



Borehole **40-04-08**

Log Event A

Borehole Information

Farm : <u>S</u>	Tank : <u>S-104</u>	Site Number : <u>299-W23-177</u>
N-Coord : <u>36,091</u>	W-Coord : <u>75,698</u>	TOC Elevation : <u>665.48</u>
Water Level, ft :	Date Drilled : <u>Unknown</u>	

Casing Record

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>48</u>	

Borehole Notes:

There is no driller's log or other information available to provide a construction date for this borehole; therefore, the date of construction is not known. On the basis of the borehole's location, depth, and construction, it is suspected that this borehole is the result of the aborted attempt to construct borehole 40-04-07. The driller's log for borehole 40-04-07 indicates that a borehole had been drilled to a depth of 52 ft when the driller "hit something solid" and a 6-in. section of "0.5-in. reinforcement steel" was brought to the ground surface. The drill rig was apparently moved to another location and borehole 40-04-07 was drilled at the new location. The driller's log for borehole 40-04-07 gives no indication as to the first location. If this scenario is correct, borehole 40-04-08 was drilled in May 1970. It is assumed that this borehole was not perforated or grouted.

The casing thickness is assumed to be 0.280 in., on the basis of the published thickness for schedule-40, 6-in. casing.

The zero depth reference for the SGLS logs is even with the ground surface.

Equipment Information

Logging System : <u>2</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>05/1996</u>	Calibration Reference : <u>GJPO-HAN-5</u>	Logging Procedure : <u>P-GJPO-1783</u>

Log Run Information

Log Run Number : <u>1</u>	Log Run Date : <u>05/24/1996</u>	Logging Engineer: <u>Bob Spatz</u>
Start Depth, ft.: <u>48.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>0.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



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Log Event A

Analysis Information

Analyst : D.L. Parker

Data Processing Reference : P-GJPO-1787

Analysis Date : 03/07/1997

Analysis Notes :

The borehole was logged in one log run using a centralizer. The pre- and post-survey field verification spectra met the acceptance criteria established for peak shape and system efficiency. The energy and peak-shape calibration from the pre- and post-survey field verification spectra were used to establish the channel-to-energy parameters used in processing the spectra acquired during log run one. The post-survey spectra were used for files 748A1000 through 748A1070, and the pre-survey spectra were used for files 748A1071 through 748A1096.

Casing correction factors for a 0.280-in.-thick casing were applied during the analysis.

Cs-137 was the only man-made radionuclide encountered in this borehole. Cs-137 contamination was detected almost continuously from the ground surface to a depth of 30 ft, intermittently from 32.5 to 37.5 ft, and continuously from 38.5 ft to the bottom of the borehole (48 ft). The maximum Cs-137 concentration was about 90 pCi/g at 7.5 ft.

The logs of the naturally occurring radionuclides show an increase in KUT concentrations at about 46 ft.

Details concerning the interpretation of data for this borehole are presented in the Tank Summary Data Report for tank S-104.

Log Plot Notes:

Separate log plots show the man-made and the naturally occurring radionuclides. The naturally occurring radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate concentrations.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detection limit (MDL). The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.

A combination plot includes both the man-made and naturally occurring radionuclides, the total-count log plot, as well as the Tank Farm gross-gamma log. The Tank Farm gross-gamma plot displays the latest available digital data. No attempt has been made to adjust the depths of the gross gamma log plot to coincide with the SGLS data.