

Chemical Analysis Report

SW-DIST-2019-10-25-03

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

Event Description: **McKay Tidal**
Request ID: **RQ-2019-10-28-19**
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: Judy Ashton

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: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 13-NOV-2019 15:09



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: McKay Tidal @ Mouth

Collection Date/Time: 10/24/2019 12:00

Field ID: G5SW0151

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131858	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P373331	
	EPA 300.0	Bromide	54		mg Br/L	P373776	
	SM 2320 B-97	Total Alkalinity	120		mg CaCO3/L	P373394	
	SM 2540 D-97	TSS	8	I	mg/L	P373521	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P373395	
2131860	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P373639	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P373498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P373327	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P373351	
	SM 5310 B-00	Organic Carbon	4.7		mg C/L	P373405	
2131862	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P373228	
2131870	EPA 8321B	2,4-D	0.012		ug/L	P373120	
		Acesulfame K**	0.10	U	ug/L	P373164	
		AMPA**	0.10	UJ	ug/L	P373164	SUR
		Sucralose**	0.021	IJ	ug/L	P373164	SUR
		Acetaminophen**	0.0080	U	ug/L	P373120	
		Acetamiprid**	0.0020	U	ug/L	P373120	
		Endothall**	0.25	U	ug/L	P373164	
		Glufosinate**	0.10	UJ	ug/L	P373164	SUR
		Glyphosate**	0.10	UJ	ug/L	P373164	SUR
		Afidopyropen**	0.0020	UJ	ug/L	P373120	
		Bentazon	0.023		ug/L	P373120	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P373120	
		Carbamazepine**	8.0E-04	U	ug/L	P373120	
		Clothianidin**	0.0041	I	ug/L	P373120	
		Dinotefuran**	0.0020	U	ug/L	P373120	
		Diuron	0.0025	I	ug/L	P373120	
		Fenuron	0.016	U	ug/L	P373120	
		Fluridone**	0.0050		ug/L	P373120	
		Imazapyr**	0.014	I	ug/L	P373120	
		Hydrocodone**	0.0020	U	ug/L	P373120	
		Ibuprofen**	0.020	U	ug/L	P373120	
		Imidacloprid	0.017		ug/L	P373120	MS
		Linuron	0.0040	U	ug/L	P373120	
		Mandestrobin**	0.0020	UJ	ug/L	P373120	
		MCP	0.0020	U	ug/L	P373120	
		Naproxen**	0.0080	U	ug/L	P373120	
		Primidone**	0.0040	U	ug/L	P373120	
		Pyraclostrobin**	0.0020	U	ug/L	P373120	
		Thiamethoxam**	0.0020	U	ug/L	P373120	
		Tolfenpyrad**	0.0020	U	ug/L	P373120	
		Triclopyr**	0.0040	U	ug/L	P373120	

Field ID: G5SW0151

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-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.
EPA 8321B: Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: McKay Tidal South of Harbor Cir

Collection Date/Time: 10/24/2019 11:45

Field ID: G5SW0152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2131859	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P373331	
	EPA 300.0	Bromide	54		mg Br/L	P373776	
	SM 2320 B-97	Total Alkalinity	118	A	mg CaCO3/L	P373394	
	SM 2540 D-97	TSS	8	I	mg/L	P373521	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P373395	
2131861	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P373639	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P373498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P373327	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P373351	
	SM 5310 B-00	Organic Carbon	4.8		mg C/L	P373405	
2131863	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P373228	
2131871	EPA 8321B	2,4-D	0.012		ug/L	P373120	
		Acesulfame K**	0.10	U	ug/L	P373164	
		AMPA**	0.10	UJ	ug/L	P373164	SUR
		Sucralose**	0.047	J	ug/L	P373164	SUR
		Acetaminophen**	0.0080	U	ug/L	P373120	
		Acetamiprid**	0.0020	U	ug/L	P373120	
		Endothall**	0.25	U	ug/L	P373164	
		Glufosinate**	0.10	UJ	ug/L	P373164	SUR
		Glyphosate**	0.10	UJ	ug/L	P373164	SUR
		Afidopyropen**	0.0020	UJ	ug/L	P373120	
		Bentazon	0.014		ug/L	P373120	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P373120	
		Carbamazepine**	8.0E-04	U	ug/L	P373120	
		Clothianidin**	0.0032	I	ug/L	P373120	
		Dinotefuran**	0.0020	U	ug/L	P373120	
		Diuron	0.0020	U	ug/L	P373120	
		Fenuron	0.016	U	ug/L	P373120	
		Fluridone**	0.0040		ug/L	P373120	
		Imazapyr**	0.0087	I	ug/L	P373120	
		Hydrocodone**	0.0020	U	ug/L	P373120	
		Ibuprofen**	0.020	U	ug/L	P373120	
		Imidacloprid	0.012		ug/L	P373120	MS
		Linuron	0.0040	U	ug/L	P373120	
		Mandestrobin**	0.0020	UJ	ug/L	P373120	
		MCP	0.0020	U	ug/L	P373120	
		Naproxen**	0.0080	U	ug/L	P373120	
		Primidone**	0.0040	U	ug/L	P373120	
		Pyraclostrobin**	0.0020	U	ug/L	P373120	
		Thiamethoxam**	0.0020	U	ug/L	P373120	
		Tolfenpyrad**	0.0020	U	ug/L	P373120	
		Triclopyr**	0.0040	U	ug/L	P373120	

Field ID: G5SW0152

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-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.
EPA 8321B: Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373331

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P373776

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373639

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373498

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373327

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373351

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373228

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

Reference Method: EPA 8321B
Batch ID: P373120

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: P373120

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: P373164

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-97
Batch ID: P373394

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

Reference Method: SM 2540 D-97
Batch ID: P373521

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P373395

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P373405

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P373776

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373639

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373498

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.3		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373327

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: P373351

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373228

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

Reference Method: EPA 8321B
Batch ID: P373120

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	123		P	40 - 160
Acetaminophen	82.4		P	30 - 160
Acetamiprid	102		P	40 - 160
Afidopyropen	93.8		P	40 - 160
Bentazon	97.4		P	30 - 160
Benzovindiflupyr	94.8		P	40 - 160
Carbamazepine	103		P	40 - 160
Clothianidin	85.5		P	40 - 160
Dinotefuran	90.1		P	40 - 160
Diuron	103		P	40 - 160
Fenuron	103		P	40 - 160
Fluridone	92.8		P	40 - 160
Hydrocodone	89.0		P	40 - 160
Ibuprofen	84.4		P	30 - 160
Imazapyr	86.5		P	40 - 160
Imidacloprid	105		P	40 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P373120

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	78.4		P	40 - 160
Mandestrobin	94.6		P	40 - 160
MCP	114		P	40 - 160
Naproxen	103		P	40 - 160
Primidone	90.3		P	40 - 160
Pyraclostrobin	83.4		P	30 - 160
Thiamethoxam	106		P	40 - 160
Tolfenpyrad	60.5		P	40 - 160
Triclopyr	87.5		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373164

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	116		P	40 - 150
AMPA	141		P	40 - 150
Endothall	89.2		P	40 - 150
Glufosinate	104		P	40 - 150
Glyphosate	119		P	40 - 140
Sucralose	117		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P373394

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

Reference Method: SM 4500 F-C-97
Batch ID: P373395

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

Reference Method: SM 5310 B-00
Batch ID: P373405

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P373776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131222	Bromide	97.8	98.1	P/P	90 - 110
2132117	Bromide	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131860	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373498

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131861	Kjeldahl Nitrogen	100	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131685	NO2NO3-N	98.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373351

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131836	Total-P	97.6	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373228

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131863	O-Phosphate-P	96.1	96.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P373120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131538	2,4-D	116	104	P/P	40 - 160
2131538	Acetaminophen	76.9	77.5	P/P	30 - 160
2131538	Acetamiprid	104	104	P/P	40 - 160
2131538	Afidopyropen	94.5	95.7	P/P	40 - 160
2131538	Benzovindiflupyr	92.3	93.4	P/P	40 - 160
2131538	Carbamazepine	85.1	85.5	P/P	40 - 160
2131538	Clothianidin	95.2	88.4	P/P	40 - 160
2131538	Dinotefuran	108	105	P/P	40 - 160
2131538	Diuron	84.7	85.1	P/P	40 - 160
2131538	Fenuron	94.7	93.3	P/P	40 - 160
2131538	Hydrocodone	89.7	89.0	P/P	40 - 160
2131538	Ibuprofen	77.5	73.4	P/P	30 - 160
2131538	Imidacloprid	172	168	F/F	40 - 160
2131538	Linuron	68.8	69.3	P/P	40 - 160
2131538	Mandestrobin	89.2	86.9	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P373120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131538	MCP	109	98.3	P/P	40 - 160
2131538	Naproxen	76.8	62.1	P/P	40 - 160
2131538	Primidone	103	97.2	P/P	40 - 160
2131538	Pyraclostrobin	85.2	83.4	P/P	30 - 160
2131538	Thiamethoxam	140	139	P/P	40 - 160
2131538	Tolfenpyrad	60.7	55.2	P/P	40 - 160
2131538	Triclopyr	91.8	82.3	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373164

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131107	Acesulfame K	81.0	80.1	P/P	40 - 150
2131107	AMPA	85.3	84.8	P/P	40 - 150
2131107	Endothall	84.3	87.1	P/P	40 - 150
2131107	Glufosinate	85.5	87.8	P/P	40 - 150
2131107	Glyphosate	77.6	79.4	P/P	40 - 140
2131107	Sucralose	97.8	81.9	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P373395

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131859	Fluoride	93.6	94.3	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P373405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131837	Organic Carbon	96.1	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131834	Turbidity	2.89	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P373776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131222	Bromide	0.247	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131860	Ammonia-N	0.806	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131861	Kjeldahl Nitrogen	0.502	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131685	NO2NO3-N	0.169	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131836	Total-P	1.05	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131863	O-Phosphate-P	0.762	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P373120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131538	2,4-D	8.47	Spike	P	0 - 30
2131538	Acetaminophen	0.749	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P373120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131538	Acetamiprid	0.151	Spike	P	0 - 30
2131538	Afidopyropen	1.18	Spike	P	0 - 30
2131538	Bentazon	0.997	Spike	P	0 - 30
2131538	Benzovindiflupyr	1.16	Spike	P	0 - 30
2131538	Carbamazepine	0.468	Spike	P	0 - 30
2131538	Clothianidin	7.04	Spike	P	0 - 30
2131538	Dinotefuran	2.16	Spike	P	0 - 30
2131538	Diuron	0.415	Spike	P	0 - 30
2131538	Fenuron	1.52	Spike	P	0 - 30
2131538	Fluridone	0.743	Spike	P	0 - 30
2131538	Hydrocodone	0.830	Spike	P	0 - 30
2131538	Ibuprofen	5.44	Spike	P	0 - 30
2131538	Imazapyr	4.79	Spike	P	0 - 30
2131538	Imidacloprid	2.36	Spike	P	0 - 30
2131538	Linuron	0.662	Spike	P	0 - 30
2131538	Mandestrobin	2.57	Spike	P	0 - 30
2131538	MCPP	10.5	Spike	P	0 - 30
2131538	Naproxen	21.2	Spike	P	0 - 30
2131538	Primidone	6.05	Spike	P	0 - 30
2131538	Pyraclostrobin	2.12	Spike	P	0 - 30
2131538	Thiamethoxam	0.719	Spike	P	0 - 30
2131538	Tolfenpyrad	9.44	Spike	P	0 - 30
2131538	Triclopyr	10.8	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P373164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131107	Acesulfame K	1.11	Spike	P	0 - 30
2131107	AMPA	0.606	Spike	P	0 - 30
2131107	Endothall	3.27	Spike	P	0 - 30
2131107	Glufosinate	2.71	Spike	P	0 - 30
2131107	Glyphosate	2.27	Spike	P	0 - 30
2131107	Sucralose	17.8	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P373394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131859	Total Alkalinity	0.955	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-97
Batch ID: P373395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131859	Fluoride	0.477	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P373405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131837	Organic Carbon	4.86	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2131870
Field Sample ID: G5SW0151

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	86.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	75.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	95.0	P	30 - 160
EPA 8321B	Diuron-d6	75.9	P	30 - 160
EPA 8321B	Endothall-d6	76.5	P	30 - 160
EPA 8321B	Endothall-d6	76.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Ibuprofen-d3	70.0	P	30 - 160
EPA 8321B	Primidone-d5	92.0	P	30 - 160
EPA 8321B	Sucralose-d6	15.4	F	30 - 160
EPA 8321B	Sucralose-d6	15.4	F	30 - 160

Lab Sample ID: 2131871
Field Sample ID: G5SW0152

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	84.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	68.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.8	P	30 - 160
EPA 8321B	Diuron-d6	69.4	P	30 - 160
EPA 8321B	Endothall-d6	77.5	P	30 - 160
EPA 8321B	Endothall-d6	77.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Ibuprofen-d3	63.8	P	30 - 160
EPA 8321B	Primidone-d5	77.8	P	30 - 160
EPA 8321B	Sucralose-d6	20.8	F	30 - 160
EPA 8321B	Sucralose-d6	20.8	F	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95277

Included Lab Sample IDs: 2131862, 2131863

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95303

Included Lab Sample IDs: 2131860, 2131861

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95304

Included Lab Sample IDs: 2131858, 2131859

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

Reference Method: EPA 8321B

Run ID: A95323

Included Lab Sample IDs: 2131870, 2131871

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	102	103	P/P	60 - 160
Endothall	94.6	100	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A95328

Included Lab Sample IDs: 2131858, 2131859

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

Reference Method: SM 4500 F-C-97

Run ID: A95328

Included Lab Sample IDs: 2131858, 2131859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	99.5	P/P	90 - 110
Fluoride	99.5	99.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A95334

Included Lab Sample IDs: 2131870, 2131871

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	85.9	68.1	P/P	60 - 160
Glufosinate	82.2	68.4	P/P	60 - 160
Glyphosate	86.1	80.5	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A95339

Included Lab Sample IDs: 2131860, 2131861

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95343

Included Lab Sample IDs: 2131860, 2131861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A95380

Included Lab Sample IDs: 2131870, 2131871

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.0	99.9	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95416

Included Lab Sample IDs: 2131860, 2131861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.2	95.3	P/P	90 - 110
Kjeldahl Nitrogen	96.6	95.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95438

Included Lab Sample IDs: 2131860, 2131861

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

Reference Method: EPA 300.0

Run ID: A95513

Included Lab Sample IDs: 2131858, 2131859

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

Reference Method: EPA 8321B

Run ID: A95576

Included Lab Sample IDs: 2131870, 2131871

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.9	89.8	P/P	50 - 150
Acetaminophen	100	98.5	P/P	60 - 160
Acetamiprid	110	110	P/P	50 - 150
Afidopyrophen	88.1	94.0	P/P	50 - 150
Bentazon	94.2	91.1	P/P	50 - 160
Benzovindiflupyr	108	112	P/P	50 - 150
Carbamazepine	108	107	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A95576

Included Lab Sample IDs: 2131870, 2131871

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Clothianidin	89.8	94.7	P/P	60 - 150
Dinotefuran	94.4	95.1	P/P	50 - 150
Diuron	112	109	P/P	60 - 150
Fenuron	109	109	P/P	60 - 150
Fluridone	112	115	P/P	60 - 160
Hydrocodone	104	102	P/P	60 - 150
Ibuprofen	105	88.8	P/P	50 - 160
Imazapyr	92.4	89.4	P/P	50 - 150
Imidacloprid	97.9	97.4	P/P	60 - 150
Linuron	102	104	P/P	60 - 150
Mandestrobin	108	110	P/P	50 - 150
MCPP	101	98.3	P/P	50 - 150
Naproxen	93.6	78.7	P/P	50 - 160
Primidone	102	103	P/P	60 - 150
Pyraclostrobin	99.7	101	P/P	60 - 150
Thiamethoxam	104	106	P/P	50 - 150
Tolfenpyrad	104	98.8	P/P	60 - 150
Triclopyr	89.5	80.6	P/P	50 - 150

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					2.89	
EPA 300.0	Bromide	98.5	97.8	98.1	98.2		0.247
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	102	103			0.806
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.3	100	99.7			0.502
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	98.8				0.169
EPA 365.1 Rev. 2.0	Total-P	104	97.6	99.2			1.05
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	96.1	96.9			0.762
EPA 8321B	2,4-D	123	116	104			8.47
	Acesulfame K	116	81.0	80.1			1.11
	Acetaminophen	82.4	76.9	77.5			0.749
	Acetamiprid	102	104	104			0.151
	Afidopyropen	93.8	94.5	95.7			1.18
	AMPA	141	85.3	84.8			0.606
	Bentazon	97.4					0.997
	Benzovindiflupyr	94.8	92.3	93.4			1.16
	Carbamazepine	103	85.1	85.5			0.468
	Clothianidin	85.5	95.2	88.4			7.04
	Dinotefuran	90.1	108	105			2.16
	Diuron	103	84.7	85.1			0.415
	Endothall	89.2	84.3	87.1			3.27
	Fenuron	103	94.7	93.3			1.52
	Fluridone	92.8					0.743
	Glufosinate	104	85.5	87.8			2.71
	Glyphosate	119	77.6	79.4			2.27
	Hydrocodone	89.0	89.7	89.0			0.830
	Ibuprofen	84.4	77.5	73.4			5.44
	Imazapyr	86.5					4.79
	Imidacloprid	105	172	168			2.36
	Linuron	78.4	68.8	69.3			0.662
	Mandestrobin	94.6	89.2	86.9			2.57
	MCPP	114	109	98.3			10.5
	Naproxen	103	76.8	62.1			21.2
	Primidone	90.3	103	97.2			6.05
	Pyraclostrobin	83.4	85.2	83.4			2.12
	Sucralose	117	97.8	81.9			17.8
	Thiamethoxam	106	140	139			0.719
	Tolfenpyrad	60.5	60.7	55.2			9.44
	Triclopyr	87.5	91.8	82.3			10.8
SM 2320 B-97	Total Alkalinity	104				0.955	
SM 4500 F-C-97	Fluoride	96.7	93.6	94.3			0.477
SM 5310 B-00	Organic Carbon	101	96.1	102			4.86

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2131858, 2131859
EPA 300.0 / E31780	Bromide in aqueous matrices	2131858, 2131859
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2131860, 2131861
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2131860, 2131861
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2131860, 2131861

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	2131860, 2131861
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2131862, 2131863
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2131870, 2131871
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2131870, 2131871
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2131858, 2131859
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2131858, 2131859
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2131858, 2131859
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2131860, 2131861

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	10/25/2019			10/25/2019 15:59	Blanca Fach	2131858, 2131859
EPA 300.0	10/25/2019			11/05/2019 05:17	Jhamieka S. Greenwood	2131858
	10/25/2019			11/05/2019 05:34	Jhamieka S. Greenwood	2131859
EPA 350.1 Rev. 2.0	10/25/2019			11/01/2019 13:50	Ping Hua	2131860
	10/25/2019			11/01/2019 14:01	Ping Hua	2131861
EPA 351.2 Rev. 2.0	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:21	Jhamieka S. Greenwood	2131861
	10/25/2019	10/31/2019 12:16	Sima Feizi	11/01/2019 14:39	Jhamieka S. Greenwood	2131860
EPA 353.2 Rev. 2.0	10/25/2019			10/29/2019 12:02	Beverly Y. Sanders	2131860
	10/25/2019			10/29/2019 12:03	Beverly Y. Sanders	2131861
EPA 365.1 Rev. 2.0	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 13:13	Lipi Saha	2131860
	10/25/2019	10/29/2019 13:09	Vijayalakshmi Reddy	10/30/2019 13:14	Lipi Saha	2131861
EPA 365.1 Rev. 2.0 dissolved	10/25/2019			10/25/2019 15:34	Jhamieka S. Greenwood	2131863
	10/25/2019			10/25/2019 16:12	Jhamieka S. Greenwood	2131862
EPA 8321B	10/25/2019	10/28/2019 11:00	Rebecca Ware	10/28/2019 15:05	Rebecca Ware	2131870
	10/25/2019	10/28/2019 11:00	Rebecca Ware	10/28/2019 15:16	Rebecca Ware	2131871
	10/25/2019	10/28/2019 11:00	Rebecca Ware	10/29/2019 15:02	Rebecca Ware	2131870
	10/25/2019	10/28/2019 11:00	Rebecca Ware	10/29/2019 15:16	Rebecca Ware	2131871
	10/25/2019	10/28/2019 11:00	Rebecca Ware	10/30/2019 18:24	Rebecca Ware	2131870
	10/25/2019	10/28/2019 11:00	Rebecca Ware	10/30/2019 18:36	Rebecca Ware	2131871
	10/25/2019	10/30/2019 09:00	Hoor Shaik	11/07/2019 06:12	Juyoung Kim	2131870
	10/25/2019	10/30/2019 09:00	Hoor Shaik	11/07/2019 06:47	Juyoung Kim	2131871
SM 2320 B-97	10/25/2019			10/29/2019 16:23	Dale L. Simmons	2131859
	10/25/2019			10/29/2019 19:52	Dale L. Simmons	2131858
SM 2540 D-97	10/25/2019			10/30/2019 15:03	Yijie Li	2131858, 2131859
SM 4500 F-C-97	10/25/2019			10/29/2019 14:09	Dale L. Simmons	2131859
	10/25/2019			10/29/2019 16:01	Dale L. Simmons	2131858
SM 5310 B-00	10/25/2019			10/30/2019 11:03	Madeline Funaro	2131860
	10/25/2019			10/30/2019 11:31	Madeline Funaro	2131861