

Chemical Analysis Report

WQAP-2016-05-25-02

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

Event Description: **Tanyard Branch, Quincy Creek, Little River and
Ochlockonee River**

Request ID: **RQ-2016-05-23-22**

Customer: **WQAP**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
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Tallahassee, FL 32399-2400
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Date Certified: 17-JUN-2016 14:40



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: QUINCY CREEK 100 METERS UPSTREAM OF RALPH STRONG RD. **Collection Date/Time: 05/25/2016 09:10**

Field ID: G1WA0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1802175	EPA 180.1 Rev. 2.0	Turbidity	14	A	NTU	P305148	
	EPA 300.0 Rev. 2.1	Chloride	6.2		mg Cl/L	P305566	
	SM 2120 B	Color (true)	42	A	PCU	P305128	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P305509	
	SM 2540 C-97	TDS	56		mg/L	P305633	
	SM 2540 D-97	TSS	13		mg/L	P305824	
	SM 4500 F-C-97	Fluoride	0.098	I	mg F/L	P305511	
1802179	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P305658	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30		mg N/L	P305422	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P305183	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P305714	
	SM 5310 B-00	Organic Carbon	4.2		mg C/L	P305853	
1802183	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.042		mg P/L	P305030	
1802199	EPA 200.7 Rev. 4.4	Calcium	7.67		mg/L	P305303	
		Iron	2.31E+03		ug/L	P305303	
		Magnesium	2.38		mg/L	P305303	
		Potassium	0.49	I	mg/L	P305303	
		Sodium	4.1		mg/L	P305303	
		Zinc	5.0	U	ug/L	P305303	
	EPA 200.8 Rev. 5.4	Arsenic	0.93		ug/L	P305303	
		Cadmium	0.020	U	ug/L	P305303	
		Chromium	1.05		ug/L	P305303	
		Copper	0.38	I	ug/L	P305303	
		Lead	0.63		ug/L	P305303	
		Nickel	0.30		ug/L	P305303	
		Silver	0.0050	U	ug/L	P305303	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: TANYARD BRANCH 100 METERS UPSTREAM OF RALPH STRONG RD. **Collection Date/Time: 05/25/2016 09:30**

Field ID: G1WA0005

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1802187	EPA 180.1 Rev. 2.0	Turbidity	7.7		NTU	P305148	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P305566	
	SM 2120 B	Color (true)	57		PCU	P305122	
	SM 2320 B-97	Total Alkalinity	55		mg CaCO3/L	P305509	
	SM 2540 C-97	TDS	100	A	mg/L	P305633	
	SM 2540 D-97	TSS	4	I	mg/L	P305824	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P305511	
1802189	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P305658	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P305423	

Field ID: G1WA0005

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1802189	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P305184	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P305714	
	SM 5310 B-00	Organic Carbon	4.9		mg C/L	P305853	
1802191	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.044		mg P/L	P305030	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: QUINCY CREEK UPSTREAM OF SR 12

Collection Date/Time: 05/25/2016 10:05

Field ID: G1WA0019

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1802176	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P305148	
	EPA 300.0 Rev. 2.1	Chloride	5.3		mg Cl/L	P305566	
	SM 2120 B	Color (true)	63		PCU	P305122	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P305509	
	SM 2540 C-97	TDS	40		mg/L	P305633	
	SM 2540 D-97	TSS	12		mg/L	P305824	
	SM 4500 F-C-97	Fluoride	0.086	I	mg F/L	P305511	
1802180	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P305906	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P305422	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P305183	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P305714	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P305853	
1802184	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P305030	
1802200	EPA 200.7 Rev. 4.4	Calcium	6.43		mg/L	P305303	
		Iron	2.07E+03		ug/L	P305303	
		Magnesium	2.13		mg/L	P305303	
		Potassium	0.35	I	mg/L	P305303	
		Sodium	3.1		mg/L	P305303	
		Zinc	5.0	U	ug/L	P305303	
	EPA 200.8 Rev. 5.4	Arsenic	0.86		ug/L	P305303	
		Cadmium	0.020	U	ug/L	P305303	
		Chromium	0.88		ug/L	P305303	
		Copper	0.27	I	ug/L	P305303	
		Lead	0.50		ug/L	P305303	
		Nickel	0.25		ug/L	P305303	
		Silver	0.0050	U	ug/L	P305303	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: LITTLE RIVER 100 METERS UPSTREAM OF SR 12

Collection Date/Time: 05/25/2016 10:55

Field ID: G1WA0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G1WA0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1802188	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P305148	
	EPA 300.0 Rev. 2.1	Chloride	6.0		mg Cl/L	P305566	
	SM 2120 B	Color (true)	67		PCU	P305128	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P305510	
	SM 2540 C-97	TDS	57		mg/L	P305633	
	SM 2540 D-97	TSS	11		mg/L	P305824	
	SM 4500 F-C-97	Fluoride	0.090	I	mg F/L	P305512	
1802190	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P305658	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32		mg N/L	P305423	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.50		mg N/L	P305184	
	EPA 365.1 Rev. 2.0	Total-P	0.095		mg P/L	P305714	
	SM 5310 B-00	Organic Carbon	6.6		mg C/L	P305853	
1802192	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.044		mg P/L	P305030	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: OCHLOCKONEE RIVER UPSTREAM OF SR 12 Collection Date/Time: 05/25/2016 12:05

Field ID: G1WA0038

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1802177	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P305148	
	EPA 300.0 Rev. 2.1	Chloride	13	A	mg Cl/L	P305566	
	SM 2120 B	Color (true)	91		PCU	P305122	
	SM 2320 B-97	Total Alkalinity	27		mg CaCO3/L	P305509	
	SM 2540 C-97	TDS	84		mg/L	P305633	
	SM 2540 D-97	TSS	11		mg/L	P305824	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P305511	
1802181	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P305658	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P305423	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.75		mg N/L	P305184	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P305714	
	SM 5310 B-00	Organic Carbon	7.7		mg C/L	P305853	
1802185	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.088		mg P/L	P305030	
1802201	EPA 200.7 Rev. 4.4	Calcium	8.43		mg/L	P305303	
		Iron	1.63E+03		ug/L	P305303	
		Magnesium	4.18		mg/L	P305303	
		Potassium	2.6		mg/L	P305303	
		Sodium	8.8		mg/L	P305303	
		Zinc	5.0	U	ug/L	P305303	
	EPA 200.8 Rev. 5.4	Arsenic	1.01		ug/L	P305303	
		Cadmium	0.020	U	ug/L	P305303	
		Chromium	0.81		ug/L	P305303	
		Copper	0.56		ug/L	P305303	
		Lead	0.56		ug/L	P305303	

Field ID: G1WA0038

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1802201	EPA 200.8 Rev. 5.4	Nickel	0.44		ug/L	P305303	
		Silver	0.0050	U	ug/L	P305303	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: OCHLOCKONEE RIVER 350M UPSTREAM OF SR 12 **Collection Date/Time: 05/25/2016 12:25**

Field ID: G1WA0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1802178	EPA 180.1 Rev. 2.0	Turbidity	9.5		NTU	P305148	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P305566	
	SM 2120 B	Color (true)	90		PCU	P305122	
	SM 2320 B-97	Total Alkalinity	28		mg CaCO3/L	P305509	
	SM 2540 C-97	TDS	100		mg/L	P305633	
	SM 2540 D-97	TSS	12		mg/L	P305824	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P305511	
1802182	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P305658	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P305423	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.77		mg N/L	P305184	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P305714	
	SM 5310 B-00	Organic Carbon	7.7		mg C/L	P305853	
1802186	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.087		mg P/L	P305030	
1802202	EPA 200.7 Rev. 4.4	Calcium	8.55		mg/L	P305303	
		Iron	1.63E+03		ug/L	P305303	
		Magnesium	4.22		mg/L	P305303	
		Potassium	2.7		mg/L	P305303	
		Sodium	9.0		mg/L	P305303	
		Zinc	5.0	U	ug/L	P305303	
	EPA 200.8 Rev. 5.4	Arsenic	1.0		ug/L	P305303	
		Cadmium	0.020	U	ug/L	P305303	
		Chromium	0.80		ug/L	P305303	
		Copper	0.63		ug/L	P305303	
		Lead	0.56		ug/L	P305303	
		Nickel	0.46		ug/L	P305303	
		Silver	0.0050	U	ug/L	P305303	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P305148

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305148

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P305303

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: P305303

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.050	U	ug/L
Copper	0.10	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.050	U	ug/L
Silver	0.0050	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305566

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305658

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305906

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305422

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305423

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305183

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305184

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305714

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305030

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

Reference Method: SM 2120 B
Batch ID: P305122

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P305128

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P305509

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

Reference Method: SM 2320 B-97
Batch ID: P305510

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P305633

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P305824

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P305511

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P305512

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P305853

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: P305303

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	106		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	101		P	85 - 115
Sodium	104		P	85 - 115
Zinc	96.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P305303

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	95.4		P	85 - 115
Cadmium	97.2		P	85 - 115
Chromium	97.2		P	85 - 115
Copper	93.7		P	85 - 115
Lead	94.6		P	85 - 115
Nickel	93.6		P	85 - 115
Silver	96.1		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305566

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305658

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305906

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	100		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305423

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: P305183

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: P305184

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: P305714

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305030

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P305509

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Reference Method: SM 2320 B-97
Batch ID: P305510

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

Reference Method: SM 4500 F-C-97
Batch ID: P305511

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P305512

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P305853

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P305303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1802313	Calcium	104		P	80 - 120
1802313	Iron	106	108	P/P	80 - 120
1802313	Magnesium	104	106	P/P	80 - 120
1802313	Potassium	98.5	99.3	P/P	80 - 120
1802313	Sodium	97.9	98.4	P/P	80 - 120
1802313	Zinc	97.6	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P305303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1802313	Arsenic	96.7	96.9	P/P	80 - 120
1802313	Cadmium	96.5	97.8	P/P	80 - 120
1802313	Chromium	97.5	99.5	P/P	80 - 120
1802313	Copper	93.0	94.0	P/P	80 - 120
1802313	Lead	94.1	95.7	P/P	80 - 120
1802313	Nickel	94.1	95.0	P/P	80 - 120
1802313	Silver	97.8	99.4	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305566

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1802177	Chloride	99.1		P	90 - 110
1802329	Chloride	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305658

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1802179	Ammonia-N	95.5	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305906

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803994	Ammonia-N	99.3	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1802179	Kjeldahl Nitrogen	105	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305423

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1802182	Kjeldahl Nitrogen	98.0	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305183

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1802044	NO2NO3-N	96.5	95.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1802271	NO2NO3-N	96.0	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305030

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1802183	O-Phosphate-P	99.6	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P305511

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1802533	Fluoride	100	100	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P305512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1802519	Fluoride	94.7	95.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P305853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1802189	Organic Carbon	98.2	97.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802175	Turbidity	6.36	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P305303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802313	Calcium	3.00	Spike	P	0 - 20
1802313	Iron	1.61	Spike	P	0 - 20
1802313	Magnesium	1.53	Spike	P	0 - 20
1802313	Potassium	0.719	Spike	P	0 - 20
1802313	Sodium	0.312	Spike	P	0 - 20
1802313	Zinc	4.19	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P305303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802313	Arsenic	0.168	Spike	P	0 - 20
1802313	Cadmium	1.29	Spike	P	0 - 20
1802313	Chromium	2.04	Spike	P	0 - 20
1802313	Copper	1.06	Spike	P	0 - 20
1802313	Lead	1.74	Spike	P	0 - 20
1802313	Nickel	0.877	Spike	P	0 - 20
1802313	Silver	1.58	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802177	Chloride	0.0158	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305658

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802179	Ammonia-N	1.15	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803994	Ammonia-N	2.32	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802179	Kjeldahl Nitrogen	3.84	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305423

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802182	Kjeldahl Nitrogen	4.67	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802044	NO2NO3-N	0.673	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802271	NO2NO3-N	1.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802099	Total-P	1.81	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P305030

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802183	O-Phosphate-P	1.26	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P305122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802175	Color (true)	2.30	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P305128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802175	Color (true)	0.672	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P305509

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802533	Total Alkalinity	0.220	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P305510

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802519	Total Alkalinity	0.261	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P305633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802187	TDS	2.99	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P305511

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802533	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P305512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802519	Fluoride	0.536	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P305853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802189	Organic Carbon	0.491	Spike	P	0 - 20

Quality Assurance Report Precision

* 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: EPA 365.1 Rev. 2.0 dissolved

Run ID: A69693

Included Lab Sample IDs: 1802183, 1802184, 1802185, 1802186, 1802191, 1802192

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.4	P/P	90 - 110
O-Phosphate-P	99.4	99.8	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A69723

Included Lab Sample IDs: 1802175, 1802176, 1802177, 1802178, 1802187, 1802188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.7	P/P	90 - 115
Color (true)	98.7	98.1	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A69730

Included Lab Sample IDs: 1802175, 1802176, 1802177, 1802178, 1802187, 1802188

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69735

Included Lab Sample IDs: 1802179, 1802180, 1802181, 1802182, 1802189, 1802190

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.0	92.5	P/P	90 - 110
NO2NO3-N	97.0	97.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A69794

Included Lab Sample IDs: 1802199, 1802200, 1802201, 1802202

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.3	100	P/P	90 - 110
Iron	102	98.8	P/P	90 - 110
Magnesium	102	99.4	P/P	90 - 110
Potassium	100	99.7	P/P	90 - 110
Sodium	99.8	102	P/P	90 - 110
Zinc	98.8	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A69799

Included Lab Sample IDs: 1802199, 1802200, 1802201, 1802202

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.0	96.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A69799

Included Lab Sample IDs: 1802199, 1802200, 1802201, 1802202

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	96.5	96.8	P/P	90 - 110
Chromium	98.4	98.2	P/P	90 - 110
Copper	95.4	95.0	P/P	90 - 110
Lead	93.5	93.4	P/P	90 - 110
Nickel	95.4	95.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A69814

Included Lab Sample IDs: 1802175, 1802176, 1802177, 1802178, 1802187, 1802188

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

Reference Method: SM 2320 B-97

Run ID: A69825

Included Lab Sample IDs: 1802175, 1802176, 1802177, 1802178, 1802187, 1802188

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.6	P/P	90 - 110
Total Alkalinity	99.6	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A69825

Included Lab Sample IDs: 1802175, 1802176, 1802177, 1802178, 1802187, 1802188

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69846

Included Lab Sample IDs: 1802179, 1802180, 1802181, 1802182, 1802189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.3	91.2	P/P	90 - 110
Kjeldahl Nitrogen	95.2	92.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69862

Included Lab Sample IDs: 1802179, 1802181, 1802182, 1802189, 1802190

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	99.9	P/P	90 - 110
Ammonia-N	99.9	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A69879

Included Lab Sample IDs: 1802199, 1802200, 1802201, 1802202

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A69879

Included Lab Sample IDs: 1802199, 1802200, 1802201, 1802202

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	96.1	96.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69880

Included Lab Sample IDs: 1802190

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.8	93.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A69933

Included Lab Sample IDs: 1802179, 1802180, 1802181, 1802182, 1802189, 1802190

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.6	P/P	90 - 110
Organic Carbon	98.6	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69948

Included Lab Sample IDs: 1802180

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69951

Included Lab Sample IDs: 1802179, 1802180, 1802181, 1802182, 1802189, 1802190

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	P/P	90 - 110
Total-P	101	101	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				6.36	
EPA 200.7 Rev. 4.4	Calcium	103	104			3.00
	Iron	106	106	108		1.61
	Magnesium	107	104	106		1.53
	Potassium	101	98.5	99.3		0.719
	Sodium	104	97.9	98.4		0.312
	Zinc	96.5	97.6	102		4.19
EPA 200.8 Rev. 5.4	Arsenic	95.4	96.7	96.9		0.168
	Cadmium	97.2	96.5	97.8		1.29

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 200.8 Rev. 5.4	Chromium	97.2	97.5	99.5		2.04
	Copper	93.7	93.0	94.0		1.06
	Lead	94.6	94.1	95.7		1.74
	Nickel	93.6	94.1	95.0		0.877
	Silver	96.1	97.8	99.4		1.58
EPA 300.0 Rev. 2.1	Chloride	100	99.1	99.7	0.0158	
EPA 350.1 Rev. 2.0	Ammonia-N	101	95.5	97.5		1.15
	Ammonia-N	99.9	99.3	102		2.32
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	105	100		3.84
	Kjeldahl Nitrogen	102	98.0	105		4.67
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	96.5	95.5		0.673
	NO ₂ NO ₃ -N	98.5	96.0	97.0		1.04
EPA 365.1 Rev. 2.0	Total-P	102				1.81
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	99.6	101		1.26
SM 2120 B	Color (true)				2.30	
	Color (true)				0.672	
SM 2320 B-97	Total Alkalinity	103			0.220	
	Total Alkalinity	101			0.261	
SM 2540 C-97	TDS				2.99	
SM 4500 F-C-97	Fluoride	97.7	100	100		0.0
	Fluoride	98.2	94.7	95.3		0.536
SM 5310 B-00	Organic Carbon	101	98.2	97.6		0.491

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1802199, 1802200, 1802201, 1802202
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1802199, 1802200, 1802201, 1802202
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1802179, 1802180, 1802181, 1802182, 1802189, 1802190
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1802179, 1802180, 1802181, 1802182, 1802189, 1802190
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1802179, 1802180, 1802181, 1802182, 1802189, 1802190
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1802179, 1802180, 1802181, 1802182, 1802189, 1802190
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1802183, 1802184, 1802185, 1802186, 1802191, 1802192
SM 2120 B / E31780	True Color measured at 450 nm	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1802179, 1802180, 1802181, 1802182, 1802189, 1802190

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	05/25/2016			05/26/2016 16:42	Blanca Fach	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
EPA 200.7 Rev. 4.4	05/25/2016	05/31/2016	Elliott D. Healy	06/01/2016	Joshua Ayres	1802199, 1802200, 1802201, 1802202
EPA 200.8 Rev. 5.4	05/25/2016	05/31/2016	Elliott D. Healy	06/01/2016	Charles J. Peterson	1802199, 1802200, 1802201, 1802202
	05/25/2016	05/31/2016	Elliott D. Healy	06/03/2016	Charles J. Peterson	1802199, 1802200, 1802201, 1802202
EPA 300.0 Rev. 2.1	05/25/2016			06/02/2016	Elisa J Lutz	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
EPA 350.1 Rev. 2.0	05/25/2016			06/06/2016	Diana M. Turner	1802179, 1802181, 1802182, 1802189, 1802190
	05/25/2016			06/09/2016	Diana M. Turner	1802180
EPA 351.2 Rev. 2.0	05/25/2016	06/02/2016	Sofia Elnemr	06/03/2016	Christopher Armour	1802179, 1802180, 1802181, 1802182, 1802189
	05/25/2016	06/02/2016	Sofia Elnemr	06/06/2016	Christopher Armour	1802190
EPA 353.2 Rev. 2.0	05/25/2016			05/27/2016	Peter D. Kaus	1802179, 1802180, 1802181, 1802182, 1802189, 1802190
EPA 365.1 Rev. 2.0	05/25/2016	06/07/2016	Vijayalakshmi Reddy	06/09/2016	Rochelle Y Jackson	1802179, 1802180, 1802181, 1802182, 1802189, 1802190
EPA 365.1 Rev. 2.0 dissolved	05/25/2016			05/25/2016 15:30	Julia Storbeck	1802183
	05/25/2016			05/25/2016 15:34	Julia Storbeck	1802184
	05/25/2016			05/25/2016 15:35	Julia Storbeck	1802185
	05/25/2016			05/25/2016 15:36	Julia Storbeck	1802186
	05/25/2016			05/25/2016 15:41	Julia Storbeck	1802191
	05/25/2016			05/25/2016 15:42	Julia Storbeck	1802192
SM 2120 B	05/25/2016			05/26/2016 16:32	Chrisoulla Rakowski	1802176
	05/25/2016			05/26/2016 16:34	Chrisoulla Rakowski	1802177
	05/25/2016			05/26/2016 16:35	Chrisoulla Rakowski	1802178
	05/25/2016			05/26/2016 16:36	Chrisoulla Rakowski	1802187
	05/25/2016			05/26/2016 17:23	Chrisoulla Rakowski	1802175
	05/25/2016			05/26/2016 17:24	Chrisoulla Rakowski	1802188
SM 2320 B-97	05/25/2016			06/02/2016	Dale L. Simmons	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
SM 2540 C-97	05/25/2016			05/27/2016	Yijie Li	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
SM 2540 D-97	05/25/2016			05/27/2016	Yijie Li	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
SM 4500 F-C-97	05/25/2016			06/02/2016	Dale L. Simmons	1802175, 1802176, 1802177, 1802178, 1802187, 1802188
SM 5310 B-00	05/25/2016			06/07/2016	Diana M. Turner	1802179, 1802180, 1802181, 1802182, 1802189, 1802190