

RECEIVED  
STATE CORPORATION COMMISSION  
MAR 20 1972  
CONSERVATION DIVISION  
Wichita, Kansas

15-183-20005-00-00

**RICHARD B. SCHMIDT**  
1219 COLLEGE AVENUE  
TOPEKA, KANSAS 66604  
  
PETROLEUM EXPLORATION CONSULTANT

February 21, 1972

CLOUD EXPLORATION COMPANY

Swede Nelson & Arnold Schoen  
1019 Lincoln 231 West 20th  
Concordia, Kansas 66901

OLIVER # 1, 340 ft. west of  
East line; 900 ft. south of  
North line of SW $\frac{1}{4}$  of Section 5,  
Township 5 South, Range 11 West,  
SMITH COUNTY, KANSAS

Approximately the SE $\frac{1}{4}$ , NE $\frac{1}{4}$  of SW $\frac{1}{4}$   
of Section 5, T. 5 S., R. 11 W.

**GENERAL:**

Contractor: Ehrlich Drilling Company, Wilson, Kansas

Rotary Drilling: Surface to 4190 feet

Spudded & set surface casing: January 26, 1972

Under surface casing drilling commenced: Jan. 28, 1972

Drilling completed: February 16, 1972

Total depth: 4190 feet

**CASING:**

Surface pipe: 242 feet of 8 - 5/8ths cemented  
with 150 sacks of cement.

Production pipe: none

**ELEVATIONS:**

Ground level after dirt work: none surveyed

Derrick floor: none surveyed

Rotary bushing: estimated at 1764 feet above sea level

Rotary bushing elevation and measurements used.

DRILL STEM TESTS: None

CORES: None

ELECTRIC LOGS: None

15-183-20005-00-00  
Memo: 3-19-72



Dear Frank:

Enclosed is the log on one  
Oliver No 1 Well Smith Co.  
Sorry being so late getting this  
to you, I didn't think it would be  
this long. But we just received  
the log from Richard Schmidt  
this past Wednesday, and I was  
out of town when it came.

Frank, you mentioned the day  
I was down if we wanted to with-  
hold this information for awhile.  
Yes, if possible could it be with held  
until around the middle of June.  
We may want to look at this and  
some more yet, if this meets  
with your approval. I can't help  
but think it's up there somewhere.

Sincerely yours

Ronald Johnson

SEC. 5-5-11W

RECEIVED  
STATE CORPORATION COMMISSION

MAR 20 1972

CONSERVATION DIVISION  
Wichita, Kansas

Fire - Auto - Life Insurance

## G E O L O G I C A L     D A T A

Thirty foot drilling samples were saved and examined wet from 2075 to 2300 feet; twenty foot samples from 2300 to 2720 feet; ten foot samples from 2720 feet to the total depth of 4190 feet except in selected areas, five foot samples were saved and examined wet. It should be noted that posted written instructions dated December 27, 1971, requested ten foot drilling samples from 2000 feet to total depth. Since these requested instructions were not followed, it would be speculative to properly evaluate the various formations above the ten foot samples.

One foot drilling time was retained from 1,800 feet to 4190 feet.

<u>FORMATION TOPS</u>	<u>BY SAMPLES &amp; TIME LOG</u>
Foraker lime	2020 feet
Stotler lime	2302
Burlingame lime	2446
Topeka lime	2552
Heebner shale	2816
Toronto lime	2840
LANSING LIME	2912
Base of the Hertha lime	3182
Cherokee Section	3366
Cherokee sand	3433
BURGESS SAND	3641
MISSISSIPPIAN	3670
Gilmore City lime	3763
HUNTON lime	3827
VIOLA	3904
Simpson shale section	4086
ARBUCKLE DOLOMITE	4125
Total depth of well	4190

## ZONES OF CONSIDERABLE INTEREST

TOPEKA LIME [ 2552 ]  
=====

At 2785 feet, after circulating 3/4 hour, recovered off-white limestone, chalky in part, with good pin-point porosity; dense off-white fossiliferous limestone.

At 2800 feet, recovered more of the same. These samples are from the porous zone of 2772 to 2790 feet. No free live oil shows or gas or dead oil was observed, however, at this point, a questionable slight odor was detected by driller, Raymond Teel, Russell, Kansas. Upon his second attempt, no odor was detected and none whatsoever by me.

LANSING LIME [ 2912 ]  
=====

At 2920 feet, recovered white dense crystalline lime; white dense fossiliferous limestone and snow white chalk.

At 2930 feet, recovered white chalk, dense cream limestone chalky grading to sub-crystalline. These samples are from the 10 foot zone.

At 2951 feet, after circulating 1 hour, recovered dense cream sub-oolitic limestone grading to fossiliferous with chalk matrix; dense cream fossiliferous limestone. These samples are from the 30 foot zone

At 2990 feet, after circulating 1/2 hour, recovered dense cream cherty limestone grading to sub-oolitic lime with traces of small grain oolitic limestone; dense cream-gray fossiliferous limestone. This is the 70 foot zone.

At 3006 feet, after circulating 1 hour, recovered soft cream-white oolitic limestone with a chalk matrix. Traces of medium grain light gray oolitic limestone 10%, rest oolitic limestone. These samples are from the 90 foot zone, 2996 to 3006 feet.

At 3010 feet, recovered more of the last above plus traces of snow-white crystalline limestone with good porosity.

At 3020 feet, recovered dense cream oolitic limestone; dense white limestone grading to sub-crystalline with some white crystalline limestone and porosity; white cherty to chalky limestone. It should be noted that about 2 inches of drilling mud was lost in this 100 foot zone.

At 3085 feet, after circulating 1 hour, recovered white and cream soft dense limestone grading to chalky; dense cream limestone grading to white crystalline porous limestone. These samples are from the 160 foot zone of 3071 to 3078 and 3081 to 3087 feet.

At 3180 feet, recovered light gray oolitic to sub-oolitic medium grain limestone. These samples are from the Hertha lime (Base of the Kansas City limes) at 3158 to 3182 feet.

MARMATON [ 3212 ]

At 3280 feet, recovered green, brown, gray shales and siltstone; gray siltstone grading to sub-micaceous sandstone, very fine and friable. This partial sand zone is at 3266 to 3278 feet.

CHEROKEE SECTION [ 3366 ]

At 3410 feet, recovered considerable light green, fine grain and highly calcareous cemented dense non-micaceous sandstone. This compares lithologically to the Lagonda Sandstone [ Squirrel Sand ] of Eastern Kansas except that it is not brown in color and not micaceous. The zone is from 3396 to 3412 feet.

At 3450 feet, recovered traces of fine grain dense white-translucent sandstone clusters, calcareous in part and somewhat compares lithologically to the Cattleman Sand of Eastern Kansas.

BURGESS SAND OR BASAL PENNSYLVANIAN SAND [ 3641 ]

At 3651 feet, after circulating 1 hour, recovered 80% light green-white fine grain sub-angular, non-micaceous sandstone clusters. About half were fairly friable and the rest not too friable but well cemented. This is the porous sand zone from 3641 to 3651 feet with rough to slightly rough drilling.

At 3652 feet, a bit trip was made and at 3653 feet, the hole was cleaned-up for 1/2 hour.

At 3670 feet, after circulating 1 hour, recovered considerable medium and fine grain, translucent, well cemented sandstone with traces of black dead-oil stain in few clusters with no live-free oil, gas, odor or florescence. The translucent sand here at 3654 to 3671 feet was coarser grained than in the above zone. These two massive large clean sand zones to a greater degree had intra-grain porosity to the extent where I believe they would yield considerable fluid on a drill-stem-test. They are the best zones developed in the whole test well.

These sand zones in the Cherokee are listed even though Wallace Lee in the Kansas Geological Survey Bulletin # 121, STRATIGRAPHY AND STRUCTURAL DEVELOPMENT OF THE SALINA BASIN AREA, 1956, p. 87, says, "In the Saline Basin, the sandstone and coal beds so characteristic of the Cherokee - - - are not represented - - - ."

## MISSISSIPPIAN [ 3671 ]

At 3680 feet, recovered very light tan dense sucrosic dolomite, buff to pale yellow chert, some very sharp; snow white chert.

At 3685 feet, after circulating 1 hour, recovered snow white, non-viterous chert.

## - GILMORE CITY LIME [ 3763 ]

At 3780 feet, recovered dense soft cream medium grain oolitic limestone 60% with a chalk matrix and medium grain oolitic dolomite 5%. This is the porous zone from 3772 to 3776 feet.

At 3790 feet, recovered the same plus a trace of dead oil stain in the chalky lime matrix of the oolites.

At 3800 feet, recovered 80% cream-tan soft dense medium grain oolitic limestone with a trace of dead oil stain in the white chalky lime matrix.

At 3810 feet, recovered more of the last above plus a trace of black shale (possibly Chattanooga shale). Most of these samples were from the zone 3788 to 3800 feet.

## VIOLA [ 3904 ]

At 3970 feet, recovered dense cream dolomite, vuggy in part, some of this has a white chalk matrix. Most of these sample are from a porous zone at 3956 to 3969 feet.

At 4000 feet, recovered dense dark-cream fine and medium grain dolomitic lime with some vuggy porosity. Most of this is from the porous zone at 3988 to 3966 feet.

## SIMPSON SECTION [ 4086 ]

At 4090 feet, recovered white opaque chert, soft cream limestone, light tan sucrosic dolomite, most from the Viola above. Yellow shale, pale green shale, non-waxy; traces of well rounded medium grain translucent sand grains in blue-green shale matrix.

At 4100 feet, recovered more of the last above plus yellow-gray, yellow, olive green and gray shales.

At 4120 feet, after circulating  $1\frac{1}{2}$  hours, recovered pale green-gray, yellow shale, gray siltstone, traces of translucent sand grains as second above, plus 40% soft cream limestone. All these samples are typical from 4086 to 4120 feet, and are typical of the samples from the SIMPSON of the Helmrich & Payne Inc. Meyer well in the C NE SW $\frac{1}{4}$  of Section 10, 5-11W., Smith County, Kansas. There was no clean sand zone development observed by me from the drilling time or from the samples even though the drilling mud was in excellent condition. It should be noted that these samples ARE NOT THE TYPICAL blue-green waxy Simpson Shale south and southwest of the Central Kansas Uplift.

## ARBUCKLE DOLOMITE [ 4125 ]

At 4140 feet, after circulating  $1\frac{1}{2}$  hours, recovered traces of white opaque chert, light tan and traces of pinish-white dense dolomite and white sucrosic dolomite. These are from the porous zone at 4127 to 4140 feet.

At 4180 feet, recovered light tan, tan-yellow dense to medium crystalline dolomite with some crystalline porosity. These are from the porous zone of 4169 to 4180 feet.

#### STRUCTURAL COMPARISONS

No structural comparisons are being made with other test wells in the general area since the operators of this well did not furnish a reliable surveyed well site elevation. To use an assumed elevation would be highly speculative as to reliable conclusions.

#### CONCLUSIONS

There never were any shows of live-free oil, gas, live-free oil staining, petroleum type odors or gas odors and oil florescence observed by me during the drilling of this well and of all the many samples examined. I spent many, many hours in actual well site examination and found NO EVIDENCE of free-live oil, gas or staining of free-live oil.

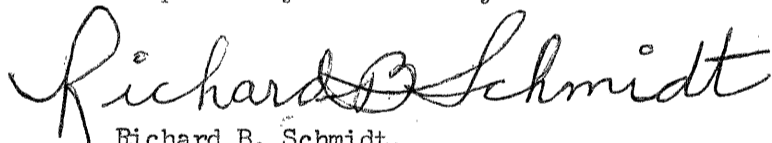
It should benoted that the massive BURGESS SAND (Basal Pennsylvanian Sand) development suggests to me a possible near-by high Mississippi structure. This sand could be a good producer if it is situated correctly with live free oil or gas.

The Gilmore City lime of the Mississippian also could develop if higher structure or a structural trap is found.

#### RECOMMENDATIONS

Due to the complete absence of any shows of free-live oil, gas, stainings of free-live oil or odors of oil or gas as observed by me, it is recommended that the OLIVER drill site or test well as legally described on page one of this report be plugged and abandoned as A DRY HOLE.

Respectfully submitted by:



Richard B. Schmidt,

Petroleum Exploration Consultant,  
AB & BBA

RBS:jr

Drilling time attached hereto

DRILLING TIME LOG

CLOUD EXPLORATION COMPANY, Swede Nelson & Arnold Schoen  
1019 Lincoln & 231 West 20th, Concordia, Kansas 66901

Oliver # 1, 340 ft. west of East line; 900 ft. south of North line of SW $\frac{1}{4}$  of Section 5, Township 5 South, Range 11 West, SMITH COUNTY, KANSAS, approximately the SE $\frac{1}{2}$ , NE $\frac{1}{4}$  of SW $\frac{1}{4}$  of Section 5, 5-11 West.

Depth	Minutes per foot	Remarks
1800 - 1820	2 2 2 2 2 1 1 2 2 1 1 2 2 3 3 4 2 5 4 4	
1821 - 1840	5 6 4 4 3 4 3 3 4 2 2 3 5 4 4 3 4 4 5 4	
1841 - 1860	4 3 4 3 5 5 3 5 3 2 2 2 2 2 2 2 2 2 2	
1861 - 1880	2 2 2 1 2 2 2 2 1 4 3 4 4 4 4 3 3 4 4 3	
1881 - 1900	2 2 2 2 2 3 2 3 3 2 3 2 3 4 3 3 4 3 4 4	
1901 - 1920	4 3 5 4 2 1 2 2 3 2 3 2 2 2 3 1 2 2 2 2	
1921 - 1940	2 2 2 4 3 2 2 1 1 1 2 1 1 1 1 1 1 2 2 2	
1941 - 1960	2 2 2 3 4 3 2 3 4 2 2 3 3 4 3 3 4 3 2 2	
1961 - 1980	2 1 1 2 2 5 4 4 3 5 3 4 4 3 5 3 3 3 3 3	
1981 - 2000	2 3 2 2 2 2 2 3 2 3 2 2 2 2 2 2 2 2 2 2	
2001 - 2020	2 2 2 2 2 2 2 2 2 3 2 2 2 2 2 2 4 4 3 4	
2021 - 2040	7 8 7 6 6 7 7 6 5 5 7 6 5 7 7 7 6 6 8 7	
2041 - 2060	5 4 3 4 8 9 5 4 3 3 4 4 5 5 5 7 5 6 5 7	
2061 - 2080	5 6 8 10 5 5 7 8 10 5 3 4 6 9 8 8 9 12 6 2	
2081 - 2100	2 2 2 3 2 3 2 3 2 5 5 2 3 5 2 3 2 2 4	
2101 - 2120	6 5 5 6 5 2 5 5 5 3 4 5 4 3 5 4 3 3 2 5	Trip @ 2125
2121 - 2140	1 2 3 3 6 5 2 3 5 3 2 2 3 3 3 1 2 2 2 3	
2141 - 2160	2 1 2 2 2 2 3 2 3 2 2 3 3 4 3 3 3 2 3 1	
2161 - 2180	3 3 3 3 3 3 2 2 3 3 3 1 1 3 3 3 2 2 3 2	
2181 - 2200	3 2 2 3 3 1 3 3 3 2 1 2 3 2 3 3 3 2 3 3	
2201 - 2220	4 4 2 2 2 2 2 2 2 2 2 2 3 3 2 3 3 3 3 2	
2221 - 2240	3 2 2 2 2 4 2 2 3 3 3 2 3 5 4 4 4 3 2 3	
2241 - 2260	2 2 2 2 2 2 4 4 4 3 3 3 2 2 2 2 2 2 2 2	
2261 - 2280	2 2 2 2 3 4 3 4 4 3 3 4 3 4 4 4 5 4 4 3	, End Jan. 31, 1972
2281 - 2300	2 3 2 3 3 3 2 4 3 3 2 2 2 2 2 5 3 3 3 2	
2301 - 2320	3 4 5 5 3 4 3 3 3 3 3 3 2 2 3 3 3 2 3	
2321 - 2340	2 3 3 2 2 2 2 2 3 5 5 3 5 4 4 4 3 3 3 3	
2341 - 2360	4 4 3 3 2 4 3 3 2 3 2 2 1 2 2 2 2 2 3 2	
2361 - 2380	3 3 3 2 3 3 4 4 3 3 2 3 2 2 2 2 1 1 2 1	
2381 - 2400	3 2 1 2 2 3 1 2 2 2 2 3 2 3 2 3 2 3 2 2	
2401 - 2420	2 2 2 2 2 2 2 2 2 3 3 4 3 2 3 5 5 4 3	
2421 - 2440	4 4 3 4 3 4 6 5 6 5 5 5 3 5 4 4 6 4 6	Circ. $\frac{1}{2}$ @ 2440
2441 - 2460	4 3 3 3 5 5 5 10 18 15 3 4 1 2 2 2 2 2 2	2 Trip @ 2487, losing mud @ 2454
2461 - 2480	2 4 9 6 8 6 5 4 4 5 6 11 6 5 6 4 2 7 5 7	
2481 - 2500	5 3 2 6 5 6 10 3 1 2 2 2 2 3 3 2 3 2 2 2	
2501 - 2520	2 1 3 3 3 3 2 1 1 2 2 2 2 2 1 2 2 2 3 3	Vis. 42
2521 - 2540	3 3 3 3 2 3 3 2 3 3 4 3 2 2 3 2 2 1 2 2	
2541 - 2560	1 2 2 2 2 2 3 3 2 2 1 2 3 2 2 3 3 2 2 2	
2561 - 2580	2 2 1 2 2 2 3 1 1 2 2 1 1 1 2 1 2 1 2 2	
2581 - 2600	2 2 2 2 1 2 2 3 2 3 4 3 3 4 4 4 4 2 3 2	
2601 - 2620	2 2 2 2 2 2 2 2 1 2 2 2 2 2 2 3 2 2 2 3	Circ. 1 hr @ 2616
2621 - 2640	2 1 2 2 2 2 1 2 2 3 3 5 3 5 4 4 5 4 4 5	Circ. 1 hr @ 2640
2641 - 2660	4 3 2 3 4 4 5 6 6 5 4 3 4 4 6 6 4 4 5 4	
2661 - 2680	2 3 10 5 3 6 6 6 6 4 5 5 5 5 4 4 7 5 3 3	
2681 - 2700	3 3 3 3 2 3 5 4 5 5 4 4 4 4 4 5 4 3 3 5	
2701 - 2720	3 3 4 3 3 4 4 4 3 3 3 3 5 7 6 4 5 4 5 8	Vis. 40
2721 - 2740	4 2 4 3 7 7 3 5 5 3 3 6 6 5 7 3 3 5 3 4	Circ. 1 Hr. @ 2731
2741 - 2760	3 4 2 2 6 5 3 3 1 3 3 5 3 2 2 1 1 1 2 2	
2761 - 2780	3 4 4 4 9 7 6 4 5 9 7 5 4 4 5 1 1 2 4 3	
2781 - 2800	3 4 2 3 3 4 5 4 4 5 5 7 8 8 7 7 7 4 5 5	

Depth	Minutes per foot	Remarks
2801 - 2820	4 4 8 13 11 9 9 11 10 10 11 9 8 7 6 6 5 6 6 6	Trip @ 2800
2821 - 2840	11 7 7 3 2 1 3 5 4 3 4 2 5 6 7 8 11 7 9 5	slight odor 2810 ?????? Circ. 1 hr.@ 2836
2841 - 2860	8 9 11 12 13 16 13 12 8 8 6 6 5 5 3 5 3 3 4 4	
2861 - 2880	4 6 6 4 4 4 4 5 4 3 8 6 6 5 5 7 5 4 4 2	Circ. 1 hr@ 2862 Vis. 43
2881 - 2900	4 3 8 5 4 2 2 10 9 10 8 7 9 4 4 5 8 8 6 6	Circ. 1 hr.@ 2890 1/2 hr.@ 0
2901 - 2920	7 7 6 6 6 5 5 5 5 5 5 10 8 10 7 12 14 10 10	Circ.2950 1 hr.
2921 - 2940	11 14 16 20 11 9 9 9 6 7 9 8 6 6 7 7 8 7 7 12	
2941 - 2960	11 10 7 12 11 11 8 11 15 13 10 5 2 1 1 3 2 2 2 6	
2961 - 2980	7 10 8 7 6 7 6 7 4 6 6 8 7 7 7 8 4 2 2 4	Circ. 1 hr.@ 2962
2981 - 3000	6 8 10 10 9 11 12 11 10 9 10 9 10 10 10 4 6 7 10 4	Circ. 1/2 hr.@ 2990 VR.@ 3000 & 3004
3001 - 3020	3 6 1 3 6 8 13 6 6 7 7 5 5 9 6 7 6 6 7 6	Circ. 1 hr.@ 3006
3021 - 3040	8 8 8 9 10 5 4 10 6 11 7 8 7 10 14 12 12 9 9 5	Lost 2" mud@ 3013 R@ 3031
3041 - 3060	6 6 14 6 3 5 7 5 7 8 7 5 7 11 8 7 8 10 21 31	Open Mud mixer @ 3059 - 3062
3061 - 3080	20 7 18 19 16 15 19 10 19 17 3 3 6 6 9 10 7 10 15 13	Trip@ 3070
3081 - 3100	14 9 9 7 9 11 10 19 19 17 10 9 10 11 12 5 5 4 5 5	Circ. 1 hr.@ 3085
3101 - 3120	6 5 5 5 5 6 6 6 6 7 9 7 9 5 10 5 5 5 5 5	
3121 - 3140	8 7 8 7 10 4 9 9 8 12 5 5 5 9 12 12 10 6 5 2	Circ. 1 hr.@ 3122
3141 - 3160	5 6 7 7 6 5 3 5 7 4 4 6 9 5 5 3 3 6 8 5	Circ. 1/2 hr.@ 3160
3161 - 3180	4 6 9 11 12 8 12 10 7 7 8 9 7 4 5 5 5 4 4 4	
3181 - 3200	3 3 3 4 3 4 3 5 4 6 6 5 3 3 4 5 10 9 9 14	Circ. 1 hr.@ 3198 End. 2/5/72
3201 - 3220	9 5 4 7 11 12 10 11 8 9 12 6 11 9 9 8 7 9 7	
3221 - 3240	8 7 9 11 11 12 9 13 12 11 9 10 10 7 9 15 10 18 7 17	Circ. 1 hr@ 3225
3241 - 3260	9 14 12 11 15 8 12 14 6 4 5 4 3 4 4 6 3 4 5 6	Circ. 1/2 hr@ 3260
3261 - 3280	6 6 7 4 6 5 3 4 4 4 4 4 5 4 3 3 5 5 5 7	Trip @ 3250
3281 - 3300	6 6 4 4 5 4 4 5 4 5 5 6 9 7 6 5 5 5 5 5	Circ. 1/2 hr. @ 3285
3301 - 3320	4 5 6 5 5 10 8 9 7 8 8 7 6 6 6 3 4 7 6 8	Circ. 1/2 hr. @ 3304
3321 - 3340	7 8 12 7 7 5 7 9 9 9 9 10 9 8 10 10 11 13 13 10	Circ. 1/2 hr. @ 3334
3341 - 3360	6 6 9 10 13 10 8 9 7 7 6 4 4 7 10 8 6 7 8 6	Circ. 1 hr. @ 3322 Circ. 1/2 hr. @ 3345 Circ. 1 hr. @ 3360
3361 - 3380	5 10 10 8 9 8 10 3 3 6 3 5 5 4 3 3 6 10 6 7	R @ 3378-79
3381 - 3400	9 10 7 6 6 10 20 12 6 5 4 17 3 3 7 3 4 6 6 4	Circ. 1/2 hr. @ 3388 Bit locking @ 3392 ?
3401 - 3420	5 4 5 4 4 5 5 6 7 6 5 7 8 6 8 7 4 4 3 2	
3421 - 3440	4 7 4 4 3 5 7 7 6 8 10 9 11 4 4 7 8 6 7 8	Circ. 1 hr. @ 3430 End. 2/7/72
3441 - 3460	9 8 9 5 5 8 7 6 8 8 7 8 8 8 6 7 9 8 8 7	
3461 - 3480	10 9 10 8 7 8 9 8 8 9 8 10 9 9 10 11 10 13 11 11	Circ. 1 hr. @ 3470
3481 - 3500	3 3 3 2 4 4 5 7 6 5 5 5 5 5 5 5 5 5 10	SR @ 3496
3501 - 3520	9 9 8 4 6 4 5 8 11 6 10 6 7 5 6 10 7 9 11 9	
3521 - 3540	6 7 8 7 8 8 7 5 7 8 3 5 6 6 6 5 5 4 3 5	Circ. 1 hr. @ 3540
3541 - 3560	5 9 10 5 8 8 7 8 8 8 8 8 7 7 7 9 7 5 6	
3561 - 3580	7 6 7 6 6 7 7 7 9 9 9 9 11 12 6 7 6 7 10 9	
3581 - 3600	10 8 9 5 6 2 4 6 10 8 9 11 12 9 9 9 6 7 8 8	Circ. 1 hr. @ 3590
3601 - 3620	9 10 11 19 15 12 11 11 13 14 12 7 4 4 4 3 3 7 20 18	Circ. 1/2 Hr.@ 3619
3621 - 3640	15 15 14 15 17 17 10 9 11 11 14 6 6 8 10 17 23 11 9 15	
3641 - 3660	5 5 4 2 2 2 3 4 4 4 5 10 1 2 1 4 4 5 4 1	SR 3632 - 34 - 45; R 3646 - 3651 Circ. 1 hr.@ 3652 Circ. 1/2 hr.@ 3653 Circ. 1 hr.@ 3669
3661 - 3680	1 2 1/2 1 1 2 1 1 3 1 2 10 7 3 2 2 2 3 4 2	SR 3674 - 78 SR 3660 - 3669
3681 - 3700	5 7 12 7 13 9 8 10 9 14 12 16 18 17 17 11 12 14 15 13	SR 3696-97 Circ. 1 hr.@ 3685
3701 - 3720	15 15 19 1 2 3 5 5 18 25 8 4 2 4 4 16 12 4 15 21	Circ. 1 hr.@ 3709
3721 - 3740	30 20 8 7 9 10 7 7 20 10 10 5 5 5 5 10 9 3 7 6	VR 3723=28 Circ.1 hr.3736 VR 3733=35 Circ.1 hr.3729
3741 - 3760	7 9 10 10 9 3 10 8 7 5 5 7 12 5 8 5 7 8 8 8	VR 3751=3757
3761 - 3780	8 7 9 10 11 11 13 11 12 12 12 8 6 3 6 7 14 14 11 9	Trip @ 3763
3781 - 3800	9 7 8 12 16 12 10 8 12 9 9 11 11 4 4 8 7 6 9 9	



Depth	Minutes per foot	Remarks
3801 - 3820	10 7 11 7 9 10 11 10 5 4 9 9 8 11 8 7 11 5 8 8	
3821 - 3840	12 9 10 10 10 8 8 12 11 11 10 5 9 10 10 11 15 13 8 5	SR @ 3840
3841 - 3860	4 5 5 6 9 9 11 8 12 6 1 2 2 2 1 2 3 2 3 1	SR 3840-41 & 48 Circ. 1 hr. @ 3857
3861 - 3880	1 1 2 2 1 2 3 5 2 3 4 3 5 6 8 6 13 10 5 9	
3881 - 3900	5 3 3 5 9 5 2 4 6 4 5 3 4 3 3 3 3 2 3 3	
3901 - 3920	4 5 6 11 7 12 12 12 9 12 16 15 12 7 14 11 11 13 10 13	
3921 - 3940	15 6 11 3 4 5 4 11 7 10 8 9 3 7 12 13 8 8 8 8	End Feb. 11, 1972
3941 - 3960	10 12 11 9 12 4 6 3 5 3 4 5 5 6 5 4 5 4 5 6	
3961 - 3980	9 5 3 8 5 12 6 6 4 4 5 5 3 8 8 5 6 5 6 7	
3981 - 4000	7 5 5 4 5 5 5 5 13 11 12 5 11 10 15 5 5 8 7 10	
4001 - 4020	10 10 13 9 5 8 10 12 3 13 9 8 10 3 3 6 6 3 5 5	R@ 4007=11
4021 - 4040	5 10 3 7 10 5 10 12 10 10 10 8 7 11 4 8 7 5 5 8	VR@ 4019 = 20 End Feb. 12, 1972
4041 - 4060	10 6 10 9 10 6 9 14 11 14 10 10 15 10 6 9 8 12 12 12	R@4021=22 & 24 R@ 4031=33
4061 - 4080	15 12 15 15 22 23 15 20 30 3 3 2 3 2 2 4 3 4 3 3	Button bit is too dull to drill, comments by writer
		Button bit locked at 4069, fishing for 3 lost cones by three runs with magnet.
		Stopped drilling at <del>11:30 a.m.</del> 9:30 p. m. February 12, 1972. Started new drilling with new conventional bit at 11:30 a. m. February 15, 1972.
4081 - 4100	4 2 5 3 6 4 3 7 8 9 13 11 16 14 16 13 15 15 18 25	Circ. 1 hr. @ 4074 to clean-up hole. SR@ 4083 & 4087; R @ 4089 & 4092; SR@ 4099
4101 - 4120	33 9 10 10 10 10 5 9 8 14 13 13 7 11 9 9 14 15 14 13	Circ. 1½ hr. @ 4120 Trip @ 4112
4121 - 4140	13 10 9 12 9 19 14 13 15 11 11 11 14 17 15 8 8 9 10 10	Circ. 1½ hr. A 4140 Vis. 39
4141 - 4160	15 4 6 7 11 12 13 15 15 12 13 15 15 12 21 13 17 13 13 15	SR@ 4145 & 47 End. Feb. 16, 1972 at 4152 noon, 12:10 p
4161 - 4180	15 12 12 16 18 10 10 17 11 10 5 13 11 9 9 8 10 13 12 11	
4181 - 4190	19 4 12 10 17 12 16 12 10 17	End drilling at 4190 at 8:37 p. m. February 16, 1972 Plugged with Allied Cement truck at 2 a. m. Feb. 17, 1972