

Chemical Analysis Report

SE-DIST-2019-11-20-01

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

Event Description: **SMP-Stuart**
Request ID: **RQ-2019-11-11-17**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 02-JAN-2020 09:56

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: Bessey Creek @ Murphy

Collection Date/Time: 11/19/2019 12:00

Field ID: G2SE0017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137410	EPA 8321B	2,4-D	0.023		ug/L	P374481	
		Acesulfame K**	0.19	I	ug/L	P374550	
		AMPA**	0.10	U	ug/L	P374550	
		Sucralose**	0.88	Q	ug/L	P374550	
		Acetaminophen**	0.0080	U	ug/L	P374481	
		Acetamiprid**	0.0020	U	ug/L	P374481	
		Endothall**	0.25	U	ug/L	P374550	
		Glufosinate**	0.10	U	ug/L	P374550	
		Glyphosate**	1.2		ug/L	P374550	
		Afidopyropen**	0.0020	UJ	ug/L	P374481	
		Bentazon	0.21		ug/L	P374613	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P374481	
		Carbamazepine**	8.0E-04	U	ug/L	P374481	
		Clothianidin**	0.0020	U	ug/L	P374481	
		Dinotefuran**	0.0020	U	ug/L	P374481	
		Diuron	0.0025	I	ug/L	P374481	
		Fenuron	0.016	U	ug/L	P374481	
		Fluridone**	0.0027	I	ug/L	P374481	
		Imazapyr**	0.24		ug/L	P374481	
		Hydrocodone**	0.0020	U	ug/L	P374481	
		Ibuprofen**	0.020	U	ug/L	P374481	
		Imidacloprid	0.021		ug/L	P374481	
		Linuron	0.0040	U	ug/L	P374481	
		Mandestrobin**	0.0020	UJ	ug/L	P374481	
		MCPP	0.0035	I	ug/L	P374481	
		Naproxen**	0.0080	U	ug/L	P374481	
		Primidone**	0.0056	I	ug/L	P374481	
		Pyraclostrobin**	0.0020	U	ug/L	P374481	
		Thiamethoxam**	0.0020	U	ug/L	P374481	
		Tolfenpyrad**	0.0020	U	ug/L	P374481	
		Triclopyr**	0.0040	U	ug/L	P374481	

Ref. Method and Comment:

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

EPA 8321B: Q - Sample analyzed beyond holding time due to technical difficulties.

Sample Location: Warner Creek @ 24th

Collection Date/Time: 11/19/2019 13:10

Field ID: G2SE0038

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137401	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P374541	
	EPA 300.0	Bromide	0.10		mg Br/L	P374771	
	SM 2320 B-97	Total Alkalinity	60	A	mg CaCO3/L	P374899	
	SM 2540 D-97	TSS	2	I	mg/L	P375107	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P374903	
2137402	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P374835	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P374845	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P374698	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P374958	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P374730	
2137403	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P374577	
2137412	EPA 200.7 Rev. 4.4	Iron	120		ug/L	P374612	
		Manganese	3.7	I	ug/L	P374612	
		Zinc	5.0	U	ug/L	P374612	
	EPA 200.8 Rev. 5.4	Aluminum	197		ug/L	P374612	
		Antimony	0.079	I	ug/L	P374612	
		Arsenic	0.54		ug/L	P374612	
		Cadmium	0.020	U	ug/L	P374612	
		Chromium	0.95	I	ug/L	P374612	
		Copper	1.03		ug/L	P374612	
		Lead	0.21	I	ug/L	P374612	
		Nickel	0.50	U	ug/L	P374612	
		Selenium	0.20	U	ug/L	P374612	
		Silver	0.010	U	ug/L	P374612	
		Thallium	0.10	U	ug/L	P374612	

Ref. Method and Comment:

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

Sample Location: Warner Creek @ 24th

Collection Date/Time: 11/19/2019 13:20

Field ID: G2SE0038_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2137398	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P374541	
	EPA 300.0	Bromide	0.099		mg Br/L	P374771	
	SM 2320 B-97	Total Alkalinity	60		mg CaCO3/L	P374899	
	SM 2540 D-97	TSS	3	I	mg/L	P375107	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P374903	
2137399	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P374835	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P374845	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P374698	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P374958	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P374730	
2137400	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P374574	
2137411	EPA 200.7 Rev. 4.4	Iron	120		ug/L	P374612	
		Manganese	3.6	I	ug/L	P374612	
		Zinc	5.0	U	ug/L	P374612	
	EPA 200.8 Rev. 5.4	Aluminum	198		ug/L	P374612	
		Antimony	0.079	I	ug/L	P374612	
		Arsenic	0.55		ug/L	P374612	
		Cadmium	0.020	U	ug/L	P374612	
		Chromium	0.97	I	ug/L	P374612	
		Copper	1.00		ug/L	P374612	
		Lead	0.21	I	ug/L	P374612	
		Nickel	0.50	U	ug/L	P374612	
		Selenium	0.20	U	ug/L	P374612	
		Silver	0.010	U	ug/L	P374612	
		Thallium	0.10	U	ug/L	P374612	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374541

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P374612

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374612

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	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
Batch ID: P374771

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374835

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374845

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374698

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374958

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374574

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374577

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

Reference Method: EPA 8321B
Batch ID: P374481

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
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: EPA 8321B
Batch ID: P374550

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P374550

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P374613

Component	Result	Code	Units
Bentazon	8.0E-04	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P374899

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

Reference Method: SM 2540 D-97
Batch ID: P375107

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P374903

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P374730

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: P374612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	101		P	85 - 115
Manganese	105		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.0		P	85 - 115
Antimony	95.9		P	85 - 115
Arsenic	96.0		P	85 - 115
Cadmium	94.8		P	85 - 115
Chromium	94.7		P	85 - 115
Copper	97.8		P	85 - 115
Lead	95.0		P	85 - 115
Nickel	96.6		P	85 - 115
Selenium	88.9		P	85 - 115
Silver	99.7		P	85 - 115
Thallium	97.9		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P374771

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374835

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374845

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374698

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: P374958

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374574

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374577

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

Reference Method: EPA 8321B
Batch ID: P374481

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	82.9		P	40 - 160
Acetaminophen	79.0		P	30 - 160
Acetamiprid	95.5		P	40 - 160
Afidopyropen	87.2		P	40 - 160
Benzovindiflupyr	85.7		P	40 - 160
Carbamazepine	111		P	40 - 160
Clothianidin	78.7		P	40 - 160
Dinotefuran	75.2		P	40 - 160
Diuron	84.5		P	40 - 160
Fenuron	107		P	40 - 160
Fluridone	98.9		P	40 - 160
Hydrocodone	94.6		P	40 - 160
Ibuprofen	51.2		P	30 - 160
Imazapyr	53.8		P	40 - 160
Imidacloprid	103		P	40 - 160
Linuron	79.0		P	40 - 160
Mandestrobin	100		P	40 - 160
MCPP	80.5		P	40 - 160
Naproxen	60.3		P	40 - 160
Primidone	80.1		P	40 - 160
Pyraclostrobin	85.4		P	30 - 160
Thiamethoxam	98.1		P	40 - 160
Tolfenpyrad	62.2		P	40 - 160
Triclopyr	68.2		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P374550

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	91.1		P	40 - 150
AMPA	145		P	40 - 150
Endothall	98.9		P	40 - 150
Glufosinate	99.0		P	40 - 150
Glyphosate	112		P	40 - 140
Sucralose	121		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P374613

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P374613

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	83.4		P	30 - 160

Reference Method: SM 2320 B-97
Batch ID: P374899

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P374903

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P374730

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	106		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P374612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137204	Iron	99.9		P	80 - 120
2137204	Manganese	102		P	80 - 120
2137204	Zinc	106		P	80 - 120
2137595	Iron	102	99.2	P/P	80 - 120
2137595	Manganese	105	104	P/P	80 - 120
2137595	Zinc	105	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137204	Aluminum	96.5		P	80 - 120
2137204	Antimony	97.0		P	80 - 120
2137204	Arsenic	98.5		P	80 - 120
2137204	Cadmium	93.7		P	80 - 120
2137204	Chromium	93.2		P	80 - 120
2137204	Copper	97.7		P	80 - 120
2137204	Lead	97.5		P	80 - 120
2137204	Nickel	96.9		P	80 - 120
2137204	Selenium	86.4		P	80 - 120
2137204	Silver	98.2		P	80 - 120
2137204	Thallium	106		P	80 - 120
2137595	Aluminum	96.8	97.9	P/P	80 - 120
2137595	Antimony	96.0	97.8	P/P	80 - 120
2137595	Arsenic	96.4	97.7	P/P	80 - 120
2137595	Cadmium	93.5	95.0	P/P	80 - 120
2137595	Chromium	91.5	93.8	P/P	80 - 120
2137595	Copper	98.7	99.9	P/P	80 - 120
2137595	Lead	95.5	96.5	P/P	80 - 120
2137595	Nickel	96.2	98.7	P/P	80 - 120
2137595	Selenium	86.7	88.2	P/P	80 - 120
2137595	Silver	97.1	99.7	P/P	80 - 120
2137595	Thallium	99.1	101	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P374771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136905	Bromide	99.2	97.9	P/P	90 - 110
2137398	Bromide	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137568	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137571	Kjeldahl Nitrogen	104	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137263	NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374958

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137368	Total-P	98.1	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137218	O-Phosphate-P	95.9	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137569	O-Phosphate-P	96.8	99.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P374481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137170	2,4-D	74.5	72.2	P/P	40 - 160
2137170	Acetaminophen	76.1	69.7	P/P	30 - 160
2137170	Acetamiprid	115	103	P/P	40 - 160
2137170	Afidopyropen	108	87.1	P/P	40 - 160
2137170	Benzovindiflupyr	85.5	78.4	P/P	40 - 160
2137170	Carbamazepine	106	90.8	P/P	40 - 160
2137170	Clothianidin	91.8	77.9	P/P	40 - 160
2137170	Dinotefuran	97.7	86.6	P/P	40 - 160
2137170	Diuron	72.1	65.5	P/P	40 - 160
2137170	Fenuron	102	92.8	P/P	40 - 160
2137170	Hydrocodone	98.4	88.5	P/P	40 - 160
2137170	Ibuprofen	54.9	46.9	P/P	30 - 160
2137170	Imazapyr	68.7	50.6	P/P	40 - 160
2137170	Linuron	72.8	62.8	P/P	40 - 160
2137170	Mandestrobin	99.8	88.6	P/P	40 - 160
2137170	MCPP	74.1	67.9	P/P	40 - 160
2137170	Naproxen	54.7	64.1	P/P	40 - 160
2137170	Primidone	91.8	81.3	P/P	40 - 160
2137170	Pyraclostrobin	90.2	79.8	P/P	30 - 160
2137170	Thiamethoxam	140	123	P/P	40 - 160
2137170	Tolfenpyrad	60.3	51.2	P/P	40 - 160
2137170	Triclopyr	63.6	62.6	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P374550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137386	Acesulfame K	113	109	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P374550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137386	AMPA	135	136	P/P	40 - 150
2137386	Endothall	101	136	P/P	40 - 150
2137386	Glufosinate	92.1	86.6	P/P	40 - 150
2137386	Glyphosate	102	103	P/P	40 - 140
2137386	Sucralose	87.4	64.4	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P374903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137401	Fluoride	105	104	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P374730

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2137263	Organic Carbon	102	105	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137420	Turbidity	8.50	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P374612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137595	Iron	2.75	Spike	P	0 - 20
2137595	Manganese	1.03	Spike	P	0 - 20
2137595	Zinc	1.17	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P374612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137595	Aluminum	1.10	Spike	P	0 - 20
2137595	Antimony	1.89	Spike	P	0 - 20
2137595	Arsenic	1.37	Spike	P	0 - 20
2137595	Cadmium	1.63	Spike	P	0 - 20
2137595	Chromium	2.38	Spike	P	0 - 20
2137595	Copper	1.26	Spike	P	0 - 20
2137595	Lead	1.06	Spike	P	0 - 20
2137595	Nickel	2.59	Spike	P	0 - 20
2137595	Selenium	1.71	Spike	P	0 - 20
2137595	Silver	2.71	Spike	P	0 - 20
2137595	Thallium	1.54	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P374771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136905	Bromide	1.12	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137568	Ammonia-N	0.609	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137571	Kjeldahl Nitrogen	0.499	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137263	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137368	Total-P	1.66	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137218	O-Phosphate-P	0.583	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137569	O-Phosphate-P	2.35	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P374481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137170	2,4-D	2.35	Spike	P	0 - 30
2137170	Acetaminophen	8.71	Spike	P	0 - 30
2137170	Acetamiprid	11.5	Spike	P	0 - 30
2137170	Afidopyropen	21.7	Spike	P	0 - 30
2137170	Benzovindiflupyr	8.59	Spike	P	0 - 30
2137170	Carbamazepine	13.5	Spike	P	0 - 30
2137170	Clothianidin	16.4	Spike	P	0 - 30
2137170	Dinotefuran	11.5	Spike	P	0 - 30
2137170	Diuron	8.75	Spike	P	0 - 30
2137170	Fenuron	9.47	Spike	P	0 - 30
2137170	Fluridone	12.1	Spike	P	0 - 30
2137170	Hydrocodone	10.6	Spike	P	0 - 30
2137170	Ibuprofen	15.8	Spike	P	0 - 30
2137170	Imazapyr	7.21	Spike	P	0 - 30
2137170	Imidacloprid	11.2	Spike	P	0 - 30
2137170	Linuron	14.7	Spike	P	0 - 30
2137170	Mandestrobin	11.9	Spike	P	0 - 30
2137170	MCPP	7.96	Spike	P	0 - 30
2137170	Naproxen	15.7	Spike	P	0 - 30
2137170	Primidone	12.1	Spike	P	0 - 30
2137170	Pyraclostrobin	12.2	Spike	P	0 - 30
2137170	Thiamethoxam	12.9	Spike	P	0 - 30
2137170	Tolfenpyrad	16.4	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P374481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137170	Triclopyr	1.52	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P374550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137386	Acesulfame K	3.83	Spike	P	0 - 30
2137386	AMPA	0.769	Spike	P	0 - 30
2137386	Endothall	29.5	Spike	P	0 - 30
2137386	Glufosinate	6.14	Spike	P	0 - 30
2137386	Glyphosate	0.780	Spike	P	0 - 30
2137386	Sucralose	29.7	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P374613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137732	Bentazon	3.15	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P374899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137401	Total Alkalinity	0.214	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-97
Batch ID: P374903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137401	Fluoride	0.984	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P374730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2137263	Organic Carbon	1.54	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2137410
Field Sample ID: G2SE0017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	95.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	82.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	88.5	P	30 - 160
EPA 8321B	Diuron-d6	66.9	P	30 - 160
EPA 8321B	Endothall-d6	106	P	30 - 160
EPA 8321B	Endothall-d6	106	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.0	P	30 - 160
EPA 8321B	Primidone-d5	87.5	P	30 - 160
EPA 8321B	Sucralose-d6	83.5	P	30 - 160
EPA 8321B	Sucralose-d6	83.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95857

Included Lab Sample IDs: 2137398, 2137401

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95869

Included Lab Sample IDs: 2137400, 2137403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.8	99.9	P/P	90 - 110
O-Phosphate-P	99.9	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95909

Included Lab Sample IDs: 2137399, 2137402

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A95921

Included Lab Sample IDs: 2137411, 2137412

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	101	101	P/P	90 - 110
Manganese	106	107	P/P	90 - 110
Zinc	105	106	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A95923

Included Lab Sample IDs: 2137399, 2137402

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	108	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A95927

Included Lab Sample IDs: 2137410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	78.8	77.6	P/P	50 - 150
Acetaminophen	90.7	92.0	P/P	60 - 160
Acetamiprid	99.1	100	P/P	50 - 150
Afidopyropen	92.9	92.3	P/P	50 - 150
Benzovindiflupyr	104	104	P/P	50 - 150
Carbamazepine	109	105	P/P	60 - 150
Clothianidin	84.3	85.5	P/P	60 - 150
Dinotefuran	83.2	79.8	P/P	50 - 150
Diuron	90.5	87.9	P/P	60 - 150
Fenuron	102	101	P/P	60 - 150
Fluridone	104	111	P/P	60 - 160
Hydrocodone	105	99.3	P/P	60 - 150
Ibuprofen	86.0	79.3	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A95927

Included Lab Sample IDs: 2137410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	85.3	86.2	P/P	50 - 150
Imidacloprid	99.3	95.1	P/P	60 - 150
Linuron	86.9	91.3	P/P	60 - 150
Mandestrobin	112	108	P/P	50 - 150
MCPP	75.9	76.1	P/P	50 - 150
Naproxen	100	108	P/P	50 - 160
Primidone	84.1	81.4	P/P	60 - 150
Pyraclostrobin	100	97.5	P/P	60 - 150
Thiamethoxam	102	103	P/P	50 - 150
Tolfenpyrad	75.2	76.5	P/P	60 - 150
Triclopyr	90.7	85.6	P/P	50 - 150

Reference Method: EPA 300.0

Run ID: A95940

Included Lab Sample IDs: 2137398, 2137401

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	104	102	P/P	90 - 110
Bromide	99.6	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A95944

Included Lab Sample IDs: 2137410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	116	100	P/P	60 - 160
Glufosinate	103	106	P/P	60 - 160
Glyphosate	121	106	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95959

Included Lab Sample IDs: 2137399, 2137402

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

Reference Method: EPA 8321B

Run ID: A95967

Included Lab Sample IDs: 2137410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	93.5	96.5	P/P	60 - 160
Endothall	98.5	108	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A95978

Included Lab Sample IDs: 2137398, 2137401

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.4	100	P/P	90 - 110
Total Alkalinity	98.9	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A95978

Included Lab Sample IDs: 2137398, 2137401

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95998

Included Lab Sample IDs: 2137411, 2137412

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.1	100	P/P	90 - 110
Antimony	97.4	96.9	P/P	90 - 110
Arsenic	100	102	P/P	90 - 110
Cadmium	99.5	98.7	P/P	90 - 110
Chromium	101	99.7	P/P	90 - 110
Copper	104	105	P/P	90 - 110
Lead	98.7	99.0	P/P	90 - 110
Nickel	102	103	P/P	90 - 110
Selenium	95.9	96.0	P/P	90 - 110
Silver	103	102	P/P	90 - 110
Thallium	94.9	96.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96013

Included Lab Sample IDs: 2137399, 2137402

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.8	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96060

Included Lab Sample IDs: 2137399, 2137402

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

Reference Method: EPA 8321B

Run ID: A96086

Included Lab Sample IDs: 2137410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	93.1	98.7	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A96534

Included Lab Sample IDs: 2137410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	79.1	86.9	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						8.50	
EPA 200.7 Rev. 4.4	Iron	101	99.9	102	99.2			2.75
	Manganese	105	102	105	104			1.03
	Zinc	104	106	105	104			1.17
EPA 200.8 Rev. 5.4	Aluminum	95.0	96.5	96.8	97.9			1.10
	Antimony	95.9	97.0	96.0	97.8			1.89
	Arsenic	96.0	98.5	96.4	97.7			1.37
	Cadmium	94.8	93.7	93.5	95.0			1.63
	Chromium	94.7	93.2	91.5	93.8			2.38
	Copper	97.8	97.7	98.7	99.9			1.26
	Lead	95.0	97.5	95.5	96.5			1.06
	Nickel	96.6	96.9	96.2	98.7			2.59
	Selenium	88.9	86.4	86.7	88.2			1.71
	Silver	99.7	98.2	97.1	99.7			2.71
	Thallium	97.9	106	99.1	101			1.54
EPA 300.0	Bromide	99.2	99.2	97.9	95.7			1.12
EPA 350.1 Rev. 2.0	Ammonia-N	101	101	101				0.609
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	104	105				0.499
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.5					0.499
EPA 365.1 Rev. 2.0	Total-P	102	98.1	100				1.66
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.8	95.9	96.5				0.583
	O-Phosphate-P	102	96.8	99.1				2.35
EPA 8321B	2,4-D	82.9	74.5	72.2				2.35
	Acesulfame K	91.1	113	109				3.83
	Acetaminophen	79.0	76.1	69.7				8.71
	Acetamiprid	95.5	115	103				11.5
	Afidopyropen	87.2	108	87.1				21.7
	AMPA	145	135	136				0.769
	Bentazon	83.4						3.15
	Benzovindiflupyr	85.7	85.5	78.4				8.59
	Carbamazepine	111	106	90.8				13.5
	Clothianidin	78.7	91.8	77.9				16.4
	Dinotefuran	75.2	97.7	86.6				11.5
	Diuron	84.5	72.1	65.5				8.75
	Endothall	98.9	101	136				29.5
	Fenuron	107	102	92.8				9.47
	Fluridone	98.9						12.1
	Glufosinate	99.0	92.1	86.6				6.14
	Glyphosate	112	102	103				0.780
	Hydrocodone	94.6	98.4	88.5				10.6
	Ibuprofen	51.2	54.9	46.9				15.8
	Imazapyr	53.8	68.7	50.6				7.21
	Imidacloprid	103						11.2
	Linuron	79.0	72.8	62.8				14.7
	Mandestrobin	100	99.8	88.6				11.9
	MCPP	80.5	74.1	67.9				7.96
	Naproxen	60.3	54.7	64.1				15.7
	Primidone	80.1	91.8	81.3				12.1
	Pyraclostrobin	85.4	90.2	79.8				12.2
	Sucralose	121	87.4	64.4				29.7
	Thiamethoxam	98.1	140	123				12.9
	Tolfenpyrad	62.2	60.3	51.2				16.4
	Triclopyr	68.2	63.6	62.6				1.52
SM 2320 B-97	Total Alkalinity	101					0.214	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
SM 4500 F-C-97	Fluoride	98.3	105	104			0.984
SM 5310 B-00	Organic Carbon	106	102	105			1.54

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2137398, 2137401
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2137411, 2137412
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2137411, 2137412
EPA 300.0 / E31780	Bromide in aqueous matrices	2137398, 2137401
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2137399, 2137402
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2137399, 2137402
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2137399, 2137402
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2137399, 2137402
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2137400, 2137403
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2137410
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2137410
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2137398, 2137401
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2137398, 2137401
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2137398, 2137401
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2137399, 2137402

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	11/20/2019			11/20/2019 16:28	Samantha Davila	2137398, 2137401
EPA 200.7 Rev. 4.4	11/20/2019	11/21/2019 15:55	Elliott D. Healy	11/22/2019 13:51	Betina Topolski	2137411
	11/20/2019	11/21/2019 15:55	Elliott D. Healy	11/22/2019 13:58	Betina Topolski	2137412
EPA 200.8 Rev. 5.4	11/20/2019	11/21/2019 15:55	Elliott D. Healy	11/26/2019 23:20	Robert K Palmer	2137411
	11/20/2019	11/21/2019 15:55	Elliott D. Healy	11/26/2019 23:29	Robert K Palmer	2137412
EPA 300.0	11/20/2019			11/22/2019 13:42	Lipi Saha	2137398
	11/20/2019			11/22/2019 18:17	Lipi Saha	2137401
EPA 350.1 Rev. 2.0	11/20/2019			11/25/2019 10:12	Ping Hua	2137399
	11/20/2019			11/25/2019 10:13	Ping Hua	2137402
EPA 351.2 Rev. 2.0	11/20/2019	11/26/2019 12:31	Sima Feizi	11/27/2019 12:43	Jhamieka S. Greenwood	2137399
	11/20/2019	11/26/2019 12:31	Sima Feizi	11/27/2019 12:44	Jhamieka S. Greenwood	2137402
EPA 353.2 Rev. 2.0	11/20/2019			11/22/2019 10:42	Beverly Y. Sanders	2137399
	11/20/2019			11/22/2019 10:43	Beverly Y. Sanders	2137402
EPA 365.1 Rev. 2.0	11/20/2019	11/27/2019 13:48	Yen Ta	12/02/2019 16:07	Benjamin T. Nordmann	2137399
	11/20/2019	11/27/2019 13:48	Yen Ta	12/02/2019 16:08	Benjamin T. Nordmann	2137402
EPA 365.1 Rev. 2.0 dissolved	11/20/2019			11/20/2019 15:10	Ping Hua	2137400
	11/20/2019			11/20/2019 15:38	Ping Hua	2137403
EPA 8321B	11/20/2019	11/21/2019 09:00	Hoor Shaik	11/24/2019 23:58	Juyoung Kim	2137410
	11/20/2019	11/21/2019 09:00	Hoor Shaik	11/25/2019 21:25	Juyoung Kim	2137410
	11/20/2019	11/21/2019 10:30	Rebecca Ware	11/21/2019 13:43	Rebecca Ware	2137410
	11/20/2019	11/21/2019 10:30	Rebecca Ware	11/23/2019 23:52	Rebecca Ware	2137410
	11/20/2019	11/21/2019 10:30	Rebecca Ware	12/23/2019 14:30	Mohammad Ghaffari	2137410
SM 2320 B-97	11/20/2019			11/26/2019 02:00	Dale L. Simmons	2137401
	11/20/2019			11/26/2019 06:09	Dale L. Simmons	2137398
SM 2540 D-97	11/20/2019			11/22/2019 15:21	Yijie Li	2137398, 2137401
SM 4500 F-C-97	11/20/2019			11/26/2019 01:51	Dale L. Simmons	2137401
	11/20/2019			11/26/2019 06:09	Dale L. Simmons	2137398
SM 5310 B-00	11/20/2019			11/22/2019 21:10	Lauren Lees	2137399
	11/20/2019			11/22/2019 21:23	Lauren Lees	2137402