

Chemical Analysis Report

WQAP-2017-06-28-04

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

Event Description: **Sand, Sally, 8 mile, Chicken, Lafayette**
Request ID: **RQ-2017-06-26-17**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3525
Tallahassee, FL 32399-2400
Attn: Curtis Musson

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Certified by: Colin Wright, Program Administrator

Date Certified: 28-JUL-2017 10:37

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: Sand Pond Middle

Collection Date/Time: 06/28/2017 08:50

Field ID: G1WA0044_06282017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909821	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P327679	
	EPA 300.0 Rev. 2.1	Chloride	1.8		mg Cl/L	P328063	
		Sulfate	0.40	I	mg SO4/L	P328066	
	SM 2120 B	Color (true)	24		PCU	P327707	
	SM 2320 B-97	Total Alkalinity	0.93	I	mg CaCO3/L	P327909	
	SM 2540 C-97	TDS	23	I	mg/L	P328014	
	SM 2540 D-97	TSS	2	I	mg/L	P328284	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P327983	
1909827	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P327788	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P327843	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327853	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P327851	
	SM 5310 B-00	Organic Carbon	6.2		mg C/L	P327943	
1909833	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327646	

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: Sand Pond Middle QC Dup

Collection Date/Time: 06/28/2017 08:50

Field ID: G1WA0044_06282017D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909822	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P327680	
	EPA 300.0 Rev. 2.1	Chloride	1.8		mg Cl/L	P328063	
		Sulfate	0.39	I	mg SO4/L	P328066	
	SM 2120 B	Color (true)	24		PCU	P327707	
	SM 2320 B-97	Total Alkalinity	0.91	I	mg CaCO3/L	P327909	
	SM 2540 C-97	TDS	19	I	mg/L	P328014	
	SM 2540 D-97	TSS	3	I	mg/L	P328284	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P327983	
1909828	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P327788	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P327843	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327853	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P327851	
	SM 5310 B-00	Organic Carbon	5.9		mg C/L	P327943	
1909834	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327646	

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: QC BLANK DI WATER

Collection Date/Time: 06/28/2017 08:25

Field ID: G1WA0044_06282017B

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909823	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P327680	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P328063	
		Sulfate	0.20	U	mg SO4/L	P328066	

Field ID: G1WA0044_06282017B

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909823	SM 2120 B	Color (true)	2.5	U	PCU	P327707	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P327909	
	SM 2540 C-97	TDS	15	U	mg/L	P328009	
	SM 2540 D-97	TSS	2	U	mg/L	P328279	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P327983	
1909829	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P327788	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P327843	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327853	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P327851	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P327943	
1909835	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327646	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 07/13/2017.

Sample Location: QC BLANK DI WATER

Collection Date/Time: 06/28/2017 08:25

Field ID: G1WA0044_06282017B

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909848	EPA 8321B	Sucralose**	0.010	U	ug/L	P327691	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P327607	
		Diuron	8.0E-04	U	ug/L	P327607	
		Fenuron	0.0080	U	ug/L	P327607	
		Imidacloprid	8.0E-04	U	ug/L	P327607	MS
		Bentazon	8.0E-04	U	ug/L	P327607	
		Linuron	0.0040	U	ug/L	P327607	
		Acetaminophen**	0.0080	U	ug/L	P327607	
		MCP	0.0020	U	ug/L	P327607	
		Carbamazepine**	4.0E-04	U	ug/L	P327607	
		Triclopyr**	0.0040	U	ug/L	P327607	
		Primidone**	0.0040	U	ug/L	P327607	
		Fluridone**	4.0E-04	U	ug/L	P327607	

Ref. Method and Comment:

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

Sample Location: Sally Ward Spring at Wakulla Park Dr

Collection Date/Time: 06/28/2017 09:58

Field ID: G1WA0021_06282017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909824	EPA 180.1 Rev. 2.0	Turbidity	0.15		NTU	P327680	
	EPA 300.0 Rev. 2.1	Chloride	7.9	A	mg Cl/L	P328062	
		Sulfate	8.8	A	mg SO4/L	P328065	
	SM 2120 B	Color (true)	2.5	U	PCU	P327707	
	SM 2320 B-97	Total Alkalinity	152		mg CaCO3/L	P327909	
	SM 2540 C-97	TDS	188		mg/L	P328014	
	SM 2540 D-97	TSS	2	I	mg/L	P328284	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P327983	

Field ID: G1WA0021_06282017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909830	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P327788	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P327843	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.58		mg N/L	P327853	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P327851	
	SM 5310 B-00	Organic Carbon	0.57	I	mg C/L	P327943	
1909836	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P327646	

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: 06/28/2017 10:47

Field ID: G1WA0024_06282017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909825	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P327680	
	EPA 300.0 Rev. 2.1	Chloride	2.1		mg Cl/L	P328062	
		Sulfate	1.2		mg SO4/L	P328065	
	SM 2120 B	Color (true)	47	A	PCU	P327707	
	SM 2320 B-97	Total Alkalinity	35		mg CaCO3/L	P327909	
	SM 2540 C-97	TDS	66		mg/L	P328014	
	SM 2540 D-97	TSS	2	I	mg/L	P328284	
	SM 4500 F-C-97	Fluoride	0.071	I	mg F/L	P327983	
1909831	EPA 350.1 Rev. 2.0	Ammonia-N	0.098		mg N/L	P327788	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P327843	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P327853	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P327851	
	SM 5310 B-00	Organic Carbon	6.6		mg C/L	P327943	
1909837	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P327646	

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: Lake Lafayette Drain 250 meters downstream
of Weems Rd

Collection Date/Time: 06/28/2017 12:30

Field ID: G1WA0007_06282017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909826	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P327680	
	EPA 300.0 Rev. 2.1	Chloride	3.4	A	mg Cl/L	P328063	
		Sulfate	20	A	mg SO4/L	P328066	
	SM 2120 B	Color (true)	5.2	I	PCU	P327707	
	SM 2320 B-97	Total Alkalinity	27		mg CaCO3/L	P327909	
	SM 2540 C-97	TDS	85		mg/L	P328014	
	SM 2540 D-97	TSS	2	I	mg/L	P328284	
	SM 4500 F-C-97	Fluoride	0.055	I	mg F/L	P327983	
1909832	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P327788	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P327843	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P327853	

Field ID: G1WA0007_06282017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909832	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P327851	
	SM 5310 B-00	Organic Carbon	2.4		mg C/L	P327943	
1909838	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327646	

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: Lake Lafayette Drain 250 meters downstream of Weems Rd Collection Date/Time: 06/28/2017 12:30

Field ID: G1WA0007_06282017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909850	EPA 200.7 Rev. 4.4	Calcium	12.6		mg/L	P327754	
		Iron	54	I	ug/L	P327754	
		Magnesium	3.52		mg/L	P327754	
		Potassium	0.69	I	mg/L	P327754	
		Sodium	2.2		mg/L	P327754	
		Zinc	5.0	U	ug/L	P327754	
	EPA 200.8 Rev. 5.4	Arsenic	0.41		ug/L	P327754	
		Cadmium	0.020	U	ug/L	P327754	
		Chromium	0.40	U	ug/L	P327754	
		Copper	0.42	I	ug/L	P327754	
		Lead	0.050	U	ug/L	P327754	
		Nickel	0.20	U	ug/L	P327754	
		Silver	0.010	U	ug/L	P327754	

Sample Location: Lake Lafayette Drain 250 meters downstream of Weems Rd Collection Date/Time: 06/28/2017 12:30

Field ID: G1WA0007_06282017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909849	EPA 8321B	Sucralose**	0.010	U	ug/L	P327691	
	USGS O-2060-01	2,4-D	0.064		ug/L	P327607	
		Diuron	0.0062		ug/L	P327607	
		Fenuron	0.0080	U	ug/L	P327607	
		Imidacloprid	0.022		ug/L	P327607	MS
		Bentazon	8.0E-04	U	ug/L	P327607	
		Linuron	0.0040	U	ug/L	P327607	
		Acetaminophen**	0.0080	U	ug/L	P327607	
		MCP	0.0020	U	ug/L	P327607	
		Carbamazepine**	4.0E-04	U	ug/L	P327607	
		Triclopyr**	0.0040	U	ug/L	P327607	
		Primidone**	0.0040	U	ug/L	P327607	
		Fluridone**	0.011		ug/L	P327607	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P327679

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P327680

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P327754

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P327754

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328062

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328063

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328065

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328066

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327788

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327843

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327853

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327851

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327646

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

Reference Method: EPA 8321B
Batch ID: P327691

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P327707

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P327909

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P328009

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P328014

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P328279

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P328284

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P327983

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P327943

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

Reference Method: USGS O-2060-01
Batch ID: P327607

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P327754

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Iron	102		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	99.0		P	85 - 115
Sodium	102		P	85 - 115
Zinc	95.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P327754

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	99.0		P	85 - 115
Cadmium	98.5		P	85 - 115
Chromium	95.9		P	85 - 115
Copper	95.8		P	85 - 115
Lead	95.1		P	85 - 115
Nickel	98.6		P	85 - 115
Silver	96.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328062

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328063

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328065

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328066

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327788

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327843

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327853

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: P327851

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327646

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

Reference Method: EPA 8321B
Batch ID: P327691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	112		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P327909

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

Reference Method: SM 4500 F-C-97
Batch ID: P327983

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

Reference Method: SM 5310 B-00
Batch ID: P327943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P327607

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.1		P	40 - 150
Acetaminophen	71.2		P	30 - 150
Bentazon	88.8		P	40 - 150
Carbamazepine	92.9		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P327607

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	88.3		P	40 - 150
Fenuron	104		P	40 - 150
Fluridone	85.4		P	40 - 150
Imidacloprid	82.2		P	40 - 160
Linuron	70.5		P	40 - 150
MCPP	85.4		P	40 - 150
Primidone	108		P	40 - 150
Triclopyr	75.8		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P327754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909385	Calcium	97.9		P	80 - 120
1909385	Iron	98.8		P	80 - 120
1909385	Magnesium	96.3		P	80 - 120
1909385	Potassium	96.1		P	80 - 120
1909385	Sodium	102		P	80 - 120
1909385	Zinc	93.0		P	80 - 120
1909850	Calcium	97.9		P	80 - 120
1909850	Iron	103	102	P/P	80 - 120
1909850	Magnesium	104	101	P/P	80 - 120
1909850	Potassium	98.1	97.5	P/P	80 - 120
1909850	Sodium	103	99.8	P/P	80 - 120
1909850	Zinc	95.0	92.1	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P327754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909385	Arsenic	101		P	80 - 120
1909385	Cadmium	100		P	80 - 120
1909385	Chromium	97.3		P	80 - 120
1909385	Copper	92.7		P	80 - 120
1909385	Lead	96.5		P	80 - 120
1909385	Nickel	96.2		P	80 - 120
1909385	Silver	96.1		P	80 - 120
1909850	Arsenic	99.7	98.5	P/P	80 - 120
1909850	Cadmium	100	101	P/P	80 - 120
1909850	Chromium	98.0	97.3	P/P	80 - 120
1909850	Copper	93.3	92.7	P/P	80 - 120
1909850	Lead	96.7	96.2	P/P	80 - 120
1909850	Nickel	97.2	96.0	P/P	80 - 120
1909850	Silver	96.4	96.9	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909824	Chloride	96.1		P	90 - 110
1909825	Chloride	95.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328063

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909826	Chloride	96.7		P	90 - 110
1909903	Chloride	97.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909824	Sulfate	96.4		P	90 - 110
1909825	Sulfate	97.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909826	Sulfate	94.2		P	90 - 110
1909903	Sulfate	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909827	Ammonia-N	97.2	94.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327843

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909656	Kjeldahl Nitrogen	94.3	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909828	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327851

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909832	Total-P	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P327646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909661	O-Phosphate-P	95.5	95.0	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P327691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909869	Sucralose	128	130	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P327983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909623	Fluoride	99.9	100	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P327943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909559	Organic Carbon	95.4	97.4	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P327607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909014	2,4-D	95.2	122	P/P	40 - 150
1909014	Acetaminophen	76.7	104	P/P	30 - 150
1909014	Carbamazepine	84.5	103	P/P	40 - 150
1909014	Diuron	66.5	71.7	P/P	40 - 150
1909014	Fenuron	70.3	83.0	P/P	40 - 150
1909014	Fluridone	41.7	61.3	P/P	40 - 150
1909014	Imidacloprid	160	184	F/F	40 - 160
1909014	Linuron	74.1	87.1	P/P	40 - 150
1909014	MCP	108	121	P/P	40 - 150
1909014	Primidone	85.1	98.2	P/P	40 - 150
1909014	Triclopyr	97.5	116	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P327679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909650	Turbidity	3.68	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P327680

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P327680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909883	Turbidity	0.385	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P327754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909850	Calcium	2.13	Spike	P	0 - 20
1909850	Iron	1.76	Spike	P	0 - 20
1909850	Magnesium	1.65	Spike	P	0 - 20
1909850	Potassium	0.503	Spike	P	0 - 20
1909850	Sodium	1.85	Spike	P	0 - 20
1909850	Zinc	3.05	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P327754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909850	Arsenic	1.23	Spike	P	0 - 20
1909850	Cadmium	0.826	Spike	P	0 - 20
1909850	Chromium	0.751	Spike	P	0 - 20
1909850	Copper	0.670	Spike	P	0 - 20
1909850	Lead	0.497	Spike	P	0 - 20
1909850	Nickel	1.19	Spike	P	0 - 20
1909850	Silver	0.461	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909824	Chloride	2.75	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328063

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909826	Chloride	0.931	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909824	Sulfate	1.26	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909826	Sulfate	1.87	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909827	Ammonia-N	2.31	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327843

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909656	Kjeldahl Nitrogen	4.89	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909828	NO2NO3-N	0.482	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909832	Total-P	0.0733	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909661	O-Phosphate-P	0.476	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P327691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909869	Sucralose	1.51	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P327707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909825	Color (true)	0.107	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P327909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909623	Total Alkalinity	0.893	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P328009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909256	TDS	2.65	Sample	P	0 - 10

Reference Method: SM 2540 C-97
 Batch ID: P328014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909625	TDS	3.56	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P327983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909623	Fluoride	0.542	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P327943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909559	Organic Carbon	1.29	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P327607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909014	2,4-D	8.23	Spike	P	0 - 30
1909014	Acetaminophen	30.0	Spike	P	0 - 30
1909014	Bentazon	6.20	Spike	P	0 - 30
1909014	Carbamazepine	17.7	Spike	P	0 - 30
1909014	Diuron	6.33	Spike	P	0 - 30
1909014	Fenuron	16.5	Spike	P	0 - 30
1909014	Fluridone	13.5	Spike	P	0 - 30
1909014	Imidacloprid	11.1	Spike	P	0 - 30
1909014	Linuron	16.1	Spike	P	0 - 30
1909014	MCP	10.2	Spike	P	0 - 30
1909014	Primidone	11.1	Spike	P	0 - 30
1909014	Triclopyr	17.3	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: 1909848

Field Sample ID: G1WA0044_06282017B

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	124	P	40 - 160
USGS O-2060-01	2,4-D-d3	91.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	41.3	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	113	P	30 - 165
USGS O-2060-01	Diuron-d6	112	P	30 - 160
USGS O-2060-01	Primidone-d5	101	P	30 - 150

Lab Sample ID: 1909849

Field Sample ID: G1WA0007_06282017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	116	P	40 - 160
USGS O-2060-01	2,4-D-d3	106	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	109	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	128	P	30 - 165
USGS O-2060-01	Diuron-d6	123	P	30 - 160
USGS O-2060-01	Primidone-d5	117	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77396

Included Lab Sample IDs: 1909833, 1909834, 1909835, 1909836, 1909837, 1909838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	97.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77411

Included Lab Sample IDs: 1909821, 1909822, 1909823, 1909824, 1909825, 1909826

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

Reference Method: SM 2120 B

Run ID: A77420

Included Lab Sample IDs: 1909821, 1909822, 1909823, 1909824, 1909825, 1909826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.5	101	P/P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77454

Included Lab Sample IDs: 1909827, 1909828, 1909829, 1909830, 1909831, 1909832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.4	P/P	90 - 110
Ammonia-N	98.5	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A77476

Included Lab Sample IDs: 1909850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.9	96.2	P/P	90 - 110
Iron	98.4	97.1	P/P	90 - 110
Magnesium	98.0	97.0	P/P	90 - 110
Potassium	97.1	96.7	P/P	90 - 110
Sodium	98.4	97.6	P/P	90 - 110
Zinc	97.2	95.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77492

Included Lab Sample IDs: 1909827, 1909828, 1909829, 1909830, 1909831, 1909832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77508

Included Lab Sample IDs: 1909821, 1909822, 1909823, 1909824, 1909825, 1909826

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

Reference Method: SM 5310 B-00

Run ID: A77524

Included Lab Sample IDs: 1909827, 1909828, 1909829, 1909830, 1909831, 1909832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.4	95.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77532

Included Lab Sample IDs: 1909821, 1909822, 1909823, 1909824, 1909825, 1909826

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77541

Included Lab Sample IDs: 1909831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	104	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77558

Included Lab Sample IDs: 1909821, 1909822, 1909823, 1909824, 1909825, 1909826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.2	P/P	90 - 110
Chloride	106	102	P/P	90 - 110
Chloride	99.2	101	P/P	90 - 110
Sulfate	101	97.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77558

Included Lab Sample IDs: 1909821, 1909822, 1909823, 1909824, 1909825, 1909826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	101	101	P/P	90 - 110
Sulfate	97.3	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77564

Included Lab Sample IDs: 1909850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	100	99.1	P/P	90 - 110
Cadmium	98.7	99.5	P/P	90 - 110
Chromium	98.1	98.5	P/P	90 - 110
Copper	98.9	98.0	P/P	90 - 110
Lead	96.5	97.0	P/P	90 - 110
Nickel	99.1	98.5	P/P	90 - 110
Silver	94.8	95.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77565

Included Lab Sample IDs: 1909827, 1909828, 1909829, 1909830, 1909832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.0	P/P	90 - 110
Total-P	99.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77594

Included Lab Sample IDs: 1909827, 1909828, 1909829, 1909830, 1909831, 1909832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.9	97.6	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A77714

Included Lab Sample IDs: 1909848, 1909849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.8	92.9	P/P	50 - 150
Bentazon	90.8	94.6	P/P	50 - 150
MCP	79.7	83.8	P/P	50 - 150
Triclopyr	86.8	72.2	P/P	50 - 150

Reference Method: USGS O-2060-01

Run ID: A77717

Included Lab Sample IDs: 1909848, 1909849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	93.3	101	P/P	60 - 150
Carbamazepine	98.4	101	P/P	60 - 150
Diuron	90.8	86.3	P/P	60 - 150
Fenuron	111	102	P/P	60 - 150
Fluridone	96.2	111	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A77717

Included Lab Sample IDs: 1909848, 1909849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imidacloprid	106	98.9	P/P	60 - 150
Linuron	89.4	94.7	P/P	60 - 150
Primidone	98.4	94.1	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A77777

Included Lab Sample IDs: 1909848, 1909849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	118	130	P/P	60 - 160
Sucralose	130	106	P/P	60 - 160

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						3.68	
	Turbidity						0.385	
EPA 200.7 Rev. 4.4	Calcium	100	97.9	97.9				2.13
	Iron	102	98.8	103	102			1.76
	Magnesium	103	96.3	104	101			1.65
	Potassium	99.0	96.1	98.1	97.5			0.503
	Sodium	102	102	103	99.8			1.85
	Zinc	95.5	93.0	95.0	92.1			3.05
EPA 200.8 Rev. 5.4	Arsenic	99.0	101	99.7	98.5			1.23
	Cadmium	98.5	100	100	101			0.826
	Chromium	95.9	97.3	98.0	97.3			0.751
	Copper	95.8	92.7	93.3	92.7			0.670
	Lead	95.1	96.5	96.7	96.2			0.497
	Nickel	98.6	96.2	97.2	96.0			1.19
	Silver	96.2	96.1	96.4	96.9			0.461
EPA 300.0 Rev. 2.1	Chloride	99.2	96.1	95.5			2.75	
	Chloride	96.9	96.7	97.4			0.931	
	Sulfate	98.1	96.4	97.0			1.26	
	Sulfate	96.5	94.2	98.0			1.87	
EPA 350.1 Rev. 2.0	Ammonia-N	101	97.2	94.8				2.31
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.7	94.3	100				4.89
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104	104				0.482
EPA 365.1 Rev. 2.0	Total-P	101	99.0	99.0				0.0733
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	95.5	95.0				0.476
EPA 8321B	Sucralose	112	128	130				1.51
SM 2120 B	Color (true)						0.107	
SM 2320 B-97	Total Alkalinity	103					0.893	
SM 2540 C-97	TDS						2.65	
	TDS						3.56	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 4500 F-C-97	Fluoride	98.4	99.9	100		0.542
SM 5310 B-00	Organic Carbon	98.8	95.4	97.4		1.29
USGS O-2060-01	2,4-D	88.1	95.2	122		8.23
	Acetaminophen	71.2	76.7	104		30.0
	Bentazon	88.8				6.20
	Carbamazepine	92.9	84.5	103		17.7
	Diuron	88.3	66.5	71.7		6.33
	Fenuron	104	70.3	83.0		16.5
	Fluridone	85.4	41.7	61.3		13.5
	Imidacloprid	82.2	160	184		11.1
	Linuron	70.5	74.1	87.1		16.1
	MCPP	85.4	108	121		10.2
	Primidone	108	85.1	98.2		11.1
	Triclopyr	75.8	97.5	116		17.3

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1909850
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1909850
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1909827, 1909828, 1909829, 1909830, 1909831, 1909832
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1909827, 1909828, 1909829, 1909830, 1909831, 1909832
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1909827, 1909828, 1909829, 1909830, 1909831, 1909832
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1909827, 1909828, 1909829, 1909830, 1909831, 1909832
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1909833, 1909834, 1909835, 1909836, 1909837, 1909838
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1909848, 1909849
SM 2120 B / E31780	True Color measured at 450 nm	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1909827, 1909828, 1909829, 1909830, 1909831, 1909832
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1909848, 1909849
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1909848, 1909849

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	06/28/2017			06/28/2017 17:52	DeAsia Armster	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
EPA 200.7 Rev. 4.4	06/28/2017	06/29/2017	Elliott D. Healy	06/30/2017	Betina Topolski	1909850
EPA 200.8 Rev. 5.4	06/28/2017	06/29/2017	Elliott D. Healy	07/06/2017	Nadine Brooks	1909850
EPA 300.0 Rev. 2.1	06/28/2017			07/06/2017	Julia Storbeck	1909824, 1909825
	06/28/2017			07/07/2017	Julia Storbeck	1909821, 1909822, 1909823, 1909826
EPA 350.1 Rev. 2.0	06/28/2017			06/29/2017	Sofia Elnemr	1909827, 1909828, 1909829, 1909830, 1909831, 1909832
EPA 351.2 Rev. 2.0	06/28/2017	07/03/2017	Adrian Shelby	07/07/2017	Joseph Suarez	1909827, 1909828, 1909829, 1909830, 1909831, 1909832
EPA 353.2 Rev. 2.0	06/28/2017			07/03/2017	Beverly Y. Sanders	1909827, 1909828, 1909829, 1909830, 1909831, 1909832
EPA 365.1 Rev. 2.0	06/28/2017	07/03/2017	Vijayalakshmi Reddy	07/06/2017	Lipi Saha	1909827, 1909828, 1909829, 1909830, 1909831, 1909832
EPA 365.1 Rev. 2.0 dissolved	06/28/2017			06/28/2017 14:04	Lipi Saha	1909833
	06/28/2017			06/28/2017 14:05	Lipi Saha	1909834, 1909835
	06/28/2017			06/28/2017 14:06	Lipi Saha	1909836
	06/28/2017			06/28/2017 14:07	Lipi Saha	1909837
	06/28/2017			06/28/2017 14:08	Lipi Saha	1909838
EPA 8321B	06/28/2017	07/12/2017	Mohammad Ghaffari	07/13/2017	Mohammad Ghaffari	1909848, 1909849
SM 2120 B	06/28/2017			06/28/2017 18:30	Tanya Welborn	1909821
	06/28/2017			06/28/2017 18:31	Tanya Welborn	1909822
	06/28/2017			06/28/2017 18:32	Tanya Welborn	1909823
	06/28/2017			06/28/2017 18:33	Tanya Welborn	1909824
	06/28/2017			06/28/2017 18:34	Tanya Welborn	1909825
	06/28/2017			06/28/2017 18:35	Tanya Welborn	1909826
SM 2320 B-97	06/28/2017			07/01/2017	Dale L. Simmons	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
SM 2540 C-97	06/28/2017			06/30/2017	Yijie Li	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
SM 2540 D-97	06/28/2017			06/30/2017	Yijie Li	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
SM 4500 F-C-97	06/28/2017			07/05/2017	Dale L. Simmons	1909821, 1909822, 1909823, 1909824, 1909825, 1909826
SM 5310 B-00	06/28/2017			07/03/2017	Sofia Elnemr	1909827, 1909828, 1909829, 1909830, 1909831, 1909832
USGS O-2060-01	06/28/2017	06/29/2017	Hoor Shaik	07/11/2017	Juyoung Kim	1909848, 1909849