

DETAILED DRILLING AND COMPLETION RECORD OF TATLOCK OIL COMPANY ROBBINS #1 FARMOUT
TO ARMER DRILLING COMPANY AND N.C.R.A.

Location: NE NE NE Sec. 21-27S-15W, Pratt County, Kansas

Pool: Carver-Robbins Pool discovery in the Pennsylvanian Conglomerate
for 8,500,000 cubic feet, Kansas Corporation Commission gauge,
shut in gas producer.

Elevation: 2075 ground
2078 derrick floor
2081 Kelly bushing - measurements are from K.B.

Commenced: Rigged up November 8, 1954

Completed: November 28, 1954 with 5 1/2" casing cemented at 4590' from T.D. 4815'

Set 273' of 8 5/8" surface pipe with 300 sacks cement.

<u>Geological Tops</u>	<u>Datum</u>	<u>Datum - Electric Log Tops</u>
ANHYDRITE	1050 (1045)	
BASE ANHYDRITE	1064 (1017)	
HEEDNER	3845 (-1764)	3840 (-1759)
TORONTO	3864 (-1783)	3863 (-1782)
DOUGLAS	3889 (-1808)	3890 (-1809)
BROWN LIME	4001 (-1920)	4001 (-1920)
LANSING-KANSAS CITY	4018 (-1935)	4024 (-1943)
BASE LANSING-K.C.	4322 (-2241)	4320 (-2239)
DZ SAND & SHALE	4464 (-2383)	4462 (-2381)
MISSISSIPPI	4497 (-2416)	4494 (-2413)
KINDERHOOK SAND	4542 (-2461)	4542 (-2461)
VIOLA	4603 (-2522)	4600 (-2519)
SIMPSON SHALE	4681 (-2600)	4684 (-2603)
SIMPSON SAND	4707 (-2626)	4705 (-2624)
ARBUCKLE	4776 (-2695)	4777 (-2696)
T.D. - DRILLERS	4815 (-2734)	4815 (-2734)

LANSING-KANSAS CITY

D.S.T. #1 - 4035-59 - Open one hour - fair, diminishing to weak blow.
Recovered 2580' gas in drill pipe - 170' heavily gas out and
slightly oil out mud - 240' heavily oil and gas out mud and
90' muddy gassy oil and 90' salt water.
Shut in 20 minutes - IFP 0# - FFP 180# - BHP 1125#

D.S.T. #2 - 4168-84 - Open one hour - weak blow 25 minutes.
Recovered 6' mud with trace of oil specks.
Shut in 1/2 hour - IFP 15# - FFP 15# - BHP 25#

D.S.T. #3 - 4241-69 - Open one hour, fair steady blow throughout.
Recovered 300' gas in drill pipe, 95' gas out mud with
trace of oil. Shut in 1/2 hour - IFP 75# - FFP 95# - BHP 1215#.

BASAL PENNSYLVANIAN SANDS

D.S.T. #4 - 4463-90 - Open one hour and 44 minutes, very strong blow,
gas to surface in 70 seconds, gauged 47 1/2# for 48 minutes
5,802,687 C.F.G. with 5 gallons distillate. Shut in 1/2 hour -
IFP 280# - FFP 679# - BHP 1514#.

MISSISSIPPIAN

D.S.T. #5 - 4499-4534 - Open 1 hour, strong blow. Recovered 50' watery mud -
Shut in 1/2 hour - IFP 0# - FFP 0# - BHP 750#.

KINDERHOOK SANDS

D.S.T. #6 - 4538-58 - Open one hour - weak blow 38 minutes. Recovered 90' mud -
Shut in 1/2 hour - IFP 0# - FFP 0# - BHP 100#.

ARBUCKLE

D.S.T. #7 - 4478-90 - Open 3/4 hour, weak blow 32 minutes. Recovered 30' mud, slightly watery. Shut in 15 minutes - IFF 12# - PFP 27# - BHP 838#.

Ran Halliburton Guard Log - Electric Survey

Set 5-1/2" casing at 4590' with 150 sac Pommix on November 28, 1954.

Bit record indicates 21 bits used.

STRUCTURAL COMPARISON

<u>Lansing-K.C.</u>	<u>Arbuckle</u>	<u>Dry Holes</u>
32' lower	30' higher	Musgrove Tatlook #1 NE NE NE Sec. 6-27S-15W
31' lower	65' higher	R-S-T & Tatlook Ward #1 NE NE NW Sec. 12-27S-15W
10' higher	1' lower	Grigsby #1 NE SE SE Sec. 25-27S-15W
3' higher	71' higher	Greenbrier-Tatlook Barbee #1 SW SW SW 19-27S-15W
101' higher	153' higher	Bryant #1 NE SW SE Sec. 31-27S-15W

Stanton Cox, Armer Drilling Company geologist on the well, recommended the following zones be tested after studying log, samples, drill stem tests and time logs:

MARMATON SECTION

D.S.T. #4 - 4463' to 4490'
 4472' to 4475' - gas - perforate
 4479' to 4481' - distillate - perforate

Cherokee Sand Section

LANSING SECTION

D.S.T. #1 - 4035' to 4059'
 4050' to 4055' - gas and oil - perforate
 Possibility of water below 4055'

National Cooperative Refining Association will complete the well.

November 30, 1954 - Oage Lee, General Production Superintendent of NCRA informed us that no definite date had been set for moving in cable tools. They have concurred with Frosty Cox on all geological data. Their present plans call for testing the gas zone first.

KANSAS CITY LIMESTONE TESTING

12/10/54 - Ran Gamma Ray and Collar Log
 12 perforations from 4043' to 4046' did not produce anything natural. 500 gallon acid job was complete failure due to channeling behind the pipe as shown by channel survey.

Squeezed perforations from 4043' to 4046' with 160 sacks cement in order to correct channeling behind the pipe from 4043' to 3950', as a result of acid job. Drilled cement to 4056'.

12/13/54 - Perforated from 4050' to 4054' with 20 shots with 4 shots per foot.

4050' to 4051' - Stain in gun chamber. No fluid in one hour test.
 4051' to 4052' - Stain in gun chamber at 4051 1/2'. No fluid on one hour test.
 4052' to 4053' - Good gas odor and stain on gun chamber. No fluid on hour test.
 4053' to 4054' - Good stain at 4053'. No fluid.

Perforated -
 4050 1/2' to 4051' - 2 shots per foot
 4052' to 4052 1/2' - 2 shots per foot

After this perforating well made 5 1/2 gallons water in 2 hours. Water decreased to 1 1/2 gallons per hour on six hour test with no oil or gas showing.

Water analysis indicates Kansas City water.

Acidized with 250 gallons regular 15% acid. Maximum pressure 800# with no break in pressure during treatment. Treating time 5 1/2 minutes. One minute pressure drop 100# to 700# pressure. Well went on slight vacuum in 5 minutes.

Results - Recovered all load. Well produced 23 barrels fluid on 2 1/2 hour test. Estimated 2 barrels oil per hour, 8 barrels water per hour with fair show of gas. Oil is 44 1/2 gravity at 60 degrees.

Continuing to swab well. Water should decrease or exhaust. This zone of the Kansas City should produce commercially.

12/14/54 - From 6:30 AM to 2:30 PM Robbins #1 swabbed:

61.88 barrels of fluid
10.02 barrels of oil
51.86 barrels of water

Last two hours swabbed:

13.36 barrels of fluid
1.67 barrels of oil
11.69 barrels of water

Squeezed perforations with 7 1/2 sacks cement.

PENNSYLVANIAN CONGLOMERATE TESTING

Perforated with 12 shots at 4472' to 4475'
Perforated with 16 shots at 4478' to 4482'

Tested 3,925,000 C.F.G. before acidizing.

Acidized with 250 gallons

12/20/54 - Plan to hydra-frac zone with 4000 gallons total utilizing plugging material between 4472' to 4475' and 4478' to 4482' after using 2000 gallons in lower perforations in order to treat the entire section of perforations.

1/ 6/55 - Gage Lee gauged 7,600,000 c.f.g. between separator and back of pressure valve and 8,500,000 c.f.g. open flow through 2" tubing with maximum pressure of 1320# in 20 minutes.

1/26/55 - Barnes of Cities Service Gas Company ran test for 6,600,000 cubic feet through 1/2" choke. Estimated well would deliver 1,000,000 c.f.g. against 800# pressure with BTU test of 1060.

Shut in for Federal Power Commission Gas Purchase Contract Approval -

1/30/57 - Went on Panhandle Eastern Pipe Line Company line.

2/ 3/57 - Went off line

2/ 7/57 - Shut in

2/25/57 - Proposed workover operations NCRA - Robbins #1 - NE NE N E 21-27S-15W

Plan to move in cable tools this week.

Run Channel Determination survey in order to locate channel.

Analysis indicates KC water - so will perforate K. C. and squeeze with top of packer at approximately 4450.

Reperforate and refrac with 2000 lbs. of sand and oil.

3/ 1/57 - Moving in cable tools.

3/ 3/57 - Plug 4556

3/ 3/57 - Contd.

Ran Channel Survey - Indicated channel 4414-4478 squeezed 90 sacks

Perforated 4435 - 4 shots
4433½ - 4 shots

Plugged back to 4473½

Ran tubing and squeezed perforations

3/ 7/57 - W.O.C.

3/12/57 - After repairing channel from 4478 to 4414 - ran collar locator and found hole 4487 - Perforations 4478 to 4482
Plugged or no evident. Squeezed hole 4487 and then producing zones (4472-75 and 4478-82)
Starting over.

Panhandle Eastern wanted 1,000,000 cu. ft. gas per day for Feb. 1957.

3/20/57 - Everything squeezed off - hole dry.

4460 drilling cement

3/22/57 - Perforated 4478-82 No gas 16 shots
4472-75 6 shots

Unloaded hole - swabbed 6.84 BW/Hr. for 6 hrs.
4.5 BW/Hr. for 3 hrs.

8th hour had slight show gas
Shut well in for 15 hrs. casg. pressure 450#
blew well for 10 minutes.
Shut down.

3/28/57 - 3 bbls. water an hour - 16 hours

16 hrs. 100,000 cubic feet gas

Talking about plugging

4/ 5/57 - Moved out cable tools.

8/24/57 - Plugged

8/30/57 - Finished pulling 3496' 5½" casing by Forbes Casing Pulling Company of Great Bend, Kansas.