

GENERALIZED COLUMNAR SECTION

SYSTEM	SERIES	STRATIGRAPHIC UNITS	LITHOLOGY	DESCRIPTION
QUATERNARY	Pleistocene and Recent	Alluvium, colluvium and terrace gravels		Clay, silt, and unconsolidated sand. 1 to 50 feet.
				Mainly quartzite cobbles and pebbles, some volcanic and metamorphic rocks and some red and gray chert. 1 to 25 feet.
TERTIARY	Eocene	Units		Sandstone, brown and light-brownish-gray, medium- to coarse-grained, lenticular, interbedded with gray olive and brown calcareous shale a few beds contain abundant plant debris. 360+ feet.
		Evacuation Creek Member		Sandstone, light-greenish-yellow, very fine grained; oscillation ripple marks; pale olive limy shale in upper part; light-gray marlstone and very light gray limestone in middle part; very light gray granular limestone at base. 360 feet.
		Parachute Creek Member		Fly larvae
				Marlstone, very light gray and grayish-olive-green; sandstone, yellow-gray, very fine grained, limy; limestone, buff, medium- to coarse-grained, algal and pelletal; contains some beds of oil shale that yield 10 gallons of oil per ton. Base of main oil-shale zone marked by top of m bed. Distinctive fly-larvae(?) zone near top of member. 1,370 feet.
				Analcime 1.4'
	Wasatch Formation	Main oil shale m bed		May be correlative with a part of the Mahogany ledge of the Piceance Basin about 10 miles east of map area.
		Thin oil shales, 5-25 g/t		
		Oil shale, 10-15 g/t		
		Garden Gulch Member		Shale, grayish-green, dolomitic. Contains local sand lenses. 455 feet.
		Tongue of Wasatch Formation		Limestone, buff to brownish-gray, fine- to medium-grained; shale, gray-green, limy. Tongue of Wasatch Formation (0-100 feet); variegated gray and red shale and fine- to very fine-grained light-gray sandstone containing abundant gastropods (<i>Gastropoda</i> sp., <i>Vesicovera</i> sp.). Member sandy in basal 20 to 30 feet and has distinctive thin dark-gray limestone with corals near base. Fossil locality D3652 yielded numerous specimens of <i>Platystrophia</i> pollen. 390 feet.
CRETACEOUS	Upper Cretaceous	Fossil locality D3653		Claystone and shale, green, grayish-green, purple, and red, soft; sandstone, white to ash-gray, fine- to medium grained, slightly resistant to nonresistant, very lenticular, dark chert grains common. 325 to 120 feet.
		Fossil locality D3545B		
		1.5' Coal		
		1.0' Coal		
		Barren member		Sandstone, brown to yellowish-gray, fine- to very fine-grained at base becoming coarser toward top, limy, massive, ripple-forming, lenticular; interbedded with yellow-gray shale, thin coals locally present in upper part. Fossil locality D3545B yielded paleontological assemblages similar to assemblages obtained from Fox Hills Sandstone, basal part of Larue Formation, and basal part of Medicine Bow Formation. 1,090 feet.
	Mesaverde Formation	Main coal member		Sandstone, yellowish-gray to dirty-orange, very fine- to fine-grained, limy; interbedded with gray and brown carbonaceous shale; thickest coal beds in lower part of member. 510 to 600 feet.
		Minor coal member		Sandstone, light-brown, yellowish-gray, and very light gray, fine- to very fine-grained, limy; interbedded with gray to light-brown-gray shale and brown carbonaceous shale. Contains a few thin coal beds (1.5-2.0 ft). Base probably marks transition from underlying marine sandstone to continental and freshwater strata. 750 feet.
		Sego Sandstone Member		Sandstone, very light gray, fine- to very fine-grained, limy. <i>Inoceramus</i> sp. at top. 30 feet.
		Anchor Mine Tongue of Mancos Shale		Shale, brownish-gray; sandy in lower 40 feet. 40 to 110 feet.
		Buck Tongue		Sandstone, yellow-gray to gray-orange, fine-grained. <i>Ophiomorpha</i> at base. 0 to 50 feet.
CRETACEOUS	Mancos Shale	Tongue of Castlegate Sandstone		Sandstone, very light gray, weathers same, very fine grained, very porous, resistant. Upper 30 feet fine grained; contains pale-yellow-brown ferruginous sandstone concretions averaging 0.4 feet in diameter; locally a thin (0.5 ft) coal is present at top. 50 to 70 feet.
				Shale, brownish-gray, noncalcareous, marine; interbedded siltstone and very fine grained sandstone; thin beds of sandstone. 3,600 feet from base of Mesaverde Formation to top of calcareous facies of Mancos Shale; only top 1,900 feet exposed.
		Emery(?) Sandstone Member		Sandstone, orange-gray-pink, very fine grained, silty, very calcareous, slightly resistant; correlates with basal "B" zone in subsurface along Douglas Creek Arch about 12 miles southeast of map area. 15 feet.
				Shale, as in upper part of Mancos Shale.

ECONOMIC GEOLOGY

Oil and gas, coal, oil shale, sodium zeolites, and sand and gravel occur within the mapped area, but only oil and gas and sand and gravel are being exploited at the present time. Part of the Rangely oil field is included in the mapped area. The Rangely field is the only field in Colorado classified as a "giant"; that is, it has an ultimate recovery of 100 million barrels of oil or more. Production is from several formations and reservoirs along the flanks and crest of a large anticline at depths ranging from about 560 feet to more than 6,700 feet. The following table shows cumulative production figures for each productive formation (Colorado Oil and Gas Conservation Commission, 1966).

Cumulative production to January 1, 1966, Rangely field		
Reservoir	Oil (barrels)	Gas (thousand cubic feet)
Mancos Shale	10,018,442	22
Morrison Formation	2,471	
Entrada Sandstone		52,293
Gartre Member of Chinle		
Weber Sandstone	212,087	51,387
Total	369,016,301	611,186,282
	379,249,301	611,290,634

¹No production is presently being obtained from the Entrada Sandstone and the Gartre Member of the Chinle Formation.

²New usage, formerly reported as Shinarump Conglomerate.

At the present time only the Mancos Shale and the Weber Sandstone are productive in the Banty Point quadrangle. The Dakota Sandstone has yielded minor quantities of gas, but the wells have gone to water rapidly.

Coal beds as much as 12 feet thick are exposed in the main coal member of the Mesaverde Formation and beds as much as 4 feet thick are exposed in the minor coal member. Two thin discontinuous coal beds are present near the top of the Buck Tongue. Samples collected by Gale (1910, p. 196, 197, 250) from the abandoned Hector mine in sec. 14, T. 1 N., R. 102 W., in the adjoining Rangely quadrangle show that Mesaverde coal has a calorific value of 11,080 to 11,490 Btu (air-dried). The average sulfur content is 0.40 to 0.46 percent. The coal is classified as high volatile C bituminous (Landis, 1959, p. 150). No mines are presently operative in the mapped area.

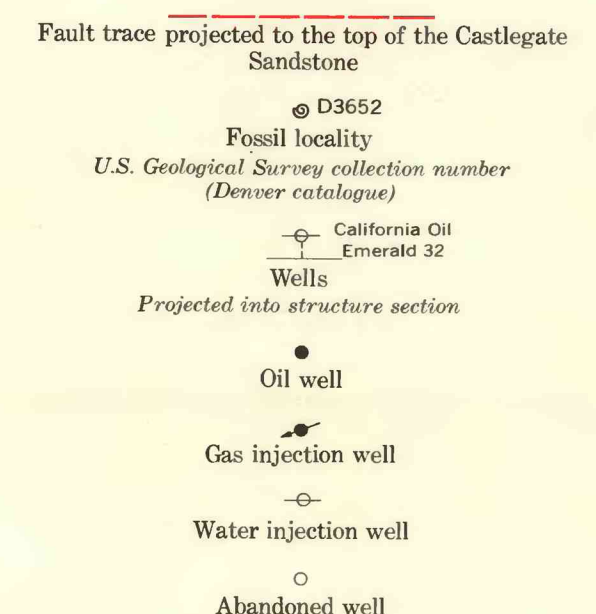
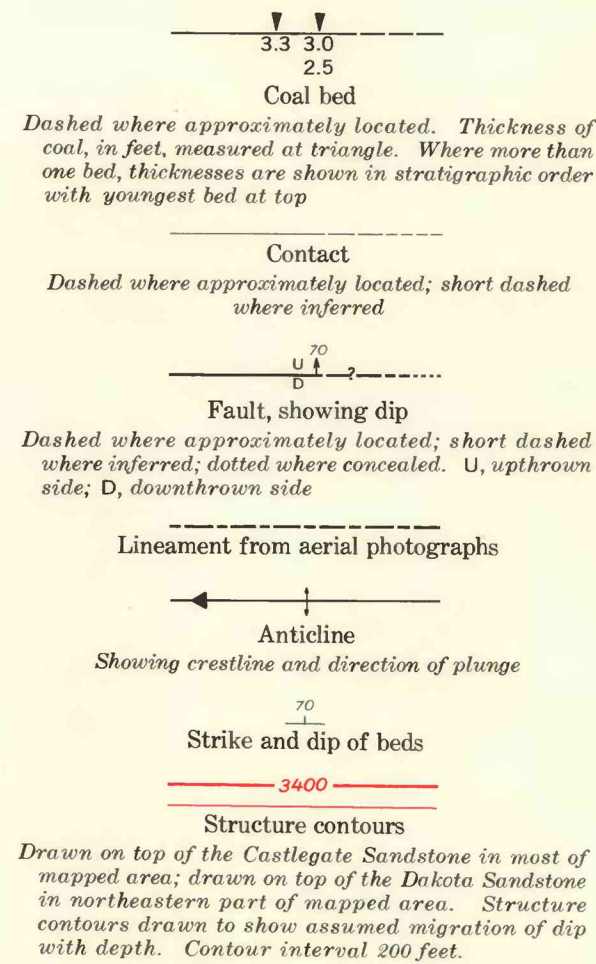
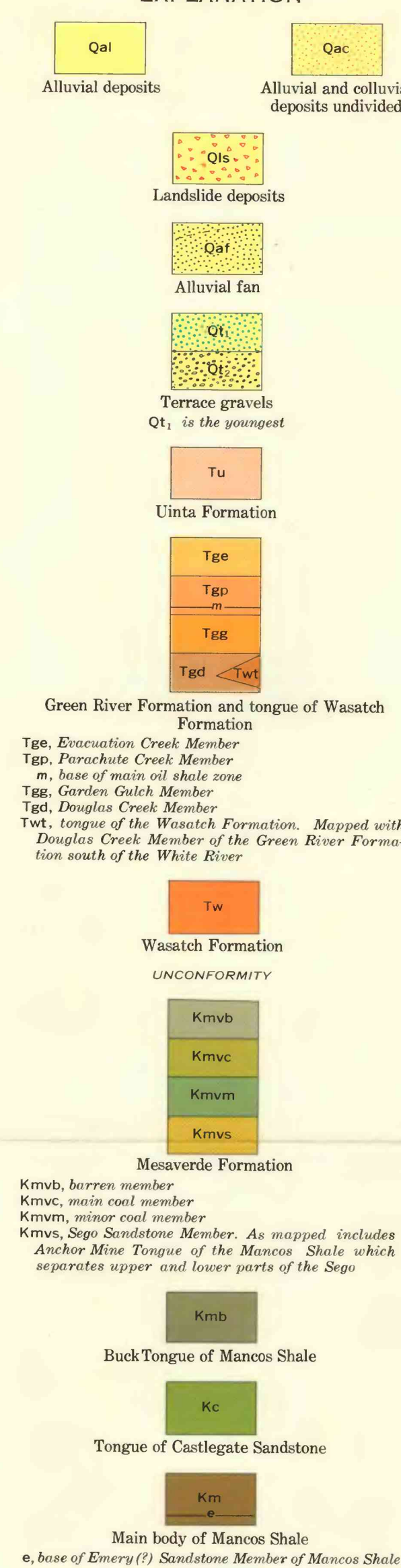
Oil shale and analcime are present in the Parachute Creek Member of the Green River Formation. Analyses of outcrop samples of the oil shale show oil yields ranging from less than 10 gallons to 25 gallons per ton. Somewhat larger yields should reasonably be expected from unweathered shale. Nine thin beds of analcime have been recognized in the Parachute Creek Member. Three of these beds occur within a 50-foot interval below the m bed and the remaining six beds occur in a 380-foot interval above the m bed. The thickest beds is 1.4 feet thick and is 250 feet above the m bed.

REFERENCES CITED

Colorado Oil and Gas Conservation Commission, 1966, Colorado oil and gas statistics, 1965: 121 p.
Gale, H. S., 1910, Coal fields of northwestern Colorado and northeastern Utah: U.S. Geol. Survey Bull. 415, 265 p.
Landis, E. R., 1959, Coal resources of Colorado: U.S. Geol. Survey Bull. 1072-C, p. 131-282.



EXPLANATION



GEOLOGIC MAP OF THE BANTY POINT QUADRANGLE, RIO BLANCO COUNTY, COLORADO

By
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