



## Woolsey Operating Company, LLC

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

Well Name: OHLSON #2  
Location: Section 16 - Township 35 South - Range 12 West  
License Number: 15-007-2423-0000 Region: Barber County, Kansas  
Spud Date: October 8, 2014 Drilling Completed: October 19, 2014  
Surface Coordinates: FNL 1300' and 600' FEL  
C of E 1/2 NE  
Bottom Hole  
Coordinates:  
Ground Elevation (ft): 1381' K.B. Elevation (ft): 1393'  
Logged Interval (ft): 4000' To: 5424' Total Depth (ft): 5424,  
Formation: Kansas City Group ---> Simpson Group  
Type of Drilling Fluid: Chemical Mud

Printed by MUD.LOG 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 at 4:30 pm on October 8, 2014, set 6 joints of new 13 3/8" X 48#/ft casing at 216' KB (tally 201.11'). Cemented with 300 sx Class A, 2% gel, 3% cc (by Allied). Plug down at 11 pm on October 8, 2014, cement did circulate.

Production Casing: 5 1/2" X 10.5#/ft

Deviation Surveys: 1 1/2 at 216', 3/4 at 1013', 3/4 at 1520', 3/4 at 1993', 3/4 at 3005', 3/4 at 3513', 1 at 4021', 1 1/4 at 4242', 1 1/4 at 4495', 1 1/2 at 4749', 1/4 at 4896', 1/8 at 5424'

#### Fossil Drilling Rig 3 Bit Record:

- 1) 17 1/2" Smith Tool RR, in a 0' out at 216'. 1 3/4 hours
- 2) 7 7/8" Varel HE-21 in at 216' out at 4896', 125 3/4 hours
- 3) 7 7/8" Varel HE-29 RR in at 4896' out at 5424', 38 hours

Gas Detector: Woolsey Operating Co. Gas Shack #2

Mud System: Chemical Mud, Mud-Co. Brad Bortz, Engineer

Company Man: Mike Tharp, Woolsey Operating Co.

DSTs: Trilobite Testing, Matt Smith, Tester

E-Logs: Nabors Completion and Production Services, Dual Induction Laterolog w/SP, CNL/FDC w/PE, Gamma Ray and Caliper. Jeff Groneweg, Engineer.




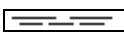
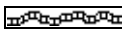



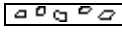







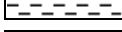




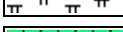
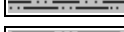


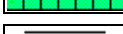
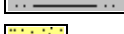


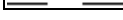


### DSTs

DST #1 4836'-4896', 30"-60"-60"-120". SB BOB in 30 seconds. GTS 9 minutes into second flow period. (39 minutes). Recovered: 127' GOCM (5%G, 5%O, 90%M), 61' GOCM (35%G, 5%O, 60%M), 61' GOCM (10%G, 5%O, 85%M). Gas flow rates 2nd flow period: 10"-32.4 MCF, 20"-29.2 MCF, 30"-27.9 MCF, 40" 7.1 MCF, 50"-7.6 MCF, 60"-8.4 MCF. IHP 2525, IFP 59-71, ISIP 1561, FFP 53-75, FSIP 1583, FHP 2356. BHT 127 degrees.

### CREWS

Jim Wenrich, Toolpusher (rarely seen)  
 Daniel Orrantea, Daylights  
 Ron Burns, Eveninig  
 Kirk Shuman, Morning  
 Chris Slatts, Relief

### ROCK TYPES

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

## ACCESSORIES

### MINERAL

- Anhy
- Arg
- Bent
- Bit
- Breccfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Ferrpel
- Ferr
- Glau
- Gyp
- Marl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt

- Chlorite
- Dol
- Sand
- Slty

### FOSSIL

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

- Pelec
- Pellet
- Pisolite
- Plant
- Strom
- Fuss
- Oomoldic

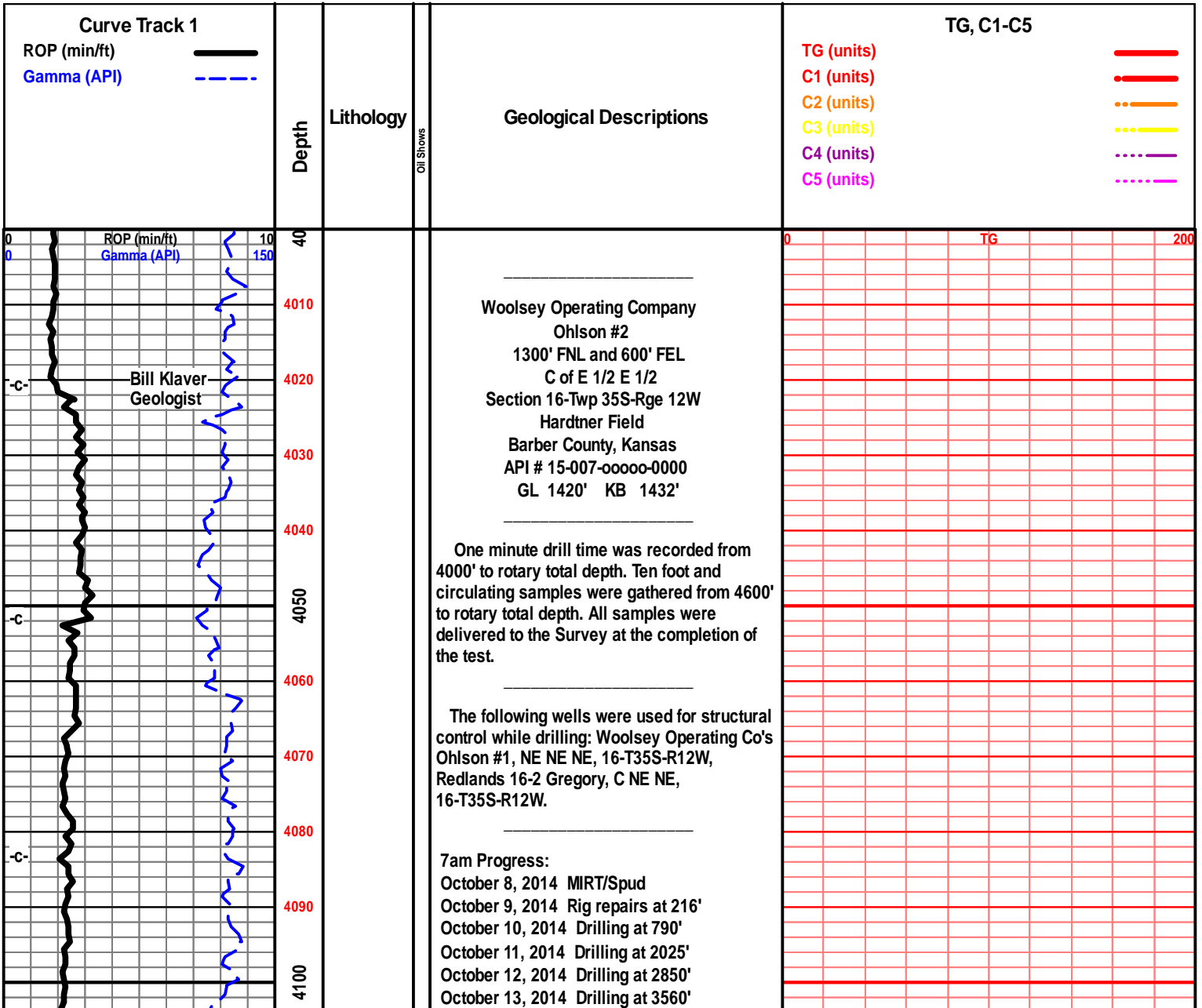
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

### STRINGER

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

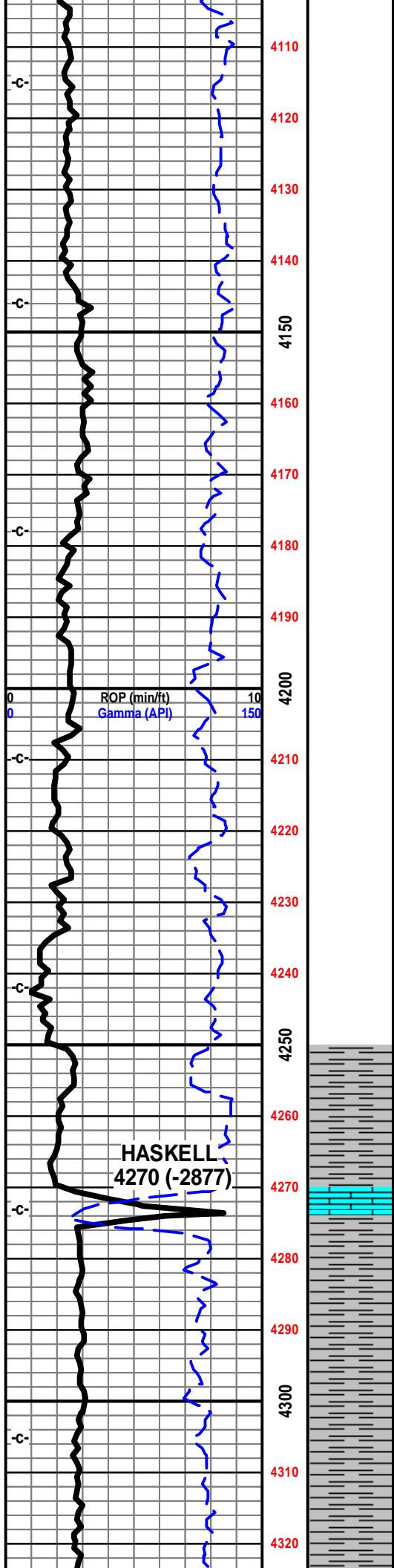
### TEXTURE

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest



October 14, 2014 Drilling at 4170'  
 October 15, 2014 Drilling at 4605'  
 October 16, 2014 CFS in Miss at 4852'  
 October 17, 2014 Drilling at 4968'  
 October 18, 2014 Drilling at 5235'  
 October 19, 2014 Rig up loggers/5424'

- E-Log Tops:**
- Herington 1928 (-535)
  - Onaga 2806 (-1413)
  - Wabaunsee 2864 (-1471)
  - Stotler 3015 (-1622)
  - Topeka 3206 (-1813)
  - LeCompton 3629 (-2236)
  - Kanwaka 3654 (-2261)
  - Elgin Sand DND
  - Heebner 3854 (-2461)
  - Toronto 3864 (-2471)
  - Douglas Group 3896 (-2503)
  - Douglas Shale 3942 (-2549)
  - Haskell 4271 (-2878)
  - Quindaro 4382 (-2989)
  - Iola 4420 (-3027)
  - Drum 4470 (-3077)
  - Dennis 4500 (-3107)
  - Stark 4548 (-3155)
  - Swope 4563 (-3170)
  - Hushpuckney 4580 (-3187)
  - Hertha 4594 (-3201)
  - B/Kansas City 4627 (-3234)
  - Pawnee 4732 (-3339)
  - Cherokee Group 4776 (-3383)
  - Mississippi Unc. 4834 (-3441)
  - C3 4834 (-3441)
  - C2A 4850 (-3457)
  - C2 4898 (-3505)
  - C1 5001 (-3608)
  - Osage 5074 (-3681)
  - Northview Shale 5092 (-3699)
  - Compton 5108 (-3715)
  - Kinderhook 5125 (-3732)
  - Woodford 5198 (-3805)
  - Viola 5252 (-3859)
  - Simpson Group 5371 (-3978)
  - Simpson 'F' Dolomite 5371 (-3978)
  - Wilcox 5396 (-4003)
  - LTD 5426 (-4033)



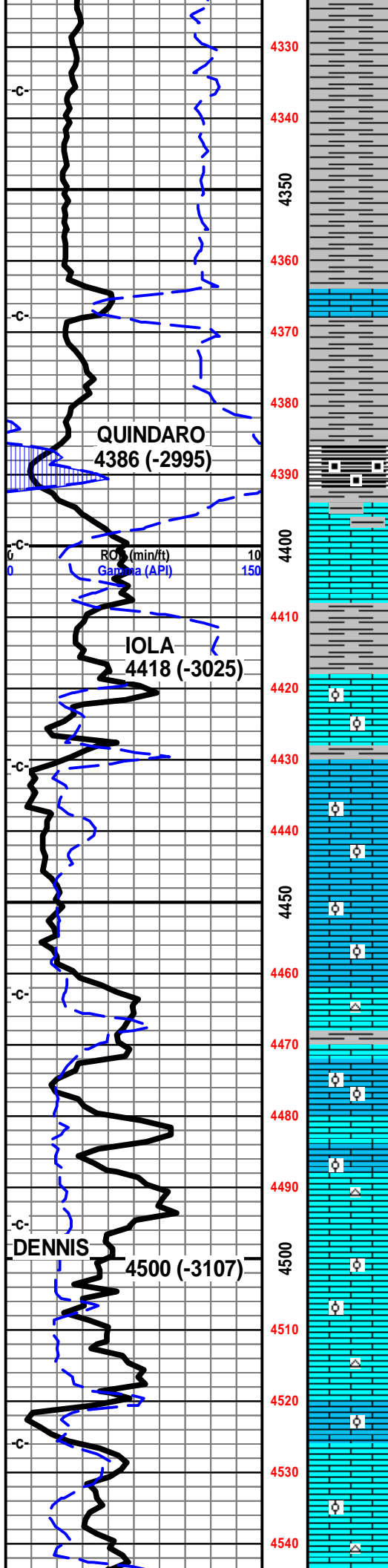
4170' 7 am  
 Tuesday  
 October 14, 2014

Scale Change  
 TG

Survey at 4242'  
 1 1/4 degrees  
 decrease WOB

Mud-Co. 4299'  
 wt. 9.3 vis. 63  
 wl. 8.8 chl. 3,000

1% Methane Test



shl gry med gry, silty soft

shl aa, tr 1st tan brn f vf xln dns hrd blkly tr sndy, gritty, arg silty

shl gry med drk gry soft silty

shl drk gry blk, blk carb in prt, blkly ang pcs, abun gas bubs

1st off wht crm tan f vf xln dns hrd blkly, tr sub chlky, micro foss frags,

1st crm tan lt gry/tan f xln dns hrd blkly ang sli chlky foss frags,

shl gry dkr gry brn silty gritty calc, 1st tan crm off wht f xln gran sub chlky, foss frags, foss ool, pelletal

1st crm tan off wth f xln gran blkly dns sub chlky, foss frags, foss ool, pelletal, inter xln foss mold por

1st off wth crm tan f xln gran blkly sub chlky foss frags, foss ool/pelletal, inater xln por, foss mold por

1st crm tan f xln blkly dns sub chlky foss frags, tr foss ool, tr inter xln por, calc xln fill,

1st crm wht tan lt gry tan, f xln blkly ang dns hrd, tr sub chlky, foss frags, calc xln fill

1st crm off wht tan f xln gran sub chlky tr soft foss frags, tr foss ool, calc xln fill, tr chrt wht shrp frsh opa

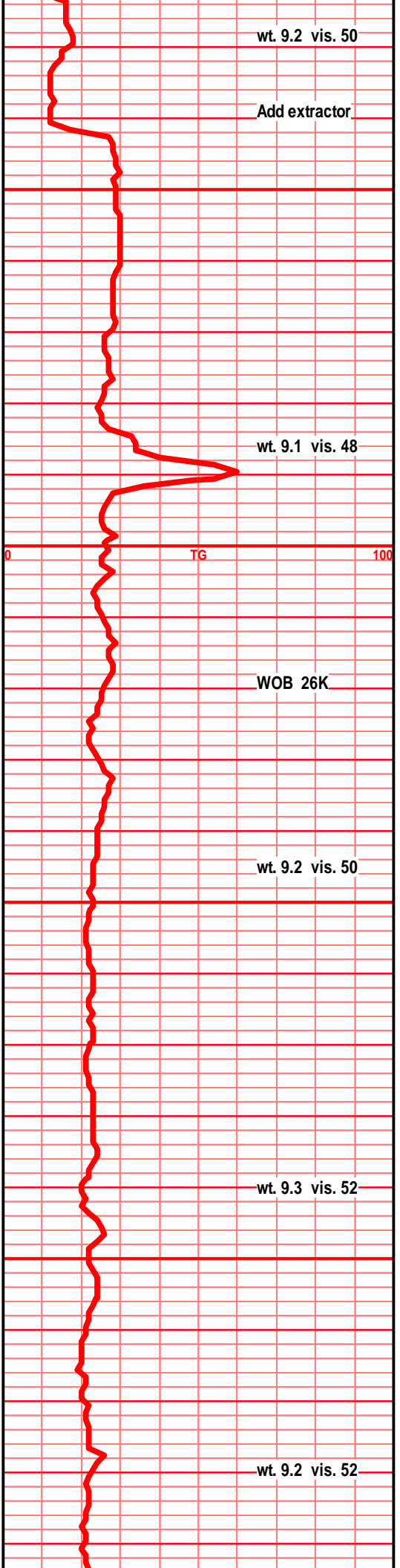
1st off wht tan f xln gran sub chlky foss frags, gritty arg in prt, foss micro ool, tr pelletal, chrt aa

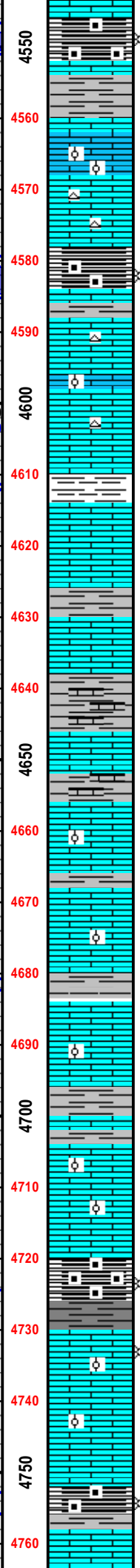
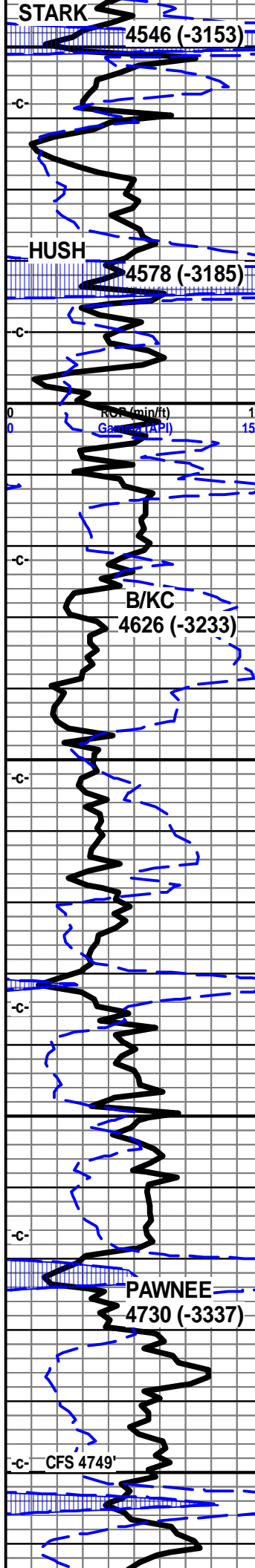
1st crm gry tan f xln dns blkly ang sli arg, sub chlky calc xln fill, tr foss frags, micro foss, chrt wht lt gry shrp frsh

1st crm buff tan f xln blkly ang sub chlky, gran in part, calc xln fill foss frags, micro ool, chrt wht shrp frsh opa

1st crm tan off wht f xln gran soft sub chlky foss frags, foss ool/pelletal, pp foss mold por, omold por, inter xln por,

1st crm tan lt gry/tan f xln gran, blkly ang dns, sub chlky, micro foss frags, foss ool, calc xln por, chrt tan wht shrp frsh





4550 Ist aa, shl drk gry blk, blk carb wxy grsy text, blk ang pcs, mucho gas bubs

4560 shl gry drk gry blk, calc silty foss, 1st tan gry tan lt brn f xln dns hrd blk ang hrd micro foss dns arg

4570 Ist crm, gry/tan f xln dns hrd blk ang sub chlky, micro foss frags, ool, calc xln fill, tr chrt tan gry shrp frsh

4580 Ist tan gry tan f xln dn shrd blk sub chlky calc xln fill, micro foss ool chrt aa

4590 shl gry blk, blk carb, grsy wxy text, gas bubs, 1st tan gry tan lt brn f vf xln blk ang dns hrd arg, calc xln fill

4600 Ist crm tan gry tan, f xln dns hrd blk ang foss frags, micro ool/pelletal, calc xln fill, pp foss mold por

4610 Ist crm gry tan f vf xln dns hrd blk pcs, tr sub chlky, calc xln fill, micro foss frags, chrt tan wht shrp frsh

4620 shl gry blk, tr blk carb text, 1st crm tan/gry f vf xln dns hrd blk ang, foss frags, calc xln fill, tr chrt tan lt gry shrt

4630 Ist crm tan brn f vf xln dns hrd blk ang, arg, crs calc fill, micro foss frags, chrt tan brn shrp frsh

4640 Ist aa, shl drk gry blk, calc, silty gritty, calc inclu, foss frag inclu, arg, 1st drk brn/blk f mic xln dns hrd arg micro foss

4650 Ist buff tan, f xln dns hrd blk ang pcs, tr mic xln, micro foss, micro calc fill, shl gry brn, silty calc, foss frags inclu

4660 Ist crm buff tan f vf xln dns hrd blk ang pcs, micro foss frags, micro ool, calc xln fill,

4670 shl gry blk, 1st tan crm buff f vf xln blk ang dns hrd pcs, micro foss frags, micro ool, calc xln fill,

4680 Ist crm buff lt tan f vf xln dns hrd blk ang pcs, micro foss frags, micro calc fill, micro ool/pelletal

4690 shl gry brn, tan brn silty gritty, calc, 1st tan buff/tan f vf xln hrd blk dns sli sub chlky, micro foss, frags/pelletal, calc fill

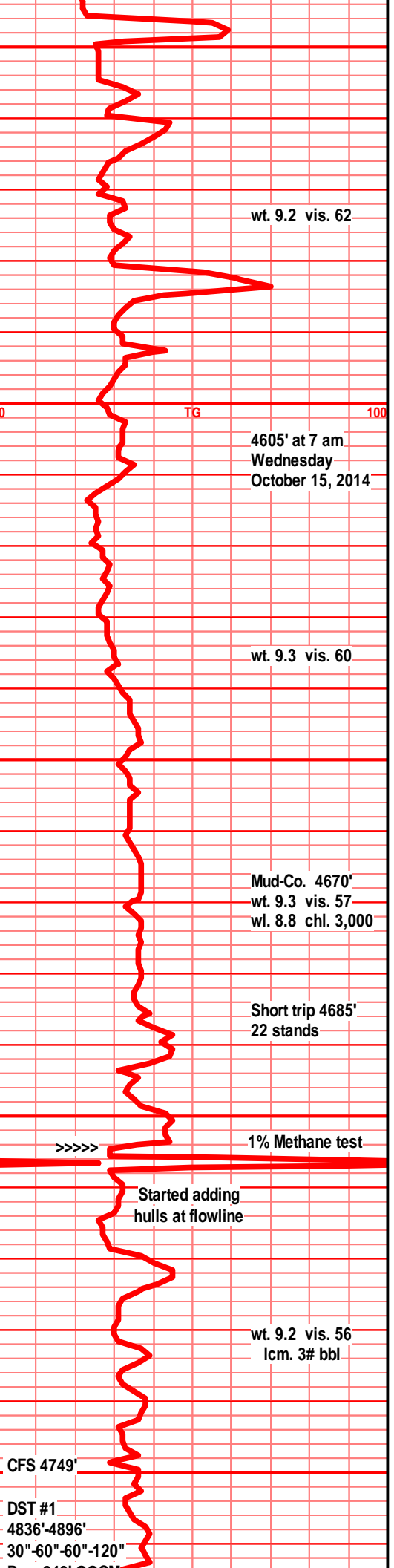
4700 Ist crm buff tan f vf xln dns hrd blk, ang sli sub chlky, micro foss frags, micro ool/pelletal calc xln fill

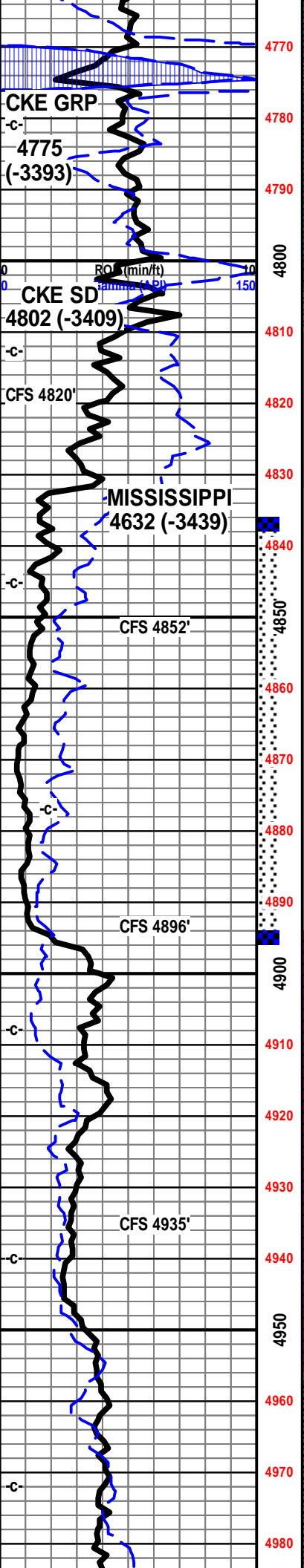
4710 shl drk gry blk, blk carb, wxy grsy text, blk ang pcs, abun gas bubs, shl drk gry brn/blk silty gritty calc

4720 Ist crm tan lt tan buff f xln blk ang dns hrd, micro xln in prt, micro foss frags, micro ool, much calc xln fill NVP, tr gas bubs on break 3-4 pcs, mineral UV, nodor NSFO

4730 Ist crm buff tan f vf xln hrd dns blk ang pcs, sli sub chlky, micro foss frags/ool pelletal, calc xln fill, shl drk gry blk, tr carb text, wxy gry, blk ang pcs

4740 Ist crm buff tan drk tan f mic xln dns hrd





lst crm dull, tan, drk tan, f mic xln, dns hrd blk ang pcs, sli sub chlky, micro xln in prt, micro foss frags, calc xln fill,

shl drk gry, gry blk, carb in prt, wxy grsy text, blk ang pcs, gas bubs, lst tan drk tan, tr buff, f vf tr micro xln, dns hrd blk, micro foss frags, calc xln fill

lst crm tan lt gry, gry/ltbrn, f mic xln dns hrd blk pcs, micro xln, micro foss frags, tr arg, silty gran text

lst crm buff tan/gry f vf xln dns hrd blk arg, sub chlky, gran, tr foss frags

sst tan gry, gry brn mott, drk tan brn, vf grnd, sub rded grns, w/srtd, w/cem, calc fill, sub fria tr mushy, mstly blk ang dns clstrs, filmy SFO/brk, gas bubs, nodor

shls gry, gry brn green silty gritty, tr sndy, snd grn inclu,

shl lt gry, gry/green, tr yellow/maroon, silty soft, tr gran gritty, clays, tr spintery

chrt wht, off wht, bone wht, shrp frsh opa, shrp blk ang shards, tr with tan brn sli weath edge, pp/moldic por, stain. chrt wht tan brn mott, weath gran sli spongy trip text, gran, pp vug moldic por, brn stain, SSFO, gas bubs, fair odor in all

chrt wht, off wht bone wht, shrp frsh blk ang pcs, sub opa w/drk tan brn stained edges, pp moldic por, chrt wht tan/brn mott, weath gran sli spongy trip text, weath pp moldic, vug por, tan brn stain, gas bubs, filmy RBSFO on spl water, fair odor in all, tr blk gilson stain

chrt wht off wht, bone wht, shrp frsh blk ang pcs, sub opa, tr with tan brn sli weath edge, brn stain, gas bubs, drk SFO, chrt wht tan, drk tan brn mott with weath gran sli spongy trip text, gd weath pp moldic vug por, stain, SFO, filmy RBSFO on spl water, fair odor in all, chrt lt gry smokey shrp frsh opa with weath spongy sli trip text edges, stain SFO gas bubs

dolo chrty dolo, crm tan, lt gry/tan, f vf xln gran blk dns hrd, tr soft sli chlky gran, tr small snd grn inclu, sli sucr text in prt, tr glau, sli inter xln por, wht lt smokey gry chrt inclu, shrp frsh sub opa, tr weath gran edge text, pp moldic por, tan brn stain, vssfo, gas bubs, sli odor. dull UV

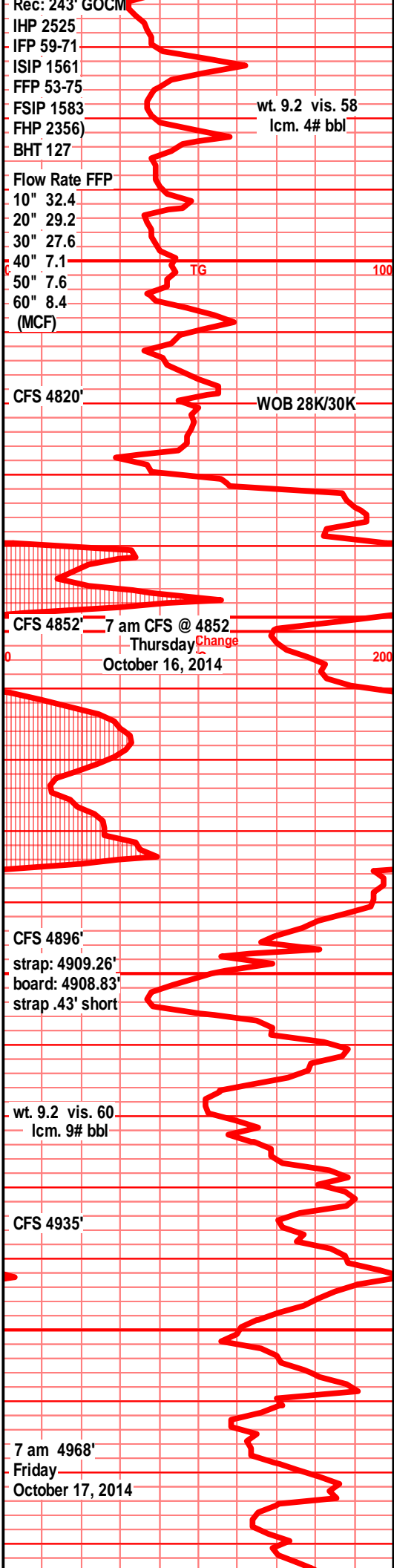
dolo crm tan, lt gry/tan f vf xln, blk ang dns, sli gran, tr snd grn inclu, sli fnly sucr, tr inter xln por, chrty, chrt wht lt gry smokey shrp frsh tr weath edge text, sli stain, sli odor,

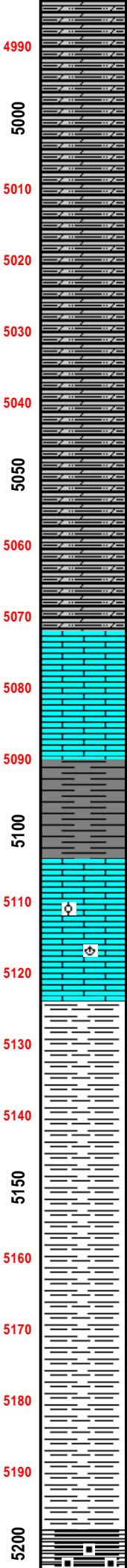
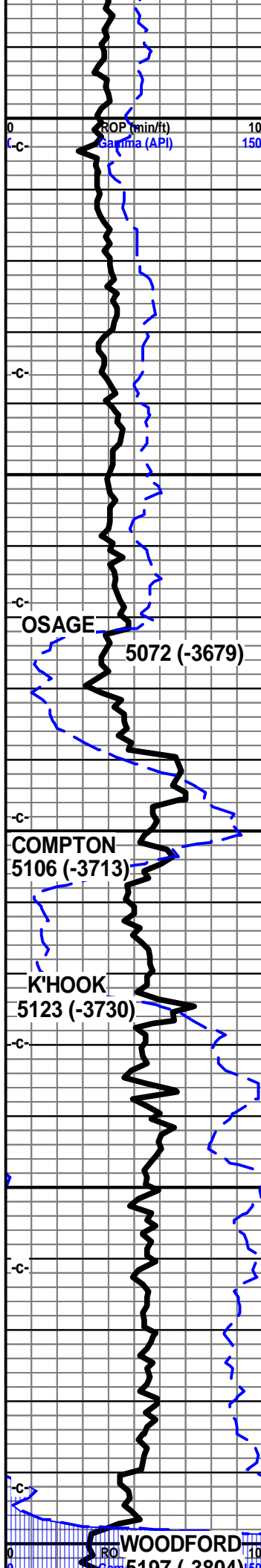
dolo crm lt gry, f vf xln dns hrd blk ang pcs, tr glau, tr snd grn inclu, tr inter xln por, sub chlky/gran in prt, tr stain, tr gas bubs, chrt lt gry smokey shrp frsh sub opa

dolo drk gry tan, gry, f vf xln blk ang dns hrd pcs, tr glau, tr gran sub chlky text, tr micro sucr text, bec drk gry incr arg text, chrt gry drk gry shrp frsh sub opa

dolo dilty dolo gry med drk gry f vf xln gran silty gritty arg, chrt drk gry shrp sub opa

dolo, silty dolo, drk gry med/drk gry f vf xln gran dns hrd, grittv, arg, shls drk gry gritty





calc, xln text

dolo, silty dolo, med gry, med/drk gry, f vf xln dns hrd blk ang pcs, gran gritty, silty, chrt med gry shrp frsh sub opa

dolo, silty shly dolo, med drk gry, f vf xln dns calc, silty gritty

dolo, silty shly dolo, med/drk drk gry silty gritty, silic in most

dolo silty shly silic dolo, f vf xln gran gritty dns hrd

dolo, silty silic shly dolo, f vf xln dns hrd blk ang pcs, gritty

dolo, silty silic dolo, f vf xln blk ang dns fnly gran, gritty, shl gry med drk gry slty hrd calc

dolo silty silic dolo, drk gry, med gry f vf xln dns hrd blk, shls aa

lst wht f med xln blk ang pcs, tr sub chlky, crs calc xln fill, chrt lt gry smokey gry shrp frsh sub opa

lst off wht dull tan, f vf xln dns hrd blk ang vry dns pcs, tr foss frags, tr micro ool, micro calc xln fill

lst dull tan, sli gry tint f vf xln dns hrd blk ang pcs, foss frags, tr micro ool, micro calc xln fill, tr pyritic

shl gry/green, blue/green, silty gritty wxy text,

lst dull tan/gry off wth f vf xln dns hrd blk, sli sub chlky, micro foss frags,

lst off wht dull tan, dull tan/gry f vf xln dns hrd blk ang pcs, sli sub chlky, tr micro foss frags, tr pyritic

shl med/drk gry, gry reddish brn/blk, silty gran in prt, gas bubs

shl gry dry med gry, gry blk w/reddish tint, silty gritty,

shl drk gry, med drk gry reddish brn tint silty gritty bedded/banded

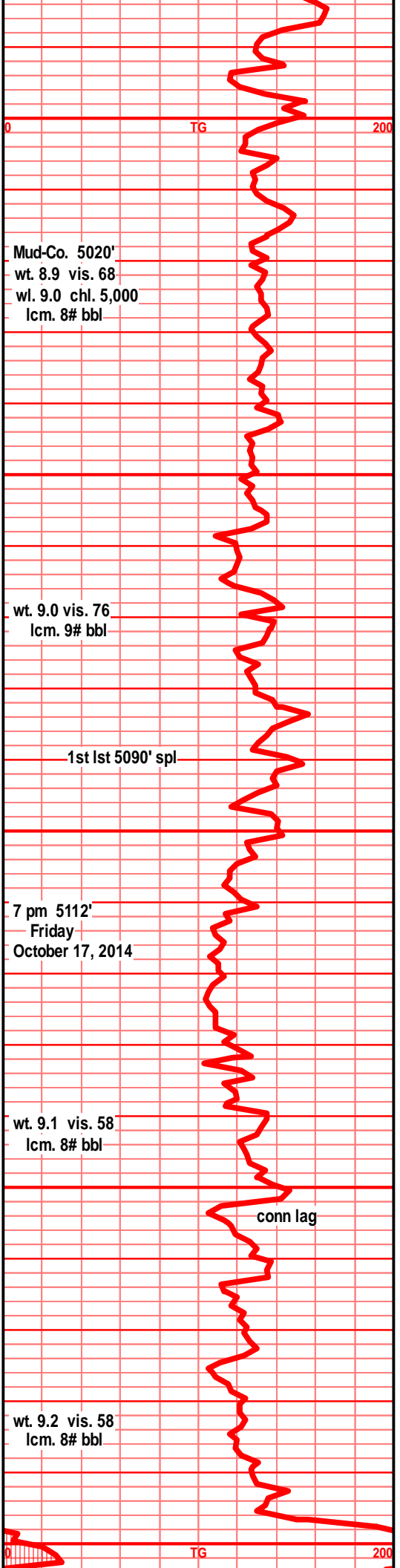
shl drk gry, drk brn, silty gritty,

shl drk gry/red brn silty gritty, bedded, banded tr pyritic tr gas bubs

shl drk gry/brnish red, blk, silty gritty bedded/banded

shl gry drk gry/blk, brnish red tint, silty gritty, bedded/banded, tr splintery

shl, silic dolo shl, drk gry blk, mstly drk blk, deep/drk brn/reddish blk, carb text, wxy grsy



Mud-Co. 5020'  
wt. 8.9 vis. 68  
wl. 9.0 chl. 5,000  
lcm. 8# bbl

wt. 9.0 vis. 76  
lcm. 9# bbl

1st lst 5090' spl

7 pm 5112'  
Friday  
October 17, 2014

wt. 9.1 vis. 58  
lcm. 8# bbl

conn lag

wt. 9.2 vis. 58  
lcm. 8# bbl

ROP (min/ft) 10  
Gamma (API) 150

OSAGE  
5072 (-3679)

COMPTON  
5106 (-3713)

K'HOOK  
5123 (-3730)

WOODFORD  
5207 (-3904)



shl blk pcs, dull copper blk grns, tr pyritic, abun gas bubs, filmy cond on brk

shl gry med gry silty silic, shls drk red/gry, deep red/brn/blk, blk ang pcs, silty dolo text in prt, soft gran blk ang pcs in prt, abun gas bubs, filmy cond

shl gry drk gry, silty gritty, tr dolo text, sst 1/2 clstrs drk gry/blk f grnd sub ang grns, prly srtd, w/cem, silic cem, pyritic, clay fill, blk filmy gilson stain, gas bubs, nodor

shl lt gry, gry/green, silty gritty soft, grsy, silic text, vry fnly sndy text, vry sm rded snd grn inclu, wxy

shl gry green, blue green, silty gritty, tr fnly sndy, tr silic text. tr soft mush, gry drk gry mott

shl gry med lt gry aa, incr drk brn red, blk ang pcs, gritty gran, silic text in prt, tr gas bubs

shl dolo shl, drk brn redd, blk/red tint, blk ang hrd pcs, silty gritty, silic text, gas bubs

lst crm wht, off wht lt gry mott, tr off wht tan, f med xln, blk ang dns pcs, sub chkiy in prt, crs calc xstl inclu, tr crs foss frags, pyritic, tr chrt dull tan /lt gry shrp frsh sub opa

lst off wht, wht/gry mott f med xln blk ang crsly foss in prt, crs calc xln inclu, pyritic, chrty, lst/dolo off wht dull tan f vf xln dns hrd blk, micro foss, chrty, chrt dull tan shrp frsh, sub opa

lst off wht, wht/gry f sli med xln blk ang, crs foss frags, crs calc xln inclu, chrt wht lt gry shrp, lst dolo, tan dull tan f vf xln dns hrd blk, sli gran suc text, chrty, foss frags, chrt dull tan blk ang shrp sub opa

lst, dolo in prt, f vf xln dns blk ang, gran, sli sub suc text, tr sndy text, chrty, chrt dull tan lt brn shrp frsh sug opa

lst, dolo in prt, off wht dull tan, gry/brn f vf xln gran sub suc text, blk ang tr sub chky, chrty in prt, chrt dull tan lt brn shrp frsh sub opa

lst, dolo in prt, off wht dull tan tr lt gry, f vf xln dns hrd blk, gran sli suc sndy text, tr sli chky chrt, chrt dull tan shrp frsh sub opa,

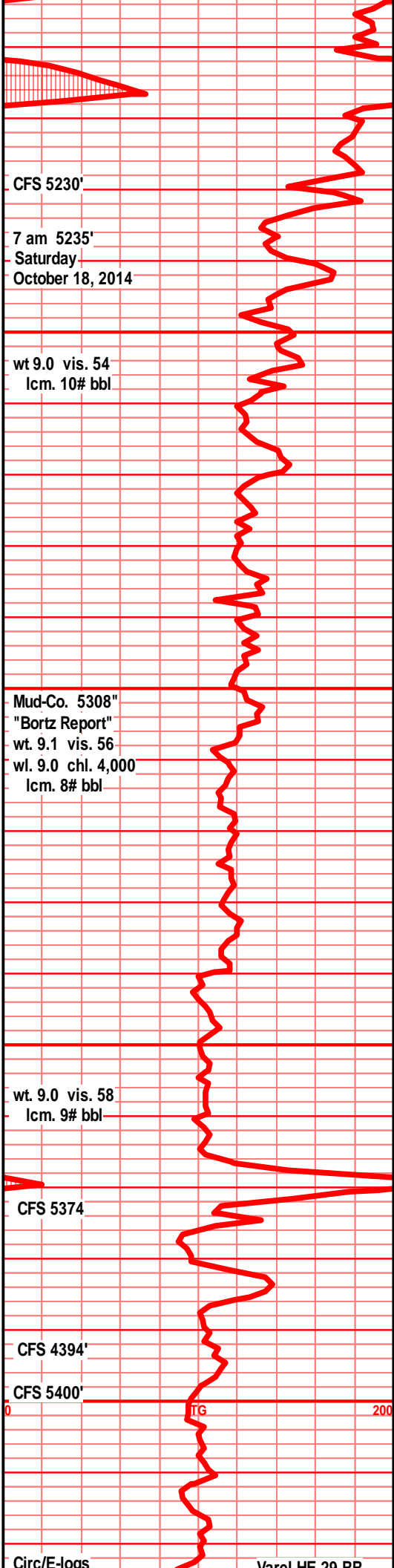
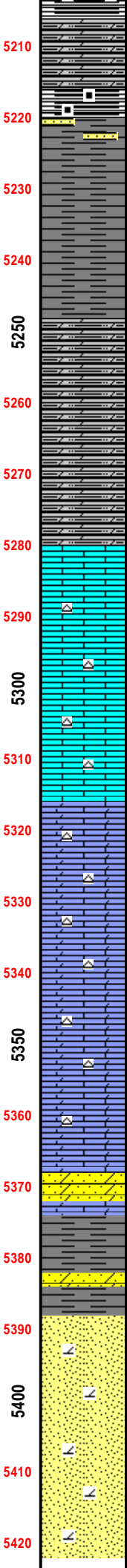
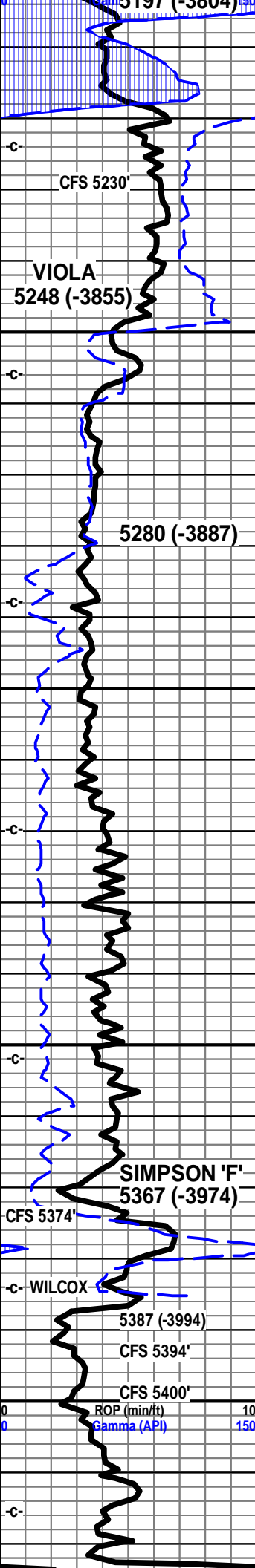
dolo sndy dolo, tan, brn, drk brn, reddish brn, f med xln suc/sndy text, gd inter xln por, tr vug/sli moldic por, clr fn grnd, sub ang snd grn inclu, bleeding gas bubs, fair odor, lt tranl SFO, dull UV, gd shows on break

shl gry, green, sst, dolo sst, gry, clr/green tint, green, f grnd sub grns, w/srtd blk hard, pyritic, grn clay fill

sst clr off wht, lt tan, semi frosted clstrs, f grnd, sub rded, rded grns, silic cem, poorly cem, fria gran soft, inter grn por, tr gas bubs, drk brn oil smears, filmy SFO, blk gilsonitic stain, nodor

sst clr semi frosted, tr wht clstrs, f grnd, sub ang/sub rded grns, w/srtd, fair to prly cem, silic cem, tr dolo text/fill, mstly fria, gran soft, inter gran por, dead gilsonitic stain, tr brn oil smears, nodor

sst wht/clear, semi frosted clstrs, f grnd, sub rded/sub ang grns, w/srtd, mstly prly cem, silic cem, dolo text fill, mstlv soft fria, inter



RTD  
5424 (-4031)

5430  
5440  
5450  
5460  
5470  
5480  
5490  
5500  
5510  
5520  
5530  
5540  
5550  
5560  
5570  
5580  
5590  
00

gran por, tr dead gilsonitic flakes, nodor,  
NSFO

7 am 5424'  
Sunday  
October 19, 2014  
varel NE-29 RR  
shells out. 39 hrs

Woolsey Operation Company  
Ohlson #2  
1300' FNL and 600' FEL  
C of E 1/2 E 1/2  
Sec. 16 - Twp 35S - Rge 12W  
Hardtner Field  
Barber County, Kansas  
API # 15-007-000000-0000  
GL 1420' KB 1432"

Bill Klaver

Geologist

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