Chemical Analysis Report

NE-DIST-2019-03-08-03

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

Event Description: **Continuous Monitoring**
Request ID: **RQ-2019-01-21-47**
Customer: **NE-DIST**
Project ID: **SMP**

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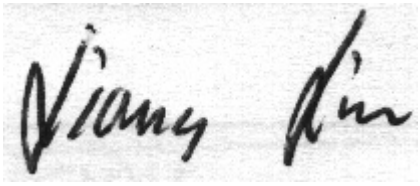
Date Certified: 22-MAR-2019 18:01



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 groups are included in this report: Metals and 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: HOPKINS CR AT KINGS RD **Collection Date/Time: 03/07/2019 11:00**

Field ID: 20030758 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068414	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P360148	
	EPA 300.0	Bromide	46		mg Br/L	P360483	
	SM 2320 B-97	Total Alkalinity	95		mg CaCO3/L	P360331	
	SM 2540 D-97	TSS	4	I	mg/L	P360662	
	SM 4500 F-C-97	Fluoride	0.78		mg F/L	P360340	
2068415	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P360166	
	SM 4500 F-C-97 dissolved	Fluoride	0.79		mg F/L	P360340	
2068416	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P360422	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P360346	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P360547	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P360441	
	SM 5310 B-00	Organic Carbon	7.9		mg C/L	P360754	
2068419	EPA 200.7 Rev. 4.4	Iron	160	I	ug/L	P360388	
		Manganese	9.7	I	ug/L	P360388	
		Zinc	15	U	ug/L	P360388	
	EPA 200.8 Rev. 5.4	Aluminum	182		ug/L	P360388	
		Antimony	0.20	U	ug/L	P360388	
		Arsenic	2.23		ug/L	P360388	
		Cadmium	0.080	U	ug/L	P360388	
		Chromium	1.6	U	ug/L	P360388	
		Lead	0.80	U	ug/L	P360388	
		Nickel	2.0	U	ug/L	P360388	
		Selenium	0.80	U	ug/L	P360388	
		Silver	0.040	U	ug/L	P360388	
		Thallium	0.40	U	ug/L	P360388	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360148

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360388

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0
Batch ID: P360483

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360422

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360346

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360547

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: P360441

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360166

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

Reference Method: SM 2320 B-97
Batch ID: P360331

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

Reference Method: SM 2540 D-97
Batch ID: P360662

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P360340

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97 dissolved
Batch ID: P360340

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P360754

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	109		P	85 - 115
Manganese	101		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.4		P	85 - 115
Antimony	95.6		P	85 - 115
Arsenic	100		P	85 - 115
Cadmium	98.7		P	85 - 115
Chromium	97.8		P	85 - 115
Lead	97.6		P	85 - 115
Nickel	97.5		P	85 - 115
Selenium	96.5		P	85 - 115
Silver	96.2		P	85 - 115
Thallium	96.4		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P360483

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360422

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360346

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360547

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: P360441

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360166

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

Reference Method: SM 2320 B-97
Batch ID: P360331

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P360340

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.6		P	91 - 105

Reference Method: SM 4500 F-C-97 dissolved
Batch ID: P360340

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.6		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360754

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068917	Iron	107	105	P/P	80 - 120
2068917	Manganese	95.1	97.0	P/P	80 - 120
2068917	Zinc	98.4	98.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068917	Aluminum	96.9	95.6	P/P	70 - 130
2068917	Antimony	101	99.8	P/P	70 - 130
2068917	Arsenic	110	109	P/P	70 - 130
2068917	Cadmium	98.7	98.5	P/P	70 - 130
2068917	Chromium	88.1	92.5	P/P	70 - 130
2068917	Lead	101	101	P/P	70 - 130
2068917	Nickel	94.0	93.2	P/P	70 - 130
2068917	Selenium	82.8	79.7	P/P	70 - 130
2068917	Silver	91.6	90.9	P/P	70 - 130
2068917	Thallium	95.1	94.1	P/P	70 - 130

Reference Method: EPA 300.0
Batch ID: P360483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068367	Bromide	98.1	98.0	P/P	90 - 110
2068489	Bromide	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068369	Ammonia-N	93.9	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068370	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068354	NO2NO3-N	100	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360441

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068353	Total-P	96.8	96.2	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068388	O-Phosphate-P	94.2	94.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P360340

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068486	Fluoride	93.2	93.2	P/P	91 - 105

Reference Method: SM 4500 F-C-97 dissolved
Batch ID: P360340

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068486	Fluoride	93.2	93.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068416	Organic Carbon	91.7	93.9	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068385	Turbidity	8.36	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068917	Iron	1.82	Spike	P	0 - 20
2068917	Manganese	1.97	Spike	P	0 - 20
2068917	Zinc	0.428	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068917	Aluminum	1.36	Spike	P	0 - 20
2068917	Antimony	0.991	Spike	P	0 - 20
2068917	Arsenic	0.317	Spike	P	0 - 20
2068917	Cadmium	0.146	Spike	P	0 - 20
2068917	Chromium	4.86	Spike	P	0 - 20
2068917	Lead	0.122	Spike	P	0 - 20
2068917	Nickel	0.835	Spike	P	0 - 20
2068917	Selenium	3.80	Spike	P	0 - 20
2068917	Silver	0.770	Spike	P	0 - 20
2068917	Thallium	1.00	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P360483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068367	Bromide	0.0893	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068369	Ammonia-N	2.00	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068370	Kjeldahl Nitrogen	2.22	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068354	NO2NO3-N	1.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068353	Total-P	0.699	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068388	O-Phosphate-P	0.411	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P360331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068486	Total Alkalinity	0.458	Sample	P	0 - 1.6

Reference Method: SM 2540 D-97
Batch ID: P360662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068385	TSS	6.35	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P360340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068486	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97 dissolved
Batch ID: P360340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068486	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P360754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068416	Organic Carbon	1.96	Spike	P	0 - 20

Quality Assurance Report
Precision

* 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 180.1 Rev. 2.0
Run ID: A89903
Included Lab Sample IDs: 2068414

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A89909
Included Lab Sample IDs: 2068415

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	94.5	98.3	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A89980
Included Lab Sample IDs: 2068414

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: A89980
Included Lab Sample IDs: 2068414

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	98.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97 dissolved
Run ID: A89980
Included Lab Sample IDs: 2068415

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90009
Included Lab Sample IDs: 2068416

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	108	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90011
Included Lab Sample IDs: 2068416

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.4	P/P	90 - 110

Reference Method: EPA 300.0
Run ID: A90025
Included Lab Sample IDs: 2068414

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A90026
Included Lab Sample IDs: 2068419

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.7	97.6	P/P	90 - 110
Antimony	93.8	94.3	P/P	90 - 110
Arsenic	98.2	98.0	P/P	90 - 110
Cadmium	94.7	95.1	P/P	90 - 110
Lead	98.0	97.8	P/P	90 - 110
Nickel	97.6	96.1	P/P	90 - 110
Selenium	95.4	95.7	P/P	90 - 110
Silver	92.9	93.0	P/P	90 - 110
Thallium	91.1	90.7	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A90027
Included Lab Sample IDs: 2068419

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	101	102	P/P	90 - 110
Manganese	102	103	P/P	90 - 110
Zinc	99.6	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A90046
Included Lab Sample IDs: 2068416

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90047
Included Lab Sample IDs: 2068416

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A90052
Included Lab Sample IDs: 2068419

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	90.9	96.1	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A90118
Included Lab Sample IDs: 2068416

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.6	93.6	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			Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					8.36	
EPA 200.7 Rev. 4.4	Iron	109	107	105			1.82
	Manganese	101	95.1	97.0			1.97
	Zinc	100	98.4	98.8			0.428
EPA 200.8 Rev. 5.4	Aluminum	97.4	96.9	95.6			1.36
	Antimony	95.6	101	99.8			0.991
	Arsenic	100	110	109			0.317
	Cadmium	98.7	98.7	98.5			0.146
	Chromium	97.8	88.1	92.5			4.86
	Lead	97.6	101	101			0.122
	Nickel	97.5	94.0	93.2			0.835
	Selenium	96.5	82.8	79.7			3.80
	Silver	96.2	91.6	90.9			0.770
	Thallium	96.4	95.1	94.1			1.00
EPA 300.0	Bromide	104	98.1	98.0	101		0.0893
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	93.9	96.4			2.00
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.1	107	104			2.22
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	99.0			1.18
EPA 365.1 Rev. 2.0	Total-P	105	96.8	96.2			0.699
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0	94.2	94.7			0.411
SM 2320 B-97	Total Alkalinity	102				0.458	
SM 2540 D-97	TSS					6.35	
SM 4500 F-C-97	Fluoride	95.6	93.2	93.2			0.0
SM 4500 F-C-97 dissolved	Fluoride	95.6	93.2	93.2			0.0
SM 5310 B-00	Organic Carbon	96.6	91.7	93.9			1.96

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2068414
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2068419
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2068419
EPA 300.0 / E31780	Bromide in aqueous matrices	2068414
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2068416
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2068416
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2068416
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2068416
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2068415
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2068414
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2068414
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2068414
SM 4500 F-C-97 dissolved / E31780	Fluoride, dissolved, in filtered aqueous matrices, without distillation (not valid for NPDES monitoring)	2068415
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2068416

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	03/08/2019			03/08/2019 14:48	Adrian Shelby	2068414
EPA 200.7 Rev. 4.4	03/08/2019	03/13/2019 17:30	Elliott D. Healy	03/14/2019 16:41	Vijayalakshmi Reddy	2068419
EPA 200.8 Rev. 5.4	03/08/2019	03/13/2019 17:30	Elliott D. Healy	03/15/2019 01:39	Allison Taylor	2068419
	03/08/2019	03/13/2019 17:30	Elliott D. Healy	03/16/2019 00:43	Allison Taylor	2068419
EPA 300.0	03/08/2019			03/14/2019 23:32	Lipi Saha	2068414
EPA 350.1 Rev. 2.0	03/08/2019			03/13/2019 11:09	Ping Hua	2068416
EPA 351.2 Rev. 2.0	03/08/2019	03/13/2019 12:00	Adrian Shelby	03/14/2019 11:26	Joseph Suarez	2068416
EPA 353.2 Rev. 2.0	03/08/2019			03/14/2019 12:20	Beverly Y. Sanders	2068416
EPA 365.1 Rev. 2.0	03/08/2019	03/14/2019 13:10	Sima Feizi	03/15/2019 17:20	Rosalyn Ballman	2068416
EPA 365.1 Rev. 2.0 dissolved	03/08/2019			03/08/2019 16:59	Jhamieka S. Greenwood	2068415
SM 2320 B-97	03/08/2019			03/12/2019 11:58	Dale L. Simmons	2068414
SM 2540 D-97	03/08/2019			03/13/2019 14:03	Yijie Li	2068414
SM 4500 F-C-97	03/08/2019			03/12/2019 11:03	Dale L. Simmons	2068414
SM 4500 F-C-97 dissolved	03/08/2019			03/12/2019 11:12	Dale L. Simmons	2068415
SM 5310 B-00	03/08/2019			03/20/2019 03:29	Julia Storbeck	2068416