

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 183

Summary of Texota Oil Co. - M. Sorum #1
Burke County, North Dakota
Well No. 1280 - Permit No. 1292

by Robert M. Eisenhard
January, 1958

Texota Oil Company - M. Sorum No. 1 is located in the SE of SE of Sec. 23, T. 163N., R. 91 W. Elevation 1937 G.L., 1947 K.B.

The Texota Oil Company - M. Sorum No. 1 was spudded October 21, 1956; 10 3/4" casing was set at 450 feet with 325 sacks of cement and 5 1/2" production casing was set at 6004 feet with 230 sacks of cement. The M. Sorum No. 1 was drilled to a total depth of 6295 feet and plugged back to 5900 feet and completed as a new oil discovery (Flaxton Field) January 15, 1957.

Logs:

Schlumberger: Electric Microlaterolog, Gamma Ray-Neutron, Temperature;
Lane Wells: Radioactivity

Cores: None

Tests:

DST #1 - 5818-40, open 4 hrs. Rec. 100' SGCM, trace oil. Flow. press. 67#, one hr. shut-in press. 210#.

DST #2 - 5841-66, gas to surface in 2 hrs., 25 mins. Rec. 95' oil, 280' OCM. Flow. press. 140#, shut-in press. 2595#.

DST #3 - 5880-5919, open 3 hrs. Rec. 3100' gas, 70' OGCM, 462' SOGC, Sul. W. Flow. press. 264#, one hr. shut-in press. 2459#.

Completion Test Data:

Test commenced January 14, 1957; completed January 15, 1957. Length of test - 24 hrs. Test taken on pump: length of stroke 64". No. of strokes per min. 14. Size of working barrel - 1 1/2". Size of tubing 2". No. of ft. run - 5850 ft.

Result of Test:

80.05 bbls. net oil per 24 hrs. Gas-oil ratio - 1400 cu. ft. of gas per bbl. of oil. Percent water produced during test - none. Gravity of oil (corrected to 60° F A.P.I.) 40.3.

Perforated with 4 holes per. ft. Acidized with 8500 gals. from 5846-5856 by Haliburton Oil Well Cementing Co. Top of Pay - 5846 ft.

Transporter:

Westland Oil Refinery Company, Williston, N.D.

Formation tops were picked from samples and electric logs; corrected to electric logs. Not all formation tops are called in the following list. Colors are from the Rock-Color chart.

FORMATION TOPS

Cretaceous System	
Pierre formation	1095
Niobrara formation	2950
Greenhorn formation	3265
Dakota Group	3600
Dakota Group Sands	3858
Jurassic System	
Piper Lime	4905
Triassic System	
Spearfish formation	5105
Mississippian System	
Charles formation	5427
490-520	Sandstone, yellowish gray (5Y8/1) subangular to subrounded, clear to grayish yellow, fine to medium grained quartz, calcareous; lumpy yellowish gray (5Y7/2) salt; few lignite chips.
520-550	Shale, pale yellowish brown to olive gray (5Y4/1)2 soft; lignite chips.
550-670	Sandstone, very light olive gray (5Y6/2), subrounded clear to whitish, very fine grained to silty quartz, etc. friable, bentonitic; some lignite chips.
670-700	Siltstone, very light olive gray (5Y6/2) soft, shaly in parts; with subrounded to rounded coarse grained very light olive gray (5Y6/2) friable sandstone; minor lignite.
700-730	Free sand, coarse subangular to rounded white to clear quartz and colored chert grains; with siltstone as above; minor lignite.
730-790	Siltstone, very light olive gray (5Y6/2), soft bentonitic, calcareous, argillaceous; some sand grains as above; minor lignite.
790-820	Siltstone as above with some grading to very fine grained sandstone; some free sand grains as above; minor lignite.
820-850	Siltstone as above, some moderate reddish orange; free sand grains as above.
850-910	Siltstone, very light olive gray (5Y6/2) bentonitic, calcareous, argillaceous; some coarse sand grains and lignite.
910-940	Siltstone as above.
940-970	Siltstone as above grading to very fine sandstone, minor coarse sand grains and lignite.
970-1000	Siltstone, very light olive gray (5Y6/2) bentonitic, calcareous, argillaceous, some coarse sand grains and lignite.
1000-1030	Clay, very light olive gray (5Y6/2) to moderate reddish orange, bentonitic, calcareous, silty; minor coarse sand grains and lignite.
1030-1120	Clay, very light olive gray (5Y6/2) bentonitic, calcareous silty; minor coarse sand grains and lignite.
1120-1150	Clay as above to moderate reddish orange, some coarse sand grains and lignite.
1150-1210	Clay, very light olive gray (5Y6/2) bentonitic calcareous, silty; some coarse sand grains, minor lignite.
1210-1330	Shale, very light olive gray (5Y6/2) silty, some lumpy, bentonitic; some clay as above; minor coarse sand and lignite.

1330-1480 Shale, very light olive gray (5Y6/2) silty, lumpy, bentonitic, slightly calcareous, minor lignite.

1480-1540 Shale, very light olive gray (5Y6/2) some lumpy, bentonitic, silty; light gray compact.

1540-1570 Missing.

1570-1600 Shale, medium light gray, compact, some bentonite.

1600-1630 Shale, medium light gray, compact.

1630-1660 Shale, medium gray, compact, minor bentonite.

1660-1720 Shale, medium light gray, compact, minor bentonite.

1720-1780 Shale, medium light gray, compact.

1780-1870 Shale, medium light gray, compact, silty.

1870-1960 Shale, medium light gray, compact.

1960-1990 Missing.

1990-2050 Shale, medium light gray to brownish medium light gray, compact to lumpy.

2050-2260 Shale, medium light gray, compact.

2260-2290 Shale as above, with some pyrite.

2290-2350 Shale, medium light gray, compact to lumpy.

2350-2380 Shale, as above, some bentonite.

2380-2410 Shale, medium gray, compact.

2410-2440 Shale, medium light gray, compact to lumpy.

2440-2470 Shale, medium light gray, compact.

2470-2530 Missing.

2530-2590 Shale, medium light gray, compact, some bentonite.

2590-2680 Shale, medium light gray, compact.

2680-2830 Shale, medium gray to brownish medium gray, compact.

2340-2880 Shale, medium light gray, compact, minor bentonite.

2880-2970 Shale, medium light gray to medium gray, compact.

2970-3090 Shale, medium light gray, some calcareous, very few white specks.

3090-3150 Shale, medium light gray slightly micaceous; medium dark gray, calcareous with abundant white specks.

3150-3170 Shale, medium light gray; minor medium dark gray calcareous, white specked shale.

3170-3200 Shale, medium light gray, compact.

3200-3230 Shale, medium light gray, compact, to medium dark gray, some slightly calcareous.

3230-3250 Shale as above, minor very pale blue bentonite.

3250-3280 Shale, medium light gray, compact, minor very pale blue bentonite.

3280-3310 Shale, medium light gray, compact to medium dark gray, calcareous with abundant white specks.

3370-3340 Shale, medium light gray, compact; minor medium dark gray calcareous shale with abundant white specks.

3340-3430 Shale, medium dark gray, calcareous, with abundant white specks; minor medium light gray shale; Inoceramus prisms plentiful.

3430-3470 Missing.

3470-3530 Shale, medium light gray to medium dark gray, some medium dark gray calcareous with abundant white specks; plentiful Inoceramus prisms and pyrite.

3530-3590 Shale, medium dark gray, minor medium light gray and medium dark gray, calcareous with abundant white specks, plentiful Inoceramus prisms and pyrite.

3590-3740 Shale, medium dark gray, plentiful Inoceramus prisms and pyrite.

3740-3800 Shale, medium light gray to medium dark gray; plentiful pyrite; minor very pale blue bentonite.

3800-3850 Shale, medium dark gray, abundant pyrite.

3850-3860 Shale, medium dark gray; minor pale yellowish brown silty shale; abundant pyrite.

3860-3900 Shale as above with minor light olive gray (5Y6/1) shale, abundant pyrite.

3900-3910 Shale, medium dark gray to brownish medium light gray; abundant pyrite.

3910-3940 Shale, as above, with minor clear to white sandstone of clear angular to subangular fine quartz grains, friable; some pyrite.

3940-3970 Shale and sandstone as above, with moderate reddish orange carbonate nodules.

3970-4010 Shale, medium dark gray; minor brownish medium light gray shale and minor sandstone as above, moderate reddish orange carbonate nodules.

4010-4020 Shale, brownish medium light gray, some medium dark gray shale; carbonate nodules as above.

4020-4070 Missing.

4070-4080 Shale, brownish medium light gray, soft, to medium dark gray, compact; moderate reddish orange to dusky red carbonate nodules.

4080-4150 Missing.

4150-4160 Shale, medium dark gray to medium light gray; abundant subangular to rounded, clear to grayish pink, fine to coarse, free quartz grains.

4160-4170 Shale, as above with some free quartz grains as above.

4170-4190 Missing.

4190-4200 Shale, as above with minor free quartz grains as above.

4200-4210 Shale, medium dark gray to brownish medium light gray, compact.

4210-4230 Missing.

4230-4240 Shale, as above.

4240-4250 Shale, medium dark gray, compact to brownish medium light gray soft.

4250-4260 Shale, as above with minor very pale blue bentonite.

4260-4280 Shale, as above.

4280-4290 Shale, as above, with minor very pale blue bentonite.

4290-4300 Missing.

4300-4310 Shale, medium dark gray, compact, to brownish medium light gray, soft.

4310-4320 Missing.

4320-4340 Shale, as above; minor light greenish gray (5GY8/1) siltstone to very fine grained quartz sandstone, slightly calcareous, friable.

4340-4350 Shale, dark gray to brownish medium light gray.

4350-4380 Missing.

4380-4390 Shale, medium dark gray to medium light gray.

4390-4610 Missing.

4610-4620 Shale, dark gray to medium light gray, and light greenish gray (5G8/1) slightly calcareous.

4620-4630 Shale, medium dark gray to medium light gray and light olive gray (5Y6/1).

4630-4650 Shale, medium dark gray to brownish medium light gray.

4650-4660 Shale, dark gray to brownish medium light gray, minor waxy grayish olive shale.

4660-4670 Shale as above; minor white very fine grain calcareous quartz sandstone.

4670-4680 Shale, dark gray to brownish medium light gray, some silty.

4680-4690 Shale, dark gray, brownish medium light gray and greenish gray (5GY6/1).

4690-4710 Shale, medium dark gray to brownish medium light gray, waxey grayish green (10GY5/2), and moderate red (5R4/6); some very light gray very fine to very fine grained calcareous quartz sandstone.

4710-4720 Sandstone, white, fine to very fine grained, subangular to subrounded, calcareous; mixed shale as above.

4720-4730 Shale, mixed and sandstone, as above.

4730-4740 Shale, mixture as above with fine to very fine grained quartz in calcareous matrix. Ratio of quartz to calcareous material varies.

4740-4800 Shale mixture as above, some quartz grain bearing limestone to calcareous quartz sandstone.

4800-4830 Shale, medium light gray to light greenish gray (5G8/1), minor moderate red (5R4/6), and dark gray shale; some calcareous quartz sandstone and quartz bearing limestone as above.

4830-4880 Shale, medium light gray to greenish gray (5GY6/1); some moderate red (5R4/6) and dark gray shale.

4880-4900 Shale, as above with some grayish green (10GY5/2).

4900-4910 Shale, as above; yellowish gray (5Y8/1) fine crystalline limestone.

4910-4950 Limestone, white sublithographic; medium gray to greenish gray (5GY6/1) shale.

4950-4970 Limestone, white sublithographic; dark gray to medium gray and greenish gray (5GY6/1) shale.

4970-4980 Shale and limestone as above; minor light gray siltstone.

4980-4990 Shale and limestone as above with minor light gray siltstone and white bentonite.

4990-5000 Shale, dark gray to medium gray and greenish gray (5GY6/1); minor siltstone, limestone as above.

5000-5010 Shale, dark gray to light gray, minor fine to very fine white calcareous quartz sandstone and minor white sublithographic to fine crystalline limestone. _

5010-5050 Missing.

5050-5070 Shale, greenish gray (5GY6/1), some gray and minor dusky red. Some white anhydrite.

5070-5080 Shale, dark gray, some greenish gray (5GY6/1) and medium light gray, silty. Some white anhydrite and very pale blue bentonite.

5080-5100 Shale, dark gray and greenish gray (5GY6/1), minor medium light gray, silty, and dusky red. Some white anhydrite.

5100-5120 Shale, dark gray to medium light gray, greenish gray (5GY6/1), and dusky red. A few clear to frosted to yellow iron stained, round to subround, medium quartz grains. Minor moderate reddish orange siltstone.

5120-5160 Shale, dark gray, greenish gray (5GY6/1) and minor dusky red; moderate reddish orange siltstone. Minor anhydrite. Few free quartz grains as above.

5160-5210 Siltstone, moderate reddish orange; shale, as above.

5210-5240 Siltstone and shale as above with minor dusky yellow green shale.

5240-5270 Siltstone, moderate reddish orange; some dark gray, greenish gray (5GY6/1) and dusky yellow green shale; a few rounded to subrounded, frosted, stained medium quartz grains.

5270-5280 Shale, dark gray to light gray.

5280-5290 Missing.

5290-5300 Shale, dark gray to light gray; moderate reddish orange, very fine grained sandstone.

5300-5310 Shale, dark gray to light gray, dusky yellow-green, and moderate red (5R4/6).

5310-5340 Sandstone, moderate reddish orange, very fine grained, slightly calcareous; minor shale mixture as above.

5340-5400 Missing.

5400-5420 Sandstone, moderate reddish orange, very fine, rounded, grains; minor dark gray to medium light gray shale. Medium to coarse, rounded, frosted quartz grains.

5420-5430 Sandstone, shale and quartz grains as above; pale red (5R6/2) sandstone, very fine to medium rounded to subrounded quartz grains, calcareous.

5430-5440 Sandstone, pale red, as above; shale as above; white sub-lithographic limestone.

5440-5450 Limestone, grayish pink, fine crystalline, some containing quartz silt; shale and sandstone as above.

5450-5460 Limestone, grayish pink to pale red purple; fine crystalline; some medium dark gray to greenish gray (5GY6/1) shale.

5460-5480 Limestone, pinkish gray to mottled moderate red (5R5/4) and pinkish gray, fine crystalline to oolitic.

5480-5490 Limestone as above to moderate orange pink to moderate red (5R5/4); some shaly.

5490-5500 Limestone, pinkish gray to grayish pink, fine crystalline to sublithographic.

5500-5510 Limestone, yellowish gray (5Y8/1) to grayish orange pink, fine crystalline to sublithographic.

5510-5520 Limestone, yellowish gray (5Y8/1), sublithographic.

5520-5530 Limestone, yellowish gray to grayish orange pink, sublithographic to oolitic.

5530-5550 Limestone, yellowish gray to grayish orange pink, fine crystalline to oolitic, some dolomitic, some white, fine crystalline anhydrite.

5560-5570 Limestone, grayish orange pink to moderate red, fine crystalline, anhydritic, some white anhydrite.

5570-5590 Limestone, grayish orange pink to pale red (5R6/2), some very anhydritic; some white anhydrite.

5590-5600 Anhydrite, fine crystalline, white; minor limestone as above.

5600-5610 Limestone, very pale orange, to moderate red (5R5/4); white to very light gray sublithographic anhydrite.

5610-5620 Limestone, very pale orange to yellowish gray, sublithographic to fine crystalline; minor anhydrite as above.

5620-5630 Limestone as above.

5630-5640 Limestone as above, to medium gray.

5640-5670 Anhydrite, white, sublithographic to fine crystalline.

5670-5680 Limestone, yellowish gray to light brownish gray, sublithographic to fine crystalline.

5680-5700 Limestone as above; white fine crystalline to sublithographic anhydrite.

5700-5720 Anhydrite, white fine crystalline to sublithographic, some soft.

5720-5730 Limestone, dark yellowish brown to very pale orange, fine crystalline; anhydrite as above.

5730-5740 Anhydrite, white to very pale blue, fine crystalline to sublithographic.

5740-5750 Limestone, very pale orange, fine crystalline to fragmental; some anhydrite as above.

5750-5760 Limestone, very pale orange, fragmental to oolitic.

5760-5770 Limestone, as above with white, sublithographic to fine crystalline anhydrite.

5770-5780 Anhydrite, very light gray, sublithographic.

5780-5790 Limestone, very pale orange, fragmental to fine crystalline; anhydrite as above.

5790-5800 Limestone, very pale orange to pale yellowish brown fine crystalline to fragmental; anhydrite as above.

5800-5820 Anhydrite, white to very light gray, sublithographic.

5820-5830 Limestone, yellowish gray to light gray, fine crystalline to fragmental, anhydritic; some anhydrite as above.

5830-5840 Limestone, very pale orange, fragmental to oolitic.

5840-5870 Limestone, very pale orange to pale yellowish brown, fine crystalline to fragmental and oolitic; some white sublithographic anhydrite.

5870-5880 Anhydrite, very pale blue to very light gray, fine crystalline to sublithographic.

5880-5890 Anhydrite as above; some very pale orange anhydritic limestone.

5890-5900 Limestone, very pale orange to yellowish brown, fine crystalline to oolitic, minor anhydrite as above.

5900-5920 Limestone, very pale orange to pale yellowish brown, re-crystallized oolitic.

5920-5940 Limestone, as above, with crystalline anhydrite in vugs.

5940-5970 Limestone, yellowish gray (5Y7/2), recrystallized oolitic; with crystalline clear anhydrite in vugs.

5970-6060 Limestone, yellowish gray (5Y7/2) fine crystalline to re-crystallized oolitic; some crystalline clear anhydrite in vugs.

6060-6130 Limestone, as above; anhydrite as above; also clear crystallized calcite; some open vugs.

6130-6160 Limestone, yellowish gray to pale yellowish brown, recrystallized fragmental to recrystallized oolitic.

6160-6170 Limestone as above to dense very fine crystalline white, soft, limestone.

6170-6180 Limestone, yellowish gray to pale yellowish brown, including many very fine quartz grains; minor clear quartz sandstone, calcareous cement, fine subangular to subrounded grains.

6180-6190 Sandstone, quartz, as above; some limestone as above and gradations in between.

6190-6220 Sandstone as above; minor very pale orange, fine crystalline to oolitic, limestone.

6220-6230 Limestone, very pale orange, fragmental; some sandstone as above.

6230-6240 Limestone as above, to recrystallized oolitic.

6240-6280 Limestone, yellowish gray (5Y7/2), fine crystalline to re-crystallized oolitic.

6280-6295 Limestone, white to yellowish gray (5Y8/1) sublithographic to recrystallized oolitic.

6295 Total Depth.