

Chemical Analysis Report

NE-DIST-2019-01-11-01

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

Event Description: **LSJR Palatka**
Request ID: **RQ-2019-01-07-44**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 30-JAN-2019 11:56



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 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: MILL BRANCH @ OLD SAN MATEO RD

Collection Date/Time: 01/10/2019 12:20

Field ID: 20030577

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2053754	EPA 180.1 Rev. 2.0	Turbidity	8.6		NTU	P357234	
	EPA 300.0 Rev. 2.1	Chloride	54		mg Cl/L	P357337	
		Sulfate	21		mg SO4/L	P357339	
	SM 2120 B	Color (true)	530		PCU	P357177	
	SM 2320 B-97	Total Alkalinity	32		mg CaCO3/L	P357658	
	SM 2540 C-97	TDS	276		mg/L	P357619	
	SM 2540 D-97	TSS	3	I	mg/L	P357612	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P357662	
2053755	EPA 350.1 Rev. 2.0	Ammonia-N	0.062		mg N/L	P357366	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P357344	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P357212	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P357281	
	SM 5310 B-00	Organic Carbon	42		mg C/L	P357327	
2053756	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P357181	
2053766	EPA 8321B	2,4-D	0.0020	U	ug/L	P357055	
		Sucralose**	0.081		ug/L	P357257	
		Bentazon	8.0E-04	U	ug/L	P357055	
		MCP	0.0020	U	ug/L	P357055	
		Triclopyr**	0.0040	U	ug/L	P357055	
		Imidacloprid	0.0068	I	ug/L	P357055	MS
		Diuron	0.0020	U	ug/L	P357055	
		Pyraclostrobin**	0.0020	U	ug/L	P357055	
		Primidone**	0.0040	U	ug/L	P357055	
		Linuron	0.0040	U	ug/L	P357055	
		Acetaminophen**	0.0080	U	ug/L	P357055	
		Fenuron	0.016	U	ug/L	P357055	
		Imazapyr**	0.036		ug/L	P357055	
		Carbamazepine**	8.0E-04	U	ug/L	P357055	
		Fluridone**	8.0E-04	U	ug/L	P357055	
		Hydrocodone**	0.0020	U	ug/L	P357055	
		Naproxen**	0.0080	U	ug/L	P357055	
		Ibuprofen**	0.020	U	ug/L	P357055	
		Glyphosate**	0.10	U	ug/L	P357257	
		AMPA**	0.10	U	ug/L	P357257	
		Endothall**	0.25	U	ug/L	P357257	
		Glufosinate**	0.10	U	ug/L	P357257	
		Acesulfame K**	0.10	U	ug/L	P357257	
2053770	EPA 200.7 Rev. 4.4	Barium	16.2		ug/L	P357312	
		Calcium	26.3		mg/L	P357312	
		Iron	2.49E+03		ug/L	P357312	
		Magnesium	6.97		mg/L	P357312	
		Potassium	2.4		mg/L	P357312	
		Sodium	28.8		mg/L	P357312	

Field ID: 20030577

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2053770	EPA 200.7 Rev. 4.4	Zinc	7.7	I	ug/L	P357312	
	EPA 200.8 Rev. 5.4	Aluminum	533		ug/L	P357312	
		Antimony	0.060	I	ug/L	P357312	
		Arsenic	0.75		ug/L	P357312	
		Boron**	26.5		ug/L	P357312	
		Cadmium	0.034	I	ug/L	P357312	
		Chromium	1.5	I	ug/L	P357312	
		Copper	1.66		ug/L	P357312	
		Lead	0.63		ug/L	P357312	
		Nickel	1.1	I	ug/L	P357312	
		Selenium	0.23	I	ug/L	P357312	
		Silver	0.010	U	ug/L	P357312	
		Thallium	0.10	U	ug/L	P357312	

Ref. Method and Comment:

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

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: DUNNS CREEK 0.4 MILES UPSTREAM OF US17

Collection Date/Time: 01/10/2019 11:45

Field ID: G2NE1187

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2053745	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P357234	
	EPA 300.0 Rev. 2.1	Chloride	60		mg Cl/L	P357336	
		Sulfate	18		mg SO4/L	P357338	
		Color (true)	360		PCU	P357177	
	SM 2320 B-97	Total Alkalinity	28		mg CaCO3/L	P357658	
	SM 2540 C-97	TDS	230		mg/L	P357618	
	SM 2540 D-97	TSS	3	I	mg/L	P357611	
	SM 4500 F-C-97	Fluoride	0.073	I	mg F/L	P357662	
2053748	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P357366	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P357343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P357211	
	EPA 365.1 Rev. 2.0	Total-P	0.081		mg P/L	P357281	
	SM 5310 B-00	Organic Carbon	29		mg C/L	P357327	
2053751	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P357181	
2053767	EPA 200.7 Rev. 4.4	Barium	11.8		ug/L	P357312	
		Calcium	20.8		mg/L	P357312	
		Iron	810		ug/L	P357312	
		Magnesium	6.53		mg/L	P357312	
		Potassium	2.0		mg/L	P357312	
		Sodium	35.1		mg/L	P357312	
		Zinc	5.0	U	ug/L	P357312	
	EPA 200.8 Rev. 5.4	Aluminum	212		ug/L	P357312	
		Antimony	0.052	I	ug/L	P357312	
		Arsenic	0.92		ug/L	P357312	
		Boron**	29.4		ug/L	P357312	
		Cadmium	0.020	U	ug/L	P357312	
		Chromium	0.67	I	ug/L	P357312	
		Copper	0.71	I	ug/L	P357312	
		Lead	0.65		ug/L	P357312	
		Nickel	0.50	U	ug/L	P357312	
		Selenium	0.24	I	ug/L	P357312	
		Silver	0.010	U	ug/L	P357312	
		Thallium	0.10	U	ug/L	P357312	

Ref. Method and Comment:

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

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: MOCCASSIN BRANCH AT WINFORD MASTERS RD Collection Date/Time: 01/10/2019 12:55

Field ID: 20030557

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2053746	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P357234	
	EPA 300.0 Rev. 2.1	Chloride	42		mg Cl/L	P357336	
		Sulfate	37		mg SO4/L	P357338	
		Color (true)	490		PCU	P357177	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P357658	
	SM 2540 C-97	TDS	276		mg/L	P357619	
	SM 2540 D-97	TSS	2	I	mg/L	P357612	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P357662	
2053749	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P357366	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P357343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P357211	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P357281	
	SM 5310 B-00	Organic Carbon	44		mg C/L	P357327	
2053752	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P357181	
2053768	EPA 200.7 Rev. 4.4	Barium	17.7		ug/L	P357312	
		Calcium	28.2		mg/L	P357312	
		Iron	1.87E+03		ug/L	P357312	
		Magnesium	6.97		mg/L	P357312	
		Potassium	1.6		mg/L	P357312	
		Sodium	24.5		mg/L	P357312	
		Zinc	7.0	I	ug/L	P357312	
	EPA 200.8 Rev. 5.4	Aluminum	727		ug/L	P357312	
		Antimony	0.063	I	ug/L	P357312	
		Arsenic	0.66		ug/L	P357312	
		Boron**	27.4		ug/L	P357312	
		Cadmium	0.028	I	ug/L	P357312	
		Chromium	1.4	I	ug/L	P357312	
		Copper	1.00		ug/L	P357312	
		Lead	0.59		ug/L	P357312	
		Nickel	0.90	I	ug/L	P357312	
		Selenium	0.25	I	ug/L	P357312	
		Silver	0.010	U	ug/L	P357312	
		Thallium	0.10	U	ug/L	P357312	

Ref. Method and Comment:

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

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: BULL CREEK 0.5 M UPSTR OF DEAD LAKE

Collection Date/Time: 01/10/2019 10:40

Field ID: G2NE1182

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2053747	EPA 180.1 Rev. 2.0	Turbidity	6.9		NTU	P357234	
	EPA 300.0 Rev. 2.1	Chloride	68		mg Cl/L	P357337	
		Sulfate	23		mg SO4/L	P357339	
	SM 2120 B	Color (true)	560		PCU	P357177	
	SM 2320 B-97	Total Alkalinity	50		mg CaCO3/L	P357658	
	SM 2540 C-97	TDS	335	A	mg/L	P357619	
	SM 2540 D-97	TSS	3	IA	mg/L	P357612	
2053750	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P357662	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P357366	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P357343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P357212	
	EPA 365.1 Rev. 2.0	Total-P	0.35		mg P/L	P357281	
2053753	SM 5310 B-00	Organic Carbon	48		mg C/L	P357327	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.27		mg P/L	P357181	
2053769	EPA 200.7 Rev. 4.4	Barium	17.4		ug/L	P357312	
		Calcium	35.4		mg/L	P357312	
		Iron	1.60E+03		ug/L	P357312	
		Magnesium	8.35		mg/L	P357312	
		Potassium	2.1		mg/L	P357312	
		Sodium	35.9		mg/L	P357312	
		Zinc	5.4	I	ug/L	P357312	
	EPA 200.8 Rev. 5.4	Aluminum	505		ug/L	P357312	
		Antimony	0.067	I	ug/L	P357312	
		Arsenic	1.07		ug/L	P357312	
		Boron**	29.4		ug/L	P357312	
		Cadmium	0.026	I	ug/L	P357312	
		Chromium	1.3	I	ug/L	P357312	
		Copper	2.16		ug/L	P357312	
		Lead	0.53		ug/L	P357312	
		Nickel	0.83	I	ug/L	P357312	
		Selenium	0.27	I	ug/L	P357312	
		Silver	0.010	U	ug/L	P357312	
		Thallium	0.10	U	ug/L	P357312	

Ref. Method and Comment:

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

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P357234

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357312

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: P357312

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: P357336

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357337

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357338

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357339

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357366

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357343

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357344

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357211

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357212

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357281

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357181

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

Reference Method: EPA 8321B
Batch ID: P357055

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P357055

Component	Result	Code	Units
Diuron	0.0020	U	ug/L
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
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P357257

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: P357177

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P357658

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

Reference Method: SM 2540 C-97
Batch ID: P357618

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P357619

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P357611

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P357612

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P357662

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P357327

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: P357312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	105		P	85 - 115
Iron	107		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	105		P	85 - 115
Sodium	109		P	85 - 115
Zinc	98.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	97.6		P	85 - 115
Arsenic	104		P	85 - 115
Boron	103		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	103		P	85 - 115
Copper	103		P	85 - 115
Lead	99.6		P	85 - 115
Nickel	103		P	85 - 115
Selenium	102		P	85 - 115
Silver	99.1		P	85 - 115
Thallium	98.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357336

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357337

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357338

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357339

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357366

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357343

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357344

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357211

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357212

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357281

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357181

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.9		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P357055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	67.7		P	40 - 150
Acetaminophen	104		P	30 - 150
Bentazon	73.2		P	30 - 150
Carbamazepine	92.5		P	40 - 150
Diuron	75.0		P	40 - 150
Fenuron	111		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	101		P	40 - 150
Ibuprofen	73.1		P	40 - 150
Imazapyr	91.3		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P357055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imidacloprid	107		P	40 - 160
Linuron	77.3		P	40 - 150
MCPP	95.4		P	40 - 150
Naproxen	52.5		P	40 - 150
Primidone	92.6		P	40 - 150
Pyraclostrobin	65.0		P	40 - 150
Triclopyr	45.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P357257

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	127		P	40 - 150
AMPA	117		P	40 - 150
Endothall	96.6		P	40 - 150
Glufosinate	98.8		P	40 - 150
Glyphosate	105		P	40 - 140
Sucralose	104		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P357177

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P357658

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P357662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P357327

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053668	Barium	98.7		P	80 - 120
2053668	Iron	103		P	80 - 120
2053668	Magnesium	102		P	80 - 120
2053668	Zinc	101		P	80 - 120
2054037	Barium	104	103	P/P	80 - 120
2054037	Calcium	108	107	P/P	80 - 120
2054037	Iron	110	108	P/P	80 - 120
2054037	Magnesium	113	111	P/P	80 - 120
2054037	Potassium	111	110	P/P	80 - 120
2054037	Sodium	107		P	80 - 120
2054037	Zinc	103	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053668	Aluminum	99.6		P	80 - 120
2053668	Antimony	102		P	80 - 120
2053668	Arsenic	108		P	80 - 120
2053668	Cadmium	103		P	80 - 120
2053668	Chromium	97.6		P	80 - 120
2053668	Copper	97.2		P	80 - 120
2053668	Lead	103		P	80 - 120
2053668	Nickel	97.5		P	80 - 120
2053668	Selenium	101		P	80 - 120
2053668	Silver	95.1		P	80 - 120
2053668	Thallium	104		P	80 - 120
2054037	Aluminum	98.0	99.6	P/P	80 - 120
2054037	Antimony	97.7	96.7	P/P	80 - 120
2054037	Arsenic	104	104	P/P	80 - 120
2054037	Boron	103	101	P/P	80 - 120
2054037	Cadmium	104	103	P/P	80 - 120
2054037	Chromium	105	104	P/P	80 - 120
2054037	Copper	106	105	P/P	80 - 120
2054037	Lead	100	99.7	P/P	80 - 120
2054037	Nickel	103	103	P/P	80 - 120
2054037	Selenium	102	101	P/P	80 - 120
2054037	Silver	99.5	98.5	P/P	80 - 120
2054037	Thallium	102	103	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053641	Chloride	94.3		P	90 - 110
2053644	Chloride	93.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357337

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053754	Chloride	99.8	98.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053641	Sulfate	93.1		P	90 - 110
2053644	Sulfate	97.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357339

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053754	Sulfate	97.8	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357366

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053713	Ammonia-N	99.4	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053713	Kjeldahl Nitrogen	106	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053832	Kjeldahl Nitrogen	104	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357211

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053648	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357212

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053750	NO2NO3-N	97.5	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053723	Total-P	102	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357181

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053835	O-Phosphate-P	94.2	93.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P357055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053633	2,4-D	82.2	74.7	P/P	40 - 150
2053633	Acetaminophen	113	109	P/P	30 - 150
2053633	Bentazon	37.5	35.0	P/P	30 - 150
2053633	Carbamazepine	81.6	78.5	P/P	40 - 150
2053633	Diuron	65.5	62.7	P/P	40 - 150
2053633	Fenuron	88.3	85.3	P/P	40 - 150
2053633	Fluridone	89.1	91.5	P/P	40 - 150
2053633	Hydrocodone	109	105	P/P	40 - 150
2053633	Ibuprofen	67.1	62.3	P/P	40 - 150
2053633	Imazapyr	114	107	P/P	40 - 150
2053633	Imidacloprid	196	192	F/F	40 - 160
2053633	Linuron	66.0	67.3	P/P	40 - 150
2053633	MCP	111	102	P/P	40 - 150
2053633	Naproxen	51.3	53.8	P/P	40 - 150
2053633	Primidone	96.9	91.0	P/P	40 - 150
2053633	Pyraclostrobin	65.1	64.4	P/P	40 - 150
2053633	Triclopyr	61.6	56.3	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P357257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053633	Acesulfame K	104	104	P/P	40 - 150
2053633	AMPA	113	116	P/P	40 - 150
2053633	Endothall	87.1	85.0	P/P	40 - 150
2053633	Glufosinate	103	81.9	P/P	40 - 150
2053633	Glyphosate	101	76.1	P/P	40 - 140
2053633	Sucralose	104	109	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P357662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2054742	Fluoride	98.2	98.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P357327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2053623	Organic Carbon	99.8	98.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P357234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053825	Turbidity	1.70	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2054037	Barium	1.51	Spike	P	0 - 20
2054037	Calcium	1.06	Spike	P	0 - 20
2054037	Iron	1.21	Spike	P	0 - 20
2054037	Magnesium	1.27	Spike	P	0 - 20
2054037	Potassium	1.03	Spike	P	0 - 20
2054037	Sodium	1.54	Spike	P	0 - 20
2054037	Zinc	1.56	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2054037	Aluminum	0.979	Spike	P	0 - 20
2054037	Antimony	1.01	Spike	P	0 - 20
2054037	Arsenic	0.0539	Spike	P	0 - 20
2054037	Boron	1.63	Spike	P	0 - 20
2054037	Cadmium	0.375	Spike	P	0 - 20
2054037	Chromium	1.04	Spike	P	0 - 20
2054037	Copper	0.416	Spike	P	0 - 20
2054037	Lead	0.356	Spike	P	0 - 20
2054037	Nickel	0.371	Spike	P	0 - 20
2054037	Selenium	0.672	Spike	P	0 - 20
2054037	Silver	0.966	Spike	P	0 - 20
2054037	Thallium	0.714	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053641	Chloride	0.472	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357337

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053754	Chloride	0.612	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053641	Sulfate	0.553	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357339

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053754	Sulfate	2.31	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053713	Ammonia-N	1.38	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053713	Kjeldahl Nitrogen	1.37	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053832	Kjeldahl Nitrogen	0.807	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053648	NO2NO3-N	0.443	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053750	NO2NO3-N	0.300	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053723	Total-P	2.38	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053835	O-Phosphate-P	0.206	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P357055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053633	2,4-D	9.54	Spike	P	0 - 30
2053633	Acetaminophen	4.04	Spike	P	0 - 30
2053633	Bentazon	6.81	Spike	P	0 - 30
2053633	Carbamazepine	3.85	Spike	P	0 - 30
2053633	Diuron	4.38	Spike	P	0 - 30
2053633	Fenuron	3.48	Spike	P	0 - 30
2053633	Fluridone	2.63	Spike	P	0 - 30
2053633	Hydrocodone	3.30	Spike	P	0 - 30
2053633	Ibuprofen	7.35	Spike	P	0 - 30
2053633	Imazapyr	5.97	Spike	P	0 - 30
2053633	Imidacloprid	2.04	Spike	P	0 - 30
2053633	Linuron	1.96	Spike	P	0 - 30
2053633	MCP	9.02	Spike	P	0 - 30
2053633	Naproxen	4.75	Spike	P	0 - 30
2053633	Primidone	6.28	Spike	P	0 - 30
2053633	Pyraclostrobin	1.04	Spike	P	0 - 30
2053633	Triclopyr	9.09	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P357257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053633	Acesulfame K	0.310	Spike	P	0 - 30
2053633	AMPA	2.49	Spike	P	0 - 30
2053633	Endothall	2.40	Spike	P	0 - 30
2053633	Glufosinate	23.1	Spike	P	0 - 30
2053633	Glyphosate	28.4	Spike	P	0 - 30
2053633	Sucralose	4.95	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P357177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053825	Color (true)	1.42	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P357658

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2054742	Total Alkalinity	0.294	Sample	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P357618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053643	TDS	5.13	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P357619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053747	TDS	6.57	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P357662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2054742	Fluoride	0.477	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P357327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2053623	Organic Carbon	1.16	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2053766
Field Sample ID: 20030577

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	87.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.2	P	30 - 160
EPA 8321B	Diuron-d6	58.1	P	30 - 160
EPA 8321B	Endothall-d6	82.4	P	40 - 160
EPA 8321B	Endothall-d6	82.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	43.1	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	43.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	65.3	P	30 - 160
EPA 8321B	Primidone-d5	78.2	P	30 - 160
EPA 8321B	Sucralose-d6	126	P	40 - 160
EPA 8321B	Sucralose-d6	126	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A88775

Included Lab Sample IDs: 2053745, 2053746, 2053747, 2053754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A88776

Included Lab Sample IDs: 2053751, 2053752, 2053753, 2053756

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	98.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A88788

Included Lab Sample IDs: 2053745, 2053746, 2053747, 2053754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Chloride	99.8	102	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110
Sulfate	99.5	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88791

Included Lab Sample IDs: 2053748, 2053749, 2053750, 2053755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	101	P/P	90 - 110
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A88797

Included Lab Sample IDs: 2053745, 2053746, 2053747, 2053754

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

Reference Method: SM 5310 B-00

Run ID: A88833

Included Lab Sample IDs: 2053748, 2053749, 2053750, 2053755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.9	P/P	90 - 110
Organic Carbon	99.9	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88851

Included Lab Sample IDs: 2053748, 2053749, 2053750, 2053755

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88860

Included Lab Sample IDs: 2053748, 2053749, 2053750, 2053755

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88871

Included Lab Sample IDs: 2053748, 2053749, 2053750

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	109	P/P	90 - 110
Kjeldahl Nitrogen	106	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A88872

Included Lab Sample IDs: 2053766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	112	115	P/P	60 - 160
Glufosinate	105	100	P/P	60 - 160
Glyphosate	111	116	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A88874

Included Lab Sample IDs: 2053766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	115	110	P/P	60 - 160
Endothall	86.2	78.4	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88886

Included Lab Sample IDs: 2053755

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88888

Included Lab Sample IDs: 2053767, 2053768, 2053769, 2053770

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	101	P/P	90 - 110
Barium	101	101	P/P	90 - 110
Calcium	102	103	P/P	90 - 110
Calcium	103	104	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110
Potassium	100	101	P/P	90 - 110
Potassium	101	100	P/P	90 - 110
Sodium	107	108	P/P	90 - 110
Sodium	108	107	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88888

Included Lab Sample IDs: 2053767, 2053768, 2053769, 2053770

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88896

Included Lab Sample IDs: 2053767, 2053768, 2053769, 2053770

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	100	P/P	90 - 110
Antimony	98.8	99.7	P/P	90 - 110
Arsenic	103	102	P/P	90 - 110
Cadmium	99.9	101	P/P	90 - 110
Chromium	103	103	P/P	90 - 110
Copper	103	103	P/P	90 - 110
Lead	101	101	P/P	90 - 110
Nickel	103	103	P/P	90 - 110
Selenium	101	103	P/P	90 - 110
Thallium	92.7	94.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A88926

Included Lab Sample IDs: 2053766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	79.7	81.2	P/P	50 - 150
Acetaminophen	113	110	P/P	60 - 160
Bentazon	101	103	P/P	50 - 160
Carbamazepine	106	103	P/P	60 - 150
Diuron	106	105	P/P	60 - 150
Fenuron	107	106	P/P	60 - 150
Fluridone	106	109	P/P	60 - 160
Hydrocodone	99.4	102	P/P	60 - 150
Ibuprofen	89.4	110	P/P	50 - 160
Imazapyr	94.1	95.2	P/P	50 - 150
Imidacloprid	104	101	P/P	60 - 150
Linuron	111	110	P/P	60 - 150
MCPP	80.4	93.4	P/P	50 - 150
Naproxen	96.6	94.2	P/P	50 - 160
Primidone	105	107	P/P	60 - 150
Pyraclostrobin	109	101	P/P	60 - 150
Triclopyr	91.7	88.6	P/P	50 - 150

Reference Method: SM 2320 B-97

Run ID: A88947

Included Lab Sample IDs: 2053745, 2053746, 2053747, 2053754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.4	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A88947

Included Lab Sample IDs: 2053745, 2053746, 2053747, 2053754

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

Reference Method: EPA 8321B

Run ID: A88955

Included Lab Sample IDs: 2053766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	102	122	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88956

Included Lab Sample IDs: 2053767, 2053768, 2053769, 2053770

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	98.3	99.1	P/P	90 - 110
Silver	98.1	97.7	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						1.70	
EPA 200.7 Rev. 4.4	Barium	101	98.7	104	103			1.51
	Calcium	105	108	107				1.06
	Iron	107	103	110	108			1.21
	Magnesium	109	102	113	111			1.27
	Potassium	105	111	110				1.03
	Sodium	109	107					1.54
	Zinc	98.5	101	103	102			1.56
EPA 200.8 Rev. 5.4	Aluminum	101	99.6	98.0	99.6			0.979
	Antimony	97.6	102	97.7	96.7			1.01
	Arsenic	104	108	104	104			0.0539
	Boron	103	103	101				1.63
	Cadmium	103	103	104	103			0.375
	Chromium	103	97.6	105	104			1.04
	Copper	103	97.2	106	105			0.416
	Lead	99.6	103	100	99.7			0.356
	Nickel	103	97.5	103	103			0.371
	Selenium	102	101	102	101			0.672
	Silver	99.1	95.1	99.5	98.5			0.966
	Thallium	98.4	104	102	103			0.714
EPA 300.0 Rev. 2.1	Chloride	106	94.3	93.4			0.472	
	Chloride	103	99.8	98.1				0.612
	Sulfate	105	93.1	97.1			0.553	
	Sulfate	102	97.8	102				2.31
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	99.4	102				1.38
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	106	108				1.37
	Kjeldahl Nitrogen	98.7	104	102				0.807
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	102	102				0.443
	NO ₂ NO ₃ -N	102	97.5	97.0				0.300
EPA 365.1 Rev. 2.0	Total-P	102	102	99.3				2.38
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	94.2	93.9				0.206
EPA 8321B	2,4-D	67.7	82.2	74.7				9.54
	Acesulfame K	127	104	104				0.310
	Acetaminophen	104	113	109				4.04
	AMPA	117	113	116				2.49
	Bentazon	73.2	37.5	35.0				6.81
	Carbamazepine	92.5	81.6	78.5				3.85
	Diuron	75.0	65.5	62.7				4.38
	Endothall	96.6	87.1	85.0				2.40
	Fenuron	111	88.3	85.3				3.48
	Fluridone	102	89.1	91.5				2.63
	Glufosinate	98.8	103	81.9				23.1
	Glyphosate	105	101	76.1				28.4
	Hydrocodone	101	109	105				3.30
	Ibuprofen	73.1	67.1	62.3				7.35
	Imazapyr	91.3	114	107				5.97
	Imidacloprid	107	196	192				2.04
	Linuron	77.3	66.0	67.3				1.96
	MCP	95.4	111	102				9.02
	Naproxen	52.5	51.3	53.8				4.75
	Primidone	92.6	96.9	91.0				6.28
	Pyraclostrobin	65.0	65.1	64.4				1.04
	Sucralose	104	104	109				4.95
	Triclopyr	45.1	61.6	56.3				9.09

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
SM 2120 B	Color (true)	101			1.42	
SM 2320 B-97	Total Alkalinity	102			0.294	
SM 2540 C-97	TDS				5.13	
	TDS				6.57	
SM 4500 F-C-97	Fluoride	97.9	98.2 98.8			0.477
SM 5310 B-00	Organic Carbon	98.0	99.8 98.2			1.16

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2053745, 2053746, 2053747, 2053754
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2053767, 2053768, 2053769, 2053770
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2053767, 2053768, 2053769, 2053770
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2053745, 2053746, 2053747, 2053754
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2053745, 2053746, 2053747, 2053754
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2053748, 2053749, 2053750, 2053755
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2053748, 2053749, 2053750, 2053755
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2053748, 2053749, 2053750, 2053755
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2053748, 2053749, 2053750, 2053755
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2053751, 2053752, 2053753, 2053756
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2053766
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2053766
SM 2120 B / E31780	True Color measured at 450 nm	2053745, 2053746, 2053747, 2053754
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2053745, 2053746, 2053747, 2053754
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2053745, 2053746, 2053747, 2053754
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2053745, 2053746, 2053747, 2053754
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2053745, 2053746, 2053747, 2053754
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2053748, 2053749, 2053750, 2053755

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	01/11/2019			01/11/2019 17:41	Megan Treadwell	2053745, 2053746, 2053747, 2053754
EPA 200.7 Rev. 4.4	01/11/2019	01/15/2019 18:15	Elliott D. Healy	01/17/2019 15:43	Betina Topolski	2053767
	01/11/2019	01/15/2019 18:15	Elliott D. Healy	01/17/2019 15:49	Betina Topolski	2053768
	01/11/2019	01/15/2019 18:15	Elliott D. Healy	01/17/2019 16:15	Betina Topolski	2053769
	01/11/2019	01/15/2019 18:15	Elliott D. Healy	01/17/2019 16:21	Betina Topolski	2053770
EPA 200.8 Rev. 5.4	01/11/2019	01/15/2019 18:15	Elliott D. Healy	01/17/2019 22:07	Allison Taylor	2053767
	01/11/2019	01/15/2019 18:15	Elliott D. Healy	01/17/2019 22:17	Allison Taylor	2053768
	01/11/2019	01/15/2019 18:15	Elliott D. Healy	01/17/2019 22:27	Allison Taylor	2053769
	01/11/2019	01/15/2019 18:15	Elliott D. Healy	01/17/2019 22:36	Allison Taylor	2053770
	01/11/2019	01/15/2019 18:15	Elliott D. Healy	01/22/2019 17:40	Allison Taylor	2053767
	01/11/2019	01/15/2019 18:15	Elliott D. Healy	01/22/2019 17:49	Allison Taylor	2053768
	01/11/2019	01/15/2019 18:15	Elliott D. Healy	01/22/2019 17:59	Allison Taylor	2053769
	01/11/2019	01/15/2019 18:15	Elliott D. Healy	01/22/2019 18:08	Allison Taylor	2053770
EPA 300.0 Rev. 2.1	01/11/2019			01/15/2019 19:34	Lipi Saha	2053745
	01/11/2019			01/15/2019 19:46	Lipi Saha	2053746
	01/11/2019			01/15/2019 20:58	Lipi Saha	2053754
	01/11/2019			01/15/2019 21:35	Lipi Saha	2053747
EPA 350.1 Rev. 2.0	01/11/2019			01/16/2019 12:29	Ping Hua	2053748
	01/11/2019			01/16/2019 12:31	Ping Hua	2053749
	01/11/2019			01/16/2019 12:32	Ping Hua	2053750
	01/11/2019			01/16/2019 12:34	Ping Hua	2053755
EPA 351.2 Rev. 2.0	01/11/2019	01/16/2019 11:15	Adrian Shelby	01/17/2019 11:00	Joseph Suarez	2053748
	01/11/2019	01/16/2019 11:15	Adrian Shelby	01/17/2019 11:02	Joseph Suarez	2053749
	01/11/2019	01/16/2019 11:15	Adrian Shelby	01/17/2019 11:06	Joseph Suarez	2053750
	01/11/2019	01/16/2019 11:15	Adrian Shelby	01/17/2019 13:39	Joseph Suarez	2053755
EPA 353.2 Rev. 2.0	01/11/2019			01/14/2019 10:18	Beverly Y. Sanders	2053748
	01/11/2019			01/14/2019 10:20	Beverly Y. Sanders	2053749
	01/11/2019			01/14/2019 10:27	Beverly Y. Sanders	2053750
	01/11/2019			01/14/2019 10:36	Beverly Y. Sanders	2053755
EPA 365.1 Rev. 2.0	01/11/2019	01/15/2019 12:00	Sima Feizi	01/16/2019 17:16	Rosalyn Ballman	2053748
	01/11/2019	01/15/2019 12:00	Sima Feizi	01/16/2019 17:18	Rosalyn Ballman	2053749
	01/11/2019	01/15/2019 12:00	Sima Feizi	01/16/2019 17:19	Rosalyn Ballman	2053750
	01/11/2019	01/15/2019 12:00	Sima Feizi	01/16/2019 17:20	Rosalyn Ballman	2053755
EPA 365.1 Rev. 2.0 dissolved	01/11/2019			01/11/2019 15:59	Jhamieka S. Greenwood	2053751
	01/11/2019			01/11/2019 16:00	Jhamieka S. Greenwood	2053752
	01/11/2019			01/11/2019 16:01	Jhamieka S. Greenwood	2053753
	01/11/2019			01/11/2019 16:02	Jhamieka S. Greenwood	2053756
EPA 8321B	01/11/2019	01/16/2019 09:30	Rebecca Ware	01/16/2019 11:12	Rebecca Ware	2053766
	01/11/2019	01/16/2019 09:30	Rebecca Ware	01/16/2019 14:06	Rebecca Ware	2053766
	01/11/2019	01/16/2019 09:30	Rebecca Ware	01/22/2019 22:54	Mohammad Ghaffari	2053766

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	01/11/2019	01/17/2019 09:00	Hoor Shaik	01/17/2019 23:35	Juyoung Kim	2053766
SM 2120 B	01/11/2019			01/11/2019 16:17	Chelsea Hernandez	2053745
	01/11/2019			01/11/2019 16:18	Chelsea Hernandez	2053746
	01/11/2019			01/11/2019 16:19	Chelsea Hernandez	2053747
	01/11/2019			01/11/2019 16:20	Chelsea Hernandez	2053754
SM 2320 B-97	01/11/2019			01/21/2019 13:33	Dale L. Simmons	2053745
	01/11/2019			01/21/2019 13:45	Dale L. Simmons	2053746
	01/11/2019			01/21/2019 13:58	Dale L. Simmons	2053747
	01/11/2019			01/21/2019 14:10	Dale L. Simmons	2053754
SM 2540 C-97	01/11/2019			01/14/2019 14:21	Yijie Li	2053745, 2053746, 2053747, 2053754
SM 2540 D-97	01/11/2019			01/14/2019 14:21	Yijie Li	2053745, 2053746, 2053747, 2053754
SM 4500 F-C-97	01/11/2019			01/21/2019 13:33	Dale L. Simmons	2053745
	01/11/2019			01/21/2019 13:45	Dale L. Simmons	2053746
	01/11/2019			01/21/2019 13:58	Dale L. Simmons	2053747
	01/11/2019			01/21/2019 14:10	Dale L. Simmons	2053754
SM 5310 B-00	01/11/2019			01/15/2019 18:19	Megan Treadwell	2053748
	01/11/2019			01/15/2019 18:55	Megan Treadwell	2053749
	01/11/2019			01/15/2019 19:08	Megan Treadwell	2053750
	01/11/2019			01/15/2019 19:20	Megan Treadwell	2053755