

Chemical Analysis Report

NE-DIST-2021-10-15-03

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

Event Description: **Goodbys creek**
Request ID: **RQ-2021-10-18-13**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 10-NOV-2021 13:48



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: Goodbys CR at Baymeadows

Collection Date/Time: 10/14/2021 12:30

Field ID: 20030593

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2283832	EPA 180.1 Rev. 2.0	Turbidity	4.7	A	NTU	P405129	
	SM 2320 B-2011	Total Alkalinity	91		mg CaCO3/L	P405378	
	SM 2540 D-2011	TSS	5	I	mg/L	P405596	
	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P405382	
2283833	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P405562	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P405551	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P405317	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P405387	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P405620	
2283834	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.066		mg P/L	P405126	
2283857	EPA 8276	Chlordane	2.6	U	ng/L	P405098	
		Toxaphene	16	U	ng/L	P405098	
2283859	EPA 8321B	Acesulfame K	0.13	I	ug/L	P405071	
		2,4-D	0.086		ug/L	P405047	MS
		2,4,5-T	0.0040	U	ug/L	P405047	
		AMPA	0.59		ug/L	P405071	
		Acetaminophen	0.0080	U	ug/L	P405047	
		Acetamiprid	0.0020	U	ug/L	P405047	
		Endothall	0.25	U	ug/L	P405071	
		Glufosinate	0.10	U	ug/L	P405071	
		Glyphosate	1.1		ug/L	P405071	
		Afidopyropen	0.0020	U	ug/L	P405047	
		Bentazon	0.044		ug/L	P405047	
		Sucralose	0.30		ug/L	P405071	
		Benzovindiflupyr	0.0020	U	ug/L	P405047	
		Carbamazepine	8.0E-04	U	ug/L	P405047	
		Clothianidin	0.011		ug/L	P405047	MS
		Dinotefuran	0.0044	I	ug/L	P405047	
		Diuron	0.030		ug/L	P405047	
		Fenuron	0.016	U	ug/L	P405047	
		Fluridone	0.025		ug/L	P405047	
		Imazapyr	0.43		ug/L	P405047	
		Hydrocodone	0.0020	U	ug/L	P405047	
		Ibuprofen	0.020	U	ug/L	P405047	
		Imidacloprid	0.064		ug/L	P405047	MS
		Linuron	0.0040	U	ug/L	P405047	
		Mandestrobin	0.0020	U	ug/L	P405047	
		MCP	0.015		ug/L	P405047	MS
		Naproxen	0.0080	U	ug/L	P405047	
		Primidone	0.0040	U	ug/L	P405047	
		Pyraclostrobin	0.0020	U	ug/L	P405047	
		Thiamethoxam	0.0040	I	ug/L	P405047	MS
		Tolfenpyrad	0.0020	U	ug/L	P405047	

Field ID: 20030593

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2283859	EPA 8321B	Triclopyr	0.0040	U	ug/L	P405047	
2283861	EPA 200.7 Rev. 4.4	Calcium	40.0		mg/L	P405273	
		Iron	1.07E+03		ug/L	P405273	
		Magnesium	9.97		mg/L	P405273	
		Manganese	36.3		ug/L	P405273	
		Zinc	5.0	U	ug/L	P405273	
	EPA 200.8 Rev. 5.4	Aluminum	61		ug/L	P405273	
		Antimony	0.13	I	ug/L	P405273	
		Arsenic	4.04		ug/L	P405273	
		Beryllium	0.010	U	ug/L	P405273	
		Cadmium	0.020	U	ug/L	P405273	
		Chromium	0.40	U	ug/L	P405273	
		Copper	1.06		ug/L	P405273	
		Lead	0.37	I	ug/L	P405273	
		Nickel	0.50	U	ug/L	P405273	
		Selenium	0.20	U	ug/L	P405273	
		Silver	0.010	U	ug/L	P405273	
		Thallium	0.10	U	ug/L	P405273	

Ref. Method and Comment:

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

Sample Location: FB10142021

Collection Date/Time: 10/14/2021 12:40

Field ID: FB10142021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2283835	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P405129	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P405378	
	SM 2540 D-2011	TSS	2	U	mg/L	P405596	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P405382	
2283836	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P405562	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P405312	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P405317	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P405330	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P405620	
2283837	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P405126	
2283858	EPA 8276	Chlordane	2.6	U	ng/L	P405098	
		Toxaphene	16	U	ng/L	P405098	
2283860	EPA 8321B	Acesulfame K	0.10	U	ug/L	P405071	
		2,4-D	0.0020	U	ug/L	P405047	MS
		2,4,5-T	0.0040	U	ug/L	P405047	
		AMPA	0.10	U	ug/L	P405071	
		Acetaminophen	0.0080	U	ug/L	P405047	
		Acetamiprid	0.0020	U	ug/L	P405047	
		Endothall	0.25	U	ug/L	P405071	
		Glufosinate	0.10	U	ug/L	P405071	
		Glyphosate	0.10	U	ug/L	P405071	
		Afidopyropen	0.0020	U	ug/L	P405047	
		Bentazon	8.0E-04	U	ug/L	P405047	
		Sucralose	0.010	U	ug/L	P405071	
		Benzovindiflupyr	0.0020	U	ug/L	P405047	
		Carbamazepine	8.0E-04	U	ug/L	P405047	
		Clothianidin	0.0020	U	ug/L	P405047	MS
		Dinotefuran	0.0020	U	ug/L	P405047	
		Diuron	0.0020	U	ug/L	P405047	
		Fenuron	0.016	U	ug/L	P405047	
		Fluridone	8.0E-04	U	ug/L	P405047	
		Imazapyr	0.0040	U	ug/L	P405047	
		Hydrocodone	0.0020	U	ug/L	P405047	
		Ibuprofen	0.020	U	ug/L	P405047	
		Imidacloprid	0.0020	U	ug/L	P405047	MS
		Linuron	0.0040	U	ug/L	P405047	
		Mandestrobin	0.0020	U	ug/L	P405047	
		MCP	0.0020	U	ug/L	P405047	MS
		Naproxen	0.0080	U	ug/L	P405047	
		Primidone	0.0040	U	ug/L	P405047	
		Pyraclostrobin	0.0020	U	ug/L	P405047	
		Thiamethoxam	0.0020	U	ug/L	P405047	MS
		Tolfenpyrad	0.0020	U	ug/L	P405047	

Field ID: FB10142021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2283860	EPA 8321B	Triclopyr	0.0040	U	ug/L	P405047	
2283862	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P405273	
		Iron	30	U	ug/L	P405273	
		Magnesium	0.040	U	mg/L	P405786	
		Manganese	1.0	U	ug/L	P405273	
		Zinc	5.0	U	ug/L	P405273	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P405273	
		Antimony	0.050	U	ug/L	P405273	
		Arsenic	0.050	U	ug/L	P405273	
		Beryllium	0.010	U	ug/L	P405273	
		Cadmium	0.020	U	ug/L	P405273	
		Chromium	0.40	U	ug/L	P405273	
		Copper	0.40	U	ug/L	P405273	
		Lead	0.20	U	ug/L	P405273	
		Nickel	0.50	U	ug/L	P405273	
		Selenium	0.20	U	ug/L	P405273	
		Silver	0.010	U	ug/L	P405273	
		Thallium	0.10	U	ug/L	P405273	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P405129

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P405273

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P405786

Component	Result	Code	Units
Magnesium	0.040	U	mg/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P405273

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
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 350.1 Rev. 2.0
Batch ID: P405562

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405312

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405551

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: P405317

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405330

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405387

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405126

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

Reference Method: EPA 8276
Batch ID: P405098

Component	Result	Code	Units
Chlordane	2.5	U	ng/L
Chlordane	2.5	U	ng/L
Toxaphene	15	U	ng/L
Toxaphene	15	U	ng/L

Reference Method: EPA 8321B
Batch ID: P405047

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P405047

Component	Result	Code	Units
MCP	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: EPA 8321B

Batch ID: P405071

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: P405378

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

Reference Method: SM 2540 D-2011

Batch ID: P405596

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P405382

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P405620

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: P405273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	107		P	85 - 115
Iron	109		P	85 - 115
Magnesium	111		P	85 - 115
Manganese	105		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P405786

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Magnesium	111		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P405273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	106		P	85 - 115
Arsenic	102		P	85 - 115
Beryllium	95.5		P	85 - 115
Cadmium	99.5		P	85 - 115
Chromium	102		P	85 - 115
Copper	102		P	85 - 115
Lead	104		P	85 - 115
Nickel	102		P	85 - 115
Selenium	107		P	85 - 115
Silver	104		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P405562

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405551

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405317

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P405330

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P405387

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P405126

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

Reference Method: EPA 8276
 Batch ID: P405098

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	93.7	89.1	P/P	56 - 117
Toxaphene	82.7	75.9	P/P	45 - 116

Reference Method: EPA 8321B
 Batch ID: P405047

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	114		P	40 - 150
2,4,5-T	116		P	40 - 150
Acetaminophen	85.8		P	30 - 150
Acetamiprid	88.4		P	40 - 150
Afidopyropen	98.7		P	40 - 150
Bentazon	101		P	30 - 150
Benzovindiflupyr	98.8		P	40 - 150
Carbamazepine	110		P	40 - 150
Clothianidin	111		P	40 - 150
Dinotefuran	84.2		P	40 - 150
Diuron	87.1		P	40 - 150
Fenuron	95.0		P	40 - 150
Fluridone	96.1		P	40 - 150
Hydrocodone	95.0		P	40 - 150
Ibuprofen	60.1		P	40 - 150
Imazapyr	83.7		P	40 - 150
Imidacloprid	89.9		P	40 - 150
Linuron	86.7		P	40 - 150
Mandestrobin	101		P	40 - 150
MCPP	129		P	40 - 150
Naproxen	77.6		P	40 - 150
Primidone	97.7		P	40 - 150
Pyraclostrobin	91.2		P	40 - 150
Thiamethoxam	101		P	40 - 150
Tolfenpyrad	60.7		P	30 - 150
Triclopyr	105		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P405071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	93.5		P	40 - 160
Endothall	81.0		P	40 - 150
Glufosinate	108		P	40 - 160
Glyphosate	86.1		P	40 - 160
Sucralose	114		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P405378

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.0		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P405382

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P405620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P405273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283861	Calcium	96.2		P	80 - 120
2283861	Iron	107		P	80 - 120
2283861	Magnesium	98.7		P	80 - 120
2283861	Manganese	105		P	80 - 120
2283861	Zinc	101		P	80 - 120
2284324	Calcium	102	106	P/P	80 - 120
2284324	Iron	105	108	P/P	80 - 120
2284324	Magnesium	106	110	P/P	80 - 120
2284324	Manganese	104	106	P/P	80 - 120
2284324	Zinc	97.9	99.1	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P405786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286611	Magnesium	111	111	P/P	80 - 120
2287005	Magnesium	110		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P405273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283861	Aluminum	103		P	80 - 120
2283861	Antimony	109		P	80 - 120
2283861	Arsenic	104		P	80 - 120
2283861	Beryllium	95.0		P	80 - 120
2283861	Cadmium	102		P	80 - 120
2283861	Chromium	104		P	80 - 120
2283861	Copper	100		P	80 - 120
2283861	Lead	105		P	80 - 120
2283861	Nickel	99.9		P	80 - 120
2283861	Selenium	109		P	80 - 120
2283861	Silver	102		P	80 - 120
2283861	Thallium	105		P	80 - 120
2284324	Aluminum	106	107	P/P	80 - 120
2284324	Antimony	106	106	P/P	80 - 120
2284324	Arsenic	102	102	P/P	80 - 120
2284324	Beryllium	98.6	96.6	P/P	80 - 120
2284324	Cadmium	101	101	P/P	80 - 120
2284324	Chromium	109	103	P/P	80 - 120
2284324	Copper	100	101	P/P	80 - 120
2284324	Lead	104	104	P/P	80 - 120
2284324	Nickel	113	102	P/P	80 - 120
2284324	Selenium	108	108	P/P	80 - 120
2284324	Silver	103	104	P/P	80 - 120
2284324	Thallium	105	104	P/P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P405562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283833	Ammonia-N	92.8	94.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P405312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2282778	Kjeldahl Nitrogen	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P405551

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283713	Kjeldahl Nitrogen	101	96.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P405317

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283775	NO2NO3-N	98.6	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P405330

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2282260	Total-P	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P405387

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2282714	Total-P	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P405126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283867	O-Phosphate-P	97.0	96.2	P/P	90 - 110

Reference Method: EPA 8276
 Batch ID: P405098

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283947	Chlordane	87.6	86.8	P/P	47 - 128
2283947	Toxaphene	81.9	84.1	P/P	11 - 163

Reference Method: EPA 8321B
 Batch ID: P405047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283302	2,4-D	152	139	F/P	40 - 150
2283302	2,4,5-T	137	135	P/P	40 - 150
2283302	Acetaminophen	129	118	P/P	30 - 150
2283302	Acetamiprid	118	109	P/P	40 - 150
2283302	Afidopyropen	130	110	P/P	40 - 150
2283302	Bentazon	75.1	62.6	P/P	30 - 150
2283302	Benzovindiflupyr	126	98.0	P/P	40 - 150
2283302	Carbamazepine	132	114	P/P	40 - 150
2283302	Clothianidin	160	146	F/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P405047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283302	Dinotefuran	144	120	P/P	40 - 150
2283302	Diuron	89.7	78.9	P/P	40 - 150
2283302	Fenuron	108	95.2	P/P	40 - 150
2283302	Fluridone	108	94.9	P/P	40 - 150
2283302	Hydrocodone	130	110	P/P	40 - 150
2283302	Ibuprofen	91.3	86.1	P/P	40 - 150
2283302	Imazapyr	131	94.9	P/P	40 - 150
2283302	Imidacloprid	214	198	F/F	40 - 150
2283302	Linuron	95.3	78.9	P/P	40 - 150
2283302	Mandestrobin	111	96.9	P/P	40 - 150
2283302	MCPP	152	136	F/P	40 - 150
2283302	Naproxen	78.0	74.7	P/P	40 - 150
2283302	Primidone	96.4	127	P/P	40 - 150
2283302	Pyraclostrobin	100	96.6	P/P	40 - 150
2283302	Thiamethoxam	203	183	F/F	40 - 150
2283302	Tolfenpyrad	71.2	64.4	P/P	30 - 150
2283302	Triclopyr	136	137	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P405071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283617	Acesulfame K	117	139	P/P	40 - 150
2283617	AMPA	62.1	58.2	P/P	40 - 160
2283617	Endothall	85.3	87.0	P/P	40 - 150
2283617	Glufosinate	77.9	72.3	P/P	40 - 160
2283617	Glyphosate	47.9	51.4	P/P	40 - 160
2283617	Sucralose	109	113	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P405382

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283923	Fluoride	99.8	98.7	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P405620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2284221	Organic Carbon	98.9	99.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P405129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283832	Turbidity	1.70	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P405273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284324	Calcium	2.90	Spike	P	0 - 20
2284324	Iron	2.81	Spike	P	0 - 20
2284324	Magnesium	2.71	Spike	P	0 - 20
2284324	Manganese	1.76	Spike	P	0 - 20
2284324	Zinc	1.23	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P405786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286611	Magnesium	0.312	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P405273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284324	Aluminum	0.849	Spike	P	0 - 20
2284324	Antimony	0.342	Spike	P	0 - 20
2284324	Arsenic	0.821	Spike	P	0 - 20
2284324	Beryllium	2.01	Spike	P	0 - 20
2284324	Cadmium	0.414	Spike	P	0 - 20
2284324	Chromium	5.71	Spike	P	0 - 20
2284324	Copper	0.868	Spike	P	0 - 20
2284324	Lead	0.585	Spike	P	0 - 20
2284324	Nickel	10.6	Spike	P	0 - 20
2284324	Selenium	0.325	Spike	P	0 - 20
2284324	Silver	1.08	Spike	P	0 - 20
2284324	Thallium	0.412	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P405562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283833	Ammonia-N	0.969	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2282778	Kjeldahl Nitrogen	1.38	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P405551

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283713	Kjeldahl Nitrogen	3.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P405317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283775	NO2NO3-N	0.418	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P405330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2282260	Total-P	1.17	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P405387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2282714	Total-P	0.660	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P405126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283867	O-Phosphate-P	0.542	Spike	P	0 - 20

Reference Method: EPA 8276

Batch ID: P405098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283947	Chlordane	0.934	Spike	P	0 - 30
2283947	Toxaphene	2.58	Spike	P	0 - 30
LFB	Chlordane	5.01	LCS	P	0 - 30
LFB	Toxaphene	8.50	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P405047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283302	2,4-D	8.00	Spike	P	0 - 30
2283302	2,4,5-T	1.93	Spike	P	0 - 30
2283302	Acetaminophen	9.18	Spike	P	0 - 30
2283302	Acetamiprid	7.75	Spike	P	0 - 30
2283302	Afidopyropen	16.4	Spike	P	0 - 30
2283302	Bentazon	5.74	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P405047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283302	Benzovindiflupyr	23.9	Spike	P	0 - 30
2283302	Carbamazepine	13.3	Spike	P	0 - 30
2283302	Clothianidin	9.15	Spike	P	0 - 30
2283302	Dinotefuran	13.4	Spike	P	0 - 30
2283302	Diuron	8.39	Spike	P	0 - 30
2283302	Fenuron	13.0	Spike	P	0 - 30
2283302	Fluridone	11.5	Spike	P	0 - 30
2283302	Hydrocodone	16.0	Spike	P	0 - 30
2283302	Ibuprofen	5.89	Spike	P	0 - 30
2283302	Imazapyr	21.6	Spike	P	0 - 30
2283302	Imidacloprid	7.05	Spike	P	0 - 30
2283302	Linuron	18.9	Spike	P	0 - 30
2283302	Mandestrobin	13.8	Spike	P	0 - 30
2283302	MCPP	11.0	Spike	P	0 - 30
2283302	Naproxen	4.26	Spike	P	0 - 30
2283302	Primidone	27.1	Spike	P	0 - 30
2283302	Pyraclostrobin	3.51	Spike	P	0 - 30
2283302	Thiamethoxam	10.2	Spike	P	0 - 30
2283302	Tolfenpyrad	10.1	Spike	P	0 - 30
2283302	Triclopyr	0.958	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P405071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283617	Acesulfame K	15.5	Spike	P	0 - 30
2283617	AMPA	6.06	Spike	P	0 - 30
2283617	Endothall	1.98	Spike	P	0 - 30
2283617	Glufosinate	7.51	Spike	P	0 - 30
2283617	Glyphosate	6.99	Spike	P	0 - 30
2283617	Sucralose	3.26	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P405378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283923	Total Alkalinity	0.277	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P405382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283923	Fluoride	1.03	Spike	P	0 - 2.1

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P405620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2284221	Organic Carbon	0.212	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2283857
Field Sample ID: 20030593

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	87.0	P	29 - 92.0
EPA 8276	PCNB	89.2	P	43 - 134

Lab Sample ID: 2283858
Field Sample ID: FB10142021

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	88.3	P	29 - 92.0
EPA 8276	PCNB	89.6	P	43 - 134

Lab Sample ID: 2283859
Field Sample ID: 20030593

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	149	P	30 - 160
EPA 8321B	Acetaminophen-d4	121	P	30 - 160
EPA 8321B	Carbamazepine-d10	128	P	30 - 160
EPA 8321B	Diuron-d6	110	P	30 - 160
EPA 8321B	Endothall-d6	69.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	59.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	84.1	P	30 - 160
EPA 8321B	Primidone-d5	109	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	30 - 160

Lab Sample ID: 2283860
Field Sample ID: FB10142021

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	124	P	30 - 160
EPA 8321B	Acetaminophen-d4	82.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	109	P	30 - 160
EPA 8321B	Diuron-d6	94.8	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	86.6	P	30 - 160
EPA 8321B	Primidone-d5	81.9	P	30 - 160
EPA 8321B	Sucralose-d6	142	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A108335

Included Lab Sample IDs: 2283859, 2283860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	85.2	87.7	P/P	60 - 160
Glufosinate	98.7	107	P/P	60 - 160
Glyphosate	78.6	81.9	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A108361

Included Lab Sample IDs: 2283834, 2283837

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	97.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A108362

Included Lab Sample IDs: 2283832, 2283835

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

Reference Method: EPA 8321B

Run ID: A108384

Included Lab Sample IDs: 2283859, 2283860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	109	112	P/P	60 - 160
Endothall	81.0	78.1	P/P	60 - 160
Sucralose	116	112	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A108421

Included Lab Sample IDs: 2283859, 2283860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	104	P/P	50 - 150
2,4,5-T	101	128	P/P	50 - 150
Acetaminophen	111	109	P/P	60 - 160
Acetamiprid	109	117	P/P	50 - 150
Afidopyropen	112	133	P/P	50 - 150
Bentazon	121	122	P/P	50 - 160
Benzovindiflupyr	130	133	P/P	50 - 150
Carbamazepine	116	134	P/P	60 - 150
Clothianidin	127	126	P/P	60 - 150
Dinotefuran	109	108	P/P	50 - 150
Diuron	125	123	P/P	60 - 160
Fenuron	104	104	P/P	60 - 150
Fluridone	121	125	P/P	60 - 160
Hydrocodone	108	108	P/P	60 - 150
Ibuprofen	113	74.5	P/P	50 - 160
Imazapyr	85.2	99.9	P/P	50 - 150
Imidacloprid	113	116	P/P	60 - 150
Linuron	120	124	P/P	60 - 150
Mandestrobin	119	126	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A108421

Included Lab Sample IDs: 2283859, 2283860

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
MCP	111	122	P/P	50 - 150
Naproxen	123	85.3	P/P	50 - 160
Primidone	113	105	P/P	60 - 150
Pyraclostrobin	132	134	P/P	60 - 150
Thiamethoxam	115	111	P/P	50 - 150
Tolfenpyrad	116	120	P/P	60 - 150
Triclopyr	117	116	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A108437

Included Lab Sample IDs: 2283833, 2283836

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	102	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108452

Included Lab Sample IDs: 2283861, 2283862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	102	P/P	90 - 110
Aluminum	103	101	P/P	90 - 110
Antimony	105	105	P/P	90 - 110
Antimony	105	105	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Arsenic	103	101	P/P	90 - 110
Beryllium	95.4	93.2	P/P	90 - 110
Beryllium	95.8	95.4	P/P	90 - 110
Cadmium	100	98.7	P/P	90 - 110
Cadmium	98.7	99.2	P/P	90 - 110
Chromium	98.2	98.9	P/P	90 - 110
Chromium	99.8	98.2	P/P	90 - 110
Lead	100	99.5	P/P	90 - 110
Lead	99.5	100	P/P	90 - 110
Nickel	97.1	97.0	P/P	90 - 110
Nickel	99.5	97.1	P/P	90 - 110
Selenium	100	102	P/P	90 - 110
Selenium	101	100	P/P	90 - 110
Silver	102	102	P/P	90 - 110
Silver	103	102	P/P	90 - 110
Thallium	99.1	99.9	P/P	90 - 110
Thallium	99.9	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A108459

Included Lab Sample IDs: 2283832, 2283835

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.4	95.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A108459

Included Lab Sample IDs: 2283832, 2283835

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

Reference Method: EPA 8276

Run ID: A108462

Included Lab Sample IDs: 2283857, 2283858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	97.6		P	80 - 120
Toxaphene	105		P	80 - 120

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A108465

Included Lab Sample IDs: 2283836

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108479

Included Lab Sample IDs: 2283861, 2283862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	90.9	90.9	P/P	90 - 110
Copper	93.8	90.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108494

Included Lab Sample IDs: 2283836

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108497

Included Lab Sample IDs: 2283833

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A108519

Included Lab Sample IDs: 2283833, 2283836

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.5	99.7	P/P	90 - 110
Ammonia-N	98.5	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108528

Included Lab Sample IDs: 2283861, 2283862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	102	P/P	90 - 110
Calcium	102	102	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Magnesium	104	104	P/P	90 - 110
Manganese	104	105	P/P	90 - 110
Manganese	105	105	P/P	90 - 110
Zinc	96.3	99.7	P/P	90 - 110
Zinc	99.7	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A108536

Included Lab Sample IDs: 2283833

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.8	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A108545

Included Lab Sample IDs: 2283833, 2283836

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.6	96.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108702

Included Lab Sample IDs: 2283862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Magnesium	104	104	P/P	95 - 105

* 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							1.70	
EPA 200.7 Rev. 4.4	Calcium	107		96.2	102	106			2.90
	Iron	109		107	105	108			2.81
	Magnesium	111		98.7	106	110			2.71
	Magnesium	111		111	111	110			0.312
	Manganese	105		105	104	106			1.76
	Zinc	100		101	97.9	99.1			1.23
EPA 200.8 Rev. 5.4	Aluminum	104		106	107	103			0.849
	Antimony	106		106	106	109			0.342
	Arsenic	102		102	102	104			0.821
	Beryllium	95.5		98.6	96.6	95.0			2.01
	Cadmium	99.5		101	101	102			0.414
	Chromium	102		109	103	104			5.71
	Copper	102		100	100	101			0.868
	Lead	104		104	104	105			0.585
	Nickel	102		113	102	99.9			10.6
	Selenium	107		109	108	108			0.325
	Silver	104		103	104	102			1.08
	Thallium	102		105	104	105			0.412
EPA 350.1 Rev. 2.0	Ammonia-N	97.4		92.8	94.0				0.969
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.8		100	102				1.38
	Kjeldahl Nitrogen	98.1		101	96.5				3.09
EPA 353.2 Rev. 2.0	NO2NO3-N	102		98.6	99.0				0.418
EPA 365.1 Rev. 2.0	Total-P	103		105	104				1.17
	Total-P	104		106	106				0.660
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9		97.0	96.2				0.542
EPA 8276	Chlordane	93.7	89.1	87.6	86.8		5.01		0.934
	Toxaphene	82.7	75.9	81.9	84.1		8.50		2.58
EPA 8321B	2,4-D	114		152	139				8.00
	2,4,5-T	116		137	135				1.93
	Acesulfame K	101		117	139				15.5
	Acetaminophen	85.8		129	118				9.18
	Acetamiprid	88.4		118	109				7.75
	Afidopyrophen	98.7		130	110				16.4
	AMPA	93.5		62.1	58.2				6.06
	Bentazon	101		75.1	62.6				5.74
	Benzovindiflupyr	98.8		126	98.0				23.9
	Carbamazepine	110		132	114				13.3
	Clothianidin	111		160	146				9.15
	Dinotefuran	84.2		144	120				13.4
	Diuron	87.1		89.7	78.9				8.39
	Endothall	81.0		85.3	87.0				1.98
	Fenuron	95.0		108	95.2				13.0
	Fluridone	96.1		108	94.9				11.5
	Glufosinate	108		77.9	72.3				7.51
	Glyphosate	86.1		47.9	51.4				6.99
	Hydrocodone	95.0		130	110				16.0
	Ibuprofen	60.1		91.3	86.1				5.89
	Imazapyr	83.7		131	94.9				21.6
	Imidacloprid	89.9		214	198				7.05
	Linuron	86.7		95.3	78.9				18.9
	Mandestrobin	101		111	96.9				13.8
	MCPP	129		152	136				11.0
	Naproxen	77.6		78.0	74.7				4.26

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8321B	Primidone	97.7	96.4	127			27.1
	Pyraclostrobin	91.2	100	96.6			3.51
	Sucralose	114	109	113			3.26
	Thiamethoxam	101	203	183			10.2
	Tolfenpyrad	60.7	71.2	64.4			10.1
	Triclopyr	105	136	137			0.958
SM 2320 B-2011	Total Alkalinity	98.0				0.277	
SM 4500 F-C-2011	Fluoride	99.8	99.8	98.7			1.03
SM 5310 B-2011	Organic Carbon	96.2	98.9	99.2			0.212

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2283832, 2283835
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2283861, 2283862
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2283861, 2283862
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2283833, 2283836
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2283833, 2283836
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2283833, 2283836
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2283833, 2283836
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2283834, 2283837
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2283857, 2283858
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2283859, 2283860
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2283832, 2283835
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2283832, 2283835
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2283832, 2283835
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2283833, 2283836

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	10/15/2021			10/15/2021 16:27	Khloe J Berg	2283832, 2283835
EPA 200.7 Rev. 4.4	10/15/2021	10/20/2021 10:00	Emily M Philpot	10/25/2021 21:52	Josef B Mick	2283862
	10/15/2021	10/20/2021 10:00	Emily M Philpot	10/25/2021 23:19	Josef B Mick	2283861
	10/15/2021	11/01/2021 11:00	Emily M Philpot	11/03/2021 14:03	Josef B Mick	2283862
EPA 200.8 Rev. 5.4	10/15/2021	10/20/2021 10:00	Emily M Philpot	10/20/2021 17:12	McKinley C Carter	2283862
	10/15/2021	10/20/2021 10:00	Emily M Philpot	10/20/2021 20:12	McKinley C Carter	2283861
	10/15/2021	10/20/2021 10:00	Emily M Philpot	10/21/2021 15:28	McKinley C Carter	2283862
	10/15/2021	10/20/2021 10:00	Emily M Philpot	10/21/2021 17:19	McKinley C Carter	2283861
EPA 350.1 Rev. 2.0	10/15/2021			10/22/2021 12:49	Ping Hua	2283833
	10/15/2021			10/22/2021 14:28	Ping Hua	2283836
EPA 351.2 Rev. 2.0	10/15/2021	10/20/2021 13:30	Benjamin T. Nordmann	10/21/2021 10:12	Alexandra J Mattheus	2283836
	10/15/2021	10/25/2021 12:30	Benjamin T. Nordmann	10/26/2021 12:43	Alexandra J Mattheus	2283833
EPA 353.2 Rev. 2.0	10/15/2021			10/20/2021 11:59	Beverly Y. Sanders	2283833
	10/15/2021			10/20/2021 12:01	Beverly Y. Sanders	2283836
EPA 365.1 Rev. 2.0	10/15/2021	10/20/2021 14:17	Simonne.V. Calhoun	10/22/2021 14:56	Lipi Saha	2283836
	10/15/2021	10/21/2021 17:16	Simonne.V. Calhoun	10/22/2021 12:35	Sarah A Nixon	2283833
EPA 365.1 Rev. 2.0 dissolved	10/15/2021			10/15/2021 14:31	James L Waggeberby	2283834, 2283837
EPA 8276	10/15/2021	10/18/2021 08:00	Fe-Val Siddell	10/20/2021 17:19	Michael Poppell	2283857
	10/15/2021	10/18/2021 08:00	Fe-Val Siddell	10/20/2021 18:14	Michael Poppell	2283858
EPA 8321B	10/15/2021	10/15/2021 13:00	Juyoung Kim	10/15/2021 13:15	Juyoung Kim	2283859
	10/15/2021	10/15/2021 13:00	Juyoung Kim	10/15/2021 13:26	Juyoung Kim	2283860
	10/15/2021	10/15/2021 13:00	Juyoung Kim	10/15/2021 18:47	Manjita Shrestha	2283859
	10/15/2021	10/15/2021 13:00	Juyoung Kim	10/15/2021 19:02	Manjita Shrestha	2283860
	10/15/2021	10/15/2021 14:00	Hoor Shaik	10/19/2021 01:51	Juyoung Kim	2283859
	10/15/2021	10/15/2021 14:00	Hoor Shaik	10/19/2021 02:25	Juyoung Kim	2283860
SM 2320 B-2011	10/15/2021			10/19/2021 22:10	Dale L. Simmons	2283832
	10/15/2021			10/19/2021 22:19	Dale L. Simmons	2283835
SM 2540 D-2011	10/15/2021			10/19/2021 15:08	Yijie Li	2283832, 2283835
SM 4500 F-C-2011	10/15/2021			10/19/2021 22:10	Dale L. Simmons	2283832
	10/15/2021			10/19/2021 22:19	Dale L. Simmons	2283835
SM 5310 B-2011	10/15/2021			10/25/2021 22:32	Khloe J Berg	2283833
	10/15/2021			10/25/2021 22:45	Khloe J Berg	2283836