



**Woolsey Operating Company, LLC**

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

Measured Depth Log

**Well Name:** Nusser #4  
**Location:** Section 11 - Township 35 South - Range 12 West  
**License Number:** API# 15-007-24067-0000 **Region:** Barber County, Kansas  
**Spud Date:** September 30, 2013 **Drilling Completed:** October 9, 2013  
**Surface Coordinates:** S 1/2 SW NW SW  
1350' FSL & 330' FWL  
**Bottom Hole Coordinates:**  
**Ground Elevation (ft):** 1387' **K.B. Elevation (ft):** 1400'  
**Logged Interval (ft):** 4400' **To:** 5490' **Total Depth (ft):** 5490'  
**Formation:** Kansas City ----> Simpson Group  
**Type of Drilling Fluid:** Chemical Mud, Displaced at  
Printed by WellSight Log Viewer 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:** Joel Gearhart  
**Company:** Woolsey Operating Co. LLC  
**Address:** 125 N. Market, Wichita Kansas, 67202

## COMMENTS

Surface Casing: Ran 5 joints of new 13 3/8" X 48#/ft casing to 217' KB with 130 sx Class A, 2% gel, 3% cc. Plug down at 2:40 am on October 1, 2013. Cement did circulate.

Production Casing: 5 1/2" X 15.5#/ft

Deviation Surveys: 1/2 at 222', 1/2 at 1337'. 1 1/4 at 1557', 1 at 2002', 3/4 at 2508', 1 at 3013', 3/4 at 3562', 3/4 at 4028', 3/4 at 4503', 3/4 at 4900', 3/4 at 5490'.

Pipe Strap @ 4900', Board: 4916.07', Strap: 4913.19'. Strap 2.88' long. No correction was made to the board.

Ninnescah Drilling Rig 101 Bit Record:

- 1) 17 1/2" HTC RR in at 0' out at 222', 3 hours
- 2) 7 7/8" Varel HE-21 in at 222', out at 4900', 111 1/2 hours
- 3) 7 7/8" Varel HE-34 in at 4900', out at 5490', 39 1/2 hours

Gas Detector: Woolsey Operating Co. Gas Trailer #2

Mud System: Mud-Co. Brad Bortz, Engineer

DSTs: No tests were ran.

Electric Logs: Nabors Completion and Production Services. Dual Induction Laterolog w/SP, CNL-FDC w/PE, GR and Caliper. Mitch Rupp, Engineer.

## DSTs

No open hole tests were ran.

## CREWS

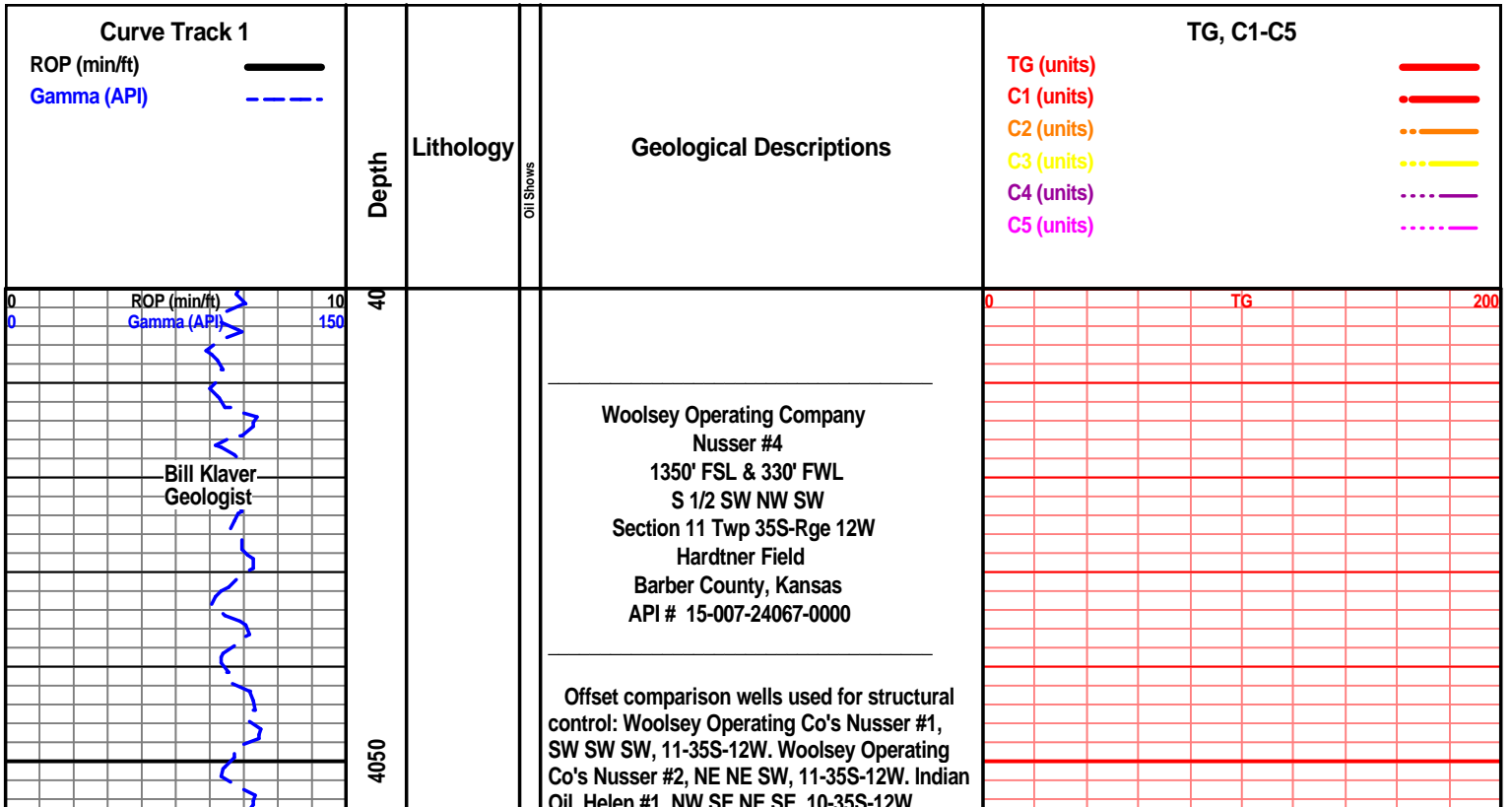
Mr. Rick Barriger, Tool Pusher  
Jason Barriger, Daylights  
Juan "Cisco" Navarro, Evening  
Ronaldo "Pedro" Guerrero, Morning  
Oscar "Poncho" Orona, Relief

### 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		Mrst		Shyltst		Lmst
	Congl		Salt		Slysh		Calc dol
	Sdy dolo		Shale		Ss 2		Shale 3

### ACCESSORIES

<b>FOSSIL</b>		Fuss		Salt		Grysh	
	Algae		Oomoldic		Sandy		Gryslt
	Amph	<b>MINERAL</b>		Silt		Lms	
	Belm		Anhy		Sand		Sandylms
	Bioclst		Arg		Silty		Sh
	Brach		Bent		Dol		Sltstn
	Bryozoa		Bit		Sand	<b>TEXTURE</b>	
	Cephal		Brecfrag		Dol		Boundst
	Coral		Calc		Gyp		Chalky
	Crin		Carb		Coal		Cryxln
	Echin		Chtdk		Dol		Earthy
	Fish		Chtlt		Ls		Finexln
	Foram		Dol		Mrst		Grainst
	Fossil		Ferrpel		Sltststrg		Lithogr
	Gastro		Ferr		Ssstrg		Microxln
	Oolite		Glau		Carbsh		Mudst
	Ostra		Gyp		Clystn		Packst
	Pelec		Marl		Dol		Wackest
	Pellet		Nodule				
	Pisolite		Phos				
	Plant		Pyr				
	Strom						



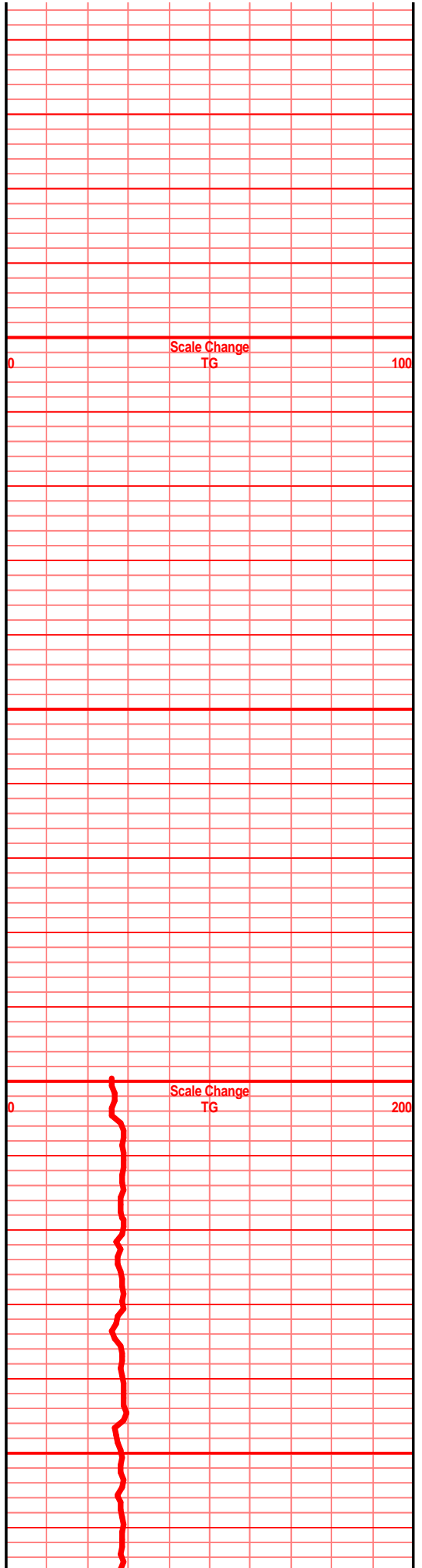
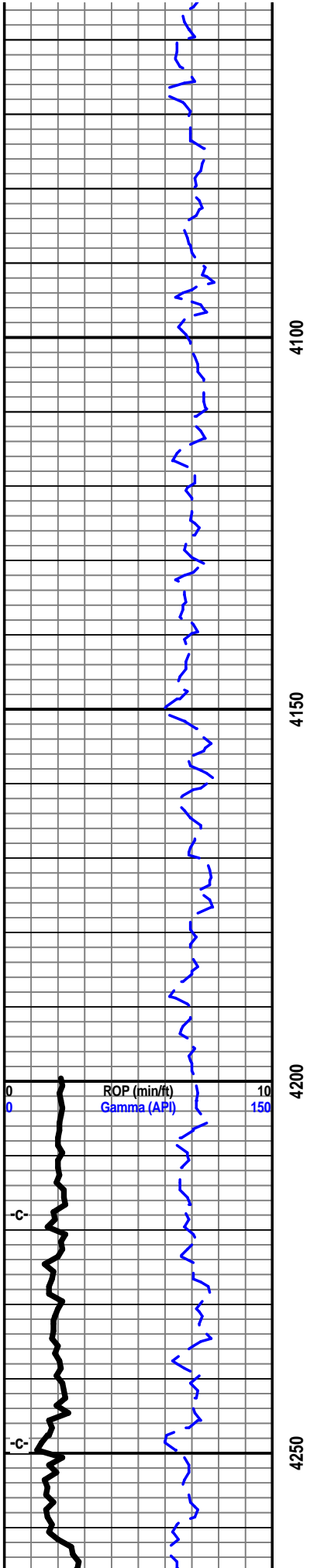
One foot drill time was recorded from 4400' to rotary total depth. 10' and circulating samples were gathered from 4600' to rotary total depth. All samples were delivered to the Survey at the completion of the test.

**7am Progress:**

September 30, 2013 MIRT/SPUD  
 October 1, 2013 WOC  
 October 2, 2013 Drilling at 1559'  
 October 3, 2013 Drilling at 2364'  
 October 4, 2013 Drilling at 3137'  
 October 5, 2013 Drilling at 3975'  
 October 6, 2013 Drilling at 4590'  
 October 7, 2013 Bit trip at 4900'  
 October 8, 2013 TOOH for logs.  
 Logs out 3 pm

**Electric Log Tops:**

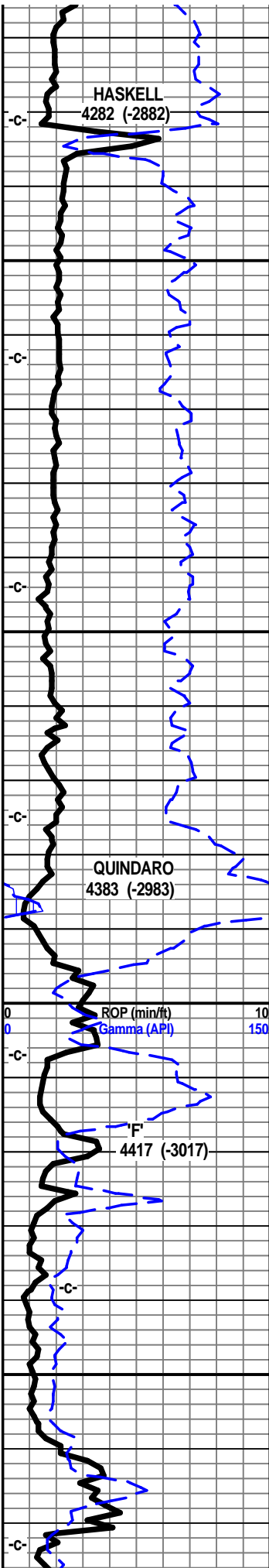
Herington 1915 (-515)  
 Onaga 2775 (-1375)  
 Wabaunsee 2837 (-1437)  
 LeCompton 3620 (-2220)  
 Kanwaka 3644 (-2244)  
 Elgin Sand 3720 (-2320)  
 Heebner 3834 (-2434)  
 Toronto 3845 (-2445)  
 Douglas Group 3872 (-2472)  
 Brown Lime 4281 (-2881)  
 Stalnaker ND  
 Quindaro 4382 (-2982)  
 Kansas City 'F' 4386 (-2996)  
 Kansas City 'G' (Iola) 4417 (-3017)  
 Kansas City 'I' (Dennis) 4501 (-3101)  
 Stark 4541 (-3141)  
 Kansas City 'J' (Swope) 4554 (-3154)  
 Hushpuckney 4572 (-3172)  
 Kansas City 'K' (Hertha) 4580 (-3180)  
 B/Kansas City 4621 (-3221)  
 Pawnee 4726 (-3326)  
 Cherokee Group 4771 (-3371)  
 Cherokee Sand 4801 (-3401)  
 Mississippian 4828 (-3428)  
 C3 4828 (-3428)  
 C2A 4836 (-3436)  
 C2 4901 (-3501)  
 C1 5004 (-3604)  
 Osage 5068 (-3668)  
 Northview Shale 5079 (-3679)  
 Compton 5083 (-3683)  
 Kinderhook 5095 (-3695)  
 Woodford 5173 (-3773)  
 Misener Sand 5194 (-3794)  
 Viola 5222 (-3822)  
 Simpson 5350 (-3950)



Wilcox Sand 5370 (-3970)  
McLish Shale 5453 (-4053)

Oil & Gas Show Legend

- ⊗ Gas
- Even Stain/Saturation
- ◐ Spotted Stain/Saturation
- Weak/Questionable
- ◻ Dead/Gilsonitic

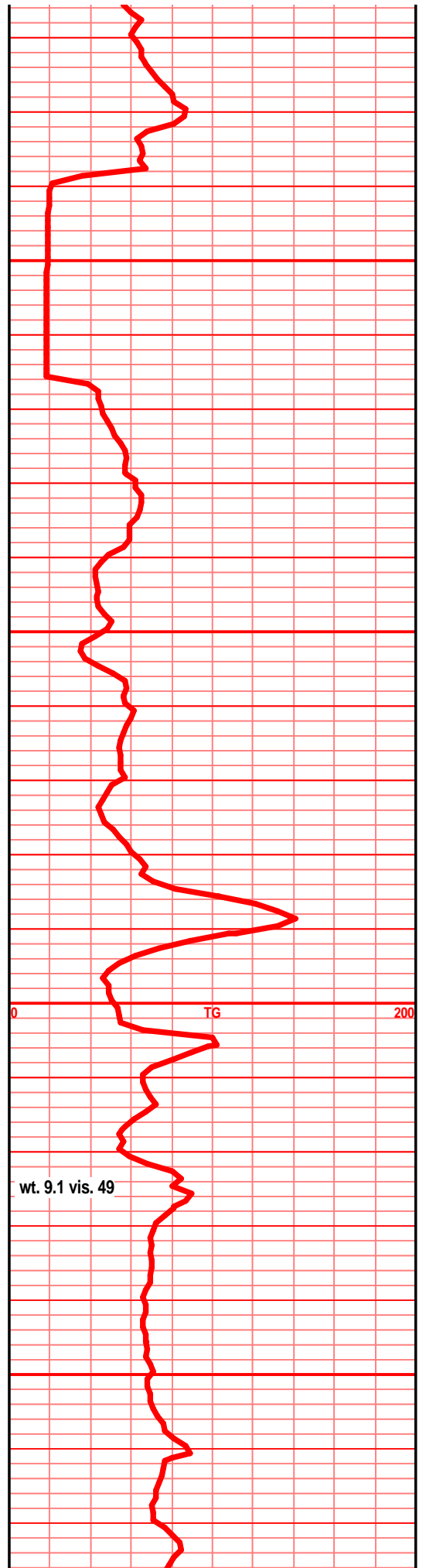
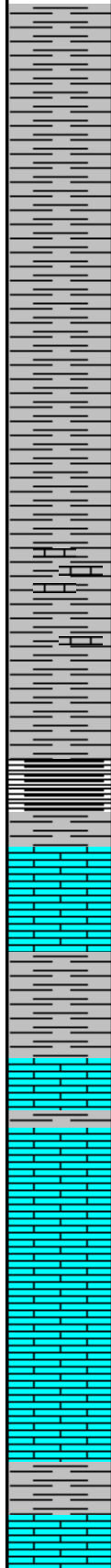


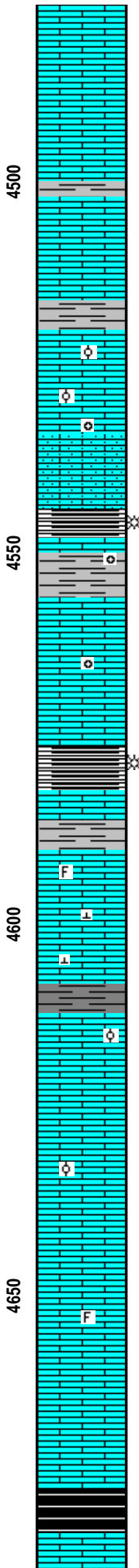
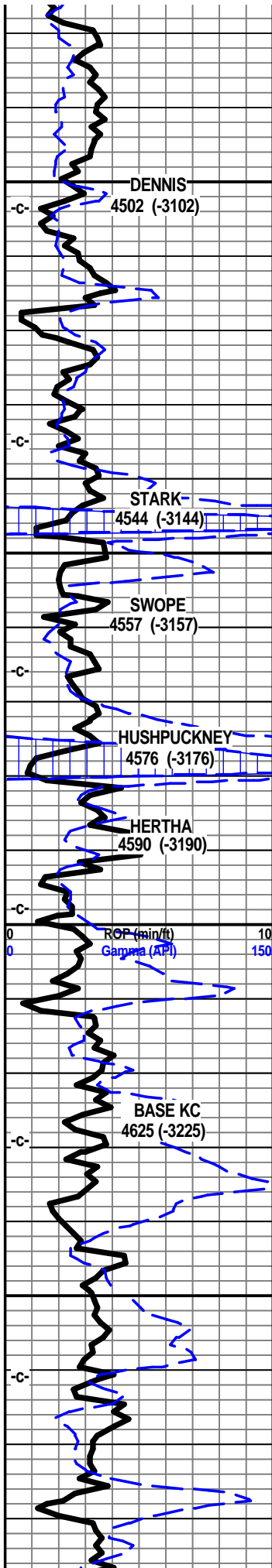
4300

4350

4400

4450





ool lst, brn-drk brn, dns, foss frags, clky,

sndy hrd lst, gray-green shale w/ pyrite

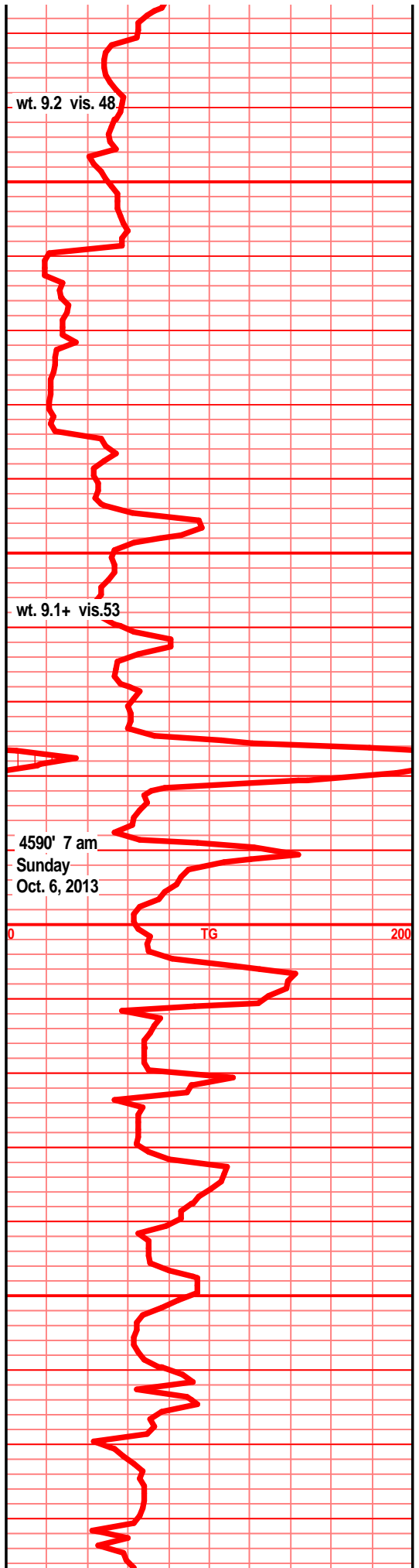
blk gry-gry drty lst gritty, foss frags, mdy gray shl

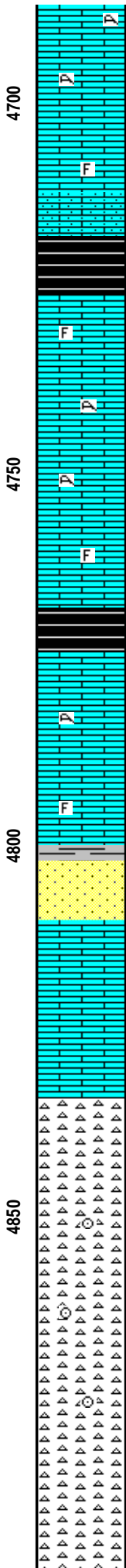
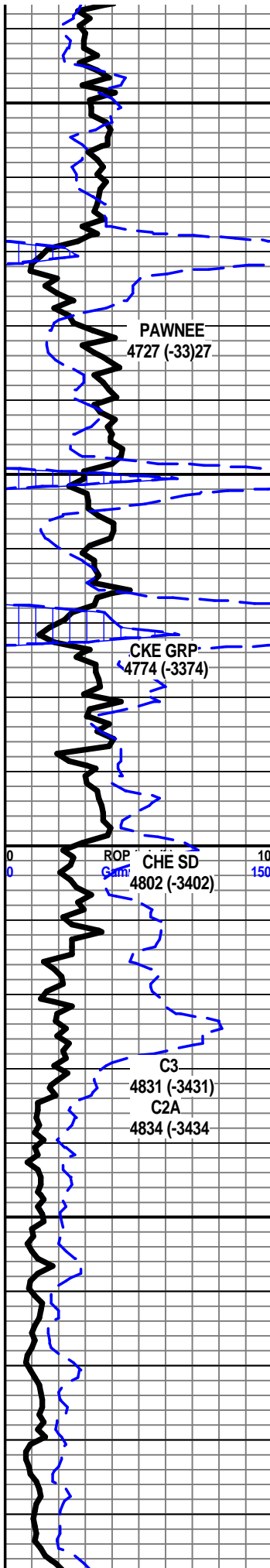
blk shl, gas bubs, clky lst gry- drk brn, wht-tan chrt

drk brn-lt brn cal lst, micro ool, foss frags, calcite crystals, drk gry drty shl/mud stn w/ lttl pyrt, ang grans, wt-lt tan chrt

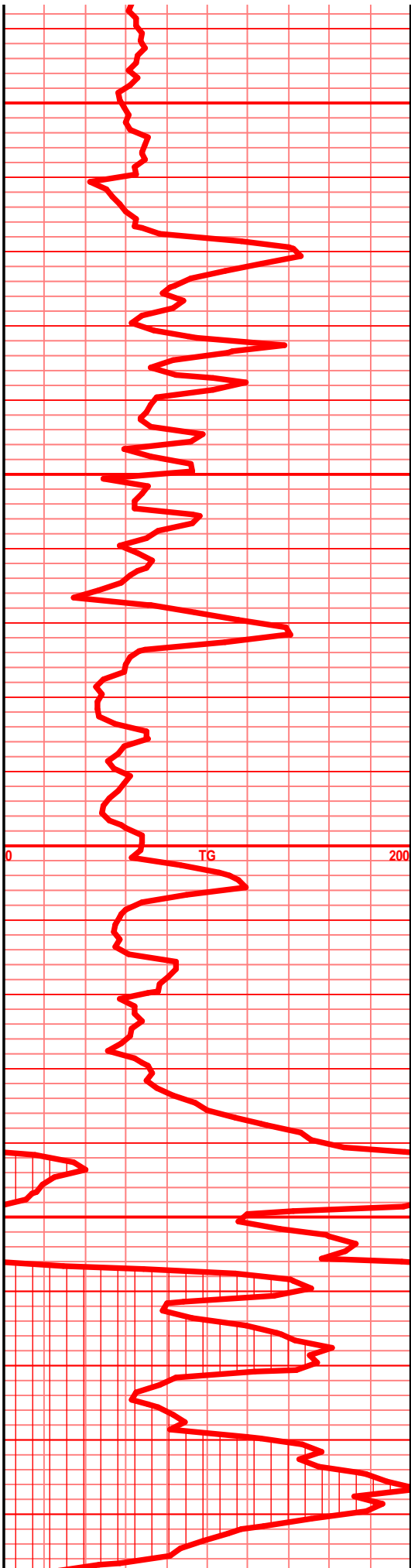
dirty tan lst w/ grn lst, interbedded hrd grn shl-mud stn

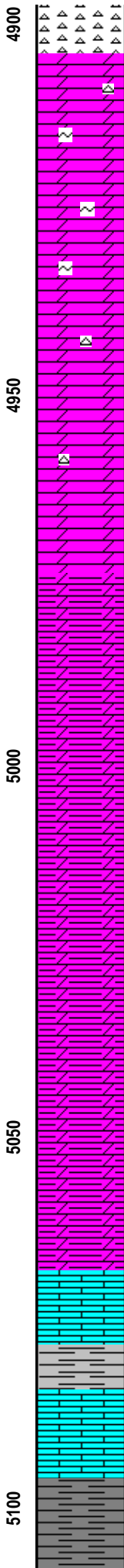
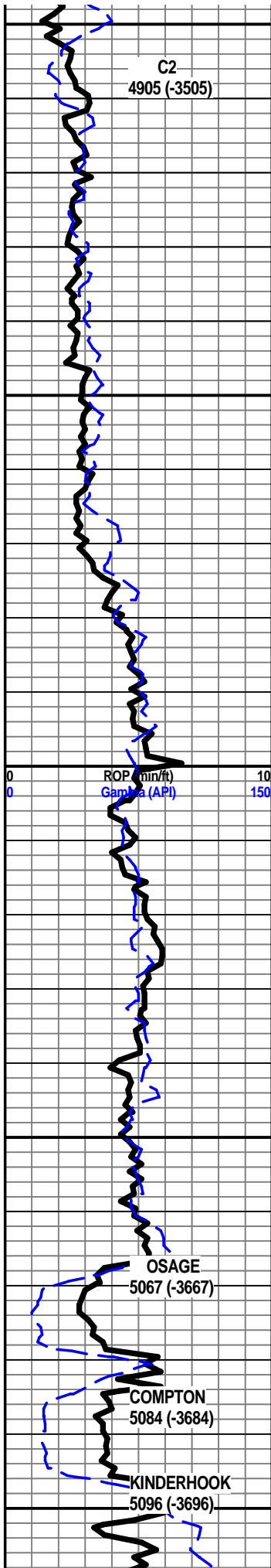
drk blk shl, carb





It brn-tan lst, coral foss frags, lt gry-gry shl, lt gry md stn, brt wt-lt brn chrt  
 drk brn sndy lst, hrd, sub-ang grns  
 blk shl, carb  
 It tan ool lst, no visible por, lttl chlky, calcitic, foss/coral frags, blk slit stn w/ pyrite, gry shls  
 It tan lst, micro ool, foss frags, drk blk shl, grtty shl, ang grans, dolo snd grans  
 gry-blk shl, carb  
 It brn-tan lst, dnse, ang grans, gritty, foss frags, lt brown-wt chrt, gry-gry grn sft shls  
 iron precipitates  
 drk brn snd stn, vfn-fn grn, sub ang, oil film, faint odor, tite blk clusters, sso bleed, gas bubs  
 brn-lt brn drty shly lst, gry-lt grn shls  
 It tan lst, dnse, ool, sub ang  
 drk blue- yllw grn lst, dnse, smll xln  
 It brn-wt chrt, shrp weathered brn edges, trc spongy text, slight odor, oil stns, gas bubs  
 smokey wt chrt, shrp edges, blkly ang pieces, lt brn edges  
 wt chrt wthrd spongy edge, oil stains, gas bubs, smky chrt lng shrp angular pieces, wt chrt shrp lt brn edges, crinoid foss frag  
 wt chrt wthrd jggd edge, oil spots, sub ang grns, gas bubs, smky wt chrt long ang shrp brn edges, blkly ang grns  
 smky wt chrt, ridged wthrd brn edges, sso, gas bubs, lt smky brn chrt, blocky shrp edges, ang grns, pyrite granulars, wt chrt, sub ang, gritty,





foss frags

lt tan-off wt dolo, wthrd gritty text, sub ang grns, chrty look

lt tan dolo, gritty/sndy text, visible snd inclusions, sub ang grns, snd is drk brn, sso, gas bubs, glauconite present teal grn in color

lt gry-wt dolo, gritty text, sub ang grns, spotty stains, lttl chrty

gry brn silty dolo, vf-fn grns, gritty text, sub ang grns, lttl glauc, lt tan silty dolo, silt drk gry, fn grn, oil stain, gritty

shls drk gry-blk shls, carb

drk gry shly dolo, sub ang grns, gritty, glauc pieces present

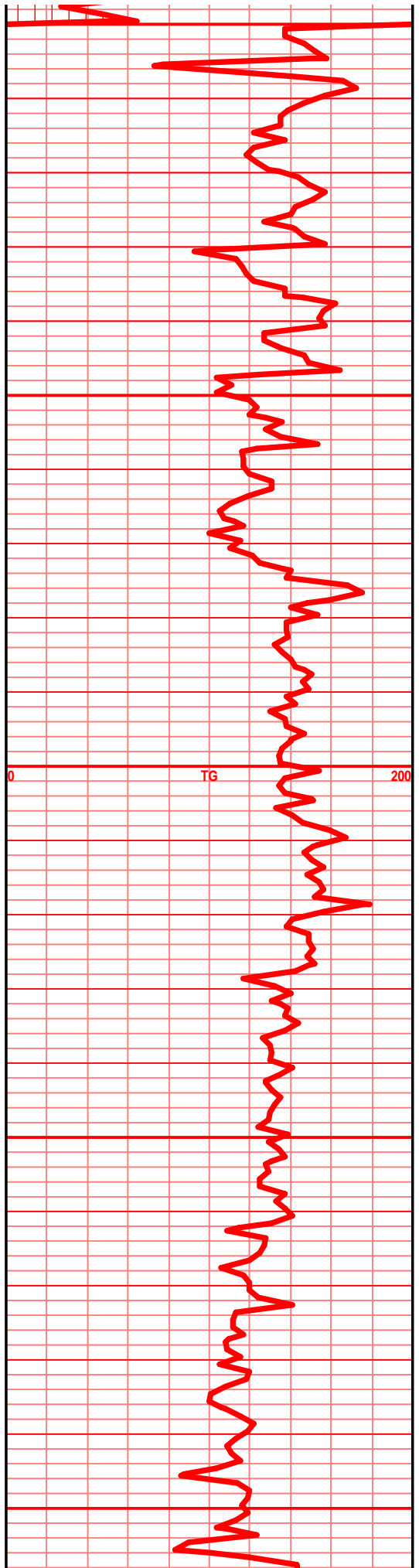
gry-drk gry silt dolo, ang, blocky, little soft, spks of pyrt, gritty text

drk dolo, strks of blk shl, hrd dns, ang, wthrd ripple text, gritty look

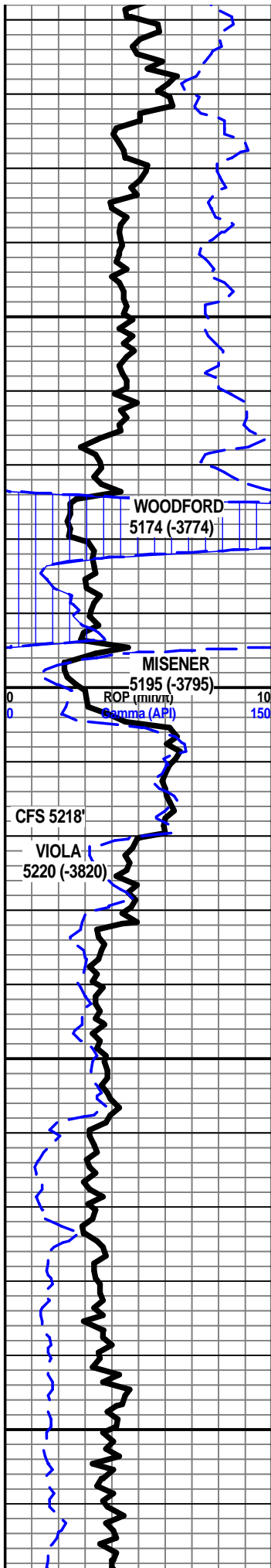
wt lst, crs xln, tabular calcite crstls, shrp, jggd edg, foss frags, lttl glauc, ang, brittle

lt grn & drk grn shls, gritty, sft, angl drk gry lam shl

gry-tan lst, fn xln, sub ang, lttl glauc, wt wthrd edge, sub ang







drk gry shl, gritty granular text, pyrite.  
interbedded blk shl, silty appearance

lt gry slty-shl, gritty, sub ang, sft, pyrite, sub  
ang

gry shl, interbedded blk shl, pyrite, sub ang

drk gry-blk shl, drk gry-red brn hue, hd platey,  
pyrite, some gas bubs, oil film

gry shl, red hue, pyrite, oil film, gas bubs, carb

clear sst, pr srtd, shls, pyritic, sub ang  
lt wt sst, hrd, pr srtd, sub ang grains,  
interbedded shls, chalky calcite cement, poorly  
cemented

drk brn shl w/ interbedded blk shl

drk brn-red dolo, slty, sft, sub ang, gas bubs,  
gritty wthrd text

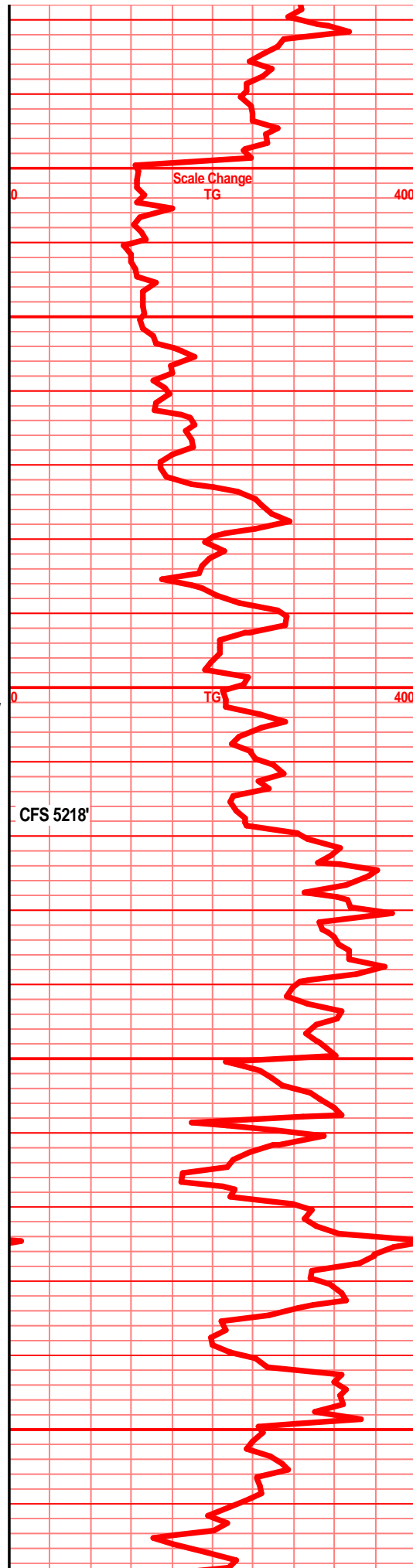
drk red-brn dolo, silty, gritty, soft, gas bubs,  
sub ang, lttl pyrite, organic material, carb,  
pyrite clusters

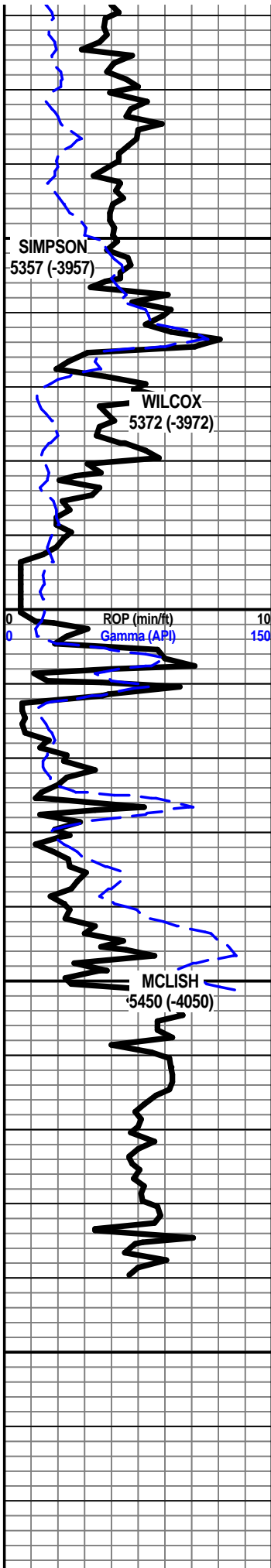
smky lt brn lst, ang, xln, pyritic, lttl wt chrt  
edges, mottled text, foss frags, chrt is brt wt

lt creamy tan lst, chrt, mushy, sub ang,  
cottage cheese look when broke

smky brn lst, coars xln, blk clay, calcite fld  
foss csts, ang, hd

lt smky brn lst, shrp, xln, blk, glauc grn tint,  
intrbd clys





lt brn lst, gritty, hd, sub ang, lttl chrt

lt cream brn dolo, calcite silt, pr srt, brttl, sub ang

lt teal grn shl, waxy, sft

lt grn sst, dolomitic, pr srt, pr cementd, sub ang grns, mud flakes

lt brn sst, pr srt, ang grns, well cementd, sub ang clstrs, mud flakes

lt tan sst, sub ang clstrs, wll cmntd, sub ang grns, pyrite and mud flakes, hd, dnse

lt tan-off wt sst, sub ang clstrs, hd dnse, fn grn, wll srt, wll rnd grns, drk mud and pyrite flakes

wt sst, chrt, sub ang clstrs, sub ang grns, pr srt, tints of grn, lttl glauc and pyrite flakes

wt-off wt sst, sub ang clstrs, pr-wll srt, sub ang grns, lttl to no mud or pyrite content, glauc present

lt grn-teal grn shl, dull waxy look, wt snd inclusions, sft

drk shl w/ pyrite inclusions, long tabular, hd, silty lookin

lt gry slty shl, hd, pyritic,, drk gry shl gritty text, pyritic,, lt grn shl, sft

drk gry shl, snd-silt inclusions, pyritic,, lt teal grn shl, waxy look

