

**DESCRIPTION OF MAP UNITS**

**Qa11** LOCALLY DERIVED ALUVIUM (HOLOCENE)—Found in tributaries of the Colorado River. Derived from local bedrock outcrops.

**Qa1c** ALUVIUM OF COLORADO RIVER (HOLOCENE)—Found along the Colorado River. Contains pebbles and cobbles derived from distant sources.

**Qc1** LOCALLY DERIVED TERRACE DEPOSITS (PLEISTOCENE)—Old alluvial fan, talus, and slope-wash deposits. Found mainly around South Shale Ridge where it forms a single sloping surface.

**Qtc** TERRACE DEPOSITS OF COLORADO RIVER (PLEISTOCENE)—Forms several levels along the Colorado River. Contains pebbles and cobbles derived from distant sources.

**Qs** SLUMP DEPOSITS (HOLOCENE AND PLEISTOCENE)—Found mainly along the steep slopes of South Shale Ridge.

**Tgdm** DOUGLAS CREEK MEMBER OF THE GREEN RIVER FORMATION (Eocene)  
Muddy facies—Carbonate-rich rocks such as laminated muddy carbonates, ostracodal, oolitic, and algal limestone interlayered with olive-green mudstone, medium- to dark-gray shale, gray siltstone, and gray sandstone. Sandstone units are fairly persistent, 5 m or less thick and constitute less than 20 percent of the unit. Sandstone is fine to medium grained, moderate to well sorted, parallel-horizontal, and ripple laminated. Ostracodal, oolitic, and algal limestone are as much as 2 m thick and constitute about 10 percent of the facies. Middle to early Eocene in age (Johnson and May, 1979). Only the lower 130 m of the section is exposed in the quadrangle.

**Tgsu** Tuff bed at Kimball Mountain—Mapped as the base of the muddy facies although may be as much as 20 m above the base. Even bedded, 5 cm-thick tuff; consists of sandstone which is partially replaced by large sparry calcite crystals; crystals are conspicuous on fresh surface. Purple and gray on fresh surface, and rust brown where weathered.

**Tgdc** Sandy facies—Gray sandstone, gray siltstone, and gray- to olive-gray mudstone, with minor oolitic, ostracodal, and algal limestone, and a few thin oil-shale beds. Sandstone units are fairly persistent, are as much as 30 m thick and constitute about half of the facies. Sandstone is fine to coarse grained, moderately well sorted, and parallel-horizontal, trough-cross, and ripple laminated. Mudstone is nonlaminated to indistinctly laminated and sometimes contains ostracods. Equivalent to the Arvil Points Member of the Green River Formation as mapped in Long Point quadrangle (Johnson, 1975). Middle to early Eocene in age (Johnson and May, 1979). Thickness 100–110 m.

**Twsu** Marker bed at Long Point—Varying amounts of fine- to medium-grained quartz sand, ostracods, and oolites; containing locally abundant *Goniatites* and *Strophomena* gastropods. A widespread transgressive unit found throughout the southwest Piceance Creek basin. Thickness about 1–7 m.

**Tws1** Tongue at Cow Ridge—Gray ostracodal clay shale and brown carbonaceous clay shale with some sandstone, siltstone, and massive maroon and gray mudstone. Sandstone units are 5 m or less thick, persistent, fine grained, well sorted, parallel-horizontal, and ripple laminated. The sandstone contains abundant ostracods and some gastropods, pelecypods, and fish remains. Formerly called middle part of Shire Member (Johnson, 1975, 1977). Middle to early Eocene in age (Johnson and May, 1979). Thickness 50–60 m.

**WASATCH FORMATION (EOCENE AND PALEOCENE)**  
**Shire Member (Eocene and Paleocene?)**  
Upper part—Mostly massive gray, purple, and maroon mudstone and a few lenticular sandstone units. The sandstone units are 10 m or less thick, fine to coarse grained, moderately to poorly sorted, and parallel-horizontal, trough-cross and drift-ripple laminated. Middle to early Eocene in age (Johnson and May, 1979). Thickness 10–60 m, and thickening toward the northeast.

**Lower part—Mostly massive gray, purple, and maroon mudstone with a few lenticular sandstone units. Similar to upper part (Twsu). Contains the equivalent of the Molina Member southwest of sec. 5, T. 9 S., R. 98 W. Middle to early Eocene in age (Johnson and May, 1979). Thickness 45–140 m, thickening toward the northeast. Where the unit includes the equivalent of the Molina Member, thickness is about 150 m and may be partly Paleocene in age.**

Table of Drill-hole Data

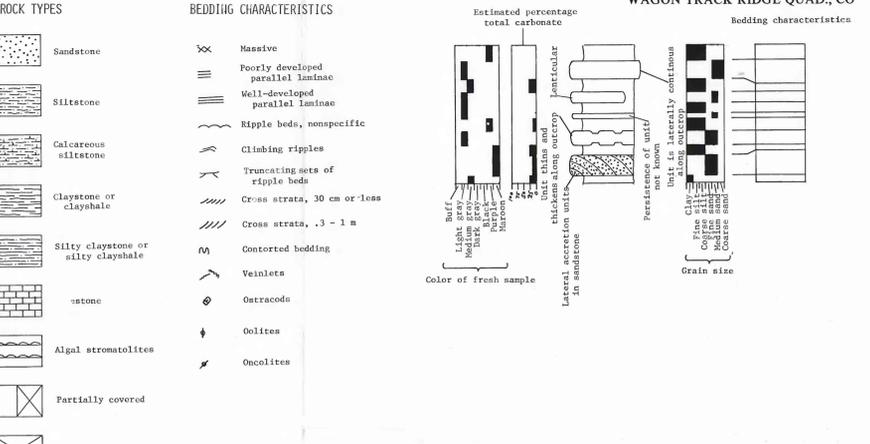
No.	Name and Operator	Location			Total depth	
		sec.	T.S.	R.W.	ft	m
1	Orocco Oil and Gas Co. no. 2 Coon Hollow	25	8	98	2,205	672
2	Orocco Oil and Gas Co. no. 1 Coon Hollow	26	8	98	2,404	733
3	United Producing Co. no. 1-31 Coon Hollow	31	8	98	7,843	2,391
4	Thomas A. Kendall no. 1 Coon Hollow	32	8	98	2,011	613
5	DeBeque Petroleum Co. no. 1 Coon Hollow	34	8	98	3,459	1,054
6	United Producing Co. no. 2-23	23	9	98	2,496	822

**Molina Member (Eocene and Paleocene?)**—Mostly gray and brown sandstone, trough-cross and massive mudstone. Sandstone units are from 1 to 15 m thick, fairly persistent, and constitute up from about 25 to 70 percent of the member. Sandstone is fine to medium grained, well sorted to moderately well sorted, and parallel-horizontal, trough-cross and drift-ripple laminated. Sandstones become more lenticular and less abundant to the southwest. In sec. 5, T. 9 S., R. 98 W., sandstone abundance generally drops below 25 percent, and southwest of here the unit is mapped with the lower part of the Shire Member (Qw1). Purple and maroon mudstone also appear in the member near its southeast limit, and in general, the Molina grades laterally into typical Shire lithology. The basal sandstone persists throughout the quadrangle, however, and is used as the base of the Shire Member where the Molina Member is no longer present. Middle to early Eocene and late Paleocene(?) in age (Johnson and May, 1979). Thickness 45–70 m.

**Arwell Gulch Member (Paleocene)**—Mostly black, gray, and maroon claystone and mudstone with a few sandstone units. Sandstone units are 7 m or less thick, lenticular, and found mainly in the lower 30 m of the member. Sandstone is commonly fine to coarse grained, poorly sorted and contains lenses of chert and silicified limestone pebbles of various colors. Sandstone is parallel-horizontal, trough-cross, and drift-ripple laminated. Most of the upper half of the member is dark-gray to black claystone. Late Paleocene in age (Johnson and May, 1979). Thickness 150–215 m, thickening toward the northeast.

**HUNTER CANYON FORMATION (UPPER CRETACEOUS)**—Mostly gray to white sandstone, interlayered with massive gray mudstone and gray carbonaceous claystone. Sandstone units are as much as 40 m thick, lenticular, and constitute about 60 to 70 percent of the formation. Sandstone is fine to coarse grained with a few lenses of small gray chert and gray silicified limestone pebbles found mainly in the upper 100 m. Sandstone is parallel-horizontal and trough-cross laminated with some large-scale lateral-accretion bedding. White sandstone is confined to the upper 50–100 m of the section. The white color is caused by a breakdown of feldspar to kaolinite and is interpreted to be a paleo-weathering profile developed during the time gap represented by the overlying unconformity (Johnson and May, 1980). This white zone has been called Ohio Creek Formation in the past but was recently redefined as a member of the Hunter Canyon Formation (Johnson and May, 1980). In Wagon Track Ridge quadrangle, the lower contact of the Ohio Creek Member is gradational on outcrop and, consequently, the member was not capped. Early restriction to late Campanian in age (Johnson and May, 1979). Only upper 200 m is exposed.

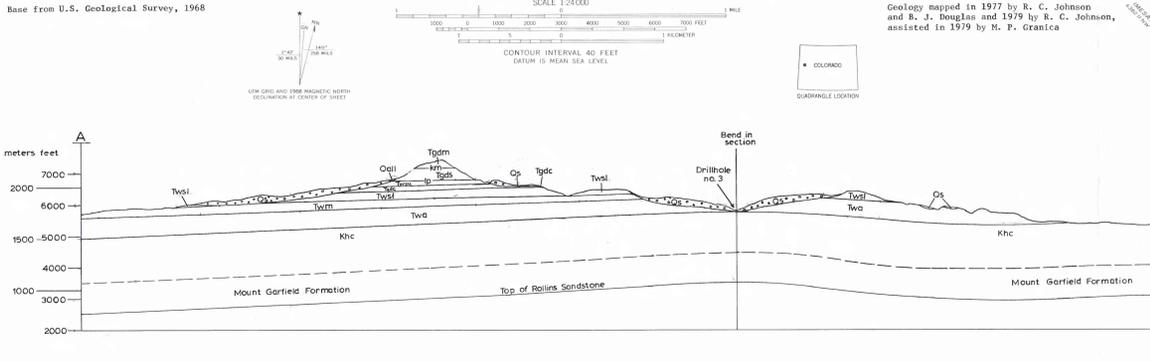
- REFERENCES CITED**
- Johnson, R. C., 1975, Preliminary geologic map, oil-shale yield histograms, and stratigraphic sections, Long Point quadrangle, Garfield County, Colorado: U.S. Geological Survey Miscellaneous Field Studies Map MF-688, scale 1:24,000.
- 1977, Preliminary geologic map and cross section of the Saddle quadrangle, Garfield County, Colorado: U.S. Geological Survey Miscellaneous Field Studies Map MF-829, scale 1:24,000.
- Johnson, R. C., and May, Fred, 1979, Preliminary stratigraphic studies of the upper part of the Mesaverde Group, the Wasatch Formation, and the lower part of the Green River Formation, DeBeque area, Colorado, including environments of deposition and investigation of palynomorph assemblages: U.S. Geological Survey Miscellaneous Field Studies Map MF-1050, 1980, A study of the Cretaceous-Tertiary unconformity in the Piceance Creek basin, Colorado—The underlying Ohio Creek Formation (Upper Cretaceous) redefined as a member of the Hunter Canyon or Mesaverde Formation: U.S. Geological Survey Bulletin 1482a, in press.



**ABBREVIATIONS**

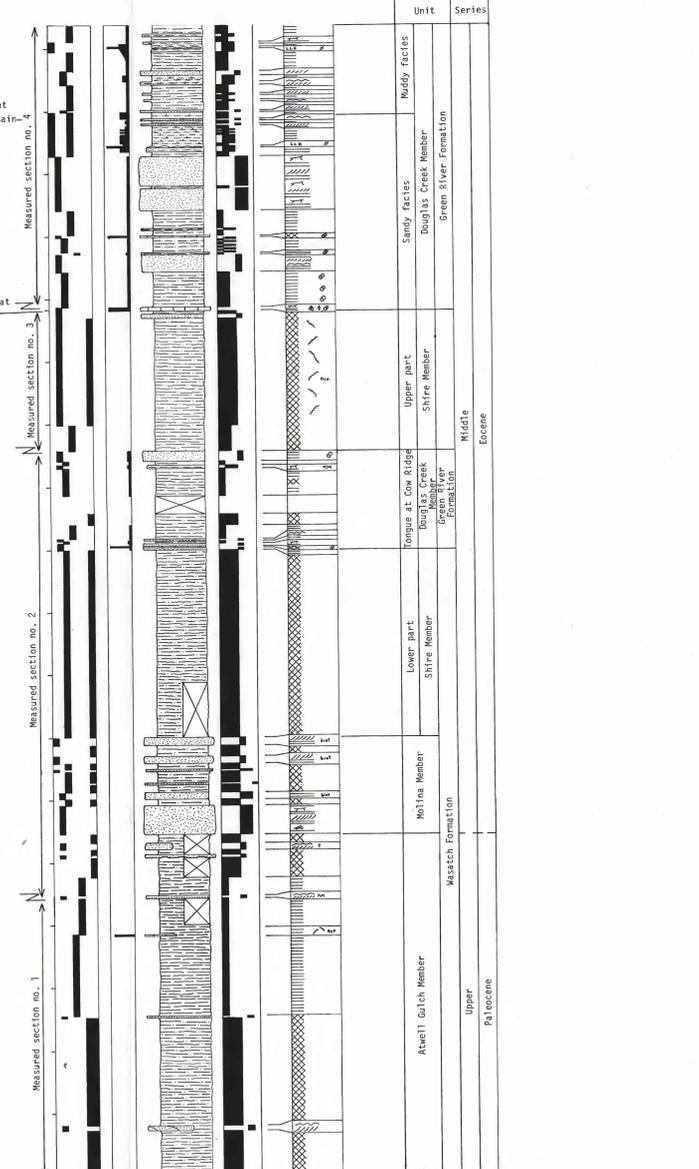
LLH Laterally linked hemispheroids  
Bt Bioturbation  
Gyp Gypsum

Measured Sections Located in sec. 21, 27, and 28, T. 8 S., R. 98 W. of the Wagon Track Ridge quadrangle, Colo.



PRELIMINARY GEOLOGIC MAP OF THE WAGON TRACK RIDGE QUADRANGLE, GARFIELD AND MESA COUNTIES, COLORADO

By  
Ronald C. Johnson and Bruce J. Douglas  
1980



Vertical Scale 1 in. = 100 ft (1 cm = 12 m)