Chemical Analysis Report

SE-DIST-2019-04-23-01

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-2019-04-22-21**
Customer: **SE-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 13-MAY-2019 13:59

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: Taylor Creek @ 39th St. **Collection Date/Time: 04/22/2019 10:00**

Field ID: G1SE0024 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080028	EPA 180.1 Rev. 2.0	Turbidity	7.7		NTU	P362738	
	EPA 300.0 Rev. 2.1	Chloride	84		mg Cl/L	P362962	
		Sulfate	80		mg SO4/L	P362966	
	SM 2120 B	Color (true)	48		PCU	P362700	
	SM 2320 B-97	Total Alkalinity	144		mg CaCO3/L	P363242	
	SM 2540 C-97	TDS	432		mg/L	P363102	
	SM 2540 D-97	TSS	10		mg/L	P363051	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P363249	
2080036	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P363030	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.97		mg N/L	P362989	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P362980	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P362792	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P362920	
2080044	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.17		mg P/L	P362732	

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

Sample Location: Popash Slough @ 67th Dr. **Collection Date/Time: 04/22/2019 10:30**

Field ID: G1SE0027 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080029	EPA 180.1 Rev. 2.0	Turbidity	14	A	NTU	P362738	
	EPA 300.0 Rev. 2.1	Chloride	490		mg Cl/L	P362962	
		Sulfate	120		mg SO4/L	P362966	
	SM 2120 B	Color (true)	100		PCU	P362700	
	SM 2320 B-97	Total Alkalinity	58		mg CaCO3/L	P363242	
	SM 2540 C-97	TDS	1.11E+03		mg/L	P363103	
	SM 2540 D-97	TSS	23		mg/L	P363052	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P363249	
2080037	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P363030	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P362989	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362980	
	EPA 365.1 Rev. 2.0	Total-P	0.34		mg P/L	P362792	
	SM 5310 B-00	Organic Carbon	25		mg C/L	P362921	
2080045	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P362732	

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

Sample Location: L-62 upstream of S-154C **Collection Date/Time: 04/22/2019 11:15**

Field ID: G1SE0028 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080030	EPA 180.1 Rev. 2.0	Turbidity	6.7		NTU	P362738	
	EPA 300.0 Rev. 2.1	Chloride	430		mg Cl/L	P362962	
		Sulfate	130		mg SO4/L	P362966	
	SM 2120 B	Color (true)	120		PCU	P362700	
	SM 2320 B-97	Total Alkalinity	55		mg CaCO3/L	P363242	
	SM 2540 C-97	TDS	1.00E+03		mg/L	P363103	
	SM 2540 D-97	TSS	9	I	mg/L	P363052	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P363249	
2080038	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P363030	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P362989	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362981	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P362793	
	SM 5310 B-00	Organic Carbon	25		mg C/L	P362921	
2080046	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.01	I	mg P/L	P362732	

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

Sample Location: Lemkin Creek @ 78 **Collection Date/Time: 04/22/2019 12:00**

Field ID: G1SE0026 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080031	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P362738	
	EPA 300.0 Rev. 2.1	Chloride	230		mg Cl/L	P362962	
		Sulfate	120		mg SO4/L	P362966	
	SM 2120 B	Color (true)	71	A	PCU	P362701	
	SM 2320 B-97	Total Alkalinity	157		mg CaCO3/L	P363242	
	SM 2540 C-97	TDS	776		mg/L	P363103	
	SM 2540 D-97	TSS	8	I	mg/L	P363052	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P363249	
2080039	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P363030	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.1		mg N/L	P362989	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362981	
	EPA 365.1 Rev. 2.0	Total-P	0.074		mg P/L	P362793	
	SM 5310 B-00	Organic Carbon	29		mg C/L	P362921	
2080047	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362732	

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

Sample Location: Taylor Creek @ 98 **Collection Date/Time: 04/22/2019 12:30**

Field ID: G1SE0025 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080032	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P362738	
	EPA 300.0 Rev. 2.1	Chloride	74		mg Cl/L	P362962	
		Sulfate	37		mg SO4/L	P362966	
	SM 2120 B	Color (true)	69		PCU	P362701	
	SM 2320 B-97	Total Alkalinity	183		mg CaCO3/L	P363242	
	SM 2540 C-97	TDS	457		mg/L	P363103	
	SM 2540 D-97	TSS	25		mg/L	P363052	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P363249	
2080040	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P363030	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P362989	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362981	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P362793	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P362921	
2080048	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.027		mg P/L	P362732	

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 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: 04/22/2019 13:40**

Field ID: G1SE0023 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080033	EPA 180.1 Rev. 2.0	Turbidity	7.2		NTU	P362738	
	EPA 300.0 Rev. 2.1	Chloride	90		mg Cl/L	P362962	
		Sulfate	50		mg SO4/L	P362966	
	SM 2120 B	Color (true)	71		PCU	P362701	
	SM 2320 B-97	Total Alkalinity	145		mg CaCO3/L	P363242	
	SM 2540 C-97	TDS	411		mg/L	P363103	
	SM 2540 D-97	TSS	10	I	mg/L	P363052	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P363249	
2080041	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P363030	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P362989	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362981	
	EPA 365.1 Rev. 2.0	Total-P	0.35		mg P/L	P362793	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P362921	
2080049	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.24		mg P/L	P362732	

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 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: 04/22/2019 14:10**

Field ID: G1SE0029 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080034	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P362738	
	EPA 300.0 Rev. 2.1	Chloride	100		mg Cl/L	P362962	
		Sulfate	53		mg SO4/L	P362966	
	SM 2120 B	Color (true)	90		PCU	P362701	
	SM 2320 B-97	Total Alkalinity	117		mg CaCO3/L	P363244	
	SM 2540 C-97	TDS	414		mg/L	P363103	
	SM 2540 D-97	TSS	7	I	mg/L	P363052	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P363250	
2080042	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P363030	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P362989	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362981	
	EPA 365.1 Rev. 2.0	Total-P	0.31		mg P/L	P362793	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P362921	
2080050	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P362732	

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: 04/22/2019 14:30**

Field ID: G1SE0022 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080035	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P362738	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P362962	
		Sulfate	30		mg SO4/L	P362966	
	SM 2120 B	Color (true)	190		PCU	P362701	
	SM 2320 B-97	Total Alkalinity	81		mg CaCO3/L	P363244	
	SM 2540 C-97	TDS	378	A	mg/L	P363103	
	SM 2540 D-97	TSS	3	IA	mg/L	P363052	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P363250	
2080043	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P363030	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P363095	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.048		mg N/L	P362981	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P362793	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P362921	
2080051	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.093		mg P/L	P362735	

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362738

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362962

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362966

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363030

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362989

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363095

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362980

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362981

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362792

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
Batch ID: P362793

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362732

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362735

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

Reference Method: SM 2120 B
Batch ID: P362700

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P362701

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P363242

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

Reference Method: SM 2320 B-97
Batch ID: P363244

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

Reference Method: SM 2540 C-97
Batch ID: P363102

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P363103

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P363051

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363052

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P363249

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P363250

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362920

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

Reference Method: SM 5310 B-00
Batch ID: P362921

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: P362962

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362966

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363030

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: P362989

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363095

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: P362980

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362981

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362792

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362793

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362732

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362735

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

Reference Method: SM 2120 B
Batch ID: P362700

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

Reference Method: SM 2120 B
Batch ID: P362701

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

Reference Method: SM 2320 B-97
Batch ID: P363242

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P363244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363249

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P363250

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P362920

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	90.8		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P362921

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079904	Chloride	100		P	90 - 110
2080052	Chloride	98.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362966

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079904	Sulfate	103		P	90 - 110
2080052	Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363030

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080017	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363095

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080016	Kjeldahl Nitrogen	99.9	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079907	NO2NO3-N	98.1	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362981

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080038	NO2NO3-N	96.0	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362792

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079906	Total-P	106	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080055	Total-P	95.8	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362732

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079932	O-Phosphate-P	97.1	98.0	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080057	O-Phosphate-P	97.2	98.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P363250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080052	Fluoride	98.9	98.9	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P362920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079856	Organic Carbon	88.8	87.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P362921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080055	Organic Carbon	102	103	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080029	Turbidity	2.21	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080052	Chloride	0.0676	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362966

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080052	Sulfate	0.544	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363030

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080017	Ammonia-N	0.387	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080040	Kjeldahl Nitrogen	1.33	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363095

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080016	Kjeldahl Nitrogen	0.102	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079907	NO2NO3-N	0.849	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080038	NO2NO3-N	1.04	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079906	Total-P	8.44	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080055	Total-P	3.80	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079932	O-Phosphate-P	0.750	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080057	O-Phosphate-P	1.13	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P362700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079929	Color (true)	3.10	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P362701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080031	Color (true)	2.75	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P363242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080172	Total Alkalinity	0.187	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P363244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080052	Total Alkalinity	0.476	Sample	P	0 - 2.8

Quality Assurance Report
Precision

Reference Method: SM 2540 C-97
Batch ID: P363102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079855	TDS	0.962	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P363103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080035	TDS	3.43	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P363249

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080172	Fluoride	0.507	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P363250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080052	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P362920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079856	Organic Carbon	0.899	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P362921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080055	Organic Carbon	0.164	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: A90941
Included Lab Sample IDs: 2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	104	P/P	90 - 115
Color (true)	103	102	P/P	90 - 115
Color (true)	105	105	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A90950
Included Lab Sample IDs: 2080044, 2080045, 2080046, 2080047, 2080048, 2080049, 2080050, 2080051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	98.7	P/P	90 - 110
O-Phosphate-P	98.5	97.7	P/P	90 - 110
O-Phosphate-P	98.7	98.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A90951
Included Lab Sample IDs: 2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035

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

Reference Method: SM 5310 B-00
Run ID: A91030
Included Lab Sample IDs: 2080036

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	91.8	90.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A91034
Included Lab Sample IDs: 2080036, 2080037, 2080038, 2080039, 2080040, 2080041, 2080042, 2080043

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	90 - 110
Total-P	102	104	P/P	90 - 110
Total-P	104	103	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A91035
Included Lab Sample IDs: 2080037, 2080038, 2080039, 2080040, 2080041, 2080042, 2080043

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	102	P/P	90 - 110
Organic Carbon	99.7	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A91039
Included Lab Sample IDs: 2080036, 2080037, 2080038, 2080039, 2080040, 2080041, 2080042, 2080043

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	98.5	P/P	90 - 110
NO2NO3-N	98.5	98.5	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A91050
Included Lab Sample IDs: 2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A91070
Included Lab Sample IDs: 2080036, 2080037, 2080038, 2080039, 2080040, 2080041, 2080042, 2080043

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A91098
Included Lab Sample IDs: 2080036, 2080037, 2080038, 2080039, 2080040, 2080041, 2080042

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	110	P/P	90 - 110
Kjeldahl Nitrogen	110	103	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A91158
Included Lab Sample IDs: 2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	100	P/P	90 - 110
Total Alkalinity	101	99.5	P/P	90 - 110
Total Alkalinity	99.5	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A91158
Included Lab Sample IDs: 2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A91214
Included Lab Sample IDs: 2080043

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	95.9	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					2.21	
EPA 300.0 Rev. 2.1	Chloride	100	98.6	100		0.0676	
	Sulfate	103	98.2	103		0.544	
EPA 350.1 Rev. 2.0	Ammonia-N	101	101	101			0.387
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109					1.33
	Kjeldahl Nitrogen	102	99.9	99.8			0.102
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0	98.1	99.6			0.849
	NO2NO3-N	98.0	96.0	97.0			1.04
EPA 365.1 Rev. 2.0	Total-P	108	106	96.5			8.44
	Total-P	104	95.8	99.6			3.80
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.2	97.1	98.0			0.750
	O-Phosphate-P	98.4	97.2	98.3			1.13
SM 2120 B	Color (true)	102				3.10	
	Color (true)	103				2.75	
SM 2320 B-97	Total Alkalinity	101				0.187	
	Total Alkalinity	101				0.476	
SM 2540 C-97	TDS					0.962	
	TDS					3.43	
SM 4500 F-C-97	Fluoride	97.7					0.507
	Fluoride	97.2	98.9	98.9			0.0
SM 5310 B-00	Organic Carbon	90.8	88.8	87.6			0.899
	Organic Carbon	101	103	102			0.164

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2080036, 2080037, 2080038, 2080039, 2080040, 2080041, 2080042, 2080043
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2080036, 2080037, 2080038, 2080039, 2080040, 2080041, 2080042, 2080043
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2080036, 2080037, 2080038, 2080039, 2080040, 2080041, 2080042, 2080043
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2080036, 2080037, 2080038, 2080039, 2080040, 2080041, 2080042, 2080043
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2080044, 2080045, 2080046, 2080047, 2080048, 2080049, 2080050, 2080051
SM 2120 B / E31780	True Color measured at 450 nm	2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2080036, 2080037, 2080038, 2080039, 2080040, 2080041, 2080042, 2080043

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	04/23/2019			04/23/2019 17:05	Adrian Shelby	2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035
EPA 300.0 Rev. 2.1	04/23/2019			04/26/2019 20:21	Lipi Saha	2080028
	04/23/2019			04/26/2019 20:58	Lipi Saha	2080029
	04/23/2019			04/26/2019 21:10	Lipi Saha	2080030
	04/23/2019			04/26/2019 21:22	Lipi Saha	2080031
	04/23/2019			04/26/2019 21:34	Lipi Saha	2080032
	04/23/2019			04/26/2019 21:46	Lipi Saha	2080033
	04/23/2019			04/26/2019 21:58	Lipi Saha	2080034
	04/23/2019			04/26/2019 22:10	Lipi Saha	2080035
EPA 350.1 Rev. 2.0	04/23/2019			04/26/2019 11:49	Ping Hua	2080036
	04/23/2019			04/26/2019 11:51	Ping Hua	2080037
	04/23/2019			04/26/2019 11:52	Ping Hua	2080038
	04/23/2019			04/26/2019 11:54	Ping Hua	2080039
	04/23/2019			04/26/2019 11:55	Ping Hua	2080040
	04/23/2019			04/26/2019 11:57	Ping Hua	2080041
	04/23/2019			04/26/2019 11:58	Ping Hua	2080042
	04/23/2019			04/26/2019 12:00	Ping Hua	2080043
EPA 351.2 Rev. 2.0	04/23/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 11:00	Joseph Suarez	2080036
	04/23/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 11:02	Joseph Suarez	2080037
	04/23/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 11:03	Joseph Suarez	2080038
	04/23/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 11:05	Joseph Suarez	2080039
	04/23/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 11:10	Joseph Suarez	2080040
	04/23/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 11:14	Joseph Suarez	2080041
	04/23/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 11:16	Joseph Suarez	2080042
	04/23/2019	04/30/2019 12:15	Adrian Shelby	05/06/2019 09:12	Joseph Suarez	2080043
EPA 353.2 Rev. 2.0	04/23/2019			04/26/2019 12:14	Beverly Y. Sanders	2080036
	04/23/2019			04/26/2019 12:16	Beverly Y. Sanders	2080037
	04/23/2019			04/26/2019 12:23	Beverly Y. Sanders	2080038
	04/23/2019			04/26/2019 12:29	Beverly Y. Sanders	2080039
	04/23/2019			04/26/2019 12:30	Beverly Y. Sanders	2080040
	04/23/2019			04/26/2019 12:31	Beverly Y. Sanders	2080041
	04/23/2019			04/26/2019 12:32	Beverly Y. Sanders	2080042
	04/23/2019			04/26/2019 12:33	Beverly Y. Sanders	2080043
EPA 365.1 Rev. 2.0	04/23/2019	04/24/2019 13:50	Sima Feizi	04/26/2019 12:46	Rosalyn Ballman	2080036
	04/23/2019	04/24/2019 13:50	Sima Feizi	04/26/2019 12:47	Rosalyn Ballman	2080037
	04/23/2019	04/24/2019 13:50	Sima Feizi	04/26/2019 12:56	Rosalyn Ballman	2080038
	04/23/2019	04/24/2019 13:50	Sima Feizi	04/26/2019 12:57	Rosalyn Ballman	2080039
	04/23/2019	04/24/2019 13:50	Sima Feizi	04/26/2019 12:59	Rosalyn Ballman	2080040
	04/23/2019	04/24/2019 13:50	Sima Feizi	04/26/2019 13:00	Rosalyn Ballman	2080041

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	04/23/2019	04/24/2019 13:50	Sima Feizi	04/26/2019 13:01	Rosalyn Ballman	2080042
	04/23/2019	04/24/2019 13:50	Sima Feizi	04/26/2019 13:04	Rosalyn Ballman	2080043
EPA 365.1 Rev. 2.0 dissolved	04/23/2019			04/23/2019 16:08	Jhamieka S. Greenwood	2080049
	04/23/2019			04/23/2019 16:09	Jhamieka S. Greenwood	2080050
	04/23/2019			04/23/2019 16:18	Jhamieka S. Greenwood	2080045, 2080046
	04/23/2019			04/23/2019 16:19	Jhamieka S. Greenwood	2080047
	04/23/2019			04/23/2019 16:20	Jhamieka S. Greenwood	2080048
	04/23/2019			04/23/2019 16:21	Jhamieka S. Greenwood	2080051
	04/23/2019			04/23/2019 16:29	Jhamieka S. Greenwood	2080044
SM 2120 B	04/23/2019			04/23/2019 16:02	Mariam Hanna	2080028, 2080029
	04/23/2019			04/23/2019 16:03	Mariam Hanna	2080030
	04/23/2019			04/23/2019 16:08	Mariam Hanna	2080031, 2080032
	04/23/2019			04/23/2019 16:09	Mariam Hanna	2080033
	04/23/2019			04/23/2019 16:10	Mariam Hanna	2080034
	04/23/2019			04/23/2019 16:28	Mariam Hanna	2080035
SM 2320 B-97	04/23/2019			05/01/2019 19:21	Dale L. Simmons	2080029
	04/23/2019			05/01/2019 19:34	Dale L. Simmons	2080030
	04/23/2019			05/01/2019 19:47	Dale L. Simmons	2080031
	04/23/2019			05/01/2019 21:24	Dale L. Simmons	2080028
	04/23/2019			05/01/2019 22:11	Dale L. Simmons	2080032
	04/23/2019			05/01/2019 22:24	Dale L. Simmons	2080033
	04/23/2019			05/01/2019 23:32	Dale L. Simmons	2080035
	04/23/2019			05/02/2019 02:41	Dale L. Simmons	2080034
SM 2540 C-97	04/23/2019			04/24/2019 15:30	Yijie Li	2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035
SM 2540 D-97	04/23/2019			04/24/2019 15:30	Yijie Li	2080028, 2080029, 2080030, 2080031, 2080032, 2080033, 2080034, 2080035
SM 4500 F-C-97	04/23/2019			05/01/2019 19:21	Dale L. Simmons	2080029
	04/23/2019			05/01/2019 19:34	Dale L. Simmons	2080030
	04/23/2019			05/01/2019 19:47	Dale L. Simmons	2080031
	04/23/2019			05/01/2019 21:24	Dale L. Simmons	2080028
	04/23/2019			05/01/2019 22:11	Dale L. Simmons	2080032
	04/23/2019			05/01/2019 22:24	Dale L. Simmons	2080033
	04/23/2019			05/01/2019 23:32	Dale L. Simmons	2080035
	04/23/2019			05/02/2019 02:41	Dale L. Simmons	2080034
SM 5310 B-00	04/23/2019			04/25/2019 12:06	Julia Storbeck	2080036
	04/23/2019			04/25/2019 22:59	Julia Storbeck	2080037
	04/23/2019			04/25/2019 23:11	Julia Storbeck	2080038
	04/23/2019			04/25/2019 23:48	Julia Storbeck	2080039
	04/23/2019			04/26/2019 00:00	Julia Storbeck	2080040

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	04/23/2019			04/26/2019 00:12	Julia Storbeck	2080041
	04/23/2019			04/26/2019 00:24	Julia Storbeck	2080042
	04/23/2019			04/26/2019 00:37	Julia Storbeck	2080043