

Chemical Analysis Report

NW-DIST-2019-11-20-01

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

Event Description: **Project Greenshores/Blank**
Request ID: **RQ-2019-11-18-26**
Customer: **NW-DIST**
Project ID: **DISTRICT**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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

Date Certified: 04-DEC-2019 18:17



NON-CONFORMANCE REPORT INCLUDED

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: Pen. Bay Range Marker E. of Texar

Collection Date/Time: 11/18/2019 10:39

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137322	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P374535	
	SM 2120 B	Color (true)	2.5	UQ	PCU	P374545	
	SM 2540 D-97	TSS	4	I	mg/L	P375108	
2137336	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P374722	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P374746	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P374570	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P374911	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt.

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

Sample Location: Pen. Bay midpoint between Bay Bridge & Muscogee Wharf

Collection Date/Time: 11/18/2019 10:55

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137323	EPA 180.1 Rev. 2.0	Turbidity	1.2	A	NTU	P374535	
	SM 2120 B	Color (true)	2.5	UQ	PCU	P374545	
	SM 2540 D-97	TSS	3	I	mg/L	P375108	
2137337	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P374722	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I J	mg N/L	P374786	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P374570	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P374915	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt.

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: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Pen. Bay, East end of primary Stormdrain

Collection Date/Time: 11/18/2019 11:17

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137324	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P374535	
	SM 2120 B	Color (true)	7.5	UQ	PCU	P374545	
	SM 2540 D-97	TSS	5	I	mg/L	P375108	
2137338	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P374722	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24	I	mg N/L	P374786	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.041		mg N/L	P374571	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P374915	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt. The MDL was elevated because of sample matrix interference.

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

Sample Location: Pen. Bay, South of Primary Stormdrain

Collection Date/Time: 11/18/2019 11:22

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137325	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P374535	
	SM 2120 B	Color (true)	7.5	UQ	PCU	P374545	
	SM 2540 D-97	TSS	6	I	mg/L	P375109	
2137339	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P374722	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P374786	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.037		mg N/L	P374571	
	EPA 365.1 Rev. 2.0	Total-P	0.005	I	mg P/L	P374915	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt. The MDL was elevated because of sample matrix interference.

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

Sample Location: Pen. Bay, End of Chase Street

Collection Date/Time: 11/18/2019 11:35

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137326	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P374535	
	SM 2120 B	Color (true)	7.5	UQ	PCU	P374545	
	SM 2540 D-97	TSS	6	I	mg/L	P375109	
2137340	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P374725	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21	I	mg N/L	P374786	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.039		mg N/L	P374571	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P374915	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt. The MDL was elevated because of sample matrix interference.

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

Sample Location: Pen. Bay, Midpoint btw Muscogee & Hawkshaw Collection Date/Time: 11/18/2019 11:42

Field ID: 6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137327	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P374535	
	SM 2120 B	Color (true)	7.5	UQ	PCU	P374499	
	SM 2540 D-97	TSS	6	I	mg/L	P375109	
2137341	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P374725	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P374786	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P374571	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P374915	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt. Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

The MDL was elevated because of sample matrix interference.

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

Sample Location: Pen. Bay, Midpoint between bridge & port spoil pond **Collection Date/Time: 11/18/2019 11:48**

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137328	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P374535	
	SM 2120 B	Color (true)	7.5	UQ	PCU	P374499	
	SM 2540 D-97	TSS	6	I	mg/L	P375109	
2137342	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P374725	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P374786	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P374571	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P374915	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt. Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The MDL was elevated because of sample matrix interference.

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

Sample Location: Pen. Bay, West of primary stormdrain

Collection Date/Time: 11/18/2019 11:29

Field ID: 8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137329	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P374535	
	SM 2120 B	Color (true)	7.5	UQ	PCU	P374499	
	SM 2540 D-97	TSS	4	I	mg/L	P375109	
2137343	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P374725	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P374786	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.034		mg N/L	P374571	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P374915	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt. Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

The MDL was elevated because of sample matrix interference.

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

Sample Location: Pen. Bay, West of Hawkshaw Lagoon

Collection Date/Time: 11/18/2019 12:16

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137330	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P374535	
	SM 2120 B	Color (true)	7.5	UQ	PCU	P374499	
	SM 2540 D-97	TSS	4	I	mg/L	P375109	
2137344	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P374725	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P374786	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P374571	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P374915	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt. Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

The MDL was elevated because of sample matrix interference.

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

Sample Location: Pen. Bay, So. of Bayfront stormdrain

Collection Date/Time: 11/18/2019 12:11

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137331	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P374535	
	SM 2120 B	Color (true)	7.5	UQ	PCU	P374545	
	SM 2540 D-97	TSS	4	I	mg/L	P375109	
2137345	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P374725	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P374786	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P374571	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P374915	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt. The MDL was elevated because of sample matrix interference.

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

Sample Location: Pen. Bay @ Seville Marina Inlet

Collection Date/Time: 11/18/2019 12:04

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137332	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P374536	
	SM 2120 B	Color (true)	2.5	UQ	PCU	P374499	
	SM 2540 D-97	TSS	5	I	mg/L	P375109	
2137346	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P374725	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I	mg N/L	P374786	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P374571	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P374915	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt. Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Pen. Bay, East of port spoil pond

Collection Date/Time: 11/18/2019 11:56

Field ID: 12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137333	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P374536	
	SM 2120 B	Color (true)	7.5	UQ	PCU	P374499	
	SM 2540 D-97	TSS	4	I	mg/L	P375109	
2137347	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P374725	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22	I	mg N/L	P374787	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P374571	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P374916	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt. Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

The MDL was elevated because of sample matrix interference.

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

Sample Location: Hawkshaw Lagoon at Memorial Bridge

Collection Date/Time: 11/18/2019 12:30

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137334	EPA 180.1 Rev. 2.0	Turbidity	1.1	A	NTU	P374536	
	SM 2120 B	Color (true)	2.5	UA	PCU	P374499	
	SM 2540 D-97	TSS	6	IA	mg/L	P375109	
2137348	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P374725	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P374787	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P374572	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P374916	

Ref. Method and Comment:

SM 2120 B: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Pen. Bay, 150 FT So of Hawkshaw Lagoon East Stormdrain **Collection Date/Time: 11/18/2019 12:43**

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137335	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P374536	
	SM 2120 B	Color (true)	7.5	U	PCU	P374499	
	SM 2540 D-97	TSS	4	IA	mg/L	P375110	
2137349	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P374725	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P374787	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.035		mg N/L	P374572	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P374916	

Ref. Method and Comment:

SM 2120 B: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The MDL was elevated because of sample matrix interference.

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

Sample Location: Field Blank

Collection Date/Time: 11/18/2019 11:50

Field ID: FB

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137350	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P374536	
	SM 2120 B	Color (true)	2.5	UQ	PCU	P374499	
	SM 2540 D-97	TSS	2	U	mg/L	P375107	
2137351	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P374835	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P374785	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P374698	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P374958	

Ref. Method and Comment:

SM 2120 B: The sample expired upon receipt. Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Non-Conformance Report

NCR ID: 8025

Event(s)

NW-DIST-2019-11-20-01

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived one or more days late by FedEx, samples received within the acceptable temperature range.

Resolution: Samples will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 12/2/2019

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374535

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374536

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374722

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374725

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374835

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374746

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374785

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374786

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374787

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374570

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374571

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374572

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374698

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374911

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374915

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374916

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374958

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

Reference Method: SM 2120 B
Batch ID: P374499

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P374545

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P375107

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P375108

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P375109

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P375110

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374722

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374725

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374835

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: P374746

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374786

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374787

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374570

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374571

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: P374572

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374698

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374911

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374915

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374916

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374958

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

Reference Method: SM 2120 B
Batch ID: P374499

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

Reference Method: SM 2120 B
Batch ID: P374545

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P374722

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137082	Ammonia-N	103	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P374725

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137340	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P374835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137568	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P374746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137081	Kjeldahl Nitrogen	99.5	95.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P374785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137259	Kjeldahl Nitrogen	101	110	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P374786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137337	Kjeldahl Nitrogen	98.8	110	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P374787

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137347	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P374570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136741	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P374571

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137338	NO2NO3-N	101	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374572

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137348	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137263	NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374911

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136741	Total-P	92.6	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137337	Total-P	95.3	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137347	Total-P	98.7	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374958

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137368	Total-P	98.1	100	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137323	Turbidity	5.91	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137334	Turbidity	3.51	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137082	Ammonia-N	2.22	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374725

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137340	Ammonia-N	0.504	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137568	Ammonia-N	0.609	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137081	Kjeldahl Nitrogen	3.52	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137259	Kjeldahl Nitrogen	7.06	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137337	Kjeldahl Nitrogen	9.95	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374787

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137347	Kjeldahl Nitrogen	0.0684	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136741	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137338	NO2NO3-N	0.820	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137348	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137263	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374911

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136741	Total-P	5.58	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137337	Total-P	5.41	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137347	Total-P	3.40	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137368	Total-P	1.66	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P374545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137257	Color (true)	1.25	Sample	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A95845

Included Lab Sample IDs: 2137327, 2137328, 2137329, 2137330, 2137332, 2137333, 2137334, 2137335, 2137350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115
Color (true)	101	100	P/P	90 - 115
Color (true)	99.8	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95857

Included Lab Sample IDs: 2137322, 2137323, 2137324, 2137325, 2137326, 2137327, 2137328, 2137329, 2137330, 2137331, 2137332, 2137333, 2137334, 2137335, 2137350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	101	P/P	95 - 105
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A95858

Included Lab Sample IDs: 2137322, 2137323, 2137324, 2137325, 2137326, 2137331

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95875

Included Lab Sample IDs: 2137336, 2137337, 2137338, 2137339, 2137340, 2137341, 2137342, 2137343, 2137344, 2137345, 2137346, 2137347, 2137348, 2137349

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95909

Included Lab Sample IDs: 2137351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95920

Included Lab Sample IDs: 2137336, 2137337, 2137338, 2137339, 2137340, 2137341, 2137342, 2137343, 2137344, 2137345, 2137346, 2137347, 2137348, 2137349

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	100	P/P	90 - 110
Ammonia-N	99.7	100	P/P	90 - 110
Ammonia-N	100	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95959

Included Lab Sample IDs: 2137351

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95959

Included Lab Sample IDs: 2137351

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95977

Included Lab Sample IDs: 2137336

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.6	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95999

Included Lab Sample IDs: 2137337, 2137338, 2137339, 2137340, 2137341, 2137342, 2137343, 2137344, 2137345, 2137346, 2137351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	106	P/P	90 - 110
Kjeldahl Nitrogen	108	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96000

Included Lab Sample IDs: 2137347, 2137348, 2137349

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	101	P/P	90 - 110
Kjeldahl Nitrogen	96.4	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96030

Included Lab Sample IDs: 2137336, 2137337, 2137338, 2137339, 2137340, 2137341, 2137342, 2137343, 2137344, 2137345, 2137346, 2137347, 2137348, 2137349

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96060

Included Lab Sample IDs: 2137351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	100	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	MS
EPA 180.1 Rev. 2.0	Turbidity				5.91	
	Turbidity				3.51	
EPA 350.1 Rev. 2.0	Ammonia-N	99.1	103	106		2.22
	Ammonia-N	96.9	103	103		0.504
	Ammonia-N	101	101	101		0.609
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	99.5	95.8		3.52
	Kjeldahl Nitrogen	98.5	101	110		7.06
	Kjeldahl Nitrogen	98.6	98.8	110		9.95
	Kjeldahl Nitrogen	107	101	101		0.0684
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	102	102		0.491
	NO2NO3-N	101	101	102		0.820
	NO2NO3-N	102	102	102		0.0
	NO2NO3-N	100	97.5			0.499
EPA 365.1 Rev. 2.0	Total-P	105	92.6	98.3		5.58
	Total-P	104	95.3	101		5.41
	Total-P	107	98.7	95.4		3.40
	Total-P	102	98.1	100		1.66
SM 2120 B	Color (true)	100				
	Color (true)	99.4			1.25	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2137322, 2137323, 2137324, 2137325, 2137326, 2137327, 2137328, 2137329, 2137330, 2137331, 2137332, 2137333, 2137334, 2137335, 2137350
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2137336, 2137337, 2137338, 2137339, 2137340, 2137341, 2137342, 2137343, 2137344, 2137345, 2137346, 2137347, 2137348, 2137349, 2137351
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2137336, 2137337, 2137338, 2137339, 2137340, 2137341, 2137342, 2137343, 2137344, 2137345, 2137346, 2137347, 2137348, 2137349, 2137351
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2137336, 2137337, 2137338, 2137339, 2137340, 2137341, 2137342, 2137343, 2137344, 2137345, 2137346, 2137347, 2137348, 2137349, 2137351
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2137336, 2137337, 2137338, 2137339, 2137340, 2137341, 2137342, 2137343, 2137344, 2137345, 2137346, 2137347, 2137348, 2137349, 2137351
SM 2120 B / E31780	True Color measured at 450 nm	2137322, 2137323, 2137324, 2137325, 2137326, 2137327, 2137328, 2137329, 2137330, 2137331, 2137332, 2137333, 2137334, 2137335, 2137350
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2137322, 2137323, 2137324, 2137325, 2137326, 2137327, 2137328, 2137329, 2137330, 2137331, 2137332, 2137333, 2137334, 2137335, 2137350

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	11/20/2019			11/20/2019 10:34	Samantha Davila	2137322
	11/20/2019			11/20/2019 10:36	Samantha Davila	2137324
	11/20/2019			11/20/2019 10:38	Samantha Davila	2137325
	11/20/2019			11/20/2019 10:40	Samantha Davila	2137326
	11/20/2019			11/20/2019 10:41	Samantha Davila	2137327
	11/20/2019			11/20/2019 10:42	Samantha Davila	2137328
	11/20/2019			11/20/2019 10:44	Samantha Davila	2137329
	11/20/2019			11/20/2019 10:45	Samantha Davila	2137330
	11/20/2019			11/20/2019 10:47	Samantha Davila	2137331
	11/20/2019			11/20/2019 10:51	Samantha Davila	2137323
	11/20/2019			11/20/2019 10:56	Samantha Davila	2137332
	11/20/2019			11/20/2019 10:57	Samantha Davila	2137333
	11/20/2019			11/20/2019 11:00	Samantha Davila	2137335
	11/20/2019			11/20/2019 11:02	Samantha Davila	2137350
	11/20/2019			11/20/2019 11:03	Samantha Davila	2137334
EPA 350.1 Rev. 2.0	11/20/2019			11/22/2019 12:10	Ping Hua	2137336
	11/20/2019			11/22/2019 12:12	Ping Hua	2137337
	11/20/2019			11/22/2019 12:13	Ping Hua	2137338
	11/20/2019			11/22/2019 12:15	Ping Hua	2137339
	11/20/2019			11/22/2019 13:25	Ping Hua	2137340
	11/20/2019			11/22/2019 13:30	Ping Hua	2137341
	11/20/2019			11/22/2019 13:31	Ping Hua	2137342
	11/20/2019			11/22/2019 13:33	Ping Hua	2137343
	11/20/2019			11/22/2019 13:41	Ping Hua	2137344
	11/20/2019			11/22/2019 13:42	Ping Hua	2137345
	11/20/2019			11/22/2019 13:44	Ping Hua	2137346
	11/20/2019			11/22/2019 13:45	Ping Hua	2137347
	11/20/2019			11/22/2019 13:47	Ping Hua	2137348
	11/20/2019			11/22/2019 13:48	Ping Hua	2137349
	11/20/2019			11/25/2019 10:00	Ping Hua	2137351
EPA 351.2 Rev. 2.0	11/20/2019	11/25/2019 11:47	Sima Feizi	11/26/2019 15:24	Jhamieka S. Greenwood	2137336
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 18:42	Jhamieka S. Greenwood	2137351
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 18:54	Jhamieka S. Greenwood	2137337
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 19:02	Jhamieka S. Greenwood	2137338
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 19:04	Jhamieka S. Greenwood	2137339
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 19:05	Jhamieka S. Greenwood	2137340
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 19:07	Jhamieka S. Greenwood	2137341
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 19:09	Jhamieka S. Greenwood	2137342
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 19:10	Jhamieka S. Greenwood	2137343
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 19:12	Jhamieka S. Greenwood	2137344

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 351.2 Rev. 2.0	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 19:13	Jhamieka S. Greenwood	2137345
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 19:15	Jhamieka S. Greenwood	2137346
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 20:23	Jhamieka S. Greenwood	2137347
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 20:30	Jhamieka S. Greenwood	2137348
	11/20/2019	11/25/2019 16:50	Jhamieka S. Greenwood	11/26/2019 20:32	Jhamieka S. Greenwood	2137349
EPA 353.2 Rev. 2.0	11/20/2019			11/21/2019 10:47	Beverly Y. Sanders	2137336
	11/20/2019			11/21/2019 10:49	Beverly Y. Sanders	2137337
	11/20/2019			11/21/2019 10:56	Beverly Y. Sanders	2137338
	11/20/2019			11/21/2019 11:02	Beverly Y. Sanders	2137339
	11/20/2019			11/21/2019 11:03	Beverly Y. Sanders	2137340
	11/20/2019			11/21/2019 11:04	Beverly Y. Sanders	2137341
	11/20/2019			11/21/2019 11:05	Beverly Y. Sanders	2137342
	11/20/2019			11/21/2019 11:06	Beverly Y. Sanders	2137343
	11/20/2019			11/21/2019 11:08	Beverly Y. Sanders	2137344
	11/20/2019			11/21/2019 11:09	Beverly Y. Sanders	2137345
	11/20/2019			11/21/2019 11:10	Beverly Y. Sanders	2137346
	11/20/2019			11/21/2019 11:11	Beverly Y. Sanders	2137347
	11/20/2019			11/21/2019 11:18	Beverly Y. Sanders	2137348
	11/20/2019			11/21/2019 11:24	Beverly Y. Sanders	2137349
	11/20/2019			11/22/2019 10:37	Beverly Y. Sanders	2137351
EPA 365.1 Rev. 2.0	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 14:20	Benjamin T. Nordmann	2137336
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 14:58	Benjamin T. Nordmann	2137337
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 14:59	Benjamin T. Nordmann	2137338
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 15:00	Benjamin T. Nordmann	2137339
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 15:01	Benjamin T. Nordmann	2137340
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 15:09	Benjamin T. Nordmann	2137341
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 15:10	Benjamin T. Nordmann	2137342
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 15:11	Benjamin T. Nordmann	2137343
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 15:12	Benjamin T. Nordmann	2137344
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 15:13	Benjamin T. Nordmann	2137345
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 15:14	Benjamin T. Nordmann	2137346
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 15:16	Benjamin T. Nordmann	2137347
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 15:17	Benjamin T. Nordmann	2137348
	11/20/2019	11/26/2019 14:09	Yen Ta	11/27/2019 15:18	Benjamin T. Nordmann	2137349
	11/20/2019	11/27/2019 13:48	Yen Ta	12/02/2019 15:57	Benjamin T. Nordmann	2137351
SM 2120 B	11/20/2019			11/20/2019 12:24	Julia Storbeck	2137334
	11/20/2019			11/20/2019 12:26	Julia Storbeck	2137350
	11/20/2019			11/20/2019 12:30	Julia Storbeck	2137332
	11/20/2019			11/20/2019 12:33	Julia Storbeck	2137335
	11/20/2019			11/20/2019 12:44	Julia Storbeck	2137327

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	11/20/2019			11/20/2019 12:45	Julia Storbeck	2137328, 2137329
	11/20/2019			11/20/2019 12:46	Julia Storbeck	2137330
	11/20/2019			11/20/2019 12:48	Julia Storbeck	2137333
	11/20/2019			11/20/2019 18:02	Julia Storbeck	2137322
	11/20/2019			11/20/2019 18:03	Julia Storbeck	2137323
	11/20/2019			11/20/2019 18:34	Julia Storbeck	2137324
	11/20/2019			11/20/2019 18:35	Julia Storbeck	2137325, 2137326
	11/20/2019			11/20/2019 18:36	Julia Storbeck	2137331
	11/20/2019			11/22/2019 15:21	Yijie Li	2137322, 2137323, 2137324, 2137325, 2137326, 2137327, 2137328, 2137329, 2137330, 2137331, 2137332, 2137333, 2137334, 2137335, 2137350
SM 2540 D-97	11/20/2019					