Chemical Analysis Report

NW-DIST-2016-12-01-01

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

Event Description: **Pens/Cant Run WBID 872A 531 624 291 494 542 478A**
Request ID: **RQ-2016-12-05-13**
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

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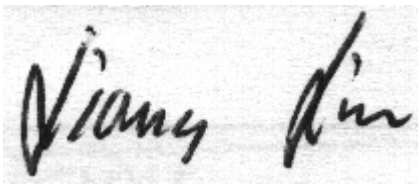
Certified by: Liang Lin, Environmental Administrator

Date Certified: 22-DEC-2016 12:16



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: REST AREA RUN BELOW BEAVER POND CREEK **Collection Date/Time: 11/30/2016 12:15**

Field ID: G5NW0068 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1853609	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P316040	
	EPA 300.0 Rev. 2.1	Chloride	8.0		mg Cl/L	P316553	
		Sulfate	2.4		mg SO4/L	P316557	
	SM 2120 B	Color (true)	40		PCU	P316034	
	SM 2320 B-97	Total Alkalinity	6.1		mg CaCO3/L	P316122	
	SM 2540 C-97	TDS	52		mg/L	P316704	
	SM 2540 D-97	TSS	2	U	mg/L	P316482	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P316125	
1853612	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P316241	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.15	I	mg N/L	P316478	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.52		mg N/L	P316090	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P316259	
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P316050	
1853615	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316045	

Sample Location: PERDIDIO RIVER AT RUBY'S LANDING HWY 90 **Collection Date/Time: 11/30/2016 13:00**

Field ID: G5NW0033 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1853610	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P316040	
	EPA 300.0 Rev. 2.1	Chloride	1.0E+03		mg Cl/L	P316832	
		Sulfate	140		mg SO4/L	P316831	
	SM 2120 B	Color (true)	14		PCU	P316034	
	SM 2320 B-97	Total Alkalinity	8.2		mg CaCO3/L	P316122	
	SM 2540 C-97	TDS	1.86E+03		mg/L	P316704	
	SM 2540 D-97	TSS	5	I	mg/L	P316482	
	SM 4500 F-C-97	Fluoride	0.074	I	mg F/L	P316125	
1853613	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P316241	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P316460	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P316090	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P316259	
	SM 5310 B-00	Organic Carbon	2.4		mg C/L	P316050	
1853616	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316045	

Sample Location: PERDIDIO RIVER AT RUBY'S LANDING HWY 90 **Collection Date/Time: 11/30/2016 13:05**

Field ID: G5NW0033DUPLICATE Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1853611	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P316040	
	EPA 300.0 Rev. 2.1	Chloride	1.0E+03		mg Cl/L	P316832	
		Sulfate	140		mg SO4/L	P316831	
	SM 2120 B	Color (true)	16		PCU	P316034	
	SM 2320 B-97	Total Alkalinity	8.2		mg CaCO3/L	P316122	

Field ID: G5NW0033DUPLICATE Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1853611	SM 2540 C-97	TDS	1.86E+03		mg/L	P316704	
	SM 2540 D-97	TSS	5	I	mg/L	P316482	
	SM 4500 F-C-97	Fluoride	0.077	I	mg F/L	P316125	
1853614	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P316241	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P316460	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P316090	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P316259	
	SM 5310 B-00	Organic Carbon	2.3		mg C/L	P316050	
1853617	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P316045	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P316040

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316553

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316557

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316831

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316832

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P316241

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316460

Component	Result	Code	Units

Quality Assurance Report
Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316460

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316478

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P316090

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316259

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316045

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

Reference Method: SM 2120 B
Batch ID: P316034

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P316122

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

Reference Method: SM 2540 C-97
Batch ID: P316704

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P316482

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P316125

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P316050

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: P316553

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316557

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316831

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316832

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P316241

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: P316460

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: P316478

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: P316478

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: P316090

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316259

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: P316045

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

Reference Method: SM 2320 B-97
Batch ID: P316122

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.5		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P316125

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P316050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.5		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1853005	Chloride	96.3		P	90 - 110
1853609	Chloride	96.8		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316557

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1853005	Sulfate	92.5		P	90 - 110
1853609	Sulfate	92.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1852910	Sulfate	102		P	90 - 110
1852911	Sulfate	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316832

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1852910	Chloride	102		P	90 - 110
1852911	Chloride	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P316241

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1853355	Ammonia-N	101	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1853962	Kjeldahl Nitrogen	98.6	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1853612	Kjeldahl Nitrogen	105	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P316090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1853614	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1853613	Total-P	102	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316045

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1853662	O-Phosphate-P	97.2	98.4	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P316125

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1853751	Fluoride	98.2	98.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P316050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1853036	Organic Carbon	101		P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P316040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853359	Turbidity	3.00	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853005	Chloride	0.0469	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853005	Sulfate	0.961	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852911	Sulfate	4.97	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852911	Chloride	0.0890	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P316241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P316241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853355	Ammonia-N	3.44	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853962	Kjeldahl Nitrogen	0.992	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853612	Kjeldahl Nitrogen	4.30	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P316090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853614	NO2NO3-N	0.436	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P316259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853613	Total-P	4.17	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853662	O-Phosphate-P	1.12	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P316034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853646	Color (true)	1.74	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P316122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853751	Total Alkalinity	0.0771	Sample	P	0 - 4.8

Quality Assurance Report
Precision

Reference Method: SM 2540 C-97
Batch ID: P316704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853772	TDS	1.72	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P316482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853772	TSS	0.0	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P316125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853751	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P316050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1853036	Organic Carbon	0.386	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: SM 2120 B
Run ID: A73120
Included Lab Sample IDs: 1853609, 1853610, 1853611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.2	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A73121
Included Lab Sample IDs: 1853609, 1853610, 1853611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A73122
Included Lab Sample IDs: 1853615, 1853616, 1853617

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	99.0	P/P	90 - 110
O-Phosphate-P	99.7	98.9	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A73126
Included Lab Sample IDs: 1853612, 1853613, 1853614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.4	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A73139
Included Lab Sample IDs: 1853612, 1853613, 1853614

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

Reference Method: SM 2320 B-97
Run ID: A73150
Included Lab Sample IDs: 1853609, 1853610, 1853611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.2	97.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A73150
Included Lab Sample IDs: 1853609, 1853610, 1853611

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A73197
Included Lab Sample IDs: 1853612, 1853613, 1853614

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A73219
Included Lab Sample IDs: 1853609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.4	100	P/P	90 - 110
Sulfate	93.5	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A73226
Included Lab Sample IDs: 1853612, 1853613, 1853614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.2	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A73301
Included Lab Sample IDs: 1853613, 1853614

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A73301
Included Lab Sample IDs: 1853613, 1853614

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A73317
Included Lab Sample IDs: 1853612

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.9	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A73375
Included Lab Sample IDs: 1853610, 1853611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	106	P/P	90 - 110
Chloride	103	103	P/P	90 - 110
Sulfate	101	99.9	P/P	90 - 110
Sulfate	100	102	P/P	90 - 110

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					3.00	
EPA 300.0 Rev. 2.1	Chloride	99.1	96.3	96.8		0.0469	
	Chloride	104	102	102		0.0890	
	Sulfate	94.6	92.5	92.4		0.961	
	Sulfate	105	103	102		4.97	
EPA 350.1 Rev. 2.0	Ammonia-N	102	101	105			3.44
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	98.6	99.6			0.992
	Kjeldahl Nitrogen	101	105	100			4.30
EPA 353.2 Rev. 2.0	NO2NO3-N	105	99.5	100			0.436
EPA 365.1 Rev. 2.0	Total-P	103	102	107			4.17
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.4	97.2	98.4			1.12
SM 2120 B	Color (true)					1.74	
SM 2320 B-97	Total Alkalinity	98.5				0.0771	
SM 2540 C-97	TDS					1.72	
SM 2540 D-97	TSS					0.0	
SM 4500 F-C-97	Fluoride	98.6	98.2	98.2			0.0
SM 5310 B-00	Organic Carbon	98.5	101				0.386

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1853609, 1853610, 1853611
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1853609, 1853610, 1853611
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1853609, 1853610, 1853611
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1853612, 1853613, 1853614
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1853612, 1853613, 1853614
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1853612, 1853613, 1853614
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1853612, 1853613, 1853614
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1853615, 1853616, 1853617
SM 2120 B / E31780	True Color measured at 450 nm	1853609, 1853610, 1853611
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1853609, 1853610, 1853611
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1853609, 1853610, 1853611
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1853609, 1853610, 1853611
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1853609, 1853610, 1853611
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1853612, 1853613, 1853614

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	12/01/2016			12/01/2016 16:32	Sima Feizi	1853609, 1853610, 1853611
EPA 300.0 Rev. 2.1	12/01/2016			12/09/2016	Ping Hua	1853609
	12/01/2016			12/15/2016	Ping Hua	1853610, 1853611
EPA 350.1 Rev. 2.0	12/01/2016			12/05/2016	Sofia Elnemr	1853612, 1853613, 1853614
EPA 351.2 Rev. 2.0	12/01/2016	12/09/2016	Adrian Shelby	12/12/2016	Joseph Suarez	1853612
	12/01/2016	12/09/2016	Martin Acosta	12/12/2016	Joseph Suarez	1853613, 1853614
EPA 353.2 Rev. 2.0	12/01/2016			12/02/2016	Beverly Y. Sanders	1853612, 1853613, 1853614
EPA 365.1 Rev. 2.0	12/01/2016	12/06/2016	Vijayalakshmi Reddy	12/07/2016	Lipi Saha	1853612, 1853613, 1853614
EPA 365.1 Rev. 2.0 dissolved	12/01/2016			12/01/2016 16:01	Julia Storbeck	1853616
	12/01/2016			12/01/2016 16:02	Julia Storbeck	1853617
	12/01/2016			12/01/2016 16:13	Julia Storbeck	1853615
SM 2120 B	12/01/2016			12/01/2016 15:39	Jared I. Manley	1853609
	12/01/2016			12/01/2016 15:40	Jared I. Manley	1853610
	12/01/2016			12/01/2016 15:41	Jared I. Manley	1853611
SM 2320 B-97	12/01/2016			12/02/2016	Dale L. Simmons	1853609, 1853610, 1853611
SM 2540 C-97	12/01/2016			12/05/2016	Sima Feizi	1853609, 1853610, 1853611
SM 2540 D-97	12/01/2016			12/05/2016	Sima Feizi	1853609, 1853610, 1853611
SM 4500 F-C-97	12/01/2016			12/02/2016	Dale L. Simmons	1853609, 1853610, 1853611
SM 5310 B-00	12/01/2016			12/01/2016	Julie Michelle Frank	1853612, 1853613, 1853614