

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

RE: Frontier Oil Company
No. 2 Curry
NE SE SW 14-19S-15W
Barton County, Kansas

Dear Sir:

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

Drilling was supervised from 1600' to 3700', rotary total depth. Samples were examined from 1600' to rotary total depth.

All formation tops, zones of porosity, and stainings 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)	1916 GL	--- 1921 KB
Anhydrite (Top)	858	(+1063)
Anhydrite (Base)	884	(+1037)
Herington	1769	(+ 152)
Winfield	1822	(+ 99)
Fort Riley	1920	(+ 1)
Council Grove	2075	(- 154)
Cottonwood	2218	(- 297)
Neva	2263	(- 342)
Red Eagle	2325	(- 404)
Brownville	2492	(- 571)
Tarkio	2612	(- 691)
Howard	2814	(- 893)
Topeka	2891	(- 970)
Heebner	3144	(-1223)
Toronto	3157	(-1236)
Brown Lime	3225	(-1304)
Lansing-Kansas City	3235	(-1314)
Base of Kansas City	3453	(-1532)
Conglomerate Sand	3498	(-1577)
Cherty Conglomerate	3504	(-1583)
Arbuckle Dolomite	3520	(-1599)
Quartz	3603	(-1682)
RTD	3700	(-1779)

14 19 15W

Structurally, on top of the Lansing-Kansas City the No. 2 Curry ran 20' lower than Frontier Oil Company's No. 1 Eberly, a Lansing-Kansas City producer located approximately one location East. The Arbuckle Dolomite came in at 3520 (-1599).

ZONES OF INTEREST

HERINGTON (Top 1769)

1790 to 1800

Tan fossiliferous limestone with good fossil-cast porosity. No show of hydrocarbons.

WINFIELD (Top 1822)

1822 to 1830

Tan fossiliferous medium crystalline limestone with no show of hydrocarbons.

FORT RILEY (Top 1920)

1920 to 1928

Tan well-developed oolitic dolomitized limestone with no show of hydrocarbons.

COUNCIL GROVE (Top 2075)

2075 to 2083

Light tan fossiliferous limestone with good fossil-cast porosity. No show of hydrocarbons.

COTTONWOOD (Top 2218)

2218 to 2230

Light tan fossiliferous limestone with no show of hydrocarbons.

NEVA (Top 2263)

2263 to 2270

White fossiliferous limestone with poor fossil-cast porosity.
No show of hydrocarbons.

RED EAGLE (Top 2325)

2325 to 2338

Light tan fossiliferous limestone with fair fossil-cast porosity.
No show of hydrocarbons.

BROWNVILLE (Top 2492)

2492 to 2500

Light tan fossiliferous limestone with no show of oil.

TARKIO (Top 2612)

2650 to 2660

Scattered grey to tan micaceous sandstone with no show of oil.

TOPEKA (Top 2891)

2891 to 2895

Tan fine crystalline to chalky limestone with no show of oil.

2928 to 2939

Light tan chalky limestone with no show of oil.

3087 to 3098

Tan well-developed oolitic limestone with no show of oil.

TORONTO (Top 3157)

3157 to 3165

White fine crystalline to chalky limestone with no show of oil.
(Included in DST No. 1)

LANSING-KANSAS CITY (Top 3235)

3235 to 3239

Light tan medium crystalline limestone with no show of oil.
(Included in DST No. 1)

3263 to 3270

Light tan fine crystalline to chalky limestone with no show of oil.
(Included in DST No. 1)

3292 to 3299

Light tan fossiliferous to slightly vugular limestone. Scattered oil staining, no show of free oil, and no odor.
(Included in DST No. 1)

DRILL STEM TEST NO. 1 (FOC Test)

3141 to 3298

120-45 ^{WB 1W (see 10 60)} Weak increasing to good blow. Recovered 195' mud.
Flow pressures 113 to 204#.
Shut in pressures 1073#.

3308 to 3332

Tan very well-developed oolitic limestone with no show of oil.

3368 to 3372

Tan fairly well-developed oolitic limestone. Good dark scattered oil staining, good show of free oil, and a good odor.
(Included in DST No. 2 & 4)

DRILL STEM TEST NO. 2 (FOC Test)

3350 to 3375

90-45 Weak blow dead in 7 minutes, flushed tool, no help.
Recovered 45' mud.
Flow pressures 20 to 52#.
Shut in pressure 90#.

3382 to 3386

Light tan oolitic slightly vugular limestone. Scattered spotted oil staining, fair show of free oil, and fair odor.
(Included in DST No. 3 & 4)

DRILL STEM TEST NO. 3 (FOC Test)

3374 to 3395

Tool open, weak blow dead in 10 minutes, flushed tool, packer failure. Recovered 740' mud. Flow pressures 45 to 45#. No shut in pressure.

3398 to 3402

Light tan oolitic limestone. Trace of dark spotted oil staining, slight show of free oil, and no odor. (Included in DST No. 4)

3419 to 3423

White fine crystalline to chalky limestone with no show of oil. (Included in DST No. 4)

3433 to 3440

White fine crystalline to chalky limestone with no show of oil. (Included in DST No. 4)

DRILL STEM TEST NO. 4 (FOC Test)

3356 to 3460

Misrun (Tool malfunction)

DRILL STEM TEST NO. 4 (RERUN) (FOC Test)

3354 to 3460

90-45 Weak blow dead in 10 minutes. Recovered 10' mud. Flow pressures 90 to 90#. Shut in pressure 135#.

CONGLOMERATE SAND (Top 3498)

3498 to 3504

Clear well-rounded sandstone clusters. Slight show of free oil, and no odor. (Included in DST No. 5 & 6)

DRILL STEM TEST NO. 5 (FOC Test)

3448 to 3505

60-30 Weak blow in 30 minutes. Recovered 30' mud. Flow pressures 68 to 113#. Shut in pressure 227#.

ARBUCKLE DOLOMITE (Top 3520)

3520 to 3527

White to light tan coarse crystalline dolomite. Scattered dark oil staining, no show of free oil, and a good odor.
(Included in DST No. 6)

DRILL STEM TEST NO. 6 (FOC Test)

3450 to 3527

135-45 Strong blow throughout. Recovered 695' gas-in-pipe, 65' gas cut mud.
Flow pressures 90 to 101#.
Shut in pressure 101#.

3527 to 3537

White to light tan coarse crystalline dolomite. Slight show of free oil, and a good odor.
(Included in DST No. 7)

DRILL STEM TEST NO. 7 (Western Testing)

3525 to 3537

60-30-60-30 First open weak blow increasing to good blow. Second open strong blow.
Recovered 650' gas-in-pipe, 40' gas cut mud.
Initial flow pressures 52 to 52#.
Final flow pressures 52 to 52#.
Initial shut in pressure 78#.
Final shut in pressure 78#.

3539 to 3545

Light tan to white coarse crystalline arenaceous dolomite. No show of free oil, and a strong odor.
(Included in DST No. 8)

DRILL STEM TEST NO. 8 (Western Testing)

3530 to 3545

60-30-60-30 First open weak blow increasing to strong blow.
Second open strong blow, gas to surface. Second flow:

10 minutes	3,920 CFGPD
20 minutes	5,640 CFGPD
30 minutes	7,060 CFGPD
40 minutes	7,700 CFGPD
50 minutes	8,890 CFGPD
60 minutes	9,450 CFGPD

Recovered 63' gas cut mud.
Initial flow pressures 52 to 52#.
Final flow pressures 39 to 39#.
Initial shut in pressure 772#.
Final shut in pressure 811#.

3545 to 3550

Light tan to white arenaceous dolomite.
No show of free oil, and a good odor.
(Included in DST No. 9)

DRILL STEM TEST NO. 9 (Western Testing)

3543 to 3550

60-30-60-30 First open strong blow, gas to surface in 50 minutes.
Second open strong blow.
First flow:
50 minutes 15,700 CFGPD
60 minutes 18,500 CFGPD
Second flow:
Equalized at 18,500 CFGPD in 10 minutes.

Recovered 45' gas cut mud.
Initial flow pressures 26 to 13#.
Final flow pressures 13 to 13#.
Initial shut in pressure 994#.
Final shut in pressure 994#.

3550 to 3555

Light tan to white arenaceous dolomite.
Scattered angular clear quartz.
No show of free oil, and a fair odor.
(Included in DST No. 10)

DRILL STEM TEST NO. 10 (Western Testing)

3548 to 3555

60-30-60-30 First open strong blow,
gas to surface in 3 minutes.

Second open strong blow.

First flow:

10 minutes	245,000 CFGPD
20 minutes	259,000 CFGPD
30 minutes	259,000 CFGPD
40 minutes	274,000 CFGPD
50 minutes	274,000 CFGPD
60 minutes	274,000 CFGPD

Second flow:

10 minutes	303,000 CFGPD
20 minutes	288,000 CFGPD
30 minutes	288,000 CFGPD
40 minutes	288,000 CFGPD
50 minutes	288,000 CFGPD
60 minutes	288,000 CFGPD

Recovered 45' gas cut mud.

Initial flow pressures 78 to 65#.

Final flow pressures 65 to 65#.

Initial shut in pressure 994#.

Final shut in pressure 968#.

3555 to 3563

Light tan medium crystalline arenaceous
to pure dolomite. Very slight show of
free oil, and a fair odor.

(Included in DST No. 11)

DRILL STEM TEST NO. 11 (Western Testing)

3555 to 3563

60-30-60-30 First open weak blow
increasing to good blow.

Second open good blow.

Recovered 30' mud.

Initial flow pressures 39 to 39#.

Final flow pressures 39 to 39#.

Initial shut in pressure 693#.

Final shut in pressure 863#.

3564 to 3570

Light tan coarse crystalline arenaceous
dolomite and scattered angular clear
quartz. No show of free oil, and
a fair odor.

(Included in DST No. 12)

DRILL STEM TEST NO. 12 (Western Testing)

3563 to 3570

60-30-60-30 First open weak blow.
Second open weak blow.
Recovered 255' gas-in-pipe, 125' OGCM
(49% gas, 15% oil, 4% water, 32% mud).
Initial flow pressure 52 to 52#.
Final flow pressures 52 to 52#.
Initial shut in pressure 91#.
Final shut in pressure 104#.

3570 to 3575

Light tan to clear sandstone with
a dolomite matrix. No show of
free oil, and a fair odor.
(Included in DST No. 13)

DRILL STEM TEST NO. 13 (Western Testing)

3568 to 3575

60-30-60-30 First open strong blow.
Second open strong blow.
Recovered 930' gas-in-pipe,
60' light oil and gas cut mud,
180' oil and gas cut mud.
Initial flow pressures 51 to 81#.
Final flow pressures 102 to 122#.
Initial shut in pressure 1047#.
Final flow pressure 1047#.

3575 to 3592

Light tan coarse crystalline arenaceous
dolomite grading into dolomite cemented
sandstone. No show of oil, and no odor.

QUARTZ (Top 3603)

3603 to 3700

Dark green quartz with no show of oil.

ROTARY TOTAL DEPTH AT 3700

4-1/2" casing was set at 3695', 5' off bottom with 200 sx 60-40 poz, 4% gel and 200 sx common cement, 10% salt. The shoe joint is 40.73' long and zero point is 5' AGL.

Sincerely,

A handwritten signature in cursive script that reads "Steve D. Parker".

Steve D. Parker

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