

Chemical Analysis Report

NE-DIST-2017-02-09-02

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

Event Description: **Gainesville 1**
Request ID: **RQ-2017-02-06-17**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 02-MAR-2017 14:53

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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: Little Hatchett Creek @ SR 24

Collection Date/Time: 02/08/2017 09:50

Field ID: G1NE0083

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871147	EPA 180.1 Rev. 2.0	Turbidity	8.9		NTU	P319622	
	EPA 300.0 Rev. 2.1	Chloride	9.9		mg Cl/L	P320122	
		Sulfate	20		mg SO4/L	P320123	
	SM 2120 B	Color (true)	69	A	PCU	P319626	
	SM 2320 B-97	Total Alkalinity	52		mg CaCO3/L	P320109	
	SM 2540 C-97	TDS	130		mg/L	P320289	
	SM 2540 D-97	TSS	10		mg/L	P320151	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P319956	
1871151	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P319695	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P319711	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P320133	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P319784	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P319674	
1871155	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.075		mg P/L	P319609	
1871361	EPA 8321B	Sucralose**	0.49		ug/L	P319242	
	USGS O-2060-01	Diuron	0.0080	U	ug/L	P319725	
		Fenuron	0.016	U	ug/L	P319725	
		Imidacloprid	0.014	I	ug/L	P319725	
		Linuron	0.0080	U	ug/L	P319725	
		Acetaminophen**	0.037		ug/L	P319725	
		Carbamazepine**	4.0E-04	U	ug/L	P319725	
		Primidone**	0.026	I	ug/L	P319725	
		Fluridone**	8.0E-04	U	ug/L	P319725	RPD

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: Bentazon = 0.17 ug/L, 2,4-D = 0.072 ug/L, MCPP = 0.015 ug/L and triclopyr = 0.042 ug/L. MDL's for some parameters elevated due to matrix interference.

Sample Location: Blues Creek @ NW 71st St. Gainesville

Collection Date/Time: 02/08/2017 10:15

Field ID: 21030089 02082017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871148	EPA 180.1 Rev. 2.0	Turbidity	3.0	A	NTU	P319623	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P320122	
		Sulfate	23		mg SO4/L	P320123	
	SM 2120 B	Color (true)	120		PCU	P319626	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P320109	
	SM 2540 C-97	TDS	179		mg/L	P320289	
	SM 2540 D-97	TSS	2	I	mg/L	P320151	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P319956	
1871152	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P319938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P319711	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P320133	
	EPA 365.1 Rev. 2.0	Total-P	0.68		mg P/L	P319786	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P319674	

Field ID: 21030089 02082017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871156	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.55		mg P/L	P319609	
1871362	EPA 8321B	Sucralose**	0.15		ug/L	P319242	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P319725	
		Fenuron	0.0080	U	ug/L	P319725	
		Imidacloprid	0.0040	U	ug/L	P319725	
		Linuron	0.0040	U	ug/L	P319725	
		Acetaminophen**	0.0040	U	ug/L	P319725	
		Carbamazepine**	0.0040		ug/L	P319725	
		Primidone**	0.0080	U	ug/L	P319725	
		Fluridone**	4.0E-04	U	ug/L	P319725	RPD

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: Triclopyr = 0.0054 I ug/L.

Sample Location: Tumblin Creek @ SW 14TH

Collection Date/Time: 02/08/2017 10:55

Field ID: G1NE0856 02082017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871149	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P319623	
	EPA 300.0 Rev. 2.1	Chloride	8.2		mg Cl/L	P320122	
		Sulfate	13		mg SO4/L	P320123	
	SM 2120 B	Color (true)	43		PCU	P319626	
	SM 2320 B-97	Total Alkalinity	76		mg CaCO3/L	P320109	
	SM 2540 C-97	TDS	131		mg/L	P320289	
	SM 2540 D-97	TSS	13		mg/L	P320151	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P319956	
1871153	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P319695	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P319711	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P320133	
	EPA 365.1 Rev. 2.0	Total-P	0.27		mg P/L	P319786	
	SM 5310 B-00	Organic Carbon	7.4		mg C/L	P319674	
1871157	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P319609	
1871363	EPA 8321B	Sucralose**	0.21		ug/L	P319242	
	USGS O-2060-01	Diuron	0.026	I	ug/L	P319725	
		Fenuron	0.016	U	ug/L	P319725	
		Imidacloprid	0.011	I	ug/L	P319725	
		Linuron	0.0080	U	ug/L	P319725	
		Acetaminophen**	0.047		ug/L	P319725	
		Carbamazepine**	4.0E-04	U	ug/L	P319725	
		Primidone**	0.0080	U	ug/L	P319725	
		Fluridone**	8.0E-04	U	ug/L	P319725	RPD

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: 2,4-D = 0.17 ug/L and triclopyr = 0.019 ug/L. MDL's for some parameters elevated due to matrix interference.

Sample Location: Lake Alice Outlet @ Gale Lemmeron Rd.

Collection Date/Time: 02/08/2017 11:15

Field ID: G1NE0206 02082017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871150	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P319623	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P320122	
		Sulfate	18		mg SO4/L	P320123	
	SM 2120 B	Color (true)	46		PCU	P319626	
	SM 2320 B-97	Total Alkalinity	47		mg CaCO3/L	P320109	
	SM 2540 C-97	TDS	117		mg/L	P320290	
	SM 2540 D-97	TSS	13		mg/L	P320152	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P319956	
1871154	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P319696	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P319711	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P320133	
	EPA 365.1 Rev. 2.0	Total-P	0.53		mg P/L	P319786	
	SM 5310 B-00	Organic Carbon	8.6		mg C/L	P319674	
1871158	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.31		mg P/L	P319609	
1871364	EPA 8321B	Sucralose**	1.2		ug/L	P319242	
	USGS O-2060-01	Diuron	0.0085	I	ug/L	P319725	
		Fenuron	0.016	U	ug/L	P319725	
		Imidacloprid	0.032		ug/L	P319725	
		Linuron	0.0080	U	ug/L	P319725	
		Acetaminophen**	0.11		ug/L	P319725	
		Carbamazepine**	7.3E-04	I	ug/L	P319725	
		Primidone**	0.0080	U	ug/L	P319725	
		Fluridone**	8.0E-04	U	ug/L	P319725	RPD

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: Bentazon = 0.040 ug/L, 2,4-D = 0.015 ug/L and triclopyr = 0.23 ug/L. MDL's for some parameters elevated due to matrix interference.

Sample Location: Hogtown Creek @ SW 20th Ave.

Collection Date/Time: 02/08/2017 11:45

Field ID: G1NE0871 02082017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871365	EPA 8321B	Sucralose**	0.19		ug/L	P319242	
	USGS O-2060-01	Diuron	0.0052	I	ug/L	P319725	
		Fenuron	0.0080	U	ug/L	P319725	
		Imidacloprid	0.0094	I	ug/L	P319725	
		Linuron	0.0040	U	ug/L	P319725	
		Acetaminophen**	0.16		ug/L	P319725	
		Carbamazepine**	4.0E-04	U	ug/L	P319725	
		Primidone**	0.0080	U	ug/L	P319725	
		Fluridone**	4.0E-04	U	ug/L	P319725	RPD

Ref. Method and Comment:

USGS O-2060-01: Bentazon = 0.019 ug/L, 2,4-D = 0.064 ug/L and triclopyr = 0.022 ug/L.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319622

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319623

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320122

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320123

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319695

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319696

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319938

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319711

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320133

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319784

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319786

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319609

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

Reference Method: EPA 8321B
Batch ID: P319242

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P319626

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P320109

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

Reference Method: SM 2540 C-97
Batch ID: P320289

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P320290

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P320151

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P320152

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P319956

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P319674

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

Reference Method: USGS O-2060-01
Batch ID: P319725

Component	Result	Code	Units
Acetaminophen	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0080	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320122

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320123

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319695

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319696

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319938

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319711

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320133

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319784

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319786

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319609

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

Reference Method: EPA 8321B
Batch ID: P319242

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	75.7		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P320109

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
 Batch ID: P319956

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

Reference Method: SM 5310 B-00
 Batch ID: P319674

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P319725

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	79.2		P	40 - 140
Carbamazepine	116		P	40 - 140
Diuron	76.0		P	40 - 140
Fenuron	96.4		P	40 - 140
Fluridone	62.4		P	40 - 140
Imidacloprid	84.0		P	40 - 160
Linuron	85.6		P	40 - 140
Primidone	76.8		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P320122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871711	Chloride	104		P	90 - 110
1871713	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P320123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871711	Sulfate	102		P	90 - 110
1871713	Sulfate	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P319695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870715	Ammonia-N	98.6	98.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P319696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870792	Ammonia-N	102	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871042	Ammonia-N	97.9	94.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871198	Kjeldahl Nitrogen	97.1	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871151	NO2NO3-N	98.5	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319784

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871111	Total-P	100	96.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871201	Total-P	98.8	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319609

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871093	O-Phosphate-P	98.4	98.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P319242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870854	Sucralose	84.3	87.4	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P319956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870833	Fluoride	101	99.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P319674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870819	Organic Carbon	92.2	93.2	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P319725

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872083	Acetaminophen	55.6	57.2	P/P	40 - 140
1872083	Carbamazepine	56.0	59.2	P/P	40 - 140
1872083	Diuron	44.4	42.4	P/P	40 - 140
1872083	Fenuron	54.4	53.2	P/P	40 - 140
1872083	Fluridone	64.0	46.8	P/P	40 - 140
1872083	Imidacloprid	90.4	80.0	P/P	40 - 160
1872083	Linuron	68.8	69.6	P/P	40 - 140
1872083	Primidone	44.4	58.4	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871039	Turbidity	0.228	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871148	Turbidity	0.329	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871711	Chloride	0.0518	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871711	Sulfate	0.201	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870715	Ammonia-N	0.220	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870792	Ammonia-N	1.12	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871042	Ammonia-N	1.93	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871198	Kjeldahl Nitrogen	3.69	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871151	NO2NO3-N	1.59	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319784

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871111	Total-P	3.36	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871201	Total-P	1.08	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871093	O-Phosphate-P	0.203	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P319242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870854	Sucralose	3.61	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P319626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871147	Color (true)	3.51	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P320109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870833	Total Alkalinity	0.623	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P320289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871039	TDS	0.837	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P320290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871195	TDS	0.669	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P319956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870833	Fluoride	1.04	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P319674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870819	Organic Carbon	0.940	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P319725

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872083	Acetaminophen	2.84	Spike	P	0 - 30
1872083	Carbamazepine	5.56	Spike	P	0 - 30
1872083	Diuron	4.61	Spike	P	0 - 30
1872083	Fenuron	2.23	Spike	P	0 - 30
1872083	Fluridone	31.0	Spike	F	0 - 30
1872083	Imidacloprid	12.2	Spike	P	0 - 30
1872083	Linuron	1.16	Spike	P	0 - 30
1872083	Primidone	27.2	Spike	P	0 - 30

Quality Assurance Report Precision

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 1871361
Field Sample ID: G1NE0083

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	92.5	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	78.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	48.2	P	40 - 160
USGS O-2060-01	Diuron-d6	55.2	P	40 - 150
USGS O-2060-01	Primidone-d5	60.6	P	40 - 150

Lab Sample ID: 1871362
Field Sample ID: 21030089 02082017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	89.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	75.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	78.4	P	40 - 160
USGS O-2060-01	Diuron-d6	51.0	P	40 - 150
USGS O-2060-01	Primidone-d5	61.2	P	40 - 150

Lab Sample ID: 1871363
Field Sample ID: G1NE0856 02082017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	99.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	74.4	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	59.4	P	40 - 160
USGS O-2060-01	Diuron-d6	58.4	P	40 - 150
USGS O-2060-01	Primidone-d5	79.6	P	40 - 150

Lab Sample ID: 1871364
Field Sample ID: G1NE0206 02082017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	88.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	72.2	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	54.8	P	40 - 160
USGS O-2060-01	Diuron-d6	55.6	P	40 - 150
USGS O-2060-01	Primidone-d5	87.4	P	40 - 150

Lab Sample ID: 1871365
Field Sample ID: G1NE0871 02082017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	90.5	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	62.6	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	64.0	P	40 - 160
USGS O-2060-01	Diuron-d6	47.4	P	40 - 150
USGS O-2060-01	Primidone-d5	72.0	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A74375

Included Lab Sample IDs: 1871155, 1871156, 1871157, 1871158

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A74381

Included Lab Sample IDs: 1871147, 1871148, 1871149, 1871150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	98.5	P/P	95 - 105
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A74382

Included Lab Sample IDs: 1871147, 1871148, 1871149, 1871150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.7	99.0	P/P	85 - 115

Reference Method: SM 5310 B-00

Run ID: A74405

Included Lab Sample IDs: 1871151, 1871152, 1871153, 1871154

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74413

Included Lab Sample IDs: 1871151, 1871153, 1871154

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

Reference Method: EPA 8321B

Run ID: A74419

Included Lab Sample IDs: 1871361, 1871362, 1871363, 1871364, 1871365

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	113	100	P/P	60 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74454

Included Lab Sample IDs: 1871151, 1871152, 1871153, 1871154

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74498

Included Lab Sample IDs: 1871151, 1871152, 1871153, 1871154

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	101	P/P	90 - 110
Total-P	103	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74506

Included Lab Sample IDs: 1871152

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

Reference Method: SM 4500 F-C-97

Run ID: A74518

Included Lab Sample IDs: 1871147, 1871148, 1871149, 1871150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	105	101	P/P	90 - 110
Fluoride	106	105	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A74527

Included Lab Sample IDs: 1871147, 1871148, 1871149, 1871150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	105	P/P	90 - 110
Sulfate	98.4	92.5	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A74555

Included Lab Sample IDs: 1871361, 1871362, 1871363, 1871364, 1871365

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	119	123	P/P	60 - 150
Acetaminophen	123	133	P/P	60 - 150
Carbamazepine	128	134	P/P	60 - 150
Carbamazepine	134	142	P/P	60 - 150
Diuron	112	118	P/P	60 - 150
Diuron	118	130	P/P	60 - 150
Diuron	127	126	P/P	60 - 150
Fenuron	118	126	P/P	60 - 150
Fenuron	126	135	P/P	60 - 150
Fenuron	136	134	P/P	60 - 150
Fluridone	121	122	P/P	60 - 150
Fluridone	130	130	P/P	60 - 150
Fluridone	130	130	P/P	60 - 150
Imidacloprid	100	106	P/P	60 - 150
Imidacloprid	106	99.6	P/P	60 - 150
Imidacloprid	110	99.2	P/P	60 - 150
Linuron	104	123	P/P	60 - 150
Linuron	118	110	P/P	60 - 150
Linuron	123	114	P/P	60 - 150
Primidone	114	115	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A74555

Included Lab Sample IDs: 1871361, 1871362, 1871363, 1871364, 1871365

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	115	119	P/P	60 - 150

Reference Method: SM 2320 B-97

Run ID: A74571

Included Lab Sample IDs: 1871147, 1871148, 1871149, 1871150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	104	P/P	90 - 110
Total Alkalinity	104	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74580

Included Lab Sample IDs: 1871151, 1871152, 1871153, 1871154

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.0	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		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.228	
	Turbidity						0.329	
EPA 300.0 Rev. 2.1	Chloride	102		104	101		0.0518	
	Sulfate	99.1		102	97.2		0.201	
EPA 350.1 Rev. 2.0	Ammonia-N	103		98.6	98.3			0.220
	Ammonia-N	106		102	101			1.12
	Ammonia-N	97.2		97.9	94.7			1.93
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105		97.1	103			3.69
EPA 353.2 Rev. 2.0	NO2NO3-N	102		98.5	101			1.59
EPA 365.1 Rev. 2.0	Total-P	99.8		100	96.1			3.36
	Total-P	99.4		98.8	100			1.08
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102		98.4	98.6			0.203
EPA 8321B	Sucralose	75.7		84.3	87.4			3.61
SM 2120 B	Color (true)						3.51	
SM 2320 B-97	Total Alkalinity	104					0.623	
SM 2540 C-97	TDS						0.837	
	TDS						0.669	
SM 4500 F-C-97	Fluoride	103		101	99.6			1.04
SM 5310 B-00	Organic Carbon	95.8		92.2	93.2			0.940
USGS O-2060-01	Acetaminophen	79.2		55.6	57.2			2.84
	Carbamazepine	116		56.0	59.2			5.56
	Diuron	76.0		44.4	42.4			4.61
	Fenuron	96.4		54.4	53.2			2.23
	Fluridone	62.4		64.0	46.8			31.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
USGS O-2060-01	Imidacloprid	84.0	90.4	80.0		12.2
	Linuron	85.6	68.8	69.6		1.16
	Primidone	76.8	44.4	58.4		27.2

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1871147, 1871148, 1871149, 1871150
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1871147, 1871148, 1871149, 1871150
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1871147, 1871148, 1871149, 1871150
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1871151, 1871152, 1871153, 1871154
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1871151, 1871152, 1871153, 1871154
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1871151, 1871152, 1871153, 1871154
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1871151, 1871152, 1871153, 1871154
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1871155, 1871156, 1871157, 1871158
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1871361, 1871362, 1871363, 1871364, 1871365
SM 2120 B / E31780	True Color measured at 450 nm	1871147, 1871148, 1871149, 1871150
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1871147, 1871148, 1871149, 1871150
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1871147, 1871148, 1871149, 1871150
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1871147, 1871148, 1871149, 1871150
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1871147, 1871148, 1871149, 1871150
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1871151, 1871152, 1871153, 1871154
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1871361, 1871362, 1871363, 1871364, 1871365

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	02/09/2017			02/09/2017 16:21	Julie Michelle Frank	1871147, 1871148, 1871149, 1871150
EPA 300.0 Rev. 2.1	02/09/2017			02/16/2017	Ping Hua	1871147, 1871148, 1871149, 1871150
EPA 350.1 Rev. 2.0	02/09/2017			02/10/2017	Sofia Elnemr	1871151, 1871153, 1871154
	02/09/2017			02/15/2017	Sofia Elnemr	1871152
EPA 351.2 Rev. 2.0	02/09/2017	02/13/2017	Adrian Shelby	02/14/2017	Joseph Suarez	1871151, 1871152, 1871153, 1871154
EPA 353.2 Rev. 2.0	02/09/2017			02/20/2017	Beverly Y. Sanders	1871151, 1871152, 1871153, 1871154
EPA 365.1 Rev. 2.0	02/09/2017	02/14/2017	Adrian Shelby	02/15/2017	Lipi Saha	1871151, 1871152, 1871153, 1871154
EPA 365.1 Rev. 2.0 dissolved	02/09/2017			02/09/2017 14:20	Lipi Saha	1871155
	02/09/2017			02/09/2017 14:54	Lipi Saha	1871156
	02/09/2017			02/09/2017 14:55	Lipi Saha	1871158
	02/09/2017			02/09/2017 14:56	Lipi Saha	1871157
EPA 8321B	02/09/2017	02/09/2017	Mohammad Ghaffari	02/10/2017	Mohammad Ghaffari	1871361, 1871362, 1871363, 1871364, 1871365
SM 2120 B	02/09/2017			02/09/2017 17:26	Julie Michelle Frank	1871147
	02/09/2017			02/09/2017 17:27	Julie Michelle Frank	1871148
	02/09/2017			02/09/2017 17:28	Julie Michelle Frank	1871149
	02/09/2017			02/09/2017 17:29	Julie Michelle Frank	1871150
SM 2320 B-97	02/09/2017			02/19/2017	Dale L. Simmons	1871147, 1871148, 1871149, 1871150
SM 2540 C-97	02/09/2017			02/14/2017	Sima Feizi	1871147, 1871148, 1871149, 1871150
SM 2540 D-97	02/09/2017			02/14/2017	Sima Feizi	1871147, 1871148, 1871149, 1871150
SM 4500 F-C-97	02/09/2017			02/16/2017	Dale L. Simmons	1871147, 1871148, 1871149, 1871150
SM 5310 B-00	02/09/2017			02/10/2017	Julie Michelle Frank	1871151, 1871152, 1871153, 1871154
USGS O-2060-01	02/09/2017	02/14/2017	Hoor Shaik	02/16/2017	Juyoung Kim	1871361, 1871362, 1871363, 1871364, 1871365