

**199-K-141 (C5303)  
Log Data Report**

**Borehole Information:**

<b>Borehole:</b> C5303 (199-K-141)			<b>Site:</b> 100K		
<b>Coordinates (WA St Plane)</b>		<b>GWL<sup>1</sup> (ft):</b> 73.5	<b>GWL Date:</b> 12/21/06		
<b>North (m)</b>	<b>East (m)</b>	<b>Drill Date</b>	<b>TOC Elevation</b>	<b>Total Depth (ft)</b>	<b>Type</b>
146818.49	569024.22	12/2006	142.32	113.0	Cable Tool

**Casing Information:**

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Threaded Steel	5.15	11 3/4"	10 1/4"	3/4"	-5.15	113

**Borehole Notes:**

Depth of borehole, casing information and depth to water were provided by the BTR. Logger measured casing using a steel tape and rounding to the nearest 1/16-in.

Zero reference = top of ground

**Logging Equipment Information:**

<b>Logging System:</b> Gamma4 N	<b>Type:</b> 60% HPGe SGLS
<b>Effective Calibration Date:</b> 04/06/06	<b>Calibration Reference:</b> DOE-EM/GJ1177-2006
<b>Serial No.:</b> 45-TP22010A	<b>Logging Procedure:</b> HGLP-MAN-002 Rev.0

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

Log Run	1	2	3 Repeat		
Date	12/21/06	12/22/06	12/22/06		
Logging Engineer	McClellan	McClellan	McClellan		
Start Depth (ft)	0.0	50.0	45.0		
Finish Depth (ft)	51.0	111.0	34.0		
Count Time (sec)	200 s	200 s	200 s		
Live/Real	R	R	R		
Shield (Y/N)	NA	NA	NA		
MSA Interval (ft)	1.0 ft	1.0 ft	1.0 ft		
ft/min	NA	NA	NA		
Pre-Verification	DN531CAB	DN541CAB	DN541CAB		
Start File	DN531000	DN541000	DN541062		
Finish File	DN531051	DN541061	DN541073		
Post-Verification	DN511CAA	DN541CAA	DN541CAA		
Depth Return Error (in.)	0	NA	1/2" low		
Comments	No fine gain adjustments.	No fine gain adjustments.	Repeat section		

**Logging Operation Notes:**

Data were collected using Gamma 4, HO 68B-3573. Pre- and post-survey verification measurements were acquired in the Amersham verifier, SN 115. The back of the logging truck was set-up facing northeast. A centralizer was installed on the sonde. The tool un-weighted at 111.6 ft

**Analysis Notes:**

<b>Analyst:</b>	LEGLER	<b>Date:</b>	8/22/2007	<b>Reference:</b>	GJO-HGLP 1.6.3, Rev. 0
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The pre- and post-run verification spectra met the acceptance criteria established for the system but verification spectra files DN531CAA and DN541CAA each had one acceptance criterion outside of control limits (LCL for 0609 cps and UCL for 0609 fwhm respectively).

A Casing correction factor for a 0.75-in. thick steel casing was applied during analysis. Water correction factors were also applied during analysis from 73.5 ft to total depth of borehole.

SLGLS spectra were processed in batch mode in APTEC SUPERVISOR to identify individual peaks and count rates. Concentrations were calculated with an EXCEL template identified as GN4Apr06.xls using an efficiency function and corrections for casing, dead time, and water as determined by annual calibrations.

**Results and Interpretations:**

The only man-made radionuclide detected in this borehole was Cs-137, which was detected at 84 ft near its MDL.

The KUT concentrations appear to bias high at depths where water is present, suggesting that water correction factors may be overcorrecting.

Repeat log section showed repeatability for depth and radionuclide concentrations, suggesting that the logging system was operating properly.

**List of Log Plots:**

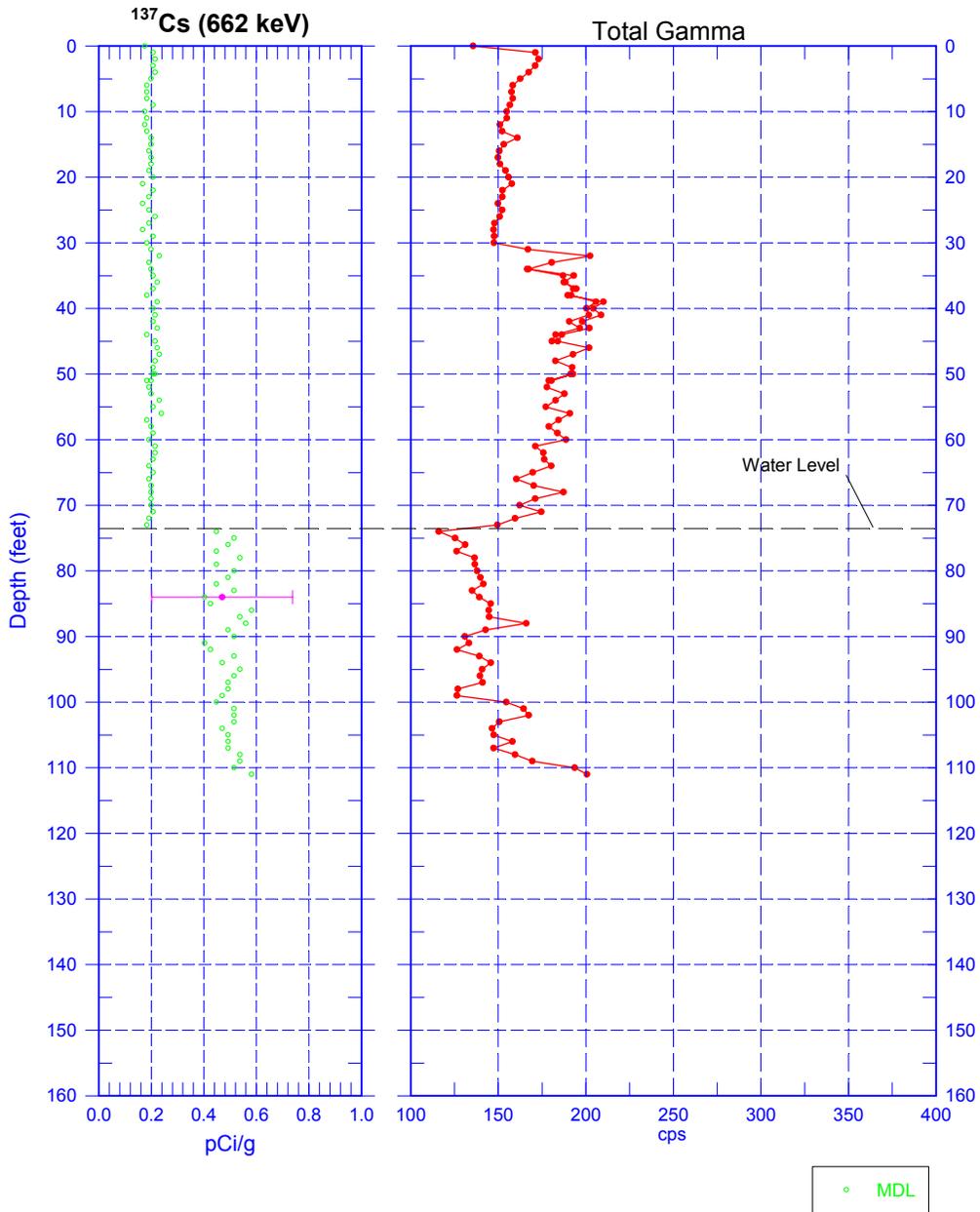
Depth Reference is top of casing  
Depth Scale - 20 ft/inch except for repeat logs

Man-made Radionuclides  
Natural Gamma Logs  
Combination Plot  
Total Gamma & Dead Time  
Repeat Section of Natural Gamma Logs

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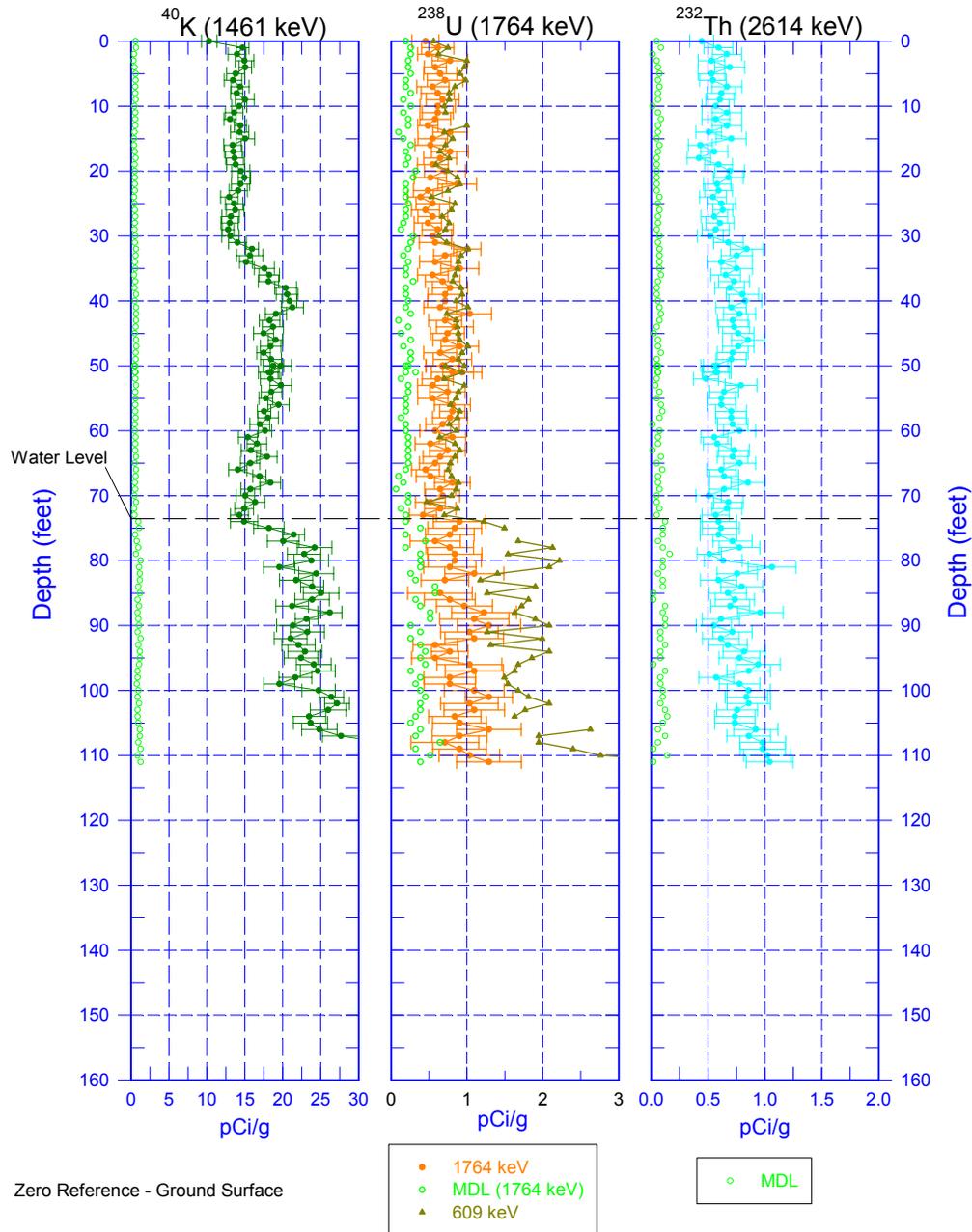
<sup>1</sup> GWL – groundwater level

**199-K-141 (C5303)  
Manmade Radionuclides**

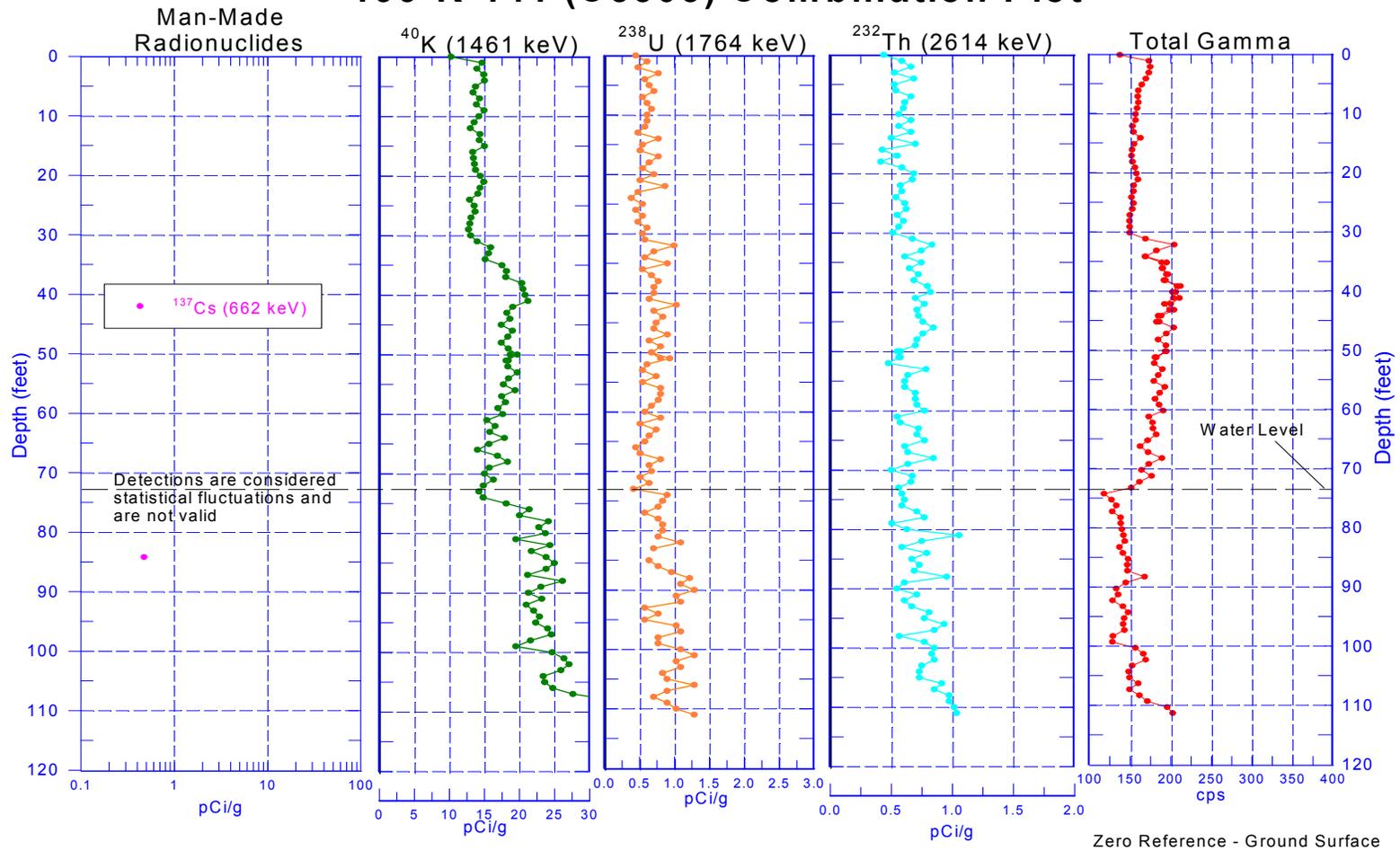


Zero Reference - Ground Surface

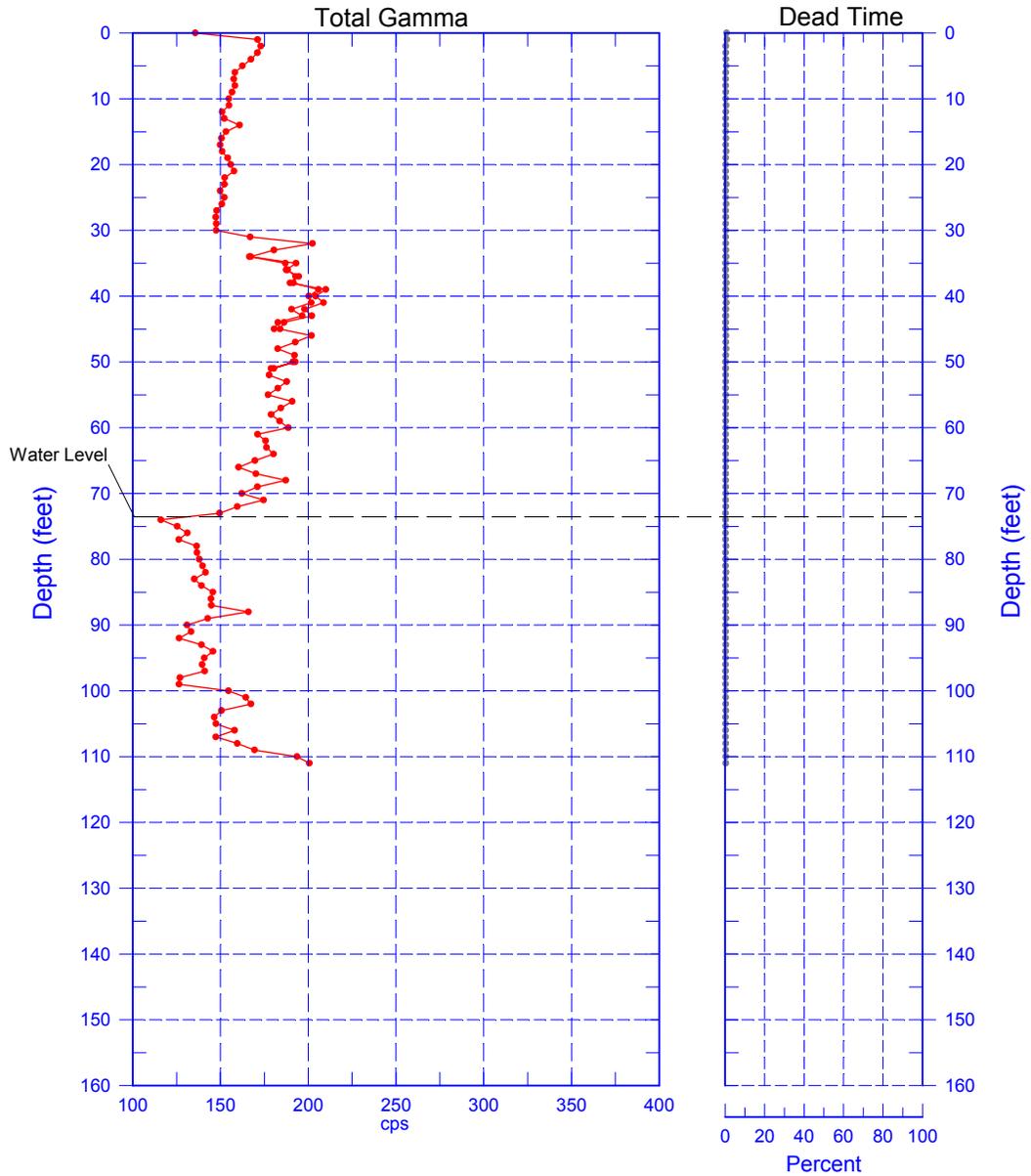
**199-K-141 (C5303)  
Natural Gamma Logs**



### 199-K-141 (C5303) Combination Plot



**199-K-141 (C5303)  
Total Gamma & Dead Time**



Reference - Ground Surface

**199-K-141 (C5303)**  
**Repeat Section of Natural Gamma Logs**

