NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR N0. 118

Summary of the McLaughlin & Erickson-Walz & Westby #1
Permit #850 - Well # 837
Bottineau County, North Dakota

by John L. Hainer
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McLaughlin & Erickson - Walz and Westby #1, Bottineau County, North Dakota, Section 31-T164N-R78W (660 feet from the south and 660 feet from the east lease lines of the SE 1/4 NW 1/4 - Section 31).

The McLaughlin & Erickson - Walz and Westby #1 was spudded March 15, 1955. Surface casing, 10 3/4" was set at 347 feet with 210 sacks of cement. The well was drilled to a total depth of 3115 feet. The well was non-commercial and was abandoned April 19, 1955.

Elevation: 1517' ground; 1523' K.B.

Casing: 10 3/4" @ 356' with 200 sacks; 5 1/2” @ 3115' with 200 sacks.

Cores: #1 - 3031-3070
#2 - 3070-3089

Drill Stem Tests:
3034-3070: Open 2 hours, received 30' slightly gas cut mud, 277' high oil and gas cut mud with very small amount of free oil, FP 40-115 lb., 20 minutes shut in pressure 190 lb., hydrostatid pressure 1745 lb.
3045-3100: Open 4 hours, received 180' high oil and gas cut mud, 120' oil and gas cut salt water, 1800' slightly gas cut salt water, flowing pressure 95-935 lb., 30 minutes shut in pressure 1305 lb., hydrostatic pressure 1745 lb.

Perforation and Treatment:
Perforated 3072-3084', acidized with 500 gallons; swabbed 40 barrels oil and 51 barrels water in 18 hours; swabbed 18 hours, no recovery; squeezed; perforated 3042-3047'; acidized with 1000 gallons; swabbed load oil; swabbed 10 barrels oil in 24 hours - non-commercial, dry and abandoned.

Logs Run: Electric, microlog, McCullough Radiation.

Plugging Record: 10 3/4" casing cemented @ 375' with 210 sacks: Plugs set at 1910-1840 - 20 sacks; 1113-1060 - 15 sacks; 365-312 - 20 sacks; Surface and cellar - 10 sacks. Mud weight between plugs - 10.3. B. J. Method used.

The following tops were picked from samples and electric logs, not all lithologic tops called in following list. Colors determined from Rock Color Chart.

FORMATION TOPS

Cretaceous System	
Greenhorn Formation	1594
Dakota Group	2014
Jurassic System	2280
Piper Formation	2676
Piper Limestone	2710
Triassic System	
Spearfish Formation	2930
Mississippian System	
Mission Canyon Formation	3033
Total Depth	3115

365-500	Shale, brownish gray 5YR4/1 to medium gray, fissile to spongy.
500-540	Shale, medium gray, massive to spongy.
540-600	Shale, brownish gray to medium gray, massive to spongy.
600-660	Shale, medium light gray, massive.
660-700	Shale, brownish gray 5YR4/1, fissile. Shale as above.
700-740	Shale, medium light gray, massive.
740-860	Shale as above. Dolomite, dark yellowish brown 10YR4/2, micro-crystalline, very dense, silty.
860-900	Bentonitic shale, very light gray, massive.
900-920	Bentonite, white. Bentonitic shale, very light gray, spongy. Some bentonitic shale, light gray with non-calcareous “white specks”.
920-960	Bentonitic shale, light olive gray 5Y6/1, spongy with some “white specks” as above.
960-1060	Bentonitic shale, light olive gray to medium light gray.
1060-1100	Shale, dark gray, grayish black, fissile.
1100-1160	Shale, medium gray, lumpy, bentonitic. Shale as above.
1160-1400	Shale, medium gray, lumpy, bentonitic.
1400-1440	Shale as above. Shale, dark gray fissile. Inoceramus prisms.
1440-1500	Shale as above. Little pyrite.
1500-1580	Shale, medium to dark gray, lumpy to foliated.
1580-1660	Shale, dark gray, foliated with calcareous “white specks.” Shale, medium gray, lumpy. Some Inoceramus prisms and pyrite.
1660-1700	Shale, medium to dark gray, foliated. Inoceramus prisms, and pyrite. Little limestone, medium gray, granular, shaly.
1700-1800	Shale, medium to dark gray, lumpy to foliated, few “white specks”. Inoceramus prisms and pyrite.
1800-1840	Shale, medium to dark gray, lumpy to foliated. Inoceramus prisms and pyrite.
1840-1880	Shale as above, bentonitic.
1880-2000	Shale, medium to medium dark gray, foliated to fissile.
2000-2030	Shale as above. Quartz grains, clear to multicolored, angular.
2090-2050	Sandstone, fine grained, colorless, friable, composed of sub-angular quartz grains and calcitic cement. Shale and few quartz grains as above.
2050-2070	Quartz sand, clear, subrounded, unconsolidated. Little fine grained sandstone as above.
2070-2080	Missing.
2080-2100	Quartz sand and little sandstone as above. Pyrite.
2100-2120	Shale, medium gray, foliated. Little shale, pale reddish brown,

waxy. Quartz sand and pyrite as above.

2120-2150 Shale, medium dark gray, foliated. Little quartz sand as above.

2150-2160 Shale, medium gray, lumpy, medium dark gray, foliated. Little quartz sand as above. Trace of glauconitic siltstone.

2160-2180 Shale, light olive gray 5Y6/1, lumpy. Little medium grained sandstone, pyritic cement.

2180-2240 Shale, medium to medium dark gray, foliated. Quartz grains, clear, subrounded.

2240-2250 Shale, medium to dark gray, lumpy to foliated. Little sandstone, clear, fine grained, angular, calcitic cement, friable.

2250-2260 Shale and sandstone as above. Quartz grains, clear, subrounded, trace of moderate reddish brown shale.

2260-2300 Calcareous siltstone to argillaceous limestone, very light gray to yellowish gray. Shale as above.

2300-2350 Shale, medium to medium dark gray, lumpy to foliated. Little calcareous siltstone, pale yellowish brown.

2350-2380 Shale as above, little shale, greenish gray 5GY6/1 and moderate reddish brown 10R4/6, splintery, waxy.

2380-2390 Shale, greenish gray, moderate reddish brown, splintery, waxy, medium light to medium gray, fissile.

2390-2400 Shale as above. Little limestone, yellowish gray 5Y8/1, fragmental.

2400-2410 Missing.

2410-2480 Shale and little limestone as above.

2480-2540 Shale as above. Little calcareous siltstone, very light gray.

2540-2580 Shale, grayish red 10R4/2, greenish gray 5GY6/1, splintery, waxy. Shale, medium light gray, fissile. Little, limestone, yellowish gray, very finely crystalline.

2580-2600 Shale as above. Little sandstone, very fine grained, angular, calcareous, friable.

2600-2610 Missing.

2610-2620 Shale and sandstone as above. Unconsolidated free quartz grains, subrounded.

2620-2670 Shale as above. Little limestone, yellowish gray, very finely crystalline.

2670-2680 Shale, grayish red, greenish gray, splintery, waxy. Little limestone, grayish pink 5R8/2, finely crystalline.

2680-2700 Shale as above. Little limestone, very pale orange, finely crystalline.

2700-2710 Shale as above. Limestone, very pale orange, fine grained, very sandy.

2710-2730 Limestone, yellowish gray 5Y7/1, very finely crystalline, dense. Shale as above.

2730-2780 Limestone, white to very pale orange, very finely crystalline, dense. Shale, grayish red to greenish gray as above.

2780-2790 Sandstone, white to pale yellowish brown, calcareous cement, friable. Shale and little limestone as above.

2790-2810 Limestone, very pale orange to pale yellowish brown, very finely crystalline, dense. Shale as above.

2810-2820 Shale and limestone as above with little gypsum.

2820-2930 Anhydrite and gypsum. Shale and little limestone as above.

2930-3000 Siltstone, moderate orange pink 5YR8/4, calcareous. Few quartz sand grains, rounded, clear to frosted. Shale, moderate brown 5YR3/4, waxy, massive. Little anhydrite.

3000-3010 Siltstone, brownish gray, slight oil cut. Quartz sand grains as

above.

3010-3030 Siltstone, grayish orange pink 5YR7/2, with included sand grains as above. Little anhydrite.

3030 Circulation. Siltstone matrix, pale yellowish brown with included sand grains as above, 0.5 to 1 mm in diameter, anhydritic cement.

CORE #1

3031-3033 Siltstone with included sand as above.

3033-3034 Anhydrite, pale yellowish brown. Anhydritic limestone, pale yellowish brown, dense, oil stain and cut.

3034-3035 Anhydritic limestone as above, slightly oolitic but porosity poor due to anhydritic filling.

3035-3042 Anhydritic limestone, pale yellowish brown, finely crystalline, dense.

3042-3044 Anhydrite, white.

3044-3052 Limestone, pale yellowish brown, anhydritic, dense, finely crystalline.

3052-3053 Anhydrite, white.

3053-3057 Limestone, pale yellowish brown, anhydritic, medium crystalline, dense.

3057-3058 Anhydrite, white.

3058-3060 Limestone as above, fluorescence but no cut with CCl_4.

3060-3061 Limestone, pale yellowish brown, granular to oolitic, anhydritic, oil stain and good cut.

3061-3062 Anhydrite, pale yellowish brown to white.

3062-3067 Limestone, very pale orange, finely, crystalline, little vuggy, anhydritic filling, fluorescence, slight cut.

3067-3069 Limestone, very pale orange, finely crystalline with few oolites, vuggy, anhydritic filling.

3069-3070 Limestone, pale yellowish brown, coarse granular, good intergranular porosity, good oil stain, fluorescence and oil cut.

CORE #2

3070-3071 Limestone, very pale orange, finely crystalline, slightly oolitic, anhydritic, stylolites.

3071-3075 Limestone, pale yellowish brown, coarse granular, good inter-granular porosity, good oil stain, fluorescence and cut.

3075-3076 Limestone, very pale orange, oolitic with anhydritic cement, little intergranular porosity, few styolites.

3076-3077 Limestone, very pale orange, finely crystalline, dense, vugs filled with anhydrite.

3077-3089 Limestone, very pale orange to pale yellowish brown, oolitic to crypto-crystalline, vuggy, oil stained.

SAMPLES

3089-3100 Limestone, very pale orange, finely crystalline to microsucrosic, fluorescence and oil cut.

3100-3103 Limestone, very pale orange, finely crystalline, fluorescent.

3103-3105 Limestone, very pale orange, fine to medium crystalline, vuggy, fluorescent.

3115 Total Depth.