

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 175

Summary of the Calvert Drilling Inc. - Harriet M. Sinclair #1
Burke County, North Dakota
Well #1080 - Permit #1092

by James Peterson
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Calvert Drilling, Inc. - Harriet M. Sinclair #1, Burke County, North Dakota. Location: C SE SE Sec. 11-163N-88W. Elevation: 1870 K.B., 1856 GR.

The Calvert Drilling Inc., Harriet M. Sinclair #1 was spudded March 1, 1956, drilled to a total depth of 5300', found dry, and was plugged March 18, 1956.

Logging Record:

Electric log by Schlumberger.

Testing Record:

DST #1, 5035-5055, tool open 4 hours. Recovered 75' salty drilling fluid, 780' salt water, 855' total fluid recovered. IH 2785#, IF 165#, FF 450#, ISI (45 min) 2115#, FH 2700#.

Casing Record:

10 3/4" OD casing at 386' with 250 sacks cement.

Plugging Record:

5030 to 4985 with 15 sacks.
4620 to 4575 with 15 sacks.
3430 to 3385 with 15 sacks.
396 to 361 with 15 sacks.
10 to 0 with 5 sacks.

Formation tops were determined from samples and electric logs. Doubtful or obscure formation tops were not picked. Color names and identifying numbers were taken from the 1948 Rock-Color Chart which is distributed by the National Research Council, Washington, D.C.

FORMATION TOPS

Cretaceous System	
Pierre formation	858
Niobrara formation	2553 (?)
Greenhorn formation	2862
Basal Cretaceous Sandstone	3433
Jurassic System	3875
Piper formation	4383
Triassic System	
Spearfish formation	4640
Mississippian System	
Charles formation	4847

600-630 Shale, medium light gray, lumpy, silty, to medium dark gray, platy. Limestone, very light gray, sublithographic fine granular texture, argillaceous. Scattered coarse sand grains.

630-720 Lignite.

720-780 Shale, medium light gray, lumpy, interbedded lignite.

780-860 Free sand grains, medium to coarse, sub-angular, predominantly silica with magnetite grains numerous.

860-990 Shale, medium light gray, lumpy, very sandy. Occasional limestone fragments, very light gray, sublithographic, sub-crystalline.

990-1020 Shale as above, shale, light brown (5YR5/6), lumpy, sandy; limestone, very light gray, sublithographic.

1020-1380 Shale, medium light gray, lumpy, irregular fragments, bentonitic in part, occasional interbedded sublithographic limestone fragments to shale, medium light gray, compact. Sand grains, chert fragments.

1380-1550 Shale, medium light gray, lumpy, irregular fragments, bentonite and limestone inclusions. Sand grains.

1550-1650 Shale, medium gray, lumpy to irregular fragments, shale as above.

1650-1680 Shale as above; limestone, very light gray, sublithographic, fine granular texture, argillaceous, earthy.

1689-1750 Shale, medium light gray, lumpy, slightly bentonitic in part.

1750-1950 Shale, medium light gray, lumpy occasional white bentonite inclusions to shale, medium gray, lumpy.

1950-2100 Shale, medium light gray, massive, compact, to lumpy irregular fragments.

2100-2250 Shale, medium light gray to medium gray, irregular fragments, shell fragments.

2250-2370 Shale, medium light gray, as above.

2370-2550 Shale as above, shale, medium gray, platy to massive.

2550-2600 Shale, medium gray to medium dark gray, platy, soft white calcareous specks; shale, medium dark gray, platy.

2600-2750 Shale, medium light gray, lumpy. Occasional white bentonite inclusions.

2750-2860 Shale, medium dark gray, platy.

2860-2880 Shale, medium dark gray, soft white calcareous inclusions. Inoceramus prisms.

2880-2990 Shale, medium light gray to medium dark gray, lumpy as above.

2990-3030 Shale, medium light gray, lumpy to medium dark gray, platy. Occasional limestone fragments, light gray, lithographic, sub-crystalline.

3030-3120 Shale, medium dark gray to dark gray, platy, sooty luster.

3120-3440 Shale, medium dark gray, platy; shale, medium light gray, lumpy, massive.

3440 Cavings. Shale as above, occasional limestone fragments, lithographic, very light gray to yellowish gray, fine granular texture. Cavings.

3720-3780 Sandstone, fine grained, sub-angular quartz grains, cavings.

3780-3840 Siltstone, very light gray, calcareous.

3840-3900 Siltstone, to very fine grained sandstone, calcareous, limestone, very light gray, sublithographic, sandy, cavings.

3900-4020 Shale, greenish gray (5GY6/1) platy, siltstone as above, shale, medium light gray to medium dark gray, lumpy to platy.

4020-4170 Shale, medium light gray to medium dark gray, platy. Occasional fragments of moderate brown (5YR3/4) shale. Limestone, very light gray, sublithographic, argillaceous.

4170-4220 Shale, moderate brown to light olive gray, platy to splintery; shale, limestone as above.

4220-4300 As above; sandstone fragments, very fine grained, very light gray, calcareous.

4300-4310 Limestone, light pinkish gray, sublithographic, subcrystalline, shale as above.

4310-4350 Shale as above. Occasional limestone fragments, very light gray, sublithographic, soft, very fine granular.

4350-4390 Free silica coarse sand grains, subround to sub-angular. Sandstone, fine grained, very light gray, calcareous. Shale, limestone as above.

4390-4400 Limestone, very light gray, sublithographic, very fine granular texture. Shale as above.

4400-4430 Shale as above, limestone as above.

4430-4460 Limestone as above, shale as above.

4460-4480 Limestone, very light gray, subcrystalline, dense. Occasional crystalline interbedded anhydrite crystals.

4480-4510 Limestone, very light gray to light gray, fine granular texture; limestone as above, secondary white finely crystalline anhydrite. Caving.

4510-4570 Dolomite, light gray, subcrystalline. Limestone, anhydrite as above. Shale, moderate brown, platy to medium dark gray.

4570-4620 Dolomite, light gray, lithographic, subcrystalline.

4620-4650 Siltstone, moderate brown (5YR3/4) interbedded anhydrite, parts shaley.

4650-4660 Siltstone, light brown (5YR6/4), calcareous.

4660-4680 Siltstone as above, parts sandy. Free sand grains, sub-round, sub-angular.

4680-4750 Siltstone as above.

4750-4760 Siltstone to very fine grained sandstone, pale brown (5YR6/4). Free sand granules, sub-round.

4760-4790 As above. Gypsum, white, subcrystalline, sublithographic, rounded fragments. Chert, moderate orange pink. Cavings.

4790-4800 Siltstone to very fine sandstone as above, some fragments, with interbedded gypsum. Sand granules, chert fragments as above; cavings.

4800-4840 As above. Gypsum fragments, colorless, crystalline.

4840-4856 Dolomite, very light gray to light olive gray, fine grainy to crystalline, some interstitial anhydrite.

4856 Circulation 1 hour. Limestone, white, fine grainy, sublithographic with light brownish gray to light olive gray, secondary fine to crystalline lithographic limestone and anhydrite.

4850-4860 As above.

4860-4880 Limestone, light pinkish gray, very fine grainy texture, sublithographic, occasional fragments of light brownish gray calcitic anhydrite.

4880-4900 Anhydrite, very light gray, subcrystalline. Limestone, very light gray, grainy sublithographic matrix with secondary crystalline, light brownish gray anhydrite.

4900-4910 Anhydrite as above; also crystalline, colorless. Limestone, light brownish gray, grainy, anhydritic.

4910-4930 Dolomite, light bluish gray, subcrystalline, sublithographic, much caving.

4930-4950 Dolomite, very light gray, subcrystalline, sublithographic, calcitic. Light gray anhydrite fragments, rounded.

4950-4973 Limestone, light olive gray, grainy, anhydritic. Anhydrite, very light gray, subcrystalline to finely crystalline.

4973-4990 Circulation 1 hour. Limestone, light gray to light brownish gray, fragmental texture, secondary anhydrite replacement. In some fragments replacement is over 50%.

4990-5000 Anhydritic limestone, pale yellowish brown, subcrystalline, very hard, dense interbedded with white, finely crystalline anhydrite.

5000-5040 Anhydrite, light to medium bluish gray, subcrystalline, calcitic.

5040 Circulation 1 1/4 hour. Limestone, yellowish gray, fine granular texture, secondary granular anhydrite, good porosity. No oil show.

5040-5050 As above.

5055 Circulation 1 1/2 hour. Limestone, yellowish gray, fine granular to granular texture, secondary granular anhydrite replacement.

5055-5060 As above.

5060-5070 Limestone, very light gray, very fine grainy matrix, fine oolitic to fragmental texture, fossiliferous. Much caving.

5070-5090 Limestone, very light gray. matrix, yellowish gray recrystallization, fragmental texture.

5090-5100 Anhydrite, light bluish gray, subcrystalline, dolomitic.

5100-5118 Limestone, light gray, subcrystalline, oolitic, sharp fragments.

5118 Circulation 3/4 hour. Limestone, light gray, subcrystalline, oolitic. Occasional small vugs, some filled with crystalline calcite.

5115-5125 As above.

5125-5200 Limestone, light gray, subcrystalline, oolitic. Hard, dense, sharp fragments. Fractures with colorless crystalline anhydrite.

5200-5223 Limestone, very light gray, very fine grainy matrix, oolitic to fragmental, some vuggy and intergranular porosity.

5223-5230 Limestone, very light gray, very fine grainy matrix, abundant oolites - usually very small, fair porosity.

5230-5250 As above.

5250-5280 Limestone, light gray, subcrystalline, dense - sharp fragments, tight.

5280 Sandy limestone, light gray, very porous.

5300 Total depth.