

299-E26-69 (A6662)
Log Data Report

Borehole Information:

Borehole: 299-E26-69 (A6662)		Site: 216-A-24 Crib			
Coordinates (WA St Plane)		GWL¹ (ft): None		GWL Date: 10/27/05	
North (m)	East (m)	Drill Date	Ground Level Elevation (ft)	Total Depth (ft)	Type
136433.956	575728.924	08/83	639.70	33	Cable

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Welded Steel	1.2	6 5/8	6 1/8	1/4	1.2	33

Borehole Notes:

Casing diameter and casing stickup measurements were acquired by the logging engineer using a caliper and steel tape. Measurements were rounded to the nearest 1/16 in.

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			
Date	11/1/05	11/1/05			
Logging Engineer	Pearson	Pearson			
Start Depth (ft)	32.0	10.0			
Finish Depth (ft)	2.0	5.0			
Count Time (sec)	100	100			
Live/Real	R	R			
Shield (Y/N)	N	N			
MSA Interval (ft)	1.0	1.0			
ft/min	N/A ²	N/A			
Pre-Verification	AE132CAB	AE132CAB			
Start File	AE133000	AE133031			
Finish File	AE133030	AE133036			
Post-Verification	AE133CAA	AE133CAA			
Depth Return Error (in.)	N/A	0.0			

Log Run	1	2 Repeat			
Comments	No fine gain adjustment.	No fine gain adjustment.			

Logging Operation Notes:

Logging was conducted with a centralizer on the sonde. Logging data acquisition is referenced to the top of casing. A repeat section was collected in this borehole to evaluate system performance.

Analysis Notes:

Analyst:	Pope	Date:	12/09/05	Reference:	GJO-HGLP 1.6.3, Rev. 0
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Pre-run and post-run verifications for the logging system were performed before and after the day’s data acquisition. The acceptance criteria were met.

A casing correction for 0.25-in.-thick casing was applied to the log data.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated with an EXCEL worksheet template identified as G1EMar05.xls using efficiency functions and corrections for casing, water, and dead time as determined from annual calibrations. No corrections for dead time or water were necessary.

1994 RLS data were acquired using ground surface as the zero-depth reference. The RLS depths were adjusted upward by 1.2 ft to match the top-of-casing zero-depth reference of the 2005 SGLS log. The RLS data were decayed to 2005 for comparison with the recent SGLS data.

Results and Interpretations:

¹³⁷Cs was the man-made radionuclide detected in this borehole. ¹³⁷Cs was detected continuously throughout the borehole, with the exceptions of 3.0, 4.0, and 28.0 ft (below top of casing). The maximum concentration was measured at approximately 46 pCi/g at 9.0 ft.

The repeat section indicates good agreement of the naturally occurring KUT and ¹³⁷Cs concentrations, with one exception. At 8.96 ft (depth as recorded by logging software) in the original log, the measured ¹³⁷Cs (662 keV) count rate is approximately 112 cps less than the count rate at 9.0 ft in the repeat section. The repeat data for the 9.0-ft depth yield a much closer match with the 1994 ¹³⁷Cs contamination profile, which otherwise shows good agreement with the 2005 ¹³⁷Cs profile above and below 9.0 ft. Therefore, for plots produced for this report, repeat data have been substituted for original data from 5.0 to 10.0 ft. This discrepancy is believed to result from an error in the depth control function of the CASSIS logging software. The erroneous depth value (8.96 ft instead of 9.00 ft) is consistent with a software error.

The comparison of SGLS and RLS ¹³⁷Cs concentrations shows good agreement after correcting for decay, indicating no significant changes have occurred since 1994.

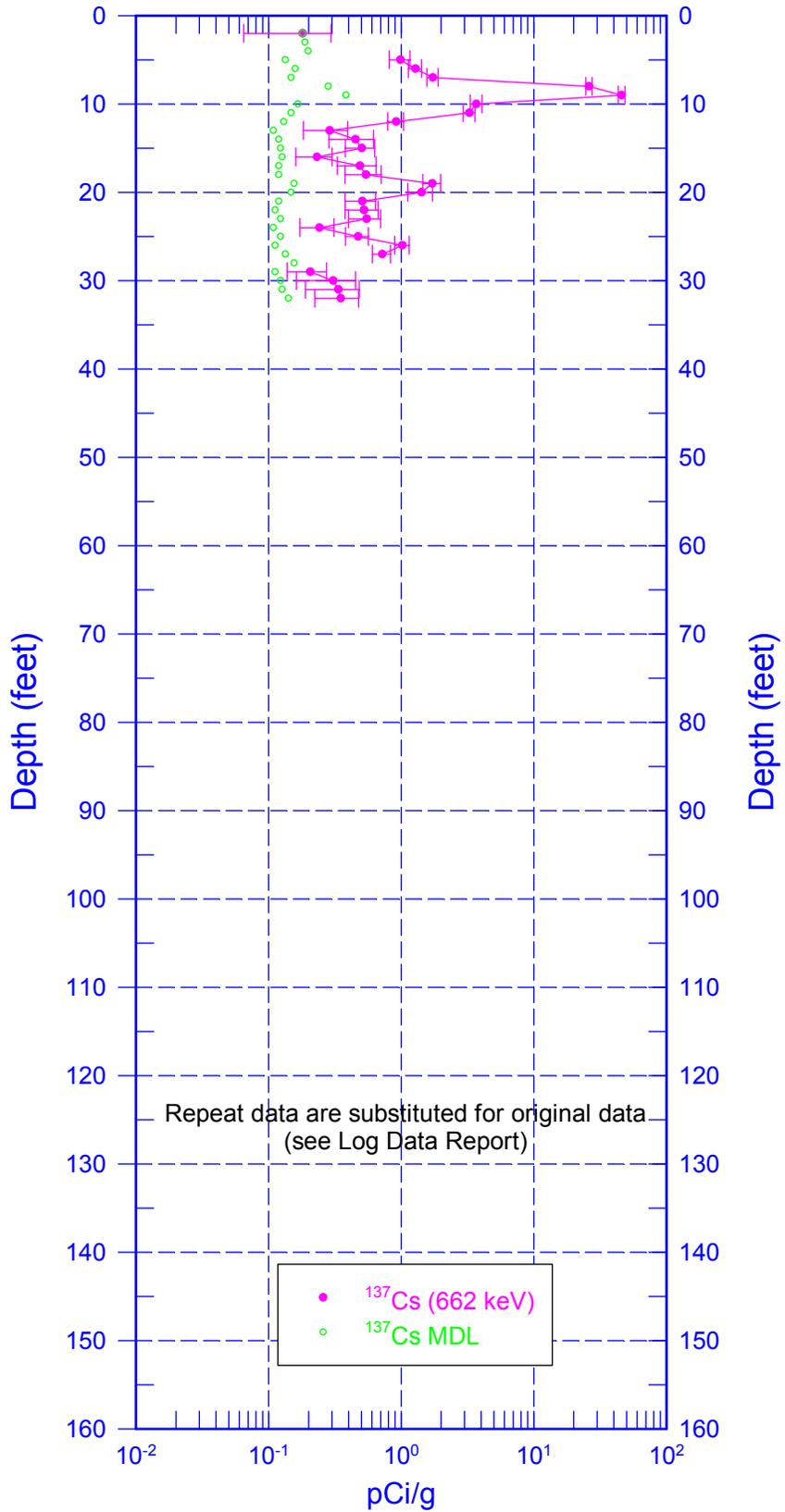
List of Plots:

Man-Made Radionuclides
Natural Gamma Logs
Combination Plot
Total Gamma and Dead Time
RLS (1994)/SGLS Man-Made Comparison Plot
Repeat Section of Man-Made Radionuclides
Repeat Section of Natural Gamma Logs

¹ GWL – groundwater level

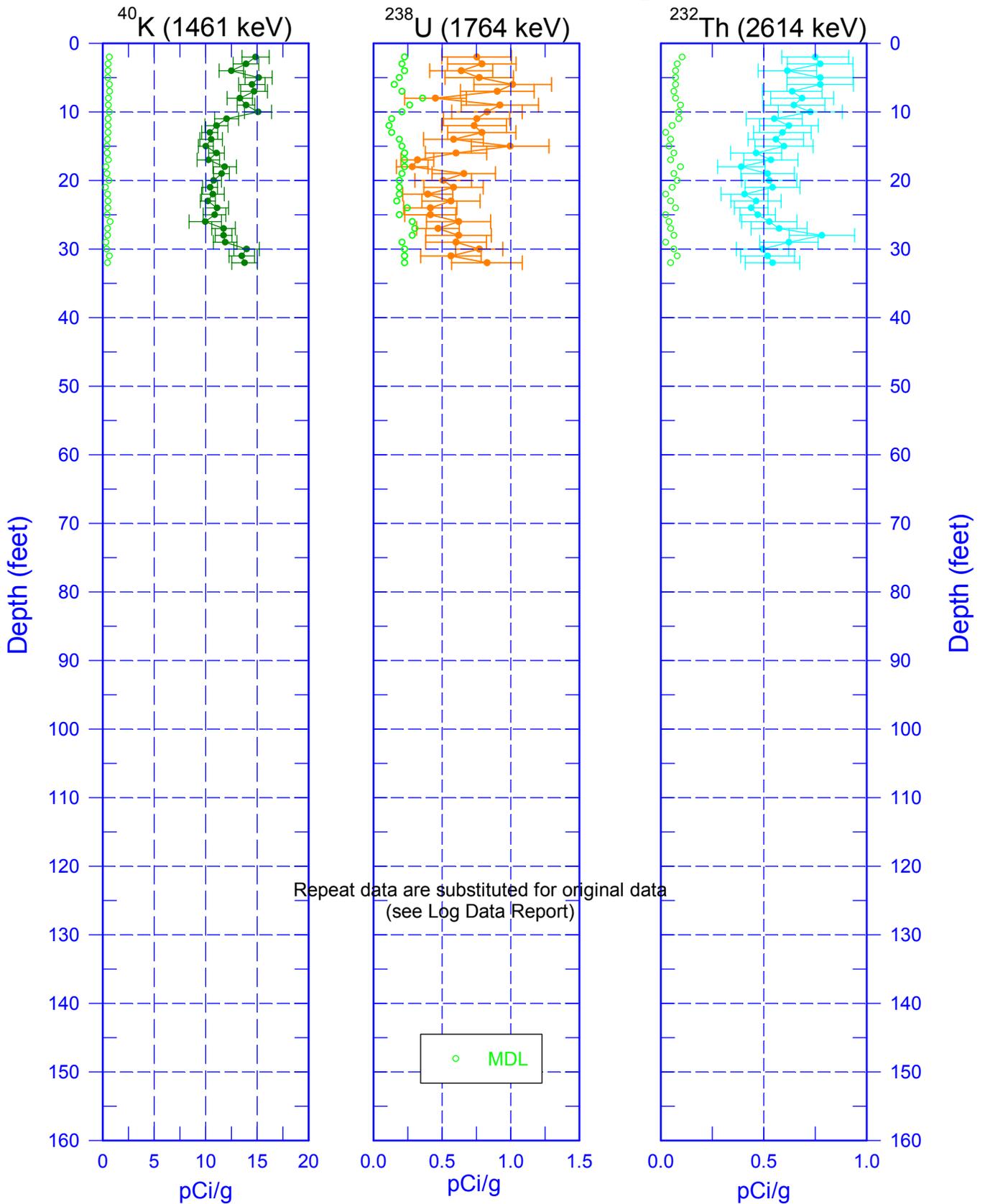
² N/A – not applicable

299-E26-69 (A6662) Man-Made Radionuclides



Zero Reference - Top of Casing

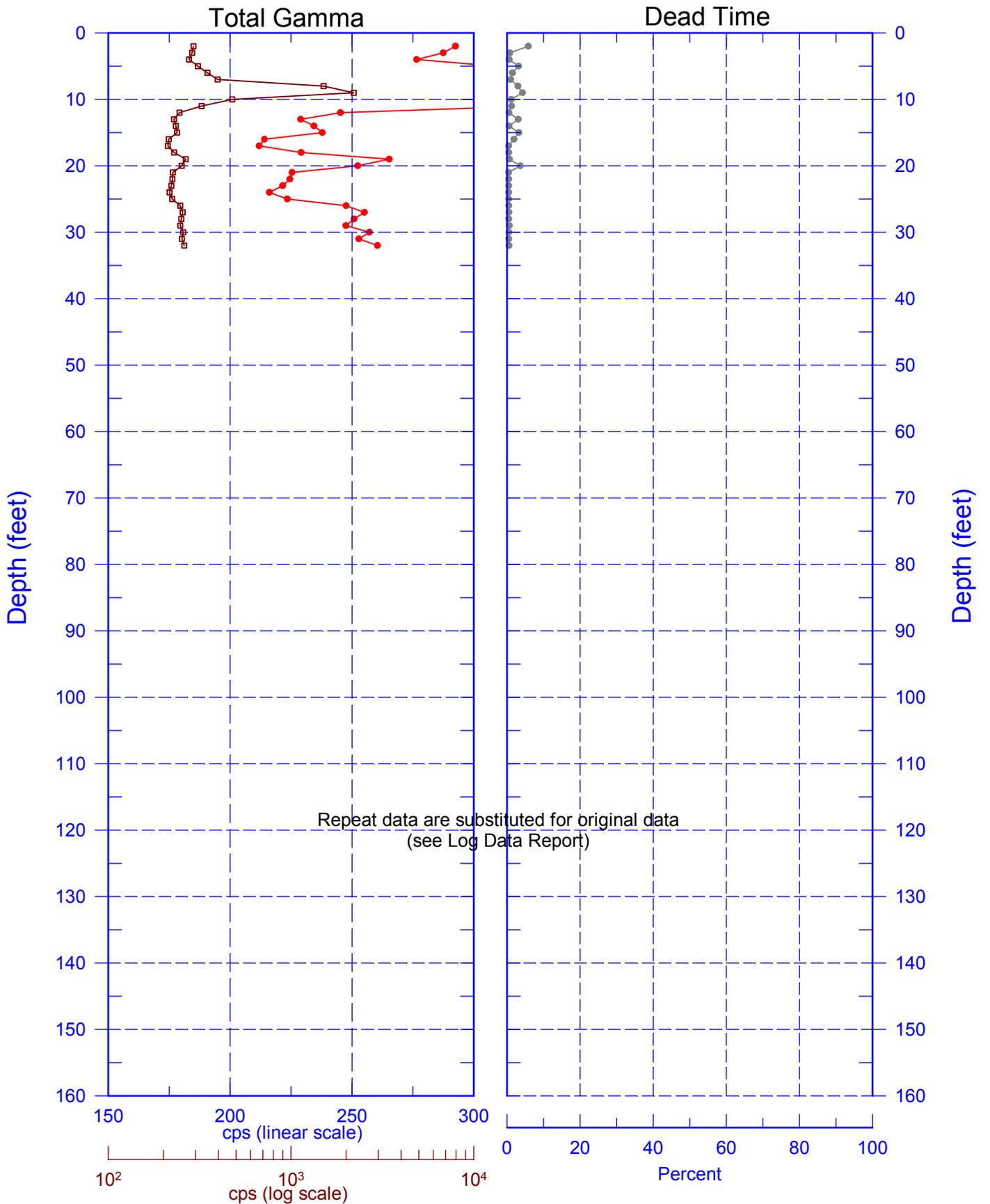
299-E26-69 (A6662) Natural Gamma Logs



Zero Reference = Top of Casing

299-E26-69 (A6662)

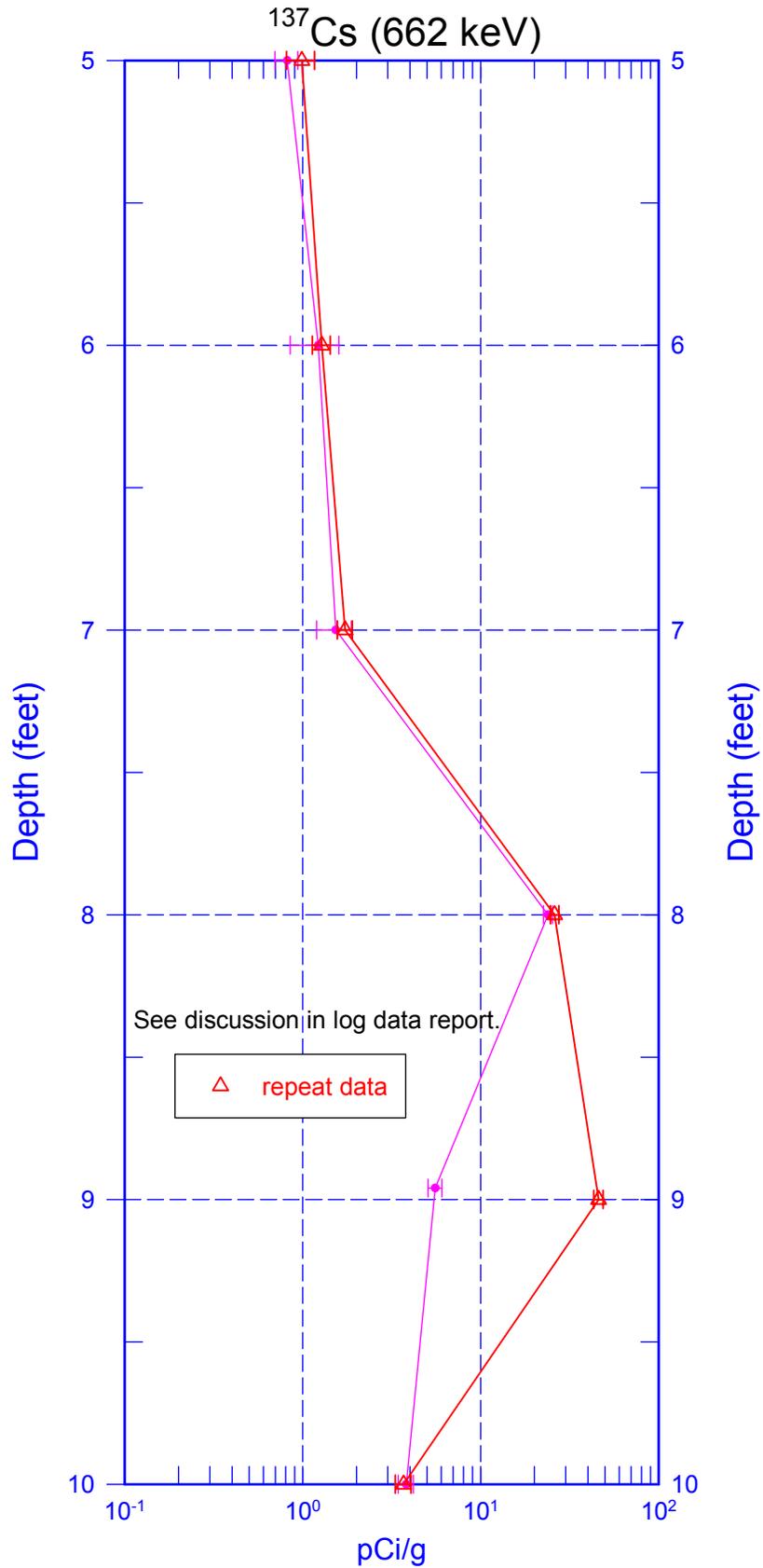
Total Gamma & Dead Time



Reference - Top of Casing

299-E26-69 (A6662)

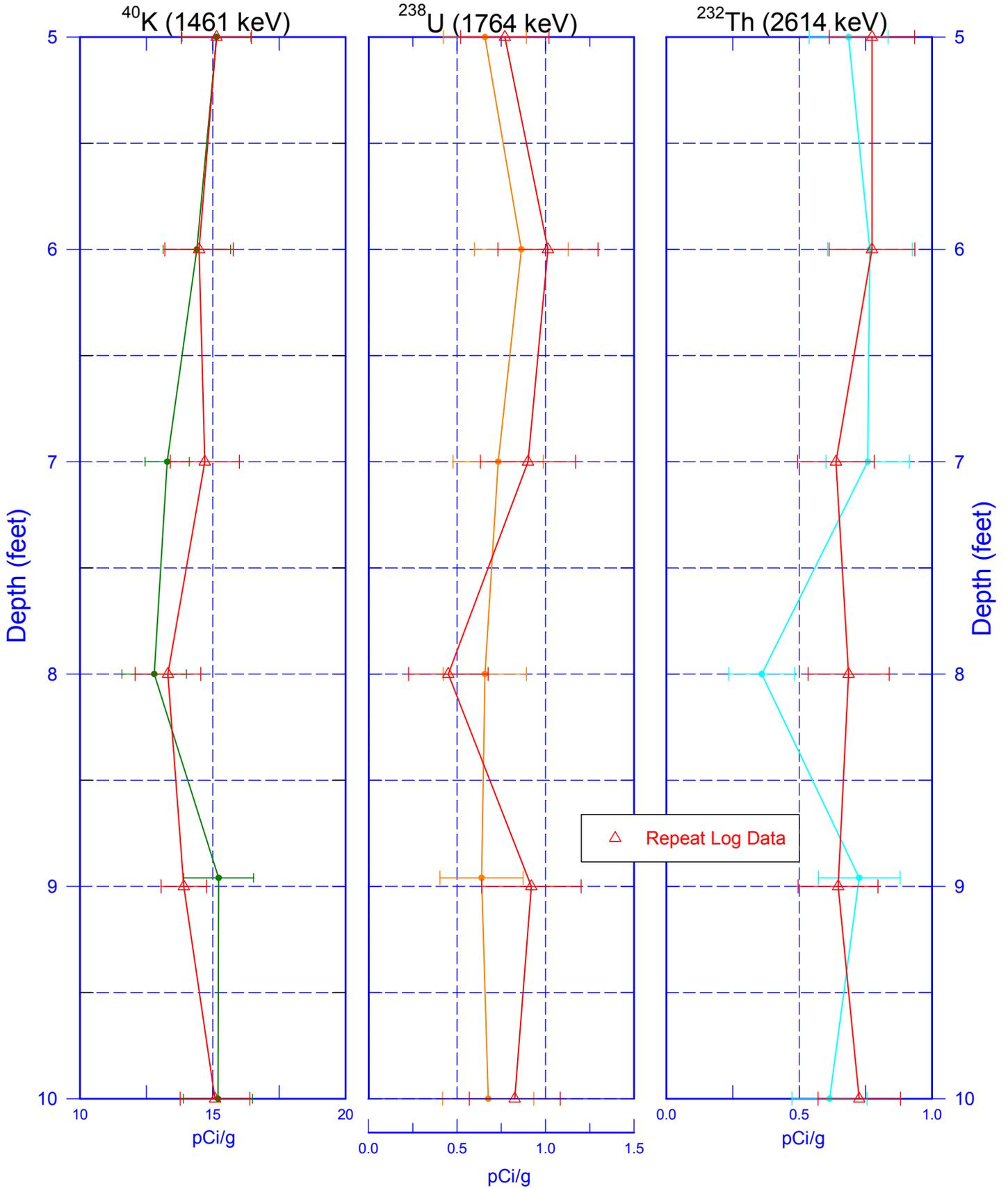
Repeat of Man-Made Radionuclides



Zero Reference - Top of Casing

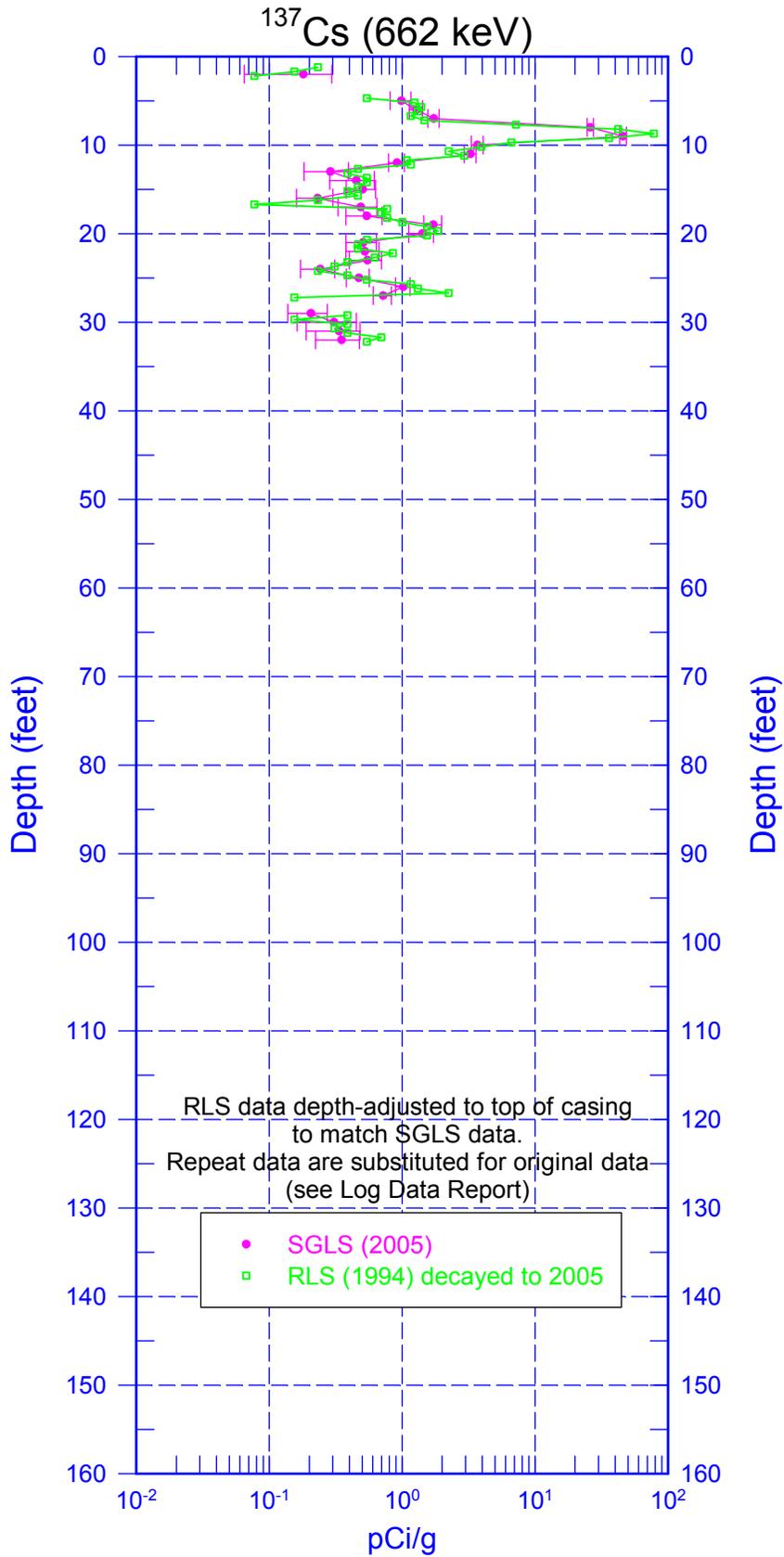
299-E26-69 (A6662)

Repeat Section of Natural Gamma Logs



Zero Reference - Top of Casing

299-E26-69 (A6662) SGLS & RLS Comparison



Zero Reference - Top of Casing