

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 137

Summary of the Lion Oil Co. - Wallace #1  
Bottineau County, North Dakota  
Well No. 895 - Permit No. 907

by Dan E. Hansen  
March 1, 1956

The Lion Oil Company - Wallace #1, Bottineau County, North Dakota, NW NW, T. 162N., R. 76W. (660 feet from north line and 660 feet from west line) Ground elevation 1672 feet. K.B.

The Lion Oil Company - Wallace #1 was spudded, June 22, 1955, drilled to a total depth of 3895, found dry and plugged according to regulations July 9, 1955. No drill stem tests were taken. The well was drilled into the top of the Devonian.

CASING: Surface casing, 8 5/8" OD 24# J-55 at 369 feet, cemented with 200 sacks.

PLUGGING RECORD: 8 5/8" casing left in hole, cemented with 200 sacks. Cement plugs at 3856; 20 sx.; 3050, 15 sx.; 2060, 15 sx.; 2150, 15 sx.; 367, 15 sx.; and 10 sx. at surface.

CORES: Core #1, 3010-3035; Core #2, 3035-3057; and Core #3, 3057-3082.

LOGS RUN: Electrical, Micro, and Radiation.

FORMATION TOPS: Formation tops were determined from samples, electrical and radioactivity logs, corrected to the electrical log. Not all formation tops were picked. Colors were determined from the rock color chart.

	TOPS
Cretaceous System	
Pierre Formation	270
Niobrara Formation	1225
Greenhorn Formation	1660
Dakota Group	1900
Dakota Group Sands	2059
Jurassic System	
Piper Lime	2680
Triassic System	
Spearfish Formation	2925
Mississippian System	
Lower Mission Canyon (MC <sub>2</sub> )	3048
Lodgepole Formation	3177
Englewood	3798
Devonian System	
Nisku Formation	3845
TOTAL DEPTH	3917

0-30 Sand, medium coarse grained, clear, white quartz, angular-rounded, buff dolomite, angular. Angular fragments of white, clear, pink feldspar. Angular fragments of greenstone and rounded gray chert fragments.

30-60 Silt, light gray, micaceous, sandy, with brown-gray silt.

60-120 Sand, very fine grained to trace medium, quartzose, light gray, glauconitic (reworked?) with gray-brown silt and sand.

120-150 Sand, light gray, quartzose, fine grained, micaceous, "Salt and Pepper." Slightly calcareous.

150-270 Silt and sand, as above. With brown-gray shale at 210-270.

270-960 Shale, medium gray, massive, lumpy, platy, micro-micaceous.

960-1120 Shale, medium gray, massive, lumpy, platy and spongy, micro-micaceous. Traces very light gray to white bentonite.

1120-1260 Shale, as above, with medium dark gray flaky shale.

1260-1300 Shale, dark gray, flaky, soft, micro-micaceous. Partly spongy with white specks.

1300-1740 Shale, medium gray, medium dark gray, flaky, soft, spongy. With much extraneous material, poor samples.

1740-1860 Shale, medium dark gray, dark gray, flaky, soft spongy and lumpy, with traces of calcite prisms.

1860-1900 Shale, dark gray, soft, flaky, lumpy, and spongy, micro-micaceous.

1900-2050 Shale, medium gray, medium dark gray, soft, spongy, flaky.

2050-2110 Shale, medium gray, soft, spongy. With coarse grained, rounded, loose, clear, quartz grains. Traces pyrite, light gray bentonite.

2110-2150 Sand, loose quartz grains, angular-rounded, clear, white, pitted, fine - very coarse grained. With medium gray shale and small amount of yellow-brown and red shale at 2110-2140. Traces pyrite.

2150-2240 Shale, medium gray with traces of light gray-red, soft, spongy, silty, and sand as above.

2240-2330 Sand, fine - very coarse grained, angular-rounded, pitted, clear, white, loose, quartz grains. With medium gray shale. Traces of pyrite.

2330-2450 Sand as above, with much pyrite cement and traces of light gray, sandy limestone. Traces of gray chert. Much dark gray and medium gray shale.

2450-2490 Sand and shale, as above, with some light gray shale. Small amounts of fine grained, crystalline, carbonaceous streaked limestone. Fossil fragments ?

2490-2580 Sand and shale, as above. With traces of light green gray, red-brown calcareous massive, lumpy shale.

2580-2670 Shale, light green gray, red brown, fissile, slightly calcareous. Fine grained, calcareous, white, sandstone. Shale and sand, as above.

2670-2740 Limestone, light gray, shaly, fine grained, crystalline, fragmental. With shale as above. Small amounts of fine medium grained, clear, angular-rounded, quartz grains.

2740-2810 Limestone, light gray, soft, shaly, fine grained, chalky. Medium gray, calcareous shales, lumpy to fissile.

2810-2925 Shale, medium gray, massive to splintery, slightly calcareous and red-brown shale, same. With fine-coarse, crystalline, white, pink anhydrite.

2925-3010 Shale, red-brown, massive. With traces, rounded, medium grained quartz grains, silty.

Core # 1

- 3010-3018 Sandstone, moderate-yellowish-brown, very fine grained, silty with included medium grained, rounded, frosted, quartz grains. Very slightly calcareous. Slight fluorescence and slight CCL<sub>4</sub> cut.
- 3018-3032 Sandstone and silt, very fine grained, pale brown. With inclusions of anhydrite and medium grained, rounded, frosted quartz grains. Irregular bedding.
- 3032-3035½ Sandstone, moderate-brown, fine medium grained, irregular bedding, angular to rounded, frosted, quartz grains. Silt and anhydrite in matrix. Fair to little porosity. Inclusions of anhydrite.

Core # 2

- 3035½-3036 Anhydrite, clear, white, dense, crystalline.
- 3036-3037 Limestone, light gray, dense, fine grained, rounded, fragmental with inclusions of anhydrite. Some pinpoint porosity.
- 3037-3039 Limestone, light yellowish-gray, fragmental, oolitic, well cemented, to medium-coarse grained crystalline. Anhydritic, no porosity.
- 3039-3042 Limestone, fragmental, oolitic, medium grained, somewhat crystalline, inter-fragmental porosity, filled by recrystallization and by anhydrite.
- 3042-3045 Limestone, light yellowish-gray, fragmental, fine- medium grained, soft, fairly porous.
- 3045-3052 Limestone, light yellowish-gray, fragmental, oolitic, medium to very coarse grained, fair to good porosity. Somewhat recrystallized.
- 3052-3056½ Limestone, light yellow-gray, fragmental, fine-medium grained angular-rounded, partly oolitic, little porosity.
- 3056½-3057 Limestone, light yellowish-gray, fragmental, oolitic to pisolitic, coarse grained, porosity filled by fine-medium grained fragmental partially recrystallized.

Core #3

- 3057-3061 Limestone, light yellowish gray, fragmental, oolitic to subangular rounded fragments, medium-very coarse grained. Some coarse grained, recrystallized limestone.
- 3061-3064 Limestone, light yellowish-gray, fragmental, medium grained, oolitic to fine grained fragmental, recrystallized. Little porosity.
- 3064-3067 Limestone, light yellowish-gray, fragmental, fine-medium grained angular to rounded, grainy.
- 3067-3069 Limestone, light yellowish-gray, fragmental, oolitic, medium-coarse grained, irregular. Compacted and recrystallized with little porosity.
- 3069-3070 Limestone, light gray, shaly, fragmental to crystalline, dense.
- 3070-3073 Limestone, light yellowish-gray, fine grained, fragmental, rounded, some recrystallization, grainy, pinpoint porosity.
- 3073-3074 Limestone, light yellowish-gray, fine grained, fragmental, rounded, grainy with some recrystallization.
- 3074-3079 Limestone, light yellowish-gray, fine-medium grained, fragmental, oolitic, irregular, with rounded, grainy, matrix. Oolitic, becomes coarse, pisolitic at 3077-3078. No porosity.
- 3079-3081 Limestone, light yellowish-gray, fine grained, fragmental, rounded grainy, dense.

3081-3082 Limestone, light yellowish-gray, fragmental, very coarse grained, oolitic, irregular to sharp, fragmental, partially recrystallized.

End of Core.

3080-3090 Samples of dark gray cretaceous shale.

3090-3150 Limestone, light yellowish-gray, fragmental, fine grained, grainy, rounded to medium grained oolitic, psuedo-oolitic, irregular.

3150-3175 Limestone, light gray, fragmental, fine grained, grainy to coarse grained, dense, recrystallized partially.

3175-3325 Limestone, light gray, fine grained, soft, shaly, to coarse grained fragmental. Pale red calcareous shale at 3175-3180. With medium gray, fissile shales. Trace shell fragments. Poor samples.

3325-3575 Limestone, light gray, fragmental, fine-coarse grained, angular to rounded, grainy, soft, shaly. With medium gray shale. Trace oolites. Small amounts green-gray, red-brown shales.

3575-3620 Limestone, light gray, coarse grained, fragmental, angular. With much medium gray, massive shale. Trace shell fragments.

3620-3700 Limestone, light gray, fine-coarse grained, fragmental to fine grained, crystalline dense. With light gray chert, medium gray shale.

3700-3770 Limestone, light-medium gray, fine grained, subcrystalline, dense. With gray chert.

3770-3800 Limestone, very light gray, fine-medium grained, fragmental and crystalline, dense. With medium gray shale.

3800-3830 Shale, medium dark gray, fissile to flaky.

3830-3850 Shale, as above, with red-brown and greenish gray calcareous shale.

3850-3870 Limestone, light brownish-gray to yellowish gray, fine grained, crystalline, to fragmental, grainy, medium grain size.

3870-3895 Dolomite, light brownish gray, fine, medium grained, granular.

3917 Total Depth.