

Chemical Analysis Report

WQAP-2017-10-25-04

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 - b/t/m (3573A_Steinhatchee River, 913_Big Creek)**
Request ID: **RQ-2017-09-25-26**
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

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

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 22-NOV-2017 11:24



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: Big Creek @ CR 2224

Collection Date/Time: 10/25/2017 13:00

Field ID: G1TLHR0057-2017-05

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1940029	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P334060	
	EPA 300.0 Rev. 2.1	Chloride	3.2		mg Cl/L	P334434	
	SM 2120 B	Color (true)	350		PCU	P334061	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P334233	
	SM 2540 C-97	TDS	50		mg/L	P334618	
	SM 2540 D-97	TSS	4	I	mg/L	P334658	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P334460	
1940030	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P334569	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P334536	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P334455	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P334202	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P334708	
1940031	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P334133	
1940035	EPA 8321B	Sucralose**	0.012	I	ug/L	P334158	
	USGS O-2060-01	2,4-D	0.0020	UQ	ug/L	P335526	
		Diuron	8.0E-04	U	ug/L	P334217	
		Fenuron	0.0080	U	ug/L	P334217	
		Imidacloprid	8.0E-04	U	ug/L	P334217	MS
		Bentazon	8.0E-04	UQ	ug/L	P335526	
		Linuron	0.0040	U	ug/L	P334217	
		Acetaminophen**	0.0080	UJ	ug/L	P334217	LCS
		MCP	0.0020	UQ	ug/L	P335526	
		Carbamazepine**	4.0E-04	U	ug/L	P334217	MS
		Triclopyr**	0.0040	UQ	ug/L	P335526	
		Primidone**	0.0040	U	ug/L	P334217	
		Fluridone**	4.0E-04	U	ug/L	P334217	

Ref. Method and Comment:

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

USGS O-2060-01: Sample required re-extraction beyond normal holding time due to reagent performance inconsistencies.

USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P334060

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P334434

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334569

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334536

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334455

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334202

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334133

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

Reference Method: EPA 8321B
Batch ID: P334158

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P334061

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P334233

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

Reference Method: SM 2540 C-97
Batch ID: P334618

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P334658

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P334460

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P334708

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

Reference Method: USGS O-2060-01
Batch ID: P334217

Component	Result	Code	Units
Acetaminophen	0.0080	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
Primidone	0.0040	U	ug/L

Reference Method: USGS O-2060-01
Batch ID: P335526

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
MCPP	0.0020	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: P334434

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334569

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.5		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334536

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334455

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: P334202

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334133

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

Reference Method: EPA 8321B
Batch ID: P334158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	85.0		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P334233

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P334460

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P334708

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	104		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P334217

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	151		F	30 - 150
Carbamazepine	143		P	40 - 150
Diuron	112		P	40 - 150
Fenuron	117		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P334217

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluridone	117		P	40 - 150
Imidacloprid	114		P	40 - 160
Linuron	116		P	40 - 150
Primidone	110		P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P335526

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	102		P	40 - 150
Bentazon	91.1		P	30 - 150
MCPP	91.5		P	40 - 150
Triclopyr	94.8		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334434

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940049	Chloride	103		P	90 - 110
1940073	Chloride	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334569

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939965	Ammonia-N	99.3	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940458	Kjeldahl Nitrogen	97.9	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940030	NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940054	Total-P	103	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P334133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939971	O-Phosphate-P	97.9	99.1	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P334158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939692	Sucralose	64.6	64.6	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P334460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940259	Fluoride	99.1	99.1	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P334708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939812	Organic Carbon	100	106	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P334217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940229	Acetaminophen	97.1	103	P/P	30 - 150
1940229	Carbamazepine	136	154	P/F	40 - 150
1940229	Diuron	90.8	107	P/P	40 - 150
1940229	Fenuron	102	115	P/P	40 - 150
1940229	Fluridone	104	98.0	P/P	40 - 150
1940229	Imidacloprid	217	250	F/F	40 - 160
1940229	Linuron	108	118	P/P	40 - 150
1940229	Primidone	108	129	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P335526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940027	2,4-D	85.4	83.6	P/P	40 - 150
1940027	Bentazon	87.2	86.7	P/P	30 - 150
1940027	MCP	71.8	66.5	P/P	40 - 150
1940027	Triclopyr	69.0	65.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P334060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939963	Turbidity	1.78	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940049	Chloride	0.322	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334569

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939965	Ammonia-N	1.89	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940458	Kjeldahl Nitrogen	0.321	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940030	NO2NO3-N	0.253	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940054	Total-P	0.303	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939971	O-Phosphate-P	1.22	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P334158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939692	Sucralose	0.0	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P334061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939962	Color (true)	0.641	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P334233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940259	Total Alkalinity	0.565	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P334618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940050	TDS	8.53	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P334460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940259	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P334708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939812	Organic Carbon	4.50	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P334217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940229	Acetaminophen	6.23	Spike	P	0 - 30
1940229	Carbamazepine	13.1	Spike	P	0 - 30
1940229	Diuron	16.3	Spike	P	0 - 30
1940229	Fenuron	11.6	Spike	P	0 - 30
1940229	Fluridone	4.88	Spike	P	0 - 30
1940229	Imidacloprid	14.5	Spike	P	0 - 30
1940229	Linuron	8.92	Spike	P	0 - 30
1940229	Primidone	17.6	Spike	P	0 - 30

Reference Method: USGS O-2060-01
 Batch ID: P335526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940027	2,4-D	2.07	Spike	P	0 - 30
1940027	Bentazon	0.633	Spike	P	0 - 30
1940027	MCP	7.60	Spike	P	0 - 30
1940027	Triclopyr	4.66	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: 1940035
Field Sample ID: G1TLHR0057-2017-05

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	154	P	30 - 160
EPA 8321B	Carbamazepine-d10	122	P	30 - 160
EPA 8321B	Diuron-d6	84.7	P	30 - 160
EPA 8321B	Primidone-d5	90.1	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	40 - 160
USGS O-2060-01	2,4-D-d3	70.4	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	154	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	122	P	30 - 160
USGS O-2060-01	Diuron-d6	84.7	P	30 - 160
USGS O-2060-01	Primidone-d5	90.1	P	30 - 160
USGS O-2060-01	Sucralose-d6	100	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A79807
Included Lab Sample IDs: 1940029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	100	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A79808
Included Lab Sample IDs: 1940029

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A79834
Included Lab Sample IDs: 1940031

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

Reference Method: SM 2320 B-97
Run ID: A79869
Included Lab Sample IDs: 1940029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.6	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A79900
Included Lab Sample IDs: 1940030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A79937

Included Lab Sample IDs: 1940029

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

Reference Method: EPA 8321B

Run ID: A79945

Included Lab Sample IDs: 1940035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	98.6	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79946

Included Lab Sample IDs: 1940030

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

Reference Method: SM 4500 F-C-97

Run ID: A79949

Included Lab Sample IDs: 1940029

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79995

Included Lab Sample IDs: 1940030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80046

Included Lab Sample IDs: 1940030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.4	97.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A80051

Included Lab Sample IDs: 1940030

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

Reference Method: USGS O-2060-01

Run ID: A80386

Included Lab Sample IDs: 1940035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.8	103	P/P	50 - 150
Bentazon	121	122	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A80386
Included Lab Sample IDs: 1940035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
MCP	106	104	P/P	50 - 150
Triclopyr	107	101	P/P	50 - 150

Reference Method: USGS O-2060-01
Run ID: A80401
Included Lab Sample IDs: 1940035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	127	124	P/P	60 - 150
Carbamazepine	135	132	P/P	60 - 150
Diuron	115	115	P/P	60 - 150
Fenuron	115	114	P/P	60 - 150
Fluridone	125	127	P/P	60 - 160
Imidacloprid	114	115	P/P	60 - 150
Linuron	125	128	P/P	60 - 150
Primidone	116	121	P/P	60 - 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					1.78	
EPA 300.0 Rev. 2.1	Chloride	104	103	104		0.322	
EPA 350.1 Rev. 2.0	Ammonia-N	98.5	99.3	97.2			1.89
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	97.9	98.2			0.321
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	103	104			0.253
EPA 365.1 Rev. 2.0	Total-P	105	103	102			0.303
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	97.9	99.1			1.22
EPA 8321B	Sucralose	85.0	64.6	64.6			0.0
SM 2120 B	Color (true)					0.641	
SM 2320 B-97	Total Alkalinity	101				0.565	
SM 2540 C-97	TDS					8.53	
SM 4500 F-C-97	Fluoride	98.2	99.1	99.1			0.0
SM 5310 B-00	Organic Carbon	104	100	106			4.50
USGS O-2060-01	2,4-D	102	85.4	83.6			2.07
	Acetaminophen	151	97.1	103			6.23
	Bentazon	91.1	87.2	86.7			0.633
	Carbamazepine	143	136	154			13.1
	Diuron	112	90.8	107			16.3
	Fenuron	117	102	115			11.6
	Fluridone	117	104	98.0			4.88
	Imidacloprid	114	217	250			14.5
	Linuron	116	108	118			8.92
	MCP	91.5	71.8	66.5			7.60
	Primidone	110	108	129			17.6

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
USGS O-2060-01	Triclopyr	94.8	69.0 65.9			4.66

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1940029
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1940029
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1940030
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1940030
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1940030
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1940030
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1940031
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1940035
SM 2120 B / E31780	True Color measured at 450 nm	1940029
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1940029
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1940029
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1940029
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1940029
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1940030
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1940035
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1940035

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	10/25/2017			10/25/2017 16:57	DeAsia Armster	1940029
EPA 300.0 Rev. 2.1	10/25/2017			10/31/2017	Julia Storbeck	1940029
EPA 350.1 Rev. 2.0	10/25/2017			11/01/2017	Sofia Elnemr	1940030
EPA 351.2 Rev. 2.0	10/25/2017	11/02/2017	Adrian Shelby	11/03/2017	Joseph Suarez	1940030
EPA 353.2 Rev. 2.0	10/25/2017			11/01/2017	Beverly Y. Sanders	1940030
EPA 365.1 Rev. 2.0	10/25/2017	10/27/2017	Sima Feizi	10/30/2017	Lipi Saha	1940030
EPA 365.1 Rev. 2.0 dissolved	10/25/2017			10/26/2017 15:03	Megan Treadwell	1940031
EPA 8321B	10/25/2017	10/30/2017	Juyoung Kim	10/30/2017	Juyoung Kim	1940035
SM 2120 B	10/25/2017			10/25/2017 16:40	Tanya Welborn	1940029
SM 2320 B-97	10/25/2017			10/27/2017	Dale L. Simmons	1940029
SM 2540 C-97	10/25/2017			10/27/2017	Yijie Li	1940029
SM 2540 D-97	10/25/2017			10/27/2017	Yijie Li	1940029
SM 4500 F-C-97	10/25/2017			10/31/2017	Dale L. Simmons	1940029
SM 5310 B-00	10/25/2017			11/03/2017	Ping Hua	1940030
USGS O-2060-01	10/25/2017	10/31/2017	Hoor Shaik	11/03/2017	Julie Michelle Frank	1940035
	10/25/2017	11/16/2017	Hoor Shaik	11/20/2017	Julie Michelle Frank	1940035