

Chemical Analysis Report

CEN-DIST-2019-06-20-01

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

Event Description: **Gordon / Van + D&B**
Request ID: **RQ-2019-06-17-27**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 11-JUL-2019 11:29

A handwritten signature in black ink, appearing to read "Liang Lin", 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 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 Van @ SW Corner of W Lobe

Collection Date/Time: 06/19/2019 11:15

Field ID: G4CE0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097069	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P366047	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P366491	
		Sulfate	26		mg SO4/L	P366492	
	SM 2120 B	Color (true)	74		PCU	P366087	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P366361	
	SM 2540 C-97	TDS	139		mg/L	P366327	RPD
	SM 2540 D-97	TSS	6	I	mg/L	P366184	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P366364	
2097071	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P366545	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.91		mg N/L	P366697	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.019		mg N/L	P366228	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P366250	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P366239	
2097073	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P366043	

Ref. Method and Comment:

SM 2320 B-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Lake Van @ SW Corner of W Lobe

Collection Date/Time: 06/19/2019 11:20

Field ID: G4CE0099_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097075	EPA 180.1 Rev. 2.0	Turbidity	5.1		NTU	P366047	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P366491	
		Sulfate	26		mg SO4/L	P366492	
	SM 2120 B	Color (true)	74		PCU	P366087	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P366361	
	SM 2540 C-97	TDS	143		mg/L	P366327	RPD
	SM 2540 D-97	TSS	6	I	mg/L	P366184	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P366364	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P366545	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P366697	
2097077	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P366228	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P366250	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P366239	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.019		mg P/L	P366043	
	dissolved						

Ref. Method and Comment:

SM 2320 B-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Field Blank

Collection Date/Time: 06/19/2019 11:30

Field ID: FB_06192019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097076	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P366047	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P366491	
		Sulfate	0.20	U	mg SO4/L	P366492	
	SM 2120 B	Color (true)	2.5	U	PCU	P366087	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P366361	
	SM 2540 C-97	TDS	15	U	mg/L	P366327	RPD
	SM 2540 D-97	TSS	2	U	mg/L	P366184	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P366364	
2097078	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P366545	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P366697	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366228	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P366250	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P366239	
2097080	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366043	

Ref. Method and Comment:

SM 2320 B-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Lake Gordon @ Center

Collection Date/Time: 06/19/2019 12:15

Field ID: G3CE0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2097070	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P366047	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P366491	
		Sulfate	5.5		mg SO4/L	P366492	
	SM 2120 B	Color (true)	12		PCU	P366087	
	SM 2320 B-97	Total Alkalinity	49		mg CaCO3/L	P366361	
	SM 2540 C-97	TDS	81		mg/L	P366327	RPD
	SM 2540 D-97	TSS	2	U	mg/L	P366184	
	SM 4500 F-C-97	Fluoride	0.088	I	mg F/L	P366364	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P366545	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P366268	
2097072	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366333	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P366250	
	SM 5310 B-00	Organic Carbon	4.2		mg C/L	P366239	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P366043	
	dissolved						

Ref. Method and Comment:

SM 2320 B-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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: P366047

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366491

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366492

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366545

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366268

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366697

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366228

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366333

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366250

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: P366043

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

Reference Method: SM 2120 B
Batch ID: P366087

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P366361

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

Reference Method: SM 2540 C-97
Batch ID: P366327

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P366184

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P366364

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P366239

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: P366491

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P366492

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P366545

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P366268

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P366697

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P366228

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P366333

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P366250

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: P366043

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.4		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P366087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.4		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P366361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P366364

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P366239

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366491

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096949	Chloride	99.2		P	90 - 110
2097104	Chloride	99.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096949	Sulfate	99.5		P	90 - 110
2097104	Sulfate	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366545

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097107	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096951	Kjeldahl Nitrogen	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097106	Kjeldahl Nitrogen	94.1	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366228

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096958	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097072	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096982	Total-P	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097109	O-Phosphate-P	94.6	95.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P366364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096976	Fluoride	98.9	98.9	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P366239

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096984	Organic Carbon	93.8	94.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096977	Turbidity	1.21	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096949	Chloride	1.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096949	Sulfate	2.09	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097107	Ammonia-N	0.150	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096951	Kjeldahl Nitrogen	0.0346	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097106	Kjeldahl Nitrogen	5.40	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096958	NO2NO3-N	0.791	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097072	NO2NO3-N	0.491	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P366250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096982	Total-P	0.852	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P366043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097109	O-Phosphate-P	0.422	Spike	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P366087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096977	Color (true)	4.63	Sample	P	0 - 20

Reference Method: SM 2540 C-97
 Batch ID: P366327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096976	TDS	11.2	Sample	F	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P366364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096976	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P366239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096984	Organic Carbon	0.661	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: A92248

Included Lab Sample IDs: 2097073, 2097074, 2097079, 2097080

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	98.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92250

Included Lab Sample IDs: 2097069, 2097070, 2097075, 2097076

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.5	P/P	95 - 105
Turbidity	98.5	98.0	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A92266

Included Lab Sample IDs: 2097069, 2097070, 2097075, 2097076

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92301

Included Lab Sample IDs: 2097071, 2097077, 2097078

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

Reference Method: SM 5310 B-00

Run ID: A92321

Included Lab Sample IDs: 2097071, 2097072, 2097077, 2097078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.2	96.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92336

Included Lab Sample IDs: 2097069, 2097070, 2097075, 2097076

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.1	100	P/P	90 - 110
Sulfate	99.2	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92359

Included Lab Sample IDs: 2097071, 2097077

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92365

Included Lab Sample IDs: 2097072, 2097078

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92365

Included Lab Sample IDs: 2097072, 2097078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92371

Included Lab Sample IDs: 2097072

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

Reference Method: SM 2320 B-97

Run ID: A92380

Included Lab Sample IDs: 2097069, 2097070, 2097075, 2097076

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A92380

Included Lab Sample IDs: 2097069, 2097070, 2097075, 2097076

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92400

Included Lab Sample IDs: 2097072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.6	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92461

Included Lab Sample IDs: 2097071, 2097072, 2097077, 2097078

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92598

Included Lab Sample IDs: 2097071, 2097077, 2097078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.6	P/P	90 - 110
Kjeldahl Nitrogen	98.6	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					1.21	
EPA 300.0 Rev. 2.1	Chloride	96.2	99.2	99.5		1.59	
	Sulfate	96.4	99.5	98.5		2.09	
EPA 350.1 Rev. 2.0	Ammonia-N	102	103	104			0.150
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	104	104			0.0346
	Kjeldahl Nitrogen	97.5	94.1	102			5.40
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	100			0.791
	NO2NO3-N	100	102	102			0.491
EPA 365.1 Rev. 2.0	Total-P	103	105	106			0.852
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	94.6	95.0			0.422
SM 2120 B	Color (true)	99.4				4.63	
SM 2320 B-97	Total Alkalinity	103					
SM 2540 C-97	TDS					11.2	
SM 4500 F-C-97	Fluoride	97.0	98.9	98.9			0.0
SM 5310 B-00	Organic Carbon	93.1	93.8	94.6			0.661

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2097069, 2097070, 2097075, 2097076
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2097069, 2097070, 2097075, 2097076
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2097069, 2097070, 2097075, 2097076
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2097071, 2097072, 2097077, 2097078
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2097071, 2097072, 2097077, 2097078
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2097071, 2097072, 2097077, 2097078
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2097071, 2097072, 2097077, 2097078
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2097073, 2097074, 2097079, 2097080
SM 2120 B / E31780	True Color measured at 450 nm	2097069, 2097070, 2097075, 2097076
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2097069, 2097070, 2097075, 2097076
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2097069, 2097070, 2097075, 2097076
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2097069, 2097070, 2097075, 2097076
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2097069, 2097070, 2097075, 2097076
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2097071, 2097072, 2097077, 2097078

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	06/20/2019			06/20/2019 17:18	Adrian Shelby	2097069, 2097070, 2097075, 2097076
EPA 300.0 Rev. 2.1	06/20/2019			06/27/2019 16:36	Jhamieka S. Greenwood	2097069
	06/20/2019			06/27/2019 16:48	Jhamieka S. Greenwood	2097070
	06/20/2019			06/27/2019 17:01	Jhamieka S. Greenwood	2097075
	06/20/2019			06/27/2019 17:13	Jhamieka S. Greenwood	2097076
EPA 350.1 Rev. 2.0	06/20/2019			06/27/2019 11:47	Ping Hua	2097071
	06/20/2019			06/27/2019 11:49	Ping Hua	2097077
	06/20/2019			06/27/2019 11:50	Ping Hua	2097072
	06/20/2019			06/27/2019 11:52	Ping Hua	2097078
EPA 351.2 Rev. 2.0	06/20/2019	06/25/2019 12:50	Sima Feizi	06/27/2019 10:01	Joseph Suarez	2097072
	06/20/2019	07/03/2019 12:30	Adrian Shelby	07/05/2019 10:34	Joseph Suarez	2097071
	06/20/2019	07/03/2019 12:30	Adrian Shelby	07/05/2019 10:39	Joseph Suarez	2097077
	06/20/2019	07/03/2019 12:30	Adrian Shelby	07/05/2019 10:41	Joseph Suarez	2097078
EPA 353.2 Rev. 2.0	06/20/2019			06/24/2019 11:31	Beverly Y. Sanders	2097071
	06/20/2019			06/24/2019 11:32	Beverly Y. Sanders	2097077
	06/20/2019			06/24/2019 11:33	Beverly Y. Sanders	2097078
	06/20/2019			06/26/2019 10:38	Beverly Y. Sanders	2097072
EPA 365.1 Rev. 2.0	06/20/2019	06/25/2019 11:00	Lipi Saha	06/26/2019 09:07	Lipi Saha	2097071
	06/20/2019	06/25/2019 11:00	Lipi Saha	06/26/2019 09:10	Lipi Saha	2097077
	06/20/2019	06/25/2019 11:00	Lipi Saha	06/26/2019 10:42	Lipi Saha	2097072
	06/20/2019	06/25/2019 11:00	Lipi Saha	06/26/2019 10:43	Lipi Saha	2097078
EPA 365.1 Rev. 2.0 dissolved	06/20/2019			06/20/2019 17:22	Julia Storbeck	2097073
	06/20/2019			06/20/2019 17:23	Julia Storbeck	2097079
	06/20/2019			06/20/2019 17:27	Julia Storbeck	2097080
	06/20/2019			06/20/2019 17:28	Julia Storbeck	2097074
SM 2120 B	06/20/2019			06/20/2019 16:57	Madeline Funaro	2097069
	06/20/2019			06/20/2019 16:58	Madeline Funaro	2097070
	06/20/2019			06/20/2019 16:59	Madeline Funaro	2097075, 2097076
SM 2320 B-97	06/20/2019			06/26/2019 00:08	Dale L. Simmons	2097069
	06/20/2019			06/26/2019 00:21	Dale L. Simmons	2097070
	06/20/2019			06/26/2019 00:32	Dale L. Simmons	2097075
	06/20/2019			06/26/2019 00:46	Dale L. Simmons	2097076
SM 2540 C-97	06/20/2019			06/21/2019 14:16	Rosalyn Ballman	2097069, 2097070, 2097075, 2097076
SM 2540 D-97	06/20/2019			06/21/2019 14:16	Rosalyn Ballman	2097069, 2097070, 2097075, 2097076
SM 4500 F-C-97	06/20/2019			06/26/2019 00:08	Dale L. Simmons	2097069
	06/20/2019			06/26/2019 00:21	Dale L. Simmons	2097070
	06/20/2019			06/26/2019 00:32	Dale L. Simmons	2097075
	06/20/2019			06/26/2019 00:46	Dale L. Simmons	2097076
SM 5310 B-00	06/20/2019			06/24/2019 11:08	Madeline Funaro	2097071
	06/20/2019			06/24/2019 11:21	Madeline Funaro	2097072

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	06/20/2019			06/24/2019 11:34	Madeline Funaro	2097077
	06/20/2019			06/24/2019 11:47	Madeline Funaro	2097078