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ANALYTICAL REPORT

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

Laboratory Job ID: 180-98483-1
Client Project/Site: WBF_STR_20191106_2B
Revision: 2

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

Attn: Amanda Cover

Authorized for release by:
4/16/2020 8:34:24 AM
Gail Lage, Senior Project Manager
(615)301-5741
gail.lage@testamericainc.com

Designee for

Jennifer Rumble, Project Manager I
(412)963-7058
jennifer.rumble@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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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Narrative

Job Narrative
180-98483-1

Revised Report
This report was revised to correct the Ra226 calibration and results. This replaces the previous final report.

Receipt
The samples were received on 11/8/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 7 coolers at receipt time were 8.6º C, 9.0º C, 12.7º C, 12.9º C, 12.9º C, 13.0º C and 13.3º C.

RAD
Method 903.0: Radium-226 prep batch 160-450225
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
WBF-STR-FB02-20191106 ~ NA (180-98483-1), WBF-STR-EB02-20191106 ~ NA (180-98483-2), WBF-STR-TR03-LB-SUR-20191106 ~ STR-TR03 (180-98483-4), WBF-STR-TR03-LB-MID-20191106 ~ STR-TR03 (180-98483-5), WBF-STR-TR03-LB-BOT-20191106 ~ STR-TR03 (180-98483-6), WBF-STR-TR03-CC-SUR-20191106 ~ STR-TR03 (180-98483-7), WBF-STR-TR03-CC-MID-20191106 ~ STR-TR03 (180-98483-8), WBF-STR-TR03-CC-BOT-20191106 ~ STR-TR03 (180-98483-9), WBF-STR-TR03-RB-SUR-20191106 ~ STR-TR03 (180-98483-10), WBF-STR-TR03-RB-MID-20191106 ~ STR-TR03 (180-98483-11), WBF-STR-TR03-RB-BOT-20191106 ~ STR-TR03 (180-98483-12), WBF-STR-TR02-RB-SUR--20191106 ~ STR-TR02 (180-98483-13), WBF-STR-TR02-RB-BOT-20191106 ~ STR-TR02 (180-98483-14), WBF-STR-TR02-CC-SUR-20191106 ~ STR-TR02 (180-98483-15), WBF-STR-TR02-CC-MID-20191106 ~ STR-TR02 (180-98483-16), WBF-STR-TR02-CC-BOT-20191106 ~ STR-TR02 (180-98483-17), WBF-STR-TR02-LB-SUR-20191106 ~ STR-TR02 (180-98483-18), WBF-STR-TR02-LB-MID-20191106 ~ STR-TR02 (180-98483-19), WBF-STR-TR02-LB-BOT-20191106 ~ STR-TR02 (180-98483-20), WBF-STR-TR02-DUP02-20191106 ~ NA (180-98483-21), (LCS 160-450225/1-A), (MB 160-450225/23-A) and (180-98483-C-1-A DU)

Method 903.0: Radium-226 Prep Batch: 160-450225
Ra-226 is reported without a 21-day waiting period to ensure short-lived alpha-emitting radium isotopes (e.g. Ra-224) have decayed out. The Ra-226 result should be considered to be potentially high biased. Associated samples have activity below the RL. The results are reported with this narrative.
WBF-STR-FB02-20191106 ~ NA (180-98483-1), WBF-STR-EB02-20191106 ~ NA (180-98483-2), WBF-STR-TR03-LB-SUR-20191106 ~ STR-TR03 (180-98483-4), WBF-STR-TR03-LB-MID-20191106 ~ STR-TR03 (180-98483-5), WBF-STR-TR03-LB-BOT-20191106 ~ STR-TR03 (180-98483-6), WBF-STR-TR03-CC-SUR-20191106 ~ STR-TR03 (180-98483-7), WBF-STR-TR03-CC-MID-20191106 ~ STR-TR03 (180-98483-8), WBF-STR-TR03-CC-BOT-20191106 ~ STR-TR03 (180-98483-9), WBF-STR-TR03-RB-SUR-20191106 ~ STR-TR03 (180-98483-10), WBF-STR-TR03-RB-MID-20191106 ~ STR-TR03 (180-98483-11), WBF-STR-TR03-RB-BOT-20191106 ~ STR-TR03 (180-98483-12), WBF-STR-TR02-RB-SUR--20191106 ~ STR-TR02 (180-98483-13), WBF-STR-TR02-RB-BOT-20191106 ~ STR-TR02 (180-98483-14), WBF-STR-TR02-CC-SUR-20191106 ~ STR-TR02 (180-98483-15), WBF-STR-TR02-CC-MID-20191106 ~ STR-TR02 (180-98483-16), WBF-STR-TR02-CC-BOT-20191106 ~ STR-TR02 (180-98483-17), WBF-STR-TR02-LB-SUR-20191106 ~ STR-TR02 (180-98483-18), WBF-STR-TR02-LB-MID-20191106 ~ STR-TR02 (180-98483-19), WBF-STR-TR02-LB-BOT-20191106 ~ STR-TR02 (180-98483-20), WBF-STR-TR02-DUP02-20191106 ~ NA (180-98483-21), (LCS 160-450225/1-A), (MB 160-450225/23-A) and (180-98483-C-1-A DU)

Method 903.0: Radium-226 Prep Batch: 160-450326
Ra-226 is reported without a 21-day waiting period to ensure short-lived alpha-emitting radium isotopes (e.g. Ra-224) have decayed out. The Ra-226 result should be considered to be potentially high biased. Associated samples have activity below the RL. The results are reported with this narrative.
WBF-STR-TR02-DUP04-20191106 ~ NA (180-98483-22), WBF-STR-TR01-LB-SUR-20191106 ~ STR-TR01 (180-98483-23), WBF-STR-TR01-LB-MID-20191106 ~ STR-TR01 (180-98483-24), WBF-STR-TR01-LB-BOT-20191106 ~ STR-TR01 (180-98483-25), WBF-STR-TR01-CC-SUR-20191106 ~ STR-TR01 (180-98483-26), WBF-STR-TR01-CC-MID-20191106 ~ STR-TR01 (180-98483-27), WBF-STR-TR01-CC-BOT-20191106 ~ STR-TR01 (180-98483-28), WBF-STR-TR01-RB-SUR-20191106 ~ STR-TR01 (180-98483-29), WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR01 (180-98483-30), WBF-STR-TR07-LB-SUR-20191106 ~ STR-TR07 (180-98483-31), WBF-STR-TR07-LB-BOT-20191106 ~ STR-TR07 (180-98483-32), WBF-STR-TR07-CC-SUR-20191106 ~ STR-TR07 (180-98483-33), WBF-STR-TR07-CC-MID-20191106 ~ STR-TR07 (180-98483-34), WBF-STR-TR07-CC-BOT-20191106 ~ STR-TR07 (180-98483-35),

Job ID: 180-98483-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

WBF-STR-TR07-RB-SUR-20191106 ~ STR-TR07 (180-98483-36), WBF-STR-TR07-RB-BOT-20191106 ~ STR-TR07 (180-98483-37), (LCS 160-450326/1-A), (MB 160-450326/19-A) and (180-98483-A-30-A DU)

Method 903.0: Radium-226 prep batch 160-450326
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.
Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
WBF-STR-TR02-DUP04-20191106 ~ NA (180-98483-22), WBF-STR-TR01-LB-SUR-20191106 ~ STR-TR01 (180-98483-23), WBF-STR-TR01-LB-MID-20191106 ~ STR-TR01 (180-98483-24), WBF-STR-TR01-LB-BOT-20191106 ~ STR-TR01 (180-98483-25), WBF-STR-TR01-CC-SUR-20191106 ~ STR-TR01 (180-98483-26), WBF-STR-TR01-CC-MID-20191106 ~ STR-TR01 (180-98483-27), WBF-STR-TR01-CC-BOT-20191106 ~ STR-TR01 (180-98483-28), WBF-STR-TR01-RB-SUR-20191106 ~ STR-TR01 (180-98483-29), WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR01 (180-98483-30), WBF-STR-TR07-LB-SUR-20191106 ~ STR-TR07 (180-98483-31), WBF-STR-TR07-LB-BOT-20191106 ~ STR-TR07 (180-98483-32), WBF-STR-TR07-CC-SUR-20191106 ~ STR-TR07 (180-98483-33), WBF-STR-TR07-CC-MID-20191106 ~ STR-TR07 (180-98483-34), WBF-STR-TR07-CC-BOT-20191106 ~ STR-TR07 (180-98483-35), WBF-STR-TR07-RB-SUR-20191106 ~ STR-TR07 (180-98483-36), WBF-STR-TR07-RB-BOT-20191106 ~ STR-TR07 (180-98483-37), (LCS 160-450326/1-A), (MB 160-450326/19-A) and (180-98483-A-30-A DU)

Method 903.0: Radium-226 Prep Batch: 160-450326
The following samples exhibited a negative result greater in magnitude than the 3 sigma TPU. This occurrence was evaluated and determined to be random in nature. Sporadic occurrences such as this are statistically expected. No further action is required.
WBF-STR-TR07-LB-SUR-20191106 ~ STR-TR07 (180-98483-31) and (MB 160-450326/19-A)

Method 904.0: Radium-228 Prep Batch 160-450328
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
WBF-STR-TR02-DUP04-20191106 ~ NA (180-98483-22), WBF-STR-TR01-LB-SUR-20191106 ~ STR-TR01 (180-98483-23), WBF-STR-TR01-LB-MID-20191106 ~ STR-TR01 (180-98483-24), WBF-STR-TR01-LB-BOT-20191106 ~ STR-TR01 (180-98483-25), WBF-STR-TR01-CC-SUR-20191106 ~ STR-TR01 (180-98483-26), WBF-STR-TR01-CC-MID-20191106 ~ STR-TR01 (180-98483-27), WBF-STR-TR01-CC-BOT-20191106 ~ STR-TR01 (180-98483-28), WBF-STR-TR01-RB-SUR-20191106 ~ STR-TR01 (180-98483-29), WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR01 (180-98483-30), WBF-STR-TR07-LB-SUR-20191106 ~ STR-TR07 (180-98483-31), WBF-STR-TR07-LB-BOT-20191106 ~ STR-TR07 (180-98483-32), WBF-STR-TR07-CC-SUR-20191106 ~ STR-TR07 (180-98483-33), WBF-STR-TR07-CC-MID-20191106 ~ STR-TR07 (180-98483-34), WBF-STR-TR07-CC-BOT-20191106 ~ STR-TR07 (180-98483-35), WBF-STR-TR07-RB-SUR-20191106 ~ STR-TR07 (180-98483-36), WBF-STR-TR07-RB-BOT-20191106 ~ STR-TR07 (180-98483-37), (LCS 160-450328/1-A), (MB 160-450328/19-A) and (180-98483-A-30-B DU)

Method 904.0: Radium-228 Prep Batch 160-450240
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
WBF-STR-FB02-20191106 ~ NA (180-98483-1), WBF-STR-EB02-20191106 ~ NA (180-98483-2), WBF-STR-TR03-LB-SUR-20191106 ~ STR-TR03 (180-98483-4), WBF-STR-TR03-LB-MID-20191106 ~ STR-TR03 (180-98483-5), WBF-STR-TR03-LB-BOT-20191106 ~ STR-TR03 (180-98483-6), WBF-STR-TR03-CC-SUR-20191106 ~ STR-TR03 (180-98483-7), WBF-STR-TR03-CC-MID-20191106 ~ STR-TR03 (180-98483-8), WBF-STR-TR03-CC-BOT-20191106 ~ STR-TR03 (180-98483-9), WBF-STR-TR03-RB-SUR-20191106 ~ STR-TR03 (180-98483-10), WBF-STR-TR03-RB-MID-20191106 ~ STR-TR03 (180-98483-11), WBF-STR-TR03-RB-BOT-20191106 ~ STR-TR03 (180-98483-12), WBF-STR-TR02-RB-SUR--20191106 ~ STR-TR02 (180-98483-13), WBF-STR-TR02-RB-BOT-20191106 ~ STR-TR02 (180-98483-14), WBF-STR-TR02-CC-SUR-20191106 ~ STR-TR02 (180-98483-15), WBF-STR-TR02-CC-MID-20191106 ~ STR-TR02 (180-98483-16), WBF-STR-TR02-CC-BOT-20191106 ~ STR-TR02 (180-98483-17), WBF-STR-TR02-LB-SUR-20191106 ~ STR-TR02 (180-98483-18), WBF-STR-TR02-LB-MID-20191106 ~ STR-TR02 (180-98483-19), WBF-STR-TR02-LB-BOT-20191106 ~ STR-TR02 (180-98483-20), WBF-STR-TR02-DUP02-20191106 ~ NA (180-98483-21), (LCS 160-450240/1-A), (MB 160-450240/23-A) and (180-98483-C-1-B DU)

Method 904.0: Gamma Prep Batch 160-450328

Job ID: 180-98483-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

The method blank (MB) has activity greater than the requested limit (RL). The following associated samples are non-detect (activity < MDC) for the contaminant. The results are reported with this narrative.
WBF-STR-TR02-DUP04-20191106 ~ NA (180-98483-22), WBF-STR-TR01-LB-SUR-20191106 ~ STR-TR01 (180-98483-23), WBF-STR-TR01-LB-MID-20191106 ~ STR-TR01 (180-98483-24), WBF-STR-TR01-LB-BOT-20191106 ~ STR-TR01 (180-98483-25), WBF-STR-TR01-CC-SUR-20191106 ~ STR-TR01 (180-98483-26), WBF-STR-TR01-CC-BOT-20191106 ~ STR-TR01 (180-98483-28), WBF-STR-TR01-RB-SUR-20191106 ~ STR-TR01 (180-98483-29), WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR01 (180-98483-30), WBF-STR-TR07-LB-SUR-20191106 ~ STR-TR07 (180-98483-31), WBF-STR-TR07-LB-BOT-20191106 ~ STR-TR07 (180-98483-32), WBF-STR-TR07-CC-SUR-20191106 ~ STR-TR07 (180-98483-33), WBF-STR-TR07-CC-MID-20191106 ~ STR-TR07 (180-98483-34), WBF-STR-TR07-CC-BOT-20191106 ~ STR-TR07 (180-98483-35), WBF-STR-TR07-RB-SUR-20191106 ~ STR-TR07 (180-98483-36), WBF-STR-TR07-RB-BOT-20191106 ~ STR-TR07 (180-98483-37), (LCS 160-450328/1-A), (MB 160-450328/19-A) and (180-98483-A-30-B DU)

Method 904.0: Radium-228 Prep Batch 160-450328
The following sample had a MB with activity above the MDC/RL: WBF-STR-TR01-CC-MID-20191106 ~ STR-TR01 (180-98483-27). All other samples in prep batch 450328 were non-detect (act < MDC). Sample 180-98483-27 had activity above the MDC; however, the MDC was well below the client's requested limit (RL). The data has been reported with this narrative.

Method PrecSep_0: Radium 228 Prep Batch 160-450240:
The following samples contained light white particles:WBF-STR-TR03-LB-SUR-20191106 ~ STR-TR03 (180-98483-4), WBF-STR-TR03-LB-MID-20191106 ~ STR-TR03 (180-98483-5), WBF-STR-TR03-LB-BOT-20191106 ~ STR-TR03 (180-98483-6), WBF-STR-TR03-CC-SUR-20191106 ~ STR-TR03 (180-98483-7), WBF-STR-TR03-CC-MID-20191106 ~ STR-TR03 (180-98483-8), WBF-STR-TR03-CC-BOT-20191106 ~ STR-TR03 (180-98483-9), WBF-STR-TR03-RB-SUR-20191106 ~ STR-TR03 (180-98483-10), WBF-STR-TR03-RB-MID-20191106 ~ STR-TR03 (180-98483-11), WBF-STR-TR03-RB-BOT-20191106 ~ STR-TR03 (180-98483-12), WBF-STR-TR02-RB-SUR--20191106 ~ STR-TR02 (180-98483-13), WBF-STR-TR02-RB-BOT-20191106 ~ STR-TR02 (180-98483-14), WBF-STR-TR02-CC-SUR-20191106 ~ STR-TR02 (180-98483-15), WBF-STR-TR02-CC-MID-20191106 ~ STR-TR02 (180-98483-16), WBF-STR-TR02-CC-BOT-20191106 ~ STR-TR02 (180-98483-17), WBF-STR-TR02-LB-SUR-20191106 ~ STR-TR02 (180-98483-18), WBF-STR-TR02-LB-MID-20191106 ~ STR-TR02 (180-98483-19), WBF-STR-TR02-LB-BOT-20191106 ~ STR-TR02 (180-98483-20) and WBF-STR-TR02-DUP02-20191106 ~ NA (180-98483-21).

Method PrecSep_0: Radium 228 Prep Batch 160-450328:
The following samples contained light white particles:WBF-STR-TR02-DUP04-20191106 ~ NA (180-98483-22), WBF-STR-TR01-LB-SUR-20191106 ~ STR-TR01 (180-98483-23), WBF-STR-TR01-LB-MID-20191106 ~ STR-TR01 (180-98483-24), WBF-STR-TR01-LB-BOT-20191106 ~ STR-TR01 (180-98483-25), WBF-STR-TR01-CC-SUR-20191106 ~ STR-TR01 (180-98483-26), WBF-STR-TR01-CC-MID-20191106 ~ STR-TR01 (180-98483-27), WBF-STR-TR01-CC-BOT-20191106 ~ STR-TR01 (180-98483-28), WBF-STR-TR01-RB-SUR-20191106 ~ STR-TR01 (180-98483-29), WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR01 (180-98483-30), WBF-STR-TR07-LB-SUR-20191106 ~ STR-TR07 (180-98483-31), WBF-STR-TR07-LB-BOT-20191106 ~ STR-TR07 (180-98483-32), WBF-STR-TR07-CC-SUR-20191106 ~ STR-TR07 (180-98483-33), WBF-STR-TR07-CC-MID-20191106 ~ STR-TR07 (180-98483-34), WBF-STR-TR07-CC-BOT-20191106 ~ STR-TR07 (180-98483-35), WBF-STR-TR07-RB-SUR-20191106 ~ STR-TR07 (180-98483-36), WBF-STR-TR07-RB-BOT-20191106 ~ STR-TR07 (180-98483-37) and (180-98483-A-30 DU).

Method PrecSep STD: Radium 226 Prep Batch 160-450225:
The following samples contained light white particles:WBF-STR-TR03-LB-SUR-20191106 ~ STR-TR03 (180-98483-4), WBF-STR-TR03-LB-MID-20191106 ~ STR-TR03 (180-98483-5), WBF-STR-TR03-LB-BOT-20191106 ~ STR-TR03 (180-98483-6), WBF-STR-TR03-CC-SUR-20191106 ~ STR-TR03 (180-98483-7), WBF-STR-TR03-CC-MID-20191106 ~ STR-TR03 (180-98483-8), WBF-STR-TR03-CC-BOT-20191106 ~ STR-TR03 (180-98483-9), WBF-STR-TR03-RB-SUR-20191106 ~ STR-TR03 (180-98483-10), WBF-STR-TR03-RB-MID-20191106 ~ STR-TR03 (180-98483-11), WBF-STR-TR03-RB-BOT-20191106 ~ STR-TR03 (180-98483-12), WBF-STR-TR02-RB-SUR--20191106 ~ STR-TR02 (180-98483-13), WBF-STR-TR02-RB-BOT-20191106 ~ STR-TR02 (180-98483-14), WBF-STR-TR02-CC-SUR-20191106 ~ STR-TR02 (180-98483-15), WBF-STR-TR02-CC-MID-20191106 ~ STR-TR02 (180-98483-16), WBF-STR-TR02-CC-BOT-20191106 ~ STR-TR02 (180-98483-17), WBF-STR-TR02-LB-SUR-20191106 ~ STR-TR02 (180-98483-18), WBF-STR-TR02-LB-MID-20191106 ~ STR-TR02 (180-98483-19), WBF-STR-TR02-LB-BOT-20191106 ~ STR-TR02 (180-98483-20) and WBF-STR-TR02-DUP02-20191106 ~ NA (180-98483-21).

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

Definitions/Glossary

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
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: WBF_STR_20191106_2B

Job ID: 180-98483-1

Laboratory: Eurofins TestAmerica, Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
California	State	2891	04-30-20
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Georgia	State	PA 02-00416	04-30-20
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	03-31-20
Kentucky (UST)	State	162013	04-30-20
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-20
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-04-20
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	03-31-20
North Carolina (WW/SW)	State	434	01-01-21
North Dakota	State	R-227	04-30-20
Oregon	NELAP	PA-2151	02-06-20
Pennsylvania	NELAP	02-00416	04-30-20
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-20
Texas	NELAP	T104704528	03-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-20
Virginia	NELAP	10043	02-06-20
Wisconsin	State	998027800	02-24-20

Accreditation/Certification Summary

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

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	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-20
California	Los Angeles County Sanitation Districts	10259	06-30-20
California	State	2886	02-12-20
Florida	NELAP	E87689	02-10-20
Illinois	NELAP	004553	11-30-20
Iowa	State	373	09-17-20
Kansas	NELAP	E-10236	10-31-20
Kentucky (DW)	State	KY90125	02-10-20
Louisiana	NELAP	04080	06-30-20
Louisiana (DW)	State	LA011	02-16-20
Nevada	State	MO000542020-1	07-31-20
New Jersey	NELAP	MO002	02-17-20
North Dakota	State	R-207	06-30-20
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	02-10-20
Pennsylvania	NELAP	68-00540	02-10-20
South Carolina	State	85002001	06-30-20
Texas	NELAP	T104704193-19-13	02-13-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00028	02-02-20
Virginia	NELAP	10310	06-14-20
West Virginia DEP	State	381	10-31-20

Sample Summary

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-98483-1	WBF-STR-FB02-20191106 ~ NA	Water	11/06/19 10:25	11/08/19 09:00	
180-98483-2	WBF-STR-EB02-20191106 ~ NA	Water	11/06/19 10:30	11/08/19 09:00	
180-98483-4	WBF-STR-TR03-LB-SUR-20191106 ~ STR-TR03	Water	11/06/19 11:55	11/08/19 09:00	
180-98483-5	WBF-STR-TR03-LB-MID-20191106 ~ STR-TR03	Water	11/06/19 12:05	11/08/19 09:00	
180-98483-6	WBF-STR-TR03-LB-BOT-20191106 ~ STR-TR03	Water	11/06/19 12:10	11/08/19 09:00	
180-98483-7	WBF-STR-TR03-CC-SUR-20191106 ~ STR-TR0	Water	11/06/19 11:25	11/08/19 09:00	
180-98483-8	WBF-STR-TR03-CC-MID-20191106 ~ STR-TR03	Water	11/06/19 11:35	11/08/19 09:00	
180-98483-9	WBF-STR-TR03-CC-BOT-20191106 ~ STR-TR0	Water	11/06/19 11:40	11/08/19 09:00	
180-98483-10	WBF-STR-TR03-RB-SUR-20191106 ~ STR-TR0	Water	11/06/19 10:50	11/08/19 09:00	
180-98483-11	WBF-STR-TR03-RB-MID-20191106 ~ STR-TR03	Water	11/06/19 11:00	11/08/19 09:00	
180-98483-12	WBF-STR-TR03-RB-BOT-20191106 ~ STR-TR0	Water	11/06/19 11:10	11/08/19 09:00	
180-98483-13	WBF-STR-TR02-RB-SUR--20191106 ~ STR-TR02	Water	11/06/19 13:55	11/08/19 09:00	
180-98483-14	WBF-STR-TR02-RB-BOT-20191106 ~ STR-TR02	Water	11/06/19 14:05	11/08/19 09:00	
180-98483-15	WBF-STR-TR02-CC-SUR-20191106 ~ STR-TR0	Water	11/06/19 13:15	11/08/19 09:00	
180-98483-16	WBF-STR-TR02-CC-MID-20191106 ~ STR-TR02	Water	11/06/19 13:25	11/08/19 09:00	
180-98483-17	WBF-STR-TR02-CC-BOT-20191106 ~ STR-TR0	Water	11/06/19 13:35	11/08/19 09:00	
180-98483-18	WBF-STR-TR02-LB-SUR-20191106 ~ STR-TR02	Water	11/06/19 12:40	11/08/19 09:00	
180-98483-19	WBF-STR-TR02-LB-MID-20191106 ~ STR-TR02	Water	11/06/19 12:50	11/08/19 09:00	
180-98483-20	WBF-STR-TR02-LB-BOT-20191106 ~ STR-TR02	Water	11/06/19 12:55	11/08/19 09:00	
180-98483-21	WBF-STR-TR02-DUP02-20191106 ~ NA	Water	11/06/19 00:00	11/08/19 09:00	
180-98483-22	WBF-STR-TR02-DUP04-20191106 ~ NA	Water	11/06/19 00:00	11/08/19 09:00	
180-98483-23	WBF-STR-TR01-LB-SUR-20191106 ~ STR-TR01	Water	11/06/19 15:15	11/08/19 09:00	
180-98483-24	WBF-STR-TR01-LB-MID-20191106 ~ STR-TR01	Water	11/06/19 15:25	11/08/19 09:00	
180-98483-25	WBF-STR-TR01-LB-BOT-20191106 ~ STR-TR01	Water	11/06/19 15:30	11/08/19 09:00	
180-98483-26	WBF-STR-TR01-CC-SUR-20191106 ~ STR-TR0	Water	11/06/19 14:45	11/08/19 09:00	
180-98483-27	WBF-STR-TR01-CC-MID-20191106 ~ STR-TR01	Water	11/06/19 14:55	11/08/19 09:00	
180-98483-28	WBF-STR-TR01-CC-BOT-20191106 ~ STR-TR0	Water	11/06/19 15:00	11/08/19 09:00	
180-98483-29	WBF-STR-TR01-RB-SUR-20191106 ~ STR-TR0	Water	11/06/19 14:20	11/08/19 09:00	
180-98483-30	WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR0	Water	11/06/19 14:30	11/08/19 09:00	
180-98483-31	WBF-STR-TR07-LB-SUR-20191106 ~ STR-TR07	Water	11/06/19 16:00	11/08/19 09:00	
180-98483-32	WBF-STR-TR07-LB-BOT-20191106 ~ STR-TR07	Water	11/06/19 16:10	11/08/19 09:00	
180-98483-33	WBF-STR-TR07-CC-SUR-20191106 ~ STR-TR0	Water	11/06/19 16:20	11/08/19 09:00	
180-98483-34	WBF-STR-TR07-CC-MID-20191106 ~ STR-TR07	Water	11/06/19 16:30	11/08/19 09:00	
180-98483-35	WBF-STR-TR07-CC-BOT-20191106 ~ STR-TR0	Water	11/06/19 16:35	11/08/19 09:00	
180-98483-36	WBF-STR-TR07-RB-SUR-20191106 ~ STR-TR0	Water	11/06/19 17:00	11/08/19 09:00	
180-98483-37	WBF-STR-TR07-RB-BOT-20191106 ~ STR-TR0	Water	11/06/19 17:10	11/08/19 09:00	

Method Summary

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228 Pos	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep STD	Preparation, Precipitate Separation (Standard In-Growth)	None	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

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: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-FB02-20191106 ~ NA

Lab Sample ID: 180-98483-1

Date Collected: 11/06/19 10:25
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.7 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 13:20	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.7 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450983	11/18/19 18:45	AJD	TAL SL
	Instrument ID:	GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-EB02-20191106 ~ NA

Lab Sample ID: 180-98483-2

Date Collected: 11/06/19 10:30
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.6 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 13:20	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.6 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450983	11/18/19 18:45	AJD	TAL SL
	Instrument ID:	GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR03-LB-SUR-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-4

Date Collected: 11/06/19 11:55
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.0 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 13:20	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.0 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450983	11/18/19 18:45	AJD	TAL SL
	Instrument ID:	GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR03-LB-MID-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-5

Date Collected: 11/06/19 12:05
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.5 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 13:20	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.5 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450983	11/18/19 18:45	AJD	TAL SL
	Instrument ID:	GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR03-LB-BOT-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-6

Date Collected: 11/06/19 12:10
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.0 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:37	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.0 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450983	11/18/19 18:46	AJD	TAL SL
	Instrument ID:	GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR03-CC-SUR-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-7

Date Collected: 11/06/19 11:25
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.6 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:37	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.6 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450983	11/18/19 18:46	AJD	TAL SL
	Instrument ID:	GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR03-CC-MID-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-8

Date Collected: 11/06/19 11:35
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.0 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:37	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.0 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450983	11/18/19 18:46	AJD	TAL SL
	Instrument ID:	GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR03-CC-BOT-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-9

Date Collected: 11/06/19 11:40
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.3 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:37	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.3 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450983	11/18/19 18:46	AJD	TAL SL
	Instrument ID:	GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR03-RB-SUR-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-10

Date Collected: 11/06/19 10:50
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.4 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1			458021	01/24/20 13:48	CJQ	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.4 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450983	11/18/19 18:46	AJD	TAL SL
	Instrument ID:	GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR03-RB-MID-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-11

Date Collected: 11/06/19 11:00
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.6 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:38	AJD	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.6 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450935	11/18/19 18:49	SMP	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: WBF-STR-TR03-RB-BOT-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-12

Date Collected: 11/06/19 11:10
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.0 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:38	AJD	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.0 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450935	11/18/19 18:49	SMP	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: WBF-STR-TR02-RB-SUR--20191106 ~ STR-TR02

Lab Sample ID: 180-98483-13

Date Collected: 11/06/19 13:55
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.6 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:38	AJD	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.6 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450935	11/18/19 18:49	SMP	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-RB-BOT-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-14

Date Collected: 11/06/19 14:05
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.5 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:38	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.5 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450935	11/18/19 18:49	SMP	TAL SL
	Instrument ID:	GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR02-CC-SUR-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-15

Date Collected: 11/06/19 13:15
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.6 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:38	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.6 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450935	11/18/19 18:50	SMP	TAL SL
	Instrument ID:	GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR02-CC-MID-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-16

Date Collected: 11/06/19 13:25
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.0 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:40	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.0 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450935	11/18/19 18:50	SMP	TAL SL
	Instrument ID:	GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-CC-BOT-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-17

Date Collected: 11/06/19 13:35
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.5 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:40	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.5 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450935	11/18/19 18:50	SMP	TAL SL
	Instrument ID:	GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR02-LB-SUR-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-18

Date Collected: 11/06/19 12:40
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.3 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:40	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.3 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450935	11/18/19 18:50	SMP	TAL SL
	Instrument ID:	GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR02-LB-MID-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-19

Date Collected: 11/06/19 12:50
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.0 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 15:40	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.0 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450935	11/18/19 18:50	SMP	TAL SL
	Instrument ID:	GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-LB-BOT-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-20

Date Collected: 11/06/19 12:55
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.1 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 17:33	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.1 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450935	11/18/19 18:50	SMP	TAL SL
	Instrument ID:	GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR02-DUP02-20191106 ~ NA

Lab Sample ID: 180-98483-21

Date Collected: 11/06/19 00:00
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.7 mL	1.0 g	450225	11/13/19 13:30	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 17:33	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.7 mL	1.0 g	450240	11/13/19 14:32	ORM	TAL SL
Total/NA	Analysis	904.0		1			450935	11/18/19 18:50	SMP	TAL SL
	Instrument ID:	GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR02-DUP04-20191106 ~ NA

Lab Sample ID: 180-98483-22

Date Collected: 11/06/19 00:00
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.1 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1			458669	01/30/20 11:15	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.1 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450937	11/18/19 18:37	AJD	TAL SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR01-LB-SUR-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-23

Date Collected: 11/06/19 15:15
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.0 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 17:36	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.0 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450937	11/18/19 18:37	AJD	TAL SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR01-LB-MID-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-24

Date Collected: 11/06/19 15:25
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.4 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 17:36	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.4 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450937	11/18/19 18:37	AJD	TAL SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR01-LB-BOT-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-25

Date Collected: 11/06/19 15:30
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.3 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 17:36	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.3 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450937	11/18/19 18:37	AJD	TAL SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR01-CC-SUR-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-26

Date Collected: 11/06/19 14:45
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.1 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 17:36	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.1 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450937	11/18/19 18:37	AJD	TAL SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR01-CC-MID-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-27

Date Collected: 11/06/19 14:55
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.3 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 17:36	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.3 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450937	11/18/19 18:37	AJD	TAL SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR01-CC-BOT-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-28

Date Collected: 11/06/19 15:00
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.0 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 17:36	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.0 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450937	11/18/19 18:38	AJD	TAL SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR01-RB-SUR-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-29

Date Collected: 11/06/19 14:20
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.5 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 17:36	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.5 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450937	11/18/19 18:38	AJD	TAL SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-30

Date Collected: 11/06/19 14:30
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.2 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	451843	11/25/19 17:37	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.2 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450937	11/18/19 18:38	AJD	TAL SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR07-LB-SUR-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-31

Date Collected: 11/06/19 16:00
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.2 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	452083	11/26/19 07:21	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.2 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450937	11/18/19 18:38	AJD	TAL SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR07-LB-BOT-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-32

Date Collected: 11/06/19 16:10
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.4 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	452083	11/26/19 07:21	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.4 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450937	11/18/19 18:38	AJD	TAL SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR07-CC-SUR-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-33

Date Collected: 11/06/19 16:20
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.3 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	452083	11/26/19 07:21	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.3 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450937	11/18/19 18:39	AJD	TAL SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR07-CC-MID-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-34

Date Collected: 11/06/19 16:30
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.3 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	452083	11/26/19 07:21	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.3 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450917	11/18/19 18:40	SCB	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR07-CC-BOT-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-35

Date Collected: 11/06/19 16:35
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.2 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	452083	11/26/19 07:22	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.2 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450917	11/18/19 18:41	SCB	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR07-RB-SUR-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-36

Date Collected: 11/06/19 17:00
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.5 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	452083	11/26/19 09:09	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.5 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450917	11/18/19 18:41	SCB	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WBF-STR-TR07-RB-BOT-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-37

Date Collected: 11/06/19 17:10
Date Received: 11/08/19 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	Prep	PrecSep STD			1000.2 mL	1.0 g	450326	11/13/19 15:23	ORM	TAL SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	452083	11/26/19 09:09	AJD	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.2 mL	1.0 g	450328	11/13/19 16:06	ORM	TAL SL
Total/NA	Analysis	904.0		1			450917	11/18/19 18:42	SCB	TAL SL
	Instrument ID:	GFPCBLUE								
Total/NA	Analysis	Ra226_Ra228 Pos		1			452470	11/29/19 08:13	SMP	TAL SL
	Instrument ID:	NOEQUIP								

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

ORM = Octavia Moore

Batch Type: Analysis

AJD = Audra DeMariano

CJQ = Caleb Quinn

SCB = Sarah Bernsen

SMP = Siobhan Perry

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-FB02-20191106 ~ NA

Lab Sample ID: 180-98483-1

Date Collected: 11/06/19 10:25
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0636	U	0.0610	0.0612	1.00	0.150	pCi/L	11/13/19 13:30	11/25/19 13:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.9*		*40 - 110*	*11/13/19 13:30*	*11/25/19 13:20*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.705	U	0.519	0.523	1.00	0.820	pCi/L	11/13/19 14:32	11/18/19 18:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.9*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:45*	*1*
Y Carrier	*52.7*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:45*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.705	U	0.523	0.527	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-EB02-20191106 ~ NA

Lab Sample ID: 180-98483-2

Date Collected: 11/06/19 10:30
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0468	U	0.0712	0.0713	1.00	0.159	pCi/L	11/13/19 13:30	11/25/19 13:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.2*		*40 - 110*	*11/13/19 13:30*	*11/25/19 13:20*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.311	U	0.314	0.315	1.00	0.510	pCi/L	11/13/19 14:32	11/18/19 18:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.2*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:45*	*1*
Y Carrier	*78.5*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:45*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.311	U	0.322	0.323	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR03-LB-SUR-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-4

Date Collected: 11/06/19 11:55
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0125	U	0.0914	0.0914	1.00	0.173	pCi/L	11/13/19 13:30	11/25/19 13:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.8*		*40 - 110*	*11/13/19 13:30*	*11/25/19 13:20*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.355	U	0.342	0.344	1.00	0.555	pCi/L	11/13/19 14:32	11/18/19 18:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.8*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:45*	*1*
Y Carrier	*78.9*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:45*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.368	U	0.354	0.356	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR03-LB-MID-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-5

Date Collected: 11/06/19 12:05
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00830	U	0.0635	0.0635	1.00	0.130	pCi/L	11/13/19 13:30	11/25/19 13:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*109*		*40 - 110*	*11/13/19 13:30*	*11/25/19 13:20*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0593	U	0.294	0.294	1.00	0.531	pCi/L	11/13/19 14:32	11/18/19 18:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*109*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:45*	*1*
Y Carrier	*65.4*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:45*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.000	U	0.301	0.301	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR03-LB-BOT-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-6

Date Collected: 11/06/19 12:10
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0728	U	0.0623	0.0627	1.00	0.158	pCi/L	11/13/19 13:30	11/25/19 15:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.6*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:37*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.217	U	0.429	0.430	1.00	0.791	pCi/L	11/13/19 14:32	11/18/19 18:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.6*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:46*	*1*
Y Carrier	*62.8*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:46*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.000	U	0.434	0.435	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR03-CC-SUR-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-7

Date Collected: 11/06/19 11:25
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0677	U	0.0649	0.0652	1.00	0.156	pCi/L	11/13/19 13:30	11/25/19 15:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.0*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:37*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.328	U	0.395	0.397	1.00	0.653	pCi/L	11/13/19 14:32	11/18/19 18:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.0*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:46*	*1*
Y Carrier	*60.2*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:46*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.328	U	0.400	0.402	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR03-CC-MID-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-8

Date Collected: 11/06/19 11:35
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0315	U	0.0831	0.0831	1.00	0.175	pCi/L	11/13/19 13:30	11/25/19 15:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.1*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:37*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.228	U	0.456	0.456	1.00	0.777	pCi/L	11/13/19 14:32	11/18/19 18:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.1*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:46*	*1*
Y Carrier	*57.6*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:46*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.228	U	0.464	0.464	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR03-CC-BOT-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-9

Date Collected: 11/06/19 11:40
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00247	U	0.0791	0.0791	1.00	0.154	pCi/L	11/13/19 13:30	11/25/19 15:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.5*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:37*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.231	U	0.317	0.317	1.00	0.528	pCi/L	11/13/19 14:32	11/18/19 18:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.5*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:46*	*1*
Y Carrier	*75.5*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:46*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.234	U	0.327	0.327	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR03-RB-SUR-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-10

Date Collected: 11/06/19 10:50
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0267	U	0.0514	0.0515	1.00	0.0919	pCi/L	11/13/19 13:30	01/24/20 13:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*11/13/19 13:30*	*01/24/20 13:48*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.169	U	0.335	0.335	1.00	0.569	pCi/L	11/13/19 14:32	11/18/19 18:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:46*	*1*
Y Carrier	*68.8*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:46*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.196	U	0.339	0.339	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR03-RB-MID-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-11

Date Collected: 11/06/19 11:00
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0638	U	0.0573	0.0576	1.00	0.144	pCi/L	11/13/19 13:30	11/25/19 15:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.5*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:38*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.220	U	0.295	0.296	1.00	0.492	pCi/L	11/13/19 14:32	11/18/19 18:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.5*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:49*	*1*
Y Carrier	*70.3*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:49*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.220	U	0.301	0.302	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR03-RB-BOT-20191106 ~ STR-TR03

Lab Sample ID: 180-98483-12

Date Collected: 11/06/19 11:10
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0471	U	0.0719	0.0721	1.00	0.162	pCi/L	11/13/19 13:30	11/25/19 15:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.3*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:38*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.299	U	0.279	0.281	1.00	0.448	pCi/L	11/13/19 14:32	11/18/19 18:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.3*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:49*	*1*
Y Carrier	*72.1*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:49*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.299	U	0.288	0.290	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-RB-SUR--20191106 ~ STR-TR02

Lab Sample ID: 180-98483-13

Date Collected: 11/06/19 13:55
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0490	U	0.0631	0.0633	1.00	0.105	pCi/L	11/13/19 13:30	11/25/19 15:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.9*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:38*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.641**		0.346	0.351	1.00	0.504	pCi/L	11/13/19 14:32	11/18/19 18:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.9*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:49*	*1*
Y Carrier	*56.1*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:49*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**0.690**		0.352	0.357	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-RB-BOT-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-14

Date Collected: 11/06/19 14:05
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0429	U	0.0512	0.0513	1.00	0.125	pCi/L	11/13/19 13:30	11/25/19 15:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.6*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:38*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0626	U	0.266	0.266	1.00	0.484	pCi/L	11/13/19 14:32	11/18/19 18:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.6*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:49*	*1*
Y Carrier	*74.0*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:49*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.000	U	0.271	0.271	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-CC-SUR-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-15

Date Collected: 11/06/19 13:15
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00596	U	0.0683	0.0683	1.00	0.137	pCi/L	11/13/19 13:30	11/25/19 15:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.2*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:38*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.203	U	0.249	0.250	1.00	0.412	pCi/L	11/13/19 14:32	11/18/19 18:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.2*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*
Y Carrier	*77.4*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.203	U	0.258	0.259	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-CC-MID-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-16

Date Collected: 11/06/19 13:25
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0443	U	0.0753	0.0754	1.00	0.167	pCi/L	11/13/19 13:30	11/25/19 15:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.9*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:40*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.00876	U	0.264	0.264	1.00	0.480	pCi/L	11/13/19 14:32	11/18/19 18:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.9*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*
Y Carrier	*74.0*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.000	U	0.275	0.275	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-CC-BOT-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-17

Date Collected: 11/06/19 13:35
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0641	U	0.0678	0.0680	1.00	0.161	pCi/L	11/13/19 13:30	11/25/19 15:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.7*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:40*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0497	U	0.270	0.270	1.00	0.494	pCi/L	11/13/19 14:32	11/18/19 18:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.7*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*
Y Carrier	*77.8*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.000	U	0.278	0.278	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-LB-SUR-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-18

Date Collected: 11/06/19 12:40
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0343	U	0.0845	0.0845	1.00	0.151	pCi/L	11/13/19 13:30	11/25/19 15:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:40*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.131	U	0.243	0.243	1.00	0.463	pCi/L	11/13/19 14:32	11/18/19 18:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*
Y Carrier	*71.8*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0343	U	0.257	0.257	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-LB-MID-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-19

Date Collected: 11/06/19 12:50
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0288	U	0.0737	0.0737	1.00	0.161	pCi/L	11/13/19 13:30	11/25/19 15:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.6*		*40 - 110*	*11/13/19 13:30*	*11/25/19 15:40*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.171	U	0.328	0.328	1.00	0.559	pCi/L	11/13/19 14:32	11/18/19 18:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.6*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*
Y Carrier	*71.4*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.171	U	0.336	0.336	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-LB-BOT-20191106 ~ STR-TR02

Lab Sample ID: 180-98483-20

Date Collected: 11/06/19 12:55
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0117	U	0.0749	0.0749	1.00	0.153	pCi/L	11/13/19 13:30	11/25/19 17:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.5*		*40 - 110*	*11/13/19 13:30*	*11/25/19 17:33*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.326	U	0.317	0.319	1.00	0.611	pCi/L	11/13/19 14:32	11/18/19 18:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.5*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*
Y Carrier	*76.6*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.000	U	0.326	0.328	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-DUP02-20191106 ~ NA

Lab Sample ID: 180-98483-21

Date Collected: 11/06/19 00:00

Matrix: Water

Date Received: 11/08/19 09:00

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0825	U	0.0685	0.0689	1.00	0.170	pCi/L	11/13/19 13:30	11/25/19 17:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.6*		*40 - 110*	*11/13/19 13:30*	*11/25/19 17:33*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.483	U	0.323	0.326	1.00	0.500	pCi/L	11/13/19 14:32	11/18/19 18:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.6*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*
Y Carrier	*79.3*		*40 - 110*	*11/13/19 14:32*	*11/18/19 18:50*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.483	U	0.330	0.333	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR02-DUP04-20191106 ~ NA

Lab Sample ID: 180-98483-22

Date Collected: 11/06/19 00:00
Matrix: Water
Date Received: 11/08/19 09:00

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0142	U	0.0660	0.0660	1.00	0.124	pCi/L	11/13/19 15:23	01/30/20 11:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.5*		*40 - 110*	*11/13/19 15:23*	*01/30/20 11:15*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.212	U	0.314	0.315	1.00	0.596	pCi/L	11/13/19 16:06	11/18/19 18:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.5*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:37*	*1*
Y Carrier	*69.2*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:37*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0142	U	0.321	0.322	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR01-LB-SUR-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-23

Date Collected: 11/06/19 15:15
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0600	U	0.0639	0.0641	1.00	0.155	pCi/L	11/13/19 15:23	11/25/19 17:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.6*		*40 - 110*	*11/13/19 15:23*	*11/25/19 17:36*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0664	U	0.351	0.351	1.00	0.634	pCi/L	11/13/19 16:06	11/18/19 18:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.6*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:37*	*1*
Y Carrier	*66.9*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:37*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.000	U	0.357	0.357	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR01-LB-MID-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-24

Date Collected: 11/06/19 15:25
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0621	U	0.0651	0.0653	1.00	0.156	pCi/L	11/13/19 15:23	11/25/19 17:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*40 - 110*	*11/13/19 15:23*	*11/25/19 17:36*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.00454	U	0.237	0.237	1.00	0.425	pCi/L	11/13/19 16:06	11/18/19 18:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:37*	*1*
Y Carrier	*90.1*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:37*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.000	U	0.246	0.246	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR01-LB-BOT-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-25

Date Collected: 11/06/19 15:30
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0487	U	0.0720	0.0721	1.00	0.123	pCi/L	11/13/19 15:23	11/25/19 17:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.7*		*40 - 110*	*11/13/19 15:23*	*11/25/19 17:36*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0458	U	0.309	0.309	1.00	0.547	pCi/L	11/13/19 16:06	11/18/19 18:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.7*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:37*	*1*
Y Carrier	*75.5*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:37*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0944	U	0.317	0.317	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR01-CC-SUR-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-26

Date Collected: 11/06/19 14:45
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0147	U	0.0681	0.0681	1.00	0.144	pCi/L	11/13/19 15:23	11/25/19 17:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.1*		*40 - 110*	*11/13/19 15:23*	*11/25/19 17:36*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.162	U	0.512	0.513	1.00	0.945	pCi/L	11/13/19 16:06	11/18/19 18:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.1*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:37*	*1*
Y Carrier	*42.6*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:37*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.000	U	0.517	0.518	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR01-CC-MID-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-27

Date Collected: 11/06/19 14:55
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00158	U	0.0742	0.0742	1.00	0.145	pCi/L	11/13/19 15:23	11/25/19 17:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.1*		*40 - 110*	*11/13/19 15:23*	*11/25/19 17:36*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.599**		0.335	0.340	1.00	0.500	pCi/L	11/13/19 16:06	11/18/19 18:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.1*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:37*	*1*
Y Carrier	*69.5*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:37*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	**0.601**		0.343	0.348	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR01-CC-BOT-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-28

Date Collected: 11/06/19 15:00
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0601	U	0.0689	0.0691	1.00	0.162	pCi/L	11/13/19 15:23	11/25/19 17:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.7*		*40 - 110*	*11/13/19 15:23*	*11/25/19 17:36*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.121	U	0.346	0.347	1.00	0.597	pCi/L	11/13/19 16:06	11/18/19 18:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.7*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:38*	*1*
Y Carrier	*66.9*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:38*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.121	U	0.353	0.354	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR01-RB-SUR-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-29

Date Collected: 11/06/19 14:20
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0703	U	0.0637	0.0640	1.00	0.156	pCi/L	11/13/19 15:23	11/25/19 17:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.6*		*40 - 110*	*11/13/19 15:23*	*11/25/19 17:36*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.309	U	0.330	0.331	1.00	0.539	pCi/L	11/13/19 16:06	11/18/19 18:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.6*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:38*	*1*
Y Carrier	*67.3*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:38*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.309	U	0.336	0.337	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR01

Lab Sample ID: 180-98483-30

Date Collected: 11/06/19 14:30
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0479	U	0.0976	0.0977	1.00	0.172	pCi/L	11/13/19 15:23	11/25/19 17:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.5*		*40 - 110*	*11/13/19 15:23*	*11/25/19 17:37*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.170	U	0.332	0.333	1.00	0.621	pCi/L	11/13/19 16:06	11/18/19 18:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.5*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:38*	*1*
Y Carrier	*70.3*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:38*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0479	U	0.346	0.347	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR07-LB-SUR-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-31

Date Collected: 11/06/19 16:00
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.108	U	0.0597	0.0605	1.00	0.172	pCi/L	11/13/19 15:23	11/26/19 07:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.9*		*40 - 110*	*11/13/19 15:23*	*11/26/19 07:21*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0813	U	0.347	0.347	1.00	0.611	pCi/L	11/13/19 16:06	11/18/19 18:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*70.9*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:38*	*1*
Y Carrier	*71.8*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:38*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0813	U	0.352	0.352	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR07-LB-BOT-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-32

Date Collected: 11/06/19 16:10
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0360	U	0.0736	0.0737	1.00	0.158	pCi/L	11/13/19 15:23	11/26/19 07:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.2*		*40 - 110*	*11/13/19 15:23*	*11/26/19 07:21*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.416	U	0.279	0.282	1.00	0.578	pCi/L	11/13/19 16:06	11/18/19 18:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.2*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:38*	*1*
Y Carrier	*67.3*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:38*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.000	U	0.289	0.291	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR07-CC-SUR-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-33

Date Collected: 11/06/19 16:20
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0206	U	0.0727	0.0728	1.00	0.151	pCi/L	11/13/19 15:23	11/26/19 07:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.4*		*40 - 110*	*11/13/19 15:23*	*11/26/19 07:21*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0311	U	0.327	0.327	1.00	0.585	pCi/L	11/13/19 16:06	11/18/19 18:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.4*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:39*	*1*
Y Carrier	*72.1*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:39*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.000	U	0.335	0.335	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR07-CC-MID-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-34

Date Collected: 11/06/19 16:30
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0450	U	0.0916	0.0917	1.00	0.162	pCi/L	11/13/19 15:23	11/26/19 07:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.2*		*40 - 110*	*11/13/19 15:23*	*11/26/19 07:21*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.422	U	0.332	0.334	1.00	0.524	pCi/L	11/13/19 16:06	11/18/19 18:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.2*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:40*	*1*
Y Carrier	*72.9*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:40*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.467	U	0.344	0.346	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR07-CC-BOT-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-35

Date Collected: 11/06/19 16:35
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0177	U	0.0690	0.0691	1.00	0.146	pCi/L	11/13/19 15:23	11/26/19 07:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.7*		*40 - 110*	*11/13/19 15:23*	*11/26/19 07:22*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.335	U	0.361	0.363	1.00	0.591	pCi/L	11/13/19 16:06	11/18/19 18:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.7*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:41*	*1*
Y Carrier	*63.2*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:41*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.335	U	0.368	0.370	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR07-RB-SUR-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-36

Date Collected: 11/06/19 17:00
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0551	U	0.0665	0.0667	1.00	0.157	pCi/L	11/13/19 15:23	11/26/19 09:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.1*		*40 - 110*	*11/13/19 15:23*	*11/26/19 09:09*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.195	U	0.446	0.446	1.00	0.764	pCi/L	11/13/19 16:06	11/18/19 18:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.1*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:41*	*1*
Y Carrier	*59.4*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:41*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.195	U	0.451	0.451	5.00		pCi/L		11/29/19 08:13	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Client Sample ID: WBF-STR-TR07-RB-BOT-20191106 ~ STR-TR07

Lab Sample ID: 180-98483-37

Date Collected: 11/06/19 17:10
Date Received: 11/08/19 09:00

Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0190	U	0.0747	0.0747	1.00	0.153	pCi/L	11/13/19 15:23	11/26/19 09:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.3*		*40 - 110*	*11/13/19 15:23*	*11/26/19 09:09*	*1*

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.370	U	0.384	0.385	1.00	0.626	pCi/L	11/13/19 16:06	11/18/19 18:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.3*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:42*	*1*
Y Carrier	*60.2*		*40 - 110*	*11/13/19 16:06*	*11/18/19 18:42*	*1*

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.370	U	0.391	0.392	5.00		pCi/L		11/29/19 08:13	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-450225/23-A
Matrix: Water
Analysis Batch: 451843

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 450225

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.004179	U	0.0840	0.0840	1.00	0.162	pCi/L	11/13/19 13:30	11/25/19 17:34	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.2*		*40 - 110*	*11/13/19 13:30*	*11/25/19 17:34*	*1*

Lab Sample ID: LCS 160-450225/1-A
Matrix: Water
Analysis Batch: 451843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 450225

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.3	9.960		1.08	1.00	0.149	pCi/L	88	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*80.5*		*40 - 110*

Lab Sample ID: 180-98483-1 DU
Matrix: Water
Analysis Batch: 451843

Client Sample ID: WBF-STR-FB02-20191106 ~ NA
Prep Type: Total/NA
Prep Batch: 450225

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	-0.0636	U		-0.01016	U	0.0956	1.00	0.191	pCi/L			0.34	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*73.2*		*40 - 110*

Lab Sample ID: MB 160-450326/19-A
Matrix: Water
Analysis Batch: 452083

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 450326

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.1389	U	0.0835	0.0844	1.00	0.228	pCi/L	11/13/19 15:23	11/26/19 09:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*54.2*		*40 - 110*	*11/13/19 15:23*	*11/26/19 09:10*	*1*

Lab Sample ID: LCS 160-450326/1-A
Matrix: Water
Analysis Batch: 451843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 450326

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.3	9.406		1.03	1.00	0.167	pCi/L	83	75 - 125		

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-450326/1-A
Matrix: Water
Analysis Batch: 451843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 450326

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	80.8		40 - 110

Lab Sample ID: 180-98483-30 DU
Matrix: Water
Analysis Batch: 451843

Client Sample ID: WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR01
Prep Type: Total/NA
Prep Batch: 450326

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.0479	U		0.04823	U	0.0960	1.00	0.170	pCi/L			0	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	77.7		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-450240/23-A
Matrix: Water
Analysis Batch: 450935

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 450240

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1830	U	0.274	0.274	1.00	0.460	pCi/L	11/13/19 14:32	11/18/19 18:51	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.2		40 - 110	11/13/19 14:32	11/18/19 18:51	1
Y Carrier	77.8		40 - 110	11/13/19 14:32	11/18/19 18:51	1

Lab Sample ID: LCS 160-450240/1-A
Matrix: Water
Analysis Batch: 450983

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 450240

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			9.38	9.940		1.25	1.00	0.670	pCi/L	106	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	80.5		40 - 110
Y Carrier	78.9		40 - 110

Lab Sample ID: 180-98483-1 DU
Matrix: Water
Analysis Batch: 450983

Client Sample ID: WBF-STR-FB02-20191106 ~ NA
Prep Type: Total/NA
Prep Batch: 450240

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.705	U		0.6565	U	0.458	1.00	0.714	pCi/L			0.05	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: 180-98483-1 DU
Matrix: Water
Analysis Batch: 450983

Client Sample ID: WBF-STR-FB02-20191106 ~ NA
Prep Type: Total/NA
Prep Batch: 450240

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	73.2		40 - 110
Y Carrier	78.5		40 - 110

Lab Sample ID: MB 160-450328/19-A
Matrix: Water
Analysis Batch: 450917

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 450328

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.871	G	0.786	0.804	1.00	1.13	pCi/L	11/13/19 16:06	11/18/19 18:41	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	54.2		40 - 110	11/13/19 16:06	11/18/19 18:41	1
Y Carrier	60.2		40 - 110	11/13/19 16:06	11/18/19 18:41	1

Lab Sample ID: LCS 160-450328/1-A
Matrix: Water
Analysis Batch: 450937

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 450328

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			9.38	9.312		1.24	1.00	0.682	pCi/L	99	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	80.8		40 - 110
Y Carrier	62.8		40 - 110

Lab Sample ID: 180-98483-30 DU
Matrix: Water
Analysis Batch: 450937

Client Sample ID: WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR01
Prep Type: Total/NA
Prep Batch: 450328

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	-0.170	U		0.3025	U	0.371	1.00	0.612	pCi/L			0.67	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	77.7		40 - 110
Y Carrier	71.0		40 - 110

QC Association Summary

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Rad

Prep Batch: 450225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-98483-1	WBF-STR-FB02-20191106 ~ NA	Total/NA	Water	PrecSep STD	
180-98483-2	WBF-STR-EB02-20191106 ~ NA	Total/NA	Water	PrecSep STD	
180-98483-4	WBF-STR-TR03-LB-SUR-20191106 ~ STR-TR03	Total/NA	Water	PrecSep STD	
180-98483-5	WBF-STR-TR03-LB-MID-20191106 ~ STR-TR03	Total/NA	Water	PrecSep STD	
180-98483-6	WBF-STR-TR03-LB-BOT-20191106 ~ STR-TR03	Total/NA	Water	PrecSep STD	
180-98483-7	WBF-STR-TR03-CC-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-8	WBF-STR-TR03-CC-MID-20191106 ~ STR-TR03	Total/NA	Water	PrecSep STD	
180-98483-9	WBF-STR-TR03-CC-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-10	WBF-STR-TR03-RB-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-11	WBF-STR-TR03-RB-MID-20191106 ~ STR-TR03	Total/NA	Water	PrecSep STD	
180-98483-12	WBF-STR-TR03-RB-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-13	WBF-STR-TR02-RB-SUR--20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-14	WBF-STR-TR02-RB-BOT-20191106 ~ STR-TR02	Total/NA	Water	PrecSep STD	
180-98483-15	WBF-STR-TR02-CC-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-16	WBF-STR-TR02-CC-MID-20191106 ~ STR-TR02	Total/NA	Water	PrecSep STD	
180-98483-17	WBF-STR-TR02-CC-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-18	WBF-STR-TR02-LB-SUR-20191106 ~ STR-TR02	Total/NA	Water	PrecSep STD	
180-98483-19	WBF-STR-TR02-LB-MID-20191106 ~ STR-TR02	Total/NA	Water	PrecSep STD	
180-98483-20	WBF-STR-TR02-LB-BOT-20191106 ~ STR-TR02	Total/NA	Water	PrecSep STD	
180-98483-21	WBF-STR-TR02-DUP02-20191106 ~ NA	Total/NA	Water	PrecSep STD	
MB 160-450225/23-A	Method Blank	Total/NA	Water	PrecSep STD	
LCS 160-450225/1-A	Lab Control Sample	Total/NA	Water	PrecSep STD	
180-98483-1 DU	WBF-STR-FB02-20191106 ~ NA	Total/NA	Water	PrecSep STD	

Prep Batch: 450240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-98483-1	WBF-STR-FB02-20191106 ~ NA	Total/NA	Water	PrecSep_0	
180-98483-2	WBF-STR-EB02-20191106 ~ NA	Total/NA	Water	PrecSep_0	
180-98483-4	WBF-STR-TR03-LB-SUR-20191106 ~ STR-TR03	Total/NA	Water	PrecSep_0	
180-98483-5	WBF-STR-TR03-LB-MID-20191106 ~ STR-TR03	Total/NA	Water	PrecSep_0	
180-98483-6	WBF-STR-TR03-LB-BOT-20191106 ~ STR-TR03	Total/NA	Water	PrecSep_0	
180-98483-7	WBF-STR-TR03-CC-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-8	WBF-STR-TR03-CC-MID-20191106 ~ STR-TR03	Total/NA	Water	PrecSep_0	
180-98483-9	WBF-STR-TR03-CC-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-10	WBF-STR-TR03-RB-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-11	WBF-STR-TR03-RB-MID-20191106 ~ STR-TR03	Total/NA	Water	PrecSep_0	
180-98483-12	WBF-STR-TR03-RB-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-13	WBF-STR-TR02-RB-SUR--20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-14	WBF-STR-TR02-RB-BOT-20191106 ~ STR-TR02	Total/NA	Water	PrecSep_0	
180-98483-15	WBF-STR-TR02-CC-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-16	WBF-STR-TR02-CC-MID-20191106 ~ STR-TR02	Total/NA	Water	PrecSep_0	
180-98483-17	WBF-STR-TR02-CC-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-18	WBF-STR-TR02-LB-SUR-20191106 ~ STR-TR02	Total/NA	Water	PrecSep_0	
180-98483-19	WBF-STR-TR02-LB-MID-20191106 ~ STR-TR02	Total/NA	Water	PrecSep_0	
180-98483-20	WBF-STR-TR02-LB-BOT-20191106 ~ STR-TR02	Total/NA	Water	PrecSep_0	
180-98483-21	WBF-STR-TR02-DUP02-20191106 ~ NA	Total/NA	Water	PrecSep_0	
MB 160-450240/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-450240/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-98483-1 DU	WBF-STR-FB02-20191106 ~ NA	Total/NA	Water	PrecSep_0	

QC Association Summary

Client: Environmental Standards Inc.
Project/Site: WBF_STR_20191106_2B

Job ID: 180-98483-1

Rad

Prep Batch: 450326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-98483-22	WBF-STR-TR02-DUP04-20191106 ~ NA	Total/NA	Water	PrecSep STD	
180-98483-23	WBF-STR-TR01-LB-SUR-20191106 ~ STR-TR01	Total/NA	Water	PrecSep STD	
180-98483-24	WBF-STR-TR01-LB-MID-20191106 ~ STR-TR01	Total/NA	Water	PrecSep STD	
180-98483-25	WBF-STR-TR01-LB-BOT-20191106 ~ STR-TR01	Total/NA	Water	PrecSep STD	
180-98483-26	WBF-STR-TR01-CC-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-27	WBF-STR-TR01-CC-MID-20191106 ~ STR-TR01	Total/NA	Water	PrecSep STD	
180-98483-28	WBF-STR-TR01-CC-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-29	WBF-STR-TR01-RB-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-30	WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-31	WBF-STR-TR07-LB-SUR-20191106 ~ STR-TR07	Total/NA	Water	PrecSep STD	
180-98483-32	WBF-STR-TR07-LB-BOT-20191106 ~ STR-TR07	Total/NA	Water	PrecSep STD	
180-98483-33	WBF-STR-TR07-CC-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-34	WBF-STR-TR07-CC-MID-20191106 ~ STR-TR07	Total/NA	Water	PrecSep STD	
180-98483-35	WBF-STR-TR07-CC-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-36	WBF-STR-TR07-RB-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
180-98483-37	WBF-STR-TR07-RB-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	
MB 160-450326/19-A	Method Blank	Total/NA	Water	PrecSep STD	
LCS 160-450326/1-A	Lab Control Sample	Total/NA	Water	PrecSep STD	
180-98483-30 DU	WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep STD	

Prep Batch: 450328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-98483-22	WBF-STR-TR02-DUP04-20191106 ~ NA	Total/NA	Water	PrecSep_0	
180-98483-23	WBF-STR-TR01-LB-SUR-20191106 ~ STR-TR01	Total/NA	Water	PrecSep_0	
180-98483-24	WBF-STR-TR01-LB-MID-20191106 ~ STR-TR01	Total/NA	Water	PrecSep_0	
180-98483-25	WBF-STR-TR01-LB-BOT-20191106 ~ STR-TR01	Total/NA	Water	PrecSep_0	
180-98483-26	WBF-STR-TR01-CC-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-27	WBF-STR-TR01-CC-MID-20191106 ~ STR-TR01	Total/NA	Water	PrecSep_0	
180-98483-28	WBF-STR-TR01-CC-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-29	WBF-STR-TR01-RB-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-30	WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-31	WBF-STR-TR07-LB-SUR-20191106 ~ STR-TR07	Total/NA	Water	PrecSep_0	
180-98483-32	WBF-STR-TR07-LB-BOT-20191106 ~ STR-TR07	Total/NA	Water	PrecSep_0	
180-98483-33	WBF-STR-TR07-CC-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-34	WBF-STR-TR07-CC-MID-20191106 ~ STR-TR07	Total/NA	Water	PrecSep_0	
180-98483-35	WBF-STR-TR07-CC-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-36	WBF-STR-TR07-RB-SUR-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
180-98483-37	WBF-STR-TR07-RB-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	
MB 160-450328/19-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-450328/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-98483-30 DU	WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR0	Total/NA	Water	PrecSep_0	

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 7
COC No:	WBF_STR_20191106_2B
1 of 4 Pages	
Task Desc:	WBF_STR

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	WATTS BAR FOSSIL PLANT	Sampler: Daniel Geren	
Lab Address:	301 Alpha Drive	Project #:	426799	Sampling Company: TVA	
	RIDC Park	Site Address	933 Old Ferry Road	Address: TVA Chickamauga Power Service Center, 4601 N. Access Road, 37415	
	Pittsburgh, PA 15238	City	Spring City State, Zip: TN, 37381	City/State: Chattanooga, TN	Phone: 423-876-6733
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	2
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 (Standard)

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth Depth Unit Start Depth	Sample Depth Meters End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: Filtered N	Preserve HNO3	Analysis SW_RAD
1	WBF-STR-FB02-20191106	NA	NA	NA	SW	G	FB	11/6/2019	1025	3		☐			X
2	WBF-STR-EB02-20191106	NA	NA	NA	SW	G	EB	11/6/2019	1030	3		☐			X
3	WBF-STR-TR03-LB-SUR-20191106	STR-TR03	0.5	NA	SW	G	N	11/6/2019	1155	3		☐			X
4	WBF-STR-TR03-LB-MID-20191106	STR-TR03	2.0	NA	SW	G	N	11/6/2019	1205	3		☐			X
5	WBF-STR-TR03-LB-BOT-20191106	STR-TR03	3.5	NA	SW	G	N	11/6/2019	1210	3		☐			X
6	WBF-STR-TR03-CC-SUR-20191106	STR-TR03	0.5	NA	SW	G	N	11/6/2019	1125	3		☐			X
7	WBF-STR-TR03-CC-MID-20191106	STR-TR03	2.0	NA	SW	G	N	11/6/2019	1135	3		☐			X
8	WBF-STR-TR03-CC-BOT-20191106	STR-TR03	3.5	NA	SW	G	N	11/6/2019	1140	3		☐			X
9	WBF-STR-TR03-RB-SUR-20191106	STR-TR03	0.5	NA	SW	G	N	11/6/2019	1050	3		☐			X
10	WBF-STR-TR03-RB-MID-20191106	STR-TR03	2.0	NA	SW	G	N	11/6/2019	1100	3		☐			X
11	WBF-STR-TR03-RB-BOT-20191106	STR-TR03	3.0	NA	SW	G	N	11/6/2019	1110	3		☐			X
12												☐			
13												☐			

11-7-19

180-98483 Chain of Custody

Additional Comments/Special Instructions:

Custody Seal #: 510341-510348

RELINQISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
/ TVA-JSG	11-7-19	1300	TA/H	11/8/19	900

Sample Receipt Conditions				
☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	N/A
☐ 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	Daniel Geren

Form TVA 30067A

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

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COOLER No.:	1 of 7
COC No:	WBF_STR_20191106_2B
2 of 4 Pages	
Task Desc:	WBF_STR

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	WATTS BAR FOSSIL PLANT	Sampler: Daniel Geren	
Lab Address:	301 Alpha Drive	Project #:	426799	Sampling Company: TVA	
	RIDC Park	Site Address	933 Old Ferry Road	Address: TVA Chickamauga Power Service Center, 4601 N. Access Road, 37415	
	Pittsburgh, PA 15238	City	Spring City / State, Zip: TN, 37381	City/State: Chattanooga, TN	Phone: 423-876-6733
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	2
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 (Standard)

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Meters Start Depth	Sample Depth: Meters 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	Preserve HNO3	Analysis SW_RAD
1	WBF-STR-TR02-RB-SUR-20191106	STR-TR02		0.5	NA	SW	G	N	11/6/2019	1355	3		☐			X
2	WBF-STR-TR02-RB-BOT-20191106	STR-TR02		1.5	NA	SW	G	N	11/6/2019	1405	3		☐			X
3	WBF-STR-TR02-CC-SUR-20191106	STR-TR02		0.5	NA	SW	G	N	11/6/2019	1315	3		☐			X
4	WBF-STR-TR02-CC-MID-20191106	STR-TR02		2.1	NA	SW	G	N	11/6/2019	1325	3		☐			X
5	WBF-STR-TR02-CC-BOT-20191106	STR-TR02		3.8	NA	SW	G	N	11/6/2019	1335	3		☐			X
6	WBF-STR-TR02-LB-SUR-20191106	STR-TR02		0.5	NA	SW	G	N	11/6/2019	1240	3		☐			X
7	WBF-STR-TR02-LB-MID-20191106	STR-TR02		2.6	NA	SW	G	N	11/6/2019	1250	3		☐			X
8	WBF-STR-TR02-LB-BOT-20191106	STR-TR02		4.7	NA	SW	G	N	11/6/2019	1255	3		☐			X
9	WBF-STR-DUP02-20191106	NA		NA	NA	SW	G	FD	11/6/2019	NA	3		☐			X
10	WBF-STR-DUP04-20191106	NA		NA	NA	SW	G	FD	11/6/2019	NA	3		☐			X
11													☐			
12													☐			
13													☐			

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
/ TVA-JSG	11-7-19	1300		11/8/19	

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	Daniel Geren

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

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COOLER No.:	1 of 7
COC No:	WBF_STR_20191106_2B
3 of 4 Pages	
Task Desc:	WBF_STR

Required Ship to Lab:		Required Project Information:				Required Sampler Information			
Lab Name:	TestAmerica Pittsburgh	Site ID #:	WATTS BAR FOSSIL PLANT			Sampler: Daniel Geren			
Lab Address:	301 Alpha Drive	Project #:	426799			Sampling Company: TVA			
	RIDC Park	Site Address	933 Old Ferry Road			Address: TVA Chickamauga Power Service Center, 4601 N. Access Road, 37415			
	Pittsburgh, PA 15238	City	Spring City	State, Zip:	TN, 37381	City/State: Chattanooga, TN		Phone:	423-876-6733
Lab Manager Contact Information		Site PM Name:	Roy Quinn						
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753			Sampling Team Number:	2		
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 (Standard)

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth Depth Unit Start Depth	Sample Depth Depth Unit End Depth (Meters)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered N	Preserve HNO3	Analysis SW_RAD
1	WBF-STR-TR01-LB-SUR-20191106	STR-TR01	0.5	NA	SW	G	N	11/6/2019	1515	3		☐			X
2	WBF-STR-TR01-LB-MID-20191106	STR-TR01	1.8	NA	SW	G	N	11/6/2019	1525	3		☐			X
3	WBF-STR-TR01-LB-BOT-20191106	STR-TR01	3.1	NA	SW	G	N	11/6/2019	1530	3		☐			X
4	WBF-STR-TR01-CC-SUR-20191106	STR-TR01	0.5	NA	SW	G	N	11/6/2019	1445	3		☐			X
5	WBF-STR-TR01-CC-MID-20191106	STR-TR01	1.9	NA	SW	G	N	11/6/2019	1455	3		☐			X
6	WBF-STR-TR01-CC-BOT-20191106	STR-TR01	2.8	NA	SW	G	N	11/6/2019	1500	3		☐			X
7	WBF-STR-TR01-RB-SUR-20191106	STR-TR01	0.5	NA	SW	G	N	11/6/2019	1420	3		☐			X
8	WBF-STR-TR01-RB-BOT-20191106	STR-TR01	2.3	NA	SW	G	N	11/6/2019	1430	3		☐			X
9												☐			
10												☐			
11												☐			
12												☐			
13												☐			

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
/ TVH-SSG	11-7-19	1300		11/9/19	

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	Daniel Geren

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 7
COC No:	WBF_STR_20191106_2B
4 of 4 Pages	
Task Desc:	WBF_STR

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	WATTS BAR FOSSIL PLANT	Sampler: Daniel Geren	
Lab Address:	301 Alpha Drive	Project #:	426799	Sampling Company: TVA	
	RIDC Park	Site Address	933 Old Ferry Road	Address: TVA Chickamauga Power Service Center, 4601 N. Access Road, 37415	
	Pittsburgh, PA 15238	City	Spring City State, Zip: TN, 37381	City/State: Chattanooga, TN	Phone: 423-876-6733
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	2
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 (Standard)

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit	Sample Depth: Meters Start Depth	Sample Depth: Meters 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	Preserve: HNO3	Analysis: SW_RAD
1	WBF-STR-TR07-LB-SUR-20191106	STR-TR07		0.5	NA	SW	G	N	11/6/2019	1600	3		☐			X
2	WBF-STR-TR07-LB-BOT-20191106	STR-TR07		2.0	NA	SW	G	N	11/6/2019	1610	3		☐			X
3	WBF-STR-TR07-CC-SUR-20191106	STR-TR07		0.5	NA	SW	G	N	11/6/2019	1620	3		☐			X
4	WBF-STR-TR07-CC-MID-20191106	STR-TR07		3.5	NA	SW	G	N	11/6/2019	1630	3		☐			X
5	WBF-STR-TR07-CC-BOT-20191106	STR-TR07		6.5	NA	SW	G	N	11/6/2019	1635	3		☐			X
6	WBF-STR-TR07-RB-SUR-20191106	STR-TR07		0.5	NA	SW	G	N	11/6/2019	1700	3		☐			X
7	WBF-STR-TR07-RB-BOT-20191106	STR-TR07		1.6	NA	SW	G	N	11/6/2019	1710	3		☐			X
8													☐			
9													☐			
10													☐			
11													☐			
12													☐			
13													☐			

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
TVA	11-7-19	1300	TPA	11/8/19	90

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	Tyler Baker

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.:	1	of	7
COC No:	WBF_STR_20191106_2B		
1 of 4 Pages			
Task Desc:	WBF_STR		

Rev01 KH 11/18/19

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:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	WATTS BAR FOSSIL PLANT	Sampler: Daniel Geren	
Lab Address:	301 Alpha Drive	Project #:	426799	Sampling Company: TVA	
	RIDC Park	Site Address	933 Old Ferry Road	Address: TVA Chickamauga Power Service Center, 4501 N. Access Road, 37415	
	Pittsburgh, PA 15238	City	Spring City State, Zip: TN, 37381	City/State: Chattanooga, TN	Phone: 423-876-5733
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	2
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	rquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envsta.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: Meters)	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: SW_RAD	Filtered: N	Preserve: CONT
1	WBF-STR-FB02-20191106	NA	NA	NA	~~SW~~ AQ	G	FB	11/6/2019	1025	3		☐	X		
2	WBF-STR-EB02-20191106	NA	NA	NA	~~SW~~ AQ	G	EB	11/6/2019	1030	3		☐	X		
3	WBF-STR-TR03-LB-SUR-20191106	STR-TR03	0.5	NA	SW	G	N	11/6/2019	1155	3		☐	X		
4	WBF-STR-TR03-LB-MID-20191106	STR-TR03	2.0	NA	SW	G	N	11/6/2019	1205	3		☐	X		
5	WBF-STR-TR03-LB-BOT-20191106	STR-TR03	3.5	NA	SW	G	N	11/6/2019	1210	3		☐	X		
6	WBF-STR-TR03-CC-SUR-20191106	STR-TR03	0.5	NA	SW	G	N	11/6/2019	1125	3		☐	X		
7	WBF-STR-TR03-CC-MID-20191106	STR-TR03	2.0	NA	SW	G	N	11/6/2019	1135	3		☐	X		
8	WBF-STR-TR03-CC-BOT-20191106	STR-TR03	3.5	NA	SW	G	N	11/6/2019	1140	3		☐	X		
9	WBF-STR-TR03-RB-SUR-20191106	STR-TR03	0.5	NA	SW	G	N	11/6/2019	1050	3		☐	X		
10	WBF-STR-TR03-RB-MID-20191106	STR-TR03	2.0	NA	SW	G	N	11/6/2019	1100	3		☐	X		
11	WBF-STR-TR03-RB-BOT-20191106	STR-TR03	3.0	NA	SW	G	N	11/6/2019	1110	3		☐	X		
12								11-7-19				☐			
13												☐			

180-98483 Chain of Custody

Additional Comments/Special Instructions:
Custody Seal #: 510341-510348

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
/ TVA-JSC	11-7-19	1300	FAITH	11/8/19	900

Sample Receipt Conditions: Temperature in °C ☐ Yes ☐ No; Sample on Ice? ☐ Yes ☐ No; Sample Intact? ☐ Yes ☐ No; Trip Blank? ☐ Yes ☐ No

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	Daniel Geren

Form TVA 30087A

4/16/2020 (Rev. 2)

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	7
COC No:	WBF_STR_20191106_2B		
2 of 4 Pages			
Task Desc:	WBF_STR		

Rev01 KH 11/18/19

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive RIDC Park 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 #:	WATTS BAR FOSSIL PLANT		
Project #:	426799		
Site Address	933 Old Ferry Road		
City	Spring City	State, Zip:	TN, 37381
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	rquinn@tva.gov		

Required Sampler Information

Sampler: Daniel Geren			
Sampling Company: TVA			
Address: TVA Chickamauga Power Service Center, 4601 N. Access Road, 37415			
City/State: Chattanooga, TN		Phone:	423-876-6733
Sampling Team Number:	2		
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 (Standard)

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth Depth Unit: Start Depth	Sample Depth Depth Unit: End Depth (Meters)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SW_RAD	Preserve: HNO3	Filtered: N
1	WBF-STR-TR02-RB-SUR-20191106	STR-TR02	0.5	NA	SW	G	N	11/6/2019	1355	3		☐	X		
2	WBF-STR-TR02-RB-BOT-20191106	STR-TR02	1.5	NA	SW	G	N	11/6/2019	1405	3		☐	X		
3	WBF-STR-TR02-CC-SUR-20191106	STR-TR02	0.5	NA	SW	G	N	11/6/2019	1315	3		☐	X		
4	WBF-STR-TR02-CC-MID-20191106	STR-TR02	2.1	NA	SW	G	N	11/6/2019	1325	3		☐	X		
5	WBF-STR-TR02-CC-BOT-20191106	STR-TR02	3.8	NA	SW	G	N	11/6/2019	1335	3		☐	X		
6	WBF-STR-TR02-LB-SUR-20191106	STR-TR02	0.5	NA	SW	G	N	11/6/2019	1240	3		☐	X		
7	WBF-STR-TR02-LB-MID-20191106	STR-TR02	2.6	NA	SW	G	N	11/6/2019	1250	3		☐	X		
8	WBF-STR-TR02-LB-BOT-20191106	STR-TR02	4.7	NA	SW	G	N	11/6/2019	1255	3		☐	X		
9	WBF-STR-DUP02-20191106	NA	NA	NA	SW	G	FD	11/6/2019	NA	3		☐	X		
10	WBF-STR-DUP04-20191106	NA	NA	NA	SW	G	FD	11/6/2019	NA	3		☐	X		
11												☐			
12												☐			
13												☐			

11-7-19

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
/ TVA-JSG	11-7-19	1300		11/8/19	0900

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	Daniel Geren

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	7
COC No:	WBF_STR_20191106_2B		
3 of 4 Pages			
Task Desc:	WBF_STR		

Rev Ø1 KH 11/18/19

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive RIDC Park 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 #:	WATTS BAR FOSSIL PLANT		
Project #:	428799		
Site Address	933 Old Ferry Road		
City	Spring City	State, Zip:	TN, 37381
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	rquinn@tva.gov		

Required Sampler Information

Sampler: Daniel Geren			
Sampling Company: TVA			
Address: TVA Chickamauga Power Service Center, 4801 N. Access Road, 37415			
City/State: Chattanooga, TN		Phone:	423-876-6733
Sampling Team Number:	2		
Send EDD/Hard Copy to:	tva_deliverables@envsdd.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 Meters: End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: SW_RAD	Preserve: HNO3	Filtered: N
1	WBF-STR-TR01-LB-SUR-20191106	STR-TR01	0.5	NA	SW	G	N	11/6/2019	1515	3		☐	X		
2	WBF-STR-TR01-LB-MID-20191106	STR-TR01	1.8	NA	SW	G	N	11/6/2019	1525	3		☐	X		
3	WBF-STR-TR01-LB-BOT-20191106	STR-TR01	3.1	NA	SW	G	N	11/6/2019	1530	3		☐	X		
4	WBF-STR-TR01-CC-SUR-20191106	STR-TR01	0.5	NA	SW	G	N	11/6/2019	1445	3		☐	X		
5	WBF-STR-TR01-CC-MID-20191106	STR-TR01	1.9	NA	SW	G	N	11/6/2019	1455	3		☐	X		
6	WBF-STR-TR01-CC-BOT-20191106	STR-TR01	2.8	NA	SW	G	N	11/6/2019	1500	3		☐	X		
7	WBF-STR-TR01-RB-SUR-20191106	STR-TR01	0.5	NA	SW	G	N	11/6/2019	1420	3		☐	X		
8	WBF-STR-TR01-RB-BOT-20191106	STR-TR01	2.3	NA	SW	G	N	11/6/2019	1430	3		☐	X		
9												☐			
10												☐			
11												☐			
12												☐			
13												☐			

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] / TVA-JSC	11-7-19	1300	[signature]	11/9/19	9:00

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	Daniel Geren [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 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 7
COC No:	WBF_STR_20191106_2B
4 of 4 Pages	
Task Desc:	WBF_STR

Rev01 KH 11/18/19

Required Ship to Lab:

Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive RIDC Park 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 #:	WATTS BAR FOSSIL PLANT		
Project #:	426799		
Site Address	933 Old Ferry Road		
City	Spring City	State, Zip:	TN 37381
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	rquinn@tva.gov		

Required Sampler Information

Sampler: Daniel Geren			
Sampling Company: TVA			
Address: TVA Chickamauga Power Service Center, 4601 N. Access Road, 37415			
City/State: Chattanooga, TN		Phone:	423-876-6733
Sampling Team Number:	2		
Send EDD/Hard Copy to:	tva_deliverables@lenvsld.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 Meters 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	Preserve HNO3	Analysis SW_RAD
1	WBF-STR-TR07-LB-SUR-20191106	STR-TR07	0.5	NA	SW	G	N	11/6/2019	1600	3		☐			X
2	WBF-STR-TR07-LB-BOT-20191106	STR-TR07	2.0	NA	SW	G	N	11/6/2019	1610	3		☐			X
3	WBF-STR-TR07-CC-SUR-20191106	STR-TR07	0.5	NA	SW	G	N	11/6/2019	1620	3		☐			X
4	WBF-STR-TR07-CC-MID-20191106	STR-TR07	3.5	NA	SW	G	N	11/6/2019	1630	3		☐			X
5	WBF-STR-TR07-CC-BOT-20191106	STR-TR07	6.5	NA	SW	G	N	11/6/2019	1635	3		☐			X
6	WBF-STR-TR07-RB-SUR-20191106	STR-TR07	0.5	NA	SW	G	N	11/6/2019	1700	3		☐			X
7	WBF-STR-TR07-RB-BOT-20191106	STR-TR07	1.6	NA	SW	G	N	11/6/2019	1710	3		☐			X
8												☐			
9												☐			
10												☐			
11												☐			
12												☐			
13												☐			

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
TVA	11-7-19	1300	Eurofins TMT	11/8/19	900

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	Tyler Baker

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

180-98483 Waybill

Do Not Lift Using This Tag

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

510358

Custody Seal

DATE 11-7-19

SIGNATURE

TEST AMERICA - PITTSBURGH
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963-2428

INV:
PO:
REF:
DEPT:

FedEx Express

2 of 5

MPS# 0263 7808 1299 6540

Mstr# 7808 1299 6530

0201

XH AGCA

FRI - 08 NOV 10:30A
PRIORITY OVERNIGHT
AHS
15238
PA-US PIT

Uncorrected temp 8.6 °C
Thermometer ID 10
No Ice
CF 0 Initials B

PT-WI-SR-001 effective 11/8/18

07 1 A

FedEx®

Do Not Lift Using This

ORIGIN ID:CHAA (423) 876-6733
TVA

P91B91 01684A
1101 MARKET ST
CHATTANOOGA, TN 37402
UNITED STATES US

SHIP DATE: 07
ACTWGT: 23.60
CAD: 6993885/
DIMS: 24x13x14

BILL THIRD PAR

TO TEST AMERICA – PITTSBURGH
TEST AMERICA – PITTSBUR
301 ALPHA DR

PITTSBURGH PA 15

(412) 963-2428
INV:
PO:
REF:

RT 97
FZ
1
10:30
A
6551
11:08

3 of 5

MPS# 0263 7808 1299 6551

Mstr# 7808 1299 6530

0201

XH AGCA

FRI – 08 NOV
PRIORITY OVER

PA – US

Uncorrected temp 9.0
Thermometer ID 10
CF 0 Initials

PT-WI-SR-001 effective 11/8/18

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
510354

Custody Seal
DATE 11-7-14
SIGNATURE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
510354

Do Not Lift Using This Ta

ORIGIN ID:CHAA (423) 876-6733
TVA

P91B91 01684A
1101 MARKET ST
CHATTANOOGA, TN 37402
UNITED STATES US

SHIP DATE: 07NOV18
ACTWGT: 55.20 LB
CAD: 6993885/SSFE20
DIMS: 24x13x14 IN

BILL THIRD PARTY

TO **TEST AMERICA – PITTSBURGH**
TEST AMERICA – PITTSBURGH
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963-2428
INV:
PO:
REF:
DEPT:

Fe

4 of 5
MPS# 0263 **7808 1299 6562**
Mstr# 7808 1299 6530
0201

FRI – 08 NOV 1
PRIORITY OVERN

XH AGCA

1
PA-US

Uncorrected Temp 13.0 C
Thermometer ID 10
CF 0 No Ice
Initials B
PT-WI-SR-001 effective 11/8/18

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
510352

Custody Seal
DATE 5-7-11
SIGNATURE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
510352

Custody Seal
DATE 11-8-19
SIGNATURE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
510356

Do Not Lift Using This Tag

ORIGIN ID:CHAA (423) 876-6733
TVA

PS1B91 01684A
1101 MARKET ST
CHATTANOOGA, TN 37402
UNITED STATES US

SHIP DATE: 07NOV18
ACTWGT: 55.00 LB
CAD: 6983895/SSFE2021
DIMS: 24x13x14 IN

BILL THIRD PARTY

TO TEST AMERICA – PITTSBURGH
TEST AMERICA – PITTSBURGH
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963-2428
INV:
PO: REF:
DEPT:

FedEx Express

5 of 5
MPS# 0263 7808 1299 6573
Mstr# 7808 1299 6530 0201

FRI – 08 NOV 10:30A
PRIORITY OVERNIGHT
AHS
15238
PA-US PIT

XH AGCA

Uncorrected temp 12.9 °C
Thermometer ID 10
CF 0 Initials JB
PT-WI-SR-001 effective 11/8/18

1 A
10:30 6573
11.08

RT 97
FZ

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
510357

Custody Seal
DATE 11-7-19
SIGNATURE

ORIGIN ID:CHAA (423) ...
TVA

P91B91 01684A
1101 MARKET ST
CHATTANOOGA, TN 37402
UNITED STATES US

CAD: 6...
DIMS: 24x13x14 IN

BILL THIRD PARTY

TO TEST AMERICA – PITTSBURGH
TEST AMERICA – PITTSBURGH
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963-2428 REF:
INV:
PO: DEPT:

FedEx Express

J192119091901 AW

2 of 5
MPS# 0263 7808 1284 1232
Mstr# 7808 1284 1221 0201

FRI – 08 NOV 10:30A
PRIORITY OVERNIGHT
AHS
15238
PIT
PA-US

XH AGCA

Uncorrected temp ~~133~~ 0
Thermometer ID 10

CF 0 Initials B

PT-WI-SR-001 effective 11/8/18

RT 97 1 10:30 A
1232
11.08
FZ

Custody Seal
11-7-19
SIGNATURE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
510355

Do Not Lift Using This Tag

ORIGIN ID:CHAA (423) 876-6733
TVA

P91B91 01684A
1101 MARKET ST
CHATTANOOGA, TN 37402
UNITED STATES US

SHIP DATE: 07NOV19
ACTWGT: 47.20 LB
CAD: 6993895/SSFE2021
DIMS: 24x13x14 IN

BILL THIRD PARTY

TO TEST AMERICA – PITTSBURGH
TEST AMERICA – PITTSBURGH
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963-2428 REF:
INV:
PO: DEPT:

Part # 156297-435 RRDG EXP 08/20
2950/SEF/17255

FedEx Express
J192119951001

4 of 5
MPS# 0263 7808 1284 1254
Mstr# 7808 1284 1221 0201

XH AGCA

FRI – 08 NOV 10:30A
PRIORITY OVERNIGHT
AHS
15238
PA-US PIT

Uncorrected temp 12.9 C
Thermometer ID 12
CF 0 Initials JB
PT-WI-SR-001 effective 11/8/18

1
10:30 A
1254
11.08

FedEx®

Custody Seal

DATE 11-7-19

SIGNATURE

TestAmerica THE LEADER IN ENVIRONMENTAL TESTING

Do Not Lift Using This Tag

ORIGIN ID:CHAA (423) 876-6733
TVA

P91B91 01684A
1101 MARKET ST
CHATTANOOGA, TN 37402
UNITED STATES US

SHIP DATE: 07NOV19
ACTWGT: 47.10 LB
CAD: 6993895/SSFE2021
DIMS: 24x13x14 IN

BILL THIRD PARTY

Part # 156297-433 REV EXP 08/20

SG7J1/F330/0502

TO **TEST AMERICA – PITTSBURGH**
TEST AMERICA – PITTSBURGH
301 ALPHA DR

PITTSBURGH PA 15238
(412) 963-2428 REF:
INV:
PO: DEPT:

FedEx Express

J192119091901 AB10616112IF

5 of 5

MPS# 0263 7808 1284 1265

Mstr# 7808 1284 1221 0201

XH AGCA

FRI – 08 NOV 10:30A
PRIORITY OVERNIGHT
AHS
15238
PA-US **PIT**

Uncorrected temp 127 °C
Thermometer ID 10

CF 0 Initials B

PT-WI-SR-001 effective 11/8/18

Uncorrected temp °C

RT 97 1 10:30 A
FZ 1265
11.08

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

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rumble, Jennifer L	Carrier Tracking No(s):	COC No: 180-378453.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: jennifer.rumble@testamericainc.com	State of Origin: Tennessee	Page: Page 1 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-98483-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/11/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: WBF_STR_20191106_2B	Project #: 18020303			
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)	903.0/PrecSep_STD Ra-226	904.0/PrecSep_0 Ra-228	Ra226_228GFPC_P	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
WBF-STR-FB02-20191106 ~ NA (180-98483-1)	11/6/19	10:25 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-EB02-20191106 ~ NA (180-98483-2)	11/6/19	10:30 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR03-LB-SUR-20191106 ~ STR-TR03 (180-98483-4)	11/6/19	11:55 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR03-LB-MID-20191106 ~ STR-TR03 (180-98483-5)	11/6/19	12:05 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR03-LB-BOT-20191106 ~ STR-TR03 (180-98483-6)	11/6/19	12:10 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR03-CC-SUR-20191106 ~ STR-TR03 (180-98483-7)	11/6/19	11:25 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR03-CC-MID-20191106 ~ STR-TR03 (180-98483-8)	11/6/19	11:35 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR03-CC-BOT-20191106 ~ STR-TR03 (180-98483-9)	11/6/19	11:40 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR03-RB-SUR-20191106 ~ STR-TR03 (180-98483-10	11/6/19	10:50 Central		Water			X	X	X	3	TVA - Batch alone

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: [signature]	Date/Time: 11/11/19 1700	Company: DJT	Received by: Michael Heem	Date/Time: 11-12-19 11:40	Company: 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: 01/16/2019

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

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rumble, Jennifer L	Carrier Tracking No(s):	COC No: 180-378453.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: jennifer.rumble@testamericainc.com	State of Origin: Tennessee	Page: Page 2 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-98483-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/11/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: WBF_STR_20191106_2B	Project #: 18020303			
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)	903.0/PrecSep_STD Ra-226	904.0/PrecSep_0 Ra-228	Ra226_228GFPC_P	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
WBF-STR-TR03-RB-MID-20191106 ~ STR-TR03 (180-98483-11)	11/6/19	11:00 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR03-RB-BOT-20191106 ~ STR-TR03 (180-98483-12	11/6/19	10:10 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR02-RB-SUR--20191106 ~ STR-TR02 (180-98483-13	11/6/19	13:55 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR02-RB-BOT-20191106 ~ STR-TR02 (180-98483-14	11/6/19	14:05 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR02-CC-SUR-20191106 ~ STR-TR02 (180-98483-15	11/6/19	13:15 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR02-CC-MID-20191106 ~ STR-TR02 (180-98483-16)	11/6/19	13:25 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR02-CC-BOT-20191106 ~ STR-TR02 (180-98483-17	11/6/19	13:35 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR02-LB-SUR-20191106 ~ STR-TR02 (180-98483-18)	11/6/19	12:40 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR02-LB-MID-20191106 ~ STR-TR02 (180-98483-19)	11/6/19	12:50 Central		Water			X	X	X	3	TVA - Batch alone

180-98483-01 Chain of Custody

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	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ 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:

	Date/Time	Company		Date/Time	Company
Relinquished by:	11/11/19 1200	TAS	Received by:	11-12-19 11:40	TA SR
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: 01/16/2019

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

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rumble, Jennifer L	Carrier Tracking No(s):	COC No: 180-378453.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: jennifer.rumble@testamericainc.com	State of Origin: Tennessee	Page: Page 3 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-98483-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/11/2019			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: WBF_STR_20191106_2B	Project #: 18020303			
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:

180-98483-02 Chain of Custody

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)	903.0/PrecSep_STD Ra-226	904.0/PrecSep_0 Ra-228	Ra226_228GFPC_P	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
WBF-STR-TR02-LB-BOT-20191106 ~ STR-TR02 (180-98483-20)	11/6/19	12:55 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR02-DUP02-20191106 ~ NA (180-98483-21)	11/6/19	Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR02-DUP04-20191106 ~ NA (180-98483-22)	11/6/19	Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR01-LB-SUR-20191106 ~ STR-TR01 (180-98483-23)	11/6/19	15:15 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR01-LB-MID-20191106 ~ STR-TR01 (180-98483-24)	11/6/19	15:25 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR01-LB-BOT-20191106 ~ STR-TR01 (180-98483-25)	11/6/19	15:30 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR01-CC-SUR-20191106 ~ STR-TR01 (180-98483-26	11/6/19	14:45 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR01-CC-MID-20191106 ~ STR-TR01 (180-98483-27)	11/6/19	14:55 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR01-CC-BOT-20191106 ~ STR-TR01 (180-98483-28	11/6/19	15:00 Central		Water			X	X	X	3	TVA - Batch alone

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: 11/11/19 1700	Company: DNT	Received by:	Date/Time: 11-12-19 11:40	Company: TA SL
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: 01/16/2019

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

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)

Client Contact: Shipping/Receiving
Company: TestAmerica Laboratories, Inc.
Address: 13715 Rider Trail North,
City: Earth City
State, Zip: MO, 63045
Phone: 314-298-8566(Tel) 314-298-8757(Fax)
Email:
Project Name: WBF_STR_20191106_2B
Site:

Sampler:
Phone:
Due Date Requested: 12/11/2019
TAT Requested (days):
PO #:
WO #:
Project #: 18020303
SSOW#:

Lab PM: Rumble, Jennifer L
E-Mail: jennifer.rumble@testamericainc.com
Carrier Tracking No(s):
State of Origin: Tennessee
Accreditations Required (See note):

COC No: 180-378453.4
Page: Page 4 of 4
Job #: 180-98483-1

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:

Analysis Requested

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)	903.0/PrecSep_STD Ra-226	904.0/PrecSep_0 Ra-228	Ra226_228GFPC_P	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
WBF-STR-TR01-RB-SUR-20191106 ~ STR-TR01 (180-98483-29	11/6/19	14:20 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR01-RB-BOT-20191106 ~ STR-TR01 (180-98483-30	11/6/19	14:30 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR07-LB-SUR-20191106 ~ STR-TR07 (180-98483-31)	11/6/19	16:00 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR07-LB-BOT-20191106 ~ STR-TR07 (180-98483-32)	11/6/19	16:10 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR07-CC-SUR-20191106 ~ STR-TR07 (180-98483-33	11/6/19	16:20 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR07-CC-MID-20191106 ~ STR-TR07 (180-98483-34)	11/6/19	16:30 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR07-CC-BOT-20191106 ~ STR-TR07 (180-98483-35	11/6/19	16:35 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR07-RB-SUR-20191106 ~ STR-TR07 (180-98483-36	11/6/19	17:00 Central		Water			X	X	X	3	TVA - Batch alone
WBF-STR-TR07-RB-BOT-20191106 ~ STR-TR07 (180-98483-37	11/6/19	17:10 Central		Water			X	X	X	3	TVA - Batch alone

180-98483-03 Chain of Custody

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:	Company	Received by:	Date/Time:	Company
	11/11/19 1200	PNT		11-12-19 11:40	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: 01/16/2019

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 180-98483-1

Login Number: 98483
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.	False	
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: 180-98483-1

Login Number: 98483
List Number: 2
Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis
List Creation: 11/12/19 12:44 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	17.0
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	

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 180-98483-1

Login Number: 98483
List Number: 3
Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis
List Creation: 11/12/19 12:45 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	17.0
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	