

Chemical Analysis Report

SW-DIST-2019-07-19-01

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

Event Description: **SMP: Peace, Scott Lake, Lake Isabelle**
Request ID: **RQ-2019-07-08-08**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 06-AUG-2019 14:59

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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 by the Florida Department of Health Environmental Laboratory Certification Program 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: SCOTT LAKE @ SOUTH CENTRAL

Collection Date/Time: 07/18/2019 10:40

Field ID: G2SW0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2104787	EPA 180.1 Rev. 2.0	Turbidity	13	A	NTU	P367646	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P367916	
	SM 2120 B	Color (true)	19		PCU	P367649	
	SM 2320 B-97	Total Alkalinity	47		mg CaCO3/L	P367938	
	SM 2540 C-97	TDS	118		mg/L	P368117	
	SM 2540 D-97	TSS	18		mg/L	P367795	
	SM 4500 F-C-97	Fluoride	0.32		mg F/L	P367941	
2104789	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P368305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P367896	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P367690	
	EPA 365.1 Rev. 2.0	Total-P	0.075		mg P/L	P367808	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P367964	
2104791	EPA 300.0 Rev. 2.1 dissolved	Sulfate	8.5		mg SO4/L	P367919	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P367642	

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: PEACE RIVER @ SR60

Collection Date/Time: 07/18/2019 09:40

Field ID: G3SW0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2104781	EPA 180.1 Rev. 2.0	Turbidity	13	A	NTU	P367645	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P367916	
	SM 2120 B	Color (true)	200		PCU	P367649	
	SM 2320 B-97	Total Alkalinity	45		mg CaCO3/L	P367938	
	SM 2540 C-97	TDS	143		mg/L	P368117	
	SM 2540 D-97	TSS	22		mg/L	P367795	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P367941	
2104783	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P368305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P367896	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.073		mg N/L	P367689	
	EPA 365.1 Rev. 2.0	Total-P	0.32		mg P/L	P367808	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P367964	
2104785	EPA 300.0 Rev. 2.1 dissolved	Sulfate	13		mg SO4/L	P367919	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P367642	
2104801	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P367668	
		2,4-D	0.056		ug/L	P367283	MS
		AMPA**	0.47		ug/L	P367668	
		Sucralose**	0.71		ug/L	P367668	
		Acetaminophen**	0.0080	U	ug/L	P367283	
		Endothall**	0.25	U	ug/L	P367668	
		Glufosinate**	0.10	U	ug/L	P367668	
		Glyphosate**	3.5		ug/L	P367668	
		Bentazon	0.0027	I	ug/L	P367283	
		Carbamazepine**	0.0029	I	ug/L	P367283	
		Diuron	0.0026	I	ug/L	P367283	
		Fenuron	0.038	I	ug/L	P367283	
		Fluridone**	0.0071		ug/L	P367283	
		Imazapyr**	0.026		ug/L	P367283	
		Hydrocodone**	0.0020	U	ug/L	P367283	
		Ibuprofen**	0.020	U	ug/L	P367283	
		Imidacloprid	0.013		ug/L	P367283	
		Linuron	0.0040	U	ug/L	P367283	
		MCP	0.0020	U	ug/L	P367283	MS
		Naproxen**	0.0080	U	ug/L	P367283	
		Primidone**	0.0071	I	ug/L	P367283	
		Pyraclostrobin**	0.0020	U	ug/L	P367283	
		Triclopyr**	0.0040	U	ug/L	P367283	MS
2104803	EPA 200.7 Rev. 4.4	Barium	23.0		ug/L	P367698	
		Calcium	18.3		mg/L	P367698	
		Iron	490		ug/L	P367698	
		Magnesium	5.55		mg/L	P367698	
		Potassium	5.1		mg/L	P367698	
		Sodium	16.0		mg/L	P367698	

Field ID: G3SW0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2104803	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P367698	
	EPA 200.8 Rev. 5.4	Aluminum	225		ug/L	P367698	
		Antimony	0.15	I	ug/L	P367698	
		Arsenic	1.67		ug/L	P367698	
		Boron**	44.5		ug/L	P367698	
		Cadmium	0.034	I	ug/L	P367698	
		Chromium	0.52	I	ug/L	P367698	
		Copper	0.60	I	ug/L	P367698	
		Lead	0.44		ug/L	P367698	
		Nickel	0.62	I	ug/L	P367698	
		Selenium	0.20	I	ug/L	P367698	
		Silver	0.010	U	ug/L	P367698	
		Thallium	0.10	U	ug/L	P367698	

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: MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: PEACE RIVER @ HERITAGE LANDING

Collection Date/Time: 07/18/2019 11:30

Field ID: G3SW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2104782	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P367646	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P367916	
	SM 2120 B	Color (true)	200		PCU	P367649	
	SM 2320 B-97	Total Alkalinity	48		mg CaCO3/L	P367938	
	SM 2540 C-97	TDS	163		mg/L	P368117	
	SM 2540 D-97	TSS	10		mg/L	P367795	
	SM 4500 F-C-97	Fluoride	0.42		mg F/L	P367941	
2104784	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P368305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P367896	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P367690	
	EPA 365.1 Rev. 2.0	Total-P	0.59		mg P/L	P367808	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P367964	
2104786	EPA 300.0 Rev. 2.1 dissolved	Sulfate	15		mg SO4/L	P367919	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.38		mg P/L	P367642	
2104802	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P367668	
		2,4-D	0.065		ug/L	P367283	MS
		AMPA**	0.49		ug/L	P367668	
		Sucralose**	1.3		ug/L	P367668	
		Acetaminophen**	0.0080	U	ug/L	P367283	
		Endothall**	0.25	U	ug/L	P367668	
		Glufosinate**	0.10	U	ug/L	P367668	
		Glyphosate**	3.7		ug/L	P367668	
		Bentazon	0.0039		ug/L	P367283	
		Carbamazepine**	0.0042		ug/L	P367283	
		Diuron	0.0029	I	ug/L	P367283	
		Fenuron	0.053	I	ug/L	P367283	
		Fluridone**	0.025		ug/L	P367283	
		Imazapyr**	0.056		ug/L	P367283	
		Hydrocodone**	0.0020	U	ug/L	P367283	
		Ibuprofen**	0.020	U	ug/L	P367283	
		Imidacloprid	0.018		ug/L	P367283	
		Linuron	0.0040	U	ug/L	P367283	
		MCP	0.0020	I	ug/L	P367283	MS
		Naproxen**	0.011	I	ug/L	P367283	
		Primidone**	0.011	I	ug/L	P367283	
		Pyraclostrobin**	0.0020	U	ug/L	P367283	
		Triclopyr**	0.0040	U	ug/L	P367283	MS
2104804	EPA 200.7 Rev. 4.4	Barium	19.9		ug/L	P367698	
		Calcium	18.9		mg/L	P367698	
		Iron	600		ug/L	P367698	
		Magnesium	6.19		mg/L	P367698	
		Potassium	4.7		mg/L	P367698	
		Sodium	16.1		mg/L	P367698	

Field ID: G3SW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2104804	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P367698	
	EPA 200.8 Rev. 5.4	Aluminum	260		ug/L	P367698	
		Antimony	0.20		ug/L	P367698	
		Arsenic	1.87		ug/L	P367698	
		Boron**	43.3		ug/L	P367698	
		Cadmium	0.070	I	ug/L	P367698	
		Chromium	0.83	I	ug/L	P367698	
		Copper	0.91		ug/L	P367698	
		Lead	0.46		ug/L	P367698	
		Nickel	0.93	I	ug/L	P367698	
		Selenium	0.26	I	ug/L	P367698	
		Silver	0.010	U	ug/L	P367698	
		Thallium	0.10	U	ug/L	P367698	

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: MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: LAKE ISABELL CENTER

Collection Date/Time: 07/18/2019 12:40

Field ID: G4SW0095

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2104788	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P367646	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P367916	
	SM 2120 B	Color (true)	43	A	PCU	P367649	
	SM 2320 B-97	Total Alkalinity	4.2		mg CaCO3/L	P367938	
	SM 2540 C-97	TDS	122	A	mg/L	P368118	
	SM 2540 D-97	TSS	5	IA	mg/L	P367796	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P367941	
2104790	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P368306	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P367896	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P367690	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P367809	
	SM 5310 B-00	Organic Carbon	8.4		mg C/L	P367964	
2104792	EPA 300.0 Rev. 2.1 dissolved	Sulfate	35		mg SO4/L	P367919	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P367642	

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: P367645

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367646

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367698

Component	Result	Code	Units
Barium	1.0	U	ug/L
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 200.8 Rev. 5.4
Batch ID: P367698

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367916

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P367919

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: P368305

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368306

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367896

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367689

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367690

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367808

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367809

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367642

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

Reference Method: EPA 8321B
Batch ID: P367283

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	8.0E-04	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P367283

Component	Result	Code	Units
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	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
Naproxen	0.0080	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: P367668

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P367649

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P367938

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

Reference Method: SM 2540 C-97
Batch ID: P368117

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P368118

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P367795

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P367796

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P367941

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P367964

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: P367698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	111		P	85 - 115
Iron	106		P	85 - 115
Magnesium	112		P	85 - 115
Potassium	110		P	85 - 115
Sodium	114		P	85 - 115
Zinc	99.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.9		P	85 - 115
Antimony	96.7		P	85 - 115
Arsenic	105		P	85 - 115
Boron	104		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	99.8		P	85 - 115
Copper	103		P	85 - 115
Lead	93.0		P	85 - 115
Nickel	103		P	85 - 115
Selenium	106		P	85 - 115
Silver	99.3		P	85 - 115
Thallium	94.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367916

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

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P367919

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368305

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: P368306

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P367896

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: P367689

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P367690

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P367808

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P367809

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P367642

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

Reference Method: EPA 8321B
 Batch ID: P367283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	132		P	40 - 150
Acetaminophen	95.6		P	30 - 150
Bentazon	94.0		P	30 - 150
Carbamazepine	115		P	40 - 150
Diuron	112		P	40 - 150
Fenuron	120		P	40 - 150
Fluridone	111		P	40 - 150
Hydrocodone	100		P	40 - 150
Ibuprofen	90.7		P	30 - 150
Imazapyr	91.9		P	40 - 150
Imidacloprid	103		P	40 - 150
Linuron	95.5		P	40 - 150
MCPP	126		P	40 - 150
Naproxen	117		P	40 - 150
Primidone	106		P	40 - 150
Pyraclostrobin	108		P	30 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P367283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Triclopyr	119		P	30 - 150

Reference Method: EPA 8321B
Batch ID: P367668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	71.3		P	40 - 150
AMPA	102		P	40 - 150
Endothall	111		P	40 - 150
Glufosinate	90.0		P	40 - 150
Glyphosate	98.5		P	40 - 140
Sucralose	98.1		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P367649

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P367938

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P367941

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P367964

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104146	Barium	98.7		P	80 - 120
2104146	Calcium	101		P	80 - 120
2104146	Iron	102		P	80 - 120
2104146	Magnesium	101		P	80 - 120
2104146	Potassium	108		P	80 - 120
2104146	Sodium	102		P	80 - 120
2104146	Zinc	96.6		P	80 - 120
2104526	Barium	102	102	P/P	80 - 120
2104526	Calcium	109	108	P/P	80 - 120
2104526	Iron	105	104	P/P	80 - 120
2104526	Magnesium	111	110	P/P	80 - 120
2104526	Potassium	112	110	P/P	80 - 120
2104526	Sodium	109	108	P/P	80 - 120
2104526	Zinc	102	98.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104146	Aluminum	102		P	80 - 120
2104146	Antimony	101		P	80 - 120
2104146	Arsenic	108		P	80 - 120
2104146	Boron	107		P	80 - 120
2104146	Cadmium	106		P	80 - 120
2104146	Chromium	100		P	80 - 120
2104146	Copper	100		P	80 - 120
2104146	Lead	94.6		P	80 - 120
2104146	Nickel	101		P	80 - 120
2104146	Selenium	106		P	80 - 120
2104146	Silver	102		P	80 - 120
2104146	Thallium	98.9		P	80 - 120
2104526	Aluminum	102	101	P/P	80 - 120
2104526	Antimony	98.3	98.1	P/P	80 - 120
2104526	Arsenic	106	105	P/P	80 - 120
2104526	Boron	104	104	P/P	80 - 120
2104526	Cadmium	104	102	P/P	80 - 120
2104526	Chromium	102	101	P/P	80 - 120
2104526	Copper	104	104	P/P	80 - 120
2104526	Lead	95.3	94.1	P/P	80 - 120
2104526	Nickel	103	102	P/P	80 - 120
2104526	Selenium	105	105	P/P	80 - 120
2104526	Silver	99.9	99.7	P/P	80 - 120
2104526	Thallium	105	95.9	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104714	Chloride	97.2		P	90 - 110
2104930	Chloride	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P367919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105119	Sulfate	102		P	90 - 110
2105289	Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104732	Ammonia-N	97.9	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368306

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104790	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367896

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104732	Kjeldahl Nitrogen	106	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367689

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104692	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367690

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104784	NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104735	Total-P	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367809

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104932	Total-P	100	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104792	O-Phosphate-P	97.6	98.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P367283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104392	2,4-D	181	164	F/F	40 - 150
2104392	Acetaminophen	110	103	P/P	30 - 150
2104392	Bentazon	65.9	63.9	P/P	30 - 150
2104392	Carbamazepine	107	106	P/P	40 - 150
2104392	Diuron	98.2	94.9	P/P	40 - 150
2104392	Fenuron	102	101	P/P	40 - 150
2104392	Fluridone	109	106	P/P	40 - 150
2104392	Hydrocodone	112	105	P/P	40 - 150
2104392	Ibuprofen	104	93.1	P/P	30 - 150
2104392	Imazapyr	88.0	87.2	P/P	40 - 150
2104392	Linuron	95.0	89.0	P/P	40 - 150
2104392	MCP	189	176	F/F	40 - 150
2104392	Naproxen	134	108	P/P	40 - 150
2104392	Primidone	117	100	P/P	40 - 150
2104392	Pyraclostrobin	103	103	P/P	30 - 150
2104392	Triclopyr	173	161	F/F	30 - 150

Reference Method: EPA 8321B
 Batch ID: P367668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104164	Acesulfame K	69.4	80.8	P/P	40 - 150
2104164	AMPA	98.2	99.3	P/P	40 - 150
2104164	Endothall	110	113	P/P	40 - 150
2104164	Glufosinate	91.3	95.2	P/P	40 - 150
2104164	Glyphosate	92.7	94.4	P/P	40 - 140
2104164	Sucralose	92.1	91.7	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P367941

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104549	Fluoride	104	104	P/P	89 - 106

Reference Method: SM 5310 B-00
 Batch ID: P367964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104789	Organic Carbon	107	103	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104781	Turbidity	7.87	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104787	Turbidity	1.54	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104526	Barium	0.707	Spike	P	0 - 20
2104526	Calcium	0.704	Spike	P	0 - 20
2104526	Iron	0.721	Spike	P	0 - 20
2104526	Magnesium	0.554	Spike	P	0 - 20
2104526	Potassium	1.56	Spike	P	0 - 20
2104526	Sodium	0.135	Spike	P	0 - 20
2104526	Zinc	2.75	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104526	Aluminum	1.33	Spike	P	0 - 20
2104526	Antimony	0.221	Spike	P	0 - 20
2104526	Arsenic	1.27	Spike	P	0 - 20
2104526	Boron	0.412	Spike	P	0 - 20
2104526	Cadmium	1.73	Spike	P	0 - 20
2104526	Chromium	0.485	Spike	P	0 - 20
2104526	Copper	0.0103	Spike	P	0 - 20
2104526	Lead	1.37	Spike	P	0 - 20
2104526	Nickel	1.58	Spike	P	0 - 20
2104526	Selenium	0.399	Spike	P	0 - 20
2104526	Silver	0.207	Spike	P	0 - 20
2104526	Thallium	9.19	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104714	Chloride	1.90	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P367919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105289	Sulfate	1.78	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104732	Ammonia-N	3.02	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104790	Ammonia-N	1.60	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367896

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104732	Kjeldahl Nitrogen	1.63	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104692	NO2NO3-N	0.480	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367690

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104784	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104735	Total-P	0.0703	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104932	Total-P	4.57	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104792	O-Phosphate-P	0.409	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P367283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104392	2,4-D	8.18	Spike	P	0 - 30
2104392	Acetaminophen	6.87	Spike	P	0 - 30
2104392	Bentazon	3.12	Spike	P	0 - 30
2104392	Carbamazepine	1.68	Spike	P	0 - 30
2104392	Diuron	3.06	Spike	P	0 - 30
2104392	Fenuron	1.10	Spike	P	0 - 30
2104392	Fluridone	3.53	Spike	P	0 - 30
2104392	Hydrocodone	7.32	Spike	P	0 - 30
2104392	Ibuprofen	10.7	Spike	P	0 - 30
2104392	Imazapyr	0.816	Spike	P	0 - 30
2104392	Imidacloprid	23.7	Spike	P	0 - 30
2104392	Linuron	6.52	Spike	P	0 - 30
2104392	MCP	7.38	Spike	P	0 - 30
2104392	Naproxen	21.5	Spike	P	0 - 30
2104392	Primidone	14.9	Spike	P	0 - 30
2104392	Pyraclostrobin	0.164	Spike	P	0 - 30
2104392	Triclopyr	7.40	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P367668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104164	Acesulfame K	15.2	Spike	P	0 - 30
2104164	AMPA	1.08	Spike	P	0 - 30
2104164	Endothall	2.51	Spike	P	0 - 30
2104164	Glufosinate	4.24	Spike	P	0 - 30
2104164	Glyphosate	1.79	Spike	P	0 - 30
2104164	Sucralose	0.474	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P367649

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104788	Color (true)	1.02	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P367938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104549	Total Alkalinity	2.72	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P368117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104613	TDS	0.897	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P368118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104788	TDS	1.64	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P367941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104549	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P367964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104789	Organic Carbon	2.17	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: 2104801
Field Sample ID: G3SW0042

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	157	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.1	P	30 - 160
EPA 8321B	Diuron-d6	77.4	P	30 - 160
EPA 8321B	Endothall-d6	84.0	P	30 - 160
EPA 8321B	Endothall-d6	84.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	78.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	78.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	109	P	30 - 160
EPA 8321B	Primidone-d5	87.0	P	30 - 160
EPA 8321B	Sucralose-d6	82.0	P	30 - 160
EPA 8321B	Sucralose-d6	82.0	P	30 - 160

Lab Sample ID: 2104802
Field Sample ID: G3SW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	140	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.6	P	30 - 160
EPA 8321B	Diuron-d6	76.8	P	30 - 160
EPA 8321B	Endothall-d6	91.7	P	30 - 160
EPA 8321B	Endothall-d6	91.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	76.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	76.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	111	P	30 - 160
EPA 8321B	Primidone-d5	93.5	P	30 - 160
EPA 8321B	Sucralose-d6	116	P	30 - 160
EPA 8321B	Sucralose-d6	116	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A92848

Included Lab Sample IDs: 2104801, 2104802

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.6	108	P/P	50 - 150
Acetaminophen	101	116	P/P	60 - 160
Bentazon	93.7	92.7	P/P	50 - 160
Carbamazepine	123	128	P/P	60 - 150
Diuron	124	119	P/P	60 - 150
Fenuron	128	126	P/P	60 - 150
Fluridone	127	124	P/P	60 - 160
Hydrocodone	105	115	P/P	60 - 150
Ibuprofen	105	98.1	P/P	50 - 160
Imazapyr	107	83.7	P/P	50 - 150
Imidacloprid	105	108	P/P	60 - 150
Linuron	116	118	P/P	60 - 150
MCPP	103	104	P/P	50 - 150
Naproxen	80.5	108	P/P	50 - 160
Primidone	104	107	P/P	60 - 150
Pyraclostrobin	122	118	P/P	60 - 150
Triclopyr	102	91.6	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92908

Included Lab Sample IDs: 2104785, 2104786, 2104791, 2104792

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.5	96.9	P/P	90 - 110
O-Phosphate-P	98.8	97.5	P/P	90 - 110
O-Phosphate-P	99.5	99.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92909

Included Lab Sample IDs: 2104781, 2104782, 2104787, 2104788

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

Reference Method: SM 2120 B

Run ID: A92910

Included Lab Sample IDs: 2104781, 2104782, 2104787, 2104788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	101	101	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92937

Included Lab Sample IDs: 2104783, 2104784, 2104789, 2104790

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110
NO2NO3-N	100	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92954

Included Lab Sample IDs: 2104781, 2104782, 2104787, 2104788

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

Reference Method: EPA 300.0 Rev. 2.1 dissolved

Run ID: A92954

Included Lab Sample IDs: 2104785, 2104786, 2104791, 2104792

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A92966

Included Lab Sample IDs: 2104803, 2104804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	103	P/P	90 - 110
Calcium	102	98.1	P/P	90 - 110
Iron	102	97.5	P/P	90 - 110
Magnesium	102	97.5	P/P	90 - 110
Potassium	102	98.3	P/P	90 - 110
Sodium	108	106	P/P	90 - 110
Zinc	102	99.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A92984

Included Lab Sample IDs: 2104801, 2104802

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	81.4	79.7	P/P	60 - 160
Endothall	110	109	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A92986

Included Lab Sample IDs: 2104801, 2104802

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	99.6	102	P/P	60 - 160
Glufosinate	87.0	88.2	P/P	60 - 160
Glyphosate	96.3	91.0	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93009

Included Lab Sample IDs: 2104784, 2104789

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93022

Included Lab Sample IDs: 2104783

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93022

Included Lab Sample IDs: 2104783

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93024

Included Lab Sample IDs: 2104790

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

Reference Method: SM 2320 B-97

Run ID: A93033

Included Lab Sample IDs: 2104781, 2104782, 2104787, 2104788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	106	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A93033

Included Lab Sample IDs: 2104781, 2104782, 2104787, 2104788

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

Reference Method: SM 5310 B-00

Run ID: A93041

Included Lab Sample IDs: 2104783, 2104784, 2104789, 2104790

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93073

Included Lab Sample IDs: 2104783, 2104784, 2104789, 2104790

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.5	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93176

Included Lab Sample IDs: 2104803, 2104804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	104	P/P	90 - 110
Antimony	97.3	98.2	P/P	90 - 110
Arsenic	107	106	P/P	90 - 110
Boron	104	106	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Chromium	105	105	P/P	90 - 110
Copper	107	106	P/P	90 - 110
Lead	100	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93176

Included Lab Sample IDs: 2104803, 2104804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	105	106	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	94.4	91.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93196

Included Lab Sample IDs: 2104783, 2104784, 2104789, 2104790

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	99.8	P/P	90 - 110
Ammonia-N	99.8	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93230

Included Lab Sample IDs: 2104801, 2104802

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.9	88.6	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93257

Included Lab Sample IDs: 2104803, 2104804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	98.5	97.8	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								7.87	
	Turbidity								1.54	
EPA 200.7 Rev. 4.4	Barium	102			98.7	102	102			0.707
	Calcium	111			101	109	108			0.704
	Iron	106			102	105	104			0.721
	Magnesium	112			101	111	110			0.554
	Potassium	110			108	112	110			1.56
	Sodium	114			102	109	108			0.135
	Zinc	99.9			96.6	102	98.8			2.75
EPA 200.8 Rev. 5.4	Aluminum	99.9			102	102	101			1.33
	Antimony	96.7			101	98.3	98.1			0.221
	Arsenic	105			108	106	105			1.27
	Boron	104			107	104	104			0.412
	Cadmium	101			106	104	102			1.73
	Chromium	99.8			100	102	101			0.485
	Copper	103			100	104	104			0.0103
	Lead	93.0			94.6	95.3	94.1			1.37
	Nickel	103			101	103	102			1.58
	Selenium	106			106	105	105			0.399
	Silver	99.3			102	99.9	99.7			0.207
	Thallium	94.2			98.9	105	95.9			9.19
EPA 300.0 Rev. 2.1	Chloride	99.6			97.2	102			1.90	
EPA 300.0 Rev. 2.1 dissolved	Sulfate	102			99.6	102			1.78	
EPA 350.1 Rev. 2.0	Ammonia-N	102			97.9	102				3.02
	Ammonia-N	104			103	102				1.60
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105			106	103				1.63
EPA 353.2 Rev. 2.0	NO2NO3-N	100			100	101				0.480
	NO2NO3-N	101			98.5					0.0
EPA 365.1 Rev. 2.0	Total-P	99.3			103	103				0.0703
	Total-P	97.0			100	105				4.57
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101			97.6	98.0				0.409
EPA 8321B	2,4-D	132			181	164				8.18
	Acesulfame K	71.3			69.4	80.8				15.2
	Acetaminophen	95.6			110	103				6.87
	AMPA	102			98.2	99.3				1.08
	Bentazon	94.0			65.9	63.9				3.12
	Carbamazepine	115			107	106				1.68
	Diuron	112			98.2	94.9				3.06
	Endothall	111			110	113				2.51
	Fenuron	120			102	101				1.10
	Fluridone	111			109	106				3.53
	Glufosinate	90.0			91.3	95.2				4.24
	Glyphosate	98.5			92.7	94.4				1.79
	Hydrocodone	100			112	105				7.32
	Ibuprofen	90.7			104	93.1				10.7
	Imazapyr	91.9			88.0	87.2				0.816
	Imidacloprid	103								23.7
	Linuron	95.5			95.0	89.0				6.52
	MCPP	126			189	176				7.38
	Naproxen	117			134	108				21.5
	Primidone	106			117	100				14.9
	Pyraclostrobin	108			103	103				0.164
	Sucralose	98.1			92.1	91.7				0.474
	Triclopyr	119			173	161				7.40

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
SM 2120 B	Color (true)	101				1.02	
SM 2320 B-97	Total Alkalinity	103				2.72	
SM 2540 C-97	TDS					0.897	
	TDS					1.64	
SM 4500 F-C-97	Fluoride	97.2	104	104			0.0
SM 5310 B-00	Organic Carbon	105	107	103			2.17

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2104781, 2104782, 2104787, 2104788
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2104803, 2104804
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2104803, 2104804
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2104781, 2104782, 2104787, 2104788
EPA 300.0 Rev. 2.1 dissolved / E31780	Sulfate, dissolved, in filtered, aqueous matrices	2104785, 2104786, 2104791, 2104792
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2104783, 2104784, 2104789, 2104790
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2104783, 2104784, 2104789, 2104790
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2104783, 2104784, 2104789, 2104790
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2104783, 2104784, 2104789, 2104790
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2104785, 2104786, 2104791, 2104792
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2104801, 2104802
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2104801, 2104802
SM 2120 B / E31780	True Color measured at 450 nm	2104781, 2104782, 2104787, 2104788
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2104781, 2104782, 2104787, 2104788
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2104781, 2104782, 2104787, 2104788
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2104781, 2104782, 2104787, 2104788
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2104781, 2104782, 2104787, 2104788
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2104783, 2104784, 2104789, 2104790

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	07/19/2019			07/19/2019 17:01	Samantha Davila	2104781, 2104782, 2104787, 2104788
EPA 200.7 Rev. 4.4	07/19/2019	07/22/2019 15:20	Elliott D. Healy	07/23/2019 15:56	Betina Topolski	2104803
	07/19/2019	07/22/2019 15:20	Elliott D. Healy	07/23/2019 16:01	Betina Topolski	2104804
EPA 200.8 Rev. 5.4	07/19/2019	07/22/2019 15:20	Elliott D. Healy	07/31/2019 13:36	Robert K Palmer	2104803
	07/19/2019	07/22/2019 15:20	Elliott D. Healy	07/31/2019 13:46	Robert K Palmer	2104804
	07/19/2019	07/22/2019 15:20	Elliott D. Healy	08/02/2019 17:49	Robert K Palmer	2104803
	07/19/2019	07/22/2019 15:20	Elliott D. Healy	08/02/2019 17:57	Robert K Palmer	2104804
EPA 300.0 Rev. 2.1	07/19/2019			07/24/2019 14:17	Jhamieka S. Greenwood	2104781
	07/19/2019			07/24/2019 14:29	Jhamieka S. Greenwood	2104782
	07/19/2019			07/24/2019 14:41	Jhamieka S. Greenwood	2104787
	07/19/2019			07/24/2019 14:53	Jhamieka S. Greenwood	2104788
EPA 300.0 Rev. 2.1 dissolved	07/19/2019			07/24/2019 20:09	Jhamieka S. Greenwood	2104785
	07/19/2019			07/24/2019 20:21	Jhamieka S. Greenwood	2104786
	07/19/2019			07/24/2019 20:33	Jhamieka S. Greenwood	2104791
	07/19/2019			07/24/2019 20:45	Jhamieka S. Greenwood	2104792
EPA 350.1 Rev. 2.0	07/19/2019			07/31/2019 14:11	Virginia P. Brown	2104783
	07/19/2019			07/31/2019 14:13	Virginia P. Brown	2104784
	07/19/2019			07/31/2019 14:14	Virginia P. Brown	2104789
	07/19/2019			07/31/2019 14:25	Virginia P. Brown	2104790
EPA 351.2 Rev. 2.0	07/19/2019	07/25/2019 12:00	Adrian Shelby	07/26/2019 14:28	Joseph Suarez	2104783
	07/19/2019	07/25/2019 12:00	Adrian Shelby	07/26/2019 14:30	Joseph Suarez	2104784
	07/19/2019	07/25/2019 12:00	Adrian Shelby	07/26/2019 14:31	Joseph Suarez	2104789
	07/19/2019	07/25/2019 12:00	Adrian Shelby	07/26/2019 14:33	Joseph Suarez	2104790
EPA 353.2 Rev. 2.0	07/19/2019			07/22/2019 11:42	Beverly Y. Sanders	2104783
	07/19/2019			07/22/2019 11:49	Beverly Y. Sanders	2104784
	07/19/2019			07/22/2019 11:55	Beverly Y. Sanders	2104789
	07/19/2019			07/22/2019 11:56	Beverly Y. Sanders	2104790
EPA 365.1 Rev. 2.0	07/19/2019	07/24/2019 11:15	Vijayalakshmi Reddy	07/25/2019 09:13	Lipi Saha	2104784
	07/19/2019	07/24/2019 11:15	Vijayalakshmi Reddy	07/25/2019 09:14	Lipi Saha	2104789
	07/19/2019	07/24/2019 11:15	Vijayalakshmi Reddy	07/25/2019 13:20	Lipi Saha	2104783
	07/19/2019	07/24/2019 11:15	Vijayalakshmi Reddy	07/25/2019 13:38	Lipi Saha	2104790
EPA 365.1 Rev. 2.0 dissolved	07/19/2019			07/19/2019 15:54	Jhamieka S. Greenwood	2104792
	07/19/2019			07/19/2019 16:13	Jhamieka S. Greenwood	2104785
	07/19/2019			07/19/2019 16:31	Jhamieka S. Greenwood	2104791
	07/19/2019			07/19/2019 16:32	Jhamieka S. Greenwood	2104786
EPA 8321B	07/19/2019	07/19/2019 13:00	Hoor Shaik	07/20/2019 09:27	Juyoung Kim	2104801
	07/19/2019	07/19/2019 13:00	Hoor Shaik	07/20/2019 10:01	Juyoung Kim	2104802
	07/19/2019	07/22/2019 10:00	Rebecca Ware	07/22/2019 15:02	Rebecca Ware	2104801
	07/19/2019	07/22/2019 10:00	Rebecca Ware	07/22/2019 15:15	Rebecca Ware	2104802
	07/19/2019	07/22/2019 10:00	Rebecca Ware	07/23/2019 14:06	Rebecca Ware	2104801

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	07/19/2019	07/22/2019 10:00	Rebecca Ware	07/23/2019 14:17	Rebecca Ware	2104802
	07/19/2019	07/22/2019 10:00	Rebecca Ware	08/02/2019 03:00	Rebecca Ware	2104801
	07/19/2019	07/22/2019 10:00	Rebecca Ware	08/02/2019 03:12	Rebecca Ware	2104802
SM 2120 B	07/19/2019			07/19/2019 17:01	Madeline Funaro	2104787
	07/19/2019			07/19/2019 17:02	Madeline Funaro	2104788
	07/19/2019			07/19/2019 17:12	Madeline Funaro	2104781
	07/19/2019			07/19/2019 17:14	Madeline Funaro	2104782
SM 2320 B-97	07/19/2019			07/25/2019 03:40	Dale L. Simmons	2104781
	07/19/2019			07/25/2019 03:53	Dale L. Simmons	2104782
	07/19/2019			07/25/2019 04:06	Dale L. Simmons	2104787
	07/19/2019			07/25/2019 04:17	Dale L. Simmons	2104788
SM 2540 C-97	07/19/2019			07/22/2019 15:00	Sima Feizi	2104781, 2104782, 2104787, 2104788
SM 2540 D-97	07/19/2019			07/22/2019 15:00	Sima Feizi	2104781, 2104782, 2104787, 2104788
SM 4500 F-C-97	07/19/2019			07/25/2019 03:40	Dale L. Simmons	2104781
	07/19/2019			07/25/2019 03:53	Dale L. Simmons	2104782
	07/19/2019			07/25/2019 04:06	Dale L. Simmons	2104787
	07/19/2019			07/25/2019 04:17	Dale L. Simmons	2104788
SM 5310 B-00	07/19/2019			07/24/2019 05:21	Madeline Funaro	2104789
	07/19/2019			07/24/2019 10:35	Madeline Funaro	2104783
	07/19/2019			07/24/2019 10:49	Madeline Funaro	2104784
	07/19/2019			07/24/2019 11:02	Madeline Funaro	2104790