T. G. WRIGHT

Consulting Geologist

620 FOURTH FINANCIAL CENTER WICHITA, KANSAS 67202

December 1, 1975

GEOLOGICAL WELL REPORT

William Gruenerwald & Associates, Inc. #7 Gibbons, N/2 SW SW Section 36-T27S-R13W Rolingson Pool, Pratt County, Kansas Contractor: Damac Drilling Co., Inc. Spud: November 12, 1975

13 3/8" @ 191' 5 1/2" @ 4380'

Rotary Completion: November 21, 1975

Total Depth: 4385' (Rotary) 4379' (E. Log)

William Gruenerwald & Associates, Inc. P. O. Box 909 Colorado Springs, Colorado 80901

Gentlemen:

Listed below are the pertinent geological tops and an evaluation of the porosities encountered. No drill stem tests were taken. The hole was logged electrically before being cased, electric log data included herein.

I arrived at the location at a depth of 2065' and witnessed the drilling at intervals from that point to T.D. 4385'. Samples were examined from 1900-2800 and 3700-4385 T.D.

Enclosed herewith is a copy of the plotted drilling time log which also includes tops, porous zones, and other pertinent data.

ELECTRIC LOG TOPS

ELEVATION 1885 KB (Estimated)

RED EAGLE LIMESTONE POROUS ZONE 2622-28

NOTE: Believed to be "gas pay" in offsetting lease.

HEEBNER SHALE 3564 (-1679)

BROWN LIME 3746 (-1861)

LANSING-KANSAS CITY 3764 (-1879)

BASE OF KANSAS CITY 4116 (-2231)

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William Gruenerwald & Associates, Inc. -2-#7 Gibbons

MISSISSIPPIAN CHERT 4217 (-2332)

VIOLA CHERT 4264 (-2379)

SIMPSON SHALE 4316 (2431)

Sand 4346 (-2461)

4346-58 Sandstone, clean, clustered, medium grained, friable. Good porosity completely oil stained.

TOTAL DEPTH

4385 (Rotary) 4379 (Electric Log)

CONCLUSIONS AND RECOMMENDATIONS

The subject well, using an estimated surface elevation correlates well structurally with other wells on the lease and appears normal. The Simpson Sand is well developed but I feel the effective sand is limited to the interval 4346-58 and perforations should be restricted to 4346-51 in my opinion.

The up-the-hole gas section being produced in the Hillard lease offsetting you to the south is in the Red Eagle Limestone of the Council Grove Group in the lower Permian. It appears a correlative zone 2622-28 occurs in this well. Before testing the zone we should research this further. 5 1/2" casing was landed at 4380 to test the Simpson Sand and possibly the Red Eagle Lime.

Yours very truly,

T. G. Wright

TGW:bf

BIT RECORD

SMITH DT2 SMITH F3 191-1960 1960-4385 TD

DRILLING PROGRESS

| 11-12 | SPUD | | |
|-------|------|---------------|------------|
| 11-13 | 575 | | |
| 11-14 | 1960 | | |
| 11-15 | 2580 | | |
| 11-16 | 3120 | | |
| 11-17 | 3650 | | |
| 11-18 | 4040 | | |
| 11-19 | 4318 | | |
| 11-20 | 4385 | \mathtt{TD} | Logging |
| 11-21 | 4385 | \mathtt{TD} | WOC 5 1/2" |
| | | | |

Log Analysis

| | Franklin St. | 300 | |
|------|--------------|-------------|------------|
| | | · derived a | Marinday 1 |
| Sec. | | | |

| COMPANY | | . J.A | . ~ | | wee | | 4 | , 1 |
|-----------|---------|-------|----------|--|----------|---------------|---------|--|
| Wm Gre | | | | | | G 1660 | | 7 |
| Rollingse | 267 | Pras | cH | ************************************** | | Cansus | | |
| DEPTH | Rt | Rw | ϕ_o | Pi | Ps | % POROSITY | WATER | REMARKI |
| 2186 90 | 2 | 0.09 | 20 | 26 | 17.3 | 23 | 61 | |
| 622 28 | 1.2-2.5 | ** | 18-7 | 24-14 | 17.3-7.2 | 21-10.5 | £1:100; | |
| 136-49 | 25.11 | 11 | 4-11 | 10-15 | 5-11.4 | 7-10 | po 46 | Tite at top |
| 132-34 | 10 | 0.05 | 16 | 19 | 1 | 17.5 | | : : • |
| 34 36 | 19 | .11 | 14 | 12 | 6.3 | 13 | 39 | • |
| 972 74 | 7 | (1 | | <u>I</u> | 5 | <i>[]</i> | 77 | |
| 982.86 | 12-5 | 11 | 16 | 16 | 6.3 | 16 | 40-63 | |
| 86-90 | 510 | ,, | 19:10 | 14.10 | 6,3 | 14-10 | 7/ | THE RESIDENCE OF CONTRACTOR AND A PARTY OF THE PARTY OF T |
| 1010-14 | 9-2 | 11 | 18 | 20 | 136 | 19 | 39-83 | |
| 9164-66 | 15 | /1 | 4 | 4 | 4 | 4 | 100 | |
| 66-68 | 60 | 11 | // | 7 | 3 | 9 | 32 | |
| 68-73 | 40-15 | /1 | 12 | 10 | 8.5 | 11 | 32-52 | |
| 73-80 | 15-5 | 11 | 10 | 14 | 12 | | 48 80 | |
| 1218-26 | 20 | 1: | 14 | 10 | 10:7 | | 42 | |
| 26-30 | 18 | 11 | 11 | 11 | 10 | / 1 | 48 | |
| 30-40 | 19 | I, | 8 | // | 1/2 | | 51 | |
| 1266-70 | 10 | 15 | 5 | 5 | 5 | 5 | 100 | |
| 70-74 | 8 | 44 | 12 | 12 | 17.6 | 12 | 66 | |
| 74-76 | 6 | i, | 10 | 18 | 14 | 14 | 65 | |
| 76-82 | 6 | ,, | 14 | 14 | 13.6 | 14 | 65 | |
| 82-55 | 6 | | 17 | 17 | 16 | 17 | 54 | |
| 3) 88 | 5 | • : | 18 | 20 | /8 | | 53 | |
| 38-90 | 4.5 | 3. 00 | 20 | 22 | 20 | | 50 | |
| 90-94 | | 11 | 16 | 19 | 16.5 | 17,5 | | |
| 94-98 | 4 | 11 | 13 | 16 | 13.6 | | | |
| 98-4302 | 4.5 | 71 | 19 | 70 | | 19.5 | 1 | |
| 346-50 | 30 | 0.06 | 17 | 4 | 4 8 | • | 1 1 | Gaselfect |
| 50-54 | 15 | 11 | 16 | 7 | 2./ | 11 | 52 | in ir |
| 54-60 | 15 |) i | 12 | 6 | 5.6 | 9 | 63 | |
| 0 -66 | 21 | 11 | 8 | 4 | 4.1 | - | 80 | Tite |
| 00 00 | | | | | | | | 11.0 |
| | | | es. | | | | 4 | |

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy are correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to Clause 7 of our General Terms and Conditions as set out in our current Price Schedule.

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Wichita, Ks

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