

Chemical Analysis Report

CEN-DIST-2019-07-10-01

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

Event Description: **Lk Helen + LVI / Gleason**
Request ID: **RQ-2019-07-08-67**
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.
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Thekkekalathil Chandrasekhar, Ph.D, QA Officer
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 30-JUL-2019 18:52



NON-CONFORMANCE REPORT INCLUDED

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 Helen @ center of southern lobe

Collection Date/Time: 07/08/2019 11:40

Field ID: G2CE0212

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2100961	EPA 180.1 Rev. 2.0	Turbidity	4.0	A	NTU	P366976	
	EPA 300.0 Rev. 2.1	Chloride	19	A	mg Cl/L	P367147	
		Sulfate	9.7	A	mg SO4/L	P367150	
	SM 2120 B	Color (true)	15	A	PCU	P366935	
	SM 2320 B-97	Total Alkalinity	24	A	mg CaCO3/L	P367673	
	SM 2540 C-97	TDS	88		mg/L	P367312	
	SM 2540 D-97	TSS	4	I	mg/L	P367319	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P367674	
2100963	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P367338	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P367048	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P367041	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P367054	
	SM 5310 B-00	Organic Carbon	6.1		mg C/L	P367868	
2100965	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P366937	

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 dissolved: O-Phosphate-P: The sample expired upon receipt.

Sample Location: Lake Gleason @ Center

Collection Date/Time: 07/08/2019 12:35

Field ID: G2CE0114

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2100962	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P366976	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P367147	
		Sulfate	2.3		mg SO4/L	P367150	
	SM 2120 B	Color (true)	34		PCU	P366935	
	SM 2320 B-97	Total Alkalinity	48		mg CaCO3/L	P367445	
	SM 2540 C-97	TDS	88		mg/L	P367312	
	SM 2540 D-97	TSS	2	I	mg/L	P367319	
	SM 4500 F-C-97	Fluoride	0.078	I	mg F/L	P367449	
2100964	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P367338	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P367048	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P367041	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P367054	
	SM 5310 B-00	Organic Carbon	9.3		mg C/L	P367868	
2100966	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366937	

Ref. Method and Comment:

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

Non-Conformance Report

NCR ID: 7768

Event(s)

CEN-DIST-2019-07-10-01

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived one or more days late by FedEx, samples received within the acceptable temperature range.

Resolution: Samples will be qualified as appropriate.

Authorized by/Date: Peter D. Kaus 7/26/2019

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366976

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367147

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367150

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P367338

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367048

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367041

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367054

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366937

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

Reference Method: SM 2120 B
Batch ID: P366935

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P367445

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

Reference Method: SM 2320 B-97
Batch ID: P367673

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

Reference Method: SM 2540 C-97
Batch ID: P367312

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P367319

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P367449

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P367674

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P367868

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: P367147

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: P367150

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P367338

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P367048

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P367041

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: P367054

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: P366937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.9		P	90 - 110

Reference Method: SM 2120 B
 Batch ID: P366935

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.0		P	85 - 115

Reference Method: SM 2320 B-97
 Batch ID: P367445

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P367673

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

Reference Method: SM 4500 F-C-97
Batch ID: P367449

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P367674

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

Reference Method: SM 5310 B-00
Batch ID: P367868

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2100961	Chloride	95.6		P	90 - 110
2101044	Chloride	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2100961	Sulfate	96.5		P	90 - 110
2101044	Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P367338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2100963	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2100963	Kjeldahl Nitrogen	96.3	95.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2100963	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2100963	Total-P	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101035	O-Phosphate-P	96.4	97.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P367449

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101790	Fluoride	97.3	98.1	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P367674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2100961	Fluoride	106	105	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P367868

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2100964	Organic Carbon	93.1	92.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100961	Turbidity	13.3	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100961	Chloride	0.212	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100961	Sulfate	0.156	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P367338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100963	Ammonia-N	0.805	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100963	Kjeldahl Nitrogen	0.257	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100963	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100963	Total-P	1.68	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101035	O-Phosphate-P	0.724	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
 Batch ID: P366935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100961	Color (true)	2.43	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P367445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101790	Total Alkalinity	0.0833	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
 Batch ID: P367673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100961	Total Alkalinity	1.46	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P367312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100955	TDS	5.59	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P367449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101790	Fluoride	0.509	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
 Batch ID: P367674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100961	Fluoride	0.511	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P367868

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100964	Organic Carbon	0.684	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 300.0 Rev. 2.1

Run ID: A92640

Included Lab Sample IDs: 2100961, 2100962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.9	101	P/P	90 - 110
Sulfate	99.8	101	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A92674

Included Lab Sample IDs: 2100961, 2100962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.8	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92676

Included Lab Sample IDs: 2100965, 2100966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92685

Included Lab Sample IDs: 2100961, 2100962

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92703

Included Lab Sample IDs: 2100963, 2100964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92729

Included Lab Sample IDs: 2100963, 2100964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.7	92.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92731

Included Lab Sample IDs: 2100963, 2100964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92807

Included Lab Sample IDs: 2100963, 2100964

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92807

Included Lab Sample IDs: 2100963, 2100964

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

Reference Method: SM 2320 B-97

Run ID: A92846

Included Lab Sample IDs: 2100962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A92846

Included Lab Sample IDs: 2100962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.2	99.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A92919

Included Lab Sample IDs: 2100961

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

Reference Method: SM 4500 F-C-97

Run ID: A92919

Included Lab Sample IDs: 2100961

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

Reference Method: SM 5310 B-00

Run ID: A93016

Included Lab Sample IDs: 2100963, 2100964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	95.0	P/P	90 - 110

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

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					13.3	
EPA 300.0 Rev. 2.1	Chloride	97.1	95.6	98.1		0.212	
	Sulfate	96.5	96.5	98.2		0.156	
EPA 350.1 Rev. 2.0	Ammonia-N	105	104	105			0.805
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	96.3	95.9			0.257
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	103	103			0.0
EPA 365.1 Rev. 2.0	Total-P	102	104	103			1.68
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.9	96.4	97.1			0.724
SM 2120 B	Color (true)	98.0				2.43	
SM 2320 B-97	Total Alkalinity	103				0.0833	
	Total Alkalinity	103				1.46	
SM 2540 C-97	TDS					5.59	
SM 4500 F-C-97	Fluoride	97.1	97.3	98.1			0.509
	Fluoride	96.9	106	105			0.511
SM 5310 B-00	Organic Carbon	95.1	93.1	92.1			0.684

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2100961, 2100962
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2100961, 2100962
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2100961, 2100962
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2100963, 2100964
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2100963, 2100964
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2100963, 2100964
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2100963, 2100964
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2100965, 2100966
SM 2120 B / E31780	True Color measured at 450 nm	2100961, 2100962
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2100961, 2100962
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2100961, 2100962
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2100961, 2100962
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2100961, 2100962
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2100963, 2100964

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	07/10/2019			07/10/2019 11:09	Adrian Shelby	2100962
	07/10/2019			07/10/2019 11:22	Adrian Shelby	2100961
EPA 300.0 Rev. 2.1	07/10/2019			07/11/2019 14:39	Jhamieka S. Greenwood	2100961
	07/10/2019			07/11/2019 15:28	Jhamieka S. Greenwood	2100962
EPA 350.1 Rev. 2.0	07/10/2019			07/16/2019 15:08	Virginia P. Brown	2100963
	07/10/2019			07/16/2019 15:20	Virginia P. Brown	2100964
EPA 351.2 Rev. 2.0	07/10/2019	07/11/2019 12:15	Sima Feizi	07/12/2019 10:11	Joseph Suarez	2100963
	07/10/2019	07/11/2019 12:15	Sima Feizi	07/12/2019 10:16	Joseph Suarez	2100964
EPA 353.2 Rev. 2.0	07/10/2019			07/11/2019 10:08	Beverly Y. Sanders	2100963
	07/10/2019			07/11/2019 10:14	Beverly Y. Sanders	2100964
EPA 365.1 Rev. 2.0	07/10/2019	07/11/2019 13:05	Sima Feizi	07/12/2019 12:41	Lipi Saha	2100963
	07/10/2019	07/11/2019 13:05	Sima Feizi	07/12/2019 12:42	Lipi Saha	2100964
EPA 365.1 Rev. 2.0 dissolved	07/10/2019			07/10/2019 11:43	Jhamieka S. Greenwood	2100965
	07/10/2019			07/10/2019 11:46	Jhamieka S. Greenwood	2100966
SM 2120 B	07/10/2019			07/10/2019 11:20	Madeline Funaro	2100961
	07/10/2019			07/10/2019 11:23	Madeline Funaro	2100962
SM 2320 B-97	07/10/2019			07/16/2019 22:43	Dale L. Simmons	2100962
	07/10/2019			07/19/2019 16:55	Samantha Davila	2100961
SM 2540 C-97	07/10/2019			07/11/2019 15:31	Yijie Li	2100961, 2100962
SM 2540 D-97	07/10/2019			07/11/2019 15:31	Yijie Li	2100961, 2100962
SM 4500 F-C-97	07/10/2019			07/16/2019 22:43	Dale L. Simmons	2100962
	07/10/2019			07/19/2019 16:46	Samantha Davila	2100961
SM 5310 B-00	07/10/2019			07/16/2019 03:11	Madeline Funaro	2100964
	07/10/2019			07/16/2019 03:55	Madeline Funaro	2100963