

Chemical Analysis Report

SW-DIST-2020-02-05-02

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

Event Description: **Horsehole - WBID 3703**
Request ID: **RQ-2020-02-03-16**
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: Matthew Bearden

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: Liang Lin, Environmental Administrator

Date Certified: 27-FEB-2020 15:17

A handwritten signature in black ink, appearing to read "Liang Lin", 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: Metals, 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: Horsehole Creek @ 19

Collection Date/Time: 02/04/2020 12:35

Field ID: G1SW0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2154570	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P378398	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P379224	
		Sulfate	2.0		mg SO4/L	P379226	
	SM 2120 B-2011	Color (true)	73		PCU	P378445	
	SM 2320 B-2011	Total Alkalinity	134		mg CaCO3/L	P378557	
	SM 2540 C-2011	TDS	168		mg/L	P378877	
	SM 2540 D-2011	TSS	2	U	mg/L	P378660	
2154571	SM 4500 F-C-2011	Fluoride	0.047	I	mg F/L	P378561	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P378885	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P378670	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P378949	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P378631	
2154572	SM 5310 B-2011	Organic Carbon	13		mg C/L	P378534	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P378354	
2154583	EPA 8321B	2,4-D	0.0020	U	ug/L	P378223	
		Acesulfame K**	0.10	U	ug/L	P378369	MS
		AMPA**	0.10	U	ug/L	P378369	
		Sucralose**	0.022	I	ug/L	P378369	MS
		Acetaminophen**	0.011	I	ug/L	P378223	
		Acetamiprid**	0.0020	U	ug/L	P378223	
		Endothall**	0.25	U	ug/L	P378369	
		Glufosinate**	0.10	U	ug/L	P378369	MS
		Glyphosate**	0.10	UJ	ug/L	P378369	LCS, MS
		Afidopyropen**	0.0020	UJ	ug/L	P378223	
		Bentazon	8.0E-04	U	ug/L	P378223	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P378223	
		Carbamazepine**	8.0E-04	U	ug/L	P378223	
		Clothianidin**	0.0020	U	ug/L	P378223	
		Dinotefuran**	0.0020	U	ug/L	P378223	
		Diuron	0.0020	U	ug/L	P378223	
		Fenuron	0.016	U	ug/L	P378223	
		Fluridone**	8.0E-04	U	ug/L	P378223	
		Imazapyr**	0.0054	I	ug/L	P378223	
		Hydrocodone**	0.0020	U	ug/L	P378223	
		Ibuprofen**	0.020	U	ug/L	P378223	
		Imidacloprid	0.0020	U	ug/L	P378223	
		Linuron	0.0040	U	ug/L	P378223	
		Mandestrobin**	0.0020	UJ	ug/L	P378223	
		MCP	0.0020	U	ug/L	P378223	
		Naproxen**	0.0080	U	ug/L	P378223	
		Primidone**	0.0040	U	ug/L	P378223	
		Pyraclostrobin**	0.0020	U	ug/L	P378223	
		Thiamethoxam**	0.0020	U	ug/L	P378223	

Field ID: G1SW0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2154583	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P378223	
		Triclopyr**	0.0040	U	ug/L	P378223	
2154590	EPA 200.7 Rev. 4.4	Barium	6.1		ug/L	P378297	
		Calcium	44.1		mg/L	P378297	
		Iron	280		ug/L	P378297	
		Magnesium	4.27		mg/L	P378297	
		Potassium	0.30	U	mg/L	P378297	
		Sodium	7.4		mg/L	P378297	
		Zinc	5.0	U	ug/L	P378297	
	EPA 200.8 Rev. 5.4	Aluminum	90		ug/L	P378297	
		Antimony	0.059	I	ug/L	P378297	
		Arsenic	0.50		ug/L	P378297	
		Boron**	15.6		ug/L	P378297	
		Cadmium	0.020	U	ug/L	P378297	
		Chromium	0.58	I	ug/L	P378297	
		Copper	0.40	U	ug/L	P378297	
		Lead	0.20	U	ug/L	P378297	
		Nickel	0.50	U	ug/L	P378297	
		Selenium	0.20	U	ug/L	P378297	
		Silver	0.010	U	ug/L	P378297	
		Thallium	0.10	U	ug/L	P378297	
	SM 2340B	Hardness	128		mg/L	P378297	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378398

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378297

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378297

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379224

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379226

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378885

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378670

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378949

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378631

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378354

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

Reference Method: EPA 8321B
Batch ID: P378223

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P378369

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-2011
Batch ID: P378445

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P378557

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

Reference Method: SM 2540 C-2011
Batch ID: P378877

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P378660

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P378561

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P378534

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	103		P	85 - 115
Iron	101		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	99.9		P	85 - 115
Sodium	101		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	107		P	85 - 115
Arsenic	104		P	85 - 115
Boron	96.7		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	106		P	85 - 115
Copper	101		P	85 - 115
Lead	99.3		P	85 - 115
Nickel	99.0		P	85 - 115
Selenium	102		P	85 - 115
Silver	105		P	85 - 115
Thallium	93.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379224

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379226

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378885

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378670

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378949

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378631

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378354

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

Reference Method: EPA 8321B
Batch ID: P378223

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	121		P	30 - 160
Acetaminophen	85.2		P	30 - 160
Acetamiprid	83.5		P	30 - 160
Afidopyropen	86.4		P	30 - 160
Bentazon	68.5		P	30 - 160
Benzovindiflupyr	80.4		P	30 - 160
Carbamazepine	90.9		P	30 - 160
Clothianidin	83.3		P	30 - 160
Dinotefuran	87.9		P	30 - 160
Diuron	77.7		P	30 - 160
Fenuron	101		P	30 - 160
Fluridone	88.3		P	30 - 160
Hydrocodone	98.0		P	30 - 160
Ibuprofen	80.6		P	30 - 160
Imazapyr	91.5		P	30 - 160
Imidacloprid	95.6		P	30 - 160
Linuron	68.7		P	30 - 160
Mandestrobin	90.8		P	30 - 160
MCPP	126		P	30 - 160
Naproxen	66.8		P	30 - 160
Primidone	94.1		P	30 - 160
Pyraclostrobin	82.7		P	30 - 160
Thiamethoxam	92.6		P	30 - 160
Tolfenpyrad	49.0		P	30 - 160
Triclopyr	116		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P378369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	122		P	40 - 150
AMPA	105		P	40 - 150
Endothall	102		P	40 - 150
Glufosinate	137		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P378369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	149		F	40 - 140
Sucralose	104		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P378445

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.8		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P378557

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P378561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P378534

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154590	Barium	97.1	98.8	P/P	80 - 120
2154590	Calcium	96.0		P	80 - 120
2154590	Iron	97.4	99.3	P/P	80 - 120
2154590	Magnesium	97.6		P	80 - 120
2154590	Potassium	100	102	P/P	80 - 120
2154590	Sodium	96.0		P	80 - 120
2154590	Zinc	98.5	100	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154590	Aluminum	102	101	P/P	80 - 120
2154590	Antimony	112	110	P/P	80 - 120
2154590	Arsenic	107	107	P/P	80 - 120
2154590	Boron	98.2	94.3	P/P	80 - 120
2154590	Cadmium	111	105	P/P	80 - 120
2154590	Chromium	110	109	P/P	80 - 120
2154590	Copper	100	109	P/P	80 - 120
2154590	Lead	103	102	P/P	80 - 120
2154590	Nickel	99.5	99.1	P/P	80 - 120
2154590	Selenium	106	106	P/P	80 - 120
2154590	Silver	107	109	P/P	80 - 120
2154590	Thallium	99.4	99.2	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379224

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154535	Chloride	99.1		P	90 - 110
2154686	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154535	Sulfate	98.6		P	90 - 110
2154686	Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154544	Ammonia-N	99.6	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154527	Kjeldahl Nitrogen	98.0	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P378949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154538	NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P378631

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154571	Total-P	108	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P378354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154415	O-Phosphate-P	97.8	96.8	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P378223

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153997	2,4-D	102	104	P/P	30 - 160
2153997	Acetaminophen	85.6	94.2	P/P	30 - 160
2153997	Acetamiprid	75.6	66.5	P/P	30 - 160
2153997	Afidopyropen	87.7	84.2	P/P	30 - 160
2153997	Bentazon	32.4	33.9	P/P	30 - 160
2153997	Benzovindiflupyr	72.5	73.1	P/P	30 - 160
2153997	Carbamazepine	68.0	60.4	P/P	30 - 160
2153997	Clothianidin	69.4	73.3	P/P	30 - 160
2153997	Dinotefuran	97.1	112	P/P	30 - 160
2153997	Diuron	57.8	61.8	P/P	30 - 160
2153997	Fenuron	63.2	64.8	P/P	30 - 160
2153997	Fluridone	73.9	73.4	P/P	30 - 160
2153997	Hydrocodone	82.3	87.1	P/P	30 - 160
2153997	Ibuprofen	64.7	70.3	P/P	30 - 160
2153997	Imidacloprid	134	130	P/P	30 - 160
2153997	Linuron	60.3	63.1	P/P	30 - 160
2153997	Mandestrobin	80.2	80.1	P/P	30 - 160
2153997	MCP	90.1	102	P/P	30 - 160
2153997	Naproxen	71.6	71.2	P/P	30 - 160
2153997	Primidone	78.7	80.2	P/P	30 - 160
2153997	Pyraclostrobin	79.1	84.5	P/P	30 - 160
2153997	Thiamethoxam	105	107	P/P	30 - 160
2153997	Tolfenpyrad	47.3	47.9	P/P	30 - 160
2153997	Triclopyr	88.0	98.9	P/P	30 - 160

Reference Method: EPA 8321B
 Batch ID: P378369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154578	Acesulfame K	37.2	38.2	F/F	40 - 150
2154578	AMPA	102	102	P/P	40 - 150
2154578	Endothall	114	124	P/P	40 - 150
2154578	Glufosinate	173	192	F/F	40 - 150
2154578	Glyphosate	156	172	F/F	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P378369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154578	Sucralose	29.4	32.3	F/F	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P378561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2155025	Fluoride	104	105	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P378534

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154539	Organic Carbon	102		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154534	Turbidity	0.948	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154590	Barium	1.69	Spike	P	0 - 20
2154590	Calcium	1.14	Spike	P	0 - 20
2154590	Iron	1.83	Spike	P	0 - 20
2154590	Magnesium	2.30	Spike	P	0 - 20
2154590	Potassium	1.50	Spike	P	0 - 20
2154590	Sodium	1.44	Spike	P	0 - 20
2154590	Zinc	1.54	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154590	Aluminum	0.404	Spike	P	0 - 20
2154590	Antimony	1.40	Spike	P	0 - 20
2154590	Arsenic	0.213	Spike	P	0 - 20
2154590	Boron	3.49	Spike	P	0 - 20
2154590	Cadmium	4.95	Spike	P	0 - 20
2154590	Chromium	0.805	Spike	P	0 - 20
2154590	Copper	8.19	Spike	P	0 - 20
2154590	Lead	0.916	Spike	P	0 - 20
2154590	Nickel	0.351	Spike	P	0 - 20
2154590	Selenium	0.545	Spike	P	0 - 20
2154590	Silver	1.28	Spike	P	0 - 20
2154590	Thallium	0.196	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154535	Chloride	0.844	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154535	Sulfate	1.33	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154544	Ammonia-N	0.735	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154527	Kjeldahl Nitrogen	2.29	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154538	NO2NO3-N	0.504	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154571	Total-P	1.65	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154415	O-Phosphate-P	0.914	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P378223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153997	2,4-D	1.98	Spike	P	0 - 30
2153997	Acetaminophen	9.58	Spike	P	0 - 30
2153997	Acetamiprid	12.8	Spike	P	0 - 30
2153997	Afidopyropen	4.01	Spike	P	0 - 30
2153997	Bentazon	4.42	Spike	P	0 - 30
2153997	Benzovindiflupyr	0.721	Spike	P	0 - 30
2153997	Carbamazepine	11.9	Spike	P	0 - 30
2153997	Clothianidin	5.42	Spike	P	0 - 30
2153997	Dinotefuran	14.0	Spike	P	0 - 30
2153997	Diuron	6.60	Spike	P	0 - 30
2153997	Fenuron	2.60	Spike	P	0 - 30
2153997	Fluridone	0.627	Spike	P	0 - 30
2153997	Hydrocodone	5.71	Spike	P	0 - 30
2153997	Ibuprofen	8.33	Spike	P	0 - 30
2153997	Imazapyr	9.08	Spike	P	0 - 30
2153997	Imidacloprid	3.33	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P378223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153997	Linuron	4.49	Spike	P	0 - 30
2153997	Mandestrobin	0.0228	Spike	P	0 - 30
2153997	MCP	12.3	Spike	P	0 - 30
2153997	Naproxen	0.539	Spike	P	0 - 30
2153997	Primidone	1.90	Spike	P	0 - 30
2153997	Pyraclostrobin	6.61	Spike	P	0 - 30
2153997	Thiamethoxam	2.03	Spike	P	0 - 30
2153997	Tolfenpyrad	1.12	Spike	P	0 - 30
2153997	Triclopyr	11.6	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P378369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154578	Acesulfame K	2.61	Spike	P	0 - 30
2154578	AMPA	0.111	Spike	P	0 - 30
2154578	Endothall	7.63	Spike	P	0 - 30
2154578	Glufosinate	10.1	Spike	P	0 - 30
2154578	Glyphosate	7.05	Spike	P	0 - 30
2154578	Sucralose	9.25	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P378445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154543	Color (true)	0.150	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P378557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155025	Total Alkalinity	0.119	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P378877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154534	TDS	1.07	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P378561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2155025	Fluoride	0.464	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P378534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154539	Organic Carbon	0.430	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2154583

Field Sample ID: G1SW0103

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	125	P	30 - 160
EPA 8321B	Acetaminophen-d4	114	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.9	P	30 - 160
EPA 8321B	Diuron-d6	85.3	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	78.0	P	30 - 160
EPA 8321B	Primidone-d5	109	P	30 - 160
EPA 8321B	Sucralose-d6	76.2	P	30 - 160
EPA 8321B	Sucralose-d6	76.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97339

Included Lab Sample IDs: 2154572

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.9	96.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97350

Included Lab Sample IDs: 2154570

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A97360

Included Lab Sample IDs: 2154590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	90 - 110
Calcium	99.2	98.5	P/P	90 - 110
Iron	99.5	98.3	P/P	90 - 110
Magnesium	100	100	P/P	90 - 110
Potassium	98.5	98.8	P/P	90 - 110
Sodium	97.7	97.8	P/P	90 - 110
Zinc	98.6	101	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A97363

Included Lab Sample IDs: 2154570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	99.5	P/P	90 - 115

Reference Method: SM 5310 B-2011

Run ID: A97399

Included Lab Sample IDs: 2154571

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

Reference Method: SM 2320 B-2011

Run ID: A97407

Included Lab Sample IDs: 2154570

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

Reference Method: SM 4500 F-C-2011

Run ID: A97407

Included Lab Sample IDs: 2154570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	105	106	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97412

Included Lab Sample IDs: 2154583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	108	90.5	P/P	50 - 150
Acetaminophen	100	98.5	P/P	60 - 160
Acetamiprid	108	103	P/P	50 - 150
Afidopyropen	94.6	110	P/P	50 - 150
Bentazon	97.1	82.4	P/P	50 - 160
Benzovindiflupyr	100	98.6	P/P	50 - 150
Carbamazepine	92.1	100	P/P	60 - 150
Clothianidin	93.7	96.6	P/P	60 - 150
Dinotefuran	103	104	P/P	50 - 150
Diuron	115	112	P/P	60 - 150
Fenuron	103	95.5	P/P	60 - 150
Fluridone	105	108	P/P	60 - 160
Hydrocodone	99.5	97.4	P/P	60 - 150
Ibuprofen	83.8	71.1	P/P	50 - 160
Imazapyr	94.8	92.9	P/P	50 - 150
Imidacloprid	97.1	95.6	P/P	60 - 150
Linuron	96.2	95.0	P/P	60 - 150
Mandestrobin	105	104	P/P	50 - 150
MCPP	89.0	86.0	P/P	50 - 150
Naproxen	98.5	127	P/P	50 - 160
Primidone	92.1	97.9	P/P	60 - 150
Pyraclostrobin	104	95.1	P/P	60 - 150
Thiamethoxam	101	102	P/P	50 - 150
Tolfenpyrad	92.8	93.8	P/P	60 - 150
Triclopyr	97.4	99.1	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A97473

Included Lab Sample IDs: 2154583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	100	67.1	P/P	60 - 160
Endothall	96.4	88.7	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97476

Included Lab Sample IDs: 2154571

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

Reference Method: EPA 8321B

Run ID: A97477

Included Lab Sample IDs: 2154583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	99.1	78.9	P/P	60 - 160
Glufosinate	125	117	P/P	60 - 160
Glyphosate	137	111	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97486

Included Lab Sample IDs: 2154571

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.3	98.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97525

Included Lab Sample IDs: 2154571

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97560

Included Lab Sample IDs: 2154590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	101	P/P	90 - 110
Antimony	105	107	P/P	90 - 110
Arsenic	104	103	P/P	90 - 110
Boron	103	98.9	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Chromium	104	103	P/P	90 - 110
Copper	98.0	97.2	P/P	90 - 110
Lead	97.9	99.7	P/P	90 - 110
Nickel	98.4	97.1	P/P	90 - 110
Selenium	104	105	P/P	90 - 110
Silver	103	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97586

Included Lab Sample IDs: 2154590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	91.7	90.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97638

Included Lab Sample IDs: 2154570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.7	98.2	P/P	90 - 110
Sulfate	98.5	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97643

Included Lab Sample IDs: 2154571

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97796

Included Lab Sample IDs: 2154583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	93.2	97.7	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.948	
EPA 200.7 Rev. 4.4	Barium	101		97.1	98.8			1.69
	Calcium	103		96.0				1.14
	Iron	101		97.4	99.3			1.83
	Magnesium	103		97.6				2.30
	Potassium	99.9		100	102			1.50
	Sodium	101		96.0				1.44
	Zinc	100		98.5	100			1.54
EPA 200.8 Rev. 5.4	Aluminum	101		102	101			0.404
	Antimony	107		112	110			1.40
	Arsenic	104		107	107			0.213
	Boron	96.7		98.2	94.3			3.49
	Cadmium	104		111	105			4.95
	Chromium	106		110	109			0.805
	Copper	101		100	109			8.19
	Lead	99.3		103	102			0.916
	Nickel	99.0		99.5	99.1			0.351
	Selenium	102		106	106			0.545
	Silver	105		107	109			1.28
	Thallium	93.4		99.4	99.2			0.196
EPA 300.0 Rev. 2.1	Chloride	98.2		99.1	101		0.844	
	Sulfate	98.0		98.6	99.1		1.33	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4		99.6	98.8			0.735
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100		98.0	102			2.29
EPA 353.2 Rev. 2.0	NO2NO3-N	100		99.0	99.5			0.504
EPA 365.1 Rev. 2.0	Total-P	103		108	106			1.65
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100		97.8	96.8			0.914
EPA 8321B	2,4-D	121		102	104			1.98
	Acesulfame K	122		37.2	38.2			2.61
	Acetaminophen	85.2		85.6	94.2			9.58
	Acetamiprid	83.5		75.6	66.5			12.8
	Afidopyropen	86.4		87.7	84.2			4.01
	AMPA	105		102	102			0.111
	Bentazon	68.5		32.4	33.9			4.42
	Benzovindiflupyr	80.4		72.5	73.1			0.721
	Carbamazepine	90.9		68.0	60.4			11.9
	Clothianidin	83.3		69.4	73.3			5.42
	Dinotefuran	87.9		97.1	112			14.0
	Diuron	77.7		57.8	61.8			6.60
	Endothall	102		114	124			7.63
	Fenuron	101		63.2	64.8			2.60
	Fluridone	88.3		73.9	73.4			0.627
	Glufosinate	137		192	173			10.1
	Glyphosate	149		156	172			7.05
	Hydrocodone	98.0		82.3	87.1			5.71
	Ibuprofen	80.6		64.7	70.3			8.33
	Imazapyr	91.5						9.08
	Imidacloprid	95.6		134	130			3.33
	Linuron	68.7		60.3	63.1			4.49
	Mandestrobin	90.8		80.2	80.1			0.0228
	MCPP	126		90.1	102			12.3
	Naproxen	66.8		71.6	71.2			0.539
	Primidone	94.1		78.7	80.2			1.90
	Pyraclostrobin	82.7		79.1	84.5			6.61

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Sucralose	104	29.4	32.3			9.25
	Thiamethoxam	92.6	105	107			2.03
	Tolfenpyrad	49.0	47.3	47.9			1.12
	Triclopyr	116	88.0	98.9			11.6
SM 2120 B-2011	Color (true)	98.8				0.150	
SM 2320 B-2011	Total Alkalinity	102				0.119	
SM 2540 C-2011	TDS					1.07	
SM 4500 F-C-2011	Fluoride	102	104	105			0.464
SM 5310 B-2011	Organic Carbon	97.8	102				0.430

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2154570
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2154590
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2154590
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2154570
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2154570
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2154571
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2154571
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2154571
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2154571
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2154572
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2154583
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2154583
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2154570
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2154570
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2154590
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2154570
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2154570
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2154570
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2154571

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	02/05/2020			02/05/2020 16:54	Yen Ta	2154570
EPA 200.7 Rev. 4.4	02/05/2020	02/05/2020 14:40	Elliott D. Healy	02/06/2020 14:40	Betina Topolski	2154590
EPA 200.8 Rev. 5.4	02/05/2020	02/05/2020 14:40	Elliott D. Healy	02/15/2020 04:59	Justin Cutchin	2154590
	02/05/2020	02/05/2020 14:40	Elliott D. Healy	02/17/2020 22:29	Justin Cutchin	2154590
EPA 300.0 Rev. 2.1	02/05/2020			02/19/2020 15:48	Lipi Saha	2154570
EPA 350.1 Rev. 2.0	02/05/2020			02/13/2020 10:21	Ping Hua	2154571
EPA 351.2 Rev. 2.0	02/05/2020	02/11/2020 11:45	Jhamieka S. Greenwood	02/12/2020 12:25	Jhamieka S. Greenwood	2154571
EPA 353.2 Rev. 2.0	02/05/2020			02/12/2020 11:35	Beverly Y. Sanders	2154571
EPA 365.1 Rev. 2.0	02/05/2020	02/10/2020 17:16	Yen Ta	02/18/2020 15:42	Benjamin T. Nordmann	2154571
EPA 365.1 Rev. 2.0 dissolved	02/05/2020			02/05/2020 18:30	Carlos Miranda	2154572
EPA 8321B	02/05/2020	02/05/2020 12:10	Hoor Shaik	02/08/2020 05:49	Juyoung Kim	2154583
	02/05/2020	02/06/2020 11:00	Rebecca Ware	02/07/2020 17:41	Rebecca Ware	2154583
	02/05/2020	02/06/2020 11:00	Rebecca Ware	02/10/2020 12:14	Rebecca Ware	2154583
	02/05/2020	02/06/2020 11:00	Rebecca Ware	02/21/2020 22:48	Rebecca Ware	2154583
SM 2120 B-2011	02/05/2020			02/05/2020 17:31	Madeline Funaro	2154570
SM 2320 B-2011	02/05/2020			02/08/2020 09:04	Dale L. Simmons	2154570
SM 2340B	02/05/2020			02/06/2020 14:40	Betina Topolski	2154590
SM 2540 C-2011	02/05/2020			02/07/2020 17:00	Blanca Fach	2154570
SM 2540 D-2011	02/05/2020			02/07/2020 17:00	Blanca Fach	2154570
SM 4500 F-C-2011	02/05/2020			02/08/2020 09:04	Dale L. Simmons	2154570
SM 5310 B-2011	02/05/2020			02/07/2020 21:57	Madeline Funaro	2154571