

Chemical Analysis Report

SO-DIST-2016-02-12-01

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

Event Description: **SMP: Bobcat Creek and Unnamed Ditches**

Request ID: **RQ-2016-02-22-68**

Customer: **SO-DIST**

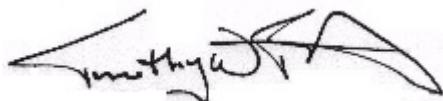
Project ID: **SMP**

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: Timothy Fitzpatrick, Program Administrator

Date Certified: 02-MAR-2016 09:45

A handwritten signature in black ink, appearing to read "Timothy W. Fitzpatrick", with a stylized flourish at the end.

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: Bobcat Creek in Preserve East

Collection Date/Time: 02/11/2016 08:50

Field ID: SD020816-3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1770905	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P298538	
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P298713	
		Sulfate	10		mg SO4/L	P298715	
	SM 2120 B	Color (true)	370		PCU	P298528	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P298966	
	SM 2540 C-97	TDS	147		mg/L	P299078	
	SM 2540 D-97	TSS	3	I	mg/L	P299016	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P299042	
1770908	EPA 350.1 Rev. 2.0	Ammonia-N	0.047		mg N/L	P299120	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P298772	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P298981	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P298785	
	SM 5310 B-00	Organic Carbon	31		mg C/L	P298947	
1770911	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.17		mg P/L	P298534	

Ref. Method and Comment:

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

Sample Location: 2028 Site 3

Collection Date/Time: 02/11/2016 09:10

Field ID: G3SD020416-23

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1770906	EPA 180.1 Rev. 2.0	Turbidity	6.9		NTU	P298538	
	EPA 300.0 Rev. 2.1	Chloride	48		mg Cl/L	P298713	
		Sulfate	23		mg SO4/L	P298715	
	SM 2120 B	Color (true)	310		PCU	P298529	
	SM 2320 B-97	Total Alkalinity	38		mg CaCO3/L	P299108	
	SM 2540 C-97	TDS	199		mg/L	P299078	
	SM 2540 D-97	TSS	3	I	mg/L	P299016	
	SM 4500 F-C-97	Fluoride	0.34		mg F/L	P299042	
1770909	EPA 350.1 Rev. 2.0	Ammonia-N	0.071		mg N/L	P299120	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P298772	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P298981	
	EPA 365.1 Rev. 2.0	Total-P	0.34		mg P/L	P298785	
	SM 5310 B-00	Organic Carbon	30		mg C/L	P298947	
1770912	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.25		mg P/L	P298534	

Ref. Method and Comment:

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

Sample Location: 2028 in RV Resort

Collection Date/Time: 02/11/2016 09:30

Field ID: G3SD020416-24

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1770907	EPA 180.1 Rev. 2.0	Turbidity	6.9		NTU	P298538	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P298713	
		Sulfate	13		mg SO4/L	P298715	

Field ID: G3SD020416-24

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1770907	SM 2120 B	Color (true)	480		PCU	P298529	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P299108	
	SM 2540 C-97	TDS	176	A	mg/L	P299078	
	SM 2540 D-97	TSS	3	I	mg/L	P299016	
	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P299042	
1770910	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P299121	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P298772	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P298981	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P298785	
	SM 5310 B-00	Organic Carbon	41		mg C/L	P298947	
1770913	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P298534	

Ref. Method and Comment:

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: P298538

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P298713

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P298715

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P299120

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P299121

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P298772

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: P298981

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298785

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298534

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

Reference Method: SM 2120 B
Batch ID: P298528

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P298529

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P298966

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

Reference Method: SM 2320 B-97
Batch ID: P299108

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

Reference Method: SM 2540 C-97
Batch ID: P299078

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P299016

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P299042

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P298947

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: P298713

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298715

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299120

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299121

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298772

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	91.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298981

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298785

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298534

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

Reference Method: SM 2320 B-97
Batch ID: P298966

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

Reference Method: SM 2320 B-97
Batch ID: P299108

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P299042

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P298947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298713

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770593	Chloride	103		P	90 - 110
1770594	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770593	Sulfate	98.4		P	90 - 110
1770594	Sulfate	98.0		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770860	Ammonia-N	90.1	95.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770941	Ammonia-N	96.1	95.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770859	Kjeldahl Nitrogen	96.1	91.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298981

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770931	NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770858	Total-P	97.7	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298534

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770943	O-Phosphate-P	98.9	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P299042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771690	Fluoride	99.2	98.6	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P298947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1770601	Organic Carbon	92.6	93.3	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P298538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770896	Turbidity	1.77	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298713

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770593	Chloride	0.124	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P298715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770593	Sulfate	0.0477	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770860	Ammonia-N	5.04	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770941	Ammonia-N	0.342	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P298772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770859	Kjeldahl Nitrogen	3.01	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P298981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770931	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770858	Total-P	4.28	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770943	O-Phosphate-P	1.15	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P298528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770852	Color (true)	3.22	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P298529

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770927	Color (true)	1.23	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P298966

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771810	Total Alkalinity	1.29	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P299108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771690	Total Alkalinity	0.298	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P299078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770907	TDS	1.70	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P299042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771690	Fluoride	0.473	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P298947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1770601	Organic Carbon	0.508	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A67591

Included Lab Sample IDs: 1770905, 1770906, 1770907

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A67592

Included Lab Sample IDs: 1770911, 1770912, 1770913

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A67593

Included Lab Sample IDs: 1770905, 1770906, 1770907

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A67638

Included Lab Sample IDs: 1770905, 1770906, 1770907

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.9	102	P/P	90 - 110
Sulfate	96.1	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A67686

Included Lab Sample IDs: 1770908, 1770909, 1770910

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.7	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A67698

Included Lab Sample IDs: 1770908, 1770909, 1770910

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	96.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A67710

Included Lab Sample IDs: 1770908, 1770909, 1770910

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.9	94.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A67716

Included Lab Sample IDs: 1770905

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A67721

Included Lab Sample IDs: 1770908, 1770909, 1770910

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

Reference Method: SM 4500 F-C-97

Run ID: A67743

Included Lab Sample IDs: 1770905, 1770906, 1770907

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

Reference Method: SM 2320 B-97

Run ID: A67766

Included Lab Sample IDs: 1770906, 1770907

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A67770

Included Lab Sample IDs: 1770908, 1770909, 1770910

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	98.2	P/P	90 - 110
Ammonia-N	99.8	99.0	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				1.77	
EPA 300.0 Rev. 2.1	Chloride	104	103 103		0.124	
	Sulfate	99.0	98.4 98.0		0.0477	
EPA 350.1 Rev. 2.0	Ammonia-N	95.7	90.1 95.3			5.04
	Ammonia-N	95.3	96.1 95.6			0.342
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	91.1	96.1 91.1			3.01
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	99.0 99.0			0.0
EPA 365.1 Rev. 2.0	Total-P	101	97.7 102			4.28
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	98.9 100			1.15
SM 2120 B	Color (true)				3.22	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
SM 2120 B	Color (true)					1.23	
SM 2320 B-97	Total Alkalinity	101				1.29	
	Total Alkalinity	100				0.298	
SM 2540 C-97	TDS					1.70	
SM 4500 F-C-97	Fluoride	98.0	99.2	98.6			0.473
SM 5310 B-00	Organic Carbon	95.2	92.6	93.3			0.508

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1770905, 1770906, 1770907
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1770905, 1770906, 1770907
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1770905, 1770906, 1770907
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1770908, 1770909, 1770910
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1770908, 1770909, 1770910
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1770908, 1770909, 1770910
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1770908, 1770909, 1770910
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1770911, 1770912, 1770913
SM 2120 B / E31780	True Color measured at 450 nm	1770905, 1770906, 1770907
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1770905, 1770906, 1770907
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1770905, 1770906, 1770907
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1770905, 1770906, 1770907
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1770905, 1770906, 1770907
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1770908, 1770909, 1770910

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	02/12/2016			02/12/2016 14:25	Sima Feizi	1770905, 1770906, 1770907
EPA 300.0 Rev. 2.1	02/12/2016			02/17/2016	Ping Hua	1770905, 1770906, 1770907
EPA 350.1 Rev. 2.0	02/12/2016			02/23/2016	Diana M. Turner	1770908, 1770909, 1770910
EPA 351.2 Rev. 2.0	02/12/2016	02/18/2016	Christopher Armour	02/19/2016	Bryan A. Werth	1770908, 1770909, 1770910
EPA 353.2 Rev. 2.0	02/12/2016			02/19/2016	Virginia P. Brown	1770908, 1770909, 1770910
EPA 365.1 Rev. 2.0	02/12/2016	02/18/2016	Christopher Armour	02/18/2016	Lipi Saha	1770908, 1770909, 1770910
EPA 365.1 Rev. 2.0 dissolved	02/12/2016			02/12/2016 13:55	Julia Storbeck	1770911, 1770912
	02/12/2016			02/12/2016 13:56	Julia Storbeck	1770913
SM 2120 B	02/12/2016			02/12/2016 14:13	Rochelle Y Jackson	1770905
	02/12/2016			02/12/2016 14:14	Rochelle Y Jackson	1770906
	02/12/2016			02/12/2016 14:15	Rochelle Y Jackson	1770907
SM 2320 B-97	02/12/2016			02/21/2016	Dale L. Simmons	1770905
	02/12/2016			02/23/2016	Dale L. Simmons	1770906, 1770907
SM 2540 C-97	02/12/2016			02/17/2016	Yijie Li	1770905, 1770906, 1770907
SM 2540 D-97	02/12/2016			02/17/2016	Yijie Li	1770905, 1770906, 1770907
SM 4500 F-C-97	02/12/2016			02/22/2016	Dale L. Simmons	1770905, 1770906, 1770907
SM 5310 B-00	02/12/2016			02/19/2016	Diana M. Turner	1770908, 1770909, 1770910