

Chemical Analysis Report

SO-DIST-2019-04-02-02

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-2019-04-01-57**
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

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 17-APR-2019 13:48

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the "T" and a long horizontal stroke 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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Hancock Creek

Collection Date/Time: 04/01/2019 09:00

Field ID: G3SD0130

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2073936	SM 2120 B	Color (true)	54		PCU	P361464	
	SM 2320 B-97	Total Alkalinity	170		mg CaCO3/L	P361717	
	SM 2540 D-97	TSS	4	I	mg/L	P361665	
	SM 4500 F-C-97	Fluoride	0.33		mg F/L	P361719	
2073939	SM 5310 B-00 dissolved	Organic Carbon	14		mg C/L	P361542	
2073942	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P361696	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P361486	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P361799	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P361513	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P361542	
2073945	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.098		mg P/L	P361435	

Sample Location: Orange River

Collection Date/Time: 04/01/2019 09:40

Field ID: G3SD0128

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2073937	SM 2120 B	Color (true)	29		PCU	P361464	
	SM 2320 B-97	Total Alkalinity	200		mg CaCO3/L	P361717	
	SM 2540 D-97	TSS	3	I	mg/L	P361665	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P361719	
2073940	SM 5310 B-00 dissolved	Organic Carbon	9.2		mg C/L	P361542	
2073943	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P361698	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P361489	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P361480	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P361494	
	SM 5310 B-00	Organic Carbon	9.4		mg C/L	P361542	
2073946	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P361434	

Sample Location: Telegraph Creek

Collection Date/Time: 04/01/2019 10:30

Field ID: G3SD0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2073938	SM 2120 B	Color (true)	170		PCU	P361464	
	SM 2320 B-97	Total Alkalinity	169		mg CaCO3/L	P361717	
	SM 2540 D-97	TSS	3	I	mg/L	P361665	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P361719	
2073941	SM 5310 B-00 dissolved	Organic Carbon	23		mg C/L	P361542	
2073944	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P361698	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P361556	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.098		mg N/L	P361480	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P361494	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P361542	
2073947	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P361434	

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361696

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361698

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361486

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361489

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361556

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361480

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361799

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361494

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361513

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 dissolved
Batch ID: P361434

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361435

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

Reference Method: SM 2120 B
Batch ID: P361464

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P361717

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

Reference Method: SM 2540 D-97
Batch ID: P361665

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P361719

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P361542

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P361542

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: P361696

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361698

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361486

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361489

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361556

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361480

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361799

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361494

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361513

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361434

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361435

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

Reference Method: SM 2120 B
Batch ID: P361464

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P361717

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

Reference Method: SM 4500 F-C-97
Batch ID: P361719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361542

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P361542

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072700	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073959	Ammonia-N	101	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073064	Kjeldahl Nitrogen	98.9	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073917	Kjeldahl Nitrogen	92.7	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073944	Kjeldahl Nitrogen	98.8	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361480

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073917	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361799

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073942	NO2NO3-N	94.5	94.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073943	Total-P	100	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361513

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074034	Total-P	101	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361434

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073961	O-Phosphate-P	95.1	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361435

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073945	O-Phosphate-P	95.9	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P361719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073957	Fluoride	99.8	98.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073959	Organic Carbon	100	101	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P361542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073959	Organic Carbon	100	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072700	Ammonia-N	0.0315	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073959	Ammonia-N	5.80	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073064	Kjeldahl Nitrogen	1.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073917	Kjeldahl Nitrogen	3.57	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073944	Kjeldahl Nitrogen	3.13	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073917	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361799

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073942	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073943	Total-P	1.23	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361513

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074034	Total-P	0.541	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073961	O-Phosphate-P	1.77	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361435

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073945	O-Phosphate-P	5.56	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P361464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073914	Color (true)	3.39	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P361717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073957	Total Alkalinity	0.566	Sample	P	0 - 1.6

Reference Method: SM 2540 D-97
Batch ID: P361665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074319	TSS	8.22	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P361719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073957	Fluoride	1.00	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P361542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073959	Organic Carbon	0.582	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00 dissolved
Batch ID: P361542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073959	Organic Carbon	0.582	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90388

Included Lab Sample IDs: 2073945, 2073946, 2073947

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.9	P/P	90 - 110
O-Phosphate-P	98.1	97.9	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A90399

Included Lab Sample IDs: 2073936, 2073937, 2073938

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.7	99.8	P/P	90 - 115
Color (true)	99.2	100	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90407

Included Lab Sample IDs: 2073943, 2073944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A90428

Included Lab Sample IDs: 2073942, 2073943, 2073944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	100	P/P	90 - 110

Reference Method: SM 5310 B-00 dissolved

Run ID: A90428

Included Lab Sample IDs: 2073939, 2073940, 2073941

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90432

Included Lab Sample IDs: 2073942, 2073944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	102	P/P	90 - 110
Total-P	99.8	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90440

Included Lab Sample IDs: 2073943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90472

Included Lab Sample IDs: 2073942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	97.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90499

Included Lab Sample IDs: 2073943, 2073944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	96.6	P/P	90 - 110
Kjeldahl Nitrogen	97.0	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90502

Included Lab Sample IDs: 2073942, 2073943, 2073944

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

Reference Method: SM 2320 B-97

Run ID: A90507

Included Lab Sample IDs: 2073936, 2073937, 2073938

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.8	107	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90507

Included Lab Sample IDs: 2073936, 2073937, 2073938

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90543

Included Lab Sample IDs: 2073942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	98.0	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	MS
						SMP	
EPA 350.1 Rev. 2.0	Ammonia-N	103	101	101			0.0315
	Ammonia-N	103	101	108			5.80
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.8	98.9	100			1.26
	Kjeldahl Nitrogen	99.8	92.7	98.6			3.57
	Kjeldahl Nitrogen	95.3	98.8	105			3.13
EPA 353.2 Rev. 2.0	NO2NO3-N	101	102	102			0.0
	NO2NO3-N	100	94.5	94.5			0.0
EPA 365.1 Rev. 2.0	Total-P	102	100	98.7			1.23
	Total-P	99.8	101	100			0.541
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	95.1	96.8			1.77
	O-Phosphate-P	102	95.9	104			5.56
SM 2120 B	Color (true)	99.2				3.39	
SM 2320 B-97	Total Alkalinity	101				0.566	
SM 2540 D-97	TSS					8.22	
SM 4500 F-C-97	Fluoride	99.3	99.8	98.6			1.00
SM 5310 B-00	Organic Carbon	102	100	101			0.582
SM 5310 B-00 dissolved	Organic Carbon	102	100	101			0.582

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2073942, 2073943, 2073944
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2073942, 2073943, 2073944
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2073942, 2073943, 2073944
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2073942, 2073943, 2073944
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2073945, 2073946, 2073947
SM 2120 B / E31780	True Color measured at 450 nm	2073936, 2073937, 2073938
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2073936, 2073937, 2073938
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2073936, 2073937, 2073938
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2073936, 2073937, 2073938
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2073942, 2073943, 2073944
SM 5310 B-00 dissolved / E31780	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2073939, 2073940, 2073941

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	04/02/2019			04/04/2019 11:45	Ping Hua	2073942
	04/02/2019			04/04/2019 12:42	Ping Hua	2073943
	04/02/2019			04/04/2019 12:51	Ping Hua	2073944
EPA 351.2 Rev. 2.0	04/02/2019	04/03/2019 13:00	Adrian Shelby	04/05/2019 09:22	Joseph Suarez	2073942
	04/02/2019	04/03/2019 13:00	Adrian Shelby	04/05/2019 13:16	Joseph Suarez	2073943
	04/02/2019	04/04/2019 15:00	Adrian Shelby	04/05/2019 13:30	Joseph Suarez	2073944
EPA 353.2 Rev. 2.0	04/02/2019			04/03/2019 10:02	Beverly Y. Sanders	2073943
	04/02/2019			04/03/2019 10:03	Beverly Y. Sanders	2073944
	04/02/2019			04/09/2019 10:22	Beverly Y. Sanders	2073942
EPA 365.1 Rev. 2.0	04/02/2019	04/03/2019 13:35	Sima Feizi	04/04/2019 10:53	Rosalyn Ballman	2073944
	04/02/2019	04/03/2019 13:35	Sima Feizi	04/04/2019 11:24	Rosalyn Ballman	2073942
	04/02/2019	04/03/2019 13:35	Sima Feizi	04/04/2019 13:57	Rosalyn Ballman	2073943
EPA 365.1 Rev. 2.0 dissolved	04/02/2019			04/02/2019 16:23	Jhamieka S. Greenwood	2073945
	04/02/2019			04/02/2019 16:59	Jhamieka S. Greenwood	2073946
	04/02/2019			04/02/2019 17:00	Jhamieka S. Greenwood	2073947
SM 2120 B	04/02/2019			04/02/2019 16:04	Mariam Hanna	2073936, 2073937
	04/02/2019			04/02/2019 16:56	Mariam Hanna	2073938
SM 2320 B-97	04/02/2019			04/06/2019 09:17	Dale L. Simmons	2073937
	04/02/2019			04/06/2019 09:30	Dale L. Simmons	2073938
	04/02/2019			04/06/2019 10:21	Dale L. Simmons	2073936
SM 2540 D-97	04/02/2019			04/03/2019 15:14	Yijie Li	2073936, 2073937, 2073938
SM 4500 F-C-97	04/02/2019			04/06/2019 09:17	Dale L. Simmons	2073937
	04/02/2019			04/06/2019 09:30	Dale L. Simmons	2073938
	04/02/2019			04/06/2019 10:21	Dale L. Simmons	2073936
SM 5310 B-00	04/02/2019			04/03/2019 17:18	Julia Storbeck	2073942
	04/02/2019			04/03/2019 17:30	Julia Storbeck	2073943
	04/02/2019			04/03/2019 17:43	Julia Storbeck	2073944
SM 5310 B-00 dissolved	04/02/2019			04/03/2019 17:55	Julia Storbeck	2073939
	04/02/2019			04/03/2019 18:07	Julia Storbeck	2073940
	04/02/2019			04/03/2019 18:19	Julia Storbeck	2073941