

Computer inventoried

JAMES C. MUSGROVE
Petroleum Geologist
2021 Forest
P.O. Box 1162
Great Bend, Kansas 67530

ORIGINAL

Office (316) 792-7716

Res. Claflin (316) 587-3444

15-167-23102

Hallwood Petroleum Inc.
Booth B #4
100' South NE-SW-NE; Section 29-11s-15w
Russell County, Kansas
Page 1

KCC
MAY 19 1997

5½" Production Casing Set

Contractor: Allen Drilling Co. (Rig #3)
Commenced: August 4, 1995
Completed: August 10, 1995
Elevation: 1779' K.B., 1777' D.F., 1774' G.L.
Measurements: All depths measured from the Kelly Bushing.
Casing Program: Surface; 8 5/8" @ 840'
Production; 5½" @ 3289'
Samples: Samples saved and examined 2400' to the Rotary Total Depth.
Drilling Time: One (1) ft. drilling time recorded and kept 2400' to the Rotary Total Depth.
Electric Log: By Halliburton Logging Services; Dual Induction, Spectral Density Dual Spaced Neutron Log, Microlog.
Formation Testing: None.

<u>Formation</u>	<u>Electric Log Depth</u>	<u>Sub-sea Datum</u>
Anhydrite	833	+946
Topeka	2589	-810
Heebner	2840	-1061
Toronto	2860	-1081
Lansing	2889	-1110
Base Kansas City	3143	-1364
Conglomerate Sand	3212	-1433
Conglomerate Chert	3229	-1450
Arbuckle	3258	-1479
Rotary Total Depth	3296	-1517
Log Total Depth	3290	-1511

(All tops and zones corrected to Electric Log Measurements)

SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.

TOPEKA SECTION

2589-2600' Limestone; tan, cherty, dense, trace limestone, brown to tan, highly fossiliferous, no shows.

- 2618-2628' Limestone, tan to brown, slightly dolomitic, sucrosic, fair pin point to crystalline type porosity, fair brown stain and saturation, fair show of free oil and fair odor in fresh samples.
- 2646-2654' Limestone; gray to brown, finely crystalline, increasingly cherty, no shows.
- 2658-2664' Limestone; tan, finely crystalline, dolomitic, scattered porosity, spotty stain and saturation, trace of free oil and faint odor in fresh samples. Plus gray to tan chert.
- 2688-2700' Limestone; gray, finely crystalline, fossiliferous, poor visible porosity, no shows.
- 2715-2722' Limestone; white, cherty, dense, no shows.
- 2729-2734' Limestone; white to gray, few fossiliferous, chalky, spotty brown stain, no show of free oil or odor in fresh samples.
- 2755-2760' Limestone; tan, fossiliferous, dense, no shows.
- 2774-2783' Limestone; gray, fine to medium crystalline, few fossiliferous, no shows.
- 2798-2804' Limestone; tan, dolomitic, fine to medium crystalline, fossiliferous in part, few sucrosic, good intercrystalline to vuggy type porosity, good stain and saturation, fair to good show of free oil and good odor in fresh samples.
- 2805-2810' Limestone; as above, increasingly fossiliferous, chalky in part.
- 2810-2820' Limestone; as above, trace white, boney chert.

TORONTO SECTION

- 2860-2865' Limestone; cream to white, few finely crystalline, cherty, dense, plus white boney chert, poor stain in limestone, no show of free oil or odor in fresh samples.

LANSING SECTION

- 2890-2895' Limestone; gray, fossiliferous, slightly cherty, scattered porosity, trace golden brown stain, trace of free oil and no odor in fresh samples. Plus chert, gray, opaque, dark brown to golden brown edge staining, no show of free oil or odor in fresh samples.
- 2918-2926' Limestone; white to tan, fossiliferous, granular, slightly cherty, spotty golden brown stain, poor show of free oil and questionable odor in fresh samples.
- 2936-2940' Limestone; as above, trace free oil and faint odor in fresh samples.
- 2944-2952' Limestone; gray to white, fossiliferous, chalky, poor visible porosity, trace poor stain, no show of free oil and faint odor in fresh samples.
- 2966-2970' Limestone; white to gray, chalky, few fossiliferous, poor porosity, trace stain, slight show of free oil and no odor.
- 2978-2987' Limestone; white to light gray, chalky (dense), plus abundant white to gray, fossiliferous opaque chert.

- 2989-2996' Limestone; white, oolitic, oocastic, fair oocastic to vuggy type porosity, trace golden brown to light brown stain, trace of free oil and faint odor in fresh samples. Plus trace white oolitic chert.
- 3028-3032' Limestone; cream, sub-oocastic, poorly developed porosity, trace poor stain, no show of free oil or odor in fresh samples.
- 3050-3060' Limestone; cream, fossiliferous, slightly chalky, dull gray to golden brown stain, trace free oil and faint odor in fresh samples.
- 3078-3084' Limestone; white to gray, fine to medium crystalline, slightly fossiliferous, few oocastic, fair oocastic to pin point to vuggy type porosity, golden brown stain, fair show of free oil and good odor in fresh samples.
- 3106-3115' Limestone; gray, oolitic, finely oocastic, fair to good porosity, fair stain and saturation, show of free oil and faint odor in fresh samples.
- 3132-3136' Limestone; white, oolitic, chalky, poor visible porosity, trace spotty stain, no show of free oil or odor in fresh samples.

MARMATON SECTION

- 3156-3162' Limestone; white, chalky, few fossiliferous, trace stain, poor visible porosity, no show of free oil and questionable odor in fresh samples.

CONGLOMERATE SECTION

- 3212-3218' Sand; medium to coarse grained, quartzitic, sub-angular, few sub-rounded, poor to fair sorting, scattered chert and pyrite inclusion, friable in part, fair porosity, brown stain and saturation, fair show of free oil and no odor in fresh samples.
- 3229-3237' Chert; orange, yellow, gray white, oolitic, opaque, spotty black to brown edge staining, no show of free oil or odor in fresh samples.

ARBUCKLE SECTION

- 3258-3264' Dolomite; white, coarse crystalline, good intercrystalline porosity, fair to good brown to dark brown stain, fair stain, fair show of free oil and fair odor in fresh samples.
- 3266-3280' Dolomite; as above, plus dolomite, white to cream, finely crystalline, sucrosic, black spotty stain (dead), show of free oil (dead, flaky) and no odor in fresh samples.
- 3280-3290' Dolomite; as above, plus gray chert, black dead stain, no show of free oil or odor in fresh samples.

Rotary Total Depth 3296 (-1517)

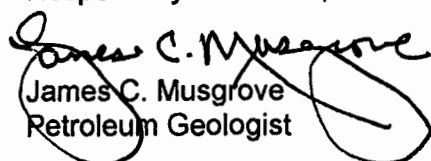
Log Total Depth 3290 (-1511)

RECOMMENDATIONS

On the basis of the favorable electric log calculation and sample shows, it was recommended by all parties involved to set and cement 5½" production casing at 3289' (one foot off bottom) and to further test the following zones in the Booth B #4:

1. Arbuckle	3260-3262	perforate
2. Conglomerate Chert	3230-3238	perforate
3. Conglomerate Sand	3213-3216	perforate
4. Lansing - K Zone	3106-3112	perforate
5. Lansing - J Zone	2978-2983	perforate
6. Lansing - G Zone	2989-2992	perforate
7. Lansing - F Zone	2966-2970	perforate
8. Lansing - C Zone	2937-3940	perforate
9. Lansing - B Zone	2919-2923	perforate
10. Lansing - A Zone	2891-2895	perforate
11. Topeka	2814-2819	perforate
12. Topeka	2806-2809	perforate
13. Topeka	2799-2802	perforate
14. Topeka	2618-2624	perforate

Respectfully submitted,


James C. Musgrove
Petroleum Geologist

RECEIVED
KANSAS GEOLOGICAL SURVEY
MAY - 5 1997