

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 27

Summary of the Lion Oil Company Sebelius No. 1
Rolette County, North Dakota

By Morton Strassberg
November, 1953

Lion Oil Company-Sebelius No. 1, Rolette County, North Dakota. SE 1/4 NW 1/4 Section 23, T. 161N, R. 73W (1980 feet from N. line, 1980 feet from W. line) Elevation: 1627 feet K. B.

The Lion Oil Seblius No. 1 was spudded June 8, 1952 and 9 5/8 inch casing was set at 403 feet. The well was completed as a dry hole July 7, 1952, and was abandoned. Total depth 5505 feet.

Tests-DST 3310-3384 open 15 minutes, shut in 10 minutes, recovered 1760 feet salt water. F.P. 1000, S.I.P. 1375, H.P. 1800.

Cores - #1 2614-2656
 #2 2656-2707
 #3 2707-2762
 #4 3369-3384
 #5 3543-3553

Fifteen sack cement plugs were set at the following depths: 5353, 4820, 4120, 3310, 2670, 1810, 420, at top of surface casing.

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

Formation Tops

| <u>Formation</u> | <u>Depth</u> |
|-----------------------|--------------|
| Cretaceous System | |
| Niobrara Formation | 1090 |
| Greenhorn Formation | 1488 |
| Belle Fourche-Mowry | 1610 |
| Muddy Zone | 1728 |
| Dakota | 1868 |
| Jurassic System | |
| Morrison Formation | 2043 |
| Sundance Formation | 2142 |
| Piper Formation | 2430 |
| Triassic System | |
| Spearfish Formation | 2633 |
| Mississippian System | |
| Charles Formation | 2653 |
| Lodgepole Formation | 2692 |
| Bakken Formation | 3262 |
| Devonian System | |
| Three Forks Formation | 3287 |

| <u>Formation</u> | <u>Depth</u> |
|------------------------|--------------|
| Nisku Formation | 3302 |
| Duperow Formation | 3388 |
| Souris River Formation | 3761 |
| Dawson Bay Formation | 4000 |
| Prairie Evaporites | 4138 |
| Winnipegosis Formation | 4196 |
| Ashern Formation | 4307 |
| Silurian System | |
| Interlake Group | 4370 |
| Ordovician System | |
| Upper Stony Mtn. | 4598 |
| Lower Stony Mtn | 4686 |
| Red River Formation | 4761 |
| Winnipeg Formation | 5350 |
| Winnipeg Sandstone | 5470 |
| Pre-Cambrian | 5502 |

| <u>From</u> | <u>To</u> | <u>Formation</u> |
|----------------|-----------|---|
| 460 | 540 | Shale, medium gray. |
| 540 | 700 | Shale, medium light gray. |
| 700 | 730 | Shale, medium light gray. |
| 730 | 750 | Shale, medium light to medium gray. |
| 750 | 760 | Shale, same, inoceramus fragments. |
| 760 | 780 | Shale, same, no inoceramus. |
| 780 | 790 | Shale, medium light gray, very light gray micaceous bentonite. |
| 790 | 800 | Shale, medium light gray. |
| 800 | 810 | Shale, same as above, white bentonite. |
| 810 | 820 | Shale, same as above, white, micaceous, bentonite. |
| 820 | 870 | Shale, medium light gray. |
| 870 | 900 | Shale, light gray bentonitic. |
| 900 | 910 | Shale, light to medium dark gray, bentonitic. |
| 910 | 930 | Shale, medium gray, bentonitic. |
| 940 | 990 | Shale, medium gray, bentonitic. |
| 990 | 1050 | Shale, medium gray, white bentonite. |
| 1050 | 1060 | Shale, dark to medium dark gray. |
| 1060 | 1070 | Shale, medium to medium dark gray. |
| 1070 | 1080 | Shale, medium to medium dark gray. |
| 1080 | 1100 | Shale, same as above, bentonitic. |
| Niobrara 1090 | | |
| 1110 | 1160 | Shale, same as above. White bentonite. |
| 1160 | 1320 | Shale, medium to medium dark gray, bentonitic. |
| 1320 | 1420 | Shale, medium dark to dark gray, very bentonitic. |
| 1420 | 1460 | Shale, medium dark gray, bentonitic. |
| 1460 | 1470 | Shale, medium dark to dark gray. Light gray fragmental limestone, made up entirely of calcite prisms. |
| 1470 | 1480 | Shale, medium dark gray, white specks. |
| Greenhorn 1488 | | |
| 1480 | 1500 | Shale, medium dark to dark gray, white specks. Shell fragments. |

| <u>From</u> | <u>To</u> | <u>Formation</u> |
|--------------------------|-----------|--|
| 1500 | 1510 | Shale, medium to medium dark gray. |
| 1510 | 1520 | Shale, medium dark to dark gray. Light gray fragmental limestone. |
| 1520 | 1530 | Shale, medium dark to dark gray. Much shell fragments. |
| 1530 | 1550 | Limestone, fragmental composed entirely of inoceramus shell fragments. Dark gray shale. |
| 1550 | 1570 | Shale, dark gray, little shell fragments. |
| 1570 | 1580 | Shale, same as above, white specks. |
| 1580 | 1600 | Shale, dark gray. White bentonite. |
| 1600 | 1610 | Shale, medium dark to dark, gray. White bentonite. |
| Belle Fourche Mowry 1610 | | |
| 1610 | 1620 | Shale, medium to medium dark gray, white specks. |
| 1620 | 1630 | Shale, same as above, white bentonite. |
| 1630 | 1640 | Shale, medium dark gray. |
| 1640 | 1650 | Shale, medium dark to dark gray, white specks. |
| 1650 | 1690 | Shale, same as above, white bentonite. |
| 1690 | 1740 | Shale, medium dark to dark gray, white specks. |
| Muddy 1728 | | |
| 1740 | 1770 | Shale, medium dark gray. |
| 1770 | 1780 | Shale, same as above, white specks. |
| 1780 | 1810 | Shale, medium dark gray. |
| 1810 | 1830 | Shale, same as above, few white specks. |
| 1820 | 1840 | Shale, medium to medium dark gray, white specks. |
| 1840 | 1850 | Shale, medium dark gray, white specks. |
| 1850 | 1860 | Sandstone, medium to coarse, subrounded, to subangular. Medium dark gray shale, pyrite. |
| 1860 | 1870 | Sandstone, fine grained, subrounded, frosted, calcite cement, few medium subrounded, frosted grains. Medium dark gray shale. |
| Dakota 1868 | | |
| 1870 | 1890 | Sandstone, same as above, pyritic. |
| 1890 | 1900 | Sandstone, light gray, very fine grained, calcareous, fine grained calcareous, and medium to coarse, subrounded, frosted. |
| 1900 | 1910 | Sandstone, fine to medium subrounded to subangular, frosted, little very fine grained. |
| 1910 | 1940 | Sandstone, same as above, pyritic. |
| 1940 | 1980 | Shale, dark gray. Fine to medium grained, subrounded, frosted and very fine, light gray sandstone. |
| 1980 | 1990 | Shale, medium dark gray, fine to very fine grained sandstone. |
| 1990 | 2000 | Shale, same as above, no gypsum. |
| 2000 | 2010 | Shale, same as above, more shale. |
| 2010 | 2020 | Shale, same as above, Very fine grained, light gray, calcareous sandstone. |
| 2020 | 2030 | Sandstone, light gray, very fine grained, calcareous. Little white anhydrite. Medium dark gray shale. |
| 2030 | 2040 | Shale, medium dark gray. Some very fine grained sandstone and anhydrite. |

| <u>From</u> | <u>To</u> | <u>Formation</u> |
|---------------|-----------|---|
| Morrison 2043 | | |
| 2040 | 2060 | Shale, as above, few medium grained subrounded quartz. |
| 2060 | 2070 | Shale as above, light gray, very fine, calcareous sandstone. |
| 2100 | 2110 | Shale, medium dark to dark gray. Very fine grained calcareous sandstone. |
| 2110 | 2130 | Shale as above, light gray bentonite. |
| 2130 | 2150 | Shale, medium dark gray and light gray bentonite. |
| Sundance 2142 | | |
| 2150 | 2160 | Shale, medium dark gray and light gray bentonite. |
| 2160 | 2190 | Shale, medium dark, light gray, and little pale red. |
| 2190 | 2200 | Shale as above, little very fine grained sandstone. |
| 2200 | 2210 | Shale, light to medium light gray. |
| 2210 | 2200 | Shale as above, very fine grained sandstone. |
| 2220 | 2240 | Shale, medium light to medium gray, very fine grained sandstone. |
| 2240 | 2260 | Shale as above, pale red shale. |
| 2260 | 2270 | Shale as above, no sandstone. |
| 2270 | 2280 | Shale, medium to medium dark gray. |
| 2280 | 2290 | Shale, light to medium dark gray. |
| 2290 | 2310 | Shale as above, little pale red. |
| 2310 | 2330 | Shale as above, white anhydrite. |
| 2330 | 2340 | Shale, medium to medium dark and pale red calcareous. |
| 2340 | 2350 | Shale as above, anhydrite and fibrous gypsum. Few medium quartz grains. |
| 2350 | 2360 | Shale, medium to medium dark gray, little pale red calcareous. |
| 2360 | 2370 | Shale as above, free quartz medium grained, subangular, frosted. |
| 2370 | 2400 | Shale as above, more pale red shale. |
| 2400 | 2410 | Shale, medium gray, calcareous and pale red. |
| 2410 | 2430 | Shale as above, fine to medium subrounded frosted quartz grains. |
| Piper 2430 | | |
| 2430 | 2440 | Limestone, white, fine grained, dolomitic, pinpoint porosity. |
| 2440 | 2450 | Limestone as above, little fine grained subangular quartz. |
| 2450 | 2460 | Shale, medium dark gray. White, fine grained limestone and fine subangular quartz grains. |
| 2460 | 2470 | Shale, medium dark and light gray calcareous, white to very light gray dolomitic limestone. |
| 2470 | 2490 | Shale, dark gray. White gypsum and light olive gray limestone. |
| 2490 | 2510 | Limestone, white, fine grained dense. Medium dark gray shale. |
| 2510 | 2550 | Limestone, white, fine grained, dense. Medium gray shale. |
| 2550 | 2560 | Limestone, white to very light gray, sublithographic, medium gray shale. |

| <u>From</u> | <u>To</u> | <u>Formation</u> |
|----------------|-----------|--|
| 2560 | 2570 | Shale, medium to medium dark gray and pale red, calcareous. White to light gray limestone. |
| 2570 | 2590 | Shale as above, white aragonite. |
| 2590 | 2600 | Shale as above, considerable white aragonite. |
| 2600 | 2614 | Aragonite, white. Pale brown and medium dark gray shale. |
| Core 1 | | |
| 2618 | 2625 | Dolomite, very light to light gray, argillaceous, fine grained, dense. |
| 2625 | 2630 | Shale, light gray with medium gray streaks, calcareous. |
| | | White aragonite. |
| 2630 | 2633 | Aragonite, white to light gray. |
| Spearfish 2633 | | |
| 2633 | 2637 | Shale, medium light gray, massive. |
| 2637 | 2638 | Aragonite, white to medium gray. Greenish gray massive shale. |
| 2638 | 2639 1/2 | Aragonite, white. |
| 2639 1/2 | 2643 | Aragonite, white to medium light gray. |
| 2644 | 2656 | Shale, light brownish gray and white aragonite. |
| Charles 2653 | | |
| Core 2 | | |
| 2656 | 2662 | Aragonite, white to pinkish gray. |
| 2662 | 2664 | Aragonite, white and medium to pink gray. |
| 2664 | 2671 | Aragonite, white to light gray. |
| 2671 | 2675 | Limestone, yellow to pinkish gray dense, tight. |
| 2675 | 2686 | Limestone, light brownish gray. Fine grained dense tight, argillaceous. |
| 2686 | 2692 | Limestone, light brownish gray and medium light gray variegated, argillaceous, tight. |
| Lodgepole 2692 | | |
| 2692 | 2107 | Limestone, pinkish gray, fine grained, tight. |
| 2707 | 2717 | Limestone, pinkish gray to light gray variegated, fine grained, tight. |
| Core 3 | | |
| 2717 | 2720 | Limestone, pinkish gray, fine grained, tight. |
| 2720 | 2728 | Limestone, pinkish gray, pseudo-oolitic, interstitial porosity. |
| 2728 | 2740 | Limestone, light brownish gray, fragmental, pinpoint porosity and light brownish gray fine grained tight argillaceous. |
| 2740 | 2752 | Limestone, variegated light gray and dusky red argillaceous, fine grained, tight. |
| 2752 | 2762 | Limestone, pinkish gray, medium to coarse grained, clastic, vuggy. |
| 2762 | 2800 | Limestone, same as above, pinpoint and interstitial porosity. |

| <u>From</u> | <u>To</u> | <u>Formation</u> |
|-------------|-----------|--|
| 2800 | 2850 | Limestone, light brownish to pinkish gray, fine to medium grained, interstitial porosity, clastic. |
| 2850 | 2890 | Limestone, pinkish gray, fine to medium grained, interstitial porosity, clastic. |
| 2890 | 2910 | Limestone, white to very light gray oolitic, intergranular porosity. |
| 2910 | 2920 | Limestone, same as above, some clastic limestone. |
| 2920 | 2942 | Limestone, same as above, iron stained. |
| 2940 | 2980 | Limestone, pinkish gray, medium grained, clastic interstitial porosity. |
| 2980 | 3040 | Limestone, light gray, medium grained, clastic, pinpoint porosity. |
| 3040 | 3080 | Limestone, light to medium light gray, fine grained, pinpoint porosity. |
| 3080 | 3110 | Limestone, very light to light gray, fine grained, pinpoint porosity. Medium gray shale. |
| 3110 | 3140 | Limestone, light gray, fine grained, dense. |
| 3140 | 3160 | Limestone, light gray fine grained. Some medium gray, fine grained, dense dolomite. |
| 3160 | 3170 | Limestone, light gray fine grained, dense. |
| 3170 | 3210 | Limestone, very light gray, fine grained. |
| 3210 | 3220 | Limestone, same as above. Medium gray fine grained dense dolomite. |
| 3220 | 3240 | Limestone, same as above, less dolomite. |
| 3240 | 3250 | Limestone, light to medium light gray, fine grained, dense. |
| 3250 | 3260 | Limestone, same as above, considerable, medium dark gray shale. |
| 3260 | 3270 | Shale, medium dark gray, medium light gray, fine grained limestone. |
| Bakken 3262 | | |
| 3270 | 3300 | Dolomite, light gray, fine grained, pinpoint porosity. |
| Three Forks | | |
| 3300 | 3310 | Dolomite, very light gray, fine grained, pinpoint porosity. |
| Nisku 3302 | | |
| 3310 | 3330 | Limestone very light to light gray, fine to medium grained, pinpoint porosity. |
| 3330 | 3340 | Dolomite, pale yellowish brown, fine grained, sucrosic, interstitial porosity. |
| Core 5 | | |
| 3343 | 3353 | Limestone, very light to light gray, fine grained, pinpoint porosity. |
| 3360 | 3370 | Limestone, pale yellowish brown, sucrosic, dolomitic. |
| Core 4 | | |
| 3369 | 3384 | Limestone, yellowish gray, fine grained, pinpoint porosity. |

| <u>From</u> | <u>To</u> | <u>Formation</u> |
|-------------------|-----------|--|
| Duperow 3388 | | |
| 3382 | 3390 | Dolomite, light gray fine grained and pale yellowish brown sucrosic. |
| 3390 | 3400 | Dolomite, grayish orange pink, fine grained. |
| 3400 | 3410 | Dolomite, white sucrosic to pale red argillaceous medium dark gray shale. |
| 3410 | 3420 | Dolomite, white to very light gray fine grained. |
| 3420 | 3430 | Dolomite, light gray, fine grained, some pinpoint porosity. |
| 3430 | 3440 | Limestone, light gray, fine grained. |
| 3440 | 3450 | Dolomite, light gray fine grained dense. |
| 3450 | 3460 | Limestone, pale yellowish brown, fine to medium grained. |
| 3460 | 3480 | Limestone, white to very light gray fine grained dense to finely granular. |
| 3480 | 3520 | Limestone, very light gray to pinkish gray, finely granular pinpoint porosity. |
| 3520 | 3530 | Limestone, white to very light gray, fine grained porous. |
| 3530 | 3540 | Dolomite, light gray, fine grained, sucrosic, interstitial porosity. Very light gray fine grained limestone. |
| 3540 | 3560 | Dolomite, pale red, sucrosic, interstitial porosity. |
| 3560 | 3570 | Limestone, white to very light gray, fine grained, some pinpoint porosity. Yellowish gray sucrosic dolomite. |
| 3570 | 3600 | Limestone, moderate yellowish brown, sucrosic, dolomitic interstitial porosity. |
| 3600 | 3630 | Dolomite, pale yellowish brown, fine grained, sucrosic interstitial porosity. |
| 3630 | 3680 | Limestone white, fine grained, dense. |
| 3680 | 3690 | Limestone, white to very light gray, fine grained, very porous. |
| 3690 | 3700 | Dolomite, light gray, fine grained, calcareous, very porous. |
| 3700 | 3750 | Limestone, white, fine grained, pinpoint porosity. |
| 3750 | 3760 | Dolomite, light gray, sucrosic, interstitial porosity. |
| Souris River 3761 | | |
| 3760 | 3770 | Dolomite, same as above, white, fine grained limestone. |
| 3770 | 3790 | Limestone, white, fine grained, dense. |
| 3790 | 3800 | Limestone, light gray, fine grained, dense. |
| 3800 | 3820 | Dolomite, yellowish gray, finely granular, pinpoint porosity. |
| 3820 | 3830 | Limestone, very light gray, fine grained, dolomitic. |
| 3830 | 3840 | Dolomite, very light to light gray. |
| 3840 | 3850 | Dolomite, yellowish gray, fine grained, sucrosic, interstitial porosity. |
| 3850 | 3860 | Limestone, very light gray, fine grained. Some light gray fine grained dolomite. |
| 3860 | 3870 | Dolomite, light gray, fine grained. |

| <u>From</u> | <u>To</u> | <u>Formation</u> |
|-------------------------|-----------|--|
| 3870 | 3880 | Limestone, light gray, fine grained. Some light gray fine grained dolomite. |
| 3880 | 3890 | Limestone, light grey, fine grained. |
| 3890 | 3900 | Limestone, same as above, white anhydrite. |
| 3900 | 3910 | Dolomite, yellowish gray, fine grained, dense. |
| 3910 | 3920 | Dolomite, yellowish gray, fine grained, sucrosic. |
| 3920 | 3930 | Dolomite, very light to light gray, fine grained. |
| 3930 | 3940 | Dolomite, light olive gray, fine grained, pinpoint porosity. |
| 3940 | 3970 | Dolomite, same as above, some light gray fine grained dolomite. |
| 3970 | 3990 | Dolomite, same as above, some light gray fine grained limestone. |
| 3990 | 4000 | Limestone, very light gray, fine grained, dense. Light gray, finely granular, dolomite with pinpoint porosity. |
| Dawson Bay 4000 | | |
| 4000 | 4010 | Limestone, white, sublithographic, dense. |
| 4010 | 4020 | Limestone, same as above, yellowish gray finely granular dolomite. |
| 4020 | 4030 | Limestone, same as above, more dolomite. |
| 4030 | 4050 | Dolomite, pale yellowish brown, sucrosic, interstitial porosity. |
| 4050 | 4080 | Dolomite, pale yellowish brown, sucrosic, interstitial porosity. |
| 4080 | 4100 | Dolomite, light olive gray, fine grained, pinpoint porosity. |
| 4100 | 4140 | Limestone, very light to light gray, fine grained, dense. |
| Prairie Evaporites 4138 | | |
| 4140 | 4150 | Dolomite, pinkish gray, fine grained, argillaceous. |
| 4150 | 4170 | Dolomite, light brown, fine grained, argillaceous. |
| 4170 | 4180 | Dolomite, light to medium light gray, fine grained. |
| 4180 | 4190 | Dolomite, same as above, white anhydrite. |
| Winnipegosis 4196 | | |
| 4190 | 4200 | Dolomite, very light gray, fine grained dense to light gray, finely granular, pinpoint porosity. |
| 4200 | 4230 | Dolomite, light brownish gray, fine grained, sucrosic, interstitial porosity. |
| 4230 | 4340 | Limestone, light olive gray, fine grained, pinpoint porosity. |
| 4240 | 4250 | Limestone, yellowish gray, fine grained, pinpoint porosity. |
| 4250 | 4290 | Limestone, light gray, fine grained dense. |
| 4290 | 4310 | Limestone, very light to light gray, fine grained dense. |
| Ashern 4307 | | |
| 4310 | 4320 | Dolomite, light gray, fine grained, dense. |

| <u>From</u> | <u>To</u> | <u>Formation</u> |
|-----------------------|-----------|---|
| 4320 | 4330 | Limestone, light gray, fine grained, dense. |
| 4330 | 4340 | Limestone, light brown, argillaceous, fine grained. |
| 4340 | 4350 | Limestone, same as above, medium dark gray shale. |
| 4350 | 4390 | Limestone, pale red, fine grained, argillaceous, medium gray shale. |
| Interlake 4370 | | |
| 4390 | 4410 | Limestone, pinkish gray, sublithographic. |
| 4410 | 4420 | Limestone, white, fine grained, sublithographic. |
| 4420 | 4440 | Limestone, white to pinkish gray, sublithographic to fine grained. |
| 4440 | 4450 | Dolomite, white to pinkish gray, fine grained. |
| 4450 | 4470 | Dolomite, same as above, white sublithographic limestone. |
| 4470 | 4480 | Limestone, white, sublithographic. |
| 4480 | 4520 | Dolomite, white, fine grained, dense. |
| 4520 | 4540 | Limestone, white, sublithographic. |
| 4550 | 4570 | Dolomite, white, fine grained dense. |
| 4570 | 4580 | Dolomite, moderate orange pink, fine grained dense. |
| 4580 | 4600 | Dolomite, white, fine grained, dense. |
| Upper Stony Mtn. 4598 | | |
| 4600 | 4610 | Dolomite, white, iron stained mottled, fine grained, dense. |
| 4610 | 4640 | Dolomite, white iron stained, fine grained, dense. |
| 4640 | 4670 | Dolomite, white, fine grained, dense. |
| Lower Stony Mtn. 4686 | | |
| 4670 | 4700 | Dolomite, light gray, finely granular. |
| 4700 | 4750 | Limestone, light to medium light gray. |
| 4750 | 4760 | Limestone, same as above, medium dark gray shale. |
| Red River 4761 | | |
| 4760 | 4770 | Limestone, very light to light gray, fine grained dense. |
| 4770 | 4790 | Limestone, same as above, medium gray shale. |
| 4790 | 4820 | Limestone, very light gray, fine grained dense. |
| 4820 | 4830 | Dolomite, white, sublithographic. |
| 4830 | 4840 | Dolomite, white, sublithpgraphic. |
| 4840 | 4850 | Dolomite, same as above, some light gray dolomite. |
| 4850 | 4870 | Dolomite, very light to light gray, fine grained, dense. |
| 4870 | 4880 | Limestone, very light gray, fine grained dense. Light gray fine grained dolomite. |
| 4880 | 4970 | Limestone, white to very light, fine grained, dense. |
| 4970 | 5030 | Limestone, very light gray fine grained dense and medium light gray, fine grained, dolomitic. |
| 5030 | 5110 | Limestone, white to very light gray fine grained dense and light gray, finely granular. |
| 5110 | 5130 | Limestone, white to very light gray fine grained. |
| 5130 | 5150 | Limestone, same as above and light gray, finely granular, dolomitic. |

| <u>From</u> | <u>To</u> | <u>Formation</u> |
|--------------------|-----------|---|
| 5150 | 5160 | Limestone, same as above, medium dark gray shale. |
| 5160 | 5250 | Limestone, white to very light gray dense. |
| 5250 | 5270 | Limestone, white to light gray, fine grained, dense. Light gray fine grained dense dolomite. |
| 5270 | 5300 | Limestone, white to light gray, fine grained, dense. |
| 5300 | 5310 | Limestone, white to light gray fine grained. |
| 5310 | 5320 | Shale, medium dark gray and olive gray. Fine to medium grained, subrounded to subangular, frosted sandstone. |
| 5320 | 5340 | Limestone, very light to light gray fine grained. |
| 5340 | 5350 | Limestone, same as above. Much medium gray shale. |
| Winnipeg 5350 | | |
| 5350 | 5370 | Shale, dark greenish gray and olive gray. Light gray, fine grained limestone and pyrite. |
| 5370 | 5380 | Shale, same as above. No limestone and pyrite. |
| 5380 | 5390 | Shale, dark greenish gray. |
| 5390 | 5400 | Shale, dark greenish gray and gray red. |
| 5400 | 5410 | Shale, same as above, mostly gray red. |
| 5410 | 5440 | Shale, dark greenish gray and olive gray. |
| 5440 | 5450 | Shale, dark greenish gray and olive gray. |
| 5450 | 5470 | Shale, dark greenish gray and brown gray. |
| Winnipeg Sand 5470 | | |
| 5470 | 5500 | Sandstone, fine to medium grained subrounded, frosted iron stained. |
| Pre-Cambrian 5502 | | |
| 5500 | 5510 | Sandstone, same as above. Pink granite. |