

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 72

Summary of the Ward Williston Drilling Company - Klokstad #1  
Bottineau County, North Dakota  
Well No. 201, Permit No. 217

By Morton Strassberg  
May, 1954

Ward Williston Drilling Company - Klokstad No. 1, Bottineau County,  
North Dakota, C NE 1/4 NW 1/4 Section 36, T. 164 N., R. 79W. (660 feet from N.  
line 1980 feet from W. line). Elevation G. L. 1515, K.B. 1525.

The Ward Williston - Klokstad No. 1 was spudded October 4, 1952 and 10  
inch drive pipe was set at 280 feet, 3073 feet of 5 1/2 inch production casing  
set with 150 sacks of cement, and 3080 feet of 2 inch production string was  
set at 3080 feet. Drilling was completed May 20, 1953.

Cores

#1 3061-3071  
#2 3071-3081

Tests

DST #1 3072-81, Open 45 minutes. Recovered 40 feet slightly oil cut mud, 75  
feet highly oil and gas cut mud, 115 feet free oil. F. P. 0#, 30  
minutes, SIP 1200#, HP 2050-1800#; Swabbed 4 hours, recovered 10.35  
barrels oil, 42.5 gravity and 300 feet fill up 20% water overnight;  
Acidized with 500 gallons; swabbed and flowed 100 barrels oil in 6  
hours, mostly load oil. Flowed 80 barrels oil in 5 hours, through  
open tubing. Flowed 2 barrels of oil per hour through 16/64 inch  
choke, T. P. 300#, swabbed and flowed about 40-50 barrels of oil in 8  
hours. Swabbed and flowed 50-90 barrels of oil per day for week.  
Pumped 60 barrels fluid per day; pumped 70 barrels fluid for 16  
hours, 15% water; pumped 63 barrels fluid 16 hours, 20% water; pumped  
120 barrels fluid 16 hours, 50% water; pumped 79 barrels oil and 40  
barrels water 24 hours; pumped 96 barrels oil and 60 barrels water  
per day; pumped 71 barrels oil and 80 barrels water 23 1/2 hours;  
pumped 54 barrels oil and 80 barrels water 24 hours; pumped 1000  
barrels fluid per day 35% water; pumped 90 barrels fluid per day, 35%  
water. Completed as discovery well. Northeast Landa Field. Total  
production as of April 1, 1954, 10,332 barrels oil.

Formation tops were determined from samples electric and micro logs. Not  
all lithologic tops were called in the following list. All tops were corrected  
to electric log tops. Colors were determined from the rock color chart.

Formation tops

<u>Formation</u>	<u>Depth</u>
Cretaceous System	
Niobrara Formation	920 samples
Greenhorn Formation	1623
Dakota	2028
Jurassic System	
Morrison Formation	2332
Sundance Formation	2405
Piper Formation	2693
Triassic System	
Spearfish Formation	2955
Mississippian System	
Charles Formation	3072

<u>From</u>	<u>To</u>	<u>Formation</u>
357	450	Shale--medium light gray.
450	458	Shale--medium light gray, white bentonite.
458	510	Shale--medium light to medium gray.
510	615	Shale--medium light gray.
615	865	Shale--medium light to medium gray.
865	885	Shale--light to medium light gray, bentonitic.
885	920	Shale--light to medium light gray.
920	937	Shale--light gray white specks, bentonitic.
937	950	Shale--medium light gray bentonitic.
950	957	Shale--medium light gray, white specks, bentonitic.
957	987	Shale--medium light gray, bentonitic, some white specks.
987	1000	Shale--medium light gray and medium light gray bentonitic.
1000	1030	Shale--medium light gray. White bentonite.
1030	1070	Shale--light gray bentonitic.
1070	1100	Shale--light gray and light olive gray, bentonitic.
1100	1110	Shale--light gray bentonitic.
1110	1120	Shale--light gray and light olive gray, bentonitic.
1120	1160	Shale--light gray bentonitic and dark gray.
1160	1200	Shale--light and light olive gray bentonitic and dark gray.
1200	1220	Shale--light gray bentonitic and dark gray calcareous.
1220	1260	Shale--light gray, white specks, bentonite and dark gray.
1260	1290	Shale--light to light olive gray, bentonitic.
1290	1300	Shale--light to medium light gray.
1300	1350	Shale--light to medium light and light olive gray.
1350	1390	Shale--light gray and medium dark gray calcareous.
1390	1400	Shale--light gray, bentonitic.
1400	1470	Shale--light to medium light gray, bentonitic.
1470	1520	Shale--light gray, bentonitic.
1520	1550	Shale--light to medium light gray and calcareous medium, dark gray.
1550	1600	Missing samples.
1600	1620	Shale--light to medium light gray.
1620	1630	Shale--medium light gray and medium dark gray white specks calcareous.
1630	1875	Missing samples.

<u>From</u>	<u>To</u>	<u>Formation</u>
1875	1880	Shale--medium light gray and medium dark gray calcareous.
1880	1890	Shale--medium dark gray calcareous and medium light gray. White bentonite.
1890	1930	Shale--medium light and medium dark gray.
1930	1950	Shale--medium light and pale olive gray, bentonitic.
1950	1970	Shale--light to medium light gray.
1970	2000	Shale--medium light gray and calcareous medium dark gray.
2000	2030	Shale--medium light and medium dark gray. Iron stained siltstone.
2030	2080	Shale--medium light to medium dark gray.
2080	2090	Shale--medium light gray. Medium to coarse grained free quartz.
2090	2100	Sandstone--light gray to iron stained. Medium light gray shale.
2100	2110	Shale--medium light to light olive gray. Coarse grained free quartz.
2110	2130	Shale--medium light gray, fine grained calcareous sandstone.
2130	2200	Shale--medium light gray. Medium to coarse grained free quartz.
2200	2230	Sandstone--fine to very coarse grained, subrounded to subangular. Iron stained siltstone concretions. Medium light gray shale.
2230	2260	Sandstone--medium to very coarse grained, subrounded, frosted. Iron stained siltstone concretions.
2260	2280	Shale--medium light gray. Very coarse subrounded to subangular free quartz.
2280	2300	Sandstone--medium to very coarse grained, subrounded frosted. Iron stained siltstone concretions. Medium light gray shale.
2300	2320	Shale--medium light gray. Very fine grained calcareous sandstone and very coarse grained free quartz.
2320	2330	Shale--medium light gray, coarse to very coarse free quartz.
2330	2370	Sandstone--very fine grained calcareous and medium to very coarse grained subrounded, frosted. Iron stained siltstone concretions. Medium light gray shale.
2370	2400	Sandstone--fine grained calcareous and medium to very coarse grained. Iron stained siltstone. Medium light and greenish gray shale.
2400	2430	Shale--greenish gray and medium light. White to very light gray calcareous sandstone and medium to coarse grained free quartz.
2430	2440	Shale--light olive to greenish gray.
2440	2450	Sandstone--very light gray, fine grained, calcareous and coarse grained free quartz. Greenish gray shale.
2450	2470	Sandstone--fine to very coarse grained, subangular to subrounded, frosted. Iron stained siltstone concretions. Greenish gray, pale yellowish brown and moderate red shale.
2470	2480	Siltstone--very light gray, calcareous. Medium to very coarse sandstone. Greenish to medium gray shale.
2480	2500	Limestone--very light to medium dark gray, argillaceous, arenaceous. Medium to coarse grained free quartz. Pale yellowish brown and greenish gray shale.

<u>From</u>	<u>To</u>	<u>Formation</u>
2500	2530	Shale--medium to greenish gray. Light gray fragmental arenaceous limestone. Coarse grained free quartz.
2530	2560	Shale--medium light to greenish gray. Coarse to very coarse grained free quartz.
2560	2570	Shale--medium light to medium and greenish gray. Light gray calcareous siltstone.
2570	2610	Shale--medium light to greenish gray.
2610	2640	Shale--medium light to greenish gray. White highly arenaceous limestone.
2640	2660	Shale--medium light to greenish gray. Very fine grained calcareous sandstone.
2660	2700	Shale--medium light to greenish gray and pale reddish brown. Very fine grained calcareous sandstone and coarse grained free quartz.
2700	2720	Shale--medium light to greenish gray. White grained limestone.
2720	2750	Shale--pale reddish brown, medium gray, and pale brown. Fine grained calcareous sandstone. Very light gray fine grained limestone.
2750	2790	Shale--greenish gray and pale reddish brown. Very light gray fine grained limestone.
2790	2840	Shale--medium to greenish gray and pale reddish brown. Very light gray arenaceous and white fine grained limestone.
2840	2850	Limestone--pinkish gray sublithographic. Greenish gray and pale reddish brown shale.
2850	2860	Anhydrite--white. Very light gray limestone. Greenish gray to pale reddish brown shale.
2860	2880	Limestone--very light gray fine grained to sublithographic. Greenish gray to pale reddish brown shale.
2880	2890	Shale--medium to greenish gray and pale reddish brown. White anhydrite and very light gray sublithographic limestone.
2890	2910	Limestone--very light gray fine grained to sublithographic. Medium to greenish gray and pale reddish brown shale.
2910	2940	Anhydrite--white. Very light gray sublithographic limestone. Medium to greenish gray and pale reddish brown shale.
2940	2950	Shale--medium to greenish gray and pale reddish brown, white anhydrite.
2950	2960	Limestone--very light gray sublithographic. Pale yellowish brown fine grained dolomite. Medium gray, pale reddish brown and pale brown shale.
2960	2980	Shale--greenish to medium gray and pale reddish brown. White anhydrite. Very light gray sublithographic limestone.
2980	3010	Shale--pale reddish brown and greenish gray.
3010	3050	Shale--grayish red and medium to greenish gray. Pale red arenaceous limestone.
3050	3060	Shale--grayish red and medium to greenish gray. Light gray and pale red siltstone. Medium to coarse grained iron stained free quartz.