

Chemical Analysis Report

TLH-ROC-2019-04-08-02

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

Event Description: **Run 9**
Request ID: **RQ-2019-01-21-12**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 24-APR-2019 18:37



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: Wards Creek @ CR259

Collection Date/Time: 04/08/2019 15:00

Field ID: G1TLHR0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076375	EPA 180.1 Rev. 2.0	Turbidity	14	A	NTU	P361818	
	EPA 300.0 Rev. 2.1	Chloride	5.7		mg Cl/L	P362192	
		Sulfate	0.42	I	mg SO4/L	P362194	
	SM 2120 B	Color (true)	110		PCU	P361860	
	SM 2320 B-97	Total Alkalinity	12		mg CaCO3/L	P362173	RPD
	SM 2540 C-97	TDS	49		mg/L	P362413	
	SM 2540 D-97	TSS	9	I	mg/L	P362140	
	SM 4500 F-C-97	Fluoride	0.057	I	mg F/L	P362179	
2076377	EPA 350.1 Rev. 2.0	Ammonia-N	0.34		mg N/L	P362282	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P362156	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.53		mg N/L	P362333	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P362082	
	SM 5310 B-00	Organic Carbon	9.5		mg C/L	P361976	
2076379	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.099		mg P/L	P361837	

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: Wards Creek @ W Lake Rd

Collection Date/Time: 04/08/2019 15:30

Field ID: G1TLHR0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076376	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P361818	
	EPA 300.0 Rev. 2.1	Chloride	4.0		mg Cl/L	P362267	
		Sulfate	0.20	U	mg SO4/L	P362270	
	SM 2120 B	Color (true)	160		PCU	P361860	
	SM 2320 B-97	Total Alkalinity	9.9		mg CaCO3/L	P362572	
	SM 2540 C-97	TDS	38		mg/L	P362413	
	SM 2540 D-97	TSS	7	I	mg/L	P362140	
	SM 4500 F-C-97	Fluoride	0.050	I	mg F/L	P362443	
2076378	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P362282	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P362156	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362328	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P362082	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P361976	
2076380	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P361837	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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: P361818

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362192

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362194

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362267

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362270

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362282

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362156

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362328

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362333

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362082

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361837

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

Reference Method: SM 2120 B
Batch ID: P361860

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P362173

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

Reference Method: SM 2320 B-97
Batch ID: P362572

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

Reference Method: SM 2540 C-97
Batch ID: P362413

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P362140

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P362179

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P362443

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: P361976

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: P362192

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362194

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362267

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362270

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362282

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362156

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362333

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362082

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361837

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

Reference Method: SM 2120 B
Batch ID: P361860

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.9		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P362173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P362572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.7		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P362179

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P362443

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P361976

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362192

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076120	Chloride	95.7		P	90 - 110
2076145	Chloride	92.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362194

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076120	Sulfate	96.9		P	90 - 110
2076145	Sulfate	94.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362267

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076390	Chloride	106		P	90 - 110
2076511	Chloride	108		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076390	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362282

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076333	Ammonia-N	99.7	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076393	Kjeldahl Nitrogen	106	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076378	NO2NO3-N	97.0	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076777	NO2NO3-N	98.5	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076333	Total-P	100	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076398	O-Phosphate-P	97.5	98.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P362179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076930	Fluoride	100	100	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P362443

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074564	Fluoride	96.3	95.8	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P361976

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076492	Organic Carbon	102	95.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361818

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076375	Turbidity	1.46	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076120	Chloride	0.227	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076120	Sulfate	0.549	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076390	Chloride	9.70	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076390	Sulfate	9.97	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076333	Ammonia-N	1.51	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076393	Kjeldahl Nitrogen	1.49	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076378	NO2NO3-N	1.03	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076777	NO2NO3-N	0.259	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076333	Total-P	0.956	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076398	O-Phosphate-P	0.613	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P361860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076367	Color (true)	0.406	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P362173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076930	Total Alkalinity	8.08	Sample	F	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P362572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077663	Total Alkalinity	0.559	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P362413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076183	TDS	2.49	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P362179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076930	Fluoride	0.0	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P362443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074564	Fluoride	0.482	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P361976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076492	Organic Carbon	3.46	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: A90538

Included Lab Sample IDs: 2076375

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90551

Included Lab Sample IDs: 2076375, 2076376

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90555

Included Lab Sample IDs: 2076379, 2076380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	95.6	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A90564

Included Lab Sample IDs: 2076375, 2076376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	103	104	P/P	90 - 115

Reference Method: SM 5310 B-00

Run ID: A90618

Included Lab Sample IDs: 2076377, 2076378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	102	P/P	90 - 110
Organic Carbon	102	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A90703

Included Lab Sample IDs: 2076375

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.5	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90703

Included Lab Sample IDs: 2076375

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90722

Included Lab Sample IDs: 2076377, 2076378

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90751

Included Lab Sample IDs: 2076377, 2076378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.6	97.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90760

Included Lab Sample IDs: 2076376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	99.5	P/P	90 - 110
Sulfate	102	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90762

Included Lab Sample IDs: 2076377, 2076378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90779

Included Lab Sample IDs: 2076377, 2076378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	99.0	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90826

Included Lab Sample IDs: 2076376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	98.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A90871

Included Lab Sample IDs: 2076376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	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					1.46	
EPA 300.0 Rev. 2.1	Chloride	100	95.7	92.0		0.227	
	Chloride	103	106	108		9.70	
	Sulfate	99.8	96.9	94.8		0.549	
	Sulfate	105	107			9.97	
EPA 350.1 Rev. 2.0	Ammonia-N	99.9	99.7	101			1.51
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	106	103			1.49
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.5	97.0	98.0			1.03
	NO ₂ NO ₃ -N	100	98.5	99.0			0.259
EPA 365.1 Rev. 2.0	Total-P	103	100	101			0.956
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	97.5	98.1			0.613
SM 2120 B	Color (true)	99.9				0.406	
SM 2320 B-97	Total Alkalinity	101				8.08	
	Total Alkalinity	99.7				0.559	
SM 2540 C-97	TDS					2.49	
SM 4500 F-C-97	Fluoride	99.5	100	100			0.0
	Fluoride	97.3	96.3	95.8			0.482
SM 5310 B-00	Organic Carbon	102	102	95.8			3.46

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2076375, 2076376
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2076375, 2076376
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2076375, 2076376
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2076377, 2076378
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2076377, 2076378
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2076377, 2076378
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2076377, 2076378
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2076379, 2076380
SM 2120 B / E31780	True Color measured at 450 nm	2076375, 2076376
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2076375, 2076376
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2076375, 2076376
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2076375, 2076376
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2076375, 2076376
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2076377, 2076378

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/08/2019			04/09/2019 15:54	Adrian Shelby	2076375, 2076376
EPA 300.0 Rev. 2.1	04/08/2019			04/13/2019 03:28	Lipi Saha	2076375
	04/08/2019			04/15/2019 19:47	Julia Storbeck	2076376
EPA 350.1 Rev. 2.0	04/08/2019			04/15/2019 13:35	Ping Hua	2076377
	04/08/2019			04/15/2019 13:36	Ping Hua	2076378
EPA 351.2 Rev. 2.0	04/08/2019	04/15/2019 14:15	Jhamieka S. Greenwood	04/16/2019 13:28	Joseph Suarez	2076377
	04/08/2019	04/15/2019 14:15	Jhamieka S. Greenwood	04/16/2019 13:29	Joseph Suarez	2076378
EPA 353.2 Rev. 2.0	04/08/2019			04/17/2019 09:07	Beverly Y. Sanders	2076378
	04/08/2019			04/17/2019 11:10	Beverly Y. Sanders	2076377
EPA 365.1 Rev. 2.0	04/08/2019	04/12/2019 15:40	Sima Feizi	04/15/2019 14:35	Rosalyn Ballman	2076377
	04/08/2019	04/12/2019 15:40	Sima Feizi	04/15/2019 14:38	Rosalyn Ballman	2076378
EPA 365.1 Rev. 2.0 dissolved	04/08/2019			04/09/2019 17:42	Julia Storbeck	2076379
	04/08/2019			04/09/2019 17:43	Julia Storbeck	2076380
SM 2120 B	04/08/2019			04/09/2019 15:39	Mariam Hanna	2076375
	04/08/2019			04/09/2019 16:16	Mariam Hanna	2076376
SM 2320 B-97	04/08/2019			04/13/2019 10:49	Dale L. Simmons	2076375
	04/08/2019			04/19/2019 14:15	Samantha Davila	2076376
SM 2540 C-97	04/08/2019			04/09/2019 15:45	Yijie Li	2076375, 2076376
SM 2540 D-97	04/08/2019			04/09/2019 15:45	Yijie Li	2076375, 2076376
SM 4500 F-C-97	04/08/2019			04/13/2019 10:49	Dale L. Simmons	2076375
	04/08/2019			04/18/2019 07:55	Samantha Davila	2076376
SM 5310 B-00	04/08/2019			04/10/2019 15:57	Julia Storbeck	2076377
	04/08/2019			04/10/2019 16:37	Julia Storbeck	2076378