

Chemical Analysis Report

CEN-DIST-2017-11-29-02

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

Event Description: **Spring G Lk / Shaw / Lil Haw**
Request ID: **RQ-2017-11-27-64**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 18-DEC-2017 15:57



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Shaw Lake @ Center of North Lobe

Collection Date/Time: 11/28/2017 11:26

Field ID: G2CE0127

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1949062	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P336080	
	EPA 300.0 Rev. 2.1	Chloride	14	A	mg Cl/L	P336188	
		Sulfate	6.2	A	mg SO4/L	P336191	
	SM 2120 B	Color (true)	610		PCU	P336073	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P336465	
	SM 2540 C-97	TDS	151		mg/L	P336392	
	SM 2540 D-97	TSS	2	I	mg/L	P336366	
	SM 4500 F-C-97	Fluoride	0.041	I	mg F/L	P336469	
1949064	EPA 350.1 Rev. 2.0	Ammonia-N	0.086		mg N/L	P336540	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P336354	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P336166	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P336312	
	SM 5310 B-00	Organic Carbon	46		mg C/L	P336261	
1949066	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P336055	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Spring Garden Lake @ 800m N of Center

Collection Date/Time: 11/28/2017 12:22

Field ID: G2CE0117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1949063	EPA 180.1 Rev. 2.0	Turbidity	1.7	A	NTU	P336078	
	EPA 300.0 Rev. 2.1	Chloride	200		mg Cl/L	P336187	
		Sulfate	32		mg SO4/L	P336190	
	SM 2120 B	Color (true)	65	A	PCU	P336041	
	SM 2320 B-97	Total Alkalinity	122		mg CaCO3/L	P336465	
	SM 2540 C-97	TDS	565		mg/L	P336392	
	SM 2540 D-97	TSS	3	I	mg/L	P336366	
	SM 4500 F-C-97	Fluoride	0.095	I	mg F/L	P336469	
1949065	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P336541	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P336354	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.33		mg N/L	P336166	
	EPA 365.1 Rev. 2.0	Total-P	0.084		mg P/L	P336312	
	SM 5310 B-00	Organic Carbon	8.4		mg C/L	P336261	
1949067	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.057		mg P/L	P336055	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P336078

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P336080

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336187

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336188

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336190

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336191

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336540

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336541

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336354

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336166

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P336312

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P336055

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

Reference Method: SM 2120 B
Batch ID: P336041

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P336073

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P336465

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

Reference Method: SM 2540 C-97
Batch ID: P336392

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P336366

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P336469

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
 Batch ID: P336261

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: P336187

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P336188

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P336190

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P336191

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P336540

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P336541

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: P336354

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P336166

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336166

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P336312

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: P336055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P336465

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P336469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P336261

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336187

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949100	Chloride	96.6		P	90 - 110
1949149	Chloride	96.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948014	Chloride	96.4		P	90 - 110
1949062	Chloride	96.5		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949100	Sulfate	98.2		P	90 - 110
1949149	Sulfate	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336191

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948014	Sulfate	97.2		P	90 - 110
1949062	Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336541

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949102	Ammonia-N	101	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949101	Kjeldahl Nitrogen	99.4	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949036	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P336055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949103	O-Phosphate-P	99.7	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P336469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949217	Fluoride	96.3	96.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P336261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948993	Organic Carbon	95.4	95.2	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P336078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949063	Turbidity	5.25	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P336080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949059	Turbidity	7.18	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336187

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949149	Chloride	0.995	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949062	Chloride	1.05	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949149	Sulfate	0.764	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949062	Sulfate	1.17	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949036	Ammonia-N	5.27	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949102	Ammonia-N	1.96	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949101	Kjeldahl Nitrogen	5.02	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949036	NO2NO3-N	1.10	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P336312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949197	Total-P	0.337	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P336055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949103	O-Phosphate-P	0.899	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P336041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949063	Color (true)	0.318	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P336073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949012	Color (true)	0.759	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P336465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949217	Total Alkalinity	1.90	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P336392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949047	TDS	5.36	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P336469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949217	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P336261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948993	Organic Carbon	0.315	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: A80576
Included Lab Sample IDs: 1949063

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A80577
Included Lab Sample IDs: 1949066, 1949067

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.9	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A80591
Included Lab Sample IDs: 1949062

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A80593
Included Lab Sample IDs: 1949062, 1949063

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A80623
Included Lab Sample IDs: 1949064, 1949065

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A80632

Included Lab Sample IDs: 1949062, 1949063

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	100	P/P	90 - 110
Chloride	101	100	P/P	90 - 110
Sulfate	99.0	99.8	P/P	90 - 110
Sulfate	99.0	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A80659

Included Lab Sample IDs: 1949064, 1949065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80731

Included Lab Sample IDs: 1949065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A80732

Included Lab Sample IDs: 1949062, 1949063

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110
Total Alkalinity	103	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A80732

Included Lab Sample IDs: 1949062, 1949063

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.5	P/P	90 - 110
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80744

Included Lab Sample IDs: 1949064, 1949065

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80749

Included Lab Sample IDs: 1949064, 1949065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	99.5	P/P	90 - 110
Ammonia-N	99.5	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80764

Included Lab Sample IDs: 1949064

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				5.25	
	Turbidity				7.18	
EPA 300.0 Rev. 2.1	Chloride	97.1	96.0 96.6		0.995	
	Chloride	96.0	96.5 96.4		1.05	
	Sulfate	98.6	97.7 98.2		0.764	
	Sulfate	98.1	98.8 97.2		1.17	
EPA 350.1 Rev. 2.0	Ammonia-N	101				5.27
	Ammonia-N	102	101 98.9			1.96
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	99.4 107			5.02
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104 103			1.10
EPA 365.1 Rev. 2.0	Total-P	102				0.337
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	99.7 101			0.899
SM 2120 B	Color (true)				0.318	
	Color (true)				0.759	
SM 2320 B-97	Total Alkalinity	103			1.90	
SM 2540 C-97	TDS				5.36	
SM 4500 F-C-97	Fluoride	96.8	96.3 96.3			0.0
SM 5310 B-00	Organic Carbon	97.9	95.4 95.2			0.315

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1949062, 1949063
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1949062, 1949063
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1949062, 1949063
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1949064, 1949065
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1949064, 1949065
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1949064, 1949065
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1949064, 1949065
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1949066, 1949067
SM 2120 B / E31780	True Color measured at 450 nm	1949062, 1949063
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1949062, 1949063

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1949062, 1949063
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1949062, 1949063
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1949062, 1949063
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1949064, 1949065

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	11/29/2017			11/29/2017 11:32	DeAsia Armster	1949063
	11/29/2017			11/29/2017 16:26	DeAsia Armster	1949062
EPA 300.0 Rev. 2.1	11/29/2017			12/01/2017	Irina Carbone	1949062, 1949063
EPA 350.1 Rev. 2.0	11/29/2017			12/06/2017	Sofia Elnemr	1949064, 1949065
EPA 351.2 Rev. 2.0	11/29/2017	12/05/2017	Adrian Shelby	12/06/2017	Joseph Suarez	1949064, 1949065
EPA 353.2 Rev. 2.0	11/29/2017			12/01/2017	Beverly Y. Sanders	1949064, 1949065
EPA 365.1 Rev. 2.0	11/29/2017	12/04/2017	Sima Feizi	12/05/2017	Beverly Y. Sanders	1949065
	11/29/2017	12/04/2017	Sima Feizi	12/07/2017	Lipi Saha	1949064
EPA 365.1 Rev. 2.0 dissolved	11/29/2017			11/29/2017 12:25	Megan Treadwell	1949066, 1949067
SM 2120 B	11/29/2017			11/29/2017 11:48	Tanya Welborn	1949063
	11/29/2017			11/29/2017 15:08	Tanya Welborn	1949062
SM 2320 B-97	11/29/2017			12/06/2017	Dale L. Simmons	1949062, 1949063
SM 2540 C-97	11/29/2017			12/01/2017	Yijie Li	1949062, 1949063
SM 2540 D-97	11/29/2017			12/01/2017	Yijie Li	1949062, 1949063
SM 4500 F-C-97	11/29/2017			12/06/2017	Dale L. Simmons	1949062, 1949063
SM 5310 B-00	11/29/2017			12/01/2017	Ping Hua	1949064, 1949065