

Chemical Analysis Report

SO-DIST-2021-02-04-01

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

Event Description: **2021 SMP : Myakka Cricks**

Request ID: **RQ-2021-02-01-62**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Chris Hormuth

For additional information please contact

Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 24-FEB-2021 09:54



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: Apollo Waterway Ebranch

Collection Date/Time: 02/03/2021 11:00

Field ID: G3SD0208

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2223241	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P393389	
	EPA 300.0 Rev. 2.1	Bromide	18		mg Br/L	P393555	
	SM 2320 B-2011	Total Alkalinity	175		mg CaCO3/L	P393642	
	SM 2540 D-2011	TSS	7	I	mg/L	P393846	
	SM 4500 F-C-2011	Fluoride	0.56		mg F/L	P393646	
2223244	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P393513	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P393593	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P393493	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P393526	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P393622	
2223247	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.043		mg P/L	P393386	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Little Alligator Creek @ Midway Blvd.

Collection Date/Time: 02/03/2021 10:25

Field ID: G3SD0071

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2223238	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P393389	
	EPA 300.0 Rev. 2.1	Bromide	36		mg Br/L	P393555	
	SM 2320 B-2011	Total Alkalinity	138		mg CaCO3/L	P393642	
	SM 2540 D-2011	TSS	6	I	mg/L	P393848	
	SM 4500 F-C-2011	Fluoride	0.83		mg F/L	P393646	
2223239	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P393513	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P393593	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.017		mg N/L	P393493	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P393526	
	SM 5310 B-2011	Organic Carbon	8.2		mg C/L	P393624	
2223240	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.086		mg P/L	P393386	
2223273	EPA 200.7 Rev. 4.4	Calcium	256		mg/L	P393674	
		Chromium	5.8	I	ug/L	P393674	
		Iron	90	U	ug/L	P393674	
		Magnesium	655		mg/L	P393674	
		Manganese	6.0	I	ug/L	P393674	
		Zinc	15	U	ug/L	P393674	
	EPA 200.8 Rev. 5.4	Aluminum	50	U	ug/L	P393674	
		Antimony	0.33	I	ug/L	P393674	
		Arsenic	2.0		ug/L	P393674	
		Beryllium	0.040	U	ug/L	P393674	
		Cadmium	0.080	U	ug/L	P393674	
		Copper	1.6	U	ug/L	P393674	
		Lead	0.80	U	ug/L	P393674	
		Nickel	2.0	U	ug/L	P393674	
		Selenium	2.0	U	ug/L	P393674	
		Silver	0.010	U	ug/L	P393674	
		Thallium	0.40	U	ug/L	P393674	

Ref. Method and Comment:

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and magnesium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Rock Creek @ Eisenhower Dr.

Collection Date/Time: 02/03/2021 11:40

Field ID: G3SD0070

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2223235	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P393389	
	EPA 300.0 Rev. 2.1	Bromide	24		mg Br/L	P393555	
	SM 2320 B-2011	Total Alkalinity	109	A	mg CaCO3/L	P393642	
	SM 2540 D-2011	TSS	4	I	mg/L	P393848	
	SM 4500 F-C-2011	Fluoride	0.62		mg F/L	P393646	
2223236	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P393513	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P393593	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P393493	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P393526	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P393624	
2223237	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P393386	
2223260	EPA 8321B	2,4-D	0.0020	U	ug/L	P393502	
		Acesulfame K	0.10	U	ug/L	P393377	MS
		AMPA	0.10	UJ	ug/L	P393377	SUR
		Sucralose	0.31		ug/L	P393377	
		Acetaminophen**	0.0080	U	ug/L	P393502	
		Endothall	0.25	U	ug/L	P393377	
		Acetamiprid**	0.0020	U	ug/L	P393502	
		Glufosinate	0.10	UJ	ug/L	P393377	SUR
		Glyphosate	0.10	UJ	ug/L	P393377	SUR
		Afidopyropen**	0.0020	U	ug/L	P393502	
		Bentazon	0.0039		ug/L	P393502	
		Benzovindiflupyr**	0.0020	U	ug/L	P393502	
		Carbamazepine**	0.0017	I	ug/L	P393502	
		Clothianidin**	0.0020	U	ug/L	P393502	
		Dinotefuran**	0.017		ug/L	P393502	
		Diuron	0.0020	U	ug/L	P393502	
		Fenuron	0.016	U	ug/L	P393502	
		Fluridone**	0.014		ug/L	P393502	
		Imazapyr**	0.027		ug/L	P393502	
		Hydrocodone**	0.0020	U	ug/L	P393502	
		Ibuprofen**	0.020	U	ug/L	P393502	
		Imidacloprid	0.0065	I	ug/L	P393502	
		Linuron	0.0040	U	ug/L	P393502	
		Mandestrobin**	0.0020	U	ug/L	P393502	
		MCP	0.0020	U	ug/L	P393502	
		Naproxen**	0.0080	U	ug/L	P393502	
		Primidone**	0.0040	U	ug/L	P393502	
		Pyraclostrobin**	0.0020	U	ug/L	P393502	
		Thiamethoxam**	0.0023	I	ug/L	P393502	
		Tolfenpyrad**	0.0020	U	ug/L	P393502	
		Triclopyr**	0.0040	U	ug/L	P393502	
2223272	EPA 200.7 Rev. 4.4	Calcium	198		mg/L	P393674	

Field ID: G3SD0070

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2223272	EPA 200.7 Rev. 4.4	Chromium	4.0	I	ug/L	P393674	
		Iron	120	I	ug/L	P393674	
		Magnesium	434		mg/L	P393674	
		Manganese	9.1	I	ug/L	P393674	
	EPA 200.8 Rev. 5.4	Zinc	15	U	ug/L	P393674	
		Aluminum	89	I	ug/L	P393674	
		Antimony	0.20	U	ug/L	P393674	
		Arsenic	1.8	I	ug/L	P393674	
		Beryllium	0.040	U	ug/L	P393674	
		Cadmium	0.080	U	ug/L	P393674	
		Copper	1.6	U	ug/L	P393674	
		Lead	0.80	U	ug/L	P393674	
		Nickel	2.0	U	ug/L	P393674	
		Selenium	0.80	U	ug/L	P393674	
		Silver	0.010	U	ug/L	P393674	
		Thallium	0.40	U	ug/L	P393674	

Ref. Method and Comment:

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 8321B: Results confirmed in sample duplicate. MS accuracy for glyphosate could not be assessed due to high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and magnesium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Myakka River (tidal) @ US 41

Collection Date/Time: 02/03/2021 12:35

Field ID: G3SD0068

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2223242	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P393389	
	EPA 300.0 Rev. 2.1	Bromide	5.9		mg Br/L	P393555	
	SM 2320 B-2011	Total Alkalinity	85		mg CaCO3/L	P393639	
	SM 2540 D-2011	TSS	5	IA	mg/L	P393847	
	SM 4500 F-C-2011	Fluoride	0.40		mg F/L	P393645	
2223245	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P393577	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.90		mg N/L	P393593	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P393493	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P393526	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P393622	
2223248	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P393385	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Apollo Waterway Wbranch

Collection Date/Time: 02/03/2021 11:15

Field ID: G3SD0195

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2223243	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P393389	
	EPA 300.0 Rev. 2.1	Bromide	24		mg Br/L	P393555	
	SM 2320 B-2011	Total Alkalinity	137		mg CaCO3/L	P393642	
	SM 2540 D-2011	TSS	4	IA	mg/L	P393849	
	SM 4500 F-C-2011	Fluoride	0.62		mg F/L	P393646	
2223246	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P393577	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P393593	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P393494	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P393526	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P393624	
2223249	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.073		mg P/L	P393386	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P393389

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P393674

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Chromium	1.0	U	ug/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P393674

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
Cadmium	0.020	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: P393555

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393513

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393577

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393593

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393493

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393494

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393526

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393385

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393386

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

Reference Method: EPA 8321B
Batch ID: P393377

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: P393502

Component	Result	Code	Units
2,4-D	0.0020	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P393502

Component	Result	Code	Units
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 2320 B-2011
Batch ID: P393639

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

Reference Method: SM 2320 B-2011
Batch ID: P393642

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

Reference Method: SM 2540 D-2011
Batch ID: P393846

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P393847

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P393848

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P393849

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P393645

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P393646

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P393622

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

Reference Method: SM 5310 B-2011
Batch ID: P393624

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: P393674

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Chromium	102		P	85 - 115
Iron	107		P	85 - 115
Magnesium	103		P	85 - 115
Manganese	104		P	85 - 115
Zinc	112		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P393674

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.4		P	85 - 115
Antimony	105		P	85 - 115
Arsenic	96.0		P	85 - 115
Beryllium	86.6		P	85 - 115
Cadmium	93.9		P	85 - 115
Copper	92.9		P	85 - 115
Lead	97.2		P	85 - 115
Nickel	92.1		P	85 - 115
Selenium	96.5		P	85 - 115
Silver	102		P	85 - 115
Thallium	96.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393555

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393513

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393577

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393593

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393493

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393494

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: P393526

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393385

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393386

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

Reference Method: EPA 8321B
Batch ID: P393377

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	116		P	40 - 150
AMPA	106		P	40 - 150
Endothall	104		P	40 - 150
Glufosinate	107		P	40 - 150
Glyphosate	101		P	40 - 150
Sucralose	109		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P393502

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	105		P	30 - 160
Acetaminophen	91.0		P	30 - 160
Acetamiprid	91.7		P	30 - 160
Afidopyropen	62.5		P	30 - 160
Bentazon	90.7		P	30 - 160
Benzovindiflupyr	75.6		P	30 - 160
Carbamazepine	98.7		P	30 - 160
Clothianidin	99.0		P	30 - 160
Dinotefuran	83.9		P	30 - 160
Diuron	62.7		P	30 - 160
Fenuron	95.6		P	30 - 160
Fluridone	87.5		P	30 - 160
Hydrocodone	94.0		P	30 - 160
Ibuprofen	86.1		P	30 - 160
Imazapyr	98.0		P	30 - 160
Imidacloprid	99.7		P	30 - 160
Linuron	69.5		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P393502

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mandestrobin	81.1		P	30 - 160
MCPD	102		P	30 - 160
Naproxen	46.8		P	30 - 160
Primidone	90.7		P	30 - 160
Pyraclostrobin	74.3		P	30 - 160
Thiamethoxam	86.2		P	30 - 160
Tolfenpyrad	36.9		P	30 - 160
Triclopyr	90.0		P	30 - 160

Reference Method: SM 2320 B-2011
Batch ID: P393639

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P393642

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.2		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P393645

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P393646

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P393622

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P393624

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P393674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223637	Chromium	103	101	P/P	70 - 130
2223637	Iron	105	106	P/P	70 - 130
2223637	Manganese	104	104	P/P	70 - 130
2223637	Zinc	112	111	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P393674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223637	Aluminum	99.6	99.4	P/P	70 - 130
2223637	Antimony	107	107	P/P	70 - 130
2223637	Arsenic	99.4	100	P/P	70 - 130
2223637	Beryllium	91.5	90.5	P/P	70 - 130
2223637	Cadmium	91.8	92.5	P/P	70 - 130
2223637	Copper	100	101	P/P	70 - 130
2223637	Lead	99.6	99.4	P/P	70 - 130
2223637	Nickel	92.8	93.3	P/P	70 - 130
2223637	Selenium	101	100	P/P	70 - 130
2223637	Silver	94.0	95.4	P/P	70 - 130
2223637	Thallium	97.9	99.0	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P393555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222197	Bromide	101		P	90 - 110
2222279	Bromide	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P393513

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222362	Ammonia-N	108	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P393593

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223236	Kjeldahl Nitrogen	99.8	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P393493

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223236	NO2NO3-N	96.7	95.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P393494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223246	NO2NO3-N	96.8	95.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P393526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223236	Total-P	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P393386

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223247	O-Phosphate-P	101	101	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P393377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222757	Acesulfame K	19.1	19.9	F/F	40 - 150
2222757	AMPA	86.1	82.2	P/P	40 - 150
2222757	Endothall	86.2	82.5	P/P	40 - 150
2222757	Glufosinate	103	93.5	P/P	40 - 150
2222757	Sucralose	109	113	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P393502

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223260	2,4-D	79.3	87.2	P/P	30 - 160
2223260	Acetaminophen	107	108	P/P	30 - 160
2223260	Acetamiprid	98.5	94.0	P/P	30 - 160
2223260	Afidopyropen	74.0	80.1	P/P	30 - 160
2223260	Bentazon	44.0	41.8	P/P	30 - 160
2223260	Benzovindiflupyr	72.0	77.3	P/P	30 - 160
2223260	Carbamazepine	74.2	77.7	P/P	30 - 160
2223260	Clothianidin	88.7	97.4	P/P	30 - 160
2223260	Dinotefuran	103	96.4	P/P	30 - 160
2223260	Diuron	51.0	51.7	P/P	30 - 160
2223260	Fenuron	70.3	67.8	P/P	30 - 160
2223260	Fluridone	95.6	59.7	P/P	30 - 160
2223260	Hydrocodone	87.7	87.8	P/P	30 - 160
2223260	Ibuprofen	67.4	76.8	P/P	30 - 160
2223260	Imazapyr	101	91.1	P/P	30 - 160
2223260	Imidacloprid	123	130	P/P	30 - 160
2223260	Linuron	62.5	64.1	P/P	30 - 160
2223260	Mandestrobin	77.6	80.4	P/P	30 - 160
2223260	MCPP	78.3	82.7	P/P	30 - 160
2223260	Naproxen	76.3	74.4	P/P	30 - 160
2223260	Primidone	86.9	97.9	P/P	30 - 160
2223260	Pyraclostrobin	80.2	78.0	P/P	30 - 160
2223260	Thiamethoxam	111	110	P/P	30 - 160
2223260	Tolfenpyrad	42.3	45.9	P/P	30 - 160
2223260	Triclopyr	75.1	83.5	P/P	30 - 160

Reference Method: SM 4500 F-C-2011

Batch ID: P393645

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

Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P393645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223691	Fluoride	98.0	96.5	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P393622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223357	Organic Carbon	98.3	98.5	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P393624

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223628	Organic Carbon	95.6	95.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P393389

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223230	Turbidity	0.743	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P393674

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223637	Calcium	1.53	Spike	P	0 - 20
2223637	Chromium	1.97	Spike	P	0 - 20
2223637	Iron	0.768	Spike	P	0 - 20
2223637	Magnesium	1.86	Spike	P	0 - 20
2223637	Manganese	0.481	Spike	P	0 - 20
2223637	Zinc	0.389	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P393674

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223637	Aluminum	0.237	Spike	P	0 - 20
2223637	Antimony	0.390	Spike	P	0 - 20
2223637	Arsenic	0.981	Spike	P	0 - 20
2223637	Beryllium	1.11	Spike	P	0 - 20
2223637	Cadmium	0.682	Spike	P	0 - 20
2223637	Copper	0.611	Spike	P	0 - 20
2223637	Lead	0.107	Spike	P	0 - 20
2223637	Nickel	0.563	Spike	P	0 - 20
2223637	Selenium	0.711	Spike	P	0 - 20
2223637	Silver	1.48	Spike	P	0 - 20
2223637	Thallium	1.12	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P393555

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222279	Bromide	0.371	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P393513

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222362	Ammonia-N	2.97	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P393577

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223628	Ammonia-N	0.407	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P393593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223236	Kjeldahl Nitrogen	1.89	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P393493

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223236	NO2NO3-N	1.56	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P393494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223246	NO2NO3-N	1.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P393526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223236	Total-P	0.519	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P393385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223248	O-Phosphate-P	0.335	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P393386

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223247	O-Phosphate-P	0.208	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P393377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222757	Acesulfame K	4.09	Spike	P	0 - 30
2222757	AMPA	2.64	Spike	P	0 - 30
2222757	Endothall	4.40	Spike	P	0 - 30
2222757	Glufosinate	9.79	Spike	P	0 - 30
2222757	Glyphosate	2.89	Spike	P	0 - 30
2222757	Sucralose	3.48	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P393502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223260	2,4-D	9.44	Spike	P	0 - 30
2223260	Acetaminophen	0.594	Spike	P	0 - 30
2223260	Acetamiprid	4.67	Spike	P	0 - 30
2223260	Afidopyropen	7.92	Spike	P	0 - 30
2223260	Bentazon	2.35	Spike	P	0 - 30
2223260	Benzovindiflupyr	7.09	Spike	P	0 - 30
2223260	Carbamazepine	4.12	Spike	P	0 - 30
2223260	Clothianidin	9.36	Spike	P	0 - 30
2223260	Dinotefuran	5.19	Spike	P	0 - 30
2223260	Diuron	1.41	Spike	P	0 - 30
2223260	Fenuron	3.56	Spike	P	0 - 30
2223260	Fluridone	24.4	Spike	P	0 - 30
2223260	Hydrocodone	0.0536	Spike	P	0 - 30
2223260	Ibuprofen	13.1	Spike	P	0 - 30
2223260	Imazapyr	7.94	Spike	P	0 - 30
2223260	Imidacloprid	4.72	Spike	P	0 - 30
2223260	Linuron	2.50	Spike	P	0 - 30
2223260	Mandestrobin	3.59	Spike	P	0 - 30
2223260	MCPP	5.47	Spike	P	0 - 30
2223260	Naproxen	2.55	Spike	P	0 - 30
2223260	Primidone	11.9	Spike	P	0 - 30
2223260	Pyraclostrobin	2.84	Spike	P	0 - 30
2223260	Thiamethoxam	0.649	Spike	P	0 - 30
2223260	Tolfenpyrad	8.21	Spike	P	0 - 30
2223260	Triclopyr	10.6	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
 Batch ID: P393639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223691	Total Alkalinity	1.65	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
 Batch ID: P393642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223235	Total Alkalinity	0.745	Sample	P	0 - 8.1

Reference Method: SM 2540 D-2011
 Batch ID: P393848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223208	TSS	7.84	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P393645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223691	Fluoride	0.953	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P393646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223235	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P393622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223357	Organic Carbon	0.173	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P393624

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223628	Organic Carbon	0.191	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2223260

Field Sample ID: G3SD0070

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	88.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.1	P	30 - 160
EPA 8321B	Diuron-d6	57.3	P	30 - 160
EPA 8321B	Endothall-d6	55.2	P	30 - 160
EPA 8321B	Endothall-d6	55.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	197	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	197	F	30 - 160
EPA 8321B	Ibuprofen-d3	74.9	P	30 - 160
EPA 8321B	Primidone-d5	87.5	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103427

Included Lab Sample IDs: 2223237, 2223240, 2223247, 2223248, 2223249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	101	P/P	90 - 110
O-Phosphate-P	98.9	99.4	P/P	90 - 110
O-Phosphate-P	99.3	100	P/P	90 - 110
O-Phosphate-P	99.4	99.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103428

Included Lab Sample IDs: 2223235, 2223238, 2223241, 2223242, 2223243

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	100	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A103441

Included Lab Sample IDs: 2223260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	80.2	145	P/P	60 - 160
AMPA	84.3	121	P/P	60 - 160
Endothall	105	104	P/P	60 - 160
Glufosinate	99.1	94.4	P/P	60 - 160
Glyphosate	94.3	106	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103469

Included Lab Sample IDs: 2223236, 2223239, 2223244, 2223245, 2223246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103478

Included Lab Sample IDs: 2223236, 2223239, 2223244

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103482

Included Lab Sample IDs: 2223235, 2223238, 2223241, 2223242, 2223243

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103500

Included Lab Sample IDs: 2223245, 2223246

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A103516
Included Lab Sample IDs: 2223260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	107	106	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A103518
Included Lab Sample IDs: 2223236, 2223239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.3	100	P/P	85 - 115

Reference Method: SM 5310 B-2011
Run ID: A103526
Included Lab Sample IDs: 2223236, 2223239, 2223244, 2223245, 2223246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.8	P/P	90 - 110
Organic Carbon	97.0	97.4	P/P	90 - 110
Organic Carbon	98.6	97.0	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A103529
Included Lab Sample IDs: 2223235, 2223238, 2223241, 2223242, 2223243

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.1	96.8	P/P	90 - 110
Total Alkalinity	96.7	95.1	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A103529
Included Lab Sample IDs: 2223235, 2223238, 2223241, 2223242, 2223243

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A103537
Included Lab Sample IDs: 2223236, 2223239, 2223244, 2223245, 2223246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	97.8	P/P	90 - 110
Kjeldahl Nitrogen	97.8	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A103539
Included Lab Sample IDs: 2223244, 2223245, 2223246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.5	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A103561
Included Lab Sample IDs: 2223260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	108	P/P	50 - 150
Acetaminophen	109	110	P/P	60 - 160
Acetamiprid	113	109	P/P	50 - 150
Afidopyropen	116	101	P/P	50 - 150
Bentazon	145	137	P/P	50 - 160
Benzovindiflupyr	104	106	P/P	50 - 160
Carbamazepine	118	106	P/P	60 - 150
Clothianidin	109	93.6	P/P	60 - 150
Dinotefuran	102	106	P/P	50 - 150
Diuron	114	109	P/P	60 - 160
Fenuron	110	112	P/P	60 - 150
Fluridone	102	120	P/P	60 - 160
Hydrocodone	107	101	P/P	60 - 150
Ibuprofen	123	88.3	P/P	50 - 160
Imazapyr	102	101	P/P	50 - 160
Imidacloprid	96.5	99.9	P/P	60 - 150
Linuron	104	119	P/P	60 - 150
Mandestrobin	105	109	P/P	50 - 150
MCPP	102	102	P/P	50 - 150
Naproxen	85.3	65.4	P/P	50 - 160
Primidone	101	110	P/P	60 - 150
Pyraclostrobin	109	109	P/P	60 - 150
Thiamethoxam	105	98.9	P/P	50 - 150
Tolfenpyrad	102	110	P/P	60 - 150
Triclopyr	116	109	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A103597
Included Lab Sample IDs: 2223272, 2223273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	101	P/P	90 - 110
Chromium	104	101	P/P	90 - 110
Iron	101	99.3	P/P	90 - 110
Magnesium	100	98.8	P/P	90 - 110
Manganese	101	101	P/P	90 - 110
Zinc	110	106	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A103616
Included Lab Sample IDs: 2223272, 2223273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.4	96.6	P/P	90 - 110
Antimony	102	103	P/P	90 - 110
Arsenic	94.8	96.2	P/P	90 - 110
Beryllium	94.1	93.1	P/P	90 - 110
Cadmium	96.5	98.0	P/P	90 - 110
Copper	95.0	99.0	P/P	90 - 110
Lead	97.8	98.8	P/P	90 - 110
Nickel	94.5	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103616

Included Lab Sample IDs: 2223272, 2223273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	95.8	97.7	P/P	90 - 110
Selenium	97.7	99.7	P/P	90 - 110
Thallium	100	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103639

Included Lab Sample IDs: 2223272, 2223273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	101	101	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					0.743	
EPA 200.7 Rev. 4.4	Calcium	106					1.53
	Chromium	102	103	101			1.97
	Iron	107	105	106			0.768
	Magnesium	103					1.86
	Manganese	104	104	104			0.481
	Zinc	112	112	111			0.389
EPA 200.8 Rev. 5.4	Aluminum	97.4	99.6	99.4			0.237
	Antimony	105	107	107			0.390
	Arsenic	96.0	99.4	100			0.981
	Beryllium	86.6	91.5	90.5			1.11
	Cadmium	93.9	91.8	92.5			0.682
	Copper	92.9	100	101			0.611
	Lead	97.2	99.6	99.4			0.107
	Nickel	92.1	92.8	93.3			0.563
	Selenium	96.5	101	100			0.711
	Silver	102	94.0	95.4			1.48
	Thallium	96.1	97.9	99.0			1.12
EPA 300.0 Rev. 2.1	Bromide	103	101	101	101		0.371
EPA 350.1 Rev. 2.0	Ammonia-N	98.5	108	104			2.97
	Ammonia-N	101					0.407
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.8	99.8	102			1.89
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	96.7	95.2			1.56
	NO2NO3-N	98.5	96.8	95.8			1.04
EPA 365.1 Rev. 2.0	Total-P	102	103	103			0.519
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100					0.335
	O-Phosphate-P	101	101	101			0.208
EPA 8321B	2,4-D	105	79.3	87.2			9.44
	Acesulfame K	116	19.1	19.9			4.09
	Acetaminophen	91.0	107	108			0.594
	Acetamiprid	91.7	98.5	94.0			4.67
	Afidopyropen	62.5	74.0	80.1			7.92
	AMPA	106	86.1	82.2			2.64
	Bentazon	90.7	44.0	41.8			2.35
	Benzovindiflupyr	75.6	72.0	77.3			7.09
	Carbamazepine	98.7	74.2	77.7			4.12
	Clothianidin	99.0	88.7	97.4			9.36
	Dinotefuran	83.9	103	96.4			5.19
	Diuron	62.7	51.0	51.7			1.41
	Endothall	104	86.2	82.5			4.40
	Fenuron	95.6	70.3	67.8			3.56
	Fluridone	87.5	95.6	59.7			24.4
	Glufosinate	107	103	93.5			9.79
	Glyphosate	101					2.89
	Hydrocodone	94.0	87.7	87.8			0.0536
	Ibuprofen	86.1	67.4	76.8			13.1
	Imazapyr	98.0	101	91.1			7.94
	Imidacloprid	99.7	123	130			4.72
	Linuron	69.5	62.5	64.1			2.50
	Mandestrobin	81.1	77.6	80.4			3.59
	MCPP	102	78.3	82.7			5.47
	Naproxen	46.8	76.3	74.4			2.55
	Primidone	90.7	86.9	97.9			11.9
	Pyraclostrobin	74.3	80.2	78.0			2.84

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Sucralose	109	109	113		3.48
	Thiamethoxam	86.2	111	110		0.649
	Tolfenpyrad	36.9	42.3	45.9		8.21
	Triclopyr	90.0	75.1	83.5		10.6
SM 2320 B-2011	Total Alkalinity	101			1.65	
	Total Alkalinity	95.2			0.745	
SM 2540 D-2011	TSS				7.84	
SM 4500 F-C-2011	Fluoride	97.6	98.0	96.5		0.953
	Fluoride	98.6				0.0
SM 5310 B-2011	Organic Carbon	98.6	98.3	98.5		0.173
	Organic Carbon	97.9	95.6	95.9		0.191

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2223235, 2223238, 2223241, 2223242, 2223243
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2223272, 2223273
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2223272, 2223273
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2223235, 2223238, 2223241, 2223242, 2223243
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2223236, 2223239, 2223244, 2223245, 2223246
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2223236, 2223239, 2223244, 2223245, 2223246
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2223236, 2223239, 2223244, 2223245, 2223246
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2223236, 2223239, 2223244, 2223245, 2223246
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2223237, 2223240, 2223247, 2223248, 2223249
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2223260
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2223260
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2223235, 2223238, 2223241, 2223242, 2223243
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2223235, 2223238, 2223241, 2223242, 2223243
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2223235, 2223238, 2223241, 2223242, 2223243
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2223236, 2223239, 2223244, 2223245, 2223246

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	02/04/2021			02/04/2021 16:36	Julia Storbeck	2223235, 2223238, 2223241, 2223242, 2223243
EPA 200.7 Rev. 4.4	02/04/2021	02/11/2021 15:50	Elliott D. Healy	02/15/2021 17:26	Betina Topolski	2223272
	02/04/2021	02/11/2021 15:50	Elliott D. Healy	02/15/2021 17:34	Betina Topolski	2223272
	02/04/2021	02/11/2021 15:50	Elliott D. Healy	02/15/2021 17:42	Betina Topolski	2223273
	02/04/2021	02/11/2021 15:50	Elliott D. Healy	02/15/2021 17:50	Betina Topolski	2223273
EPA 200.8 Rev. 5.4	02/04/2021	02/11/2021 15:50	Elliott D. Healy	02/16/2021 17:21	Alexander Thompson	2223272
	02/04/2021	02/11/2021 15:50	Elliott D. Healy	02/16/2021 17:28	Alexander Thompson	2223273
	02/04/2021	02/11/2021 15:50	Elliott D. Healy	02/16/2021 18:28	Alexander Thompson	2223272
	02/04/2021	02/11/2021 15:50	Elliott D. Healy	02/16/2021 18:35	Alexander Thompson	2223273
	02/04/2021	02/11/2021 15:50	Elliott D. Healy	02/17/2021 17:00	Alexander Thompson	2223272
	02/04/2021	02/11/2021 15:50	Elliott D. Healy	02/17/2021 17:04	Alexander Thompson	2223273
EPA 300.0 Rev. 2.1	02/04/2021			02/09/2021 02:57	Lipi Saha	2223235
	02/04/2021			02/09/2021 03:15	Lipi Saha	2223238
	02/04/2021			02/09/2021 03:33	Lipi Saha	2223241
	02/04/2021			02/09/2021 03:51	Lipi Saha	2223242
	02/04/2021			02/09/2021 04:09	Lipi Saha	2223243
EPA 350.1 Rev. 2.0	02/04/2021			02/08/2021 17:24	Ping Hua	2223236
	02/04/2021			02/08/2021 17:26	Ping Hua	2223239
	02/04/2021			02/08/2021 17:27	Ping Hua	2223244
	02/04/2021			02/09/2021 15:47	Julia Storbeck	2223245
	02/04/2021			02/09/2021 15:48	Julia Storbeck	2223246
EPA 351.2 Rev. 2.0	02/04/2021	02/10/2021 12:11	Yen Ta	02/11/2021 12:09	Julia Storbeck	2223236
	02/04/2021	02/10/2021 12:11	Yen Ta	02/11/2021 12:22	Julia Storbeck	2223239
	02/04/2021	02/10/2021 12:11	Yen Ta	02/11/2021 12:24	Julia Storbeck	2223244
	02/04/2021	02/10/2021 12:11	Yen Ta	02/11/2021 12:25	Julia Storbeck	2223245
	02/04/2021	02/10/2021 12:11	Yen Ta	02/11/2021 12:27	Julia Storbeck	2223246
EPA 353.2 Rev. 2.0	02/04/2021			02/08/2021 09:51	Beverly Y. Sanders	2223236
	02/04/2021			02/08/2021 10:04	Beverly Y. Sanders	2223239
	02/04/2021			02/08/2021 10:05	Beverly Y. Sanders	2223244
	02/04/2021			02/08/2021 10:06	Beverly Y. Sanders	2223245
	02/04/2021			02/08/2021 10:13	Beverly Y. Sanders	2223246
EPA 365.1 Rev. 2.0	02/04/2021	02/09/2021 13:50	Shengyu Wang	02/10/2021 13:29	Shengyu Wang	2223236
	02/04/2021	02/09/2021 13:50	Shengyu Wang	02/10/2021 13:32	Shengyu Wang	2223239
	02/04/2021	02/09/2021 13:50	Shengyu Wang	02/11/2021 13:00	Shengyu Wang	2223244
	02/04/2021	02/09/2021 13:50	Shengyu Wang	02/11/2021 13:01	Shengyu Wang	2223245
	02/04/2021	02/09/2021 13:50	Shengyu Wang	02/11/2021 13:02	Shengyu Wang	2223246
EPA 365.1 Rev. 2.0 dissolved	02/04/2021			02/04/2021 15:00	Blanca Fach	2223248
	02/04/2021			02/04/2021 15:10	Blanca Fach	2223249
	02/04/2021			02/04/2021 15:28	Blanca Fach	2223237

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0 dissolved	02/04/2021			02/04/2021 15:34	Blanca Fach	2223247
	02/04/2021			02/04/2021 15:37	Blanca Fach	2223240
EPA 8321B	02/04/2021	02/04/2021 14:00	Rebecca Ware	02/04/2021 17:07	Rebecca Ware	2223260
	02/04/2021	02/04/2021 14:00	Rebecca Ware	02/10/2021 02:41	Rebecca Ware	2223260
	02/04/2021	02/09/2021 13:00	Hoor Shaik	02/11/2021 23:23	Juyoung Kim	2223260
SM 2320 B-2011	02/04/2021			02/09/2021 15:42	Dale L. Simmons	2223242
	02/04/2021			02/09/2021 18:04	Dale L. Simmons	2223235
	02/04/2021			02/09/2021 18:17	Dale L. Simmons	2223241
	02/04/2021			02/09/2021 18:29	Dale L. Simmons	2223243
	02/04/2021			02/09/2021 18:42	Dale L. Simmons	2223238
SM 2540 D-2011	02/04/2021			02/05/2021 14:39	Yijie Li	2223235, 2223238, 2223241, 2223242, 2223243
SM 4500 F-C-2011	02/04/2021			02/09/2021 15:42	Dale L. Simmons	2223242
	02/04/2021			02/09/2021 16:59	Dale L. Simmons	2223235
	02/04/2021			02/09/2021 17:13	Dale L. Simmons	2223241
	02/04/2021			02/09/2021 17:18	Dale L. Simmons	2223243
	02/04/2021			02/09/2021 17:23	Dale L. Simmons	2223238
SM 5310 B-2011	02/04/2021			02/08/2021 23:06	Madeline Gruver	2223244
	02/04/2021			02/08/2021 23:18	Madeline Gruver	2223245
	02/04/2021			02/09/2021 10:29	Madeline Gruver	2223236
	02/04/2021			02/09/2021 10:53	Madeline Gruver	2223239
	02/04/2021			02/09/2021 11:30	Madeline Gruver	2223246