

Chemical Analysis Report

SE-DIST-2017-04-12-01

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

Event Description: **SMP-G2 Martin**
Request ID: **RQ-2017-04-03-23**
Customer: **SE-DIST**
Project ID: **SMP**

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

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 09-MAY-2017 15:12

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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: St. Lucie North Fork @ Veterans Park

Collection Date/Time: 04/11/2017 10:40

Field ID: G2SE0007

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887693	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P323265	
	SM 2320 B-97	Total Alkalinity	156		mg CaCO3/L	P323535	
	SM 2540 D-97	TSS	6	I	mg/L	P323903	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P323537	
1887695	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P323272	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P323500	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323569	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P323426	
	SM 5310 B-00	Organic Carbon	9.6		mg C/L	P323370	
1887697	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P323293	
1887741	EPA 8321B	Sucralose**	0.058		ug/L	P323139	
	USGS O-2060-01	2,4-D	0.029		ug/L	P323221	
		Diuron	0.028		ug/L	P323221	
		Fenuron	0.0080	U	ug/L	P323221	
		Imidacloprid	0.0040	U	ug/L	P323221	
		Bentazon	0.12		ug/L	P323221	
		Linuron	0.0040	UJ	ug/L	P323221	MS
		Acetaminophen**	0.010	U	ug/L	P323221	
		MCPD	0.0040	U	ug/L	P323221	
		Carbamazepine**	4.0E-04	U	ug/L	P323221	
		Triclopyr**	0.60		ug/L	P323221	
		Primidone**	0.0080	U	ug/L	P323221	
		Fluridone**	0.0040	J	ug/L	P323221	RPD

Ref. Method and Comment:

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

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

USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.

Sample Location: Bessey Creek @ Murphy Rd.

Collection Date/Time: 04/11/2017 11:30

Field ID: G2SE0017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887699	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P323265	
	SM 2320 B-97	Total Alkalinity	168		mg CaCO3/L	P323535	
	SM 2540 D-97	TSS	4	I	mg/L	P323903	
	SM 4500 F-C-97	Fluoride	0.78		mg F/L	P323537	
1887701	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P323272	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P323500	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P323569	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P323426	
	SM 5310 B-00	Organic Carbon	8.4		mg C/L	P323370	
1887703	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P323293	
1887744	EPA 200.7 Rev. 4.4	Iron	150	I	ug/L	P323748	
	EPA 200.8 Rev. 5.4	Arsenic	4.73		ug/L	P323748	

Field ID: G2SE0017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887744	EPA 200.8 Rev. 5.4	Cadmium	0.060	U	ug/L	P323748	
		Chromium	1.2	U	ug/L	P323748	
		Copper	2.5		ug/L	P323748	
		Lead	0.15	U	ug/L	P323748	
		Nickel	0.60	U	ug/L	P323748	
		Silver	0.030	U	ug/L	P323748	
		Zinc	4.2	I	ug/L	P323748	

Ref. Method and Comment:

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

Sample Location: Danforth Creek @ Martin Hwy

Collection Date/Time: 04/11/2017 11:50

Field ID: G2SE0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887690	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P323265	
	EPA 300.0 Rev. 2.1	Chloride	56		mg Cl/L	P323744	
		Sulfate	8.7		mg SO4/L	P323746	
	SM 2120 B	Color (true)	94	A	PCU	P323259	
	SM 2320 B-97	Total Alkalinity	166		mg CaCO3/L	P323886	
	SM 2540 C-97	TDS	298	A	mg/L	P323654	
	SM 2540 D-97	TSS	5	IA	mg/L	P323885	
	SM 4500 F-C-97	Fluoride	0.076	I	mg F/L	P324679	
1887691	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P323275	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P323282	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P323397	
	EPA 365.1 Rev. 2.0	Total-P	0.062		mg P/L	P323306	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P323369	
1887692	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P323295	

Ref. Method and Comment:

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

Sample Location: South Fork St. Lucie near Leighton Park

Collection Date/Time: 04/11/2017 12:10

Field ID: G2SE0013

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887700	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P323265	
	SM 2320 B-97	Total Alkalinity	147		mg CaCO3/L	P323535	
	SM 2540 D-97	TSS	8	I	mg/L	P323903	
	SM 4500 F-C-97	Fluoride	0.78		mg F/L	P323537	
1887702	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P323272	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P323500	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323569	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P323426	
	SM 5310 B-00	Organic Carbon	7.8		mg C/L	P323370	
1887704	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P323293	
1887745	EPA 200.7 Rev. 4.4	Iron	200	I	ug/L	P323748	

Field ID: G2SE0013

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887745	EPA 200.8 Rev. 5.4	Arsenic	2.32		ug/L	P323748	
		Cadmium	0.060	U	ug/L	P323748	
		Chromium	1.2	U	ug/L	P323748	
		Copper	1.9	I	ug/L	P323748	
		Lead	0.22	I	ug/L	P323748	
		Nickel	0.60	U	ug/L	P323748	
		Silver	0.030	U	ug/L	P323748	
		Zinc	3.1	I	ug/L	P323748	

Ref. Method and Comment:

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

Sample Location: South Fork St. Lucie @ Halpatiokee

Collection Date/Time: 04/11/2017 13:45

Field ID: G2SE0015

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887684	EPA 180.1 Rev. 2.0	Turbidity	2.8	A	NTU	P323265	
	EPA 300.0 Rev. 2.1	Chloride	2.5E+03		mg Cl/L	P323744	
		Sulfate	370		mg SO4/L	P323746	
	SM 2120 B	Color (true)	46		PCU	P323259	
	SM 2320 B-97	Total Alkalinity	231		mg CaCO3/L	P323886	
	SM 2540 C-97	TDS	4.90E+03		mg/L	P323654	
	SM 2540 D-97	TSS	6	I	mg/L	P323885	
	SM 4500 F-C-97	Fluoride	0.33		mg F/L	P324679	
1887685	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P323272	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P323500	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323568	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P323426	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P323369	
1887686	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.076		mg P/L	P323293	

Ref. Method and Comment:

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

Sample Location: South Fork St. Lucie @ Hosford Park

Collection Date/Time: 04/11/2017 14:10

Field ID: 28010478

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887694	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P323265	
	SM 2320 B-97	Total Alkalinity	203		mg CaCO3/L	P323535	
	SM 2540 D-97	TSS	5	IA	mg/L	P323903	
	SM 4500 F-C-97	Fluoride	0.45		mg F/L	P323537	
1887696	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P323272	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P323500	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P323569	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P323426	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P323370	
1887698	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P323293	

Field ID: 28010478

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887742	EPA 8321B	Sucralose**	0.072		ug/L	P323139	
	USGS O-2060-01	2,4-D	0.0079	I	ug/L	P323221	
		Diuron	0.017		ug/L	P323221	
		Fenuron	0.0080	U	ug/L	P323221	
		Imidacloprid	0.0085	I	ug/L	P323221	
		Bentazon	0.16		ug/L	P323221	
		Linuron	0.0040	U	ug/L	P323221	MS
		Acetaminophen**	0.010	U	ug/L	P323221	
		MCP	0.0040	U	ug/L	P323221	
		Carbamazepine**	4.0E-04	U	ug/L	P323221	
		Triclopyr**	0.12		ug/L	P323221	
		Primidone**	0.0080	U	ug/L	P323221	
		Fluridone**	4.1E-04	I	ug/L	P323221	RPD

Ref. Method and Comment:

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

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

Sample Location: Manatee Pocket, Port Salerno

Collection Date/Time: 04/11/2017 14:30

Field ID: G2SE0012

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1887687	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P323265	
	SM 2320 B-97	Total Alkalinity	148		mg CaCO3/L	P323535	
	SM 2540 D-97	TSS	5	I	mg/L	P323902	
	SM 4500 F-C-97	Fluoride	0.79		mg F/L	P323537	
1887688	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P323272	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P323500	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.031		mg N/L	P323569	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P323426	
	SM 5310 B-00	Organic Carbon	5.6		mg C/L	P323370	
1887689	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.052		mg P/L	P323293	
	dissolved						

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P323265

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P323748

Component	Result	Code	Units
Iron	30	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323748

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323744

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323746

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323272

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323275

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323282

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323500

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323397

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323568

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323569

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323306

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323426

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323293

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323295

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

Reference Method: EPA 8321B
Batch ID: P323139

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P323259

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P323535

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P323886

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

Reference Method: SM 2540 C-97
Batch ID: P323654

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P323885

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P323902

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P323903

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P323537

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P324679

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P323369

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

Reference Method: SM 5310 B-00
Batch ID: P323370

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: P323221

Component	Result	Code	Units
2,4-D	0.0040	U	ug/L
Acetaminophen	0.010	U	ug/L
Bentazon	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0040	U	ug/L
Primidone	0.0080	U	ug/L
Triclopyr	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	98.0		P	85 - 115
Cadmium	96.0		P	85 - 115
Chromium	96.7		P	85 - 115
Copper	96.8		P	85 - 115
Lead	94.9		P	85 - 115
Nickel	97.5		P	85 - 115
Silver	96.1		P	85 - 115
Zinc	97.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323744

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323272

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323272

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323275

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323282

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323500

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323568

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323569

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323306

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323426

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323293

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323295

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

Reference Method: EPA 8321B
Batch ID: P323139

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	104		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P323535

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

Reference Method: SM 2320 B-97
Batch ID: P323886

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P323537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.0		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P324679

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P323369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	106		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P323370

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	107		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P323221

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	97.2		P	40 - 140
Acetaminophen	51.2		P	40 - 140
Bentazon	140		P	40 - 140
Carbamazepine	90.4		P	40 - 140
Diuron	76.0		P	40 - 140
Fenuron	86.8		P	40 - 140
Fluridone	96.0		P	40 - 140
Imidacloprid	76.4		P	40 - 160
Linuron	50.0		P	40 - 140
MCPP	90.0		P	40 - 140
Primidone	96.4		P	40 - 140
Triclopyr	96.8		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887121	Iron	102		P	70 - 130
1887254	Iron	94.1	93.5	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887121	Arsenic	110		P	70 - 130
1887121	Cadmium	99.9		P	70 - 130
1887121	Chromium	94.6		P	70 - 130
1887121	Copper	98.3		P	70 - 130
1887121	Lead	103		P	70 - 130
1887121	Nickel	102		P	70 - 130
1887121	Silver	96.1		P	70 - 130
1887121	Zinc	100		P	70 - 130
1887254	Arsenic	108	107	P/P	70 - 130
1887254	Cadmium	101	101	P/P	70 - 130
1887254	Chromium	91.4	91.1	P/P	70 - 130
1887254	Copper	93.7	93.9	P/P	70 - 130
1887254	Lead	103	103	P/P	70 - 130
1887254	Nickel	99.8	99.2	P/P	70 - 130
1887254	Silver	93.9	94.3	P/P	70 - 130
1887254	Zinc	94.8	92.6	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323744

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887330	Chloride	101		P	90 - 110
1887605	Chloride	100		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887330	Sulfate	97.8		P	90 - 110
1887605	Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887654	Ammonia-N	104	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887691	Ammonia-N	102	97.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323282

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887718	Kjeldahl Nitrogen	102	97.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323500

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887685	Kjeldahl Nitrogen	96.2	95.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887691	NO2NO3-N	97.2	96.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323568

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887218	NO2NO3-N	96.5	95.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323569

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887695	NO2NO3-N	97.6	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323306

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887754	Total-P	99.9	94.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887710	Total-P	96.2	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323293

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887655	O-Phosphate-P	97.0	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P323295

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887692	O-Phosphate-P	95.8	97.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P323139

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887573	Sucralose	87.3	98.0	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P323537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887371	Fluoride	93.7	95.3	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P324679

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1891234	Fluoride	98.4	99.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P323369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887685	Organic Carbon	104	105	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P323370

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887173	Organic Carbon	105	105	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P323221

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887741	2,4-D	135	127	P/P	40 - 140
1887741	Acetaminophen	70.4	56.8	P/P	40 - 140
1887741	Carbamazepine	66.0	63.6	P/P	40 - 140
1887741	Diuron	63.3	66.5	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P323221

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1887741	Fenuron	60.8	52.8	P/P	40 - 140
1887741	Fluridone	59.6	42.8	P/P	40 - 140
1887741	Imidacloprid	112	98.4	P/P	40 - 160
1887741	Linuron	40.0	47.2	F/P	40 - 140
1887741	MCCP	131	116	P/P	40 - 140
1887741	Primidone	50.0	51.2	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P323265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887684	Turbidity	1.08	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P323748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887254	Iron	0.612	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P323748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887254	Arsenic	0.373	Spike	P	0 - 20
1887254	Cadmium	0.600	Spike	P	0 - 20
1887254	Chromium	0.363	Spike	P	0 - 20
1887254	Copper	0.185	Spike	P	0 - 20
1887254	Lead	0.141	Spike	P	0 - 20
1887254	Nickel	0.590	Spike	P	0 - 20
1887254	Silver	0.400	Spike	P	0 - 20
1887254	Zinc	1.73	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887605	Chloride	0.0681	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887605	Sulfate	0.682	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887654	Ammonia-N	1.97	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P323275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887691	Ammonia-N	3.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887718	Kjeldahl Nitrogen	3.81	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P323500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887685	Kjeldahl Nitrogen	0.885	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887691	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323568

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887218	NO2NO3-N	1.57	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P323569

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887695	NO2NO3-N	1.53	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P323306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887754	Total-P	5.75	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P323426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887710	Total-P	3.97	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P323293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887655	O-Phosphate-P	1.33	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P323295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887692	O-Phosphate-P	1.08	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P323139

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887573	Sucralose	11.5	Spike	P	0 - 30

Reference Method: SM 2120 B

Batch ID: P323259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887690	Color (true)	4.93	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P323535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887371	Total Alkalinity	0.989	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97

Batch ID: P323886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887805	Total Alkalinity	1.58	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97

Batch ID: P323654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887690	TDS	1.01	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P323537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887371	Fluoride	0.972	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P324679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1891234	Fluoride	0.487	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P323369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887685	Organic Carbon	0.381	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P323370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887173	Organic Carbon	0.174	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P323221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1887741	2,4-D	5.51	Spike	P	0 - 30
1887741	Acetaminophen	21.4	Spike	P	0 - 30
1887741	Bentazon	8.61	Spike	P	0 - 30
1887741	Carbamazepine	3.70	Spike	P	0 - 30
1887741	Diuron	3.43	Spike	P	0 - 30
1887741	Fenuron	14.1	Spike	P	0 - 30
1887741	Fluridone	30.4	Spike	F	0 - 30
1887741	Imidacloprid	12.6	Spike	P	0 - 30
1887741	Linuron	16.6	Spike	P	0 - 30
1887741	MCPP	12.6	Spike	P	0 - 30
1887741	Primidone	2.37	Spike	P	0 - 30
1887741	Triclopyr	0.612	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

Quality Assurance Report Surrogates

Lab Sample ID: 1887741
Field Sample ID: G2SE0007

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	78.0	P	40 - 150
USGS O-2060-01	2,4-D-d3	120	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	44.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	69.2	P	40 - 160
USGS O-2060-01	Diuron-d6	50.6	P	30 - 150
USGS O-2060-01	Primidone-d5	66.4	P	40 - 150

Lab Sample ID: 1887742
Field Sample ID: 28010478

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	97.5	P	40 - 150
USGS O-2060-01	2,4-D-d3	131	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	57.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	60.8	P	40 - 160
USGS O-2060-01	Diuron-d6	40.6	P	30 - 150
USGS O-2060-01	Primidone-d5	55.0	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A75747
Included Lab Sample IDs: 1887684, 1887690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	99.7	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A75748
Included Lab Sample IDs: 1887684, 1887687, 1887690, 1887693, 1887694, 1887699, 1887700

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A75750
Included Lab Sample IDs: 1887685, 1887688, 1887691, 1887695, 1887696, 1887701, 1887702

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A75755
Included Lab Sample IDs: 1887686, 1887689, 1887692, 1887697, 1887698, 1887703, 1887704

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	96.9	P/P	90 - 110
O-Phosphate-P	97.7	97.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A75756

Included Lab Sample IDs: 1887741, 1887742

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.4	113	P/P	60 - 150

Reference Method: SM 5310 B-00

Run ID: A75775

Included Lab Sample IDs: 1887685, 1887688, 1887691, 1887695, 1887696, 1887701, 1887702

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75777

Included Lab Sample IDs: 1887691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	106	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75786

Included Lab Sample IDs: 1887691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	95.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75791

Included Lab Sample IDs: 1887691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	108	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75815

Included Lab Sample IDs: 1887685, 1887695, 1887696, 1887701, 1887702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	105	106	P/P	90 - 110
Total-P	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75826

Included Lab Sample IDs: 1887688

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A75833

Included Lab Sample IDs: 1887687, 1887693, 1887694, 1887699, 1887700

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

Reference Method: SM 4500 F-C-97

Run ID: A75833

Included Lab Sample IDs: 1887687, 1887693, 1887694, 1887699, 1887700

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.7	97.4	P/P	90 - 110
Fluoride	97.9	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75838

Included Lab Sample IDs: 1887685, 1887688, 1887695, 1887696, 1887701, 1887702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	94.0	P/P	90 - 110
NO2NO3-N	97.0	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75842

Included Lab Sample IDs: 1887685, 1887688, 1887695, 1887696, 1887701, 1887702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.1	P/P	90 - 110
Kjeldahl Nitrogen	102	98.7	P/P	90 - 110
Kjeldahl Nitrogen	99.1	98.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75903

Included Lab Sample IDs: 1887684, 1887690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	99.7	102	P/P	90 - 110
Sulfate	98.4	94.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A75952

Included Lab Sample IDs: 1887684, 1887690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	105	P/P	90 - 110
Total Alkalinity	105	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A75972

Included Lab Sample IDs: 1887744, 1887745

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	96.7	94.9	P/P	90 - 110
Cadmium	96.5	97.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A75972

Included Lab Sample IDs: 1887744, 1887745

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	98.1	97.6	P/P	90 - 110
Copper	96.4	92.0	P/P	90 - 110
Lead	97.2	95.8	P/P	90 - 110
Nickel	95.2	91.3	P/P	90 - 110
Silver	96.1	95.2	P/P	90 - 110
Zinc	97.9	93.9	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A75985

Included Lab Sample IDs: 1887741, 1887742

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.6	98.2	P/P	50 - 150
Bentazon	74.2	90.8	P/P	50 - 150
MCP	105	125	P/P	50 - 150
Triclopyr	82.0	91.2	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A75991

Included Lab Sample IDs: 1887744, 1887745

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	95.8	96.7	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A76024

Included Lab Sample IDs: 1887741, 1887742

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	145	134	P/P	60 - 150
Carbamazepine	128	133	P/P	60 - 150
Diuron	125	141	P/P	60 - 150
Fenuron	117	125	P/P	60 - 150
Fluridone	121	126	P/P	60 - 150
Imidacloprid	113	112	P/P	60 - 150
Linuron	89.6	72.0	P/P	60 - 150
Primidone	72.8	93.2	P/P	60 - 150

Reference Method: SM 4500 F-C-97

Run ID: A76201

Included Lab Sample IDs: 1887684, 1887690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	101	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						1.08	
EPA 200.7 Rev. 4.4	Iron	100	94.1	93.5	102			0.612
EPA 200.8 Rev. 5.4	Arsenic	98.0	110	108	107			0.373
	Cadmium	96.0	99.9	101	101			0.600
	Chromium	96.7	94.6	91.4	91.1			0.363
	Copper	96.8	98.3	93.7	93.9			0.185
	Lead	94.9	103	103	103			0.141
	Nickel	97.5	102	99.8	99.2			0.590
	Silver	96.1	96.1	93.9	94.3			0.400
	Zinc	97.2	100	94.8	92.6			1.73
EPA 300.0 Rev. 2.1	Chloride	101	100	101			0.0681	
	Sulfate	95.4	98.2	97.8			0.682	
EPA 350.1 Rev. 2.0	Ammonia-N	99.3	104	102				1.97
	Ammonia-N	101	102	97.9				3.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	102	97.1				3.81
	Kjeldahl Nitrogen	101	96.2	95.1				0.885
EPA 353.2 Rev. 2.0	NO2NO3-N	97.0	97.2	96.7				0.499
	NO2NO3-N	99.0	96.5	95.0				1.57
	NO2NO3-N	97.0	97.6	99.1				1.53
EPA 365.1 Rev. 2.0	Total-P	101	99.9	94.1				5.75
	Total-P	101	96.2	100				3.97
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.0	97.0	98.3				1.33
	O-Phosphate-P	98.7	95.8	97.1				1.08
EPA 8321B	Sucralose	104	87.3	98.0				11.5
SM 2120 B	Color (true)						4.93	
SM 2320 B-97	Total Alkalinity	103					0.989	
	Total Alkalinity	104					1.58	
SM 2540 C-97	TDS						1.01	
SM 4500 F-C-97	Fluoride	95.0	93.7	95.3				0.972
	Fluoride	98.1	98.4	99.0				0.487
SM 5310 B-00	Organic Carbon	106	104	105				0.381
	Organic Carbon	107	105	105				0.174
USGS O-2060-01	2,4-D	97.2	135	127				5.51
	Acetaminophen	51.2	70.4	56.8				21.4
	Bentazon	140						8.61
	Carbamazepine	90.4	66.0	63.6				3.70
	Diuron	76.0	63.3	66.5				3.43
	Fenuron	86.8	60.8	52.8				14.1
	Fluridone	96.0	59.6	42.8				30.4
	Imidacloprid	76.4	112	98.4				12.6
	Linuron	50.0	40.0	47.2				16.6
	MCPP	90.0	131	116				12.6
	Primidone	96.4	50.0	51.2				2.37
	Triclopyr	96.8						0.612

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1887684, 1887687, 1887690, 1887693, 1887694, 1887699, 1887700
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1887744, 1887745

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1887744, 1887745
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1887684, 1887690
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1887684, 1887690
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1887685, 1887688, 1887691, 1887695, 1887696, 1887701, 1887702
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1887685, 1887688, 1887691, 1887695, 1887696, 1887701, 1887702
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1887685, 1887688, 1887691, 1887695, 1887696, 1887701, 1887702
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1887685, 1887688, 1887691, 1887695, 1887696, 1887701, 1887702
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1887686, 1887689, 1887692, 1887697, 1887698, 1887703, 1887704
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1887741, 1887742
SM 2120 B / E31780	True Color measured at 450 nm	1887684, 1887690
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1887684, 1887687, 1887690, 1887693, 1887694, 1887699, 1887700
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1887684, 1887690
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1887684, 1887687, 1887690, 1887693, 1887694, 1887699, 1887700
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1887684, 1887687, 1887690, 1887693, 1887694, 1887699, 1887700
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1887685, 1887688, 1887691, 1887695, 1887696, 1887701, 1887702
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1887741, 1887742
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1887741, 1887742

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	04/12/2017			04/12/2017 15:06	Sima Feizi	1887684, 1887687, 1887690, 1887693, 1887694, 1887699, 1887700
EPA 200.7 Rev. 4.4	04/12/2017	04/20/2017	Elliott D. Healy	04/25/2017	Martin Acosta	1887744, 1887745
EPA 200.8 Rev. 5.4	04/12/2017	04/20/2017	Elliott D. Healy	04/24/2017	Betina Topolski	1887744, 1887745
EPA 300.0 Rev. 2.1	04/12/2017			04/20/2017	Ping Hua	1887684, 1887690
EPA 350.1 Rev. 2.0	04/12/2017			04/12/2017	Julie Michelle Frank	1887685, 1887688, 1887691, 1887695, 1887696, 1887701, 1887702
EPA 351.2 Rev. 2.0	04/12/2017	04/13/2017	Adrian Shelby	04/14/2017	Joseph Suarez	1887691
	04/12/2017	04/17/2017	Adrian Shelby	04/18/2017	Joseph Suarez	1887685, 1887688, 1887695, 1887696, 1887701, 1887702
EPA 353.2 Rev. 2.0	04/12/2017			04/14/2017	Beverly Y. Sanders	1887691
	04/12/2017			04/18/2017	Beverly Y. Sanders	1887685, 1887688, 1887695, 1887696, 1887701, 1887702
EPA 365.1 Rev. 2.0	04/12/2017	04/13/2017	Adrian Shelby	04/13/2017	Lipi Saha	1887691
	04/12/2017	04/14/2017	Vijayalakshmi Reddy	04/17/2017	Lipi Saha	1887685, 1887688, 1887695, 1887696, 1887701, 1887702
EPA 365.1 Rev. 2.0 dissolved	04/12/2017			04/12/2017 13:43	Anthony C. Onicha	1887692
	04/12/2017			04/12/2017 14:47	Anthony C. Onicha	1887686
	04/12/2017			04/12/2017 14:48	Anthony C. Onicha	1887689
	04/12/2017			04/12/2017 14:49	Anthony C. Onicha	1887697
	04/12/2017			04/12/2017 14:50	Anthony C. Onicha	1887698
	04/12/2017			04/12/2017 14:51	Anthony C. Onicha	1887703
	04/12/2017			04/12/2017 14:52	Anthony C. Onicha	1887704
EPA 8321B	04/12/2017	04/12/2017	Mohammad Ghaffari	04/12/2017	Mohammad Ghaffari	1887741, 1887742
SM 2120 B	04/12/2017			04/12/2017 14:55	Julia Storbeck	1887690
	04/12/2017			04/12/2017 14:57	Julia Storbeck	1887684
SM 2320 B-97	04/12/2017			04/16/2017	Dale L. Simmons	1887694
	04/12/2017			04/17/2017	Dale L. Simmons	1887687, 1887693, 1887699, 1887700
	04/12/2017			04/22/2017	Dale L. Simmons	1887684, 1887690
SM 2540 C-97	04/12/2017			04/14/2017	Yijie Li	1887684, 1887690
SM 2540 D-97	04/12/2017			04/14/2017	Yijie Li	1887684, 1887687, 1887690, 1887693, 1887694, 1887699, 1887700
SM 4500 F-C-97	04/12/2017			04/16/2017	Dale L. Simmons	1887687, 1887693, 1887694, 1887699, 1887700
	04/12/2017			05/03/2017	Dale L. Simmons	1887684, 1887690
SM 5310 B-00	04/12/2017			04/13/2017	Julie Michelle Frank	1887685, 1887691
	04/12/2017			04/14/2017	Julie Michelle Frank	1887688, 1887695, 1887696, 1887701, 1887702
USGS O-2060-01	04/12/2017	04/16/2017	Fe-Val Siddell	04/22/2017	Juyoung Kim	1887741, 1887742
	04/12/2017	04/16/2017	Fe-Val Siddell	04/25/2017	Juyoung Kim	1887741, 1887742