

Chemical Analysis Report

SO-DIST-2023-10-26-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **2023 SMP: Glades Sloughs**
Request ID: **RQ-2023-10-23-21**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
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Date Certified: 15-NOV-2023 09:44



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: GATOR SLOUGH AT US27

Collection Date/Time: 10/25/2023 11:40

Field ID: G4SD0214

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2447260	DEP SOP: NU-094-1	Color (true)	340		PCU	P437052	
	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P437059	
	EPA 300.0 Rev. 2.1	Chloride	6.0		mg Cl/L	P437503	
		Sulfate	0.75		mg SO4/L	P437507	
	SM 2320 B-2011	Total Alkalinity	5.4		mg CaCO3/L	P437158	
	SM 2540 C-2015	TDS	75		mg/L	P437565	
	SM 2540 D-2015	TSS	2	I	mg/L	P437416	
	SM 4500-F- C-2011	Fluoride	0.025	I	mg F/L	P437161	
2447263	EPA 350.1 Rev. 2.0	Ammonia-N	0.071		mg N/L	P437141	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P437123	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.019		mg N/L	P437641	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P437068	
	SM 5310 B-2011	Organic Carbon	26		mg C/L	P437225	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: JOHNNENRYSLOUGH ATCR731

Collection Date/Time: 10/25/2023 13:05

Field ID: G4SD0215

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2447266	DEP SOP: NU-094-1	Color (true)	320		PCU	P437056	
	EPA 180.1 Rev. 2.0	Turbidity	30		NTU	P437059	
	EPA 300.0 Rev. 2.1	Chloride	100		mg Cl/L	P437503	
		Sulfate	31		mg SO4/L	P437507	
	SM 2320 B-2011	Total Alkalinity	30		mg CaCO3/L	P437158	
	SM 2540 C-2015	TDS	333		mg/L	P437567	
	SM 2540 D-2015	TSS	62		mg/L	P437417	
2447267	SM 4500-F- C-2011	Fluoride	0.11		mg F/L	P437161	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P437141	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.4		mg N/L	P437065	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P437641	
	EPA 365.1 Rev. 2.0	Total-P	0.38		mg P/L	P437068	
2447277	SM 5310 B-2011	Organic Carbon	41		mg C/L	P437266	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P437027	
		Acesulfame K	0.10	U	ug/L	P437019	
		2,4,5-T	0.0040	U	ug/L	P437027	
		AMPA	0.10	U	ug/L	P437019	
		Acetaminophen	0.0080	U	ug/L	P437027	
		Acetamiprid	0.0020	U	ug/L	P437027	
		Endothall	0.25	U	ug/L	P437019	
		Glufosinate	0.10	U	ug/L	P437019	
		Glyphosate	0.10	U	ug/L	P437019	
		Afidopyropen	0.0020	U	ug/L	P437027	
		Bentazon	8.0E-04	U	ug/L	P437027	
		Sucralose	0.010	U	ug/L	P437019	
		Benzovindiflupyr	0.0020	U	ug/L	P437027	
		Carbamazepine	8.0E-04	U	ug/L	P437027	
		Clothianidin	0.0020	U	ug/L	P437027	
		Dinotefuran	0.0020	U	ug/L	P437027	
		Diuron	0.0020	U	ug/L	P437027	
		Fenuron	0.032	U	ug/L	P437027	
		Fluridone	8.0E-04	U	ug/L	P437027	
		Imazapyr	0.0040	U	ug/L	P437027	
		Hydrocodone	0.0020	U	ug/L	P437027	
		Ibuprofen	0.080	U	ug/L	P437027	
		Imidacloprid	0.012		ug/L	P437027	
		Linuron	0.0040	U	ug/L	P437027	
		Mandestrobin	0.0020	U	ug/L	P437027	
		MCP	0.0020	U	ug/L	P437027	
		Naproxen	0.0080	U	ug/L	P437027	
		Primidone	0.0040	U	ug/L	P437027	
		Pyraclostrobin	0.0020	U	ug/L	P437027	
		Silvex	0.0040	U	ug/L	P437027	
		Thiamethoxam	0.0020	U	ug/L	P437027	

Field ID: G4SD0215

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2447277	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P437027	
		Triclopyr	0.0040	U	ug/L	P437027	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: BOOTHEELCREEKEASTBRANCH

Collection Date/Time: 10/25/2023 12:05

Field ID: G4SD0105

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2447261	DEP SOP: NU-094-1	Color (true)	550		PCU	P437052	
	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P437059	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P437503	
		Sulfate	0.80		mg SO4/L	P437507	
	SM 2320 B-2011	Total Alkalinity	3.9		mg CaCO3/L	P437158	
	SM 2540 C-2015	TDS	130		mg/L	P437565	
	SM 2540 D-2015	TSS	3	I	mg/L	P437416	
	SM 4500-F- C-2011	Fluoride	0.077	I	mg F/L	P437161	
2447264	EPA 350.1 Rev. 2.0	Ammonia-N	0.086		mg N/L	P437141	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P437065	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P437641	
	EPA 365.1 Rev. 2.0	Total-P	0.31		mg P/L	P437068	
	SM 5310 B-2011	Organic Carbon	47		mg C/L	P437225	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: GOPHER GULLY AT US27

Collection Date/Time: 10/25/2023 13:35

Field ID: G4SD0216

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2447262	DEP SOP: NU-094-1	Color (true)	630		PCU	P437053	
	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P437059	
	EPA 300.0 Rev. 2.1	Chloride	53		mg Cl/L	P437503	
		Sulfate	1.4		mg SO4/L	P437507	
	SM 2320 B-2011	Total Alkalinity	27		mg CaCO3/L	P437158	
	SM 2540 C-2015	TDS	254		mg/L	P437565	
	SM 2540 D-2015	TSS	3	I	mg/L	P437416	
	SM 4500-F- C-2011	Fluoride	0.14		mg F/L	P437161	
2447265	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P437141	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.2		mg N/L	P437065	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P437641	
	EPA 365.1 Rev. 2.0	Total-P	0.38		mg P/L	P437068	
	SM 5310 B-2011	Organic Carbon	64		mg C/L	P437266	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: RAINEY SLOUGH AT FARABEE RD

Collection Date/Time: 10/25/2023 12:45

Field ID: G4SD0111

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2447518	EPA 200.7 Rev. 4.4	Calcium	9.85		mg/L	P437135	
		Iron	3.82E+03		ug/L	P437135	
		Magnesium	4.00		mg/L	P437135	
		Potassium	0.82	I	mg/L	P437135	
		Sodium	14.7		mg/L	P437135	
		Strontium	95.4		ug/L	P437135	
		Tin	3.0	U	ug/L	P437135	
		Titanium	3.7		ug/L	P437135	
	EPA 200.8 Rev. 5.4	Vanadium	2.2	I	ug/L	P437135	
		Aluminum	1.10E+03		ug/L	P437135	
		Antimony	0.053	I	ug/L	P437135	
		Arsenic	1.64		ug/L	P437135	
		Barium	27.5		ug/L	P437135	
		Beryllium	0.147		ug/L	P437135	
		Boron	26.5		ug/L	P437135	
		Cadmium	0.023	I	ug/L	P437135	
		Chromium	1.9		ug/L	P437135	
		Cobalt	0.754		ug/L	P437135	
		Copper	1.79		ug/L	P437135	
		Lead	2.14		ug/L	P437135	
		Manganese	22.3		ug/L	P437135	
		Molybdenum	0.20	I	ug/L	P437135	MS
		Nickel	1.5	I	ug/L	P437135	
		Selenium	0.20	U	ug/L	P437135	MS
		Silver	0.010	U	ug/L	P437135	
		Thallium	0.10	U	ug/L	P437135	
		Zinc	44		ug/L	P437135	
	SM 2340 B-2011	Hardness	41.1		mg/L	P437135	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, iron and titanium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum, chromium, copper, lead, manganese and zinc are unavailable for one of two spiked samples because of high analyte concentration in the QC sample. The beryllium and lead result was confirmed in the undigested sample on 11/01/2023.

Sample Location: FENCELINE DRAIN AT BLUE HEAD RANCH

Collection Date/Time: 10/25/2023 10:15

Field ID: G4SD0193

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2447519	EPA 200.7 Rev. 4.4	Calcium	6.23		mg/L	P437135	
		Iron	1.72E+03		ug/L	P437135	
		Magnesium	2.18		mg/L	P437135	
		Potassium	0.81	I	mg/L	P437135	
		Sodium	8.2		mg/L	P437135	
		Strontium	58.4		ug/L	P437135	
		Tin	3.0	U	ug/L	P437135	
	EPA 200.8 Rev. 5.4	Titanium	1.1	I	ug/L	P437135	
		Vanadium	2.0	U	ug/L	P437135	
		Aluminum	306		ug/L	P437135	
		Antimony	0.050	U	ug/L	P437135	
		Arsenic	0.80		ug/L	P437135	
		Barium	6.06		ug/L	P437135	
		Beryllium	0.020	I	ug/L	P437135	
		Boron	16.3		ug/L	P437135	
		Cadmium	0.020	U	ug/L	P437135	
		Chromium	0.70	I	ug/L	P437135	
		Cobalt	0.203		ug/L	P437135	
		Copper	0.88		ug/L	P437135	
		Lead	0.41		ug/L	P437135	
		Manganese	13.5		ug/L	P437135	
		Molybdenum	0.15	U	ug/L	P437135	MS
		Nickel	0.50	U	ug/L	P437135	
		Selenium	0.20	U	ug/L	P437135	MS
		Silver	0.010	U	ug/L	P437135	
		Thallium	0.10	U	ug/L	P437135	
		Zinc	7.0	U	ug/L	P437135	
	SM 2340 B-2011	Hardness	24.5		mg/L	P437135	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, iron and titanium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum, chromium, copper, lead, manganese and zinc are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P437052

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P437053

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P437056

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437059

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437135

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437135

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.22	I	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437135

Component	Result	Code	Units
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L
Zinc	7.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437503

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437507

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437141

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437065

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437123

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437641

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437068

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

Reference Method: EPA 8321B
Batch ID: P437019

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P437019

Component	Result	Code	Units
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: P437027

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	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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: P437158

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

Reference Method: SM 2540 C-2015

Batch ID: P437565

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P437567

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P437416

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P437417

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P437161

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P437225

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

Reference Method: SM 5310 B-2011
Batch ID: P437266

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: P437052

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.4		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P437053

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P437056

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437059

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437135

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	107		P	85 - 115
Iron	113		P	85 - 115
Magnesium	114		P	85 - 115
Potassium	104		P	85 - 115
Sodium	103		P	85 - 115
Strontium	99.6		P	85 - 115
Tin	98.4		P	85 - 115
Titanium	102		P	85 - 115
Vanadium	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437135

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.3		P	85 - 115
Antimony	95.3		P	85 - 115
Arsenic	98.0		P	85 - 115
Barium	98.9		P	85 - 115
Beryllium	95.0		P	85 - 115
Boron	97.5		P	85 - 115
Cadmium	97.8		P	85 - 115
Chromium	92.2		P	85 - 115
Cobalt	95.2		P	85 - 115
Copper	95.3		P	85 - 115
Lead	101		P	85 - 115
Manganese	95.3		P	85 - 115
Molybdenum	94.9		P	85 - 115
Nickel	95.6		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437135

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Selenium	98.1		P	85 - 115
Silver	105		P	85 - 115
Thallium	104		P	85 - 115
Zinc	95.5		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437503

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437507

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437141

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	106		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437123

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437641

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437068

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

Reference Method: EPA 8321B
Batch ID: P437019

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	130		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P437019

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
AMPA	98.6		P	40 - 160
Endothall	93.1		P	40 - 160
Glufosinate	101		P	40 - 160
Glyphosate	94.6		P	40 - 160
Sucralose	117		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P437027

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	72.5		P	40 - 150
2,4,5-T	82.3		P	40 - 150
Acetaminophen	88.5		P	30 - 150
Acetamiprid	79.4		P	40 - 150
Afidopyropen	69.4		P	30 - 150
Bentazon	86.1		P	30 - 150
Benzovindiflupyr	81.5		P	40 - 150
Carbamazepine	79.8		P	40 - 150
Clothianidin	88.0		P	40 - 150
Dinotefuran	99.3		P	40 - 150
Diuron	80.8		P	40 - 150
Fenuron	89.9		P	40 - 150
Fluridone	83.6		P	40 - 150
Hydrocodone	90.4		P	40 - 150
Ibuprofen	62.8		P	40 - 150
Imazapyr	83.4		P	40 - 150
Imidacloprid	83.2		P	40 - 150
Linuron	76.9		P	40 - 150
Mandestrobin	86.3		P	40 - 150
MCPP	89.4		P	40 - 150
Naproxen	65.3		P	40 - 150
Primidone	83.6		P	40 - 150
Pyraclostrobin	81.7		P	40 - 150
Silvex	72.0		P	40 - 150
Thiamethoxam	84.8		P	40 - 150
Tolfenpyrad	51.2		P	30 - 150
Triclopyr	86.2		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P437158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.8		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P437565

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.8		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P437567

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

Reference Method: SM 2540 D-2015
Batch ID: P437416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	109		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P437417

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	101		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P437161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P437225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.8		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P437266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P437135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447484	Calcium	108		P	80 - 120
2447484	Iron	112	112	P/P	80 - 120
2447484	Magnesium	112	113	P/P	80 - 120
2447484	Potassium	103	103	P/P	80 - 120
2447484	Sodium	104		P	80 - 120
2447484	Strontium	100	99.6	P/P	80 - 120
2447484	Tin	97.9	96.8	P/P	80 - 120
2447484	Titanium	101	96.6	P/P	80 - 120
2447484	Vanadium	101	101	P/P	80 - 120
2447658	Magnesium	105		P	75 - 125
2447658	Potassium	106		P	75 - 125
2447658	Sodium	105		P	75 - 125
2447658	Strontium	100		P	75 - 125
2447658	Tin	84.6		P	75 - 125
2447658	Vanadium	94.8		P	75 - 125

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P437135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447484	Aluminum	93.4	93.2	P/P	80 - 120
2447484	Antimony	96.4	96.9	P/P	80 - 120
2447484	Arsenic	97.0	97.1	P/P	80 - 120
2447484	Barium	98.3	99.2	P/P	80 - 120
2447484	Beryllium	90.5	92.8	P/P	80 - 120
2447484	Boron	100	100	P/P	80 - 120
2447484	Cadmium	99.3	99.5	P/P	80 - 120
2447484	Chromium	92.3	93.1	P/P	80 - 120
2447484	Cobalt	94.3	94.9	P/P	80 - 120
2447484	Copper	95.2	95.8	P/P	80 - 120
2447484	Lead	102	103	P/P	80 - 120
2447484	Manganese	96.5	97.3	P/P	80 - 120
2447484	Molybdenum	95.3	95.8	P/P	80 - 120
2447484	Nickel	94.8	95.3	P/P	80 - 120
2447484	Selenium	97.6	97.1	P/P	80 - 120
2447484	Silver	105	104	P/P	80 - 120
2447484	Thallium	105	107	P/P	80 - 120
2447484	Zinc	97.0	103	P/P	80 - 120
2447658	Antimony	82.2		P	75 - 125
2447658	Arsenic	84.6		P	75 - 125
2447658	Barium	97.5		P	75 - 125
2447658	Beryllium	85.5		P	75 - 125
2447658	Boron	95.8		P	75 - 125
2447658	Cadmium	96.9		P	75 - 125
2447658	Cobalt	91.4		P	75 - 125
2447658	Molybdenum	73.3		F	75 - 125
2447658	Nickel	82.3		P	75 - 125
2447658	Selenium	66.1		F	75 - 125
2447658	Silver	97.5		P	75 - 125
2447658	Thallium	104		P	75 - 125

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447305	Chloride	103		P	90 - 110
2447362	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447305	Sulfate	103		P	90 - 110
2447362	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447201	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447193	Kjeldahl Nitrogen	95.7	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447734	Kjeldahl Nitrogen	94.6	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437641

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446744	NO2NO3-N	100	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447218	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P437019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447226	Acesulfame K	146	147	P/P	40 - 150
2447226	AMPA	78.5	80.0	P/P	40 - 160
2447226	Endothall	88.9	86.1	P/P	40 - 160
2447226	Glufosinate	81.2	89.8	P/P	40 - 160
2447226	Glyphosate	90.5	86.7	P/P	40 - 160
2447226	Sucralose	115	117	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P437027

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447187	2,4-D	84.6	69.7	P/P	40 - 150
2447187	2,4,5-T	108	96.8	P/P	40 - 150
2447187	Acetaminophen	85.4	84.3	P/P	30 - 150
2447187	Acetamiprid	75.1	70.2	P/P	40 - 150
2447187	Afidopyropen	67.1	68.3	P/P	30 - 150
2447187	Bentazon	88.5	71.2	P/P	30 - 150
2447187	Benzovindiflupyr	80.8	75.1	P/P	40 - 150
2447187	Carbamazepine	77.7	72.5	P/P	40 - 150
2447187	Clothianidin	91.2	82.2	P/P	40 - 150
2447187	Dinotefuran	101	94.2	P/P	40 - 150
2447187	Diuron	70.8	67.3	P/P	40 - 150
2447187	Fenuron	81.1	75.0	P/P	40 - 150
2447187	Fluridone	72.9	79.3	P/P	40 - 150
2447187	Hydrocodone	89.1	84.3	P/P	40 - 150
2447187	Ibuprofen	61.2	63.7	P/P	40 - 150
2447187	Imazapyr	93.1	87.1	P/P	40 - 150
2447187	Imidacloprid	92.4	86.8	P/P	40 - 150
2447187	Linuron	63.5	65.4	P/P	40 - 150
2447187	Mandestrobin	84.3	78.2	P/P	40 - 150
2447187	MCCPP	98.7	81.3	P/P	40 - 150
2447187	Naproxen	64.5	53.2	P/P	40 - 150
2447187	Primidone	84.0	77.1	P/P	40 - 150
2447187	Pyraclostrobin	80.6	73.4	P/P	40 - 150
2447187	Silvex	83.8	71.0	P/P	40 - 150
2447187	Thiamethoxam	81.7	80.0	P/P	40 - 150
2447187	Tolfenpyrad	55.9	53.3	P/P	30 - 150
2447187	Triclopyr	100	90.6	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P437161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447213	Fluoride	102	101	P/P	94 - 106

Reference Method: SM 5310 B-2011

Batch ID: P437225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447193	Organic Carbon	94.5	94.9	P/P	85 - 115

Reference Method: SM 5310 B-2011

Batch ID: P437266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447283	Organic Carbon	93.7	95.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P437052

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447215	Color (true)	1.09	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P437053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447309	Color (true)	2.77	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P437056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447320	Color (true)	4.94	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447192	Turbidity	4.13	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447484	Calcium	0.0903	Spike	P	0 - 20
2447484	Iron	0.216	Spike	P	0 - 20
2447484	Magnesium	0.246	Spike	P	0 - 20
2447484	Potassium	0.114	Spike	P	0 - 20
2447484	Sodium	0.395	Spike	P	0 - 20
2447484	Strontium	0.425	Spike	P	0 - 20
2447484	Tin	1.13	Spike	P	0 - 20
2447484	Titanium	3.12	Spike	P	0 - 20
2447484	Vanadium	0.816	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447484	Aluminum	0.121	Spike	P	0 - 20
2447484	Antimony	0.490	Spike	P	0 - 20
2447484	Arsenic	0.116	Spike	P	0 - 20
2447484	Barium	0.865	Spike	P	0 - 20
2447484	Beryllium	2.39	Spike	P	0 - 20
2447484	Boron	0.0105	Spike	P	0 - 20
2447484	Cadmium	0.233	Spike	P	0 - 20
2447484	Chromium	0.838	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447484	Cobalt	0.598	Spike	P	0 - 20
2447484	Copper	0.677	Spike	P	0 - 20
2447484	Lead	1.12	Spike	P	0 - 20
2447484	Manganese	0.713	Spike	P	0 - 20
2447484	Molybdenum	0.469	Spike	P	0 - 20
2447484	Nickel	0.494	Spike	P	0 - 20
2447484	Selenium	0.546	Spike	P	0 - 20
2447484	Silver	0.992	Spike	P	0 - 20
2447484	Thallium	1.54	Spike	P	0 - 20
2447484	Zinc	6.38	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447305	Chloride	0.800	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447305	Sulfate	0.628	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447201	Ammonia-N	0.0	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447193	Kjeldahl Nitrogen	2.93	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447734	Kjeldahl Nitrogen	2.77	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P437641

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446744	NO2NO3-N	0.404	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P437068

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447218	Total-P	1.34	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P437019

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447226	Acesulfame K	0.686	Spike	P	0 - 30
2447226	AMPA	1.90	Spike	P	0 - 30
2447226	Endothall	3.27	Spike	P	0 - 30
2447226	Glufosinate	10.0	Spike	P	0 - 30
2447226	Glyphosate	4.28	Spike	P	0 - 30
2447226	Sucralose	1.92	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P437027

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447187	2,4-D	19.3	Spike	P	0 - 30
2447187	2,4,5-T	10.6	Spike	P	0 - 30
2447187	Acetaminophen	1.24	Spike	P	0 - 30
2447187	Acetamiprid	6.68	Spike	P	0 - 30
2447187	Afidopyropen	1.79	Spike	P	0 - 30
2447187	Bentazon	18.5	Spike	P	0 - 30
2447187	Benzovindiflupyr	7.25	Spike	P	0 - 30
2447187	Carbamazepine	6.92	Spike	P	0 - 30
2447187	Clothianidin	10.3	Spike	P	0 - 30
2447187	Dinotefuran	6.65	Spike	P	0 - 30
2447187	Diuron	5.09	Spike	P	0 - 30
2447187	Fenuron	7.77	Spike	P	0 - 30
2447187	Fluridone	8.35	Spike	P	0 - 30
2447187	Hydrocodone	5.44	Spike	P	0 - 30
2447187	Ibuprofen	4.05	Spike	P	0 - 30
2447187	Imazapyr	6.74	Spike	P	0 - 30
2447187	Imidacloprid	6.20	Spike	P	0 - 30
2447187	Linuron	2.85	Spike	P	0 - 30
2447187	Mandestrobin	7.51	Spike	P	0 - 30
2447187	MCPP	19.4	Spike	P	0 - 30
2447187	Naproxen	19.2	Spike	P	0 - 30
2447187	Primidone	8.64	Spike	P	0 - 30
2447187	Pyraclostrobin	9.39	Spike	P	0 - 30
2447187	Silvex	16.4	Spike	P	0 - 30
2447187	Thiamethoxam	2.02	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P437027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447187	Tolfenpyrad	4.69	Spike	P	0 - 30
2447187	Triclopyr	10.0	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P437158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447213	Total Alkalinity	1.30	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P437565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447397	TDS	1.70	Sample	P	0 - 10

Reference Method: SM 2540 C-2015
Batch ID: P437567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447569	TDS	7.44	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P437161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447213	Fluoride	0.467	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P437225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447193	Organic Carbon	0.227	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P437266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447283	Organic Carbon	1.86	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2447277
Field Sample ID: G4SD0215

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	67.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	41.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	49.7	P	30 - 160
EPA 8321B	Diuron-d6	36.2	P	30 - 160
EPA 8321B	Endothall-d6	93.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	73.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	72.6	P	30 - 160
EPA 8321B	Primidone-d5	33.9	P	30 - 160
EPA 8321B	Sucralose-d6	99.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A122390

Included Lab Sample IDs: 2447260, 2447261, 2447262, 2447266

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 110
Color (true)	99.7	102	P/P	90 - 110
Color (true)	100	99.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122392

Included Lab Sample IDs: 2447260, 2447261, 2447262, 2447266

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

Reference Method: EPA 8321B

Run ID: A122422

Included Lab Sample IDs: 2447277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	152	156	P/P	60 - 160
Sucralose	115	111	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122432

Included Lab Sample IDs: 2447264, 2447265, 2447267

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122434

Included Lab Sample IDs: 2447263, 2447264, 2447265, 2447267

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.9	P/P	90 - 110
Total-P	98.8	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122439

Included Lab Sample IDs: 2447263, 2447264, 2447265, 2447267

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

Reference Method: EPA 8321B

Run ID: A122440

Included Lab Sample IDs: 2447277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	94.4	96.9	P/P	60 - 160
Endothall	94.2	90.0	P/P	60 - 160
Glufosinate	96.4	94.1	P/P	60 - 160
Glyphosate	90.3	93.2	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A122444

Included Lab Sample IDs: 2447260, 2447261, 2447262, 2447266

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.2	95.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A122444

Included Lab Sample IDs: 2447260, 2447261, 2447262, 2447266

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122475

Included Lab Sample IDs: 2447518, 2447519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.9	96.0	P/P	90 - 110
Antimony	95.1	94.9	P/P	90 - 110
Arsenic	96.7	96.8	P/P	90 - 110
Barium	96.4	96.5	P/P	90 - 110
Beryllium	92.4	94.2	P/P	90 - 110
Boron	91.6	95.7	P/P	90 - 110
Cadmium	97.3	97.6	P/P	90 - 110
Chromium	93.0	93.4	P/P	90 - 110
Cobalt	95.1	94.3	P/P	90 - 110
Copper	94.0	93.8	P/P	90 - 110
Lead	101	101	P/P	90 - 110
Manganese	97.3	97.7	P/P	90 - 110
Molybdenum	95.6	94.7	P/P	90 - 110
Nickel	95.1	95.2	P/P	90 - 110
Selenium	97.2	97.4	P/P	90 - 110
Silver	98.3	98.0	P/P	90 - 110
Thallium	101	100	P/P	90 - 110
Zinc	96.1	95.8	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A122481

Included Lab Sample IDs: 2447263, 2447264

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	98.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122489

Included Lab Sample IDs: 2447277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.5	87.0	P/P	50 - 150
2,4,5-T	86.4	79.4	P/P	50 - 150
Acetaminophen	108	106	P/P	60 - 160
Acetamiprid	106	106	P/P	50 - 150
Afidopyropen	94.3	119	P/P	50 - 150
Bentazon	103	99.2	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A122489
Included Lab Sample IDs: 2447277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Benzovindiflupyr	108	106	P/P	50 - 150
Carbamazepine	104	97.4	P/P	60 - 150
Clothianidin	109	107	P/P	60 - 150
Dinotefuran	113	114	P/P	50 - 150
Diuron	109	117	P/P	60 - 160
Fenuron	109	109	P/P	60 - 150
Fluridone	106	117	P/P	60 - 160
Hydrocodone	117	114	P/P	60 - 150
Ibuprofen	90.4	108	P/P	50 - 160
Imazapyr	94.7	98.5	P/P	50 - 150
Imidacloprid	99.8	99.8	P/P	60 - 150
Linuron	102	106	P/P	60 - 150
Mandestrobin	105	107	P/P	50 - 150
MCPP	92.8	89.2	P/P	50 - 150
Naproxen	97.8	89.2	P/P	50 - 160
Primidone	94.7	94.5	P/P	60 - 150
Pyraclostrobin	115	115	P/P	60 - 150
Silvex	90.9	85.2	P/P	50 - 150
Thiamethoxam	113	112	P/P	50 - 150
Tolfenpyrad	107	105	P/P	60 - 150
Triclopyr	87.0	82.6	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A122501
Included Lab Sample IDs: 2447518, 2447519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	105	P/P	90 - 110
Iron	103	104	P/P	90 - 110
Magnesium	103	104	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Strontium	99.2	99.4	P/P	90 - 110
Tin	100	100	P/P	90 - 110
Titanium	101	101	P/P	90 - 110
Vanadium	101	101	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A122507
Included Lab Sample IDs: 2447265, 2447267

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.8	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A122525
Included Lab Sample IDs: 2447263

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122610

Included Lab Sample IDs: 2447260, 2447261, 2447262, 2447266

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122667

Included Lab Sample IDs: 2447263, 2447264, 2447265, 2447267

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	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			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	99.4				1.09	
	Color (true)	101				2.77	
	Color (true)	102				4.94	
EPA 180.1 Rev. 2.0	Turbidity	104				4.13	
EPA 200.7 Rev. 4.4	Calcium	107	108				0.0903
	Iron	113	112	112			0.216
	Magnesium	114	112	113	105		0.246
	Potassium	104	103	103	106		0.114
	Sodium	103	104	105			0.395
	Strontium	99.6	100	99.6	100		0.425
	Tin	98.4	97.9	96.8	84.6		1.13
	Titanium	102	101	96.6			3.12
	Vanadium	100	101	101	94.8		0.816
EPA 200.8 Rev. 5.4	Aluminum	96.3	93.4	93.2			0.121
	Antimony	95.3	82.2	96.4	96.9		0.490
	Arsenic	98.0	97.0	97.1	84.6		0.116
	Barium	98.9	98.3	99.2	97.5		0.865
	Beryllium	95.0	90.5	92.8	85.5		2.39
	Boron	97.5	100	100	95.8		0.0105
	Cadmium	97.8	99.3	99.5	96.9		0.233
	Chromium	92.2	92.3	93.1			0.838
	Cobalt	95.2	94.3	94.9	91.4		0.598
	Copper	95.3	95.2	95.8			0.677
	Lead	101	102	103			1.12
	Manganese	95.3	96.5	97.3			0.713
	Molybdenum	94.9	95.3	95.8	73.3		0.469
	Nickel	95.6	94.8	95.3	82.3		0.494
	Selenium	98.1	97.6	97.1	66.1		0.546
	Silver	105	105	104	97.5		0.992
	Thallium	104	105	107	104		1.54
	Zinc	95.5	97.0	103			6.38
EPA 300.0 Rev. 2.1	Chloride	102	103	101		0.800	
	Sulfate	101	103	103		0.628	
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	101	101			0.0
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	95.7	99.4			2.93
	Kjeldahl Nitrogen	100	94.6	98.5			2.77
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	99.8			0.404
EPA 365.1 Rev. 2.0	Total-P	103	106	107			1.34
EPA 8321B	2,4-D	72.5	84.6	69.7			19.3
	2,4,5-T	82.3	108	96.8			10.6
	Acesulfame K	130	146	147			0.686
	Acetaminophen	88.5	85.4	84.3			1.24
	Acetamiprid	79.4	75.1	70.2			6.68
	Afidopyropen	69.4	67.1	68.3			1.79
	AMPA	98.6	78.5	80.0			1.90
	Bentazon	86.1	88.5	71.2			18.5
	Benzovindiflupyr	81.5	80.8	75.1			7.25
	Carbamazepine	79.8	77.7	72.5			6.92
	Clothianidin	88.0	91.2	82.2			10.3
	Dinotefuran	99.3	101	94.2			6.65
	Diuron	80.8	70.8	67.3			5.09
	Endothall	93.1	88.9	86.1			3.27
	Fenuron	89.9	81.1	75.0			7.77
	Fluridone	83.6	72.9	79.3			8.35

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Glufosinate	101	81.2	89.8		
	Glyphosate	94.6	90.5	86.7		
	Hydrocodone	90.4	89.1	84.3		
	Ibuprofen	62.8	61.2	63.7		
	Imazapyr	83.4	93.1	87.1		
	Imidacloprid	83.2	92.4	86.8		
	Linuron	76.9	63.5	65.4		
	Mandestrobin	86.3	84.3	78.2		
	MCPP	89.4	98.7	81.3		
	Naproxen	65.3	64.5	53.2		
	Primidone	83.6	84.0	77.1		
	Pyraclostrobin	81.7	80.6	73.4		
	Silvex	72.0	83.8	71.0		
	Sucralose	117	115	117		
	Thiamethoxam	84.8	81.7	80.0		
	Tolfenpyrad	51.2	55.9	53.3		
	Triclopyr	86.2	100	90.6		
SM 2320 B-2011	Total Alkalinity	98.8				1.30
SM 2540 C-2015	TDS	94.8				1.70
	TDS	97.6				7.44
SM 2540 D-2015	TSS	109				
	TSS	101				
SM 4500-F- C-2011	Fluoride	102	102	101		0.467
SM 5310 B-2011	Organic Carbon	94.8	94.5	94.9		0.227
	Organic Carbon	94.4	93.7	95.6		1.86

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2447260, 2447261, 2447262, 2447266
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2447260, 2447261, 2447262, 2447266
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2447518, 2447519
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2447518, 2447519
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2447260, 2447261, 2447262, 2447266
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2447260, 2447261, 2447262, 2447266
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2447263, 2447264, 2447265, 2447267
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2447263, 2447264, 2447265, 2447267
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2447263, 2447264, 2447265, 2447267
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2447263, 2447264, 2447265, 2447267
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2447277
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2447260, 2447261, 2447262, 2447266
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2447518, 2447519
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2447260, 2447261, 2447262, 2447266
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2447260, 2447261, 2447262, 2447266
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2447260, 2447261, 2447262, 2447266
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2447263, 2447264, 2447265, 2447267

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	10/26/2023			10/26/2023 15:40	Chandler E Cox	2447260
	10/26/2023			10/26/2023 15:41	Chandler E Cox	2447261
	10/26/2023			10/26/2023 15:44	Chandler E Cox	2447262
	10/26/2023			10/26/2023 16:13	Chandler E Cox	2447266
EPA 180.1 Rev. 2.0	10/26/2023			10/26/2023 14:21	Khloe J Berg	2447260
	10/26/2023			10/26/2023 14:22	Khloe J Berg	2447261
	10/26/2023			10/26/2023 14:24	Khloe J Berg	2447262
	10/26/2023			10/26/2023 14:26	Khloe J Berg	2447266
EPA 200.7 Rev. 4.4	10/26/2023	10/30/2023 13:55	George D Taylor	11/01/2023 16:51	Chase Roberts	2447518
	10/26/2023	10/30/2023 13:55	George D Taylor	11/01/2023 16:57	Chase Roberts	2447519
EPA 200.8 Rev. 5.4	10/26/2023	10/30/2023 13:55	George D Taylor	10/31/2023 18:31	Conrad Hartmann	2447518
	10/26/2023	10/30/2023 13:55	George D Taylor	10/31/2023 18:40	Conrad Hartmann	2447519
EPA 300.0 Rev. 2.1	10/26/2023			11/07/2023 06:22	James L Waggeberby	2447260
	10/26/2023			11/07/2023 06:37	James L Waggeberby	2447261
	10/26/2023			11/07/2023 06:52	James L Waggeberby	2447262
	10/26/2023			11/07/2023 07:07	James L Waggeberby	2447266
EPA 350.1 Rev. 2.0	10/26/2023			10/30/2023 13:11	Ping Hua	2447263
	10/26/2023			10/30/2023 13:23	Ping Hua	2447264
	10/26/2023			10/30/2023 13:25	Ping Hua	2447265
	10/26/2023			10/30/2023 13:26	Ping Hua	2447267
EPA 351.2 Rev. 2.0	10/26/2023	10/27/2023 09:39	Samantha L Bates	10/30/2023 11:14	Samantha L Bates	2447264
	10/26/2023	10/27/2023 09:39	Samantha L Bates	10/30/2023 11:16	Samantha L Bates	2447265
	10/26/2023	10/27/2023 09:39	Samantha L Bates	10/30/2023 11:18	Samantha L Bates	2447267
	10/26/2023	10/30/2023 13:30	Simonne.V. Calhoun	11/02/2023 16:33	Ping Hua	2447263
EPA 353.2 Rev. 2.0	10/26/2023			11/09/2023 13:15	Fadila Guebre	2447263
	10/26/2023			11/09/2023 13:17	Fadila Guebre	2447264
	10/26/2023			11/09/2023 13:18	Fadila Guebre	2447265
	10/26/2023			11/09/2023 13:19	Fadila Guebre	2447267
EPA 365.1 Rev. 2.0	10/26/2023	10/27/2023 12:52	Adam P Silver	10/30/2023 11:26	Chandler E Cox	2447263
	10/26/2023	10/27/2023 12:52	Adam P Silver	10/30/2023 11:29	Chandler E Cox	2447264
	10/26/2023	10/27/2023 12:52	Adam P Silver	10/30/2023 11:30	Chandler E Cox	2447265
	10/26/2023	10/27/2023 12:52	Adam P Silver	10/30/2023 11:31	Chandler E Cox	2447267
EPA 8321B	10/26/2023	10/27/2023 14:00	Hana Lee	10/27/2023 18:43	Tae K Lee	2447277
	10/26/2023	10/27/2023 14:00	Hana Lee	10/30/2023 13:00	Tae K Lee	2447277
	10/26/2023	10/31/2023 09:00	Hoor Shaik	10/31/2023 19:35	Juyoung Kim	2447277
SM 2320 B-2011	10/26/2023			10/30/2023 21:02	Adam P Silver	2447260
	10/26/2023			10/30/2023 21:13	Adam P Silver	2447261
	10/26/2023			10/30/2023 21:26	Adam P Silver	2447262
	10/26/2023			10/30/2023 21:39	Adam P Silver	2447266
SM 2340 B-2011	10/26/2023			11/01/2023 16:51	Chase Roberts	2447518

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2340 B-2011	10/26/2023			11/01/2023 16:57	Chase Roberts	2447519
SM 2540 C-2015	10/26/2023			10/31/2023 14:50	Yijie Li	2447260, 2447261, 2447262, 2447266
SM 2540 D-2015	10/26/2023			10/31/2023 14:50	Yijie Li	2447260, 2447261, 2447262, 2447266
SM 4500-F- C-2011	10/26/2023			10/30/2023 21:02	Adam P Silver	2447260
	10/26/2023			10/30/2023 21:13	Adam P Silver	2447261
	10/26/2023			10/30/2023 21:26	Adam P Silver	2447262
	10/26/2023			10/30/2023 21:39	Adam P Silver	2447266
SM 5310 B-2011	10/26/2023			10/31/2023 21:34	Elise M. Gillis	2447263
	10/26/2023			10/31/2023 21:48	Elise M. Gillis	2447264
	10/26/2023			11/01/2023 15:13	Elise M. Gillis	2447265
	10/26/2023			11/01/2023 15:27	Elise M. Gillis	2447267