

Chemical Analysis Report

CEN-DIST-2017-01-26-02

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

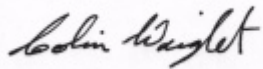
Event Description: **Rose Bay/Strickland x2/UnBranch 2642/**
Request ID: **RQ-2017-01-16-29**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

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

Certified by: Colin Wright, Program Administrator

Date Certified: 22-FEB-2017 10:17



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: Strickland Bay @ 525 m East (DS) of RR Crossing

Collection Date/Time: 01/25/2017 12:36

Field ID: G5CE0082

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1866813	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P318844	
	SM 2320 B-97	Total Alkalinity	139		mg CaCO3/L	P318981	
	SM 2540 D-97	TSS	9	I	mg/L	P319306	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P318986	
1866814	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P319008	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P318916	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P319685	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P318930	
	SM 5310 B-00	Organic Carbon	4.2		mg C/L	P318899	
1866815	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P318807	
1866867	EPA 200.7 Rev. 4.4	Iron	100	I	ug/L	P319117	
		Zinc	15	U	ug/L	P319117	
	EPA 200.8 Rev. 5.4	Arsenic	2.05		ug/L	P319117	
		Cadmium	0.080	U	ug/L	P319117	
		Chromium	1.6	U	ug/L	P319117	
		Copper	0.86	I	ug/L	P319117	
		Lead	0.22	I	ug/L	P319117	
		Nickel	0.80	U	ug/L	P319117	
		Silver	0.040	U	ug/L	P319117	

Ref. Method and Comment:

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

Sample Location: Strickland Bay @ 100 m East (DS) of RR Crossing

Collection Date/Time: 01/25/2017 12:48

Field ID: G5CE0081

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1866816	EPA 180.1 Rev. 2.0	Turbidity	3.3	A	NTU	P318845	
	SM 2320 B-97	Total Alkalinity	149		mg CaCO3/L	P318981	
	SM 2540 D-97	TSS	8	I	mg/L	P319306	
	SM 4500 F-C-97	Fluoride	0.95		mg F/L	P318986	
1866817	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P319008	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P318916	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P319161	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P318930	
	SM 5310 B-00	Organic Carbon	4.9		mg C/L	P318899	
1866818	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.046		mg P/L	P318807	
1866868	EPA 200.7 Rev. 4.4	Iron	120	I	ug/L	P319117	
		Zinc	15	U	ug/L	P319117	
	EPA 200.8 Rev. 5.4	Arsenic	1.82		ug/L	P319117	
		Cadmium	0.080	U	ug/L	P319117	
		Chromium	1.6	U	ug/L	P319117	
		Copper	0.89	I	ug/L	P319117	

Field ID: G5CE0081

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1866868	EPA 200.8 Rev. 5.4	Lead	0.21	I	ug/L	P319117	
		Nickel	0.80	U	ug/L	P319117	
		Silver	0.040	U	ug/L	P319117	
1866869	EPA 8321B	Sucralose**	0.55		ug/L	P318567	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P318793	
		Fenuron	0.0080	U	ug/L	P318793	
		Imidacloprid	0.0040	U	ug/L	P318793	
		Linuron	0.0040	U	ug/L	P318793	
		Acetaminophen**	0.0040	U	ug/L	P318793	
		Carbamazepine**	0.0024		ug/L	P318793	
		Primidone**	0.0080	U	ug/L	P318793	
		Fluridone**	0.0076		ug/L	P318793	

Ref. Method and Comment:
 SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
 USGS O-2060-01: Results confirmed in re-extraction.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P318844

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P318845

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P319117

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P319117

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319008

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P318916

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319161

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319685

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P318930

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P318807

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

Reference Method: EPA 8321B
Batch ID: P318567

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P318981

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

Reference Method: SM 2540 D-97
Batch ID: P319306

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P318986

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P318899

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

Reference Method: USGS O-2060-01
Batch ID: P318793

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: P319117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	103		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P319117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	93.5		P	85 - 115
Cadmium	94.2		P	85 - 115
Chromium	94.7		P	85 - 115
Copper	94.6		P	85 - 115
Lead	93.9		P	85 - 115
Nickel	92.2		P	85 - 115
Silver	95.3		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319008

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P318916

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319161

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319685

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P318930

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P318807

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

Reference Method: EPA 8321B
Batch ID: P318567

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	92.6		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P318981

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

Reference Method: SM 4500 F-C-97
Batch ID: P318986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P318899

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01

Batch ID: P318793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	78.8		P	40 - 140
Carbamazepine	94.8		P	40 - 140
Diuron	88.4		P	40 - 140
Fenuron	92.4		P	40 - 140
Fluridone	70.0		P	40 - 140
Imidacloprid	94.0		P	40 - 160
Linuron	74.4		P	40 - 140
Primidone	70.8		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P319117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1867233	Iron	99.9	95.6	P/P	70 - 130
1867233	Zinc	95.7	92.4	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P319117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1867233	Arsenic	109	109	P/P	80 - 120
1867233	Cadmium	105	105	P/P	80 - 120
1867233	Chromium	94.3	93.7	P/P	80 - 120
1867233	Copper	97.6	97.0	P/P	80 - 120
1867233	Lead	109	106	P/P	80 - 120
1867233	Nickel	106	97.4	P/P	80 - 120
1867233	Silver	104	103	P/P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P319008

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1866336	Ammonia-N	109	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P318916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1866877	Kjeldahl Nitrogen	103	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P319161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1866817	NO2NO3-N	105	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319685

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1866814	NO2NO3-N	101	101	P/P	90 - 110
1866814	NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P318930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1866814	Total-P	92.0	94.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P318807

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1866815	O-Phosphate-P	94.8	98.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P318567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1865382	Sucralose	136	132	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P318986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1866884	Fluoride	96.7	99.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P318899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1866303	Organic Carbon	97.2	97.7	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P318793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1866907	Acetaminophen	72.4	74.4	P/P	40 - 140
1866907	Carbamazepine	99.3	103	P/P	40 - 140
1866907	Diuron	70.8	72.4	P/P	40 - 140
1866907	Fenuron	83.6	86.4	P/P	40 - 140
1866907	Fluridone	50.8	54.8	P/P	40 - 140
1866907	Imidacloprid	130	113	P/P	40 - 160
1866907	Linuron	80.4	73.6	P/P	40 - 140
1866907	Primidone	100	94.0	P/P	40 - 140

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P318844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866768	Turbidity	1.64	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P318845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866816	Turbidity	2.74	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P319117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1867233	Iron	4.43	Spike	P	0 - 20
1867233	Zinc	3.47	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P319117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1867233	Arsenic	0.497	Spike	P	0 - 20
1867233	Cadmium	0.00592	Spike	P	0 - 20
1867233	Chromium	0.551	Spike	P	0 - 20
1867233	Copper	0.592	Spike	P	0 - 20
1867233	Lead	2.44	Spike	P	0 - 20
1867233	Nickel	8.22	Spike	P	0 - 20
1867233	Silver	0.678	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319008

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866336	Ammonia-N	1.83	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P318916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866877	Kjeldahl Nitrogen	2.96	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866817	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866814	NO2NO3-N	0.277	Spike	P	0 - 15

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P318930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866814	Total-P	2.68	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P318807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866815	O-Phosphate-P	2.51	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P318567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1865382	Sucralose	2.74	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P318981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866884	Total Alkalinity	0.624	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P318986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866884	Fluoride	1.48	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P318899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866303	Organic Carbon	0.366	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P318793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866907	Acetaminophen	2.72	Spike	P	0 - 30
1866907	Carbamazepine	3.86	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
 Batch ID: P318793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1866907	Diuron	1.79	Spike	P	0 - 30
1866907	Fenuron	3.29	Spike	P	0 - 30
1866907	Fluridone	7.30	Spike	P	0 - 30
1866907	Imidacloprid	12.9	Spike	P	0 - 30
1866907	Linuron	8.83	Spike	P	0 - 30
1866907	Primidone	6.58	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: 1866869
 Field Sample ID: G5CE0081

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	116	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	80.2	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	101	P	40 - 160
USGS O-2060-01	Diuron-d6	71.2	P	40 - 150
USGS O-2060-01	Primidone-d5	125	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A74129
 Included Lab Sample IDs: 1866869

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	143	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Run ID: A74133
 Included Lab Sample IDs: 1866815, 1866818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	98.8	P/P	90 - 110
O-Phosphate-P	99.6	99.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
 Run ID: A74142
 Included Lab Sample IDs: 1866813, 1866816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105
Turbidity	99.5	99.5	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A74153

Included Lab Sample IDs: 1866814, 1866817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74180

Included Lab Sample IDs: 1866813, 1866816

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

Reference Method: SM 4500 F-C-97

Run ID: A74180

Included Lab Sample IDs: 1866813, 1866816

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74187

Included Lab Sample IDs: 1866814, 1866817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74188

Included Lab Sample IDs: 1866814, 1866817

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74193

Included Lab Sample IDs: 1866814, 1866817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74232

Included Lab Sample IDs: 1866817

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

Reference Method: USGS O-2060-01

Run ID: A74237

Included Lab Sample IDs: 1866869

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	101	112	P/P	60 - 150
Carbamazepine	120	115	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A74237

Included Lab Sample IDs: 1866869

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Diuron	118	118	P/P	60 - 150
Fenuron	118	112	P/P	60 - 150
Fluridone	95.6	107	P/P	60 - 150
Imidacloprid	102	84.4	P/P	60 - 150
Linuron	102	111	P/P	60 - 150
Primidone	119	121	P/P	60 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A74277

Included Lab Sample IDs: 1866867, 1866868

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	97.9	97.4	P/P	90 - 110
Zinc	99.3	99.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A74331

Included Lab Sample IDs: 1866867, 1866868

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	105	104	P/P	90 - 110
Cadmium	103	103	P/P	90 - 110
Chromium	104	99.9	P/P	90 - 110
Lead	102	102	P/P	90 - 110
Nickel	104	102	P/P	90 - 110
Silver	109	108	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A74386

Included Lab Sample IDs: 1866867, 1866868

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74410

Included Lab Sample IDs: 1866814

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	101	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	Precision	MS
				LCS SMP	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.64	
	Turbidity						2.74	
EPA 200.7 Rev. 4.4	Iron	103		95.6	99.9			4.43
	Zinc	101		95.7	92.4			3.47
EPA 200.8 Rev. 5.4	Arsenic	93.5		109	109			0.497
	Cadmium	94.2		105	105			0.0059
	Chromium	94.7		94.3	93.7			0.551
	Copper	94.6		97.6	97.0			0.592
	Lead	93.9		109	106			2.44
	Nickel	92.2		106	97.4			8.22
	Silver	95.3		104	103			0.678
EPA 350.1 Rev. 2.0	Ammonia-N	106		109	105			1.83
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106		103	99.0			2.96
EPA 353.2 Rev. 2.0	NO2NO3-N	104		105	105			0.0
	NO2NO3-N	100		101	101	101		0.277 RSD
EPA 365.1 Rev. 2.0	Total-P	107		92.0	94.6			2.68
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102		94.8	98.1			2.51
EPA 8321B	Sucralose	92.6		136	132			2.74
SM 2320 B-97	Total Alkalinity	103					0.624	
SM 4500 F-C-97	Fluoride	98.5		96.7	99.0			1.48
SM 5310 B-00	Organic Carbon	101		97.2	97.7			0.366
USGS O-2060-01	Acetaminophen	78.8		72.4	74.4			2.72
	Carbamazepine	94.8		99.3	103			3.86
	Diuron	88.4		70.8	72.4			1.79
	Fenuron	92.4		83.6	86.4			3.29
	Fluridone	70.0		50.8	54.8			7.30
	Imidacloprid	94.0		130	113			12.9
	Linuron	74.4		80.4	73.6			8.83
	Primidone	70.8		100	94.0			6.58

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1866813, 1866816
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1866867, 1866868
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1866867, 1866868
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1866814, 1866817
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1866814, 1866817
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1866814, 1866817
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1866814, 1866817
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1866815, 1866818
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1866869
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1866813, 1866816
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1866813, 1866816
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1866813, 1866816
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1866814, 1866817
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1866869

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	01/26/2017			01/26/2017 15:52	Sima Feizi	1866813, 1866816
EPA 200.7 Rev. 4.4	01/26/2017	02/01/2017	Elliott D. Healy	02/03/2017	Joshua Ayres	1866867, 1866868
EPA 200.8 Rev. 5.4	01/26/2017	02/01/2017	Elliott D. Healy	02/07/2017	Betina Topolski	1866867, 1866868
	01/26/2017	02/01/2017	Elliott D. Healy	02/09/2017	Betina Topolski	1866867, 1866868
EPA 350.1 Rev. 2.0	01/26/2017			01/30/2017	Sofia Elnemr	1866814, 1866817
EPA 351.2 Rev. 2.0	01/26/2017	01/30/2017	Adrian Shelby	01/31/2017	Joseph Suarez	1866814, 1866817
EPA 353.2 Rev. 2.0	01/26/2017			02/02/2017	Beverly Y. Sanders	1866817
	01/26/2017			02/10/2017	Virginia P. Brown	1866814
EPA 365.1 Rev. 2.0	01/26/2017	01/30/2017	Vijayalakshmi Reddy	01/31/2017	Lipi Saha	1866814, 1866817
EPA 365.1 Rev. 2.0 dissolved	01/26/2017			01/26/2017 15:24	Julie Michelle Frank	1866815
	01/26/2017			01/26/2017 16:10	Julie Michelle Frank	1866818
EPA 8321B	01/26/2017	01/26/2017	Mohammad Ghaffari	01/26/2017	Mohammad Ghaffari	1866869
SM 2320 B-97	01/26/2017			01/31/2017	Dale L. Simmons	1866813, 1866816
SM 2540 D-97	01/26/2017			01/30/2017	Sima Feizi	1866813, 1866816
SM 4500 F-C-97	01/26/2017			01/31/2017	Dale L. Simmons	1866813, 1866816
SM 5310 B-00	01/26/2017			01/27/2017	Jared I. Manley	1866814, 1866817
USGS O-2060-01	01/26/2017	02/01/2017	Hoor Shaik	02/01/2017	Juyoung Kim	1866869