

Chemical Analysis Report

SW-DIST-2020-09-23-01

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

Event Description: **RUN 1.5: Cazz River GOM Pasco**

Request ID: **RQ-2020-09-21-52**

Customer: **SW-DIST**

Project ID: **SMP**

Send Reports to:

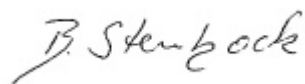
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Bne Paswater

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

Date Certified: 13-OCT-2020 17:40



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: Gulf of Mexico Pasco

Collection Date/Time: 09/22/2020 11:25

Field ID: G5SW0159

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2197569	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P387751	
	EPA 300.0 Rev. 2.1	Bromide	31		mg Br/L	P388432	
	SM 2320 B-2011	Total Alkalinity	135		mg CaCO3/L	P387835	
	SM 2540 D-2011	TSS	3	UA	mg/L	P388204	
	SM 4500 F-C-2011	Fluoride	0.55		mg F/L	P387833	
2197570	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P387885	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P387869	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.086		mg N/L	P387850	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P387921	
	SM 5310 B-2011	Organic Carbon	7.1		mg C/L	P387838	
2197571	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P387760	
2197582	EPA 8321B	2,4-D	0.0020	U	ug/L	P387668	
		Acesulfame K**	0.10	UJ	ug/L	P387746	SUR
		AMPA**	1.0	U	ug/L	P387746	
		Sucralose**	0.031	I	ug/L	P387746	
		Acetaminophen**	0.0080	U	ug/L	P387668	
		Acetamiprid**	0.0020	U	ug/L	P387668	
		Endothall**	0.25	UJ	ug/L	P387746	SUR
		Glufosinate**	1.0	U	ug/L	P387746	
		Glyphosate**	1.0	U	ug/L	P387746	
		Afidopyropen**	0.0020	U	ug/L	P387668	
		Bentazon	0.0026	I	ug/L	P387668	
		Benzovindiflupyr**	0.0020	U	ug/L	P387668	
		Carbamazepine**	8.0E-04	U	ug/L	P387668	
		Clothianidin**	0.0020	U	ug/L	P387668	
		Dinotefuran**	0.0020	U	ug/L	P387668	
		Diuron	0.0020	U	ug/L	P387668	
		Fenuron	0.016	U	ug/L	P387668	
		Fluridone**	0.0024	I	ug/L	P387668	
		Imazapyr**	0.0086	I	ug/L	P387668	
		Hydrocodone**	0.0020	U	ug/L	P387668	
		Ibuprofen**	0.020	U	ug/L	P387668	
		Imidacloprid	0.0088		ug/L	P387668	
		Linuron	0.0040	U	ug/L	P387668	
		Mandestrobin**	0.0020	U	ug/L	P387668	
		MCP	0.0020	U	ug/L	P387668	
		Naproxen**	0.0080	U	ug/L	P387668	
		Primidone**	0.0040	U	ug/L	P387668	
		Pyraclostrobin**	0.0020	U	ug/L	P387668	
		Thiamethoxam**	0.0020	U	ug/L	P387668	
		Tolfenpyrad**	0.0020	U	ug/L	P387668	
		Triclopyr**	0.0040	U	ug/L	P387668	

Field ID: G5SW0159

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low 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.
EPA 8321B: MDL for some parameters elevated due to matrix interference. Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Chassahowitzka River Downstream of Houses Collection Date/Time: 09/22/2020 13:35

Field ID: G5SW0065

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2197566	EPA 180.1 Rev. 2.0	Turbidity	2.7	A	NTU	P387751	
	EPA 300.0 Rev. 2.1	Bromide	7.8		mg Br/L	P388432	
	SM 2320 B-2011	Total Alkalinity	172		mg CaCO3/L	P387828	
	SM 2540 D-2011	TSS	7	I	mg/L	P388201	
	SM 4500 F-C-2011	Fluoride	0.16		mg F/L	P387943	
2197567	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P387885	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P387869	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.38		mg N/L	P387850	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P387921	
	SM 5310 B-2011	Organic Carbon	1.8		mg C/L	P387981	
2197568	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P387760	

Ref. Method and Comment:

SM 2540 D-2011: 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: P387751

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388432

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387885

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387869

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387850

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387921

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387760

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

Reference Method: EPA 8321B
Batch ID: P387668

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P387668

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

Reference Method: EPA 8321B
Batch ID: P387746

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 2320 B-2011
Batch ID: P387828

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

Reference Method: SM 2320 B-2011
Batch ID: P387835

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

Reference Method: SM 2540 D-2011
Batch ID: P388201

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P388204

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P387833

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P387943

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P387838

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

Reference Method: SM 5310 B-2011
Batch ID: P387981

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: P388432

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387885

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387869

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387850

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387921

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387760

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

Reference Method: EPA 8321B
Batch ID: P387668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	97.8		P	30 - 160
Acetaminophen	70.1		P	30 - 160
Acetamiprid	67.5		P	30 - 160
Afidopyropen	55.4		P	30 - 160
Bentazon	53.6		P	30 - 160
Benzovindiflupyr	53.1		P	30 - 160
Carbamazepine	56.4		P	30 - 160
Clothianidin	69.8		P	30 - 160
Dinotefuran	80.4		P	30 - 160
Diuron	47.0		P	30 - 160
Fenuron	82.8		P	30 - 160
Fluridone	69.4		P	30 - 160
Hydrocodone	59.9		P	30 - 160
Ibuprofen	53.9		P	30 - 160
Imazapyr	75.6		P	30 - 160
Imidacloprid	86.5		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P387668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	59.3		P	30 - 160
Mandestrobin	66.1		P	30 - 160
MCP	97.5		P	30 - 160
Naproxen	75.2		P	30 - 160
Primidone	67.8		P	30 - 160
Pyraclostrobin	53.7		P	30 - 160
Thiamethoxam	69.2		P	30 - 160
Tolfenpyrad	35.4		P	30 - 160
Triclopyr	70.8		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P387746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	98.1		P	40 - 150
AMPA	82.5		P	40 - 150
Endothall	94.7		P	40 - 150
Glufosinate	89.8		P	40 - 150
Glyphosate	101		P	40 - 140
Sucralose	95.8		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P387828

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P387835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P387833

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P387943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P387838

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P387981

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2196936	Bromide	99.0	101	P/P	90 - 110
2197633	Bromide	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197248	Ammonia-N	97.9	94.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387869

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197611	Kjeldahl Nitrogen	96.7	97.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197567	NO2NO3-N	97.0	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197282	Total-P	107	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387760

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197571	O-Phosphate-P	99.0	97.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P387668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197057	Acetaminophen	77.2	72.4	P/P	30 - 160
2197057	Acetamiprid	65.3	59.4	P/P	30 - 160
2197057	Afidopyropen	54.6	50.4	P/P	30 - 160
2197057	Benzovindiflupyr	60.5	57.8	P/P	30 - 160
2197057	Carbamazepine	49.7	46.7	P/P	30 - 160
2197057	Clothianidin	61.0	61.2	P/P	30 - 160
2197057	Dinotefuran	89.2	81.2	P/P	30 - 160
2197057	Diuron	39.4	41.2	P/P	30 - 160
2197057	Fenuron	75.4	73.8	P/P	30 - 160
2197057	Hydrocodone	70.1	66.4	P/P	30 - 160
2197057	Ibuprofen	52.5	50.9	P/P	30 - 160
2197057	Linuron	50.4	54.0	P/P	30 - 160
2197057	Mandestrobin	65.5	66.3	P/P	30 - 160
2197057	MCP	94.0	86.9	P/P	30 - 160
2197057	Naproxen	116	109	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P387668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197057	Primidone	75.0	71.4	P/P	30 - 160
2197057	Pyraclostrobin	59.9	54.1	P/P	30 - 160
2197057	Thiamethoxam	88.4	86.8	P/P	30 - 160
2197057	Tolfenpyrad	44.2	38.0	P/P	30 - 160
2197057	Triclopyr	72.9	78.7	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P387746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197190	Acesulfame K	114	119	P/P	40 - 150
2197190	AMPA	114	117	P/P	40 - 150
2197190	Endothall	107	93.8	P/P	40 - 150
2197190	Glufosinate	83.8	94.5	P/P	40 - 150
2197190	Glyphosate	82.6	80.4	P/P	40 - 140
2197190	Sucralose	99.1	102	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P387833

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197635	Fluoride	99.0	101	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P387943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197717	Fluoride	100	100	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P387838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197570	Organic Carbon	96.3	97.0	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P387981

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197588	Organic Carbon	94.9	98.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P387751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197566	Turbidity	0.367	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2196936	Bromide	1.83	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197248	Ammonia-N	2.57	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387869

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197611	Kjeldahl Nitrogen	0.497	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197567	NO2NO3-N	0.175	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197282	Total-P	2.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387760

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197571	O-Phosphate-P	1.06	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P387668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197057	2,4-D	4.75	Spike	P	0 - 30
2197057	Acetaminophen	6.44	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P387668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197057	Acetamiprid	9.37	Spike	P	0 - 30
2197057	Afidopyropen	8.08	Spike	P	0 - 30
2197057	Bentazon	11.1	Spike	P	0 - 30
2197057	Benzovindiflupyr	4.71	Spike	P	0 - 30
2197057	Carbamazepine	6.15	Spike	P	0 - 30
2197057	Clothianidin	0.184	Spike	P	0 - 30
2197057	Dinotefuran	9.31	Spike	P	0 - 30
2197057	Diuron	3.77	Spike	P	0 - 30
2197057	Fenuron	2.08	Spike	P	0 - 30
2197057	Fluridone	5.52	Spike	P	0 - 30
2197057	Hydrocodone	5.47	Spike	P	0 - 30
2197057	Ibuprofen	3.12	Spike	P	0 - 30
2197057	Imazapyr	7.01	Spike	P	0 - 30
2197057	Imidacloprid	3.58	Spike	P	0 - 30
2197057	Linuron	6.85	Spike	P	0 - 30
2197057	Mandestrobin	1.24	Spike	P	0 - 30
2197057	MCPP	7.90	Spike	P	0 - 30
2197057	Naproxen	6.51	Spike	P	0 - 30
2197057	Primidone	4.95	Spike	P	0 - 30
2197057	Pyraclostrobin	10.3	Spike	P	0 - 30
2197057	Thiamethoxam	1.64	Spike	P	0 - 30
2197057	Tolfenpyrad	15.3	Spike	P	0 - 30
2197057	Triclopyr	7.62	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P387746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197190	Acesulfame K	4.24	Spike	P	0 - 30
2197190	AMPA	1.86	Spike	P	0 - 30
2197190	Endothall	13.0	Spike	P	0 - 30
2197190	Glufosinate	12.0	Spike	P	0 - 30
2197190	Glyphosate	2.62	Spike	P	0 - 30
2197190	Sucralose	2.90	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P387828

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197717	Total Alkalinity	0.488	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P387835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197635	Total Alkalinity	2.15	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P387833

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197635	Fluoride	1.44	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P387943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197717	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P387838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197570	Organic Carbon	0.655	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P387981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197588	Organic Carbon	2.99	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2197582

Field Sample ID: G5SW0159

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	73.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	67.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	49.2	P	30 - 160
EPA 8321B	Diuron-d6	51.7	P	30 - 160
EPA 8321B	Endothall-d6	397	F	30 - 160
EPA 8321B	Endothall-d6	397	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	88.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	88.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.7	P	30 - 160
EPA 8321B	Primidone-d5	80.6	P	30 - 160
EPA 8321B	Sucralose-d6	37.1	P	30 - 160
EPA 8321B	Sucralose-d6	37.1	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A101160

Included Lab Sample IDs: 2197566, 2197569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101162

Included Lab Sample IDs: 2197568, 2197571

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

Reference Method: EPA 8321B

Run ID: A101191

Included Lab Sample IDs: 2197582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	88.1	90.8	P/P	60 - 160
Endothall	107	112	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A101193

Included Lab Sample IDs: 2197566, 2197569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	101	P/P	90 - 110
Total Alkalinity	98.3	99.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101193

Included Lab Sample IDs: 2197569

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

Reference Method: SM 5310 B-2011

Run ID: A101194

Included Lab Sample IDs: 2197570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101196

Included Lab Sample IDs: 2197567, 2197570

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101210

Included Lab Sample IDs: 2197567, 2197570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	96.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101224

Included Lab Sample IDs: 2197582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	71.8	74.8	P/P	60 - 160
Glufosinate	94.0	99.4	P/P	60 - 160
Glyphosate	97.5	98.9	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101228

Included Lab Sample IDs: 2197567, 2197570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	99.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101239

Included Lab Sample IDs: 2197566

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

Reference Method: SM 5310 B-2011

Run ID: A101262

Included Lab Sample IDs: 2197567

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	98.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101289

Included Lab Sample IDs: 2197582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	123	134	P/P	50 - 150
Acetaminophen	125	124	P/P	60 - 160
Acetamiprid	122	126	P/P	50 - 150
Afidopyropen	95.6	102	P/P	50 - 150
Bentazon	106	102	P/P	50 - 160
Benzovindiflupyr	107	110	P/P	50 - 150
Carbamazepine	103	110	P/P	60 - 150
Clothianidin	117	124	P/P	60 - 150
Dinotefuran	111	122	P/P	50 - 150
Diuron	104	113	P/P	60 - 160
Fenuron	121	122	P/P	60 - 150
Fluridone	113	120	P/P	60 - 160
Hydrocodone	113	119	P/P	60 - 150
Ibuprofen	87.5	74.3	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A101289
 Included Lab Sample IDs: 2197582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	130	115	P/P	50 - 160
Imidacloprid	109	113	P/P	60 - 150
Linuron	112	107	P/P	60 - 150
Mandestrobin	104	109	P/P	50 - 150
MCPP	136	133	P/P	50 - 150
Naproxen	102	79.5	P/P	50 - 160
Primidone	127	115	P/P	60 - 150
Pyraclostrobin	103	115	P/P	60 - 150
Thiamethoxam	137	138	P/P	50 - 150
Tolfenpyrad	106	119	P/P	60 - 150
Triclopyr	130	133	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0
 Run ID: A101310
 Included Lab Sample IDs: 2197567, 2197570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	93.8	94.2	P/P	90 - 110

Reference Method: EPA 8321B
 Run ID: A101350
 Included Lab Sample IDs: 2197582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	98.7	93.3	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1
 Run ID: A101391
 Included Lab Sample IDs: 2197566, 2197569

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.367	
EPA 300.0 Rev. 2.1	Bromide	106	99.0	101	95.7			1.83
EPA 350.1 Rev. 2.0	Ammonia-N	101	97.9	94.3				2.57
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.7	96.7	97.3				0.497
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	97.0	96.5				0.175
EPA 365.1 Rev. 2.0	Total-P	105	107	104				2.37
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	99.0	97.9				1.06
EPA 8321B	2,4-D	97.8						4.75
	Acesulfame K	98.1	114	119				4.24
	Acetaminophen	70.1	77.2	72.4				6.44
	Acetamiprid	67.5	65.3	59.4				9.37
	Afidopyropen	55.4	54.6	50.4				8.08
	AMPA	82.5	114	117				1.86
	Bentazon	53.6						11.1
	Benzovindiflupyr	53.1	60.5	57.8				4.71
	Carbamazepine	56.4	49.7	46.7				6.15
	Clothianidin	69.8	61.0	61.2				0.184
	Dinotefuran	80.4	89.2	81.2				9.31
	Diuron	47.0	39.4	41.2				3.77
	Endothall	94.7	107	93.8				13.0
	Fenuron	82.8	75.4	73.8				2.08
	Fluridone	69.4						5.52
	Glufosinate	89.8	83.8	94.5				12.0
	Glyphosate	101	82.6	80.4				2.62
	Hydrocodone	59.9	70.1	66.4				5.47
	Ibuprofen	53.9	52.5	50.9				3.12
	Imazapyr	75.6						7.01
	Imidacloprid	86.5						3.58
	Linuron	59.3	50.4	54.0				6.85
	Mandestrobin	66.1	65.5	66.3				1.24
	MCPP	97.5	94.0	86.9				7.90
	Naproxen	75.2	116	109				6.51
	Primidone	67.8	75.0	71.4				4.95
	Pyraclostrobin	53.7	59.9	54.1				10.3
	Sucralose	95.8	99.1	102				2.90
	Thiamethoxam	69.2	88.4	86.8				1.64
	Tolfenpyrad	35.4	44.2	38.0				15.3
	Triclopyr	70.8	72.9	78.7				7.62
SM 2320 B-2011	Total Alkalinity	101					0.488	
	Total Alkalinity	102					2.15	
SM 4500 F-C-2011	Fluoride	97.2	99.0	101				1.44
	Fluoride	100	100	100				0.0
SM 5310 B-2011	Organic Carbon	97.8	96.3	97.0				0.655
	Organic Carbon	97.5	94.9	98.6				2.99

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2197566, 2197569
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2197566, 2197569
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2197567, 2197570
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2197567, 2197570
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2197567, 2197570

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2197567, 2197570
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2197568, 2197571
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2197582
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2197582
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2197566, 2197569
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2197566, 2197569
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2197566, 2197569
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2197567, 2197570

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	09/23/2020			09/23/2020 15:04	Yen Ta	2197566, 2197569
EPA 300.0 Rev. 2.1	09/23/2020			10/08/2020 16:16	Lipi Saha	2197566
	09/23/2020			10/08/2020 16:34	Lipi Saha	2197569
EPA 350.1 Rev. 2.0	09/23/2020			09/26/2020 12:58	Ping Hua	2197567
	09/23/2020			09/26/2020 13:00	Ping Hua	2197570
EPA 351.2 Rev. 2.0	09/23/2020	09/25/2020 11:45	David Boose	09/28/2020 12:11	Elliott Rodriguez	2197567
	09/23/2020	09/25/2020 11:45	David Boose	09/28/2020 12:13	Elliott Rodriguez	2197570
EPA 353.2 Rev. 2.0	09/23/2020			09/25/2020 09:52	Beverly Y. Sanders	2197567
	09/23/2020			09/25/2020 09:58	Beverly Y. Sanders	2197570
EPA 365.1 Rev. 2.0	09/23/2020	09/28/2020 12:44	Yen Ta	10/01/2020 13:13	Lipi Saha	2197567
	09/23/2020	09/28/2020 12:44	Yen Ta	10/01/2020 13:14	Lipi Saha	2197570
EPA 365.1 Rev. 2.0 dissolved	09/23/2020			09/23/2020 15:44	Virginia P. Brown	2197571
	09/23/2020			09/23/2020 15:51	Virginia P. Brown	2197568
EPA 8321B	09/23/2020	09/23/2020 13:00	Hoor Shaik	09/25/2020 17:35	Juyoung Kim	2197582
	09/23/2020	09/24/2020 09:45	Rebecca Ware	09/24/2020 16:56	Rebecca Ware	2197582
	09/23/2020	09/24/2020 09:45	Rebecca Ware	09/25/2020 15:51	Rebecca Ware	2197582
	09/23/2020	09/24/2020 09:45	Rebecca Ware	09/30/2020 16:34	Rebecca Ware	2197582
SM 2320 B-2011	09/23/2020			09/24/2020 20:18	Dale L. Simmons	2197566
	09/23/2020			09/25/2020 02:06	Dale L. Simmons	2197569
SM 2540 D-2011	09/23/2020			09/28/2020 15:25	Yijie Li	2197566, 2197569
SM 4500 F-C-2011	09/23/2020			09/25/2020 00:19	Dale L. Simmons	2197569
	09/23/2020			09/25/2020 21:53	Dale L. Simmons	2197566
SM 5310 B-2011	09/23/2020			09/25/2020 04:44	Madeline Gruver	2197570
	09/23/2020			09/28/2020 08:58	David Boose	2197567