RUST GEOTECH INC.

Spectral Gamma-Ray Borehole
Log Data Report

Borehole 41-06-05

Log Event A

Borehole Information

Farm : SX	**Tank :** SX-106	**Site Number :** 299-W23-143
N-Coord : 35,419	**W-Coord :** 75,838	**TOC Elevation :** 661.51
Water Level, ft :	**Date Drilled :** 3/21/1972	

Casing Record

Type : Steel-welded	**Thickness :** 0.280	**ID, in. :** 6
Top Depth, ft. : 0	**Bottom Depth, ft. :** 140	

Equipment Information

Logging System : 1	**Detector Type :** HPGe	**Detector Efficiency:** 35.0 %
Calibration Date : 03/1995	**Calibration Reference :** GJPO-HAN-1	

Logging Information

Log Run Number : 1	**Log Run Date :** 5/24/1995	**Logging Engineer:** Kim Benham
Start Depth, ft.: 0.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 102.5	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Log Run Number : 2	**Log Run Date :** 5/25/1995	**Logging Engineer:** Kim Benham
Start Depth, ft.: 138.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 101.5	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Borehole 41-06-05

Log Event A

Analysis Information

Analyst : P.D. Henwood

Data Processing Reference : Data Analysis Manual Ver. 1 Analysis Date : 8/11/1995

Analysis Notes :

This borehole was drilled to 100 ft in 1972 and deepened to 140 ft in 1973. There is no record of grout in borehole. The borehole was logged to a depth of 138 ft. There was some indication of alpha/beta contamination within borehole. The driller's log indicates a lithology change at about 80 ft with gravels to 5" in diameter. This change is also indicated by the logging results. Historical Tank Farm gross gamma logs indicate elevated readings at about 2 ft.

This borehole was logged in two runs: run 1 from the surface to 102.5 ft and run 2 from 138 to 101.5 ft, with a 1 ft overlap. The pre- and post-survey field verification spectra showed consistent activities, but energy calibrations differed due to gain drift in the instrumentation. Spectra were recalibrated for energy versus channel where appropriate.

Log data were corrected for casing attenuation using a 0.25-in. casing thickness. There was no reported fluid in the borehole.

Cs-137 was the only man-made radionuclide detected in the borehole. Surface contamination occurred from the surface to about 10 ft with a maximum concentration at 1 ft of 35 pCi/g. Another interval of Cs-137 occurred from 30 to 44 ft with a maximum concentration of 0.6 pCi/g. Other minor concentrations of Cs-137 occurred sporadically throughout the borehole. The naturally occurring radionuclides (K-40, U-238, and Th-232) indicate lithology changes to finer-grained material at 62 to 65 ft and at about 82 ft.

Log Plot Notes:

Three log plots are provided. The Cs-137 concentrations are provided in a separate plot to document the relative concentration and show the shape of the distribution. The error of the concentration determination is shown by the error bars and represents 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 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 also provided with Cs-137, naturally occurring radionuclides, total gamma data derived from the spectral gamma logging, and the WHC Tank Farms gross gamma data.