James C. Musgrove, petroleum geologist
report for
Hallwood Petroleum Inc.

GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

OPERATOR Hallwood Petroleum Inc.
LEASE Kollman WELL NO. 12
FIELD Bemis
LOCATION n/2-se-ne
SEC. 18 TWP. 11S RGE. 17W
COUNTY Ellis STATE Kansas

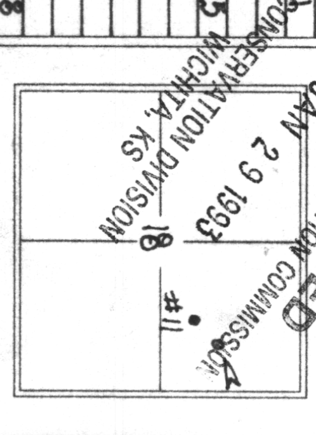
ELEVATION
KB 1840
DF
GL 1835
Measurements Are All From K.B.

CONTRACTOR Duke Drilling Co. (rig #1)
COMM: 10-26-92 COMP: 11-3-92
RTD 3505 LOG TD 3506
SAMPLES SAVED FROM 2500 TO RTD
DRILLING TIME KEPT FROM 2500 TO RTD
SAMPLES EXAMINED FROM 2500 TO RTD
GEOLOGICAL SUPERVISION FROM 2610 TO RTD
MUD UP 2700 TYPE MUD Chemical (mud co.)
WELL SITE GEOLOGIST James C. Musgrove

CASING RECORD
SURFACE 8 5/8" e 1088
PRODUCTION 5 1/2" e 3505
(1 ft. off bottom log measurements)

ELECTRICAL SURVEYS
By H.L.S.; Dual guard, micro guard, CDL/DSN

RECEIVED
KANSAS CORPORATION COMMISSION
JAN 2 9 1993
CONSERVATION DIVISION
WICHITA, KS



FORMATION	LOG TOP	LOG DATUM	SAMPLE TOP	SAMPLE DATUM	STRUCT. COMP.
Anhydrite	1074	+766	1077	+763	
Howard	2743	-903	2746	-906	
Severy	2758	-918	2759	-919	
Topeka	2769	-929	2771	-931	-931
Heebner	2998	-1158	2998	-1158	
Toronto	3018	-1178	3019	-1179	
Lansing	3043	-1203	3044	-1204	-1205
Base Kansas City	3276	-1436	3279	-1439	
Conglomerate	3283	-1443	3286	-1446	
Simpson Shale	3307	-1467	3308	-1468	
1st Simpson Dolomite	3310	-1470	3310	-1470	
2nd Simpson Dolomite	3316	-1476	3316	-1476	
Simpson Sand	3334	-1494	3332	-1492	
Arbuckle	3337	-1497	3336	-1496	-1498
RTD	3505	-1665	LTD 3506	-1666	

REFERENCE WELL FOR STRUCTURAL COMPARISON Hallwood (Pan American Pet.) Kollman #11; N/2-SE-NE Section 18-11S-17W, Ellis County, Ks.

DATE	DEPTH	NO	SIZE	MAKE	TYPE	DEPTH OUT	FEET	HOURS
10-26-92	Spud							
10-27-92	Woc (1088') e 7:00 am							
10-28-92	1785' e 7:00 am							
10-29-92	2490' e 7:00 am							
10-30-92	2715' e 7:00 am							
10-31-92	3125' e 7:00 am							
11-1-92	3254' e 7:00 am							
11-2-92	3360' e 7:00 am							
11-3-92	3505' (logging e 7:00 am)							
		1	12 1/4	Hughes	X3A	537	537	7 1/2
		2	12 1/4	Hughes	OSC 3A	1088	551	7
		3	7 7/8	STC	FDT	1812	724	12 3/4
		4	7 7/8	WM	515F	3505		

FORMATION	INTERVAL	DESCRIPTION OF SHOW	LOG ANALYSIS Ø	LOG ANALYSIS SW
		See Sample Log		

DRILL STEM TESTS

No.	Interval	IFP/Time	ISIP/Time	FFP/Time	FSIP/Time	IHH-FHH	RECOVERY
1	2788-2810	19-39 psi 30	897 psi 45	49-49 psi 30	847 psi 60		70' mud
2	3098-3125	55-55 psi 30	198 psi 45	55-55 psi 45	198 psi 60	1662-1578 psi	558' gas in pipe 20' slightly oil cut mud (3% oil; 97% mud)
3	3125-3145	44-88 psi 30	198 psi 45	110-143 psi 45	198 psi 60	1630-1546 psi	180' gas in pipe 1' clean oil 210' water
4	3177-3254	59-78 psi 30	986 psi 45	88-88 psi 45	986 psi 60	1756-1696 psi	310' gas in pipe 30' clean oil 62' oil cut mud
5	3275-3340	118-541 psi 30	1006 psi 30	551-758 psi 30	1006 psi 30	1836-1756 psi	30' gas in pipe 585' VHOCW 240' HOCW 360' OCW 600' water
6	3366-3380	295-887 psi 20	1046 psi 30	917-1036 psi 20	1046 psi 30	1806-1776	2380' water

REMARKS AND RECOMMENDATIONS On the basis of the favorable structural position and the positive results of D.S.T. # 4 & 5, it was recommended that 5 1/2" production casing be set and cemented and the following zones be tested in the Kollman # 12

1) Arbuckle 3337-3338 perforate
2) Lansing 3204-3208 perforate
3) Lansing 3175-3180 perforate
4) Topeka 2955-2962 perforate

Respectfully Submitted,
James C. Musgrove
James C. Musgrove
petroleum geologist

7514

gry-mar-blk silty sh. Tr. vfg; mica s.s. n/s

L.S. wh-crm; chlky; few sub ooc-chlky; poorly dev φ n/s

gry-green silty sh Tr. FeS_2

L.S. gry-crm; slightly foss; chlky in part; poor vis φ n/s

a.a.

L.S. tan; glauc Δ'y (dse)

L.S. tan-beige; f. x-l. suc; scatt p.p. φ; Tr. fr. sptty-even stn & sat; sfo; no odor.

L.S. gry-tan; foss; poorly dev. φ n/s

a.a.
Tr. gry-tan Δ

L.S. tan; highly foss; poor vis φ n/s

L.S. a.a. + tan boney Δ

blk-gry sh.

L.S. wh-beige; f. x-l. few gran; scatt φ; chlky in part n/s

blk-gry-mar. soft sh

L.S. gry; highly foss + Tr. gry boney-opaque Δ

a.a.

blk carb. sh.

Tr. gry-tan boney Δ

L.S. crm; foss; highly chlky; sptty stn; wk. sfo; no odor.

L.S. crm-wh; chlky

L.S. crm-wh; foss; fr. fossil cst. vuggy φ; fr. stn; sfo; ft. odor.

slug gry foss boney-opaque Δ

Δ; a.a. + wh-crm; chlky (dx) L.S.

blk carb. sh.
Tr. gry Δ

brick red-gry sh.

L.S. wh; f-med x-l.; chlky; poor vis φ n/s

mar-brick red soft sh

L.S. gry-wh; foss; chlky n/s
Tr. tan-gry Δ

L.S. wh-crm; f. x-l. foss; slightly Δ'y; dull gry-brn stn; nsfo or odor.

gry-green sh; Tr. FeS_2

L.S. wh-gry; foss; fr. φ; chlky; brn-golden brn stn; Tr. fo; no odor.

mar-green sh.

L.S. crm-wh; ool; chlky; sptty brn-blk stn; sfo; ft. odor.

a.a. + tan; med x-l. L.S. fr. φ; golden brn stn; Tr. fo; ft. odor.

L.S. crm-wh; foss in part; chlky; sptty stn; Tr. fo; no odor.

a.a.

L.S. wh-crm; foss; fr. vuggy φ; fr. stn & sat; fr. sfo; fr. odor. + Tr. crm; ooc; L.S. scatt φ sfo; and fr. odor.

blk carb sh.
Tr. gry-blk Δ & FeS_2

L.S. tan-f. x-l.; scatt x-l φ; fr. sptty-even stn; Tr. fo; no odor

L.S. wh; ooc; slightly ool; chlky; poorly dev φ; blk. stn; Tr. fo; no odor. (+ gry Δ; scatt. stn)

L.S. wh-gry; foss; fr-good vuggy φ; good stn & sat; sfo; fr odor.

L.S. wh-gry; foss; chlky; poor stn; poor sfo; no odor.

gry-blk-green sh

L.S. gry; ool; foss; chlky brn-golden brn stn; wk sfo no odor

Tr. wh opaque Δ

mar-gry-blk sh

L.S. tan-gry; ool; chlky-Δ'y poor vis φ

mar-blk-gry sh

abunt. red-mar soft sh + rose nodular L.S. dense; n/s

a.a. + yellow opaque Δ
Tr. FeS_2

a.a.; Tr. blue green sh

dol; green-yellow; f. x-l.; suc; poor vis φ n/s

Tr. blue green sh

dol; a.a.; ft. odor.

abunt; blue green sub waxey sh.

Tr. sd; med grn; subrounded-sub x; fr. sorting; fr. φ; fr. stn & sat; sfo

dol; tan-f. x-l; suc; fr.-good stn & sat; fr. sfo; ft. odor

a.a.; dec. stn; Tr. fo; ft. odor

dol; tan-wh; f. x-l.; suc; scatt φ; Tr. brn stn; Tr. fo; ft. odor

a.a. Tr. Δ

dol; gry-tan; med x-l; fr. x-l. (suc) vuggy φ; fr. good stn & sat; sfo; fr. odor

dol; a.a. + Tr. tan-wh Δ fr. stn sfo fr. odor.

dol; a.a.; tan-crm. suc. fr. good p.p. φ; fr. stn & sat; sfo

dol; gry-wh; med x-l; fr. φ; sptty brn-golden brn stn; sfo; ft. odor

a.a. dec. φ n/s

dol; wh-tan-gry-pk; f-med x-l. fr. x-l. vuggy φ; Tr. wh. ool. Δ & wh chalk n/s

a.a.; good φ n/s

dol; tan; med-coarse x-l; fr-good x-l. vuggy φ n/s + wh-tan opaque Δ

a.a.; dec. φ

dol; tan-f. med x-l. Δ'y in part; poor vis φ n/s

dol; a.a. + wh-clear Δ
Tr. FeS_2

a.a.; n/s

circ.

DST#1 2788-2810
30-45-30-60
Blow;
recovery; 70' mud
pressures; Isip 897
fsip 847
Ifp 19-39
ffp 49-49
HSH

DST#2 3098-3125
30-45-45-60
Blow; I.f.; weak building 3"
f.f.; weak building strong (BOB 10")
recovery; 558' gas in pipe
20' slightly oil cut mud (3% oil; 97% mud)
pressures; Isip 198 psi
fsip 198 psi
Ifp 55-55 psi
ffp 55-55 psi
HSH 1662-1578 psi

DST#3 3125-3145
30-45-45-60
Blow; I.f.; strong (B.O.B. 23 mins)
f.f.; weak, building to 1"
recovery; 180' gas in pipe
1' clean oil
210' water
pressures; Isip 198 psi
fsip 198 psi
Ifp 44-88 psi
ffp 110-143 psi
HSH 1630-1546 psi

DST#4 3177-3254
30-45-45-60
Blow; weak to fair
recovery; 310' gas in pipe
30' clean oil
62' oil cut mud
pressures; Isip 986 psi
fsip 986 psi
Ifp 59-78 psi
ffp 88-88 psi
HSH 1756-1696 psi

DST#5 3275-3340
30-30-30-30
Blow; strong
recovery; 30' gas in pipe
585' Very Heavily oil cut water
(80% oil; 10% water 10% mud)
240' Heavily oil cut mud
(60% oil; 20% water 20% gas)
360' oil cut water
(10% oil; 90% water)
600' water
pressures; Isip 1006 psi
fsip 1006 psi
Ifp 118-541 psi
ffp 551-758 psi
HSH 1836-1756 psi

DST#6 3366-3380
20-30-20-30
Blow; strong
recovery; 2380' water
pressures; Isip 1046 psi
fsip 1046 psi
Ifp 295-887 psi
ffp 917-1036 psi
HSH 1806-1776 psi

COMPANY Hallwood Petroleum Inc.
LEASE Kollman #12
LOCATION n/2-se-ne SEC 18 TWP 11S RGE 17W
COUNTY Ellis STATE Kansas
ELEVATION: 1840 K.B.