

Chemical Analysis Report

WQAP-2017-11-21-01

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

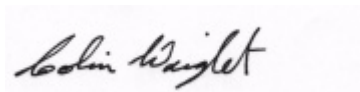
Event Description: **Peace River Streams**
Request ID: **RQ-2017-11-20-04**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2295 Victoria Ave.
Suite 364
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Attn: Ben Paswater

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Certified by: Colin Wright, Program Administrator

Date Certified: 11-DEC-2017 11:19

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

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Myrtle Slough @ SR31

Collection Date/Time: 11/20/2017 09:30

Field ID: G3SD112017-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947829	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P335793	
	EPA 300.0 Rev. 2.1	Chloride	120		mg Cl/L	P336017	
		Sulfate	74		mg SO4/L	P336019	
	SM 2120 B	Color (true)	68		PCU	P335736	
	SM 2320 B-97	Total Alkalinity	199		mg CaCO3/L	P336241	
	SM 2540 C-97	TDS	570	A	mg/L	P335827	
	SM 2540 D-97	TSS	7	IA	mg/L	P335960	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P336330	
1947832	EPA 350.1 Rev. 2.0	Ammonia-N	0.33		mg N/L	P336256	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P336177	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P336037	
	EPA 365.1 Rev. 2.0	Total-P	0.071		mg P/L	P336062	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P336195	
1947835	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P335743	
1947877	EPA 200.7 Rev. 4.4	Calcium	110		mg/L	P335972	
		Iron	730		ug/L	P335972	
		Magnesium	12.0		mg/L	P335972	
		Potassium	10.2		mg/L	P335972	
		Sodium	60.5		mg/L	P335972	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P335972	
		Arsenic	1.05		ug/L	P335972	
		Cadmium	0.020	U	ug/L	P335972	
		Chromium	0.65	I	ug/L	P335972	
		Copper	0.96		ug/L	P335972	
		Lead	0.16	I	ug/L	P335972	
		Nickel	1.47		ug/L	P335972	
		Silver	0.010	U	ug/L	P335972	

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

Sample Location: Myrtle 1995 @ Pine Island St.

Collection Date/Time: 11/20/2017 10:00

Field ID: G3SD112017-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947830	EPA 180.1 Rev. 2.0	Turbidity	8.4	A	NTU	P335794	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P336017	
		Sulfate	12		mg SO4/L	P336019	
	SM 2120 B	Color (true)	220		PCU	P335738	
	SM 2320 B-97	Total Alkalinity	148		mg CaCO3/L	P336241	
	SM 2540 C-97	TDS	263		mg/L	P336345	
	SM 2540 D-97	TSS	5	I	mg/L	P336295	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P336330	
1947833	EPA 350.1 Rev. 2.0	Ammonia-N	0.23		mg N/L	P336336	

Field ID: G3SD112017-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947833	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P336178	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.080		mg N/L	P336038	
	EPA 365.1 Rev. 2.0	Total-P	0.065		mg P/L	P336062	
	SM 5310 B-00	Organic Carbon	25		mg C/L	P336195	
1947836	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P335743	
1947878	EPA 200.7 Rev. 4.4	Calcium	59.7		mg/L	P335972	
		Iron	2.06E+03		ug/L	P335972	
		Magnesium	6.58		mg/L	P335972	
		Potassium	3.9		mg/L	P335972	
		Sodium	18.3		mg/L	P335972	
		Zinc	5.0	U	ug/L	P335972	
	EPA 200.8 Rev. 5.4	Arsenic	1.28		ug/L	P335972	
		Cadmium	0.020	U	ug/L	P335972	
		Chromium	0.53	I	ug/L	P335972	
		Copper	0.20	U	ug/L	P335972	
		Lead	0.20	I	ug/L	P335972	
		Nickel	0.27	I	ug/L	P335972	
		Silver	0.010	U	ug/L	P335972	

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

Sample Location: Myrtle 1995 @ Pine Island St.

Collection Date/Time: 11/20/2017 10:00

Field ID: G3SD112017-2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947873	EPA 8321B	Sucralose**	0.010	U	ug/L	P335805	
	USGS O-2060-01	2,4-D	0.0020	UQ	ug/L	P336263	
		Diuron	0.0044		ug/L	P335693	
		Fenuron	0.0080	U	ug/L	P335693	
		Imidacloprid	0.0068		ug/L	P335693	MS
		Bentazon	8.0E-04	UQ	ug/L	P336263	
		Linuron	0.0040	U	ug/L	P335693	
		Acetaminophen**	0.0080	U	ug/L	P335693	
		MCP	0.0020	UQ	ug/L	P336263	
		Carbamazepine**	4.0E-04	U	ug/L	P335693	
		Triclopyr**	0.0040	UQ	ug/L	P336263	
		Primidone**	0.0040	U	ug/L	P335693	
		Fluridone**	4.0E-04	U	ug/L	P335693	

Ref. Method and Comment:

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

Sample Location: Hog Bay @ CR 763

Collection Date/Time: 11/20/2017 10:40

Field ID: G3SD112017-3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947823	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P335793	

Field ID: G3SD112017-3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947823	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P336017	
		Sulfate	120		mg SO4/L	P336019	
	SM 2120 B	Color (true)	71		PCU	P335736	
	SM 2320 B-97	Total Alkalinity	130		mg CaCO3/L	P336241	
	SM 2540 C-97	TDS	554		mg/L	P335827	
	SM 2540 D-97	TSS	3	I	mg/L	P335960	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P336330	
1947825	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P336256	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P336177	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.2		mg N/L	P336037	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P336062	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P336195	
1947827	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.072		mg P/L	P335743	

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

Sample Location: Shell Cr. @ SR 31

Collection Date/Time: 11/20/2017 09:00

Field ID: G3SD112017-4

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947831	EPA 180.1 Rev. 2.0	Turbidity	23		NTU	P335794	
	EPA 300.0 Rev. 2.1	Chloride	200		mg Cl/L	P336017	
		Sulfate	80		mg SO4/L	P336019	
	SM 2120 B	Color (true)	66	A	PCU	P335741	
	SM 2320 B-97	Total Alkalinity	215		mg CaCO3/L	P336241	
	SM 2540 C-97	TDS	758	A	mg/L	P336345	
	SM 2540 D-97	TSS	20	A	mg/L	P336295	
1947834	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P336330	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.18		mg N/L	P336336	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P336178	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P336038	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P336062	
1947837	SM 5310 B-00	Organic Carbon	19		mg C/L	P336195	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P335743	
1947879	EPA 200.7 Rev. 4.4	Calcium	119		mg/L	P335972	
		Iron	2.02E+03		ug/L	P335972	
		Magnesium	18.0		mg/L	P335972	
		Potassium	7.5		mg/L	P335972	
		Sodium	96.1		mg/L	P335972	
		Zinc	5.0	U	ug/L	P335972	
	EPA 200.8 Rev. 5.4	Arsenic	1.11		ug/L	P335972	
		Cadmium	0.020	U	ug/L	P335972	
		Chromium	1.6	I	ug/L	P335972	
		Copper	2.34		ug/L	P335972	

Field ID: G3SD112017-4

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947879	EPA 200.8 Rev. 5.4	Lead	0.51		ug/L	P335972	
		Nickel	1.10		ug/L	P335972	
		Silver	0.010	U	ug/L	P335972	

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

Sample Location: Bobcat Creek in Preserve East

Collection Date/Time: 11/20/2017 12:30

Field ID: G3SD112017-5

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947824	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P335793	
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P336017	
		Sulfate	17		mg SO4/L	P336019	
	SM 2120 B	Color (true)	130		PCU	P335736	
	SM 2320 B-97	Total Alkalinity	112		mg CaCO3/L	P336241	
	SM 2540 C-97	TDS	241		mg/L	P335827	
	SM 2540 D-97	TSS	3	I	mg/L	P335960	
	SM 4500 F-C-97	Fluoride	0.52		mg F/L	P336330	
1947826	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P336256	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P336177	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P336037	
	EPA 365.1 Rev. 2.0	Total-P	1.1		mg P/L	P336062	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P336195	
1947828	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.80		mg P/L	P335743	

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

Sample Location: Hawthorne Creek @ Reynolds St.

Collection Date/Time: 11/20/2017 11:10

Field ID: G3SD112017-6

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947874	EPA 8321B	Sucralose**	0.29		ug/L	P335805	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P335693	MS
		Diuron	1.8		ug/L	P335693	
		Fenuron	0.070		ug/L	P335693	
		Imidacloprid	0.67		ug/L	P335693	MS
		Bentazon	8.0E-04	U	ug/L	P335693	
		Linuron	0.0040	U	ug/L	P335693	
		Acetaminophen**	0.0080	U	ug/L	P335693	
		MCP	0.0020	U	ug/L	P335693	MS
		Carbamazepine**	0.0020		ug/L	P335693	
		Triclopyr**	0.0040	U	ug/L	P335693	MS
		Primidone**	0.0040	U	ug/L	P335693	
		Fluridone**	4.0E-04	U	ug/L	P335693	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P335793

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P335794

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P335972

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: P335972

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: P336017

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336019

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336256

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336336

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336177

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336178

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336037

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336038

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P336062

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335743

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

Reference Method: EPA 8321B
Batch ID: P335805

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P335736

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P335738

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P335741

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P336241

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P335827

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P336345

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P335960

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P336295

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P336330

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P336195

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

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P335693

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

Reference Method: USGS O-2060-01
Batch ID: P336263

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: P335972

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	101		P	85 - 115
Magnesium	110		P	85 - 115
Potassium	105		P	85 - 115
Sodium	102		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335972

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	103		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	96.1		P	85 - 115
Copper	99.6		P	85 - 115
Lead	100		P	85 - 115
Nickel	101		P	85 - 115
Silver	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336019

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336256

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336336

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336177

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336178

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336037

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: P336038

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: P336062

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335743

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.5		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P335805

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	73.8		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P336241

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

Reference Method: SM 4500 F-C-97
Batch ID: P336330

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P336195

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

Reference Method: USGS O-2060-01
Batch ID: P335693

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	59.2		P	40 - 150
Acetaminophen	105		P	30 - 150
Bentazon	35.8		P	30 - 150
Carbamazepine	100		P	40 - 150
Diuron	114		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	101		P	40 - 150
Imidacloprid	90.7		P	40 - 160
Linuron	102		P	40 - 150
MCPP	48.5		P	40 - 150
Primidone	88.9		P	40 - 150
Triclopyr	48.9		P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P336263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	40 - 150
Bentazon	83.2		P	30 - 150
MCPP	111		P	40 - 150
Triclopyr	107		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P335972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947938	Calcium	102		P	80 - 120
1947938	Iron	104		P	80 - 120
1947938	Magnesium	103		P	80 - 120
1947938	Potassium	108		P	80 - 120
1947938	Sodium	103		P	80 - 120
1947938	Zinc	102		P	80 - 120
1948255	Calcium	101		P	80 - 120
1948255	Iron	99.2		P	80 - 120
1948255	Magnesium	109	105	P/P	80 - 120
1948255	Potassium	112	109	P/P	80 - 120
1948255	Sodium	104		P	80 - 120
1948255	Zinc	99.2	97.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947938	Arsenic	107		P	80 - 120
1947938	Cadmium	104		P	80 - 120
1947938	Chromium	94.9		P	80 - 120
1947938	Copper	99.9		P	80 - 120
1947938	Lead	103		P	80 - 120
1947938	Nickel	101		P	80 - 120
1947938	Silver	103		P	80 - 120
1948255	Arsenic	104	103	P/P	80 - 120
1948255	Cadmium	102	101	P/P	80 - 120
1948255	Chromium	95.5	96.1	P/P	80 - 120
1948255	Copper	99.4	99.6	P/P	80 - 120
1948255	Lead	99.7	99.5	P/P	80 - 120
1948255	Nickel	102	102	P/P	80 - 120
1948255	Silver	103	103	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947761	Chloride	93.4		P	90 - 110
1947809	Chloride	96.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947761	Sulfate	93.0		P	90 - 110
1947809	Sulfate	96.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336256

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947814	Ammonia-N	102	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947891	Ammonia-N	98.1	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947813	Kjeldahl Nitrogen	88.2	90.8	F/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947905	Kjeldahl Nitrogen	97.0	93.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947813	NO2NO3-N	104	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947833	NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335743

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947740	O-Phosphate-P	91.4	90.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P335805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947930	Sucralose	107	115	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P336330

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947907	Fluoride	95.2	95.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P336195

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947826	Organic Carbon	96.6	100	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P335693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947629	2,4-D	24.7	29.6	F/F	40 - 150
1947629	Acetaminophen	99.0	107	P/P	30 - 150
1947629	Bentazon	34.8	35.8	P/P	30 - 150
1947629	Carbamazepine	71.7	72.7	P/P	40 - 150
1947629	Diuron	75.2	76.1	P/P	40 - 150
1947629	Fenuron	72.1	69.1	P/P	40 - 150
1947629	Fluridone	87.6	89.9	P/P	40 - 150
1947629	Imidacloprid	178	182	F/F	40 - 160
1947629	Linuron	89.7	89.4	P/P	40 - 150
1947629	MCP	22.2	22.5	F/F	40 - 150
1947629	Primidone	80.4	82.4	P/P	40 - 150
1947629	Triclopyr	23.3	22.3	F/F	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P336263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947129	2,4-D	75.9	83.8	P/P	40 - 150
1947129	Bentazon	49.7	57.0	P/P	30 - 150
1947129	MCP	64.8	68.5	P/P	40 - 150
1947129	Triclopyr	54.0	68.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P335793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947762	Turbidity	3.78	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P335794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947830	Turbidity	1.67	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P335972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948255	Calcium	0.735	Spike	P	0 - 20
1948255	Iron	2.23	Spike	P	0 - 20
1948255	Magnesium	2.16	Spike	P	0 - 20
1948255	Potassium	2.09	Spike	P	0 - 20
1948255	Sodium	0.565	Spike	P	0 - 20
1948255	Zinc	1.29	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948255	Arsenic	0.299	Spike	P	0 - 20
1948255	Cadmium	1.37	Spike	P	0 - 20
1948255	Chromium	0.640	Spike	P	0 - 20
1948255	Copper	0.102	Spike	P	0 - 20
1948255	Lead	0.223	Spike	P	0 - 20
1948255	Nickel	0.434	Spike	P	0 - 20
1948255	Silver	0.821	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947761	Chloride	0.343	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P336019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947761	Sulfate	0.224	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336256

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947814	Ammonia-N	1.59	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947891	Ammonia-N	3.03	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947813	Kjeldahl Nitrogen	2.16	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P336178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947905	Kjeldahl Nitrogen	1.92	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947813	NO2NO3-N	0.358	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947833	NO2NO3-N	0.707	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P336062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947826	Total-P	1.11	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335743

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947740	O-Phosphate-P	0.518	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P335805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947930	Sucralose	6.99	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P335736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947808	Color (true)	5.95	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P335738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947889	Color (true)	5.94	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P335741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947831	Color (true)	1.75	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P336241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947907	Total Alkalinity	0.147	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P335827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947829	TDS	2.46	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P336345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947831	TDS	3.96	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P336330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947907	Fluoride	0.477	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P336195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947826	Organic Carbon	2.09	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P335693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947629	2,4-D	18.1	Spike	P	0 - 30
1947629	Acetaminophen	7.80	Spike	P	0 - 30
1947629	Bentazon	2.79	Spike	P	0 - 30
1947629	Carbamazepine	1.45	Spike	P	0 - 30
1947629	Diuron	1.20	Spike	P	0 - 30
1947629	Fenuron	4.24	Spike	P	0 - 30
1947629	Fluridone	2.62	Spike	P	0 - 30
1947629	Imidacloprid	1.82	Spike	P	0 - 30
1947629	Linuron	0.279	Spike	P	0 - 30
1947629	MCP	1.61	Spike	P	0 - 30
1947629	Primidone	2.47	Spike	P	0 - 30
1947629	Triclopyr	4.52	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P336263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947129	2,4-D	9.89	Spike	P	0 - 30
1947129	Bentazon	13.7	Spike	P	0 - 30
1947129	MCP	5.52	Spike	P	0 - 30
1947129	Triclopyr	24.0	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: 1947873
Field Sample ID: G3SD112017-2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	97.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	65.2	P	30 - 160
EPA 8321B	Diuron-d6	51.0	P	30 - 160
EPA 8321B	Primidone-d5	70.3	P	30 - 160
EPA 8321B	Sucralose-d6	127	P	40 - 160
USGS O-2060-01	2,4-D-d3	56.4	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	97.4	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	65.2	P	30 - 160
USGS O-2060-01	Diuron-d6	51.0	P	30 - 160
USGS O-2060-01	Primidone-d5	70.3	P	30 - 160
USGS O-2060-01	Sucralose-d6	127	P	40 - 160

Lab Sample ID: 1947874
Field Sample ID: G3SD112017-6

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	102	P	30 - 160
EPA 8321B	Carbamazepine-d10	79.0	P	30 - 160
EPA 8321B	Diuron-d6	62.4	P	30 - 160
EPA 8321B	Primidone-d5	83.2	P	30 - 160
EPA 8321B	Sucralose-d6	146	P	40 - 160
USGS O-2060-01	2,4-D-d3	32.7	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	102	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	79.0	P	30 - 160
USGS O-2060-01	Diuron-d6	62.4	P	30 - 160
USGS O-2060-01	Primidone-d5	83.2	P	30 - 160
USGS O-2060-01	Sucralose-d6	146	P	40 - 160

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A80442

Included Lab Sample IDs: 1947823, 1947824, 1947829, 1947830, 1947831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	99.2	P/P	85 - 115
Color (true)	102	101	P/P	85 - 115
Color (true)	103	102	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A80443

Included Lab Sample IDs: 1947827, 1947828, 1947836, 1947837

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.3	98.4	P/P	90 - 110
O-Phosphate-P	96.9	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A80444

Included Lab Sample IDs: 1947835

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	94.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A80463

Included Lab Sample IDs: 1947823, 1947824, 1947829, 1947830, 1947831

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

Reference Method: USGS O-2060-01

Run ID: A80505

Included Lab Sample IDs: 1947874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	83.5	83.6	P/P	50 - 150
Acetaminophen	111	111	P/P	60 - 150
Acetaminophen	111	111	P/P	60 - 150
Bentazon	87.5	88.8	P/P	50 - 150
Carbamazepine	105	108	P/P	60 - 150
Carbamazepine	108	106	P/P	60 - 150
Diuron	113	114	P/P	60 - 150
Diuron	114	116	P/P	60 - 150
Fenuron	106	109	P/P	60 - 150
Fenuron	107	106	P/P	60 - 150
Fluridone	112	114	P/P	60 - 160
Fluridone	114	113	P/P	60 - 160
Imidacloprid	96.5	99.0	P/P	60 - 150
Imidacloprid	97.2	96.5	P/P	60 - 150
Linuron	105	112	P/P	60 - 150
Linuron	109	105	P/P	60 - 150
MCPP	90.4	90.4	P/P	50 - 150
Primidone	102	96.8	P/P	60 - 150
Primidone	96.8	107	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A80505

Included Lab Sample IDs: 1947874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Triclopyr	92.3	92.4	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A80566

Included Lab Sample IDs: 1947823, 1947824, 1947829, 1947830, 1947831

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

Reference Method: EPA 8321B

Run ID: A80568

Included Lab Sample IDs: 1947873, 1947874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	102	123	P/P	60 - 150
Sucralose	108	102	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A80575

Included Lab Sample IDs: 1947825, 1947826, 1947832, 1947833, 1947834

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A80600

Included Lab Sample IDs: 1947877, 1947878, 1947879

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	99.6	P/P	95 - 105
Calcium	99.6	100	P/P	90 - 110
Iron	101	98.3	P/P	95 - 105
Iron	98.3	98.2	P/P	90 - 110
Magnesium	101	99.6	P/P	95 - 105
Magnesium	99.6	99.5	P/P	90 - 110
Potassium	100	102	P/P	90 - 110
Potassium	99.9	100	P/P	95 - 105
Sodium	98.9	101	P/P	90 - 110
Sodium	99.0	98.9	P/P	95 - 105
Zinc	100	99.2	P/P	95 - 105
Zinc	99.2	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80605

Included Lab Sample IDs: 1947825, 1947826, 1947832, 1947833, 1947834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	103	P/P	90 - 110
Total-P	104	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A80618

Included Lab Sample IDs: 1947877, 1947878, 1947879

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	102	102	P/P	90 - 110
Cadmium	98.5	100	P/P	90 - 110
Chromium	94.3	95.3	P/P	90 - 110
Copper	102	103	P/P	90 - 110
Lead	99.8	100	P/P	90 - 110
Nickel	102	102	P/P	90 - 110
Silver	99.6	101	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A80633

Included Lab Sample IDs: 1947825, 1947826, 1947832, 1947833, 1947834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	102	P/P	90 - 110
Organic Carbon	102	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A80654

Included Lab Sample IDs: 1947823, 1947824, 1947829, 1947830, 1947831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.6	P/P	90 - 110
Total Alkalinity	99.3	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80655

Included Lab Sample IDs: 1947825, 1947826, 1947832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	101	P/P	90 - 110
Ammonia-N	100	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A80689

Included Lab Sample IDs: 1947823, 1947824, 1947829, 1947830, 1947831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.1	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A80693

Included Lab Sample IDs: 1947873

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.6	94.2	P/P	50 - 150
Bentazon	102	104	P/P	50 - 150
MCP	95.4	100	P/P	50 - 150
Triclopyr	93.3	93.0	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80695

Included Lab Sample IDs: 1947833, 1947834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	102	P/P	90 - 110
Ammonia-N	97.0	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80699

Included Lab Sample IDs: 1947825, 1947826, 1947832, 1947833, 1947834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	95.3	P/P	90 - 110
Kjeldahl Nitrogen	95.3	98.3	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						3.78	
	Turbidity						1.67	
EPA 200.7 Rev. 4.4	Calcium	104	102	101				0.735
	Iron	101	104	99.2				2.23
	Magnesium	110	103	109	105			2.16
	Potassium	105	108	112	109			2.09
	Sodium	102	103	104				0.565
	Zinc	101	102	99.2	97.8			1.29
EPA 200.8 Rev. 5.4	Arsenic	103	107	104	103			0.299
	Cadmium	103	104	102	101			1.37
	Chromium	96.1	94.9	95.5	96.1			0.640
	Copper	99.6	99.9	99.4	99.6			0.102
	Lead	100	103	99.7	99.5			0.223
	Nickel	101	101	102	102			0.434
	Silver	103	103	103	103			0.821
EPA 300.0 Rev. 2.1	Chloride	94.9	93.4	96.0			0.343	
	Sulfate	95.6	93.0	96.1			0.224	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	102	101				1.59
	Ammonia-N	97.9	98.1	101				3.03
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.0	88.2	90.8				2.16
	Kjeldahl Nitrogen	99.1	97.0	93.7				1.92
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	105				0.358
	NO2NO3-N	104	102	101				0.707
EPA 365.1 Rev. 2.0	Total-P	100						1.11
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	91.4	90.9				0.518
EPA 8321B	Sucralose	73.8	107	115				6.99
SM 2120 B	Color (true)						5.95	
	Color (true)						5.94	
	Color (true)						1.75	
SM 2320 B-97	Total Alkalinity	102					0.147	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 2540 C-97	TDS				2.46	
	TDS				3.96	
SM 4500 F-C-97	Fluoride	94.8	95.2	95.9		0.477
SM 5310 B-00	Organic Carbon	101	96.6	100		2.09
USGS O-2060-01	2,4-D	59.2	24.7	29.6		18.1
	2,4-D	113	75.9	83.8		9.89
	Acetaminophen	105	99.0	107		7.80
	Bentazon	35.8	34.8	35.8		2.79
	Bentazon	83.2	49.7	57.0		13.7
	Carbamazepine	100	71.7	72.7		1.45
	Diuron	114	75.2	76.1		1.20
	Fenuron	103	72.1	69.1		4.24
	Fluridone	101	87.6	89.9		2.62
	Imidacloprid	90.7	178	182		1.82
	Linuron	102	89.7	89.4		0.279
	MCP	48.5	22.2	22.5		1.61
	MCP	111	64.8	68.5		5.52
	Primidone	88.9	80.4	82.4		2.47
	Triclopyr	48.9	23.3	22.3		4.52
	Triclopyr	107	54.0	68.8		24.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1947823, 1947824, 1947829, 1947830, 1947831
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1947877, 1947878, 1947879
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1947877, 1947878, 1947879
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1947823, 1947824, 1947829, 1947830, 1947831
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1947823, 1947824, 1947829, 1947830, 1947831
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1947825, 1947826, 1947832, 1947833, 1947834
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1947825, 1947826, 1947832, 1947833, 1947834
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1947825, 1947826, 1947832, 1947833, 1947834
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1947825, 1947826, 1947832, 1947833, 1947834
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1947827, 1947828, 1947835, 1947836, 1947837
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1947873, 1947874
SM 2120 B / E31780	True Color measured at 450 nm	1947823, 1947824, 1947829, 1947830, 1947831
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1947823, 1947824, 1947829, 1947830, 1947831
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1947823, 1947824, 1947829, 1947830, 1947831
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1947823, 1947824, 1947829, 1947830, 1947831
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1947823, 1947824, 1947829, 1947830, 1947831

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1947825, 1947826, 1947832, 1947833, 1947834
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1947873, 1947874
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1947873, 1947874

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	11/21/2017			11/21/2017 16:18	DeAsia Armster	1947823, 1947824, 1947829, 1947830, 1947831
EPA 200.7 Rev. 4.4	11/21/2017	11/28/2017	Elliott D. Healy	11/29/2017	Martin Acosta	1947877, 1947878, 1947879
EPA 200.8 Rev. 5.4	11/21/2017	11/28/2017	Elliott D. Healy	11/30/2017	Nadine Brooks	1947877, 1947878, 1947879
EPA 300.0 Rev. 2.1	11/21/2017			11/29/2017	Julia Storbeck	1947823, 1947824, 1947829, 1947830, 1947831
EPA 350.1 Rev. 2.0	11/21/2017			12/01/2017	Sofia Elnemr	1947825, 1947826, 1947832
	11/21/2017			12/04/2017	Sofia Elnemr	1947833, 1947834
EPA 351.2 Rev. 2.0	11/21/2017	12/01/2017	Adrian Shelby	12/04/2017	Joseph Suarez	1947825, 1947826, 1947832, 1947833, 1947834
EPA 353.2 Rev. 2.0	11/21/2017			11/29/2017	Beverly Y. Sanders	1947825, 1947826, 1947832, 1947833, 1947834
EPA 365.1 Rev. 2.0	11/21/2017	11/29/2017	Sima Feizi	11/30/2017	Lipi Saha	1947825, 1947826, 1947832, 1947833, 1947834
EPA 365.1 Rev. 2.0 dissolved	11/21/2017			11/21/2017 14:50	Megan Treadwell	1947827
	11/21/2017			11/21/2017 14:52	Megan Treadwell	1947836
	11/21/2017			11/21/2017 14:53	Megan Treadwell	1947837
	11/21/2017			11/21/2017 15:27	Megan Treadwell	1947828
	11/21/2017			11/21/2017 17:07	Megan Treadwell	1947835
EPA 8321B	11/21/2017	11/28/2017	Juyoung Kim	11/29/2017	Juyoung Kim	1947873, 1947874
SM 2120 B	11/21/2017			11/21/2017 15:11	Tanya Welborn	1947823
	11/21/2017			11/21/2017 15:12	Tanya Welborn	1947824
	11/21/2017			11/21/2017 15:13	Tanya Welborn	1947829
	11/21/2017			11/21/2017 15:42	Tanya Welborn	1947830
	11/21/2017			11/21/2017 15:49	Tanya Welborn	1947831
SM 2320 B-97	11/21/2017			12/02/2017	Dale L. Simmons	1947823, 1947824, 1947829, 1947830, 1947831
SM 2540 C-97	11/21/2017			11/22/2017	Yijie Li	1947823, 1947824, 1947829
	11/21/2017			11/25/2017	Yijie Li	1947830, 1947831
SM 2540 D-97	11/21/2017			11/22/2017	Yijie Li	1947823, 1947824, 1947829
	11/21/2017			11/25/2017	Yijie Li	1947830, 1947831
SM 4500 F-C-97	11/21/2017			12/04/2017	Dale L. Simmons	1947823, 1947824, 1947829, 1947830, 1947831
SM 5310 B-00	11/21/2017			11/29/2017	Ping Hua	1947825, 1947826, 1947832, 1947833, 1947834
USGS O-2060-01	11/21/2017	11/22/2017	Hoor Shaik	11/23/2017	Julie Michelle Frank	1947873
	11/21/2017	11/22/2017	Hoor Shaik	11/24/2017	Julie Michelle Frank	1947874
	11/21/2017	12/04/2017	Hoor Shaik	12/04/2017	Julie Michelle Frank	1947873