

15-033-20625

State Geological Survey
WICHITA BRANCH

P/
22-31-16W

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GEOLOGICAL REPORT

LUFF EXPLORATION COMPANY

D-22 LGK

C NW NW Sec 22-31S-16W
COMANCHE COUNTY, KANSAS

RECEIVED
STATE GEOLOGICAL COMMISSION

JAN 12 1984

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GEOLOGICAL REPORT

Luff Exploration Company
D-22 LGK
C NW NW Sec 22-31S-16W
Comanche County, Kansas

ELEVATIONS: 2040 Kelly Bushing
2033 Ground Level

CONTRACTOR: H-30 Drilling, Inc., Rig #5

COMMENCED: December 28, 1983
COMPLETED: January 9, 1984

ROTARY TOTAL DEPTH: 5080 feet
LOGGED TOTAL DEPTH: 5079 feet

SURFACE PIPE: 12 jts new 8 5/8" 24# @ 507' w/300 sx
Class H, 2% Gel, 3% cc. Cement did
circ. Plug down @ 1700, 12-28-83.

PRODUCTION PIPE: D & A

LOGS: WELEX:
1. DIGL
2. DSN-DEN
3. Cal

DAILY PENETRATION RATE:

December 29, 1983	0700	770', Drlg.
December 30, 1983	"	1214', WOC
December 31, 1983	"	2100', Drlg.
January 1, 1984	"	2735', Drlg.
January 2, 1984	"	3323', Drlg.
January 3, 1984	"	3915', Drlg.
January 4, 1984	"	4494', Drlg.
January 5, 1984	"	4880', Drlg.
January 6, 1984	"	5021', DST #1
January 7, 1984	"	5021', DST #2
January 8, 1984	"	5080', Logging
January 9, 1984	"	5080', DST #3

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REMARKS:

All measurements are from Kelly Bushing (2040). RTD was 5080, LTD was 5079 (-3039).

One foot drilling time was plotted from 4100-TD. Thirty foot samples were saved from 1000-3100, and ten foot samples 3100-TD.

All drill stem tests taken were in the Mississippian.

Drill pipe was strapped during a bit trip at 4915. The strap was .34 feet short of the board.

FORMATIONS:

The following are the depths and datums of formation tops encountered as determined by sample and electrical/nuclear log analysis.

<u>Formation</u>	<u>Sample</u>	<u>Log</u>	<u>Datum</u>
Chase	-	2432	- 392
Council Grove	-	2803	- 763
Cnaga	-	3255	-1215
Howard	-	3669	-1629
Topeka	-	3816	-1776
Heebner	4182	4179	-2139
Lansing	4394	4392	-2352
Base/Kansas City	4825	4823	-2783
Marmaton	4843	4839	-2799
Cherokee	4967	4964	-2924
Mississippian	5003	5001	-2961
TD	5080	5079	-3039

DRILL STEM TESTS:

A geological log is included with this report and is considered a part of it. Refer to it for sample descriptions. The following are drill stem test results.

Mississippian 5001 (5003 EL)

DST NO. 1
4979-5021 feet

Misrun - No Packer Seat

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DRILL STEM TESTS (cont'd):

Mississippian

DST NO. 2
4041-5021 feet

Open 30 minutes, very weak blow ($1\frac{1}{2}$ "
throughout. Shut-in 60 minutes. Open
90 minutes, surface blow ($1/8$ "
throughout. Shut-in 120 minutes.
Recovered 210 feet of fluid as follows:
90 feet of drilling mud, 60 feet of slightly
gas cut mud, 90 feet of slightly oil and gas
cut mud.

Initial Hydrostatic Head	2383 psi
Initial Flow Pressure	93-166 psi *
Initial Shut-in Pressure	1455 psi
Final Flow Pressure	176-176 psi
Final Shut-in Pressure	1382 psi
Final Hydrostatic Head	2290 psi
Temperature	120°

* Severe plugging throughout both flow
periods.

Mississippian

DST NO. 3
5004-5079 feet
Log Depths

Open 30 minutes, very weak blow throughout.
Shut-in 60 minutes. Open 90 minutes, very
weak blow throughout. Shut-in 120 minutes.
Recovered 390 feet of watery mud.

Initial Hydrostatic Head	2469 psi
Initial Flow Pressure	62-133 psi
Initial Shut-in Pressure	1435 psi
Final Flow Pressure	133-236 psi
Final Shut-in Pressure	1346 psi
Final Hydrostatic Head	2428 psi
Temperature	120°

RECOMMENDATIONS AND CONCLUSIONS:

The following is a structural comparison of the D-22 LGK to
the Luff Exploration K-22 (100' S of C NE SW Sec 22-31S-16W) and
the Mesa Petroleum 1-20 Kay (2400' FSL & 400' FWL, Sec 20-31S-16W).

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RECOMMENDATIONS AND CONCLUSIONS (Cont'd):

<u>Formation</u>	<u>D-22 LGK</u>	<u>K-22 LGK</u>	<u>1-20 Kay</u>
Chase	- 392	- 389	- 381
Council Grove	- 763	- 760	- 762
Onaga	-1215	-1211	-1203
Howard	-1629	-1609	-1604
Topeka	-1776	-1774	-1768 ?
Heebner	-2139	-2140	-2106
Lansing	-2352	-2342	-2306
Base/Kansas City	-2783	-2765	-2728
Marmaton	-2799	-2780	-2745
Cherokee	-2924	-2899	-2866
Mississippian	-2961	-2937	-2895
TD	-3039	-3403	-3644

At a rotary total depth of 5080 feet, the D-22 LGK was logged by Welex. Due to severe plugging during DST #2, it was decided to retest the zone, plus the rest of the Mississippian to TD. Following DST #3, the D-22 LGK was plugged and abandoned.

Respectfully submitted,

Raymond E. Palmer

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1-9-84