

Chemical Analysis Report

WTRSHD-MGT-2012-01-26-01

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

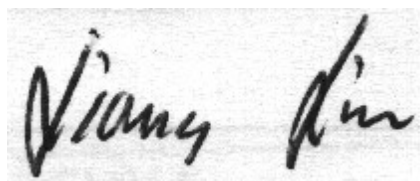
Event Description: **TMDL Sampling - Merritts Mill Pond SURFACE WATER**
Request ID: **RQ-2012-01-23-37**
Customer: **WTRSHD-MGT**
Project ID: **GRNT-10608**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd.
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 17-FEB-2012 14:15

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

Abbreviations and data remark codes

CERT # - NELAP (National Environmental Laboratory Accreditation Program) Certification Number of the laboratory that performed the analysis.

LCS – Laboratory Control Sample; in the QC Failures column, this notation indicates a batch recovery failure.

MS – Matrix Spike; in the QC Failures column, this notation indicates a batch recovery failure.

RPD – Relative Percent Difference; in the QC Failures column, this notation indicates a batch failure for precision.

CCV – Continuing Calibration Verification; in the QC Failures column, this notation indicates a failure of the calibration verification check sample.

RSD – Relative Standard Deviation expressed as a percentage.

SMP – Sample.

** - The laboratory is not NELAP certified for this analyte/method, or certification is not applicable.

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

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).

Precision is reported as relative percent difference unless otherwise noted.

Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published test performance acceptance criteria.

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.

All sample collection performed by Bureau of Laboratories staff followed the field Standard Operating Procedures adopted by reference in Rule 62-160 FAC unless otherwise noted.

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.

Results for NELAP accredited tests contained in this report meet the requirements specified by the National Environmental Laboratory Accreditation Conference (NELAC). All samples received were in acceptable condition and met NELAC requirements unless otherwise noted. Results generated in this report pertain to the samples collected and submitted for analysis.

Job: TLH-2012-01-26-89

Group: Nutrients

Job: TLH-2012-01-26-90

Group: Metals

Sample Location: MMP-2**Collection Date/Time: 01/26/2012 12:18 PM****Field ID: MMP-2**

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1404725	EPA 180.1 Rev. 2.0	Turbidity	0.30		NTU	P235452	
	EPA 300.0 Rev. 2.1	Chloride	4.6		mg Cl/L	P235466	
		Sulfate	1.4		mg SO4/L	P235467	
	SM 2120 B	Color (true)	2.5	U	PCU	P235449	
	SM 2320 B-97	Alkalinity	120		mg CaCO3/L	P235539	
	SM 2540 C-97	TDS	147		mg/L	P235752	
	SM 2540 D-97	TSS	2	I	mg/L	P235764	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P235535	
1404728	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P235515	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.13	I	mg N/L	P235620	
	EPA 353.2 Rev. 2.0	NO2NO3-N	3.4		mg N/L	P235550	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P235572	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P235603	
1404731	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P235503	
1404734	EPA 200.7 Rev. 4.4	Boron	15	U	ug/L	P236031	
		Potassium	0.38	I	mg/L	P236031	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to low analyte concentration in the QC sample.

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

Sample Location: MMP-4**Collection Date/Time: 01/26/2012 10:16 AM****Field ID: MMP-4**

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1404724	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P235452	
	EPA 300.0 Rev. 2.1	Chloride	4.9		mg Cl/L	P235466	
		Sulfate	1.5		mg SO4/L	P235467	
	SM 2120 B	Color (true)	2.5	U	PCU	P235449	
	SM 2320 B-97	Alkalinity	126		mg CaCO3/L	P235539	
	SM 2540 C-97	TDS	151		mg/L	P235752	
	SM 2540 D-97	TSS	3	I	mg/L	P235764	
	SM 4500 F-C-97	Fluoride	0.040	I	mg F/L	P235535	
1404727	EPA 350.1 Rev. 2.0	Ammonia-N	0.043		mg N/L	P235515	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P235620	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.7		mg N/L	P235550	
	EPA 365.1 Rev. 2.0	Total-P	0.008	I	mg P/L	P235572	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P235601	
1404730	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P235503	
1404733	EPA 200.7 Rev. 4.4	Boron	15	U	ug/L	P236031	
		Potassium	0.35	I	mg/L	P236031	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to low analyte concentration in the QC sample.

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

Sample Location: MMP-5**Collection Date/Time: 01/26/2012 09:01 AM**

Field ID: MMP-5

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1404723	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P235452	
	EPA 300.0 Rev. 2.1	Chloride	4.7		mg Cl/L	P235466	
		Sulfate	1.5		mg SO4/L	P235467	
	SM 2120 B	Color (true)	2.5	U	PCU	P235449	
	SM 2320 B-97	Alkalinity	125	A	mg CaCO3/L	P235539	
	SM 2540 C-97	TDS	147		mg/L	P235752	
	SM 2540 D-97	TSS	4	I	mg/L	P235764	
	SM 4500 F-C-97	Fluoride	0.039	I	mg F/L	P235535	
1404726	EPA 350.1 Rev. 2.0	Ammonia-N	0.083		mg N/L	P235514	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P235620	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.5		mg N/L	P235550	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P235572	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P235601	
1404729	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P235503	
1404732	EPA 200.7 Rev. 4.4	Boron	15	U	ug/L	P236031	
		Potassium	0.38	I	mg/L	P236031	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to low analyte concentration in the QC sample.

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P235452

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P236031

Component	Result	Code	Units
Boron	15	U	ug/L
Potassium	0.30	U	mg/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P235466

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P235467

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P235514

Component	Result	Code	Units
Ammonia-N	0.010	U	mg N/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P235515

Component	Result	Code	Units
Ammonia-N	0.010	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P235620

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P235550

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P235572

Component	Result	Code	Units
Total-P	0.004	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P235503

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

Reference Method: SM 2120 B

Batch ID: P235449

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97

Batch ID: P235539

Component	Result	Code	Units
Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97

Batch ID: P235752

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97

Batch ID: P235764

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97

Batch ID: P235535

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00

Batch ID: P235601

Component	Result	Code	Units
Organic Carbon	1.0	U	mg C/L

Reference Method: SM 5310 B-00

Batch ID: P235603

Component	Result	Code	Units
Organic Carbon	1.0	U	mg C/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P236031

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Boron	96.8		P	85 - 115
Potassium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P235466

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P235467

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P235514

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.6		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P235515

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P235620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P235550

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P235572

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P235503

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

Reference Method: SM 2320 B-97

Batch ID: P235539

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

Reference Method: SM 4500 F-C-97

Batch ID: P235535

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P235601

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P235603

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P236031

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1406008	Boron	103	105	P/P	80 - 120
1406008	Potassium	104	103	P/P	80 - 120
1406400	Boron	103		P	80 - 120
1406400	Potassium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P235466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1404534	Chloride	98.5	98.7	P/P	90 - 110
1404796	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P235467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1404534	Sulfate	98.7	98.4	P/P	90 - 110
1404796	Sulfate	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P235514

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1404541	Ammonia-N	104	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P235515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1404832	Ammonia-N	107	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P235620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1404727	Kjeldahl Nitrogen	107	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P235550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1404700	NO2NO3-N	92.4	92.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P235572

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1404726	Total-P	103	104	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P235503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1404729	O-Phosphate-P	97.1	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Batch ID: P235535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1404723	Fluoride	103	101	P/P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P235601

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1404538	Organic Carbon	98.9	101	P/P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P235603

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1404834	Organic Carbon	93.9	95.5	P/P	85 - 115

Quality Assurance Report

Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P235452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404827	Turbidity	3.67	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P236031

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1406008	Boron	1.86	Spike	P	0 - 20
1406008	Potassium	1.47	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P235466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404534	Chloride	0.146	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P235467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404534	Sulfate	0.247	Spike	P	0 - 20

Quality Assurance Report

Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P235514

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404541	Ammonia-N	2.35	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P235515

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404832	Ammonia-N	1.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P235620

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404727	Kjeldahl Nitrogen	0.263	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P235550

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404700	NO2NO3-N	0.501	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P235572

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404726	Total-P	0.617	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P235503

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404729	O-Phosphate-P	3.94	Spike	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P235539

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404462	Alkalinity	0.610	Sample	P	0 - 20
1404723	Alkalinity	0.904	Sample	P	0 - 20

Reference Method: SM 2540 C-97

Batch ID: P235752

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404590	TDS	3.01	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97

Batch ID: P235535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404723	Fluoride	1.45	Spike	P	0 - 20

Reference Method: SM 5310 B-00

Batch ID: P235601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404538	Organic Carbon	1.82	Spike	P	0 - 20

Reference Method: SM 5310 B-00

Batch ID: P235603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1404834	Organic Carbon	1.25	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: A43285

Included Lab Sample IDs: 1404723, 1404724, 1404725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.5	100	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A43288

Included Lab Sample IDs: 1404723, 1404724, 1404725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A43291

Included Lab Sample IDs: 1404723, 1404724, 1404725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	99.2	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A43303

Included Lab Sample IDs: 1404729, 1404730, 1404731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A43303

Included Lab Sample IDs: 1404729, 1404730, 1404731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A43308

Included Lab Sample IDs: 1404726, 1404727, 1404728

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

Reference Method: SM 2320 B-97

Run ID: A43313

Included Lab Sample IDs: 1404723, 1404724, 1404725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alkalinity	104	113	P/P	85 - 115

Reference Method: SM 4500 F-C-97

Run ID: A43313

Included Lab Sample IDs: 1404723, 1404724, 1404725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	99.0	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A43316

Included Lab Sample IDs: 1404726, 1404727, 1404728

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A43329

Included Lab Sample IDs: 1404726, 1404727, 1404728

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	99.8	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A43346

Included Lab Sample IDs: 1404726, 1404727, 1404728

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	96.2	P/P	85 - 115
Organic Carbon	98.4	97.8	P/P	85 - 115

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A43352

Included Lab Sample IDs: 1404726, 1404727, 1404728

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A43352

Included Lab Sample IDs: 1404726, 1404727, 1404728

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	106	P/P	90 - 110
Kjeldahl Nitrogen	107	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A43543

Included Lab Sample IDs: 1404732, 1404733, 1404734

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	98.6	99.0	P/P	90 - 110
Potassium	101	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			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						3.67	
EPA 200.7 Rev. 4.4	Boron	96.8	103	105	103			1.86
	Potassium	104	104	103	103			1.47
EPA 300.0 Rev. 2.1	Chloride	102	98.5	98.7	100			0.146
	Sulfate	99.8	98.7	98.4	98.6			0.247
EPA 350.1 Rev. 2.0	Ammonia-N	96.6	104	106				2.35
	Ammonia-N	99.9	107	105				1.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.6	107	106				0.263
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	92.4	92.9				0.501
EPA 365.1 Rev. 2.0	Total-P	102	103	104				0.617
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	97.1	101				3.94
SM 2320 B-97	Alkalinity	101					0.610 0.904 3.01	
SM 2540 C-97	TDS							
SM 4500 F-C-97	Fluoride	103	103	101				1.45
SM 5310 B-00	Organic Carbon	97.2	98.9	101				1.82
	Organic Carbon	96.6	93.9	95.5				1.25

Reference Method Descriptions

Method / NELAC Cert.

EPA 180.1 Rev. 2.0 / E31780

EPA 200.7 Rev. 4.4 / E31780

EPA 300.0 Rev. 2.1 / E31780

EPA 300.0 Rev. 2.1 / E31780

EPA 350.1 Rev. 2.0 / E31780

EPA 351.2 Rev. 2.0 / E31780

EPA 353.2 Rev. 2.0 / E31780

EPA 365.1 Rev. 2.0 / E31780

Description

Turbidity in aqueous matrices

Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects

Chloride in aqueous matrices

Sulfate in aqueous matrices

Ammonia in aqueous matrices as mg N/L

Total Kjeldahl Nitrogen in aqueous matrices

Nitrite/Nitrate in aqueous matrices as mg N/L

Total Phosphorus in aqueous matrices as mg P/L

Reference Method Descriptions

Method / NELAC Cert. #	Description
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L
SM 2120 B / E31780	True Color measured at 450 nm or Apparent Color
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices

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	01/26/2012			01/27/2012 15:03	Bryan A. Werth	1404723, 1404724, 1404725
EPA 200.7 Rev. 4.4	01/26/2012	02/08/2012	Elliott D. Healy	02/14/2012	Elisa J Lutz	1404732, 1404733, 1404734
EPA 300.0 Rev. 2.1	01/26/2012			01/27/2012	Gary Dearman	1404723, 1404724, 1404725
EPA 350.1 Rev. 2.0	01/26/2012			01/30/2012	Diana M. Dunbar	1404726, 1404727, 1404728
EPA 351.2 Rev. 2.0	01/26/2012	01/31/2012	Bryan A. Werth	02/02/2012	Christopher Armour	1404726, 1404727, 1404728
EPA 353.2 Rev. 2.0	01/26/2012			01/30/2012	Sima Feizi	1404726, 1404727, 1404728
EPA 365.1 Rev. 2.0	01/26/2012	01/30/2012	Megan E. Faircloth	01/31/2012	Megan E. Faircloth	1404726, 1404727, 1404728
EPA 365.1 Rev. 2.0 dissolved	01/26/2012			01/27/2012 15:14	Pallavi R. Gadwal	1404729
	01/26/2012			01/27/2012 15:20	Pallavi R. Gadwal	1404730
	01/26/2012			01/27/2012 15:25	Pallavi R. Gadwal	1404731
SM 2120 B	01/26/2012			01/27/2012 14:33	Rochelle Y Jackson	1404723
	01/26/2012			01/27/2012 14:34	Rochelle Y Jackson	1404724, 1404725
SM 2320 B-97	01/26/2012			01/30/2012	Rochelle Y Jackson	1404723, 1404724, 1404725
SM 2540 C-97	01/26/2012			02/01/2012	Yijie Li	1404723, 1404724, 1404725
SM 2540 D-97	01/26/2012			02/01/2012	Yijie Li	1404723, 1404724, 1404725
SM 4500 F-C-97	01/26/2012			01/30/2012	Rochelle Y Jackson	1404723, 1404724, 1404725
SM 5310 B-00	01/26/2012			02/01/2012	Rochelle Y Jackson	1404726, 1404727
	01/26/2012			02/02/2012	Rochelle Y Jackson	1404728