

Dubois and Johnson

Consulting Geologists

432 State Bank Building • Winfield, Kansas • 316-221-0428

April 7, 1987

GEOLOGIC REPORT

Simco Petroleum Co., #4 J. Heim

NW NW SW 20-8S-22E

Leavenworth County, Kansas

Daily Progress:

- 4-4 Spud at 9:00 a.m., set 123' of 7" surface casing at 130' with 40 sacks cement, plug down at 4:00 p.m.
- 4-5 Drilled out beneath surface casing at 12:30 a.m., drilling at 300' at 7:00 a.m.
- 4-6 Rotary total depth of 1255' reached at 6:05 a.m., ran E-Logs, set 1249' of 4-1/2" casing with 110 sacks cement at 1253' (KB depth), plug down at 2:00 p.m.

Service Companies:

Drilling Contractor: Glacier Drilling Company, Inc.
Cement: Sun Cementing
E-Logs: Log Tech
Drilling Mud: Trotter International

Formation Tops (E-Log Depths):

<u>Formations</u>	#4 J. Heim	Structural Relation to
	NW NW SW 20-8-22	#8 C. Heim
	<u>KB 850</u>	<u>NW SE NE 19-8-22</u>
Lansing	120 (+730)	-3
Base Kansas City	446 (+404)	-5
Cherokee	696 (+154)	-7
Coal Marker	1059 (-209)	-10
Upper McLouth SS	1146 (-296)	-7
Lower McLouth SS	1178 (-328)	-3
Burgess SS	1216 (-366)	+2
Mississippi (St. Louis)	1236 (-389)	+9
Log TD	1260 (-410)	
Rotary TD	1255 (-405)	

Oils and Gas Shows (E-Log Depths):

1146-72 Upper McLouth Sandstone
Sandstone, tan (oil stain), fine grained, subrounded, well sorted, good porosity, faint odor, show of gas bubbles, slight oil scum. E-Logs indicate top 4' are tight and balance has average porosity of 25%, resistivity 50 ohms, and water saturation of 23%. Strong neutron-density crossover and samples indicate the zone is a gas pay zone.

- Lower McLouth Sandstone
- 1179-87 Sandstone, brown (oil stained), fine to medium grained, subrounded, well sorted, very good porosity, good show of gassy oil, circulated a fair oil scum to the pits. E-Logs calculate an average 28% porosity, 40 ohms resistivity, and 20% water saturation. The zone is likely to yield oil and gas.
- Burgess Sandstone
- 1202-09 Sandstone, gray-brown (oil stain), fine grained, subrounded, well sorted, shaley, trace of glauconite, fair porosity, good show of free oil. E-Logs indicate the zone is too shaley to be productive.
- 1216-20 Sandstone, medium to coarse grained, mostly loose grains, subrounded, moderately sorted, good porosity, fair show of tar. E-Logs calculate 22% porosity, 10 ohms resistivity, and 55% water saturation. Actual water saturation may be lower since resistivity in the thin sand is likely to have been dampened by adjacent shales. Possible gas pay zone with water production also likely.

Summary/Recommendation:

The #4 J. Heim well encountered two pay zones, the Upper McLouth and the Lower McLouth Sandstone. The sand in the Upper McLouth is part of the reservoir that is productive on the C. Heim lease to the northwest. The sand in the Lower McLouth interval also appears to be a part of a reservoir that extends to the northwest rather than the Lower McLouth reservoir found to the south.

Thought the Lower McLouth reservoir is relatively thin, only eight feet, it is likely to yield substantial amounts of oil and gas due to its excellent porosity. It is recommended that this zone be perforated first and stimulated as is appropriate for an oil well completion. Recommended perforations are from 1180 to 1187. The Upper McLouth sand should be perforated at a later date and its production commingled with the Lower McLouth production. Perforations from 1152 to 1162 should be sufficient to drain this gas reservoir. Since the reservoir pressure is likely to be depleted somewhat because of production on adjacent leases, it may require some acid in order to "clean up" the perforations.

The four foot sand (1216-1220) in the Burgess interval could yield some gas but is also likely to yield water. This zone should be perforated after the McLouth sands are depleted prior to abandonment.

Respectfully submitted,

Martin K. Dubois

Martin K. Dubois

MKD:lk



CARD MUST BE TYPED

State of Kansas

CARD MUST BE SIGNED

NOTICE OF INTENTION TO DRILL

(see rules on reverse side)

Starting Date 3 23 87 month day year

API Number 15- 103-20817

OPERATOR: License # 4081 Name SIMCO Petroleum Co. Address P.O. Box 1515 City/State/Zip Cheyenne, WY 82003 Contact Person Ted Simola Phone 307-632-6468

NW NW SW 2310 Sec. 20 Twp. 8 S, Rg. 22 East West Ft. from South Line of Section 4950 Ft. from East Line of Section

(Note: Locate well on Section Plat on reverse side)

CONTRACTOR: License # 5825 Name Glacier Drilling Co., Inc. City/State Emporia, KS

Nearest lease or unit boundary line 330 feet County Leavenworth

Lease Name J. Heim Well # 4 Ground surface elevation 850 (Est.) feet MSL

Well Drilled For: Well Class: Type Equipment: Oil SWD Infield Mud Rotary Gas Inj Pool Ext Air Rotary OWWO Expl Wildcat Cable

Domestic well within 330 feet: yes no Municipal well within one mile: yes no

Depth to bottom of fresh water 50 Depth to bottom of usable water 275

If OWWO: old well info as follows: Operator Well Name Comp Date Old Total Depth

Surface pipe by Alternate: 1 2 X Surface pipe planned to be set 40'

Conductor pipe required Projected Total Depth 1250 feet

I certify that well will comply with K.S.A. 55-101, et seq., plus eventually plugging hole to KCC specifications. Date 3-10-87 Signature of Operator or Agent Title Geologist

For KCC Use: Conductor Pipe Required feet; Minimum Surface Pipe Required 40 feet per Alt. This Authorization Expires 9-19-87 Approved By 3-19-87