

Chemical Analysis Report

NE-DIST-2020-03-25-01

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

Event Description: **Interlachen 2020**
Request ID: **RQ-2020-03-23-09**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 16-APR-2020 11:11

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Church Lake Center

Collection Date/Time: 03/24/2020 10:15

Field ID: G1NE0867

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167775	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P381301	
	EPA 300.0 Rev. 2.1	Chloride	5.8		mg Cl/L	P381867	
		Sulfate	3.2		mg SO4/L	P381871	
		Color (true)	9.7		PCU	P381329	
	SM 2120 B-2011	Total Alkalinity	3.9		mg CaCO3/L	P381657	
	SM 2540 C-2011	TDS	21	I	mg/L	P381715	
	SM 2540 D-2011	TSS	2	U	mg/L	P381708	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P381964	RPD
2167776	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P381431	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30		mg N/L	P381703	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P381593	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P381416	
	SM 5310 B-2011	Organic Carbon	4.0		mg C/L	P381643	
2167777	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P381297	
2167791	EPA 200.7 Rev. 4.4	Barium	1.9	I	ug/L	P381354	
		Calcium	2.02		mg/L	P381354	
		Iron	30	U	ug/L	P381354	
		Magnesium	0.78		mg/L	P381354	
		Potassium	0.88	I	mg/L	P381354	
		Sodium	4.5		mg/L	P381354	
		Zinc	5.0	U	ug/L	P381354	
	EPA 200.8 Rev. 5.4	Aluminum	22		ug/L	P381354	
		Antimony	0.095	I	ug/L	P382004	
		Arsenic	8.38		ug/L	P381354	
		Boron**	20.3		ug/L	P381354	
		Cadmium	0.020	U	ug/L	P381354	
		Chromium	0.40	U	ug/L	P381354	
		Copper	1.12		ug/L	P381354	
		Lead	0.20	U	ug/L	P381354	
		Nickel	0.50	U	ug/L	P381354	
		Selenium	0.20	U	ug/L	P381354	
		Silver	0.010	U	ug/L	P381354	
		Thallium	0.10	U	ug/L	P381354	
		Hardness	8.2		mg/L	P381354	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Hardesty Lake Center

Collection Date/Time: 03/24/2020 09:40

Field ID: G1NE0869

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167778	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P381302	
	EPA 300.0 Rev. 2.1	Chloride	8.6	A	mg Cl/L	P381868	
		Sulfate	1.8	A	mg SO4/L	P381872	
	SM 2120 B-2011	Color (true)	170		PCU	P381329	
	SM 2320 B-2011	Total Alkalinity	0.82	I	mg CaCO3/L	P381657	
	SM 2540 C-2011	TDS	47		mg/L	P381715	
	SM 2540 D-2011	TSS	2	U	mg/L	P381708	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P381964	RPD
2167781	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P381439	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P381703	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P381593	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P381417	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P381643	
2167784	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P381297	

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: Gillis Pond Center

Collection Date/Time: 03/24/2020 11:00

Field ID: G1NE0863

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167779	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P381302	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P381868	
		Sulfate	3.7		mg SO4/L	P381872	
	SM 2120 B-2011	Color (true)	38	A	PCU	P381330	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P381657	
	SM 2540 C-2011	TDS	55		mg/L	P381715	
	SM 2540 D-2011	TSS	2	I	mg/L	P381708	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P381964	RPD
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P381439	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P381703	MS
2167782	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P381593	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P381417	
	SM 5310 B-2011	Organic Carbon	9.2		mg C/L	P381643	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P381297	
	dissolved						
2167785	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P381297	

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: Smith Lake Center

Collection Date/Time: 03/24/2020 12:00

Field ID: G2NE1156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167780	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P381302	
	EPA 300.0 Rev. 2.1	Chloride	5.7		mg Cl/L	P381868	
		Sulfate	0.42	I	mg SO4/L	P381872	
	SM 2120 B-2011	Color (true)	26		PCU	P381330	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P381657	
	SM 2540 C-2011	TDS	30		mg/L	P381715	
	SM 2540 D-2011	TSS	2	U	mg/L	P381708	
	SM 4500 F-C-2011	Fluoride	0.035	UJ	mg F/L	P381964	RPD
2167783	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P381439	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P381703	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P381593	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P381417	
	SM 5310 B-2011	Organic Carbon	9.6		mg C/L	P381643	
2167786	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P381297	

Ref. Method and Comment:

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

SM 4500 F-C-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P381301

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P381302

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P381354

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: P381354

Component	Result	Code	Units
Aluminum	5.0	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 200.8 Rev. 5.4
Batch ID: P382004

Component	Result	Code	Units
Antimony	0.050	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381867

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381868

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381868

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381871

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381872

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381431

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381439

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381703

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381593

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381416

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381417

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381297

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

Reference Method: SM 2120 B-2011
Batch ID: P381329

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P381330

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P381657

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

Reference Method: SM 2540 C-2011
Batch ID: P381715

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P381708

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P381964

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P381643

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: P381354

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381354

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	94.8		P	85 - 115
Arsenic	97.3		P	85 - 115
Boron	97.7		P	85 - 115
Cadmium	96.4		P	85 - 115
Chromium	96.8		P	85 - 115
Copper	96.7		P	85 - 115
Lead	93.8		P	85 - 115
Nickel	102		P	85 - 115
Selenium	93.5		P	85 - 115
Silver	100		P	85 - 115
Thallium	91.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P382004

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Antimony	92.7		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381867

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381868

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381871

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381872

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381872

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381431

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381439

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381703

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381593

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381416

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381417

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381297

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

Reference Method: SM 2120 B-2011
Batch ID: P381329

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P381330

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

Reference Method: SM 2320 B-2011
Batch ID: P381657

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.7		P	98 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P381964

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	93.4		P	92 - 104

Reference Method: SM 5310 B-2011
Batch ID: P381643

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P381354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167542	Barium	98.1	100	P/P	80 - 120
2167542	Calcium	99.7		P	80 - 120
2167542	Iron	101	100	P/P	80 - 120
2167542	Magnesium	101		P	80 - 120
2167542	Potassium	98.8	98.1	P/P	80 - 120
2167542	Sodium	98.7	98.7	P/P	80 - 120
2167542	Zinc	98.3	101	P/P	80 - 120
2167572	Barium	100		P	80 - 120
2167572	Calcium	98.7		P	80 - 120
2167572	Iron	99.9		P	80 - 120
2167572	Magnesium	100		P	80 - 120
2167572	Potassium	97.4		P	80 - 120
2167572	Sodium	100		P	80 - 120
2167572	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167542	Aluminum	97.4	97.1	P/P	80 - 120
2167542	Arsenic	100	99.5	P/P	80 - 120
2167542	Boron	103	102	P/P	80 - 120
2167542	Cadmium	100	100	P/P	80 - 120
2167542	Chromium	101	98.8	P/P	80 - 120
2167542	Copper	98.3	97.4	P/P	80 - 120
2167542	Lead	95.5	94.8	P/P	80 - 120
2167542	Nickel	93.2	95.9	P/P	80 - 120
2167542	Selenium	96.7	92.3	P/P	80 - 120
2167542	Silver	103	102	P/P	80 - 120
2167542	Thallium	95.0	95.3	P/P	80 - 120
2167572	Aluminum	95.1		P	80 - 120
2167572	Arsenic	99.2		P	80 - 120
2167572	Boron	102		P	80 - 120
2167572	Cadmium	98.0		P	80 - 120
2167572	Chromium	101		P	80 - 120
2167572	Copper	98.3		P	80 - 120
2167572	Lead	94.7		P	80 - 120
2167572	Nickel	94.0		P	80 - 120
2167572	Selenium	94.1		P	80 - 120
2167572	Silver	102		P	80 - 120
2167572	Thallium	93.5		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P382004

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2168340	Antimony	89.1	90.3	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381867

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381867

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167262	Chloride	107		P	90 - 110
2167615	Chloride	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381868

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167778	Chloride	106		P	90 - 110
2167939	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381871

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167262	Sulfate	106		P	90 - 110
2167615	Sulfate	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167778	Sulfate	106		P	90 - 110
2167939	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167622	Ammonia-N	98.6	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381439

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167783	Ammonia-N	99.6	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381703

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167734	Kjeldahl Nitrogen	89.2	102	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381593

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167776	NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381416

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167029	Total-P	104	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167781	Total-P	109	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167777	O-Phosphate-P	100	99.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P381964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167780	Fluoride	96.3	98.4	P/P	91 - 105

Reference Method: SM 5310 B-2011
Batch ID: P381643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167782	Organic Carbon	97.7	97.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P381301

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167731	Turbidity	7.33	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P381302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167856	Turbidity	14.3	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P381354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167542	Barium	2.32	Spike	P	0 - 20
2167542	Calcium	0.522	Spike	P	0 - 20
2167542	Iron	0.873	Spike	P	0 - 20
2167542	Magnesium	0.359	Spike	P	0 - 20
2167542	Potassium	0.605	Spike	P	0 - 20
2167542	Sodium	0.0269	Spike	P	0 - 20
2167542	Zinc	2.48	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167542	Aluminum	0.320	Spike	P	0 - 20
2167542	Arsenic	0.728	Spike	P	0 - 20
2167542	Boron	0.846	Spike	P	0 - 20
2167542	Cadmium	0.00469	Spike	P	0 - 20
2167542	Chromium	2.44	Spike	P	0 - 20
2167542	Copper	0.850	Spike	P	0 - 20
2167542	Lead	0.729	Spike	P	0 - 20
2167542	Nickel	2.85	Spike	P	0 - 20
2167542	Selenium	4.60	Spike	P	0 - 20
2167542	Silver	0.945	Spike	P	0 - 20
2167542	Thallium	0.390	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P382004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2168340	Antimony	1.34	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167262	Chloride	0.529	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381868

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167778	Chloride	1.14	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P381872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167778	Sulfate	1.26	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167622	Ammonia-N	0.120	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167783	Ammonia-N	0.0689	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167734	Kjeldahl Nitrogen	7.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167776	NO2NO3-N	0.506	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167029	Total-P	3.59	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167781	Total-P	0.671	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167777	O-Phosphate-P	0.600	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P381329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167748	Color (true)	4.76	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P381330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167779	Color (true)	2.78	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P381657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2168022	Total Alkalinity	0.761	Sample	P	0 - 3.3

Reference Method: SM 2540 C-2011
Batch ID: P381715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167732	TDS	7.47	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P381964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167780	Fluoride	2.09	Spike	F	0 - 2.0

Reference Method: SM 5310 B-2011
Batch ID: P381643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167782	Organic Carbon	0.349	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: EPA 365.1 Rev. 2.0 dissolved

Run ID: A98436

Included Lab Sample IDs: 2167777, 2167784, 2167785, 2167786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	97.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A98437

Included Lab Sample IDs: 2167775, 2167778, 2167779, 2167780

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

Reference Method: SM 2120 B-2011

Run ID: A98455

Included Lab Sample IDs: 2167775, 2167779, 2167780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	105	P/P	90 - 115
Color (true)	102	102	P/P	90 - 115

Reference Method: SM 2120 B-2011

Run ID: A98457

Included Lab Sample IDs: 2167778

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98491

Included Lab Sample IDs: 2167776

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98492

Included Lab Sample IDs: 2167781, 2167782, 2167783

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98529

Included Lab Sample IDs: 2167791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.8	97.6	P/P	90 - 110
Arsenic	101	102	P/P	90 - 110
Boron	102	103	P/P	90 - 110
Cadmium	99.3	97.9	P/P	90 - 110
Chromium	97.9	97.5	P/P	90 - 110
Copper	97.9	98.9	P/P	90 - 110
Lead	97.2	97.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98529

Included Lab Sample IDs: 2167791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	95.7	96.8	P/P	90 - 110
Silver	103	102	P/P	90 - 110
Thallium	91.2	91.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98546

Included Lab Sample IDs: 2167776, 2167781, 2167782, 2167783

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98560

Included Lab Sample IDs: 2167776, 2167781, 2167782, 2167783

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

Reference Method: SM 5310 B-2011

Run ID: A98574

Included Lab Sample IDs: 2167776, 2167781, 2167782, 2167783

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	97.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A98581

Included Lab Sample IDs: 2167775, 2167778, 2167779, 2167780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.2	98.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98626

Included Lab Sample IDs: 2167791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	102	P/P	90 - 110
Calcium	100	101	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Magnesium	103	102	P/P	90 - 110
Potassium	102	103	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Zinc	102	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98631

Included Lab Sample IDs: 2167791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98631

Included Lab Sample IDs: 2167791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	101	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98641

Included Lab Sample IDs: 2167776, 2167781, 2167782, 2167783

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.1	94.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98675

Included Lab Sample IDs: 2167775, 2167778, 2167779, 2167780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	101	97.6	P/P	90 - 110
Sulfate	103	103	P/P	90 - 110
Sulfate	103	98.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A98715

Included Lab Sample IDs: 2167775, 2167778, 2167779, 2167780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	93.4	95.0	P/P	90 - 110
Fluoride	96.3	93.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98763

Included Lab Sample IDs: 2167791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	92.5	92.4	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					7.33	
	Turbidity					14.3	
EPA 200.7 Rev. 4.4	Barium	102	98.1	100	100		2.32
	Calcium	101	99.7	98.7			0.522
	Iron	103	101	100	99.9		0.873
	Magnesium	102	101	100			0.359
	Potassium	101	98.8	98.1	97.4		0.605
	Sodium	102	98.7	98.7	100		0.0269
	Zinc	103	98.3	101	101		2.48
EPA 200.8 Rev. 5.4	Aluminum	94.8	97.4	97.1	95.1		0.320
	Antimony	92.7	89.1	90.3			1.34
	Arsenic	97.3	100	99.5	99.2		0.728
	Boron	97.7	103	102	102		0.846
	Cadmium	96.4	100	100	98.0		0.0046
	Chromium	96.8	101	98.8	101		2.44
	Copper	96.7	98.3	97.4	98.3		0.850
	Lead	93.8	95.5	94.8	94.7		0.729
	Nickel	102	93.2	95.9	94.0		2.85
	Selenium	93.5	96.7	92.3	94.1		4.60
	Silver	100	103	102	102		0.945
	Thallium	91.2	95.0	95.3	93.5		0.390
EPA 300.0 Rev. 2.1	Chloride	102	107	99.7		0.529	
	Chloride	98.4	106	103		1.14	
	Sulfate	103	106	101			
	Sulfate	103	106	103		1.26	
EPA 350.1 Rev. 2.0	Ammonia-N	99.3	98.6	98.5			0.120
	Ammonia-N	100	99.6	99.5			0.0689
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	89.2	102			7.09
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	99.0	98.5			0.506
EPA 365.1 Rev. 2.0	Total-P	104	104	108			3.59
	Total-P	107	109	108			0.671
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	100	99.7			0.600
SM 2120 B-2011	Color (true)	103				4.76	
	Color (true)	101				2.78	
SM 2320 B-2011	Total Alkalinity	99.7				0.761	
SM 2540 C-2011	TDS					7.47	
SM 4500 F-C-2011	Fluoride	93.4	96.3	98.4			2.09
SM 5310 B-2011	Organic Carbon	97.8	97.7	97.2			0.349

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2167775, 2167778, 2167779, 2167780
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2167791
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2167791
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2167775, 2167778, 2167779, 2167780
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2167775, 2167778, 2167779, 2167780
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2167776, 2167781, 2167782, 2167783
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2167776, 2167781, 2167782, 2167783
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2167776, 2167781, 2167782, 2167783
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2167776, 2167781, 2167782, 2167783

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	2167777, 2167784, 2167785, 2167786
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2167775, 2167778, 2167779, 2167780
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2167775, 2167778, 2167779, 2167780
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2167791
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2167775, 2167778, 2167779, 2167780
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2167775, 2167778, 2167779, 2167780
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2167775, 2167778, 2167779, 2167780
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2167776, 2167781, 2167782, 2167783

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	03/25/2020			03/25/2020 17:03	Yen Ta	2167775, 2167778, 2167779, 2167780
EPA 200.7 Rev. 4.4	03/25/2020	03/26/2020 16:00	Elliott D. Healy	04/03/2020 00:46	Betina Topolski	2167791
EPA 200.8 Rev. 5.4	03/25/2020	03/26/2020 16:00	Elliott D. Healy	03/30/2020 19:43	Justin Cutchin	2167791
	03/25/2020	03/26/2020 16:00	Elliott D. Healy	04/03/2020 05:11	Justin Cutchin	2167791
	03/25/2020	04/10/2020 15:05	Alexander Thompson	04/13/2020 22:41	Alexander Thompson	2167791
EPA 300.0 Rev. 2.1	03/25/2020			04/02/2020 23:08	Elliott Rodriguez	2167775
	03/25/2020			04/03/2020 00:50	Elliott Rodriguez	2167778
	03/25/2020			04/03/2020 01:59	Elliott Rodriguez	2167779
	03/25/2020			04/03/2020 02:16	Elliott Rodriguez	2167780
EPA 350.1 Rev. 2.0	03/25/2020			03/28/2020 15:23	Ping Hua	2167776
	03/25/2020			03/29/2020 10:25	Ping Hua	2167783
	03/25/2020			03/29/2020 10:39	Ping Hua	2167781
	03/25/2020			03/29/2020 10:40	Ping Hua	2167782
EPA 351.2 Rev. 2.0	03/25/2020	04/02/2020 09:25	Sima Feizi	04/03/2020 12:37	Jhamieka S. Greenwood	2167776
	03/25/2020	04/02/2020 09:25	Sima Feizi	04/03/2020 12:38	Jhamieka S. Greenwood	2167781
	03/25/2020	04/02/2020 09:25	Sima Feizi	04/03/2020 12:40	Jhamieka S. Greenwood	2167782
	03/25/2020	04/02/2020 09:25	Sima Feizi	04/03/2020 12:42	Jhamieka S. Greenwood	2167783
EPA 353.2 Rev. 2.0	03/25/2020			03/31/2020 10:12	Beverly Y. Sanders	2167776
	03/25/2020			03/31/2020 10:18	Beverly Y. Sanders	2167781
	03/25/2020			03/31/2020 10:19	Beverly Y. Sanders	2167782
	03/25/2020			03/31/2020 10:21	Beverly Y. Sanders	2167783
EPA 365.1 Rev. 2.0	03/25/2020	03/27/2020 16:50	Yen Ta	03/31/2020 18:49	Benjamin T. Nordmann	2167776
	03/25/2020	03/27/2020 16:50	Yen Ta	03/31/2020 18:59	Benjamin T. Nordmann	2167781
	03/25/2020	03/27/2020 16:50	Yen Ta	03/31/2020 19:00	Benjamin T. Nordmann	2167782
	03/25/2020	03/27/2020 16:50	Yen Ta	03/31/2020 19:01	Benjamin T. Nordmann	2167783
EPA 365.1 Rev. 2.0 dissolved	03/25/2020			03/25/2020 17:55	Julia Storbeck	2167777
	03/25/2020			03/25/2020 17:57	Julia Storbeck	2167784
	03/25/2020			03/25/2020 17:58	Julia Storbeck	2167785
	03/25/2020			03/25/2020 17:59	Julia Storbeck	2167786
SM 2120 B-2011	03/25/2020			03/25/2020 19:18	Madeline Gruver	2167775
	03/25/2020			03/25/2020 19:23	Madeline Gruver	2167779, 2167780
	03/25/2020			03/25/2020 20:18	Madeline Gruver	2167778
SM 2320 B-2011	03/25/2020			04/01/2020 03:54	Dale L. Simmons	2167775
	03/25/2020			04/01/2020 04:02	Dale L. Simmons	2167778
	03/25/2020			04/01/2020 04:08	Dale L. Simmons	2167779
	03/25/2020			04/01/2020 04:15	Dale L. Simmons	2167780
SM 2340B	03/25/2020			04/03/2020 00:46	Betina Topolski	2167791
SM 2540 C-2011	03/25/2020			03/27/2020 15:36	Yijie Li	2167775, 2167778, 2167779, 2167780
SM 2540 D-2011	03/25/2020			03/27/2020 15:32	Yijie Li	2167775, 2167778, 2167779, 2167780
SM 4500 F-C-2011	03/25/2020			04/09/2020 00:11	Samantha Davila	2167780

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-2011	03/25/2020			04/09/2020 01:04	Samantha Davila	2167775
	03/25/2020			04/09/2020 01:09	Samantha Davila	2167778
	03/25/2020			04/09/2020 01:14	Samantha Davila	2167779
SM 5310 B-2011	03/25/2020			03/31/2020 08:20	Madeline Gruver	2167782
	03/25/2020			03/31/2020 09:19	Madeline Gruver	2167783
	03/25/2020			03/31/2020 09:48	Madeline Gruver	2167776
	03/25/2020			03/31/2020 10:03	Madeline Gruver	2167781