

Chemical Analysis Report

WQAP-2017-05-03-03

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

Event Description: **RUN 16**
Request ID: **RQ-2017-05-01-35**
Customer: **WQAP**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 26-MAY-2017 13:30



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: Peace River

Collection Date/Time: 05/02/2017 10:10

Field ID: G3SW0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895803	EPA 180.1 Rev. 2.0	Turbidity	36	A	NTU	P324599	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P324966	
		Sulfate	10		mg SO4/L	P324969	
	SM 2120 B	Color (true)	50	A	PCU	P324505	
	SM 2320 B-97	Total Alkalinity	80		mg CaCO3/L	P325237	
	SM 2540 C-97	TDS	127		mg/L	P325017	
	SM 2540 D-97	TSS	82		mg/L	P325258	
	SM 4500 F-C-97	Fluoride	0.58		mg F/L	P325275	
1895805	EPA 350.1 Rev. 2.0	Ammonia-N	0.23		mg N/L	P324530	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	5.5		mg N/L	P324835	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P324676	
	EPA 365.1 Rev. 2.0	Total-P	0.60		mg P/L	P324693	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P324626	
1895807	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P324561	

Ref. Method and Comment:

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

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Peace River

Collection Date/Time: 05/02/2017 10:10

Field ID: G3SW0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895818	EPA 8321B	Sucralose**	3.7		ug/L	P324384	
	USGS O-2060-01	2,4-D	1.2		ug/L	P324481	
		Diuron	0.0010	U	ug/L	P324481	
		Fenuron	0.0050	U	ug/L	P324481	
		Imidacloprid	0.0060		ug/L	P324481	MS
		Bentazon	0.0023	I	ug/L	P324481	
		Linuron	0.0050	U	ug/L	P324481	
		Acetaminophen**	0.010	U	ug/L	P324481	
		MCPD	0.0010	U	ug/L	P324481	
		Carbamazepine**	0.0086		ug/L	P324481	
		Triclopyr**	0.0050	U	ug/L	P324481	
		Primidone**	0.027		ug/L	P324481	
		Fluridone**	0.0037		ug/L	P324481	MS

Ref. Method and Comment:

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

Sample Location: Peace River DUPLICATE

Collection Date/Time: 05/02/2017 10:15

Field ID: DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895819	EPA 8321B	Sucralose**	3.3		ug/L	P324384	
	USGS O-2060-01	2,4-D	1.3		ug/L	P324481	
		Diuron	8.0E-04	U	ug/L	P324481	

Field ID: DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895819	USGS O-2060-01	Fenuron	0.0040	U	ug/L	P324481	
		Imidacloprid	0.0043		ug/L	P324481	MS
		Bentazon	0.0018	I	ug/L	P324481	
		Linuron	0.0040	U	ug/L	P324481	
		Acetaminophen**	0.0080	U	ug/L	P324481	
		MCP	8.0E-04	U	ug/L	P324481	
		Carbamazepine**	0.0077		ug/L	P324481	
		Triclopyr**	0.0040	U	ug/L	P324481	
		Primidone**	0.022		ug/L	P324481	
		Fluridone**	0.0035		ug/L	P324481	MS

Ref. Method and Comment:

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

Sample Location: BLANK

Collection Date/Time: 05/02/2017 10:20

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895820	EPA 8321B	Sucralose**	0.010	U	ug/L	P324384	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P324481	
		Diuron	8.0E-04	U	ug/L	P324481	
		Fenuron	0.0040	U	ug/L	P324481	
		Imidacloprid	8.0E-04	U	ug/L	P324481	MS
		Bentazon	8.0E-04	U	ug/L	P324481	
		Linuron	0.0040	U	ug/L	P324481	
		Acetaminophen**	0.0080	U	ug/L	P324481	
		MCP	8.0E-04	U	ug/L	P324481	
		Carbamazepine**	4.0E-04	U	ug/L	P324481	
		Triclopyr**	0.0040	U	ug/L	P324481	
		Primidone**	0.0040	U	ug/L	P324481	
		Fluridone**	4.0E-04	U	ug/L	P324481	MS

Ref. Method and Comment:

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

Sample Location: Rice Creek

Collection Date/Time: 05/02/2017 12:00

Field ID: G2SW0033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895804	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P324599	
	EPA 300.0 Rev. 2.1	Chloride	34		mg Cl/L	P324966	
		Sulfate	34		mg SO4/L	P324969	
		Color (true)	90		PCU	P324504	
	SM 2320 B-97	Total Alkalinity	61		mg CaCO3/L	P325237	
	SM 2540 C-97	TDS	194		mg/L	P325017	
	SM 2540 D-97	TSS	2	I	mg/L	P325258	
	SM 4500 F-C-97	Fluoride	0.21		mg F/L	P325275	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P324530	
		Kjeldahl Nitrogen	0.70		mg N/L	P324835	

Field ID: G2SW0033				Matrix: W-SURF-FRH			
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1895806	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P324676	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P324693	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P324626	
1895808	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P324561	
Ref. Method and Comment: SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.							

Sample Location: Rice Creek

Collection Date/Time: 05/02/2017 12:00

Field ID: G2SW0033					Matrix: W-SURF-FRH			
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
1895821	EPA 8321B	Sucralose**	2.1		ug/L	P324480		
	USGS O-2060-01	2,4-D	0.0020	I	ug/L	P324481		
		Diuron	0.17		ug/L	P324481		
		Fenuron	0.064		ug/L	P324481		
		Imidacloprid	0.0090		ug/L	P324481	MS	
		Bentazon	0.072		ug/L	P324481		
		Linuron	0.0040	U	ug/L	P324481		
		Acetaminophen**	0.0080	U	ug/L	P324481		
		MCP	8.0E-04	U	ug/L	P324481		
		Carbamazepine**	0.0097		ug/L	P324481		
		Triclopyr**	0.0040	U	ug/L	P324481		
		Primidone**	0.036		ug/L	P324481		
		Fluridone**	0.0016		ug/L	P324481	MS	
Ref. Method and Comment: USGS O-2060-01: MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample.								

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0 Batch ID: P324599			
Component	Result	Code	Units
Turbidity	0.10	U	NTU
Reference Method: EPA 300.0 Rev. 2.1 Batch ID: P324966			
Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L
Reference Method: EPA 300.0 Rev. 2.1 Batch ID: P324969			
Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324530

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324835

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324676

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324693

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324561

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

Reference Method: EPA 8321B
Batch ID: P324384

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P324480

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P324504

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P324505

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
 Batch ID: P325237

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

Reference Method: SM 2540 C-97
 Batch ID: P325017

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P325258

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P325275

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P324626

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

Reference Method: USGS O-2060-01
 Batch ID: P324481

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	0.0040	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCP	8.0E-04	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: P324966

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324969

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324530

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324835

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: P324676

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: P324693

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324561

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

Reference Method: EPA 8321B
Batch ID: P324384

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	112		P	40 - 140

Reference Method: EPA 8321B
Batch ID: P324480

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	107		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P325237

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P325275

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P324626

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P324481

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	72.6		P	40 - 140
Acetaminophen	97.6		P	40 - 140
Bentazon	73.0		P	40 - 140
Carbamazepine	99.2		P	40 - 140
Diuron	105		P	40 - 140
Fenuron	105		P	40 - 140
Fluridone	90.9		P	40 - 140
Imidacloprid	109		P	40 - 160
Linuron	89.8		P	40 - 140
MCP	70.0		P	40 - 140
Primidone	110		P	40 - 140
Triclopyr	63.2		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324966

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895773	Chloride	96.6		P	90 - 110
1896086	Chloride	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P324969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895773	Sulfate	93.3		P	90 - 110
1896086	Sulfate	92.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895743	Ammonia-N	103	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P324835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895718	Kjeldahl Nitrogen	96.9	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P324676

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895777	NO2NO3-N	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P324693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895775	Total-P	99.9	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P324561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895676	O-Phosphate-P	97.5	96.7	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P324384

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895472	Sucralose	109	96.7	P/P	40 - 140

Reference Method: EPA 8321B
 Batch ID: P324480

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896109	Sucralose	118	95.0	P/P	40 - 140

Reference Method: SM 4500 F-C-97
 Batch ID: P325275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895643	Fluoride	102	102	P/P	91 - 105

Reference Method: USGS O-2060-01
 Batch ID: P324481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895708	2,4-D	67.9	68.7	P/P	40 - 140
1895708	Acetaminophen	92.2	101	P/P	40 - 140
1895708	Carbamazepine	85.4	79.5	P/P	40 - 140
1895708	Diuron	73.5	70.2	P/P	40 - 140
1895708	Fenuron	64.6	69.4	P/P	40 - 140
1895708	Fluridone	38.4	27.6	F/F	40 - 140
1895708	Imidacloprid	151	162	P/F	40 - 160
1895708	Linuron	75.5	67.2	P/P	40 - 140
1895708	MCP	56.3	58.6	P/P	40 - 140
1895708	Primidone	84.5	90.3	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P324481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895708	Triclopyr	52.1	53.3	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P324599

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895803	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324966

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895773	Chloride	0.195	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P324969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895773	Sulfate	0.320	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P324530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895743	Ammonia-N	0.130	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P324835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895718	Kjeldahl Nitrogen	4.24	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P324676

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895777	NO2NO3-N	2.44	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P324693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895775	Total-P	0.518	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P324561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895676	O-Phosphate-P	0.824	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P324384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895472	Sucralose	11.7	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P324480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896109	Sucralose	21.0	Spike	P	0 - 30

Reference Method: SM 2120 B

Batch ID: P324504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895741	Color (true)	0.368	Sample	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P324505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895803	Color (true)	0.571	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P325237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895643	Total Alkalinity	0.358	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97

Batch ID: P325017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895742	TDS	2.85	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P325275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895643	Fluoride	0.480	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P324626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895504	Organic Carbon	0.255	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P324481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895708	2,4-D	0.954	Spike	P	0 - 30
1895708	Acetaminophen	9.39	Spike	P	0 - 30
1895708	Carbamazepine	7.18	Spike	P	0 - 30
1895708	Diuron	4.45	Spike	P	0 - 30
1895708	Fenuron	7.28	Spike	P	0 - 30
1895708	Fluridone	29.6	Spike	P	0 - 30
1895708	Imidacloprid	5.93	Spike	P	0 - 30
1895708	Linuron	11.6	Spike	P	0 - 30
1895708	MCP	3.78	Spike	P	0 - 30
1895708	Primidone	6.68	Spike	P	0 - 30
1895708	Triclopyr	2.35	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: 1895818
Field Sample ID: G3SW0042

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	86.5	P	40 - 150
USGS O-2060-01	2,4-D-d3	48.0	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	66.5	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	55.9	P	30 - 160
USGS O-2060-01	Diuron-d6	49.8	P	30 - 150
USGS O-2060-01	Primidone-d5	67.1	P	30 - 150

Lab Sample ID: 1895819
Field Sample ID: DUPLICATE

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	61.4	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	85.3	P	30 - 150

Quality Assurance Report Surrogates

Lab Sample ID: 1895819
Field Sample ID: DUPLICATE

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Carbamazepine-d10	63.2	P	30 - 160
USGS O-2060-01	Diuron-d6	53.9	P	30 - 150
USGS O-2060-01	Primidone-d5	72.7	P	30 - 150

Lab Sample ID: 1895820
Field Sample ID: BLANK

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	110	P	40 - 150
USGS O-2060-01	2,4-D-d3	67.5	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	114	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	107	P	30 - 160
USGS O-2060-01	Diuron-d6	100	P	30 - 150
USGS O-2060-01	Primidone-d5	112	P	30 - 150

Lab Sample ID: 1895821
Field Sample ID: G2SW0033

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	126	P	40 - 150
USGS O-2060-01	2,4-D-d3	65.9	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	105	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	75.5	P	30 - 160
USGS O-2060-01	Diuron-d6	70.5	P	30 - 150
USGS O-2060-01	Primidone-d5	91.2	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A76157
Included Lab Sample IDs: 1895803, 1895804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	85 - 115
Color (true)	102	99.8	P/P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A76160
Included Lab Sample IDs: 1895805, 1895806

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.3	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A76165
Included Lab Sample IDs: 1895807, 1895808

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.3	95.3	P/P	90 - 110
O-Phosphate-P	98.4	97.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A76176

Included Lab Sample IDs: 1895803, 1895804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: SM 5310 B-00

Run ID: A76189

Included Lab Sample IDs: 1895805, 1895806

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	94.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76200

Included Lab Sample IDs: 1895805, 1895806

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76246

Included Lab Sample IDs: 1895805, 1895806

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A76269

Included Lab Sample IDs: 1895803, 1895804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	102	P/P	90 - 110
Chloride	101	104	P/P	90 - 110
Sulfate	97.4	96.9	P/P	90 - 110
Sulfate	97.8	98.2	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A76396

Included Lab Sample IDs: 1895803, 1895804

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

Reference Method: SM 4500 F-C-97

Run ID: A76418

Included Lab Sample IDs: 1895803, 1895804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76425

Included Lab Sample IDs: 1895805, 1895806

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	104	P/P	90 - 110
Kjeldahl Nitrogen	97.6	98.1	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A76477

Included Lab Sample IDs: 1895818, 1895819, 1895820, 1895821

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.0	105	P/P	50 - 150
Acetaminophen	122	116	P/P	60 - 150
Bentazon	91.0	91.0	P/P	50 - 150
Carbamazepine	105	107	P/P	60 - 150
Diuron	118	114	P/P	60 - 150
Fenuron	113	101	P/P	60 - 150
Fenuron	121	112	P/P	60 - 150
Fluridone	119	116	P/P	60 - 150
Imidacloprid	117	115	P/P	60 - 150
Linuron	112	110	P/P	60 - 150
MCPP	98.0	98.0	P/P	50 - 150
Primidone	100	105	P/P	60 - 150
Primidone	92.0	87.6	P/P	60 - 150
Triclopyr	93.0	103	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A76559

Included Lab Sample IDs: 1895818, 1895819, 1895820, 1895821

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	110	96.1	P/P	60 - 150
Sucralose	145	87.9	P/P	60 - 150
Sucralose	89.4	64.0	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A76569

Included Lab Sample IDs: 1895818, 1895819

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.4	109	P/P	50 - 150

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

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				0.0	
EPA 300.0 Rev. 2.1	Chloride	99.5	96.6 97.3		0.195	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 300.0 Rev. 2.1	Sulfate	94.8	93.3	92.4	0.320	
EPA 350.1 Rev. 2.0	Ammonia-N	105	103	103		0.130
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	96.9	103		4.24
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	101	104		2.44
EPA 365.1 Rev. 2.0	Total-P	96.6	99.9	99.4		0.518
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.5	96.7		0.824
EPA 8321B	Sucralose	112	109	96.7		11.7
	Sucralose	107	118	95.0		21.0
SM 2120 B	Color (true)				0.368	
	Color (true)				0.571	
SM 2320 B-97	Total Alkalinity	103			0.358	
SM 2540 C-97	TDS				2.85	
SM 4500 F-C-97	Fluoride	98.5	102	102		0.480
SM 5310 B-00	Organic Carbon	97.0				0.255
USGS O-2060-01	2,4-D	72.6	67.9	68.7		0.954
	Acetaminophen	97.6	92.2	101		9.39
	Bentazon	73.0				
	Carbamazepine	99.2	85.4	79.5		7.18
	Diuron	105	73.5	70.2		4.45
	Fenuron	105	64.6	69.4		7.28
	Fluridone	90.9	38.4	27.6		29.6
	Imidacloprid	109	151	162		5.93
	Linuron	89.8	75.5	67.2		11.6
	MCPP	70.0	56.3	58.6		3.78
	Primidone	110	84.5	90.3		6.68
	Triclopyr	63.2	52.1	53.3		2.35

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1895803, 1895804
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1895803, 1895804
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1895803, 1895804
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1895805, 1895806
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1895805, 1895806
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1895805, 1895806
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1895805, 1895806
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1895807, 1895808
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1895818, 1895819, 1895820, 1895821
SM 2120 B / E31780	True Color measured at 450 nm	1895803, 1895804
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1895803, 1895804
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1895803, 1895804
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1895803, 1895804
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1895803, 1895804
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1895805, 1895806
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1895818, 1895819, 1895820, 1895821
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1895818, 1895819, 1895820, 1895821

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	05/03/2017			05/03/2017 16:36	Blanca Fach	1895803, 1895804
EPA 300.0 Rev. 2.1	05/03/2017			05/10/2017	Ping Hua	1895803, 1895804
EPA 350.1 Rev. 2.0	05/03/2017			05/03/2017	Julie Michelle Frank	1895805, 1895806
EPA 351.2 Rev. 2.0	05/03/2017	05/09/2017	Adrian Shelby	05/15/2017	Joseph Suarez	1895805, 1895806
EPA 353.2 Rev. 2.0	05/03/2017			05/05/2017	Beverly Y. Sanders	1895805, 1895806
EPA 365.1 Rev. 2.0	05/03/2017	05/05/2017	Vijayalakshmi Reddy	05/08/2017	Lipi Saha	1895805, 1895806
EPA 365.1 Rev. 2.0 dissolved	05/03/2017			05/03/2017 15:08	Anthony C. Onicha	1895807
	05/03/2017			05/03/2017 15:13	Anthony C. Onicha	1895808
EPA 8321B	05/03/2017	05/17/2017	Mohammad Ghaffari	05/18/2017	Mohammad Ghaffari	1895818, 1895819, 1895820, 1895821
SM 2120 B	05/03/2017			05/03/2017 16:02	Julia Storbeck	1895804
	05/03/2017			05/03/2017 16:06	Julia Storbeck	1895803
SM 2320 B-97	05/03/2017			05/12/2017	Dale L. Simmons	1895803, 1895804
SM 2540 C-97	05/03/2017			05/05/2017	Yijie Li	1895803, 1895804
SM 2540 D-97	05/03/2017			05/05/2017	Yijie Li	1895803, 1895804
SM 4500 F-C-97	05/03/2017			05/15/2017	Dale L. Simmons	1895803, 1895804
SM 5310 B-00	05/03/2017			05/04/2017	Julie Michelle Frank	1895805, 1895806
USGS O-2060-01	05/03/2017	05/08/2017	Fe-Val Siddell	05/16/2017	Juyoung Kim	1895818, 1895819, 1895820, 1895821
	05/03/2017	05/08/2017	Fe-Val Siddell	05/22/2017	Juyoung Kim	1895818, 1895819