

Part 3: LOGEVAL Program Description

LOGEVAL was written by P. M. Stokes using the Amoco Log Analysis System Language (AMOLOG). The program was designed to provide a comprehensive log analysis of a well from the top of the first logging run to total depth while allowing for run specific and zone specific processing parameters. The program uses a combination of automated and user specified controls to give the interpreter complete control of the program.

LOGEVAL requires that multiple logging runs be merged. Run specific information such as bit size and mud properties are required to normalize and correct the logs. Independent interval parameters are input to control volume of shale, porosity, and bad hole computations. Intervals of geologic interest can be defined for use in the pay summary presentations, and information such as tops, core, drillstem test and repeat formation test intervals can be flagged.

The LOGEVAL program can be divided into seven sections as follows:

1. Program set-up.

- specify processing parameters
- flag Tops, Core, DST and RFT intervals if desired

***** End of User Input *****

2. Data Preparation.

- correct gamma ray for borehole effects and normalize
- correct spontaneous potential curve for sp drift
- correct deep and shallow resistivity curves for borehole environment
- correct neutron log for borehole environment and convert to sandstone matrix if doing a shaly sand evaluation
- plot histograms

3. Compute Volume of Shale, Lithology and Porosity.

- compute volume of shale using selected method (GR, SP, RHOMAA, TMAA)
- discriminate main lithologic units (see Note 1)
- compute neutron/density