

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Revised preliminary geologic map of the northern half of the
Square S Ranch Quadrangle, Rio Blanco County, Colorado

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1984

Open-File Report 84-202

This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature.

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CORRELATION OF MAP UNITS

Qal	Holocene	} QUATERNARY
Qt	Pleistocene	

Tu5	} Eocene	} TERTIARY
Tgt		
Tu4		
Tgd		
Tu3		

DESCRIPTION OF MAP UNITS

- Qa1 ALLUVIUM (HOLOCENE)--Mud, silt, sand, and gravel of flood plains, and alluvial fans in the larger valleys
- Qt TERRACE DEPOSITS (PLEISTOCENE)--Remnants of older stream deposits on terraces 20 to 160 ft (6-49 m) above present levels of Piceance Creek. Deposits contain numerous smoothly rounded pebbles and boulders of chert, quartzite, limestone, arkose, and sandstone derived from pre-Tertiary rocks east of Piceance Creek Basin. Maximum thickness 25 ft (8 m)

UINTA FORMATION (EOCENE)

- Tu5 Unnamed tongue 5--Mostly brown to brownish-gray sandstone, with minor siltstone in eastern part of area. Sparse chert-pebble conglomerate. Sequence contains increasing proportion of light-gray marlstone, silty marlstone, and gray to greenish-gray siltstone in western part of area. Top of unit not present in area. Maximum thickness about 350 ft (107 m)
- Tu4 Unnamed tongue 4--Mostly light- to medium-brown sandstone and siltstone. Locally contains some ostracodal sandstone. Upper part contains considerable light-gray variably silty marlstone which becomes less silty westward across area. In western and southern part of area, tongue contains a thin persistent bed of oolitic limestone near top. Minor siltstone and thin lenticular marlstone beds east of Piceance Creek. Thickness ranges from about 100 to 350 ft (30-107 m)
- Tu3 Unnamed tongue 3--Mostly light- to medium-brown sandstone and siltstone; minor silty marlstone. In northwest part of area, unit contains two persistent marlstone beds, the lower of which was mapped as the Dry Fork Tongue of the Green River Formation on MF-754 (Duncan, 1974). Base of unit not exposed in area. Maximum thickness about 330 ft (100 m)

GREEN RIVER FORMATION (EOCENE)

- Tgt Thirteenmile Creek Tongue--Light-gray to white-weathering marlstone. Some ostracodal limestone in lower part. Minor siltstone and sandstone. Thickness ranges from about 20 to 60 ft (6-18 m). Note: The Thirteenmile Creek Tongue here locally includes beds stratigraphically lower than those included in map unit Tgtu - Thirteenmile Creek Tongue, upper part - as shown on MF-754 (Duncan, 1976)

Tgd Dry Fork Tongue--Light-gray to white-weathering marlstone; variably silty. In western part of area, contains a very thin persistent bed of sparry algal limestone at base. Becomes thinner westward across area, and tongues out just west of quadrangle boundary. Ranges in thickness from about 6 to 60 ft (2-18 m)

————— CONTACT--Approximately located where obscured by soil cover or vegetation.

————— FAULT--Bar and ball on downthrown side.

—5300— STRUCTURE CONTOURS--Approximately located. Drawn on top of Mahogany oil-shale zone (not exposed in this area) of the Parachute Creek Member of the Green River Formation, showing elevation in feet above mean sea level.

○ 3 DRILL HOLE--Showing map number; keyed to table.

REFERENCE

Duncan, D. C., 1976, Preliminary geologic map of the Square S Ranch Quadrangle, Rio Blanco County, Colorado: U.S. Geological Survey Miscellaneous Field Studies Map MF-754.

Note: This map supersedes approximately the north half of MF-754 (Duncan, 1976). The principal changes are in the mapping of the Dry Fork and Thirteenmile Creek Tongues of the Green River Formation. Mapping subsequent to 1976 has shown that the Dry Fork Tongue in the drainage of Yellow Creek lies stratigraphically above the unit mapped as Dry Fork Tongue on MF-754. The Thirteenmile Creek Tongue is here mapped in its entirety rather than only its upper part, with the addition of certain beds at the base of the unit. Structure contours have been modified, mostly as a result of new drill-hole information from within and near the area.

LIST OF DRILL HOLES
(Approximately located)

Map No.	Name	USGS corehole no.	Location	Total depth	Approximate ground elevation
1	Sinclair Oil Co. 1-1B Federal	C-6	SW1/4 sec. 6, T. 1 S., R. 97 W.	2,593 ft (790 m)	6,245 ft (1903 m)
2	J. D. Henderson 1 Henderson Gov't.		SE1/4 sec. 7, T. 1 S., R. 97 W.	7,042 ft (2146 m)	6,500 ft (1981 m)
3	Shell Oil Co. 41X-9	C-197	NE1/4 sec. 9, T. 1 S., R. 97 W.	3,000 ft (914 m)	6,545 ft (1995) m)
4	Carter Oil Co. 1 Square S Herring		SW1/4 sec. 11, T. 1 S., R. 97 W.	3,050 ft (930 m)	6,005 ft (1830 m)
5	Kaiser Aluminum Co. 17-1 Neilson	C-156	NE1/4 sec. 17, T. 1 S., R. 97 W.	2,554 ft (778 m)	6,550 ft (1996 m)
6	Kaiser Aluminum Co. 20-1 Neilson	C-1	SE1/4 sec. 20, T. 1 S., R. 97 W.	2,084 ft (635 m)	6,230 ft (1899 m)
7	Indian Wells Oil Co. 22-1-97 Federal		SW1/4 sec. 22, T. 1 S., R. 97 W.	6,235 ft (1900 m)	6,370 ft (1942 m)
8	General Petroleum Corp. 51-28 Yellow Creek		NE1/4 sec. 28, T. 1 S., R. 97 W.	2,690 ft (820 m)	6,050 ft (1844 m)
9	U.S. Bureau of Mines 02-A	C-299	SW1/4 sec. 29, T. 1 S., R. 97 W.	2,660 ft (811 m)	6,230 ft (1899 m)
10	U.S. Bureau of Mines 01-A	C-334	SW1/4 sec. 29, T. 1 S., R. 97 W.	2,610 ft (796 m)	6,240 ft (1902 m)
11	Wolf Ridge Minerals Corp. 14-1 Colorado	C-155	SW1/4 sec. 29, T. 1 S., R. 97 W.	2,460 ft (750 m)	6,300 ft (1920 m)

LIST OF DRILL HOLES--continued
(Approximately located)

Map No.	Name	USGS corehole no.	Location	Total depth	Approximate ground elevation
12	Wolf Ridge Minerals Corp. 24-1 Savage	C-154	NE1/4 sec. 24, T. 1 S., R. 98 W.	2,770 ft (844 m)	6,585 ft (2007 m)
13	Sinclair Oil Co. 1 Corehole	C-8	NE1/4 sec. 26, T. 1 S., R. 98 W.	3,385 ft (1032 m)	6,605 ft (2013 m)