

Chemical Analysis Report

SE-DIST-2019-03-26-01

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

Event Description: **SMP-Kevin Run**
Request ID: **RQ-2019-03-18-45**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 12-APR-2019 10:59



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: L-62 upstream of S-154C

Collection Date/Time: 03/25/2019 11:25

Field ID: G1SE0028

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072346	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P361083	
	EPA 300.0 Rev. 2.1	Chloride	320		mg Cl/L	P361400	
		Sulfate	130		mg SO4/L	P361402	
	SM 2120 B	Color (true)	130		PCU	P361077	
	SM 2320 B-97	Total Alkalinity	54		mg CaCO3/L	P361715	
	SM 2540 C-97	TDS	760		mg/L	P361412	
	SM 2540 D-97	TSS	7	I	mg/L	P361416	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P361654	
2072353	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P361377	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P361150	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P361131	
	EPA 365.1 Rev. 2.0	Total-P	0.083		mg P/L	P361265	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P361173	
2072360	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.020		mg P/L	P361087	

Ref. Method and Comment:

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

Sample Location: L-62 upstream of S-154C

Collection Date/Time: 03/25/2019 11:30

Field ID: G1SE0028_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072347	EPA 180.1 Rev. 2.0	Turbidity	5.7		NTU	P361083	
	EPA 300.0 Rev. 2.1	Chloride	320		mg Cl/L	P361400	
		Sulfate	130		mg SO4/L	P361402	
	SM 2120 B	Color (true)	130		PCU	P361077	
	SM 2320 B-97	Total Alkalinity	54		mg CaCO3/L	P361715	
	SM 2540 C-97	TDS	722		mg/L	P361412	
	SM 2540 D-97	TSS	6	I	mg/L	P361416	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P361654	
2072354	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P361377	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P361159	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P361131	
	EPA 365.1 Rev. 2.0	Total-P	0.082		mg P/L	P361265	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P361173	
2072361	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.020		mg P/L	P361087	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: L-63 canal @ SE 86th Blvd

Collection Date/Time: 03/25/2019 12:30

Field ID: G1SE0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072348	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P361083	
	EPA 300.0 Rev. 2.1	Chloride	120		mg Cl/L	P361400	
		Sulfate	33		mg SO4/L	P361402	
	SM 2120 B	Color (true)	210		PCU	P361077	
	SM 2320 B-97	Total Alkalinity	79		mg CaCO3/L	P361715	
	SM 2540 C-97	TDS	390		mg/L	P361412	
	SM 2540 D-97	TSS	2	I	mg/L	P361416	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P361654	
2072355	EPA 350.1 Rev. 2.0	Ammonia-N	0.088		mg N/L	P361377	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P361159	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P361131	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P361265	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P361173	
2072362	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P361087	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: L-63 canal @ SE 86th Blvd

Collection Date/Time: 03/25/2019 12:40

Field ID: FB_03252019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072367	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P361083	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P361400	
		Sulfate	0.20	U	mg SO4/L	P361402	
	SM 2120 B	Color (true)	2.5	U	PCU	P361078	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P361651	
	SM 2540 C-97	TDS	15	U	mg/L	P361411	
	SM 2540 D-97	TSS	2	U	mg/L	P361415	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361655	
2072368	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P361376	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P361159	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P361287	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P361265	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P361173	
2072369	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P361089	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: L-63N canal @ SR 70

Collection Date/Time: 03/25/2019 13:40

Field ID: G1SE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072349	EPA 180.1 Rev. 2.0	Turbidity	5.5	A	NTU	P361085	
	EPA 300.0 Rev. 2.1	Chloride	99		mg Cl/L	P361400	
		Sulfate	59		mg SO4/L	P361402	
	SM 2120 B	Color (true)	83		PCU	P361077	
	SM 2320 B-97	Total Alkalinity	125		mg CaCO3/L	P361715	
	SM 2540 C-97	TDS	418		mg/L	P361412	
	SM 2540 D-97	TSS	8	I	mg/L	P361416	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P361654	
2072356	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P361377	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P361159	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P361131	
	EPA 365.1 Rev. 2.0	Total-P	0.35		mg P/L	P361265	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P361173	
2072363	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.25		mg P/L	P361087	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: L-63 @ SE 59th Blvd

Collection Date/Time: 03/25/2019 14:05

Field ID: G1SE0029

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072350	EPA 180.1 Rev. 2.0	Turbidity	5.1	A	NTU	P361083	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P361400	
		Sulfate	68		mg SO4/L	P361402	
	SM 2120 B	Color (true)	110		PCU	P361077	
	SM 2320 B-97	Total Alkalinity	103		mg CaCO3/L	P361715	
	SM 2540 C-97	TDS	434	A	mg/L	P361412	
	SM 2540 D-97	TSS	7	IA	mg/L	P361416	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P361654	
2072357	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P361376	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P361159	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P361131	
	EPA 365.1 Rev. 2.0	Total-P	0.32		mg P/L	P361265	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P361173	
2072364	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P361087	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Taylor Creek @ 39th St

Collection Date/Time: 03/25/2019 14:45

Field ID: G1SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072351	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P361083	
	EPA 300.0 Rev. 2.1	Chloride	100		mg Cl/L	P361400	
		Sulfate	54		mg SO4/L	P361402	
	SM 2120 B	Color (true)	73		PCU	P361077	
	SM 2320 B-97	Total Alkalinity	172		mg CaCO3/L	P361715	
	SM 2540 C-97	TDS	462	A	mg/L	P361413	
	SM 2540 D-97	TSS	6	IA	mg/L	P361417	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P361654	
2072358	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P361376	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P361159	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P361131	
	EPA 365.1 Rev. 2.0	Total-P	0.29		mg P/L	P361265	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P361173	
2072365	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P361087	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Taylor Creek @ 70

Collection Date/Time: 03/25/2019 15:15

Field ID: G1SE0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072352	EPA 180.1 Rev. 2.0	Turbidity	6.2		NTU	P361083	
	EPA 300.0 Rev. 2.1	Chloride	54		mg Cl/L	P361400	
		Sulfate	30		mg SO4/L	P361402	
	SM 2120 B	Color (true)	77		PCU	P361077	
	SM 2320 B-97	Total Alkalinity	161		mg CaCO3/L	P361715	
	SM 2540 C-97	TDS	336		mg/L	P361413	
	SM 2540 D-97	TSS	14		mg/L	P361417	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P361654	
2072359	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P361376	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P361159	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.42		mg N/L	P361131	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P361265	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P361173	
2072366	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.057		mg P/L	P361087	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361083

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361085

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361400

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361402

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361376

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361377

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361150

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361159

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361131

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361287

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361265

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361087

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361089

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

Reference Method: SM 2120 B
Batch ID: P361077

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P361078

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P361651

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

Reference Method: SM 2320 B-97
Batch ID: P361715

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

Reference Method: SM 2540 C-97
Batch ID: P361411

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P361412

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P361413

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361415

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361416

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361417

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P361654

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P361655

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P361173

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361400

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361402

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361376

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361377

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: P361150

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361159

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361131

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361287

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: P361265

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361087

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361089

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.7		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P361077

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

Reference Method: SM 2120 B
Batch ID: P361078

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

Reference Method: SM 2320 B-97
Batch ID: P361651

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P361715

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P361654

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P361655

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072330	Chloride	101		P	90 - 110
2072401	Chloride	96.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072330	Sulfate	104		P	90 - 110
2072401	Sulfate	99.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361376

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072402	Ammonia-N	96.9	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072179	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072178	Kjeldahl Nitrogen	105	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072332	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361287

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072430	NO2NO3-N	98.2	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072353	Total-P	94.6	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072337	O-Phosphate-P	98.7	99.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361089

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072403	O-Phosphate-P	96.2	97.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P361654

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072792	Fluoride	99.6	100	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P361655

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072446	Fluoride	99.5	99.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072332	Organic Carbon	97.7	98.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361083

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072350	Turbidity	1.36	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072349	Turbidity	2.53	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072401	Chloride	0.945	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072401	Sulfate	1.06	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361376

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072402	Ammonia-N	3.81	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072179	Ammonia-N	0.329	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072178	Kjeldahl Nitrogen	1.64	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072357	Kjeldahl Nitrogen	2.85	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072332	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361287

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072430	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072353	Total-P	1.42	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072337	O-Phosphate-P	0.807	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072403	O-Phosphate-P	1.25	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P361077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072330	Color (true)	1.52	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P361078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072401	Color (true)	0.128	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P361651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072446	Total Alkalinity	0.791	Sample	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P361715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072792	Total Alkalinity	0.487	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P361411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072024	TDS	6.06	Sample	P	0 - 10

Reference Method: SM 2540 C-97
 Batch ID: P361412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072350	TDS	5.53	Sample	P	0 - 10

Reference Method: SM 2540 C-97
 Batch ID: P361413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072351	TDS	4.98	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P361654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072792	Fluoride	0.467	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
 Batch ID: P361655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072446	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P361173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072332	Organic Carbon	0.587	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: SM 2120 B

Run ID: A90241

Included Lab Sample IDs: 2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 115
Color (true)	98.2	99.0	P/P	90 - 115
Color (true)	99.0	100	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90242

Included Lab Sample IDs: 2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90243

Included Lab Sample IDs: 2072360, 2072361, 2072362, 2072363, 2072364, 2072365, 2072366, 2072369

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.2	99.1	P/P	90 - 110
O-Phosphate-P	99.4	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90262

Included Lab Sample IDs: 2072353, 2072354, 2072355, 2072356, 2072357, 2072358, 2072359

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

Reference Method: SM 5310 B-00

Run ID: A90286

Included Lab Sample IDs: 2072353, 2072354, 2072355, 2072356, 2072357, 2072358, 2072359, 2072368

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.6	P/P	90 - 110
Organic Carbon	97.6	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90306

Included Lab Sample IDs: 2072353

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90310

Included Lab Sample IDs: 2072354, 2072355, 2072356, 2072357, 2072358, 2072359, 2072368

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.3	99.6	P/P	90 - 110
Kjeldahl Nitrogen	99.6	96.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90326

Included Lab Sample IDs: 2072368

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90346

Included Lab Sample IDs: 2072353, 2072354, 2072355, 2072356, 2072357, 2072358, 2072359

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90350

Included Lab Sample IDs: 2072368

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90355

Included Lab Sample IDs: 2072353, 2072354, 2072355, 2072356, 2072357, 2072358, 2072359, 2072368

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	100	P/P	90 - 110
Ammonia-N	102	102	P/P	90 - 110
Ammonia-N	102	102	P/P	90 - 110
Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90374

Included Lab Sample IDs: 2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367

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

Reference Method: SM 2320 B-97

Run ID: A90475

Included Lab Sample IDs: 2072367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90475

Included Lab Sample IDs: 2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.1	P/P	90 - 110
Fluoride	99.1	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A90507

Included Lab Sample IDs: 2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.0	100	P/P	90 - 110
Total Alkalinity	99.4	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		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					1.36	
	Turbidity					2.53	
EPA 300.0 Rev. 2.1	Chloride	102	96.7	101		0.945	
	Sulfate	103	99.2	104		1.06	
EPA 350.1 Rev. 2.0	Ammonia-N	100	96.9	103			3.81
	Ammonia-N	101	103	102			0.329
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	105	103			1.64
	Kjeldahl Nitrogen	102					2.85
EPA 353.2 Rev. 2.0	NO2NO3-N	101	103	103			0.0
	NO2NO3-N	99.0	98.2	97.7			0.499
EPA 365.1 Rev. 2.0	Total-P	99.8	94.6	96.3			1.42
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	98.7	99.5			0.807
	O-Phosphate-P	98.7	96.2	97.8			1.25
SM 2120 B	Color (true)	100				1.52	
	Color (true)	101				0.128	
SM 2320 B-97	Total Alkalinity	99.1				0.791	
	Total Alkalinity	99.9				0.487	
SM 2540 C-97	TDS					6.06	
	TDS					5.53	
	TDS					4.98	
SM 4500 F-C-97	Fluoride	98.3	99.6	100			0.467
	Fluoride	99.3	99.5	99.5			0.0
SM 5310 B-00	Organic Carbon	98.8	97.7	98.4			0.587

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2072353, 2072354, 2072355, 2072356, 2072357, 2072358, 2072359, 2072368
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2072353, 2072354, 2072355, 2072356, 2072357, 2072358, 2072359, 2072368
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2072353, 2072354, 2072355, 2072356, 2072357, 2072358, 2072359, 2072368
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2072353, 2072354, 2072355, 2072356, 2072357, 2072358, 2072359, 2072368
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2072360, 2072361, 2072362, 2072363, 2072364, 2072365, 2072366, 2072369
SM 2120 B / E31780	True Color measured at 450 nm	2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2072353, 2072354, 2072355, 2072356, 2072357, 2072358, 2072359, 2072368

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	03/26/2019			03/26/2019 16:32	Adrian Shelby	2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367
EPA 300.0 Rev. 2.1	03/26/2019			03/29/2019 04:58	Lipi Saha	2072346
	03/26/2019			03/29/2019 05:10	Lipi Saha	2072347
	03/26/2019			03/29/2019 05:22	Lipi Saha	2072348
	03/26/2019			03/29/2019 05:58	Lipi Saha	2072349
	03/26/2019			03/29/2019 06:10	Lipi Saha	2072350
	03/26/2019			03/29/2019 06:22	Lipi Saha	2072351
	03/26/2019			03/29/2019 06:34	Lipi Saha	2072352
	03/26/2019			03/29/2019 06:46	Lipi Saha	2072367
EPA 350.1 Rev. 2.0	03/26/2019			03/29/2019 11:12	Ping Hua	2072357
	03/26/2019			03/29/2019 11:14	Ping Hua	2072358
	03/26/2019			03/29/2019 11:21	Ping Hua	2072359
	03/26/2019			03/29/2019 11:30	Ping Hua	2072368
	03/26/2019			03/29/2019 11:53	Ping Hua	2072353
	03/26/2019			03/29/2019 12:00	Ping Hua	2072354
	03/26/2019			03/29/2019 12:02	Ping Hua	2072355
	03/26/2019			03/29/2019 12:03	Ping Hua	2072356
EPA 351.2 Rev. 2.0	03/26/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/28/2019 15:03	Joseph Suarez	2072353
	03/26/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/29/2019 08:59	Joseph Suarez	2072354
	03/26/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/29/2019 09:01	Joseph Suarez	2072355
	03/26/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/29/2019 09:02	Joseph Suarez	2072356
	03/26/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/29/2019 09:04	Joseph Suarez	2072357
	03/26/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/29/2019 09:11	Joseph Suarez	2072358
	03/26/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/29/2019 09:13	Joseph Suarez	2072359
	03/26/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/29/2019 09:15	Joseph Suarez	2072368
EPA 353.2 Rev. 2.0	03/26/2019			03/27/2019 08:32	Beverly Y. Sanders	2072353
	03/26/2019			03/27/2019 08:34	Beverly Y. Sanders	2072354
	03/26/2019			03/27/2019 08:35	Beverly Y. Sanders	2072355
	03/26/2019			03/27/2019 08:36	Beverly Y. Sanders	2072356
	03/26/2019			03/27/2019 08:37	Beverly Y. Sanders	2072357
	03/26/2019			03/27/2019 08:38	Beverly Y. Sanders	2072358
	03/26/2019			03/27/2019 08:39	Beverly Y. Sanders	2072359
	03/26/2019			03/29/2019 11:04	Virginia P. Brown	2072368
EPA 365.1 Rev. 2.0	03/26/2019	03/29/2019 12:25	Adrian Shelby	03/29/2019 18:03	Rosalyn Ballman	2072353
	03/26/2019	03/29/2019 12:25	Adrian Shelby	03/29/2019 18:06	Rosalyn Ballman	2072354
	03/26/2019	03/29/2019 12:25	Adrian Shelby	03/29/2019 18:07	Rosalyn Ballman	2072355
	03/26/2019	03/29/2019 12:25	Adrian Shelby	03/29/2019 18:08	Rosalyn Ballman	2072356
	03/26/2019	03/29/2019 12:25	Adrian Shelby	03/29/2019 18:09	Rosalyn Ballman	2072357
	03/26/2019	03/29/2019 12:25	Adrian Shelby	03/29/2019 18:10	Rosalyn Ballman	2072358

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	03/26/2019	03/29/2019 12:25	Adrian Shelby	03/29/2019 18:12	Rosalyn Ballman	2072359
	03/26/2019	03/29/2019 12:25	Adrian Shelby	04/01/2019 16:15	Rosalyn Ballman	2072368
EPA 365.1 Rev. 2.0 dissolved	03/26/2019			03/26/2019 15:50	Jhamieka S. Greenwood	2072369
	03/26/2019			03/26/2019 15:52	Jhamieka S. Greenwood	2072362
	03/26/2019			03/26/2019 15:53	Jhamieka S. Greenwood	2072363, 2072364
	03/26/2019			03/26/2019 15:54	Jhamieka S. Greenwood	2072365
	03/26/2019			03/26/2019 16:03	Jhamieka S. Greenwood	2072360
	03/26/2019			03/26/2019 16:04	Jhamieka S. Greenwood	2072361, 2072366
SM 2120 B	03/26/2019			03/26/2019 15:53	Mariam Hanna	2072346
	03/26/2019			03/26/2019 15:54	Mariam Hanna	2072347
	03/26/2019			03/26/2019 15:55	Mariam Hanna	2072349
	03/26/2019			03/26/2019 15:56	Mariam Hanna	2072350
	03/26/2019			03/26/2019 15:57	Mariam Hanna	2072351
	03/26/2019			03/26/2019 15:58	Mariam Hanna	2072352
	03/26/2019			03/26/2019 16:01	Mariam Hanna	2072367
	03/26/2019			03/26/2019 16:28	Mariam Hanna	2072348
SM 2320 B-97	03/26/2019			04/04/2019 07:43	Dale L. Simmons	2072367
	03/26/2019			04/05/2019 17:39	Dale L. Simmons	2072348
	03/26/2019			04/05/2019 17:50	Dale L. Simmons	2072349
	03/26/2019			04/05/2019 18:01	Dale L. Simmons	2072350
	03/26/2019			04/05/2019 18:57	Dale L. Simmons	2072351
	03/26/2019			04/05/2019 19:08	Dale L. Simmons	2072352
	03/26/2019			04/05/2019 20:28	Dale L. Simmons	2072346
	03/26/2019			04/05/2019 20:39	Dale L. Simmons	2072347
SM 2540 C-97	03/26/2019			03/27/2019 14:03	Yijie Li	2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367
SM 2540 D-97	03/26/2019			03/27/2019 14:03	Yijie Li	2072346, 2072347, 2072348, 2072349, 2072350, 2072351, 2072352, 2072367
SM 4500 F-C-97	03/26/2019			04/04/2019 04:15	Dale L. Simmons	2072348
	03/26/2019			04/04/2019 04:29	Dale L. Simmons	2072349
	03/26/2019			04/04/2019 04:42	Dale L. Simmons	2072350
	03/26/2019			04/04/2019 04:55	Dale L. Simmons	2072346
	03/26/2019			04/04/2019 05:52	Dale L. Simmons	2072347
	03/26/2019			04/04/2019 06:05	Dale L. Simmons	2072351
	03/26/2019			04/04/2019 06:18	Dale L. Simmons	2072352
	03/26/2019			04/04/2019 07:43	Dale L. Simmons	2072367
SM 5310 B-00	03/26/2019			03/27/2019 16:21	Julia Storbeck	2072358
	03/26/2019			03/27/2019 17:36	Julia Storbeck	2072353
	03/26/2019			03/27/2019 17:48	Julia Storbeck	2072354
	03/26/2019			03/27/2019 18:00	Julia Storbeck	2072355

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	03/26/2019			03/27/2019 18:12	Julia Storbeck	2072356
	03/26/2019			03/27/2019 18:24	Julia Storbeck	2072357
	03/26/2019			03/27/2019 18:49	Julia Storbeck	2072359
	03/26/2019			03/27/2019 19:01	Julia Storbeck	2072368