

Chemical Analysis Report

NE-DIST-2017-11-01-01

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

Event Description: **Gainesville 2**
Request ID: **RQ-2017-10-30-10**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 01-DEC-2017 14:01



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: Hatchett Crk @ SR 26

Collection Date/Time: 10/31/2017 09:40

Field ID: G1NE0096 10312017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1941739	EPA 180.1 Rev. 2.0	Turbidity	1.9	A	NTU	P334494	
	EPA 300.0 Rev. 2.1	Chloride	8.9	A	mg Cl/L	P334715	
		Sulfate	1.5	A	mg SO4/L	P334717	
	SM 2120 B	Color (true)	380		PCU	P334499	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P335154	
	SM 2540 C-97	TDS	102		mg/L	P334920	
	SM 2540 D-97	TSS	2	U	mg/L	P334785	
	SM 4500 F-C-97	Fluoride	0.080	I	mg F/L	P335157	
1941740	EPA 350.1 Rev. 2.0	Ammonia-N	0.043		mg N/L	P335569	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P334934	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.071		mg N/L	P334733	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P334561	
	SM 5310 B-00	Organic Carbon	28		mg C/L	P335076	
1941741	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P334491	
1941772	EPA 8321B	Sucralose**	0.085		ug/L	P334478	
	USGS O-2060-01	2,4-D	0.0020	UQ	ug/L	P335856	
		Diuron	8.0E-04	U	ug/L	P334335	
		Fenuron	0.0080	U	ug/L	P334335	
		Imidacloprid	9.1E-04	I	ug/L	P334335	
		Bentazon	8.0E-04	UQ	ug/L	P335856	
		Linuron	0.0040	U	ug/L	P334335	
		Acetaminophen**	0.0080	U	ug/L	P334335	
		MCP	0.0020	UQ	ug/L	P335856	
		Carbamazepine**	4.0E-04	U	ug/L	P334335	
		Triclopyr**	0.0040	UQ	ug/L	P335856	MS
		Primidone**	0.0040	U	ug/L	P334335	
		Fluridone**	4.0E-04	U	ug/L	P334335	
	EPA 200.7 Rev. 4.4	Calcium	7.96		mg/L	P334545	
		Iron	860		ug/L	P334545	
		Magnesium	2.61		mg/L	P334545	
		Potassium	0.51	I	mg/L	P334545	
		Sodium	5.2		mg/L	P334545	
		Zinc	5.0	U	ug/L	P334545	
		Arsenic	0.62		ug/L	P334545	
		Cadmium	0.020	U	ug/L	P334545	
		Chromium	0.71	I	ug/L	P334545	
		Copper	0.24	I	ug/L	P335286	
1941783	EPA 200.8 Rev. 5.4	Lead	0.40		ug/L	P335286	
		Nickel	0.52	I	ug/L	P334545	
		Silver	0.010	U	ug/L	P334545	

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

Sample Location: Lake Forest Crk @ University Ave

Collection Date/Time: 10/31/2017 10:05

Field ID: G1NE0098 10272017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1941730	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P334493	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P334715	
		Sulfate	13		mg SO4/L	P334717	
	SM 2120 B	Color (true)	160		PCU	P334499	
	SM 2320 B-97	Total Alkalinity	55		mg CaCO3/L	P335152	
	SM 2540 C-97	TDS	147		mg/L	P334919	
	SM 2540 D-97	TSS	3	I	mg/L	P334785	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P335405	
1941733	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P335182	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P334933	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P334733	
	EPA 365.1 Rev. 2.0	Total-P	0.088		mg P/L	P334560	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P335426	
1941736	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.068		mg P/L	P334491	

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: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Forest Crk @ University Ave

Collection Date/Time: 10/31/2017 10:05

Field ID: G1NE0098 10272017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1941773	EPA 8321B	Sucralose**	0.21		ug/L	P334478	
	USGS O-2060-01	2,4-D	0.0020	UQ	ug/L	P335856	
		Diuron	8.0E-04	U	ug/L	P334335	
		Fenuron	0.0080	U	ug/L	P334335	
		Imidacloprid	0.0020	I	ug/L	P334335	
		Bentazon	8.0E-04	UQ	ug/L	P335856	
		Linuron	0.0040	U	ug/L	P334335	
		Acetaminophen**	0.0080	U	ug/L	P334335	
		MCP	0.0020	UQ	ug/L	P335856	
		Carbamazepine**	4.0E-04	U	ug/L	P334335	
		Triclopyr**	0.0040	UQ	ug/L	P335856	MS
		Primidone**	0.0040	U	ug/L	P334335	
		Fluridone**	4.0E-04	U	ug/L	P334335	

Ref. Method and Comment:

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

Sample Location: Sweetwater Creek above wetland

Collection Date/Time: 10/31/2017 11:15

Field ID: G1NE0001 10312017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1941774	EPA 8321B	Sucralose**	21		ug/L	P334478	
	USGS O-2060-01	2,4-D	0.0042	IQ	ug/L	P335856	
		Diuron	0.016		ug/L	P334335	
		Fenuron	0.0080	U	ug/L	P334335	
		Imidacloprid	0.072		ug/L	P334335	

Field ID: G1NE0001 10312017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1941774	USGS O-2060-01	Bentazon	0.0036	Q	ug/L	P335856	
		Linuron	0.027		ug/L	P334335	
		Acetaminophen**	0.0080	U	ug/L	P334335	
		MCPP	0.0020	UQ	ug/L	P335856	
		Carbamazepine**	0.11		ug/L	P334335	
		Triclopyr**	0.0040	UQ	ug/L	P335856	MS
		Primidone**	0.073		ug/L	P334335	
		Fluridone**	0.0011	I	ug/L	P334335	

Ref. Method and Comment:

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

Sample Location: Bivens Arm Outlet @ SR 331

Collection Date/Time: 10/31/2017 11:25

Field ID: G1NE0208 10312017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1941731	EPA 180.1 Rev. 2.0	Turbidity	0.40		NTU	P334493	
	EPA 300.0 Rev. 2.1	Chloride	6.4		mg Cl/L	P334715	
		Sulfate	2.9		mg SO4/L	P334717	
		Color (true)	43	A	PCU	P334499	
	SM 2320 B-97	Total Alkalinity	96		mg CaCO3/L	P335154	
	SM 2540 C-97	TDS	130		mg/L	P334919	
	SM 2540 D-97	TSS	2	U	mg/L	P334785	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P335157	
	EPA 350.1 Rev. 2.0	Ammonia-N	1.8		mg N/L	P335182	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.3		mg N/L	P334933	
1941734	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P334733	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P334561	
	SM 5310 B-00	Organic Carbon	9.6		mg C/L	P335076	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P334491	

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: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Kanapaha 300m N of 56th

Collection Date/Time: 10/31/2017 11:50

Field ID: G2NE0933 10312017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1941732	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P334493	
	EPA 300.0 Rev. 2.1	Chloride	7.8		mg Cl/L	P334715	
		Sulfate	5.0		mg SO4/L	P334717	
		Color (true)	81		PCU	P334499	
	SM 2320 B-97	Total Alkalinity	136		mg CaCO3/L	P335154	
	SM 2540 C-97	TDS	174	A	mg/L	P334919	
	SM 2540 D-97	TSS	2	UA	mg/L	P334785	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P335157	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.65		mg N/L	P335182	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P334933	

Field ID: G2NE0933 10312017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1941735	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P334733	
	EPA 365.1 Rev. 2.0	Total-P	0.52		mg P/L	P334561	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P335076	
1941738	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.48		mg P/L	P334489	

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: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P334493

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P334494

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P334545

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: P334545

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

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P335286

Component	Result	Code	Units
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334715

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334717

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P335182

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P335569

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334933

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334934

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334733

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334560

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334561

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: P334489

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334491

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

Reference Method: EPA 8321B
Batch ID: P334478

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P334499

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P335152

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

Reference Method: SM 2320 B-97
Batch ID: P335154

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

Reference Method: SM 2540 C-97
Batch ID: P334919

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P334920

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P334785

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P335157

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P335405

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P335076

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

Reference Method: SM 5310 B-00
Batch ID: P335426

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

Reference Method: USGS O-2060-01
Batch ID: P334335

Component	Result	Code	Units
Acetaminophen	0.0080	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0040	U	ug/L

Reference Method: USGS O-2060-01
Batch ID: P335856

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
MCP	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P334545

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	108		P	85 - 115
Iron	106		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P334545

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Magnesium	108		P	85 - 115
Potassium	98.9		P	85 - 115
Sodium	103		P	85 - 115
Zinc	97.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P334545

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	97.1		P	85 - 115
Nickel	98.7		P	85 - 115
Silver	93.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335286

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	98.4		P	85 - 115
Lead	98.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334715

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334717

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	93.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P335182

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P335569

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334933

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334934

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334733

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334560

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334561

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: P334489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334491

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

Reference Method: EPA 8321B
Batch ID: P334478

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	102		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P335152

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P335154

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P335157

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.9		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P335405

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

Reference Method: SM 5310 B-00
Batch ID: P335076

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P335426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.7		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P334335

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	58.7		P	30 - 150
Carbamazepine	98.7		P	40 - 150
Diuron	77.6		P	40 - 150
Fenuron	104		P	40 - 150
Fluridone	99.3		P	40 - 150
Imidacloprid	99.8		P	40 - 160
Linuron	95.5		P	40 - 150
Primidone	95.9		P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P335856

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	105		P	40 - 150
Bentazon	99.6		P	30 - 150
MCP	101		P	40 - 150
Triclopyr	103		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P334545

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941706	Calcium	105	104	P/P	80 - 120
1941706	Iron	102	104	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P334545

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941706	Magnesium	104	105	P/P	80 - 120
1941706	Potassium	96.3	97.4	P/P	80 - 120
1941706	Sodium	102		P	80 - 120
1941706	Zinc	99.5	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P334545

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941706	Arsenic	101	101	P/P	80 - 120
1941706	Cadmium	102	101	P/P	80 - 120
1941706	Chromium	99.6	100	P/P	80 - 120
1941706	Nickel	98.8	99.4	P/P	80 - 120
1941706	Silver	93.7	93.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335286

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1944935	Copper	93.2	92.0	P/P	80 - 120
1944935	Lead	100	95.8	P/P	80 - 120
1945239	Copper	96.1		P	80 - 120
1945239	Lead	95.4		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941739	Chloride	96.0		P	90 - 110
1941940	Chloride	95.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334717

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941739	Sulfate	95.2		P	90 - 110
1941940	Sulfate	95.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P335569

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941740	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334933

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941721	Kjeldahl Nitrogen	99.2	96.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941803	Kjeldahl Nitrogen	94.6	95.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334733

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941718	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941696	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941734	Total-P	98.2	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941804	O-Phosphate-P	97.2	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334491

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941725	O-Phosphate-P	95.4	93.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P334478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941595	Sucralose	104	101	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P335157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941802	Fluoride	97.8	98.4	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P335405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941919	Fluoride	96.9	97.7	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P335076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941734	Organic Carbon	93.7	94.3	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P335426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941679	Organic Carbon	99.3	98.9	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P334335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941115	Acetaminophen	99.7	102	P/P	30 - 150
1941115	Carbamazepine	62.0	61.5	P/P	40 - 150
1941115	Diuron	49.9	48.3	P/P	40 - 150
1941115	Fenuron	68.0	65.9	P/P	40 - 150
1941115	Fluridone	73.9	70.8	P/P	40 - 150
1941115	Imidacloprid	116	116	P/P	40 - 160
1941115	Linuron	66.5	68.8	P/P	40 - 150
1941115	Primidone	82.4	83.8	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P335856

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1941997	2,4-D	54.8	58.8	P/P	40 - 150
1941997	Bentazon	52.2	54.2	P/P	30 - 150
1941997	MCPP	40.8	40.3	P/P	40 - 150
1941997	Triclopyr	41.2	39.2	P/F	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P334493

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941712	Turbidity	0.357	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P334494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941739	Turbidity	1.60	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P334545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941706	Calcium	0.242	Spike	P	0 - 20
1941706	Iron	1.32	Spike	P	0 - 20
1941706	Magnesium	0.502	Spike	P	0 - 20
1941706	Potassium	0.743	Spike	P	0 - 20
1941706	Sodium	1.03	Spike	P	0 - 20
1941706	Zinc	1.29	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P334545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941706	Arsenic	0.456	Spike	P	0 - 20
1941706	Cadmium	0.335	Spike	P	0 - 20
1941706	Chromium	0.374	Spike	P	0 - 20
1941706	Nickel	0.638	Spike	P	0 - 20
1941706	Silver	0.0420	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335286

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1944935	Copper	1.29	Spike	P	0 - 20
1944935	Lead	4.52	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941739	Chloride	0.388	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941739	Sulfate	1.02	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P335182

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941733	Ammonia-N	0.0567	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P335569

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941740	Ammonia-N	0.781	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334933

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941721	Kjeldahl Nitrogen	1.93	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941803	Kjeldahl Nitrogen	0.664	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941718	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941696	Total-P	1.73	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941734	Total-P	0.0665	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941804	O-Phosphate-P	0.455	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941725	O-Phosphate-P	1.72	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P334478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941595	Sucralose	2.93	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P334499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941731	Color (true)	0.710	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P335152

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941919	Total Alkalinity	0.261	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P335154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941802	Total Alkalinity	0.694	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P334919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941732	TDS	0.573	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P334920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941761	TDS	1.82	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P335157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941802	Fluoride	0.484	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P335405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941919	Fluoride	0.513	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P335076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941734	Organic Carbon	0.458	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P335426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941679	Organic Carbon	0.314	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P334335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941115	Acetaminophen	2.40	Spike	P	0 - 30
1941115	Carbamazepine	0.777	Spike	P	0 - 30
1941115	Diuron	3.30	Spike	P	0 - 30
1941115	Fenuron	3.14	Spike	P	0 - 30
1941115	Fluridone	4.28	Spike	P	0 - 30
1941115	Imidacloprid	0.0172	Spike	P	0 - 30
1941115	Linuron	3.34	Spike	P	0 - 30
1941115	Primidone	1.66	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P335856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941997	2,4-D	7.04	Spike	P	0 - 30
1941997	Bentazon	3.75	Spike	P	0 - 30
1941997	MCP	1.10	Spike	P	0 - 30
1941997	Triclopyr	4.86	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: 1941772
Field Sample ID: G1NE0096 10312017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	102	P	30 - 160
EPA 8321B	Carbamazepine-d10	93.2	P	30 - 160
EPA 8321B	Diuron-d6	67.3	P	30 - 160
EPA 8321B	Primidone-d5	99.6	P	30 - 160
EPA 8321B	Sucralose-d6	73.8	P	40 - 160
USGS O-2060-01	2,4-D-d3	86.4	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	102	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1941772
Field Sample ID: G1NE0096 10312017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Carbamazepine-d10	93.2	P	30 - 160
USGS O-2060-01	Diuron-d6	67.3	P	30 - 160
USGS O-2060-01	Primidone-d5	99.6	P	30 - 160
USGS O-2060-01	Sucralose-d6	73.8	P	40 - 160

Lab Sample ID: 1941773
Field Sample ID: G1NE0098 10272017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	58.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.6	P	30 - 160
EPA 8321B	Diuron-d6	66.6	P	30 - 160
EPA 8321B	Primidone-d5	105	P	30 - 160
EPA 8321B	Sucralose-d6	64.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	92.4	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	58.6	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	89.6	P	30 - 160
USGS O-2060-01	Diuron-d6	66.6	P	30 - 160
USGS O-2060-01	Primidone-d5	105	P	30 - 160
USGS O-2060-01	Sucralose-d6	64.0	P	40 - 160

Lab Sample ID: 1941774
Field Sample ID: G1NE0001 10312017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	69.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	79.4	P	30 - 160
EPA 8321B	Diuron-d6	62.9	P	30 - 160
EPA 8321B	Primidone-d5	100	P	30 - 160
EPA 8321B	Sucralose-d6	66.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	62.7	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	69.2	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	79.4	P	30 - 160
USGS O-2060-01	Diuron-d6	62.9	P	30 - 160
USGS O-2060-01	Primidone-d5	100	P	30 - 160
USGS O-2060-01	Sucralose-d6	66.0	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A79966
Included Lab Sample IDs: 1941730, 1941731, 1941732, 1941739

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	85 - 115
Color (true)	101	102	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A79967

Included Lab Sample IDs: 1941736, 1941737, 1941738, 1941741

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	98.8	P/P	90 - 110
O-Phosphate-P	102	101	P/P	90 - 110
O-Phosphate-P	98.7	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A79968

Included Lab Sample IDs: 1941730, 1941731, 1941732, 1941739

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

Reference Method: EPA 8321B

Run ID: A80019

Included Lab Sample IDs: 1941772, 1941773, 1941774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	111	109	P/P	60 - 150
Sucralose	124	111	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80021

Included Lab Sample IDs: 1941733, 1941734, 1941735, 1941740

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A80039

Included Lab Sample IDs: 1941730, 1941731, 1941732, 1941739

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.0	99.6	P/P	90 - 110
Sulfate	99.4	99.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A80044

Included Lab Sample IDs: 1941783

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	102	102	P/P	90 - 110
Cadmium	102	102	P/P	90 - 110
Chromium	100	101	P/P	90 - 110
Silver	94.5	94.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A80045

Included Lab Sample IDs: 1941783

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A80045

Included Lab Sample IDs: 1941783

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	101	101	P/P	90 - 110
Magnesium	101	100	P/P	90 - 110
Potassium	98.4	97.8	P/P	90 - 110
Sodium	99.9	99.9	P/P	90 - 110
Zinc	95.4	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A80058

Included Lab Sample IDs: 1941733, 1941734, 1941735, 1941740

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A80104

Included Lab Sample IDs: 1941783

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

Reference Method: SM 5310 B-00

Run ID: A80188

Included Lab Sample IDs: 1941734, 1941735, 1941740

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	95.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A80221

Included Lab Sample IDs: 1941730, 1941731, 1941732, 1941739

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A80221

Included Lab Sample IDs: 1941731, 1941732, 1941739

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

Reference Method: USGS O-2060-01

Run ID: A80228

Included Lab Sample IDs: 1941772, 1941773, 1941774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	96.2	93.4	P/P	60 - 150
Acetaminophen	97.2	96.2	P/P	60 - 150
Carbamazepine	102	106	P/P	60 - 150
Carbamazepine	105	102	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A80228

Included Lab Sample IDs: 1941772, 1941773, 1941774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Diuron	104	110	P/P	60 - 150
Diuron	110	107	P/P	60 - 150
Fenuron	103	106	P/P	60 - 150
Fenuron	105	103	P/P	60 - 150
Fluridone	102	106	P/P	60 - 160
Fluridone	106	107	P/P	60 - 160
Imidacloprid	93.5	94.9	P/P	60 - 150
Imidacloprid	94.9	97.3	P/P	60 - 150
Linuron	100	105	P/P	60 - 150
Linuron	105	105	P/P	60 - 150
Primidone	108	112	P/P	60 - 150
Primidone	90.8	108	P/P	60 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80229

Included Lab Sample IDs: 1941733, 1941734, 1941735

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80261

Included Lab Sample IDs: 1941733, 1941734, 1941735

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80295

Included Lab Sample IDs: 1941740

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.6	94.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A80300

Included Lab Sample IDs: 1941730

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	99.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A80314

Included Lab Sample IDs: 1941733

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80368

Included Lab Sample IDs: 1941740

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A80408

Included Lab Sample IDs: 1941783

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	96.6	95.9	P/P	90 - 110
Lead	95.7	95.4	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A80527

Included Lab Sample IDs: 1941772, 1941773, 1941774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.8	94.5	P/P	50 - 150
Bentazon	112	113	P/P	50 - 150
MCP	96.1	101	P/P	50 - 150
Triclopyr	101	102	P/P	50 - 150

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.357	
	Turbidity						1.60	
EPA 200.7 Rev. 4.4	Calcium	108		105	104			0.242
	Iron	106		102	104			1.32
	Magnesium	108		104	105			0.502
	Potassium	98.9		96.3	97.4			0.743
	Sodium	103		102				1.03
	Zinc	97.4		99.5	101			1.29
EPA 200.8 Rev. 5.4	Arsenic	101		101	101			0.456
	Cadmium	101		102	101			0.335
	Chromium	97.1		99.6	100			0.374
	Copper	98.4		93.2	92.0	96.1		1.29
	Lead	98.1		100	95.8	95.4		4.52
	Nickel	98.7		98.8	99.4			0.638
	Silver	93.9		93.7	93.8			0.0420
EPA 300.0 Rev. 2.1	Chloride	94.3		96.0	95.1		0.388	
	Sulfate	93.8		95.2	95.0		1.02	
EPA 350.1 Rev. 2.0	Ammonia-N	103						0.0567
	Ammonia-N	99.4		100	102			0.781
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100		99.2	96.9			1.93
	Kjeldahl Nitrogen	102		94.6	95.5			0.664

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 353.2 Rev. 2.0	NO2NO3-N	104	103	103		0.0
EPA 365.1 Rev. 2.0	Total-P	103	103	101		1.73
	Total-P	101	98.2	98.1		0.0665
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.3	97.2	97.9		0.455
	O-Phosphate-P	102	95.4	93.7		1.72
EPA 8321B	Sucralose	102	104	101		2.93
SM 2120 B	Color (true)				0.710	
SM 2320 B-97	Total Alkalinity	102			0.261	
	Total Alkalinity	103			0.694	
SM 2540 C-97	TDS				0.573	
	TDS				1.82	
SM 4500 F-C-97	Fluoride	94.9	97.8	98.4		0.484
	Fluoride	97.0	96.9	97.7		0.513
SM 5310 B-00	Organic Carbon	97.0	93.7	94.3		0.458
	Organic Carbon	99.7	99.3	98.9		0.314
USGS O-2060-01	2,4-D	105	54.8	58.8		7.04
	Acetaminophen	58.7	99.7	102		2.40
	Bentazon	99.6	52.2	54.2		3.75
	Carbamazepine	98.7	62.0	61.5		0.777
	Diuron	77.6	49.9	48.3		3.30
	Fenuron	104	68.0	65.9		3.14
	Fluridone	99.3	73.9	70.8		4.28
	Imidacloprid	99.8	116	116		0.0172
	Linuron	95.5	66.5	68.8		3.34
	MCPP	101	40.8	40.3		1.10
	Primidone	95.9	82.4	83.8		1.66
	Triclopyr	103	41.2	39.2		4.86

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1941730, 1941731, 1941732, 1941739
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1941783
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1941783
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1941730, 1941731, 1941732, 1941739
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1941730, 1941731, 1941732, 1941739
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1941733, 1941734, 1941735, 1941740
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1941733, 1941734, 1941735, 1941740
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1941733, 1941734, 1941735, 1941740
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1941733, 1941734, 1941735, 1941740
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1941736, 1941737, 1941738, 1941741
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1941772, 1941773, 1941774
SM 2120 B / E31780	True Color measured at 450 nm	1941730, 1941731, 1941732, 1941739
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1941730, 1941731, 1941732, 1941739
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1941730, 1941731, 1941732, 1941739

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1941730, 1941731, 1941732, 1941739
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1941730, 1941731, 1941732, 1941739
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1941733, 1941734, 1941735, 1941740
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1941772, 1941773, 1941774
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1941772, 1941773, 1941774

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	11/01/2017			11/01/2017 16:13	DeAsia Armster	1941730, 1941731, 1941732, 1941739
EPA 200.7 Rev. 4.4	11/01/2017	11/02/2017	Elliott D. Healy	11/03/2017	Betina Topolski	1941783
EPA 200.8 Rev. 5.4	11/01/2017	11/02/2017	Elliott D. Healy	11/05/2017	Robert K Palmer	1941783
	11/01/2017	11/02/2017	Elliott D. Healy	11/07/2017	Robert K Palmer	1941783
	11/01/2017	11/14/2017	Elliott D. Healy	11/20/2017	Robert K Palmer	1941783
EPA 300.0 Rev. 2.1	11/01/2017			11/03/2017	Irina Carbone	1941730, 1941731, 1941732, 1941739
EPA 350.1 Rev. 2.0	11/01/2017			11/13/2017	Sofia Elnemr	1941733, 1941734, 1941735
	11/01/2017			11/17/2017	Sofia Elnemr	1941740
EPA 351.2 Rev. 2.0	11/01/2017	11/08/2017	Adrian Shelby	11/14/2017	Tanya Welborn	1941733, 1941734, 1941735
	11/01/2017	11/08/2017	Adrian Shelby	11/15/2017	Tanya Welborn	1941740
EPA 353.2 Rev. 2.0	11/01/2017			11/06/2017	Beverly Y. Sanders	1941733, 1941734, 1941735, 1941740
EPA 365.1 Rev. 2.0	11/01/2017	11/02/2017	Sima Feizi	11/03/2017	Lipi Saha	1941733, 1941734, 1941735, 1941740
EPA 365.1 Rev. 2.0 dissolved	11/01/2017			11/01/2017 15:31	Megan Treadwell	1941736
	11/01/2017			11/01/2017 15:36	Megan Treadwell	1941737
	11/01/2017			11/01/2017 15:37	Megan Treadwell	1941741
	11/01/2017			11/01/2017 15:48	Megan Treadwell	1941738
EPA 8321B	11/01/2017	11/02/2017	Juyoung Kim	11/02/2017	Juyoung Kim	1941772, 1941773, 1941774
SM 2120 B	11/01/2017			11/01/2017 15:29	Tanya Welborn	1941731
	11/01/2017			11/01/2017 15:30	Tanya Welborn	1941732
	11/01/2017			11/01/2017 15:52	Tanya Welborn	1941730, 1941739
SM 2320 B-97	11/01/2017			11/08/2017	Dale L. Simmons	1941730
	11/01/2017			11/09/2017	Dale L. Simmons	1941731, 1941732, 1941739
SM 2540 C-97	11/01/2017			11/03/2017	DeAsia Armster	1941730, 1941731, 1941732, 1941739
SM 2540 D-97	11/01/2017			11/03/2017	DeAsia Armster	1941730, 1941731, 1941732, 1941739
SM 4500 F-C-97	11/01/2017			11/09/2017	Dale L. Simmons	1941731, 1941732, 1941739
	11/01/2017			11/16/2017	Dale L. Simmons	1941730
SM 5310 B-00	11/01/2017			11/09/2017	Ping Hua	1941734, 1941735, 1941740
	11/01/2017			11/15/2017	Ping Hua	1941733
USGS O-2060-01	11/01/2017	11/06/2017	Hoor Shaik	11/09/2017	S. M. Reddy	1941772
	11/01/2017	11/06/2017	Hoor Shaik	11/10/2017	S. M. Reddy	1941773, 1941774
	11/01/2017	11/27/2017	Hoor Shaik	11/28/2017	Julie Michelle Frank	1941772, 1941773, 1941774