

Chemical Analysis Report

SE-DIST-2019-11-14-02

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

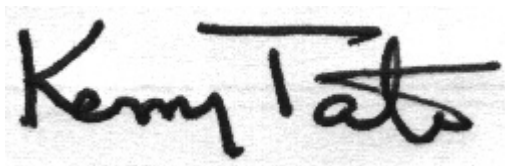
Event Description: **SMP-Kevin Run**
Request ID: **RQ-2019-11-11-08**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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2199 South Rock Road
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 03-DEC-2019 11:55

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 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: 11/13/2019 10:15

Field ID: G1SE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2136266	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P374249	
	EPA 300.0 Rev. 2.1	Chloride	78		mg Cl/L	P374400	
		Sulfate	58		mg SO4/L	P374403	
	SM 2120 B	Color (true)	110		PCU	P374266	
	SM 2320 B-97	Total Alkalinity	117		mg CaCO3/L	P374495	
	SM 2540 C-97	TDS	366		mg/L	P374861	
	SM 2540 D-97	TSS	5	I	mg/L	P374853	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P374500	
2136271	EPA 350.1 Rev. 2.0	Ammonia-N	0.33		mg N/L	P374464	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P374609	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.58		mg N/L	P374287	
	EPA 365.1 Rev. 2.0	Total-P	0.31		mg P/L	P374709	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P374428	
2136276	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.23		mg P/L	P374278	

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 @ 70

Collection Date/Time: 11/13/2019 10:35

Field ID: G1SE0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2136267	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P374249	
	EPA 300.0 Rev. 2.1	Chloride	63		mg Cl/L	P374400	
		Sulfate	33		mg SO4/L	P374403	
	SM 2120 B	Color (true)	100		PCU	P374266	
	SM 2320 B-97	Total Alkalinity	154		mg CaCO3/L	P374495	
	SM 2540 C-97	TDS	347		mg/L	P374861	
	SM 2540 D-97	TSS	6	I	mg/L	P374853	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P374500	
2136272	EPA 350.1 Rev. 2.0	Ammonia-N	0.79		mg N/L	P374464	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.3		mg N/L	P374617	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.89		mg N/L	P374287	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P374709	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P374428	
2136277	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P374278	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Taylor Creek @ 441

Collection Date/Time: 11/13/2019 11:05

Field ID: G1SE0001

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2136268	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P374249	
	EPA 300.0 Rev. 2.1	Chloride	98		mg Cl/L	P374400	
		Sulfate	110		mg SO4/L	P374403	
	SM 2120 B	Color (true)	50		PCU	P374266	
	SM 2320 B-97	Total Alkalinity	84		mg CaCO3/L	P374495	
	SM 2540 C-97	TDS	446		mg/L	P374861	
	SM 2540 D-97	TSS	2	I	mg/L	P374853	
	SM 4500 F-C-97	Fluoride	0.087	I	mg F/L	P374500	
2136273	EPA 350.1 Rev. 2.0	Ammonia-N	0.23		mg N/L	P374464	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P374617	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.3		mg N/L	P374287	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P374585	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P374428	
2136278	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P374278	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Taylor Creek @ 39th St

Collection Date/Time: 11/13/2019 11:30

Field ID: G1SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2136269	EPA 180.1 Rev. 2.0	Turbidity	1.1	A	NTU	P374250	
	EPA 300.0 Rev. 2.1	Chloride	81		mg Cl/L	P374400	
		Sulfate	76		mg SO4/L	P374403	
	SM 2120 B	Color (true)	86	A	PCU	P374267	
	SM 2320 B-97	Total Alkalinity	112		mg CaCO3/L	P374495	
	SM 2540 C-97	TDS	400		mg/L	P374861	
	SM 2540 D-97	TSS	2	I	mg/L	P374853	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P374500	
2136274	EPA 350.1 Rev. 2.0	Ammonia-N	0.44		mg N/L	P374464	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P374617	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.66		mg N/L	P374287	
	EPA 365.1 Rev. 2.0	Total-P	0.30		mg P/L	P374585	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P374428	
2136279	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.23		mg P/L	P374278	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Popash Slough @ 67th Dr

Collection Date/Time: 11/13/2019 12:55

Field ID: G1SE0027

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2136263	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P374249	
	EPA 300.0 Rev. 2.1	Chloride	210		mg Cl/L	P374400	
		Sulfate	59		mg SO4/L	P374403	
	SM 2120 B	Color (true)	370		PCU	P374266	
	SM 2320 B-97	Total Alkalinity	58		mg CaCO3/L	P374495	
	SM 2540 C-97	TDS	559		mg/L	P374860	
	SM 2540 D-97	TSS	2	I	mg/L	P374852	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P374500	
2136264	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P374464	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P374609	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P374287	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P374709	
	SM 5310 B-00	Organic Carbon	34		mg C/L	P374428	
2136265	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.046		mg P/L	P374278	

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: 11/13/2019 13:25

Field ID: G1SE0028

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2136270	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P374250	
	EPA 300.0 Rev. 2.1	Chloride	200		mg Cl/L	P374400	
		Sulfate	89		mg SO4/L	P374403	
	SM 2120 B	Color (true)	340		PCU	P374266	
	SM 2320 B-97	Total Alkalinity	63		mg CaCO3/L	P374495	
	SM 2540 C-97	TDS	586	A	mg/L	P374861	
	SM 2540 D-97	TSS	2	IA	mg/L	P374853	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P374500	
2136275	EPA 350.1 Rev. 2.0	Ammonia-N	0.054		mg N/L	P374464	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P374617	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.057		mg N/L	P374287	
	EPA 365.1 Rev. 2.0	Total-P	0.080		mg P/L	P374585	
	SM 5310 B-00	Organic Carbon	29		mg C/L	P374428	
2136280	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.039		mg P/L	P374278	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374249

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374250

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374400

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374403

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374464

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374609

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374617

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374287

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374585

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: P374709

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374278

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

Reference Method: SM 2120 B
Batch ID: P374266

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P374267

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P374495

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

Reference Method: SM 2540 C-97
Batch ID: P374860

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P374861

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P374852

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P374853

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P374500

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P374428

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: P374400

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374403

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374464

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374609

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374617

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374287

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374585

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374709

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P374266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P374267

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P374495

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P374500

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P374428

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: P374400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136190	Chloride	98.2		P	90 - 110
2136427	Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136190	Sulfate	97.2		P	90 - 110
2136427	Sulfate	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374464

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136227	Ammonia-N	99.5	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374609

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136211	Kjeldahl Nitrogen	95.3	97.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374287

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136275	NO2NO3-N	93.1	95.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374585

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136273	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136119	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135937	O-Phosphate-P	94.9	95.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P374500

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136193	Fluoride	99.4	99.4	P/P	89 - 106

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P374428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136271	Organic Carbon	103		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374249

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136213	Turbidity	1.39	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136269	Turbidity	10.2	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136190	Chloride	0.582	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136190	Sulfate	0.327	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136227	Ammonia-N	1.74	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136211	Kjeldahl Nitrogen	1.54	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136273	Kjeldahl Nitrogen	4.44	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374287

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136275	NO2NO3-N	1.63	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136273	Total-P	0.439	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136119	Total-P	0.529	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135937	O-Phosphate-P	0.287	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P374266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136210	Color (true)	0.885	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P374267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136269	Color (true)	1.39	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P374495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136193	Total Alkalinity	0.393	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P374860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136193	TDS	4.35	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P374861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136270	TDS	2.56	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P374500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136193	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P374428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136271	Organic Carbon	0.565	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95743

Included Lab Sample IDs: 2136263, 2136266, 2136267, 2136268, 2136269, 2136270

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

Reference Method: SM 2120 B

Run ID: A95748

Included Lab Sample IDs: 2136263, 2136266, 2136267, 2136268, 2136269, 2136270

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	104	P/P	90 - 115
Color (true)	102	102	P/P	90 - 115
Color (true)	104	103	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95752

Included Lab Sample IDs: 2136264, 2136271, 2136272, 2136273, 2136274, 2136275

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95753

Included Lab Sample IDs: 2136265, 2136276, 2136277, 2136278, 2136279, 2136280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	97.9	P/P	90 - 110
O-Phosphate-P	97.9	97.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A95765

Included Lab Sample IDs: 2136263, 2136266, 2136267, 2136268, 2136269, 2136270

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

Reference Method: SM 5310 B-00

Run ID: A95823

Included Lab Sample IDs: 2136264, 2136271, 2136272, 2136273, 2136274, 2136275

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95834

Included Lab Sample IDs: 2136264, 2136271, 2136272, 2136273, 2136274, 2136275

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95834

Included Lab Sample IDs: 2136264, 2136271, 2136272, 2136273, 2136274, 2136275

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

Reference Method: SM 2320 B-97

Run ID: A95843

Included Lab Sample IDs: 2136263, 2136266, 2136267, 2136268, 2136269, 2136270

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.4	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A95843

Included Lab Sample IDs: 2136263, 2136266, 2136267, 2136268, 2136269, 2136270

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95908

Included Lab Sample IDs: 2136264, 2136271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95912

Included Lab Sample IDs: 2136272, 2136273, 2136274, 2136275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95943

Included Lab Sample IDs: 2136273, 2136274, 2136275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	100	P/P	90 - 110
Total-P	98.8	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95968

Included Lab Sample IDs: 2136271, 2136272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96030

Included Lab Sample IDs: 2136264

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	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				1.39	
	Turbidity				10.2	
EPA 300.0 Rev. 2.1	Chloride	100	98.2	99.9	0.582	
	Sulfate	100	97.2	99.3	0.327	
EPA 350.1 Rev. 2.0	Ammonia-N	98.7	99.5	97.8		1.74
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	95.3	97.3		1.54
	Kjeldahl Nitrogen	99.3				4.44
EPA 353.2 Rev. 2.0	NO2NO3-N	100	93.1	95.1		1.63
EPA 365.1 Rev. 2.0	Total-P	104	102	103		0.439
	Total-P	103	101	101		0.529
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	94.9	95.2		0.287
SM 2120 B	Color (true)	101			0.885	
	Color (true)	102			1.39	
SM 2320 B-97	Total Alkalinity	101			0.393	
SM 2540 C-97	TDS				4.35	
	TDS				2.56	
SM 4500 F-C-97	Fluoride	98.6	99.4	99.4		0.0
SM 5310 B-00	Organic Carbon	103	103			0.565

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2136263, 2136266, 2136267, 2136268, 2136269, 2136270
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2136263, 2136266, 2136267, 2136268, 2136269, 2136270
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2136263, 2136266, 2136267, 2136268, 2136269, 2136270
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2136264, 2136271, 2136272, 2136273, 2136274, 2136275
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2136264, 2136271, 2136272, 2136273, 2136274, 2136275
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2136264, 2136271, 2136272, 2136273, 2136274, 2136275
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2136264, 2136271, 2136272, 2136273, 2136274, 2136275
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2136265, 2136276, 2136277, 2136278, 2136279, 2136280
SM 2120 B / E31780	True Color measured at 450 nm	2136263, 2136266, 2136267, 2136268, 2136269, 2136270
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2136263, 2136266, 2136267, 2136268, 2136269, 2136270
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2136263, 2136266, 2136267, 2136268, 2136269, 2136270
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2136263, 2136266, 2136267, 2136268, 2136269, 2136270
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2136263, 2136266, 2136267, 2136268, 2136269, 2136270
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2136264, 2136271, 2136272, 2136273, 2136274, 2136275

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	11/14/2019			11/14/2019 17:30	Blanca Fach	2136263, 2136266, 2136267, 2136268, 2136269, 2136270
EPA 300.0 Rev. 2.1	11/14/2019			11/19/2019 00:01	Lipi Saha	2136263
	11/14/2019			11/19/2019 00:13	Lipi Saha	2136266
	11/14/2019			11/19/2019 00:25	Lipi Saha	2136267
	11/14/2019			11/19/2019 00:37	Lipi Saha	2136268
	11/14/2019			11/19/2019 00:49	Lipi Saha	2136269
EPA 350.1 Rev. 2.0	11/14/2019			11/19/2019 01:01	Lipi Saha	2136270
	11/14/2019			11/19/2019 13:20	Ping Hua	2136264
	11/14/2019			11/19/2019 14:18	Ping Hua	2136273
	11/14/2019			11/19/2019 14:20	Ping Hua	2136271
	11/14/2019			11/19/2019 14:21	Ping Hua	2136272
EPA 351.2 Rev. 2.0	11/14/2019			11/19/2019 14:23	Ping Hua	2136274
	11/14/2019			11/19/2019 14:24	Ping Hua	2136275
	11/14/2019	11/21/2019 12:36	Sima Feizi	11/22/2019 13:45	Jhamieka S. Greenwood	2136264
	11/14/2019	11/21/2019 12:36	Sima Feizi	11/22/2019 13:47	Jhamieka S. Greenwood	2136271
	11/14/2019	11/21/2019 12:36	Sima Feizi	11/22/2019 15:51	Jhamieka S. Greenwood	2136273
EPA 353.2 Rev. 2.0	11/14/2019	11/21/2019 12:36	Sima Feizi	11/22/2019 15:55	Jhamieka S. Greenwood	2136272
	11/14/2019	11/21/2019 12:36	Sima Feizi	11/22/2019 15:57	Jhamieka S. Greenwood	2136274
	11/14/2019	11/21/2019 12:36	Sima Feizi	11/22/2019 15:58	Jhamieka S. Greenwood	2136275
	11/14/2019			11/15/2019 09:43	Beverly Y. Sanders	2136271
	11/14/2019			11/15/2019 09:50	Beverly Y. Sanders	2136264
EPA 365.1 Rev. 2.0	11/14/2019			11/15/2019 09:54	Beverly Y. Sanders	2136275
	11/14/2019			11/15/2019 10:10	Beverly Y. Sanders	2136272
	11/14/2019			11/15/2019 10:11	Beverly Y. Sanders	2136273
	11/14/2019			11/15/2019 10:16	Beverly Y. Sanders	2136274
	11/14/2019	11/21/2019 13:00	Yen Ta	11/22/2019 15:09	Benjamin T. Nordmann	2136273
EPA 365.1 Rev. 2.0 dissolved	11/14/2019	11/21/2019 13:00	Yen Ta	11/22/2019 15:12	Benjamin T. Nordmann	2136274
	11/14/2019	11/21/2019 13:00	Yen Ta	11/22/2019 15:16	Benjamin T. Nordmann	2136275
	11/14/2019	11/22/2019 13:04	Yen Ta	11/26/2019 14:39	Benjamin T. Nordmann	2136271
	11/14/2019	11/22/2019 13:04	Yen Ta	11/26/2019 14:40	Benjamin T. Nordmann	2136272
	11/14/2019	11/22/2019 13:04	Yen Ta	11/27/2019 13:47	Benjamin T. Nordmann	2136264
SM 2120 B	11/14/2019			11/14/2019 16:42	Samantha Davila	2136276
	11/14/2019			11/14/2019 16:43	Samantha Davila	2136277
	11/14/2019			11/14/2019 16:44	Samantha Davila	2136278, 2136279
	11/14/2019			11/14/2019 16:45	Samantha Davila	2136280
	11/14/2019			11/14/2019 16:55	Samantha Davila	2136265
	11/14/2019			11/14/2019 16:38	Madeline Funaro	2136266, 2136267
	11/14/2019			11/14/2019 16:39	Madeline Funaro	2136268
	11/14/2019			11/14/2019 16:45	Madeline Funaro	2136269

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	11/14/2019			11/14/2019 16:56	Madeline Funaro	2136263
	11/14/2019			11/14/2019 16:57	Madeline Funaro	2136270
SM 2320 B-97	11/14/2019			11/16/2019 11:29	Dale L. Simmons	2136263
	11/14/2019			11/16/2019 11:41	Dale L. Simmons	2136266
	11/14/2019			11/16/2019 11:55	Dale L. Simmons	2136267
	11/14/2019			11/16/2019 12:07	Dale L. Simmons	2136268
	11/14/2019			11/16/2019 12:19	Dale L. Simmons	2136269
	11/14/2019			11/16/2019 12:32	Dale L. Simmons	2136270
	11/14/2019			11/19/2019 15:21	Yijie Li	2136263, 2136266, 2136267, 2136268, 2136269, 2136270
SM 2540 D-97	11/14/2019			11/19/2019 15:21	Yijie Li	2136263, 2136266, 2136267, 2136268, 2136269, 2136270
SM 4500 F-C-97	11/14/2019			11/16/2019 11:29	Dale L. Simmons	2136263
	11/14/2019			11/16/2019 11:41	Dale L. Simmons	2136266
	11/14/2019			11/16/2019 11:55	Dale L. Simmons	2136267
	11/14/2019			11/16/2019 12:07	Dale L. Simmons	2136268
	11/14/2019			11/16/2019 12:19	Dale L. Simmons	2136269
	11/14/2019			11/16/2019 12:32	Dale L. Simmons	2136270
	11/14/2019			11/18/2019 16:07	Lauren Lees	2136271
SM 5310 B-00	11/14/2019			11/18/2019 16:55	Lauren Lees	2136273
	11/14/2019			11/18/2019 17:20	Lauren Lees	2136264
	11/14/2019			11/18/2019 17:34	Lauren Lees	2136272
	11/14/2019			11/18/2019 18:15	Lauren Lees	2136274
	11/14/2019			11/18/2019 18:29	Lauren Lees	2136275
	11/14/2019					