

GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

GRAND MESA OPERATING CO.

WELL: KLAUS-HESS #1-33
LOC.: 332' FNL & 2551' FEL
SEC. 33-13-31W
GOVE COUNTY, KANSAS
API: 15-063-21889-00-00

DRILLING CONTR.: MURFIN RIG #24
SPUD: 02-03-11 COMP: 02-16-11
MUD UP: 3500' TYPE MUD: CHEM.
DRILL TIME: 3600-RTD
RTD: 4570' LTD: 4568'
SAMPLES SAVED: 3800'-RTD
GEOLOGIST: ROBERT J. PETERSEN

ELEVATION

KB: 2851'
GL: 2846'
LOG MEASURED
FROM: KB

SURFACE CASING

New 23# 8 5/8" surface csg..
Tally 211.13', Set @ 220' KB.
Cemented w/165sx
Common, 3% CC, 2% Gel

PRODUCTION CASING

Ran 110 jts 5 1/2", 15.5# csg.
Set @ 4557'. PBTD @ 4546'
Cem.1st stage with 175sxs
DV tool @ 2355'
Cemented 2nd stage w/ 255sx
circ. to surface

WELL LOG SURVEYS

DIL/CDL w/micro

ELECTRIC LOG TOPS

Formation	Depth	Datum	Ref. Well A	Ref. Well B
SC	2343	+508	-8	-43
BSC	2365	+486	-7	-39
LARSH	3746	-895	-1	-11
HEEB	3861	-1010	-4	-13
TOR	3884	-1033	-3	-11
LANS	3901	-1050	+2	-10
Muncie Cr	4054	-1203	+6	-15
BKC	4209	-1358	+5	-15
Marmaton	4248	-1397	+5	-14
Altamont	4292	-1441	+6	-15
Little Osage	4368	-1517	+4	-15
Excelllo	4395	-1544	+4	-14
Johnson	4466	-1615	+7	-14
Morrow	4487	-1636	+6	-14
Miss	4518	-1667	+9	-2

REFERENCE WELL:

WELL A:
GMOC
Hess#1-33
2914KB
1406' FNL & 335' FWL
33-13-31W

WELL B:
Thunderbird Drig.
Phelps "B" #1
2885 KB
SW-SW
28-13-31W

REMARKS AND RECOMMENDATIONS

Due to the positive drill stem results the operator ran production casing to further test theis well.

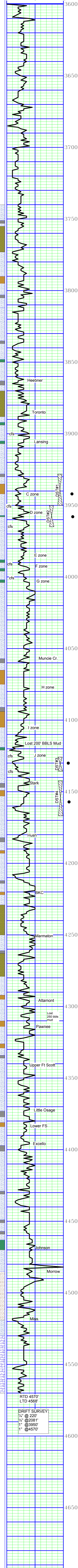
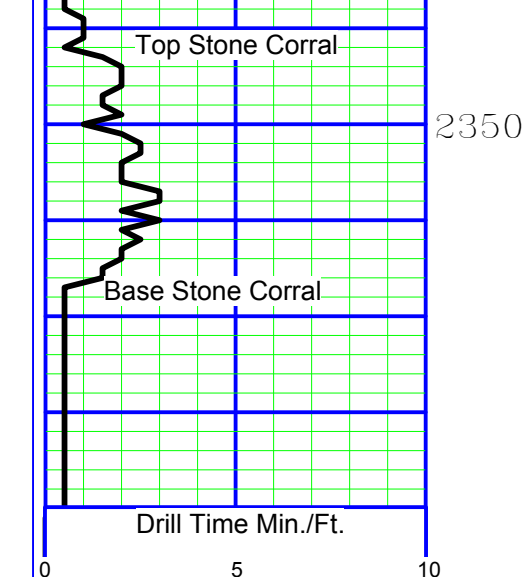
Respectfully submitted,

Robert J. Petersen
Robert J. Petersen Feb. 17, 2011

DAILY REPORT

@7:00 A.M.

02/04/11 MIRU
02/05/11 Spud @ 11:15 a.m.
02/06/11 675' Drilling
02/07/11 2080' Drilling
02/08/11 3350' Displace mud
02/09/11 3425' Circulating (cold weather)
02/10/11 3795' Drilling
02/11/11 3950' DST #1
02/12/11 4045' Drilling ahead
02/13/11 4136' DST #4
02/14/11 4300' Drilling ahead
02/15/11 4570' Conditioning hole for log
02/16/11 4570' Rig down



Bit trip @3424
Strap .73 Short

DST#1
3928-3950'
30-45-45-60"
IF: Bottom of bucket in 6 min.
ISI: 1/2" return blow
FF: Bottom of bucket in 6 min.
FSI: 1" return blow
Recovered:
480' GIP
960' Gassy oil 25% gas/75% oil
240' Mud cut gassy oil 15% gas/70% oil/ 15% mud
SIP: 1008-996#
FP: 73-280/281-508#
HP: 1963-1895#
BHT: 125F

DST#2
3950-3965'
30-45-45-75"
IF: Bottom of bucket in 1 1/2 min.
ISI: 4" return blow
FF: Bottom of bucket in 2 min.
FSI: Return blow to bottom of bucket
Recovered:
300' GIP
1720' Gassy oil 30%gas/70% oil
120' Mud cut gassy oil 30% gas/60% oil/10% mud
60' mud cut gassy oil trace water 30% gas/ 40% mud/15% mud/15%water
SIP: 987-995#
FP: 147-462/482-705#
HP: 1929-1868#
BHT: 111F

DST#3
4126-4136'
30-45-45-60"
IF: Bottom of bucket in 12 min.
FF: 10" blow
Recovered:
200' Mud
60' Mud cut water 60% mud/40% water
120' Muddy water 40% mud/60% water
SIP: 1418-1382#
FP: 131-173/184-215#
HP: 1966-1904#
BHT: 118F

DST#4
4142-4167'
30-30-30-30"
Recovered:
75' Mud
120' Muddy water 40% mud/ 60% water
IF: 1379-1335#
FP: 65-111/116-133#
HP 1991-1942#
BHT: 114F

Samples start at 3800'

LS: Cream/gray, fine crystalline, foss, chalky + SH; Gray/SS; Gray (3810)
SH: Black (trace 20) Vis 8/ Wt 8.7
LS: Cream/white, fine crystalline to dense, foss, chalky, cherty (20)
LS: Cream/lt gray, fine crystalline to dense, foss, chalky (30)
LS: Cream/lt gray, fine crystalline, , foss, chalkym cherty + SH; Gray, trace black shale (40)
LS: Cream/lt gray/tan, fine crystalline to dense, foss- subgranular + SH; Gray, silty-sandy (50)
LS: Cream/gray, fine crystalline, chalky, soft + SH; Red/gray (60)
LS: Cream/gray, fine crystalline to dense, foss, chalky, cherty (70)
SH: Black (80)
LS: Cream/tan, fine crystalline, foss, chalky, mealy, trace stain (80)
LS: Cream/gray, fine crystalline, foss, chalky (90)
SH: Red/gray, silty, sandy + SS; Gray, fine grained (3900)
LS: Gray/cream, fine crystalline, oolitic, oomoldic por, chalky/mealy, trace dead stain (00)
LS: Cream/white, fine crystalline, foss, chalky, soft, cherty + LS; Gray, dense, foss (00/30'-3910)
SH: Red/gray, silty, sandy (20-30)
LS: Cream/white, fine crystalline, ool, chalky (30)
LS: Cream/lt gray, fine crystalline, ool, chalky, sl dolo (40)
SH: Black (trace 40 incr. 50)
SH: Red/gray, silty, sandy (50 50/30")
LS: Cream/white, fine crystalline, chalky (chalk very soft) cherty + LS; Gray, dense(50/30")
LS: Gray, fine crystalline, ool, sl dolo w/fair vug por, sfo, odor, even brown stain on dry (50/60")
LS: Cream, fine crystalline, ool, cherty + SH; Gray (65) Vis 79/ Wt 8.6
LS: Cream/lt gray, fine crystalline, ool, cherty w/chert inclusions, granular w. fair inter-ool/oomoldic por, sfo, odor, patchy to full sat on dry grading to intercrystalline por w/depth (65/20-40")
LS: Cream/white, fine crystalline por, decrease por, chalky + LS; Tan, fine crystalline, dolo (65/60")
LS: Cream/lt gray, fine crystalline, foss, cherty, sl dolo (80-90)
LS: Cream/lt gray, fine crystalline, ool, chalky, cherty (orange) trace SH; Gray, silty (91/20")
LS: Cream/lt gray, fine crystalline, ool, granular, no vis por, trace dead stain (91/40"-4002")
LS: Lt gray/cream, fine crystalline, trace poor intergran por, vssfo (4002/30")
LS: Lt gray, fine crystalline to dense, foss, dolo, cherty + SH; Red (4002/60")
LS: Cream/tan, fine crystalline to dense, foss, trace dead stain (10) no stain (20)
LS: Cream/tan/lt gray, fine crystalline, sl dolo, foss, chalky, cherty (30)
LS: White/lt gray/tan, fine crystalline to dense, chalky (40)
LS: Cream/lt gray, fine crystalline to dense, foss, chalky (50) Vis 60+/- Wt 8.9
LS: Cream/lt gray, fine crystalline to dense, chalky, cherty + tr SH; Red (60)
SH: Black (trace 70 incr 80)
LS: Cream/lt gray, fine crystalline to dense, foss, chalky (70) + Chert; Gray (80)
SH: Gray, silty (90)
LS: Cream/tan/lt gray, fine crystalline to dense, cherty(tan), foss, mottled, chalky, trace dead stain (90)
LS: Cream/tan/lt gray, fine crystalline to dense, chalky, cherty + SH; Gray (4100)
SH: Black (10)
SH: Red/gray, silty(10)
LS: Cream/tan/lt gray, fine crystalline to dense, foss, chalky (trace stain-mealy) (25)
LS: Cream/tan/lt brown, fine crystalline to dense, chalky-mealy, trace stain (25/20")
LS: Tan/gray, dense, ool-gran, chalky + SH; Gray, silty-sandy (25/40")
trace LS: White, fine crystalline, ool, gran, tr lt stain on dry, vssfo (25/60")
LS: Cream/lt gray, fine crystalline to dense, chalky, cherty, trace vug por, vssfo, abund LS;
Cream/lt gray, fine crystalline to dense, chalky, cherty (36-36/20")
LS: Tan, fine crystalline, ool-subgran w/fair vug por, sfo (36/40")
LS: Tan, fine crystalline, oolitic-granular, bleeding oil (36/60") Vis 60+/- Wt 8.9
LS: Tan/lt gray, dense, foss (45)
SH: Black (50) flood (60)
SH: Red/gray, silty-sandy+ SS; Gray, fine grained (62/20")
LS: Cream/tan, dense, ool (62/20")
LS: Lt gray/cream, dense, cherty + LS; Gray, fine crys dolo (62/40")
LS: Cream/white, fine crystalline, ool-foss in part, w/p-f vug/frac por + LS; Tan, fine to med crystalline, dolo, w/intercrystalline por, ssfo (67/20")
increase dolomite (67/40")
LS: Cream/gray, fine crystalline to dense, dolo, cherty (80-90)
SH: Black (4200)
SH: Gray, silty-sandy +LS; Tan/cream, fine crystalline to dense, foss, dolomitic-cherty (00)
LS: Cream/lt gray, fine crystalline to dense, foss, mottled, trace stain, nsfo (10)
LS: Lt gray, fine crystalline, dolomitic (20)
SH: Black (20)
LS: Cream/lt gray, fine crystalline to dense, foss, + Dolo; Gray, fine crystalline (30)
SH: Red/gray (30)
LS: Gray, fine crystalline to dense, sl foss, chalky-gummy + SH; Red (40)
SH: Red/gray, silty-sandy, calc in part (50-60)
LS: Gray, fine crystalline to dense, sl foss, sl dolo (60)
LS: Cream/gray, fine crystalline, foss, chalky, cherty, trace stain (70)
SH: Black (trace 70 incr 80)
SH: Red/gray, silty-sandy+ LS; Cream, fine crystalline to dense, chalky, trace SS; Gray, fine grained (80-90)
LS: Cream/tan/lt brown, fine crystalline to dense, foss, chalky (90)
LS: Cream/tan/lt gray, fine crystalline to dense + SH; Gray, trace black pyritic shale(4300)
SH: Gray (10)
LS: Cream/tan, foss, subgran (10)
LS: Cream/white, fine crystalline to dense, foss, cherty (20) Vis 64/ Wt 9.1
SH: Red/gray (20)
LS: Cream/tan, fine crystalline, ool granular in part, chalky, trace stain (30)
SH: Red/gray, silty (40)
LS: Cream, fine crystalline, ool/foss, granular in part w/ intergran por, vssfo (40)
SH: Dark gray (50)
LS: Cream, fine crystalline, ool, chalky, cherty (50)
LS: Cream, fine crystalline, oolitic, granular w/trace poor oomoldic/inter-ool por, vssfo, light stain on dry (61)
LS: Cream, fine crystalline, ool, very chalky, soft abundant Chert; Tan/gray, angular (61/15")
LS: Cream/tan, dense, ool-gran in part + SH; Red/gray (70)
LS: Tan/lt gray, fine crystalline to dense, sl foss, cherty (80)
SH: Black (flood 90)
LS: Gray, dense, foss + SH; Gray (90)
LS: Cream/brown, dense, foss, cherty (4400)
SH: Black (10)
LS: Tan/brown, dense, foss, cherty, chalky (40)
LS: Tan/brown, dense, foss, pell., cherty, chalky (soft)(50)
LS: Tan/brown, dense, chalky, foss-brecciated +SH; Black (60)
LS: Tan/gray/brown, dense, foss, trace poor, vug por, spot sat., vssfo, dark gray stain on dry (65/30"-70")
SH: Gray, silty (80)
LS: Tan/gray, dense (80)
LS: Cream/tan, dense, chalky, cherty, w/trace poor foss-cast por, trace stain, vssfo(tarry) no odor (80/20-40")
LS: Cream/tan, fine crystalline to dense, foss, chalky + SH; Gray (92)
LS: Cream/tan, dense, foss, cherty, chalky + SH; Black (92/60")
LS: Cream/tan, fine crystalline to dense, chalky, sl foss w/ trace poor fossilcast por, vssfo (tarry) no odor + SH; Green/gray (4500)
LS: Cream/tan, fine crystalline to dense, mostly dense, foss + Dolo; Cream, fine crystalline, trace frac por, ssfo (tarry) trace SH; Black + Calc concretions (10)
LS: Lt gray/tan, dense, hard, foss + LS; Cream, chalky, soft, mealy w/trace stain + Chert;
White-milky/tan, blocky (10/20") + Chert; Black/dense dolo (10/40")
LS: Brown, dense, hard + SH; Gray/red, silty-sandy + SS; Brown, fine grained + Dolo, Cream, dense (10/60")
LS: Tan/gray, dense, ool sl dolo + SH; Mustard yell/gray, blocky + Chert; Gray (20)
SH: Gray, blocky (30)
LS: Gray, dense + LS: Tan/cream, dolomitic, foss (bryazoan) + SH; Gray/green/yell (40)
LS: Tan, dense, hard, foss + LS; White, dense, dolomitic, chalky w/vssfo (50)
LS: White, sandy, ool + SS; White/gray, fine grained, ang, friable (60)
LS: Cream/tan, fine crystalline, ool, sandy + SS; Gray, hard + SH; Green (70)
LS: Cream/white, fine crystalline, ool, sandy, chalky + SH; Olive, brittle (70/30")
LS: Cream white, sandy(coarse rounded sand) + SS; Clear, coarse, friable + SS; Gray, fine grained, pyritic, hard (70/60") Vis 50/ Wt 9.1