

COMMONWEALTH OF AUSTRALIA

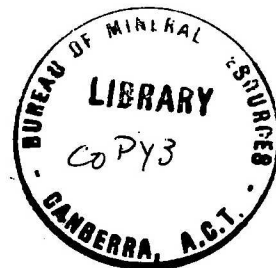
DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES,
GEOLOGY AND GEOPHYSICS.

RECORDS
1957, No.73

ELECTRIC LOGGING OF CONDOMINE OIL LTD. NO. 1
(SPECULATION) WELL, NEAR CHINCHILLA, QUEENSLAND

by



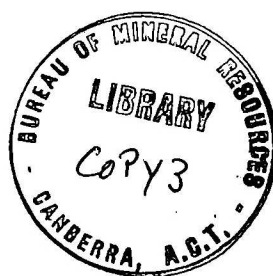
W.A. WIEBENGA

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ILLUSTRATION

Plate 1. Self-potential and resistivity logs.

ABSTRACT

This report describes the results of electrical logging tests carried out in Condomine Oil Limited No.1 (Separation) Well, near Chinchilla, Queensland. The well was logged from 1,524ft. to 2,311ft.

As the logs disclosed no permeable zones, no recommendation is made for further testing of the logged section of the well.

1. INTRODUCTION.

In response to an application from Condomine Oil Limited for technical assistance in the testing of its No.1 (Speculation) Well, near Chinchilla, Queensland, the Geophysical Section of the Bureau of Mineral Resources carried out electrical logging tests in the well on 17th July, 1957. The well, which was "spudded in" on 5th August, 1948, is situated on the Chinchilla - Auburn road, about 24 miles north of Chinchilla, and at the time of logging was at a depth of 2311 feet.

The surface elevation of the well is approximately 1,120 ft, and the depths shown on the electric log accompanying this report are measured from the drill floor, which is 3 ft above the surface. The hole was cased with 8-inch (O.D.) casing to 563 ft, 6-inch (O.D.) casing to 1,530 ft, 5-inch (O.D.) casing to 1,683.5 ft, and 4-inch (O.D.) casing to 2,266.5 ft. To enable the electrical logging of the hole to be carried out, the 5-inch and 4-inch casing were pulled, and the hole was logged from 1,524 ft. to 2,311 ft.

2. GEOLOGY.

The geology has been described in unpublished reports by L.C. Ball, Consulting Geologist to the company, W.D. Mott, previously of the Queensland Geological Survey, and D.F. O'Driscoll, Assistant Chief Geologist of the Bureau.

The Bundamba Group (Upper Triassic) was reached at 250 ft, the Moolayember Shales (Middle Triassic) at 1,041 ft, and the Clematis Sandstone, within the Moolayember Shales, at 1,555 ft. Below 1,770 ft. is an indurated conglomerate consisting of volcanic, granitic and sedimentary rock, possibly a Permian tillite.

It is worthy of note that at Roma, about 115 miles west of Speculation Well, the Bundamba/Moolayember contact is at a depth of about 3,050 ft.

3. EQUIPMENT.

The equipment used was a "Widco" two-channel, single-electrode logger (Model ZDE), manufactured by the Well Instrument Developing Company, Bellaire, Texas, U.S.A. The self-potential (S.P.) and resistivity logs are recorded simultaneously, side-by-side, on a paper chart.

The scales used in the logging were :-

Depth scale : 100, 50 and 20 ft/inch.

Self-potential scale : 50 mV/inch.

Resistivity scale : 100 ohms/inch.

4. RESULTS.

The S.P. and resistivity logs are shown on Plate 1.

Between 1,520 ft, and 1,770 ft, the resistivity log shows little character with only minor anomalies. The indication near 1,574 ft, which coincides with a slight lowering of the S.P. value, may indicate a sandy shale with sandy shale layers from 1,574 to 1,770 ft.

The log is notable for an almost completely featureless self-potential curve; particularly for the section below 1,730 ft.

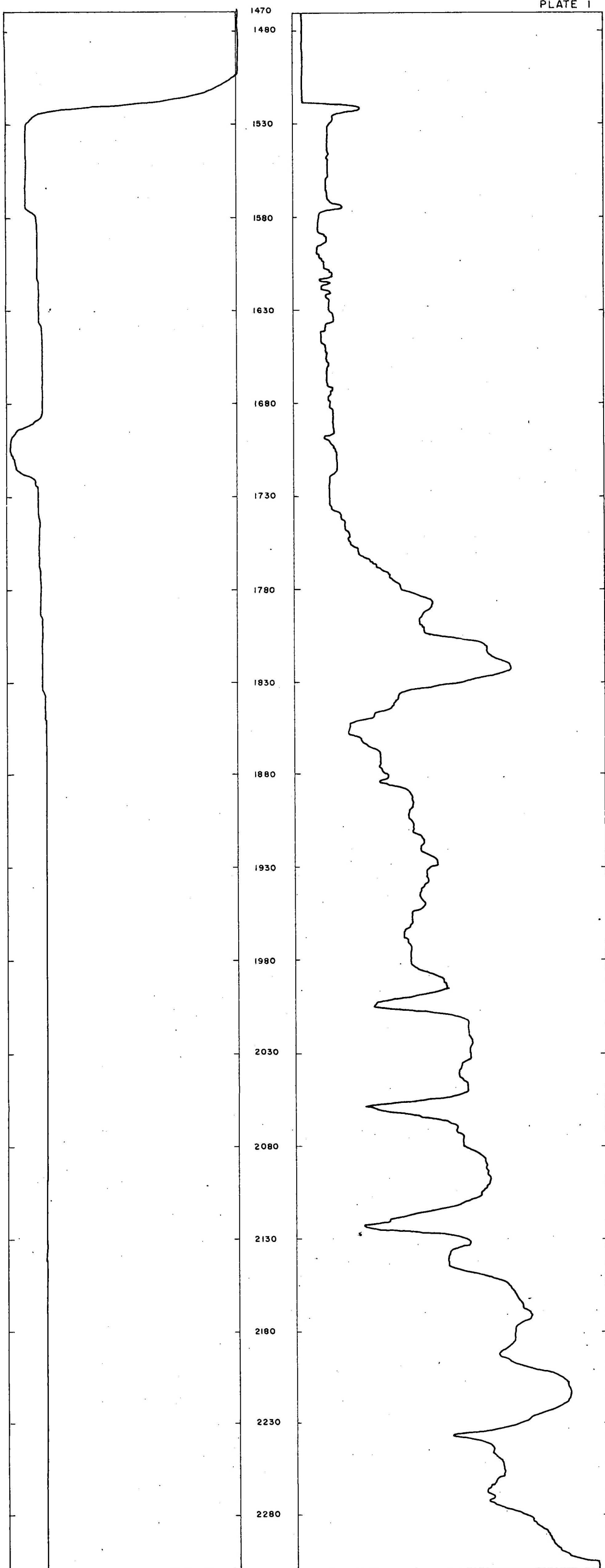
Core samples from below this depth are of indurated conglomerate which might be expected to have very low permeability.

As self-potential contrast in a log is directly related to permeability contrast in the section it can be inferred that the rocks below 1730 feet are uniformly impermeable. The relatively high average resistivity below this depth is consistent with this interpretation.

The pronounced S.P. anomaly at about 1,700 ft. is not easily explained. The core log shows igneous rock with a quartz vein at that depth, and it is thought that the anomaly may be associated with a mineralised vein or dyke, in contact with bore hole fluid.

5. CONCLUSIONS.

The electric logs between 1,524 ft. and 2,311 ft. did not indicate the presence of permeable zones likely to contain oil or gas in sufficient quantity to be considered of economic value. Hence, no recommendation is made for further testing of the logged section of the well.



S.P. SCALE IN mV (APPROX.)
100 50 0

RESISTANCE SCALE IN OHMS (APPROX.)
0 100 200 300

DEPTH SCALE IN FEET
50 0 50 100 150

SELF-POTENTIAL AND RESISTIVITY LOGS
OF CONDOMINE OIL LIMITED
No 1 (SPECULATION) WELL, NEAR CHINCHILLA, QUEENSLAND

William A Wiebenga
GEOPHYSICIST