FORMATION LOG

WENDELL C. JOHNS

Computer invention

A. G. Hill #1 Dodson
SW/SE/NW; 21-26S-13W
Pratt County, Kansas
Elevation: 1938 derrick floor

8 5/8" surface casing 420'
5½" casing 4500'
Comm: 2/5/54
Comp:

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

Depth	Formation Description	Remarks
0 - 175	Sand and shale	Drillers log 0 - 3500'
175 - 600	Red bed	
600 - 880	Red bed and shells	
880 - 1038	Shale and shells	
1038 - 1280	Red bed and shells	
1280 - 1600	Shale and shells	
1600 - 1780	Salt, shale and shells	
1780 - 1885	Limestone	
1885 - 2395	Limestone and shale	
2395 - 2515	Shale and limestone	
2515 - 2635	Limestone and shale	
2635 - 3115	Shale and limestone	
3115 - 3215	Limestone and shale	
3215 - 3345	Shale and limestone	
3345 - 3500	Limestone and shale	
3500 - 3504	Limestone, gray, sub-crystalline	Sample log 3500' to T.D.
3504 - 3508	Shale, gray	
3508 - 3554	Limestone, gray, sub-crystalline to crystalline; good vugular and oolicastic porosity	Trace stain
3554 - 3562	Limestone, light gray, dense	
3562 - 3568	Limestone, as above, spotted porosity	Trace stain
3568 - 3579	Limestone, white to light tan to brown, sucrose, dolomitic; porous	Some staining
3579 - 3596	Limestone, tan, dense; gray shale streaks	
3596 - 3607	Limestone, light tan, dense; streaks sucrose, porous limestone	Light stain
3607 - 3615	Shale, soft, brown-black	Heebner
3615 - 3618	Limestone, dark brown, dense, fossiliferous.	Leavenworth
3618 - 3628	Shale, green-gray	Snyderville
3628 - 3635	Limestone, white to light tan to light gray, sub-crystalline, chalky; some vugular porosity	Toronto; fair stain
3635 - 3642	Limestone, as above, no porosity	
3642 - 3670	Shale green to green-gray; gray micaceous siltstone.	Top Douglas 3642
3670 - 3714	Sand, gray to brown, fine to medium, angular, micaceous, slightly silty.	Fair oil stain
3714 - 3777	Shale, green-gray, trace brown; some shaly sand.	
3777 - 3782	Limestone, dark brown to gray, dense	Top Brown Lansing 3777

(2) Formation log; A. G. Hill #1 Dodson

Depth	Formation Description	Remarks
3782 - 3806	Shale, gray; streaks limestone, as above	
3806 - 3840	Limestone, light gray; sub-crystalline, chalky and gray to tan sub-crystalline to finely crystalline; trace white, opaque chert	Top Lansing 3806
3840 - 3848	Limestone, gray, dense, some brown, sucrose; fair vugular porosity	Trace light stain; DST
3848 - 3858	Limestone, brown, dense; streaks gray and brown shale.	
3858 - 3872	Limestone, tan to dark brown, sub-crystalline to sucrose; some porosity	Slight trace stain
3872 - 3909	Limestone, tan to brown, dense to sub-crystalline; thin streaks brown shale	
3909 - 3934	Limestone, gray to brown, finely crystalline to dense; chert, gray to black opaque; some porosity.	Trace light to dark brown stain
3934 - 3937	Limestone and chert, as above; no porosity.	
3937 - 3947	Limestone, porous, as above; chert, as above	Trace stain
3947 - 3958	Limestone, as above; streaks brown and gray-green shale	
3958 - 3962	Limestone, brown to gray, sub-crystalline, oolitic; good oolicastic porosity.	Fair spotted stain, trace free oil, slight odor; DST.
3962 - 3995	Limestone, tan to brown, sub-crystalline to dense; much gray, opaque chert; thin streaks shale	
3995 - 3997	Limestone, white to light gray, oolitic; some oolicastic porosity	Trace stain, no free oil
3997 - 4008	Limestone and brown shale streaks	
4008 - 4016	Limestone, gray; oolitic and oolicastic, good porosity; some gray, opaque chert.	Slight trace odor, trace spotted stain
4016 - 4027	Limestone, tan to gray-brown, dense; chert, as above	
4027 - 4031	Limestone, gray, dense; spotted oolicastic porosity	Trace stain
4031 - 4120	Limestone, tan to gray to buff, sub-crystalline to dense, lithographic; chert, gray, opaque, earthy; streaks gray-black and gray-green shale	Base Kansas City 4120
4120 - 4134	Shale, gray to gray-black, green and maroon	Top Marmaton 4120
4134 - 4137	Limestone, gray to brown, sub-crystalline	
4137 - 4141	Shale, as above	
4141 - 4151	Limestone, gray to red, sub-crystalline; streaks gray green shale; chert, salmon to gray to amber and black, mottled, vitreous to sub-vitreous.	

(3) Formation log; A. G. Hill #1 Dodson

Depth	Formation Description	Remarks
4151 - 4154	Shale, as above	
4154 - 4168	Limestone and chert, as above	Porous on electric log
4168 - 4174	Shale, black, pyritic to black and maroon mottled	
4174 - 4195	Limestone, gray, sub-crystalline to finely sucrose, mottled, spotted vugular porosity (4176-80 & 4184-95) chert, amber to orange to salmon to gray, vitreous to sub-vitreous.	No show
4195 - 4222	Shale, varicolored	
4222 - 4233	Limestone, as above, some dolomitic, porous; much chert, as above	No show
4233 - 4247	Varicolored shale, as above	
4247 - 4260	Chert, white to tan to rust, semi-devitrified; chert, salmon to amber to citrine, vitreous, translucent to semi-translucent; some tan, porous devitrified chert with brown stain; shale, red, maroon, gray and gray-green, rotten.	Top Conglomerate 4247; good brown stain, no odor or free oil.
4260 - 4282	Mostly shale and chert, as above; streaks limestone, gray to tan, finely crystalline to dense, cherty	
4282 - 4300	Chert, white, opaque, vitreous to waxy, some tan, waxy; chert, white to tan to brown, devitrified; chert, red-brown to tan to salmon, semi-translucent.	Top Mississippi 4282
4300 - 4308	Shale, brown, gray-green and pale-green, limy.	Top Kinderhook 4300
4308 - 4322	Limestone, gray to tan, dense, cherty	
4322 - 4327	Shale, as above	
4327 - 4339	Chert, white, opaque to blue-white translucent, spicular; chert, white to tan, devitrified; streaks gray, sub-crystalline limestone	Top Viola 4327; no show
4339 - 4384	Limestone, gray to cream to tan, finely crystalline to dense; some gray, finely crystalline, sandy, glauconitic limestone, dolomitic; limestone, white to cream, finely sucrose to pink dense; chert, brown to white, opaque, sub-vitreous to vitreous	
4384 - 4392	Limestone, gray, finely sucrose, dolomitic; porous	No show
4392 - 4414	Sandy, dolomitic limestone, as above; some dolomite and dolomitic limestone, cream to gray, finely sucrose	
4414 - 4421	Shale, gray-green, sandy; trace shaly sand.	Top Simpson 4414
4421 - 4434	Sand, medium, sub-angular to sub-rounded, fairly well sorted, gray to tan, dolomitic	Good odor, very slight show free oil; DST

(4) Formation Deg; A. G. Hill #1 Dodson

Depth	Formation Description	Remarks
4434 - 4436	Shale, gray to gray-green, sandy	
4436 - 4440	Sand, as above, coarser	Good odor, slight show free oil; DST
4440 - 4445	Dolomite gray to tan, finely sucrose, some very sandy	
4445 - 4452	Shale, bright green, sandy	
4452 - 4456	Sand, gray to tan, poorly sorted, coarse to sub-medium, sub-rounded; porous (4453-56)	Fair odor, slight show free oil; DST
4456 - 4470	Sand, as above, quite shale in spots; spotted porosity	Spotted show oil, as above.
4470 - 4473	Dolomite, dirty brown, sub-crystalline	
4473 - 4511	Mostly shale, as above, much red-brown shale; streaks sand and dolomite	
4511 - 4513	Dolomite, buff to cream, finely crystalline, rhombohedral	Top Arbuckle 4511
4513 - 4516	Dolomite, buff to cream, medium to finely crystalline, rhombohedral, some silicified, poor vugular porosity; chert, light gray, opaque oolitic to white, translucent, oolitic	No sh w
4516 - 4526	Dolomite, buff to cream, sub-crystalline; chert, as above; few thin streaks green shale	
4526 - 4530	Dolomite, porous, as above	No show
4530 - 4539	Dolomite, cream to tan, sub-crystalline to coarsely crystalline, rhombohedral; chert, and thin streaks shale, as above	
4539 - 4541	Dolomite, cream to tan, medium to coarsely crystalline, rhombohedral; fair to good vugular porosity	No show
4541 - 4554	Dolomite, tan, sub-crystalline to dense, less chert, as above	
4554 - 4558	Dolomite, coarsely crystalline, as above; fair vugular porosity	No show
4558 - 4560	Dolomite, tan to brown, finely crystalline to dense.	
4560	Rotary total depth.	

Drill Stem Test Data:

Lansing-Kansas City:

DST #1: 3832-50; open 1 hour - good blow which decreased to small blow in 15 min. and died before end of test
Recovered 150' gas cut and very slightly oil cut mud
180' salt water with trace oil at top
Shut in pressure 1380# (20 min.)

(5) Formation log; A. G. Hill #1 Dodson:

(Drill stem test data cont'd.)

DST #2: 3958-68; open 30 minutes - slight trace blow
Recovered 240' mud - tried to reopen tool and it failed to close after the packer was unseated. Probably less than 10' mud recovered in actual test.
Shut in pressure 0#

Simpson:
DST #3: 4414-28; open 1½ hours - fair to good blow throughout test. Gas to surface in 1 hour and 25 min.
Recovered 80' heavily oil and gas cut mud
120' muddy oil
175' clean oil
5' filtrate (analysed by Halliburton)
Shut in pressure 1410# (30 min.)
Initial flowing pressure 0#
Final flowing pressure 107#

DST #4: 4428-56; open 1½ hours - good blow throughout test. Gas to surface in 1½ hours
Recovered 65' muddy oil
150' slightly muddy oil
Shut in pressure 1465# (30 min.)
Initial flowing pressure 30#
Final flowing pressure 90#

(Samples examined and log compiled by Wendell S. Johns and Willis Jack Magathan.)

TIME LOG

JOHNS AND MAGATHAN
CONSULTING GEOLOGISTS
501 BITTING BUILDING
WICHITA 2, KANSAS

WENDELL G. JOHNS

A.G. Hill #1 Dodson
SW SE NW; 21-26S-13W
Pratt County, Kansas
Elevation: 1938 derrick floor

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

1' time log starts at 3500'

Depth	Time	Remarks
3500 - 10	3-3-4-3-3-4-3-4-3-4	
20	3-3-4-3-3-3-3-2-3-3	
30	2-3-2-2-1-3-4-4-3-3	
40	3-3-3-3-3-2-3-3-3-4	
50	3-3-4-4-3-3-3-3-4-4	
60	3-3-3-3-4-5-3-3-4-5	
70	7-7-5-6-5-5-5-4-3-3	
80	2-1-2-2-2-2-2-3-3-5	
90	5-5-5-5-6-4-5-4-4-4	
3590 - 3600	4-8-5-4-4-4-7-5-5-6	
10	4-3-4-5-7-6-6-6-5-3	Top Heebner 3607
20	3-3-3-2-2-6-8-6-5-4	
30	6-5-4-4-5-6-5-5-4-3	
40	4-7-8-6-8-8-7-6-6-8	
50	9-8-7-5-6-6-6-5-5-6	
60	5-7-6-5-6-6-5-5-5-7	
70	6-6-7-7-6-7-8-7-9-7	
80	6-6-6-5-5-4-5-5-2-1	
90	2-3-2-2-2-2-2-2-4-2	
3690 - 3700	2-2-2-1-2-2-2-2-2-1	
10	1-2-2-2-5-4-2-2-2-2	
20	1-1-2-2-6-7-6-5-6-5	
30	7-6-6-4-5-6-6-5-5-6	
40	6-5-6-6-6-6-6-6-6-6	
50	7-7-7-7-8-4-5-5-5-5	Trip 3745
60	5-5-4-4-3-3-4-4-4-7	
70	5-3-4-3-3-3-4-4-3-4	
80	3-3-4-3-3-3-3-8-9-9	Top Brown Lansing 3777
90	9-9-6-6-6-5-7-5-4-5	
3790 - 3800	4-5-5-5-5-4-5-5-5-6	
10	8-7-5-5-4-4-5-5-5-6	Top Lansing 3806
20	7-7-7-7-7-5-7-6-6-7	
30	5-7-8-6-5-5-5-7-6-8	
40	6-8-8-5-5-5-5-6-5-6	
50	5-6-5-5-5-4-5-5-7-7	Circ. 1½ hr @ 3850; D.C.T.; new bit @ 3850
60	10-11-13-11-11-9-5-6-2-2	
70	2-5-5-3-2-3-3-3-4-5	
80	7-7-9-7-9-10-9-9-8-8	
90	8-8-9-7-10-6-9-8-10-10	
3890 - 3900	12-11-11-11-9-10-9-11-13-11	
10	11-10-11-6-5-5-5-8-7-6	
20	7-6-6-4-4-4-3-6-5-11	Circ. 1 hr @ 3920
30	8-6-12-8-6-5-4-5-5-5	
40	6-6-5-5-9-9-10-9-8-8	
50	6-6-8-8-11-13-17-15-17-15	Trip @ 3949

(2) Time Log: A.G. Hill #1 Dodson

Depth	Time	Remarks
3950 - 60	16-10-9-10-7-7-8-10-8-9	
70	2-2-10-14-12-11-14-12-15-13	Circ. 1½ hr @ 3968; D.S.T.
80	10-7-7-7-9-6-9-11-6-8	
90	12-12-11-12-10-8-8-12-7-8	
3990 - 4000	6-8-9-10-5-4-3-7-13-10	
10	12-12-13-9-4-3-1-1-1-4	
20	3-4-3-4-3-5-6-10-10-12	Circ. 1½ hr @ 4020 Trip @ 4020
30	10-13-15-12-15-12-6-5-5-6	
40	7-8-9-12-9-6-6-5-7-7	
50	5-6-5-9-11-13-9-10-10-10	
60	10-9-9-9-10-11-10-11-10-9	
70	9-11-9-9-9-8-4-7-5-6	
80	8-9-8-7-8-8-8-7-7-9	
90	9-9-9-9-8-9-10-10-10-10	
4090 - 4100	9-10-8-9-9-10-10-10-8-8	
10	9-10-10-11-11-11-8-9-9-10	
20	8-7-8-8-9-10-12-13-13-14	Base Kansas City 4120 Top Marmaton 4120
30	9-8-8-9-8-7-8-8-7-6	
40	6-7-6-5-8-10-11-9-9-10	
50	11-12-10-10-13-15-13-13-12-13	
60	14-11-8-10-12-13-13-12-12-10	Trip @ 4154
70	10-10-11-7-11-8-7-7-8-8	
80	10-9-6-6-6-5-6-4-4-3	
90	5-5-12-9-9-10-8-10-8-9	
4190 - 4200	7-8-7-6-6-8-10-10-10-12	
10	11-10-9-10-11-11-11-11-11-13	
20	10-8-9-10-10-10-12-9-9-8	
30	8-9-10-9-7-4-5-8-9-6	
40	10-12-13-11-10-10-10-6-8-10	
50	11-13-12-10-10-10-13-12-11-10	Top Conglomerate 4247
60	6-4-5-6-6-6-9-7-6-6	
70	9-10-7-12-8-10-8-9-10-11	
80	12-13-13-19-15-16-19-12-18-15	Trip @ 4275
90	18-16-9-6-9-8-5-5-4-3	Top Mississippi 4282
4290 - 4300	4-5-5-5-5-6-6-6-7-7	Top Kinderhook 4300
10	10-11-11-9-14-15-19-17-15-23	
20	30-27-24-25-26-25-19-7-8-10	
30	10-9-17-14-12-8-14-10-5-5	Top Viola 4327
40	5-4-6-8-6-5-6-8-9-18	
50	18-20-19-16-15-16-24-28-10-12	Trip @ 4348
60	17-12-18-14-14-13-14-18-12-18	
70	11-15-13-13-17-11-13-15-10-12	
80	19-13-12-13-14-19-30-20-19-16	
90	15-17-18-18-18-8-7-13-7-11	Trip @ 4385
4390 - 4400	13-14-13-14-16-19-20-21-17-20	
10	18-23-15-19-18-17-15-14-12-17	
20	17-17-17-16-10-11-15-10-12-7	Top Simpson 4414
30	10-5-7-6-6-7-7-13-9-9	Circ. 1½ hr @ 4425 Circ. 1½ hr @ 4428 D.S.T.; New bit @ 4428

(3) Time Log: A.G. Hill #1 Dodson

Depth	Time	Remarks
4430 - 40	8-6-6-5-3-5-3-4-5-5	
50	7-11-13-13-12-10-7-5-3-3	
60	3-4-4-5-7-5-9-6-10-5	Circ. 1½ hr @ 4456
70	7-9-8-9-7-6-6-6-10-10	
80	9-9-10-9-9-10-8-8-7-10	
90	10-9-9-9-8-9-9-8-8-9	
4490 - 4500	9-9-9-9-8-9-7-7-9-10	
10	8-9-10-6-9-11-8-5-8-7	
20	6-6-9-9-8-7-9-9-13-12	Top Arbuckle 4511 Circ. 1½ hr @ 4520
30	10-15-12-13-13-13-9-9-10-10	
40	13-11-11-10-14-18-15-15-17-11	Trip @ 4539
50	10-10-9-6-16-13-13-10-9-7	Circ. 1½ hr @ 4545
60	10-11-10-9-7-6-5-9-9-10	Circ. 1½ hr @ 4560 R.T.D. 4560

Time Log condensed by Willis Jack Magathan