

Chemical Analysis Report

NW-DIST-2017-02-28-01

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

Event Description: **Escambia River Upper WBID 10A,B,C**
Request ID: **RQ-2017-02-20-16**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government St
Suite 208A
Pensacola, FL 32502-5794
Attn: Michael King

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 04-APR-2017 09:49

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 and Nutrients.

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: ESCAMBIA RIVER BELOW COTTON LAKE

Collection Date/Time: 02/27/2017 11:30

Field ID: G4NW0403

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1875917	EPA 180.1 Rev. 2.0	Turbidity	19		NTU	P320676	
	EPA 300.0 Rev. 2.1	Chloride	4.1		mg Cl/L	P321443	
		Sulfate	6.4		mg SO4/L	P321446	
	SM 2120 B	Color (true)	68	A	PCU	P320668	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P321207	
	SM 2540 C-97	TDS	47		mg/L	P321095	
	SM 2540 D-97	TSS	11		mg/L	P321059	
	SM 4500 F-C-97	Fluoride	0.035	I	mg F/L	P321042	
1875921	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P320996	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P320717	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P320827	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P320723	
	SM 5310 B-00	Organic Carbon	6.4		mg C/L	P320852	
1875925	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P320680	
1875933	EPA 200.7 Rev. 4.4	Calcium	7.79		mg/L	P321026	
		Iron	1.76E+03		ug/L	P321026	
		Magnesium	1.07		mg/L	P321026	
		Potassium	1.0	I	mg/L	P321026	
		Sodium	4.8		mg/L	P321026	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P321026	
		Arsenic	0.72		ug/L	P321026	
		Cadmium	0.020	U	ug/L	P321026	
		Chromium	2.0		ug/L	P321026	
		Copper	0.81		ug/L	P321026	
		Lead	0.66		ug/L	P321026	
		Nickel	1.14		ug/L	P321026	
		Silver	0.010	U	ug/L	P321026	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: The lead result was confirmed on 03/30/2017.

Sample Location: ESCAMBIA RIVER BELOW COTTON LAKE

Collection Date/Time: 02/27/2017 11:35

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1875918	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P320677	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P321443	
		Sulfate	0.20	U	mg SO4/L	P321446	
	SM 2120 B	Color (true)	2.5	U	PCU	P320666	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P321207	
	SM 2540 C-97	TDS	15	U	mg/L	P321092	
	SM 2540 D-97	TSS	2	U	mg/L	P321056	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P321042	
1875922	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P320996	

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1875922	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P320882	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P320828	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P320725	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P320852	
1875926	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P320680	
1875934	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P321026	
		Iron	30	U	ug/L	P321026	
		Magnesium	0.040	U	mg/L	P321026	
		Potassium	0.30	U	mg/L	P321026	
		Sodium	0.50	U	mg/L	P321026	
		Zinc	5.0	U	ug/L	P321026	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P321026	
		Cadmium	0.020	U	ug/L	P321026	
		Chromium	0.40	U	ug/L	P321026	
		Copper	0.20	U	ug/L	P321026	
		Lead	0.050	U	ug/L	P321026	
		Nickel	0.20	U	ug/L	P321026	
		Silver	0.010	U	ug/L	P321026	

Ref. Method and Comment:

SM 2540 D-97: 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: ESCAMBIA RIVER ABOVE MITCHELL CREEK Collection Date/Time: 02/27/2017 12:30

Field ID: G4NW0404

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1875919	EPA 180.1 Rev. 2.0	Turbidity	22		NTU	P320677	
	EPA 300.0 Rev. 2.1	Chloride	4.2	A	mg Cl/L	P321443	
		Sulfate	6.8	A	mg SO4/L	P321446	
	SM 2120 B	Color (true)	62		PCU	P320668	
	SM 2320 B-97	Total Alkalinity	20		mg CaCO3/L	P321207	
	SM 2540 C-97	TDS	48		mg/L	P321095	
	SM 2540 D-97	TSS	23		mg/L	P321059	
	SM 4500 F-C-97	Fluoride	0.036	I	mg F/L	P321042	
1875923	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P320996	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P320882	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P320827	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P320725	
	SM 5310 B-00	Organic Carbon	6.4		mg C/L	P320852	
1875927	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.01	I	mg P/L	P320680	
1875935	EPA 200.7 Rev. 4.4	Calcium	8.36		mg/L	P321026	
		Iron	2.06E+03		ug/L	P321026	
		Magnesium	1.12		mg/L	P321026	
		Potassium	1.1	I	mg/L	P321026	
		Sodium	5.1		mg/L	P321026	

Field ID: G4NW0404

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1875935	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P321026	
	EPA 200.8 Rev. 5.4	Arsenic	0.85		ug/L	P321026	
		Cadmium	0.020	U	ug/L	P321026	
		Chromium	2.3		ug/L	P321026	
		Copper	0.80		ug/L	P321026	
		Lead	0.78		ug/L	P321026	
		Nickel	1.20		ug/L	P321026	
		Silver	0.010	U	ug/L	P321026	

Ref. Method and Comment:

SM 2540 D-97: 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 200.8 Rev. 5.4: The lead result was confirmed on 03/30/2017.

Sample Location: ESCAMBIA RIVER ABOVE MITCHELL CREEK Collection Date/Time: 02/27/2017 12:35

Field ID: G4NW0404DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1875920	EPA 180.1 Rev. 2.0	Turbidity	22		NTU	P320677	
	EPA 300.0 Rev. 2.1	Chloride	4.0	A	mg Cl/L	P321452	
		Sulfate	6.4	A	mg SO4/L	P321455	
	SM 2120 B	Color (true)	63		PCU	P320668	
	SM 2320 B-97	Total Alkalinity	21		mg CaCO3/L	P321207	
	SM 2540 C-97	TDS	52		mg/L	P321095	
	SM 2540 D-97	TSS	22		mg/L	P321059	
	SM 4500 F-C-97	Fluoride	0.038	I	mg F/L	P321042	
1875924	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P320998	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P320882	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P320827	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P320725	
	SM 5310 B-00	Organic Carbon	6.4		mg C/L	P320852	
1875928	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.009	I	mg P/L	P320680	
1875936	EPA 200.7 Rev. 4.4	Calcium	8.34		mg/L	P321026	
		Iron	2.13E+03		ug/L	P321026	
		Magnesium	1.11		mg/L	P321026	
		Potassium	1.1	I	mg/L	P321026	
		Sodium	5.1		mg/L	P321026	
		Zinc	5.0	U	ug/L	P321026	
	EPA 200.8 Rev. 5.4	Arsenic	0.87		ug/L	P321026	
		Cadmium	0.020	U	ug/L	P321026	
		Chromium	2.6		ug/L	P321026	
		Copper	0.83		ug/L	P321026	
		Lead	0.78		ug/L	P321026	
		Nickel	1.28		ug/L	P321026	
		Silver	0.010	U	ug/L	P321026	

Field ID: G4NW0404DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:

SM 2540 D-97: 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 200.8 Rev. 5.4: The lead result was confirmed on 03/30/2017.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P320676

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P320677

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P321026

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: P321026

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P321443

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P321446

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321452

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321455

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320996

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320998

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320717

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320882

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320827

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320828

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320723

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320725

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320680

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

Reference Method: SM 2120 B
Batch ID: P320666

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P320668

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P321207

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

Reference Method: SM 2540 C-97
Batch ID: P321092

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P321095

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P321056

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P321059

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P321042

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P320852

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: P321026

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	102		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	102		P	85 - 115
Sodium	94.0		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P321026

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	97.0		P	85 - 115
Cadmium	93.3		P	85 - 115
Chromium	95.5		P	85 - 115
Copper	96.0		P	85 - 115
Lead	91.0		P	85 - 115
Nickel	97.5		P	85 - 115
Silver	90.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321443

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321446

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.3		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321455

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	90.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320996

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320998

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320717

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: P320882

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320827

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320828

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320723

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320725

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	90.8		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320680

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

Reference Method: SM 2320 B-97
Batch ID: P321207

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P321042

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P320852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P321026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875858	Calcium	106		P	80 - 120
1875858	Iron	107	102	P/P	80 - 120
1875858	Magnesium	107	102	P/P	80 - 120
1875858	Potassium	104	101	P/P	80 - 120
1875858	Sodium	99.3		P	80 - 120
1875858	Zinc	102	101	P/P	80 - 120
1876277	Calcium	101		P	80 - 120
1876277	Iron	98.7		P	80 - 120
1876277	Magnesium	100		P	80 - 120
1876277	Potassium	98.8		P	80 - 120
1876277	Sodium	97.6		P	80 - 120
1876277	Zinc	98.7		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P321026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875858	Arsenic	96.5	97.6	P/P	80 - 120
1875858	Cadmium	92.9	95.7	P/P	80 - 120
1875858	Chromium	94.3	95.7	P/P	80 - 120
1875858	Copper	95.6	96.3	P/P	80 - 120
1875858	Lead	95.1	94.2	P/P	80 - 120
1875858	Nickel	95.6	95.4	P/P	80 - 120
1875858	Silver	91.1	91.8	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P321026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1876277	Arsenic	99.6		P	80 - 120
1876277	Cadmium	96.0		P	80 - 120
1876277	Chromium	93.8		P	80 - 120
1876277	Copper	99.3		P	80 - 120
1876277	Lead	94.7		P	80 - 120
1876277	Nickel	98.4		P	80 - 120
1876277	Silver	91.3		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321443

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875902	Chloride	101		P	90 - 110
1875919	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321446

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875902	Sulfate	99.9		P	90 - 110
1875919	Sulfate	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875920	Chloride	94.9		P	90 - 110
1876124	Chloride	92.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875920	Sulfate	91.6		P	90 - 110
1876124	Sulfate	90.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320996

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875862	Ammonia-N	95.8	94.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320998

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875924	Ammonia-N	99.5	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320717

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320717

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875783	Kjeldahl Nitrogen	101	96.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320827

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875906	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320828

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875957	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875850	Total-P	95.6	94.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320725

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875959	Total-P	95.1	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875962	O-Phosphate-P	97.4	96.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P321042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875792	Fluoride	102	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P320852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875758	Organic Carbon	101	97.2	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P320676

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875877	Turbidity	7.19	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P320677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875956	Turbidity	4.57	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P321026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875858	Calcium	0.401	Spike	P	0 - 20
1875858	Iron	4.23	Spike	P	0 - 20
1875858	Magnesium	4.41	Spike	P	0 - 20
1875858	Potassium	1.82	Spike	P	0 - 20
1875858	Sodium	0.373	Spike	P	0 - 20
1875858	Zinc	1.17	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P321026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875858	Arsenic	1.12	Spike	P	0 - 20
1875858	Cadmium	2.92	Spike	P	0 - 20
1875858	Chromium	1.39	Spike	P	0 - 20
1875858	Copper	0.695	Spike	P	0 - 20
1875858	Lead	0.944	Spike	P	0 - 20
1875858	Nickel	0.205	Spike	P	0 - 20
1875858	Silver	0.850	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875919	Chloride	0.0634	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321446

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875919	Sulfate	0.154	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875920	Chloride	0.899	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875920	Sulfate	0.976	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320996

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875862	Ammonia-N	1.11	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320998

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875924	Ammonia-N	0.435	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875783	Kjeldahl Nitrogen	2.73	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320882

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875958	Kjeldahl Nitrogen	2.17	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875906	NO2NO3-N	1.95	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320828

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875957	NO2NO3-N	0.962	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P320723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875850	Total-P	1.36	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P320725

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875959	Total-P	0.294	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P320680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875962	O-Phosphate-P	1.09	Spike	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P320666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875861	Color (true)	1.40	Sample	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P320668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875917	Color (true)	7.18	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P321207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876211	Total Alkalinity	0.106	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P321092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875374	TDS	7.97	Sample	P	0 - 10

Reference Method: SM 2540 C-97
 Batch ID: P321095

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875904	TDS	7.69	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P321042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875792	Fluoride	0.480	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P320852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875758	Organic Carbon	3.49	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 Calibration Verification

Reference Method: SM 2120 B
Run ID: A74777
Included Lab Sample IDs: 1875917, 1875918, 1875919, 1875920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.3	97.4	P/P	85 - 115
Color (true)	95.9	95.0	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A74781
Included Lab Sample IDs: 1875917, 1875918, 1875919, 1875920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A74782
Included Lab Sample IDs: 1875925, 1875926, 1875927, 1875928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.7	P/P	90 - 110
O-Phosphate-P	99.0	100	P/P	90 - 110
O-Phosphate-P	99.7	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A74836
Included Lab Sample IDs: 1875921, 1875922, 1875923, 1875924

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74838

Included Lab Sample IDs: 1875921, 1875922, 1875923, 1875924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.5	P/P	90 - 110
Total-P	99.2	98.8	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A74852

Included Lab Sample IDs: 1875921, 1875922, 1875923, 1875924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.7	94.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74858

Included Lab Sample IDs: 1875921

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74900

Included Lab Sample IDs: 1875922, 1875923, 1875924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.0	P/P	90 - 110
Kjeldahl Nitrogen	99.1	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74904

Included Lab Sample IDs: 1875921, 1875922, 1875923, 1875924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	101	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A74917

Included Lab Sample IDs: 1875917, 1875918, 1875919, 1875920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74976

Included Lab Sample IDs: 1875917, 1875918, 1875919, 1875920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	109	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A74977

Included Lab Sample IDs: 1875917, 1875918, 1875919, 1875920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	102	101	P/P	90 - 110
Chloride	98.7	93.5	P/P	90 - 110
Sulfate	91.9	90.1	P/P	90 - 110
Sulfate	97.4	93.1	P/P	90 - 110
Sulfate	98.3	92.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A75007

Included Lab Sample IDs: 1875933, 1875934, 1875935, 1875936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	100	100	P/P	90 - 110
Arsenic	102	101	P/P	90 - 110
Cadmium	98.3	95.8	P/P	90 - 110
Cadmium	98.5	98.6	P/P	90 - 110
Chromium	101	100	P/P	90 - 110
Chromium	100	97.2	P/P	90 - 110
Copper	102	102	P/P	90 - 110
Copper	104	103	P/P	90 - 110
Lead	91.8	92.4	P/P	90 - 110
Lead	93.3	92.9	P/P	90 - 110
Nickel	101	103	P/P	90 - 110
Nickel	103	102	P/P	90 - 110
Silver	94.3	92.8	P/P	90 - 110
Silver	94.8	93.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A75052

Included Lab Sample IDs: 1875933, 1875934, 1875935, 1875936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	106	P/P	90 - 110
Calcium	105	102	P/P	95 - 105
Iron	102	104	P/P	95 - 105
Iron	99.9	100	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Magnesium	103	103	P/P	95 - 105
Potassium	103	102	P/P	95 - 105
Potassium	103	104	P/P	90 - 110
Sodium	101	101	P/P	95 - 105
Sodium	100	102	P/P	90 - 110
Zinc	101	103	P/P	90 - 110
Zinc	102	101	P/P	95 - 105

* 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						7.19	
	Turbidity						4.57	
EPA 200.7 Rev. 4.4	Calcium	104	106	101				0.401
	Iron	102	107	102	98.7			4.23
	Magnesium	103	107	102	100			4.41
	Potassium	102	104	101	98.8			1.82
	Sodium	94.0	99.3	97.6				0.373
	Zinc	102	102	101	98.7			1.17
EPA 200.8 Rev. 5.4	Arsenic	97.0	96.5	97.6	99.6			1.12
	Cadmium	93.3	92.9	95.7	96.0			2.92
	Chromium	95.5	94.3	95.7	93.8			1.39
	Copper	96.0	95.6	96.3	99.3			0.695
	Lead	91.0	95.1	94.2	94.7			0.944
	Nickel	97.5	95.6	95.4	98.4			0.205
	Silver	90.6	91.1	91.8	91.3			0.850
EPA 300.0 Rev. 2.1	Chloride	102	103	101			0.0634	
	Chloride	94.3	94.9	92.7			0.899	
	Sulfate	97.9	99.3	99.9			0.154	
	Sulfate	90.8	91.6	90.5			0.976	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	95.8	94.7				1.11
	Ammonia-N	102	99.5	98.8				0.435
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	101	96.5				2.73
	Kjeldahl Nitrogen	102						2.17
EPA 353.2 Rev. 2.0	NO2NO3-N	103	102	104				1.95
	NO2NO3-N	105	104	104				0.962
EPA 365.1 Rev. 2.0	Total-P	94.6	95.6	94.3				1.36
	Total-P	90.8	95.1	94.8				0.294
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.4	96.2				1.09
SM 2120 B	Color (true)						1.40	
	Color (true)						7.18	
SM 2320 B-97	Total Alkalinity	103					0.106	
SM 2540 C-97	TDS						7.97	
	TDS						7.69	
SM 4500 F-C-97	Fluoride	97.3	102	101				0.480
SM 5310 B-00	Organic Carbon	97.5	101	97.2				3.49

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1875917, 1875918, 1875919, 1875920
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1875933, 1875934, 1875935, 1875936
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1875933, 1875934, 1875935, 1875936
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1875917, 1875918, 1875919, 1875920
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1875917, 1875918, 1875919, 1875920
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1875921, 1875922, 1875923, 1875924
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1875921, 1875922, 1875923, 1875924
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1875921, 1875922, 1875923, 1875924

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1875921, 1875922, 1875923, 1875924
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1875925, 1875926, 1875927, 1875928
SM 2120 B / E31780	True Color measured at 450 nm	1875917, 1875918, 1875919, 1875920
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1875917, 1875918, 1875919, 1875920
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1875917, 1875918, 1875919, 1875920
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1875917, 1875918, 1875919, 1875920
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1875917, 1875918, 1875919, 1875920
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1875921, 1875922, 1875923, 1875924

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	02/28/2017			02/28/2017 14:48	Sima Feizi	1875917, 1875918, 1875919, 1875920
EPA 200.7 Rev. 4.4	02/28/2017	03/06/2017	Elliott D. Healy	03/08/2017	Joshua Ayres	1875933, 1875934, 1875935, 1875936
EPA 200.8 Rev. 5.4	02/28/2017	03/06/2017	Elliott D. Healy	03/09/2017	Betina Topolski	1875934
	02/28/2017	03/06/2017	Elliott D. Healy	03/10/2017	Betina Topolski	1875933, 1875935, 1875936
EPA 300.0 Rev. 2.1	02/28/2017			03/10/2017	Elisa J Lutz	1875917, 1875918, 1875919, 1875920
EPA 350.1 Rev. 2.0	02/28/2017			03/02/2017	Sofia Elnemr	1875921, 1875922, 1875923, 1875924
EPA 351.2 Rev. 2.0	02/28/2017	03/01/2017	Adrian Shelby	03/02/2017	Joseph Suarez	1875921
	02/28/2017	03/03/2017	Adrian Shelby	03/06/2017	Joseph Suarez	1875922, 1875923, 1875924
EPA 353.2 Rev. 2.0	02/28/2017			03/02/2017	Beverly Y. Sanders	1875921, 1875922, 1875923, 1875924
EPA 365.1 Rev. 2.0	02/28/2017	03/01/2017	Vijayalakshmi Reddy	03/02/2017	Lipi Saha	1875921, 1875922, 1875923, 1875924
EPA 365.1 Rev. 2.0 dissolved	02/28/2017			02/28/2017 15:42	Julia Storbeck	1875926
	02/28/2017			02/28/2017 16:02	Julia Storbeck	1875925
	02/28/2017			02/28/2017 16:12	Julia Storbeck	1875927
	02/28/2017			02/28/2017 16:13	Julia Storbeck	1875928
SM 2120 B	02/28/2017			02/28/2017 15:15	Julie Michelle Frank	1875918
	02/28/2017			02/28/2017 15:31	Julie Michelle Frank	1875917
	02/28/2017			02/28/2017 15:32	Julie Michelle Frank	1875919
	02/28/2017			02/28/2017 15:33	Julie Michelle Frank	1875920
SM 2320 B-97	02/28/2017			03/09/2017	Dale L. Simmons	1875917, 1875918, 1875919, 1875920
SM 2540 C-97	02/28/2017			03/01/2017	Yijie Li	1875917, 1875918, 1875919, 1875920
SM 2540 D-97	02/28/2017			03/01/2017	Yijie Li	1875917, 1875918, 1875919, 1875920
SM 4500 F-C-97	02/28/2017			03/04/2017	Dale L. Simmons	1875917, 1875918, 1875919, 1875920
SM 5310 B-00	02/28/2017			03/01/2017	Julie Michelle Frank	1875921, 1875922, 1875923
	02/28/2017			03/02/2017	Julie Michelle Frank	1875924