Woolsey Operating Company, LLC

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

Well Name: BROWN A-1
API: 15-007-24354-00-00
Location: Section 2 - Township 34 South - Range 12 West
License Number: 33168 **Region:** Barber County, Kansas
Spud Date: July 23, 2019 **Drilling Completed:** August 1, 2019
Surface Coordinates: S/2-SE-SW
330' FSL & 2040' FWL
Bottom Hole Coordinates:
Ground Elevation (ft): 1504' **K.B. Elevation (ft):** 1517'
Logged Interval (ft): 3500' **To:** 5300' **Total Depth (ft):** 5300'
Formation: Heebner >>> Simpson
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 July 23, 2019 at 9:30 pm, Ran 6 joints of 10 3/4" X 32#/ft new casing to 284', cemented with 260 sx 60/40 poz mix, 3% cc, 1/4# cello flake. Plug down 8:15 am on July 24, 2019. Cement did circulate.
Production Casing: None ran.

Deviation Surveys: 3/4 at 163', 1/4 at 284', 3/4 at 1019', 1/2 at 1521', 1/2 at 1992', 1 at 2523', 3/4 at 3026', 1/2 at 3463, see detail for additional survey data.
Pipe Strap @ 4704', Board: 4715.26', Strap: 4715.69', strap .43' long. No correction to the board was made.
Duke Drilling Rig 7 Bit Record:
1) 12 3/4" Smith FDS in at 0' out at 284'. 5.75 hours
2) 7 7/8" Hughs Tool DP 506 in at 284', out at 4230', 51 hours
3) 7 7/8" Hughs Tool DP 506 in at 4230' out at 5300', 20 hours
Gas Detector: Pason Systems
Mud System: Mud-Co. Brad Bortz, Engineer
DSTs: Trilobite Testing, Leal Cason, Tester
E-Logs: ELI Wireline, Dual Induction Laterolog w/SP, CNL-FDC w/PE, GR and Caliper, Jeff Luebbers, Eng.
Company Rep: Alan Dick, Woolsey Operating

DSTs

DST #1 Cherokee/Mississippian, 4610'-4704', 30"-60"-30"-90", weak blow, Rec: 5' drilling mud, IHP 2329, IFP 23-25, ICIP 42, FFP 27-27, FCIP 37, FHP 2262, BHT 2262

DST #2 Mississippi Osage, 4795'-4805', SB BOB in 2 minutes of IFP, SB BOB in 8 minutes of FFP. Rec: 1625' GIP, 70' OMCW (10%O, 76%W, 14%M), 312' SW, API Rw .1 @ 85 deg. Chlorides 62,000 ppm. IHP 2436, IFP 120-99, ICIP 1683, FFP 111-189, FCIP 1667, FHP 2357, BHT 124 degrees

DST #3 Misener 5046'-5058', 20"-30"-30"-60", SB BOB 1 minute into IFP, SB BOB 8 minutes into FFP. Rec: 4' MOCW (40%O, 48%W, 12%M), 193' OMCW (10%O, 70%W, 20%M), 1260' SW, API Rw .11 @ 84 degrees, Chlorides 59,000 ppm. IHP 2522, IFP 151-409, ICIP 1808, FFP 431-731, FCIP 1814, FHP 2405, BHT 133 degrees.

DST #4 Simpson 5157'-5183', 15"-30"-15"-60", SB BOB 1 minute into IFP, SB BOB 1 minute into FFP. Rec: 660' GIP, 345' WCM, 2961' SW, API Rw .1 @ 86 degrees. Chlorides: 62,000 ppm. IHP 2573, IFP 735-1279, ICIP 1915, FFP 1267-1674, FCIP 1917, FHP 2444 BHT 136 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

Curve Track 1
ROP (min/ft)
Gamma (API)

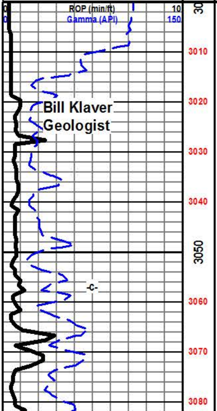
Depth

Lithology

Oil Shows

Geological Descriptions

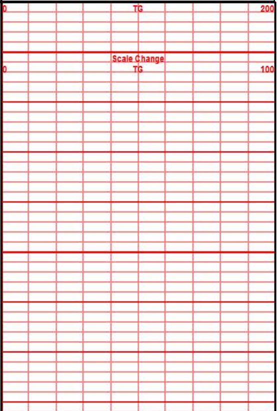
TG, C1-C5
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
C5 (units)

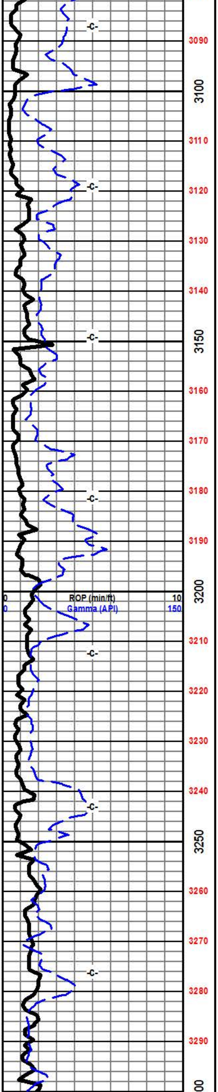


Woolsey Operating Company LLC
Brown A-1
Sec. 2 - Twp 34 South - Rge 12 West
C S/2-SE-SW
330' FSL & 2040' FWL
Field: Wildcat
Barber County, Kansas
API # 15-007-24354-00-00
GL 1504' KB 1517'

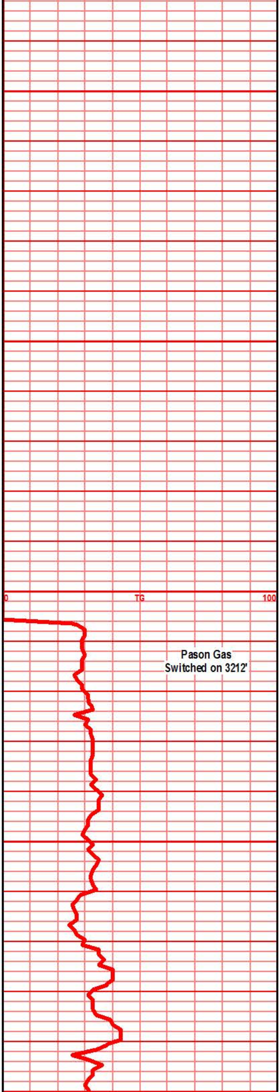
The following test were used for structural comparison: Woolsey's Farney Trust #1, NW SE NW, 11-34S-12W. Frontier Oil's Brown A-1 OWWO, C SW SW, 2-34S-12W. Vess Oil's 1-2 Farney, C NE NW, 2-34S-12W.

Rotary cuttings were collected from 3800' to rotary total depth. One minute drill time was recorded from 3500' to rotary total depth. All samples were requested by and delivered to the Survey at the completion of the test.

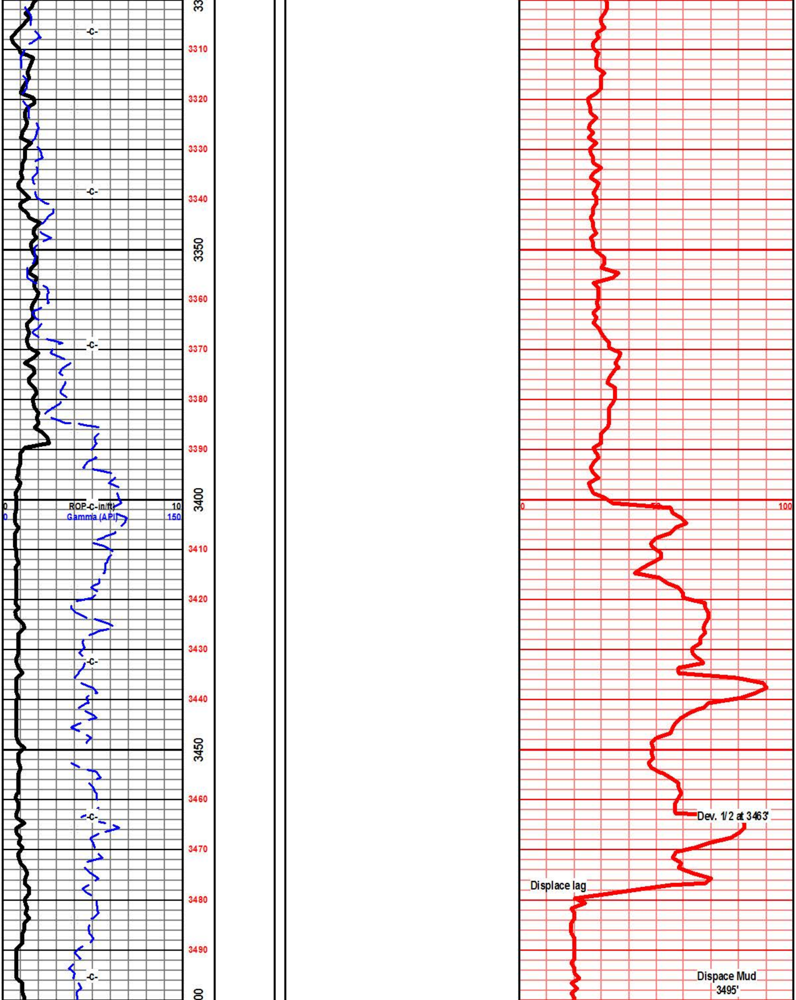


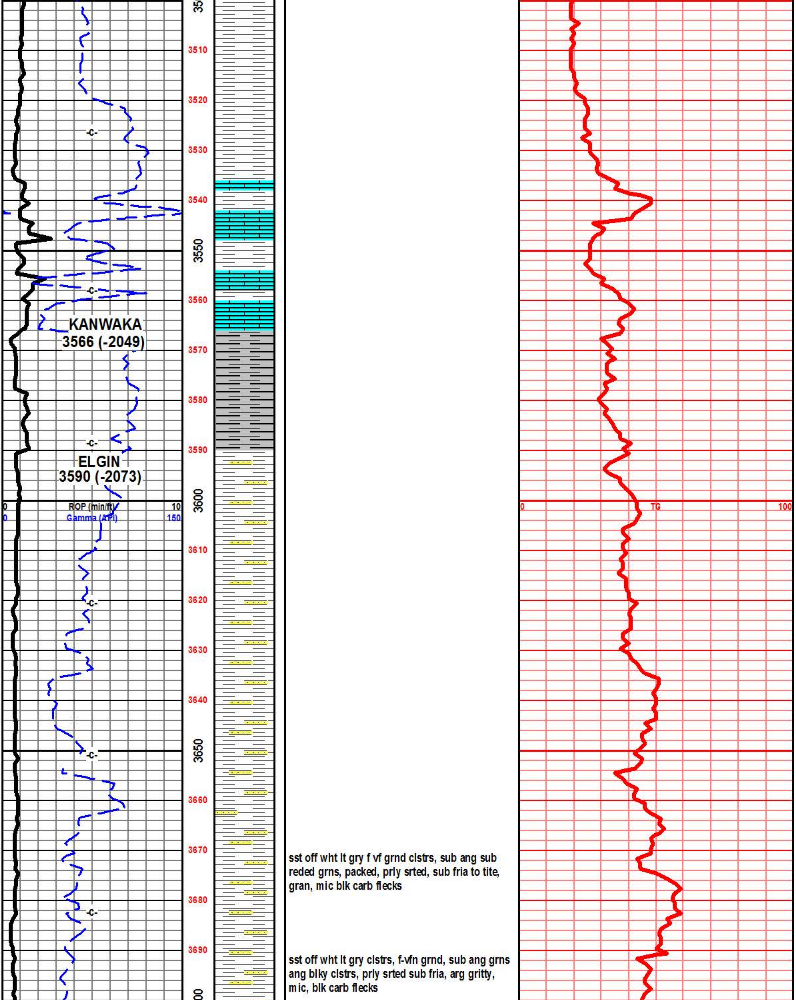


7 am Progress:
July 23, 2019 MIRT/Spud
July 24, 2019 Running surface casing
July 25, 2019 Drilling at 1285'
July 26, 2019 Drilling at 2800'
July 27, 2019 Drilling at 3808'
July 28, 2019 CFS at 4684'
July 29, 2019 CTCH after test at 4704'
July 30, 2019 Drilling at 4865'
July 31, 2019 CFS at 5083' (Viola)
August 1, 2019 RTD 5300' @ 6 am, CTCH prep to rig up ELI for e-logs



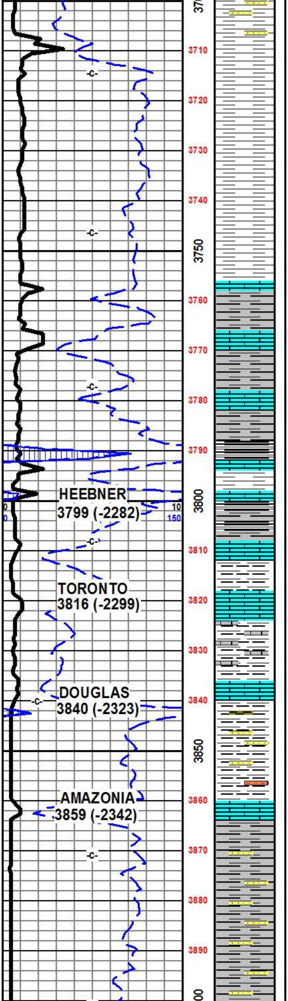
Pason Gas
Switched on 3212'





sst off wht lt gry f vf grnd clstrs, sub ang sub reded grns, packed, prly srted, sub fria to tite, gran, mic blk carb flecks

sst off wht lt gry clstrs, f-vfn grnd, sub ang grns ang blky clstrs, prly srted sub fria, arg gritty, mic, blk carb flecks



shl gry med gry silty gritty, tr sndy, soft tr firm, spls tend wsh gry

shl gry med gry soft tr frim, tr gritty silty text

slh gry med gry blky ang firm pcs, tr gritty, prytitic,

lst off wht lt gry f xln blky ang soft sub chlky, shl gry med drk gry blky ang firm pcs

lst tan off wht tr lt gry/brn f xln blky ang dns hrd, shl gry med gry silty gritty

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

shl drk gry blk, blk carb, tr brn/red/blk blky ang firm pcs, wxy grsy text, abun gas bubs

shl gry drk gry blky ang firm, lst tan gry f vf xln gran blky dna hrd arg, silty

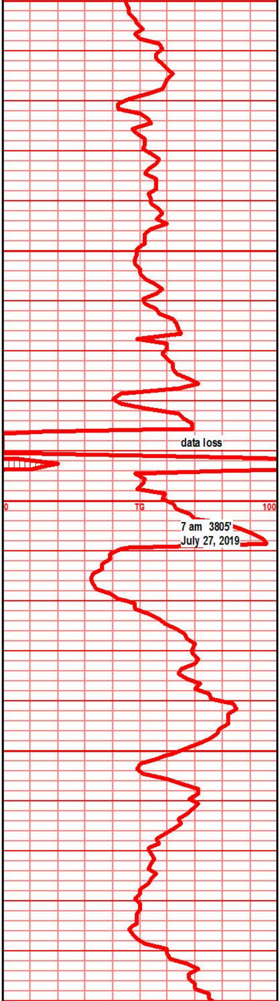
shl gry ddrk med gry silty , lst tan off wht tr lt gry brn, f xln gran blky ang sub chlky tr micro foss frags, silty gritty

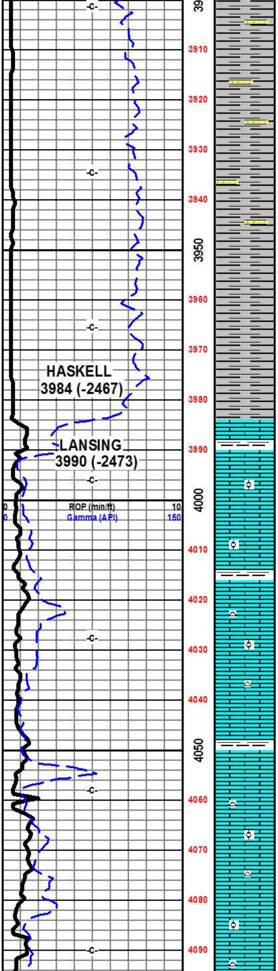
shl gry med gry, tr drk gry silty tr gritty, calc in some, sst off wht tan tr lt gry f grnd sub ang grns, fria clstrs, arg, mic

lst tan brn off wht f xln blky ang gran dns hrd, micro xln in prt, foss frags, calc xln fill

shl gry med gry silty gritty, sndy, sst off wht lt gry clstrs, f grnd, sub ang grns, fria, mic, clay fill arg tr blk carb flecks

shl gry med gry soft unfirm, sndy, gritty, sst lt gry off wht f grnd, sub ang grnd, prly srted, sub fria, mic, clay fill arg.





shl gry drk gry, silty gritty tr sndy mic

shl gry drk gry frim blky ang pcs, silty gritty tr sndy mic trr blk carb flecks

slhl gry drk gry blk/gry, firm blky ang pcs, silty gritty mic in prt, tr blk carb flecks

shl gry drk gry silty gritty, tr sndy text, mic, blky ang firm pcs, tr blk cab flecks

lst tan tr tan brn f vf xln dns hrd blky ang calc xln fill, micro foss frags.

lst crm wht tan f sli med xln gran soft foss frags, tr micro ool, foss frags tr sub chlky

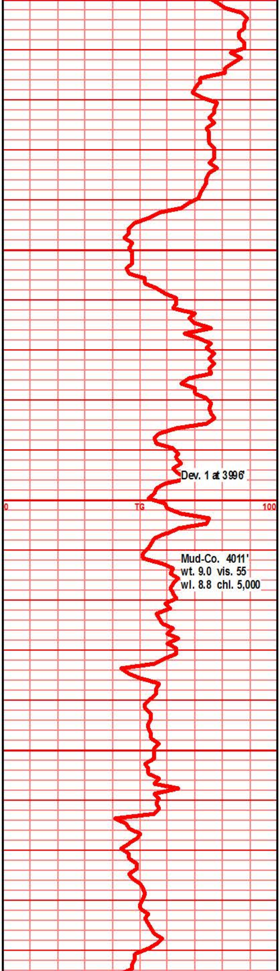
lst crm wht tan f sli med xln gran sub chlky foss frags, foss micor ool, calc xln fill, inter xln por, foss mold por

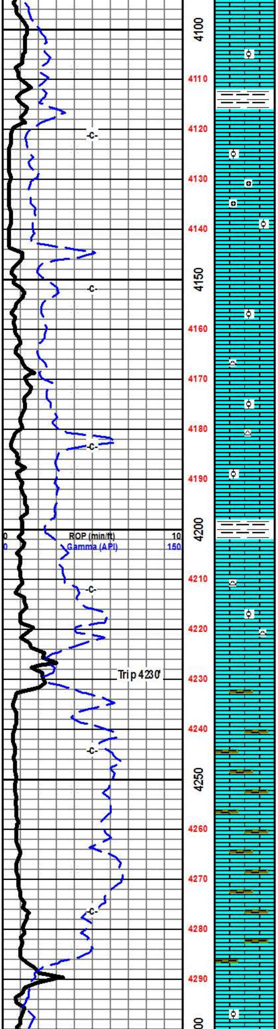
lst tan wrm off wht f sli med xln gran sub chlky foss frags, foss mold por, inter xln por, calc xln fill,

lst crm gry tan f xln blky ang dns hrd blky foss frags, tr micro ool, subh chliy in prt, inter xln por, m stly dns hrd tr arg

lst crm gry tan mott f sli med xln gran sub chlky foss frags, gran inter xln por, micro ool, chrt wht tan shrp frsh

lst crm tan lt gry mott f sli med xl gran firm pcs, sub chlky foss frags, calc xln fill,





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

lst gry, lst tan off wht tan buff f sli med xln gran sub chlky, foss frags, inter xln por, calc xln fill, firm to soft chlky pcs.

lst tan off wht crm f sli med xln gran sub chlky, inter xln por, foss frags foss mold por, mostly gran soft, tr micro ool, micro foss frags, ool, oomold por

lst crm tan buff, tr gry tan mott f sli med xln, blky ang pcs, sub chlky foss frags, foss ool, inter xln foss mold por

lst crm tan lt brn f sli med xln gran sli chlky gran soft crumbly in prt, foss frags, inter xln por foss mold por, tr foss ool, oomold porr

poor sample, stirred pits, mslty shls gry to blk, lst tan off wht crm f sli med xln blky ang sub chlky foss frags, inter xln por

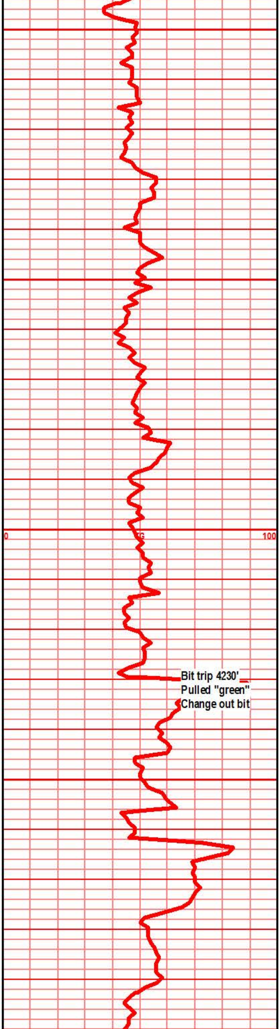
lst wht off wht crm tan f sli med xln gran sub chlky foss frags, foss ool, calc xln fill, inter xln por, mstly firm gran ang pcs, shls and garbage aa, evening tour

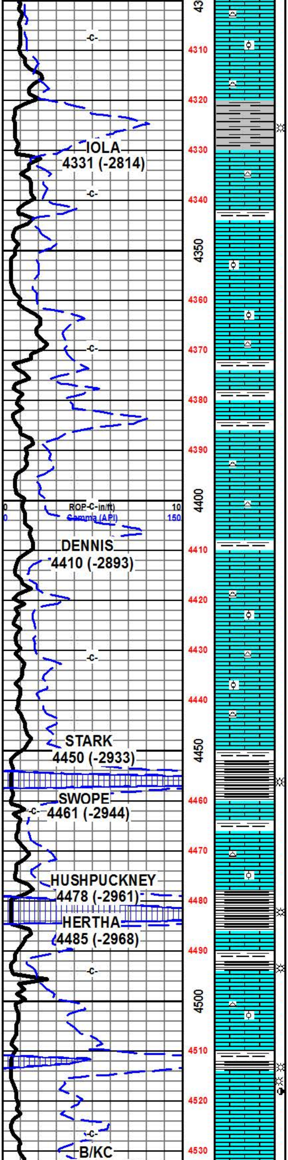
lst drk gry brn mstly drk gry f vf xln dns hrd blky ang arg, micro foss frags, chrt gry tan shrp frsh opaq

lst drk gry brn f vf xln dns hrd blky ang arg, foss frags, crsly in prt, calc xln fill, blky ang dns pcs, tr arg

shl gry drk gry blk hrd massive dns frim pcs, lst tan brn drk gry brn f vf xln dns hrd blky ang arg spl quality?

lst gry drk gry, gry brn f vf xln dns hrd blky ang arg, foss frags micro foss frags, mstly dns hrd, shl drk gry blk, massice firm blky ang pcs





lst wht off wht crm f sli med xln, blky ang pcs, chlky gran, calc xln inclu, soft, foss mold/vug por, crumbly in prt, foss frags,

slh gry drk gry blk, blky ang firm pcs, calc in prt, tr foss frags, lst tan drk gry brn f vf xln dns hrd blky ang arg foss frags

lst crm tan tr tan crm drk gry f xln blky ang sub chlky pcs, foss frags, dns hrd tr arg silty

lst crm tan off wht f sli med xln gran tr soft sub chlky in prt, crumbly in prt, foss frags, foss ool, foss mold, inter xln por, calc xln fill,

lst tan crm buff f sli med xln gran soft sub chlky, crumbly in prt, foss frags, foss ool, foss mold inter xln por, shl gry lt gry silty gritty calc in most

shl gry drk gry blk in spl, lst tan drk tan gry f vf xln dns hrd blky ang, calc, micro foss frags, chrt tan gry shrp frsh, mstly dns arg in prt

lst crm tan buff, tr gry tan mott, f vf xln dns hrd, sub chlky, gran crumbly in prt, foss frags, micro foss, ool, calc xln fill, foss mold, inter xln por

lst crm buff tan tr drk tan/gry mott f sli med xln dns hrd blky sub chlky, mstly dns, foss frags, foss mold por, inter xln por, tr chrt wht tan shrp frsh

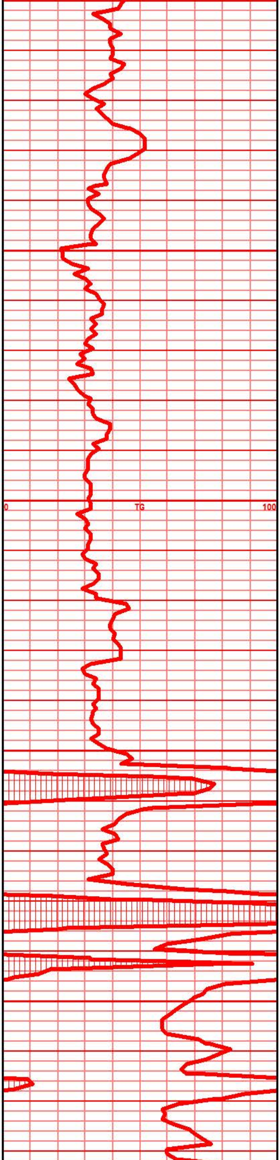
shl gry drk gry blk, blk carb, firm blky ang pcs, wxy grsy text, gas bubs, lst tan crm f xln gran, soft sub chlky foss frags, foss mold, inter xln por

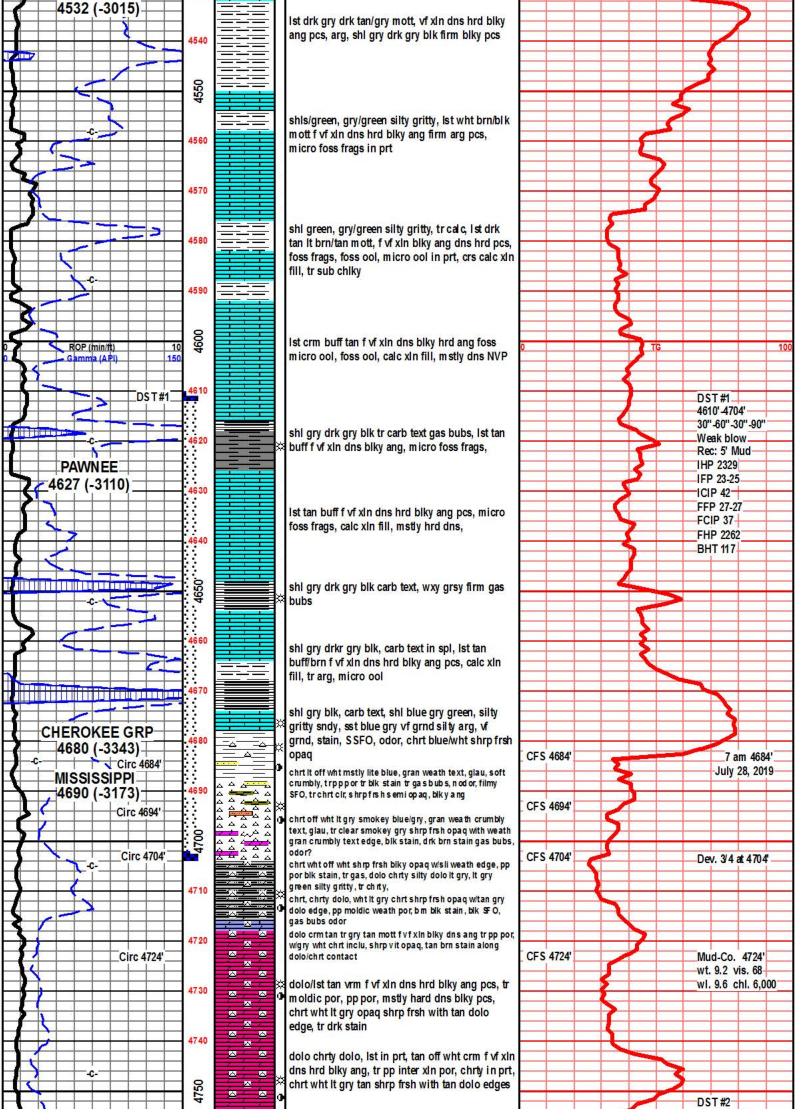
lst crm tan drk tan gry f xln dns hrd blky ang tr sub chlky, foss frags, chrt tan gry shrp frsh, mstly hrd blky dns

shl drk gry blk, blk carb, firm blky ang pcs, wxy grsy text, abun gas bubs, lst tan bry, f vf xln dns hrd blky ang sli arg, foss frags, micro foss frags

lst crm tan lt gry, tr gry tan mott f vf xln sub chlky, gran in prt, mstly hrd dns, foss frags, micro foss frags, tr calc xln fill, foss mold, inter xln por

lst wht off wht crm f sli med xln, soft vry chlky crumbly, dns, tr foss frags, calc xln fill, tr moldic por, odor, RBSFO,





lst drk gry drk tan/gry mott, vf xln dns hrd blky ang pcs, arg, shl gry drk gry blk firm blky pcs

shls/green, gry/green silty gritty, lst wht brn/blk mott f vf xln dns hrd blky ang firm arg pcs, micro foss frags in prt

shl green, gry/green silty gritty, tr calc, lst drk tan lt brn/tan mott, f vf xln blky ang dns hrd pcs, foss frags, foss ool, micro ool in prt, crs calc xln fill, tr sub chlky

lst crm buff tan f vf xln dns blky hrd ang foss micro ool, foss ool, calc xln fill, mstly dns NVP

shl gry drk gry blk tr carb text gas bubs, lst tan buff f vf xln dns blky ang, micro foss frags,

lst tan buff f vf xln dns hrd blky ang pcs, micro foss frags, calc xln fill, mstly hrd dns,

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

shl gry drkr gry blk, carb text in spl, lst tan buff/brn f vf xln dns hrd blky ang pcs, calc xln fill, tr arg, micro ool

shl gry blk, carb text, shl blue gry green, silty gritty sndy, sst blue gry vf grnd silty arg, vf grnd, stain, SSFO, odor, chrt blue/wht shrp frsh opaq

chrt lt off wht mstly lite blue, gran weath text, glau, soft crumbly, tr pp por tr blk stain tr gas bubs, n odor, filmy SFO, tr chrt clr, shrp frsh semi opaq, blky ang

chrt off wht lt gry smokey blue/gry, gran weath crumbly text, glau, tr clear smokey gry shrp frsh opaq with weath gran crumbly text edge, blk stain, drk brn stain gas bubs, odor?

chrt wht off wht shrp frsh blky opaq w/sli weath edge, pp por blk stain, tr gas, dolo chrty silty dolo lt gry, lt gry green silty gritty, tr chrty,

chrt, chrty dolo, wht lt gry chrt shrp frsh opaq w/tan gry dolo edge, pp moldic weath por, brn blk stain, blk SFO, gas bubs odor

dolo crm tan tr gry tan mott f vf xln blky dns ang tr pp por, w/gry wht chrt inclu, shrp vit opaq, tan brn stain along dolo/chrt contact

dolo/lst tan vrm f vf xln dns hrd blky ang pcs, tr moldic por, pp por, mstly hard dns blky pcs, chrt wht lt gry opaq shrp frsh with tan dolo edge, tr drk stain

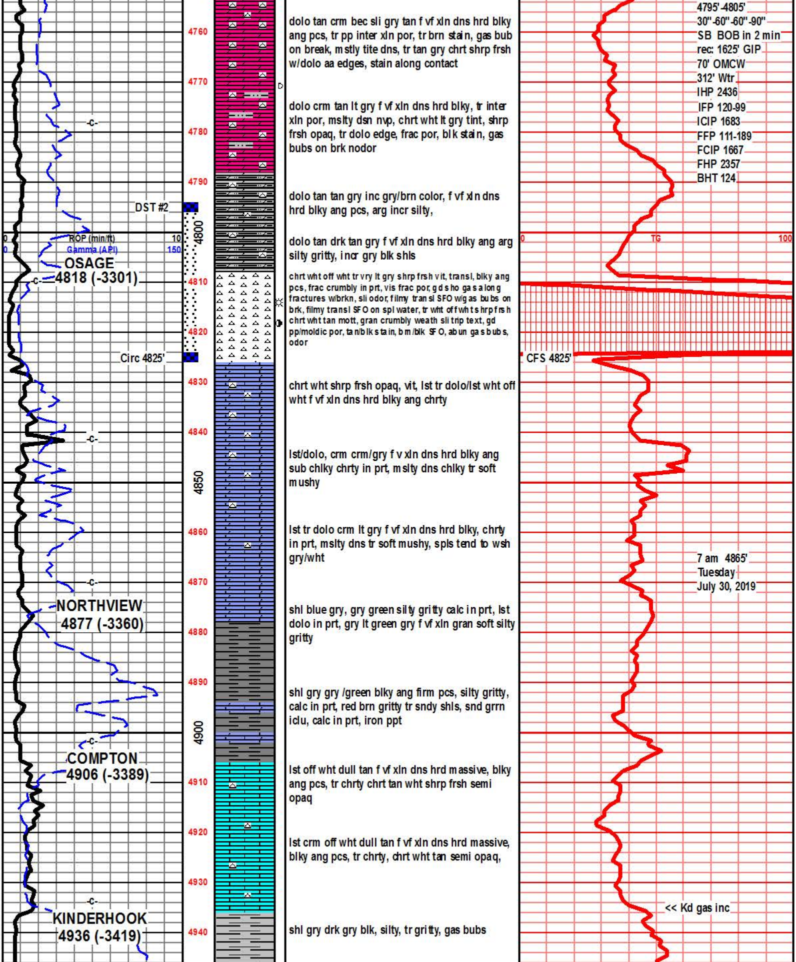
dolo chrty dolo, lst in prt, tan off wht crm f vf xln dns hrd blky ang, tr pp inter xln por, chrty in prt, chrt wht lt gry tan shrp frsh with tan dolo edges

DST #1
4610'-4704'
30"-60"-30"-90"
Weak blow
Rec: 5' Mud
IHP 2329
IFP 23-25
ICIP 42
FFP 27-27
FCIP 37
FHP 2262
BHT 117

7 am 4684'
July 28, 2019

Dev. 3/4 at 4704'

Mud-Co. 4724'
wt. 9.2 vis. 68
wl. 9.6 chl. 6,000



4795'-4805'
30"-60"-60"-90"
SB BOB in 2 min
rec: 1625' GIP
70' OMCW
312' Wtr
IHP 2436
IFP 120-99
ICIP 1683
FFP 111-189
FCIP 1667
FHP 2357
BHT 124

dolo tan crm bec sli gry tan f vf xln dns hrd blky ang pcs, tr pp inter xln por, tr brn stain, gas bub on break, mstly tite dns, tr tan gry chrt shrp frsh w/dolo aa edges, stain along contact

dolo crm tan lt gry f vf xln dns hrd blky, tr inter xln por, mslty dsn nvp, chrt wht lt gry tint, shrp frsh opaq, tr dolo edge, frac por, blk stain, gas bubs on brk nodor

dolo tan tan gry inc gry/brn color, f vf xln dns hrd blky ang pcs, arg incr silty,

dolo tan drk tan gry f vf xln dns hrd blky ang arg silty gritty, incr gry blk shls

chrt wht off wht tr vry lt gry shrp frsh vit, transl, blky ang pcs, frac crumbly in prt, vis frac por, gd sho gas along fractures w/brkn, sli odor, filmy transl SFO w/gas bubs on brk, filmy transl SFO on spl water, tr wht off wht shrp frsh chrt wht tan mott, gran crumbly weath sli trip text, gd pp/moldic por, tan/blk stain, brn/blk SFO, abun gas bubs, odor

chrt wht shrp frsh opaq, vit, lst tr dolo/lst wht off wht f vf xln dns hrd blky ang chrty

lst/dolo, crm crm/gry f v xln dns hrd blky ang sub chlky chrty in prt, mslty dns chlky tr soft mushy

lst tr dolo crm lt gry f vf xln dns hrd blky, chrty in prt, mslty dns tr soft mushy, spls tend to wsh gry/wht

7 am 4865'
Tuesday
July 30, 2019

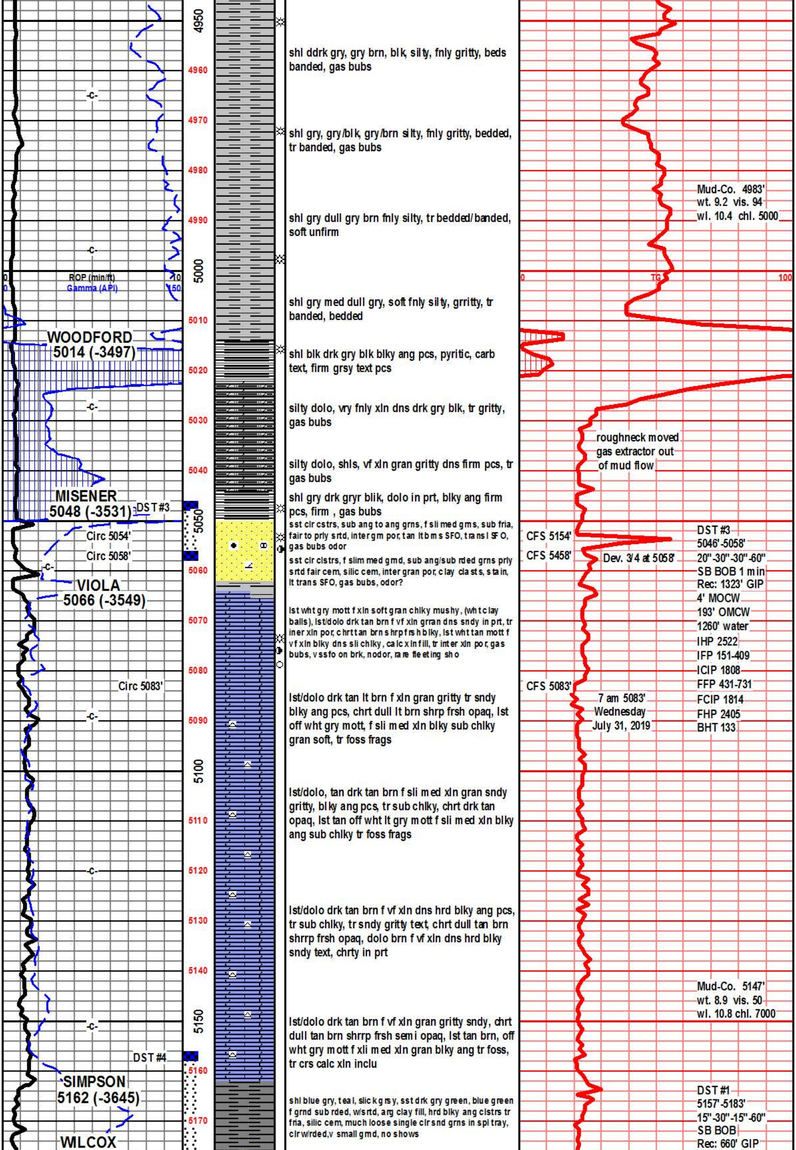
shl blue gry, gry green silty gritty calc in prt, lst dolo in prt, gry lt green gry f vf xln gran soft silty gritty

shl gry gry /green blky ang firm pcs, silty gritty, calc in prt, red brn gritty tr sndy shls, snd grrn iclu, calc in prt, iron ppt

lst off wht dull tan f vf xln dns hrd massive, blky ang pcs, tr chrty chrt tan wht shrp frsh semi opaq

lst crm off wht dull tan f vf xln dns hrd massive, blky ang pcs, tr chrty, chrt wht tan semi opaq,

shl gry drk gry blk, silty, tr gritty, gas bubs



shl ddrk gry, gry brn, blk, silty, fnly gritty, beds banded, gas bubs

shl gry, gry/blk, gry/brn silty, fnly gritty, bedded, tr banded, gas bubs

shl gry dull gry brn fnly silty, tr bedded/banded, soft unfirm

shl gry med dull gry, soft fnly silty, grritty, tr banded, bedded

shl blk drk gry blk blky ang pcs, pyritic, carb text, firm grsy text pcs

silty dolo, vry fnly xln dns drk gry blk, tr gritty, gas bubs

silty dolo, shls, vf xln gran gritty dns firm pcs, tr gas bubs

shl gry drk gryr blik, dolo in prt, blky ang firm pcs, firm , gas bubs

sst clr cstrs, sub ang to ang grns, f sli med grns, sub fria, fair to prly srtd, intergrn por, tan lt brn s SFO, transl SFO, gas bubs odor

sst clr clstrs, f slim med grnd, sub ang/sub rded grns prly srtd fair cem, silic cem, inter gran por, clay clasts, stain, lt trans SFO, gas bubs, odor?

lst wht gry mott f xln soft gran chlky mushy, (wht clay balls), lst/dolo drk tan brn f vf xln grran dns sndy in prt, tr iner xln por, chrt tan brn shrp frsh blky, lst wht tan mott f vf xln blky dns sli chlky, calc xln fill, tr inter xln por, gas bubs, v ssfo on brk, nodor, rare fleeting sho

lst/dolo drk tan lt brn f xln gran gritty tr sndy blky ang pcs, chrt dull lt brn shrp frsh opaq, lst off wht gry mott, f sli med xln blky sub chlky gran soft, tr foss frags

lst/dolo, tan drk tan brn f sli med xln gran sndy gritty, blky ang pcs, tr sub chlky, chrt drk tan opaq, lst tan off wht lt gry mott f sli med xln blky ang sub chlky tr foss frags

lst/dolo drk tan brn f vf xln dns hrd blky ang pcs, tr sub chlky, tr sndy gritty text, chrt dull tan brn shrrp frsh opaq, dolo brn f vf xln dns hrd blky sndy text, chrty in prt

lst/dolo drk tan brn f vf xln gran gritty sndy, chrt dull tan brn shrrp frsh semi opaq, lst tan brn, off wht gry mott f xli med xln gran blky ang tr foss, tr crs calc xln inclu

shl blue gry, teal, slick grsy, sst drk gry green, blue green f grnd sub rded, w/srtd, arg clay fill, hrd blky ang clstrs tr fria, silic cem, much loose single clr snd grns in spl tray, clr w/rded,v small grnd, no shows

Mud-Co. 4983'
wt. 9.2 vis. 94
wl. 10.4 chl. 5000

roughneck moved
gas extractor out
of mud flow

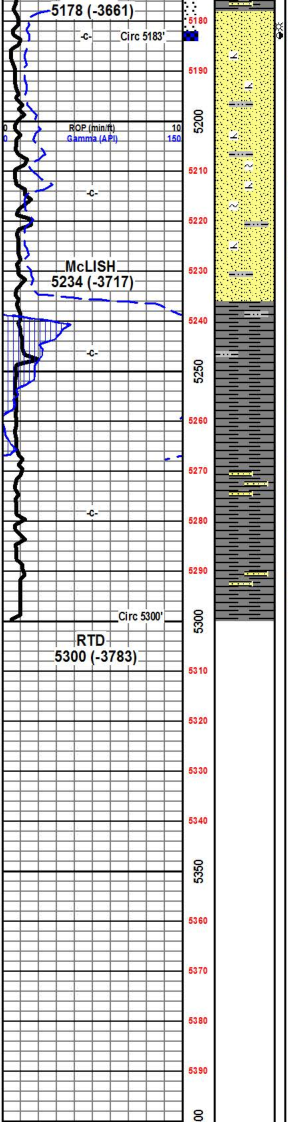
DST #3
5046'-5058'
20"-30"-30"-60"
SB BOB 1 min
Rec: 1323' GIP
4' MOCW
193' OMCW
1260' water
IHP 2522
IFP 151-409
ICIP 1808
FFP 431-731
FCIP 1814
FHP 2405
BHT 133

Dev. 3/4 at 5058'

7 am 5083'
Wednesday
July 31, 2019

Mud-Co. 5147'
wt. 8.9 vis. 50
wl. 10.8 chl. 7000

DST #1
5157'-5183'
15"-30"-15"-60"
SB BOB
Rec: 660' GIP



sst clr clstrs f grnd sub rded w/srtd prly cem, sub frai silic cem, tr glau, gran soft clstrs, inter gran por, trd ead stain, transl/lt tan oil droplets, VSSFO, gas bubs NODOR

sst clr to lt gry clstrs, f grnd, sub rdrd tr sub ang grns, sub fria some fria, fair to well srtd, tr silic dolo fill, tr glau, tr arg clay fill

sst clr tr lt gry/tan clstrs f grnd, sub rded to rded grns, sub fria to soft gran, tr clay fill, mineral fill, tr dolo silic text, mstly soft crumbly, abundant loose graind in sple tray

sst clr vit clstrs, f grnd sub rded grns, mstly fria, gran crumbly, gd inter gran por, silic cem, dolo text in prt, sst off wht lt gry clstrs f grnd sub ang/sub rded grns, sub fria, silic cem, silic fill, tr blk mineral fill, mslty soft crumbly

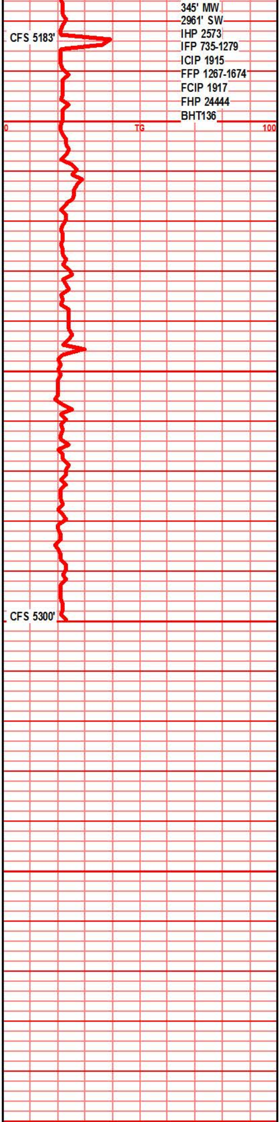
sst clr lt tan clstrs, f grnd sub ang, sub rded grns, w/srted, sub fria, fair cem, silic fill & cem, crumbly gran text, sst aa

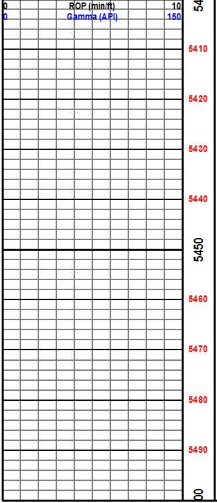
shl drk gry green, teal green, slick wxy grsy text, firm blky pcs, snd grn inclu, tr glau

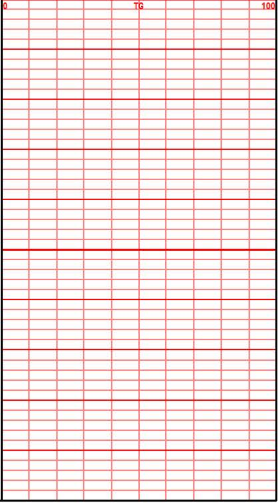
shl gry blk, drk blue green teal green, slick, wxy grsy text, silty gritty in prt, abun snd grn inclu, glau

shl drk blue gry teal gry, slick wxy grsy text, firrm blky pcs, snd grn inclu, glay

shl gry blk, drk blue green, teal green, slick, wxy grsy text, silty gritty in prt, abun snd grn inclu, tr glau







Woolsey Operating Company LLC
Brown A-1
Sec 2 - Twp 34 South - Rge 12 West
C S/2-SE-SW
330' FSL & 2040' FWL
Field: Wildcat
Barber County, Kansas
API # 15-007-24354-00-00
GL 1504' KB 1517'