

Chemical Analysis Report

SW-DIST-2019-02-20-02

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-2019-02-18-25**
Customer: **SW-DIST**
Project ID: **SMP**

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Date Certified: 13-MAR-2019 15:13



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: PEACE RIVER @ SR 60

Collection Date/Time: 02/19/2019 12:00

Field ID: G3SW0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063967	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P359258	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P359817	
	SM 2120 B	Color (true)	180		PCU	P359248	
	SM 2320 B-97	Total Alkalinity	44		mg CaCO3/L	P359597	
	SM 2540 C-97	TDS	143		mg/L	P359701	
	SM 2540 D-97	TSS	18		mg/L	P359469	
	SM 4500 F-C-97	Fluoride	0.24		mg F/L	P359601	
2063969	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P359550	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P359521	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.060		mg N/L	P359519	
	EPA 365.1 Rev. 2.0	Total-P	0.36		mg P/L	P359390	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P359683	
2063971	EPA 300.0 Rev. 2.1 dissolved	Sulfate	13		mg SO4/L	P359887	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P359281	
2063987	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P359225	
		2,4-D	0.032		ug/L	P359230	
		AMPA**	0.40	I	ug/L	P359225	
		Sucralose**	1.5		ug/L	P359225	
		Endothall**	0.25	U	ug/L	P359225	
		Acetaminophen**	0.0080	U	ug/L	P359230	
		Glufosinate**	0.10	U	ug/L	P359225	
		Glyphosate**	8.1		ug/L	P359225	
		Bentazon	0.0013	I	ug/L	P359230	
		Carbamazepine**	0.0024	I	ug/L	P359230	
		Diuron	0.0020	U	ug/L	P359230	
		Fenuron	0.018	I	ug/L	P359230	
		Fluridone**	0.0094		ug/L	P359230	
		Imazapyr**	0.043		ug/L	P359230	
		Hydrocodone**	0.0020	U	ug/L	P359230	
		Ibuprofen**	0.020	U	ug/L	P359230	
		Imidacloprid	0.016		ug/L	P359230	MS
		Linuron	0.0040	U	ug/L	P359230	
		MCPP	0.0020	U	ug/L	P359230	
		Naproxen**	0.0080	U	ug/L	P359230	
		Primidone**	0.0069	I	ug/L	P359230	
		Pyraclostrobin**	0.0020	U	ug/L	P359230	
		Triclopyr**	0.0040	U	ug/L	P359230	
2063989	EPA 200.7 Rev. 4.4	Calcium	17.3		mg/L	P359691	
		Iron	510		ug/L	P359691	
		Magnesium	5.32		mg/L	P359691	
		Potassium	4.9		mg/L	P359691	
		Sodium	13.4		mg/L	P359691	
	EPA 200.8 Rev. 5.4	Aluminum	278		ug/L	P359328	

Field ID: G3SW0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063989	EPA 200.8 Rev. 5.4	Antimony	0.11	I	ug/L	P359328	
		Arsenic	1.37		ug/L	P359328	
		Barium	20.9		ug/L	P359328	
		Boron**	39.9		ug/L	P359328	
		Cadmium	0.028	I	ug/L	P359328	
		Chromium	0.82	I	ug/L	P359328	
		Copper	0.94		ug/L	P359328	
		Lead	0.74		ug/L	P359328	
		Nickel	0.69	I	ug/L	P359328	
		Selenium	0.22	I	ug/L	P359328	
		Silver	0.010	U	ug/L	P359328	
		Thallium	0.10	U	ug/L	P359328	
		Zinc	4.0	I	ug/L	P359328	

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 glyphosate could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: PEACE RIVER @ HERITAGE LANDING

Collection Date/Time: 02/19/2019 11:21

Field ID: G3SW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063968	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P359258	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P359817	
	SM 2120 B	Color (true)	170		PCU	P359248	
	SM 2320 B-97	Total Alkalinity	51		mg CaCO3/L	P359597	
	SM 2540 C-97	TDS	149		mg/L	P359701	
	SM 2540 D-97	TSS	15	I	mg/L	P359469	
	SM 4500 F-C-97	Fluoride	0.38		mg F/L	P359601	
2063970	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P359550	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P359521	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P359519	
	EPA 365.1 Rev. 2.0	Total-P	0.65		mg P/L	P359390	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P359683	
2063972	EPA 300.0 Rev. 2.1 dissolved	Sulfate	19		mg SO4/L	P359887	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.39		mg P/L	P359281	
2063988	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P359225	
		2,4-D	0.033		ug/L	P359230	
		AMPA**	0.38	I	ug/L	P359225	
		Sucralose**	0.69		ug/L	P359225	
		Endothall**	0.25	U	ug/L	P359225	
		Acetaminophen**	0.0080	U	ug/L	P359230	
		Glufosinate**	0.10	U	ug/L	P359225	
		Glyphosate**	2.7		ug/L	P359225	
		Bentazon	0.0013	I	ug/L	P359230	
		Carbamazepine**	0.0012	I	ug/L	P359230	
		Diuron	0.0020	U	ug/L	P359230	
		Fenuron	0.016	U	ug/L	P359230	
		Fluridone**	0.0077		ug/L	P359230	
		Imazapyr**	0.044		ug/L	P359230	
		Hydrocodone**	0.0020	U	ug/L	P359230	
		Ibuprofen**	0.020	U	ug/L	P359230	
		Imidacloprid	0.014		ug/L	P359230	MS
		Linuron	0.0040	U	ug/L	P359230	
		MCP	0.0020	U	ug/L	P359230	
		Naproxen**	0.0080	U	ug/L	P359230	
		Primidone**	0.0040	U	ug/L	P359230	
		Pyraclostrobin**	0.0020	U	ug/L	P359230	
		Triclopyr**	0.0040	U	ug/L	P359230	
2063990	EPA 200.7 Rev. 4.4	Calcium	19.1		mg/L	P359691	
		Iron	530		ug/L	P359691	
		Magnesium	6.31		mg/L	P359691	
		Potassium	4.4		mg/L	P359691	
		Sodium	12.9		mg/L	P359691	
	EPA 200.8 Rev. 5.4	Aluminum	192		ug/L	P359328	

Field ID: G3SW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063990	EPA 200.8 Rev. 5.4	Antimony	0.11	I	ug/L	P359328	
		Arsenic	1.49		ug/L	P359328	
		Barium	18.1		ug/L	P359328	
		Boron**	38.5		ug/L	P359328	
		Cadmium	0.055	I	ug/L	P359328	
		Chromium	0.70	I	ug/L	P359328	
		Copper	0.90		ug/L	P359328	
		Lead	0.54		ug/L	P359328	
		Nickel	0.79	I	ug/L	P359328	
		Selenium	0.25	I	ug/L	P359328	
		Silver	0.010	U	ug/L	P359328	
		Thallium	0.10	U	ug/L	P359328	
		Zinc	3.3	I	ug/L	P359328	

Ref. Method and Comment:

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

EPA 8321B: MS accuracy for glyphosate could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: LAKE ISABELL CENTER

Collection Date/Time: 02/19/2019 10:20

Field ID: G4SW0095

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063973	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P359258	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P359817	
	SM 2120 B	Color (true)	52		PCU	P359248	
	SM 2320 B-97	Total Alkalinity	3.5		mg CaCO3/L	P359597	
	SM 2540 C-97	TDS	118		mg/L	P359701	
	SM 2540 D-97	TSS	2	U	mg/L	P359469	
	SM 4500 F-C-97	Fluoride	0.092	I	mg F/L	P359601	
2063975	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P359550	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P359521	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.057		mg N/L	P359519	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P359390	
	SM 5310 B-00	Organic Carbon	9.2		mg C/L	P359683	
2063977	EPA 300.0 Rev. 2.1 dissolved	Sulfate	34		mg SO4/L	P360101	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P359282	

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: SCOTT LAKE @ SOUTH CENTRAL

Collection Date/Time: 02/19/2019 12:56

Field ID: G2SW0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2063974	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P359258	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P359817	
	SM 2120 B	Color (true)	15		PCU	P359248	
	SM 2320 B-97	Total Alkalinity	45		mg CaCO3/L	P359597	
	SM 2540 C-97	TDS	105		mg/L	P359701	
	SM 2540 D-97	TSS	15	I	mg/L	P359469	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P359601	
2063976	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P359550	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P359521	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P359519	
	EPA 365.1 Rev. 2.0	Total-P	0.099		mg P/L	P359390	
	SM 5310 B-00	Organic Carbon	7.5		mg C/L	P359683	
2063978	EPA 300.0 Rev. 2.1 dissolved	Sulfate	8.8		mg SO4/L	P360101	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P359282	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359258

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359691

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359328

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	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
Zinc	2.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359817

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P359887

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P360101

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: P359550

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359521

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359519

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359390

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359281

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359282

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

Reference Method: EPA 8321B
Batch ID: P359225

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: EPA 8321B
Batch ID: P359230

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
Diuron	0.0020	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P359230

Component	Result	Code	Units
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: SM 2120 B
Batch ID: P359248

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359597

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

Reference Method: SM 2540 C-97
Batch ID: P359701

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359469

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P359601

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P359683

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: P359691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	103		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	99.1		P	85 - 115
Sodium	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	80 - 120
Antimony	103		P	80 - 120
Arsenic	108		P	80 - 120
Barium	106		P	80 - 120
Boron	110		P	80 - 120
Cadmium	108		P	80 - 120
Chromium	109		P	80 - 120
Copper	110		P	80 - 120
Lead	107		P	80 - 120
Nickel	108		P	80 - 120
Selenium	103		P	80 - 120
Silver	104		P	80 - 120
Thallium	108		P	80 - 120
Zinc	108		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359817

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

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P359887

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

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P360101

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359550

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.8		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P359521

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: P359519

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P359390

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: P359281

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P359282

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

Reference Method: EPA 8321B
 Batch ID: P359225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	113		P	40 - 150
AMPA	64.7		P	40 - 150
Endothall	93.1		P	40 - 150
Glufosinate	89.0		P	40 - 150
Glyphosate	91.9		P	40 - 140
Sucralose	98.2		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P359230

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	94.1		P	40 - 150
Acetaminophen	109		P	30 - 150
Bentazon	124		P	30 - 150
Carbamazepine	77.5		P	40 - 150
Diuron	88.5		P	40 - 150
Fenuron	118		P	40 - 150
Fluridone	113		P	40 - 150
Hydrocodone	94.1		P	40 - 150
Ibuprofen	102		P	40 - 150
Imazapyr	97.7		P	40 - 150
Imidacloprid	110		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P359230

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	86.0		P	40 - 150
MCP	111		P	40 - 150
Naproxen	91.6		P	40 - 150
Primidone	102		P	40 - 150
Pyraclostrobin	61.2		P	40 - 150
Triclopyr	59.4		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P359248

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P359597

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

Reference Method: SM 4500 F-C-97
Batch ID: P359601

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359683

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063940	Calcium	103	105	P/P	80 - 120
2063940	Iron	103	104	P/P	80 - 120
2063940	Magnesium	103	104	P/P	80 - 120
2063940	Potassium	101	102	P/P	80 - 120
2063940	Sodium	98.6	101	P/P	80 - 120
2064291	Calcium	102		P	80 - 120
2064291	Iron	103		P	80 - 120
2064291	Magnesium	102		P	80 - 120
2064291	Potassium	99.3		P	80 - 120
2064291	Sodium	98.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063939	Aluminum	98.2		P	80 - 120
2063939	Antimony	101		P	80 - 120
2063939	Arsenic	106		P	80 - 120
2063939	Barium	104		P	80 - 120
2063939	Boron	102		P	80 - 120
2063939	Cadmium	107		P	80 - 120
2063939	Chromium	106		P	80 - 120
2063939	Copper	109		P	80 - 120
2063939	Lead	106		P	80 - 120
2063939	Nickel	105		P	80 - 120
2063939	Selenium	99.4		P	80 - 120
2063939	Silver	102		P	80 - 120
2063939	Thallium	108		P	80 - 120
2063939	Zinc	105		P	80 - 120
2063961	Aluminum	98.3	98.7	P/P	80 - 120
2063961	Antimony	105	105	P/P	80 - 120
2063961	Arsenic	110	110	P/P	80 - 120
2063961	Barium	107	107	P/P	80 - 120
2063961	Boron	104	105	P/P	80 - 120
2063961	Cadmium	110	109	P/P	80 - 120
2063961	Chromium	110	110	P/P	80 - 120
2063961	Copper	110	110	P/P	80 - 120
2063961	Lead	109	108	P/P	80 - 120
2063961	Nickel	106	106	P/P	80 - 120
2063961	Selenium	101	102	P/P	80 - 120
2063961	Silver	105	105	P/P	80 - 120
2063961	Thallium	110	111	P/P	80 - 120
2063961	Zinc	106	106	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359817

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063878	Chloride	104		P	90 - 110
2063952	Chloride	106		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P359887

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064199	Sulfate	101		P	90 - 110
2064252	Sulfate	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P360101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064311	Sulfate	104		P	90 - 110
2064330	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063976	Ammonia-N	98.9	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063975	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359519

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063956	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064200	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063930	O-Phosphate-P	97.9	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359282

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063977	O-Phosphate-P	95.3	96.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P359225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063987	Acesulfame K	90.0	87.7	P/P	40 - 150
2063987	AMPA	53.0	62.5	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P359225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063987	Endothall	128	119	P/P	40 - 150
2063987	Glufosinate	87.4	95.8	P/P	40 - 150
2063987	Sucralose	104	105	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P359230

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064182	2,4-D	117	105	P/P	40 - 150
2064182	Acetaminophen	102	98.7	P/P	30 - 150
2064182	Bentazon	68.7	76.7	P/P	30 - 150
2064182	Carbamazepine	70.8	68.2	P/P	40 - 150
2064182	Diuron	63.8	68.7	P/P	40 - 150
2064182	Fenuron	71.2	71.5	P/P	40 - 150
2064182	Fluridone	92.0	111	P/P	40 - 150
2064182	Hydrocodone	78.2	76.9	P/P	40 - 150
2064182	Ibuprofen	91.8	85.3	P/P	40 - 150
2064182	Imazapyr	131	102	P/P	40 - 150
2064182	Imidacloprid	163	154	F/F	40 - 150
2064182	Linuron	72.0	76.1	P/P	40 - 150
2064182	MCP	141	139	P/P	40 - 150
2064182	Naproxen	87.0	77.9	P/P	40 - 150
2064182	Primidone	85.7	91.8	P/P	40 - 150
2064182	Pyraclostrobin	75.1	78.7	P/P	40 - 150
2064182	Triclopyr	88.1	80.1	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P359601

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064733	Fluoride	98.0	97.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359683

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063449	Organic Carbon	103		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063954	Turbidity	5.07	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063940	Calcium	1.96	Spike	P	0 - 20
2063940	Iron	0.563	Spike	P	0 - 20
2063940	Magnesium	0.339	Spike	P	0 - 20
2063940	Potassium	0.756	Spike	P	0 - 20
2063940	Sodium	2.27	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063961	Aluminum	0.444	Spike	P	0 - 20
2063961	Antimony	0.247	Spike	P	0 - 20
2063961	Arsenic	0.172	Spike	P	0 - 20
2063961	Barium	0.0607	Spike	P	0 - 20
2063961	Boron	0.852	Spike	P	0 - 20
2063961	Cadmium	0.623	Spike	P	0 - 20
2063961	Chromium	0.546	Spike	P	0 - 20
2063961	Copper	0.395	Spike	P	0 - 20
2063961	Lead	0.303	Spike	P	0 - 20
2063961	Nickel	0.254	Spike	P	0 - 20
2063961	Selenium	0.444	Spike	P	0 - 20
2063961	Silver	0.179	Spike	P	0 - 20
2063961	Thallium	1.32	Spike	P	0 - 20
2063961	Zinc	0.376	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063952	Chloride	0.976	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P359887

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064199	Sulfate	0.529	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P360101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064311	Sulfate	0.849	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063976	Ammonia-N	0.719	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063975	Kjeldahl Nitrogen	0.0747	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359519

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063956	NO2NO3-N	1.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064200	Total-P	0.762	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063930	O-Phosphate-P	0.204	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063977	O-Phosphate-P	0.787	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P359225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063987	Acesulfame K	2.48	Spike	P	0 - 30
2063987	AMPA	9.77	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P359225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063987	Endothall	7.35	Spike	P	0 - 30
2063987	Glufosinate	9.20	Spike	P	0 - 30
2063987	Glyphosate	8.75	Spike	P	0 - 30
2063987	Sucralose	0.796	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P359230

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064182	2,4-D	10.0	Spike	P	0 - 30
2064182	Acetaminophen	3.47	Spike	P	0 - 30
2064182	Bentazon	6.32	Spike	P	0 - 30
2064182	Carbamazepine	3.78	Spike	P	0 - 30
2064182	Diuron	6.89	Spike	P	0 - 30
2064182	Fenuron	0.448	Spike	P	0 - 30
2064182	Fluridone	16.8	Spike	P	0 - 30
2064182	Hydrocodone	1.73	Spike	P	0 - 30
2064182	Ibuprofen	7.38	Spike	P	0 - 30
2064182	Imazapyr	4.45	Spike	P	0 - 30
2064182	Imidacloprid	5.18	Spike	P	0 - 30
2064182	Linuron	5.47	Spike	P	0 - 30
2064182	MCPP	1.88	Spike	P	0 - 30
2064182	Naproxen	11.1	Spike	P	0 - 30
2064182	Primidone	6.91	Spike	P	0 - 30
2064182	Pyraclostrobin	4.61	Spike	P	0 - 30
2064182	Triclopyr	9.53	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P359248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063925	Color (true)	1.10	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P359597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064733	Total Alkalinity	0.126	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P359701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064199	TDS	1.90	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P359601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064733	Fluoride	0.470	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P359683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063449	Organic Carbon	0.424	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: 2063987
Field Sample ID: G3SW0042

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	101	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.5	P	30 - 160
EPA 8321B	Diuron-d6	49.0	P	30 - 160
EPA 8321B	Endothall-d6	144	P	40 - 160
EPA 8321B	Endothall-d6	144	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	119	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	119	P	40 - 160
EPA 8321B	Ibuprofen-d3	72.0	P	30 - 160
EPA 8321B	Primidone-d5	74.0	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	40 - 160
EPA 8321B	Sucralose-d6	105	P	40 - 160

Lab Sample ID: 2063988
Field Sample ID: G3SW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	96.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	58.6	P	30 - 160
EPA 8321B	Diuron-d6	54.2	P	30 - 160
EPA 8321B	Endothall-d6	137	P	40 - 160
EPA 8321B	Endothall-d6	137	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	118	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	118	P	40 - 160
EPA 8321B	Ibuprofen-d3	76.6	P	30 - 160
EPA 8321B	Primidone-d5	72.1	P	30 - 160
EPA 8321B	Sucralose-d6	99.9	P	40 - 160
EPA 8321B	Sucralose-d6	99.9	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A89535

Included Lab Sample IDs: 2063967, 2063968, 2063973, 2063974

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.6	98.0	P/P	85 - 115
Color (true)	99.1	99.3	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89537

Included Lab Sample IDs: 2063967, 2063968, 2063973, 2063974

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: A89552

Included Lab Sample IDs: 2063971, 2063972, 2063977, 2063978

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.9	97.6	P/P	90 - 110
O-Phosphate-P	99.0	98.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89599

Included Lab Sample IDs: 2063987, 2063988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	94.5	93.1	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A89610

Included Lab Sample IDs: 2063987, 2063988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.3	99.2	P/P	50 - 150
Acetaminophen	107	117	P/P	60 - 160
Bentazon	69.6	77.3	P/P	50 - 160
Carbamazepine	99.8	99.7	P/P	60 - 150
Diuron	109	101	P/P	60 - 150
Fenuron	98.9	101	P/P	60 - 150
Fluridone	103	106	P/P	60 - 160
Hydrocodone	98.0	92.7	P/P	60 - 150
Ibuprofen	78.2	62.2	P/P	50 - 160
Imazapyr	106	99.1	P/P	50 - 150
Imidacloprid	103	108	P/P	60 - 150
Linuron	107	105	P/P	60 - 150
MCPP	102	97.6	P/P	50 - 150
Naproxen	66.4	136	P/P	50 - 160
Primidone	103	102	P/P	60 - 150
Pyraclostrobin	99.2	104	P/P	60 - 150
Triclopyr	102	98.6	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89630

Included Lab Sample IDs: 2063969, 2063970, 2063976

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89646

Included Lab Sample IDs: 2063975

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89648

Included Lab Sample IDs: 2063989, 2063990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.5	97.4	P/P	90 - 110
Antimony	99.4	100	P/P	90 - 110
Arsenic	103	104	P/P	90 - 110
Barium	102	104	P/P	90 - 110
Boron	101	101	P/P	90 - 110
Cadmium	102	102	P/P	90 - 110
Chromium	105	106	P/P	90 - 110
Copper	107	109	P/P	90 - 110
Lead	103	105	P/P	90 - 110
Nickel	104	105	P/P	90 - 110
Selenium	99.4	100	P/P	90 - 110
Silver	98.4	99.5	P/P	90 - 110
Thallium	99.9	101	P/P	90 - 110
Zinc	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89651

Included Lab Sample IDs: 2063969, 2063970, 2063975, 2063976

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89666

Included Lab Sample IDs: 2063969, 2063970, 2063975, 2063976

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89674

Included Lab Sample IDs: 2063967, 2063968, 2063973, 2063974

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A89680

Included Lab Sample IDs: 2063967, 2063968, 2063973, 2063974

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.7	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89680

Included Lab Sample IDs: 2063967, 2063968, 2063973, 2063974

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89706

Included Lab Sample IDs: 2063987, 2063988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	120	114	P/P	60 - 160
Endothall	95.2	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A89708

Included Lab Sample IDs: 2063987, 2063988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	69.7	70.4	P/P	60 - 160
Glufosinate	119	112	P/P	60 - 160
Glyphosate	123	122	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89719

Included Lab Sample IDs: 2063969, 2063970, 2063975, 2063976

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

Reference Method: SM 5310 B-00

Run ID: A89721

Included Lab Sample IDs: 2063969, 2063970, 2063975, 2063976

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.0	93.7	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A89758

Included Lab Sample IDs: 2063989, 2063990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	100	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	100	101	P/P	90 - 110
Potassium	97.0	96.5	P/P	90 - 110
Sodium	99.5	97.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1 dissolved

Run ID: A89801

Included Lab Sample IDs: 2063971, 2063972

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

Reference Method: EPA 300.0 Rev. 2.1 dissolved

Run ID: A89885

Included Lab Sample IDs: 2063977, 2063978

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	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						5.07	
EPA 200.7 Rev. 4.4	Calcium	105	103	105	102			1.96
	Iron	103	103	104	103			0.563
	Magnesium	103	103	104	102			0.339
	Potassium	99.1	101	102	99.3			0.756
	Sodium	101	98.6	101	98.3			2.27
EPA 200.8 Rev. 5.4	Aluminum	102	98.2	98.3	98.7			0.444
	Antimony	103	101	105	105			0.247
	Arsenic	108	106	110	110			0.172
	Barium	106	104	107	107			0.0607
	Boron	110	102	104	105			0.852
	Cadmium	108	107	110	109			0.623
	Chromium	109	106	110	110			0.546
	Copper	110	109	110	110			0.395
	Lead	107	106	109	108			0.303
	Nickel	108	105	106	106			0.254
	Selenium	103	99.4	101	102			0.444
	Silver	104	102	105	105			0.179
	Thallium	108	108	110	111			1.32
	Zinc	108	105	106	106			0.376
EPA 300.0 Rev. 2.1	Chloride	103	106	104			0.976	
EPA 300.0 Rev. 2.1 dissolved	Sulfate	102	101	102			0.529	
	Sulfate	106	104	103			0.849	
EPA 350.1 Rev. 2.0	Ammonia-N	97.8	98.9	99.7				0.719
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	101	101				0.0747
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	100	99.5				1.00
EPA 365.1 Rev. 2.0	Total-P	107	104	105				0.762
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.9	98.1				0.204
	O-Phosphate-P	98.0	95.3	96.1				0.787
EPA 8321B	2,4-D	94.1	117	105				10.0
	Acesulfame K	113	90.0	87.7				2.48
	Acetaminophen	109	102	98.7				3.47
	AMPA	64.7	53.0	62.5				9.77
	Bentazon	124	68.7	76.7				6.32
	Carbamazepine	77.5	70.8	68.2				3.78
	Diuron	88.5	63.8	68.7				6.89
	Endothall	93.1	128	119				7.35
	Fenuron	118	71.2	71.5				0.448
	Fluridone	113	92.0	111				16.8
	Glufosinate	89.0	87.4	95.8				9.20
	Glyphosate	91.9						8.75
	Hydrocodone	94.1	78.2	76.9				1.73
	Ibuprofen	102	91.8	85.3				7.38
	Imazapyr	97.7	131	102				4.45
	Imidacloprid	110	163	154				5.18
	Linuron	86.0	72.0	76.1				5.47
	MCPP	111	141	139				1.88
	Naproxen	91.6	87.0	77.9				11.1
	Primidone	102	85.7	91.8				6.91
	Pyraclostrobin	61.2	75.1	78.7				4.61
	Sucralose	98.2	104	105				0.796
	Triclopyr	59.4	88.1	80.1				9.53
SM 2120 B	Color (true)	99.5					1.10	
SM 2320 B-97	Total Alkalinity	101					0.126	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 2540 C-97	TDS				1.90	
SM 4500 F-C-97	Fluoride	96.5	98.0 97.3			0.470
SM 5310 B-00	Organic Carbon	94.3	103			0.424

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2063967, 2063968, 2063973, 2063974
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2063989, 2063990
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2063989, 2063990
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2063967, 2063968, 2063973, 2063974
EPA 300.0 Rev. 2.1 dissolved / E31780	Sulfate, dissolved, in filtered, aqueous matrices	2063971, 2063972, 2063977, 2063978
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2063969, 2063970, 2063975, 2063976
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2063969, 2063970, 2063975, 2063976
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2063969, 2063970, 2063975, 2063976
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2063969, 2063970, 2063975, 2063976
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2063971, 2063972, 2063977, 2063978
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2063987, 2063988
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2063987, 2063988
SM 2120 B / E31780	True Color measured at 450 nm	2063967, 2063968, 2063973, 2063974
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2063967, 2063968, 2063973, 2063974
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2063967, 2063968, 2063973, 2063974
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2063967, 2063968, 2063973, 2063974
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2063967, 2063968, 2063973, 2063974
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2063969, 2063970, 2063975, 2063976

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	02/20/2019			02/20/2019 17:34	Julia Storbeck	2063967, 2063968, 2063973, 2063974
EPA 200.7 Rev. 4.4	02/20/2019	02/28/2019 13:45	Elliott D. Healy	03/01/2019 16:21	Betina Topolski	2063989
	02/20/2019	02/28/2019 13:45	Elliott D. Healy	03/01/2019 16:26	Betina Topolski	2063990
EPA 200.8 Rev. 5.4	02/20/2019	02/21/2019 17:40	Elliott D. Healy	02/25/2019 23:38	Allison Taylor	2063989
	02/20/2019	02/21/2019 17:40	Elliott D. Healy	02/25/2019 23:47	Allison Taylor	2063990
EPA 300.0 Rev. 2.1	02/20/2019			03/01/2019 21:36	Lipi Saha	2063967
	02/20/2019			03/01/2019 21:51	Lipi Saha	2063968
	02/20/2019			03/01/2019 22:06	Lipi Saha	2063973
	02/20/2019			03/01/2019 22:50	Lipi Saha	2063974
EPA 300.0 Rev. 2.1 dissolved	02/20/2019			03/05/2019 10:09	Lipi Saha	2063971
	02/20/2019			03/05/2019 10:24	Lipi Saha	2063972
	02/20/2019			03/06/2019 21:47	Lipi Saha	2063977
	02/20/2019			03/06/2019 22:01	Lipi Saha	2063978
EPA 350.1 Rev. 2.0	02/20/2019			02/25/2019 12:54	Ping Hua	2063976
	02/20/2019			02/25/2019 13:06	Ping Hua	2063969
	02/20/2019			02/25/2019 13:08	Ping Hua	2063970
	02/20/2019			02/25/2019 13:09	Ping Hua	2063975
EPA 351.2 Rev. 2.0	02/20/2019	02/26/2019 11:30	Adrian Shelby	02/28/2019 09:24	Joseph Suarez	2063969
	02/20/2019	02/26/2019 11:30	Adrian Shelby	02/28/2019 09:26	Joseph Suarez	2063970
	02/20/2019	02/26/2019 11:30	Adrian Shelby	02/28/2019 09:28	Joseph Suarez	2063975
	02/20/2019	02/26/2019 11:30	Adrian Shelby	02/28/2019 09:32	Joseph Suarez	2063976
EPA 353.2 Rev. 2.0	02/20/2019			02/26/2019 10:56	Beverly Y. Sanders	2063969
	02/20/2019			02/26/2019 10:57	Beverly Y. Sanders	2063970
	02/20/2019			02/26/2019 10:58	Beverly Y. Sanders	2063975
	02/20/2019			02/26/2019 11:00	Beverly Y. Sanders	2063976
EPA 365.1 Rev. 2.0	02/20/2019	02/22/2019 13:00	Sima Feizi	02/25/2019 12:25	Rosalyn Ballman	2063969
	02/20/2019	02/22/2019 13:00	Sima Feizi	02/25/2019 12:26	Rosalyn Ballman	2063970
	02/20/2019	02/22/2019 13:00	Sima Feizi	02/25/2019 12:29	Rosalyn Ballman	2063976
	02/20/2019	02/22/2019 13:00	Sima Feizi	02/25/2019 19:05	Rosalyn Ballman	2063975
EPA 365.1 Rev. 2.0 dissolved	02/20/2019			02/20/2019 16:49	Jhamieka S. Greenwood	2063977
	02/20/2019			02/20/2019 16:54	Jhamieka S. Greenwood	2063971
	02/20/2019			02/20/2019 16:55	Jhamieka S. Greenwood	2063978
	02/20/2019			02/20/2019 17:16	Jhamieka S. Greenwood	2063972
EPA 8321B	02/20/2019	02/22/2019 10:00	Hoor Shaik	02/25/2019 03:06	Juyoung Kim	2063987
	02/20/2019	02/22/2019 10:00	Hoor Shaik	02/25/2019 03:41	Juyoung Kim	2063988
	02/20/2019	02/22/2019 10:00	Rebecca Ware	02/22/2019 13:28	Rebecca Ware	2063987
	02/20/2019	02/22/2019 10:00	Rebecca Ware	02/22/2019 13:39	Rebecca Ware	2063988
	02/20/2019	02/22/2019 10:00	Rebecca Ware	02/22/2019 19:07	Rebecca Ware	2063987
	02/20/2019	02/22/2019 10:00	Rebecca Ware	02/22/2019 19:20	Rebecca Ware	2063988
	02/20/2019	02/22/2019 10:00	Rebecca Ware	02/23/2019 07:05	Mohammad Ghaffari	2063987

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/20/2019	02/22/2019 10:00	Rebecca Ware	02/23/2019 07:17	Mohammad Ghaffari	2063988
SM 2120 B	02/20/2019			02/20/2019 16:14	Chelsea Hernandez	2063973
	02/20/2019			02/20/2019 16:15	Chelsea Hernandez	2063974
	02/20/2019			02/20/2019 16:31	Chelsea Hernandez	2063967
	02/20/2019			02/20/2019 16:32	Chelsea Hernandez	2063968
SM 2320 B-97	02/20/2019			02/26/2019 04:07	Dale L. Simmons	2063967
	02/20/2019			02/26/2019 04:19	Dale L. Simmons	2063968
	02/20/2019			02/26/2019 04:31	Dale L. Simmons	2063973
	02/20/2019			02/26/2019 04:44	Dale L. Simmons	2063974
	02/20/2019			02/22/2019 15:01	Yijie Li	2063967, 2063968, 2063973, 2063974
SM 2540 C-97	02/20/2019			02/22/2019 15:01	Yijie Li	2063967, 2063968, 2063973, 2063974
SM 2540 D-97	02/20/2019			02/26/2019 04:07	Dale L. Simmons	2063967
SM 4500 F-C-97	02/20/2019			02/26/2019 04:19	Dale L. Simmons	2063968
	02/20/2019			02/26/2019 04:31	Dale L. Simmons	2063973
	02/20/2019			02/26/2019 04:44	Dale L. Simmons	2063974
	02/20/2019			02/27/2019 09:26	Chelsea Hernandez	2063969
	02/20/2019			02/27/2019 09:42	Chelsea Hernandez	2063970
SM 5310 B-00	02/20/2019			02/27/2019 09:56	Chelsea Hernandez	2063975
	02/20/2019			02/27/2019 10:09	Chelsea Hernandez	2063976