

Chemical Analysis Report

NW-DIST-2019-07-25-02

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

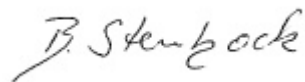
Event Description: **Western Lakes**
Request ID: **RQ-2019-07-22-14**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 15-AUG-2019 17:59



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: LOCKLIN LAKE CENTER

Collection Date/Time: 07/24/2019 10:00

Field ID: G4NW0437

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106097	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P367925	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P368187	
		Sulfate	1.0		mg SO4/L	P368189	
		Color (true)	12		PCU	P368023	
	SM 2320 B-97	Total Alkalinity	8.7		mg CaCO3/L	P368234	
	SM 2540 C-97	TDS	32		mg/L	P368267	
	SM 2540 D-97	TSS	2	U	mg/L	P368111	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P368237	
2106100	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P368535	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P368089	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P367990	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P368077	
	SM 5310 B-00	Organic Carbon	1.6		mg C/L	P368053	
2106103	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P367946	

Sample Location: LOCKLIN LAKE CENTER

Collection Date/Time: 07/24/2019 10:05

Field ID: G4NW0437_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106098	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P367925	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P368187	
		Sulfate	1.0		mg SO4/L	P368189	
	SM 2120 B	Color (true)	13		PCU	P368023	
	SM 2320 B-97	Total Alkalinity	8.7		mg CaCO3/L	P368234	
	SM 2540 C-97	TDS	34		mg/L	P368267	
	SM 2540 D-97	TSS	2	U	mg/L	P368111	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P368237	
2106101	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P368535	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P368089	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.39		mg N/L	P367990	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P368077	
	SM 5310 B-00	Organic Carbon	1.6		mg C/L	P368053	
2106104	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P367946	

Sample Location: LOCKLIN LAKE CENTER

Collection Date/Time: 07/24/2019 10:10

Field ID: FB_24072019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106106	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P367925	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P368187	
		Sulfate	0.20	U	mg SO4/L	P368189	
		Color (true)	2.5	U	PCU	P368023	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P368372	
	SM 2540 C-97	TDS	15	U	mg/L	P368268	
	SM 2540 D-97	TSS	2	U	mg/L	P368112	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P368377	
2106107	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P368535	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P368089	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P367990	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P368077	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P368107	
2106108	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P367947	

Sample Location: LAKE KARICK (CENTER) (ALSO 33040210)

Collection Date/Time: 07/24/2019 11:35

Field ID: G4NW0274

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106099	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P367925	
	EPA 300.0 Rev. 2.1	Chloride	2.3		mg Cl/L	P368187	
		Sulfate	0.62		mg SO4/L	P368189	
		Color (true)	35		PCU	P368023	
	SM 2320 B-97	Total Alkalinity	3.9		mg CaCO3/L	P368372	
	SM 2540 C-97	TDS	20	I	mg/L	P368268	
	SM 2540 D-97	TSS	2	I	mg/L	P368112	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P368377	
2106102	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P368535	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P368089	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P367990	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P368077	
	SM 5310 B-00	Organic Carbon	5.0		mg C/L	P368053	
2106105	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P367947	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367925

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368187

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368189

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368535

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368089

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367990

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368077

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367946

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367947

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P368023

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P368234

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

Reference Method: SM 2320 B-97
Batch ID: P368372

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

Reference Method: SM 2540 C-97
Batch ID: P368267

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P368268

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P368111

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P368112

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P368237

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P368377

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P368053

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P368107

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: P368187

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368189

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368535

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368089

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367990

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368077

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367946

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.4		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P368023

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P368234

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P368372

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

Reference Method: SM 4500 F-C-97
Batch ID: P368237

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.5		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P368377

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P368053

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P368107

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: P368187

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106075	Chloride	96.7		P	90 - 110
2106164	Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106075	Sulfate	101		P	90 - 110
2106164	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106080	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368089

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106100	Kjeldahl Nitrogen	108	110	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105922	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106102	Total-P	99.0	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106103	O-Phosphate-P	95.0	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106105	O-Phosphate-P	95.6	96.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P368237

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105867	Fluoride	96.4	97.0	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P368377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106385	Fluoride	97.5	98.1	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P368053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106024	Organic Carbon	95.4	97.2	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P368107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106255	Organic Carbon	110	96.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106164	Turbidity	2.78	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368187

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106164	Chloride	0.869	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106164	Sulfate	1.46	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106080	Ammonia-N	0.561	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106100	Kjeldahl Nitrogen	1.67	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105922	NO2NO3-N	0.980	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106102	Total-P	0.443	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106103	O-Phosphate-P	1.26	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106105	O-Phosphate-P	0.626	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P368023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106022	Color (true)	0.765	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P368234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105867	Total Alkalinity	0.337	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P368372

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106385	Total Alkalinity	1.26	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P368267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106019	TDS	2.72	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P368268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106164	TDS	1.99	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P368111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106019	TSS	3.64	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P368112

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106164	TSS	8.22	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P368237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105867	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P368377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106385	Fluoride	0.484	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P368053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106024	Organic Carbon	0.904	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P368107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106255	Organic Carbon	6.62	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 180.1 Rev. 2.0

Run ID: A93031

Included Lab Sample IDs: 2106097, 2106098, 2106099, 2106106

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A93035

Included Lab Sample IDs: 2106103, 2106104, 2106105, 2106108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.2	96.8	P/P	90 - 110
O-Phosphate-P	98.2	97.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93050

Included Lab Sample IDs: 2106100, 2106101, 2106102, 2106107

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

Reference Method: SM 2120 B

Run ID: A93064

Included Lab Sample IDs: 2106097, 2106098, 2106099, 2106106

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

Reference Method: SM 5310 B-00

Run ID: A93079

Included Lab Sample IDs: 2106100, 2106101, 2106102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.7	99.0	P/P	90 - 110
Organic Carbon	95.8	94.7	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A93112

Included Lab Sample IDs: 2106107

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93124

Included Lab Sample IDs: 2106100, 2106101, 2106102, 2106107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.5	P/P	90 - 110
Total-P	99.0	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93125

Included Lab Sample IDs: 2106100, 2106101, 2106102, 2106107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.0	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A93147

Included Lab Sample IDs: 2106097, 2106098, 2106099, 2106106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.2	98.2	P/P	90 - 110
Chloride	98.2	98.7	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110
Sulfate	102	103	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A93171

Included Lab Sample IDs: 2106097, 2106098

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

Reference Method: SM 4500 F-C-97

Run ID: A93171

Included Lab Sample IDs: 2106097, 2106098

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

Reference Method: SM 2320 B-97

Run ID: A93228

Included Lab Sample IDs: 2106099, 2106106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A93228

Included Lab Sample IDs: 2106099, 2106106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93303

Included Lab Sample IDs: 2106100, 2106101, 2106102, 2106107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	106	P/P	90 - 110
Ammonia-N	106	104	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				2.78	
EPA 300.0 Rev. 2.1	Chloride	98.8	98.2	96.7	0.869	
	Sulfate	102	103	101	1.46	
EPA 350.1 Rev. 2.0	Ammonia-N	103	103	103		0.561
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	108	110		1.67
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	102		0.980
EPA 365.1 Rev. 2.0	Total-P	102	99.0	98.6		0.443
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	95.0	96.2		1.26
	O-Phosphate-P	99.4	95.6	96.2		0.626
SM 2120 B	Color (true)	103			0.765	
SM 2320 B-97	Total Alkalinity	103			0.337	
	Total Alkalinity	104			1.26	
SM 2540 C-97	TDS				2.72	
	TDS				1.99	
SM 2540 D-97	TSS				3.64	
	TSS				8.22	
SM 4500 F-C-97	Fluoride	95.5	96.4	97.0		0.473
	Fluoride	97.7	97.5	98.1		0.484
SM 5310 B-00	Organic Carbon	99.0	95.4	97.2		0.904
	Organic Carbon	102	110	96.6		6.62

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2106097, 2106098, 2106099, 2106106
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2106097, 2106098, 2106099, 2106106
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2106097, 2106098, 2106099, 2106106
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2106100, 2106101, 2106102, 2106107
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2106100, 2106101, 2106102, 2106107
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2106100, 2106101, 2106102, 2106107
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2106100, 2106101, 2106102, 2106107
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2106103, 2106104, 2106105, 2106108
SM 2120 B / E31780	True Color measured at 450 nm	2106097, 2106098, 2106099, 2106106
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2106097, 2106098, 2106099, 2106106
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2106097, 2106098, 2106099, 2106106
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2106097, 2106098, 2106099, 2106106
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2106097, 2106098, 2106099, 2106106
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2106100, 2106101, 2106102, 2106107

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	07/25/2019			07/25/2019 15:23	Samantha Davila	2106097, 2106098, 2106099, 2106106
EPA 300.0 Rev. 2.1	07/25/2019			07/31/2019 00:00	Jhamieka S. Greenwood	2106097
	07/25/2019			07/31/2019 00:12	Jhamieka S. Greenwood	2106098
	07/25/2019			07/31/2019 00:49	Jhamieka S. Greenwood	2106099
	07/25/2019			07/31/2019 01:01	Jhamieka S. Greenwood	2106106
EPA 350.1 Rev. 2.0	07/25/2019			08/06/2019 18:30	Virginia P. Brown	2106100
	07/25/2019			08/06/2019 18:31	Virginia P. Brown	2106101
	07/25/2019			08/06/2019 18:39	Virginia P. Brown	2106102
	07/25/2019			08/06/2019 18:40	Virginia P. Brown	2106107
EPA 351.2 Rev. 2.0	07/25/2019	07/29/2019 13:00	Adrian Shelby	07/30/2019 12:09	Joseph Suarez	2106100
	07/25/2019	07/29/2019 13:00	Adrian Shelby	07/30/2019 12:13	Joseph Suarez	2106101
	07/25/2019	07/29/2019 13:00	Adrian Shelby	07/30/2019 12:15	Joseph Suarez	2106102
	07/25/2019	07/29/2019 13:00	Adrian Shelby	07/30/2019 12:17	Joseph Suarez	2106107
EPA 353.2 Rev. 2.0	07/25/2019			07/26/2019 11:09	Beverly Y. Sanders	2106100
	07/25/2019			07/26/2019 11:10	Beverly Y. Sanders	2106101
	07/25/2019			07/26/2019 11:11	Beverly Y. Sanders	2106102
	07/25/2019			07/26/2019 11:12	Beverly Y. Sanders	2106107
EPA 365.1 Rev. 2.0	07/25/2019	07/29/2019 11:58	Vijayalakshmi Reddy	07/30/2019 11:16	Lipi Saha	2106107
	07/25/2019	07/29/2019 11:58	Vijayalakshmi Reddy	07/30/2019 11:26	Lipi Saha	2106100
	07/25/2019	07/29/2019 11:58	Vijayalakshmi Reddy	07/30/2019 11:27	Lipi Saha	2106101
	07/25/2019	07/29/2019 11:58	Vijayalakshmi Reddy	07/30/2019 11:28	Lipi Saha	2106102
EPA 365.1 Rev. 2.0 dissolved	07/25/2019			07/25/2019 16:32	Jhamieka S. Greenwood	2106103
	07/25/2019			07/25/2019 16:37	Jhamieka S. Greenwood	2106105
	07/25/2019			07/25/2019 17:10	Jhamieka S. Greenwood	2106108
	07/25/2019			07/25/2019 17:14	Jhamieka S. Greenwood	2106104
SM 2120 B	07/25/2019			07/25/2019 16:53	Madeline Funaro	2106097
	07/25/2019			07/25/2019 16:54	Madeline Funaro	2106098, 2106099
	07/25/2019			07/25/2019 16:55	Madeline Funaro	2106106
SM 2320 B-97	07/25/2019			07/31/2019 07:05	Dale L. Simmons	2106097
	07/25/2019			07/31/2019 07:16	Dale L. Simmons	2106098
	07/25/2019			08/02/2019 00:26	Dale L. Simmons	2106099
	07/25/2019			08/02/2019 00:39	Dale L. Simmons	2106106
SM 2540 C-97	07/25/2019			07/26/2019 16:00	Blanca Fach	2106097, 2106098, 2106099, 2106106
SM 2540 D-97	07/25/2019			07/26/2019 16:00	Blanca Fach	2106097, 2106098, 2106099, 2106106
SM 4500 F-C-97	07/25/2019			07/31/2019 07:05	Dale L. Simmons	2106097
	07/25/2019			07/31/2019 07:16	Dale L. Simmons	2106098
	07/25/2019			08/02/2019 00:26	Dale L. Simmons	2106099
	07/25/2019			08/02/2019 00:39	Dale L. Simmons	2106106
SM 5310 B-00	07/25/2019			07/27/2019 03:13	Madeline Funaro	2106100
	07/25/2019			07/27/2019 03:25	Madeline Funaro	2106101

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	07/25/2019			07/27/2019 04:04	Madeline Funaro	2106102
	07/25/2019			07/29/2019 15:45	Madeline Funaro	2106107