

Chemical Analysis Report

CEN-DIST-2018-11-29-01

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

Event Description: **Puzzle Lk Drain / Bear Crk / Gee X2**
Request ID: **RQ-2018-11-26-42**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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3319 Maguire Blvd., Suite 232
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Certified by: Colin Wright, Program Administrator

Date Certified: 07-JAN-2019 12:06

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 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: Saint Johns River @ 300m DS of Hatbill Park (2964B1)

Collection Date/Time: 11/28/2018 11:15

Field ID: G3CE0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044756	EPA 180.1 Rev. 2.0	Turbidity	20	A	NTU	P355354	
	EPA 300.0 Rev. 2.1	Chloride	430		mg Cl/L	P355697	
		Sulfate	130		mg SO4/L	P355699	
		Color (true)	120	A	PCU	P355395	
	SM 2320 B-97	Total Alkalinity	80		mg CaCO3/L	P355561	
	SM 2540 C-97	TDS	932		mg/L	P355728	
	SM 2540 D-97	TSS	19		mg/L	P355822	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P355564	
2044757	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P355589	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P355492	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P355382	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P355411	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P355515	
2044758	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P355341	
2044780	EPA 200.7 Rev. 4.4	Calcium	78.3		mg/L	P355476	
		Iron	950		ug/L	P355476	
		Magnesium	30.9		mg/L	P355476	
		Potassium	7.9		mg/L	P355476	
		Sodium	242		mg/L	P355476	
		Zinc	5.0	U	ug/L	P355476	
	EPA 200.8 Rev. 5.4	Arsenic	0.72		ug/L	P355476	
		Cadmium	0.020	U	ug/L	P355476	
		Chromium	0.60	I	ug/L	P355476	
		Copper	0.77	I	ug/L	P356654	
		Lead	1.03		ug/L	P356234	
		Nickel	0.47	I	ug/L	P355476	
		Silver	0.010	U	ug/L	P355476	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Gee Creek @ Alton Rd (2994A)

Collection Date/Time: 11/28/2018 13:00

Field ID: G2CE0161

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044775	EPA 8321B	2,4-D	0.0050	I	ug/L	P355375	
		Bentazon	0.022		ug/L	P355375	
		MCP	0.0042	I	ug/L	P355375	
		Triclopyr**	0.0040	U	ug/L	P355375	
		Imidacloprid	0.022		ug/L	P355375	MS
		Diuron	0.0025	I	ug/L	P355375	
		Pyraclostrobin**	0.0020	U	ug/L	P355375	
		Primidone**	0.0049	I	ug/L	P355375	
		Linuron	0.0040	U	ug/L	P355375	
		Acetaminophen**	0.0080	U	ug/L	P355375	
		Fenuron	0.016	U	ug/L	P355375	
		Imazapyr**	0.041		ug/L	P355375	
		Carbamazepine**	0.0031	I	ug/L	P355375	
		Fluridone**	0.046		ug/L	P355375	
		Hydrocodone**	8.0E-04	U	ug/L	P355375	
		Naproxen**	0.0080	U	ug/L	P355375	MS, RPD
		Ibuprofen**	0.020	U	ug/L	P355375	
		Sucralose**	1.5		ug/L	P355297	
		Acesulfame K**	0.62		ug/L	P355297	

Sample Location: Gee Creek @ SR Hwy 419 (2994A)

Collection Date/Time: 11/28/2018 13:10

Field ID: G2CE0075

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044776	EPA 8321B	2,4-D	0.0049	I	ug/L	P355375	
		Bentazon	0.060		ug/L	P355375	
		MCP	0.0039	I	ug/L	P355375	
		Triclopyr**	0.0040	U	ug/L	P355375	
		Imidacloprid	0.018		ug/L	P355375	MS
		Diuron	0.0022	I	ug/L	P355375	
		Pyraclostrobin**	0.0020	U	ug/L	P355375	
		Primidone**	0.0073	I	ug/L	P355375	
		Linuron	0.0040	U	ug/L	P355375	
		Acetaminophen**	0.0080	U	ug/L	P355375	
		Fenuron	0.016	U	ug/L	P355375	
		Imazapyr**	0.12		ug/L	P355375	
		Carbamazepine**	0.0030	I	ug/L	P355375	
		Fluridone**	0.037		ug/L	P355375	
		Hydrocodone**	8.0E-04	U	ug/L	P355375	
		Naproxen**	0.0080	U	ug/L	P355375	MS, RPD
		Ibuprofen**	0.020	U	ug/L	P355375	
		Sucralose**	2.1		ug/L	P355297	
		Acesulfame K**	0.45		ug/L	P355297	

**Sample Location: Bear Crk just north of Winter Springs Blvd in
 Bear Crk Park (2999)**

Collection Date/Time: 11/28/2018 13:30

Field ID: G2CE0069

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044759	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P355354	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P355697	
		Sulfate	10		mg SO4/L	P355699	
		Color (true)	81	A	PCU	P355394	
	SM 2320 B-97	Total Alkalinity	70		mg CaCO3/L	P355561	
	SM 2540 C-97	TDS	156		mg/L	P355728	
	SM 2540 D-97	TSS	4	I	mg/L	P355822	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P355564	
2044760	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P355543	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P355492	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P355382	
	EPA 365.1 Rev. 2.0	Total-P	0.083		mg P/L	P355411	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P355515	
2044761	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.058		mg P/L	P355341	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355354

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355476

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355476

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356234

Component	Result	Code	Units
Lead	0.050	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356654

Component	Result	Code	Units
Copper	0.20	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355697

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355699

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355543

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P355589

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P355492

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P355382

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P355411

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P355341

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

Reference Method: EPA 8321B
 Batch ID: P355297

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
 Batch ID: P355375

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	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
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P355375

Component	Result	Code	Units
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P355394

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P355395

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P355561

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

Reference Method: SM 2540 C-97
Batch ID: P355728

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P355822

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P355564

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P355515

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: P355476

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	102		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	98.5		P	85 - 115
Sodium	103		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355476

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	105		P	85 - 115
Cadmium	109		P	85 - 115
Chromium	106		P	85 - 115
Nickel	104		P	85 - 115
Silver	107		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356234

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	108		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356654

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	107		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355697

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355699

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355543

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355589

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355492

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355382

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355411

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355341

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

Reference Method: EPA 8321B
Batch ID: P355297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	102		P	40 - 150
Sucralose	109		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355375

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	60.3		P	40 - 150
Acetaminophen	71.3		P	30 - 150
Bentazon	31.6		P	30 - 150
Carbamazepine	82.4		P	40 - 150
Diuron	67.0		P	40 - 150
Fenuron	99.4		P	40 - 150
Fluridone	96.9		P	40 - 150
Hydrocodone	96.2		P	40 - 150
Ibuprofen	59.7		P	40 - 150
Imazapyr	76.3		P	40 - 150
Imidacloprid	90.9		P	40 - 160
Linuron	70.9		P	40 - 150
MCPP	81.7		P	40 - 150
Naproxen	52.5		P	40 - 150
Primidone	70.9		P	40 - 150
Pyraclostrobin	60.9		P	40 - 150
Triclopyr	49.6		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P355394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	105		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P355395

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	105		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P355561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P355564

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P355515

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044650	Calcium	94.0		P	80 - 120
2044650	Iron	104		P	80 - 120
2044650	Magnesium	97.8		P	80 - 120
2044650	Potassium	101		P	80 - 120
2044650	Sodium	93.7		P	80 - 120
2044650	Zinc	99.9		P	80 - 120
2045110	Calcium	99.4		P	80 - 120
2045110	Iron	105	103	P/P	80 - 120
2045110	Magnesium	107	102	P/P	80 - 120
2045110	Potassium	103	103	P/P	80 - 120
2045110	Sodium	98.9		P	80 - 120
2045110	Zinc	104	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044650	Arsenic	108		P	80 - 120
2044650	Cadmium	110		P	80 - 120
2044650	Chromium	96.1		P	80 - 120
2044650	Nickel	102		P	80 - 120
2044650	Silver	106		P	80 - 120
2045110	Arsenic	106	107	P/P	80 - 120
2045110	Cadmium	108	108	P/P	80 - 120
2045110	Chromium	106	106	P/P	80 - 120
2045110	Nickel	104	105	P/P	80 - 120
2045110	Silver	106	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356234

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044528	Lead	108		P	80 - 120
2044771	Lead	109	109	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356654

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044663	Copper	107		P	80 - 120
2047182	Copper	102	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044613	Chloride	96.1		P	90 - 110
2044657	Chloride	96.9		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355699

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044613	Sulfate	99.4		P	90 - 110
2044657	Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2045072	Ammonia-N	97.7	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044757	Ammonia-N	98.7	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044763	Kjeldahl Nitrogen	106	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355382

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044658	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044760	Total-P	97.2	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355341

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044615	O-Phosphate-P	93.6	94.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P355297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044792	Acesulfame K	127	122	P/P	40 - 150
2044792	Sucralose	101	120	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355375

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044604	2,4-D	85.9	94.2	P/P	40 - 150
2044604	Acetaminophen	83.5	85.3	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P355375

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044604	Bentazon	34.5	39.4	P/P	30 - 150
2044604	Carbamazepine	77.3	82.2	P/P	40 - 150
2044604	Diuron	59.1	64.3	P/P	40 - 150
2044604	Fenuron	87.4	89.5	P/P	40 - 150
2044604	Fluridone	97.0	104	P/P	40 - 150
2044604	Hydrocodone	113	117	P/P	40 - 150
2044604	Ibuprofen	60.7	67.9	P/P	40 - 150
2044604	Imazapyr	113	98.3	P/P	40 - 150
2044604	Imidacloprid	177	180	F/F	40 - 160
2044604	Linuron	65.1	65.6	P/P	40 - 150
2044604	MCPP	107	115	P/P	40 - 150
2044604	Naproxen	34.7	58.8	F/P	40 - 150
2044604	Primidone	85.8	87.1	P/P	40 - 150
2044604	Pyraclostrobin	60.6	60.2	P/P	40 - 150
2044604	Triclopyr	63.6	64.5	P/P	40 - 150

Reference Method: SM 5310 B-00
Batch ID: P355515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044577	Organic Carbon	99.1	94.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044756	Turbidity	0.512	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2045110	Calcium	0.512	Spike	P	0 - 20
2045110	Iron	1.48	Spike	P	0 - 20
2045110	Magnesium	2.31	Spike	P	0 - 20
2045110	Potassium	0.237	Spike	P	0 - 20
2045110	Sodium	0.146	Spike	P	0 - 20
2045110	Zinc	1.22	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2045110	Arsenic	1.51	Spike	P	0 - 20
2045110	Cadmium	0.312	Spike	P	0 - 20
2045110	Chromium	0.0723	Spike	P	0 - 20
2045110	Nickel	0.391	Spike	P	0 - 20
2045110	Silver	1.04	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044771	Lead	0.130	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047182	Copper	0.228	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044613	Chloride	0.103	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355699

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355699

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044613	Sulfate	0.893	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2045072	Ammonia-N	2.42	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044757	Ammonia-N	1.64	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044763	Kjeldahl Nitrogen	1.64	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044658	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044760	Total-P	5.68	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044615	O-Phosphate-P	1.07	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P355297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044792	Acesulfame K	3.84	Spike	P	0 - 30
2044792	Sucralose	15.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P355375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044604	2,4-D	8.84	Spike	P	0 - 30
2044604	Acetaminophen	1.13	Spike	P	0 - 30
2044604	Bentazon	12.0	Spike	P	0 - 30
2044604	Carbamazepine	6.13	Spike	P	0 - 30
2044604	Diuron	6.61	Spike	P	0 - 30
2044604	Fenuron	2.34	Spike	P	0 - 30
2044604	Fluridone	6.65	Spike	P	0 - 30
2044604	Hydrocodone	3.32	Spike	P	0 - 30
2044604	Ibuprofen	11.2	Spike	P	0 - 30
2044604	Imazapyr	7.20	Spike	P	0 - 30
2044604	Imidacloprid	1.85	Spike	P	0 - 30
2044604	Linuron	0.692	Spike	P	0 - 30
2044604	MCP	6.79	Spike	P	0 - 30
2044604	Naproxen	39.6	Spike	F	0 - 30
2044604	Primidone	1.54	Spike	P	0 - 30
2044604	Pyraclostrobin	0.548	Spike	P	0 - 30
2044604	Triclopyr	1.39	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P355394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044759	Color (true)	0.973	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P355395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044756	Color (true)	2.79	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P355561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044801	Total Alkalinity	0.733	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P355728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044618	TDS	3.92	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P355564

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

Reference Method: SM 4500 F-C-97
Batch ID: P355564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044801	Fluoride	0.469	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P355515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044577	Organic Carbon	2.63	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2044775
Field Sample ID: G2CE0161

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	76.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	82.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.6	P	30 - 160
EPA 8321B	Diuron-d6	75.9	P	30 - 160
EPA 8321B	Endothall-d6	103	P	40 - 160
EPA 8321B	Ibuprofen-d3	79.0	P	30 - 160
EPA 8321B	Primidone-d5	71.7	P	30 - 160
EPA 8321B	Sucralose-d6	125	P	40 - 160

Lab Sample ID: 2044776
Field Sample ID: G2CE0075

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	91.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.8	P	30 - 160
EPA 8321B	Diuron-d6	78.4	P	30 - 160
EPA 8321B	Endothall-d6	104	P	40 - 160
EPA 8321B	Ibuprofen-d3	92.0	P	30 - 160
EPA 8321B	Primidone-d5	83.7	P	30 - 160
EPA 8321B	Sucralose-d6	123	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A88047

Included Lab Sample IDs: 2044758, 2044761

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A88051

Included Lab Sample IDs: 2044756, 2044759

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88055

Included Lab Sample IDs: 2044757, 2044760

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

Reference Method: SM 2120 B

Run ID: A88059

Included Lab Sample IDs: 2044756, 2044759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	90 - 115
Color (true)	103	104	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A88074

Included Lab Sample IDs: 2044775, 2044776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	72.1	87.0	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A88081

Included Lab Sample IDs: 2044775, 2044776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	121	107	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A88116

Included Lab Sample IDs: 2044757, 2044760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88125

Included Lab Sample IDs: 2044757, 2044760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88126

Included Lab Sample IDs: 2044760

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

Reference Method: SM 2320 B-97

Run ID: A88134

Included Lab Sample IDs: 2044756, 2044759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.7	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A88134

Included Lab Sample IDs: 2044756, 2044759

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88137

Included Lab Sample IDs: 2044757, 2044760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.1	96.4	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88138

Included Lab Sample IDs: 2044780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	103	P/P	90 - 110
Iron	101	102	P/P	90 - 110
Magnesium	100	102	P/P	90 - 110
Potassium	99.2	100	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Zinc	106	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88149

Included Lab Sample IDs: 2044757

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A88194

Included Lab Sample IDs: 2044756, 2044759

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	100	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88217

Included Lab Sample IDs: 2044780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	101	102	P/P	90 - 110
Cadmium	103	105	P/P	90 - 110
Chromium	104	105	P/P	90 - 110
Nickel	103	103	P/P	90 - 110
Silver	104	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A88245

Included Lab Sample IDs: 2044775, 2044776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	84.2	85.0	P/P	50 - 150
Acetaminophen	81.7	76.4	P/P	60 - 160
Bentazon	110	104	P/P	50 - 160
Carbamazepine	115	109	P/P	60 - 160
Diuron	113	107	P/P	60 - 150
Fenuron	91.3	93.9	P/P	60 - 150
Fluridone	109	106	P/P	60 - 160
Hydrocodone	85.2	93.2	P/P	60 - 150
Ibuprofen	64.7	79.0	P/P	50 - 160
Imazapyr	73.5	71.1	P/P	50 - 150
Imidacloprid	93.1	87.4	P/P	60 - 160
Linuron	101	92.0	P/P	60 - 150
MCPP	95.6	92.4	P/P	50 - 150
Naproxen	81.6	126	P/P	50 - 160
Primidone	83.1	84.3	P/P	60 - 160
Pyraclostrobin	100	104	P/P	60 - 150
Triclopyr	95.6	86.3	P/P	50 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88421

Included Lab Sample IDs: 2044780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	107	107	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88578

Included Lab Sample IDs: 2044780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	107	104	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.512	
EPA 200.7 Rev. 4.4	Calcium	101	94.0	99.4				0.512
	Iron	102	104	105	103			1.48
	Magnesium	104	97.8	107	102			2.31
	Potassium	98.5	101	103	103			0.237
	Sodium	103	93.7	98.9				0.146
	Zinc	100	99.9	104	102			1.22
EPA 200.8 Rev. 5.4	Arsenic	105	108	106	107			1.51
	Cadmium	109	110	108	108			0.312
	Chromium	106	96.1	106	106			0.0723
	Copper	107	107	102	102			0.228
	Lead	108	108	109	109			0.130
	Nickel	104	102	104	105			0.391
	Silver	107	106	106	107			1.04
EPA 300.0 Rev. 2.1	Chloride	99.4	96.1	96.9			0.103	
	Sulfate	99.8	99.4	98.1			0.893	
EPA 350.1 Rev. 2.0	Ammonia-N	99.1	97.7	100				2.42
	Ammonia-N	97.8	98.7	101				1.64
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	106	109				1.64
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	99.5	99.5				0.0
EPA 365.1 Rev. 2.0	Total-P	104	97.2	104				5.68
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	93.6	94.9				1.07
EPA 8321B	2,4-D	60.3	85.9	94.2				8.84
	Acesulfame K	102	127	122				3.84
	Acetaminophen	71.3	83.5	85.3				1.13
	Bentazon	31.6	34.5	39.4				12.0
	Carbamazepine	82.4	77.3	82.2				6.13
	Diuron	67.0	59.1	64.3				6.61
	Fenuron	99.4	87.4	89.5				2.34
	Fluridone	96.9	97.0	104				6.65
	Hydrocodone	96.2	113	117				3.32
	Ibuprofen	59.7	60.7	67.9				11.2
	Imazapyr	76.3	113	98.3				7.20
	Imidacloprid	90.9	177	180				1.85
	Linuron	70.9	65.1	65.6				0.692
	MCPP	81.7	107	115				6.79
	Naproxen	52.5	34.7	58.8				39.6
	Primidone	70.9	85.8	87.1				1.54
	Pyraclostrobin	60.9	60.6	60.2				0.548
	Sucralose	109	101	120				15.1
	Triclopyr	49.6	63.6	64.5				1.39
SM 2120 B	Color (true)	105					0.973	
	Color (true)	105					2.79	
SM 2320 B-97	Total Alkalinity	100					0.733	
SM 2540 C-97	TDS						3.92	
SM 4500 F-C-97	Fluoride	101						0.469
SM 5310 B-00	Organic Carbon	96.2	99.1	94.2				2.63

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2044756, 2044759

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2044780
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2044780
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2044756, 2044759
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2044756, 2044759
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2044757, 2044760
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2044757, 2044760
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2044757, 2044760
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2044757, 2044760
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2044758, 2044761
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2044775, 2044776
SM 2120 B / E31780	True Color measured at 450 nm	2044756, 2044759
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2044756, 2044759
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2044756, 2044759
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2044756, 2044759
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2044756, 2044759
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2044757, 2044760

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	11/29/2018			11/29/2018 17:05	Megan Treadwell	2044756, 2044759
EPA 200.7 Rev. 4.4	11/29/2018	12/03/2018 13:40	Elliott D. Healy	12/04/2018 18:51	Betina Topolski	2044780
	11/29/2018	12/03/2018 13:40	Elliott D. Healy	12/04/2018 18:58	Betina Topolski	2044780
EPA 200.8 Rev. 5.4	11/29/2018	12/03/2018 13:40	Elliott D. Healy	12/07/2018 05:53	Robert K Palmer	2044780
	11/29/2018	12/17/2018 13:00	Elliott D. Healy	12/19/2018 05:36	Allison Taylor	2044780
	11/29/2018	12/27/2018 16:45	Elliott D. Healy	12/28/2018 23:45	Allison Taylor	2044780
EPA 300.0 Rev. 2.1	11/29/2018			12/06/2018 00:34	Lipi Saha	2044756
	11/29/2018			12/06/2018 00:46	Lipi Saha	2044759
EPA 350.1 Rev. 2.0	11/29/2018			12/04/2018 11:47	Adrian Shelby	2044760
	11/29/2018			12/04/2018 11:57	Ping Hua	2044757
EPA 351.2 Rev. 2.0	11/29/2018	12/03/2018 12:15	Adrian Shelby	12/04/2018 14:08	Joseph Suarez	2044757
	11/29/2018	12/03/2018 12:15	Adrian Shelby	12/04/2018 14:10	Joseph Suarez	2044760
EPA 353.2 Rev. 2.0	11/29/2018			11/30/2018 11:24	Beverly Y. Sanders	2044757
	11/29/2018			11/30/2018 11:25	Beverly Y. Sanders	2044760
EPA 365.1 Rev. 2.0	11/29/2018	11/30/2018 13:35	Sima Feizi	12/03/2018 13:51	Beverly Y. Sanders	2044760
	11/29/2018	11/30/2018 13:35	Sima Feizi	12/03/2018 13:55	Beverly Y. Sanders	2044757
EPA 365.1 Rev. 2.0 dissolved	11/29/2018			11/29/2018 17:17	Jhamieka S. Greenwood	2044758
	11/29/2018			11/29/2018 17:18	Jhamieka S. Greenwood	2044761
EPA 8321B	11/29/2018	11/30/2018 15:00	Rebecca Ware	11/30/2018 19:50	Rebecca Ware	2044775
	11/29/2018	11/30/2018 15:00	Rebecca Ware	11/30/2018 20:04	Rebecca Ware	2044776
	11/29/2018	11/30/2018 15:00	Rebecca Ware	12/01/2018 16:50	Mohammad Ghaffari	2044775
	11/29/2018	11/30/2018 15:00	Rebecca Ware	12/01/2018 17:04	Mohammad Ghaffari	2044776
	11/29/2018	12/05/2018 10:00	Hoor Shaik	12/07/2018 04:47	Juyoung Kim	2044775
	11/29/2018	12/05/2018 10:00	Hoor Shaik	12/07/2018 05:21	Juyoung Kim	2044776
SM 2120 B	11/29/2018			11/29/2018 16:12	Chelsea Hernandez	2044759
	11/29/2018			11/29/2018 16:41	Chelsea Hernandez	2044756
SM 2320 B-97	11/29/2018			12/04/2018 12:05	Dale L. Simmons	2044759
	11/29/2018			12/04/2018 13:35	Dale L. Simmons	2044756
SM 2540 C-97	11/29/2018			11/30/2018 16:02	Yijie Li	2044756, 2044759
SM 2540 D-97	11/29/2018			11/30/2018 16:02	Yijie Li	2044756, 2044759
SM 4500 F-C-97	11/29/2018			12/04/2018 12:05	Dale L. Simmons	2044759
	11/29/2018			12/04/2018 13:35	Dale L. Simmons	2044756
SM 5310 B-00	11/29/2018			12/04/2018 01:02	Megan Treadwell	2044760
	11/29/2018			12/04/2018 12:49	Megan Treadwell	2044757