

Chemical Analysis Report

SE-DIST-2017-06-02-01

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

Event Description: **SMP-Broward Blue**
Request ID: **RQ-2017-05-29-18**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Matthew Sewell

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Certified by: Colin Wright, Program Administrator

Date Certified: 30-JUN-2017 10:36

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: S. New River Canal @ S. Flamingo

Collection Date/Time: 06/01/2017 10:00

Field ID: 28030546

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903190	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P326173	
	EPA 300.0 Rev. 2.1	Chloride	71		mg Cl/L	P326859	
		Sulfate	2.3		mg SO4/L	P326861	
	SM 2120 B	Color (true)	37		PCU	P326234	
	SM 2320 B-97	Total Alkalinity	239		mg CaCO3/L	P326416	
	SM 2540 C-97	TDS	394		mg/L	P326693	
	SM 2540 D-97	TSS	2	I	mg/L	P326664	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P326417	
1903192	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P326187	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P326254	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P326263	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P326259	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P326192	
1903194	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P326177	
1903249	EPA 8321B	Sucralose**	0.078		ug/L	P326155	
	USGS O-2060-01	2,4-D	0.012		ug/L	P326112	
		Diuron	0.0039		ug/L	P326112	
		Fenuron	0.0043	I	ug/L	P326112	MS, RPD
		Imidacloprid	0.020		ug/L	P326112	MS
		Bentazon	0.014		ug/L	P326112	MS
		Linuron	0.0040	U	ug/L	P326112	
		Acetaminophen**	0.0080	U	ug/L	P326112	
		MCP	0.0020	U	ug/L	P326112	
		Carbamazepine**	4.0E-04	U	ug/L	P326112	
		Triclopyr**	0.0040	U	ug/L	P326112	
		Primidone**	0.0040	U	ug/L	P326112	
		Fluridone**	0.17		ug/L	P326112	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

USGS O-2060-01: MS accuracy for fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: S. New River Canal (East)

Collection Date/Time: 06/01/2017 10:35

Field ID: G4SE0047

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903191	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P326173	
	EPA 300.0 Rev. 2.1	Chloride	4.3E+03		mg Cl/L	P326859	
		Sulfate	1.7E+03		mg SO4/L	P326861	
	SM 2120 B	Color (true)	45		PCU	P326234	
	SM 2320 B-97	Total Alkalinity	206		mg CaCO3/L	P326354	
	SM 2540 C-97	TDS	8.36E+03		mg/L	P326697	
	SM 2540 D-97	TSS	3	I	mg/L	P326669	
	SM 4500 F-C-97	Fluoride	0.45		mg F/L	P326357	
1903193	EPA 350.1 Rev. 2.0	Ammonia-N	0.094		mg N/L	P326185	

Field ID: G4SE0047

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903193	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P326316	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.098		mg N/L	P326209	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P326346	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P326317	
1903195	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P326178	
1903250	EPA 8321B	Sucralose**	0.12		ug/L	P326155	
	USGS O-2060-01	2,4-D	0.043		ug/L	P326112	
		Diuron	0.093		ug/L	P326112	
		Fenuron	0.0070	I	ug/L	P326112	MS, RPD
		Imidacloprid	0.025		ug/L	P326112	MS
		Bentazon	0.027		ug/L	P326112	MS
		Linuron	0.0040	U	ug/L	P326112	
		Acetaminophen**	0.0080	U	ug/L	P326112	
		MCP	0.0020	U	ug/L	P326112	
		Carbamazepine**	0.0022		ug/L	P326112	
		Triclopyr**	0.0040	U	ug/L	P326112	
		Primidone**	0.0040	U	ug/L	P326112	
		Fluridone**	0.022		ug/L	P326112	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

USGS O-2060-01: MS accuracy for fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Dania Cutoff Canal @ US 1

Collection Date/Time: 06/01/2017 10:55

Field ID: 28030552

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903199	EPA 180.1 Rev. 2.0	Turbidity	1.4	A	NTU	P326174	
	SM 2320 B-97	Total Alkalinity	149		mg CaCO3/L	P326354	
	SM 2540 D-97	TSS	3	U	mg/L	P326669	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P326357	
1903200	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P326185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P326316	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P326209	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P326346	
	SM 5310 B-00	Organic Carbon	3.1		mg C/L	P326507	
1903201	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P326178	
1903251	EPA 8321B	Sucralose**	0.33		ug/L	P326155	
	USGS O-2060-01	2,4-D	0.0024	I	ug/L	P326112	
		Diuron	0.026		ug/L	P326112	
		Fenuron	0.0040	U	ug/L	P326112	MS, RPD
		Imidacloprid	0.0026	I	ug/L	P326112	MS
		Bentazon	0.0037		ug/L	P326112	MS
		Linuron	0.0040	U	ug/L	P326112	
		Acetaminophen**	0.0080	U	ug/L	P326112	
		MCP	0.0020	U	ug/L	P326112	

Field ID: 28030552

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903251	USGS O-2060-01	Carbamazepine**	0.0034		ug/L	P326112	
		Triclopyr**	0.0040	U	ug/L	P326112	
		Primidone**	0.0040	U	ug/L	P326112	
		Fluridone**	0.0029		ug/L	P326112	
1903254	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P326226	
	EPA 200.8 Rev. 5.4	Arsenic	2.48		ug/L	P326226	
		Cadmium	0.080	U	ug/L	P326226	
		Chromium	1.6	U	ug/L	P326226	
		Copper	5.6		ug/L	P326226	
		Lead	0.35	U	ug/L	P326226	
		Nickel	0.81	I	ug/L	P326226	
		Silver	0.040	U	ug/L	P326226	
		Zinc	32		ug/L	P326226	

Ref. Method and Comment:

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

USGS O-2060-01: MS accuracy for fluridone could not be assessed due to high concentration of parameter in the spiked sample.

EPA 200.8 Rev. 5.4: The copper result was confirmed in the undigested sample on 06/27/2017.

Sample Location: C-10 Canal @ Stirling

Collection Date/Time: 06/01/2017 11:20

Field ID: G4SE0036

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903202	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P326174	
	SM 2320 B-97	Total Alkalinity	177		mg CaCO3/L	P326354	
	SM 2540 D-97	TSS	6	I	mg/L	P326669	
	SM 4500 F-C-97	Fluoride	0.69		mg F/L	P326357	
1903204	EPA 350.1 Rev. 2.0	Ammonia-N	0.062		mg N/L	P326185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P326316	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P326209	
	EPA 365.1 Rev. 2.0	Total-P	0.059		mg P/L	P326346	
	SM 5310 B-00	Organic Carbon	5.3		mg C/L	P326507	
1903206	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P326178	
1903252	EPA 8321B	Sucralose**	1.2	J	ug/L	P326156	MS, RPD
	USGS O-2060-01	2,4-D	0.0091		ug/L	P326112	
		Diuron	0.043		ug/L	P326112	
		Fenuron	0.011	I	ug/L	P326112	MS, RPD
		Imidacloprid	0.0062		ug/L	P326112	MS
		Bentazon	0.0081		ug/L	P326112	MS
		Linuron	0.0040	U	ug/L	P326112	
		Acetaminophen**	0.0080	U	ug/L	P326112	
		MCP	0.0020	U	ug/L	P326112	
		Carbamazepine**	0.010		ug/L	P326112	
		Triclopyr**	0.0040	U	ug/L	P326112	
		Primidone**	0.0077	I	ug/L	P326112	
		Fluridone**	0.0038		ug/L	P326112	

Field ID: G4SE0036

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment:							
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.							
EPA 350.1 Rev. 2.0: The result was confirmed on 06/02/2017.							
EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 06/13/2017.							
EPA 8321B: Refer to the narrative for an explanation of QC Codes.							
USGS O-2060-01: MS accuracy for fluridone could not be assessed due to high concentration of parameter in the spiked sample.							

Sample Location: C-10 Canal @ Stirling Rd

Collection Date/Time: 06/01/2017 11:35

Field ID: G4SE0036_DUPE

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903203	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P326174	
	SM 2320 B-97	Total Alkalinity	173		mg CaCO3/L	P326354	
	SM 2540 D-97	TSS	5	I	mg/L	P326669	
	SM 4500 F-C-97	Fluoride	0.74		mg F/L	P326357	
1903205	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P326185	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P326316	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P326209	
	EPA 365.1 Rev. 2.0	Total-P	0.073		mg P/L	P326346	
	SM 5310 B-00	Organic Carbon	5.2		mg C/L	P326507	
1903207	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.014		mg P/L	P326178	
1903253	EPA 8321B	Sucralose**	0.98		ug/L	P326156	MS, RPD
	USGS O-2060-01	2,4-D	0.0088		ug/L	P326112	
		Diuron	0.040		ug/L	P326112	
		Fenuron	0.0025	T	ug/L	P326112	MS, RPD
		Imidacloprid	0.0058		ug/L	P326112	MS
		Bentazon	0.0082		ug/L	P326112	MS
		Linuron	0.0040	U	ug/L	P326112	
		Acetaminophen**	0.0080	U	ug/L	P326112	
		MCP	0.0020	U	ug/L	P326112	
		Carbamazepine**	0.0095		ug/L	P326112	
		Triclopyr**	0.0040	U	ug/L	P326112	
		Primidone**	0.0077	I	ug/L	P326112	
		Fluridone**	0.0050		ug/L	P326112	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: The result was confirmed on 06/02/2017.
EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 06/13/2017.
USGS O-2060-01: MS accuracy for fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: West Lake Middle North Sheridan

Collection Date/Time: 06/01/2017 11:55

Field ID: G4SE0037

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903196	EPA 180.1 Rev. 2.0	Turbidity	7.4		NTU	P326173	
	SM 2320 B-97	Total Alkalinity	143		mg CaCO3/L	P326354	
	SM 2540 D-97	TSS	19		mg/L	P326669	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P326357	
1903197	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P326185	

Field ID: G4SE0037

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903197	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P326316	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P326209	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P326385	
	SM 5310 B-00	Organic Carbon	3.0		mg C/L	P326317	
1903198	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P326178	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P326173

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P326174

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P326226

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P326226

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L
Zinc	1.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P326859

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P326861

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: P326185

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326187

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326254

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326316

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326209

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326263

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326259

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326346

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326385

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: P326177

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326178

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

Reference Method: EPA 8321B
Batch ID: P326155

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P326156

Component	Result	Code	Units
Sucralose	0.0090	U	ug/L

Reference Method: SM 2120 B
Batch ID: P326234

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P326354

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

Reference Method: SM 2320 B-97
Batch ID: P326416

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

Reference Method: SM 2540 C-97
Batch ID: P326693

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P326697

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P326664

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P326669

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P326357

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P326417

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P326192

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

Reference Method: SM 5310 B-00
Batch ID: P326317

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

Reference Method: SM 5310 B-00
Batch ID: P326507

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

Reference Method: USGS O-2060-01
Batch ID: P326112

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

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P326112

Component	Result	Code	Units
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: P326226

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	99.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326226

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	97.9		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	100		P	85 - 115
Copper	97.5		P	85 - 115
Lead	97.7		P	85 - 115
Nickel	98.5		P	85 - 115
Silver	99.2		P	85 - 115
Zinc	99.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326859

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326861

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326185

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326187

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326254

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: P326316

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326209

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326263

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326259

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326346

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326385

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326177

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326178

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P326155

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	49.0		P	40 - 140

Reference Method: EPA 8321B
Batch ID: P326156

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	128		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P326354

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

Reference Method: SM 2320 B-97
Batch ID: P326416

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

Reference Method: SM 4500 F-C-97
Batch ID: P326357

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P326417

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P326192

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P326317

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.3		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P326507

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P326112

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	101		P	40 - 140
Acetaminophen	97.0		P	40 - 140
Bentazon	76.8		P	40 - 140
Carbamazepine	121		P	40 - 140
Diuron	116		P	40 - 140
Fenuron	112		P	40 - 140
Fluridone	127		P	40 - 140
Imidacloprid	108		P	40 - 160
Linuron	107		P	40 - 140
MCPP	100		P	40 - 140
Primidone	115		P	40 - 140
Triclopyr	101		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P326226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902438	Iron	102	102	P/P	70 - 130
1903254	Iron	97.6		P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P326226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902438	Arsenic	108	109	P/P	70 - 130
1902438	Cadmium	100	101	P/P	70 - 130
1902438	Chromium	90.8	90.9	P/P	70 - 130
1902438	Copper	97.3	98.9	P/P	70 - 130
1902438	Lead	104	105	P/P	70 - 130
1902438	Nickel	104	105	P/P	70 - 130
1902438	Silver	96.3	95.5	P/P	70 - 130
1902438	Zinc	101	102	P/P	70 - 130
1903254	Arsenic	104		P	70 - 130
1903254	Cadmium	92.1		P	70 - 130
1903254	Chromium	84.7		P	70 - 130
1903254	Copper	99.1		P	70 - 130
1903254	Lead	108		P	70 - 130
1903254	Nickel	105		P	70 - 130
1903254	Silver	90.9		P	70 - 130
1903254	Zinc	88.5		P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P326861

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903208	Sulfate	104		P	90 - 110
1903209	Sulfate	101		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902918	Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326187

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903266	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326254

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903085	Kjeldahl Nitrogen	101	93.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903197	Kjeldahl Nitrogen	95.5	95.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903183	NO2NO3-N	105	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903084	NO2NO3-N	107	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903210	Total-P	101	94.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903185	Total-P	94.4	90.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903197	Total-P	94.7	94.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903194	O-Phosphate-P	95.0	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903195	O-Phosphate-P	95.1	96.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P326155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902433	Sucralose	108	93.0	P/P	40 - 140

Reference Method: EPA 8321B
Batch ID: P326156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903252	Sucralose	32.0	87.0	F/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P326357

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902394	Fluoride	97.3	98.8	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P326417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903067	Fluoride	100	99.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P326192

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902870	Organic Carbon	98.1	98.0	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P326317

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902483	Organic Carbon	93.0	93.1	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P326507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903200	Organic Carbon	96.0	94.1	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P326112

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902999	2,4-D	101	100	P/P	40 - 140
1902999	Acetaminophen	117	124	P/P	40 - 140
1902999	Bentazon	37.6	39.4	F/F	40 - 140
1902999	Carbamazepine	100	105	P/P	40 - 140
1902999	Diuron	85.6	96.2	P/P	40 - 140
1902999	Fenuron	182	78.2	F/P	40 - 140
1902999	Imidacloprid	179	205	F/F	40 - 160
1902999	Linuron	104	109	P/P	40 - 140
1902999	MCP	75.4	86.0	P/P	40 - 140
1902999	Primidone	97.2	104	P/P	40 - 140
1902999	Triclopyr	86.2	88.0	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P326173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903080	Turbidity	10.8	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P326174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903199	Turbidity	8.06	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P326226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902438	Iron	0.255	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P326226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902438	Arsenic	0.750	Spike	P	0 - 20
1902438	Cadmium	1.03	Spike	P	0 - 20
1902438	Chromium	0.0954	Spike	P	0 - 20
1902438	Copper	1.51	Spike	P	0 - 20
1902438	Lead	0.787	Spike	P	0 - 20
1902438	Nickel	0.285	Spike	P	0 - 20
1902438	Silver	0.768	Spike	P	0 - 20
1902438	Zinc	1.24	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903208	Chloride	0.636	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903208	Sulfate	0.343	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902918	Ammonia-N	1.13	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326187

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903266	Ammonia-N	0.760	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903085	Kjeldahl Nitrogen	5.30	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903197	Kjeldahl Nitrogen	0.128	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903183	NO2NO3-N	0.957	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903084	NO2NO3-N	2.36	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903210	Total-P	6.44	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903185	Total-P	4.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903197	Total-P	0.181	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903194	O-Phosphate-P	0.630	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903195	O-Phosphate-P	1.48	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P326155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902433	Sucralose	14.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P326156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903252	Sucralose	30.5	Spike	F	0 - 30

Reference Method: SM 2120 B
Batch ID: P326234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903082	Color (true)	1.15	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P326354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902751	Total Alkalinity	0.0219	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P326416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903067	Total Alkalinity	0.320	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P326693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903082	TDS	4.14	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P326697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903795	TDS	1.49	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P326357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902394	Fluoride	0.986	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P326417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903067	Fluoride	0.995	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P326192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902870	Organic Carbon	0.0270	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P326317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902483	Organic Carbon	0.0942	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P326507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903200	Organic Carbon	1.85	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P326112

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902999	2,4-D	0.220	Spike	P	0 - 30
1902999	Acetaminophen	5.80	Spike	P	0 - 30
1902999	Bentazon	2.51	Spike	P	0 - 30
1902999	Carbamazepine	5.26	Spike	P	0 - 30
1902999	Diuron	10.7	Spike	P	0 - 30
1902999	Fenuron	72.9	Spike	F	0 - 30
1902999	Fluridone	4.73	Spike	P	0 - 30
1902999	Imidacloprid	11.0	Spike	P	0 - 30
1902999	Linuron	4.90	Spike	P	0 - 30
1902999	MCP	13.1	Spike	P	0 - 30
1902999	Primidone	6.37	Spike	P	0 - 30
1902999	Triclopyr	2.07	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: 1903249
Field Sample ID: 28030546

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	111	P	40 - 150
USGS O-2060-01	2,4-D-d3	97.9	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	118	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	91.6	P	30 - 160
USGS O-2060-01	Diuron-d6	81.2	P	30 - 160
USGS O-2060-01	Primidone-d5	104	P	30 - 150

Lab Sample ID: 1903250
Field Sample ID: G4SE0047

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	79.6	P	40 - 150
USGS O-2060-01	2,4-D-d3	114	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	123	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	106	P	30 - 160
USGS O-2060-01	Diuron-d6	97.8	P	30 - 160
USGS O-2060-01	Primidone-d5	110	P	30 - 150

Quality Assurance Report Surrogates

Lab Sample ID: 1903251
Field Sample ID: 28030552

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	119	P	40 - 150
USGS O-2060-01	2,4-D-d3	97.3	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	117	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	137	P	30 - 160
USGS O-2060-01	Diuron-d6	122	P	30 - 160
USGS O-2060-01	Primidone-d5	147	P	30 - 150

Lab Sample ID: 1903252
Field Sample ID: G4SE0036

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	129	P	40 - 150
USGS O-2060-01	2,4-D-d3	102	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	98.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	130	P	30 - 160
USGS O-2060-01	Diuron-d6	121	P	30 - 160
USGS O-2060-01	Primidone-d5	147	P	30 - 150

Lab Sample ID: 1903253
Field Sample ID: G4SE0036_DUPE

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	135	P	40 - 150
USGS O-2060-01	2,4-D-d3	105	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	107	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	137	P	30 - 160
USGS O-2060-01	Diuron-d6	126	P	30 - 160
USGS O-2060-01	Primidone-d5	140	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A76836
Included Lab Sample IDs: 1903190, 1903191, 1903196, 1903199, 1903202, 1903203

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105
Turbidity	101	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A76839
Included Lab Sample IDs: 1903194, 1903195, 1903198, 1903201, 1903206, 1903207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	99.5	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76841

Included Lab Sample IDs: 1903192, 1903193, 1903197, 1903200, 1903204, 1903205

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

Reference Method: SM 5310 B-00

Run ID: A76846

Included Lab Sample IDs: 1903192

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.5	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76855

Included Lab Sample IDs: 1903193, 1903197, 1903200, 1903204, 1903205

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

Reference Method: SM 2120 B

Run ID: A76866

Included Lab Sample IDs: 1903190, 1903191

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.1	103	P/P	85 - 115

Reference Method: EPA 8321B

Run ID: A76878

Included Lab Sample IDs: 1903249, 1903250, 1903251, 1903252, 1903253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	78.8	121	P/P	60 - 150
Sucralose	96.8	101	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76880

Included Lab Sample IDs: 1903192

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

Reference Method: SM 5310 B-00

Run ID: A76902

Included Lab Sample IDs: 1903193, 1903197

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.5	96.1	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A76906

Included Lab Sample IDs: 1903254

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A76906

Included Lab Sample IDs: 1903254

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	97.9	98.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A76915

Included Lab Sample IDs: 1903191, 1903196, 1903199, 1903202, 1903203

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76915

Included Lab Sample IDs: 1903191, 1903196, 1903199, 1903202, 1903203

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

Reference Method: SM 2320 B-97

Run ID: A76939

Included Lab Sample IDs: 1903190

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76939

Included Lab Sample IDs: 1903190

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76940

Included Lab Sample IDs: 1903192

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.0	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76950

Included Lab Sample IDs: 1903192

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.5	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A76951

Included Lab Sample IDs: 1903249, 1903250, 1903251, 1903252, 1903253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	114	110	P/P	50 - 150
2,4-D	114	114	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A76951

Included Lab Sample IDs: 1903249, 1903250, 1903251, 1903252, 1903253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	104	95.2	P/P	60 - 150
Acetaminophen	105	104	P/P	60 - 150
Bentazon	116	121	P/P	50 - 150
Bentazon	121	120	P/P	50 - 150
Carbamazepine	115	110	P/P	60 - 150
Carbamazepine	116	115	P/P	60 - 150
Diuron	111	115	P/P	60 - 150
Diuron	114	111	P/P	60 - 150
Fenuron	100	91.2	P/P	60 - 150
Fenuron	106	100	P/P	60 - 150
Fluridone	123	124	P/P	60 - 160
Fluridone	124	127	P/P	60 - 160
Imidacloprid	104	114	P/P	60 - 150
Imidacloprid	106	104	P/P	60 - 150
Linuron	113	114	P/P	60 - 150
Linuron	114	114	P/P	60 - 150
MCPP	102	101	P/P	50 - 150
MCPP	104	102	P/P	50 - 150
Primidone	110	112	P/P	60 - 150
Primidone	112	102	P/P	60 - 150
Triclopyr	105	104	P/P	50 - 150
Triclopyr	109	105	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76955

Included Lab Sample IDs: 1903193, 1903197, 1903200, 1903204, 1903205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76957

Included Lab Sample IDs: 1903193, 1903197, 1903200, 1903204, 1903205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.9	96.7	P/P	90 - 110
Kjeldahl Nitrogen	96.3	95.9	P/P	90 - 110
Kjeldahl Nitrogen	96.7	96.3	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A76978

Included Lab Sample IDs: 1903200, 1903204, 1903205

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77055

Included Lab Sample IDs: 1903254

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77055

Included Lab Sample IDs: 1903254

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	99.5	97.2	P/P	90 - 110
Chromium	99.5	94.3	P/P	90 - 110
Copper	98.4	102	P/P	90 - 110
Nickel	97.6	101	P/P	90 - 110
Silver	98.2	98.3	P/P	90 - 110
Zinc	99.5	99.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77076

Included Lab Sample IDs: 1903190, 1903191

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.5	99.6	P/P	90 - 110
Sulfate	103	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77154

Included Lab Sample IDs: 1903254

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	96.6	99.1	P/P	90 - 110
Lead	96.4	104	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							10.8	
	Turbidity							8.06	
EPA 200.7 Rev. 4.4	Iron	99.0		102	102	97.6			0.255
EPA 200.8 Rev. 5.4	Arsenic	97.9		108	109	104			0.750
	Cadmium	102		100	101	92.1			1.03
	Chromium	100		90.8	90.9	84.7			0.0954
	Copper	97.5		97.3	98.9	99.1			1.51
	Lead	97.7		104	105	108			0.787
	Nickel	98.5		104	105	105			0.285
	Silver	99.2		96.3	95.5	90.9			0.768
	Zinc	99.6		101	102	88.5			1.24
EPA 300.0 Rev. 2.1	Chloride	104						0.636	
	Sulfate	103		104	101			0.343	
EPA 350.1 Rev. 2.0	Ammonia-N	101		103	101				1.13
	Ammonia-N	102		101	102				0.760
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102		101	93.2				5.30
	Kjeldahl Nitrogen	104		95.5	95.6				0.128
EPA 353.2 Rev. 2.0	NO2NO3-N	104		105	104				0.957

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 353.2 Rev. 2.0	NO2NO3-N	102	107	104		2.36
EPA 365.1 Rev. 2.0	Total-P	102	101	94.7		6.44
	Total-P	100	94.4	90.5		4.04
	Total-P	99.6	94.7	94.6		0.181
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.7	95.0	95.6		0.630
	O-Phosphate-P	98.9	95.1	96.6		1.48
EPA 8321B	Sucralose	49.0	108	93.0		14.9
	Sucralose	128	32.0	87.0		30.5
SM 2120 B	Color (true)				1.15	
SM 2320 B-97	Total Alkalinity	103			0.0219	
	Total Alkalinity	103			0.320	
SM 2540 C-97	TDS				4.14	
	TDS				1.49	
SM 4500 F-C-97	Fluoride	96.6	97.3	98.8		0.986
	Fluoride	97.0	100	99.3		0.995
SM 5310 B-00	Organic Carbon	96.2	98.1	98.0		0.0270
	Organic Carbon	95.3	93.0	93.1		0.0942
	Organic Carbon	101	96.0	94.1		1.85
USGS O-2060-01	2,4-D	101	101	100		0.220
	Acetaminophen	97.0	117	124		5.80
	Bentazon	76.8	37.6	39.4		2.51
	Carbamazepine	121	100	105		5.26
	Diuron	116	85.6	96.2		10.7
	Fenuron	112	182	78.2		72.9
	Fluridone	127				4.73
	Imidacloprid	108	179	205		11.0
	Linuron	107	104	109		4.90
	MCPP	100	75.4	86.0		13.1
	Primidone	115	97.2	104		6.37
	Triclopyr	101	86.2	88.0		2.07

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1903190, 1903191, 1903196, 1903199, 1903202, 1903203
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1903254
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1903254
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1903190, 1903191
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1903190, 1903191
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1903192, 1903193, 1903197, 1903200, 1903204, 1903205
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1903192, 1903193, 1903197, 1903200, 1903204, 1903205
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1903192, 1903193, 1903197, 1903200, 1903204, 1903205
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1903192, 1903193, 1903197, 1903200, 1903204, 1903205
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1903194, 1903195, 1903198, 1903201, 1903206, 1903207

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1903249, 1903250, 1903251, 1903252, 1903253
SM 2120 B / E31780	True Color measured at 450 nm	1903190, 1903191
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1903190, 1903191, 1903196, 1903199, 1903202, 1903203
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1903190, 1903191
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1903190, 1903191, 1903196, 1903199, 1903202, 1903203
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1903190, 1903191, 1903196, 1903199, 1903202, 1903203
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1903192, 1903193, 1903197, 1903200, 1903204, 1903205
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1903249, 1903250, 1903251, 1903252, 1903253
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1903249, 1903250, 1903251, 1903252, 1903253

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	06/02/2017			06/02/2017 14:58	Sima Feizi	1903190, 1903191, 1903196, 1903199, 1903202, 1903203
EPA 200.7 Rev. 4.4	06/02/2017	06/05/2017	Elliott D. Healy	06/06/2017	Betina Topolski	1903254
EPA 200.8 Rev. 5.4	06/02/2017	06/05/2017	Elliott D. Healy	06/14/2017	Robert K Palmer	1903254
	06/02/2017	06/05/2017	Elliott D. Healy	06/16/2017	Robert K Palmer	1903254
EPA 300.0 Rev. 2.1	06/02/2017			06/14/2017	Julia Storbeck	1903190, 1903191
EPA 350.1 Rev. 2.0	06/02/2017			06/02/2017	Julie Michelle Frank	1903192, 1903193, 1903197, 1903200, 1903204, 1903205
EPA 351.2 Rev. 2.0	06/02/2017	06/06/2017	Adrian Shelby	06/08/2017	Joseph Suarez	1903192
	06/02/2017	06/07/2017	Adrian Shelby	06/08/2017	Joseph Suarez	1903193, 1903197, 1903200, 1903204, 1903205
EPA 353.2 Rev. 2.0	06/02/2017			06/05/2017	Beverly Y. Sanders	1903193, 1903197, 1903200, 1903204, 1903205
	06/02/2017			06/06/2017	Beverly Y. Sanders	1903192
EPA 365.1 Rev. 2.0	06/02/2017	06/06/2017	Adrian Shelby	06/08/2017	Lipi Saha	1903192
	06/02/2017	06/07/2017	Vijayalakshmi Reddy	06/08/2017	Lipi Saha	1903193, 1903197, 1903200, 1903204, 1903205
EPA 365.1 Rev. 2.0 dissolved	06/02/2017			06/02/2017 14:20	Anthony C. Onicha	1903194
	06/02/2017			06/02/2017 14:24	Anthony C. Onicha	1903195
	06/02/2017			06/02/2017 14:31	Anthony C. Onicha	1903198
	06/02/2017			06/02/2017 14:32	Anthony C. Onicha	1903201
	06/02/2017			06/02/2017 14:33	Anthony C. Onicha	1903206
	06/02/2017			06/02/2017 14:34	Anthony C. Onicha	1903207
EPA 8321B	06/02/2017	06/05/2017	Mohammad Ghaffari	06/06/2017	Mohammad Ghaffari	1903249, 1903250, 1903251, 1903252, 1903253
SM 2120 B	06/02/2017			06/02/2017 15:18	Tanya Welborn	1903190, 1903191
SM 2320 B-97	06/02/2017			06/06/2017	Dale L. Simmons	1903191, 1903196
	06/02/2017			06/07/2017	Dale L. Simmons	1903190, 1903199, 1903202, 1903203
SM 2540 C-97	06/02/2017			06/07/2017	Yijie Li	1903190, 1903191
SM 2540 D-97	06/02/2017			06/07/2017	Yijie Li	1903190, 1903191, 1903196, 1903199, 1903202, 1903203
SM 4500 F-C-97	06/02/2017			06/06/2017	Dale L. Simmons	1903191, 1903196, 1903199, 1903202, 1903203
	06/02/2017			06/07/2017	Dale L. Simmons	1903190
SM 5310 B-00	06/02/2017			06/03/2017	Julie Michelle Frank	1903192
	06/02/2017			06/06/2017	Christopher Armour	1903193, 1903197
	06/02/2017			06/08/2017	Christopher Armour	1903200, 1903204, 1903205
USGS O-2060-01	06/02/2017	06/06/2017	Hoor Shaik	06/08/2017	Mohammad Ghaffari	1903249, 1903250, 1903251, 1903252, 1903253