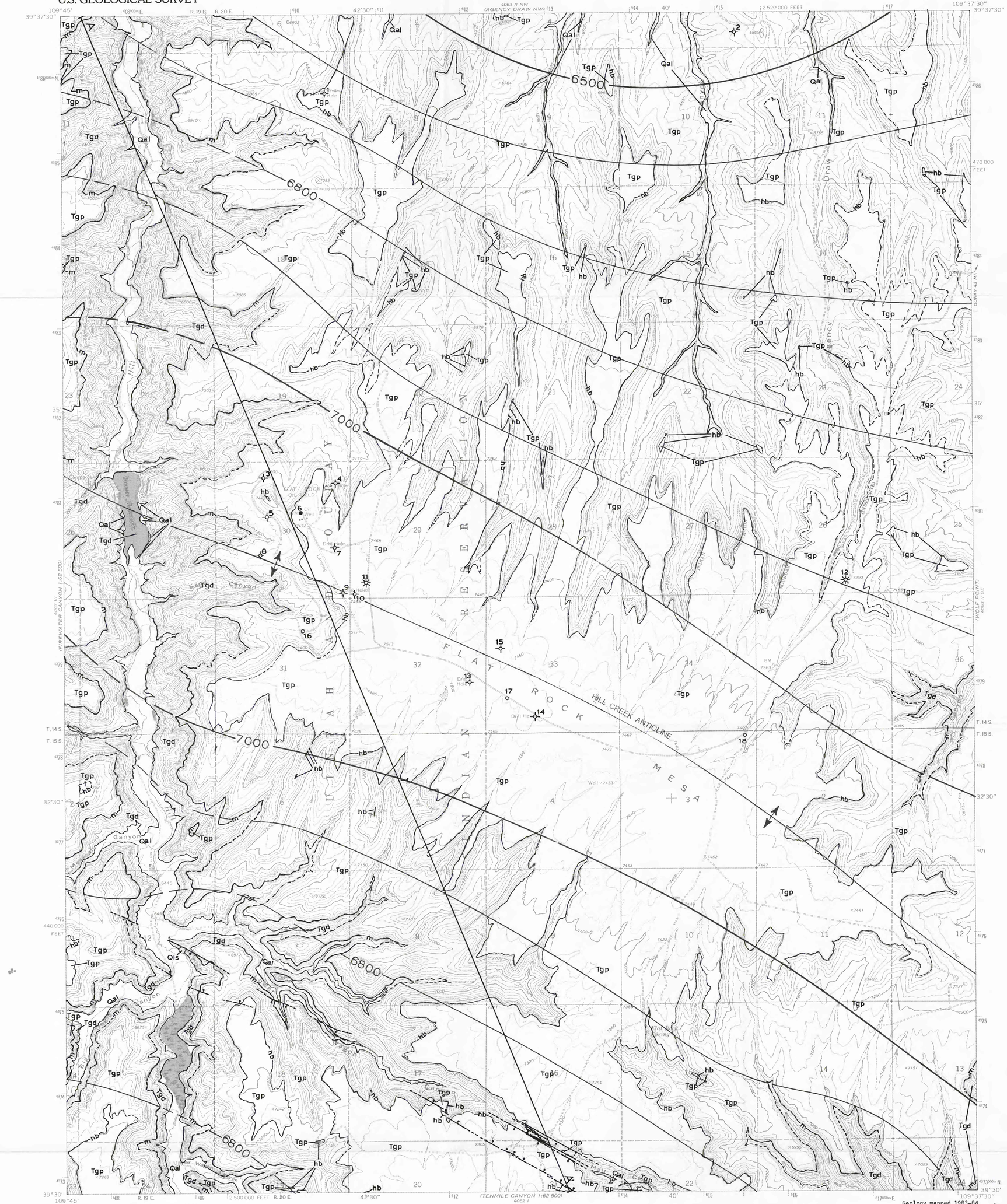
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES
MAP MF-1866



Qal	Qls	Holocene	QUATERNARY
hb			
Tgp		Eocene	TERTIARY
m			
Tgd			

DESCRIPTION OF MAP UNITS

[1 ft=0.305 m; 1 in.=2.54 cm]

Qal — ALLUVIAL DEPOSITS (HOLOCENE)--Unconsolidated brown and gray sand, silt, and gravel of slope wash, fan, and stream deposits

Qls — LANDSLIDE DEPOSIT (HOLOCENE)--Unconsolidated brown and gray sandstone, siltstone, mudstone, and associated debris of landslide in southern Hill Creek

GREEN RIVER FORMATION (EOCENE)

Tgp — Parachute Creek Member--Brown and light-gray to nearly white marlstone, light- to yellowish-brown sandstone and siltstone, light-tan to dark-brown tuff, and dark-gray and brown oil-shale beds. Marlstone beds commonly form slopes, locally cliffs and ledges; some beds may contain kerogen. Sandstone beds are very fine to fine grained. Sandstone beds adjacent to Mahogany ledge (Mahogany zone in subsurface) tend to be bitumen impregnated. Locally, sandstone outcrops are coated with bitumen that seeped from sandstone beds. Tuff beds range in thickness from less than 1/2 in. to approximately 1 ft. Mahogany ledge occurs near base of Parachute Creek Member in Flat Rock Mesa area, averaging about 26 ft thick and containing the Mahogany oil-shale bed. Boundary between Douglas Creek Member and Parachute Creek Member is approximately 10 ft below bottom of Mahogany oil-shale bed, but is shown at top of Mahogany oil-shale bed on map. Approximately 440 ft of Parachute Creek Member is exposed in quadrangle

—hb— Base of Horse Bench Sandstone Bed--Brown and yellowish-brown, fine-grained, laterally extensive, bench-forming sandstone, having a few channel-form features and an undulating base. Sandstone is approximately 400 ft above top of Mahogany oil-shale bed, and ranges in thickness from 5 ft to about 20 ft

—m— Top of Mahogany oil-shale bed--Dark-gray to black, ledge-forming oil-shale bed; weathers to silver-gray ledges. Boundary between Douglas Creek Member and Parachute Creek Member is approximately 10 ft below bottom of Mahogany oil-shale bed, but is shown at top of Mahogany oil-shale bed on map. Mahogany oil-shale bed is located in lower half of Mahogany ledge and is about 3 ft thick

Tgd — Douglas Creek Member--Consists of light-brown to brown sandstone, green claystone and mudstone, light-tan, light-pink, to light-brown limestone, and a few dark-gray to brown oil-shale beds. Sandstone beds are fine to very fine grained, commonly having calcareous cement. Sandstone beds may be ostracodal, many are channel-form, and many are lenticular and display lateral-accretion bedding. Sandstone beds weather to cliffs, ledges or benches, and occasionally steep slopes. Claystone and mudstone beds are very calcareous and lenticular; these weather to slopes, or to reentrants in cliff faces. Limestone beds are ostracodal, stromatolitic or massive, and weather to orange-brown or gray ledges. A few thin oil-shale beds occur in upper 100 ft of member and form ledges. Map unit may include the Renegade Tongue of the Wasatch Formation (Cashion, 1967), which is very thin in this area and was not positively identified. Thickness of exposed Douglas Creek Member ranges from about 200 ft in southern part of quadrangle to about 600 ft in northern part

WASATCH FORMATION (EOCENE)

Tw — Main body--Shown in cross section only. Consists of brown and gray sandstone, and red and gray shale. Boundary between Green River Formation and Wasatch Formation is not clearly defined due to extensive intertonguing. For purposes of this report, boundary is approximately 1,970 ft below top of Mahogany oil-shale bed

——— CONTACT--Dashed where approximately located. All Quaternary units are approximately located

——— FAULT--Dashed where approximately located. Bar and ball on downthrown side. Arrows indicate direction of movement on cross section

—6800— —7000— STRUCTURE CONTOUR--Drawn on top of Mahogany oil-shale bed. Dashed where bed is eroded. Contour interval 100 ft. Datum is mean sea level

16 CORE HOLE--Number keyed to list of drill holes

1 DRY HOLE/NO DATA--Number keyed to list of drill holes

6 OIL WELL--Number keyed to list of drill holes

11 GAS WELL--Number keyed to list of drill holes

SELECTED REFERENCES

Cashion, W. B., 1967, Geology and fuel resources of the Green River Formation, southeastern Uinta Basin, Utah and Colorado: U.S. Geological Survey Professional Paper 548, 48 p.

———1984, Geologic map of the Agency Draw NW quadrangle, Uintah County, Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-1717, scale 1:24,000.

Cashion, W. B, compiler, 1973, Geologic and structure map of the Grand Junction quadrangle, Colorado and Utah: U.S. Geological Survey Miscellaneous Investigations Series Map I-736, scale 1:250,000.

Peterson, P. R., and Ritzma, H. R., 1974, Informational core drilling in Utah's oil-impregnated sandstone deposits, southeastern Uinta Basin, Uintah County, Utah: Utah Geological and Mineral Survey, Report of Investigation No. 88, 10 p.

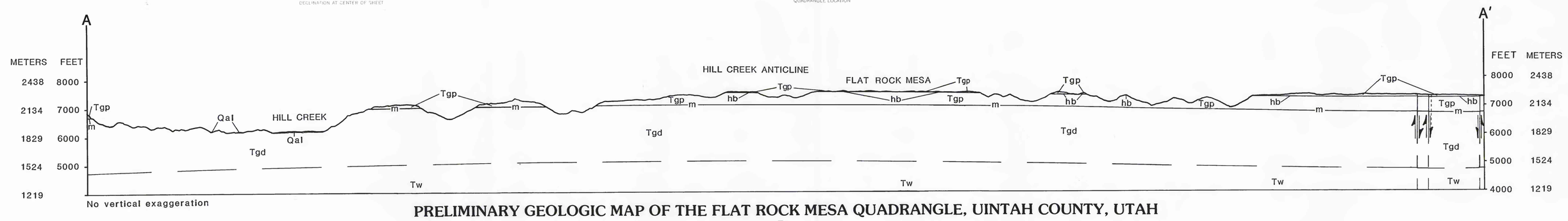
Pipiringos, G. N., 1979, Preliminary geologic map of the Agency Draw NE quadrangle, Uintah County, Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-1078, scale 1:24,000.

Smith, M. C., 1981, Structure contours and overburden on the top of the Mahogany bed, Green River Formation, eastern part of the Uinta Basin, Uintah, Duchesne, and Carbon Counties, Utah, and Rio Blanco County, Colorado: U.S. Geological Survey Miscellaneous Field Studies Map MF-1311, scale 1:126,720.

LIST OF DRILL HOLES IN THE FLAT ROCK MESA QUADRANGLE, UINTAH COUNTY, UTAH

[ND, no data found; 1 ft=0.305 m]

Drill-hole number (on map)	Operator	Drill-hole name	Total depth (feet)
1	Phillips Petroleum Co.	Flatrock #1	7,290
2	Pacific Transmission Supply Co.	Federal 44-3	7,907
3	Phillips Petroleum Co.	Flatrock #4	4,448
4	Phillips Petroleum Co.	Flatrock #5	4,598
5	Del Rio Drilling Co.	ND	ND
6	Phillips Petroleum Co.	Flatrock #2	6,795
7	Phillips Petroleum Co.	Flatrock #3	4,655
8	Del Rio Drilling programs	Flatrock 30-2a	4,101
9	ND	ND	ND
10	ND	ND	ND
11	Del Rio Drilling programs	#29-1a	6,248
12	Exxon Petroleum Co.	ND	7,295
13	Carter Oil Co.	Minton State #1	12,897
14	Phillips Petroleum Co.	Flatrock #6	4,750
15	Utah Oil and Refining Co.	#1 Hill Creek	2,145
16	Utah Geological and Mineral Survey	Hill Creek #1	268
17	Utah Geological and Mineral Survey	Hill Creek #2	488
18	Utah Geological and Mineral Survey	Hill Creek #3	500



PRELIMINARY GEOLOGIC MAP OF THE FLAT ROCK MESA QUADRANGLE, UINTAH COUNTY, UTAH

By

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