UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Preliminary report on a coal exploratory drill hole in the Book Cliffs coal region, Garfield County, Colorado

by

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The U.S. Geological Survey, (USGS) drilled a test hole on May 26th and 27th, 1980, near the abandoned townsite of Carbonera, Garfield County, Colorado. The location was chosen because the USGS needed a drill hole which would serve the following purposes: (1) provide a site where geophysical tools could be calibrated in situ; and (2) provide a site where research could be conducted on the geophysical tools. The hole had to be located on land where the mined rights were federally owned, had to be reasonably close to geophysical loggers, and if possible, tie into a coal assessment program currently being conducted. The Carbonera site met these requirements, and adjoins an area to the southwest which has been mapped by J. L. Gualtieri of the U.S. Geological Survey (Gualtieri, 1979).

The drill hole is located approximately 1/2 mile west on Buniger Road in the NE1/4 SE1/4 sec. 10, T. 7S., R. 10W., Garfield County, Colorado (fig. 1). The elevation at the site is approximately 5840 ft. The mineral rights are federally owned and the surface rights belong to Harold F. Young of Mack, Colorado. An archeological survey of the area by the U.S. Bureau of Land Management revealed no signs of a prehistoric site. The dominant coal-bearing formation in this area is the Upper Cretaceous Neslen Formation of the Mesaverde Group and consists of four coal zones: the Palisade, Ballard, Cameo, and Carbonera zones. The Sego Sandstone underlies the Neslen Formation and forms a good marker bed for the base of the Neslen. The Neslen Formation is overlain by the Farrer Formation (Gualtieri, 1979).

The hole was rotary drilled to a depth of 815 ft by USGS equipment and personnel. Steel surface casing with 6 in. internal diameter and 1/4 in. wall thickness was set at 10 ft and cemented. The drill bit was a tri-cone internal diamond bit. The drill hole diameter was 5 1/8 in. The water level at the time of drilling was at 290 ft, and water flowed at greater

than 10 gals/min. at 600 ft. Sample cuttings were taken at the drill site for every 5 ft of depth but are not described in this report. The hole has been left open so that it can be used in the future for as a geophysical tool for calibration and research.

Mineral Services Company of Grand Junction, Colorado, made the following geophysical logs of the hole: gamma ray, resistance, density and caliper (fig. 2a). The initial run was made at a logging speed of 20 ft/min. A rerun of 265 ft to 325 ft was made at 10 ft/min. J. L. Gualtieri has tentatively identified the coal zones on the accompanying strip log (fig. 2).

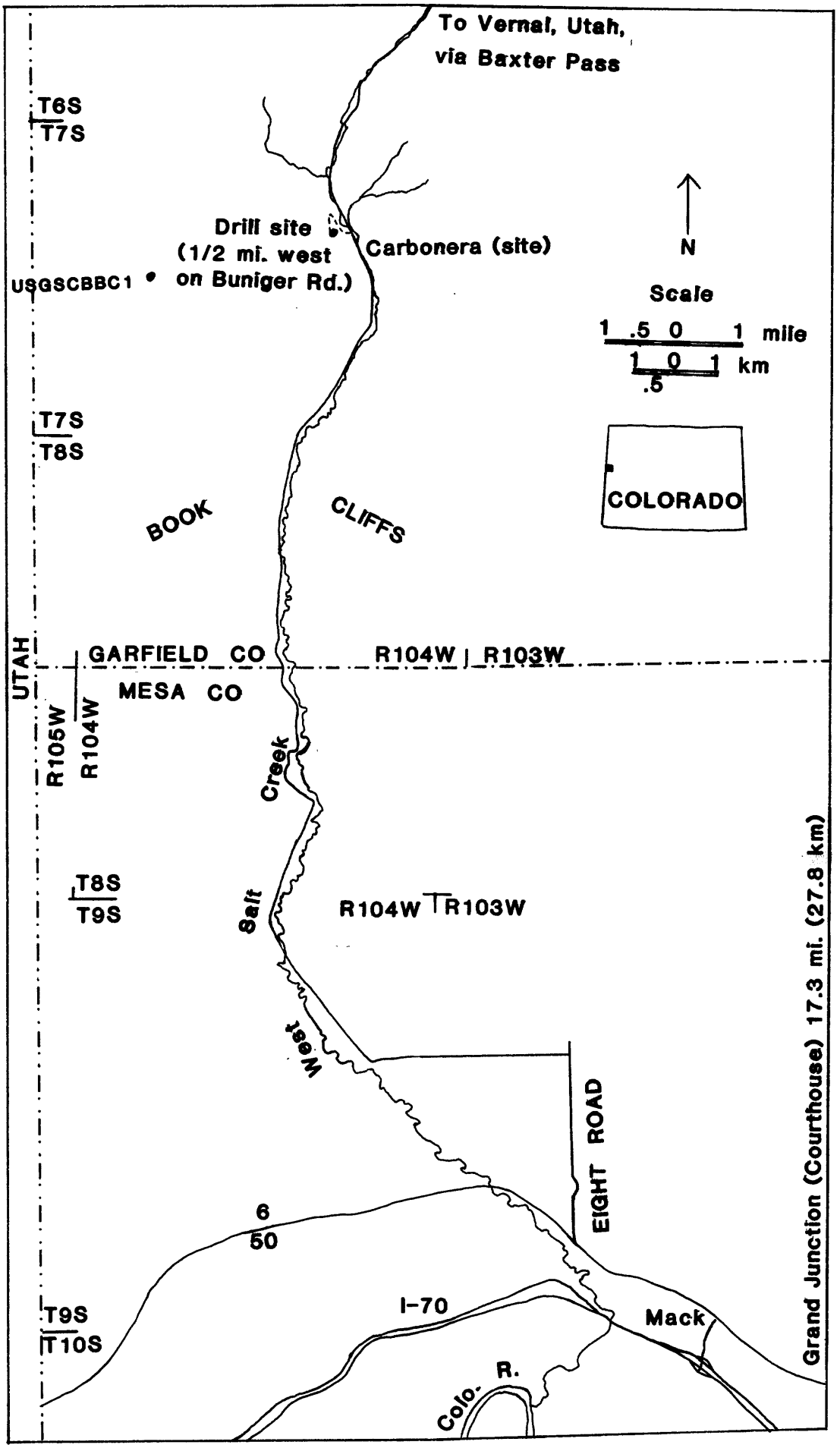


Fig. 1--Index map showing location of coal exploratory drill hole in the Book Cliffs coal region, Colorado.

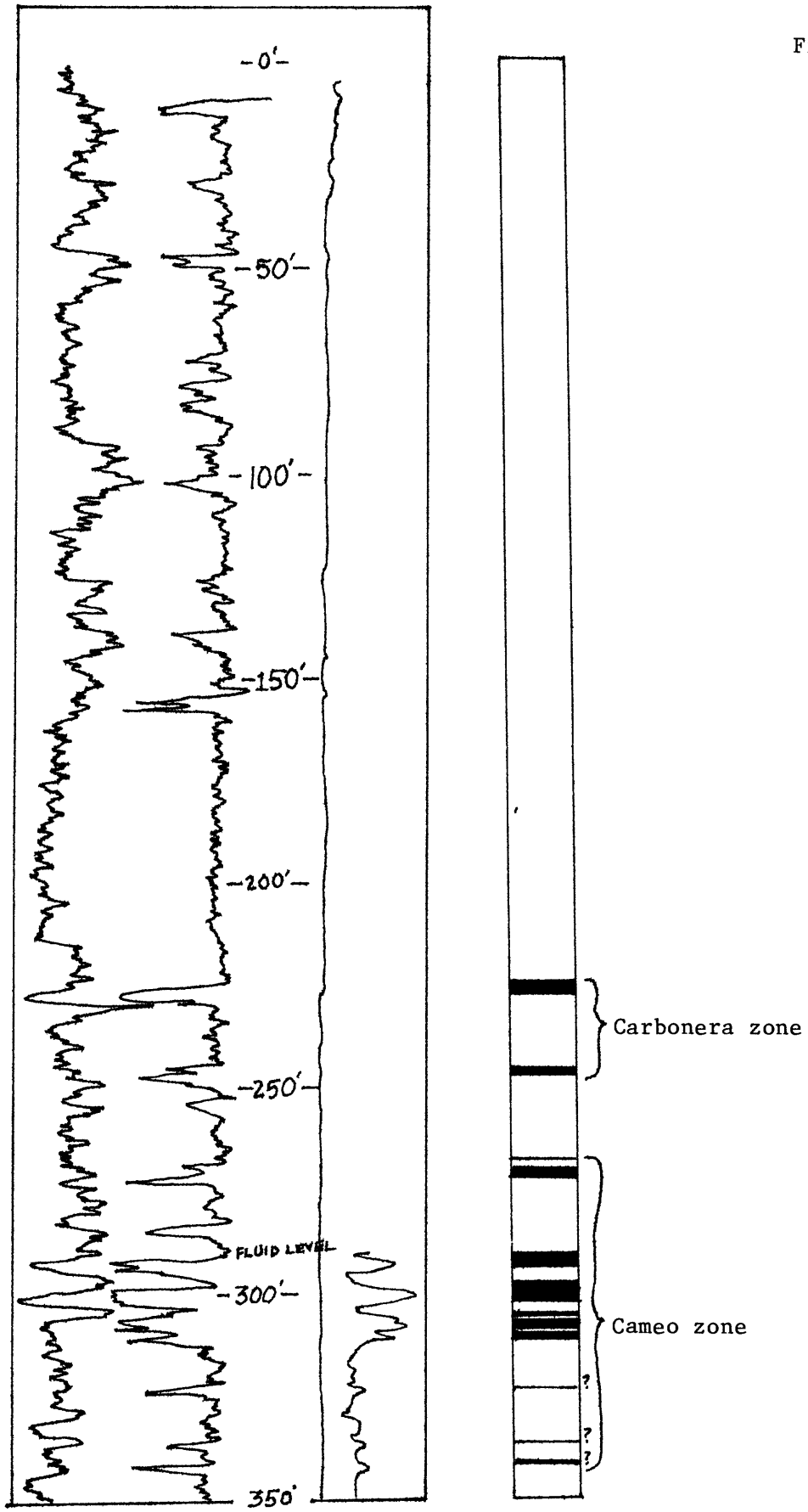
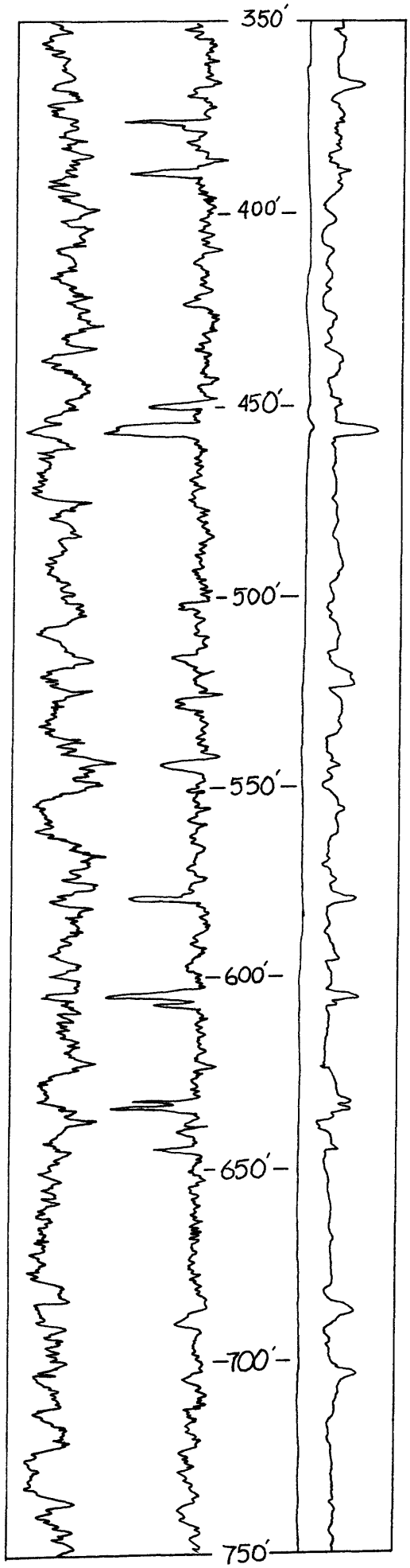


Figure 2.--Geophysical and strip logs of drill hole showing locations and tentative identification of coal zones.



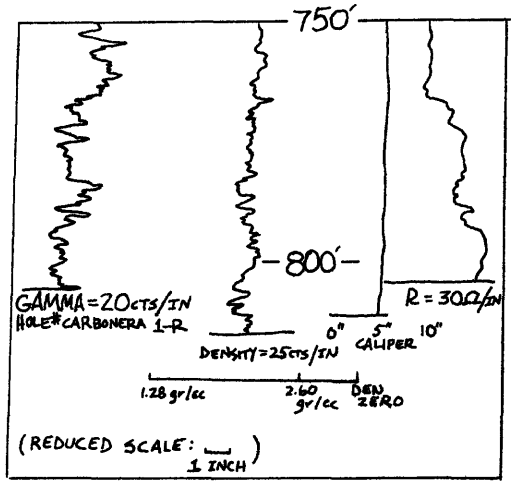


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Figure 2.--Geophysical and strip logs of drill hole showing locations and tentative identification of coal zones--continued.

Reference cited

Gualtieri, J. L., 1979, Preliminary results of coal exploratory drilling in the Book Cliffs Coal Region, Garfield County, Colorado, and Grand County, Utah: U.S. Geological Survey, Open-File Report 79-999, 53 p.