

Chemical Analysis Report

SO-DIST-2019-07-24-01

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

Event Description: **2019 SMP : MyBB**

Request ID: **RQ-2019-07-22-20**

Customer: **SO-DIST**

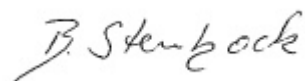
Project ID: **SMP**

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

Date Certified: 09-AUG-2019 12:45



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: Brandy Branch @SR70

Collection Date/Time: 07/23/2019 09:45

Field ID: G3SD0083

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2105420	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P367855	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P367958	
		Sulfate	190		mg SO4/L	P368402	
	SM 2120 B	Color (true)	230		PCU	P367907	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P367975	
	SM 2540 C-97	TDS	390		mg/L	P368344	
	SM 2540 D-97	TSS	8	I	mg/L	P368001	
	SM 4500 F-C-97	Fluoride	0.41		mg F/L	P367977	
2105421	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P368533	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P368012	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.088		mg N/L	P367986	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P367889	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P367969	
2105422	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.099		mg P/L	P367843	
2105432	EPA 8321B	2,4-D	0.0023	I	ug/L	P367470	
		Acesulfame K**	0.10	U	ug/L	P367852	
		AMPA**	0.28	I	ug/L	P367852	MS
		Sucralose**	0.023	I	ug/L	P367852	
		Acetaminophen**	0.0080	U	ug/L	P367470	
		Endothall**	0.25	U	ug/L	P367852	
		Glufosinate**	0.10	U	ug/L	P367852	
		Glyphosate**	0.10	U	ug/L	P367852	
		Bentazon	0.067		ug/L	P367470	
		Carbamazepine**	8.0E-04	U	ug/L	P367470	
		Diuron	0.0056	I	ug/L	P367470	
		Fenuron	0.016	U	ug/L	P367470	
		Fluridone**	8.0E-04	U	ug/L	P367470	
		Imazapyr**	0.0054	I	ug/L	P367470	
		Hydrocodone**	0.0020	U	ug/L	P367470	
		Ibuprofen**	0.020	U	ug/L	P367470	
		Imidacloprid	0.043		ug/L	P367470	MS
		Linuron	0.0040	U	ug/L	P367470	
		MCP	0.0020	U	ug/L	P367470	MS
		Naproxen**	0.0080	U	ug/L	P367470	
		Primidone**	0.0040	U	ug/L	P367470	
		Pyraclostrobin**	0.0020	U	ug/L	P367470	
		Triclopyr**	0.0040	U	ug/L	P367470	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Brandy Branch @SR70

Collection Date/Time: 07/23/2019 09:50

Field ID: FB_07152019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2105433	EPA 8321B	2,4-D	0.0020	U	ug/L	P367470	
		Acesulfame K**	0.10	U	ug/L	P367852	
		AMPA**	0.10	U	ug/L	P367852	MS
		Sucralose**	0.010	U	ug/L	P367852	
		Acetaminophen**	0.0080	U	ug/L	P367470	
		Endothall**	0.25	U	ug/L	P367852	
		Glufosinate**	0.10	U	ug/L	P367852	
		Glyphosate**	0.10	U	ug/L	P367852	
		Bentazon	8.0E-04	U	ug/L	P367470	
		Carbamazepine**	8.0E-04	U	ug/L	P367470	
		Diuron	0.0020	U	ug/L	P367470	
		Fenuron	0.016	U	ug/L	P367470	
		Fluridone**	8.0E-04	U	ug/L	P367470	
		Imazapyr**	0.0040	U	ug/L	P367470	
		Hydrocodone**	0.0020	U	ug/L	P367470	
		Ibuprofen**	0.020	U	ug/L	P367470	
		Imidacloprid	0.0020	U	ug/L	P367470	MS
		Linuron	0.0040	U	ug/L	P367470	
		MCPP	0.0020	U	ug/L	P367470	MS
		Naproxen**	0.0080	U	ug/L	P367470	
		Primidone**	0.0040	U	ug/L	P367470	
		Pyraclostrobin**	0.0020	U	ug/L	P367470	
		Triclopyr**	0.0040	U	ug/L	P367470	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: LakeMyakka(Upper)

Collection Date/Time: 07/23/2019 11:00

Field ID: G3SD0133

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2105423	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P367856	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P367958	
		Sulfate	130		mg SO4/L	P368188	
	SM 2120 B	Color (true)	140		PCU	P367907	
	SM 2320 B-97	Total Alkalinity	32		mg CaCO3/L	P367975	
	SM 2540 C-97	TDS	289		mg/L	P368344	
	SM 2540 D-97	TSS	5	I	mg/L	P368001	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P367977	
2105424	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P368533	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P368012	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P367986	
	EPA 365.1 Rev. 2.0	Total-P	0.45		mg P/L	P367889	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P367969	
2105425	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.38		mg P/L	P367843	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
 SM 4500 F-C-97: Batch matrix spike recoveries are unavailable 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: P367855

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367856

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367958

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368188

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368402

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368533

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368012

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367986

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367889

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367843

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

Reference Method: EPA 8321B
Batch ID: P367470

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
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P367852

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: P367907

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P367975

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

Reference Method: SM 2540 C-97
Batch ID: P368344

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P368001

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P367977

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P367969

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367958

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368188

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368402

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368533

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: P368012

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367986

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367889

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367843

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

Reference Method: EPA 8321B
Batch ID: P367470

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	143		P	40 - 150
Acetaminophen	95.8		P	30 - 150
Bentazon	127		P	30 - 150
Carbamazepine	94.4		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P367470

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	101		P	40 - 150
Fenuron	107		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	106		P	40 - 150
Ibuprofen	93.4		P	30 - 150
Imazapyr	93.8		P	40 - 150
Imidacloprid	101		P	40 - 150
Linuron	84.6		P	40 - 150
MCPP	145		P	40 - 150
Naproxen	106		P	40 - 150
Primidone	91.6		P	40 - 150
Pyraclostrobin	95.4		P	30 - 150
Triclopyr	93.0		P	30 - 150

Reference Method: EPA 8321B
Batch ID: P367852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	133		P	40 - 150
AMPA	81.2		P	40 - 150
Endothall	97.0		P	40 - 150
Glufosinate	78.4		P	40 - 150
Glyphosate	67.8		P	40 - 140
Sucralose	77.0		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P367907

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P367975

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

Reference Method: SM 4500 F-C-97
Batch ID: P367977

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

Reference Method: SM 5310 B-00
Batch ID: P367969

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367958

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105365	Chloride	100	99.2	P/P	90 - 110
2105582	Chloride	95.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105895	Sulfate	100		P	90 - 110
2106021	Sulfate	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106252	Sulfate	99.5		P	90 - 110
2106349	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105366	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105424	Kjeldahl Nitrogen	98.6	90.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105350	NO2NO3-N	98.4	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367889

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105350	Total-P	105	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367843

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105591	O-Phosphate-P	96.8	97.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P367470

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105151	Acetaminophen	98.2	96.3	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P367470

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105151	Carbamazepine	76.3	78.4	P/P	40 - 150
2105151	Diuron	78.9	76.1	P/P	40 - 150
2105151	Fenuron	74.2	69.5	P/P	40 - 150
2105151	Fluridone	87.0	90.5	P/P	40 - 150
2105151	Hydrocodone	99.4	83.9	P/P	40 - 150
2105151	Ibuprofen	101	101	P/P	30 - 150
2105151	Imazapyr	78.7	80.9	P/P	40 - 150
2105151	Imidacloprid	164	175	F/F	40 - 150
2105151	Linuron	75.8	75.4	P/P	40 - 150
2105151	MCPP	197	202	F/F	40 - 150
2105151	Naproxen	111	121	P/P	40 - 150
2105151	Primidone	90.4	94.5	P/P	40 - 150
2105151	Pyraclostrobin	87.9	88.6	P/P	30 - 150
2105151	Triclopyr	113	125	P/P	30 - 150

Reference Method: EPA 8321B
Batch ID: P367852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105151	Acesulfame K	65.5	70.8	P/P	40 - 150
2105151	AMPA	32.1	30.9	F/F	40 - 150
2105151	Endothall	83.2	91.4	P/P	40 - 150
2105151	Glufosinate	48.8	48.3	P/P	40 - 150
2105151	Glyphosate	66.1	65.1	P/P	40 - 140
2105151	Sucralose	129	125	P/P	40 - 150

Reference Method: SM 5310 B-00
Batch ID: P367969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105514	Organic Carbon	98.0	97.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105405	Turbidity	3.74	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105458	Turbidity	1.19	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105365	Chloride	0.783	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106021	Sulfate	0.912	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106252	Sulfate	1.59	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105366	Ammonia-N	0.890	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105424	Kjeldahl Nitrogen	4.23	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105350	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P367889

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105350	Total-P	4.39	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P367843

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105591	O-Phosphate-P	1.13	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P367470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105151	2,4-D	0.987	Spike	P	0 - 30
2105151	Acetaminophen	1.98	Spike	P	0 - 30
2105151	Bentazon	3.29	Spike	P	0 - 30
2105151	Carbamazepine	2.73	Spike	P	0 - 30
2105151	Diuron	3.27	Spike	P	0 - 30
2105151	Fenuron	6.49	Spike	P	0 - 30
2105151	Fluridone	2.97	Spike	P	0 - 30
2105151	Hydrocodone	16.9	Spike	P	0 - 30
2105151	Ibuprofen	0.0193	Spike	P	0 - 30
2105151	Imazapyr	1.43	Spike	P	0 - 30
2105151	Imidacloprid	5.51	Spike	P	0 - 30
2105151	Linuron	0.617	Spike	P	0 - 30
2105151	MCPP	2.68	Spike	P	0 - 30
2105151	Naproxen	9.06	Spike	P	0 - 30
2105151	Primidone	4.51	Spike	P	0 - 30
2105151	Pyraclostrobin	0.821	Spike	P	0 - 30
2105151	Triclopyr	9.89	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P367852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105151	Acesulfame K	7.82	Spike	P	0 - 30
2105151	AMPA	2.63	Spike	P	0 - 30
2105151	Endothall	9.40	Spike	P	0 - 30
2105151	Glufosinate	0.992	Spike	P	0 - 30
2105151	Glyphosate	1.50	Spike	P	0 - 30
2105151	Sucralose	2.51	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P367907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105513	Color (true)	0.158	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P367975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105288	Total Alkalinity	0.922	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P368344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105513	TDS	0.332	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P367977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105288	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P367969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105514	Organic Carbon	0.143	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: 2105432
Field Sample ID: G3SD0083

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	141	P	30 - 160
EPA 8321B	2,4-D-d3	141	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.6	P	30 - 160
EPA 8321B	Diuron-d6	90.9	P	30 - 160
EPA 8321B	Diuron-d6	90.9	P	30 - 160
EPA 8321B	Endothall-d6	88.8	P	30 - 160
EPA 8321B	Endothall-d6	88.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	54.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	54.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	123	P	30 - 160
EPA 8321B	Ibuprofen-d3	123	P	30 - 160
EPA 8321B	Primidone-d5	85.1	P	30 - 160
EPA 8321B	Primidone-d5	85.1	P	30 - 160
EPA 8321B	Sucralose-d6	156	P	30 - 160
EPA 8321B	Sucralose-d6	156	P	30 - 160

Lab Sample ID: 2105433
Field Sample ID: FB_07152019

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.9	P	30 - 160
EPA 8321B	Diuron-d6	96.8	P	30 - 160
EPA 8321B	Diuron-d6	96.8	P	30 - 160
EPA 8321B	Endothall-d6	114	P	30 - 160
EPA 8321B	Endothall-d6	114	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	73.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	73.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	92.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	92.7	P	30 - 160
EPA 8321B	Primidone-d5	99.8	P	30 - 160
EPA 8321B	Primidone-d5	99.8	P	30 - 160
EPA 8321B	Sucralose-d6	114	P	30 - 160
EPA 8321B	Sucralose-d6	114	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92954

Included Lab Sample IDs: 2105420, 2105423

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92997

Included Lab Sample IDs: 2105422, 2105425

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.3	96.4	P/P	90 - 110
O-Phosphate-P	99.3	98.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A93008

Included Lab Sample IDs: 2105420, 2105423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	100	P/P	95 - 105
Turbidity	99.5	102	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A93029

Included Lab Sample IDs: 2105420, 2105423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115
Color (true)	100	102	P/P	90 - 115

Reference Method: SM 5310 B-00

Run ID: A93042

Included Lab Sample IDs: 2105421, 2105424

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

Reference Method: SM 2320 B-97

Run ID: A93046

Included Lab Sample IDs: 2105420, 2105423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A93046

Included Lab Sample IDs: 2105420, 2105423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93048

Included Lab Sample IDs: 2105421, 2105424

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93050

Included Lab Sample IDs: 2105421, 2105424

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

Reference Method: EPA 8321B

Run ID: A93078

Included Lab Sample IDs: 2105432, 2105433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.6	98.9	P/P	50 - 150
2,4-D	98.9	89.2	P/P	50 - 150
Acetaminophen	110	115	P/P	60 - 160
Acetaminophen	115	114	P/P	60 - 160
Bentazon	114	104	P/P	50 - 160
Bentazon	114	114	P/P	50 - 160
Carbamazepine	97.5	95.7	P/P	60 - 150
Carbamazepine	98.1	97.5	P/P	60 - 150
Diuron	108	110	P/P	60 - 150
Diuron	110	110	P/P	60 - 150
Fenuron	104	103	P/P	60 - 150
Fenuron	109	104	P/P	60 - 150
Fluridone	106	112	P/P	60 - 160
Fluridone	112	116	P/P	60 - 160
Hydrocodone	105	101	P/P	60 - 150
Hydrocodone	98.8	105	P/P	60 - 150
Ibuprofen	68.8	77.6	P/P	50 - 160
Ibuprofen	77.6	87.4	P/P	50 - 160
Imazapyr	90.7	90.7	P/P	50 - 150
Imazapyr	90.7	93.9	P/P	50 - 150
Imidacloprid	101	92.5	P/P	60 - 150
Imidacloprid	102	101	P/P	60 - 150
Linuron	107	109	P/P	60 - 150
Linuron	109	107	P/P	60 - 150
MCP	95.1	97.3	P/P	50 - 150
MCP	97.3	99.9	P/P	50 - 150
Naproxen	123	74.9	P/P	50 - 160
Naproxen	135	123	P/P	50 - 160
Primidone	102	93.2	P/P	60 - 150
Primidone	94.9	102	P/P	60 - 150
Pyraclostrobin	106	105	P/P	60 - 150
Pyraclostrobin	106	106	P/P	60 - 150
Triclopyr	111	116	P/P	50 - 150
Triclopyr	116	96.8	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A93099

Included Lab Sample IDs: 2105432, 2105433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	128	122	P/P	60 - 160
Endothall	104	107	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93116

Included Lab Sample IDs: 2105421, 2105424

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	95.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93119

Included Lab Sample IDs: 2105432, 2105433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	77.3	89.6	P/P	60 - 160
Glufosinate	76.6	80.7	P/P	60 - 160
Glyphosate	83.2	88.3	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A93147

Included Lab Sample IDs: 2105420, 2105423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	102	101	P/P	90 - 110
Sulfate	99.2	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93301

Included Lab Sample IDs: 2105421, 2105424

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	105	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93331

Included Lab Sample IDs: 2105432, 2105433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	81.3	79.6	P/P	60 - 160
Sucralose	87.8	64.9	P/P	60 - 160

* 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	MS
EPA 180.1 Rev. 2.0	Turbidity							3.74	
	Turbidity							1.19	
EPA 300.0 Rev. 2.1	Chloride	100			100	99.2	95.4		0.783
	Sulfate	100			98.4	100		0.912	
	Sulfate	99.9			99.5	101		1.59	
EPA 350.1 Rev. 2.0	Ammonia-N	103			103	102			0.890
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103			90.7	98.6			4.23
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5			98.4	98.4			0.0
EPA 365.1 Rev. 2.0	Total-P	98.1			105	98.6			4.39
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.1			96.8	97.9			1.13
EPA 8321B	2,4-D	143							0.987
	Acesulfame K	133			65.5	70.8			7.82
	Acetaminophen	95.8			98.2	96.3			1.98
	AMPA	81.2			32.1	30.9			2.63
	Bentazon	127							3.29
	Carbamazepine	94.4			76.3	78.4			2.73
	Diuron	101			78.9	76.1			3.27
	Endothall	97.0			83.2	91.4			9.40
	Fenuron	107			74.2	69.5			6.49
	Fluridone	102			87.0	90.5			2.97
	Glufosinate	78.4			48.8	48.3			0.992
	Glyphosate	67.8			66.1	65.1			1.50
	Hydrocodone	106			99.4	83.9			16.9
	Ibuprofen	93.4			101	101			0.0193
	Imazapyr	93.8			78.7	80.9			1.43
	Imidacloprid	101			164	175			5.51
	Linuron	84.6			75.8	75.4			0.617
	MCPP	145			197	202			2.68
	Naproxen	106			111	121			9.06
	Primidone	91.6			90.4	94.5			4.51
	Pyraclostrobin	95.4			87.9	88.6			0.821
	Sucralose	77.0			129	125			2.51
	Triclopyr	93.0			113	125			9.89
SM 2120 B	Color (true)	102						0.158	
SM 2320 B-97	Total Alkalinity	104						0.922	
SM 2540 C-97	TDS							0.332	
SM 4500 F-C-97	Fluoride	97.6							0.0
SM 5310 B-00	Organic Carbon	100			98.0	97.8			0.143

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2105420, 2105423
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2105420, 2105423
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2105420, 2105423
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2105421, 2105424
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2105421, 2105424
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2105421, 2105424

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2105421, 2105424
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2105422, 2105425
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2105432, 2105433
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2105432, 2105433
SM 2120 B / E31780	True Color measured at 450 nm	2105420, 2105423
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2105420, 2105423
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2105420, 2105423
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2105420, 2105423
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2105420, 2105423
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2105421, 2105424

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	07/24/2019			07/24/2019 17:04	Adrian Shelby	2105420, 2105423
EPA 300.0 Rev. 2.1	07/24/2019			07/25/2019 17:45	Jhamieka S. Greenwood	2105420
	07/24/2019			07/25/2019 17:57	Jhamieka S. Greenwood	2105423
	07/24/2019			07/30/2019 17:20	Jhamieka S. Greenwood	2105423
	07/24/2019			07/31/2019 13:11	Jhamieka S. Greenwood	2105420
EPA 350.1 Rev. 2.0	07/24/2019			08/06/2019 16:36	Virginia P. Brown	2105421
	07/24/2019			08/06/2019 16:38	Virginia P. Brown	2105424
EPA 351.2 Rev. 2.0	07/24/2019	07/26/2019 13:00	Adrian Shelby	07/29/2019 14:58	Joseph Suarez	2105421
	07/24/2019	07/26/2019 13:00	Adrian Shelby	07/29/2019 15:00	Joseph Suarez	2105424
EPA 353.2 Rev. 2.0	07/24/2019			07/26/2019 09:39	Beverly Y. Sanders	2105421
	07/24/2019			07/26/2019 09:40	Beverly Y. Sanders	2105424
EPA 365.1 Rev. 2.0	07/24/2019	07/25/2019 12:40	Vijayalakshmi Reddy	07/26/2019 11:18	Lipi Saha	2105421
	07/24/2019	07/25/2019 12:40	Vijayalakshmi Reddy	07/26/2019 11:19	Lipi Saha	2105424
EPA 365.1 Rev. 2.0 dissolved	07/24/2019			07/24/2019 16:47	Jhamieka S. Greenwood	2105422
	07/24/2019			07/24/2019 17:24	Jhamieka S. Greenwood	2105425
EPA 8321B	07/24/2019	07/25/2019 10:00	Hoor Shaik	07/26/2019 08:07	Juyoung Kim	2105432
	07/24/2019	07/25/2019 10:00	Hoor Shaik	07/26/2019 09:16	Juyoung Kim	2105433
	07/24/2019	07/25/2019 10:00	Hoor Shaik	07/26/2019 16:11	Juyoung Kim	2105432
	07/24/2019	07/25/2019 11:00	Rebecca Ware	07/27/2019 22:14	Rebecca Ware	2105432
	07/24/2019	07/25/2019 11:00	Rebecca Ware	07/27/2019 22:28	Rebecca Ware	2105433
	07/24/2019	07/25/2019 11:00	Rebecca Ware	07/29/2019 11:58	Rebecca Ware	2105432
	07/24/2019	07/25/2019 11:00	Rebecca Ware	07/29/2019 12:09	Rebecca Ware	2105433
	07/24/2019	07/25/2019 11:00	Rebecca Ware	08/06/2019 14:00	Rebecca Ware	2105432
	07/24/2019	07/25/2019 11:00	Rebecca Ware	08/06/2019 15:24	Rebecca Ware	2105433
SM 2120 B	07/24/2019			07/24/2019 17:36	Madeline Funaro	2105423
	07/24/2019			07/24/2019 18:10	Madeline Funaro	2105420
SM 2320 B-97	07/24/2019			07/26/2019 06:32	Dale L. Simmons	2105420
	07/24/2019			07/26/2019 06:43	Dale L. Simmons	2105423
SM 2540 C-97	07/24/2019			07/25/2019 13:30	Sima Feizi	2105420, 2105423
SM 2540 D-97	07/24/2019			07/25/2019 13:30	Sima Feizi	2105420, 2105423
SM 4500 F-C-97	07/24/2019			07/26/2019 06:32	Dale L. Simmons	2105420
	07/24/2019			07/26/2019 06:43	Dale L. Simmons	2105423
SM 5310 B-00	07/24/2019			07/25/2019 23:32	Madeline Funaro	2105421
	07/24/2019			07/25/2019 23:45	Madeline Funaro	2105424