**Wire-Line Logging Devices**

New section introduced by a 2nd-level heading.

Topic of the previous section “coring and coring analysis” is referenced.

Indicates how this section and the previous section are related.

Background and initial description of wire-line logging.

Overview of the contents of this section.

Coring and core analysis techniques are adequate only to a certain extent, as the previous section shows. However, a much faster and less expensive method of detecting fractures is increasingly being used in exploratory wells: wire-line logging anlysis.

Logging can be generally defined as the storing of any information that may be of importance in producing an accurate subsurface geological map. Logs are kept of such things as cores, drilling muds (the fluids used to reduce friction during drilling), and drilling rates. In wire-line logging, this information is collected by lowering a probe into a well at the end of a multiconductor cable (the actual wire line). The probe then records physical properties as a function of depth, and the record is reproduced as a well log on graph paper.

Several wire-line well logs exist which can be used to determine whether a formation may be fractured. The types of logs discussed in the following include (1) the sonic amplitude log, (2) the dual-induction laterolog,
(3) the neutron log, and (4) the fracture identification log.