The Sinclair Oil and Gas Co., #1 Joe Muecke is located in the SE 1/4, NE 1/4, Sec. 29, T. 140N., R. 94W., Stark County, North Dakota. Elevation K.B. 2427; G.L. 2417.

The well was spudded July 17, 1958 and drilled to a depth of 11,080 feet, plugged and abandoned as a dry hole on October 5, 1958.

DST #1; 7488'-7510'. Tool plugged, prepare to rerun test.

DST #2; 7493'-7510'. Tool open 3 hours, no blow or recovery. 1 hour IBHSIP 10#. BHFP 10#. 2 hour FBHSIP 10#.

DST #3; 8440'-8488'. Tool open 3 hours, air immediately, very weak blow and died in 1 minute. Recovered 435' of mud cut salt water with no show. 1 hour IBHFP 3917#. BHFP 71# to 269#. 3 hour FBHSIP 3577#.

DST #4; 8487'-8534'. Tool open 3 hours, air immediately, weak blow throughout test. Recovered 364' of gas and mud cut salt water and 273' of black salty sulphur water. IBHSIP after 1 hour, 3917#. BHFP 54# to 341#. FBHSIP after 3 hours 3631#.

Casing Record:
30 feet of 24 inch surface casing cemented 2 yards.
722 feet of 13 3/8 inch surface casing cemented in with 575 sacks.

Core Record:
1. 8433'-58', recovered 25 feet.
2. 8458'-88', recovered 30 feet.
3. 8488'-8534', recovered 46 feet.
4. 8534'-73', recovered 39 feet.
5. 8646'-8692.5', recovered 46.5 feet.

Logs Run:
Laterolog-gamma ray, microlaterolog, (Schlumberger)

Plugging Record:
25 sacks of cement at 10,950'.
25 sacks of cement at 9,830'.
25 sacks of cement at 8,342'.
25 sacks of cement at 7,525'.
25 sacks of cement at 6,780'.
25 sacks of cement at 5,280'.

Washed plug at 725'. Replugged at 725' with 25 sacks cement and capped well with 10 sacks cement in top of surface casing. Surface casing was cut off well below planing depth.
Formation tops were determined from samples and mechanical logs. Not all formation tops were picked, colors and identifying numbers are taken from the Rock-Color Chart distributed by the Geological Society of America.

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<td><strong>T. D. 11,080 feet.</strong></td>
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0-60 Lignite, dark gray to black.

60-390 Lignite, brownish-gray to vitreous black, common impurities.

390-420 Lignite, brownish gray to black, abundant quartz sand grains.

420-660 Lignite, black, impure, abundant clay aggregates, slightly calcareous.

660-720 Lignite, brownish black to black, vitreous.

730-850 Sandstone, light greenish gray (5GY8/1), fine grained, silty, calcareous, quartz grains.

850-940 Sandstone, light greenish gray, (5GY8/1) fine grained, impure, common lignite brownish black.
940-980 Lignite, brownish black, abundant clay aggregates, slightly calcareous, spongy.
980-1010 Claystone, light greenish gray (5GY8/1), abundant lignite black.
1010-1050 Sandstone, light greenish gray (5GY8/1), fine to medium grained, poorly cemented, slightly calcareous.
1050-1350 Shale, light greenish gray (5GY8/1), impure, micaceous, rare lignite black, common quartz sand grains, some pyrite amorphous.
1350-1500 Sandstone, light olive gray to light greenish gray (5GY8/1), fine to medium grained, well cemented, calcareous; abundant shale as above.
1500-1530 Shale, olive gray to greenish gray (5GY6/1), lightly calcareous, spongy, partly silty.
1530-2100 Sandstone, greenish gray, fine to medium grained, calcareous, shaly, poorly cemented, common lignite, black.

Pierre 2110
2100-2370 Shale, light olive gray (5Y6/1), abundant sandstone as above.
2370-2400 Siltstone, greenish gray (5GY6/1), slightly calcareous, common shale olive gray, and lignite black.
2400-2490 Shale, light olive gray (5Y6/1), silty, spongy, micaceous, slightly calcareous, common lignite.
2490-2730 Shale, light greenish gray (5GY8/1), compact, clayey.
2730-2760 Shale, as above, common micaceous black shale, soft.
2760-3010 Shale, light greenish gray (5GY8/1) slightly silty and calcareous, impure, rare quartz sand grains, pyrite, shell fragments, gypsum.
3010-3050 Shale, as above, abundant sandstone, very light gray (N8), well cemented, medium hard, slightly calcareous, fine to medium grained.
3070-3550 Shale, light olive gray (5Y6/1), silty, spongy, slightly calcareous, shell fragments.
3550-3780 Shale, light olive gray (5Y6/1), silty, abundant sandstone, very light gray (N8), well cemented, rare pyrite, quartz sand grains, lignite, Nodosaria specie.

Niobrara 3795
3780-4110 Shale, greenish gray to medium light gray (N6), splintery, slightly calcareous, common “white specks” common sandstone, very light gray (N8).
4110-4380 Shale, light olive gray (5Y6/1), soft, “white specks”, other impurities, slightly calcareous, rare calcite prisms.

Greenhorn 4392
4380-4500 Shale, light olive gray to medium light gray (N6) soft, slightly calcareous, common white, calcareous specks, Inoceramus prisms, rare limestone light brownish gray (5Y4/1).
4500-4530 Shale, medium light gray (N6), calcareous, common limestone light brownish gray (5YR4/1), abundant white calcareous specks, calcite prisms.
4530-4620 Limestone, light brownish gray (5YR4/1), fine to medium grained, abundant shale medium light gray (N6), calcareous, common white specks, calcite prisms.
4620-4790 Shale, greenish gray to medium gray (N5), calcareous, common limestone, brownish gray (5YR4/1), calcite prisms, common white specks.
4790-4800  Shale, same as above, rare limestone, rare white specks, common calcite prisms, sandstone, light olive gray (5Y6/1), medium grained, poorly cemented.

Belle-Fourche-Mowry 4800
4800-4940  Shale, grayish black to black (N1), fissile, and some shale olive gray (5Y4/1), calcareous, few calcite prisms, rare white specks.

Newcastle 4937
4940-4950  Shale, as above.
4950-4980  Shale, black, fissile, compact.
4980-5070  Shale, as above, some sandstone, white, fine to medium grained, poorly cemented, abundant clay aggregates.
5070-5080  Shale, grayish black to black (N1), and light olive gray (5Y6/1), abundant clay aggregates.
5080-5250  Shale, black, fissile, compact, rare sandstone, white, fine grained, poorly cemented.

Fall River 5250
5250-5290  Shale, medium gray (N5), splintery, soft, partly calcareous.
5290-5330  Shale, black, fissile, compact, and sandstone, white, fine to medium grained, some shale, medium gray (N5), soft, slightly calcareous, rare lignite.
5330-5440  Shale, as above, and sandstone, moderate red (5R4/6), some white, fine to medium grained, well cemented, rare glauconitic green sandstone.
5440-5450  Shale, light medium gray to dark gray (N6-N3), splintery, and sandstone, white to pale red (5R6/2), fine to medium grained, well cemented, common quartz sand grains.
5455  Circulation
5450-5480  Shale, and sandstone, as above.
5480-5500  Shale, dark gray (N6), soft, splintery.
5500-5510  Shale as above, rare sandstone, white.
5510-5576  Shale, dark gray (N6) and black (N1), fissile, little sandstone, white to pale red (5R6/2), fine grained, well cemented.

Morrison 5576
5576-5760  Shale, light medium gray to dark gray (N6), soft and sandstone, white to pale red (5R6/2), to varicolored, and siltstone, pale red (10R6/2), well cemented, common loose quartz sand grains, rare calcite prisms.
5760-5790  Shale, medium gray (N5), soft, slightly calcareous and very little sandstone as above, common pyrite, amorphous.
5790-5840  Shale, greenish gray (5GY6/1), soft, and some sandstone, dusky red (5R3/4), ferruginous, well cemented, medium grained, rare calcite prisms.
5840-5890  Shale, greenish gray to dark gray, soft, to compact, and sandstone, pale reddish brown 10R5/4, medium grained, well cemented.
5890-5940  Sandstone, grayish pink (5R8/2) to light red (5R6/6), fine to medium grained, well cemented, and shale, greenish gray (5GY6/1), soft.
5940-5980  Shale, greenish gray to dark gray (N6), soft to compact, and sandstone, pale red (5R6/2), medium grained, well cemented, slightly calcareous.
5980-6100 Sandstone, white to pale red (5R6/2), medium grained, well cemented, and shale as above.
6100-6130 Sandstone, as above, slightly calcareous and shale, greenish gray to dark gray, soft, calcareous, little limestone, white with red specks, rare dolomite, light brownish gray (5YR6/1).
6130-6200 Shale, medium light gray to medium gray (N5), and limestone, pale yellowish brown (10YR6/2), oolitic, rare pyrite, amorphous, quartz grains, common sandstone, white to pale red (5R6/2), rare anhydrite.
6200-6240 Limestone, light olive gray (5Y6/1), dense, some oolitic, and shale medium gray, common sandstone, pale red as above, common Inoceramus calcite prisms.
6240-6250 Sandstone, white to pale red (5R6/2), medium grained, well cemented, calcareous, and shale, dark gray (N6), soft, some limestone, light olive gray (5Y6/1), dense.
6250-6320 Shale, medium gray (N5), slightly calcareous, soft, and sandstone as above, little limestone.
6317 Circulation
6320-6370 Shale, as above, and sandstone pale red, some limestone, light olive gray (5Y/1), dense, rare anhydrite grains.

Piper Limestone 6334
6370-6380 Limestone, white, crystalline, sucrosic, some shale medium gray (N5), soft, calcareous, common chert, white, smooth.
6380-6410 Shale, medium gray (N5), soft, some limestone as above.
6410-6440 Limestone, pinkish gray (5YR8/1) fine crystalline, dense, and shale, medium gray (N5), some sandstone, pale reddish brown (10R5/4), fine grained, calcareous.
6440-6490 Shale, medium gray (N5), and limestone as above.
6490 Circulation.
6490-6550 Shale, medium gray (N5), and dolomitic limestone pale reddish brown (10R5/4), little limestone, light brownish gray (5YR6/1).
6550-6580 Shale, dark gray to black, and limestone pale red (10R6/2) to moderate red (5R4/6) to white, medium to coarse crystalline, porous, some calcite prisms, rare sandstone, pale red (10R6/2).

Spearfish ? 6580
6580-6600 Limestone, pale red to moderate red as above, and shale, dark gray (N6), some sandstone, white, fine grained, abundant quartz sand, subrounded.
6600-6650 Shale, greenish gray to dark gray (N6), medium hard, and sandstone, moderate red (5R4/6), fine grained, well cemented, calcareous, some limestone, pale red (10R6/2), dense, hard, quartz grains, rounded, common chert.
6650 Circulation
6650-6660 Same as above.
6660-6730 Sandstone, moderate red (5R4/6), fine grained, slightly calcareous, and limestone, pale red (10R6/2), dense, little shale, medium gray (N5), medium hard.

Minnekahta 6733
6730-6775 Same as above, common calcite prisms.
Opechee 6775
6775-6800 Limestone, white to light red (5R6/6), sublithographic, chalky, and sandstone, moderate red (5R4/6), fine grained, some shale, medium gray (N5), common quartz, angular, clear.

6800-6850 Limestone, white to moderate orange pink (10R7/4), chalky, and shale, dark gray (N6), abundant siltstone, moderate red (5R4/6), medium grained, poorly cemented, common gypsum, white, soft.

6850-6870 Siltstone, moderate red (5R4/6), medium grained, calcareous, and limestone as above, some shale, dark gray (N6).

Minnelusa 6876
6870-6920 Shale, greenish gray to medium gray (N5), soft, some siltstone and limestone as above, common gypsum, rare quartz grains, rounded.

6920-6930 Shale, same as above, abundant siltstone, moderate red (5R4/6), medium grained, calcareous, common limestone, pink, soft, rare gypsum, clear, common quartz grains, rounded.

6930-6950 Limestone, white to pale red (5R6/2), medium to coarse, dense to porous, abundant shale, medium gray (N5), some siltstone, moderate red (5R4/6), medium grained, common quartz grains.

6950-6975 Limestone, as above, abundant sandstone, pale red (5R6/2), medium grained, calcareous, little shale, medium gray (N5).

6975-7010 Sandstone and limestone, same as above, very little shale, quartz grains, rounded, rare chert, smooth.

7010-7025 Same as above.

Amsden 7055
7055-7070 Same as above.

7070-7090 Limestone, very light gray (N8), to pale red (5R6/2), coarse crystalline, shale, medium gray, and sandstone, moderate reddish brown to white, common quartz grains.

7090-7110 Shale, medium gray (N5) to dusky red (5R3/4), some limestone and sandstone as above, common chert, milky, smooth.

7110-7125 Shale, medium gray (N5) to dusky red (5R3/4), little limestone, pale red (5R6/2) to very light gray (N8), common chert, rare sandstone, white, fine grained.

7125-7135 Shale, medium light gray (N6), limestone, pale red (5R6/2), dense, common halite, clear.

7135-7140 Shale, greenish gray to medium gray (N5), and limestone, pale red (10R6/2), dense, crystalline.

7140-7155 Limestone, moderate pink (5R7/4), to pale red (5R6/2), to pale brown (5YR5/2) and shale, medium gray, (N5).

7155-7162 Circulation

7162-7190 Limestone grayish pink (5R8/2), crystalline, dense, shale, medium gray (N5), soft, slightly calcareous chert, milky, rare sandstone, white to pale red.
Limestone, pale brown (5YR5/2), dense, common dolomite, grayish pink (5R8/2), cryptocrystalline, some shale, medium gray (N5), soft, little sandstone, white, fine grained, poorly cemented.

Shale, medium gray (N5), to dusky red (5R3/4), soft, slightly calcareous, little limestone and dolomite as above.

Limestone, grayish pink (5R8/2), dense, dolomite, moderate pink (5R7/4), hard, sandstone, white, fine grained, calcareous, and shale, medium gray (N5).

Circulation.

Shale, medium gray to dusky red (5R3/4), soft, calcareous, limestone as above, common sandstone, white.

Shale, greenish gray to medium gray, sandstone, white to grayish pink (5R8/2), some limestone and dolomite as above.

Circulation.

Limestone, white to grayish pink (5R8/2), to light brownish gray (5YR6/1), chalky to dense, some shale, dark gray (N6), soft, common quartz grains.

Shale, greenish gray to dark gray, soft, slightly calcareous, limestone as above, common sandstone, white, fine grained.

Limestone, white to grayish pink (5R8/2), dense, some shale, dark gray (N6) to dusky red (5R3/4), soft, abundant sandstone, white to moderate pink (5R7/4), fine grained, poorly cemented, common chert, smooth, chalcedonic.

Circulation.

Same as above.

Circulation.

Limestone, light brownish gray (5YR6/1), to grayish pink (5R8/2), dense, shale, dark gray (N6), soft, slightly calcareous.

Circulation.

Limestone, light olive gray (5Y6/1) to pinkish gray (5YR8/1), dense, cryptocrystalline.

Circulation.

Same as above, ostracods, common quartz grains, rounded.

Circulation.

Limestone, light olive gray (5Y6/1), sandstone, white to pinkish gray (5YR8/1), fine grained, poorly cemented, calcareous, quartz sand grains, rounded, rare shale, dark gray (N6).

Big Snowy Group 7525

Same as above.

Limestone, light olive gray (5Y6/1) fine crystalline, dense, little shale dark gray, rare sandstone, white, fine grained, rare quartz grains.

Circulation.

Limestone same as above, abundant sandstone, white to very light gray (N8), fine grained, well cemented, calcareous, little shale, dark gray.

Limestone, light olive gray (5Y6/1), dense, abundant shale, dark gray (N3), soft, little sandstone, common quartz grains, rounded.
Shale, dark gray (N3), soft, slightly calcareous, common limestone, light olive gray (5Y6/1), dense, little sandstone white to light bluish gray (5B7/1), fine grained.

Circulation.

Limestone, light olive gray to grayish green (10GY5/2), dense, shale dark gray (N3), soft, and sandstone, white poorly cemented, quartz sand grains, rounded.

Shale, dark gray (N3), splintery, limestone and sandstone as above.

Limestone, light olive gray to grayish green (10GY5/2), to dark greenish gray (5GY4/1), dense, coarse crystalline to cryptocrystalline, little shale, dark gray (N3) to moderate red (5R4/6), soft.

Circulation.

Limestone and shale as above.

Limestone and shale as above, common sandstone, pale reddish brown (10R5/4), fine grained, poorly cemented, common quartz grains, subrounded.

Sandstone, pale reddish brown (10R5/4), fine grained, slightly calcareous, little limestone, light olive gray (5Y6/1), and shale dark gray (N3) to moderate yellow green (5GY7/4).

Shale, greenish gray (5G6/1) to medium gray (N5), soft, sandstone and limestone as above.

Sandstone, pale reddish brown (10R5/4), fine to medium grained, slightly calcareous, shale as above quartz grains, frosted, subrounded.

Limestone, very light gray (N8) to light greenish gray (5GY8/1), coarse crystalline, sandstone as above, little shale medium gray.

Circulation.

Same as above.

Shale, greenish gray (5GY8/1), to medium gray (N5), soft, slightly calcareous, some limestone and sandstone as above.

Limestone, moderate reddish brown (10R4/6), coarse crystalline, silty, little sandstone, pale reddish brown (10R5/4), fine to medium grained, common shale, medium gray (N5), soft.

Circulation.

Same as above.

Limestone, moderate reddish brown (10R4/6), coarse crystalline, dolomitic, silty, partly oolitic, little sandstone, white to bluish white (5B9/1), fine to medium grained, calcareous, shale, medium gray (N5), soft.

Same as above, little anhydrite, moderate reddish orange (10R6/6) and selenite, clear, euhedral, little dolomite, pale red (5R6/2), dense.

Limestone, moderate reddish brown (10R4/6) to dark yellowish brown (10YR4/2) coarse crystalline, silty, slightly dolomitic, dense to oolitic, sandstone, pale red (10R6/2), fine to medium grained, little shale, common anhydrite, quartz grains.
8095-8125 Limestone, light bluish gray (5B7/1), dense to oolitic, fine crystalline, dolomitic, silty, little anhydrite, white.

8121 Circulation.
8125-8170 Same as above.
8170-8240 Limestone, light bluish gray (5B7/1) to dark yellowish brown (10YR4/2) fine to medium, dense to porous, oolitic in part, common anhydrite, white, common shale, dark brown (N3) to moderate red (5R4/6), soft, slightly calcareous.

8238 Circulation.
8240-8255 Same as above.
8255-8280 Limestone, very light gray (N5) to light olive gray (5Y6/1), fine, dense, dolomitic, anhydrite, white to very light gray, soft, little shale, dark gray (N3).

8280-8300 Limestone, same as above, fluorescent, slight cut with CCl₄, little anhydrite and shale as above.
8300-8360 Limestone, very light gray (N8), coarse, to very fine, sucrosic, pinpoint porosity, dolomitic to calcitic, little shale dark gray (N3), splintery, common anhydrite, white, abundant halite, clear, euhedral.
8360-8370 Halite, euhedral and rock salt, common anhydrite.
8370-8375 Limestone, very light gray (N8), fine to coarse, little shale, gray, anhydrite, white.

8376 Circulation.
8375-8395 Limestone, very light gray, fine to coarse, common shale, gray to greenish gray, soft, anhydrite, white.
8395-8400 Shale, greenish gray to medium gray (P5), soft limestone, very light gray (N8), common anhydrite.
8400-8410 Anhydrite, very light gray (N8) to light greenish gray (5GY8/1), soft.
8410-8430 Limestone, light olive gray (5Y6/1), dense, anhydrite, same as above.

Core #1
8433-8441 Anhydrite, light olive gray (5Y6/1), soft, calcareous.
8441-8444 Limestone, pale brown (5YR5/2), very fine crystalline, dense.
8444-8446 Dolomite, very light gray (N8), dense.
8446-8448 Anhydrite, white, soft, good fluorescence, slight cut with CCl₄.
8448-8449 Anhydrite, pale red (10R6/2), slight fluorescence, no cut, limestone, pale brown (5YR5/2), subcrystalline.
8449-8450 Limestone, same as above.

Core #2
8450-8453 Limestone, pale brown (10R6/2), very fine crystalline sucrosic, hard.
8453-8462 Anhydrite, light gray (N7), soft, slightly calcareous.
8462-8466 Limestone, pale brown (5YR5/2), very fine crystalline, dense.
8466-8472 Anhydrite, white to very light gray (N8), soft.
8472-8487 Limestone, pale brown (5YR5/2), sucrosic, calcitic, Spirifer ? fragments.
8487-8488 Anhydrite, light gray (N7), soft, calcareous.

Core #3
8488-8489 Limestone, dark gray (N3), very fine crystalline, dense, good cut, banding.
Anhydrite, pale brown (10R6/2), soft, calcareous.
Limestone, light olive gray (5Y6/1), soft, sucrosic, anhydritic, fossiliferous.
Limestone, light olive gray (5Y6/1), fine to very fine, sucrosic, anhydritic, styolites, fossiliferous, good cut.
Anhydrite, light brownish gray (5YR6/1), soft, calcareous.
Limestone, grayish black (N2), fine to medium crystalline, shaly, styolites, anhydritic, good cut, some anhydrite as above.
Anhydrite, light brownish gray (5YR6/1), soft, calcareous.
Limestone, light gray (N7), medium, grainy, anhydritic.
Limestone, same as above, good cut, suboolitic.

"Nesson" zone 8520
Limestone, olive gray (5Y4/1), subcrystalline, dense, good cut.
Limestone, medium light gray (N6), fine to medium, dense, fluorescent, no cut.
Anhydrite, white, medium hard.
Limestone, very light gray (N8), medium crystalline grainy, slight cut.
Limestone, dusky yellowish brown (10YR2/2), subcrystalline, dense, calcitic, slight cut.
Anhydrite, pale brown (10R6/2), medium hard, slightly calcareous.
Limestone, light brownish gray (5YR6/1), slight cut.

Core #4
Anhydrite, medium gray (N5), hard, dense.
Limestone, pale brown, medium, grainy, shows banding, anhydritic, slight cut.
Anhydrite, medium gray (N5), hard, dense.
Limestone, pale brown, subcrystalline, dense, anhydrite inclusions.
Anhydrite, very light gray (N8) to medium gray (N5), to dark gray (N3), dense, hard, breaks with subconchoidal fracture.
Limestone, light gray (N7), fine, dense, banded anhydritic.
Missing.

Core #5
Anhydrite, light gray, hard, dense, dolomitic.
Limestone, pale yellowish brown (10YR6/2), fine dense, with interbedded anhydrite.
Limestone, medium dark gray (N4), to medium light gray (N6), medium, dolomitic, grainy, slight cut, styolites.
Limestone, olive gray (5Y4/1), medium crystalline, grainy.

Samples
Limestone, light olive gray (5Y5/2), medium, grainy slight cut, rare anhydrite, white.
Circulation.
Limestone, light gray (N7), medium hard, grainy to porous, anhydrite, white to light bluish gray (5B7/1), soft.
Circulation.
Limestone, light gray to light brownish gray (5YR6/1), hard, dense.
Limestone, same as above, anhydrite, white to very light gray (N8), soft, some black shale cavings?
Circulation.

Limestone, light gray (N7), to light brownish gray (5YR6/1), sucrosic to subcrystalline to pseudo-oolitic.

Shale, dark gray (N3), oily, splintery, common limestone as above.

Limestone, light gray to light brownish gray (5YR6/1), fine, sucrosic to subcrystalline.

Circulation.

Limestone, same as above.

Limestone, light gray to medium light gray (N6), fine, grainy to oolitic, common fossil fragments.

Limestone, medium light gray to medium dark gray (N4), fine, grainy to subcrystalline.

Bakken 9685

Same as above.

Limestone as above, little shale, dark gray (N3), platy, soft.

Shale, dark gray (N3), medium hard, platy to splintery, calcareous, abundant limestone, light gray (N7), grainy to subcrystalline.

Circulation.

Same as above.

Shale, dark gray (N3), platy, calcareous, abundant limestone, medium light gray (N6) to moderate reddish orange (10R6/6), fine, grainy to subcrystalline.

Circulation.

Limestone, moderate reddish orange (10R6/6), grainy to subcrystalline, dolomitic, siliceous, little shale, dark gray.

Circulation.

Limestone as above, common shale, grayish green (5G5/2), waxy, platy, calcareous, common anhydrite, white, soft.

Limestone, moderate red (5R4/6), to moderate reddish brown (10R4/6) grainy, slightly dolomitic, common shale grayish green (5G5/2) to dark gray (N3), platy, slightly calcareous, little anhydrite, white, soft.

Limestone, pale brown (5YR5/2) to moderate reddish brown (10R4/6), subcrystalline to grainy, common shale as above.

Limestone, pale yellowish brown (10YR6/2) to moderate brown (5YR3/4), grainy to cryptocrystalline.

Limestone, moderate brown (5YR3/4) to moderate reddish brown (10R4/6), grainy, common shale, grayish green (5G5/2), massive to platy, slightly calcareous.

Circulation.

Limestone, pale yellowish brown to moderate brown (5YR3/4), subcrystalline.

Duperow 10090

Limestone, pale brown (5YR5/2) to light brownish gray (5YR6/1), fine to medium crystalline, dolomitic.

Limestone, light brownish gray (5YR6/1) to light gray (N7), sub-lithographic.

Circulation.

Limestone as above.

Circulation.

Limestone, light gray (N7) to light brownish gray (5YR6/1), grainy to subcrystalline.
10175 Circulation.
10175-10185 Limestone, pale yellowish brown (10YR6/2) to light brownish gray (5YR6/1), grainy to subcrystalline.
10184 Circulation.
10185-10210 Limestone as above, very fine to medium crystalline, slightly dolomitic.
10207 Circulation.
10210-10280 Limestone, pale yellowish brown (10YR6/2) to light brownish gray (5YR6/1), very fine to medium crystalline, grainy, slightly dolomitic, little shale, dark gray (N3), platy.
10280-10310 Limestone as above, and abundant shale, dark gray (N3), platy to splintery.
10310-10335 Limestone, light yellowish brown (10YR6/2) to light brownish gray (5YR6/1), fine to medium crystalline, sucrosic to grainy, calcitic.
10332 Circulation.
10335-10360 Limestone as above.
10357 Circulation.
10360-10370 Limestone, light yellowish brown (10YR6/2) to moderate brown (5YR4/4), fine to medium crystalline, grainy, slightly oil-stained with no cut, low porosity.
10370 Circulation.
10370-10375 Same as above.

Souris River 10375
10375-10430 Limestone as above.
10429 Circulation.
10430-10505 Limestone, medium light gray to pale brown (5YR5/2), fine to medium crystalline, grainy.
10505-10510 Limestone as above, common shale, greenish gray (5G6/1), waxy and platy.
10509 Circulation.
10510-10535 Limestone as above, common quartz grains, subrounded, frosted.
10535-10560 Limestone, yellowish gray (5Y7/2) to grayish pink (5R8/2) to pale brown (5YR5/2), fine to medium crystalline, sucrosic to grainy, little quartz grains, subrounded.
10558 Circulation.

Dawson Bay 10560
10560-10580 Limestone, yellowish gray (5Y7/2), sublithographic to medium, little shale, greenish gray (5G6/1), platy.
10580-10615 Limestone, yellowish gray to medium light gray (N6) to light brownish gray (5YR6/1), sublithographic to medium crystalline, grainy to subcrystalline, dense.
10615 Circulation.
10615-10630 Limestone, yellowish gray (5Y7/2) to pale brown (5YR5/2), fine to medium crystalline, sucrosic, dense.
10630-10650 Limestone, pale yellowish brown (10YR6/2) to brownish gray (5YR4/1), very fine to fine crystalline, dense.

Prairie Evaporites 10651
10650-10670 Limestone as above.
10670-10680 Limestone as above, little anhydrite, white to pale green (10G6/2), medium hard, and shale, dark gray (N3), platy.
10678  Circulation.
10680-10715  Limestone as above, common shale, medium light gray (N6) to dark gray, splintery, slightly silty, little anhydrite, white.
10715-10760  Limestone, light brownish gray (5YR6/1), fine crystalline, dense, common shale and anhydrite as above, rare gypsum selenite crystals.
10759  Circulation.
10760-10835  Limestone, light brownish gray (5YR6/1), fine crystalline, dense, common shale and anhydrite as above, rare gypsum selenite crystals.
10835  Circulation.
10835-10845  Limestone, medium light gray (N6) to light olive gray (5Y4/1), fine to medium, grainy to dense, little shale as above.

Winnipegosis 10846
10845-10890  Same as above.
10889  Circulation.
10890-10950  Limestone, yellowish gray (5Y7/2) to olive gray (5Y4/1), fine to medium crystalline, dense, sucrosic, little shale, medium dark gray (N4), platy, soft.

Interlake 10953
10950-10990  Same as above.
10989  Circulation.
10990-11000  Limestone, olive gray (5Y4/1) to yellowish gray (5Y7/2), fine crystalline, dense, abundant dolomite, very pale orange (10YR8/2), fine crystalline, dense, sucrosic.
11000-11015  Dolomite, moderate orange pink (10R7/4) to very pale orange (10YR8/2), fine to very fine crystalline, sucrosic, common limestone as above.
11015-11035  Dolomite, white to very pale orange, crystalline, little limestone, olive gray (5Y4/1), medium to fine crystalline, dense.
11035  Circulation.
11035-11080  Dolomite, white to moderate reddish orange (10R6/6), crystalline, sucrosic, dense, little limestone, light bluish gray (5B7/1), fine crystalline, dense.
11080  Circulation.