



PHIL ASKEY
PETROLEUM GEOLOGIST



GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY Hess Oil Company

LEASE Becky #1

FIELD Wildcat

LOCATION 1650' ESL & 2100' FWL

SEC 26 TWP 17 S RGE 23 W

COUNTY Nowa STATE Kansas

CONTRACTOR Mallard Drilling, J.V. Inc.

SPUD 4-8-13 COMP 4-16-13

RTD 4395' LTD —

MUD UP 3397' TYPE MUD Chemical-Mud-C

SAMPLES EXAMINED FROM 3700' TO RTD

DRILLING TIME KEPT FROM 3500' TO RTD

GEOLOGICAL SUPERVISION FROM 3720' TO RTD/LTD

GEOLOGIST ON WELL Phil Askey, R.G.

ELEVATIONS

KB 2343'

GL 2338'

Measurements Are From KB

API # 15-135-25571

CASING

SURFACE 878' @ 219' w/ 2005x5

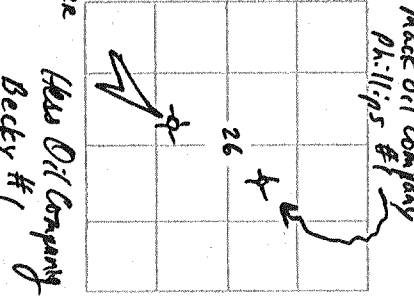
PRODUCTION —

ELECTRICAL SURVEYS —

FORMATION TOPS	LOG	SAMPLES	%
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Anhy	No logs	1627 +716	+6
Heebner		3737 -1394	+11
Lansing		3777 -1434	+12
B/kc		4065 -1722	+11
Magnaton		4123 -1780	+11
Paunee		4165 -1822	+12
FtCott		4257 -1914	+13
Cherokee Shale		4280 -1937	+9
MISSISSIPPI		4379 -2036	-13
RTD		4395 -2052	48'

REFERENCE WELL



REMARKS

The Hess Oil Company, Becky #1, ran structurally high to the key reference well, Mack Oil Company, Phillips #1 from the Anhy to the Cherokee Shale. Thickening of the Congl shale section above the Mississippi resulted in a lower Mississippi structure. All sample shows were DST'd with non-commercial results (DST #1 & 2). It was decided to not run logs and to plug the well after salt water was recovered on the Mississippi test (DST #2).

Phil Askey, R.G.

LEGEND

Anhydrite	Salt	Sandstone	Shale	Carb sh	Limestone	Ool.Limo	Chert	Dolomite

SCALE " = 100'

DRILLING TIME IN MINUTES

PER FOOT
Rate of Penetration Increases

DEPTH

5" 10" 15" 20" 25"

LITHOLOGY

SAMPLE DESCRIPTIONS

REMARKS

1600

Anky 1627 (+716)

50

B/Anky 1662 (+681)

3500

Samples 10' wet + dry
3700' - RTD

Rig data:

WOB 32K * PP 800-1000 #

SPM 60 RPM 60-70

* (drill pipe was 4 drill collars missing due to collar repairs) (short)

Bit data:

Smith F-27 7 7/8"
219' 4345' 116 3/4 hrs (35.34 ft/hr)

Smith F-27 7 7/8" RR
4345' 4395' 2 1/2 hrs (20 ft/hr)

Dev Surveys:

1/2° @ 219'

1° @ 4345'

50

DSTs 2 by Tri-labite Testing

3600

Geograph
clock stopped

50

3700

Hebner 3737 (-1394)

50

Lansing 3777 (-1434)

3800

Pipe strap @ 4345'

Board 4357.34'

Strap 4356.82'

Pipe short .52'

LS, crm, firm, v f-fxlw, tr fss
scat wh offsh, shchky-ckky, scat oil-ppt
fr interl ϕ , NS
scat ch, wh tan semitrnal, fresh

LS, crm tan qy, firm, v f-fxlw
tr shchky-ckky, scat fss, fr xlv ϕ , NS

sh, blk, fis, carb
LS, tan, lt-mqybd qy, firm-dns
micro-fxlw, fss, ppt, NS
sh, m-dky, rdbrw, q-n, rd, fishy

LS, crm offsh, firm, shchky-ckky
v f-fxlw, tr fr fss, scat xlv ϕ , NS
scat ch, wh semitrnal, fresh

sh, dky, rdbrw-brd, fcol, blk
sm shy

LS, offsh-ck crm ultqy, firm
micro-fxlw, shchky-ckky,
tr tan qy dns, cpts-microxlv, fss
tr ch tan, NS
scat brd

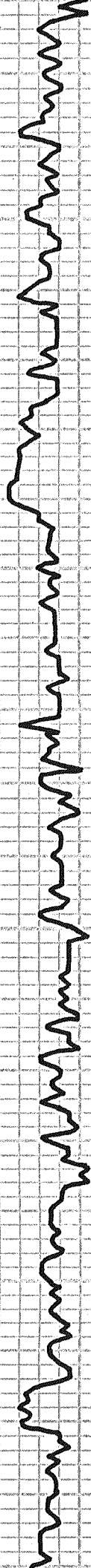
LS, tan lt-brw lt-mqy, firm-dns
micro-fxlw, sm fss, tr m-dky, dns
p xlv ϕ , NS
intd sh's, lt-dky, blk, qy q-dky
tr ch, wh tan, semitrnal, fresh

50

3900

50

4000



LS, tan H-mgubm crm, firm-dns
 fr chky, micro-cyto xls, sm VF xls
 N vis ϕ , NS fr Ch, tan-brn

SH, dkgy-blk shcml

LS, crm offwh tan, firm, fr dns,
 fr shchky-chky, vf-fslr, fr fss,
 scat Ch, wh crm semitrnl, frns, NS

LS, d/a, fr brn-gyben, dng,
 cyto-micro xls
 sm cat, cr/a, fr fss, NS

LS, H crm-offwh, firm, vf-fslr,
 scat ool-vngp, sm fr xls-ool-vngp ϕ
 NS fr shchky-chky, 5 pc Ch, 10gy-wh

SH, qy^r rdbrn-brn

LS, more tan H-mgubm-brn,
 firm-dns, micro-fslr, sme-cytxls,
 fr xls ϕ , NS scat shchky-chky

SH, dkgy-blk
 sme qy-gygrn

LS, tan shcn, mostly dns
 micro xls, N vis ϕ , NS
 3 pc brn, dns-chky, cytxls
 SH, d/a, blk-carb

Mud-Co data @ 3943'
 wt 9.1 vis 44 wl 2.8 solids 5.4%
 pH 8.5 cl 5,400 ppm lcm 0[#] YP 13

rdbrn-brn, qy-gygrn, blk

LS, offwh-crm tan, firm, sm dns, plty
 vf-fslr, scat xls ϕ , NS sme arg
 scat 10gy tan, firm-dns, cytxls, NS

SH, mdky qygrn-grn rdbrn-brn
 trcol

LS, offwh-H crm 10gy, vf-fslr
 firm, scat wh chky, trcol,
 scat xls ϕ , tr ool ϕ , NS

fr tan-crm fss Ch
 2 pc ss, cl 1941 firm, n-crm, intgrn ϕ , NS
 SH, m-dky qygrn-grn sm blk, carb
 2 pc pyr

LS, offwh-crm-tan, firm,
 vf-fslr, fr shchky-chky,
 scat ool-xls ϕ , fr vngp ϕ , NS

LS, offwh-crm-tan, sme qy-gybrn-brn,
 firm-dns, micro-fslr, fr chky,
 fr fss

50

Ø/KC 4065 (-1722)

LS, shchky-chky, fr. sh, 3 pc ool. conc-
 Fe φ, NS 2 pc qtz grains
 SH, dkgy blk, qygrn rdbrn
 LS, tan crm sme off wh-ltgy,
 fr. dns, micro-fxln, fr. fr. ool-ool φ, NS
 3 pc ch, tan
 SH, qy blk qygrn rdbrn
 fr. slky-sdy, 2 pc ss clastic grains, NS
 LS, crm tan qy off wh to qybrn, tan, arg,
 fr. dns, fr. shchky-chky, fr. chky,
 φ/ls φ, NS
 LS, more qy-qybrn, mostly dns,
 micro-fxln, fr. chky, fr. chky, crm arg, NS
 SH, qy's drdbrn, fr. slky-sdy, mica, NS
 LS, qy tan, dns-chky, cyph-micro-fxln

4100

Marmaton 4123 (-1780)

SH, mdkgy blk rdbrn-brn qygrn
 fr. slky - mica
 LS, crm tan qy off wh, fr. dns,
 micro-fxln, fr. shchky, fr. brn-dnschky,
 N vis φ, NS
 LS, a/a, crm tan-brn, chky, fr. ch, NS
 fr. fss

50

Pawnee 4165 (-1822)

SH, qy qybrn blk rdbrn
 LS, off wh-wh, ltgy, ltan, fr. dns,
 shchky-chky, micro-fxln
 fr. tan-qy, dns-chky, v. ph φ, NS

4200

Muel. Co data # 4239'
 WT 9.4 V15 47 WL 8.8. Solids 7.5#
 pH 10.0 Cl 6,500 ppm LCM trace YP 14

LS, off wh ltgy ltan, dns, fr. chky,
 micro-vfxln, sme wh-off wh -
 shchky-chky, fr. tan-ltbrn, dns,
 cyph/ls, nvis φ, NS
 LS, a/a, samples carrying much
 SH, qy-qygrn rdbrn-brn

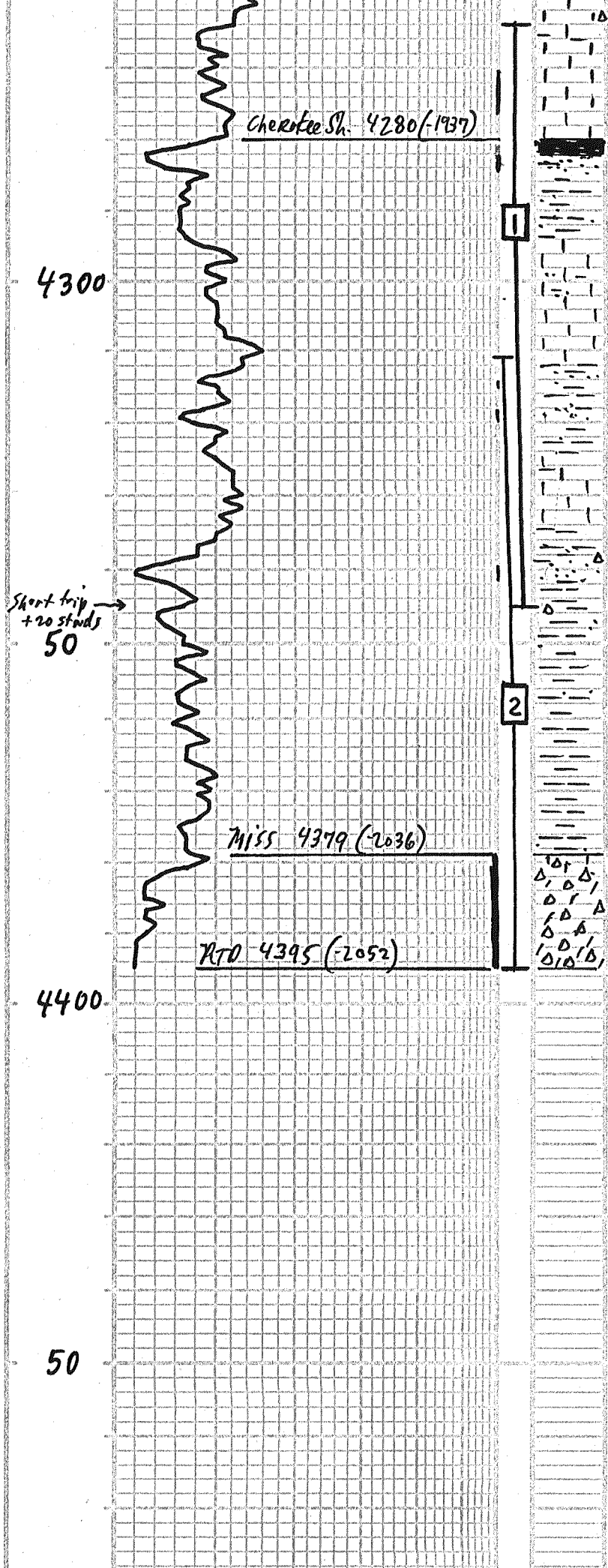
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Ft. Scott 4257 (-1914)

LS, off wh-wh, ltan tan-qy,
 mostly dns, micro-fxln, fr. chky,
 nvis φ, NS
 samples contain 95% sh, a/a
 SH, dkgy blk, shcarb-carb

DST #1 4264'-4345'

Times: 30"-30"-out
 1st run weak blow 1/4 inch



LS, tan-11brn qy, olibk, dns, micro crys, scat. fct - dk fct, 2 pc ch, NS

LS, qy tan sm offsh, tan/blk, fm-das, micro-fab, fct, fr xh, ph-ppt, fc, 3 pc tan/blk, dns, (up) vug, w/ blk stn, NFO, fr. thr, fr odor

Stt, blk, fr, carb

SS, tan-cl, fm, f-m gran, sband, mst, fr, intgrn, blk, hvy stn, NFO, n odor

CFS, 3 pc w, tan-qy, dns, vug, w/ dk stn, NFO, fr odor

3 pc st, gla, 3 pc g-tale, fr odor

LS, tan qy offsh, fm-das, micro-fab, k arg, p kln, NS

LS, tan erm offsh qy, fm-das, micro-fab, 3 pc vug w/ brn/blk stn, NFO, n odor

tr-s odor, fr ss, cl, qy, fm-das, m gran, sband, mst, intgrn, 2 pc w/ blk stn, NFO, fr odor

much stt, qy qy qn-grn, rd brn, brn maroon

LS, tan offsh qy, fm-das, micro-fab, fr. fct, n vid, NS

Stt, qy qy qn rd brn brn, wxy, var

SS, cl, fm, m gran, sband, mst, fr, intgrn, blk, hvy stn, NFO, n odor, w/ od, fr ch, comp. sh, fresh, NS

Stt, qy's rd brn, col, var, wxy, fr stty

3 pc ss, cl, luh, fm-stn, f-m gran, calc, sband, mst, gran, NS

4 pc ch, amber-tan, fresh

CFS, tr-s odor, 4 pc ss, gla, NS, 2 pc g-tale, NS

LS, tan erm qy, dns-cty, epa-micro, fr. ch, tan-brn wh-erm, fr resid, stn, NFO

cht, wh, hvy, semitrans, sawtooth, fr. hvy, hvy stn, NFO, resid stn, fr qy odor

DOL, crm, fm-das, scat. sucr, scat. H-brn staining, 2 pc HFO, fr qy odor, pfor

CFS: ch + dol 2/a, 60% ch, 40% dol

2nd open: no 2nd open

Rec: 10' mud w/ show of oil

IFP 29.37 # 15IP 115 #

HP 2130 # BHT 110°F

Mud-Co data @ 4345'

WT 9.6 V15 58 WL 8.8 solids 9.07

pH 8.5 CL 5,400 ppm LCM trace YP 17

DST # 2 4311' - 4395'

Times: 45" - 45" - 45" - 45"

1st open: wk to strong blow in 40" (no blow back)

2nd open: wk building blow to 4 inches (no blow back)

Rec: 200' MW (75% wtr 25% mud)

300' SW CL 32,000 ppm RW .27 e55°F

Total fluid 580' (show of oil in tool)

IFP 29-186 # 15IP 1296 #

FFP 191-280 # FSIP 1300 #

HP 2111-2099 # BHT 119°F

Short trip + 20 stands 50

Cherokee Sh. 4280-1937

Miss 4379 (2036)

RTD 4395 (2052)

4300

4400

50

DEPTH

DRILLING TIME Minutes/Foot

5" 10" 15" 20" 25"

Rate of Penetration Increases

LITHOLOGY

SAMPLE DESCRIPTIONS

REMARKS

COMPANY

Hess Oil Company

LEASE

Becky #1

LOCATION

1650' FSL & 2100' FWL SEC 26 TWP 17S RNG 23W

COUNTY

Ness

STATE

Kansas

ELEVATION:

2343' KB