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June 18, 1981

GEOLOGIC REPORT
Jennings Drilling Company
Wilson #1
100' N of C-SE-NW 12-12S-21E
Leavenworth County, Kansas

Daily Progress:

6-15 Drilling surface hole
6-16 250', drilling
6-17 600', drilling
6-18 Ran 4 1/2" casing to 700', plug down @ 2:00 a.m.

Service Companies:

Drilling Contractor: Pomco
Drilling Mud: Fud Mud, Chemical Mud
E-Logs: Plains Well Surveys Inc., IES, CDL, GRN

Formation Tops:

	Jennings #1 Wilson 100' N of C-SE-NW 12-12S-21E	Hannan, Etal * #1 Shoenlebar N/2-SE-SE 11-12S-21E	Relation of #1 Wilson to #1 Shoenlebar
<u>Formation</u>	<u>12-12S-21E</u>	<u>11-12S-21E</u>	<u>#1 Shoenlebar</u>
B.Kansas City	300 (+526)	342 (+508)	+18
Altamont	468 (+358)	512 (+348)	+10
Cherokee	556 (+270)	602 (+248)est	+22
U.Squirrel SS	580 (+246)	--	---
M.Squirrel SS	608 (+218)	636 (+214)	+4
L.Squirrel SS	652 (+174)	DNP	
Ardmore	674 (+152)	DNP	
TD	701 (+125)	655 (+195)	

* Gas well in Middle Squirrel Sandstone, sand thickness 19'+

Shows:

Depth (E-Log)	Sample Description	Show Description	E-Log Calculations			
			Depth	ϕ	Rt	SW
306-14	Sandstone, fine grained, quartzose, glauconitic, trace mica, fair to good intergranular porosity	No visible show	306-08	21.5	10	50
			308-10	23	10	46
			310-12	23	9	49
			312-14	23	8	53
581-90	Sandstone, tan (oil stain), fine grained, quartzose, micaceous, carbonaceous material, thin shale laminae, fair intergranular porosity	Uniform stain, fluorescence, and slight cut, slight show of free gassy oil and show of gas (bubbles)	580-82	20	18	40*
			582-84	20	20	38
			584-86	20	20	38
			586-88	20	17	41
			588-90	20	13	47
594-602	Sandstone, as above, more carbonaceous material	Show as above except slightly more oil show and less gas show	594-96	19	12	51**
			596-98	18	12	54
			598-600	18.5	12	53
			600-02	18.5	12	54
611-15	Sandstone, as above	Fair show free gassy oil, good fluorescence and show	610-12	20	12	49**
			612-14	18	12	54
621-30	Sandstone, as above	Show of free gassy oil, slight show of gas	620-22	21	8	57
			622-24	21	6.5	63
			624-26	20	6.3	67
			626-28	19.5	6.3	69
			628-30	19	6.3	71
633-40	Sandstone, as above, less shaley	Light stain, fair show of gas poor fluorescence and slight cut	634-36	21.5	6	64
			636-38	21.5	6	64
			638-40	22	6.2	61
640-47	Sandstone, as above	Show as above plus a slight show of free gassy oil	640-42	22.5	6.2	60
			642-44	22	6.5	60
			644-46	22	7.5	58

* Porosity was estimated. Gas affected porosity tool readings.

** Shaley, low permeability.

Depth
(E-Log)
652-60

Sample Description

Sandstone, quartzose, medium grained, moderately to well sorted, micaceous, trace of carbonaceous material, good intergranular porosity

Show Description

Good show of free slightly gassy oil

E-Log Calculations

Depth	ϕ	Rt	SW
652-54	22	6	63
654-56	21	6	65
656-58	21.5	6	64
658-60	21.5	5	70

660-70

Sandstone, quartzose, medium to coarse grained, moderately sorted, subangular, micaceous, abundant carbonaceous material increasing downward, pyrite and coal fragments at base, good intergranular porosity

Fair show of free slightly gassy oil

660-62	22.5	5	67
662-64	23	5	65
664-66	22	5	68
666-68	22.5	5	67

Rw used = 0.14

$$F = \frac{.81}{\phi}$$

Summary and Recommendations:

On June 18, 1981, 4 1/2 inch production casing was run to a depth of 700 feet and cemented to surface in the Jennings Drilling Company #1 Wilson in order to test through pipe the Squirrel Sandstones. Hole conditions prevented the running of drill stem tests, however there was sample and log shows to merit testing the sands through pipe. It appears the Upper Squirrel Sandstone will produce gas, the Middle Squirrel Sandstone may also be gas productive, and the Lower Squirrel may be oil productive.

The Cherokee shale in the #1 Wilson was found structurally higher than all gas wells in the pool one-half to one mile southwest and higher than many of the wells in the pool to the northeast where the Dove #1 is located. The Upper and Lower Squirrel Sandstones are similar in the Wilson #1 and the Dove #1 wells, however the middle sand is very similar to that in the Ryan #1, being shaley in the top and having a thick sand in the lower portion that is stratigraphically equivalent to shale in the Dove #1.

Recommended perforations:

Upper Squirrel Sandstone	581-588
Middle Squirrel Sandstone	609-613
	621-624
	634-637
Lower Squirrel Sandstone	652-655

The Upper Squirrel Sandstone looks the best on the logs. There is good convergences and crossover of the neutron and density curves due to gas effect and the zone calculates approximately 40% SW. The Lower Squirrel Sandstone should be tested on the merits of the sample show. The Middle Squirrel Sandstone at 608 (+218) should be perforated because of sample show and also because it is structurally higher, by four feet, than it was in the Hannon Etal. #1 Shoenlebar, N/2 SE SE 11-12S- 21E. Although sand with good reservoir qualities was not found until 621(+205) in the Wilson #1, this position is still structurally higher than where the #1 Shoenlebar was TD'd, 655(+195), still in the Middle Squirrel Sandstone. No water was reported in the #1 Shoenlebar.

Respectfully Submitted,

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