Chemical Analysis Report

NW-DIST-2017-04-20-02

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

Event Description: **ENR C WBID 49A 722 742 789**
Request ID: **RQ-2017-04-17-23**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government St
Suite 208A
Pensacola, FL 32502-5794
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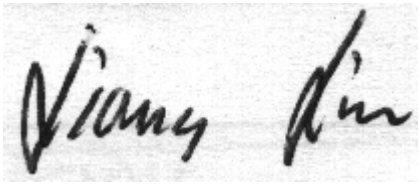
Certified by: Liang Lin, Environmental Administrator

Date Certified: 18-MAY-2017 11:33



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: Rocky Bayou Mouth **Collection Date/Time: 04/19/2017 11:45**

Field ID: G3NW0031 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1890956	EPA 8321B	Sucralose**	0.14		ug/L	P323688	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P323708	
		Diuron	0.0020	U	ug/L	P323708	RPD
		Fenuron	0.010	U	ug/L	P323708	
		Imidacloprid	0.0020	U	ug/L	P323708	
		Bentazon	0.0010	U	ug/L	P323708	
		Linuron	0.010	U	ug/L	P323708	RPD
		Acetaminophen**	0.020	U	ug/L	P323708	
		MCPP	0.0040	U	ug/L	P323708	
		Carbamazepine**	5.0E-04	U	ug/L	P323708	
		Triclopyr**	0.010	U	ug/L	P323708	
		Primidone**	0.020	U	ug/L	P323708	
		Fluridone**	5.0E-04	U	ug/L	P323708	

Sample Location: Rocky Bayou Mouth **Collection Date/Time: 04/19/2017 11:45**

Field ID: G3NW0031 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1890919	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P323804	
	SM 2320 B-97	Total Alkalinity	51		mg CaCO3/L	P324294	
	SM 2540 D-97	TSS	3	U	mg/L	P324218	
	SM 4500 F-C-97	Fluoride	0.39		mg F/L	P325240	RPD
1890922	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P323779	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P323411	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P324050	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P323893	
	SM 5310 B-00	Organic Carbon	2.9		mg C/L	P323787	
1890925	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P323758	

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: Basin Bayou at Inlet **Collection Date/Time: 04/19/2017 13:10**

Field ID: G3NW0101 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1890957	EPA 8321B	Sucralose**	0.021	I	ug/L	P323688	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P323708	
		Diuron	0.0020	U	ug/L	P323708	RPD
		Fenuron	0.010	U	ug/L	P323708	
		Imidacloprid	0.0020	U	ug/L	P323708	
		Bentazon	0.0010	U	ug/L	P323708	
		Linuron	0.010	U	ug/L	P323708	RPD
		Acetaminophen**	0.020	U	ug/L	P323708	
		MCPP	0.0040	U	ug/L	P323708	

Field ID: G3NW0101 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1890957	USGS O-2060-01	Carbamazepine**	5.0E-04	U	ug/L	P323708	
		Triclopyr**	0.010	U	ug/L	P323708	
		Primidone**	0.020	U	ug/L	P323708	
		Fluridone**	5.0E-04	U	ug/L	P323708	

Sample Location: Basin Bayou at Inlet **Collection Date/Time: 04/19/2017 13:10**

Field ID: G3NW0101 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1890920	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P323804	
	SM 2320 B-97	Total Alkalinity	7.4		mg CaCO3/L	P324294	
	SM 2540 D-97	TSS	4	IA	mg/L	P324232	
	SM 4500 F-C-97	Fluoride	0.060	I	mg F/L	P325403	
1890923	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P323779	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.10	I	mg N/L	P324279	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323970	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P323895	
	SM 5310 B-00	Organic Carbon	2.7		mg C/L	P323787	
1890926	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P323758	

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: LaGrange Bayou, Middle **Collection Date/Time: 04/19/2017 14:20**

Field ID: G3NW0036 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1890921	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P323804	
	SM 2320 B-97	Total Alkalinity	40		mg CaCO3/L	P324294	
	SM 2540 D-97	TSS	3	U	mg/L	P324218	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P325240	RPD
1890924	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P323779	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P323411	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P324050	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P323893	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P323787	
1890927	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P323758	

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: P323804

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323779

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P3234114

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324279

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323970

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324050

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323893

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323895

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323758

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

Reference Method: EPA 8321B
Batch ID: P323688

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P324294

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

Reference Method: SM 2540 D-97
Batch ID: P324218

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P324232

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P325240

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P325403

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P323787

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

Reference Method: USGS O-2060-01
Batch ID: P323708

Component	Result	Code	Units
2,4-D	0.0040	U	ug/L
Acetaminophen	0.020	U	ug/L
Bentazon	0.0010	U	ug/L
Carbamazepine	5.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.010	U	ug/L
Fluridone	5.0E-04	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.010	U	ug/L
MCPP	0.0040	U	ug/L
Primidone	0.020	U	ug/L
Triclopyr	0.010	U	ug/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323779

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P3234114

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: P324279

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323970

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324050

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323893

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323895

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323758

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

Reference Method: EPA 8321B
Batch ID: P323688

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	87.0		P	40 - 140

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P324294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P325240

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.7		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P325403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P323787

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

Reference Method: USGS O-2060-01
Batch ID: P323708

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.0		P	40 - 140
Acetaminophen	101		P	40 - 140
Bentazon	61.3		P	40 - 140
Carbamazepine	97.0		P	40 - 140
Diuron	90.7		P	40 - 140
Fenuron	100		P	40 - 140
Fluridone	91.8		P	40 - 140
Imidacloprid	92.2		P	40 - 160
Linuron	94.7		P	40 - 140
MCPP	88.5		P	40 - 140
Primidone	97.7		P	40 - 140
Triclopyr	85.1		P	40 - 140

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323779

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1890876	Ammonia-N	106	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P3234114

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1890878	Kjeldahl Nitrogen	90.6	90.8	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1893812	Kjeldahl Nitrogen	88.6	89.9	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1890923	NO2NO3-N	108	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1890878	NO2NO3-N	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323893

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1890879	Total-P	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1890835	Total-P	100	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1890883	O-Phosphate-P	100	101	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P323688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1890552	Sucralose	94.7	98.7	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P325240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895713	Fluoride	92.5	98.8	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P325403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1890410	Fluoride	100	100	P/P	91 - 105

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P323787

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1890753	Organic Carbon	87.8	95.4	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P323708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1890843	2,4-D	93.5	74.3	P/P	40 - 140
1890843	Acetaminophen	96.8	91.5	P/P	40 - 140
1890843	Bentazon	51.3	42.9	P/P	40 - 140
1890843	Carbamazepine	111	95.3	P/P	40 - 140
1890843	Diuron	91.7	64.7	P/P	40 - 140
1890843	Fenuron	56.2	46.9	P/P	40 - 140
1890843	Fluridone	92.1	70.9	P/P	40 - 140
1890843	Imidacloprid	149	112	P/P	40 - 160
1890843	Linuron	101	72.5	P/P	40 - 140
1890843	MCPP	80.7	64.1	P/P	40 - 140
1890843	Primidone	106	83.5	P/P	40 - 140
1890843	Triclopyr	82.3	67.7	P/P	40 - 140

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P323804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890872	Turbidity	3.09	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323779

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890876	Ammonia-N	0.850	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P3234114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890878	Kjeldahl Nitrogen	0.211	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1893812	Kjeldahl Nitrogen	1.29	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890923	NO2NO3-N	0.466	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890878	NO2NO3-N	0.175	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890879	Total-P	2.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890835	Total-P	3.38	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890883	O-Phosphate-P	0.596	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P323688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890552	Sucralose	3.67	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P324294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890875	Total Alkalinity	1.03	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P325240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895713	Fluoride	3.84	Spike	F	0 - 3.0

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-97
Batch ID: P325403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890410	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P323787

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890753	Organic Carbon	6.33	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P323708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1890843	2,4-D	22.2	Spike	P	0 - 30
1890843	Acetaminophen	5.63	Spike	P	0 - 30
1890843	Bentazon	17.8	Spike	P	0 - 30
1890843	Carbamazepine	14.9	Spike	P	0 - 30
1890843	Diuron	32.8	Spike	F	0 - 30
1890843	Fenuron	18.0	Spike	P	0 - 30
1890843	Fluridone	26.0	Spike	P	0 - 30
1890843	Imidacloprid	25.3	Spike	P	0 - 30
1890843	Linuron	33.2	Spike	F	0 - 30
1890843	MCPP	22.9	Spike	P	0 - 30
1890843	Primidone	23.9	Spike	P	0 - 30
1890843	Triclopyr	19.5	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: 1890956
Field Sample ID: G3NW0031

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	134	P	40 - 150
USGS O-2060-01	2,4-D-d3	78.2	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	88.5	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	93.0	P	30 - 160
USGS O-2060-01	Diuron-d6	87.0	P	30 - 150
USGS O-2060-01	Primidone-d5	80.7	P	30 - 150

Lab Sample ID: 1890957
Field Sample ID: G3NW0101

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	86.0	P	40 - 150
USGS O-2060-01	2,4-D-d3	74.6	P	40 - 150

Quality Assurance Report
Surrogates

Lab Sample ID: 1890957
Field Sample ID: G3NW0101

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Acetaminophen-d4	80.7	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	96.8	P	30 - 160
USGS O-2060-01	Diuron-d6	80.9	P	30 - 150
USGS O-2060-01	Primidone-d5	81.6	P	30 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A75911
Included Lab Sample IDs: 1890925, 1890926, 1890927

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.4	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A75919
Included Lab Sample IDs: 1890922, 1890923, 1890924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	104	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A75923
Included Lab Sample IDs: 1890922, 1890923, 1890924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	99.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A75925
Included Lab Sample IDs: 1890919, 1890920, 1890921

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

Reference Method: EPA 8321B
Run ID: A75944
Included Lab Sample IDs: 1890956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	90.4	142	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A75983
Included Lab Sample IDs: 1890923

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A75984
Included Lab Sample IDs: 1890922, 1890923, 1890924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110
Total-P	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A76006
Included Lab Sample IDs: 1890922, 1890924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A76022
Included Lab Sample IDs: 1890957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	80.6	113	P/P	60 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A76054
Included Lab Sample IDs: 1890922, 1890924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	100	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A76086
Included Lab Sample IDs: 1890919, 1890920, 1890921

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110
Total Alkalinity	105	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A76115
Included Lab Sample IDs: 1890923

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	96.0	P/P	90 - 110

Reference Method: USGS O-2060-01
Run ID: A76387
Included Lab Sample IDs: 1890956, 1890957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	105	102	P/P	50 - 150
Acetaminophen	107	108	P/P	60 - 150
Bentazon	59.0	57.2	P/P	50 - 150
Carbamazepine	94.1	86.5	P/P	60 - 150
Diuron	89.9	90.0	P/P	60 - 150
Fenuron	103	96.0	P/P	60 - 150
Fluridone	77.6	70.6	P/P	60 - 150

Quality Assurance Report
Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A76387
Included Lab Sample IDs: 1890956, 1890957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imidacloprid	92.4	93.0	P/P	60 - 150
Linuron	101	90.7	P/P	60 - 150
MCPP	96.9	90.7	P/P	50 - 150
Primidone	99.0	89.8	P/P	60 - 150
Triclopyr	102	102	P/P	50 - 150

Reference Method: SM 4500 F-C-97
Run ID: A76396
Included Lab Sample IDs: 1890919, 1890921

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	94.9	96.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A76469
Included Lab Sample IDs: 1890920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.7	100	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					3.09	
EPA 350.1 Rev. 2.0	Ammonia-N	104	106	105			0.850
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	90.6	90.8			0.211
	Kjeldahl Nitrogen	95.1	88.6	89.9			1.29
EPA 353.2 Rev. 2.0	NO2NO3-N	107	108	107			0.466
	NO2NO3-N	106	105				0.175
EPA 365.1 Rev. 2.0	Total-P	105	102	104			2.25
	Total-P	106	100	104			3.38
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	100	101			0.596
EPA 8321B	Sucralose	87.0	94.7	98.7			3.67
SM 2320 B-97	Total Alkalinity	103				1.03	
SM 4500 F-C-97	Fluoride	95.7	92.5	98.8			3.84
	Fluoride	96.3	100	100			0.0
SM 5310 B-00	Organic Carbon	102	87.8	95.4			6.33
USGS O-2060-01	2,4-D	89.0	93.5	74.3			22.2
	Acetaminophen	101	96.8	91.5			5.63
	Bentazon	61.3	51.3	42.9			17.8
	Carbamazepine	97.0	111	95.3			14.9
	Diuron	90.7	91.7	64.7			32.8
	Fenuron	100	56.2	46.9			18.0
	Fluridone	91.8	92.1	70.9			26.0

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
USGS O-2060-01	Imidacloprid	92.2	149	112			25.3
	Linuron	94.7	101	72.5			33.2
	MCPP	88.5	80.7	64.1			22.9
	Primidone	97.7	106	83.5			23.9
	Triclopyr	85.1	82.3	67.7			19.5

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1890919, 1890920, 1890921
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1890922, 1890923, 1890924
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1890922, 1890923, 1890924
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1890922, 1890923, 1890924
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1890922, 1890923, 1890924
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1890925, 1890926, 1890927
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1890956, 1890957
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1890919, 1890920, 1890921
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1890919, 1890920, 1890921
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1890919, 1890920, 1890921
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1890922, 1890923, 1890924
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1890956, 1890957
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1890956, 1890957

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	04/20/2017			04/20/2017 16:03	Blanca Fach	1890919, 1890920, 1890921
EPA 350.1 Rev. 2.0	04/20/2017			04/20/2017	Julie Michelle Frank	1890922, 1890923, 1890924
EPA 351.2 Rev. 2.0	04/20/2017	04/27/2017	Adrian Shelby	04/28/2017	Joseph Suarez	1890922, 1890924
	04/20/2017	05/01/2017	Adrian Shelby	05/02/2017	Joseph Suarez	1890923
EPA 353.2 Rev. 2.0	04/20/2017			04/25/2017	Beverly Y. Sanders	1890923
	04/20/2017			04/26/2017	Beverly Y. Sanders	1890922, 1890924
EPA 365.1 Rev. 2.0	04/20/2017	04/24/2017	Vijayalakshmi Reddy	04/25/2017	Lipi Saha	1890922, 1890923, 1890924
EPA 365.1 Rev. 2.0 dissolved	04/20/2017			04/20/2017 15:19	Anthony C. Onicha	1890925
	04/20/2017			04/20/2017 15:20	Anthony C. Onicha	1890926
	04/20/2017			04/20/2017 15:21	Anthony C. Onicha	1890927
EPA 8321B	04/20/2017	04/20/2017	Mohammad Ghaffari	04/20/2017	Mohammad Ghaffari	1890956
	04/20/2017	04/20/2017	Mohammad Ghaffari	04/26/2017	Mohammad Ghaffari	1890957
SM 2320 B-97	04/20/2017			04/29/2017	Dale L. Simmons	1890919, 1890920, 1890921
SM 2540 D-97	04/20/2017			04/24/2017	Sima Feizi	1890919, 1890920, 1890921
SM 4500 F-C-97	04/20/2017			05/13/2017	Dale L. Simmons	1890919, 1890921
	04/20/2017			05/16/2017	Dale L. Simmons	1890920
SM 5310 B-00	04/20/2017			04/21/2017	Julie Michelle Frank	1890922, 1890923, 1890924
USGS O-2060-01	04/20/2017	04/22/2017	Hoor Shaik	05/09/2017	Juyoung Kim	1890956, 1890957