

28-24-13W

LEE H. CORNELL
Petroleum Geologist
312 W-K-H BUILDING
WICHITA 2, KANSAS

PHONES } OFC. AM 2-3921
 } RES. FO 3-7353

January 12, 1954

C
O
P
Y

Oklahoma Exploration Company
503 Jenkins Bldg.,
Tulsa, Oklahoma

Re: No. 1 Van Lieu
SE NW SW 28-24-13W
Stafford County, Kansas

Gentlemen:

Submitted herewith is my geological report on the above captioned well.

Drilling progress was observed at the well site from 3400 to 4193 total depth. Ten foot samples were saved from 3350 to 3550 and five foot samples were saved from 3550 to 4193 total depth. All samples were examined dry and all samples were examined wet through all porous zones in the Lansing and through the entire Arbuckle section. A one foot time log was kept and plotted from 3350 to 4193 total depth. All sample observations were adjusted to the time log. A Schlumberger survey was run and these tops are included with this report. The maximum difference between sample tops and Schlumberger tops was four feet.

Well samples were delivered to the Kansas Well Sample Bureau, but no cut was ordered for your account. The original time log is retained in the files of Natural Oil and Gas, but a copy will be delivered to the Kansas Well Log Bureau by me at the completion of this report. Three copies each of the Schlumberger log and all drill stem charts will be delivered to you by the service companies. A field print of the Schlumberger survey was mailed to you ahead of this report.

MISCELLANEOUS DATA

Elevation: 1930 Ground; 1933 Derrick Floor; 1936 Rotary Bushing
Zero Point for all measurements: Top Rotary Bushing
Contractor: Natural Gas & Oil, Rig No. 1
Tool Pusher: Duke Burt
Surface Hole: December 22, 1953, 2nd Tour
Surface Casing: 233 feet of new 8 5/8 set at 233 feet and cemented with 200 sacks. Job completed 7:30 P. M., Dec. 22nd
Oil String: 18 joints 15 1/2 lb. (on bottom of string) and 87 joints 14 lb. 5 1/2" set at 4192 and cemented with 150 sacks.

FORMATION TOPS

By Samples and Time Log

By Schlumberger

Anhydrite (Driller)	795	(+ 1141)	791	(+1145)
Heebner	3433	(-1497)	3432	(-1496)
Leavenworth	3438	(-1502)	3436	(-1500)
Toronto	3451	(-1515)	3451	(-1515)
Iatan	3570	(-1634)	3570	(-1634)
Lansing (Estimated)	3590	(-1654)	3601	(-1665)
Base K. C.	3868	(-1932)	3869	(-1933)
Cherty Cong.	3927	(-1991)	3926	(-1990)
Kinderhook	3950	(-2014)	3950	(-2014)
Viola	4011	(-2075)	4012	(-2076)
Simpson	4129	(-2193)	4125	(-2189)
Arbuckle	4177	(-2241)	4179	(-2243)
Total Depth	4188	(-2252)	4188	(-2252)

Drilled deeper to 4193 (-2257) T.D. after Schlumberger survey.

LANSING SECTION

"80 Foot Zone" 3672-78, circulated 1 hour at 3681, white, coarse crystalline limestone, poor porosity, no free oil, no stain.

"100 Foot Zone" 3690-96, circulated 1 hour at 3697. Gray to light brown oolitic limestone, poor porosity, no free oil, no stain.

"170 Foot Zone" 3762-67, white, medium crystalline limestone, fair to good vugular porosity, show dark free oil, faint odor, fair to good dark stain.

"180 Foot Zone" 3774-82, white, oolitic limestone, poor permeability, mostly barren, few pieces with trace free oil and partly stained. No odor.

D.S.T. No. 1 3757-83 (Johnston Testers) open 45 minutes, weak flow for 10 minutes. Recovered 30 feet of mud, Bottom Hole Pressure 195 lbs. Flow pressure zero.

"220 Foot Zone" 3807-09, white, soft coarse oolitic and oolitic limestone. Scattered shows of free oil, faint odor, scattered fair to good stain. Poor permeability.

D.S.T. No. 2 3793-3830 (Bee Testers), open 1 hour, weak blow for 20 minutes, recovered 34 feet of oil specked mud, B.H.P. 100 lbs., flow pressure Zero.

"240 Foot Zone" 3834-44, white fossiliferous limestone, show free oil, slight odor. Fair porosity, fair to good stain.

D.S.T. No. 3, 3832-66 (Bee Testers), open 1 hour, weak blow for 10 minutes, recovered 20 feet of mud B.H.P. 100 lbs.

CHERTY CONGLOMERATE SECTION

3927 - 3950 white, amber, brown and orange chert.

KINDERHOOK SECTION

3950-4011, black flakey shale, some greenish glauconitic shale and white, glauconitic limestone.

VIOLA SECTION

4011-4090, mostly white and gray chert, some white, tripolitic chert with traces dark, residual stain, poor porosity.
4090-4103, white, weathered, chert and white coarse crystalline limestone, both with poor porosity and scattered shows of free oil, no odor, fair to good scattered stain in dry samples.
D.S.T. No. 4 (Haliburton) 4085-4110 open 1 hour, weak blow for 3 minutes, recovered 40 feet of mud, no oil, B.H.P. 45 lbs.
4103 - 4129 white and gray coarse crystalline limestone.

SIMPSON SECTION

4129-44 pale green and dark, blue green shale
4141-51 some shaley coarse grained sand clusters, trace clear, glauconitic sand clusters, trace clear, medium, angular, tight dolomitic sand. No shows of oil.
4151 - 77, green shale, partly weathered.

ARBUCKLE SECTION

4177 - 81, brown and white oolitic chert, brown oolastic dolomite (in 1 hour circulating sample), fair to good porosity, good show of free oil. Scattered light stain in dry sample.
4181 - 83 as above.
D.S.T. No. 5 (Johnston Testers) 4178-83 open one hour, strong blow throughout test recovered 60 feet clean oil, 170 feet of muddy oil and approximately 180 feet of gas. B.H.P. 1320 lbs. Flow Pressure Zero, Gravity of oil 36.0, corrected. 4183-88 oolastic dolomite as above; medium to coarse crystalline dolomite with scattered good to excellent intercrystalline porosity, good show of free oil and faint to fair stain in dry samples.
D.S.T. No. 6 (Bee Testers) 4184-88 open 1 hour, strong blow throughout test. Recovered 435 feet of muddy, gassy oil and 200 feet of black sulphur water, plus approximately 250 feet of gas. B.H.P. 1325 lbs. Initial Flow pressure zero, Time Flow Pressure 200 lbs.
4188-93 T.D. Fine, medium and coarse crystalline dolomite, fair to good porosity, scattered shows of oil.

In view of the positive drill stem tests in the Arbuckle, it was recommended that casing be run on this test, even though the Arbuckle is lower than most of the nearest production. After the Schlumberger survey was run, the well was drilled deeper five feet in order to run casing through the oil section and leave ample room for perforating the oil section.

All Lansing Zones were carefully observed by the writer and all were adequately tested by Drill Stem and the entire section appears to be of negative quality.

One drill stem test was taken in the Viola with negative results. This zone had a very good show in the samples however and it is recommended that this zone be perforated from 4090 to 4105 before the well is abandoned.

Yours very truly,



LEE H. CORNELL

Natural Gas & Oil & Oklahoma Exploration Company
 No. 1 Van Lieu, SE NW SW 28-24-13W, Stafford County, Kansas
 Elevation: 1936 Rotary Bushing

TIME LOG

3350 - 3360	6-4-6-6-6	6-7-6-8-6	
	70 8-6-7-7-6	7-5-6-6-5	
	80 5-5-5-3-2	3-2-3-3-5	
	90 3-2-3-2-3	3-3-5-5-4	
3390 - 3400	4-4-4-4-7	6-6-12-6-3	
3400 - 3410	3-3-5-12-9	3-7-6-5-5	
	20 5-7-6-7-8	8-8-7-7-7	
	30 6-4-4-7-6	8-9-7-8-9	
	40 9-6-6-4-5	4-4-5-7-9	
	50 7-8-4-6-6	7-7-7-8-6	
	60 6-8-7-9-10	7-5-8-7-7	
	70 6-8-5-8-7	6-9-9-9-8	
	80 9-8-7-7-8	8-7-7-6-5	
	90 5-4-6-5-5	5-7-6-4-5	
3490 - 3500	7-7-6-6-5	5-6-6-5-6	
3500 -	10 6-6-5-6-5	4-5-4-5-6	
	20 6-4-5-5-6	7-5-6-5-4	
	30 7-5-4-4-5	5-10-6-6-5	
	40 5-5-5-5-6	5-6-5-6-6	
	50 5-6-6-6-6	6-6-5-7-6	
	60 4-4-7-6-5	7-6-6-7-6	
	70 6-5-6-6-6	6-6-7-6-5	
	80 13-15-6-10-9	11-9-10-10-8	
	90 9-7-9-11-9 *	3-4-5-4-5	SR 3586, 87, 88
	* Trip 3585 2 hrs. 37 min. put on OWS		
3590 - 3600	5-4-5-4-6	5-5-7-5-6	SR 3594, 3597
3600 -	10 5-8-7-8-8	9-7-10-8-10	
	20 11-9-10-10-10	9-7-5-4-4	
	30 6-7-6-8-10	8-7-6-6-6	
	40 6-6-6-8-10	8-11-9-8-10	
	50 6-5-6-10-7	8-8-8-7-9	
	60 8-12-10-9-8	10-15-12-16-12	
	70 17-13-9-9-16	15-12-15-14-7	
	80 14-14-7-6-5	3-4-4-6-8	
	90 10-12-12-11-9	11-11-15-13-9	Circ. 1 hr. 3681
3690 - 3700	4-2-1-5-5	5-6-13-13-11	Circ. 1 hr. 3697
3700 -	10 10-8-8-9-8	6-5-9-8-6	
	20 7-8-5-11-7	8-7-7-7-14	SR 3716, 17
	30 17-17-18-17-18	25-19-13-17-14	
	40 13-12-12-14-12	13-8-9-5-8	SR 3739
	50 18-18 * 10-10-10	9-10-7-9-9	Circ. 1 hr. 3742
	* Trip 3742 2 hrs. 6 min. rig time, incl. circ. Put on (New W7)		
	60 9-10-8-8-10	12-9-9-7-11	
	70 8-10-6-8-8	3-3-7-9-7	SR 3766, 67
	80 7-7-6-9-3	5-3-2-2-2	
	90 1-3-7 * 8-8	10-9-9-10-9	Circ 1 1/2 hr. 3793
	* DST No. 2 3757-93 9 hrs. 29 min rig time incl. circ. (Put on New W7)		

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3790 - 3800	9-10-11-11-11	5-5-6-6-6	
3800 - 10	7-7-8-6-11	7-9-2-2-7	Circ. 1 hr 3807 SR 3808
20	6-10-9-9-9	9-10-10-11-11	
30	10-11-12-13-12	13-11-11-11-7 *	
	*DST 3793 - 3830 7 hrs. 33 min. rig time incl. circ (Put on New W7)		
40	8-13-13-7-4	6-9-4-6-4	SR 3836, 38, 39, 40
50	4-4-4-5-11	12-12-14-13-13	SR 3841, 42, 43, 44
60	9-9-8-6-7	10-7-10-5-6	SR 3859
70	5-7-7-9-7	9-* 10-12-11-8	SR 3861
	* DST No. 3 3832-66 8 hrs. 3 min incl. circ time		
80	8-9-6-4-6	6-5-4-5-6	SR 3871, 73, 74
90	6-7-10-12-10	9-9-9-6-12	SR 3888
3890 - 3900	12-13-14-10-12	16-17-13-17-15	
3900 - 10	13-10-9-8-7	7-10-11-14-13	SR 3902, 03, 05
20	9-11-11-11-11	8-7-12-10-9	SR 3914
30	12-9-8-12-10	5-7-4-3-3	
40	3-3-4-4-3	4-4-4-4-4	
50	4-5-4-4-4	3-6-6-5-5	Circ. 1 hr. 3945
60	9-13-19-* 12-11	7-9-10-9-9	
	* Trip 3953 2 hrs 44 min. Put on W7R		
70	10-9-11-10-13	9-10-9-9-10	
80	10-10-8-9-10	10-9-9-9-10	
90	9-8-8-11-10	9-9-11-9-10	
3990 - 4000	9-8-10-8-8	9-8-8-9-8	
4000 - 10	7-8-9-8-8	9-8-8-8-8	
20	8-9-11-9-8	11-7-15-13-14	R4013, 14, 15 Circ. 1 hr 4020
30	9-6-10-9-11	11-9-11-14-13	R 4024
40	14-13-13-11-12	11-10-8-6-6	
50	6-4-11-16-14	16-16-17-18-26 *	SR 4047
	* Trip 4050 2 hrs 23 min. Put on W7R		
60	11-14-15-12-14	15-16-12-14-17	SR 4058
70	12-15-17-15-15	16-16-15-14-16	
80	14-14-16-13-15	12-13-17-15-15	
90	14-14-15-16-20	15-18-17-17-15	
4090 - 4100	9-12-7-5-9	8-7-11-6-7	SR 4091, 92, 93, 94
4100 - 10	7-6-7-15-18	20-20-22-23-18	SR 4103
	DST No. 4 4085-4110 7 hrs. 28 min. incl. circulating fine Put on new W7R at 4110		
20	13-11-12-10-12	11-11-11-12-12	
30	11-12-15-13-10	13-11-11-10-13	
40	10-11-9-8-10	11-8-9-10-10	SR 4134, 35
50	9-10-10-10-3	1-2-2-3-3	
60	4-7-7-8-9	1-12-12-12-12	Circ. 1 hr. 4156
70	11-12-12-11-11	11-13-12-15-12	
80	12-11-11-12-13	10-13-10-10-6	
90	7-5-8- * 4-6	7-7-6 **5-12	R. 4181, 82, SR 4184, 87, (R4188 Cir. 1 hr. 1/2 4181 (Cir. 3/4 hr 4183)
	* DST No. 5 4178-83 8 hrs. 2 min. incl. circ time, Put on W7-R Re-run		
	** DST. No. 6 4184-88 Re-conditioned hole after DST and ran Schlumberger at 4188		
4190 - 4193	8-7-7	(Drilled deeper 4188-4193 TD after Schlumberger Survey at 4188).	

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BIT RECORD

No.	Make	Size	Type	Depth	Footage	Hrs. Run
1	Hughes	7 7/8	OSQ - 3	233 - 1755	1522	23 1/2
2	"	"	OSQ	1755 - 1980	225	14 1/2
3	"	"	OSQ	1980 - 2250	270	17 3/4
4	"	"	OSQ	2250 - 2850	600	31 1/4
5	"	"	OSQ	2850 - 3300	450	29 1/2
6	"	"	OSQ	3300 - 3583	283	28
7	"	"	OSQ	3583 - 3742	157	23 3/4
8	"	"	W 7	3742 - 3830	88	11 3/4
9	"	"	W 7	3830 - 3953	123	19
10	"	"	W7-R	3953 - 4050	97	16 1/2
11	"	"	W7-R	4050 - 4110	60	13 1/2
12	"	"	W7-R	4110 - 4193	83	13 3/4

DAILY PROGRESS AS OF 7:00 A.M.

Dec.	22,	1953	Started surface hole
"	23,	"	TD 233 shut down
"	24,	"	" " " "
"	25,	"	" " " "
"	26,	"	Start under surface
"	27,	"	Drig. 1540
"	28,	"	" 2110
"	29,	"	" 2450
"	30,	"	" 2850
"	31,	"	" 3200
Jan.	1,	1954	" 3398
"	2,	"	TD 3585 Making trip
"	3,	"	Drig. 3725
"	4,	"	TD 3807 Circulating for sample
"	5,	"	TD 3866 Going in hole after DST
"	6,	"	Drig. 3993
"	7,	"	" 4096
"	8,	"	" 4169
"	9,	"	TD 4188 Running Schlumberger
			DD to 4193 Total Depth, Set 5 1/2" casing at 4192.