

Chemical Analysis Report

NE-DIST-2017-02-21-02

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

Event Description: **LSJR Coast**
Request ID: **RQ-2017-02-13-11**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 21-MAR-2017 09:41

A handwritten signature in black ink, appearing to read "Liang Lin", is written on a light-colored, textured 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: Hopkins Creek @ Kings Rd.

Collection Date/Time: 02/20/2017 11:15

Field ID: G2NE0766 02202017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874163	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P320212	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P320412	
	SM 2540 D-97	TSS	7	I	mg/L	P320621	
	SM 4500 F-C-97	Fluoride	0.71		mg F/L	P320421	
1874167	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P320321	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P320264	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.041		mg N/L	P320352	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P320294	
	SM 5310 B-00	Organic Carbon	9.4		mg C/L	P320486	
1874171	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.066		mg P/L	P320208	

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: ICW @ Isle of Palms Boat Ramp

Collection Date/Time: 02/20/2017 11:50

Field ID: G2NE1136 02202017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874160	EPA 180.1 Rev. 2.0	Turbidity	6.6		NTU	P320212	
	EPA 300.0 Rev. 2.1	Sulfate	1.8E+03		mg SO4/L	P321011	
	SM 2320 B-97	Total Alkalinity	113		mg CaCO3/L	P320412	
	SM 2540 D-97	TSS	14		mg/L	P320621	
	SM 4500 F-C-97	Fluoride	0.88		mg F/L	P320421	
1874161	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P320321	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P320264	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P320351	
	EPA 365.1 Rev. 2.0	Total-P	0.062		mg P/L	P320293	
	SM 5310 B-00	Organic Carbon	6.7		mg C/L	P320486	
1874162	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P320207	
1874232	EPA 8321B	Sucralose**	0.33		ug/L	P320274	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P320202	
		Fenuron	0.0080	U	ug/L	P320202	
		Imidacloprid	0.0040	U	ug/L	P320202	
		Linuron	0.0040	U	ug/L	P320202	
		Acetaminophen**	0.0040	U	ug/L	P320202	
		Carbamazepine**	7.2E-04	I	ug/L	P320202	
		Primidone**	0.0080	U	ug/L	P320202	
		Fluridone**	0.0026		ug/L	P320202	MS

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: Results confirmed in re-extraction.

Sample Location: Open Creek @ San Pablo Rd.

Collection Date/Time: 02/20/2017 12:10

Field ID: G2NE0703 02202017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G2NE0703 02202017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874164	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P320212	
	SM 2320 B-97	Total Alkalinity	79		mg CaCO3/L	P320413	
	SM 2540 D-97	TSS	4	I	mg/L	P320620	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P320422	
1874168	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P320442	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P320366	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P320825	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P320297	
	SM 5310 B-00	Organic Carbon	9.3		mg C/L	P320484	
1874172	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.015		mg P/L	P320206	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: St. Johns R @ Scanlon BR Mayport

Collection Date/Time: 02/20/2017 09:10

Field ID: G2NE1128 02202017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874175	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P320213	
	SM 2320 B-97	Total Alkalinity	115		mg CaCO3/L	P320412	
	SM 2540 D-97	TSS	11		mg/L	P320621	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P320421	
1874177	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P320321	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30	I	mg N/L	P320264	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P320352	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P320294	
	SM 5310 B-00	Organic Carbon	3.7		mg C/L	P320486	
1874179	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P320208	
1874230	EPA 200.7 Rev. 4.4	Iron	140	I	ug/L	P320664	
	EPA 200.8 Rev. 5.4	Arsenic	2.25		ug/L	P320664	
		Cadmium	0.080	U	ug/L	P320664	
		Chromium	1.6	U	ug/L	P320664	
		Copper	0.80	U	ug/L	P320664	
		Lead	0.20	U	ug/L	P320664	
		Nickel	0.80	U	ug/L	P320664	
		Silver	0.040	U	ug/L	P320664	
		Zinc	4.6	I	ug/L	P320664	

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: St. Johns R @ Little Jetties Pier

Collection Date/Time: 02/20/2017 09:40

Field ID: G2NE0745 02202017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874176	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P320213	
	SM 2320 B-97	Total Alkalinity	114		mg CaCO3/L	P320412	

Field ID: G2NE0745 02202017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874176	SM 2540 D-97	TSS	7	I	mg/L	P320621	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P320421	
1874178	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P320321	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30	I	mg N/L	P320264	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P320352	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P320294	
	SM 5310 B-00	Organic Carbon	4.5		mg C/L	P320486	
1874180	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P320208	
1874231	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P320664	
	EPA 200.8 Rev. 5.4	Arsenic	2.23		ug/L	P320664	
		Cadmium	0.080	U	ug/L	P320664	
		Chromium	1.6	U	ug/L	P320664	
		Copper	0.80	U	ug/L	P320664	
		Lead	0.20	U	ug/L	P320664	
		Nickel	0.80	U	ug/L	P320664	
		Silver	0.040	U	ug/L	P320664	
		Zinc	7.2	I	ug/L	P320664	

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: Sherman Creek @ A1A bridge

Collection Date/Time: 02/20/2017 10:10

Field ID: G2NE0020 02202017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874165	EPA 180.1 Rev. 2.0	Turbidity	4.7	A	NTU	P320213	
	SM 2320 B-97	Total Alkalinity	121		mg CaCO3/L	P320412	
	SM 2540 D-97	TSS	6	I	mg/L	P320621	
	SM 4500 F-C-97	Fluoride	0.94		mg F/L	P320421	
1874169	EPA 350.1 Rev. 2.0	Ammonia-N	0.050		mg N/L	P320321	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P320264	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P320352	
	EPA 365.1 Rev. 2.0	Total-P	0.083		mg P/L	P320294	
	SM 5310 B-00	Organic Carbon	6.2		mg C/L	P320486	
1874173	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.058		mg P/L	P320208	

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: Greenfield Creek @ Wonderwood

Collection Date/Time: 02/20/2017 10:35

Field ID: G2NE1137 02202017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874166	EPA 180.1 Rev. 2.0	Turbidity	6.7		NTU	P320213	
	SM 2320 B-97	Total Alkalinity	109		mg CaCO3/L	P320412	
	SM 2540 D-97	TSS	6	I	mg/L	P320621	
	SM 4500 F-C-97	Fluoride	0.90		mg F/L	P320421	
1874170	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P320321	

Field ID: G2NE1137 02202017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1874170	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P320264	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P320352	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P320294	
	SM 5310 B-00	Organic Carbon	6.2		mg C/L	P320486	
1874174	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P320208	

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: P320212

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P320213

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P320664

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P320664

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: P321011

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P320321

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320442

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320264

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320366

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320351

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320352

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320825

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320293

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320294

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320297

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: P320206

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320207

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320208

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

Reference Method: EPA 8321B
Batch ID: P320274

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P320412

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

Reference Method: SM 2320 B-97
Batch ID: P320413

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

Reference Method: SM 2540 D-97
Batch ID: P320620

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P320621

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P320421

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P320422

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P320484

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

Reference Method: SM 5310 B-00
Batch ID: P320486

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

Reference Method: USGS O-2060-01
Batch ID: P320202

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P320664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P320664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	87.8		P	85 - 115
Cadmium	95.0		P	85 - 115
Chromium	95.5		P	85 - 115
Copper	98.6		P	85 - 115
Lead	86.9		P	85 - 115
Nickel	86.9		P	85 - 115
Silver	91.6		P	85 - 115
Zinc	88.4		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321011

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	90.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320321

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320442

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320264

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	106		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320366

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320351

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320352

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: P320825

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320293

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.1		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320294

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	90.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320206

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320207

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: P320208

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

Reference Method: EPA 8321B
Batch ID: P320274

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	89.7		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P320412

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

Reference Method: SM 2320 B-97
Batch ID: P320413

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

Reference Method: SM 4500 F-C-97
Batch ID: P320421

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P320422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P320484

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P320486

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P320202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	79.2		P	40 - 140
Carbamazepine	115		P	40 - 140
Diuron	85.2		P	40 - 140
Fenuron	105		P	40 - 140
Fluridone	86.8		P	40 - 140
Imidacloprid	102		P	40 - 160
Linuron	92.8		P	40 - 140
Primidone	86.4		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P320664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874088	Iron	82.0		P	70 - 130
1875991	Iron	78.5	89.7	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P320664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874088	Arsenic	107		P	70 - 130
1874088	Cadmium	95.3		P	70 - 130
1874088	Chromium	94.1		P	70 - 130
1874088	Copper	103		P	70 - 130
1874088	Lead	100		P	70 - 130
1874088	Nickel	95.6		P	70 - 130
1874088	Silver	91.1		P	70 - 130
1874088	Zinc	96.6		P	70 - 130
1875991	Arsenic	102	104	P/P	70 - 130
1875991	Cadmium	90.9	97.2	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P320664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875991	Chromium	94.1	94.5	P/P	70 - 130
1875991	Copper	96.2	94.9	P/P	70 - 130
1875991	Lead	96.4	97.0	P/P	70 - 130
1875991	Nickel	90.4	91.3	P/P	70 - 130
1875991	Silver	90.8	88.1	P/P	70 - 130
1875991	Zinc	90.3	91.0	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873900	Sulfate	90.1		P	90 - 110
1873976	Sulfate	90.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874020	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874156	Kjeldahl Nitrogen	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320366

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874168	Kjeldahl Nitrogen	103	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320351

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874018	NO2NO3-N	103	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874167	NO2NO3-N	101	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320825

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875704	NO2NO3-N	96.4	96.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320293

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874110	Total-P	92.0	93.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874187	Total-P	91.2	93.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874124	Total-P	97.2	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320206

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874172	O-Phosphate-P	97.2	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873911	O-Phosphate-P	98.3	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874180	O-Phosphate-P	98.8	98.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P320274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874519	Sucralose	82.6	74.3	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P320421

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874009	Fluoride	94.8	95.5	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P320422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874059	Fluoride	104	100	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P320484

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874000	Organic Carbon	94.4	93.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P320486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874110	Organic Carbon	95.2	94.8	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P320202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874049	Acetaminophen	72.4	72.0	P/P	40 - 140
1874049	Carbamazepine	58.0	49.6	P/P	40 - 140
1874049	Diuron	41.2	46.8	P/P	40 - 140
1874049	Fenuron	49.2	49.2	P/P	40 - 140
1874049	Fluridone	38.7	48.3	F/P	40 - 140
1874049	Imidacloprid	113	110	P/P	40 - 160
1874049	Linuron	70.0	60.8	P/P	40 - 140
1874049	Primidone	48.0	58.4	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P320212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873999	Turbidity	3.53	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P320213

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874165	Turbidity	3.84	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P320664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875991	Iron	12.6	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P320664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875991	Arsenic	1.94	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P320664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875991	Cadmium	6.66	Spike	P	0 - 20
1875991	Chromium	0.446	Spike	P	0 - 20
1875991	Copper	1.35	Spike	P	0 - 20
1875991	Lead	0.579	Spike	P	0 - 20
1875991	Nickel	0.974	Spike	P	0 - 20
1875991	Silver	2.97	Spike	P	0 - 20
1875991	Zinc	0.783	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873976	Sulfate	0.233	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874020	Ammonia-N	0.0270	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874060	Ammonia-N	0.185	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874156	Kjeldahl Nitrogen	1.47	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874168	Kjeldahl Nitrogen	3.72	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874018	NO2NO3-N	1.41	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874167	NO2NO3-N	5.59	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875704	NO2NO3-N	0.518	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874110	Total-P	1.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874187	Total-P	2.11	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874124	Total-P	1.32	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874172	O-Phosphate-P	1.50	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873911	O-Phosphate-P	0.271	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874180	O-Phosphate-P	0.0816	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P320274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874519	Sucralose	10.4	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P320412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874009	Total Alkalinity	0.231	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P320413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874059	Total Alkalinity	0.174	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P320421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874009	Fluoride	0.473	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P320422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874059	Fluoride	2.40	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P320484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874000	Organic Carbon	0.504	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P320486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874110	Organic Carbon	0.376	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P320202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874049	Acetaminophen	0.554	Spike	P	0 - 30
1874049	Carbamazepine	15.6	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P320202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1874049	Diuron	12.7	Spike	P	0 - 30
1874049	Fenuron	0.0	Spike	P	0 - 30
1874049	Fluridone	19.8	Spike	P	0 - 30
1874049	Imidacloprid	2.15	Spike	P	0 - 30
1874049	Linuron	14.1	Spike	P	0 - 30
1874049	Primidone	19.5	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: 1874232
Field Sample ID: G2NE1136 02202017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	70.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	57.4	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	78.4	P	40 - 160
USGS O-2060-01	Diuron-d6	72.4	P	40 - 150
USGS O-2060-01	Primidone-d5	82.4	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A74619
Included Lab Sample IDs: 1874162, 1874171, 1874172, 1874173, 1874174, 1874179, 1874180

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A74620
Included Lab Sample IDs: 1874160, 1874163, 1874164, 1874165, 1874166, 1874175, 1874176

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A74655
Included Lab Sample IDs: 1874161, 1874167, 1874169, 1874170, 1874177, 1874178

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

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A74666

Included Lab Sample IDs: 1874232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	98.8	108	P/P	60 - 150
Carbamazepine	132	130	P/P	60 - 150
Diuron	114	111	P/P	60 - 150
Fenuron	128	128	P/P	60 - 150
Fluridone	112	112	P/P	60 - 150
Imidacloprid	117	114	P/P	60 - 150
Linuron	102	92.0	P/P	60 - 150
Primidone	111	113	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74669

Included Lab Sample IDs: 1874161, 1874167, 1874169, 1874170, 1874177, 1874178

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

Reference Method: EPA 8321B

Run ID: A74670

Included Lab Sample IDs: 1874232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	109	90.3	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74675

Included Lab Sample IDs: 1874167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74682

Included Lab Sample IDs: 1874161, 1874168, 1874169, 1874170, 1874177, 1874178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.5	P/P	90 - 110
Total-P	98.8	98.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74690

Included Lab Sample IDs: 1874160, 1874163, 1874164, 1874165, 1874166, 1874175, 1874176

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

Reference Method: SM 4500 F-C-97

Run ID: A74690

Included Lab Sample IDs: 1874160, 1874163, 1874164, 1874165, 1874166, 1874175, 1874176

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

Reference Method: SM 4500 F-C-97

Run ID: A74690

Included Lab Sample IDs: 1874160, 1874163, 1874164, 1874165, 1874166, 1874175, 1874176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	98.6	P/P	90 - 110
Fluoride	98.6	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74693

Included Lab Sample IDs: 1874161, 1874167, 1874169, 1874170, 1874177, 1874178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.0	P/P	90 - 110
Kjeldahl Nitrogen	98.0	95.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74696

Included Lab Sample IDs: 1874168

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74700

Included Lab Sample IDs: 1874168

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.8	97.7	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A74718

Included Lab Sample IDs: 1874161, 1874167, 1874168, 1874169, 1874170, 1874177, 1874178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.2	95.4	P/P	90 - 110
Organic Carbon	95.4	96.3	P/P	90 - 110
Organic Carbon	95.4	95.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A74817

Included Lab Sample IDs: 1874230, 1874231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	91.5	90.4	P/P	90 - 110
Lead	92.7	90.3	P/P	90 - 110
Nickel	93.7	90.6	P/P	90 - 110
Nickel	96.7	93.4	P/P	90 - 110
Zinc	93.8	90.5	P/P	90 - 110
Zinc	97.5	93.3	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A74833

Included Lab Sample IDs: 1874230, 1874231

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A74833
Included Lab Sample IDs: 1874230, 1874231

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A74836
Included Lab Sample IDs: 1874168

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A74874
Included Lab Sample IDs: 1874160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	90.4	92.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A74889
Included Lab Sample IDs: 1874230, 1874231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	95.0	93.9	P/P	90 - 110
Chromium	95.7	96.8	P/P	90 - 110
Copper	102	103	P/P	90 - 110
Silver	93.0	92.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A75096
Included Lab Sample IDs: 1874230, 1874231

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				3.53	
	Turbidity				3.84	
EPA 200.7 Rev. 4.4	Iron	102	78.5 89.7 82.0			12.6
EPA 200.8 Rev. 5.4	Arsenic	87.8	107 102 104			1.94
	Cadmium	95.0	95.3 90.9 97.2			6.66
	Chromium	95.5	94.1 94.1 94.5			0.446
	Copper	98.6	103 96.2 94.9			1.35
	Lead	86.9	100 96.4 97.0			0.579

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision	MS
			LCS	SMP	MS		
EPA 200.8 Rev. 5.4	Nickel	86.9	95.6	90.4	91.3		0.974
	Silver	91.6	91.1	90.8	88.1		2.97
	Zinc	88.4	96.6	90.3	91.0		0.783
EPA 300.0 Rev. 2.1	Sulfate	90.6	90.5	90.1		0.233	
EPA 350.1 Rev. 2.0	Ammonia-N	103	102	102			0.0270
	Ammonia-N	103					0.185
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	101	103			1.47
	Kjeldahl Nitrogen	105	103	108			3.72
EPA 353.2 Rev. 2.0	NO2NO3-N	105	103	105			1.41
	NO2NO3-N	104	101	108			5.59
	NO2NO3-N	103	96.4	96.9			0.518
EPA 365.1 Rev. 2.0	Total-P	95.1	92.0	93.2			1.25
	Total-P	96.2	91.2	93.2			2.11
	Total-P	90.1	97.2	96.0			1.32
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.4	97.2	98.9			1.50
	O-Phosphate-P	101	98.3	98.6			0.271
	O-Phosphate-P	101	98.8	98.7			0.0816
EPA 8321B	Sucralose	89.7	82.6	74.3			10.4
SM 2320 B-97	Total Alkalinity	103				0.231	
	Total Alkalinity	103				0.174	
SM 4500 F-C-97	Fluoride	96.6	94.8	95.5			0.473
	Fluoride	96.1	104	100			2.40
SM 5310 B-00	Organic Carbon	98.2	94.4	93.6			0.504
	Organic Carbon	96.8	95.2	94.8			0.376
USGS O-2060-01	Acetaminophen	79.2	72.4	72.0			0.554
	Carbamazepine	115	58.0	49.6			15.6
	Diuron	85.2	41.2	46.8			12.7
	Fenuron	105	49.2	49.2			0.0
	Fluridone	86.8	38.7	48.3			19.8
	Imidacloprid	102	113	110			2.15
	Linuron	92.8	70.0	60.8			14.1
	Primidone	86.4	48.0	58.4			19.5

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1874160, 1874163, 1874164, 1874165, 1874166, 1874175, 1874176
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1874230, 1874231
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1874230, 1874231
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1874160
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1874161, 1874167, 1874168, 1874169, 1874170, 1874177, 1874178
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1874161, 1874167, 1874168, 1874169, 1874170, 1874177, 1874178
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1874161, 1874167, 1874168, 1874169, 1874170, 1874177, 1874178
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1874161, 1874167, 1874168, 1874169, 1874170, 1874177, 1874178
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1874162, 1874171, 1874172, 1874173, 1874174, 1874179, 1874180
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1874232

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1874160, 1874163, 1874164, 1874165, 1874166, 1874175, 1874176
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1874160, 1874163, 1874164, 1874165, 1874166, 1874175, 1874176
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1874160, 1874163, 1874164, 1874165, 1874166, 1874175, 1874176
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1874161, 1874167, 1874168, 1874169, 1874170, 1874177, 1874178
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1874232

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	02/21/2017			02/21/2017 15:21	Sima Feizi	1874160, 1874163, 1874164, 1874165, 1874166, 1874175, 1874176
EPA 200.7 Rev. 4.4	02/21/2017	02/28/2017	Elliott D. Healy	03/01/2017	Joshua Ayres	1874230, 1874231
EPA 200.8 Rev. 5.4	02/21/2017	02/28/2017	Elliott D. Healy	03/02/2017	Betina Topolski	1874230, 1874231
	02/21/2017	02/28/2017	Elliott D. Healy	03/03/2017	Betina Topolski	1874230, 1874231
	02/21/2017	02/28/2017	Elliott D. Healy	03/14/2017	Betina Topolski	1874230, 1874231
EPA 300.0 Rev. 2.1	02/21/2017			03/03/2017	Ping Hua	1874160
EPA 350.1 Rev. 2.0	02/21/2017			02/22/2017	Sofia Elnemr	1874161, 1874167, 1874169, 1874170, 1874177, 1874178
	02/21/2017			02/23/2017	Sofia Elnemr	1874168
EPA 351.2 Rev. 2.0	02/21/2017	02/22/2017	Adrian Shelby	02/23/2017	Joseph Suarez	1874161, 1874167, 1874169, 1874170, 1874177, 1874178
	02/21/2017	02/23/2017	Adrian Shelby	02/24/2017	Joseph Suarez	1874168
EPA 353.2 Rev. 2.0	02/21/2017			02/23/2017	Beverly Y. Sanders	1874161, 1874167, 1874169, 1874170, 1874177, 1874178
	02/21/2017			03/02/2017	Beverly Y. Sanders	1874168
EPA 365.1 Rev. 2.0	02/21/2017	02/22/2017	Vijayalakshmi Reddy	02/23/2017	Lipi Saha	1874161, 1874167, 1874168, 1874169, 1874170, 1874177, 1874178
EPA 365.1 Rev. 2.0 dissolved	02/21/2017			02/21/2017 14:39	Julia Storbeck	1874172
	02/21/2017			02/21/2017 14:52	Julia Storbeck	1874180
	02/21/2017			02/21/2017 15:29	Julia Storbeck	1874162
	02/21/2017			02/21/2017 15:30	Julia Storbeck	1874171
	02/21/2017			02/21/2017 15:31	Julia Storbeck	1874173
	02/21/2017			02/21/2017 15:32	Julia Storbeck	1874174
	02/21/2017			02/21/2017 15:33	Julia Storbeck	1874179
EPA 8321B	02/21/2017	02/22/2017	Mohammad Ghaffari	02/22/2017	Mohammad Ghaffari	1874232
SM 2320 B-97	02/21/2017			02/23/2017	Dale L. Simmons	1874160, 1874163, 1874164, 1874165, 1874166, 1874175, 1874176
SM 2540 D-97	02/21/2017			02/23/2017	Yijie Li	1874160, 1874163, 1874164, 1874165, 1874166, 1874175, 1874176
SM 4500 F-C-97	02/21/2017			02/23/2017	Dale L. Simmons	1874160, 1874163, 1874164, 1874165, 1874166, 1874175, 1874176
SM 5310 B-00	02/21/2017			02/23/2017	Julie Michelle Frank	1874168
	02/21/2017			02/24/2017	Julie Michelle Frank	1874161, 1874167, 1874169, 1874170, 1874177, 1874178
USGS O-2060-01	02/21/2017	02/23/2017	Hoor Shaik	02/24/2017	Juyoung Kim	1874232