

Chemical Analysis Report

CEN-DIST-2019-06-06-01

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

Event Description: **Noname / Seracy / Ann / Asher / Bearhead**

Request ID: **RQ-2019-06-03-45**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

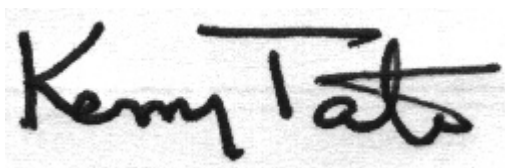
FL Dept. of Environmental Protection
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Attn: Mike Linger

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

Date Certified: 20-JUN-2019 11:35

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 first name.

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: Noname Lake @ Center

Collection Date/Time: 06/05/2019 09:36

Field ID: G2CE0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2092134	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P365227	
	EPA 300.0 Rev. 2.1	Chloride	19	A	mg Cl/L	P365525	
		Sulfate	11	A	mg SO4/L	P365527	
	SM 2120 B	Color (true)	16		PCU	P365221	
	SM 2320 B-97	Total Alkalinity	21		mg CaCO3/L	P365561	
	SM 2540 C-97	TDS	81		mg/L	P365532	
	SM 2540 D-97	TSS	4	I	mg/L	P365370	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P365567	
2092138	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P365728	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P365474	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P365578	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P365486	
	SM 5310 B-00	Organic Carbon	5.6		mg C/L	P365430	
2092142	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P365245	

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 Searcy @ center

Collection Date/Time: 06/05/2019 10:32

Field ID: G2CE0137

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2092135	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P365227	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P365525	
		Sulfate	3.9		mg SO4/L	P365527	
	SM 2120 B	Color (true)	43		PCU	P365221	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P365561	
	SM 2540 C-97	TDS	113		mg/L	P365532	
	SM 2540 D-97	TSS	10		mg/L	P365370	
	SM 4500 F-C-97	Fluoride	0.086	I	mg F/L	P365567	
2092139	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P365728	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P365474	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P365578	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P365486	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P365430	
2092143	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P365245	

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 Asher @ Center of Lake

Collection Date/Time: 06/05/2019 11:25

Field ID: G2CE0130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2092136	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P365227	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P365525	
		Sulfate	8.5		mg SO4/L	P365527	
		Color (true)	52		PCU	P365221	
	SM 2320 B-97	Total Alkalinity	35		mg CaCO3/L	P365561	
	SM 2540 C-97	TDS	127		mg/L	P365532	
	SM 2540 D-97	TSS	11		mg/L	P365370	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P365567	
2092140	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P365728	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P365474	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P365578	
	EPA 365.1 Rev. 2.0	Total-P	0.057		mg P/L	P365486	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P365430	
2092144	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P365245	

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: Bear Head Lake @ Center

Collection Date/Time: 06/05/2019 12:23

Field ID: G4CE0126

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2092137	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P365228	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P365525	
		Sulfate	16		mg SO4/L	P365527	
	SM 2120 B	Color (true)	21		PCU	P365221	
	SM 2320 B-97	Total Alkalinity	40		mg CaCO3/L	P365561	
	SM 2540 C-97	TDS	123		mg/L	P365532	
	SM 2540 D-97	TSS	3	I	mg/L	P365370	
	SM 4500 F-C-97	Fluoride	0.051	I	mg F/L	P365567	
2092141	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P365728	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P365474	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P365578	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P365486	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P365430	
2092145	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P365245	

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: P365227

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P365228

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365525

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365527

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365728

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365474

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365578

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365486

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365245

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: P365221

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P365561

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

Reference Method: SM 2540 C-97
Batch ID: P365532

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P365370

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P365567

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P365430

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: P365525

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365527

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365728

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365474

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365578

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365486

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365245

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

Reference Method: SM 2120 B
Batch ID: P365221

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

Reference Method: SM 2320 B-97
Batch ID: P365561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P365567

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P365430

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365525

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2092134	Chloride	100		P	90 - 110
2092252	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365527

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2092134	Sulfate	102		P	90 - 110
2092252	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365728

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2092189	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2092087	Kjeldahl Nitrogen	106	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2092138	NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2092138	Total-P	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2092190	O-Phosphate-P	96.3	96.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P365567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2092187	Fluoride	97.2	96.7	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P365430

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2092084	Organic Carbon	97.0	94.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P365227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092082	Turbidity	3.63	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P365228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092203	Turbidity	10.7	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092134	Chloride	0.119	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092134	Sulfate	0.312	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092189	Ammonia-N	0.969	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092087	Kjeldahl Nitrogen	2.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092138	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092138	Total-P	1.98	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P365245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092190	O-Phosphate-P	0.207	Spike	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P365221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092083	Color (true)	2.37	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P365561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092187	Total Alkalinity	0.616	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P365532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092079	TDS	0.722	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P365567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092187	Fluoride	0.482	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P365430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092084	Organic Carbon	2.50	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: SM 2120 B

Run ID: A91919

Included Lab Sample IDs: 2092134, 2092135, 2092136, 2092137

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.7	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A91921

Included Lab Sample IDs: 2092134, 2092135, 2092136, 2092137

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105
Turbidity	99.0	98.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A91928

Included Lab Sample IDs: 2092142, 2092143, 2092144, 2092145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	98.8	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A92015

Included Lab Sample IDs: 2092138, 2092139, 2092140, 2092141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.3	96.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92026

Included Lab Sample IDs: 2092134, 2092135, 2092136, 2092137

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Sulfate	103	104	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A92072

Included Lab Sample IDs: 2092134, 2092135, 2092136, 2092137

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A92072

Included Lab Sample IDs: 2092134, 2092135, 2092136, 2092137

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92073

Included Lab Sample IDs: 2092138, 2092139, 2092140, 2092141

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92073

Included Lab Sample IDs: 2092138, 2092139, 2092140, 2092141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92093

Included Lab Sample IDs: 2092138, 2092139, 2092140, 2092141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.1	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92110

Included Lab Sample IDs: 2092140

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92118

Included Lab Sample IDs: 2092138, 2092139, 2092141

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92132

Included Lab Sample IDs: 2092138, 2092139, 2092140, 2092141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	105	P/P	90 - 110
Ammonia-N	105	103	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					3.63	
	Turbidity					10.7	
EPA 300.0 Rev. 2.1	Chloride	100	100	100		0.119	
	Sulfate	101	102	102		0.312	
EPA 350.1 Rev. 2.0	Ammonia-N	100	101	102			0.969
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.5	106	109			2.15
EPA 353.2 Rev. 2.0	NO2NO3-N	97.5	99.0	99.0			0.0
EPA 365.1 Rev. 2.0	Total-P	98.8	100	102			1.98
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0	96.3	96.5			0.207
SM 2120 B	Color (true)	100				2.37	
SM 2320 B-97	Total Alkalinity	104				0.616	
SM 2540 C-97	TDS					0.722	
SM 4500 F-C-97	Fluoride	96.9	97.2	96.7			0.482
SM 5310 B-00	Organic Carbon	98.1	97.0	94.3			2.50

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2092134, 2092135, 2092136, 2092137
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2092134, 2092135, 2092136, 2092137
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2092134, 2092135, 2092136, 2092137
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2092138, 2092139, 2092140, 2092141
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2092138, 2092139, 2092140, 2092141
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2092138, 2092139, 2092140, 2092141
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2092138, 2092139, 2092140, 2092141
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2092142, 2092143, 2092144, 2092145
SM 2120 B / E31780	True Color measured at 450 nm	2092134, 2092135, 2092136, 2092137
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2092134, 2092135, 2092136, 2092137
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2092134, 2092135, 2092136, 2092137
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2092134, 2092135, 2092136, 2092137
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2092134, 2092135, 2092136, 2092137
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2092138, 2092139, 2092140, 2092141

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	06/06/2019			06/06/2019 18:53	Julia Storbeck	2092134, 2092135, 2092136, 2092137
EPA 300.0 Rev. 2.1	06/06/2019			06/12/2019 22:07	Lipi Saha	2092134
	06/06/2019			06/12/2019 22:56	Lipi Saha	2092135
	06/06/2019			06/12/2019 23:08	Lipi Saha	2092136
	06/06/2019			06/12/2019 23:20	Lipi Saha	2092137
EPA 350.1 Rev. 2.0	06/06/2019			06/13/2019 12:42	Ping Hua	2092138
	06/06/2019			06/13/2019 12:51	Ping Hua	2092139
	06/06/2019			06/13/2019 12:53	Ping Hua	2092140
	06/06/2019			06/13/2019 12:54	Ping Hua	2092141
EPA 351.2 Rev. 2.0	06/06/2019	06/12/2019 10:45	Adrian Shelby	06/13/2019 16:00	Joseph Suarez	2092138
	06/06/2019	06/12/2019 10:45	Adrian Shelby	06/13/2019 16:02	Joseph Suarez	2092139
	06/06/2019	06/12/2019 10:45	Adrian Shelby	06/13/2019 16:03	Joseph Suarez	2092140
	06/06/2019	06/12/2019 10:45	Adrian Shelby	06/13/2019 16:05	Joseph Suarez	2092141
EPA 353.2 Rev. 2.0	06/06/2019			06/13/2019 10:05	Beverly Y. Sanders	2092138
	06/06/2019			06/13/2019 10:12	Beverly Y. Sanders	2092139
	06/06/2019			06/13/2019 10:13	Beverly Y. Sanders	2092140
	06/06/2019			06/13/2019 10:14	Beverly Y. Sanders	2092141
EPA 365.1 Rev. 2.0	06/06/2019	06/12/2019 14:05	Sima Feizi	06/13/2019 17:00	Julia Storbeck	2092140
	06/06/2019	06/12/2019 14:05	Sima Feizi	06/14/2019 17:11	Julia Storbeck	2092138
	06/06/2019	06/12/2019 14:05	Sima Feizi	06/14/2019 17:13	Julia Storbeck	2092139
	06/06/2019	06/12/2019 14:05	Sima Feizi	06/14/2019 17:14	Julia Storbeck	2092141
EPA 365.1 Rev. 2.0 dissolved	06/06/2019			06/06/2019 15:06	Jhamieka S. Greenwood	2092142, 2092143
	06/06/2019			06/06/2019 15:07	Jhamieka S. Greenwood	2092144
	06/06/2019			06/06/2019 15:08	Jhamieka S. Greenwood	2092145
SM 2120 B	06/06/2019			06/06/2019 15:53	Madeline Funaro	2092134, 2092135
	06/06/2019			06/06/2019 15:54	Madeline Funaro	2092136
	06/06/2019			06/06/2019 15:55	Madeline Funaro	2092137
SM 2320 B-97	06/06/2019			06/13/2019 03:21	Dale L. Simmons	2092134
	06/06/2019			06/13/2019 03:33	Dale L. Simmons	2092135
	06/06/2019			06/13/2019 03:46	Dale L. Simmons	2092136
	06/06/2019			06/13/2019 03:57	Dale L. Simmons	2092137
SM 2540 C-97	06/06/2019			06/07/2019 16:20	Mariam Hanna	2092134, 2092135, 2092136, 2092137
SM 2540 D-97	06/06/2019			06/07/2019 16:27	Mariam Hanna	2092134, 2092135, 2092136, 2092137
SM 4500 F-C-97	06/06/2019			06/13/2019 03:21	Dale L. Simmons	2092134
	06/06/2019			06/13/2019 03:33	Dale L. Simmons	2092135
	06/06/2019			06/13/2019 03:46	Dale L. Simmons	2092136
	06/06/2019			06/13/2019 03:57	Dale L. Simmons	2092137
SM 5310 B-00	06/06/2019			06/11/2019 04:10	Madeline Funaro	2092138
	06/06/2019			06/11/2019 04:28	Madeline Funaro	2092139
	06/06/2019			06/11/2019 04:41	Madeline Funaro	2092140

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	06/06/2019			06/11/2019 04:55	Madeline Funaro	2092141