



Woolsey Operating Company, LLC

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

Well Name: Gottsch #1
Location: Section: 14 Township: 35S Range: 12W
License Number: 15-007-24129-0000
Spud Date: 03/17/14
Surface Coordinates: Irregular Section
1270' FNL, 1560' FEL
Bottom Hole Vertical Hole
Coordinates:
Ground Elevation (ft): 1369 K.B. Elevation (ft): 1381
Logged Interval (ft): 4350 To: 5505 Total Depth (ft): 5505
Formation: Brown Limestone ---> Simpson
Type of Drilling Fluid: Chemical Mud

Region: Barber Co., Kansas
Drilling Completed: 3/27/2014

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: Joel Gearhart
Company: Woolsey Operating Co. LLC
Address: 125 N. Market, Wichita Kansas, 67202

COMMENTS

Surface Casing: Set 5 jts 13 3/8" x 48#/ft new surface casing at 223' (tally 223') w/ 300 sx Class A, 2% gel, 3% cc (by Allied). Plug down at 12:30 am on 03/19/14. Cmt did circ.

Production Casing:

Deviation Surveys: 3/4-220', 1-1016', 3/4-1554', 3/4-1999', 3/4-2507', 1-3013', 3/4-3521', 1 1/2-4090', 7 (Missrun)-4279', 7 (Missrun)-4311', 1 1/2-4324', 1-4357', 3/4-4500', 3/4-4902', 1/4-5505'

Pipe Strap @ 4902', Board: 4912.26', Strap: 4912.34', Strap is 0.08' long to the Board. No corrections were made to the Board.

Contractor Bit Record: Fossil Drilling Rig #3

- 1.) 17 1/4" Varel RR, in 0' out 788', 2 hrs.
- 2.) 7 7/8" Varel HE-21, in 788' out 4902', 113 hrs.
- 3.) 7 7/8" Varel HE-29, in 4902' out 5505', 49 1/4 hrs.

Gas Detector: Woolsey Operating Company LLC., Gas Trailer #2

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

DSTs: Trilobite Testing, Tate Lang

E-Logs: Nabors Completion and Production Services, Dual Induction Laterlog w/ SP, CNL_FDC w/ PE, Gamma and Caliper

DSTs


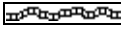
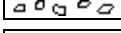









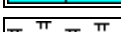

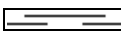









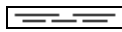







DST #1 Mississippi 4750-4902

30-60-60-120, IF: BOB in 2 mins, ISI: Built to 1 1/4" in 10 mins, died in 50 mins, FF: BOB in 30 secs GTS/40", FSI: Built to 3 1/2" in 5 mins, died in 60 mins, REC: 360' GOCM (10%G 20%O 70%M), 110' GM (10%G 90%M), IHP: 2409, FHP: 2299, ISIP: 1518, FSIP: 1531, FP: 160-184/184-456, BHT: 122














































































CREWS

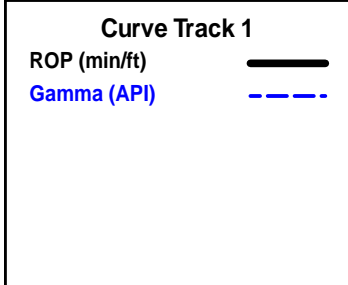
Fossil Drilling Rig #3
 Jim Wenrick, Toolpusher
 Chris Staats, Morning
 Daniel Orrantia, Daylight
 Ron Burns, Evening
 Jesse Reynolds, Relief

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
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ACCESSORIES

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

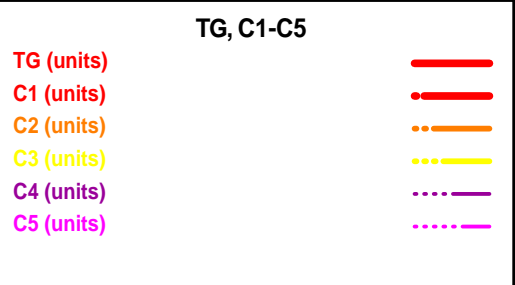


Depth

Lithology

Oil Shows

Geological Descriptions

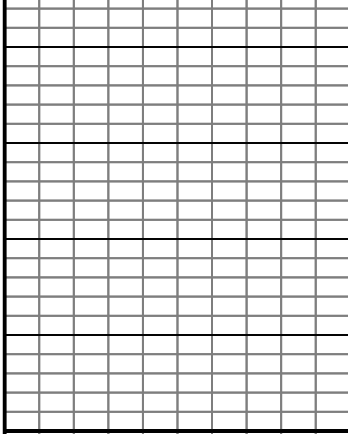


ROP (min/ft) 10
Gamma (API) 150

40

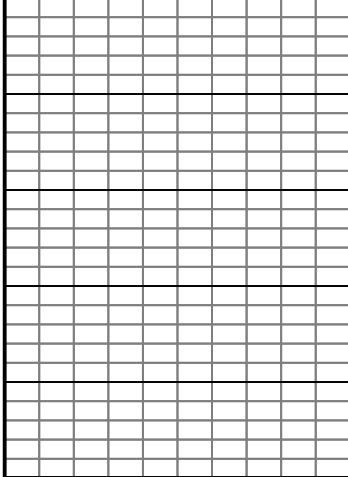
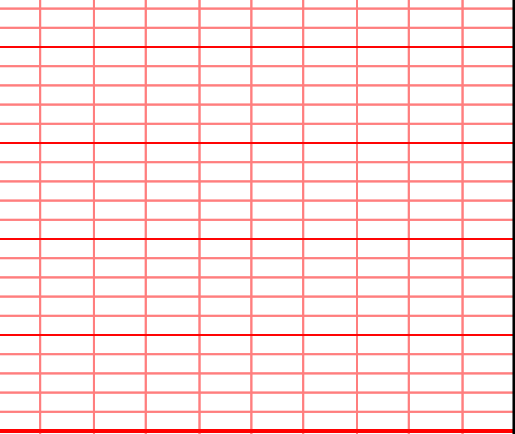
7 a.m. Progress

TG 100



4050

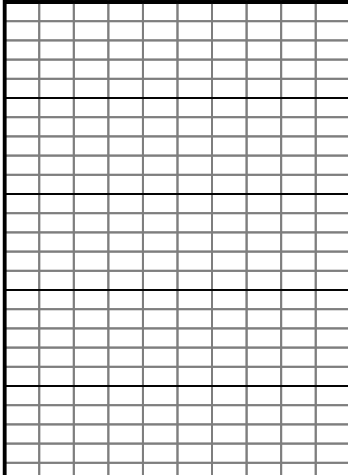
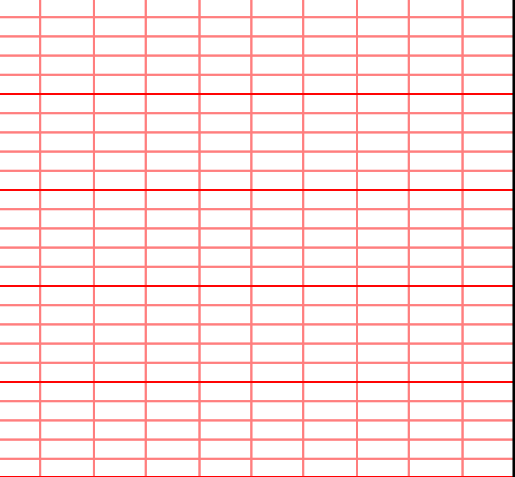
March 17- SPUD
 March 18- 220'
 March 19- 1750'
 March 20- 2665'
 March 21- 3520'
 March 22- 4244'
 March 23- 4600'
 March 24- 4870', DST
 March 25- 4949'
 March 26- 5011'
 March 27- 5478', TD



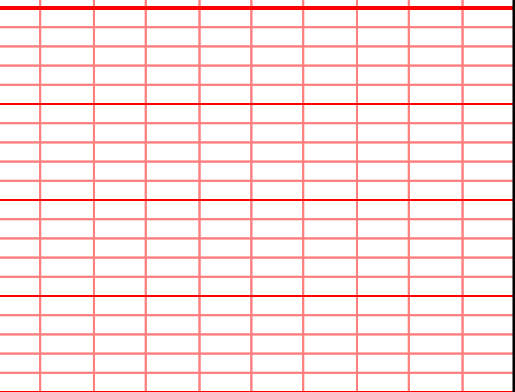
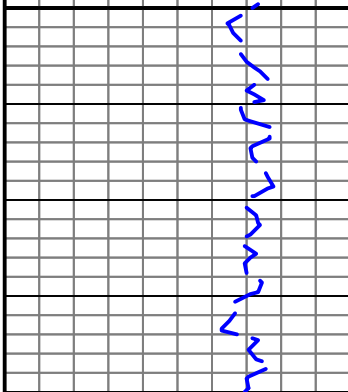
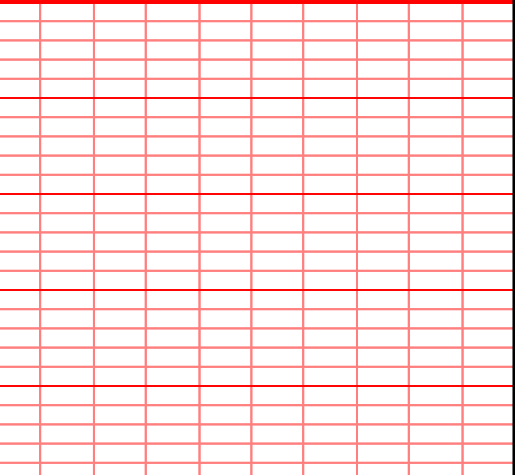
4100

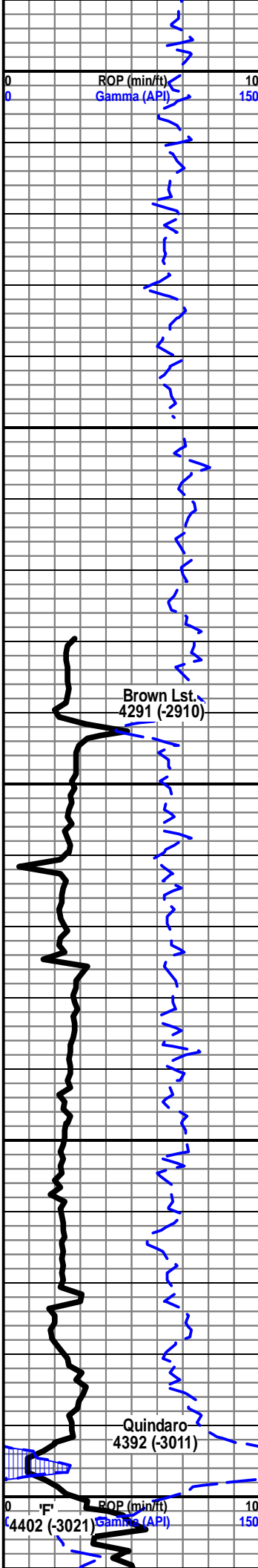
E-Log Tops

Herington- 1899' (-518)
 Onaga- 2776' (-1395)
 Wabunsee- 2832' (-1451)
 LeCompton- 3607' (-2226)
 Kanwaka- 3632' (-2251)
 Elgin Sd Middle- 3688' (-2307)
 Elgin Sd Lower- 3779' (-2398)
 Heebner- 3843' (-2462)
 Toronto- 3853' (-2472)
 Douglas Grp- 3883' (-2502)
 Douglas Shl- 3948' (-2567)
 Quindaro- 4388' (-3007)
 Iola- 4419' (-3038)
 Drum- 4472' (-3091)
 Dennis- 4505' (-3124)
 Stark- 4543' (-3162)
 Swope- 4557' (-3176)
 Hushpuckney- 4574' (-3193)
 Hertha- 4593' (-3212)
 Base KC- 4624' (-3243)
 Pawnee- 4733' (-3352)
 Cherokee Grp- 4779' (-3398)
 Cowley C2A- 4845' (-3464)
 Cowley C2- 4896' (-3515)
 Osage- 5068' (-3687)
 Northview- 5079' (-3698)
 Compton- 5084' (-3703)
 Kinderhook- 5098' (-3717)
 Misner Sd- 5195' (-3814)
 Viola- 5226' (-3845)
 Simpson Grp- 5357' (-3976)
 Simpson Sd- 5362' (-3981)
 Wilcox- 5383' (-4002)
 McLish- 5458' (-4077)

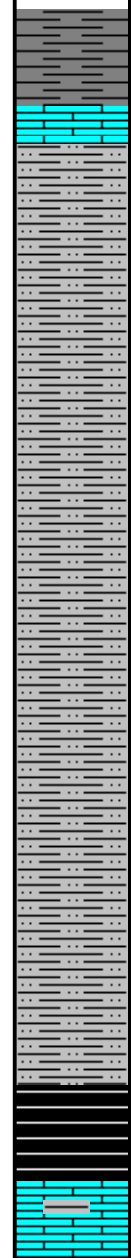


4150





4200
4250
4300
4350
4400



gry slty shl, pyritic, sub ang, soft
drk gry shl, lttl sily, blk shl clasts, pyritic,
brittle, tabular

gry slty shl, pyritic, sub ang, soft
drk gry shl, lttl sily, blk shl clasts, pyritic,
brittle, tabular

gry shl, slty, pyritic, sub ang, soft, drk gry shl,
sily, brittle, tabular, pyritic

gry shl, slty, pyritic, sub ang, soft, drk gry shl,
sily, brittle, tabular, pyritic, increase in silt w/
depth

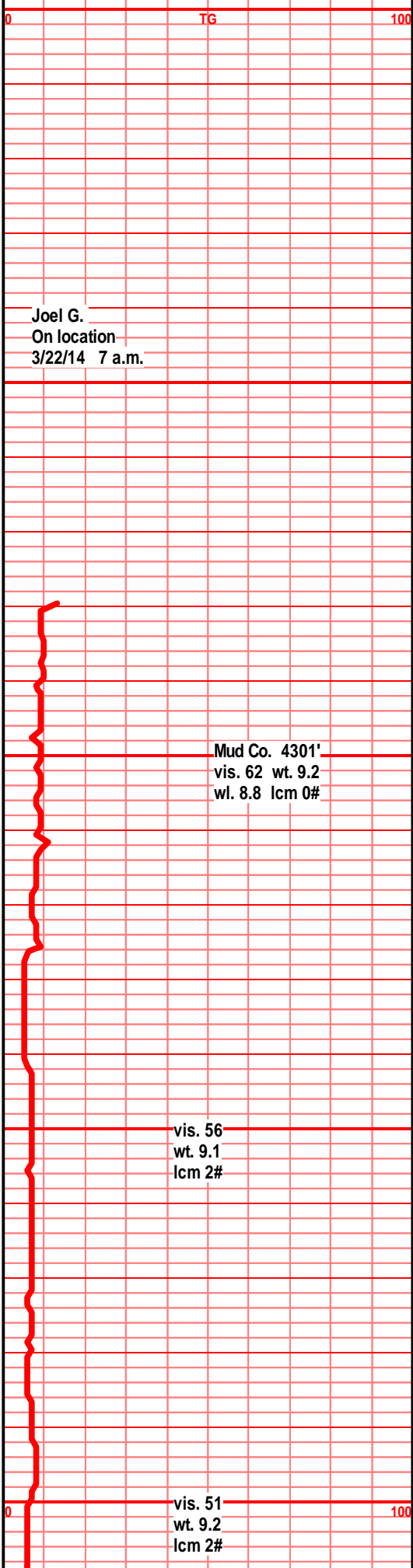
gry shl, slty, pyritic, sub ang, soft, drk gry shl,
sily, brittle, tabular, pyritic, increase in silt w/
depth

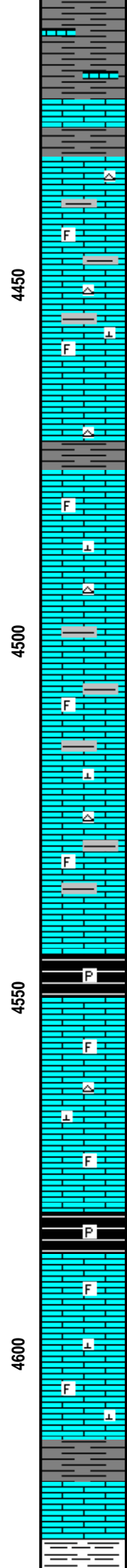
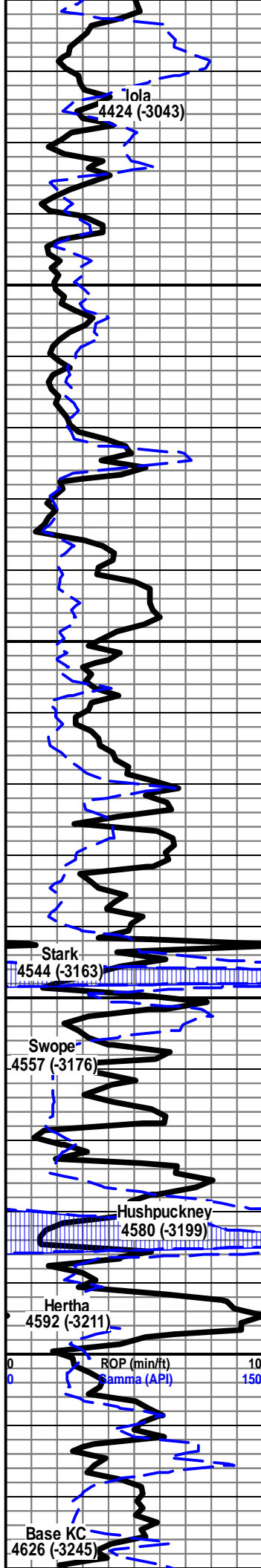
gry shl, slty, pyritic, sub ang, soft, drk gry shl,
sily, brittle, tabular, pyritic, increase in silt w/
depth

gry shl, slty, pyritic, sub ang, soft, drk gry shl,
sily, tabular, brittle, pyritic, blk shl, carb, lttl
silty, occasional gas bub on brk, sub ang, soft

blk shl, carb, lttl sily, pyritic, tabular, hrd, gas
bubs on brk

lt tan-off wt lst, xln, chrt/chlky, sub ang, clay
clasts, hrd, wt chrt, brn eds, sub ang, rigid





text, hrd, wt brk
 gry shl, calc in part, xln, hrd, sub ang, lt tan
 lst stringers, drk brn shly lst, xln, sub ang,
 hrd

lt off wt- gry lst, chrty/chlky eds, gritty text,
 clay clasts, hrd, sub ang, gry-drk gry shl, slty
 gritty text, tabular, hrd, pyritic

lt tan lst, chrty, xln-vxln, trc foss, foss mold
 por, sub ang, hrd, off wt chrt, xln, brt wt brk,
 sub ang, hrd, gry-drk gry shl, tabular, brittle,
 pyritic

lt tan-tan lst, chrty/chlky, xln, trc foss, foss
 frags, sub ang, hrd, off wt chrt, xln, brt wt brk,
 sub ang, hrd, gry-drk gry shl, tabular, brittle,
 pyritic

lt tan- off wt lst, xln, calc fill, chrty/chlky, foss
 frags, trc foss, sub ang, hrd

gry-drk gry shl, lttl slty, tabular, pyritic, soft, lt
 gry tan lst, xln, chrty, chlky eds, trc foss,
 foss frags, foss mold por, sub ang, hrd

gry-drk gry shl, lttl slty, tabular, pyritic, soft, lt
 gry tan lst, xln, chrty, chlky eds, trc foss,
 foss frags, foss mold por, sub ang, hrd

tan lst, xln, chrty/chlky, trc foss, calc fill, sub
 ang, hrd, wt chrt, xln, shrp, frsh, sub ang, hrd

tan-gry tan lst, xln, chlky, lttl chrty, foss frags,
 clay clasts, sub ang, hrd

tan lst, xln, chlky eds, xln wt chrt clasts,
 foss frags, sub ang, hrd, drk gry shl, tabular,
 brittle

tan lst, xln, foss frags, trc foss, calc fill, chlky
 look, sub ang, hrd, gry-drk gry shl, tabular,
 pyritic, brittle

drk brn lst, vxln, foss frags, clay clasts, sub
 ang, hrd

drk brn lst, vxln, foss frags, clay clasts, sub
 ang, hrd, gry shl, sub ang, waxy brk

blk shl, carb, pyritic, sub ang, soft,
 occasional gas bub on brk

tan-brn tan lst, xln-vxln, foss frags, chlky
 eds, sub ang, hrd

tan-brn tan lst, vxln, foss frags, trc foss, calc
 fill, chlky eds, sub ang, hrd

blk shl, carb, pyritic, blk, sub ang, hrd,
 occasional gas bub on brk

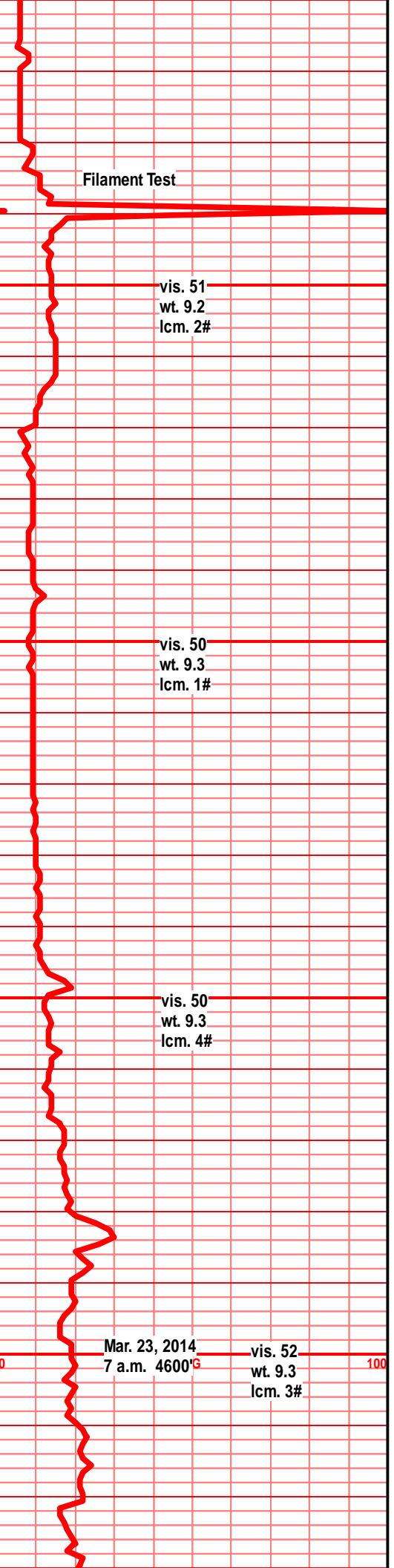
tan-gry tan lst, xln, foss frags, trc foss calc
 xln fill, chlky chrty eds, sub ang, hrd, gry
 shl, tabular, hrd

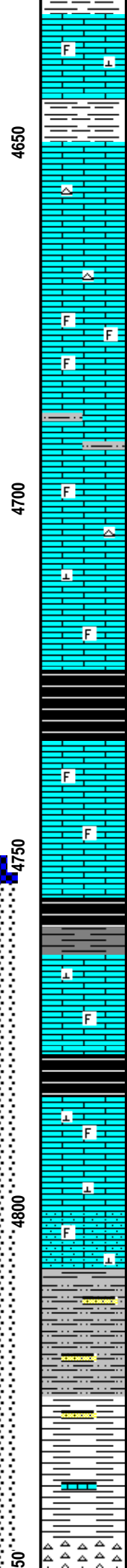
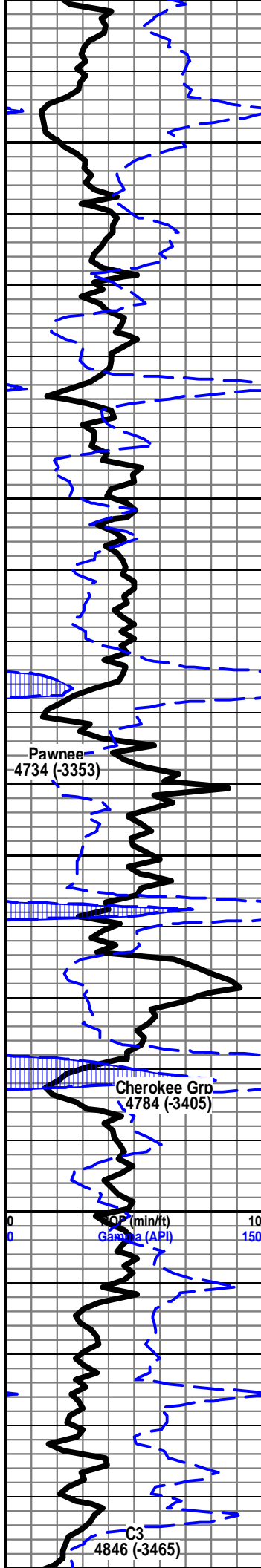
tan gry-gry lst, fxln, lttl chlky chrt, foss frags,
 trc foss calc fill, sub ang, hrd

tan gry-gry lst, fxln, lttl chlky chrt, foss frags,
 trc foss calc fill, sub ang, hrd, gry-drk gry shl,
 lttl slty, sub ang, brittle, waxy brk

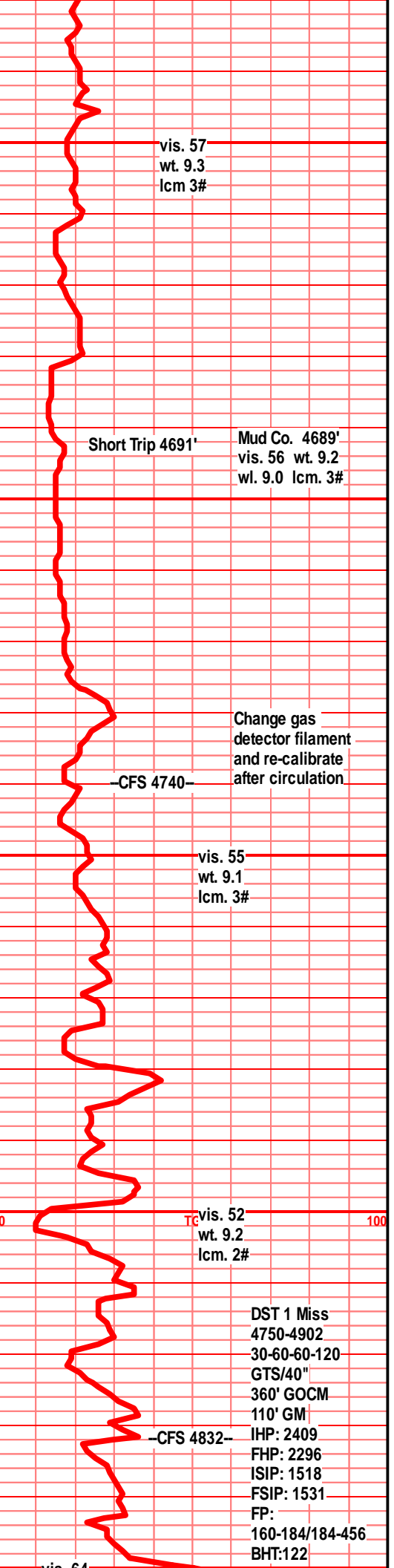
off wt-tan gry lst, xln, chlky chrt, calc fill, lttl
 mottled txt, sub ang

drk gry grn shl, sub ang, soft, mushy, lams of





drk gry-blk shl
 It gry tan-tan brn lst, xln, lttl chlky egds, lttl wt chrt, foss frags, calc fill, sub ang, hrd
 drk gry-grn shl, silty, pyritic, sub ang, soft, teal grn shl, gritty, sub ang, waxy brk
 gry grn lst, silty, clay content, sub ang, brittle, off wt-lt grn chrt, shrp, chlky eds, sub ang, tabular, hrd
 gry grn lst, silty, clay content, sub ang, brittle, off wt-lt grn chrt, shrp, chlky eds, sub ang, tabular, hrd
 tan lst, fxln, heavy foss frags, green clay clasts, sub ang, hrd
 tan lst, fxln, heavy foss frags, green clay clasts, sub ang, hrd, gry shl, brn silt inclus, pyritic, tabular, hrd
 tan-gry tan lst, fxln, chlky, few foss frags, sub ang, hrd, brn opaque chrt, shrp, ang, hrd
 tan-gry tan lst, xln, trc foss, lttl chrt, calc fill, foss frags, sub ang, hrd, iron precipitates on edges
 tan-gry tan lst, xln, trc foss, lttl chrt, calc fill, foss frags, sub ang, hrd, iron precipitates on edges
 blk shl, carb, pyritic, tabular, hrd, gas bubs on brk, nso, no odor
 tan lst, fxln-xln, chlky, wt chrt, few foss frags, sub ang, hrd
 tan-lt gry tan lst, xln, foss frags, lttl wt chrt w/ brn eds, sub ang, hrd
 gry shl, blk shl lams, tabular, soft, drk gry-blk shl, carb, pyritic, tabular, hrd
 tan lst, xln, trc foss, calc fill, foss frags, chlky eds, sub ang, hrd
 blk shl, carb, pyritic, tabular, hrd, gas bubs on brk, nso, no odor
 tan lst, xln, foss frags, calc xln fill, sub ang, hrd
 brn-drk brn lst, xln, vfn snd grn inclusions, foss frags, calc xln fill, sub ang, brittle
 gry-lt grn gry sltstn, vfn snd inclus, blk shl clasts, sub ang, soft, gas bubs on brk, nso, no odor
 gry-lt grn gry sltstn, vfn snd inclus, blk shl clasts, sub ang, soft, gas bubs on brk, nso, no odor
 teal grn shl, sft, vfn snd inclus, waxy brk, yellow-grn yellow shl, sub ang, mushy
 teal grn shl, sft, waxy, soft, yellow-grn yellow shl, sub ang, mushy, red-red brn shl, lime inclus, sub ang, soft
 wt chrt, xln, some wthrd eds, few foss frags,



vis. 57
 wt. 9.3
 lcm 3#

Short Trip 4691'

Mud Co. 4689'
 vis. 56 wt. 9.2
 wl. 9.0 lcm. 3#

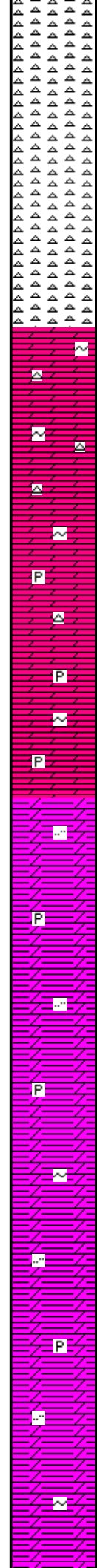
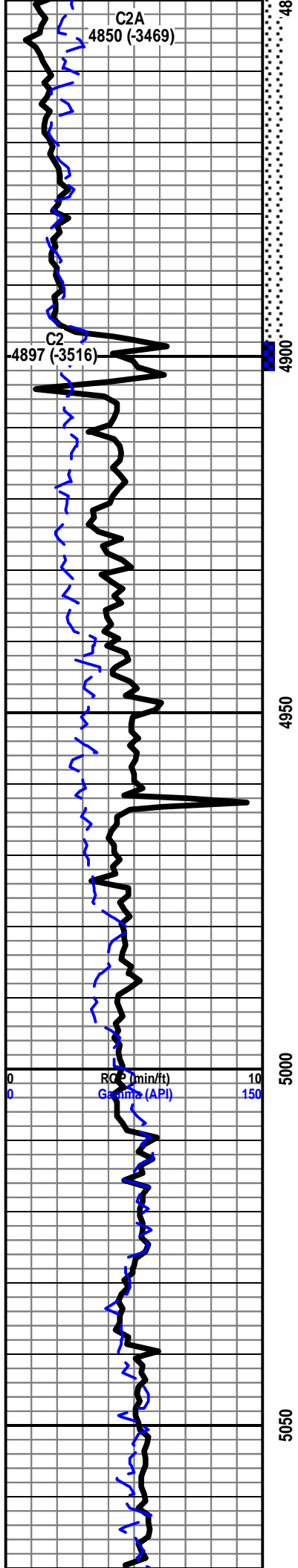
Change gas detector filament and re-calibrate after circulation

-CFS 4740-

vis. 55
 wt. 9.1
 lcm. 3#

vis. 52
 wt. 9.2
 lcm. 2#

DST 1 Miss
 4750-4902
 30-60-60-120
 GTS/40"
 360' GOCM
 110' GM
 IHP: 2409
 FHP: 2296
 ISIP: 1518
 FSIP: 1531
 FP:
 160-184/184-456
 BHT:122



ang, hrd, drk blk tar stain, filmy so, nsg, no odor

brt wt chrt, lttl blu hue, mottled wthrd, glauc. pinpoint por, sub ang, brn-drk brn stain, lttle odor, sfo, abundant gas bubs on brk, even dull flour

brt wt chrt, lttl blu hue, mottled wthrd, pinpoint por, sub ang, brn-drk brn stain, good odor, sfo, abundant gas bubs on brk, even dull flour, better show w/ depth

brt wt chrt, lttl blu hue, mottled wthrd, pinpoint por, sub ang, drk brn-blk stain, good odor, sfo, abundant gas bubs on brk, even dull flour

-Bad sample

tan-tan gry dol, fn-vfn xln, gritty, vfn snd content, glauc, sub ang, hrd, brt chrt, xln, shrp, ang, lt brn-drk brn stain along contact, ssfo, gas bubs on brk, no odor

tan-tan gry dol, fn-vfn xln, gritty, vfn snd content, glauc, sub ang, hrd, brt chrt, xln, shrp, ang, lt brn stain along contact, ssfo, gas bubs on brk, slight odor

tan-tan grn dol, fn xln, gritty, pyritic, sub ang, hrd, brt wt chrt, xln, shrp, ang

tan-tan grn dol, fn xln, gritty, pyritic, iron precipitates, sub ang, hrd, brt wt chrt, xln, shrp, ang

tan-tan grn dol, fn xln, gritty, pyritic, iron precipitates, sub ang, hrd, brt wt chrt, xln, shrp, ang

tan-tan gry dol, gritty, vfn snd content, chrt, glauc, pyritic, sub ang, hrd, brt wt chrt

gry-drk gry dol, fxln, vfn snd inclus, gritty, lttl silt content, pyritic, sub ang, hrd

gry-drk gry dol, fxln, vfn snd inclus, gritty, lttl silt content, pyritic, sub ang, hrd

gry-drk gry dol, fxln, gritty, silty, increase silt w/ depth, pyritic, sub ang, hrd

gry-drk gry dol, fxln, silty, vfn snd inclus, gritty, lttl silt content, pyritic, sub ang, hrd

drk gry dol, shly, lttl silt, vfn snd inclus, pyritic, glauc, gritty, sub ang, hrd waxy shl brk

drk gry dol, shly, lttl silt, pyritic, glauc, gritty, sub ang, hrd waxy shl brk, increase shl w/ depth

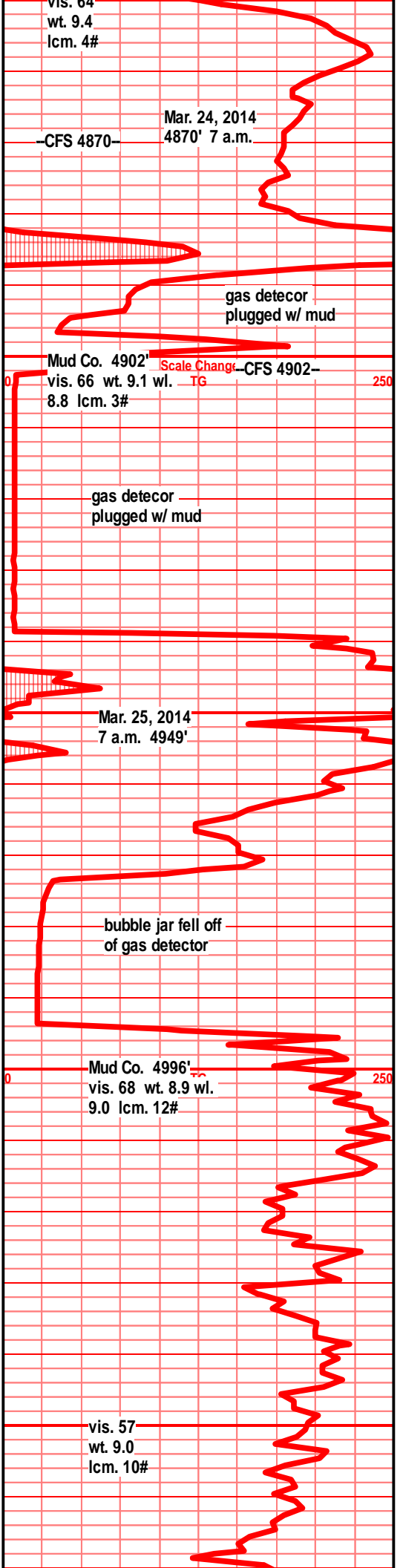
drk gry dol, shly, lttl silt, pyritic, glauc, gritty, trc wt chrt, sub ang, hrd waxy shl brk

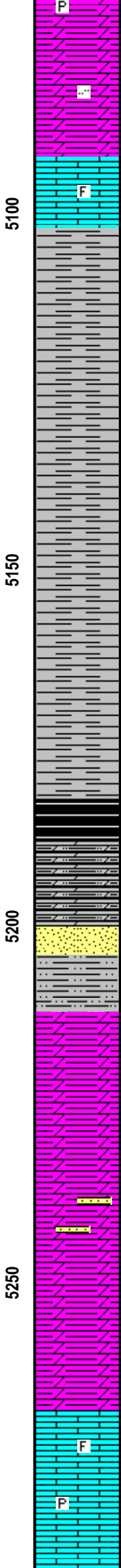
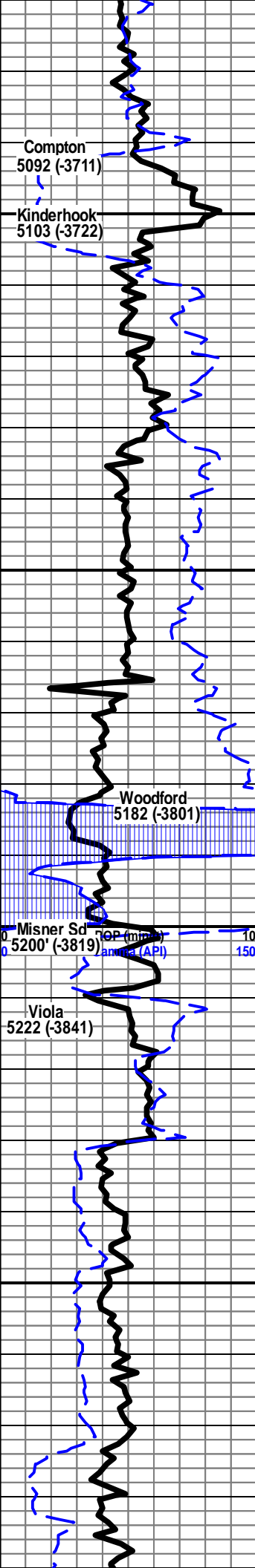
drk gry dol, shly, lttl silt, pyritic, glauc, gritty, trc wt chrt, drk clay clasts, sub ang, hrd waxy shl brk

drk gry dol, shly, lttl silt, pyritic, gritty, trc chrt, drk clay clasts, sub ang, hrd waxy shl brk

drk gry dol, shly, lttl silt, pyritic, gritty, trc chrt, drk clay clasts, sub ang, hrd waxy shl brk

drk gry dol, shly, lttl silt, pyritic, gritty, trc





chrt, drk clay clasts, sub ang, brittle

drk gry dol, shly, lttl silt, pyritic, gritty, trc
chrt, drk clay clasts, sub ang, brittle

drk gry dol, shly, slty, lttl pyritic, gritty, drk
clay clasts, sub ang, waxy brk

lt gry tan lst, vfxln, foss frags, calc fill, drk
clay content, sub ang, hrd

drk gry shl, gritty, vfn snd inclus, blk shl
clasts, tabular, hrd, brittle, occasional gas
bub on brk, nsfo, no odor

drk gry shl, gritty, vfn snd inclus, blk shl
clasts, tabular, hrd, brittle, occasional gas
bub on brk, nsfo, no odor

gry-drk gry shl, gritty, blk shl lams, tabular,
hrd, occasional gas bub on brk

drk gry shl, silty, calc inclus, brown hue, sub
ang, soft, occasional gas bub on brk

drk gry shl, silty, calc inclus, brown hue, sub
ang, brittle

gry-drk gry shl, gritty, blk shl lams, tabular,
hrd

gry- drk gry shl, silty, pyritic, blk shl lams,
brown hue, sub ang, brittle

blk shl, carb, silty, red hue, gas bubs on brk,
nso, no odor

gry-drk gry dol, silty, pyritic, few drk clay
clasts, sub ang, hrd waxy brk

clear sst, fn-med fn grn, sub-well rounded
grns, poor sorted, blk clay clasts, friable, ng,
nso

lt gry shl, silty, vfn snd inclus, waxy, pyritic,
sub ang

red brn shly dol, silty, pyritic, gritty txt, sub
ang, soft, gas bubs on brk

red brn shly dol, silty, pyritic, gritty txt, sub
ang, soft

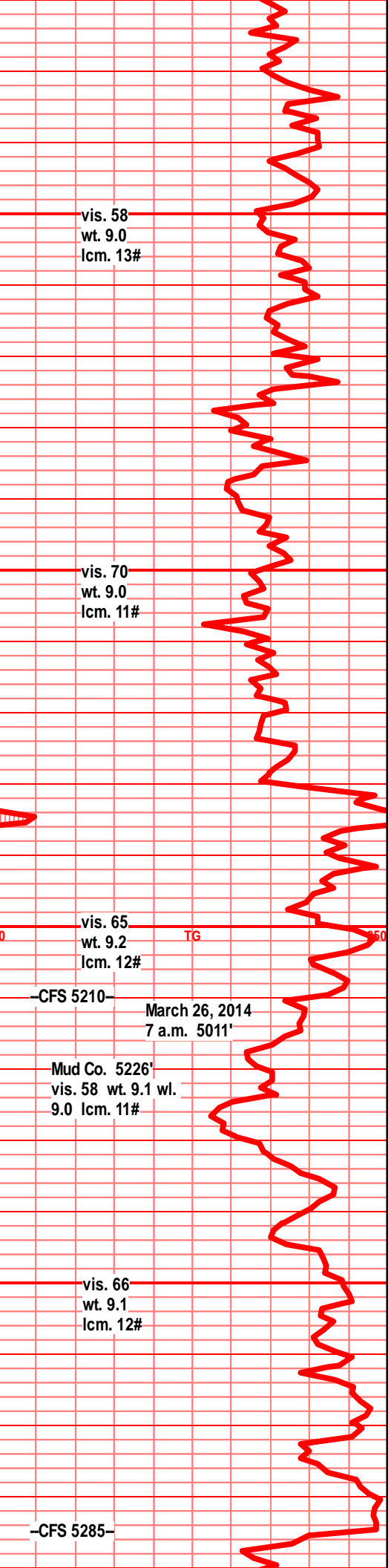
red brn dol, silty, pyritic, gritty, vfn sand
inclus, silt and shl increase w/ depth, sub
ang, soft, gas bubs on brk

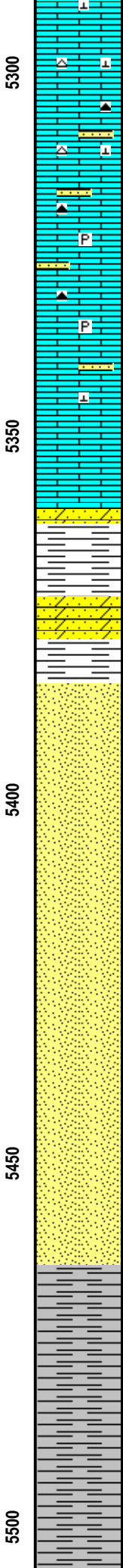
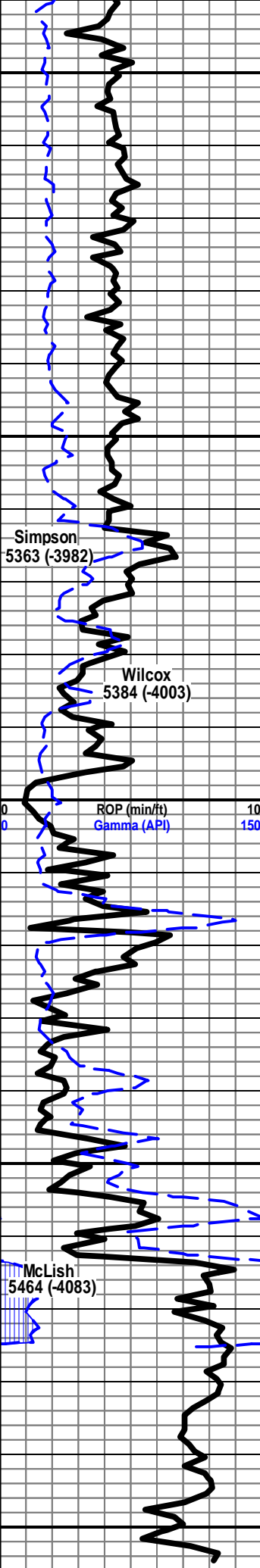
red brn dol, very shly/silty, lttl pyritic, sub
ang, gas bubs on brk, nso, no odor

red brn dol, very shly/silty, lttl pyritic, sub ang
gas bubs on brk, nso, no odor, soft, tan lst,
xln, lttl chrt on eds, wt mottled chrt, foss
frags, calc fill, chlky brk, pyritic, drk gry clay
clasts, sub ang

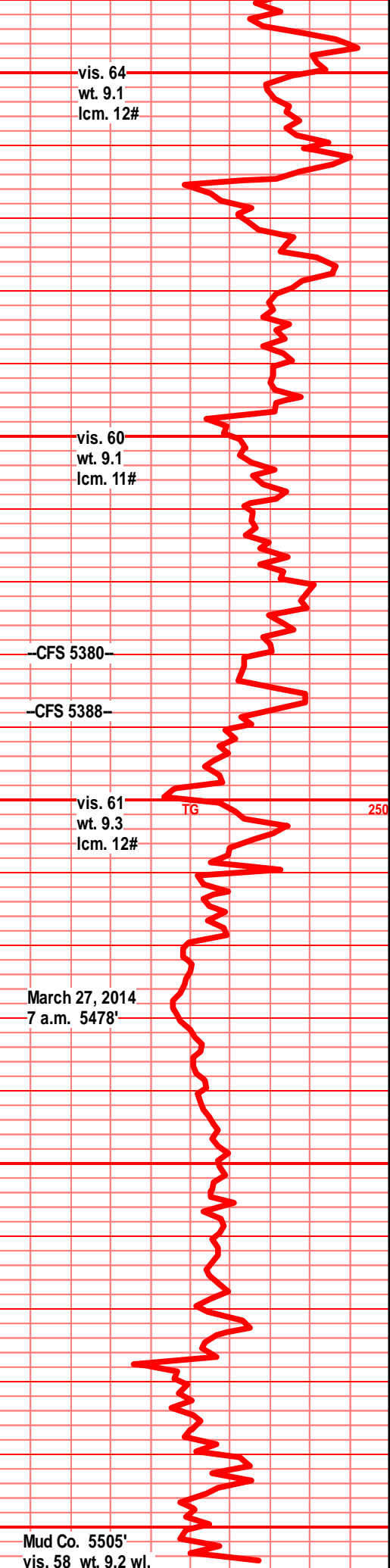
tan lst, vxln, vxln calc fill, wt chlky chrt eds,
foss frags, trc pyritic, trc clay clasts, sub ang,
hrd

tan lst, vxln, vxln calc fill, wt chlky chrt eds,





foss frags, trc pyritic, trc clay clasts, sub ang, hrd
tan lst, vxln, vxln calc fill, wt chlky chrt edges, foss frags, trc pyritic, trc clay clasts, sub ang, hrd
tan lst, xln, vfn snd inclus, gritty, lttl dolomitic, drk clay clasts, pyritic, sub ang, hrd, chlky brk, brn-drk brn chrt, translus, pyritic, drk clay clasts, shrp, ang, hrd
tan lst, xln, vfn snd inclus, gritty, lttl dolomitic, drk clay clasts, pyritic, sub ang, hrd, chlky brk, brn-drk brn chrt, translus, pyritic, drk clay clasts, shrp, ang, hrd
tan lst, f-mxln, dolomitic, vfn snd inclus, drk clay clasts, pyritic, chlky brk, sub ang, brittle, drk brn chrt, dirty, clay clasts, shrp, ang
tan lst, f-mxln, dolomitic, vfn snd inclus, drk clay clasts, pyritic, chlky brk, sub ang, brittle, drk brn chrt, xln calc inclus, dirty, clay clasts, shrp, ang
drk brn sndy dol, poor srtd, sub rnd grns, p-w cmntd, sub friable, clay clasts, pyritic, no show, teal-pale grn sndy shl, vfn snd grns, pyritic, waxy, soft
lt grn-brn sst, poor srtd, sub rnd grns, well cmntd, sub friable, sg, sfo, light brn so drps, drk brn oil smears, no odor
clear-cloudy wt sst, p-f srtd, sub rnd grns, dnse sub ang clusters, poor cmntd, friable, drk clay clasts, no show
clear-cloudy wt sst, p-f srtd, sub rnd grns, dnse sub ang clusters, poor cmntd, friable, drk clay clasts, no show
cloudy wt sst, poor srtd, sub rnd grns, fair cmntd, sub friable, dnse sub ang clusters, drk clay clasts, no show
cloudy wt sst, poor srtd, sub rnd grns, fair cmntd, sub friable, dnse sub ang clusters, drk clay clasts, no show
cloudy wt sst, poor srtd, sub rnd grns, well cmntd, dnse sub ang clusters, hrd, drk clay clasts, no show
wt-off wt sst, poor srtd, sub rnd grns, well cmntd, dnse sub ang clusters, hrd, drk clay clasts, no show
wt-off wt sst, poor srtd, sub rnd grns, well cmntd, dnse sub ang clusters, hrd, drk clay clasts, no show
wt-off wt sst, poor srtd, sub rnd grns, well cmntd, dnse sub ang clusters, hrd, drk clay clasts, no show, gry grn shl, silty, pyritic, tabular blks, hrd
gry grn shl, silty, pyritic, tabular blks, hrd
shl drk gry-gry grn, silty, fn snd inclus, pyritic, tabular, hrd, lttl waxy look
shl grn, pyritic, slick waxy txt, drk clay clasts, tabular blks, hrd, lt gry-lt gry grn shl, pyritic, waxy, vfn snd inclus, blk, hrd
shl grn, pyritic, slick waxy txt, drk clay clasts, tabular blks, hrd, lt gry-lt gry grn shl, pyritic, waxy, vfn snd inclus, blk, hrd



March 27, 2014
7 a.m. 5478'

TD 5505

