

Chemical Analysis Report

WQAP-2017-07-12-03

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

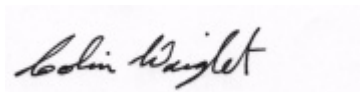
Event Description: **SMP 2017 Freshwater Kit A with B/T/M**
Request ID: **RQ-2017-06-26-36**
Customer: **WQAP**
Project ID: **SMP**

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

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Certified by: Colin Wright, Program Administrator

Date Certified: 04-AUG-2017 16:39

A handwritten signature in black ink, appearing to read "Colin Wright", is written on a light-colored rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Woods Creek @ Osteen Rd

Collection Date/Time: 07/12/2017 09:40

Field ID: G1TLHR0067-2017-04

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913101	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P328389	
	EPA 300.0 Rev. 2.1	Chloride	6.3		mg Cl/L	P328553	
	SM 2120 B	Color (true)	45	A	PCU	P328383	
	SM 2320 B-97	Total Alkalinity	190		mg CaCO3/L	P328662	
	SM 2540 C-97	TDS	210		mg/L	P328900	
	SM 2540 D-97	TSS	2	U	mg/L	P329003	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P328667	
1913103	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P328591	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P328617	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P328675	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P328698	
	SM 5310 B-00	Organic Carbon	4.9		mg C/L	P328861	
1913105	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P328473	
1913119	EPA 8321B	Sucralose**	0.010	U	ug/L	P328419	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P328403	
		Diuron	8.0E-04	U	ug/L	P328403	
		Fenuron	0.0080	U	ug/L	P328403	RPD
		Imidacloprid	8.0E-04	U	ug/L	P328403	MS
		Bentazon	0.0015	I	ug/L	P328403	
		Linuron	0.0040	U	ug/L	P328403	
		Acetaminophen**	0.0080	U	ug/L	P328403	
		MCP	0.0020	U	ug/L	P328403	
		Carbamazepine**	4.0E-04	U	ug/L	P328403	
		Triclopyr**	0.0040	U	ug/L	P328403	
		Primidone**	0.0040	U	ug/L	P328403	
		Fluridone**	4.0E-04	U	ug/L	P328403	

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: Steinhatchee River South of SE La Bennett Rd

Collection Date/Time: 07/12/2017 11:10

Field ID: G1TLHR0064-2017-02

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913102	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P328389	
	EPA 300.0 Rev. 2.1	Chloride	5.8		mg Cl/L	P328553	
	SM 2120 B	Color (true)	510		PCU	P328383	
	SM 2320 B-97	Total Alkalinity	83		mg CaCO3/L	P328662	
	SM 2540 C-97	TDS	191	A	mg/L	P328900	
	SM 2540 D-97	TSS	6	IA	mg/L	P329003	
	SM 4500 F-C-97	Fluoride	0.097	I	mg F/L	P328667	
1913104	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P328591	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P328617	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P328675	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P328698	

Field ID: G1TLHR0064-2017-02

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1913104	SM 5310 B-00	Organic Carbon	40		mg C/L	P328861	
1913106	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P328473	
1913120	EPA 8321B	Sucralose**	0.010	U	ug/L	P328419	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P328403	
		Diuron	8.0E-04	U	ug/L	P328403	
		Fenuron	0.0080	U	ug/L	P328403	RPD
		Imidacloprid	8.0E-04	U	ug/L	P328403	MS
		Bentazon	8.0E-04	U	ug/L	P328403	
		Linuron	0.0040	U	ug/L	P328403	
		Acetaminophen**	0.0080	U	ug/L	P328403	
		MCPD	0.0020	U	ug/L	P328403	
		Carbamazepine**	4.0E-04	U	ug/L	P328403	
		Triclopyr**	0.0040	U	ug/L	P328403	
		Primidone**	0.0040	U	ug/L	P328403	
		Fluridone**	4.0E-04	U	ug/L	P328403	

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: P328389

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P328553

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P328591

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P328617

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P328675

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328698

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328473

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

Reference Method: EPA 8321B
Batch ID: P328419

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P328383

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P328662

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

Reference Method: SM 2540 C-97
Batch ID: P328900

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329003

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P328667

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P328861

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

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P328403

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328553

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328591

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328617

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328675

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328473

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.1		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P328419

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	88.9		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P328662

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

Reference Method: SM 4500 F-C-97
 Batch ID: P328667

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P328861

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P328403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	91.1		P	40 - 150
Acetaminophen	148		P	30 - 150
Bentazon	87.1		P	40 - 150
Carbamazepine	123		P	40 - 150
Diuron	106		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	123		P	40 - 150
Imidacloprid	76.0		P	40 - 160
Linuron	111		P	40 - 150
MCPD	95.6		P	40 - 150
Primidone	107		P	40 - 150
Triclopyr	96.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P328553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912890	Chloride	98.7		P	90 - 110
1913066	Chloride	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P328591

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328591

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913103	Ammonia-N	95.2	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913025	Kjeldahl Nitrogen	102	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328675

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913103	NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913024	Total-P	96.6	93.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913027	O-Phosphate-P	99.5	99.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P328419

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913119	Sucralose	100	86.0	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P328667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913065	Fluoride	98.0	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P328861

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912852	Organic Carbon	99.0		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P328403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912972	2,4-D	120	122	P/P	40 - 150
1912972	Acetaminophen	105	112	P/P	30 - 150
1912972	Bentazon	92.8	85.9	P/P	40 - 150
1912972	Carbamazepine	128	128	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P328403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1912972	Diuron	101	98.9	P/P	40 - 150
1912972	Fenuron	71.9	98.7	P/P	40 - 150
1912972	Fluridone	79.8	71.2	P/P	40 - 150
1912972	Imidacloprid	158	202	P/F	40 - 160
1912972	Linuron	109	106	P/P	40 - 150
1912972	MCP	111	104	P/P	40 - 150
1912972	Primidone	104	115	P/P	40 - 150
1912972	Triclopyr	109	102	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P328389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913021	Turbidity	0.810	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912890	Chloride	0.750	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913103	Ammonia-N	1.66	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913025	Kjeldahl Nitrogen	0.923	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328675

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913103	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913024	Total-P	2.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913027	O-Phosphate-P	0.150	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P328419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913119	Sucralose	15.1	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P328383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913101	Color (true)	2.57	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P328662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913065	Total Alkalinity	0.163	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P328900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913102	TDS	5.24	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P328667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913065	Fluoride	1.90	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P328861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912852	Organic Carbon	0.315	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
 Batch ID: P328403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1912972	2,4-D	1.82	Spike	P	0 - 30
1912972	Acetaminophen	6.81	Spike	P	0 - 30
1912972	Bentazon	7.66	Spike	P	0 - 30
1912972	Carbamazepine	0.298	Spike	P	0 - 30
1912972	Diuron	1.88	Spike	P	0 - 30
1912972	Fenuron	31.4	Spike	F	0 - 30
1912972	Fluridone	11.4	Spike	P	0 - 30
1912972	Imidacloprid	24.4	Spike	P	0 - 30
1912972	Linuron	2.67	Spike	P	0 - 30
1912972	MCP	6.43	Spike	P	0 - 30
1912972	Primidone	10.3	Spike	P	0 - 30
1912972	Triclopyr	6.65	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: 1913119
 Field Sample ID: G1TLHR0067-2017-04

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	66.4	P	40 - 160
USGS O-2060-01	2,4-D-d3	95.1	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	97.5	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	123	P	30 - 160
USGS O-2060-01	Diuron-d6	92.6	P	30 - 160
USGS O-2060-01	Primidone-d5	87.1	P	30 - 160

Lab Sample ID: 1913120
 Field Sample ID: G1TLHR0064-2017-02

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	65.3	P	40 - 160
USGS O-2060-01	2,4-D-d3	94.0	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	110	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	92.9	P	30 - 160
USGS O-2060-01	Diuron-d6	64.4	P	30 - 160
USGS O-2060-01	Primidone-d5	64.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
 Run ID: A77666
 Included Lab Sample IDs: 1913101, 1913102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	109	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77668

Included Lab Sample IDs: 1913101, 1913102

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77695

Included Lab Sample IDs: 1913101, 1913102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	105	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77701

Included Lab Sample IDs: 1913105, 1913106

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77748

Included Lab Sample IDs: 1913103, 1913104

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

Reference Method: SM 2320 B-97

Run ID: A77776

Included Lab Sample IDs: 1913101, 1913102

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

Reference Method: SM 4500 F-C-97

Run ID: A77776

Included Lab Sample IDs: 1913101, 1913102

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

Reference Method: EPA 8321B

Run ID: A77777

Included Lab Sample IDs: 1913119, 1913120

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	145	72.6	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77778

Included Lab Sample IDs: 1913103, 1913104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.0	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A77810
Included Lab Sample IDs: 1913103, 1913104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	90.6	94.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A77814
Included Lab Sample IDs: 1913103, 1913104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.9	98.4	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A77848
Included Lab Sample IDs: 1913103, 1913104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	99.0	P/P	90 - 110

Reference Method: USGS O-2060-01
Run ID: A78009
Included Lab Sample IDs: 1913119, 1913120

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	100	109	P/P	50 - 150
Acetaminophen	92.4	106	P/P	60 - 150
Bentazon	96.9	98.0	P/P	50 - 150
Carbamazepine	103	102	P/P	60 - 150
Diuron	97.2	97.1	P/P	60 - 150
Fenuron	104	112	P/P	60 - 150
Fluridone	135	114	P/P	60 - 160
Imidacloprid	85.0	103	P/P	60 - 150
Linuron	105	93.5	P/P	60 - 150
MCP	93.9	86.1	P/P	50 - 150
Primidone	126	105	P/P	60 - 150
Triclopyr	98.3	92.5	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				0.810	
EPA 300.0 Rev. 2.1	Chloride	102	98.7 99.7		0.750	
EPA 350.1 Rev. 2.0	Ammonia-N	101	95.2 97.0			1.66
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.8	102 103			0.923
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	98.5 98.5			0.0
EPA 365.1 Rev. 2.0	Total-P	95.4	96.6 93.9			2.18
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	99.5 99.3			0.150

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Sucralose	88.9	100	86.0		15.1
SM 2120 B	Color (true)				2.57	
SM 2320 B-97	Total Alkalinity	103			0.163	
SM 2540 C-97	TDS				5.24	
SM 4500 F-C-97	Fluoride	100	98.0	101		1.90
SM 5310 B-00	Organic Carbon	96.0	99.0			0.315
USGS O-2060-01	2,4-D	91.1	120	122		1.82
	Acetaminophen	148	105	112		6.81
	Bentazon	87.1	92.8	85.9		7.66
	Carbamazepine	123	128	128		0.298
	Diuron	106	101	98.9		1.88
	Fenuron	109	71.9	98.7		31.4
	Fluridone	123	79.8	71.2		11.4
	Imidacloprid	76.0	158	202		24.4
	Linuron	111	109	106		2.67
	MCP	95.6	111	104		6.43
	Primidone	107	104	115		10.3
	Triclopyr	96.1	109	102		6.65

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1913101, 1913102
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1913101, 1913102
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1913103, 1913104
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1913103, 1913104
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1913103, 1913104
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1913103, 1913104
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1913105, 1913106
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1913119, 1913120
SM 2120 B / E31780	True Color measured at 450 nm	1913101, 1913102
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1913101, 1913102
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1913101, 1913102
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1913101, 1913102
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1913101, 1913102
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1913103, 1913104
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1913119, 1913120
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1913119, 1913120

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	07/12/2017			07/12/2017 17:13	DeAsia Armster	1913101, 1913102
EPA 300.0 Rev. 2.1	07/12/2017			07/14/2017	Julia Storbeck	1913101, 1913102
EPA 350.1 Rev. 2.0	07/12/2017			07/14/2017	Sofia Elnemr	1913103, 1913104
EPA 351.2 Rev. 2.0	07/12/2017	07/18/2017	Adrian Shelby	07/19/2017	Joseph Suarez	1913103, 1913104
EPA 353.2 Rev. 2.0	07/12/2017			07/18/2017	Beverly Y. Sanders	1913103, 1913104
EPA 365.1 Rev. 2.0	07/12/2017	07/18/2017	Vijayalakshmi Reddy	07/19/2017	Lipi Saha	1913103, 1913104
EPA 365.1 Rev. 2.0 dissolved	07/12/2017			07/13/2017 14:26	Anthony C. Onicha	1913105
	07/12/2017			07/13/2017 14:27	Anthony C. Onicha	1913106
EPA 8321B	07/12/2017	07/14/2017	Mohammad Ghaffari	07/14/2017	Mohammad Ghaffari	1913119, 1913120
SM 2120 B	07/12/2017			07/12/2017 17:28	Tanya Welborn	1913101
	07/12/2017			07/12/2017 17:32	Tanya Welborn	1913102
SM 2320 B-97	07/12/2017			07/15/2017	Dale L. Simmons	1913101, 1913102
SM 2540 C-97	07/12/2017			07/18/2017	Yijie Li	1913101, 1913102
SM 2540 D-97	07/12/2017			07/18/2017	Yijie Li	1913101, 1913102
SM 4500 F-C-97	07/12/2017			07/15/2017	Dale L. Simmons	1913101, 1913102
SM 5310 B-00	07/12/2017			07/20/2017	Sofia Elnemr	1913103, 1913104
USGS O-2060-01	07/12/2017	07/17/2017	Hoor Shaik	07/26/2017	Juyoung Kim	1913119, 1913120