

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 240

Summary of the Pembina Mountain Oil Exploration Company - Isaac Akre No. 1
Walsh County, North Dakota
Well No. 2078 - Permit. No. 2090

by Sidney B. Anderson
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Location: NW 1/4 NW 1/4, Section 36, Township 157 North, Range 57 West.
Elevation: Unknown. Total Depth: 1765 feet.

The Pembina Mountain Oil Exploration Company's Isaac Akre No. 1 was spudded about October 30, 1958; drilling was suspended November 14, 1958, due to cold weather; the well was plugged and abandoned April 14, 1959.

Logs run: None

Core record: None

Tests: None

Casing record:

Set 160 feet of 8 5/8" surface casing with 70 sacks of cement.

Plugging record:

Set 20 sacks plug between 860 feet to 800 feet, 20 sacks from 195 feet to 135 feet with a 5 sack plug at surface. Surface casing was left in hole and sealed with a steel cap.

Formation tops were determined from samples. Colors were determined from the Goddard, et al., 1951 Rock Color Chart, distributed by the Geological Society of America, New York, New York.

FORMATION TOPS

Jurassic System	1085
Silurian System	1170
Ordovician System	
Stony Mountain formation	1255
Red River formation	1300

1055-1070 Sand, medium to coarse grained, rounded to subrounded, clear, uncemented quartz sand.

1070-1075 Sandstone, fine grained, light gray sand with calcareous cement; some light to medium gray shale and sand as above; few pieces of oolitic to fragmental light gray limestone.

1075-1080 Shale, light to medium gray with some sand and a little sandstone as above, with few fragments of light gray (N7) oolitic to fragmental limestone, with the oolites and fragments being medium gray (N5).

1080-1085 Sand, medium to coarse, rounded to subrounded as above, probably

cave; more limestone as above with some pale yellow brown (10YR6/2) fragmental limestone and some gray shale and pyrite little fine grained gray sandstone as above.

Jurassic

- 1085-1090 Shale, medium gray (N5) with sand, sandstone, and limestone as above.
- 1090-1145 Limestone, pale yellow brown (10YR6/2) fragmental to oolitic limestone with granular matrix. Few floating quartz grains (1090-1100); some pinpoint porosity.
- 1145-1170 Limestone, pale yellow gray (5Y8/1), earthy limestone, and limestone as above; numerous pieces of calcite.

Silurian

- 1170-1185 Dolomite, whitish (N9), dense, sublithographic.
- 1185-1190 Dolomite as above, and little finely saccharoidal whitish dolomite with fair to good pinpoint porosity.
- 1190-1195 Dolomite as above, but containing more saccharoidal whitish dolomite with fair to good pinpoint porosity; few fragments have oolitic appearance.
- 1195-1200 Dolomite, whitish, sublithographic; some very fine sucrosic whitish dolomite with some pinpoint porosity.
- 1200-1205 As above, but with few pieces of fine grained quartz sandstone cemented with whitish dolomitic cement.
- 1205-1210 Dolomite, whitish, very fine, sucrosic, containing some fair pinpoint porosity.
- 1210-1220 Dolomite, very pale yellow brown (10YR6/2) to buff, very fine, sucrosic, with little pinpoint porosity; few fragments of pale red, dense, very fine grained dolomite; few fragments of whitish, fine grained sandstone, and very few fragments of reddish, silty sandstone.
- 1220-1225 Dolomite, whitish, microsucrosic, containing numerous medium grained rounded, frosted quartz grains; dolomite as above.
- 1225-1240 Dolomite, whitish to pale yellow gray, fine grained to very fine grained, dense, little pinpoint porosity.
- 1240-1250 Dolomite, very pale yellow brown to pale yellow brown (10YR6/2), fine grained, dense.
- 1250-1255 Dolomite as above to microsucrosic.

Stony Mountain

- 1255-1260 Dolomite, pale red (10R6/2), fine grained, and dolomite as above.
- 1260-1265 Dolomite, pale yellow brown (10YR6/2) to very pale yellow brown, fine grained.
- 1265-1275 Dolomite, pale red with yellow staining (10YR6/2), microsucrosic, limy, containing few quartz grains, and very pale yellow brown to pale yellow brown, fine grained to microsucrosic dolomite.
- 1275-1290 Limestone, pale red (10R6/2) microsucrosic to sucrosic, dolomitic, some fair intergranular and pinpoint porosity; some yellow brown dolomite as above.
- 1290-1300 Limestone, pale red (10R6/2) to very pale yellow brown, microsucrosic to sucrosic, slightly dolomitic, fair intergranular and pinpoint porosity.

Red River

1300-1305 Limestone, light gray (N7) to pale yellow brown (10YR6/2), fine grained, microsucrosic to pale yellow brown, fragmental, dense.

1305-1310 Limestone, light gray (N7), fine grained, dense, and limestone as above.

1310-1315 Limestone, light gray (N7) to pale yellow brown, fine grained to microsucrosic.

1315-1330 Limestone, light gray, microsucrosic and pale yellow brown fine grained to microsucrosic.

1330-1350 Limestone, light gray (N7), fine grained, fragmental, and some as above.

1350-1355 Limestone, light gray, fine grained, fragmental, fossiliferous, and pale red (10R6/2) earthy limestone.

1355-1360 Limestone grayish orange (10YR7/2), fine grained, some reddish and pinkish limestone as above.

1360-1375 Limestone, very pale orange (10YR8/2), fine grained, dense, little pale red fine grained, dense limestone.

1375-1385 Limestone as above, and some medium gray shale, maybe cave.

1385-1390 Limestone, very pale orange (10YR8/2) to grayish orange pink (10R8/2), fine grained to microsucrosic.

1390-1400 Limestone, color as above, microsucrosic.

1400-1410 Limestone, pale yellow brown (10YR6/2), fine grained, dense, with some microsucrosic as above; few fragments of pale red fine grained limestone.

1410-1460 Limestone, dolomitic, very pale yellow brown, fine grained, earthy, and some fine grained, dense, sub-vitreous to vitreous limestone.

1460-1465 Limestone, dolomitic, very pale yellow brown, some pale red, fine grained, earthy.

1465-1470 Limestone, pale red (10R6/2) and very pale yellow brown, fine grained, slightly earthy texture.

1470-1475 Limestone, dolomitic, pale red to very pale yellow brown, fine grained to microsucrosic.

1475-1485 Limestone, dolomitic, very pale yellow brown, microsucrosic to sucrosic.

1485-1490 Limestone, dolomitic, very pale orange (10YR8/2), fine sucrosic.

1490-1505 Limestone, dolomitic, very pale orange and pale red (10R6/2), fine sucrosic.

1505-1515 Limestone, very pale orange, fine grained, dense, and dolomitic limestone as above.

1515-1525 Limestone, very pale yellow brown, fine sucrosic.

1525-1555 Limestone as above, some with slight reddish cast, and some very pale yellow brown, fine grained, dense, earthy limestone.

1555-1600 Limestone, very pale orange (10YR8/2), fine to medium sucrosic.

1600-1610 Limestone, very pale orange to grayish orange pink (10R8/2), sucrosic.

1610-1670 Limestone as above, with some grayish orange pink to very pale orange fragmental limestone.

1670-1680 Limestone, very pale yellow brown, sucrosic, and very pale orange fragmental limestone.

1680-1685 Limestone, very pale orange, fine grained, fragmental, some sucrosic limestone as above.

1685-1715 Limestone, very pale orange, fine sucrosic, and some fragments as above; crinoid and bryozoan fragments.

1715-1720 Limestone, very pale orange to pinkish gray, fine sucrosic to

fragmental, dense; crinoid fragments.

- 1720-1725 Limestone, very pale orange, fine sucrosic; crinoid fragments.
1725-1730 Limestone, very pale orange, fine sucrosic; crinoid fragments.
1730-1760 Limestone, very pale orange to grayish orange pink fragments.
1760 Total depth. Limestone, earthy, and some fine sucrosic as above;
numerous crinoid, brachiopod, and bryozoan fragments.