

CTEH - ER

Sample Delivery Group: L1854753
Samples Received: 05/03/2025
Project Number: PROJ-054017
Description: Bishop Loss of Containment Incident

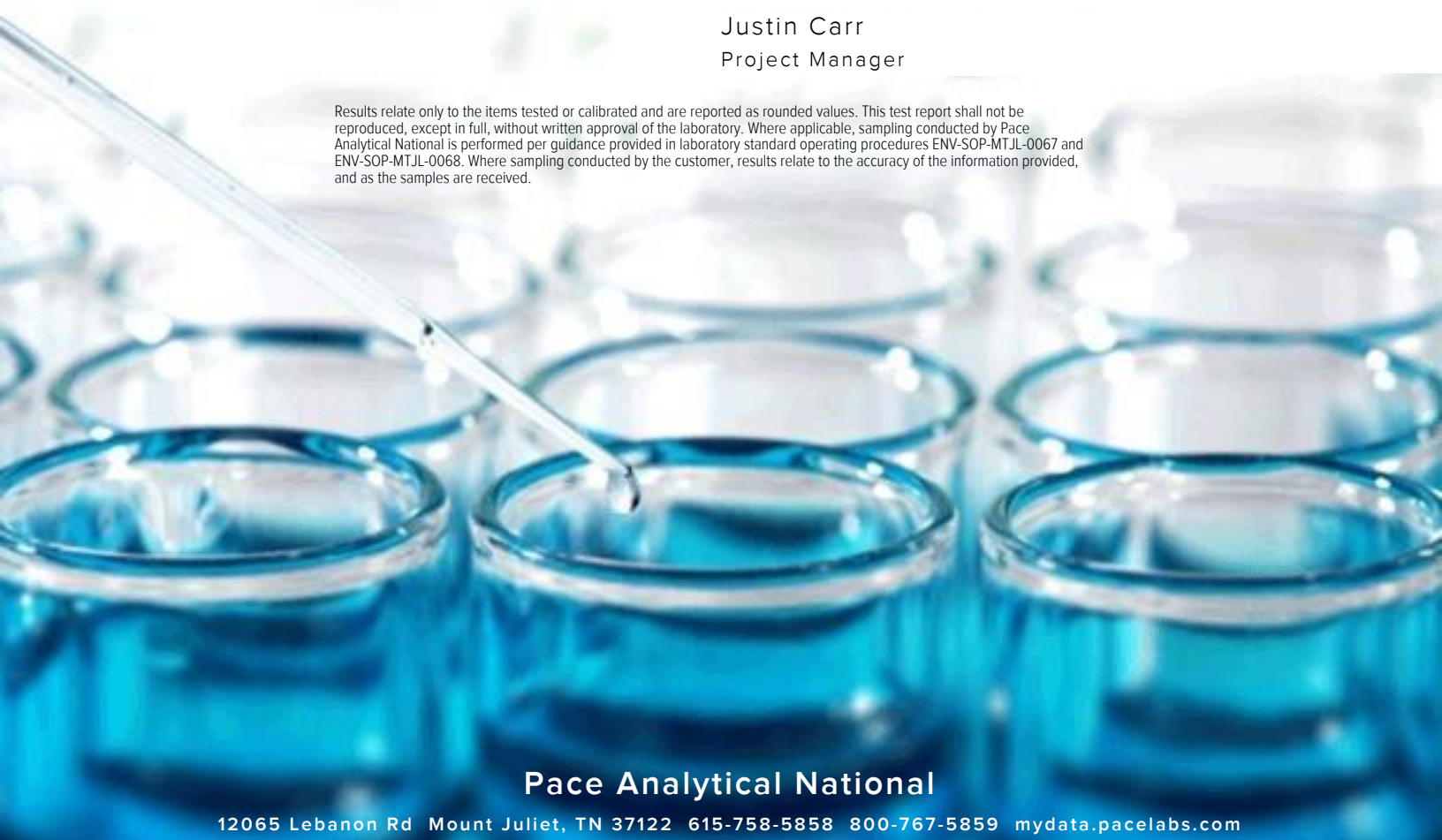
Report To: CTEH
5120 North Shore Drive
North Little Rock, AR 72118

Entire Report Reviewed By:



Justin Carr
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

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TABLE OF CONTENTS

| | | |
|---|---|---|
| Cp: Cover Page | 1 |  |
| Tc: Table of Contents | 2 |  |
| Ss: Sample Summary | 3 |  |
| Cn: Case Narrative | 4 |  |
| Sr: Sample Results | 5 |  |
| GACO0502T129-1S001 L1854753-01 | 5 |  |
| Qc: Quality Control Summary | 6 |  |
| Radiochemistry by Method DOE Ga-01-R/901.1 | 6 |  |
| Gl: Glossary of Terms | 7 |  |
| Al: Accreditations & Locations | 8 |  |
| Sc: Sample Chain of Custody | 9 |  |

SAMPLE SUMMARY

GACO0502T129-1S001 L1854753-01 Solids and Chemical Materials

Collected by: M. Beck
Collected date/time: 05/02/25 08:50
Received date/time: 05/03/25 14:00

| Method | Batch | Dilution | Preparation date/time | Analysis date/time | Analyst | Location |
|--|-----------|----------|-----------------------|--------------------|---------|----------------|
| Radiochemistry by Method DOE Ga-01-R/901.1 | WG2507033 | 1 | 05/04/25 14:33 | 05/05/25 11:12 | ZRG | Mt. Juliet, TN |

¹Cp

²Tc

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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.



Justin Carr
Project Manager

¹Cp

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Radiochemistry by Method DOE Ga-01-R/901.1

| Analyte | Result | Qualifier | 2 sigma CE | TPU | MDA | Lc | Analysis Date | Batch |
|-----------------------|--------|-----------|------------|-------|-------|--------|------------------|---------------------------|
| | pCi/g | | + / - | + / - | pCi/g | pCi/g | date / time | |
| Actinium-228 (Ra-228) | 0.814 | | 0.200 | 0.200 | 0.333 | 0.149 | 05/05/2025 11:12 | WG2507033 |
| Bismuth-214 (Ra-226) | 0.884 | | 0.156 | 0.156 | 0.194 | 0.0886 | 05/05/2025 11:12 | WG2507033 |
| Lead-214 | 0.873 | | 0.141 | 0.141 | 0.198 | 0.0916 | 05/05/2025 11:12 | WG2507033 |
| Thorium-234 (U-238) | -1.09 | U | 1.24 | 1.24 | 2.95 | 1.18 | 05/05/2025 11:12 | WG2507033 |
| Radium-226 (186 KeV) | 0.738 | J | 0.752 | 0.752 | 1.34 | 0.634 | 05/05/2025 11:12 | WG2507033 |

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R4209845-1 05/05/25 11:10

| Analyte | MB Result pCi/g | MB Qualifier | MB 2 sigma CE + / - | MB MDA pCi/g | MB Lc pCi/g |
|-----------------------|--------------------|--------------|------------------------|-----------------|----------------|
| Actinium-228 (Ra-228) | -0.0689 | ☹ | 0.248 | 0.630 | 0.266 |
| Americium-241 | 0.165 | ☹ | 0.217 | 0.391 | 0.184 |
| Bismuth-214 (Ra-226) | -0.0675 | ☹ | 0.158 | 0.364 | 0.159 |
| Cesium-137 | 0.0545 | ☹ | 0.0819 | 0.156 | 0.0648 |
| Cobalt-60 | 0.00831 | ☹ | 0.0439 | 0.180 | 0.0708 |
| Lead-214 | -0.0375 | ☹ | 0.120 | 0.309 | 0.136 |
| Radium-226 (186 KeV) | 1.08 | ☹ | 0.746 | 1.28 | 0.567 |
| Thorium-234 (U-238) | 1.14 | ☹ | 1.00 | 2.53 | 1.00 |

¹Cp

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L1854753-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1854753-01 05/05/25 11:12 • (DUP) R4209845-4 05/05/25 12:06

| 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) | 0.814 | 0.200 | 0.333 | 0.149 | 0.850 | 0.254 | 0.449 | 0.196 | 4.25 | 0.110 | | 20 | 3 |
| Bismuth-214 (Ra-226) | 0.884 | 0.156 | 0.194 | 0.0886 | 0.899 | 0.186 | 0.213 | 0.0935 | 1.63 | 0.0597 | | 20 | 3 |
| Lead-214 | 0.873 | 0.141 | 0.198 | 0.0916 | 0.848 | 0.162 | 0.241 | 0.110 | 2.94 | 0.118 | | 20 | 3 |
| Radium-226 (186 KeV) | 0.738 | 0.752 | 1.34 | 0.634 | 1.40 | 0.676 | 1.14 | 0.531 | 62.0 | 0.655 | | 20 | 3 |
| Thorium-234 (U-238) | -1.09 | 1.24 | 2.95 | 1.18 | -0.554 | 0.988 | 2.21 | 0.875 | 0.000 | 0.337 | ☹ | 20 | 3 |

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

(LCS) R4209845-2 05/05/25 11:11 • (LCSD) R4209845-3 05/05/25 11:42

| 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 | 34.0 | 37.2 | 92.2 | 101 | 80.0-120 | | | 8.93 | 20 |
| Cesium-137 | 53.8 | 55.1 | 58.1 | 102 | 108 | 80.0-120 | | | 5.35 | 20 |
| Cobalt-60 | 62.9 | 62.6 | 67.2 | 99.5 | 107 | 80.0-120 | | | 7.15 | 20 |

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. |

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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.

¹ Cp

² Tc

³ Ss

⁴ Cn

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⁶ Qc

⁷ Gl

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⁹ Sc

