

FORMATION LOG

R. N. Rine #1 Phillips  
 NE/NE/NE; 5-27S-13W  
 Pratt County, Kansas  
 Elevation: 1965 derrick floor

Conn: 11-1-52  
 Comp: 12-1-52  
 8 5/8" csg. 815' (?)  
 5 1/2" csg. 4454'

Note: All measurements are from the top of the rotary bushing which is two feet above the derrick floor.

<u>Depth</u>	<u>Formation Description</u>	<u>Remarks</u>
0 - 40	Surface clay and sand	Drillers log on old hole 0 - 2955
40 - 320	Sand, shale and red bed	
320 - 425	Shale and red bed	
425 - 560	Shale and shells	
560 - 685	Shale, shells and sand	
685 - 815	Shale, shells and red bed	
815 - 1195	Shale and shells	
1195 - 1760	Salt shale and shells	
1760 - 1970	Shale and shells	
1970 - 2235	Limestone and shale	
2235 - 2285	Limestone and shale	
2285 - 2285	Limestone	
2285 - 2740	Shale and limestone	
2740 - 2880	Shale	
2880 - 2955	Limestone and shale	
2955 - 3060	Shale and limestone	Drillers log on new hole 2955 - 3500
3060 - 3145	Limestone and shale	
3145 - 3240	Shale and shells	
3240 - 3345	Shale and limestone	
3345 - 3500	Shale and limestone	
3500 - 3503	Shale, gray	Sample log 3500 to T.D. No show
3503 - 3602	Limestone, tan to gray-brown, sub-crystalline, some white, oolitic; limestone, gray to white to brown, finely sucrose, oolitic, dolomitic, spotted vugular and oolitic porosity.	
3602 - 3609	Shale, gray-black to brown-black	
3609 - 3621	Limestone, tan to gray, granular to dense.	
3621 - 3625	Shale, brown-black, fissile, micaceous.	Heebner
3625 - 3630	Limestone, blue-gray, dense, mottled.	Leavenworth
3630 - 3644	Shale, gray to green-gray; some gray siltstone	Snyderville
3644 - 3660	Limestone, cream to white, finely crystalline to finely sucrose.	Toronto
3660 - 3683	Mostly limestone, dirty gray, sub-crystalline to brown, dense; streaks gray-green silty shale.	Top Douglas 3660
3683 - 3712	Shale, gray and green, gray; siltstone, fine, gray, micaceous.	
3712 - 3767	Sand, gray to green-gray, medium, sub-rounded to sub-angular, dirty, micaceous.	

WINDY HILL JOINS

<u>Depth</u>	<u>Formation Description</u>	<u>Remarks</u>
3767 - 3772	Limestone, brown, dense, some very hard.	Top Brown Lansing 3767
3772 - 3792	Limestone, as above, streaks gray shale.	
3792 - 3804	Limestone, white to light gray, medium crystalline to sub-crystalline.	Top Lansing 3792
3804 - 3818	Limestone, as above, streaks brown and gray shale.	
3818 - 3832	Limestone, brown to gray, sub-crystalline, some oolitic with spotted pinpoint porosity.	Fair odor, no free oil; DST
3832 - 3843	Limestone, tan to gray, dense, some translucent; streaks gray and brown shale.	
3843 - 3857	Limestone, white to blue-gray, oolitic, finely crystalline, fair oolitic porosity	Fair stain
3857 - 3896	Limestone, blue-gray to brown, dense; some gray-brown, mottled, opaque chert; streaks brown and gray shale.	
3896 - 3908	Limestone, gray, dense, translucent, chert, gray to black, opaque; spotted pinpoint porosity.	Trace stain
3908 - 3913	Limestone and chert, as above, no porosity.	
3913 - 3925	Limestone, gray to dark gray, mottled, oolitic, sub-crystalline; some spotted porosity.	Slight stain
3925 - 3927	Limestone, as above, no porosity.	
3927 - 3933	Limestone, gray, earthy, sub-crystalline, spotted pinpoint porosity, chert, blue-gray, opaque.	No show
3933 - 3944	Limestone, gray to brown, sub-crystalline to dense; streaks gray-green and brown shale	
3944 - 3952	Limestone, brown, sucrose, good pinpoint porosity; chert, gray to gray-blue, opaque vitreous.	Good stain, very slight show oil.
3952 - 3978	Limestone, tan to brown, sub-crystalline, mottled; chert, as above; streaks shale, gray-green and green	
3978 - 3981	Limestone, brown to gray, sub-crystalline to finely crystalline; fair vugular porosity.	Good stain
3981 - 3989	Limestone, brown-gray to brown-black, mottled, sub-crystalline	
3989 - 3998	Limestone, brown-gray to sucrose, oolitic; good oolitic porosity.	Fair odor, slight show free oil; DST
3998 - 4020	Limestone, gray-brown sub-crystalline to dense; chert, gray, opaque; streaks black and gray, micaceous shale	
4020 - 4025	Limestone, gray to brown, sub-crystalline, finely sucrose, oolitic; good oolitic and vugular porosity.	Fair odor, slight show free oil; DST
4025 - 4033	Limestone, gray, sub-crystalline	
4033 - 4046	Limestone, tan to brown, mottled, sub-crystalline, oolitic; good vugular and oolitic porosity.	Fair stain Base Kansas City 4114

## (3) Formation log; Mine Al Phillips:

<u>Depth</u>	<u>Formation Description</u>	<u>Remarks</u>
4046 - 4114	Limestone, tan to gray to brown, sub-crystalline to dense; shale, gray-gray-black and brown; chert, tan to gray, opaque.	Base Kansas City 4114
4114 - 4129	Shale, gray, gray-green and olive, silty.	Top Harmanon 4114
4129 - 4154	Mostly limestone, gray and brown, sub-crystalline to dense, resinous; shale, gray-green, gray and maroon	
4154 - 4171	Less limestone, increase in shale; chert, tan to salmon, vitreous, opaque to translucent.	
4171 - 4186	Limestone, gray, sub-crystalline, fossiliferous; much chert, as above.	
4186 - 4191	Shale, green, gray and maroon	
4191 - 4198	Chert, amber to salmon, vitreous, translucent, amber to white to brown, devitrified	Top Mississippi 4191; some gilsonitic stain, no free oil, DST
4198 - 4203	Shale, gray and gray-green	
4203 - 4228	Chert, white, opaque, vitreous, some salmon to pink to amber, vitreous, translucent; chert, white to brown devitrified; chert, blue-green to yellow, opaque, vitreous to devitrified.	Some brown stain, much gilsonitic stain, no free oil, fair odor; DST
4228 - 4230	Shale, gray-green and silver gray, micaceous, some gray-black, waxy	Top Kinderhook 4228
4230 - 4251	Mostly limestone, dirty brown argillaceous, sub-crystalline; streaks shale, as above	
4251 - 4260	Chert, brown to amber to salmon, vitreous, some brown to white, devitrified, opaque	Fair odor, possible slight show free oil; DST
4260 - 4266	limestone and shale, as above	
4266 - 4281	Chert, as above; much limestone as above; some shale, silty, as above	
4281 - 4292	shale, silty, micaceous, as above	
4292 - 4332	Chert, white, opaque, vitreous, brown to tan to white, vitreous to devitrified porous; slight odor, good show free oil; chert, amber, translucent to opaque, vitreous.	Top Viola 4292; slight odor good show free oil; DST
4332 - 4342	Shale, green to brown-black, waxy; streaks brown sub-crystalline limestone.	
4342 - 4349	Limestone, white to buff, finely crystalline limestone; sandy	
4349 - 4351	shale, bright green, sandy	Top Simpson 4349
4351 - 4355	sand, brown, fine to medium, angular to sub-rounded; interfingering streaks bright green shale.	
4355 - 4359	Sand, brown, fine, angular, dolomitic; streaks interfingering, bright green, sandy shale; streaks limestone, white, sub-crystalline, very sandy.	Fair odor, spotted saturation
4359 - 4360	Limestone, white to tan, fossiliferous, sub-crystalline to dense; sandy; thin streaks sand and sandy shale, as above.	Spotted stain

## (4) Formation log; Well #1 Phillips

<u>Depth</u>	<u>Formation Description</u>	<u>Remarks</u>
4360 - 4362	Sand, white to brown to tan, fine, to medium-coarse, angular to sub-angular, calcareous, some phosphate nodules.	Good odor, streaks fair saturation
4362 - 4367	Dolomite, brown to buff, sub-crystalline to dense, slightly sandy, very large scattered vugs	Good show free oil
4367 - 4371	Dolomite, brown to gray, sub-crystalline to dense, lithographic; white to yellow, dense limestone inclusions, few thin inter-fingered streaks black waxy shale.	Spotted gilsonitic stain.
4371 - 4373	Dolomite, brown, sub-crystalline to finely crystalline, thin streaks shale, as above.	
4373 - 4375	Shale, black to green, sandy in spots, pyritic.	(Shale saturated with oil, bleeding oil through fissures.)
4375 - 4383	Sand, brown, dolomitic, medium, sub-angular to sub-rounded	(Fair to good stain)
4383 - 4387	Shale, green and black, as above	
4387 - 4397	Sand, medium to fine, sub-rounded to sub-angular	Fair stain
4397 - 4433	streaks sand, shale and dolomite, as above.	
4433 - 4439	Dolomite, cream to buff, medium crystalline, rhombohedral; chert, white, opaque, oolitic.	Top Arbuckle 4433
4439 - 4444	Dolomite, brown, medium to finely crystalline, rhombohedral, fair vugular porosity.	Fair show free oil (old well produced from this zone).
4444 - 4446	Dolomite, brown to tan, sub-crystalline to dense; chert, gray to tan, opaque, oolitic.	
4446 - 4453	Dolomite, tan to gray, finely sucrose, oolitic; good vugular and oolitic porosity.	Good odor, good show free oil.
4453 - 4457	Dolomite, brown to tan, sub-crystalline, as above; chert, as above.	
4457 - 4463	Dolomite, tan, sub-crystalline, some medium crystalline with fair vugular porosity.	No show
4463 - 4470	Dolomite, as above, no porosity; chert, gray, translucent, oolitic,	
4470	Rotary total depth	
4454	5 1/2" casing	250 sacks cement.

Drill Stem Test Data:

Well #1 3818-40 (Lensing zone #1) open 1 hour, strong blow throughout - gas to surface in 30 min.  
 Recovered 90' slightly oil and gas cut mud  
 170' heavily oil and gas cut mud and muddy oil  
 Bottom hole pressure 1160# (20 min.)  
 Initial flowing pressure 30  
 Final flowing pressure 105.

(5) Formation log; Mine #1 Phillips

- Test #2 3990 - 4027 (Lansing zones #10 and #12) open 1 hour, small blow throughout test  
recovered 465' gas and 35' gas cut mud  
Bottom hole pressure 260# (20 min.) still building up rapidly
- Test #3 4186 - 4200 (Mississippi) open 30 minutes, weak blow for 4 min.  
recovered 15' mud  
Bottom hole pressure 30# (20 min.)
- Test #4 4201 - 30; (Mississippi) open 1 hour, strong blow throughout test;  
gas to surface in 31 min.  
recovered 130' gas cut mud  
Bottom hole pressure 690# (20 min.)
- Test #5 4250-70; (Winderhook) open 1 hour, small blow throughout test  
recovered 465' gas and 30' gas cut mud  
Bottom hole pressure 30# (20 min.)
- Test #6 4286 - 4330 (Viola) open 1 hour, strong blow throughout test - gas to surface in 6 min.  
recovered 2075' gassy oil - little mud at top  
Bottom hole pressure 1190# (20 min.)  
Initial flowing pressure 200#  
Final flowing pressure 550#
- Test #7 4445 - 55 (Arbuckle zone #2) open 45 min., very weak blow throughout test.  
recovered 120' muddy water - trace oil  
Bottom hole pressure 1480# (20 min.)

(Samples examined and log compiled by  
Killis Jack Magathan)