Chemical Analysis Report

NE-DIST-2017-11-02-02

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

Event Description: **LSJR WEST**
Request ID: **RQ-2017-10-30-19**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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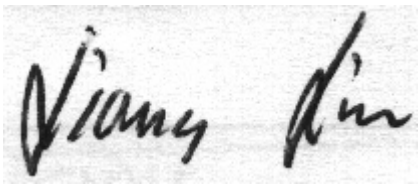
Certified by: Liang Lin, Environmental Administrator

Date Certified: 21-NOV-2017 10:51



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: WILLIANSON CREEK @ HYDE PARK **Collection Date/Time: 11/01/2017 11:05**

Field ID: G2NE0091 11012017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1942356	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P334587	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P334898	
		Sulfate	22		mg SO4/L	P334899	
	SM 2120 B	Color (true)	44		PCU	P334652	
	SM 2320 B-97	Total Alkalinity	86		mg CaCO3/L	P335155	
	SM 2540 C-97	TDS	184		mg/L	P335222	
	SM 2540 D-97	TSS	4	I	mg/L	P335133	
	SM 4500 F-C-97	Fluoride	0.090	I	mg F/L	P335158	
1942360	EPA 350.1 Rev. 2.0	Ammonia-N	0.089		mg N/L	P335185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P335016	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P335030	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P334766	
	SM 5310 B-00	Organic Carbon	7.7		mg C/L	P335197	
1942364	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.042		mg P/L	P334600	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: BUTCHER PEN CREEK @ CONFEDERATE PT. RD. **Collection Date/Time: 11/01/2017 10:30**

Field ID: G2NE0089 11012017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1942357	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P334587	
	EPA 300.0 Rev. 2.1	Chloride	43		mg Cl/L	P334898	
		Sulfate	26		mg SO4/L	P334899	
	SM 2120 B	Color (true)	100		PCU	P334652	
	SM 2320 B-97	Total Alkalinity	92		mg CaCO3/L	P335155	
	SM 2540 C-97	TDS	236		mg/L	P335222	
	SM 2540 D-97	TSS	5	I	mg/L	P335133	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P335158	
1942361	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P335185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P335021	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P335030	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P334758	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P335197	
1942365	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P334600	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: FISHING CREEK S SIDE OF TIMUQUANA **Collection Date/Time: 11/01/2017 09:40**

Field ID: G2NE0622 11012017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1942358	EPA 180.1 Rev. 2.0	Turbidity	2.5	A	NTU	P334588	

Field ID: G2NE0622 11012017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1942358	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P334898	
		Sulfate	18		mg SO4/L	P334899	
	SM 2120 B	Color (true)	61		PCU	P334652	
	SM 2320 B-97	Total Alkalinity	76		mg CaCO3/L	P335155	
	SM 2540 C-97	TDS	186		mg/L	P335222	
	SM 2540 D-97	TSS	2	I	mg/L	P335133	
	SM 4500 F-C-97	Fluoride	0.068	I	mg F/L	P335158	
1942362	EPA 350.1 Rev. 2.0	Ammonia-N	0.054		mg N/L	P335185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P335021	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.31		mg N/L	P335030	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P334758	
	SM 5310 B-00	Organic Carbon	9.6		mg C/L	P335197	
1942366	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P334600	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: FIELD BLANK **Collection Date/Time: 11/01/2017 10:00**

Field ID: FIELD BLANK 11012017 Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1942359	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P334588	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P334974	
		Sulfate	0.20	U	mg SO4/L	P334976	
	SM 2120 B	Color (true)	2.5	U	PCU	P334652	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P335155	
	SM 2540 C-97	TDS	15	U	mg/L	P335220	
	SM 2540 D-97	TSS	2	U	mg/L	P335131	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P335158	
1942363	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P335185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P335020	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P335030	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P334758	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P335197	
1942367	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P334600	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 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: P334587

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: P334588

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334898

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334899

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334974

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334976

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P335185

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335016

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335020

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335021

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335030

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334758

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334766

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334600

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

Reference Method: SM 2120 B
Batch ID: P334652

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P335155

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

Reference Method: SM 2540 C-97
Batch ID: P335220

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P335222

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P335131

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P335133

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P335158

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P335197

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: P334898

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334899

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334974

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334976

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P335185

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335016

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335016

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: P335020

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335021

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335030

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334758

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334766

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: P334600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.4		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P335155

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

Reference Method: SM 4500 F-C-97
Batch ID: P335158

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P335197

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942121	Chloride	101		P	90 - 110
1942159	Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942121	Sulfate	99.8		P	90 - 110
1942159	Sulfate	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942402	Chloride	92.1		P	90 - 110
1942421	Chloride	95.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334976

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942402	Sulfate	91.7		P	90 - 110
1942421	Sulfate	96.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942360	Kjeldahl Nitrogen	96.9	96.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335020

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942312	Kjeldahl Nitrogen	98.8	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335021

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942361	Kjeldahl Nitrogen	104	106	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335030

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942361	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942362	Total-P	100	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942360	Total-P	97.1	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942137	O-Phosphate-P	92.4	93.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P335158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942084	Fluoride	97.1	98.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P335197

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942360	Organic Carbon	99.8	102	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P334587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942117	Turbidity	3.20	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P334588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942358	Turbidity	4.78	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942159	Chloride	0.972	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942159	Sulfate	0.953	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942402	Chloride	0.610	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942402	Sulfate	0.450	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P335185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942360	Ammonia-N	0.345	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942360	Kjeldahl Nitrogen	0.531	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942312	Kjeldahl Nitrogen	2.20	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942361	Kjeldahl Nitrogen	0.961	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335030

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942361	NO2NO3-N	0.285	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942362	Total-P	2.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942360	Total-P	0.377	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942137	O-Phosphate-P	0.818	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P334652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942160	Color (true)	1.24	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P335155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942084	Total Alkalinity	0.604	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P335220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942067	TDS	6.94	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P335222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942161	TDS	3.17	Sample	P	0 - 10

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-97
Batch ID: P335158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942084	Fluoride	1.01	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P335197

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942360	Organic Carbon	1.61	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A80005
Included Lab Sample IDs: 1942356, 1942357, 1942358, 1942359

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A80009
Included Lab Sample IDs: 1942364, 1942365, 1942366, 1942367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.8	99.1	P/P	90 - 110
O-Phosphate-P	99.1	94.3	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A80027
Included Lab Sample IDs: 1942356, 1942357, 1942358, 1942359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	101	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A80090
Included Lab Sample IDs: 1942360

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A80116
Included Lab Sample IDs: 1942356, 1942357, 1942358

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	108	107	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A80116
Included Lab Sample IDs: 1942356, 1942357, 1942358

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	105	104	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A80134
Included Lab Sample IDs: 1942359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	102	P/P	90 - 110
Sulfate	98.7	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A80142
Included Lab Sample IDs: 1942361, 1942362

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A80164
Included Lab Sample IDs: 1942360, 1942361, 1942362, 1942363

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A80180
Included Lab Sample IDs: 1942363

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A80216
Included Lab Sample IDs: 1942360

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A80217
Included Lab Sample IDs: 1942363

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.3	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A80221
Included Lab Sample IDs: 1942356, 1942357, 1942358, 1942359

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A80221
Included Lab Sample IDs: 1942356, 1942357, 1942358, 1942359

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A80229
Included Lab Sample IDs: 1942360, 1942361, 1942362, 1942363

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	103	P/P	90 - 110
Ammonia-N	102	101	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A80236
Included Lab Sample IDs: 1942360, 1942361, 1942362, 1942363

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A80291
Included Lab Sample IDs: 1942361, 1942362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.6	94.7	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					3.20	
	Turbidity					4.78	
EPA 300.0 Rev. 2.1	Chloride	101	98.3	101		0.972	
	Chloride	98.5	92.1	95.5		0.610	
	Sulfate	99.6	96.2	99.8		0.953	
	Sulfate	98.1	91.7	96.5		0.450	
EPA 350.1 Rev. 2.0	Ammonia-N	103					0.345
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	96.9	96.2			0.531
	Kjeldahl Nitrogen	108	98.8	96.6			2.20
	Kjeldahl Nitrogen	101	104	106			0.961
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104	104			0.285
EPA 365.1 Rev. 2.0	Total-P	101	100	97.8			2.04
	Total-P	103	97.1	96.6			0.377
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.4	92.4	93.2			0.818
SM 2120 B	Color (true)					1.24	
SM 2320 B-97	Total Alkalinity	103				0.604	
SM 2540 C-97	TDS					6.94	

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
SM 2540 C-97	TDS					3.17	
SM 4500 F-C-97	Fluoride	99.2	97.1	98.3			1.01
SM 5310 B-00	Organic Carbon	99.4	99.8	102			1.61

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1942356, 1942357, 1942358, 1942359
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1942356, 1942357, 1942358, 1942359
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1942356, 1942357, 1942358, 1942359
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1942360, 1942361, 1942362, 1942363
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1942360, 1942361, 1942362, 1942363
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1942360, 1942361, 1942362, 1942363
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1942360, 1942361, 1942362, 1942363
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1942364, 1942365, 1942366, 1942367
SM 2120 B / E31780	True Color measured at 450 nm	1942356, 1942357, 1942358, 1942359
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1942356, 1942357, 1942358, 1942359
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1942356, 1942357, 1942358, 1942359
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1942356, 1942357, 1942358, 1942359
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1942356, 1942357, 1942358, 1942359
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1942360, 1942361, 1942362, 1942363

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	11/02/2017			11/02/2017 17:33	DeAsia Armster	1942356, 1942357, 1942358, 1942359
EPA 300.0 Rev. 2.1	11/02/2017			11/07/2017	Julia Storbeck	1942356, 1942357, 1942358
	11/02/2017			11/08/2017	Julia Storbeck	1942359
EPA 350.1 Rev. 2.0	11/02/2017			11/13/2017	Sofia Elnemr	1942360, 1942361, 1942362, 1942363
EPA 351.2 Rev. 2.0	11/02/2017	11/09/2017	Adrian Shelby	11/13/2017	Joseph Suarez	1942360, 1942363
	11/02/2017	11/09/2017	Adrian Shelby	11/15/2017	Tanya Welborn	1942361, 1942362
EPA 353.2 Rev. 2.0	11/02/2017			11/09/2017	Beverly Y. Sanders	1942360, 1942361, 1942362, 1942363
EPA 365.1 Rev. 2.0	11/02/2017	11/06/2017	Sima Feizi	11/07/2017	Lipi Saha	1942360
	11/02/2017	11/07/2017	Sima Feizi	11/08/2017	Lipi Saha	1942361, 1942362
	11/02/2017	11/07/2017	Sima Feizi	11/09/2017	Lipi Saha	1942363
EPA 365.1 Rev. 2.0 dissolved	11/02/2017			11/02/2017 14:46	Megan Treadwell	1942364, 1942365
	11/02/2017			11/02/2017 14:47	Megan Treadwell	1942366
	11/02/2017			11/02/2017 14:52	Megan Treadwell	1942367
SM 2120 B	11/02/2017			11/02/2017 15:19	Tanya Welborn	1942356
	11/02/2017			11/02/2017 15:20	Tanya Welborn	1942357
	11/02/2017			11/02/2017 15:21	Tanya Welborn	1942358, 1942359
SM 2320 B-97	11/02/2017			11/09/2017	Dale L. Simmons	1942356, 1942357, 1942358, 1942359
SM 2540 C-97	11/02/2017			11/06/2017	Yijie Li	1942356, 1942357, 1942358, 1942359
SM 2540 D-97	11/02/2017			11/06/2017	Yijie Li	1942356, 1942357, 1942358, 1942359
SM 4500 F-C-97	11/02/2017			11/09/2017	Dale L. Simmons	1942356, 1942357, 1942358, 1942359
SM 5310 B-00	11/02/2017			11/13/2017	Ping Hua	1942360, 1942361, 1942362, 1942363