

GEOLOGICAL REPORT

NCRA #1 Haffner
SE NE NW of Sec. 19-9S-27W
Sheridan County
Kansas

Rotary work commenced: December 1, 1956.
Rotary work completed: December 13, 1956.
Surface casing: 8" 294 feet.

Samples were examined from 3360 feet to total depth. Drilling was supervised from 3735 feet to total depth. A 1 foot drilling time log was kept from 3360 feet to total depth.

All tops and zones of porosity were measured from the kelly bushing.

	ELEVATION	2753 DF	2755 KB
	HEEBNER	3850	-1095
	(Electric Log)	3853	-1098
	TORONTO	3873	-1118
	(Electric Log)	3877	-1122
3873-3877	Limestone, white, fine crystalline, fossiliferous, pyritic, spotted to saturated brown, live stain. Fair intercrystalline to vugular porosity. Trace brown, live, free oil. No odor. Tested this zone and found it to be of no commercial value.		
JDST #1 3872-3884	Open 1 hour, weak, 15 minute blow. Recovered 12 feet mud with few specks of oil. IBHP 55#/20 minutes, FBHP 25#/20 minutes, FP 25#-25#.		
	LANSING	3887	-1132
	(Electric Log)	3891	-1136
3887-3890	Limestone, white, fine crystalline, fossiliferous, slightly chalky, fair vugular porosity. No show. No value.		
3913-3917	Limestone, white, fine to medium crystalline, fossiliferous, fair intercrystalline to vugular porosity, cherty, spotted brown oil stain. Trace brown, live, free oil. No odor. Tested this zone found it to be of no commercial value.		
HDST #2 3900-3920	Open 1 hour, weak, intermittent blow throughout test. Recovered 5 feet mud with specks of oil. IBHP 30#/20 minutes, FBHP 30#/20 minutes, FP 0#-0#.		
3926-3930	Limestone, white, fine crystalline, fossiliferous, fair intercrystalline, porosity, light brown spotted stain. Show of light brown, free oil. No odor. Tested and found this zone to be of no commercial value.		

	3933-3936	Limestone, white, fine crystalline fossiliferous, fair vugular porosity, spotted to saturated stain. Trace brown, free oil. Fair odor. Tested this zone and found it to be of no commercial value.
WDST #3	3924-3944	Open 1½ hours, weak blow throughout test. Recovered 100 feet salt water with slight scum of oil. IBHP 1260#/20 minutes, FBHP 890#/20 minutes, FP 0#-0#.
	3950-3962	Dolomite, light gray, medium to coarse crystalline, good inter-crystalline to oolitic porosity. Spotted to saturated brown stain. Good show light brown, free oil. Good odor. Tested this zone and found it to be of no commercial value.
WDST #4	3947-3970	Open 1 hour, fair blow throughout test. Recovered 815 feet salt water. IBHP 1380#/20 minutes, FBHP 1300#/20 minutes, FP 0#-320#.
	3992-3995	Limestone, gray, fine crystalline to dense with fair intercrystalline to vugular porosity, good, live stain on edges. No free oil. Good odor. Judged this zone to be of no value.
MD-DST #5	3990-4010	Open 1 hour, weak, intermittent blow for 30 minutes. Recovered 17 feet mud. IBHP 1340#/20 minutes, FBHP 1340#/20 minutes, FP 1#. Tool partially or completely plugged throughout test. The chart indicates that the initial shut in pressure requires at least 5 minutes to build to maximum pressure, indicating that the zone in question would give very little fluid. The plugging was caused from the disc being only partially broken by the drop bar. Examination of the fluid that was recovered in the air chamber and the tool showed no signs of oil. Therefore, the zone was judged to be of no value.
	4011-4015	Limestone, light buff to gray, very fine crystalline to dense, fair vugular porosity, brown, live to black spotted stain. Fair show of brown, heavy, free oil. Slight odor. Tested and found this zone to be of no commercial value.
HDST #6	4007-4035	Open 1 hour, weak blow throughout test. Recovered 50 feet muddy salt water. IBHP 1120#/20 minutes, FBHP 1090#/20 minutes, FP 15#-30#.
	4058-4060	Limestone, gray, very fine crystalline to dense, poor leached porosity. No show. No odor. No value.
	BASE/KANSAS CITY (Electric Log)	4108 4111 -1353 -1356
	4119-4140	Sand, gray, very fine grained, shaley, limey, black gilsonitic stain. Trace heavy, flaky, dead, free oil. No odor. Judged this zone to be of no commercial value.

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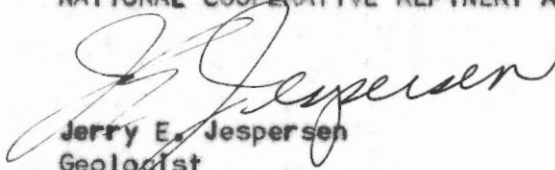
ROTARY TOTAL DEPTH	4140	-1385
(Electric Log)	4143	-1388

Ran Schlumberger Electric Log at total depth.

REMARKS

Electric Log correlated 3 foot down the hole. 4143 on the Electric Log equals 4140 on the strip log. Test dry and abandoned.

NATIONAL COOPERATIVE REFINERY ASSOCIATION


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DRILLING TIME LOG

NCRA
#1 Haffner

SE NE NW of Sec. 19-9S-27W

Elevation 2755 KB

Sheridan County, Kansas

DEPTH		TIME	REMARKS
From	To		
3360	3370	5-7-5-8-9-5-7-5-6-6	
	3380	9-8-6-7-5-4-3-2-4-6	
	3390	4-5-6-4-2-3-5-6-8-7	
	3400	8-8-7-6-6-5-5-6-7-7	
	3410	6-6-4-7-11-10-11-13-6-7	
	3420	8-5-3-7-11-13-5-5-3-3	Trip @ 3416
	3430	2-2-3-3-4-3-3-3-3-3	
	3440	3-4-3-5-5-3-3-4-3-3	
	3450	2-2-2-3-3-4-4-2-2-2	
	3460	2-2-3-3-4-3-2-3-5-3	
3500	3470	2-3-4-4-4-4-4-3-3-3	
	3480	2-2-3-2-2-3-2-1-1-2	
	3490	2-2-2-1-2-2-4-3-2-2	
	3500	2-3-2-1-2-2-1-2-4-4	
	3510	4-3-4-3-4-2-2-3-2-2	
	3520	5-5-4-3-6-4-5-2-5-6	
	3530	5-5-5-6-4-5-5-7-6-5	
	3540	5-4-5-6-6-6-6-4-5-4	
	3550	5-4-3-3-4-3-5-3-3-2	
	3560	3-3-4-3-3-6-4-5-8-4	
3600	3570	4-6-5-5-8-4-5-3-2-2	
	3580	4-7-3-3-3-4-3-4-3-3	
	3590	2-4-4-4-5-3-5-7-7-6	
	3600	8-9-9-10-5-5-5-5-6-6	
	3610	7-5-10-13-8-9-8-7-9-9	
	3620	5-3-2-3-4-5-6-9-6-8	
	3630	7-7-7-3-3-2-5-5-5-5	
	3640	5-5-4-4-3-4-6-4-5-8	
	3650	9-8-8-9-10-10-7-8-4-5	
	3660	4-3-5-7-8-8-12-9-8-12	
3700	3670	10-5-7-7-5-4-4-4-6-6	
	3680	5-4-4-5-4-3-7-11-10-7	
	3690	7-6-6-7-4-6-6-7-6-7	
	3700	5-5-5-6-8-5-5-5-6-7	
	3710	8-7-6-5-4-3-3-5-5-8	
	3720	6-6-12-9-8-4-1-1-1-2	
	3730	2-2-4-3-2-6-7-11-8	
	3740	9-9-12-12-11-12-16-8-7-5-3	Trip @ 3736
	3750	5-7-5-3-4-4-2-3-3-2	
	3760	3-3-2-1-2-2-2-2-2-3	

DRILLING TIME LOG

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DEPTH		TIME	REMARKS
From	To		
3760	3770	3-3-3-5-5-2-3-3-3-2	
	3780	4-3-4-3-3-3-5-3-3-3	
	3790	3-4-3-3-4-2-1-4-4-5	
	3800	6-4-3-2-3-5-7-7-4-3	
3800	3810	2-7-7-6-7-3-3-7-3-3-	
	3820	6-6-5-4-4-7-8-8-8-7	Circ @ 3810
	3830	10-10-6-3-5-6-5-4-4-2	
	3840	3-2-3-2-2-2-2-2-3-2	
	3850	2-2-2-2-2-3-3-3-4-7	
	3860	3-2-2-7-7-9-6-4-3-3	
	3870	4-3-3-5-4-4-4-4-4-4	
	3880	4-4-3-4-7-7-9-10-13-11	Circ @ 3870
	3890	11-9-5-4-2-3-5-4-6-9	Circ @ 3884
	3900	9-10-9-9-10-10-9-8-8-9	
3900	3910	8-8-10-5-7-9-5-4-3-4	Circ @ 3905
	3920	3-3-5-8-8-8-9-13-18-10	
	3930	4-4-7-10-8-6-3-3-3-5	Circ @ 3920
	3940	10-7-7-6-5-4-9-6-8-8	
	3950	8-10-6-4-3-9-10-9-2-4	Circ @ 3944
	3960	4-3-4-3-4-4-5-4-4-5	
	3970	2-1-5-4-2-3-4-6-7-6	
	3980	8-9-9-9-8-8-8-8-9-7	Circ @ 3970
	3990	7-9-8-7-7-6-6-8-6-8	Circ @ 3984
	4000	8-8-6-7-8-8-10-11-13-5	
4000	4010	4-12-10-12-8-11-12-3-4-4	
	4020	4-3-3-3-6-11-12-11-12-12	Circ @ 4010
	4030	12-11-11-11-13-10-12-11-7-12	
	4040	12-4-4-9-7-5-5-3-5-6	Circ @ 4035
	4050	5-3-5-7-5-3-4-3-4-3	
	4060	5-4-4-4-8-11-10-9-9-10	
	4070	9-11-11-10-4-3-3-5-7-5	
	4080	4-5-3-4-6-6-10-9-8-6	Circ @ 4075
	4090	8-9-9-8-8-9-7-6-6-6	Circ @ 4080½
	4100	6-7-5-4-4-4-4-4-6-10	
4100	4110	8-9-12-8-10-10-10-10-5-3	
	4120	3-4-4-4-5-5-5-5-3-5	Circ @ 4110
	4130	5-4-3-4-4-4-4-4-3-3	Circ @ 4125
	4140	3-3-3-3-4-4-3-3-4-5	Circ @ 4140
			RTD @ 4140