

Chemical Analysis Report

WAS-SECT-2019-06-28-02

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

Event Description: **NWQI - Alligator Creek**

Request ID: **RQ-2019-06-03-27**

Customer: **WAS-SECT**

Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 17-JUL-2019 10:00



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: Wilson Mill Creek Upstream of 274

Collection Date/Time: 06/27/2019 13:47

Field ID: G2WA0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2099207	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P366498	
	EPA 300.0 Rev. 2.1	Chloride	7.6		mg Cl/L	P366761	
		Sulfate	0.85		mg SO4/L	P366763	
	SM 2120 B	Color (true)	46		PCU	P366493	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P366737	RPD
	SM 2540 C-97	TDS	63		mg/L	P366894	
	SM 2540 D-97	TSS	2	I	mg/L	P366869	
	SM 4500 F-C-97	Fluoride	0.050	I	mg F/L	P366744	
2099209	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P366784	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P366701	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.6		mg N/L	P366728	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P366551	
	SM 5310 B-00	Organic Carbon	4.5		mg C/L	P366631	
2099211	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P366504	
2099219	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P366428	
		2,4-D	0.0020	U	ug/L	P366536	MS
		AMPA**	0.10	U	ug/L	P366428	
		Sucralose**	0.044		ug/L	P366428	
		Acetaminophen**	0.0080	U	ug/L	P366536	
		Endothall**	0.25	U	ug/L	P366428	
		Glufosinate**	0.10	U	ug/L	P366428	
		Glyphosate**	0.10	U	ug/L	P366428	
		Bentazon	0.0037		ug/L	P366536	
		Carbamazepine**	8.0E-04	U	ug/L	P366536	
		Diuron	0.0020	U	ug/L	P366536	RPD
		Fenuron	0.016	U	ug/L	P366536	
		Fluridone**	8.0E-04	U	ug/L	P366536	
		Imazapyr**	0.0040	U	ug/L	P366536	
		Hydrocodone**	0.0020	U	ug/L	P366536	
		Ibuprofen**	0.020	U	ug/L	P366536	
		Imidacloprid	0.015		ug/L	P366536	MS
		Linuron	0.0040	U	ug/L	P366536	
		MCP	0.0020	U	ug/L	P366536	MS
		Naproxen**	0.0080	U	ug/L	P366536	
		Primidone**	0.0040	U	ug/L	P366536	
		Pyraclostrobin**	0.0020	U	ug/L	P366536	
		Triclopyr**	0.0040	U	ug/L	P366536	

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: Stone Mill Creek Upstream of Dianna St.

Collection Date/Time: 06/27/2019 15:02

Field ID: G2WA0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2099208	EPA 180.1 Rev. 2.0	Turbidity	6.8		NTU	P366498	
	EPA 300.0 Rev. 2.1	Chloride	4.3		mg Cl/L	P366761	
		Sulfate	1.4		mg SO4/L	P366763	
	SM 2120 B	Color (true)	350		PCU	P366493	
	SM 2320 B-97	Total Alkalinity	3.5		mg CaCO3/L	P366737	RPD
	SM 2540 C-97	TDS	74		mg/L	P366894	
	SM 2540 D-97	TSS	4	I	mg/L	P366869	
2099210	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P366744	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.41		mg N/L	P366784	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P366701	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.064		mg N/L	P366728	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P366551	
2099212	SM 5310 B-00	Organic Carbon	24		mg C/L	P366631	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P366504	
2099220	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P366428	
		2,4-D	0.0020	U	ug/L	P366536	MS
		AMPA**	0.10	U	ug/L	P366428	
		Sucralose**	0.050		ug/L	P366428	
		Acetaminophen**	0.0080	U	ug/L	P366536	
		Endothall**	0.25	U	ug/L	P366428	
		Glufosinate**	0.10	U	ug/L	P366428	
		Glyphosate**	0.10	U	ug/L	P366428	
		Bentazon	8.0E-04	U	ug/L	P366536	
		Carbamazepine**	8.0E-04	U	ug/L	P366536	
		Diuron	0.0020	U	ug/L	P366536	RPD
		Fenuron	0.016	U	ug/L	P366536	
		Fluridone**	8.0E-04	U	ug/L	P366536	
		Imazapyr**	0.015	I	ug/L	P366536	
		Hydrocodone**	0.0020	U	ug/L	P366536	
		Ibuprofen**	0.020	U	ug/L	P366536	
		Imidacloprid	0.0020	U	ug/L	P366536	MS
		Linuron	0.0040	U	ug/L	P366536	
		MCP	0.0020	U	ug/L	P366536	MS
		Naproxen**	0.0080	U	ug/L	P366536	
		Primidone**	0.0040	U	ug/L	P366536	
		Pyraclostrobin**	0.0020	U	ug/L	P366536	
		Triclopyr**	0.0040	U	ug/L	P366536	

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: P366498

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366761

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366763

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366784

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366701

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366728

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366551

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366504

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

Reference Method: EPA 8321B
Batch ID: P366428

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B**Batch ID: P366428**

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B**Batch ID: P366536**

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: SM 2120 B**Batch ID: P366493**

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97**Batch ID: P366737**

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97**Batch ID: P366894**

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97**Batch ID: P366869**

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97

Batch ID: P366744

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00

Batch ID: P366631

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: P366761

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366763

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366784

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: P366701

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: P366728

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366551

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366504

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

Reference Method: EPA 8321B
Batch ID: P366428

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	148		P	40 - 150
AMPA	83.9		P	40 - 150
Endothall	94.0		P	40 - 150
Glufosinate	83.2		P	40 - 150
Glyphosate	81.0		P	40 - 140
Sucralose	109		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P366536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	122		P	40 - 150
Acetaminophen	83.5		P	30 - 150
Bentazon	97.6		P	30 - 150
Carbamazepine	92.0		P	40 - 150
Diuron	91.3		P	40 - 150
Fenuron	95.7		P	40 - 150
Fluridone	97.4		P	40 - 150
Hydrocodone	92.1		P	40 - 150
Ibuprofen	89.4		P	30 - 150
Imazapyr	98.1		P	40 - 150
Imidacloprid	89.4		P	40 - 150
Linuron	73.6		P	40 - 150
MCPP	138		P	40 - 150
Naproxen	82.9		P	40 - 150
Primidone	81.8		P	40 - 150
Pyraclostrobin	84.2		P	30 - 150
Triclopyr	103		P	30 - 150

Reference Method: SM 2120 B

Batch ID: P366493

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

Reference Method: SM 2320 B-97

Batch ID: P366737

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

Reference Method: SM 4500 F-C-97

Batch ID: P366744

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.6		P	92 - 103

Reference Method: SM 5310 B-00

Batch ID: P366631

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 300.0 Rev. 2.1
Batch ID: P366761

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098838	Chloride	103		P	90 - 110
2099095	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098838	Sulfate	103		P	90 - 110
2099095	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366784

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099209	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099100	Kjeldahl Nitrogen	99.5	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366728

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099100	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366551

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098751	Total-P	100	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099211	O-Phosphate-P	94.3	95.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P366428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098570	Acesulfame K	148	138	P/P	40 - 150
2098570	AMPA	75.8	78.0	P/P	40 - 150
2098570	Endothall	95.6	94.9	P/P	40 - 150
2098570	Glufosinate	85.6	81.4	P/P	40 - 150
2098570	Glyphosate	76.0	79.3	P/P	40 - 140
2098570	Sucralose	101	105	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P366536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099202	2,4-D	141	151	P/F	40 - 150
2099202	Acetaminophen	104	107	P/P	30 - 150
2099202	Bentazon	92.4	93.3	P/P	30 - 150
2099202	Carbamazepine	109	109	P/P	40 - 150
2099202	Diuron	102	73.7	P/P	40 - 150
2099202	Fenuron	80.0	90.3	P/P	40 - 150
2099202	Fluridone	105	111	P/P	40 - 150
2099202	Hydrocodone	91.6	75.9	P/P	40 - 150
2099202	Ibuprofen	108	92.2	P/P	30 - 150
2099202	Imazapyr	147	119	P/P	40 - 150
2099202	Imidacloprid	156	163	F/F	40 - 150
2099202	Linuron	82.8	82.7	P/P	40 - 150
2099202	MCPP	168	174	F/F	40 - 150
2099202	Naproxen	105	104	P/P	40 - 150
2099202	Primidone	110	93.4	P/P	40 - 150
2099202	Pyraclostrobin	96.6	103	P/P	30 - 150
2099202	Triclopyr	130	131	P/P	30 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P366744

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098934	Fluoride	98.1	98.1	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P366631

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099197	Organic Carbon	94.5	93.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099196	Turbidity	6.90	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098838	Chloride	0.0103	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098838	Sulfate	0.717	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366784

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099209	Ammonia-N	0.131	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099100	Kjeldahl Nitrogen	2.46	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099100	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366551

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098751	Total-P	2.39	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099211	O-Phosphate-P	1.20	Spike	P	0 - 20

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P366428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098570	Acesulfame K	6.79	Spike	P	0 - 30
2098570	AMPA	2.88	Spike	P	0 - 30
2098570	Endothall	0.764	Spike	P	0 - 30
2098570	Glufosinate	5.01	Spike	P	0 - 30
2098570	Glyphosate	4.26	Spike	P	0 - 30
2098570	Sucralose	4.55	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P366536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099202	2,4-D	7.20	Spike	P	0 - 30
2099202	Acetaminophen	2.90	Spike	P	0 - 30
2099202	Bentazon	0.997	Spike	P	0 - 30
2099202	Carbamazepine	0.313	Spike	P	0 - 30
2099202	Diuron	32.1	Spike	F	0 - 30
2099202	Fenuron	12.1	Spike	P	0 - 30
2099202	Fluridone	5.52	Spike	P	0 - 30
2099202	Hydrocodone	18.7	Spike	P	0 - 30
2099202	Ibuprofen	16.2	Spike	P	0 - 30
2099202	Imazapyr	21.1	Spike	P	0 - 30
2099202	Imidacloprid	4.59	Spike	P	0 - 30
2099202	Linuron	0.228	Spike	P	0 - 30
2099202	MCPP	3.60	Spike	P	0 - 30
2099202	Naproxen	1.22	Spike	P	0 - 30
2099202	Primidone	16.6	Spike	P	0 - 30
2099202	Pyraclostrobin	6.55	Spike	P	0 - 30
2099202	Triclopyr	0.630	Spike	P	0 - 30

Reference Method: SM 2120 B

Batch ID: P366493

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099196	Color (true)	1.52	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P366737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098934	Total Alkalinity	5.55	Sample	F	0 - 2.8

Reference Method: SM 2540 C-97

Batch ID: P366894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099396	TDS	3.95	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P366744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098934	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P366631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099197	Organic Carbon	0.583	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: 2099219

Field Sample ID: G2WA0020

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	121	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	103	P	30 - 160
EPA 8321B	Diuron-d6	90.6	P	30 - 160
EPA 8321B	Endothall-d6	99.1	P	30 - 160
EPA 8321B	Endothall-d6	99.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	58.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	58.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.1	P	30 - 160
EPA 8321B	Primidone-d5	91.6	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160

Lab Sample ID: 2099220

Field Sample ID: G2WA0012

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	120	P	30 - 160
EPA 8321B	Acetaminophen-d4	80.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.8	P	30 - 160
EPA 8321B	Diuron-d6	65.6	P	30 - 160
EPA 8321B	Endothall-d6	89.1	P	30 - 160
EPA 8321B	Endothall-d6	89.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	33.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	33.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	75.1	P	30 - 160
EPA 8321B	Primidone-d5	77.9	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A92445

Included Lab Sample IDs: 2099207, 2099208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	99.9	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92446

Included Lab Sample IDs: 2099207, 2099208

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92447

Included Lab Sample IDs: 2099211, 2099212

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	96.8	P/P	90 - 110
O-Phosphate-P	98.9	98.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A92499

Included Lab Sample IDs: 2099219, 2099220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	82.3	81.1	P/P	60 - 160
Glufosinate	86.0	75.6	P/P	60 - 160
Glyphosate	89.0	80.7	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A92500

Included Lab Sample IDs: 2099219, 2099220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	144	136	P/P	60 - 160
Endothall	98.9	101	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A92510

Included Lab Sample IDs: 2099209, 2099210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	96.2	P/P	90 - 110
Organic Carbon	95.8	95.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92512

Included Lab Sample IDs: 2099207, 2099208

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92520

Included Lab Sample IDs: 2099209, 2099210

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92556

Included Lab Sample IDs: 2099209, 2099210

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

Reference Method: SM 2320 B-97

Run ID: A92563

Included Lab Sample IDs: 2099207, 2099208

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

Reference Method: SM 4500 F-C-97

Run ID: A92563

Included Lab Sample IDs: 2099207, 2099208

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

Reference Method: EPA 8321B

Run ID: A92569

Included Lab Sample IDs: 2099219, 2099220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.4	98.6	P/P	50 - 150
2,4-D	98.6	91.6	P/P	50 - 150
Acetaminophen	106	115	P/P	60 - 160
Acetaminophen	115	104	P/P	60 - 160
Bentazon	103	104	P/P	50 - 160
Bentazon	104	106	P/P	50 - 160
Carbamazepine	100	106	P/P	60 - 150
Carbamazepine	106	100	P/P	60 - 150
Diuron	106	110	P/P	60 - 150
Diuron	109	106	P/P	60 - 150
Fenuron	104	101	P/P	60 - 150
Fenuron	106	104	P/P	60 - 150
Fluridone	106	113	P/P	60 - 160
Fluridone	113	110	P/P	60 - 160
Hydrocodone	105	108	P/P	60 - 150
Hydrocodone	108	109	P/P	60 - 150
Ibuprofen	84.5	85.6	P/P	50 - 160
Ibuprofen	96.7	84.5	P/P	50 - 160
Imazapyr	83.0	95.2	P/P	50 - 150
Imazapyr	98.7	83.0	P/P	50 - 150
Imidacloprid	121	100	P/P	60 - 150
Imidacloprid	95.3	121	P/P	60 - 150
Linuron	102	106	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A92569

Included Lab Sample IDs: 2099219, 2099220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Linuron	106	99.2	P/P	60 - 150
MCP	95.3	92.5	P/P	50 - 150
MCP	99.3	95.3	P/P	50 - 150
Naproxen	115	120	P/P	50 - 160
Naproxen	120	118	P/P	50 - 160
Primidone	91.5	98.8	P/P	60 - 150
Primidone	98.8	94.4	P/P	60 - 150
Pyraclostrobin	109	112	P/P	60 - 150
Pyraclostrobin	112	110	P/P	60 - 150
Triclopyr	89.9	108	P/P	50 - 150
Triclopyr	98.8	89.9	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92579

Included Lab Sample IDs: 2099209, 2099210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	104	P/P	90 - 110
Ammonia-N	107	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92598

Included Lab Sample IDs: 2099209, 2099210

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

Reference Method: EPA 8321B

Run ID: A92625

Included Lab Sample IDs: 2099219, 2099220

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	98.8	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					6.90	
EPA 300.0 Rev. 2.1	Chloride	101	103	101		0.0103	
	Sulfate	101	103	102		0.717	
EPA 350.1 Rev. 2.0	Ammonia-N	103	102	103			0.131
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	99.5	103			2.46
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	99.5	99.5			0.0
EPA 365.1 Rev. 2.0	Total-P	100	100	103			2.39
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	94.3	95.5			1.20
EPA 8321B	2,4-D	122	151	141			7.20
	Acesulfame K	148	148	138			6.79
	Acetaminophen	83.5	104	107			2.90
	AMPA	83.9	75.8	78.0			2.88
	Bentazon	97.6	93.3	92.4			0.997
	Carbamazepine	92.0	109	109			0.313
	Diuron	91.3	73.7	102			32.1
	Endothall	94.0	95.6	94.9			0.764
	Fenuron	95.7	90.3	80.0			12.1
	Fluridone	97.4	111	105			5.52
	Glufosinate	83.2	85.6	81.4			5.01
	Glyphosate	81.0	76.0	79.3			4.26
	Hydrocodone	92.1	91.6	75.9			18.7
	Ibuprofen	89.4	108	92.2			16.2
	Imazapyr	98.1	119	147			21.1
	Imidacloprid	89.4	163	156			4.59
	Linuron	73.6	82.7	82.8			0.228
	MCPP	138	168	174			3.60
	Naproxen	82.9	105	104			1.22
	Primidone	81.8	110	93.4			16.6
	Pyraclostrobin	84.2	103	96.6			6.55
	Sucralose	109	101	105			4.55
	Triclopyr	103	130	131			0.630
SM 2120 B	Color (true)	100				1.52	
SM 2320 B-97	Total Alkalinity	104				5.55	
SM 2540 C-97	TDS					3.95	
SM 4500 F-C-97	Fluoride	99.6	98.1	98.1			0.0
SM 5310 B-00	Organic Carbon	96.6	94.5	93.9			0.583

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2099207, 2099208
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2099207, 2099208
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2099207, 2099208
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2099209, 2099210
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2099209, 2099210
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2099209, 2099210
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2099209, 2099210

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2099211, 2099212
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2099219, 2099220
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2099219, 2099220
SM 2120 B / E31780	True Color measured at 450 nm	2099207, 2099208
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2099207, 2099208
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2099207, 2099208
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2099207, 2099208
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2099207, 2099208
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2099209, 2099210

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	06/28/2019			06/28/2019 16:42	Samantha Davila	2099207, 2099208
EPA 300.0 Rev. 2.1	06/28/2019			07/05/2019 20:13	Jhamieka S. Greenwood	2099207
	06/28/2019			07/05/2019 20:25	Jhamieka S. Greenwood	2099208
EPA 350.1 Rev. 2.0	06/28/2019			07/05/2019 12:26	Ping Hua	2099209
	06/28/2019			07/05/2019 15:02	Ping Hua	2099210
EPA 351.2 Rev. 2.0	06/28/2019	07/03/2019 12:30	Adrian Shelby	07/05/2019 12:25	Joseph Suarez	2099209
	06/28/2019	07/03/2019 12:30	Adrian Shelby	07/05/2019 12:27	Joseph Suarez	2099210
EPA 353.2 Rev. 2.0	06/28/2019			07/03/2019 18:02	Lauren Lees	2099209
	06/28/2019			07/03/2019 18:03	Lauren Lees	2099210
EPA 365.1 Rev. 2.0	06/28/2019	07/01/2019 12:00	Lipi Saha	07/02/2019 15:56	Rosalyn Ballman	2099209
	06/28/2019	07/01/2019 12:00	Lipi Saha	07/02/2019 15:57	Rosalyn Ballman	2099210
EPA 365.1 Rev. 2.0 dissolved	06/28/2019			06/28/2019 15:49	Jhamieka S. Greenwood	2099211
	06/28/2019			06/28/2019 16:33	Jhamieka S. Greenwood	2099212
EPA 8321B	06/28/2019	06/28/2019 10:30	Rebecca Ware	06/28/2019 15:21	Rebecca Ware	2099219
	06/28/2019	06/28/2019 10:30	Rebecca Ware	06/28/2019 15:32	Rebecca Ware	2099220
	06/28/2019	06/28/2019 10:30	Rebecca Ware	07/01/2019 19:24	Rebecca Ware	2099219
	06/28/2019	06/28/2019 10:30	Rebecca Ware	07/01/2019 19:37	Rebecca Ware	2099220
	06/28/2019	06/28/2019 10:30	Rebecca Ware	07/08/2019 19:04	Rebecca Ware	2099219
	06/28/2019	06/28/2019 10:30	Rebecca Ware	07/08/2019 19:16	Rebecca Ware	2099220
	06/28/2019	07/03/2019 12:30	Hoor Shaik	07/04/2019 05:06	Juyoung Kim	2099219
	06/28/2019	07/03/2019 12:30	Hoor Shaik	07/04/2019 06:16	Juyoung Kim	2099220
SM 2120 B	06/28/2019			06/28/2019 16:15	Madeline Funaro	2099207
	06/28/2019			06/28/2019 16:52	Madeline Funaro	2099208
SM 2320 B-97	06/28/2019			07/04/2019 08:46	Dale L. Simmons	2099207
	06/28/2019			07/04/2019 08:58	Dale L. Simmons	2099208
SM 2540 C-97	06/28/2019			07/03/2019 15:12	Yijie Li	2099207, 2099208
SM 2540 D-97	06/28/2019			07/03/2019 15:12	Yijie Li	2099207, 2099208
SM 4500 F-C-97	06/28/2019			07/04/2019 08:46	Dale L. Simmons	2099207
	06/28/2019			07/04/2019 08:58	Dale L. Simmons	2099208
SM 5310 B-00	06/28/2019			07/01/2019 04:24	Madeline Funaro	2099209
	06/28/2019			07/01/2019 06:46	Madeline Funaro	2099210