

Chemical Analysis Report

SO-DIST-2018-05-16-01

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

Event Description: **Caloosa Creeks**
Request ID: **RQ-2018-04-30-52**
Customer: **SO-DIST**
Project ID: **BMAP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Gary Snorek

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 06-JUN-2018 15:05

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

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: Orange River

Collection Date/Time: 05/15/2018 11:05

Field ID: G3SD0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1993058	SM 2120 B	Color (true)	47		PCU	P345425	
	SM 2320 B-97	Total Alkalinity	144		mg CaCO3/L	P345633	
	SM 2540 D-97	TSS	6	I	mg/L	P345885	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P345634	
1993061	SM 5310 B-00 dissolved	Organic Carbon	13		mg C/L	P345785	
1993064	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P345570	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.91		mg N/L	P345824	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P345670	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P345660	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P345785	
1993067	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.066		mg P/L	P345460	

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: Telegraph Creek

Collection Date/Time: 05/15/2018 11:46

Field ID: G3SD0129

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1993059	SM 2120 B	Color (true)	54		PCU	P345425	
	SM 2320 B-97	Total Alkalinity	128		mg CaCO3/L	P345633	
	SM 2540 D-97	TSS	8	IA	mg/L	P345885	
	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P345634	
1993062	SM 5310 B-00 dissolved	Organic Carbon	14		mg C/L	P345785	
1993065	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P345570	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P345820	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.091		mg N/L	P345670	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P345660	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P345785	
1993068	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P345460	

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: Hancock Creek

Collection Date/Time: 05/15/2018 12:45

Field ID: G3SD0130

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1993060	SM 2120 B	Color (true)	52		PCU	P345425	
	SM 2320 B-97	Total Alkalinity	112	A	mg CaCO3/L	P345706	
	SM 2540 D-97	TSS	6	IA	mg/L	P345886	
	SM 4500 F-C-97	Fluoride	0.50		mg F/L	P345707	
1993063	SM 5310 B-00 dissolved	Organic Carbon	13		mg C/L	P345787	
1993066	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P345570	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P345820	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P345671	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P345660	

Field ID: G3SD0130

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1993066	SM 5310 B-00	Organic Carbon	14		mg C/L	P345787	
1993069	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P345465	

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 350.1 Rev. 2.0
Batch ID: P345570

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345820

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345824

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345670

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345671

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345660

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345460

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345465

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P345425

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P345633

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-97
Batch ID: P345706

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-97
Batch ID: P345885

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P345886

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P345634

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P345707

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P345785

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P345787

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00 dissolved
Batch ID: P345785

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00 dissolved
Batch ID: P345787

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345570

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345820

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345824

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	98.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345671

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345660

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345460

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 dissolved
Batch ID: P345460

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345465

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

Reference Method: SM 2320 B-97
Batch ID: P345633

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P345706

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P345634

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.3		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P345707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	93.3		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P345785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P345787

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P345785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00 dissolved
Batch ID: P345787

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1992716	Ammonia-N	98.1	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993105	Kjeldahl Nitrogen	94.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345824

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1992443	Kjeldahl Nitrogen	96.6	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1992716	NO2NO3-N	97.5	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345671

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993066	NO2NO3-N	96.1	97.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345660

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993104	Total-P	90.1	92.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993128	O-Phosphate-P	96.2	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345465

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993135	O-Phosphate-P	96.6	96.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P345634

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993148	Fluoride	94.4	95.6	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P345707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993060	Fluoride	92.7	92.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P345785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993061	Organic Carbon	101	98.3	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P345787

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1992441	Organic Carbon	97.0	97.9	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P345785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993061	Organic Carbon	101	98.3	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P345787

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1992441	Organic Carbon	97.0	97.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1992716	Ammonia-N	0.847	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993105	Kjeldahl Nitrogen	6.04	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345824

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1992443	Kjeldahl Nitrogen	5.79	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1992716	NO2NO3-N	0.571	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993066	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345660

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993104	Total-P	2.60	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993128	O-Phosphate-P	1.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993135	O-Phosphate-P	0.232	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P345425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1992999	Color (true)	5.17	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P345633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993148	Total Alkalinity	1.43	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P345706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993060	Total Alkalinity	0.616	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P345634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993148	Fluoride	0.993	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P345707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993060	Fluoride	0.476	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P345785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993061	Organic Carbon	1.76	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P345787

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1992441	Organic Carbon	0.694	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P345785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993061	Organic Carbon	1.76	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P345787

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1992441	Organic Carbon	0.694	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: A83942

Included Lab Sample IDs: 1993058, 1993059, 1993060

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.0	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A83956

Included Lab Sample IDs: 1993067, 1993068, 1993069

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84010

Included Lab Sample IDs: 1993064, 1993065, 1993066

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.7	98.1	P/P	90 - 110
Ammonia-N	99.9	97.7	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A84037

Included Lab Sample IDs: 1993058, 1993059

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.2	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A84037

Included Lab Sample IDs: 1993058, 1993059

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84050

Included Lab Sample IDs: 1993064, 1993065, 1993066

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	97.5	P/P	90 - 110
NO2NO3-N	97.5	98.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A84069

Included Lab Sample IDs: 1993060

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

Reference Method: SM 2320 B-97
Run ID: A84069
Included Lab Sample IDs: 1993060

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A84069
Included Lab Sample IDs: 1993060

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	95.2	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A84099
Included Lab Sample IDs: 1993064, 1993065, 1993066

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.4	P/P	90 - 110
Organic Carbon	97.8	99.8	P/P	90 - 110

Reference Method: SM 5310 B-00 dissolved
Run ID: A84099
Included Lab Sample IDs: 1993061, 1993062, 1993063

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.4	P/P	90 - 110
Organic Carbon	97.8	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A84131
Included Lab Sample IDs: 1993064, 1993065, 1993066

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A84135
Included Lab Sample IDs: 1993065, 1993066

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.0	93.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A84147
Included Lab Sample IDs: 1993064

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.1	97.8	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 350.1 Rev. 2.0	Ammonia-N	104	98.1 99.3			0.847
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.0	94.2 101			6.04
	Kjeldahl Nitrogen	100	96.6 104			5.79
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	97.5 98.5			0.571
	NO2NO3-N	99.5	96.1 97.1			1.01
EPA 365.1 Rev. 2.0	Total-P	98.2	90.1 92.6			2.60
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.4	96.2 97.5			1.00
	O-Phosphate-P	100	96.6 96.3			0.232
SM 2120 B	Color (true)				5.17	
SM 2320 B-97	Total Alkalinity	102			1.43	
	Total Alkalinity	102			0.616	
SM 4500 F-C-97	Fluoride	95.3	94.4 95.6			0.993
	Fluoride	93.3	92.7 92.0			0.476
SM 5310 B-00	Organic Carbon	98.8	101 98.3			1.76
	Organic Carbon	98.8	97.0 97.9			0.694
SM 5310 B-00 dissolved	Organic Carbon	98.8	101 98.3			1.76
	Organic Carbon	98.8	97.0 97.9			0.694

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1993064, 1993065, 1993066
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1993064, 1993065, 1993066
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1993064, 1993065, 1993066
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1993064, 1993065, 1993066
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1993067, 1993068, 1993069
SM 2120 B / E31780	True Color measured at 450 nm	1993058, 1993059, 1993060
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1993058, 1993059, 1993060
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	1993058, 1993059, 1993060
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1993058, 1993059, 1993060
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1993064, 1993065, 1993066
SM 5310 B-00 dissolved / E31780	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	1993061, 1993062, 1993063

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	05/16/2018			05/18/2018 11:47	Ping Hua	1993064
	05/16/2018			05/18/2018 11:48	Ping Hua	1993065
	05/16/2018			05/18/2018 11:56	Ping Hua	1993066
EPA 351.2 Rev. 2.0	05/16/2018	05/23/2018 16:00	Adrian Shelby	05/24/2018 11:04	Joseph Suarez	1993065
	05/16/2018	05/23/2018 16:00	Adrian Shelby	05/24/2018 11:05	Joseph Suarez	1993066
	05/16/2018	05/23/2018 16:00	Adrian Shelby	05/24/2018 14:28	Joseph Suarez	1993064
EPA 353.2 Rev. 2.0	05/16/2018			05/21/2018 12:03	Lauren Bottorf	1993064
	05/16/2018			05/21/2018 12:04	Lauren Bottorf	1993065
	05/16/2018			05/21/2018 12:11	Lauren Bottorf	1993066
EPA 365.1 Rev. 2.0	05/16/2018	05/21/2018 13:05	Sima Feizi	05/23/2018 12:21	Beverly Y. Sanders	1993064
	05/16/2018	05/21/2018 13:05	Sima Feizi	05/23/2018 12:22	Beverly Y. Sanders	1993065
	05/16/2018	05/21/2018 13:05	Sima Feizi	05/23/2018 12:23	Beverly Y. Sanders	1993066
EPA 365.1 Rev. 2.0 dissolved	05/16/2018			05/16/2018 16:36	Megan Treadwell	1993067
	05/16/2018			05/16/2018 16:37	Megan Treadwell	1993068, 1993069
SM 2120 B	05/16/2018			05/16/2018 14:27	Tanya Welborn	1993058
	05/16/2018			05/16/2018 14:28	Tanya Welborn	1993059
	05/16/2018			05/16/2018 14:29	Tanya Welborn	1993060
SM 2320 B-97	05/16/2018			05/19/2018 02:41	Dale L. Simmons	1993058
	05/16/2018			05/19/2018 02:51	Dale L. Simmons	1993059
	05/16/2018			05/21/2018 18:22	Dale L. Simmons	1993060
SM 2540 D-97	05/16/2018			05/19/2018 23:10	Yijie Li	1993058, 1993059, 1993060
SM 4500 F-C-97	05/16/2018			05/19/2018 02:41	Dale L. Simmons	1993058
	05/16/2018			05/19/2018 02:51	Dale L. Simmons	1993059
	05/16/2018			05/21/2018 16:37	Dale L. Simmons	1993060
SM 5310 B-00	05/16/2018			05/21/2018 17:57	Megan Treadwell	1993064
	05/16/2018			05/21/2018 18:09	Megan Treadwell	1993065
	05/16/2018			05/22/2018 07:44	Megan Treadwell	1993066
SM 5310 B-00 dissolved	05/16/2018			05/21/2018 16:42	Megan Treadwell	1993061
	05/16/2018			05/21/2018 17:32	Megan Treadwell	1993062
	05/16/2018			05/22/2018 07:32	Megan Treadwell	1993063