

Chemical Analysis Report

WQAP-2017-03-30-07

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

Event Description: **SMP 2017 Freshwater Kit A with B/T/M**
Request ID: **RQ-2017-03-20-34**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3560
Tallahassee, FL 32399-2400
Attn: Mike Eckles

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 21-APR-2017 11:44



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: MOORE BRANCH @ CODY CHURCH RD.

Collection Date/Time: 03/30/2017 10:20

Field ID: G2TLHR0041-2017-02

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884881	EPA 180.1 Rev. 2.0	Turbidity	2.4	A	NTU	P322546	
	EPA 300.0 Rev. 2.1	Chloride	5.3		mg Cl/L	P323117	
	SM 2120 B	Color (true)	120		PCU	P322524	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P323357	
	SM 2540 C-97	TDS	25		mg/L	P323101	
	SM 2540 D-97	TSS	2	I	mg/L	P322878	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P323007	
1884884	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P322604	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P322633	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322720	
	EPA 365.1 Rev. 2.0	Total-P	0.093		mg P/L	P322705	
	SM 5310 B-00	Organic Carbon	8.0		mg C/L	P322612	
1884887	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.053		mg P/L	P322538	
1884899	EPA 8321B	Sucralose**	0.010	U	ug/L	P322530	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P322600	
		Diuron	0.0040	U	ug/L	P322600	
		Fenuron	0.0080	U	ug/L	P322600	
		Imidacloprid	0.0040	U	ug/L	P322600	
		Bentazon	0.0040	U	ug/L	P322600	MS
		Linuron	0.0040	U	ug/L	P322600	
		Acetaminophen**	0.010	U	ug/L	P322600	
		MCP	0.0040	U	ug/L	P322600	
		Carbamazepine**	4.0E-04	U	ug/L	P322600	
		Triclopyr**	0.010	U	ug/L	P322600	
		Primidone**	0.0080	U	ug/L	P322600	RPD
		Fluridone**	4.0E-04	U	ug/L	P322600	

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: SWEETWATER BRANCH @ CODY CHURCH RD.

Collection Date/Time: 03/30/2017 10:45

Field ID: G2TLHR0040-2017-02

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884882	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P322545	
	EPA 300.0 Rev. 2.1	Chloride	5.2		mg Cl/L	P323118	
	SM 2120 B	Color (true)	93		PCU	P322524	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P323004	
	SM 2540 C-97	TDS	26		mg/L	P323101	
	SM 2540 D-97	TSS	2	I	mg/L	P322878	
	SM 4500 F-C-97	Fluoride	0.068	I	mg F/L	P323007	
1884885	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P322604	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32		mg N/L	P322633	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322720	

Field ID: G2TLHR0040-2017-02

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884885	EPA 365.1 Rev. 2.0	Total-P	0.079		mg P/L	P322705	
	SM 5310 B-00	Organic Carbon	7.3		mg C/L	P322612	
1884888	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.044		mg P/L	P322538	
1884900	EPA 8321B	Sucralose**	0.010	U	ug/L	P322530	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P322600	
		Diuron	0.0040	U	ug/L	P322600	
		Fenuron	0.0080	U	ug/L	P322600	
		Imidacloprid	0.0040	U	ug/L	P322600	
		Bentazon	0.0040	U	ug/L	P322600	MS
		Linuron	0.0040	U	ug/L	P322600	
		Acetaminophen**	0.010	U	ug/L	P322600	
		MCP	0.0040	U	ug/L	P322600	
		Carbamazepine**	4.0E-04	U	ug/L	P322600	
		Triclopyr**	0.010	U	ug/L	P322600	
		Primidone**	0.0080	U	ug/L	P322600	RPD
		Fluridone**	4.0E-04	U	ug/L	P322600	

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: FIELD BLANK 1

Collection Date/Time: 03/30/2017 12:15

Field ID: FIELD BLANK 1

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884883	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P322545	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P323034	
	SM 2120 B	Color (true)	2.5	U	PCU	P322525	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P323004	
	SM 2540 C-97	TDS	15	U	mg/L	P323101	
	SM 2540 D-97	TSS	2	U	mg/L	P322878	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P323007	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P322604	
1884886	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P322633	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322720	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P322705	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P322612	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322538	
1884901	EPA 8321B	Sucralose**	0.010	U	ug/L	P322530	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P322600	
		Diuron	0.0040	U	ug/L	P322600	
		Fenuron	0.0080	U	ug/L	P322600	
		Imidacloprid	0.0040	U	ug/L	P322600	
		Bentazon	0.0040	U	ug/L	P322600	MS
		Linuron	0.0040	U	ug/L	P322600	
		Acetaminophen**	0.010	U	ug/L	P322600	
		MCP	0.0040	U	ug/L	P322600	

Field ID: FIELD BLANK 1

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884901	USGS O-2060-01	Carbamazepine**	4.0E-04	U	ug/L	P322600	
		Triclopyr**	0.010	U	ug/L	P322600	
		Primidone**	0.0080	U	ug/L	P322600	RPD
		Fluridone**	4.0E-04	U	ug/L	P322600	

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: P322545

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P322546

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323034

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323117

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323118

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P322604

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P322633

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322720

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322705

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322538

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

Reference Method: EPA 8321B
Batch ID: P322530

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P322524

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P322525

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P323004

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

Reference Method: SM 2320 B-97
Batch ID: P323357

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

Reference Method: SM 2540 C-97
Batch ID: P323101

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
 Batch ID: P322878

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P323007

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P322612

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

Reference Method: USGS O-2060-01
 Batch ID: P322600

Component	Result	Code	Units
2,4-D	0.0040	U	ug/L
Acetaminophen	0.010	U	ug/L
Bentazon	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0040	U	ug/L
Primidone	0.0080	U	ug/L
Triclopyr	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323034

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323117

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323118

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322604

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322633

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322720

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322705

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322538

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

Reference Method: EPA 8321B
Batch ID: P322530

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	99.6		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P323004

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P323357

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P323007

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P322612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.9		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P322600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	104		P	40 - 140
Acetaminophen	53.2		P	40 - 140
Bentazon	83.6		P	40 - 140
Carbamazepine	121		P	40 - 140
Diuron	87.6		P	40 - 140
Fenuron	98.0		P	40 - 140
Fluridone	75.6		P	40 - 140
Imidacloprid	85.6		P	40 - 160
Linuron	92.4		P	40 - 140
MCP	105		P	40 - 140
Primidone	86.8		P	40 - 140
Triclopyr	94.8		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884764	Chloride	106		P	90 - 110
1884769	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1883912	Chloride	98.7		P	90 - 110
1884041	Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323118

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1885051	Chloride	98.7		P	90 - 110
1885069	Chloride	99.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P322604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884821	Ammonia-N	104	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884960	Kjeldahl Nitrogen	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884822	NO2NO3-N	98.0	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884885	Total-P	97.6	110	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884827	O-Phosphate-P	96.0	97.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P322530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884563	Sucralose	76.5	76.6	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P323007

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1885134	Fluoride	98.9	98.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P322612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884821	Organic Carbon	94.8	95.2	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P322600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884497	2,4-D	109	103	P/P	40 - 140
1884497	Acetaminophen	70.8	55.6	P/P	40 - 140
1884497	Bentazon	160	160	F/F	40 - 140
1884497	Carbamazepine	83.2	102	P/P	40 - 140
1884497	Diuron	81.6	73.2	P/P	40 - 140
1884497	Fenuron	89.2	82.0	P/P	40 - 140
1884497	Fluridone	85.2	71.6	P/P	40 - 140
1884497	Imidacloprid	102	85.6	P/P	40 - 160
1884497	Linuron	74.0	87.6	P/P	40 - 140
1884497	MCP	122	104	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P322600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884497	Primidone	92.4	65.6	P/P	40 - 140
1884497	Triclopyr	96.0	87.6	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P322545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884815	Turbidity	0.388	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P322546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884881	Turbidity	2.52	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884764	Chloride	0.740	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884041	Chloride	0.279	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1885069	Chloride	0.223	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884821	Ammonia-N	0.526	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884960	Kjeldahl Nitrogen	0.241	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884822	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884885	Total-P	10.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884827	O-Phosphate-P	1.86	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P322530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884563	Sucralose	0.131	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P322524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884815	Color (true)	2.75	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P322525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884941	Color (true)	1.65	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P323004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1885134	Total Alkalinity	0.0234	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P323357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1885701	Total Alkalinity	0.791	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P323101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884700	TDS	1.70	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P323007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1885134	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P322612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884821	Organic Carbon	0.173	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P322600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884497	2,4-D	5.28	Spike	P	0 - 30
1884497	Acetaminophen	24.1	Spike	P	0 - 30
1884497	Bentazon	0.250	Spike	P	0 - 30
1884497	Carbamazepine	20.3	Spike	P	0 - 30
1884497	Diuron	10.9	Spike	P	0 - 30
1884497	Fenuron	8.41	Spike	P	0 - 30
1884497	Fluridone	17.3	Spike	P	0 - 30
1884497	Imidacloprid	17.9	Spike	P	0 - 30
1884497	Linuron	16.8	Spike	P	0 - 30
1884497	MCPP	15.2	Spike	P	0 - 30
1884497	Primidone	33.9	Spike	F	0 - 30
1884497	Triclopyr	9.15	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

Quality Assurance Report Surrogates

Lab Sample ID: 1884899

Field Sample ID: G2TLHR0041-2017-02

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	108	P	40 - 150
USGS O-2060-01	2,4-D-d3	107	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	59.4	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	91.2	P	40 - 160
USGS O-2060-01	Diuron-d6	74.8	P	40 - 150
USGS O-2060-01	Primidone-d5	93.6	P	40 - 150

Lab Sample ID: 1884900

Field Sample ID: G2TLHR0040-2017-02

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	102	P	40 - 150
USGS O-2060-01	2,4-D-d3	99.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	65.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	87.0	P	40 - 160
USGS O-2060-01	Diuron-d6	66.2	P	40 - 150
USGS O-2060-01	Primidone-d5	85.4	P	40 - 150

Lab Sample ID: 1884901

Field Sample ID: FIELD BLANK 1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	93.5	P	40 - 150
USGS O-2060-01	2,4-D-d3	114	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	86.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	105	P	40 - 160
USGS O-2060-01	Diuron-d6	40.0	P	40 - 150
USGS O-2060-01	Primidone-d5	118	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A75477

Included Lab Sample IDs: 1884881, 1884882, 1884883

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A75479

Included Lab Sample IDs: 1884887, 1884888, 1884889

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A75482

Included Lab Sample IDs: 1884881, 1884882, 1884883

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A75505

Included Lab Sample IDs: 1884884, 1884885, 1884886

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: A75508

Included Lab Sample IDs: 1884884, 1884885, 1884886

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	96.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75553

Included Lab Sample IDs: 1884884, 1884885, 1884886

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	95.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75568

Included Lab Sample IDs: 1884884, 1884885, 1884886

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75582

Included Lab Sample IDs: 1884884, 1884885

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75585

Included Lab Sample IDs: 1884886

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

Reference Method: SM 2320 B-97

Run ID: A75665

Included Lab Sample IDs: 1884882, 1884883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A75665

Included Lab Sample IDs: 1884882, 1884883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	107	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A75665

Included Lab Sample IDs: 1884881, 1884882, 1884883

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75672

Included Lab Sample IDs: 1884883

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

Reference Method: EPA 8321B

Run ID: A75673

Included Lab Sample IDs: 1884899, 1884900, 1884901

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	122	108	P/P	60 - 150
Sucralose	140	104	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A75682

Included Lab Sample IDs: 1884899, 1884900, 1884901

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	130	123	P/P	60 - 150
Acetaminophen	99.6	130	P/P	60 - 150
Carbamazepine	117	118	P/P	60 - 150
Carbamazepine	121	117	P/P	60 - 150
Diuron	114	110	P/P	60 - 150
Diuron	120	114	P/P	60 - 150
Fenuron	110	112	P/P	60 - 150
Fenuron	114	110	P/P	60 - 150
Fluridone	106	107	P/P	60 - 150
Fluridone	116	106	P/P	60 - 150
Imidacloprid	108	94.0	P/P	60 - 150
Imidacloprid	94.0	96.8	P/P	60 - 150
Linuron	132	145	P/P	60 - 150
Linuron	145	150	P/P	60 - 150
Primidone	105	122	P/P	60 - 150
Primidone	122	80.0	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A75705

Included Lab Sample IDs: 1884899, 1884900, 1884901

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A75705

Included Lab Sample IDs: 1884899, 1884900, 1884901

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	110	137	P/P	50 - 150
2,4-D	137	120	P/P	50 - 150
Bentazon	147	94.2	P/P	50 - 150
Bentazon	94.2	91.4	P/P	50 - 150
MCP	123	133	P/P	50 - 150
MCP	136	123	P/P	50 - 150
Triclopyr	107	113	P/P	50 - 150
Triclopyr	113	103	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75723

Included Lab Sample IDs: 1884881, 1884882

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	102	P/P	90 - 110
Chloride	97.9	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A75773

Included Lab Sample IDs: 1884881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	105	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				0.388	
	Turbidity				2.52	
EPA 300.0 Rev. 2.1	Chloride	105	106 105		0.740	
	Chloride	96.6	98.2 98.7		0.279	
	Chloride	101	99.0 98.7		0.223	
EPA 350.1 Rev. 2.0	Ammonia-N	102	104 103			0.526
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	103 103			0.241
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	98.0 98.5			0.499
EPA 365.1 Rev. 2.0	Total-P	110	97.6 110			10.0
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	96.0 97.8			1.86
EPA 8321B	Sucralose	99.6	76.5 76.6			0.131
SM 2120 B	Color (true)				2.75	
	Color (true)				1.65	
SM 2320 B-97	Total Alkalinity	105			0.0234	
	Total Alkalinity	105			0.791	
SM 2540 C-97	TDS				1.70	
SM 4500 F-C-97	Fluoride	97.4	98.9 98.9			0.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
SM 5310 B-00	Organic Carbon	94.9	94.8	95.2			0.173
USGS O-2060-01	2,4-D	104	109	103			5.28
	Acetaminophen	53.2	70.8	55.6			24.1
	Bentazon	83.6	160	160			0.250
	Carbamazepine	121	83.2	102			20.3
	Diuron	87.6	81.6	73.2			10.9
	Fenuron	98.0	89.2	82.0			8.41
	Fluridone	75.6	85.2	71.6			17.3
	Imidacloprid	85.6	102	85.6			17.9
	Linuron	92.4	74.0	87.6			16.8
	MCP	105	122	104			15.2
	Primidone	86.8	92.4	65.6			33.9
	Triclopyr	94.8	96.0	87.6			9.15

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1884881, 1884882, 1884883
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1884881, 1884882, 1884883
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1884884, 1884885, 1884886
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1884884, 1884885, 1884886
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1884884, 1884885, 1884886
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1884884, 1884885, 1884886
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1884887, 1884888, 1884889
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1884899, 1884900, 1884901
SM 2120 B / E31780	True Color measured at 450 nm	1884881, 1884882, 1884883
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1884881, 1884882, 1884883
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1884881, 1884882, 1884883
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1884881, 1884882, 1884883
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1884881, 1884882, 1884883
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1884884, 1884885, 1884886
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1884899, 1884900, 1884901
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1884899, 1884900, 1884901

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	03/30/2017			03/30/2017 15:54	Blanca Fach	1884881, 1884882, 1884883
EPA 300.0 Rev. 2.1	03/30/2017			04/08/2017	Ping Hua	1884883
	03/30/2017			04/11/2017	Ping Hua	1884881, 1884882
EPA 350.1 Rev. 2.0	03/30/2017			03/31/2017	Julie Michelle Frank	1884884, 1884885, 1884886
EPA 351.2 Rev. 2.0	03/30/2017	04/03/2017	Adrian Shelby	04/04/2017	Joseph Suarez	1884884, 1884885, 1884886
EPA 353.2 Rev. 2.0	03/30/2017			04/04/2017	Beverly Y. Sanders	1884884, 1884885, 1884886
EPA 365.1 Rev. 2.0	03/30/2017	04/04/2017	Adrian Shelby	04/05/2017	Lipi Saha	1884884, 1884885, 1884886
EPA 365.1 Rev. 2.0 dissolved	03/30/2017			03/30/2017 16:52	Anthony C. Onicha	1884887
	03/30/2017			03/30/2017 16:53	Anthony C. Onicha	1884888
	03/30/2017			03/30/2017 16:54	Anthony C. Onicha	1884889
EPA 8321B	03/30/2017	04/07/2017	Mohammad Ghaffari	04/07/2017	Mohammad Ghaffari	1884899, 1884900, 1884901
SM 2120 B	03/30/2017			03/30/2017 19:41	Julie Michelle Frank	1884881
	03/30/2017			03/30/2017 19:42	Julie Michelle Frank	1884882
	03/30/2017			03/30/2017 19:45	Julie Michelle Frank	1884883
SM 2320 B-97	03/30/2017			04/07/2017	Dale L. Simmons	1884882, 1884883
	03/30/2017			04/12/2017	Dale L. Simmons	1884881
SM 2540 C-97	03/30/2017			04/03/2017	Sima Feizi	1884881, 1884882, 1884883
SM 2540 D-97	03/30/2017			04/03/2017	Sima Feizi	1884881, 1884882, 1884883
SM 4500 F-C-97	03/30/2017			04/07/2017	Dale L. Simmons	1884881, 1884882, 1884883
SM 5310 B-00	03/30/2017			03/31/2017	Christopher Armour	1884884, 1884885, 1884886
USGS O-2060-01	03/30/2017	04/03/2017	Hoor Shaik	04/08/2017	Juyoung Kim	1884899, 1884900, 1884901
	03/30/2017	04/03/2017	Hoor Shaik	04/10/2017	Juyoung Kim	1884899, 1884900, 1884901