

Chemical Analysis Report

SW-DIST-2019-09-13-01

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

Event Description: **McKay Tidal, 34th Basin, PP Ditch#1**

Request ID: **RQ-2019-09-09-19**

Customer: **SW-DIST**

Project ID: **SMP**

Send Reports to:

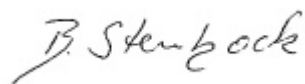
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 03-OCT-2019 16:20



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 SOUTH OF HARBOR CIR

Collection Date/Time: 09/11/2019 10:30

Field ID: G5SW0152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2119003	EPA 180.1 Rev. 2.0	Turbidity	5.2	Q	NTU	P370651	
	EPA 300.0	Bromide	59		mg Br/L	P371116	
	SM 2320 B-97	Total Alkalinity	123		mg CaCO3/L	P371103	
	SM 2540 D-97	TSS	6	I	mg/L	P371187	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P371107	
2119006	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P370846	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P371441	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P370778	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P370786	
	SM 5310 B-00	Organic Carbon	4.4		mg C/L	P371023	
2119009	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011	Q	mg P/L	P370638	
2119050	EPA 8321B	2,4-D	0.0020	U	ug/L	P370625	
		Acesulfame K**	0.10	U	ug/L	P370674	
		AMPA**	1.0	U	ug/L	P370674	
		Sucralose**	0.26		ug/L	P370674	
		Acetaminophen**	0.0080	U	ug/L	P370625	
		Acetamiprid**	0.0020	U	ug/L	P370625	
		Endothall**	0.25	U	ug/L	P370674	
		Glufosinate**	1.0	U	ug/L	P370674	
		Glyphosate**	1.0	U	ug/L	P370674	
		Afidopyropen**	0.0020	UJ	ug/L	P370625	
		Bentazon	0.022		ug/L	P370625	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P370625	RPD
		Carbamazepine**	8.6E-04	I	ug/L	P370625	
		Clothianidin**	0.0020	U	ug/L	P370625	
		Dinotefuran**	0.0020	U	ug/L	P370625	
		Diuron	0.0020	U	ug/L	P370625	
		Fenuron	0.016	U	ug/L	P370625	
		Fluridone**	0.0036		ug/L	P370625	
		Imazapyr**	0.013	I	ug/L	P370625	
		Hydrocodone**	0.0020	U	ug/L	P370625	
		Ibuprofen**	0.020	U	ug/L	P370625	
		Imidacloprid	0.0065	I	ug/L	P370625	MS
		Linuron	0.0040	U	ug/L	P370625	
		Mandestrobin**	0.0020	UJ	ug/L	P370625	
		MCPP	0.0020	U	ug/L	P370625	
		Naproxen**	0.0080	U	ug/L	P370625	RPD
		Primidone**	0.0040	U	ug/L	P370625	
		Pyraclostrobin**	0.0020	U	ug/L	P370625	RPD
		Thiamethoxam**	0.0020	U	ug/L	P370625	MS
		Tolfenpyrad**	0.0020	UJ	ug/L	P370625	LCS, MS
		Triclopyr**	0.0040	U	ug/L	P370625	

Matrix: W-SURF-SLT

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

EPA 180.1 Rev. 2.0: The sample expired upon receipt.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imazapyr and fluridone could not be assessed due to high concentration of parameter in the spiked sample. Matrix spike precision for tolfenpyrad is not available due to low analyte recovery. Refer to the narrative for an explanation of QC Codes.

EPA 8321B: MDL for some parameters elevated due to matrix interference.

Sample Location: McKAY TIDAL @ MOUTH

Collection Date/Time: 09/11/2019 10:15

Field ID: G5SW0151

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2119004	EPA 180.1 Rev. 2.0	Turbidity	5.0	Q	NTU	P370651	
	EPA 300.0	Bromide	64		mg Br/L	P371116	
	SM 2320 B-97	Total Alkalinity	123		mg CaCO3/L	P371103	
	SM 2540 D-97	TSS	9	IA	mg/L	P371187	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P371107	
2119007	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P370846	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P371441	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P370778	
	EPA 365.1 Rev. 2.0	Total-P	0.041		mg P/L	P370786	
	SM 5310 B-00	Organic Carbon	3.7		mg C/L	P371023	
2119010	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P370638	
2119051	EPA 8321B	2,4-D	0.0020	U	ug/L	P370625	
		Acesulfame K**	0.10	U	ug/L	P370674	
		AMPA**	1.0	U	ug/L	P370674	
		Sucralose**	0.39		ug/L	P370674	
		Acetaminophen**	0.0080	U	ug/L	P370625	
		Acetamiprid**	0.0020	U	ug/L	P370625	
		Endothall**	0.25	U	ug/L	P370674	
		Glufosinate**	1.0	U	ug/L	P370674	
		Glyphosate**	1.0	U	ug/L	P370674	
		Afidopyropen**	0.0020	UJ	ug/L	P370625	
		Bentazon	0.011		ug/L	P370625	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P370625	RPD
		Carbamazepine**	8.0E-04	U	ug/L	P370625	
		Clothianidin**	0.0020	U	ug/L	P370625	
		Dinotefuran**	0.0020	U	ug/L	P370625	
		Diuron	0.0020	U	ug/L	P370625	
		Fenuron	0.016	U	ug/L	P370625	
		Fluridone**	0.0019	I	ug/L	P370625	
		Imazapyr**	0.0040	U	ug/L	P370625	
		Hydrocodone**	0.0020	U	ug/L	P370625	
		Ibuprofen**	0.020	U	ug/L	P370625	
		Imidacloprid	0.0022	I	ug/L	P370625	MS
		Linuron	0.0040	U	ug/L	P370625	
		Mandestrobin**	0.0020	UJ	ug/L	P370625	
		MCP	0.0020	U	ug/L	P370625	
		Naproxen**	0.0080	U	ug/L	P370625	RPD
		Primidone**	0.0040	U	ug/L	P370625	
		Pyraclostrobin**	0.0020	U	ug/L	P370625	RPD
		Thiamethoxam**	0.0020	U	ug/L	P370625	MS
		Tolfenpyrad**	0.0020	UJ	ug/L	P370625	LCS, MS
		Triclopyr**	0.0040	U	ug/L	P370625	

Matrix: W-SURF-SLT

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

EPA 180.1 Rev. 2.0: The sample expired prior to receipt.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt.

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imazapyr and fluridone could not be assessed due to high concentration of parameter in the spiked sample. Matrix spike precision for tolfenpyrad is not available due to low analyte recovery. Refer to the narrative for an explanation of QC Codes.

EPA 8321B: MDL for some parameters elevated due to matrix interference.

Sample Location: PP DITCH#1 @ 71st ST

Collection Date/Time: 09/11/2019 11:20

Field ID: G5SW0134

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2119005	EPA 180.1 Rev. 2.0	Turbidity	5.0	Q	NTU	P370651	
	EPA 300.0	Bromide	2.3		mg Br/L	P371116	
	SM 2320 B-97	Total Alkalinity	195		mg CaCO3/L	P371032	
	SM 2540 D-97	TSS	7	I	mg/L	P371159	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P371510	
2119008	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P370929	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P370785	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P370966	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P370789	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P370862	
2119011	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.046	Q	mg P/L	P370637	
2119052	EPA 8321B	2,4-D	0.14		ug/L	P370625	
		Acesulfame K**	0.10	UJ	ug/L	P370674	SUR
		AMPA**	0.33	I	ug/L	P370674	
		Sucralose**	0.87		ug/L	P370674	
		Acetaminophen**	0.0080	U	ug/L	P370625	
		Acetamiprid**	0.0020	U	ug/L	P370625	
		Endothall**	0.25	UJ	ug/L	P370674	SUR
		Glufosinate**	0.10	U	ug/L	P370674	
		Glyphosate**	1.5		ug/L	P370674	
		Afidopyropen**	0.0020	UJ	ug/L	P370625	
		Bentazon	0.095		ug/L	P370625	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P370625	RPD
		Carbamazepine**	0.0058		ug/L	P370625	
		Clothianidin**	0.022		ug/L	P370625	
		Dinotefuran**	0.0034	I	ug/L	P370625	
		Diuron	0.093		ug/L	P370625	
		Fenuron	0.016	U	ug/L	P370625	
		Fluridone**	0.13		ug/L	P370625	
		Imazapyr**	0.24		ug/L	P370625	
		Hydrocodone**	0.0020	U	ug/L	P370625	
		Ibuprofen**	0.020	U	ug/L	P370625	
		Imidacloprid	0.13		ug/L	P370625	MS
		Linuron	0.0040	U	ug/L	P370625	
		Mandestrobin**	0.0020	UJ	ug/L	P370625	
		MCP	0.0066	I	ug/L	P370625	
		Naproxen**	0.0080	U	ug/L	P370625	RPD
		Primidone**	0.017		ug/L	P370625	
		Pyraclostrobin**	0.0020	U	ug/L	P370625	RPD
		Thiamethoxam**	0.0020	U	ug/L	P370625	MS
		Tolfenpyrad**	0.0020	UJ	ug/L	P370625	LCS, MS
		Triclopyr**	0.0040	U	ug/L	P370625	

Field ID: G5SW0134

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
EPA 180.1 Rev. 2.0: The sample expired upon receipt.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.
EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imazapyr and fluridone could not be assessed due to high concentration of parameter in the spiked sample. Matrix spike precision for tolfenpyrad is not available due to low analyte recovery. Refer to the narrative for an explanation of QC Codes.
EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate.

Sample Location: 34th STREET BASIN @ 11 AVE S

Collection Date/Time: 09/11/2019 12:00

Field ID: G5SW0146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2119000	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P370651	
	EPA 300.0 Rev. 2.1	Chloride	58		mg Cl/L	P370974	
		Sulfate	37		mg SO4/L	P370977	
	SM 2120 B	Color (true)	54	A	PCU	P370657	
	SM 2320 B-97	Total Alkalinity	87	A	mg CaCO3/L	P371032	
	SM 2540 C-97	TDS	278		mg/L	P371183	
	SM 2540 D-97	TSS	2	I	mg/L	P371157	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P371510	
2119001	EPA 350.1 Rev. 2.0	Ammonia-N	0.069		mg N/L	P370845	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P370785	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.84		mg N/L	P370966	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P370789	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P370862	
2119002	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016	Q	mg P/L	P370637	
2119049	EPA 8321B	2,4-D	0.0020	U	ug/L	P370625	
		Acesulfame K**	0.10	U	ug/L	P370674	
		AMPA**	0.22	I	ug/L	P370674	
		Sucralose**	0.087		ug/L	P370674	
		Acetaminophen**	0.0080	U	ug/L	P370625	
		Acetamiprid**	0.0020	U	ug/L	P370625	
		Endothall**	0.25	U	ug/L	P370674	
		Glufosinate**	0.10	U	ug/L	P370674	
		Glyphosate**	0.10	U	ug/L	P370674	
		Afidopyropen**	0.0020	UJ	ug/L	P370625	
		Bentazon	0.0077		ug/L	P370625	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P370625	RPD
		Carbamazepine**	8.0E-04	U	ug/L	P370625	
		Clothianidin**	0.0030	I	ug/L	P370625	
		Dinotefuran**	0.0020	U	ug/L	P370625	
		Diuron	0.0031	I	ug/L	P370625	
		Fenuron	0.016	U	ug/L	P370625	
		Fluridone**	8.0E-04	U	ug/L	P370625	
		Imazapyr**	0.0074	I	ug/L	P370625	
		Hydrocodone**	0.0020	U	ug/L	P370625	
		Ibuprofen**	0.020	U	ug/L	P370625	
		Imidacloprid	0.010		ug/L	P370625	MS
		Linuron	0.0040	U	ug/L	P370625	
		Mandestrobin**	0.0020	UJ	ug/L	P370625	
		MCPP	0.0020	U	ug/L	P370625	
		Naproxen**	0.0080	U	ug/L	P370625	RPD
		Primidone**	0.0040	U	ug/L	P370625	
		Pyraclostrobin**	0.0020	U	ug/L	P370625	RPD
		Thiamethoxam**	0.0020	U	ug/L	P370625	MS

Field ID: G5SW0146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2119049	EPA 8321B	Tolfenpyrad**	0.0020	UJ	ug/L	P370625	LCS, MS
		Triclopyr**	0.0040	U	ug/L	P370625	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imazapyr and fluridone could not be assessed due to high concentration of parameter in the spiked sample. Matrix spike precision for tolfe npyrad is not available due to low analyte recovery. Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P370651

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P371116

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370974

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370977

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370845

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370846

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370929

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370785

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371441

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370778

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370966

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370786

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370789

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370637

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370638

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

Reference Method: EPA 8321B
Batch ID: P370625

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P370625

Component	Result	Code	Units
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: P370674

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P370657

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P371032

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

Reference Method: SM 2320 B-97
Batch ID: P371103

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

Reference Method: SM 2540 C-97
Batch ID: P371183

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P371157

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P371159

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P371187

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P371107

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P371510

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P370862

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

Reference Method: SM 5310 B-00
Batch ID: P371023

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: P371116

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P370974

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P370977

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P370845

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P370846

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P370929

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P370785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P371441

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P370778

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370966

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: P370786

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370789

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370637

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370638

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

Reference Method: EPA 8321B
Batch ID: P370625

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.6		P	40 - 160
Acetaminophen	83.7		P	30 - 160
Acetamiprid	96.7		P	40 - 160
Afidopyropen	79.9		P	40 - 160
Bentazon	93.6		P	30 - 160
Benzovindiflupyr	50.5		P	40 - 160
Carbamazepine	97.5		P	40 - 160
Clothianidin	95.6		P	40 - 160
Dinotefuran	89.5		P	40 - 160
Diuron	103		P	40 - 160
Fenuron	119		P	40 - 160
Fluridone	88.8		P	40 - 160
Hydrocodone	98.6		P	40 - 160
Ibuprofen	49.3		P	30 - 160
Imazapyr	86.7		P	40 - 160
Imidacloprid	100		P	40 - 160
Linuron	66.3		P	40 - 160
Mandestrobin	73.0		P	40 - 160
MCPP	75.3		P	40 - 160
Naproxen	60.1		P	40 - 160
Primidone	84.4		P	40 - 160
Pyraclostrobin	41.1		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P370625

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Thiamethoxam	108		P	40 - 160
Tolfenpyrad	14.2		F	40 - 160
Triclopyr	50.7		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P370674

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	63.8		P	40 - 150
AMPA	107		P	40 - 150
Endothall	107		P	40 - 150
Glufosinate	132		P	40 - 150
Glyphosate	132		P	40 - 140
Sucralose	65.1		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P370657

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	91.7		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P371032

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

Reference Method: SM 2320 B-97
Batch ID: P371103

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

Reference Method: SM 4500 F-C-97
Batch ID: P371107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P371510

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P370862

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P371023

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P371116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2120060	Bromide	95.7	96.1	P/P	90 - 110
2120064	Bromide	95.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118682	Chloride	101		P	90 - 110
2119000	Chloride	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370977

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118682	Sulfate	101		P	90 - 110
2119000	Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118726	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370846

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118841	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370929

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119023	Ammonia-N	99.6	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119096	Kjeldahl Nitrogen	93.6	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371441

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118841	Kjeldahl Nitrogen	98.7	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118842	NO2NO3-N	104	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370966

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118843	NO2NO3-N	98.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118842	Total-P	92.6	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118900	Total-P	99.0	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370637

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119109	O-Phosphate-P	95.9	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370638

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119009	O-Phosphate-P	97.6	98.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P370625

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118309	2,4-D	132	119	P/P	40 - 160
2118309	Acetaminophen	88.0	89.4	P/P	30 - 160
2118309	Acetamiprid	127	110	P/P	40 - 160
2118309	Afidopyropen	117	114	P/P	40 - 160
2118309	Bentazon	73.0	75.1	P/P	30 - 160
2118309	Benzovindiflupyr	45.1	73.3	P/P	40 - 160
2118309	Carbamazepine	116	114	P/P	40 - 160
2118309	Clothianidin	117	116	P/P	40 - 160
2118309	Dinotefuran	123	123	P/P	40 - 160
2118309	Diuron	115	106	P/P	40 - 160
2118309	Fenuron	100	103	P/P	40 - 160
2118309	Hydrocodone	110	108	P/P	40 - 160
2118309	Ibuprofen	70.2	76.9	P/P	30 - 160
2118309	Imidacloprid	222	210	F/F	40 - 160
2118309	Linuron	72.3	71.9	P/P	40 - 160
2118309	Mandestrobin	86.0	90.6	P/P	40 - 160
2118309	MCP	141	130	P/P	40 - 160
2118309	Naproxen	116	74.0	P/P	40 - 160
2118309	Primidone	102	101	P/P	40 - 160
2118309	Pyraclostrobin	36.8	65.1	P/P	30 - 160
2118309	Thiamethoxam	174	176	F/F	40 - 160
2118309	Tolfenpyrad	2.13	23.2	F/F	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P370625

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118309	Triclopyr	100	88.9	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P370674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119049	Acesulfame K	55.2	56.2	P/P	40 - 150
2119049	AMPA	49.9	46.3	P/P	40 - 150
2119049	Endothall	83.8	84.7	P/P	40 - 150
2119049	Glufosinate	94.5	97.7	P/P	40 - 150
2119049	Glyphosate	113	113	P/P	40 - 140
2119049	Sucralose	53.9	52.0	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P371107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2117596	Fluoride	93.6	96.2	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P371510

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119000	Fluoride	98.1	98.1	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P370862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119001	Organic Carbon	101	101	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P371023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2118626	Organic Carbon	94.4	96.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P370651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119106	Turbidity	1.67	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P371116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120060	Bromide	0.450	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118682	Chloride	0.234	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118682	Sulfate	0.701	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118726	Ammonia-N	0.335	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370846

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118841	Ammonia-N	0.358	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119023	Ammonia-N	0.635	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119096	Kjeldahl Nitrogen	3.60	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118841	Kjeldahl Nitrogen	0.924	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118842	NO2NO3-N	1.44	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370966

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118843	NO2NO3-N	0.717	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118842	Total-P	3.83	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118900	Total-P	1.12	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370637

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119109	O-Phosphate-P	1.09	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119009	O-Phosphate-P	0.640	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P370625

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118309	2,4-D	9.18	Spike	P	0 - 30
2118309	Acetaminophen	1.55	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P370625

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118309	Acetamiprid	14.0	Spike	P	0 - 30
2118309	Afidopyropen	2.93	Spike	P	0 - 30
2118309	Bentazon	1.31	Spike	P	0 - 30
2118309	Benzovindiflupyr	47.5	Spike	F	0 - 30
2118309	Carbamazepine	2.37	Spike	P	0 - 30
2118309	Clothianidin	0.551	Spike	P	0 - 30
2118309	Dinotefuran	0.391	Spike	P	0 - 30
2118309	Diuron	7.38	Spike	P	0 - 30
2118309	Fenuron	2.67	Spike	P	0 - 30
2118309	Fluridone	2.67	Spike	P	0 - 30
2118309	Hydrocodone	1.74	Spike	P	0 - 30
2118309	Ibuprofen	9.11	Spike	P	0 - 30
2118309	Imazapyr	4.82	Spike	P	0 - 30
2118309	Imidacloprid	5.12	Spike	P	0 - 30
2118309	Linuron	0.554	Spike	P	0 - 30
2118309	Mandestrobin	5.18	Spike	P	0 - 30
2118309	MCPP	8.08	Spike	P	0 - 30
2118309	Naproxen	44.2	Spike	F	0 - 30
2118309	Primidone	0.586	Spike	P	0 - 30
2118309	Pyraclostrobin	55.4	Spike	F	0 - 30
2118309	Thiamethoxam	1.23	Spike	P	0 - 30
2118309	Triclopyr	11.8	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P370674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119049	Acesulfame K	1.78	Spike	P	0 - 30
2119049	AMPA	5.11	Spike	P	0 - 30
2119049	Endothall	0.988	Spike	P	0 - 30
2119049	Glufosinate	3.34	Spike	P	0 - 30
2119049	Glyphosate	0.485	Spike	P	0 - 30
2119049	Sucralose	3.40	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P370657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119000	Color (true)	0.182	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P371032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119000	Total Alkalinity	0.777	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P371103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117596	Total Alkalinity	0.228	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P371183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118278	TDS	6.13	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P371107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2117596	Fluoride	1.95	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
 Batch ID: P371510

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119000	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P370862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119001	Organic Carbon	0.127	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P371023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2118626	Organic Carbon	1.89	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: 2119049
Field Sample ID: G5SW0146

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	88.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.9	P	30 - 160
EPA 8321B	Diuron-d6	105	P	30 - 160
EPA 8321B	Endothall-d6	156	P	30 - 160
EPA 8321B	Endothall-d6	156	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	99.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	99.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.6	P	30 - 160
EPA 8321B	Primidone-d5	96.5	P	30 - 160
EPA 8321B	Sucralose-d6	45.6	P	30 - 160
EPA 8321B	Sucralose-d6	45.6	P	30 - 160

Lab Sample ID: 2119050
Field Sample ID: G5SW0152

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	126	P	30 - 160
EPA 8321B	Acetaminophen-d4	84.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	106	P	30 - 160
EPA 8321B	Diuron-d6	117	P	30 - 160
EPA 8321B	Endothall-d6	108	P	30 - 160
EPA 8321B	Endothall-d6	108	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	40.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	40.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	62.3	P	30 - 160
EPA 8321B	Primidone-d5	94.8	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	30 - 160

Lab Sample ID: 2119051
Field Sample ID: G5SW0151

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	114	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	104	P	30 - 160
EPA 8321B	Diuron-d6	115	P	30 - 160
EPA 8321B	Endothall-d6	114	P	30 - 160
EPA 8321B	Endothall-d6	114	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	35.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	35.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.2	P	30 - 160
EPA 8321B	Primidone-d5	98.2	P	30 - 160
EPA 8321B	Sucralose-d6	155	P	30 - 160
EPA 8321B	Sucralose-d6	155	P	30 - 160

Lab Sample ID: 2119052
Field Sample ID: G5SW0134

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	140	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2119052

Field Sample ID: G5SW0134

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	82.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	93.3	P	30 - 160
EPA 8321B	Diuron-d6	107	P	30 - 160
EPA 8321B	Endothall-d6	447	F	30 - 160
EPA 8321B	Endothall-d6	447	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	41.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	41.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	72.3	P	30 - 160
EPA 8321B	Primidone-d5	98.7	P	30 - 160
EPA 8321B	Sucralose-d6	47.7	P	30 - 160
EPA 8321B	Sucralose-d6	47.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94198

Included Lab Sample IDs: 2119002, 2119009, 2119010, 2119011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	98.7	P/P	90 - 110
O-Phosphate-P	99.3	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94201

Included Lab Sample IDs: 2119000, 2119003, 2119004, 2119005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A94205

Included Lab Sample IDs: 2119000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.4	98.4	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94262

Included Lab Sample IDs: 2119006, 2119007

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94268

Included Lab Sample IDs: 2119000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.4	99.4	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94290

Included Lab Sample IDs: 2119049, 2119050, 2119051, 2119052

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	96.7	84.3	P/P	60 - 160
Endothall	151	139	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94295

Included Lab Sample IDs: 2119001, 2119006, 2119007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	102	P/P	90 - 110
Ammonia-N	102	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A94300

Included Lab Sample IDs: 2119049, 2119050, 2119051, 2119052

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	69.2	97.1	P/P	60 - 160
AMPA	77.1	133	P/P	60 - 160
Glufosinate	61.7	100	P/P	60 - 160
Glufosinate	82.1	138	P/P	60 - 160
Glyphosate	158	107	P/P	60 - 160
Glyphosate	86.9	158	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A94304

Included Lab Sample IDs: 2119001, 2119008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	104	104	P/P	90 - 110
Organic Carbon	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94316

Included Lab Sample IDs: 2119008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.4	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94317

Included Lab Sample IDs: 2119001, 2119006, 2119007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.8	P/P	90 - 110
Total-P	99.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94318

Included Lab Sample IDs: 2119001, 2119008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.8	98.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94333

Included Lab Sample IDs: 2119049, 2119050, 2119051, 2119052

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	65.6	67.1	P/P	60 - 160
Sucralose	67.1	76.1	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94334

Included Lab Sample IDs: 2119008

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94338

Included Lab Sample IDs: 2119001, 2119008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A94349

Included Lab Sample IDs: 2119006, 2119007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.1	103	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A94353

Included Lab Sample IDs: 2119000, 2119005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	103	P/P	90 - 110
Total Alkalinity	105	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A94392

Included Lab Sample IDs: 2119003, 2119004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A94392

Included Lab Sample IDs: 2119003, 2119004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	98.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94400

Included Lab Sample IDs: 2119049, 2119050, 2119051, 2119052

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	105	97.7	P/P	50 - 150
Acetaminophen	116	99.9	P/P	60 - 160
Acetamiprid	111	112	P/P	50 - 150
Afidopyropen	114	121	P/P	50 - 150
Bentazon	80.5	82.3	P/P	50 - 160
Benzovindiflupyr	104	106	P/P	50 - 150
Carbamazepine	109	104	P/P	60 - 150
Clothianidin	104	101	P/P	60 - 150
Dinotefuran	97.3	98.1	P/P	50 - 150
Diuron	135	130	P/P	60 - 150
Fenuron	111	111	P/P	60 - 150
Fluridone	104	114	P/P	60 - 160
Hydrocodone	111	106	P/P	60 - 150
Ibuprofen	85.8	80.7	P/P	50 - 160
Imazapyr	92.1	85.5	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A94400

Included Lab Sample IDs: 2119049, 2119050, 2119051, 2119052

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imidacloprid	96.7	101	P/P	60 - 150
Linuron	93.7	93.8	P/P	60 - 150
Mandestrobin	112	112	P/P	50 - 150
MCP	88.9	91.5	P/P	50 - 150
Naproxen	60.8	82.8	P/P	50 - 160
Primidone	90.6	70.7	P/P	60 - 150
Pyraclostrobin	109	110	P/P	60 - 150
Thiamethoxam	103	107	P/P	50 - 150
Tolfenpyrad	116	115	P/P	60 - 150
Triclopyr	89.6	103	P/P	50 - 150

Reference Method: EPA 300.0

Run ID: A94401

Included Lab Sample IDs: 2119003, 2119004, 2119005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	103	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A94568

Included Lab Sample IDs: 2119000, 2119005

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94597

Included Lab Sample IDs: 2119006, 2119007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.7	105	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			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					1.67	
EPA 300.0	Bromide	98.2	95.7	96.1	95.2		0.450
EPA 300.0 Rev. 2.1	Chloride	97.8	101	96.2		0.234	
	Sulfate	99.2	101	98.3		0.701	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	101			0.335
	Ammonia-N	99.9	104	105			0.358
	Ammonia-N	98.6	99.6	98.8			0.635
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.5	93.6	98.9			3.60
	Kjeldahl Nitrogen	98.8	98.7	99.8			0.924
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104	102			1.44
	NO2NO3-N	99.0	98.2				0.717
EPA 365.1 Rev. 2.0	Total-P	98.7	92.6	96.3			3.83
	Total-P	97.6	99.0	97.7			1.12
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	95.9	97.6			1.09
	O-Phosphate-P	102	97.6	98.3			0.640
EPA 8321B	2,4-D	74.6	132	119			9.18
	Acesulfame K	63.8	55.2	56.2			1.78
	Acetaminophen	83.7	88.0	89.4			1.55
	Acetamiprid	96.7	127	110			14.0
	Afidopyropen	79.9	117	114			2.93
	AMPA	107	49.9	46.3			5.11
	Bentazon	93.6	73.0	75.1			1.31
	Benzovindiflupyr	50.5	45.1	73.3			47.5
	Carbamazepine	97.5	116	114			2.37
	Clothianidin	95.6	117	116			0.551
	Dinotefuran	89.5	123	123			0.391
	Diuron	103	115	106			7.38
	Endothall	107	83.8	84.7			0.988
	Fenuron	119	100	103			2.67
	Fluridone	88.8					2.67
	Glufosinate	132	94.5	97.7			3.34
	Glyphosate	132	113	113			0.485
	Hydrocodone	98.6	110	108			1.74
	Ibuprofen	49.3	70.2	76.9			9.11
	Imazapyr	86.7					4.82
	Imidacloprid	100	222	210			5.12
	Linuron	66.3	72.3	71.9			0.554
	Mandestrobin	73.0	86.0	90.6			5.18
	MCPP	75.3	141	130			8.08
	Naproxen	60.1	116	74.0			44.2
	Primidone	84.4	102	101			0.586
	Pyraclostrobin	41.1	36.8	65.1			55.4
	Sucralose	65.1	53.9	52.0			3.40
	Thiamethoxam	108	174	176			1.23
	Tolfenpyrad	14.2	2.13	23.2			
	Triclopyr	50.7	100	88.9			11.8
SM 2120 B	Color (true)	91.7				0.182	
SM 2320 B-97	Total Alkalinity	104				0.777	
	Total Alkalinity	104				0.228	
SM 2540 C-97	TDS					6.13	
SM 4500 F-C-97	Fluoride	96.6	93.6	96.2			1.95
	Fluoride	96.1	98.1	98.1			0.0
SM 5310 B-00	Organic Carbon	103	101	101			0.127
	Organic Carbon	94.6	94.4	96.8			1.89

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2119000, 2119003, 2119004, 2119005
EPA 300.0 / E31780	Bromide in aqueous matrices	2119003, 2119004, 2119005
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2119000
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2119000
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2119001, 2119006, 2119007, 2119008
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2119001, 2119006, 2119007, 2119008
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2119001, 2119006, 2119007, 2119008
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2119001, 2119006, 2119007, 2119008
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2119002, 2119009, 2119010, 2119011
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2119049, 2119050, 2119051, 2119052
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2119049, 2119050, 2119051, 2119052
SM 2120 B / E31780	True Color measured at 450 nm	2119000
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2119000, 2119003, 2119004, 2119005
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2119000
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2119000, 2119003, 2119004, 2119005
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2119000, 2119003, 2119004, 2119005
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2119001, 2119006, 2119007, 2119008

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	09/13/2019			09/13/2019 11:41	Samantha Davila	2119000
	09/13/2019			09/13/2019 11:51	Samantha Davila	2119003
	09/13/2019			09/13/2019 11:54	Samantha Davila	2119004
	09/13/2019			09/13/2019 11:56	Samantha Davila	2119005
EPA 300.0	09/13/2019			09/20/2019 20:14	Jhamieka S. Greenwood	2119003
	09/13/2019			09/20/2019 20:31	Jhamieka S. Greenwood	2119004
	09/13/2019			09/20/2019 20:48	Jhamieka S. Greenwood	2119005
	09/13/2019			09/18/2019 13:55	Jhamieka S. Greenwood	2119000
EPA 300.0 Rev. 2.1	09/13/2019			09/17/2019 11:33	Ping Hua	2119001
EPA 350.1 Rev. 2.0	09/13/2019			09/17/2019 11:54	Ping Hua	2119006
	09/13/2019			09/17/2019 11:56	Ping Hua	2119007
	09/13/2019			09/18/2019 12:14	Ping Hua	2119008
	09/13/2019			09/18/2019 14:05	Julia Storbeck	2119001
EPA 351.2 Rev. 2.0	09/13/2019	09/17/2019 12:50	Sima Feizi	09/18/2019 14:07	Julia Storbeck	2119008
	09/13/2019	09/27/2019 12:10	Jhamieka S. Greenwood	09/30/2019 13:35	Virginia P. Brown	2119006
	09/13/2019	09/27/2019 12:10	Jhamieka S. Greenwood	09/30/2019 13:37	Virginia P. Brown	2119007
	09/13/2019			09/17/2019 11:14	Beverly Y. Sanders	2119006
EPA 353.2 Rev. 2.0	09/13/2019			09/17/2019 11:16	Beverly Y. Sanders	2119007
	09/13/2019			09/19/2019 11:41	Beverly Y. Sanders	2119001
	09/13/2019			09/19/2019 11:42	Beverly Y. Sanders	2119008
	09/13/2019			09/18/2019 10:38	Rosalyn Ballman	2119008
EPA 365.1 Rev. 2.0	09/13/2019	09/17/2019 13:00	Lipi Saha	09/18/2019 13:03	Rosalyn Ballman	2119006
	09/13/2019	09/17/2019 13:00	Lipi Saha	09/18/2019 13:04	Rosalyn Ballman	2119007
	09/13/2019	09/17/2019 13:00	Lipi Saha	09/18/2019 13:24	Rosalyn Ballman	2119001
	09/13/2019			09/13/2019 12:53	Jhamieka S. Greenwood	2119009
EPA 365.1 Rev. 2.0 dissolved	09/13/2019			09/13/2019 13:12	Jhamieka S. Greenwood	2119002
	09/13/2019			09/13/2019 13:13	Jhamieka S. Greenwood	2119011
	09/13/2019			09/13/2019 13:16	Jhamieka S. Greenwood	2119010
	09/13/2019			09/16/2019 23:28	Juyoung Kim	2119049
EPA 8321B	09/13/2019	09/16/2019 09:00	Fe-Val Siddell	09/17/2019 00:03	Juyoung Kim	2119050
	09/13/2019	09/16/2019 09:00	Fe-Val Siddell	09/17/2019 00:37	Juyoung Kim	2119051
	09/13/2019	09/16/2019 09:00	Fe-Val Siddell	09/17/2019 01:12	Juyoung Kim	2119052
	09/13/2019	09/16/2019 10:00	Rebecca Ware	09/17/2019 12:31	Rebecca Ware	2119049
	09/13/2019	09/16/2019 10:00	Rebecca Ware	09/17/2019 12:45	Rebecca Ware	2119050
	09/13/2019	09/16/2019 10:00	Rebecca Ware	09/17/2019 12:59	Rebecca Ware	2119051
	09/13/2019	09/16/2019 10:00	Rebecca Ware	09/17/2019 13:12	Rebecca Ware	2119052
	09/13/2019	09/16/2019 10:00	Rebecca Ware	09/17/2019 19:09	Rebecca Ware	2119049
	09/13/2019	09/16/2019 10:00	Rebecca Ware	09/17/2019 19:41	Rebecca Ware	2119052
	09/13/2019	09/16/2019 10:00	Rebecca Ware	09/17/2019 21:40	Rebecca Ware	2119050
	09/13/2019	09/16/2019 10:00	Rebecca Ware	09/17/2019 21:51	Rebecca Ware	2119051

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/13/2019	09/16/2019 10:00	Rebecca Ware	09/18/2019 12:53	Rebecca Ware	2119049
	09/13/2019	09/16/2019 10:00	Rebecca Ware	09/18/2019 13:28	Rebecca Ware	2119052
	09/13/2019	09/16/2019 10:00	Rebecca Ware	09/18/2019 15:16	Rebecca Ware	2119050
	09/13/2019	09/16/2019 10:00	Rebecca Ware	09/18/2019 15:28	Rebecca Ware	2119051
SM 2120 B	09/13/2019			09/13/2019 11:54	Madeline Funaro	2119000
SM 2320 B-97	09/13/2019			09/18/2019 07:49	Dale L. Simmons	2119000
	09/13/2019			09/18/2019 12:55	Dale L. Simmons	2119005
	09/13/2019			09/19/2019 15:28	Dale L. Simmons	2119003
	09/13/2019			09/19/2019 15:40	Dale L. Simmons	2119004
SM 2540 C-97	09/13/2019			09/17/2019 14:10	Yijie Li	2119000
SM 2540 D-97	09/13/2019			09/17/2019 14:10	Yijie Li	2119000, 2119003, 2119004, 2119005
SM 4500 F-C-97	09/13/2019			09/19/2019 10:22	Dale L. Simmons	2119003
	09/13/2019			09/19/2019 10:26	Dale L. Simmons	2119004
	09/13/2019			09/25/2019 19:30	Dale L. Simmons	2119000
	09/13/2019			09/25/2019 21:16	Dale L. Simmons	2119005
SM 5310 B-00	09/13/2019			09/17/2019 15:31	Madeline Funaro	2119001
	09/13/2019			09/17/2019 17:33	Madeline Funaro	2119008
	09/13/2019			09/19/2019 06:34	Madeline Funaro	2119006
	09/13/2019			09/19/2019 06:48	Madeline Funaro	2119007