The Generation of Thermal-Conductivity and Heat-Flow Logs from Conventional Borehole Logs

R. H. MERKEL

Relationships between thermal conductivity and mineralogy, porosity, and fracture orientation have been reported in the literature. Various relationships are examined and compared with core results. The factors which most affect thermal conductivity are discussed. It is shown how these factors can be delineated using conventional borehole logs. Cases of both granitic and sedimentary sequences are presented to show how well logs can be used to generate a thermal-conductivity log. This log is then used in conjunction with the temperature log to produce a heat-flow log.