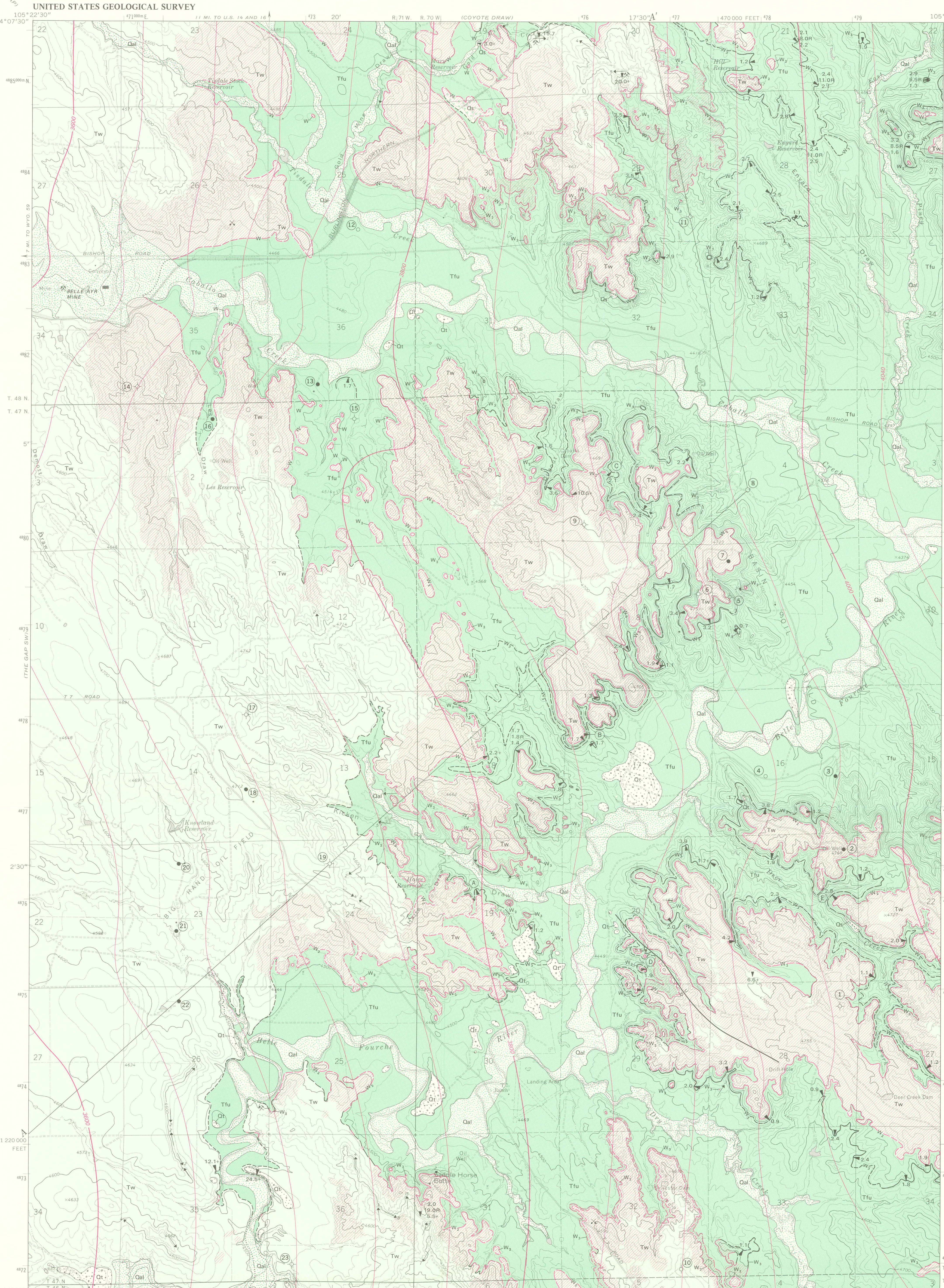


Base from U.S. Geological Survey, 1971

Projection and 10,000-foot grid ticks: Wyoming coordinate system, east zone (traverse Mercator)

1000-meter Universal Transverse Mercator grid ticks, zone 13. 1927 North American datum

APPROXIMATE MEAN DECLINATION, 1977

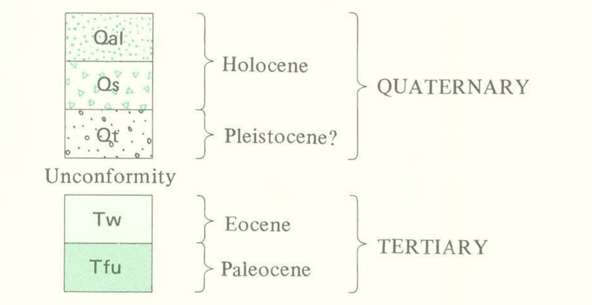
SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

QUADRANGLE LOCATION

Geology mapped in 1972–1973

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

Qal — ALLUVIUM (HOLOCENE) – Valley fill consisting mainly of reworked sedimentary rocks

Qs — LANDSLIDE DEPOSITS (HOLOCENE) – Heterogeneous broken and mixed rock masses and toreva blocks

Qt — TERRACE DEPOSITS (PLEISTOCENE?) – Gravel less than 5 feet (<1.5 m) thick consisting mainly of interstitial sand, well-indurated sandstone, quartzite, chert, and granite pebbles and cobbles up to 1 foot (0.3 m) in diameter. Commonly found as thin patches capping indistinct surfaces, but locally capping well-formed surfaces. Deposits are present along the Belle Fourche River and Caballo Creek

Tw — WASATCH FORMATION (EOCENE) – Interbedded sandstone, shale, and coal. The sandstone and shale are generally poorly consolidated. Some of the sandstone is coarse grained and contains pebbles up to 1 inch (2.54 cm) in diameter. No persistent Wasatch coal beds occur in this quadrangle. Only the lower 300 feet (91.4 m) of the formation exposed in map area

Tfu — FORT UNION FORMATION (PALEOCENE) – Interbedded fine-grained sandstone, shale, zones of ferruginous concretions, and thin to thick coal beds. The sandstone and shale are generally much lighter in color than those of the Wasatch. Only the upper 400 feet (122 m) of the formation is exposed in the area

(F) W_3 3.2 8.5R 1.6 — COAL BED OR SUBZONE – Dashed where approximately located; short dashed where inferred; dotted where concealed. Thickness of coal, in feet, measured at triangle, calculated by methods of Smith and others (1913, p. 72–73) and Bass, Smith, and Horn (1970, p. 6). Uncircled letter denotes coal bed; subscript designates subzone split. Circled letter indicates location of detailed stratigraphic section. The W_3 subzone includes several beds of varying thickness; the contact mapped is the base of the lowest coal. Locally within the W_3 subzone two thick coal beds separated by a thick rock interval (R) are each labeled W_3

W_2 — BAKED AND FUSED ROCK – Trace of burned coal bed, dashed where approximately located, short dashed where inferred. Letter with subscript identifies coal bed. Pattern indicates inferred extent of burn

U/D — FAULT – Approximately located; U, upthrown side; D, downthrown side

4000 — STRUCTURE CONTOURS – Drawn on base of V coal. Contour interval 40 feet (12.2 m); Datum is mean sea level

5 ← DIP COMPONENT

OPEN PIT COAL MINE

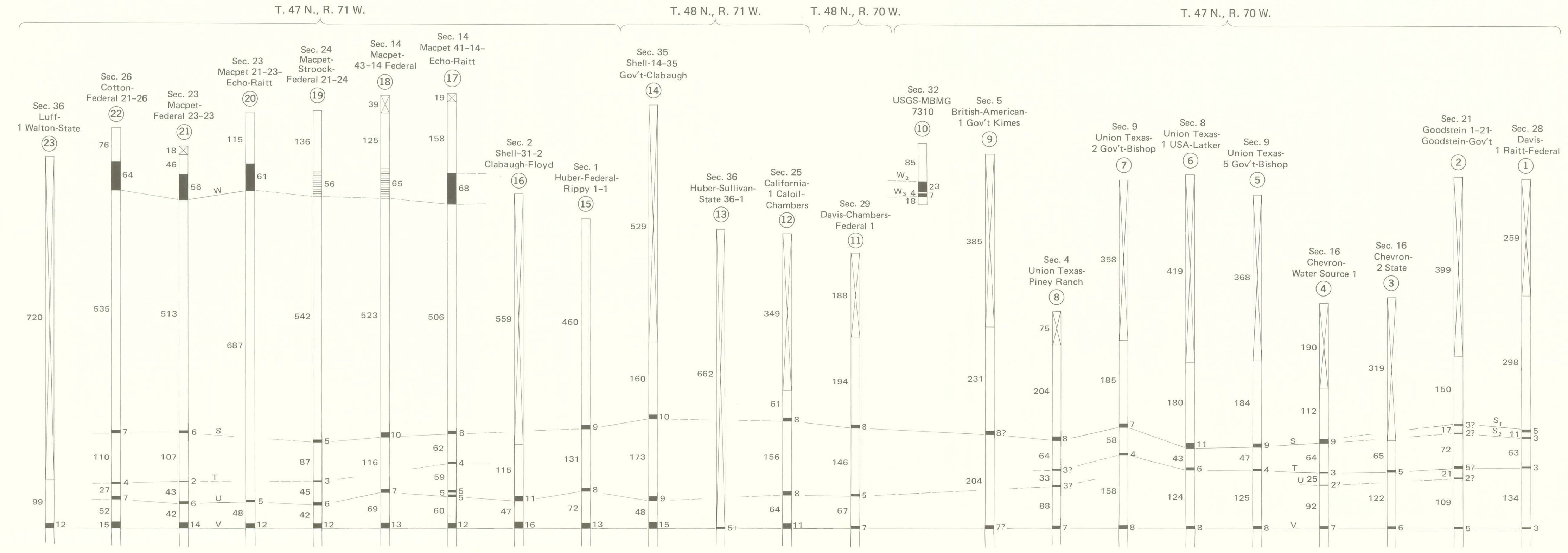
GRAVEL PIT

DRILL HOLES – Used in subsurface interpretation. Index number refers to coal sections

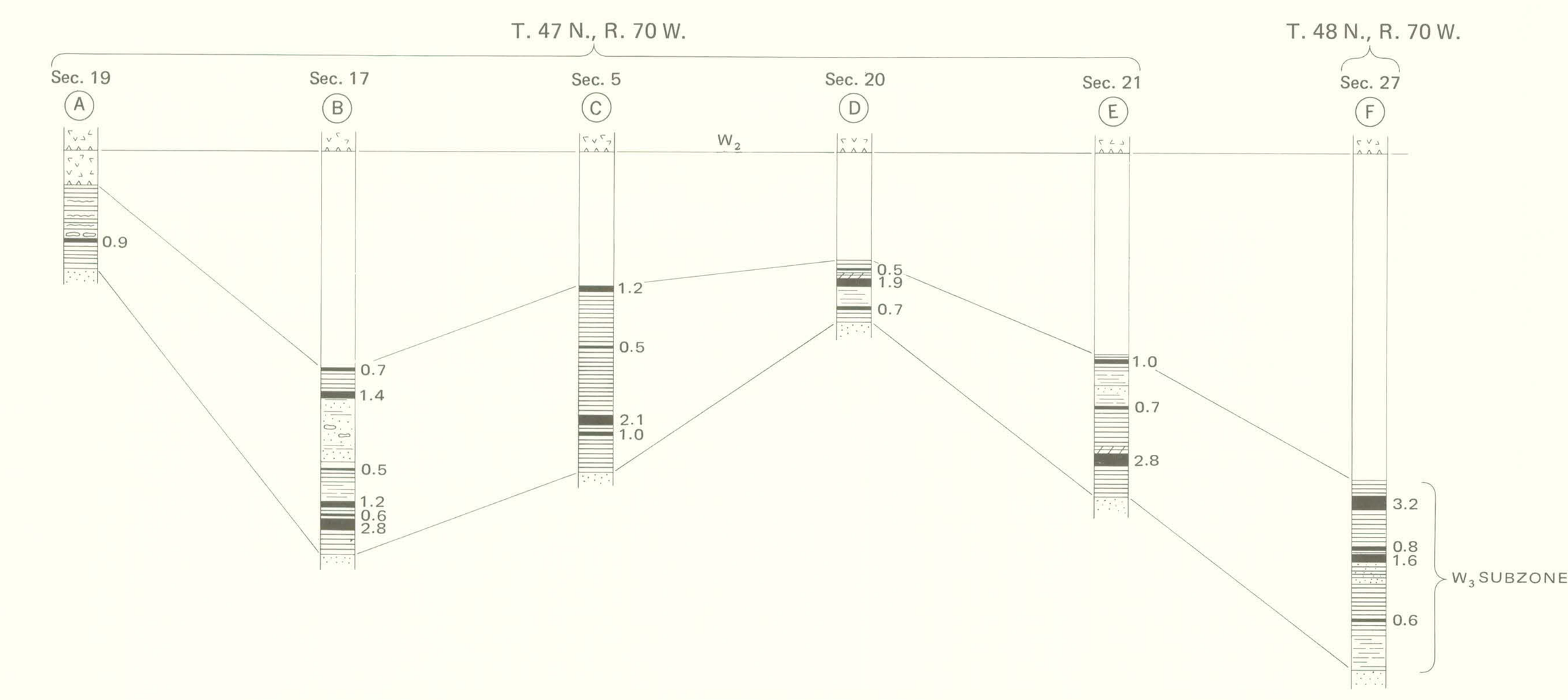
(9) Dry hole
(20) Oil well
(8) Water well
(10) USGS–MBMG coal test hole

REFERENCES

Bass, N. W., Smith, H. L., and Horn, G. H., 1970, Standards for the classification of public coal lands: U.S. Geol. Survey Circ. 633, 10 p.
Smith, G. O., and others, 1913, The classification of the public lands: U.S. Geol. Survey Bull. 537, 197 p.

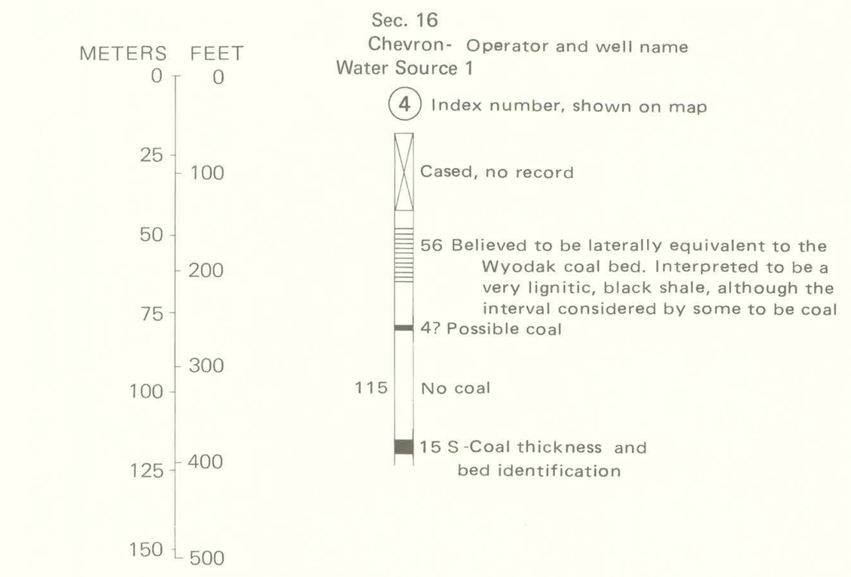


SUBSURFACE COAL SECTIONS



DETAILED SURFACE STRATIGRAPHIC SECTIONS OF W_3 COAL SUBZONE

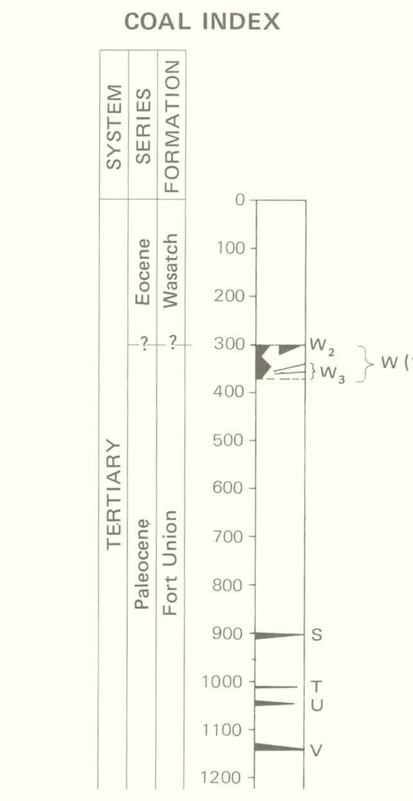
EXPLANATION FOR SUBSURFACE COAL SECTIONS



All measurements in feet

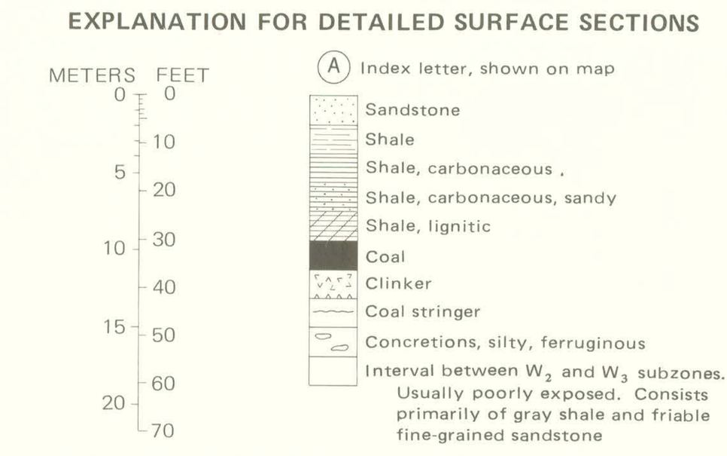
Subsurface data compiled as of August 1973

COAL INDEX

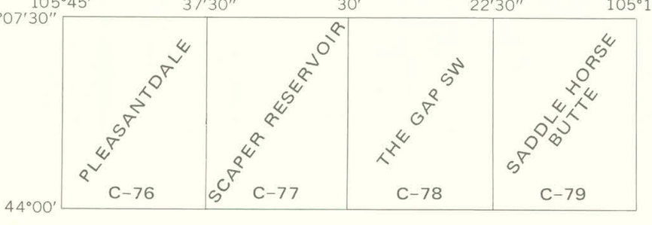


Subscripts indicate splits or subzones of the same coal; superscripts indicate separate coals. All intervals and measurements in feet.

EXPLANATION FOR DETAILED SURFACE SECTIONS

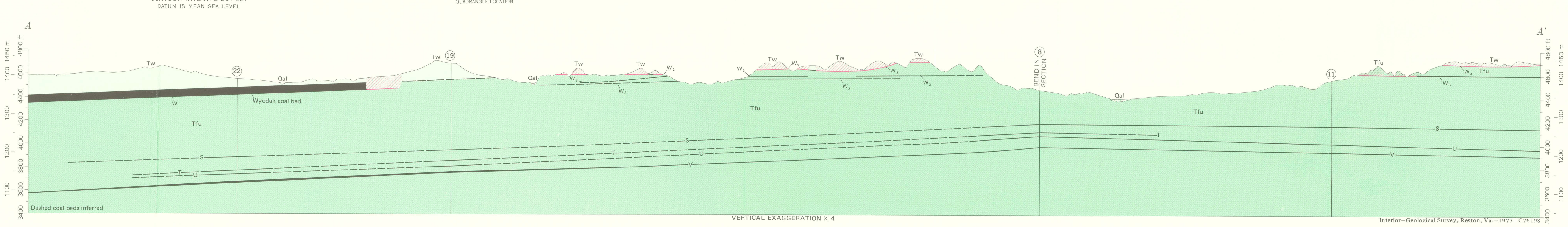


All measurements in feet



INDEX TO QUADRANGLES
Note: Sheets 2 and 3 of each map carry the same text, tables and generalized columnar section

METRIC CONVERSIONS
1 inch=2.54 centimeters
1 foot=0.3048 meter
1 mile=1.6 kilometers



Interior–Geological Survey, Reston, Va.–1977–C76136

GEOLOGIC MAP AND COAL RESOURCES OF THE SADDLE HORSE BUTTE QUADRANGLE, CAMPBELL COUNTY, WYOMING

By
S. L. Grazis

1977

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