

Chemical Analysis Report

NE-DIST-2017-09-27-01

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

Event Description: **LSJR Nutrients**
Request ID: **RQ-2017-09-25-41**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Certified by: Colin Wright, Program Administrator

Date Certified: 12-OCT-2017 11:49

A handwritten signature in black ink, appearing to read "Colin Wright", is positioned 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 groups are included in this report: Nutrients and Pesticides.

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: Strawberry Creek @ Lone Star Rd.

Collection Date/Time: 09/26/2017 10:40

Field ID: G2NE0762 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931754	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P332342	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P332363	
		Sulfate	23		mg SO4/L	P332366	
	SM 2120 B	Color (true)	140		PCU	P332371	
	SM 2320 B-97	Total Alkalinity	42		mg CaCO3/L	P332632	
	SM 2540 C-97	TDS	167		mg/L	P332920	
	SM 2540 D-97	TSS	3	I	mg/L	P332913	
	SM 4500 F-C-97	Fluoride	0.045	I	mg F/L	P332636	RPD
1931755	EPA 350.1 Rev. 2.0	Ammonia-N	0.23		mg N/L	P332756	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P332504	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P332611	
	EPA 365.1 Rev. 2.0	Total-P	0.067		mg P/L	P332460	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P332516	
1931756	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P332328	
1931787	EPA 8321B	Sucralose**	0.058		ug/L	P332314	
	USGS O-2060-01	2,4-D	0.0024	I	ug/L	P332316	
		Diuron	0.0022	I	ug/L	P332316	
		Fenuron	0.0080	U	ug/L	P332316	
		Imidacloprid	0.036		ug/L	P332316	
		Bentazon	0.026		ug/L	P332316	MS
		Linuron	0.0040	U	ug/L	P332316	
		Acetaminophen**	0.0080	U	ug/L	P332316	
		MCP	0.0020	U	ug/L	P332316	
		Carbamazepine**	4.0E-04	U	ug/L	P332316	
		Triclopyr**	0.0040	U	ug/L	P332316	
		Primidone**	0.0040	U	ug/L	P332316	
		Fluridone**	7.6E-04	I	ug/L	P332316	

Ref. Method and Comment:

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

USGS O-2060-01: MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Terrapin at Faye Rd.

Collection Date/Time: 09/26/2017 11:45

Field ID: G2NE0660 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931739	EPA 180.1 Rev. 2.0	Turbidity	8.3		NTU	P332341	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P332363	
		Sulfate	14		mg SO4/L	P332366	
	SM 2120 B	Color (true)	130		PCU	P332370	
	SM 2320 B-97	Total Alkalinity	28		mg CaCO3/L	P332632	
	SM 2540 C-97	TDS	119		mg/L	P332920	
	SM 2540 D-97	TSS	3	I	mg/L	P332913	
	SM 4500 F-C-97	Fluoride	0.059	I	mg F/L	P332636	RPD
1931744	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P332542	

Field ID: G2NE0660 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931744	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P332501	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P332610	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P332436	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P332516	
1931749	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P332328	

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: Puncheon Br. @ Gate PKWY N

Collection Date/Time: 09/26/2017 08:45

Field ID: G2NE0875 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931740	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P332341	
	EPA 300.0 Rev. 2.1	Chloride	27		mg Cl/L	P332363	
		Sulfate	23		mg SO4/L	P332366	
		Color (true)	260		PCU	P332370	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P332632	
	SM 2540 C-97	TDS	146		mg/L	P332920	
	SM 2540 D-97	TSS	4	I	mg/L	P332913	
	SM 4500 F-C-97	Fluoride	0.039	I	mg F/L	P332636	RPD
1931745	EPA 350.1 Rev. 2.0	Ammonia-N	0.38		mg N/L	P332756	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P332501	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P332610	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P332436	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P332516	
1931750	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P332328	

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: NW Trib to Open Cr. @ Hodges Blvd

Collection Date/Time: 09/26/2017 09:55

Field ID: G2NE0856 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931741	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P332341	
	EPA 300.0 Rev. 2.1	Chloride	38		mg Cl/L	P332363	
		Sulfate	58		mg SO4/L	P332366	
		Color (true)	67	A	PCU	P332370	
	SM 2320 B-97	Total Alkalinity	59		mg CaCO3/L	P332632	
	SM 2540 C-97	TDS	249		mg/L	P332920	
	SM 2540 D-97	TSS	3	I	mg/L	P332913	
	SM 4500 F-C-97	Fluoride	0.091	I	mg F/L	P332636	RPD
1931746	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P332756	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P332501	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P332610	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P332436	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P332516	

Field ID: G2NE0856 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931751	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.021		mg P/L	P332328	

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: Greenfield Creek @ Atlantic Blvd.

Collection Date/Time: 09/26/2017 10:10

Field ID: G2NE0664 9262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931742	EPA 180.1 Rev. 2.0	Turbidity	1.6	A	NTU	P332342	
	EPA 300.0 Rev. 2.1	Chloride	39		mg Cl/L	P332363	
		Sulfate	44		mg SO4/L	P332366	
	SM 2120 B	Color (true)	120		PCU	P332370	
	SM 2320 B-97	Total Alkalinity	85		mg CaCO3/L	P332632	
	SM 2540 C-97	TDS	246		mg/L	P332920	
	SM 2540 D-97	TSS	2	I	mg/L	P332913	
	SM 4500 F-C-97	Fluoride	0.072	I	mg F/L	P332636	RPD
	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P332542	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P332501	
1931747	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P332610	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P332436	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P332516	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P332328	

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: Newcastle Creek @ Ft. Caroline Rd.

Collection Date/Time: 09/26/2017 11:15

Field ID: G2NE0880 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931743	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P332342	
	EPA 300.0 Rev. 2.1	Chloride	34		mg Cl/L	P332363	
		Sulfate	30		mg SO4/L	P332366	
	SM 2120 B	Color (true)	22		PCU	P332371	
	SM 2320 B-97	Total Alkalinity	44		mg CaCO3/L	P332632	
	SM 2540 C-97	TDS	162	A	mg/L	P332920	
	SM 2540 D-97	TSS	4	IA	mg/L	P332913	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P332636	RPD
	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P332542	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P332504	
1931748	EPA 353.2 Rev. 2.0	NO2NO3-N	0.33		mg N/L	P332610	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P332460	
	SM 5310 B-00	Organic Carbon	4.4		mg C/L	P332516	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P332328	

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: P332341

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332342

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332363

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332366

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332542

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332756

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332501

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332504

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332610

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332611

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332436

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332460

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332328

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

Reference Method: EPA 8321B
Batch ID: P332314

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P332370

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P332371

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P332632

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

Reference Method: SM 2540 C-97
Batch ID: P332920

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P332913

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P332636

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P332516

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

Reference Method: USGS O-2060-01
Batch ID: P332316

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332363

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332366

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332542

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332756

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: P332501

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332504

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332610

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332611

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332436

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332460

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332328

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

Reference Method: EPA 8321B
Batch ID: P332314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	92.6		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P332632

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P332636

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P332516

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

Reference Method: USGS O-2060-01
Batch ID: P332316

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.3		P	40 - 150
Acetaminophen	145		P	30 - 150
Bentazon	40.2		P	40 - 150
Carbamazepine	117		P	40 - 150
Diuron	103		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	110		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	107		P	40 - 150
MCP	75.7		P	40 - 150
Primidone	109		P	40 - 150
Triclopyr	72.5		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332363

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931610	Chloride	93.3		P	90 - 110
1931643	Chloride	94.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332366

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931610	Sulfate	94.7		P	90 - 110
1931643	Sulfate	93.7		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931655	Ammonia-N	100	98.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931773	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332501

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931656	Kjeldahl Nitrogen	102	90.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931818	Kjeldahl Nitrogen	98.6	95.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332610

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931705	NO2NO3-N	106	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931755	NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931744	Total-P	94.3	96.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931818	Total-P	99.3	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931749	O-Phosphate-P	94.9	96.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P332314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1932057	Sucralose	42.3	42.5	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P332636

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931805	Fluoride	96.0	100	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P332516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931655	Organic Carbon	96.8	102	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P332316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931788	2,4-D	64.1	66.9	P/P	40 - 150
1931788	Acetaminophen	82.5	90.5	P/P	30 - 150
1931788	Bentazon	22.3	29.7	F/F	40 - 150
1931788	Carbamazepine	82.1	84.7	P/P	40 - 150
1931788	Diuron	57.4	62.9	P/P	40 - 150
1931788	Fenuron	82.6	83.1	P/P	40 - 150
1931788	Fluridone	66.1	58.8	P/P	40 - 150
1931788	Linuron	80.7	85.4	P/P	40 - 150
1931788	MCPP	50.0	51.8	P/P	40 - 150
1931788	Primidone	91.9	91.9	P/P	40 - 150
1931788	Triclopyr	50.6	52.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931637	Turbidity	1.92	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931742	Turbidity	1.29	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332363

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931610	Chloride	2.38	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931610	Sulfate	3.55	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931655	Ammonia-N	1.38	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931773	Ammonia-N	1.86	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931656	Kjeldahl Nitrogen	8.00	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931818	Kjeldahl Nitrogen	2.26	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931705	NO2NO3-N	0.468	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931755	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931744	Total-P	1.53	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931818	Total-P	1.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931749	O-Phosphate-P	1.38	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P332314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1932057	Sucralose	0.283	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P332370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931741	Color (true)	0.397	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P332371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931769	Color (true)	4.14	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P332632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931805	Total Alkalinity	0.258	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P332920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931743	TDS	0.615	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P332636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931805	Fluoride	4.04	Spike	F	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P332516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931655	Organic Carbon	3.24	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P332316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931788	2,4-D	3.28	Spike	P	0 - 30
1931788	Acetaminophen	9.20	Spike	P	0 - 30
1931788	Bentazon	11.2	Spike	P	0 - 30
1931788	Carbamazepine	2.99	Spike	P	0 - 30
1931788	Diuron	6.74	Spike	P	0 - 30
1931788	Fenuron	0.652	Spike	P	0 - 30
1931788	Fluridone	11.1	Spike	P	0 - 30
1931788	Imidacloprid	0.905	Spike	P	0 - 30
1931788	Linuron	5.66	Spike	P	0 - 30
1931788	MCPP	3.10	Spike	P	0 - 30
1931788	Primidone	0.0440	Spike	P	0 - 30
1931788	Triclopyr	3.91	Spike	P	0 - 30

* 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 Surrogates

Lab Sample ID: 1931787
Field Sample ID: G2NE0762 09262017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	97.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.7	P	30 - 160
EPA 8321B	Diuron-d6	64.0	P	30 - 160
EPA 8321B	Primidone-d5	81.4	P	30 - 160
EPA 8321B	Sucralose-d6	85.2	P	40 - 160
USGS O-2060-01	2,4-D-d3	68.3	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	97.0	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	82.7	P	30 - 160
USGS O-2060-01	Diuron-d6	64.0	P	30 - 160
USGS O-2060-01	Primidone-d5	81.4	P	30 - 160
USGS O-2060-01	Sucralose-d6	85.2	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A79194

Included Lab Sample IDs: 1931749, 1931750, 1931751, 1931752, 1931753, 1931756

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	96.5	P/P	90 - 110
O-Phosphate-P	101	101	P/P	90 - 110
O-Phosphate-P	98.4	99.6	P/P	90 - 110
O-Phosphate-P	99.6	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A79197

Included Lab Sample IDs: 1931739, 1931740, 1931741, 1931742, 1931743, 1931754

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A79203

Included Lab Sample IDs: 1931739, 1931740, 1931741, 1931742, 1931743, 1931754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.7	99.1	P/P	90 - 110
Sulfate	95.1	101	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A79205

Included Lab Sample IDs: 1931739, 1931740, 1931741, 1931742, 1931743, 1931754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	104	P/P	90 - 115
Color (true)	103	103	P/P	90 - 115
Color (true)	98.0	103	P/P	85 - 115

Reference Method: SM 5310 B-00

Run ID: A79261

Included Lab Sample IDs: 1931744, 1931745, 1931746, 1931747, 1931748, 1931755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	98.9	P/P	90 - 110
Organic Carbon	98.9	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79263

Included Lab Sample IDs: 1931744, 1931746, 1931747, 1931748, 1931755

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79267

Included Lab Sample IDs: 1931744, 1931747, 1931748

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79280

Included Lab Sample IDs: 1931745

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79298

Included Lab Sample IDs: 1931744, 1931745, 1931746, 1931747, 1931748, 1931755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	104	P/P	90 - 110
NO2NO3-N	104	104	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A79305

Included Lab Sample IDs: 1931739, 1931740, 1931741, 1931742, 1931743, 1931754

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

Reference Method: SM 4500 F-C-97

Run ID: A79305

Included Lab Sample IDs: 1931739, 1931740, 1931741, 1931742, 1931743, 1931754

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79313

Included Lab Sample IDs: 1931744, 1931745, 1931746, 1931747, 1931748, 1931755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.7	98.0	P/P	90 - 110
Kjeldahl Nitrogen	99.7	96.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79344

Included Lab Sample IDs: 1931745, 1931746, 1931755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	104	P/P	90 - 110
Ammonia-N	105	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A79377
Included Lab Sample IDs: 1931787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.0	96.7	P/P	50 - 150
Acetaminophen	99.2	97.6	P/P	60 - 150
Bentazon	125	118	P/P	50 - 150
Carbamazepine	106	106	P/P	60 - 150
Diuron	104	103	P/P	60 - 150
Fenuron	101	99.4	P/P	60 - 150
Fluridone	102	100	P/P	60 - 160
Imidacloprid	93.2	92.2	P/P	60 - 150
Linuron	108	104	P/P	60 - 150
MCPP	99.9	99.8	P/P	50 - 150
Primidone	99.8	99.4	P/P	60 - 150
Triclopyr	100	98.9	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A79451
Included Lab Sample IDs: 1931787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	90.6	81.6	P/P	60 - 150

* 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		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.92	
	Turbidity						1.29	
EPA 300.0 Rev. 2.1	Chloride	96.6		93.3	94.2		2.38	
	Sulfate	98.9		94.7	93.7		3.55	
EPA 350.1 Rev. 2.0	Ammonia-N	102		100	98.7			1.38
	Ammonia-N	101		101	103			1.86
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100		102	90.6			8.00
	Kjeldahl Nitrogen	98.0		98.6	95.3			2.26
EPA 353.2 Rev. 2.0	NO2NO3-N	107		106	107			0.468
	NO2NO3-N	107		104				0.0
EPA 365.1 Rev. 2.0	Total-P	93.3		94.3	96.1			1.53
	Total-P	98.9		99.3	97.9			1.37
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3		94.9	96.7			1.38
EPA 8321B	Sucralose	92.6		42.3	42.5			0.283
SM 2120 B	Color (true)						0.397	
	Color (true)						4.14	
SM 2320 B-97	Total Alkalinity	102					0.258	
SM 2540 C-97	TDS						0.615	
SM 4500 F-C-97	Fluoride	98.2		96.0	100			4.04
SM 5310 B-00	Organic Carbon	101		96.8	102			3.24
USGS O-2060-01	2,4-D	74.3		64.1	66.9			3.28

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
USGS O-2060-01	Acetaminophen	145	82.5	90.5		9.20
	Bentazon	40.2	22.3	29.7		11.2
	Carbamazepine	117	82.1	84.7		2.99
	Diuron	103	57.4	62.9		6.74
	Fenuron	112	82.6	83.1		0.652
	Fluridone	110	66.1	58.8		11.1
	Imidacloprid	102				0.905
	Linuron	107	80.7	85.4		5.66
	MCPD	75.7	50.0	51.8		3.10
	Primidone	109	91.9	91.9		0.0440
	Triclopyr	72.5	50.6	52.6		3.91

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1931744, 1931745, 1931746, 1931747, 1931748, 1931755
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1931744, 1931745, 1931746, 1931747, 1931748, 1931755
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1931744, 1931745, 1931746, 1931747, 1931748, 1931755
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1931744, 1931745, 1931746, 1931747, 1931748, 1931755
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1931749, 1931750, 1931751, 1931752, 1931753, 1931756
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1931787
SM 2120 B / E31780	True Color measured at 450 nm	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1931744, 1931745, 1931746, 1931747, 1931748, 1931755
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1931787
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1931787

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	09/27/2017			09/27/2017 17:33	Tanya Welborn	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
EPA 300.0 Rev. 2.1	09/27/2017			09/27/2017	Julia Storbeck	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
EPA 350.1 Rev. 2.0	09/27/2017			09/29/2017	Sofia Elnemr	1931744, 1931747, 1931748
	09/27/2017			10/04/2017	Sofia Elnemr	1931745, 1931746, 1931755
EPA 351.2 Rev. 2.0	09/27/2017	09/29/2017	Adrian Shelby	10/02/2017	Tanya Welborn	1931744, 1931745, 1931746, 1931747, 1931748, 1931755
EPA 353.2 Rev. 2.0	09/27/2017			10/03/2017	Beverly Y. Sanders	1931744, 1931745, 1931746, 1931747, 1931748, 1931755
EPA 365.1 Rev. 2.0	09/27/2017	09/29/2017	Sima Feizi	10/02/2017	Lipi Saha	1931744, 1931745, 1931746, 1931747, 1931748, 1931755
EPA 365.1 Rev. 2.0 dissolved	09/27/2017			09/27/2017 14:36	Megan Treadwell	1931749
	09/27/2017			09/27/2017 14:51	Megan Treadwell	1931750
	09/27/2017			09/27/2017 15:00	Megan Treadwell	1931753
	09/27/2017			09/27/2017 15:01	Megan Treadwell	1931756
	09/27/2017			09/27/2017 15:07	Megan Treadwell	1931752
	09/27/2017			09/27/2017 15:17	Megan Treadwell	1931751
EPA 8321B	09/27/2017	10/02/2017	Hoor Shaik	10/09/2017	Juyoung Kim	1931787
SM 2120 B	09/27/2017			09/27/2017 15:30	DeAsia Armster	1931739
	09/27/2017			09/27/2017 15:32	DeAsia Armster	1931741
	09/27/2017			09/27/2017 15:33	DeAsia Armster	1931742
	09/27/2017			09/27/2017 15:36	DeAsia Armster	1931743
	09/27/2017			09/27/2017 15:37	DeAsia Armster	1931754
	09/27/2017			09/27/2017 16:30	DeAsia Armster	1931740
SM 2320 B-97	09/27/2017			10/03/2017	Dale L. Simmons	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
SM 2540 C-97	09/27/2017			09/29/2017	Yijie Li	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
SM 2540 D-97	09/27/2017			09/29/2017	Yijie Li	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
SM 4500 F-C-97	09/27/2017			10/03/2017	Dale L. Simmons	1931739, 1931740, 1931741, 1931742, 1931743, 1931754
SM 5310 B-00	09/27/2017			09/28/2017	Ping Hua	1931744, 1931745, 1931746, 1931747, 1931748, 1931755
USGS O-2060-01	09/27/2017	10/02/2017	Hoor Shaik	10/06/2017	Julie Michelle Frank	1931787