GEOLOGY OF THE WILLIAMS PARK - FISH CREEK ANTICLINES
Routt County, Colorado

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LOCATION

The Williams Park and Fish Creek structures are located in southwestern Routt County, Colorado in Townships 3 and 4 North, Ranges 87 and 88 West.

HISTORY AND DEVELOPMENT

The first well on the Williams Park Anticline was drilled prior to 1920 by the Twenty Mile Oil Company. It was spudded in the Mancos shale with the total depth reported as 1725 feet in the Dakota formation, and was followed by three more tests by the same operators. The Producers and Refiners Corporation also drilled a well on the north end of the structure in 1920. No complete records of the wells have been located and all information is of questionable reliability; but from that available, gas shows were reported in these wells from depths ranging from 42 feet to 1725 feet with several shows being reported in each well. Only the No. 1 well reported oil shows. All shows presumably were in stray sands or in the shales of the Mancos formation and in the Dakota formation. Stratigraphically, the deepest penetration was in the No. 4 well which reportedly drilled 380 feet of the Chinle formation at a total depth of 1518 feet. No information concerning casing of the wells or production from them is available. The largest estimated gas flow has been reported as 500,000 cubic feet per day from the No. 2 well. The field has never actually been in production.

On the Fish Creek structure, three wells have been drilled. The first, by the Mid-Colorado Petroleum Company was spudded in 1930 and finally reported as abandoned in 1941. The two other wells were drilled by O. D. Robinson in 1953 and the No. 1 Kagie was a granite test to 4794 feet. This well encountered oil shows in the Dakota, Lakota, Shinarump and Morgan. However, drill stem tests recovered only mud and water, and no commercial production was indicated.

GEOLOGY

General

Geologically these structures are folds plunging northward from the White River Uplift. The outline of the features are well delineated by the outcrop of massive sandstones in the basal Mesaverde formation, but the interior portions of the folds are more obscure, being expressed in the soft shale beds of the Mancos formation and lying partially in well wooded, rugged terrain. Tertiary basalt flows cap the highlands to the south, forming flat topped mountains, and in part obscure the southern portion of the Williams Park feature.

Structure

The Williams Park Anticline is a portion of a somewhat sinuous line of folding that includes the Little Poose Creek, Williams Park and Sage Creek Anticlines. The Williams Park feature trends generally north-south, but is slightly arcuate to the east. The fold is assymetrical with dips on the eastern flank ranging from 30° to 56° and those on the western flank from 12° to 20°. The structure shows approximately 1250 feet of closure covering an area some four miles long by a mile and a half wide. The northern plunge of the feature becomes the Sage Creek fold

The Fish Creek Anticline is a plunging nose trending northeasterly from the Williams Park closure. It is also an assymetrical anticline averaging 25° dip on the eastern limb and 10° on the western limb. No demonstratable closure is present.

The only faulting mapped on these structures is an axial fault exposed on the plunge of the Fish Creek nose in the Mesaverde sandstone beds. This appears to be a nearly vertical fault, downthrown on the west, with a displacement of some 100 feet.

STRATIGRAPHY

An abbreviated stratigraphic column is incorporated with the illustration; however, since shows have been encountered in several formations, a brief lithologic description of the more favorable of the potentially productive horizons is included here.

DAKOTA — sandstone, light gray to gray, fine-grained, quartzitic to tight, occasionally shaley, pyritic, grains sub-rounded to sub-angular, exhibits some porosity. Estimated 50 feet overall thickness approximately half being effective reservoir sandstone.

LAKOTA — sandstone, light gray to light tan, medium grained, well cemented, tight to quartzitic, fair sorting, abundant pyrite and chert. Chert is blue to milky. Sandstone conglomeratic in part. Estimated 30-35 feet thick.

SHINARUMP — sandstone, conglomeratic, white to gray, coarse grained to conglomeratic with pebbles up to ½" in size. Good porosity; estimated 40 feet thick.

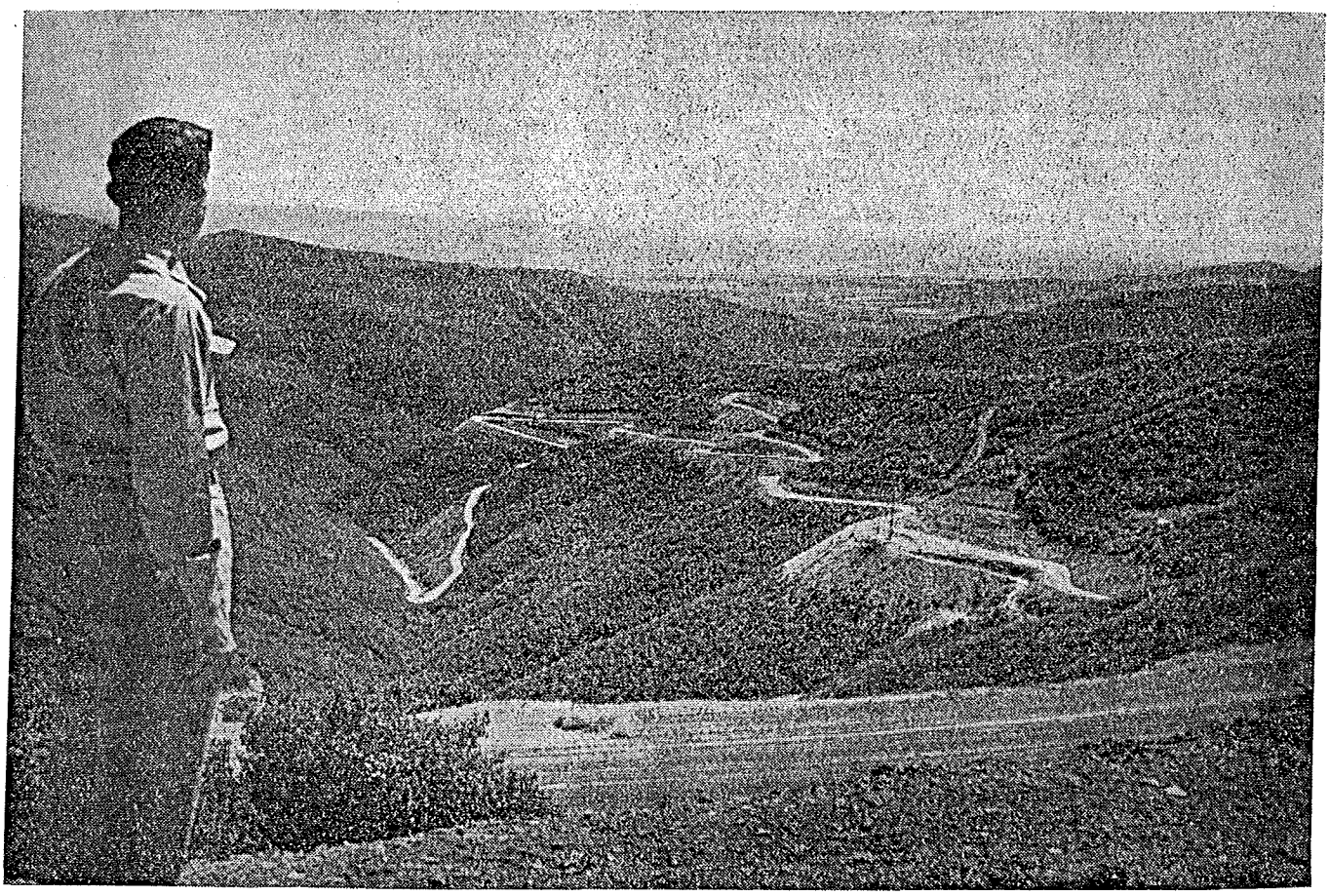
Permo-Pennsylvanian strata penetrated in the No. 1 Kagie well include coarsely clastic arkose which may represent the time equivalent of several formations. Principally because of a lack of detailed correlation through the region, the formations present are tentatively identified as Morgan, Maroon and granite wash. Potential reservoir beds are absent in this part of the section.

BIBLIOGRAPHY

Barb, Clark F. (1946), "Selected Well Logs of Colorado," Quarterly of the Colorado School of Mines, vol. 41, no. 1, pp. 388-90.

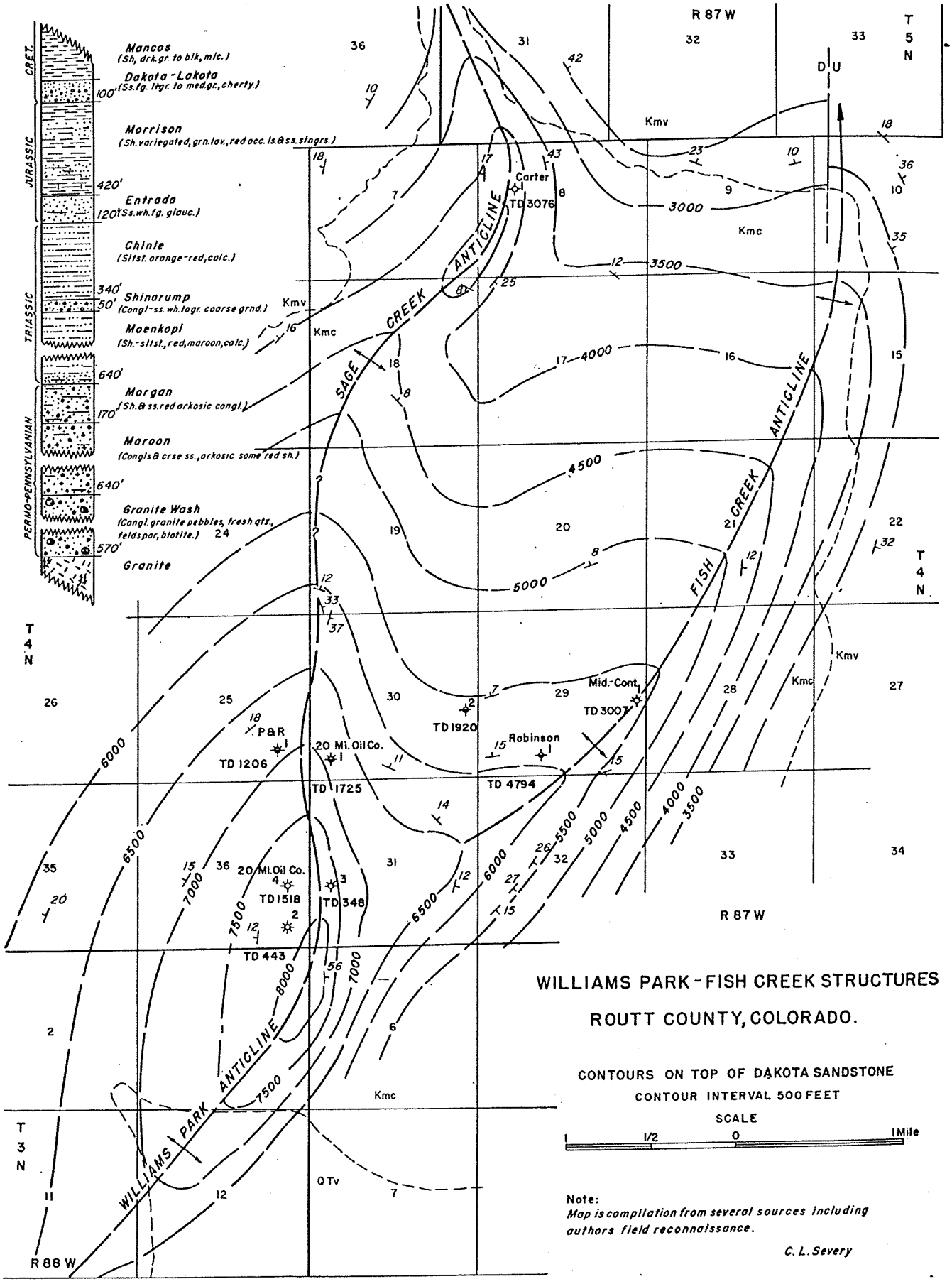
Coffin, R. W., Perini, V. C., and Collins, M. J. (1924), "Some Anticlines of Western Colorado," Colo. Geol. Survey Bull. 24, pp. 34-35.

Crawford, R. D., Willson, K. M., and Perini, V. C. (1920), "Some Anticlines of Routt County, Colorado," Colo. Geol. Survey Bull. 23, pp. 17-19.



Wiggins Studio, Craig

Wilson Creek Oil Field.



WILLIAMS PARK - FISH CREEK STRUCTURES

ROUTT COUNTY, COLORADO.

CONTOURS ON TOP OF DAKOTA SANDSTONE

CONTOUR INTERVAL 500 FEET

SCALE

1 1/2 0 1 Mile

Note:
Map is compilation from several sources including authors field reconnaissance.

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