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Formation Evaluation

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MENLO PARK
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Mr. S. L. Hewitt
Husky Oil/NFR Operations, Inc.
2525 C Street
Anchorage, Ak 99503

Dear Mr. Hewitt:

Schlumberger began the second logging run at ~~South-Barrow No. 20~~ at approximately 0500 hours on April 14, 1980, and completed DLL, CNL/FDC and BHC at about 1200 hours the same day to a total depth of 2130. Log quality was good except for a sticky galvanometer on the gamma ray from 1734 to 1924 but the interval was traced on from another log. Top of the Upper Barrow Sand is not too well defined by the gamma ray but appears to be about 1980. Top of the Lower Barrow Sand is 2062.

Two zones of interest up the hole, one from 1564 to 1573 and the other from 1625 to 1636 indicate gas saturation from the curve responses of Neutron-Density where the two curves are moving in opposite directions. The apparent neutron porosity is no doubt too high due to shale effects but the curve responses definitely suggest gas. Here, again, the old problem of R_w arises and there are no wet zones for R_{wa} computations. However, since the SP shows a positive deflection of some 8 MV, R_w should approximate R_{mf} of 0.127 and is probably 0.15. This figure was used in computations of both zones resulting in porosity of 17% and S_w of 27% in the upper sand and porosity of 21% and S_w of 12-13% in the lower zone. Approximate cross-plot results indicate an invasion diameter of 20-23 inches. Both sands are shaly but are worthy of testing.

In the Lower Barrow Sand an interval from 2068-74 appears gassy with a porosity of 24% and S_w of 36% using the R_w of 0.15, while the Upper Barrow appears quite shaly, 40-45%, with an average density porosity of 15-16%.

RUN

The third logging, to total depth of 2356 was begun April 23 at 0900 hours and finished DLL, CNL/FDC, BHC and CBL at 2100 hours the same day. Log quality was good except for some skipping and spiking on the BHC and a somewhat questionable caliper on the CNL/FDC. All logs were recorded 8 feet shallow to pipe measurement, casing shoe and lithology log.

Top of the Sag River Sands was found at 2240 and Argillite at 2315. The Sag River Sands are of low porosity from 4% to 16% and appear quite shaly and probably tight with little evidence of hydrocarbon saturation which confirms the disappointing formation test.

Very truly yours,

A. Kane

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