

Chemical Analysis Report

WQAP-2018-10-31-01

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

Event Description: **Scott & Bonnet**
Request ID: **RQ-2018-10-29-17**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Tampa, FL 33637
Attn: Judy Ashton

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: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 04-DEC-2018 13:51



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 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: SCOTT LAKE @ SOUTH CENTRAL

Collection Date/Time: 10/30/2018 11:03

Field ID: G2SW0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2037631	EPA 180.1 Rev. 2.0	Turbidity	7.4	A	NTU	P354004	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P354899	MS
		Sulfate	8.2		mg SO4/L	P354902	
	SM 2120 B	Color (true)	13		PCU	P354077	
	SM 2320 B-97	Total Alkalinity	46		mg CaCO3/L	P354355	
	SM 2540 C-97	TDS	107		mg/L	P354573	
	SM 2540 D-97	TSS	13		mg/L	P354496	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P354361	
2037633	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P354388	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P354283	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P354292	
	EPA 365.1 Rev. 2.0	Total-P	0.070		mg P/L	P354159	
	SM 5310 B-00	Organic Carbon	6.7		mg C/L	P354204	
2037635	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P354007	

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Field Blank_10/30/2018

Collection Date/Time: 10/30/2018 11:25

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2037632	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P354004	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P354899	MS
		Sulfate	0.20	U	mg SO4/L	P354902	
	SM 2120 B	Color (true)	2.5	U	PCU	P354077	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P354355	
	SM 2540 C-97	TDS	15	U	mg/L	P354570	
	SM 2540 D-97	TSS	2	U	mg/L	P354493	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P354361	
2037634	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P354388	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P354283	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P354292	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P354159	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P354204	
2037636	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P354007	

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE BONNET NORTH

Collection Date/Time: 10/30/2018 12:05

Field ID: G2SW0057

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2037622	EPA 180.1 Rev. 2.0	Turbidity	27		NTU	P354003	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P354900	
		Sulfate	5.0		mg SO4/L	P354903	
		Color (true)	20		PCU	P354080	
	SM 2320 B-97	Total Alkalinity	44		mg CaCO3/L	P354355	
	SM 2540 C-97	TDS	95		mg/L	P354573	
	SM 2540 D-97	TSS	39		mg/L	P354496	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P354361	
2037625	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P354388	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.9		mg N/L	P354283	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P354292	
	EPA 365.1 Rev. 2.0	Total-P	0.28		mg P/L	P354159	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P354204	
2037628	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P354007	
2037651	EPA 200.7 Rev. 4.4	Calcium	16.1		mg/L	P354082	
		Iron	130		ug/L	P354082	
		Magnesium	2.33		mg/L	P354082	
		Potassium	2.5		mg/L	P354082	
		Sodium	8.1		mg/L	P354082	
		Zinc	6.1	I	ug/L	P354082	
	EPA 200.8 Rev. 5.4	Arsenic	0.74		ug/L	P354082	
		Cadmium	0.020	U	ug/L	P354082	
		Chromium	1.2	I	ug/L	P354982	
		Copper	1.19		ug/L	P354082	
		Lead	2.20		ug/L	P354082	
		Nickel	0.32	I	ug/L	P354082	
		Silver	0.010	U	ug/L	P354982	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 11/19/2018.

Sample Location: LAKE BONNET SW

Collection Date/Time: 10/30/2018 12:25

Field ID: G2SW0058

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2037623	EPA 180.1 Rev. 2.0	Turbidity	27		NTU	P354004	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P354900	
		Sulfate	5.2		mg SO4/L	P354903	
		Color (true)	21		PCU	P354080	
	SM 2320 B-97	Total Alkalinity	44		mg CaCO3/L	P354355	
	SM 2540 C-97	TDS	104		mg/L	P354573	
	SM 2540 D-97	TSS	18		mg/L	P354496	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P354361	
2037626	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P354388	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.9		mg N/L	P354283	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P354292	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P354159	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P354204	
2037629	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P354007	
2037652	EPA 200.7 Rev. 4.4	Calcium	16.2		mg/L	P354082	
		Iron	130		ug/L	P354082	
		Magnesium	2.35		mg/L	P354082	
		Potassium	2.6		mg/L	P354082	
		Sodium	8.0		mg/L	P354082	
		Zinc	5.4	I	ug/L	P354082	
		Arsenic	0.74		ug/L	P354082	
	EPA 200.8 Rev. 5.4	Cadmium	0.020	U	ug/L	P354082	
		Chromium	0.59	I	ug/L	P354982	
		Copper	0.81		ug/L	P354082	
		Lead	2.14		ug/L	P354082	
		Nickel	0.30	I	ug/L	P354082	
		Silver	0.010	U	ug/L	P354982	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 11/19/2018.

Sample Location: LAKE BONNET SE

Collection Date/Time: 10/30/2018 12:15

Field ID: G2SW0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2037624	EPA 180.1 Rev. 2.0	Turbidity	24		NTU	P354004	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P354900	
		Sulfate	5.0		mg SO4/L	P354903	
		Color (true)	21	A	PCU	P354080	
	SM 2320 B-97	Total Alkalinity	44		mg CaCO3/L	P354355	
	SM 2540 C-97	TDS	102		mg/L	P354573	
	SM 2540 D-97	TSS	15		mg/L	P354496	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P354361	
2037627	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P354388	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.7		mg N/L	P354283	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P354292	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P354159	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P354204	
2037630	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P354007	
2037653	EPA 200.7 Rev. 4.4	Calcium	16.1		mg/L	P354082	
		Iron	120		ug/L	P354082	
		Magnesium	2.39		mg/L	P354082	
		Potassium	2.5		mg/L	P354082	
		Sodium	7.9		mg/L	P354082	
		Zinc	5.6	I	ug/L	P354082	
	EPA 200.8 Rev. 5.4	Arsenic	0.72		ug/L	P354082	
		Cadmium	0.020	U	ug/L	P354082	
		Chromium	1.8		ug/L	P354982	
		Copper	0.69	I	ug/L	P354082	
		Lead	2.05		ug/L	P354082	
		Nickel	0.28	I	ug/L	P354082	
		Silver	0.010	U	ug/L	P354982	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 11/19/2018.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P354003

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P354004

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P354082

Component	Result	Code	Units
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: P354082

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P354982

Component	Result	Code	Units
Chromium	0.40	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354899

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354900

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354902

Component	Result	Code	Units
-----------	--------	------	-------

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354902

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354903

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354388

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354283

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354292

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354159

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354007

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

Reference Method: SM 2120 B
Batch ID: P354077

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P354080

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P354355

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

Reference Method: SM 2540 C-97
Batch ID: P354570

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P354573

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P354493

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P354496

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P354361

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P354204

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: P354082

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	102		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	103		P	85 - 115
Sodium	101		P	85 - 115
Zinc	99.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P354082

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	108		P	85 - 115
Cadmium	107		P	85 - 115
Copper	103		P	85 - 115
Lead	105		P	85 - 115
Nickel	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P354982

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	103		P	85 - 115
Silver	98.5		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354899

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354900

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354902

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354903

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
-----------	---------	---------	-----------	----------------

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354388

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: P354283

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354292

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: P354159

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354007

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

Reference Method: SM 2120 B
Batch ID: P354077

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.4		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P354080

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.6		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P354355

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P354361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	91 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P354204

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	91.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P354082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037372	Calcium	100		P	80 - 120
2037372	Iron	97.7		P	80 - 120
2037372	Magnesium	99.1		P	80 - 120
2037372	Potassium	99.6		P	80 - 120
2037372	Sodium	95.7		P	80 - 120
2037372	Zinc	98.3		P	80 - 120
2037593	Calcium	103		P	80 - 120
2037593	Iron	101	101	P/P	80 - 120
2037593	Magnesium	107	106	P/P	80 - 120
2037593	Potassium	104	103	P/P	80 - 120
2037593	Sodium	97.2		P	80 - 120
2037593	Zinc	103	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P354082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037372	Arsenic	107		P	80 - 120
2037372	Cadmium	108		P	80 - 120
2037372	Copper	101		P	80 - 120
2037372	Lead	104		P	80 - 120
2037372	Nickel	100		P	80 - 120
2037593	Arsenic	107	105	P/P	80 - 120
2037593	Cadmium	108	106	P/P	80 - 120
2037593	Copper	103	102	P/P	80 - 120
2037593	Lead	105	104	P/P	80 - 120
2037593	Nickel	102	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P354982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037440	Chromium	103	102	P/P	80 - 120
2037440	Silver	98.9	97.9	P/P	80 - 120
2037637	Chromium	101		P	80 - 120
2037637	Silver	97.1		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037278	Chloride	90.0		P	90 - 110
2037582	Chloride	86.0		F	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354900

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037862	Chloride	101		P	90 - 110
2037914	Chloride	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354902

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037278	Sulfate	95.9		P	90 - 110
2037582	Sulfate	90.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037862	Sulfate	97.0		P	90 - 110
2037914	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037627	Ammonia-N	99.8	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037608	Kjeldahl Nitrogen	97.5	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354292

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037625	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037633	Total-P	99.8	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354007

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037629	O-Phosphate-P	99.4	100	P/P	90 - 110

Reference Method: SM 5310 B-00
Batch ID: P354204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2037456	Organic Carbon	93.9	92.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P354003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037610	Turbidity	2.54	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P354004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037631	Turbidity	6.64	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P354082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037593	Calcium	1.64	Spike	P	0 - 20
2037593	Iron	0.365	Spike	P	0 - 20
2037593	Magnesium	0.178	Spike	P	0 - 20
2037593	Potassium	0.304	Spike	P	0 - 20
2037593	Sodium	1.15	Spike	P	0 - 20
2037593	Zinc	0.318	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P354082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037593	Arsenic	1.18	Spike	P	0 - 20
2037593	Cadmium	1.13	Spike	P	0 - 20
2037593	Copper	1.75	Spike	P	0 - 20
2037593	Lead	1.51	Spike	P	0 - 20
2037593	Nickel	1.07	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P354982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037440	Chromium	0.900	Spike	P	0 - 20
2037440	Silver	0.956	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037278	Chloride	3.44	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037862	Chloride	0.445	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037862	Sulfate	0.128	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037627	Ammonia-N	0.409	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037608	Kjeldahl Nitrogen	5.33	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354292

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037625	NO2NO3-N	0.976	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037633	Total-P	0.792	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037629	O-Phosphate-P	0.702	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P354077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037669	Color (true)	2.23	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P354080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037624	Color (true)	7.01	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P354355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038201	Total Alkalinity	0.633	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P354570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037271	TDS	7.29	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P354573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037607	TDS	0.310	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P354361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038201	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P354204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2037456	Organic Carbon	0.777	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A87427

Included Lab Sample IDs: 2037622, 2037623, 2037624, 2037631, 2037632

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A87428

Included Lab Sample IDs: 2037628, 2037629, 2037630, 2037635, 2037636

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.6	P/P	90 - 110
O-Phosphate-P	99.4	99.6	P/P	90 - 110
O-Phosphate-P	99.6	98.4	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A87462

Included Lab Sample IDs: 2037622, 2037623, 2037624, 2037631, 2037632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	100	P/P	85 - 115
Color (true)	98.4	99.9	P/P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A87509

Included Lab Sample IDs: 2037651, 2037652, 2037653

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	99.7	P/P	90 - 110
Calcium	104	102	P/P	90 - 110
Iron	100	99.2	P/P	90 - 110
Iron	103	100	P/P	90 - 110
Magnesium	101	99.7	P/P	90 - 110
Magnesium	104	101	P/P	90 - 110
Potassium	102	98.7	P/P	90 - 110
Potassium	98.7	97.1	P/P	90 - 110
Sodium	101	95.6	P/P	90 - 110
Sodium	95.6	94.2	P/P	90 - 110
Zinc	102	103	P/P	90 - 110
Zinc	104	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A87523

Included Lab Sample IDs: 2037625, 2037626, 2037627, 2037633, 2037634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.2	93.8	P/P	90 - 110
Organic Carbon	93.8	93.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A87528

Included Lab Sample IDs: 2037625, 2037626, 2037627, 2037633

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A87528

Included Lab Sample IDs: 2037625, 2037626, 2037627, 2037633

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A87544

Included Lab Sample IDs: 2037634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A87560

Included Lab Sample IDs: 2037625, 2037626, 2037627, 2037633, 2037634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A87599

Included Lab Sample IDs: 2037622, 2037623, 2037624, 2037631, 2037632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.8	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A87599

Included Lab Sample IDs: 2037622, 2037623, 2037624, 2037631, 2037632

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A87606

Included Lab Sample IDs: 2037625, 2037626, 2037627, 2037633, 2037634

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A87613

Included Lab Sample IDs: 2037625, 2037626, 2037627, 2037633, 2037634

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	105	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A87809

Included Lab Sample IDs: 2037622, 2037623, 2037624, 2037631, 2037632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A87809

Included Lab Sample IDs: 2037622, 2037623, 2037624, 2037631, 2037632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	104	P/P	90 - 110
Chloride	102	103	P/P	90 - 110
Chloride	103	102	P/P	90 - 110
Chloride	98.0	102	P/P	90 - 110
Sulfate	100	101	P/P	90 - 110
Sulfate	100	102	P/P	90 - 110
Sulfate	101	100	P/P	90 - 110
Sulfate	95.9	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A87854

Included Lab Sample IDs: 2037651, 2037652, 2037653

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	104	103	P/P	90 - 110
Cadmium	104	104	P/P	90 - 110
Copper	102	102	P/P	90 - 110
Lead	104	103	P/P	90 - 110
Nickel	101	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A87944

Included Lab Sample IDs: 2037651, 2037652, 2037653

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	104	105	P/P	90 - 110
Silver	97.7	97.4	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					2.54	
	Turbidity					6.64	
EPA 200.7 Rev. 4.4	Calcium	102	100	103			1.64
	Iron	102	97.7	101	101		0.365
	Magnesium	107	99.1	107	106		0.178
	Potassium	103	99.6	104	103		0.304
	Sodium	101	95.7	97.2			1.15
	Zinc	99.0	98.3	103	102		0.318
EPA 200.8 Rev. 5.4	Arsenic	108	107	107	105		1.18
	Cadmium	107	108	108	106		1.13
	Chromium	103	103	102	101		0.900
	Copper	103	101	103	102		1.75
	Lead	105	104	105	104		1.51
	Nickel	104	100	102	101		1.07
	Silver	98.5	98.9	97.9	97.1		0.956
EPA 300.0 Rev. 2.1	Chloride	104	90.0	86.0		3.44	
	Chloride	103	101	102		0.445	
	Sulfate	101	95.9	90.6			
	Sulfate	99.5	97.0	100		0.128	
EPA 350.1 Rev. 2.0	Ammonia-N	100	99.8	99.3			0.409
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	97.5	108			5.33
EPA 353.2 Rev. 2.0	NO2NO3-N	100	102	103			0.976
EPA 365.1 Rev. 2.0	Total-P	101	99.8	98.9			0.792
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	99.4	100			0.702
SM 2120 B	Color (true)	98.4				2.23	
	Color (true)	97.6				7.01	
SM 2320 B-97	Total Alkalinity	101				0.633	
SM 2540 C-97	TDS					7.29	
	TDS					0.310	
SM 4500 F-C-97	Fluoride	99.8					0.0
SM 5310 B-00	Organic Carbon	91.8	93.9	92.9			0.777

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2037622, 2037623, 2037624, 2037631, 2037632
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2037651, 2037652, 2037653
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2037651, 2037652, 2037653
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2037622, 2037623, 2037624, 2037631, 2037632
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2037622, 2037623, 2037624, 2037631, 2037632
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2037625, 2037626, 2037627, 2037633, 2037634
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2037625, 2037626, 2037627, 2037633, 2037634
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2037625, 2037626, 2037627, 2037633, 2037634
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2037625, 2037626, 2037627, 2037633, 2037634
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2037628, 2037629, 2037630, 2037635, 2037636

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2120 B / E31780	True Color measured at 450 nm	2037622, 2037623, 2037624, 2037631, 2037632
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2037622, 2037623, 2037624, 2037631, 2037632
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2037622, 2037623, 2037624, 2037631, 2037632
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2037622, 2037623, 2037624, 2037631, 2037632
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2037622, 2037623, 2037624, 2037631, 2037632
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2037625, 2037626, 2037627, 2037633, 2037634

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	10/31/2018			10/31/2018 15:58	Megan Treadwell	2037622, 2037623, 2037624, 2037631, 2037632
EPA 200.7 Rev. 4.4	10/31/2018	11/01/2018 17:00	Elliott D. Healy	11/02/2018 16:30	Betina Topolski	2037651
	10/31/2018	11/01/2018 17:00	Elliott D. Healy	11/02/2018 16:36	Betina Topolski	2037652
EPA 200.8 Rev. 5.4	10/31/2018	11/01/2018 17:00	Elliott D. Healy	11/02/2018 17:00	Betina Topolski	2037653
	10/31/2018	11/01/2018 17:00	Elliott D. Healy	11/16/2018 04:05	Allison Taylor	2037651
	10/31/2018	11/01/2018 17:00	Elliott D. Healy	11/16/2018 04:15	Allison Taylor	2037652
	10/31/2018	11/01/2018 17:00	Elliott D. Healy	11/16/2018 04:25	Allison Taylor	2037653
	10/31/2018	11/20/2018 14:40	Elliott D. Healy	11/22/2018 04:00	Allison Taylor	2037651
	10/31/2018	11/20/2018 14:40	Elliott D. Healy	11/22/2018 04:09	Allison Taylor	2037652
	10/31/2018	11/20/2018 14:40	Elliott D. Healy	11/22/2018 04:19	Allison Taylor	2037653
EPA 300.0 Rev. 2.1	10/31/2018			11/16/2018 02:59	Lipi Saha	2037631
	10/31/2018			11/16/2018 04:11	Lipi Saha	2037632
	10/31/2018			11/16/2018 07:00	Lipi Saha	2037622
	10/31/2018			11/16/2018 07:12	Lipi Saha	2037624
	10/31/2018			11/16/2018 07:49	Lipi Saha	2037623
EPA 350.1 Rev. 2.0	10/31/2018			11/07/2018 14:31	Ping Hua	2037625
	10/31/2018			11/07/2018 14:32	Ping Hua	2037626
	10/31/2018			11/07/2018 14:34	Ping Hua	2037627
	10/31/2018			11/07/2018 14:35	Ping Hua	2037633
	10/31/2018			11/07/2018 14:47	Ping Hua	2037634
EPA 351.2 Rev. 2.0	10/31/2018	11/06/2018 12:30	Adrian Shelby	11/07/2018 16:28	Virginia P. Brown	2037625
	10/31/2018	11/06/2018 12:30	Adrian Shelby	11/07/2018 16:29	Virginia P. Brown	2037626
	10/31/2018	11/06/2018 12:30	Adrian Shelby	11/07/2018 16:31	Virginia P. Brown	2037627
	10/31/2018	11/06/2018 12:30	Adrian Shelby	11/07/2018 16:32	Virginia P. Brown	2037633
	10/31/2018	11/06/2018 12:30	Adrian Shelby	11/07/2018 16:34	Virginia P. Brown	2037634
EPA 353.2 Rev. 2.0	10/31/2018			11/06/2018 11:14	Lauren Bottorf	2037625
	10/31/2018			11/06/2018 11:20	Lauren Bottorf	2037634
	10/31/2018			11/06/2018 11:21	Lauren Bottorf	2037626
	10/31/2018			11/06/2018 11:22	Lauren Bottorf	2037627
	10/31/2018			11/06/2018 11:23	Lauren Bottorf	2037633
EPA 365.1 Rev. 2.0	10/31/2018	11/02/2018 12:40	Sima Feizi	11/05/2018 12:04	Beverly Y. Sanders	2037633
	10/31/2018	11/02/2018 12:40	Sima Feizi	11/05/2018 12:10	Beverly Y. Sanders	2037625
	10/31/2018	11/02/2018 12:40	Sima Feizi	11/05/2018 12:11	Beverly Y. Sanders	2037626
	10/31/2018	11/02/2018 12:40	Sima Feizi	11/05/2018 12:12	Beverly Y. Sanders	2037627
	10/31/2018	11/02/2018 12:40	Sima Feizi	11/05/2018 15:25	Beverly Y. Sanders	2037634
EPA 365.1 Rev. 2.0 dissolved	10/31/2018			10/31/2018 15:30	Julia Storbeck	2037629
	10/31/2018			10/31/2018 15:54	Julia Storbeck	2037636
	10/31/2018			10/31/2018 16:09	Julia Storbeck	2037628
	10/31/2018			10/31/2018 16:10	Julia Storbeck	2037630

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0 dissolved SM 2120 B	10/31/2018			10/31/2018 16:11	Julia Storbeck	2037635
	10/31/2018			10/31/2018 15:18	Chelsea Hernandez	2037631
	10/31/2018			10/31/2018 15:19	Chelsea Hernandez	2037632
	10/31/2018			10/31/2018 15:53	Chelsea Hernandez	2037622, 2037623
	10/31/2018			10/31/2018 15:55	Chelsea Hernandez	2037624
SM 2320 B-97	10/31/2018			11/06/2018 21:47	Dale L. Simmons	2037622
	10/31/2018			11/06/2018 21:58	Dale L. Simmons	2037623
	10/31/2018			11/06/2018 22:10	Dale L. Simmons	2037624
	10/31/2018			11/06/2018 22:20	Dale L. Simmons	2037631
	10/31/2018			11/06/2018 22:33	Dale L. Simmons	2037632
SM 2540 C-97	10/31/2018			11/02/2018 16:03	Yijie Li	2037622, 2037623, 2037624, 2037631, 2037632
SM 2540 D-97	10/31/2018			11/02/2018 16:03	Yijie Li	2037622, 2037623, 2037624, 2037631, 2037632
SM 4500 F-C-97	10/31/2018			11/06/2018 21:47	Dale L. Simmons	2037622
	10/31/2018			11/06/2018 21:58	Dale L. Simmons	2037623
	10/31/2018			11/06/2018 22:10	Dale L. Simmons	2037624
	10/31/2018			11/06/2018 22:20	Dale L. Simmons	2037631
	10/31/2018			11/06/2018 22:33	Dale L. Simmons	2037632
SM 5310 B-00	10/31/2018			11/03/2018 06:30	Megan Treadwell	2037625
	10/31/2018			11/03/2018 06:44	Megan Treadwell	2037626
	10/31/2018			11/03/2018 06:57	Megan Treadwell	2037627
	10/31/2018			11/03/2018 07:37	Megan Treadwell	2037633
	10/31/2018			11/03/2018 07:50	Megan Treadwell	2037634