

Borehole

41-05-07

Log Event A

Borehole Information

Farm : <u>SX</u>	Tank : <u>SX-105</u>	Site Number : <u>299-W23-126</u>
N-Coord : <u>35,410</u>	W-Coord : <u>75,792</u>	TOC Elevation : <u>661.92</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>130</u>	

Equipment Information

Logging System : <u>2</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>03/1995</u>	Calibration Reference : <u>GJPO-HAN-1</u>	

Logging Information

Log Run Number : <u>1</u>	Log Run Date : <u>5/16/1995</u>	Logging Engineer: <u>Kim Benham</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>83.0</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>5/19/1995</u>	Logging Engineer: <u>Kim Benham</u>
Start Depth, ft.: <u>123.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>82.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

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Analysis Information

Analyst : D.C. StromswoldData Processing Reference : Data Analysis Manual Ver. 1Analysis Date : 8/10/1995**Analysis Notes :**

This borehole was deepened from 75 ft to 135 ft in 1973. No records indicate subsequent modifications; however, the borehole was probably plugged with bentonite in the bottom 5 ft.

The borehole was logged in two runs: run 1 from 0 to 83 ft and run 2 from 123 to 82 ft. Counting time at each 0.5-ft station was 100-s.

The casing thickness was 0.25 in.; a correction factor for 0.25-in. steel casing was used during analysis.

Slight increases in the K-40, U-238, and Th-232 activities near 73 ft probably indicate a lithology change.

Cs-137 was the only man-made radionuclide detected. It occurred continuously from the surface to 40 ft and discontinuously to TD. The highest concentration (other than at the surface) was at 75 ft with a value of 4 pCi/g. The apparent lithology change near this depth may have concentrated the Cs-137 at this location.

Log Plot Notes:

Three log data plots are provided. The Cs-137 concentration is provided on a separate plot to present details of Cs-137 activity and distribution. The error of the Cs-137 activity determination is shown by error bars that represent the 95-percent confidence interval. The calculated MDA is shown on the plots as open circles. If the calculated activity is less than the MDA, it is considered a non-detect and the concentration is not reported. A plot of naturally occurring potassium, uranium, and thorium (K-40, U-238, and Th-232) is provided to allow correlation with geologic information. On the Th-232 plot, the MDA value is shown as zero at some depth locations. This zero value was a result of an anomaly in the commercial spectrum analysis software which has been corrected by the vendor. Because the MDA calculation at these few points is not significant relative to the intended use of the plot, the data were not reprocessed and corrected. Therefore, these MDA data points should be ignored.

A combination plot of individual radionuclide activities is provided that includes the total gamma-ray count rate calculated from the spectral data and the WHC Tank Farm gross gamma-ray log data acquired with the gross gamma-ray logging systems.