

Chemical Analysis Report

SW-DIST-2022-06-09-02

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

Event Description: **Run 5**
Request ID: **RQ-2022-06-06-16**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben 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: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 06-JUL-2022 11:09



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: Wolf Branch @ 19th Ave NE

Collection Date/Time: 06/08/2022 11:20

Field ID: G1SW0119

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333547	DEP SOP: NU-094-1	Color (true)**	110		PCU	P415004	
	EPA 180.1 Rev. 2.0	Turbidity	6.7		NTU	P414996	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P415412	
		Sulfate	170		mg SO4/L	P415547	
	SM 2320 B-2011	Total Alkalinity	39		mg CaCO3/L	P415496	
	SM 2540 C-2011	TDS	385		mg/L	P415490	
	SM 2540 D-2011	TSS	2	I	mg/L	P415429	
	SM 4500-F- C-2011	Fluoride	0.13	J	mg F/L	P416136	LCS
2333548	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P415584	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P415162	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P415738	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P415185	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P415144	

Ref. Method and Comment:

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

SM 4500-F- C-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Heritage Park Creek

Collection Date/Time: 06/08/2022 12:15

Field ID: G2SW0138

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333549	EPA 180.1 Rev. 2.0	Turbidity	3.5	A	NTU	P414997	
	SM 2320 B-2011	Total Alkalinity	84		mg CaCO3/L	P415497	
	SM 2540 D-2011	TSS	8	I	mg/L	P415436	
	SM 4500-F- C-2011	Fluoride	0.74		mg F/L	P415773	
2333550	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P415587	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P415160	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P415833	
	EPA 365.1 Rev. 2.0	Total-P	0.27		mg P/L	P415184	
	SM 5310 B-2011	Organic Carbon	9.4		mg C/L	P415408	

Ref. Method and Comment:

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

Sample Location: Sims Branch @ Port Redwing

Collection Date/Time: 06/08/2022 10:30

Field ID: G1SW0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333559	EPA 8321B	2,4-D	0.0021	I	ug/L	P414950	
		AMPA	10	U	ug/L	P414936	
		2,4,5-T	0.0040	U	ug/L	P414950	
		Acetaminophen	0.0080	U	ug/L	P414950	
		Endothall	0.25	U	ug/L	P414936	
		Acetamiprid	0.0020	U	ug/L	P414950	
		Glufosinate	10	U	ug/L	P414936	
		Glyphosate	10	U	ug/L	P414936	
		Afidopyropen	0.0020	U	ug/L	P414950	
		Sucralose	1.2		ug/L	P414936	
		Bentazon	0.0053		ug/L	P414950	
		Benzovindiflupyr	0.0020	U	ug/L	P414950	
		Carbamazepine	0.0018	I	ug/L	P414950	
		Clothianidin	0.0020	U	ug/L	P414950	
		Dinotefuran	0.0020	U	ug/L	P414950	
		Diuron	0.0087		ug/L	P414950	
		Fenuron	0.032	U	ug/L	P414950	
		Fluridone	0.0025	I	ug/L	P414950	
		Imazapyr	0.0081	I	ug/L	P414950	
		Hydrocodone	0.0020	U	ug/L	P414950	
		Ibuprofen	0.080	U	ug/L	P414950	
		Imidacloprid	0.0020	U	ug/L	P414950	
		Linuron	0.0040	U	ug/L	P414950	
		Mandestrobin	0.0020	U	ug/L	P414950	
		MCPP	0.0040	U	ug/L	P414950	
		Naproxen	0.0080	U	ug/L	P414950	
		Primidone	0.0065	I	ug/L	P414950	
		Pyraclostrobin	0.0020	U	ug/L	P414950	
		Silvex	0.0040	U	ug/L	P414950	
		Thiamethoxam	0.0020	U	ug/L	P414950	
		Tolfenpyrad	0.0020	U	ug/L	P414950	
		Triclopyr	0.0040	U	ug/L	P414950	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P415004

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414996

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414997

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415412

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415547

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415584

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415587

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415160

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415162

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415738

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415833

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415184

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415185

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

Reference Method: EPA 8321B
Batch ID: P414936

Component	Result	Code	Units
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: EPA 8321B
Batch ID: P414950

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P414950

Component	Result	Code	Units
Mandestrobin	0.0020	U	ug/L
MCP	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011

Batch ID: P415496

Component	Result	Code	Units
Total Alkalinity	1.0	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011

Batch ID: P415497

Component	Result	Code	Units
Total Alkalinity	1.0	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011

Batch ID: P415490

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P415429

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P415436

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P415773

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011

Batch ID: P416136

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P415144

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

Reference Method: SM 5310 B-2011
Batch ID: P415408

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P415004

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414996

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.7		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414997

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415412

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415547

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415584

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415587

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: P415160

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415162

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415738

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415833

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415184

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415185

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

Reference Method: EPA 8321B
Batch ID: P414936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
AMPA	99.7		P	40 - 150
Endothall	96.9		P	40 - 150
Glufosinate	94.7		P	40 - 150
Glyphosate	99.2		P	40 - 150
Sucralose	94.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P414950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.3		P	40 - 150
2,4,5-T	82.6		P	40 - 150
Acetaminophen	81.6		P	30 - 150
Acetamiprid	69.6		P	40 - 150
Afidopyropen	59.1		P	30 - 150
Bentazon	93.8		P	30 - 150
Benzovindiflupyr	52.5		P	40 - 150
Carbamazepine	66.1		P	40 - 150
Clothianidin	76.6		P	40 - 150
Dinotefuran	78.4		P	40 - 150
Diuron	66.8		P	40 - 150
Fenuron	72.1		P	40 - 150
Fluridone	75.0		P	40 - 150
Hydrocodone	75.3		P	40 - 150
Ibuprofen	84.2		P	40 - 150
Imazapyr	84.7		P	40 - 150
Imidacloprid	70.8		P	40 - 150
Linuron	61.3		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P414950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mandestrobin	53.5		P	40 - 150
MCPD	91.7		P	40 - 150
Naproxen	78.9		P	40 - 150
Primidone	81.6		P	40 - 150
Pyraclostrobin	50.9		P	40 - 150
Silvex	75.8		P	40 - 150
Thiamethoxam	73.9		P	40 - 150
Tolfenpyrad	40.5		P	30 - 150
Triclopyr	84.0		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P415496

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P415497

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P415773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P416136

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.2		F	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P415144

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.7		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P415408

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333401	Chloride	98.2		P	90 - 110
2333589	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333771	Sulfate	95.6		P	90 - 110
2334322	Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333518	Ammonia-N	97.6	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333006	Ammonia-N	104	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333485	Kjeldahl Nitrogen	108	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415162

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333334	Kjeldahl Nitrogen	102	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415738

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333519	NO2NO3-N	97.0	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415833

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333550	NO2NO3-N	95.1	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333484	Total-P	94.4	94.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P415185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333659	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P414936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333217	AMPA	113	109	P/P	40 - 150
2333217	Endothall	98.4	95.6	P/P	40 - 150
2333217	Glufosinate	100	108	P/P	40 - 150
2333217	Glyphosate	105	101	P/P	40 - 150
2333217	Sucralose	97.5	96.5	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P414950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333123	2,4-D	121	121	P/P	40 - 150
2333123	2,4,5-T	109	112	P/P	40 - 150
2333123	Acetaminophen	121	123	P/P	30 - 150
2333123	Acetamiprid	75.6	74.9	P/P	40 - 150
2333123	Afidopyropen	63.1	61.5	P/P	30 - 150
2333123	Benzovindiflupyr	57.5	61.6	P/P	40 - 150
2333123	Carbamazepine	91.4	93.5	P/P	40 - 150
2333123	Clothianidin	104	100	P/P	40 - 150
2333123	Dinotefuran	126	124	P/P	40 - 150
2333123	Diuron	80.8	85.3	P/P	40 - 150
2333123	Fenuron	76.9	78.4	P/P	40 - 150
2333123	Fluridone	87.4	85.6	P/P	40 - 150
2333123	Hydrocodone	93.2	98.2	P/P	40 - 150
2333123	Ibuprofen	96.3	92.1	P/P	40 - 150
2333123	Imidacloprid	126	124	P/P	40 - 150
2333123	Linuron	74.7	71.0	P/P	40 - 150
2333123	Mandestrobin	61.1	62.6	P/P	40 - 150
2333123	MCP	131	133	P/P	40 - 150
2333123	Naproxen	113	94.3	P/P	40 - 150
2333123	Primidone	109	106	P/P	40 - 150
2333123	Pyraclostrobin	57.0	57.9	P/P	40 - 150
2333123	Silvex	109	104	P/P	40 - 150
2333123	Thiamethoxam	126	126	P/P	40 - 150
2333123	Tolfenpyrad	45.8	44.6	P/P	30 - 150
2333123	Triclopyr	123	126	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P415773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333620	Fluoride	99.0	99.0	P/P	94 - 104

Reference Method: SM 4500-F- C-2011

Batch ID: P416136

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

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P416136

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333516	Fluoride	96.2	96.9	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P415144

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333482	Organic Carbon	86.0	93.1	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P415408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333622	Organic Carbon	92.0	92.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P415004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333443	Color (true)	5.38	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414996

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333412	Turbidity	6.30	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414997

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333549	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333401	Chloride	0.316	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333771	Sulfate	0.649	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333518	Ammonia-N	0.549	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333006	Ammonia-N	3.41	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333485	Kjeldahl Nitrogen	8.81	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333334	Kjeldahl Nitrogen	1.79	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333519	NO2NO3-N	0.704	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415833

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333550	NO2NO3-N	2.59	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333484	Total-P	0.182	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333659	Total-P	0.803	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P414936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333217	AMPA	3.60	Spike	P	0 - 30
2333217	Endothall	2.90	Spike	P	0 - 30
2333217	Glufosinate	7.30	Spike	P	0 - 30
2333217	Glyphosate	3.56	Spike	P	0 - 30
2333217	Sucralose	1.00	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P414950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333123	2,4-D	0.143	Spike	P	0 - 30
2333123	2,4,5-T	2.94	Spike	P	0 - 30
2333123	Acetaminophen	1.80	Spike	P	0 - 30
2333123	Acetamiprid	0.910	Spike	P	0 - 30
2333123	Afidopyropen	2.55	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P414950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333123	Bentazon	2.42	Spike	P	0 - 30
2333123	Benzovindiflupyr	6.97	Spike	P	0 - 30
2333123	Carbamazepine	1.86	Spike	P	0 - 30
2333123	Clothianidin	2.70	Spike	P	0 - 30
2333123	Dinotefuran	1.81	Spike	P	0 - 30
2333123	Diuron	4.85	Spike	P	0 - 30
2333123	Fenuron	1.95	Spike	P	0 - 30
2333123	Fluridone	1.68	Spike	P	0 - 30
2333123	Hydrocodone	5.26	Spike	P	0 - 30
2333123	Ibuprofen	4.41	Spike	P	0 - 30
2333123	Imazapyr	7.54	Spike	P	0 - 30
2333123	Imidacloprid	0.924	Spike	P	0 - 30
2333123	Linuron	5.09	Spike	P	0 - 30
2333123	Mandestrobin	2.36	Spike	P	0 - 30
2333123	MCPP	1.41	Spike	P	0 - 30
2333123	Naproxen	18.1	Spike	P	0 - 30
2333123	Primidone	3.41	Spike	P	0 - 30
2333123	Pyraclostrobin	1.57	Spike	P	0 - 30
2333123	Silvex	5.21	Spike	P	0 - 30
2333123	Thiamethoxam	0.388	Spike	P	0 - 30
2333123	Tolfenpyrad	2.48	Spike	P	0 - 30
2333123	Triclopyr	1.94	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P415496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333516	Total Alkalinity	0.627	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011

Batch ID: P415497

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333620	Total Alkalinity	0.939	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011

Batch ID: P415490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333231	TDS	3.17	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011

Batch ID: P415773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333620	Fluoride	0.0	Spike	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P416136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333516	Fluoride	0.487	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P415144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333482	Organic Carbon	6.07	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P415408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333622	Organic Carbon	0.416	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2333559

Field Sample ID: G1SW0056

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	112	P	30 - 160
EPA 8321B	Acetaminophen-d4	113	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.0	P	30 - 160
EPA 8321B	Diuron-d6	70.6	P	30 - 160
EPA 8321B	Endothall-d6	85.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	93.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	89.5	P	30 - 160
EPA 8321B	Primidone-d5	96.4	P	30 - 160
EPA 8321B	Sucralose-d6	66.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A112710

Included Lab Sample IDs: 2333547, 2333549

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

Reference Method: DEP SOP: NU-094-1

Run ID: A112716

Included Lab Sample IDs: 2333547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	85 - 115

Reference Method: EPA 8321B

Run ID: A112791

Included Lab Sample IDs: 2333559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	103	P/P	50 - 150
2,4,5-T	106	112	P/P	50 - 150
Acetaminophen	107	107	P/P	60 - 160
Acetamiprid	89.1	89.0	P/P	50 - 150
Afidopyropen	84.3	79.0	P/P	50 - 150
Bentazon	108	108	P/P	50 - 160
Benzovindiflupyr	80.7	78.7	P/P	50 - 150
Carbamazepine	86.7	87.2	P/P	60 - 150
Clothianidin	96.8	100	P/P	60 - 150
Dinotefuran	95.1	93.1	P/P	50 - 150
Diuron	90.2	86.6	P/P	60 - 160
Fenuron	86.1	86.3	P/P	60 - 150
Fluridone	97.2	101	P/P	60 - 160
Hydrocodone	94.4	93.6	P/P	60 - 150
Ibuprofen	99.0	98.7	P/P	50 - 160
Imazapyr	98.7	98.4	P/P	50 - 150
Imidacloprid	90.7	88.4	P/P	60 - 150
Linuron	74.3	77.6	P/P	60 - 150
Mandestrobin	81.2	81.3	P/P	50 - 150
MCPP	112	109	P/P	50 - 150
Naproxen	111	132	P/P	50 - 160
Primidone	96.4	102	P/P	60 - 150
Pyraclostrobin	78.0	78.0	P/P	60 - 150
Silvex	110	106	P/P	50 - 150
Thiamethoxam	91.7	90.9	P/P	50 - 150
Tolfenpyrad	85.6	85.1	P/P	60 - 150
Triclopyr	101	106	P/P	50 - 150

Reference Method: SM 5310 B-2011

Run ID: A112800

Included Lab Sample IDs: 2333548

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A112815
Included Lab Sample IDs: 2333559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	103	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A112816
Included Lab Sample IDs: 2333559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	111	111	P/P	60 - 160
Endothall	110	113	P/P	60 - 160
Glufosinate	103	106	P/P	60 - 160
Glyphosate	101	101	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A112889
Included Lab Sample IDs: 2333548

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.3	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A112925
Included Lab Sample IDs: 2333547

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

Reference Method: SM 5310 B-2011
Run ID: A112926
Included Lab Sample IDs: 2333550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	94.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A112934
Included Lab Sample IDs: 2333548, 2333550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.4	98.6	P/P	90 - 110
Total-P	98.6	99.0	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A112951
Included Lab Sample IDs: 2333547, 2333549

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110
Total Alkalinity	101	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A112976

Included Lab Sample IDs: 2333547

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A112990

Included Lab Sample IDs: 2333548, 2333550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	99.0	P/P	90 - 110
Ammonia-N	98.4	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A112994

Included Lab Sample IDs: 2333550

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113060

Included Lab Sample IDs: 2333548

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	97.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113067

Included Lab Sample IDs: 2333549

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113114

Included Lab Sample IDs: 2333550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	96.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113273

Included Lab Sample IDs: 2333547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	95.2	98.0	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	
DEP SOP: NU-094-1	Color (true)	100				5.38	
EPA 180.1 Rev. 2.0	Turbidity	96.7				6.30	
	Turbidity	97.0				0.0	
EPA 300.0 Rev. 2.1	Chloride	102	98.2	101		0.316	
	Sulfate	97.5	95.6	98.2		0.649	
EPA 350.1 Rev. 2.0	Ammonia-N	97.2	97.6	98.2			0.549
	Ammonia-N	101	104	100			3.41
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	108	97.2			8.81
	Kjeldahl Nitrogen	98.9	102	105			1.79
EPA 353.2 Rev. 2.0	NO2NO3-N	97.5	97.0	98.0			0.704
	NO2NO3-N	97.0	95.1	97.6			2.59
EPA 365.1 Rev. 2.0	Total-P	101	94.4	94.6			0.182
	Total-P	102	102	101			0.803
EPA 8321B	2,4-D	88.3	121	121			0.143
	2,4,5-T	82.6	112	109			2.94
	Acetaminophen	81.6	121	123			1.80
	Acetamiprid	69.6	75.6	74.9			0.910
	Afidopyropen	59.1	63.1	61.5			2.55
	AMPA	99.7	113	109			3.60
	Bentazon	93.8					2.42
	Benzovindiflupyr	52.5	61.6	57.5			6.97
	Carbamazepine	66.1	91.4	93.5			1.86
	Clothianidin	76.6	104	100			2.70
	Dinotefuran	78.4	126	124			1.81
	Diuron	66.8	80.8	85.3			4.85
	Endothall	96.9	98.4	95.6			2.90
	Fenuron	72.1	76.9	78.4			1.95
	Fluridone	75.0	87.4	85.6			1.68
	Glufosinate	94.7	100	108			7.30
	Glyphosate	99.2	105	101			3.56
	Hydrocodone	75.3	93.2	98.2			5.26
	Ibuprofen	84.2	92.1	96.3			4.41
	Imazapyr	84.7					7.54
	Imidacloprid	70.8	126	124			0.924
	Linuron	61.3	74.7	71.0			5.09
	Mandestrobin	53.5	62.6	61.1			2.36
	MCPP	91.7	133	131			1.41
	Naproxen	78.9	94.3	113			18.1
	Primidone	81.6	109	106			3.41
	Pyraclostrobin	50.9	57.9	57.0			1.57
	Silvex	75.8	104	109			5.21
	Sucralose	94.6	97.5	96.5			1.00
	Thiamethoxam	73.9	126	126			0.388
	Tolfenpyrad	40.5	44.6	45.8			2.48
	Triclopyr	84.0	126	123			1.94
SM 2320 B-2011	Total Alkalinity	105				0.627	
	Total Alkalinity	104				0.939	
SM 2540 C-2011	TDS					3.17	
SM 4500-F- C-2011	Fluoride	98.9	99.0	99.0			0.0
	Fluoride	95.2	96.2	96.9			0.487
SM 5310 B-2011	Organic Carbon	92.7	86.0	93.1			6.07
	Organic Carbon	96.0	92.0	92.4			0.416

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2333547
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2333547, 2333549
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2333547
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2333547
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2333548, 2333550
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2333548, 2333550
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2333548, 2333550
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2333548, 2333550
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2333559
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2333547, 2333549
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2333547
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2333547, 2333549
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2333547, 2333549
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2333548, 2333550

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	06/09/2022			06/09/2022 14:58	Samantha L Bates	2333547
EPA 180.1 Rev. 2.0	06/09/2022			06/09/2022 14:01	Khloe J Berg	2333547
	06/09/2022			06/09/2022 14:13	Khloe J Berg	2333549
EPA 300.0 Rev. 2.1	06/09/2022			06/16/2022 09:26	Anna M. Plaviak	2333547
	06/09/2022			06/21/2022 17:22	Anna M. Plaviak	2333547
EPA 350.1 Rev. 2.0	06/09/2022			06/22/2022 14:29	Judith K. Clark	2333548
	06/09/2022			06/22/2022 15:48	Judith K. Clark	2333550
EPA 351.2 Rev. 2.0	06/09/2022	06/16/2022 09:51	Samantha L Bates	06/16/2022 16:00	Alexandra J Mattheus	2333548
	06/09/2022	06/16/2022 09:51	Samantha L Bates	06/20/2022 13:23	Alexandra J Mattheus	2333550
EPA 353.2 Rev. 2.0	06/09/2022			06/24/2022 15:47	Touraj Touran	2333548
	06/09/2022			06/27/2022 14:39	Touraj Touran	2333550
EPA 365.1 Rev. 2.0	06/09/2022	06/15/2022 11:23	Simonne.V. Calhoun	06/20/2022 11:20	James L Waggeberby	2333550
	06/09/2022	06/15/2022 11:23	Simonne.V. Calhoun	06/20/2022 11:34	James L Waggeberby	2333548
EPA 8321B	06/09/2022	06/10/2022 13:00	Hoor Shaik	06/11/2022 20:25	Juyoung Kim	2333559
	06/09/2022	06/13/2022 12:00	Umesh Chiluwal	06/13/2022 20:58	Umesh Chiluwal	2333559
	06/09/2022	06/13/2022 12:00	Umesh Chiluwal	06/14/2022 06:40	Umesh Chiluwal	2333559
	06/09/2022	06/13/2022 12:00	Umesh Chiluwal	06/14/2022 12:05	Umesh Chiluwal	2333559
SM 2320 B-2011	06/09/2022			06/18/2022 20:35	Dale L. Simmons	2333547
	06/09/2022			06/19/2022 02:45	Dale L. Simmons	2333549
SM 2540 C-2011	06/09/2022			06/14/2022 14:14	Yijie Li	2333547
SM 2540 D-2011	06/09/2022			06/14/2022 14:14	Yijie Li	2333547, 2333549
SM 4500-F- C-2011	06/09/2022			06/25/2022 16:23	Dale L. Simmons	2333549
	06/09/2022			07/01/2022 14:51	Sarah A Nixon	2333547
SM 5310 B-2011	06/09/2022			06/14/2022 03:34	Judith K. Clark	2333548
	06/09/2022			06/18/2022 05:16	Khloe J Berg	2333550