

Chemical Analysis Report

SW-DIST-2016-06-30-01

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

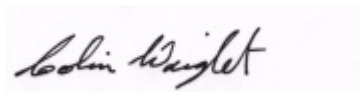
Event Description: **Frye Canal SCI**
Request ID: **RQ-2016-06-27-18**
Customer: **SW-DIST**
Project ID: **SCIREF**

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Certified by: Colin Wright, Environmental Administrator

Date Certified: 21-JUL-2016 14:32

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed 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: Metals, 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: Frye Canal Ref. Stream

Collection Date/Time: 06/29/2016 12:10

Field ID: FRYEUNK

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1812480	EPA 180.1 Rev. 2.0	Turbidity	4.0	A	NTU	P307192	
	EPA 300.0	Bromide**	0.22		mg Br/L	P307527	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P307575	
		Sulfate	50		mg SO4/L	P307576	
	SM 2120 B	Color (true)	190		PCU	P307165	
	SM 2320 B-97	Total Alkalinity	36		mg CaCO3/L	P307616	
	SM 2540 C-97	TDS	175		mg/L	P307745	
	SM 2540 D-97	TSS	10	I	mg/L	P307716	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P307620	
1812481	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P307421	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P307263	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P307383	
	EPA 365.1 Rev. 2.0	Total-P	0.46		mg P/L	P307320	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P307806	
1812485	EPA 200.7 Rev. 4.4	Calcium	23.1		mg/L	P307372	
		Magnesium	9.82		mg/L	P307372	
		Potassium	8.4		mg/L	P307372	
		Sodium	7.9		mg/L	P307372	
1812493	EPA 8321B	Sucralose**	0.010	UJ	ug/L	P306952	SUR
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P306952	
		Fenuron	0.0080	U	ug/L	P306952	
		Imidacloprid	0.066		ug/L	P306952	
		Linuron	0.0040	UJ	ug/L	P306952	CCV
		Acetaminophen**	0.0040	U	ug/L	P306952	
		Carbamazepine**	4.0E-04	U	ug/L	P306952	
		Primidone**	0.0080	U	ug/L	P306952	
		Fluridone**	7.5E-04	I	ug/L	P306952	

Ref. Method and Comment:

SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 237 umhos/cm.

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Results confirmed in re-extraction.

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

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: P307192

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P307372

Component	Result	Code	Units
Calcium	0.075	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P307372

Component	Result	Code	Units
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L

Reference Method: EPA 300.0
Batch ID: P307527

Component	Result	Code	Units
Bromide	0.016	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307575

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307576

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307421

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307263

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307383

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307320

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

Reference Method: EPA 8321B
Batch ID: P306952

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P307165

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P307616

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

Reference Method: SM 2540 C-97
Batch ID: P307745

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P307716

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P307620

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P307806

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

Reference Method: USGS O-2060-01
Batch ID: P306952

Component	Result	Code	Units
Acetaminophen	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
Primidone	0.0080	U	ug/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P307372

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	101		P	85 - 115
Sodium	103		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P307527

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307575

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307576

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307421

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307263

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307383

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: P307320

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

Reference Method: EPA 8321B
Batch ID: P306952

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	114		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P307616

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

Reference Method: SM 4500 F-C-97
Batch ID: P307620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P307806

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

Reference Method: USGS O-2060-01
Batch ID: P306952

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	108		P	40 - 140
Carbamazepine	114		P	40 - 140
Diuron	111		P	40 - 140
Fenuron	108		P	40 - 140
Fluridone	117		P	40 - 140
Imidacloprid	110		P	40 - 160
Linuron	84.0		P	40 - 140
Primidone	102		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P307372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812209	Calcium	104	104	P/P	80 - 120
1812209	Magnesium	103	104	P/P	80 - 120
1812209	Potassium	102	102	P/P	80 - 120
1812209	Sodium	101	105	P/P	80 - 120
1812806	Calcium	103		P	80 - 120
1812806	Magnesium	104		P	80 - 120
1812806	Potassium	103		P	80 - 120
1812806	Sodium	101		P	80 - 120

Reference Method: EPA 300.0
Batch ID: P307527

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810758	Bromide	106	106	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307575

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810758	Chloride	103	103	P/P	90 - 110
1810759	Chloride	106		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810758	Sulfate	99.8	100	P/P	90 - 110
1810759	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307421

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812470	Ammonia-N	97.9	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812502	Kjeldahl Nitrogen	90.3	93.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812471	NO2NO3-N	99.1	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812412	Total-P	99.6	95.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P306952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811321	Sucralose	75.6	82.6	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P307620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812263	Fluoride	99.2	98.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P307806

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812470	Organic Carbon	98.0	99.6	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P306952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811321	Acetaminophen	68.8	75.2	P/P	40 - 140
1811321	Carbamazepine	79.4	87.0	P/P	40 - 140
1811321	Fenuron	90.4	96.8	P/P	40 - 140
1811321	Fluridone	106	104	P/P	40 - 140
1811321	Linuron	84.4	96.4	P/P	40 - 140
1811321	Primidone	107	115	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812480	Turbidity	1.99	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P307372

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812209	Calcium	0.377	Spike	P	0 - 20
1812209	Magnesium	1.53	Spike	P	0 - 20
1812209	Potassium	0.208	Spike	P	0 - 20
1812209	Sodium	3.88	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P307527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810758	Bromide	0.0325	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307575

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810758	Chloride	0.321	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810758	Sulfate	0.181	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812470	Ammonia-N	1.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812502	Kjeldahl Nitrogen	2.02	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812471	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812412	Total-P	4.06	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P306952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811321	Sucralose	4.06	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P307165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812496	Color (true)	0.933	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P307616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812263	Total Alkalinity	0.0901	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P307745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812333	TDS	0.213	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P307620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812263	Fluoride	0.466	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P307806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812470	Organic Carbon	1.11	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P306952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811321	Acetaminophen	8.89	Spike	P	0 - 30
1811321	Carbamazepine	8.46	Spike	P	0 - 30
1811321	Diuron	20.2	Spike	P	0 - 30
1811321	Fenuron	6.84	Spike	P	0 - 30
1811321	Fluridone	1.30	Spike	P	0 - 30
1811321	Imidacloprid	1.66	Spike	P	0 - 30
1811321	Linuron	13.3	Spike	P	0 - 30
1811321	Primidone	7.57	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: 1812493
Field Sample ID: FRYEUNK

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	86.4	P	30 - 150
EPA 8321B	Carbamazepine-d10	81.8	P	40 - 160
EPA 8321B	Diuron-d6	63.8	P	40 - 150
EPA 8321B	Primidone-d5	81.0	P	40 - 150
EPA 8321B	Sucralose-d6	15.0	F	40 - 150
USGS O-2060-01	Acetaminophen-d4	86.4	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	81.8	P	40 - 160
USGS O-2060-01	Diuron-d6	63.8	P	40 - 150
USGS O-2060-01	Primidone-d5	81.0	P	40 - 150
USGS O-2060-01	Sucralose-d6	15.0	F	40 - 150

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A70328
Included Lab Sample IDs: 1812480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.6	95.4	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A70349
Included Lab Sample IDs: 1812480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	101	P/P	95 - 105

Reference Method: EPA 8321B
Run ID: A70367
Included Lab Sample IDs: 1812493

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	121	115	P/P	70 - 150

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A70411
Included Lab Sample IDs: 1812481

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A70418
Included Lab Sample IDs: 1812481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A70419
Included Lab Sample IDs: 1812481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.8	P/P	90 - 110

Reference Method: EPA 300.0
Run ID: A70443
Included Lab Sample IDs: 1812480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	103	107	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A70443
Included Lab Sample IDs: 1812480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	107	P/P	90 - 110
Sulfate	100	107	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A70452

Included Lab Sample IDs: 1812493

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	109	104	P/P	60 - 150
Carbamazepine	132	133	P/P	60 - 150
Diuron	109	114	P/P	60 - 150
Fenuron	130	135	P/P	60 - 150
Fluridone	117	115	P/P	60 - 150
Imidacloprid	118	126	P/P	60 - 150
Linuron	148	150*	P/F	60 - 150
Primidone	125	110	P/P	60 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A70461

Included Lab Sample IDs: 1812485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	101	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Potassium	100	98.6	P/P	90 - 110
Sodium	99.1	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70469

Included Lab Sample IDs: 1812481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.4	97.1	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A70474

Included Lab Sample IDs: 1812480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A70474

Included Lab Sample IDs: 1812480

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

Reference Method: SM 5310 B-00

Run ID: A70521

Included Lab Sample IDs: 1812481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.9	99.8	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						1.99	
EPA 200.7 Rev. 4.4	Calcium	103	104	104	103			0.377
	Magnesium	104	103	104	104			1.53
	Potassium	101	102	102	103			0.208
	Sodium	103	101	105	101			3.88
EPA 300.0	Bromide	108	106	106				0.0325
EPA 300.0 Rev. 2.1	Chloride	104	103	103	106			0.321
	Sulfate	101	99.8	100	102			0.181
EPA 350.1 Rev. 2.0	Ammonia-N	98.5	97.9	99.5				1.49
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.5	90.3	93.7				2.02
EPA 353.2 Rev. 2.0	NO2NO3-N	104	99.1	99.1				0.0
EPA 365.1 Rev. 2.0	Total-P	101	99.6	95.4				4.06
EPA 8321B	Sucralose	114	75.6	82.6				4.06
SM 2120 B	Color (true)						0.933	
SM 2320 B-97	Total Alkalinity	103					0.0901	
SM 2540 C-97	TDS						0.213	
SM 4500 F-C-97	Fluoride	98.9	99.2	98.6				0.466
SM 5310 B-00	Organic Carbon	104	98.0	99.6				1.11
USGS O-2060-01	Acetaminophen	108	68.8	75.2				8.89
	Carbamazepine	114	79.4	87.0				8.46
	Diuron	111						20.2
	Fenuron	108	90.4	96.8				6.84
	Fluridone	117	106	104				1.30
	Imidacloprid	110						1.66
	Linuron	84.0	84.4	96.4				13.3
	Primidone	102	107	115				7.57

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1812480
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1812485
EPA 300.0 / E31780	Bromide in aqueous matrices	1812480
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1812480
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1812480
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1812481
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1812481
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1812481
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1812481
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1812493
SM 2120 B / E31780	True Color measured at 450 nm	1812480
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1812480
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1812480
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1812480
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1812480
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1812481
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1812493

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	06/30/2016			06/30/2016 16:24	Blanca Fach	1812480
EPA 200.7 Rev. 4.4	06/30/2016	07/05/2016	Elliott D. Healy	07/07/2016	Joshua Ayres	1812485
EPA 300.0	06/30/2016			07/07/2016	Ping Hua	1812480
EPA 300.0 Rev. 2.1	06/30/2016			07/07/2016	Ping Hua	1812480
EPA 350.1 Rev. 2.0	06/30/2016			07/06/2016	Diana M. Turner	1812481
EPA 351.2 Rev. 2.0	06/30/2016	07/05/2016	Sofia Elnemr	07/07/2016	Christopher Armour	1812481
EPA 353.2 Rev. 2.0	06/30/2016			07/06/2016	Beverly Y. Sanders	1812481
EPA 365.1 Rev. 2.0	06/30/2016	07/05/2016	Vijayalakshmi Reddy	07/06/2016	Lipi Saha	1812481
EPA 8321B	06/30/2016	06/30/2016	Fe-Val Siddell	07/01/2016	Mohammad Ghaffari	1812493
SM 2120 B	06/30/2016			06/30/2016 16:03	Rochelle Y Jackson	1812480
SM 2320 B-97	06/30/2016			07/08/2016	Dale L. Simmons	1812480
SM 2540 C-97	06/30/2016			07/05/2016	Sima Feizi	1812480
SM 2540 D-97	06/30/2016			07/05/2016	Sima Feizi	1812480
SM 4500 F-C-97	06/30/2016			07/08/2016	Dale L. Simmons	1812480
SM 5310 B-00	06/30/2016			07/12/2016	Sofia Elnemr	1812481
USGS O-2060-01	06/30/2016	06/30/2016	Fe-Val Siddell	07/03/2016	Juyoung Kim	1812493