

9-11-17W



GEOLOGICAL REPORT

FRONTIER OIL COMPANY

SIMPSON NO. 4

SE NE SE 9-11S-17W
ELLIS COUNTY, KANSAS

FEB 27 1984

State Geological Survey
WICHITA BRANCH

Commenced: November 7, 1983

Date of RTD: November 15, 1983

RECEIVED
STATE CORPORATION COMMISSION

Richard D. Parker

FEB 22 1984

CONSERVATION DIVISION
Wichita, Kansas

9-11-17W

Frontier Oil Company
1720 Kansas State Bank Building
Wichita, Kansas 67202

RE: Frontier Oil Company
No. 4 Simpson
SE NE SE 9-11S-17W
Ellis County, Kansas

Dear Sir:

The following is a Geological Report with a Time Log attached on the above captioned well.

Drilling was supervised from 2600' to 3650', rotary total depth. Samples were examined from 2600' to rotary total depth.

All formation tops, zones of porosity, and staining are based on rotary bushing measurements. Any corrections in measurements during the drilling of this well have been incorporated into this report.

| Elevation (L&S) | 1809 DF | 1812 KB |
|---------------------|---------|---------|
| Anhydrite | 1042 | (+ 770) |
| Topeka | 2769 | (- 957) |
| Heebner | 3000 | (-1188) |
| Toronto | 3024 | (-1212) |
| Lansing-Kansas City | 3041 | (-1229) |
| Base of Kansas City | 3282 | (-1470) |
| Conglomerate | 3308 | (-1496) |
| Simpson Sand | 3376 | (-1564) |
| Arbuckle | 3426 | (-1614) |
| RTD | 3650 | (-1838) |
| 5½" Pipe At | 3646 | (-1834) |

Structurally, on top of the Topeka, the No. 4 Simpson ran 4' lower than the No. 2 Simpson, a Conglomerate producer located one location North. On top of the Lansing-Kansas City the No. 4 Simpson ran 5' lower than the No. 2 Simpson. On top of the Conglomerate the No. 4 Simpson ran 6' lower than the No. 2. On top of the Arbuckle the No. 4 ran 22' lower than the No. 2 Simpson.

P1
9-11-17w
4 Simpson

ZONES OF INTEREST

TOPEKA (Top 2769)

| | |
|--------------|---|
| 2798 to 2804 | Tan fine crystalline to sucrosic lime with a scattered show of free oil, scattered light stain and no odor. |
| 2946 to 2952 | Tan fine crystalline to chalky lime with no show of oil. |
| 2966 to 2972 | Tan to white fine crystalline to chalky lime with trace of dark oil stain, no odor. |

LANSING-KANSAS CITY (Top 3041)

| | |
|--------------|--|
| 3041 to 3046 | Tan fine crystalline to slightly cherty lime with no show of oil. |
| 3078 to 3084 | Tan fine crystalline to dense lime with a trace of oil stain, no odor. |
| 3122 to 3126 | Tan chalky lime with no show of oil. |
| 3132 to 3140 | Tan chalky lime with no show. |
| 3162 to 3168 | Tan fine crystalline with no show of oil. |
| 3186 to 3192 | Tan chalky lime with no show of oil. |
| 3202 to 3208 | Tan fine crystalline lime with a trace of light stain, no odor. |
| 3220 to 3224 | Tan chalky lime with no show of oil. |
| 3252 to 3256 | Tan chalky lime with no show of oil. |

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CONGLOMERATE (Top 3308)

3308 to 3330

White junky lime red and yellow weathered to fresh cherts. No show of oil.

3331 to 3336

Clear well rounded to sub rounded sand in clusters with a dolomitic matrix. Scattered show of free oil, good spotted dark stain and a fair odor.

3336 to 3342

Reddish brown and yellow cherts and red shale.

3342 to 3347

Clear well rounded to sub rounded sand grain in clusters with dolomitic matrix. Good show of free oil, fair odor, good spotted dark oil stain.

3354 to 3360

Fresh, sharp, red and yellow chert. No show of oil, no odor.

DRILL STEM TEST NO. 1 (FOC Test)

3278 to 3360

60-30-60-30 First opening strong blow. Second opening strong blow. Recovered 120' oil cut mud, 780' gassy mud cut oil. Initial flows 41 to 288#. Final flows 308 to 350#. Initial shut in pressure 514#. Final shut in pressure 715#.

SIMPSON SAND (Top 3376)

3376 to 3380

Clear to frosted well rounded loose sand grains with trace of free oil floating in tray, faint odor, traces of oil stain on some of the sand grains.

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DRILL STEM TEST NO. 2 (FOC Test)

3370 to 3395

60-30-60-30 First opening strong blow. Second opening strong blow. Recovered 120' oil cut mud, 1060' gassy oil cut salt water (approximately 10% oil) 120' clean salt water. Initial flows 61 to 432#. Final flows 452 to 617#. Initial shut in pressure 884#. Final shut in pressure 864#.

ARBUCKLE (Top 3426)

3426 to 3440

Tan medium crystalline dolomite with no show of oil.

3440 to 3650

Tan medium to coarse crystalline dolomite with no show of oil.

5-1/2" pipe was set at 3646', 220' in the Arbuckle and 4' off bottom with 200 sacks common cement 10% salt. The shoe joint is 33.14' long and zero point is 5' AGL.

Sincerely,

Richard D. Parker
Richard D. Parker

ss

RDP:ss

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DRILLING INFORMATION ON THE SIMPSON NO. 4

Contractor: Red Tiger Drilling Co.

Drillers: Derauf
Ayres
Kennedy

Tool Pusher: Bill Ayres

Spud Date: November 7, 1983

Date of RTD: November 15, 1983

Surface Pipe: 8-5/8" @ 1054' w/400 sx

Casing: 5 1/2" @ 3646' w/200 sx common
cement 10% salt

TOTAL FOOTAGE DRILLED PER DAY

Under Surface At 3:50 A.M. On November 9, 1983

| | | | | | |
|------|------|----|-----------|----|-------------------|
| 1170 | Feet | At | 7:00 A.M. | On | November 9, 1983 |
| 2252 | " | " | " " | " | November 10, 1983 |
| 2834 | " | " | " " | " | November 11, 1983 |
| 3198 | " | " | " " | " | November 12, 1983 |
| 3360 | " | " | " " | " | November 13, 1983 |
| 3400 | " | " | " " | " | November 14, 1983 |
| 3650 | " | " | 5:01 A.M. | " | November 15, 1983 |

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BIT RECORD

| <u>BITS</u> | <u>TYPE</u> | <u>FOOTAGE</u> |
|-------------|------------------|----------------|
| No. 1 | Smith F-27 (new) | 783' to 3650' |

MUD RECORD (Mud-Co)

| | |
|----------|--|
| Surface: | 32 sx salt gel, 5 sx lime, 8 sx hulls |
| 2665' | 50 sx salt gel, 15 sx starch, 20 sx hulls, 1 sx preservative |
| 3088' | 93 sx salt gel, 22 sx starch, 4 sx hulls |
| 3284' | 18 sx salt gel, 8 sx hulls |
| 3395' | 7 sx starch, 8 sx hulls |
| 3650' | 20 sx hulls |