

Chemical Analysis Report

SO-DIST-2016-09-21-02

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

Event Description: **SMP: Telegraph, Olga, Roberts**
Request ID: **RQ-2016-09-05-76**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901
Attn: Ben Paswater

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Certified by: Colin Wright, Environmental Administrator

Date Certified: 19-OCT-2016 14:44

A handwritten signature in black ink, appearing to read "Colin Wright", is placed over a light gray rectangular background.

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: TELEGRAPH SWAMP SOUTH SITE

Collection Date/Time: 09/20/2016 14:10

Field ID: G3SD092016-7

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1833202	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P311600	
	EPA 300.0 Rev. 2.1	Chloride	42		mg Cl/L	P311775	
		Sulfate	4.5		mg SO4/L	P311776	
	SM 2120 B	Color (true)	220		PCU	P311617	
	SM 2320 B-97	Total Alkalinity	59		mg CaCO3/L	P311803	
	SM 2540 C-97	TDS	186		mg/L	P312263	
	SM 2540 D-97	TSS	3	I	mg/L	P312267	
	SM 4500 F-C-97	Fluoride	0.10	I	mg F/L	P311805	
1833206	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P311842	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P312103	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.055		mg N/L	P311901	MS
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P312225	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P311982	
1833210	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P311603	

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: TELEGRAPH SWAMP DUPLICATE

Collection Date/Time: 09/20/2016 14:10

Field ID: G3SD092016-DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1833203	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P311600	
	EPA 300.0 Rev. 2.1	Chloride	42		mg Cl/L	P311775	
		Sulfate	4.4		mg SO4/L	P311776	
	SM 2120 B	Color (true)	220		PCU	P311617	
	SM 2320 B-97	Total Alkalinity	59		mg CaCO3/L	P311803	
	SM 2540 C-97	TDS	176		mg/L	P312263	
	SM 2540 D-97	TSS	2	I	mg/L	P312267	
	SM 4500 F-C-97	Fluoride	0.10	I	mg F/L	P311805	
1833207	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P311842	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P312103	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.055		mg N/L	P311901	MS
	EPA 365.1 Rev. 2.0	Total-P	0.059		mg P/L	P312225	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P311982	
1833211	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P311603	

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: BANANA BRANCH @ FT. DENAUD RD.

Collection Date/Time: 09/20/2016 11:30

Field ID: G3SD092016-8

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1833204	EPA 180.1 Rev. 2.0	Turbidity	3.2	A	NTU	P311600	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P311775	
		Sulfate	9.3		mg SO4/L	P311776	

Field ID: G3SD092016-8

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1833204	SM 2120 B	Color (true)	130		PCU	P311617	
	SM 2320 B-97	Total Alkalinity	131		mg CaCO3/L	P311803	
	SM 2540 C-97	TDS	239		mg/L	P312263	
	SM 2540 D-97	TSS	8	I	mg/L	P312267	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P311805	
1833208	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P311842	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P312103	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P311901	MS
	EPA 365.1 Rev. 2.0	Total-P	0.084		mg P/L	P312225	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P311982	
1833212	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P311603	

Ref. Method and Comment:

SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 360 umhos/cm.

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

Sample Location: OLGA CREEK @ SR 80

Collection Date/Time: 09/20/2016 12:10

Field ID: G3SD092016-9

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1833205	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P311600	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P311775	
		Sulfate	16		mg SO4/L	P311776	
	SM 2120 B	Color (true)	71	A	PCU	P311617	
	SM 2320 B-97	Total Alkalinity	245		mg CaCO3/L	P311803	
	SM 2540 C-97	TDS	468	A	mg/L	P312263	
	SM 2540 D-97	TSS	3	I	mg/L	P312267	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P311805	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P311842	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P312103	
1833209	EPA 353.2 Rev. 2.0	NO2NO3-N	0.061	J	mg N/L	P311901	MS
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P312434	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P311982	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P311603	

Ref. Method and Comment:

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

EPA 353.2 Rev. 2.0: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P311600

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P311775

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P311776

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P311842

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P312103

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311901

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312225

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312434

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P311603

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

Reference Method: SM 2120 B
Batch ID: P311617

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
 Batch ID: P311803

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

Reference Method: SM 2540 C-97
 Batch ID: P312263

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P312267

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P311805

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P311982

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: P311775

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P311776

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P311842

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P312103

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: P312103

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P311901

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	95.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P312225

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P312434

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P311603

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

Reference Method: SM 2320 B-97
 Batch ID: P311803

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

Reference Method: SM 4500 F-C-97
 Batch ID: P311805

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P311982

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P311775

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P311775

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1833184	Chloride	101		P	90 - 110
1833185	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P311776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1833184	Sulfate	98.1		P	90 - 110
1833185	Sulfate	96.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P311842

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1833187	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P312103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1833235	Kjeldahl Nitrogen	96.3	97.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311901

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1833209	NO2NO3-N	86.3	86.3	F/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1833189	Total-P	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312434

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1834287	Total-P	97.0	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P311603

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1833111	O-Phosphate-P	102	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P311805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1832801	Fluoride	98.6	98.0	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P311982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1833189	Organic Carbon	105		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P311600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1833204	Turbidity	2.83	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P311775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1833184	Chloride	1.15	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P311776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1833184	Sulfate	0.497	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P311842

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1833187	Ammonia-N	1.16	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P312103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1833235	Kjeldahl Nitrogen	0.545	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P311901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1833209	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1833189	Total-P	0.600	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1834288	Total-P	0.273	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P311603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1833111	O-Phosphate-P	0.293	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P311617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1833205	Color (true)	1.03	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P311803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1832801	Total Alkalinity	0.177	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P312263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1833205	TDS	1.93	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P311805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1832801	Fluoride	0.525	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P311982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1833189	Organic Carbon	1.34	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: A71758

Included Lab Sample IDs: 1833202, 1833203, 1833204, 1833205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A71759

Included Lab Sample IDs: 1833210, 1833211, 1833212, 1833213

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.9	P/P	90 - 110
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	99.9	99.4	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A71760

Included Lab Sample IDs: 1833202, 1833203, 1833204, 1833205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	93.4	96.0	P/P	85 - 115
Color (true)	99.1	96.9	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A71789

Included Lab Sample IDs: 1833202, 1833203, 1833204, 1833205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.0	98.0	P/P	90 - 110
Chloride	99.7	98.5	P/P	90 - 110
Sulfate	101	98.9	P/P	90 - 110
Sulfate	98.4	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A71811

Included Lab Sample IDs: 1833202, 1833203, 1833204, 1833205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A71811

Included Lab Sample IDs: 1833202, 1833203, 1833204, 1833205

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A71831

Included Lab Sample IDs: 1833206, 1833207, 1833208, 1833209

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.9	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A71854

Included Lab Sample IDs: 1833206, 1833207, 1833208, 1833209

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	91.5	91.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A71877

Included Lab Sample IDs: 1833206, 1833207, 1833208, 1833209

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A71982

Included Lab Sample IDs: 1833206, 1833207, 1833208

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A72058

Included Lab Sample IDs: 1833206, 1833207, 1833208, 1833209

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A72124

Included Lab Sample IDs: 1833209

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	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				2.83	
EPA 300.0 Rev. 2.1	Chloride	101	101	100	1.15	
	Sulfate	98.3	96.9	98.1	0.497	
EPA 350.1 Rev. 2.0	Ammonia-N	101	104	103		1.16

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	96.3	97.1		0.545
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	95.0	86.3	86.3		0.0
EPA 365.1 Rev. 2.0	Total-P	97.2	103	102		0.600
	Total-P	98.5	97.0	97.3		0.273
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	102	103		0.293
SM 2120 B	Color (true)				1.03	
SM 2320 B-97	Total Alkalinity	103			0.177	
SM 2540 C-97	TDS				1.93	
SM 4500 F-C-97	Fluoride	99.2	98.6	98.0		0.525
SM 5310 B-00	Organic Carbon	103	105			1.34

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1833202, 1833203, 1833204, 1833205
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1833202, 1833203, 1833204, 1833205
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1833202, 1833203, 1833204, 1833205
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1833206, 1833207, 1833208, 1833209
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1833206, 1833207, 1833208, 1833209
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1833206, 1833207, 1833208, 1833209
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1833206, 1833207, 1833208, 1833209
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1833210, 1833211, 1833212, 1833213
SM 2120 B / E31780	True Color measured at 450 nm	1833202, 1833203, 1833204, 1833205
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1833202, 1833203, 1833204, 1833205
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1833202, 1833203, 1833204, 1833205
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1833202, 1833203, 1833204, 1833205
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1833202, 1833203, 1833204, 1833205
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1833206, 1833207, 1833208, 1833209

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	09/21/2016			09/21/2016 15:10	Sima Feizi	1833202, 1833203, 1833204, 1833205
EPA 300.0 Rev. 2.1	09/21/2016			09/24/2016	Ping Hua	1833202, 1833203, 1833204, 1833205
EPA 350.1 Rev. 2.0	09/21/2016			09/23/2016	Sofia Elnemr	1833206, 1833207, 1833208, 1833209
EPA 351.2 Rev. 2.0	09/21/2016	09/29/2016	Adrian Shelby	10/06/2016	Joseph Suarez	1833206, 1833207, 1833208, 1833209
EPA 353.2 Rev. 2.0	09/21/2016			09/27/2016	Peter D. Kaus	1833206, 1833207, 1833208, 1833209
EPA 365.1 Rev. 2.0	09/21/2016	09/30/2016	Vijayalakshmi Reddy	10/03/2016	Lipi Saha	1833206, 1833207, 1833208
	09/21/2016	10/05/2016	Vijayalakshmi Reddy	10/10/2016	Lipi Saha	1833209
EPA 365.1 Rev. 2.0 dissolved	09/21/2016			09/21/2016 15:05	Julia Storbeck	1833210, 1833211
	09/21/2016			09/21/2016 15:17	Julia Storbeck	1833212
	09/21/2016			09/21/2016 15:25	Julia Storbeck	1833213
SM 2120 B	09/21/2016			09/21/2016 19:10	Julie Michelle Frank	1833204
	09/21/2016			09/21/2016 19:11	Julie Michelle Frank	1833205
	09/21/2016			09/21/2016 19:36	Julie Michelle Frank	1833202
	09/21/2016			09/21/2016 19:37	Julie Michelle Frank	1833203
SM 2320 B-97	09/21/2016			09/24/2016	Dale L. Simmons	1833202, 1833203, 1833204, 1833205
SM 2540 C-97	09/21/2016			09/23/2016	Yijie Li	1833202, 1833203, 1833204, 1833205
SM 2540 D-97	09/21/2016			09/23/2016	Yijie Li	1833202, 1833203, 1833204, 1833205
SM 4500 F-C-97	09/21/2016			09/24/2016	Dale L. Simmons	1833202, 1833203, 1833204, 1833205
SM 5310 B-00	09/21/2016			09/27/2016	Sofia Elnemr	1833206, 1833207, 1833208, 1833209