

Chemical Analysis Report

SO-DIST-2019-09-17-01

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

Event Description: **2019 SMP : MyBB**

Request ID: **RQ-2019-09-16-30**

Customer: **SO-DIST**

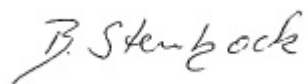
Project ID: **SMP**

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

Date Certified: 02-OCT-2019 18:32



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

A - Value reported is the mean of two or more determinations.
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value and/or the analysis did not meet established quality control criteria.
K - Actual value is known to be less than value given.
L - Actual value is known to be greater than value given.
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Brandy Branch @SR70

Collection Date/Time: 09/16/2019 09:00

Field ID: G3SD0083

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2119680	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P370834	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P371124	
		Sulfate	180		mg SO4/L	P371226	
	SM 2120 B	Color (true)	230		PCU	P370939	
	SM 2320 B-97	Total Alkalinity	45		mg CaCO3/L	P371113	
	SM 2540 C-97	TDS	389		mg/L	P371457	
	SM 2540 D-97	TSS	8	I	mg/L	P371390	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P371117	
2119681	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P370993	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P370967	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.37		mg N/L	P370859	
	EPA 365.1 Rev. 2.0	Total-P	0.37		mg P/L	P370980	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P371022	
2119682	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.31		mg P/L	P370818	
2119694	EPA 8321B	2,4-D	0.0042	I	ug/L	P370771	
		Acesulfame K**	0.10	U	ug/L	P370917	
		AMPA**	0.54		ug/L	P370917	
		Sucralose**	0.010	U	ug/L	P370917	
		Acetaminophen**	0.0080	U	ug/L	P370771	
		Acetamiprid**	0.0020	U	ug/L	P370771	
		Endothall**	0.25	U	ug/L	P370917	
		Glufosinate**	0.10	U	ug/L	P370917	
		Glyphosate**	0.64		ug/L	P370917	
		Afidopyropen**	0.0020	UJ	ug/L	P370771	
		Bentazon	1.0		ug/L	P370771	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P370771	
		Carbamazepine**	8.0E-04	U	ug/L	P370771	
		Clothianidin**	0.012		ug/L	P370771	
		Dinotefuran**	0.0020	U	ug/L	P370771	
		Diuron	0.0078	I	ug/L	P370771	
		Fenuron	0.016	U	ug/L	P370771	
		Fluridone**	8.0E-04	U	ug/L	P370771	
		Imazapyr**	0.0040	U	ug/L	P370771	
		Hydrocodone**	0.0020	U	ug/L	P370771	
		Ibuprofen**	0.020	U	ug/L	P370771	
		Imidacloprid	0.062		ug/L	P370771	
		Linuron	0.0040	U	ug/L	P370771	
		Mandestrobin**	0.0020	UJ	ug/L	P370771	
		MCP	0.0020	U	ug/L	P370771	
		Naproxen**	0.0080	U	ug/L	P370771	
		Primidone**	0.0040	U	ug/L	P370771	
		Pyraclostrobin**	0.0020	U	ug/L	P370771	
		Thiamethoxam**	0.022		ug/L	P370771	

Field ID: G3SD0083

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2119694	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P370771	
		Triclopyr**	0.0040	U	ug/L	P370771	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Sample Location: Brandy Branch @SR70

Collection Date/Time: 09/16/2019 09:05

Field ID: FB_09112019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2119686	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P370834	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P371124	
		Sulfate	0.20	U	mg SO4/L	P371128	
		Color (true)	2.5	U	PCU	P370942	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P371113	
	SM 2540 C-97	TDS	15	U	mg/L	P371455	
	SM 2540 D-97	TSS	2	U	mg/L	P371388	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P371117	
2119687	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P370993	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P370967	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P370860	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P370981	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P371022	
2119688	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P370818	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LakeMyakka(Upper)

Collection Date/Time: 09/16/2019 09:55

Field ID: G3SD0133

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2119683	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P370834	
	EPA 300.0 Rev. 2.1	Chloride	15	A	mg Cl/L	P371124	
		Sulfate	54	A	mg SO4/L	P371128	
	SM 2120 B	Color (true)	270		PCU	P370939	
	SM 2320 B-97	Total Alkalinity	40		mg CaCO3/L	P371113	
	SM 2540 C-97	TDS	201		mg/L	P371457	
	SM 2540 D-97	TSS	4	I	mg/L	P371390	
	SM 4500 F-C-97	Fluoride	0.21		mg F/L	P371117	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.070		mg N/L	P370993	
2119684	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P370967	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.087		mg N/L	P370860	
	EPA 365.1 Rev. 2.0	Total-P	0.50		mg P/L	P370980	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P371022	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.43		mg P/L	P370818	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P370834

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371124

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371128

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371226

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370993

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370967

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370859

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370860

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370980

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370981

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370818

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

Reference Method: EPA 8321B
Batch ID: P370771

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
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCP	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: P370917

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P370939

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P370942

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P371113

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

Reference Method: SM 2540 C-97
Batch ID: P371455

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P371457

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P371388

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P371390

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P371117

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P371022

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: P371124

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371128

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371226

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370993

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370967

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370859

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370860

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370980

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370981

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.4		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P370818

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.4		P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P370771

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	148		P	40 - 160
Acetaminophen	76.0		P	30 - 160
Acetamiprid	95.9		P	40 - 160
Afidopyropen	101		P	40 - 160
Bentazon	125		P	30 - 160
Benzovindiflupyr	94.1		P	40 - 160
Carbamazepine	103		P	40 - 160
Clothianidin	90.9		P	40 - 160
Dinotefuran	88.3		P	40 - 160
Diuron	107		P	40 - 160
Fenuron	101		P	40 - 160
Fluridone	97.3		P	40 - 160
Hydrocodone	93.1		P	40 - 160
Ibuprofen	96.4		P	30 - 160
Imazapyr	93.2		P	40 - 160
Imidacloprid	99.5		P	40 - 160
Linuron	84.6		P	40 - 160
Mandestrobin	92.2		P	40 - 160
MCPP	146		P	40 - 160
Naproxen	96.9		P	40 - 160
Primidone	93.5		P	40 - 160
Pyraclostrobin	91.9		P	30 - 160
Thiamethoxam	90.7		P	40 - 160
Tolfenpyrad	73.2		P	40 - 160
Triclopyr	120		P	30 - 160

Reference Method: EPA 8321B
 Batch ID: P370917

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	74.5		P	40 - 150
AMPA	126		P	40 - 150
Endothall	145		P	40 - 150
Glufosinate	128		P	40 - 150
Glyphosate	126		P	40 - 140
Sucralose	138		P	40 - 150

Reference Method: SM 2120 B
 Batch ID: P370939

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P370942

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

Reference Method: SM 2320 B-97
Batch ID: P371113

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P371117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P371022

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371124

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119683	Chloride	99.2		P	90 - 110
2119797	Chloride	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119797	Sulfate	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2120952	Sulfate	101		P	90 - 110
2121005	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119666	Ammonia-N	99.2	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370859

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119663	NO2NO3-N	100	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119720	NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119660	Total-P	98.1	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370981

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119715	Total-P	97.4	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370818

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119808	O-Phosphate-P	97.2	98.4	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P370771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119072	2,4-D	141	141	P/P	40 - 160
2119072	Acetaminophen	88.5	86.5	P/P	30 - 160
2119072	Acetamiprid	110	100	P/P	40 - 160
2119072	Afidopyropen	109	93.4	P/P	40 - 160
2119072	Bentazon	109	101	P/P	30 - 160
2119072	Benzovindiflupyr	96.0	93.5	P/P	40 - 160
2119072	Carbamazepine	108	102	P/P	40 - 160
2119072	Clothianidin	102	97.1	P/P	40 - 160
2119072	Dinotefuran	103	101	P/P	40 - 160
2119072	Diuron	106	103	P/P	40 - 160
2119072	Fenuron	100	98.4	P/P	40 - 160
2119072	Fluridone	94.4	92.7	P/P	40 - 160
2119072	Hydrocodone	103	95.6	P/P	40 - 160
2119072	Ibuprofen	92.9	93.2	P/P	30 - 160
2119072	Imazapyr	112	103	P/P	40 - 160
2119072	Imidacloprid	124	136	P/P	40 - 160
2119072	Linuron	82.3	81.0	P/P	40 - 160
2119072	Mandestrobin	95.2	95.3	P/P	40 - 160
2119072	MCP	151	147	P/P	40 - 160
2119072	Naproxen	97.8	95.8	P/P	40 - 160
2119072	Primidone	86.4	88.8	P/P	40 - 160
2119072	Pyraclostrobin	91.3	92.0	P/P	30 - 160
2119072	Thiamethoxam	118	115	P/P	40 - 160
2119072	Tolfenpyrad	71.1	73.6	P/P	40 - 160
2119072	Triclopyr	111	122	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P370917

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119620	Acesulfame K	60.3	55.1	P/P	40 - 150
2119620	AMPA	115	108	P/P	40 - 150
2119620	Endothall	115	105	P/P	40 - 150
2119620	Glufosinate	115	116	P/P	40 - 150
2119620	Glyphosate	111	110	P/P	40 - 140
2119620	Sucralose	147	133	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P371117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2120409	Fluoride	96.9	95.4	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P371022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2119672	Organic Carbon	103	98.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P370834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119719	Turbidity	10.7	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119683	Chloride	1.08	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119683	Sulfate	1.69	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120952	Sulfate	1.11	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119666	Ammonia-N	0.413	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119672	Kjeldahl Nitrogen	0.757	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119663	NO2NO3-N	0.464	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119720	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119660	Total-P	0.383	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119715	Total-P	1.94	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370818

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119808	O-Phosphate-P	1.23	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P370771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119072	2,4-D	0.219	Spike	P	0 - 30
2119072	Acetaminophen	2.37	Spike	P	0 - 30
2119072	Acetamiprid	8.84	Spike	P	0 - 30
2119072	Afidopyrophen	15.0	Spike	P	0 - 30
2119072	Bentazon	7.30	Spike	P	0 - 30
2119072	Benzovindiflupyr	2.61	Spike	P	0 - 30
2119072	Carbamazepine	5.56	Spike	P	0 - 30
2119072	Clothianidin	5.27	Spike	P	0 - 30
2119072	Dinotefuran	2.02	Spike	P	0 - 30
2119072	Diuron	2.37	Spike	P	0 - 30
2119072	Fenuron	1.65	Spike	P	0 - 30
2119072	Fluridone	1.79	Spike	P	0 - 30
2119072	Hydrocodone	7.85	Spike	P	0 - 30
2119072	Ibuprofen	0.280	Spike	P	0 - 30
2119072	Imazapyr	8.42	Spike	P	0 - 30
2119072	Imidacloprid	6.52	Spike	P	0 - 30
2119072	Linuron	1.66	Spike	P	0 - 30
2119072	Mandestrobin	0.115	Spike	P	0 - 30
2119072	MCPP	2.13	Spike	P	0 - 30
2119072	Naproxen	2.00	Spike	P	0 - 30
2119072	Primidone	2.79	Spike	P	0 - 30
2119072	Pyraclostrobin	0.692	Spike	P	0 - 30
2119072	Thiamethoxam	2.87	Spike	P	0 - 30
2119072	Tolfenpyrad	3.55	Spike	P	0 - 30
2119072	Triclopyr	9.27	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P370917

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119620	Acesulfame K	9.13	Spike	P	0 - 30
2119620	AMPA	6.30	Spike	P	0 - 30
2119620	Endothall	9.18	Spike	P	0 - 30
2119620	Glufosinate	0.610	Spike	P	0 - 30
2119620	Glyphosate	0.974	Spike	P	0 - 30
2119620	Sucralose	9.12	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P370939

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119574	Color (true)	0.555	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P370942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119665	Color (true)	1.34	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P371113

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120409	Total Alkalinity	1.95	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P371455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119562	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P371457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119662	TDS	9.23	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P371117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120409	Fluoride	1.47	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P371022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2119672	Organic Carbon	2.61	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: 2119694
Field Sample ID: G3SD0083

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	146	P	30 - 160
EPA 8321B	Acetaminophen-d4	66.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	79.2	P	30 - 160
EPA 8321B	Diuron-d6	78.1	P	30 - 160
EPA 8321B	Endothall-d6	89.2	P	30 - 160
EPA 8321B	Endothall-d6	89.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	131	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	131	P	30 - 160
EPA 8321B	Ibuprofen-d3	89.3	P	30 - 160
EPA 8321B	Primidone-d5	90.0	P	30 - 160
EPA 8321B	Sucralose-d6	117	P	30 - 160
EPA 8321B	Sucralose-d6	117	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94268

Included Lab Sample IDs: 2119680, 2119683, 2119686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Sulfate	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94279

Included Lab Sample IDs: 2119682, 2119685, 2119688

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94291

Included Lab Sample IDs: 2119680, 2119683, 2119686

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94302

Included Lab Sample IDs: 2119681, 2119684, 2119687

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

Reference Method: SM 2120 B

Run ID: A94335

Included Lab Sample IDs: 2119680, 2119683, 2119686

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94340

Included Lab Sample IDs: 2119681, 2119684, 2119687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A94349

Included Lab Sample IDs: 2119681, 2119684, 2119687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	95.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94380

Included Lab Sample IDs: 2119681, 2119684

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.4	98.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A94398

Included Lab Sample IDs: 2119680, 2119683, 2119686

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

Reference Method: SM 4500 F-C-97

Run ID: A94398

Included Lab Sample IDs: 2119680, 2119683, 2119686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94410

Included Lab Sample IDs: 2119694

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.7	114	P/P	50 - 150
Acetaminophen	114	115	P/P	60 - 160
Acetamiprid	113	115	P/P	50 - 150
Afidopyropen	110	101	P/P	50 - 150
Bentazon	117	111	P/P	50 - 160
Benzovindiflupyr	112	112	P/P	50 - 150
Carbamazepine	107	104	P/P	60 - 150
Clothianidin	105	102	P/P	60 - 150
Dinotefuran	109	103	P/P	50 - 150
Diuron	112	112	P/P	60 - 150
Fenuron	107	110	P/P	60 - 150
Fluridone	113	112	P/P	60 - 160
Hydrocodone	112	112	P/P	60 - 150
Ibuprofen	90.5	121	P/P	50 - 160
Imazapyr	97.7	106	P/P	50 - 150
Imidacloprid	98.6	96.0	P/P	60 - 150
Linuron	104	105	P/P	60 - 150
Mandestrobin	108	113	P/P	50 - 150
MCP	96.7	104	P/P	50 - 150
Naproxen	113	87.7	P/P	50 - 160
Primidone	105	102	P/P	60 - 150
Pyraclostrobin	120	122	P/P	60 - 150
Thiamethoxam	104	98.6	P/P	50 - 150
Tolfenpyrad	121	127	P/P	60 - 150
Triclopyr	96.5	108	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94412

Included Lab Sample IDs: 2119681, 2119684, 2119687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.8	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94415

Included Lab Sample IDs: 2119687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	98.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94421

Included Lab Sample IDs: 2119694

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	116	120	P/P	60 - 160
Glufosinate	107	124	P/P	60 - 160
Glyphosate	134	135	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A94423

Included Lab Sample IDs: 2119694

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	158	60.0	P/P	60 - 160
Endothall	138	134	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94452

Included Lab Sample IDs: 2119680

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

Reference Method: EPA 8321B

Run ID: A94533

Included Lab Sample IDs: 2119694

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	138	131	P/P	60 - 160

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					10.7	
EPA 300.0 Rev. 2.1	Chloride	98.3	99.2	99.8		1.08	
	Sulfate	99.5	102			1.69	
	Sulfate	99.9	101	100		1.11	
	Ammonia-N	97.7	99.2	99.7			0.413
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103					0.757
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	100	99.6			0.464
	NO2NO3-N	99.5	99.0	99.0			0.0
EPA 365.1 Rev. 2.0	Total-P	97.7	98.1	97.6			0.383
	Total-P	96.4	97.4	99.4			1.94
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	97.2	98.4			1.23
EPA 8321B	2,4-D	148	141	141			0.219
	Acesulfame K	74.5	60.3	55.1			9.13
	Acetaminophen	76.0	88.5	86.5			2.37
	Acetamiprid	95.9	110	100			8.84
	Afidopyropen	101	109	93.4			15.0
	AMPA	126	115	108			6.30
	Bentazon	125	109	101			7.30
	Benzovindiflupyr	94.1	96.0	93.5			2.61
	Carbamazepine	103	108	102			5.56
	Clothianidin	90.9	102	97.1			5.27
	Dinotefuran	88.3	103	101			2.02
	Diuron	107	106	103			2.37
	Endothall	145	115	105			9.18
	Fenuron	101	100	98.4			1.65
	Fluridone	97.3	94.4	92.7			1.79
	Glufosinate	128	115	116			0.610
	Glyphosate	126	111	110			0.974
	Hydrocodone	93.1	103	95.6			7.85
	Ibuprofen	96.4	92.9	93.2			0.280
	Imazapyr	93.2	112	103			8.42
	Imidacloprid	99.5	124	136			6.52
	Linuron	84.6	82.3	81.0			1.66
	Mandestrobin	92.2	95.2	95.3			0.115
	MCPPP	146	151	147			2.13
	Naproxen	96.9	97.8	95.8			2.00
	Primidone	93.5	86.4	88.8			2.79
	Pyraclostrobin	91.9	91.3	92.0			0.692
	Sucralose	138	147	133			9.12
	Thiamethoxam	90.7	118	115			2.87
	Tolfenpyrad	73.2	71.1	73.6			3.55
	Triclopyr	120	111	122			9.27
SM 2120 B	Color (true)	101				0.555	
	Color (true)	102				1.34	
SM 2320 B-97	Total Alkalinity	103				1.95	
SM 2540 C-97	TDS					0.0	
	TDS					9.23	
SM 4500 F-C-97	Fluoride	97.2	96.9	95.4			1.47
SM 5310 B-00	Organic Carbon	100	103	98.8			2.61

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
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Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2119680, 2119683, 2119686
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2119680, 2119683, 2119686
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2119680, 2119683, 2119686
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2119681, 2119684, 2119687
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2119681, 2119684, 2119687
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2119681, 2119684, 2119687
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2119681, 2119684, 2119687
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2119682, 2119685, 2119688
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2119694
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2119694
SM 2120 B / E31780	True Color measured at 450 nm	2119680, 2119683, 2119686
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2119680, 2119683, 2119686
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2119680, 2119683, 2119686
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2119680, 2119683, 2119686
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2119680, 2119683, 2119686
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2119681, 2119684, 2119687

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	09/17/2019			09/17/2019 15:16	Samantha Davila	2119680, 2119683, 2119686
EPA 300.0 Rev. 2.1	09/17/2019			09/20/2019 17:05	Jhamieka S. Greenwood	2119683
	09/17/2019			09/20/2019 18:18	Jhamieka S. Greenwood	2119680
	09/17/2019			09/20/2019 18:30	Jhamieka S. Greenwood	2119686
	09/17/2019			09/23/2019 20:20	Jhamieka S. Greenwood	2119680
EPA 350.1 Rev. 2.0	09/17/2019			09/19/2019 11:58	Ping Hua	2119681
	09/17/2019			09/19/2019 11:59	Ping Hua	2119684
	09/17/2019			09/19/2019 12:01	Ping Hua	2119687
EPA 351.2 Rev. 2.0	09/17/2019	09/19/2019 14:00	Sima Feizi	09/20/2019 17:14	Julia Storbeck	2119681
	09/17/2019	09/19/2019 14:00	Sima Feizi	09/20/2019 17:16	Julia Storbeck	2119684
	09/17/2019	09/19/2019 14:00	Sima Feizi	09/20/2019 17:17	Julia Storbeck	2119687
EPA 353.2 Rev. 2.0	09/17/2019			09/18/2019 10:06	Beverly Y. Sanders	2119681
	09/17/2019			09/18/2019 10:19	Beverly Y. Sanders	2119684
	09/17/2019			09/18/2019 10:21	Beverly Y. Sanders	2119687
EPA 365.1 Rev. 2.0	09/17/2019	09/19/2019 14:14	Lipi Saha	09/20/2019 12:22	Rosalyn Ballman	2119681
	09/17/2019	09/19/2019 14:14	Lipi Saha	09/20/2019 12:23	Rosalyn Ballman	2119684
	09/17/2019	09/19/2019 14:14	Lipi Saha	09/20/2019 16:46	Rosalyn Ballman	2119687
EPA 365.1 Rev. 2.0 dissolved	09/17/2019			09/17/2019 15:37	Jhamieka S. Greenwood	2119688
	09/17/2019			09/17/2019 15:41	Jhamieka S. Greenwood	2119682
	09/17/2019			09/17/2019 15:43	Jhamieka S. Greenwood	2119685
EPA 8321B	09/17/2019	09/18/2019 12:00	Hoor Shaik	09/19/2019 05:36	Juyoung Kim	2119694
	09/17/2019	09/18/2019 12:00	Hoor Shaik	09/19/2019 16:52	Juyoung Kim	2119694
	09/17/2019	09/19/2019 10:30	Rebecca Ware	09/19/2019 11:50	Rebecca Ware	2119694
	09/17/2019	09/19/2019 10:30	Rebecca Ware	09/20/2019 11:14	Rebecca Ware	2119694
	09/17/2019	09/19/2019 10:30	Rebecca Ware	09/25/2019 16:58	Rebecca Ware	2119694
SM 2120 B	09/17/2019			09/17/2019 18:45	Madeline Funaro	2119686
	09/17/2019			09/17/2019 19:01	Madeline Funaro	2119680, 2119683
SM 2320 B-97	09/17/2019			09/20/2019 08:02	Dale L. Simmons	2119680
	09/17/2019			09/20/2019 08:15	Dale L. Simmons	2119683
	09/17/2019			09/20/2019 08:29	Dale L. Simmons	2119686
SM 2540 C-97	09/17/2019			09/20/2019 15:02	Yijie Li	2119680, 2119683, 2119686
SM 2540 D-97	09/17/2019			09/20/2019 15:02	Yijie Li	2119680, 2119683, 2119686
SM 4500 F-C-97	09/17/2019			09/20/2019 08:02	Dale L. Simmons	2119680
	09/17/2019			09/20/2019 08:15	Dale L. Simmons	2119683
	09/17/2019			09/20/2019 08:29	Dale L. Simmons	2119686
SM 5310 B-00	09/17/2019			09/19/2019 01:29	Madeline Funaro	2119681
	09/17/2019			09/19/2019 01:41	Madeline Funaro	2119684
	09/17/2019			09/19/2019 01:53	Madeline Funaro	2119687