

Chemical Analysis Report

SO-DIST-2016-05-25-02

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

Event Description: **SMP: Arbuckle Br, Arbuckle Creek, Harney Pond**

Request ID: **RQ-2016-05-23-06**

Customer: **SO-DIST**

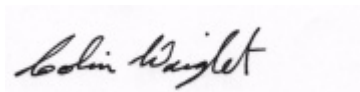
Project ID: **SMP**

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

For additional information please contact
Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
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Certified by: Colin Wright, Environmental Administrator

Date Certified: 16-JUN-2016 13:41



NON-CONFORMANCE REPORT INCLUDED

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: ARBUCKLE BRANCH @ ARBUCKLE CREEK RD.

Collection Date/Time: 05/24/2016 11:00

Field ID: G4SD-26010519

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801803	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P305036	
	EPA 300.0 Rev. 2.1	Chloride	9.9		mg Cl/L	P305472	
		Sulfate	3.7		mg SO4/L	P305475	
	SM 2120 B	Color (true)	440		PCU	P305062	
	SM 2320 B-97	Total Alkalinity	9.7		mg CaCO3/L	P305452	
	SM 2540 C-97	TDS	96		mg/L	P305629	
	SM 2540 D-97	TSS	6	I	mg/L	P305820	
	SM 4500 F-C-97	Fluoride	0.047	I	mg F/L	P305459	
1801806	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P305501	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P305585	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P305181	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P305620	
	SM 5310 B-00	Organic Carbon	33		mg C/L	P305727	
1801809	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P305026	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: PLATT BRANCH @ CR 731

Collection Date/Time: 05/24/2016 09:45

Field ID: SD052416-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801804	EPA 180.1 Rev. 2.0	Turbidity	3.3	A	NTU	P305037	
	EPA 300.0 Rev. 2.1	Chloride	150		mg Cl/L	P305472	
		Sulfate	74		mg SO4/L	P305475	
	SM 2120 B	Color (true)	240		PCU	P305062	
	SM 2320 B-97	Total Alkalinity	32		mg CaCO3/L	P305452	
	SM 2540 C-97	TDS	464		mg/L	P305629	
	SM 2540 D-97	TSS	6	I	mg/L	P305820	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P305459	
1801807	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P305502	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P305586	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P305181	
	EPA 365.1 Rev. 2.0	Total-P	0.33		mg P/L	P305620	
	SM 5310 B-00	Organic Carbon	28		mg C/L	P305727	
1801810	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.26		mg P/L	P305026	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: ARBUCKLE CR. ABOVE MORGAN HOLE BY RAMP

Collection Date/Time: 05/24/2016 11:40

Field ID: G4SD0117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801805	EPA 180.1 Rev. 2.0	Turbidity	6.7		NTU	P305037	

Field ID: G4SD0117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1801805	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P305472	
		Sulfate	16		mg SO4/L	P305475	
	SM 2120 B	Color (true)	180		PCU	P305062	
	SM 2320 B-97	Total Alkalinity	14		mg CaCO3/L	P305452	
	SM 2540 C-97	TDS	119		mg/L	P305629	
	SM 2540 D-97	TSS	8	I	mg/L	P305820	
	SM 4500 F-C-97	Fluoride	0.073	I	mg F/L	P305459	
1801808	EPA 350.1 Rev. 2.0	Ammonia-N	0.020	Y	mg N/L	P305502	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1	Y	mg N/L	P305586	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025	Y	mg N/L	P305181	
	EPA 365.1 Rev. 2.0	Total-P	0.080	Y	mg P/L	P305620	
	SM 5310 B-00	Organic Carbon	19	Y	mg C/L	P305727	
1801811	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P305026	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 351.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 353.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 365.1 Rev. 2.0: Total-P: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

SM 5310 B-00: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

Non-Conformance Report

NCR ID: 5880

Event(s)

SO-DIST-2016-05-25-02

Job(s)

TLH-2016-05-25-32

Sample(s)

1801808

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Sample not preserved to pH < 2.
 Sample ID 1801808; Field ID G4SD0117.

Resolution: Sample preserved in lab with sulfuric acid at 11:45 a.m. on 5/25/16.

Authorised by/Date: Kathryn Holland 5/25/2016

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
 Please address questions to:

Chemistry Tim Fitzpatrick (850) 245-8085
 Biology Cheryl Swanson (850) 245-8177

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P305036

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P305037

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305037

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305472

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305475

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305501

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305502

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305585

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305586

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305181

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305620

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305026

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

Reference Method: SM 2120 B
Batch ID: P305062

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P305452

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

Reference Method: SM 2540 C-97
Batch ID: P305629

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P305820

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P305459

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P305727

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: P305472

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305475

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305475

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305501

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305502

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305585

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305586

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305181

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305620

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: P305026

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

Reference Method: SM 2320 B-97
Batch ID: P305452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P305459

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P305727

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801859	Chloride	99.3		P	90 - 110
1801893	Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801859	Sulfate	98.7		P	90 - 110
1801893	Sulfate	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305501

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801714	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305502

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801820	Ammonia-N	98.9	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305585

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801717	Kjeldahl Nitrogen	98.5	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801832	Kjeldahl Nitrogen	103	98.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P305181

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801671	NO2NO3-N	96.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P305620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801832	Total-P	105	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P305026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801841	O-Phosphate-P	98.0	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P305459

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801861	Fluoride	96.7	97.2	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P305727

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801570	Organic Carbon	99.2	97.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P305036

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801667	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P305037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801804	Turbidity	3.36	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P305472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801859	Chloride	0.00551	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801859	Sulfate	0.417	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801714	Ammonia-N	0.545	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801820	Ammonia-N	1.28	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801717	Kjeldahl Nitrogen	2.83	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801832	Kjeldahl Nitrogen	3.00	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801671	NO2NO3-N	1.72	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801832	Total-P	0.0720	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801841	O-Phosphate-P	0.509	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P305062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801819	Color (true)	0.679	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P305452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801861	Total Alkalinity	0.884	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P305629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801752	TDS	6.26	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P305459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801861	Fluoride	0.492	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P305727

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801570	Organic Carbon	1.03	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 365.1 Rev. 2.0 dissolved
Run ID: A69693
Included Lab Sample IDs: 1801809, 1801810, 1801811

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A69695
Included Lab Sample IDs: 1801803, 1801804, 1801805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105
Turbidity	99.0	101	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A69704

Included Lab Sample IDs: 1801803, 1801804, 1801805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.3	98.4	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69735

Included Lab Sample IDs: 1801806, 1801807, 1801808

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A69805

Included Lab Sample IDs: 1801803, 1801804, 1801805

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

Reference Method: SM 4500 F-C-97

Run ID: A69805

Included Lab Sample IDs: 1801803, 1801804, 1801805

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A69814

Included Lab Sample IDs: 1801803, 1801804, 1801805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Sulfate	99.1	94.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69820

Included Lab Sample IDs: 1801806, 1801807, 1801808

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.7	P/P	90 - 110
Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A69893

Included Lab Sample IDs: 1801806, 1801807, 1801808

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69899

Included Lab Sample IDs: 1801806, 1801807, 1801808

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69899

Included Lab Sample IDs: 1801806, 1801807, 1801808

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.8	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69917

Included Lab Sample IDs: 1801806, 1801807, 1801808

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	99.6	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				0.0	
	Turbidity				3.36	
EPA 300.0 Rev. 2.1	Chloride	100	99.3 99.1		0.0055	
	Sulfate	97.5	98.7 97.4		0.417	
EPA 350.1 Rev. 2.0	Ammonia-N	101	100 101			0.545
	Ammonia-N	102	98.9 101			1.28
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.6	98.5 103			2.83
	Kjeldahl Nitrogen	97.2	103 98.8			3.00
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	96.0 98.0			1.72
EPA 365.1 Rev. 2.0	Total-P	103	105 105			0.0720
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.0 98.5			0.509
SM 2120 B	Color (true)				0.679	
SM 2320 B-97	Total Alkalinity	103			0.884	
SM 2540 C-97	TDS				6.26	
SM 4500 F-C-97	Fluoride	98.3	96.7 97.2			0.492
SM 5310 B-00	Organic Carbon	99.6	99.2 97.9			1.03

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1801803, 1801804, 1801805
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1801803, 1801804, 1801805
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1801803, 1801804, 1801805
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1801806, 1801807, 1801808
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1801806, 1801807, 1801808
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1801806, 1801807, 1801808

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1801806, 1801807, 1801808
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1801809, 1801810, 1801811
SM 2120 B / E31780	True Color measured at 450 nm	1801803, 1801804, 1801805
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1801803, 1801804, 1801805
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1801803, 1801804, 1801805
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1801803, 1801804, 1801805
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1801803, 1801804, 1801805
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1801806, 1801807, 1801808

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	05/25/2016			05/25/2016 16:22	Sima Feizi	1801803, 1801804, 1801805
EPA 300.0 Rev. 2.1	05/25/2016			06/02/2016	Elisa J Lutz	1801803, 1801804, 1801805
EPA 350.1 Rev. 2.0	05/25/2016			06/02/2016	Diana M. Turner	1801806, 1801807, 1801808
EPA 351.2 Rev. 2.0	05/25/2016	06/06/2016	Sofia Elnemr	06/07/2016	Christopher Armour	1801806, 1801807, 1801808
EPA 353.2 Rev. 2.0	05/25/2016			05/27/2016	Peter D. Kaus	1801806, 1801807, 1801808
EPA 365.1 Rev. 2.0	05/25/2016	06/06/2016	Vijayalakshmi Reddy	06/08/2016	Rochelle Y Jackson	1801806, 1801807, 1801808
EPA 365.1 Rev. 2.0 dissolved	05/25/2016			05/25/2016 14:16	Julia Storbeck	1801809
	05/25/2016			05/25/2016 14:17	Julia Storbeck	1801810
	05/25/2016			05/25/2016 14:18	Julia Storbeck	1801811
SM 2120 B	05/25/2016			05/25/2016 17:51	Chrisoulla Rakowski	1801803
	05/25/2016			05/25/2016 17:52	Chrisoulla Rakowski	1801804
	05/25/2016			05/25/2016 17:53	Chrisoulla Rakowski	1801805
SM 2320 B-97	05/25/2016			06/01/2016	Dale L. Simmons	1801803, 1801804, 1801805
SM 2540 C-97	05/25/2016			05/27/2016	Yijie Li	1801803, 1801804, 1801805
SM 2540 D-97	05/25/2016			05/27/2016	Yijie Li	1801803, 1801804, 1801805
SM 4500 F-C-97	05/25/2016			06/01/2016	Dale L. Simmons	1801803, 1801804, 1801805
SM 5310 B-00	05/25/2016			06/07/2016	Diana M. Turner	1801806, 1801807, 1801808