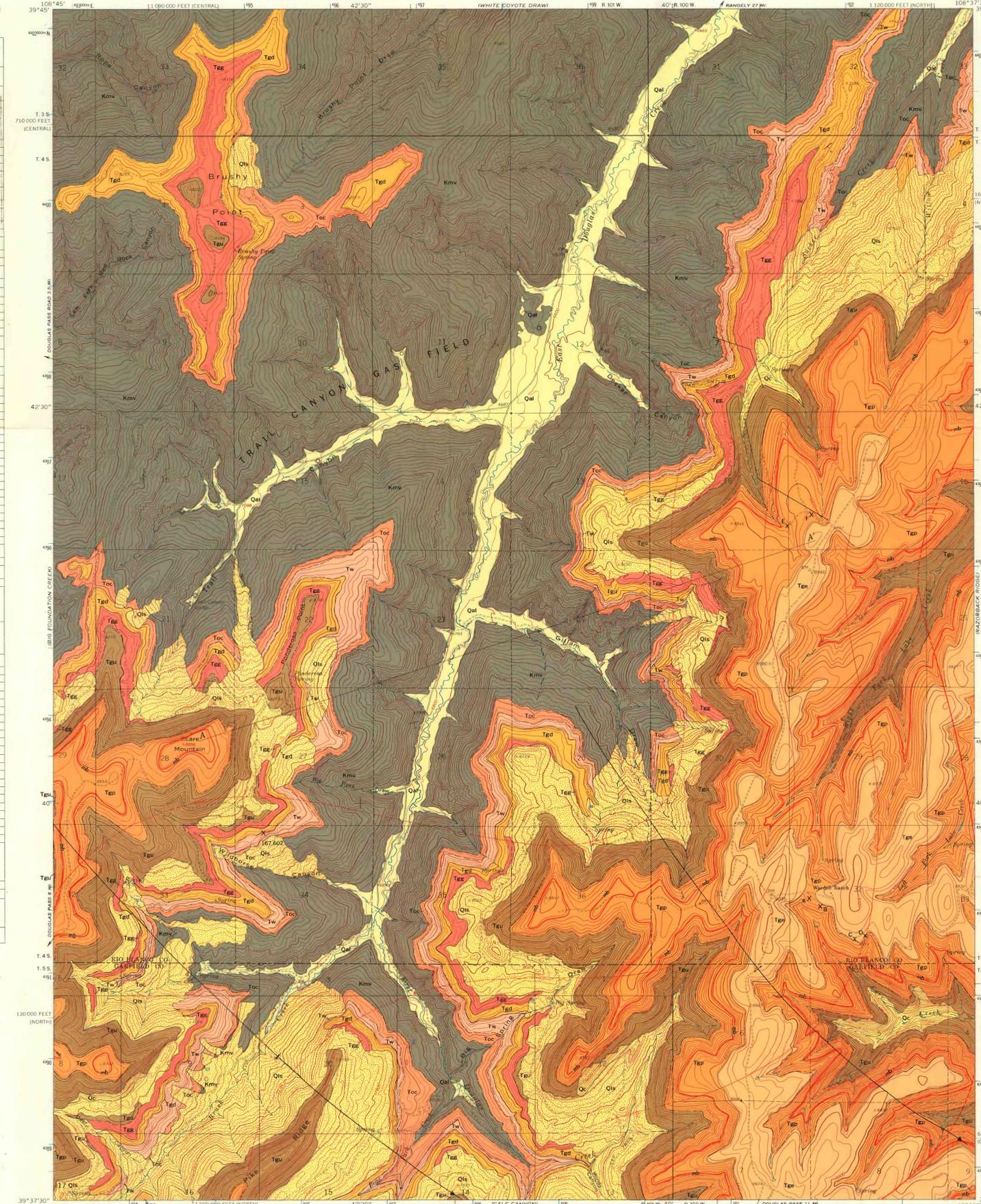


COMPOSITE STRATIGRAPHIC SECTION OF THE GREEN RIVER (PART), WASATCH, OHIO CREEK(?), AND MESAVERDE (PART) FORMATIONS MEASURED IN SECS. 17, 17, AND 18, T. 4 S., R. 100 W. (LINE OF SECTION SHOWN ON MAP)

SYSTEM	AGE	STRATIGRAPHIC UNITS	LITHOLOGY	DESCRIPTION
TERTIARY	Middle	Parachute Creek Member	[Symbol]	Gray, brown silty dolomitic claystone containing thin interbedded dark brown paper of shale and tan buff dolomitic siltstone.
			[Symbol]	Medium- to dark brown gray dolomitic oil shale and thin interbedded medium-brown dolomitic varved clay shale.
			[Symbol]	Medium-brown platy varved dolomitic clay shale interbedded with dark brown flaky to papery oil shale; abundant fossil fly larvae.
			[Symbol]	Medium- to dark brown dolomitic oil shale; well preserved fossil leaves.
			[Symbol]	Dark brown fissile oil shale and very thin interbedded analomized tuff.
			[Symbol]	Black hard dolomitic oil shale (the Mahogany oil shale bed, mb.)
			[Symbol]	Dark brown papery oil shale; thin analomized tuff at the top.
			[Symbol]	Medium- to dark brown papery oil shale; scattered fossil insects.
			[Symbol]	Medium-brown varved oil shale intermingled with dark brown to black flaky oil shale; excellently preserved leaf fossils.
			[Symbol]	Medium- to dark brown dolomitic oil shale; thin analomized tuff at the top.
TERTIARY	Eocene	Unnamed unit	[Symbol]	Tan to brown varved dolomitic clay shale interbedded with a few thin beds of tan, gray-green blocky dolomitic claystone; very thin beds of analomized tuff.
			[Symbol]	Dark brown flaky oil shale; interbedded tan varved clay shale.
			[Symbol]	Tan algal limestone; weathers to smooth plates.
			[Symbol]	Dark brown flaky dolomitic oil shale interbedded with tan varved clay shale; laminae of analomized tuff lower part.
			[Symbol]	Analomized tuff.
			[Symbol]	Dark brown flaky oil shale interbedded with tan clay shale.
			[Symbol]	Tan algal limestone.
			[Symbol]	Dark brown flaky oil shale interbedded with tan dolomitic silty clay shale.
			[Symbol]	Tan to dark brown dolomitic oil shale; base of bed is "blue marker" horizon.
			[Symbol]	Brown oil shale; algal limestone; tan gray dolomitic claystone; tuff.
TERTIARY	Early	Green River	[Symbol]	Seven beds of tan algal limestone interbedded with gray-brown flaky oil shale.
			[Symbol]	Light to medium gray dolomitic claystone; thin beds of algal limestone and brown to gray-brown flaky dolomitic oil shale.
			[Symbol]	Medium gray to medium gray green silty dolomitic claystone and interbedded tan algal limestone.
			[Symbol]	Gray hard dolomitic limestone.
			[Symbol]	Gray, very fine grained, calcareous sandstone and a few very thin interbedded gray to gray-green dolomitic silty to sandy claystone beds.
			[Symbol]	Gray to gray-brown silty dolomitic claystone.
			[Symbol]	Gray limy siltstone.
			[Symbol]	Gray-brown to gray-green silty dolomitic claystone.
			[Symbol]	Algal limestone; brown oil shale; tan gray siltstone containing black chert pebbles.
			[Symbol]	Brown, gray-green silty claystone.
CRETACEOUS	Paleocene and Eocene	Wasatch Formation	[Symbol]	Tan oolitic limestone; gray-green claystone; gray limy siltstone.
			[Symbol]	Light gray very fine grained sandstone; gray green to brown claystone.
			[Symbol]	Light gray limy hard siltstone; weathers to small elongated blocks.
			[Symbol]	Gray-green, gray, brown silty hard dolomitic claystone.
			[Symbol]	Gray siltstone; gray-brown varved oil shale; oolitic and algal limestone.
			[Symbol]	Gray-green dolomitic claystone; thin beds of tan algal limestone.
			[Symbol]	Papery oil shale; dolomitic claystone; sandstone; algal limestone.
			[Symbol]	Gray-green silty dolomitic claystone.
			[Symbol]	Tan algal limestone.
			[Symbol]	Tan oolitic limestone.
CRETACEOUS	Upper Cretaceous	Mesaverde Formation	[Symbol]	Gray-green silty shale; dark-gray-green silty mudstone; two beds of oil-saturated light gray to brown very fine grained micaceous sandstone.
			[Symbol]	Dark brown papery oil shale; thin laminae tan oolitic limestone.
			[Symbol]	Dark gray limy mudstone containing Goniatites sp. and Trilobites sp.
			[Symbol]	Gray-green silty blocky mudstone.
			[Symbol]	Gray fine grained limy sandstone containing abundant Goniatites sp.
			[Symbol]	Oil saturated light gray to brown fine grained sandstone.
			[Symbol]	Gray-green fissile silty shale.
			[Symbol]	Oil saturated light gray to brown fine grained sandstone.
			[Symbol]	Gray-green fissile shale; thin beds light gray very fine grained sandstone.
			[Symbol]	Gray oolitic limestone; some Goniatites sp.
CRETACEOUS	Paleocene and Eocene	Douglas Creek Member	[Symbol]	Gray, brown fissile shale.
			[Symbol]	Tan argillaceous oolitic limestone; a few thin beds of dark-brown papery oil shale.
			[Symbol]	Dark brown papery soft oil shale.
			[Symbol]	Tan argillaceous oolitic limestone.
			[Symbol]	Medium gray green mudstone; a few laminae of oolitic limestone.
			[Symbol]	Gray limestone containing Pecten sp., Astartella sp., Gynoxys sp., Pecteniformis sp.
			[Symbol]	Dark gray green silty blocky mudstone.
			[Symbol]	Gray fine grained sandstone and thin tan oolitic limestone at the top.
			[Symbol]	Light gray, fine- to medium grained, poorly sorted, subangular, soft, friable sandstone.
			[Symbol]	Gray calcareous siltstone; possibly a fossil leaf.
CRETACEOUS	Paleocene and Eocene	Ohio Creek(?) Formation	[Symbol]	Light gray fine grained sandstone; a few thin beds of dark gray carbonaceous siltstone.
			[Symbol]	Black silty limonitic carbonaceous shale.
			[Symbol]	Light gray, fine- to medium grained, fairly well sorted, angular to subangular, soft, friable sandstone; weathers gray white but has rust patches and streaks.
			[Symbol]	Black soft fissile shale.
			[Symbol]	Light gray sandstone; dark-gray-brown carbonaceous gypsiferous shale.
			[Symbol]	Light gray, very fine to fine grained, poorly sorted, subangular, soft, friable, crossbedded sandstone; abundant colored grains, white clay cement; weathers to massive ledge.
			[Symbol]	Dark gray soft sandy carbonaceous shale interbedded with light gray, very fine grained, fairly well sorted, soft, friable, salt-and-pepper sandstone.
			[Symbol]	
			[Symbol]	
			[Symbol]	



EXPLANATION

Quaternary

- Qal: Alluvium (Unconsolidated gravel, silt, and clay)
- Qls: Landslide deposits (Rock and soil debris at the base of steep slopes)
- Qc: Colluvium (Talus and slopewash deposits)

Green River Formation

- Tgs: Escanaba Creek Member: gray to brown dolomitic claystone, dark-brown papery oil shale, and tan-brown dolomitic siltstone and sandstone. Weathers to tan-gray rounded hills. Only the lower 175 feet is present. The lower part intertongues with the Parachute Creek Member. The contact is arbitrarily placed at the base of the lowermost tan-weathering siltstone or sandstone bed overlying gray-weathering dolomitic oil shale and clay-shale beds that comprise the upper part of the Parachute Creek Member.
- Tgp: Parachute Creek Member: mainly oil shale. Dark-brown to black dolomitic oil shale interbedded with brown to gray-green dolomitic clay shale. Very thin beds and laminae of gray analomized tuff and tan-gray dolomite. The upper part has abundant well-preserved fossil leaf and insect remains. Locally thin beds of algal limestone near the base. Weathers to chalky-gray cliffs and steep slopes. Contains the Mahogany oil shale bed (mb). This unit weathers by intertonguing with the underlying unnamed unit (Tgu). 200-775 feet thick.
- Tgu: Unnamed unit: mainly sandstone, siltstone, and claystone. Gray-brown to gray-green silty dolomitic claystone, algal limestone, gray fine-grained sandstone, and light-gray limy siltstone. This bed of tan to gray oolitic limestone and gray argillaceous limestone. A few thin beds and laminae of analomized tuff. Sparse thin beds of brown papery to flaky dolomitic oil shale. Weathers to steep gray slopes interspersed by tan-brown-weathering siltstone and sandstone benches. This unit was traced in an area about 3 miles southwestward from the quadrangle to where it comprises the upper part of the type section of the Douglas Creek Member. 125-650 feet thick.
- Tgc: Garden Gulch Member: the upper part is dark-brown to black fissile to papery oil shale and has thin beds of tan oolitic limestone, algal limestone, and gray-brown limy claystone. The lower part is gray-green silty sandstone, gray to brown fine-grained sandstone and thin beds of gray-green shale, dark-brown oil shale, and oolitic or multi-bedded limestone. The shale weathers dark gray; the sandstone light gray. 95-225 feet thick.
- Tgd: Douglas Creek Member: dark-brown soft papery oil shale and gray fine-grained sandstone. Abundant thin beds of oolitic or multi-bedded limestone. Sparse thin beds of gray to gray-green shale, dark-gray to black carbonaceous shale, gray-green mudstone, and light-gray calcareous siltstone. In the northwest part of the map the member has a few thick beds of algal limestone and thin beds of oil shale. Weathers to gray-brown slopes interspersed by sandstone and limestone benches. The "orange marker," a distinctive resistivity core on electric logs, is located 15-25 feet below the top in regional subsurface correlations. This unit southwestward, 80-200 feet thick.

Wasatch Formation

- Tw: Gray and green silty mudstone, gray to brown carbonaceous shale, light-gray fine-grained sandstone, and gray calcareous siltstone. Locally the formation is dominantly sandstone. Weathers to dark-gray slopes interspersed by tan to gray sandstone benches. This unit weathers; wedges out to the north-west corner of the map. 0-210 feet thick.

Ohio Creek(?) Formation

- Toc: Gray, very fine to fine grained, crossbedded sandstone, locally coarse-grained and containing thin bands of conglomerate. A few very thin beds of gray sandy shale. Weathers to tan or gray bench, or series of benches. Wedges out to the extreme northwest part of the map. 0-220 feet thick.

Mesaverde Formation

- Kmv: Dark-gray waxy carbonaceous shale, gray-green shale, gray siltstone, and gray fine-grained sandstone. Weathers to dark-gray slopes interspersed by gray or tan sandstone benches. Only the upper 1,000 feet is exposed in quadrangle.

CONTACTS

- Contact: Dashed where approximately located
- Anticline: Showing crestline and direction of plunge
- Syncline: Showing troughline and direction of plunge
- Strike and dip of beds: 8500'
- Structure contours: Drawn on top of the Mahogany oil-shale bed. Short dashed where datum is eroded. Contour interval 100 feet.

Drilling well or well location

- Dry hole
- Gas well
- Line of measured stratigraphic section

Fossil leaf and insect locality

- A, D, World! Beach localities, discussed in MacGinitie (1909, p. 29-30)
- E, F, unnamed localities

Fossil mammal locality

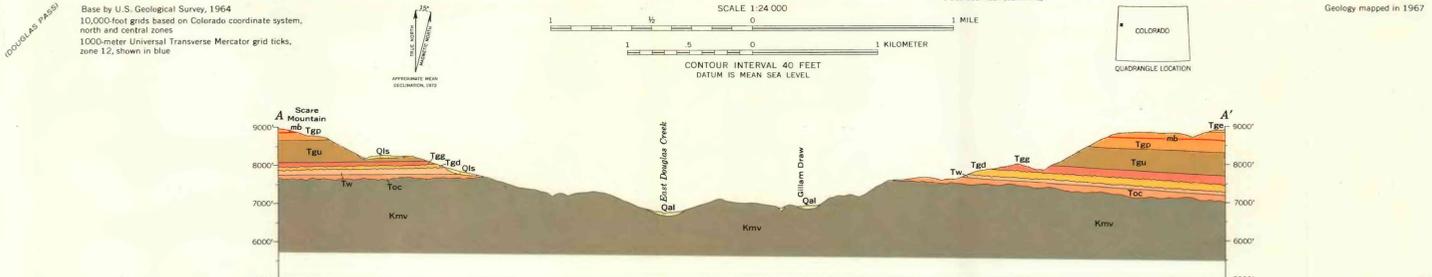
- X 167,602
- Showing National Museum of Natural History catalog number. Probable Last Cuban provincial age of Wood and others (1951, p. 9, 21)

REFERENCES

MacGinitie, H. D., 1909, The Eocene Green River flora of northwestern Colorado and northeastern Utah: California Univ. Press Publ. in Geol. Ser., v. 85, 140 p.

Wood, H. E., 24, and others, 1941, Nomenclature and correlation of the North American continental Tertiary: Geol. Soc. America Bull., v. 52, no. 1, p. 1-48.

Geology mapped in 1967



GEOLOGIC MAP OF THE BRUSHY POINT QUADRANGLE, RIO BLANCO AND GARFIELD COUNTIES, COLORADO

By
Henry W. Roehler
1972