



15-033-20605

State Geological Survey
WICHITA BRANCH

23-31-17W ^{and P1}

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GEOLOGICAL REPORT

LUFF EXPLORATION COMPANY

K-23 UNRUH-MOBIL
C NE ^{SW} Sec 23-31S-17W
Comanche County, Kansas

RECEIVED
STATE CORPORATION COMMISSION

OCT 14 1983

CONSERVATION DIVISION
Wichita, Kansas



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GEOLOGICAL REPORT

Luff Exploration Company
K-23 Unruh-Mobil
C-NE SW Sec 23-31S-17W
Comanche County, Kansas

ELEVATIONS: 1993 Kelly Bushing
1986 Ground Level

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

COMMENCED: September 19, 1983
COMPLETED: October 1, 1983

ROTARY TOTAL DEPTH: 5020 feet
LOGGED TOTAL DEPTH: 5016 feet

CONDUCTOR PIPE: 16" @ 84'
SURFACE PIPE: 13 jts new 8 5/8" 24# (tally 521.72')
@ 525' w/ 200 sx Lite and 100 sx Class
A, 3% CC, 2% Gel. Cement did circulate.
Plug down @ 1645, 9-20-83.

PRODUCTION PIPE: D & A

LOGS: Welex
1. DIGL
2. DSN*DEN
3. CAL

DAILY PENETRATION RATE:

September 20, 1983	0700	846 feet, Bit trip
September 21, 1983	"	1290 feet, Pump repair
September 22, 1983	"	2200 feet, Drlg.
September 23, 1983	"	2835 feet, Drlg.
September 24, 1983	"	3240 feet, Drlg.
September 25, 1983	"	3914 feet, Drlg.
September 26, 1983	"	4451 feet, Drlg.
September 27, 1983	"	4517 feet, DST #1
September 28, 1983	"	4825 feet, CFS
September 29, 1983	"	4950 feet, DST #2
September 30, 1983	"	5020 feet, Logging
October 1, 1983	"	5020 feet, P & A

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REMARKS:

All measurements are from Kelly Bushing (1993). RTD was 5020, while LTD was 5016 (-3023).

One foot drilling time was plotted from 4000 feet to TD. Thirty foot samples were saved from 1200-3200 feet, and ten foot samples were saved from 3200-TD.

Two drill stem tests were taken covering Lansing and Mississippian zones. No hole problems were encountered during either test.

A strap taken during the bit trip at 3177 feet was .32 feet long to 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	-	2379	- 386
Council Grove	-	2748	- 755
Onaga Shale	-	3199	-1206
Howard	-	3618	-1625
Topeka	-	3797	-1804
Heebner	4118	4117	-2124
Lansing	4314	4312	-2319
Base/Kansas City	4739	4736	-2743
Marmaton	4748	4746	-2753
Marmaton 'X'	4787	4785	-2792
Cherokee Shale	4874	4873	-2880
Rew. Mississippian	4911	4909	-2916
Sol. Mississippian	4940	4940	-2947
TD	5020	5016	-3023

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.

Lansing 4492 (4488 EL)

DST No. 1 4482-4517 feet	Open 30 minutes, $\frac{1}{4}$ " blow throughout. Shut-in 60 minutes. Open 90 minutes, surface blow died in 30 minutes. Shut-in 120 minutes. Recovered 60 feet of watery mud and 120 feet of muddy water.
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Lansing (Cont'd)

IFP 37-56
ISIP 1677
FFP 74-129
FSIP 1677
IHP 2197
FHP 2178

Mississippian 4911 (4909 EL)

DST No. 2 Open 15 minutes, strong blow in 1 minute,
4894-4950 feet GTS in 15 minutes. Shut-in 60 minutes. Open
 90 minutes, gas immediately, gauged 251 mcf
 that decreased throughout to 116 mcf. Shut-in
 120 minutes.
 Recovered 270 feet of slightly gas cut watery
 mud.

IFP 148-178
ISIP 1382
FFP 93-93
FSIP 821
IHP 2364
FHP 2346

<u>2nd Open</u>	<u>Time</u>	<u>Choke</u>	<u>PSI</u>	<u>Rate(mcf)</u>
	5 Min.	$\frac{1}{2}$ "	40	251
	10 "	"	40	251
	15 "	"	39	244
	20 "	"	36	225
	25 "	"	33	207
	30 "	"	28	175
	35 "	"	26	163
	40 "	"	24.5	153
	45 "	"	23	144
	50 "	"	22.5	141
	55 "	"	22	138
	60 "	"	21.5	135
	65 "	"	20.5	128
	70 "	"	20.5	128
	75 "	"	20	125
	80 "	"	19.5	122
	85 "	"	19	119
	90 "	"	18.5	116

RECOMMENDATIONS AND CONCLUSIONS:

The following is structural comparison of the K-23 Unruh-Mobil to the M. L. Brown No. 1 V. L. Smith, 530 FNL and 415 FWL, Sec 26-31S-17W.

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<u>Formation</u>	<u>K-23 Unruh-Mobil</u>	<u>No. 1 V. L. Smith</u>
Chase	- 386	- 391
Council Grove	- 755	- 764
Onaga Shale	-1206	-1209
Howard	-1625	-1635
Topeka	-1804	-1805
Heebner	-2124	-2120
Lansing	-2319	-2314
Base/Kansas City	-2743	-2743
Marmaton	-2753	-2760
Marmaton 'X'	-2792	-2794
Cherokee Shale	-2880	-2881
Rew. Mississippian	-2916	-2926
Sol. Mississippian	-2947	-2938
TD	-3023	-3095

At a rotary total depth of 5020, the K-23 Unruh-Mobil was logged by Welex. Due to lack of zone development and absence of shows, other than those tested, it was recommended that this hole be plugged and abandoned.

Respectfully submitted,

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10-4-83