INTRODUCTION

The Kanab Creek Unit area is located in that portion of the Colorado Plateau province between the Sevier and Paunsaugunt faults of southwestern Utah. Several excellent manuscripts exist in the literature describing the geology of southwestern Utah and northwestern Arizona. Only a few references are cited in this paper. A more comprehensive list has been compiled and is included as background information for interested persons. This paper deals specifically with the geology of the Kanab Creek Unit area situated some eight miles northwest of Kanab, Utah. Essentially, the paper is a listing of formational units penetrated by nearby tests, and includes a cross-section of those tests with a supplemental photogeological interpretation.

STRATIGRAPHIC NOMENCLATURE

This paper utilizes a subsurface application of the most recent revisions, redefinitions, and correlations of surface sections.

Geologic maps of the Kanab area published by the U. S. Geological Survey ("1" series) carry an excellent breakdown of the Jurassic rocks. A detailed discussion entailing revision of the Jurassic and Triassic formations has been published (Averitt, et al., 1955). Studies of the Jurassic and Triassic systems (McKee, et al., 1956; and McKee, et al., 1959) provide a regional setting from which localized stratigraphy can be developed. Paleozoic stratigraphy has been described by (Heylum, 1958), (McKee, 1945), (McNair, 1951), and others.

The writer has exchanged information with Mr. R. D. Munger of the American Stratigraphic Company, Denver, Colorado, and is in close agreement with sample study correlation of units in southwestern Utah.

SIGNIFICANT OIL SHOWS

In Superior's Kanab Creek Well, C SW 1/4 NE 1/4, Sec. 16, T. 42 S., R. 7 W.:

3,755-3,780 Timpoweap Member Spotty saturation with slight odor

4,236-4,239 Toroweap Formation Slight yellow fluorescence

4,435-4,450 Toroweap Formation Slight yellow fluorescence

4,593-4,623 Toroweap Formation Pale yellow fluorescence

5,258-5,266 Hermit Formation Trace live oil stains with fluorescence

8,040-8,045 Cambrian unnamed Slight yellow fluorescence

A core was cut in the Timpoweap member of the Moenkopi Formation from 3,760-3,807. Recovery consisted of 47 feet of silty dolomite grading to a dolomitic sandstone. The upper 20 feet was characterized by thin (2-8 inch) irregular zones of spotty oil saturation and/or slight gas odor. The lower 27 feet was devoid of shows. The entire core had poor to fair porosity, but with poor permeability.

Three drill-stem tests were taken to evaluate shows found in the samples and in the core. DST #1 from 3,754-3,783 recovered 50 feet of drilling mud. DST #2 from 4,590-4,604 yielded 196 feet of sulfur water. DST #3 from 5,249-5,265 recovered 10 feet of drilling fluid.

A Baroid gas detector was utilized on this well; however, no significant gas reading was recorded.

In McDermott's #1 State well, C SW 1/4 SW 1/4 Sec. 2, T. 43 S., R. 8 W.:

2,650-2,715 Mocnave Formation Dark brown oil stain with fluorescence

3,842-3,872 Moenkopi Formation Spotted light oil stain

5,120-5,308 Kaibab Formation Questionable oil stain

7,820-7,830 Redwall Formation Slight oil stain with good fluorescence

8,340-8,345 Redwall Formation Live oil stain

8,900-9,057 Cambrian unnamed Spotted stain with slight fluorescence

Six cores were cut in this venture. Core #1 from 3,842-3,894 (Moenkopi Formation) recovered 52 feet of interbedded sandstone, siltstone, and shale. Spotted oil stain was present from 3,842-45, at 3,862 feet, and at 3,872 feet. Connate water saturation through these zones ranged from 77% to 95%. Core #2 taken from 3,894-3,944 (Moenkopi Formation) recovered 50 feet of claystone and siltstone with no shows. Core #3 from 7,643-7,646 (Redwall Formation) had 3 feet of hard, dense, algal limestone with no shows. Core #4 from 8,345-51 (Redwall Formation) had no recovery. Core #5 taken from 8,356-8,366 (Redwall Formation) recovered 10 feet of hard, dense limestone bearing live oil stain, good odor, and fair fluorescence. Core #6 from 9,084-9,096 recovered 12 feet of tight dolomite having anhydrite inclusions.