

Chemical Analysis Report

SE-DIST-2018-05-03-01

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

Event Description: **SMP- Martin Boat**
Request ID: **RQ-2018-02-12-52**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 22-MAY-2018 13:39



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: South Fork SLR@ Ganes Ave

Collection Date/Time: 05/02/2018 12:47

Field ID: G2SE0039

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989794	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P344609	
	SM 2320 B-97	Total Alkalinity	208		mg CaCO3/L	P345176	RPD
	SM 2540 D-97	TSS	10		mg/L	P344818	
	SM 4500 F-C-97	Fluoride	0.35		mg F/L	P345179	
1989798	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P344871	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89		mg N/L	P344769	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P344802	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P344806	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P345108	
1989802	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.071		mg P/L	P344635	
1989875	EPA 200.7 Rev. 4.4	Iron	170		ug/L	P344841	
		Zinc	5.0	U	ug/L	P344841	
	EPA 200.8 Rev. 5.4	Arsenic	2.56		ug/L	P344841	
		Cadmium	0.060	U	ug/L	P344841	
		Chromium	1.2	U	ug/L	P344841	
		Copper	2.2	I	ug/L	P344841	
		Lead	0.18	I	ug/L	P344841	
		Nickel	0.60	U	ug/L	P344841	
		Silver	0.030	U	ug/L	P344841	

Ref. Method and Comment:

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

Sample Location: South Fork SLR @ Hosford Park

Collection Date/Time: 05/02/2018 13:04

Field ID: G2SE0043

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989795	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P344609	
	SM 2320 B-97	Total Alkalinity	202		mg CaCO3/L	P345178	
	SM 2540 D-97	TSS	13		mg/L	P344818	
	SM 4500 F-C-97	Fluoride	0.38		mg F/L	P344920	
1989799	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P344871	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P344769	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P344802	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P344806	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P345108	
1989803	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.073		mg P/L	P344635	
1989876	EPA 200.7 Rev. 4.4	Iron	200		ug/L	P344841	
		Zinc	5.0	U	ug/L	P344841	
	EPA 200.8 Rev. 5.4	Arsenic	2.67		ug/L	P344841	
		Cadmium	0.060	U	ug/L	P344841	
		Chromium	1.2	U	ug/L	P344841	
		Copper	2.5		ug/L	P344841	
		Lead	0.25	I	ug/L	P344841	
		Nickel	0.60	U	ug/L	P344841	

Field ID: G2SE0043

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989876	EPA 200.8 Rev. 5.4	Silver	0.030	U	ug/L	P344841	

Ref. Method and Comment:

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

Sample Location: South Fork SLR @ SW F

Collection Date/Time: 05/02/2018 13:35

Field ID: G2SE0041

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989796	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P344609	
	SM 2320 B-97	Total Alkalinity	180	A	mg CaCO3/L	P345178	
	SM 2540 D-97	TSS	5	I	mg/L	P344820	
	SM 4500 F-C-97	Fluoride	0.49		mg F/L	P344920	
1989800	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P345111	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P344857	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P344802	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P344806	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P344913	
1989804	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P344635	
1989877	EPA 200.7 Rev. 4.4	Iron	150	I	ug/L	P344841	
		Zinc	15	U	ug/L	P344841	
	EPA 200.8 Rev. 5.4	Arsenic	2.71		ug/L	P344841	
		Cadmium	0.060	U	ug/L	P344841	
		Chromium	1.2	U	ug/L	P344841	
		Copper	3.2		ug/L	P344841	
		Lead	0.23	I	ug/L	P344841	
		Nickel	0.60	U	ug/L	P344841	
		Silver	0.030	U	ug/L	P344841	

Ref. Method and Comment:

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

Sample Location: South Fork SLR @ St. Lucie Settlement

Collection Date/Time: 05/02/2018 13:55

Field ID: G2SE0040

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989797	EPA 180.1 Rev. 2.0	Turbidity	6.0		NTU	P344609	
	SM 2320 B-97	Total Alkalinity	167		mg CaCO3/L	P345178	
	SM 2540 D-97	TSS	8	I	mg/L	P344820	
	SM 4500 F-C-97	Fluoride	0.56		mg F/L	P344920	
1989801	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P345111	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P344857	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P344802	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P344806	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P344913	
1989805	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P344635	
1989878	EPA 200.7 Rev. 4.4	Iron	160	I	ug/L	P344841	
		Zinc	15	U	ug/L	P344841	

Field ID: G2SE0040

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989878	EPA 200.8 Rev. 5.4	Arsenic	2.40		ug/L	P344841	
		Cadmium	0.060	U	ug/L	P344841	
		Chromium	1.2	U	ug/L	P344841	
		Copper	2.6		ug/L	P344841	
		Lead	0.25	I	ug/L	P344841	
		Nickel	0.60	U	ug/L	P344841	
		Silver	0.030	U	ug/L	P344841	

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. Lucie River @ Martin Hwy

Collection Date/Time: 05/02/2018 14:20

Field ID: SLSF

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989788	EPA 180.1 Rev. 2.0	Turbidity	9.4		NTU	P344609	
	SM 2320 B-97	Total Alkalinity	143		mg CaCO3/L	P345178	
	SM 2540 D-97	TSS	9	I	mg/L	P344820	
	SM 4500 F-C-97	Fluoride	0.77		mg F/L	P344920	
1989790	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P344871	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P344769	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P344802	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P344806	
	SM 5310 B-00	Organic Carbon	8.9		mg C/L	P344913	
1989792	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P344635	
1989873	EPA 8321B	2,4-D	0.016		ug/L	P344559	
		Bentazon	0.0086		ug/L	P344559	
		MCP	0.0020	U	ug/L	P344559	
		Triclopyr**	0.0040	U	ug/L	P344559	
		Imidacloprid	0.0027	I	ug/L	P344559	
		Diuron	0.021		ug/L	P344559	
		Pyraclostrobin**	0.0020	U	ug/L	P344559	
		Primidone**	0.0040	U	ug/L	P344559	
		Linuron	0.0040	U	ug/L	P344559	
		Acetaminophen**	0.0080	U	ug/L	P344559	
		Fenuron	0.016	U	ug/L	P344559	
		Imazapyr**	0.066		ug/L	P344559	
		Carbamazepine**	4.0E-04	U	ug/L	P344559	
		Fluridone**	0.0061		ug/L	P344559	
		Hydrocodone**	8.0E-04	U	ug/L	P344559	
		Sucralose**	0.10	U	ug/L	P344561	

Ref. Method and Comment:

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

Sample Location: South Fork SLR @ Lesstar Park

Collection Date/Time: 05/02/2018 14:39

Field ID: G2SE0013

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1989789	EPA 180.1 Rev. 2.0	Turbidity	7.9		NTU	P344609	
	SM 2320 B-97	Total Alkalinity	143		mg CaCO3/L	P345178	
	SM 2540 D-97	TSS	21		mg/L	P344820	
	SM 4500 F-C-97	Fluoride	0.80		mg F/L	P344920	
1989791	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P344871	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P344769	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P344802	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P344806	
	SM 5310 B-00	Organic Carbon	8.5		mg C/L	P344913	
1989793	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P344635	
1989874	EPA 8321B	2,4-D	0.019		ug/L	P344559	
		Bentazon	0.0089		ug/L	P344559	
		MCP	0.0020	U	ug/L	P344559	
		Triclopyr**	0.0040	U	ug/L	P344559	
		Imidacloprid	0.0022	I	ug/L	P344559	
		Diuron	0.021		ug/L	P344559	
		Pyraclostrobin**	0.0020	U	ug/L	P344559	
		Primidone**	0.0040	U	ug/L	P344559	
		Linuron	0.0040	U	ug/L	P344559	
		Acetaminophen**	0.0080	U	ug/L	P344559	
		Fenuron	0.016	U	ug/L	P344559	
		Imazapyr**	0.052		ug/L	P344559	
		Carbamazepine**	4.0E-04	U	ug/L	P344559	
		Fluridone**	0.0058		ug/L	P344559	
		Hydrocodone**	8.0E-04	U	ug/L	P344559	
		Sucralose**	0.12	I	ug/L	P344561	

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: P344609

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P344841

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

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P344841

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P344841

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344871

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345111

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344769

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344857

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P344802

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P344806

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344635

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P344559

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P344561

Component	Result	Code	Units
Sucralose	0.10	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P345176

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

Reference Method: SM 2320 B-97
Batch ID: P345178

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

Reference Method: SM 2540 D-97
Batch ID: P344818

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P344820

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P344920

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: P345179

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P344913

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

Reference Method: SM 5310 B-00
Batch ID: P345108

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P344841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	107		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P344841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	96.5		P	85 - 115
Cadmium	94.5		P	85 - 115
Chromium	100		P	85 - 115
Copper	91.3		P	85 - 115
Lead	92.2		P	85 - 115
Nickel	92.3		P	85 - 115
Silver	97.7		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344871

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345111

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.7		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344769

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344857

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P344802

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: P344806

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344635

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.6		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P344559

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	81.1		P	40 - 150
Acetaminophen	91.8		P	30 - 150
Bentazon	88.9		P	30 - 150
Carbamazepine	67.1		P	40 - 150
Diuron	71.2		P	40 - 150
Fenuron	99.9		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	98.2		P	40 - 150
Imazapyr	86.2		P	40 - 150
Imidacloprid	103		P	40 - 160
Linuron	84.1		P	40 - 150
MCP	85.0		P	40 - 150
Primidone	83.3		P	40 - 150
Pyraclostrobin	71.1		P	40 - 150
Triclopyr	81.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P344561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	96.6		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P345176

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P345178

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P344920

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.4		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P345179

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.7		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P344913

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.7		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P345108

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P344841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990561	Iron	102	105	P/P	70 - 130
1990561	Zinc	105	107	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P344841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990561	Arsenic	109	106	P/P	70 - 130
1990561	Cadmium	94.8	91.8	P/P	70 - 130
1990561	Chromium	95.6	92.9	P/P	70 - 130
1990561	Copper	92.4	91.5	P/P	70 - 130
1990561	Lead	105	102	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P344841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990561	Nickel	97.8	91.9	P/P	70 - 130
1990561	Silver	93.9	90.9	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344871

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989063	Ammonia-N	105	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989800	Ammonia-N	99.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989790	Kjeldahl Nitrogen	100	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344857

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989892	Kjeldahl Nitrogen	104	97.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P344802

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989660	NO2NO3-N	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P344806

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989896	Total-P	93.0	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344635

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989802	O-Phosphate-P	98.0	98.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P344559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989874	2,4-D	116	108	P/P	40 - 150
1989874	Acetaminophen	75.4	75.4	P/P	30 - 150
1989874	Bentazon	58.2	53.7	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P344559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989874	Carbamazepine	49.8	48.5	P/P	40 - 150
1989874	Diuron	52.3	53.8	P/P	40 - 150
1989874	Fenuron	51.7	55.9	P/P	40 - 150
1989874	Fluridone	80.2	87.3	P/P	40 - 150
1989874	Hydrocodone	83.4	85.4	P/P	40 - 150
1989874	Imazapyr	77.4	78.7	P/P	40 - 150
1989874	Imidacloprid	136	137	P/P	40 - 160
1989874	Linuron	81.5	84.7	P/P	40 - 150
1989874	MCP	113	106	P/P	40 - 150
1989874	Primidone	72.9	76.1	P/P	40 - 150
1989874	Pyraclostrobin	73.8	73.8	P/P	40 - 150
1989874	Triclopyr	103	95.1	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P344561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989731	Sucralose	114	99.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P344920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989796	Fluoride	92.8	93.5	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P345179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990462	Fluoride	96.6	96.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P344913

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989790	Organic Carbon	90.2	91.8	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P345108

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1989766	Organic Carbon	100	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P344609

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P344609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989764	Turbidity	6.22	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P344841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990561	Iron	2.25	Spike	P	0 - 20
1990561	Zinc	1.62	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P344841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990561	Arsenic	3.02	Spike	P	0 - 20
1990561	Cadmium	3.25	Spike	P	0 - 20
1990561	Chromium	2.78	Spike	P	0 - 20
1990561	Copper	0.949	Spike	P	0 - 20
1990561	Lead	2.70	Spike	P	0 - 20
1990561	Nickel	6.17	Spike	P	0 - 20
1990561	Silver	3.22	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989063	Ammonia-N	2.99	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989800	Ammonia-N	1.70	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989790	Kjeldahl Nitrogen	0.750	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P344857

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989892	Kjeldahl Nitrogen	4.94	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P344802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989660	NO2NO3-N	0.948	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P344806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989896	Total-P	1.66	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P344635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989802	O-Phosphate-P	0.531	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P344559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989874	2,4-D	5.80	Spike	P	0 - 30
1989874	Acetaminophen	0.0207	Spike	P	0 - 30
1989874	Bentazon	6.68	Spike	P	0 - 30
1989874	Carbamazepine	2.64	Spike	P	0 - 30
1989874	Diuron	1.87	Spike	P	0 - 30
1989874	Fenuron	6.10	Spike	P	0 - 30
1989874	Fluridone	7.88	Spike	P	0 - 30
1989874	Hydrocodone	2.33	Spike	P	0 - 30
1989874	Imazapyr	0.936	Spike	P	0 - 30
1989874	Imidacloprid	0.949	Spike	P	0 - 30
1989874	Linuron	3.88	Spike	P	0 - 30
1989874	MCP	6.70	Spike	P	0 - 30
1989874	Primidone	4.31	Spike	P	0 - 30
1989874	Pyraclostrobin	0.0324	Spike	P	0 - 30
1989874	Triclopyr	7.71	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P344561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989731	Sucralose	12.9	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P345176

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990462	Total Alkalinity	1.92	Sample	F	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P345178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989796	Total Alkalinity	0.243	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P344920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989796	Fluoride	0.480	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P345179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990462	Fluoride	0.473	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P344913

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989790	Organic Carbon	1.41	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P345108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1989766	Organic Carbon	0.138	Spike	P	0 - 20

* 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: 1989873
Field Sample ID: SLSF

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	112	P	30 - 160
EPA 8321B	Acetaminophen-d4	86.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.7	P	30 - 160
EPA 8321B	Diuron-d6	64.0	P	30 - 160
EPA 8321B	Primidone-d5	85.3	P	30 - 160
EPA 8321B	Sucralose-d6	75.7	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1989874
Field Sample ID: G2SE0013

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	126	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	74.5	P	30 - 160
EPA 8321B	Diuron-d6	69.7	P	30 - 160
EPA 8321B	Primidone-d5	89.3	P	30 - 160
EPA 8321B	Sucralose-d6	96.8	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A83641
Included Lab Sample IDs: 1989788, 1989789, 1989794, 1989795, 1989796, 1989797

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83654
Included Lab Sample IDs: 1989792, 1989793, 1989802, 1989803, 1989804, 1989805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	98.0	P/P	90 - 110
O-Phosphate-P	99.3	98.8	P/P	90 - 110
O-Phosphate-P	99.5	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83710
Included Lab Sample IDs: 1989790, 1989791, 1989798, 1989799, 1989800, 1989801

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A83734
Included Lab Sample IDs: 1989790, 1989791, 1989798, 1989799

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

Reference Method: SM 5310 B-00
Run ID: A83745
Included Lab Sample IDs: 1989790, 1989791, 1989800, 1989801

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	96.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A83750

Included Lab Sample IDs: 1989788, 1989789, 1989795, 1989796, 1989797

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	99.0	P/P	90 - 110
Fluoride	98.1	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A83751

Included Lab Sample IDs: 1989790, 1989791, 1989798, 1989799

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.3	95.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A83769

Included Lab Sample IDs: 1989873, 1989874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	103	104	P/P	50 - 150
2,4-D	96.1	98.9	P/P	50 - 150
Bentazon	111	108	P/P	50 - 160
Bentazon	118	109	P/P	50 - 160
MCP	102	109	P/P	50 - 150
MCP	107	109	P/P	50 - 150
Triclopyr	105	101	P/P	50 - 150
Triclopyr	98.2	102	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A83770

Included Lab Sample IDs: 1989800, 1989801

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.2	95.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A83775

Included Lab Sample IDs: 1989875, 1989876, 1989877, 1989878

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83782

Included Lab Sample IDs: 1989790, 1989791, 1989798, 1989799, 1989800, 1989801

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A83819

Included Lab Sample IDs: 1989798, 1989799

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83820

Included Lab Sample IDs: 1989800, 1989801

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A83834

Included Lab Sample IDs: 1989875, 1989876, 1989877, 1989878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.1	97.9	P/P	90 - 110
Arsenic	97.9	97.6	P/P	90 - 110
Cadmium	94.4	96.4	P/P	90 - 110
Cadmium	95.4	94.4	P/P	90 - 110
Copper	96.2	96.4	P/P	90 - 110
Copper	96.4	96.1	P/P	90 - 110
Lead	95.0	95.3	P/P	90 - 110
Lead	95.3	97.0	P/P	90 - 110
Nickel	92.8	92.2	P/P	90 - 110
Nickel	94.0	92.8	P/P	90 - 110
Silver	96.7	97.9	P/P	90 - 110
Silver	97.9	97.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A83835

Included Lab Sample IDs: 1989875, 1989876, 1989877, 1989878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	95.6	97.7	P/P	90 - 110
Chromium	97.7	91.2	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A83837

Included Lab Sample IDs: 1989788, 1989789, 1989794, 1989795, 1989796, 1989797

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	99.0	P/P	90 - 110
Total Alkalinity	102	99.0	P/P	90 - 110
Total Alkalinity	99.0	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A83837

Included Lab Sample IDs: 1989794

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A83883

Included Lab Sample IDs: 1989873, 1989874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	124	136	P/P	60 - 150
Acetaminophen	134	141	P/P	60 - 150
Carbamazepine	108	113	P/P	60 - 150
Carbamazepine	132	123	P/P	60 - 150
Diuron	106	123	P/P	60 - 150
Diuron	133	128	P/P	60 - 150
Fenuron	115	114	P/P	60 - 150
Fenuron	119	109	P/P	60 - 150
Fluridone	123	125	P/P	60 - 160
Fluridone	138	122	P/P	60 - 160
Hydrocodone	122	123	P/P	60 - 150
Hydrocodone	130	124	P/P	60 - 150
Imazapyr	104	105	P/P	50 - 150
Imazapyr	113	112	P/P	50 - 150
Imidacloprid	110	97.4	P/P	60 - 150
Imidacloprid	97.3	115	P/P	60 - 150
Linuron	107	106	P/P	60 - 150
Linuron	116	107	P/P	60 - 150
Primidone	90.5	101	P/P	60 - 150
Primidone	99.4	93.6	P/P	60 - 150
Pyraclostrobin	100	105	P/P	60 - 150
Pyraclostrobin	108	103	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A83902

Included Lab Sample IDs: 1989873, 1989874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	157	110	P/P	60 - 160

* 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				6.22	
EPA 200.7 Rev. 4.4	Iron	107	102 105			2.25
	Zinc	103	105 107			1.62
EPA 200.8 Rev. 5.4	Arsenic	96.5	109 106			3.02
	Cadmium	94.5	94.8 91.8			3.25
	Chromium	100	95.6 92.9			2.78
	Copper	91.3	92.4 91.5			0.949
	Lead	92.2	105 102			2.70
	Nickel	92.3	97.8 91.9			6.17
	Silver	97.7	93.9 90.9			3.22
EPA 350.1 Rev. 2.0	Ammonia-N	102	105 101			2.99

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 350.1 Rev. 2.0	Ammonia-N	99.7	99.2	101		1.70
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.0	100	99.0		0.750
	Kjeldahl Nitrogen	101	104	97.2		4.94
EPA 353.2 Rev. 2.0	NO2NO3-N	104	105	106		0.948
EPA 365.1 Rev. 2.0	Total-P	107	93.0	94.8		1.66
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	98.0	98.9		0.531
EPA 8321B	2,4-D	81.1	116	108		5.80
	Acetaminophen	91.8	75.4	75.4		0.0207
	Bentazon	88.9	58.2	53.7		6.68
	Carbamazepine	67.1	49.8	48.5		2.64
	Diuron	71.2	52.3	53.8		1.87
	Fenuron	99.9	51.7	55.9		6.10
	Fluridone	102	80.2	87.3		7.88
	Hydrocodone	98.2	83.4	85.4		2.33
	Imazapyr	86.2	77.4	78.7		0.936
	Imidacloprid	103	136	137		0.949
	Linuron	84.1	81.5	84.7		3.88
	MCPP	85.0	113	106		6.70
	Primidone	83.3	72.9	76.1		4.31
	Pyraclostrobin	71.1	73.8	73.8		0.0324
	Sucralose	96.6	114	99.2		12.9
	Triclopyr	81.9	103	95.1		7.71
SM 2320 B-97	Total Alkalinity	101			1.92	
	Total Alkalinity	102			0.243	
SM 4500 F-C-97	Fluoride	94.4	92.8	93.5		0.480
	Fluoride	94.7	96.6	96.0		0.473
SM 5310 B-00	Organic Carbon	97.7	90.2	91.8		1.41
	Organic Carbon	101	100	101		0.138

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1989788, 1989789, 1989794, 1989795, 1989796, 1989797
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1989875, 1989876, 1989877, 1989878
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1989875, 1989876, 1989877, 1989878
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1989790, 1989791, 1989798, 1989799, 1989800, 1989801
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1989790, 1989791, 1989798, 1989799, 1989800, 1989801
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1989790, 1989791, 1989798, 1989799, 1989800, 1989801
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1989790, 1989791, 1989798, 1989799, 1989800, 1989801
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1989792, 1989793, 1989802, 1989803, 1989804, 1989805
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1989873, 1989874
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1989788, 1989789, 1989794, 1989795, 1989796, 1989797
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1989788, 1989789, 1989794, 1989795, 1989796, 1989797
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1989788, 1989789, 1989794, 1989795, 1989796, 1989797

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1989790, 1989791, 1989798, 1989799, 1989800, 1989801

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	05/03/2018			05/03/2018 15:50	William L. Brown IV	1989788, 1989789, 1989794, 1989795, 1989796, 1989797
EPA 200.7 Rev. 4.4	05/03/2018	05/08/2018 11:30	Allison Taylor	05/09/2018 13:34	Betina Topolski	1989875
	05/03/2018	05/08/2018 11:30	Allison Taylor	05/09/2018 13:46	Betina Topolski	1989876
	05/03/2018	05/08/2018 11:30	Allison Taylor	05/09/2018 13:58	Betina Topolski	1989877
	05/03/2018	05/08/2018 11:30	Allison Taylor	05/09/2018 14:09	Betina Topolski	1989878
EPA 200.8 Rev. 5.4	05/03/2018	05/08/2018 11:30	Allison Taylor	05/10/2018 14:04	Robert K Palmer	1989875
	05/03/2018	05/08/2018 11:30	Allison Taylor	05/10/2018 14:14	Robert K Palmer	1989876
	05/03/2018	05/08/2018 11:30	Allison Taylor	05/10/2018 14:24	Robert K Palmer	1989877
	05/03/2018	05/08/2018 11:30	Allison Taylor	05/10/2018 14:52	Robert K Palmer	1989878
	05/03/2018	05/08/2018 11:30	Allison Taylor	05/11/2018 13:03	Robert K Palmer	1989875
	05/03/2018	05/08/2018 11:30	Allison Taylor	05/11/2018 13:08	Robert K Palmer	1989876
	05/03/2018	05/08/2018 11:30	Allison Taylor	05/11/2018 13:27	Robert K Palmer	1989877
	05/03/2018	05/08/2018 11:30	Allison Taylor	05/11/2018 13:32	Robert K Palmer	1989878
EPA 350.1 Rev. 2.0	05/03/2018			05/07/2018 13:12	Ping Hua	1989790
	05/03/2018			05/07/2018 13:13	Ping Hua	1989791
	05/03/2018			05/07/2018 13:15	Ping Hua	1989798
	05/03/2018			05/07/2018 13:16	Ping Hua	1989799
	05/03/2018			05/10/2018 11:45	Ping Hua	1989800
	05/03/2018			05/10/2018 11:49	Ping Hua	1989801
EPA 351.2 Rev. 2.0	05/03/2018	05/07/2018 11:30	Adrian Shelby	05/08/2018 15:36	Joseph Suarez	1989790
	05/03/2018	05/07/2018 11:30	Adrian Shelby	05/08/2018 15:41	Joseph Suarez	1989791
	05/03/2018	05/07/2018 11:30	Adrian Shelby	05/08/2018 15:43	Joseph Suarez	1989798
	05/03/2018	05/07/2018 11:30	Adrian Shelby	05/08/2018 15:44	Joseph Suarez	1989799
	05/03/2018	05/08/2018 11:00	Adrian Shelby	05/09/2018 13:54	Joseph Suarez	1989800
	05/03/2018	05/08/2018 11:00	Adrian Shelby	05/09/2018 13:56	Joseph Suarez	1989801
EPA 353.2 Rev. 2.0	05/03/2018			05/07/2018 13:50	Lauren Bottorf	1989790
	05/03/2018			05/07/2018 13:52	Lauren Bottorf	1989791
	05/03/2018			05/07/2018 13:53	Lauren Bottorf	1989798
	05/03/2018			05/07/2018 13:54	Lauren Bottorf	1989799
	05/03/2018			05/07/2018 13:55	Lauren Bottorf	1989800
	05/03/2018			05/07/2018 13:56	Lauren Bottorf	1989801
EPA 365.1 Rev. 2.0	05/03/2018	05/07/2018 13:25	Sima Feizi	05/09/2018 08:51	Beverly Y. Sanders	1989790
	05/03/2018	05/07/2018 13:25	Sima Feizi	05/09/2018 08:52	Beverly Y. Sanders	1989791
	05/03/2018	05/07/2018 13:25	Sima Feizi	05/09/2018 08:53	Beverly Y. Sanders	1989798
	05/03/2018	05/07/2018 13:25	Sima Feizi	05/09/2018 08:54	Beverly Y. Sanders	1989799
	05/03/2018	05/07/2018 13:25	Sima Feizi	05/09/2018 08:55	Beverly Y. Sanders	1989800
	05/03/2018	05/07/2018 13:25	Sima Feizi	05/09/2018 08:59	Beverly Y. Sanders	1989801
EPA 365.1 Rev. 2.0 dissolved	05/03/2018			05/03/2018 14:51	Megan Treadwell	1989802
	05/03/2018			05/03/2018 15:19	Megan Treadwell	1989803

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0 dissolved	05/03/2018			05/03/2018 15:32	Megan Treadwell	1989792, 1989793
	05/03/2018			05/03/2018 15:33	Megan Treadwell	1989804
	05/03/2018			05/03/2018 15:34	Megan Treadwell	1989805
EPA 8321B	05/03/2018	05/03/2018 17:00	Hoor Shaik	05/04/2018 16:46	Juyoung Kim	1989873
	05/03/2018	05/03/2018 17:00	Hoor Shaik	05/04/2018 17:05	Juyoung Kim	1989874
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/08/2018 21:00	Juyoung Kim	1989874
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/09/2018 06:48	Juyoung Kim	1989873
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/09/2018 16:09	Juyoung Kim	1989874
	05/03/2018	05/08/2018 10:00	Hoor Shaik	05/10/2018 03:41	Juyoung Kim	1989873
SM 2320 B-97	05/03/2018			05/12/2018 00:21	Dale L. Simmons	1989794
	05/03/2018			05/12/2018 06:29	Dale L. Simmons	1989796
	05/03/2018			05/12/2018 08:12	Dale L. Simmons	1989788
	05/03/2018			05/12/2018 08:21	Dale L. Simmons	1989789
	05/03/2018			05/12/2018 08:29	Dale L. Simmons	1989795
	05/03/2018			05/12/2018 08:38	Dale L. Simmons	1989797
SM 2540 D-97	05/03/2018			05/04/2018 15:30	William L. Brown IV	1989788, 1989789, 1989794, 1989795, 1989796, 1989797
SM 4500 F-C-97	05/03/2018			05/08/2018 17:06	Dale L. Simmons	1989796
	05/03/2018			05/08/2018 17:28	Dale L. Simmons	1989795
	05/03/2018			05/08/2018 18:44	Dale L. Simmons	1989788
	05/03/2018			05/08/2018 18:48	Dale L. Simmons	1989789
	05/03/2018			05/08/2018 18:51	Dale L. Simmons	1989797
	05/03/2018			05/12/2018 00:21	Dale L. Simmons	1989794
SM 5310 B-00	05/03/2018			05/08/2018 05:15	Megan Treadwell	1989790
	05/03/2018			05/08/2018 05:55	Megan Treadwell	1989791
	05/03/2018			05/08/2018 06:09	Megan Treadwell	1989800
	05/03/2018			05/08/2018 06:36	Megan Treadwell	1989801
	05/03/2018			05/10/2018 22:24	Julia Storbeck	1989798
	05/03/2018			05/10/2018 22:36	Julia Storbeck	1989799