

Chemical Analysis Report

NW-DIST-2021-11-10-01

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

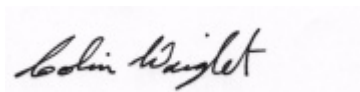
Event Description: **Escambia Bay Whaler Run**
Request ID: **RQ-2021-11-08-23**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Myranda K Butler

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Certified by: Colin Wright, Program Administrator

Date Certified: 03-DEC-2021 09:44



NON-CONFORMANCE REPORT INCLUDED

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: Bayou Texar Near Baars Park

Collection Date/Time: 11/08/2021 09:36

Field ID: G4NW0516

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2289090	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P406619	
	SM 2540 D-2011	TSS	3	U	mg/L	P406505	
	SM 4500 F-C-2011	Fluoride	0.095	I	mg F/L	P406621	
2289092	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P406589	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P406414	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.94		mg N/L	P406332	
	EPA 365.1 Rev. 2.0	Total-P	0.005	I	mg P/L	P406313	
2289106	SM 5310 B-2011	Organic Carbon	1.7	I	mg C/L	P406873	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P406225	
		Acesulfame K	0.10	U	ug/L	P406265	MS
		AMPA	1.0	U	ug/L	P406265	
		2,4,5-T	0.0040	U	ug/L	P406225	
		Acetaminophen	0.0080	U	ug/L	P406225	
		Endothall	0.25	U	ug/L	P406265	
		Acetamiprid	0.0020	U	ug/L	P406225	
		Glufosinate	1.0	U	ug/L	P406265	
		Glyphosate	1.0	U	ug/L	P406265	
		Afidopyropen	0.0020	U	ug/L	P406225	
		Sucralose	0.36		ug/L	P406265	
		Bentazon	0.0012	I	ug/L	P406225	
		Benzovindiflupyr	0.0020	U	ug/L	P406225	
		Carbamazepine	0.0014	I	ug/L	P406225	
		Clothianidin	0.0020	U	ug/L	P406225	
		Dinotefuran	0.0020	U	ug/L	P406225	
		Diuron	0.0020	U	ug/L	P406225	
		Fenuron	0.016	U	ug/L	P406225	
		Fluridone	8.0E-04	U	ug/L	P406225	
		Imazapyr	0.016	I	ug/L	P406225	
		Hydrocodone	0.0020	U	ug/L	P406225	
		Ibuprofen	0.020	U	ug/L	P406225	
		Imidacloprid	0.028		ug/L	P406225	MS
		Linuron	0.0040	U	ug/L	P406225	
		Mandestrobin	0.0020	U	ug/L	P406225	
		MCP	0.0040	U	ug/L	P406225	MS
		Naproxen	0.0080	U	ug/L	P406225	
		Primidone	0.0040	U	ug/L	P406225	MS
		Pyraclostrobin	0.0020	U	ug/L	P406225	
		Silvex	0.0040	U	ug/L	P406225	
		Thiamethoxam	0.0020	U	ug/L	P406225	MS
		Tolfenpyrad	0.0020	U	ug/L	P406225	
		Triclopyr	0.0040	U	ug/L	P406225	
2289122	EPA 200.7 Rev. 4.4	Calcium	24.7		mg/L	P406365	
		Iron	380		ug/L	P406365	
		Magnesium	56.6		mg/L	P406365	

Field ID: G4NW0516

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2289122	EPA 200.7 Rev. 4.4	Manganese	35		ug/L	P406365	
		Strontium	304		ug/L	P406365	
		Tin	9.0	U	ug/L	P406365	
		Vanadium	6.0	U	ug/L	P406365	
	EPA 200.8 Rev. 5.4	Zinc	16	I	ug/L	P406365	
		Aluminum	83		ug/L	P406365	
		Antimony	0.20	U	ug/L	P406365	
		Arsenic	0.37	I	ug/L	P406365	
		Beryllium	0.10	U	ug/L	P406365	
		Cadmium	0.080	U	ug/L	P406365	
		Chromium	1.6	U	ug/L	P406365	
		Cobalt	0.42		ug/L	P406365	
		Copper	1.6	U	ug/L	P406365	
		Lead	0.80	U	ug/L	P406365	
		Molybdenum	1.5	U	ug/L	P406365	
		Nickel	2.0	U	ug/L	P406365	
		Selenium	0.80	U	ug/L	P406365	
		Silver	0.040	U	ug/L	P406365	
		Thallium	0.40	U	ug/L	P406365	

Ref. Method and Comment:

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

EPA 8321B: MDL for some parameters elevated due to matrix interference.

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

Sample Location: Bayou Texar 200 Meters Above Hwy 90 Bridge Collection Date/Time: 11/08/2021 09:05

Field ID: G4NW0402

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2289091	SM 2320 B-2011	Total Alkalinity	51		mg CaCO3/L	P406489	
	SM 2540 D-2011	TSS	3	UA	mg/L	P406505	
	SM 4500 F-C-2011	Fluoride	0.55		mg F/L	P406491	
2289093	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P406589	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27	I	mg N/L	P406414	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.35		mg N/L	P406332	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P406313	
	SM 5310 B-2011	Organic Carbon	3.0		mg C/L	P406873	
2289107	EPA 8321B	2,4-D	0.0020	U	ug/L	P406225	
		Acesulfame K	0.10	U	ug/L	P406265	MS
		AMPA	1.0	U	ug/L	P406265	
		2,4,5-T	0.0040	U	ug/L	P406225	
		Acetaminophen	0.018	I	ug/L	P406225	
		Endothall	0.25	U	ug/L	P406265	
		Acetamiprid	0.0020	U	ug/L	P406225	
		Glufosinate	1.0	U	ug/L	P406265	
		Glyphosate	1.0	U	ug/L	P406265	
		Afidopyropen	0.0020	U	ug/L	P406225	
		Sucralose	0.19		ug/L	P406265	
		Bentazon	0.0012	I	ug/L	P406225	
		Benzovindiflupyr	0.0020	U	ug/L	P406225	
		Carbamazepine	8.0E-04	U	ug/L	P406225	
		Clothianidin	0.0020	U	ug/L	P406225	
		Dinotefuran	0.0020	U	ug/L	P406225	
		Diuron	0.0020	U	ug/L	P406225	
		Fenuron	0.016	U	ug/L	P406225	
		Fluridone	8.0E-04	U	ug/L	P406225	
		Imazapyr	0.056		ug/L	P406225	
		Hydrocodone	0.0020	U	ug/L	P406225	
		Ibuprofen	0.020	U	ug/L	P406225	
		Imidacloprid	0.013		ug/L	P406225	MS
		Linuron	0.0040	U	ug/L	P406225	
		Mandestrobin	0.0020	U	ug/L	P406225	
		MCP	0.0040	U	ug/L	P406225	MS
		Naproxen	0.0080	U	ug/L	P406225	
		Primidone	0.0040	U	ug/L	P406225	MS
		Pyraclostrobin	0.0020	U	ug/L	P406225	
		Silvex	0.0040	U	ug/L	P406225	
		Thiamethoxam	0.0020	U	ug/L	P406225	MS
		Tolfenpyrad	0.0020	U	ug/L	P406225	
		Triclopyr	0.0040	U	ug/L	P406225	
2289123	EPA 200.7 Rev. 4.4	Calcium	138		mg/L	P406365	
		Iron	120	I	ug/L	P406365	
		Magnesium	435		mg/L	P406365	

Field ID: G4NW0402

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2289123	EPA 200.7 Rev. 4.4	Manganese	25		ug/L	P406365	
		Strontium	2.30E+03		ug/L	P406365	
		Tin	30	U	ug/L	P406365	
		Vanadium	6.0	U	ug/L	P406365	
	EPA 200.8 Rev. 5.4	Zinc	25	I	ug/L	P406365	
		Aluminum	221		ug/L	P406365	
		Antimony	0.20	U	ug/L	P406365	
		Arsenic	1.22		ug/L	P406365	
		Beryllium	0.10	U	ug/L	P406365	
		Cadmium	0.080	U	ug/L	P406365	
		Chromium	1.6	U	ug/L	P406365	
		Cobalt	0.50		ug/L	P406365	
		Copper	1.6	I	ug/L	P406365	
		Lead	0.80	U	ug/L	P406365	
		Molybdenum	4.9	I	ug/L	P406365	
		Nickel	2.0	U	ug/L	P406365	
		Selenium	0.80	U	ug/L	P406365	
		Silver	0.040	U	ug/L	P406365	
		Thallium	0.40	U	ug/L	P406365	

Ref. Method and Comment:

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

EPA 8321B: MDL for some parameters elevated due to matrix interference.

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

Non-Conformance Report

NCR ID: 9115

Event(s)

NW-DIST-2021-11-10-01

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived late, samples received within the acceptable temperature range.

Resolution: Samples will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 11/12/2021

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P406365

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P406365

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
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Molybdenum	0.15	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 350.1 Rev. 2.0
Batch ID: P406589

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406414

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406332

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406313

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P406225

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	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P406265

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

Reference Method: SM 2320 B-2011

Batch ID: P406489

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

Reference Method: SM 2320 B-2011

Batch ID: P406619

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P406505

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P406491

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P406621

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P406873

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: P406365

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	112		P	85 - 115
Magnesium	107		P	85 - 115
Manganese	104		P	85 - 115
Strontium	99.8		P	85 - 115
Tin	106		P	85 - 115
Vanadium	102		P	85 - 115
Zinc	109		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P406365

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	106		P	85 - 115
Arsenic	98.7		P	85 - 115
Beryllium	99.1		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	100		P	85 - 115
Cobalt	95.7		P	85 - 115
Copper	96.3		P	85 - 115
Lead	98.1		P	85 - 115
Molybdenum	102		P	85 - 115
Nickel	97.2		P	85 - 115
Selenium	101		P	85 - 115
Silver	99.5		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P406589

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P406414

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P406332

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P406313

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P406225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	114		P	40 - 150
2,4,5-T	106		P	40 - 150
Acetaminophen	83.5		P	30 - 150
Acetamiprid	87.9		P	40 - 150
Afidopyropen	78.0		P	40 - 150
Bentazon	91.1		P	30 - 150
Benzovindiflupyr	81.4		P	40 - 150
Carbamazepine	95.3		P	40 - 150
Clothianidin	92.4		P	40 - 150
Dinotefuran	86.0		P	40 - 150
Diuron	90.5		P	40 - 150
Fenuron	90.5		P	40 - 150
Fluridone	90.9		P	40 - 150
Hydrocodone	86.6		P	40 - 150
Ibuprofen	67.1		P	40 - 150
Imazapyr	93.5		P	40 - 150
Imidacloprid	95.4		P	40 - 150
Linuron	82.6		P	40 - 150
Mandestrobin	93.3		P	40 - 150
MCPP	129		P	40 - 150
Naproxen	86.7		P	40 - 150
Primidone	91.0		P	40 - 150
Pyraclostrobin	84.0		P	40 - 150
Silvex	83.8		P	40 - 150
Thiamethoxam	94.9		P	40 - 150
Tolfenpyrad	51.1		P	30 - 150
Triclopyr	101		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P406265

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	103		P	40 - 150
AMPA	96.4		P	40 - 160
Endothall	76.7		P	40 - 150
Glufosinate	94.6		P	40 - 160
Glyphosate	111		P	40 - 160
Sucralose	94.8		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P406489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P406619

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.8		P	94 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P406491

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

Reference Method: SM 4500 F-C-2011
Batch ID: P406621

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

Reference Method: SM 5310 B-2011
Batch ID: P406873

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P406365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289122	Calcium	109	113	P/P	70 - 130
2289122	Iron	113	115	P/P	70 - 130
2289122	Manganese	103	106	P/P	70 - 130
2289122	Strontium	98.1	98.7	P/P	70 - 130
2289122	Tin	106	109	P/P	70 - 130
2289122	Vanadium	106	107	P/P	70 - 130
2289122	Zinc	112	114	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P406365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289122	Aluminum	102	107	P/P	70 - 130
2289122	Antimony	110	116	P/P	70 - 130
2289122	Arsenic	105	112	P/P	70 - 130
2289122	Beryllium	93.6	89.8	P/P	70 - 130
2289122	Cadmium	103	110	P/P	70 - 130
2289122	Chromium	102	107	P/P	70 - 130
2289122	Cobalt	101	106	P/P	70 - 130
2289122	Copper	101	106	P/P	70 - 130
2289122	Lead	99.8	106	P/P	70 - 130
2289122	Molybdenum	106	107	P/P	70 - 130
2289122	Nickel	102	107	P/P	70 - 130
2289122	Selenium	105	112	P/P	70 - 130
2289122	Silver	97.9	98.4	P/P	70 - 130
2289122	Thallium	104	111	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289092	Ammonia-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406414

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288792	Kjeldahl Nitrogen	92.9	92.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P406332

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289114	NO2NO3-N	97.5	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288792	Total-P	99.4	101	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P406225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289018	2,4-D	128	136	P/P	40 - 150
2289018	2,4,5-T	133	135	P/P	40 - 150
2289018	Acetaminophen	109	103	P/P	30 - 150
2289018	Acetamiprid	116	98.7	P/P	40 - 150
2289018	Afidopyropen	97.2	79.9	P/P	40 - 150
2289018	Bentazon	76.8	67.9	P/P	30 - 150
2289018	Benzovindiflupyr	90.4	88.1	P/P	40 - 150
2289018	Carbamazepine	116	112	P/P	40 - 150
2289018	Clothianidin	116	117	P/P	40 - 150
2289018	Dinotefuran	112	113	P/P	40 - 150
2289018	Diuron	102	101	P/P	40 - 150
2289018	Fenuron	96.0	95.3	P/P	40 - 150
2289018	Fluridone	93.7	97.0	P/P	40 - 150
2289018	Hydrocodone	113	108	P/P	40 - 150
2289018	Ibuprofen	69.5	77.5	P/P	40 - 150
2289018	Imazapyr	125	135	P/P	40 - 150
2289018	Imidacloprid	177	169	F/F	40 - 150
2289018	Linuron	94.9	80.2	P/P	40 - 150
2289018	Mandestrobin	103	95.0	P/P	40 - 150
2289018	MCCP	143	160	P/F	40 - 150
2289018	Naproxen	80.1	93.6	P/P	40 - 150
2289018	Primidone	161	138	F/P	40 - 150
2289018	Pyraclostrobin	91.6	90.7	P/P	40 - 150
2289018	Silvex	116	118	P/P	40 - 150
2289018	Thiamethoxam	160	156	F/F	40 - 150
2289018	Tolfenpyrad	49.6	53.0	P/P	30 - 150
2289018	Triclopyr	132	132	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P406265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289018	Acesulfame K	116	152	P/F	40 - 150
2289018	AMPA	87.5	85.0	P/P	40 - 160
2289018	Endothall	106	107	P/P	40 - 150
2289018	Glufosinate	105	99.6	P/P	40 - 160
2289018	Glyphosate	107	110	P/P	40 - 160
2289018	Sucralose	95.5	96.1	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P406491

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289664	Fluoride	104	104	P/P	92 - 107

Reference Method: SM 4500 F-C-2011

Batch ID: P406621

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289929	Fluoride	101	101	P/P	92 - 107

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P406873

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289665	Organic Carbon	97.6	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P406365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289122	Calcium	0.610	Spike	P	0 - 20
2289122	Iron	1.70	Spike	P	0 - 20
2289122	Magnesium	1.42	Spike	P	0 - 20
2289122	Manganese	2.49	Spike	P	0 - 20
2289122	Strontium	0.521	Spike	P	0 - 20
2289122	Tin	2.98	Spike	P	0 - 20
2289122	Vanadium	0.175	Spike	P	0 - 20
2289122	Zinc	1.74	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P406365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289122	Aluminum	4.59	Spike	P	0 - 20
2289122	Antimony	5.51	Spike	P	0 - 20
2289122	Arsenic	6.06	Spike	P	0 - 20
2289122	Beryllium	4.11	Spike	P	0 - 20
2289122	Cadmium	6.43	Spike	P	0 - 20
2289122	Chromium	4.79	Spike	P	0 - 20
2289122	Cobalt	4.75	Spike	P	0 - 20
2289122	Copper	4.90	Spike	P	0 - 20
2289122	Lead	6.01	Spike	P	0 - 20
2289122	Molybdenum	0.296	Spike	P	0 - 20
2289122	Nickel	4.55	Spike	P	0 - 20
2289122	Selenium	6.97	Spike	P	0 - 20
2289122	Silver	0.528	Spike	P	0 - 20
2289122	Thallium	6.42	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P406589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289092	Ammonia-N	0.579	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P406414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288792	Kjeldahl Nitrogen	0.317	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P406332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289114	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288792	Total-P	1.45	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P406225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289018	2,4-D	5.78	Spike	P	0 - 30
2289018	2,4,5-T	1.05	Spike	P	0 - 30
2289018	Acetaminophen	6.06	Spike	P	0 - 30
2289018	Acetamiprid	15.7	Spike	P	0 - 30
2289018	Afidopyropen	19.6	Spike	P	0 - 30
2289018	Bentazon	12.3	Spike	P	0 - 30
2289018	Benzovindiflupyr	2.56	Spike	P	0 - 30
2289018	Carbamazepine	4.19	Spike	P	0 - 30
2289018	Clothianidin	0.298	Spike	P	0 - 30
2289018	Dinotefuran	0.782	Spike	P	0 - 30
2289018	Diuron	1.35	Spike	P	0 - 30
2289018	Fenuron	0.799	Spike	P	0 - 30
2289018	Fluridone	3.46	Spike	P	0 - 30
2289018	Hydrocodone	4.03	Spike	P	0 - 30
2289018	Ibuprofen	9.92	Spike	P	0 - 30
2289018	Imazapyr	7.17	Spike	P	0 - 30
2289018	Imidacloprid	4.51	Spike	P	0 - 30
2289018	Linuron	16.7	Spike	P	0 - 30
2289018	Mandestrobin	7.58	Spike	P	0 - 30
2289018	MCP	11.4	Spike	P	0 - 30
2289018	Naproxen	15.5	Spike	P	0 - 30
2289018	Primidone	15.0	Spike	P	0 - 30
2289018	Pyraclostrobin	0.895	Spike	P	0 - 30
2289018	Silvex	1.67	Spike	P	0 - 30
2289018	Thiamethoxam	2.03	Spike	P	0 - 30
2289018	Tolfenpyrad	6.61	Spike	P	0 - 30
2289018	Triclopyr	0.288	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P406265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289018	Acesulfame K	27.2	Spike	P	0 - 30
2289018	AMPA	2.89	Spike	P	0 - 30
2289018	Endothall	0.715	Spike	P	0 - 30
2289018	Glufosinate	5.70	Spike	P	0 - 30
2289018	Glyphosate	3.05	Spike	P	0 - 30
2289018	Sucralose	0.577	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P406489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289664	Total Alkalinity	0.543	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P406619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289929	Total Alkalinity	0.0923	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P406491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289664	Fluoride	0.477	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P406621

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289929	Fluoride	0.487	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P406873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289665	Organic Carbon	1.79	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2289106

Field Sample ID: G4NW0516

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	104	P	30 - 160
EPA 8321B	Acetaminophen-d4	89.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	104	P	30 - 160
EPA 8321B	Diuron-d6	80.5	P	30 - 160
EPA 8321B	Endothall-d6	89.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	71.2	P	30 - 160
EPA 8321B	Primidone-d5	82.3	P	30 - 160
EPA 8321B	Sucralose-d6	98.7	P	30 - 160

Lab Sample ID: 2289107

Field Sample ID: G4NW0402

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	129	P	30 - 160
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	113	P	30 - 160
EPA 8321B	Diuron-d6	86.6	P	30 - 160
EPA 8321B	Endothall-d6	98.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	75.3	P	30 - 160
EPA 8321B	Primidone-d5	111	P	30 - 160
EPA 8321B	Sucralose-d6	96.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A108872

Included Lab Sample IDs: 2289106, 2289107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	91.7	94.2	P/P	60 - 160
Glufosinate	87.9	93.0	P/P	60 - 160
Glyphosate	104	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A108883

Included Lab Sample IDs: 2289106, 2289107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	103	98.6	P/P	60 - 160
Endothall	81.5	79.6	P/P	60 - 160
Sucralose	98.0	92.5	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A108897

Included Lab Sample IDs: 2289092, 2289093

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

Reference Method: EPA 8321B

Run ID: A108906

Included Lab Sample IDs: 2289106, 2289107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	114	111	P/P	50 - 150
2,4,5-T	91.4	101	P/P	50 - 150
Acetaminophen	104	95.6	P/P	60 - 160
Acetamiprid	103	106	P/P	50 - 150
Afidopyropen	96.0	101	P/P	50 - 150
Bentazon	108	106	P/P	50 - 160
Benzovindiflupyr	105	104	P/P	50 - 150
Carbamazepine	105	105	P/P	60 - 150
Clothianidin	101	101	P/P	60 - 150
Dinotefuran	91.1	105	P/P	50 - 150
Diuron	117	109	P/P	60 - 160
Fenuron	97.4	102	P/P	60 - 150
Fluridone	99.9	102	P/P	60 - 160
Hydrocodone	99.4	103	P/P	60 - 150
Ibuprofen	133	119	P/P	50 - 160
Imazapyr	121	114	P/P	50 - 150
Imidacloprid	97.2	96.7	P/P	60 - 150
Linuron	105	110	P/P	60 - 150
Mandestrobin	99.7	102	P/P	50 - 150
MCPP	94.8	102	P/P	50 - 150
Naproxen	145	89.6	P/P	50 - 160
Primidone	98.3	112	P/P	60 - 150
Pyraclostrobin	103	102	P/P	60 - 150
Silvex	105	103	P/P	50 - 150
Thiamethoxam	104	101	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A108906

Included Lab Sample IDs: 2289106, 2289107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tolfenpyrad	97.2	93.7	P/P	60 - 150
Triclopyr	98.9	101	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108928

Included Lab Sample IDs: 2289122, 2289123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	100	P/P	90 - 110
Antimony	100	101	P/P	90 - 110
Arsenic	97.7	96.5	P/P	90 - 110
Beryllium	105	96.8	P/P	90 - 110
Cadmium	99.3	98.1	P/P	90 - 110
Chromium	95.7	95.8	P/P	90 - 110
Cobalt	92.2	91.4	P/P	90 - 110
Copper	94.6	93.1	P/P	90 - 110
Lead	94.0	92.7	P/P	90 - 110
Molybdenum	99.6	99.7	P/P	90 - 110
Nickel	94.2	93.7	P/P	90 - 110
Selenium	99.2	100	P/P	90 - 110
Thallium	97.7	96.4	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108929

Included Lab Sample IDs: 2289122, 2289123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	103	P/P	90 - 110
Calcium	104	105	P/P	90 - 110
Iron	108	109	P/P	90 - 110
Magnesium	108	108	P/P	90 - 110
Manganese	103	104	P/P	90 - 110
Manganese	104	104	P/P	90 - 110
Strontium	100	102	P/P	90 - 110
Strontium	101	100	P/P	90 - 110
Tin	103	103	P/P	90 - 110
Tin	105	104	P/P	90 - 110
Vanadium	100	100	P/P	90 - 110
Vanadium	101	101	P/P	90 - 110
Zinc	107	107	P/P	90 - 110
Zinc	110	107	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108942

Included Lab Sample IDs: 2289123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	98.7	103	P/P	95 - 105
Magnesium	97.8	102	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108953

Included Lab Sample IDs: 2289122, 2289123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	97.8	96.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A108965

Included Lab Sample IDs: 2289092, 2289093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	94.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A108970

Included Lab Sample IDs: 2289091

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A108970

Included Lab Sample IDs: 2289091

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108996

Included Lab Sample IDs: 2289092, 2289093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A109005

Included Lab Sample IDs: 2289092, 2289093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	98.4	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A109022

Included Lab Sample IDs: 2289090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	96.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A109022

Included Lab Sample IDs: 2289090

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

Quality Assurance Report

Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A109141

Included Lab Sample IDs: 2289092, 2289093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.6	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 200.7 Rev. 4.4	Calcium	104	109	113			0.610
	Iron	112	113	115			1.70
	Magnesium	107					1.42
	Manganese	104	103	106			2.49
	Strontium	99.8	98.1	98.7			0.521
	Tin	106	106	109			2.98
	Vanadium	102	106	107			0.175
	Zinc	109	112	114			1.74
EPA 200.8 Rev. 5.4	Aluminum	104	102	107			4.59
	Antimony	106	110	116			5.51
	Arsenic	98.7	105	112			6.06
	Beryllium	99.1	93.6	89.8			4.11
	Cadmium	100	103	110			6.43
	Chromium	100	102	107			4.79
	Cobalt	95.7	101	106			4.75
	Copper	96.3	101	106			4.90
	Lead	98.1	99.8	106			6.01
	Molybdenum	102	106	107			0.296
	Nickel	97.2	102	107			4.55
	Selenium	101	105	112			6.97
	Silver	99.5	97.9	98.4			0.528
	Thallium	104	104	111			6.42
	Ammonia-N	96.8	98.0	99.0			0.579
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.6	92.9	92.6			0.317
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	97.0	97.5	97.5			0.0
EPA 365.1 Rev. 2.0	Total-P	101	99.4	101			1.45
EPA 8321B	2,4-D	114	128	136			5.78
	2,4,5-T	106	133	135			1.05
	Acesulfame K	103	116	152			27.2
	Acetaminophen	83.5	109	103			6.06
	Acetamiprid	87.9	116	98.7			15.7
	Afidopyropen	78.0	97.2	79.9			19.6
	AMPA	96.4	87.5	85.0			2.89
	Bentazon	91.1	76.8	67.9			12.3
	Benzovindiflupyr	81.4	90.4	88.1			2.56
	Carbamazepine	95.3	116	112			4.19
	Clothianidin	92.4	116	117			0.298
	Dinotefuran	86.0	112	113			0.782
	Diuron	90.5	102	101			1.35
	Endothall	76.7	106	107			0.715
	Fenuron	90.5	96.0	95.3			0.799
	Fluridone	90.9	93.7	97.0			3.46
	Glufosinate	94.6	105	99.6			5.70
	Glyphosate	111	107	110			3.05
	Hydrocodone	86.6	113	108			4.03
	Ibuprofen	67.1	69.5	77.5			9.92
	Imazapyr	93.5	125	135			7.17
	Imidacloprid	95.4	177	169			4.51
	Linuron	82.6	94.9	80.2			16.7
	Mandestrobin	93.3	103	95.0			7.58
	MCPP	129	143	160			11.4
	Naproxen	86.7	80.1	93.6			15.5
	Primidone	91.0	161	138			15.0
	Pyraclostrobin	84.0	91.6	90.7			0.895

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
EPA 8321B	Silvex	83.8	116	118			1.67
	Sucralose	94.8	95.5	96.1			0.577
	Thiamethoxam	94.9	160	156			2.03
	Tolfenpyrad	51.1	49.6	53.0			6.61
	Triclopyr	101	132	132			0.288
SM 2320 B-2011	Total Alkalinity	101				0.543	
	Total Alkalinity	99.8				0.0923	
SM 4500 F-C-2011	Fluoride	101	104	104			0.477
	Fluoride	101	101	101			0.487
SM 5310 B-2011	Organic Carbon	97.3	97.6	95.5			1.79

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2289122, 2289123
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2289122, 2289123
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2289092, 2289093
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2289092, 2289093
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2289092, 2289093
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2289092, 2289093
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2289106, 2289107
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2289090, 2289091
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2289090, 2289091
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2289090, 2289091
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2289092, 2289093

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	11/10/2021	11/16/2021 11:30	Emily M Philpot	11/16/2021 17:51	Josef B Mick	2289122
	11/10/2021	11/16/2021 11:30	Emily M Philpot	11/16/2021 23:12	Josef B Mick	2289123
	11/10/2021	11/16/2021 11:30	Emily M Philpot	11/16/2021 23:18	Josef B Mick	2289123
	11/10/2021	11/16/2021 11:30	Emily M Philpot	11/17/2021 11:08	Josef B Mick	2289123
	11/10/2021	11/16/2021 11:30	Emily M Philpot	11/17/2021 11:15	Josef B Mick	2289123
EPA 200.8 Rev. 5.4	11/10/2021	11/16/2021 11:30	Emily M Philpot	11/16/2021 17:57	Alexander Thompson	2289123
	11/10/2021	11/16/2021 11:30	Emily M Philpot	11/16/2021 18:16	Alexander Thompson	2289122
	11/10/2021	11/16/2021 11:30	Emily M Philpot	11/16/2021 19:52	Alexander Thompson	2289123
	11/10/2021	11/16/2021 11:30	Emily M Philpot	11/16/2021 20:12	Alexander Thompson	2289122
	11/10/2021	11/16/2021 11:30	Emily M Philpot	11/17/2021 13:50	Alexander Thompson	2289123
EPA 350.1 Rev. 2.0	11/10/2021	11/16/2021 11:30	Emily M Philpot	11/17/2021 14:26	Alexander Thompson	2289122
	11/10/2021			11/19/2021 12:35	Ping Hua	2289092
EPA 351.2 Rev. 2.0	11/10/2021			11/19/2021 12:50	Ping Hua	2289093
	11/10/2021	11/17/2021 12:10	Benjamin T. Nordmann	11/18/2021 09:53	Alexandra J Mattheus	2289092
EPA 353.2 Rev. 2.0	11/10/2021	11/17/2021 12:10	Benjamin T. Nordmann	11/18/2021 09:55	Alexandra J Mattheus	2289093
	11/10/2021			11/15/2021 09:54	Beverly Y. Sanders	2289093
EPA 365.1 Rev. 2.0	11/10/2021			11/15/2021 10:37	Beverly Y. Sanders	2289092
	11/10/2021	11/16/2021 19:16	Simonne.V. Calhoun	11/17/2021 16:19	Sarah A Nixon	2289092
EPA 8321B	11/10/2021	11/16/2021 19:16	Simonne.V. Calhoun	11/17/2021 16:20	Sarah A Nixon	2289093
	11/10/2021	11/10/2021 14:00	Hoor Shaik	11/11/2021 05:44	Juyoung Kim	2289106
	11/10/2021	11/10/2021 14:00	Hoor Shaik	11/11/2021 06:19	Juyoung Kim	2289107
	11/10/2021	11/12/2021 10:00	Juyoung Kim	11/12/2021 10:54	Juyoung Kim	2289106
	11/10/2021	11/12/2021 10:00	Juyoung Kim	11/12/2021 11:05	Juyoung Kim	2289107
	11/10/2021	11/12/2021 10:00	Juyoung Kim	11/12/2021 18:14	Manjita Shrestha	2289106
	11/10/2021	11/12/2021 10:00	Juyoung Kim	11/12/2021 18:29	Manjita Shrestha	2289107
SM 2320 B-2011	11/10/2021			11/18/2021 00:34	Dale L. Simmons	2289091
	11/10/2021			11/18/2021 18:39	Dale L. Simmons	2289090
SM 2540 D-2011	11/10/2021			11/12/2021 16:00	Simonne.V. Calhoun	2289090, 2289091
SM 4500 F-C-2011	11/10/2021			11/17/2021 22:37	Dale L. Simmons	2289091
	11/10/2021			11/18/2021 18:39	Dale L. Simmons	2289090
SM 5310 B-2011	11/10/2021			11/30/2021 10:44	Khloe J Berg	2289092
	11/10/2021			11/30/2021 11:32	Khloe J Berg	2289093