

Chemical Analysis Report

SE-DIST-2019-09-19-01

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

Event Description: **SMP- Kissimmee et al**
Request ID: **RQ-2019-09-16-47**
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

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 04-OCT-2019 11:52



NON-CONFORMANCE REPORT INCLUDED

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Lake O near Kissimmee Inflow

Collection Date/Time: 09/18/2019 13:15

Field ID: G1SE0019

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2120952	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P371016	
	EPA 300.0 Rev. 2.1	Chloride	20	A	mg Cl/L	P371223	
		Sulfate	6.1	A	mg SO4/L	P371226	
	SM 2120 B	Color (true)	200		PCU	P371010	
	SM 2320 B-97	Total Alkalinity	34	Y	mg CaCO3/L	P371526	
	SM 2540 C-97	TDS	133		mg/L	P371352	
	SM 2540 D-97	TSS	5	I	mg/L	P371272	
	SM 4500 F-C-97	Fluoride	0.088	I	mg F/L	P371530	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P371266	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P371541	
2120955	EPA 353.2 Rev. 2.0	NO2NO3-N	0.044		mg N/L	P371290	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P371165	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P371199	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.056		mg P/L	P371006	
	dissolved						

Ref. Method and Comment:

SM 2320 B-97: Sample was left out at room temperature overnight, should be stored below 6 degC.

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

Sample Location: Oak Creek @ 68

Collection Date/Time: 09/18/2019 14:20

Field ID: G4SE0080

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2120953	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P371016	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P371223	
		Sulfate	0.72		mg SO4/L	P371226	
	SM 2120 B	Color (true)	260		PCU	P371010	
	SM 2320 B-97	Total Alkalinity	12	Y	mg CaCO3/L	P371526	
	SM 2540 C-97	TDS	106		mg/L	P371352	
	SM 2540 D-97	TSS	4	I	mg/L	P371272	
	SM 4500 F-C-97	Fluoride	0.060	I	mg F/L	P371530	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.076		mg N/L	P371266	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P371304	
2120956	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P371290	
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P371165	
	SM 5310 B-00	Organic Carbon	28		mg C/L	P371199	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.019		mg P/L	P371007	
	dissolved						

Ref. Method and Comment:

SM 2320 B-97: Sample was left out at room temperature overnight, should be stored below 6 degC.

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

Sample Location: Padgett Branch @ 441

Collection Date/Time: 09/18/2019 15:20

Field ID: G3SE0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2120954	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P371016	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P371223	
		Sulfate	1.9		mg SO4/L	P371226	
	SM 2120 B	Color (true)	310		PCU	P371010	
	SM 2320 B-97	Total Alkalinity	27	Y	mg CaCO3/L	P371526	
	SM 2540 C-97	TDS	134		mg/L	P371352	
	SM 2540 D-97	TSS	6	I	mg/L	P371272	
	SM 4500 F-C-97	Fluoride	0.089	I	mg F/L	P371530	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P371266	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P371304	
2120957	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P371290	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P371165	
	SM 5310 B-00	Organic Carbon	32		mg C/L	P371199	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.14		mg P/L	P371007	
	dissolved						

Ref. Method and Comment:

SM 2320 B-97: Sample was left out at room temperature overnight, should be stored below 6 degC.

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

Non-Conformance Report

NCR ID: 7939

<u>Event(s)</u>	<u>Job(s)</u>	<u>Sample(s)</u>	<u>Test(s)</u>
SE-DIST-2019-09-19-01	TLH-2019-09-19-27	2120952	
SE-DIST-2019-09-19-01	TLH-2019-09-19-27	2120953	
SE-DIST-2019-09-19-01	TLH-2019-09-19-27	2120954	

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Samples stored outside of the acceptable temperature range overnight.

Resolution: Samples returned to refrigerator on 9/24/19 @ 08:40. Data will be qualified as appropriate when analyzed after this date/time.

Authorized by/Date: Peter D. Kaus 10/3/2019

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371016

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371223

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371226

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371266

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371304

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371541

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371290

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371165

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371006

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371007

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

Reference Method: SM 2120 B
Batch ID: P371010

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P371526

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

Reference Method: SM 2540 C-97
Batch ID: P371352

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P371272

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P371530

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P371199

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: P371223

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371226

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371304

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371541

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371290

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371165

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: P371006

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371007

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P371010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P371526

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

Reference Method: SM 4500 F-C-97
Batch ID: P371530

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P371199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371223

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2120952	Chloride	98.8		P	90 - 110
2121005	Chloride	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2120952	Sulfate	101		P	90 - 110
2121005	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2120968	Ammonia-N	99.2	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371304

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2120936	Kjeldahl Nitrogen	104	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371541

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122345	Kjeldahl Nitrogen	101	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2120968	NO2NO3-N	98.2	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371165

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2120878	Total-P	102	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371006

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2120832	O-Phosphate-P	96.5	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371007

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121077	O-Phosphate-P	96.2	96.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P371530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121426	Fluoride	97.6	96.0	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P371199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2120602	Organic Carbon	97.3	98.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120961	Turbidity	9.61	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120952	Chloride	0.946	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120952	Sulfate	1.11	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120968	Ammonia-N	0.189	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120936	Kjeldahl Nitrogen	1.31	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122345	Kjeldahl Nitrogen	2.06	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120968	NO2NO3-N	0.271	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120878	Total-P	4.26	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120832	O-Phosphate-P	0.635	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121077	O-Phosphate-P	0.518	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P371010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120814	Color (true)	1.95	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P371526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121426	Total Alkalinity	0.129	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P371352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120935	TDS	0.881	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P371530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121426	Fluoride	1.41	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P371199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120602	Organic Carbon	1.36	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94346

Included Lab Sample IDs: 2120958, 2120959, 2120960

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	98.9	P/P	90 - 110
O-Phosphate-P	99.2	98.9	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A94347

Included Lab Sample IDs: 2120952, 2120953, 2120954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.0	100	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94348

Included Lab Sample IDs: 2120952, 2120953, 2120954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	101	P/P	95 - 105

Reference Method: SM 5310 B-00

Run ID: A94437

Included Lab Sample IDs: 2120955, 2120956, 2120957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	93.1	P/P	90 - 110
Organic Carbon	93.1	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94439

Included Lab Sample IDs: 2120955, 2120957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	90 - 110
Total-P	102	99.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94452

Included Lab Sample IDs: 2120952, 2120953, 2120954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.5	99.4	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94456

Included Lab Sample IDs: 2120956

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94474

Included Lab Sample IDs: 2120955, 2120956, 2120957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.5	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94489

Included Lab Sample IDs: 2120955, 2120956, 2120957

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94540

Included Lab Sample IDs: 2120956, 2120957

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

Reference Method: SM 2320 B-97

Run ID: A94582

Included Lab Sample IDs: 2120952, 2120953, 2120954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A94582

Included Lab Sample IDs: 2120952, 2120953, 2120954

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94637

Included Lab Sample IDs: 2120955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					9.61	
EPA 300.0 Rev. 2.1	Chloride	99.0	98.8	99.7		0.946	
	Sulfate	99.9	101	100		1.11	
EPA 350.1 Rev. 2.0	Ammonia-N	96.4	99.2	99.4			0.189
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	104	106			1.31
	Kjeldahl Nitrogen	99.8	101	98.2			2.06
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	98.2	98.8			0.271
EPA 365.1 Rev. 2.0	Total-P	103	102	97.0			4.26
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.3	96.5	97.4			0.635
	O-Phosphate-P	102	96.2	96.7			0.518
SM 2120 B	Color (true)	99.6				1.95	
SM 2320 B-97	Total Alkalinity	101				0.129	
SM 2540 C-97	TDS					0.881	
SM 4500 F-C-97	Fluoride	97.9	97.6	96.0			1.41
SM 5310 B-00	Organic Carbon	97.8	97.3	98.8			1.36

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2120952, 2120953, 2120954
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2120952, 2120953, 2120954
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2120952, 2120953, 2120954
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2120955, 2120956, 2120957
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2120955, 2120956, 2120957
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2120955, 2120956, 2120957
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2120955, 2120956, 2120957
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2120958, 2120959, 2120960
SM 2120 B / E31780	True Color measured at 450 nm	2120952, 2120953, 2120954
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2120952, 2120953, 2120954
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2120952, 2120953, 2120954
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2120952, 2120953, 2120954
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2120952, 2120953, 2120954
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2120955, 2120956, 2120957

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	09/19/2019			09/19/2019 15:53	Rosalyn Ballman	2120952, 2120953, 2120954
EPA 300.0 Rev. 2.1	09/19/2019			09/23/2019 19:32	Jhamieka S. Greenwood	2120952
	09/19/2019			09/23/2019 20:32	Jhamieka S. Greenwood	2120953
	09/19/2019			09/23/2019 20:45	Jhamieka S. Greenwood	2120954
EPA 350.1 Rev. 2.0	09/19/2019			09/24/2019 14:10	Ping Hua	2120955
	09/19/2019			09/24/2019 14:12	Ping Hua	2120956
	09/19/2019			09/24/2019 14:13	Ping Hua	2120957
EPA 351.2 Rev. 2.0	09/19/2019	09/25/2019 11:47	Sima Feizi	09/26/2019 16:54	Julia Storbeck	2120956
	09/19/2019	09/25/2019 11:47	Sima Feizi	09/26/2019 16:55	Julia Storbeck	2120957
	09/19/2019	09/30/2019 13:30	Jhamieka S. Greenwood	10/01/2019 13:59	Julia Storbeck	2120955
EPA 353.2 Rev. 2.0	09/19/2019			09/25/2019 11:40	Beverly Y. Sanders	2120955
	09/19/2019			09/25/2019 11:41	Beverly Y. Sanders	2120956
	09/19/2019			09/25/2019 11:42	Beverly Y. Sanders	2120957
EPA 365.1 Rev. 2.0	09/19/2019	09/23/2019 14:45	Lipi Saha	09/24/2019 10:58	Lipi Saha	2120955
	09/19/2019	09/23/2019 14:45	Lipi Saha	09/24/2019 11:03	Lipi Saha	2120957
	09/19/2019	09/23/2019 14:45	Lipi Saha	09/24/2019 12:59	Lipi Saha	2120956
EPA 365.1 Rev. 2.0 dissolved	09/19/2019			09/19/2019 16:13	Jhamieka S. Greenwood	2120958
	09/19/2019			09/19/2019 16:24	Jhamieka S. Greenwood	2120960
	09/19/2019			09/19/2019 16:25	Jhamieka S. Greenwood	2120959
SM 2120 B	09/19/2019			09/19/2019 17:01	Madeline Funaro	2120952, 2120953
	09/19/2019			09/19/2019 17:02	Madeline Funaro	2120954
SM 2320 B-97	09/19/2019			09/28/2019 02:28	Dale L. Simmons	2120952
	09/19/2019			09/28/2019 02:40	Dale L. Simmons	2120953
	09/19/2019			09/28/2019 02:51	Dale L. Simmons	2120954
SM 2540 C-97	09/19/2019			09/20/2019 17:00	Blanca Fach	2120952, 2120953, 2120954
SM 2540 D-97	09/19/2019			09/20/2019 17:00	Blanca Fach	2120952, 2120953, 2120954
SM 4500 F-C-97	09/19/2019			09/28/2019 02:28	Dale L. Simmons	2120952
	09/19/2019			09/28/2019 02:40	Dale L. Simmons	2120953
	09/19/2019			09/28/2019 02:51	Dale L. Simmons	2120954
SM 5310 B-00	09/19/2019			09/24/2019 05:28	Madeline Funaro	2120955
	09/19/2019			09/24/2019 05:40	Madeline Funaro	2120956
	09/19/2019			09/24/2019 06:17	Madeline Funaro	2120957