eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 180-86110-1
Client Project/Site: JSF_BS_20190124_1B
Revision: 2

For:
Environmental Standards Inc.
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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: 180-86110-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-86110-1

Revised Report
This report was revised to update the results for sample 3 to adjust the solid sample results for dry weight using the dry weight results from TA-Pittsburgh This replaces the previous final report.

Receipt
The samples were received on 1/26/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.8º C, 1.8º C, 2.4º C, 2.6º C and 3.1º C.

Receipt Exceptions
The container label for the following sample did not match the information listed on the Chain-of-Custody (COC):
JSF-BS-BG10-0.0/0.5-20190124 (180-86109-17). The container labels list a sample collection time of 1548, while the COC lists 1556. The collection time of 1556 was confirmed by the client.

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

Definitions/Glossary

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

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: JSF_BS_20190124_1B

Job ID: 180-86110-1

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
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.

Accreditation/Certification Summary

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Laboratory: Eurofins TestAmerica, St. Louis

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
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD		L2305	04-06-22
Arizona	State Program	9	AZ0813	12-08-19
California	State Program	9	2886	06-30-19 *
Connecticut	State Program	1	PH-0241	03-31-21
Florida	NELAP	4	E87689	06-30-19 *
Hawaii	State Program	9	NA	06-30-19
Illinois	NELAP	5	200023	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19 *
New York	NELAP	2	11616	03-31-20
North Dakota	State Program	8	R207	06-30-19 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-20
South Carolina	State Program	4	85002001	06-30-19
Texas	NELAP	6	T104704193-18-13	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19 *
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

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

Sample Summary

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-86110-1	JSF-BS-BG12-0.8/2.8-20190123	Solid	01/23/19 11:19	01/26/19 09:30
180-86110-2	JSF-BS-BG12-5.0/10.0-20190123	Solid	01/23/19 12:05	01/26/19 09:30
180-86110-3	JSF-BS-BG12-10.75/12.75-20190123	Solid	01/23/19 12:32	01/26/19 09:30
180-86110-4	JSF-BS-BG12-13.5/15.0-20190123	Solid	01/23/19 12:44	01/26/19 09:30
180-86110-5	JSF-BS-BG12-0.0/0.5-20190123	Solid	01/23/19 12:47	01/26/19 09:30
180-86110-6	JSF-BS-FB01-20190123	Water	01/23/19 15:30	01/26/19 09:30
180-86110-7	JSF-BS-BG11-1.1/3.1-20190124	Solid	01/24/19 11:16	01/26/19 09:30
180-86110-8	JSF-BS-BG11-5.5/8.5-20190124	Solid	01/24/19 11:36	01/26/19 09:30
180-86110-9	JSF-BS-FD01-20190124	Solid	01/24/19 11:21	01/26/19 09:30
180-86110-10	JSF-BS-BG11-11.3/13.3-20190124	Solid	01/24/19 12:02	01/26/19 09:30
180-86110-11	JSF-BS-BG11-0.0/0.5-20190124	Solid	01/24/19 12:47	01/26/19 09:30
180-86110-12	JSF-BS-EB01-20190124	Water	01/24/19 12:35	01/26/19 09:30
180-86110-13	JSF-BS-FB02-20190124	Water	01/24/19 14:34	01/26/19 09:30
180-86110-14	JSF-BS-BG10-1.4/3.4-20190124	Solid	01/24/19 15:07	01/26/19 09:30
180-86110-15	JSF-BS-BG10-6.5/8.5-20190124	Solid	01/24/19 15:27	01/26/19 09:30
180-86110-16	JSF-BS-BG10-10.5/12.5-20190124	Solid	01/24/19 15:48	01/26/19 09:30
180-86110-17	JSF-BS-BG10-0.0/0.5-20190124	Solid	01/24/19 15:56	01/26/19 09:30

Method Summary

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Method	Method Description	Protocol	Laboratory
901.1	Radium-226 & Other Gamma Emitters (GS)	EPA	TAL SL
Fill_Geo-21	Fill Geometry, 21-Day In-Growth	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG12-0.8/2.8-20190123 — Lab Sample ID: 180-86110-1

Date Collected: 01/23/19 11:19 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			260.3 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415651	02/20/19 08:13	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-BG12-5.0/10.0-20190123 — Lab Sample ID: 180-86110-2

Date Collected: 01/23/19 12:05 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			381.1 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415891	02/21/19 01:55	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-BG12-10.75/12.75-20190123 — Lab Sample ID: 180-86110-3

Date Collected: 01/23/19 12:32 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			432.6 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415652	02/20/19 08:11	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-BG12-13.5/15.0-20190123 — Lab Sample ID: 180-86110-4

Date Collected: 01/23/19 12:44 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			375.6 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415654	02/20/19 08:14	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-BG12-0.0/0.5-20190123 — Lab Sample ID: 180-86110-5

Date Collected: 01/23/19 12:47 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			384.8 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415647	02/20/19 09:34	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-FB01-20190123 — Lab Sample ID: 180-86110-6

Date Collected: 01/23/19 15:30 — **Matrix: Water**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			1000 mL	1.0 mL	412878	01/29/19 22:58	MPT	TAL SL
Total/NA	Analysis	901.1		1			415544	02/19/19 07:35	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-BG11-1.1/3.1-20190124 — Lab Sample ID: 180-86110-7

Date Collected: 01/24/19 11:16 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			343.1 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415653	02/20/19 09:36	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-BG11-5.5/8.5-20190124 — Lab Sample ID: 180-86110-8

Date Collected: 01/24/19 11:36 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			390.2 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415652	02/20/19 09:37	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-FD01-20190124 — Lab Sample ID: 180-86110-9

Date Collected: 01/24/19 11:21 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			375.6 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415889	02/21/19 01:54	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-BG11-11.3/13.3-20190124 — Lab Sample ID: 180-86110-10

Date Collected: 01/24/19 12:02 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			372.9 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415652	02/20/19 10:46	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG11-0.0/0.5-20190124 — Lab Sample ID: 180-86110-11

Date Collected: 01/24/19 12:47 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			392.9 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415892	02/21/19 01:56	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-EB01-20190124 — Lab Sample ID: 180-86110-12

Date Collected: 01/24/19 12:35 — **Matrix: Water**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			1000 mL	1.0 mL	412878	01/29/19 22:58	MPT	TAL SL
Total/NA	Analysis	901.1		1			415544	02/19/19 09:40	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-FB02-20190124 — Lab Sample ID: 180-86110-13

Date Collected: 01/24/19 14:34 — **Matrix: Water**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			1000 mL	1.0 mL	412878	01/29/19 22:58	MPT	TAL SL
Total/NA	Analysis	901.1		1			415542	02/19/19 09:39	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-BG10-1.4/3.4-20190124 — Lab Sample ID: 180-86110-14

Date Collected: 01/24/19 15:07 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			323 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415646	02/20/19 10:47	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-BG10-6.5/8.5-20190124 — Lab Sample ID: 180-86110-15

Date Collected: 01/24/19 15:27 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			303.5 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415647	02/20/19 10:47	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG10-10.5/12.5-20190124 — Lab Sample ID: 180-86110-16

Date Collected: 01/24/19 15:48 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			329 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415654	02/20/19 11:48	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Client Sample ID: JSF-BS-BG10-0.0/0.5-20190124 — Lab Sample ID: 180-86110-17

Date Collected: 01/24/19 15:56 — **Matrix: Solid**
Date Received: 01/26/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Fill_Geo-21			352.6 g	1.0 g	412881	01/30/19 00:23	MPT	TAL SL
Total/NA	Analysis	901.1		1			415651	02/20/19 11:51	KLS	TAL SL
	Instrument ID:	GAMMAVISION								

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: TAL SL
- Batch Type: Prep
  - MPT = Michael Tucker
- Batch Type: Analysis
  - KLS = Kody Saulters

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG12-0.8/2.8-20190123

Lab Sample ID: 180-86110-1

Date Collected: 01/23/19 11:19

Matrix: Solid

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.08		0.282	0.304	1.00	0.222	pCi/g	01/30/19 00:23	02/20/19 08:13	1
Radium-228	1.60		0.385	0.418		0.230	pCi/g	01/30/19 00:23	02/20/19 08:13	1
Radium 226 and Radium 228	2.68		0.477	0.517			pCi/g	01/30/19 00:23	02/20/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG12-5.0/10.0-20190123

Lab Sample ID: 180-86110-2

Date Collected: 01/23/19 12:05

Matrix: Solid

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.603		0.225	0.233	1.00	0.219	pCi/g	01/30/19 00:23	02/21/19 01:55	1
Radium-228	1.57		0.287	0.328		0.230	pCi/g	01/30/19 00:23	02/21/19 01:55	1
Radium 226 and Radium 228	2.17		0.365	0.402			pCi/g	01/30/19 00:23	02/21/19 01:55	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG12-10.75/12.75-20190123

Lab Sample ID: 180-86110-3

Date Collected: 01/23/19 12:32
Date Received: 01/26/19 09:30

Matrix: Solid

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.779		0.196	0.213	1.00	0.163	pCi/g	01/30/19 00:23	02/20/19 08:11	1
Radium-228	1.26		0.232	0.265		0.107	pCi/g	01/30/19 00:23	02/20/19 08:11	1
Radium 226 and Radium 228	2.04		0.304	0.340		0.163	pCi/g	01/30/19 00:23	02/20/19 08:11	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG12-13.5/15.0-20190123

Lab Sample ID: 180-86110-4

Date Collected: 01/23/19 12:44

Matrix: Solid

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.752		0.209	0.223	1.00	0.174	pCi/g	01/30/19 00:23	02/20/19 08:14	1
Radium-228	1.04		0.252	0.273		0.460	pCi/g	01/30/19 00:23	02/20/19 08:14	1
Radium 226 and Radium 228	1.79		0.327	0.353			pCi/g	01/30/19 00:23	02/20/19 08:14	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG12-0.0/0.5-20190123

Lab Sample ID: 180-86110-5

Date Collected: 01/23/19 12:47

Matrix: Solid

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.254	U	0.147	0.149	1.00	0.482	pCi/g	01/30/19 00:23	02/20/19 09:34	1
Radium-228	**0.744**		0.238	0.250		0.141	pCi/g	01/30/19 00:23	02/20/19 09:34	1
Radium 226 and Radium 228	**0.998**		0.280	0.291			pCi/g	01/30/19 00:23	02/20/19 09:34	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-FB01-20190123

Lab Sample ID: 180-86110-6

Date Collected: 01/23/19 15:30

Matrix: Water

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	6.11	U	9.98	10.0	50.0	13.9	pCi/L	01/29/19 22:58	02/19/19 07:35	1
Radium-228	1.41	U	17.9	17.9	50.0	29.6	pCi/L	01/29/19 22:58	02/19/19 07:35	1
Radium 226 and Radium 228	7.52	U	20.5	20.5			pCi/L	01/29/19 22:58	02/19/19 07:35	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG11-1.1/3.1-20190124

Lab Sample ID: 180-86110-7

Date Collected: 01/24/19 11:16
Date Received: 01/26/19 09:30

Matrix: Solid

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.829		0.209	0.226	1.00	0.174	pCi/g	01/30/19 00:23	02/20/19 09:36	1
Radium-228	1.53		0.273	0.314		0.145	pCi/g	01/30/19 00:23	02/20/19 09:36	1
Radium 226 and Radium 228	2.36		0.344	0.387			pCi/g	01/30/19 00:23	02/20/19 09:36	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG11-5.5/8.5-20190124

Lab Sample ID: 180-86110-8

Date Collected: 01/24/19 11:36

Matrix: Solid

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.897		0.175	0.198	1.00	0.118	pCi/g	01/30/19 00:23	02/20/19 09:37	1
Radium-228	1.43		0.242	0.283		0.111	pCi/g	01/30/19 00:23	02/20/19 09:37	1
Radium 226 and Radium 228	2.33		0.299	0.345			pCi/g	01/30/19 00:23	02/20/19 09:37	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-FD01-20190124

Lab Sample ID: 180-86110-9

Date Collected: 01/24/19 11:21

Matrix: Solid

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.872		0.215	0.234	1.00	0.163	pCi/g	01/30/19 00:23	02/21/19 01:54	1
Radium-228	1.22		0.325	0.348		0.289	pCi/g	01/30/19 00:23	02/21/19 01:54	1
Radium 226 and Radium 228	2.09		0.390	0.419			pCi/g	01/30/19 00:23	02/21/19 01:54	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG11-11.3/13.3-20190124

Lab Sample ID: 180-86110-10

Date Collected: 01/24/19 12:02

Matrix: Solid

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.820		0.164	0.185	1.00	0.103	pCi/g	01/30/19 00:23	02/20/19 10:46	1
Radium-228	1.37		0.240	0.278		0.182	pCi/g	01/30/19 00:23	02/20/19 10:46	1
Radium 226 and Radium 228	2.19		0.291	0.334			pCi/g	01/30/19 00:23	02/20/19 10:46	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG11-0.0/0.5-20190124

Lab Sample ID: 180-86110-11

Date Collected: 01/24/19 12:47
Date Received: 01/26/19 09:30

Matrix: Solid

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.737		0.189	0.204	1.00	0.153	pCi/g	01/30/19 00:23	02/21/19 01:56	1
Radium-228	1.30		0.415	0.436		0.282	pCi/g	01/30/19 00:23	02/21/19 01:56	1
Radium 226 and Radium 228	2.04		0.456	0.481			pCi/g	01/30/19 00:23	02/21/19 01:56	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-EB01-20190124

Lab Sample ID: 180-86110-12

Date Collected: 01/24/19 12:35

Matrix: Water

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**30.6**		16.9	17.2	50.0	17.1	pCi/L	01/29/19 22:58	02/19/19 09:40	1
Radium-228	-2.53	U	12.0	12.0	50.0	28.0	pCi/L	01/29/19 22:58	02/19/19 09:40	1
Radium 226 and Radium 228	**30.6**		16.9	17.2			pCi/L	01/29/19 22:58	02/19/19 09:40	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-FB02-20190124

Lab Sample ID: 180-86110-13

Date Collected: 01/24/19 14:34

Matrix: Water

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	3.59	U	3.52	3.54	50.0	31.4	pCi/L	01/29/19 22:58	02/19/19 09:39	1
Radium-228	4.39	U	10.0	10.0	50.0	33.4	pCi/L	01/29/19 22:58	02/19/19 09:39	1
Radium 226 and Radium 228	7.98	U	10.6	10.6			pCi/L	01/29/19 22:58	02/19/19 09:39	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG10-1.4/3.4-20190124

Lab Sample ID: 180-86110-14

Date Collected: 01/24/19 15:07

Matrix: Solid

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.647		0.194	0.205	1.00	0.176	pCi/g	01/30/19 00:23	02/20/19 10:47	1
Radium-228	1.56		0.266	0.310		0.110	pCi/g	01/30/19 00:23	02/20/19 10:47	1
Radium 226 and Radium 228	2.21		0.329	0.372			pCi/g	01/30/19 00:23	02/20/19 10:47	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG10-6.5/8.5-20190124

Lab Sample ID: 180-86110-15

Date Collected: 01/24/19 15:27

Matrix: Solid

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.35		0.267	0.300	1.00	0.139	pCi/g	01/30/19 00:23	02/20/19 10:47	1
Radium-228	2.37		0.442	0.503		0.170	pCi/g	01/30/19 00:23	02/20/19 10:47	1
Radium 226 and Radium 228	3.72		0.516	0.586			pCi/g	01/30/19 00:23	02/20/19 10:47	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG10-10.5/12.5-20190124

Lab Sample ID: 180-86110-16

Date Collected: 01/24/19 15:48

Matrix: Solid

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.780		0.243	0.256	1.00	0.218	pCi/g	01/30/19 00:23	02/20/19 11:48	1
Radium-228	1.75		0.342	0.385		0.348	pCi/g	01/30/19 00:23	02/20/19 11:48	1
Radium 226 and Radium 228	2.53		0.420	0.462			pCi/g	01/30/19 00:23	02/20/19 11:48	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Client Sample ID: JSF-BS-BG10-0.0/0.5-20190124

Lab Sample ID: 180-86110-17

Date Collected: 01/24/19 15:56

Matrix: Solid

Date Received: 01/26/19 09:30

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.927**		0.219	0.239	1.00	0.151	pCi/g	01/30/19 00:23	02/20/19 11:51	1
Radium-228	0.538	U	0.278	0.284		0.597	pCi/g	01/30/19 00:23	02/20/19 11:51	1
Radium 226 and Radium 228	**1.47**		0.354	0.371			pCi/g	01/30/19 00:23	02/20/19 11:51	1

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-412878/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 415565 — **Prep Batch: 412878**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-1.807	U	21.4	21.4	50.0	36.6	pCi/L	01/29/19 22:58	02/19/19 09:29	1
Radium-228	-17.50	U	24.0	24.1	50.0	48.0	pCi/L	01/29/19 22:58	02/19/19 09:29	1
Radium 226 and Radium 228	0.0000	U	0.00000	0.00000			pCi/L	01/29/19 22:58	02/19/19 09:29	1

Lab Sample ID: LCS 160-412878/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 415565 — **Prep Batch: 412878**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	136000	131800		15200		347	pCi/L	97	90 - 111
Cesium-137	44900	40200		4030		187	pCi/L	90	90 - 111
Cobalt-60	30500	29570		2930		69.4	pCi/L	97	89 - 110

Lab Sample ID: 180-86110-6 DU — **Client Sample ID: JSF-BS-FB01-20190123**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 415543 — **Prep Batch: 412878**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	6.11	U	-20.31	U	14.8	50.0	41.6	pCi/L	1.06	1
Radium-228	1.41	U	-15.81	U	17.3	50.0	33.8	pCi/L	0.49	1
Radium 226 and Radium 228	7.52	U	0.0000	U	0.00000			pCi/L	0.17	

Lab Sample ID: MB 160-412881/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 415646 — **Prep Batch: 412881**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.04047	U	0.138	0.138	1.00	0.259	pCi/g	01/30/19 00:23	02/20/19 07:58	1
Radium-228	-0.05015	U	0.181	0.181		0.219	pCi/g	01/30/19 00:23	02/20/19 07:58	1
Radium 226 and Radium 228	0.0000	U	0.00000	0.00000			pCi/g	01/30/19 00:23	02/20/19 07:58	1

Lab Sample ID: LCS 160-412881/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 415647 — **Prep Batch: 412881**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Americium-241	96.7	95.72		11.2		1.12	pCi/g	99	87 - 116
Cesium-137	27.9	30.39		3.20		0.332	pCi/g	109	87 - 120
Cobalt-60	12.0	12.66		1.33		0.168	pCi/g	105	87 - 115

Method: 901.1 - Radium-226 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: 180-86110-1 DU
Matrix: Solid
Analysis Batch: 415646

Client Sample ID: JSF-BS-BG12-0.8/2.8-20190123
Prep Type: Total/NA
Prep Batch: 412881

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	1.08			0.8629		0.207	1.00	0.140	pCi/g			0.43	1
Radium-228	1.60			1.497		0.341		0.123	pCi/g			0.14	1
Radium 226 and Radium 228	2.68			2.360		0.399			pCi/g			0.35	

QC Association Summary

Client: Environmental Standards Inc.
Project/Site: JSF_BS_20190124_1B

Job ID: 180-86110-1

Rad

Prep Batch: 412878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86110-6	JSF-BS-FB01-20190123	Total/NA	Water	Fill_Geo-21	
180-86110-12	JSF-BS-EB01-20190124	Total/NA	Water	Fill_Geo-21	
180-86110-13	JSF-BS-FB02-20190124	Total/NA	Water	Fill_Geo-21	
MB 160-412878/1-A	Method Blank	Total/NA	Water	Fill_Geo-21	
LCS 160-412878/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-21	
180-86110-6 DU	JSF-BS-FB01-20190123	Total/NA	Water	Fill_Geo-21	

Prep Batch: 412881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86110-1	JSF-BS-BG12-0.8/2.8-20190123	Total/NA	Solid	Fill_Geo-21	
180-86110-2	JSF-BS-BG12-5.0/10.0-20190123	Total/NA	Solid	Fill_Geo-21	
180-86110-3	JSF-BS-BG12-10.75/12.75-20190123	Total/NA	Solid	Fill_Geo-21	
180-86110-4	JSF-BS-BG12-13.5/15.0-20190123	Total/NA	Solid	Fill_Geo-21	
180-86110-5	JSF-BS-BG12-0.0/0.5-20190123	Total/NA	Solid	Fill_Geo-21	
180-86110-7	JSF-BS-BG11-1.1/3.1-20190124	Total/NA	Solid	Fill_Geo-21	
180-86110-8	JSF-BS-BG11-5.5/8.5-20190124	Total/NA	Solid	Fill_Geo-21	
180-86110-9	JSF-BS-FD01-20190124	Total/NA	Solid	Fill_Geo-21	
180-86110-10	JSF-BS-BG11-11.3/13.3-20190124	Total/NA	Solid	Fill_Geo-21	
180-86110-11	JSF-BS-BG11-0.0/0.5-20190124	Total/NA	Solid	Fill_Geo-21	
180-86110-14	JSF-BS-BG10-1.4/3.4-20190124	Total/NA	Solid	Fill_Geo-21	
180-86110-15	JSF-BS-BG10-6.5/8.5-20190124	Total/NA	Solid	Fill_Geo-21	
180-86110-16	JSF-BS-BG10-10.5/12.5-20190124	Total/NA	Solid	Fill_Geo-21	
180-86110-17	JSF-BS-BG10-0.0/0.5-20190124	Total/NA	Solid	Fill_Geo-21	
MB 160-412881/1-A	Method Blank	Total/NA	Solid	Fill_Geo-21	
LCS 160-412881/2-A	Lab Control Sample	Total/NA	Solid	Fill_Geo-21	
180-86110-1 DU	JSF-BS-BG12-0.8/2.8-20190123	Total/NA	Solid	Fill_Geo-21	

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	1	of	5
COC No:	JSF_BS_20190124_1B		
1 of 2 Pages			
Task Desc:	JSF_BS		

Chain-of-Custody / Analytical Request Document

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

180-86110 Chain of Custody

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Nashville	Site ID #:	JOHN SEVIER FOSSIL PLANT	Sampler:	Andrew Stevens & Elizabeth Dilbone
Lab Address:	29360 Foster Creighton Dr	Project #:	175568225	Sampling Company:	Stantec
	Nashville, TN 37204	Site Address	606 Old Highway 70 S	Address	601 Grassmere Park
		City	Rogersville State, Zip: TN, 37857	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-ei@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 (Standard)

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: CUF_BACKGROUNDSOIL_RAD	Analysis: CUF_BACKGROUNDSOIL_BLANKS_RAD	Preserve: None	Preserve: HNO3
1	JSF-BS-BG12-0.8/2.8-20190123	BG12	0.8	2.8	S	G	N	1/23/2019	1119	2		☐	X			
2	JSF-BS-BG12-5.0/10.0-20190123	BG12	5.0	10.0	S	G	N	1/23/2019	1205	2		☐	X			
3	JSF-BS-BG12-10.25/12.75-20190123	BG12	10.3	12.8	S	G	N	1/23/2019	1232	2		☐	X			
4	JSF-BS-BG12-13.5/15.0-20190123	BG12	13.5	15.0	S	G	N	1/23/2019	1244	2		☐	X			
5	JSF-BS-BG12-0.0/0.5-20190123	BG12	0.0	0.5	S	G	N	1/23/2019	1247	2		☐	X			
6	JSF-BS-FB01-20190123	BG12	NA	NA	W	G	FB	1/23/2019	1530	3		☐		X		
7	JSF-BS-BG11-1.1/3.1-20190124	BG11	1.1	3.1	S	G	N	1/24/2019	1116	2		☐	X			
8	JSF-BS-BG11-5.5/8.5-20190124	BG11	5.5	8.5	S	G	N	1/24/2019	1136	2		☐	X			
9	JSF-BS-FD01-20190124	NA	NA	NA	S	G	FD	1/24/2019	1121	2		☐	X			
10	JSF-BS-BG11-11.3/13.3-20190124	BG11	11.3	13.3	S	G	N	1/24/2019	1202	2		☐	X			
11	JSF-BS-BG11-0.0/0.5-20190124	BG11	0.0	0.5	S	G	N	1/24/2019	1247	2		☐	X			
12	JSF-BS-EB01-20190124	BG11	NA	NA	W	G	EB	1/24/2019	1235	3		☐		X		
13	JSF-BS-FB02-20190124	BG10	NA	NA	W	G	FB	1/24/2019	1434	3		☐		X		

AS 1/24/19

Additional Comments/Special Instructions:

AS 1/24/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Andrew Stevens	1/24/19	1900	TMSIR	1/25/19	930

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
fedex	Andrew Stevens

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 3000ZAA

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	1	of	5
COC No:	JSF_BS_20190124_1B		
2 of 2 Pages			
Task Desc:	JSF_BS		

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:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Nashville	Site ID #:	JOHN SEVIER FOSSIL PLANT	Sampler:	Andrew Stevens & Elizabeth Dilbone
Lab Address:	29360 Foster Creighton Dr	Project #:	175568225	Sampling Company:	Stantec
	Nashville, TN 37204	Site Address	606 Old Highway 70 S	Address	601 Grassmere Park
		City	Rogersville State, Zip: TN, 37857	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:	irquinn@tva.gov	Send EDD/Hard Copy to:	tva-ei@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 (Standard)

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: CUF_BACKGROUNDSOIL_RAD	Analysis: CUF_BACKGROUNDSOIL_BLANKS_RAD
1	JSF-BS-BG10-1.4/3.4-20190124	BG10	1.4	3.4	S	G	N	1/24/2019	1507	2		☐	X	
2	JSF-BS-BG10-6.5/8.5-20190124	BG10	6.5	8.5	S	G	N	1/24/2019	1527	2		☐	X	
3	JSF-BS-BG10-10.5/12.5-20190124	BG10	10.5	12.5	S	G	N	1/24/2019	1548	2		☐	X	
4	JSF-BS-BG10-0.0/0.5-20190124	BG10	0.0	0.5	S	G	N	1/24/2019	1556	2		☐	X	
5												☐		
6												☐		
7												☐		
8												☐		
9												☐		
10												☐		
11												☐		
12												☐		
13												☐		

Filtered: N N

Preserve: None HNO3

AS 1/24/19 AS 1/24/19 AS 1/24/19 AS 1/24/19 AS 1/24/19

Additional Comments/Special Instructions:

AS 1/24/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Andrew Stevens	1/24/19	1900	MPiSS	1/24/19	630

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	Andrew Stevens

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?

Form TVA 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	2	of	5
COC No:	JSF_BS_20190124_1B		
1 of 2 Pages			
Task Desc:	JSF_BS		

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:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Nashville	Site ID #:	JOHN SEVIER FOSSIL PLANT	Sampler:	Andrew Stevens & Elizabeth Dibbone
Lab Address:	29360 Foster Creighton Dr	Project #:	175568225	Sampling Company:	Stantec
	Nashville, TN 37204	Site Address	606 Old Highway 70 S	Address	601 Grassmere Park
		City	Rogersville State, Zip: TN, 37857	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:	rquinn@tva.gov	Send EDD/Hard Copy to:	tva-ei@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 (Standard)

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: CUF_BACKGROUNDSOIL_RAD	Analysis: CUF_BACKGROUNDSOIL_BLANKS_RAD	Preserve: None	Preserve: HNO3	Filtered: N	Filtered: N
1	JSF-BS-BG12-0.8/2.8-20190123	BG12	0.8	2.8	S	G	N	1/23/2019	1119	2		☐	X					
2	JSF-BS-BG12-5.0/10.0-20190123	BG12	5.0	10.0	S	G	N	1/23/2019	1205	2		☐	X					
3	JSF-BS-BG12-10.25/12.75-20190123	BG12	10.3	12.8	S	G	N	1/23/2019	1232	2		☐	X					
4	JSF-BS-BG12-13.5/15.0-20190123	BG12	13.5	15.0	S	G	N	1/23/2019	1244	2		☐	X					
5	JSF-BS-BG12-0.0/0.5-20190123	BG12	0.0	0.5	S	G	N	1/23/2019	1247	2		☐	X					
6	JSF-BS-FB01-20190123	BG12	NA	NA	W	G	FB	1/23/2019	1530	3		☐		X				
7	JSF-BS-BG11-1.1/3.1-20190124	BG11	1.1	3.1	S	G	N	1/24/2019	1116	2		☐	X					
8	JSF-BS-BG11-5.5/8.5-20190124	BG11	5.5	8.5	S	G	N	1/24/2019	1136	2		☐	X					
9	JSF-BS-FD01-20190124	NA	NA	NA	S	G	FD	1/24/2019	1121	2		☐	X					
10	JSF-BS-BG11-11.3/13.3-20190124	BG11	11.3	13.3	S	G	N	1/24/2019	1202	2		☐	X					
11	JSF-BS-BG11-0.0/0.5-20190124	BG11	0.0	0.5	S	G	N	1/24/2019	1247	2		☐	X					
12	JSF-BS-EB01-20190124	BG11	NA	NA	W	G	EB	1/24/2019	1235	3		☐		X				
13	JSF-BS-FB02-20190124	BG10	NA	NA	W	G	FB	1/24/2019	1434	3		☐		X				

AS 1/24/19

Additional Comments/Special Instructions:

AS 1/24/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Receipt Conditions
Andrew Stevens	1/24/19	1900	[illegible]	1/24/19	1930	☐ 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
Fedex	Andrew Stevens

Temperature in °C / Sample on ice? / Sample intact? / Trip Blank?

Form TVA 3000EAA

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	2	of	5
COC No:	JSF_BS_20190124_1B		
2 of 2 Pages			
Task Desc:	JSF_BS		

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:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Nashville	Site ID #:	JOHN SEVIER FOSSIL PLANT	Sampler:	Andrew Stevens & Elizabeth Dilbone
Lab Address:	29360 Foster Creighton Dr	Project #:	175568225	Sampling Company:	Stantec
	Nashville, TN 37204	Site Address	606 Old Highway 70 S	Address	601 Grassmere Park
		City	Rogersville State, Zip: TN, 37857	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-ei@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 (Standard)

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	Filtered: N	Filtered: N	Preserve: None	Preserve: HNO3	Analysis: CLP_BACKGROUNDSOIL_RAD	Analysis: CLP_BACKGROUNDSOIL_BLANKS_RAD
1	JSF-BS-BG10-1.4/3.4-20190124	BG10	1.4	3.4	S	G	N	1/24/2019	1507	2		☐					X	
2	JSF-BS-BG10-6.5/8.5-20190124	BG10	6.5	8.5	S	G	N	1/24/2019	1527	2		☐					X	
3	JSF-BS-BG10-10.5/12.5-20190124	BG10	10.5	12.5	S	G	N	1/24/2019	1548	2		☐					X	
4	JSF-BS-BG10-0.0/0.5-20190124	BG10	0.0	0.5	S	G	N	1/24/2019	1556	2		☐					X	
5												☐						
6												☐						
7												☐						
8												☐						
9												☐						
10												☐						
11												☐						
12												☐						
13												☐						

AS 1/24/19

Additional Comments/Special Instructions:

AS 1/24/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Andrew Stevens	1/24/19	1900	[illegible]	1/26/19	930

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
Fedex	Andrew Stevens

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:	JSF_BS_20190124_1B
1 of 2 Pages	
Task Desc:	JSF_BS

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Nashville	Site ID #:	JOHN SEVIER FOSSIL PLANT	Sampler:	Andrew Stevens & Elizabeth Dilbone
Lab Address:	29360 Foster Creighton Dr Nashville, TN 37204	Project #:	175568225	Sampling Company:	Stantec
		Site Address	606 Old Highway 70 S	Address	601 Grassmere Park
		City	Rogersville, State, Zip: TN, 37857	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-ei@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 (Standard)

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	Filtered N	Filtered N	Preserve None	Preserve HNO3	Analysis CUF_BACKGROUNDSOIL_RAD	Analysis CUF_BACKGROUNDSOIL_BLANKS_RAD
1	JSF-BS-BG12-0.8/2.8-20190123	BG12	0.8	2.8	S	G	N	1/23/2019	1119	2		☐					X	
2	JSF-BS-BG12-5.0/10.0-20190123	BG12	5.0	10.0	S	G	N	1/23/2019	1205	2		☐					X	
3	JSF-BS-BG12-10.25/12.75-20190123	BG12	10.3	12.8	S	G	N	1/23/2019	1232	2		☐					X	
4	JSF-BS-BG12-13.5/15.0-20190123	BG12	13.5	15.0	S	G	N	1/23/2019	1244	2		☐					X	
5	JSF-BS-BG12-0.0/0.5-20190123	BG12	0.0	0.5	S	G	N	1/23/2019	1247	2		☐					X	
6	JSF-BS-FB01-20190123	BG12	NA	NA	W	G	FB	1/23/2019	1530	3		☐						X
7	JSF-BS-BG11-1.1/3.1-20190124	BG11	1.1	3.1	S	G	N	1/24/2019	1116	2		☐					X	
8	JSF-BS-BG11-5.5/8.5-20190124	BG11	5.5	8.5	S	G	N	1/24/2019	1136	2		☐					X	
9	JSF-BS-FD01-20190124	NA	NA	NA	S	G	FD	1/24/2019	1121	2		☐					X	
10	JSF-BS-BG11-11.3/13.3-20190124	BG11	11.3	13.3	S	G	N	1/24/2019	1202	2		☐					X	
11	JSF-BS-BG11-0.0/0.5-20190124	BG11	0.0	0.5	S	G	N	1/24/2019	1247	2		☐					X	
12	JSF-BS-EB01-20190124	BG11	NA	NA	W	G	EB	1/24/2019	1235	3		☐						X
13	JSF-BS-FB02-20190124	BG10	NA	NA	W	G	FB	1/24/2019	1434	3		☐						X

AS 1/24/19

Additional Comments/Special Instructions:

AS 1/24/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Andrew Stevens	1/24/19	1900	TAPIST	1/24/19	1930

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	Andrew Stevens

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 30062AA

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	3	of	5
COC No:	JSF_BS_20190124_1B		
2 of 2 Pages			
Task Desc:	JSF_BS		

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:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Nashville	Site ID #:	JOHN SEVIER FOSSIL PLANT	Sampler:	Andrew Stevens & Elizabeth Dilbone
Lab Address:	29360 Foster Creighton Dr Nashville, TN 37204	Project #:	175568225	Sampling Company:	Stantec
		Site Address	606 Old Highway 70 S	Address	601 Grassmere Park
		City	Rogersville State, Zip: TN, 37857	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-ei@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 (Standard)

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: CUF_BACKGROUNDSOIL_RAD	Analysis: CUF_BACKGROUNDSOIL_BLANKS_RAD
1	JSF-BS-BG10-1.4/3.4-20190124	BG10	1.4	3.4	S	G	N	1/24/2019	1507	2		☐	X	
2	JSF-BS-BG10-6.5/8.5-20190124	BG10	6.5	8.5	S	G	N	1/24/2019	1527	2		☐	X	
3	JSF-BS-BG10-10.5/12.5-20190124	BG10	10.5	12.5	S	G	N	1/24/2019	1548	2		☐	X	
4	JSF-BS-BG10-0.0/0.5-20190124	BG10	0.0	0.5	S	G	N	1/24/2019	1556	2		☐	X	
5												☐		
6												☐		
7												☐		
8												☐		
9												☐		
10												☐		
11												☐		
12												☐		
13												☐		

Filtered: N N

Preserve: None HNO3

AS 1/24/19

AS 1/24/19

AS 1/24/19

AS 1/24/19

AS 1/24/19

Additional Comments/Special Instructions:

AS 1/24/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Andrew Stevens	1/24/19	1900	[illegible]	1/24/19	5:10

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	Andrew Stevens

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

COOLER No.:	4	of	5
COC No:	JSF_BS_20190124_1B		
1 of 2 Pages			
Task Desc:	JSF_BS		

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:		Required Project Information:				Required Sampler Information			
Lab Name:	TestAmerica Nashville	Site ID #:	JOHN SEVIER FOSSIL PLANT			Sampler:	Andrew Stevens & Elizabeth Dilbone		
Lab Address:	29360 Foster Creighton Dr	Project #:	175568225			Sampling Company:	Stantec		
	Nashville, TN 37204	Site Address	606 Old Highway 70 S			Address	601 Grassmere Park		
		City	Rogersville	State, Zip:	TN, 37857	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-ei@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 (Standard)

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	Filtered	Preserve: None	Preserve: HNO3	Analysis: CUF_BACKGROUNDSOIL_RAD	Analysis: CUF_BACKGROUNDSOIL_BLANKS_RAD
1	JSF-BS-BG12-0.8/2.8-20190123	BG12	0.8	2.8	S	G	N	1/23/2019	1119	2		☐	N			X	
2	JSF-BS-BG12-5.0/10.0-20190123	BG12	5.0	10.0	S	G	N	1/23/2019	1205	2		☐	N			X	
3	JSF-BS-BG12-10.25/12.75-20190123	BG12	10.3	12.8	S	G	N	1/23/2019	1232	2		☐	N			X	
4	JSF-BS-BG12-13.5/15.0-20190123	BG12	13.5	15.0	S	G	N	1/23/2019	1244	2		☐	N			X	
5	JSF-BS-BG12-0.0/0.5-20190123	BG12	0.0	0.5	S	G	N	1/23/2019	1247	2		☐	N			X	
6	JSF-BS-FB01-20190123	BG12	NA	NA	W	G	FB	1/23/2019	1530	3		☐	N				X
7	JSF-BS-BG11-1.1/3.1-20190124	BG11	1.1	3.1	S	G	N	1/24/2019	1116	2		☐	N			X	
8	JSF-BS-BG11-5.5/8.5-20190124	BG11	5.5	8.5	S	G	N	1/24/2019	1136	2		☐	N			X	
9	JSF-BS-FD01-20190124	NA	NA	NA	S	G	FD	1/24/2019	1121	2		☐	N			X	
10	JSF-BS-BG11-11.3/13.3-20190124	BG11	11.3	13.3	S	G	N	1/24/2019	1202	2		☐	N			X	
11	JSF-BS-BG11-0.0/0.5-20190124	BG11	0.0	0.5	S	G	N	1/24/2019	1247	2		☐	N			X	
12	JSF-BS-EB01-20190124	BG11	NA	NA	W	G	EB	1/24/2019	1235	3		☐					X
13	JSF-BS-FB02-20190124	BG10	NA	NA	W	G	FB	1/24/2019	1434	3		☐					X

AS 1/24/19

Additional Comments/Special Instructions:

AS 1/24/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Andrew Stevens	1/24/19	1900	[illegible]	1/24/19	930

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
Fedex	Andrew Stevens

Page 1 of 1

Form TVA 3000EAA

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	4	of	5
COC No:	JSF_BS_20190124_1B		
2 of 2 Pages			
Task Desc:	JSF_BS		

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:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Nashville	Site ID #:	JOHN SEVIER FOSSIL PLANT	Sampler:	Andrew Stevens & Elizabeth Dilbone
Lab Address:	29360 Foster Creighton Dr	Project #:	175568225	Sampling Company:	Stantec
	Nashville, TN 37204	Site Address	606 Old Highway 70 S	Address	601 Grassmere Park
		City	Rogersville State, Zip: TN, 37857	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-ei@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 (Standard)

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	Filtered: N	Preserve: None	Preserve: HNO3	Analysis: CUF_BACKGROUNDSOIL_RAD	Analysis: CUF_BACKGROUNDSOIL_BLANKS_RAD
1	JSF-BS-BG10-1.4/3.4-20190124	BG10	1.4	3.4	S	G	N	1/24/2019	1507	2		☐		X			
2	JSF-BS-BG10-6.5/8.5-20190124	BG10	6.5	8.5	S	G	N	1/24/2019	1527	2		☐		X			
3	JSF-BS-BG10-10.5/12.5-20190124	BG10	10.5	12.5	S	G	N	1/24/2019	1548	2		☐		X			
4	JSF-BS-BG10-0.0/0.5-20190124	BG10	0.0	0.5	S	G	N	1/24/2019	1556	2		☐		X			
5												☐					
6												☐					
7												☐					
8												☐					
9												☐					
10												☐					
11												☐					
12												☐					
13												☐					

AS 1/24/19

Additional Comments/Special Instructions:

AS 1/24/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Andrew Stevens	1/24/19	1900	[illegible]	1/26/19	930

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
Fedex	Andrew Stevens

Form TVA 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	5	of	5
COC No:	JSF_BS_20190124_1B		
1 of 2 Pages			
Task Desc:	JSF_BS		

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:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Nashville	Site ID #:	JOHN SEVIER FOSSIL PLANT	Sampler:	Andrew Stevens & Elizabeth Dilbone
Lab Address:	29360 Foster Creighton Dr	Project #:	175568225	Sampling Company:	Stantec
	Nashville, TN 37204	Site Address	606 Old Highway 70 S	Address	601 Grassmere Park
		City	Rogersville State, Zip: TN, 37857	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:	jtquinn@tva.gov	Send EDD/Hard Copy to:	tva-ei@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 (Standard)

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: CUF_BACKGROUNDSOIL_RAD (Filtered N, Preserve None)	Analysis: CUF_BACKGROUNDSOIL_BLANKS_RAD (Filtered N, Preserve HNO3)
1	JSF-BS-BG12-0.8/2.8-20190123	BG12	0.8	2.8	S	G	N	1/23/2019	1119	2		☐	X	
2	JSF-BS-BG12-5.0/10.0-20190123	BG12	5.0	10.0	S	G	N	1/23/2019	1205	2		☐	X	
3	JSF-BS-BG12-10.25/12.75-20190123	BG12	10.3	12.8	S	G	N	1/23/2019	1232	2		☐	X	
4	JSF-BS-BG12-13.5/15.0-20190123	BG12	13.5	15.0	S	G	N	1/23/2019	1244	2		☐	X	
5	JSF-BS-BG12-0.0/0.5-20190123	BG12	0.0	0.5	S	G	N	1/23/2019	1247	2		☐	X	
6	JSF-BS-FB01-20190123	BG12	NA	NA	W	G	FB	1/23/2019	1530	3		☐		X
7	JSF-BS-BG11-1.1/3.1-20190124	BG11	1.1	3.1	S	G	N	1/24/2019	1116	2		☐	X	
8	JSF-BS-BG11-5.5/8.5-20190124	BG11	5.5	8.5	S	G	N	1/24/2019	1136	2		☐	X	
9	JSF-BS-FD01-20190124	NA	NA	NA	S	G	FD	1/24/2019	1121	2		☐	X	
10	JSF-BS-BG11-11.3/13.3-20190124	BG11	11.3	13.3	S	G	N	1/24/2019	1202	2		☐	X	
11	JSF-BS-BG11-0.0/0.5-20190124	BG11	0.0	0.5	S	G	N	1/24/2019	1247	2		☐	X	
12	JSF-BS-EB01-20190124	BG11	NA	NA	W	G	EB	1/24/2019	1235	3		☐		X
13	JSF-BS-FB02-20190124	BG10	NA	NA	W	G	FB	1/24/2019	1434	3		☐		X

AS 1/24/19

Additional Comments/Special Instructions:

AS 1/24/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Andrew Stevens	1/24/19	1900	MAPM	1/26/19	930

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
fedex	Andrew Stevens

Page 1 of 1

Form TVA 38002AA

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	5	of	5
COC No:	JSF_BS_20190124_1B		
2 of 2 Pages			
Task Desc:	JSF_BS		

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 Nashville
Lab Address:	29360 Foster Creighton Dr Nashville, TN 37204

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 #:	JOHN SEVIER FOSSIL PLANT		
Project #:	175568225		
Site Address	606 Old Highway 70 S		
City	Rogersville	State, Zip:	TN, 37857
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	jrquinn@tva.gov		

Required Sampler Information

Sampler:	Andrew Stevens & Elizabeth Dilbone		
Sampling Company:	Stantec		
Address	601 Grassmere Park		
City/State	Nashville/TN	Phone:	615-885-1144
Sampling Team Number:	1		
Send EDD/Hard Copy to:	tva-ei@envsld.com		

Analysis Turnaround Time

☐ CALENDAR DAYS ☒ WORKING DAYS

TAT if different from Below _____

☐ 24 Hours
☐ 3 Business Days
☒ 5 Business Days
☐ 10 Business Days (Standard)

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: CUF_BACKGROUNDSOIL_RAD	Analysis: CUF_BACKGROUNDSOIL_BLANKS_RAD
1	JSF-BS-BG10-1.4/3.4-20190124	BG10	1.4	3.4	S	G	N	1/24/2019	1507	2		☐	X	
2	JSF-BS-BG10-6.5/8.5-20190124	BG10	6.5	8.5	S	G	N	1/24/2019	1527	2		☐	X	
3	JSF-BS-BG10-10.5/12.5-20190124	BG10	10.5	12.5	S	G	N	1/24/2019	1548	2		☐	X	
4	JSF-BS-BG10-0.0/0.5-20190124	BG10	0.0	0.5	S	G	N	1/24/2019	1556	2		☐	X	
5												☐		
6												☐		
7												☐		
8												☐		
9												☐		
10												☐		
11												☐		
12												☐		
13												☐		

Filtered: N N

Preserve: None HNO3

AS 1/24/19

AS 1/24/19

AS 1/24/19

AS 1/24/19

AS 1/24/19

Additional Comments/Special Instructions:

AS 1/24/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Andrew Stevens	1/24/19	1900		1/26/19	930

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	Andrew Stevens

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.:	1 of 5
COC No:	JSF_BS_20190124_1B
1 of 2 Pages	
Task Desc:	JSF_BS

Rev 1 DC 1/29/19 REV 2 CT 4/8/19

180-86110 Chain of Custody

Required Ship to Lab:

Lab Name	TestAmerica Nashville
Lab Address	29360 Foster Creighton Dr Nashville, TN 37204

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 #:	JOHN SEVER FOSSIL PLANT		
Project #:	175568225		
Site Address	606 Old Highway 70 S		
City	Rogersville	State, Zip:	TN 37857
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	[illegible]		

CT 4/8/19 10.75

Required Sampler Information

Sampler:	Andrew Stevens & Elizabeth Dilbone		
Sampling Company:	Stantec		
Address	601 Grassmere Park		
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
☐ 7 Business Days
☐ 5 Business Days
✓ 10 Business Days (Standard) DC 1/29/19

CT 4/8/19 JSF-BS-BG12-10.75/12.75-20190123

~~10.25~~ 12.75 DC 1/29/19

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: BACKGROUNDSOIL_RAD	Analysis: BACKGROUNDSOIL_BLANKS_RAD
1	JSF-BS-BG12-0 8/2 8-20190123	BG12	0 8	2.8	S	G	N	1/23/2019	1119	2			X	
2	JSF-BS-BG12-5 0/10 0-20190123	BG12	5 0	10 0	S	G	N	1/23/2019	1205	2			X	
3	~~JSF-BS-BG12-10 25/12 75-20190123~~	BG12	~~10.3~~	~~12.8~~	S	G	N	1/23/2019	1232	2			X	
4	JSF-BS-BG12-13 5/15 0-20190123	BG12	13 5	15 0	S	G	N	1/23/2019	1244	2			X	
5	JSF-BS-BG12-0 0/0 5-20190123	BG12	0.0	0 5	S	G	N	1/23/2019	1247	2			X	
6	JSF-BS-FB01-20190123	BG12	NA	NA	W	G	FB	1/23/2019	1530	3				X
7	JSF-BS-BG11-1 1/3 1-20190124	BG11	1.1	3.1	S	G	N	1/24/2019	1116	2			X	
8	JSF-BS-BG11-5 5/8 5-20190124	BG11	5.5	8.5	S	G	N	1/24/2019	1136	2			X	
9	JSF-BS-FD01-20190124	NA	NA	NA	S	G	FD	1/24/2019	1121	2			X	
10	JSF-BS-BG11-11 3/13.3-20190124	BG11	11 3	13 3	S	G	N	1/24/2019	1202	2			X	
11	JSF-BS-BG11-0 0/0 5-20190124	BG11	0.0	0.5	S	G	N	1/24/2019	1247	2			X	
12	JSF-BS-EB01-20190124	BG11	NA	NA	W	G	EB	1/24/2019	1235	3				X
13	JSF-BS-FB02-20190124	BG10	NA	NA	W	G	FB	1/24/2019	1434	3				X

AS 1/24/19

Additional Comments/Special Instructions:

AS 1/24/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Andrew Stevens	1/24/19	1700	[illegible] TMS	1/4/19	930

SHIPPING METHOD	SAMPLER NAME AND SIGNATURE
Hand	Andrew Stevens

Sample Receipt Conditions: Temperature in °C; Sample on Ice?; Sample Intact?; Trip Blank?

Page 1 of 1

Form TVA 30082AA

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:	JSF_BS_20190124_1B
2 of 2 Pages	
Task Desc:	JSF_BS

Rev-1 DC 1/29/19

Required Ship to Lab:

Lab Name:	TestAmerica Nashville
Lab Address:	29360 Foster Creighton Dr Nashville, TN 37204
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 #:	JOHN SEVIER FOSSIL PLANT		
Project #:	175588225		
Site Address	506 Old Highway 70 S		
City	Rogersville	State, Zip:	TN 37857
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	[illegible]		

Required Sampler Information

Sampler:	Andrew Stevens & Elizabeth Dibone		
Sampling Company:	Stantec		
Address	601 Grassmere Park		
City/State #	Nashville/TN	Phone:	615-885-1144
Sampling Team Number:	1		
Send EDD/Hard Copy to:	[illegible]		

Analysis Turnaround Time

C CALENDAR DAYS — W WORKING DAYS

TAT Reference from Below

24 Hours

3 Business Days

5 Business Days

✓ 10 Business Days (Standard) DC 1/29/19

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: CHR, BACKGROUNDSOIL, RAD	Analysis: CHR, BACKGROUNDSOIL, ALL&W3, RAD
1	JSF-BS-BG10-1 4/3 4-20190124	BG10	1.4	3.4	S	G	N	1/24/2019	1507	2			X	
2	JSF-BS-BG10-6 5/8 5-20190124	BG10	6.5	8.5	S	G	N	1/24/2019	1527	2			X	
3	JSF-BS-BG10-10 5/12.5-20190124	BG10	10.5	12.5	S	G	N	1/24/2019	1548	2			X	
4	JSF-BS-BG10-0 0/0 5-20190124	BG10	0.0	0.5	S	G	N	1/24/2019	1556	2			X	
5														
6														
7														
8														
9														
10														
11														
12														
13														

Filtered: N / Y — AS 1/24/19

Preserve: None / HNO3 — AS 1/24/19

Analysis — AS 1/24/19 — DC 1/29/19

Additional Comments/Special Instructions:

AS 1/24/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Andrew Stevens [signature]	1/24/19	1900	[signature] MSIS	1/24/19	631

SHIPPING METHOD	SAMPLER NAME AND SIGNATURE
Fedex	Andrew Stevens [signature]

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 30057A

Farr, Carole

From: Farr, Carole
Sent: Monday, April 8, 2019 9:37 AM
To: 'Jennifer Gable'; 'Amanda Cover'
Cc: Zvirbulis, Brigid; Kerr, Jim; Brooks, Rebekah; Carey, Kevin; 'Jacob Gruzalski'
Subject: FW: data base analytical sample result reporting
Attachments: jsf_bs_20190124_1a_1b_rev_1.pdf

Hi Jennifer,

After reviewing the field data and COC with the FTL for this project, it was determined that the Sample ID on the COC was incorrect. It should be JSF-BS-BG12-10.75/12.75-20190123. The change has been noted on the attached COC.

Thank you,
Carole

Carole Farr
Principal Geologist

Direct: 858 633-4266
Mobile: 619 762-0668
Fax: 619 296-6199
Carole.Farr@stantec.com

Stantec

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From: Jennifer Gable <jgable@envstd.com>
Sent: Tuesday, April 02, 2019 9:39 AM
To: Zvirbulis, Brigid <brigid.zvirbulis@stantec.com>; Amanda Cover <ACover@envstd.com>; Jacob Gruzalski <jgruzalski@envstd.com>
Cc: Sukkurwala, Gus <gus.sukkurwala@stantec.com>; Kerr, Jim <Jim.KerrJr@stantec.com>; Brooks, Rebekah <rebekah.brooks@stantec.com>
Subject: RE: data base analytical sample result reporting

Hi Brigid,

Please see my comments below, these are issues originating with field information that will require either COC revisions or field data revisions.

I also noted that for JSF background soils, there is an incorrect sample ID for field pH measurement. Analytical sample ID is JSF-BS-BG12-10.**2**5/12.75-20190123, field data reported JSF-BS-BG12-10.**7**5/12.75-20190123. Please provide revised field data so we can get this corrected.

Thanks
Jen

Office: 859-422-3145
Mobile: 859-619-8010
kevin.carey@stantec.com

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From: Farr, Carole <Carole.Farr@stantec.com>
Sent: Friday, April 5, 2019 1:15 PM
To: Edmunds, Matthew <Matthew.Edmunds@stantec.com>; Carey, Kevin <Kevin.Carey@stantec.com>
Cc: Kerr, Jim <Jim.KerrJr@stantec.com>; Brooks, Rebekah <rebekah.brooks@stantec.com>; Zvirbulis, Brigid <brigid.zvirbulis@stantec.com>
Subject: JSF Sample ID issue 1/23/2019

Matt and Kevin,

We are trying to address an inconsistency in sample IDs associated with data collected on 1/23/2019. Note that this we need to do this because the TDEC Portal is going live soon, and various types of data are going to be reported there, not just lab data. Following is an excerpt from an email from EnvStds. I'm also trying to find the daily field log and boring log associated with this, as those may also need to be corrected. I haven't been able to find the daily field log on the KMP. I will set up a short call with you both on Monday to resolve this.

I also noted that for JSF background soils, there is an incorrect sample ID for field pH measurement.
ISSUE #1 - Analytical sample ID is JSF-BS-BG12-10.25/12.75-20190123, field data reported JSF-BS-BG12-10.75/12.75-20190123. Please provide revised field data so we can get this corrected.

Thanks,
Carole

Carole Farr PG
Principal Geologist

Direct: 858-633-4266
Mobile: 619-762-0668
Carole.Farr@stantec.com

Stantec

Farr, Carole

From: Farr, Carole
Sent: Monday, April 8, 2019 9:06 AM
To: Carey, Kevin; Edmunds, Matthew
Cc: Kerr, Jim; Brooks, Rebekah; Zvirbulis, Brigid
Subject: FW: JSF Sample ID issue 1/23/2019

Hi Kevin,

Per your email, the COC sample ID will need to be corrected. I will make the COC correction to match up with the other field forms you referenced in your email.

Thank you,
Carole

Carole Farr
Principal Geologist

Direct: 858 633-4266
Mobile: 619 762-0668
Fax: 619 296-6199
Carole.Farr@stantec.com

Stantec

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From: Carey, Kevin <Kevin.Carey@stantec.com>
Sent: Friday, April 5, 2019 10:44 AM
To: Farr, Carole <Carole.Farr@stantec.com>; Edmunds, Matthew <Matthew.Edmunds@stantec.com>
Cc: Kerr, Jim <Jim.KerrJr@stantec.com>; Brooks, Rebekah <rebekah.brooks@stantec.com>; Zvirbulis, Brigid <brigid.zvirbulis@stantec.com>; Stevens, Andrew <Andrew.Stevens@stantec.com>
Subject: RE: JSF Sample ID issue 1/23/2019

Attached are the Daily Field Activity Log, Soil pH Data Form, and COC from 1/23/2019.

The Daily Field Activity Log indicates a sample interval of 10.75'/12.75 three separate times, which I've highlighted.

The Soil pH Data Form also indicates an interval of 10.75'/12.75' (twice).

My guess is the interval of 10.25'/12.75' was inadvertently put on the COC. I can even understand where a hand-written "7" could be confused for a "2".

If this is the case and the interval is, in fact, 10.75/12.75', does the COC need to be modified accordingly, initialed, dated, and emailed to EnvStandards personnel? Or do we need to dig deeper for a rationale?

Hope this helps.

Kevin P. Carey, PG
Senior Geologist
3052 Beaumont Centre Circle
Lexington, Kentucky 40503

Jennifer N. Gable
Associate Principal Chemist
Environmental Standards, Inc.
(610) 935.5577 x 414

From: Zvirbulis, Brigid [mailto:brigid.zvirbulis@stantec.com]
Sent: Wednesday, March 27, 2019 6:27 PM
To: Amanda Cover <ACover@envstd.com>; Jennifer Gable <jgable@envstd.com>; Jacob Gruzalski <jgruzalski@envstd.com>
Cc: Sukkurwala, Gus <gus.sukkurwala@stantec.com>
Subject: data base analytical sample result reporting

All

It was shown to me today that there are some issues when we pull the data and Gus works his magic to create the tables we use for reporting. These are items that need to be updated/fixed before the items are uploaded into the system for reporting.

Currently there is a disconnect between the Sample IDs when a sample is also sent for ASH. We are showing 2 lines of sample results for the same sample because the Sample IDs were not entered the same way. For example as circled in the snipit, the ID for the Ash sample is BG03-**0.0**/0.5-20180822 but the ID for the other results is **0**/0.5-20180822. Not sure why one is 0 and the other 0.0 as they should be identical if they are coming off the COC. Somewhere in the process – possibly during samle Login, the 0.0 is being cut? We reviewed the COCs and the samples were reported consistent with the COC. Please provide a revised COC for samples submitted to TestAmerica to address this issue.

I also noted this issue for the following locations:

CUF BG-03
CUF BG-07

The 2nd issue is there are no depths for the duplicates. This needs to be populated as well.

We'll update these. I also noticed this for BRF and JSF

3rd, the units are not correct – they are showing as all capital letters MG/KG when they shouldn't be (mg/Kg)

4th – Gus is having to manually enter the Sample location because in the database the samples are listed as "Background Soil Sample Location 1" with out specifics. That is consistent with the field data we've received. You'll need to either use the sys_loc_code in table rather than loc_name, or start populating both fields with a consistent location code.

Can you please work with Gus/me/the lab to ensure that these corrections are made and the EDDs are updated accordingly. I'm not sure if some of this will need to be "fixed" during validation?

Thank you,
Brigid

Brigid Zvirbulis, PMP

PLEASE NOTE THAT I WILL BE ON VACATION FROM APRIL 1ST THROUGH APRIL 9TH .

Principal Project Manager, Principal Chemist

Direct: 248 522-8304
Mobile: 248 766-9525
brigid.zvirbulis@stantec.com

Stantec
27280 Haggerty Road Suite C-11
Farmington Hills MI 48331-3433

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TestAmerica Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lage, Gail	Carrier Tracking No(s):	COC No: 180-353454.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: gail.lage@testamericainc.com	State of Origin: Tennessee	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-86110-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/7/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: JSF_BS_20190124_1B	Project #: 18019862			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Ra/Fill_Geo_21 (MOD) Radium-226/228	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
JSF-BS-BG12-0.8/2.8-20190123 (180-86110-1)	1/23/19	11:19 Eastern		Solid			X	2	TVA
JSF-BS-BG12-5.0/10.0-20190123 (180-86110-2)	1/23/19	12:05 Eastern		Solid			X	2	TVA
JSF-BS-BG12-10.25/12.75-20190123 (180-86110-3)	1/23/19	12:32 Eastern		Solid			X	2	TVA
JSF-BS-BG12-13.5/15.0-20190123 (180-86110-4)	1/23/19	12:44 Eastern		Solid			X	2	TVA
JSF-BS-BG12-0.0/0.5-20190123 (180-86110-5)	1/23/19	12:47 Eastern		Solid			X	2	TVA
JSF-BS-FB01-20190123 (180-86110-6)	1/23/19	15:30 Eastern		Water			X	3	TVA
JSF-BS-BG11-1.1/3.1-20190124 (180-86110-7)	1/24/19	11:16 Eastern		Solid			X	2	TVA
JSF-BS-BG11-5.5/8.5-20190124 (180-86110-8)	1/24/19	11:36 Eastern		Solid			X	2	TVA
JSF-BS-FD01-20190124 (180-86110-9)	1/24/19	11:21 Eastern		Solid			X	2	TVA

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/28/19 1700	TAPitt	[signature]	1-29-19 0925	TA STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 09/20/2016

TestAmerica Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lage, Gail	Carrier Tracking No(s):	COC No: 180-353454.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: gail.lage@testamericainc.com	State of Origin: Tennessee	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-86110-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/7/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: JSF_BS_20190124_1B	Project #: 18019862			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	901.1_Ra/Fil_Geo_21 (MOD) Radium-226/228	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
JSF-BS-BG11-11.3/13.3-20190124 (180-86110-10)	1/24/19	12:02 Eastern		Solid			X	2	TVA
JSF-BS-BG11-0.0/0.5-20190124 (180-86110-11)	1/24/19	12:47 Eastern		Solid			X	2	TVA
JSF-BS-EB01-20190124 (180-86110-12)	1/24/19	12:35 Eastern		Water			X	3	TVA
JSF-BS-FB02-20190124 (180-86110-13)	1/24/19	14:34 Eastern		Water			X	3	TVA
JSF-BS-BG10-1.4/3.4-20190124 (180-86110-14)	1/24/19	15:07 Eastern		Solid			X	2	TVA
JSF-BS-BG10-6.5/8.5-20190124 (180-86110-15)	1/24/19	15:27 Eastern		Solid			X	2	TVA
JSF-BS-BG10-10.5/12.5-20190124 (180-86110-16)	1/24/19	15:48 Eastern		Solid			X	2	TVA
JSF-BS-BG10-0.0/0.5-20190124 (180-86110-17)	1/24/19	15:56 Eastern		Solid			X	2	TVA

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 1/28/19 1700	Company TAPIT	Received by:	Date/Time: 1-29-19 0925	Company TAPIT
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 180-86110-1

Login Number: 86110
List Number: 1
Creator: Kovitch, Christina M

List Source: Eurofins TestAmerica, Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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	

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 180-86110-1

Login Number: 86110
List Number: 2
Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis
List Creation: 01/29/19 02:57 PM

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.	N/A	
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	0.1, 0.8, 1.1, 1.2
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?	N/A	
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.	N/A	
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").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 180-86110-1

Login Number: 86110
List Number: 3
Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis
List Creation: 01/29/19 03:41 PM

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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	20.0
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?	N/A	
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").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	