

Chemical Analysis Report

SO-DIST-2023-01-25-01

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

Event Description: **2023 SMP: Glades Slough**
Request ID: **RQ-2023-01-23-17**
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
Attn: William Mullen

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

Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 14-FEB-2023 10:01



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: Gopher Gully At US27

Collection Date/Time: 01/24/2023 10:00

Field ID: G4SD0216

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2383024	DEP SOP: NU-094-1	Color (true)	640		PCU	P424983	
	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P424989	
	EPA 300.0 Rev. 2.1	Chloride	47		mg Cl/L	P425654	
		Sulfate	3.9		mg SO4/L	P425658	
	SM 2320 B-2011	Total Alkalinity	22		mg CaCO3/L	P425395	
	SM 2540 C-2015	TDS	238		mg/L	P425427	
	SM 2540 D-2015	TSS	6	I	mg/L	P425333	
	SM 4500-F- C-2011	Fluoride	0.14		mg F/L	P425399	RPD
2383027	EPA 350.1 Rev. 2.0	Ammonia-N	0.19		mg N/L	P425531	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.6		mg N/L	P425065	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P425257	
	EPA 365.1 Rev. 2.0	Total-P	1.4		mg P/L	P425170	
	SM 5310 B-2011	Organic Carbon	60		mg C/L	P425163	

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: Gator Slough At US27

Collection Date/Time: 01/24/2023 10:15

Field ID: G4SD0214

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2383025	DEP SOP: NU-094-1	Color (true)	430		PCU	P424983	
	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P424989	
	EPA 300.0 Rev. 2.1	Chloride	8.0		mg Cl/L	P425654	
		Sulfate	1.7		mg SO4/L	P425658	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P425396	
	SM 2540 C-2015	TDS	102		mg/L	P425427	
	SM 2540 D-2015	TSS	2	I	mg/L	P425333	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P425400	MS
2383028	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P425531	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P425065	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P425257	
	EPA 365.1 Rev. 2.0	Total-P	0.36		mg P/L	P425170	
	SM 5310 B-2011	Organic Carbon	36		mg C/L	P425163	

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@ Farabee Road

Collection Date/Time: 01/24/2023 11:00

Field ID: G4SD0111

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2383066	EPA 200.7 Rev. 4.4	Calcium	13.4		mg/L	P425131	
		Chromium	1.6	I	ug/L	P425131	
		Iron	1.87E+03		ug/L	P425131	
		Magnesium	5.89		mg/L	P425131	
		Potassium	2.1		mg/L	P425131	
		Sodium	21.1		mg/L	P425131	
		Strontium	146		ug/L	P425131	
		Tin	3.0	U	ug/L	P425131	
		Titanium	1.3	I	ug/L	P425131	
		Vanadium	2.0	U	ug/L	P425131	
		Zinc	5.0	U	ug/L	P425131	
	EPA 200.8 Rev. 5.4	Aluminum	273		ug/L	P425131	
		Antimony	0.053	I	ug/L	P425131	
		Arsenic	1.40		ug/L	P425131	
		Barium	20.2		ug/L	P425131	
		Beryllium	0.063		ug/L	P425131	
		Boron	27.2		ug/L	P425131	
		Cadmium	0.020	U	ug/L	P425131	
		Cobalt	0.770		ug/L	P425131	
		Copper	0.45	I	ug/L	P425131	
		Lead	0.31	I	ug/L	P425131	
		Manganese	42.0		ug/L	P425131	
		Molybdenum	0.15	U	ug/L	P425131	
		Nickel	0.81	I	ug/L	P425131	
		Selenium	0.20	U	ug/L	P425131	
		Silver	0.010	U	ug/L	P425131	
		Thallium	0.10	U	ug/L	P425131	
	SM 2340 B-2011	Hardness	57.6		mg/L	P425131	

Ref. Method and Comment:

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

Sample Location: JohnHenrySlough AtCR7321

Collection Date/Time: 01/24/2023 11:20

Field ID: G4SD0215

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2383030	DEP SOP: NU-094-1	Color (true)	110		PCU	P424985	
	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P424989	
	EPA 300.0 Rev. 2.1	Chloride	280		mg Cl/L	P425654	
		Sulfate	110		mg SO4/L	P425658	
	SM 2320 B-2011	Total Alkalinity	24		mg CaCO3/L	P425396	
	SM 2540 C-2015	TDS	706		mg/L	P425427	
	SM 2540 D-2015	TSS	2	U	mg/L	P425333	
	SM 4500-F- C-2011	Fluoride	0.11		mg F/L	P425400	MS
2383031	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P425608	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P425065	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.070		mg N/L	P425258	
	EPA 365.1 Rev. 2.0	Total-P	0.063		mg P/L	P425179	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P425163	
2383065	EPA 8321B	Acesulfame K	0.10	U	ug/L	P424964	
		2,4-D	0.0020	U	ug/L	P425006	MS, RPD
		AMPA	0.10	U	ug/L	P424964	
		2,4,5-T	0.0040	U	ug/L	P425006	
		Acetaminophen	0.034		ug/L	P425006	
		Endothall	0.25	U	ug/L	P424964	
		Acetamiprid	0.0020	U	ug/L	P425006	
		Glufosinate	0.10	U	ug/L	P424964	
		Glyphosate	4.8		ug/L	P424964	
		Afidopyropen	0.0020	U	ug/L	P425006	
		Sucralose	0.010	U	ug/L	P424964	
		Bentazon	8.0E-04	U	ug/L	P425006	
		Benzovindiflupyr	0.0020	U	ug/L	P425006	
		Carbamazepine	8.0E-04	U	ug/L	P425006	
		Clothianidin	0.0020	U	ug/L	P425006	
		Dinotefuran	0.0020	U	ug/L	P425006	
		Diuron	0.0020	U	ug/L	P425006	
		Fenuron	0.032	U	ug/L	P425006	
		Fluridone	8.0E-04	U	ug/L	P425006	
		Imazapyr	0.0048	I	ug/L	P425006	
		Hydrocodone	0.0020	U	ug/L	P425006	
		Ibuprofen	0.080	U	ug/L	P425006	
		Imidacloprid	0.0052	I	ug/L	P425006	
		Linuron	0.0040	U	ug/L	P425006	
		Mandestrobin	0.0020	U	ug/L	P425006	
		MCP	0.0020	U	ug/L	P425006	
		Naproxen	0.0080	U	ug/L	P425006	
		Primidone	0.0040	U	ug/L	P425006	
		Pyraclostrobin	0.0020	U	ug/L	P425006	
		Silvex	0.0040	U	ug/L	P425006	
		Thiamethoxam	0.0020	U	ug/L	P425006	

Field ID: G4SD0215

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2383065	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P425006	
		Triclopyr	0.0040	U	ug/L	P425006	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for glyphosate could not be assessed due to a high concentration of parameter in the spiked sample.

Sample Location: BootheelCreekEastBranch

Collection Date/Time: 01/24/2023 11:50

Field ID: G4SD0105

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2383026	DEP SOP: NU-094-1	Color (true)	420		PCU	P424983	
	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P424989	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P425654	
		Sulfate	0.98		mg SO4/L	P425658	
	SM 2320 B-2011	Total Alkalinity	4.7		mg CaCO3/L	P425396	
	SM 2540 C-2015	TDS	142		mg/L	P425427	
	SM 2540 D-2015	TSS	2	U	mg/L	P425333	
	SM 4500-F- C-2011	Fluoride	0.082	I	mg F/L	P425400	MS
2383029	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P425531	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P425065	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P425257	
	EPA 365.1 Rev. 2.0	Total-P	0.29		mg P/L	P425170	
	SM 5310 B-2011	Organic Carbon	38		mg C/L	P425163	

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P424983

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P424985

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P424989

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P425131

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P425131

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	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
Thallium	0.10	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425654

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425658

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425531

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425608

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425065

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425257

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425258

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425170

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425179

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P424964

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: P425006

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: P425395

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

Reference Method: SM 2320 B-2011

Batch ID: P425396

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P425427

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P425333

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P425399

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P425400

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P425163

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: P424983

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: P424985

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P424989

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P425131

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Chromium	102		P	85 - 115
Iron	106		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	105		P	85 - 115
Sodium	100		P	85 - 115
Strontium	101		P	85 - 115
Tin	103		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	101		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P425131

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	96.1		P	85 - 115
Arsenic	99.5		P	85 - 115
Barium	99.8		P	85 - 115
Beryllium	97.2		P	85 - 115
Boron	103		P	85 - 115
Cadmium	97.9		P	85 - 115
Cobalt	97.9		P	85 - 115
Copper	98.0		P	85 - 115
Lead	95.1		P	85 - 115
Manganese	97.4		P	85 - 115
Molybdenum	94.3		P	85 - 115
Nickel	98.7		P	85 - 115
Selenium	96.0		P	85 - 115
Silver	97.6		P	85 - 115
Thallium	96.7		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425654

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425658

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425608

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425257

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	105		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425258

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425170

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425179

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P424964

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	84.6		P	40 - 150
AMPA	105		P	40 - 150
Endothall	111		P	40 - 150
Glufosinate	106		P	40 - 150
Glyphosate	104		P	40 - 150
Sucralose	89.6		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P425006

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	81.1		P	40 - 150
2,4,5-T	64.1		P	40 - 150
Acetaminophen	100		P	30 - 150
Acetamiprid	86.5		P	40 - 150
Afidopyropen	64.9		P	30 - 150
Bentazon	79.9		P	30 - 150
Benzovindiflupyr	82.4		P	40 - 150
Carbamazepine	85.7		P	40 - 150
Clothianidin	83.8		P	40 - 150
Dinotefuran	111		P	40 - 150
Diuron	70.9		P	40 - 150
Fenuron	89.5		P	40 - 150
Fluridone	67.5		P	40 - 150
Hydrocodone	97.6		P	40 - 150
Ibuprofen	81.7		P	40 - 150
Imazapyr	94.2		P	40 - 150
Imidacloprid	82.3		P	40 - 150
Linuron	74.2		P	40 - 150
Mandestrobin	95.0		P	40 - 150
MCPP	107		P	40 - 150
Naproxen	75.8		P	40 - 150
Primidone	93.8		P	40 - 150
Pyraclostrobin	75.6		P	40 - 150
Silvex	62.6		P	40 - 150
Thiamethoxam	77.6		P	40 - 150
Tolfenpyrad	34.7		P	30 - 150
Triclopyr	72.7		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P425395

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.0		P	94 - 106

Reference Method: SM 2320 B-2011

Batch ID: P425396

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.3		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P425427

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

Reference Method: SM 2540 D-2015
Batch ID: P425333

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	101		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P425399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P425400

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	104		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P425163

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P425131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383195	Chromium	98.6	98.3	P/P	80 - 120
2383195	Iron	104	106	P/P	80 - 120
2383195	Magnesium	100		P	80 - 120
2383195	Potassium	99.4	102	P/P	80 - 120
2383195	Sodium	103		P	80 - 120
2383195	Strontium	98.7	100	P/P	80 - 120
2383195	Tin	100	99.8	P/P	80 - 120
2383195	Titanium	98.9	98.8	P/P	80 - 120
2383195	Vanadium	101	101	P/P	80 - 120
2383195	Zinc	103	103	P/P	80 - 120
2383379	Calcium	104		P	80 - 120
2383379	Chromium	99.6		P	80 - 120
2383379	Iron	103		P	80 - 120
2383379	Magnesium	104		P	80 - 120
2383379	Potassium	99.4		P	80 - 120
2383379	Sodium	103		P	80 - 120
2383379	Strontium	101		P	80 - 120
2383379	Tin	104		P	80 - 120
2383379	Titanium	97.5		P	80 - 120
2383379	Vanadium	102		P	80 - 120
2383379	Zinc	106		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P425131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383195	Aluminum	97.3	98.6	P/P	80 - 120
2383195	Antimony	103	103	P/P	80 - 120
2383195	Arsenic	106	106	P/P	80 - 120
2383195	Barium	105	106	P/P	80 - 120
2383195	Beryllium	103	102	P/P	80 - 120
2383195	Boron	97.7	100	P/P	80 - 120
2383195	Cadmium	103	105	P/P	80 - 120
2383195	Cobalt	103	104	P/P	80 - 120
2383195	Copper	99.4	101	P/P	80 - 120
2383195	Lead	98.4	99.3	P/P	80 - 120
2383195	Manganese	101	103	P/P	80 - 120
2383195	Molybdenum	103	105	P/P	80 - 120
2383195	Nickel	103	104	P/P	80 - 120
2383195	Selenium	104	104	P/P	80 - 120
2383195	Silver	96.9	98.2	P/P	80 - 120
2383195	Thallium	101	103	P/P	80 - 120
2383379	Aluminum	99.8		P	80 - 120
2383379	Antimony	101		P	80 - 120
2383379	Arsenic	103		P	80 - 120
2383379	Barium	102		P	80 - 120
2383379	Beryllium	99.0		P	80 - 120
2383379	Boron	106		P	80 - 120
2383379	Cadmium	103		P	80 - 120
2383379	Cobalt	101		P	80 - 120
2383379	Copper	99.9		P	80 - 120
2383379	Lead	98.1		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P425131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383379	Manganese	100		P	80 - 120
2383379	Molybdenum	98.8		P	80 - 120
2383379	Nickel	102		P	80 - 120
2383379	Selenium	99.2		P	80 - 120
2383379	Silver	99.9		P	80 - 120
2383379	Thallium	101		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425654

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382908	Chloride	97.1		P	90 - 110
2383026	Chloride	90.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425658

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382908	Sulfate	94.3		P	90 - 110
2383026	Sulfate	90.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382912	Ammonia-N	97.6	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382769	Ammonia-N	95.4	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382921	Kjeldahl Nitrogen	96.2	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382891	NO2NO3-N	103	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425258

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383031	NO2NO3-N	104	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425170

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382911	Total-P	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383191	Total-P	105	106	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P424964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383065	Acesulfame K	80.9	80.5	P/P	40 - 150
2383065	AMPA	58.4	57.5	P/P	40 - 150
2383065	Endothall	134	131	P/P	40 - 150
2383065	Glufosinate	78.7	74.1	P/P	40 - 150
2383065	Sucralose	79.6	79.8	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P425006

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382996	2,4-D	105	151	P/F	40 - 150
2382996	2,4,5-T	90.7	88.9	P/P	40 - 150
2382996	Acetaminophen	83.6	84.6	P/P	30 - 150
2382996	Acetamiprid	102	99.1	P/P	40 - 150
2382996	Afidopyropen	81.4	74.9	P/P	30 - 150
2382996	Bentazon	60.9	69.8	P/P	30 - 150
2382996	Benzovindiflupyr	79.6	90.3	P/P	40 - 150
2382996	Carbamazepine	72.8	53.7	P/P	40 - 150
2382996	Clothianidin	93.4	96.3	P/P	40 - 150
2382996	Dinotefuran	62.3	66.5	P/P	40 - 150
2382996	Diuron	64.3	70.8	P/P	40 - 150
2382996	Fenuron	80.5	75.7	P/P	40 - 150
2382996	Fluridone	63.6	76.3	P/P	40 - 150
2382996	Hydrocodone	81.2	87.5	P/P	40 - 150
2382996	Ibuprofen	105	105	P/P	40 - 150
2382996	Imazapyr	95.4	108	P/P	40 - 150
2382996	Imidacloprid	108	111	P/P	40 - 150
2382996	Linuron	73.8	76.1	P/P	40 - 150
2382996	Mandestrobin	89.4	89.2	P/P	40 - 150
2382996	MCPP	112	119	P/P	40 - 150
2382996	Naproxen	116	102	P/P	40 - 150
2382996	Primidone	88.7	99.8	P/P	40 - 150
2382996	Pyraclostrobin	73.7	81.7	P/P	40 - 150
2382996	Silvex	86.9	80.9	P/P	40 - 150
2382996	Thiamethoxam	86.5	94.0	P/P	40 - 150
2382996	Tolfenpyrad	47.8	53.2	P/P	30 - 150
2382996	Triclopyr	80.7	83.2	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P425399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382909	Fluoride	103	100	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P425400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383190	Fluoride	104	102	F/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P425163

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383373	Organic Carbon	104		P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P424983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382839	Color (true)	1.06	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P424985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382908	Color (true)	0.628	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P424989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382920	Turbidity	5.61	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P425131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383195	Calcium	0.0133	Spike	P	0 - 20
2383195	Chromium	0.299	Spike	P	0 - 20
2383195	Iron	1.18	Spike	P	0 - 20
2383195	Magnesium	1.01	Spike	P	0 - 20
2383195	Potassium	1.96	Spike	P	0 - 20
2383195	Sodium	0.257	Spike	P	0 - 20
2383195	Strontium	1.26	Spike	P	0 - 20
2383195	Tin	0.554	Spike	P	0 - 20
2383195	Titanium	0.134	Spike	P	0 - 20
2383195	Vanadium	0.455	Spike	P	0 - 20
2383195	Zinc	0.131	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P425131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383195	Aluminum	1.32	Spike	P	0 - 20
2383195	Antimony	0.127	Spike	P	0 - 20
2383195	Arsenic	0.303	Spike	P	0 - 20
2383195	Barium	0.626	Spike	P	0 - 20
2383195	Beryllium	0.707	Spike	P	0 - 20
2383195	Boron	1.87	Spike	P	0 - 20
2383195	Cadmium	1.57	Spike	P	0 - 20
2383195	Cobalt	1.57	Spike	P	0 - 20
2383195	Copper	1.71	Spike	P	0 - 20
2383195	Lead	0.918	Spike	P	0 - 20
2383195	Manganese	1.08	Spike	P	0 - 20
2383195	Molybdenum	1.09	Spike	P	0 - 20
2383195	Nickel	1.53	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P425131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383195	Selenium	0.0987	Spike	P	0 - 20
2383195	Silver	1.33	Spike	P	0 - 20
2383195	Thallium	2.02	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382908	Chloride	0.313	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425658

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382908	Sulfate	0.230	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382912	Ammonia-N	3.82	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382769	Ammonia-N	1.13	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382921	Kjeldahl Nitrogen	0.999	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382891	NO2NO3-N	1.31	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425258

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: P425258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383031	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382911	Total-P	1.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383191	Total-P	1.66	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P424964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383065	Acesulfame K	0.521	Spike	P	0 - 30
2383065	AMPA	1.43	Spike	P	0 - 30
2383065	Endothall	1.95	Spike	P	0 - 30
2383065	Glufosinate	6.05	Spike	P	0 - 30
2383065	Glyphosate	19.9	Spike	P	0 - 30
2383065	Sucralose	0.343	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P425006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382996	2,4-D	35.6	Spike	F	0 - 30
2382996	2,4,5-T	2.05	Spike	P	0 - 30
2382996	Acetaminophen	1.28	Spike	P	0 - 30
2382996	Acetamiprid	3.12	Spike	P	0 - 30
2382996	Afidopyropen	8.31	Spike	P	0 - 30
2382996	Bentazon	13.5	Spike	P	0 - 30
2382996	Benzovindiflupyr	12.7	Spike	P	0 - 30
2382996	Carbamazepine	28.0	Spike	P	0 - 30
2382996	Clothianidin	3.03	Spike	P	0 - 30
2382996	Dinotefuran	4.89	Spike	P	0 - 30
2382996	Diuron	9.64	Spike	P	0 - 30
2382996	Fenuron	6.15	Spike	P	0 - 30
2382996	Fluridone	18.1	Spike	P	0 - 30
2382996	Hydrocodone	7.46	Spike	P	0 - 30
2382996	Ibuprofen	0.329	Spike	P	0 - 30
2382996	Imazapyr	12.4	Spike	P	0 - 30
2382996	Imidacloprid	2.72	Spike	P	0 - 30
2382996	Linuron	3.09	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P425006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382996	Mandestrobin	0.275	Spike	P	0 - 30
2382996	MCCP	6.24	Spike	P	0 - 30
2382996	Naproxen	12.1	Spike	P	0 - 30
2382996	Primidone	11.7	Spike	P	0 - 30
2382996	Pyraclostrobin	10.3	Spike	P	0 - 30
2382996	Silvex	7.13	Spike	P	0 - 30
2382996	Thiamethoxam	8.28	Spike	P	0 - 30
2382996	Tolfenpyrad	10.6	Spike	P	0 - 30
2382996	Triclopyr	3.05	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P425395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382909	Total Alkalinity	0.110	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P425396

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383190	Total Alkalinity	0.142	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P425427

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382577	TDS	5.08	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P425399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382909	Fluoride	1.95	Spike	F	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P425400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383190	Fluoride	1.47	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P425163

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383373	Organic Carbon	1.25	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2383065
Field Sample ID: G4SD0215

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	83.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	92.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	57.2	P	30 - 160
EPA 8321B	Diuron-d6	48.6	P	30 - 160
EPA 8321B	Endothall-d6	126	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	105	P	30 - 160
EPA 8321B	Ibuprofen-d3	89.5	P	30 - 160
EPA 8321B	Primidone-d5	78.7	P	30 - 160
EPA 8321B	Sucralose-d6	84.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A117080
Included Lab Sample IDs: 2383065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	83.0	79.4	P/P	60 - 160
Sucralose	87.9	85.2	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A117084
Included Lab Sample IDs: 2383065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	98.7	P/P	60 - 160
Endothall	115	105	P/P	60 - 160
Glufosinate	112	98.2	P/P	60 - 160
Glyphosate	103	111	P/P	60 - 160

Reference Method: DEP SOP: NU-094-1
Run ID: A117094
Included Lab Sample IDs: 2383024, 2383025, 2383026, 2383030

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A117097
Included Lab Sample IDs: 2383024, 2383025, 2383026, 2383030

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

Reference Method: EPA 8321B
Run ID: A117160
Included Lab Sample IDs: 2383065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.9	111	P/P	50 - 150
2,4,5-T	106	112	P/P	50 - 150
Acetaminophen	122	125	P/P	60 - 160
Acetamiprid	114	113	P/P	50 - 150
Afidopyropen	84.4	98.4	P/P	50 - 150
Bentazon	99.6	107	P/P	50 - 160
Benzovindiflupyr	104	121	P/P	50 - 150
Carbamazepine	120	114	P/P	60 - 150
Clothianidin	99.3	97.1	P/P	60 - 150
Dinotefuran	138	143	P/P	50 - 150
Diuron	121	129	P/P	60 - 160
Fenuron	98.1	97.3	P/P	60 - 150
Fluridone	97.0	112	P/P	60 - 160
Hydrocodone	128	131	P/P	60 - 150
Ibuprofen	78.8	73.3	P/P	50 - 160
Imazapyr	121	119	P/P	50 - 150
Imidacloprid	91.2	92.6	P/P	60 - 150
Linuron	100	98.9	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A117160
Included Lab Sample IDs: 2383065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mandestrobin	113	121	P/P	50 - 150
MCPD	88.5	107	P/P	50 - 150
Naproxen	142	92.1	P/P	50 - 160
Primidone	114	122	P/P	60 - 150
Pyraclostrobin	112	121	P/P	60 - 150
Silvex	96.1	119	P/P	50 - 150
Thiamethoxam	92.6	90.1	P/P	50 - 150
Tolfenpyrad	108	109	P/P	60 - 150
Triclopyr	95.1	107	P/P	50 - 150

Reference Method: SM 5310 B-2011
Run ID: A117165
Included Lab Sample IDs: 2383027, 2383028, 2383029, 2383031

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.8	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A117175
Included Lab Sample IDs: 2383027, 2383028, 2383029, 2383031

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.4	97.4	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A117195
Included Lab Sample IDs: 2383066

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	102	P/P	90 - 110
Chromium	102	102	P/P	90 - 110
Iron	101	103	P/P	90 - 110
Magnesium	101	103	P/P	90 - 110
Potassium	101	103	P/P	90 - 110
Sodium	101	103	P/P	90 - 110
Strontium	102	103	P/P	90 - 110
Tin	103	103	P/P	90 - 110
Titanium	98.8	99.1	P/P	90 - 110
Vanadium	99.6	99.8	P/P	90 - 110
Zinc	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A117200
Included Lab Sample IDs: 2383028, 2383029, 2383031

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117201

Included Lab Sample IDs: 2383027

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117205

Included Lab Sample IDs: 2383027, 2383028, 2383029, 2383031

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	105	106	P/P	90 - 110
NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117214

Included Lab Sample IDs: 2383066

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	101	P/P	90 - 110
Antimony	98.1	99.0	P/P	90 - 110
Arsenic	101	100	P/P	90 - 110
Barium	99.2	100	P/P	90 - 110
Beryllium	102	103	P/P	90 - 110
Boron	100	102	P/P	90 - 110
Cadmium	99.7	101	P/P	90 - 110
Cobalt	98.2	99.1	P/P	90 - 110
Copper	99.0	99.7	P/P	90 - 110
Lead	99.5	99.1	P/P	90 - 110
Manganese	99.2	102	P/P	90 - 110
Molybdenum	94.7	96.4	P/P	90 - 110
Nickel	98.7	99.4	P/P	90 - 110
Selenium	98.3	99.8	P/P	90 - 110
Silver	98.5	99.9	P/P	90 - 110
Thallium	100	99.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A117270

Included Lab Sample IDs: 2383024, 2383025, 2383026, 2383030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.5	96.0	P/P	90 - 110
Total Alkalinity	96.8	95.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A117270

Included Lab Sample IDs: 2383024, 2383025, 2383026, 2383030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	105	P/P	90 - 110
Fluoride	105	106	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A117317

Included Lab Sample IDs: 2383024, 2383025, 2383026, 2383030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	93.3	98.1	P/P	90 - 110
Chloride	98.1	98.1	P/P	90 - 110
Sulfate	93.0	96.9	P/P	90 - 110
Sulfate	96.9	97.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117326

Included Lab Sample IDs: 2383027, 2383028, 2383029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	96.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117354

Included Lab Sample IDs: 2383031

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	97.9	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				1.06	
	Color (true)	100				0.628	
EPA 180.1 Rev. 2.0	Turbidity	101				5.61	
EPA 200.7 Rev. 4.4	Calcium	102	104				0.0133
	Chromium	102	98.6	98.3	99.6		0.299
	Iron	106	104	106	103		1.18
	Magnesium	104	100	104			1.01
	Potassium	105	99.4	102	99.4		1.96
	Sodium	100	103	103			0.257
	Strontium	101	98.7	100	101		1.26
	Tin	103	104	100	99.8		0.554
	Titanium	101	98.9	98.8	97.5		0.134
	Vanadium	101	101	101	102		0.455
	Zinc	106	103	103	106		0.131
EPA 200.8 Rev. 5.4	Aluminum	101	97.3	98.6	99.8		1.32
	Antimony	96.1	103	103	101		0.127
	Arsenic	99.5	106	106	103		0.303
	Barium	99.8	105	106	102		0.626
	Beryllium	97.2	103	102	99.0		0.707
	Boron	103	97.7	100	106		1.87
	Cadmium	97.9	103	105	103		1.57
	Cobalt	97.9	103	104	101		1.57
	Copper	98.0	99.4	101	99.9		1.71
	Lead	95.1	98.4	99.3	98.1		0.918
	Manganese	97.4	101	103	100		1.08
	Molybdenum	94.3	103	105	98.8		1.09
	Nickel	98.7	103	104	102		1.53
	Selenium	96.0	104	104	99.2		0.0987
	Silver	97.6	96.9	98.2	99.9		1.33
	Thallium	96.7	101	103	101		2.02
EPA 300.0 Rev. 2.1	Chloride	98.2	97.1	90.3		0.313	
	Sulfate	96.6	94.3	90.2		0.230	
EPA 350.1 Rev. 2.0	Ammonia-N	95.2	97.6	101			3.82
	Ammonia-N	95.6	95.4	96.8			1.13
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.2	96.2	97.5			0.999
EPA 353.2 Rev. 2.0	NO2NO3-N	105	103	105			1.31
	NO2NO3-N	106	104	104			0.0
EPA 365.1 Rev. 2.0	Total-P	103	105	106			1.37
	Total-P	105	105	106			1.66
EPA 8321B	2,4-D	81.1	105	151			35.6
	2,4,5-T	64.1	90.7	88.9			2.05
	Acesulfame K	84.6	80.9	80.5			0.521
	Acetaminophen	100	83.6	84.6			1.28
	Acetamiprid	86.5	102	99.1			3.12
	Afidopyropen	64.9	81.4	74.9			8.31
	AMPA	105	58.4	57.5			1.43
	Bentazon	79.9	60.9	69.8			13.5
	Benzovindiflupyr	82.4	79.6	90.3			12.7
	Carbamazepine	85.7	72.8	53.7			28.0
	Clothianidin	83.8	93.4	96.3			3.03
	Dinotefuran	111	62.3	66.5			4.89
	Diuron	70.9	64.3	70.8			9.64
	Endothall	111	134	131			1.95
	Fenuron	89.5	80.5	75.7			6.15

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Fluridone	67.5	63.6	76.3		18.1
	Glufosinate	106	78.7	74.1		6.05
	Glyphosate	104				19.9
	Hydrocodone	97.6	81.2	87.5		7.46
	Ibuprofen	81.7	105	105		0.329
	Imazapyr	94.2	95.4	108		12.4
	Imidacloprid	82.3	108	111		2.72
	Linuron	74.2	73.8	76.1		3.09
	Mandestrobin	95.0	89.4	89.2		0.275
	MCPP	107	112	119		6.24
	Naproxen	75.8	116	102		12.1
	Primidone	93.8	88.7	99.8		11.7
	Pyraclostrobin	75.6	73.7	81.7		10.3
	Silvex	62.6	86.9	80.9		7.13
	Sucralose	89.6	79.6	79.8		0.343
	Thiamethoxam	77.6	86.5	94.0		8.28
	Tolfenpyrad	34.7	47.8	53.2		10.6
	Triclopyr	72.7	80.7	83.2		3.05
SM 2320 B-2011	Total Alkalinity	97.0				0.110
	Total Alkalinity	97.3				0.142
SM 2540 C-2015	TDS	97.4				5.08
SM 2540 D-2015	TSS	101				
SM 4500-F- C-2011	Fluoride	101	103	100		1.95
	Fluoride	104	104	102		1.47
SM 5310 B-2011	Organic Carbon	99.8	104			1.25

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2383024, 2383025, 2383026, 2383030
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2383024, 2383025, 2383026, 2383030
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2383066
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2383066
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2383024, 2383025, 2383026, 2383030
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2383024, 2383025, 2383026, 2383030
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2383027, 2383028, 2383029, 2383031
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2383027, 2383028, 2383029, 2383031
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2383027, 2383028, 2383029, 2383031
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2383027, 2383028, 2383029, 2383031
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2383065
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2383024, 2383025, 2383026, 2383030
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2383066
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2383024, 2383025, 2383026, 2383030
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2383024, 2383025, 2383026, 2383030
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2383024, 2383025, 2383026, 2383030
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2383027, 2383028, 2383029, 2383031

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	01/25/2023			01/25/2023 14:54	Anna M. Plaviak	2383030
	01/25/2023			01/25/2023 14:55	Anna M. Plaviak	2383024
	01/25/2023			01/25/2023 14:56	Anna M. Plaviak	2383025, 2383026
	01/25/2023			01/25/2023 14:07	Khloe J Berg	2383024
EPA 180.1 Rev. 2.0	01/25/2023			01/25/2023 14:08	Khloe J Berg	2383025
	01/25/2023			01/25/2023 14:09	Khloe J Berg	2383026
	01/25/2023			01/25/2023 14:10	Khloe J Berg	2383030
	01/25/2023	01/30/2023 11:10	Vijayalakshmi Reddy	01/31/2023 15:02	McKinley C Carter	2383066
EPA 200.7 Rev. 4.4	01/25/2023	01/30/2023 11:10	Vijayalakshmi Reddy	02/02/2023 02:25	Emily M Philpot	2383066
EPA 300.0 Rev. 2.1	01/25/2023			02/08/2023 12:40	Anna M. Plaviak	2383026
	01/25/2023			02/08/2023 14:56	Anna M. Plaviak	2383024
	01/25/2023			02/08/2023 15:41	Anna M. Plaviak	2383025
	01/25/2023			02/08/2023 15:56	Anna M. Plaviak	2383030
EPA 350.1 Rev. 2.0	01/25/2023			02/08/2023 11:27	Ping Hua	2383027
	01/25/2023			02/08/2023 11:28	Ping Hua	2383028
	01/25/2023			02/08/2023 11:30	Ping Hua	2383029
	01/25/2023			02/09/2023 11:27	Ping Hua	2383031
EPA 351.2 Rev. 2.0	01/25/2023	01/27/2023 11:20	Simonne.V. Calhoun	01/31/2023 10:35	Samantha L Bates	2383027
	01/25/2023	01/27/2023 11:20	Simonne.V. Calhoun	01/31/2023 10:37	Samantha L Bates	2383028
	01/25/2023	01/27/2023 11:20	Simonne.V. Calhoun	01/31/2023 10:39	Samantha L Bates	2383029
	01/25/2023	01/27/2023 11:20	Simonne.V. Calhoun	01/31/2023 10:40	Samantha L Bates	2383031
EPA 353.2 Rev. 2.0	01/25/2023			02/01/2023 10:27	Beverly Y. Sanders	2383027
	01/25/2023			02/01/2023 10:28	Beverly Y. Sanders	2383028
	01/25/2023			02/01/2023 10:30	Beverly Y. Sanders	2383029
	01/25/2023			02/01/2023 10:37	Beverly Y. Sanders	2383031
EPA 365.1 Rev. 2.0	01/25/2023	01/31/2023 13:47	Adam P Silver	02/01/2023 09:07	James L Waggeberby	2383028
	01/25/2023	01/31/2023 13:47	Adam P Silver	02/01/2023 09:09	James L Waggeberby	2383029
	01/25/2023	01/31/2023 13:47	Adam P Silver	02/01/2023 09:35	James L Waggeberby	2383031
	01/25/2023	01/31/2023 13:47	Adam P Silver	02/01/2023 11:09	James L Waggeberby	2383027
EPA 8321B	01/25/2023	01/26/2023 12:40	Manjita Shrestha	01/26/2023 13:43	Manjita Shrestha	2383065
	01/25/2023	01/26/2023 12:40	Manjita Shrestha	01/26/2023 22:22	Manjita Shrestha	2383065
	01/25/2023	01/27/2023 09:30	June Rhew	01/28/2023 02:18	Juyoung Kim	2383065
SM 2320 B-2011	01/25/2023			02/03/2023 04:55	Dale L. Simmons	2383024
	01/25/2023			02/03/2023 06:40	Dale L. Simmons	2383025
	01/25/2023			02/03/2023 06:51	Dale L. Simmons	2383026
	01/25/2023			02/03/2023 08:19	Dale L. Simmons	2383030
SM 2340 B-2011	01/25/2023			01/31/2023 15:02	McKinley C Carter	2383066
SM 2540 C-2015	01/25/2023			01/27/2023 16:11	Yijie Li	2383024, 2383025, 2383026, 2383030
SM 2540 D-2015	01/25/2023			01/27/2023 16:11	Yijie Li	2383024, 2383025, 2383026, 2383030
SM 4500-F- C-2011	01/25/2023			02/03/2023 04:55	Dale L. Simmons	2383024

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500-F- C-2011	01/25/2023			02/03/2023 06:40	Dale L. Simmons	2383025
	01/25/2023			02/03/2023 06:51	Dale L. Simmons	2383026
	01/25/2023			02/03/2023 08:19	Dale L. Simmons	2383030
SM 5310 B-2011	01/25/2023			01/30/2023 22:16	Khloe J Berg	2383027
	01/25/2023			01/30/2023 22:30	Khloe J Berg	2383028
	01/25/2023			01/30/2023 22:44	Khloe J Berg	2383029
	01/25/2023			01/30/2023 22:59	Khloe J Berg	2383031