DRILLING-TIME RECORD

From - To	Minutes per 5-foot interval:
4600-50	4-4-4-3-3-3-4-3-4-4
4650-4700	4-4-4-4-4-5-8-3-4-3
4700-50	4-3-3-3-5-3-3-3-4-2
4750-4800	4-4-4-4-4-3-3-3-3-4
4800-50	4-4-5-4-4-5-4-4-4-4
4850-4900	5-5-5-5-5-5-5-5-6-7
4900-50	8*-10-7-4-7-7-7-8-9-7
4950-5000	6-6-6-6-6-6-4-6-6-7
5000-50	8-9-9-10-8-11-7-11-11-11
5050-5100	11-9-8-8-8-9-10-8-9-7
5100-50	9-9-8-8-9-6-6-6-7- 6
5150-5200	9-6-7-8-7-6-7-8-7-8
5200-50	7-7-8-8-7-9-9-8-6-9
5250-5300	7-9-8-8-8-9-7-15-17-13
5300-50	9-8-9-9-5-7-6-8-10*-7
5350-5400	10-9-14-9-10-9-12-7-10-7
5400-50	4-9-8-7-8-8-5-8-5-8
5450-5500	5-7-7-7-6-7-7-8-5-6

	Minutes per 1-foot interval:
5500-10	1-1-1-1-1-2-1-2-1-2
5510-20	2-1-1-2-2-1-1-1-2-4
5520-30	5-5-7-3-5-5-5-7-10-8
5530-40	5-8-8-6-4-5-4-4-3-4
5540-50	6-6-10-10-7-7-5-5-6-5
5550-60	5-6-8-5-6-5-3-4-6-5
5560-70	2-3-3-2-2-2-1-1-2-2
5570-80	2-2-3-2-2-2-3-3-2-4**
5580-90	4-5-10*-3-3-5-5-2-5-6
5590-5600	4-4-5-7-2**-1-5-4-4-2
5600-10	2-4-5-4-2-1-2-3-2-5
5610-20	6-10-6-4-4-2-3-3-3-4
5620-30	5-9-4-4-6-4-3-3-1-3
5630-40	2-4-3-4-4-3-4-4-4-6
5640-50	3-5-5-4-3-3-3-4-6-5
5650-60	3-4-4-5-5-8-7-5-7-3
5660-70	8-8-3-3-6-4-5-4-1-5
5670-80	6-6-3-6-6-5-8-9-4-8
5680-90	4-7-4-7-6-5-4-5-5-6
5690-5700	7-8-8-9-5-6-8-11-10-7
5700-10	7-9*-7-7-4-7-4-8-3-8
5710-20	7-4-7-5-4-5-4-6-4-5
5720-30	7-4-8-6-4-4-3-3-5-3
5730-40	3-4-5-5-3-3-3-3-3-3
5740-50	3-5-3-3-3-3-5-3-3-3
5750-60	3-3-5-3-3-3-5-5-12-8
5760-66	18-22-19- 12-13-15**

* trip
** circulation

DISCUSSION (Continued)

The Lakota Sand, 5754 (-664), was penetrated 8 feet, and it was a gray fine hard tight quartzitic sand that calculated 4% porosity and 100% water saturation.

The well was plugged November 22, 1969, by filling it with heavy mud from the total depth to just below the bottom of the surface pipe (5762-80). A 25-sack cement plug was set below the bottom of the surface pipe, and the casing was filled with cement to the top (80-13). No permanent marker was set at the request of the surface land owner.

All measurements are taken from the Kelly bushing which was approximately 11 feet above the ground.

George D Volk.

GDV jv

George D. Volk, Petroleum Geologist

SAMPLE DESCRIPTION

2850-2900 Shale dark gray rotten
2900-50 do 1 cluster fine gray hard silty sd no show
2950-3000 do tr do 3 clusters very weak fluor;no cut; some soft bentonite
3000-50 do tr do 2 " " " " no cut " " "
3050-3100 do tr do 2 " " " " no cut " " "
3100-50 do tr do
4600-20
40 Shale dark gray little shale gray to dark gray mot wh to brn calc.
NIOBRARA
60 do little do
80 do little do
4700 do little do
4700-20 do little do
40 do little do
60 do little do
80 Shale gray to dark gray mot wh to brn calc and shale dark gray
4800 same
20
40
60
80
4900
4900-20
40
60
80
5000
5000-20
40
60
TIPMAS 5072 (-18)
80 tr ls white chalky
5100 Ls wh to buff chalky dense and shale dark gray
CARLILE 5116 (-26)
5100-20 do and do
40 Shale dark gray little ls as above
60 do trace do
80 do trace do
GREENHORN 5200
5200 do trace do
5200-20 shale dark gray tr ls gray shaly dense
40 do little do
60 do tr do some brn tr siltstone gray
80 do tr siltstone gray
5300 do
5300-20 do
40 do
60 do
80 do
5400 do
BENTONITE 5424

	Shale dark gray	
5400-20	do	
40	do	
60	do	
80	do	
5500	do	
5500-10	do	
D SAND	5518 (-428)	
20	do	
25	do	tr siltstone gray tr pyrite
30	do	tr sd gray fine hard tite no show tr pyrite
35	do	tr do
40	do	2 clusters do reworked
45	do	2 clusters do
50	do	3 clusters do tr siltstone gray
55	do	2 clusters do tr do
J SAND	5556 (-466)	
60	do	2 clusters do tr do
65	do	tr siltstone gray
70	do	
75	do	
80	do	
5580 Circ.		
30	do	tr sd gray fine firm subangular glauc no show
5580 Circ.		
60	do	little do silty
5580-85	do	1 cluster of sd as above tr siltstone gray
90	do	3 clusters do tr do
95	do	5 clusters do tr do
5595 Circ.		
20	do	1 cluster do tr do
5595 Circ.		
40	do	3 clusters do tr do
5595 Circ.		
60	do	tr wh fine silty subang sd no cut
5500	do	tr do pt reworked sl tr fluor 3 clusters no cut
5500-5	do	tr do " " no cut
10	do	tr gray fine silty tite 1 rw no show
15	do	tr do some reqorked
20	do	tr do glauconitic some reworked tr siltstone gray
25	do	tr do " " tr do
30	do	2 clusters do
35	do	4 clusters do
40	do	tr do 1 cluster soft clean porous good fluor and cut; recheck no fluor.
45	do	1 cluster do
50	do	tr do ptly rw
55	do	tr do " "
60	do	3 clusters do
65	do	3 clusters do
70	do	tr siltstone gray
75	do	2 clusters sd as above
80	do	tr do
85	do	
90	do	3 clusters do
95	do	

	Shale dark gray
5700	do
5700-5	do tr siltstone gray
10	do tr do
15	do 2 clusters fine hard tite sd
20	do ptly silty tr pyrite
SKULL CREEK	5725
25	do " " tr do
30	do tr siltstone gray
30-35	do
40	do
45	do
50	do
55	do
IAKOTA	5758
60	do
65	do 3 clusters dark gray siltstone; 2 clusters ? fluor soft
5766 Circ.	
20	do 1 cluster do
5766 Circ.	
40	do tr sd gray med hard tite qtz no show tr siltstone dark gray
5766 Circ.	
60	do 3 clusters sd gray med hard tite no show