

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 81

Summary of the Midwest Exploration Company P. Juntunen
Towner County, North Dakota
Well No. 434 - Permit No. 450

by Morton Strassberg
June, 1954

Midwest Exploration - Juntunen No. 1, Towner County, North Dakota, C NW
NW Sec. 27, T. 163 N., R. 68 W. (660 feet from N. Line and 660 feet from W.
line) Elevation 1729 G. L.

The Midwest - Juntunen #1 was spudded September 16, 1953 and 10 3/4
inch casing was set at 268 feet with 100 sacks of cement. The well was
completed as a dry hole October 1, 1953 and was abandoned. Total depth 4,436
feet.

D.S.T. #1 3704-3417; Open 1 hour, recovered 150' mud, F.P. 0#; 15
minute S.I.P. 1400#, HP 2200#.

Ten sack cement plugs were set at the following depths:

4405 - 4360	2330 - 2350
3700 - 3760	2030 - 2050
3180 - 3220	1670 - 1690
2500 - 2530	1590 - 1620

Formation tops were determined from samples, electric, micro, and
radioactivity logs and were corrected to electric log tops unless
otherwise stated. Not all lithologic tops were called in the following
list. Colors were determined from the rock color chart.

Formation Tops

Formation	<u>Depth</u>
Cretaceous System	
Niobrara Formation	845
Greenhorn Formation	1228
Dakota	1610
Jurassic System	
Morrison Formation	1764 ?
Sundance Formation	1790
Piper Formation	2035
Mississippian System	
Lodgepole Formation	2126
Englewood Formation	2277
Devonian System	
Lyleton Formation	2310
Nisku Formation	2338
Duperow Formation	2411
Souris River Formation	2778
Dawson Bay Formation	2894
Ashern Formation	3151

Silurian System		
Interlake Group		3182
Ordovician System		
Upper Stony Mountain	3521	
Lower Stony Mountain	3617	
Red River	3695	
Winnipeg Shale	4274	
Winnipeg Sandstone	4404	
Granite	4425	
Total Depth	4436	

0-66	Sand, medium to very coarse grained.
60-120	Shale, medium to light gray.
120-150	Sand, fine to coarse grained.
150-210	Shale, medium light gray.
210-310	Sand, fine to coarse grained.
310-390	Sand, medium to very coarse grained.
390-420	Sand, fine to coarse grained.
420-450	Shale, medium light gray.
450-500	Sand, medium to coarse grained. Medium light gray shale.
500-520	Shale, medium light gray.
520-580	Shale, medium light to medium dark gray.
580-640	Shale, medium light to medium gray.
640-660	Shale, light to medium dark gray.
660-700	Shale, light to medium gray.
700-740	Shale, light to medium gray. White bentonite.
740-800	Shale, medium to light olive gray.
800-860	Shale, dark gray, white specks.
860-960	Shale, medium to medium dark gray, white specks, calcareous.
960-980	Shale, medium to dark gray, calcareous.
980-1240	Shale, medium to medium dark gray, calcareous, white specks.
1240-1260	Limestone, fragmental, calcite prisms. Dark gray, calcareous, white specked shale.
1260-1400	Shale, dark gray, white specks, calcareous. Fragmental calcite prism.
1400-1450	Shale, medium to medium dark gray.
1450-1480	Shale, medium to medium dark gray, white specks, calcareous. Calcite prism.
1480-1530	Shale, medium to medium dark gray, white specks, calcareous.
1530-1540	1/4 hour circulation. Shale, medium gray. Calcite prism fragments.
1540-1590	Shale, medium to medium dark gray. Calcite prism fragments.
1590-1610	Shale, medium light to medium gray.
1610-1630	Sandstone, medium to very coarse grained, medium gray shale.
1630-1680	Sandstone, coarse to very coarse grained, frosted, subrounded to subangular.
1680-1700	Sandstone, coarse to very coarse grained, frosted, subrounded. Medium gray shale.
1700-1730	Shale, medium to medium dark gray. Medium to very coarse grained quartz.
1730-1740	Sandstone, medium to very coarse grained, rounded, frosted.
1740-1760	Sandstone, very fine grained calcareous and medium to coarse grained, subrounded, frosted. Medium gray shale.
1760-1790	Shale, medium gray. Very fine grained calcareous sandstone. Coarse grained free quartz.

1790-1810 Limestone, white, fine grained arenaceous. Medium to light olive gray shale. Coarse grained free quartz.

1810-1820 Shale, medium gray to pale brown. Medium to very coarse grained sandstone.

1820-1860 Shale, medium to pale brown, white limestone. Medium to very coarse grained free quartz.

1860-1880 Sandstone, medium to very coarse grained. Medium gray shale.

1877 20 minutes circulation. Sandstone, medium to very coarse grained, frosted, rounded. Light gray calcareous siltstone. Medium gray shale.

1880-1910 Sandstone, medium to very coarse grained, frosted, rounded and very fine grained, calcareous.

1910-1930 Shale, medium gray and silty light brown. Medium to very coarse grained quartz.

1930-1950 Shale, pale reddish brown, silty. Medium to coarse subrounded, frosted sandstone. Light to greenish gray calcareous siltstone.

1950-1980 Sandstone, coarse to very coarse grained and light to greenish gray calcareous siltstone. White chalky limestone.

1980-2010 Shale, medium gray and silty light brown. Medium to very coarse grained sandstone.

2010-2040 Shale, medium gray. White chalky limestone. Medium to very coarse grained sandstone.

2040-2050 Limestone, white chalky and yellowish gray fine grained. Medium gray shale.

2050-2060 Limestone, white to yellowish gray fine grained to chalky. White chert.

2060-2070 Dolomite, light gray, microsucrosic.

2070-2080 Dolomite, light gray, microsucrosic. White gypsum. Medium to coarse grained quartz.

2080-2090 Limestone, light to yellowish gray, fine grained.

2090-2100 Limestone, yellowish gray, sublithographic.

2100-2110 Limestone, yellowish gray, fine grained to sublithographic. Yellowish gray chert.

2110-2120 Chert, white to yellowish gray. Yellowish gray limestone.

2120-2130 Limestone, pinkish gray, fine grained dolomitic. Yellowish gray chert.

2130-2140 Limestone, yellowish to pinkish gray, fine grained to sublithographic.

2140-2150 Limestone, moderate reddish orange, fine grained, dolomitic.

2150-2160 Chert, white. Yellowish gray fine grained limestone.

2160-2190 Limestone, yellowish to pinkish gray, fine grained white chert.

2190-2200 Limestone, white to yellowish gray, fine grained. White chert.

2200-2230 Dolomite, pale red, sublithographic. Yellowish gray fine grained limestone. White to yellowish gray chert.

2230-2250 Limestone, white to yellowish gray, fine grained to chalky. Grayish red calcareous shale.

2250-2270 Shale, medium gray and calcareous pale reddish brown. White to yellowish gray fine grained limestone.

2270-2280 Shale, pale reddish brown calcareous, arenaceous and medium gray.

2278 Circulation. Shale, pale reddish brown calcareous.

2280-2300 Shale, pale red brown and medium gray, calcareous. Medium to very coarse grained free quartz.

2300-2330 Shale, pale reddish brown, calcareous. Medium to coarse grained free quartz.

2330-2340 Shale, pale yellowish orange, calcareous.
 2335 1/2 hour circulation. Limestone, white, fine grained, chalky. Pale reddish brown calcareous, shale.
 2340-2350 Limestone, yellowish gray, sucrosic, dolomitic.
 2351 20 minute circulation. Dolomite, grayish orange pink sucrosic.
 2350-2370 Dolomite, grayish orange pink, sucrosic.
 2370-2400 Limestone, yellowish gray, fine grained to microsucrosic.
 2400-2410 Shale, pale brown and medium gray. Yellowish gray fine grained limestone.
 2410-2420 Shale, pale reddish brown, calcareous.
 2420-2430 Limestone, pale red, fine grained.
 2430-2440 Dolomite, pale red, microsucrosic.
 2440-2450 1/4 hour circulation. Dolomite, pale red, microsucrosic. Pale red fine grained limestone.
 2450-2460 Dolomite, grayish orange pink, fine grained.
 2460-2480 Gypsum, white, grayish orange pink, fine grained limestone.
 2480-2490 Limestone, white to very light gray, fine,grained. White gypsum.
 2490-2500 1/4 hour circulation. Limestone, white to yellowish gray, fine grained to chalky. Medium gray shale.
 2500-2520 Limestone, grayish orangepink, fine grained.
 2520-2530 1/4 hour circulation. Dolomite, yellowish gray, sucrosic.
 2530-2550 Dolomite, same as above.
 2550-2570 Limestone, yellowish gray, fine grained to fragmental.
 2570-2600 Dolomite, grayish orange pink sucrosic, intergranular porosity.
 2600-2630 Dolomite, pale brown, sucrosic, intergranular porosity. White gypsum.
 2630-2670 Limestone, very light to yellowish gray, fine grained.
 2670-2690 Limestone, yellowish gray, fragmental to sublithographic.
 2690-2710 Limestone, yellowish gray, fine grained to chalky.
 2710-2720 Limestone, yellowish gray, fine grained to sublithographic.
 2720-2730 Limestone, yellowish gray, fine grained. Medium gray shale.
 2730-2740 Limestone, grayish orange pink, fine grained to oolitic, some intergranular porosity.
 2740-2750 Limestone, yellowish gray, fine grained. Medium gray shale.
 2750-2770 Dolomite, pale yellowish brown, microsucrosic.
 2770-2780 Limestone, very light gray, fine grained.
 2780-2790 Dolomite, light to yellowish gray, microsucrosic.
 2790-2800 Limestone, yellowish gray, microsucrosic.
 2800-2820 Dolomite, very light gray, microsucrosic.
 2820-2860 Anhydrite, pale yellowish brown to white.
 2860-2870 Limestone, white to very light gray, microsucrosic.
 2870-2880 Limestone, white to very light gray, microsucrosic to sublithographic.
 2880-2890 Limestone, very light to light gray, fine grained, argillaceous.
 2890-2900 10 minute circulation. Dolomite. Yellowish gray to pale yellow brown, microsucrosic.
 2900-2910 Dolomite, yellowish gray, microsucrosic.
 2910-2920 Anhydrite, white to pale yellowish brown. Medium to coarse grained, subrounded frosted free quartz. Medium gray shale.
 2920-2930 Shale, medium and greenish gray.
 2930-2950 Dolomite, pale red, microsucrosic.
 2960-2970 Dolomite, pale yellowish brown, microsucrosic.
 2970-2980 Limestone, pale yellowish brown, fine grained to microsucrosic, dolomitic.

2980-2990 Dolomite, pale red, fine grained to microsucrosic.
 2990-3000 Shale, pale reddish brown, calcareous.
 3000-3010 Dolomite, pale red, sucrosic.
 3010-3020 Dolomite, grayish orange pink and pale red, fine grained to sucrosic.
 3020-3070 Dolomite, grayish orange pink, sucrosic to fine grained, some pinpoint porosity.
 3070-3080 Limestone, grayish orange pink fine grained.
 3080-3110 Limestone, grayish orange pink fine grained to sublithographic.
 3110-3120 Dolomite, grayish orange pink, sucrosic.
 3120-3140 Limestone, yellowish gray to grayish orange pink, fine grained to sublithographic.
 3140-3150 Limestone, grayish orange pink, sucrosic, dolomitic. Medium to coarse free quartz.
 3150-3170 Dolomite, pale red calcareous, fine grained. Pale red calcareous shale.
 3170-3180 Shale, moderate reddish orange, calcareous.
 3180-3190 Dolomite, pale red, fine grained. Pale red calcareous shale.
 3190-3200 Dolomite, moderate orange pink, sublithographic.
 3200-3210 Dolomite, very pale orange, microsucrosic.
 3210-3240 Dolomite, grayish orange pink, sucrosic, intergranular to vuggy porosity.
 3240-3250 Dolomite, grayish orange pink, microsucrosic.
 3250-3280 Limestone, grayish orange pink, fine grained to sucrosic, dolomitic.
 3280-3330 Dolomite, very pale orange, sublithographic.
 3330-3350 Limestone, white, chalky.
 3350-3370 Dolomite, very pale orange, sublithographic.
 3370-3390 Limestone, white to very pale orange, chalky to sublithographic.
 3390-3430 Dolomite, very pale orange, microsucrosic.
 3430-3440 Limestone, very pale orange, sublithographic. Medium gray shale.
 3440-3450 Dolomite, very pale orange, sublithographic. Medium gray shale.
 3450-3490 Dolomite, very pale orange, sublithographic.
 3490-3500 Dolomite, very pale orange, sublithographic to fine grained.
 3500-3510 Dolomite, very pale orange and light red, sublithographic to microsucrosic.
 3510-3530 Dolomite, very pale orange, sublithographic. Medium gray shale.
 3530-3560 Dolomite, grayish orange pink, sublithographic.
 3560-3570 Shale, moderate reddish orange, calcareous.
 3570-3590 Dolomite, pale red, sucrosic.
 3590-3620 Dolomite, very pale orange, microsucrosic.
 3620-3630 Dolomite, very pale orange and light gray, microsucrosic. Medium gray shale.
 3630-3690 Shale, light to medium gray, calcareous. Very light to pinkish gray fine grained limestone.
 3690-3710 Limestone, very light gray, fine grained, black inclusions.
 3713 2 hours circulation. Dolomite, very light to yellowish gray, microsucrosic to sublithographic.
 3710-3720 Sandstone, medium to very coarse grained, cave?
 3720-3730 Dolomite, yellowish gray, fine grained to sucrosic.
 3730-3740 Dolomite, very pale orange to grayish orange pink, sucrosic, pinpoint porosity.
 3736 1/2 hour circulation. Dolomite, grayish orange pink to pale yellowish brown, sucrosic, pinpoint to intergranular porosity.

3740-3750 Limestone, very light to yellowish gray, fine grained.
 3750-3770 Dolomite, very pale orange, sublithographic.
 3770-3790 Dolomite, very pale orange, oolitic to sublithographic.
 3790-3800 Dolomite, very pale orange, fine grained to microsugrosic.
 3800-3830 Dolomite, very pale orange, sublithographic to microsugrosic.
 3830-3840 Dolomite, light gray to grayish orange pink, fine grained.
 3840-3860 Dolomite, grayish orange pink, sugrosic.
 3860-3870 Limestone, very pale orange, fine grained.
 3870-3880 Dolomite, grayish orange pink, sugrosic. Very pale orange fine grained limestone.
 3880-3940 Limestone, light gray, fine grain to sublithographic.
 3940-4000 Limestone, very light to yellowish gray, fine grained to sublithographic.
 4000-4010 Dolomite, very light to yellowish gray, sugrosic, pinpoint porosity.
 4010-4030 Dolomite, pale yellowish brown, sugrosic.
 4030-4040 Dolomite, light gray, sublithographic to microsugrosic.
 4040-4050 Dolomite, light gray, sublithographic. White chert.
 4050-4180 Limestone, white to very light gray, fine grained to sublithographic.
 4180-4200 Limestone, very light to yellowish gray, fine grained to lithographic.
 4200-4230 Limestone, very light to yellowish gray, fine grained to sublithographic. Medium gray shale.
 4230-4250 Limestone, very light to yellowish gray, fine grained. Fine to medium grained free quartz. Medium gray shale.
 4250-4270 Shale, medium to medium dark gray.
 4270-4290 Shale, medium to greenish gray, calcareous.
 4290-4300 Shale, medium to greenish gray. Hematite concretions.
 4300-4320 Shale, greenish gray. Hematite concretions.
 4320-4340 Shale, medium to greenish gray. Hematite concretions.
 4340-4365 Shale, greenish gray and grayish red. Hematite concretions.
 4365-4385 Shale, greenish gray. Hematite concretions.
 4385-4390 Shale, greenish gray and gray red. Hematite concretions.
 4390-4395 Shale, greenish gray. Hematite concretions.
 4395-4400 Shale, greenish gray and gray red. Hematite concretions. Fine to coarse grained free quartz.
 4400-4405 Shale, greenish gray. Hematite concretions.
 4405 1/2 hour circulation. Shale, greenish gray. Hematite concretions.
 4405-4410 Shale, greenish gray. Hematite concretions. Fine to medium grained free quartz.
 4410-4415 Sandstone, medium to coarse grained. Greenish gray and gray red shale. Hematite concretions.
 4417 1/4 hour circulation. Sandstone, fine to coarse grained, subrounded, frosted.
 4415-4420 Sandstone, same as above.
 4420-4435 Shale, greenish gray. Fine to coarse grained sandstone.
 4436 1/2 hour circulation. Granite, quartz, biotite, feldspar.