

Chemical Analysis Report

SO-DIST-2022-05-17-01

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

Event Description: **2022 SMP: Hendry Cricks**
Request ID: **RQ-2022-05-16-33**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 10-JUN-2022 09:55

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: BEE BRANCH @ LOBLOLLY BAY RD

Collection Date/Time: 05/16/2022 08:40

Field ID: G3SD0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2327324	DEP SOP: NU-094-1	Color (true)**	93		PCU	P413973	
	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P413977	
	EPA 300.0 Rev. 2.1	Chloride	31		mg Cl/L	P414106	
		Sulfate	17		mg SO4/L	P414110	
	SM 2320 B-2011	Total Alkalinity	37		mg CaCO3/L	P414067	
	SM 2540 C-2011	TDS	156	A	mg/L	P414398	
	SM 2540 D-2011	TSS	3	IA	mg/L	P414313	
2327325	SM 4500-F- C-2011	Fluoride	0.086	I	mg F/L	P414070	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P414363	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P414238	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P414276	
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P414054	
2327344	EPA 8321B	SM 5310 B-2011	Organic Carbon	13	mg C/L	P414079	
		Acesulfame K	0.10	U	ug/L	P414088	
		2,4-D	0.0020	U	ug/L	P414017	
		AMPA	0.24	IQ	ug/L	P414088	
		2,4,5-T	0.0040	U	ug/L	P414017	
		Acetaminophen	0.0080	U	ug/L	P414017	
		Endothall	0.25	U	ug/L	P414088	
		Acetamiprid	0.0020	U	ug/L	P414017	
		Glufosinate	0.10	U	ug/L	P414088	
		Glyphosate	0.19	IQ	ug/L	P414088	
		Afidopyropen	0.0020	U	ug/L	P414017	
		Sucralose	0.026	I	ug/L	P414088	
		Bentazon	8.0E-04	U	ug/L	P414017	MS
		Benzovindiflupyr	0.0020	U	ug/L	P414017	
		Carbamazepine	8.0E-04	U	ug/L	P414017	
		Clothianidin	0.0020	U	ug/L	P414017	
		Dinotefuran	0.0020	U	ug/L	P414017	
		Diuron	0.0020	U	ug/L	P414017	
		Fenuron	0.032	U	ug/L	P414017	
		Fluridone	8.0E-04	U	ug/L	P414017	
		Imazapyr	0.0040	U	ug/L	P414017	
		Hydrocodone	0.0020	U	ug/L	P414017	
		Ibuprofen	0.020	U	ug/L	P414017	
		Imidacloprid	0.0044	I	ug/L	P414017	
		Linuron	0.0040	U	ug/L	P414017	
		Mandestrobin	0.0020	U	ug/L	P414017	
		MCPP	0.0040	U	ug/L	P414017	
		Naproxen	0.0080	U	ug/L	P414017	
		Primidone	0.0040	U	ug/L	P414017	
		Pyraclostrobin	0.0020	U	ug/L	P414017	
		Silvex	0.0040	U	ug/L	P414017	
		Thiamethoxam	0.0020	U	ug/L	P414017	

Field ID: G3SD0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2327344	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P414017	
		Triclopyr	0.0040	U	ug/L	P414017	
2327346	EPA 200.7 Rev. 4.4	Calcium	19.5		mg/L	P413983	
		Iron	920		ug/L	P413983	
		Magnesium	4.89		mg/L	P413983	
		Potassium	2.7		mg/L	P413983	
		Sodium	15.0		mg/L	P413983	
		Strontium	554		ug/L	P413983	
		Tin	3.0	U	ug/L	P413983	
		Titanium	0.83	I	ug/L	P413983	
		Vanadium	2.0	U	ug/L	P413983	
		Zinc	5.0	U	ug/L	P413983	
	EPA 200.8 Rev. 5.4	Aluminum	53		ug/L	P413983	
		Antimony	0.057	I	ug/L	P413983	
		Arsenic	0.82		ug/L	P413983	
		Barium	23.0		ug/L	P413983	
		Beryllium	0.010	U	ug/L	P413983	
		Boron**	31.1		ug/L	P413983	
		Cadmium	0.020	U	ug/L	P413983	
		Chromium	0.61	I	ug/L	P413983	
		Cobalt	0.200		ug/L	P413983	
		Copper	0.55	I	ug/L	P413983	
		Lead	0.38	I	ug/L	P413983	
		Manganese	65.9		ug/L	P413983	
		Molybdenum	0.39	I	ug/L	P413983	
		Nickel	0.50	U	ug/L	P413983	
		Selenium	0.20	U	ug/L	P413983	
		Silver	0.010	U	ug/L	P413983	
		Thallium	0.10	U	ug/L	P413983	
	SM 2340 B-2011	Hardness	68.9		mg/L	P413983	

Ref. Method and Comment:

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

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

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample. Q - Sample extracted and analyzed beyond holding time due to technical difficulties.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for manganese are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Bee Branch At CR78

Collection Date/Time: 05/16/2022 09:20

Field ID: G3SD0226

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2327345	EPA 8321B	Acesulfame K	0.10	U	ug/L	P414088	
		2,4-D	0.0033	I	ug/L	P414017	
		AMPA	0.12	IQ	ug/L	P414088	
		2,4,5-T	0.0040	U	ug/L	P414017	
		Acetaminophen	0.0080	U	ug/L	P414017	
		Endothall	0.25	U	ug/L	P414088	
		Acetamiprid	0.0020	U	ug/L	P414017	
		Glufosinate	0.10	U	ug/L	P414088	
		Glyphosate	0.18	IQ	ug/L	P414088	
		Afidopyropen	0.0020	U	ug/L	P414017	
		Sucralose	0.019	I	ug/L	P414088	
		Bentazon	8.5E-04	I	ug/L	P414017	MS
		Benzovindiflupyr	0.0020	U	ug/L	P414017	
		Carbamazepine	8.0E-04	U	ug/L	P414017	
		Clothianidin	0.098		ug/L	P414017	
		Dinotefuran	0.0020	U	ug/L	P414017	
		Diuron	0.0020	U	ug/L	P414017	
		Fenuron	0.032	U	ug/L	P414017	
		Fluridone	8.0E-04	U	ug/L	P414017	
		Imazapyr	0.0040	U	ug/L	P414017	
		Hydrocodone	0.0020	U	ug/L	P414017	
		Ibuprofen	0.020	U	ug/L	P414017	
		Imidacloprid	0.15		ug/L	P414017	
		Linuron	0.0040	U	ug/L	P414017	
		Mandestrobin	0.0020	U	ug/L	P414017	
		MCPP	0.0040	U	ug/L	P414017	
		Naproxen	0.0080	U	ug/L	P414017	
		Primidone	0.0040	U	ug/L	P414017	
		Pyraclostrobin	0.0020	U	ug/L	P414017	
		Silvex	0.0040	U	ug/L	P414017	
		Thiamethoxam	0.48		ug/L	P414017	
		Tolfenpyrad	0.0020	U	ug/L	P414017	
		Triclopyr	0.0040	U	ug/L	P414017	
2327347	EPA 200.7 Rev. 4.4	Calcium	103		mg/L	P413983	
		Iron	670		ug/L	P413983	
		Magnesium	13.7		mg/L	P413983	
		Potassium	11.5		mg/L	P413983	
		Sodium	68.7		mg/L	P413983	
		Strontium	881		ug/L	P413983	
		Tin	6.0	U	ug/L	P413983	
		Titanium	1.5	I	ug/L	P413983	
		Vanadium	2.0	U	ug/L	P413983	
		Zinc	5.0	U	ug/L	P413983	
	EPA 200.8 Rev. 5.4	Aluminum	20		ug/L	P413983	

Field ID: G3SD0226

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2327347	EPA 200.8 Rev. 5.4	Antimony	0.47		ug/L	P413983	
		Arsenic	1.15		ug/L	P413983	
		Barium	30.9		ug/L	P413983	
		Beryllium	0.016	I	ug/L	P413983	
		Boron**	58.1		ug/L	P413983	
		Cadmium	0.020	U	ug/L	P413983	
		Chromium	0.40	U	ug/L	P413983	
		Cobalt	0.237		ug/L	P413983	
		Copper	0.40	U	ug/L	P413983	
		Lead	0.20	U	ug/L	P413983	
		Manganese	12.9		ug/L	P413983	
		Molybdenum	3.67		ug/L	P413983	
		Nickel	3.4		ug/L	P413983	
		Selenium	0.20	U	ug/L	P413983	
		Silver	0.010	U	ug/L	P413983	
		Thallium	0.10	U	ug/L	P413983	
	SM 2340 B-2011	Hardness	313		mg/L	P413983	

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. Q - Sample extracted and analyzed beyond holding time due to technical difficulties.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for manganese are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Jacks Branch At CR78

Collection Date/Time: 05/16/2022 09:45

Field ID: G3SD0227

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2327318	DEP SOP: NU-094-1	Color (true)**	36		PCU	P413972	
	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P413977	
	EPA 300.0 Rev. 2.1	Chloride	140		mg Cl/L	P414106	
		Sulfate	54		mg SO4/L	P414110	
	SM 2320 B-2011	Total Alkalinity	170		mg CaCO3/L	P414067	
	SM 2540 C-2011	TDS	487		mg/L	P414397	
	SM 2540 D-2011	TSS	5	I	mg/L	P414312	
	SM 4500-F- C-2011	Fluoride	0.26		mg F/L	P414070	
2327321	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P414363	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P414238	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P414275	
	EPA 365.1 Rev. 2.0	Total-P	0.067		mg P/L	P414054	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P414078	

Ref. Method and Comment:

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

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

Sample Location: Fort Simmons Branch

Collection Date/Time: 05/16/2022 10:30

Field ID: G3SD0177

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2327319	DEP SOP: NU-094-1	Color (true)**	82		PCU	P413973	
	EPA 180.1 Rev. 2.0	Turbidity	15		NTU	P413977	
	EPA 300.0 Rev. 2.1	Chloride	65		mg Cl/L	P414106	
		Sulfate	57		mg SO4/L	P414110	
	SM 2320 B-2011	Total Alkalinity	234		mg CaCO3/L	P414067	
	SM 2540 C-2011	TDS	444		mg/L	P414397	
	SM 2540 D-2011	TSS	50		mg/L	P414312	
	SM 4500-F- C-2011	Fluoride	0.54		mg F/L	P414070	
2327322	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P414363	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	5.4		mg N/L	P414239	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P414275	
	EPA 365.1 Rev. 2.0	Total-P	2.3		mg P/L	P414552	
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P414078	

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: FortSimmonsBranchAtSR80

Collection Date/Time: 05/16/2022 10:55

Field ID: G3SD0230

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2327320	DEP SOP: NU-094-1	Color (true)**	54	A	PCU	P413973	
	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P413977	
	EPA 300.0 Rev. 2.1	Chloride	87		mg Cl/L	P414106	
		Sulfate	35		mg SO4/L	P414110	
	SM 2320 B-2011	Total Alkalinity	269		mg CaCO3/L	P414067	
	SM 2540 C-2011	TDS	468		mg/L	P414397	
	SM 2540 D-2011	TSS	17		mg/L	P414312	
	SM 4500-F- C-2011	Fluoride	0.52		mg F/L	P414070	
2327323	EPA 350.1 Rev. 2.0	Ammonia-N	0.069		mg N/L	P414363	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.9		mg N/L	P414239	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.069		mg N/L	P414276	
	EPA 365.1 Rev. 2.0	Total-P	0.91		mg P/L	P414552	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P414079	

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P413972

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P413973

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P413977

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P413983

Component	Result	Code	Units
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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P413983

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P414106

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P414110

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414363

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414238

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414239

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414275

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414276

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414054

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414552

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P414017

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	0.020	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	0.0040	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: EPA 8321B

Batch ID: P414088

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 2320 B-2011

Batch ID: P414067

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

Reference Method: SM 2540 C-2011

Batch ID: P414397

Component	Result	Code	Units
TDS	15	U	mg/L

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Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P414398

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P414312

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P414313

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P414070

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P414078

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

Reference Method: SM 5310 B-2011
Batch ID: P414079

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: P413972

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.6		P	85 - 115

Reference Method: DEP SOP: NU-094-1
Batch ID: P413973

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P413977

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.9		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P413983

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	106		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	108		P	85 - 115
Sodium	108		P	85 - 115
Strontium	106		P	85 - 115
Tin	110		P	85 - 115
Titanium	107		P	85 - 115
Vanadium	101		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P413983

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	98.8		P	85 - 115
Barium	103		P	85 - 115
Beryllium	97.3		P	85 - 115
Boron	105		P	85 - 115
Cadmium	99.6		P	85 - 115
Chromium	98.8		P	85 - 115
Cobalt	97.2		P	85 - 115
Copper	95.8		P	85 - 115
Lead	101		P	85 - 115
Manganese	99.5		P	85 - 115
Molybdenum	100		P	85 - 115
Nickel	96.3		P	85 - 115
Selenium	99.1		P	85 - 115
Silver	99.6		P	85 - 115
Thallium	101		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P414106

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P414110

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414363

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414238

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414239

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	106		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414275

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414276

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414054

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414552

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P414017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	71.0		P	40 - 150
2,4,5-T	61.3		P	40 - 150
Acetaminophen	59.2		P	30 - 150
Acetamiprid	91.9		P	40 - 150
Afidopyropen	65.8		P	30 - 150
Bentazon	138		P	30 - 150
Benzovindiflupyr	85.8		P	40 - 150
Carbamazepine	95.5		P	40 - 150
Clothianidin	99.2		P	40 - 150
Dinotefuran	96.6		P	40 - 150
Diuron	81.8		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	71.4		P	40 - 150
Hydrocodone	92.2		P	40 - 150
Ibuprofen	70.8		P	40 - 150
Imazapyr	84.9		P	40 - 150
Imidacloprid	83.8		P	40 - 150
Linuron	68.6		P	40 - 150
Mandestrobin	75.8		P	40 - 150
MCPP	93.6		P	40 - 150
Naproxen	66.4		P	40 - 150
Primidone	90.5		P	40 - 150
Pyraclostrobin	81.1		P	40 - 150
Silvex	56.9		P	40 - 150
Thiamethoxam	97.5		P	40 - 150
Tolfenpyrad	44.6		P	30 - 150
Triclopyr	66.6		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P414088

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	139		P	40 - 150
AMPA	112		P	40 - 150
Endothall	88.7		P	40 - 150
Glufosinate	102		P	40 - 150
Glyphosate	99.3		P	40 - 150
Sucralose	97.9		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P414067

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.7		P	94 - 106

Reference Method: SM 4500-F- C-2011

Batch ID: P414070

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	96 - 104

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P414078

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P414079

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P413983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326982	Calcium	101		P	80 - 120
2326982	Iron	105	104	P/P	80 - 120
2326982	Magnesium	99.7		P	80 - 120
2326982	Potassium	104	104	P/P	80 - 120
2326982	Sodium	105	104	P/P	80 - 120
2326982	Strontium	104	103	P/P	80 - 120
2326982	Tin	106	106	P/P	80 - 120
2326982	Titanium	105	105	P/P	80 - 120
2326982	Vanadium	98.8	98.4	P/P	80 - 120
2326982	Zinc	102	102	P/P	80 - 120
2327131	Calcium	101		P	80 - 120
2327131	Iron	105		P	80 - 120
2327131	Magnesium	102		P	80 - 120
2327131	Potassium	102		P	80 - 120
2327131	Sodium	101		P	80 - 120
2327131	Strontium	104		P	80 - 120
2327131	Tin	103		P	80 - 120
2327131	Titanium	110		P	80 - 120
2327131	Vanadium	99.0		P	80 - 120
2327131	Zinc	98.2		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P413983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326982	Aluminum	98.0	96.9	P/P	80 - 120
2326982	Antimony	100	99.6	P/P	80 - 120
2326982	Arsenic	97.5	97.4	P/P	80 - 120
2326982	Barium	102	101	P/P	80 - 120
2326982	Beryllium	94.9	94.9	P/P	80 - 120
2326982	Boron	103	99.3	P/P	80 - 120
2326982	Cadmium	98.5	96.9	P/P	80 - 120
2326982	Chromium	97.0	95.6	P/P	80 - 120
2326982	Cobalt	96.4	95.7	P/P	80 - 120
2326982	Copper	94.3	93.5	P/P	80 - 120
2326982	Lead	98.9	99.4	P/P	80 - 120
2326982	Manganese	97.1	99.2	P/P	80 - 120
2326982	Molybdenum	101	101	P/P	80 - 120
2326982	Nickel	97.2	97.2	P/P	80 - 120
2326982	Selenium	97.1	97.5	P/P	80 - 120
2326982	Silver	98.3	98.6	P/P	80 - 120
2326982	Thallium	101	102	P/P	80 - 120
2327131	Aluminum	108		P	80 - 120
2327131	Antimony	101		P	80 - 120
2327131	Arsenic	97.8		P	80 - 120
2327131	Barium	102		P	80 - 120
2327131	Beryllium	97.0		P	80 - 120
2327131	Boron	104		P	80 - 120
2327131	Cadmium	99.5		P	80 - 120
2327131	Chromium	102		P	80 - 120
2327131	Cobalt	96.8		P	80 - 120
2327131	Copper	95.5		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P413983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327131	Lead	101		P	80 - 120
2327131	Molybdenum	101		P	80 - 120
2327131	Nickel	97.9		P	80 - 120
2327131	Selenium	96.7		P	80 - 120
2327131	Silver	98.1		P	80 - 120
2327131	Thallium	101		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P414106

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326976	Chloride	102		P	90 - 110
2327287	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P414110

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326976	Sulfate	99.0		P	90 - 110
2327287	Sulfate	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414363

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327259	Ammonia-N	95.0	93.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414239

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327116	Kjeldahl Nitrogen	94.9	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327207	NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327325	NO2NO3-N	97.4	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327259	Total-P	103	97.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P414552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330108	Total-P	104	101	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P414017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327564	2,4-D	80.9	72.4	P/P	40 - 150
2327564	2,4,5-T	69.9	60.1	P/P	40 - 150
2327564	Acetaminophen	65.0	62.9	P/P	30 - 150
2327564	Acetamiprid	90.5	88.3	P/P	40 - 150
2327564	Afidopyropen	61.9	58.4	P/P	30 - 150
2327564	Bentazon	176	143	F/P	30 - 150
2327564	Benzovindiflupyr	100	87.0	P/P	40 - 150
2327564	Carbamazepine	112	101	P/P	40 - 150
2327564	Clothianidin	94.1	85.7	P/P	40 - 150
2327564	Dinotefuran	114	102	P/P	40 - 150
2327564	Diuron	97.3	88.1	P/P	40 - 150
2327564	Fenuron	112	98.0	P/P	40 - 150
2327564	Fluridone	83.4	75.6	P/P	40 - 150
2327564	Hydrocodone	108	98.8	P/P	40 - 150
2327564	Ibuprofen	69.7	62.9	P/P	40 - 150
2327564	Imazapyr	94.5	82.2	P/P	40 - 150
2327564	Imidacloprid	110	96.4	P/P	40 - 150
2327564	Linuron	71.1	67.4	P/P	40 - 150
2327564	Mandestrobin	77.9	73.4	P/P	40 - 150
2327564	MCPP	102	82.2	P/P	40 - 150
2327564	Naproxen	74.7	59.2	P/P	40 - 150
2327564	Primidone	85.3	80.9	P/P	40 - 150
2327564	Pyraclostrobin	92.4	84.4	P/P	40 - 150
2327564	Silvex	65.8	56.4	P/P	40 - 150
2327564	Thiamethoxam	110	101	P/P	40 - 150
2327564	Tolfenpyrad	54.2	47.1	P/P	30 - 150
2327564	Triclopyr	75.3	62.8	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P414088

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327275	Acesulfame K	112	118	P/P	40 - 150
2327275	Endothall	89.4	96.5	P/P	40 - 150
2327275	Glufosinate	99.2	95.7	P/P	40 - 150
2327275	Sucralose	96.9	102	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P414070

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327257	Fluoride	97.5	96.7	P/P	94 - 104

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P414078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327258	Organic Carbon	95.8	96.5	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P414079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327376	Organic Carbon	94.9	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P413972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327114	Color (true)	6.77	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P413973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327320	Color (true)	0.914	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P413977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327112	Turbidity	4.64	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P413983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326982	Calcium	2.17	Spike	P	0 - 20
2326982	Iron	0.848	Spike	P	0 - 20
2326982	Magnesium	2.14	Spike	P	0 - 20
2326982	Potassium	0.501	Spike	P	0 - 20
2326982	Sodium	0.875	Spike	P	0 - 20
2326982	Strontium	0.835	Spike	P	0 - 20
2326982	Tin	0.549	Spike	P	0 - 20
2326982	Titanium	0.218	Spike	P	0 - 20
2326982	Vanadium	0.339	Spike	P	0 - 20
2326982	Zinc	0.0937	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P413983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326982	Aluminum	1.08	Spike	P	0 - 20
2326982	Antimony	0.481	Spike	P	0 - 20
2326982	Arsenic	0.147	Spike	P	0 - 20
2326982	Barium	0.378	Spike	P	0 - 20
2326982	Beryllium	0.0651	Spike	P	0 - 20
2326982	Boron	3.40	Spike	P	0 - 20
2326982	Cadmium	1.71	Spike	P	0 - 20
2326982	Chromium	1.17	Spike	P	0 - 20
2326982	Cobalt	0.719	Spike	P	0 - 20
2326982	Copper	0.890	Spike	P	0 - 20
2326982	Lead	0.486	Spike	P	0 - 20
2326982	Manganese	1.69	Spike	P	0 - 20
2326982	Molybdenum	0.211	Spike	P	0 - 20
2326982	Nickel	0.0212	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P413983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326982	Selenium	0.394	Spike	P	0 - 20
2326982	Silver	0.338	Spike	P	0 - 20
2326982	Thallium	1.23	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P414106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326976	Chloride	2.95	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P414110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326976	Sulfate	1.71	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414363

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327259	Ammonia-N	0.856	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326979	Kjeldahl Nitrogen	5.71	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327116	Kjeldahl Nitrogen	7.67	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327207	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P414276

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327325	NO2NO3-N	1.61	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P414054

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327259	Total-P	2.63	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P414552

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330108	Total-P	2.36	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P414017

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327564	2,4-D	11.2	Spike	P	0 - 30
2327564	2,4,5-T	15.0	Spike	P	0 - 30
2327564	Acetaminophen	3.33	Spike	P	0 - 30
2327564	Acetamiprid	2.47	Spike	P	0 - 30
2327564	Afidopyropen	5.79	Spike	P	0 - 30
2327564	Bentazon	17.1	Spike	P	0 - 30
2327564	Benzovindiflupyr	14.0	Spike	P	0 - 30
2327564	Carbamazepine	10.5	Spike	P	0 - 30
2327564	Clothianidin	9.29	Spike	P	0 - 30
2327564	Dinotefuran	10.9	Spike	P	0 - 30
2327564	Diuron	10.0	Spike	P	0 - 30
2327564	Fenuron	13.0	Spike	P	0 - 30
2327564	Fluridone	8.14	Spike	P	0 - 30
2327564	Hydrocodone	9.01	Spike	P	0 - 30
2327564	Ibuprofen	10.3	Spike	P	0 - 30
2327564	Imazapyr	13.1	Spike	P	0 - 30
2327564	Imidacloprid	13.5	Spike	P	0 - 30
2327564	Linuron	5.41	Spike	P	0 - 30
2327564	Mandestrobin	5.93	Spike	P	0 - 30
2327564	MCP	21.4	Spike	P	0 - 30
2327564	Naproxen	23.2	Spike	P	0 - 30
2327564	Primidone	5.29	Spike	P	0 - 30
2327564	Pyraclostrobin	8.97	Spike	P	0 - 30
2327564	Silvex	15.5	Spike	P	0 - 30
2327564	Thiamethoxam	8.31	Spike	P	0 - 30
2327564	Tolfenpyrad	14.1	Spike	P	0 - 30
2327564	Triclopyr	18.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P414088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327275	Acesulfame K	5.34	Spike	P	0 - 30
2327275	AMPA	4.17	Spike	P	0 - 30
2327275	Endothall	7.60	Spike	P	0 - 30
2327275	Glufosinate	3.60	Spike	P	0 - 30
2327275	Glyphosate	2.42	Spike	P	0 - 30
2327275	Sucralose	4.21	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P414067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327257	Total Alkalinity	1.61	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011

Batch ID: P414397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326674	TDS	5.46	Sample	P	0 - 10

Reference Method: SM 2540 C-2011

Batch ID: P414398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327324	TDS	5.13	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011

Batch ID: P414070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327257	Fluoride	0.473	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011

Batch ID: P414078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327258	Organic Carbon	0.514	Spike	P	0 - 20

Reference Method: SM 5310 B-2011

Batch ID: P414079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327376	Organic Carbon	0.455	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2327344
Field Sample ID: G3SD0085

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	87.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	44.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	88.5	P	30 - 160
EPA 8321B	Diuron-d6	58.5	P	30 - 160
EPA 8321B	Endothall-d6	90.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	62.2	P	30 - 160
EPA 8321B	Primidone-d5	77.9	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	30 - 160

Lab Sample ID: 2327345
Field Sample ID: G3SD0226

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	102	P	30 - 160
EPA 8321B	Acetaminophen-d4	49.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	103	P	30 - 160
EPA 8321B	Diuron-d6	70.5	P	30 - 160
EPA 8321B	Endothall-d6	96.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	88.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.1	P	30 - 160
EPA 8321B	Primidone-d5	89.5	P	30 - 160
EPA 8321B	Sucralose-d6	108	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A112198

Included Lab Sample IDs: 2327318, 2327319, 2327320, 2327324

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

Reference Method: DEP SOP: NU-094-1

Run ID: A112208

Included Lab Sample IDs: 2327318, 2327319, 2327320, 2327324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	85 - 115
Color (true)	99.6	100	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A112209

Included Lab Sample IDs: 2327318, 2327319, 2327320, 2327324

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A112233

Included Lab Sample IDs: 2327346, 2327347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.2	98.6	P/P	90 - 110
Antimony	98.8	98.8	P/P	90 - 110
Arsenic	97.3	97.8	P/P	90 - 110
Barium	98.8	98.5	P/P	90 - 110
Beryllium	96.0	95.7	P/P	90 - 110
Boron	100	102	P/P	90 - 110
Cadmium	98.5	98.1	P/P	90 - 110
Chromium	98.4	98.2	P/P	90 - 110
Cobalt	96.6	95.2	P/P	90 - 110
Copper	97.1	96.2	P/P	90 - 110
Lead	98.7	98.5	P/P	90 - 110
Manganese	97.8	97.8	P/P	90 - 110
Molybdenum	98.0	98.2	P/P	90 - 110
Nickel	97.4	95.9	P/P	90 - 110
Selenium	97.3	99.1	P/P	90 - 110
Silver	98.4	98.1	P/P	90 - 110
Thallium	98.4	97.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A112245

Included Lab Sample IDs: 2327318, 2327319, 2327320, 2327324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.2	96.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A112245

Included Lab Sample IDs: 2327318, 2327319, 2327320, 2327324

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

Reference Method: SM 5310 B-2011

Run ID: A112250

Included Lab Sample IDs: 2327321, 2327322, 2327323, 2327325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.9	96.8	P/P	90 - 110
Organic Carbon	96.4	95.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A112303

Included Lab Sample IDs: 2327346, 2327347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	100	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Potassium	102	103	P/P	90 - 110
Sodium	102	102	P/P	90 - 110
Strontium	105	104	P/P	90 - 110
Tin	103	104	P/P	90 - 110
Titanium	101	103	P/P	90 - 110
Vanadium	104	104	P/P	90 - 110
Zinc	103	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A112324

Included Lab Sample IDs: 2327344, 2327345

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.9	91.4	P/P	50 - 150
2,4,5-T	96.4	83.7	P/P	50 - 150
Acetaminophen	109	105	P/P	60 - 160
Acetamiprid	113	110	P/P	50 - 150
Afidopyropen	99.9	91.9	P/P	50 - 150
Bentazon	99.8	101	P/P	50 - 160
Benzovindiflupyr	99.2	98.2	P/P	50 - 150
Carbamazepine	103	102	P/P	60 - 150
Clothianidin	120	124	P/P	60 - 150
Dinotefuran	99.9	98.9	P/P	50 - 150
Diuron	114	109	P/P	60 - 160
Fenuron	97.4	97.8	P/P	60 - 150
Fluridone	105	105	P/P	60 - 160
Hydrocodone	105	111	P/P	60 - 150
Ibuprofen	95.6	87.4	P/P	50 - 160
Imazapyr	90.1	84.2	P/P	50 - 150
Imidacloprid	99.2	93.8	P/P	60 - 150
Linuron	99.2	97.2	P/P	60 - 150
Mandestrobin	106	101	P/P	50 - 150
MCP	102	95.3	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A112324

Included Lab Sample IDs: 2327344, 2327345

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Naproxen	84.5	109	P/P	50 - 160
Primidone	111	92.8	P/P	60 - 150
Pyraclostrobin	105	102	P/P	60 - 150
Silvex	93.6	94.0	P/P	50 - 150
Thiamethoxam	107	102	P/P	50 - 150
Tolfenpyrad	95.3	92.2	P/P	60 - 150
Triclopyr	102	96.2	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A112330

Included Lab Sample IDs: 2327344, 2327345

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Endothall	90.0	88.1	P/P	60 - 160
Glufosinate	96.9	98.2	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A112331

Included Lab Sample IDs: 2327344, 2327345

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	141	148	P/P	60 - 160
AMPA	101	98.5	P/P	60 - 160
Glyphosate	102	100	P/P	60 - 160
Sucralose	98.2	105	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A112335

Included Lab Sample IDs: 2327321, 2327325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	99.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A112342

Included Lab Sample IDs: 2327347

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A112355

Included Lab Sample IDs: 2327321, 2327322, 2327323, 2327325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	98.0	P/P	90 - 110
NO2NO3-N	98.0	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A112397

Included Lab Sample IDs: 2327321, 2327322, 2327323, 2327325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A112417

Included Lab Sample IDs: 2327321, 2327322, 2327323, 2327325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.6	P/P	90 - 110
Kjeldahl Nitrogen	101	101	P/P	90 - 110
Kjeldahl Nitrogen	93.3	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A112569

Included Lab Sample IDs: 2327322, 2327323

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	97.2	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			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	97.6				6.77	
	Color (true)	99.5				0.914	
EPA 180.1 Rev. 2.0	Turbidity	96.9				4.64	
EPA 200.7 Rev. 4.4	Calcium	103	101	101			2.17
	Iron	106	105	104	105		0.848
	Magnesium	102	99.7	102			2.14
	Potassium	108	104	104	102		0.501
	Sodium	108	105	104	101		0.875
	Strontium	106	104	103	104		0.835
	Tin	110	106	106	103		0.549
	Titanium	107	105	105	110		0.218
	Vanadium	101	98.8	98.4	99.0		0.339
	Zinc	106	102	102	98.2		0.0937
EPA 200.8 Rev. 5.4	Aluminum	100	98.0	96.9	108		1.08
	Antimony	102	100	99.6	101		0.481
	Arsenic	98.8	97.5	97.4	97.8		0.147
	Barium	103	102	101	102		0.378
	Beryllium	97.3	94.9	94.9	97.0		0.0651
	Boron	105	103	99.3	104		3.40
	Cadmium	99.6	98.5	96.9	99.5		1.71
	Chromium	98.8	97.0	95.6	102		1.17
	Cobalt	97.2	96.4	95.7	96.8		0.719
	Copper	95.8	94.3	93.5	95.5		0.890
	Lead	101	98.9	99.4	101		0.486
	Manganese	99.5	97.1	99.2			1.69
	Molybdenum	100	101	101	101		0.211
	Nickel	96.3	97.2	97.2	97.9		0.0212
	Selenium	99.1	97.1	97.5	96.7		0.394
	Silver	99.6	98.3	98.6	98.1		0.338
	Thallium	101	101	101	102		1.23
EPA 300.0 Rev. 2.1	Chloride	101	102	102		2.95	
	Sulfate	99.5	99.0	97.8		1.71	
EPA 350.1 Rev. 2.0	Ammonia-N	96.4	95.0	93.6			0.856
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102					5.71
	Kjeldahl Nitrogen	106	94.9	106			7.67
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	99.0	99.0			0.0
	NO2NO3-N	98.5	97.4	95.4			1.61
EPA 365.1 Rev. 2.0	Total-P	104	103	97.8			2.63
	Total-P	105	104	101			2.36
EPA 8321B	2,4-D	71.0	80.9	72.4			11.2
	2,4,5-T	61.3	69.9	60.1			15.0
	Acesulfame K	139	112	118			5.34
	Acetaminophen	59.2	65.0	62.9			3.33
	Acetamiprid	91.9	90.5	88.3			2.47
	Afidopyropen	65.8	61.9	58.4			5.79
	AMPA	112					4.17
	Bentazon	138	176	143			17.1
	Benzovindiflupyr	85.8	100	87.0			14.0
	Carbamazepine	95.5	112	101			10.5
	Clothianidin	99.2	94.1	85.7			9.29
	Dinotefuran	96.6	114	102			10.9
	Diuron	81.8	97.3	88.1			10.0
	Endothall	88.7	89.4	96.5			7.60
	Fenuron	101	112	98.0			13.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Fluridone	71.4	83.4	75.6		8.14
	Glufosinate	102	99.2	95.7		3.60
	Glyphosate	99.3				2.42
	Hydrocodone	92.2	108	98.8		9.01
	Ibuprofen	70.8	69.7	62.9		10.3
	Imazapyr	84.9	94.5	82.2		13.1
	Imidacloprid	83.8	110	96.4		13.5
	Linuron	68.6	71.1	67.4		5.41
	Mandestrobin	75.8	77.9	73.4		5.93
	MCPP	93.6	102	82.2		21.4
	Naproxen	66.4	74.7	59.2		23.2
	Primidone	90.5	85.3	80.9		5.29
	Pyraclostrobin	81.1	92.4	84.4		8.97
	Silvex	56.9	65.8	56.4		15.5
	Sucralose	97.9	96.9	102		4.21
	Thiamethoxam	97.5	110	101		8.31
	Tolfenpyrad	44.6	54.2	47.1		14.1
	Triclopyr	66.6	75.3	62.8		18.1
SM 2320 B-2011	Total Alkalinity	98.7			1.61	
SM 2540 C-2011	TDS				5.46	
	TDS				5.13	
SM 4500-F- C-2011	Fluoride	99.9	97.5	96.7		0.473
SM 5310 B-2011	Organic Carbon	98.6	95.8	96.5		0.514
	Organic Carbon	96.4	94.9	95.5		0.455

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2327318, 2327319, 2327320, 2327324
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2327318, 2327319, 2327320, 2327324
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2327346, 2327347
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2327346, 2327347
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2327318, 2327319, 2327320, 2327324
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2327318, 2327319, 2327320, 2327324
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2327321, 2327322, 2327323, 2327325
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2327321, 2327322, 2327323, 2327325
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2327321, 2327322, 2327323, 2327325
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2327321, 2327322, 2327323, 2327325
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2327344, 2327345
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2327318, 2327319, 2327320, 2327324
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2327346, 2327347
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2327318, 2327319, 2327320, 2327324
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2327318, 2327319, 2327320, 2327324
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2327318, 2327319, 2327320, 2327324
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2327321, 2327322, 2327323, 2327325

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	05/17/2022			05/17/2022 15:27	Anna M. Plaviak	2327318
	05/17/2022			05/17/2022 15:30	Anna M. Plaviak	2327319
	05/17/2022			05/17/2022 15:32	Anna M. Plaviak	2327320, 2327324
EPA 180.1 Rev. 2.0	05/17/2022			05/17/2022 13:59	Khloe J Berg	2327318
	05/17/2022			05/17/2022 14:00	Khloe J Berg	2327319
	05/17/2022			05/17/2022 14:01	Khloe J Berg	2327320
EPA 200.7 Rev. 4.4	05/17/2022			05/17/2022 14:02	Khloe J Berg	2327324
	05/17/2022	05/18/2022 10:05	Megan Whitefoot	05/20/2022 20:09	Josef B Mick	2327346
	05/17/2022	05/18/2022 10:05	Megan Whitefoot	05/20/2022 20:17	Josef B Mick	2327347
EPA 200.8 Rev. 5.4	05/17/2022	05/18/2022 10:05	Megan Whitefoot	05/23/2022 17:45	Josef B Mick	2327347
	05/17/2022	05/18/2022 10:05	Megan Whitefoot	05/18/2022 21:22	Alexander Thompson	2327346
	05/17/2022	05/18/2022 10:05	Megan Whitefoot	05/18/2022 21:31	Alexander Thompson	2327347
EPA 300.0 Rev. 2.1	05/17/2022			05/19/2022 09:22	Anna M. Plaviak	2327318
	05/17/2022			05/19/2022 09:34	Anna M. Plaviak	2327319
	05/17/2022			05/19/2022 09:46	Anna M. Plaviak	2327320
EPA 350.1 Rev. 2.0	05/17/2022			05/19/2022 09:58	Anna M. Plaviak	2327324
	05/17/2022			05/25/2022 12:20	Ping Hua	2327321
	05/17/2022			05/25/2022 12:21	Ping Hua	2327322
EPA 351.2 Rev. 2.0	05/17/2022			05/25/2022 12:23	Ping Hua	2327323
	05/17/2022			05/25/2022 12:24	Ping Hua	2327325
	05/17/2022	05/24/2022 15:12	Samantha L Bates	05/25/2022 18:39	Alexandra J Mattheus	2327321
EPA 353.2 Rev. 2.0	05/17/2022	05/24/2022 15:12	Samantha L Bates	05/25/2022 18:40	Alexandra J Mattheus	2327325
	05/17/2022	05/24/2022 15:12	Samantha L Bates	05/25/2022 19:00	Alexandra J Mattheus	2327323
	05/17/2022	05/24/2022 15:12	Samantha L Bates	05/25/2022 19:55	Alexandra J Mattheus	2327322
EPA 365.1 Rev. 2.0	05/17/2022			05/24/2022 09:30	Beverly Y. Sanders	2327321
	05/17/2022			05/24/2022 09:32	Beverly Y. Sanders	2327322
	05/17/2022			05/24/2022 09:39	Beverly Y. Sanders	2327325
EPA 8321B	05/17/2022			05/24/2022 09:45	Beverly Y. Sanders	2327323
	05/17/2022	05/20/2022 15:00	Simonne.V. Calhoun	05/23/2022 11:30	Sarah A Nixon	2327321
	05/17/2022	05/20/2022 15:00	Simonne.V. Calhoun	05/23/2022 11:33	Sarah A Nixon	2327325
EPA 8321B	05/17/2022	06/01/2022 16:00	Adam P Silver	06/02/2022 11:16	James L Waggeberby	2327322
	05/17/2022	06/01/2022 16:00	Adam P Silver	06/02/2022 11:17	James L Waggeberby	2327323
	05/17/2022	05/19/2022 10:00	June Rhew	05/21/2022 03:19	Juyoung Kim	2327344
EPA 8321B	05/17/2022	05/19/2022 10:00	June Rhew	05/21/2022 03:53	Juyoung Kim	2327345
	05/17/2022	05/20/2022 08:00	Manjita Shrestha	05/21/2022 13:05	Manjita Shrestha	2327344
	05/17/2022	05/20/2022 08:00	Manjita Shrestha	05/21/2022 13:20	Manjita Shrestha	2327345
EPA 8321B	05/17/2022	05/20/2022 08:00	Manjita Shrestha	05/22/2022 05:17	Manjita Shrestha	2327344
	05/17/2022	05/20/2022 08:00	Manjita Shrestha	05/22/2022 05:30	Manjita Shrestha	2327345
	05/17/2022	05/20/2022 08:00	Manjita Shrestha	05/23/2022 11:29	Manjita Shrestha	2327344
EPA 8321B	05/17/2022	05/20/2022 08:00	Manjita Shrestha	05/23/2022 11:42	Manjita Shrestha	2327345

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	05/17/2022			05/19/2022 00:46	Dale L. Simmons	2327318
	05/17/2022			05/19/2022 01:01	Dale L. Simmons	2327319
	05/17/2022			05/19/2022 01:12	Dale L. Simmons	2327324
	05/17/2022			05/19/2022 01:47	Dale L. Simmons	2327320
SM 2340 B-2011	05/17/2022			05/20/2022 20:09	Josef B Mick	2327346
	05/17/2022			05/20/2022 20:17	Josef B Mick	2327347
SM 2540 C-2011	05/17/2022			05/18/2022 14:36	Yijie Li	2327318, 2327319, 2327320, 2327324
SM 2540 D-2011	05/17/2022			05/18/2022 14:36	Yijie Li	2327318, 2327319, 2327320, 2327324
SM 4500-F- C-2011	05/17/2022			05/19/2022 00:46	Dale L. Simmons	2327318
	05/17/2022			05/19/2022 01:01	Dale L. Simmons	2327319
	05/17/2022			05/19/2022 01:12	Dale L. Simmons	2327324
	05/17/2022			05/19/2022 01:47	Dale L. Simmons	2327320
SM 5310 B-2011	05/17/2022			05/19/2022 01:22	Judith K. Clark	2327321
	05/17/2022			05/19/2022 01:37	Judith K. Clark	2327322
	05/17/2022			05/19/2022 06:06	Judith K. Clark	2327323
	05/17/2022			05/19/2022 06:21	Judith K. Clark	2327325