

CTEH - ER

Sample Delivery Group: L1853220
Samples Received: 04/30/2025
Project Number: PROJ-054017
Description: Bishop Loss of Containment Incident

Report To: CTEH
5120 North Shore Drive
North Little Rock, AR 72118

Entire Report Reviewed By:



Jared Starkey
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
GACO0429T000S001 L1853220-01	5	
GACO0429T000S002 L1853220-02	6	⁴ Cn
GACO0429T000S003 L1853220-03	7	⁵ Sr
Qc: Quality Control Summary	8	
Radiochemistry by Method DOE Ga-01-R/901.1	8	⁶ Qc
Gl: Glossary of Terms	9	⁷ Gl
Al: Accreditations & Locations	10	⁸ Al
Sc: Sample Chain of Custody	11	⁹ Sc

SAMPLE SUMMARY

GACO0429T000S001 L1853220-01 Solids and Chemical Materials				Collected by	Collected date/time	Received date/time
					04/29/25 09:20	04/30/25 11:20
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method DOE Ga-01-R/901.1	WG2504261	1	04/30/25 13:13	05/01/25 10:14	ZRG	Mt. Juliet, TN

¹Cp

²Tc

³Ss

GACO0429T000S002 L1853220-02 Solids and Chemical Materials				Collected by	Collected date/time	Received date/time
					04/29/25 09:40	04/30/25 11:20
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method DOE Ga-01-R/901.1	WG2504261	1	04/30/25 13:13	05/01/25 10:15	ZRG	Mt. Juliet, TN

⁴Cn

⁵Sr

⁶Qc

GACO0429T000S003 L1853220-03 Solids and Chemical Materials				Collected by	Collected date/time	Received date/time
					04/29/25 10:00	04/30/25 11:20
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method DOE Ga-01-R/901.1	WG2504261	1	04/30/25 13:13	05/01/25 10:15	ZRG	Mt. Juliet, TN

⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

Unless qualified or notated within the narrative below, all sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jared Starkey
Project Manager



Radiochemistry by Method DOE Ga-01-R/901.1

Analyte	Result pCi/g	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/g	Lc pCi/g	Analysis Date date / time	Batch
Actinium-228 (Ra-228)	1.03		0.233	0.233	0.388	0.174	05/01/2025 10:14	WG2504261
Bismuth-214 (Ra-226)	0.893		0.165	0.165	0.202	0.0916	05/01/2025 10:14	WG2504261
Lead-214	0.979		0.170	0.170	0.186	0.0850	05/01/2025 10:14	WG2504261
Thorium-234 (U-238)	1.71	J	1.21	1.21	2.33	0.932	05/01/2025 10:14	WG2504261
Radium-226 (186 KeV)	1.08	J	0.750	0.750	1.26	0.594	05/01/2025 10:14	WG2504261

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method DOE Ga-01-R/901.1

Analyte	Result pCi/g	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/g	Lc pCi/g	Analysis Date date / time	Batch
Actinium-228 (Ra-228)	0.691		0.306	0.306	0.684	0.305	05/01/2025 10:15	WG2504261
Bismuth-214 (Ra-226)	0.606		0.196	0.196	0.289	0.129	05/01/2025 10:15	WG2504261
Lead-214	0.577		0.175	0.175	0.313	0.143	05/01/2025 10:15	WG2504261
Thorium-234 (U-238)	0.837	U	1.38	1.38	2.90	1.15	05/01/2025 10:15	WG2504261
Radium-226 (186 KeV)	0.654	U	0.967	0.967	1.82	0.856	05/01/2025 10:15	WG2504261

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method DOE Ga-01-R/901.1

Analyte	Result pCi/g	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/g	Lc pCi/g	Analysis Date date / time	Batch
Actinium-228 (Ra-228)	0.723		0.227	0.227	0.430	0.193	05/01/2025 10:15	WG2504261
Bismuth-214 (Ra-226)	0.691		0.157	0.157	0.210	0.0946	05/01/2025 10:15	WG2504261
Lead-214	0.694		0.144	0.144	0.204	0.0924	05/01/2025 10:15	WG2504261
Thorium-234 (U-238)	-0.649	U	1.37	1.37	3.31	1.32	05/01/2025 10:15	WG2504261
Radium-226 (186 KeV)	0.582	U	0.848	0.848	1.55	0.729	05/01/2025 10:15	WG2504261

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4208220-2 05/01/25 08:41

Analyte	MB Result pCi/g	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/g	MB Lc pCi/g
Actinium-228 (Ra-228)	-0.0408	⌋	0.168	0.542	0.217
Americium-241	0.225	⌋	0.390	0.704	0.292
Bismuth-214 (Ra-226)	-0.0117	⌋	0.0942	0.212	0.0808
Cesium-137	-0.0405	⌋	0.0409	0.143	0.0563
Cobalt-60	-0.0428	⌋	0.0588	0.270	0.104
Lead-214	0.0321	⌋	0.0770	0.170	0.0661
Radium-226 (186 KeV)	1.16		0.646	1.05	0.447
Thorium-234 (U-238)	1.37	⌋	0.967	1.97	0.728

L1853220-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1853220-03 05/01/25 10:15 • (DUP) R4208220-3 05/01/25 09:08

Analyte	Original Result pCi/g	Original 2 sigma CE + / -	Original MDA pCi/g	Original Lc pCi/g	DUP Result pCi/g	DUP 2 sigma CE + / -	DUP MDA pCi/g	DUP Lc pCi/g	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Actinium-228 (Ra-228)	0.723	0.227	0.430	0.193	0.456	0.311	0.780	0.351	45.2	0.692	⌋	20	3
Bismuth-214 (Ra-226)	0.691	0.157	0.210	0.0946	0.843	0.229	0.325	0.146	19.8	0.546		20	3
Lead-214	0.694	0.144	0.204	0.0924	0.660	0.190	0.336	0.154	4.96	0.141		20	3
Radium-226 (186 KeV)	0.582	0.848	1.55	0.729	1.94	1.02	1.77	0.827	108	1.02		20	3
Thorium-234 (U-238)	-0.649	1.37	3.31	1.32	0.445	1.50	3.30	1.31	200	0.539	⌋	20	3

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4208220-1 05/01/25 08:40 • (LCSD) R4208220-4 05/01/25 09:09

Analyte	Spike Amount pCi/g	LCS Result pCi/g	LCSD Result pCi/g	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Americium-241	36.9	42.8	38.7	116	105	80.0-120			10.1	20
Cesium-137	53.8	56.1	56.2	104	105	80.0-120			0.321	20
Cobalt-60	62.9	64.7	65.5	103	104	80.0-120			1.14	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

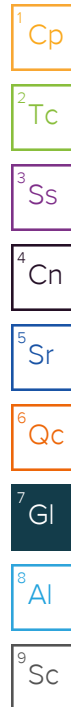
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





Pace® Location Requested (City/State):
Pace National, 12065 Lebanon Road, Mt. Juliet, TN 37122

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company Name: CTEH, LLC

Street Address:

5120 North Shore Drive, North Little Rock, AR 72118

Customer Project #: PROJ-054017

Project Name:

Bishop LOC

Site Collection Info/Facility ID (as applicable):

Galeton, CO

Time Zone Collected: [] AK [] PT ☒ MT [] CT [] ET

Data Deliverables:

☒ Level II [] Level III [] Level IV

[] EQUIS

[] Other _____

Regulatory Program (DW, RCRA, etc.) as applicable:

Reportable [] Yes [] No

Rush (Pre-approval required):

[] Same Day [] 1 Day [] 2 Day ☒ 3 Day Other _____

Date Results

Requested:

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [] Yes [] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start		Collected or Composite End		# Cont.	Residual Chlorine		Radium/EPA 901.1	Preservation m
			Date	Time	Date	Time		Result	Units		
67AC00429T000S001	SS	GT			04/29/25	0920	2			X	G077
67AC00429T000S002	SS	GT			04/29/25	0940	2			X	
67AC00429T000S003	SS	GT			04/29/25	1000	2	SK		X	
67AC00429T000S003MS	SS	GT			04/29/25	1000	2			X	
67AC00429T000S003MSD	SS	GT			04/29/25	1000	2			X	
67AC00429T000T001SK											

Additional Instructions from Pace®:

Collected By:

Printed Name

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

Signature

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Signature

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Signature

Customer Remarks / Special Conditions / Possible Hazards:

Coolers:

Thermometer ID:

Correction Factor (°C):

Obs. Temp. (°C):

Corrected Temp. (°C):

[] On Ice

Relinquished by/Company: (Signature)

Relinquished by/Company: (Signature)

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Tracking Number:

Tracking Number:

Tracking Number:

Submit

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N ☐ NP If Applicable
COC Signed/Accurate: ☒ Y ☐ N VOA Zero Headspace: ☐ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N Pres. Correct/Check: ☐ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N Condition: ☒ NCF ☐ OK
RA Screen <0.5 mB/hr: ☒ Y ☐ N

found at <https://info.pacelabs.com/hubs/pas-standard-terms.pdf>.

ENV-FRM-CORQ-0019_v02_110123 ©