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31-13-15w

**RICHARD G. SMITH** x

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GEOLOGICAL REPORT

KENWAY SERVICES, INC.

NO. 1 BRUNGARDT  
1500' FNI & 1590 FEI NE/4  
SECTION 31-T13S-R15W  
RUSSELL COUNTY, KANSAS

MAY 2 2 1985  
State Geological Survey  
WICHITA BRANCH

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Wichita, Kansas

D1  
31-13-15W

Operator: Kenway Services, Inc.  
949 East 4th Street  
Russell, Kansas 67665

Well: No. 1 Brungardt

Location: 1500' FNL & 1590 FEL NE/4  
Section 31-T13S-R15W  
Russell County, Kansas

Wellsite: Level wheat stubble field

Commenced: December 1, 1984

Completed: December 9, 1984 (with rotary)

Elevation: 1903 GL 1907 DF 1908 KB

Total Depth: 3435 Driller 3433 Welex

Casing: Surface: 8 5/8" @ 986/425 sacks cement  
Production: 5 1/2" @ 3433/160 sacks cement

Samples: 10- foot intervals: 2500 feet to 3175 feet  
5- foot intervals: 3175 feet to 3435 feet

Electrical Logs: Radiation-Guard-Caliper by Welex

Drillstem Tests: One (1) by Superior Testers

Contractor: Von Feldt Drilling, Inc.  
Russell, Kansas

<u>FORMATION TOPS</u>	<u>SAMPLES</u>	<u>WELEX</u>
Anhydrite	982 + 926	982 + 926
Tarkio	2625 - 657	2563 - 655
Topeka	2817 - 909	2816 - 908
Heebner	3043 -1134	3038 -1129
Toronto	3059 -1151	3060 -1152
Lansing	3089 -1181	3086 -1178
Base Kansas City	3328 -1320	3326 -1318
Gorham Sand	3349 -1441	3350 -1442
Arbuckle	3369 -1461	3370 -1462
Reagan Sand	3393 -1485	3392 -1484
Rotary Total Depth	3435 -1527	3433 -1525

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SAMPLE ZONE DESCRIPTIONS

TARKIO 2565 -657

2590-2598 Sand: gray, fine sized, micaceous and shaley; no shows of oil/gas observed.

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TOPEKA 2817 -909

3001-3010 Limestone; buff to cream, finely crystalline; chalky and cherty in part; no free oil observed; scattered spotted oil staining in poorly developed vuggy porosity.

LANSING-KANSAS 3089 -1181

3089-3094 "A" Zone Limestone; white, finely crystalline; poor to fair pin-hole/vuggy porosity; very small show free oil; fair to good oil staining.

3116-3122 "B" Zone Limestone; white finely crystalline; oolitic and oolitic in part; fair to good vuggy porosity; small show free oil; fair to good odor; fair, spotted oil staining.

3135-3139 "C" Zone Limestone; white to buff, finely crystalline; scattered, poorly developed vuggy porosity; TRACE free oil; scattered, spotted oil staining.

No. 1 drillstem test, 3073-3140/ 30-60-60-60/ weak to fair blow during initial and final flow periods (4" to 6" into water); recovered: 60 feet gas in drillpipe; 30 feet oil cut watery mud (40% mud; 43% water; 14% oil; 3% gas); 60 feet oil cut watery mud (45% mud; 45% water; 8% oil; 2% gas).  
IHF 1682; IFP 63-74; ICIF 639; FFP 85-95; PCIF 542; FHP 1650;  
Temperature 94° F.

3142-3148 "D" Zone Identified from electrical log. Limestone as 3135-3139.

3182-3190 "G" Zone Limestone; white finely crystalline, oolitic; good porosity; no shows of oil observed.

3234-3240 "H" Zone Limestone; white to buff, finely crystalline; cherty; poorly developed vuggy porosity; no free oil observed. Scattered, spotted oil staining.

3275-3280 Limestone; buff, finely crystalline; scattered poorly developed vuggy porosity; very small show free oil; light odor, spotted oil staining.

GORHAM SAND 3349 -1441

Sand; clear, glassy to frosted; rounded; dolomitic in part; very pyritic; abundant loose sand; fine to very coarse sized; no shows of oil observed.

ARBUCKIE 3369 -1461

3369-3378 Dolomite; tan to light brown, finely crystalline; pyritic; poor porosity; no shows of oil observed.

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3378-3389 Dolomite; buff-gray, medium crystalline; poor inter-crystalline to vuggy porosity; TRACE heavy dark free oil; no good free oil observed.

REAGAN SAND 3393 -1485

3393-3414 Sand; clear, glassy, fine to medium sized clusters friable sand; small to fair show free oil; slight odor, good oil staining.

STRUCTURAL CORRELATION

<u>FORMATION</u>	<u>Kenway #1 Brungardt 31-13S-15W</u>	<u>Mai #1 Haselhorst 31-13S-15W</u>	<u>Hammerschmidt/Weigel No. 1 Foster 30-13S-15W</u>
Anhydrite	+ 926	+ 926	-
Heebner	-1129	-1134	-1124
Lansing	-1173	-1181	-1171
Gorham	-1442	none	-1423 (ZONE)
Arbuckle	-1462	-1465	-1469
Reagan	-1484	not rched	-1502
Total Depth	-1525	-1506	-1540

Production casing (5½") has been set and cemented one (1) foot off bottom at 3434 feet (-1526 feet subsea).

Completion recommendations are:

1. Perforate and test the Reagan Sand within the interval 3394-3401 feet.
2. Perforate and test the Lansing-Kansas City "D" zone within the interval 3142-3146 feet.
3. Perforate and test the following zones before abandonment:
  - (a) Lansing-Kansas City "H" zone 3224-3228 feet.
  - (b) Lansing-Kansas City "A" zone 3089-3106 feet.
  - (c) Topeka zone 2817-2820 feet.
4. Perforate and test the Lansing-Kansas City "B" zone 3114-3118 feet.

All measurements were taken from the rotary kelly bushing elevation. well measurements of formation tops, zones and total depth are taken as correct.

Respectfully,

Richard G. Smith  
Petroleum Geologist

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