Stoller
Hanford Office

DOE-EM/GJ968-2005

# 699-50-74 (C4697)
## Log Data Report

## Borehole Information:

| **Borehole:** 699-50-74 (C4697) | | | **Site:** Not Available | | |
|---|---|---|---|---|---|
| **Coordinates (WA St Plane)** | | **GWL[1] (ft) :** 217.85 | | **GWL Date:** 07/22/05 | |
| **North** | **East** | **Drill Date** | **Ground level Elevation** | **Total Depth (ft)** | **Type** |
| Not available | Not available | 07/05 | Not available | 338 | Becker |

## Casing Information:

| Casing Type | Stickup (ft) | Outer Diameter (in.) | Inside Diameter (in.) | Thickness (in.) | Top (ft) | Bottom (ft) |
|---|---|---|---|---|---|---|
| Steel | 3.25 | 6.24 | 6.0 | 0.12 | 3.25 | 338 |
| Steel | 3.0 | 9.0 | 8.0 | 0.50 | 3.0 | 338 |

## Borehole Notes:

The Becker drilling system uses a dual-wall casing. Air flows down the annulus and cuttings are returned inside the inner casing. Total wall thickness is 0.620 in., increasing to 1.115 in. at the casing joints, which occur at 10-ft intervals. The casing dimensions are derived from published values for Becker drill casing. Logging data acquisition is referenced to the ground surface.

## Logging Equipment Information:

| **Logging System:** Gamma 1E | | | **Type:** SGLS (70%) SN:34TP40587A |
|---|---|---|---|
| **Effective Calibration Date:** 03/04/05 | | **Calibration Reference:** | DOE/EM-GJ864-2005 |
| | | **Logging Procedure:** | MAC-HGLP 1.6.5, Rev. 0 |

## Spectral Gamma Logging System (SGLS) Log Run Information:

| **Log Run** | **1** | **2 Repeat** | **3** | | |
|---|---|---|---|---|---|
| Date | 07/21/05 | 07/22/05 | 07/22/05 | | |
| Logging Engineer | Spatz | Spatz | Spatz | | |
| Start Depth (ft) | 338.0 | 185.0 | 150.0 | | |
| Finish Depth (ft) | 151.0 | 151.0 | 0.0 | | |
| Count Time (sec) | 50 | 50 | 50 | | |
| Live/Real | R | R | R | | |
| Shield (Y/N) | N | N | N | | |
| Sample interval (ft) | 1.0 | 1.0 | 1.0 | | |
| ft/min | N/A[2] | N/A | N/A | | |
| Pre-Verification | AE081CAB | AE082CAB | AE082CAB | | |
| Start File | AE081000 | AE082000 | AE082035 | | |
| Finish File | AE081187 | AE082034 | AE082185 | | |

| | | | | | |
|---|---|---|---|---|---|
| Post-Verification | AE081CAA | AE082CAA | AE082CAA | | |
| Depth Return Error (in.) | - 1 | N/A | + 1 | | |
| Comments | Fine gain adjustment made after file -152 | No fine gain adjustment made | No fine gain adjustment made | | |

## Logging Operation Notes:

Logging was conducted with a centralizer on the sonde and measurements are referenced to ground surface. A repeat section was collected in this borehole to evaluate system performance.

## Analysis Notes:

| **Analyst:** | Henwood | **Date:** | 08/23/05 | **Reference:** | GJO-HGLP 1.6.3, Rev. 0 |
|---|---|---|---|---|---|

Pre-run and post-run verifications for the logging system were performed before and after data acquisition. Acceptance criteria were met.

Casing thickness (additive for the 6- and 9-in. casings) is approximately 0.620-in. The combined thickness at casing joints is 1.115-in. This thickness results in a significant reduction in gamma activity detection as the detector passes by a casing joint. However, it is not practical to correct individual data points for the effect of casing joints. The influence of the thick joints is apparent on the total gamma where reduced count rates are exhibited at approximately 10-ft depth intervals.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to extract the total gamma count rate from individual files. No corrections are made for dead time, casing, or water.

## Log Plot Notes:

Log plots are provided for the total gamma and dead time. A repeat log section is also presented.

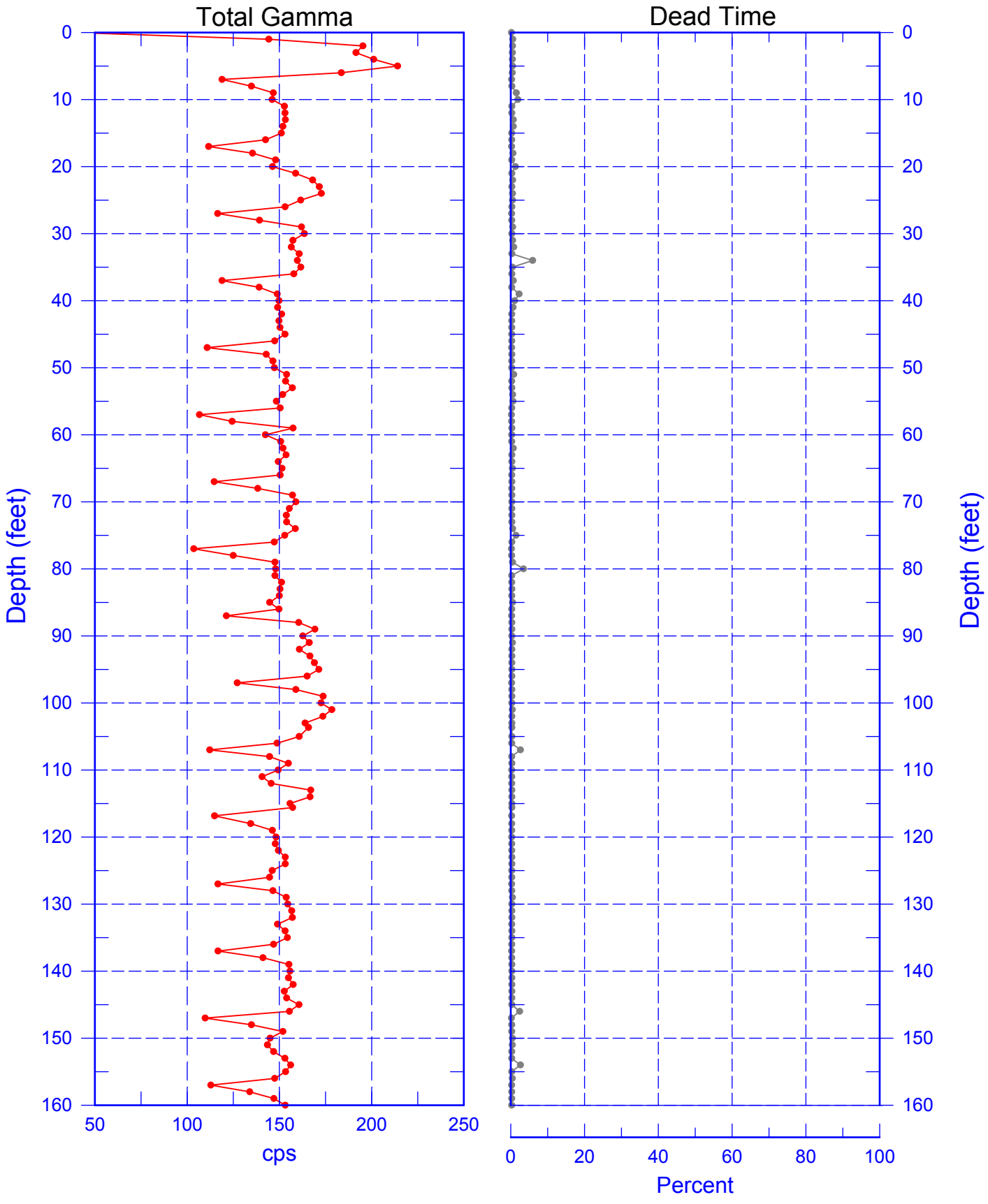
## Results and Interpretations:

A decrease in gamma activity occurred at each casing joint, where the increase in wall thickness resulted in greater attenuation of gamma activity. No anomalous gamma activity was observed. This observation suggests no significant concentrations of man-made radionuclides.

The repeat section indicates good agreement of the total count rate.

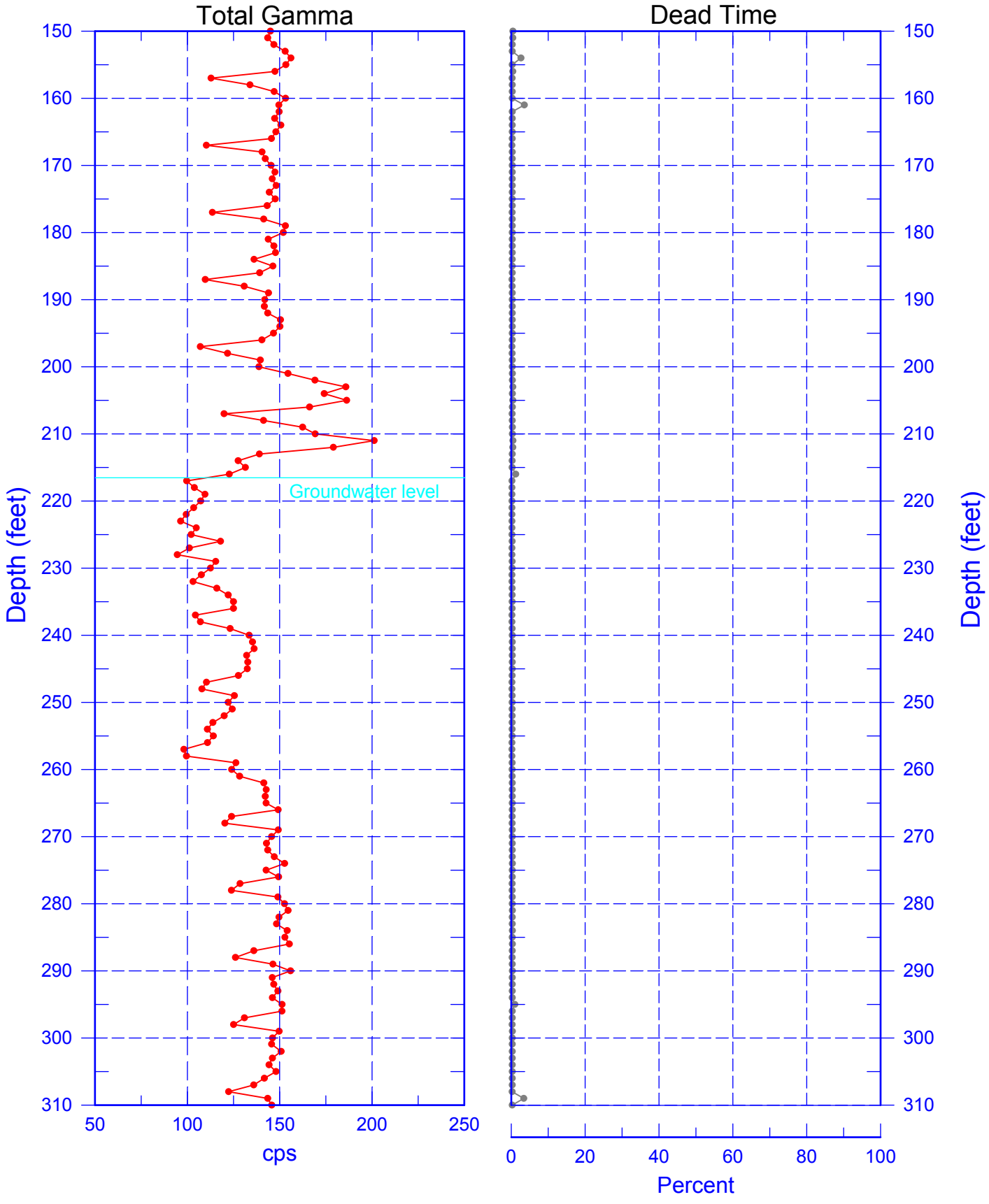
[1] GWL – groundwater level
[2] N/A – not applicable

# 699-50-74 (C4697)
# Total Gamma & Dead Time



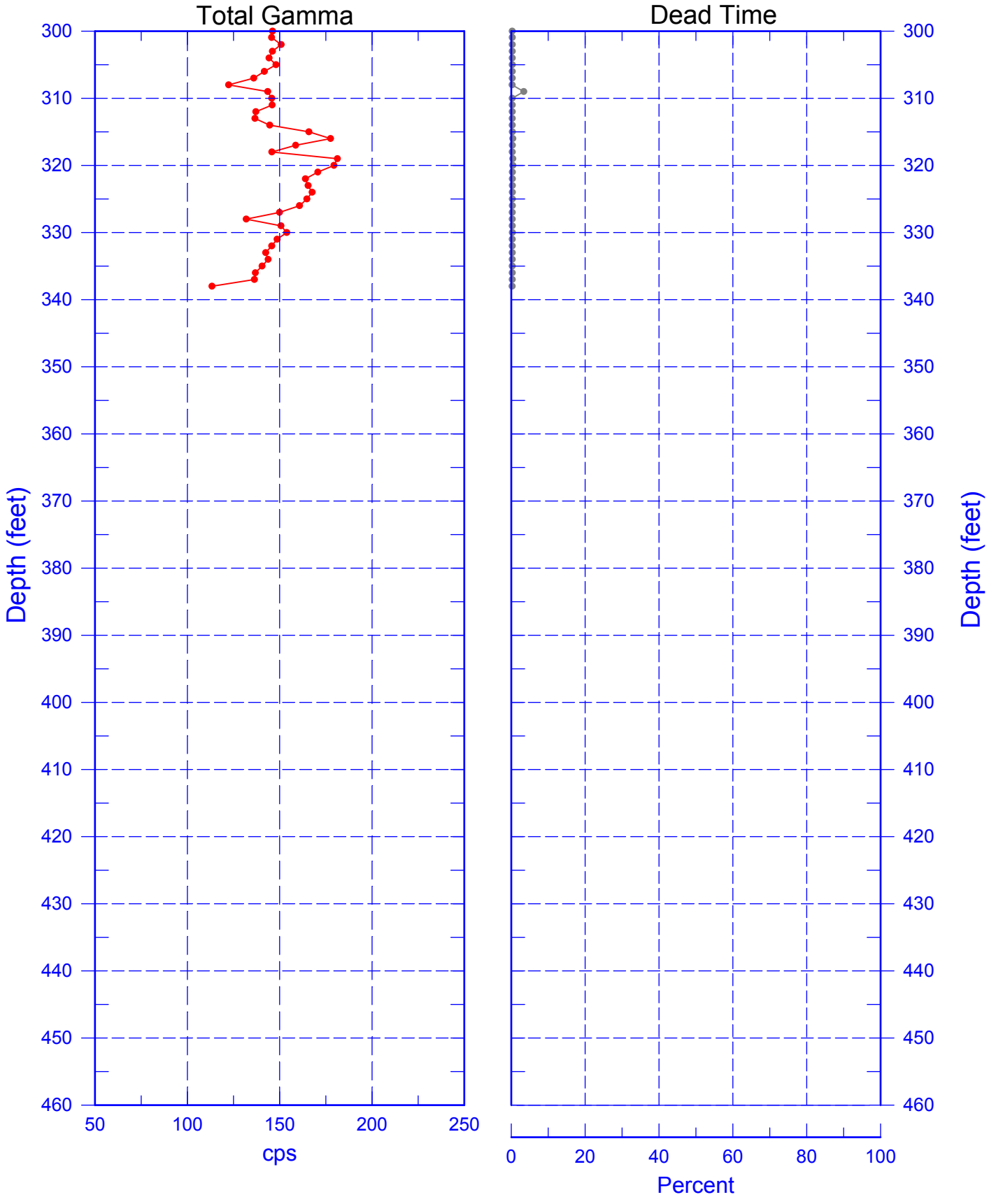

Reference - Ground Surface

# 699-50-74 (C4697)
# Total Gamma & Dead Time



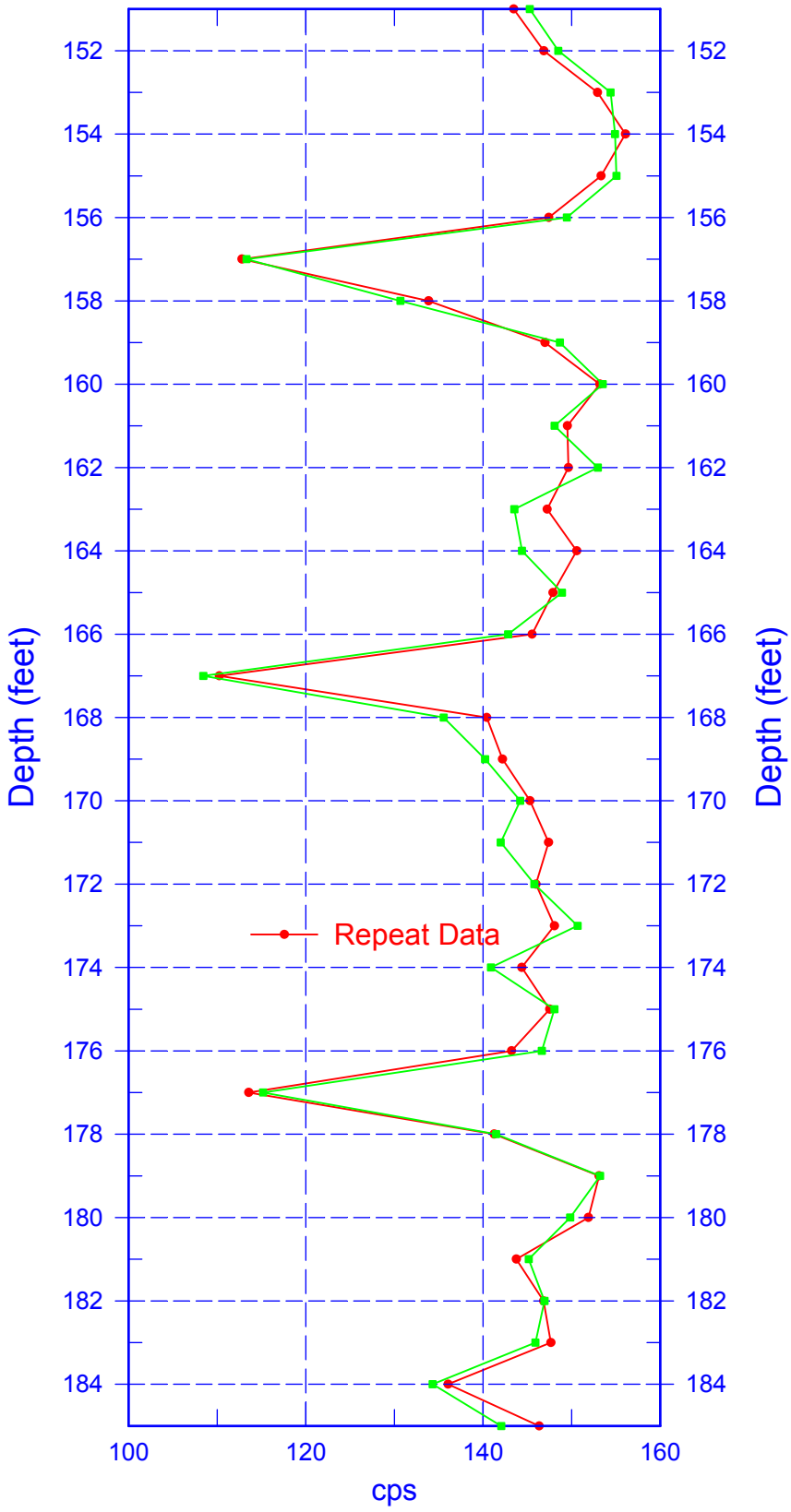

Reference - Ground Surface

# 699-50-74 (C4697)
## Total Gamma & Dead Time




Reference - Ground Surface

# 699-50-74 (C4697)
## Total Gamma Repeat Section




Reference - Ground Surface