

Chemical Analysis Report

SE-DIST-2021-05-11-02

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

Event Description: **SMP - Okeechobee Monthly 05/21**

Request ID: **RQ-2021-05-03-66**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

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FL Dept. of Environmental Protection
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Certified by: Colin Wright, Program Administrator

Date Certified: 27-MAY-2021 10:38

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light blue rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: Taylor Creek @ 39th St.

Collection Date/Time: 05/10/2021 10:10

Field ID: G1SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246475	EPA 180.1 Rev. 2.0	Turbidity	9.0		NTU	P398004	
	EPA 300.0 Rev. 2.1	Chloride	97		mg Cl/L	P398645	
		Sulfate	55		mg SO4/L	P398648	
	SM 2120 B-2011	Color (true)	130		PCU	P398010	
	SM 2320 B-2011	Total Alkalinity	176		mg CaCO3/L	P398477	
	SM 2540 C-2011	TDS	485	A	mg/L	P398438	
	SM 2540 D-2011	TSS	10	A	mg/L	P398331	
	SM 4500 F-C-2011	Fluoride	0.15		mg F/L	P398697	
2246476	EPA 350.1 Rev. 2.0	Ammonia-N	2.8		mg N/L	P398306	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	5.7		mg N/L	P398357	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.4		mg N/L	P398123	
	EPA 365.1 Rev. 2.0	Total-P	1.0		mg P/L	P398281	
	SM 5310 B-2011	Organic Carbon	27		mg C/L	P398166	
2246477	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.79		mg P/L	P398024	
2246501	EPA 8321B	2,4-D	0.046		ug/L	P398046	
		Acesulfame K	0.10	U	ug/L	P397923	RPD
		2,4,5-T	0.0040	U	ug/L	P398046	
		AMPA	0.35	I	ug/L	P397923	
		Sucralose	0.22		ug/L	P397923	
		Acetaminophen	0.11		ug/L	P398046	
		Acetamiprid	0.0020	U	ug/L	P398046	
		Endothall	0.25	U	ug/L	P397923	
		Glufosinate	0.10	U	ug/L	P397923	
		Glyphosate	0.97		ug/L	P397923	
		Afidopyropen	0.0020	U	ug/L	P398046	
		Bentazon	0.0018	I	ug/L	P398046	
		Benzovindiflupyr	0.0020	U	ug/L	P398046	
		Carbamazepine	8.0E-04	U	ug/L	P398046	
		Clothianidin	0.0027	I	ug/L	P398046	
		Dinotefuran	0.0062	I	ug/L	P398046	
		Diuron	0.0020	U	ug/L	P398046	
		Fenuron	0.016	U	ug/L	P398046	
		Fluridone	8.0E-04	U	ug/L	P398046	
		Imazapyr	0.27		ug/L	P398046	
		Hydrocodone	0.0020	U	ug/L	P398046	
		Ibuprofen	0.020	U	ug/L	P398046	
		Imidacloprid	0.0084		ug/L	P398046	MS
		Linuron	0.0040	U	ug/L	P398046	
		Mandestrobin	0.0020	U	ug/L	P398046	
		MCP	0.0020	U	ug/L	P398046	
		Naproxen	0.0080	U	ug/L	P398046	
		Primidone	0.0040	U	ug/L	P398046	
		Pyraclostrobin	0.0020	U	ug/L	P398046	

Field ID: G1SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246501	EPA 8321B	Thiamethoxam	0.0030	I	ug/L	P398046	
		Tolfenpyrad	0.0020	U	ug/L	P398046	
		Triclopyr	0.0040	U	ug/L	P398046	

Ref. Method and Comment:
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: L-63 Canal @ SE 86th Blvd.

Collection Date/Time: 05/10/2021 10:45

Field ID: G1SE0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246484	EPA 180.1 Rev. 2.0	Turbidity	9.8	A	NTU	P398005	
	EPA 300.0 Rev. 2.1	Chloride	89		mg Cl/L	P398646	
		Sulfate	42		mg SO4/L	P398649	
	SM 2120 B-2011	Color (true)	110		PCU	P398010	
	SM 2320 B-2011	Total Alkalinity	122		mg CaCO3/L	P398477	
	SM 2540 C-2011	TDS	392	A	mg/L	P398439	
	SM 2540 D-2011	TSS	10	A	mg/L	P398332	
2246485	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P398697	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P398306	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P398245	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P398123	
	EPA 365.1 Rev. 2.0	Total-P	0.28		mg P/L	P398285	
2246486	SM 5310 B-2011	Organic Carbon	24		mg C/L	P398166	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P398025	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Henry Creek @ 710

Collection Date/Time: 05/10/2021 11:05

Field ID: G1SE0002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246481	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P398004	
	EPA 300.0 Rev. 2.1	Chloride	420		mg Cl/L	P398645	
		Sulfate	120		mg SO4/L	P398648	
	SM 2120 B-2011	Color (true)	190		PCU	P398010	
	SM 2320 B-2011	Total Alkalinity	60		mg CaCO3/L	P398477	
	SM 2540 C-2011	TDS	926		mg/L	P398439	
	SM 2540 D-2011	TSS	3	I	mg/L	P398332	
	SM 4500 F-C-2011	Fluoride	0.26		mg F/L	P398697	
2246482	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P398306	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P398245	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.031		mg N/L	P398123	
	EPA 365.1 Rev. 2.0	Total-P	0.27		mg P/L	P398285	
	SM 5310 B-2011	Organic Carbon	27		mg C/L	P398166	
2246483	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.21		mg P/L	P398024	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lemkin Creek @ 78

Collection Date/Time: 05/10/2021 09:30

Field ID: G1SE0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246478	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P398004	
	EPA 300.0 Rev. 2.1	Chloride	200		mg Cl/L	P398645	
		Sulfate	110		mg SO4/L	P398648	
	SM 2120 B-2011	Color (true)	63	A	PCU	P398010	
	SM 2320 B-2011	Total Alkalinity	166		mg CaCO3/L	P398477	
	SM 2540 C-2011	TDS	686		mg/L	P398439	
	SM 2540 D-2011	TSS	4	I	mg/L	P398332	
	SM 4500 F-C-2011	Fluoride	0.17		mg F/L	P398697	
2246479	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P398306	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P398357	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P398123	
	EPA 365.1 Rev. 2.0	Total-P	0.084		mg P/L	P398285	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P398166	
2246480	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.027		mg P/L	P398024	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lettuce Creek @ 710

Collection Date/Time: 05/10/2021 11:30

Field ID: G1SE0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246505	EPA 200.7 Rev. 4.4	Barium	28.7		ug/L	P398257	
		Calcium	51.4		mg/L	P398257	
		Iron	1.26E+03		ug/L	P398257	
		Magnesium	7.91		mg/L	P398257	
		Manganese	43.4		ug/L	P398257	
		Potassium	3.3		mg/L	P398257	
		Sodium	40.1		mg/L	P398257	
	EPA 200.8 Rev. 5.4	Zinc	26		ug/L	P398257	
		Aluminum	183		ug/L	P398257	
		Antimony	0.058	I	ug/L	P398257	
		Arsenic	1.00		ug/L	P398257	
		Beryllium	0.027	I	ug/L	P398257	
		Boron**	56.1		ug/L	P398257	
		Cadmium	0.020	U	ug/L	P398257	
		Chromium	1.2	I	ug/L	P398257	
		Copper	0.44	I	ug/L	P398257	
		Lead	0.20	U	ug/L	P398257	
		Nickel	0.50	U	ug/L	P398257	
		Selenium	0.20	U	ug/L	P398257	
		Silver	0.010	U	ug/L	P398257	
		Thallium	0.10	U	ug/L	P398257	
	SM 2340B	Hardness	161		mg/L	P398257	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P398004

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P398005

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P398257

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
Manganese	1.0	U	ug/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: P398257

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	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: P398645

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398646

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398648

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398649

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398306

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398245

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398357

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398123

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398281

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398285

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398024

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398025

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

Reference Method: EPA 8321B
Batch ID: P397923

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: P398046

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
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
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P398010

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P398477

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

Reference Method: SM 2540 C-2011
Batch ID: P398438

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P398439

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P398331

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P398332

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P398697

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P398166

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: P398257

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	106		P	85 - 115
Iron	102		P	85 - 115
Magnesium	102		P	85 - 115
Manganese	104		P	85 - 115
Potassium	97.4		P	85 - 115
Sodium	101		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P398257

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.3		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	98.8		P	85 - 115
Beryllium	93.0		P	85 - 115
Boron	98.6		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	96.9		P	85 - 115
Copper	99.8		P	85 - 115
Lead	90.7		P	85 - 115
Nickel	98.0		P	85 - 115
Selenium	95.5		P	85 - 115
Silver	99.7		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398645

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398646

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398648

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398649

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398306

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398245

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398357

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398123

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398281

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398285

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: P398024

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398025

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

Reference Method: EPA 8321B
Batch ID: P397923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	81.1		P	40 - 150
AMPA	96.2		P	40 - 150
Endothall	87.3		P	40 - 150
Glufosinate	85.7		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P397923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	72.7		P	40 - 140
Sucralose	95.5		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P398046

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	122		P	40 - 150
2,4,5-T	107		P	40 - 150
Acetaminophen	83.2		P	30 - 150
Acetamiprid	95.0		P	40 - 150
Afidopyropen	79.2		P	40 - 150
Bentazon	120		P	30 - 150
Benzovindiflupyr	90.3		P	40 - 150
Carbamazepine	99.2		P	40 - 150
Clothianidin	89.5		P	40 - 150
Dinotefuran	97.9		P	40 - 150
Diuron	84.9		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	96.1		P	40 - 150
Hydrocodone	87.3		P	40 - 150
Ibuprofen	101		P	40 - 150
Imazapyr	114		P	40 - 150
Imidacloprid	94.9		P	40 - 150
Linuron	66.9		P	40 - 150
Mandestrobin	86.5		P	40 - 150
MCPP	120		P	40 - 150
Naproxen	66.3		P	40 - 150
Primidone	94.2		P	40 - 150
Pyraclostrobin	69.9		P	40 - 150
Thiamethoxam	89.2		P	40 - 150
Tolfenpyrad	48.7		P	40 - 150
Triclopyr	112		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P398010

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

Reference Method: SM 2320 B-2011

Batch ID: P398477

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.9		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P398697

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P398166

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P398257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2245897	Barium	101		P	80 - 120
2245897	Calcium	103		P	80 - 120
2245897	Iron	105		P	80 - 120
2245897	Magnesium	105		P	80 - 120
2245897	Manganese	104		P	80 - 120
2245897	Potassium	98.3		P	80 - 120
2245897	Sodium	101		P	80 - 120
2245897	Zinc	103		P	80 - 120
2245949	Barium	101	106	P/P	80 - 120
2245949	Calcium	106	109	P/P	80 - 120
2245949	Iron	104	108	P/P	80 - 120
2245949	Magnesium	103	107	P/P	80 - 120
2245949	Manganese	103	107	P/P	80 - 120
2245949	Potassium	97.3	102	P/P	80 - 120
2245949	Sodium	100	105	P/P	80 - 120
2245949	Zinc	100	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P398257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2245897	Aluminum	95.8		P	80 - 120
2245897	Antimony	101		P	80 - 120
2245897	Arsenic	97.3		P	80 - 120
2245897	Beryllium	89.8		P	80 - 120
2245897	Boron	96.3		P	80 - 120
2245897	Cadmium	101		P	80 - 120
2245897	Chromium	96.1		P	80 - 120
2245897	Copper	99.9		P	80 - 120
2245897	Lead	89.3		P	80 - 120
2245897	Nickel	95.7		P	80 - 120
2245897	Selenium	91.7		P	80 - 120
2245897	Silver	99.2		P	80 - 120
2245897	Thallium	102		P	80 - 120
2245949	Aluminum	97.2	97.0	P/P	80 - 120
2245949	Antimony	100	99.6	P/P	80 - 120
2245949	Arsenic	97.1	97.7	P/P	80 - 120
2245949	Beryllium	87.4	86.5	P/P	80 - 120
2245949	Boron	98.2	97.6	P/P	80 - 120
2245949	Cadmium	102	102	P/P	80 - 120
2245949	Chromium	95.5	95.9	P/P	80 - 120
2245949	Copper	100	101	P/P	80 - 120
2245949	Lead	90.0	89.8	P/P	80 - 120
2245949	Nickel	96.4	97.6	P/P	80 - 120
2245949	Selenium	95.5	95.2	P/P	80 - 120
2245949	Silver	97.2	93.8	P/P	80 - 120
2245949	Thallium	101	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P398645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246132	Chloride	102		P	90 - 110
2246271	Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246525	Chloride	102		P	90 - 110
2246890	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246132	Sulfate	101		P	90 - 110
2246271	Sulfate	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398649

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246525	Sulfate	101		P	90 - 110
2246890	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398306

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246485	Ammonia-N	92.2	93.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246353	NO2NO3-N	95.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2245864	Total-P	108	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246479	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398024

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398024

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246360	O-Phosphate-P	99.7	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246655	O-Phosphate-P	102	101	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P397923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246291	Acesulfame K	132	89.6	P/P	40 - 150
2246291	AMPA	95.3	87.8	P/P	40 - 150
2246291	Endothall	102	77.5	P/P	40 - 150
2246291	Glufosinate	99.9	104	P/P	40 - 150
2246291	Glyphosate	79.9	88.9	P/P	40 - 140
2246291	Sucralose	95.6	91.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P398046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246412	2,4,5-T	113	112	P/P	40 - 150
2246412	Acetaminophen	86.0	104	P/P	30 - 150
2246412	Acetamiprid	94.0	82.9	P/P	40 - 150
2246412	Afidopyropen	88.9	69.1	P/P	40 - 150
2246412	Benzovindiflupyr	75.5	89.5	P/P	40 - 150
2246412	Carbamazepine	82.1	84.3	P/P	40 - 150
2246412	Clothianidin	85.6	86.7	P/P	40 - 150
2246412	Dinotefuran	122	127	P/P	40 - 150
2246412	Diuron	68.9	75.5	P/P	40 - 150
2246412	Fenuron	98.5	106	P/P	40 - 150
2246412	Hydrocodone	86.4	95.8	P/P	40 - 150
2246412	Ibuprofen	71.6	68.5	P/P	40 - 150
2246412	Imidacloprid	152	149	F/P	40 - 150
2246412	Linuron	72.0	81.2	P/P	40 - 150
2246412	Mandestrobin	90.2	91.4	P/P	40 - 150
2246412	MCPP	121	118	P/P	40 - 150
2246412	Naproxen	61.9	70.4	P/P	40 - 150
2246412	Primidone	102	110	P/P	40 - 150
2246412	Pyraclostrobin	76.7	80.5	P/P	40 - 150
2246412	Thiamethoxam	114	117	P/P	40 - 150
2246412	Tolfenpyrad	51.9	56.7	P/P	40 - 150
2246412	Triclopyr	116	115	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P398697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246889	Fluoride	98.2	98.8	P/P	92 - 107

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P398166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246354	Organic Carbon	97.0	97.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P398004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246343	Turbidity	6.15	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P398005

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246484	Turbidity	3.05	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P398257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2245949	Barium	3.84	Spike	P	0 - 20
2245949	Calcium	2.87	Spike	P	0 - 20
2245949	Iron	3.30	Spike	P	0 - 20
2245949	Magnesium	3.60	Spike	P	0 - 20
2245949	Manganese	3.53	Spike	P	0 - 20
2245949	Potassium	3.59	Spike	P	0 - 20
2245949	Sodium	2.56	Spike	P	0 - 20
2245949	Zinc	3.83	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P398257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2245949	Aluminum	0.157	Spike	P	0 - 20
2245949	Antimony	0.474	Spike	P	0 - 20
2245949	Arsenic	0.654	Spike	P	0 - 20
2245949	Beryllium	0.742	Spike	P	0 - 20
2245949	Boron	0.593	Spike	P	0 - 20
2245949	Cadmium	0.401	Spike	P	0 - 20
2245949	Chromium	0.469	Spike	P	0 - 20
2245949	Copper	0.187	Spike	P	0 - 20
2245949	Lead	0.169	Spike	P	0 - 20
2245949	Nickel	1.10	Spike	P	0 - 20
2245949	Selenium	0.254	Spike	P	0 - 20
2245949	Silver	3.54	Spike	P	0 - 20
2245949	Thallium	0.500	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246271	Chloride	0.324	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246890	Chloride	1.82	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246271	Sulfate	1.21	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398649

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246890	Sulfate	1.58	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246485	Ammonia-N	1.29	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246482	Kjeldahl Nitrogen	1.35	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246444	Kjeldahl Nitrogen	0.327	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246353	NO2NO3-N	0.681	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2245864	Total-P	0.990	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P398285

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246479	Total-P	0.777	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P398024

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246360	O-Phosphate-P	0.261	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P398025

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246655	O-Phosphate-P	0.494	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P397923

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246291	Acesulfame K	38.0	Spike	F	0 - 30
2246291	AMPA	8.22	Spike	P	0 - 30
2246291	Endothall	27.2	Spike	P	0 - 30
2246291	Glufosinate	4.04	Spike	P	0 - 30
2246291	Glyphosate	10.7	Spike	P	0 - 30
2246291	Sucralose	4.11	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P398046

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246412	2,4-D	1.26	Spike	P	0 - 30
2246412	2,4,5-T	0.979	Spike	P	0 - 30
2246412	Acetaminophen	19.3	Spike	P	0 - 30
2246412	Acetamiprid	12.5	Spike	P	0 - 30
2246412	Afidopyropen	25.0	Spike	P	0 - 30
2246412	Bentazon	1.36	Spike	P	0 - 30
2246412	Benzovindiflupyr	17.0	Spike	P	0 - 30
2246412	Carbamazepine	2.43	Spike	P	0 - 30
2246412	Clothianidin	1.31	Spike	P	0 - 30
2246412	Dinotefuran	3.34	Spike	P	0 - 30
2246412	Diuron	8.03	Spike	P	0 - 30
2246412	Fenuron	7.79	Spike	P	0 - 30
2246412	Fluridone	2.55	Spike	P	0 - 30
2246412	Hydrocodone	10.3	Spike	P	0 - 30
2246412	Ibuprofen	4.43	Spike	P	0 - 30
2246412	Imazapyr	2.24	Spike	P	0 - 30
2246412	Imidacloprid	1.77	Spike	P	0 - 30
2246412	Linuron	12.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P398046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246412	Mandestrobin	1.32	Spike	P	0 - 30
2246412	MCP	2.93	Spike	P	0 - 30
2246412	Naproxen	12.8	Spike	P	0 - 30
2246412	Primidone	6.88	Spike	P	0 - 30
2246412	Pyraclostrobin	4.88	Spike	P	0 - 30
2246412	Thiamethoxam	2.97	Spike	P	0 - 30
2246412	Tolfenpyrad	8.75	Spike	P	0 - 30
2246412	Triclopyr	0.811	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P398010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246478	Color (true)	0.919	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P398477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246580	Total Alkalinity	0.470	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P398438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246475	TDS	2.47	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P398439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246484	TDS	8.41	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P398331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246475	TSS	7.69	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P398332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246484	TSS	3.92	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P398697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246889	Fluoride	0.479	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P398166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246354	Organic Carbon	0.510	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2246501

Field Sample ID: G1SE0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	63.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	61.0	P	30 - 160
EPA 8321B	Diuron-d6	40.5	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	121	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	121	P	30 - 160
EPA 8321B	Ibuprofen-d3	72.3	P	30 - 160
EPA 8321B	Primidone-d5	66.2	P	30 - 160
EPA 8321B	Sucralose-d6	79.2	P	30 - 160
EPA 8321B	Sucralose-d6	79.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A105342

Included Lab Sample IDs: 2246475, 2246478, 2246481, 2246484

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.0	P/P	95 - 105
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A105343

Included Lab Sample IDs: 2246475, 2246478, 2246481, 2246484

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115
Color (true)	102	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A105353

Included Lab Sample IDs: 2246477, 2246480, 2246483, 2246486

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	99.8	P/P	90 - 110
O-Phosphate-P	99.7	99.7	P/P	90 - 110
O-Phosphate-P	99.8	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A105396

Included Lab Sample IDs: 2246476, 2246479, 2246482, 2246485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A105404

Included Lab Sample IDs: 2246501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.3	92.6	P/P	50 - 150
2,4,5-T	106	104	P/P	50 - 150
Acetaminophen	105	107	P/P	60 - 160
Acetamiprid	102	101	P/P	50 - 150
Afidopyropen	95.0	104	P/P	50 - 150
Bentazon	103	118	P/P	50 - 160
Benzovindiflupyr	99.2	107	P/P	50 - 150
Carbamazepine	104	102	P/P	60 - 150
Clothianidin	102	99.5	P/P	60 - 150
Dinotefuran	101	100	P/P	50 - 150
Diuron	115	107	P/P	60 - 160
Fenuron	87.3	86.8	P/P	60 - 150
Fluridone	104	102	P/P	60 - 160
Hydrocodone	98.8	96.8	P/P	60 - 150
Ibuprofen	97.4	92.3	P/P	50 - 160
Imazapyr	122	107	P/P	50 - 150
Imidacloprid	91.8	92.2	P/P	60 - 150
Linuron	92.3	91.5	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A105404
Included Lab Sample IDs: 2246501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mandestrobin	99.5	93.2	P/P	50 - 150
MCPD	96.6	98.9	P/P	50 - 150
Naproxen	89.3	77.8	P/P	50 - 160
Primidone	94.9	99.1	P/P	60 - 150
Pyraclostrobin	99.6	101	P/P	60 - 150
Thiamethoxam	105	101	P/P	50 - 150
Tolfenpyrad	95.4	96.4	P/P	60 - 150
Triclopyr	100	97.5	P/P	50 - 150

Reference Method: SM 5310 B-2011
Run ID: A105417
Included Lab Sample IDs: 2246476, 2246479, 2246482, 2246485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A105465
Included Lab Sample IDs: 2246482, 2246485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.8	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A105472
Included Lab Sample IDs: 2246476, 2246479, 2246482, 2246485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	99.2	P/P	90 - 110
Ammonia-N	99.1	99.9	P/P	90 - 110
Ammonia-N	99.9	98.8	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A105477
Included Lab Sample IDs: 2246501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.2	98.8	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A105482
Included Lab Sample IDs: 2246501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	98.6	64.7	P/P	60 - 160
AMPA	80.3	94.7	P/P	40 - 160
Endothall	90.5	83.0	P/P	60 - 160
Glufosinate	89.3	88.9	P/P	60 - 200
Glyphosate	96.5	107	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105495

Included Lab Sample IDs: 2246476, 2246479, 2246482, 2246485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	101	P/P	90 - 110
Total-P	100	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105518

Included Lab Sample IDs: 2246505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	103	P/P	90 - 110
Antimony	103	105	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Beryllium	98.3	99.4	P/P	90 - 110
Boron	103	102	P/P	90 - 110
Cadmium	104	104	P/P	90 - 110
Chromium	99.3	100	P/P	90 - 110
Copper	100	101	P/P	90 - 110
Nickel	100	101	P/P	90 - 110
Silver	99.4	99.6	P/P	90 - 110
Thallium	98.4	98.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A105539

Included Lab Sample IDs: 2246505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	102	P/P	90 - 110
Calcium	101	97.3	P/P	90 - 110
Iron	101	96.9	P/P	90 - 110
Magnesium	99.7	96.1	P/P	90 - 110
Manganese	100	100	P/P	90 - 110
Potassium	101	98.1	P/P	90 - 110
Sodium	102	98.9	P/P	90 - 110
Zinc	98.8	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105541

Included Lab Sample IDs: 2246505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	91.5	90.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105542

Included Lab Sample IDs: 2246476, 2246479

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	94.8	P/P	90 - 110
Kjeldahl Nitrogen	95.7	97.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A105548

Included Lab Sample IDs: 2246475, 2246478, 2246481, 2246484

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.2	98.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A105550

Included Lab Sample IDs: 2246475, 2246478, 2246481, 2246484

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Sulfate	99.6	99.7	P/P	90 - 110
Sulfate	99.7	99.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105578

Included Lab Sample IDs: 2246505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	97.1	95.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A105626

Included Lab Sample IDs: 2246475, 2246478, 2246481, 2246484

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.5	P/P	90 - 110
Fluoride	99.5	98.5	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.

Ref. Method	Analyte	LCS % Recovery	MS % Recovery				Precision		
							LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						6.15		
	Turbidity						3.05		
EPA 200.7 Rev. 4.4	Barium	102	101	101	106			3.84	
	Calcium	106	103	106	109			2.87	
	Iron	102	105	104	108			3.30	
	Magnesium	102	105	103	107			3.60	
	Manganese	104	104	103	107			3.53	
	Potassium	97.4	98.3	97.3	102			3.59	
	Sodium	101	101	100	105			2.56	
	Zinc	102	103	100	104			3.83	
EPA 200.8 Rev. 5.4	Aluminum	97.3	97.2	97.0	95.8			0.157	
	Antimony	101	100	99.6	101			0.474	
	Arsenic	98.8	97.1	97.7	97.3			0.654	
	Beryllium	93.0	87.4	86.5	89.8			0.742	
	Boron	98.6	98.2	97.6	96.3			0.593	
	Cadmium	101	102	102	101			0.401	
	Chromium	96.9	95.5	95.9	96.1			0.469	
	Copper	99.8	100	101	99.9			0.187	
	Lead	90.7	90.0	89.8	89.3			0.169	
	Nickel	98.0	96.4	97.6	95.7			1.10	
	Selenium	95.5	95.5	95.2	91.7			0.254	
	Silver	99.7	97.2	93.8	99.2			3.54	
	Thallium	103	101	101	102			0.500	
EPA 300.0 Rev. 2.1	Chloride	102	99.9	102			0.324		
	Chloride	104	101	102			1.82		
	Sulfate	101	99.3	101			1.21		
	Sulfate	103	107	101			1.58		
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	92.2	93.8				1.29	
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.3						1.35	
	Kjeldahl Nitrogen	102						0.327	
EPA 353.2 Rev. 2.0	NO2NO3-N	100	95.8					0.681	
EPA 365.1 Rev. 2.0	Total-P	104	108	107				0.990	
	Total-P	107	104	105				0.777	
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	99.7	99.4				0.261	
	O-Phosphate-P	101	102	101				0.494	
EPA 8321B	2,4-D	122						1.26	
	2,4,5-T	107	113	112				0.979	
	Acesulfame K	81.1	132	89.6				38.0	
	Acetaminophen	83.2	86.0	104				19.3	
	Acetamiprid	95.0	94.0	82.9				12.5	
	Afidopyropen	79.2	88.9	69.1				25.0	
	AMPA	96.2	95.3	87.8				8.22	
	Bentazon	120						1.36	
	Benzovindiflupyr	90.3	75.5	89.5				17.0	
	Carbamazepine	99.2	82.1	84.3				2.43	
	Clothianidin	89.5	85.6	86.7				1.31	
	Dinotefuran	97.9	122	127				3.34	
	Diuron	84.9	68.9	75.5				8.03	
	Endothall	87.3	102	77.5				27.2	
	Fenuron	109	98.5	106				7.79	
	Fluridone	96.1						2.55	
	Glufosinate	85.7	99.9	104				4.04	
	Glyphosate	72.7	79.9	88.9				10.7	
	Hydrocodone	87.3	86.4	95.8				10.3	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Ibuprofen	101	71.6	68.5		4.43
	Imazapyr	114				2.24
	Imidacloprid	94.9	152	149		1.77
	Linuron	66.9	72.0	81.2		12.1
	Mandestrobin	86.5	90.2	91.4		1.32
	MCPP	120	121	118		2.93
	Naproxen	66.3	61.9	70.4		12.8
	Primidone	94.2	102	110		6.88
	Pyraclostrobin	69.9	76.7	80.5		4.88
	Sucralose	95.5	95.6	91.5		4.11
	Thiamethoxam	89.2	114	117		2.97
	Tolfenpyrad	48.7	51.9	56.7		8.75
	Triclopyr	112	116	115		0.811
SM 2120 B-2011	Color (true)	100			0.919	
SM 2320 B-2011	Total Alkalinity	98.9			0.470	
SM 2540 C-2011	TDS				2.47	
	TDS				8.41	
SM 2540 D-2011	TSS				7.69	
	TSS				3.92	
SM 4500 F-C-2011	Fluoride	96.0	98.2	98.8		0.479
SM 5310 B-2011	Organic Carbon	96.5	97.0	97.8		0.510

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2246475, 2246478, 2246481, 2246484
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2246505
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2246505
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2246475, 2246478, 2246481, 2246484
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2246475, 2246478, 2246481, 2246484
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2246476, 2246479, 2246482, 2246485
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2246476, 2246479, 2246482, 2246485
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2246476, 2246479, 2246482, 2246485
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2246476, 2246479, 2246482, 2246485
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2246477, 2246480, 2246483, 2246486
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2246501
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2246501
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2246475, 2246478, 2246481, 2246484
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2246475, 2246478, 2246481, 2246484
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2246505
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2246475, 2246478, 2246481, 2246484
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2246475, 2246478, 2246481, 2246484
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2246475, 2246478, 2246481, 2246484
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2246476, 2246479, 2246482, 2246485

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	05/11/2021			05/11/2021 16:10	Yen Ta	2246475, 2246478, 2246481, 2246484
EPA 200.7 Rev. 4.4	05/11/2021	05/17/2021 14:45	Elliott D. Healy	05/19/2021 16:19	Betina Topolski	2246505
EPA 200.8 Rev. 5.4	05/11/2021	05/17/2021 14:45	Elliott D. Healy	05/18/2021 20:50	McKinley C Carter	2246505
	05/11/2021	05/17/2021 14:45	Elliott D. Healy	05/19/2021 20:14	Alexander Thompson	2246505
	05/11/2021	05/17/2021 14:45	Elliott D. Healy	05/20/2021 19:48	Alexander Thompson	2246505
EPA 300.0 Rev. 2.1	05/11/2021			05/21/2021 19:22	Lipi Saha	2246475
	05/11/2021			05/21/2021 19:34	Lipi Saha	2246478
	05/11/2021			05/21/2021 19:46	Lipi Saha	2246481
	05/11/2021			05/21/2021 21:46	Lipi Saha	2246484
EPA 350.1 Rev. 2.0	05/11/2021			05/17/2021 14:18	Roberta Tatti	2246482
	05/11/2021			05/17/2021 14:19	Roberta Tatti	2246485
	05/11/2021			05/17/2021 14:43	Roberta Tatti	2246479
	05/11/2021			05/17/2021 14:59	Roberta Tatti	2246476
EPA 351.2 Rev. 2.0	05/11/2021	05/14/2021 17:30	Benjamin T. Nordmann	05/17/2021 11:04	Virginia P. Brown	2246482
	05/11/2021	05/14/2021 17:30	Benjamin T. Nordmann	05/17/2021 11:09	Virginia P. Brown	2246485
	05/11/2021	05/18/2021 13:32	Benjamin T. Nordmann	05/19/2021 15:11	Virginia P. Brown	2246479
	05/11/2021	05/18/2021 13:32	Benjamin T. Nordmann	05/19/2021 17:58	Virginia P. Brown	2246476
EPA 353.2 Rev. 2.0	05/11/2021			05/13/2021 10:34	Beverly Y. Sanders	2246482
	05/11/2021			05/13/2021 10:35	Beverly Y. Sanders	2246485
	05/11/2021			05/13/2021 11:36	Beverly Y. Sanders	2246476
	05/11/2021			05/13/2021 11:37	Beverly Y. Sanders	2246479
EPA 365.1 Rev. 2.0	05/11/2021	05/17/2021 13:26	Yen Ta	05/18/2021 10:40	Shengyu Ding	2246479
	05/11/2021	05/17/2021 13:26	Yen Ta	05/18/2021 10:43	Shengyu Ding	2246482
	05/11/2021	05/17/2021 13:26	Yen Ta	05/18/2021 10:44	Shengyu Ding	2246485
	05/11/2021	05/17/2021 13:26	Yen Ta	05/18/2021 11:44	Shengyu Ding	2246476
EPA 365.1 Rev. 2.0 dissolved	05/11/2021			05/11/2021 16:03	Blanca Fach	2246480
	05/11/2021			05/11/2021 16:43	Blanca Fach	2246483
	05/11/2021			05/11/2021 16:48	Blanca Fach	2246477
	05/11/2021			05/11/2021 16:49	Blanca Fach	2246486
EPA 8321B	05/11/2021	05/11/2021 13:15	Mohammad Ghaffari	05/13/2021 14:37	Mohammad Ghaffari	2246501
	05/11/2021	05/11/2021 13:15	Mohammad Ghaffari	05/14/2021 18:41	Mohammad Ghaffari	2246501
	05/11/2021	05/13/2021 09:00	Hoor Shaik	05/13/2021 20:09	Juyoung Kim	2246501
SM 2120 B-2011	05/11/2021			05/11/2021 16:13	Sarah A Nixon	2246478
	05/11/2021			05/11/2021 16:16	Sarah A Nixon	2246475
	05/11/2021			05/11/2021 16:18	Sarah A Nixon	2246484
	05/11/2021			05/11/2021 16:30	Sarah A Nixon	2246481
SM 2320 B-2011	05/11/2021			05/18/2021 17:11	Dale L. Simmons	2246475
	05/11/2021			05/18/2021 17:24	Dale L. Simmons	2246484
	05/11/2021			05/18/2021 18:28	Dale L. Simmons	2246478
	05/11/2021			05/18/2021 18:39	Dale L. Simmons	2246481

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2340B	05/11/2021			05/19/2021 16:19	Betina Topolski	2246505
SM 2540 C-2011	05/11/2021			05/14/2021 15:25	Yijie Li	2246475, 2246478, 2246481, 2246484
SM 2540 D-2011	05/11/2021			05/14/2021 15:25	Yijie Li	2246475, 2246478, 2246481, 2246484
SM 4500 F-C-2011	05/11/2021			05/24/2021 19:21	Dale L. Simmons	2246475
	05/11/2021			05/24/2021 19:26	Dale L. Simmons	2246484
	05/11/2021			05/24/2021 20:56	Dale L. Simmons	2246478
	05/11/2021			05/24/2021 21:01	Dale L. Simmons	2246481
SM 5310 B-2011	05/11/2021			05/13/2021 06:27	Madeline Gruver	2246476
	05/11/2021			05/13/2021 06:40	Madeline Gruver	2246479
	05/11/2021			05/13/2021 06:53	Madeline Gruver	2246482
	05/11/2021			05/13/2021 07:07	Madeline Gruver	2246485