JUNE 23, 1978

Computer Inventoried

GEOLOGICAL WELL REPORT

Alco Drilling Co., Inc.

#1 J. S. Brandon, NW SE SW

Section 31-T. 18S - R. 15E.,

Last Chance Pool Area,

Osage County, Kansas

Alco Drilling Co., Inc. - Contractor

Spud: June 17, 1978

7" Surface Casing @ 50' 178'

4 1/2" Production Casing @ 1782'

Rotary Completion: June 22, 1978

Total Depth: 1590'

ALCO DRILLING CO., INC. RFD #3
Iola, Kansas 66749

Gentlemen:

Listed below are the pertinent geological tops and an evaluation of the porosities encountered. No drill stem tests were taken and the hole was not logged mechanically before being cased.

I arrived at the location at a depth of 1265' and witnessed the drilling from that point to TD 1590'. Samples were examined from 1300 - 1590' TD.

Enclosed herewith is a copy of the plotted drilling time log from 50-1590' 20 which also includes lithology, porous zones, tops, and other pertinent data below 1300. A diamond core was cut in the Bartlesville Sand, core description included below.

| | SAMPLE TOPS | | GRN LOU TOPS |
|------------------------|-------------|--|-------------------------------------|
| ELEVATION | 1151 | (Private Elevation) | HEEB 325(+84) |
| KANSAS CITY | 835 | (+ 316) 835 (+ 316) | DOUG 364 (+ 787) CANS 647 (+504) |
| BASE OF KANSAS CITY | 1045 | (+ 106) 1048 (+103) | - , |
| PAWNEE | 1205 | (- 54) 1205 (-54) | |
| CHEROKEE | 1324 | (- 173) 1326 (175 (- 365) 1515 (-364) | Cattemen In 1420 |
| BARTLESVILLE SANDSTONE | 1516 | (- 365) 1515 (-364) | (-269 |

1516-20 Sandstone, medium fine, clustered, fairly clean. Fair porosity, good oil stain, trace of free oil. Good golden fluorescence.

ALCO DRILLING CO., INC. #1 J. S. Brandon, Osage Co., Kansas

DIAMOND CORE #1

| | 1520-1542 Recovered 100% |
|-------------|---|
| 1520-1521 | Sandstone, fine, clean, compact, fairly friable, loosely lime cemented, fair porosity, good oil staining, some oil bleeding and fluorescence. |
| 1521-1523 | Sandstone, very fine, compact, tight, calcareous, no stain. |
| 1523-15244 | Shale, gray-green, hard, laminated with paper-thin silty streaks. |
| 15241-15271 | Sandstone, medium grained, angular, clean, somewhat calcareous, compact, fairly friable, fair to good porosity, oil stained, good golden fluorescence, some bleeding oil. |
| 15271-1528 | Hard, compact, gray-greenish. |
| 1528-1532 | Sandstone, light gray, fine, calcareous, tight, no show. |
| 1532-1536 | Shale, gray-green, hard, compact. |
| 1536-1538 | Shale as above, thin streaks of fine, tight, calcareous sandstone |
| 1538-1539 | Sandstone, medium coarse, friable, clean, angular, good porosity, good oil stain and fluorescence. |
| 1539-1541 | Gray, compact shale. |
| 1541-1542 | Shale, gray, hard, silty. |
| | 4 |

Bartlesvilled Sandstone (cont'd)

| 1542-1590 | Sandstone, clean, light gray to white, medium fine to |
|-----------|---|
| | medium coarse, porous, no stains, no fluorescence. |

TOTAL DEPTH: 1590'

Conclusions and Recommendations

Structurally, at the top of the Bartlesville, this well is 15 feet lower than Brunson-Spines #3 Jones, slightly less than 1/2 mile southwest and the nearest producing well in The Last Chance Pool, however the producing zone in the #3 Jones is at -366 which indicates less drastic structural change. On the basis of the

Conclusions and Recommendations (cont'd.)

core on this well it is believed we have three feet of potential pay 1524½ - 27 in addition to one foot 1538 - 39. It is possible we drilled additional "pay Zone" 1516 - 20 before coring and the upper one foot of the core 1520-21 carried a show of oil. It is possible this well has 7-8 feet of potential "pay".

It was recommended that the hole be cased to test the Bartlesville Sand.

Yours very truly,

T. G. Wright

TGW:wlr

BIT RECORD

SMITH

F₂ (rerun) 50 - 1590 TD

DRILLING PROGRESS

| 6/17/78 | Spud | | |
|---------|-----------|-----|----|
| 6/18 | Shut down | | |
| 6/19 | 390 | | |
| 6/20 | 1012 | | |
| 6/21 | 1590 TD | WOC | 43 |