

Chemical Analysis Report

SE-DIST-2022-01-21-01

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

Event Description: **Palm Beach/Tidal Lox**
Request ID: **RQ-2022-01-17-33**
Customer: **SE-DIST**
Project ID: **SMP**

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

Date Certified: 17-FEB-2022 18:04



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: C-51 Forest Hill Blvd.

Collection Date/Time: 01/20/2022 10:30

Field ID: G3SE0057

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2300963	DEP SOP: NU-094-1	Color (true)**	38		PCU	P408808	
	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P408815	
	EPA 300.0 Rev. 2.1	Chloride	40		mg Cl/L	P409267	
		Sulfate	19		mg SO4/L	P409270	
	SM 2320 B-2011	Total Alkalinity	189		mg CaCO3/L	P409053	
	SM 2540 C-2011	TDS	304		mg/L	P409306	
	SM 2540 D-2011	TSS	3	I	mg/L	P409309	
	SM 4500 F-C-2011	Fluoride	0.14		mg F/L	P409056	
2300964	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P409347	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P409071	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P408986	
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P409098	
	SM 5310 B-2011	Organic Carbon	9.4		mg C/L	P409520	
2300965	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P408799	

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: Lake Worth @ PGA Blvd.

Collection Date/Time: 01/20/2022 11:00

Field ID: G3SE0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2300966	EPA 180.1 Rev. 2.0	Turbidity	0.40		NTU	P408815	
	SM 2320 B-2011	Total Alkalinity	132	A	mg CaCO3/L	P409144	
	SM 2540 D-2011	TSS	5	I	mg/L	P409315	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P409147	
2300967	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P409351	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P409069	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.044		mg N/L	P408860	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P408938	
	SM 5310 B-2011	Organic Carbon	3.2		mg C/L	P409371	
2300968	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P408801	
2300979	EPA 200.7 Rev. 4.4	Calcium	349		mg/L	P408834	
		Iron	120	U	ug/L	P408834	
		Magnesium	1.10E+03		mg/L	P408834	
		Strontium	6.88E+03		ug/L	P408834	
		Tin	150	U	ug/L	P408834	
		Vanadium	8.0	U	ug/L	P408834	
		Zinc	20	U	ug/L	P408834	
	EPA 200.8 Rev. 5.4	Aluminum	50	U	ug/L	P408834	
		Antimony	0.20	U	ug/L	P408834	
		Arsenic	1.28		ug/L	P408834	
		Beryllium	0.040	U	ug/L	P408834	
		Cadmium	0.080	U	ug/L	P408834	
		Chromium	1.6	U	ug/L	P408834	
		Cobalt	0.080	U	ug/L	P408834	
		Copper	1.7	I	ug/L	P408834	
		Lead	0.80	U	ug/L	P408834	
		Manganese	1.8		ug/L	P408834	
		Molybdenum	6.2		ug/L	P408834	
		Nickel	2.0	U	ug/L	P408834	
		Selenium	0.80	U	ug/L	P408834	
		Silver	0.040	U	ug/L	P408834	

Ref. Method and Comment:

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

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

Sample Location: Tidal Creek to Lox

Collection Date/Time: 01/20/2022 11:50

Field ID: G2SE0027

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2300969	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P408815	
	SM 2320 B-2011	Total Alkalinity	138		mg CaCO3/L	P409144	
	SM 2540 D-2011	TSS	4	I	mg/L	P409315	
	SM 4500 F-C-2011	Fluoride	0.86		mg F/L	P409147	
2300970	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P409351	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P409069	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.041		mg N/L	P408860	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P408938	
	SM 5310 B-2011	Organic Carbon	7.4	J	mg C/L	P409916	CCV
2300971	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P408801	
2300978	EPA 8321B	Acesulfame K	0.10	U	ug/L	P408756	
		2,4-D	0.0020	U	ug/L	P408897	
		AMPA	10	U	ug/L	P408756	
		2,4,5-T	0.0040	U	ug/L	P408897	
		Acetaminophen	0.0080	U	ug/L	P408897	
		Endothall	0.25	U	ug/L	P408756	
		Acetamiprid	0.0020	U	ug/L	P408897	
		Glufosinate	10	U	ug/L	P408756	
		Glyphosate	10	U	ug/L	P408756	
		Afidopyropen	0.0020	U	ug/L	P408897	
		Sucralose	0.082		ug/L	P408756	
		Bentazon	0.046		ug/L	P408897	
		Benzovindiflupyr	0.0020	U	ug/L	P408897	
		Carbamazepine	8.0E-04	U	ug/L	P408897	
		Clothianidin	0.0020	U	ug/L	P408897	
		Dinotefuran	0.0020	U	ug/L	P408897	
		Diuron	0.0020	U	ug/L	P408897	
		Fenuron	0.016	U	ug/L	P408897	
		Fluridone	0.0032	I	ug/L	P408897	
		Imazapyr	0.25		ug/L	P408897	MS
		Hydrocodone	0.0020	U	ug/L	P408897	
		Ibuprofen	0.020	U	ug/L	P408897	
		Imidacloprid	0.0041	I	ug/L	P408897	MS
		Linuron	0.0040	U	ug/L	P408897	
		Mandestrobin	0.0020	U	ug/L	P408897	
		MCP	0.0020	U	ug/L	P408897	
		Naproxen	0.0080	U	ug/L	P408897	
		Primidone	0.0040	U	ug/L	P408897	
		Pyraclostrobin	0.0020	U	ug/L	P408897	
		Silvex	0.0040	U	ug/L	P408897	
		Thiamethoxam	0.0020	U	ug/L	P408897	
		Tolfenpyrad	0.0020	U	ug/L	P408897	
		Triclopyr	0.0040	U	ug/L	P408897	

Field ID: G2SE0027

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.
EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P408808

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408815

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408834

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/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: P408834

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
Manganese	0.10	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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409267

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409270

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409347

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409351

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409069

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409071

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408860

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408986

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408938

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409098

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408799

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408801

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

Reference Method: EPA 8321B
Batch ID: P408756

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: P408897

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
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: SM 2320 B-2011
Batch ID: P409053

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P409144

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

Reference Method: SM 2540 C-2011
Batch ID: P409306

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P409309

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P409315

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409056

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409147

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P409371

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

Reference Method: SM 5310 B-2011
Batch ID: P409520

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

Reference Method: SM 5310 B-2011
Batch ID: P409916

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P408808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408834

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408834

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	101		P	85 - 115
Beryllium	97.1		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	102		P	85 - 115
Cobalt	103		P	85 - 115
Copper	101		P	85 - 115
Lead	100		P	85 - 115
Manganese	100		P	85 - 115
Molybdenum	102		P	85 - 115
Nickel	102		P	85 - 115
Selenium	98.8		P	85 - 115
Silver	105		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409267

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409270

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409347

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409351

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409069

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409071

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408860

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408986

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408938

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409098

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: P408799

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408801

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.1		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P408756

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	112		P	40 - 150
AMPA	91.4		P	40 - 150
Endothall	115		P	40 - 150
Glufosinate	95.7		P	40 - 150
Glyphosate	90.3		P	40 - 150
Sucralose	86.1		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P408897

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	94.2		P	30 - 160
2,4,5-T	92.0		P	30 - 160
Acetaminophen	61.6		P	30 - 160
Acetamiprid	95.6		P	30 - 160
Afidopyropen	78.2		P	30 - 160
Bentazon	92.9		P	30 - 160
Benzovindiflupyr	96.4		P	30 - 160
Carbamazepine	99.8		P	30 - 160
Clothianidin	103		P	30 - 160
Dinotefuran	105		P	30 - 160
Diuron	98.6		P	30 - 160
Fenuron	106		P	30 - 160
Fluridone	113		P	30 - 160
Hydrocodone	98.6		P	30 - 160
Ibuprofen	92.1		P	30 - 160
Imazapyr	110		P	30 - 160
Imidacloprid	95.7		P	30 - 160
Linuron	82.7		P	30 - 160
Mandestrobin	98.6		P	30 - 160
MCPP	120		P	30 - 160
Naproxen	114		P	30 - 160
Primidone	95.9		P	30 - 160
Pyraclostrobin	89.7		P	30 - 160
Silvex	70.5		P	30 - 160
Thiamethoxam	101		P	30 - 160
Tolfenpyrad	44.8		P	30 - 160
Triclopyr	90.4		P	30 - 160

Reference Method: SM 2320 B-2011

Batch ID: P409053

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	94 - 106

Reference Method: SM 2320 B-2011

Batch ID: P409144

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.9		P	94 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P409056

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P409147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P409371

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

Reference Method: SM 5310 B-2011
Batch ID: P409520

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P409916

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P408834

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299892	Iron	104	107	P/P	70 - 130
2299892	Tin	89.2	84.4	P/P	70 - 130
2299892	Vanadium	112	109	P/P	70 - 130
2299892	Zinc	103	102	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P408834

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299892	Aluminum	96.0	108	P/P	70 - 130
2299892	Antimony	96.8	89.4	P/P	70 - 130
2299892	Arsenic	104	95.7	P/P	70 - 130
2299892	Beryllium	102	94.1	P/P	70 - 130
2299892	Cadmium	91.1	84.2	P/P	70 - 130
2299892	Chromium	95.6	88.3	P/P	70 - 130
2299892	Cobalt	107	97.5	P/P	70 - 130
2299892	Copper	98.4	91.4	P/P	70 - 130
2299892	Lead	98.9	89.6	P/P	70 - 130
2299892	Manganese	90.0	80.0	P/P	70 - 130
2299892	Molybdenum	104	94.5	P/P	70 - 130
2299892	Nickel	104	96.5	P/P	70 - 130
2299892	Selenium	97.5	88.4	P/P	70 - 130
2299892	Silver	88.7	81.3	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P409267

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300843	Chloride	101		P	90 - 110
2300924	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P409270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300843	Sulfate	100		P	90 - 110
2300924	Sulfate	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P409347

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300905	Ammonia-N	98.8	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P409351

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300729	Ammonia-N	104	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409069

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300732	Kjeldahl Nitrogen	94.2	90.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301102	Kjeldahl Nitrogen	104	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300112	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300959	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300731	Total-P	95.5	95.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409098

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300984	Total-P	107	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408799

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300960	O-Phosphate-P	97.4	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408801

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300968	O-Phosphate-P	99.9	99.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P408756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300832	Acesulfame K	130	141	P/P	40 - 150
2300832	AMPA	71.5	72.6	P/P	40 - 150
2300832	Endothall	96.5	101	P/P	40 - 150
2300832	Glufosinate	76.8	76.8	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P408756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300832	Glyphosate	73.5	73.5	P/P	40 - 150
2300832	Sucralose	84.2	88.7	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P408897

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300987	2,4-D	128	140	P/P	30 - 160
2300987	2,4,5-T	107	135	P/P	30 - 160
2300987	Acetaminophen	85.7	85.5	P/P	30 - 160
2300987	Acetamiprid	114	100	P/P	30 - 160
2300987	Afidopyropen	78.6	65.4	P/P	30 - 160
2300987	Bentazon	78.4	76.1	P/P	30 - 160
2300987	Benzovindiflupyr	103	107	P/P	30 - 160
2300987	Carbamazepine	113	122	P/P	30 - 160
2300987	Clothianidin	140	147	P/P	30 - 160
2300987	Dinotefuran	131	135	P/P	30 - 160
2300987	Diuron	87.5	86.0	P/P	30 - 160
2300987	Fenuron	92.7	99.6	P/P	30 - 160
2300987	Fluridone	97.4	113	P/P	30 - 160
2300987	Hydrocodone	113	120	P/P	30 - 160
2300987	Ibuprofen	91.9	85.2	P/P	30 - 160
2300987	Imazapyr	198	202	F/F	30 - 160
2300987	Imidacloprid	182	188	F/F	30 - 160
2300987	Linuron	79.0	74.7	P/P	30 - 160
2300987	Mandestrobin	103	107	P/P	30 - 160
2300987	MCPP	145	147	P/P	30 - 160
2300987	Naproxen	87.4	114	P/P	30 - 160
2300987	Primidone	116	115	P/P	30 - 160
2300987	Pyraclostrobin	101	106	P/P	30 - 160
2300987	Silvex	89.1	110	P/P	30 - 160
2300987	Thiamethoxam	153	156	P/P	30 - 160
2300987	Tolfenpyrad	63.6	67.3	P/P	30 - 160
2300987	Triclopyr	114	138	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P409056

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301560	Fluoride	99.2	99.8	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P409147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300966	Fluoride	95.5	96.3	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P409371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300967	Organic Carbon	95.9	95.3	P/P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P409520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300871	Organic Carbon	97.2	99.9	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P409916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302142	Organic Carbon	89.8	90.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P408808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300925	Color (true)	4.94	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300927	Turbidity	4.37	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299892	Calcium	4.16	Spike	P	0 - 20
2299892	Iron	2.74	Spike	P	0 - 20
2299892	Magnesium	1.49	Spike	P	0 - 20
2299892	Strontium	3.81	Spike	P	0 - 20
2299892	Tin	5.56	Spike	P	0 - 20
2299892	Vanadium	3.00	Spike	P	0 - 20
2299892	Zinc	0.885	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299892	Aluminum	11.0	Spike	P	0 - 20
2299892	Antimony	7.93	Spike	P	0 - 20
2299892	Arsenic	8.22	Spike	P	0 - 20
2299892	Beryllium	7.99	Spike	P	0 - 20
2299892	Cadmium	7.98	Spike	P	0 - 20
2299892	Chromium	7.95	Spike	P	0 - 20
2299892	Cobalt	9.10	Spike	P	0 - 20
2299892	Copper	7.44	Spike	P	0 - 20
2299892	Lead	9.78	Spike	P	0 - 20
2299892	Manganese	8.24	Spike	P	0 - 20
2299892	Molybdenum	8.15	Spike	P	0 - 20
2299892	Nickel	7.53	Spike	P	0 - 20
2299892	Selenium	9.69	Spike	P	0 - 20
2299892	Silver	8.75	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300843	Chloride	1.26	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300843	Sulfate	0.449	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300905	Ammonia-N	2.20	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300729	Ammonia-N	0.168	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300732	Kjeldahl Nitrogen	3.61	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301102	Kjeldahl Nitrogen	3.25	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300112	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300959	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300731	Total-P	0.248	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P409098

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300984	Total-P	0.635	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P408799

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300960	O-Phosphate-P	1.63	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P408801

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300968	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P408756

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300832	Acesulfame K	8.14	Spike	P	0 - 30
2300832	AMPA	1.10	Spike	P	0 - 30
2300832	Endothall	4.55	Spike	P	0 - 30
2300832	Glufosinate	0.0479	Spike	P	0 - 30
2300832	Glyphosate	0.0447	Spike	P	0 - 30
2300832	Sucralose	4.88	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P408897

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300987	2,4-D	8.72	Spike	P	0 - 30
2300987	2,4,5-T	22.8	Spike	P	0 - 30
2300987	Acetaminophen	0.257	Spike	P	0 - 30
2300987	Acetamiprid	13.2	Spike	P	0 - 30
2300987	Afidopyropen	18.3	Spike	P	0 - 30
2300987	Bentazon	2.93	Spike	P	0 - 30
2300987	Benzovindiflupyr	4.28	Spike	P	0 - 30
2300987	Carbamazepine	7.46	Spike	P	0 - 30
2300987	Clothianidin	4.69	Spike	P	0 - 30
2300987	Dinotefuran	3.31	Spike	P	0 - 30
2300987	Diuron	1.72	Spike	P	0 - 30
2300987	Fenuron	7.20	Spike	P	0 - 30
2300987	Fluridone	14.8	Spike	P	0 - 30
2300987	Hydrocodone	5.84	Spike	P	0 - 30
2300987	Ibuprofen	7.57	Spike	P	0 - 30
2300987	Imazapyr	1.95	Spike	P	0 - 30
2300987	Imidacloprid	3.51	Spike	P	0 - 30
2300987	Linuron	5.60	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P408897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300987	Mandestrobin	3.74	Spike	P	0 - 30
2300987	MCCP	1.53	Spike	P	0 - 30
2300987	Naproxen	26.5	Spike	P	0 - 30
2300987	Primidone	1.31	Spike	P	0 - 30
2300987	Pyraclostrobin	5.17	Spike	P	0 - 30
2300987	Silvex	21.4	Spike	P	0 - 30
2300987	Thiamethoxam	1.98	Spike	P	0 - 30
2300987	Tolfenpyrad	5.77	Spike	P	0 - 30
2300987	Triclopyr	18.8	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P409053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301560	Total Alkalinity	0.403	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P409144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300966	Total Alkalinity	1.27	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P409306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300843	TDS	6.74	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P409056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301560	Fluoride	0.492	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P409147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300966	Fluoride	0.480	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P409371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300967	Organic Carbon	0.579	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P409520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300871	Organic Carbon	1.54	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P409916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302142	Organic Carbon	0.953	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2300978

Field Sample ID: G2SE0027

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	88.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	108	P	30 - 160
EPA 8321B	Diuron-d6	84.8	P	30 - 160
EPA 8321B	Endothall-d6	79.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	83.7	P	30 - 160
EPA 8321B	Primidone-d5	99.6	P	30 - 160
EPA 8321B	Sucralose-d6	54.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A109981

Included Lab Sample IDs: 2300965, 2300968, 2300971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	99.3	P/P	90 - 110
O-Phosphate-P	99.3	99.0	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A109985

Included Lab Sample IDs: 2300963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.8	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A109987

Included Lab Sample IDs: 2300963, 2300966, 2300969

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.0	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A109991

Included Lab Sample IDs: 2300978

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	76.7	81.5	P/P	60 - 160
Endothall	74.4	66.6	P/P	60 - 160
Sucralose	95.2	96.6	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110002

Included Lab Sample IDs: 2300967, 2300970

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

Reference Method: EPA 8321B

Run ID: A110023

Included Lab Sample IDs: 2300978

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	103	104	P/P	60 - 160
Glufosinate	94.1	93.6	P/P	60 - 160
Glyphosate	94.9	87.7	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A110039

Included Lab Sample IDs: 2300979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	99.4	102	P/P	90 - 110
Arsenic	101	102	P/P	90 - 110
Beryllium	104	109	P/P	90 - 110
Cadmium	97.6	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A110039

Included Lab Sample IDs: 2300979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	98.3	101	P/P	90 - 110
Cobalt	103	105	P/P	90 - 110
Copper	102	104	P/P	90 - 110
Lead	93.5	93.7	P/P	90 - 110
Manganese	99.3	102	P/P	90 - 110
Molybdenum	97.8	98.1	P/P	90 - 110
Nickel	104	106	P/P	90 - 110
Selenium	99.0	101	P/P	90 - 110
Silver	101	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A110045

Included Lab Sample IDs: 2300979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.4	96.5	P/P	90 - 110
Iron	99.9	97.8	P/P	90 - 110
Magnesium	99.2	96.7	P/P	90 - 110
Strontium	104	105	P/P	90 - 110
Tin	102	103	P/P	90 - 110
Vanadium	102	102	P/P	90 - 110
Zinc	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110050

Included Lab Sample IDs: 2300964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	104	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A110068

Included Lab Sample IDs: 2300963

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

Reference Method: SM 4500 F-C-2011

Run ID: A110068

Included Lab Sample IDs: 2300963

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A110089

Included Lab Sample IDs: 2300979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.0	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A110099

Included Lab Sample IDs: 2300966, 2300969

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A110099

Included Lab Sample IDs: 2300966, 2300969

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110109

Included Lab Sample IDs: 2300967, 2300970

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110137

Included Lab Sample IDs: 2300967, 2300970

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	108	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A110148

Included Lab Sample IDs: 2300978

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.6	83.4	P/P	50 - 150
2,4,5-T	87.1	76.0	P/P	50 - 150
Acetaminophen	108	109	P/P	60 - 160
Acetamiprid	105	103	P/P	50 - 150
Afidopyropen	103	90.8	P/P	50 - 150
Bentazon	90.2	82.9	P/P	50 - 160
Benzovindiflupyr	108	103	P/P	50 - 160
Carbamazepine	103	105	P/P	60 - 150
Clothianidin	82.1	113	P/P	60 - 150
Dinotefuran	106	104	P/P	50 - 150
Diuron	110	105	P/P	60 - 160
Fenuron	107	108	P/P	60 - 150
Fluridone	105	104	P/P	60 - 160
Hydrocodone	105	102	P/P	60 - 150
Ibuprofen	79.6	98.8	P/P	50 - 160
Imazapyr	117	112	P/P	50 - 160
Imidacloprid	99.5	101	P/P	60 - 150
Linuron	101	108	P/P	60 - 150
Mandestrobin	113	109	P/P	50 - 150
MCPP	90.6	93.0	P/P	50 - 150
Naproxen	102	106	P/P	50 - 160
Primidone	97.1	94.4	P/P	60 - 150
Pyraclostrobin	113	113	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A110148
Included Lab Sample IDs: 2300978

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silvex	73.1	73.1	P/P	50 - 150
Thiamethoxam	101	102	P/P	50 - 150
Tolfenpyrad	101	107	P/P	60 - 150
Triclopyr	86.1	91.0	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A110152
Included Lab Sample IDs: 2300964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.4	97.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A110154
Included Lab Sample IDs: 2300963

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A110182
Included Lab Sample IDs: 2300964, 2300967, 2300970

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	100	P/P	90 - 110
Ammonia-N	99.8	99.4	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A110189
Included Lab Sample IDs: 2300967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A110201
Included Lab Sample IDs: 2300964

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

Reference Method: SM 5310 B-2011
Run ID: A110267
Included Lab Sample IDs: 2300964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	103	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A110436

Included Lab Sample IDs: 2300970

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	89.4*	89.8*	F/F	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
DEP SOP: NU-094-1	Color (true)	99.6				4.94	
EPA 180.1 Rev. 2.0	Turbidity					4.37	
EPA 200.7 Rev. 4.4	Calcium	102					4.16
	Iron	109	104	107			2.74
	Magnesium	102					1.49
	Strontium	106					3.81
	Tin	107	89.2	84.4			5.56
	Vanadium	106	112	109			3.00
	Zinc	106	103	102			0.885
EPA 200.8 Rev. 5.4	Aluminum	102	96.0	108			11.0
	Antimony	101	96.8	89.4			7.93
	Arsenic	101	104	95.7			8.22
	Beryllium	97.1	102	94.1			7.99
	Cadmium	102	91.1	84.2			7.98
	Chromium	102	95.6	88.3			7.95
	Cobalt	103	107	97.5			9.10
	Copper	101	98.4	91.4			7.44
	Lead	100	98.9	89.6			9.78
	Manganese	100	90.0	80.0			8.24
	Molybdenum	102	104	94.5			8.15
	Nickel	102	104	96.5			7.53
	Selenium	98.8	97.5	88.4			9.69
	Silver	105	88.7	81.3			8.75
EPA 300.0 Rev. 2.1	Chloride	101	101	101		1.26	
	Sulfate	100	100	99.3		0.449	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	98.8	101			2.20
	Ammonia-N	99.4	104	104			0.168
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	94.2	90.5			3.61
	Kjeldahl Nitrogen	94.8	104	100			3.25
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	104	104			0.0
	NO ₂ NO ₃ -N	102	103	103			0.0
EPA 365.1 Rev. 2.0	Total-P	105	95.5	95.2			0.248
	Total-P	104	107	106			0.635
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6	97.4	99.0			1.63
	O-Phosphate-P	99.1	99.9	99.9			0.0
EPA 8321B	2,4-D	94.2	128	140			8.72
	2,4,5-T	92.0	107	135			22.8
	Acesulfame K	112	130	141			8.14
	Acetaminophen	61.6	85.7	85.5			0.257
	Acetamiprid	95.6	114	100			13.2
	Afidopyropen	78.2	78.6	65.4			18.3
	AMPA	91.4	71.5	72.6			1.10
	Bentazon	92.9	78.4	76.1			2.93
	Benzovindiflupyr	96.4	103	107			4.28
	Carbamazepine	99.8	113	122			7.46
	Clothianidin	103	140	147			4.69
	Dinotefuran	105	131	135			3.31
	Diuron	98.6	87.5	86.0			1.72
	Endothall	115	96.5	101			4.55
	Fenuron	106	92.7	99.6			7.20
	Fluridone	113	97.4	113			14.8
	Glufosinate	95.7	76.8	76.8			0.0479
	Glyphosate	90.3	73.5	73.5			0.0447
	Hydrocodone	98.6	113	120			5.84

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Ibuprofen	92.1	91.9	85.2			7.57
	Imazapyr	110	198	202			1.95
	Imidacloprid	95.7	182	188			3.51
	Linuron	82.7	79.0	74.7			5.60
	Mandestrobin	98.6	103	107			3.74
	MCPP	120	145	147			1.53
	Naproxen	114	87.4	114			26.5
	Primidone	95.9	116	115			1.31
	Pyraclostrobin	89.7	101	106			5.17
	Silvex	70.5	89.1	110			21.4
	Sucralose	86.1	84.2	88.7			4.88
	Thiamethoxam	101	153	156			1.98
	Tolfenpyrad	44.8	63.6	67.3			5.77
	Triclopyr	90.4	114	138			18.8
SM 2320 B-2011	Total Alkalinity	99.2				0.403	
	Total Alkalinity	96.9				1.27	
SM 2540 C-2011	TDS					6.74	
SM 4500 F-C-2011	Fluoride	97.8	99.2	99.8			0.492
	Fluoride	98.4	95.5	96.3			0.480
SM 5310 B-2011	Organic Carbon	97.6	95.9	95.3			0.579
	Organic Carbon	96.4	97.2	99.9			1.54
	Organic Carbon	95.1	89.8	90.8			0.953

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2300963
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2300963, 2300966, 2300969
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2300979
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2300979
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2300963
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2300963
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2300964, 2300967, 2300970
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2300964, 2300967, 2300970
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2300964, 2300967, 2300970
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2300964, 2300967, 2300970
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2300965, 2300968, 2300971
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2300978
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2300963, 2300966, 2300969
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2300963
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2300963, 2300966, 2300969
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2300963, 2300966, 2300969
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2300964, 2300967, 2300970

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	01/21/2022			01/21/2022 14:16	Blanca Fach	2300963
EPA 180.1 Rev. 2.0	01/21/2022			01/21/2022 15:36	Sarah A Nixon	2300963, 2300966, 2300969
EPA 200.7 Rev. 4.4	01/21/2022	01/24/2022 09:56	Emily M Philpot	01/25/2022 23:13	Josef B Mick	2300979
	01/21/2022	01/24/2022 09:56	Emily M Philpot	01/25/2022 23:21	Josef B Mick	2300979
EPA 200.8 Rev. 5.4	01/21/2022	01/24/2022 09:56	Emily M Philpot	01/25/2022 22:50	McKinley C Carter	2300979
	01/21/2022	01/24/2022 09:56	Emily M Philpot	01/27/2022 14:35	Emily M Philpot	2300979
EPA 300.0 Rev. 2.1	01/21/2022			02/01/2022 12:04	James L Waggeberby	2300963
EPA 350.1 Rev. 2.0	01/21/2022			02/02/2022 12:57	Ping Hua	2300964
	01/21/2022			02/02/2022 14:44	Ping Hua	2300967
	01/21/2022			02/02/2022 14:45	Ping Hua	2300970
EPA 351.2 Rev. 2.0	01/21/2022	01/28/2022 12:21	Samantha L Bates	01/31/2022 12:03	Alexandra J Mattheus	2300967
	01/21/2022	01/28/2022 12:21	Samantha L Bates	01/31/2022 12:05	Alexandra J Mattheus	2300970
	01/21/2022	01/28/2022 12:21	Samantha L Bates	02/01/2022 12:12	Virginia P. Brown	2300964
EPA 353.2 Rev. 2.0	01/21/2022			01/24/2022 10:47	Beverly Y. Sanders	2300967
	01/21/2022			01/24/2022 10:48	Beverly Y. Sanders	2300970
	01/21/2022			01/26/2022 09:46	Beverly Y. Sanders	2300964
EPA 365.1 Rev. 2.0	01/21/2022	01/26/2022 17:15	Simonne.V. Calhoun	01/28/2022 15:40	Shengyu Ding	2300967
	01/21/2022	01/26/2022 17:15	Simonne.V. Calhoun	01/28/2022 15:41	Shengyu Ding	2300970
	01/21/2022	01/28/2022 14:50	Simonne.V. Calhoun	02/02/2022 16:18	Sarah A Nixon	2300964
EPA 365.1 Rev. 2.0 dissolved	01/21/2022			01/21/2022 13:58	James L Waggeberby	2300965
	01/21/2022			01/21/2022 14:20	James L Waggeberby	2300968
	01/21/2022			01/21/2022 14:22	James L Waggeberby	2300971
EPA 8321B	01/21/2022	01/21/2022 12:30	Manjita Shrestha	01/21/2022 19:52	Manjita Shrestha	2300978
	01/21/2022	01/21/2022 12:30	Manjita Shrestha	01/21/2022 20:24	Manjita Shrestha	2300978
	01/21/2022	01/27/2022 09:00	Hoor Shaik	01/29/2022 22:25	Juyoung Kim	2300978
SM 2320 B-2011	01/21/2022			01/27/2022 00:54	Dale L. Simmons	2300963
	01/21/2022			01/28/2022 04:47	Dale L. Simmons	2300966
	01/21/2022			01/28/2022 05:00	Dale L. Simmons	2300969
SM 2540 C-2011	01/21/2022			01/25/2022 16:02	Yijie Li	2300963
SM 2540 D-2011	01/21/2022			01/25/2022 16:02	Yijie Li	2300963, 2300966, 2300969
SM 4500 F-C-2011	01/21/2022			01/27/2022 00:54	Dale L. Simmons	2300963
	01/21/2022			01/28/2022 04:05	Dale L. Simmons	2300966
	01/21/2022			01/28/2022 04:19	Dale L. Simmons	2300969
SM 5310 B-2011	01/21/2022			02/01/2022 22:39	Khloe J Berg	2300967
	01/21/2022			02/05/2022 06:51	Nathaniel J Jones	2300964
	01/21/2022			02/15/2022 12:23	Khloe J Berg	2300970