

28-20-12W

JAMES C. MUSGROVE

Petroleum Geologist

2021 FOREST

P. O. BOX 1162

GREAT BEND, KANSAS 67530

OFFICE PHONE (316) 792-7716

RES. CLAFLIN 587-3444

Eagle Petroleum, Inc.
Spacil No. 1
SE-NW-NE, Section 28-20s-12w
Barton County, Kansas
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5 1/2" PRODUCTION CASING SET

CONTRACTOR: Duke Drilling Company (Rig #1)
COMMENCED: August 7, 1991
COMPLETED: August 13, 1991
ELEVATIONS: 1854' K.B., 1851' D.F., 1849' G.L.
CASING PROGRAM: Surface - 8 5/8" set @ 264'
Production - 5 1/2" set @ 3490'
SAMPLES: Samples saved and examined from 2750' to the rotary total depth
DRILLING TIME: One (1) ft. drilling time recorded and kept 2750' to the rotary total depth
MEASUREMENTS: All depths measured from the Kelly Bushing
ELECTRIC LOG: By Halliburton Logging Services, Inc.; Dual Induction Laterolog, Compensated Density Dual Spaced Neutron II Log, Coral Log.
FORMATION TESTING: There were three (3) drill stem tests run by Swift Formation Testers.

<u>FORMATION</u>	<u>ELECTRIC LOG DEPTH</u>	<u>SUB SEA DATUM</u>
Anhydrite	638	+1216
Topeka	2783	- 929
Heebner	3046	-1192
Toronto	3067	-1213
Douglas	3083	-1229
Brown Lime	3172	-1318
Lansing	3186	-1332
Base Kansas City	3394	-1540
Conglomerate	3407	-1553
Arbuckle	3416	-1562
Rotary Total Depth	3491	-1637
Log Total Depth	3491	-1637

(All tops and zones are corrected to Electric Log Measurements)

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CONSERVATION DIVISION
WARRANTS

28-20-12W

SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.

TOPEKA SECTION

2988-3000' Limestone, cream to tan, fossiliferous; fair to good porosity; no shows.
3014-3020' Limestone, as above; plus trace white to gray chert; few weathered; few with good porosity; no shows.
3020-3045' Limestone, as above; plus gray to white to brown; slightly fossiliferous chert.

TORONTO SECTION

3067-3080' Limestone, brown; fossiliferous; cherty (dense), no shows.

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LANSING SECTION

- 3186-3200' Limestone, brown to tan, fossiliferous, cherty; scattered porosity, light brown to dark brown stain; show of free oil, faint odor.
- 3210-3218' Limestone, tan to gray, fossiliferous, scattered fossil cast to vuggy porosity; chalky, spotty brown to golden brown stain; trace of free oil and faint odor in fresh samples.
- 3227-3230' Limestone, cream to tan, finely crystalline, fair intercrystalline porosity; fair golden to brown stain and saturation; trace of free oil and fair odor in fresh samples.
- 3251-3258' Limestone, gray to dark gray; oolitic, scattered porosity, brown to black stain; weak show of free oil and no odor in fresh samples.
- 3269-3275' Limestone, gray to tan; oolitic, fair oolitic porosity, chalky, questionable stain; no show of free oil or odor in fresh samples.
- 3280-3304' Limestone, gray to tan; oolitic, fair porosity; plus gray to tan; finely crystalline; slightly chalky dense limestone.
- 3315-3320' Limestone, gray, oolitic, chalky, spotty dark brown to black stain; trace of free oil and fair odor in fresh samples.
- 3332-3336' Limestone, tan; oolitic, fair porosity, spotty stain; weak show of free oil and faint odor in fresh samples.
- 3344-3354' Limestone, as above; poor porosity; no shows.
- 3370-3380' Limestone, tan; cherty (dense) no shows.

ARBUCKLE SECTION

- 3416-3430' Dolomite, tan to beige, finely crystalline, sucrosic, fair to good intercrystalline to pin point porosity; good stain and saturation, good show of free oil and good odor in fresh samples.

DRILL STEM TEST #1 3390-3430'

Open: I.F. 30"
F.F. 45"

Blow: Weak to good

Recovery: 330' gas in pipe
60' clean gassy oil
90' muddy gassy oil

Pressure: ISIP 584 psi (30")
FSIP 292 psi (30")
IFP 83-91 psi
FFP 108-117 psi
HSH 1782-1769 psi

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Topeka, Kansas

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3430-3440' Dolomite, as immediately above, plus cream to gray, medium crystalline, dolomite, fair porosity; fair stain and saturation; fair show of free oil and fair odor in fresh samples.

DRILL STEM TEST #2 3430-3440'

Open: I.F. 30"
F.F. 45"

Blow: Weak to good

Recovery: 180' gas in pipe
75' clean gassy oil
60' muddy gassy oil
15' oil cut thin watery mud

Pressure: ISIP 609 psi (30")
FSIP 585 psi (45")
IFP 40-48 psi
FFP 65-81 psi
HSH 1859-1849 psi

3440-3451' Dolomite, tan-gray; finely crystalline, sucrosic, fair stain and saturation; fair show of free oil, fair to good odor in fresh samples. Plus trace of white chert.

DRILL STEM TEST #3 3440-3451'

Open: I.F. 30"
F.F. 30"

Blow: Weak to good

Recovery: 240' gas in pipe
155' clean gassy oil
60' mud cut gassy oil
30' oil cut mud
180' water, show of oil

Pressure: ISIP 480 psi
FSIP 390 psi
IFP 65-122 psi
FFP 154-211 psi
HSH 1801-1797 psi

3456-3466' Dolomite, tan, fine to medium crystalline, fair to good intercrystalline porosity; fair stain and saturation; fair show of free oil and good odor in fresh samples.

3473-3480' Dolomite, as above; sucrosic, fair porosity; fair stain and saturation; show of free oil and good odor in fresh samples.

3480-3491' Dolomite, as above; trace tan pyritic dolomite.

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Rotary Total Depth 3491 (-1637)
Log Total Depth 3491 (-1637)

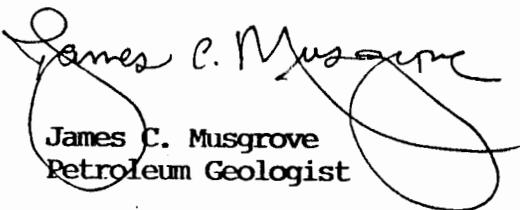
RECOMMENDATIONS: On the basis of the favorable structural position and the positive results of the Drill Stem Tests, it was recommended that 5 1/2" production casing be set and cemented at 3490' (one ft. off bottom) and the following zones be tested in the Spacil #1:

- | | | |
|-------------|------------|-----------|
| 1) Arbuckle | 3456-3457' | perforate |
| 2) Arbuckle | 3448-3450' | perforate |
| 3) Arbuckle | 3444-3446' | perforate |
| 4) Arbuckle | 3434-3436' | perforate |
| 5) Arbuckle | 3430-3432' | perforate |
| 6) Arbuckle | 3426-3428' | perforate |

Before abandonment, the following zones should be perforated.

- | | |
|----------------|------------|
| 1) Lansing 'H' | 3315-3320' |
|----------------|------------|

Respectfully submitted,


James C. Musgrove
Petroleum Geologist

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