

Chemical Analysis Report

SE-DIST-2017-06-06-01

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

Event Description: **SMP- G4 Dade Orange Run**
Request ID: **RQ-2017-06-05-25**
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: 30-JUN-2017 10:16

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: ICWW @ S.Shore Pelicon Harbor Park

Collection Date/Time: 06/05/2017 10:15

Field ID: G4SE0099

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903801	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P326367	
	SM 2320 B-97	Total Alkalinity	136		mg CaCO3/L	P326654	
	SM 2540 D-97	TSS	3	I	mg/L	P326670	
	SM 4500 F-C-97	Fluoride	0.99		mg F/L	P326656	
1903803	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P326408	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P326412	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P326338	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P326429	
	SM 5310 B-00	Organic Carbon	4.6		mg C/L	P326507	
1903805	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P326313	

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: ICWW 79 St.Causeway East

Collection Date/Time: 06/05/2017 10:45

Field ID: 28040332

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903802	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P326367	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P326654	
	SM 2540 D-97	TSS	3	IA	mg/L	P326670	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P326656	
1903804	EPA 350.1 Rev. 2.0	Ammonia-N	0.062		mg N/L	P326408	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P326427	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.037		mg N/L	P326338	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P326429	
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P326507	
1903806	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P326313	

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: L-8 / Biscayne Canal

Collection Date/Time: 06/05/2017 10:55

Field ID: G4SEBS04

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903795	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P326366	
	EPA 300.0 Rev. 2.1	Chloride	85		mg Cl/L	P326860	
		Sulfate	14		mg SO4/L	P326862	
	SM 2120 B	Color (true)	31		PCU	P326303	
	SM 2320 B-97	Total Alkalinity	192		mg CaCO3/L	P326792	
	SM 2540 C-97	TDS	402	A	mg/L	P326697	
	SM 2540 D-97	TSS	2	IA	mg/L	P326668	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P327060	
1903796	EPA 350.1 Rev. 2.0	Ammonia-N	0.22		mg N/L	P326383	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.93		mg N/L	P326411	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.049		mg N/L	P326450	

Field ID: G4SEBS04

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903796	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P326432	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P326561	
1903797	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P326313	
1903832	EPA 8321B	Sucralose**	0.29		ug/L	P326278	MS, RPD
	USGS O-2060-01	2,4-D	0.072		ug/L	P326401	
		Diuron	0.0092		ug/L	P326401	
		Fenuron	0.0040	U	ug/L	P326401	
		Imidacloprid	0.0067		ug/L	P326401	MS
		Bentazon	0.0092		ug/L	P326401	
		Linuron	0.0040	U	ug/L	P326401	
		Acetaminophen**	0.0080	U	ug/L	P326401	
		MCPD	0.0020	U	ug/L	P326401	
		Carbamazepine**	0.0050		ug/L	P326401	
		Triclopyr**	0.0040	U	ug/L	P326401	
		Primidone**	0.0040	U	ug/L	P326401	
		Fluridone**	0.0051		ug/L	P326401	
1903833	EPA 200.7 Rev. 4.4	Calcium	70.6		mg/L	P326516	
		Iron	160		ug/L	P326516	
		Magnesium	10.3		mg/L	P326516	
		Potassium	3.5		mg/L	P326516	
		Sodium	57.8		mg/L	P326516	
		Zinc	5.0	U	ug/L	P326516	
	EPA 200.8 Rev. 5.4	Arsenic	1.50		ug/L	P326516	
		Cadmium	0.020	U	ug/L	P326516	
		Chromium	0.40	U	ug/L	P326516	
		Copper	1.09		ug/L	P326516	
		Lead	0.17	I	ug/L	P326516	
		Nickel	0.30	I	ug/L	P326516	
		Selenium	0.20	U	ug/L	P326516	
		Silver	0.010	U	ug/L	P326516	

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: Arch Creek (upper segment)

Collection Date/Time: 06/05/2017 11:30

Field ID: 42009060

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903789	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P326367	
	SM 2320 B-97	Total Alkalinity	163		mg CaCO3/L	P326654	
	SM 2540 D-97	TSS	12		mg/L	P326669	
	SM 4500 F-C-97	Fluoride	0.39		mg F/L	P326907	
1903791	EPA 350.1 Rev. 2.0	Ammonia-N	1.2		mg N/L	P326408	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P326412	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.054		mg N/L	P326337	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P326429	

Field ID: 42009060

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903791	SM 5310 B-00	Organic Carbon	5.3		mg C/L	P326507	
1903793	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.084		mg P/L	P326313	
1903830	EPA 8321B	Sucralose**	0.78	J	ug/L	P326278	MS, RPD
	USGS O-2060-01	2,4-D	8.8E-04	I	ug/L	P326401	
		Diuron	0.0060		ug/L	P326401	
		Fenuron	0.020		ug/L	P326401	
		Imidacloprid	0.0043		ug/L	P326401	MS
		Bentazon	8.0E-04	U	ug/L	P326401	
		Linuron	0.0040	U	ug/L	P326401	
		Acetaminophen**	1.0	I	ug/L	P326401	
		MCP	0.0020	U	ug/L	P326401	
		Carbamazepine**	0.0067		ug/L	P326401	
		Triclopyr**	0.0040	U	ug/L	P326401	
		Primidone**	0.0084	I	ug/L	P326401	
		Fluridone**	4.8E-04	I	ug/L	P326401	

Ref. Method and Comment:

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

EPA 8321B: Refer to the narrative for an explanation of QC Codes.

Sample Location: Olera River (upper segment)

Collection Date/Time: 06/05/2017 12:15

Field ID: 42009058

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903790	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P326366	
	SM 2320 B-97	Total Alkalinity	157		mg CaCO3/L	P326654	
	SM 2540 D-97	TSS	3	IA	mg/L	P326669	
	SM 4500 F-C-97	Fluoride	0.78		mg F/L	P326656	
1903792	EPA 350.1 Rev. 2.0	Ammonia-N	0.060		mg N/L	P326408	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P326412	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P326337	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P326429	
	SM 5310 B-00	Organic Carbon	6.0		mg C/L	P326724	
1903794	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.010		mg P/L	P326313	
1903831	EPA 8321B	Sucralose**	0.18		ug/L	P326278	MS, RPD
	USGS O-2060-01	2,4-D	0.0088		ug/L	P326401	
		Diuron	0.0049		ug/L	P326401	
		Fenuron	0.0040	U	ug/L	P326401	
		Imidacloprid	0.0031	IJ	ug/L	P326401	MS
		Bentazon	0.010		ug/L	P326401	
		Linuron	0.0040	U	ug/L	P326401	
		Acetaminophen**	0.0080	U	ug/L	P326401	
		MCP	0.0020	U	ug/L	P326401	
		Carbamazepine**	0.0025		ug/L	P326401	
		Triclopyr**	0.0040	U	ug/L	P326401	
		Primidone**	0.0040	U	ug/L	P326401	

Field ID: 42009058

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903831	USGS O-2060-01	Fluridone**	0.0035		ug/L	P326401	

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: Refer to the narrative for an explanation of QC Codes.

Sample Location: ICWN (Miami Dade Northern Segment)

Collection Date/Time: 06/05/2017 11:55

Field ID: G4SE0063

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903798	EPA 180.1 Rev. 2.0	Turbidity	2.6	A	NTU	P326367	
	SM 2320 B-97	Total Alkalinity	158		mg CaCO3/L	P326654	
	SM 2540 D-97	TSS	5	I	mg/L	P326670	
	SM 4500 F-C-97	Fluoride	0.72		mg F/L	P326656	
1903799	EPA 350.1 Rev. 2.0	Ammonia-N	0.047		mg N/L	P326408	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P326412	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P326337	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P326429	
	SM 5310 B-00	Organic Carbon	7.2		mg C/L	P326507	
1903800	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P326313	
1903834	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P326778	
	EPA 200.8 Rev. 5.4	Arsenic	1.51		ug/L	P326778	
		Cadmium	0.060	U	ug/L	P326778	
		Chromium	1.2	U	ug/L	P326778	
		Copper	1.3	I	ug/L	P326778	
		Lead	0.23	I	ug/L	P326778	
		Nickel	0.60	U	ug/L	P326778	
		Silver	0.030	U	ug/L	P326778	
		Zinc	3.0	U	ug/L	P326778	

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: P326366

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P326367

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P326516

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326516

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326778

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326516

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
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326778

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: P326860

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326862

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326383

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326408

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326411

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326412

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326427

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326337

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326338

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326450

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326429

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
Batch ID: P326432

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326313

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

Reference Method: EPA 8321B
Batch ID: P326278

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P326303

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P326654

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

Reference Method: SM 2320 B-97
Batch ID: P326792

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

Reference Method: SM 2540 C-97
Batch ID: P326697

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P326668

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P326669

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P326670

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P326656

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P326907

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P327060

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P326507

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

Reference Method: SM 5310 B-00
Batch ID: P326561

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

Reference Method: SM 5310 B-00
Batch ID: P326724

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

Reference Method: USGS O-2060-01
Batch ID: P326401

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

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P326401

Component	Result	Code	Units
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	104		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	98.5		P	85 - 115
Sodium	103		P	85 - 115
Zinc	97.5		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	105		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	100		P	85 - 115
Copper	100		P	85 - 115
Lead	97.9		P	85 - 115
Nickel	102		P	85 - 115
Selenium	106		P	85 - 115
Silver	98.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	98.0		P	85 - 115
Cadmium	98.8		P	85 - 115
Chromium	98.8		P	85 - 115
Copper	97.0		P	85 - 115
Lead	96.3		P	85 - 115
Nickel	100		P	85 - 115
Silver	95.0		P	85 - 115
Zinc	98.1		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326860

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326862

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326383

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326408

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326411

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326412

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326427

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326337

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326338

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326450

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326429

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326432

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326313

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

Reference Method: EPA 8321B
Batch ID: P326278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	88.2		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P326654

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

Reference Method: SM 2320 B-97
Batch ID: P326792

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

Reference Method: SM 4500 F-C-97
Batch ID: P326656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P326907

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.4		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P327060

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P326507

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

Reference Method: SM 5310 B-00
Batch ID: P326561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.9		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P326724

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	90.9		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P326401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	94.0		P	40 - 140
Acetaminophen	50.0		P	40 - 140
Bentazon	78.6		P	40 - 140
Carbamazepine	139		P	40 - 140
Diuron	139		P	40 - 140
Fenuron	115		P	40 - 140
Fluridone	138		P	40 - 140
Imidacloprid	120		P	40 - 160
Linuron	124		P	40 - 140
MCPP	98.2		P	40 - 140
Primidone	132		P	40 - 140
Triclopyr	103		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903833	Calcium	100		P	80 - 120
1903833	Iron	107		P	80 - 120
1903833	Magnesium	104		P	80 - 120
1903833	Potassium	101		P	80 - 120
1903833	Sodium	101		P	80 - 120
1903833	Zinc	101		P	80 - 120
1904095	Calcium	106		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904095	Iron	104	104	P/P	80 - 120
1904095	Magnesium	105		P	80 - 120
1904095	Potassium	98.7	101	P/P	80 - 120
1904095	Sodium	107		P	80 - 120
1904095	Zinc	100	98.1	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903834	Iron	103	102	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903833	Arsenic	106		P	80 - 120
1903833	Cadmium	103		P	80 - 120
1903833	Chromium	98.0		P	80 - 120
1903833	Copper	96.9		P	80 - 120
1903833	Lead	101		P	80 - 120
1903833	Nickel	98.3		P	80 - 120
1903833	Selenium	108		P	80 - 120
1903833	Silver	98.7		P	80 - 120
1904095	Arsenic	106	106	P/P	80 - 120
1904095	Cadmium	106	105	P/P	80 - 120
1904095	Chromium	97.1	97.3	P/P	80 - 120
1904095	Copper	98.5	98.4	P/P	80 - 120
1904095	Lead	100	100	P/P	80 - 120
1904095	Nickel	99.8	99.8	P/P	80 - 120
1904095	Selenium	106	106	P/P	80 - 120
1904095	Silver	98.7	98.3	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903834	Arsenic	91.8	93.4	P/P	70 - 130
1903834	Cadmium	93.6	91.2	P/P	80 - 120
1903834	Chromium	86.7	87.2	P/P	80 - 120
1903834	Copper	94.4	95.7	P/P	80 - 120
1903834	Lead	100	102	P/P	80 - 120
1903834	Nickel	102	103	P/P	80 - 120
1903834	Silver	88.8	89.2	P/P	80 - 120
1903834	Zinc	92.0	92.7	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903324	Chloride	106		P	90 - 110
1903963	Chloride	97.9		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903324	Sulfate	104		P	90 - 110
1903963	Sulfate	95.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903883	Ammonia-N	106	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904112	Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903884	Kjeldahl Nitrogen	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903516	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326427

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903804	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326337

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903511	NO2NO3-N	108	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903803	NO2NO3-N	106	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326450

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903885	NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326429

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903515	Total-P	93.2	92.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903760	Total-P	97.3	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903793	O-Phosphate-P	95.1	96.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P326278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903830	Sucralose	32.1	148	F/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P326656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904221	Fluoride	99.1	99.1	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P326907

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905529	Fluoride	95.6	93.5	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P327060

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903795	Fluoride	100	105	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P326507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903200	Organic Carbon	96.0	94.1	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P326561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903968	Organic Carbon	99.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P326724

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903792	Organic Carbon	89.2	89.0	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P326401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903831	2,4-D	90.0	95.8	P/P	40 - 140
1903831	Acetaminophen	109	108	P/P	40 - 140
1903831	Bentazon	41.6	42.8	P/P	40 - 140
1903831	Carbamazepine	114	121	P/P	40 - 140
1903831	Diuron	102	105	P/P	40 - 140
1903831	Fenuron	80.0	78.0	P/P	40 - 140
1903831	Fluridone	100	103	P/P	40 - 140
1903831	Imidacloprid	205	204	F/F	40 - 160
1903831	Linuron	116	112	P/P	40 - 140
1903831	MCCP	73.2	76.0	P/P	40 - 140
1903831	Primidone	120	128	P/P	40 - 140
1903831	Triclopyr	76.0	74.8	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P326366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903754	Turbidity	2.05	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P326367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903798	Turbidity	3.09	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904095	Calcium	1.27	Spike	P	0 - 20
1904095	Iron	0.201	Spike	P	0 - 20
1904095	Magnesium	1.32	Spike	P	0 - 20
1904095	Potassium	1.29	Spike	P	0 - 20
1904095	Sodium	2.22	Spike	P	0 - 20
1904095	Zinc	1.98	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903834	Iron	1.29	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904095	Arsenic	0.762	Spike	P	0 - 20
1904095	Cadmium	1.52	Spike	P	0 - 20
1904095	Chromium	0.160	Spike	P	0 - 20
1904095	Copper	0.119	Spike	P	0 - 20
1904095	Lead	0.519	Spike	P	0 - 20
1904095	Nickel	0.0363	Spike	P	0 - 20
1904095	Selenium	0.367	Spike	P	0 - 20
1904095	Silver	0.409	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903834	Arsenic	1.62	Spike	P	0 - 20
1903834	Cadmium	2.65	Spike	P	0 - 20
1903834	Chromium	0.604	Spike	P	0 - 20
1903834	Copper	1.28	Spike	P	0 - 20
1903834	Lead	1.15	Spike	P	0 - 20
1903834	Nickel	1.09	Spike	P	0 - 20
1903834	Silver	0.374	Spike	P	0 - 20
1903834	Zinc	0.777	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903324	Chloride	2.98	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903324	Sulfate	3.34	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903883	Ammonia-N	0.395	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904112	Ammonia-N	1.64	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903884	Kjeldahl Nitrogen	0.492	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903516	Kjeldahl Nitrogen	0.879	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326427

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903804	Kjeldahl Nitrogen	0.655	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326337

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903511	NO2NO3-N	0.466	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903803	NO2NO3-N	0.372	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903885	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903515	Total-P	0.833	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903760	Total-P	2.09	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903793	O-Phosphate-P	0.667	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P326278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903830	Sucralose	64.8	Spike	F	0 - 30

Reference Method: SM 2120 B
Batch ID: P326303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903485	Color (true)	3.17	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P326654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904221	Total Alkalinity	0.00963	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P326792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905012	Total Alkalinity	0.140	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P326697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903795	TDS	1.49	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P326656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904221	Fluoride	0.0	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P326907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905529	Fluoride	1.46	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P327060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903795	Fluoride	2.88	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P326507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903200	Organic Carbon	1.85	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P326561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903968	Organic Carbon	3.10	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P326724

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903792	Organic Carbon	0.144	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P326401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903831	2,4-D	5.05	Spike	P	0 - 30
1903831	Acetaminophen	0.369	Spike	P	0 - 30
1903831	Bentazon	1.77	Spike	P	0 - 30
1903831	Carbamazepine	5.01	Spike	P	0 - 30
1903831	Diuron	2.25	Spike	P	0 - 30
1903831	Fenuron	2.53	Spike	P	0 - 30
1903831	Fluridone	2.35	Spike	P	0 - 30
1903831	Imidacloprid	0.471	Spike	P	0 - 30
1903831	Linuron	4.21	Spike	P	0 - 30
1903831	MCP	3.75	Spike	P	0 - 30
1903831	Primidone	6.79	Spike	P	0 - 30
1903831	Triclopyr	1.59	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: 1903830
Field Sample ID: 42009060

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	70.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	93.9	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	65.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	132	P	30 - 160
USGS O-2060-01	Diuron-d6	107	P	30 - 160
USGS O-2060-01	Primidone-d5	133	P	30 - 150

Lab Sample ID: 1903831
Field Sample ID: 42009058

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	69.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	102	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	126	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	138	P	30 - 160
USGS O-2060-01	Diuron-d6	118	P	30 - 160
USGS O-2060-01	Primidone-d5	135	P	30 - 150

Lab Sample ID: 1903832
Field Sample ID: G4SEBS04

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	71.5	P	40 - 160
USGS O-2060-01	2,4-D-d3	106	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	120	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	113	P	30 - 160
USGS O-2060-01	Diuron-d6	98.5	P	30 - 160
USGS O-2060-01	Primidone-d5	117	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A76897
Included Lab Sample IDs: 1903795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	103	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A76901
Included Lab Sample IDs: 1903793, 1903794, 1903797, 1903800, 1903805, 1903806

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	99.5	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76909

Included Lab Sample IDs: 1903791, 1903792, 1903799, 1903803, 1903804

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A76922

Included Lab Sample IDs: 1903789, 1903790, 1903795, 1903798, 1903801, 1903802

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76928

Included Lab Sample IDs: 1903796

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76933

Included Lab Sample IDs: 1903791, 1903792, 1903799, 1903803, 1903804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.5	P/P	90 - 110
Ammonia-N	100	100	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A76951

Included Lab Sample IDs: 1903830, 1903831, 1903832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	110	110	P/P	50 - 150
2,4-D	110	110	P/P	50 - 150
Acetaminophen	102	107	P/P	60 - 150
Acetaminophen	110	90.0	P/P	60 - 150
Acetaminophen	95.2	110	P/P	60 - 150
Bentazon	116	112	P/P	50 - 150
Bentazon	120	116	P/P	50 - 150
Carbamazepine	110	113	P/P	60 - 150
Carbamazepine	113	110	P/P	60 - 150
Diuron	110	102	P/P	60 - 150
Diuron	115	110	P/P	60 - 150
Fenuron	100	93.6	P/P	60 - 150
Fenuron	91.2	100	P/P	60 - 150
Fluridone	127	128	P/P	60 - 160
Fluridone	128	113	P/P	60 - 160
Imidacloprid	111	98.4	P/P	60 - 150
Imidacloprid	114	111	P/P	60 - 150
Linuron	108	104	P/P	60 - 150
Linuron	114	108	P/P	60 - 150
MCP	101	98.4	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A76951

Included Lab Sample IDs: 1903830, 1903831, 1903832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
MCP	98.4	91.2	P/P	50 - 150
Primidone	102	110	P/P	60 - 150
Primidone	110	110	P/P	60 - 150
Triclopyr	101	98.8	P/P	50 - 150
Triclopyr	104	101	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76953

Included Lab Sample IDs: 1903796

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	102	101	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A76978

Included Lab Sample IDs: 1903791, 1903799, 1903803, 1903804

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76980

Included Lab Sample IDs: 1903791

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76984

Included Lab Sample IDs: 1903792, 1903796, 1903799, 1903803, 1903804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.5	P/P	90 - 110
Total-P	98.5	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76990

Included Lab Sample IDs: 1903791, 1903792, 1903799, 1903803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.8	97.2	P/P	90 - 110
Kjeldahl Nitrogen	97.3	94.8	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A76997

Included Lab Sample IDs: 1903796

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.4	92.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77011

Included Lab Sample IDs: 1903796, 1903804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	103	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A77022

Included Lab Sample IDs: 1903833

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	102	P/P	90 - 110
Iron	101	102	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	99.6	100	P/P	90 - 110
Sodium	102	103	P/P	90 - 110
Zinc	99.4	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77029

Included Lab Sample IDs: 1903789, 1903790, 1903798, 1903801, 1903802

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: A77029

Included Lab Sample IDs: 1903790, 1903798, 1903801, 1903802

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

Reference Method: SM 5310 B-00

Run ID: A77054

Included Lab Sample IDs: 1903792

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.5	95.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77055

Included Lab Sample IDs: 1903833

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	101	99.3	P/P	90 - 110
Cadmium	99.7	98.6	P/P	90 - 110
Chromium	97.8	98.1	P/P	90 - 110
Copper	100	97.9	P/P	90 - 110
Lead	92.4	94.1	P/P	90 - 110
Nickel	99.3	97.8	P/P	90 - 110
Selenium	103	99.3	P/P	90 - 110
Silver	98.4	97.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77076

Included Lab Sample IDs: 1903795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.5	100	P/P	90 - 110
Sulfate	101	106	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77078

Included Lab Sample IDs: 1903795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77119

Included Lab Sample IDs: 1903789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.1	95.3	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A77123

Included Lab Sample IDs: 1903834

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

Reference Method: SM 4500 F-C-97

Run ID: A77172

Included Lab Sample IDs: 1903795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.2	96.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77218

Included Lab Sample IDs: 1903834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	95.9	96.5	P/P	90 - 110
Chromium	95.6	94.4	P/P	90 - 110
Copper	98.4	99.9	P/P	90 - 110
Lead	94.6	95.5	P/P	90 - 110
Nickel	99.4	101	P/P	90 - 110
Silver	95.0	96.4	P/P	90 - 110
Zinc	97.1	97.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A77276

Included Lab Sample IDs: 1903830, 1903831, 1903832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	115	78.8	P/P	60 - 160
Sucralose	78.8	112	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77321

Included Lab Sample IDs: 1903834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.3	98.0	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						2.05	
	Turbidity						3.09	
EPA 200.7 Rev. 4.4	Calcium	102		100	106			1.27
	Iron	104		107	104	104		0.201
	Iron	104		103	102			1.29
	Magnesium	103		104	105			1.32
	Potassium	98.5		101	98.7	101		1.29
	Sodium	103		101	107			2.22
	Zinc	97.5		101	100	98.1		1.98
EPA 200.8 Rev. 5.4	Arsenic	105		106	106	106		0.762
	Arsenic	98.0		91.8	93.4			1.62
	Cadmium	103		103	106	105		1.52
	Cadmium	98.8		93.6	91.2			2.65
	Chromium	100		98.0	97.1	97.3		0.160
	Chromium	98.8		86.7	87.2			0.604
	Copper	100		96.9	98.5	98.4		0.119
	Copper	97.0		94.4	95.7			1.28
	Lead	97.9		101	100	100		0.519
	Lead	96.3		100	102			1.15
	Nickel	102		98.3	99.8	99.8		0.0363
	Nickel	100		102	103			1.09
	Selenium	106		108	106	106		0.367
	Silver	98.8		98.7	98.7	98.3		0.409
	Silver	95.0		88.8	89.2			0.374
	Zinc	98.1		92.0	92.7			0.777
EPA 300.0 Rev. 2.1	Chloride	99.2		106	97.9		2.98	
	Sulfate	99.9		104	95.3		3.34	
EPA 350.1 Rev. 2.0	Ammonia-N	105		106	105			0.395
	Ammonia-N	97.4		103	101			1.64
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103		100	101			0.492
	Kjeldahl Nitrogen	97.3		102	102			0.879
	Kjeldahl Nitrogen	103		103	104			0.655
EPA 353.2 Rev. 2.0	NO2NO3-N	104		108	107			0.466
	NO2NO3-N	105		106	107			0.372
	NO2NO3-N	104		102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	99.8		93.2	92.4			0.833
	Total-P	99.3		97.3	99.5			2.09
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.3		95.1	96.3			0.667
EPA 8321B	Sucralose	88.2		32.1	148			64.8

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 2120 B	Color (true)				3.17	
SM 2320 B-97	Total Alkalinity	103			0.0096	
	Total Alkalinity	103			0.140	
SM 2540 C-97	TDS				1.49	
SM 4500 F-C-97	Fluoride	96.5	99.1	99.1		0.0
	Fluoride	95.4	95.6	93.5		1.46
	Fluoride	96.9	100	105		2.88
SM 5310 B-00	Organic Carbon	101	96.0	94.1		1.85
	Organic Carbon	92.9	99.4			3.10
	Organic Carbon	90.9	89.2	89.0		0.144
USGS O-2060-01	2,4-D	94.0	90.0	95.8		5.05
	Acetaminophen	50.0	109	108		0.369
	Bentazon	78.6	41.6	42.8		1.77
	Carbamazepine	139	114	121		5.01
	Diuron	139	102	105		2.25
	Fenuron	115	80.0	78.0		2.53
	Fluridone	138	100	103		2.35
	Imidacloprid	120	205	204		0.471
	Linuron	124	116	112		4.21
	MCPP	98.2	73.2	76.0		3.75
	Primidone	132	120	128		6.79
	Triclopyr	103	76.0	74.8		1.59

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1903789, 1903790, 1903795, 1903798, 1903801, 1903802
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1903833, 1903834
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1903833, 1903834
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1903795
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1903795
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1903791, 1903792, 1903796, 1903799, 1903803, 1903804
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1903791, 1903792, 1903796, 1903799, 1903803, 1903804
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1903791, 1903792, 1903796, 1903799, 1903803, 1903804
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1903791, 1903792, 1903796, 1903799, 1903803, 1903804
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1903793, 1903794, 1903797, 1903800, 1903805, 1903806
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1903830, 1903831, 1903832
SM 2120 B / E31780	True Color measured at 450 nm	1903795
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1903789, 1903790, 1903795, 1903798, 1903801, 1903802
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1903795
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1903789, 1903790, 1903795, 1903798, 1903801, 1903802
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1903789, 1903790, 1903795, 1903798, 1903801, 1903802

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1903791, 1903792, 1903796, 1903799, 1903803, 1903804
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1903830, 1903831, 1903832
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1903830, 1903831, 1903832

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	06/06/2017			06/06/2017 17:41	Blanca Fach	1903789, 1903790, 1903795, 1903798, 1903801, 1903802
EPA 200.7 Rev. 4.4	06/06/2017	06/09/2017	Elliott D. Healy	06/12/2017	Betina Topolski	1903833
	06/06/2017	06/14/2017	Elliott D. Healy	06/15/2017	Betina Topolski	1903834
EPA 200.8 Rev. 5.4	06/06/2017	06/09/2017	Elliott D. Healy	06/13/2017	Robert K Palmer	1903833
	06/06/2017	06/14/2017	Elliott D. Healy	06/20/2017	Robert K Palmer	1903834
	06/06/2017	06/14/2017	Elliott D. Healy	06/24/2017	Robert K Palmer	1903834
EPA 300.0 Rev. 2.1	06/06/2017			06/15/2017	Julia Storbeck	1903795
EPA 350.1 Rev. 2.0	06/06/2017			06/06/2017	Julie Michelle Frank	1903796
	06/06/2017			06/07/2017	Julie Michelle Frank	1903791, 1903792, 1903799, 1903803, 1903804
EPA 351.2 Rev. 2.0	06/06/2017	06/08/2017	Adrian Shelby	06/09/2017	Joseph Suarez	1903791, 1903792, 1903799, 1903803
	06/06/2017	06/08/2017	Adrian Shelby	06/12/2017	Joseph Suarez	1903796, 1903804
EPA 353.2 Rev. 2.0	06/06/2017			06/07/2017	Beverly Y. Sanders	1903791, 1903792, 1903799, 1903803, 1903804
	06/06/2017			06/08/2017	Beverly Y. Sanders	1903796
EPA 365.1 Rev. 2.0	06/06/2017	06/08/2017	Adrian Shelby	06/09/2017	Lipi Saha	1903791, 1903792, 1903796, 1903799, 1903803, 1903804
EPA 365.1 Rev. 2.0 dissolved	06/06/2017			06/06/2017 15:56	Anthony C. Onicha	1903793
	06/06/2017			06/06/2017 16:47	Anthony C. Onicha	1903794
	06/06/2017			06/06/2017 16:48	Anthony C. Onicha	1903797
	06/06/2017			06/06/2017 16:49	Anthony C. Onicha	1903800, 1903805
	06/06/2017			06/06/2017 16:50	Anthony C. Onicha	1903806
EPA 8321B	06/06/2017	06/15/2017	Mohammad Ghaffari	06/20/2017	Mohammad Ghaffari	1903830, 1903831, 1903832
SM 2120 B	06/06/2017			06/06/2017 17:54	Tanya Welborn	1903795
SM 2320 B-97	06/06/2017			06/12/2017	Dale L. Simmons	1903789, 1903790, 1903798, 1903801, 1903802
	06/06/2017			06/13/2017	Dale L. Simmons	1903795
SM 2540 C-97	06/06/2017			06/07/2017	Yijie Li	1903795
SM 2540 D-97	06/06/2017			06/07/2017	Yijie Li	1903789, 1903790, 1903795, 1903798, 1903801, 1903802
SM 4500 F-C-97	06/06/2017			06/12/2017	Dale L. Simmons	1903790, 1903798, 1903801, 1903802
	06/06/2017			06/14/2017	Dale L. Simmons	1903789
	06/06/2017			06/16/2017	Elisa J Lutz	1903795
SM 5310 B-00	06/06/2017			06/08/2017	Christopher Armour	1903791, 1903799, 1903803, 1903804
	06/06/2017			06/09/2017	Christopher Armour	1903796
	06/06/2017			06/13/2017	Christopher Armour	1903792
USGS O-2060-01	06/06/2017	06/08/2017	Hoor Shaik	06/09/2017	Mohammad Ghaffari	1903830, 1903831, 1903832