

Chemical Analysis Report

NW-DIST-2016-07-14-01

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

Event Description: **WBID 204A 283 61A**

Request ID: **RQ-2016-07-04-34**

Customer: **NW-DIST**

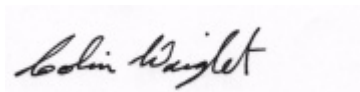
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government st
Suite 208A
Pensacola, FL 32502-5794
Attn: Michael King

For additional information please contact
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Certified by: Colin Wright, Environmental Administrator

Date Certified: 05-AUG-2016 15:13



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: Juniper Lake NE of Defuniak

Collection Date/Time: 07/13/2016 11:50

Field ID: G3NW0119

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815979	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P307970	
	EPA 300.0 Rev. 2.1	Chloride	4.5		mg Cl/L	P308926	
		Sulfate	0.94		mg SO4/L	P308930	
	SM 2120 B	Color (true)	15		PCU	P307965	
	SM 2320 B-97	Total Alkalinity	1.8	I	mg CaCO3/L	P308420	
	SM 2540 C-97	TDS	18	I	mg/L	P308837	
	SM 2540 D-97	TSS	2	U	mg/L	P308474	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308424	
1815984	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P308347	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39		mg N/L	P308167	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P308715	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P308129	
	SM 5310 B-00	Organic Carbon	4.3		mg C/L	P308414	
1815989	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307958	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Juniper Lake

Collection Date/Time: 07/13/2016 12:05

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815980	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P307970	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P308926	
		Sulfate	0.20	U	mg SO4/L	P308930	
	SM 2120 B	Color (true)	2.5	U	PCU	P307965	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P308420	
	SM 2540 C-97	TDS	15	U	mg/L	P308837	
	SM 2540 D-97	TSS	2	U	mg/L	P308474	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308424	
1815985	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P308347	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P308168	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308501	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P308129	
	SM 5310 B-00	Organic Carbon	0.56	I	mg C/L	P308414	
1815990	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307958	

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 result was confirmed on 07/20/2016.

SM 5310 B-00: The result was confirmed on 07/25/2016. Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Blue Pond Center

Collection Date/Time: 07/13/2016 13:00

Field ID: G3NW0070

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815981	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P307970	
	EPA 300.0 Rev. 2.1	Chloride	2.6		mg Cl/L	P308926	
		Sulfate	0.73		mg SO4/L	P308930	
	SM 2120 B	Color (true)	9.8		PCU	P307965	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P308420	
	SM 2540 C-97	TDS	15	U	mg/L	P308837	
	SM 2540 D-97	TSS	2	U	mg/L	P308474	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308424	
1815986	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P308347	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P308678	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308501	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P308129	
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P308414	
1815991	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307959	

Ref. Method and Comment:

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

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Blue Pond Center

Collection Date/Time: 07/13/2016 13:05

Field ID: G3NW0070DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815982	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P307970	
	EPA 300.0 Rev. 2.1	Chloride	2.7		mg Cl/L	P308926	
		Sulfate	0.85		mg SO4/L	P308930	
	SM 2120 B	Color (true)	9.0		PCU	P307965	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P308420	
	SM 2540 C-97	TDS	15	U	mg/L	P308837	
	SM 2540 D-97	TSS	2	U	mg/L	P308474	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308424	
1815987	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P308347	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P308678	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308501	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P308129	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P308414	
1815992	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307959	

Ref. Method and Comment:

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

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Sand Hammock Pond Center

Collection Date/Time: 07/13/2016 14:40

Field ID: G3NW0077

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815983	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P307970	
	EPA 300.0 Rev. 2.1	Chloride	3.1		mg Cl/L	P308926	

Field ID: G3NW0077

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815983	EPA 300.0 Rev. 2.1	Sulfate	0.20	U	mg SO4/L	P308930	
	SM 2120 B	Color (true)	20	A	PCU	P307965	
	SM 2320 B-97	Total Alkalinity	3.8		mg CaCO3/L	P308420	
	SM 2540 C-97	TDS	15	I	mg/L	P308837	
	SM 2540 D-97	TSS	2	U	mg/L	P308474	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308424	
1815988	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P308347	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30		mg N/L	P308168	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308501	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P308129	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P308414	
1815993	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UY	mg P/L	P307959	

Ref. Method and Comment:

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

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Sample was filtered in lab as it had not been filtered in the field. See NCR.

Non-Conformance Report

NCR ID: 5943

Event(s)

NW-DIST-2016-07-14-01

Job(s)

TLH-2016-07-14-43

Sample(s)

1815993

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Sample not field-filtered

Observation: Sampler noted on the container & by email that the W-PO4-F sample was not field filtered.

Field ID: G3NW0077 / Lab ID:1815993.

Resolution: W-PO4-F result was Y qualified.

Authorised by/Date: Colin Wright 8/4/2016

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: P307970

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P308926

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308930

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308347

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308167

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308168

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308678

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308501

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308715

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308129

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307958

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307959

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

Reference Method: SM 2120 B
Batch ID: P307965

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P308420

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

Reference Method: SM 2540 C-97
Batch ID: P308837

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P308474

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P308424

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P308414

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: P308926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308930

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: P308930

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308347

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308167

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308168

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308678

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308501

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308715

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: P308129

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307958

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307959

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

Reference Method: SM 2320 B-97
Batch ID: P308420

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P308424

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P308414

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815826	Chloride	98.9		P	90 - 110
1820254	Chloride	98.8	99.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815826	Sulfate	95.8		P	90 - 110
1820254	Sulfate	95.2	95.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308347

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816020	Ammonia-N	96.0	97.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815988	Kjeldahl Nitrogen	110	109	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308678

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817179	Kjeldahl Nitrogen	105	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308501

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815986	NO2NO3-N	99.0	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815984	NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308129

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815984	Total-P	96.4	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307958

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815969	O-Phosphate-P	97.3	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1816021	O-Phosphate-P	99.3	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P308424

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815860	Fluoride	97.7	98.9	P/P	91 - 105

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815998	Turbidity	5.91	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1820254	Chloride	0.140	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1820254	Sulfate	0.229	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816020	Ammonia-N	1.78	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815963	Kjeldahl Nitrogen	2.97	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815988	Kjeldahl Nitrogen	0.409	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308678

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817179	Kjeldahl Nitrogen	1.36	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815986	NO2NO3-N	2.00	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815984	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815984	Total-P	0.762	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815969	O-Phosphate-P	1.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816021	O-Phosphate-P	0.902	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P307965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815983	Color (true)	6.19	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P308420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815860	Total Alkalinity	0.0713	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P308837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1816026	TDS	0.905	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P308424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815860	Fluoride	0.979	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P308414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815941	Organic Carbon	0.246	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 365.1 Rev. 2.0 dissolved

Run ID: A70559

Included Lab Sample IDs: 1815989, 1815990, 1815991, 1815992, 1815993

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.8	P/P	90 - 110
O-Phosphate-P	98.9	99.4	P/P	90 - 110
O-Phosphate-P	99.4	101	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A70560

Included Lab Sample IDs: 1815979, 1815980, 1815981, 1815982, 1815983

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	94.4	93.9	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A70562

Included Lab Sample IDs: 1815979, 1815980, 1815981, 1815982, 1815983

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70648

Included Lab Sample IDs: 1815984, 1815985, 1815986, 1815987, 1815988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.0	P/P	90 - 110
Total-P	99.0	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70675

Included Lab Sample IDs: 1815984, 1815985, 1815986, 1815987, 1815988

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

Reference Method: SM 5310 B-00

Run ID: A70693

Included Lab Sample IDs: 1815984, 1815985, 1815986, 1815987, 1815988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.3	98.4	P/P	90 - 110
Organic Carbon	98.4	98.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A70694

Included Lab Sample IDs: 1815979, 1815980, 1815981, 1815982, 1815983

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

Reference Method: SM 4500 F-C-97

Run ID: A70694

Included Lab Sample IDs: 1815979, 1815980, 1815981, 1815982, 1815983

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70716

Included Lab Sample IDs: 1815985, 1815986, 1815987, 1815988

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70723

Included Lab Sample IDs: 1815984, 1815985, 1815988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	95.9	P/P	90 - 110
Kjeldahl Nitrogen	102	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70789

Included Lab Sample IDs: 1815984

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	106	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A70802

Included Lab Sample IDs: 1815979, 1815980, 1815981, 1815982, 1815983

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	103	101	P/P	90 - 110
Sulfate	96.6	96.3	P/P	90 - 110
Sulfate	97.1	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70842

Included Lab Sample IDs: 1815986, 1815987

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.8	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			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					5.91	
EPA 300.0 Rev. 2.1	Chloride	99.3	98.8	99.0	98.9		0.140
	Sulfate	96.1	95.2	95.4	95.8		0.229
EPA 350.1 Rev. 2.0	Ammonia-N	96.5	96.0	97.9			1.78
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101					2.97
	Kjeldahl Nitrogen	105	110	109			0.409
	Kjeldahl Nitrogen	99.2	105	103			1.36
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.0	101			2.00
	NO2NO3-N	104	99.0	99.0			0.0
EPA 365.1 Rev. 2.0	Total-P	93.6	96.4	95.7			0.762
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.3	98.3			1.02
	O-Phosphate-P	99.6	99.3	100			0.902
SM 2120 B	Color (true)					6.19	
SM 2320 B-97	Total Alkalinity	104				0.0713	
SM 2540 C-97	TDS					0.905	
SM 4500 F-C-97	Fluoride	97.8	97.7	98.9			0.979
SM 5310 B-00	Organic Carbon	96.2					0.246

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1815979, 1815980, 1815981, 1815982, 1815983
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1815979, 1815980, 1815981, 1815982, 1815983
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1815979, 1815980, 1815981, 1815982, 1815983
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1815984, 1815985, 1815986, 1815987, 1815988
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1815984, 1815985, 1815986, 1815987, 1815988
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1815984, 1815985, 1815986, 1815987, 1815988
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1815984, 1815985, 1815986, 1815987, 1815988
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1815989, 1815990, 1815991, 1815992, 1815993
SM 2120 B / E31780	True Color measured at 450 nm	1815979, 1815980, 1815981, 1815982, 1815983
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1815979, 1815980, 1815981, 1815982, 1815983
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1815979, 1815980, 1815981, 1815982, 1815983
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1815979, 1815980, 1815981, 1815982, 1815983
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1815979, 1815980, 1815981, 1815982, 1815983
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1815984, 1815985, 1815986, 1815987, 1815988

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	07/14/2016			07/14/2016 17:05	Rochelle Y Jackson	1815979, 1815980, 1815981, 1815982, 1815983
EPA 300.0 Rev. 2.1	07/14/2016			07/30/2016	Ping Hua	1815979, 1815980, 1815981, 1815982, 1815983
EPA 350.1 Rev. 2.0	07/14/2016			07/20/2016	Diana M. Turner	1815984, 1815985, 1815986, 1815987, 1815988
EPA 351.2 Rev. 2.0	07/14/2016	07/19/2016	Sofia Elnemr	07/21/2016	Christopher Armour	1815984, 1815985, 1815988
	07/14/2016	07/27/2016	Sofia Elnemr	07/28/2016	Christopher Armour	1815986, 1815987
EPA 353.2 Rev. 2.0	07/14/2016			07/22/2016	Beverly Y. Sanders	1815985, 1815986, 1815987, 1815988
	07/14/2016			07/27/2016	Beverly Y. Sanders	1815984
EPA 365.1 Rev. 2.0	07/14/2016	07/18/2016	Vijayalakshmi Reddy	07/20/2016	Lipi Saha	1815984, 1815985, 1815986, 1815987, 1815988
EPA 365.1 Rev. 2.0 dissolved	07/14/2016			07/14/2016 14:24	Julia Storbeck	1815991, 1815992
	07/14/2016			07/14/2016 14:33	Julia Storbeck	1815990
	07/14/2016			07/14/2016 14:50	Julia Storbeck	1815989
	07/14/2016			07/14/2016 14:51	Julia Storbeck	1815993
SM 2120 B	07/14/2016			07/14/2016 14:16	Rochelle Y Jackson	1815979
	07/14/2016			07/14/2016 14:17	Rochelle Y Jackson	1815980
	07/14/2016			07/14/2016 14:18	Rochelle Y Jackson	1815981, 1815982
	07/14/2016			07/14/2016 14:20	Rochelle Y Jackson	1815983
SM 2320 B-97	07/14/2016			07/20/2016	Dale L. Simmons	1815979, 1815980, 1815981, 1815982, 1815983
SM 2540 C-97	07/14/2016			07/18/2016	Sima Feizi	1815979, 1815980, 1815981, 1815982, 1815983
SM 2540 D-97	07/14/2016			07/18/2016	Sima Feizi	1815979, 1815980, 1815981, 1815982, 1815983
SM 4500 F-C-97	07/14/2016			07/20/2016	Dale L. Simmons	1815979, 1815980, 1815981, 1815982, 1815983
SM 5310 B-00	07/14/2016			07/21/2016	Sofia Elnemr	1815984, 1815985, 1815986, 1815987, 1815988