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GEOLOGICAL REPORT

NO. 4 RINGWALD
160' S 170' E of NE SW NW
SECTION 12-19S-11W
BARTON COUNTY, KANSAS

Operator: Petroleum Energy, Inc.
 First National Bank Building
 Suite 415
 105 North Main
 Wichita, Kansas 67202

Well: No. 4 Ringwald

Location: 160' S 170' E of NE SW NW
 Section 12-19S-11W
 Barton County, Kansas

Wellsite: Slightly sloping wheat stubble

Field: Rick

Elevation: 1792 KB 1787 GL

Casing: Surface: 8 5/8" 248'/185 Sacks Cement
 Production: 5 1/2" 3408/150 Sacks Cement

Commenced: September 18, 1983

Completed: September 23, 1983 (with rotary)

Total Depth: RTD 3410 -1618 LTD 3409 -1617

Samples: Samples were examined from 2500 feet to rotary total depth.

Measurements: All measurements are from the kelly bushing elevation.

Contractor: White & Ellis (Rig 2)

Electrical Logs: Radiation, Guard, Caliper by Electra Log, Inc.

Formation Testing: There were three (3) drillstem tests by Western Testers, Inc.

FORMATION TOPS

SAMPLES

ELECTRALOG

| | | | | |
|------------------|------|-------|------|-------|
| Howard | 2563 | - 771 | 2560 | - 768 |
| Severy Shale | 2615 | - 823 | 2610 | - 818 |
| Topeka | 2647 | - 855 | 2644 | - 852 |
| Heebner | 2910 | -1118 | 2907 | -1115 |
| Toronto | 2928 | -1136 | 2925 | -1133 |
| Douglas | 2941 | -1149 | 2938 | -1146 |
| Brown Lime | 3030 | -1238 | 3028 | -1236 |
| Lansing | 3047 | -1255 | 3046 | -1254 |
| Base Kansas City | 3318 | -1526 | 3318 | -1526 |
| Conglomerate | 3337 | -1545 | 3340 | -1548 |
| Arbuckle | 3352 | -1560 | 3359 | -1567 |
| Total Depth | 3410 | -1618 | 3409 | -1617 |

NOTE: Depths adjusted to log.

SAMPLE ZONE DESCRIPTIONS

HOWARD 2560-2574

Limestone; white, blocky, firm, fine crystalline; trace fossils, poor porosity; no oil stain, fluorescence, odor or cut.

2584-2610

Limestone; white, blocky, generally hard, very fine crystalline; finely oolitic in part; good porosity, barren, no visible stain; no fluorescence, odor or cut; oily film on water.

SEVERY

There were no clean, porous sandstones developed in the Severy section from 2610 feet to 2644 feet.

TOPEKA

There were no shows of live oil/gas in the Topeka section from 2644 feet to 2907 feet.

TORONTO 2925-2938

Limestone; white, light brown, sub-blocky, firm to soft, very fine crystalline; chalky in part; poor porosity, no oil stain, fluorescence, odor or cut.

DOUGLAS

There were no clean sandstones or porous limestones in the Douglas section from 2938 feet to 3028 feet.

3052-3062

LANSING/KANSAS CITY 3046-3048

Limestone; light brown, white, sub-blocky; moderately hard; very fine to fine crystalline; trace fossils and pellets; poor to fair porosity; no oil stain, fluorescence, odor or cut.

3070-3080

Limestone; white, light gray, blocky, moderately hard, brittle, very fine crystalline; medium developed medium sized oolitic; good to very good porosity; common oil stain, yellow fluorescence, moderate odor, good white cut; rare free oil.

DRILLSTEM TEST # 1 3050-3088

Testing Periods: 30-45-30-45. Blow: IF: Strong; FF: Strong; Gas to surface in 20 minutes; 10,600 CFGD decreasing to 8,220 CFGD; Recovered: 80' gas cut mud. Pressures: IBHP: 261#; FBHP: 250#; IFP: 68-68#; FFP: 68-68#; HH: 1700-1700#; Temp. 100° F.

3095-3106 3117-3122

Limestone; light brown, generally blocky, hard, very fine to fine crystalline; very oolitic and fossiliferous; fair to moderately good intergranular porosity, trace light brown oil stain, spotty yellow fluorescence, light odor, good white cut, few drops free oil.

DRILLSTEM TEST # 2 3090-3132

Testing Periods: 30-30-15-30. Blow: IF: Very weak, dead in 16 minutes.
FF: Very weak, dead in 5 minutes. Recovered: 5' mud. Pressures:
IBHP: 68#; FBHP: 56#; IFP: 45-45#; FFP: 45-45#; HH: 1711-1711#;
Temperature: 101° F.

3134-3158

Limestone; light brown, jagged, brittle, well developed medium to coarse oolitic; common crystalline overgrowths filling porosity; fine crystalline, good porosity, trace discoloration, trace pale yellow fluorescence, no odor, no cut, trace oil film on water.

3216-3225 3235-3240

Limestone; white, blocky, medium hard to friable; very fine crystalline; common skeletal debris; trace oolitic; fair intergranular and pin-point vugular porosity; trace oil stain, yellow fluorescence, no odor, white cut, no free oil.

MARMAON 3322-3332

Limestone; brown, gray, sub-blocky, weathered; generally fine crystalline; fair to poor porosity, no oil stain, fluorescence, odor or cut.

CONGLOMERATE 3340-3344

Sandstone; light brown, rounded, firm; fine to medium grained; sub-rounded, medium well sorted; siliceous cement, good porosity; clean, common oil stain, good bright yellow fluorescence, light odor, good bright white cut; good show free oil when crushed.

DRILLSTEM TEST # 3 3309-3345

Testing Periods: 30-45-30-45; Blow: IF: Weak to fair; FF: Weak
Recovered: 370' muddy oil; Pressures: IBHP: 568#; FBHP: 556#; IFP:
56-102#; FFP: 147-170#; HH: 1711-1711#; Temperature: 111° F.

3348-3350

Dolomite; white, very light brown, blocky, hard, fine to medium crystalline; poor porosity, trace sandy with white chert.

ARBUCKLE 3359-3376

Dolomite; light gray brown; pitted blocky, brittle; very fine crystalline; medium developed medium to fine oolitic, some oolitic; very good porosity in oolitic and oolitic dolomite; common oil saturation; bright yellow gold fluorescence, strong odor, bright white cut; excellent show of free oil.

3385-3398

Dolomite; white, very light brown, sub-blocky, moderately hard to firm; fine crystalline, fair to good porosity, trace light oil stain, yellow fluorescence, light odor, white cut, trace oil film.

3398-3408

Dolomite; light brown, sub-blocky; firm, medium crystalline; trace white chert, good porosity; trace oil stain, yellow fluorescence, light odor, white cut, trace oil film.

STRUCTURAL CORRELATION

| | Ringwald #4 Ringwald #4 160' S 170'E NE SW NW 12-19s-11w | Ringwald #3 Ringwald #3 C N/2 SW NW 12-19s-11w | Ringwald #2 Ringwald #2 SE SW NW 12-19s-11w | Ringwald #1 Ringwald #1 C W/2 SE SW 12-19s-11w | Radar #3 Radar #3 SE NW NW 12-19s-11w |
|--------------|--|---|--|---|--|
| Anhydrite | +1252 | ----- | +1251 | +1246 | +1249 |
| Severy | - 818 | ----- | - 821 | ----- | - 825 |
| Topeka | - 852 | - 863 | - 852 | - 908 | - 860 |
| Heebner | -1115 | -1127 | -1116 | -1116 | -1125 |
| Toronto | -1133 | -1144 | -1133 | -1137 | -1143 |
| Douglas | -1146 | -1158 | -1147 | -1150 | -1155 |
| Brown Lime | -1236 | -1248 | -1236 | -1236 | -1245 |
| Lansing | -1254 | -1268 | -1255 | -1261 | -1263 |
| Conglomerate | -1548 | -1558 | -1548 | ----- | -1563 |
| Arbuckle | -1567 | -1563 | -1560 | -1549 | -1596 |
| Total Depth | -1617 | -1585 | -1579 | -1582 | -1615 |
| | Arb & Cong | LKC 20 BOPD | Arb 38 BOPD | Arb 124 BOPD | LKC & CONG 6 BOPD |

In view of the favorable structural position of the potentially productive zones, the good recovery of oil from the Conglomerate, and the good show of oil in the upper Arbuckle, a 5½" string of production casing was set at 3679 feet. Electralog recommends these zones for further testing:

- Arbuckle 3385-3388 This zone has a fair show of oil, but looks wet.
- Arbuckle 3367-3370 This zone is a dolomitized oolitic limestone. This zone has an excellent show of oil.
- Conglomerate Sand 3340-3343 This sand may be a Simpson remnant. It is very clean and yielded a good recovery of oil from the drillstem test.
- Lansing 3070-3074 This zone appears to be depleted and will probably yield only small amounts of gas.

The Arbuckle zones should be initially perforated. Should greater production be required or necessary, an acid treatment is recommended.

The Conglomerate Sand should certainly be perforated before abandonment. This zone should respond well to a hydraulic fracture treatment.

The Kansas City zone may be perforated and acidized for small gas production.

Electralog's measurements of formation tops, zones and total depth
are taken as correct.

Respectfully,

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Michael J. Wreath
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