Well:	#1 Friend
Operator:	Apex Oil Company
Contractor:	Tipps Drilling Company
Location:	C SW NE Sec. 20, T-3-S, R-50-W
County:	Washington
State:	Colorado
Elevation:	4551.5 GL; 4558.5 KB
Casing:	Set 222' of 8-5/8" w/225 sacks @232'
Commenced:	July 12, 1964
Cores:	One, "J" Sand
Core Analysis:	Core Laboratories
Drill Stem Tests:	Virg's Testers; "D" Sand, "J" Sand
Logs:	Schlumberger; Ind-Elec. and Gamma Ray Sonic
Completed:	
Status:	

ELECTRIC LOG FORMATION TOPS

Formation	Top		Subsea
Niobrara	3050		
Fort Hays	3376		
Carlile	3436		
Greenhorn	3568		
Bentonite	3765		+793
"D" Sand	3852		+706
"J" Sand	3904		+654
Total Depth	4031	Drillers	4031

CORING TIME

CORE #1 3901 - 3927' Minutes per Foot

3901 - 3902	12	3910 - 3911	5	3919 - 3920	9
3902 - 3903	1	3911 - 3912	5	3920 - 3921	6
3903 - 3904	4	3912 - 3913	3	3921 - 3922	7
3904 - 3905	6	3913 - 3914	8	3922 - 3923	3
3905 - 3906	10	3914 - 3915	10	3923 - 3924	7
3906 - 3907	7	3915 - 3916	13	3924 - 3925	9
3907 - 3908	13	3916 - 3917	8	3925 - 3926	16
3908 - 3909	3	3917 - 3918	12	3926 - 3927	16
3909 - 3910	7	3918 - 3919	9		

DRILL STEM TESTS

DST #1 3907 - 3912 Straddle Packer Test

Open 2 Hours 30" Initial and 30" Final Shut In Time

Tool opened with fair blow of air to surface that continued throughout test.
Recovered 810' of fluid, 540' of free oil and 270' of water oil cut 5%

Initial Hydrostatic Pressure	2093 psi
Final Hydrostatic Pressure	2037 psi
Initial Flow Pressure	75 psi
Final Flow Pressure	419 psi
Initial Shut In Pressure	826 psi
Final Shut In Pressure	813 psi

DST #2 3868 - 3875 Straddle Packer Test

Open 2 Hours 30" Initial and 30" Final Shut In Time

Tool opened with weak blow of air and continued throughout test.
Recovered 73' of fluid, 10' of oil and 63' of slightly oil cut muddy water.

Initial Hydrostatic Pressure	2058 psi
Final Hydrostatic Pressure	2030 psi
Initial Flow Pressure	11 psi
Final Flow Pressure	42 psi
Initial Shut In Pressure	814 psi
Final Shut In Pressure	718 psi

CORE DESCRIPTION

CORE #1 3901 - 3927 Cut and Recovered 26'

3901 -3901-1/2	Shale, black, sandy.
3901-1/2- 3903	Sand, gray-tan, reworked w/black shale, spotty stain and fluorescence.
3903 -3920-1/2	Sand, brown, fine-grained, fair porosity and permeability, occasional thin black shale streaks, good stain and bright yellow fluorescence, slight odor.
3920-1/2 -3927	Siltstone, gray, hard, shaly.

CORE ANALYSIS

Depth	Hor.	Vert.	Porosity	Oil	Water
3903 - 3904	107	88	25.5	22.3	57.8
3904 - 3905	217	203	22.2	30.2	54.1
3905 - 3906	587	498	26.7	12.4	68.2
3906 - 3907	349	341	25.6	34.8	51.6
3907 - 3908	300	281	26.6	27.4	54.9
3908 - 3909	278	274	27.2	24.2	62.5
3909 - 3910	648	316	26.6	30.4	57.6
3910 - 3911	333	333	27.1	28.4	50.5
3911 - 3912	370	252	29.6	14.2	69.7
3912 - 3913	155	122	34.7	12.4	74.4
3913 - 3914	335	174	27.2	12.5	72.1
3914 - 3915	157	133	25.2	17.4	64.3
3915 - 3916	423	409	26.5	22.6	61.9
3916 - 3717	314	273	24.3	26.7	61.7
3917 - 3918	277	260	22.0	26.4	62.7
3918 - 3919	170	107	25.3	13.8	68.1
3919 - 3920	329	327	21.8	23.0	66.6
3920 - 3921	423	388	21.9	27.4	63.9

SAMPLE DESCRIPTION

3850 - 3860	Shale, dark gray w/sand from above.
3860 - 3865	Sand, gray, fine-grained, dirty, wet; no show.
3865 - 3870	Same as above, no show.
3870 - 3875	First "D" Sand; sand, gray-white, fine grained, silty, thin shale streaks, looks wet; no show.
*3875 - 3880	Same sand as above; one sand cluster in ten has fair stain and fluorescence.
3880 - 3885	Sand, gray-tan, fine-grained, soft and friable, good uniform oil stain and good fluorescence.
3885 - 3890	Sand, gray-tan, fine-grained, harder than above, good stain and fluorescence.
3890 - 3895	Sand, gray-tan, fine-grained, silty, fair stain and fluorescence.
3895 - 3900	Same sand as above, with slight oil show.
3900	(20 minutes, circulate for samples) siltstone, gray, w/gray sand.
3900	(40 minutes, circulate for samples) shale, gray w/trace of brown limestone.
3900	(60 minutes, circulate for samples) shale, gray, soft.
3901 - 3927	Core #1
3930 - 3935	Unrepresentative sample.
3935 - 3940	Same as above.
3940 - 3945	Same as above.
3945 - 3950	Siltstone, gray, hard.

Sample Description (Con't)

3950 - 3955	Same w/blue bentonitic shale.
3955-- 3960	Shale, gray, soft.
3960 - 3965	Sand, gray-tan, fine grained, spotty oil stain on some sand clusters, good stain on others, visible stain on all clusters when crushed, fair to good fluorescence on all sand clusters.
3965 - 3970	Same sand as above w/less total sand and less oil show.
3970 - 3975	Sand, gray, fine-grained, fairly clean, wet, no visible oil stain or fluorescence.
3975 - 3980	Same as above, no show.
3980 - 3985	Sand, gray-tan, fine-grained, slight stain, fair fluorescence.
3985 - 3990	Same as above.
3990 - 3995	Sand, white, fine-grained, clay filled, tight, no show.
3995 - 4000	Same, no show.
4000 - 4005	Sand, white, fine-grained, soft, wet, no show.
4005 - 4010	Sand, gray, fine to medium-grained, soft, good stain on fresh break, good fluorescence.
4010 - 4015	Same sand as above, wet, no show.
4015 - 4020	Sand, white, fine-grained, soft, wet, no show.
4020 - 4025	Same sand as above, some isolated clusters w/spotty stain and fluorescence.
4025 - 4030	Same as above.
4030	(20 minutes, circulate for samples) sand, gray, shaly, wet, no show.
4030	(40 minutes, circulate for samples) same, wet, no show.

BIT RECORD

Run No.	Size	Make	Type	Depth From	Depth To	Feet	Hours
1	7-7/8	Smith	DTJ	232	3405	3175	23
2	7-7/8	HTC	OSC-3	3405	3901	496	11-1/2
3	6-5/8	D&S	Diamond	3901	3927	26	4
4	7-7/8	HTC	OSC	3927	4031	104	4-1/2