Woolsey Operating Company, LLC

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: BAUER #1
API: 15-077-22183-00-00
Location: Section 16 - Township 31 South - Range 6 West
License Number: 33168 **Region:** Harper County, Kansas
Spud Date: August 5, 2019 **Drilling Completed:** August 12, 2019
Surface Coordinates: NE SW SW NE
2045' FNL & 2045' FEL
Bottom Hole Coordinates:
Ground Elevation (ft): 1460' **K.B. Elevation (ft):** 1473'
Logged Interval (ft): 3000' **To:** 4415' **Total Depth (ft):** 4415'
Formation: Topeka >>> Mississippian
Type of Drilling Fluid: Chemical Mud

Printed by MudLog from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Woolsey Operating Company,LLC
Address: 125 N. Market, Suite 1000
Wichita, KS 67202

GEOLOGIST

Name: Bill Klaver
Company: Woolsey Operating Co. LLC
Address: 125 N. Market, Wichita Kansas, 67202

COMMENTS

Surface Casing: Spud August 5, 2019 at 8:45 am, ran 6 joints of 8 5/8" X 24#/ft casing to 265' KB (tally 252.95').
Cement with 200 sx 60/40 poz mix, 3% cc, 1/4# cello flake. Plug down 4:30 pm, cement did circulate.
Production Casing: 5 1/2" X 15.5#/ft

Deviation Surveys: .75 at 275', .75 at 1019', .75 at 1521', 1 at 1707', 1 at 1897', .75 at 2114', .50 at 2304', See detail for additional surveys.
Pipe Strap @ 3717' Board: 3717.17', Strap: 3715.82', strap 1.35' short. No correction was made to the board.
Duke Drilling Rig 7 bit record:
1) 12 3/4" Smith RT RR in at 0' out at 275', 4.25 hours
2) 7 7/8" Hughs Tool DP 506 in at 275' out at 4415', 52 hours

Gas Detector: Pason Systems
Mud System: Mud-Co. Brad Bortz, Engineer
DST: Trilobite Testing, Leal Cason, Tester
E-Logs: ELI Wireling, Dual Induction Laterolog w/SP, CNL-FDC w/SP GR and Caliper. Gus Pfanenstiel, Engineer
Company Rep: Alan Dick, Woolsey Operating Company

DSTs

DST #1 Kansas City "Iola", 3700'-3717', 30"-60"-30"-60", Weak blow died, (tool slid 20' to bottom, plugging action on both flow periods), Rec: 189' Mud, IHP 1875, IFP 129-131, ICIP 1378, FFP 135-134, FCIP 1364, FHP 1845, BHT 120 degrees

DST #2 Mississippi, 4269'-4280', 30"-60"-60"-60", SB BOB in 30 seconds, Rec: 756' GIP, 65' SGCM (5%G, 95%M), IHP 2165, IFP 28-40, ICIP 653, FFP 18-44, FCIP 833, FHP 2235, BHT 129 degrees

DST #3 Mississippi, 4284'-4305', 30"-60"-60"-60", SB BOB in 30 seconds, GTS in 5 minutes of IFP. IFP: 10" 818.48 MCF, 20" 865.34 MCF, 30" 849.72 MCF. FFP: 10" 943.34 MCF, 20"-30" 943.43 MCF, 40"-60" 927.81 MCF. Rec: 4087' GIP, 16' GMOCW (14%G 30%O 44%W 12%M), 179' GMOCW (20%G 20%O 50%W 10%M), IHP 2128, IFP 360-333, ICIP 1421, FFP 300-271, FCIP 1401, FHP 2106. API Rw .095 @ 80 deg. Chlorides: 71,000 ppm, BHT 125 degrees.

DST#4 Mississippi, 4305'-4315', 30"-60"-60"-90", SB BOB in 10 seconds, GTS in 10 minutes of IFP. IFP: 20"-30" 140.66 MCF, FFP: 10" 137.00 MCF, 20" 151.65 MCF, 30" 158.98 MCF, 40"-60" 166.31 MCF. Rec: 3925' GIP, 78' GO (20%G 80%O), 119' GMWCO (10%G 60%O 24%W 6%M), 60' MOCW (20%O 72%W 8%M), 33.6 gravity, Rw .12 @ 86 degrees. Chlorides 68,000 ppm, IHP 2188, IFP 57-96, ICIP 1430, ICIP 1430, FFP 84-119, FCIP 1425, FHP 2135, BHT 124 degrees.

CREWS

Galen Roach, Tool Pusher
Charles Stout, Morning
Scott Edwards, Days
Steven "Skippy" Green, Evening

ROCK TYPES

- ▨ Anhy
- ▨ Bent
- ▨ Brec
- ▨ Cht
- ▨ Clyst
- ■ Coal
- ▨ Congl
- ▨ Sdy dolo
- ▨ Shy dolo
- ▨ Dol
- ▨ Gyp
- ▨ Sdy lmst
- ▨ Lmst
- ▨ Mrlst
- ▨ Salt
- ▨ Shale
- ▨ Sltst
- ▨ Ss
- ▨ Black sh
- ▨ Gry sh
- ▨ Shale
- ▨ Shysltst
- ▨ Sltysh
- ▨ Ss 2
- ▨ Shale 3
- ▨ Silty dol
- ▨ Dol lmst
- ▨ Dol 2
- ▨ Granite wash
- ▨ Lmst
- ▨ Calc dol
- ▨ Shale 3

ACCESSORIES

MINERAL

- ▫ Anhy
- ▫ Arg
- ▫ Bent
- ▫ Bit
- ▫ Brecfrag
- ▫ Calc
- ▫ Chlorite
- ▫ Dol
- ▫ Sand
- ▫ Slty

FOSSIL

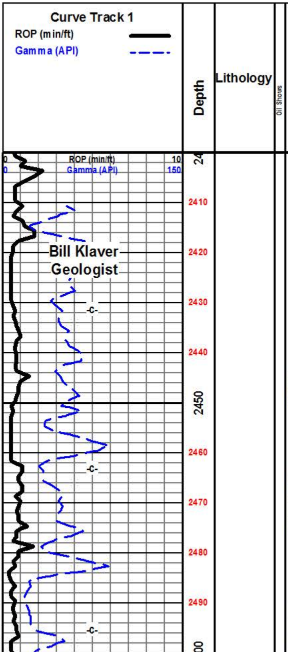
- ▫ Algae
- ▫ Pelec
- ▫ Pellet
- ▫ Pisolite
- ▫ Plant
- ▫ Strom
- ▫ Fuss
- ▫ Oomoldic
- ▭ Grysh
- ▭ Gryslt
- ▭ Lms
- ▭ Sandylms
- ▭ Sh
- ▭ Sltstn

Carb
Chtdk
Chtlt
Dol
Ferrpel
Ferr
Glau
Gyp
Marl
Nodule
Phos
Pyr
Salt
Sandy
Silt

Amph
Belm
Bioclst
Brach
Bryozoa
Cephal
Coral
Crin
Echin
Fish
Foram
Fossil
Gastro
Oolite
Ostra

STRINGER
Anhy
Arg
Bent
Coal
Dol
Gyp
Ls
Mrst
Sltstrg
Ssstrg
Carbsh
Clystn
Dol

TEXTURE
BS Boundst
C Chalky
CX Cryxln
E Earthy
FX Finexln
GS Grainst
L Lithogr
MX Microxln
MS Mudst
PS Packst
WS Wackest



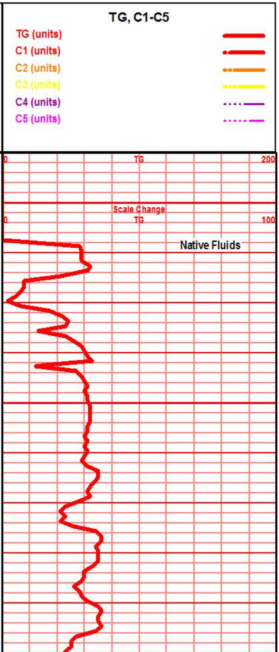
Geological Descriptions

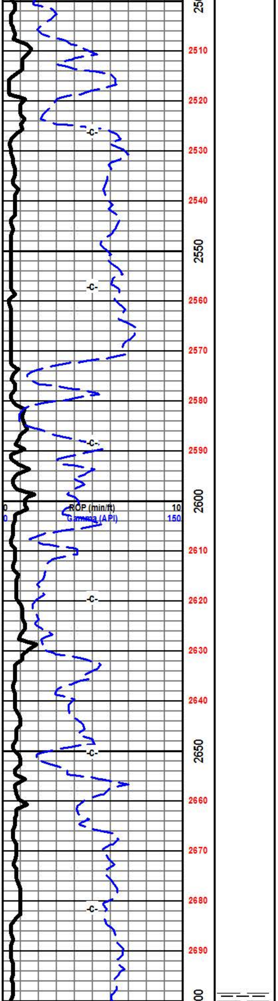
Woolsey Operating Comapny LLC
Bauer 1
Sec. 16 - Twp 31 South - Rge 6 West
NE SW SW NE
2045' FNL & 2045' FEL
Field: Bauer South
Harper County, Kansas
API # 15-077-22183-00-00
GL 1460' KB 1473'

The following tests were used for structural comparison: Fursth-Hill-Darnell's #1 Hoard, C NW NE. 16-31S-6W, Gear Petroleum's #1 Reida, C SE NW, 16-31S-6W.

Rotary cuttings were collected during drilling process from 3000' to rotary total depth. One minute drill time was manually recorded from 2700' to rotary total depth. All samples were delivered to the Survey at the completion of the test.

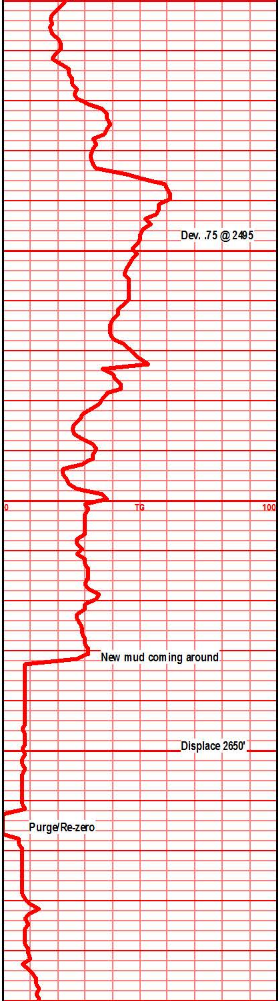
7 am Drilling Progress
August 3, 2019 MIRT
August 4, 2019 Shut down
August 5, 2019 Rig up and Spud
August 6, 2019 Drilling at 490'

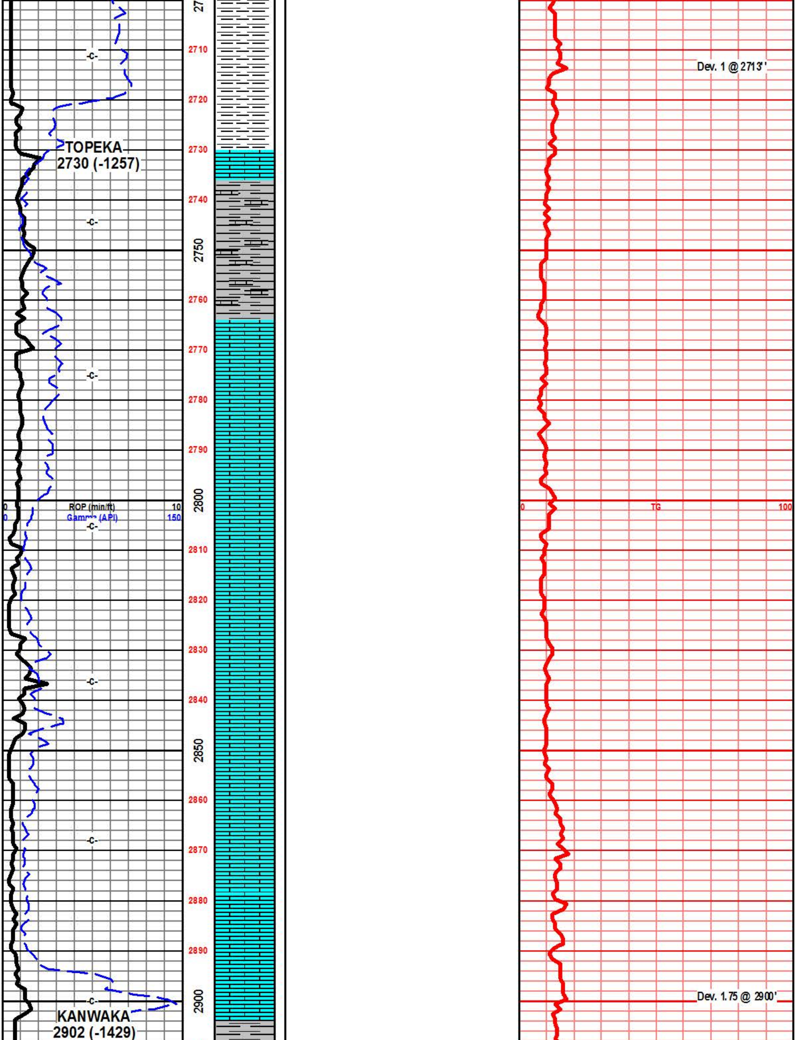


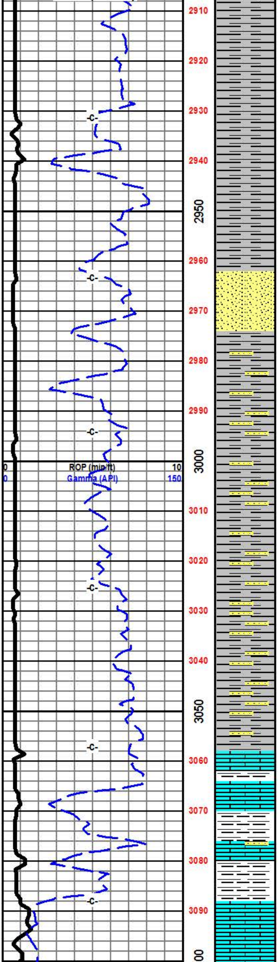


August 7, 2019 Drilling at 2177'
August 8, 2019 Drilling at 3372'
August 9, 2019 DST #1 at 3717'
August 10, 2019 DST #2 at 4280'
August 11, 2019 DST #3 at 4305'
August 12, 2019 TOOH for logs at 4415'

E-log Tops:
Chase 1254 (+219)
Onaga 2118 (-645)
Wabaunsee 2169 (-696)
Topeka 2718 (-1245)
Heebner 3130 (-1657)
Toronto 3149 (-1376)
Douglas 3183 (-1710)
Haskell 3381 (-1908)
Stalnaker Sand 3450 (-1977)
KC Iola 'G' 3709 (-2236)
Stark 3318 (-2345)
Swope 3827 (-2354)
Hushpuckney 3856 (-2383)
Hertha 3864 (-2391)
B/Kansas City 3941 (-2468)
Pawnee 4042 (-2569)
Cherokee Group 4112 (-2569)
Mississippian 4267 (-2794)
MIss Detrital 4267 (-2794)
Miss Warsaw W1 4285 (-2812)
Miss Osage 4350 (-2877)
LTD 4411 (-2938)







much lst tan crm lt gry f xln gran soft vry chlky arg, shl gry frim blky ang pcs, calc in prt

shl gry med gry silty gritty, sst wht tan f grnd, sub ang sub rded grns, prly srted prly cem calc cem, fria, arg in prt

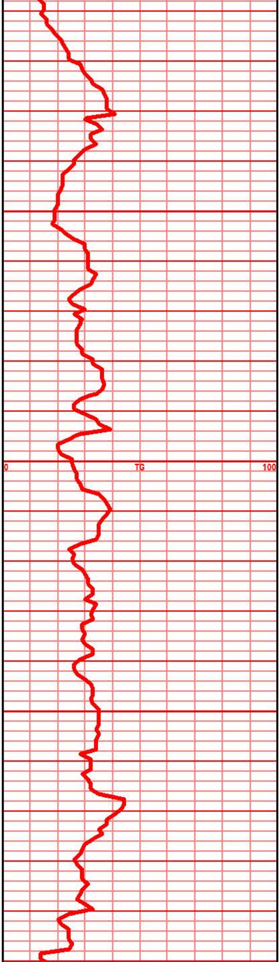
sst wht off wht med grn f vf grnd sub ang grns, prly srted, fria, mic. arg silty, tr mic

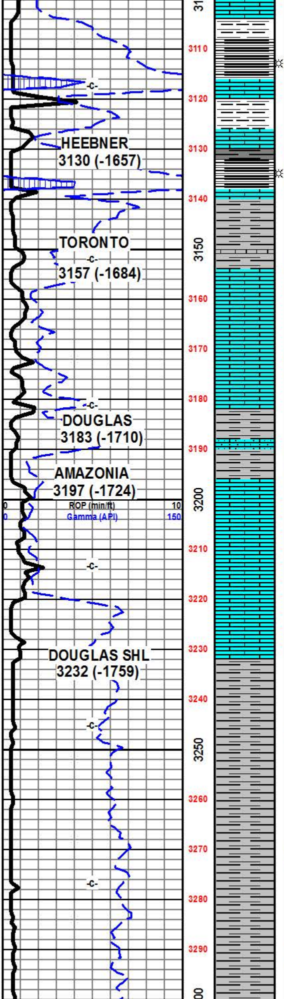
shl gry med gry silty sndy, sst wht off wht lt gry, med gry f vf grnd, prly srted,

sst off wht lt/med gry f vf grnd, sub ang grns, fair to prly srtd, sub fria, arg silty, mic,

shl gry med gry silty gritty, sst aa

lst wht tan crm f xln gran soft sub chlky tr micro foss frags, inter xln por, calc xln fill,





shl gry drk gry blk, blk carb firm wxy grsy text, abun gas bubs

lst tan crm f vf xln gran arg blky dns sub chlky tr foss frags, shl drk gry blk, carb in prt, firm blky ang grsy wxy gas bubs

lst crm tan off wht, f sli med xln, blky ang sub chlky, micro foss frags, calc xstl inclu, inter xln por, foss frags, foss mold por

lst crm off wht tan f sli med xln gran sub chlky foss frags, calc xln fill, foss mold, inter xln por

shl gry drk gry silty gritty, arg, lst tan gry off wht, silty sndy text, snd grn inclu, sub chlky soft

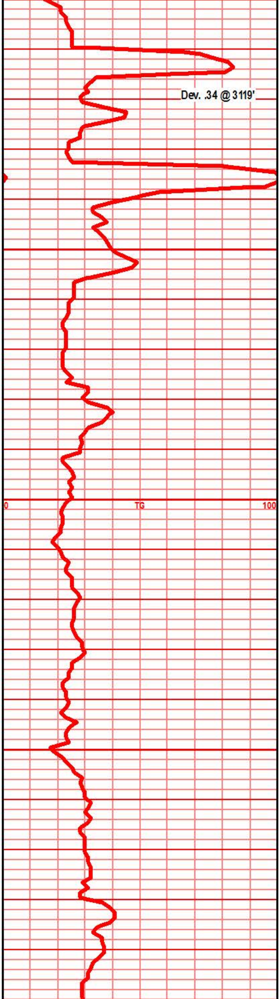
lst crm tan lt brn f med xln blky gran ang, sub chlky, foss frags, crsly in prt, calc xstl inclu, foss mold, inter xln por

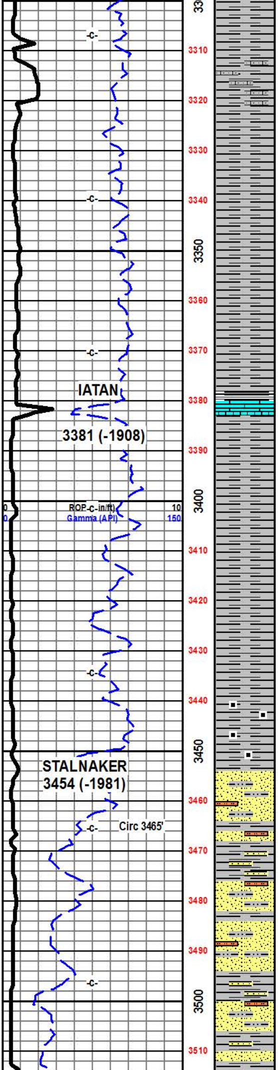
lst tan lt brn f med xln gran sub chlky, foss frag, crsly in prt, foss mold, inter xln por, crs calc xstl inclu in prt

shl gry dull gry silty soft unfirm, sndy gritty

shl gry med gry soft silty gritty in prt, mic in most, tr blk carb flecks

shl gry med gry soft silty gritty in prt, mic in most





shl gry med gry silty soft gritty, mic

shl gry med gry silty gritty mic

shl gry med drk gry, soft silty tr gritty, mic, tr carb flecks

shl gry med gry silty gritty, soft mic

shl gry med drk gry firrm blky pcs, silty gritty in prt

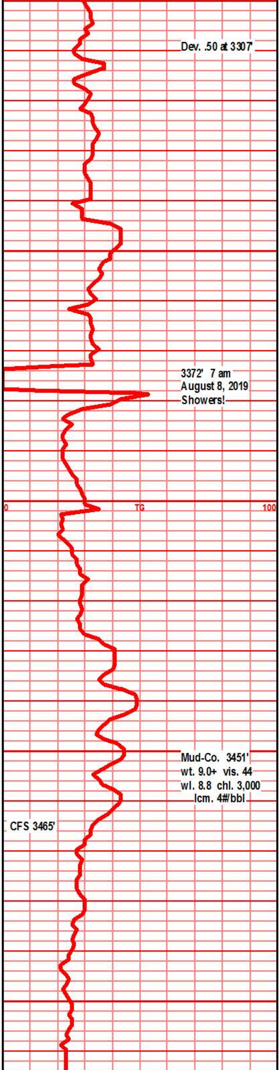
shl gry med/drk gry silty slick,

shl gry med gry blky firm pcs, silty gritty in prt., much blk organic mat, blk carb flecks, gas bubs

shl gry drk gry blk silty gritty sndy, tr mic, blk carb flecks, sst drk gry f grnd sub ang grns, prly srted, sub fria, shl clay fill, mic, blk carb flecks

sst wht lt gry f vf grnd, sub ang grns, fairly srted, fair/well cem sub fria, calc cem mic, arg silty in prt

shl gry silty sndy mic, sst wht lt gry/wht clstrs, f grnd, fair to w/srtd, sub ang grns, sub fria to tite, tr crumbly, mic

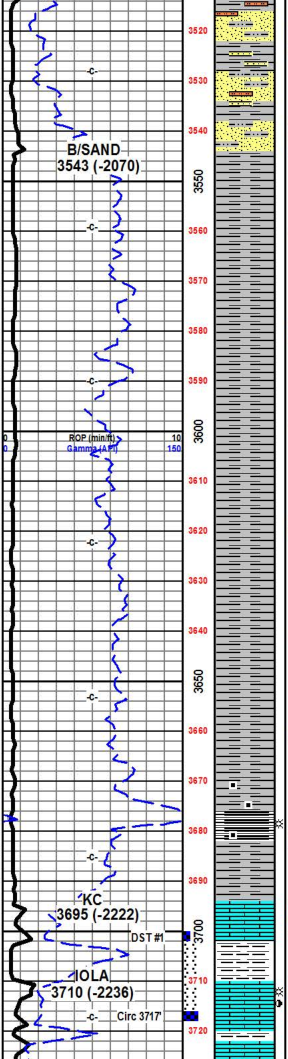


Dev. .50 at 3307'

3372' 7 am
August 8, 2019
Showers!

Mud-Co. 3451'
wt. 9.0+ vis. 44
wl. 8.8 chl. 3,000
lcm. 4#/bbl

CFS 3465'



shl gry sndy gritty mic, sst off wht lt gry clstrs, f grnd, sub ang grns, w/fair srtd, sub fria to tite, tr crumbly mic arg clay silt fill

shl aa, sst wht off wht lt gry clstrs, f grnd sub ang grns, w/fair srtd, w/cem, silic cem, arg in prt, clay silt fill, tr blk mic flecks

shl gry drk gry, soft mushy pcs

shl gry, med drk gry soft mushy, spls wsh drk gry,

shl gry drk med drk gry soft easy pcs

shl gry drk tr vry drk gry blky ang firm pccs, tr fnly silty, gritty

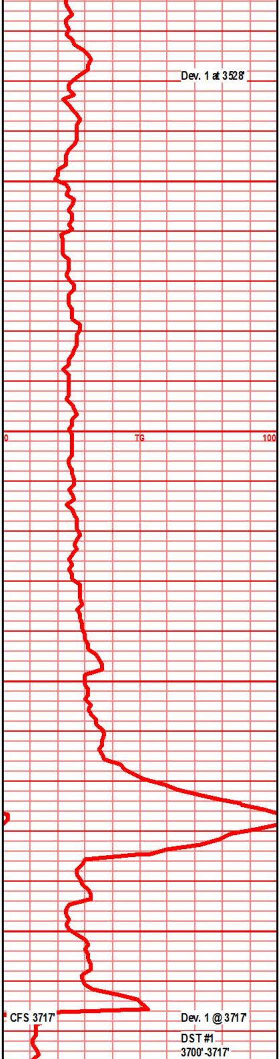
shl gry, drk gry fnly silty firm

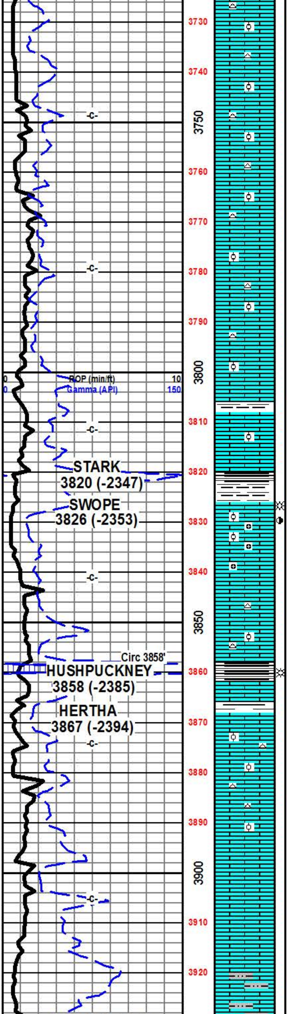
shl gry drk gry, bec drkr gry blky ang firm pcs, soft fnly gritty silty

shl drk gry, bec blk, blk carb text, blky ang firm pcs, wxy grsy text, gas bubs

lst off wht tan crm f xln blky sub chlky trr foss frags, calc xln fill, tan gry mott f xln sub chlky arg,

lst crm wht tan f xln blky ang pcs, sub chlky, msly dns, hrd, foss frags, tr oomold por, fossmold por, gas bubs, SFO, RBS FO and odor on break, oil show vry light, transl





lst crm tan tr lt brn f sli med xln gran blky ang pcs, sub chlky foss frags, foss ool, foss mold, inter xln por, chrt tan t brn shrp frsh opaq

lst crm tan f sli med xln gran blky sub chlky foss frags, foss ool, calc xln fill, foss mold por, inter xln por, chrt tan lt gry shrp frsh opaq

lst crm tan off wht f sli med xln gran sub chlky foss frags, foss ool, inter xln inter foss leeched por, chrt tan lt gry shrp frsh opaq

lst crm tan lt brn in prt f sli med xln blky ang dns sub chlky, foss frags, tr foss ool, calc xln fill, foss mold, inter xln por, chrt tan lt gry shrp frsh opaq

lt tan buff crm tr lt brn, tr gry brn mott, f sli med xln gran blky sub chlky crumbly in prt, foss frags tr foss ool, calc xln fill, inter xln foss mold por chrt tan shrp frsh opaq

tr shl blk carb, wxy grsy firm text, blky pcs, lst tan crm lt brn, tan brn mott f sli med xln blky ang tr sub chlky, foss frags, crsly oomoldic in prt foss ool, calc xln fill, inter xln por, m slty chlky dns, tr blk stain, drk brn SFO, tr gas bub, nodor

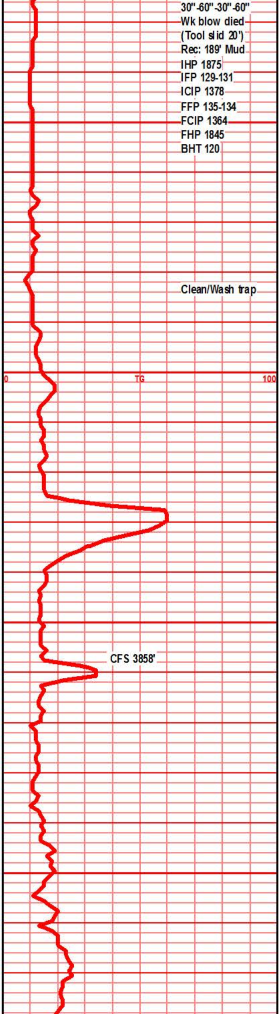
lst crm tan drk tan, tr tan brn mott f sli med xln gran blky tr crumbly chlky to sub chlky foss frags, foss ool, tr oomod por, inter xln por, calc xln fill, chrt off wht lt gry shrp frsh opaq

shl gry blk, tr blk carb, wxy grsy firm blky pcs, gas bubs, lst tan gry tan f xln dns hrd blky ang sub chlky tr crumbly, mstly dns hrd, foss frags fosss ool, foss mold por, inter xln por

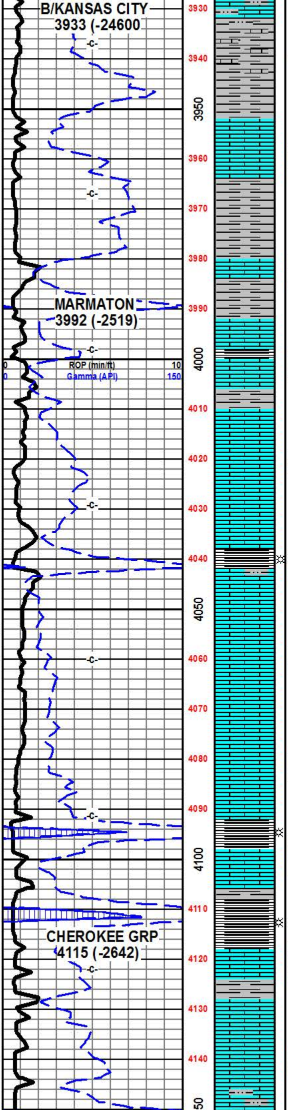
lst crm tan drk tan, tan brn mott f vf xln dns hrd blky ang sub chlky, foss frags, foss ool, chrt tan shrt frsh opaq

lst gry tan brc drk gry f vf xln dns hrd foss frags, crs xln text, blky shrp pcs, arg, chrt drk tan blk shrp frsh opaq

lst drk tan gry blk f vf xln dns hrd blky ang shrp arg, chrt drk tan blk shrp frsh opaq tr foss frags xln text



30"-60"-30"-60"
Wk blow died
(Tool slid 20')
Rec: 189' Mud
IHP 1875
IFP 129-131
ICIP 1378
FFP 135-134
FCIP 1364
FHP 1845
BHT 120



shl gry drk gry blk, blky ang firm tr shrp pcs,

lst gry tan, tan/brn f vf xln dns hrd blky micro foss frags, chrty, chrt tan brn shrp frsh, shl gry, gry/blk shrp firm blky ang pcs

shl drk gry, gry blk, tr green silty gritty, lst tan brn crm tr buff f xln dns hrd blky ang tr sub chlky

shl gry blk,tr carb, shl gry green silty sndy gritty, shl red gran sndy gritty, lst crm buff f xln blky ang micro foss frags/ool

lst buff tan f xln blky ang pcs, tr sub chlky tr calc xstl inclu, calc xln fill, mirco foss frags, micro ool, tite dns inter xln por

shl gry drk gry blk, tr carb text, lst tan buff crm f vf xln dns hrd blky, tr sub chlky dns tite inter xln por, micro foss

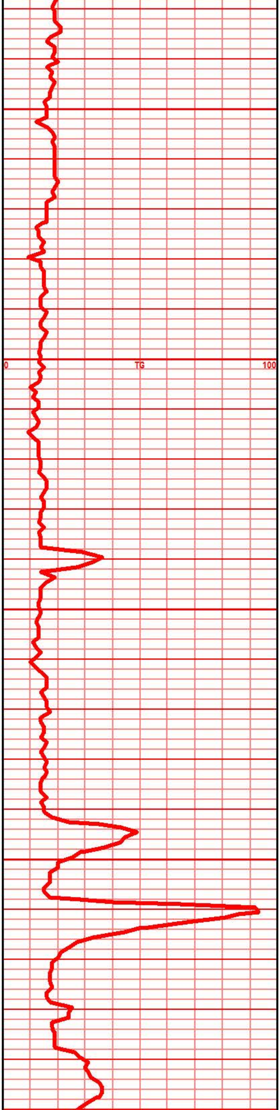
lst tan buff, tan/gry mott f vf xln dns hrd blk ang, micro foss frags, calc xln fill, mirco xln in prt, micro foss, tr micro ool

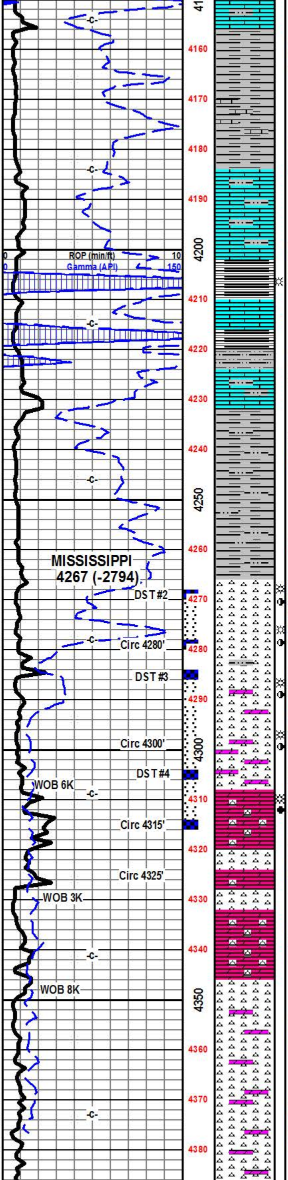
lst dull tan buff lt crm f vf xln dns hrd blky dns sli sub chlky, micro foss frags, micro ool, calc xln fill, NVP mstly dns hrd

shl gry drk gry blk, blk carb wxy grsy firm text, lst dull tan gry med gry f mic xln dns hrd blky ang, micro foss frags

shl gry dkr gry blk, carb in prt, wxy grsy firm text, gas bubs, lst gry crm tan f vf xln dns hrd sub chlky calc xln fill, inter xln por, micro foss frags

lst crm buff tan f xln gran semi soft, sub chlky, blky ang micro foss frags, calc xln fill, tr gry tan mott, f xln gran chlky arg





shl gry med drk gry, silty slick, lst tan crm tan/gry mott f vf xln dns hrd blky sub chlky arg silty, foss frags

shl gry drk gry gry brn, lst tan gry med gry/brn f vf xln dns hrd blky ang arg, micro foss frags, mstly chlky dns hrd arg

shl gry drk gry green silty gritty, blk, carb text wxy grsy frim blky pcs, lst drk tan gry f mic xln dns hrd arg blky silty arg

shl drk gry blk, tr blk carb text, lst tan crm buff vf xln dns hrd blky sub chlky, gry tan vf xln silty gritty, abun shls

shl gry, gry blk, green reds, tr yellow, silty gritty, fnly sndy inprt, tr lst gry tan gry mottvf xln dns hrd blky chlky soft arg

shl gry drk gry, gry green mott, red, red brn mott, yellow, silty gritty

chrt wht tan brn, tan/brn mott, weath gran sli trip text, pp moldic por, odor, gas bubs, SFO, blk stain, drk brn stain, chrt wht lt gry shrp frsh w/weath chlky gran weath text edge, tr glau, chrt gry blue/brn shrp frsh opaq

chrt wht gry tan mott, tr blue gry, shrp frsh opaq, blky with weath gran sli trip text, pp moldic por, odor, abun gas bubs, lt tan stain, blk stain SFO, tr glau, chrt gry shrp frsh opaq w/chlky gran dolo text edge/fill, gd stain, SFO, abun gas bubs

chrt clr wht gry shrp frsh blky ang shrds

dolo gry drk gry f xln blky ang, pp inter xln por, chrty in prt, fair odor, SFO/ Stain, abun gas bubs

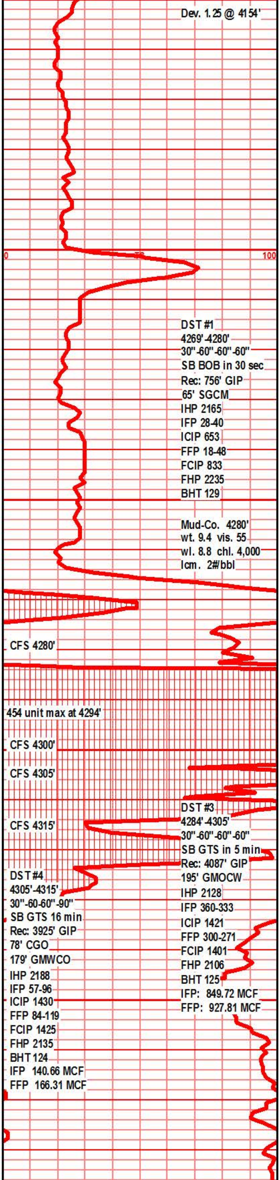
dolo tan brn f xln fnly sucr, sucr sli sndy text, gd inter gran/inter xln por, abun gas bubs, gd odor, SFO, gd stain

chrt wht off wht shrp frsh w/weath text edge, sli trip text, dolo tan crm lt bry f xln gran sli sur gd inter por SFO, gas

dolo, chrty dolo, wht gry mott, shrp blky ang pcs, sub weath gran soft text, pp moldic por, gry lt gry dolo edge, gran mstly dns hrd

chrt wht lt gry mott, weath gran text, gran soft tr chlky text, chrt wht frsh opaq blk ang w/gran weath text edge, pp moldic por

chrt incr frsh, chrt wht off wht lt gry shrp frsh blky ang shrds, chrt wht lt gry mott frsh w/weath gran text edge, tr tan gry dolo edges, weath pp moldic por

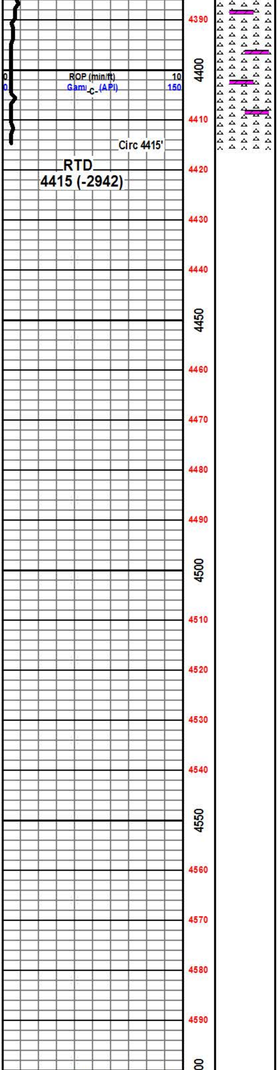


DST #1
4269'-4280'
30"-60"-60"-60"
SB BOB in 30 sec
Rec: 756' GIP
65' SGCM
IHP 2165
IFP 28-40
ICIP 653
FFP 18-48
FCIP 833
FHP 2235
BHT 129

Mud-Co. 4280'
wt. 9.4 vis. 55
wl. 8.8 chl. 4,000
lcm. 2#/bbl

DST #3
4284'-4305'
30"-60"-60"-60"
SB GTS in 5 min
Rec: 4087' GIP
195' GMOCW
IHP 2128
IFP 360-333
ICIP 1421
FFP 300-271
FCIP 1401
FHP 2106
BHT 125
IFP: 849.72 MCF
FFP: 927.81 MCF

DST #4
4305'-4315'
30"-60-60"-90"
SB GTS 16 min
Rec: 3925' GIP
78' CGO
179' GMWCO
IHP 2188
IFP 57-96
ICIP 1430
FFP 84-119
FCIP 1425
FHP 2135
BHT 124
IFP 140.66 MCF
FFP 166.31 MCF

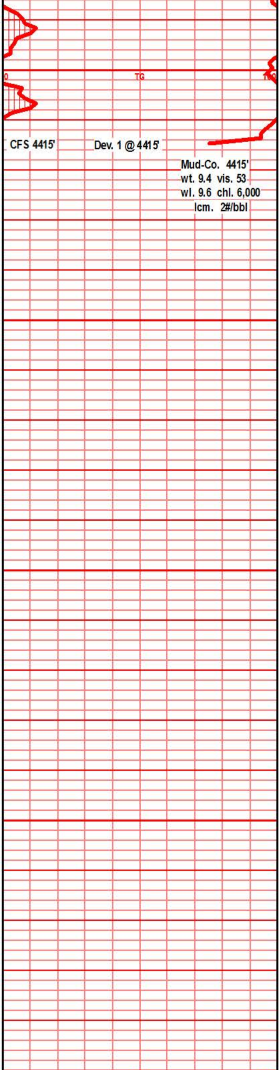


Circ 4415'

RTD
4415 (-2942)

chrt off wht lt gry, gry wht mott gran weath text, tr soft sub chlky/gran edge, pp moldic por, tr tan crm lt gry dolo edge, chrt wht gry lt blue shrp frsh blky ang shards

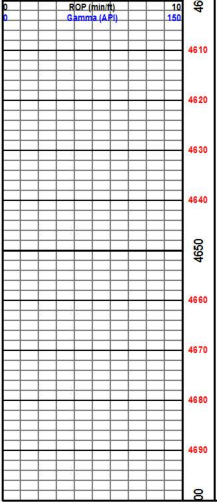
chrt off wht tan gry/wht gran weath, hrd/crumbly weathtext, pp moldic por, chrt wht gry blue gry shrp frsh ang blky shards, tr glau,

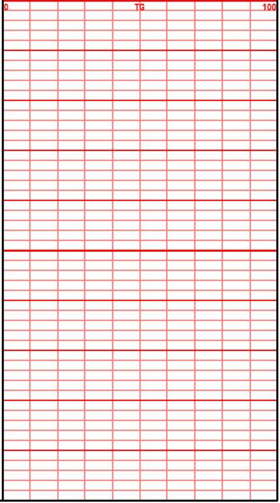


CFS 4415'

Dev. 1 @ 4415'

Mud-Co. 4415'
wt. 9.4 vis. 53
wl. 9.6 chl. 6,000
lcm. 2#/bbl



Woolsey Operating Company LLC
Bauer 1
Sec. 16 - Twp 31 South - Rge 6 West
C NE SW SW NE
2045' FNL & 2045' FEL
Harper County, Kansas
Field: Bauer South
API # 15-077-22183-00-00
GL 1460' KB 1473'