

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 24

Summary of the Peter Lenertz No. 1 Well McHenry County, North Dakota

By John W. Caldwell

Hunt Oil Company - Peter Lenertz Well No. 1, McHenry County, North Dakota, NW SE Section 17, T. 153N., R. 77W., (1980 feet N. of S. line, 1980 feet W. of E. line, Sec. 17) Elevation: G. L. 1559.6, D. F. 1570.6

The Hunt No. 1 Lenertz was spudded March 25, 1952. The well was completed May 31, 1952.

TESTS: DST: 4698 - 4723, Shut in 2 hours, open 20 minutes, received 31 feet of mud. BHFP 0#, BHSIP 500#.

Each zone was, cemented with a 15 sack plug. Cemented points:

Top of surface 15 sack plug, steel plug

Muddy - 1918

Mississippian - 3550

Devonian - 4910

Silurian- 5600

Ordovician - 6250

Formation tops determined from sample and electric logs, not all lithologic tops called in following list. Colors determined from rock color chart.

	<u>TOPS</u>
Cretaceous System	<u>Depth</u>
Pierre	341
Niobrara	1331
Greenhorn	1920
Dakota	2472
Jurassic System	
Morrison	2605
Sundance	2630
Piper	3144
Triassic System	
Spearfish	3386
Mississippian System	
Charles	3516
Mission Canyon	3872
Lodgepole	4177
Englewood	4820
Devonian System	
Lyleton	4846
Nisku	4904
Duperow	4986
Souris River	5280
Dawson Bay	5567
Prairie Evaporite	5670

Winnipegosis	5713
Ashern	5826
Silurian System	
Interlake	5853
Ordovician System	
Stony Mountain	6152
Stony Mountain Shale	6253
Red River	6337
Winnipeg Shale	6945
Winnipeg Sand	7098
Total Depth	7211

Hunt - Lenertz #1

1000-1010	Shale, medium gray, silty.
1010-1020	Shale, medium light gray, silty.
1020-1024	Shale, medium light gray, silty, slightly bentonitic.
1024-1050	Shale, medium light gray, silty.
1050-1070	Shale, medium light gray, compact silty.
1070-1080	Shale, medium light gray, silty, slightly bentonitic.
1080-1100	Shale, medium light gray with slight amount light tan shale.
1100-1110	Shale, medium light gray, slightly bentonitic
1110-1130	Shale, medium gray.
1130-1150	Shale, medium gray, little tan.
1150-1190	Shale, medium gray.
1190-1210	Shale, medium light gray.
1210-1230	Shale, medium light gray, slightly calcareous.
1230-1270	Shale, medium light gray, slightly calcareous, bentonitic.
1270-1310	Shale, medium light gray, bentonitic.
Niobrara 1331	
1310-1370	Shale, medium light gray, bentonitic, compact.
1370-1430	Shale, medium light gray, slightly bentonitic.
1430-1470	Shale, medium gray, calcareous, white specks.
1470-1490	Shale, medium gray, few white specks, slightly calcareous pyrite bentonitic.
1490-1510	Shale, medium dark gray, shell fragments, pyrite.
1510-1550	Shale, medium gray, lumpy, calcareous bentonitic.
1550-1570	Shale, medium dark gray, lumpy, calcareous, bentonitic.
1570-1590	Shale, medium dark gray, slightly calcareous, slightly bentonitic pyrite.
1590-1620	Shale, dark gray, carbonaceous in part, slightly calcareous and bentonitic, pyrite.
1620-1660	Shale, medium and dark gray shale, slightly calcareous and bentonitic, pyrite.
1660-1720	Shale, medium gray, lumpy, calcareous, bentonitic, pyrite.
1720-1760	Shale, medium dark gray, slightly calcareous and bentonitic.
1760-1780	Shale, medium light gray, lumpy, slightly calcareous, and bentonitic.
1780-1840	Shale, medium light gray, lumpy, calcareous, bentonitic.
1840-1880	Shale, medium and dark gray, slightly calcareous.

Greenhorn 1920

1880-1960	Shale, medium and dark gray, white specks with some medium grained calcitic light gray limestone, inoceramus, pyrite calcareous.
1960-2060	Shale, medium dark gray, white specks, little medium grain calcitic limestone, light gray, inoceramus, Globigerina, pyrite, calcareous.
2060-2080	Shale, medium and dark gray, white specks, little calcitic light gray limestone, pyrite, bentonite, calcareous.
2080-2100	Shale, medium light gray, few white specks, calcareous, bentonitic pyrite.
2100-2140	Shale, medium gray, inoceramus, Globigerina, pyrite.
2140-2160	Shale, medium gray, lumpy, bentonitic, slightly calcareous.
2160-2200	Shale, medium dark gray, bentonitic, slightly calcareous, lumpy, Globigerina.
2200-2220	Shale, medium gray, slightly bentonitic, slightly calcareous, Globigerina.
2220-2240	Shale, medium gray, Globigerina.
2240-2320	Shale, medium gray, Globigerina, slightly calcareous and bentonitic.
2320-2380	Shale, medium dark gray, Globigerina.
2380-2420	Shale, medium gray with some pale yellowish brown shale.
2420-2440	Shale, medium gray.
2440-2470	Shale, medium gray, pyrite, some white loose medium to very coarse grained sandstone, subangular to rounded.

Dakota 2472

2470-2480	Shale, medium gray, large amount of sandstone as above.
2480-2500	Shale, medium gray, little and as above.
2500-2510	Shale, medium gray, little light gray sandy siltstone.
2510-2520	Shale, medium gray, some light gray sandy siltstone.
2520-2530	Shale, medium gray, large amount of very fine grain, silty sand, light gray to light brown.
2530-2540	Shale, medium gray, little light gray sandy siltstone, pyrite.
2540-2550	Shale, medium dark gray.
2550-2570	Shale, medium gray shale, little very fine grain sandstone, little medium to very coarse grain sandstone, pyrite.
2570-2600	Shale, medium gray, little very fine grain sandstone, calcite cement, pyrite, trace of red shale.

Morrison 2605

2600-2620	Sandstone, white, very fine to fine grain, calcite cement, large amount of gray shale, pyrite.
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Sundance 2630

2620-2650	Shale, medium gray shale, some sandstone as above, pyrite and pyrite cemented sand.
2650-2660	Shale, medium gray, little sandstone as 2600-20.
2660-2680	Shale, medium gray, little sandstone as above, few very coarse quartz grains, pyrite and pyrite cemented sand.
2680-2690	Shale, medium gray, some very coarse subangular to rounded frosted sand grains, pyrite cemented sand and few ironstone concretions.
2690-2710	Shale as above, large amount of very coarse sand.

2710-2720 Shale, medium gray, some very coarse quartz grains and pebbles, little medium grain pyrite cemented sandstone.
 2720-2730 Sandstone, loose coarse grained, subangular to rounded, few quartz pebbles, pyrite and pyrite cemented sand.
 2730-2750 Sandstone as above with some medium gray shale.
 2750-2754 Shale, medium gray, large amount of light gray siltstone sandy, little fine grained sand and little coarse grained sand, pyrite.
 2754-2760 Shale, medium gray, large amount of light gray and light tan sandy siltstone.
 2760-2764 Shale, medium gray, large amount of tan slightly calcareous and bentonitic shale.
 2764-2774 Shale, medium light gray, sandy, lumpy, bentonitic and calcareous.
 2774-2784 Shale, medium light gray, sandy, lumpy, calcareous and slightly bentonitic.
 2784-2800 Shale, medium light gray, large amount of light gray and light tan siltstone, calcareous.
 2800-2820 Shale, medium light gray, some light gray and light tan sandy siltstone, calcareous, little fine to coarse sand grains.
 2820-2824 Shale, medium light gray, little siltstone and few sand grains.
 2824-2830 Shale, medium gray, some tan shale, little siltstone and few sand grains.
 2830-2850 Shale, medium light and medium dark gray.
 2850-2860 Shale, medium dark gray, light gray and olive green.
 2860-2870 Shale, varicolored.
 2870-2890 Shale as above, with little white, fine grain sandstone, calcareous cement.
 2890-2910 Limestone, white to light gray, medium to coarse grained, little shale as above.
 2910-2920 Limestone as above, large amount of shale as 2860-70.
 2920-3010 Shale, medium light greenish gray, Spines(?) shell fragments.
 3010-3050 Shale, varicolored, shell fragments.
 3050-3060 Shale as above, little light gray, calcareous siltstone.
 3060-3070 Shale as above, with some light gray calcareous siltstone.
 3070-3080 Siltstone, light gray calcareous, some shale, as above.
 3080-3120 Shale, medium light gray, some siltstone as above, little silty and sandy limestone.
 3120-3130 Limestone, white argillaceous earthy, little gray shale.

 Piper 3144
 3130-3140 Limestone as above, large amount gray shale, few quartz grains.
 3140-3150 Shale, medium light gray, some coarse rounded frosted quartz grains, little limestone as above.
 3150-3160 Shale, varicolored.
 3160-3170 Shale as above, with little white earthy to fine grain limestone.
 3170-3180 Shale as above, with large amount earthy to fine grained limestone, white to light olive, gray.
 3180-3200 Limestone, white, earthy to fine grain, large amount of shale as above.
 3200-3210 Shale, light gray, some limestone as above.
 3210-3240 Limestone, white earthy to fine grain, some light gray shale.
 3240-3260 Limestone, white earthy to fine grain, little light gray shale.
 3260-3280 Limestone as above, some light gray shale.

3280-3290 Limestone as above, little light gray shale, white chert.
3290-3300 Shale, varicolored. Little limestone as above and white to pink anhydrite.

Corrected depth.

3330-3350 Shale as above, some limestone white earthy to fine grain and little white to pink anhydrite.
3350-3360 Shale as above, some anhydrite, little limestone.

Spearfish 3386

3360-3370 Shale, medium gray, little limestone and little anhydrite.
3370-3390 Shale, varicolored, large amount anhydrite.
3390-3410 Shale as above, some anhydrite.
3410-3430 Shale as above, little anhydrite.
3430-3440 Shale, varicolored, large amount pale red siltstone, little anhydrite.
3440-3460 Shale as above with siltstone, larger amounts of red shale.
3460-3490 Siltstone pale red, some medium gray shale and red shale.
3490-3500 Siltstone, pale red, sandy, little medium gray shale.
3500-3510 Shale, medium gray, some siltstone as above.
3510-3520 Siltstone, pale red, sandy, little medium gray shale.

Charles 3516

3520-3530 Siltstone, pale red, sandy, some medium gray shale, some white calcareous dolomite.
3530-3540 Shale, reddish brown, some medium gray shale and some white calcareous dolomite, reddish brown chert.
3540-3550 Shale, medium dark gray, some reddish brown shale, some white earthy to fine grain limestone.
3550-3590 Shale, varicolored, little limestone as above, little anhydrite.
3590-3610 Shale, varicolored, little anhydrite.
3610-3630 Limestone, white to yellowish gray, dolomitic, fine grain, little gray shale.
3630-3640 Limestone, white to pinkish gray, fine grained, silty, little gray shale.
3640-3660 Limestone as above with reddish brown and gray shale.
3660-3670 Shale, varicolored, little anhydrite.
3670-3680 Shale, varicolored, some pinkish gray medium grain limestone.
3680-3740 Shale, medium dark gray, varicolored, little lime and anhydrite.
3740-3770 Shale, varicolored, little white to light olive gray limestone earthy to medium grained, fossiliferous, oolitic, little anhydrite.
3770-3780 Shale, medium gray, large amount of fine grained limestone, yellowish gray to light olive gray.
3780-3790 Shale, medium gray, little limestone as above.
3790-3800 Shale, varicolored, little limestone and anhydrite.
3800-3810 Shale, light gray, silty, calcareous, little limestone, little anhydrite.
3810-3840 Shale, light gray, silty, calcareous, some limestone, little anhydrite.
3840-3860 Limestone, yellowish gray to light olive gray, some light gray silty calcareous shale.

Mission Canyon 3872

3860-3890	Shale, varicolored, silty, calcareous, little limestone, little anhydrite.
3890-3900	Limestone, yellowish gray, coarse grained oolitic, dolomitic, no cut with carbon tetrachloride good fluorescence, little shale as above.
3900-3940	Limestone, white to yellowish gray, medium to coarse grain oolitic, fair fluorescence.
3940-3960	Limestone as above, no fluorescence.
3960-3980	Limestone, white to yellowish gray, medium to coarse grain, few oolites, some white earthy limestone.
3980-4000	Limestone as above, little gray shale.
4000-4020	Limestone as above, some gray shale.
4020-4030	Limestone, white to yellowish gray, earthy to granular, little light gray shale, few oolites.
4030-4040	Limestone as above, with some medium and light gray shale.
4040-4050	Limestone and shale as above, with little light gray dolomite.
4050-4060	Dolomite, light gray, dense, some limestone as above and some gray shale.
4060-4070	Limestone, yellowish gray, granular, little dolomite and shale, slight fluorescence.
4070-4080	Limestone, white to yellow gray, granular, some dense light gray dolomite, large amount of light and medium gray shale.
4080-4120	Limestone, white to yellow gray, coarse granular, oolitic, little gray shale.
4120-4130	Limestone as above, some medium dark gray and varicolored shale.
4130-4160	Limestone as above, large amount of shale as above.
4160-4170	Shale as above, some limestone as above.

Lodgepole 4177

4170-4180	Shale as above, little limestone and anhydrite.
4180-4210	Shale as above, some limestone, little anhydrite.
4210-4240	Shale, medium dark gray, little light yellowish gray, granular limestone, few oolites.
4240-4270	Shale, medium dark gray, some yellowish gray to light olive ray, granular limestone, few oolites.
4270-4280	Limestone, yellowish gray to light gray, granular oolitic, large amount of gray shale.
4280-4290	Limestone as above, some gray shale.
4290-4300	Limestone, medium light to light gray, coarse granular, few oolites, little gray shale.
4300-4340	Limestone, medium light to light gray, coarse, few oolites, granular, little white earthy lime, little white anhydrite, sugary.
4340-4380	Limestone, medium light to light gray, medium to coarse granular, little white earthy limestone.
4380-4420	Limestone, medium light to light gray, medium granular, little white earthy limestone.
4420-4430	Limestone, medium light to light gray, medium granular, little white earthy limestone, little white anhydrite.
4430-4440	Limestone as above, little gray shale, shell fragments, ostracods, little anhydrite.
4440-4460	Limestone as above, some white earthy limestone, ostracods, crinoid stems, oolites.

4460-4480 Limestone, oolitic, coarse grained light gray to yellow gray, little gray shale and white earthy limestone.

4480-4490 Limestone, light gray to yellowish gray, medium to coarse grained, oolitic, ostracods, little white earthy limestone.

4490-4500 Limestone as above, oolitic, ostracods, some white to gray earthy lime, some light gray calcareous shale, few quartz grains.

4500-4510 Limestone, light gray to yellowish gray, oolitic, some white earthy limestone, little gray shale.

4510-4520 Limestone, light gray to yellowish gray, fine to coarse grained, large amount earthy light gray limestone, little anhydrite.

4520-4550 Limestone as above, little white earthy limestone, little anhydrite, few oolites and ostracods.

4550-4560 Limestone, light gray to very light gray, medium to coarse grained, few oolites, little white earthy limestone.

4560-4570 Limestone as above, little white earthy limestone, few oolites, little gray shale.

4570 Limestone as above, some white earthy limestone, little gray shale.

4566-4570 Corrected Depth. Limestone as above, some white earthy lime, some gray shale, little anhydrite, few sand grains.

4570-4590 Limestone, light gray, fine grained, little gray shale, little anhydrite, few sand grains.

4590-4610 Limestone, light gray, fine grained, little gray shale, little white earthy limestone.

4610-4620 Limestone, light gray, fine grained.

4620-4640 Limestone, light gray, fine grained, little white earthy limestone, few quartz grains, little gray shale.

4640-4650 Limestone, light gray, fine grained.

4650-4660 Limestone, light gray, fine grained, little white earthy limestone, few quartz grains with little gray shale.

4660-4670 Limestone, light gray, fine grained.

4670-4690 Limestone, light gray, fine grained, some dense fine grain medium gray limy dolomite, little gray shale, some white earthy limestone.

4690-4700 Limestone, light gray, fine grain, little fine grain dense dolomite, medium gray limy, little earthy limestone, few quartz grains.

4700-4704 Limestone, light gray, fine grained, some fine grain dense dolomite, medium gray limy, little earthy white limestone.

4704-4708 Limestone, light gray, fine grain, some fine grain dense dolomite, medium gray.

4708-4720 limestone, light gray, fine grain, large amount of fine grained medium gray dolomite.

4720-4760 Limestone, light gray, fine grained, very argillaceous, dolomitic, little gray shale, crinoid stem.

4760-4790 Limestone, light gray, fine grain, argillaceous, little gray shale.

4790-4800 Limestone, light gray, fine grain, argillaceous, little gray shale, little light gray earthy limestone.

4800-4820 Limestone as above, large amount of light gray earthy limestone, chert milky.

Englewood 4820

- 4820-4830 Shale, dark gray, some light gray, fine grain to earthy limestone.
4830-4840 Shale, dark gray, little earthy to medium grain light gray limestone.

Lyleton 4846

- 4840-4850 Limestone, light gray, argillaceous, silty earthy to medium grained, little shale as above.
4850-4870 Limestone, white to very light gray, earthy, argillaceous, silty, some medium gray shale, few quartz grains.
4870-4880 Sandstone, medium to coarse loose rounded, pale red silty shale, medium gray shale, yellowish gray limestone.
4880-4890 Shale, pale red silty calcareous, large amount of sand as above, medium gray shale and limestone.

Nisku 4904

- 4890-4910 Shale, medium dark gray, large amount of red shale as above.
4910-4920 Dolomite, yellowish gray, fine grained, some dark medium gray shale as above.
4920-4940 Dolomite as above, some light brownish gray, limestone, slight oil cut with acid, no fluorescence.
4940-4950 Limestone, pale yellow brown, dolomitic, medium grain sugary dolomite as above, little anhydrite.

Duperow 4986

- 4950-4980 Limestone as above, little white earthy limestone and anhydrite.
4980-4990 Limestone as above, little gray shale.
4990-5000 Limestone, pale yellow brown dolomitic, little gray shale, few quartz grains, little anhydrite.
5000-5010 Limestone as above, little gray shale, some anhydrite.
5010-5020 Limestone as above, some white fine grain dolomite.
5020-5030 Dolomite, light gray, fine grain, some white fine grain.
5030-5040 Limestone, light gray, fine grain, little light gray shale.
5040-5050 Dolomite, white to light gray, fine grain.
5050-5060 Limestone, white to pale yellow gray, earthy to fine grain.
5060-5070 Dolomite, yellow gray to light olive gray, medium grained, sugary, limestone as above, slightly oil cut with acid, no cut with carbon tetrachloride.
5070-5090 Dolomite, yellow gray to light olive gray, medium grain sugary.
5090-5100 Dolomite as above with light gray dolomite, sugary.
5100-5110 Limestone, white to pale yellow gray, earthy to fine grain, large amount of dolomite as above.
5110-5130 Limestone, white to pale yellow gray, earthy to fine grain.
5130-5140 Limestone as above, little gray shale.
5140-5150 Limestone as above, little gray shale, some yellow gray sugary limy dolomite.
5150-5170 Dolomite, yellow gray, sugary limy in part, little gray shale.
5170-5190 Dolomite as above, limy in part.
5190-5200 Dolomite as above, few quartz grains.
5200-5210 Dolomite, yellow gray, sugary.
5210-5220 Dolomite as above, some light gray earthy to fine grain limestone.
5220-5230 Dolomite as above, limestone as above, little gray shale.

5230-5240 Limestone, white to pale yellow gray, earthy to fine grain,
little dolomite as above and little gray shale.
5240-5250 Dolomite, pale yellow gray, limestone as above.
5250-5270 Limestone, white to pale yellow gray, earthy to fine grain,
dolomite as above, little gray shale.

Souris River 5280

5270-5280 Limestone as above, some dolomite as above, little gray shale.
5280-5310 Limestone as above, little gray shale.
5310-5340 Dolomite, white to pale yellow gray, dolomite, some gray shale
and limestone as above.
5340-5370 Limestone, white to pale yellow gray, earthy to fine grain,
little gray shale.
5370-5410 Dolomite, yellow gray, sugary, fine to medium grain.
5410-5420 Limestone, light gray, fine grain, fossiliferous, large amount
of dolomite as above.
5420-5430 Dolomite, very light gray to light yellow gray, fine grain.
5430-5460 Dolomite, yellow gray to light olive gray, fine grained.
5460-5470 Dolomite, pale light yellow brown, fine to medium grain, sugary.
5470-5490 Dolomite, pale light yellow brown, fine grained, sugary.
5490-5500 Dolomite as above, some medium and dark gray shale.
5500-5510 Limestone, white porous earthy, some dolomite and shale as
above.
5510-5520 Limestone, white to very light gray, earthy to fine grain,
dolomite and shale as above.
5520-5530 Dolomite, medium light gray, fine grain, some limestone as
above.
5530-5540 Limestone, white to very light gray, earthy to fine grain.
5540-5550 Limestone, white to yellow gray, fine grain, little limestone as
above.

Dawson Bay 5567

5550-5560 Dolomite, light olive gray, fine grain.
5560-5590 Dolomite, light olive gray, fine to coarse grain, sugary, limy
in part.
5590-5610 Limestone, white to very light gray, earthy to fine grain, some
dolomite as above.
5610-5630 Limestone as above, little dolomite as above.
5630-5650 Limestone as above, slightly dolomitic, some white to light gray
shale.
5650-5660 Dolomite, pale red fine grain, some grayish orange pink
calcareous shale, few quartz grains.
5660-5670 Limestone, light olive gray, dolomitic, dolomite shale as above,
little dark gray shale.

Prairie Evaporite 5670

5670-5680 Limestone, light olive gray to medium gray dolomitic, little
white argillaceous limestone.
5680-5690 Dolomite, white to pale yellow gray, fine grained, little white
argillaceous limestone.
5690-5710 Dolomite, yellow gray to light olive brown, fine grained,
sugary.

Winnipegosis 5713

5710-5720 Dolomite as above, some light gray shale, white argillaceous, earthy limestone, few quartz grains.
5720-5730 Limestone, very light gray to light yellow gray, fine grain, little dolomite as above.
5730-5740 Limestone, white to light yellow gray, earthy to fine grain.
5740-5760 Dolomite, light olive gray, fine grain, large amount of limestone as above.
5760-5770 Limestone, white to light olive gray, earthy to fine grain.
5770-5800 Limestone, light olive gray, fine grain.
5800-5810 Limestone as above, slightly dolomitic, some white earthy limestone.

Ashern 5826

5810-5840 Limestone, white to light yellow gray, earthy to fine grain, slightly dolomitic.

Interlake 5853

5840-5860 Dolomite, light gray fine grain, little limestone as above.
5860-5870 Dolomite as above, little gray shale.
5870-5880 Dolomite, pinkish gray, fine to medium grain, sugary.
5880-5890 Limestone, grayish orange, sub-crystalline, little grayish red shale.
5890-5910 Limestone as above, earthy to sub-crystalline, little grayish red shale and medium gray shale.
5910-5920 Limestone as above, some grayish red and medium gray shale.
5920-5930 Dolomite, pale yellow orange and grayish orange, fine grain.
5930-5940 Dolomite as above, some grayish red and gray shale.
5940-5950 Dolomite as above, some grayish red and gray shale, little white earthy limestone.
5950-5960 Limestone, white earthy, some dolomite and shale as above.
5960-5990 Dolomite, white, pale yellowish orange and grayish orange, fine grained.
5990-6000 Dolomite as above, little white earthy limestone.
6000-6010 Dolomite as above, little gray shale.
6010-6020 Dolomite as above, some gray shale.
6020-6030 Dolomite, white to very pale yellow gray, fine grained.
6030-6040 Dolomite, very pale orange, fine grained, little red and gray shale.
6040-6070 Dolomite, white to very pale yellow gray, fine grained little red and gray shale.
6070-6100 Dolomite, white to very pale yellow gray, fine grained, little gray shale, little white earthy limestone.
6100-6130 Dolomite, white to very pale yellow gray, fine grained, little red and gray shale.
6130-6140 Dolomite as above, little pinkish gray and pale red dolomite.
6140-6160 Dolomite as above, some gray shale, little gray and pale red dolomite.

Stony Mountain 5152

6160-6170 Dolomite, very pale orange and yellow gray, fine grained, little red and gray shale.
6170-6180 Dolomite, pale red, fine grained.
6180-6190 Dolomite as above, little light gray, fine grained.

6190-6210 Dolomite, pale red, pale yellow gray, light gray, fine grain.
 6210-6220 Dolomite, light and medium gray, yellow gray, fine to medium grained, little gray shale.

Stony Mountain Shale 6253

6220-6250 Dolomite, yellow gray, fine grained, little gray shale.
 6250-6270 Dolomite, yellow gray and light gray, little white earthy limestone.
 6270-6280 Dolomite as above, little white earthy limestone, little medium gray, fine grained limestone.
 6280-6300 Limestone, light gray, earthy, argillaceous, little gray limestone, dolomite, little gray shale.
 6300-6320 Limestone, light gray, earthy, argillaceous, little white to light gray fossiliferous limestone.
 6320-6330 Limestone as above, little, medium gray shale.
 6330-6340 Limestone as above, some shale as above.
 6340-6350 Limestone, white earthy and white to light gray, fine grained, fossiliferous, large amount of medium gray shale, little dolomite.

Red River 6337

6350-6380 Limestone, yellow gray to light olive gray, fine grain, pyrite, bryozoa, carbonaceous film on bedding planes, no fluorescence.
 6380-6400 Dolomite, yellow gray, fine grain, sugary, some limestone as above.
 6400-6410 Limestone, yellow gray to light gray, fine grained, dolomite as above.
 6410-6430 Dolomite, white to yellow gray, fine grained.
 6430-6460 Dolomite as above, limy.
 6460-6490 Dolomite, white to yellow gray, fine grained, limy, little gray shale.
 6490-6510 Limestone, yellow gray, fine grained, dolomitic, little gray shale and white earthy limestone.
 6510-6530 Limestone as above, sugary in part, yellow gray, fine grained, limy dolomite, white earthy limestone.
 6530-6540 Dolomite, yellow gray, fine grained, limy, dolomitic, yellow gray limestone, some white earthy argillaceous limestone.
 6540-6550 Limestone, white to yellow gray, earthy to fine grained, dolomitic in part and dolomite.
 6550-6570 Limestone as above, with some gray shale (cave?).
 6570-6600 Limestone, white to yellow gray, earthy to fine grained.
 6600-6620 Limestone as above with some yellow gray, fine grained, sugary dolomite.
 6620-6640 Limestone, white to yellow gray earthy to fine grained, bryozoa.
 6640-6660 Limestone as above, little sugary fine grained, yellow gray dolomite.
 6660-6670 Limestone, white to yellow gray, earthy to fine grained.
 6670-6680 Limestone as above, little sugary fine grain, yellow gray dolomite.
 6680-6700 Limestone as above, large amount of dolomite as above.
 6700-6730 Limestone as above, some dolomite as above.
 6730-6760 Limestone, white to yellow gray earthy to fine grained, large amount of dolomite sugary, fine grained, yellow gray, little gray shale.

6760-6790	Limestone, white to yellow gray, earthy to fine grain. Little dolomite as above.
6790-6810	Limestone, white to yellow gray, earthy to fine grained, large amount of dolomite grayish yellow sugary, pyrite.
6810-6830	Limestone as above, little dolomite as above.
6830-6850	Limestone, light gray to yellow gray, earthy to fine grain.
6850-6880	Limestone as above, little gray shale.
6880-6920	Limestone, white to yellow gray, earthy to fine grained.
6920-6950	Limestone as above, little red and gray shale, bryozoa.
6950-6970	Limestone, light gray to yellow gray, earthy to fine grained, little red and gray shale.
Winnipeg Shale 6945	
6970-6980	Limestone as above, little red and gray shale. Few pieces angular quartz grains, pyrite.
6980-6990	Shale, greenish gray splintery, some limestone as above, pyrite, little medium gray shale.
6990-7020	Shale, greenish gray, splintery, little limestone as above, pyrite, little medium gray shale.
7020-7050	Shale, greenish gray splintery, little medium gray shale.
7050-7090	Shale, greenish gray splintery, little medium gray shale.
7090-7100	Dolomite, light gray to yellow gray, fine grained, large amount of shale as above.
Winnipeg Sand 7098	
7100-7110	Dolomite as above, large amount of shale as above, few coarse quartz grains.
7110-7120	Dolomite as above, large amount of shale as above, little light gray, fine grained sandstone, few coarse quartz grains.
7120-7140	Shale, greenish gray, splintery, little light gray, fine grain sandstone, few coarse quartz grains.
7140-7180	Shale as above, some fine to medium grained, light gray sandstone, few coarse quartz grains, pyrite.
7180-7190	Shale, greenish gray, splintery, large amount of light gray sandstone, fine grained, few coarse quartz grains.
7190-7210	Sandstone, light gray fine grained, pyrite, some shale as above, few coarse quartz grains.
7211	Total Depth.