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Geological Report

D.G. Hansen Trust
#6 RODERICK
E/2 W/2 SE/4
Section 28-T15S-R27W
Gove County, Kansas

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#6 RODERICK
E/2 W/2 SE/4
Section 28-T15S-R27W
Gove County, Kansas

Field:	Rosa NW
Elevations:	2485 Kelly Bushing 2482 Derrick Floor 2480 Ground Level
Wellsite Geologist:	J.E. Jespersen
Contractor:	White and Ellis Drilling
Commenced:	June 25, 1996
Completed:	July 2, 1996
Rotary Total Depth:	4050 feet
Log Total Depth:	4049 feet
Surface Casing:	8 5/8" @ 372 feet with 200 sacks
Production Casing:	4048 feet with 200 sacks
Electrical Surveys:	ELI Wireline: GR-N-G Caliper Log
Hole Size:	12 1/4" from surface to 373 feet 7 7/8" from 373 feet to 4050 feet (RTD)
General Information:	Samples saved from 3300 to 4050 feet (RTD). Drilling time kept from 1900 to 1960 feet and 3300 to 4050 feet (RTD). Samples examined from 3300 to 4050 feet (RTD). Drilling supervised from 3540 to 4050 feet (RTD). Mud up at 3400 feet. Mud type, chemical.

	FORMATION TOP	LOG DATUM	SAMPLE TOP	SAMPLE DATUM	STRUCT COMP.
Anhydrite	1921	+ 564	1923	+ 562	8' Low
B/Anhydrite	1956	+ 529	1961	+ 524	8' Low
Topeka	3446	- 961	3449	- 964	7' Low
Heebner	3683	- 1198	3685	- 1200	8' Low
Lansing	3721	- 1236	3722	- 1237	6' Low
Stark Sh	3968	- 1483	3968	- 1483	6' Low
B/Kansas City	4026	- 1541	4028	- 1543	5' Low
Pawnee					
Cherokee Sh					
Mississippi Lime					
Total Depth	4049	- 1564	4050	- 1565	

Reference/Structural Comparison: D.G. Hansen Trust **#2 Roderick**

Note: Pipe strap at 3745 feet was .23' long to the board.

DAILY PENETRATION

Date	Depth	Remarks
6/25/96	- 0 -	Spud 3:45 PM
		8 5/8" @ 372' with 200 sx.
		Plug down 11:50 PM
6/26	373	Drill plug 7:45 AM.
6/27	2255	**Anhydrite 1923 to 1961'**
6/28	2915	Drilling
6/29	3430	**DST #1 3684-3745**
6/30	3745	**DST #2 3875-3940**
7/01/96	3940	**DST #3 3942-3972**
7/02	4020	Reached RTD (4050') @ 8:45 AM
		ELI RAG Log: **5 1/2" @ 4048' w/200 sacks.**
7/02	4050	**RTD 4050 @ 8:45 AM**

BIT RECORD

NO.	SIZE	MAKE	TYPE	DEPTH OUT	FEET	HOURS
S	12 1/4	Smith	RT	373	373	4
1	7 7/8	SEC	S84S	2312	1939	18
2	7 7/8	W/Mc	52 CHF	3745	1433	49
3	7 7/8	W/Mc	52 CHF	3940	195	9
4	7 7/8	W/Mc	52 CHF	4050	110	5 1/4
						85 1/4

MUD RECORD (Mud-Co)

CHK	DEPTH	WT	VIS	FIL	PH	PV	YP	GELS	CHLORIDES	SOL
1	- 0 -									
2	2312	9.2	29	N/C	7.0	---	---	--/--	10,000	5.8%
3	3455	8.6	40	10.4	10.5	8	13	6/15	1,200	2.0%
4	3820	9.0	49	10.4	9.0	13	19	8/22	1,000	4.8%
5	3940	9.0	45	11.2	9.0	14	17	9/20	1,500	5.6%

DRILL STEM TESTS

NO	INTERVAL	IFP	ISIP	FFP	FSIP	IHHPFHH
1	3684-3745	46-46/15	870/45	58-69/30	823/45	1757-1734
	Recovery:	40' Mud with Very slight show of oil				
2	3875-3940	58-58/15	347/45	69-69/45	324/45	1885-1871
	Recovery:	120' Gas in pipe 60' Oil cut mud (12% Oil)				
3	3942-3972	MISRUN - TOOL MALFUNCTION				
4	3942-3972	58-69/15	243/45	69-81/60	231/45	1997-1974
	Recovery:	230' Gas in pipe 40' Oil cut mud (5% Oil) 30' Oil & water cut mud (5% Oil, 12% Water)				

Geological Formations and Porosity Zones

A detailed lithological log was maintained from 3300 feet to 4050 feet (RTD. The following are formation tops, recoveries of drillstem tests, descriptions of reservoirs containing shows of oil and descriptions of reservoirs felt pertinent to the accumulation of hydrocarbons in the area. The depths are interpolated from drillers measurements and measured from the kelly bushing.

Anhydrite	Sample	1923 + 562
	E-Log	1921 + 564
B/Anhydrite	Sample	1961 + 524
	E-Log	1956 + 529
Topeka	Sample	3449 - 964
	E-Log	3446 - 961

SL 3470-3475
EL 3469-3473
Limestone, light grey, very fine crystalline, fossiliferous. Fair interfossiliferous porosity. No shows.
Judged this zone to be of no commercial value.

SL 3480-3495
EL 3478-3486
Limestone, light grey, fine crystalline, fossiliferous, cherty. Good intercrystalline and interfossiliferous porosity. No shows.
Judged this zone to be of no commercial value.

SL 3505-3514
EL 3507-3510
Limestone, light grey, fine crystalline, fossiliferous, cherty. Fair interfossiliferous porosity. No shows.
Judged this zone to be of no commercial value.

SL 3526-3531
EL 3528-3532
Limestone, white to light grey, fine crystalline, fossiliferous. Fair intercrystalline porosity. No shows.
Judged this zone to be of no commercial value.

SL 3540-3550
EL 3540-3545
Limestone, light grey, fine crystalline, chalky. Fair intercrystalline porosity. No shows.
Judged this zone to be of no commercial value.

Geological Formations and Porosity Zones

SL 3587-3596
EL 3580-3598
Limestone, white to light grey, fine crystalline, fossiliferous, cherty. Fair to good intercrystalline and interfossiliferous porosity. No shows.
Judged this zone to be of no commercial value.

SL 3616-3623
EL 3615-3622
Limestone, white to light buff, fine crystalline, sucrosic. Good intercrystalline porosity. No shows.
Judged this zone to be of no commercial value.

SL 3626-3631
EL 3625-3630
Limestone, light buff, fine crystalline, fossiliferous. Good interfossiliferous porosity. No shows.
Judged this zone to be of no commercial value.

SL 3639-3642
EL 3638-3642
Limestone, light buff, fine crystalline, fossiliferous, cherty. Poor to fair interfossiliferous porosity. No shows.
Judged this zone to be of no commercial value.

SL 3647-3666
EL 3646-3666
Limestone, white to light grey, fine crystalline, fossiliferous, chalky. Good intergranular porosity. No shows.
Judged this zone to be of no commercial value.

SL 3677-3682
EL 3676-3682
Limestone, light grey to grey, fine crystalline, fossiliferous. Fair interfossiliferous porosity. ***No free oil.*** **Rare show glisonitic staining**; no odor.
Judged this zone to be of no commercial value.

Heebner	Sample	3685	-1200
	E-Log	3683	-1198
Toronto	Sample	3706	-1221
	E-Log	3704	-1219

Geological Formations and Porosity Zones

SL 3708-3715
EL 3708-3710

Limestone, white to light buff, very fine crystalline, fossiliferous. Fair interfossiliferous and vugular porosity; slightly cherty. ***No free oil.*** **Spotted brown live oil stain**; no odor. Tested this zone. (See DST #1) The results of the drillstem test indicates this zone is not recommended for a waterflood zone. However, it should be perforated for a possible oil producing zone.
Judged this zone to be of no commercial value.

Lansing

Sample	3722	-1237
E-Log	3721	-1236

(A-Zone)

SL 3724-3730
EL 3725-3730

Limestone, white, very fine crystalline, fossiliferous, oolitic. Fair interoolitic and interfossiliferous porosity. No shows. No odor. Tested this zone in DST #1. Judged this zone to be of no commercial value due to lack of any oil shows in sample.

(A-Zone)

SL 3737-3742
EL 3735-3738

Limestone, white, very fine crystalline, chalky. Fair intergranular and vugular porosity. No free oil. very rare light brown oil stain; no odor. Tested this zone in DST #1. Due to the quality of hydrocarbon show, judged this zone to be of no commercial value.
Judged this zone to be of no commercial value.

Drillstem Test #1 **3684-3745**

Very weak bldg to weak blow both flows .

Recovered:	40' Mud w/very slight show of oil
Initial Flow Pressures:	46# to 46# / 15 min.
Initial Shut-In Pressure:	870# / 45 min.
Final Flow Pressures:	58# to 69# / 30 min.
Final Shut-In Pressure:	823# / 45 min.
Initial Hydrostatic Pressure:	1757#
Final Hydrostatic Pressure:	1737#
Bottomhole Temperature:	107 degrees

Geological Formations and Porosity Zones

(B-Zone)

SL 3756-3768
EL 3756-3760

Limestone, light grey, Fine crystalline, fossiliferous. Fair interfossiliferous porosity. ***No free oil.*** **Rare spotted dark oil stain**; no odor.
Judged this zone to be of no commercial value.

(D-Zone)

SL 3772-3780
EL 3774-3778

Limestone, light grey to grey, very fine crystalline, fossiliferous. Poor to fair interfossiliferous and vugular porosity. ***No free oil.*** Spotted dark brown oil stain; no odor.
Judged this zone to be of no commercial value.

(D-Zone)

SL 3780-3796
EL 3778-3794

Limestone, light buff, fine crystalline, fair interfossiliferous and vugular porosity. Slightly chalky; no shows; no odor.
Judged this zone to be of no commercial value.

(E-Zone)

SL 3812-3816
EL 3812-3815

Limestone, light buff, fine crystalline, fossiliferous. Fair interfossiliferous porosity. ***Poor show live free oil.*** Spotted light brown oil stain; slight odor. This zone should be perforated, attempted as an oil completion, and at a later date converted to an injection zone for a waterflood project.

(F-Zone)

SL 3822-3826
EL 3821-3825

Limestone, white, fine crystalline, sucrosic, chalky. Fair intergranular porosity. No shows.
Judged this zone to be of no commercial value.

(G-Zone)

SL 3838-3844
EL 3840-3843

Limestone, white to light grey, fine crystalline, oolitic, highly fossiliferous. Good interfossiliferous and oolicastic porosity. No shows. No odor.
Judged this zone to be of no commercial value.

Geological Formations and Porosity Zones

Muncie Creek Sample 3876 -1391
E-Log 3872 -1387

(Paola)

SL 3879-3886
EL 3874-3877 Limestone, light buff, fine crystalline, fossiliferous, fair intercrystalline and interfossiliferous porosity. ***Poor show brown free oil.*** Spotted to saturated brown oil stain; slight odor. Tested this zone in DST #2. Recommend this zone be perforated in one of the wells on this lease, prior to abandoning the lease, for a possible oil producing zone.

(H-Zone)

SL 3892-3902
EL 3887-3891 Limestone, cream, very fine to fine crystalline, fossiliferous. Poor interfossiliferous porosity. ***Poor show brown live free oil.*** Spotted brown oil stain; very slight odor. This zone was covered in DST #2. Due to the test results, quality of the oil show, and the history of production from this zone on the lease, recommend this well be perforated, attempted as an oil completion, and later made into part of the waterflood project.

(I -Zone)

SL 3909-3918
EL 3912-3918 Limestone, light grey, fine crystalline, fossiliferous. Fair interfossiliferous and intercrystalline porosity. ***Fair show dark brown free oil.*** Spotted to saturated dark brown oil stain; slight odor. This zone was covered by DST #2. Due to the quality of the oil show, the results of the test, and the history of production from this zone on the lease, recommend this zone be perforated and further tested, and later made part of the waterflood project.

(I-Zone)

SL 3925-3930
EL 3924-3928 Limestone, light buff, very fine crystalline, fossiliferous. Fair interfossiliferous porosity. ***Poor show light brown free oil.*** Spotted light brown oil stain; very slight odor. This zone was included in DST #2. Due to the quality of the oil show and test results, recommend this zone be perforated, attempted as an oil completion, and later made part of the waterflood project. Judged this zone to be of no commercial value.

Geological Formations and Porosity Zones

	Drillstem Test #2	**3875-3940**
	Weak increasing to fair blow both flows.	
	Recovered:	120' Gas in pipe 60' Oil cut mud (12%O, 88%M)
	Initial Flow Pressures:	58# to 58# / 15 min.
	Initial Shut-In Pressure:	347# / 45 min.
	Final Flow Pressures:	69# to 69# / 45 min.
	Final Shut-In Pressure:	324# / 45 min.
	Initial Hydrostatic Pressure:	1885#
	Final Hydrostatic Pressure:	1871#
	Bottomhole Temperature:	112 degrees

(J-Zone)

SL 3951-3956
EL 3950-3958

Limestone, white to light buff, fines to medium crystalline, oolitic. Good interoolitic and oolicastic porosity. ***Poor show brown live free oil.*** Spotted brown oil stain; no odor. Tested this zone. (See DST #3) Due to the test results, recommend this zone be perforated and further tested, and later made part of the water flood project.

Stark	Sample	3968	-1483
	E-Log	3968	-1483

Drillstem Test #3 **3942-3972**

MISRUN - Tool Malfunction

Geological Formations and Porosity Zones

	Drillstem Test #4	**3942-3972**
	Weak increasing blow both flows.	
	Recovered:	230' Gas in pipe 40' Oil cut mud (5%O, 95%M) 30' Oil & water cut mud (5%O, 12%W, 83%M)
	Initial Flow Pressures:	58# to 69# / 15 min.
	Initial Shut-In Pressure:	243# / 45 min.
	Final Flow Pressure:	69# to 81# / 60 min.
	Final Shut-In Pressure:	231# / 45 min.
	Initial Hydrostatic Pressure:	1997#
	Final Hydrostatic Pressure:	1971#
	Bottomhole Temperature:	121 degrees

(K-Zone)

SL 3978-3986
EL 3982-3984

Limestone, light grey, fine crystalline, oolitic. Fair interoolitic porosity. ***No free oil***. Spotted brown live oil stain; slight odor. This zone has been tested in other wells on this lease with negative results. No further testing or recommendations are made for this zone.

(L-Zone)

SL 4014-4018
EL 4014-4016

Limestone, buff to light buff, very fine crystalline, fossiliferous. Poor interfossiliferous porosity. No shows. No odor. Judged this zone to be of no commercial value.

B/Kansas City	Sample	4028	-1543
	E-Log	4026	-1541

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RotaryTotal Depth	4050	-1565
Electric Log Total Depth	4049	-1564

ELI Wireline: GR-N-G-Caliper Log

5 1/2" casing set @ 4048 feet with 200 sacks

REMARKS and RECOMMENDATIONS

Recommend 5 1/2" casing be run. Perforate the following zones for possible oil producing zones. Upon depletion of these zones convert to a waterflood program.

1.	J Zone	3950-3958
2.	Lower I Zone	
3.	Upper I Zone	3924-3928
4.	H Zone	3883-3891
5.	Paola Lime	3874-3877
6.	E Zone	3812-3815
7.	Possibly, Toronto	3708-3710

Respectfully submitted,

Jerold E. Jespersen

JEJ
08/02/96