

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 67

Summary of the Sohio Petroleum Company - John Nelson #1
 Renville County, North Dakota
 Well #369, Permit #385

By Carole Smith
 May, 1954

The Sohio Petroleum Company - John Nelson #1, Renville County, North Dakota. Located: C SE SW, Section 34, T. 158N., R. 81W. (660' from south line, 1980' from west line, Section 34). Elevation: 1530' GL.

The Sohio Petroleum Company - John Nelson #1 was spudded August 11, 1953 and 267 feet of 10 3/4" surface casing was set with 125 sacks. A 20 sack plug was set at 4415-4465; 15 sack plugs were set at 2970-3010 and 2660-2700; a 30 sack plug was set at 255-305 (the bottom of the surface casing). The well was abandoned as dry on September 5, 1953 at a total depth of 4954'. No cores.

DST #1: 4506-4620

Open 1 1/2 hours, shut in 1/2 hour. Fair blow immediately, then decreasing. Recovered 1110'. Slightly mud cut brackish water, no oil show. Flaming pressure 0# to 580#. Shut in pressure 1900#.

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

Formation Tops

Cretaceous System	
Pierre Formation	395
Niobrara Formation	1745
Greenhorn Formation	2136
Dakota	2692
Jurassic System	
Morrison Formation	2994
Sundance Formation	3160
Piper Formation	3531
Triassic System	
Spearfish Formation	3758
Mississippian System	
Charles Formation	3985
Mission Canyon Formation	4468
Lodgepole Formation	4860
Total Depth	4954

<u>From</u>	<u>To</u>	<u>Formation</u>
0	120	Coarse sand and gravel.
120	200	Coarse sand and medium grey argillaceous silt; much medium grey, silty, slightly calcareous shale beginning at 140.
200	240	Coarse to medium sand; some medium grey, partly brown shale.

<u>From</u>	<u>To</u>	<u>Formation</u>
240	260	Shale--black, flaky; some sand and gravel.
260	300	Sandy shale--medium grey.
300	340	Missing Samples
340	380	Poor samples.
380	500	Silty shale--pale olive, becoming grey and brown, lumpy.
500	660	Shale--medium grey, rather firm, becoming slightly green and bentonitic; small amounts of hard, dense, dark grey limestone, 610-650.
660	1120	Shale--medium grey, rather firm, partly lumpy, somewhat more lumpy and bentonitic beginning at 920.
1120	1420	Shale--medium grey, firm; small amounts are medium grey, lumpy, and bentonitic; missing samples: 1340-1360.
1420	1480	Shale-- medium grey, somewhat greenish, firm, partly lumpy and bentonitic.
1480	1570	Bentonitic shale--medium grey, lumpy, some shale as above, traces of bentonite.
1570	1600	Shale--dark grey, flaky; traces of bentonite.
1600	1620	Shale--medium grey to medium dark grey, rather firm, becoming lumpy and bentonitic.
1620	1650	Calcareous shale--medium grey, lumpy; much firm grey shale as above; traces of bentonite.
1650	1680	Shale--medium grey, rather firm slightly calcareous.
1680	1700	Calcareous shale--medium grey, lumpy to firm; small amounts of sublithographic white limestone.
1700	1730	Calcareous shale--medium grey to medium dark grey, firm to lumpy; traces of sublithographic white limestone.
1730	1850	Calcareous shale---dark grey with white specks, flaky; much grey black, flaky shale beginning at 1840.
1850	1860	Shale--dark grey to grey black, flaky, partly limey.
1860	1870	Calcareous shale as above.
1870	1910	Shale--medium grey to dark grey, pyritic, lumpy to firm, partly calcareous and bentonitic.
1910	1940	Shale--medium grey, firm, increasingly lumpy and bentonitic; traces of bentonite.
1940	1970	Shale--medium grey to dark grey, firm to flaky, partly limey, traces of bentonite.
1970	1980	Bentonitic shale--medium grey, rather greenish, soft.
1980	2060	Bentonitic shale--medium grey to medium grey, lumpy; traces of bentonite.
2060	2140	Shale--black, flaky; some bentonite and bentonitic shale, increasing in quantity at 2100.
2140	2160	Calcareous shale--dark grey with white specks; much lumpy, grey, bentonitic shale; traces of inoceramus prisms.
2160	2280	Calcareous shale--black with white specks, partly lumpy; scattered traces of inoceramus prisms; much grey black, flaky shale beginning at 2270.
2280	2510	Shale--grey black, flaky, scattered traces of inoceramus prisms; missing samples 2390-2400; much medium dark grey, lumpy shale at 2460; scattered traces of silty, calcareous shale beginning at 2470.
2510	2630	Shale--dark grey, firm, partly lumpy and slightly silty.

<u>From</u>	<u>To</u>	<u>Formation</u>
2630	2710	Shale--black, flaky; traces of inocaramus prisms and silty shale, small amounts of coarse, subangular quartz sand beginning at 2690; traces of pyrite.
2710	2750	Shale--dark grey to grey black, flaky; some medium dark grey, lumpy, silty shale.
2750	2800	Shale--medium grey to dark grey, firm to flaky, partly silty and lumpy; traces of moderate red, reddish purple, and very light grey shale beginning at 2780; traces of pyrite.
2800	2820	Shale--grey, lumpy, variegated (2800-2810) partly limey; traces of pyrite and sand.
2820	2840	Shale--black; flaky; much medium dark grey, lumpy, silty shale, decreasing in quantity; traces of reddish and yellowish shale at 2830.
2840	2920	Shale--black, flaky; traces of fine grained, white, limey sandstone, increasing steadily and greatly in quantity.
2920	2980	Sand--very coarse, subangular to subround; some grey, partly silty shale.
2980	3010	Silty shale--medium grey to dark grey, flaky, partly lumpy; some fine to coarse sand; some fine grained, white to pinkish brown, limey sandstone beginning at 3000.
3010	3040	Shale--black, flaky; traces of limey sandstone, waxey green shale, concretionary quartz, pink anhydrite.
3040	3110	Shale--black, flaky; small amounts of pinkish anhydrite; scattered traces of reddish brown shale, sand, light brown siltstone, waxey green shale.
3110	3170	Shale--black, flaky; much light grey, fine grained, limey sandstone; traces of flaky, limey green shale; some sand beginning at 3140 and becoming finer.
3170	3180	Shale--dusky yellow green to greyed green, soft, flaky; traces of purple, red, brownish and black shales; traces of sand and pyrite.
3180	3210	Shale--black, flaky; increasing amounts of silty reddish brown and limey greenish shales; traces of sand; some white to pink anhydrite at 3200.
3210	3240	Shale--greenish grey, silty, lumpy, limey, scattered traces of anhydrite, sand, reddish shale.
3240	3260	Shale--greenish, limey, flaky, soft; much flaky, black shale; small amounts of reddish brown shale; some medium to coarse sand.
3260	3340	Shale--greenish grey, lumpy, silty, limey; some flaky, black shale; traces of sand, shell fragments and fossils, reddish shale.
3340	3360	Shale--greenish, as above, some flaky, black shale; some reddish brown shale and medium sand at 3350.
3360	3410	Shale--grey green to green grey, flaky to splintery, somewhat limey; increasing amounts of black shale; decreasing amounts of reddish brown shale; scattered traces of sand, anhydrite, and olive shale; small amount of fine grained, very limey sandstone at 3400.
3410	3440	Shale--pale green to grey green, soft to flaky, limey; some reddish brown shale; traces of grey shale, anhydrite, sand, sandstone

<u>From</u>	<u>To</u>	<u>Formation</u>
3440	3490	Shale--greenish as above, much medium grey to dark grey shale, some reddish brown shale; traces of sand, sandstone and shell fragments.
3490	3510	Calcareous shale--greenish, lumpy to flaky, soft, some grey, reddish, and yellowish shales, some coarse sand.
3510	3520	Missing samples.
3520	3530	Limestone--white, chalky to lithographic; much reddish, greenish, grey and purple shale.
3530	3570	Shale--dark grey, some reddish and greenish, soft, partly limey; traces of limestone and anhydrite.
3570	3620	Limestone--almost white, chalky to lithographic; some shale as above (increasing 3580-3600, 3610-3620).
3620	3630	Shale--splintery greenish to medium dark grey; much limestone as above; traces of reddish shale, sandstone and shell fragments.
3630	3640	Shale--reddish brown, slightly limey; some greenish and black shales; some limestone as above.
3640	3680	Shale--medium grey, becoming black and flaky; some greenish shale as above, increasing amounts of reddish shale; some dense, pale limestone and anhydrite.
3680	3710	Shale--black, green, firm and lumpy, partly limey; increasing amounts of reddish shale; some white anhydrite, steadily decreasing in quantity; traces of pinkish and yellowish shales at 3700; small amount of dense grey dolomite at 3700.
3710	3720	Missing samples.
3720	3780	Shale--medium dark grey, greenish, increasing amounts of reddish shale; much anhydrite, decreasing rapidly in quantity and then increasing again 3750-3760; traces of sandstone and sand.
3780	3800	Shale--reddish brown, silty, partly sandy; some grey and greenish shales; traces of anhydrite; some medium to coarse sand beginning at 3790.
3800	3810	Sandstone--reddish brown, fine to medium grained, limey, some grey and greenish shales.
3810	3820	Shale--dark grey, flaky; much reddish, lumpy, calcareous shale; some firm, greenish shale; small amount of white anhydrite.
3820	3830	Sandstone--reddish brown, fine to medium grained; much medium to dark grey, green, partly limey shale.
3830	3900	Sandstone as above, increasing in quantity; much dark grey, flaky, shale, decreasing in quantity; traces of anhydrite and coarse sand.
3900	3910	Shale--medium grey to dark grey, greenish, reddish brown, partly limey; small amounts of sandstone and sand.
3910	3950	Sandstone--reddish brown, medium grained, partly limey, decreasing in quantity at 3920 and increasing again at 3930; much shale as above; traces of anhydrite.
3950	3980	Shale as above; small amount of purple and pinkish shales beginning at 3960; small amounts of sand and white anhydrite; some sandstone as above at 3970.
3980	3990	Shale as above, much pale red to pale reddish purple, dense, argillaceous dolomite; traces of anhydrite.

<u>From</u>	<u>To</u>	<u>Formation</u>
3990	4000	Dolomitic limestone---very pale yellow grey, sub-lithographic; some pale greyish brown, dense, dolomitic limestone; some shale; traces of anhydrite.
4000	4010	Calcareous shale--greenish, flaky; some flaky, dark grey shale, races of anhydrite.
4010	4050	Limestone--almost white, sublithographic to lithographic; some shale as above.
4050	4070	Shale--grey, greenish, reddish, partly limey; much pale, micro-sugary limestone which ends at 4060; much dense, white anhydrite at 4060.
4070	4090	Limestone--pale yellow brown, micro-sugary and/or chalky; much shale (mostly grey); increasing amounts of anhydrite.
4090	4140	Shale--greenish (calcareous), some flaky black and lumpy reddish shale; small amounts of anhydrite; increasing at 4130; small amount of dense, blue grey dolomite (4120-4130).
4140	4160	Shale--black, flaky; some greenish grey limey shale and reddish shale; some anhydrite and dolomite at 4150; traces of anhydrite, reddish sandstone, and dense limestone; some dense grey limestone at 4150.
4160	4170	Limestone--yellow brown, micro-surgery and crystalline, partly dolomitic, some shale as above; traces of anhydrite.
4170	4220	Shale--greyish black, flaky; much greenish silty, limey shale; small amounts of reddish shale; some dense, blue grey dolomite ending at 4190; increasing amounts of dense, grey anhydrite.
4220	4230	Limestone--almost white, sublithographic; small amounts of shale and anhydrite.
4230	4250	Limestone--very pale yellow brown, micro-sugary to sublithographic; much shale as above, small amounts of anhydrite.
4250	4260	Limestone--very pale yellow brown, micro-sugary to lithographic; small amounts of shale.
4260	4320	Shale as above, some dense, grey anhydrite; much very light grey, micro-sugary, argillaceous limestone (4280-4290); missing samples 4310-4320.
4320	4380	Shale as above, much anhydrite (pinkish to white).
4380	4390	Shale--black, flaky; some greenish grey, firm, limey shale; small amounts of reddish shale; small amounts of limestone and anhydrite as above; traces of reddish sandstone and siltstone.
4390	4400	Dolomite--pale red to very light grey, dense; small amounts of shale and anhydrite.
4400	4420	Dolomite--very light grey to white, dense, decreasing in quantity; some medium grey to dark grey shale, increasing in quantity.
4420	4450	Shale--black, flaky, some reddish and greenish shales; traces of anhydrite and sandstone; some pink and white, dense dolomite and anhydrite at 4440.
4450	4460	Missing samples.
4460	4470	Shale--black, flaky; much very light grey, micro-sugary limestone.

<u>From</u>	<u>To</u>	<u>Formation</u>
4470	4500	Limestone--light olive grey to very pale yellow brown, sublithographic, partly oolitic, small amounts of shale.
4500	4510	Limestone--very light grey, micro-sugary to sublithographic; small amounts of shale.
4510	4590	Limestone--yellow brown, fine to micro-sugary; some grey shale.
4590	4620	Limestone--pale yellow brown, micro-sugary to chalky; small amounts of shale,
4620	4630	Shale--grey, reddish and greenish; some light olive grey, dense dolomite.
4630	4640	Limestone--grey, micro-sugary and crystalline, shaly, partly dolomitic; small amounts of shale.
4640	4660	Shale--as above; much dense, blue grey anhydrite ending at 4650; much micro-sugary, almost white dolomite and pink anhydrite at 4650.
4660	4670	Dolomite--grey, dense; much shale as above, especially grey; some limestone and anhydrite as above.
4670	4730	Limestone--very light grey, becoming partly very pale orange and yellow brown, sugary and chalky, shaly; some dark grey and greenish shales.
4730	4740	Limestone--yellow brown, micro-sugary, tiny vugs, somewhat dolomitic.
4740	4790	Dolomitic limestone--yellow brown, fine sugary; small amounts of shale; the limestone is not dolomitic at 4750 and 4780; much dark grey shale at 4780.
4790	4800	Limestone--light grey, chalky, lumpy, shaly, much grey shale.
4800	4810	Shale--dark grey, soft, lumpy.
4810	4830	Limestone, very pale yellow brown, micro-sugary, increasingly soft and chalky; much grey shale.
4830	4860	Shale--dark grey, some brownish and greenish; some limestone as above, traces of anhydrite.
4860	4880	Shale--black, flaky; some limey greenish shale; much light olive grey to white, fine sugary to chalky limestone.
4880	4910	Limestone--white to grey, crystalline, shaly; much grey and green shale as above.
4910	4940	Limestone--grey, argillaceous, dense; much dark grey shale, increasing in quantity.
4940	4951	Limestone--light olive gray, crystalline and chalky, argillaceous some shale as above.
4951		Total depth.