

Chemical Analysis Report

WAS-SECT-2020-03-11-01

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

Event Description: **Merritt's Mill Pond BMAP**

Request ID: **RQ-2020-03-09-04**

Customer: **WAS-SECT**

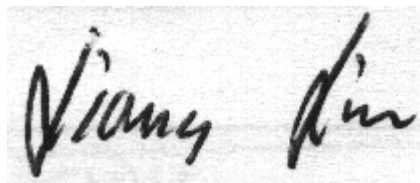
Project ID: **BMAP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 30-MAR-2020 16:50

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

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: Merritt's Mill Pond 500 Meters Upstream of Dam

Collection Date/Time: 03/11/2020 10:15

Field ID: G2WA0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2164492	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P380535	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P380837	
		Sulfate	1.3		mg SO4/L	P380838	
		Color (true)	2.5	U	PCU	P380482	
	SM 2320 B-2011	Total Alkalinity	125		mg CaCO3/L	P381066	
	SM 2540 C-2011	TDS	148		mg/L	P381117	
	SM 2540 D-2011	TSS	2	U	mg/L	P381185	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P381262	
2164496	EPA 350.1 Rev. 2.0	Ammonia-N	0.056		mg N/L	P381037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P380775	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.5		mg N/L	P381325	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P380900	
	SM 5310 B-2011	Organic Carbon	0.99	I	mg C/L	P380674	
2164500	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P380577	
2164508	EPA 200.7 Rev. 4.4	Barium	6.3		ug/L	P380736	
		Calcium	52.8		mg/L	P380736	
		Iron	30	U	ug/L	P380736	
		Magnesium	2.89		mg/L	P380736	
		Potassium	0.41	I	mg/L	P380736	
		Sodium	2.2		mg/L	P380736	
		Zinc	5.0	U	ug/L	P380736	
	EPA 200.8 Rev. 5.4	Aluminum	5.6	I	ug/L	P380736	
		Antimony	0.050	U	ug/L	P380736	
		Arsenic	0.29		ug/L	P380736	
		Boron**	8.8		ug/L	P380736	
		Cadmium	0.020	U	ug/L	P380736	
		Chromium	0.98	I	ug/L	P380736	
		Copper	0.40	U	ug/L	P380736	
		Lead	0.20	U	ug/L	P380736	
		Nickel	0.50	U	ug/L	P380736	
		Selenium	0.20	U	ug/L	P380736	
		Silver	0.010	U	ug/L	P380736	
		Thallium	0.10	U	ug/L	P380736	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Merritt's Mill Pond Mid Under Powerlines

Collection Date/Time: 03/11/2020 11:30

Field ID: G2WA0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2164493	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P380570	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P380837	
		Sulfate	1.3		mg SO4/L	P380838	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P380578	
	SM 2320 B-2011	Total Alkalinity	127		mg CaCO3/L	P381066	
	SM 2540 C-2011	TDS	155		mg/L	P381117	
	SM 2540 D-2011	TSS	2	I	mg/L	P381185	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P381262	
2164497	EPA 350.1 Rev. 2.0	Ammonia-N	0.047		mg N/L	P381037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P380775	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.8		mg N/L	P381196	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P380900	
	SM 5310 B-2011	Organic Carbon	0.75	I	mg C/L	P380674	
2164501	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P380577	
2164509	EPA 200.7 Rev. 4.4	Barium	6.2		ug/L	P380736	
		Calcium	53.5		mg/L	P380736	
		Iron	30	U	ug/L	P380736	
		Magnesium	2.85		mg/L	P380736	
		Potassium	0.41	I	mg/L	P380736	
		Sodium	2.1		mg/L	P380736	
		Zinc	5.0	U	ug/L	P380736	
	EPA 200.8 Rev. 5.4	Aluminum	5.7	I	ug/L	P380736	
		Antimony	0.050	U	ug/L	P380736	
		Arsenic	0.28		ug/L	P380736	
		Boron**	8.2		ug/L	P380736	
		Cadmium	0.020	U	ug/L	P380736	
		Chromium	1.1	I	ug/L	P380736	
		Copper	0.40	U	ug/L	P380736	
		Lead	0.20	U	ug/L	P380736	
		Nickel	0.50	U	ug/L	P380736	
		Selenium	0.20	U	ug/L	P380736	
		Silver	0.010	U	ug/L	P380736	
		Thallium	0.10	U	ug/L	P380736	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Merritt's Mill Pond 600 Meters Downstream Of Jackson Blue Sp **Collection Date/Time: 03/11/2020 12:05**

Field ID: G2WA0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2164494	EPA 180.1 Rev. 2.0	Turbidity	0.10	I	NTU	P380570	
	EPA 300.0 Rev. 2.1	Chloride	4.8		mg Cl/L	P380837	
		Sulfate	1.3		mg SO4/L	P380838	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P380578	
	SM 2320 B-2011	Total Alkalinity	125		mg CaCO3/L	P381066	
	SM 2540 C-2011	TDS	157		mg/L	P381117	
	SM 2540 D-2011	TSS	2	U	mg/L	P381185	
2164498	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P381262	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P381037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P380775	
	EPA 353.2 Rev. 2.0	NO2NO3-N	3.6		mg N/L	P381199	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P380900	
2164502	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P380674	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.018		mg P/L	P380566	
2164510	EPA 200.7 Rev. 4.4	Barium	6.1		ug/L	P380736	
		Calcium	54.3		mg/L	P380736	
		Iron	30	U	ug/L	P380736	
		Magnesium	2.47		mg/L	P380736	
		Potassium	0.42	I	mg/L	P380736	
		Sodium	1.9	I	mg/L	P380736	
		Zinc	5.0	U	ug/L	P380736	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P380736	
		Antimony	0.050	U	ug/L	P380736	
		Arsenic	0.27		ug/L	P380736	
		Boron**	8.1		ug/L	P380736	
		Cadmium	0.020	U	ug/L	P380736	
		Chromium	1.2	I	ug/L	P380736	
		Copper	0.40	U	ug/L	P380736	
		Lead	0.20	U	ug/L	P380736	
		Nickel	0.50	U	ug/L	P380736	
		Selenium	0.20	U	ug/L	P380736	
		Silver	0.010	U	ug/L	P380736	
		Thallium	0.10	U	ug/L	P380736	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Shangri La Spring Vent

Collection Date/Time: 03/11/2020 12:20

Field ID: G2WA0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2164495	EPA 180.1 Rev. 2.0	Turbidity	0.30		NTU	P380570	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P380837	
		Sulfate	1.4		mg SO4/L	P380838	
		Color (true)	2.5	U	PCU	P380578	
	SM 2320 B-2011	Total Alkalinity	142		mg CaCO3/L	P381066	
	SM 2540 C-2011	TDS	188	A	mg/L	P381117	
	SM 2540 D-2011	TSS	2	UA	mg/L	P381185	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P381262	
2164499	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P381037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P380775	
	EPA 353.2 Rev. 2.0	NO2NO3-N	3.8		mg N/L	P381197	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P380900	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P380674	
2164503	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P380566	
2164511	EPA 200.7 Rev. 4.4	Barium	5.2		ug/L	P380736	
		Calcium	62.9		mg/L	P380736	
		Iron	30	U	ug/L	P380736	
		Magnesium	2.12		mg/L	P380736	
		Potassium	0.41	I	mg/L	P380736	
		Sodium	1.9	I	mg/L	P380736	
		Zinc	5.0	U	ug/L	P380736	
		Aluminum	5.0	U	ug/L	P380736	
		Antimony	0.050	U	ug/L	P380736	
		Arsenic	0.25		ug/L	P380736	
	EPA 200.8 Rev. 5.4	Boron**	8.1		ug/L	P380736	
		Cadmium	0.020	U	ug/L	P380736	
		Chromium	2.1		ug/L	P380736	
		Copper	0.40	U	ug/L	P380736	
		Lead	0.20	U	ug/L	P380736	
		Nickel	0.50	U	ug/L	P380736	
		Selenium	0.24	I	ug/L	P380736	
		Silver	0.010	U	ug/L	P380736	
		Thallium	0.10	U	ug/L	P380736	

Ref. Method and Comment:

SM 2540 D-2011: 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: P380535

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P380570

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P380736

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P380736

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	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 Rev. 2.1

Batch ID: P380837

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P380838

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381037

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380775

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381196

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381197

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381199

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381325

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380900

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380566

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380577

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B-2011
Batch ID: P380482

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P380578

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P381066

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

Reference Method: SM 2540 C-2011
Batch ID: P381117

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P381185

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P381262

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P380674

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: P380736

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	103		P	85 - 115
Iron	106		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P380736

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	94.5		P	85 - 115
Antimony	98.4		P	85 - 115
Arsenic	97.5		P	85 - 115
Boron	95.6		P	85 - 115
Cadmium	96.5		P	85 - 115
Chromium	100		P	85 - 115
Copper	96.5		P	85 - 115
Lead	92.7		P	85 - 115
Nickel	95.5		P	85 - 115
Selenium	96.7		P	85 - 115
Silver	98.1		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P380837

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P380838

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P381037

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P380775

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381196

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381197

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: P381199

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381325

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380900

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: P380566

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380577

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

Reference Method: SM 2120 B-2011
Batch ID: P380482

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P380578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P381066

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

Reference Method: SM 4500 F-C-2011
Batch ID: P381262

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.7		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P380674

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P380736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164511	Barium	99.1	100	P/P	80 - 120
2164511	Calcium	101		P	80 - 120
2164511	Iron	104	103	P/P	80 - 120
2164511	Magnesium	102	101	P/P	80 - 120
2164511	Potassium	101	101	P/P	80 - 120
2164511	Sodium	100	105	P/P	80 - 120
2164511	Zinc	100	101	P/P	80 - 120
2164731	Barium	102		P	80 - 120
2164731	Calcium	102		P	80 - 120
2164731	Iron	104		P	80 - 120
2164731	Magnesium	99.2		P	80 - 120
2164731	Potassium	101		P	80 - 120
2164731	Sodium	99.4		P	80 - 120
2164731	Zinc	103		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P380736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164511	Aluminum	96.3	95.5	P/P	80 - 120
2164511	Antimony	100	101	P/P	80 - 120
2164511	Arsenic	97.2	98.7	P/P	80 - 120
2164511	Boron	95.5	96.4	P/P	80 - 120
2164511	Cadmium	102	101	P/P	80 - 120
2164511	Chromium	98.4	99.0	P/P	80 - 120
2164511	Copper	95.4	97.0	P/P	80 - 120
2164511	Lead	92.5	93.2	P/P	80 - 120
2164511	Nickel	95.6	96.1	P/P	80 - 120
2164511	Selenium	92.1	95.6	P/P	80 - 120
2164511	Silver	99.1	99.2	P/P	80 - 120
2164511	Thallium	106	108	P/P	80 - 120
2164731	Aluminum	95.9		P	80 - 120
2164731	Antimony	103		P	80 - 120
2164731	Arsenic	105		P	80 - 120
2164731	Boron	101		P	80 - 120
2164731	Cadmium	99.4		P	80 - 120
2164731	Chromium	104		P	80 - 120
2164731	Copper	98.6		P	80 - 120
2164731	Lead	96.3		P	80 - 120
2164731	Nickel	97.1		P	80 - 120
2164731	Selenium	100		P	80 - 120
2164731	Silver	96.9		P	80 - 120
2164731	Thallium	109		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P380837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164306	Chloride	97.8		P	90 - 110
2164390	Chloride	98.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P380838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164306	Sulfate	98.6		P	90 - 110
2164390	Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P381037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164392	Ammonia-N	98.1	96.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P380775

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164496	Kjeldahl Nitrogen	103	110	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P381196

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164377	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P381197

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164639	NO2NO3-N	95.8	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P381199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164815	NO2NO3-N	96.9	97.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P381325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164340	NO2NO3-N	97.0	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P380900

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164496	Total-P	100	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P380566

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164502	O-Phosphate-P	97.6	99.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164383	O-Phosphate-P	96.5	93.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P381262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164631	Fluoride	96.7	97.9	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P380674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164382	Organic Carbon	94.0	94.4	P/P	85 - 115

Quality Assurance Report

Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P380535

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164373	Turbidity	7.45	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P380570

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164541	Turbidity	0.247	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P380736

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164511	Barium	1.12	Spike	P	0 - 20
2164511	Calcium	4.08	Spike	P	0 - 20
2164511	Iron	0.779	Spike	P	0 - 20
2164511	Magnesium	0.909	Spike	P	0 - 20
2164511	Potassium	0.400	Spike	P	0 - 20
2164511	Sodium	3.23	Spike	P	0 - 20
2164511	Zinc	0.775	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P380736

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164511	Aluminum	0.848	Spike	P	0 - 20
2164511	Antimony	0.764	Spike	P	0 - 20
2164511	Arsenic	1.46	Spike	P	0 - 20
2164511	Boron	0.905	Spike	P	0 - 20
2164511	Cadmium	1.63	Spike	P	0 - 20
2164511	Chromium	0.552	Spike	P	0 - 20
2164511	Copper	1.68	Spike	P	0 - 20
2164511	Lead	0.724	Spike	P	0 - 20
2164511	Nickel	0.474	Spike	P	0 - 20
2164511	Selenium	3.62	Spike	P	0 - 20
2164511	Silver	0.0635	Spike	P	0 - 20
2164511	Thallium	1.39	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P380837

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164306	Chloride	0.210	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164306	Sulfate	0.619	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164392	Ammonia-N	1.37	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164496	Kjeldahl Nitrogen	5.80	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381196

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164377	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381197

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164639	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164815	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164340	NO2NO3-N	0.587	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164496	Total-P	3.00	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164502	O-Phosphate-P	1.89	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164383	O-Phosphate-P	2.21	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P380482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164312	Color (true)	3.74	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P380578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164673	Color (true)	2.53	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P381066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164631	Total Alkalinity	0.157	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P381117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164495	TDS	2.67	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P381262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164631	Fluoride	1.03	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P380674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164382	Organic Carbon	0.414	Spike	P	0 - 20

Quality Assurance Report

Precision

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A98135

Included Lab Sample IDs: 2164492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A98149

Included Lab Sample IDs: 2164492

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A98165

Included Lab Sample IDs: 2164502, 2164503

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	97.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A98166

Included Lab Sample IDs: 2164493, 2164494, 2164495

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A98168

Included Lab Sample IDs: 2164500, 2164501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.4	93.3	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A98169

Included Lab Sample IDs: 2164493, 2164494, 2164495

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

Reference Method: SM 5310 B-2011

Run ID: A98201

Included Lab Sample IDs: 2164496, 2164497, 2164498, 2164499

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.1	97.0	P/P	90 - 110
Organic Carbon	97.4	97.1	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98252

Included Lab Sample IDs: 2164508, 2164509, 2164510, 2164511

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98252

Included Lab Sample IDs: 2164508, 2164509, 2164510, 2164511

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	105	P/P	90 - 110
Calcium	104	104	P/P	90 - 110
Calcium	104	104	P/P	90 - 110
Iron	106	107	P/P	90 - 110
Iron	106	106	P/P	90 - 110
Magnesium	104	104	P/P	90 - 110
Magnesium	104	105	P/P	90 - 110
Potassium	101	98.1	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Sodium	102	102	P/P	90 - 110
Sodium	103	102	P/P	90 - 110
Zinc	101	101	P/P	90 - 110
Zinc	101	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98256

Included Lab Sample IDs: 2164508, 2164509, 2164510, 2164511

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	93.0	94.1	P/P	90 - 110
Aluminum	94.1	99.9	P/P	90 - 110
Antimony	92.6	94.4	P/P	90 - 110
Antimony	94.4	92.3	P/P	90 - 110
Arsenic	95.1	93.7	P/P	90 - 110
Arsenic	96.5	95.1	P/P	90 - 110
Boron	93.5	98.9	P/P	90 - 110
Boron	96.7	93.5	P/P	90 - 110
Cadmium	95.8	94.2	P/P	90 - 110
Cadmium	95.9	95.8	P/P	90 - 110
Chromium	95.7	95.2	P/P	90 - 110
Chromium	96.2	95.7	P/P	90 - 110
Copper	93.4	94.8	P/P	90 - 110
Copper	93.6	93.4	P/P	90 - 110
Lead	90.0	90.9	P/P	90 - 110
Lead	90.9	91.2	P/P	90 - 110
Nickel	93.3	95.3	P/P	90 - 110
Nickel	94.4	93.3	P/P	90 - 110
Selenium	94.6	96.0	P/P	90 - 110
Selenium	96.0	93.6	P/P	90 - 110
Silver	96.3	96.7	P/P	90 - 110
Silver	96.7	95.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98259

Included Lab Sample IDs: 2164492, 2164493, 2164494, 2164495

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98280

Included Lab Sample IDs: 2164508, 2164509, 2164510, 2164511

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	96.7	98.2	P/P	90 - 110
Thallium	98.2	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98327

Included Lab Sample IDs: 2164496, 2164497, 2164498, 2164499

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98337

Included Lab Sample IDs: 2164496, 2164497, 2164498, 2164499

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98341

Included Lab Sample IDs: 2164496, 2164497, 2164498, 2164499

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	105	P/P	90 - 110
Kjeldahl Nitrogen	96.8	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A98350

Included Lab Sample IDs: 2164492, 2164493, 2164494, 2164495

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98402

Included Lab Sample IDs: 2164497, 2164498, 2164499

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

Reference Method: SM 4500 F-C-2011

Run ID: A98428

Included Lab Sample IDs: 2164492, 2164493, 2164494, 2164495

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.1	97.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98453

Included Lab Sample IDs: 2164496

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.0	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						7.45	
	Turbidity						0.247	
EPA 200.7 Rev. 4.4	Barium	102	99.1	100	102			1.12
	Calcium	103	101	102				4.08
	Iron	106	104	104	103			0.779
	Magnesium	106	102	101	99.2			0.909
	Potassium	101	101	101	101			0.400
	Sodium	101	100	105	99.4			3.23
	Zinc	103	100	101	103			0.775
EPA 200.8 Rev. 5.4	Aluminum	94.5	96.3	95.5	95.9			0.848
	Antimony	98.4	103	100	101			0.764
	Arsenic	97.5	97.2	98.7	105			1.46
	Boron	95.6	95.5	96.4	101			0.905
	Cadmium	96.5	102	101	99.4			1.63
	Chromium	100	98.4	99.0	104			0.552
	Copper	96.5	95.4	97.0	98.6			1.68
	Lead	92.7	92.5	93.2	96.3			0.724
	Nickel	95.5	95.6	96.1	97.1			0.474
	Selenium	96.7	92.1	95.6	100			3.62
	Silver	98.1	99.1	99.2	96.9			0.0635
	Thallium	104	106	108	109			1.39
EPA 300.0 Rev. 2.1	Chloride	101	97.8	98.4			0.210	
	Sulfate	100	98.6	99.1			0.619	
EPA 350.1 Rev. 2.0	Ammonia-N	101	98.1	96.1				1.37
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.6	103	110				5.80
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	100	100				0.0
	NO ₂ NO ₃ -N	98.5	95.8	96.8				1.01
	NO ₂ NO ₃ -N	100	96.9	97.9				1.01
	NO ₂ NO ₃ -N	98.0	97.0	96.0				0.587
EPA 365.1 Rev. 2.0	Total-P	102	100	103				3.00
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	97.6	99.8				1.89
	O-Phosphate-P	98.3	96.5	93.9				2.21
SM 2120 B-2011	Color (true)	102					3.74	
	Color (true)	99.2					2.53	
SM 2320 B-2011	Total Alkalinity	104					0.157	
SM 2540 C-2011	TDS						2.67	
SM 4500 F-C-2011	Fluoride	94.7	96.7	97.9				1.03
SM 5310 B-2011	Organic Carbon	95.3	94.0	94.4				0.414

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2164492, 2164493, 2164494, 2164495
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2164508, 2164509, 2164510, 2164511
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2164508, 2164509, 2164510, 2164511
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2164492, 2164493, 2164494, 2164495
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2164492, 2164493, 2164494, 2164495
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2164496, 2164497, 2164498, 2164499
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2164496, 2164497, 2164498, 2164499
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2164496, 2164497, 2164498, 2164499
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2164496, 2164497, 2164498, 2164499

Reference Method Descriptions

Method	Description	Associated Samples
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2164500, 2164501, 2164502, 2164503
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2164492, 2164493, 2164494, 2164495
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2164492, 2164493, 2164494, 2164495
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2164492, 2164493, 2164494, 2164495
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2164492, 2164493, 2164494, 2164495
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2164492, 2164493, 2164494, 2164495
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2164496, 2164497, 2164498, 2164499

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	03/11/2020			03/11/2020 19:16	Yen Ta	2164492
	03/11/2020			03/12/2020 16:01	Yen Ta	2164493, 2164494, 2164495
EPA 200.7 Rev. 4.4	03/11/2020	03/16/2020 17:15	Elliott D. Healy	03/17/2020 22:25	Betina Topolski	2164508
	03/11/2020	03/16/2020 17:15	Elliott D. Healy	03/17/2020 22:33	Betina Topolski	2164509
	03/11/2020	03/16/2020 17:15	Elliott D. Healy	03/17/2020 22:40	Betina Topolski	2164510
	03/11/2020	03/16/2020 17:15	Elliott D. Healy	03/17/2020 23:16	Betina Topolski	2164511
EPA 200.8 Rev. 5.4	03/11/2020	03/16/2020 17:15	Elliott D. Healy	03/17/2020 20:31	Justin Cutchin	2164511
	03/11/2020	03/16/2020 17:15	Elliott D. Healy	03/17/2020 21:33	Justin Cutchin	2164508
	03/11/2020	03/16/2020 17:15	Elliott D. Healy	03/17/2020 21:39	Justin Cutchin	2164509
	03/11/2020	03/16/2020 17:15	Elliott D. Healy	03/17/2020 21:45	Justin Cutchin	2164510
	03/11/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 18:04	Alexander Thompson	2164508
	03/11/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 18:11	Alexander Thompson	2164509
	03/11/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 18:18	Alexander Thompson	2164511
	03/11/2020	03/16/2020 17:15	Elliott D. Healy	03/18/2020 18:59	Alexander Thompson	2164510
EPA 300.0 Rev. 2.1	03/11/2020			03/16/2020 22:22	Lipi Saha	2164492
	03/11/2020			03/16/2020 22:34	Lipi Saha	2164493
	03/11/2020			03/16/2020 22:46	Lipi Saha	2164494
	03/11/2020			03/16/2020 22:58	Lipi Saha	2164495
EPA 350.1 Rev. 2.0	03/11/2020			03/20/2020 11:45	Ping Hua	2164496
	03/11/2020			03/20/2020 11:57	Ping Hua	2164497
	03/11/2020			03/20/2020 11:58	Ping Hua	2164498
	03/11/2020			03/20/2020 12:00	Ping Hua	2164499
EPA 351.2 Rev. 2.0	03/11/2020	03/17/2020 11:50	Sima Feizi	03/19/2020 13:31	Julia Storbeck	2164496
	03/11/2020	03/17/2020 11:50	Sima Feizi	03/19/2020 13:39	Julia Storbeck	2164497
	03/11/2020	03/17/2020 11:50	Sima Feizi	03/19/2020 13:44	Julia Storbeck	2164498
	03/11/2020	03/17/2020 11:50	Sima Feizi	03/19/2020 13:45	Julia Storbeck	2164499
EPA 353.2 Rev. 2.0	03/11/2020			03/24/2020 12:10	Beverly Y. Sanders	2164497
	03/11/2020			03/24/2020 12:16	Beverly Y. Sanders	2164499
	03/11/2020			03/24/2020 12:28	Beverly Y. Sanders	2164498
	03/11/2020			03/26/2020 11:24	Beverly Y. Sanders	2164496
EPA 365.1 Rev. 2.0	03/11/2020	03/18/2020 13:30	Yen Ta	03/20/2020 11:09	Benjamin T. Nordmann	2164496
	03/11/2020	03/18/2020 13:30	Yen Ta	03/20/2020 11:10	Benjamin T. Nordmann	2164497
	03/11/2020	03/18/2020 13:30	Yen Ta	03/20/2020 11:11	Benjamin T. Nordmann	2164498
	03/11/2020	03/18/2020 13:30	Yen Ta	03/20/2020 11:12	Benjamin T. Nordmann	2164499
EPA 365.1 Rev. 2.0 dissolved	03/11/2020			03/12/2020 15:34	Carlos Miranda	2164502
	03/11/2020			03/12/2020 15:36	Carlos Miranda	2164503
	03/11/2020			03/12/2020 17:56	Carlos Miranda	2164500
	03/11/2020			03/12/2020 17:57	Carlos Miranda	2164501
SM 2120 B-2011	03/11/2020			03/11/2020 18:52	Madeline Gruver	2164492
	03/11/2020			03/12/2020 17:07	Madeline Gruver	2164493

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B-2011	03/11/2020			03/12/2020 17:08	Madeline Gruver	2164494
	03/11/2020			03/12/2020 17:09	Madeline Gruver	2164495
SM 2320 B-2011	03/11/2020			03/21/2020 00:16	Dale L. Simmons	2164492
	03/11/2020			03/21/2020 00:26	Dale L. Simmons	2164493
	03/11/2020			03/21/2020 00:37	Dale L. Simmons	2164494
	03/11/2020			03/21/2020 00:48	Dale L. Simmons	2164495
SM 2540 C-2011	03/11/2020			03/16/2020 15:52	Yijie Li	2164492, 2164493, 2164494, 2164495
SM 2540 D-2011	03/11/2020			03/16/2020 15:52	Yijie Li	2164492, 2164493, 2164494, 2164495
SM 4500 F-C-2011	03/11/2020			03/24/2020 19:55	Dale L. Simmons	2164492
	03/11/2020			03/24/2020 20:00	Dale L. Simmons	2164493
	03/11/2020			03/24/2020 20:05	Dale L. Simmons	2164494
	03/11/2020			03/24/2020 20:10	Dale L. Simmons	2164495
SM 5310 B-2011	03/11/2020			03/14/2020 04:14	Lauren Lees	2164496
	03/11/2020			03/14/2020 04:27	Lauren Lees	2164497
	03/11/2020			03/14/2020 05:13	Lauren Lees	2164498
	03/11/2020			03/14/2020 05:26	Lauren Lees	2164499