

Chemical Analysis Report

NW-DIST-2017-11-16-01

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

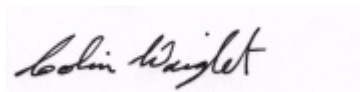
Event Description: **Escambia River WBID 10A,B,C,E,F**
Request ID: **RQ-2017-10-09-20**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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Attn: Michael King

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Certified by: Colin Wright, Program Administrator

Date Certified: 08-DEC-2017 12:19

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: ESCAMBIA RIVER UPSTREAM GULF POWER DISCHARGE **Collection Date/Time: 11/15/2017 14:00**

Field ID: G4NW0264

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947151	EPA 180.1 Rev. 2.0	Turbidity	9.2		NTU	P335463	
	EPA 300.0 Rev. 2.1	Chloride	100		mg Cl/L	P335683	
		Sulfate	19		mg SO4/L	P335685	
		Color (true)	61		PCU	P335472	
	SM 2320 B-97	Total Alkalinity	27		mg CaCO3/L	P336013	
	SM 2540 C-97	TDS	249		mg/L	P335957	
	SM 2540 D-97	TSS	3	I	mg/L	P335785	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P335923	
1947154	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P336252	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P336051	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P335901	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P335881	
	SM 5310 B-00	Organic Carbon	4.3		mg C/L	P336098	
1947157	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P335483	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: The result was confirmed on 11/20/2017.

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

Sample Location: ESCAMBIA RIVER UPSTREAM GULF POWER DISCHARGE **Collection Date/Time: 11/15/2017 14:05**

Field ID: G4NW0264DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947152	EPA 180.1 Rev. 2.0	Turbidity	9.2		NTU	P335463	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P335683	
		Sulfate	23		mg SO4/L	P335685	
		Color (true)	58		PCU	P335472	
	SM 2320 B-97	Total Alkalinity	27		mg CaCO3/L	P336013	
	SM 2540 C-97	TDS	289		mg/L	P335957	
	SM 2540 D-97	TSS	4	I	mg/L	P335785	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P335923	
1947155	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P336252	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P336051	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P335901	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P335881	
	SM 5310 B-00	Organic Carbon	4.2		mg C/L	P336098	
1947158	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P335483	
1947222	EPA 200.7 Rev. 4.4	Calcium	12.4		mg/L	P335750	
		Iron	1.05E+03		ug/L	P335750	
		Magnesium	11.4		mg/L	P335750	
		Potassium	3.9		mg/L	P335750	
		Sodium	86.9		mg/L	P335750	
		Zinc	5.0	U	ug/L	P335750	
		Arsenic	0.59		ug/L	P335750	

Field ID: G4NW0264DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947222	EPA 200.8 Rev. 5.4	Cadmium	0.020	U	ug/L	P335750	
		Chromium	0.49	I	ug/L	P335750	
		Copper	0.38	I	ug/L	P335750	
		Lead	0.30		ug/L	P335750	
		Nickel	0.59	I	ug/L	P335750	
		Silver	0.010	U	ug/L	P335750	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: The result was confirmed on 11/20/2017.

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

Sample Location: ESCAMBIA RIVER UPSTREAM GULF POWER DISCHARGE **Collection Date/Time: 11/15/2017 14:10**

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947153	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P335463	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P335683	
		Sulfate	0.20	U	mg SO4/L	P335685	
	SM 2120 B	Color (true)	2.5	U	PCU	P335472	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P336013	
	SM 2540 C-97	TDS	15	U	mg/L	P335957	
	SM 2540 D-97	TSS	2	U	mg/L	P335785	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P335923	
1947156	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P336252	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P336051	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P335901	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P335881	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P336098	
1947159	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P335483	
	dissolved						

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: ESCAMBIA RIVER UPSTREAM GULF POWER DISCHARGE **Collection Date/Time: 11/15/2017 14:10**

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947175	EPA 8321B	Sucralose**	0.010	U	ug/L	P335633	
	USGS O-2060-01	2,4-D	0.0020	UQ	ug/L	P335859	
		Diuron	8.0E-04	U	ug/L	P335611	
		Fenuron	0.0080	U	ug/L	P335611	
		Imidacloprid	8.0E-04	U	ug/L	P335611	
		Bentazon	8.0E-04	UQ	ug/L	P335859	
		Linuron	0.0040	U	ug/L	P335611	
		Acetaminophen**	0.0080	U	ug/L	P335611	
		MCP	0.0020	UQ	ug/L	P335859	
		Carbamazepine**	4.0E-04	U	ug/L	P335611	

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947175	USGS O-2060-01	Triclopyr**	0.0040	UQ	ug/L	P335859	
		Primidone**	0.0040	U	ug/L	P335611	
		Fluridone**	4.0E-04	U	ug/L	P335611	

Ref. Method and Comment:

USGS O-2060-01: Sample required re-extraction beyond normal holding time due to reagent performance inconsistencies.

Sample Location: ESCAMBIA RIVER DOWNSTREAM OF COTTON LAKE **Collection Date/Time: 11/15/2017 11:00**

Field ID: G4NW0403

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947160	EPA 180.1 Rev. 2.0	Turbidity	9.6		NTU	P335463	
	EPA 300.0 Rev. 2.1	Chloride	5.5		mg Cl/L	P335684	
		Sulfate	6.2		mg SO4/L	P335686	
	SM 2120 B	Color (true)	62	A	PCU	P335473	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P336013	
	SM 2540 C-97	TDS	70		mg/L	P335957	
	SM 2540 D-97	TSS	10	I	mg/L	P335785	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P335923	
1947162	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P336252	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P336051	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P335901	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P335881	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P336098	
1947164	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.015		mg P/L	P335483	
1947177	EPA 200.7 Rev. 4.4	Calcium	10.4		mg/L	P335750	
		Iron	1.52E+03		ug/L	P335750	
		Magnesium	1.31		mg/L	P335750	
		Potassium	1.2	I	mg/L	P335750	
		Sodium	6.3		mg/L	P335750	
		Zinc	5.0	U	ug/L	P335750	
	EPA 200.8 Rev. 5.4	Arsenic	0.66		ug/L	P335750	
		Cadmium	0.020	U	ug/L	P335750	
		Chromium	0.93	I	ug/L	P335750	
		Copper	0.39	I	ug/L	P335750	
		Lead	0.39		ug/L	P335750	
		Nickel	0.73	I	ug/L	P335750	
		Silver	0.010	U	ug/L	P335750	

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: ESCAMBIA RIVER UPSTREAM OF MITCHELL CREEK **Collection Date/Time: 11/15/2017 11:45**

Field ID: G4NW0404

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947161	EPA 180.1 Rev. 2.0	Turbidity	8.8		NTU	P335463	

Field ID: G4NW0404

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947161	EPA 300.0 Rev. 2.1	Chloride	5.7	A	mg Cl/L	P335684	
		Sulfate	6.5	A	mg SO4/L	P335686	
	SM 2120 B	Color (true)	61		PCU	P335473	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P336013	
	SM 2540 C-97	TDS	74		mg/L	P335957	
	SM 2540 D-97	TSS	8	I	mg/L	P335785	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P335923	
1947163	EPA 350.1 Rev. 2.0	Ammonia-N	0.046		mg N/L	P336252	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P336051	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P335901	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P335881	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P336098	
1947165	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P335483	
1947178	EPA 200.7 Rev. 4.4	Calcium	11.0		mg/L	P335750	
		Iron	1.44E+03		ug/L	P335750	
		Magnesium	1.36		mg/L	P335750	
		Potassium	1.2	I	mg/L	P335750	
		Sodium	6.7		mg/L	P335750	
		Zinc	5.0	U	ug/L	P335750	
	EPA 200.8 Rev. 5.4	Arsenic	0.66		ug/L	P335750	
		Cadmium	0.020	U	ug/L	P335750	
		Chromium	0.78	I	ug/L	P335750	
		Copper	0.36	I	ug/L	P335750	
		Lead	0.33		ug/L	P335750	
		Nickel	0.70	I	ug/L	P335750	
		Silver	0.010	U	ug/L	P335750	

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: ESCAMBIA RIVER BELOW MACKEY BAY INLET (NORTH BANK)

Collection Date/Time: 11/15/2017 13:45

Field ID: G4NW0255

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947176	EPA 8321B	Sucralose**	0.12		ug/L	P336107	
	USGS O-2060-01	2,4-D	0.0020	UQ	ug/L	P335859	
		Diuron	8.0E-04	U	ug/L	P335611	
		Fenuron	0.0080	U	ug/L	P335611	
		Imidacloprid	0.0028	I	ug/L	P335611	
		Bentazon	8.0E-04	UQ	ug/L	P335859	
		Linuron	0.0040	U	ug/L	P335611	
		Acetaminophen**	0.0080	U	ug/L	P335611	
		MCP	0.0020	UQ	ug/L	P335859	
		Carbamazepine**	4.0E-04	U	ug/L	P335611	
		Triclopyr**	0.0040	UQ	ug/L	P335859	
		Primidone**	0.0040	U	ug/L	P335611	

Field ID: G4NW0255

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947176	USGS O-2060-01	Fluridone**	4.0E-04	U	ug/L	P335611	

Ref. Method and Comment:

USGS O-2060-01: Sample required re-extraction beyond normal holding time due to reagent performance inconsistencies.

Sample Location: ESCAMBIA RIVER UPSTREAM GULF POWER DISCHARGE **Collection Date/Time: 11/15/2017 14:10**

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947223	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P335750	
		Iron	30	U	ug/L	P335750	
		Magnesium	0.040	U	mg/L	P335750	
		Potassium	0.30	U	mg/L	P335750	
		Sodium	0.50	U	mg/L	P335750	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P335750	
		Arsenic	0.050	U	ug/L	P335750	
		Cadmium	0.020	U	ug/L	P335750	
		Chromium	0.40	U	ug/L	P335750	
		Copper	0.20	U	ug/L	P335750	
		Lead	0.050	U	ug/L	P335750	
		Nickel	0.20	U	ug/L	P335750	
		Silver	0.010	U	ug/L	P335750	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P335463

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P335750

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: P335750

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335750

Component	Result	Code	Units
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335683

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335684

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335685

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335686

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336252

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336051

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335901

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335881

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 dissolved
Batch ID: P335483

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

Reference Method: EPA 8321B
Batch ID: P335633

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P336107

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P335472

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P335473

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P336013

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

Reference Method: SM 2540 C-97
Batch ID: P335957

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P335785

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P335923

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P336098

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

Reference Method: USGS O-2060-01
Batch ID: P335611

Component	Result	Code	Units
Acetaminophen	0.0080	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
Primidone	0.0040	U	ug/L

Reference Method: USGS O-2060-01
Batch ID: P335859

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
MCPP	0.0020	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: P335750

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	102		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	104		P	85 - 115
Sodium	102		P	85 - 115
Zinc	97.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335750

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	104		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	102		P	85 - 115
Copper	102		P	85 - 115
Lead	103		P	85 - 115
Nickel	104		P	85 - 115
Silver	107		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335683

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335685

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335686

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336252

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336051

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335901

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335881

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335483

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P335633

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	100		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P336107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	67.4		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P336013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 108

Reference Method: SM 4500 F-C-97
 Batch ID: P335923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.3		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P336098

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

Reference Method: USGS O-2060-01
 Batch ID: P335611

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	87.8		P	30 - 150
Carbamazepine	104		P	40 - 150
Diuron	90.0		P	40 - 150
Fenuron	80.4		P	40 - 150
Fluridone	91.1		P	40 - 150
Imidacloprid	76.7		P	40 - 160
Linuron	78.4		P	40 - 150
Primidone	85.0		P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P335859

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.9		P	40 - 150
Bentazon	83.3		P	30 - 150
MCP	77.4		P	40 - 150
Triclopyr	71.9		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P335750

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947324	Calcium	100		P	80 - 120
1947324	Iron	99.9		P	80 - 120
1947324	Magnesium	99.4		P	80 - 120
1947324	Potassium	101		P	80 - 120
1947324	Sodium	98.8		P	80 - 120
1947324	Zinc	97.7		P	80 - 120
1947419	Calcium	98.4	98.8	P/P	80 - 120
1947419	Iron	97.5	97.8	P/P	80 - 120
1947419	Magnesium	103	102	P/P	80 - 120
1947419	Potassium	100	101	P/P	80 - 120
1947419	Sodium	97.3	97.4	P/P	80 - 120
1947419	Zinc	96.1	96.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335750

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947324	Arsenic	105		P	80 - 120
1947324	Cadmium	107		P	80 - 120
1947324	Chromium	102		P	80 - 120
1947324	Copper	102		P	80 - 120
1947324	Lead	104		P	80 - 120
1947324	Nickel	104		P	80 - 120
1947324	Silver	106		P	80 - 120
1947419	Arsenic	106	108	P/P	80 - 120
1947419	Cadmium	107	109	P/P	80 - 120
1947419	Chromium	105	106	P/P	80 - 120
1947419	Copper	105	106	P/P	80 - 120
1947419	Lead	106	107	P/P	80 - 120
1947419	Nickel	106	106	P/P	80 - 120
1947419	Silver	108	108	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335683

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947007	Chloride	93.6		P	90 - 110
1947053	Chloride	94.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947161	Chloride	95.6		P	90 - 110
1947426	Chloride	93.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335685

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947007	Sulfate	97.5		P	90 - 110
1947053	Sulfate	96.5		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947161	Sulfate	96.3		P	90 - 110
1947426	Sulfate	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947059	Ammonia-N	94.7	95.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336051

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947155	Kjeldahl Nitrogen	97.5	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335901

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947162	NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947162	Total-P	96.5	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947014	O-Phosphate-P	95.6	98.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P335633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947274	Sucralose	55.4	114	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P336107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949632	Sucralose	76.2	82.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P335923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947248	Fluoride	97.5	97.0	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P336098

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947061	Organic Carbon	95.8	95.4	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P335611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947128	Acetaminophen	53.2	60.5	P/P	30 - 150
1947128	Carbamazepine	90.9	101	P/P	40 - 150
1947128	Diuron	50.7	51.1	P/P	40 - 150
1947128	Fenuron	71.9	80.3	P/P	40 - 150
1947128	Fluridone	72.0	76.4	P/P	40 - 150
1947128	Imidacloprid	123	138	P/P	40 - 160
1947128	Linuron	86.0	94.6	P/P	40 - 150
1947128	Primidone	79.2	86.7	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P335859

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947131	2,4-D	97.5	88.0	P/P	40 - 150
1947131	Bentazon	79.0	75.5	P/P	30 - 150
1947131	MCP	70.8	63.9	P/P	40 - 150
1947131	Triclopyr	67.4	59.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P335463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947057	Turbidity	1.12	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P335750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947419	Calcium	0.310	Spike	P	0 - 20
1947419	Iron	0.292	Spike	P	0 - 20
1947419	Magnesium	0.187	Spike	P	0 - 20
1947419	Potassium	0.261	Spike	P	0 - 20
1947419	Sodium	0.0790	Spike	P	0 - 20
1947419	Zinc	0.687	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P335750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947419	Arsenic	1.60	Spike	P	0 - 20
1947419	Cadmium	1.41	Spike	P	0 - 20
1947419	Chromium	1.58	Spike	P	0 - 20
1947419	Copper	1.07	Spike	P	0 - 20
1947419	Lead	1.62	Spike	P	0 - 20
1947419	Nickel	0.0672	Spike	P	0 - 20
1947419	Silver	0.196	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P335683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947007	Chloride	0.278	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P335684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947161	Chloride	0.489	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P335685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947007	Sulfate	0.126	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P335686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947161	Sulfate	0.618	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P336252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947059	Ammonia-N	0.474	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P336051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947155	Kjeldahl Nitrogen	0.234	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947162	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947162	Total-P	2.07	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947014	O-Phosphate-P	2.96	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P335633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947274	Sucralose	27.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P336107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949632	Sucralose	2.51	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P335472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947008	Color (true)	0.285	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P335473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947160	Color (true)	1.60	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P336013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947248	Total Alkalinity	0.128	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
 Batch ID: P335957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947209	TDS	1.15	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P335923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947248	Fluoride	0.487	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P336098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947061	Organic Carbon	0.362	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P335611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947128	Acetaminophen	8.55	Spike	P	0 - 30
1947128	Carbamazepine	10.6	Spike	P	0 - 30
1947128	Diuron	0.747	Spike	P	0 - 30
1947128	Fenuron	11.0	Spike	P	0 - 30
1947128	Fluridone	5.95	Spike	P	0 - 30
1947128	Imidacloprid	11.5	Spike	P	0 - 30
1947128	Linuron	9.63	Spike	P	0 - 30
1947128	Primidone	9.02	Spike	P	0 - 30

Reference Method: USGS O-2060-01
 Batch ID: P335859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947131	2,4-D	10.2	Spike	P	0 - 30
1947131	Bentazon	4.27	Spike	P	0 - 30
1947131	MCPP	10.2	Spike	P	0 - 30
1947131	Triclopyr	11.7	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: 1947175
 Field Sample ID: FIELD BLANK

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
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Quality Assurance Report Surrogates

Lab Sample ID: 1947175
 Field Sample ID: FIELD BLANK

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	85.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	104	P	30 - 160
EPA 8321B	Diuron-d6	97.4	P	30 - 160
EPA 8321B	Primidone-d5	92.7	P	30 - 160
EPA 8321B	Sucralose-d6	104	P	40 - 160
USGS O-2060-01	2,4-D-d3	39.7	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	85.6	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	104	P	30 - 160
USGS O-2060-01	Diuron-d6	97.4	P	30 - 160
USGS O-2060-01	Primidone-d5	92.7	P	30 - 160
USGS O-2060-01	Sucralose-d6	104	P	40 - 160

Lab Sample ID: 1947176
 Field Sample ID: G4NW0255

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	74.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.6	P	30 - 160
EPA 8321B	Diuron-d6	75.1	P	30 - 160
EPA 8321B	Primidone-d5	99.2	P	30 - 160
EPA 8321B	Sucralose-d6	114	P	40 - 160
USGS O-2060-01	2,4-D-d3	43.3	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	74.2	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	86.6	P	30 - 160
USGS O-2060-01	Diuron-d6	75.1	P	30 - 160
USGS O-2060-01	Primidone-d5	99.2	P	30 - 160
USGS O-2060-01	Sucralose-d6	114	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
 Run ID: A80230
 Included Lab Sample IDs: 1947151, 1947152, 1947153, 1947160, 1947161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	103	P/P	90 - 110
Chloride	101	103	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110
Sulfate	102	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
 Run ID: A80322
 Included Lab Sample IDs: 1947151, 1947152, 1947153, 1947160, 1947161

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A80323

Included Lab Sample IDs: 1947151, 1947152, 1947153, 1947160, 1947161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	107	108	P/P	85 - 115
Color (true)	108	107	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A80325

Included Lab Sample IDs: 1947157, 1947158, 1947159, 1947164, 1947165

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	104	105	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A80455

Included Lab Sample IDs: 1947175, 1947176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	92.8	98.1	P/P	60 - 150
Carbamazepine	102	102	P/P	60 - 150
Diuron	99.9	103	P/P	60 - 150
Fenuron	105	104	P/P	60 - 150
Fluridone	111	106	P/P	60 - 160
Imidacloprid	89.4	93.4	P/P	60 - 150
Linuron	111	113	P/P	60 - 150
Primidone	102	104	P/P	60 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A80499

Included Lab Sample IDs: 1947177, 1947178, 1947222, 1947223

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	96.7	P/P	90 - 110
Calcium	99.6	100	P/P	95 - 105
Iron	101	98.3	P/P	95 - 105
Iron	98.3	97.2	P/P	90 - 110
Magnesium	100	98.9	P/P	95 - 105
Magnesium	98.9	97.6	P/P	90 - 110
Potassium	100	98.5	P/P	95 - 105
Potassium	98.5	98.6	P/P	90 - 110
Sodium	97.9	96.7	P/P	90 - 110
Sodium	98.4	97.9	P/P	95 - 105
Zinc	98.7	99.4	P/P	90 - 110
Zinc	99.4	98.7	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A80516

Included Lab Sample IDs: 1947154, 1947155, 1947156, 1947162, 1947163

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

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A80527

Included Lab Sample IDs: 1947175, 1947176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.6	80.8	P/P	50 - 150
Bentazon	114	122	P/P	50 - 150
MCP	80.4	84.3	P/P	50 - 150
Tricopyr	78.3	78.9	P/P	50 - 150

Reference Method: SM 4500 F-C-97

Run ID: A80534

Included Lab Sample IDs: 1947151, 1947152, 1947153, 1947160, 1947161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	106	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80548

Included Lab Sample IDs: 1947154, 1947155, 1947156, 1947162, 1947163

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

Reference Method: SM 2320 B-97

Run ID: A80565

Included Lab Sample IDs: 1947151, 1947152, 1947153, 1947160, 1947161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.5	P/P	90 - 110
Total Alkalinity	99.5	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A80568

Included Lab Sample IDs: 1947175, 1947176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	109	107	P/P	60 - 150
Sucralose	118	117	P/P	60 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A80570

Included Lab Sample IDs: 1947177, 1947178, 1947222, 1947223

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	102	103	P/P	90 - 110
Arsenic	103	104	P/P	90 - 110
Cadmium	101	103	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Chromium	100	102	P/P	90 - 110
Chromium	97.6	100	P/P	90 - 110
Copper	103	105	P/P	90 - 110
Copper	104	103	P/P	90 - 110
Lead	101	102	P/P	90 - 110
Lead	102	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A80570

Included Lab Sample IDs: 1947177, 1947178, 1947222, 1947223

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	104	106	P/P	90 - 110
Nickel	105	104	P/P	90 - 110
Silver	102	104	P/P	90 - 110
Silver	104	106	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A80598

Included Lab Sample IDs: 1947154, 1947155, 1947156, 1947162, 1947163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.9	96.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80655

Included Lab Sample IDs: 1947154, 1947155, 1947156, 1947162, 1947163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	102	P/P	90 - 110
Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80668

Included Lab Sample IDs: 1947154, 1947155, 1947156, 1947162, 1947163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	97.7	P/P	90 - 110
Kjeldahl Nitrogen	97.7	103	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity								1.12	
EPA 200.7 Rev. 4.4	Calcium	103			100	98.4	98.8			0.310
	Iron	102			99.9	97.5	97.8			0.292
	Magnesium	106			99.4	103	102			0.187
	Potassium	104			101	100	101			0.261
	Sodium	102			98.8	97.3	97.4			0.0790
	Zinc	97.0			97.7	96.1	96.8			0.687
EPA 200.8 Rev. 5.4	Arsenic	104			105	106	108			1.60
	Cadmium	105			107	107	109			1.41
	Chromium	102			102	105	106			1.58
	Copper	102			102	105	106			1.07
	Lead	103			104	106	107			1.62
	Nickel	104			104	106	106			0.0672

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision	
			LCS	SMP	MS		
EPA 200.8 Rev. 5.4	Silver	107	106	108	108		0.196
EPA 300.0 Rev. 2.1	Chloride	94.1	93.6	94.1		0.278	
	Chloride	96.5	95.6	93.7		0.489	
	Sulfate	95.3	97.5	96.5		0.126	
	Sulfate	97.7	96.3	96.2		0.618	
EPA 350.1 Rev. 2.0	Ammonia-N	104	94.7	95.2			0.474
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.8	97.5	97.8			0.234
EPA 353.2 Rev. 2.0	NO2NO3-N	104	99.0				0.0
EPA 365.1 Rev. 2.0	Total-P	103	96.5	98.7			2.07
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	108	95.6	98.6			2.96
EPA 8321B	Sucralose	100	55.4	114			27.9
	Sucralose	67.4	76.2	82.2			2.51
SM 2120 B	Color (true)					0.285	
	Color (true)					1.60	
SM 2320 B-97	Total Alkalinity	101				0.128	
SM 2540 C-97	TDS					1.15	
SM 4500 F-C-97	Fluoride	94.3	97.5	97.0			0.487
SM 5310 B-00	Organic Carbon	95.2	95.8	95.4			0.362
USGS O-2060-01	2,4-D	84.9	97.5	88.0			10.2
	Acetaminophen	87.8	53.2	60.5			8.55
	Bentazon	83.3	75.5	79.0			4.27
	Carbamazepine	104	90.9	101			10.6
	Diuron	90.0	50.7	51.1			0.747
	Fenuron	80.4	71.9	80.3			11.0
	Fluridone	91.1	72.0	76.4			5.95
	Imidacloprid	76.7	123	138			11.5
	Linuron	78.4	86.0	94.6			9.63
	MCPP	77.4	70.8	63.9			10.2
	Primidone	85.0	79.2	86.7			9.02
	Triclopyr	71.9	67.4	59.9			11.7

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1947151, 1947152, 1947153, 1947160, 1947161
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1947177, 1947178, 1947222, 1947223
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1947177, 1947178, 1947222, 1947223
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1947151, 1947152, 1947153, 1947160, 1947161
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1947151, 1947152, 1947153, 1947160, 1947161
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1947154, 1947155, 1947156, 1947162, 1947163
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1947154, 1947155, 1947156, 1947162, 1947163
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1947154, 1947155, 1947156, 1947162, 1947163
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1947154, 1947155, 1947156, 1947162, 1947163
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1947157, 1947158, 1947159, 1947164, 1947165
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1947175, 1947176

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2120 B / E31780	True Color measured at 450 nm	1947151, 1947152, 1947153, 1947160, 1947161
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1947151, 1947152, 1947153, 1947160, 1947161
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1947151, 1947152, 1947153, 1947160, 1947161
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1947151, 1947152, 1947153, 1947160, 1947161
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1947151, 1947152, 1947153, 1947160, 1947161
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1947154, 1947155, 1947156, 1947162, 1947163
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1947175, 1947176
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1947175, 1947176

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	11/16/2017			11/16/2017 16:18	DeAsia Armster	1947151, 1947152, 1947153, 1947160, 1947161
EPA 200.7 Rev. 4.4	11/16/2017	11/21/2017	Elliott D. Healy	11/22/2017	Martin Acosta	1947177, 1947178, 1947222, 1947223
EPA 200.8 Rev. 5.4	11/16/2017	11/21/2017	Elliott D. Healy	11/27/2017	Nadine Brooks	1947177, 1947178, 1947222, 1947223
EPA 300.0 Rev. 2.1	11/16/2017			11/17/2017	Irina Carbone	1947151, 1947152, 1947153, 1947160, 1947161
EPA 350.1 Rev. 2.0	11/16/2017			12/01/2017	Sofia Elnemr	1947154, 1947155, 1947156, 1947162, 1947163
EPA 351.2 Rev. 2.0	11/16/2017	11/29/2017	Adrian Shelby	12/01/2017	Tanya Welborn	1947154, 1947155, 1947156, 1947162, 1947163
EPA 353.2 Rev. 2.0	11/16/2017			11/27/2017	Beverly Y. Sanders	1947154, 1947155, 1947156, 1947162, 1947163
EPA 365.1 Rev. 2.0	11/16/2017	11/27/2017	Sima Feizi	11/28/2017	Lipi Saha	1947154, 1947155, 1947156, 1947162, 1947163
EPA 365.1 Rev. 2.0 dissolved	11/16/2017			11/16/2017 15:28	Megan Treadwell	1947157
	11/16/2017			11/16/2017 15:29	Megan Treadwell	1947158
	11/16/2017			11/16/2017 15:30	Megan Treadwell	1947159
	11/16/2017			11/16/2017 15:31	Megan Treadwell	1947164
	11/16/2017			11/16/2017 15:32	Megan Treadwell	1947165
EPA 8321B	11/16/2017	11/22/2017	Mohammad Ghaffari	11/29/2017	Mohammad Ghaffari	1947175
	11/16/2017	11/30/2017	Juyoung Kim	11/30/2017	Juyoung Kim	1947176
SM 2120 B	11/16/2017			11/16/2017 16:12	Tanya Welborn	1947151
	11/16/2017			11/16/2017 16:13	Tanya Welborn	1947152
	11/16/2017			11/16/2017 16:14	Tanya Welborn	1947153
	11/16/2017			11/16/2017 16:17	Tanya Welborn	1947160
	11/16/2017			11/16/2017 16:18	Tanya Welborn	1947161
SM 2320 B-97	11/16/2017			11/28/2017	Dale L. Simmons	1947151, 1947152, 1947153, 1947160, 1947161
SM 2540 C-97	11/16/2017			11/17/2017	DeAsia Armster	1947151, 1947152, 1947153, 1947160, 1947161
SM 2540 D-97	11/16/2017			11/17/2017	DeAsia Armster	1947151, 1947152, 1947153, 1947160, 1947161
SM 4500 F-C-97	11/16/2017			11/28/2017	Dale L. Simmons	1947151, 1947152, 1947153, 1947160, 1947161
SM 5310 B-00	11/16/2017			11/28/2017	Ping Hua	1947154, 1947155, 1947156, 1947162, 1947163
USGS O-2060-01	11/16/2017	11/20/2017	Hoor Shaik	11/22/2017	Julie Michelle Frank	1947175, 1947176
	11/16/2017	11/27/2017	Hoor Shaik	11/29/2017	Julie Michelle Frank	1947175
	11/16/2017	11/27/2017	Hoor Shaik	11/30/2017	Julie Michelle Frank	1947176