

Chemical Analysis Report

SO-DIST-2019-05-08-02

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

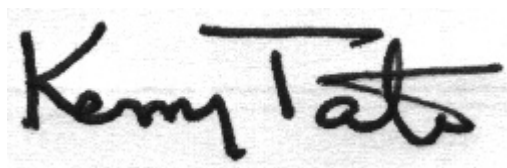
Event Description: **SMP:LaBelle-ish**
Request ID: **RQ-2019-05-06-27**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Maryann Dugan

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

Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 23-MAY-2019 10:24

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: BeeBranch@LoblollyBayRd

Collection Date/Time: 05/07/2019 09:40

Field ID: G3SD0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2084554	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P363612	
	EPA 300.0 Rev. 2.1	Chloride	83		mg Cl/L	P363880	
		Sulfate	55		mg SO4/L	P363883	
	SM 2120 B	Color (true)	92		PCU	P363640	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P364170	
	SM 2540 C-97	TDS	280		mg/L	P364143	
	SM 2540 D-97	TSS	9	I	mg/L	P364238	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P364174	
2084555	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P363907	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P363930	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P364065	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P363875	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P363921	
2084556	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.067		mg P/L	P363653	

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: PollywogCreek@SR78

Collection Date/Time: 05/07/2019 10:10

Field ID: G3SD0098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2084566	EPA 8321B	2,4-D	0.0020	U	ug/L	P363505	
		Acesulfame K**	0.41		ug/L	P363636	
		AMPA**	0.12	I	ug/L	P363636	
		Sucralose**	0.69		ug/L	P363636	
		Acetaminophen**	0.0080	U	ug/L	P363505	
		Endothall**	0.25	U	ug/L	P363636	
		Glufosinate**	0.10	U	ug/L	P363636	
		Bentazon	8.0E-04	U	ug/L	P363505	
		Glyphosate**	0.10	U	ug/L	P363636	
		Carbamazepine**	0.010		ug/L	P363505	
		Diuron	0.0020	U	ug/L	P363505	
		Fenuron	0.016	U	ug/L	P363505	
		Fluridone**	8.0E-04	U	ug/L	P363505	
		Imazapyr**	0.0052	I	ug/L	P363505	
		Hydrocodone**	0.0020	U	ug/L	P363505	
		Ibuprofen**	0.020	U	ug/L	P363505	
		Imidacloprid	0.0093		ug/L	P363505	
		Linuron	0.0040	U	ug/L	P363505	
		MCPP	0.0027	I	ug/L	P363505	
		Naproxen**	0.0080	U	ug/L	P363505	
		Primidone**	0.0046	I	ug/L	P363505	
		Pyraclostrobin**	0.0020	U	ug/L	P363505	
		Triclopyr**	0.0040	U	ug/L	P363505	

Sample Location: Ok Branch @ Eucalyptus

Collection Date/Time: 05/07/2019 10:40

Field ID: G3SD0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2084557	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P363613	
	EPA 300.0 Rev. 2.1	Chloride	96		mg Cl/L	P363880	
		Sulfate	32		mg SO4/L	P363883	
	SM 2120 B	Color (true)	66		PCU	P363640	
	SM 2320 B-97	Total Alkalinity	240		mg CaCO3/L	P364170	
	SM 2540 C-97	TDS	465		mg/L	P364143	
	SM 2540 D-97	TSS	4	I	mg/L	P364238	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P364174	
2084558	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P363907	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P363930	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P364065	
	EPA 365.1 Rev. 2.0	Total-P	0.082		mg P/L	P363875	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P364049	
2084559	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.031		mg P/L	P363653	
2084567	EPA 8321B	2,4-D	0.016		ug/L	P363505	
		Acesulfame K**	0.10	U	ug/L	P363636	
		AMPA**	0.55		ug/L	P363636	
		Sucralose**	1.3		ug/L	P363636	
		Acetaminophen**	0.0080	U	ug/L	P363505	
		Endothall**	0.25	U	ug/L	P363636	
		Glufosinate**	0.10	U	ug/L	P363636	
		Bentazon	9.9E-04	I	ug/L	P363505	
		Glyphosate**	0.10	U	ug/L	P363636	
		Carbamazepine**	0.013		ug/L	P363505	
		Diuron	0.0020	U	ug/L	P363505	
		Fenuron	0.016	U	ug/L	P363505	
		Fluridone**	0.18		ug/L	P363505	
		Imazapyr**	0.031		ug/L	P363505	
		Hydrocodone**	0.0020	U	ug/L	P363505	
		Ibuprofen**	0.020	U	ug/L	P363505	
		Imidacloprid	0.0063	I	ug/L	P363505	
		Linuron	0.0040	U	ug/L	P363505	
		MCP	0.0020	U	ug/L	P363505	
		Naproxen**	0.0080	U	ug/L	P363505	
		Primidone**	0.0040	U	ug/L	P363505	
		Pyraclostrobin**	0.0020	U	ug/L	P363505	
		Triclopyr**	0.0040	U	ug/L	P363505	
2084569	EPA 200.7 Rev. 4.4	Barium	20.3		ug/L	P363686	
		Calcium	88.8		mg/L	P363686	
		Iron	670		ug/L	P363686	
		Magnesium	7.67		mg/L	P363686	
		Potassium	4.5		mg/L	P363686	
		Sodium	69.6		mg/L	P363686	

Field ID: G3SD0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2084569	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P363686	
	EPA 200.8 Rev. 5.4	Aluminum	17	I	ug/L	P363686	
		Antimony	0.28		ug/L	P363686	
		Arsenic	2.23		ug/L	P363686	
		Boron**	78.7		ug/L	P363686	
		Cadmium	0.020	U	ug/L	P363686	
		Chromium	0.41	I	ug/L	P363686	
		Copper	0.40	U	ug/L	P363686	
		Lead	0.20	U	ug/L	P363686	
		Manganese	35.2		ug/L	P363686	
		Nickel	0.62	I	ug/L	P363686	
		Selenium	0.20	U	ug/L	P363686	
		Silver	0.010	U	ug/L	P363686	
		Thallium	0.10	U	ug/L	P363686	

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: Robert's Canal @SR80

Collection Date/Time: 05/07/2019 11:55

Field ID: G3SD0146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2084560	EPA 180.1 Rev. 2.0	Turbidity	9.4		NTU	P363613	
	EPA 300.0 Rev. 2.1	Chloride	43		mg Cl/L	P363880	
		Sulfate	21		mg SO4/L	P363883	
	SM 2120 B	Color (true)	61		PCU	P363640	
	SM 2320 B-97	Total Alkalinity	192		mg CaCO3/L	P364170	
	SM 2540 C-97	TDS	311		mg/L	P364143	
	SM 2540 D-97	TSS	14		mg/L	P364238	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P364174	
2084561	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P363907	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P363987	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P364065	
	EPA 365.1 Rev. 2.0	Total-P	0.074		mg P/L	P363875	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P364049	
2084562	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P363653	
2084568	EPA 8321B	2,4-D	0.029		ug/L	P363505	
		Acesulfame K**	0.10	U	ug/L	P363636	
		AMPA**	0.34	I	ug/L	P363636	
		Sucralose**	0.010	U	ug/L	P363636	
		Acetaminophen**	0.0080	U	ug/L	P363505	
		Endothall**	0.25	U	ug/L	P363636	
		Glufosinate**	0.10	U	ug/L	P363636	
		Bentazon	0.023		ug/L	P363505	
		Glyphosate**	0.59		ug/L	P363636	
		Carbamazepine**	8.0E-04	U	ug/L	P363505	
		Diuron	0.0067	I	ug/L	P363505	
		Fenuron	0.016	U	ug/L	P363505	
		Fluridone**	0.0094		ug/L	P363505	
		Imazapyr**	0.23		ug/L	P363505	
		Hydrocodone**	0.0020	U	ug/L	P363505	
		Ibuprofen**	0.020	U	ug/L	P363505	
		Imidacloprid	0.010		ug/L	P363505	
		Linuron	0.0040	U	ug/L	P363505	
		MCP	0.0020	U	ug/L	P363505	
		Naproxen**	0.0080	U	ug/L	P363505	
		Primidone**	0.0040	U	ug/L	P363505	
		Pyraclostrobin**	0.0020	U	ug/L	P363505	
		Triclopyr**	0.0040	U	ug/L	P363505	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363612

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363613

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363686

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: P363686

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
Manganese	0.10	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: P363880

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363883

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: P363907

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363930

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363987

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364065

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363875

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363653

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

Reference Method: EPA 8321B
Batch ID: P363505

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
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P363505

Component	Result	Code	Units
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P363636

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: P363640

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P364170

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

Reference Method: SM 2540 C-97
Batch ID: P364143

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P364238

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P364174

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P363921

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P364049

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: P363686

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.5		P	85 - 115
Calcium	99.3		P	85 - 115
Iron	100		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	99.4		P	85 - 115
Sodium	101		P	85 - 115
Zinc	98.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363686

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.0		P	85 - 115
Antimony	98.2		P	85 - 115
Arsenic	102		P	85 - 115
Boron	97.5		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	99.3		P	85 - 115
Copper	99.6		P	85 - 115
Lead	100		P	85 - 115
Manganese	98.9		P	85 - 115
Nickel	99.9		P	85 - 115
Selenium	101		P	85 - 115
Silver	98.4		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363880

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363883

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363907

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363930

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363987

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364065

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363875

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: P363653

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

Reference Method: EPA 8321B
Batch ID: P363505

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.6		P	40 - 150
Acetaminophen	92.9		P	30 - 150
Bentazon	106		P	30 - 150
Carbamazepine	92.2		P	40 - 150
Diuron	90.4		P	40 - 150
Fenuron	102		P	40 - 150
Fluridone	95.3		P	40 - 150
Hydrocodone	96.5		P	40 - 150
Ibuprofen	82.0		P	40 - 150
Imazapyr	93.1		P	40 - 150
Imidacloprid	96.7		P	40 - 150
Linuron	73.3		P	40 - 150
MCPP	94.5		P	40 - 150
Naproxen	81.0		P	40 - 150
Primidone	90.8		P	40 - 150
Pyraclostrobin	74.1		P	40 - 150
Triclopyr	58.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P363636

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	114		P	40 - 150
AMPA	94.2		P	40 - 150
Endothall	105		P	40 - 150
Glufosinate	110		P	40 - 150
Glyphosate	116		P	40 - 140
Sucralose	101		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P363640

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P364170

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

Reference Method: SM 4500 F-C-97
Batch ID: P364174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P363921

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	89.2		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P364049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083973	Barium	99.0		P	80 - 120
2083973	Calcium	100		P	80 - 120
2083973	Iron	99.5		P	80 - 120
2083973	Magnesium	105		P	80 - 120
2083973	Potassium	97.1		P	80 - 120
2083973	Sodium	102		P	80 - 120
2083973	Zinc	99.6		P	80 - 120
2084515	Barium	98.1	99.9	P/P	80 - 120
2084515	Calcium	100		P	80 - 120
2084515	Iron	101	103	P/P	80 - 120
2084515	Magnesium	101	105	P/P	80 - 120
2084515	Potassium	96.7		P	80 - 120
2084515	Sodium	101		P	80 - 120
2084515	Zinc	102	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083973	Aluminum	94.1		P	80 - 120
2083973	Antimony	97.4		P	80 - 120
2083973	Arsenic	99.9		P	80 - 120
2083973	Boron	95.7		P	80 - 120
2083973	Cadmium	98.2		P	80 - 120
2083973	Chromium	99.4		P	80 - 120
2083973	Copper	97.6		P	80 - 120
2083973	Lead	100		P	80 - 120
2083973	Manganese	96.8		P	80 - 120
2083973	Nickel	98.6		P	80 - 120
2083973	Selenium	99.6		P	80 - 120
2083973	Silver	96.8		P	80 - 120
2083973	Thallium	103		P	80 - 120
2084515	Aluminum	93.9	93.5	P/P	80 - 120
2084515	Antimony	98.3	97.1	P/P	80 - 120
2084515	Arsenic	102	99.6	P/P	80 - 120
2084515	Boron	93.8	92.4	P/P	80 - 120
2084515	Cadmium	98.9	98.9	P/P	80 - 120
2084515	Chromium	97.1	96.7	P/P	80 - 120
2084515	Copper	98.2	96.3	P/P	80 - 120
2084515	Lead	99.7	99.1	P/P	80 - 120
2084515	Manganese	96.4	94.7	P/P	80 - 120
2084515	Nickel	98.7	98.1	P/P	80 - 120
2084515	Selenium	99.6	97.1	P/P	80 - 120
2084515	Silver	96.5	94.0	P/P	80 - 120
2084515	Thallium	103	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083563	Chloride	98.9		P	90 - 110
2084529	Chloride	98.9		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083563	Sulfate	99.2		P	90 - 110
2084529	Sulfate	99.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363907

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084561	Ammonia-N	106	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084453	Kjeldahl Nitrogen	92.8	91.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363987

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084672	Kjeldahl Nitrogen	106	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084504	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084585	Total-P	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363653

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084540	O-Phosphate-P	97.4	96.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P363505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083598	2,4-D	98.5	111	P/P	40 - 150
2083598	Acetaminophen	80.4	84.2	P/P	30 - 150
2083598	Bentazon	47.6	47.5	P/P	30 - 150
2083598	Carbamazepine	67.0	66.1	P/P	40 - 150
2083598	Diuron	57.1	58.7	P/P	40 - 150
2083598	Fenuron	73.8	73.6	P/P	40 - 150
2083598	Fluridone	64.3	70.7	P/P	40 - 150
2083598	Hydrocodone	81.2	84.0	P/P	40 - 150
2083598	Ibuprofen	65.2	68.1	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P363505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083598	Imazapyr	120	110	P/P	40 - 150
2083598	Imidacloprid	103	101	P/P	40 - 150
2083598	Linuron	47.2	50.2	P/P	40 - 150
2083598	MCPP	130	130	P/P	40 - 150
2083598	Naproxen	78.5	82.8	P/P	40 - 150
2083598	Primidone	88.4	89.5	P/P	40 - 150
2083598	Pyraclostrobin	83.9	85.6	P/P	40 - 150
2083598	Triclopyr	72.9	85.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P363636

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083598	Acesulfame K	78.8	97.1	P/P	40 - 150
2083598	AMPA	45.4	40.4	P/P	40 - 150
2083598	Endothall	91.8	94.5	P/P	40 - 150
2083598	Glufosinate	70.8	68.1	P/P	40 - 150
2083598	Glyphosate	96.5	86.6	P/P	40 - 140
2083598	Sucralose	103	102	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P364174

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084386	Fluoride	96.1	95.6	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P363921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083388	Organic Carbon	94.4	93.2	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P364049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2084906	Organic Carbon	99.2	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084531	Turbidity	2.09	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084450	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084515	Barium	1.84	Spike	P	0 - 20
2084515	Calcium	1.03	Spike	P	0 - 20
2084515	Iron	2.61	Spike	P	0 - 20
2084515	Magnesium	2.41	Spike	P	0 - 20
2084515	Potassium	1.42	Spike	P	0 - 20
2084515	Sodium	2.01	Spike	P	0 - 20
2084515	Zinc	2.09	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084515	Aluminum	0.390	Spike	P	0 - 20
2084515	Antimony	1.29	Spike	P	0 - 20
2084515	Arsenic	2.05	Spike	P	0 - 20
2084515	Boron	0.952	Spike	P	0 - 20
2084515	Cadmium	0.0298	Spike	P	0 - 20
2084515	Chromium	0.420	Spike	P	0 - 20
2084515	Copper	1.96	Spike	P	0 - 20
2084515	Lead	0.674	Spike	P	0 - 20
2084515	Manganese	1.53	Spike	P	0 - 20
2084515	Nickel	0.644	Spike	P	0 - 20
2084515	Selenium	2.46	Spike	P	0 - 20
2084515	Silver	2.62	Spike	P	0 - 20
2084515	Thallium	0.673	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083563	Chloride	1.12	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083563	Sulfate	0.137	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084561	Ammonia-N	1.43	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084453	Kjeldahl Nitrogen	0.854	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084672	Kjeldahl Nitrogen	0.499	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084504	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084585	Total-P	0.634	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084540	O-Phosphate-P	0.725	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P363505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083598	2,4-D	8.42	Spike	P	0 - 30
2083598	Acetaminophen	4.59	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P363505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083598	Bentazon	0.00936	Spike	P	0 - 30
2083598	Carbamazepine	1.36	Spike	P	0 - 30
2083598	Diuron	1.87	Spike	P	0 - 30
2083598	Fenuron	0.363	Spike	P	0 - 30
2083598	Fluridone	2.04	Spike	P	0 - 30
2083598	Hydrocodone	3.40	Spike	P	0 - 30
2083598	Ibuprofen	4.39	Spike	P	0 - 30
2083598	Imazapyr	4.74	Spike	P	0 - 30
2083598	Imidacloprid	0.639	Spike	P	0 - 30
2083598	Linuron	6.12	Spike	P	0 - 30
2083598	MCPP	0.285	Spike	P	0 - 30
2083598	Naproxen	5.43	Spike	P	0 - 30
2083598	Primidone	1.21	Spike	P	0 - 30
2083598	Pyraclostrobin	2.00	Spike	P	0 - 30
2083598	Triclopyr	16.0	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P363636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083598	Acesulfame K	20.8	Spike	P	0 - 30
2083598	AMPA	4.87	Spike	P	0 - 30
2083598	Endothall	2.81	Spike	P	0 - 30
2083598	Glufosinate	3.82	Spike	P	0 - 30
2083598	Glyphosate	4.74	Spike	P	0 - 30
2083598	Sucralose	0.535	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P363640

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084532	Color (true)	0.125	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P364170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084386	Total Alkalinity	0.743	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P364143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084532	TDS	4.98	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P364174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084386	Fluoride	0.476	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P363921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2083388	Organic Carbon	0.857	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P364049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2084906	Organic Carbon	0.921	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: 2084566
Field Sample ID: G3SD0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	114	P	30 - 160
EPA 8321B	Acetaminophen-d4	103	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.5	P	30 - 160
EPA 8321B	Diuron-d6	61.4	P	30 - 160
EPA 8321B	Endothall-d6	97.1	P	30 - 160
EPA 8321B	Endothall-d6	97.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	108	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	108	P	30 - 160
EPA 8321B	Ibuprofen-d3	109	P	30 - 160
EPA 8321B	Primidone-d5	92.1	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160

Lab Sample ID: 2084567
Field Sample ID: G3SD0099

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	105	P	30 - 160
EPA 8321B	Acetaminophen-d4	82.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	59.5	P	30 - 160
EPA 8321B	Diuron-d6	53.6	P	30 - 160
EPA 8321B	Endothall-d6	108	P	30 - 160
EPA 8321B	Endothall-d6	108	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	77.2	P	30 - 160
EPA 8321B	Primidone-d5	73.9	P	30 - 160
EPA 8321B	Sucralose-d6	72.3	P	30 - 160
EPA 8321B	Sucralose-d6	72.3	P	30 - 160

Lab Sample ID: 2084568
Field Sample ID: G3SD0146

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	65.2	P	30 - 160
EPA 8321B	Diuron-d6	58.0	P	30 - 160
EPA 8321B	Endothall-d6	102	P	30 - 160
EPA 8321B	Endothall-d6	102	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	56.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	56.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	88.6	P	30 - 160
EPA 8321B	Primidone-d5	75.8	P	30 - 160
EPA 8321B	Sucralose-d6	61.2	P	30 - 160
EPA 8321B	Sucralose-d6	61.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A91297

Included Lab Sample IDs: 2084554, 2084557, 2084560

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A91305

Included Lab Sample IDs: 2084554, 2084557, 2084560

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A91312

Included Lab Sample IDs: 2084556, 2084559, 2084562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.8	98.1	P/P	90 - 110
O-Phosphate-P	99.6	97.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A91347

Included Lab Sample IDs: 2084566, 2084567, 2084568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	121	96.9	P/P	60 - 160
Endothall	109	109	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A91366

Included Lab Sample IDs: 2084569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	98.7	P/P	90 - 110
Calcium	99.5	98.0	P/P	90 - 110
Iron	98.7	98.4	P/P	90 - 110
Magnesium	98.8	99.1	P/P	90 - 110
Potassium	98.6	98.2	P/P	90 - 110
Sodium	103	102	P/P	90 - 110
Zinc	100	99.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A91381

Included Lab Sample IDs: 2084566, 2084567, 2084568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	111	111	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91399

Included Lab Sample IDs: 2084569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91399

Included Lab Sample IDs: 2084569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	92.8	90.4	P/P	90 - 110
Antimony	93.3	93.6	P/P	90 - 110
Arsenic	95.4	95.5	P/P	90 - 110
Cadmium	93.8	93.3	P/P	90 - 110
Chromium	94.8	94.1	P/P	90 - 110
Copper	94.4	94.4	P/P	90 - 110
Lead	96.5	95.6	P/P	90 - 110
Manganese	94.3	93.5	P/P	90 - 110
Nickel	94.9	94.7	P/P	90 - 110
Selenium	94.2	93.7	P/P	90 - 110
Silver	92.2	91.8	P/P	90 - 110
Thallium	93.5	92.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A91404

Included Lab Sample IDs: 2084554, 2084557, 2084560

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

Reference Method: EPA 8321B

Run ID: A91409

Included Lab Sample IDs: 2084566, 2084567, 2084568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	115	123	P/P	60 - 160
Glufosinate	100	116	P/P	60 - 160
Glyphosate	112	109	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91412

Included Lab Sample IDs: 2084555, 2084558, 2084561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	104	P/P	90 - 110
Ammonia-N	104	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A91414

Included Lab Sample IDs: 2084555

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.0	92.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91443

Included Lab Sample IDs: 2084569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	90.6	93.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91448

Included Lab Sample IDs: 2084555, 2084558, 2084561

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

Reference Method: EPA 8321B

Run ID: A91464

Included Lab Sample IDs: 2084566, 2084567, 2084568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.0	104	P/P	50 - 150
Acetaminophen	112	105	P/P	60 - 160
Bentazon	107	134	P/P	50 - 160
Carbamazepine	97.9	99.8	P/P	60 - 150
Diuron	100	101	P/P	60 - 150
Fenuron	103	105	P/P	60 - 150
Fluridone	107	107	P/P	60 - 160
Fluridone	107	102	P/P	60 - 160
Hydrocodone	101	96.2	P/P	60 - 150
Ibuprofen	113	114	P/P	50 - 160
Imazapyr	92.9	112	P/P	50 - 150
Imidacloprid	99.4	76.4	P/P	60 - 150
Linuron	91.3	91.7	P/P	60 - 150
MCPP	93.6	105	P/P	50 - 150
Naproxen	114	94.1	P/P	50 - 160
Primidone	95.9	97.1	P/P	60 - 150
Pyraclostrobin	106	107	P/P	60 - 150
Triclopyr	101	103	P/P	50 - 150

Reference Method: SM 5310 B-00

Run ID: A91470

Included Lab Sample IDs: 2084558, 2084561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.4	99.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91473

Included Lab Sample IDs: 2084555, 2084558, 2084561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91497

Included Lab Sample IDs: 2084555, 2084558

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91507

Included Lab Sample IDs: 2084561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.8	103	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A91513

Included Lab Sample IDs: 2084554, 2084557, 2084560

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

Reference Method: SM 4500 F-C-97

Run ID: A91513

Included Lab Sample IDs: 2084554, 2084557, 2084560

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	98.1	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					2.09	
	Turbidity					0.0	
EPA 200.7 Rev. 4.4	Barium	99.5	99.0	98.1	99.9		1.84
	Calcium	99.3	100	100			1.03
	Iron	100	99.5	101	103		2.61
	Magnesium	107	105	101	105		2.41
	Potassium	99.4	97.1	96.7			1.42
	Sodium	101	102	101			2.01
	Zinc	98.2	99.6	102	105		2.09
EPA 200.8 Rev. 5.4	Aluminum	96.0	94.1	93.9	93.5		0.390
	Antimony	98.2	97.4	98.3	97.1		1.29
	Arsenic	102	99.9	102	99.6		2.05
	Boron	97.5	95.7	93.8	92.4		0.952
	Cadmium	100	98.2	98.9	98.9		0.0298
	Chromium	99.3	99.4	97.1	96.7		0.420
	Copper	99.6	97.6	98.2	96.3		1.96
	Lead	100	100	99.7	99.1		0.674
	Manganese	98.9	96.8	96.4	94.7		1.53
	Nickel	99.9	98.6	98.7	98.1		0.644
	Selenium	101	99.6	99.6	97.1		2.46
	Silver	98.4	96.8	96.5	94.0		2.62
	Thallium	103	103	103	102		0.673
EPA 300.0 Rev. 2.1	Chloride	98.4	98.9	98.9		1.12	
	Sulfate	98.7	99.2	99.5		0.137	
EPA 350.1 Rev. 2.0	Ammonia-N	103	106	103			1.43
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.9	92.8	91.8			0.854
	Kjeldahl Nitrogen	108	106	106			0.499
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	100	100			0.0
EPA 365.1 Rev. 2.0	Total-P	102	100	101			0.634
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	97.4	96.6			0.725
EPA 8321B	2,4-D	89.6	98.5	111			8.42
	Acesulfame K	114	78.8	97.1			20.8
	Acetaminophen	92.9	80.4	84.2			4.59
	AMPA	94.2	45.4	40.4			4.87
	Bentazon	106	47.6	47.5			0.0093
	Carbamazepine	92.2	67.0	66.1			1.36
	Diuron	90.4	57.1	58.7			1.87
	Endothall	105	91.8	94.5			2.81
	Fenuron	102	73.8	73.6			0.363
	Fluridone	95.3	64.3	70.7			2.04
	Glufosinate	110	70.8	68.1			3.82
	Glyphosate	116	96.5	86.6			4.74
	Hydrocodone	96.5	81.2	84.0			3.40
	Ibuprofen	82.0	65.2	68.1			4.39
	Imazapyr	93.1	120	110			4.74
	Imidacloprid	96.7	103	101			0.639
	Linuron	73.3	47.2	50.2			6.12
	MCPP	94.5	130	130			0.285
	Naproxen	81.0	78.5	82.8			5.43
	Primidone	90.8	88.4	89.5			1.21
	Pyraclostrobin	74.1	83.9	85.6			2.00
	Sucralose	101	103	102			0.535
	Triclopyr	58.2	72.9	85.5			16.0
SM 2120 B	Color (true)	100				0.125	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
SM 2320 B-97	Total Alkalinity	102				0.743	
SM 2540 C-97	TDS					4.98	
SM 4500 F-C-97	Fluoride	96.7	96.1	95.6			0.476
SM 5310 B-00	Organic Carbon	89.2	94.4	93.2			0.857
	Organic Carbon	96.6	99.2	100			0.921

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2084554, 2084557, 2084560
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2084569
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2084569
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2084554, 2084557, 2084560
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2084554, 2084557, 2084560
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2084555, 2084558, 2084561
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2084555, 2084558, 2084561
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2084555, 2084558, 2084561
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2084555, 2084558, 2084561
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2084556, 2084559, 2084562
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2084566, 2084567, 2084568
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2084566, 2084567, 2084568
SM 2120 B / E31780	True Color measured at 450 nm	2084554, 2084557, 2084560
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2084554, 2084557, 2084560
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2084554, 2084557, 2084560
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2084554, 2084557, 2084560
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2084554, 2084557, 2084560
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2084555, 2084558, 2084561

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	05/08/2019			05/08/2019 16:03	Adrian Shelby	2084554, 2084557, 2084560
EPA 200.7 Rev. 4.4	05/08/2019	05/09/2019 14:50	Elliott D. Healy	05/10/2019 18:18	Betina Topolski	2084569
EPA 200.8 Rev. 5.4	05/08/2019	05/09/2019 14:50	Elliott D. Healy	05/13/2019 22:31	Martin Acosta	2084569
	05/08/2019	05/09/2019 14:50	Elliott D. Healy	05/15/2019 08:04	Martin Acosta	2084569
EPA 300.0 Rev. 2.1	05/08/2019			05/13/2019 22:13	Lipi Saha	2084554
	05/08/2019			05/13/2019 22:26	Lipi Saha	2084557
	05/08/2019			05/13/2019 23:02	Lipi Saha	2084560
EPA 350.1 Rev. 2.0	05/08/2019			05/13/2019 12:32	Ping Hua	2084561
	05/08/2019			05/13/2019 12:50	Ping Hua	2084555
	05/08/2019			05/13/2019 12:51	Ping Hua	2084558
EPA 351.2 Rev. 2.0	05/08/2019	05/14/2019 12:30	Adrian Shelby	05/17/2019 09:39	Joseph Suarez	2084555
	05/08/2019	05/14/2019 12:30	Adrian Shelby	05/17/2019 09:40	Joseph Suarez	2084558
	05/08/2019	05/15/2019 12:30	Adrian Shelby	05/17/2019 11:35	Joseph Suarez	2084561
EPA 353.2 Rev. 2.0	05/08/2019			05/16/2019 11:19	Beverly Y. Sanders	2084555
	05/08/2019			05/16/2019 11:20	Beverly Y. Sanders	2084558
	05/08/2019			05/16/2019 11:21	Beverly Y. Sanders	2084561
EPA 365.1 Rev. 2.0	05/08/2019	05/14/2019 10:06	Joseph Suarez	05/15/2019 11:57	Rosalyn Ballman	2084555
	05/08/2019	05/14/2019 10:06	Joseph Suarez	05/15/2019 11:58	Rosalyn Ballman	2084558
	05/08/2019	05/14/2019 10:06	Joseph Suarez	05/15/2019 11:59	Rosalyn Ballman	2084561
EPA 365.1 Rev. 2.0 dissolved	05/08/2019			05/08/2019 15:07	Jhamieka S. Greenwood	2084559
	05/08/2019			05/08/2019 15:08	Jhamieka S. Greenwood	2084562
	05/08/2019			05/08/2019 15:33	Jhamieka S. Greenwood	2084556
EPA 8321B	05/08/2019	05/09/2019 11:00	Rebecca Ware	05/09/2019 19:35	Rebecca Ware	2084566
	05/08/2019	05/09/2019 11:00	Rebecca Ware	05/09/2019 19:49	Rebecca Ware	2084567
	05/08/2019	05/09/2019 11:00	Rebecca Ware	05/09/2019 20:03	Rebecca Ware	2084568
	05/08/2019	05/09/2019 11:00	Rebecca Ware	05/11/2019 22:04	Rebecca Ware	2084566
	05/08/2019	05/09/2019 11:00	Rebecca Ware	05/11/2019 22:15	Rebecca Ware	2084567
	05/08/2019	05/09/2019 11:00	Rebecca Ware	05/11/2019 22:26	Rebecca Ware	2084568
	05/08/2019	05/09/2019 11:00	Rebecca Ware	05/12/2019 22:10	Rebecca Ware	2084566
	05/08/2019	05/09/2019 11:00	Rebecca Ware	05/12/2019 22:22	Rebecca Ware	2084567
	05/08/2019	05/09/2019 11:00	Rebecca Ware	05/12/2019 22:33	Rebecca Ware	2084568
	05/08/2019	05/09/2019 13:00	Hoor Shaik	05/17/2019 08:06	Juyoung Kim	2084566
	05/08/2019	05/09/2019 13:00	Hoor Shaik	05/17/2019 08:41	Juyoung Kim	2084567
	05/08/2019	05/09/2019 13:00	Hoor Shaik	05/17/2019 09:15	Juyoung Kim	2084568
	05/08/2019	05/09/2019 13:00	Hoor Shaik	05/17/2019 12:43	Juyoung Kim	2084567
SM 2120 B	05/08/2019			05/08/2019 15:51	Blanca Fach	2084554
	05/08/2019			05/08/2019 15:52	Blanca Fach	2084557
	05/08/2019			05/08/2019 15:53	Blanca Fach	2084560
SM 2320 B-97	05/08/2019			05/17/2019 02:26	Dale L. Simmons	2084554
	05/08/2019			05/17/2019 02:40	Dale L. Simmons	2084557

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	05/08/2019			05/17/2019 02:55	Dale L. Simmons	2084560
SM 2540 C-97	05/08/2019			05/10/2019 16:05	Yijie Li	2084554, 2084557, 2084560
SM 2540 D-97	05/08/2019			05/10/2019 16:05	Yijie Li	2084554, 2084557, 2084560
SM 4500 F-C-97	05/08/2019			05/17/2019 02:26	Dale L. Simmons	2084554
	05/08/2019			05/17/2019 02:40	Dale L. Simmons	2084557
	05/08/2019			05/17/2019 02:55	Dale L. Simmons	2084560
	05/08/2019			05/14/2019 05:31	Julia Storbeck	2084555
SM 5310 B-00	05/08/2019			05/15/2019 18:01	Julia Storbeck	2084558
	05/08/2019			05/15/2019 18:13	Julia Storbeck	2084561