Chemical Analysis Report

CEN-DIST-2018-04-24-02

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

Event Description: **Spring Garden Creek + D&B**
Request ID: **RQ-2018-04-23-54**
Customer: **CEN-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 11-MAY-2018 11:33

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: SPRING GARDEN CREEK JUST DS OF DEEP CREEK **Collection Date/Time: 04/23/2018 12:44**

Field ID: G2CE0126 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1986723	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P344001	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P344280	
		Sulfate	15		mg SO4/L	P344284	
	SM 2120 B	Color (true)	500		PCU	P343964	
	SM 2320 B-97	Total Alkalinity	52		mg CaCO3/L	P344453	RPD
	SM 2540 C-97	TDS	382	A	mg/L	P344545	
	SM 2540 D-97	TSS	5	IA	mg/L	P344675	
	SM 4500 F-C-97	Fluoride	0.071	I	mg F/L	P344457	
1986724	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P344185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P344088	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P344120	
	EPA 365.1 Rev. 2.0	Total-P	0.088		mg P/L	P344043	
	SM 5310 B-00	Organic Carbon	37		mg C/L	P344290	
1986725	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P343970	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: SPRING GARDEN CREEK JUST DS OF DEEP CREEK **Collection Date/Time: 04/23/2018 12:50**

Field ID: G2CE0126_DUP Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1986726	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P344001	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P344280	
		Sulfate	15		mg SO4/L	P344284	
	SM 2120 B	Color (true)	500		PCU	P343964	
	SM 2320 B-97	Total Alkalinity	52		mg CaCO3/L	P344453	RPD
	SM 2540 C-97	TDS	371		mg/L	P344545	
	SM 2540 D-97	TSS	5	I	mg/L	P344675	
	SM 4500 F-C-97	Fluoride	0.071	I	mg F/L	P344457	
1986727	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P344185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P344088	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P344120	
	EPA 365.1 Rev. 2.0	Total-P	0.095		mg P/L	P344043	
	SM 5310 B-00	Organic Carbon	36		mg C/L	P344290	
1986728	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P343970	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: WASHROOM **Collection Date/Time: 04/23/2018 13:10**

Field ID: BLANK_04232018 Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes

Field ID: BLANK_04232018 Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1986729	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P344001	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P344280	
		Sulfate	0.20	U	mg SO4/L	P344284	
	SM 2120 B	Color (true)	2.5	U	PCU	P343964	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P344453	RPD
	SM 2540 C-97	TDS	15	U	mg/L	P344544	
	SM 2540 D-97	TSS	2	U	mg/L	P344674	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P344457	
1986730	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P344185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P344088	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P344120	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P344043	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P344290	
1986731	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P343970	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-00: 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: P344001

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P344280

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P344284

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344185

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344088

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P344120

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P344043

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343970

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

Reference Method: SM 2120 B
Batch ID: P343964

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P344453

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

Reference Method: SM 2540 C-97
Batch ID: P344544

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P344545

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P344674

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P344675

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P344457

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P344290

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: P344280

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P344284

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344185

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: P344088

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P344120

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P344043

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: P343970

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343970

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

Reference Method: SM 2320 B-97
Batch ID: P344453

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P344457

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P344290

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P344280

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986644	Chloride	97.9		P	90 - 110
1986809	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P344284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986644	Sulfate	94.3		P	90 - 110
1986809	Sulfate	93.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986638	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344088

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986923	Kjeldahl Nitrogen	92.7	99.4	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P344120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986638	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P344043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986735	Total-P	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986641	O-Phosphate-P	97.1	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P344457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986644	Fluoride	94.2	94.7	P/P	91 - 105

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P344001

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986706	Turbidity	6.48	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P344280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986644	Chloride	0.740	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P344284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986644	Sulfate	0.991	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986638	Ammonia-N	1.75	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986923	Kjeldahl Nitrogen	4.59	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P344120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986638	NO2NO3-N	0.494	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P344043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986735	Total-P	0.654	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986641	O-Phosphate-P	0.821	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P343964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986636	Color (true)	2.93	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P344453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986644	Total Alkalinity	4.08	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P344544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986605	TDS	6.00	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P344545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986723	TDS	2.36	Sample	P	0 - 10

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-97
Batch ID: P344457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986644	Fluoride	0.479	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P344290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986583	Organic Carbon	0.174	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 300.0 Rev. 2.1
Run ID: A83415
Included Lab Sample IDs: 1986723, 1986726, 1986729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	103	P/P	90 - 110
Chloride	104	101	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110
Sulfate	105	101	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A83425
Included Lab Sample IDs: 1986723, 1986726, 1986729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 115
Color (true)	101	99.4	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83428
Included Lab Sample IDs: 1986725, 1986728, 1986731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	97.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A83437
Included Lab Sample IDs: 1986723, 1986726, 1986729

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83479
Included Lab Sample IDs: 1986724, 1986727, 1986730

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A83494
Included Lab Sample IDs: 1986724, 1986727, 1986730

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A83503
Included Lab Sample IDs: 1986724, 1986727, 1986730

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A83509
Included Lab Sample IDs: 1986724, 1986727

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A83513
Included Lab Sample IDs: 1986730

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

Reference Method: SM 5310 B-00
Run ID: A83539
Included Lab Sample IDs: 1986724, 1986727, 1986730

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.1	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A83593
Included Lab Sample IDs: 1986723, 1986726, 1986729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.4	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A83593
Included Lab Sample IDs: 1986723, 1986726, 1986729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.0	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	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					6.48	
EPA 300.0 Rev. 2.1	Chloride	99.5	97.9	101		0.740	
	Sulfate	97.2	94.3	93.0		0.991	
EPA 350.1 Rev. 2.0	Ammonia-N	103	101	103			1.75
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	92.7	99.4			4.59
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	101	102			0.494
EPA 365.1 Rev. 2.0	Total-P	103	100	101			0.654
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.1	97.9			0.821
SM 2120 B	Color (true)					2.93	
SM 2320 B-97	Total Alkalinity	102				4.08	
SM 2540 C-97	TDS					6.00	
	TDS					2.36	
SM 4500 F-C-97	Fluoride	96.5	94.2	94.7			0.479
SM 5310 B-00	Organic Carbon	96.6					0.174

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1986723, 1986726, 1986729
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1986723, 1986726, 1986729
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1986723, 1986726, 1986729
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1986724, 1986727, 1986730
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1986724, 1986727, 1986730
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1986724, 1986727, 1986730
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1986724, 1986727, 1986730
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1986725, 1986728, 1986731
SM 2120 B / E31780	True Color measured at 450 nm	1986723, 1986726, 1986729
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1986723, 1986726, 1986729
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1986723, 1986726, 1986729
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1986723, 1986726, 1986729
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1986723, 1986726, 1986729
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1986724, 1986727, 1986730

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	04/24/2018			04/24/2018 16:04	William L. Brown IV	1986723, 1986726, 1986729
EPA 300.0 Rev. 2.1	04/24/2018			04/27/2018 15:47	Lipi Saha	1986723
	04/24/2018			04/27/2018 16:00	Lipi Saha	1986726
	04/24/2018			04/27/2018 16:37	Lipi Saha	1986729
EPA 350.1 Rev. 2.0	04/24/2018			04/25/2018 12:53	Ping Hua	1986724
	04/24/2018			04/25/2018 12:55	Ping Hua	1986727
	04/24/2018			04/25/2018 12:56	Ping Hua	1986730
EPA 351.2 Rev. 2.0	04/24/2018	04/26/2018 10:20	Adrian Shelby	04/27/2018 10:25	Joseph Suarez	1986724
	04/24/2018	04/26/2018 10:20	Adrian Shelby	04/27/2018 10:27	Joseph Suarez	1986727
	04/24/2018	04/26/2018 10:20	Adrian Shelby	04/27/2018 10:28	Joseph Suarez	1986730
EPA 353.2 Rev. 2.0	04/24/2018			04/26/2018 11:36	Lauren Bottorf	1986730
	04/24/2018			04/26/2018 11:38	Lauren Bottorf	1986724
	04/24/2018			04/26/2018 11:39	Lauren Bottorf	1986727
EPA 365.1 Rev. 2.0	04/24/2018	04/25/2018 13:20	Sima Feizi	04/27/2018 12:50	Beverly Y. Sanders	1986724
	04/24/2018	04/25/2018 13:20	Sima Feizi	04/27/2018 12:51	Beverly Y. Sanders	1986727
	04/24/2018	04/25/2018 13:20	Sima Feizi	04/27/2018 13:41	Beverly Y. Sanders	1986730
EPA 365.1 Rev. 2.0 dissolved	04/24/2018			04/24/2018 15:08	Megan Treadwell	1986725
	04/24/2018			04/24/2018 15:09	Megan Treadwell	1986728
	04/24/2018			04/24/2018 15:10	Megan Treadwell	1986731
SM 2120 B	04/24/2018			04/24/2018 15:18	Tanya Welborn	1986729
	04/24/2018			04/24/2018 15:34	Tanya Welborn	1986723, 1986726
SM 2320 B-97	04/24/2018			05/02/2018 07:04	Dale L. Simmons	1986723
	04/24/2018			05/02/2018 07:14	Dale L. Simmons	1986726
	04/24/2018			05/02/2018 07:26	Dale L. Simmons	1986729
SM 2540 C-97	04/24/2018			04/27/2018 16:08	Yijie Li	1986723, 1986726, 1986729
SM 2540 D-97	04/24/2018			04/27/2018 16:08	Yijie Li	1986723, 1986726, 1986729
SM 4500 F-C-97	04/24/2018			05/02/2018 07:04	Dale L. Simmons	1986723
	04/24/2018			05/02/2018 07:14	Dale L. Simmons	1986726
	04/24/2018			05/02/2018 07:26	Dale L. Simmons	1986729
SM 5310 B-00	04/24/2018			04/28/2018 07:17	Julia Storbeck	1986724
	04/24/2018			04/28/2018 07:32	Julia Storbeck	1986727
	04/24/2018			04/28/2018 07:47	Julia Storbeck	1986730