Chemical Analysis Report

SW-DIST-2016-11-22-01

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

Event Description: **Bellows & Green**
Request ID: **RQ-2016-11-21-43**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 15-DEC-2016 11:23

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: Green LK N **Collection Date/Time: 11/21/2016 12:10**

Field ID: G5SW0107 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1852092	EPA 180.1 Rev. 2.0	Turbidity	1.1	A	NTU	P315622	
	EPA 300.0 Rev. 2.1	Chloride	16	A	mg Cl/L	P316120	
		Sulfate	0.30	I	mg SO4/L	P316116	
	SM 2120 B	Color (true)	27	A	PCU	P315642	
	SM 2320 B-97	Total Alkalinity	20		mg CaCO3/L	P315810	
	SM 2540 C-97	TDS	69		mg/L	P316228	
	SM 2540 D-97	TSS	2	I	mg/L	P316223	
	SM 4500 F-C-97	Fluoride	0.058	I	mg F/L	P315813	
1852095	EPA 350.1 Rev. 2.0	Ammonia-N	0.03		mg N/L	P315897	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P316290	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P316025	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P316085	
	SM 5310 B-00	Organic Carbon	9.3		mg C/L	P315821	
1852098	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P315624	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Green LK S **Collection Date/Time: 11/21/2016 12:00**

Field ID: G5SW0108 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1852093	EPA 180.1 Rev. 2.0	Turbidity	0.72		NTU	P315622	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P316120	
		Sulfate	0.37	I	mg SO4/L	P316116	
	SM 2120 B	Color (true)	27		PCU	P315642	
	SM 2320 B-97	Total Alkalinity	20		mg CaCO3/L	P315810	
	SM 2540 C-97	TDS	70		mg/L	P316228	
	SM 2540 D-97	TSS	2	I	mg/L	P316223	
	SM 4500 F-C-97	Fluoride	0.060	I	mg F/L	P315813	
1852096	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P315897	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P316290	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P316025	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P316085	
	SM 5310 B-00	Organic Carbon	9.1		mg C/L	P315821	
1852099	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P315625	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Bear Creek **Collection Date/Time: 11/21/2016 10:30**

Field ID: G1SW0044 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1852094	EPA 180.1 Rev. 2.0	Turbidity	22		NTU	P315622	

Field ID: G1SW0044 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1852094	EPA 300.0 Rev. 2.1	Chloride	6.3		mg Cl/L	P316120	
		Sulfate	5.8		mg SO4/L	P316116	
	SM 2120 B	Color (true)	57	A	PCU	P315643	
	SM 2320 B-97	Total Alkalinity	50		mg CaCO3/L	P315810	
	SM 2540 C-97	TDS	104		mg/L	P316228	
	SM 2540 D-97	TSS	28		mg/L	P316223	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P315813	
1852097	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P315897	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.2		mg N/L	P316246	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P316025	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P316085	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P315821	
1852100	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P315625	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
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: P315622

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316116

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316120

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315897

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316246

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316290

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P316025

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316085

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315624

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315625

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

Reference Method: SM 2120 B
Batch ID: P315642

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P315643

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P315810

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

Reference Method: SM 2540 C-97
Batch ID: P316228

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P316223

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P315813

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P315821

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: P316116

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316120

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315897

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316246

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316290

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P316025

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P316025

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316085

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315624

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315625

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

Reference Method: SM 2320 B-97
Batch ID: P315810

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

Reference Method: SM 4500 F-C-97
Batch ID: P315813

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P315821

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1852092	Sulfate	97.3		P	90 - 110
1852093	Sulfate	99.1		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1852092	Chloride	102		P	90 - 110
1852093	Chloride	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315897

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1852095	Ammonia-N	98.4	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316246

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851555	Kjeldahl Nitrogen	97.0	94.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851901	Kjeldahl Nitrogen	110	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P316025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1852095	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1852041	Total-P	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315624

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1852043	O-Phosphate-P	97.2	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315625

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1852099	O-Phosphate-P	97.8	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P315813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1852076	Fluoride	98.8	99.5	P/P	91 - 105

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P315821

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1852056	Organic Carbon	97.3	96.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P315622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852092	Turbidity	9.78	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852092	Chloride	2.11	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852095	Ammonia-N	0.906	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316246

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851555	Kjeldahl Nitrogen	2.11	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851901	Kjeldahl Nitrogen	2.38	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P316025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852095	NO2NO3-N	0.445	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852041	Total-P	3.19	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315624

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852043	O-Phosphate-P	1.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315625

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852099	O-Phosphate-P	1.32	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P315642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852092	Color (true)	1.99	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P315643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852094	Color (true)	2.22	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P315810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852076	Total Alkalinity	0.162	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P316228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852050	TDS	2.84	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P315813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852076	Fluoride	0.490	Spike	P	0 - 3.0

Quality Assurance Report
Precision

Reference Method: SM 5310 B-00
Batch ID: P315821

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852056	Organic Carbon	0.722	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: A72966
Included Lab Sample IDs: 1852092, 1852093, 1852094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A72967
Included Lab Sample IDs: 1852098, 1852099, 1852100

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	100	P/P	90 - 110
O-Phosphate-P	99.9	99.0	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A72971
Included Lab Sample IDs: 1852092, 1852093, 1852094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	85 - 115
Color (true)	104	103	P/P	85 - 115

Reference Method: SM 2320 B-97
Run ID: A73035
Included Lab Sample IDs: 1852092, 1852093, 1852094

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

Reference Method: SM 4500 F-C-97
Run ID: A73035
Included Lab Sample IDs: 1852092, 1852093, 1852094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	98.5	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A73041
Included Lab Sample IDs: 1852095, 1852096, 1852097

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A73041
Included Lab Sample IDs: 1852095, 1852096, 1852097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	96.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A73074
Included Lab Sample IDs: 1852095, 1852096, 1852097

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A73117
Included Lab Sample IDs: 1852095, 1852096, 1852097

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A73131
Included Lab Sample IDs: 1852092, 1852093, 1852094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	101	100	P/P	90 - 110
Sulfate	95.8	98.5	P/P	90 - 110
Sulfate	98.3	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A73183
Included Lab Sample IDs: 1852097

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: A73187
Included Lab Sample IDs: 1852095, 1852096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A73234
Included Lab Sample IDs: 1852097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.8	92.7	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A73249
Included Lab Sample IDs: 1852095, 1852096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.7	96.7	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					9.78	
EPA 300.0 Rev. 2.1	Chloride	99.9	102	102		2.11	
	Sulfate	96.3	97.3	99.1			
EPA 350.1 Rev. 2.0	Ammonia-N	105	98.4	99.9			0.906
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	97.0	94.7			2.11
	Kjeldahl Nitrogen	104	110	107			2.38
EPA 353.2 Rev. 2.0	NO2NO3-N	106	106	106			0.445
EPA 365.1 Rev. 2.0	Total-P	104	101	104			3.19
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	97.2	98.6			1.37
	O-Phosphate-P	98.7	97.8	99.1			1.32
SM 2120 B	Color (true)					1.99	
	Color (true)					2.22	
SM 2320 B-97	Total Alkalinity	103				0.162	
SM 2540 C-97	TDS					2.84	
SM 4500 F-C-97	Fluoride	96.4	98.8	99.5			0.490
SM 5310 B-00	Organic Carbon	97.6	97.3	96.6			0.722

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1852092, 1852093, 1852094
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1852092, 1852093, 1852094
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1852092, 1852093, 1852094
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1852095, 1852096, 1852097
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1852095, 1852096, 1852097
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1852095, 1852096, 1852097
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1852095, 1852096, 1852097
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1852098, 1852099, 1852100
SM 2120 B / E31780	True Color measured at 450 nm	1852092, 1852093, 1852094
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1852092, 1852093, 1852094
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1852092, 1852093, 1852094
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1852092, 1852093, 1852094

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1852092, 1852093, 1852094
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1852095, 1852096, 1852097

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	11/22/2016			11/22/2016 15:04	Sima Feizi	1852092, 1852093, 1852094
EPA 300.0 Rev. 2.1	11/22/2016			12/02/2016	Ping Hua	1852092, 1852093, 1852094
EPA 350.1 Rev. 2.0	11/22/2016			11/29/2016	Sofia Elnemr	1852095, 1852096, 1852097
EPA 351.2 Rev. 2.0	11/22/2016	12/06/2016	Adrian Shelby	12/07/2016	Joseph Suarez	1852097
	11/22/2016	12/07/2016	Adrian Shelby	12/08/2016	Joseph Suarez	1852095, 1852096
EPA 353.2 Rev. 2.0	11/22/2016			12/01/2016	Beverly Y. Sanders	1852095, 1852096, 1852097
EPA 365.1 Rev. 2.0	11/22/2016	12/02/2016	Adrian Shelby	12/05/2016	Lipi Saha	1852095, 1852096, 1852097
EPA 365.1 Rev. 2.0 dissolved	11/22/2016			11/22/2016 14:58	Julia Storbeck	1852099
	11/22/2016			11/22/2016 15:28	Julia Storbeck	1852098
	11/22/2016			11/22/2016 15:29	Julia Storbeck	1852100
SM 2120 B	11/22/2016			11/22/2016 16:03	Jared I. Manley	1852092
	11/22/2016			11/22/2016 16:08	Jared I. Manley	1852093
	11/22/2016			11/22/2016 16:14	Jared I. Manley	1852094
SM 2320 B-97	11/22/2016			11/29/2016	Dale L. Simmons	1852092, 1852093, 1852094
SM 2540 C-97	11/22/2016			11/26/2016	Yijie Li	1852092, 1852093, 1852094
SM 2540 D-97	11/22/2016			11/26/2016	Yijie Li	1852092, 1852093, 1852094
SM 4500 F-C-97	11/22/2016			11/29/2016	Dale L. Simmons	1852092, 1852093, 1852094
SM 5310 B-00	11/22/2016			11/28/2016	Julie Michelle Frank	1852095, 1852096, 1852097