

Chemical Analysis Report

SE-DIST-2019-10-25-01

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

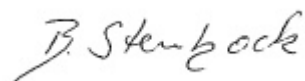
Event Description: **SMP-Kevin Run**
Request ID: **RQ-2019-10-21-19**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 13-NOV-2019 17:27



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: L-63N Canal @ SR 70

Collection Date/Time: 10/24/2019 10:10

Field ID: G1SE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131492	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P373329	
	EPA 300.0 Rev. 2.1	Chloride	67		mg Cl/L	P373762	
		Sulfate	52		mg SO4/L	P373766	
	SM 2120 B	Color (true)	120	A	PCU	P373181	
	SM 2320 B-97	Total Alkalinity	114		mg CaCO3/L	P373311	
	SM 2540 C-97	TDS	328		mg/L	P373707	
	SM 2540 D-97	TSS	2	I	mg/L	P373598	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P373314	
2131496	EPA 350.1 Rev. 2.0	Ammonia-N	0.064		mg N/L	P373464	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P373356	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P373199	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P373254	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P373404	
2131500	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P373225	

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-63N Canal @ SR 70

Collection Date/Time: 10/24/2019 10:15

Field ID: G1SE0023_Dup

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131493	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P373329	
	EPA 300.0 Rev. 2.1	Chloride	66		mg Cl/L	P373762	
		Sulfate	52		mg SO4/L	P373766	
	SM 2120 B	Color (true)	120		PCU	P373181	
	SM 2320 B-97	Total Alkalinity	115		mg CaCO3/L	P373311	
	SM 2540 C-97	TDS	337		mg/L	P373707	
	SM 2540 D-97	TSS	3	I	mg/L	P373598	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P373314	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.062		mg N/L	P373464	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P373356	
2131497	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P373199	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P373254	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P373404	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.18		mg P/L	P373225	
	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: L-63 @ SE 59th Blvd.

Collection Date/Time: 10/24/2019 10:45

Field ID: G1SE0029

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131494	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P373329	
	EPA 300.0 Rev. 2.1	Chloride	85		mg Cl/L	P373762	
		Sulfate	48		mg SO4/L	P373766	
	SM 2120 B	Color (true)	170		PCU	P373181	
	SM 2320 B-97	Total Alkalinity	92		mg CaCO3/L	P373311	
	SM 2540 C-97	TDS	348		mg/L	P373707	
	SM 2540 D-97	TSS	3	I	mg/L	P373598	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P373314	
2131498	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P373464	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P373356	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P373199	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P373347	
	SM 5310 B-00	Organic Carbon	25		mg C/L	P373404	
2131502	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P373225	

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-62 Upstream of S-154C

Collection Date/Time: 10/24/2019 12:20

Field ID: G1SE0028

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131495	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P373329	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P373762	
		Sulfate	54		mg SO4/L	P373766	
	SM 2120 B	Color (true)	460		PCU	P373181	
	SM 2320 B-97	Total Alkalinity	58		mg CaCO3/L	P373311	
	SM 2540 C-97	TDS	426		mg/L	P373707	
	SM 2540 D-97	TSS	2	I	mg/L	P373598	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P373314	
2131499	EPA 350.1 Rev. 2.0	Ammonia-N	0.088		mg N/L	P373464	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P373356	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P373200	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P373347	
	SM 5310 B-00	Organic Carbon	33		mg C/L	P373404	
2131503	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.062		mg P/L	P373225	

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: Lemkin Creek @ 78

Collection Date/Time: 10/24/2019 13:05

Field ID: G1SE0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131489	EPA 180.1 Rev. 2.0	Turbidity	1.7	A	NTU	P373329	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P373762	
		Sulfate	71		mg SO4/L	P373766	
	SM 2120 B	Color (true)	160		PCU	P373181	
	SM 2320 B-97	Total Alkalinity	93		mg CaCO3/L	P373311	
	SM 2540 C-97	TDS	449	A	mg/L	P373707	
	SM 2540 D-97	TSS	3	IA	mg/L	P373598	
	SM 4500 F-C-97	Fluoride	0.099	I	mg F/L	P373314	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.074		mg N/L	P373456	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P373356	
2131490	EPA 353.2 Rev. 2.0	NO2NO3-N	0.019		mg N/L	P373199	
	EPA 365.1 Rev. 2.0	Total-P	0.062		mg P/L	P373254	
	SM 5310 B-00	Organic Carbon	25		mg C/L	P373404	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.020		mg P/L	P373225	
	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: Lemkin Creek @ 78

Collection Date/Time: 10/24/2019 13:15

Field ID: EB_10242019

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131504	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P373329	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P373762	
		Sulfate	0.20	U	mg SO4/L	P373766	
	SM 2120 B	Color (true)	2.5	U	PCU	P373181	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P373311	
	SM 2540 C-97	TDS	15	U	mg/L	P373707	
	SM 2540 D-97	TSS	2	U	mg/L	P373598	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P373314	
2131505	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P373464	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P373356	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P373200	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P373347	
	SM 5310 B-00	Organic Carbon	1.3		mg C/L	P373404	
2131506	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P373225	

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: The result was confirmed on 10/31/2019.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373329

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373762

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373766

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373456

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373464

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373356

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373199

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373200

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373254

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: P373347

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373225

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

Reference Method: SM 2120 B
Batch ID: P373181

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P373311

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

Reference Method: SM 2540 C-97
Batch ID: P373707

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P373598

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P373314

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P373404

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: P373762

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373766

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373456

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373464

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373356

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373200

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373254

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373347

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373225

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

Reference Method: SM 2120 B
Batch ID: P373181

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.3		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P373311

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

Reference Method: SM 4500 F-C-97
Batch ID: P373314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P373404

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131557	Chloride	99.5		P	90 - 110
2131964	Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131557	Sulfate	100		P	90 - 110
2131964	Sulfate	99.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131469	Ammonia-N	99.7	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373464

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131606	Ammonia-N	99.1	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373356

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131470	Kjeldahl Nitrogen	91.4	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131286	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373200

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131555	NO2NO3-N	97.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373254

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131165	Total-P	99.4	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373347

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131555	Total-P	97.8	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131471	O-Phosphate-P	95.9	97.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P373314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131468	Fluoride	96.5	95.4	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P373404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131156	Organic Carbon	103	103	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131489	Turbidity	2.35	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131557	Chloride	0.0539	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131557	Sulfate	0.0220	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131469	Ammonia-N	0.0208	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131606	Ammonia-N	0.940	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131470	Kjeldahl Nitrogen	5.35	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131286	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131555	NO2NO3-N	0.512	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131165	Total-P	2.44	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131555	Total-P	1.61	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131471	O-Phosphate-P	1.12	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P373181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131492	Color (true)	2.48	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P373311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131468	Total Alkalinity	0.101	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P373707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131489	TDS	7.57	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P373314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131468	Fluoride	1.01	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P373404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131156	Organic Carbon	0.153	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A95265

Included Lab Sample IDs: 2131489, 2131492, 2131493, 2131494, 2131495, 2131504

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	99.5	P/P	90 - 115
Color (true)	99.0	102	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95272

Included Lab Sample IDs: 2131490, 2131496, 2131497, 2131498, 2131499, 2131505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	101	P/P	90 - 110
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95277

Included Lab Sample IDs: 2131491, 2131500, 2131501, 2131502, 2131503, 2131506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	102	P/P	90 - 110
O-Phosphate-P	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95299

Included Lab Sample IDs: 2131490, 2131496, 2131497

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

Reference Method: SM 2320 B-97

Run ID: A95300

Included Lab Sample IDs: 2131489, 2131492, 2131493, 2131494, 2131495, 2131504

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A95300

Included Lab Sample IDs: 2131489, 2131492, 2131493, 2131494, 2131495, 2131504

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95304

Included Lab Sample IDs: 2131489, 2131492, 2131493, 2131494, 2131495, 2131504

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95336

Included Lab Sample IDs: 2131498, 2131499

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	106	103	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A95339

Included Lab Sample IDs: 2131490, 2131496, 2131497, 2131498, 2131499, 2131505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	104	103	P/P	90 - 110
Organic Carbon	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95343

Included Lab Sample IDs: 2131505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95359

Included Lab Sample IDs: 2131490

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95362

Included Lab Sample IDs: 2131496, 2131497, 2131498, 2131499, 2131505

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95437

Included Lab Sample IDs: 2131490, 2131496, 2131497, 2131498, 2131499, 2131505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.9	93.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A95511

Included Lab Sample IDs: 2131489, 2131492, 2131493, 2131494, 2131495, 2131504

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

Quality Assurance Report

Calibration Verification

* 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				2.35	
EPA 300.0 Rev. 2.1	Chloride	99.7	99.5	99.1	0.0539	
	Sulfate	99.8	100	99.5	0.0220	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	99.7	99.7		0.0208
	Ammonia-N	101	99.1	100		0.940
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.1	91.4	97.6		5.35
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	102	102		0.0
	NO ₂ NO ₃ -N	100	97.5	98.0		0.512
EPA 365.1 Rev. 2.0	Total-P	98.5	99.4	95.8		2.44
	Total-P	101	97.8	100		1.61
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.3	95.9	97.1		1.12
SM 2120 B	Color (true)	99.3			2.48	
SM 2320 B-97	Total Alkalinity	104			0.101	
SM 2540 C-97	TDS				7.57	
SM 4500 F-C-97	Fluoride	97.6	96.5	95.4		1.01
SM 5310 B-00	Organic Carbon	102	103	103		0.153

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2131489, 2131492, 2131493, 2131494, 2131495, 2131504
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2131489, 2131492, 2131493, 2131494, 2131495, 2131504
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2131489, 2131492, 2131493, 2131494, 2131495, 2131504
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2131490, 2131496, 2131497, 2131498, 2131499, 2131505
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2131490, 2131496, 2131497, 2131498, 2131499, 2131505
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2131490, 2131496, 2131497, 2131498, 2131499, 2131505
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2131490, 2131496, 2131497, 2131498, 2131499, 2131505
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2131491, 2131500, 2131501, 2131502, 2131503, 2131506
SM 2120 B / E31780	True Color measured at 450 nm	2131489, 2131492, 2131493, 2131494, 2131495, 2131504
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2131489, 2131492, 2131493, 2131494, 2131495, 2131504
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2131489, 2131492, 2131493, 2131494, 2131495, 2131504
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2131489, 2131492, 2131493, 2131494, 2131495, 2131504
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2131489, 2131492, 2131493, 2131494, 2131495, 2131504
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2131490, 2131496, 2131497, 2131498, 2131499, 2131505

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	10/25/2019			10/25/2019 15:59	Blanca Fach	2131489, 2131492, 2131493, 2131494, 2131495, 2131504
EPA 300.0 Rev. 2.1	10/25/2019			11/05/2019 03:35	Jhamieka S. Greenwood	2131489
	10/25/2019			11/05/2019 03:47	Jhamieka S. Greenwood	2131492
	10/25/2019			11/05/2019 03:59	Jhamieka S. Greenwood	2131493
	10/25/2019			11/05/2019 04:11	Jhamieka S. Greenwood	2131494
	10/25/2019			11/05/2019 04:23	Jhamieka S. Greenwood	2131495
	10/25/2019			11/05/2019 04:59	Jhamieka S. Greenwood	2131504
EPA 350.1 Rev. 2.0	10/25/2019			10/29/2019 14:13	Ping Hua	2131490
	10/25/2019			10/30/2019 13:20	Ping Hua	2131496
	10/25/2019			10/30/2019 13:22	Ping Hua	2131497
	10/25/2019			10/30/2019 13:23	Ping Hua	2131498
	10/25/2019			10/30/2019 13:25	Ping Hua	2131499
	10/25/2019			10/30/2019 13:38	Ping Hua	2131505
EPA 351.2 Rev. 2.0	10/25/2019	10/29/2019 13:05	Sima Feizi	11/01/2019 19:22	Jhamieka S. Greenwood	2131490
	10/25/2019	10/29/2019 13:05	Sima Feizi	11/01/2019 19:24	Jhamieka S. Greenwood	2131496
	10/25/2019	10/29/2019 13:05	Sima Feizi	11/01/2019 19:25	Jhamieka S. Greenwood	2131497
	10/25/2019	10/29/2019 13:05	Sima Feizi	11/01/2019 19:27	Jhamieka S. Greenwood	2131498
	10/25/2019	10/29/2019 13:05	Sima Feizi	11/01/2019 19:28	Jhamieka S. Greenwood	2131499
	10/25/2019	10/29/2019 13:05	Sima Feizi	11/01/2019 19:30	Jhamieka S. Greenwood	2131505
EPA 353.2 Rev. 2.0	10/25/2019			10/28/2019 10:23	Beverly Y. Sanders	2131490
	10/25/2019			10/28/2019 10:25	Beverly Y. Sanders	2131496
	10/25/2019			10/28/2019 10:26	Beverly Y. Sanders	2131497
	10/25/2019			10/28/2019 10:27	Beverly Y. Sanders	2131498
	10/25/2019			10/28/2019 10:40	Beverly Y. Sanders	2131499
	10/25/2019			10/28/2019 10:41	Beverly Y. Sanders	2131505
EPA 365.1 Rev. 2.0	10/25/2019	10/28/2019 12:34	Vijayalakshmi Reddy	10/29/2019 11:51	Lipi Saha	2131490
	10/25/2019	10/28/2019 12:34	Vijayalakshmi Reddy	10/29/2019 11:52	Lipi Saha	2131496
	10/25/2019	10/28/2019 12:34	Vijayalakshmi Reddy	10/29/2019 11:53	Lipi Saha	2131497
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 10:39	Lipi Saha	2131498
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 10:40	Lipi Saha	2131499
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 12:36	Lipi Saha	2131505
EPA 365.1 Rev. 2.0 dissolved	10/25/2019			10/25/2019 15:41	Jhamieka S. Greenwood	2131500
	10/25/2019			10/25/2019 15:42	Jhamieka S. Greenwood	2131501
	10/25/2019			10/25/2019 15:43	Jhamieka S. Greenwood	2131502
	10/25/2019			10/25/2019 15:45	Jhamieka S. Greenwood	2131491, 2131503
	10/25/2019			10/25/2019 15:54	Jhamieka S. Greenwood	2131506
SM 2120 B	10/25/2019			10/25/2019 17:09	Madeline Funaro	2131492
	10/25/2019			10/25/2019 17:10	Madeline Funaro	2131493
	10/25/2019			10/25/2019 17:12	Madeline Funaro	2131504

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	10/25/2019			10/25/2019 17:38	Madeline Funaro	2131489
	10/25/2019			10/25/2019 17:39	Madeline Funaro	2131494
	10/25/2019			10/25/2019 17:40	Madeline Funaro	2131495
SM 2320 B-97	10/25/2019			10/29/2019 07:16	Dale L. Simmons	2131489
	10/25/2019			10/29/2019 07:29	Dale L. Simmons	2131492
	10/25/2019			10/29/2019 07:42	Dale L. Simmons	2131493
	10/25/2019			10/29/2019 07:55	Dale L. Simmons	2131494
	10/25/2019			10/29/2019 08:08	Dale L. Simmons	2131495
	10/25/2019			10/29/2019 08:21	Dale L. Simmons	2131504
	10/25/2019			10/30/2019 15:03	Yijie Li	2131489, 2131492, 2131493, 2131494, 2131495, 2131504
SM 2540 C-97	10/25/2019					
SM 2540 D-97	10/25/2019			10/30/2019 15:03	Yijie Li	2131489, 2131492, 2131493, 2131494, 2131495, 2131504
SM 4500 F-C-97	10/25/2019			10/29/2019 07:16	Dale L. Simmons	2131489
	10/25/2019			10/29/2019 07:29	Dale L. Simmons	2131492
	10/25/2019			10/29/2019 07:42	Dale L. Simmons	2131493
	10/25/2019			10/29/2019 07:55	Dale L. Simmons	2131494
	10/25/2019			10/29/2019 08:08	Dale L. Simmons	2131495
	10/25/2019			10/29/2019 08:21	Dale L. Simmons	2131504
	10/25/2019			10/30/2019 02:40	Madeline Funaro	2131490
SM 5310 B-00	10/25/2019			10/30/2019 02:55	Madeline Funaro	2131496
	10/25/2019			10/30/2019 03:09	Madeline Funaro	2131497
	10/25/2019			10/30/2019 03:24	Madeline Funaro	2131498
	10/25/2019			10/30/2019 03:39	Madeline Funaro	2131499
	10/25/2019			10/30/2019 04:22	Madeline Funaro	2131505