

Chemical Analysis Report

CEN-DIST-2023-11-03-01

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

Event Description: **Run 5**
Request ID: **RQ-2023-10-30-13**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 28-NOV-2023 10:31



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: SECOND CREEK AT SR 520

Collection Date/Time: 11/02/2023 09:40

Field ID: G3CE0066

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448788	DEP SOP: NU-094-1	Color (true)	190		PCU	P437352	
	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P437361	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P438146	
		Sulfate	16		mg SO4/L	P438150	
	SM 2320 B-2011	Total Alkalinity	92		mg CaCO3/L	P437666	
	SM 2540 C-2015	TDS	226		mg/L	P437814	
	SM 2540 D-2015	TSS	3	I	mg/L	P437781	
	SM 4500-F- C-2011	Fluoride	0.049	I	mg F/L	P437919	
2448789	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P437431	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P437512	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P437644	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P437657	
	SM 5310 B-2011	Organic Carbon	26		mg C/L	P437475	

**Sample Location: FALK CANAL AT 50M UPSTREAM OF FISKE
BLVD**

Collection Date/Time: 11/02/2023 11:12

Field ID: G3CE0016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448797	EPA 8321B	2,4-D	0.0020	U	ug/L	P437434	
		Acesulfame K	0.10	U	ug/L	P437333	
		2,4,5-T	0.0040	U	ug/L	P437434	
		AMPA	0.17	I	ug/L	P437333	
		Acetaminophen	0.0080	U	ug/L	P437434	
		Acetamiprid	0.0020	U	ug/L	P437434	
		Endothall	0.25	U	ug/L	P437333	
		Glufosinate	0.10	U	ug/L	P437333	
		Glyphosate	0.21	I	ug/L	P437333	
		Afidopyropen	0.0020	U	ug/L	P437434	
		Sucralose	0.38		ug/L	P437333	
		Bentazon	0.0051		ug/L	P437434	MS
		Benzovindiflupyr	0.0020	U	ug/L	P437434	
		Carbamazepine	8.0E-04	U	ug/L	P437434	
		Clothianidin	0.0027	I	ug/L	P437434	
		Dinotefuran	0.0020	U	ug/L	P437434	
		Diuron	0.0020	U	ug/L	P437434	
		Fenuron	0.032	U	ug/L	P437434	
		Fluridone	8.0E-04	U	ug/L	P437434	
		Imazapyr	0.25		ug/L	P437434	
		Hydrocodone	0.0020	U	ug/L	P437434	
		Ibuprofen	0.080	U	ug/L	P437434	MS
		Imidacloprid	0.0036	I	ug/L	P437434	
		Linuron	0.0040	U	ug/L	P437434	
		Mandestrobin	0.0020	U	ug/L	P437434	
		MCPP	0.0020	U	ug/L	P437434	
		Naproxen	0.0080	U	ug/L	P437434	
		Primidone	0.0040	U	ug/L	P437434	
		Pyraclostrobin	0.0020	U	ug/L	P437434	
		Silvex	0.0040	U	ug/L	P437434	
		Thiamethoxam	0.0020	U	ug/L	P437434	
		Tolfenpyrad	0.0020	U	ug/L	P437434	
		Triclopyr	0.0040	U	ug/L	P437434	

Sample Location: FLORENCE LAKE AT CENTER

Collection Date/Time: 11/02/2023 10:21

Field ID: G3CE0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448785	DEP SOP: NU-094-1	Color (true)	320		PCU	P437352	
	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P437361	
	EPA 300.0 Rev. 2.1	Chloride	220		mg Cl/L	P437827	
		Sulfate	36		mg SO4/L	P437831	
	SM 2320 B-2011	Total Alkalinity	84		mg CaCO3/L	P437666	
	SM 2540 C-2015	TDS	542		mg/L	P437814	
	SM 2540 D-2015	TSS	5	I	mg/L	P437781	
2448786	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P437919	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.056		mg N/L	P437431	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P437455	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.017		mg N/L	P437644	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P437516	
2448787	SM 5310 B-2011	Organic Carbon	31		mg C/L	P437475	
2448788	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P437349	
2448798	EPA 200.7 Rev. 4.4	Calcium	55.1		mg/L	P437426	
		Iron	840		ug/L	P437426	
		Magnesium	16.9		mg/L	P437426	
		Potassium	3.7		mg/L	P437426	
		Sodium	112		mg/L	P437426	
		Strontium	1.78E+03		ug/L	P437426	
		Tin	3.0	U	ug/L	P437426	
	EPA 200.8 Rev. 5.4	Titanium	0.75	U	ug/L	P437426	
		Vanadium	2.0	U	ug/L	P437426	
		Zinc	22		ug/L	P437426	
		Aluminum	75		ug/L	P437426	
		Antimony	0.094	I	ug/L	P437426	
		Arsenic	1.11		ug/L	P437426	
		Barium	36.1		ug/L	P437426	
		Beryllium	0.011	I	ug/L	P437426	
		Boron	40.8		ug/L	P437426	
		Cadmium	0.020	U	ug/L	P437426	
		Chromium	0.50	I	ug/L	P437629	
		Cobalt	0.168		ug/L	P437426	
		Copper	0.40	U	ug/L	P437426	
		Lead	0.60		ug/L	P437426	
		Manganese	10.1		ug/L	P437426	
		Molybdenum	0.51	I	ug/L	P437426	
		Nickel	0.50	U	ug/L	P437426	
		Selenium	0.20	U	ug/L	P437426	
		Silver	0.010	U	ug/L	P437426	
		Thallium	0.10	U	ug/L	P437426	
	SM 2340 B-2011	Hardness	207		mg/L	P437426	

Field ID: G3CE0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.

Sample Location: FB

Collection Date/Time: 11/02/2023 10:30

Field ID: FB_11022023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448790	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437352	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P437361	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P437827	
		Sulfate	0.20	U	mg SO4/L	P437831	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P437666	
	SM 2540 C-2015	TDS	15	U	mg/L	P437814	
	SM 2540 D-2015	TSS	2	U	mg/L	P437781	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P437919	
2448791	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P437431	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P437512	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P437644	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P437657	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P437475	
2448799	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P437426	
		Iron	30	U	ug/L	P437426	
		Magnesium	0.040	U	mg/L	P437426	
		Potassium	0.30	U	mg/L	P437426	
		Sodium	0.50	U	mg/L	P437426	
		Strontium	2.0	U	ug/L	P437426	
		Tin	3.0	U	ug/L	P437426	
		Titanium	0.75	U	ug/L	P437426	
		Vanadium	2.0	U	ug/L	P437426	
		Zinc	5.0	U	ug/L	P437426	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P437426	
		Antimony	0.050	U	ug/L	P437426	
		Arsenic	0.050	U	ug/L	P437426	
		Barium	0.20	U	ug/L	P437426	
		Beryllium	0.010	U	ug/L	P437426	
		Boron	2.0	U	ug/L	P437426	
		Cadmium	0.020	U	ug/L	P437426	
		Chromium	0.40	U	ug/L	P437426	
		Cobalt	0.020	U	ug/L	P437426	
		Copper	0.54	I	ug/L	P437426	
		Lead	0.20	U	ug/L	P437426	
		Manganese	0.10	U	ug/L	P437426	
		Molybdenum	0.15	U	ug/L	P437426	
		Nickel	0.50	U	ug/L	P437426	
		Selenium	0.20	U	ug/L	P437426	
		Silver	0.010	U	ug/L	P437426	
		Thallium	0.10	U	ug/L	P437426	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.

EPA 200.8 Rev. 5.4: The copper result was confirmed in the undigested sample on 11/07/2023.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P437352

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437361

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437426

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: P437426

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	2.8		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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437629

Component	Result	Code	Units
Chromium	0.40	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437827

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437831

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438146

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438150

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437431

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437455

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437512

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437644

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437516

Component	Result	Code	Units
Total-P	0.010	U	mg P/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P437657

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P437349

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

Reference Method: EPA 8321B

Batch ID: P437333

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: P437434

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P437666

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

Reference Method: SM 2540 C-2015
Batch ID: P437814

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P437781

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P437475

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: P437352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437361

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Iron	113		P	85 - 115
Magnesium	113		P	85 - 115
Potassium	101		P	85 - 115
Sodium	109		P	85 - 115
Strontium	99.7		P	85 - 115
Tin	98.8		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	100		P	85 - 115
Zinc	98.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	99.5		P	85 - 115
Barium	105		P	85 - 115
Beryllium	95.1		P	85 - 115
Boron	108		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	98.1		P	85 - 115
Cobalt	96.1		P	85 - 115
Copper	99.6		P	85 - 115
Lead	96.6		P	85 - 115
Manganese	104		P	85 - 115
Molybdenum	100		P	85 - 115
Nickel	95.9		P	85 - 115
Selenium	103		P	85 - 115
Silver	107		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437629

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	96.3		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437827

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437831

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438146

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438150

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437431

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437455

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437512

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437644

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437516

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P437657

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P437349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Reference Method: EPA 8321B

Batch ID: P437333

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	86.3		P	40 - 150
AMPA	91.4		P	40 - 160
Endothall	91.7		P	40 - 160
Glufosinate	99.4		P	40 - 160
Glyphosate	94.5		P	40 - 160
Sucralose	82.4		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P437434

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	66.8		P	40 - 150
2,4,5-T	50.3		P	40 - 150
Acetaminophen	94.2		P	30 - 150
Acetamiprid	93.2		P	40 - 150
Afidopyropen	59.6		P	30 - 150
Bentazon	64.7		P	30 - 150
Benzovindiflupyr	87.2		P	40 - 150
Carbamazepine	94.1		P	40 - 150
Clothianidin	97.5		P	40 - 150
Dinotefuran	95.8		P	40 - 150
Diuron	85.4		P	40 - 150
Fenuron	102		P	40 - 150
Fluridone	87.8		P	40 - 150
Hydrocodone	103		P	40 - 150
Ibuprofen	47.9		P	40 - 150
Imazapyr	61.0		P	40 - 150
Imidacloprid	87.1		P	40 - 150
Linuron	75.7		P	40 - 150
Mandestrobin	88.0		P	40 - 150
MCPP	61.5		P	40 - 150
Naproxen	41.3		P	40 - 150
Primidone	89.3		P	40 - 150
Pyraclostrobin	83.5		P	40 - 150
Silvex	54.1		P	40 - 150
Thiamethoxam	96.5		P	40 - 150
Tolfenpyrad	49.2		P	30 - 150
Triclopyr	58.2		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P437666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P437814

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	97.2		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P437781

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	106		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P437475

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P437426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448765	Calcium	105		P	80 - 120
2448765	Iron	108	112	P/P	80 - 120
2448765	Magnesium	103	111	P/P	80 - 120
2448765	Potassium	95.0		P	80 - 120
2448765	Sodium	97.7	105	P/P	80 - 120
2448765	Strontium	93.6	97.6	P/P	80 - 120
2448765	Tin	95.9	98.2	P/P	80 - 120
2448765	Titanium	97.2	100	P/P	80 - 120
2448765	Vanadium	96.5	98.9	P/P	80 - 120
2448765	Zinc	94.6	96.8	P/P	80 - 120
2448833	Calcium	100		P	80 - 120
2448833	Iron	109		P	80 - 120
2448833	Magnesium	103		P	80 - 120
2448833	Potassium	102		P	80 - 120
2448833	Sodium	101		P	80 - 120
2448833	Strontium	96.6		P	80 - 120
2448833	Tin	93.7		P	80 - 120
2448833	Titanium	98.2		P	80 - 120
2448833	Vanadium	97.1		P	80 - 120
2448833	Zinc	93.7		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P437426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448765	Aluminum	107	104	P/P	80 - 120
2448765	Antimony	104	102	P/P	80 - 120
2448765	Arsenic	99.6	98.0	P/P	80 - 120
2448765	Barium	105	104	P/P	80 - 120
2448765	Beryllium	95.9	95.6	P/P	80 - 120
2448765	Boron	117	112	P/P	80 - 120
2448765	Cadmium	105	104	P/P	80 - 120
2448765	Chromium	98.4	96.9	P/P	80 - 120
2448765	Cobalt	95.8	94.4	P/P	80 - 120
2448765	Copper	101	101	P/P	80 - 120
2448765	Lead	97.3	96.4	P/P	80 - 120
2448765	Manganese	110	105	P/P	80 - 120
2448765	Molybdenum	101	100	P/P	80 - 120
2448765	Nickel	96.1	95.8	P/P	80 - 120
2448765	Selenium	102	100	P/P	80 - 120
2448765	Silver	106	106	P/P	80 - 120
2448765	Thallium	105	105	P/P	80 - 120
2448833	Aluminum	99.3		P	80 - 120
2448833	Antimony	102		P	80 - 120
2448833	Arsenic	100		P	80 - 120
2448833	Barium	103		P	80 - 120
2448833	Beryllium	96.2		P	80 - 120
2448833	Boron	101		P	80 - 120
2448833	Cadmium	102		P	80 - 120
2448833	Chromium	95.0		P	80 - 120
2448833	Cobalt	92.8		P	80 - 120
2448833	Copper	98.1		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448833	Lead	95.0		P	80 - 120
2448833	Manganese	104		P	80 - 120
2448833	Molybdenum	101		P	80 - 120
2448833	Nickel	92.7		P	80 - 120
2448833	Selenium	101		P	80 - 120
2448833	Silver	102		P	80 - 120
2448833	Thallium	106		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437629

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449630	Chromium	99.7	94.7	P/P	80 - 120
2449954	Chromium	95.1		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437827

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448639	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448639	Sulfate	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450037	Chloride	95.2		P	90 - 110
2450149	Chloride	96.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450037	Sulfate	96.5		P	90 - 110
2450149	Sulfate	99.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448640	Ammonia-N	94.0	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448707	Kjeldahl Nitrogen	100	97.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448507	Kjeldahl Nitrogen	97.3	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447765	NO2NO3-N	99.5	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448507	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437657

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448757	Total-P	105	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P437349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448787	O-Phosphate-P	97.2	97.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P437333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448400	Acesulfame K	132	104	P/P	40 - 150
2448400	AMPA	85.8	90.3	P/P	40 - 160
2448400	Endothall	101	97.0	P/P	40 - 160
2448400	Glufosinate	96.2	101	P/P	40 - 160
2448400	Glyphosate	99.5	101	P/P	40 - 160
2448400	Sucralose	96.2	78.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P437434

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448400	2,4-D	62.5	58.8	P/P	40 - 150
2448400	2,4,5-T	58.0	57.3	P/P	40 - 150
2448400	Acetaminophen	57.5	56.3	P/P	30 - 150
2448400	Acetamiprid	48.6	49.1	P/P	40 - 150
2448400	Afidopyropen	65.2	63.2	P/P	30 - 150
2448400	Bentazon	26.7	25.1	F/F	30 - 150
2448400	Benzovindiflupyr	78.2	79.5	P/P	40 - 150
2448400	Carbamazepine	60.9	58.9	P/P	40 - 150
2448400	Clothianidin	55.9	54.8	P/P	40 - 150
2448400	Dinotefuran	48.1	47.9	P/P	40 - 150
2448400	Diuron	53.9	52.0	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P437434

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448400	Fenuron	41.1	40.2	P/P	40 - 150
2448400	Fluridone	52.7	53.3	P/P	40 - 150
2448400	Hydrocodone	55.9	54.4	P/P	40 - 150
2448400	Ibuprofen	38.4	43.2	F/P	40 - 150
2448400	Imazapyr	58.4	54.4	P/P	40 - 150
2448400	Imidacloprid	74.2	72.4	P/P	40 - 150
2448400	Linuron	54.8	54.9	P/P	40 - 150
2448400	Mandestrobin	81.7	74.7	P/P	40 - 150
2448400	MCCP	64.8	61.0	P/P	40 - 150
2448400	Naproxen	43.7	46.5	P/P	40 - 150
2448400	Primidone	58.1	59.3	P/P	40 - 150
2448400	Pyraclostrobin	76.0	78.5	P/P	40 - 150
2448400	Silvex	65.0	57.2	P/P	40 - 150
2448400	Thiamethoxam	56.2	56.9	P/P	40 - 150
2448400	Tolfenpyrad	50.1	49.4	P/P	30 - 150
2448400	Triclopyr	63.3	57.8	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449973	Fluoride	102	101	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P437475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448704	Organic Carbon	97.1	96.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P437352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448772	Color (true)	5.30	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448701	Turbidity	13.6	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448765	Calcium	4.33	Spike	P	0 - 20
2448765	Iron	3.91	Spike	P	0 - 20
2448765	Magnesium	3.93	Spike	P	0 - 20
2448765	Potassium	4.06	Spike	P	0 - 20
2448765	Sodium	4.07	Spike	P	0 - 20
2448765	Strontium	4.14	Spike	P	0 - 20
2448765	Tin	2.39	Spike	P	0 - 20
2448765	Titanium	2.91	Spike	P	0 - 20
2448765	Vanadium	2.48	Spike	P	0 - 20
2448765	Zinc	2.20	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448765	Aluminum	1.79	Spike	P	0 - 20
2448765	Antimony	1.59	Spike	P	0 - 20
2448765	Arsenic	1.59	Spike	P	0 - 20
2448765	Barium	0.691	Spike	P	0 - 20
2448765	Beryllium	0.350	Spike	P	0 - 20
2448765	Boron	2.66	Spike	P	0 - 20
2448765	Cadmium	1.23	Spike	P	0 - 20
2448765	Chromium	1.50	Spike	P	0 - 20
2448765	Cobalt	1.41	Spike	P	0 - 20
2448765	Copper	0.386	Spike	P	0 - 20
2448765	Lead	0.927	Spike	P	0 - 20
2448765	Manganese	2.01	Spike	P	0 - 20
2448765	Molybdenum	0.926	Spike	P	0 - 20
2448765	Nickel	0.219	Spike	P	0 - 20
2448765	Selenium	1.85	Spike	P	0 - 20
2448765	Silver	0.262	Spike	P	0 - 20
2448765	Thallium	0.265	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449630	Chromium	3.76	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448639	Chloride	0.762	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448639	Sulfate	0.880	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450037	Chloride	0.396	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450037	Sulfate	0.690	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448640	Ammonia-N	2.77	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448707	Kjeldahl Nitrogen	1.80	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448507	Kjeldahl Nitrogen	1.17	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P437644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447765	NO2NO3-N	1.38	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P437516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448507	Total-P	1.50	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P437657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448757	Total-P	1.87	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P437349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448787	O-Phosphate-P	0.0802	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P437333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448400	Acesulfame K	23.3	Spike	P	0 - 30
2448400	AMPA	4.90	Spike	P	0 - 30
2448400	Endothall	3.71	Spike	P	0 - 30
2448400	Glufosinate	4.72	Spike	P	0 - 30
2448400	Glyphosate	1.63	Spike	P	0 - 30
2448400	Sucralose	15.0	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P437434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448400	2,4-D	5.71	Spike	P	0 - 30
2448400	2,4,5-T	1.13	Spike	P	0 - 30
2448400	Acetaminophen	2.20	Spike	P	0 - 30
2448400	Acetamiprid	0.954	Spike	P	0 - 30
2448400	Afidopyropen	3.09	Spike	P	0 - 30
2448400	Bentazon	6.14	Spike	P	0 - 30
2448400	Benzovindiflupyr	1.57	Spike	P	0 - 30
2448400	Carbamazepine	3.43	Spike	P	0 - 30
2448400	Clothianidin	1.99	Spike	P	0 - 30
2448400	Dinotefuran	0.340	Spike	P	0 - 30
2448400	Diuron	3.52	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P437434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448400	Fenuron	2.17	Spike	P	0 - 30
2448400	Fluridone	1.25	Spike	P	0 - 30
2448400	Hydrocodone	2.68	Spike	P	0 - 30
2448400	Ibuprofen	11.8	Spike	P	0 - 30
2448400	Imazapyr	3.40	Spike	P	0 - 30
2448400	Imidacloprid	2.26	Spike	P	0 - 30
2448400	Linuron	0.170	Spike	P	0 - 30
2448400	Mandestrobin	9.01	Spike	P	0 - 30
2448400	MCCP	6.03	Spike	P	0 - 30
2448400	Naproxen	6.04	Spike	P	0 - 30
2448400	Primidone	1.95	Spike	P	0 - 30
2448400	Pyraclostrobin	3.32	Spike	P	0 - 30
2448400	Silvex	12.9	Spike	P	0 - 30
2448400	Thiamethoxam	1.20	Spike	P	0 - 30
2448400	Tolfenpyrad	1.37	Spike	P	0 - 30
2448400	Triclopyr	9.08	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P437666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448305	Total Alkalinity	0.0855	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P437814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448520	TDS	2.07	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P437781

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448520	TSS	8.22	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449973	Fluoride	0.467	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P437475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448704	Organic Carbon	0.154	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: 2448797

Field Sample ID: G3CE0016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	67.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	61.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	56.5	P	30 - 160
EPA 8321B	Diuron-d6	51.1	P	30 - 160
EPA 8321B	Endothall-d6	124	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	43.1	P	30 - 160
EPA 8321B	Primidone-d5	49.0	P	30 - 160
EPA 8321B	Sucralose-d6	88.1	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A122553

Included Lab Sample IDs: 2448787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	99.5	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A122555

Included Lab Sample IDs: 2448785, 2448788, 2448790

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122557

Included Lab Sample IDs: 2448785, 2448788, 2448790

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122575

Included Lab Sample IDs: 2448786, 2448789, 2448791

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

Reference Method: SM 5310 B-2011

Run ID: A122600

Included Lab Sample IDs: 2448786, 2448789, 2448791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.1	97.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122607

Included Lab Sample IDs: 2448797

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	102	92.1	P/P	60 - 160
Endothall	97.0	93.2	P/P	60 - 160
Glufosinate	93.5	97.0	P/P	60 - 160
Glyphosate	99.1	101	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A122608

Included Lab Sample IDs: 2448797

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	110	84.9	P/P	60 - 160
Sucralose	93.5	94.0	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122610

Included Lab Sample IDs: 2448785, 2448790

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	102	P/P	90 - 110
Sulfate	103	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122611

Included Lab Sample IDs: 2448798, 2448799

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	106	P/P	90 - 110
Aluminum	106	104	P/P	90 - 110
Antimony	100	101	P/P	90 - 110
Antimony	99.8	100	P/P	90 - 110
Arsenic	101	98.6	P/P	90 - 110
Arsenic	98.6	99.4	P/P	90 - 110
Barium	102	103	P/P	90 - 110
Barium	103	103	P/P	90 - 110
Beryllium	101	99.0	P/P	90 - 110
Beryllium	99.0	98.9	P/P	90 - 110
Boron	103	106	P/P	90 - 110
Boron	106	102	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Cadmium	104	104	P/P	90 - 110
Chromium	99.5	99.7	P/P	90 - 110
Cobalt	96.2	96.6	P/P	90 - 110
Cobalt	97.3	96.2	P/P	90 - 110
Copper	100	99.2	P/P	90 - 110
Copper	99.2	98.6	P/P	90 - 110
Lead	96.2	96.7	P/P	90 - 110
Lead	96.7	96.1	P/P	90 - 110
Manganese	104	105	P/P	90 - 110
Manganese	105	105	P/P	90 - 110
Molybdenum	101	101	P/P	90 - 110
Molybdenum	101	101	P/P	90 - 110
Nickel	96.1	96.3	P/P	90 - 110
Nickel	97.8	96.1	P/P	90 - 110
Selenium	103	103	P/P	90 - 110
Selenium	103	103	P/P	90 - 110
Silver	100	101	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	101	101	P/P	90 - 110
Thallium	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122620

Included Lab Sample IDs: 2448786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.0	92.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122637

Included Lab Sample IDs: 2448786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122659

Included Lab Sample IDs: 2448789, 2448791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122667

Included Lab Sample IDs: 2448786, 2448789, 2448791

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

Reference Method: SM 2320 B-2011

Run ID: A122678

Included Lab Sample IDs: 2448785, 2448788, 2448790

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.5	98.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122692

Included Lab Sample IDs: 2448797

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	62.6	61.1	P/P	50 - 150
2,4,5-T	68.8	62.0	P/P	50 - 150
Acetaminophen	102	104	P/P	60 - 160
Acetamiprid	112	114	P/P	50 - 150
Afidopyropen	109	110	P/P	50 - 150
Bentazon	66.4	74.5	P/P	50 - 160
Benzovindiflupyr	103	102	P/P	50 - 150
Carbamazepine	118	117	P/P	60 - 150
Clothianidin	111	109	P/P	60 - 150
Dinotefuran	106	104	P/P	50 - 150
Diuron	114	117	P/P	60 - 160
Fenuron	110	111	P/P	60 - 150
Fluridone	97.7	91.7	P/P	60 - 160
Hydrocodone	120	117	P/P	60 - 150
Ibuprofen	89.2	69.3	P/P	50 - 160
Imazapyr	64.1	66.3	P/P	50 - 150
Imidacloprid	95.8	95.3	P/P	60 - 150
Linuron	90.6	101	P/P	60 - 150
Mandestrobin	98.9	100	P/P	50 - 150
MCPP	67.1	65.0	P/P	50 - 150
Naproxen	69.3	81.0	P/P	50 - 160
Primidone	101	98.1	P/P	60 - 150
Pyraclostrobin	106	105	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A122692
Included Lab Sample IDs: 2448797

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silvex	73.1	78.1	P/P	50 - 150
Thiamethoxam	112	115	P/P	50 - 150
Tolfenpyrad	91.2	92.7	P/P	60 - 150
Triclopyr	64.4	60.7	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A122699
Included Lab Sample IDs: 2448798

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	98.4	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A122712
Included Lab Sample IDs: 2448789, 2448791

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A122723
Included Lab Sample IDs: 2448798, 2448799

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	101	P/P	95 - 105
Calcium	104	104	P/P	90 - 110
Iron	101	99.7	P/P	95 - 105
Iron	102	102	P/P	90 - 110
Magnesium	101	100	P/P	95 - 105
Magnesium	102	103	P/P	90 - 110
Potassium	100	101	P/P	90 - 110
Potassium	98.8	97.7	P/P	95 - 105
Sodium	101	101	P/P	90 - 110
Sodium	99.4	98.7	P/P	95 - 105
Strontium	98.2	98.9	P/P	90 - 110
Strontium	98.5	95.3	P/P	95 - 105
Tin	101	101	P/P	90 - 110
Tin	101	101	P/P	95 - 105
Titanium	100	100	P/P	90 - 110
Titanium	101	101	P/P	95 - 105
Vanadium	99.3	98.9	P/P	90 - 110
Vanadium	99.6	99.4	P/P	95 - 105
Zinc	100	99.7	P/P	90 - 110
Zinc	99.9	100	P/P	95 - 105

Reference Method: SM 4500-F- C-2011
Run ID: A122774
Included Lab Sample IDs: 2448785, 2448788, 2448790

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

Quality Assurance Report

Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122874

Included Lab Sample IDs: 2448788

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

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
DEP SOP: NU-094-1	Color (true)	99.6					5.30	
EPA 180.1 Rev. 2.0	Turbidity	104					13.6	
EPA 200.7 Rev. 4.4	Calcium	106	105	100				4.33
	Iron	113	108	112	109			3.91
	Magnesium	113	103	111	103			3.93
	Potassium	101	95.0	102				4.06
	Sodium	109	97.7	105	101			4.07
	Strontium	99.7	93.6	97.6	96.6			4.14
	Tin	98.8	95.9	98.2	93.7			2.39
	Titanium	101	97.2	100	98.2			2.91
	Vanadium	100	96.5	98.9	97.1			2.48
	Zinc	98.9	94.6	96.8	93.7			2.20
EPA 200.8 Rev. 5.4	Aluminum	104	107	104	99.3			1.79
	Antimony	102	104	102	102			1.59
	Arsenic	99.5	99.6	98.0	100			1.59
	Barium	105	105	104	103			0.691
	Beryllium	95.1	95.9	95.6	96.2			0.350
	Boron	108	117	112	101			2.66
	Cadmium	102	105	104	102			1.23
	Chromium	98.1	98.4	96.9	95.0			1.50
	Chromium	96.3	99.7	94.7	95.1			3.76
	Cobalt	96.1	95.8	94.4	92.8			1.41
	Copper	99.6	101	101	98.1			0.386
	Lead	96.6	97.3	96.4	95.0			0.927
	Manganese	104	110	105	104			2.01
	Molybdenum	100	101	100	101			0.926
	Nickel	95.9	96.1	95.8	92.7			0.219
	Selenium	103	102	100	101			1.85
	Silver	107	106	106	102			0.262
	Thallium	103	105	105	106			0.265
EPA 300.0 Rev. 2.1	Chloride	103	105				0.762	
	Chloride	99.8	95.2	96.7			0.396	
	Sulfate	103	105				0.880	
	Sulfate	98.1	96.5	99.2			0.690	
EPA 350.1 Rev. 2.0	Ammonia-N	101	94.0	97.0				2.77
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.5	100	97.7				1.80
	Kjeldahl Nitrogen	102	97.3	98.6				1.17
EPA 353.2 Rev. 2.0	NO2NO3-N	101	99.5	102				1.38
EPA 365.1 Rev. 2.0	Total-P	101	106	107				1.50
	Total-P	101	105	103				1.87
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	97.2	97.1				0.0802
EPA 8321B	2,4-D	66.8	62.5	58.8				5.71
	2,4,5-T	50.3	58.0	57.3				1.13
	Acesulfame K	86.3	132	104				23.3
	Acetaminophen	94.2	56.3	57.5				2.20
	Acetamiprid	93.2	49.1	48.6				0.954
	Afidopyropen	59.6	63.2	65.2				3.09
	AMPA	91.4	85.8	90.3				4.90
	Bentazon	64.7	25.1	26.7				6.14
	Benzovindiflupyr	87.2	79.5	78.2				1.57
	Carbamazepine	94.1	58.9	60.9				3.43
	Clothianidin	97.5	54.8	55.9				1.99
	Dinotefuran	95.8	47.9	48.1				0.340
	Diuron	85.4	52.0	53.9				3.52

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Endothall	91.7	101	97.0		3.71
	Fenuron	102	40.2	41.1		2.17
	Fluridone	87.8	53.3	52.7		1.25
	Glufosinate	99.4	96.2	101		4.72
	Glyphosate	94.5	99.5	101		1.63
	Hydrocodone	103	54.4	55.9		2.68
	Ibuprofen	47.9	38.4	43.2		11.8
	Imazapyr	61.0	54.4	58.4		3.40
	Imidacloprid	87.1	72.4	74.2		2.26
	Linuron	75.7	54.9	54.8		0.170
	Mandestrobin	88.0	74.7	81.7		9.01
	MCPP	61.5	64.8	61.0		6.03
	Naproxen	41.3	43.7	46.5		6.04
	Primidone	89.3	59.3	58.1		1.95
	Pyraclostrobin	83.5	78.5	76.0		3.32
	Silvex	54.1	65.0	57.2		12.9
	Sucralose	82.4	96.2	78.5		15.0
	Thiamethoxam	96.5	56.9	56.2		1.20
	Tolfenpyrad	49.2	49.4	50.1		1.37
	Triclopyr	58.2	63.3	57.8		9.08
SM 2320 B-2011	Total Alkalinity	99.2			0.0855	
SM 2540 C-2015	TDS	97.2			2.07	
SM 2540 D-2015	TSS	106			8.22	
SM 4500-F- C-2011	Fluoride	103	102	101		0.467
SM 5310 B-2011	Organic Carbon	96.2	97.1	96.9		0.154

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2448785, 2448788, 2448790
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2448785, 2448788, 2448790
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2448798, 2448799
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2448798, 2448799
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2448785, 2448788, 2448790
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2448785, 2448788, 2448790
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2448786, 2448789, 2448791
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2448786, 2448789, 2448791
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2448786, 2448789, 2448791
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2448786, 2448789, 2448791
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2448787
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2448797
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2448785, 2448788, 2448790
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2448798
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2448785, 2448788, 2448790
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2448785, 2448788, 2448790
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2448785, 2448788, 2448790
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2448786, 2448789, 2448791

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	11/03/2023			11/03/2023 15:42	Chandler E Cox	2448785
	11/03/2023			11/03/2023 15:43	Chandler E Cox	2448788
	11/03/2023			11/03/2023 15:44	Chandler E Cox	2448790
EPA 180.1 Rev. 2.0	11/03/2023			11/03/2023 14:56	Anna M. Plaviak	2448785
	11/03/2023			11/03/2023 14:58	Anna M. Plaviak	2448788
	11/03/2023			11/03/2023 14:59	Anna M. Plaviak	2448790
EPA 200.7 Rev. 4.4	11/03/2023	11/06/2023 14:45	George D Taylor	11/14/2023 12:58	Chase Roberts	2448799
	11/03/2023	11/06/2023 14:45	George D Taylor	11/14/2023 16:04	Chase Roberts	2448798
EPA 200.8 Rev. 5.4	11/03/2023	11/06/2023 14:45	George D Taylor	11/07/2023 16:09	Conrad Hartmann	2448799
	11/03/2023	11/06/2023 14:45	George D Taylor	11/07/2023 18:05	Conrad Hartmann	2448798
	11/03/2023	11/09/2023 13:40	George D Taylor	11/13/2023 20:06	Emily M Philpot	2448798
EPA 300.0 Rev. 2.1	11/03/2023			11/09/2023 16:57	James L Waggeberby	2448785
	11/03/2023			11/09/2023 17:12	James L Waggeberby	2448790
	11/03/2023			11/21/2023 17:47	James L Waggeberby	2448788
EPA 350.1 Rev. 2.0	11/03/2023			11/06/2023 12:48	Khloe J Berg	2448786
	11/03/2023			11/06/2023 12:50	Khloe J Berg	2448789
	11/03/2023			11/06/2023 12:51	Khloe J Berg	2448791
EPA 351.2 Rev. 2.0	11/03/2023	11/07/2023 12:15	Simonne.V. Calhoun	11/08/2023 10:38	Samantha L Bates	2448786
	11/03/2023	11/08/2023 11:50	Ping Hua	11/09/2023 11:21	Ping Hua	2448789
	11/03/2023	11/08/2023 11:50	Ping Hua	11/09/2023 11:23	Ping Hua	2448791
EPA 353.2 Rev. 2.0	11/03/2023			11/09/2023 12:52	Fadila Guebre	2448786
	11/03/2023			11/09/2023 12:53	Fadila Guebre	2448789
	11/03/2023			11/09/2023 12:54	Fadila Guebre	2448791
EPA 365.1 Rev. 2.0	11/03/2023	11/08/2023 11:08	Adam P Silver	11/08/2023 15:28	James L Waggeberby	2448786
	11/03/2023	11/13/2023 13:18	Adam P Silver	11/14/2023 16:12	James L Waggeberby	2448791
	11/03/2023	11/13/2023 13:18	Adam P Silver	11/14/2023 16:15	James L Waggeberby	2448789
EPA 365.1 Rev. 2.0 dissolved	11/03/2023			11/03/2023 15:07	Elise M. Gillis	2448787
EPA 8321B	11/03/2023	11/07/2023 08:00	Hana Lee	11/07/2023 13:31	Tae K Lee	2448797
	11/03/2023	11/07/2023 08:00	Hana Lee	11/07/2023 17:15	Tae K Lee	2448797
	11/03/2023	11/08/2023 09:00	Hoor Shaik	11/09/2023 04:09	Juyoung Kim	2448797
SM 2320 B-2011	11/03/2023			11/09/2023 22:37	Chandler E Cox	2448785
	11/03/2023			11/09/2023 22:48	Chandler E Cox	2448788
	11/03/2023			11/09/2023 22:54	Chandler E Cox	2448790
SM 2340 B-2011	11/03/2023			11/14/2023 16:04	Chase Roberts	2448798
SM 2540 C-2015	11/03/2023			11/07/2023 15:38	Yijie Li	2448785, 2448788, 2448790
SM 2540 D-2015	11/03/2023			11/07/2023 15:38	Yijie Li	2448785, 2448788, 2448790
SM 4500-F- C-2011	11/03/2023			11/16/2023 01:43	Dale L. Simmons	2448785
	11/03/2023			11/16/2023 01:49	Dale L. Simmons	2448788
	11/03/2023			11/16/2023 01:54	Dale L. Simmons	2448790
SM 5310 B-2011	11/03/2023			11/06/2023 22:45	Khloe J Berg	2448786

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	11/03/2023			11/06/2023 22:59	Khloe J Berg	2448789
	11/03/2023			11/06/2023 23:12	Khloe J Berg	2448791