

Chemical Analysis Report

BSSP-2016-12-15-01

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

Event Description: **Reference Stream Sampling**
Request ID: **RQ-2016-12-12-19**
Customer: **BSSP**
Project ID: **SCIREF**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400
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Certified by: Colin Wright, Program Administrator

Date Certified: 06-JAN-2017 11:47

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray 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: Sopchoppy River

Collection Date/Time: 12/15/2016 10:00

Field ID: SOPREF

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1858552	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P316882	
	EPA 300.0	Bromide**	0.016	UJ	mg Br/L	P317554	MS
	EPA 300.0 Rev. 2.1	Chloride	3.7		mg Cl/L	P317166	
		Sulfate	3.2		mg SO4/L	P317169	
	SM 2120 B	Color (true)	130		PCU	P316877	
	SM 2320 B-97	Total Alkalinity	69		mg CaCO3/L	P317267	
	SM 2540 C-97	TDS	120		mg/L	P317434	
	SM 2540 D-97	TSS	2	U	mg/L	P317153	
	SM 4500 F-C-97	Fluoride	0.092	I	mg F/L	P317272	
1858553	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P317456	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P317042	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P317608	
	EPA 365.1 Rev. 2.0	Total-P	0.078		mg P/L	P317244	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P316951	
1858557	EPA 8321B	Sucralose**	0.010	U	ug/L	P316766	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P316766	
		Fenuron	0.0080	U	ug/L	P316766	
		Imidacloprid	0.0040	U	ug/L	P316766	
		Linuron	0.0040	U	ug/L	P316766	
		Acetaminophen**	0.0040	U	ug/L	P316766	
		Carbamazepine**	4.0E-04	U	ug/L	P316766	
		Primidone**	0.0080	U	ug/L	P316766	RPD
		Fluridone**	4.0E-04	U	ug/L	P316766	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 300.0: Refer to the narrative for an explanation of QC Codes.

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P316882

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0

Batch ID: P317554

Component	Result	Code	Units
Bromide	0.016	U	mg Br/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317166

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317169

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317456

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317042

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317608

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317244

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

Reference Method: EPA 8321B
Batch ID: P316766

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P316877

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P317267

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P317434

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P317153

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P317272

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P316951

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

Reference Method: USGS O-2060-01
Batch ID: P316766

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

Reference Method: EPA 300.0
Batch ID: P317554

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317166

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317169

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317456

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317042

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317608

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317244

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

Reference Method: EPA 8321B
Batch ID: P316766

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	89.5		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P317267

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.6		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P317272

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P316951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P316766

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	93.2		P	40 - 140
Carbamazepine	138		P	40 - 140
Diuron	77.6		P	40 - 140
Fenuron	108		P	40 - 140
Fluridone	111		P	40 - 140
Imidacloprid	96.0		P	40 - 160
Linuron	117		P	40 - 140
Primidone	107		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P317554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858552	Bromide	110	111	F/F	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1855236	Chloride	96.5		P	90 - 110
1855237	Chloride	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1855237	Sulfate	97.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858553	Ammonia-N	104	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858721	Kjeldahl Nitrogen	98.2	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858553	NO2NO3-N	104	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P316766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857665	Sucralose	63.5	61.5	P/P	40 - 140

Reference Method: SM 4500 F-C-97
 Batch ID: P317272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858661	Fluoride	96.8	99.9	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P316951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1858314	Organic Carbon	96.5	96.7	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P316766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857665	Acetaminophen	80.0	92.0	P/P	40 - 140
1857665	Carbamazepine	131	124	P/P	40 - 140
1857665	Diuron	82.0	88.0	P/P	40 - 140
1857665	Fenuron	93.2	98.8	P/P	40 - 140
1857665	Fluridone	97.0	103	P/P	40 - 140
1857665	Imidacloprid	125	120	P/P	40 - 160
1857665	Linuron	79.6	82.8	P/P	40 - 140
1857665	Primidone	116	85.2	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 300.0
 Batch ID: P317554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858552	Bromide	0.884	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P317166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1855237	Chloride	0.0696	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P317169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1855237	Sulfate	0.783	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858553	Ammonia-N	1.83	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858721	Kjeldahl Nitrogen	3.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858553	NO2NO3-N	1.44	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858184	Total-P	0.423	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P316766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857665	Sucralose	2.82	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P316877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858171	Color (true)	1.33	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P317267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858661	Total Alkalinity	0.382	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P317434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858180	TDS	0.580	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P317272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858661	Fluoride	2.57	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P316951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1858314	Organic Carbon	0.237	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P316766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857665	Acetaminophen	14.0	Spike	P	0 - 30
1857665	Carbamazepine	5.64	Spike	P	0 - 30
1857665	Diuron	7.06	Spike	P	0 - 30
1857665	Fenuron	5.83	Spike	P	0 - 30
1857665	Fluridone	5.34	Spike	P	0 - 30
1857665	Imidacloprid	3.91	Spike	P	0 - 30
1857665	Linuron	3.94	Spike	P	0 - 30
1857665	Primidone	30.3	Spike	F	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: 1858557
Field Sample ID: SOPREF

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	70.6	P	30 - 150
EPA 8321B	Carbamazepine-d10	93.8	P	40 - 160
EPA 8321B	Diuron-d6	59.8	P	40 - 150
EPA 8321B	Primidone-d5	115	P	40 - 150
EPA 8321B	Sucralose-d6	48.4	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	70.6	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	93.8	P	40 - 160
USGS O-2060-01	Diuron-d6	59.8	P	40 - 150
USGS O-2060-01	Primidone-d5	115	P	40 - 150
USGS O-2060-01	Sucralose-d6	48.4	P	40 - 150

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A73407
Included Lab Sample IDs: 1858552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A73408
Included Lab Sample IDs: 1858552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: SM 5310 B-00
Run ID: A73434
Included Lab Sample IDs: 1858553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A73522
Included Lab Sample IDs: 1858553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	96.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A73523
Included Lab Sample IDs: 1858552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	98.5	97.5	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A73550
Included Lab Sample IDs: 1858552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.2	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A73550
Included Lab Sample IDs: 1858552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	99.0	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A73561
Included Lab Sample IDs: 1858557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	126	115	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A73563

Included Lab Sample IDs: 1858557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	107	102	P/P	60 - 150
Carbamazepine	112	121	P/P	60 - 150
Diuron	118	111	P/P	60 - 150
Fenuron	113	120	P/P	60 - 150
Fluridone	124	117	P/P	60 - 150
Imidacloprid	88.8	91.6	P/P	60 - 150
Linuron	105	130	P/P	60 - 150
Primidone	118	122	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A73569

Included Lab Sample IDs: 1858553

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A73601

Included Lab Sample IDs: 1858553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	97.2	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A73645

Included Lab Sample IDs: 1858552

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A73672

Included Lab Sample IDs: 1858553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	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 300.0	Bromide	106	110 111			0.884
EPA 300.0 Rev. 2.1	Chloride	99.8	99.7 96.5		0.0696	
	Sulfate	96.9	97.7		0.783	
EPA 350.1 Rev. 2.0	Ammonia-N	102	104 102			1.83

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	98.2	102			3.15
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	106	104	105			1.44
EPA 365.1 Rev. 2.0	Total-P	99.6					0.423
EPA 8321B	Sucralose	89.5	63.5	61.5			2.82
SM 2120 B	Color (true)					1.33	
SM 2320 B-97	Total Alkalinity	99.6				0.382	
SM 2540 C-97	TDS					0.580	
SM 4500 F-C-97	Fluoride	97.6	96.8	99.9			2.57
SM 5310 B-00	Organic Carbon	99.4	96.5	96.7			0.237
USGS O-2060-01	Acetaminophen	93.2	80.0	92.0			14.0
	Carbamazepine	138	131	124			5.64
	Diuron	77.6	82.0	88.0			7.06
	Fenuron	108	93.2	98.8			5.83
	Fluridone	111	97.0	103			5.34
	Imidacloprid	96.0	125	120			3.91
	Linuron	117	79.6	82.8			3.94
	Primidone	107	116	85.2			30.3

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1858552
EPA 300.0 / E31780	Bromide in aqueous matrices	1858552
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1858552
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1858552
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1858553
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1858553
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1858553
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1858553
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1858557
SM 2120 B / E31780	True Color measured at 450 nm	1858552
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1858552
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1858552
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1858552
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1858552
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1858553
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1858557

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	12/15/2016			12/15/2016 15:19	Julie Michelle Frank	1858552
EPA 300.0	12/15/2016			12/28/2016	Ping Hua	1858552
EPA 300.0 Rev. 2.1	12/15/2016			12/20/2016	Ping Hua	1858552
EPA 350.1 Rev. 2.0	12/15/2016			12/27/2016	Julie Michelle Frank	1858553
EPA 351.2 Rev. 2.0	12/15/2016	12/20/2016	Adrian Shelby	12/21/2016	Joseph Suarez	1858553
EPA 353.2 Rev. 2.0	12/15/2016			12/30/2016	Beverly Y. Sanders	1858553
EPA 365.1 Rev. 2.0	12/15/2016	12/22/2016	Vijayalakshmi Reddy	12/23/2016	Lipi Saha	1858553
EPA 8321B	12/15/2016	12/16/2016	Hoor Shaik	12/22/2016	Mohammad Ghaffari	1858557
SM 2120 B	12/15/2016			12/15/2016 16:23	Jared I. Manley	1858552
SM 2320 B-97	12/15/2016			12/22/2016	Dale L. Simmons	1858552
SM 2540 C-97	12/15/2016			12/19/2016	Sima Feizi	1858552
SM 2540 D-97	12/15/2016			12/19/2016	Sima Feizi	1858552
SM 4500 F-C-97	12/15/2016			12/22/2016	Dale L. Simmons	1858552
SM 5310 B-00	12/15/2016			12/16/2016	Julie Michelle Frank	1858553
USGS O-2060-01	12/15/2016	12/16/2016	Hoor Shaik	12/22/2016	Juyoung Kim	1858557