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ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
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RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-90258-1
Client Project/Site: BRF_SEW_20190515_1A
Revision: 1

For:
Environmental Standards Inc.
1140 Valley Forge Road
PO BOX 810
Valley Forge, Pennsylvania 19482-0810

Attn: Jennifer N. Gable

Authorized for release by:
8/1/2019 2:50:01 PM

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Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

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Job ID: 180-90258-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-90258-1

This report was revised to update the COC

Receipt
The samples were received on 5/17/2019 9:00 AM; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 2.4º C, 2.6º C, 2.8º C, 3.0º C and 3.0º C.

Receipt Exceptions
Only nitric preserved bottles were received for sample BRF-SEW-01-20190515 (180-90258-3). The sample was only logged for metals analysis.
Only nitric preserved bottles and small unpreserved bottles were received for sample BRF-SEW-03-20190515 (180-90258-4). The sample was only logged for metals and anion analysis.
All bottle types were received for BRF-SEW-TUB01-20190515 (180-90258-5). Since the sample is a tubing blank, only metals analysis was logged.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 6020A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-279574 and analytical batch 180-279753 were outside control limits for magnesium, manganese, zinc, and calcium. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 6020A: The post digestion spike % recovery for selenium associated with batch 180-279753 was outside of control limits. BRF-SEW-03-20190515 (180-90258-4) was impacted.

Samples BRF-SEW-04-20190515 (180-90258-1) and BRF-SEW-DUP01-20190515 (180-90258-2) total and dissolved bottles were raw scanned to double check the metals results. The results were confirmed.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-19
California	State Program	9	2891	04-30-20
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-20
Kentucky (DW)	Kentucky UST	4	162013	04-30-20
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-20
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-20
North Carolina (WW/SW)	State Program	4	434	12-31-19
Oregon	NELAP	10	PA-2151	02-06-20
Pennsylvania	NELAP	3	02-00416	04-30-20
South Carolina	State Program	4	89014	04-30-19 *
Texas	NELAP	6	T104704528-15-2	03-31-20
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19 *
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-20
Wisconsin	State Program	5	998027800	08-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Sample Summary

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-90258-1	BRF-SEW-04-20190515	Water	05/15/19 11:18	05/17/19 09:00	
180-90258-2	BRF-SEW-DUP01-20190515	Water	05/15/19 00:00	05/17/19 09:00	
180-90258-3	BRF-SEW-01-20190515	Water	05/15/19 14:23	05/17/19 09:00	
180-90258-4	BRF-SEW-03-20190515	Water	05/15/19 16:22	05/17/19 09:00	
180-90258-5	BRF-SEW-TUB01-20190515	Water	05/15/19 17:42	05/17/19 09:00	
180-90258-6	BRF-SEW-FLB01-20190515	Water	05/15/19 17:59	05/17/19 09:00	

Method Summary

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Method	Method Description	Protocol	Laboratory
EPA 9056A	Anions, Ion Chromatography	SW846	TAL PIT
EPA 6020A	Metals (ICP/MS)	SW846	TAL PIT
EPA 7470A	Mercury (CVAA)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-04-20190515

Lab Sample ID: 180-90258-1

Date Collected: 05/15/19 11:18

Matrix: Water

Date Received: 05/17/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			279790	05/26/19 19:14	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Total/NA	Analysis	EPA 9056A		10			279790	05/26/19 19:31	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Dissolved	Prep	3005A			50 mL	50 mL	279574	05/23/19 11:51	KAK	TAL PIT
Dissolved	Analysis	EPA 6020A		1			279753	05/24/19 14:14	RSK	TAL PIT
	Instrument ID:	A								
Total Recoverable	Prep	3005A			50 mL	50 mL	279574	05/23/19 11:51	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			279753	05/24/19 14:10	RSK	TAL PIT
	Instrument ID:	A								
Dissolved	Prep	7470A			50 mL	50 mL	279547	05/23/19 10:05	JJZ	TAL PIT
Dissolved	Analysis	EPA 7470A		1			279694	05/24/19 11:21	RJR	TAL PIT
	Instrument ID:	HGZ								
Total/NA	Prep	7470A			50 mL	50 mL	279547	05/23/19 10:05	JJZ	TAL PIT
Total/NA	Analysis	EPA 7470A		1			279694	05/24/19 11:06	RJR	TAL PIT
	Instrument ID:	HGZ								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	279227	05/20/19 15:48	TAM	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	279109	05/18/19 09:49	AVS	TAL PIT
	Instrument ID:	NOEQUIP								

Client Sample ID: BRF-SEW-DUP01-20190515

Lab Sample ID: 180-90258-2

Date Collected: 05/15/19 00:00

Matrix: Water

Date Received: 05/17/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			279790	05/26/19 19:48	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Total/NA	Analysis	EPA 9056A		10			279790	05/26/19 20:05	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Dissolved	Prep	3005A			50 mL	50 mL	279574	05/23/19 11:51	KAK	TAL PIT
Dissolved	Analysis	EPA 6020A		1			279753	05/24/19 14:20	RSK	TAL PIT
	Instrument ID:	A								
Total Recoverable	Prep	3005A			50 mL	50 mL	279574	05/23/19 11:51	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			279753	05/24/19 14:17	RSK	TAL PIT
	Instrument ID:	A								
Dissolved	Prep	7470A			50 mL	50 mL	279547	05/23/19 10:05	JJZ	TAL PIT
Dissolved	Analysis	EPA 7470A		1			279694	05/24/19 11:25	RJR	TAL PIT
	Instrument ID:	HGZ								
Total/NA	Prep	7470A			50 mL	50 mL	279547	05/23/19 10:05	JJZ	TAL PIT
Total/NA	Analysis	EPA 7470A		1			279694	05/24/19 11:07	RJR	TAL PIT
	Instrument ID:	HGZ								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	279227	05/20/19 15:48	TAM	TAL PIT
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-DUP01-20190515 — Lab Sample ID: 180-90258-2

Date Collected: 05/15/19 00:00
Date Received: 05/17/19 09:00
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	279109	05/18/19 09:49	AVS	TAL PIT

Client Sample ID: BRF-SEW-01-20190515 — Lab Sample ID: 180-90258-3

Date Collected: 05/15/19 14:23
Date Received: 05/17/19 09:00
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	279574	05/23/19 11:51	KAK	TAL PIT
Dissolved	Analysis	EPA 6020A		1			279753	05/24/19 14:34	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	279574	05/23/19 11:51	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			279753	05/24/19 14:30	RSK	TAL PIT
	Instrument ID: A									
Dissolved	Prep	7470A			50 mL	50 mL	279547	05/23/19 10:05	JJZ	TAL PIT
Dissolved	Analysis	EPA 7470A		1			279694	05/24/19 11:26	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Prep	7470A			50 mL	50 mL	279547	05/23/19 10:05	JJZ	TAL PIT
Total/NA	Analysis	EPA 7470A		1			279694	05/24/19 11:08	RJR	TAL PIT
	Instrument ID: HGZ									

Client Sample ID: BRF-SEW-03-20190515 — Lab Sample ID: 180-90258-4

Date Collected: 05/15/19 16:22
Date Received: 05/17/19 09:00
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			279790	05/26/19 17:16	CMR	TAL PIT
	Instrument ID: CHICS2000									
Dissolved	Prep	3005A			50 mL	50 mL	279574	05/23/19 11:51	KAK	TAL PIT
Dissolved	Analysis	EPA 6020A		1			279753	05/24/19 14:54	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	279574	05/23/19 11:51	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			279753	05/24/19 14:37	RSK	TAL PIT
	Instrument ID: A									
Dissolved	Prep	7470A			50 mL	50 mL	279547	05/23/19 10:05	JJZ	TAL PIT
Dissolved	Analysis	EPA 7470A		1			279694	05/24/19 11:27	RJR	TAL PIT
	Instrument ID: HGZ									
Total/NA	Prep	7470A			50 mL	50 mL	279547	05/23/19 10:05	JJZ	TAL PIT
Total/NA	Analysis	EPA 7470A		1			279694	05/24/19 11:12	RJR	TAL PIT
	Instrument ID: HGZ									

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-TUB01-20190515

Lab Sample ID: 180-90258-5
Date Collected: 05/15/19 17:42
Matrix: Water
Date Received: 05/17/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	279574	05/23/19 11:51	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			279753	05/24/19 15:17	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	279547	05/23/19 10:05	JJZ	TAL PIT
Total/NA	Analysis	EPA 7470A		1			279694	05/24/19 11:19	RJR	TAL PIT
	Instrument ID: HGZ									

Client Sample ID: BRF-SEW-FLB01-20190515

Lab Sample ID: 180-90258-6
Date Collected: 05/15/19 17:59
Matrix: Water
Date Received: 05/17/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	279574	05/23/19 11:54	KAK	TAL PIT
Dissolved	Analysis	EPA 6020A		1			279753	05/24/19 15:21	RSK	TAL PIT
	Instrument ID: A									
Dissolved	Prep	7470A			50 mL	50 mL	279422	05/22/19 10:24	JJZ	TAL PIT
Dissolved	Analysis	EPA 7470A		1			279694	05/24/19 11:00	RJR	TAL PIT
	Instrument ID: HGZ									

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT
- Batch Type: Prep
  - JJZ = Joseph Zubrow
  - KAK = Kayla Kalamasz
- Batch Type: Analysis
  - AVS = Abbey Smith
  - CMR = Carl Reagle
  - RJR = Ron Rosenbaum
  - RSK = Robert Kurtz
  - TAM = Tessa Mastalski

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-04-20190515

Lab Sample ID: 180-90258-1

Date Collected: 05/15/19 11:18
Matrix: Water
Date Received: 05/17/19 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.25		1.00	0.715	mg/L			05/26/19 19:14	1
Fluoride	0.237		0.100	0.0263	mg/L			05/26/19 19:14	1
Sulfate	543		10.0	3.80	mg/L			05/26/19 19:31	10

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		05/23/19 11:51	05/24/19 14:10	1
Arsenic	1.28		1.00	0.323	ug/L		05/23/19 11:51	05/24/19 14:10	1
Barium	77.3		10.0	1.49	ug/L		05/23/19 11:51	05/24/19 14:10	1
Beryllium	ND		1.00	0.155	ug/L		05/23/19 11:51	05/24/19 14:10	1
Boron	1000		80.0	30.3	ug/L		05/23/19 11:51	05/24/19 14:10	1
Cadmium	ND		1.00	0.125	ug/L		05/23/19 11:51	05/24/19 14:10	1
Calcium	176000		500	116	ug/L		05/23/19 11:51	05/24/19 14:10	1
Chromium	2.98		2.00	1.53	ug/L		05/23/19 11:51	05/24/19 14:10	1
Cobalt	1.13		0.500	0.0750	ug/L		05/23/19 11:51	05/24/19 14:10	1
Copper	0.952	J	2.00	0.627	ug/L		05/23/19 11:51	05/24/19 14:10	1
Lead	0.253	J	1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:10	1
Lithium	528		5.00	3.14	ug/L		05/23/19 11:51	05/24/19 14:10	1
Molybdenum	1.41	J	5.00	0.610	ug/L		05/23/19 11:51	05/24/19 14:10	1
Nickel	28.5		1.00	0.312	ug/L		05/23/19 11:51	05/24/19 14:10	1
Selenium	ND		5.00	2.62	ug/L		05/23/19 11:51	05/24/19 14:10	1
Silver	ND		1.00	0.121	ug/L		05/23/19 11:51	05/24/19 14:10	1
Sodium	7870		500	251	ug/L		05/23/19 11:51	05/24/19 14:10	1
Thallium	ND		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:10	1
Vanadium	4.66		1.00	0.899	ug/L		05/23/19 11:51	05/24/19 14:10	1
Zinc	21.6		5.00	3.22	ug/L		05/23/19 11:51	05/24/19 14:10	1

Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		05/23/19 11:51	05/24/19 14:14	1
Arsenic	1.26		1.00	0.323	ug/L		05/23/19 11:51	05/24/19 14:14	1
Barium	116		10.0	1.49	ug/L		05/23/19 11:51	05/24/19 14:14	1
Beryllium	ND		1.00	0.155	ug/L		05/23/19 11:51	05/24/19 14:14	1
Boron	1000		80.0	30.3	ug/L		05/23/19 11:51	05/24/19 14:14	1
Cadmium	ND		1.00	0.125	ug/L		05/23/19 11:51	05/24/19 14:14	1
Calcium	173000		500	116	ug/L		05/23/19 11:51	05/24/19 14:14	1
Chromium	2.97		2.00	1.53	ug/L		05/23/19 11:51	05/24/19 14:14	1
Cobalt	3.32		0.500	0.0750	ug/L		05/23/19 11:51	05/24/19 14:14	1
Copper	1.16	J	2.00	0.627	ug/L		05/23/19 11:51	05/24/19 14:14	1
Lead	0.342	J	1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:14	1
Lithium	537		5.00	3.14	ug/L		05/23/19 11:51	05/24/19 14:14	1
Molybdenum	1.67	J	5.00	0.610	ug/L		05/23/19 11:51	05/24/19 14:14	1
Nickel	16.2		1.00	0.312	ug/L		05/23/19 11:51	05/24/19 14:14	1
Selenium	ND		5.00	2.62	ug/L		05/23/19 11:51	05/24/19 14:14	1
Silver	ND		1.00	0.121	ug/L		05/23/19 11:51	05/24/19 14:14	1
Sodium	8100		500	251	ug/L		05/23/19 11:51	05/24/19 14:14	1
Thallium	ND		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:14	1
Vanadium	5.12		1.00	0.899	ug/L		05/23/19 11:51	05/24/19 14:14	1
Zinc	6.48		5.00	3.22	ug/L		05/23/19 11:51	05/24/19 14:14	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-04-20190515

Lab Sample ID: 180-90258-1

Date Collected: 05/15/19 11:18
Matrix: Water
Date Received: 05/17/19 09:00

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		05/23/19 10:05	05/24/19 11:06	1

Method: EPA 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		05/23/19 10:05	05/24/19 11:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**935**		10.0	10.0	mg/L			05/20/19 15:48	1
Total Suspended Solids	**382**		1.00	1.00	mg/L			05/18/19 09:49	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-DUP01-20190515

Lab Sample ID: 180-90258-2

Date Collected: 05/15/19 00:00
Date Received: 05/17/19 09:00

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.24		1.00	0.715	mg/L			05/26/19 19:48	1
Fluoride	0.230		0.100	0.0263	mg/L			05/26/19 19:48	1
Sulfate	537		10.0	3.80	mg/L			05/26/19 20:05	10

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		05/23/19 11:51	05/24/19 14:17	1
Arsenic	1.05		1.00	0.323	ug/L		05/23/19 11:51	05/24/19 14:17	1
Barium	76.1		10.0	1.49	ug/L		05/23/19 11:51	05/24/19 14:17	1
Beryllium	ND		1.00	0.155	ug/L		05/23/19 11:51	05/24/19 14:17	1
Boron	997		80.0	30.3	ug/L		05/23/19 11:51	05/24/19 14:17	1
Cadmium	ND		1.00	0.125	ug/L		05/23/19 11:51	05/24/19 14:17	1
Calcium	172000		500	116	ug/L		05/23/19 11:51	05/24/19 14:17	1
Chromium	3.04		2.00	1.53	ug/L		05/23/19 11:51	05/24/19 14:17	1
Cobalt	0.948		0.500	0.0750	ug/L		05/23/19 11:51	05/24/19 14:17	1
Copper	0.843	J	2.00	0.627	ug/L		05/23/19 11:51	05/24/19 14:17	1
Lead	0.146	J	1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:17	1
Lithium	525		5.00	3.14	ug/L		05/23/19 11:51	05/24/19 14:17	1
Molybdenum	1.29	J	5.00	0.610	ug/L		05/23/19 11:51	05/24/19 14:17	1
Nickel	27.8		1.00	0.312	ug/L		05/23/19 11:51	05/24/19 14:17	1
Selenium	ND		5.00	2.62	ug/L		05/23/19 11:51	05/24/19 14:17	1
Silver	ND		1.00	0.121	ug/L		05/23/19 11:51	05/24/19 14:17	1
Sodium	7900		500	251	ug/L		05/23/19 11:51	05/24/19 14:17	1
Thallium	ND		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:17	1
Vanadium	5.14		1.00	0.899	ug/L		05/23/19 11:51	05/24/19 14:17	1
Zinc	20.8		5.00	3.22	ug/L		05/23/19 11:51	05/24/19 14:17	1

Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		05/23/19 11:51	05/24/19 14:20	1
Arsenic	1.65		1.00	0.323	ug/L		05/23/19 11:51	05/24/19 14:20	1
Barium	122		10.0	1.49	ug/L		05/23/19 11:51	05/24/19 14:20	1
Beryllium	ND		1.00	0.155	ug/L		05/23/19 11:51	05/24/19 14:20	1
Boron	1010		80.0	30.3	ug/L		05/23/19 11:51	05/24/19 14:20	1
Cadmium	ND		1.00	0.125	ug/L		05/23/19 11:51	05/24/19 14:20	1
Calcium	172000		500	116	ug/L		05/23/19 11:51	05/24/19 14:20	1
Chromium	3.31		2.00	1.53	ug/L		05/23/19 11:51	05/24/19 14:20	1
Cobalt	3.70		0.500	0.0750	ug/L		05/23/19 11:51	05/24/19 14:20	1
Copper	1.41	J	2.00	0.627	ug/L		05/23/19 11:51	05/24/19 14:20	1
Lead	0.439	J	1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:20	1
Lithium	542		5.00	3.14	ug/L		05/23/19 11:51	05/24/19 14:20	1
Molybdenum	1.74	J	5.00	0.610	ug/L		05/23/19 11:51	05/24/19 14:20	1
Nickel	17.0		1.00	0.312	ug/L		05/23/19 11:51	05/24/19 14:20	1
Selenium	ND		5.00	2.62	ug/L		05/23/19 11:51	05/24/19 14:20	1
Silver	ND		1.00	0.121	ug/L		05/23/19 11:51	05/24/19 14:20	1
Sodium	8140		500	251	ug/L		05/23/19 11:51	05/24/19 14:20	1
Thallium	ND		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:20	1
Vanadium	5.60		1.00	0.899	ug/L		05/23/19 11:51	05/24/19 14:20	1
Zinc	7.55		5.00	3.22	ug/L		05/23/19 11:51	05/24/19 14:20	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-DUP01-20190515

Lab Sample ID: 180-90258-2

Date Collected: 05/15/19 00:00
Matrix: Water
Date Received: 05/17/19 09:00

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		05/23/19 10:05	05/24/19 11:07	1

Method: EPA 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		05/23/19 10:05	05/24/19 11:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**935**		10.0	10.0	mg/L			05/20/19 15:48	1
Total Suspended Solids	**310**		1.00	1.00	mg/L			05/18/19 09:49	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-01-20190515

Lab Sample ID: 180-90258-3

Date Collected: 05/15/19 14:23
Date Received: 05/17/19 09:00

Matrix: Water

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		05/23/19 11:51	05/24/19 14:30	1
Arsenic	**3.09**		1.00	0.323	ug/L		05/23/19 11:51	05/24/19 14:30	1
Barium	**104**		10.0	1.49	ug/L		05/23/19 11:51	05/24/19 14:30	1
Beryllium	**0.574**	**J**	1.00	0.155	ug/L		05/23/19 11:51	05/24/19 14:30	1
Boron	**41.5**	**J**	80.0	30.3	ug/L		05/23/19 11:51	05/24/19 14:30	1
Cadmium	**0.130**	**J**	1.00	0.125	ug/L		05/23/19 11:51	05/24/19 14:30	1
Calcium	**26200**		500	116	ug/L		05/23/19 11:51	05/24/19 14:30	1
Chromium	**16.7**		2.00	1.53	ug/L		05/23/19 11:51	05/24/19 14:30	1
Cobalt	**5.79**		0.500	0.0750	ug/L		05/23/19 11:51	05/24/19 14:30	1
Copper	**10.5**		2.00	0.627	ug/L		05/23/19 11:51	05/24/19 14:30	1
Lead	**9.43**		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:30	1
Lithium	**13.9**		5.00	3.14	ug/L		05/23/19 11:51	05/24/19 14:30	1
Molybdenum	ND		5.00	0.610	ug/L		05/23/19 11:51	05/24/19 14:30	1
Nickel	**13.6**		1.00	0.312	ug/L		05/23/19 11:51	05/24/19 14:30	1
Selenium	ND		5.00	2.62	ug/L		05/23/19 11:51	05/24/19 14:30	1
Silver	ND		1.00	0.121	ug/L		05/23/19 11:51	05/24/19 14:30	1
Sodium	ND		500	251	ug/L		05/23/19 11:51	05/24/19 14:30	1
Thallium	**0.134**	**J**	1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:30	1
Vanadium	**18.4**		1.00	0.899	ug/L		05/23/19 11:51	05/24/19 14:30	1
Zinc	**41.9**		5.00	3.22	ug/L		05/23/19 11:51	05/24/19 14:30	1

Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		05/23/19 11:51	05/24/19 14:34	1
Arsenic	**3.28**		1.00	0.323	ug/L		05/23/19 11:51	05/24/19 14:34	1
Barium	**94.8**		10.0	1.49	ug/L		05/23/19 11:51	05/24/19 14:34	1
Beryllium	**0.633**	**J**	1.00	0.155	ug/L		05/23/19 11:51	05/24/19 14:34	1
Boron	**41.3**	**J**	80.0	30.3	ug/L		05/23/19 11:51	05/24/19 14:34	1
Cadmium	ND		1.00	0.125	ug/L		05/23/19 11:51	05/24/19 14:34	1
Calcium	**18500**		500	116	ug/L		05/23/19 11:51	05/24/19 14:34	1
Chromium	**18.0**		2.00	1.53	ug/L		05/23/19 11:51	05/24/19 14:34	1
Cobalt	**5.53**		0.500	0.0750	ug/L		05/23/19 11:51	05/24/19 14:34	1
Copper	**10.2**		2.00	0.627	ug/L		05/23/19 11:51	05/24/19 14:34	1
Lead	**9.09**		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:34	1
Lithium	**14.6**		5.00	3.14	ug/L		05/23/19 11:51	05/24/19 14:34	1
Molybdenum	ND		5.00	0.610	ug/L		05/23/19 11:51	05/24/19 14:34	1
Nickel	**14.1**		1.00	0.312	ug/L		05/23/19 11:51	05/24/19 14:34	1
Selenium	ND		5.00	2.62	ug/L		05/23/19 11:51	05/24/19 14:34	1
Silver	ND		1.00	0.121	ug/L		05/23/19 11:51	05/24/19 14:34	1
Sodium	ND		500	251	ug/L		05/23/19 11:51	05/24/19 14:34	1
Thallium	ND		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:34	1
Vanadium	**18.9**		1.00	0.899	ug/L		05/23/19 11:51	05/24/19 14:34	1
Zinc	**39.2**		5.00	3.22	ug/L		05/23/19 11:51	05/24/19 14:34	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		05/23/19 10:05	05/24/19 11:08	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-01-20190515

Lab Sample ID: 180-90258-3

Date Collected: 05/15/19 14:23

Matrix: Water

Date Received: 05/17/19 09:00

Method: EPA 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.137	J	0.200	0.101	ug/L		05/23/19 10:05	05/24/19 11:26	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-03-20190515

Lab Sample ID: 180-90258-4

Date Collected: 05/15/19 16:22
Date Received: 05/17/19 09:00

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00	0.715	mg/L			05/26/19 17:16	1
Fluoride	0.0700	J	0.100	0.0263	mg/L			05/26/19 17:16	1
Sulfate	21.1		1.00	0.380	mg/L			05/26/19 17:16	1

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	1.08	J	2.00	0.378	ug/L		05/23/19 11:51	05/24/19 14:37	1
Arsenic	24.3		1.00	0.323	ug/L		05/23/19 11:51	05/24/19 14:37	1
Barium	327		10.0	1.49	ug/L		05/23/19 11:51	05/24/19 14:37	1
Beryllium	3.31		1.00	0.155	ug/L		05/23/19 11:51	05/24/19 14:37	1
Boron	105		80.0	30.3	ug/L		05/23/19 11:51	05/24/19 14:37	1
Cadmium	0.527	J	1.00	0.125	ug/L		05/23/19 11:51	05/24/19 14:37	1
Calcium	87500	F1	500	116	ug/L		05/23/19 11:51	05/24/19 14:37	1
Chromium	102		2.00	1.53	ug/L		05/23/19 11:51	05/24/19 14:37	1
Cobalt	39.2		0.500	0.0750	ug/L		05/23/19 11:51	05/24/19 14:37	1
Copper	61.4		2.00	0.627	ug/L		05/23/19 11:51	05/24/19 14:37	1
Lead	52.9		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:37	1
Lithium	60.8		5.00	3.14	ug/L		05/23/19 11:51	05/24/19 14:37	1
Molybdenum	1.35	J	5.00	0.610	ug/L		05/23/19 11:51	05/24/19 14:37	1
Nickel	80.8		1.00	0.312	ug/L		05/23/19 11:51	05/24/19 14:37	1
Selenium	ND		5.00	2.62	ug/L		05/23/19 11:51	05/24/19 14:37	1
Silver	0.139	J	1.00	0.121	ug/L		05/23/19 11:51	05/24/19 14:37	1
Sodium	1130		500	251	ug/L		05/23/19 11:51	05/24/19 14:37	1
Thallium	0.658	J	1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:37	1
Vanadium	106		1.00	0.899	ug/L		05/23/19 11:51	05/24/19 14:37	1
Zinc	182	F1	5.00	3.22	ug/L		05/23/19 11:51	05/24/19 14:37	1

Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.615	J	2.00	0.378	ug/L		05/23/19 11:51	05/24/19 14:54	1
Arsenic	7.48		1.00	0.323	ug/L		05/23/19 11:51	05/24/19 14:54	1
Barium	103		10.0	1.49	ug/L		05/23/19 11:51	05/24/19 14:54	1
Beryllium	0.997	J	1.00	0.155	ug/L		05/23/19 11:51	05/24/19 14:54	1
Boron	72.5	J	80.0	30.3	ug/L		05/23/19 11:51	05/24/19 14:54	1
Cadmium	0.188	J	1.00	0.125	ug/L		05/23/19 11:51	05/24/19 14:54	1
Calcium	32900		500	116	ug/L		05/23/19 11:51	05/24/19 14:54	1
Chromium	31.5		2.00	1.53	ug/L		05/23/19 11:51	05/24/19 14:54	1
Cobalt	8.87		0.500	0.0750	ug/L		05/23/19 11:51	05/24/19 14:54	1
Copper	14.4		2.00	0.627	ug/L		05/23/19 11:51	05/24/19 14:54	1
Lead	13.1		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:54	1
Lithium	20.3		5.00	3.14	ug/L		05/23/19 11:51	05/24/19 14:54	1
Molybdenum	0.682	J	5.00	0.610	ug/L		05/23/19 11:51	05/24/19 14:54	1
Nickel	21.5		1.00	0.312	ug/L		05/23/19 11:51	05/24/19 14:54	1
Selenium	ND		5.00	2.62	ug/L		05/23/19 11:51	05/24/19 14:54	1
Silver	ND		1.00	0.121	ug/L		05/23/19 11:51	05/24/19 14:54	1
Sodium	1090		500	251	ug/L		05/23/19 11:51	05/24/19 14:54	1
Thallium	0.309	J	1.00	0.128	ug/L		05/23/19 11:51	05/24/19 14:54	1
Vanadium	39.1		1.00	0.899	ug/L		05/23/19 11:51	05/24/19 14:54	1
Zinc	50.9		5.00	3.22	ug/L		05/23/19 11:51	05/24/19 14:54	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-03-20190515

Lab Sample ID: 180-90258-4

Date Collected: 05/15/19 16:22
Matrix: Water
Date Received: 05/17/19 09:00

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		05/23/19 10:05	05/24/19 11:12	1

Method: EPA 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		05/23/19 10:05	05/24/19 11:27	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-TUB01-20190515

Lab Sample ID: 180-90258-5

Date Collected: 05/15/19 17:42

Matrix: Water

Date Received: 05/17/19 09:00

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		05/23/19 11:51	05/24/19 15:17	1
Arsenic	**0.437**	**J**	1.00	0.323	ug/L		05/23/19 11:51	05/24/19 15:17	1
Barium	ND		10.0	1.49	ug/L		05/23/19 11:51	05/24/19 15:17	1
Beryllium	ND		1.00	0.155	ug/L		05/23/19 11:51	05/24/19 15:17	1
Boron	ND		80.0	30.3	ug/L		05/23/19 11:51	05/24/19 15:17	1
Cadmium	ND		1.00	0.125	ug/L		05/23/19 11:51	05/24/19 15:17	1
Calcium	ND		500	116	ug/L		05/23/19 11:51	05/24/19 15:17	1
Chromium	**2.81**		2.00	1.53	ug/L		05/23/19 11:51	05/24/19 15:17	1
Cobalt	**0.129**	**J**	0.500	0.0750	ug/L		05/23/19 11:51	05/24/19 15:17	1
Copper	ND		2.00	0.627	ug/L		05/23/19 11:51	05/24/19 15:17	1
Lead	ND		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 15:17	1
Lithium	**3.37**	**J**	5.00	3.14	ug/L		05/23/19 11:51	05/24/19 15:17	1
Molybdenum	ND		5.00	0.610	ug/L		05/23/19 11:51	05/24/19 15:17	1
Nickel	ND		1.00	0.312	ug/L		05/23/19 11:51	05/24/19 15:17	1
Selenium	ND		5.00	2.62	ug/L		05/23/19 11:51	05/24/19 15:17	1
Silver	ND		1.00	0.121	ug/L		05/23/19 11:51	05/24/19 15:17	1
Sodium	ND		500	251	ug/L		05/23/19 11:51	05/24/19 15:17	1
Thallium	ND		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 15:17	1
Vanadium	**4.77**		1.00	0.899	ug/L		05/23/19 11:51	05/24/19 15:17	1
Zinc	ND		5.00	3.22	ug/L		05/23/19 11:51	05/24/19 15:17	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		05/23/19 10:05	05/24/19 11:19	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Client Sample ID: BRF-SEW-FLB01-20190515

Lab Sample ID: 180-90258-6

Date Collected: 05/15/19 17:59
Date Received: 05/17/19 09:00

Matrix: Water

Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		05/23/19 11:54	05/24/19 15:21	1
Arsenic	**0.396**	**J**	1.00	0.323	ug/L		05/23/19 11:54	05/24/19 15:21	1
Barium	ND		10.0	1.49	ug/L		05/23/19 11:54	05/24/19 15:21	1
Beryllium	ND		1.00	0.155	ug/L		05/23/19 11:54	05/24/19 15:21	1
Boron	ND		80.0	30.3	ug/L		05/23/19 11:54	05/24/19 15:21	1
Cadmium	ND		1.00	0.125	ug/L		05/23/19 11:54	05/24/19 15:21	1
Calcium	ND		500	116	ug/L		05/23/19 11:54	05/24/19 15:21	1
Chromium	**2.41**		2.00	1.53	ug/L		05/23/19 11:54	05/24/19 15:21	1
Cobalt	ND		0.500	0.0750	ug/L		05/23/19 11:54	05/24/19 15:21	1
Copper	ND		2.00	0.627	ug/L		05/23/19 11:54	05/24/19 15:21	1
Lead	ND		1.00	0.128	ug/L		05/23/19 11:54	05/24/19 15:21	1
Lithium	ND		5.00	3.14	ug/L		05/23/19 11:54	05/24/19 15:21	1
Molybdenum	ND		5.00	0.610	ug/L		05/23/19 11:54	05/24/19 15:21	1
Nickel	ND		1.00	0.312	ug/L		05/23/19 11:54	05/24/19 15:21	1
Selenium	ND		5.00	2.62	ug/L		05/23/19 11:54	05/24/19 15:21	1
Silver	ND		1.00	0.121	ug/L		05/23/19 11:54	05/24/19 15:21	1
Sodium	ND		500	251	ug/L		05/23/19 11:54	05/24/19 15:21	1
Thallium	ND		1.00	0.128	ug/L		05/23/19 11:54	05/24/19 15:21	1
Vanadium	**4.19**		1.00	0.899	ug/L		05/23/19 11:54	05/24/19 15:21	1
Zinc	ND		5.00	3.22	ug/L		05/23/19 11:54	05/24/19 15:21	1

Method: EPA 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		05/22/19 10:24	05/24/19 11:00	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-279790/6
Matrix: Water
Analysis Batch: 279790

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00	0.715	mg/L			05/26/19 12:04	1
Fluoride	ND		0.100	0.0263	mg/L			05/26/19 12:04	1
Sulfate	ND		1.00	0.380	mg/L			05/26/19 12:04	1

Lab Sample ID: LCS 180-279790/5
Matrix: Water
Analysis Batch: 279790

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.60		mg/L		106	80 - 120
Fluoride	1.25	1.220		mg/L		98	80 - 120
Sulfate	25.0	21.58		mg/L		86	80 - 120

Lab Sample ID: 180-90258-4 MS
Matrix: Water
Analysis Batch: 279790

Client Sample ID: BRF-SEW-03-20190515
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	ND		25.0	27.02		mg/L		108	80 - 120
Fluoride	0.0700	J	1.25	1.286		mg/L		97	80 - 120
Sulfate	21.1		25.0	46.34		mg/L		101	80 - 120

Lab Sample ID: 180-90258-4 MSD
Matrix: Water
Analysis Batch: 279790

Client Sample ID: BRF-SEW-03-20190515
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	ND		25.0	26.95		mg/L		108	80 - 120	0	15
Fluoride	0.0700	J	1.25	1.284		mg/L		97	80 - 120	0	15
Sulfate	21.1		25.0	46.15		mg/L		100	80 - 120	0	15

Method: EPA 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-279574/1-A
Matrix: Water
Analysis Batch: 279753

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 279574

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.00	0.378	ug/L		05/23/19 11:51	05/24/19 12:45	1
Arsenic	ND		1.00	0.323	ug/L		05/23/19 11:51	05/24/19 12:45	1
Barium	ND		10.0	1.49	ug/L		05/23/19 11:51	05/24/19 12:45	1
Beryllium	ND		1.00	0.155	ug/L		05/23/19 11:51	05/24/19 12:45	1
Boron	ND		80.0	30.3	ug/L		05/23/19 11:51	05/24/19 12:45	1
Cadmium	ND		1.00	0.125	ug/L		05/23/19 11:51	05/24/19 12:45	1
Calcium	ND		500	116	ug/L		05/23/19 11:51	05/24/19 12:45	1
Chromium	ND		2.00	1.53	ug/L		05/23/19 11:51	05/24/19 12:45	1
Cobalt	ND		0.500	0.0750	ug/L		05/23/19 11:51	05/24/19 12:45	1
Copper	ND		2.00	0.627	ug/L		05/23/19 11:51	05/24/19 12:45	1
Lead	ND		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 12:45	1
Lithium	ND		5.00	3.14	ug/L		05/23/19 11:51	05/24/19 12:45	1

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 180-279574/1-A
Matrix: Water
Analysis Batch: 279753

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 279574

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		5.00	0.610	ug/L		05/23/19 11:51	05/24/19 12:45	1
Nickel	ND		1.00	0.312	ug/L		05/23/19 11:51	05/24/19 12:45	1
Selenium	ND		5.00	2.62	ug/L		05/23/19 11:51	05/24/19 12:45	1
Silver	ND		1.00	0.121	ug/L		05/23/19 11:51	05/24/19 12:45	1
Sodium	ND		500	251	ug/L		05/23/19 11:51	05/24/19 12:45	1
Thallium	ND		1.00	0.128	ug/L		05/23/19 11:51	05/24/19 12:45	1
Vanadium	ND		1.00	0.899	ug/L		05/23/19 11:51	05/24/19 12:45	1
Zinc	ND		5.00	3.22	ug/L		05/23/19 11:51	05/24/19 12:45	1

Lab Sample ID: LCS 180-279574/2-A
Matrix: Water
Analysis Batch: 279753

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 279574

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	250	261.8		ug/L		105	80 - 120
Arsenic	1000	916.0		ug/L		92	80 - 120
Barium	1000	1009		ug/L		101	80 - 120
Beryllium	500	535.3		ug/L		107	80 - 120
Boron	1250	1119		ug/L		90	80 - 120
Cadmium	500	524.3		ug/L		105	80 - 120
Calcium	25000	25200		ug/L		101	80 - 120
Chromium	500	538.2		ug/L		108	80 - 120
Cobalt	500	551.7		ug/L		110	80 - 120
Copper	500	552.3		ug/L		110	80 - 120
Lead	500	505.4		ug/L		101	80 - 120
Lithium	500	443.9		ug/L		89	80 - 120
Molybdenum	500	498.9		ug/L		100	80 - 120
Nickel	500	555.7		ug/L		111	80 - 120
Selenium	1000	1020		ug/L		102	80 - 120
Silver	250	249.0		ug/L		100	80 - 120
Sodium	25000	25090		ug/L		100	80 - 120
Thallium	1000	986.9		ug/L		99	80 - 120
Vanadium	500	525.1		ug/L		105	80 - 120
Zinc	250	219.3		ug/L		88	80 - 120

Lab Sample ID: 180-90258-4 MS
Matrix: Water
Analysis Batch: 279753

Client Sample ID: BRF-SEW-03-20190515
Prep Type: Total Recoverable
Prep Batch: 279574

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	1.08	J	250	264.5		ug/L		105	75 - 125
Arsenic	24.3		1000	975.4		ug/L		95	75 - 125
Barium	327		1000	1286		ug/L		96	75 - 125
Beryllium	3.31		500	536.1		ug/L		107	75 - 125
Boron	105		1250	1268		ug/L		93	75 - 125
Cadmium	0.527	J	500	547.6		ug/L		109	75 - 125
Calcium	87500	F1	25000	68980	F1	ug/L		-74	75 - 125
Chromium	102		500	630.0		ug/L		106	75 - 125
Cobalt	39.2		500	600.9		ug/L		112	75 - 125

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-90258-4 MS
Matrix: Water
Analysis Batch: 279753

Client Sample ID: BRF-SEW-03-20190515
Prep Type: Total Recoverable
Prep Batch: 279574

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	61.4		500	616.8		ug/L		111	75 - 125
Lead	52.9		500	555.6		ug/L		101	75 - 125
Lithium	60.8		500	522.3		ug/L		92	75 - 125
Molybdenum	1.35	J	500	527.1		ug/L		105	75 - 125
Nickel	80.8		500	637.6		ug/L		111	75 - 125
Selenium	ND		1000	1073		ug/L		107	75 - 125
Silver	0.139	J	250	262.0		ug/L		105	75 - 125
Sodium	1130		25000	26510		ug/L		102	75 - 125
Thallium	0.658	J	1000	1001		ug/L		100	75 - 125
Vanadium	106		500	623.2		ug/L		103	75 - 125
Zinc	182	F1	250	334.6	F1	ug/L		61	75 - 125

Lab Sample ID: 180-90258-4 MSD
Matrix: Water
Analysis Batch: 279753

Client Sample ID: BRF-SEW-03-20190515
Prep Type: Total Recoverable
Prep Batch: 279574

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	1.08	J	250	272.2		ug/L		108	75 - 125	3	20
Arsenic	24.3		1000	1007		ug/L		98	75 - 125	3	20
Barium	327		1000	1318		ug/L		99	75 - 125	2	20
Beryllium	3.31		500	548.4		ug/L		109	75 - 125	2	20
Boron	105		1250	1360		ug/L		100	75 - 125	7	20
Cadmium	0.527	J	500	561.0		ug/L		112	75 - 125	2	20
Calcium	87500	F1	25000	78340	F1	ug/L		-37	75 - 125	13	20
Chromium	102		500	646.0		ug/L		109	75 - 125	3	20
Cobalt	39.2		500	607.6		ug/L		114	75 - 125	1	20
Copper	61.4		500	624.4		ug/L		113	75 - 125	1	20
Lead	52.9		500	583.7		ug/L		106	75 - 125	5	20
Lithium	60.8		500	548.4		ug/L		98	75 - 125	5	20
Molybdenum	1.35	J	500	538.1		ug/L		107	75 - 125	2	20
Nickel	80.8		500	643.9		ug/L		113	75 - 125	1	20
Selenium	ND		1000	1089		ug/L		109	75 - 125	2	20
Silver	0.139	J	250	267.8		ug/L		107	75 - 125	2	20
Sodium	1130		25000	27200		ug/L		104	75 - 125	3	20
Thallium	0.658	J	1000	1057		ug/L		106	75 - 125	5	20
Vanadium	106		500	635.8		ug/L		106	75 - 125	2	20
Zinc	182	F1	250	352.7	F1	ug/L		68	75 - 125	5	20

Lab Sample ID: 180-90258-4 MS
Matrix: Water
Analysis Batch: 279753

Client Sample ID: BRF-SEW-03-20190515
Prep Type: Dissolved
Prep Batch: 279574

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.615	J	250	278.5		ug/L		111	75 - 125
Arsenic	7.48		1000	990.2		ug/L		98	75 - 125
Barium	103		1000	1198		ug/L		110	75 - 125
Beryllium	0.997	J	500	556.9		ug/L		111	75 - 125
Boron	72.5	J	1250	1283		ug/L		97	75 - 125
Cadmium	0.188	J	500	558.1		ug/L		112	75 - 125

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-90258-4 MS — **Client Sample ID: BRF-SEW-03-20190515**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 279753 — **Prep Batch: 279574**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	32900		25000	60150		ug/L		109	75 - 125
Chromium	31.5		500	604.1		ug/L		115	75 - 125
Cobalt	8.87		500	597.7		ug/L		118	75 - 125
Copper	14.4		500	609.0		ug/L		119	75 - 125
Lead	13.1		500	547.3		ug/L		107	75 - 125
Lithium	20.3		500	504.3		ug/L		97	75 - 125
Molybdenum	0.682	J	500	532.0		ug/L		106	75 - 125
Nickel	21.5		500	616.9		ug/L		119	75 - 125
Selenium	ND		1000	1079		ug/L		108	75 - 125
Silver	ND		250	267.8		ug/L		107	75 - 125
Sodium	1090		25000	27320		ug/L		105	75 - 125
Thallium	0.309	J	1000	1032		ug/L		103	75 - 125
Vanadium	39.1		500	597.1		ug/L		112	75 - 125
Zinc	50.9		250	281.0		ug/L		92	75 - 125

Lab Sample ID: 180-90258-4 MSD — **Client Sample ID: BRF-SEW-03-20190515**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 279753 — **Prep Batch: 279574**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.615	J	250	279.4		ug/L		112	75 - 125	0	20
Arsenic	7.48		1000	1000		ug/L		99	75 - 125	1	20
Barium	103		1000	1212		ug/L		111	75 - 125	1	20
Beryllium	0.997	J	500	549.3		ug/L		110	75 - 125	1	20
Boron	72.5	J	1250	1254		ug/L		94	75 - 125	2	20
Cadmium	0.188	J	500	555.5		ug/L		111	75 - 125	0	20
Calcium	32900		25000	59890		ug/L		108	75 - 125	0	20
Chromium	31.5		500	599.8		ug/L		114	75 - 125	1	20
Cobalt	8.87		500	594.6		ug/L		117	75 - 125	1	20
Copper	14.4		500	599.8		ug/L		117	75 - 125	2	20
Lead	13.1		500	541.8		ug/L		106	75 - 125	1	20
Lithium	20.3		500	498.3		ug/L		96	75 - 125	1	20
Molybdenum	0.682	J	500	541.9		ug/L		108	75 - 125	2	20
Nickel	21.5		500	610.8		ug/L		118	75 - 125	1	20
Selenium	ND		1000	1092		ug/L		109	75 - 125	1	20
Silver	ND		250	271.5		ug/L		109	75 - 125	1	20
Sodium	1090		25000	27430		ug/L		105	75 - 125	0	20
Thallium	0.309	J	1000	1031		ug/L		103	75 - 125	0	20
Vanadium	39.1		500	593.5		ug/L		111	75 - 125	1	20
Zinc	50.9		250	288.7		ug/L		95	75 - 125	3	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-279422/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279694 — **Prep Batch: 279422**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		05/22/19 10:24	05/24/19 10:33	1

Method: EPA 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 180-279422/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279694 — **Prep Batch: 279422**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.50	2.653		ug/L		106	80 - 120

Lab Sample ID: 180-90159-D-1-E MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279694 — **Prep Batch: 279422**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	1.035		ug/L		104	75 - 125

Lab Sample ID: 180-90159-D-1-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279694 — **Prep Batch: 279422**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	1.029		ug/L		103	75 - 125	1	20

Lab Sample ID: MB 180-279547/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279694 — **Prep Batch: 279547**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.101	ug/L		05/23/19 10:05	05/24/19 11:03	1

Lab Sample ID: LCS 180-279547/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279694 — **Prep Batch: 279547**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.50	2.655		ug/L		106	80 - 120

Lab Sample ID: 180-90258-4 MS — **Client Sample ID: BRF-SEW-03-20190515**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279694 — **Prep Batch: 279547**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	1.087		ug/L		109	75 - 125

Lab Sample ID: 180-90258-4 MSD — **Client Sample ID: BRF-SEW-03-20190515**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279694 — **Prep Batch: 279547**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	1.037		ug/L		104	75 - 125	5	20

Lab Sample ID: 180-90258-4 MS — **Client Sample ID: BRF-SEW-03-20190515**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 279694 — **Prep Batch: 279547**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	1.050		ug/L		105	75 - 125

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: 180-90258-4 MSD — **Client Sample ID: BRF-SEW-03-20190515**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 279694 — **Prep Batch: 279547**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	1.025		ug/L		103	75 - 125	2	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-279227/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279227

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	10.0	mg/L			05/20/19 15:48	1

Lab Sample ID: LCS 180-279227/1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279227

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			201	170.0		mg/L		85	80 - 120		

Lab Sample ID: 180-90246-F-2 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279227

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	624			618.0		mg/L				1	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 180-279109/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279109

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		0.500	0.500	mg/L			05/18/19 09:49	1

Lab Sample ID: LCS 180-279109/1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279109

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			75.7	76.00		mg/L		100	80 - 120		

Lab Sample ID: 180-90250-G-1 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 279109

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	ND			ND		mg/L				NC	10

QC Association Summary

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

HPLC/IC

Analysis Batch: 279790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90258-1	BRF-SEW-04-20190515	Total/NA	Water	EPA 9056A	
180-90258-1	BRF-SEW-04-20190515	Total/NA	Water	EPA 9056A	
180-90258-2	BRF-SEW-DUP01-20190515	Total/NA	Water	EPA 9056A	
180-90258-2	BRF-SEW-DUP01-20190515	Total/NA	Water	EPA 9056A	
180-90258-4	BRF-SEW-03-20190515	Total/NA	Water	EPA 9056A	
MB 180-279790/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-279790/5	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-90258-4 MS	BRF-SEW-03-20190515	Total/NA	Water	EPA 9056A	
180-90258-4 MSD	BRF-SEW-03-20190515	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 279422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90258-6	BRF-SEW-FLB01-20190515	Dissolved	Water	7470A	
MB 180-279422/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-279422/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-90159-D-1-E MS	Matrix Spike	Total/NA	Water	7470A	
180-90159-D-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Prep Batch: 279547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90258-1	BRF-SEW-04-20190515	Dissolved	Water	7470A	
180-90258-1	BRF-SEW-04-20190515	Total/NA	Water	7470A	
180-90258-2	BRF-SEW-DUP01-20190515	Dissolved	Water	7470A	
180-90258-2	BRF-SEW-DUP01-20190515	Total/NA	Water	7470A	
180-90258-3	BRF-SEW-01-20190515	Dissolved	Water	7470A	
180-90258-3	BRF-SEW-01-20190515	Total/NA	Water	7470A	
180-90258-4	BRF-SEW-03-20190515	Dissolved	Water	7470A	
180-90258-4	BRF-SEW-03-20190515	Total/NA	Water	7470A	
180-90258-5	BRF-SEW-TUB01-20190515	Total/NA	Water	7470A	
MB 180-279547/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-279547/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-90258-4 MS	BRF-SEW-03-20190515	Dissolved	Water	7470A	
180-90258-4 MS	BRF-SEW-03-20190515	Total/NA	Water	7470A	
180-90258-4 MSD	BRF-SEW-03-20190515	Dissolved	Water	7470A	
180-90258-4 MSD	BRF-SEW-03-20190515	Total/NA	Water	7470A	

Prep Batch: 279574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90258-1	BRF-SEW-04-20190515	Dissolved	Water	3005A	
180-90258-1	BRF-SEW-04-20190515	Total Recoverable	Water	3005A	
180-90258-2	BRF-SEW-DUP01-20190515	Dissolved	Water	3005A	
180-90258-2	BRF-SEW-DUP01-20190515	Total Recoverable	Water	3005A	
180-90258-3	BRF-SEW-01-20190515	Dissolved	Water	3005A	
180-90258-3	BRF-SEW-01-20190515	Total Recoverable	Water	3005A	
180-90258-4	BRF-SEW-03-20190515	Dissolved	Water	3005A	
180-90258-4	BRF-SEW-03-20190515	Total Recoverable	Water	3005A	
180-90258-5	BRF-SEW-TUB01-20190515	Total Recoverable	Water	3005A	
180-90258-6	BRF-SEW-FLB01-20190515	Dissolved	Water	3005A	
MB 180-279574/1-A	Method Blank	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 279574 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-279574/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-90258-4 MS	BRF-SEW-03-20190515	Dissolved	Water	3005A	
180-90258-4 MS	BRF-SEW-03-20190515	Total Recoverable	Water	3005A	
180-90258-4 MSD	BRF-SEW-03-20190515	Dissolved	Water	3005A	
180-90258-4 MSD	BRF-SEW-03-20190515	Total Recoverable	Water	3005A	

Analysis Batch: 279694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90258-1	BRF-SEW-04-20190515	Dissolved	Water	EPA 7470A	279547
180-90258-1	BRF-SEW-04-20190515	Total/NA	Water	EPA 7470A	279547
180-90258-2	BRF-SEW-DUP01-20190515	Dissolved	Water	EPA 7470A	279547
180-90258-2	BRF-SEW-DUP01-20190515	Total/NA	Water	EPA 7470A	279547
180-90258-3	BRF-SEW-01-20190515	Dissolved	Water	EPA 7470A	279547
180-90258-3	BRF-SEW-01-20190515	Total/NA	Water	EPA 7470A	279547
180-90258-4	BRF-SEW-03-20190515	Dissolved	Water	EPA 7470A	279547
180-90258-4	BRF-SEW-03-20190515	Total/NA	Water	EPA 7470A	279547
180-90258-5	BRF-SEW-TUB01-20190515	Total/NA	Water	EPA 7470A	279547
180-90258-6	BRF-SEW-FLB01-20190515	Dissolved	Water	EPA 7470A	279422
MB 180-279422/1-A	Method Blank	Total/NA	Water	EPA 7470A	279422
MB 180-279547/1-A	Method Blank	Total/NA	Water	EPA 7470A	279547
LCS 180-279422/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	279422
LCS 180-279547/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	279547
180-90159-D-1-E MS	Matrix Spike	Total/NA	Water	EPA 7470A	279422
180-90159-D-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 7470A	279422
180-90258-4 MS	BRF-SEW-03-20190515	Dissolved	Water	EPA 7470A	279547
180-90258-4 MS	BRF-SEW-03-20190515	Total/NA	Water	EPA 7470A	279547
180-90258-4 MSD	BRF-SEW-03-20190515	Dissolved	Water	EPA 7470A	279547
180-90258-4 MSD	BRF-SEW-03-20190515	Total/NA	Water	EPA 7470A	279547

Analysis Batch: 279753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90258-1	BRF-SEW-04-20190515	Dissolved	Water	EPA 6020A	279574
180-90258-1	BRF-SEW-04-20190515	Total Recoverable	Water	EPA 6020A	279574
180-90258-2	BRF-SEW-DUP01-20190515	Dissolved	Water	EPA 6020A	279574
180-90258-2	BRF-SEW-DUP01-20190515	Total Recoverable	Water	EPA 6020A	279574
180-90258-3	BRF-SEW-01-20190515	Dissolved	Water	EPA 6020A	279574
180-90258-3	BRF-SEW-01-20190515	Total Recoverable	Water	EPA 6020A	279574
180-90258-4	BRF-SEW-03-20190515	Dissolved	Water	EPA 6020A	279574
180-90258-4	BRF-SEW-03-20190515	Total Recoverable	Water	EPA 6020A	279574
180-90258-5	BRF-SEW-TUB01-20190515	Total Recoverable	Water	EPA 6020A	279574
180-90258-6	BRF-SEW-FLB01-20190515	Dissolved	Water	EPA 6020A	279574
MB 180-279574/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	279574
LCS 180-279574/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	279574
180-90258-4 MS	BRF-SEW-03-20190515	Dissolved	Water	EPA 6020A	279574
180-90258-4 MS	BRF-SEW-03-20190515	Total Recoverable	Water	EPA 6020A	279574
180-90258-4 MSD	BRF-SEW-03-20190515	Dissolved	Water	EPA 6020A	279574
180-90258-4 MSD	BRF-SEW-03-20190515	Total Recoverable	Water	EPA 6020A	279574

QC Association Summary

Client: Environmental Standards Inc.
Project/Site: BRF_SEW_20190515_1A

Job ID: 180-90258-1

General Chemistry

Analysis Batch: 279109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90258-1	BRF-SEW-04-20190515	Total/NA	Water	SM 2540D	
180-90258-2	BRF-SEW-DUP01-20190515	Total/NA	Water	SM 2540D	
MB 180-279109/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 180-279109/1	Lab Control Sample	Total/NA	Water	SM 2540D	
180-90250-G-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 279227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-90258-1	BRF-SEW-04-20190515	Total/NA	Water	SM 2540C	
180-90258-2	BRF-SEW-DUP01-20190515	Total/NA	Water	SM 2540C	
MB 180-279227/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-279227/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-90246-F-2 DU	Duplicate	Total/NA	Water	SM 2540C	

TVA Environmental Investigations

TVA

Tennessee Valley Authority

COOLER No.:	1	of	5
COC No:	BRF_SEW_20190515_1A		
1 of 1 Pages			
Task Desc:	BRF_SEW		

Rev 1 BJ 5/26/19

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238

Lab Manager Contact Information

Lab PM:	Gail Lage
Phone/Fax:	615-301-5741/615-726-3404
Lab Email:	Gail.Lage@testamericainc.com

Required Project Information:

Site ID #:	Bull Run Fossil Plant		
Project #:	NA		
Site Address	1265 Edgemoor Rd		
City	Clinton	State, Zip:	TN, 37716
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	rquinn@tva.gov		

Required Sampler Information

Sampler:	S.Bolden, A.Wilson & D. Norman		
Sampling Company:	Stantec		
Address	601 Grassmere Park Road, Suite 22		
City/State	Nashville, TN	Phone:	(615) 885-1144
Sampling Team Number:	1		
Send EDD/Hard Copy to:	tva_deliverables@envizd.com		

Analysis Turnaround Time

• CALENDAR DAYS • WORKING DAYS

TAT if different from Below _____

- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Select Unit	Start Depth	End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER (Filtered N, Preserve see comments)	Analysis: SEEP_WATER_BLANKS (Filtered Y, Preserve see comments)	Analysis: SEEP_WATER_FLB (Filtered N, Preserve HNO3)	AW 5/15/2019	AW 5/16/2019	AW 5/16/2019
1	BRF-SeW-04-20190515	SeW04	NA	NA	SEW	G	N	5/15/2019	1118	5		·		X						
2	BRF-SeW-DUP01-20190515	NA	NA	NA	SEW	G	FD	5/15/2019	NA	5		·		X						
3	BRF-SeW-01-20190515	SeW01	NA	NA	SEW	C	N	5/15/2019	1423	2		·		X						
4	BRF-SeW-03-20190515	SeW03	NA	NA	SEW	C	N	5/15/2019	1622	9		X		X						
5	BRF-SeW-TUB01-20190515	SeW03	NA	NA	AQ	G	TB	5/15/2019	1742	4		·			X					
6	BRF-SeW-FLB01-20190515	SeW03	NA	NA	AQ	G	FLB	5/15/2019	1759	1		·				X				

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BJ 5/26/19

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Bolden / Stantec	5/16/2019	15:00	TN/TAB		
				5/17/19	0900

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	Suama Bolden /
	Anna Wilson /
	Dominic Norman /

Sample Receipt Conditions

Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
~~Yes~~ No	~~Yes~~ No	~~Yes~~ No	Yes ~~No~~
Yes No	Yes No	Yes No	Yes No
Yes No	Yes No	Yes No	Yes No
Yes No	Yes No	Yes No	Yes No

0982 -3.0
7341 -3.0
7352 -2.8

TUB BJ 5/26/19
FB BJ 5/26/19

7363 - 2.6
7374 -2.4

180-90258 Chain of Custody

Form TVA 30067A

TVA Environmental Investigations

TVA

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	2 of 5
COC No:	BRF_SEW_20190515_1A
1 of 1 Pages	
Task Desc:	BRF_SEW

Rev 1
BJ 5/26/19

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238

Lab Manager Contact Information

Lab PM:	Gail Lage
Phone/Fax:	615-301-5741/615-726-3404
Lab Email:	Gail.Lage@testamericainc.com

Required Project Information:

Site ID #:	Bull Run Fossil Plant
Project #:	NA
Site Address	1265 Edgemoor Rd
City	Clinton State, Zip: TN, 37716
Site PM Name:	Roy Quinn
Phone/Fax:	423-751-3753
Site PM Email:	rquinn@tva.gov

Required Sampler Information

Sampler:	S.Bolden, A.Wilson & D. Norman
Sampling Company:	Stantec
Address	601 Grassmere Park Road, Suite 22
City/State	Nashville, TN Phone: (615) 885-1144
Sampling Team Number:	1
Send EDD/Hard Copy to:	tva_deliverables@envstd.com

Analysis Turnaround Time

• CALENDAR DAYS • WORKING DAYS

TAT if different from Below _____

- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth	Sample Depth: End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER (Filtered N)	Analysis: SEEP_WATER_BLANKS (Filtered Y)	Analysis: SEEP_WATER_FLB (Filtered N)	Preserve: see comments	Preserve: see comments	Preserve: HNO3
1	BRF-SeW-04-20190515	SeW04	NA	NA	SEW	G	N	5/15/2019	1118	5		•	X					
2	BRF-SeW-DUP01-20190515	NA	NA	NA	SEW	G	FD	5/15/2019	NA	5		•	X					
3	BRF-SeW-01-20190515	SeW01	NA	NA	SEW	C	N	5/15/2019	1423	2		•	X					
4	BRF-SeW-03-20190515	SeW03	NA	NA	SEW	C	N	5/15/2019	1622	9		X	X					
5	BRF-SeW-TUB01-20190515	SeW03	NA	NA	AQ	G	TB	5/15/2019	1742	4		•		X				
6	BRF-SeW-FLB01-20190515	SeW03	NA	NA	AQ	G	FLB	5/15/2019	1759	1		•			X			

AW 5/16/2019

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BJ 5/26/19

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Bolden / Stantec	5/16/2019	15:00			

Sample Receipt Conditions

Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
• Yes • No	• Yes • No	• Yes • No	• Yes • No
• Yes • No	• Yes • No	• Yes • No	• Yes • No
• Yes • No	• Yes • No	• Yes • No	• Yes • No
• Yes • No	• Yes • No	• Yes • No	• Yes • No

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	Suama Bolden /
	Anna Wilson /
	Dominic Norman /

TB FB
BJ 5/29/19

Form TVA 30067A

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	3 of 5
COC No:	BRF_SEW_20190515_1A
1 of 1 Pages	
Task Desc:	BRF_SEW

RW1 B35/26/19

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238

Lab Manager Contact Information

Lab PM:	Gail Lage
Phone/Fax:	615-301-5741/615-726-3404
Lab Email:	Gail.Lage@testamericainc.com

Required Project Information:

Site ID #:	Bull Run Fossil Plant
Project #:	NA
Site Address	1265 Edgemoor Rd
City	Clinton State, Zip: TN, 37716
Site PM Name:	Roy Quinn
Phone/Fax:	423-751-3753
Site PM Email:	rquinn@tva.gov

Required Sampler Information

Sampler:	S.Bolden, A.Wilson & D. Norman
Sampling Company:	Stantec
Address	601 Grassmere Park Road, Suite 22
City/State	Nashville, TN Phone: (615) 885-1144
Sampling Team Number:	1
Send EDD/Hard Copy to:	tva_deliverables@envsta.com

Analysis Turnaround Time

• CALENDAR DAYS • WORKING DAYS

TAT if different from Below _____

- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Select Unit	Start Depth	End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER	Analysis: SEEP_WATER_BLANKS	Analysis: SEEP_WATER_FLB	Filtered: N	Filtered: Y	Filtered: N	Preserve: See comments	Preserve: See comments	Preserve: HNO3
1	BRF-SeW-04-20190515	SeW04			NA	NA	SEW	G	N	5/15/2019	1118	5		•	X								
2	BRF-SeW-DUP01-20190515	NA			NA	NA	SEW	G	FD	5/15/2019	NA	5		•	X								
3	BRF-SeW-01-20190515	SeW01			NA	NA	SEW	C	N	5/15/2019	1423	2		•	X								
4	BRF-SeW-03-20190515	SeW03			NA	NA	SEW	C	N	5/15/2019	1622	9		X	X								
5	BRF-SeW-TUB01-20190515	SeW03			NA	NA	AQ	G	TB	5/15/2019	1742	4		•		X							
6	BRF-SeW-FLB01-20190515	SeW03			NA	NA	AQ	G	FLB	5/15/2019	1759	1		•			X						

AW 5/15/2019

AW 5/15/2019

AW 5/16/2019

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TUB FB

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Bolden / Stantec	5/16/2019	15:00			

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	Suama Bolden /
	Anna Wilson /
	Dominic Norman /

Sample Receipt Conditions

Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
• Yes • No	• Yes • No	• Yes • No	• Yes • No
• Yes • No	• Yes • No	• Yes • No	• Yes • No
• Yes • No	• Yes • No	• Yes • No	• Yes • No
• Yes • No	• Yes • No	• Yes • No	• Yes • No

Form TVA 30067A

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	4 of 5
COC No:	BRF_SEW_20190515_1A
1 of 1 Pages	
Task Desc:	BRF_SEW

Rev 1 BJ 5/26/19

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive, Pittsburgh, PA 15238

Lab Manager Contact Information

Lab PM:	Gail Lage
Phone/Fax:	615-301-5741/615-726-3404
Lab Email:	Gail.Lage@testamericainc.com

Required Project Information:

Site ID #:	Bull Run Fossil Plant
Project #:	NA
Site Address	1265 Edgemoor Rd
City	Clinton; State, Zip: TN, 37716
Site PM Name:	Roy Quinn
Phone/Fax:	423-751-3753
Site PM Email:	rquinn@tva.gov

Required Sampler Information

Sampler:	S.Bolden, A.Wilson & D. Norman
Sampling Company:	Stantec
Address	601 Grassmere Park Road, Suite 22
City/State	Nashville, TN; Phone: (615) 885-1144
Sampling Team Number:	1
Send EDD/Hard Copy to:	tva_deliverables@envirotd.com

Analysis Turnaround Time

- CALENDAR DAYS
- WORKING DAYS

TAT if different from Below _____

- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Select Unit	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER	Analysis: SEEP_WATER_BLANKS	Analysis: SEEP_WATER_FLB	Filtered: N	Filtered: Y	Filtered: N	Preserve: Sulfuric Acid	Preserve: Sulfuric Acid	Preserve: HNO3
1	BRF-SeW-04-20190515	~~SeW04~~ A014	NA	NA	SEW	G	N	5/15/2019	1118	5		·	X								
2	BRF-SeW-DUP01-20190515	NA	NA	NA	SEW	G	FD	5/15/2019	NA	5		·	X								
3	BRF-SeW-01-20190515	~~SeW01~~ A011	NA	NA	SEW	C	N	5/15/2019	1423	2		·	X								
4	BRF-SeW-03-20190515	~~SeW03~~ A013	NA	NA	SEW	C	N	5/15/2019	1622	9		X	X								
5	BRF-SeW-TUB01-20190515	~~SeW03~~ A013	NA	NA	AQ	G	~~TB~~ TUB	5/15/2019	1742	4		·		X							
6	BRF-SeW-FLB01-20190515	~~SeW03~~ A013	NA	NA	AQ	G	~~FLB~~ FB	5/15/2019	1759	1		·			X						

AW 5/16/2019

BJ 5/26/19

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Bolden / Stantec	5/16/2019	15:00			

Sample Receipt Conditions

Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
· Yes · No	· Yes · No	· Yes · No	· Yes · No
· Yes · No	· Yes · No	· Yes · No	· Yes · No
· Yes · No	· Yes · No	· Yes · No	· Yes · No
· Yes · No	· Yes · No	· Yes · No	· Yes · No

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	Suama Bolden /
	Anna Wilson /
	Dominic Norman /

TUB FB BJ 5/26/19

Form TVA 30067A

TVA Environmental Investigations

TVA Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	5 of 5
COC No:	BRF_SEW_20190515_1A
1 of 1 Pages	
Task Desc:	BRF_SEW

Rev 1 BJ 5/26/19

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238

Lab Manager Contact Information

Lab PM:	Gail Lage
Phone/Fax:	615-301-5741/615-726-3404
Lab Email:	Gail.Lage@testamericainc.com

Required Project Information:

Site ID #:	Bull Run Fossil Plant		
Project #:	NA		
Site Address	1265 Edgemoor Rd		
City	Clinton	State, Zip:	TN, 37716
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	rquinn@tva.gov		

Required Sampler Information

Sampler:	S.Bolden, A.Wilson & D. Norman		
Sampling Company:	Stantec		
Address	601 Grassmere Park Road, Suite 22		
City/State	Nashville, TN	Phone:	(615) 885-1144
Sampling Team Number:	1		
Send EDD/Hard Copy to:	tva_deliverables@envsta.com		

Analysis Turnaround Time

• CALENDAR DAYS • WORKING DAYS

TAT if different from Below _____

- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit / Start Depth	Sample Depth: Select Unit / End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER (Filtered N)	Analysis: SEEP_WATER_BLANKS (Filtered Y)	Analysis: SEEP_WATER_FLB (Filtered N)	Preserve: HNO3	AW 5/16/2019
1	BRF-SeW-04-20190515	~~SeW04~~ A014	NA	NA	SEW	G	N	5/15/2019	1118	5		•	X				
2	BRF-SeW-DUP01-20190515	NA	NA	NA	SEW	G	FD	5/15/2019	NA	5		•	X				
3	BRF-SeW-01-20190515	~~SeW01~~ A011	NA	NA	SEW	C	N	5/15/2019	1423	2		•	X				
4	BRF-SeW-03-20190515	~~SeW03~~ A013	NA	NA	SEW	C	N	5/15/2019	1622	9	AW 5/16/2019	X	X				AW 5/16/2019
5	BRF-SeW-TUB01-20190515	~~SeW03~~ A013	NA	NA	AQ	G	TB	5/15/2019	1742	4		•		X			
6	BRF-SeW-FLB01-20190515	~~SeW03~~ A013	NA	NA	AQ	G	FLB	5/15/2019	1759	1		•			X		

BJ 5/26/19

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Receipt Conditions: Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
Suama Bolden / Stantec	5/16/2019	15:00				• Yes • No	• Yes • No	• Yes • No	• Yes • No
						• Yes • No	• Yes • No	• Yes • No	• Yes • No
						• Yes • No	• Yes • No	• Yes • No	• Yes • No
						• Yes • No	• Yes • No	• Yes • No	• Yes • No

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	Suama Bolden /
	Anna Wilson /
	Dominic Norman /

TUB FB

BJ 5/26/19

Page 1 of 1

Form TVA 30067A

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	1 of 5
COC No:	BRF_SEW_20190515_1A
1 of 1 Pages	
Task Desc:	BRF_SEW

Rev 1 BJ 5/26/19
Rev 2 BJ 7/25/19

Required Ship to Lab:
Lab Name: TestAmerica Pittsburgh
Lab Address: 301 Alpha Drive, Pittsburgh, PA 15238

Lab Manager Contact Information
Lab PM: Gali Lage
Phone/Fax: 615-301-5741/615-726-3404
Lab Email: [illegible]

Required Project Information:
Site ID #: Bull Run Fossil Plant
Project #: NA
Site Address: 1265 Edgemoor Rd
City: Clinton, State, Zip: TN, 37716
Site PM Name: Roy Quinn
Phone/Fax: 423-751-3753
Site PM Email: [illegible]

Required Sampler Information
Sampler: S Bolden, A Wilson & D. Norman
Sampling Company: Stantec
Address: 601 Grassmere Park Road, Suite 22
City/State: Nashville, TN, Phone: (615) 885-1144
Sampling Team Number: 1
Send EDD/Hard Copy to: [illegible]

Analysis Turnaround Time
CALENDAR DAYS / WORKING DAYS
TAT if different from Below _____
24 Hours
3 Business Days
5 Business Days
10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth (Depth Unit)	Sample Depth: End Depth (Select Unit)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER	Analysis: SEEP_WATER_BLANKS	Analysis: SEEP_WATER_FLB
1	BRF-SeW-04-20190515	SeW04	NA	NA	SEW	G	N	5/15/2019	1118	5			X		
2	BRF-SeW-DUP01-20190515	NA	NA	NA	SEW	G	FD	5/15/2019	NA	5			X		
3	BRF-SeW-01-20190515	SeW01	NA	NA	SEW	C	N	5/15/2019	1423	2			X		
4	BRF-SeW-03-20190515	SeW03	NA	NA	SEW	C	N	5/15/2019	1622	9		X	X		
5	BRF-SeW-TUB01-20190515	SeW03	NA	NA	AQ	G	TB	5/15/2019	1742	4				X	
6	BRF-SeW-FLB01-20190515	SeW03	NA	NA	AQ	G	FLB	5/15/2019	1759	1					X

Filtered: N, N, N
Preserve (see codes): NONE, NONE
AW 5/16/2019

A014
A011
A013
A013
A013
BJ 5/26/19

Additional Comments/Special Instructions:
Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Susma Bolden / Stantec	5/15/2019	15:00	TN/TA		
			5/17/19 CFEC		

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	Susma Bolden / [illegible]
	Anna Wilson / [illegible]
	Dominic Norman / [illegible]

Sample Receipt Conditions	Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
Yes / No	Yes / No	Yes / No	Yes / No	
Yes / No	Yes / No	Yes / No	Yes / No	
Yes / No	Yes / No	Yes / No	Yes / No	
Yes / No	Yes / No	Yes / No	Yes / No	

0582 -3.0
7341 -3.0
7352 -2.8
7363 - 2.6
7374 -2.4

TUB BJ 5/26/19
FB BJ 5/26/19
FLB BJ 7/25/19

Page 1 of 1

180-90258 Chain of Custody

Form TVA 30087A

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	2 of 5
COC No:	BRF_SEW_20190515_1A
1 of 1 Pages	
Task Desc:	BRF_SEW

Rev 1 BJ 5/26/19
Rev 2 BJ 7/25/19

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238

Lab Manager Contact Information

Lab PM:	Gail Lage
Phone/Fax:	615-301-5741/615-726-3404
Lab Email:	Gail.Lage@testamericainc.com

Required Project Information:

Site ID #:	Bull Run Fossil Plant		
Project #:	NA		
Site Address	1265 Edgemoor Rd		
City	Clinton	State, Zip:	TN, 37716
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	[illegible]		

Required Sampler Information

Sampler:	S Bolden, A Wilson & D Norman		
Sampling Company:	Stantec		
Address	601 Grassmere Park Road, Suite 22		
City/State	Nashville, TN	Phone:	(615) 685-1144
Sampling Team Number:	1		
Send EDD/Hard Copy to:	[illegible]		

Analysis Turnaround Time

- CALENDAR DAYS
- WORKING DAYS

TAT if different from Below _____

- 24 Hours
- 3 Business Days
- 5 Business Days
- 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Select Unit	Start Depth	End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER	Analysis: SEEP_WATER_BLANKS	Analysis: SEEP_WATER_FLB	Preserve: Lab Comments	Preserve: Lab Comments	HNO3	Filtered
1	~~BRF-SeW-04-20190515~~	~~SeW04~~			NA	NA	SEW	G	N	5/15/2019	1118	5									
2	~~BRF-SeW-DUP01-20190515~~	NA			NA	NA	SEW	G	FD	5/15/2019	NA	5			X						
3	BRF-SeW-01-20190515	~~SeW01~~			NA	NA	SEW	C	N	5/15/2019	1423	2			X						
4	~~BRF-SeW-03-20190515~~	~~SeW03~~			NA	NA	SEW	C	N	5/15/2019	1622	9		X	X						
5	BRF-SeW-TUB01-20190515	~~SeW03~~			NA	NA	AQ	G	~~TB~~	5/15/2019	1742	4				X					
6	~~BRF-SeW-FLB01-20190515~~	~~SeW03~~			NA	NA	AQ	G	~~FLB~~	5/15/2019	1759	1					X				

AW 7/25/2019

A014
A011
A013
A013
A013
BJ 5/26/19

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Bolden / Stantec	5/18/2019	15:00			

Sample Receipt Conditions

Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
Yes / No	Yes / No	Yes / No	Yes / No
Yes / No	Yes / No	Yes / No	Yes / No
Yes / No	Yes / No	Yes / No	Yes / No
Yes / No	Yes / No	Yes / No	Yes / No

SHIPPING METHOD: Courier

SAMPLER NAME AND SIGNATURE

Suama Bolden /
Anna Wilson /
Dominic Norman /

TB BJ ~~5/29/19~~ FB FLB BJ 7/25/19

Page 1 of 1

Form TVA 20067A

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	5 of 5
COC No:	BRF_SEW_20190515_1A
1 of 1 Pages	
Task Desc:	BRF_SEW

Rev 1 B3 5/26/19
Rev 2 B3 7/25/19

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238

Lab Manager Contact Information

Lab PM:	Gail Lage
Phone/Fax:	615-301-5741/615-726-3404
Lab Email	[illegible]

Required Project Information:

Site ID #:	Bull Run Fossil Plant
Project #:	NA
Site Address	1299 Edgemoor Rd
City	Clinton State, Zip: TN 37716
Site PM Name:	Roy Quinn
Phone/Fax:	423-751-3753
Site PM Email:	[illegible]

Required Sampler Information

Sampler:	S Belden, A Wilson & D. Norman
Sampling Company:	Stantec
Address	501 Grassmere Park Road, Suite 22
City/State	Nashville, TN Phone: (615) 885-1144
Sampling Team Number:	1
Send EDD/Hard Copy to:	[illegible]

Analysis Turnaround Time

CALENDAR DAYS WORKING DAYS

TAT if different from Below _____

- 24 Hours
- 3 Business Days
- 5 Business Days
- 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Select Unit	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER	Analysis: SEEP_WATER_BLANKS	Analysis: SEEP_WATER_FLB	Filtered	Preserve (see comments)	Ice (Check)	Analysis: [illegible]	Analysis: [illegible]
1	BRF-SeW-04-20190515	~~SeW04~~	NA	NA	SEW	G	N	5/15/2019	1118	5										
2	BRF-SeW-DUP01-20190515	NA	NA	NA	SEW	G	FD	5/15/2019	NA	5			X							
3	BRF-SeW-01-20190515	~~SeW01~~	NA	NA	SEW	C	N	5/15/2019	1423	2			X							
4	BRF-SeW-03-20190515	~~SeW03~~	NA	NA	SEW	C	N	5/15/2019	1622	9		X	X							
5	BRF-SeW-TUB01-20190515	~~SeW03~~	NA	NA	AQ	G	~~TB~~	5/15/2019	1742	4				X						
6	BRF-SeW-FLB01-20190515	~~SeW03~~	NA	NA	AQ	G	~~FLB~~	5/15/2019	1759	1					X					

Alk 15/2019

Alk 15/2019

A014
A011
A013
A013
A013
B3 5/26/19

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Belden / Stantec	5/16/2019	15:00			

SHIPPING METHOD	SAMPLER NAME AND SIGNATURE
Courier	Suama Belden /
	Anna Wilson /
	Dominic Norman /

Sample Receipt Conditions	Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
Yes / No	Yes / No	Yes / No	Yes / No	
Yes / No	Yes / No	Yes / No	Yes / No	
Yes / No	Yes / No	Yes / No	Yes / No	
Yes / No	Yes / No	Yes / No	Yes / No	

TUB
~~FB~~ FLB Rev 2 7/25/19

Page 1 of 1

Form TVA 30667A

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	4 of 5
COC No:	BRF_SEW_20190515_1A
1 of 1 Pages	
Task Desc:	BRF_SEW

Rev 1 BJ 5/26/19
Rev 2 BJ 7/25/19

Required Ship to Lab:
Lab Name: TestAmerica Pittsburgh
Lab Address: 301 Alpha Drive, Pittsburgh, PA 15238

Lab Manager Contact Information
Lab PM: Gail Lage
Phone/Fax: 615-301-5741/615-726-3404
Lab Email: Gail.Lage@testamericainc.com

Required Project Information:
Site ID #: Bull Run Fossil Plant
Project #: NA
Site Address: 1265 Edgemoor Rd
City: Clinton State, Zip: TN, 37716
Site PM Name: Roy Quinn
Phone/Fax: 423-751-3753
Site PM Email:

Required Sampler Information
Sampler: S Bolden, A Wilson & D. Norman
Sampling Company: Stantec
Address: 501 Grassmere Park Road, Suite 22
City/State: Nashville, TN Phone: (615) 885-1144
Sampling Team Number: 1
Send EDD/Hard Copy to:

Analysis Turnaround Time
CALENDAR DAYS WORKING DAYS
TAT if different from Below
24 Hours
3 Business Days
5 Business Days
10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit / Select Unit	Start Depth	End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER	SEEP_WATER_BLANKS	SEEP_WATER_FLB	Filtered	Preserve	AW 7/5/2019
1	BRF-SeW-04-20190515	~~SeW04~~ A014		NA	NA	SEW	G	N	5/15/2019	1118	5			X					
2	BRF-SeW-DUP01-20190515	NA		NA	NA	SEW	G	FD	5/15/2019	NA	5			X					
3	BRF-SeW-01-20190515	~~SeW01~~ A011		NA	NA	SEW	C	N	5/15/2019	1423	2			X					
4	BRF-SeW-03-20190515	~~SeW03~~ A013		NA	NA	SEW	C	N	5/15/2019	1622	9		X	X					
5	BRF-SeW-TUB01-20190515	~~SeW03~~ A013		NA	NA	AQ	G	TB	5/15/2019	1742	4				X				
6	BRF-SeW-FLB01-20190515	~~SeW03~~ A013		NA	NA	AQ	G	~~FLB~~	5/15/2019	1759	1					X			

AW 7/5/2019

Additional Comments/Special Instructions:
Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Bolden / Stantec	5/16/2019	16:00			

Sample Receipt Conditions

Yes / No	Yes / No	Yes / No	Yes / No
Yes / No	Yes / No	Yes / No	Yes / No
Yes / No	Yes / No	Yes / No	Yes / No
Yes / No	Yes / No	Yes / No	Yes / No
Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?

SHIPPING METHOD: Courier

SAMPLER NAME AND SIGNATURE
Suama Bolden /
Anna Wilson /
Dominic Norman /

TUB ~~FB~~ BJ 5/26/19 FLB 7/25/19 BJ

Page 1 of 1

Form TVA 39087A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	5	of	5
COC No:	BRF_SEW_20190515_1A		
1 of 1 Pages			
Task Desc:	BRF_SEW		

Rev 1 BJ 5/26/19
Rev 2 BJ 7/25/19

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238

Lab Manager Contact Information

Lab PM:	Gail Lage
Phone/Fax:	615-301-5741/615-726-3404
Lab Email:	[illegible]

Required Project Information:

Site ID #:	Bull Run Fossil Plant
Project #:	NA
Site Address	1265 Bagemaor Rd
City	Clinton State, Zip: TN, 37716
Site PM Name:	Roy Quinn
Phone/Fax:	423-751-3753
Site PM Email:	[illegible]

Required Sampler Information

Sampler:	S Bolden, A Wilson & D Norman
Sampling Company:	Stantec
Address	601 Grassmere Park Road, Suite 22
City/State	Nashville, TN Phone: (615) 885-1144
Sampling Team Number:	1
Send EDD/Hard Copy to:	[illegible]

Analysis Turnaround Time

CALENDAR DATE WORKING DATE

TAT if different from Below _____

- 24 Hours
- 3 Business Days
- 5 Business Days
- 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Select Unit	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER (Filtered)	Analysis: SEEP_WATER (Preserve)	Analysis: SEEP_WATER_BLANKS (Preserve)	Analysis: SEEP_WATER_FLB (Preserve)
1	BRF-SeW-04-20190515	~~SeW04~~ A014	NA	NA	SEW	G	N	5/15/2019	1118	5			X			
2	BRF-SeW-DUP01-20190515	NA	NA	NA	SEW	G	FD	5/15/2019	NA	5			X			
3	BRF-SeW-01-20190515	~~SeW01~~ A011	NA	NA	SEW	C	N	5/15/2019	1423	2			X			
4	~~BRF-SeW-03-20190515~~	~~SeW03~~ A013	NA	NA	SEW	C	N	5/15/2019	1622	9		X	X			
5	~~BRF-SeW-TUB01-20190515~~	~~SeW03~~ A013	NA	NA	AQ	G	~~FB~~ TUB	5/15/2019	1742	4				X		
6	~~BRF-SeW-FLB01-20190515~~	~~SeW03~~ A013	NA	NA	AQ	G	~~FLB~~	5/15/2019	1759	1					X	

AW 7/25/19

AW 7/25/19

AW 7/25/19

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

BJ 5/26/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Bolden / Stantec	5/16/2019	16:00			

Sample Receipt Conditions

Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
Yes / No	Yes / No	Yes / No	Yes / No
Yes / No	Yes / No	Yes / No	Yes / No
Yes / No	Yes / No	Yes / No	Yes / No
Yes / No	Yes / No	Yes / No	Yes / No

SHIPPING METHOD	SAMPLER NAME AND SIGNATURE
Courier	Suama Bolden / [illegible]
	Anna Wilson / [illegible]
	Dominic Norman / [illegible]

TUB ~~FB~~ BJ 5/26/19

FLB 7/25/19 BJ

Page 1 of 1

Form TVA 30087A

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	1 of 5
COC No:	BRF_SEW_20190515_1A
1 of 1 Pages	
Task Desc:	BRF_SEW

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Bull Run Fossil Plant	Sampler:	S.Bolden, A.Wilson & D. Norman
Lab Address:	301 Alpha Drive	Project #:	NA	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	1265 Edgemoor Rd	Address	601 Grassmere Park Road, Suite 22
		City	Clinton State, Zip: TN, 37716	City/State	Nashville, TN Phone: (615) 885-1144
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@testamericainc.com				

Analysis Turnaround Time

• CALENDAR DAYS • WORKING DAYS

TAT if different from Below _____

- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Select Unit	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER (Filtered N, Preserve see comments)	Analysis: SEEP_WATER_BLANKS (Filtered Y, Preserve see comments)	Analysis: SEEP_WATER_FLB (Filtered N, Preserve HNO3)
1	BRF-SeW-04-20190515	SeW04	NA	NA	SEW	G	N	5/15/2019	1118	5		•	X		
2	BRF-SeW-DUP01-20190515	NA	NA	NA	SEW	G	FD	5/15/2019	NA	5		•	X		
3	BRF-SeW-01-20190515	SeW01	NA	NA	SEW	C	N	5/15/2019	1423	2		•	X		
4	BRF-SeW-03-20190515	SeW03	NA	NA	SEW	C	N	5/15/2019	1622	9		X	X		
5	BRF-SeW-TUB01-20190515	SeW03	NA	NA	AQ	G	TB	5/15/2019	1742	4		•		X	
6	BRF-SeW-FLB01-20190515	SeW03	NA	NA	AQ	G	FLB	5/15/2019	1759	1		•			X

AW 5/16/2019

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Bolden / Stantec	5/16/2019	15:00	7N/7AB		
			5/17/19	0900	

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	Suama Bolden /
	Anna Wilson /
	Dominic Norman /

Sample Receipt Conditions	Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
• Yes • No	• Yes • No	• Yes • No	• Yes • No	• Yes • No
• Yes • No	• Yes • No	• Yes • No	• Yes • No	• Yes • No
• Yes • No	• Yes • No	• Yes • No	• Yes • No	• Yes • No
• Yes • No	• Yes • No	• Yes • No	• Yes • No	• Yes • No

4982 -3.0
2341 -3.0
7352 -2.8
7363 - 2.6
7374 -2.4

180-90258 Chain of Custody

Form TVA 30067A

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

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COOLER No.:	2	of	5
COC No:	BRF_SEW_20190515_1A		
1 of 1 Pages			
Task Desc:	BRF_SEW		

Required Ship to Lab:		Required Project Information:				Required Sampler Information			
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Bull Run Fossil Plant			Sampler:	S.Bolden, A.Wilson & D. Norman		
Lab Address:	301 Alpha Drive	Project #:	NA			Sampling Company:	Stantec		
	Pittsburgh, PA 15238	Site Address	1265 Edgemoor Rd			Address	601 Grassmere Park Road, Suite 22		
		City	Clinton	State, Zip:	TN, 37716	City/State	Nashville, TN	Phone:	(615) 885-1144
Lab Manager Contact Information		Site PM Name:	Roy Quinn						
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753			Sampling Team Number:	1		
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov			Send EDD/Hard Copy to:	tva_deliverables@envstd.com		
Lab Email:	Gail.Lage@testamericainc.com								

Analysis Turnaround Time

• CALENDAR DAYS • WORKING DAYS

TAT if different from Below _____

- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ **10 Business Days**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Select Unit	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER (Filtered: N)	Analysis: SEEP_WATER_BLANKS (Filtered: Y, Preserve: see comments)	Analysis: SEEP_WATER_FLB (Filtered: N, Preserve: see comments, HNO3)											
1	BRF-SeW-04-20190515	SeW04	NA	NA	SEW	G	N	5/15/2019	1118	5		·	X													
2	BRF-SeW-DUP01-20190515	NA	NA	NA	SEW	G	FD	5/15/2019	NA	5		·	X													
3	BRF-SeW-01-20190515	SeW01	NA	NA	SEW	C	N	5/15/2019	1423	2		·	X													
4	BRF-SeW-03-20190515	SeW03	NA	NA	SEW	C	N	5/15/2019	1622	9		X	X													
5	BRF-SeW-TUB01-20190515	SeW03	NA	NA	AQ	G	TB	5/15/2019	1742	4		·		X												
6	BRF-SeW-FLB01-20190515	SeW03	NA	NA	AQ	G	FLB	5/15/2019	1759	1		·			X											

AW 5/16/2019

AW 5/16/2019

AW 5/16/2019

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Bolden / Stantec	5/16/2019	15:00			

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	Suama Bolden /
	Anna Wilson /
	Dominic Norman /

Sample Receipt Conditions

Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
· Yes · No	· Yes · No	· Yes · No	· Yes · No
· Yes · No	· Yes · No	· Yes · No	· Yes · No
· Yes · No	· Yes · No	· Yes · No	· Yes · No
· Yes · No	· Yes · No	· Yes · No	· Yes · No

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TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	3 of 5
COC No:	BRF_SEW_20190515_1A
1 of 1 Pages	
Task Desc:	BRF_SEW

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Bull Run Fossil Plant	Sampler:	S.Bolden, A.Wilson & D. Norman
Lab Address:	301 Alpha Drive	Project #:	NA	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	1265 Edgemoor Rd	Address	601 Grassmere Park Road, Suite 22
		City	Clinton State, Zip: TN, 37716	City/State	Nashville, TN Phone: (615) 885-1144
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@testamericainc.com				

Analysis Turnaround Time

- CALENDAR DAYS
- WORKING DAYS

TAT if different from Below _____

- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Select Unit	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER (Filtered: N; Preserve: see comments)	Analysis: SEEP_WATER_BLANKS (Filtered: Y; Preserve: see comments)	Analysis: SEEP_WATER_FLB (Filtered: N; Preserve: HNO3)
1	BRF-SeW-04-20190515	SeW04	NA	NA	SEW	G	N	5/15/2019	1118	5		·	X		
2	BRF-SeW-DUP01-20190515	NA	NA	NA	SEW	G	FD	5/15/2019	NA	5		·	X		
3	BRF-SeW-01-20190515	SeW01	NA	NA	SEW	C	N	5/15/2019	1423	2	AW 5/15/2019	·	X		
4	BRF-SeW-03-20190515	SeW03	NA	NA	SEW	C	N	5/15/2019	1622	9		X	X		
5	BRF-SeW-TUB01-20190515	SeW03	NA	NA	AQ	G	TB	5/15/2019	1742	4		·		X	
6	BRF-SeW-FLB01-20190515	SeW03	NA	NA	AQ	G	FLB	5/15/2019	1759	1		·			X

AW 5/15/2019

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Bolden / Stantec	5/16/2019	15:00			

Sample Receipt Conditions	Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
· Yes · No	· Yes · No	· Yes · No	· Yes · No	· Yes · No
· Yes · No	· Yes · No	· Yes · No	· Yes · No	· Yes · No
· Yes · No	· Yes · No	· Yes · No	· Yes · No	· Yes · No
· Yes · No	· Yes · No	· Yes · No	· Yes · No	· Yes · No

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	Suama Bolden /
	Anna Wilson /
	Dominic Norman /

Page 1 of 1

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COOLER No.:	4 of 5
COC No:	BRF_SEW_20190515_1A
1 of 1 Pages	
Task Desc:	BRF_SEW

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Bull Run Fossil Plant	Sampler:	S.Bolden, A.Wilson & D. Norman
Lab Address:	301 Alpha Drive	Project #:	NA	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	1265 Edgemoor Rd	Address	601 Grassmere Park Road, Suite 22
		City	Clinton State, Zip: TN, 37716	City/State	Nashville, TN Phone: (615) 885-1144
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@testamericainc.com				

Analysis Turnaround Time

- CALENDAR DAYS
- WORKING DAYS

TAT if different from Below _____

- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Select Unit	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered: SEEP_WATER (N)	Filtered: SEEP_WATER_BLANKS (Y)	Filtered: SEEP_WATER_FLB (N)	Preserve: SEEP_WATER (see comments)	Preserve: SEEP_WATER_BLANKS (see comments)	Preserve: SEEP_WATER_FLB (HNO3)	Analysis: SEEP_WATER	Analysis: SEEP_WATER_BLANKS	Analysis: SEEP_WATER_FLB
1	BRF-SeW-04-20190515	SeW04	NA	NA	SEW	G	N	5/15/2019	1118	5		·		X							
2	BRF-SeW-DUP01-20190515	NA	NA	NA	SEW	G	FD	5/15/2019	NA	5		·		X							
3	BRF-SeW-01-20190515	SeW01	NA	NA	SEW	C	N	5/15/2019	1423	2		·		X							
4	BRF-SeW-03-20190515	SeW03	NA	NA	SEW	C	N	5/15/2019	1622	9		X		X							
5	BRF-SeW-TUB01-20190515	SeW03	NA	NA	AQ	G	TB	5/15/2019	1742	4		·			X						
6	BRF-SeW-FLB01-20190515	SeW03	NA	NA	AQ	G	FLB	5/15/2019	1759	1		·				X					

AW 5/16/2019

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Bolden / Stantec	5/16/2019	15:00			

Sample Receipt Conditions			
· Yes · No	· Yes · No	· Yes · No	· Yes · No
· Yes · No	· Yes · No	· Yes · No	· Yes · No
· Yes · No	· Yes · No	· Yes · No	· Yes · No
· Yes · No	· Yes · No	· Yes · No	· Yes · No
Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	Suama Bolden /
	Anna Wilson /
	Dominic Norman /

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TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

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COOLER No.:	5 of 5
COC No:	BRF_SEW_20190515_1A
1 of 1 Pages	
Task Desc:	BRF_SEW

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238

Lab Manager Contact Information

Lab PM:	Gail Lage
Phone/Fax:	615-301-5741/615-726-3404
Lab Email:	Gail.Lage@testamericainc.com

Required Project Information:

Site ID #:	Bull Run Fossil Plant		
Project #:	NA		
Site Address	1265 Edgemoor Rd		
City	Clinton	State, Zip:	TN, 37716
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	jrquinn@tva.gov		

Required Sampler Information

Sampler:	S.Bolden, A.Wilson & D. Norman		
Sampling Company:	Stantec		
Address	601 Grassmere Park Road, Suite 22		
City/State	Nashville, TN	Phone:	(615) 885-1144
Sampling Team Number:	1		
Send EDD/Hard Copy to:	tva_deliverables@envstd.com		

Analysis Turnaround Time

• CALENDAR DAYS • WORKING DAYS

TAT if different from Below _____

- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ **10 Business Days**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Select Unit	Start Depth	End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SEEP_WATER (Filtered N, Preserve see comments)	Analysis: SEEP_WATER_BLANKS (Filtered Y, Preserve see comments)	Analysis: SEEP_WATER_FLB (Filtered N, Preserve HNO3)	AW 5/16/2019
1	BRF-SeW-04-20190515	SeW04			NA	NA	SEW	G	N	5/15/2019	1118	5		•	X			
2	BRF-SeW-DUP01-20190515	NA			NA	NA	SEW	G	FD	5/15/2019	NA	5		•	X			
3	BRF-SeW-01-20190515	SeW01			NA	NA	SEW	C	N	5/15/2019	1423	2		•	X			
4	BRF-SeW-03-20190515	SeW03			NA	NA	SEW	C	N	5/15/2019	1622	9		X	X			
5	BRF-SeW-TUB01-20190515	SeW03			NA	NA	AQ	G	TB	5/15/2019	1742	4		•		X		
6	BRF-SeW-FLB01-20190515	SeW03			NA	NA	AQ	G	FLB	5/15/2019	1759	1		•			X	

AW 5/16/2019

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

SEEP_WATER: Anions, TSS, and TDS unpreserved; Metals preserved w/ HNO3 to pH <2

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Suama Bolden / Stantec	5/16/2019	15:00			

Sample Receipt Conditions

Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
• Yes • No	• Yes • No	• Yes • No	• Yes • No
• Yes • No	• Yes • No	• Yes • No	• Yes • No
• Yes • No	• Yes • No	• Yes • No	• Yes • No
• Yes • No	• Yes • No	• Yes • No	• Yes • No

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Courier	Suama Bolden /
	Anna Wilson /
	Dominic Norman /

Form TVA 30067A

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 180-90258-1

Login Number: 90258
List Number: 1
Creator: DiNardo, Nicholas J

List Source: Eurofins TestAmerica, Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	