

Chemical Analysis Report

CEN-DIST-2017-11-09-01

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

Event Description: **Shaw / Spring Garden Lk**
Request ID: **RQ-2017-10-30-48**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 04-DEC-2017 15:36



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: Little Wekiva (West) @ 50m US of Northwestern Ave

Collection Date/Time: 11/08/2017 09:41

Field ID: G2CE0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1944975	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P335051	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P335093	
		Sulfate	10		mg SO4/L	P335096	
	SM 2120 B	Color (true)	64		PCU	P335043	
	SM 2320 B-97	Total Alkalinity	62		mg CaCO3/L	P335401	
	SM 2540 C-97	TDS	130		mg/L	P335487	
	SM 2540 D-97	TSS	6	I	mg/L	P335272	
	SM 4500 F-C-97	Fluoride	0.078	I	mg F/L	P335403	
1944978	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P335893	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P335642	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P335650	
	EPA 365.1 Rev. 2.0	Total-P	0.089		mg P/L	P335353	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P335608	
1944981	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P335081	

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: Cow Creek at Osteen-Maytown Road

Collection Date/Time: 11/08/2017 10:51

Field ID: G2CE0086

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1944976	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P335051	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P335093	
		Sulfate	0.20	U	mg SO4/L	P335096	
	SM 2120 B	Color (true)	980		PCU	P335043	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P335401	
	SM 2540 C-97	TDS	178		mg/L	P335487	
	SM 2540 D-97	TSS	2	U	mg/L	P335272	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P335403	
1944979	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P335893	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.9		mg N/L	P336047	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P335650	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P335354	
	SM 5310 B-00	Organic Carbon	75		mg C/L	P335608	
1944982	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P335081	

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: Silver Lake @ Center

Collection Date/Time: 11/08/2017 12:25

Field ID: G2CE0122

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1944977	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P335051	
	EPA 300.0 Rev. 2.1	Chloride	47		mg Cl/L	P335093	

Field ID: G2CE0122

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1944977	EPA 300.0 Rev. 2.1	Sulfate	24		mg SO4/L	P335096	
	SM 2120 B	Color (true)	12		PCU	P335043	
	SM 2320 B-97	Total Alkalinity	8.1		mg CaCO3/L	P335401	
	SM 2540 C-97	TDS	127		mg/L	P335487	
	SM 2540 D-97	TSS	2	UA	mg/L	P335272	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P335403	
1944980	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P335893	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P335758	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P335650	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P335354	
	SM 5310 B-00	Organic Carbon	5.1		mg C/L	P335609	
1944983	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P335081	

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: P335051

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P335093

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P335096

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P335893

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P335642

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P335758

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335758

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336047

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335650

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335353

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335354

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335081

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

Reference Method: SM 2120 B
Batch ID: P335043

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P335401

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

Reference Method: SM 2540 C-97
Batch ID: P335487

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
 Batch ID: P335272

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P335403

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P335608

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

Reference Method: SM 5310 B-00
 Batch ID: P335609

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: P335093

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P335096

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P335893

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P335642

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P335758

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335758

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336047

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	91.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335650

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: P335353

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335354

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: P335081

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	93.7		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P335401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P335403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P335608

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P335609

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P335093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1945017	Chloride	98.9		P	90 - 110
1945174	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P335096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1945017	Sulfate	99.0		P	90 - 110
1945174	Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P335893

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1944980	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P335642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1944978	Kjeldahl Nitrogen	101	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P335758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1944980	Kjeldahl Nitrogen	98.7	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P336047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946898	Kjeldahl Nitrogen	94.5	98.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P335650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1944978	NO2NO3-N	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P335353

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1944978	Total-P	100	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P335354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1944980	Total-P	99.7	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P335081

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1944983	O-Phosphate-P	92.3	91.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P335403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1944926	Fluoride	101	97.8	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P335608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1944892	Organic Carbon	97.0	101	P/P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P335609

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1945182	Organic Carbon	100	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P335051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944953	Turbidity	1.65	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P335093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1945017	Chloride	0.126	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1945017	Sulfate	0.292	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P335893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944980	Ammonia-N	1.31	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944978	Kjeldahl Nitrogen	1.34	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944980	Kjeldahl Nitrogen	0.418	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946898	Kjeldahl Nitrogen	2.65	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944978	NO2NO3-N	0.214	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944978	Total-P	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944980	Total-P	0.492	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944983	O-Phosphate-P	0.652	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P335043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944954	Color (true)	2.28	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P335401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944926	Total Alkalinity	0.0239	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P335487

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944954	TDS	0.583	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P335403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944926	Fluoride	1.93	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P335608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944892	Organic Carbon	3.96	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P335609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1945182	Organic Carbon	0.0455	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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A80134

Included Lab Sample IDs: 1944975, 1944976, 1944977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	100	101	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A80175

Included Lab Sample IDs: 1944975, 1944976, 1944977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	85 - 115
Color (true)	99.7	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A80181

Included Lab Sample IDs: 1944975, 1944976, 1944977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A80192

Included Lab Sample IDs: 1944981, 1944982, 1944983

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	93.4	99.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A80300

Included Lab Sample IDs: 1944975, 1944976, 1944977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.7	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A80300

Included Lab Sample IDs: 1944975, 1944976, 1944977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80313

Included Lab Sample IDs: 1944978

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80354

Included Lab Sample IDs: 1944979, 1944980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
 Run ID: A80354
 Included Lab Sample IDs: 1944979, 1944980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	105	P/P	90 - 110

Reference Method: SM 5310 B-00
 Run ID: A80378
 Included Lab Sample IDs: 1944978, 1944979, 1944980

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

Reference Method: EPA 353.2 Rev. 2.0
 Run ID: A80390
 Included Lab Sample IDs: 1944978, 1944979, 1944980

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

Reference Method: EPA 351.2 Rev. 2.0
 Run ID: A80482
 Included Lab Sample IDs: 1944978

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

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A80513
 Included Lab Sample IDs: 1944978, 1944979, 1944980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	101	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Run ID: A80551
 Included Lab Sample IDs: 1944980

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

Reference Method: EPA 351.2 Rev. 2.0
 Run ID: A80614
 Included Lab Sample IDs: 1944979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.7	95.9	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	
						SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					1.65	
EPA 300.0 Rev. 2.1	Chloride	99.9	98.9	100		0.126	
	Sulfate	99.2	99.0	99.6		0.292	
EPA 350.1 Rev. 2.0	Ammonia-N	104	101	100			1.31
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.0	101	98.9			1.34
	Kjeldahl Nitrogen	95.6	98.7	99.3			0.418
	Kjeldahl Nitrogen	91.8	94.5	98.9			2.65
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102				0.214
EPA 365.1 Rev. 2.0	Total-P	105	100	98.7			1.01
	Total-P	102	99.7	99.2			0.492
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	93.7	92.3	91.7			0.652
SM 2120 B	Color (true)					2.28	
SM 2320 B-97	Total Alkalinity	102				0.0239	
SM 2540 C-97	TDS					0.583	
SM 4500 F-C-97	Fluoride	95.2	101	97.8			1.93
SM 5310 B-00	Organic Carbon	100	97.0	101			3.96
	Organic Carbon	99.0	100	100			0.0455

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1944975, 1944976, 1944977
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1944975, 1944976, 1944977
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1944975, 1944976, 1944977
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1944978, 1944979, 1944980
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1944978, 1944979, 1944980
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1944978, 1944979, 1944980
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1944978, 1944979, 1944980
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1944981, 1944982, 1944983
SM 2120 B / E31780	True Color measured at 450 nm	1944975, 1944976, 1944977
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1944975, 1944976, 1944977
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1944975, 1944976, 1944977
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1944975, 1944976, 1944977
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1944975, 1944976, 1944977
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1944978, 1944979, 1944980

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	11/09/2017			11/09/2017 14:56	DeAsia Armster	1944975, 1944976, 1944977
EPA 300.0 Rev. 2.1	11/09/2017			11/10/2017	Julia Storbeck	1944975, 1944976, 1944977
EPA 350.1 Rev. 2.0	11/09/2017			11/22/2017	Sofia Elnemr	1944978, 1944979, 1944980
EPA 351.2 Rev. 2.0	11/09/2017	11/20/2017	Adrian Shelby	11/22/2017	Joseph Suarez	1944978
	11/09/2017	11/22/2017	Adrian Shelby	11/27/2017	Joseph Suarez	1944980
	11/09/2017	11/29/2017	Adrian Shelby	11/30/2017	Joseph Suarez	1944979
EPA 353.2 Rev. 2.0	11/09/2017			11/20/2017	Beverly Y. Sanders	1944978, 1944979, 1944980
EPA 365.1 Rev. 2.0	11/09/2017	11/15/2017	Sima Feizi	11/16/2017	Lipi Saha	1944978
	11/09/2017	11/15/2017	Sima Feizi	11/17/2017	Lipi Saha	1944979, 1944980
EPA 365.1 Rev. 2.0 dissolved	11/09/2017			11/09/2017 14:49	Megan Treadwell	1944983
	11/09/2017			11/09/2017 14:54	Megan Treadwell	1944981
	11/09/2017			11/09/2017 14:55	Megan Treadwell	1944982
SM 2120 B	11/09/2017			11/09/2017 14:47	Tanya Welborn	1944975
	11/09/2017			11/09/2017 14:49	Tanya Welborn	1944977
	11/09/2017			11/09/2017 15:08	Tanya Welborn	1944976
SM 2320 B-97	11/09/2017			11/15/2017	Dale L. Simmons	1944975, 1944976, 1944977
SM 2540 C-97	11/09/2017			11/13/2017	DeAsia Armster	1944975, 1944976, 1944977
SM 2540 D-97	11/09/2017			11/13/2017	DeAsia Armster	1944975, 1944976, 1944977
SM 4500 F-C-97	11/09/2017			11/15/2017	Dale L. Simmons	1944975, 1944976, 1944977
SM 5310 B-00	11/09/2017			11/17/2017	Ping Hua	1944978, 1944979, 1944980