Chemical Analysis Report

SW-DIST-2019-08-27-01

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

Event Description: **SMP: Cedar, Mocassin**
Request ID: **RQ-2019-08-26-04**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Bne Paswater

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: Colin Wright, Program Administrator

Date Certified: 18-SEP-2019 10:31

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: 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: CEDAR CREEK @ PINEHURST (PC09-02) **Collection Date/Time: 08/26/2019 12:35**

Field ID: G5SW0129 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2114855	EPA 8321B	2,4-D	0.0038	I	ug/L	P369771	
		Acesulfame K**	0.10	U	ug/L	P369883	
		AMPA**	0.23	I	ug/L	P369883	
		Sucralose**	2.8		ug/L	P369883	
		Acetaminophen**	0.0080	U	ug/L	P369771	
		Endothall**	0.25	U	ug/L	P369883	
		Acetamiprid**	0.0020	U	ug/L	P369771	
		Glufosinate**	0.10	U	ug/L	P369883	
		Glyphosate**	0.43		ug/L	P369883	
		Afidopyropen**	0.0020	UJ	ug/L	P369771	
		Bentazon	0.12		ug/L	P369771	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P369771	MS, RPD
		Carbamazepine**	0.0020	I	ug/L	P369771	
		Clothianidin**	0.045		ug/L	P369771	
		Dinotefuran**	0.0060	I	ug/L	P369771	
		Diuron	0.0025	I	ug/L	P369771	
		Fenuron	0.016	U	ug/L	P369771	
		Fluridone**	0.030		ug/L	P369771	
		Imazapyr**	0.017		ug/L	P369771	
		Hydrocodone**	0.0020	U	ug/L	P369771	
		Ibuprofen**	0.020	U	ug/L	P369771	
		Imidacloprid	0.15		ug/L	P369771	
		Linuron	0.0040	U	ug/L	P369771	
		Mandestrobin**	0.0020	UJ	ug/L	P369771	
		MCPP	0.0020	U	ug/L	P369771	MS
		Naproxen**	0.0080	U	ug/L	P369771	
		Primidone**	0.020		ug/L	P369771	
		Pyraclostrobin**	0.0020	UJ	ug/L	P369771	LCS, MS, RPD
		Thiamethoxam**	0.0020	U	ug/L	P369771	MS
		Tolfenpyrad**	0.0020	UJ	ug/L	P369771	LCS, MS
		Triclopyr**	0.0040	U	ug/L	P369771	

Ref. Method and Comment:
EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for several analytes could not be assessed due to high concentration of parameter in the spiked sample. MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample. MS precision for tolfenpyrad could not be assessed do to low recover in the spiked sample. Refer to the narrative for an explanation of QC Codes.

Sample Location: CEDAR CREEK ABOVE PATRICIA AVE **Collection Date/Time: 08/26/2019 12:45**

Field ID: G5SW0147 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2114840	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P369774	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P369925	
		Sulfate	25		mg SO4/L	P369928	
	SM 2120 B	Color (true)	69	A	PCU	P369769	
	SM 2320 B-97	Total Alkalinity	118		mg CaCO3/L	P370026	
	SM 2540 C-97	TDS	381		mg/L	P370069	
	SM 2540 D-97	TSS	2	U	mg/L	P370074	
	SM 4500 F-C-97	Fluoride	0.38		mg F/L	P370030	
2114841	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P370235	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P369831	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.43		mg N/L	P369996	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P369874	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P370222	
2114842	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P369800	
2114853	EPA 8321B	2,4-D	0.0032	I	ug/L	P369771	
		Acesulfame K**	0.10	U	ug/L	P369883	
		AMPA**	0.29	I	ug/L	P369883	
		Sucralose**	2.7		ug/L	P369883	
		Acetaminophen**	0.0080	U	ug/L	P369771	
		Endothall**	0.25	U	ug/L	P369883	
		Acetamiprid**	0.0020	U	ug/L	P369771	
		Glufosinate**	0.10	U	ug/L	P369883	
		Glyphosate**	0.57		ug/L	P369883	
		Afidopyropen**	0.0020	UJ	ug/L	P369771	
		Bentazon	0.11		ug/L	P369771	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P369771	MS, RPD
		Carbamazepine**	0.0020	I	ug/L	P369771	
		Clothianidin**	0.038		ug/L	P369771	
		Dinotefuran**	0.0053	I	ug/L	P369771	
		Diuron	0.0020	U	ug/L	P369771	
		Fenuron	0.016	U	ug/L	P369771	
		Fluridone**	0.034		ug/L	P369771	
		Imazapyr**	0.027		ug/L	P369771	
		Hydrocodone**	0.0020	U	ug/L	P369771	
		Ibuprofen**	0.020	U	ug/L	P369771	
		Imidacloprid	0.10		ug/L	P369771	
		Linuron	0.0040	U	ug/L	P369771	
		Mandestrobin**	0.0020	UJ	ug/L	P369771	
		MCPP	0.0020	U	ug/L	P369771	MS
		Naproxen**	0.0080	U	ug/L	P369771	
		Primidone**	0.020		ug/L	P369771	
		Pyraclostrobin**	0.0020	UJ	ug/L	P369771	LCS, MS, RPD
		Thiamethoxam**	0.0020	U	ug/L	P369771	MS

Field ID: G5SW0147 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2114853	EPA 8321B	Tolfenpyrad**	0.0020	UJ	ug/L	P369771	LCS, MS
		Triclopyr**	0.0040	U	ug/L	P369771	

Ref. Method and Comment:
EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for several analytes could not be assessed due to high concentration of parameter in the spiked sample. MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample. MS precision for tolfenpyrad could not be assessed do to low recover in the spiked sample. Refer to the narrative for an explanation of QC Codes.

Sample Location: MOCCASIN CREEK TIDAL **Collection Date/Time: 08/26/2019 11:55**

Field ID: G1SW0051 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2114843	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P369774	
	EPA 300.0	Bromide	8.9		mg Br/L	P369921	
	SM 2320 B-97	Total Alkalinity	91		mg CaCO3/L	P369891	
	SM 2540 D-97	TSS	2	I	mg/L	P370075	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P370030	
2114844	EPA 350.1 Rev. 2.0	Ammonia-N	0.068		mg N/L	P370097	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P369919	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P370120	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P369873	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P370222	
2114845	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P369799	
2114854	EPA 8321B	2,4-D	0.097		ug/L	P369771	
		Acesulfame K**	0.10	UJ	ug/L	P369883	SUR
		AMPA**	1.0	U	ug/L	P369883	
		Sucralose**	0.78		ug/L	P369883	
		Acetaminophen**	0.0080	U	ug/L	P369771	
		Endothall**	0.25	UJ	ug/L	P369883	SUR
		Acetamiprid**	0.0020	U	ug/L	P369771	
		Glufosinate**	1.0	U	ug/L	P369883	
		Glyphosate**	1.0	U	ug/L	P369883	
		Afidopyropen**	0.0020	UJ	ug/L	P369771	
		Bentazon	0.083		ug/L	P369771	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P369771	MS, RPD
		Carbamazepine**	0.0013	I	ug/L	P369771	
		Clothianidin**	0.0073	I	ug/L	P369771	
		Dinotefuran**	0.0020	U	ug/L	P369771	
		Diuron	0.0064	I	ug/L	P369771	
		Fenuron	0.016	U	ug/L	P369771	
		Fluridone**	0.047		ug/L	P369771	
		Imazapyr**	0.075		ug/L	P369771	
		Hydrocodone**	0.0020	U	ug/L	P369771	
		Ibuprofen**	0.020	U	ug/L	P369771	
		Imidacloprid	0.13		ug/L	P369771	
		Linuron	0.0040	U	ug/L	P369771	
		Mandestrobin**	0.0020	UJ	ug/L	P369771	
		MCPP	0.0068	I	ug/L	P369771	MS
		Naproxen**	0.0080	U	ug/L	P369771	
		Primidone**	0.0040	U	ug/L	P369771	
		Pyraclostrobin**	0.0020	UJ	ug/L	P369771	LCS, MS, RPD
		Thiamethoxam**	0.0020	U	ug/L	P369771	MS
		Tolfenpyrad**	0.0020	UJ	ug/L	P369771	LCS, MS
		Triclopyr**	0.0040	U	ug/L	P369771	

Field ID: G1SW0051 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for several analytes could not be assessed due to high concentration of parameter in the spiked sample. MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample. MS precision for tolfenpyrad could not be assessed do to low recover in the spiked sample. Refer to the narrative for an explanation of QC Codes.
EPA 8321B: MDL for some parameters elevated due to matrix interference. Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P369774

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P369921

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369925

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369928

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370097

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370235

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369831

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369919

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369996

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370120

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369873

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369874

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369799

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369800

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

Reference Method: EPA 8321B
Batch ID: P369771

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P369771

Component	Result	Code	Units
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P369883

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: P369769

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P369891

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

Reference Method: SM 2320 B-97
Batch ID: P370026

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

Reference Method: SM 2540 C-97
Batch ID: P370069

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P370074

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P370075

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P370030

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P370222

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P369921

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	96.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369925

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369928

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370097

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370235

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: P369831

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369919

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369996

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: P370120

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369873

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369874

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369799

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369800

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

Reference Method: EPA 8321B
Batch ID: P369771

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	85.3		P	40 - 160
Acetaminophen	70.8		P	30 - 160
Acetamiprid	78.2		P	40 - 160
Afidopyropen	61.2		P	40 - 160
Bentazon	94.9		P	30 - 160
Benzovindiflupyr	40.4		P	40 - 160
Carbamazepine	89.9		P	40 - 160
Clothianidin	94.2		P	40 - 160
Dinotefuran	99.0		P	40 - 160
Diuron	84.4		P	40 - 160
Fenuron	112		P	40 - 160
Fluridone	94.7		P	40 - 160
Hydrocodone	96.1		P	40 - 160
Ibuprofen	78.9		P	30 - 160
Imazapyr	93.0		P	40 - 160
Imidacloprid	93.5		P	40 - 160
Linuron	71.8		P	40 - 160
Mandestrobin	77.0		P	40 - 160
MCPP	88.2		P	40 - 160
Naproxen	62.2		P	40 - 160
Primidone	97.8		P	40 - 160
Pyraclostrobin	28.9		F	30 - 160
Thiamethoxam	104		P	40 - 160
Tolfenpyrad	0.807		F	40 - 160
Triclopyr	60.2		P	30 - 160

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P369883

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	137		P	40 - 150
AMPA	132		P	40 - 150
Endothall	95.6		P	40 - 150
Glufosinate	108		P	40 - 150
Glyphosate	110		P	40 - 140
Sucralose	93.0		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P369769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P369891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P370026

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P370030

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P370222

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.7		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P369921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115127	Bromide	92.4	93.2	P/P	90 - 110
2115133	Bromide	94.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369925

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114406	Chloride	104		P	90 - 110
2114812	Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114406	Sulfate	104		P	90 - 110
2114812	Sulfate	106		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370097

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114718	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370235

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114819	Ammonia-N	95.0	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114813	Kjeldahl Nitrogen	98.5	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114718	Kjeldahl Nitrogen	98.8	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369996

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114816	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115057	NO2NO3-N	99.4	98.4	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369873

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114548	Total-P	97.1	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114777	Total-P	92.6	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369799

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114721	O-Phosphate-P	98.6	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114873	O-Phosphate-P	101	101	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P369771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114832	Acetaminophen	83.1	80.6	P/P	30 - 160
2114832	Acetamiprid	103	92.7	P/P	40 - 160
2114832	Afidopyropen	120	102	P/P	40 - 160
2114832	Benzovindiflupyr	76.5	39.3	P/F	40 - 160
2114832	Carbamazepine	97.1	94.0	P/P	40 - 160
2114832	Clothianidin	123	110	P/P	40 - 160
2114832	Dinotefuran	129	126	P/P	40 - 160
2114832	Diuron	94.0	90.2	P/P	40 - 160
2114832	Fenuron	78.3	82.3	P/P	40 - 160
2114832	Hydrocodone	109	103	P/P	40 - 160
2114832	Ibuprofen	112	93.4	P/P	30 - 160
2114832	Linuron	78.6	75.2	P/P	40 - 160
2114832	Mandestrobin	89.0	81.0	P/P	40 - 160
2114832	MCPP	213	188	F/F	40 - 160
2114832	Naproxen	130	133	P/P	40 - 160
2114832	Primidone	110	112	P/P	40 - 160
2114832	Pyraclostrobin	70.7	29.6	P/F	30 - 160
2114832	Thiamethoxam	168	165	F/F	40 - 160
2114832	Tolfenpyrad	18.9	0.798	F/F	40 - 160
2114832	Triclopyr	151	116	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P369883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114790	Acesulfame K	97.6	81.2	P/P	40 - 150
2114790	AMPA	61.6	64.5	P/P	40 - 150
2114790	Endothall	82.6	92.6	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P369883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114790	Glufosinate	72.5	72.4	P/P	40 - 150
2114790	Glyphosate	94.7	107	P/P	40 - 140
2114790	Sucralose	78.5	91.0	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P370030

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115036	Fluoride	99.3	98.6	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P370222

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2114394	Organic Carbon	100	101	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P369774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114894	Turbidity	1.75	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P369921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115127	Bromide	0.648	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114406	Chloride	0.288	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114406	Sulfate	0.0425	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114718	Ammonia-N	0.490	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370235

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114819	Ammonia-N	4.14	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114813	Kjeldahl Nitrogen	5.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114718	Kjeldahl Nitrogen	0.243	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369996

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114816	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115057	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114548	Total-P	0.798	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114777	Total-P	4.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369799

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114721	O-Phosphate-P	1.21	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P369800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114873	O-Phosphate-P	0.297	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P369771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114832	2,4-D	3.05	Spike	P	0 - 30
2114832	Acetaminophen	3.13	Spike	P	0 - 30
2114832	Acetamiprid	10.4	Spike	P	0 - 30
2114832	Afidopyropen	16.3	Spike	P	0 - 30
2114832	Benzovindiflupyr	64.2	Spike	F	0 - 30
2114832	Carbamazepine	2.58	Spike	P	0 - 30
2114832	Clothianidin	10.1	Spike	P	0 - 30
2114832	Dinotefuran	2.39	Spike	P	0 - 30
2114832	Diuron	2.63	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P369771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114832	Fenuron	3.39	Spike	P	0 - 30
2114832	Fluridone	9.35	Spike	P	0 - 30
2114832	Hydrocodone	5.38	Spike	P	0 - 30
2114832	Ibuprofen	18.2	Spike	P	0 - 30
2114832	Imazapyr	0.891	Spike	P	0 - 30
2114832	Imidacloprid	0.409	Spike	P	0 - 30
2114832	Linuron	4.42	Spike	P	0 - 30
2114832	Mandestrobin	9.44	Spike	P	0 - 30
2114832	MCPP	11.9	Spike	P	0 - 30
2114832	Naproxen	2.34	Spike	P	0 - 30
2114832	Primidone	2.14	Spike	P	0 - 30
2114832	Pyraclostrobin	82.0	Spike	F	0 - 30
2114832	Thiamethoxam	2.06	Spike	P	0 - 30
2114832	Triclopyr	25.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P369883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114790	Acesulfame K	18.3	Spike	P	0 - 30
2114790	AMPA	3.04	Spike	P	0 - 30
2114790	Endothall	11.4	Spike	P	0 - 30
2114790	Glufosinate	0.171	Spike	P	0 - 30
2114790	Glyphosate	7.91	Spike	P	0 - 30
2114790	Sucralose	14.7	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P369769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114840	Color (true)	0.0890	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P369891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2113602	Total Alkalinity	0.622	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P370026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115036	Total Alkalinity	0.144	Sample	P	0 - 2.8

Quality Assurance Report
Precision

Reference Method: SM 2540 C-97
Batch ID: P370069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114775	TDS	0.280	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P370074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114775	TSS	6.78	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P370030

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115036	Fluoride	0.477	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P370222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2114394	Organic Carbon	0.415	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: 2114853
Field Sample ID: G5SW0147

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	150	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	98.8	P	30 - 160
EPA 8321B	Diuron-d6	103	P	30 - 160
EPA 8321B	Endothall-d6	86.1	P	30 - 160
EPA 8321B	Endothall-d6	86.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	86.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	86.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	73.6	P	30 - 160
EPA 8321B	Primidone-d5	136	P	30 - 160
EPA 8321B	Sucralose-d6	148	P	30 - 160
EPA 8321B	Sucralose-d6	148	P	30 - 160

Lab Sample ID: 2114854
Field Sample ID: G1SW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	86.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.1	P	30 - 160
EPA 8321B	Diuron-d6	100	P	30 - 160
EPA 8321B	Endothall-d6	418	F	30 - 160
EPA 8321B	Endothall-d6	418	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	54.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	54.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	100	P	30 - 160
EPA 8321B	Primidone-d5	126	P	30 - 160
EPA 8321B	Sucralose-d6	125	P	30 - 160
EPA 8321B	Sucralose-d6	125	P	30 - 160

Lab Sample ID: 2114855
Field Sample ID: G5SW0129

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	139	P	30 - 160
EPA 8321B	Acetaminophen-d4	88.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.0	P	30 - 160
EPA 8321B	Diuron-d6	105	P	30 - 160
EPA 8321B	Endothall-d6	87.9	P	30 - 160
EPA 8321B	Endothall-d6	87.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	82.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	82.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	81.7	P	30 - 160
EPA 8321B	Primidone-d5	136	P	30 - 160
EPA 8321B	Sucralose-d6	146	P	30 - 160
EPA 8321B	Sucralose-d6	146	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0
Run ID: A93817
Included Lab Sample IDs: 2114843

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A93819
Included Lab Sample IDs: 2114840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	104	P/P	90 - 110
Sulfate	104	106	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A93820
Included Lab Sample IDs: 2114840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A93821
Included Lab Sample IDs: 2114840, 2114843

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A93828
Included Lab Sample IDs: 2114842, 2114845

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

Reference Method: SM 2320 B-97
Run ID: A93863
Included Lab Sample IDs: 2114843

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A93889
Included Lab Sample IDs: 2114841

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.7	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A93921
Included Lab Sample IDs: 2114841, 2114844

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A93921
Included Lab Sample IDs: 2114841, 2114844

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A93923
Included Lab Sample IDs: 2114841

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A93925
Included Lab Sample IDs: 2114844

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	103	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A93928
Included Lab Sample IDs: 2114840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	106	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A93928
Included Lab Sample IDs: 2114840, 2114843

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

Reference Method: EPA 8321B
Run ID: A93944
Included Lab Sample IDs: 2114853, 2114854, 2114855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	117	68.6	P/P	60 - 160
AMPA	125	113	P/P	60 - 160
AMPA	128	117	P/P	60 - 160
Glufosinate	103	104	P/P	60 - 160
Glufosinate	104	65.3	P/P	60 - 160
Glufosinate	106	105	P/P	60 - 160
Glyphosate	109	77.3	P/P	60 - 160
Glyphosate	114	113	P/P	60 - 160
Glyphosate	115	109	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A93946
Included Lab Sample IDs: 2114853, 2114854, 2114855

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A93946
Included Lab Sample IDs: 2114853, 2114854, 2114855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	114	115	P/P	60 - 160
Acesulfame K	115	110	P/P	60 - 160
Endothall	97.7	98.9	P/P	60 - 160
Endothall	98.9	99.4	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A93962
Included Lab Sample IDs: 2114844

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A93971
Included Lab Sample IDs: 2114844

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

Reference Method: EPA 8321B
Run ID: A93996
Included Lab Sample IDs: 2114853, 2114854, 2114855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	91.8	86.2	P/P	60 - 160

Reference Method: SM 5310 B-00
Run ID: A94014
Included Lab Sample IDs: 2114841, 2114844

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A94019
Included Lab Sample IDs: 2114841

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.5	103	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A94124
Included Lab Sample IDs: 2114853, 2114854, 2114855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.3	96.2	P/P	50 - 150
Acetaminophen	79.1	104	P/P	60 - 160
Acetamiprid	107	109	P/P	50 - 150
Afidopyropen	106	126	P/P	50 - 150
Bentazon	104	105	P/P	50 - 160
Bentazon	93.8	96.3	P/P	50 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A94124
Included Lab Sample IDs: 2114853, 2114854, 2114855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Benzovindiflupyr	102	102	P/P	50 - 150
Carbamazepine	112	112	P/P	60 - 150
Clothianidin	101	93.6	P/P	60 - 150
Dinotefuran	95.5	105	P/P	50 - 150
Diuron	105	99.3	P/P	60 - 150
Fenuron	110	107	P/P	60 - 150
Fluridone	123	125	P/P	60 - 160
Hydrocodone	106	108	P/P	60 - 150
Ibuprofen	97.9	73.9	P/P	50 - 160
Imazapyr	96.8	90.3	P/P	50 - 150
Imidacloprid	100	98.6	P/P	60 - 150
Linuron	91.4	102	P/P	60 - 150
Mandestrobin	111	107	P/P	50 - 150
MCPP	109	109	P/P	50 - 150
Naproxen	75.4	131	P/P	50 - 160
Primidone	102	97.9	P/P	60 - 150
Pyraclostrobin	113	111	P/P	60 - 150
Thiamethoxam	110	107	P/P	50 - 150
Tolfenpyrad	122	125	P/P	60 - 150
Triclopyr	103	96.4	P/P	50 - 150

* 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		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.75	
EPA 300.0	Bromide	96.4	92.4	93.2	94.7			0.648
EPA 300.0 Rev. 2.1	Chloride	103	104	107			0.288	
	Sulfate	103	104	106			0.0425	
EPA 350.1 Rev. 2.0	Ammonia-N	97.9	101	101				0.490
	Ammonia-N	98.8	95.0	101				4.14
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.0	98.5	107				5.27
	Kjeldahl Nitrogen	105	98.8	98.5				0.243
EPA 353.2 Rev. 2.0	NO2NO3-N	102	103	102				0.487
	NO2NO3-N	102	99.4	98.4				1.01
EPA 365.1 Rev. 2.0	Total-P	96.9	97.1	97.9				0.798
	Total-P	96.6	92.6	98.4				4.16
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	98.6	99.8				1.21
	O-Phosphate-P	100	101	101				0.297
EPA 8321B	2,4-D	85.3						3.05
	Acesulfame K	137	97.6	81.2				18.3
	Acetaminophen	70.8	83.1	80.6				3.13
	Acetamiprid	78.2	103	92.7				10.4
	Afidopyropen	61.2	120	102				16.3
	AMPA	132	61.6	64.5				3.04
	Bentazon	94.9						
	Benzovindiflupyr	40.4	76.5	39.3				64.2
	Carbamazepine	89.9	97.1	94.0				2.58
	Clothianidin	94.2	123	110				10.1
	Dinotefuran	99.0	129	126				2.39
	Diuron	84.4	94.0	90.2				2.63
	Endothall	95.6	82.6	92.6				11.4
	Fenuron	112	78.3	82.3				3.39
	Fluridone	94.7						9.35
	Glufosinate	108	72.5	72.4				0.171
	Glyphosate	110	94.7	107				7.91
	Hydrocodone	96.1	109	103				5.38
	Ibuprofen	78.9	112	93.4				18.2
	Imazapyr	93.0						0.891
	Imidacloprid	93.5						0.409
	Linuron	71.8	78.6	75.2				4.42
	Mandestrobin	77.0	89.0	81.0				9.44
	MCPP	88.2	213	188				11.9
	Naproxen	62.2	130	133				2.34
	Primidone	97.8	110	112				2.14
	Pyraclostrobin	28.9	70.7	29.6				82.0
	Sucralose	93.0	78.5	91.0				14.7
	Thiamethoxam	104	168	165				2.06
	Tolfenpyrad	0.807	18.9	0.798				
	Triclopyr	60.2	151	116				25.9
SM 2120 B	Color (true)	99.5					0.0890	
SM 2320 B-97	Total Alkalinity	103					0.622	
	Total Alkalinity	104					0.144	
SM 2540 C-97	TDS						0.280	
SM 2540 D-97	TSS						6.78	
SM 4500 F-C-97	Fluoride	97.6	99.3	98.6				0.477
SM 5310 B-00	Organic Carbon	99.7	100	101				0.415

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2114840, 2114843
EPA 300.0 / E31780	Bromide in aqueous matrices	2114843
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2114840
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2114840
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2114841, 2114844
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2114841, 2114844
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2114841, 2114844
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2114841, 2114844
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2114842, 2114845
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2114853, 2114854, 2114855
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2114853, 2114854, 2114855
SM 2120 B / E31780	True Color measured at 450 nm	2114840
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2114840, 2114843
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2114840
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2114840, 2114843
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2114840, 2114843
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2114841, 2114844

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	08/27/2019			08/27/2019 16:17	Rosalyn Ballman	2114840, 2114843
EPA 300.0	08/27/2019			08/28/2019 21:25	Jhamieka S. Greenwood	2114843
EPA 300.0 Rev. 2.1	08/27/2019			08/29/2019 05:20	Jhamieka S. Greenwood	2114840
EPA 350.1 Rev. 2.0	08/27/2019			09/03/2019 11:45	Ping Hua	2114844
	08/27/2019			09/05/2019 12:22	Ping Hua	2114841
EPA 351.2 Rev. 2.0	08/27/2019	08/28/2019 12:55	Sima Feizi	08/29/2019 13:33	Julia Storbeck	2114841
	08/27/2019	08/29/2019 11:55	Sima Feizi	08/30/2019 12:34	Joseph Suarez	2114844
EPA 353.2 Rev. 2.0	08/27/2019			08/30/2019 10:28	Beverly Y. Sanders	2114841
	08/27/2019			09/04/2019 09:36	Beverly Y. Sanders	2114844
EPA 365.1 Rev. 2.0	08/27/2019	08/29/2019 07:30	Joseph Suarez	08/30/2019 10:48	Lipi Saha	2114844
	08/27/2019	08/29/2019 07:30	Joseph Suarez	08/30/2019 11:12	Lipi Saha	2114841
EPA 365.1 Rev. 2.0 dissolved	08/27/2019			08/27/2019 15:52	Jhamieka S. Greenwood	2114845
	08/27/2019			08/27/2019 15:54	Jhamieka S. Greenwood	2114842
EPA 8321B	08/27/2019	08/29/2019 09:45	Rebecca Ware	08/29/2019 14:42	Rebecca Ware	2114853
	08/27/2019	08/29/2019 09:45	Rebecca Ware	08/29/2019 14:56	Rebecca Ware	2114854
	08/27/2019	08/29/2019 09:45	Rebecca Ware	08/29/2019 15:23	Rebecca Ware	2114855
	08/27/2019	08/29/2019 09:45	Rebecca Ware	08/30/2019 10:12	Rebecca Ware	2114853
	08/27/2019	08/29/2019 09:45	Rebecca Ware	08/30/2019 10:45	Rebecca Ware	2114855
	08/27/2019	08/29/2019 09:45	Rebecca Ware	08/30/2019 13:37	Rebecca Ware	2114854
	08/27/2019	08/29/2019 09:45	Rebecca Ware	09/04/2019 21:25	Rebecca Ware	2114853
	08/27/2019	08/29/2019 09:45	Rebecca Ware	09/04/2019 21:37	Rebecca Ware	2114854
	08/27/2019	08/29/2019 09:45	Rebecca Ware	09/04/2019 21:49	Rebecca Ware	2114855
	08/27/2019	08/30/2019 12:30	Hoor Shaik	09/01/2019 06:04	Juyoung Kim	2114853
	08/27/2019	08/30/2019 12:30	Hoor Shaik	09/01/2019 06:38	Juyoung Kim	2114854
	08/27/2019	08/30/2019 12:30	Hoor Shaik	09/01/2019 07:13	Juyoung Kim	2114855
	08/27/2019	08/30/2019 12:30	Hoor Shaik	09/05/2019 02:32	Juyoung Kim	2114853
	08/27/2019	08/30/2019 12:30	Hoor Shaik	09/05/2019 03:41	Juyoung Kim	2114855
SM 2120 B	08/27/2019			08/27/2019 16:20	Madeline Funaro	2114840
SM 2320 B-97	08/27/2019			08/29/2019 00:20	Dale L. Simmons	2114843
	08/27/2019			08/30/2019 14:15	Dale L. Simmons	2114840
SM 2540 C-97	08/27/2019			08/28/2019 14:52	Yijie Li	2114840
SM 2540 D-97	08/27/2019			08/28/2019 14:52	Yijie Li	2114840, 2114843
SM 4500 F-C-97	08/27/2019			08/30/2019 14:15	Dale L. Simmons	2114840
	08/27/2019			08/30/2019 17:08	Dale L. Simmons	2114843
SM 5310 B-00	08/27/2019			09/04/2019 19:56	Madeline Funaro	2114841
	08/27/2019			09/04/2019 20:10	Madeline Funaro	2114844