

Chemical Analysis Report

CEN-DIST-2019-09-20-01

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

Event Description: **Dot / Up Cypress x2 / Jane (OC)**

Request ID: **RQ-2019-08-26-53**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

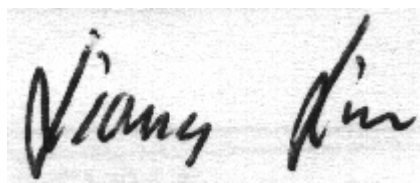
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Michael Linger

For additional information please contact

Colin Wright, Ph.D.
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Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 17-OCT-2019 13:42

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

NON-CONFORMANCE REPORT INCLUDED

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: Cypress Creek @ SR 535

Collection Date/Time: 09/19/2019 10:40

Field ID: G4CE0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121281	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P371075	
	EPA 300.0 Rev. 2.1	Chloride	31		mg Cl/L	P371224	
		Sulfate	5.1		mg SO4/L	P371227	
	SM 2120 B	Color (true)	190		PCU	P371078	
	SM 2320 B-97	Total Alkalinity	27		mg CaCO3/L	P371527	
	SM 2540 C-97	TDS	129		mg/L	P371614	
	SM 2540 D-97	TSS	2	I	mg/L	P371581	
	SM 4500 F-C-97	Fluoride	0.071	I	mg F/L	P371531	
2121283	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P371595	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P371192	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P371293	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P371313	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P371257	
2121285	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P371082	
2121328	EPA 200.7 Rev. 4.4	Barium	7.4		ug/L	P371231	
		Calcium	10.7		mg/L	P371231	
		Iron	140		ug/L	P371231	
		Magnesium	3.13		mg/L	P371231	
		Potassium	5.0		mg/L	P371231	
		Sodium	18.9		mg/L	P371231	
		Zinc	5.0	U	ug/L	P371231	
	EPA 200.8 Rev. 5.4	Aluminum	33		ug/L	P371231	
		Antimony	0.050	U	ug/L	P371231	
		Arsenic	0.48		ug/L	P371231	
		Boron**	37.4		ug/L	P371231	
		Cadmium	0.020	U	ug/L	P371231	
		Chromium	0.40	U	ug/L	P371231	
		Copper	0.40	U	ug/L	P371231	
		Lead	0.20	U	ug/L	P371231	
		Nickel	0.50	U	ug/L	P371231	
		Selenium	0.20	U	ug/L	P371231	
		Silver	0.010	U	ug/L	P371231	
		Thallium	0.10	U	ug/L	P371231	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Upper Cypress Creek @ Jacaranda

Collection Date/Time: 09/19/2019 11:00

Field ID: G4CE0157

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121282	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P371074	
	EPA 300.0 Rev. 2.1	Chloride	37		mg Cl/L	P371224	
		Sulfate	17		mg SO4/L	P371227	
		Color (true)	140		PCU	P371078	
	SM 2320 B-97	Total Alkalinity	18	Y	mg CaCO3/L	P371527	
	SM 2540 C-97	TDS	139	Y	mg/L	P371614	
	SM 2540 D-97	TSS	2	IY	mg/L	P371581	
	SM 4500 F-C-97	Fluoride	0.097	I	mg F/L	P371531	
2121284	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P371595	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P371192	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P371294	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P371313	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P371257	
2121286	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P371084	
2121329	EPA 200.7 Rev. 4.4	Barium	8.9		ug/L	P371231	
		Calcium	9.55		mg/L	P371231	
		Iron	83	I	ug/L	P371231	
		Magnesium	4.59		mg/L	P371231	
		Potassium	7.1		mg/L	P371231	
		Sodium	21.1		mg/L	P371231	
		Zinc	5.0	U	ug/L	P371231	
	EPA 200.8 Rev. 5.4	Aluminum	27		ug/L	P371231	
		Antimony	0.050	U	ug/L	P371231	
		Arsenic	0.73		ug/L	P371231	
		Boron**	51.5		ug/L	P371231	
		Cadmium	0.020	U	ug/L	P371231	
		Chromium	0.40	U	ug/L	P371231	
		Copper	0.40	U	ug/L	P371231	
		Lead	0.36	I	ug/L	P371231	
		Nickel	0.50	U	ug/L	P371231	
		Selenium	0.20	U	ug/L	P371231	
		Silver	0.010	U	ug/L	P371231	
		Thallium	0.10	U	ug/L	P371231	

Ref. Method and Comment:

SM 2320 B-97: Sample was left out at room temperature overnight, should be stored below 6 degC.

SM 2540 C-97: Sample was left out at room temperature overnight, should be stored below 6 degC.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample was left out at room temperature overnight, should be stored below 6 degC.

Sample Location: Lake Jane @ Center

Collection Date/Time: 09/19/2019 11:42

Field ID: G4CE0152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121287	EPA 180.1 Rev. 2.0	Turbidity	9.1	A	NTU	P371074	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P371224	
		Sulfate	18		mg SO4/L	P371227	
	SM 2120 B	Color (true)	37	A	PCU	P371078	
	SM 2320 B-97	Total Alkalinity	86	Y	mg CaCO3/L	P371527	
	SM 2540 C-97	TDS	151	Y	mg/L	P371614	
	SM 2540 D-97	TSS	11	Y	mg/L	P371581	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P371531	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.078		mg N/L	P371595	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P371192	
2121288	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P371294	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P371313	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P371257	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.005	I	mg P/L	P371084	
	dissolved						

Ref. Method and Comment:

SM 2320 B-97: Sample was left out at room temperature overnight, should be stored below 6 degC.

SM 2540 C-97: Sample was left out at room temperature overnight, should be stored below 6 degC.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample was left out at room temperature overnight, should be stored below 6 degC.

Sample Location: Lake Dot @ Center

Collection Date/Time: 09/19/2019 12:15

Field ID: G2CE0067

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121278	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P371074	
	EPA 300.0 Rev. 2.1	Chloride	9.2		mg Cl/L	P371224	
		Sulfate	14		mg SO4/L	P371227	
	SM 2120 B	Color (true)	10	A	PCU	P371079	
	SM 2320 B-97	Total Alkalinity	74		mg CaCO3/L	P371527	
	SM 2540 C-97	TDS	110	A	mg/L	P371614	
	SM 2540 D-97	TSS	4	IA	mg/L	P371581	
	SM 4500 F-C-97	Fluoride	0.049	I	mg F/L	P371531	
2121279	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P371595	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P371192	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.058		mg N/L	P371293	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P371313	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P371257	
2121280	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P371082	
2121315	EPA 8321B	Acesulfame K**	0.18	I	ug/L	P371101	
		2,4-D	0.17		ug/L	P370935	MS
		AMPA**	0.43		ug/L	P371101	
		Sucralose**	0.10		ug/L	P371101	
		Acetaminophen**	0.012	I	ug/L	P370935	
		Acetamiprid**	0.0020	U	ug/L	P370935	
		Endothall**	0.25	U	ug/L	P371101	
		Glufosinate**	0.10	U	ug/L	P371101	
		Glyphosate**	0.82		ug/L	P371101	
		Afidopyropen**	0.0020	UJ	ug/L	P370935	
		Bentazon	0.065		ug/L	P370935	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P370935	
		Carbamazepine**	8.0E-04	U	ug/L	P370935	
		Clothianidin**	0.0020	U	ug/L	P370935	
		Dinotefuran**	0.0036	I	ug/L	P370935	
		Diuron	0.10		ug/L	P370935	
		Fenuron	0.016	U	ug/L	P370935	
		Fluridone**	0.0015	I	ug/L	P370935	
		Imazapyr**	0.022		ug/L	P370935	
		Hydrocodone**	0.0020	U	ug/L	P370935	
		Ibuprofen**	0.020	U	ug/L	P370935	
		Imidacloprid	0.030		ug/L	P370935	MS
		Linuron	0.0040	U	ug/L	P370935	
		Mandestrobin**	0.0020	UJ	ug/L	P370935	
		MCP	0.0020	U	ug/L	P370935	MS
		Naproxen**	0.0080	U	ug/L	P370935	
		Primidone**	0.0040	U	ug/L	P370935	
		Pyraclostrobin**	0.0020	U	ug/L	P370935	
		Thiamethoxam**	0.0020	U	ug/L	P370935	

Field ID: G2CE0067

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121315	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P370935	
		Triclopyr**	0.0040	U	ug/L	P370935	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Non-Conformance Report

NCR ID: 7939

Event(s)

CEN-DIST-2019-09-20-01

CEN-DIST-2019-09-20-01

Job(s)

TLH-2019-09-20-02

TLH-2019-09-20-02

Sample(s)

2121282

2121287

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Samples stored outside of the acceptable temperature range overnight.

Resolution: Samples returned to refrigerator on 9/24/19 @ 08:40. Data will be qualified as appropriate when analyzed after this date/time.

Authorized by/Date: Irina Carbone 10/11/2019

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371074

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371075

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P371231

Component	Result	Code	Units
Barium	1.0	U	ug/L
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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P371231

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	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 300.0 Rev. 2.1
Batch ID: P371224

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371227

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371595

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371192

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371293

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371294

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371313

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371082

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371084

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

Reference Method: EPA 8321B
Batch ID: P370935

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyrophen	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P370935

Component	Result	Code	Units
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P371101

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: SM 2120 B
Batch ID: P371078

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P371079

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P371527

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

Reference Method: SM 2540 C-97
Batch ID: P371614

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P371581

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P371531

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P371257

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P371231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	104		P	85 - 115
Calcium	109		P	85 - 115
Iron	107		P	85 - 115
Magnesium	111		P	85 - 115
Potassium	103		P	85 - 115
Sodium	108		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P371231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.0		P	85 - 115
Antimony	98.4		P	85 - 115
Arsenic	98.5		P	85 - 115
Boron	102		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	93.8		P	85 - 115
Copper	97.1		P	85 - 115
Lead	92.5		P	85 - 115
Nickel	96.7		P	85 - 115
Selenium	95.6		P	85 - 115
Silver	98.5		P	85 - 115
Thallium	99.5		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371224

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371227

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371595

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371192

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P371293

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P371294

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P371313

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P371082

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P371084

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

Reference Method: EPA 8321B
 Batch ID: P370935

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	151		P	40 - 160
Acetaminophen	86.2		P	30 - 160
Acetamiprid	107		P	40 - 160
Afidopyropen	105		P	40 - 160
Bentazon	121		P	30 - 160
Benzovindiflupyr	97.5		P	40 - 160
Carbamazepine	108		P	40 - 160
Clothianidin	95.3		P	40 - 160
Dinotefuran	97.8		P	40 - 160
Diuron	105		P	40 - 160
Fenuron	105		P	40 - 160
Fluridone	99.2		P	40 - 160
Hydrocodone	93.1		P	40 - 160
Ibuprofen	100		P	30 - 160
Imazapyr	99.4		P	40 - 160
Imidacloprid	108		P	40 - 160
Linuron	84.2		P	40 - 160
Mandestrobin	96.7		P	40 - 160
MCPP	159		P	40 - 160
Naproxen	83.0		P	40 - 160
Primidone	94.3		P	40 - 160
Pyraclostrobin	90.5		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P370935

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Thiamethoxam	92.7		P	40 - 160
Tolfenpyrad	69.5		P	40 - 160
Triclopyr	120		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P371101

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	126		P	40 - 150
AMPA	89.5		P	40 - 150
Endothall	83.5		P	40 - 150
Glufosinate	88.1		P	40 - 150
Glyphosate	77.0		P	40 - 140
Sucralose	109		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P371078

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.9		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P371079

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

Reference Method: SM 2320 B-97
Batch ID: P371527

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P371531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P371257

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P371231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121052	Barium	105		P	80 - 120
2121052	Calcium	105		P	80 - 120
2121052	Iron	109		P	80 - 120
2121052	Magnesium	105		P	80 - 120
2121052	Potassium	101		P	80 - 120
2121052	Sodium	106		P	80 - 120
2121052	Zinc	103		P	80 - 120
2121216	Barium	104	106	P/P	80 - 120
2121216	Calcium	110	108	P/P	80 - 120
2121216	Iron	108	107	P/P	80 - 120
2121216	Magnesium	113	110	P/P	80 - 120
2121216	Potassium	108	106	P/P	80 - 120
2121216	Sodium	106		P	80 - 120
2121216	Zinc	103	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P371231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121052	Aluminum	104		P	80 - 120
2121052	Antimony	104		P	80 - 120
2121052	Arsenic	104		P	80 - 120
2121052	Boron	109		P	80 - 120
2121052	Cadmium	106		P	80 - 120
2121052	Chromium	102		P	80 - 120
2121052	Copper	100		P	80 - 120
2121052	Lead	99.6		P	80 - 120
2121052	Nickel	102		P	80 - 120
2121052	Selenium	101		P	80 - 120
2121052	Silver	102		P	80 - 120
2121052	Thallium	110		P	80 - 120
2121216	Aluminum	107	107	P/P	80 - 120
2121216	Antimony	106	104	P/P	80 - 120
2121216	Arsenic	106	105	P/P	80 - 120
2121216	Boron	108	109	P/P	80 - 120
2121216	Cadmium	106	105	P/P	80 - 120
2121216	Chromium	101	102	P/P	80 - 120
2121216	Copper	105	105	P/P	80 - 120
2121216	Lead	102	99.5	P/P	80 - 120
2121216	Nickel	104	103	P/P	80 - 120
2121216	Selenium	103	101	P/P	80 - 120
2121216	Silver	104	103	P/P	80 - 120
2121216	Thallium	111	110	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371224

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121188	Chloride	101		P	90 - 110
2121278	Chloride	99.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121188	Sulfate	101		P	90 - 110
2121278	Sulfate	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121279	Ammonia-N	98.5	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371192

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121279	Kjeldahl Nitrogen	106	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371293

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121267	NO2NO3-N	98.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121288	NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121266	Total-P	99.6	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121280	O-Phosphate-P	95.4	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121360	O-Phosphate-P	95.9	96.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P370935

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121150	2,4-D	169	163	F/F	40 - 160
2121150	Acetaminophen	74.3	74.7	P/P	30 - 160
2121150	Acetamiprid	127	118	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P370935

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121150	Afidopyropen	117	108	P/P	40 - 160
2121150	Bentazon	69.4	64.1	P/P	30 - 160
2121150	Benzovindiflupyr	100	101	P/P	40 - 160
2121150	Carbamazepine	95.0	90.8	P/P	40 - 160
2121150	Clothianidin	88.4	107	P/P	40 - 160
2121150	Dinotefuran	119	111	P/P	40 - 160
2121150	Diuron	90.4	87.8	P/P	40 - 160
2121150	Fenuron	94.8	91.2	P/P	40 - 160
2121150	Fluridone	93.2	93.1	P/P	40 - 160
2121150	Hydrocodone	108	102	P/P	40 - 160
2121150	Ibuprofen	95.7	93.5	P/P	30 - 160
2121150	Imazapyr	119	108	P/P	40 - 160
2121150	Imidacloprid	187	190	F/F	40 - 160
2121150	Linuron	73.9	75.6	P/P	40 - 160
2121150	Mandestrobin	95.0	92.4	P/P	40 - 160
2121150	MCCP	169	171	F/F	40 - 160
2121150	Naproxen	102	105	P/P	40 - 160
2121150	Primidone	99.6	92.5	P/P	40 - 160
2121150	Pyraclostrobin	97.9	97.1	P/P	30 - 160
2121150	Thiamethoxam	130	140	P/P	40 - 160
2121150	Tolfenpyrad	71.9	71.4	P/P	40 - 160
2121150	Triclopyr	143	140	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P371101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121020	Acesulfame K	134	134	P/P	40 - 150
2121020	AMPA	46.3	49.7	P/P	40 - 150
2121020	Endothall	81.1	82.8	P/P	40 - 150
2121020	Glufosinate	81.2	80.4	P/P	40 - 150
2121020	Glyphosate	62.9	68.9	P/P	40 - 140
2121020	Sucralose	111	112	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P371531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121189	Fluoride	97.1	96.5	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P371257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121199	Organic Carbon	96.8	97.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121287	Turbidity	5.92	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371075

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121355	Turbidity	0.350	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P371231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121216	Barium	1.73	Spike	P	0 - 20
2121216	Calcium	1.67	Spike	P	0 - 20
2121216	Iron	1.19	Spike	P	0 - 20
2121216	Magnesium	2.09	Spike	P	0 - 20
2121216	Potassium	1.85	Spike	P	0 - 20
2121216	Sodium	0.335	Spike	P	0 - 20
2121216	Zinc	2.02	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P371231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121216	Aluminum	0.685	Spike	P	0 - 20
2121216	Antimony	2.32	Spike	P	0 - 20
2121216	Arsenic	0.549	Spike	P	0 - 20
2121216	Boron	0.250	Spike	P	0 - 20
2121216	Cadmium	0.645	Spike	P	0 - 20
2121216	Chromium	0.981	Spike	P	0 - 20
2121216	Copper	0.0985	Spike	P	0 - 20
2121216	Lead	2.69	Spike	P	0 - 20
2121216	Nickel	0.707	Spike	P	0 - 20
2121216	Selenium	2.02	Spike	P	0 - 20
2121216	Silver	0.586	Spike	P	0 - 20
2121216	Thallium	0.236	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121188	Chloride	0.356	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121188	Sulfate	0.278	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121279	Ammonia-N	0.294	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121279	Kjeldahl Nitrogen	1.33	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121267	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121288	NO2NO3-N	1.73	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121266	Total-P	1.69	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121280	O-Phosphate-P	1.66	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121360	O-Phosphate-P	0.966	Spike	P	0 - 20

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P370935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121150	2,4-D	3.53	Spike	P	0 - 30
2121150	Acetaminophen	0.573	Spike	P	0 - 30
2121150	Acetamiprid	7.35	Spike	P	0 - 30
2121150	Afidopyropen	7.71	Spike	P	0 - 30
2121150	Bentazon	7.96	Spike	P	0 - 30
2121150	Benzovindiflupyr	0.744	Spike	P	0 - 30
2121150	Carbamazepine	4.47	Spike	P	0 - 30
2121150	Clothianidin	18.7	Spike	P	0 - 30
2121150	Dinotefuran	6.97	Spike	P	0 - 30
2121150	Diuron	2.89	Spike	P	0 - 30
2121150	Fenuron	3.91	Spike	P	0 - 30
2121150	Fluridone	0.139	Spike	P	0 - 30
2121150	Hydrocodone	5.86	Spike	P	0 - 30
2121150	Ibuprofen	2.30	Spike	P	0 - 30
2121150	Imazapyr	9.87	Spike	P	0 - 30
2121150	Imidacloprid	1.79	Spike	P	0 - 30
2121150	Linuron	2.30	Spike	P	0 - 30
2121150	Mandestrobin	2.86	Spike	P	0 - 30
2121150	MCPP	1.53	Spike	P	0 - 30
2121150	Naproxen	3.70	Spike	P	0 - 30
2121150	Primidone	7.34	Spike	P	0 - 30
2121150	Pyraclostrobin	0.820	Spike	P	0 - 30
2121150	Thiamethoxam	7.67	Spike	P	0 - 30
2121150	Tolfenpyrad	0.686	Spike	P	0 - 30
2121150	Triclopyr	1.80	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P371101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121020	Acesulfame K	0.412	Spike	P	0 - 30
2121020	AMPA	4.62	Spike	P	0 - 30
2121020	Endothall	2.08	Spike	P	0 - 30
2121020	Glufosinate	1.02	Spike	P	0 - 30
2121020	Glyphosate	7.20	Spike	P	0 - 30
2121020	Sucralose	0.217	Spike	P	0 - 30

Reference Method: SM 2120 B

Batch ID: P371078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121287	Color (true)	0.487	Sample	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P371079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121278	Color (true)	3.35	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P371527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121189	Total Alkalinity	0.487	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P371614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121278	TDS	0.905	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P371531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121189	Fluoride	0.487	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P371257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121199	Organic Carbon	0.926	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2121315
Field Sample ID: G2CE0067

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	153	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.6	P	30 - 160
EPA 8321B	Diuron-d6	78.6	P	30 - 160
EPA 8321B	Endothall-d6	83.3	P	30 - 160
EPA 8321B	Endothall-d6	83.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	73.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	73.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	71.4	P	30 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94382

Included Lab Sample IDs: 2121278, 2121281, 2121282, 2121287

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105
Turbidity	100	100	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A94384

Included Lab Sample IDs: 2121278, 2121281, 2121282, 2121287

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	90 - 115
Color (true)	99.6	99.8	P/P	90 - 115
Color (true)	99.6	99.6	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94385

Included Lab Sample IDs: 2121280, 2121285, 2121286, 2121289

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	98.5	P/P	90 - 110
O-Phosphate-P	99.0	97.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94410

Included Lab Sample IDs: 2121315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	137	112	P/P	50 - 150
Acetaminophen	103	110	P/P	60 - 160
Acetamiprid	116	112	P/P	50 - 150
Afidopyropen	83.0	102	P/P	50 - 150
Bentazon	113	110	P/P	50 - 160
Benzovindiflupyr	106	97.6	P/P	50 - 150
Carbamazepine	105	105	P/P	60 - 150
Clothianidin	101	109	P/P	60 - 150
Dinotefuran	104	104	P/P	50 - 150
Diuron	109	109	P/P	60 - 150
Fenuron	109	114	P/P	60 - 150
Fluridone	111	106	P/P	60 - 160
Hydrocodone	114	115	P/P	60 - 150
Ibuprofen	78.9	89.8	P/P	50 - 160
Imazapyr	101	104	P/P	50 - 150
Imidacloprid	102	95.0	P/P	60 - 150
Linuron	91.0	95.3	P/P	60 - 150
Mandestrobin	114	105	P/P	50 - 150
MCPP	91.9	95.1	P/P	50 - 150
Naproxen	77.2	78.6	P/P	50 - 160
Primidone	108	99.5	P/P	60 - 150
Pyraclostrobin	121	110	P/P	60 - 150
Thiamethoxam	80.3	104	P/P	50 - 150
Tolfenpyrad	127	113	P/P	60 - 150
Triclopyr	108	90.4	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94452

Included Lab Sample IDs: 2121278, 2121281, 2121282, 2121287

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	102	101	P/P	90 - 110
Sulfate	103	104	P/P	90 - 110
Sulfate	104	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94467

Included Lab Sample IDs: 2121315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	97.1	121	P/P	60 - 160
Endothall	93.2	93.6	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A94471

Included Lab Sample IDs: 2121279, 2121283, 2121284, 2121288

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	95.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94489

Included Lab Sample IDs: 2121279, 2121283, 2121284, 2121288

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A94502

Included Lab Sample IDs: 2121328, 2121329

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	104	P/P	90 - 110
Barium	99.3	103	P/P	90 - 110
Calcium	102	104	P/P	90 - 110
Calcium	104	104	P/P	90 - 110
Iron	102	103	P/P	90 - 110
Iron	103	105	P/P	90 - 110
Magnesium	103	104	P/P	90 - 110
Magnesium	104	105	P/P	90 - 110
Potassium	100	101	P/P	90 - 110
Potassium	101	100	P/P	90 - 110
Sodium	103	103	P/P	90 - 110
Sodium	104	103	P/P	90 - 110
Zinc	102	104	P/P	90 - 110
Zinc	97.9	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94517

Included Lab Sample IDs: 2121279, 2121288

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	98.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94522

Included Lab Sample IDs: 2121315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	69.2	99.4	P/P	60 - 160
Glufosinate	75.0	86.5	P/P	60 - 160
Glyphosate	62.0	102	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94532

Included Lab Sample IDs: 2121283, 2121284

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94536

Included Lab Sample IDs: 2121279, 2121283, 2121284, 2121288

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	106	P/P	90 - 110
Kjeldahl Nitrogen	106	105	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A94582

Included Lab Sample IDs: 2121278, 2121281, 2121282, 2121287

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

Reference Method: SM 4500 F-C-97

Run ID: A94582

Included Lab Sample IDs: 2121278, 2121281, 2121282, 2121287

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

Reference Method: EPA 8321B

Run ID: A94586

Included Lab Sample IDs: 2121315

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.8	103	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94610

Included Lab Sample IDs: 2121279, 2121283, 2121284, 2121288

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	99.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94936

Included Lab Sample IDs: 2121328, 2121329

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	108	106	P/P	90 - 110
Antimony	96.5	97.1	P/P	90 - 110
Arsenic	103	103	P/P	90 - 110
Chromium	96.3	97.7	P/P	90 - 110
Copper	104	104	P/P	90 - 110
Lead	96.0	96.6	P/P	90 - 110
Nickel	104	103	P/P	90 - 110
Selenium	102	102	P/P	90 - 110
Silver	99.5	100	P/P	90 - 110
Thallium	93.4	93.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94975

Included Lab Sample IDs: 2121328, 2121329

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	107	105	P/P	90 - 110
Cadmium	96.7	97.3	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
EPA 180.1 Rev. 2.0	Turbidity						5.92	
	Turbidity						0.350	
EPA 200.7 Rev. 4.4	Barium	104	105	104	106			1.73
	Calcium	109	105	110	108			1.67
	Iron	107	109	108	107			1.19
	Magnesium	111	105	113	110			2.09
	Potassium	103	101	108	106			1.85
	Sodium	108	106	106				0.335
	Zinc	101	103	103	105			2.02
EPA 200.8 Rev. 5.4	Aluminum	99.0	104	107	107			0.685
	Antimony	98.4	104	106	104			2.32
	Arsenic	98.5	104	106	105			0.549
	Boron	102	109	108	109			0.250
	Cadmium	100	106	106	105			0.645
	Chromium	93.8	102	101	102			0.981
	Copper	97.1	100	105	105			0.0985
	Lead	92.5	99.6	102	99.5			2.69
	Nickel	96.7	102	104	103			0.707
	Selenium	95.6	101	103	101			2.02
	Silver	98.5	102	104	103			0.586
	Thallium	99.5	110	111	110			0.236
EPA 300.0 Rev. 2.1	Chloride	99.3	101	99.4			0.356	
	Sulfate	100	101	97.3			0.278	
EPA 350.1 Rev. 2.0	Ammonia-N	98.3	98.5	98.9				0.294
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	106	108				1.33
EPA 353.2 Rev. 2.0	NO2NO3-N	104	98.2					0.0
	NO2NO3-N	104	102	100				1.73
EPA 365.1 Rev. 2.0	Total-P	97.2	99.6	102				1.69
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.4	95.4	97.0				1.66
	O-Phosphate-P	98.1	95.9	96.9				0.966
EPA 8321B	2,4-D	151	169	163				3.53
	Acesulfame K	126	134	134				0.412
	Acetaminophen	86.2	74.3	74.7				0.573
	Acetamiprid	107	127	118				7.35
	Afidopyropen	105	117	108				7.71
	AMPA	89.5	46.3	49.7				4.62
	Bentazon	121	69.4	64.1				7.96
	Benzovindiflupyr	97.5	100	101				0.744
	Carbamazepine	108	95.0	90.8				4.47
	Clothianidin	95.3	88.4	107				18.7
	Dinotefuran	97.8	119	111				6.97
	Diuron	105	90.4	87.8				2.89
	Endothall	83.5	81.1	82.8				2.08
	Fenuron	105	94.8	91.2				3.91
	Fluridone	99.2	93.2	93.1				0.139
	Glufosinate	88.1	81.2	80.4				1.02
	Glyphosate	77.0	62.9	68.9				7.20
	Hydrocodone	93.1	108	102				5.86
	Ibuprofen	100	95.7	93.5				2.30
	Imazapyr	99.4	119	108				9.87
	Imidacloprid	108	187	190				1.79
	Linuron	84.2	73.9	75.6				2.30
	Mandestrobin	96.7	95.0	92.4				2.86
	MCPP	159	169	171				1.53

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Naproxen	83.0	102	105		3.70
	Primidone	94.3	99.6	92.5		7.34
	Pyraclostrobin	90.5	97.9	97.1		0.820
	Sucralose	109	111	112		0.217
	Thiamethoxam	92.7	130	140		7.67
	Tolfenpyrad	69.5	71.9	71.4		0.686
	Triclopyr	120	143	140		1.80
SM 2120 B	Color (true)	98.9			0.487	
	Color (true)	99.8			3.35	
SM 2320 B-97	Total Alkalinity	102			0.487	
SM 2540 C-97	TDS				0.905	
SM 4500 F-C-97	Fluoride	97.4	97.1	96.5		0.487
SM 5310 B-00	Organic Carbon	94.6	96.8	97.6		0.926

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2121278, 2121281, 2121282, 2121287
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2121328, 2121329
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2121328, 2121329
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2121278, 2121281, 2121282, 2121287
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2121278, 2121281, 2121282, 2121287
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2121279, 2121283, 2121284, 2121288
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2121279, 2121283, 2121284, 2121288
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2121279, 2121283, 2121284, 2121288
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2121279, 2121283, 2121284, 2121288
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2121280, 2121285, 2121286, 2121289
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2121315
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2121315
SM 2120 B / E31780	True Color measured at 450 nm	2121278, 2121281, 2121282, 2121287
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2121278, 2121281, 2121282, 2121287
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2121278, 2121281, 2121282, 2121287
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2121278, 2121281, 2121282, 2121287
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2121278, 2121281, 2121282, 2121287
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2121279, 2121283, 2121284, 2121288

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	09/20/2019			09/20/2019 16:56	Samantha Davila	2121278, 2121281, 2121282, 2121287
EPA 200.7 Rev. 4.4	09/20/2019	09/24/2019 15:40	Elliott D. Healy	09/25/2019 18:34	Alexander Thompson	2121328
	09/20/2019	09/24/2019 15:40	Elliott D. Healy	09/25/2019 19:05	Alexander Thompson	2121329
EPA 200.8 Rev. 5.4	09/20/2019	09/24/2019 15:40	Elliott D. Healy	10/14/2019 13:09	Justin Cutchin	2121328
	09/20/2019	09/24/2019 15:40	Elliott D. Healy	10/14/2019 13:19	Justin Cutchin	2121329
	09/20/2019	09/24/2019 15:40	Elliott D. Healy	10/15/2019 23:11	Justin Cutchin	2121328
	09/20/2019	09/24/2019 15:40	Elliott D. Healy	10/15/2019 23:20	Justin Cutchin	2121329
EPA 300.0 Rev. 2.1	09/20/2019			09/24/2019 02:12	Jhamieka S. Greenwood	2121278
	09/20/2019			09/24/2019 04:38	Jhamieka S. Greenwood	2121281
	09/20/2019			09/24/2019 04:50	Jhamieka S. Greenwood	2121282
	09/20/2019			09/24/2019 05:02	Jhamieka S. Greenwood	2121287
EPA 350.1 Rev. 2.0	09/20/2019			09/27/2019 13:47	Ping Hua	2121279
	09/20/2019			09/27/2019 13:53	Ping Hua	2121283
	09/20/2019			09/27/2019 13:54	Ping Hua	2121284
	09/20/2019			09/27/2019 13:56	Ping Hua	2121288
EPA 351.2 Rev. 2.0	09/20/2019	09/24/2019 12:39	Sima Feizi	09/25/2019 16:58	Julia Storbeck	2121279
	09/20/2019	09/24/2019 12:39	Sima Feizi	09/25/2019 17:09	Julia Storbeck	2121283
	09/20/2019	09/24/2019 12:39	Sima Feizi	09/25/2019 17:10	Julia Storbeck	2121284
	09/20/2019	09/24/2019 12:39	Sima Feizi	09/25/2019 17:12	Julia Storbeck	2121288
EPA 353.2 Rev. 2.0	09/20/2019			09/25/2019 10:44	Beverly Y. Sanders	2121279
	09/20/2019			09/25/2019 10:45	Beverly Y. Sanders	2121283
	09/20/2019			09/25/2019 10:53	Beverly Y. Sanders	2121288
	09/20/2019			09/25/2019 10:58	Beverly Y. Sanders	2121284
EPA 365.1 Rev. 2.0	09/20/2019	09/25/2019 14:00	Lipi Saha	09/26/2019 11:31	Lipi Saha	2121279
	09/20/2019	09/25/2019 14:00	Lipi Saha	09/26/2019 11:35	Lipi Saha	2121288
	09/20/2019	09/25/2019 14:00	Lipi Saha	09/26/2019 14:03	Lipi Saha	2121283
	09/20/2019	09/25/2019 14:00	Lipi Saha	09/26/2019 14:04	Lipi Saha	2121284
EPA 365.1 Rev. 2.0 dissolved	09/20/2019			09/20/2019 17:28	Jhamieka S. Greenwood	2121280
	09/20/2019			09/20/2019 18:23	Jhamieka S. Greenwood	2121285
	09/20/2019			09/20/2019 18:24	Jhamieka S. Greenwood	2121286
	09/20/2019			09/20/2019 18:25	Jhamieka S. Greenwood	2121289
EPA 8321B	09/20/2019	09/20/2019 12:00	Hoor Shaik	09/21/2019 03:27	Juyoung Kim	2121315
	09/20/2019	09/23/2019 10:00	Rebecca Ware	09/23/2019 11:54	Rebecca Ware	2121315
	09/20/2019	09/23/2019 10:00	Rebecca Ware	09/24/2019 18:56	Rebecca Ware	2121315
	09/20/2019	09/23/2019 10:00	Rebecca Ware	09/27/2019 18:50	Rebecca Ware	2121315
SM 2120 B	09/20/2019			09/20/2019 16:42	Madeline Funaro	2121282
	09/20/2019			09/20/2019 16:49	Madeline Funaro	2121287
	09/20/2019			09/20/2019 17:00	Madeline Funaro	2121278
	09/20/2019			09/20/2019 17:17	Madeline Funaro	2121281
SM 2320 B-97	09/20/2019			09/28/2019 07:24	Dale L. Simmons	2121278

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	09/20/2019			09/28/2019 07:36	Dale L. Simmons	2121281
	09/20/2019			09/28/2019 07:47	Dale L. Simmons	2121282
	09/20/2019			09/28/2019 08:00	Dale L. Simmons	2121287
SM 2540 C-97	09/20/2019			09/25/2019 14:25	Yijie Li	2121278, 2121281, 2121282, 2121287
SM 2540 D-97	09/20/2019			09/25/2019 14:25	Yijie Li	2121278, 2121281, 2121282, 2121287
SM 4500 F-C-97	09/20/2019			09/28/2019 07:24	Dale L. Simmons	2121278
	09/20/2019			09/28/2019 07:36	Dale L. Simmons	2121281
	09/20/2019			09/28/2019 07:47	Dale L. Simmons	2121282
	09/20/2019			09/28/2019 08:00	Dale L. Simmons	2121287
SM 5310 B-00	09/20/2019			09/25/2019 00:49	Madeline Funaro	2121279
	09/20/2019			09/25/2019 01:03	Madeline Funaro	2121283
	09/20/2019			09/25/2019 01:17	Madeline Funaro	2121284
	09/20/2019			09/25/2019 01:29	Madeline Funaro	2121288