



Borehole **40-07-04**

Log Event **A**

**Borehole Information**

Farm : <u>S</u>	Tank : <u>S-107</u>	Site Number : <u>299-W23-185</u>
N-Coord : <u>36,012</u>	W-Coord : <u>75,620</u>	TOC Elevation : <u>665.97</u>
Water Level, ft :	Date Drilled : <u>3/31/1974</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>100</u>	

**Borehole Notes:**

According to the driller's records, this borehole was not perforated or grouted. The top of the casing, which is the zero reference for the SGLS, is approximately 0.2 ft above the tank farm grade. The casing thickness is presumed to be 0.280 in., on the basis of published thickness for schedule-40, 6-in. steel tubing.

**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>06/10/1996</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>102.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>28.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>
Log Run Number : <u>2</u>	Log Run Date : <u>06/11/1996</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>29.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



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### Analysis Information

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Analyst : S.D. Barry

Data Processing Reference : P-GJPO-1787

Analysis Date : 03/14/1997

#### **Analysis Notes :**

This borehole was logged in two log runs. The pre- and post-survey field verification spectra met the acceptance criteria established for the peak shape and detector efficiency, confirming that the SGLS was operating within specifications. The energy calibration and peak-shape calibration from these spectra were used to establish the channel-to-energy parameters used in processing the spectra acquired during the logging operation.

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

The only man-made radionuclide detected around this borehole was Cs-137. The presence of Cs-137 was measured from the ground surface to 2 ft and at the bottom of the borehole. The maximum Cs-137 concentration was 8 pCi/g at the ground surface, which is considered an apparent concentration.

The K-40 and U-238 log plots show a region of elevated concentration values between 48 and 56 ft. Beginning at about 60 ft, the K-40 concentration values increase from 12 to 16 pCi/g.

Additional information and interpretations of log data are included in the main body of the Tank Summary Data Report for tank S-107.

#### **Log Plot Notes:**

Separate log plots show the man-made and the naturally occurring radionuclides. The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the 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 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 the man-made and natural radionuclides, the total gamma derived from the spectral data, and the Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data. No attempt has been made to adjust the depths of the gross gamma logs to coincide with the SGLS data.