		0.0
SM 5310 B-00	Organic Carbon	103	102	102		0.0377

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2131048, 2131051, 2131052, 2131053, 2131054
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2131048, 2131051, 2131052, 2131053, 2131054
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2131048, 2131051, 2131052, 2131053, 2131054
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2131049, 2131055, 2131056, 2131057, 2131058
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2131049, 2131055, 2131056, 2131057, 2131058
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2131049, 2131055, 2131056, 2131057, 2131058
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2131049, 2131055, 2131056, 2131057, 2131058
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2131050, 2131059, 2131060, 2131061, 2131062
SM 2120 B / E31780	True Color measured at 450 nm	2131048, 2131051, 2131052, 2131053, 2131054
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2131048, 2131051, 2131052, 2131053, 2131054
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2131048, 2131051, 2131052, 2131053, 2131054
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2131048, 2131051, 2131052, 2131053, 2131054
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2131048, 2131051, 2131052, 2131053, 2131054
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2131049, 2131055, 2131056, 2131057, 2131058

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	10/24/2019			10/24/2019 15:01	Rosalyn Ballman	2131048, 2131051, 2131052, 2131053, 2131054
EPA 300.0 Rev. 2.1	10/24/2019			11/04/2019 22:33	Jhamieka S. Greenwood	2131048
	10/24/2019			11/04/2019 22:45	Jhamieka S. Greenwood	2131051
	10/24/2019			11/04/2019 22:57	Jhamieka S. Greenwood	2131052
	10/24/2019			11/04/2019 23:09	Jhamieka S. Greenwood	2131053
EPA 350.1 Rev. 2.0	10/24/2019			11/04/2019 23:21	Jhamieka S. Greenwood	2131054
	10/24/2019			10/29/2019 12:16	Ping Hua	2131049
	10/24/2019			10/29/2019 12:17	Ping Hua	2131055
	10/24/2019			10/29/2019 12:19	Ping Hua	2131056
	10/24/2019			10/29/2019 12:20	Ping Hua	2131057
EPA 351.2 Rev. 2.0	10/24/2019			10/29/2019 12:22	Ping Hua	2131058
	10/24/2019	10/29/2019 13:05	Sima Feizi	11/01/2019 18:31	Jhamieka S. Greenwood	2131049
	10/24/2019	10/29/2019 13:05	Sima Feizi	11/01/2019 18:32	Jhamieka S. Greenwood	2131055
	10/24/2019	10/29/2019 13:05	Sima Feizi	11/01/2019 18:34	Jhamieka S. Greenwood	2131056
	10/24/2019	10/29/2019 13:05	Sima Feizi	11/01/2019 18:38	Jhamieka S. Greenwood	2131057
EPA 353.2 Rev. 2.0	10/24/2019	10/29/2019 13:05	Sima Feizi	11/01/2019 18:40	Jhamieka S. Greenwood	2131058
	10/24/2019			10/28/2019 09:41	Beverly Y. Sanders	2131049
	10/24/2019			10/28/2019 09:42	Beverly Y. Sanders	2131055
	10/24/2019			10/28/2019 09:49	Beverly Y. Sanders	2131056
	10/24/2019			10/28/2019 09:55	Beverly Y. Sanders	2131057
EPA 365.1 Rev. 2.0	10/24/2019			10/28/2019 09:56	Beverly Y. Sanders	2131058
	10/24/2019	10/28/2019 12:34	Vijayalakshmi Reddy	10/29/2019 11:18	Lipi Saha	2131049
	10/24/2019	10/28/2019 12:34	Vijayalakshmi Reddy	10/29/2019 11:27	Lipi Saha	2131055
	10/24/2019	10/28/2019 12:34	Vijayalakshmi Reddy	10/29/2019 11:28	Lipi Saha	2131056
	10/24/2019	10/28/2019 12:34	Vijayalakshmi Reddy	10/29/2019 11:30	Lipi Saha	2131057
EPA 365.1 Rev. 2.0 dissolved	10/24/2019	10/28/2019 12:34	Vijayalakshmi Reddy	10/29/2019 11:31	Lipi Saha	2131058
	10/24/2019			10/24/2019 15:40	Julia Storbeck	2131050
	10/24/2019			10/24/2019 15:41	Julia Storbeck	2131059
	10/24/2019			10/24/2019 15:42	Julia Storbeck	2131060
	10/24/2019			10/24/2019 15:43	Julia Storbeck	2131061
SM 2120 B	10/24/2019			10/24/2019 15:44	Julia Storbeck	2131062
	10/24/2019			10/24/2019 15:49	Madeline Funaro	2131051
	10/24/2019			10/24/2019 15:50	Madeline Funaro	2131052
	10/24/2019			10/24/2019 15:51	Madeline Funaro	2131053
SM 2320 B-97	10/24/2019			10/24/2019 16:07	Madeline Funaro	2131048, 2131054
	10/24/2019			10/28/2019 23:45	Dale L. Simmons	2131051
	10/24/2019			10/29/2019 00:18	Dale L. Simmons	2131048
	10/24/2019			10/29/2019 00:31	Dale L. Simmons	2131052
	10/24/2019			10/29/2019 00:44	Dale L. Simmons	2131053

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	10/24/2019			10/29/2019 00:56	Dale L. Simmons	2131054
SM 2540 C-97	10/24/2019			10/25/2019 18:02	Rosalyn Ballman	2131048, 2131051, 2131052, 2131053, 2131054
SM 2540 D-97	10/24/2019			10/25/2019 18:02	Rosalyn Ballman	2131048, 2131051, 2131052, 2131053, 2131054
SM 4500 F-C-97	10/24/2019			10/28/2019 23:35	Dale L. Simmons	2131051
	10/24/2019			10/29/2019 00:18	Dale L. Simmons	2131048
	10/24/2019			10/29/2019 00:31	Dale L. Simmons	2131052
	10/24/2019			10/29/2019 00:44	Dale L. Simmons	2131053
	10/24/2019			10/29/2019 00:56	Dale L. Simmons	2131054
SM 5310 B-00	10/24/2019			10/29/2019 16:59	Madeline Funaro	2131055
	10/24/2019			10/29/2019 19:54	Madeline Funaro	2131049
	10/24/2019			10/29/2019 20:09	Madeline Funaro	2131056
	10/24/2019			10/29/2019 20:23	Madeline Funaro	2131057
	10/24/2019			10/29/2019 20:38	Madeline Funaro	2131058