

Chemical Analysis Report

WAS-SECT-2018-01-10-01

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

Event Description: **Sand, Black, 8, AJ, Harbinwood, Swamp, Salem**
Request ID: **RQ-2018-01-08-11**
Customer: **WAS-SECT**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

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Certified by: Colin Wright, Program Administrator

Date Certified: 06-FEB-2018 11:41

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

Case Narrative

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

Results for the following analytical groups are included in this report: 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: HARBINWOOD ESTATES DRAIN

Collection Date/Time: 01/10/2018 12:10

Field ID: G1WA0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958469	EPA 180.1 Rev. 2.0	Turbidity	1.2	A	NTU	P338074	
	EPA 300.0 Rev. 2.1	Chloride	12	A	mg Cl/L	P338248	
		Sulfate	0.98	A	mg SO4/L	P338250	
	SM 2120 B	Color (true)	27	A	PCU	P338058	
	SM 2320 B-97	Total Alkalinity	47		mg CaCO3/L	P338317	
	SM 2540 C-97	TDS	78		mg/L	P338389	
	SM 2540 D-97	TSS	2	I	mg/L	P338548	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P338319	
1958475	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P338306	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P338196	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P338175	
	EPA 365.1 Rev. 2.0	Total-P	0.062		mg P/L	P338170	
	SM 5310 B-00	Organic Carbon	4.8		mg C/L	P338323	
1958481	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P338137	

Sample Location: HARBINWOOD ESTATES DRAIN

Collection Date/Time: 01/10/2018 12:10

Field ID: G1WA0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958511	EPA 200.7 Rev. 4.4	Calcium	12.9		mg/L	P338049	
		Iron	230		ug/L	P338448	
		Magnesium	4.71		mg/L	P338049	
		Potassium	2.2		mg/L	P338049	
		Sodium	6.5		mg/L	P338049	
		Zinc	5.0	U	ug/L	P338049	
	EPA 200.8 Rev. 5.4	Arsenic	0.46		ug/L	P338049	
		Cadmium	0.020	U	ug/L	P338049	
		Chromium	0.40	U	ug/L	P338049	
		Copper	0.37	I	ug/L	P338448	
		Lead	0.090	I	ug/L	P338049	
		Nickel	0.20	U	ug/L	P338990	
		Silver	0.010	U	ug/L	P338049	

Sample Location: HARBINWOOD ESTATES DRAIN

Collection Date/Time: 01/10/2018 12:10

Field ID: G1WA0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958504	EPA 8321B	Sucralose**	0.41		ug/L	P338238	
	USGS O-2060-01	2,4-D	0.015		ug/L	P337928	
		Diuron	0.0020	U	ug/L	P337928	
		Fenuron	0.0080	U	ug/L	P337928	
		Imidacloprid	0.0085		ug/L	P337928	MS
		Bentazon	8.0E-04	U	ug/L	P337928	
		Linuron	0.0040	U	ug/L	P337928	

Field ID: G1WA0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958504	USGS O-2060-01	Acetaminophen**	0.0080	U	ug/L	P337928	
		MCP	0.0020	U	ug/L	P337928	
		Carbamazepine**	4.0E-04	U	ug/L	P337928	
		Triclopyr**	0.0040	U	ug/L	P337928	
		Primidone**	0.0045	I	ug/L	P337928	
		Fluridone**	4.0E-04	U	ug/L	P337928	

Sample Location: SALEM BRANCH DOWNSTREAM OF SR 159

Collection Date/Time: 01/10/2018 10:55

Field ID: G1WA0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958505	EPA 8321B	Sucralose**	0.13		ug/L	P338238	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P337928	
		Diuron	0.020		ug/L	P337928	
		Fenuron	0.0080	U	ug/L	P337928	
		Imidacloprid	0.0056	I	ug/L	P337928	MS
		Bentazon	0.0017	I	ug/L	P337928	
		Linuron	0.0040	U	ug/L	P337928	
		Acetaminophen**	0.0080	U	ug/L	P337928	
		MCP	0.0020	U	ug/L	P337928	
		Carbamazepine**	4.0E-04	U	ug/L	P337928	
		Triclopyr**	0.0040	U	ug/L	P337928	
		Primidone**	0.0040	U	ug/L	P337928	
		Fluridone**	0.0037		ug/L	P337928	

Sample Location: SWAMP CREEK UPSTREAM OF RAILROAD

Collection Date/Time: 01/10/2018 11:20

Field ID: G1WA0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958470	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P338074	
	EPA 300.0 Rev. 2.1	Chloride	8.1		mg Cl/L	P338248	
		Sulfate	0.51		mg SO4/L	P338250	
		SM 2120 B	Color (true)	71		PCU	P338058
	SM 2320 B-97	Total Alkalinity	18		mg CaCO3/L	P338317	
	SM 2540 C-97	TDS	47		mg/L	P338389	
	SM 2540 D-97	TSS	2	I	mg/L	P338548	
	SM 4500 F-C-97	Fluoride	0.092	I	mg F/L	P338319	
1958476	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P338306	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P338196	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.078		mg N/L	P338176	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P338170	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P338323	
1958482	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.043		mg P/L	P338137	

Sample Location: SWAMP CREEK UPSTREAM OF RAILROAD

Collection Date/Time: 01/10/2018 11:20

Field ID: G1WA0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958506	EPA 8321B	Sucralose**	0.039	I	ug/L	P338238	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P337928	
		Diuron	0.014		ug/L	P337928	
		Fenuron	0.014	I	ug/L	P337928	
		Imidacloprid	0.0020	U	ug/L	P337928	MS
		Bentazon	0.0013	I	ug/L	P337928	
		Linuron	0.0040	U	ug/L	P337928	
		Acetaminophen**	0.0080	U	ug/L	P337928	
		MCP	0.0020	U	ug/L	P337928	
		Carbamazepine**	4.0E-04	U	ug/L	P337928	
		Triclopyr**	0.0040	U	ug/L	P337928	
		Primidone**	0.0040	U	ug/L	P337928	
		Fluridone**	4.0E-04	U	ug/L	P337928	

Sample Location: SAND POND MIDDLE

Collection Date/Time: 01/10/2018 09:20

Field ID: G1WA0044

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958471	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P338074	
	EPA 300.0 Rev. 2.1	Chloride	2.1		mg Cl/L	P338248	
		Sulfate	0.65		mg SO4/L	P338250	
	SM 2120 B	Color (true)	25		PCU	P338058	
	SM 2320 B-97	Total Alkalinity	0.77	I	mg CaCO3/L	P338317	
	SM 2540 C-97	TDS	15	U	mg/L	P338389	
	SM 2540 D-97	TSS	2	I	mg/L	P338548	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P338319	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P338306	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P338196	
1958477	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P338176	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P338170	
	SM 5310 B-00	Organic Carbon	5.7		mg C/L	P338323	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P338137	
	dissolved						

Sample Location: FREEMAN CREEK UPSTREAM OF SR 267 (BLOXHAM CUTOFF)

Collection Date/Time: 01/10/2018 09:59

Field ID: G1WA0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958472	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P338074	
	EPA 300.0 Rev. 2.1	Chloride	3.6		mg Cl/L	P338248	
		Sulfate	0.55		mg SO4/L	P338250	
	SM 2120 B	Color (true)	75		PCU	P338058	
	SM 2320 B-97	Total Alkalinity	1.3	I	mg CaCO3/L	P338317	
	SM 2540 C-97	TDS	26		mg/L	P338389	
	SM 2540 D-97	TSS	4	I	mg/L	P338548	

Field ID: G1WA0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958472	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P338319	
1958478	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P338306	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P338196	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P338401	
	EPA 365.1 Rev. 2.0	Total-P	0.005		mg P/L	P338170	
	SM 5310 B-00	Organic Carbon	9.1		mg C/L	P338323	
1958484	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P338137	

**Sample Location: FREEMAN CREEK UPSTREAM OF SR 267
(BLOXHAM CUTOFF)**

Collection Date/Time: 01/10/2018 09:59

Field ID: G1WA0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958512	EPA 200.7 Rev. 4.4	Calcium	2.24		mg/L	P338049	
		Iron	380		ug/L	P338448	
		Magnesium	0.31		mg/L	P338049	
		Potassium	0.30	U	mg/L	P338049	
		Sodium	1.6	I	mg/L	P338049	
		Zinc	5.0	U	ug/L	P338049	
	EPA 200.8 Rev. 5.4	Arsenic	0.15	I	ug/L	P338049	
		Cadmium	0.020	U	ug/L	P338049	
		Chromium	0.40	U	ug/L	P338049	
		Copper	0.20	U	ug/L	P338049	
		Lead	0.20	I	ug/L	P338049	
		Nickel	0.26	I	ug/L	P338990	
		Silver	0.010	U	ug/L	P338049	

**Sample Location: BLACK CREEK UPSTREAM OF BLOXHAM
CUTOFF**

Collection Date/Time: 01/10/2018 08:50

Field ID: G1WA0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958473	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P338074	
	EPA 300.0 Rev. 2.1	Chloride	4.5		mg Cl/L	P338248	
		Sulfate	0.20	U	mg SO4/L	P338250	
	SM 2120 B	Color (true)	320		PCU	P338058	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P338317	
	SM 2540 C-97	TDS	98		mg/L	P338390	
	SM 2540 D-97	TSS	2	U	mg/L	P338549	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P338319	
1958479	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P338306	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P338329	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P338177	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P338170	
	SM 5310 B-00	Organic Carbon	28		mg C/L	P338323	

Field ID: G1WA0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958485	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P338137	

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: EIGHT MILE POND MIDDLE

Collection Date/Time: 01/10/2018 08:10

Field ID: G1WA0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958474	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P338074	
	EPA 300.0 Rev. 2.1	Chloride	4.0		mg Cl/L	P338248	
		Sulfate	2.9		mg SO4/L	P338250	
	SM 2120 B	Color (true)	62		PCU	P338058	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P338317	
	SM 2540 C-97	TDS	51		mg/L	P338390	
	SM 2540 D-97	TSS	4	I	mg/L	P338549	
	SM 4500 F-C-97	Fluoride	0.060	I	mg F/L	P338319	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.19		mg N/L	P338360	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P338329	
1958480	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P338177	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P338170	
	SM 5310 B-00	Organic Carbon	9.2		mg C/L	P338323	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.057		mg P/L	P338137	

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: EIGHT MILE POND MIDDLE

Collection Date/Time: 01/10/2018 08:10

Field ID: G1WA0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958507	EPA 8321B	Sucralose**	0.063		ug/L	P338238	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P337928	
		Diuron	0.0020	U	ug/L	P337928	
		Fenuron	0.0080	U	ug/L	P337928	
		Imidacloprid	0.0020	U	ug/L	P337928	MS
		Bentazon	8.0E-04	U	ug/L	P337928	
		Linuron	0.0040	U	ug/L	P337928	
		Acetaminophen**	0.0080	U	ug/L	P337928	
		MCP	0.0020	U	ug/L	P337928	
		Carbamazepine**	4.0E-04	U	ug/L	P337928	
		Triclopyr**	0.0040	U	ug/L	P337928	
		Primidone**	0.0040	U	ug/L	P337928	
		Fluridone**	0.0018		ug/L	P337928	

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P338074

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P338049

Component	Result	Code	Units
Calcium	0.075	U	mg/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 200.7 Rev. 4.4
Batch ID: P338448

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338049

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	8.9		ug/L
Copper	0.25	I	ug/L
Lead	0.050	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338448

Component	Result	Code	Units
Copper	0.20	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338990

Component	Result	Code	Units
Nickel	0.20	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338248

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338250

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338306

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338360

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338196

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338329

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338175

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338176

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338177

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338401

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338170

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: P338137

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

Reference Method: EPA 8321B
Batch ID: P338238

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P338058

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P338317

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

Reference Method: SM 2540 C-97
Batch ID: P338389

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P338390

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P338548

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P338549

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P338319

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: P338323

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

Reference Method: USGS O-2060-01
Batch ID: P337928

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0020	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: P338049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	107		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	102		P	85 - 115
Sodium	105		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P338448

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	109		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	100		P	85 - 115
Cadmium	106		P	85 - 115
Chromium	101		P	85 - 115
Copper	96.4		P	85 - 115
Lead	101		P	85 - 115
Silver	97.7		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338448

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	93.1		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338990

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338248

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338250

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338306

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338360

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338196

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338329

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338175

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338176

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338177

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338401

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: P338170

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338137

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.2		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P338238

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	86.4		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P338317

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

Reference Method: SM 4500 F-C-97
Batch ID: P338319

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P338323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01

Batch ID: P337928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	103		P	40 - 150
Acetaminophen	85.8		P	30 - 150
Bentazon	96.7		P	30 - 150
Carbamazepine	102		P	40 - 150
Diuron	82.9		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	115		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	93.5		P	40 - 150
MCPP	95.9		P	40 - 150
Primidone	95.0		P	40 - 150
Triclopyr	95.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P338049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958157	Calcium	110		P	80 - 120
1958157	Magnesium	109		P	80 - 120
1958157	Potassium	99.8	96.9	P/P	80 - 120
1958157	Sodium	107		P	80 - 120
1958157	Zinc	103	99.9	P/P	80 - 120
1958511	Calcium	110		P	80 - 120
1958511	Magnesium	108		P	80 - 120
1958511	Potassium	101		P	80 - 120
1958511	Sodium	107		P	80 - 120
1958511	Zinc	102		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P338448

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958158	Iron	107	109	P/P	80 - 120
1959549	Iron	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P338049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958157	Arsenic	103	105	P/P	80 - 120
1958157	Cadmium	106	108	P/P	80 - 120
1958157	Chromium	98.3	100	P/P	80 - 120
1958157	Copper	94.2	95.6	P/P	80 - 120
1958157	Lead	103	105	P/P	80 - 120
1958157	Silver	96.1	96.8	P/P	80 - 120
1958511	Arsenic	101		P	80 - 120
1958511	Cadmium	108		P	80 - 120
1958511	Chromium	102		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958511	Copper	94.1		P	80 - 120
1958511	Lead	103		P	80 - 120
1958511	Silver	98.8		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338448

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958158	Copper	92.7	91.1	P/P	80 - 120
1959549	Copper	89.9		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958512	Nickel	101	104	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958469	Chloride	107		P	90 - 110
1958470	Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958469	Sulfate	107		P	90 - 110
1958470	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338306

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958475	Ammonia-N	105	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338360

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1957767	Ammonia-N	93.4	94.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338196

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958477	Kjeldahl Nitrogen	107	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958628	Kjeldahl Nitrogen	96.1	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338175

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958475	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338176

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958628	NO2NO3-N	101		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958479	NO2NO3-N	101	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958478	NO2NO3-N	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338170

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958475	Total-P	101	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958481	O-Phosphate-P	98.0	101	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P338238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958065	Sucralose	96.1	93.6	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P338319

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958892	Fluoride	93.6	92.9	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P338323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958475	Organic Carbon	94.0	94.4	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P337928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1957757	2,4-D	96.1	98.9	P/P	40 - 150
1957757	Acetaminophen	125	141	P/P	30 - 150
1957757	Bentazon	92.7	99.2	P/P	30 - 150
1957757	Carbamazepine	97.9	115	P/P	40 - 150
1957757	Diuron	84.2	98.0	P/P	40 - 150
1957757	Fenuron	73.5	85.2	P/P	40 - 150
1957757	Fluridone	80.9	95.1	P/P	40 - 150
1957757	Imidacloprid	164	194	F/F	40 - 160
1957757	Linuron	89.8	100	P/P	40 - 150
1957757	MCCP	78.5	85.6	P/P	40 - 150
1957757	Primidone	79.2	90.5	P/P	40 - 150
1957757	Triclopyr	76.9	79.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P338074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958469	Turbidity	2.41	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P338049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958157	Calcium	3.33	Spike	P	0 - 20
1958157	Magnesium	2.82	Spike	P	0 - 20
1958157	Potassium	1.48	Spike	P	0 - 20
1958157	Sodium	2.44	Spike	P	0 - 20
1958157	Zinc	3.11	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P338448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958158	Iron	1.56	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958157	Arsenic	2.15	Spike	P	0 - 20
1958157	Cadmium	2.02	Spike	P	0 - 20
1958157	Chromium	2.00	Spike	P	0 - 20
1958157	Copper	1.42	Spike	P	0 - 20
1958157	Lead	1.47	Spike	P	0 - 20
1958157	Silver	0.775	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958158	Copper	1.78	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958512	Nickel	3.00	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958469	Chloride	0.313	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958469	Sulfate	0.746	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958475	Ammonia-N	1.66	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338360

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1957767	Ammonia-N	0.819	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338196

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958477	Kjeldahl Nitrogen	3.96	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958628	Kjeldahl Nitrogen	3.11	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958475	NO2NO3-N	0.897	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338176

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958628	NO2NO3-N	0.202	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958479	NO2NO3-N	3.02	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958478	NO2NO3-N	0.957	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958475	Total-P	1.75	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958481	O-Phosphate-P	2.08	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P338238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958065	Sucralose	2.51	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P338058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958469	Color (true)	2.68	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P338317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958892	Total Alkalinity	0.130	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P338389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958382	TDS	6.80	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P338390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958557	TDS	5.55	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P338548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958382	TSS	8.45	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P338319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958892	Fluoride	0.490	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P338323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958475	Organic Carbon	0.338	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P337928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1957757	2,4-D	2.87	Spike	P	0 - 30
1957757	Acetaminophen	12.4	Spike	P	0 - 30
1957757	Bentazon	6.73	Spike	P	0 - 30
1957757	Carbamazepine	15.8	Spike	P	0 - 30
1957757	Diuron	15.1	Spike	P	0 - 30
1957757	Fenuron	14.7	Spike	P	0 - 30
1957757	Fluridone	16.1	Spike	P	0 - 30
1957757	Imidacloprid	16.6	Spike	P	0 - 30
1957757	Linuron	11.1	Spike	P	0 - 30
1957757	MCP	8.71	Spike	P	0 - 30
1957757	Primidone	13.3	Spike	P	0 - 30
1957757	Triclopyr	3.69	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: 1958504
Field Sample ID: G1WA0034

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	110	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.9	P	30 - 160
EPA 8321B	Diuron-d6	90.2	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	98.9	P	40 - 160
USGS O-2060-01	2,4-D-d3	88.6	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	110	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	97.9	P	30 - 160
USGS O-2060-01	Diuron-d6	90.2	P	30 - 160
USGS O-2060-01	Primidone-d5	102	P	30 - 160
USGS O-2060-01	Sucralose-d6	98.9	P	40 - 160

Lab Sample ID: 1958505
Field Sample ID: G1WA0053

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	135	P	30 - 160
EPA 8321B	Carbamazepine-d10	123	P	30 - 160
EPA 8321B	Diuron-d6	110	P	30 - 160
EPA 8321B	Primidone-d5	127	P	30 - 160
EPA 8321B	Sucralose-d6	99.8	P	40 - 160
USGS O-2060-01	2,4-D-d3	100	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	135	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	123	P	30 - 160
USGS O-2060-01	Diuron-d6	110	P	30 - 160
USGS O-2060-01	Primidone-d5	127	P	30 - 160
USGS O-2060-01	Sucralose-d6	99.8	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1958506
Field Sample ID: G1WA0052

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	128	P	30 - 160
EPA 8321B	Carbamazepine-d10	122	P	30 - 160
EPA 8321B	Diuron-d6	106	P	30 - 160
EPA 8321B	Primidone-d5	123	P	30 - 160
EPA 8321B	Sucralose-d6	110	P	40 - 160
USGS O-2060-01	2,4-D-d3	95.1	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	128	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	122	P	30 - 160
USGS O-2060-01	Diuron-d6	106	P	30 - 160
USGS O-2060-01	Primidone-d5	123	P	30 - 160
USGS O-2060-01	Sucralose-d6	110	P	40 - 160

Lab Sample ID: 1958507
Field Sample ID: G1WA0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	134	P	30 - 160
EPA 8321B	Carbamazepine-d10	98.0	P	30 - 160
EPA 8321B	Diuron-d6	84.4	P	30 - 160
EPA 8321B	Primidone-d5	101	P	30 - 160
EPA 8321B	Sucralose-d6	96.1	P	40 - 160
USGS O-2060-01	2,4-D-d3	66.6	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	134	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	98.0	P	30 - 160
USGS O-2060-01	Diuron-d6	84.4	P	30 - 160
USGS O-2060-01	Primidone-d5	101	P	30 - 160
USGS O-2060-01	Sucralose-d6	96.1	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A81396
Included Lab Sample IDs: 1958469, 1958470, 1958471, 1958472, 1958473, 1958474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	104	P/P	85 - 115
Color (true)	103	103	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A81397
Included Lab Sample IDs: 1958469, 1958470, 1958471, 1958472, 1958473, 1958474

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A81400

Included Lab Sample IDs: 1958469, 1958470, 1958471, 1958472, 1958473, 1958474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A81428

Included Lab Sample IDs: 1958481, 1958482, 1958483, 1958484, 1958485, 1958486

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A81440

Included Lab Sample IDs: 1958475, 1958476, 1958477, 1958479, 1958480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.0	P/P	90 - 110
NO2NO3-N	98.0	99.0	P/P	90 - 110
NO2NO3-N	99.0	98.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A81450

Included Lab Sample IDs: 1958511, 1958512

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.6	99.9	P/P	90 - 110
Cadmium	105	105	P/P	90 - 110
Chromium	103	104	P/P	90 - 110
Copper	97.5	97.1	P/P	90 - 110
Lead	101	101	P/P	90 - 110
Silver	103	104	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A81451

Included Lab Sample IDs: 1958511, 1958512

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	100	P/P	90 - 110
Magnesium	102	101	P/P	90 - 110
Potassium	100	98.6	P/P	90 - 110
Sodium	102	100	P/P	90 - 110
Zinc	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81458

Included Lab Sample IDs: 1958475, 1958476, 1958480

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81466

Included Lab Sample IDs: 1958477, 1958478, 1958479

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81474

Included Lab Sample IDs: 1958475, 1958476, 1958477, 1958478, 1958479

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	106	107	P/P	90 - 110
Ammonia-N	106	106	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A81475

Included Lab Sample IDs: 1958469, 1958470, 1958471, 1958472, 1958473, 1958474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.1	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A81475

Included Lab Sample IDs: 1958469, 1958470, 1958471, 1958472, 1958473, 1958474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	97.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A81480

Included Lab Sample IDs: 1958475, 1958476, 1958477, 1958478, 1958479, 1958480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.4	92.4	P/P	90 - 110
Organic Carbon	94.4	93.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A81482

Included Lab Sample IDs: 1958504, 1958505, 1958506, 1958507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	88.4	87.4	P/P	60 - 150
Sucralose	93.1	88.4	P/P	60 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81494

Included Lab Sample IDs: 1958480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.3	95.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81500

Included Lab Sample IDs: 1958475, 1958476, 1958477, 1958478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A81512

Included Lab Sample IDs: 1958478

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

Reference Method: USGS O-2060-01

Run ID: A81530

Included Lab Sample IDs: 1958504, 1958505, 1958506, 1958507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	101	106	P/P	60 - 150
Acetaminophen	101	101	P/P	60 - 150
Carbamazepine	111	111	P/P	60 - 150
Carbamazepine	111	131	P/P	60 - 150
Diuron	103	107	P/P	60 - 150
Diuron	107	108	P/P	60 - 150
Fenuron	103	108	P/P	60 - 150
Fenuron	105	103	P/P	60 - 150
Imidacloprid	98.7	97.2	P/P	60 - 150
Imidacloprid	99.7	98.7	P/P	60 - 150
Linuron	108	110	P/P	60 - 150
Linuron	110	113	P/P	60 - 150
Primidone	101	99.8	P/P	60 - 150
Primidone	85.9	101	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A81531

Included Lab Sample IDs: 1958504, 1958505, 1958506, 1958507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.2	97.0	P/P	50 - 150
Bentazon	95.5	92.6	P/P	50 - 150
Fluridone	106	107	P/P	60 - 160
MCP	86.6	88.0	P/P	50 - 150
Triclopyr	100	95.4	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81550

Included Lab Sample IDs: 1958479, 1958480

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A81563
Included Lab Sample IDs: 1958511, 1958512

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A81605
Included Lab Sample IDs: 1958511

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	91.0	93.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A81767
Included Lab Sample IDs: 1958511, 1958512

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	99.1	100	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						2.41	
EPA 200.7 Rev. 4.4	Calcium	107	110	110				3.33
	Iron	109	107	109	105			1.56
	Magnesium	109	109	108				2.82
	Potassium	102	99.8	96.9	101			1.48
	Sodium	105	107	107				2.44
	Zinc	102	103	99.9	102			3.11
EPA 200.8 Rev. 5.4	Arsenic	100	103	105	101			2.15
	Cadmium	106	106	108	108			2.02
	Chromium	101	98.3	100	102			2.00
	Copper	96.4	94.2	95.6	94.1			1.42
	Copper	93.1	92.7	91.1	89.9			1.78
	Lead	101	103	105	103			1.47
	Nickel	101	101	104				3.00
	Silver	97.7	96.1	96.8	98.8			0.775
EPA 300.0 Rev. 2.1	Chloride	108	107	107			0.313	
	Sulfate	108	107	105			0.746	
EPA 350.1 Rev. 2.0	Ammonia-N	106	105	102				1.66
	Ammonia-N	94.8	93.4	94.5				0.819
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	107	101				3.96
	Kjeldahl Nitrogen	108	96.1	100				3.11
EPA 353.2 Rev. 2.0	NO2NO3-N	100	101	102				0.897
	NO2NO3-N	100	101					0.202
	NO2NO3-N	102	101	98.0				3.02
	NO2NO3-N	104	105	104				0.957

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
EPA 365.1 Rev. 2.0	Total-P	100	101 99.0			1.75
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.2	98.0 101			2.08
EPA 8321B	Sucralose	86.4	96.1 93.6			2.51
SM 2120 B	Color (true)				2.68	
SM 2320 B-97	Total Alkalinity	101			0.130	
SM 2540 C-97	TDS				6.80	
	TDS				5.55	
SM 2540 D-97	TSS				8.45	
SM 4500 F-C-97	Fluoride	96.0	93.6 92.9			0.490
SM 5310 B-00	Organic Carbon	94.4	94.0 94.4			0.338
USGS O-2060-01	2,4-D	103	96.1 98.9			2.87
	Acetaminophen	85.8	125 141			12.4
	Bentazon	96.7	92.7 99.2			6.73
	Carbamazepine	102	97.9 115			15.8
	Diuron	82.9	84.2 98.0			15.1
	Fenuron	112	73.5 85.2			14.7
	Fluridone	115	80.9 95.1			16.1
	Imidacloprid	102	164 194			16.6
	Linuron	93.5	89.8 100			11.1
	MCP	95.9	78.5 85.6			8.71
	Primidone	95.0	79.2 90.5			13.3
	Triclopyr	95.2	76.9 79.8			3.69

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1958469, 1958470, 1958471, 1958472, 1958473, 1958474
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1958511, 1958512
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1958511, 1958512
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1958469, 1958470, 1958471, 1958472, 1958473, 1958474
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1958469, 1958470, 1958471, 1958472, 1958473, 1958474
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1958475, 1958476, 1958477, 1958478, 1958479, 1958480
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1958475, 1958476, 1958477, 1958478, 1958479, 1958480
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1958475, 1958476, 1958477, 1958478, 1958479, 1958480
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1958475, 1958476, 1958477, 1958478, 1958479, 1958480
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1958481, 1958482, 1958483, 1958484, 1958485, 1958486
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1958504, 1958505, 1958506, 1958507
SM 2120 B / E31780	True Color measured at 450 nm	1958469, 1958470, 1958471, 1958472, 1958473, 1958474
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1958469, 1958470, 1958471, 1958472, 1958473, 1958474
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1958469, 1958470, 1958471, 1958472, 1958473, 1958474
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1958469, 1958470, 1958471, 1958472, 1958473, 1958474

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1958469, 1958470, 1958471, 1958472, 1958473, 1958474
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1958475, 1958476, 1958477, 1958478, 1958479, 1958480
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1958504, 1958505, 1958506, 1958507
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1958504, 1958505, 1958506, 1958507

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	01/10/2018			01/10/2018 17:59	Tanya Welborn	1958469, 1958470, 1958471, 1958472, 1958473, 1958474
EPA 200.7 Rev. 4.4	01/10/2018	01/11/2018	Allison Taylor	01/12/2018	Betina Topolski	1958511, 1958512
	01/10/2018	01/18/2018	Elliott D. Healy	01/19/2018	Betina Topolski	1958511, 1958512
EPA 200.8 Rev. 5.4	01/10/2018	01/11/2018	Allison Taylor	01/12/2018	Nadine Brooks	1958511, 1958512
	01/10/2018	01/18/2018	Elliott D. Healy	01/22/2018	Nadine Brooks	1958511
	01/10/2018	01/30/2018	Allison Taylor	01/31/2018	Robert K Palmer	1958511, 1958512
EPA 300.0 Rev. 2.1	01/10/2018			01/12/2018	Julia Storbeck	1958469, 1958470
	01/10/2018			01/13/2018	Julia Storbeck	1958471, 1958472, 1958473, 1958474
EPA 350.1 Rev. 2.0	01/10/2018			01/16/2018	Sofia Elnemr	1958475, 1958476, 1958477, 1958478, 1958479
	01/10/2018			01/17/2018	Sofia Elnemr	1958480
EPA 351.2 Rev. 2.0	01/10/2018	01/12/2018	Adrian Shelby	01/16/2018	Joseph Suarez	1958475, 1958476, 1958477, 1958478
	01/10/2018	01/17/2018	Adrian Shelby	01/19/2018	Joseph Suarez	1958479, 1958480
EPA 353.2 Rev. 2.0	01/10/2018			01/12/2018	Lauren Bottorf	1958475, 1958476, 1958477, 1958479, 1958480
	01/10/2018			01/18/2018	Beverly Y. Sanders	1958478
EPA 365.1 Rev. 2.0	01/10/2018	01/12/2018	Sima Feizi	01/16/2018	Lipi Saha	1958475, 1958476, 1958477, 1958478, 1958479, 1958480
EPA 365.1 Rev. 2.0 dissolved	01/10/2018			01/11/2018 12:57	Megan Treadwell	1958481
	01/10/2018			01/11/2018 12:59	Megan Treadwell	1958482
	01/10/2018			01/11/2018 13:00	Megan Treadwell	1958483
	01/10/2018			01/11/2018 13:01	Megan Treadwell	1958484
	01/10/2018			01/11/2018 13:02	Megan Treadwell	1958485
	01/10/2018			01/11/2018 13:03	Megan Treadwell	1958486
EPA 8321B	01/10/2018	01/16/2018	Juyoung Kim	01/17/2018	Juyoung Kim	1958504, 1958505, 1958506, 1958507
SM 2120 B	01/10/2018			01/10/2018 17:10	Tanya Welborn	1958469
	01/10/2018			01/10/2018 17:11	Tanya Welborn	1958470
	01/10/2018			01/10/2018 17:12	Tanya Welborn	1958471, 1958472
	01/10/2018			01/10/2018 17:14	Tanya Welborn	1958474
	01/10/2018			01/10/2018 17:24	Tanya Welborn	1958473
SM 2320 B-97	01/10/2018			01/17/2018	Dale L. Simmons	1958469, 1958470, 1958471, 1958472, 1958473, 1958474
SM 2540 C-97	01/10/2018			01/13/2018	Yijie Li	1958469, 1958470, 1958471, 1958472, 1958473, 1958474
SM 2540 D-97	01/10/2018			01/13/2018	Yijie Li	1958469, 1958470, 1958471, 1958472, 1958473, 1958474
SM 4500 F-C-97	01/10/2018			01/17/2018	Dale L. Simmons	1958469, 1958470, 1958471, 1958472, 1958473, 1958474
SM 5310 B-00	01/10/2018			01/16/2018	Megan Treadwell	1958475, 1958476, 1958477, 1958478, 1958479, 1958480
USGS O-2060-01	01/10/2018	01/10/2018	Hoor Shaik	01/12/2018	Julie Michelle Frank	1958504, 1958505, 1958506, 1958507

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
USGS O-2060-01	01/10/2018	01/10/2018	Hoor Shaik	01/17/2018	Julie Michelle Frank	1958504, 1958505, 1958506, 1958507