Chemical Analysis Report

NW-DIST-2017-08-30-01

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

Event Description: **Eglin East WBID 351 361 432 445 476**
Request ID: **RQ-2017-08-28-12**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government St
Suite 208A
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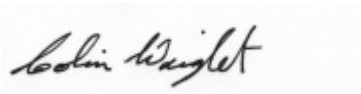
Certified by: Colin Wright, Program Administrator

Date Certified: 20-SEP-2017 10:12



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

A - Value reported is the mean of two or more determinations.
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value and/or the analysis did not meet established quality control criteria.
K - Actual value is known to be less than value given.
L - Actual value is known to be greater than value given.
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: LITTLE ALAQUA CREEK BELOW 282 BRIDGE **Collection Date/Time: 08/29/2017 11:45**

Field ID: G3NW0065 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1926235	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P331069	
	EPA 300.0 Rev. 2.1	Chloride	2.1		mg Cl/L	P331239	
		Sulfate	0.59		mg SO4/L	P331233	
	SM 2120 B	Color (true)	27	A	PCU	P331084	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P331521	
	SM 2540 C-97	TDS	15	U	mg/L	P331342	
	SM 2540 D-97	TSS	2	I	mg/L	P331531	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P331743	
1926239	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P331198	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.093	I	mg N/L	P331102	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P331117	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P331129	
	SM 5310 B-00	Organic Carbon	2.0		mg C/L	P331336	
1926243	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P331074	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: OPEN BRANCH ABOVE ER214/374 C-72 **Collection Date/Time: 08/29/2017 12:30**

Field ID: G3NW0105 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1926236	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P331069	
	EPA 300.0 Rev. 2.1	Chloride	1.6		mg Cl/L	P331239	
		Sulfate	0.49	I	mg SO4/L	P331233	
	SM 2120 B	Color (true)	8.5		PCU	P331084	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P331521	
	SM 2540 C-97	TDS	15	U	mg/L	P331342	
	SM 2540 D-97	TSS	2	I	mg/L	P331531	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P331743	
1926240	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P331169	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.089	I	mg N/L	P331102	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P331118	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P331130	
	SM 5310 B-00	Organic Carbon	1.2		mg C/L	P331336	
1926244	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P331074	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: ROCKY CREEK @ 200-201 **Collection Date/Time: 08/29/2017 12:45**

Field ID: G3NW0059 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1926237	EPA 180.1 Rev. 2.0	Turbidity	1.2	A	NTU	P331070	

Field ID: G3NW0059 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1926237	EPA 300.0 Rev. 2.1	Chloride	2.0		mg Cl/L	P331239	
		Sulfate	0.55		mg SO4/L	P331233	
	SM 2120 B	Color (true)	11		PCU	P331084	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P331521	
	SM 2540 C-97	TDS	18	I	mg/L	P331342	
	SM 2540 D-97	TSS	3	I	mg/L	P331531	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P331743	
1926241	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P331169	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.082	I	mg N/L	P331102	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.094		mg N/L	P331118	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P331130	
	SM 5310 B-00	Organic Carbon	1.1		mg C/L	P331336	
1926245	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P331074	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LITTLE ROCKY CREEK ABV EGLINF RD. 200 Collection Date/Time: 08/29/2017 13:25

Field ID: G3NW0104 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1926238	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P331070	
	EPA 300.0 Rev. 2.1	Chloride	2.1		mg Cl/L	P331239	
		Sulfate	0.74		mg SO4/L	P331233	
	SM 2120 B	Color (true)	26		PCU	P331084	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P331521	
	SM 2540 C-97	TDS	15	U	mg/L	P331342	
	SM 2540 D-97	TSS	4	I	mg/L	P331531	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P331743	
1926242	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P331169	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P331102	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.069		mg N/L	P331118	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P331130	
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P331336	
1926246	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P331074	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P331069

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P331070

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331233

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331239

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331169

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331198

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P331102

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331117

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331118

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P331129

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
Batch ID: P331130

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P331074

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

Reference Method: SM 2120 B
Batch ID: P331084

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P331521

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

Reference Method: SM 2540 C-97
Batch ID: P331342

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P331531

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P331743

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P331336

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: P331233

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331233

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	92.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331239

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331169

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331198

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P331102

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: P331117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331118

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: P331129

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P331130

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P331074

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

Reference Method: SM 2320 B-97
Batch ID: P331521

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

Reference Method: SM 4500 F-C-97
Batch ID: P331743

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

Reference Method: SM 5310 B-00
Batch ID: P331336

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.9		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331233

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926235	Sulfate	93.7		P	90 - 110
1926283	Sulfate	92.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331239

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926235	Chloride	96.1		P	90 - 110
1926283	Chloride	92.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926240	Ammonia-N	94.0	93.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331198

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926213	Ammonia-N	97.0	97.4	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926208	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331118

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926240	NO2NO3-N	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P331129

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926155	Total-P	100	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P331130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926284	Total-P	101	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P331074

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926243	O-Phosphate-P	97.1	99.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P331743

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926212	Fluoride	96.5	96.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P331336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1926239	Organic Carbon	103	102	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P331069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926203	Turbidity	2.33	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P331070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926237	Turbidity	0.866	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926283	Sulfate	7.22	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P331239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926283	Chloride	5.96	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926240	Ammonia-N	0.0518	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P331198

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926213	Ammonia-N	0.188	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P331102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926209	Kjeldahl Nitrogen	2.66	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926208	NO2NO3-N	0.494	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P331118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926240	NO2NO3-N	0.870	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P331129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926155	Total-P	2.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P331130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926284	Total-P	4.96	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P331074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926243	O-Phosphate-P	2.24	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P331084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926235	Color (true)	0.896	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P331521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926212	Total Alkalinity	0.492	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P331342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926217	TDS	2.20	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P331743

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926212	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P331336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1926239	Organic Carbon	0.889	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: A78711
Included Lab Sample IDs: 1926235, 1926236, 1926237, 1926238

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A78712
Included Lab Sample IDs: 1926243, 1926244, 1926245, 1926246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	102	102	P/P	90 - 110
O-Phosphate-P	99.0	101	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A78715
Included Lab Sample IDs: 1926235, 1926236, 1926237, 1926238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A78723
Included Lab Sample IDs: 1926239, 1926240, 1926241, 1926242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A78741
Included Lab Sample IDs: 1926240, 1926241, 1926242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	98.0	94.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A78752
Included Lab Sample IDs: 1926239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	99.6	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A78762
Included Lab Sample IDs: 1926239, 1926240, 1926241, 1926242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	106	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A78767
Included Lab Sample IDs: 1926235, 1926236, 1926237, 1926238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	107	P/P	90 - 110
Chloride	106	101	P/P	90 - 110
Chloride	107	109	P/P	90 - 110
Sulfate	100	105	P/P	90 - 110
Sulfate	101	100	P/P	90 - 110
Sulfate	105	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A78804
Included Lab Sample IDs: 1926239, 1926240, 1926241, 1926242

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

Reference Method: SM 5310 B-00
Run ID: A78811
Included Lab Sample IDs: 1926239, 1926240, 1926241, 1926242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.2	98.2	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A78870
Included Lab Sample IDs: 1926235, 1926236, 1926237, 1926238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.9	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A78959
Included Lab Sample IDs: 1926235, 1926236, 1926237, 1926238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	101	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					2.33	
	Turbidity					0.866	
EPA 300.0 Rev. 2.1	Chloride	97.4	92.8	96.1		5.96	
	Sulfate	92.3	92.9	93.7		7.22	
EPA 350.1 Rev. 2.0	Ammonia-N	103	94.0	93.9			0.0518
	Ammonia-N	100	97.0	97.4			0.188
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103					2.66
EPA 353.2 Rev. 2.0	NO2NO3-N	104	101	102			0.494
	NO2NO3-N	104	106	105			0.870
EPA 365.1 Rev. 2.0	Total-P	99.0	100	97.8			2.25
	Total-P	101	101	96.0			4.96
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	97.1	99.3			2.24
SM 2120 B	Color (true)					0.896	
SM 2320 B-97	Total Alkalinity	102				0.492	
SM 2540 C-97	TDS					2.20	
SM 4500 F-C-97	Fluoride	97.8	96.5	96.5			0.0
SM 5310 B-00	Organic Carbon	98.9	103	102			0.889

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1926235, 1926236, 1926237, 1926238
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1926235, 1926236, 1926237, 1926238
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1926235, 1926236, 1926237, 1926238
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1926239, 1926240, 1926241, 1926242
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1926239, 1926240, 1926241, 1926242
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1926239, 1926240, 1926241, 1926242
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1926239, 1926240, 1926241, 1926242
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1926243, 1926244, 1926245, 1926246
SM 2120 B / E31780	True Color measured at 450 nm	1926235, 1926236, 1926237, 1926238
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1926235, 1926236, 1926237, 1926238
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1926235, 1926236, 1926237, 1926238
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1926235, 1926236, 1926237, 1926238
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1926235, 1926236, 1926237, 1926238
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1926239, 1926240, 1926241, 1926242

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	08/30/2017			08/30/2017 15:25	DeAsia Armster	1926235, 1926236, 1926237, 1926238
EPA 300.0 Rev. 2.1	08/30/2017			09/01/2017	Julia Storbeck	1926235, 1926236, 1926237, 1926238
EPA 350.1 Rev. 2.0	08/30/2017			08/31/2017	Sofia Elnemr	1926240, 1926241, 1926242
	08/30/2017			09/01/2017	Sofia Elnemr	1926239
EPA 351.2 Rev. 2.0	08/30/2017	08/31/2017	Adrian Shelby	09/01/2017	Joseph Suarez	1926239, 1926240, 1926241, 1926242
EPA 353.2 Rev. 2.0	08/30/2017			08/31/2017	Beverly Y. Sanders	1926239, 1926240, 1926241, 1926242
EPA 365.1 Rev. 2.0	08/30/2017	08/31/2017	Sima Feizi	09/01/2017	Lipi Saha	1926239, 1926240, 1926241, 1926242
EPA 365.1 Rev. 2.0 dissolved	08/30/2017			08/30/2017 13:38	Megan Treadwell	1926243
	08/30/2017			08/30/2017 14:11	Megan Treadwell	1926244, 1926245
	08/30/2017			08/30/2017 14:12	Megan Treadwell	1926246
SM 2120 B	08/30/2017			08/30/2017 16:15	Tanya Welborn	1926235
	08/30/2017			08/30/2017 16:16	Tanya Welborn	1926236
	08/30/2017			08/30/2017 16:17	Tanya Welborn	1926237, 1926238
SM 2320 B-97	08/30/2017			09/07/2017	Dale L. Simmons	1926235, 1926236, 1926237, 1926238
SM 2540 C-97	08/30/2017			09/01/2017	Yijie Li	1926235, 1926236, 1926237, 1926238
SM 2540 D-97	08/30/2017			09/01/2017	Yijie Li	1926235, 1926236, 1926237, 1926238
SM 4500 F-C-97	08/30/2017			09/15/2017	Dale L. Simmons	1926235
	08/30/2017			09/16/2017	Dale L. Simmons	1926236, 1926237, 1926238
SM 5310 B-00	08/30/2017			09/05/2017	Ping Hua	1926239, 1926240, 1926241, 1926242