



MAP SHOWING LOCATION OF DRILL HOLES, MEASURED SECTIONS, AND STRUCTURE CONTOURS

**DISCUSSION**

**INTRODUCTION**

Interpretations between the Star Point Sandstone and overlying coal-bearing Blackhawk Formation have been previously mapped and described in the Manti 30' x 60' quadrangle, Emery and Carbon counties, Utah, by Hays, 1979; Hays and Sanchez, 1979; Hays and others, 1979; Hays and others, 1979; Madsen, 1980; and Sanchez and Brown, 1984.

A tongue of the Star Point Sandstone, located in the Trail and Bear Canyon areas, is designated the No. 6 tongue of the Star Point Sandstone (No. 6). This tongue and its relationship to the Blackhawk Formation have previously affected the stratigraphic relationship of associated coal beds and complicated the correlation.

**COAL ZONES**

The And Anderson coal zone (Sanchez and Brown 1984) in the Black Canyon area is stratigraphically equivalent to the Hawthorn coal bed of Spiker (1931) in the Manti 30' x 60' quadrangle. The level of the No. 6 tongue (T. 16 S., R. 8 E.) zone and continues northeastward into the study area of this report (Fig. 1). The And Anderson coal zone nomenclature will be used in this study area in order to correspond with the Sanchez and Brown (1984) report. The coal zone rests conformably on or a short distance above the Star Point Sandstone, primarily west of the zone of intertonguing. The coal bed ranges in thickness from 1 to 10 feet in section 17 (see 28, T. 16 S., R. 7 E.) and 15 to 18 feet in measured section 17 (see 28, T. 16 S., R. 7 E.). The Hawthorn coal zone is present westward of the position of the No. 6 tongue and is of economic interest in the area of the lower canyon of Huntington Creek. The coal in the And Anderson coal zone is currently being mined in Trail Canyon at the Co-Ogmine (see 22, T. 16 S., R. 7 E.) and in Bear Canyon at the MBE Coal Company (see 16, T. 16 S., R. 7 E.).

The Cottonwood coal zone hereafter named lies from 30 to 50 to 100 feet above the top of the Star Point Sandstone, west of the No. 6 tongue (San and Dowling, 1977), and is stratigraphically equivalent to the Hawthorn coal bed of Spiker (1931). East of the zone of intertonguing the coal zone rests upon or just above the Star Point Sandstone. The beds of the Cottonwood coal zone range in thickness from 2 to 10 feet in drill holes (see 16, T. 16 S., R. 8 E.) and 1 to 10 feet in measured sections (see 20, T. 16 S., R. 8 E.). The Cottonwood coal zone is of economic importance in the western side of Huntington Creek. The Cottonwood coal zone is currently being mined in Bear Canyon at the MBE Coal Company (see 16, T. 16 S., R. 8 E.) and in Trail Canyon at the Co-Ogmine (see 22, T. 16 S., R. 7 E.).

The Black Canyon coal zone (Sanchez and Brown 1984) hereafter referred to as the Black Canyon coal zone because the coal occurs in several areas, is laterally discontinuous and of low thickness, and there are more appropriately identified coal zones. The Black Canyon coal zone is located from 10 to 40 feet above the Cottonwood coal zone. The coal beds range in thickness from 1 to 10 feet in measured sections (see 22, T. 16 S., R. 7 E.) and 1 to 10 feet in measured sections (see 20, T. 16 S., R. 7 E.). The Black Canyon coal zone is of economic importance in the western side of Huntington Creek. The Black Canyon coal zone is currently being mined in Bear Canyon at the MBE Coal Company (see 16, T. 16 S., R. 8 E.) and in Trail Canyon at the Co-Ogmine (see 22, T. 16 S., R. 7 E.).

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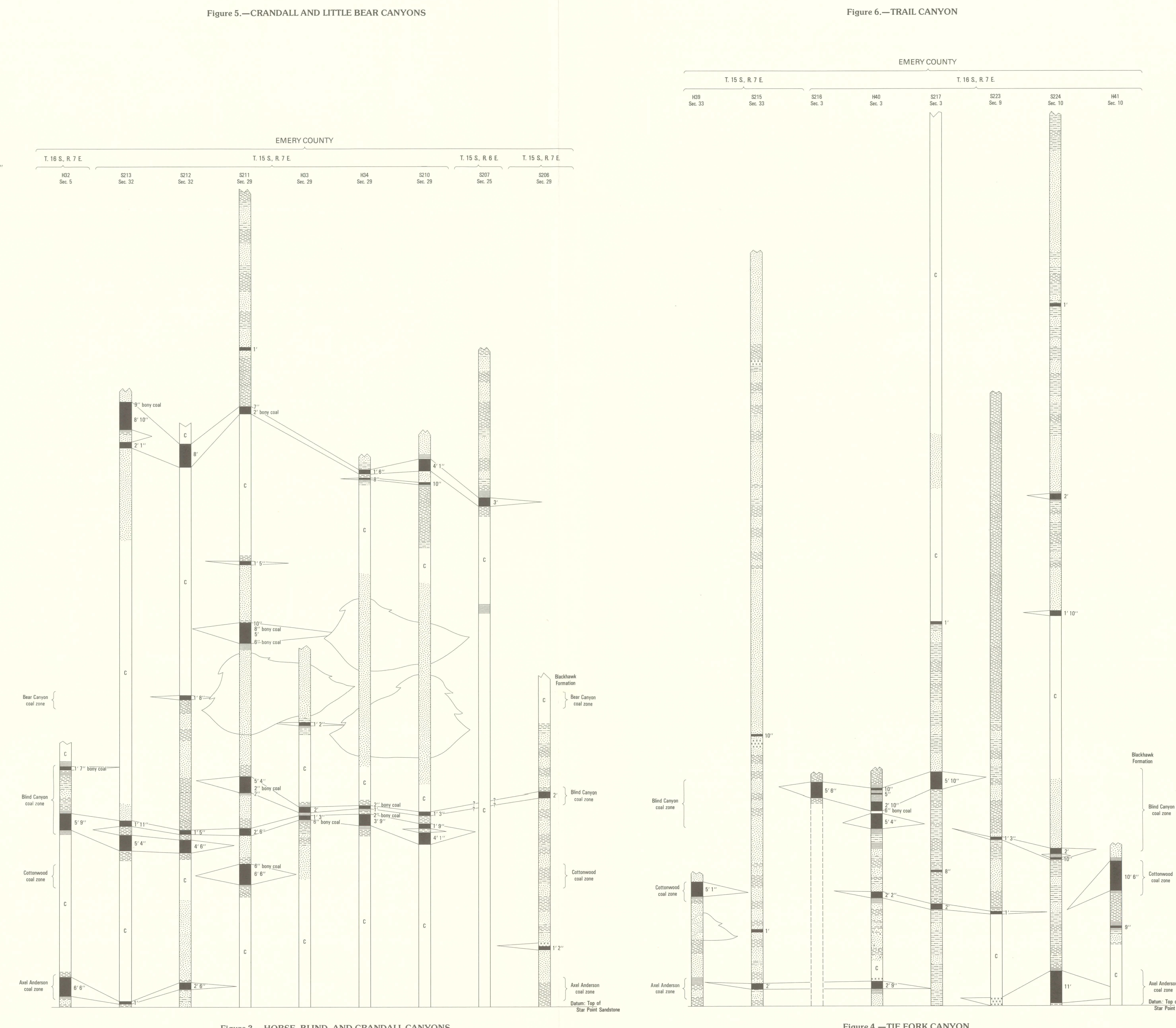
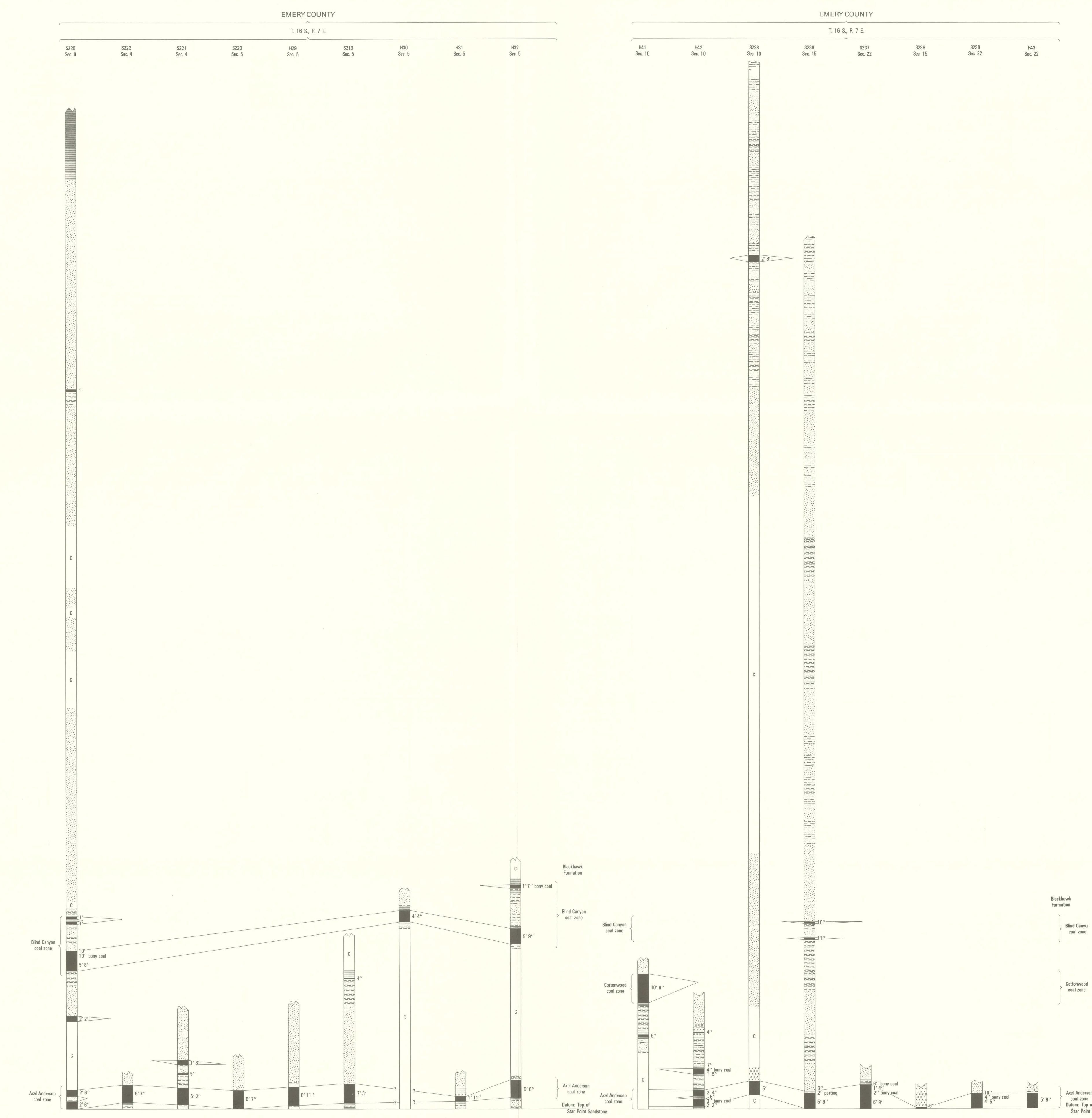
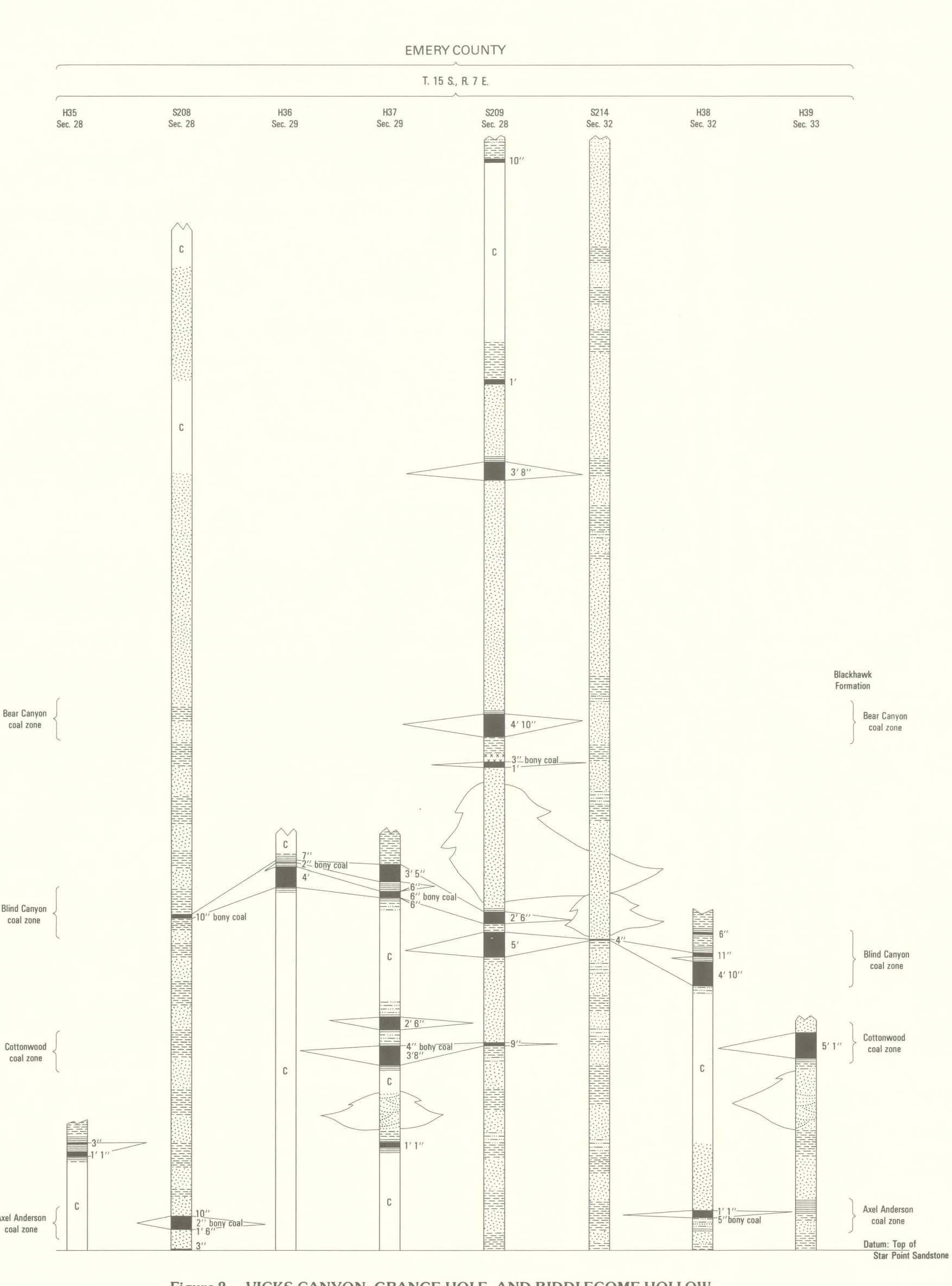
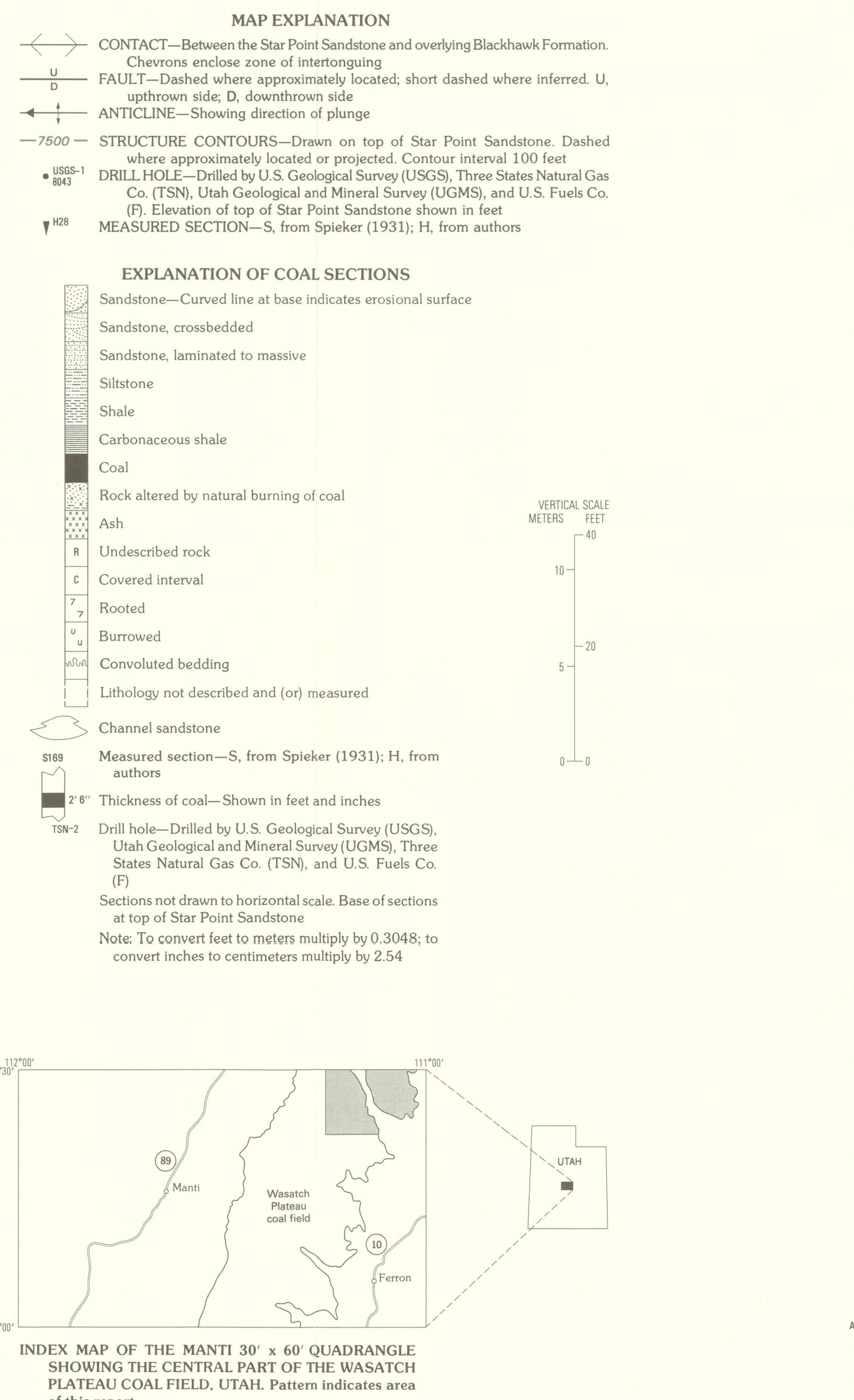
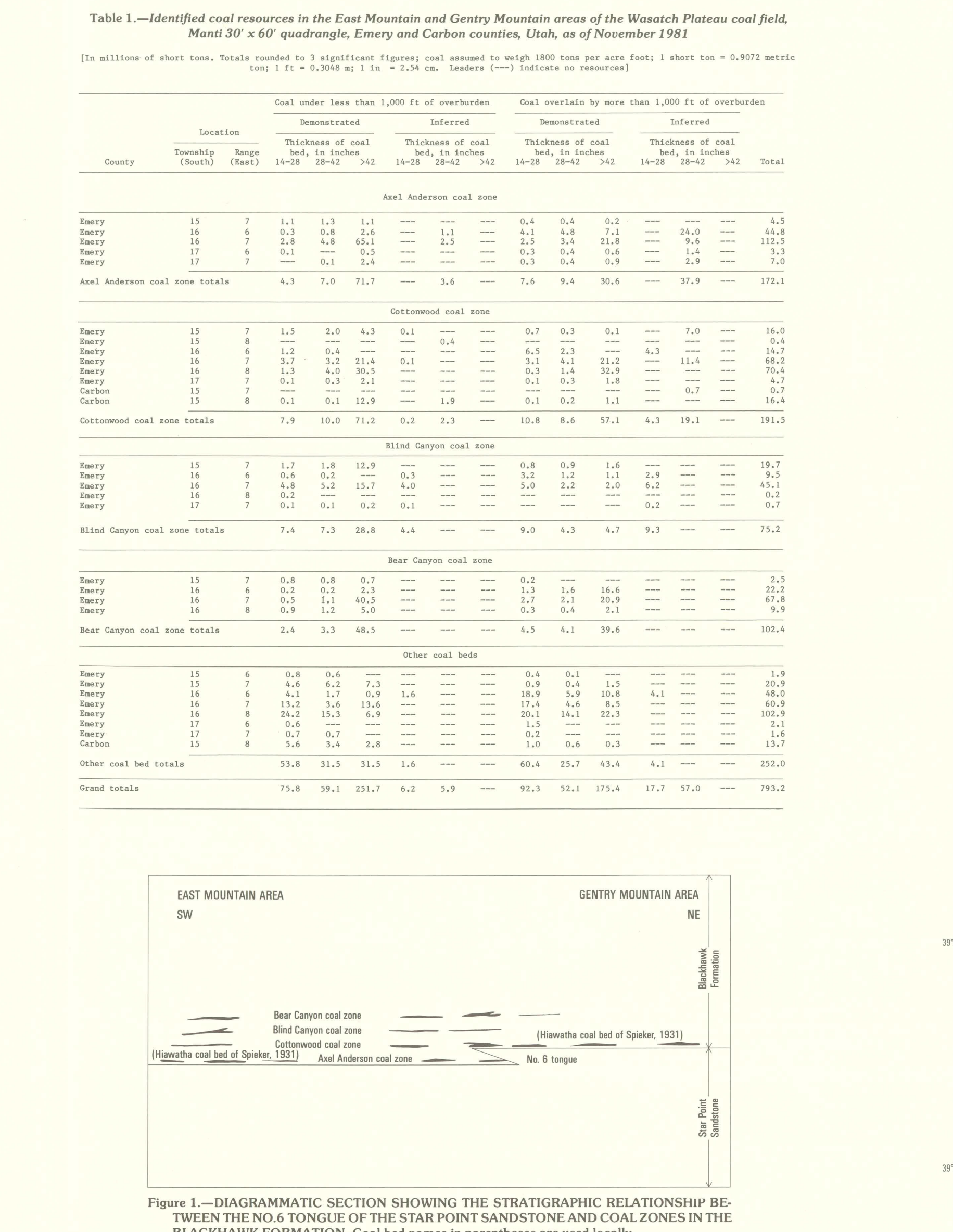
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**COAL ANALYSES**

Table 2 shows analytical results on 26 samples (Dowling, 1972) from three different coal zones. Most of the samples came from the U.S. Park Co. Hawthorn and Madsen mines, additional samples are from the Bear Canyon, Co-Ogmine, and the Fork mines. The rank of the coals from all three zones is high volatile B. Distribution is calculated from ASTM (1977) pet formulas.

**Table 2—Average coal analyses**  
(See notes on p. 22 for analytical methods.)

Sample	Bear Canyon coal zone (Other names: coal bed of Spiker, 1931)				Cottonwood coal zone (Other names: coal bed of Spiker, 1931)				Black Canyon coal zone (Other names: coal bed of Spiker, 1931)			
	Moisture	Volatiles	Fixed carbon	Heating value	Moisture	Volatiles	Fixed carbon	Heating value	Moisture	Volatiles	Fixed carbon	Heating value
1	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
2	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
3	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
4	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
5	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
6	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
7	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
8	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
9	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
10	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
11	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
12	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
13	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
14	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
15	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
16	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
17	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
18	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
19	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
20	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
21	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
22	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
23	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
24	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
25	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800
26	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800	11.2	31.5	58.3	12,800



THICKNESS AND CORRELATION OF COAL BEDS

STRATIGRAPHIC FRAMEWORK AND COAL RESOURCES OF THE UPPER CRETACEOUS BLACKHAWK FORMATION IN THE EAST MOUNTAIN AND GENTRY MOUNTAIN AREAS OF THE WASATCH PLATEAU COAL FIELD, MANTI 30' x 60' QUADRANGLE, EMERY, CARBON, AND SANPETE COUNTIES, UTAH