

Chemical Analysis Report

NE-DIST-2019-05-03-01

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

Event Description: **GTM NERR-Guana River SMP = 7 Sites + 1 Field Blank**

Request ID: **RQ-2019-05-06-01**

Customer: **NE-DIST**

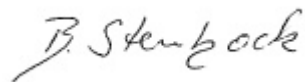
Project ID: **SMP**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 31-MAY-2019 16:40



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: DEPGR3

Collection Date/Time: 05/02/2019 09:10

Field ID: GTMGR3NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083166	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P363373	
	EPA 300.0	Bromide	70		mg Br/L	P363949	
	SM 2320 B-97	Total Alkalinity	119		mg CaCO3/L	P363495	
	SM 2540 D-97	TSS	11	A	mg/L	P363895	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P363872	
2083173	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P363635	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P363710	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363769	
	EPA 365.1 Rev. 2.0	Total-P	0.039	J	mg P/L	P363526	MS
	SM 5310 B-00	Organic Carbon	2.7		mg C/L	P363922	
2083180	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.42		mg N/L	P363710	

Ref. Method and Comment:

EPA 365.1 Rev. 2.0: Total-P: Refer to the narrative for an explanation of QC Codes.

Sample Location: DEPGR2

Collection Date/Time: 05/02/2019 09:25

Field ID: GTMGRNUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083167	EPA 180.1 Rev. 2.0	Turbidity	5.1		NTU	P363373	
	EPA 300.0	Bromide	69		mg Br/L	P363949	
	SM 2320 B-97	Total Alkalinity	117		mg CaCO3/L	P363495	
	SM 2540 D-97	TSS	16		mg/L	P363895	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P363872	
2083174	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P363635	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P363710	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363769	
	EPA 365.1 Rev. 2.0	Total-P	0.047		mg P/L	P363526	MS
	SM 5310 B-00	Organic Carbon	3.6		mg C/L	P363922	
2083181	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.37	I	mg N/L	P363710	

Sample Location: DEPGR1

Collection Date/Time: 05/02/2019 09:42

Field ID: GTMGR1NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083168	EPA 180.1 Rev. 2.0	Turbidity	7.1		NTU	P363373	
	EPA 300.0	Bromide	55		mg Br/L	P363949	
	SM 2320 B-97	Total Alkalinity	114		mg CaCO3/L	P363495	
	SM 2540 D-97	TSS	14		mg/L	P363895	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P363872	
2083175	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P363635	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P363710	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363769	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P363526	MS
	SM 5310 B-00	Organic Carbon	18		mg C/L	P363922	
2083182	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.1		mg N/L	P363710	

Sample Location: DEPGL4

Collection Date/Time: 05/02/2019 10:58

Field ID: GTMGL4NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083169	EPA 180.1 Rev. 2.0	Turbidity	50		NTU	P363373	
	EPA 300.0	Bromide	24		mg Br/L	P363949	
	SM 2320 B-97	Total Alkalinity	102	A	mg CaCO3/L	P363492	
	SM 2540 D-97	TSS	126		mg/L	P363895	
	SM 4500 F-C-97	Fluoride	0.60		mg F/L	P363872	
2083176	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P363635	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P363710	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363769	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P363526	MS
	SM 5310 B-00	Organic Carbon	13		mg C/L	P363922	
2083183	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.2		mg N/L	P363710	

Sample Location: DEPGL3

Collection Date/Time: 05/02/2019 11:21

Field ID: GTMLMNUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083170	EPA 180.1 Rev. 2.0	Turbidity	70		NTU	P363373	
	EPA 300.0	Bromide	9.8		mg Br/L	P363817	
	SM 2320 B-97	Total Alkalinity	119		mg CaCO3/L	P363807	
	SM 2540 D-97	TSS	79		mg/L	P363894	
	SM 4500 F-C-97	Fluoride	0.43		mg F/L	P363811	
2083177	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P363635	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.3		mg N/L	P363710	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363769	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P363526	MS
	SM 5310 B-00	Organic Carbon	23		mg C/L	P363920	
2083184	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.9		mg N/L	P363710	

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: DEPGL2

Collection Date/Time: 05/02/2019 11:47

Field ID: GTMGL2NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083171	EPA 180.1 Rev. 2.0	Turbidity	15		NTU	P363373	
	EPA 300.0	Bromide	1.6		mg Br/L	P363817	
	SM 2320 B-97	Total Alkalinity	112		mg CaCO3/L	P363807	
	SM 2540 D-97	TSS	29		mg/L	P363894	
	SM 4500 F-C-97	Fluoride	0.26		mg F/L	P363969	
2083178	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P363777	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P363709	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363833	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P363524	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P363920	
2083185	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.7		mg N/L	P363709	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: DEPGL1

Collection Date/Time: 05/02/2019 12:14

Field ID: GTMGL1NUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083172	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P363374	
	EPA 300.0	Bromide	0.27		mg Br/L	P363817	
	SM 2320 B-97	Total Alkalinity	117		mg CaCO3/L	P363807	
	SM 2540 D-97	TSS	2	I	mg/L	P363894	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P363969	
2083179	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P363777	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P363709	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363480	
	EPA 365.1 Rev. 2.0	Total-P	0.069		mg P/L	P363524	
	SM 5310 B-00	Organic Carbon	7.0		mg C/L	P363920	
2083186	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.49		mg N/L	P363709	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: FIELD BLANK

Collection Date/Time: 05/02/2019 08:50

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083187	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P363374	
	EPA 300.0	Bromide	0.013	U	mg Br/L	P363817	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P363807	
	SM 2540 D-97	TSS	2	U	mg/L	P363894	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P363969	
2083188	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P363777	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P363709	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363480	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P363524	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P363920	
2083189	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.080	U	mg N/L	P363709	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: 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: P363373

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363374

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P363817

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0
Batch ID: P363949

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363635

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363777

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363709

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363710

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P363709

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P363710

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363480

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363769

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363833

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363524

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363526

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

Reference Method: SM 2320 B-97
Batch ID: P363492

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

Reference Method: SM 2320 B-97
Batch ID: P363495

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

Reference Method: SM 2320 B-97
Batch ID: P363807

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P363894

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363895

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P363811

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P363872

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P363969

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P363920

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

Reference Method: SM 5310 B-00
Batch ID: P363922

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P363817

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

Reference Method: EPA 300.0
Batch ID: P363949

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363635

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363777

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363709

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363710

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P363709

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P363710

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363480

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363769

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363833

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: P363524

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363526

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.2		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P363492

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

Reference Method: SM 2320 B-97
Batch ID: P363495

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P363807

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363811

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P363872

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P363969

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P363920

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

Reference Method: SM 5310 B-00
Batch ID: P363922

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	89.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P363817

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083172	Bromide	95.5	97.3	P/P	90 - 110
2084079	Bromide	96.1		P	90 - 110

Reference Method: EPA 300.0
Batch ID: P363949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085500	Bromide	97.5	98.9	P/P	90 - 110
2085617	Bromide	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363635

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083586	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363777

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083179	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083147	Kjeldahl Nitrogen	106	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083174	Kjeldahl Nitrogen	106	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P363709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083147	Kjeldahl Nitrogen	106	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P363710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083174	Kjeldahl Nitrogen	106	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363480

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083112	NO2NO3-N	100	99.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083173	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363833

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083178	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083173	Total-P	91.3	88.2	P/F	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P363811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083136	Fluoride	98.2	97.6	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082745	Fluoride	96.6	96.6	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083317	Fluoride	99.1	97.4	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P363920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083261	Organic Carbon	94.7	91.5	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P363922

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083174	Organic Carbon	90.6	91.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083143	Turbidity	2.52	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083226	Turbidity	5.77	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P363817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083172	Bromide	1.16	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P363949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085500	Bromide	1.14	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083586	Ammonia-N	0.0348	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363777

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083179	Ammonia-N	0.224	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083147	Kjeldahl Nitrogen	0.704	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083174	Kjeldahl Nitrogen	3.44	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P363709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083147	Kjeldahl Nitrogen	0.704	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P363710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083174	Kjeldahl Nitrogen	3.44	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083112	NO2NO3-N	0.414	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083173	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363833

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083178	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083147	Total-P	1.80	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083173	Total-P	3.35	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P363492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083169	Total Alkalinity	0.350	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P363495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082745	Total Alkalinity	0.925	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P363807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083136	Total Alkalinity	0.0676	Sample	P	0 - 2.8

Reference Method: SM 2540 D-97
Batch ID: P363895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083166	TSS	7.14	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P363811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083136	Fluoride	0.470	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P363872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082745	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P363969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083317	Fluoride	1.46	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P363920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083261	Organic Carbon	2.70	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P363922

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083174	Organic Carbon	0.900	Spike	P	0 - 20

Quality Assurance Report Precision

* 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: A91209

Included Lab Sample IDs: 2083166, 2083167, 2083168, 2083169, 2083170, 2083171, 2083172, 2083187

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91242

Included Lab Sample IDs: 2083179, 2083188

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

Reference Method: SM 2320 B-97

Run ID: A91249

Included Lab Sample IDs: 2083166, 2083167, 2083168, 2083169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.9	P/P	90 - 110
Total Alkalinity	99.9	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91302

Included Lab Sample IDs: 2083173, 2083174, 2083175, 2083176, 2083177

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

Reference Method: EPA 300.0

Run ID: A91304

Included Lab Sample IDs: 2083170, 2083171, 2083172, 2083187

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	106	P/P	90 - 110
Bromide	106	110	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91332

Included Lab Sample IDs: 2083177, 2083178, 2083179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	100	P/P	90 - 110
Total-P	101	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91339

Included Lab Sample IDs: 2083173, 2083174, 2083175, 2083176, 2083188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.2	P/P	90 - 110
Total-P	99.8	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91349

Included Lab Sample IDs: 2083173, 2083174, 2083175, 2083176, 2083177

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91350

Included Lab Sample IDs: 2083178, 2083179, 2083188

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

Reference Method: SM 2320 B-97

Run ID: A91372

Included Lab Sample IDs: 2083170, 2083171, 2083172, 2083187

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

Reference Method: SM 4500 F-C-97

Run ID: A91372

Included Lab Sample IDs: 2083170

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91377

Included Lab Sample IDs: 2083178

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91383

Included Lab Sample IDs: 2083173, 2083174, 2083175, 2083177, 2083178, 2083179, 2083188

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Run ID: A91383

Included Lab Sample IDs: 2083180, 2083181, 2083182, 2083184, 2083185, 2083186, 2083189

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91387

Included Lab Sample IDs: 2083176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	95.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Run ID: A91387

Included Lab Sample IDs: 2083183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	95.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A91397

Included Lab Sample IDs: 2083166, 2083167, 2083168, 2083169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.5	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A91402

Included Lab Sample IDs: 2083166, 2083167, 2083168, 2083169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	104	107	P/P	90 - 110
Bromide	108	107	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A91414

Included Lab Sample IDs: 2083173, 2083174, 2083175, 2083176, 2083177, 2083178, 2083179, 2083188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	91.8	92.2	P/P	90 - 110
Organic Carbon	92.0	92.7	P/P	90 - 110
Organic Carbon	92.2	92.4	P/P	90 - 110
Organic Carbon	92.7	92.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A91436

Included Lab Sample IDs: 2083171, 2083172, 2083187

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	100	P/P	90 - 110
Fluoride	98.1	97.6	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					2.52	
	Turbidity					5.77	
EPA 300.0	Bromide	99.8	95.5	97.3	96.1		1.16
	Bromide	102	97.5	98.9	101		1.14
EPA 350.1 Rev. 2.0	Ammonia-N	102	102	102			0.0348
	Ammonia-N	99.5	102	102			0.224
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.5	106	108			0.704
	Kjeldahl Nitrogen	103	106	101			3.44
EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	99.5	106	108			0.704
	Kjeldahl Nitrogen	103	106	101			3.44
EPA 353.2 Rev. 2.0	NO2NO3-N	101	100	99.5			0.414
	NO2NO3-N	100	102	102			0.491
	NO2NO3-N	99.0	99.5	99.5			0.0
EPA 365.1 Rev. 2.0	Total-P	101					1.80
	Total-P	97.2	91.3	88.2			3.35
SM 2320 B-97	Total Alkalinity	101				0.350	
	Total Alkalinity	102				0.925	
	Total Alkalinity	102				0.0676	
SM 2540 D-97	TSS					7.14	
SM 4500 F-C-97	Fluoride	98.6	98.2	97.6			0.470
	Fluoride	96.6	96.6	96.6			0.0
	Fluoride	96.6	99.1	97.4			1.46
SM 5310 B-00	Organic Carbon	90.8	94.7	91.5			2.70
	Organic Carbon	89.2	90.6	91.5			0.900

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2083166, 2083167, 2083168, 2083169, 2083170, 2083171, 2083172, 2083187
EPA 300.0 / E31780	Bromide in aqueous matrices	2083166, 2083167, 2083168, 2083169, 2083170, 2083171, 2083172, 2083187
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2083173, 2083174, 2083175, 2083176, 2083177, 2083178, 2083179, 2083188
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2083173, 2083174, 2083175, 2083176, 2083177, 2083178, 2083179, 2083188
EPA 351.2 Rev. 2.0 dissolved / E31780	Total Kjeldahl Nitrogen, dissolved, in filtered, aqueous matrices	2083180, 2083181, 2083182, 2083183, 2083184, 2083185, 2083186, 2083189
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2083173, 2083174, 2083175, 2083176, 2083177, 2083178, 2083179, 2083188
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2083173, 2083174, 2083175, 2083176, 2083177, 2083178, 2083179, 2083188
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2083166, 2083167, 2083168, 2083169, 2083170, 2083171, 2083172, 2083187
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2083166, 2083167, 2083168, 2083169, 2083170, 2083171, 2083172, 2083187
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2083166, 2083167, 2083168, 2083169, 2083170, 2083171, 2083172, 2083187
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2083173, 2083174, 2083175, 2083176, 2083177, 2083178, 2083179, 2083188

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	05/03/2019			05/03/2019 16:06	Sima Feizi	2083166, 2083167, 2083168, 2083169, 2083170, 2083171, 2083172, 2083187
EPA 300.0	05/03/2019			05/10/2019 14:27	Lipi Saha	2083172
	05/03/2019			05/10/2019 19:01	Lipi Saha	2083170
	05/03/2019			05/10/2019 19:18	Lipi Saha	2083171
	05/03/2019			05/10/2019 19:35	Lipi Saha	2083187
	05/03/2019			05/14/2019 15:46	Lipi Saha	2083169
	05/03/2019			05/14/2019 20:19	Lipi Saha	2083166
	05/03/2019			05/14/2019 20:36	Lipi Saha	2083167
	05/03/2019			05/14/2019 20:54	Lipi Saha	2083168
EPA 350.1 Rev. 2.0	05/03/2019			05/08/2019 13:47	Ping Hua	2083174
	05/03/2019			05/08/2019 13:48	Ping Hua	2083175
	05/03/2019			05/08/2019 13:50	Ping Hua	2083176
	05/03/2019			05/08/2019 13:51	Ping Hua	2083177
	05/03/2019			05/08/2019 14:21	Ping Hua	2083173
	05/03/2019			05/09/2019 11:25	Ping Hua	2083179
	05/03/2019			05/09/2019 11:30	Ping Hua	2083188
	05/03/2019			05/09/2019 11:37	Ping Hua	2083178
EPA 351.2 Rev. 2.0	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:02	Joseph Suarez	2083178
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:04	Joseph Suarez	2083179
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:12	Joseph Suarez	2083188
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:18	Joseph Suarez	2083173
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:19	Joseph Suarez	2083174
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:24	Joseph Suarez	2083175
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:30	Joseph Suarez	2083177
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 15:26	Joseph Suarez	2083176
EPA 351.2 Rev. 2.0 dissolved	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:05	Joseph Suarez	2083185
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:07	Joseph Suarez	2083186
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:13	Joseph Suarez	2083189
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:32	Joseph Suarez	2083180
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:33	Joseph Suarez	2083181
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:35	Joseph Suarez	2083182
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 11:38	Joseph Suarez	2083184
	05/03/2019	05/09/2019 13:00	Adrian Shelby	05/13/2019 15:31	Joseph Suarez	2083183
EPA 353.2 Rev. 2.0	05/03/2019			05/07/2019 10:10	Beverly Y. Sanders	2083179
	05/03/2019			05/07/2019 10:11	Beverly Y. Sanders	2083188
	05/03/2019			05/10/2019 09:34	Beverly Y. Sanders	2083173
	05/03/2019			05/10/2019 09:42	Beverly Y. Sanders	2083174
	05/03/2019			05/10/2019 09:43	Beverly Y. Sanders	2083175
	05/03/2019			05/10/2019 09:44	Beverly Y. Sanders	2083176

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 353.2 Rev. 2.0	05/03/2019			05/10/2019 09:45	Beverly Y. Sanders	2083177
	05/03/2019			05/13/2019 10:17	Beverly Y. Sanders	2083178
EPA 365.1 Rev. 2.0	05/03/2019	05/07/2019 14:35	Sima Feizi	05/09/2019 14:35	Rosalyn Ballman	2083178
	05/03/2019	05/07/2019 14:35	Sima Feizi	05/09/2019 14:37	Rosalyn Ballman	2083179
	05/03/2019	05/07/2019 14:35	Sima Feizi	05/09/2019 15:15	Rosalyn Ballman	2083177
	05/03/2019	05/07/2019 14:35	Sima Feizi	05/09/2019 17:47	Rosalyn Ballman	2083188
	05/03/2019	05/07/2019 14:35	Sima Feizi	05/09/2019 18:05	Rosalyn Ballman	2083173
	05/03/2019	05/07/2019 14:35	Sima Feizi	05/09/2019 18:06	Rosalyn Ballman	2083174
	05/03/2019	05/07/2019 14:35	Sima Feizi	05/09/2019 18:07	Rosalyn Ballman	2083175
	05/03/2019	05/07/2019 14:35	Sima Feizi	05/09/2019 18:08	Rosalyn Ballman	2083176
SM 2320 B-97	05/03/2019			05/07/2019 01:41	Dale L. Simmons	2083169
	05/03/2019			05/07/2019 10:12	Dale L. Simmons	2083166
	05/03/2019			05/07/2019 10:25	Dale L. Simmons	2083167
	05/03/2019			05/07/2019 10:37	Dale L. Simmons	2083168
	05/03/2019			05/11/2019 15:26	Dale L. Simmons	2083170
	05/03/2019			05/11/2019 16:21	Dale L. Simmons	2083171
	05/03/2019			05/11/2019 16:33	Dale L. Simmons	2083172
	05/03/2019			05/11/2019 17:01	Dale L. Simmons	2083187
SM 2540 D-97	05/03/2019			05/08/2019 14:21	Yijie Li	2083166, 2083167, 2083168, 2083169, 2083170, 2083171, 2083172, 2083187
SM 4500 F-C-97	05/03/2019			05/11/2019 15:26	Dale L. Simmons	2083170
	05/03/2019			05/14/2019 08:08	Dale L. Simmons	2083166
	05/03/2019			05/14/2019 08:13	Dale L. Simmons	2083167
	05/03/2019			05/14/2019 08:17	Dale L. Simmons	2083168
	05/03/2019			05/14/2019 08:21	Dale L. Simmons	2083169
	05/03/2019			05/15/2019 04:04	Dale L. Simmons	2083172
	05/03/2019			05/15/2019 04:13	Dale L. Simmons	2083187
	05/03/2019			05/15/2019 05:16	Dale L. Simmons	2083171
SM 5310 B-00	05/03/2019			05/13/2019 05:39	Julia Storbeck	2083177
	05/03/2019			05/13/2019 05:55	Julia Storbeck	2083178
	05/03/2019			05/13/2019 06:39	Julia Storbeck	2083179
	05/03/2019			05/13/2019 06:54	Julia Storbeck	2083188
	05/03/2019			05/14/2019 06:14	Julia Storbeck	2083174
	05/03/2019			05/14/2019 08:31	Julia Storbeck	2083173
	05/03/2019			05/14/2019 08:45	Julia Storbeck	2083175
	05/03/2019			05/14/2019 08:58	Julia Storbeck	2083176