

FORMATION LOG

Computer inventoried

Deep Rock #7 Calbeck
NW/34/NE; 33-263-130
Pratt County, Kansas
elevation: 1954 derrick floor

10 3/4" surface casing 833'; 400 sacks cement,
200# Floccals
400# C.C.
7" casing 4406'; 200 sacks, 3% gel.

Note: All measurements are taken from the top of the rotary bushing which is 3 feet above the derrick floor.

Depth	Formation Description	Remarks
0 - 100	Surface soil and sand	Drillers log 0 - 3500
100 - 450	Sand & red bed	
450 - 829	Red bed	
829 - 835	Anhydrite	Stone Corral
835 - 1010	Sand & shale	
1010 - 1500	Shale & shells	
1500 - 1800	Shale & salt	
1800 - 1930	Shale & sandy limestone	
1930 - 2085	Limestone & shale	
2085 - 2250	Sand, limestone & shale	
2250 - 2505	Shale & limestone	
2505 - 3470	Shale	
3470 - 3500	Shale & limestone	
3500 - 3577	Limestone, gray to tan, finely crystalline to dense.	Sample log starts 3500'
3577 - 3579	Shale, black.	
3579 - 3595	Limestone, cream to tan, finely crystalline.	
3595 - 3600	Shale, black.	Hestner
3600 - 3605	Limestone, gray to brown, dense	Leavenworth
3605 - 3615	Shale, green, gray, silty, micaceous.	Snyderville
3615 - 3631	Limestone, white to gray, sub-crystalline.	Toronto
3631 - 3663	Shale, gray-green, silty, micaceous; some very fine gray-green, dirty micaceous sand.	Base Creek 3631 Douglas
3663 - 3696	Sand, fine, green-gray, angular to sub-rounded, micaceous.	
3696 - 3757	Shale, gray, silty; much sand, as above	
3757 - 3782	Limestone, brown, dense to sucrose; streaks gray shale.	Brown Lansing
3782 - 3805	Limestone, white to tan chalky; some limestone tan to gray, sub-crystalline, oolitic; some oolitic chert.	Lansing
3805 - 3827	Limestone, gray to brown, dense to sub-crystalline	Fair vugular porosity; fair odor, slight stain, slight show free oil.
3827 - 3836	Limestone, gray to brown, dense; streak gray shale.	
3836 - 3850	Limestone, cream to light gray, finely crystalline to dense.	Fair to good vugular porosity, fair odor, slight stain, slight show free oil
3850 - 3876	Limestone, gray to brown, sub-crystalline, some gray, opaque chert; streaks gray shale.	
3876 - 3898	Limestone, gray to brown, sub-crystalline to dense.	Some pinpoint & vugular porosity; slight odor; fair spotted stain; possible trace free oil.

WENDELL S. JOHNS

(2) Formation log; Deep Rock #7 Calbeck

<u>Depth</u>	<u>Formation Description</u>	<u>Remarks</u>
3898 - 3902	Limestone, as above	No porosity
3902 - 3914	Limestone, gray to brown, dense, mottled; chert, white to tan to gray, opaque, sub-vitreous.	Some porosity
3914 - 3917	Limestone, as above	No porosity
3917 - 3923	Limestone, as above	Some porosity
3923 - 3933	Limestone, tan to buff, sub-crystalline, streaks gray-green & gray shale.	
3933 - 3939	Limestone, tan to brown, sub-crystalline to finely sucrose	Some pinpoint porosity, trace odor & free oil, fair stain.
3939 - 3948	Limestone, gray-white, dense oolitic; streaks gray shale.	
3948 - 3955	Limestone, tan to brown, sub-crystalline to dense.	Some pinpoint & vugular porosity; trace odor & free oil, fair stain.
3955 - 3967	Limestone, tan to black, dense; streaks gray-green & brown shale	
3967 - 3971	Limestone, tan to brown, sub-crystalline	Fair pinpoint & vugular porosity, fair odor & show free oil, good stain.
3971 - 3979	Limestone, gray, sub-crystalline to dense	
3979 - 3987	Limestone, tan to gray, sub-crystalline	Fair to good vugular porosity, good odor & stain, good show free oil.
3987 - 3996	Limestone, white to tan, sub-crystalline	
3996 - 4001	Limestone, as above	Some porosity, fair stain
4001 - 4040	Limestone, gray to tan, dense; some gray shale.	
4040 - 4050	Limestone, as above; increase in gray shale	Vugular porosity, fair stain
4050 - 4200	Limestone, gray to brown, dense to sub-crystalline; much gray, devitrified & brown and amber, translucent; streaks gray, green & brown shale.	
4200 - 4222	Chert, white, brown & amber, opaque, some limestone, tan to gray, dense.	Possible Conglomerate
4222 - 4256	Shale, silver gray, green & brown; probably some chert	Kinderhook
4256 - 4302	Chert, white, vitreous, opaque to translucent; some tan to amber, opaque chert	Viola; fair pin-point porosity, fair odor, free oil and gas.
4302 - 4307	Limestone, white to tan chalky	
4307 - 4310	Shale, green, sandy	Simpson
4310 - 4322	sand, brown, medium, shaly	Good odor & show free oil
4322 - 4325	sandy green shale	
4325 - 4329	sand, as above; some brown, sucrose nodular, dolomite.	
4329 - 4333	Dolomite, crystalline, rhombohedral.	Good vugular porosity & show free oil.
4333 - 4340	Dolomite, brown, finely crystalline	
4340 - 4342	shale, green	
4342 - 4350	Sand, fine, angular, brown, slightly dolomitic, well sorted.	Good odor & saturation
4350 - 4354	Shale, green.	

(3) Formation log; Deep Rock #7 Calbeck

<u>Depth</u>	<u>Formation Description</u>	<u>Remarks</u>
4354 - 4360	Sand, as above, shaly	porous
4360 - 4406	Mostly green shale with streaks sand and dolomite	
4406 - 4410	Dolomite, white to light gray, crystalline, some white, translucent to transparent chert.	Arbuckle; no porosity, possible slight odor.
4410	ROTARY TOTAL DEPTH (measurement correction 4410 = 4408; log not corrected)	
4408 - 4409	Dolomite, gray to brown, finely crystalline to sub-crystalline	Tight
4409 - 4411	Dolomite, gray to brown, finely crystalline to sub-crystalline.	
4409 - 4411	Dolomite, as above; some coarse sand grains, trace light green shale	
4411 - 4413	Dolomite, gray to brown, crystalline, rhombohedral; trace white, opaque, chert; slight increase in green shale.	
4413 - 4415	Dolomite, as above, decrease in shale	
4415 - 4417	Dolomite, as above; increase in shale, streaks white quartzite.	
4417 - 4421	As above	
4421 - 4422	Dolomite, tan to brown, very finely sucrose, to nearly dense; slight increase in white chert.	Trace stain
4422 - 4423	Dolomite, brown, finely crystalline, oolitic and oolitic; much chert, gray, to tan, translucent, oolitic.	Good porosity & stain
4423 - 4425	Dolomite, gray, crystalline, many sand grains; some green shale.	
4425	TOTAL DEPTH	
<u>D.S.T.</u> 3821 - 51/ open 45 min; small blow throughout test/ recovered 135' muddy water/ B.H.P. = 1160#		
<u>D.S.T.</u> 3928 - 58/ open 45 min; very good blow; gas in 10 min./ recovered 390' very heavily oil & gas cut mud/ B.H.P. = 900# (15 min.)		
<u>D.S.T.</u> 3967 - 88/ open 45 min; fair blow throughout/ recovered 55' slightly oil cut mud & show gas/ B.H.P. = 350# (15 min.)		
<u>D.S.T.</u> 4310 - 18/ trouble opening tool; open only 1 minute/ no test		
<u>D.S.T.</u> 4310 - 23/ open 1 hour; good blow throughout; gas in 23 minutes/ recovered 50' very slightly gas cut mud & trace oil/ B.H.P. = 156# (15 min.)		
<u>D.S.T.</u> 4322 - 4346/ open 1 hour; very good blow; gas in 14 minutes/ recovered 275' clean oil & 275' muddy oil/ B.H.P. = 1345#		

T I M E L O G

WENDELL S. JOHNS

Deep Rock #7 Calbeck
NE/SE/NE; 33-263-13#
Pratt County, Kansas
Elevation: 1954 derrick floor

Note: All measurements are taken from the top of the rotary bushing which is three (3) feet above the derrick floor.

<u>1' time log starts 3500'</u>		
<u>Depth</u>	<u>Time</u>	<u>Remarks</u>
3500 - 10	3-4-5-3-3-3-3-3-5-3	
20	4-3-5-4-3-4-5-5-3-3	
30	3-2-2-3-2-3-2-3-3-2	
40	2-2-2-1-1-1-1-1-3-2	
50	2-2-1-3-3-4-3-2-2-2	
60	1-1-2-1-1-1-2-1-3-4	
70	4-2-2-1-1-4-2-2-2-4	
80	4-4-3-4-5-5-4-7-6-5	
90	6-4-3-5-6-7-7-7-3-5	
90 - 3600	4-3-4-3-2-3-4-9-6-7	Heebner 3594
3600 - 10	5-5-5-6-4-6-7-7-5-6	
20	5-7-6-6-5-5-5-4-6-5	
30	5-5-5-6-6-6-4-5-5-4	
40	5-5-5-5-5-4-5-7-7	
50	7-5-9-5-5-5-3-3-6	Trip 3643; strap drill pipe 3643 = 3647
60	6-8-7-6-6-8-7-6-6-5	
70	5-5-5-4-3-2-1-1-1-2	
80	2-1-1-2-2-2-2-1-2-2	
90	1-2-2-2-1-2-2-1-2-2	
90 - 3700	2-1-2-2-4-3-6-4-3-5	
3700 - 10	5-5-6-6-6-7-6-7-7-6	
20	7-6-7-7-7-5-4-5-5-4	
30	4-6-5-6-5-5-6-5-5-5	
40	6-6-6-5-6-5-5-5-5-5	
50	4-6-5-5-6-5-4-3-4-4	
60	5-5-4-4-4-4-4-5-5-5	Brown Lansing 3757
70	7-6-5-5-5-5-6-5-5-7	
80	7-5-7-4-4-2-5-5-4-6	
90	5-5-6-5-5-6-7-8-6-7	Lansing 3782
90 - 3800	10-7-7-5-7-8-8-8-6-6	
3800 - 10	9-7-6-7-7-5-5-6-8-7	
20	7-6-5-6-6-5-5-4-5-6	
30	5-6-6-5-9-7-7-9-9-9	Circ. 1 1/2 hr. @ 3826
40	10-6-6-6-3-3-3-3-5-3	
50	3-3-2-2-3-3-5-5-5-6	
60	10-10-10-11-12-9-7-7-10-7	Circ. 1 1/2 hr. @ 3851
70	9-8-8-11-6-10-10-7-10-10	
80	10-5-6-8-8-13-10-11-10-6	
90	7-7-4-12-10-5-6-9-3-4	S.A. 3883 & 85
90 - 3900	4-5-7-7-6-5-4-4-8-8	
3900 - 10	13-12-8-5-7-9-10-9-7-7	
20	7-8-5-5-11-10-11-8-9-9	
30	8-7-9-9-13-14-12-14-16-8	
40	8-12-8-9-10-11-8-6-5-7	
50	9-6-11-10-11-11-9-9-9-10	

(2) Time log; Deep Rock #7 Calbeck

<u>Depth</u>	<u>Time</u>	<u>Remarks</u>
3950 - 60	6-3-5-5-5-8-8-10-5-6	Kelly corr. 3960 = 3958; two extra foot not timed
70	7-7-7-4-4-6-7-4-2-3	
80	4-7-7-7-7-7-6-5-2	Circ. 1½ hr. 3975
90	2-2-2-2-4-4-4-7-7-8	Circ. 1½ hr. 3988
90 - 4000	5-7-8-10-12-13-11-9-6-6	
4000 - 10	6-7-9-9-11-11-10-8-10-8	
20	10-12-9-10-10-9-9-11-9-6	
30	8-9-10-7-8-7-9-8-8-8	
40	8-10-11-8-7-8-10-9-14-8	
50	10-10-10-10-8-9-13-11-9	
60	11-13-13-13-11-10-9-12-11-12	
70	10-12-12-13-13-13-12-11-11-16	Trip 4070
80	4-5-10-9-8-6-6-6-8	
90	8-8-8-6-7-8-6-7-5-6	
90 - 4100	6-5-7-7-7-9-7-6-5-6	
4100 - 10	6-8-4-5-4-3-5-5-3-2	
20	4-6-6-10-9-7-9-6-5-5	
30	6-6-5-5-6-6-11-5-8-9	
40	9-8-6-7-6-8-9-8-7-8	
50	7-6-7-6-7-8-8-9-5-5	
60	5-5-5-5-4-4-7-11-12-14	
70	10-6-7-8-9-10-10-9-16-9	
80	8-8-9-9-8-8-9-10-9-7	
90	9-8-7-7-7-6-6-3-5-4	
90 - 4200	6-7-9-7-9-10-8-9-11-9	Conglomerate 4200
4200 - 10	8-6-4-5-8-5-4-4-5-5	
20	6-5-4-5-5-5-6-5-5-4	Circ. 4220; S.R. 4216-17;
26	6-6-11-8-11-18	Trip 4226; strap drill pipe 4226 = 4223
30	5-5-8-7-7-8-10-8	
40	7-9-9-9-9-9-21-15-6	Chert grabbing drill pipe.
50	7-8-14-8-20-10-8-12-11-15	
60	11-33-25-10-8-7-4-4-3-6	Trip 4251; Viola 4254.
70	4-3-4-5-5-4-5-5-5-5	
80	5-4-4-4-4-6-6-4-8-6	
90	4-6-6-6-7-9-6-7-5-6	S.R. 4281-84.
90 - 4300	7-8-7-6-8-8-6-13-13-15	Circ. 1½ hr. = 4300
4300 - 10	8-9-11-12-8-10-8-9-9-9	Simpson 4306
20	7-7-8-5-6-9-7-6-8-12	Circ. 1½ hr. 4323
30	10-10-12-10-9-6-5-4-7-5	Circ. 1½ hr. 4318
40	10-8-6-8-11-9-10-8-8-8	Foot not timed
50	4-4-2-2-2-2-2-3-3-1	Circ. 1½ hrs. = 4346
60	5-5-7-7-4-4-5-5-5-9	
70	10-8-9-7-7-10-8-9-9-7	
80	9-8-7-8-9-7-8-7-8-8	
90	9-8-7-6-8-6-7-7-6-6	
90 - 4400	6-6-6-6-6-8-8-8-6-7	Circ. 1½ hrs. = 4398
4400 - 10	8-9-7-5-4-4-5-4-7-7	Circ. 1½ hrs. = 4402
		Arbuckle 4406
		Circ. 1½ hrs. = 4406
		Circ. 1½ hrs. = 4410
		R.T.D. 4410