

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 91

Summary of the Ohio Oil Company Standing Rock Sioux Tribal #1
Sioux County, North Dakota
Well No. 631, Permit No. 645

by Morton Strassberg
September, 1954

Ohio Oil Company - Sioux Tribal #1, Sioux County, North Dakota, C NE SW
Section 29, T. 131N., R. 80W. (1980 feet from S. line and 1980 feet from W.
line) Elevation: D.F. 1730, K.B. 1731.

The Ohio Oil - Sioux Tribal was spudded June 26, 1954 and 214.83 feet of
7 inch casing was set at 223.58 feet with 65 sacks of cement. The well was
completed as a dry hole August 7, 1954 and was abandoned. Total depth 5907
feet.

CORES

1. 3332 - 3334
2. 3800 - 3810

Cement plugs were set at the following depths:

Top of surface pipe with 8 sacks.
141 - 300 with 25 sacks
2414 - 2950 with 60 sacks
3732 - 4000 with 30 sacks
5772 - 5907 with 15 sacks

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

FORMATION TOPS

<u>Formation</u>	<u>Depth</u>
Cretaceous System	
Niobrara Formation	1239
Greenhorn Formation	1813
Muddy	2304
Dakota	2540
Jurassic System	2640
Piper Limestone	2912
Triassic System	
Spearfish Formation	3007
Permo-Pennsylvanian Systems	3100 ?
Mississippian System	
Amsden Formation	3184
Big Snowy Formation	3338
Charles Formation	3494

Mission Canyon Formation	3735
Lodgepole Formation	3993
Englewood Formation	4416
Devonian System	
Lyleton Formation	4450
Devonian Carbonates	4507
Ashern Formation	4705
Silurian System	
Interlake Group	4746
Ordovician System	
Upper Stony Mountain	4906
Lower Stony Mountain	4954
Red River Formation	5048
Winnipeg Shale	5650
Winnipeg Sandstone	5822
Total Depth	5907

0	30	Sand--fine to medium grained, heavy, minerals.
30	50	Sandstone--fine to medium grained, calcareous, ironstained.
50	90	Sandstone--fine to medium grained calcareous.
90	100	Sandstone--fine grained, argillaceous.
100	130	Shale--medium light gray, arenaceous.
130	150	Shale--medium to medium dark gray, arenaceous.
150	160	Shale--medium gray, bentonitic.
160	190	Shale--medium to light olive gray, micaceous.
190	200	Shale--medium light gray, micaceous.
200	210	Shale--medium light to medium dark gray, micaceous.
210	230	Shale--medium light gray, slightly bentonitic.
230	290	Shale--medium light to medium dark gray.
290	320	Shale--medium light gray.
320	350	Shale--medium dark gray.
350	380	Shale--medium light gray bentonitic and medium dark gray.
380	410	Shale--medium light and medium dark gray.
410	440	Shale--medium light gray bentonitic.
440	470	Shale--medium light to medium gray, calcareous.
470	500	Shale--medium light to medium gray.
500	530	Shale--medium and light olive gray.
530	560	Shale--medium light to medium gray.
560	770	Shale--medium gray.
770	950	Shale--medium light to medium gray. White bentonite.
950	1010	Shale--light to medium gray, bentonitic.
1010	1130	Shale--light gray bentonitic and medium dark gray.
1130	1190	Shale--medium light and medium dark gray, white specks, bentonitic.
1190	1226	Shale--light and medium gray.
1226	1291	Shale--light and medium dark gray, white specks, calcareous.
1291	1356	Shale--light gray, white specks, calcareous and darkgray.
1356	1450	Shale--light gray bentonitic and dark gray.
1450	1480	Shale--light to medium light gray, bentonitic.
1480	1510	Shale--light and dark gray.
1510	1600	Shale--light gray bentonitic and dark gray.
1600	1630	Shale--light and medium dark gray.
1630	1660	Shale--light gray, bentonitic, light olive gray and dark gray.
1660	1690	Shale--light gray bentonitic and dark gray.

1690	1720	Shale--light gray and dark gray. Light bluish gray bentonite.
1720	1750	Shale--light to medium light gray, bentonitic.
1750	1810	Shale--light gray bentonitic and dark gray.
1810	1840	Shale--light and dark gray. Calcite prisms.
1840	2020	Shale--light and medium dark gray, white specks, calcareous. Calcite prisms.
2020	2050	Shale--light to medium dark gray.
2050	2220	Shale--dark gray.
2220	2240	Shale--light and dark gray.
2240	2270	Shale--medium dark to dark gray.
2270	2300	Shale--medium to medium dark gray.
2300	2310	Shale--medium to medium dark gray. Light gray siltstone.
2310	2401	Shale--medium to medium dark gray. Light brown siltstone.
2401	2433	Shale--medium to medium dark gray.
2433	2470	Shale--light gray bentonitic and medium to medium dark gray.
2477		(Circ.) Shale--medium to medium dark gray.
2480	2500	Shale--light gray bentonitic and medium to medium dark gray.
2500	2540	Shale--medium light to medium dark gray.
2540	2550	Shale--medium to medium dark gray. Light gray calcareous siltstone.
2550	2570	Siltstone--light gray and light brown. Medium gray, shale.
2570	2610	Siltstone--iron stained and siltstone concretions. Medium gray shale.
2610	2620	Shale--medium gray. Fine grained sandstone and light gray siltstone.
2620	2640	Sandstone--fine grained silty, pyritic. Medium gray shale.
2640	2670	Shale--medium light to medium gray and pale green. Coarse free quartz.
2670	2680	Shale--medium light to medium dark gray.
2680	2710	Shale--medium light to medium dark gray. Light gray fine grained siltstone.
2710	2720	Shale--light to medium gray. Pyritic glauconitic siltstone.
2720	2750	Shale--medium light to medium dark gray. Light gray calcareous glauconitic siltstone.
2750	2770	Shale--light to medium dark and greenish gray. Light gray calcareous, glauconitic, siltstone.
2770	2810	Shale--light to greenish gray and gray red. Light gray and pale red calcareous siltstone.
2810	2830	Shale--light to greenish gray and pale reddish brown. Very light gray and pale red siltstone.
2830	2840	Shale--medium dark gray.
2840	2870	Shale--variegated, light, medium dark and greenish gray also gray red. Very light gray and pale red calcareous siltstone.
2870	2880	Shale--medium light gray. Very light gray and pale reddish brown, calcareous siltstone.
2880	2910	Shale--medium light to greenish gray.
2910	2915	(23 min. circ.) Limestone--yellowish to pale yellowish brown, sublithographic.
2920	2930	Limestone--dusky yellow, argillaceous. Medium light to medium gray shale.
2930	2940	Limestone--white chalky light brown. Anhydrite inclusions. Medium light to greenish gray shale.
2940	2950	Shale--greenish gray and grayish red. Grayish red siltstone.

2950	2970	Limestone--white sublithographic, greenish gray and gray red shale.
2970	2990	Limestone--pale red. Greenish gray shale. Coarse grained free quartz.
2990	3010	Limestone--white to very light gray and pale red, sublithographic. Medium light to greenish gray shale.
3010	3030	Shale--medium to medium dark gray. Pale red to pale reddish brown, argillaceous siltstone.
3030	3040	Shale--medium to medium dark gray. White anhydrite.
3040	3080	Shale--medium to medium dark gray and pale reddish brown calcareous. White anhydrite.
3080	3090	Shale--medium to medium dark gray and pale reddish brown.
3090	3100	Shale--medium to medium dark gray and pale reddish brown. White anhydrite.
3100	3110	Shale--medium to medium dark gray and gray red. White anhydrite. Pale red sublithographic dolomite.
3110	3120	Shale--medium light gray and pale reddish brown, slightly calcareous.
3120	3140	Shale--medium light to medium dark gray and pale reddish brown. White anhydrite. Pale red, fine grained dolomite.
3140	3150	Shale--medium to medium dark gray and pale reddish brown. White anhydrite. Very light to pinkish gray siltstone.
3153		(1/2 hr. Circ.) Shale--moderate reddish brown. Very fine grained sandstone.
3150	3170	Shale--moderate reddish brown. Pale red fine grained dolomite. Fine grained sandstone.
3170	3180	Dolomite--pale red, fine grained. Moderate red shale.
3180	3200	Shale--medium light and moderate reddish brown. White anhydrite.
3200	3220	Shale--medium to medium dark gray and moderate reddish brown.
3220	3230	Shale--medium to medium dark gray and moderate red. Light gray siltstone.
3230	3250	Dolomite--light to very light gray, sublithographic. Medium dark and moderate red shale.
3250	3260	Dolomite--light gray, fine grained.
3260	3270	Shale--medium dark gray and moderate red. Light gray siltstone.
3270	3280	Shale--medium light to medium dark gray.
3280	3310	Shale--medium dark gray and moderate red. White anhydrite.
3310	3320	Dolomite--light to medium light gray, fine grained, arenaceous. Medium to medium dark gray and moderate red shale.
3320	3340	Shale--medium dark gray and moderate red. Core 3332-3334. White to medium gray anhydrite. Light to medium light gray dolomite.
3340	3350	Shale--dark gray.
3350	3360	Shale--medium dark gray and moderate red. Medium to very coarse grained quartz.
3360	3370	Shale--moderate reddish brown.
3370	3380	Shale--moderate reddish brown and dusky yellow. White anhydrite.
3380	3400	Dolomite--yellowish to light gray, fine grained. Medium dark moderate red and dusky yellow shale.
3400	3410	Dolomite--medium dark gray, fine grained, argillaceous.
3410	3420	Limestone--light to medium gray, fine grained.
3420	3430	Limestone--very light gray, fine grained, arenaceous.

3430	3440	Limestone--very light to light gray, fine grained, fossiliferous.
3440	3450	Shale--medium light to medium dark gray, dark yellowish orange and gray red.
3451		(1/2 hr. Circ.) Shale--dusky yellow, moderate reddish brown and medium to medium dark gray.
3451	3470	Shale--medium to medium dark gray, dusky yellow and moderate reddish brown. Fine to coarse free quartz.
3470		(25 min.) Shale--dusky yellow and moderate reddish brown. Fine to medium grained free quartz.
3470	3480	Shale--same as above.
3480	3490	Dolomite--grayish orange pink, sucrosic, highly arenaceous.
3490	3510	Shale--medium dark gray.
3510	3520	Limestone--white, sublithographic.
3520	3530	Limestone--white, sublithographic and yellowish gray fine grained.
3530	3540	Limestone--medium light to pale yellowish brown oolitic, good intergranular porosity.
3540	3550	Limestone--yellowish gray to pale yellowish brown, oolitic, tight to intergranular porosity.
3550	3578	Limestone--fine grained to oolitic, tight.
3580	3590	Limestone--yellowish gray to pale yellowish brown, fine grained to oolitic, some pinpoint porosity.
3590	3600	Limestone--light to yellowish gray, oolitic to fragmental, tight, carbonaceous inclusions.
3600	3610	Limestone--light to medium gray, sublithographic.
3610	3620	Shale--medium dark and moderate red. White to very light gray limestone. Fine grained free quartz.
3620	3660	Limestone--white to yellowish gray fine grained to sucrosic.
3660	3670	Limestone--very light gray sublithographic.
3670	3680	Anhydrite--white. Medium dark gray pale reddish brown and dusky yellow.
3680	3690	Shale--medium to medium dark gray and gray red.
3690	3700	Limestone--yellowish gray, sublithographic, anhydrite inclusions.
3700	3710	Shale--dusky yellow and grayish red. White anhydrite.
3710	3720	Shale--medium dark gray, pale reddish brown and dusky yellow.
3720	3740	Anhydrite--light bluish gray.
3740	3750	Anhydrite--white to yellowish gray.
3750	3760	Anhydrite--yellowish to light bluish gray.
3760	3770	Limestone--yellowish gray, fine grained to fragmental.
3770	3780	(31 min. Circ) Limestone--yellowish gray to pale yellowish brown, oolitic, tight generally, some pinpoint porosity.
3790	3800	(31 min. Circ.) Limestone--yellowish gray to pale yellowish brown, fine grained to fragmental, some intergranular porosity.
3800	3802	(Core) Limestone yellowish gray to pale yellowish brown, fine grained, porous, fossiliferous.
3802	3810	Limestone--yellowish gray, fine grained, to fragmental, fossiliferous, dead oil stain, slight oil cut, many brachiopods at base, strong H ₂ S odor.
3810	3840	Limestone--yellowish gray, fine grained to fragmental.
3840	3850	Dolomite--medium light gray, microsucrosic.
3850	3860	Limestone--yellowish gray, fine grained to sublithographic.
3860	3870	Limestone--yellowish gray fine grained to sublithographic.

		Medium light gray sucrosic dolomite.
3870	3880	Dolomite--yellowish gray, microsucrosic, vuggy porosity.
3880	3890	Dolomite--yellowish gray, microsucrosic, tight to vuggy porosity.
3890	3900	Dolomite--yellowish gray to pale yellowish brown, sucrosic, some pinpoint porosity.
3900	3960	Dolomite--yellowish gray, oolitic, some intergranular porosity.
3960	3970	Dolomite--yellowish gray to pale yellowish brown, sucrosic, some pinpoint porosity.
3970	3974	Dolomite--medium light to pale yellowish brown, microsucrosic. Pale yellowish brown oolitic limestone with some intergranular porosity.
3974	3980	Dolomite--medium light to medium gray, sucrosic, some intergranular porosity.
3980	3990	Limestone--medium light to pale yellowish brown, fine grained to sucrosic.
3998		(Circ.) Limestone--yellowish brown, fine grained to fragmental.
3990	4000	Dolomite--medium light gray, microsucrosic.
4000	4010	Shale--medium dark, dusky yellow and moderate red.
4010	4030	Limestone--medium light gray, sucrosic to fragmental.
4030	4050	Limestone--pale yellowish brown, oolitic to fragmental, tightly cemented.
4050	4070	Limestone--light gray, fine grained to fragmental.
4070	4080	Shale--medium dark gray. Medium light gray, fragmental limestone.
4080	4160	Limestone--light to medium light gray, fine grained to fragmental.
4160	4230	Limestone--light to medium gray, fine grained to fragmental, fossiliferous.
4230	4270	Limestone--light to pale yellowish brown, fine grained to fragmental, some pinpoint porosity.
4270	4300	Limestone--pale yellowish brown, fine grained to fragmental fossiliferous.
4308		(3/4 hr. Circ.) Limestone--yellowish gray, fine grained to fragmental. Pale yellowish to pale brown sucrosic dolomite.
4300	4310	Limestone--same as above.
4310	4330	Limestone--yellowish gray, fine grained.
4330	4410	Limestone--yellowish gray to pale yellowish brown, fine grained to fragmental.
4410	4450	Shale--medium dark to dark gray, light gray siltstone.
4450	4470	Shale--medium to medium dark gray and moderate to grayish red. Very light gray siltstone.
4470	4480	Shale--medium to greenish gray and moderate red.
4480	4490	Shale--medium to greenish gray and moderate red. Yellowish gray microsucrosic dolomite.
4490	4510	Dolomite--yellowish gray, microsucrosic. Medium to greenish gray and moderate red.
4510	4520	Dolomite--yellowish gray to pale yellowish brown, microsucrosic, some pinpoint porosity.
4520	4540	Limestone--yellowish gray to pale yellowish brown, fine grained to fragmental, dolomitic.
4540	4550	Limestone--yellowish gray, fine grained to sublithographic. Pale yellowish brown, microsucrosic dolomite.

4550	4557	(1/2 hr. circ.) Dolomite--yellowish gray to pale yellowish brown, microsucrosic.
4560	4570	Limestone--yellowish gray, fine grained to fragmental.
4570	4580	Dolomite--yellowish gray to yellowish brown, microsucrosic.
4580	4600	Dolomite--yellowish gray to pale yellowish brown, micro-sucrosic. Coarse, rounded free quartz.
4600	4620	Dolomite--pale yellowish brown, sucrosic.
4620	4630	Shale--medium dark gray. Pale brown sucrosic dolomite.
4630	4638	(1/2 hr. circ.) Dolomite--pale yellowish to pale brown, sucrosic.
4640	4650	Dolomite--light gray to pale yellowish brown, sucrosic. Medium dark gray shale.
4650	4660	Limestone--very light to light gray, fine grained to chalky. Medium dark gray shale.
4660	4670	Limestone--very light to medium gray, fine grained to fragmental, ostracods.
4670	4690	Limestone--very light to yellowish gray, sublithographic, slightly fossiliferous.
4690	4700	Dolomite--pale yellowish brown, microsucrosic, some inter-granular porosity. Pale reddish brown shale.
4700	4710	Limestone--very light to yellowish gray, sublithographic, fossiliferous. Medium dark gray shale.
4710	4730	Dolomite--yellowish gray, microsucrosic.
4730	4750	Shale--pale reddish brown, silty and medium to medium dark gray.
4750	4770	Limestone--yellowish gray to grayish orange, sublithographic.
4770	4772	(3/4 hr. Circ.) Dolomite--grayish orange pink, microsucrosic. Grayish orange sublithographic limestone.
4770	4790	Dolomite--grayish orange pink to grayish orange, microsucrosic.
4790	4800	Dolomite--very light to yellowish gray, sucrosic, some inter-granular porosity. Greenish gray and gray red shale.
4800	4820	Dolomite--grayish orange pink, microsucrosic to sub-lithographic. Greenish gray and gray red shale.
4820	4850	Dolomite--yellowish gray, sublithographic to microsucrosic.
4850	4870	Dolomite--pale red, microsucrosic to sublithographic.
4870	4880	Dolomite--yellowish gray to grayish orange, microsucrosic to sublithographic.
4880	4890	Dolomite--moderate orange pink, fine grained to sucrosic.
4890	4910	Dolomite--yellowish gray, microsucrosic.
4910	4920	Dolomite--yellowish gray to pale red, sucrosic.
4920	4930	Shale--medium dark gray. Yellowish to pale orange sucrosic dolomite.
4930	4940	Dolomite--very light to yellowish gray, microsucrosic.
4940	4950	Dolomite--yellowish gray to pale yellowish brown, micro-sucrosic.
4950	4960	Dolomite--light gray to pale yellowish brown, sucrosic, inter-granular porosity.
4960	5010	Limestone--light to medium gray, fine grained to fragmental, fossiliferous.
5010	5030	Shale--medium to medium dark gray and gray red.
5030	5040	Shale--medium to medium dark gray.
5040	5050	Shale--medium to medium dark gray. Light gray, fine grained to fragmental fossiliferous limestone.
5050	5060	Limestone--light to medium light gray, sublithographic.

5060	5070	Limestone--very light to yellowish gray.
5070	5080	Dolomite--yellowish gray, microsucrosic.
5080	5090	Limestone--yellowish gray, microsucrosic to sublithographic.
5090	5100	Limestone--very light to yellowish gray, sublithographic.
5100	5110	Limestone--yellowish gray to pale yellowish brown, sublithographic to chalky.
5110	5130	Limestone--yellowish gray to pale yellowish brown, fine grained to fragmental, bryozoans.
5130	5160	Dolomite--yellowish gray to pale yellowish brown, microsucrosic, dense.
5160	5210	Dolomite--pale yellowish brown, microsucrosic, some intergranular porosity.
5210	5220	Limestone--very light to yellowish gray, chalky to fine grained.
5220	5230	Dolomite--pale yellowish brown to pale brown, microsucrosic, some intergranular porosity.
5230	5240	Limestone--very light to yellowish gray, fine grained to chalky.
5240	5250	Dolomite--pale yellowish brown, microsucrosic.
5250	5290	Limestone--yellowish gray fine grained to sublithographic. Pale yellowish brown microsucrosic dolomite.
5290	5310	Dolomite--pale yellowish brown, microsucrosic.
5310	5340	Limestone--very light to yellowish gray, fine grained. Pale yellowish brown, microsucrosic dolomite.
5340	5370	Dolomite--pale yellowish brown, microsucrosic. Yellowish gray fine grained limestone.
5370	5470	Dolomite--pale yellowish brown, microsucrosic.
5470	5500	Limestone--very light to yellowish gray, fine grained to sublithographic, fragmental. White chert.
5500	5520	Limestone--very light to yellowish gray, sublithographic. White chert.
5520	5590	Limestone--very light to yellowish gray, sublithographic.
5590	5600	Limestone--very light to yellowish gray, fine grained to sublithographic.
5600	5640	Limestone--very light to light gray, fine grained to sublithographic.
5640	5650	Limestone--very light to medium gray, fine grained. Medium light and medium dark gray shale.
5650	5656	(Circ.) Siltstone--very light to brownish gray. Medium to medium dark gray shale.
5650	5660	Siltstone--very light gray and pale brown, medium dark to greenish gray.

1/3 hour Circulation

5669		Shale--medium light to greenish gray, light gray siltstone.
5660	5690	Shale--medium to greenish gray, light gray siltstone.
5690	5730	Lost circulation.
5730	5740	Shale--pale brown and greenish gray, fissile.
5740	5780	Shale--greenish gray, fissile, waxy, pyrite.
5780	5800	Lost circulation.
5800	5820	Shale--greenish gray, waxy, platy.
5820	5830	Sandstone--fine to medium grained, subrounded, frosted, pyritic, greenish gray platy, waxy shale.
5830	5840	Lost circulation.

5840	5850	Sandstone--fine to medium grained subrounded, frosted, greenish gray waxy shale cave.
5850	5870	Sandstone-fine grained, subrounded, frosted, glauconitic, pyritic in part.
5870	5880	Sandstone, fine to coarse grained, rounded, frosted.
5880	5890	Lost circulation.
5890	5907	Sandstone--fine to very coarse grained, rounded.
Total depth	5907	