

Chemical Analysis Report

NW-DIST-2018-08-21-01

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

Event Description: **Project Greenshores**
Request ID: **RQ-2018-08-20-10**
Customer: **NW-DIST**
Project ID: **DISTRICT**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 06-SEP-2018 14:23

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored rectangular background.

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 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: RANGE MARKER EAST OF TEXAR

Collection Date/Time: 08/20/2018 10:40

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018445	EPA 180.1 Rev. 2.0	Turbidity	2.5	A	NTU	P350631	
	SM 2120 B	Color (true)	5.7	I	PCU	P350539	
	SM 2540 D-97	TSS	4	I	mg/L	P350812	
2018459	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P350688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P350598	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P350592	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P350613	

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: 1/2 BRIDGE AND MUSCOGEE

Collection Date/Time: 08/20/2018 10:52

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018446	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P350631	
	SM 2120 B	Color (true)	6.1		PCU	P350539	
	SM 2540 D-97	TSS	3	U	mg/L	P350812	
2018460	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P350659	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P350598	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P350592	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P350613	

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: EAST OF PRIMARY STORM DRAIN PGS1

Collection Date/Time: 08/20/2018 11:00

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018447	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P350631	
	SM 2120 B	Color (true)	4.4	I	PCU	P350539	
	SM 2540 D-97	TSS	3	U	mg/L	P350812	
2018461	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P350659	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P350598	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.031		mg N/L	P350592	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P350613	

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: 100 FT SOUTH OF STORMDRAIN

Collection Date/Time: 08/20/2018 11:08

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018448	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P350631	
	SM 2120 B	Color (true)	5.3	I	PCU	P350539	
	SM 2540 D-97	TSS	3	U	mg/L	P350812	
2018462	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P350659	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30	I	mg N/L	P350749	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P350592	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P350613	

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: 1/4 BETWEEN BRIDGE AND PORT 400FT
FROM SHORE**

Collection Date/Time: 08/20/2018 11:46

Field ID: 12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018449	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P350631	
	SM 2120 B	Color (true)	4.4	I	PCU	P350539	
	SM 2540 D-97	TSS	3	I	mg/L	P350812	
2018463	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P350659	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P350749	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P350592	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P350613	

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: INSIDE HAWKSHAW LAGOON

Collection Date/Time: 08/20/2018 12:20

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018450	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P350631	
	SM 2120 B	Color (true)	18		PCU	P350539	
	SM 2540 D-97	TSS	6	I	mg/L	P350812	
2018464	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P350659	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P350601	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P350592	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P350613	

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: EAST OF STORMDRAIN INSIDE PGS SITE 2

Collection Date/Time: 08/20/2018 12:30

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018451	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P350631	
	SM 2120 B	Color (true)	4.4	I	PCU	P350539	
	SM 2540 D-97	TSS	3	U	mg/L	P350812	
2018465	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P350659	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P350601	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P350592	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P350613	

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: FB 100 FT. S OF STORMDRAIN

Collection Date/Time: 08/20/2018 11:10

Field ID: FB 4

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018473	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P350632	
	SM 2120 B	Color (true)	2.5	U	PCU	P350540	
	SM 2540 D-97	TSS	2	U	mg/L	P350810	
2018474	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P350662	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P350748	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P350667	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P350612	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: END OF CHASE ST.

Collection Date/Time: 08/20/2018 11:25

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018452	EPA 180.1 Rev. 2.0	Turbidity	1.4	A	NTU	P350632	
	SM 2120 B	Color (true)	4.2	I	PCU	P350540	
	SM 2540 D-97	TSS	3	U	mg/L	P350812	
2018466	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P350659	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P350601	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P350592	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P350613	

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: 1/2 MUSCOGEE AND HAWKSHOW 400FT
 FROM SHORE**

Collection Date/Time: 08/20/2018 11:32

Field ID: 6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018453	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P350632	
	SM 2120 B	Color (true)	5.0	I	PCU	P350540	
	SM 2540 D-97	TSS	3	UA	mg/L	P350812	
2018467	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P350659	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P350601	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P350592	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P350614	

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: 1/2 BRIDGE AND PORT

Collection Date/Time: 08/20/2018 11:40

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018454	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P350632	
	SM 2120 B	Color (true)	4.4	I	PCU	P350540	
	SM 2540 D-97	TSS	3	U	mg/L	P350813	
2018468	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P350659	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P350601	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P350592	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P350614	

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: WEST OF STORMDRAIN INSIDE ROCKS

Collection Date/Time: 08/20/2018 11:18

Field ID: 8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018455	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P350632	
	SM 2120 B	Color (true)	4.5	I	PCU	P350540	
	SM 2540 D-97	TSS	3	I	mg/L	P350813	
2018469	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P350659	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P350601	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P350590	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P350614	

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: WEST END OF HAWKSHAW 100FT SOUTH OF OUTFALL **Collection Date/Time: 08/20/2018 12:07**

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018456	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P350632	
	SM 2120 B	Color (true)	4.7	I	PCU	P350540	
	SM 2540 D-97	TSS	3	U	mg/L	P350813	
2018470	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P350660	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P350601	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P350590	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P350614	

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: BETWEEN MARINA AND OUTFALL

Collection Date/Time: 08/20/2018 12:01

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018457	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P350632	
	SM 2120 B	Color (true)	6.2		PCU	P350540	
	SM 2540 D-97	TSS	4	I	mg/L	P350813	
2018471	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P350660	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P350601	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P350590	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P350614	

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: ENTRANCE OF MARINA

Collection Date/Time: 08/20/2018 11:53

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018458	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P350632	
	SM 2120 B	Color (true)	4.9	I	PCU	P350540	
	SM 2540 D-97	TSS	4	IA	mg/L	P350813	
2018472	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P350660	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P350601	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P350590	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P350614	

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: P350631

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350632

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350659

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350660

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350662

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350688

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350598

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350601

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350748

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
Batch ID: P350749

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350590

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350592

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350667

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350612

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350613

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350614

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

Reference Method: SM 2120 B
Batch ID: P350539

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P350540

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P350810

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P350812

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P350813

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: P350659

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350660

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350662

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350688

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350598

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350601

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350748

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350749

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: P350590

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350592

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350667

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: P350612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350613

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.1		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P350539

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.0		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P350540

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350659

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018460	Ammonia-N	101	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350660

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018470	Ammonia-N	98.7	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017936	Ammonia-N	99.6	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350598

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018459	Kjeldahl Nitrogen	107	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350601

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018468	Kjeldahl Nitrogen	100	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019015	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350749

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018707	Kjeldahl Nitrogen	99.1	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018608	NO2NO3-N	99.5	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350592

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018459	NO2NO3-N	100	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018510	NO2NO3-N	98.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018334	Total-P	99.0	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350613

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018460	Total-P	96.0	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018470	Total-P	98.4	99.8	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018445	Turbidity	0.407	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018452	Turbidity	4.32	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350659

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018460	Ammonia-N	3.70	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350660

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018470	Ammonia-N	1.96	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018412	Ammonia-N	3.10	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017936	Ammonia-N	0.869	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350598

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018459	Kjeldahl Nitrogen	4.42	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018468	Kjeldahl Nitrogen	4.51	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019015	Kjeldahl Nitrogen	0.177	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018707	Kjeldahl Nitrogen	0.801	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018608	NO2NO3-N	1.35	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350592

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018459	NO2NO3-N	0.962	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018510	NO2NO3-N	0.667	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018334	Total-P	1.45	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018460	Total-P	0.0781	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018470	Total-P	1.49	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P350539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018331	Color (true)	0.546	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P350540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018411	Color (true)	0.0864	Sample	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: A86034

Included Lab Sample IDs: 2018445, 2018446, 2018447, 2018448, 2018449, 2018450, 2018451, 2018452, 2018453, 2018454, 2018455, 2018456, 2018457, 2018458, 2018473

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 115
Color (true)	100	103	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86035

Included Lab Sample IDs: 2018445, 2018446, 2018447, 2018448, 2018449, 2018450, 2018451, 2018452, 2018453, 2018454, 2018455, 2018456, 2018457, 2018458, 2018473

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105
Turbidity	102	103	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86060

Included Lab Sample IDs: 2018459, 2018460, 2018461, 2018462, 2018463, 2018464, 2018465, 2018466, 2018467, 2018468, 2018469, 2018470, 2018471, 2018472

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86078

Included Lab Sample IDs: 2018459, 2018460, 2018461, 2018462, 2018463, 2018464, 2018465, 2018466, 2018467, 2018468, 2018469, 2018470, 2018471, 2018472, 2018474

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86079

Included Lab Sample IDs: 2018459, 2018460, 2018461, 2018464, 2018465, 2018466, 2018467, 2018468, 2018469, 2018470, 2018471, 2018472

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	97.4	P/P	90 - 110
Kjeldahl Nitrogen	92.9	106	P/P	90 - 110
Kjeldahl Nitrogen	95.2	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86083

Included Lab Sample IDs: 2018460, 2018461, 2018462, 2018463, 2018464, 2018465, 2018466, 2018467, 2018468, 2018469, 2018470, 2018471, 2018472, 2018474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.2	99.3	P/P	90 - 110
Ammonia-N	98.3	98.2	P/P	90 - 110
Ammonia-N	99.3	99.5	P/P	90 - 110
Ammonia-N	99.4	98.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86085

Included Lab Sample IDs: 2018474

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86096

Included Lab Sample IDs: 2018459

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86157

Included Lab Sample IDs: 2018462, 2018463, 2018474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	100	P/P	90 - 110
Kjeldahl Nitrogen	98.2	102	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				0.407	
	Turbidity				4.32	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	101	105		3.70
	Ammonia-N	98.5	98.7	101		1.96
	Ammonia-N	100				3.10
	Ammonia-N	99.7	99.6	101		0.869
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	107	102		4.42
	Kjeldahl Nitrogen	98.8	100	106		4.51
	Kjeldahl Nitrogen	104	102	102		0.177
	Kjeldahl Nitrogen	103	99.1	100		0.801
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	99.5	101		1.35
	NO2NO3-N	101	100	101		0.962
	NO2NO3-N	100	98.8			0.667
EPA 365.1 Rev. 2.0	Total-P	99.0	99.0	101		1.45
	Total-P	98.5	96.0	96.0		0.0781
	Total-P	96.1	98.4	99.8		1.49
SM 2120 B	Color (true)	99.0			0.546	
	Color (true)	100			0.0864	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2018445, 2018446, 2018447, 2018448, 2018449, 2018450, 2018451, 2018452, 2018453, 2018454, 2018455, 2018456, 2018457, 2018458, 2018473
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2018459, 2018460, 2018461, 2018462, 2018463, 2018464, 2018465, 2018466, 2018467, 2018468, 2018469, 2018470, 2018471, 2018472, 2018474
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2018459, 2018460, 2018461, 2018462, 2018463, 2018464, 2018465, 2018466, 2018467, 2018468, 2018469, 2018470, 2018471, 2018472, 2018474
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2018459, 2018460, 2018461, 2018462, 2018463, 2018464, 2018465, 2018466, 2018467, 2018468, 2018469, 2018470, 2018471, 2018472, 2018474
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2018459, 2018460, 2018461, 2018462, 2018463, 2018464, 2018465, 2018466, 2018467, 2018468, 2018469, 2018470, 2018471, 2018472, 2018474
SM 2120 B / E31780	True Color measured at 450 nm	2018445, 2018446, 2018447, 2018448, 2018449, 2018450, 2018451, 2018452, 2018453, 2018454, 2018455, 2018456, 2018457, 2018458, 2018473
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2018445, 2018446, 2018447, 2018448, 2018449, 2018450, 2018451, 2018452, 2018453, 2018454, 2018455, 2018456, 2018457, 2018458, 2018473

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	08/21/2018			08/21/2018 16:11	Megan Treadwell	2018445, 2018446, 2018447, 2018448, 2018449, 2018450, 2018451, 2018452, 2018453, 2018454, 2018455, 2018456, 2018457, 2018458, 2018473
EPA 350.1 Rev. 2.0	08/21/2018			08/23/2018 10:59	Adrian Shelby	2018460
	08/21/2018			08/23/2018 11:03	Adrian Shelby	2018461
	08/21/2018			08/23/2018 11:11	Adrian Shelby	2018462
	08/21/2018			08/23/2018 11:12	Adrian Shelby	2018463
	08/21/2018			08/23/2018 11:14	Adrian Shelby	2018464
	08/21/2018			08/23/2018 11:15	Adrian Shelby	2018465
	08/21/2018			08/23/2018 11:17	Adrian Shelby	2018466
	08/21/2018			08/23/2018 11:18	Adrian Shelby	2018467
	08/21/2018			08/23/2018 11:20	Adrian Shelby	2018468
	08/21/2018			08/23/2018 11:21	Adrian Shelby	2018469
	08/21/2018			08/23/2018 11:32	Adrian Shelby	2018470
	08/21/2018			08/23/2018 11:36	Adrian Shelby	2018471
	08/21/2018			08/23/2018 11:38	Adrian Shelby	2018472
	08/21/2018			08/23/2018 12:25	Ping Hua	2018459
	08/21/2018			08/23/2018 12:38	Adrian Shelby	2018474
EPA 351.2 Rev. 2.0	08/21/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 10:48	Joseph Suarez	2018459
	08/21/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 10:53	Joseph Suarez	2018460
	08/21/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 10:54	Joseph Suarez	2018461
	08/21/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 11:55	Joseph Suarez	2018464
	08/21/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 11:56	Joseph Suarez	2018465
	08/21/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 11:58	Joseph Suarez	2018466
	08/21/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 12:03	Joseph Suarez	2018467
	08/21/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 12:04	Joseph Suarez	2018468
	08/21/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 12:09	Joseph Suarez	2018469
	08/21/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 12:11	Joseph Suarez	2018470
	08/21/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 12:12	Joseph Suarez	2018471
	08/21/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 12:14	Joseph Suarez	2018472
	08/21/2018	08/27/2018 11:00	Adrian Shelby	08/28/2018 14:13	Joseph Suarez	2018474
	08/21/2018	08/27/2018 11:00	Adrian Shelby	08/28/2018 14:35	Joseph Suarez	2018462
	08/21/2018	08/27/2018 11:00	Adrian Shelby	08/28/2018 14:37	Joseph Suarez	2018463
EPA 353.2 Rev. 2.0	08/21/2018			08/22/2018 11:48	Lauren Bottorf	2018459
	08/21/2018			08/22/2018 11:54	Lauren Bottorf	2018460
	08/21/2018			08/22/2018 11:55	Lauren Bottorf	2018461
	08/21/2018			08/22/2018 11:56	Lauren Bottorf	2018462
	08/21/2018			08/22/2018 11:58	Lauren Bottorf	2018463
	08/21/2018			08/22/2018 11:59	Lauren Bottorf	2018464

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	08/21/2018			08/22/2018 12:00	Lauren Bottorf	2018465
	08/21/2018			08/22/2018 12:01	Lauren Bottorf	2018466
	08/21/2018			08/22/2018 12:02	Lauren Bottorf	2018467
	08/21/2018			08/22/2018 12:04	Lauren Bottorf	2018468
	08/21/2018			08/22/2018 12:21	Lauren Bottorf	2018469
	08/21/2018			08/22/2018 12:23	Lauren Bottorf	2018470
	08/21/2018			08/22/2018 12:24	Lauren Bottorf	2018471
	08/21/2018			08/22/2018 12:25	Lauren Bottorf	2018472
	08/21/2018			08/23/2018 13:06	Lauren Bottorf	2018474
EPA 365.1 Rev. 2.0	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:07	Beverly Y. Sanders	2018474
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:23	Beverly Y. Sanders	2018459
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:24	Beverly Y. Sanders	2018460
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:25	Beverly Y. Sanders	2018461
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:26	Beverly Y. Sanders	2018462, 2018463
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:34	Beverly Y. Sanders	2018464
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:35	Beverly Y. Sanders	2018465
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:36	Beverly Y. Sanders	2018466
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:38	Beverly Y. Sanders	2018467
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:39	Beverly Y. Sanders	2018468
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:40	Beverly Y. Sanders	2018469
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:41	Beverly Y. Sanders	2018470
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:42	Beverly Y. Sanders	2018471
	08/21/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 12:43	Beverly Y. Sanders	2018472
SM 2120 B	08/21/2018			08/21/2018 16:06	William L. Brown IV	2018445
	08/21/2018			08/21/2018 16:07	William L. Brown IV	2018446, 2018447
	08/21/2018			08/21/2018 16:08	William L. Brown IV	2018448
	08/21/2018			08/21/2018 16:09	William L. Brown IV	2018449
	08/21/2018			08/21/2018 16:10	William L. Brown IV	2018450, 2018451
	08/21/2018			08/21/2018 16:16	William L. Brown IV	2018452
	08/21/2018			08/21/2018 16:17	William L. Brown IV	2018453, 2018454
	08/21/2018			08/21/2018 16:18	William L. Brown IV	2018455
	08/21/2018			08/21/2018 16:19	William L. Brown IV	2018456
	08/21/2018			08/21/2018 16:20	William L. Brown IV	2018457
SM 2540 D-97	08/21/2018			08/21/2018 16:21	William L. Brown IV	2018458, 2018473
	08/21/2018			08/22/2018 15:33	Yijie Li	2018445, 2018446, 2018447, 2018448, 2018449, 2018450, 2018451, 2018452, 2018453, 2018454, 2018455, 2018456, 2018457, 2018458, 2018473