

Chemical Analysis Report

NE-DIST-2016-07-08-01

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

Event Description: **Nassau Reference Streams-SCI**
Request ID: **RQ-2016-06-27-22**
Customer: **NE-DIST**
Project ID: **SCIREF**

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FL Dept. of Environmental Protection
8800 Baymeadows Way West
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 28-JUL-2016 13:43



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: CEDAR RUN ABOVE BLUEHOLE

Collection Date/Time: 07/07/2016 13:15

Field ID: CEDAR RUN ABOVE BLUEHOLE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1814733	EPA 180.1 Rev. 2.0	Turbidity	1.1	A	NTU	P307589	
	EPA 300.0	Bromide**	0.041		mg Br/L	P307892	
	EPA 300.0 Rev. 2.1	Chloride	4.7		mg Cl/L	P307883	
		Sulfate	5.9		mg SO4/L	P307884	
	SM 2120 B	Color (true)	2.5	U	PCU	P307597	
	SM 2320 B-97	Total Alkalinity	155		mg CaCO3/L	P308092	
	SM 2540 C-97	TDS	177		mg/L	P308212	
	SM 2540 D-97	TSS	4	I	mg/L	P308204	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P308098	
1814734	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P307939	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P307873	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.79		mg N/L	P308148	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P307796	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P308328	
1814735	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P307585	
1814740	EPA 200.7 Rev. 4.4	Calcium	58.6		mg/L	P307830	
		Magnesium	5.96		mg/L	P307830	
		Potassium	0.30	U	mg/L	P307830	
		Sodium	2.8		mg/L	P307830	
1814741	EPA 8321B	Sucralose**	0.010	U	ug/L	P307711	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P307711	RPD
		Fenuron	0.0080	U	ug/L	P307711	
		Imidacloprid	0.0040	U	ug/L	P307711	
		Linuron	0.0040	U	ug/L	P307711	
		Acetaminophen**	0.0040	U	ug/L	P307711	
		Carbamazepine**	4.0E-04	U	ug/L	P307711	
		Primidone**	0.0080	U	ug/L	P307711	
		Fluridone**	4.0E-04	U	ug/L	P307711	

Ref. Method and Comment:

SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 318 umhos/cm.

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

EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P307589

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P307830

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: P307830

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: P307892

Component	Result	Code	Units
Bromide	0.016	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307883

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307884

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307939

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307873

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308148

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307796

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307585

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P307711

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P307597

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P308092

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

Reference Method: SM 2540 C-97
Batch ID: P308212

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P308204

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P308098

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P308328

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

Reference Method: USGS O-2060-01
Batch ID: P307711

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 200.7 Rev. 4.4
Batch ID: P307830

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		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: P307892

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307883

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307884

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307939

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307873

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: P308148

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307796

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307585

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P307711

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	85.6		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P308092

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

Reference Method: SM 4500 F-C-97
Batch ID: P308098

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

Reference Method: SM 5310 B-00
Batch ID: P308328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.8		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P307711

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	111		P	40 - 140
Carbamazepine	90.0		P	40 - 140
Diuron	47.2		P	40 - 140
Fenuron	87.2		P	40 - 140
Fluridone	92.8		P	40 - 140
Imidacloprid	86.8		P	40 - 160
Linuron	81.6		P	40 - 140
Primidone	72.4		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P307830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814770	Calcium	105		P	80 - 120
1814770	Magnesium	107		P	80 - 120
1814770	Potassium	104		P	80 - 120
1814770	Sodium	105		P	80 - 120
1814983	Calcium	112		P	80 - 120
1814983	Magnesium	108		P	80 - 120
1814983	Potassium	97.3		P	80 - 120
1814983	Sodium	110		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P307892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814733	Bromide	105	106	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811125	Chloride	97.5	97.9	P/P	90 - 110
1811590	Chloride	97.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307884

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811125	Sulfate	97.7	98.1	P/P	90 - 110
1811590	Sulfate	97.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307873

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814727	Kjeldahl Nitrogen	118	98.4	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308148

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814726	NO2NO3-N	92.5	95.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307796

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814714	Total-P	102	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307585

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814716	O-Phosphate-P	96.7	97.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P307711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815419	Sucralose	44.2	58.2	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P308098

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815090	Fluoride	98.9	98.9	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P308328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814652	Organic Carbon	93.4	94.1	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P307711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815419	Acetaminophen	71.2	72.0	P/P	40 - 140
1815419	Carbamazepine	53.2	52.4	P/P	40 - 140
1815419	Diuron	62.4	44.4	P/P	40 - 140
1815419	Fenuron	57.2	59.6	P/P	40 - 140
1815419	Fluridone	70.4	62.0	P/P	40 - 140
1815419	Imidacloprid	127	129	P/P	40 - 160
1815419	Linuron	67.2	61.2	P/P	40 - 140
1815419	Primidone	74.0	80.0	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814733	Turbidity	6.11	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P307830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814770	Calcium	3.79	Spike	P	0 - 20
1814770	Magnesium	1.30	Spike	P	0 - 20
1814770	Potassium	0.977	Spike	P	0 - 20
1814770	Sodium	3.28	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P307892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814733	Bromide	1.05	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811125	Chloride	0.424	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307884

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811125	Sulfate	0.406	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307939

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814751	Ammonia-N	1.01	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814727	Kjeldahl Nitrogen	9.56	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814726	NO2NO3-N	1.48	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307796

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814714	Total-P	4.39	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814716	O-Phosphate-P	0.791	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P307711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815419	Sucralose	27.3	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P307597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814747	Color (true)	0.560	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P308092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815090	Total Alkalinity	0.205	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P308212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814747	TDS	4.02	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P308098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815090	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P308328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814652	Organic Carbon	0.436	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P307711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815419	Acetaminophen	1.12	Spike	P	0 - 30
1815419	Carbamazepine	1.52	Spike	P	0 - 30
1815419	Diuron	33.7	Spike	F	0 - 30
1815419	Fenuron	4.11	Spike	P	0 - 30
1815419	Fluridone	12.7	Spike	P	0 - 30
1815419	Imidacloprid	1.88	Spike	P	0 - 30
1815419	Linuron	9.35	Spike	P	0 - 30
1815419	Primidone	7.79	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: 1814741
Field Sample ID: CEDAR RUN ABOVE BLUEHOLE

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	106	P	30 - 150
EPA 8321B	Carbamazepine-d10	132	P	40 - 160
EPA 8321B	Diuron-d6	68.4	P	40 - 150

Quality Assurance Report Surrogates

Lab Sample ID: 1814741

Field Sample ID: CEDAR RUN ABOVE BLUEHOLE

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Primidone-d5	81.4	P	40 - 150
EPA 8321B	Sucralose-d6	99.5	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	106	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	132	P	40 - 160
USGS O-2060-01	Diuron-d6	68.4	P	40 - 150
USGS O-2060-01	Primidone-d5	81.4	P	40 - 150
USGS O-2060-01	Sucralose-d6	99.5	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A70464

Included Lab Sample IDs: 1814735

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A70466

Included Lab Sample IDs: 1814733

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.0	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A70468

Included Lab Sample IDs: 1814733

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.0	98.2	P/P	90 - 115

Reference Method: EPA 300.0

Run ID: A70540

Included Lab Sample IDs: 1814733

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A70540

Included Lab Sample IDs: 1814733

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.5	98.4	P/P	90 - 110
Sulfate	99.1	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70556

Included Lab Sample IDs: 1814734

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A70565

Included Lab Sample IDs: 1814740

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70568

Included Lab Sample IDs: 1814734

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

Reference Method: EPA 8321B

Run ID: A70569

Included Lab Sample IDs: 1814741

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	104	112	P/P	70 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70579

Included Lab Sample IDs: 1814734

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	95.0	94.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A70594

Included Lab Sample IDs: 1814733

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A70594

Included Lab Sample IDs: 1814733

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

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A70598
Included Lab Sample IDs: 1814741

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	114	112	P/P	60 - 150
Carbamazepine	112	120	P/P	60 - 150
Diuron	104	93.2	P/P	60 - 150
Fenuron	112	118	P/P	60 - 150
Fluridone	109	106	P/P	60 - 150
Imidacloprid	108	101	P/P	60 - 150
Linuron	106	124	P/P	60 - 150
Primidone	82.0	81.2	P/P	60 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A70600
Included Lab Sample IDs: 1814734

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	96.9	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A70669
Included Lab Sample IDs: 1814734

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.9	96.4	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					6.11	
EPA 200.7 Rev. 4.4	Calcium	104	105	112			3.79
	Magnesium	104	107	108			1.30
	Potassium	101	104	97.3			0.977
	Sodium	103	105	110			3.28
EPA 300.0	Bromide	101	105	106			1.05
EPA 300.0 Rev. 2.1	Chloride	98.2	97.5	97.9	97.5		0.424
	Sulfate	98.8	97.7	98.1	97.9		0.406
EPA 350.1 Rev. 2.0	Ammonia-N	98.3					1.01
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	118	98.4			9.56
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	92.5	95.0			1.48
EPA 365.1 Rev. 2.0	Total-P	102	102	97.6			4.39
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	96.7	97.5			0.791
EPA 8321B	Sucralose	85.6	44.2	58.2			27.3
SM 2120 B	Color (true)					0.560	
SM 2320 B-97	Total Alkalinity	103				0.205	
SM 2540 C-97	TDS					4.02	
SM 4500 F-C-97	Fluoride	98.9	98.9	98.9			0.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
SM 5310 B-00	Organic Carbon	93.8	93.4	94.1		0.436
USGS O-2060-01	Acetaminophen	111	71.2	72.0		1.12
	Carbamazepine	90.0	53.2	52.4		1.52
	Diuron	47.2	62.4	44.4		33.7
	Fenuron	87.2	57.2	59.6		4.11
	Fluridone	92.8	70.4	62.0		12.7
	Imidacloprid	86.8	127	129		1.88
	Linuron	81.6	67.2	61.2		9.35
	Primidone	72.4	74.0	80.0		7.79

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1814733
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1814740
EPA 300.0 / E31780	Bromide in aqueous matrices	1814733
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1814733
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1814733
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1814734
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1814734
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1814734
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1814734
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1814735
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1814741
SM 2120 B / E31780	True Color measured at 450 nm	1814733
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1814733
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1814733
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1814733
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1814733
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1814734
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1814741

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	07/08/2016			07/08/2016 15:58	Sima Feizi	1814733
EPA 200.7 Rev. 4.4	07/08/2016	07/13/2016	Elliott D. Healy	07/14/2016	Joshua Ayres	1814740
EPA 300.0	07/08/2016			07/13/2016	Ping Hua	1814733
EPA 300.0 Rev. 2.1	07/08/2016			07/12/2016	Ping Hua	1814733
EPA 350.1 Rev. 2.0	07/08/2016			07/14/2016	Diana M. Turner	1814734
EPA 351.2 Rev. 2.0	07/08/2016	07/14/2016	Sofia Elnemr	07/15/2016	Christopher Armour	1814734
EPA 353.2 Rev. 2.0	07/08/2016			07/15/2016	Beverly Y. Sanders	1814734
EPA 365.1 Rev. 2.0	07/08/2016	07/13/2016	Vijayalakshmi Reddy	07/14/2016	Lipi Saha	1814734
EPA 365.1 Rev. 2.0 dissolved	07/08/2016			07/08/2016 15:53	Julia Storbeck	1814735
EPA 8321B	07/08/2016	07/14/2016	Hoor Shaik	07/14/2016	Mohammad Ghaffari	1814741
SM 2120 B	07/08/2016			07/08/2016 17:07	Rochelle Y Jackson	1814733
SM 2320 B-97	07/08/2016			07/16/2016	Dale L. Simmons	1814733
SM 2540 C-97	07/08/2016			07/13/2016	Yijie Li	1814733
SM 2540 D-97	07/08/2016			07/13/2016	Yijie Li	1814733
SM 4500 F-C-97	07/08/2016			07/16/2016	Dale L. Simmons	1814733
SM 5310 B-00	07/08/2016			07/19/2016	Diana M. Turner	1814734
USGS O-2060-01	07/08/2016	07/14/2016	Hoor Shaik	07/15/2016	Mohammad Ghaffari	1814741