

GEOLOGICAL REPORT

Petroleum, Inc.
#3 Gates 'C'

NE SW SE Sec. 33-218-13W
Stafford County, Kansas

MISCELLANEOUS DATA

Elevation: 1892 GL; 1894 DF; 1896 KB.

This hole was drilled with rotary tools, Garvey Drilling Co., Inc., Rig #8 contracting. Spudded October 17, 1962. Set 8 5/8" casing at 326 feet with 275 sacks cement. Set the 5 1/2" oil string at 3752 feet with 75 sacks cement. Rotary completed October 26, 1962. Pool: Gates.

GEOLOGIC TOPS AND ZONES OF INTEREST
(Samples and Drilling Time)

	<u>Depth</u>	<u>Datum</u>
Anhydrite (Driller)	748	/1148 ✓
Base Anhydrite (Driller)	775	/1121 ✓
Topeka Lime	2855	- 957 ✓
<u>3074-3087' & 3091-3096'</u> : Limestone, buff to gray, fossiliferous; fair to poor porosity, trace of chert no shows.		
<u>3099-3197'</u> : Limestone, buff, chunky to porous, some oolitic porosity, gray chert, no shows.		
Queen Hill Shale	3127	-1231 ✓
<u>3132-3164'</u> : Limestone, tan fine crystalline oolitic to fine vugular porosity, mealy, gray blocky chert, no shows.		
Heebner Shale	3234	-1338 ✓
Toronto Lime	3255	-1359 ✓
Douglas Shale	3270	-1374 ✓
Brown Lime	3366	-1470 ✓
Lansing Lime	3379	-1483 ✓

3381-3387': Limestone, tan, white fair to poor oolitic and vugular porosity, no shows.

3406-3410': Limestone, gray, dense, good vugular porosity, no shows.

3422-3425 & 3429-3431': Limestone tan, fair vugular porosity, no shows.

3465-3471': Limestone, tan, fair to good collicastic porosity, no shows.

3473-3481': Limestone, tan, buff, some fair collicastic porosity, fair to good broken vugular porosity, no shows.

3505-3510': Limestone, white, tan, fair fine collicastic to pin point porosity, no shows.

3522-3531': Limestone, cream, colitic fair intercolitic to collicastic porosity, show of heavy dark free oil, no odor, dark oil stain, included in DST #1.

Drill Stem Test #1: Garvey

3513-3530': 17 feet of anchor. Weak blow 10" and died, flushed tool, no help. In 40" recovered 15 feet of mud with no shows. IBHP 760#/30"; FBHP 690#/30"; IF 60%; FF 70%. BHT 100°.

3544-3548': Limestone, tan, cream, fair to good collicastic porosity, no shows.

3563-3569': Limestone, cream, buff, fair to good collicastic to intercolitic porosity, show of heavy dark free oil, dark stain to saturation, no odor, included in DST #2.

Drill Stem Test #2: Garvey

3533-3635': 102 feet of anchor. Weak blow for 15" and died, flushed tool, no help. In 45" recovered 30 feet of mud with no shows. IBHP 790#/30"; FBHP 480#/30"; IF 160%; FF 160%. BHT 104°.

Conglomerate

3619

-1723 ✓

Rotten red shales with weathered discolored cherts and chalky impure limes.

Viola Chert

3658

-1762 ✓

3662-3669': Chert, white, tan, cream, blocky, clean, trace of vugular porosity, slight show of free oil, trace of light brown stain, included in DST #3.

3681-3690': Chert, tan, cream, some vugular porosity, good to fair show of light gassy free oil, good light brown stain, odor, included in DST #3.

Drill Stem Test #3: Garvey

3637-3704': 67 feet of anchor. Weak blow throughout. In 2 hours and 10" recovered 30' of mud with a few specks of oil, several oil specks in the top of the tool. IBHP 120#/30"; FBHP 120#/30"; IF 120%; FF 120%. BHT 100°.

Simpson Shale

3700

-1804 ✓

Simpson Sand

3721

-1825 ✓

3721-3725': Sandstone to siltstone, medium to fine grained, clay fill between sand grains, no porosity, no shows.

Arbuckle Dolomite

3746

-1850 ✓

3746-3747': Dolomite, tan to gray, fine to medium crystalline, oolitic, good porosity, probably poor permeability, good show of medium dark free oil, good odor, good saturation, included in DST #4.

3747-3752': Dolomite, gray, fine to medium crystalline, generally dense and no porosity, trace intercrystalline porosity, fair show of free oil, odor, and saturation, included in DST #4.

Drill Stem Test #4: Garvey

3747-3752': 5 feet of anchor. Weak steady blow throughout. In 2 hours and 10" recovered 45 feet of oil and mud (50% oil). IBHP 1080#/30"; FHP 170#/30"; IF 90%; FF 90%; BHT 112°.

3752-3757': Dolomite, gray, white, fine to medium crystalline, trace coarse crystalline, fair vugular to intercrystalline porosity, good show of medium brown free live oil, good odor, good even saturation, included in DST #5.

Drill Stem Test #5: Garvey

3752-3757': 5 feet of anchor. Good blow throughout. In 1 hour and 5" recovered 180 feet of gas, (635 feet of fluid) 545 feet of clean 27° oil, 90 feet of muddy oil. IBHP 1080#/30"; FHP 730#/30"; IF 90%; FF 280%; BHT 120°.

Rotary Total Depth

3757

-1861 ✓

Arbuckle Penetration: 11 feet.

REMARKS

All measurements from Kelly Bushing, 4 feet above ground level.

Samples were saved and drilling time kept from 2800 feet to the total depth. Drilling operations were watched from 3275 feet to the total depth.

Pipe was strapped at 3118 feet with .03 ft. difference.

As a result of the oil recovery on DST #5 it was decided to set 5 $\frac{1}{2}$ " casing at 3749 feet, 8 feet off bottom. The only other zone above the Arbuckle which could have commercial possibilities is the Viola and this was seemingly condemned by DST #4.

Yours very truly,



A. Scott Ritchie
Geologist

TIME LOG

DEPTH

ACTUAL TIME

REMARKS

1st Drilling Time from 2800 to Total Depth

<u>From</u>	<u>To</u>	
2800	2810	2-2-2-2-2-1-1-2-1-2
	2820	1-1-2-1-2-1-1-2-2-2
	2830	1-1-1-1-1-1-1-1-1-1
	2840	1-1-1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1
	2850	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1
	2860	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-2-3-3-3-2
	2870	1-2-1-3-3-2-2-2-2-1
	2880	2-2-3-2-1-2-1-1-2-1
	2890	1-1-2-2-2-2-2-2-2-1
	2900	2-2-2-3-2-2-2-2-3-2
2900	2910	2-2-2-3-2-3-2-3-2-2
	2920	2-2-2-2-2-2-2-2-2-2
	2930	2-2-2-3-2-3-2-3-2-2
	2940	2-3-2-3-2-3-4-2-2-2
	2950	4-2-3-2-4-3-3-3-3-3
	2960	3-4-5-4-4-2-2-1-2-4
	2970	5-3-5-4-3-4-2-3-2-3
	2980	4-4-4-4-4-2-2-1-1-2
	2990	2-2-1-2-2-2-2-2-1-2
	3000	2-3-3-3-2-3-3-3-2-3
3000	3010	1-1-2-3-4-6-4-4-4-4
	3020	3-2-3-2-3-2-3-3-2-3
	3030	4-4-5-6-4-6-7-8-7-6
	3040	6-6-5-4-3-3-3-2-3-2
	3050	2-2-4-8-8-3-2-4-4-5
	3060	8-6-3-4-3-2-4-4-7-4
	3070	6-6-10-10-8-8-7-5-4-3
	3080	4-5-9-5-3-3-2-2-2-2
	3090	2-2-3-3-3-3-3-5-7-7
	3100	7-4-4-3-4-4-6-4-3-2
3100	3110	2-2-2-3-2-4-3-4-4-5
	3120	7-8-9-8-5-8-8-10-2-3
	3130	4-3-2-2-2-4-4-2-1-4
	3140	4-3-2-1-1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
	3150	1-1-1-1-2-1-1-1-1-1
	3160	1-1-1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	3170	1-1-1-2-3-6-4-4-3-2
	3180	4-4-5-6-5-2-4-2-2-3
	3190	2-1-2-2-1-2-3-2-3-2
	3200	2-2-2-3-3-3-4-3-3-5
3200	3210	4-4-6-6-7-5-6-8-8-8
	3220	8-7-7-7-6-6-6-6-5-5
	3230	6-5-5-5-6-6-6-6-5-5
	3240	4-6-5-5-2-2-2-2-2-10
	3250	10-8-6-4-4-3-4-2-2-2
	3260	3-2-3-3-2-4-7-2-2-4
	3270	6-3-3-3-3-4-4-2-6-6

Bit Trip @ 3118

<u>DEPTH</u>		<u>ACTUAL TIME</u>	<u>REMARKS</u>
<u>From</u>	<u>To</u>		
	3280	2-1-2-2-2-2-2-3-2-2	
	3290	3-3-2-2-3-3-3-3-3-3	
	3300	3-3-3-3-2-2-2-3-2-2	
3300	3310	3-2-3-2-2-2-3-2-3-2	
	3320	2-2-2-3-2-2-2-3-3-3	
	3330	3-4-3-3-4-4-3-4-4-4	
	3340	4-4-3-3-3-4-3-2-3-3	
	3350	2-2-2-2-2-2-2-1-2-2	
	3360	3-2-2-2-2-3-3-2-2-2	
	3370	2-2-2-3-2-2-4-10-8-8	
	3380	7-5-4-6-5-3-3-3-3-8	
	3390	8-6-6-6-6-7-6-8-9-8	
	3400	7-7-10-11-10-4-6-10-5-7	SR @ 3397 & 3398
3400	3410	9-10-9-7-7-8-7-6-6-5	
	3420	8-4-4-7-8-9-8-3-2-2	
	3430	4-6-5-6-6-10-10-11-10-7	
	3440	5-9-9-7-4-4-4-9-9-8	
	3450	7-8-7-5-7-3-8-6-2-4	SR @ 3444 & 3445
	3460	6-5-5-5-4-4-4-4-5-6	Circ. & Bit Trip @ 3455
	3470	5-4-3-2-3-2-2-2-1-2	
	3480	3-5-5-4-2-2-4-5-3-5	
	3490	4-6-5-5-5-6-6-7-6-6	Circ. @ 3485
	3500	7-9-6-6-8-8-7-7-6-11	
3500	3510	12-5-5-3-3-4-4-3-3-3	
	3520	5-6-11-9-8-7-10-9-6-3	
	3530	3-5-6-10-9-8-6-5-6-8	Circ. & DST #1 @ 3530
	3540	6-11-12-6-5-3-3-4-4-7	
	3550	7-5-5-6-1-2-2-3-7-7	
	3560	7-7-6-7-7-7-7-7-7-4	
	3570	4-4-4-3-2-3-2-3-4-7	SR @ 3564 & 3565
	3580	9-9-9-7-8-7-7-9-7-6	
	3590	6-8-8-8-9-7-7-7-3-4	
	3600	5-8-7-9-9-10-7-5-4-4	SR @ 3591
3600	3610	3-4-4-4-5-5-7-7-6-4	
	3620	3-3-3-3-4-4-4-4-4-5	
	3630	7-6-7-6-6-5-5-5-7-7	
	3640	7-7-6-7-7-7-7-7-5-9	Circ. & DST #2 @ 3635
	3650	5-4-4-4-4-4-8-8-5-12	
	3660	10-6-7-7-7-6-7-5-7-6	
	3670	4-5-3-3-3-2-3-3-3-5	Circ. @ 3675
	3680	4-5-4-5-4-3-4-3-3-4	SR @ 3684
	3690	6-4-5-3-4-6-3-4-4-4	R @ 3686, 3687, 3688, 3689 & 3690
	3700	5-5-4-5-4-5-4-4-5-6	Circ. & DST #3 @ 3704
3700	3710	8-12-14-15-11-17-16-13-8-8	
	3720	7-9-7-8-9-7-9-9-8-9	
	3730	9-7-7-6-6-9-10-10-9-10	Circ. @ 3730
	3740	8-9-8-8-8-9-8-8-9-9	Circ. @ 3746 - 8 @ 3747
	3750	9-9-8-7-7-8-5-23-16-15	Circ. @ 3749
	3760	20-23-4-3-4-3-4	Circ. & DST #4 @ 3752
			Circ. & DST #5 @ 3757