Chemical Analysis Report

SO-DIST-2016-10-20-02

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

Event Description: **SMP: Lee County Streams**
Request ID: **RQ-2016-10-10-11**
Customer: **SO-DIST**
Project ID: **SMP**

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

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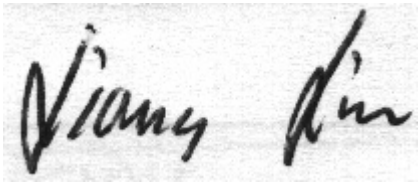
Certified by: Liang Lin, Environmental Administrator

Date Certified: 19-DEC-2016 11:05



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: OAK CREEK @ OAK CREEK PRESERVE **Collection Date/Time: 10/19/2016 09:30**

Field ID: G3SD101916-5 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1842698	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P313585	
	EPA 300.0 Rev. 2.1	Chloride	42		mg Cl/L	P314694	
		Sulfate	18		mg SO4/L	P314699	
	SM 2120 B	Color (true)	26		PCU	P313602	
	SM 2320 B-97	Total Alkalinity	318		mg CaCO3/L	P313689	
	SM 2540 C-97	TDS	443	A	mg/L	P314591	
	SM 2540 D-97	TSS	2	I	mg/L	P314024	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P313688	
1842704	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P313595	

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

Sample Location: OAK CREEK @ KENTUCKY ST. **Collection Date/Time: 10/19/2016 09:05**

Field ID: G3SD101916-6 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1842699	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P313585	
	EPA 300.0 Rev. 2.1	Chloride	44		mg Cl/L	P314694	
		Sulfate	17		mg SO4/L	P314699	
	SM 2120 B	Color (true)	45		PCU	P313602	
	SM 2320 B-97	Total Alkalinity	247		mg CaCO3/L	P313689	
	SM 2540 C-97	TDS	400		mg/L	P314591	
	SM 2540 D-97	TSS	2	I	mg/L	P314024	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P313688	
1842702	EPA 350.1 Rev. 2.0	Ammonia-N	0.055		mg N/L	P314405	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P314566	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P314020	
	EPA 365.1 Rev. 2.0	Total-P	0.049		mg P/L	P314227	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P313762	
1842705	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P313595	

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

Sample Location: OAK CREEK @ OAK CREEK PRESERVE DUPLICATE **Collection Date/Time: 10/19/2016 09:35**

Field ID: G3SD101916-5 DUP Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1842700	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P313585	
	EPA 300.0 Rev. 2.1	Chloride	42		mg Cl/L	P314694	
		Sulfate	17		mg SO4/L	P314699	
	SM 2120 B	Color (true)	26		PCU	P313602	
	SM 2320 B-97	Total Alkalinity	317		mg CaCO3/L	P313689	
	SM 2540 C-97	TDS	408		mg/L	P314591	
	SM 2540 D-97	TSS	2	I	mg/L	P314024	

Field ID: G3SD101916-5 DUP Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1842700	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P313688	
1842703	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P314644	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P314681	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P314341	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P314227	
	SM 5310 B-00	Organic Carbon	8.1		mg C/L	P313762	
1842706	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P313595	

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P313585

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314694

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314699

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314405

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314644

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314566

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314681

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: P314020

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314341

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314227

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313595

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

Reference Method: SM 2120 B
Batch ID: P313602

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P313689

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

Reference Method: SM 2540 C-97
Batch ID: P314591

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P314024

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P313688

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P313762

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: P314694

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314699

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314405

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314644

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314566

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314681

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314020

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: P314341

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314341

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314227

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313595

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

Reference Method: SM 2320 B-97
Batch ID: P313689

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	106		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P313688

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P313762

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314694

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842654	Chloride	101		P	90 - 110
1842999	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314699

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842654	Sulfate	95.9		P	90 - 110
1842999	Sulfate	96.7		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842650	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842591	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314566

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842702	Kjeldahl Nitrogen	93.0	91.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842703	Kjeldahl Nitrogen	93.1	93.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314020

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842674	NO2NO3-N	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314341

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842703	NO2NO3-N	96.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842702	Total-P	102	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842705	O-Phosphate-P	99.0	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P313688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842652	Fluoride	99.1	100	P/P	91 - 105

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P313762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1842590	Organic Carbon	95.5	97.3	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P313585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842653	Turbidity	0.471	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314694

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842654	Chloride	0.521	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P314699

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842654	Sulfate	7.31	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842650	Ammonia-N	0.337	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P314644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842591	Ammonia-N	0.515	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842702	Kjeldahl Nitrogen	1.36	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P314681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842703	Kjeldahl Nitrogen	0.260	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842674	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842703	NO2NO3-N	0.209	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842702	Total-P	2.57	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P313595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842705	O-Phosphate-P	0.629	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P313602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842670	Color (true)	0.555	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P313689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842652	Total Alkalinity	0.426	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P314591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842698	TDS	0.0	Sample	P	0 - 10

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-97
Batch ID: P313688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842652	Fluoride	0.999	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P313762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1842590	Organic Carbon	1.76	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: A72346
Included Lab Sample IDs: 1842698, 1842699, 1842700

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A72349
Included Lab Sample IDs: 1842704, 1842705, 1842706

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

Reference Method: SM 2120 B
Run ID: A72350
Included Lab Sample IDs: 1842698, 1842699, 1842700

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	101	P/P	85 - 115

Reference Method: SM 2320 B-97
Run ID: A72377
Included Lab Sample IDs: 1842698, 1842699, 1842700

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	108	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A72377
Included Lab Sample IDs: 1842698, 1842699, 1842700

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A72401
Included Lab Sample IDs: 1842702, 1842703

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A72468
Included Lab Sample IDs: 1842702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A72560
Included Lab Sample IDs: 1842703

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A72578
Included Lab Sample IDs: 1842702

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A72588
Included Lab Sample IDs: 1842702, 1842703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A72589
Included Lab Sample IDs: 1842698, 1842699, 1842700

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A72636
Included Lab Sample IDs: 1842703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.6	98.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A72694
Included Lab Sample IDs: 1842702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.2	95.9	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A72704
Included Lab Sample IDs: 1842703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.1	97.4	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					0.471	
EPA 300.0 Rev. 2.1	Chloride	101	101	101		0.521	
	Sulfate	97.1	95.9	96.7		7.31	
EPA 350.1 Rev. 2.0	Ammonia-N	104	102	102			0.337
	Ammonia-N	101	101	102			0.515
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.4	93.0	91.0			1.36
	Kjeldahl Nitrogen	97.7	93.1	93.5			0.260
EPA 353.2 Rev. 2.0	NO2NO3-N	104	100				0.0
	NO2NO3-N	101	96.8				0.209
EPA 365.1 Rev. 2.0	Total-P	106	102	99.4			2.57
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	99.0	99.8			0.629
SM 2120 B	Color (true)					0.555	
SM 2320 B-97	Total Alkalinity	106				0.426	
SM 2540 C-97	TDS					0.0	
SM 4500 F-C-97	Fluoride	99.0	99.1	100			0.999
SM 5310 B-00	Organic Carbon	101	95.5	97.3			1.76

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1842698, 1842699, 1842700
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1842698, 1842699, 1842700
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1842698, 1842699, 1842700
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1842702, 1842703
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1842702, 1842703
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1842702, 1842703
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1842702, 1842703
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1842704, 1842705, 1842706
SM 2120 B / E31780	True Color measured at 450 nm	1842698, 1842699, 1842700
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1842698, 1842699, 1842700
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1842698, 1842699, 1842700
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1842698, 1842699, 1842700

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1842698, 1842699, 1842700
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1842702, 1842703

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	10/20/2016			10/20/2016 15:29	Sima Feizi	1842698, 1842699, 1842700
EPA 300.0 Rev. 2.1	10/20/2016			11/05/2016	Elisa J Lutz	1842698, 1842699, 1842700
EPA 350.1 Rev. 2.0	10/20/2016			11/01/2016	Sofia Elnemr	1842702
	10/20/2016			11/04/2016	Sofia Elnemr	1842703
EPA 351.2 Rev. 2.0	10/20/2016	11/04/2016	Adrian Shelby	11/08/2016	Joseph Suarez	1842702
	10/20/2016	11/07/2016	Adrian Shelby	11/08/2016	Joseph Suarez	1842703
EPA 353.2 Rev. 2.0	10/20/2016			10/27/2016	Beverly Y. Sanders	1842702
	10/20/2016			11/01/2016	Beverly Y. Sanders	1842703
EPA 365.1 Rev. 2.0	10/20/2016	10/31/2016	Vijayalakshmi Reddy	11/01/2016	Lipi Saha	1842702, 1842703
EPA 365.1 Rev. 2.0 dissolved	10/20/2016			10/20/2016 15:14	Julia Storbeck	1842705
	10/20/2016			10/20/2016 15:41	Julia Storbeck	1842704
	10/20/2016			10/20/2016 15:42	Julia Storbeck	1842706
SM 2120 B	10/20/2016			10/20/2016 16:29	Julie Michelle Frank	1842698
	10/20/2016			10/20/2016 16:30	Julie Michelle Frank	1842699
	10/20/2016			10/20/2016 16:31	Julie Michelle Frank	1842700
SM 2320 B-97	10/20/2016			10/22/2016	Dale L. Simmons	1842698, 1842699, 1842700
SM 2540 C-97	10/20/2016			10/24/2016	Sima Feizi	1842698, 1842699, 1842700
SM 2540 D-97	10/20/2016			10/24/2016	Sima Feizi	1842698, 1842699, 1842700
SM 4500 F-C-97	10/20/2016			10/22/2016	Dale L. Simmons	1842698, 1842699, 1842700
SM 5310 B-00	10/20/2016			10/24/2016	Julie Michelle Frank	1842702, 1842703