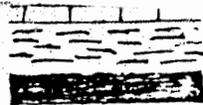


Duane Stecklein

Petroleum Geologist

State Geological Survey
WICHITA BRANCH



Stecklein

GEOLOGY CONSULTING SERVICE

2519 Henry Dr.
Hays, Kansas 67601

913 - 625 - 2708 Res.
913 - 628 - 8850 Bus.

14-7-22W

Worcester #B-3

14 - 7 - 22W
Graham County, Kansas
Commenced: 7-
Completed: 7-

August 8, 1983

Drilled By: Helberg Oil Co.
Elevation: 2225 K.B.

GEOLOGICAL DATA

SAMPLE TOPS

SEA LEVEL DATUM

TOPEKA	3188	- 963
HEBNER	3400	-1175
TORONTO	3425	-1200
LANSING K.C.	3442	-1217
WARMATON	3704	-1479
BASAL PENNSYLVANIAN CONGLOMERATE	3720	-1495
ARBUCKLE	3741	-1516
R.T.D.	3768	-1543

All samples were examined and all zones were described by me on actual location and did not start until a depth of 3150' to R.T.D. was reached. All sample tops are true and accurate according the drillers depth.

RECEIVED
STATE CORPORATION COMMISSION

JAN 31 1984

CONSERVATION DIVISION
Wichita, Kansas

14-7-22w
P

State Geological Survey
WICHITA BRANCH

TO: Helberg Oil Co.
SUBJECT: Worcester #B-3

Helberg Oil Co.

Following are the pertinent geological formations and all zones of subject well Worcester #B-3.

All zones were examined by 10' samples at a rotary depth of 3150' to 3768'.

THE FOLLOWING ZONES WERE NOTED:

- TUPEKA 3356-3365 LIMESTONE- Cream, medium crystalline to a cherty lime with a vuggy porosity, fair inter-porosity, good show of heavy oil, no odor noted.
- TORONTO 3421-3431 LIMESTONE- White and cream, cherty lime with a vuggy porosity, poor visible porosity, small show of heavy oil, no odor.
- LANSING K.C. 3477-3490 LIMESTONE- White, dense, cherty, no visible porosity, small to a rare show of spotted oil, no odor.
- 3495-3500 LIMESTONE- White, medium crystalline to chalky in part with cherty lime, occasionally fine crystalline in part with saturated stain to a spotted free oil, slightly vuggy porosity, no visible inter-porosity, no odor.
- 3516-3524 LIMESTONE- Same as above zone with a rare show of oil.
- 3532-3538 LIMESTONE- White to cream, very dense to cherty with a rare show of spotted oil in pin-point, no visible porosity.
- 3538-3560 LIMESTONE- Same as above zone with no show of oil.
- 3576-3584 LIMESTONE- White to cream, very dense to cherty with a rare show of spotted oil in pin-point, no visible porosity (very tight).
- 3591-3596 LIMESTONE- Same as above zone with fine crystalline in part.
- 3602-3611 LIMESTONE- Same as above zone with good odor and good free oil.
- 3620-3634 LIMESTONE- White and cream, fine to a medium crystalline, poor to fair inter-crystalline porosity, fair show of oil stain to free oil (somewhat tight).

14-7-22w
3 B' Worcester

THE FOLLOWING ZONES WERE NOTED:

- | | | |
|----------------------------------|-----------|---|
| LANSING K.C. | 3652-3658 | LIMESTONE- Same as above zone with odor. |
| MARMATON | 3704-3715 | CHERT AND SAND- White to translucent chert with sand embedded in part, fair show of spotted to saturated free oil, poor interporosity, no odor (residual stain in part)- (tight looking). |
| BASAL PENNSYLVANIAN CONGLOMERATE | 3720-3724 | SAND- translucent, clustered, friable, good show of free oil. |
| ARBUCKLE | 3741-3745 | DOLOMITE- Tan to cream, fine to medium crystalline, tight to friable, fair to good inter-crystalline porosity, good show of spotted to saturated free oil. |
| | 3746-3748 | DOLOMITE- Tan to cream, fine to medium crystalline, tight cherty dolomite in part (Barren) small show of free oil. |
| | 3748-3758 | DOLOMITE- Tan to cream, medium to coarse crystalline, good inter-crystalline porosity, good show of spotted to saturated free oil. |

RECOMMENDATIONS:

Because of the structural position in the Lansing K.C. and Arbuckle and the fact that the Drill Stem Test #1 recovered a fair amount of oil, operator elected to set production casing to further test Worcester #B-3.

Respectfully submitted,
STECKLEIN GEOLOGY CONSULTING SERVICE
Duane Stecklein
Duane Stecklein, Geologist