

Chemical Analysis Report

WQAP-2018-05-09-01

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

Event Description: **2017 SMP Kit Template 1**

Request ID: **RQ-2018-04-30-19**

Customer: **WQAP**

Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 24-MAY-2018 15:15



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: Buck Creek CM

Collection Date/Time: 05/08/2018 09:45

Field ID: G2SD0035

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1991068	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P344972	
	SM 2320 B-97	Total Alkalinity	133	A	mg CaCO3/L	P345490	
	SM 2540 D-97	TSS	8	I	mg/L	P345657	
	SM 4500 F-C-97	Fluoride	1.2	J	mg F/L	P345492	MS
1991070	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P345299	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P345371	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P345161	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P345015	
	SM 5310 B-00	Organic Carbon	3.7		mg C/L	P345344	
1991072	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P344977	

Ref. Method and Comment:

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

SM 4500 F-C-97: Refer to the narrative for an explanation of QC Codes.

Sample Location: Oyster Creek CM

Collection Date/Time: 05/08/2018 10:50

Field ID: G2SD0036

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1991069	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P344972	
	SM 2320 B-97	Total Alkalinity	137		mg CaCO3/L	P345490	
	SM 2540 D-97	TSS	5	IA	mg/L	P345657	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P345492	MS
1991071	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P345299	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P345371	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P345161	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P345015	
	SM 5310 B-00	Organic Carbon	4.6		mg C/L	P345344	
1991073	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P344977	

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: Oyster Creek CM

Collection Date/Time: 05/08/2018 11:25

Field ID: BLANK_05082018

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1991074	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P344972	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P345324	
	SM 2540 D-97	TSS	2	U	mg/L	P345654	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P345327	
1991075	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P345375	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P345121	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P345240	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P345014	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P345343	
1991076	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P344975	

Field ID: BLANK_05082018

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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: P344972

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345299

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345375

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345121

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345371

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345161

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345240

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345014

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345015

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344975

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344977

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

Reference Method: SM 2320 B-97
Batch ID: P345324

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

Reference Method: SM 2320 B-97
Batch ID: P345490

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

Reference Method: SM 2540 D-97
Batch ID: P345654

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P345657

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P345327

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P345492

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: P345343

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

Reference Method: SM 5310 B-00
Batch ID: P345344

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: P345299

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345375

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345121

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345371

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345161

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345240

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345014

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: P345014

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345015

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344975

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344977

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

Reference Method: SM 2320 B-97
Batch ID: P345324

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P345490

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P345327

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P345492

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	92.9		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P345343

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.3		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P345344

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P345299

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991070	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P345375

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991078	Ammonia-N	98.5	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P345121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991277	Kjeldahl Nitrogen	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P345371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991873	Kjeldahl Nitrogen	96.7	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P345161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991115	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P345240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991078	NO2NO3-N	98.0	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P345014

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991052	Total-P	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P345015

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
 Batch ID: P345015

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990937	Total-P	94.2	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P344975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991079	O-Phosphate-P	94.4	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P344977

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991182	O-Phosphate-P	96.3	97.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P345327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991083	Fluoride	97.6	97.0	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P345492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991068	Fluoride	89.2	89.2	F/F	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P345343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991051	Organic Carbon	100	98.1	P/P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P345344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990550	Organic Carbon	98.7	99.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P344972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991011	Turbidity	4.06	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345299

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991070	Ammonia-N	0.811	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991078	Ammonia-N	3.33	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991277	Kjeldahl Nitrogen	1.97	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991873	Kjeldahl Nitrogen	2.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991115	NO2NO3-N	0.482	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991078	NO2NO3-N	1.52	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991052	Total-P	2.36	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345015

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990937	Total-P	1.59	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991079	O-Phosphate-P	1.17	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991182	O-Phosphate-P	0.968	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P345324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991083	Total Alkalinity	0.348	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P345490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991068	Total Alkalinity	1.46	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P345327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991083	Fluoride	0.476	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P345492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991068	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P345343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991051	Organic Carbon	0.992	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P345344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990550	Organic Carbon	0.321	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: EPA 180.1 Rev. 2.0
Run ID: A83777
Included Lab Sample IDs: 1991068, 1991069, 1991074

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83778
Included Lab Sample IDs: 1991072, 1991073, 1991076

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	97.6	P/P	90 - 110
O-Phosphate-P	98.0	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83833
Included Lab Sample IDs: 1991070, 1991071

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83865
Included Lab Sample IDs: 1991075

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A83866
Included Lab Sample IDs: 1991075

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A83889
Included Lab Sample IDs: 1991070, 1991071

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	102	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A83894
Included Lab Sample IDs: 1991074

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A83894

Included Lab Sample IDs: 1991074

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.1	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A83898

Included Lab Sample IDs: 1991070, 1991071, 1991075

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	98.6	P/P	90 - 110
Organic Carbon	97.4	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83914

Included Lab Sample IDs: 1991070, 1991071, 1991075

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83920

Included Lab Sample IDs: 1991075

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

Reference Method: SM 2320 B-97

Run ID: A83973

Included Lab Sample IDs: 1991068, 1991069

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.0	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A83973

Included Lab Sample IDs: 1991068, 1991069

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.3	98.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A84004

Included Lab Sample IDs: 1991070, 1991071

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.3	97.2	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					4.06	
EPA 350.1 Rev. 2.0	Ammonia-N	102	104	105			0.811
	Ammonia-N	105	98.5	104			3.33
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.5	101	103			1.97
	Kjeldahl Nitrogen	103	96.7	99.0			2.03
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104	104			0.482
	NO2NO3-N	99.0	98.0	99.5			1.52
EPA 365.1 Rev. 2.0	Total-P	101	101	104			2.36
	Total-P	103	94.2	95.7			1.59
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	94.4	95.8			1.17
	O-Phosphate-P	97.6	96.3	97.5			0.968
SM 2320 B-97	Total Alkalinity	101				0.348	
	Total Alkalinity	101				1.46	
SM 4500 F-C-97	Fluoride	97.1	97.6	97.0			0.476
	Fluoride	92.9	89.2	89.2			0.0
SM 5310 B-00	Organic Carbon	99.3	100	98.1			0.992
	Organic Carbon	98.7	98.7	99.1			0.321

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1991068, 1991069, 1991074
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1991070, 1991071, 1991075
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1991070, 1991071, 1991075
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1991070, 1991071, 1991075
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1991070, 1991071, 1991075
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1991072, 1991073, 1991076
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1991068, 1991069, 1991074
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	1991068, 1991069, 1991074
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1991068, 1991069, 1991074
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1991070, 1991071, 1991075

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	05/09/2018			05/09/2018 15:35	DeAsia Armster	1991068, 1991069, 1991074
EPA 350.1 Rev. 2.0	05/09/2018			05/11/2018 12:49	Ping Hua	1991070
	05/09/2018			05/11/2018 12:54	Ping Hua	1991071
	05/09/2018			05/14/2018 10:46	Ping Hua	1991075
EPA 351.2 Rev. 2.0	05/09/2018	05/11/2018 11:00	Adrian Shelby	05/14/2018 13:59	Joseph Suarez	1991075
	05/09/2018	05/16/2018 11:00	Adrian Shelby	05/17/2018 17:02	Joseph Suarez	1991070
	05/09/2018	05/16/2018 11:00	Adrian Shelby	05/17/2018 17:04	Joseph Suarez	1991071
EPA 353.2 Rev. 2.0	05/09/2018			05/11/2018 16:26	Lauren Bottorf	1991070
	05/09/2018			05/11/2018 16:27	Lauren Bottorf	1991071
	05/09/2018			05/14/2018 12:27	Lauren Bottorf	1991075
EPA 365.1 Rev. 2.0	05/09/2018	05/10/2018 11:35	Sima Feizi	05/15/2018 12:56	Beverly Y. Sanders	1991075
	05/09/2018	05/10/2018 11:35	Sima Feizi	05/15/2018 13:13	Beverly Y. Sanders	1991070
	05/09/2018	05/10/2018 11:35	Sima Feizi	05/15/2018 13:14	Beverly Y. Sanders	1991071
EPA 365.1 Rev. 2.0 dissolved	05/09/2018			05/09/2018 15:20	Megan Treadwell	1991073, 1991076
	05/09/2018			05/09/2018 15:34	Megan Treadwell	1991072
SM 2320 B-97	05/09/2018			05/15/2018 01:00	Dale L. Simmons	1991074
	05/09/2018			05/16/2018 23:53	Dale L. Simmons	1991068
	05/09/2018			05/17/2018 00:04	Dale L. Simmons	1991069
SM 2540 D-97	05/09/2018			05/11/2018 16:15	Yijie Li	1991068, 1991069, 1991074
SM 4500 F-C-97	05/09/2018			05/15/2018 01:00	Dale L. Simmons	1991074
	05/09/2018			05/16/2018 22:23	Dale L. Simmons	1991068
	05/09/2018			05/16/2018 22:34	Dale L. Simmons	1991069
SM 5310 B-00	05/09/2018			05/14/2018 23:43	Megan Treadwell	1991075
	05/09/2018			05/15/2018 07:06	Megan Treadwell	1991070
	05/09/2018			05/15/2018 07:18	Megan Treadwell	1991071