

Chemical Analysis Report

CEN-DIST-2019-04-02-01

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

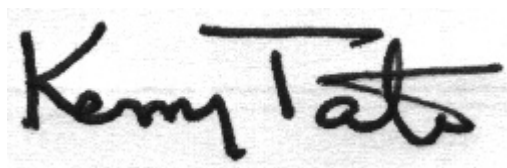
Event Description: **Belle / Gordon / Van + D&B**
Request ID: **RQ-2019-03-18-31**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 17-APR-2019 13:54

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" in "Tate".

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: Lake Gordon @ Center

Collection Date/Time: 04/01/2019 11:45

Field ID: G3CE0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2073957	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P361439	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P361732	
		Sulfate	5.9		mg SO4/L	P361734	
	SM 2120 B	Color (true)	11		PCU	P361464	
	SM 2320 B-97	Total Alkalinity	46	A	mg CaCO3/L	P361717	
	SM 2540 C-97	TDS	73		mg/L	P361824	
	SM 2540 D-97	TSS	2	U	mg/L	P361663	
	SM 4500 F-C-97	Fluoride	0.086	I	mg F/L	P361719	
2073959	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P361698	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35		mg N/L	P361556	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P361480	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P361494	
	SM 5310 B-00	Organic Carbon	3.9		mg C/L	P361542	
2073961	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P361434	

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: Lake Belle @ Center of W Lobe

Collection Date/Time: 04/01/2019 12:45

Field ID: G3CE0019

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2073958	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P361439	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P361732	
		Sulfate	38		mg SO4/L	P361734	
	SM 2120 B	Color (true)	11		PCU	P361464	
	SM 2320 B-97	Total Alkalinity	38		mg CaCO3/L	P361717	
	SM 2540 C-97	TDS	151		mg/L	P361824	
	SM 2540 D-97	TSS	2	U	mg/L	P361663	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P361719	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P361698	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P361556	
2073960	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P361480	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P361494	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P361542	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P361434	
	dissolved						

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: Lake Belle @ Center of W Lobe

Collection Date/Time: 04/01/2019 12:50

Field ID: G3CE0019_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2073963	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P361439	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P361732	
		Sulfate	39		mg SO4/L	P361734	
	SM 2120 B	Color (true)	12		PCU	P361464	
	SM 2320 B-97	Total Alkalinity	37		mg CaCO3/L	P361717	
	SM 2540 C-97	TDS	159		mg/L	P361824	
	SM 2540 D-97	TSS	2	I	mg/L	P361663	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P361719	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P361698	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P361556	
2073965	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P361480	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P361494	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P361542	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P361434	
	dissolved						

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: FB_04012019

Collection Date/Time: 04/01/2019 12:35

Field ID: FB_04012019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2073964	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P361439	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P361732	
		Sulfate	0.20	U	mg SO4/L	P361734	
	SM 2120 B	Color (true)	2.5	U	PCU	P361464	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P361717	
	SM 2540 C-97	TDS	15	U	mg/L	P361822	
	SM 2540 D-97	TSS	2	U	mg/L	P361661	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361719	
2073966	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P361698	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P361556	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P361480	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P361494	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P361542	
2073968	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P361436	

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: P361439

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361732

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361734

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/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: 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 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 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: P361436

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: 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 C-97
Batch ID: P361822

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P361824

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361661

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361663

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361732

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361734

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	100		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: 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 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 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: P361436

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

Quality Assurance Report Laboratory Control Sample Accuracy

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361732

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073871	Chloride	99.1		P	90 - 110
2073957	Chloride	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361734

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073871	Sulfate	100		P	90 - 110
2073957	Sulfate	99.1		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: 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 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 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: P361436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074344	O-Phosphate-P	94.6	96.7	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

Quality Assurance Report Matrix Spike Accuracy

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

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073914	Turbidity	2.20	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073871	Chloride	2.16	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073871	Sulfate	2.30	Sample	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: 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 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

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

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P361436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074344	O-Phosphate-P	1.15	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 C-97
 Batch ID: P361822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073594	TDS	2.16	Sample	P	0 - 10

Reference Method: SM 2540 C-97
 Batch ID: P361824

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073902	TDS	5.17	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

* 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: 2073961, 2073962, 2073967, 2073968

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.9	P/P	90 - 110
O-Phosphate-P	98.6	98.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90389

Included Lab Sample IDs: 2073957, 2073958, 2073963, 2073964

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

Reference Method: SM 2120 B

Run ID: A90399

Included Lab Sample IDs: 2073957, 2073958, 2073963, 2073964

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90407

Included Lab Sample IDs: 2073959, 2073960, 2073965, 2073966

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: 2073959, 2073960, 2073965, 2073966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.3	99.6	P/P	90 - 110
Organic Carbon	99.6	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90440

Included Lab Sample IDs: 2073959, 2073960, 2073965, 2073966

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90499

Included Lab Sample IDs: 2073959, 2073960, 2073965, 2073966

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90502

Included Lab Sample IDs: 2073959, 2073960, 2073965, 2073966

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90502

Included Lab Sample IDs: 2073959, 2073960, 2073965, 2073966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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: 2073957, 2073958, 2073963, 2073964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.8	P/P	90 - 110
Total Alkalinity	99.8	107	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90507

Included Lab Sample IDs: 2073957, 2073958, 2073963, 2073964

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90511

Included Lab Sample IDs: 2073957, 2073958, 2073963, 2073964

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

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.20	
EPA 300.0 Rev. 2.1	Chloride	100	99.1	97.6		2.16	
	Sulfate	100	100	99.1		2.30	
EPA 350.1 Rev. 2.0	Ammonia-N	103	101	108			5.80
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.3	98.8	105			3.13
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	102	100	98.7			1.23
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	95.1	96.8			1.77
	O-Phosphate-P	98.5	94.6	96.7			1.15
SM 2120 B	Color (true)	99.2				3.39	
SM 2320 B-97	Total Alkalinity	101				0.566	
SM 2540 C-97	TDS					2.16	
	TDS					5.17	
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

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2073957, 2073958, 2073963, 2073964
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2073957, 2073958, 2073963, 2073964
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2073957, 2073958, 2073963, 2073964
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2073959, 2073960, 2073965, 2073966
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2073959, 2073960, 2073965, 2073966
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2073959, 2073960, 2073965, 2073966
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2073959, 2073960, 2073965, 2073966
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2073961, 2073962, 2073967, 2073968
SM 2120 B / E31780	True Color measured at 450 nm	2073957, 2073958, 2073963, 2073964
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2073957, 2073958, 2073963, 2073964
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2073957, 2073958, 2073963, 2073964
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2073957, 2073958, 2073963, 2073964
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2073957, 2073958, 2073963, 2073964
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2073959, 2073960, 2073965, 2073966

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	04/02/2019			04/02/2019 17:05	Adrian Shelby	2073957, 2073958, 2073963, 2073964
EPA 300.0 Rev. 2.1	04/02/2019			04/06/2019 01:54	Lipi Saha	2073957
	04/02/2019			04/06/2019 04:43	Lipi Saha	2073958
	04/02/2019			04/06/2019 04:55	Lipi Saha	2073963
	04/02/2019			04/06/2019 05:07	Lipi Saha	2073964
EPA 350.1 Rev. 2.0	04/02/2019			04/04/2019 12:36	Ping Hua	2073959
	04/02/2019			04/04/2019 12:53	Ping Hua	2073960
	04/02/2019			04/04/2019 12:57	Ping Hua	2073965
	04/02/2019			04/04/2019 12:59	Ping Hua	2073966
EPA 351.2 Rev. 2.0	04/02/2019	04/04/2019 15:00	Adrian Shelby	04/05/2019 13:35	Joseph Suarez	2073959
	04/02/2019	04/04/2019 15:00	Adrian Shelby	04/05/2019 13:36	Joseph Suarez	2073960
	04/02/2019	04/04/2019 15:00	Adrian Shelby	04/05/2019 13:38	Joseph Suarez	2073965
	04/02/2019	04/04/2019 15:00	Adrian Shelby	04/05/2019 13:39	Joseph Suarez	2073966
EPA 353.2 Rev. 2.0	04/02/2019			04/03/2019 10:05	Beverly Y. Sanders	2073959
	04/02/2019			04/03/2019 10:06	Beverly Y. Sanders	2073960
	04/02/2019			04/03/2019 10:07	Beverly Y. Sanders	2073965
	04/02/2019			04/03/2019 10:08	Beverly Y. Sanders	2073966
EPA 365.1 Rev. 2.0	04/02/2019	04/03/2019 13:35	Sima Feizi	04/04/2019 13:58	Rosalyn Ballman	2073959
	04/02/2019	04/03/2019 13:35	Sima Feizi	04/04/2019 13:59	Rosalyn Ballman	2073960
	04/02/2019	04/03/2019 13:35	Sima Feizi	04/04/2019 14:00	Rosalyn Ballman	2073965
	04/02/2019	04/03/2019 13:35	Sima Feizi	04/04/2019 14:01	Rosalyn Ballman	2073966
EPA 365.1 Rev. 2.0 dissolved	04/02/2019			04/02/2019 16:18	Jhamieka S. Greenwood	2073961
	04/02/2019			04/02/2019 16:42	Jhamieka S. Greenwood	2073968
	04/02/2019			04/02/2019 16:45	Jhamieka S. Greenwood	2073962, 2073967
SM 2120 B	04/02/2019			04/02/2019 16:06	Mariam Hanna	2073957
	04/02/2019			04/02/2019 16:07	Mariam Hanna	2073958, 2073963
	04/02/2019			04/02/2019 16:08	Mariam Hanna	2073964
SM 2320 B-97	04/02/2019			04/06/2019 05:15	Dale L. Simmons	2073957
	04/02/2019			04/06/2019 09:42	Dale L. Simmons	2073958
	04/02/2019			04/06/2019 09:54	Dale L. Simmons	2073963
	04/02/2019			04/06/2019 10:07	Dale L. Simmons	2073964
SM 2540 C-97	04/02/2019			04/03/2019 15:14	Yijie Li	2073957, 2073958, 2073963, 2073964
SM 2540 D-97	04/02/2019			04/03/2019 15:14	Yijie Li	2073957, 2073958, 2073963, 2073964
SM 4500 F-C-97	04/02/2019			04/06/2019 04:35	Dale L. Simmons	2073957
	04/02/2019			04/06/2019 09:42	Dale L. Simmons	2073958
	04/02/2019			04/06/2019 09:54	Dale L. Simmons	2073963
	04/02/2019			04/06/2019 10:07	Dale L. Simmons	2073964
SM 5310 B-00	04/02/2019			04/03/2019 15:14	Julia Storbeck	2073959
	04/02/2019			04/03/2019 18:31	Julia Storbeck	2073960
	04/02/2019			04/03/2019 18:43	Julia Storbeck	2073965

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	04/02/2019			04/03/2019 18:59	Julia Storbeck	2073966