Stoller
Hanford Office

DOE-EM/GJ1278-2006

299-W10-29 (C4988)
Log Data Report

Borehole Information:

Borehole:	299-W10-29 (C4988)		Site:	LLWMA-3	
Coordinates (WA St Plane)		GWL[1] (ft):	None	GW Date:	03/31/06
North	East	Drill Date	TOC Elevation	Total Depth (ft)	Type
Not Available	Not Available	03/06	Not Available	282	Becker

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Steel	?	6.24	6.0	0.12	?	282
Steel	7.5	9.0	8.0	0.50	7.5	282

Borehole Notes:

The Becker drilling system uses a dual-wall casing. Air is forced 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 that 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 4A		Type:	SGLS (70%) SN: 34TP20893A
Effective Calibration Date:	05/11/05	Calibration Reference:	DOE/EM-GJ891-2005	
		Logging Procedure:	MAC-HGLP 1.6.5, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat		
Date	03/06/06	03/06/06		
Logging Engineer	Spatz	Spatz		
Start Depth (ft)	282.0	30.0		
Finish Depth (ft)	1.0	11.0		
Count Time (sec)	NA	NA		
Live/Real	R	R		
Shield (Y/N)	N	N		
Sample interval (ft)	1.0	1.0		
ft/min	1.0	1.0		
Pre-Verification	DA081CAB	DA081CAB		
Start File	DA081000	DA081283		

Log Run	1	2 Repeat		
Finish File	DA081282	DA081313		
Post-Verification	DA081CAA	DA081CAA		
Depth Return Error (in.)	0.0	0.0		
Comments	Fine-gain adjustment made at bottom of borehole, and after files 003 and 047.	Repeat section.		

Logging Operation Notes:

- Pre- and post-survey verification measurements were acquired in the Amersham verifier, SN 115.
- A centralizer was installed on the sonde during logging.
- Maximum borehole depth achieved was 282 ft.

Analysis Notes:

Analyst:	Pope	Date:	08/01/06	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 for all verification spectra, except for the resolution (full-width at half-max [FWHM]) of the 609 keV peak from the pre-run verification spectrum, which is approximately 17% above the upper-control limit. The resolutions and count rates of the 1460 and 2614 keV energy peaks are within control limits, as are all peaks from the post-run spectrum. Examination of the gamma energy spectra indicates that detector efficiency is within acceptance criteria, but that energy resolution may have been somewhat degraded. The high FWHM value reported for the 609 keV peak is due, at least in part, to the curve-fitting algorithm used to process the spectra. The pre-run verification spectrum is provisionally accepted.

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 plot, 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 occurs at each casing joint, where the increase in wall thickness results in greater attenuation of gamma activity. No anomalous gamma activity was observed. This observation suggests no significant concentrations of man-made radionuclides. An increase in total gamma activity from about 104 to perhaps 114 ft may be coincident with the fine-grain sediments and caliche in the lower Hanford Formation.

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

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

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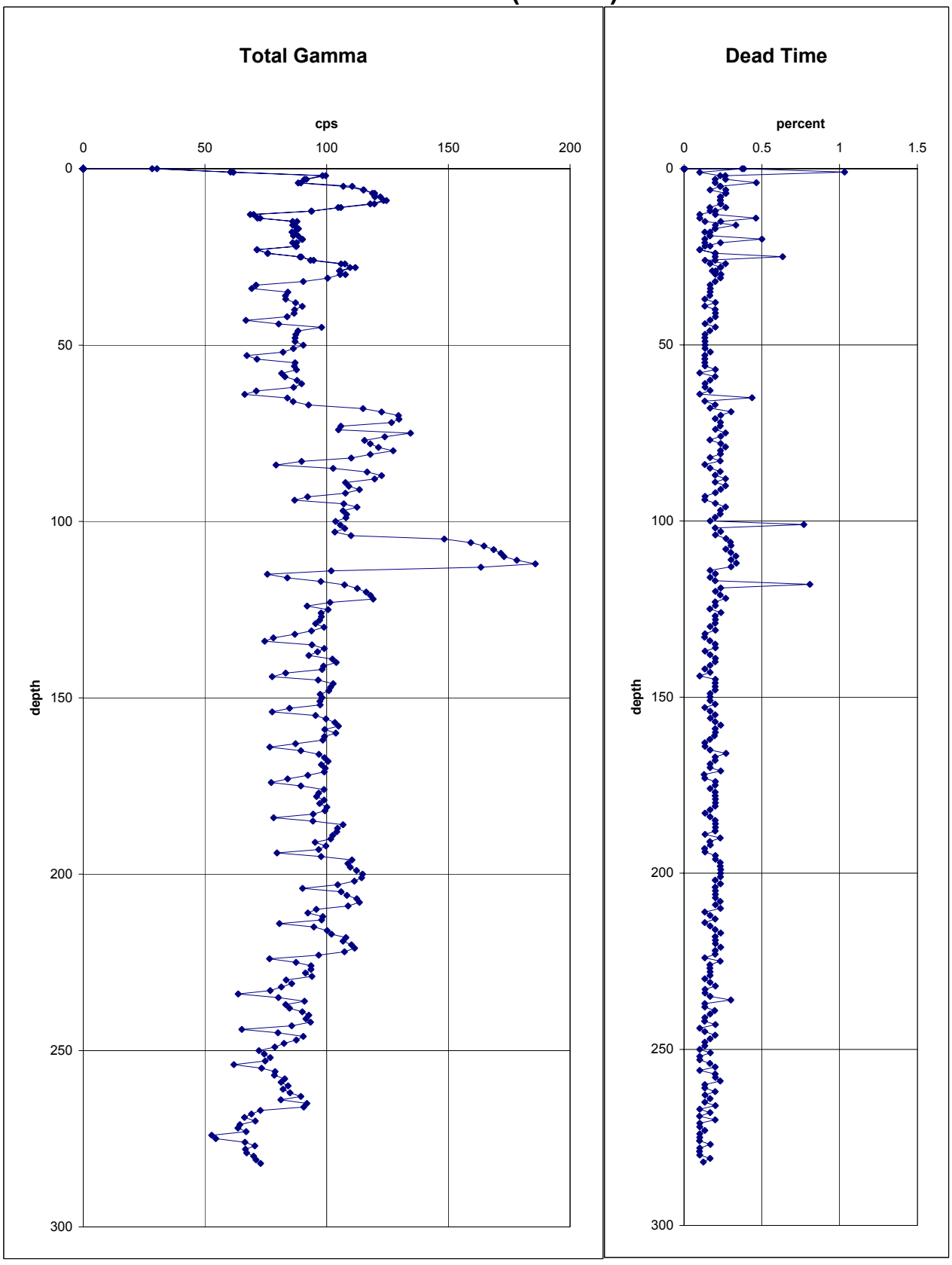

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