

Chemical Analysis Report

SW-DIST-2019-10-15-01

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

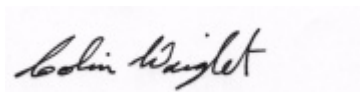
Event Description: **SMP: Cedar, Mocassin**
Request ID: **RQ-2019-10-07-07**
Customer: **SW-DIST**
Project ID: **SMP**

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

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 04-NOV-2019 15:24

A handwritten signature in black ink, appearing to read "Colin Wright", is shown on a light-colored background.

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: Cedar Creek above Patricia Ave

Collection Date/Time: 10/14/2019 12:50

Field ID: G5SW0147

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2127884	EPA 180.1 Rev. 2.0	Turbidity	24		NTU	P372503	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P373338	
		Sulfate	21		mg SO4/L	P373247	
	SM 2120 B	Color (true)	40		PCU	P372528	
	SM 2320 B-97	Total Alkalinity	126		mg CaCO3/L	P372877	
	SM 2540 C-97	TDS	360	A	mg/L	P373300	
	SM 2540 D-97	TSS	22	A	mg/L	P373255	
	SM 4500 F-C-97	Fluoride	0.34		mg F/L	P372881	
2127885	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P372776	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P372578	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P372731	
	EPA 365.1 Rev. 2.0	Total-P	0.28		mg P/L	P372580	
	SM 5310 B-00	Organic Carbon	9.4		mg C/L	P372778	
2127886	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.099		mg P/L	P372516	
2127913	EPA 8321B	2,4-D	0.0026	I	ug/L	P372475	
		Acesulfame K**	0.10	U	ug/L	P372361	
		AMPA**	0.74		ug/L	P372361	
		Sucralose**	2.2		ug/L	P372361	MS
		Acetaminophen**	0.0080	U	ug/L	P372475	
		Acetamiprid**	0.0020	U	ug/L	P372475	
		Endothall**	0.25	U	ug/L	P372361	
		Glufosinate**	0.10	U	ug/L	P372361	
		Glyphosate**	1.1		ug/L	P372361	
		Afidopyropen**	0.0020	UJ	ug/L	P372475	
		Bentazon	0.11		ug/L	P372475	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P372475	
		Carbamazepine**	0.0022	I	ug/L	P372475	
		Clothianidin**	0.0087		ug/L	P372475	
		Dinotefuran**	0.0031	I	ug/L	P372475	
		Diuron	0.0031	I	ug/L	P372475	
		Fenuron	0.016	U	ug/L	P372475	
		Fluridone**	0.041		ug/L	P372475	
		Imazapyr**	0.16		ug/L	P372475	
		Hydrocodone**	0.0020	U	ug/L	P372475	
		Ibuprofen**	0.020	U	ug/L	P372475	
		Imidacloprid	0.054		ug/L	P372475	MS
		Linuron	0.0040	U	ug/L	P372475	
		Mandestrobin**	0.0020	UJ	ug/L	P372475	
		MCPP	0.0020	U	ug/L	P372475	
		Naproxen**	0.0080	U	ug/L	P372475	
		Primidone**	0.015	I	ug/L	P372475	
		Pyraclostrobin**	0.0020	U	ug/L	P372475	
		Thiamethoxam**	0.0046	I	ug/L	P372475	MS

Field ID: G5SW0147

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2127913	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P372475	
		Triclopyr**	0.0040	U	ug/L	P372475	

Ref. Method and Comment:
EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for bentazon and imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Cedar Creek @ Pinehurst (PC09-02)

Collection Date/Time: 10/14/2019 12:35

Field ID: G5SW0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2127915	EPA 8321B	2,4-D	0.0055	I	ug/L	P372475	
		Acesulfame K**	0.10	U	ug/L	P372361	
		AMPA**	0.51		ug/L	P372361	
		Sucralose**	2.6		ug/L	P372361	MS
		Acetaminophen**	0.0080	U	ug/L	P372475	
		Acetamiprid**	0.0020	U	ug/L	P372475	
		Endothall**	0.25	U	ug/L	P372361	
		Glufosinate**	0.10	U	ug/L	P372361	
		Glyphosate**	1.3		ug/L	P372361	
		Afidopyropen**	0.0020	UJ	ug/L	P372475	
		Bentazon	0.10		ug/L	P372475	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P372475	
		Carbamazepine**	0.0025	I	ug/L	P372475	
		Clothianidin**	0.013		ug/L	P372475	
		Dinotefuran**	0.0049	I	ug/L	P372475	
		Diuron	0.0023	I	ug/L	P372475	
		Fenuron	0.016	U	ug/L	P372475	
		Fluridone**	0.026		ug/L	P372475	
		Imazapyr**	0.046		ug/L	P372475	
		Hydrocodone**	0.0020	U	ug/L	P372475	
		Ibuprofen**	0.020	U	ug/L	P372475	
		Imidacloprid	0.11		ug/L	P372475	MS
		Linuron	0.0040	U	ug/L	P372475	
		Mandestrobin**	0.0020	UJ	ug/L	P372475	
		MCPP	0.0020	U	ug/L	P372475	
		Naproxen**	0.0080	U	ug/L	P372475	
		Primidone**	0.019		ug/L	P372475	
		Pyraclostrobin**	0.0020	U	ug/L	P372475	
		Thiamethoxam**	0.0059	I	ug/L	P372475	MS
		Tolfenpyrad**	0.0020	U	ug/L	P372475	
		Triclopyr**	0.0040	U	ug/L	P372475	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for bentazon and imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Moccasin Creek Tidal

Collection Date/Time: 10/14/2019 10:30

Field ID: G1SW0051

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2127914	EPA 8321B	2,4-D	0.010		ug/L	P372475	
		Acesulfame K**	0.10	U	ug/L	P372361	
		AMPA**	1.0	U	ug/L	P372361	
		Sucralose**	0.56		ug/L	P372361	MS
		Acetaminophen**	0.0080	U	ug/L	P372475	
		Acetamiprid**	0.0020	U	ug/L	P372475	
		Endothall**	0.25	U	ug/L	P372361	
		Glufosinate**	1.0	U	ug/L	P372361	
		Glyphosate**	1.7	I	ug/L	P372361	
		Afidopyropen**	0.0020	UJ	ug/L	P372475	
		Bentazon	0.13		ug/L	P372475	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P372475	
		Carbamazepine**	0.0019	I	ug/L	P372475	
		Clothianidin**	0.0040	I	ug/L	P372475	
		Dinotefuran**	0.0020	U	ug/L	P372475	
		Diuron	0.0062	I	ug/L	P372475	
		Fenuron	0.016	U	ug/L	P372475	
		Fluridone**	0.072		ug/L	P372475	
		Imazapyr**	0.19		ug/L	P372475	
		Hydrocodone**	0.0020	U	ug/L	P372475	
		Ibuprofen**	0.020	U	ug/L	P372475	
		Imidacloprid	0.048		ug/L	P372475	MS
		Linuron	0.0040	U	ug/L	P372475	
		Mandestrobin**	0.0020	UJ	ug/L	P372475	
		MCPP	0.0029	I	ug/L	P372475	
		Naproxen**	0.0080	U	ug/L	P372475	
		Primidone**	0.0059	I	ug/L	P372475	
		Pyraclostrobin**	0.0020	U	ug/L	P372475	
		Thiamethoxam**	0.0020	U	ug/L	P372475	MS
		Tolfenpyrad**	0.0020	U	ug/L	P372475	
		Triclopyr**	0.0040	U	ug/L	P372475	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for bentazon and imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: MDL elevated due to matrix interference.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P372503

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373247

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373338

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372776

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372578

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372731

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372580

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372516

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

Reference Method: EPA 8321B
Batch ID: P372361

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P372361

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

Reference Method: EPA 8321B
Batch ID: P372475

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
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: SM 2120 B
Batch ID: P372528

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P372877

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

Reference Method: SM 2540 C-97
Batch ID: P373300

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P373255

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P372881

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P372778

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: P373247

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372776

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372731

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372580

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372516

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

Reference Method: EPA 8321B
Batch ID: P372361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	64.0		P	40 - 150
AMPA	116		P	40 - 150
Endothall	86.6		P	40 - 150
Glufosinate	88.6		P	40 - 150
Glyphosate	86.3		P	40 - 140
Sucralose	112		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P372475

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	147		P	40 - 160
Acetaminophen	94.0		P	30 - 160
Acetamiprid	98.8		P	40 - 160
Afidopyropen	101		P	40 - 160
Bentazon	127		P	30 - 160
Benzovindiflupyr	99.4		P	40 - 160
Carbamazepine	114		P	40 - 160
Clothianidin	102		P	40 - 160
Dinotefuran	91.2		P	40 - 160
Diuron	107		P	40 - 160
Fenuron	106		P	40 - 160
Fluridone	103		P	40 - 160
Hydrocodone	99.1		P	40 - 160
Ibuprofen	92.7		P	30 - 160
Imazapyr	101		P	40 - 160
Imidacloprid	108		P	40 - 160
Linuron	89.0		P	40 - 160
Mandestrobin	111		P	40 - 160
MCPP	159		P	40 - 160
Naproxen	114		P	40 - 160
Primidone	102		P	40 - 160
Pyraclostrobin	95.2		P	30 - 160
Thiamethoxam	105		P	40 - 160
Tolfenpyrad	58.7		P	40 - 160
Triclopyr	139		P	30 - 160

Reference Method: SM 2120 B
Batch ID: P372528

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

Reference Method: SM 2320 B-97
Batch ID: P372877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P372881

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P372778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373247

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127852	Sulfate	103		P	90 - 110
2127925	Sulfate	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127805	Chloride	100		P	90 - 110
2127964	Chloride	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127922	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127855	Kjeldahl Nitrogen	98.1	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2128272	NO2NO3-N	99.5	98.5	P/P	90 - 110
2128272	NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372580

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127806	Total-P	100	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127736	O-Phosphate-P	100	99.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P372361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127774	Acesulfame K	86.6	82.5	P/P	40 - 150
2127774	AMPA	82.9	80.2	P/P	40 - 150
2127774	Endothall	115	101	P/P	40 - 150
2127774	Glufosinate	80.0	75.5	P/P	40 - 150
2127774	Glyphosate	84.8	85.0	P/P	40 - 140
2127774	Sucralose	30.6	26.5	F/F	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P372475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127757	2,4-D	141	152	P/P	40 - 160
2127757	Acetaminophen	95.1	85.5	P/P	30 - 160
2127757	Acetamiprid	110	120	P/P	40 - 160
2127757	Afidopyropen	116	122	P/P	40 - 160
2127757	Benzovindiflupyr	111	114	P/P	40 - 160
2127757	Carbamazepine	121	117	P/P	40 - 160
2127757	Clothianidin	111	111	P/P	40 - 160
2127757	Dinotefuran	109	115	P/P	40 - 160
2127757	Diuron	113	110	P/P	40 - 160
2127757	Fenuron	116	101	P/P	40 - 160
2127757	Fluridone	104	94.7	P/P	40 - 160
2127757	Hydrocodone	110	111	P/P	40 - 160
2127757	Ibuprofen	98.4	92.6	P/P	30 - 160
2127757	Imidacloprid	171	158	F/P	40 - 160
2127757	Linuron	79.3	77.8	P/P	40 - 160
2127757	Mandestrobin	124	117	P/P	40 - 160
2127757	MCCP	149	153	P/P	40 - 160
2127757	Naproxen	91.5	91.2	P/P	40 - 160
2127757	Primidone	98.5	116	P/P	40 - 160
2127757	Pyraclostrobin	107	112	P/P	30 - 160
2127757	Thiamethoxam	158	162	P/F	40 - 160
2127757	Tolfenpyrad	74.6	83.6	P/P	40 - 160
2127757	Triclopyr	111	118	P/P	30 - 160

Reference Method: SM 4500 F-C-97
Batch ID: P372881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2128000	Fluoride	95.3	94.8	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P372778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2127771	Organic Carbon	88.5	93.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P372503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127853	Turbidity	2.26	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373247

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127852	Sulfate	0.249	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P373338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127805	Chloride	0.500	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127922	Ammonia-N	0.480	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127855	Kjeldahl Nitrogen	2.33	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128272	NO2NO3-N	0.298	Spike	P	0 - 15

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372580

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127806	Total-P	3.23	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127736	O-Phosphate-P	0.522	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P372361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127774	Acesulfame K	4.81	Spike	P	0 - 30
2127774	AMPA	3.39	Spike	P	0 - 30
2127774	Endothall	12.9	Spike	P	0 - 30
2127774	Glufosinate	5.79	Spike	P	0 - 30
2127774	Glyphosate	0.133	Spike	P	0 - 30
2127774	Sucralose	14.5	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P372475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127757	2,4-D	6.65	Spike	P	0 - 30
2127757	Acetaminophen	10.6	Spike	P	0 - 30
2127757	Acetamiprid	8.74	Spike	P	0 - 30
2127757	Afidopyropen	4.64	Spike	P	0 - 30
2127757	Bentazon	1.47	Spike	P	0 - 30
2127757	Benzovindiflupyr	2.69	Spike	P	0 - 30
2127757	Carbamazepine	3.36	Spike	P	0 - 30
2127757	Clothianidin	0.124	Spike	P	0 - 30
2127757	Dinotefuran	5.29	Spike	P	0 - 30
2127757	Diuron	1.68	Spike	P	0 - 30
2127757	Fenuron	14.6	Spike	P	0 - 30
2127757	Fluridone	5.60	Spike	P	0 - 30
2127757	Hydrocodone	1.23	Spike	P	0 - 30
2127757	Ibuprofen	6.09	Spike	P	0 - 30
2127757	Imazapyr	1.59	Spike	P	0 - 30
2127757	Imidacloprid	6.50	Spike	P	0 - 30
2127757	Linuron	2.00	Spike	P	0 - 30
2127757	Mandestrobin	5.93	Spike	P	0 - 30
2127757	MCPP	2.87	Spike	P	0 - 30
2127757	Naproxen	0.384	Spike	P	0 - 30
2127757	Primidone	15.9	Spike	P	0 - 30
2127757	Pyraclostrobin	5.10	Spike	P	0 - 30
2127757	Thiamethoxam	2.15	Spike	P	0 - 30
2127757	Tolfenpyrad	11.4	Spike	P	0 - 30
2127757	Triclopyr	6.09	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P372528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127853	Color (true)	5.26	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P372877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128000	Total Alkalinity	0.360	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
 Batch ID: P373300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127884	TDS	3.62	Sample	P	0 - 10

Reference Method: SM 2540 D-97
 Batch ID: P373255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127884	TSS	3.64	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P372881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2128000	Fluoride	0.477	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P372778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2127771	Organic Carbon	2.66	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2127913
Field Sample ID: G5SW0147

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	124	P	30 - 160
EPA 8321B	Acetaminophen-d4	71.2	P	30 - 160
EPA 8321B	Bentazon-d7	68.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	96.4	P	30 - 160
EPA 8321B	Diuron-d6	76.8	P	30 - 160
EPA 8321B	Endothall-d6	113	P	30 - 160
EPA 8321B	Endothall-d6	113	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	67.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	67.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	87.1	P	30 - 160
EPA 8321B	Primidone-d5	79.7	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	30 - 160

Lab Sample ID: 2127914
Field Sample ID: G1SW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	127	P	30 - 160
EPA 8321B	Acetaminophen-d4	75.5	P	30 - 160
EPA 8321B	Bentazon-d7	80.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	105	P	30 - 160
EPA 8321B	Diuron-d6	81.7	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	154	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	154	P	30 - 160
EPA 8321B	Ibuprofen-d3	101	P	30 - 160
EPA 8321B	Primidone-d5	99.0	P	30 - 160
EPA 8321B	Sucralose-d6	38.8	P	30 - 160
EPA 8321B	Sucralose-d6	38.8	P	30 - 160

Lab Sample ID: 2127915
Field Sample ID: G5SW0129

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	146	P	30 - 160
EPA 8321B	Acetaminophen-d4	70.1	P	30 - 160
EPA 8321B	Bentazon-d7	71.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	101	P	30 - 160
EPA 8321B	Diuron-d6	79.3	P	30 - 160
EPA 8321B	Endothall-d6	113	P	30 - 160
EPA 8321B	Endothall-d6	113	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	92.7	P	30 - 160
EPA 8321B	Primidone-d5	99.6	P	30 - 160
EPA 8321B	Sucralose-d6	104	P	30 - 160
EPA 8321B	Sucralose-d6	104	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94965

Included Lab Sample IDs: 2127884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94971

Included Lab Sample IDs: 2127886

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	97.9	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A94979

Included Lab Sample IDs: 2127884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.8	98.3	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A94981

Included Lab Sample IDs: 2127913, 2127914, 2127915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	121	114	P/P	60 - 160
Sucralose	121	121	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A94986

Included Lab Sample IDs: 2127913, 2127914, 2127915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	65.3	97.2	P/P	60 - 160
AMPA	92.0	87.8	P/P	60 - 160
AMPA	97.2	92.0	P/P	60 - 160
Glufosinate	63.1	94.5	P/P	60 - 160
Glufosinate	94.5	97.4	P/P	60 - 160
Glufosinate	97.4	101	P/P	60 - 160
Glyphosate	109	118	P/P	60 - 160
Glyphosate	115	109	P/P	60 - 160
Glyphosate	72.8	115	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A95006

Included Lab Sample IDs: 2127913, 2127914, 2127915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	61.1	70.7	P/P	60 - 160
Acesulfame K	70.7	65.6	P/P	60 - 160
Endothall	105	107	P/P	60 - 160
Endothall	96.9	105	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95031

Included Lab Sample IDs: 2127885

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95041

Included Lab Sample IDs: 2127885

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

Reference Method: EPA 8321B

Run ID: A95046

Included Lab Sample IDs: 2127913, 2127914, 2127915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	107	P/P	50 - 150
2,4-D	107	116	P/P	50 - 150
Acetaminophen	106	104	P/P	60 - 160
Acetaminophen	108	106	P/P	60 - 160
Acetamiprid	106	106	P/P	50 - 150
Acetamiprid	114	106	P/P	50 - 150
Afidopyropen	102	123	P/P	50 - 150
Afidopyropen	123	119	P/P	50 - 150
Bentazon	128	128	P/P	50 - 160
Benzovindiflupyr	113	126	P/P	50 - 150
Benzovindiflupyr	123	113	P/P	50 - 150
Carbamazepine	111	114	P/P	60 - 150
Carbamazepine	112	111	P/P	60 - 150
Clothianidin	101	100	P/P	60 - 150
Clothianidin	100	109	P/P	60 - 150
Dinotefuran	100	100	P/P	50 - 150
Dinotefuran	100	105	P/P	50 - 150
Diuron	116	117	P/P	60 - 150
Diuron	117	114	P/P	60 - 150
Fenuron	103	106	P/P	60 - 150
Fenuron	106	107	P/P	60 - 150
Fluridone	106	112	P/P	60 - 160
Fluridone	112	105	P/P	60 - 160
Hydrocodone	101	97.5	P/P	60 - 150
Hydrocodone	103	101	P/P	60 - 150
Ibuprofen	101	118	P/P	50 - 160
Ibuprofen	118	119	P/P	50 - 160
Imazapyr	103	87.4	P/P	50 - 150
Imazapyr	84.3	103	P/P	50 - 150
Imidacloprid	104	110	P/P	60 - 150
Imidacloprid	110	108	P/P	60 - 150
Linuron	101	103	P/P	60 - 150
Linuron	103	101	P/P	60 - 150
Mandestrobin	125	124	P/P	50 - 150
Mandestrobin	128	125	P/P	50 - 150
MCPP	135	135	P/P	50 - 150
MCPP	135	107	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A95046

Included Lab Sample IDs: 2127913, 2127914, 2127915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Naproxen	151	97.7	P/P	50 - 160
Naproxen	97.7	144	P/P	50 - 160
Primidone	102	91.6	P/P	60 - 150
Primidone	97.9	102	P/P	60 - 150
Pyraclostrobin	113	117	P/P	60 - 150
Pyraclostrobin	116	113	P/P	60 - 150
Thiamethoxam	101	107	P/P	50 - 150
Thiamethoxam	103	101	P/P	50 - 150
Tolfenpyrad	113	114	P/P	60 - 150
Tolfenpyrad	117	113	P/P	60 - 150
Triclopyr	119	127	P/P	50 - 150
Triclopyr	127	115	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95080

Included Lab Sample IDs: 2127885

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A95081

Included Lab Sample IDs: 2127885

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.3	93.3	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A95130

Included Lab Sample IDs: 2127884

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

Reference Method: SM 4500 F-C-97

Run ID: A95130

Included Lab Sample IDs: 2127884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95145

Included Lab Sample IDs: 2127885

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.5	91.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A95282

Included Lab Sample IDs: 2127884

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A95307

Included Lab Sample IDs: 2127884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.7	99.9	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS	
						SMP		
EPA 180.1 Rev. 2.0	Turbidity					2.26		
EPA 300.0 Rev. 2.1	Chloride	99.1	100	99.4		0.500		
	Sulfate	102	103	103		0.249		
EPA 350.1 Rev. 2.0	Ammonia-N	100	102	101			0.480	
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.6	98.1	101			2.33	
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	99.5	99.0	98.5		0.298	RSD
EPA 365.1 Rev. 2.0	Total-P	99.1	100	96.6			3.23	
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	100	99.3			0.522	
EPA 8321B	2,4-D	147	141	152			6.65	
	Acesulfame K	64.0	86.6	82.5			4.81	
	Acetaminophen	94.0	95.1	85.5			10.6	
	Acetamiprid	98.8	110	120			8.74	
	Afidopyropen	101	116	122			4.64	
	AMPA	116	82.9	80.2			3.39	
	Bentazon	127					1.47	
	Benzovindiflupyr	99.4	111	114			2.69	
	Carbamazepine	114	121	117			3.36	
	Clothianidin	102	111	111			0.124	
	Dinotefuran	91.2	109	115			5.29	
	Diuron	107	113	110			1.68	
	Endothall	86.6	115	101			12.9	
	Fenuron	106	116	101			14.6	
	Fluridone	103	104	94.7			5.60	
	Glufosinate	88.6	80.0	75.5			5.79	
	Glyphosate	86.3	84.8	85.0			0.133	
	Hydrocodone	99.1	110	111			1.23	
	Ibuprofen	92.7	98.4	92.6			6.09	
	Imazapyr	101					1.59	
	Imidacloprid	108	171	158			6.50	
	Linuron	89.0	79.3	77.8			2.00	
	Mandestrobin	111	124	117			5.93	
	MCCP	159	149	153			2.87	
	Naproxen	114	91.5	91.2			0.384	
	Primidone	102	98.5	116			15.9	
	Pyraclostrobin	95.2	107	112			5.10	
	Sucralose	112	30.6	26.5			14.5	
	Thiamethoxam	105	158	162			2.15	
	Tolfenpyrad	58.7	74.6	83.6			11.4	
	Triclopyr	139	111	118			6.09	
SM 2120 B	Color (true)	100				5.26		
SM 2320 B-97	Total Alkalinity	105				0.360		
SM 2540 C-97	TDS					3.62		
SM 2540 D-97	TSS					3.64		
SM 4500 F-C-97	Fluoride	94.8	95.3	94.8			0.477	
SM 5310 B-00	Organic Carbon	95.8	88.5	93.6			2.66	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2127884
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2127884

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2127884
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2127885
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2127885
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2127885
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2127885
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2127886
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2127913, 2127914, 2127915
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2127913, 2127914, 2127915
SM 2120 B / E31780	True Color measured at 450 nm	2127884
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2127884
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2127884
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2127884
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2127884
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2127885

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	10/15/2019			10/15/2019 16:32	Samantha Davila	2127884
EPA 300.0 Rev. 2.1	10/15/2019			10/26/2019 05:27	Julia Storbeck	2127884
	10/15/2019			10/28/2019 22:42	Julia Storbeck	2127884
EPA 350.1 Rev. 2.0	10/15/2019			10/18/2019 14:26	Ping Hua	2127885
EPA 351.2 Rev. 2.0	10/15/2019	10/16/2019 12:17	Sima Feizi	10/18/2019 21:22	Jhamieka S. Greenwood	2127885
EPA 353.2 Rev. 2.0	10/15/2019			10/17/2019 11:51	Beverly Y. Sanders	2127885
EPA 365.1 Rev. 2.0	10/15/2019	10/16/2019 10:45	Lipi Saha	10/17/2019 14:40	Rosalyn Ballman	2127885
EPA 365.1 Rev. 2.0 dissolved	10/15/2019			10/15/2019 15:53	Virginia P. Brown	2127886
EPA 8321B	10/15/2019	10/15/2019 14:45	Mohammad Ghaffari	10/15/2019 18:40	Mohammad Ghaffari	2127913
	10/15/2019	10/15/2019 14:45	Mohammad Ghaffari	10/15/2019 19:08	Mohammad Ghaffari	2127914
	10/15/2019	10/15/2019 14:45	Mohammad Ghaffari	10/15/2019 19:22	Mohammad Ghaffari	2127915
	10/15/2019	10/15/2019 14:45	Mohammad Ghaffari	10/15/2019 23:38	Mohammad Ghaffari	2127913
	10/15/2019	10/15/2019 14:45	Mohammad Ghaffari	10/16/2019 00:10	Mohammad Ghaffari	2127915
	10/15/2019	10/15/2019 14:45	Mohammad Ghaffari	10/16/2019 11:20	Mohammad Ghaffari	2127914
	10/15/2019	10/15/2019 14:45	Mohammad Ghaffari	10/16/2019 13:44	Mohammad Ghaffari	2127913
	10/15/2019	10/15/2019 14:45	Mohammad Ghaffari	10/16/2019 14:12	Mohammad Ghaffari	2127914
	10/15/2019	10/15/2019 14:45	Mohammad Ghaffari	10/16/2019 14:26	Mohammad Ghaffari	2127915
	10/15/2019	10/17/2019 10:00	Hoor Shaik	10/18/2019 08:14	Juyoung Kim	2127913
	10/15/2019	10/17/2019 10:00	Hoor Shaik	10/18/2019 09:23	Juyoung Kim	2127914
	10/15/2019	10/17/2019 10:00	Hoor Shaik	10/18/2019 09:58	Juyoung Kim	2127915
	10/15/2019	10/17/2019 10:00	Hoor Shaik	10/18/2019 15:10	Juyoung Kim	2127913
	10/15/2019	10/17/2019 10:00	Hoor Shaik	10/18/2019 15:44	Juyoung Kim	2127914
	10/15/2019	10/17/2019 10:00	Hoor Shaik	10/18/2019 16:19	Juyoung Kim	2127915
SM 2120 B	10/15/2019			10/15/2019 18:16	Madeline Funaro	2127884
SM 2320 B-97	10/15/2019			10/19/2019 08:39	Dale L. Simmons	2127884
SM 2540 C-97	10/15/2019			10/18/2019 15:45	Yijie Li	2127884
SM 2540 D-97	10/15/2019			10/18/2019 15:45	Yijie Li	2127884
SM 4500 F-C-97	10/15/2019			10/19/2019 08:39	Dale L. Simmons	2127884
SM 5310 B-00	10/15/2019			10/18/2019 06:35	Madeline Funaro	2127885