

Chemical Analysis Report

WQAP-2017-07-26-02

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

Event Description: **SMP 2017 kit A-b/t/m PCR-FILTER & PCR-HF183**
Request ID: **RQ-2017-06-26-37**
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: 14-AUG-2017 11:59



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: SWEETWATER BRANCH @ CODY CHURCH RD.

Collection Date/Time: 07/26/2017 12:10

Field ID: G1TLHR0040-2017-05

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1916646	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P329162	
	EPA 300.0 Rev. 2.1	Chloride	5.2		mg Cl/L	P329193	
	SM 2120 B	Color (true)	150	A	PCU	P329154	
	SM 2320 B-97	Total Alkalinity	8.8		mg CaCO3/L	P329383	
	SM 2540 C-97	TDS	42		mg/L	P329475	
	SM 2540 D-97	TSS	4	I	mg/L	P329783	
	SM 4500 F-C-97	Fluoride	0.055	I	mg F/L	P329385	
1916647	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P329430	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P329336	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P329398	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P329329	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P329479	
1916648	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.058		mg P/L	P329159	
1916652	EPA 8321B	Sucralose**	0.028	I	ug/L	P329067	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P329107	MS
		Diuron	8.0E-04	U	ug/L	P329107	
		Fenuron	0.0080	U	ug/L	P329107	
		Imidacloprid	8.0E-04	U	ug/L	P329107	
		Bentazon	8.0E-04	U	ug/L	P329107	MS
		Linuron	0.0040	U	ug/L	P329107	
		Acetaminophen**	0.0080	U	ug/L	P329107	
		MCP	0.0020	U	ug/L	P329107	
		Carbamazepine**	4.0E-04	U	ug/L	P329107	
		Triclopyr**	0.0040	U	ug/L	P329107	
		Primidone**	0.0040	U	ug/L	P329107	
		Fluridone**	4.0E-04	U	ug/L	P329107	MS, RPD

Ref. Method and Comment:

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

EPA 8321B: MS accuracy for sucralose 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: P329162

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P329193

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: P329430

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329336

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329398

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329329

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329159

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

Reference Method: EPA 8321B
Batch ID: P329067

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P329154

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P329383

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

Reference Method: SM 2540 C-97
Batch ID: P329475

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P329783

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P329385

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P329479

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

Reference Method: USGS O-2060-01
Batch ID: P329107

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
MCP	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: P329193

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329430

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329336

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329398

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: P329329

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329159

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

Reference Method: EPA 8321B
Batch ID: P329067

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	61.6		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P329383

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P329385

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P329479

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.5		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P329107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	105		P	40 - 150
Acetaminophen	91.9		P	30 - 150
Bentazon	107		P	40 - 150
Carbamazepine	96.7		P	40 - 150
Diuron	116		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	94.1		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	97.0		P	40 - 150
MCPP	94.4		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P329107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Primidone	116		P	40 - 150
Triclopyr	94.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P329193

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916441	Chloride	98.4		P	90 - 110
1916445	Chloride	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P329430

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916599	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P329336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916633	Kjeldahl Nitrogen	102	91.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P329398

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916632	NO2NO3-N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P329329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916669	Total-P	97.7	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P329159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916428	O-Phosphate-P	98.7	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P329385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916231	Fluoride	95.2	97.2	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P329479

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916451	Organic Carbon	96.9	97.7	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P329107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916003	2,4-D	150	148	F/P	40 - 150
1916003	Acetaminophen	95.9	124	P/P	30 - 150
1916003	Bentazon	38.5	32.7	F/F	40 - 150
1916003	Carbamazepine	104	97.1	P/P	40 - 150
1916003	Diuron	68.4	74.7	P/P	40 - 150
1916003	Fenuron	69.8	72.5	P/P	40 - 150
1916003	Fluridone	37.7	60.2	F/P	40 - 150
1916003	Imidacloprid	107	135	P/P	40 - 160
1916003	Linuron	70.9	81.7	P/P	40 - 150
1916003	MCP	123	127	P/P	40 - 150
1916003	Primidone	103	112	P/P	40 - 150
1916003	Triclopyr	108	128	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P329162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916631	Turbidity	10.6	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329193

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916445	Chloride	0.771	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916599	Ammonia-N	0.301	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916633	Kjeldahl Nitrogen	8.67	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916632	NO2NO3-N	0.172	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916669	Total-P	1.20	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916428	O-Phosphate-P	1.51	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P329067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916053	Sucralose	8.70	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P329154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916646	Color (true)	1.90	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P329383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916231	Total Alkalinity	0.286	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P329475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916631	TDS	6.45	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P329385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916231	Fluoride	1.45	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P329479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916451	Organic Carbon	0.676	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P329107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916003	2,4-D	0.772	Spike	P	0 - 30
1916003	Acetaminophen	19.0	Spike	P	0 - 30
1916003	Bentazon	7.55	Spike	P	0 - 30
1916003	Carbamazepine	6.79	Spike	P	0 - 30
1916003	Diuron	8.46	Spike	P	0 - 30
1916003	Fenuron	3.82	Spike	P	0 - 30
1916003	Fluridone	41.3	Spike	F	0 - 30
1916003	Imidacloprid	7.60	Spike	P	0 - 30
1916003	Linuron	14.2	Spike	P	0 - 30
1916003	MCP	3.20	Spike	P	0 - 30
1916003	Primidone	8.76	Spike	P	0 - 30
1916003	Triclopyr	17.3	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: 1916652
Field Sample ID: G1TLHR0040-2017-05

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	72.9	P	40 - 160
USGS O-2060-01	2,4-D-d3	114	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	140	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	127	P	30 - 160
USGS O-2060-01	Diuron-d6	98.0	P	30 - 160
USGS O-2060-01	Primidone-d5	113	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A77948
Included Lab Sample IDs: 1916646

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A77966
Included Lab Sample IDs: 1916646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A77968
Included Lab Sample IDs: 1916648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	98.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A77969
Included Lab Sample IDs: 1916646

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

Reference Method: SM 2320 B-97
Run ID: A78044
Included Lab Sample IDs: 1916646

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

Reference Method: SM 4500 F-C-97
Run ID: A78044
Included Lab Sample IDs: 1916646

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.6	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A78045
Included Lab Sample IDs: 1916647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A78053
Included Lab Sample IDs: 1916647

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A78068
Included Lab Sample IDs: 1916647

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A78071

Included Lab Sample IDs: 1916647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.4	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A78087

Included Lab Sample IDs: 1916647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.9	99.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A78247

Included Lab Sample IDs: 1916652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	67.8	85.9	P/P	60 - 160

Reference Method: USGS O-2060-01

Run ID: A78250

Included Lab Sample IDs: 1916652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	73.4	73.7	P/P	50 - 150
Acetaminophen	87.8	93.7	P/P	60 - 150
Bentazon	122	106	P/P	50 - 150
Carbamazepine	89.6	88.2	P/P	60 - 150
Diuron	93.4	96.9	P/P	60 - 150
Fenuron	96.3	103	P/P	60 - 150
Fluridone	104	89.3	P/P	60 - 160
Imidacloprid	83.4	95.1	P/P	60 - 150
Linuron	88.7	98.1	P/P	60 - 150
MCPP	82.7	78.0	P/P	50 - 150
Primidone	97.2	94.2	P/P	60 - 150
Triclopyr	84.2	72.9	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				10.6	
EPA 300.0 Rev. 2.1	Chloride	101	99.7	98.4	0.771	
EPA 350.1 Rev. 2.0	Ammonia-N	98.1	102	103		0.301
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	102	91.8		8.67
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102			0.172
EPA 365.1 Rev. 2.0	Total-P	98.3	97.7	96.4		1.20
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	98.7	100		1.51

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 8321B	Sucralose	61.6				8.70
SM 2120 B	Color (true)				1.90	
SM 2320 B-97	Total Alkalinity	102			0.286	
SM 2540 C-97	TDS				6.45	
SM 4500 F-C-97	Fluoride	94.4	95.2 97.2			1.45
SM 5310 B-00	Organic Carbon	97.5	96.9 97.7			0.676
USGS O-2060-01	2,4-D	105	150 148			0.772
	Acetaminophen	91.9	95.9 124			19.0
	Bentazon	107	38.5 32.7			7.55
	Carbamazepine	96.7	104 97.1			6.79
	Diuron	116	68.4 74.7			8.46
	Fenuron	112	69.8 72.5			3.82
	Fluridone	94.1	37.7 60.2			41.3
	Imidacloprid	102	107 135			7.60
	Linuron	97.0	70.9 81.7			14.2
	MCP	94.4	123 127			3.20
	Primidone	116	103 112			8.76
	Triclopyr	94.4	108 128			17.3

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1916646
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1916646
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1916647
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1916647
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1916647
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1916647
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1916648
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1916652
SM 2120 B / E31780	True Color measured at 450 nm	1916646
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1916646
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1916646
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1916646
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1916646
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1916647
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1916652
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1916652

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	07/26/2017			07/26/2017 15:19	DeAsia Armster	1916646
EPA 300.0 Rev. 2.1	07/26/2017			07/26/2017	Julia Storbeck	1916646
EPA 350.1 Rev. 2.0	07/26/2017			07/31/2017	Sofia Elnemr	1916647
EPA 351.2 Rev. 2.0	07/26/2017	07/28/2017	Adrian Shelby	08/01/2017	Joseph Suarez	1916647
EPA 353.2 Rev. 2.0	07/26/2017			07/31/2017	Beverly Y. Sanders	1916647
EPA 365.1 Rev. 2.0	07/26/2017	07/28/2017	Adrian Shelby	07/31/2017	Lipi Saha	1916647
EPA 365.1 Rev. 2.0 dissolved	07/26/2017			07/26/2017 15:08	Ping Hua	1916648
EPA 8321B	07/26/2017	07/27/2017	Julie Michelle Frank	08/04/2017	Mohammad Ghaffari	1916652
SM 2120 B	07/26/2017			07/26/2017 15:38	Tanya Welborn	1916646
SM 2320 B-97	07/26/2017			07/28/2017	Dale L. Simmons	1916646
SM 2540 C-97	07/26/2017			07/28/2017	Yijie Li	1916646
SM 2540 D-97	07/26/2017			07/28/2017	Yijie Li	1916646
SM 4500 F-C-97	07/26/2017			07/28/2017	Dale L. Simmons	1916646
SM 5310 B-00	07/26/2017			08/01/2017	Sofia Elnemr	1916647
USGS O-2060-01	07/26/2017	07/28/2017	Hoor Shaik	08/02/2017	Juyoung Kim	1916652