

Chemical Analysis Report

SE-DIST-2017-10-19-02

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

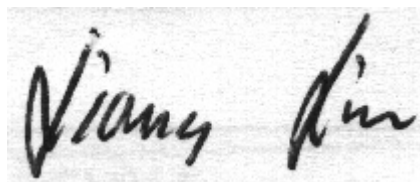
Event Description: **SMP-G2 Martin**
Request ID: **RQ-2017-10-16-33**
Customer: **SE-DIST**
Project ID: **SMP**

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

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 22-NOV-2017 09:46

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: 10/18/2017 10:00

Field ID: G2SE0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938559	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P333721	
	SM 2320 B-97	Total Alkalinity	122		mg CaCO3/L	P333925	
	SM 2540 D-97	TSS	7	I	mg/L	P334526	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P333926	
1938561	EPA 350.1 Rev. 2.0	Ammonia-N	0.085		mg N/L	P334089	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P334068	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P334096	
	EPA 365.1 Rev. 2.0	Total-P	0.29		mg P/L	P334039	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P334346	
1938563	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P333755	
1938603	EPA 8321B	Sucralose**	0.16		ug/L	P333921	
	USGS O-2060-01	2,4-D	0.054	Q	ug/L	P335339	
		Diuron	0.011		ug/L	P333877	
		Fenuron	0.0080	U	ug/L	P333877	
		Imidacloprid	0.14		ug/L	P333877	MS
		Bentazon	0.012	Q	ug/L	P335339	
		Linuron	0.0040	U	ug/L	P333877	
		Acetaminophen**	0.0080	U	ug/L	P333877	
		MCP	0.0020	UQ	ug/L	P335339	
		Carbamazepine**	0.0013	I	ug/L	P333877	MS
		Triclopyr**	0.0040	UQ	ug/L	P335339	
		Primidone**	0.0040	U	ug/L	P333877	
		Fluridone**	0.063		ug/L	P333877	

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 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Bessey Creek @ Murphy Rd.

Collection Date/Time: 10/18/2017 10:50

Field ID: G2SE0017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938565	EPA 180.1 Rev. 2.0	Turbidity	2.9	A	NTU	P333722	
	SM 2320 B-97	Total Alkalinity	69		mg CaCO3/L	P333925	
	SM 2540 D-97	TSS	2	I	mg/L	P334526	
	SM 4500 F-C-97	Fluoride	0.062	I	mg F/L	P333926	
1938567	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P334089	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P334068	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.087		mg N/L	P334097	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P334039	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P334348	
1938569	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P333755	
1938605	EPA 200.7 Rev. 4.4	Iron	1.32E+03		ug/L	P333931	
		Zinc	5.0	U	ug/L	P333931	

Field ID: G2SE0017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938605	EPA 200.8 Rev. 5.4	Arsenic	3.70		ug/L	P333931	
		Cadmium	0.020	U	ug/L	P333931	
		Chromium	0.90	I	ug/L	P333931	
		Copper	1.08		ug/L	P333931	
		Lead	0.43		ug/L	P333931	
		Nickel	0.47	I	ug/L	P333931	
		Silver	0.010	U	ug/L	P333931	

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 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: South Fork St. Lucie near Leighton Park

Collection Date/Time: 10/18/2017 11:20

Field ID: G2SE0013

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938566	EPA 180.1 Rev. 2.0	Turbidity	70		NTU	P333723	
	SM 2320 B-97	Total Alkalinity	98		mg CaCO3/L	P333925	
	SM 2540 D-97	TSS	40		mg/L	P334526	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P333926	
1938568	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P334089	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P334069	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P334097	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P334039	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P334348	
1938570	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P333755	
1938606	EPA 200.7 Rev. 4.4	Iron	2.43E+03		ug/L	P333931	
		Zinc	5.0	U	ug/L	P333931	
	EPA 200.8 Rev. 5.4	Arsenic	1.83		ug/L	P333931	
		Cadmium	0.020	U	ug/L	P333931	
		Chromium	2.6		ug/L	P333931	
		Copper	2.26		ug/L	P333931	
		Lead	1.09		ug/L	P333931	
		Nickel	1.35		ug/L	P333931	
		Silver	0.010	U	ug/L	P333931	

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 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Danforth Creek @ Martin Hwy

Collection Date/Time: 10/18/2017 11:35

Field ID: G2SE0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938553	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P333721	
	EPA 300.0 Rev. 2.1	Chloride	31		mg Cl/L	P333837	
		Sulfate	26		mg SO4/L	P333841	
	SM 2120 B	Color (true)	200		PCU	P333747	

Field ID: G2SE0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938553	SM 2320 B-97	Total Alkalinity	76		mg CaCO3/L	P333925	
	SM 2540 C-97	TDS	204		mg/L	P334315	
	SM 2540 D-97	TSS	6	I	mg/L	P334526	
	SM 4500 F-C-97	Fluoride	0.063	I	mg F/L	P333926	
1938554	EPA 350.1 Rev. 2.0	Ammonia-N	0.089		mg N/L	P334089	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P334068	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.077		mg N/L	P334096	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P334039	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P334346	
1938555	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.066		mg P/L	P333754	

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: 10/18/2017 12:00

Field ID: G2SE0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938547	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P333721	
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P333837	
		Sulfate	7.7		mg SO4/L	P333841	
	SM 2120 B	Color (true)	270		PCU	P333747	
1938548	SM 2320 B-97	Total Alkalinity	100		mg CaCO3/L	P333925	
	SM 2540 C-97	TDS	208		mg/L	P334315	
	SM 2540 D-97	TSS	8	I	mg/L	P334526	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P333926	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.066		mg N/L	P334089	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P334068	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.085		mg N/L	P334096	
1938549	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P334038	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P334346	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P333754	

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: 10/18/2017 12:30

Field ID: 28010478

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938560	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P333721	
	SM 2320 B-97	Total Alkalinity	98		mg CaCO3/L	P333925	
	SM 2540 D-97	TSS	4	I	mg/L	P334526	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P333926	
1938562	EPA 350.1 Rev. 2.0	Ammonia-N	0.074		mg N/L	P334089	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P334068	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.083		mg N/L	P334096	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P334039	

Field ID: 28010478

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938562	SM 5310 B-00	Organic Carbon	23		mg C/L	P334346	
1938564	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P333755	
1938604	EPA 8321B	Sucralose**	0.19		ug/L	P333921	
	USGS O-2060-01	2,4-D	0.040	Q	ug/L	P335339	
		Diuron	0.0016	I	ug/L	P333877	
		Fenuron	0.0080	U	ug/L	P333877	
		Imidacloprid	0.025		ug/L	P333877	MS
		Bentazon	0.011	Q	ug/L	P335339	
		Linuron	0.0040	U	ug/L	P333877	
		Acetaminophen**	0.0080	U	ug/L	P333877	
		MCP	0.0020	UQ	ug/L	P335339	
		Carbamazepine**	7.7E-04	I	ug/L	P333877	MS
		Triclopyr**	0.0040	UQ	ug/L	P335339	
		Primidone**	0.0040	U	ug/L	P333877	
		Fluridone**	0.0058		ug/L	P333877	

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 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Manatee Pocket, Park Salerno

Collection Date/Time: 10/18/2017 13:30

Field ID: G2SE0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938550	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P333721	
	SM 2320 B-97	Total Alkalinity	134		mg CaCO3/L	P333925	
	SM 2540 D-97	TSS	3	U	mg/L	P334529	
	SM 4500 F-C-97	Fluoride	0.10	I	mg F/L	P333926	
1938551	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P334089	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.91		mg N/L	P334068	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P334096	
	EPA 365.1 Rev. 2.0	Total-P	0.091		mg P/L	P334039	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P334346	
1938552	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.058		mg P/L	P333752	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The MDL was elevated due to analytical difficulties.

Sample Location: RoeBack Creek @ Locks Rd.

Collection Date/Time: 10/18/2017 14:20

Field ID: G2SE0029

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938556	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P333722	
	SM 2320 B-97	Total Alkalinity	94		mg CaCO3/L	P333925	
	SM 2540 D-97	TSS	2	I	mg/L	P334526	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P333926	

Field ID: G2SE0029

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1938557	EPA 350.1 Rev. 2.0	Ammonia-N	0.068		mg N/L	P334089	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P334068	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.39		mg N/L	P334096	
	EPA 365.1 Rev. 2.0	Total-P	0.70		mg P/L	P334039	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P334346	
1938558	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.63		mg P/L	P333755	

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 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P333721

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P333722

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P333723

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P333931

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P333931

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333837

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333841

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334089

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334068

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334069

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334096

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334097

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334038

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334039

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333752

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333754

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333755

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

Reference Method: EPA 8321B
Batch ID: P333921

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P333747

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P333925

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

Reference Method: SM 2540 C-97
Batch ID: P334315

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P334526

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P334529

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P333926

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P334346

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

Reference Method: SM 5310 B-00
Batch ID: P334348

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

Reference Method: USGS O-2060-01
Batch ID: P333877

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

Reference Method: USGS O-2060-01
Batch ID: P335339

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
MCPP	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: P333931

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	105		P	85 - 115
Zinc	98.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333931

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	105		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333931

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cadmium	106		P	85 - 115
Chromium	102		P	85 - 115
Copper	101		P	85 - 115
Lead	98.4		P	85 - 115
Nickel	103		P	85 - 115
Silver	98.3		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333837

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333841

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334089

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334068

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334069

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334096

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334097

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334038

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334039

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333752

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: P333754

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333755

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

Reference Method: EPA 8321B
Batch ID: P333921

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	105		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P333925

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

Reference Method: SM 4500 F-C-97
Batch ID: P333926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P334346

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P334348

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P333877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	77.5		P	30 - 150
Carbamazepine	128		P	40 - 150
Diuron	111		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	114		P	40 - 150
Imidacloprid	96.1		P	40 - 160
Linuron	110		P	40 - 150
Primidone	106		P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P335339

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	97.9		P	40 - 150
Bentazon	84.9		P	30 - 150
MCP	81.1		P	40 - 150
Triclopyr	81.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P333931

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938627	Iron	108		P	80 - 120
1938627	Zinc	101		P	80 - 120
1938886	Iron	107	105	P/P	80 - 120
1938886	Zinc	99.8	99.0	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333931

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938627	Arsenic	107		P	80 - 120
1938627	Cadmium	108		P	80 - 120
1938627	Chromium	105		P	80 - 120
1938627	Copper	103		P	80 - 120
1938627	Lead	102		P	80 - 120
1938627	Nickel	104		P	80 - 120
1938627	Silver	101		P	80 - 120
1938886	Arsenic	103	102	P/P	80 - 120
1938886	Cadmium	107	106	P/P	80 - 120
1938886	Chromium	102	101	P/P	80 - 120
1938886	Copper	99.5	97.8	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333931

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938886	Lead	99.6	98.0	P/P	80 - 120
1938886	Nickel	101	100	P/P	80 - 120
1938886	Silver	98.7	97.4	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938615	Chloride	105		P	90 - 110
1938621	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938615	Sulfate	103		P	90 - 110
1938621	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334089

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938518	Ammonia-N	93.3	93.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938518	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334069

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938616	Kjeldahl Nitrogen	94.9	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938463	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334097

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938568	NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334038

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938451	Total-P	99.3	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938578	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333752

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938078	O-Phosphate-P	97.8	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938455	O-Phosphate-P	96.9	92.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P333921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938505	Sucralose	61.0	61.4	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P333926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938516	Fluoride	95.9	96.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P334346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938453	Organic Carbon	99.6	100	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P334348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938567	Organic Carbon	101		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P333877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938443	Acetaminophen	119	115	P/P	30 - 150
1938443	Carbamazepine	154	147	F/P	40 - 150
1938443	Diuron	115	106	P/P	40 - 150
1938443	Fenuron	106	105	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P333877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938443	Fluridone	125	108	P/P	40 - 150
1938443	Imidacloprid	173	167	F/F	40 - 160
1938443	Linuron	120	114	P/P	40 - 150
1938443	Primidone	130	117	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P335339

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1938672	2,4-D	76.7	84.3	P/P	40 - 150
1938672	Bentazon	69.2	66.4	P/P	30 - 150
1938672	MCP	58.9	58.9	P/P	40 - 150
1938672	Triclopyr	54.0	59.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P333721

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938515	Turbidity	0.959	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P333722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938565	Turbidity	3.74	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P333723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938812	Turbidity	0.284	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P333931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938886	Iron	1.44	Spike	P	0 - 20
1938886	Zinc	0.862	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333931

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P333931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938886	Arsenic	1.06	Spike	P	0 - 20
1938886	Cadmium	0.713	Spike	P	0 - 20
1938886	Chromium	0.257	Spike	P	0 - 20
1938886	Copper	1.78	Spike	P	0 - 20
1938886	Lead	1.58	Spike	P	0 - 20
1938886	Nickel	0.801	Spike	P	0 - 20
1938886	Silver	1.35	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938621	Chloride	0.470	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938621	Sulfate	0.371	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938518	Ammonia-N	0.167	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938518	Kjeldahl Nitrogen	0.274	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938616	Kjeldahl Nitrogen	5.63	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938463	NO2NO3-N	1.33	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938568	NO2NO3-N	0.662	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938451	Total-P	0.565	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938578	Total-P	1.97	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333752

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938078	O-Phosphate-P	4.12	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938455	O-Phosphate-P	4.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P333755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938569	O-Phosphate-P	0.773	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P333921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938505	Sucralose	0.562	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P333747

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938656	Color (true)	1.49	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P333925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938516	Total Alkalinity	3.76	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P334315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938658	TDS	5.17	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P333926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938516	Fluoride	0.471	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P334346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938453	Organic Carbon	0.702	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P334348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938567	Organic Carbon	0.284	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P333877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938443	Acetaminophen	3.60	Spike	P	0 - 30
1938443	Carbamazepine	4.38	Spike	P	0 - 30
1938443	Diuron	8.17	Spike	P	0 - 30
1938443	Fenuron	1.12	Spike	P	0 - 30
1938443	Fluridone	14.2	Spike	P	0 - 30
1938443	Imidacloprid	3.83	Spike	P	0 - 30
1938443	Linuron	4.53	Spike	P	0 - 30
1938443	Primidone	10.8	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P335339

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938672	2,4-D	5.24	Spike	P	0 - 30
1938672	Bentazon	2.28	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P335339

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1938672	MCP	0.0	Spike	P	0 - 30
1938672	Triclopyr	10.2	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: 1938603
Field Sample ID: G2SE0007

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	76.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	106	P	30 - 160
EPA 8321B	Diuron-d6	74.5	P	30 - 160
EPA 8321B	Primidone-d5	94.0	P	30 - 160
EPA 8321B	Sucralose-d6	67.2	P	40 - 160
USGS O-2060-01	2,4-D-d3	63.0	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	76.5	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	106	P	30 - 160
USGS O-2060-01	Diuron-d6	74.5	P	30 - 160
USGS O-2060-01	Primidone-d5	94.0	P	30 - 160
USGS O-2060-01	Sucralose-d6	67.2	P	40 - 160

Lab Sample ID: 1938604
Field Sample ID: 28010478

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	87.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	101	P	30 - 160
EPA 8321B	Diuron-d6	75.1	P	30 - 160
EPA 8321B	Primidone-d5	93.1	P	30 - 160
EPA 8321B	Sucralose-d6	64.3	P	40 - 160
USGS O-2060-01	2,4-D-d3	75.7	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	87.4	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	101	P	30 - 160
USGS O-2060-01	Diuron-d6	75.1	P	30 - 160
USGS O-2060-01	Primidone-d5	93.1	P	30 - 160
USGS O-2060-01	Sucralose-d6	64.3	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A79674
Included Lab Sample IDs: 1938547, 1938550, 1938553, 1938556, 1938559, 1938560, 1938565, 1938566

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A79682

Included Lab Sample IDs: 1938549, 1938552, 1938555, 1938558, 1938563, 1938564, 1938569, 1938570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	101	P/P	90 - 110
O-Phosphate-P	97.3	99.9	P/P	90 - 110
O-Phosphate-P	98.6	100	P/P	90 - 110
O-Phosphate-P	99.9	98.6	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A79684

Included Lab Sample IDs: 1938547, 1938553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.0	100	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A79726

Included Lab Sample IDs: 1938547, 1938553

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

Reference Method: SM 2320 B-97

Run ID: A79765

Included Lab Sample IDs: 1938547, 1938550, 1938553, 1938556, 1938559, 1938560, 1938565, 1938566

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.6	P/P	90 - 110
Total Alkalinity	99.2	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A79765

Included Lab Sample IDs: 1938547, 1938550, 1938553, 1938556, 1938559, 1938560, 1938565, 1938566

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	98.6	P/P	90 - 110
Fluoride	98.6	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A79811

Included Lab Sample IDs: 1938605, 1938606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	103	102	P/P	90 - 110
Iron	103	103	P/P	95 - 105
Zinc	95.8	97.6	P/P	95 - 105
Zinc	97.6	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79814

Included Lab Sample IDs: 1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79814

Included Lab Sample IDs: 1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	99.2	P/P	90 - 110
Ammonia-N	99.0	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79823

Included Lab Sample IDs: 1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79825

Included Lab Sample IDs: 1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	103	P/P	90 - 110
Total-P	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79896

Included Lab Sample IDs: 1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	97.6	P/P	90 - 110
Kjeldahl Nitrogen	97.5	101	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A79905

Included Lab Sample IDs: 1938603, 1938604

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	114	111	P/P	60 - 150
Carbamazepine	115	118	P/P	60 - 150
Diuron	109	112	P/P	60 - 150
Fenuron	110	112	P/P	60 - 150
Fluridone	112	114	P/P	60 - 160
Imidacloprid	118	110	P/P	60 - 150
Linuron	109	118	P/P	60 - 150
Primidone	107	102	P/P	60 - 150

Reference Method: SM 5310 B-00

Run ID: A79911

Included Lab Sample IDs: 1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	98.6	P/P	90 - 110
Organic Carbon	98.6	99.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A79920

Included Lab Sample IDs: 1938603, 1938604

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	111	P/P	60 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A79972

Included Lab Sample IDs: 1938605, 1938606

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	108	105	P/P	90 - 110
Cadmium	104	104	P/P	90 - 110
Chromium	102	102	P/P	90 - 110
Copper	105	102	P/P	90 - 110
Lead	98.3	98.0	P/P	90 - 110
Nickel	105	102	P/P	90 - 110
Silver	96.9	96.0	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A80386

Included Lab Sample IDs: 1938603, 1938604

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	112	104	P/P	50 - 150
Bentazon	116	119	P/P	50 - 150
MCP	107	103	P/P	50 - 150
Triclopyr	108	101	P/P	50 - 150

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision	
									SMP	MS
EPA 180.1 Rev. 2.0	Turbidity								0.959	
	Turbidity								3.74	
	Turbidity								0.284	
EPA 200.7 Rev. 4.4	Iron	105			108	107	105			1.44
	Zinc	98.2			101	99.8	99.0			0.862
EPA 200.8 Rev. 5.4	Arsenic	105			107	103	102			1.06
	Cadmium	106			108	107	106			0.713
	Chromium	102			105	102	101			0.257
	Copper	101			103	99.5	97.8			1.78
	Lead	98.4			102	99.6	98.0			1.58
	Nickel	103			104	101	100			0.801
	Silver	98.3			101	98.7	97.4			1.35
EPA 300.0 Rev. 2.1	Chloride	103			103	105			0.470	
	Sulfate	102			102	103			0.371	
EPA 350.1 Rev. 2.0	Ammonia-N	97.1			93.3	93.5				0.167
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107			102	102				0.274

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	94.9	102		5.63
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	102	104		1.33
	NO ₂ NO ₃ -N	104	101			0.662
EPA 365.1 Rev. 2.0	Total-P	102	99.3	99.9		0.565
	Total-P	98.0	103	101		1.97
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.0	97.8	103		4.12
	O-Phosphate-P	101	96.9	92.6		4.54
	O-Phosphate-P	100				0.773
EPA 8321B	Sucralose	105	61.0	61.4		0.562
SM 2120 B	Color (true)				1.49	
SM 2320 B-97	Total Alkalinity	102			3.76	
SM 2540 C-97	TDS				5.17	
SM 4500 F-C-97	Fluoride	95.5	95.9	96.4		0.471
SM 5310 B-00	Organic Carbon	97.6	99.6	100		0.702
	Organic Carbon	98.4	101			0.284
USGS O-2060-01	2,4-D	97.9	76.7	84.3		5.24
	Acetaminophen	77.5	119	115		3.60
	Bentazon	84.9	69.2	66.4		2.28
	Carbamazepine	128	154	147		4.38
	Diuron	111	115	106		8.17
	Fenuron	109	106	105		1.12
	Fluridone	114	125	108		14.2
	Imidacloprid	96.1	173	167		3.83
	Linuron	110	120	114		4.53
	MCPP	81.1	58.9	58.9		0.0
	Primidone	106	130	117		10.8
	Triclopyr	81.4	54.0	59.8		10.2

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1938547, 1938550, 1938553, 1938556, 1938559, 1938560, 1938565, 1938566
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1938605, 1938606
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1938605, 1938606
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1938547, 1938553
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1938547, 1938553
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1938549, 1938552, 1938555, 1938558, 1938563, 1938564, 1938569, 1938570
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1938603, 1938604
SM 2120 B / E31780	True Color measured at 450 nm	1938547, 1938553
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1938547, 1938550, 1938553, 1938556, 1938559, 1938560, 1938565, 1938566

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1938547, 1938553
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1938547, 1938550, 1938553, 1938556, 1938559, 1938560, 1938565, 1938566
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1938547, 1938550, 1938553, 1938556, 1938559, 1938560, 1938565, 1938566
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1938603, 1938604
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1938603, 1938604

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	10/19/2017			10/19/2017 18:20	DeAsia Armster	1938547, 1938550, 1938553, 1938556, 1938559, 1938560, 1938565, 1938566
EPA 200.7 Rev. 4.4	10/19/2017	10/24/2017	Elliott D. Healy	10/25/2017	Betina Topolski	1938605, 1938606
EPA 200.8 Rev. 5.4	10/19/2017	10/24/2017	Elliott D. Healy	11/01/2017	Nadine Brooks	1938605, 1938606
EPA 300.0 Rev. 2.1	10/19/2017			10/20/2017	Julia Storbeck	1938547, 1938553
EPA 350.1 Rev. 2.0	10/19/2017			10/25/2017	Sofia Elnemr	1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568
EPA 351.2 Rev. 2.0	10/19/2017	10/26/2017	Adrian Shelby	10/27/2017	Joseph Suarez	1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568
EPA 353.2 Rev. 2.0	10/19/2017			10/26/2017	Beverly Y. Sanders	1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568
EPA 365.1 Rev. 2.0	10/19/2017	10/25/2017	Sima Feizi	10/26/2017	Lipi Saha	1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568
EPA 365.1 Rev. 2.0 dissolved	10/19/2017			10/19/2017 14:56	Megan Treadwell	1938569
	10/19/2017			10/19/2017 15:05	Megan Treadwell	1938558
	10/19/2017			10/19/2017 15:19	Megan Treadwell	1938563, 1938564
	10/19/2017			10/19/2017 15:20	Megan Treadwell	1938570
	10/19/2017			10/19/2017 15:23	Megan Treadwell	1938549
	10/19/2017			10/19/2017 15:24	Megan Treadwell	1938552
	10/19/2017			10/19/2017 15:30	Megan Treadwell	1938555
EPA 8321B	10/19/2017	10/24/2017	Juyoung Kim	10/26/2017	Juyoung Kim	1938603, 1938604
SM 2120 B	10/19/2017			10/19/2017 16:44	Tanya Welborn	1938547
	10/19/2017			10/19/2017 16:45	Tanya Welborn	1938553
SM 2320 B-97	10/19/2017			10/23/2017	Dale L. Simmons	1938547, 1938550, 1938553, 1938556, 1938559, 1938560, 1938565, 1938566
SM 2540 C-97	10/19/2017			10/23/2017	DeAsia Armster	1938547, 1938553
SM 2540 D-97	10/19/2017			10/23/2017	DeAsia Armster	1938547, 1938550, 1938553, 1938556, 1938559, 1938560, 1938565, 1938566
SM 4500 F-C-97	10/19/2017			10/23/2017	Dale L. Simmons	1938547, 1938550, 1938553, 1938556, 1938559, 1938560, 1938565, 1938566
SM 5310 B-00	10/19/2017			10/30/2017	Ping Hua	1938548, 1938551, 1938554, 1938557, 1938561, 1938562, 1938567, 1938568
USGS O-2060-01	10/19/2017	10/23/2017	Hoor Shaik	10/28/2017	Julie Michelle Frank	1938603, 1938604
	10/19/2017	11/15/2017	Hoor Shaik	11/18/2017	Julie Michelle Frank	1938603, 1938604