

Chemical Analysis Report

NE-DIST-2017-06-14-01

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

Event Description: **LSJR SWest**
Request ID: **RQ-2017-06-12-15**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256-7577
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 14-JUL-2017 14:11

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 BLACK CREEK @ SR 220

Collection Date/Time: 06/13/2017 09:35

Field ID: G2NE0674 06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905994	EPA 8321B	Sucralose**	1.9		ug/L	P326793	
	USGS O-2060-01	2,4-D	0.0037		ug/L	P326755	
		Diuron	0.0041		ug/L	P326755	
		Fenuron	0.011	I	ug/L	P326755	
		Imidacloprid	0.022		ug/L	P326755	MS
		Bentazon	0.0023	I	ug/L	P326755	MS
		Linuron	0.0040	U	ug/L	P326755	
		Acetaminophen**	0.0080	U	ug/L	P326755	
		MCP	0.0020	U	ug/L	P326755	
		Carbamazepine**	0.0021		ug/L	P326755	
		Triclopyr**	0.0040	U	ug/L	P326755	
		Primidone**	0.0051	I	ug/L	P326755	
		Fluridone**	0.024		ug/L	P326755	

Sample Location: LITTLE BLACK CREEK @ SR 220

Collection Date/Time: 06/13/2017 09:35

Field ID: G2NE0674 06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905970	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P326837	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P327081	
		Sulfate	7.8		mg SO4/L	P327084	
	SM 2120 B	Color (true)	240		PCU	P326853	
	SM 2320 B-97	Total Alkalinity	33	A	mg CaCO3/L	P327364	
	SM 2540 C-97	TDS	137		mg/L	P327132	
	SM 2540 D-97	TSS	2	U	mg/L	P327461	
	SM 4500 F-C-97	Fluoride	0.062	IAJ	mg F/L	P327062	RPD
1905972	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P326972	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P326918	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P326957	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P326923	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P327416	
1905974	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P326826	

Ref. Method and Comment:

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

SM 4500 F-C-97: Refer to the narrative for an explanation of QC Codes.

Sample Location: GROG BRANCH @ SR 220

Collection Date/Time: 06/13/2017 09:55

Field ID: G2NE0578 06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905995	EPA 8321B	Sucralose**	0.026	I	ug/L	P326793	
	USGS O-2060-01	2,4-D	0.0014	I	ug/L	P326755	
		Diuron	9.6E-04	I	ug/L	P326755	
		Fenuron	0.0080	U	ug/L	P326755	
		Imidacloprid	0.0017	I	ug/L	P326755	MS

Field ID: G2NE0578 06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905995	USGS O-2060-01	Bentazon	8.0E-04	U	ug/L	P326755	MS
		Linuron	0.0040	U	ug/L	P326755	
		Acetaminophen**	0.0080	U	ug/L	P326755	
		MCP	0.0020	U	ug/L	P326755	
		Carbamazepine**	4.0E-04	U	ug/L	P326755	
		Triclopyr**	0.0040	U	ug/L	P326755	
		Primidone**	0.0040	U	ug/L	P326755	
		Fluridone**	4.0E-04	U	ug/L	P326755	

Sample Location: GROG BRANCH @ SR 220

Collection Date/Time: 06/13/2017 09:55

Field ID: G2NE0578 06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905971	EPA 180.1 Rev. 2.0	Turbidity	7.8		NTU	P326837	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P327081	
		Sulfate	5.0		mg SO4/L	P327084	
	SM 2120 B	Color (true)	370		PCU	P326853	
	SM 2320 B-97	Total Alkalinity	43		mg CaCO3/L	P327364	
	SM 2540 C-97	TDS	127		mg/L	P327132	
	SM 2540 D-97	TSS	4	I	mg/L	P327461	
	SM 4500 F-C-97	Fluoride	0.067	I	mg F/L	P327062	RPD
1905973	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P326972	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P326918	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P326957	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P326923	
	SM 5310 B-00	Organic Carbon	29		mg C/L	P327416	
1905975	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.01	I	mg P/L	P326826	

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: PETERS CREEK @ SR 16

Collection Date/Time: 06/13/2017 10:32

Field ID: G2NE0410 03132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905996	EPA 8321B	Sucralose**	0.010	U	ug/L	P326793	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P326755	
		Diuron	8.0E-04	U	ug/L	P326755	
		Fenuron	0.0080	U	ug/L	P326755	
		Imidacloprid	8.0E-04	U	ug/L	P326755	MS
		Bentazon	8.0E-04	U	ug/L	P326755	MS
		Linuron	0.0040	U	ug/L	P326755	
		Acetaminophen**	0.0080	U	ug/L	P326755	
		MCP	0.0020	U	ug/L	P326755	
		Carbamazepine**	4.0E-04	U	ug/L	P326755	
		Triclopyr**	0.0040	U	ug/L	P326755	
		Primidone**	0.0040	U	ug/L	P326755	

Field ID: G2NE0410 03132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905996	USGS O-2060-01	Fluridone**	4.0E-04	U	ug/L	P326755	

Sample Location: PETERS CREEK @ SR 16 DUPLICATE

Collection Date/Time: 06/13/2017 10:35

Field ID: G2NE0719D06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905997	EPA 8321B	Sucralose**	0.010	U	ug/L	P326793	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P326755	
		Diuron	8.0E-04	U	ug/L	P326755	
		Fenuron	0.0080	U	ug/L	P326755	
		Imidacloprid	0.0080	U	ug/L	P326755	MS
		Bentazon	8.0E-04	U	ug/L	P326755	MS
		Linuron	0.0040	U	ug/L	P326755	
		Acetaminophen**	0.0080	U	ug/L	P326755	
		MCP	0.0020	U	ug/L	P326755	
		Carbamazepine**	4.0E-04	U	ug/L	P326755	
		Triclopyr**	0.0040	U	ug/L	P326755	
		Primidone**	0.0040	U	ug/L	P326755	
		Fluridone**	4.0E-04	U	ug/L	P326755	

Sample Location: GREENE CREEK @ SR 315 (SHARON RD.)

Collection Date/Time: 06/13/2017 10:55

Field ID: G2NE0253 06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905998	EPA 8321B	Sucralose**	0.010	U	ug/L	P326793	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P326755	
		Diuron	8.0E-04	U	ug/L	P326755	
		Fenuron	0.011	I	ug/L	P326755	
		Imidacloprid	8.0E-04	U	ug/L	P326755	MS
		Bentazon	8.0E-04	U	ug/L	P326755	MS
		Linuron	0.0040	U	ug/L	P326755	
		Acetaminophen**	0.0080	U	ug/L	P326755	
		MCP	0.0020	U	ug/L	P326755	
		Carbamazepine**	4.0E-04	U	ug/L	P326755	
		Triclopyr**	0.0040	U	ug/L	P326755	
		Primidone**	0.0040	U	ug/L	P326755	
		Fluridone**	4.0E-04	U	ug/L	P326755	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P326837

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327081

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327084

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326972

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326918

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326957

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326923

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326826

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

Reference Method: EPA 8321B
Batch ID: P326793

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P326853

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
 Batch ID: P327364

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
 Batch ID: P327132

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P327461

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P327062

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P327416

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

Reference Method: USGS O-2060-01
 Batch ID: P326755

Component	Result	Code	Units
2,4-D	8.0E-04	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: P327081

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327084

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326972

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: P326918

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326957

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326826

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.3		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P326793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	92.0		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P327364

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

Reference Method: SM 4500 F-C-97
Batch ID: P327062

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P327416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.7		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P326755

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	76.2		P	40 - 140
Acetaminophen	33.1		P	30 - 150
Bentazon	84.8		P	40 - 140
Carbamazepine	121		P	40 - 140
Diuron	112		P	40 - 140
Fenuron	109		P	40 - 140
Fluridone	111		P	40 - 140
Imidacloprid	106		P	40 - 160
Linuron	109		P	40 - 140
MCP	79.8		P	40 - 140
Primidone	99.8		P	40 - 140
Triclopyr	76.0		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327081

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905857	Chloride	99.9		P	90 - 110
1905971	Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905857	Sulfate	97.8		P	90 - 110
1905971	Sulfate	96.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905900	Ammonia-N	96.3	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326918

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905921	Kjeldahl Nitrogen	101	106	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905986	NO2NO3-N	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905901	Total-P	95.7	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326826

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1906021	O-Phosphate-P	95.6	94.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P326793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905994	Sucralose	85.5	86.0	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P327062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905970	Fluoride	94.5	97.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P327416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905985	Organic Carbon	92.4	91.4	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P326755

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905872	2,4-D	99.0	88.6	P/P	40 - 140
1905872	Acetaminophen	79.8	86.6	P/P	40 - 140
1905872	Bentazon	29.6	24.6	F/F	40 - 140
1905872	Carbamazepine	120	107	P/P	40 - 140
1905872	Diuron	85.1	78.4	P/P	40 - 140
1905872	Fenuron	81.4	77.8	P/P	40 - 140
1905872	Fluridone	80.3	76.1	P/P	40 - 140
1905872	Imidacloprid	189	174	F/F	40 - 160
1905872	Linuron	107	94.8	P/P	40 - 140
1905872	MCP	67.2	62.6	P/P	40 - 140
1905872	Primidone	98.0	91.1	P/P	40 - 140
1905872	Triclopyr	77.2	65.8	P/P	40 - 140

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P326837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905917	Turbidity	0.412	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905857	Chloride	1.26	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905857	Sulfate	0.0850	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905900	Ammonia-N	0.202	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326918

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905921	Kjeldahl Nitrogen	3.92	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905986	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905901	Total-P	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326826

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1906021	O-Phosphate-P	1.16	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P326793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905994	Sucralose	0.295	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P326853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905983	Color (true)	1.50	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P327364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905970	Total Alkalinity	0.178	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P327132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905917	TDS	1.55	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P327062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905970	Fluoride	3.04	Spike	F	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P327416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905985	Organic Carbon	0.550	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P326755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905872	2,4-D	11.1	Spike	P	0 - 30
1905872	Acetaminophen	8.10	Spike	P	0 - 30
1905872	Bentazon	18.5	Spike	P	0 - 30
1905872	Carbamazepine	11.7	Spike	P	0 - 30
1905872	Diuron	8.12	Spike	P	0 - 30
1905872	Fenuron	4.57	Spike	P	0 - 30
1905872	Fluridone	5.35	Spike	P	0 - 30
1905872	Imidacloprid	7.79	Spike	P	0 - 30
1905872	Linuron	11.6	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P326755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905872	MCP	7.09	Spike	P	0 - 30
1905872	Primidone	7.30	Spike	P	0 - 30
1905872	Triclopyr	15.9	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: 1905994
Field Sample ID: G2NE0674 06132017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	96.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	87.2	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	108	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	99.9	P	30 - 160
USGS O-2060-01	Diuron-d6	73.5	P	30 - 160
USGS O-2060-01	Primidone-d5	80.2	P	30 - 150

Lab Sample ID: 1905995
Field Sample ID: G2NE0578 06132017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	57.5	P	40 - 160
USGS O-2060-01	2,4-D-d3	80.4	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	99.2	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	93.4	P	30 - 160
USGS O-2060-01	Diuron-d6	61.4	P	30 - 160
USGS O-2060-01	Primidone-d5	73.7	P	30 - 150

Lab Sample ID: 1905996
Field Sample ID: G2NE0410 03132017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	58.5	P	40 - 160
USGS O-2060-01	2,4-D-d3	84.9	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	134	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	94.7	P	30 - 160
USGS O-2060-01	Diuron-d6	70.9	P	30 - 160
USGS O-2060-01	Primidone-d5	78.1	P	30 - 150

Lab Sample ID: 1905997
Field Sample ID: G2NE0719D06132017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	43.8	P	40 - 160
USGS O-2060-01	2,4-D-d3	96.5	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	94.0	P	30 - 150

Quality Assurance Report Surrogates

Lab Sample ID: 1905997

Field Sample ID: G2NE0719D06132017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Carbamazepine-d10	113	P	30 - 160
USGS O-2060-01	Diuron-d6	87.3	P	30 - 160
USGS O-2060-01	Primidone-d5	91.2	P	30 - 150

Lab Sample ID: 1905998

Field Sample ID: G2NE0253 06132017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	42.8	P	40 - 160
USGS O-2060-01	2,4-D-d3	75.3	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	118	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	88.2	P	30 - 160
USGS O-2060-01	Diuron-d6	69.2	P	30 - 160
USGS O-2060-01	Primidone-d5	75.5	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77087

Included Lab Sample IDs: 1905974, 1905975

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77089

Included Lab Sample IDs: 1905970, 1905971

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

Reference Method: SM 2120 B

Run ID: A77095

Included Lab Sample IDs: 1905970, 1905971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.8	98.8	P/P	85 - 115
Color (true)	99.5	98.8	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77132

Included Lab Sample IDs: 1905972, 1905973

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77139

Included Lab Sample IDs: 1905972, 1905973

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77169

Included Lab Sample IDs: 1905972, 1905973

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

Reference Method: SM 4500 F-C-97

Run ID: A77172

Included Lab Sample IDs: 1905970, 1905971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	95.5	96.2	P/P	90 - 110
Fluoride	96.2	95.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77183

Included Lab Sample IDs: 1905970, 1905971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	103	P/P	90 - 110
Chloride	98.7	100	P/P	90 - 110
Sulfate	100	109	P/P	90 - 110
Sulfate	98.7	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77192

Included Lab Sample IDs: 1905972, 1905973

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

Reference Method: USGS O-2060-01

Run ID: A77208

Included Lab Sample IDs: 1905994, 1905995, 1905996, 1905997, 1905998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	78.0	79.6	P/P	50 - 150
2,4-D	79.6	75.6	P/P	50 - 150
Acetaminophen	93.8	95.7	P/P	60 - 150
Acetaminophen	95.7	94.7	P/P	60 - 150
Bentazon	97.6	98.0	P/P	50 - 150
Bentazon	99.6	97.6	P/P	50 - 150
Carbamazepine	103	104	P/P	60 - 150
Carbamazepine	107	103	P/P	60 - 150
Diuron	94.8	98.6	P/P	60 - 150
Diuron	97.1	94.8	P/P	60 - 150
Fenuron	96.2	99.1	P/P	60 - 150
Fenuron	99.1	98.4	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A77208

Included Lab Sample IDs: 1905994, 1905995, 1905996, 1905997, 1905998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	96.7	99.3	P/P	60 - 160
Fluridone	99.0	96.7	P/P	60 - 160
Imidacloprid	90.0	97.3	P/P	60 - 150
Imidacloprid	97.3	93.3	P/P	60 - 150
Linuron	102	95.3	P/P	60 - 150
Linuron	95.3	98.1	P/P	60 - 150
MCPPP	73.6	72.8	P/P	50 - 150
MCPPP	74.0	73.6	P/P	50 - 150
Primidone	93.3	96.2	P/P	60 - 150
Primidone	96.2	99.2	P/P	60 - 150
Triclopyr	72.0	76.4	P/P	50 - 150
Triclopyr	76.0	72.0	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A77273

Included Lab Sample IDs: 1905994, 1905995, 1905996, 1905997, 1905998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	102	P/P	60 - 160
Sucralose	129	107	P/P	60 - 160
Sucralose	83.4	81.1	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A77288

Included Lab Sample IDs: 1905970, 1905971

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

Reference Method: SM 5310 B-00

Run ID: A77311

Included Lab Sample IDs: 1905972, 1905973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.4	93.6	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements. Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				0.412	
EPA 300.0 Rev. 2.1	Chloride	105	99.9	97.8	1.26	
	Sulfate	102	97.8	96.3	0.0850	
EPA 350.1 Rev. 2.0	Ammonia-N	101	96.3	96.0		0.202
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	101	106		3.92

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 353.2 Rev. 2.0	NO2NO3-N	104	106	105		0.475
EPA 365.1 Rev. 2.0	Total-P	97.1	95.7	95.7		0.0
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.3	95.6	94.5		1.16
EPA 8321B	Sucralose	92.0	85.5	86.0		0.295
SM 2120 B	Color (true)				1.50	
SM 2320 B-97	Total Alkalinity	104			0.178	
SM 2540 C-97	TDS				1.55	
SM 4500 F-C-97	Fluoride	99.4	94.5	97.9		3.04
SM 5310 B-00	Organic Carbon	93.7	92.4	91.4		0.550
USGS O-2060-01	2,4-D	76.2	99.0	88.6		11.1
	Acetaminophen	33.1	79.8	86.6		8.10
	Bentazon	84.8	29.6	24.6		18.5
	Carbamazepine	121	120	107		11.7
	Diuron	112	85.1	78.4		8.12
	Fenuron	109	81.4	77.8		4.57
	Fluridone	111	80.3	76.1		5.35
	Imidacloprid	106	189	174		7.79
	Linuron	109	107	94.8		11.6
	MCPP	79.8	67.2	62.6		7.09
	Primidone	99.8	98.0	91.1		7.30
	Triclopyr	76.0	77.2	65.8		15.9

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1905970, 1905971
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1905970, 1905971
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1905970, 1905971
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1905972, 1905973
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1905972, 1905973
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1905972, 1905973
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1905972, 1905973
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1905974, 1905975
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1905994, 1905995, 1905996, 1905997, 1905998
SM 2120 B / E31780	True Color measured at 450 nm	1905970, 1905971
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1905970, 1905971
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1905970, 1905971
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1905970, 1905971
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1905970, 1905971
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1905972, 1905973
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1905994, 1905995, 1905996, 1905997, 1905998
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1905994, 1905995, 1905996, 1905997, 1905998

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	06/14/2017			06/14/2017 16:01	Sima Feizi	1905970, 1905971
EPA 300.0 Rev. 2.1	06/14/2017			06/20/2017	Julia Storbeck	1905970, 1905971
EPA 350.1 Rev. 2.0	06/14/2017			06/15/2017	Sofia Elnemr	1905972, 1905973
EPA 351.2 Rev. 2.0	06/14/2017	06/15/2017	Adrian Shelby	06/20/2017	Joseph Suarez	1905972, 1905973
EPA 353.2 Rev. 2.0	06/14/2017			06/16/2017	Beverly Y. Sanders	1905972, 1905973
EPA 365.1 Rev. 2.0	06/14/2017	06/15/2017	Adrian Shelby	06/16/2017	Lipi Saha	1905972, 1905973
EPA 365.1 Rev. 2.0 dissolved	06/14/2017			06/14/2017 14:07	Lipi Saha	1905974
	06/14/2017			06/14/2017 14:08	Lipi Saha	1905975
EPA 8321B	06/14/2017	06/20/2017	Mohammad Ghaffari	06/22/2017	Mohammad Ghaffari	1905994, 1905995, 1905996, 1905997, 1905998
SM 2120 B	06/14/2017			06/14/2017 17:14	Tanya Welborn	1905970
	06/14/2017			06/14/2017 17:23	Tanya Welborn	1905971
SM 2320 B-97	06/14/2017			06/22/2017	Dale L. Simmons	1905970, 1905971
SM 2540 C-97	06/14/2017			06/16/2017	Yijie Li	1905970, 1905971
SM 2540 D-97	06/14/2017			06/16/2017	Yijie Li	1905970, 1905971
SM 4500 F-C-97	06/14/2017			06/17/2017	Elisa J Lutz	1905970, 1905971
SM 5310 B-00	06/14/2017			06/22/2017	Ping Hua	1905972, 1905973
USGS O-2060-01	06/14/2017	06/16/2017	Hoor Shaik	06/18/2017	Juyoung Kim	1905994, 1905995, 1905996, 1905997, 1905998