

Chemical Analysis Report

SO-DIST-2017-07-03-03

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

Event Description: **SMP: Peace River Streams**
Request ID: **RQ-2017-07-17-07**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Ben Paswater

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

Certified by: Colin Wright, Program Administrator

Date Certified: 28-JUL-2017 13:50



NON-CONFORMANCE REPORT INCLUDED

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: Bobcat Creek in Preserve East

Collection Date/Time: 06/29/2017 10:40

Field ID: G3SD062917-5

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1910873	EPA 180.1 Rev. 2.0	Turbidity	3.1	YQ	NTU	P327870	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P328248	
		Sulfate	7.9	Y	mg SO4/L	P328249	
	SM 2120 B	Color (true)	540	YQ	PCU	P327866	
	SM 2320 B-97	Total Alkalinity	34	Y	mg CaCO3/L	P328172	
	SM 2540 C-97	TDS	145	AY	mg/L	P328290	
	SM 2540 D-97	TSS	6	IAY	mg/L	P328296	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P328180	
1910875	EPA 350.1 Rev. 2.0	Ammonia-N	0.76	Y	mg N/L	P328154	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.7	Y	mg N/L	P328188	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016	Y	mg N/L	P327986	
	EPA 365.1 Rev. 2.0	Total-P	0.93	Y	mg P/L	P328054	
	SM 5310 B-00	Organic Carbon	35	Y	mg C/L	P328191	
1910877	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.80	YQ	mg P/L	P327875	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory.

EPA 300.0 Rev. 2.1: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2120 B: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory.

SM 2320 B-97: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2540 C-97: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample temperature was outside the acceptable range when received at the laboratory.

EPA 350.1 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 351.2 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 353.2 Rev. 2.0: NO2NO3-N: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 365.1 Rev. 2.0: Total-P: Sample temperature was outside the acceptable range when received at the laboratory.

SM 5310 B-00: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory. Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC

Sample Location: Hawthorne Creek @ Reynolds St.

Collection Date/Time: 06/29/2017 11:50

Field ID: G3SD062917-7

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1910897	EPA 8321B	Sucralose**	0.022	IY	ug/L	P327821	
	USGS O-2060-01	2,4-D	0.29	Y	ug/L	P327927	
		Diuron	1.0	Y	ug/L	P327927	
		Fenuron	0.010	IY	ug/L	P327927	
		Imidacloprid	1.0	Y	ug/L	P327927	MS
		Bentazon	8.0E-04	UY	ug/L	P327927	
		Linuron	0.0040	UY	ug/L	P327927	
		Acetaminophen**	0.012	IY	ug/L	P327927	
		MCP	0.0020	UY	ug/L	P327927	
		Carbamazepine**	7.2E-04	IY	ug/L	P327927	
		Triclopyr**	0.0040	UY	ug/L	P327927	
		Primidone**	0.0040	UY	ug/L	P327927	
		Fluridone**	4.0E-04	UY	ug/L	P327927	

Field ID: G3SD062917-7

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment:							
EPA 8321B: Results confirmed in re-extraction. Y - Sample was received with inadequate sample preservation; see NCR report.							
USGS O-2060-01: Y - Sample was received with inadequate sample preservation; see NCR report.							

Sample Location: Myrtle Slough @ SR31

Collection Date/Time: 06/29/2017 09:00

Field ID: G3SD062917-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1910879	EPA 180.1 Rev. 2.0	Turbidity	3.5	YQ	NTU	P327870	
	EPA 300.0 Rev. 2.1	Chloride	94		mg Cl/L	P328248	
		Sulfate	55	Y	mg SO4/L	P328249	
	SM 2120 B	Color (true)	130	YQ	PCU	P327866	
	SM 2320 B-97	Total Alkalinity	115	Y	mg CaCO3/L	P328172	
	SM 2540 C-97	TDS	412	Y	mg/L	P328291	
	SM 2540 D-97	TSS	6	IY	mg/L	P328297	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P328180	
1910882	EPA 350.1 Rev. 2.0	Ammonia-N	0.21	Y	mg N/L	P328154	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5	Y	mg N/L	P328188	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15	Y	mg N/L	P327986	
	EPA 365.1 Rev. 2.0	Total-P	0.47	Y	mg P/L	P328055	
	SM 5310 B-00	Organic Carbon	17	Y	mg C/L	P328191	
1910885	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.39	YQ	mg P/L	P327875	
1910899	EPA 200.7 Rev. 4.4	Calcium	66.7		mg/L	P327925	
		Iron	670		ug/L	P327925	
		Magnesium	9.91		mg/L	P327925	
		Potassium	10.4		mg/L	P327925	
		Sodium	44.6		mg/L	P327925	
		Zinc	5.0	U	ug/L	P327925	
	EPA 200.8 Rev. 5.4	Arsenic	1.25		ug/L	P327925	
		Cadmium	0.020	U	ug/L	P327925	
		Chromium	0.74	I	ug/L	P327925	
		Copper	3.13		ug/L	P327925	
		Lead	0.15	I	ug/L	P327925	
		Nickel	1.12		ug/L	P327925	
		Silver	0.010	U	ug/L	P327925	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory.

EPA 300.0 Rev. 2.1: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2120 B: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory.

SM 2320 B-97: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2540 C-97: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample temperature was outside the acceptable range when received at the laboratory.

EPA 350.1 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 351.2 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 353.2 Rev. 2.0: NO2NO3-N: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 365.1 Rev. 2.0: Total-P: Sample temperature was outside the acceptable range when received at the laboratory.

SM 5310 B-00: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory. Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC

Sample Location: Myrtle 1995 @ Pine Island St.

Collection Date/Time: 06/29/2017 12:25

Field ID: G3SD062917-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1910880	EPA 180.1 Rev. 2.0	Turbidity	3.6	YQ	NTU	P327870	
	EPA 300.0 Rev. 2.1	Chloride	42		mg Cl/L	P328253	
		Sulfate	44	Y	mg SO4/L	P328250	
	SM 2120 B	Color (true)	610	YQ	PCU	P327866	
	SM 2320 B-97	Total Alkalinity	95	Y	mg CaCO3/L	P328172	
	SM 2540 C-97	TDS	366	Y	mg/L	P328291	
	SM 2540 D-97	TSS	6	IY	mg/L	P328297	
	SM 4500 F-C-97	Fluoride	0.35		mg F/L	P328180	
1910883	EPA 350.1 Rev. 2.0	Ammonia-N	0.050	Y	mg N/L	P328154	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.4	Y	mg N/L	P328188	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	UY	mg N/L	P327987	
	EPA 365.1 Rev. 2.0	Total-P	0.96	Y	mg P/L	P328055	
	SM 5310 B-00	Organic Carbon	45	Y	mg C/L	P328191	
1910886	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.80	YQ	mg P/L	P327875	
1910900	EPA 200.7 Rev. 4.4	Calcium	37.3		mg/L	P327925	
		Iron	1.71E+03		ug/L	P327925	
		Magnesium	16.3		mg/L	P327925	
		Potassium	21.5		mg/L	P327925	
		Sodium	17.1		mg/L	P327925	
		Zinc	5.0	U	ug/L	P327925	
	EPA 200.8 Rev. 5.4	Arsenic	2.19		ug/L	P327925	
		Cadmium	0.020	U	ug/L	P327925	
		Chromium	0.56	I	ug/L	P327925	
		Copper	1.14		ug/L	P327925	
		Lead	0.37		ug/L	P327925	
		Nickel	0.70	I	ug/L	P327925	
		Silver	0.010	U	ug/L	P327925	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory.

EPA 300.0 Rev. 2.1: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2120 B: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory.

SM 2320 B-97: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2540 C-97: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample temperature was outside the acceptable range when received at the laboratory.

EPA 350.1 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 351.2 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 353.2 Rev. 2.0: NO2NO3-N: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 365.1 Rev. 2.0: Total-P: Sample temperature was outside the acceptable range when received at the laboratory.

SM 5310 B-00: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory. Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC

Sample Location: Myrtle 1995 @ Pine Island St.

Collection Date/Time: 06/29/2017 12:25

Field ID: G3SD062917-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1910898	EPA 8321B	Sucralose**	0.010	UY	ug/L	P327821	

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1910881	EPA 180.1 Rev. 2.0	Turbidity	5.7	YQ	NTU	P327870	
	EPA 300.0 Rev. 2.1	Chloride	100		mg Cl/L	P328253	
		Sulfate	52	Y	mg SO4/L	P328250	
	SM 2120 B	Color (true)	170	AYQ	PCU	P327866	
	SM 2320 B-97	Total Alkalinity	73	Y	mg CaCO3/L	P328172	

Field ID: G3SD062917-4

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1910881	SM 2540 C-97	TDS	420	AY	mg/L	P328291	
	SM 2540 D-97	TSS	4	IAY	mg/L	P328297	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P328180	
1910884	EPA 350.1 Rev. 2.0	Ammonia-N	0.16	Y	mg N/L	P328154	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4	Y	mg N/L	P328189	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.41	Y	mg N/L	P327987	
	EPA 365.1 Rev. 2.0	Total-P	0.17	Y	mg P/L	P328055	
	SM 5310 B-00	Organic Carbon	19	Y	mg C/L	P328191	
1910887	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11	YQ	mg P/L	P327875	
1910901	EPA 200.7 Rev. 4.4	Calcium	53.8		mg/L	P327925	
		Iron	790		ug/L	P327925	
		Magnesium	9.75		mg/L	P327925	
		Potassium	8.7		mg/L	P327925	
		Sodium	48.8		mg/L	P327925	
		Zinc	5.2	I	ug/L	P327925	
	EPA 200.8 Rev. 5.4	Arsenic	1.15		ug/L	P327925	
		Cadmium	0.020	U	ug/L	P327925	
		Chromium	0.62	I	ug/L	P327925	
		Copper	3.98		ug/L	P327925	
		Lead	0.22		ug/L	P327925	
		Nickel	0.81		ug/L	P327925	
		Silver	0.010	U	ug/L	P327925	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory.

EPA 300.0 Rev. 2.1: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2120 B: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory.

SM 2320 B-97: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2540 C-97: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample temperature was outside the acceptable range when received at the laboratory.

EPA 350.1 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 351.2 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 353.2 Rev. 2.0: NO2NO3-N: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 365.1 Rev. 2.0: Total-P: Sample temperature was outside the acceptable range when received at the laboratory.

SM 5310 B-00: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt. Sample temperature was outside the acceptable range when received at the laboratory. Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC

Non-Conformance Report

NCR ID: 6535

Event(s)

SO-DIST-2017-07-03-03

Job(s)

TLH-2017-07-03-07

Sample(s)

1910876

Test(s)

NCR Type: SAMPLING

NCR Category: General

Observation: Sample 1910876 appears to be preserved with nitric acid. Sample has a nitrite/nitrate concentration of 390 mg N/L and there is less than 1 mg N/L in the unpreserved aliquot (laboratory ID 1910874).

Resolution: Customer (Kirby Wolfe) was contacted and he requested that the affected tests be cancelled (Field ID G3SD062917-3).

Authorized by/Date: Colin Wright 7/28/2017

Non-Conformance Report

NCR ID: 6536

Event(s)

SO-DIST-2017-07-03-03

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: 1. Samples arrived one or more days late, by common carrier.
UPS Code: J4586463347
2. Samples received outside the acceptable temperature range.

Resolution: The customer (Ben Paswater) requested that the data be appropriately qualified.

Authorized by/Date: Colin Wright 7/17/2017

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry Colin Wright (850) 245-8085
Biology Cheryl Swanson (850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P327870

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P327925

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P327925

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P328248

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328249

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328250

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328253

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328154

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328188

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328189

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327986

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327987

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328054

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328055

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327875

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

Reference Method: EPA 8321B
Batch ID: P327821

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P327866

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P328172

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

Reference Method: SM 2540 C-97
Batch ID: P328290

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P328291

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P328296

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P328297

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
 Batch ID: P328180

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P328191

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

Reference Method: USGS O-2060-01
 Batch ID: P327927

Component	Result	Code	Units
2,4-D	8.0E-04	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P327925

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	105		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	104		P	85 - 115
Sodium	104		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P327925

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	97.3		P	85 - 115
Cadmium	98.4		P	85 - 115
Chromium	96.0		P	85 - 115
Copper	93.3		P	85 - 115
Lead	95.1		P	85 - 115
Nickel	96.4		P	85 - 115
Silver	95.5		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328248

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	95.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328249

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328250

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	92.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328253

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	95.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328154

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: P328188

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	104		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327987

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	105		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328054

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327875

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

Reference Method: EPA 8321B
Batch ID: P327821

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	85.2		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P328172

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

Reference Method: SM 4500 F-C-97
Batch ID: P328180

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P328191

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.3		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P327927

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	86.6		P	40 - 150
Acetaminophen	92.6		P	30 - 150
Bentazon	84.2		P	40 - 150
Carbamazepine	96.0		P	40 - 150
Diuron	108		P	40 - 150
Fenuron	89.6		P	40 - 150
Fluridone	98.8		P	40 - 150
Imidacloprid	77.6		P	40 - 160
Linuron	99.8		P	40 - 150
MCPP	78.4		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P327927

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Primidone	85.0		P	40 - 150
Triclopyr	84.8		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P327925

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910466	Calcium	107		P	80 - 120
1910466	Iron	107		P	80 - 120
1910466	Magnesium	106		P	80 - 120
1910466	Potassium	104		P	80 - 120
1910466	Sodium	104		P	80 - 120
1910466	Zinc	105		P	80 - 120
1910715	Calcium	102		P	80 - 120
1910715	Iron	109	109	P/P	80 - 120
1910715	Magnesium	110	109	P/P	80 - 120
1910715	Potassium	101	102	P/P	80 - 120
1910715	Sodium	101		P	80 - 120
1910715	Zinc	103	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P327925

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910466	Arsenic	93.1		P	80 - 120
1910466	Cadmium	93.3		P	80 - 120
1910466	Chromium	89.5		P	80 - 120
1910466	Copper	88.7		P	80 - 120
1910466	Lead	90.1		P	80 - 120
1910466	Nickel	89.8		P	80 - 120
1910466	Silver	89.1		P	80 - 120
1910715	Arsenic	99.3	103	P/P	80 - 120
1910715	Cadmium	98.2	102	P/P	80 - 120
1910715	Chromium	93.8	98.6	P/P	80 - 120
1910715	Copper	93.7	97.4	P/P	80 - 120
1910715	Lead	95.8	99.0	P/P	80 - 120
1910715	Nickel	95.6	99.0	P/P	80 - 120
1910715	Silver	94.4	96.2	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P328248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910623	Chloride	96.0		P	90 - 110
1910625	Chloride	95.8		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328249

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910623	Sulfate	96.0		P	90 - 110
1910625	Sulfate	96.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910931	Sulfate	94.3		P	90 - 110
1910971	Sulfate	94.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910931	Chloride	96.5		P	90 - 110
1910971	Chloride	93.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910932	Ammonia-N	97.3	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910691	Kjeldahl Nitrogen	99.4	97.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910967	Kjeldahl Nitrogen	98.7	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910691	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327987

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910883	NO2NO3-N	99.1	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910630	Total-P	97.5	95.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P328055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910884	Total-P	98.6	100	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P327821

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910706	Sucralose	75.8	87.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P328180

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910687	Fluoride	100	101	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P328191

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910875	Organic Carbon	95.2		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P327927

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1910709	2,4-D	88.6	130	P/P	40 - 150
1910709	Acetaminophen	103	139	P/P	30 - 150
1910709	Bentazon	57.8	56.8	P/P	40 - 150
1910709	Carbamazepine	108	117	P/P	40 - 150
1910709	Diuron	96.0	102	P/P	40 - 150
1910709	Fenuron	75.2	81.6	P/P	40 - 150
1910709	Fluridone	62.6	62.8	P/P	40 - 150
1910709	Imidacloprid	182	197	F/F	40 - 160
1910709	Linuron	82.8	85.2	P/P	40 - 150
1910709	MCP	71.8	83.4	P/P	40 - 150
1910709	Primidone	114	97.6	P/P	40 - 150
1910709	Triclopyr	78.2	80.2	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P327870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910861	Turbidity	0.844	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P327925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910715	Calcium	0.469	Spike	P	0 - 20
1910715	Iron	0.212	Spike	P	0 - 20
1910715	Magnesium	0.558	Spike	P	0 - 20
1910715	Potassium	0.499	Spike	P	0 - 20
1910715	Sodium	2.29	Spike	P	0 - 20
1910715	Zinc	1.60	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P327925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910715	Arsenic	3.64	Spike	P	0 - 20
1910715	Cadmium	3.57	Spike	P	0 - 20
1910715	Chromium	5.05	Spike	P	0 - 20
1910715	Copper	3.69	Spike	P	0 - 20
1910715	Lead	3.20	Spike	P	0 - 20
1910715	Nickel	3.42	Spike	P	0 - 20
1910715	Silver	1.93	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910623	Chloride	0.0532	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328249

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910623	Sulfate	0.457	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910931	Sulfate	2.73	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910931	Chloride	0.122	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910932	Ammonia-N	0.0334	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910691	Kjeldahl Nitrogen	1.33	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910967	Kjeldahl Nitrogen	1.22	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910691	NO2NO3-N	0.482	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910883	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910630	Total-P	1.66	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910884	Total-P	0.976	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910887	O-Phosphate-P	1.44	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P327821

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910706	Sucralose	13.6	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P327866

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910881	Color (true)	1.62	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P328172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910687	Total Alkalinity	0.0984	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P328290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910873	TDS	4.14	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P328291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910881	TDS	3.33	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P328180

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910687	Fluoride	0.464	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P328191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910875	Organic Carbon	1.34	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P327927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910709	2,4-D	22.8	Spike	P	0 - 30
1910709	Acetaminophen	29.8	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P327927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1910709	Bentazon	0.922	Spike	P	0 - 30
1910709	Carbamazepine	8.01	Spike	P	0 - 30
1910709	Diuron	4.81	Spike	P	0 - 30
1910709	Fenuron	8.16	Spike	P	0 - 30
1910709	Fluridone	0.151	Spike	P	0 - 30
1910709	Imidacloprid	7.66	Spike	P	0 - 30
1910709	Linuron	2.86	Spike	P	0 - 30
1910709	MCP	14.9	Spike	P	0 - 30
1910709	Primidone	15.7	Spike	P	0 - 30
1910709	Triclopyr	2.53	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: 1910897
Field Sample ID: G3SD062917-7

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	113	P	40 - 160
USGS O-2060-01	2,4-D-d3	115	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	96.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	119	P	30 - 160
USGS O-2060-01	Diuron-d6	70.8	P	30 - 160
USGS O-2060-01	Primidone-d5	99.8	P	30 - 150

Lab Sample ID: 1910898
Field Sample ID: G3SD062917-2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	102	P	40 - 160
USGS O-2060-01	2,4-D-d3	103	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	120	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	91.3	P	30 - 160
USGS O-2060-01	Diuron-d6	50.3	P	30 - 160
USGS O-2060-01	Primidone-d5	74.6	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A77495
Included Lab Sample IDs: 1910873, 1910874, 1910879, 1910880, 1910881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	94.7	98.1	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77498

Included Lab Sample IDs: 1910873, 1910874, 1910879, 1910880, 1910881

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77502

Included Lab Sample IDs: 1910877, 1910878, 1910885, 1910886, 1910887

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	99.6	P/P	90 - 110
O-Phosphate-P	99.6	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77534

Included Lab Sample IDs: 1910875, 1910882, 1910883, 1910884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A77550

Included Lab Sample IDs: 1910899, 1910900, 1910901

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	99.2	P/P	90 - 110
Iron	102	101	P/P	90 - 110
Magnesium	102	101	P/P	90 - 110
Potassium	100	99.3	P/P	90 - 110
Sodium	99.6	98.8	P/P	90 - 110
Zinc	99.7	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A77563

Included Lab Sample IDs: 1910900

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Potassium	96.3	95.6	P/P	95 - 105
Sodium	98.8	98.0	P/P	95 - 105

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77564

Included Lab Sample IDs: 1910899, 1910900, 1910901

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.3	99.7	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Chromium	98.4	99.6	P/P	90 - 110
Copper	97.6	98.8	P/P	90 - 110
Lead	97.6	97.6	P/P	90 - 110
Nickel	98.7	99.2	P/P	90 - 110
Silver	96.3	96.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77601

Included Lab Sample IDs: 1910875, 1910882, 1910883, 1910884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.3	96.8	P/P	90 - 110
Ammonia-N	97.9	97.3	P/P	90 - 110
Ammonia-N	98.0	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77605

Included Lab Sample IDs: 1910875, 1910882, 1910883, 1910884

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

Reference Method: SM 2320 B-97

Run ID: A77607

Included Lab Sample IDs: 1910873, 1910874, 1910879, 1910880, 1910881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77607

Included Lab Sample IDs: 1910873, 1910874, 1910879, 1910880, 1910881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A77612

Included Lab Sample IDs: 1910875, 1910882, 1910883, 1910884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.2	91.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77638

Included Lab Sample IDs: 1910873, 1910874, 1910879, 1910880, 1910881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Sulfate	92.8	98.2	P/P	90 - 110
Sulfate	95.8	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77654

Included Lab Sample IDs: 1910875, 1910882, 1910883, 1910884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.2	93.4	P/P	90 - 110
Kjeldahl Nitrogen	98.3	96.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A77687

Included Lab Sample IDs: 1910897, 1910898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.4	90.0	P/P	50 - 150
Acetaminophen	84.4	83.6	P/P	60 - 150
Bentazon	118	99.6	P/P	50 - 150
Carbamazepine	100	89.6	P/P	60 - 150
Diuron	104	104	P/P	60 - 150
Fenuron	98.0	91.6	P/P	60 - 150
Fluridone	128	122	P/P	60 - 160
Imidacloprid	90.0	91.2	P/P	60 - 150
Linuron	86.4	95.6	P/P	60 - 150
MCPD	91.6	91.2	P/P	50 - 150
Primidone	108	91.2	P/P	60 - 150
Triclopyr	83.2	73.2	P/P	50 - 150

Reference Method: USGS O-2060-01

Run ID: A77714

Included Lab Sample IDs: 1910897

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	89.4	104	P/P	50 - 150

Reference Method: USGS O-2060-01

Run ID: A77717

Included Lab Sample IDs: 1910897

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Diuron	103	72.2	P/P	60 - 150
Imidacloprid	115	90.4	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A77777

Included Lab Sample IDs: 1910897, 1910898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	92.4	116	P/P	60 - 160
Sucralose	97.7	111	P/P	60 - 160

* 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				0.844	
EPA 200.7 Rev. 4.4	Calcium	102	107	102		0.469
	Iron	105	107	109		0.212
	Magnesium	106	106	110		0.558
	Potassium	104	104	101		0.499

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 200.7 Rev. 4.4	Sodium	104	104	101			2.29
	Zinc	103	105	103	104		1.60
EPA 200.8 Rev. 5.4	Arsenic	97.3	93.1	99.3	103		3.64
	Cadmium	98.4	93.3	98.2	102		3.57
	Chromium	96.0	89.5	93.8	98.6		5.05
	Copper	93.3	88.7	93.7	97.4		3.69
	Lead	95.1	90.1	95.8	99.0		3.20
	Nickel	96.4	89.8	95.6	99.0		3.42
	Silver	95.5	89.1	94.4	96.2		1.93
EPA 300.0 Rev. 2.1	Chloride	95.5	96.0	95.8		0.0532	
	Chloride	95.8	96.5	93.9		0.122	
	Sulfate	96.4	96.0	96.1		0.457	
	Sulfate	92.5	94.3	94.5		2.73	
EPA 350.1 Rev. 2.0	Ammonia-N	102	97.3	97.2			0.0334
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.7	99.4	97.1			1.33
	Kjeldahl Nitrogen	96.4	98.7	101			1.22
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	104			0.482
	NO2NO3-N	105	99.1	98.1			1.01
EPA 365.1 Rev. 2.0	Total-P	102	97.5	95.8			1.66
	Total-P	98.4	98.6	100			0.976
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1					1.44
EPA 8321B	Sucralose	85.2	75.8	87.2			13.6
SM 2120 B	Color (true)					1.62	
SM 2320 B-97	Total Alkalinity	103				0.0984	
SM 2540 C-97	TDS					4.14	
	TDS					3.33	
SM 4500 F-C-97	Fluoride	98.4	100	101			0.464
SM 5310 B-00	Organic Carbon	94.3	95.2				1.34
USGS O-2060-01	2,4-D	86.6	88.6	130			22.8
	Acetaminophen	92.6	103	139			29.8
	Bentazon	84.2	57.8	56.8			0.922
	Carbamazepine	96.0	108	117			8.01
	Diuron	108	96.0	102			4.81
	Fenuron	89.6	75.2	81.6			8.16
	Fluridone	98.8	62.6	62.8			0.151
	Imidacloprid	77.6	182	197			7.66
	Linuron	99.8	82.8	85.2			2.86
	MCPP	78.4	71.8	83.4			14.9
	Primidone	85.0	114	97.6			15.7
	Triclopyr	84.8	78.2	80.2			2.53

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1910873, 1910874, 1910879, 1910880, 1910881
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1910899, 1910900, 1910901
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1910899, 1910900, 1910901
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1910873, 1910874, 1910879, 1910880, 1910881
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1910873, 1910874, 1910879, 1910880, 1910881

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1910875, 1910882, 1910883, 1910884
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1910875, 1910882, 1910883, 1910884
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1910875, 1910882, 1910883, 1910884
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1910875, 1910882, 1910883, 1910884
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1910877, 1910878, 1910885, 1910886, 1910887
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1910897, 1910898
SM 2120 B / E31780	True Color measured at 450 nm	1910873, 1910874, 1910879, 1910880, 1910881
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1910873, 1910874, 1910879, 1910880, 1910881
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1910873, 1910874, 1910879, 1910880, 1910881
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1910873, 1910874, 1910879, 1910880, 1910881
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1910873, 1910874, 1910879, 1910880, 1910881
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1910875, 1910882, 1910883, 1910884
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1910897, 1910898
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1910897, 1910898

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	07/03/2017			07/03/2017 12:55	DeAsia Armster	1910873, 1910874, 1910879, 1910880, 1910881
EPA 200.7 Rev. 4.4	07/03/2017	07/05/2017	Elliott D. Healy	07/06/2017	Betina Topolski	1910899, 1910900, 1910901
	07/03/2017	07/05/2017	Elliott D. Healy	07/07/2017	Betina Topolski	1910900
EPA 200.8 Rev. 5.4	07/03/2017	07/05/2017	Elliott D. Healy	07/07/2017	Nadine Brooks	1910899, 1910900, 1910901
EPA 300.0 Rev. 2.1	07/03/2017			07/10/2017	Ping Hua	1910873, 1910874, 1910879
	07/03/2017			07/11/2017	Ping Hua	1910880, 1910881
	07/03/2017			07/12/2017	Ping Hua	1910880, 1910881
EPA 350.1 Rev. 2.0	07/03/2017			07/07/2017	Sofia Elnemr	1910875, 1910882, 1910883, 1910884
EPA 351.2 Rev. 2.0	07/03/2017	07/10/2017	Adrian Shelby	07/12/2017	Joseph Suarez	1910875, 1910882, 1910883, 1910884
EPA 353.2 Rev. 2.0	07/03/2017			07/06/2017	Beverly Y. Sanders	1910875, 1910882, 1910883, 1910884
EPA 365.1 Rev. 2.0	07/03/2017	07/07/2017	Adrian Shelby	07/10/2017	Lipi Saha	1910875, 1910882, 1910883, 1910884
EPA 365.1 Rev. 2.0 dissolved	07/03/2017			07/03/2017 15:47	Anthony C. Onicha	1910887
	07/03/2017			07/03/2017 15:51	Anthony C. Onicha	1910877
	07/03/2017			07/03/2017 15:52	Anthony C. Onicha	1910878
	07/03/2017			07/03/2017 15:59	Anthony C. Onicha	1910885
	07/03/2017			07/03/2017 16:01	Anthony C. Onicha	1910886
EPA 8321B	07/03/2017	07/13/2017	Mohammad Ghaffari	07/14/2017	Mohammad Ghaffari	1910897
	07/03/2017	07/13/2017	Mohammad Ghaffari	07/15/2017	Mohammad Ghaffari	1910898
SM 2120 B	07/03/2017			07/03/2017 13:38	Tanya Welborn	1910879
	07/03/2017			07/03/2017 13:41	Tanya Welborn	1910873
	07/03/2017			07/03/2017 13:42	Tanya Welborn	1910874
	07/03/2017			07/03/2017 13:43	Tanya Welborn	1910880
	07/03/2017			07/03/2017 13:45	Tanya Welborn	1910881
SM 2320 B-97	07/03/2017			07/08/2017	Dale L. Simmons	1910873, 1910874, 1910879, 1910880, 1910881
SM 2540 C-97	07/03/2017			07/05/2017	Yijie Li	1910873, 1910874, 1910879, 1910880, 1910881
SM 2540 D-97	07/03/2017			07/05/2017	Yijie Li	1910873, 1910874, 1910879, 1910880, 1910881
SM 4500 F-C-97	07/03/2017			07/08/2017	Dale L. Simmons	1910873, 1910874, 1910879, 1910880, 1910881
SM 5310 B-00	07/03/2017			07/07/2017	Ping Hua	1910875, 1910882, 1910883, 1910884
USGS O-2060-01	07/03/2017	07/06/2017	Hoor Shaik	07/08/2017	Juyoung Kim	1910897, 1910898
	07/03/2017	07/06/2017	Hoor Shaik	07/11/2017	Juyoung Kim	1910897