

Borehole

41-06-23

Log Event A

Borehole Information

Farm : <u>SX</u>	Tank : <u>SX-106</u>	Site Number : <u>299-W23-227</u>
N-Coord : <u>35,489</u>	W-Coord : <u>75,891</u>	TOC Elevation : <u>Unknown</u>
Water Level, ft :	Date Drilled : <u>5/2/1978</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>1</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>5/31/1995</u>	Logging Engineer: <u>Steve Kos</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>16.5</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>6/1/1995</u>	Logging Engineer: <u>Bob Spatz</u>
Start Depth, ft.: <u>15.5</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>117.5</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Log Run Number : <u>3</u>	Log Run Date : <u>6/2/1995</u>	Logging Engineer: <u>Bob Spatz</u>
Start Depth, ft.: <u>116.5</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>124.5</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Log Run Number : <u>4</u>	Log Run Date : <u>6/2/1995</u>	Logging Engineer: <u>Bob Spatz</u>
Start Depth, ft.: <u>113.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>113.0</u>	MSA Interval, ft. :	Log Speed, ft/min.: <u>n/a</u>

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Analysis Information

Analyst : P.D. HenwoodData Processing Reference : Data Analysis Manual Ver. 1Analysis Date : 9/20/1995**Analysis Notes :**

This borehole was drilled in 1978 to a 130 ft depth. A cement plug was placed in the bottom of the hole from 125 to 130 ft, and grout was placed near the surface from 0 to 18 ft.

This borehole was logged in four separate runs: run 1 from 0 to 16.5 ft, run 2 from 15.5 to 117.5 ft, run 3 from 116.5 to 124.5, and run 4, a 1000-s stationary measurement at 113 ft. Data repeatability was good at the depth overlaps. There was essentially no difference between the calculated concentrations at 113 ft between run 3 and run 4. The MDA and error were much improved in the spectrum collected for 1000-s in run 4 versus the 100-s spectrum in log run 3.

Log data were corrected for attenuation using a 0.33-in. casing thickness. There was no fluid in the borehole.

Cs-137 was the only man-made radionuclide detected in the borehole. It was detected at low concentrations to 14.5 ft in depth. No other instances occurred throughout the borehole, indicating there is no subsurface source in the vicinity of the borehole.

The naturally occurring radionuclides (K-40, U-238, and Th-232) indicated a lithology change at about 83 ft in depth.

Log Plot Notes:

Three log plots are provided. The Cs-137 concentrations are provided in a separate plot to document the relative concentrations and shape of the distribution. The error of the concentration determination is shown by error bars, which represent the 95-percent confidence interval. The calculated MDA is shown on the plot as open circles. If the calculated concentration is less than the MDA, it is considered a non-detect and the concentration is not reported.

A plot of naturally occurring radionuclides is also provided (see discussion above regarding error bars and the MDA) to permit correlation of these data 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 thorium plot, the data were not reprocessed and corrected. Therefore, these MDA data points on the plot should be ignored.

A combination plot is included with Cs-137, naturally occurring radionuclides, total gamma data derived from the spectral data, and the WHC Tank Farms gross gamma data. The logs allow the user to determine the relative influence of various radionuclides on the total gamma inventory.