

Chemical Analysis Report

SO-DIST-2023-11-14-02

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

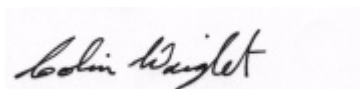
Event Description: **2023 SMP: Glades Sloughs**
Request ID: **RQ-2023-11-13-45**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
Attn: Nicole Reistad

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

Certified by: Colin Wright, Program Administrator

Date Certified: 30-NOV-2023 16:30

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

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: 11/13/2023 08:55

Field ID: G4SD0216

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451141	DEP SOP: NU-094-1	Color (true)	530		PCU	P437752	
	EPA 180.1 Rev. 2.0	Turbidity	9.4	A	NTU	P437756	
	EPA 300.0 Rev. 2.1	Chloride	64		mg Cl/L	P437999	
		Sulfate	2.2		mg SO4/L	P438003	
	SM 2320 B-2011	Total Alkalinity	56		mg CaCO3/L	P438013	
	SM 2540 C-2015	TDS	293		mg/L	P438247	
	SM 2540 D-2015	TSS	20		mg/L	P438201	
	SM 4500-F- C-2011	Fluoride	0.19		mg F/L	P438017	
2451144	EPA 350.1 Rev. 2.0	Ammonia-N	0.43		mg N/L	P438234	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.4		mg N/L	P437760	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P438100	
	EPA 365.1 Rev. 2.0	Total-P	0.89		mg P/L	P438046	
	SM 5310 B-2011	Organic Carbon	57		mg C/L	P437962	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: GATOR SLOUGH AT US27

Collection Date/Time: 11/13/2023 09:15

Field ID: G4SD0214

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451142	DEP SOP: NU-094-1	Color (true)	400		PCU	P437753	
	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P437756	
	EPA 300.0 Rev. 2.1	Chloride	6.9		mg Cl/L	P437999	
		Sulfate	1.3		mg SO4/L	P438003	
	SM 2320 B-2011	Total Alkalinity	5.0		mg CaCO3/L	P438013	
	SM 2540 C-2015	TDS	70		mg/L	P438247	
	SM 2540 D-2015	TSS	2	I	mg/L	P438201	
	SM 4500-F- C-2011	Fluoride	0.026	I	mg F/L	P438017	
2451145	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P438234	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P437760	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.017		mg N/L	P438100	
	EPA 365.1 Rev. 2.0	Total-P	0.29		mg P/L	P438046	
	SM 5310 B-2011	Organic Carbon	30		mg C/L	P437962	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: FENCELINE DRAIN AT BLUE HEAD RANCH

Collection Date/Time: 11/13/2023 10:20

Field ID: G4SD0193

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451161	EPA 200.7 Rev. 4.4	Calcium	13.1		mg/L	P437800	
		Iron	2.10E+03		ug/L	P437800	
		Magnesium	5.68		mg/L	P437800	
		Potassium	1.2		mg/L	P437800	
		Sodium	19.5		mg/L	P437800	
		Strontium	103		ug/L	P437800	
		Tin	3.0	U	ug/L	P437800	
		Titanium	4.2		ug/L	P437800	
		Vanadium	2.0	U	ug/L	P437800	
		Zinc	5.0	U	ug/L	P437800	
	EPA 200.8 Rev. 5.4	Aluminum	362		ug/L	P437800	
		Antimony	0.050	U	ug/L	P437800	
		Arsenic	1.31		ug/L	P437800	
		Barium	10.5		ug/L	P437800	
		Beryllium	0.019	I	ug/L	P437800	
		Boron	29.2		ug/L	P437800	
		Cadmium	0.020	U	ug/L	P437800	
		Chromium	0.92	I	ug/L	P437800	
		Cobalt	0.255		ug/L	P437800	
		Copper	0.67	I	ug/L	P437800	
		Lead	0.45		ug/L	P437800	
		Manganese	19.9		ug/L	P437800	
		Molybdenum	0.32	I	ug/L	P437800	
		Nickel	0.50	U	ug/L	P437800	
		Selenium	0.20	U	ug/L	P437800	
		Silver	0.010	U	ug/L	P437800	
		Thallium	0.10	U	ug/L	P437800	
	SM 2340 B-2011	Hardness	56.0		mg/L	P437800	

Sample Location: BOOTHEELCREEKEASTBRANCH

Collection Date/Time: 11/13/2023 11:40

Field ID: G4SD0105

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451143	DEP SOP: NU-094-1	Color (true)	340		PCU	P437753	
	EPA 180.1 Rev. 2.0	Turbidity	5.9		NTU	P437756	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P437999	
		Sulfate	0.96		mg SO4/L	P438003	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P438013	
	SM 2540 C-2015	TDS	124		mg/L	P438247	
	SM 2540 D-2015	TSS	5	I	mg/L	P438201	
	SM 4500-F- C-2011	Fluoride	0.16		mg F/L	P438017	
2451146	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P438241	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P437760	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P438100	
	EPA 365.1 Rev. 2.0	Total-P	0.62		mg P/L	P438046	
	SM 5310 B-2011	Organic Carbon	29		mg C/L	P437962	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: JOHNNENRYSLOUGH ATCR731

Collection Date/Time: 11/13/2023 12:05

Field ID: G4SD0215

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451147	DEP SOP: NU-094-1	Color (true)	170		PCU	P437753	
	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P437756	
	EPA 300.0 Rev. 2.1	Chloride	300		mg Cl/L	P437999	
		Sulfate	110		mg SO4/L	P438003	
	SM 2320 B-2011	Total Alkalinity	26		mg CaCO3/L	P438013	
	SM 2540 C-2015	TDS	672		mg/L	P438247	
	SM 2540 D-2015	TSS	2	I	mg/L	P438201	
2451148	SM 4500-F- C-2011	Fluoride	0.092	I	mg F/L	P438017	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P438241	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P437762	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.096		mg N/L	P438100	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P438046	
2451160	SM 5310 B-2011	Organic Carbon	28		mg C/L	P437962	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P437727	
		Acesulfame K	0.10	U	ug/L	P437618	
		2,4,5-T	0.0040	U	ug/L	P437727	
		AMPA	0.10	U	ug/L	P437618	
		Acetaminophen	0.0080	U	ug/L	P437727	
		Acetamiprid	0.0020	U	ug/L	P437727	
		Endothall	0.25	U	ug/L	P437618	
		Glufosinate	0.10	U	ug/L	P437618	
		Glyphosate	0.10	U	ug/L	P437618	
		Afidopyropen	0.0020	U	ug/L	P437727	
		Bentazon	8.0E-04	U	ug/L	P437727	
		Sucralose	0.010	U	ug/L	P437618	
		Benzovindiflupyr	0.0020	U	ug/L	P437727	
		Carbamazepine	8.0E-04	U	ug/L	P437727	
		Clothianidin	0.0020	U	ug/L	P437727	
		Dinotefuran	0.0020	U	ug/L	P437727	
		Diuron	0.0020	U	ug/L	P437727	
		Fenuron	0.032	U	ug/L	P437727	
		Fluridone	8.0E-04	U	ug/L	P437727	
		Imazapyr	0.0040	U	ug/L	P437727	
		Hydrocodone	0.0020	U	ug/L	P437727	
		Ibuprofen	0.080	U	ug/L	P437727	
		Imidacloprid	0.012		ug/L	P437727	
		Linuron	0.0040	U	ug/L	P437727	
		Mandestrobin	0.0020	U	ug/L	P437727	
		MCPP	0.0020	U	ug/L	P437727	
		Naproxen	0.0080	U	ug/L	P437727	
		Primidone	0.0040	U	ug/L	P437727	
		Pyraclostrobin	0.0020	U	ug/L	P437727	
		Silvex	0.0040	U	ug/L	P437727	
		Thiamethoxam	0.0020	U	ug/L	P437727	

Field ID: G4SD0215

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451160	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P437727	
		Triclopyr	0.0040	U	ug/L	P437727	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: RAINEY SLOUGH AT FARABEE RD

Collection Date/Time: 11/13/2023 12:25

Field ID: G4SD0111

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2451162	EPA 200.7 Rev. 4.4	Calcium	12.8		mg/L	P437800	
		Iron	2.52E+03		ug/L	P437800	
		Magnesium	3.97		mg/L	P437800	
		Potassium	1.7		mg/L	P437800	
		Sodium	17.5		mg/L	P437800	
		Strontium	175		ug/L	P437800	
		Tin	3.0	U	ug/L	P437800	
		Titanium	1.9	I	ug/L	P437800	
		Vanadium	2.0	U	ug/L	P437800	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P437800	
		Aluminum	329		ug/L	P437800	
		Antimony	0.050	U	ug/L	P437800	
		Arsenic	1.02		ug/L	P437800	
		Barium	23.5		ug/L	P437800	
		Beryllium	0.054		ug/L	P437800	
		Boron	25.7		ug/L	P437800	
		Cadmium	0.020	U	ug/L	P437800	
		Chromium	0.89	I	ug/L	P437800	
		Cobalt	0.417		ug/L	P437800	
		Copper	0.84		ug/L	P437800	
		Lead	0.70		ug/L	P437800	
		Manganese	18.3		ug/L	P437800	
		Molybdenum	0.15	U	ug/L	P437800	
		Nickel	0.84	I	ug/L	P437800	
		Selenium	0.20	U	ug/L	P437800	
		Silver	0.010	U	ug/L	P437800	
		Thallium	0.10	U	ug/L	P437800	
	SM 2340 B-2011	Hardness	48.4		mg/L	P437800	

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P437752

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P437753

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437756

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437800

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437800

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
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437999

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438003

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438234

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438241

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437760

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437762

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438100

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438046

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

Reference Method: EPA 8321B
Batch ID: P437618

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P437618

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P437727

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: P438013

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

Reference Method: SM 2540 C-2015
Batch ID: P438247

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P438201

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P438017

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P437962

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: P437752

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P437753

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437756

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437800

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Iron	104		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	101		P	85 - 115
Sodium	100		P	85 - 115
Strontium	100		P	85 - 115
Tin	96.5		P	85 - 115
Titanium	97.1		P	85 - 115
Vanadium	97.5		P	85 - 115
Zinc	96.1		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437800

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	105		P	85 - 115
Arsenic	98.8		P	85 - 115
Barium	102		P	85 - 115
Beryllium	100		P	85 - 115
Boron	97.9		P	85 - 115
Cadmium	98.6		P	85 - 115
Chromium	98.0		P	85 - 115
Cobalt	94.5		P	85 - 115
Copper	98.0		P	85 - 115
Lead	95.9		P	85 - 115
Manganese	101		P	85 - 115
Molybdenum	93.4		P	85 - 115
Nickel	98.2		P	85 - 115
Selenium	100		P	85 - 115
Silver	108		P	85 - 115
Thallium	98.2		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437999

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	108		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438003

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	108		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438234

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438241

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437760

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437762

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438100

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: P438046

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

Reference Method: EPA 8321B
Batch ID: P437618

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	111		P	40 - 150
AMPA	102		P	40 - 160
Endothall	113		P	40 - 160
Glufosinate	101		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P437618

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	101		P	40 - 160
Sucralose	101		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P437727

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	86.2		P	40 - 150
2,4,5-T	77.9		P	40 - 150
Acetaminophen	91.2		P	30 - 150
Acetamiprid	80.0		P	40 - 150
Afidopyropen	64.1		P	30 - 150
Bentazon	82.7		P	30 - 150
Benzovindiflupyr	81.2		P	40 - 150
Carbamazepine	74.5		P	40 - 150
Clothianidin	86.2		P	40 - 150
Dinotefuran	100		P	40 - 150
Diuron	73.5		P	40 - 150
Fenuron	85.5		P	40 - 150
Fluridone	88.7		P	40 - 150
Hydrocodone	87.6		P	40 - 150
Ibuprofen	72.9		P	40 - 150
Imazapyr	81.8		P	40 - 150
Imidacloprid	80.8		P	40 - 150
Linuron	81.9		P	40 - 150
Mandestrobin	82.1		P	40 - 150
MCPP	83.6		P	40 - 150
Naproxen	84.9		P	40 - 150
Primidone	86.7		P	40 - 150
Pyraclostrobin	73.6		P	40 - 150
Silvex	89.0		P	40 - 150
Thiamethoxam	79.1		P	40 - 150
Tolfenpyrad	47.7		P	30 - 150
Triclopyr	99.5		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P438013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.6		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P438247

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	93.2		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P438201

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P438017

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

Reference Method: SM 5310 B-2011
Batch ID: P437962

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P437800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450840	Calcium	100		P	80 - 120
2450840	Iron	101	101	P/P	80 - 120
2450840	Magnesium	103	102	P/P	80 - 120
2450840	Potassium	96.8	97.7	P/P	80 - 120
2450840	Sodium	99.6		P	80 - 120
2450840	Strontium	97.7	98.2	P/P	80 - 120
2450840	Tin	96.3	96.3	P/P	80 - 120
2450840	Titanium	99.5	99.8	P/P	80 - 120
2450840	Vanadium	101	101	P/P	80 - 120
2450840	Zinc	98.5	98.3	P/P	80 - 120
2451014	Calcium	106		P	80 - 120
2451014	Iron	105		P	80 - 120
2451014	Magnesium	106		P	80 - 120
2451014	Potassium	103		P	80 - 120
2451014	Sodium	103		P	80 - 120
2451014	Strontium	102		P	80 - 120
2451014	Tin	99.5		P	80 - 120
2451014	Titanium	102		P	80 - 120
2451014	Vanadium	103		P	80 - 120
2451014	Zinc	99.5		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P437800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450840	Aluminum	98.2	97.7	P/P	80 - 120
2450840	Antimony	106	106	P/P	80 - 120
2450840	Arsenic	99.8	100	P/P	80 - 120
2450840	Barium	103	103	P/P	80 - 120
2450840	Beryllium	104	102	P/P	80 - 120
2450840	Boron	94.6	94.5	P/P	80 - 120
2450840	Cadmium	99.2	99.7	P/P	80 - 120
2450840	Chromium	96.0	96.4	P/P	80 - 120
2450840	Cobalt	96.4	96.7	P/P	80 - 120
2450840	Copper	100	99.7	P/P	80 - 120
2450840	Lead	94.5	94.7	P/P	80 - 120
2450840	Manganese	108	99.4	P/P	80 - 120
2450840	Molybdenum	96.9	98.0	P/P	80 - 120
2450840	Nickel	96.4	96.9	P/P	80 - 120
2450840	Selenium	100	99.8	P/P	80 - 120
2450840	Silver	106	108	P/P	80 - 120
2450840	Thallium	96.9	98.0	P/P	80 - 120
2451014	Aluminum	95.7		P	80 - 120
2451014	Antimony	107		P	80 - 120
2451014	Arsenic	98.5		P	80 - 120
2451014	Barium	101		P	80 - 120
2451014	Beryllium	98.4		P	80 - 120
2451014	Boron	102		P	80 - 120
2451014	Cadmium	96.7		P	80 - 120
2451014	Chromium	95.2		P	80 - 120
2451014	Cobalt	92.1		P	80 - 120
2451014	Copper	96.5		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451014	Lead	94.3		P	80 - 120
2451014	Manganese	99.5		P	80 - 120
2451014	Molybdenum	97.4		P	80 - 120
2451014	Nickel	94.8		P	80 - 120
2451014	Selenium	98.9		P	80 - 120
2451014	Silver	106		P	80 - 120
2451014	Thallium	96.5		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451002	Chloride	108		P	90 - 110
2451143	Chloride	109		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438003

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451002	Sulfate	107		P	90 - 110
2451143	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438234

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449691	Ammonia-N	98.6	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438241

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451175	Ammonia-N	99.6	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437760

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450969	Kjeldahl Nitrogen	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451170	Kjeldahl Nitrogen	100	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451144	NO2NO3-N	95.8	96.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P437618

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450389	Acesulfame K	146	145	P/P	40 - 150
2450389	AMPA	91.7	88.9	P/P	40 - 160
2450389	Endothall	104	98.5	P/P	40 - 160
2450389	Glufosinate	95.2	96.8	P/P	40 - 160
2450389	Glyphosate	97.0	94.4	P/P	40 - 160
2450389	Sucralose	107	111	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P437727

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450837	2,4-D	111	112	P/P	40 - 150
2450837	2,4,5-T	94.4	83.4	P/P	40 - 150
2450837	Acetaminophen	116	114	P/P	30 - 150
2450837	Acetamiprid	79.5	68.6	P/P	40 - 150
2450837	Afidopyropen	62.7	58.9	P/P	30 - 150
2450837	Bentazon	44.0	41.2	P/P	30 - 150
2450837	Benzovindiflupyr	84.1	83.6	P/P	40 - 150
2450837	Carbamazepine	65.4	64.3	P/P	40 - 150
2450837	Clothianidin	115	111	P/P	40 - 150
2450837	Dinotefuran	106	102	P/P	40 - 150
2450837	Diuron	67.1	65.5	P/P	40 - 150
2450837	Fenuron	68.7	66.9	P/P	40 - 150
2450837	Fluridone	83.3	83.4	P/P	40 - 150
2450837	Hydrocodone	81.4	81.0	P/P	40 - 150
2450837	Ibuprofen	70.3	68.7	P/P	40 - 150
2450837	Imazapyr	116	114	P/P	40 - 150
2450837	Imidacloprid	137	133	P/P	40 - 150
2450837	Linuron	82.1	72.1	P/P	40 - 150
2450837	Mandestrobin	82.0	83.1	P/P	40 - 150
2450837	MCPP	87.4	85.6	P/P	40 - 150
2450837	Naproxen	79.8	66.8	P/P	40 - 150
2450837	Primidone	96.6	96.0	P/P	40 - 150
2450837	Pyraclostrobin	81.2	82.0	P/P	40 - 150
2450837	Silvex	96.2	88.3	P/P	40 - 150
2450837	Thiamethoxam	102	99.4	P/P	40 - 150
2450837	Tolfenpyrad	55.7	58.5	P/P	30 - 150
2450837	Triclopyr	97.6	99.2	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P438017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450964	Fluoride	101	101	P/P	94 - 106

Reference Method: SM 5310 B-2011

Batch ID: P437962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450900	Organic Carbon	95.0	95.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P437753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451169	Color (true)	2.66	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437756

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451141	Turbidity	5.12	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450840	Calcium	0.206	Spike	P	0 - 20
2450840	Iron	0.188	Spike	P	0 - 20
2450840	Magnesium	0.448	Spike	P	0 - 20
2450840	Potassium	0.574	Spike	P	0 - 20
2450840	Sodium	0.268	Spike	P	0 - 20
2450840	Strontium	0.409	Spike	P	0 - 20
2450840	Tin	0.0198	Spike	P	0 - 20
2450840	Titanium	0.328	Spike	P	0 - 20
2450840	Vanadium	0.126	Spike	P	0 - 20
2450840	Zinc	0.168	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450840	Aluminum	0.457	Spike	P	0 - 20
2450840	Antimony	0.347	Spike	P	0 - 20
2450840	Arsenic	0.573	Spike	P	0 - 20
2450840	Barium	0.412	Spike	P	0 - 20
2450840	Beryllium	2.18	Spike	P	0 - 20
2450840	Boron	0.0274	Spike	P	0 - 20
2450840	Cadmium	0.534	Spike	P	0 - 20
2450840	Chromium	0.492	Spike	P	0 - 20
2450840	Cobalt	0.274	Spike	P	0 - 20
2450840	Copper	0.287	Spike	P	0 - 20
2450840	Lead	0.224	Spike	P	0 - 20
2450840	Manganese	1.91	Spike	P	0 - 20
2450840	Molybdenum	1.04	Spike	P	0 - 20
2450840	Nickel	0.541	Spike	P	0 - 20
2450840	Selenium	0.658	Spike	P	0 - 20
2450840	Silver	1.76	Spike	P	0 - 20
2450840	Thallium	1.18	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451002	Chloride	0.185	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449691	Ammonia-N	1.38	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451175	Ammonia-N	0.951	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437760

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450969	Kjeldahl Nitrogen	1.39	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451170	Kjeldahl Nitrogen	1.88	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451144	NO2NO3-N	0.980	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451003	Total-P	0.627	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P437618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450389	Acesulfame K	0.482	Spike	P	0 - 30
2450389	AMPA	3.10	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P437618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450389	Endothall	5.79	Spike	P	0 - 30
2450389	Glufosinate	1.67	Spike	P	0 - 30
2450389	Glyphosate	2.69	Spike	P	0 - 30
2450389	Sucralose	3.55	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P437727

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450837	2,4-D	1.03	Spike	P	0 - 30
2450837	2,4,5-T	12.3	Spike	P	0 - 30
2450837	Acetaminophen	1.87	Spike	P	0 - 30
2450837	Acetamiprid	14.6	Spike	P	0 - 30
2450837	Afidopyropen	6.22	Spike	P	0 - 30
2450837	Bentazon	6.63	Spike	P	0 - 30
2450837	Benzovindiflupyr	0.648	Spike	P	0 - 30
2450837	Carbamazepine	1.79	Spike	P	0 - 30
2450837	Clothianidin	3.70	Spike	P	0 - 30
2450837	Dinotefuran	3.32	Spike	P	0 - 30
2450837	Diuron	2.43	Spike	P	0 - 30
2450837	Fenuron	2.61	Spike	P	0 - 30
2450837	Fluridone	0.0854	Spike	P	0 - 30
2450837	Hydrocodone	0.445	Spike	P	0 - 30
2450837	Ibuprofen	2.31	Spike	P	0 - 30
2450837	Imazapyr	2.21	Spike	P	0 - 30
2450837	Imidacloprid	2.91	Spike	P	0 - 30
2450837	Linuron	13.0	Spike	P	0 - 30
2450837	Mandestrobin	1.41	Spike	P	0 - 30
2450837	MCPP	2.06	Spike	P	0 - 30
2450837	Naproxen	17.8	Spike	P	0 - 30
2450837	Primidone	0.713	Spike	P	0 - 30
2450837	Pyraclostrobin	0.942	Spike	P	0 - 30
2450837	Silvex	8.52	Spike	P	0 - 30
2450837	Thiamethoxam	2.78	Spike	P	0 - 30
2450837	Tolfenpyrad	4.85	Spike	P	0 - 30
2450837	Triclopyr	1.70	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P438013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450964	Total Alkalinity	1.18	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P438247

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450787	TDS	3.75	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P438017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450964	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P437962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450900	Organic Carbon	0.159	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2451160
Field Sample ID: G4SD0215

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	69.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	55.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	44.3	P	30 - 160
EPA 8321B	Diuron-d6	34.2	P	30 - 160
EPA 8321B	Endothall-d6	113	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.9	P	30 - 160
EPA 8321B	Primidone-d5	40.9	P	30 - 160
EPA 8321B	Sucralose-d6	78.8	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A122707

Included Lab Sample IDs: 2451141, 2451142, 2451143, 2451147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	104	P/P	90 - 110
Color (true)	104	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122708

Included Lab Sample IDs: 2451141, 2451142, 2451143, 2451147

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

Reference Method: EPA 8321B

Run ID: A122711

Included Lab Sample IDs: 2451160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	97.6	97.5	P/P	60 - 160
Endothall	118	120	P/P	60 - 160
Glufosinate	103	97.1	P/P	60 - 160
Glyphosate	97.2	95.0	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A122733

Included Lab Sample IDs: 2451160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	130	133	P/P	60 - 160
Sucralose	94.3	97.4	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122736

Included Lab Sample IDs: 2451141, 2451142, 2451143, 2451147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	105	P/P	90 - 110
Chloride	105	103	P/P	90 - 110
Sulfate	102	105	P/P	90 - 110
Sulfate	105	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122776

Included Lab Sample IDs: 2451144, 2451145, 2451146, 2451148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	106	P/P	90 - 110
Kjeldahl Nitrogen	98.2	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122783

Included Lab Sample IDs: 2451161, 2451162

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122783

Included Lab Sample IDs: 2451161, 2451162

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.2	99.9	P/P	90 - 110
Aluminum	98.8	98.2	P/P	90 - 110
Antimony	90.8	90.0	P/P	90 - 110
Arsenic	98.8	98.9	P/P	90 - 110
Arsenic	99.1	98.8	P/P	90 - 110
Barium	101	99.5	P/P	90 - 110
Barium	101	101	P/P	90 - 110
Beryllium	103	101	P/P	90 - 110
Beryllium	108	103	P/P	90 - 110
Boron	93.7	97.3	P/P	90 - 110
Boron	97.3	99.9	P/P	90 - 110
Cadmium	98.2	98.6	P/P	90 - 110
Cadmium	98.6	97.9	P/P	90 - 110
Chromium	97.6	98.3	P/P	90 - 110
Chromium	98.3	98.7	P/P	90 - 110
Cobalt	93.4	92.8	P/P	90 - 110
Cobalt	94.3	93.4	P/P	90 - 110
Copper	97.3	96.7	P/P	90 - 110
Copper	98.1	97.3	P/P	90 - 110
Lead	96.4	96.9	P/P	90 - 110
Lead	96.9	97.5	P/P	90 - 110
Manganese	101	99.4	P/P	90 - 110
Manganese	99.4	99.6	P/P	90 - 110
Molybdenum	94.4	95.2	P/P	90 - 110
Molybdenum	95.2	95.0	P/P	90 - 110
Nickel	97.6	98.2	P/P	90 - 110
Nickel	98.2	97.9	P/P	90 - 110
Selenium	99.7	98.9	P/P	90 - 110
Selenium	99.9	99.7	P/P	90 - 110
Thallium	94.7	94.6	P/P	90 - 110
Thallium	95.8	94.7	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A122791

Included Lab Sample IDs: 2451144, 2451145, 2451146, 2451148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	95.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122793

Included Lab Sample IDs: 2451160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	100	91.3	P/P	50 - 150
2,4,5-T	93.3	96.5	P/P	50 - 150
Acetaminophen	111	109	P/P	60 - 160
Acetamiprid	104	106	P/P	50 - 150
Afidopyropen	89.6	103	P/P	50 - 150
Bentazon	102	99.9	P/P	50 - 160
Benzovindiflupyr	100	102	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A122793
Included Lab Sample IDs: 2451160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Carbamazepine	99.8	100	P/P	60 - 150
Clothianidin	101	102	P/P	60 - 150
Dinotefuran	110	110	P/P	50 - 150
Diuron	106	105	P/P	60 - 160
Fenuron	101	101	P/P	60 - 150
Fluridone	107	110	P/P	60 - 160
Hydrocodone	107	111	P/P	60 - 150
Ibuprofen	78.8	90.0	P/P	50 - 160
Imazapyr	99.7	79.8	P/P	50 - 150
Imidacloprid	92.6	95.7	P/P	60 - 150
Linuron	110	108	P/P	60 - 150
Mandestrobin	98.9	101	P/P	50 - 150
MCPP	96.3	88.9	P/P	50 - 150
Naproxen	130	105	P/P	50 - 160
Primidone	99.2	98.2	P/P	60 - 150
Pyraclostrobin	103	103	P/P	60 - 150
Silvex	96.7	96.9	P/P	50 - 150
Thiamethoxam	102	98.6	P/P	50 - 150
Tolfenpyrad	95.6	98.9	P/P	60 - 150
Triclopyr	103	99.0	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A122813
Included Lab Sample IDs: 2451161, 2451162

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	97.7	103	P/P	90 - 110
Silver	100	99.4	P/P	90 - 110
Silver	94.5	100	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A122815
Included Lab Sample IDs: 2451141, 2451142, 2451143, 2451147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.7	97.2	P/P	90 - 110
Total Alkalinity	97.2	95.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A122815
Included Lab Sample IDs: 2451141, 2451142, 2451143, 2451147

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A122817
Included Lab Sample IDs: 2451161, 2451162

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A122817

Included Lab Sample IDs: 2451161, 2451162

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	95.5	103	P/P	90 - 110
Iron	95.8	103	P/P	90 - 110
Magnesium	95.4	103	P/P	90 - 110
Potassium	93.4	99.4	P/P	90 - 110
Sodium	94.1	100	P/P	90 - 110
Strontium	96.4	101	P/P	90 - 110
Tin	96.9	101	P/P	90 - 110
Titanium	96.1	99.5	P/P	90 - 110
Vanadium	96.4	102	P/P	90 - 110
Zinc	98.0	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122849

Included Lab Sample IDs: 2451144, 2451145, 2451146, 2451148

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122860

Included Lab Sample IDs: 2451144, 2451145, 2451146, 2451148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.9	99.0	P/P	90 - 110
Total-P	98.8	97.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122914

Included Lab Sample IDs: 2451144, 2451145, 2451146, 2451148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.8	P/P	90 - 110
Ammonia-N	100	101	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
DEP SOP: NU-094-1	Color (true)	102						
	Color (true)	103					2.66	
EPA 180.1 Rev. 2.0	Turbidity	104					5.12	
EPA 200.7 Rev. 4.4	Calcium	100	100	106				0.206
	Iron	104	101	101	105			0.188
	Magnesium	105	103	102	106			0.448
	Potassium	101	96.8	97.7	103			0.574
	Sodium	100	99.6	103				0.268
	Strontium	100	97.7	98.2	102			0.409
	Tin	96.5	96.3	96.3	99.5			0.0198
	Titanium	97.1	99.5	99.8	102			0.328
	Vanadium	97.5	101	101	103			0.126
	Zinc	96.1	98.5	98.3	99.5			0.168
EPA 200.8 Rev. 5.4	Aluminum	100	98.2	97.7	95.7			0.457
	Antimony	105	106	106	107			0.347
	Arsenic	98.8	99.8	100	98.5			0.573
	Barium	102	103	103	101			0.412
	Beryllium	100	104	102	98.4			2.18
	Boron	97.9	94.6	94.5	102			0.0274
	Cadmium	98.6	99.2	99.7	96.7			0.534
	Chromium	98.0	96.0	96.4	95.2			0.492
	Cobalt	94.5	96.4	96.7	92.1			0.274
	Copper	98.0	100	99.7	96.5			0.287
	Lead	95.9	94.5	94.7	94.3			0.224
	Manganese	101	108	99.4	99.5			1.91
	Molybdenum	93.4	96.9	98.0	97.4			1.04
	Nickel	98.2	96.4	96.9	94.8			0.541
	Selenium	100	100	99.8	98.9			0.658
	Silver	108	106	108	106			1.76
	Thallium	98.2	96.9	98.0	96.5			1.18
EPA 300.0 Rev. 2.1	Chloride	108	108	109			0.185	
	Sulfate	108	107	107				
EPA 350.1 Rev. 2.0	Ammonia-N	94.2	98.6	101				1.38
	Ammonia-N	96.6	99.6	98.6				0.951
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	102	100				1.39
	Kjeldahl Nitrogen	97.5	100	98.0				1.88
EPA 353.2 Rev. 2.0	NO2NO3-N	100	95.8	96.8				0.980
EPA 365.1 Rev. 2.0	Total-P	102						0.627
EPA 8321B	2,4-D	86.2	111	112				1.03
	2,4,5-T	77.9	94.4	83.4				12.3
	Acesulfame K	111	146	145				0.482
	Acetaminophen	91.2	116	114				1.87
	Acetamiprid	80.0	79.5	68.6				14.6
	Afidopyropen	64.1	62.7	58.9				6.22
	AMPA	102	91.7	88.9				3.10
	Bentazon	82.7	44.0	41.2				6.63
	Benzovindiflupyr	81.2	84.1	83.6				0.648
	Carbamazepine	74.5	65.4	64.3				1.79
	Clothianidin	86.2	115	111				3.70
	Dinotefuran	100	106	102				3.32
	Diuron	73.5	67.1	65.5				2.43
	Endothall	113	104	98.5				5.79
	Fenuron	85.5	68.7	66.9				2.61
	Fluridone	88.7	83.3	83.4				0.0854

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Glufosinate	101	95.2	96.8		1.67
	Glyphosate	101	97.0	94.4		2.69
	Hydrocodone	87.6	81.4	81.0		0.445
	Ibuprofen	72.9	70.3	68.7		2.31
	Imazapyr	81.8	116	114		2.21
	Imidacloprid	80.8	137	133		2.91
	Linuron	81.9	82.1	72.1		13.0
	Mandestrobin	82.1	82.0	83.1		1.41
	MCP	83.6	87.4	85.6		2.06
	Naproxen	84.9	79.8	66.8		17.8
	Primidone	86.7	96.6	96.0		0.713
	Pyraclostrobin	73.6	81.2	82.0		0.942
	Silvex	89.0	96.2	88.3		8.52
	Sucralose	101	107	111		3.55
	Thiamethoxam	79.1	102	99.4		2.78
	Tolfenpyrad	47.7	55.7	58.5		4.85
	Triclopyr	99.5	97.6	99.2		1.70
SM 2320 B-2011	Total Alkalinity	97.6			1.18	
SM 2540 C-2015	TDS	93.2			3.75	
SM 2540 D-2015	TSS	109				
SM 4500-F- C-2011	Fluoride	101	101	101		0.0
SM 5310 B-2011	Organic Carbon	95.6	95.0	95.3		0.159

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2451141, 2451142, 2451143, 2451147
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2451141, 2451142, 2451143, 2451147
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2451161, 2451162
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2451161, 2451162
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2451141, 2451142, 2451143, 2451147
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2451141, 2451142, 2451143, 2451147
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2451144, 2451145, 2451146, 2451148
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2451144, 2451145, 2451146, 2451148
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2451144, 2451145, 2451146, 2451148
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2451144, 2451145, 2451146, 2451148
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2451160
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2451141, 2451142, 2451143, 2451147
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2451161, 2451162
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2451141, 2451142, 2451143, 2451147
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2451141, 2451142, 2451143, 2451147
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2451141, 2451142, 2451143, 2451147
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2451144, 2451145, 2451146, 2451148

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	11/14/2023			11/14/2023 15:38	Chandler E Cox	2451141
	11/14/2023			11/14/2023 15:42	Chandler E Cox	2451142
	11/14/2023			11/14/2023 15:44	Chandler E Cox	2451143
	11/14/2023			11/14/2023 15:45	Chandler E Cox	2451147
EPA 180.1 Rev. 2.0	11/14/2023			11/14/2023 14:39	Samantha L Bates	2451141
	11/14/2023			11/14/2023 14:52	Samantha L Bates	2451142
	11/14/2023			11/14/2023 14:55	Samantha L Bates	2451143
	11/14/2023			11/14/2023 14:56	Samantha L Bates	2451147
EPA 200.7 Rev. 4.4	11/14/2023	11/15/2023 12:50	George D Taylor	11/17/2023 16:38	Samatha Luckman	2451161
	11/14/2023	11/15/2023 12:50	George D Taylor	11/17/2023 16:45	Samatha Luckman	2451162
EPA 200.8 Rev. 5.4	11/14/2023	11/15/2023 12:50	George D Taylor	11/16/2023 19:41	Conrad Hartmann	2451161
	11/14/2023	11/15/2023 12:50	George D Taylor	11/16/2023 20:34	Conrad Hartmann	2451162
	11/14/2023	11/15/2023 12:50	George D Taylor	11/17/2023 16:18	Emily M Philpot	2451161
	11/14/2023	11/15/2023 12:50	George D Taylor	11/17/2023 16:55	Emily M Philpot	2451162
EPA 300.0 Rev. 2.1	11/14/2023			11/18/2023 06:41	James L Waggeberby	2451143
	11/14/2023			11/18/2023 10:12	James L Waggeberby	2451141
	11/14/2023			11/18/2023 10:27	James L Waggeberby	2451142
	11/14/2023			11/18/2023 10:42	James L Waggeberby	2451147
EPA 350.1 Rev. 2.0	11/14/2023			11/28/2023 13:06	Khloe J Berg	2451146
	11/14/2023			11/28/2023 13:07	Khloe J Berg	2451148
	11/14/2023			11/28/2023 14:19	Khloe J Berg	2451144
	11/14/2023			11/28/2023 14:21	Khloe J Berg	2451145
EPA 351.2 Rev. 2.0	11/14/2023	11/15/2023 16:54	Simonne.V. Calhoun	11/16/2023 13:19	Samantha L Bates	2451144
	11/14/2023	11/15/2023 16:54	Simonne.V. Calhoun	11/16/2023 13:21	Samantha L Bates	2451145
	11/14/2023	11/15/2023 16:54	Simonne.V. Calhoun	11/16/2023 13:22	Samantha L Bates	2451146
	11/14/2023	11/15/2023 16:54	Simonne.V. Calhoun	11/16/2023 13:56	Samantha L Bates	2451148
EPA 353.2 Rev. 2.0	11/14/2023			11/20/2023 14:08	Anna M. Plaviak	2451144
	11/14/2023			11/20/2023 14:09	Anna M. Plaviak	2451145
	11/14/2023			11/20/2023 14:11	Anna M. Plaviak	2451146
	11/14/2023			11/20/2023 14:12	Anna M. Plaviak	2451148
EPA 365.1 Rev. 2.0	11/14/2023	11/20/2023 12:58	Adam P Silver	11/21/2023 10:39	Simonne.V. Calhoun	2451144
	11/14/2023	11/20/2023 12:58	Adam P Silver	11/21/2023 10:40	Simonne.V. Calhoun	2451145
	11/14/2023	11/20/2023 12:58	Adam P Silver	11/21/2023 10:43	Simonne.V. Calhoun	2451146
	11/14/2023	11/20/2023 12:58	Adam P Silver	11/21/2023 10:44	Simonne.V. Calhoun	2451148
EPA 8321B	11/14/2023	11/14/2023 12:00	Tae K Lee	11/14/2023 16:00	Hana Lee	2451160
	11/14/2023	11/14/2023 12:00	Tae K Lee	11/14/2023 23:51	Hana Lee	2451160
	11/14/2023	11/15/2023 09:00	Hoor Shaik	11/16/2023 20:42	Juyoung Kim	2451160
SM 2320 B-2011	11/14/2023			11/18/2023 07:22	Adam P Silver	2451141
	11/14/2023			11/18/2023 07:34	Adam P Silver	2451142
	11/14/2023			11/18/2023 08:19	Adam P Silver	2451143

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	11/14/2023			11/18/2023 10:27	Adam P Silver	2451147
SM 2340 B-2011	11/14/2023			11/17/2023 16:38	Samatha Luckman	2451161
	11/14/2023			11/17/2023 16:45	Samatha Luckman	2451162
SM 2540 C-2015	11/14/2023			11/16/2023 15:42	Yijie Li	2451141, 2451142, 2451143, 2451147
SM 2540 D-2015	11/14/2023			11/16/2023 15:42	Yijie Li	2451141, 2451142, 2451143, 2451147
SM 4500-F- C-2011	11/14/2023			11/18/2023 07:22	Adam P Silver	2451141
	11/14/2023			11/18/2023 07:34	Adam P Silver	2451142
	11/14/2023			11/18/2023 08:19	Adam P Silver	2451143
	11/14/2023			11/18/2023 10:27	Adam P Silver	2451147
SM 5310 B-2011	11/14/2023			11/16/2023 15:26	Khloe J Berg	2451144
	11/14/2023			11/16/2023 15:40	Khloe J Berg	2451145
	11/14/2023			11/16/2023 15:54	Khloe J Berg	2451146
	11/14/2023			11/16/2023 16:08	Khloe J Berg	2451148