

1-20S-20W

KANSAS GEOLOGICAL SOCIETY
508 EAST MURDOCK
WICHITA, KANSAS

GEOLOGICAL COMPLETION REPORT

NCRA-Sterling #1 Russell
NW NW NW of Sec. 1-20-20W
Pawnee County
Kansas*now
check to see if you
have already filed
one copy of this
report*

Rotary work commenced: April 16, 1955.

Rotary work completed: May 3, 1955.

Surface Casing: 8" @ 464 feet.

Samples were examined from 3400 feet to total depth. Drilling was supervised from 3750 feet to total depth. A 1 foot drilling time log was kept from 3000 feet to total depth.

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

	ELEVATION	2263 DF	2266 KB
	HEEBNER	3707	-1441
	(Electric Log)	3706	-1440
	TORONTO	3727	-1461
	(Electric Log)	3725	-1459
	LANSING	3755	-1489
	(Electric Log)	3754	-1488
Zone I	3780-3784	Tan, oolitic and oolitic limestone with oolitic porosity. No shows.	
Zone II	3858-3867	Tan to brown oolitic, slightly dolomitic limestone with scattered oolitic porosity. No shows.	
	BASE KANSAS CITY	4077	-1811
	(Electric Log)	4076	-1810
	CHEROKEE	4204	-1938
	(Electric Log)	4201	-1935
	FIRST SAND	4212	-1946
	(Electric Log)	4211	-1945
	Sand, clear, medium grained, subangular to subrounded, poorly sorted, trace of free oil, no odor.		
JDST #1	4200-4220	Open 1 hour, weak blow for 3 minutes, recovered 45 feet of mud, no shows, FP 0-0#, BHP 0#/20 minutes.	
	SAND	4252	-1986
	(Electric Log)	4252	-1986
JDST #2	4225-4256	Open 1 hour, fair blow throughout, recovered 120 feet of heavy oil cut mud, 30 feet of free oil, FP 0-50#, BHP 1140#/20 minutes.	

JOST #3 4256-4265

Open 1 hour, fair blow, recovered 180 feet of muddy water, no shows,
 FP 70-180#, BHP 1140#/20 minutes.

MISSISSIPPIAN	4300	-2034
(Electric Log)	4298	-2032

White, iron stained, weathered chert to white opaque, fresh chert to fossiliferous, scattered porosity in weathered chert. No shows.

KINDERHOOK OR	4448	-2182
WISENER SAND		
(Electric Log)	4448	-2182

Sand, clear, subrounded, medium gray with free coarse sand grains, calcareous matrix, poor to fair porosity. No shows.

VIOLA	4534	-2268
(Electric Log)	4521	-2255

Tan, medium crystalline dolomite with fresh to weathered chert, scattered vugular porosity. No shows.

SIMPSON	4578	-2312
(Electric Log)	4579	-2313

Sand, frosted to clear, medium to coarse grained, subrounded to well-rounded, lots of free coarse sand grains, well-rounded, frosted. No shows.

ARBUCKLE (Cambrian?)	4600	-2334
(Electric Log)	4599	-2333

Buff to pinkish buff, medium crystalline, rhombic dolomite with white oolitic chert, some good scattered vugular porosity. No shows.

PRE-CAMBRIAN	4623	-2357
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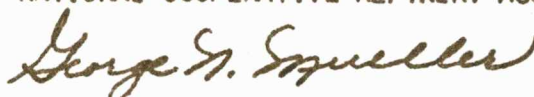
ROTARY TOTAL DEPTH	4639	-2373
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SCHLUMBERGER MICROLATEROLOG

RECOMMENDATIONS FOR COMPLETION

- (1) Perforate by Schlumberger and test zone from 4252-4255.
- (2) When this zone is depleted, perforate by Schlumberger and test zone from 4212-4214.

NATIONAL COOPERATIVE REFINERY ASSOCIATION



George N. Mueller
 Geologist

gnm/jc

cc: Sterling Drig., Amerada Pet.,
 Phillips Pet., North American Car,
 Great Bend Office, Russell Sears

602 Hale Bldg.
Wichita, Kansas
May 6, 1955

Ref: N. C. R. A.
No. 1 Russell
NW NE SW, Sec. 1-20-20W.
Pawnee County, Kansas
Elevation: 2263 D.F.

Mr. C. W. Gargile
Bartlesville Office

Dear Sir:

The following is our interpretation of the information derived from the samples, drilling time log and Schlumberger electric survey on the No. 1 Russell:

<u>Formation</u>	<u>Sample Tops</u>	<u>Schlumberger Tops</u>
Heebner	3707 (-1444)	3704 (-1441)
Toronto	3725 (-1462)	3724 (-1461)
Douglas	3735 (-1472)	3734 (-1471)
Lansing-Kansas City	3755 (-1492)	3753 (-1490)
Base-Kansas City	4077 (-1814)	4076 (-1813)
Marmaton	4098 (-1835)	4098 (-1835)
Cherokee	4204 (-1941)	4200 (-1937)
Mississippian	4300 (-2037)	4298 (-2035)
Kinderhook Shale	4444 (-2181)	4445 (-2182)
Viola	4522 (-2259)	4521 (-2258)
Simpson Shale	4579 (-2316)	4580 (-2317)
Simpson Sand	4585 (-2322)	4585 (-2322)
Cherty Arbuckle	4591 (-2328)	4591 (-2328)
Arbuckle Dolomite	4597 (-2334)	4596 (-2333)
Pre-Cambrian	4624 (-2361)	4622 (-2359)
Rotary Total Depth	4639 (-2376)	4637 (-2374)

<u>Structural Correlations:</u>	N.C.R.A. # 1 Russell NW NW NW Sec. 1-20-20W. <u>Schl.</u>	N.C.R.A. #1 Carr SE SE NE Sec. 35-19-20W. <u>Schl. (Dry)</u>	C.S.O. # 1 Russell NE NE NE Sec. 14-20-20W. <u>Schl. (Oil)</u>
<u>Formation</u>			
Heebner	-1441	-1494	
Toronto	-1461	-1512	-1434
Lansing-Kansas City	-1490	-1539	-1454
Base-Kansas City	-1813	-1842	-1484
Marmaton	-1835		-1813
Cherokee	-1937	-2014	
Mississippian	-2035	-2108	-1952
Viola	-2258		-2046
Simpson Shale	-2317	-2389	-2192
Cherty Arbuckle	-2328	-2411 (Arb.)	-2312
Arbuckle Dolomite	-2333		-2326 (Arb.)
Pre-Cambrian	-2359		
Rotary Total Depth	-2374	-2447 T.D.	-2342 T.D.

1 Russell

Shows of Oil and/or Gas:

No shows of oil and/or gas were observed during the drilling of the Lansing-Kansas City section.

Cherokee Sand Zones:

Sample Analysis
4204-08, 4210-14 Clear fine sized sand and sorted shale, poor porosity, slight stain.

Electric Log Interpretation
4205-08, 4210-14 Porosity about 8.6%, water saturation about 27%.

Recommended Perforations
4210-14

Drill stem test 4200-20, open one hour, recovered 45 feet mud, BHP 0 pounds in 20 minutes.

4220-34 Loose clear sand rounded to subrounded, few clusters fine sized sand, trace of slight stain.

4219-32 Porosity indicated about 6-8%, water saturation about 28-49%.

4220-32

4240-44 Few clusters very limy sand, slight stain in fine sized sand with clear non-calcareous appearance.

4239-43 Poor porosity indicated. 4239-43 LL-MLL ratio about 1.5 to 1.

4247-56 Trace of fine to large odd sized sand, few clusters clear fine sized sand with slight spotted stain, appears shaley.

4250-54 Porosity indicated about 15%, water saturation indicated about 60%.

4250-54

Drill stem test 4225-56, open one hour, recovered 120 feet heavy oil cut mud, 30 feet free oil, BHP 1140 pounds in 20 minutes, IF-FF zero to 50 pounds.

4256-62 Odd assorted frosted and clear sand grains, few clusters calcareous sand, no show.

4256-62 LL-MLL ratio about 1 to 1.

None

Drill stem test 4256-65, open one hour, recovered 180 feet muddy salt water, BHP 1140 pounds in 20 minutes, IF-FF 70-180.

No additional shows of oil and or gas were encountered during drilling to total depth. Five inch casing has been set and cemented at 4283 (-2020) Driller's Rotary Bushing measurement. Schlumberger measurements of tops, zones and Rotary Total Depth are taken as correct.

The recommended zones should be perforated and treated as necessary to adequately test the formations for commercial production. It is suggested that the formations be given a fracture treatment inasmuch as these zones are indicated as hard sands.

Very truly yours,

Richard G. Smith

CC: C. W. Cargile
J. M. Houshin
F. J. Latinis

Approved by Roy P. Lehman
Roy P. Lehman

RGS/mm