

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 34

Summary of the S.D. Johnson - John Rath No. 1
Stutsman County, North Dakota

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F. D. Johnson - John Rath No. 1, Stutsman County, North Dakota, Section 30, T. 137 N., R. 67 W., (720 feet from the N. line and 720 feet from the E. line, Sec. 30) Elevation: 1961 D.L. 1955 G.L.

The S. D. Johnson - John Rath No. 1 was spudded June 6, 1952. 10 3/4 inch surface casing was set at 285' with 200 sacks of cement. The well was drilled to a total depth of 3374 feet where circulation was lost, and the pipe was stuck, the pipe was shot off and 3 drill collars were left in the hole. The hole was plugged as the pipe was pulled out and no electric logs were run.

Twenty sack cement plugs were set at the following depths: 3180, 2880, 2330, and 2070. A 10 sack plug was set at the bottom of the surface casing and a 10 sack plug was set at the top of the surface casing. The well was abandoned June 22, 1952.

The following formation tops were picked from samples, not all lithologic tops called in following list. Colors determined from rock color chart.

FORMATION TOPS

	<u>Depth</u>
Cretaceous System	
Niobrara Formation	1310
Greenhorn Formation	1600
"Muddy"	1950
Dakota	2190
Jurassic System	
Morrison Formation	2320
Mississippian System	
Mission Canyon Formation	2450
Lodgepole Formation	2500
Englewood Formation	2850
Devonian System	
Ashern Formation	3000
Ordovician System	
Stony Mountain Formation	3030 ?
Red River Formation	3050 ?
Total Depth	3374
Samples End	3300
1000-1070	Shale, green gray to medium light gray.
1070-1170	Shale, medium gray, N5.
Niobrara 1310	
1170-1320	Shale, medium gray with white specks.
1320-1340	Shale, medium gray.

1340-1360 Shale, medium gray to medium dark gray.

Greenhorn 1600
1360-1600 Shale, medium gray.
1600-1610 Shale as above and little soft white silty limestone.

1610-1620 Shale, medium gray.
1620-1680 Shale, medium gray and little soft white silty limestone.

Muddy 1950
1680-1950 Shale, medium gray.
1950-1960 Shale, medium gray and piece of light gray fine grain sandstone.
1960-1970 Shale, medium gray.
1970-1990 Shale, medium gray and piece of light gray fine grain sandstone.
1990-2000 Shale, medium gray and few pieces of light brown sandstone, fine grain.
2000-2010 Shale, medium gray and piece of light gray fine grain sandstone.
2010-2040 Shale, medium gray.
2040-2050 Shale as above, light brown and light gray to whitish, fine grained sandstone.
2050-2060 Shale, medium gray.
2060-2070 Shale as above and piece of light brownish fine grained sandstone.
2070-2130 Shale as above.
2130-2140 Sandstone, light gray, fine grained, medium gray shale.
2140-2150 Shale as above and little sandstone as above.
2150-2180 Shale as above.

Dakota 2190
2180-2194 Shale, reddish and some shale as above.
2194 Sandstone, white, very calcareous, fine grained.
2194-2199 Sandstone, white and reddish, fine grained and some reddish shale, some white very silty sandstone.
2199-2210 Shale, mostly medium gray shale, little red shale and little sandstone as above.
2210-2220 Shale, red and gray.
2220-2230 Sandstone, whitish fine grained, and shale as above.
2230-2240 Shale, medium gray.
2240-2250 Shale as above and little white sandstone.
2250-2260 Missing.
2260-2270 Shale as above and piece of fine grained white sandstone.
2270-2280 Shale, medium gray shale.
2280-2290 Shale as above, piece of fine grained white sandstone and few pieces of free quartz.

Morrison 2320
2290-2320 Sandstone, much medium to coarse free quartz, sub-angular to sub-rounded.
2320-2330 Shale, medium gray, some sandstone as above.
2330-2370 Shale, reddish and gray.
2370-2400 Shale as above, mostly gray.

2400-2410 Shale, medium gray.

Mission Canyon 2450
2410-2450 Red and gray shale, sandstone and free quartz as above and white fine grained limestone.
2450-2460 Limestone, whitish, fine grained, dense, few pieces of free quartz, few pieces of white chert.
2460-2470 Limestone as above and dolomite with some pinpoint porosity.
2470-2480 Limestone, whitish, fine grained, dense, dolomitic.
2480-2490 Missing.

Lodgepole 2500
2490-2500 Limestone, whitish to very light brown, fine grained, dense, dolomitic.
2500-2580 Limestone, whitish, fine grained, dense, crystalline.
2580-2590 Limestone as above and some reddish shale, little green shale.
2590-2600 Limestone as above.
2600-2650 Limestone, whitish fine grained, dense to pale yellow brown, fine grained dense.
2650-2660 Limestone as above to very fine granular.
2660-2700 Limestone, whitish fine grained, dense.
2700-2800 Missing.
2800-2810 Limestone, very fine grained, dense, whitish to whitish oolitic limestone, dense.
2810-2820 Limestone, very fine grained, dense, whitish.
2820-2840 Limestone, light tan, fine saccharoidal limestone with intergranular porosity.

Englewood 2850
2840-2850 Limestone, light brown gray, fine saccharoidal, dolomitic, with intergranular porosity.
2850-2890 Lost circulation.
2890-2900 Limestone, reddish fine grained, dense.
2900-2910 Dolomite, reddish, fine grained, dense, and light tan, fine granular dolomite.
2910-2930 Dolomite, pale yellow brown, fine grain dense to granular with good pinpoint porosity, vugular.
2940 Missing.
2940-2950 Dolomite, pale yellow brown as above to fine granular with some pinpoint porosity and some reddish fine grain dense.
2950-2960 Dolomite, pale yellow brown, fine grain to fine granular.
2960-2970 Dolomite as above to reddish fine grained, dense.
2970-2990 Limestone, buff, fine grained, dense.

Ashern 3000
2990-3010 Dolomite, pale yellow brown, fine grain to fine granular, little pinpoint porosity also reddish fine grained dense dolomite.

Stony Mountain 3030
3010-3030 Dolomite, light pinkish, fine grained, dense.
3030-3040 Shale, red and gray shale, gray, probably cave.

Red River 3050
3050 Missing.
3040-3100 Dolomite, very light tan, fine grained, dense.
3100-3150 Limestone, whitish to slight pinkish, fine grained, dense,
dolomitic.
3150-3160 Dolomite, whitish fine granular.
3160-3190 Dolomite, very light tan, fine grain to fine granular, dense.
3190-3210 Dolomite, very light tan, fine granular.
3210-3250 Dolomite, pale yellow brown, fine grain, tan, dense.
3250-3260 Dolomite, pale yellow brown, fine granular, dense.
3260-3270 Dolomite, pale yellow brown, fine grained, dense.
3270-3300 Dolomite, very pale yellow brown, fine grain, dense.

Samples end 3300

Total Depth 3374