Chemical Analysis Report

TLH-ROC-2017-08-22-01

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

Event Description: **SMP 2016 Freshwater Kit A**
Request ID: **RQ-2017-07-17-36**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 13-SEP-2017 14:17

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 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: QA/QC BLANK FIELD BLANK **Collection Date/Time: 08/22/2017 09:02**

Field ID: QA/QC FIELD BLANK Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1923258	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P330658	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P330840	
	SM 2120 B	Color (true)	2.5	U	PCU	P330669	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P330956	
	SM 2540 C-97	TDS	15	U	mg/L	P331042	
	SM 2540 D-97	TSS	2	U	mg/L	P331175	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P330958	
1923261	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P330836	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P330777	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P330847	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P330788	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P330864	
1923264	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P330727	

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: ALLIGATOR CREEK @ CR NW 86TH **Collection Date/Time: 08/22/2017 12:22**

Field ID: G1TLHR0017-2017-03 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1923259	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P330658	
	EPA 300.0 Rev. 2.1	Chloride	6.6		mg Cl/L	P330840	
	SM 2120 B	Color (true)	750		PCU	P330669	
	SM 2320 B-97	Total Alkalinity	8.6		mg CaCO3/L	P330956	
	SM 2540 C-97	TDS	157		mg/L	P331042	
	SM 2540 D-97	TSS	3	I	mg/L	P331175	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P330958	
1923262	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P330836	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P330894	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P330847	
	EPA 365.1 Rev. 2.0	Total-P	0.36		mg P/L	P330788	
	SM 5310 B-00	Organic Carbon	59		mg C/L	P330864	
1923265	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.30		mg P/L	P330727	

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: ALLIGATOR CREEK @ CR NW 86TH **Collection Date/Time: 08/22/2017 12:24**

Field ID: G1TLHR0017-2017-03-dup Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1923260	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P330658	
	EPA 300.0 Rev. 2.1	Chloride	6.5		mg Cl/L	P330840	
	SM 2120 B	Color (true)	740		PCU	P330669	
	SM 2320 B-97	Total Alkalinity	8.9		mg CaCO3/L	P330956	
	SM 2540 C-97	TDS	161		mg/L	P331042	

Field ID: G1TLHR0017-2017-03-dup Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1923260	SM 2540 D-97	TSS	2	I	mg/L	P331175	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P330958	
1923263	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P330836	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P330894	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P330847	
	EPA 365.1 Rev. 2.0	Total-P	0.36		mg P/L	P330788	
	SM 5310 B-00	Organic Carbon	59		mg C/L	P330864	
1923266	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.30		mg P/L	P330727	

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P330658

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P330840

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P330836

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330777

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330894

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P330847

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P330788

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P330727

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

Reference Method: SM 2120 B
Batch ID: P330669

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P330956

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

Reference Method: SM 2540 C-97
Batch ID: P331042

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P331175

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P330958

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P330864

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: P330840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P330840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P330836

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: P330777

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330894

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P330847

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P330788

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P330727

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

Reference Method: SM 2320 B-97
Batch ID: P330956

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P330958

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.5		P	92 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P330864

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P330840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1923773	Chloride	96.1		P	90 - 110
1923912	Chloride	90.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P330836

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1923262	Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330777

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1923253	Kjeldahl Nitrogen	98.0	95.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1924251	Kjeldahl Nitrogen	94.8	92.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P330847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1923092	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P330788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1923281	Total-P	95.4	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P330727

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1923286	O-Phosphate-P	95.4	97.2	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P330958

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1923276	Fluoride	101	102	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P330864

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1923055	Organic Carbon	92.5	94.2	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P330658

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923252	Turbidity	0.275	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P330840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923773	Chloride	0.120	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P330836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923262	Ammonia-N	1.11	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330777

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923253	Kjeldahl Nitrogen	1.94	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924251	Kjeldahl Nitrogen	2.16	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P330847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P330847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923092	NO2NO3-N	0.261	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P330788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923281	Total-P	4.93	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P330727

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923286	O-Phosphate-P	1.38	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P330669

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923252	Color (true)	2.29	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P330956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923276	Total Alkalinity	0.0509	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P331042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923274	TDS	4.28	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P330958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923276	Fluoride	0.473	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P330864

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923055	Organic Carbon	1.04	Spike	P	0 - 20

Quality Assurance Report
Precision

* 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: A78571
Included Lab Sample IDs: 1923258, 1923259, 1923260

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

Reference Method: SM 2120 B
Run ID: A78573
Included Lab Sample IDs: 1923258, 1923259, 1923260

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A78584
Included Lab Sample IDs: 1923258, 1923259, 1923260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.1	98.3	P/P	90 - 110
Chloride	99.7	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A78589
Included Lab Sample IDs: 1923264, 1923265, 1923266

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A78613
Included Lab Sample IDs: 1923261, 1923262, 1923263

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A78615
Included Lab Sample IDs: 1923261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.8	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A78616
Included Lab Sample IDs: 1923261, 1923262, 1923263

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A78619
Included Lab Sample IDs: 1923261, 1923262, 1923263

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.6	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A78622
Included Lab Sample IDs: 1923262, 1923263

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A78656
Included Lab Sample IDs: 1923261

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

Reference Method: SM 2320 B-97
Run ID: A78669
Included Lab Sample IDs: 1923258, 1923259, 1923260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A78669
Included Lab Sample IDs: 1923258, 1923259, 1923260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A78679
Included Lab Sample IDs: 1923262, 1923263

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.4	95.0	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	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					0.275	
EPA 300.0 Rev. 2.1	Chloride	96.7	96.1	90.2		0.120	
EPA 350.1 Rev. 2.0	Ammonia-N	103	104	103			1.11
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	98.0	95.2			1.94

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.2	94.8	92.1			2.16
EPA 353.2 Rev. 2.0	NO2NO3-N	104	106	106			0.261
EPA 365.1 Rev. 2.0	Total-P	100	95.4	101			4.93
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6	95.4	97.2			1.38
SM 2120 B	Color (true)					2.29	
SM 2320 B-97	Total Alkalinity	103				0.0509	
SM 2540 C-97	TDS					4.28	
SM 4500 F-C-97	Fluoride	97.5	101	102			0.473
SM 5310 B-00	Organic Carbon	101	92.5	94.2			1.04

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1923258, 1923259, 1923260
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1923258, 1923259, 1923260
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1923261, 1923262, 1923263
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1923261, 1923262, 1923263
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1923261, 1923262, 1923263
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1923261, 1923262, 1923263
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1923264, 1923265, 1923266
SM 2120 B / E31780	True Color measured at 450 nm	1923258, 1923259, 1923260
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1923258, 1923259, 1923260
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1923258, 1923259, 1923260
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1923258, 1923259, 1923260
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1923258, 1923259, 1923260
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1923261, 1923262, 1923263

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	08/22/2017			08/22/2017 17:11	Tanya Welborn	1923258, 1923259, 1923260
EPA 300.0 Rev. 2.1	08/22/2017			08/24/2017	Julia Storbeck	1923258, 1923259, 1923260
EPA 350.1 Rev. 2.0	08/22/2017			08/24/2017	Sofia Elnemr	1923261, 1923262, 1923263
EPA 351.2 Rev. 2.0	08/22/2017	08/24/2017	Adrian Shelby	08/25/2017	Joseph Suarez	1923261
	08/22/2017	08/28/2017	Adrian Shelby	08/29/2017	Joseph Suarez	1923262, 1923263
EPA 353.2 Rev. 2.0	08/22/2017			08/25/2017	Beverly Y. Sanders	1923261, 1923262, 1923263
EPA 365.1 Rev. 2.0	08/22/2017	08/24/2017	Sima Feizi	08/25/2017	Lipi Saha	1923261, 1923262, 1923263
EPA 365.1 Rev. 2.0 dissolved	08/22/2017			08/23/2017 14:37	Megan Treadwell	1923264
	08/22/2017			08/23/2017 14:38	Megan Treadwell	1923265
	08/22/2017			08/23/2017 14:39	Megan Treadwell	1923266
SM 2120 B	08/22/2017			08/22/2017 16:11	Tanya Welborn	1923258
	08/22/2017			08/22/2017 16:14	Tanya Welborn	1923259, 1923260
SM 2320 B-97	08/22/2017			08/29/2017	Dale L. Simmons	1923258, 1923259, 1923260
SM 2540 C-97	08/22/2017			08/25/2017	Yijie Li	1923258, 1923259, 1923260
SM 2540 D-97	08/22/2017			08/25/2017	Yijie Li	1923258, 1923259, 1923260
SM 4500 F-C-97	08/22/2017			08/29/2017	Dale L. Simmons	1923258, 1923259, 1923260
SM 5310 B-00	08/22/2017			08/25/2017	Ping Hua	1923261, 1923262, 1923263