



OIL & GAS WELL ANALYSIS

1-800-310-1935

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

Well Name: **UTICA SAMPLE MUDLOG**

Location:

License Number:

Spud Date:

Surface Coordinates:

Region:

Drilling Completed:

Bottom Hole Coordinates:

Ground Elevation (ft):

Logged Interval (ft):

Formation:

Type of Drilling Fluid:

K.B. Elevation (ft):

To: Total Depth (ft):

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

OPERATOR

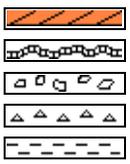
Company:

Address:

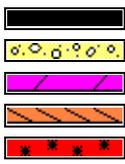
Comments

Mudloggers

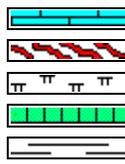
ROCK TYPES



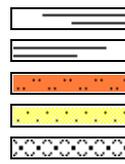
Anhy
Bent
Brec
Cht
Clyst



Coal
Congl
Dol
Gyp
Igne



Lmst
Meta
Mrlst
Salt
Shale

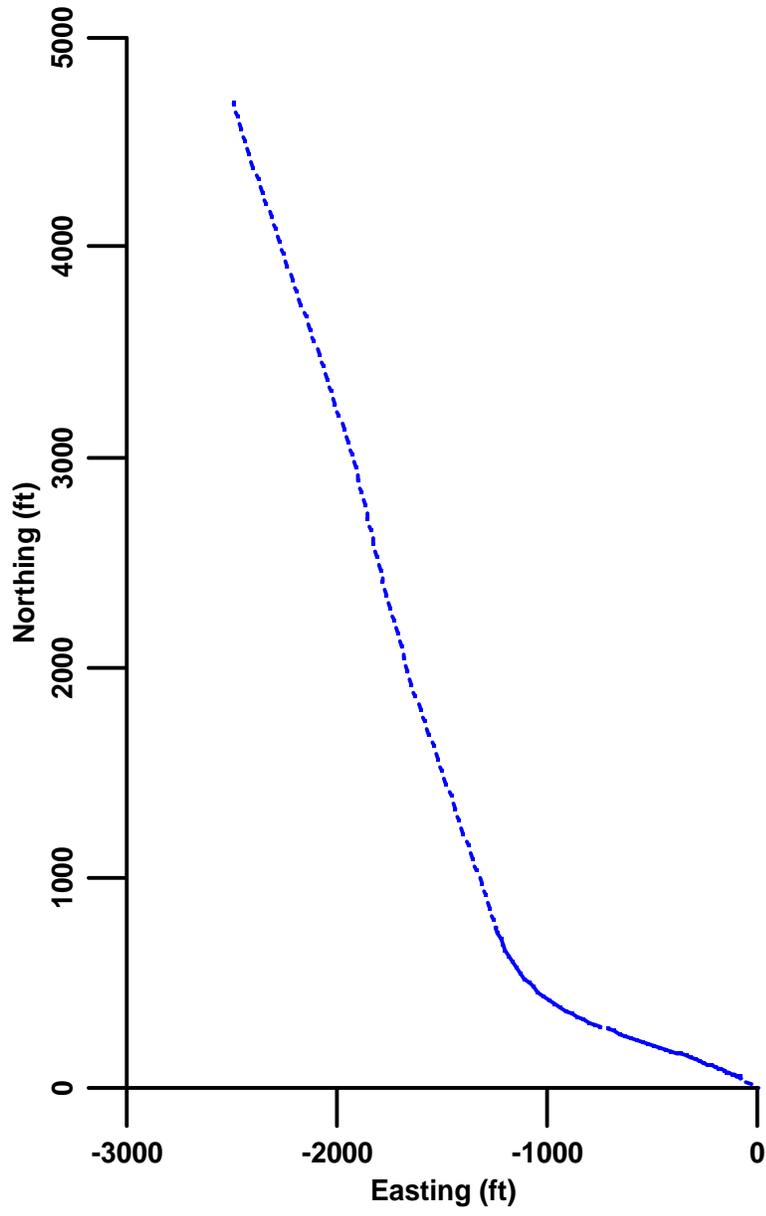


Shcol
Shgy
Sitst
Ss
Till



Shsly

Plan



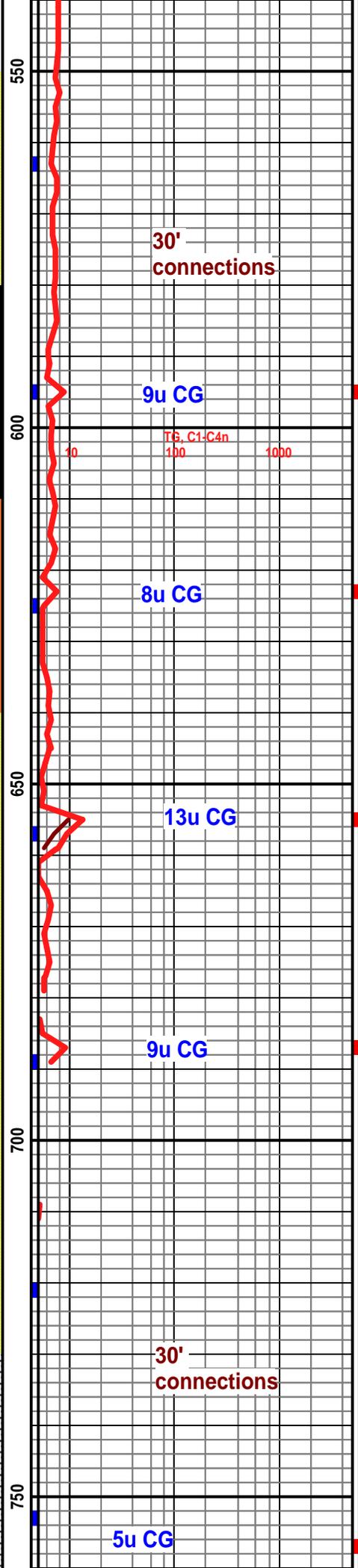
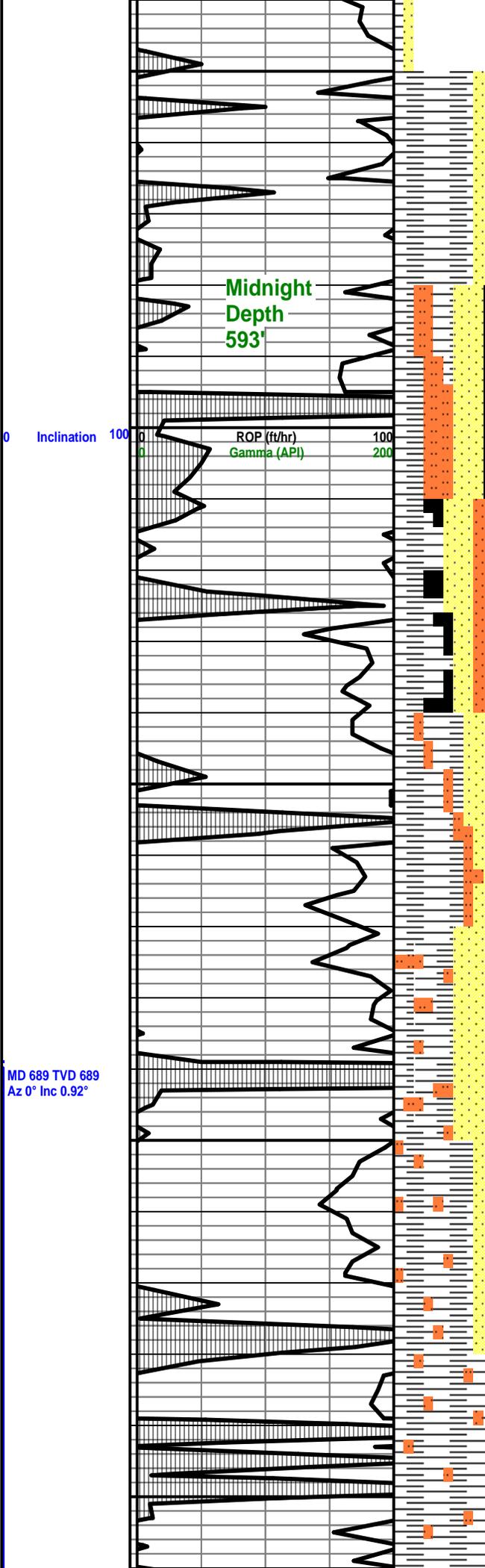
Soaping
WOB 25K
PSI 343
RPM 77

WOB 35
PSI 369
RPM 57

WOB 4-7
PSI 371
RPM 35

Soaping
WOB 3-7
PSI 377
RPM 68

WOB 3-7
PSI 338
RPM 62



SH,gy,mgym,frm,
blky,sl slty,ncalc
SS,ltgry,fg,sbang,
sbrnd,lsrtd -fwsrtd

SH:mdk-dkgy,mfrm,
blky,ncalcSS,off-wht-
wht,fg,wsrtd,COALTR
SLTS

SH,mgym-dkgy-dkgy,
mfrm,blky-vf plty,SS,
wht-clr,vffg,sbang,
pyrxls,SLTS,mdkgry-
brn,bcmg arg,musc
bio,pyrxlsTR,COAL

SH,dkgy-mdkgy, mstly
mfrm-vf frm,blky,
ncalc,SS,off wht-clr,
fg,occ slty,sbang-
sbrnd,abnt pyrxls,
vsl calc,TR SLTS

SH:mdkgy-dgy,mfrm,
blkyplty,ncalc,SS,wht-
tan,vfg,sbang,gsph,
vsl calcTR, SLTS

SH,mgym-dkgy-dkgy,
mfrm,blky-vf plty,SS,
wht-clr,vffg,sbang,
pyrxls,SLTS,stngr

SH,mgym-dkgy-dkgy,
mfrm- vf sft,blky-vf
plty,SS,wht-clr,vfg,
sbang,pyrxls,SLTS,

WOB 2-5
PSI 395
RPM 114

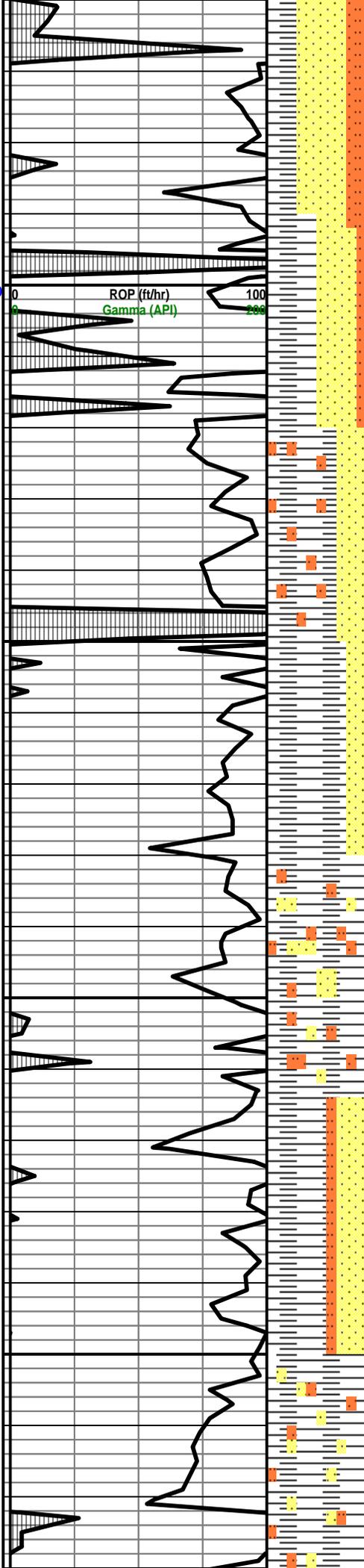
Soaping
WOB1-3
PSI 378
RPM 28

Soaping
WOB 0-1
PSI 395
RPM 31

Soaping
WOB 1-2
PSI 339
RPM 79

Inclination 100

ROP (ft/hr)
Gamma (API)



800
850
900
950

4u
9u CG
10u CG
30' connections
8u CG
9u CG
10u CG
8u CG

T6, C1-C4n
100 1000

SS,wht-off wht-clr, vfg-fg,sbang,gsph,sl slty,pyrxls,vsl calc SH,mgymdkgy-dkgy, mfrm-vf sft,blky-vf plty,SLTS,lt-mgy,mod mv cmt,occ aer,musc bio

SH,mgymdkgy-dkgy, mfrm,blky-vf plty,SS, wht-clr,vfg,sbang, pyrxls,SLTS,stngr

SH,mdkgy-dkgy, mfrm,blky,vsl-ncalc SS,wht-off wht-clr, fg,sbang-sbrnd,sl slty,sl calcTR,SLTS

SH,mdkgy-dkgy, mfrm,blky,vsl-ncalc SS,wht-off wht-clr, fg,sbang-sbrnd,sl slty,sl calcTR,SLTS

SH,dkgy-mdkgy, mfrm,blky,ncalc TR,SS,TR,SLTS

SS,wht-off wht,vfg -fg,sbang,gsph,sl slty,pyrxls,vsl calc SH,mdkgydkgy,mfrm - vf sft,blky-vf plty, SLTS,lt-mgy,mod mv cmt,occ aer,musc bio

SH,dkgy-mdkgy, mfrm,mstly blky, s/m plty, vsl-ncalc TR,SS,TR,SLTS

Soaping
WOB 0-1
PSI 365
RPM 36

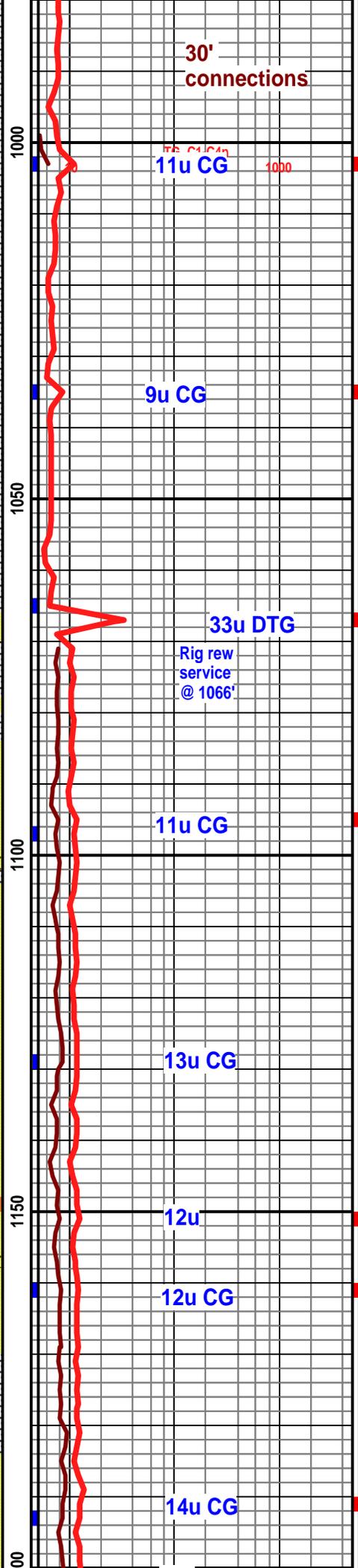
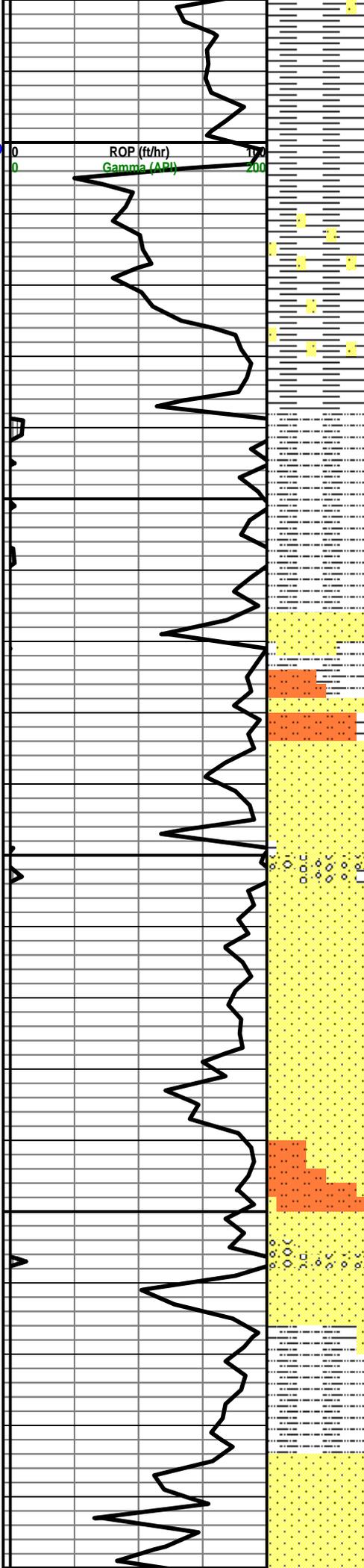
Inclination 100

ROP (ft/hr)
Gamma (API)

Soaping
WOB 3
PSI 376
RPM 33

Soaping
WOB 2-3
PSI 400
RPM 33

Soaping
WOB 2-3
PSI 400
RPM 45



SH,lt-mgy vf dkgy,
mfrm-grty,sl slty,vsl
ncalc

SH,mdkgy-dkgy,
mfrm,blky-plty,sl
slty,vsl calc,TR,SS

SLTSTS,vlt-mgy,mod
t-cmt,dsm sh,tr bio,
sl calc,

SH,dkgy-mgy,blky,
slty,grty,aren,tr bio,
drty,

SS,clr,vltgy,offwh,
frost,vfg-mg,sbang
sbrnd,gsph,psrt,
mod vt-cmt,mica,tr pyr,

SS,vlt-mgy,clr,frost,
vfg-mg,occ cg,tr cngl
sbrnd,gsph,psrt,mod
ls cmt,occ uncons,

SLTSTS,vlt-mgy,tn,lt
mbrn,mod vt cmt,
dsm sh,abnt bio,
occ v aren,

SS,clr,vltgy,vfg,sbang,
vt-cmt,occ slty,psrt,
bio,tr pyr,

Soaping
WOB 2-3
PSI 410
RPM 45

Inclination 100

ROP (ft/hr)
Gamma (API)

100
200

13u 1-C4n
100 1000

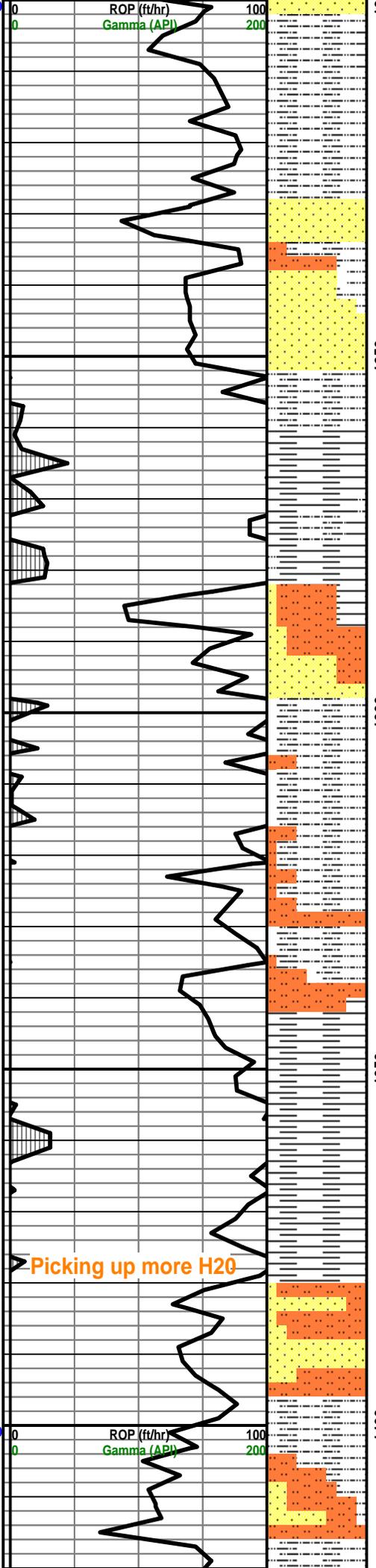
Soaping
WOB 2-3
PSI 420
RPM 40

Soaping
WOB 3
PSI 360
RPM 46

Soaping
WOB 3
PSI 380
RPM 46

MD 1375 TVD 1375
Az 0° Inc 0.85°

Picking up more H2O



20u DTG
13u Rig recal
settings

11u
11u CG

9u
10u CG

10u CG

9u CG

10u CG

41u SG

SLTSTS,vlt-mgy,occ
dkgy,blky,grty,occ
v arg,

SLTSTS,vlt-mgy,tn,lt
mbrn,mod vt cmt,
dsm sh,abnt bio,sl
aren,

SH,vlt-mgy,occ gybrn,
grty,plty,occ blky,abnt
foss,cri,brac,bcmg aren
sity,

SH,vlt-mgy,occ gybrn,
grty,plty,occ blky,slty,
tr foss,

Slst,vlt-mgy,occ dkr,
blky,occ aren,dsm
sh,tr bio,sl calc,

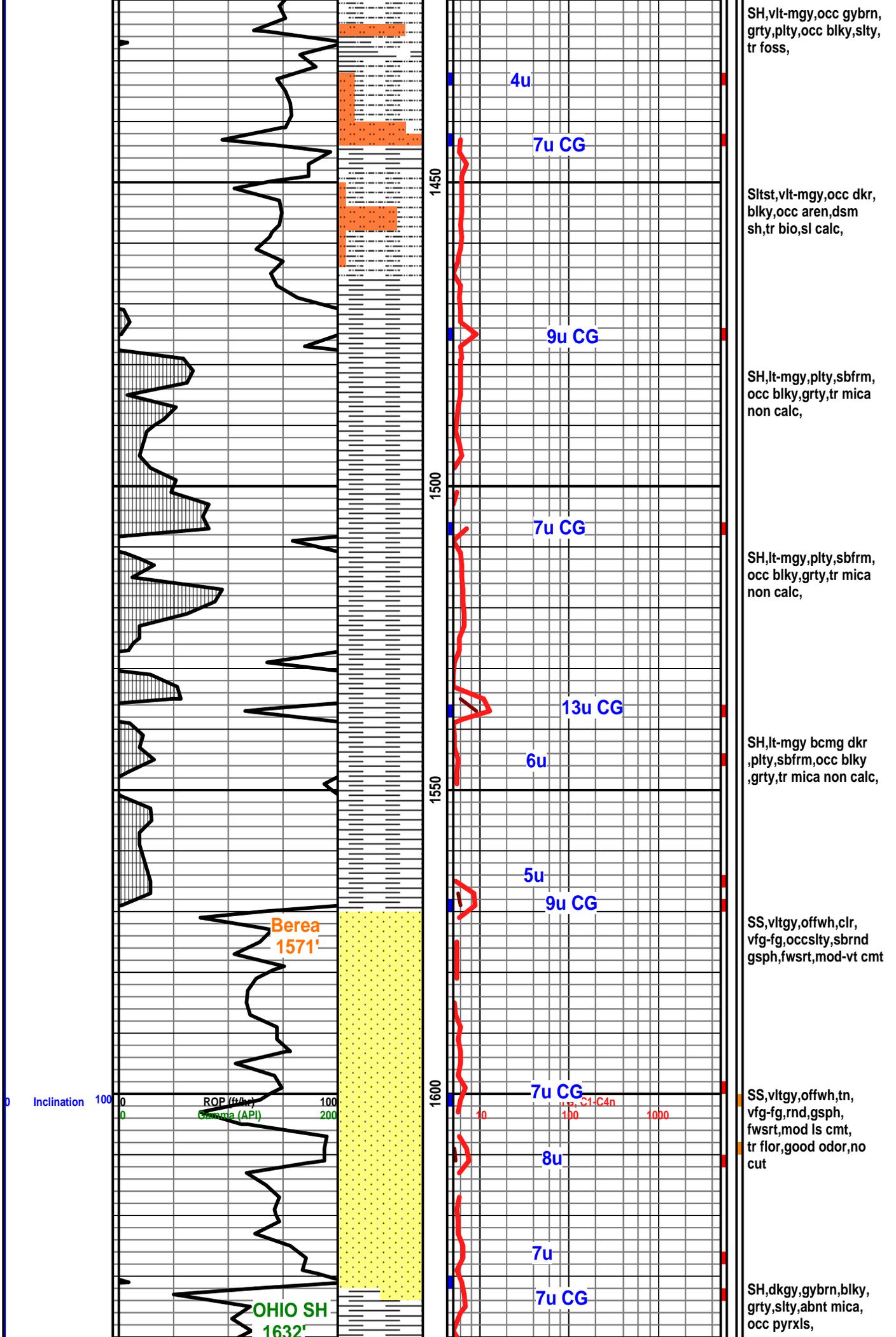
SH,vlt-mgy,occ gybrn,
grty,plty,occ blky,slty,
tr foss,

SLTSTS,vlt-mgy,occ
vltbrn,tr vfg ss,wrnd,
gsph,occ vtcmt,tr bio

SOAPING
WOB 2
PSI 370
RPM 45

Soaping
WOB 4-5
RPM 33
PSI 403

Soaping
WOB 4-5
PSI 394
RPM 45



SH, vlt-mgy, occ gybrn,
grty, plty, occ blk, slty,
tr foss,

4u

7u CG

1450

Slst, vlt-mgy, occ dkr,
blk, occ aren, dsm
sh, tr bio, sl calc,

9u CG

1500

SH, lt-mgy, plty, sbfrm,
occ blk, grty, tr mica
non calc,

7u CG

SH, lt-mgy, plty, sbfrm,
occ blk, grty, tr mica
non calc,

13u CG

1550

SH, lt-mgy, bcmg dkr
, plty, sbfrm, occ blk
, grty, tr mica non calc,

6u

5u

9u CG

Berea
1571'

SS, vltgy, offwh, clr,
vfg-fg, occ slty, sbrnd
gsph, fwsrt, mod-vt cmt

Inclination 100

ROP (ft/hr)
Gamma (API)

1600

7u CG

SS, vltgy, offwh, tn,
vfg-fg, rnd, gsph,
fwsrt, mod ls cmt,
tr fl, good odor, no
cut

8u

7u

7u CG

OHIO SH
1632'

SH, dkgy, gybrn, blk,
grty, slty, abnt mica,
occ pyxls,

Soaping
WOB 3-5
PSI 387
RPM 37

Soaping
WOB 3-6
PSI 426
RPM 34

Soaping
WOB 2-9
PSI 397
RPM 36

Dusting

Inclination 100

ROP (ft/hr)
Gamma (API)

Midnight
Depths
1835'

Scale Change
ROP (ft/hr)
Gamma (API)

Casing point
@ 1835' TVD

Resume Drilg
@ 6:32am

1650
1700
1750
1800
1850

7u
6u CG

6u CG

6u

7 CG

13u

6u CG

6u CG

7u

6u CG

BloodHound Gas detector &
Chromatograph on line
@1835'

SH,mdkgymgry,blky,
vgtry,mstilly slty,occ
pyrxls,ncalc

SH,mggy-dkmggy,blky,
sl grty,vsl silty,vsl-ncalc

SH,dkgy,gybrn,blky,
grty,slty,abnt mica,
occ pyrxls,ncalc

SH,gy-mggy-mdkgy,
mfrm-frm,blky,slty,
occ pyrxls,vsl-ncalc

SH,mggy-dkmggy,blky,
sl grty,vsl silty, vsl-ncalc

Sh,mdkgy-dkgy,blky,
mfrm,sl slty,ncalc

SH,mggy-dkmggy,blky,
sl grty,vsl silty, vsl-ncalc

TG, C1-C4n
100 1000

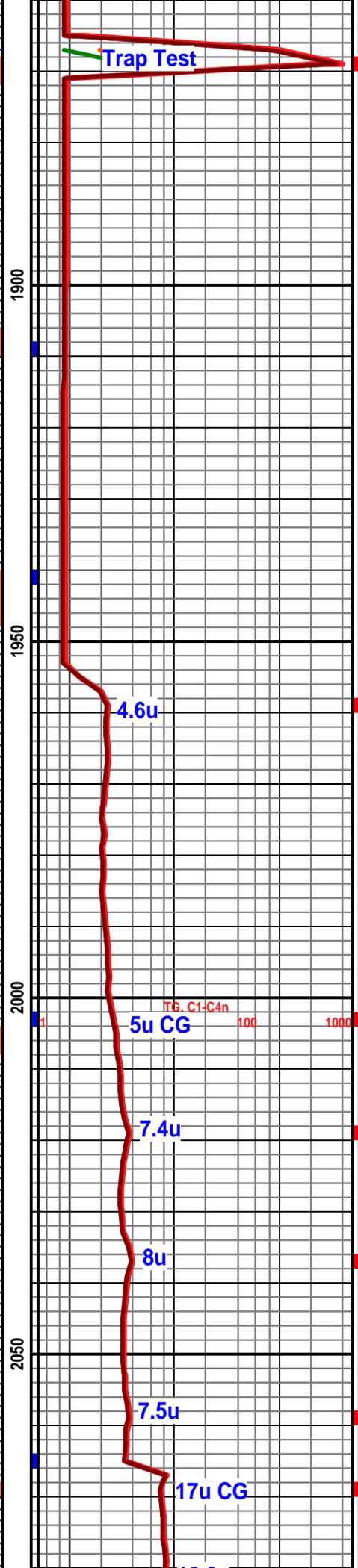
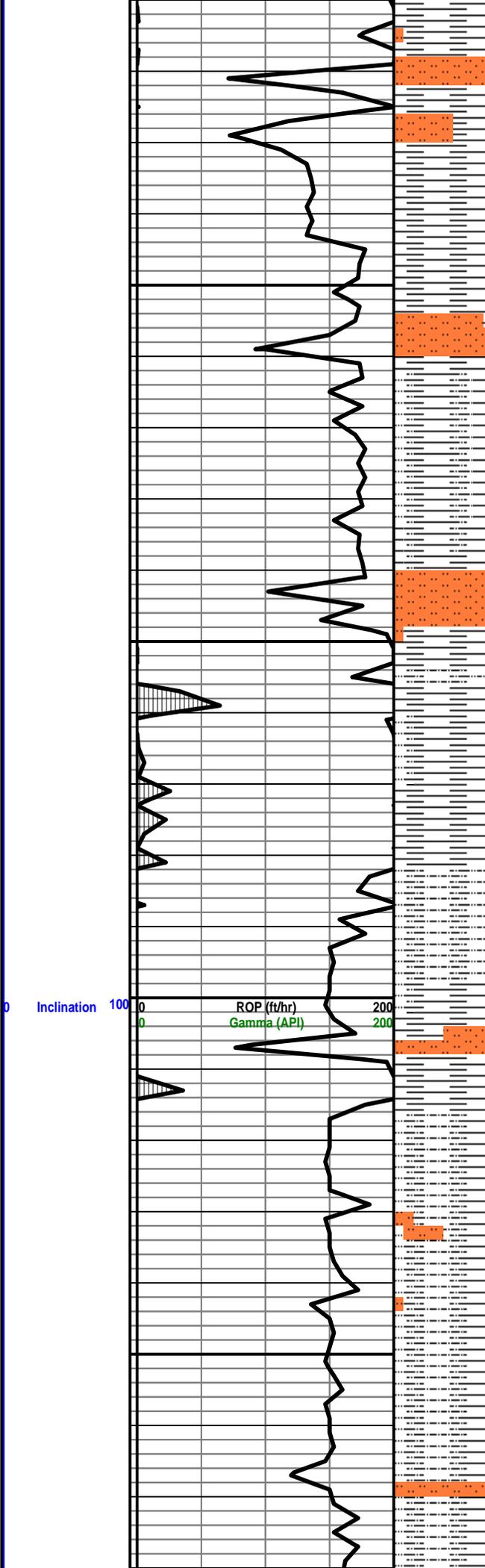
Scale Change

1000

Dusting
WOB 2
Rpm 45
PSI 358

Dusting
WOB 2
Rpm 45
PSI 358

Dusting
WOB 2
Rpm 45
PSI 358



SH,mgly,dkmgy,mfrm-sft-blky,vsl-ncalc

SH,mgly,dkmgy,mfrm-sft-blky,vsl-ncalc

SH,vlt-mgy,blky,grty occ slty,frm,non calc,

SLTST,vlt-mgy,tn,vlt brn,vt cmt,

SH,vltmgy,tn,vltbrn occ plty,sb-frm,occ blky,v-frm,grty,sl calc,

SH,lt-mgy,occ dkr, plty,sbfrm,occ blky, grty,non calc,

SH,lt-mgy,occ dkr, plty,sbfrm,occ blky, grty,non calc,

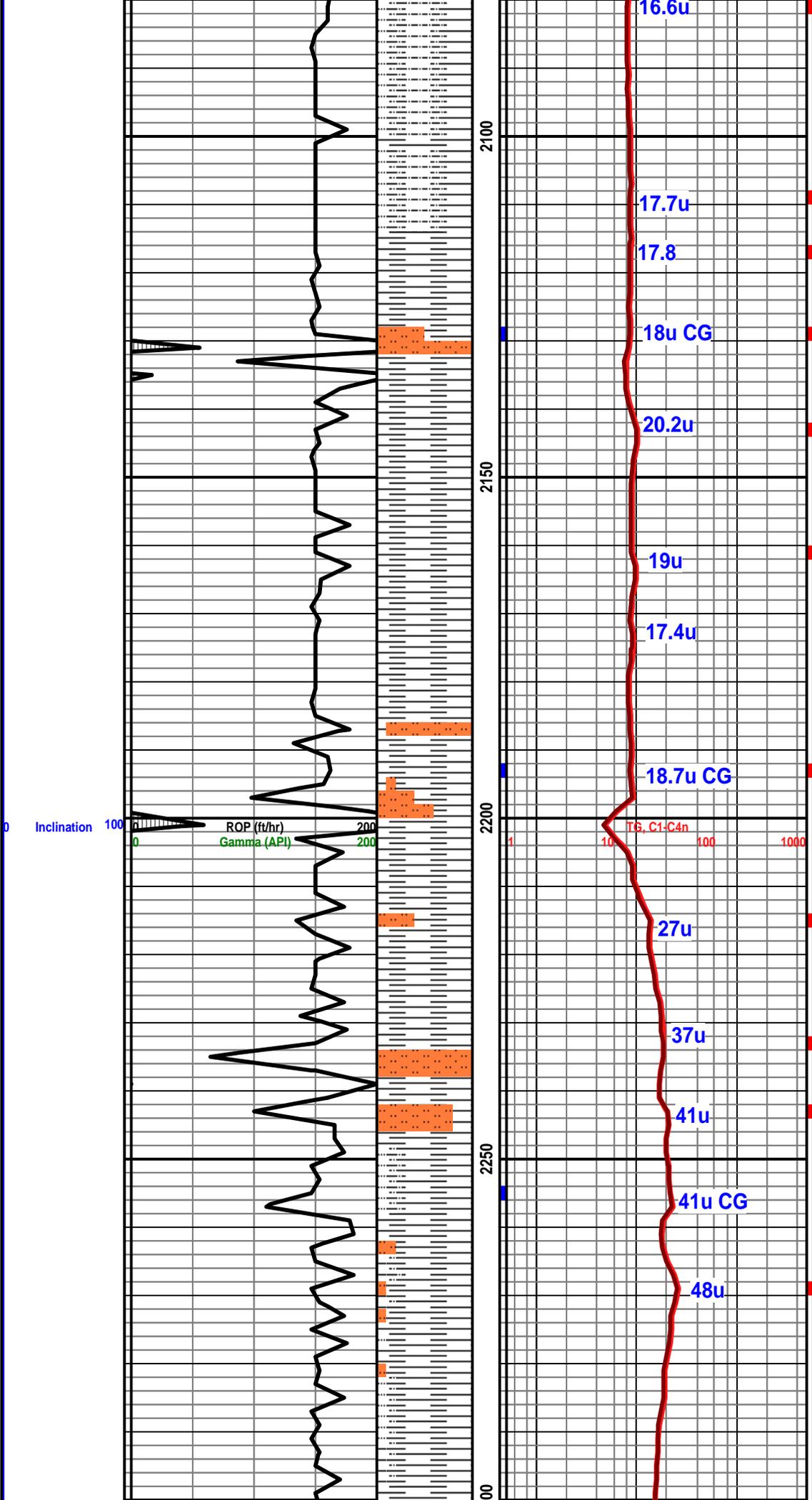
SH,A.A.

SLTST,vltgy,occ vltbrn blky,mod vt cmt,non calc,tr mica

WOB 1.5
PSI 315
RPM 45

Dusting
WOB 2-4
Rpm 45
PSI 358

Dusting
WOB 2-4
Rpm 45
PSI 358



SH,lt-mgy,occ dkr,
pity,sbfrm,occ blk,
grty,non calc,

SH,lt-mgy,occ dkr,
pity,sbfrm,occ blk,
grty,non calc,

SH,lt-mgy,occ dkr,
pity,sbfrm,occ blk,
grty,non calc,

SLTST,vltgy,occ vltbrn
blk,mod vt cmt,non
calc,tr mica

SLTST,vltgy,occ vltbrn
blk,mod vt cmt,non
calc,

SLTST,vltgy,tn,mod
vt cmt,tr mica,

SH,lt-mgy,occ dkr,
pity,sbfrm,occ blk,
grty,non calc,

16.6u

17.7u

17.8

18u CG

20.2u

19u

17.4u

18.7u CG

27u

37u

41u

41u CG

48u

2100

2150

2200

2250

2300

Dusting
WOB 2-4
Rpm 45
PSI 358

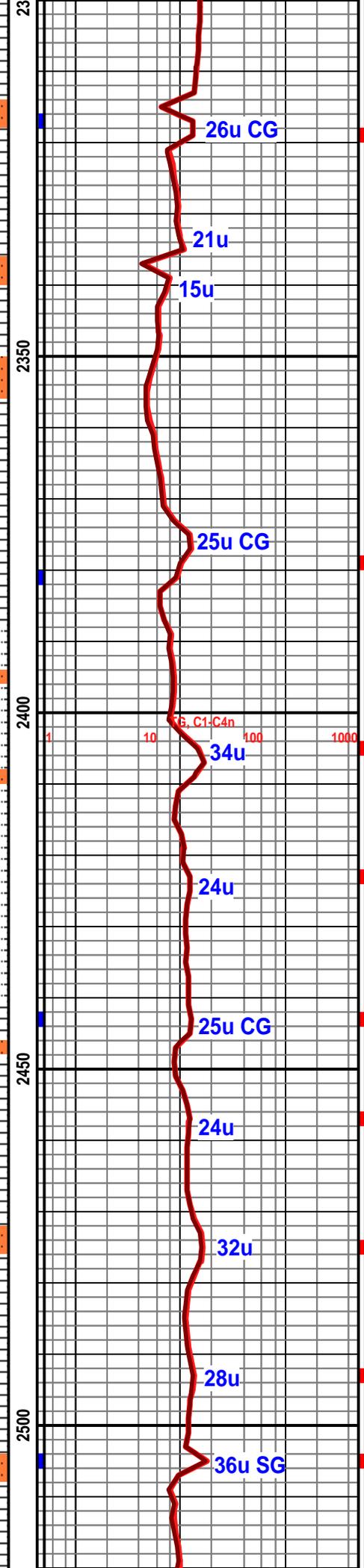
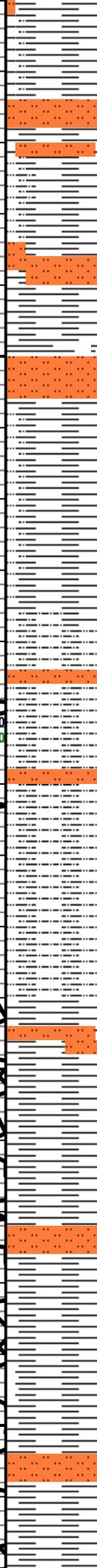
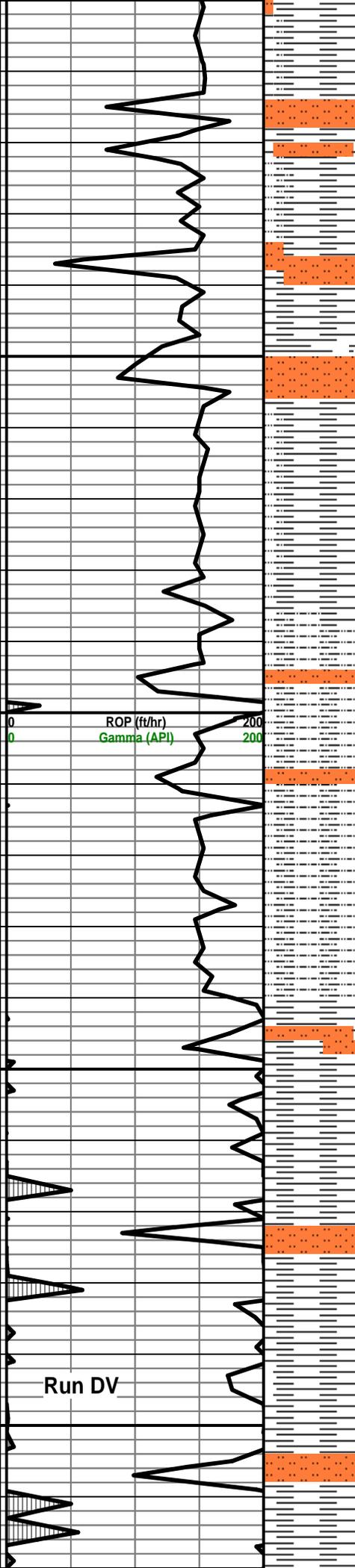
Dusting
WOB 2
RPM 45
PSI 360

Dusting
WOB 1-2
RPM 45
PSI 385

MD 2500 TVD 2500
Az 0° Inc 0.87°

Inclination 100

ROP (ft/hr)
Gamma (API)



SLTST,vltgy,occ vltbrn
blky,mod vt cmt,non
calc,

SLTST,vltgy,occ vltbrn
blky,mod vt cmt,non
calc,

SH,lt-mgy,occ dkr,
plty,sbfrm,occ blky,
grty,non calc,

SLTSTS,vltbrn,tn,vlt
gy,mod vt cmt,tr
mica,

SLTSTS,vltbrn,tn,vlt
gy,mod vt cmt,tr
mica,dsm sh,drty

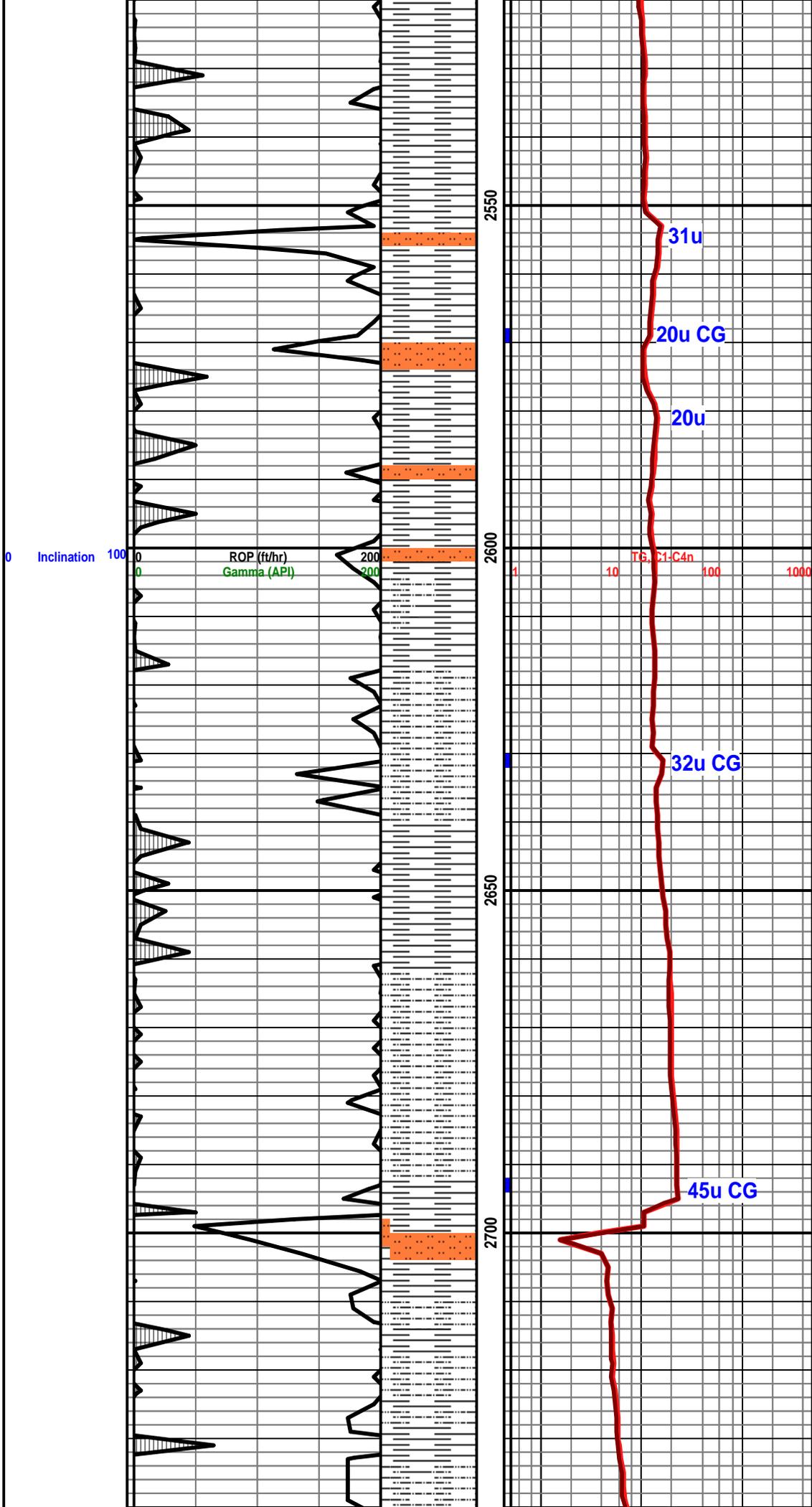
SH,vltmbrn,vltgy,plty
sbfrm,occ blky,grty,
occ smth imp,non
calc,

SLTSTS,vltbrn,tn,vlt
gy,mod vt cmt,tr
mica,dsm sh,drty

Dusting
WOB 1-2
RPM 45
PSI 385

Dusting
WOB 1-2
RPM 45
PSI 385

Dusting
WOB 1-2
RPM 45
PSI 385



SH, vltmbrn, vltgy, plty
sbfrm, occ blk, grty,
occ smth imp, non
calc,

SLTSTS, vltbrn, tn, vlt
gy, mod vt cmt, tr
mica, dsm sh, drty

SLTSTS, vltbrn, tn, vlt
gy, mod vt cmt, tr
mica, dsm sh, drty

SH, vltmbrn, vltgy, plty
sbfrm, occ blk, grty,
occ smth imp

SH, vltmbrn, vltgy, plty
sbfrm, occ blk, grty,
occ smth imp

SLTSTS, vltbrn, tn, vlt
gy, mod vt cmt, tr
mica, dsm sh

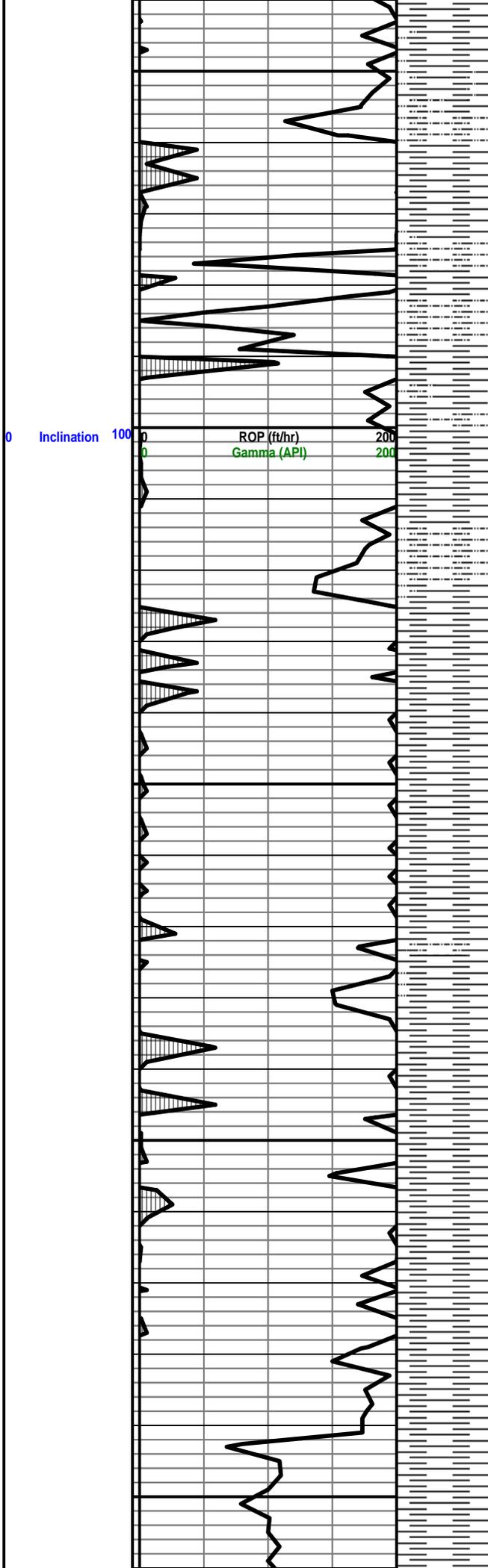
SH, vlt-mgy, bcmg dkr
occ slty, occ blk, sft
non calc,

SH, m-dkgy, mbrm,
occ plty, sbfrm, occ
sft, non calc,

Dusting
WOB 1-2
RPM 45
PSI 385

Dusting
WOB 1-2
RPM 45
PSI 400

Dusting
WOB 1-2
RPM 45
PSI 400



2750
2800
2850
2900
2950

Inclination

ROP (ft/hr)
Gamma (API)

18u CG

21u

25u

29u

32u

23u CG

49u

17u

18u CG

22u

C1 42000 ppm
C2 19000 ppm
C3 24000 ppm
C4 22900 ppm
C5 33000 ppm

SH,m-dkbrn,vlt-dkgy
plty,frm,occ grty,v-
frm-hd,non calc,tr
pyrxls,

SH,m-dkgy,dkbrn,occ
ltgy,plty,sbfrm,occ
occ blk,grty,non
calc,tr scatt pyrxls,

SH,m-dkgy,dkbrn,occ
ltgy,plty,sbfrm,occ
occ blk,grty,non
calc,tr scatt pyrxls,

SH,dkbrn,dkgy,plty,
sbfrm-sft,occ grty,
non calc,

SH,m-dkgy,dkbrn,occ
ltgy,plty,sbfrm,occ
occ blk,grty,non
calc,tr scatt pyrxls,

SH,m-dkgy,dkbrn,occ
ltgy,plty,sbfrm,occ
occ blk,grty

SH,lt-mbrn,plty,sbfrm
occ blk,sft,abnt flor
v-fnt cut,

TG, C1-C4n
1 10 100 1000

Dusting
WOB 1-2
RPM 45
PSI 400

Dusting
WOB 2.5
RPM 48
PSI 421

Dusting
WOB 2.2
RPM 26
PSI 376

Dusting
WOB 2.6

Inclination 0 100

ROP (f/hr)
Gamma (API)

Running
Gyro from
3069' con.

3000
3050
3100
3150

34u

48u

55u CG

24u

43u

86u CG

28u

22 u
CG

76 u

SH,m-dkbrn,plty,
sbfrm,occ blk,gr-
ty, non calc,

SH,m-dkbrn,plty,
sbfrm,occ blk,gr-
ty, non calc,

SH,m-dkbrn,plty,
sbfrm,occ blk,gr-
ty, non calc,

SH,m-dkbrn,plty,
sbfrm,occ blk,gr-
ty,frm,

SH,m-dkbrn,plty,
sbfrm,occ blk,
grty, ncalc,

SH,dkgy-m-dkbrn,
slmd-mfrm-mstly plty-vf
blk,

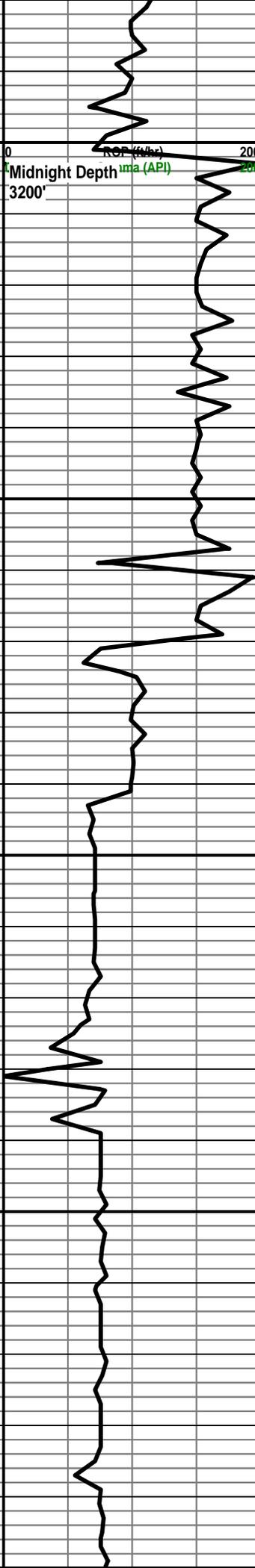
SH,m-dkbrn,plty,
sbfrm,occ blk,gr-
ty,frm,

SH,m-dkbrn,plty,
sbfrm,occ blk,gr-
ty,frm,

T6, C1-C2
C2 15200 ppm

RPM 27
PSI 398

Inclination 0 100

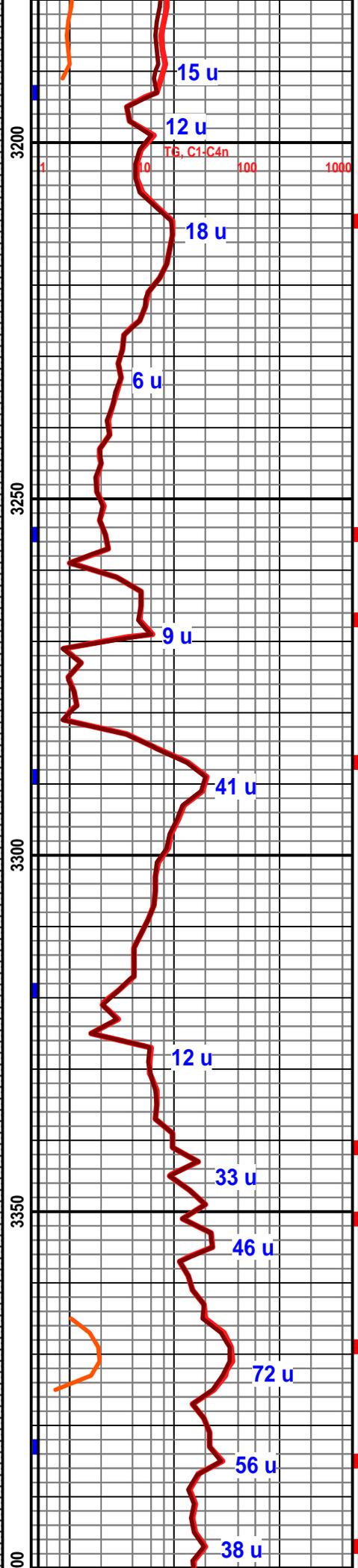


Dusting
WOB 2.5
RPM 206
PSI 407

Dusting
WOB 1.2
RPM 31
PSI 281

Dusting
WOB 2.1
RPM 31

Dusting
WOB 0.8
RPM 32



SH,m-dkbrn,plty,
sbfrm,occ blk,gr-
ty,frm,

PSI 298

Inclination 100

0

ROP (ft/hr)

200

Gamma (API)

200

Wait on AIR
6:20am

Dusting
WOB 0.8
RPM 37
PSI 298

Dusting
WOB 0.8
RPM 38
PSI 408

Midnight Depth
3544'

ONONDAGA
3571'

Inclination 100

0

ROP (ft/hr)

200

Gamma (API)

200

1

TG, C1-C4n

100

1000

40 u

54u

40u

22u CG

50u

53u

43u CG

replaced poly-flo line

20u

26u

42u CG

43u

22u

SH,m-dkbrn,plty,
sbfrm,occ blk,gr-
ty,frm,ncalc

SH,mgy-dkmgy,blk,
mfrm vf frm, ncalc

SH,dkmgy,dkmgy,
vblk,mfrm-slfrm,
occ grty cut,ncalc

SH,dkmgy -dkbrn,
blk,fnr cut,mfrm,
sl grty,vsl calc,TR LS

SH,brn-dkbrn-mdkgy,
mfrm,blk,sl smth txt,sl
-mod calc,vry sml

SH,mstly dkbrn,sm brn-tr
of mgy,mfrm
blk,good cut,sl calc
sl-calc,TR LS

SH,dkgry-mfrm,blk
blk-plty,sl grty,sl-mod
calc,LS,off wht-tan-clr,

LS,lt-mbrn,tn,offwh,
cprxln-mcxln,cln,hd
dns,TR, SH

3450

3500

3550

3600

Soaping
WOB 0.9
RPM 38
PSI 432

Dusting
WOB 0.7
RPM 38
PSI 447

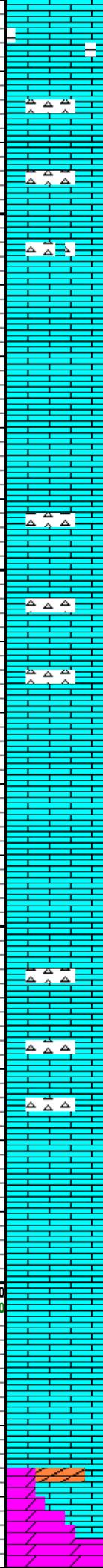
Soaping

Soaping
WOB 0.8
RPM 100
PSI 455

Inclination

ROP (ft/hr)
Gamma (API)

Put Soap
on Hole
3760'



3650
3700
3750
3800

115 CG
32u
43u
39u CG
44u
41u CG
35u CG
ODOR

LS,lt-mbrn,tn,offwh,
cprxlIn-mcxln,cln,hd
dns,tr chert

LS,lt-mbrn,tn,ltgy,
cprxlIn-mcxln,cln,
hd,dns,mlky,transluc,
vltbrn

LS,lt-mbrn,tn,offwh,
cprxlIn-mcxln,cln,hd
dns,TR cht

LS,ltbrn-drty-wht,tn
mcxln,fnrcut,sl drty,
hd,dns

LS,lt-mbrn,tn,ltgy,
cprxlIn-mcxln,cln,
hd,dns,TR Cht

LS,lt-brn-offwht-tan-
vf clr,mcxln,mod drty,
frm-hd,dns

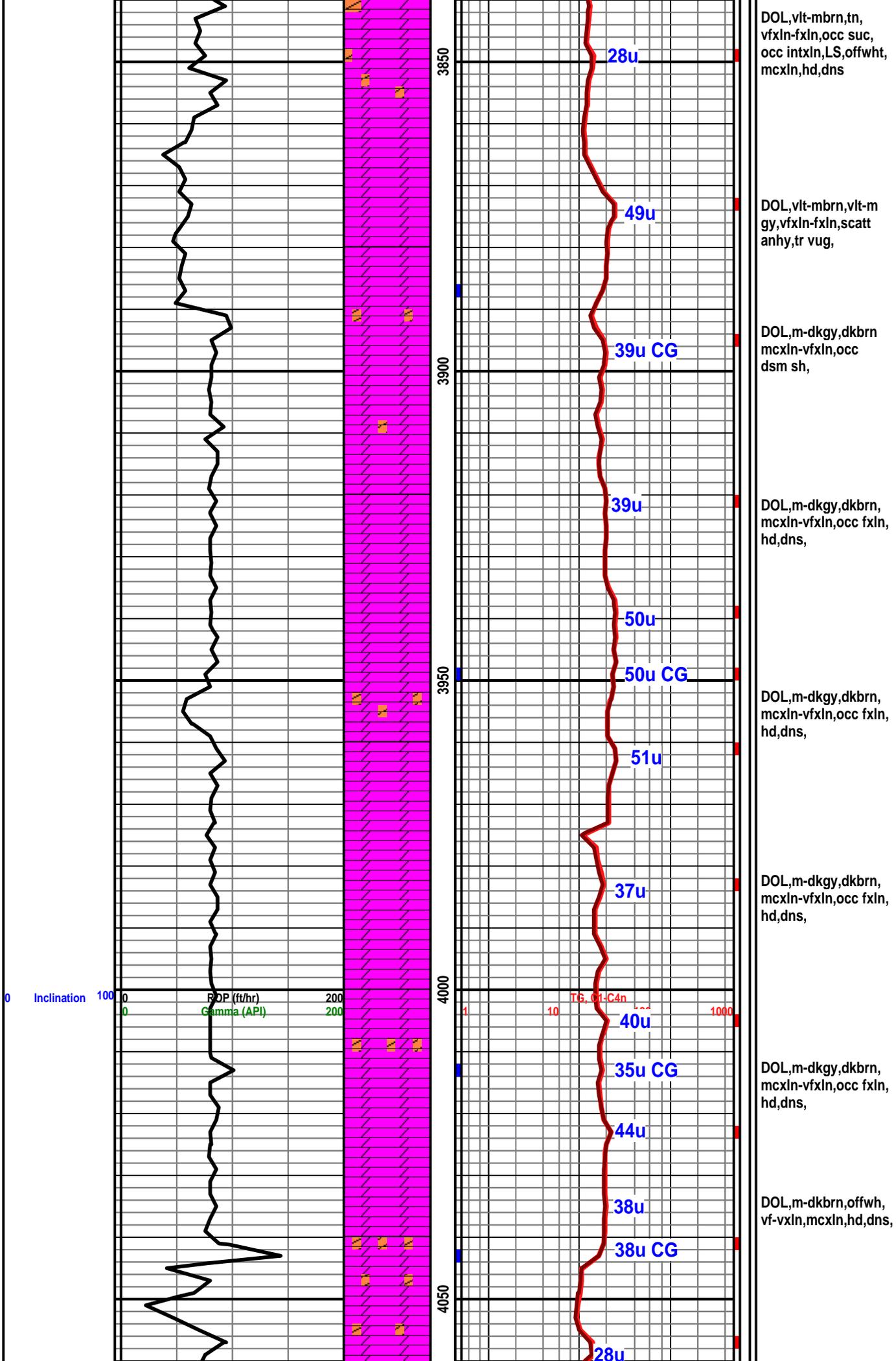
LS,ltbrn-drty-wht,tn
mcxln,fnrcut,sl drty,
hd,dnsDOL,vlt-mbrn,
tn,vfxln-fxln, occ suc,

TSS C1-C4n

Soaping
WOB 0.9
RPM 101
PSI 465

Soaping
WOB 1-2
PSI 465
RPM 37

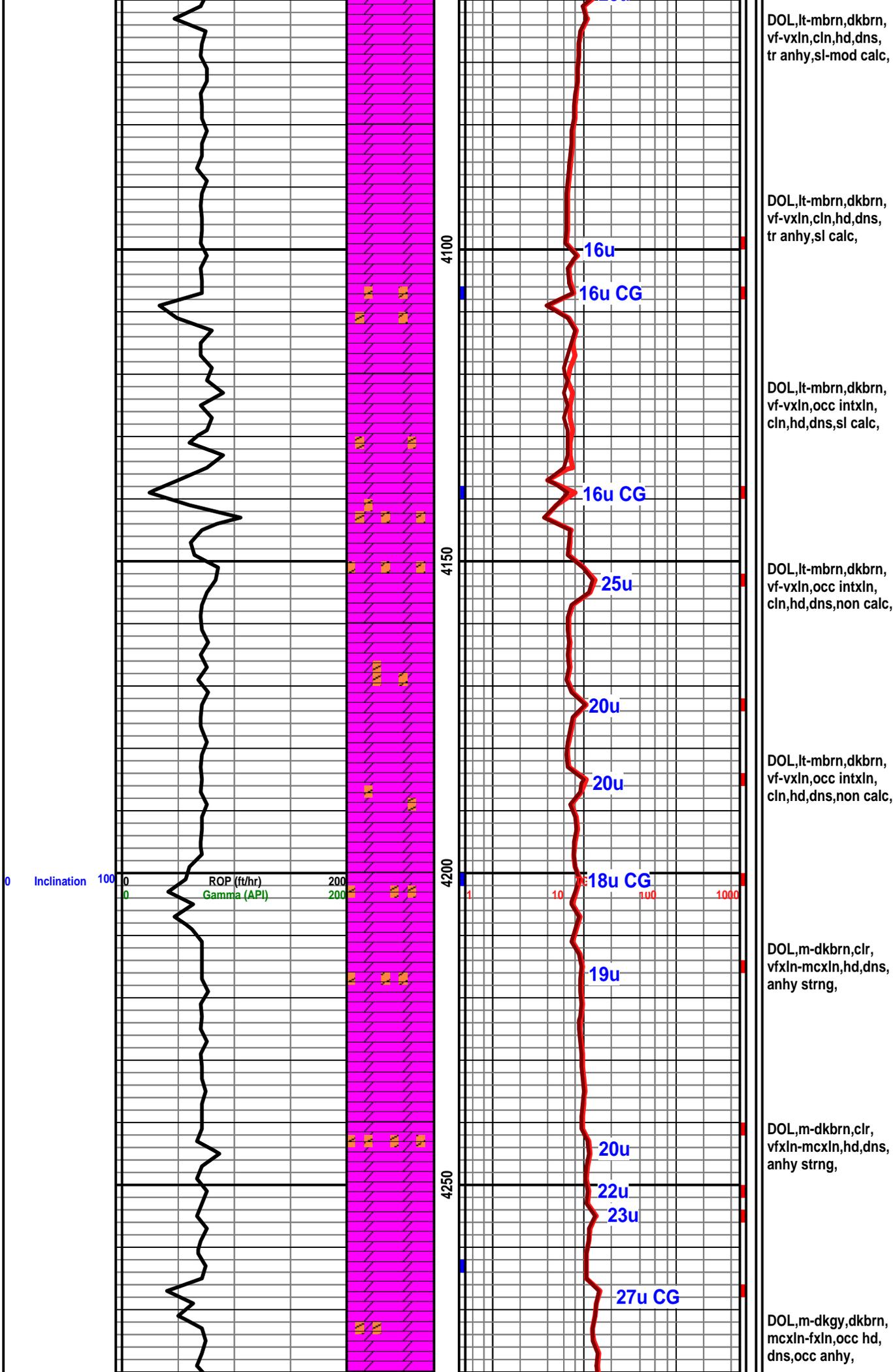
Soaping
WOB 1-2
PSI 465
RPM 37



Soaping
WOB 1-2
PSI 460
RPM 48

Soaping
WOB 1-2
PSI 465
RPM 45

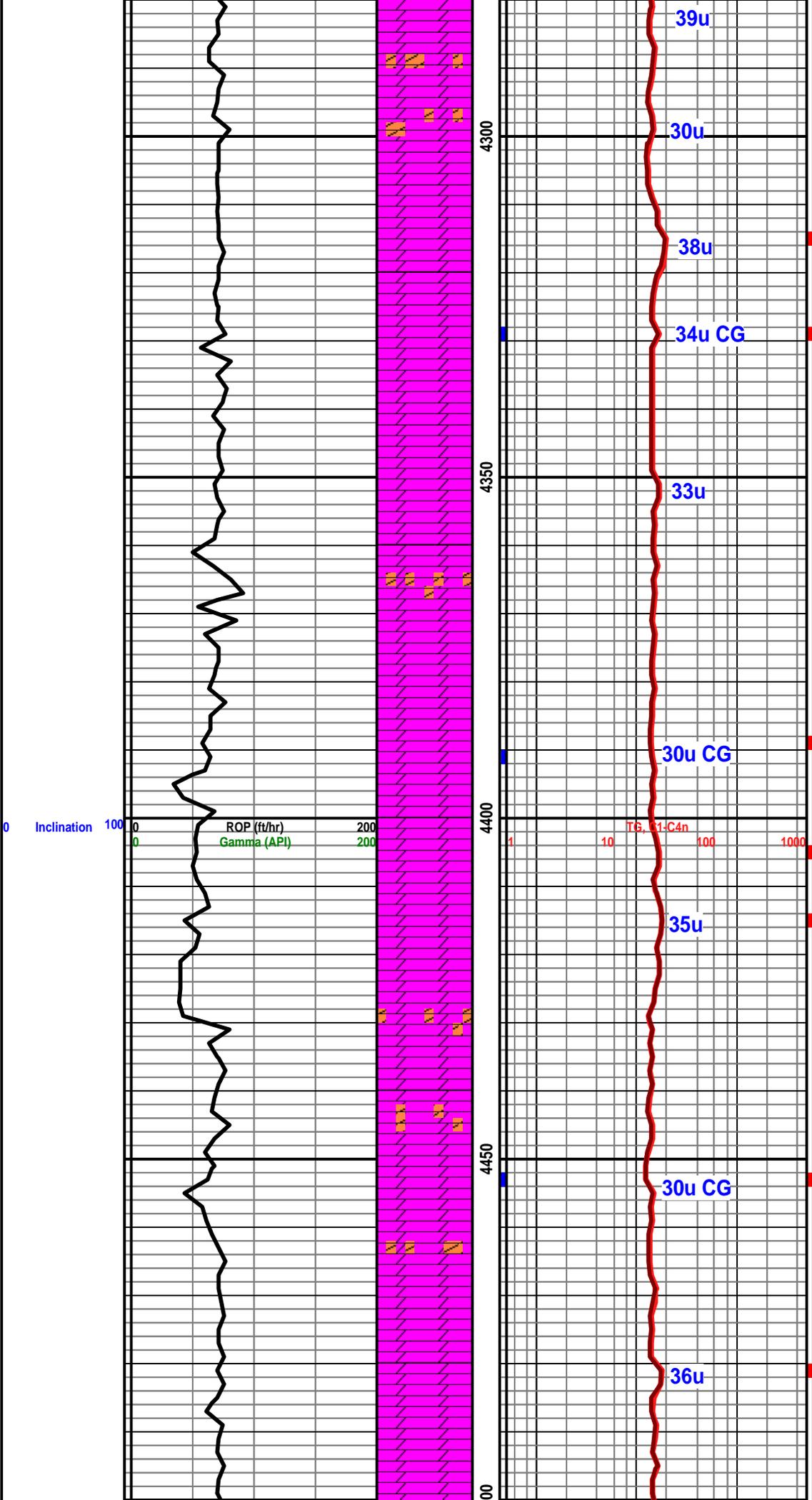
Soaping
WOB 1-2
PSI 450
RPM 53



Soaping
WOB 1
PSI 432
RPM 55

SOAPING
WOB 1.3
PSI 427
RPM 67

Soaping
WOB 1
PSI 432
RPM 60



DOLm-dkbrg,tn,off
wh,mcxln-vfxln,
hd,dns,

DOL,m-dkbrg,tn,off
wh,mcxln-vfxln,
hd,dns,

DOL,m-dkbrn,tn,
gygrn,mcxln-vfxln,
hd,dns,

DOL,m-dkbrn,tn,
gygrn,mcxln-vfxln,
hd,dns,

DOL,m-dkbrn,lt gy,
mcxln-crpxln,vxln,
hd,dns,

DOL,m-dkgy,dkbrn,
mcxln-fxln,occ hd,
dns,occ anhy,

DOL,m-dkgy,dkbrn,
mcxln,occ hd,
dns,occ anhy,

Soaping
WOB 1
PSI 432
RPM 60

MD 4515 TVD 4515
Az 1.7° Inc 0.85°

Soaping
WOB 1
PSI 432
RPM 60

Inclination 100

ROP (ft/hr) 200
Gamma (API) 200

Soaping
WOB 1
PSI 432
RPM 60

Midnight Depth
4698'

DOL,m-dkgy,dkbrn,
mcxln,occ hd,
dns,occ anhy,

DOL,m-dkgy,dkbrn,
mcxln,occ hd,
dns,occ anhy,

DOL,m-dkgy,dkbrn,
mcxln-fxln,occ hd,
dns,occ anhy

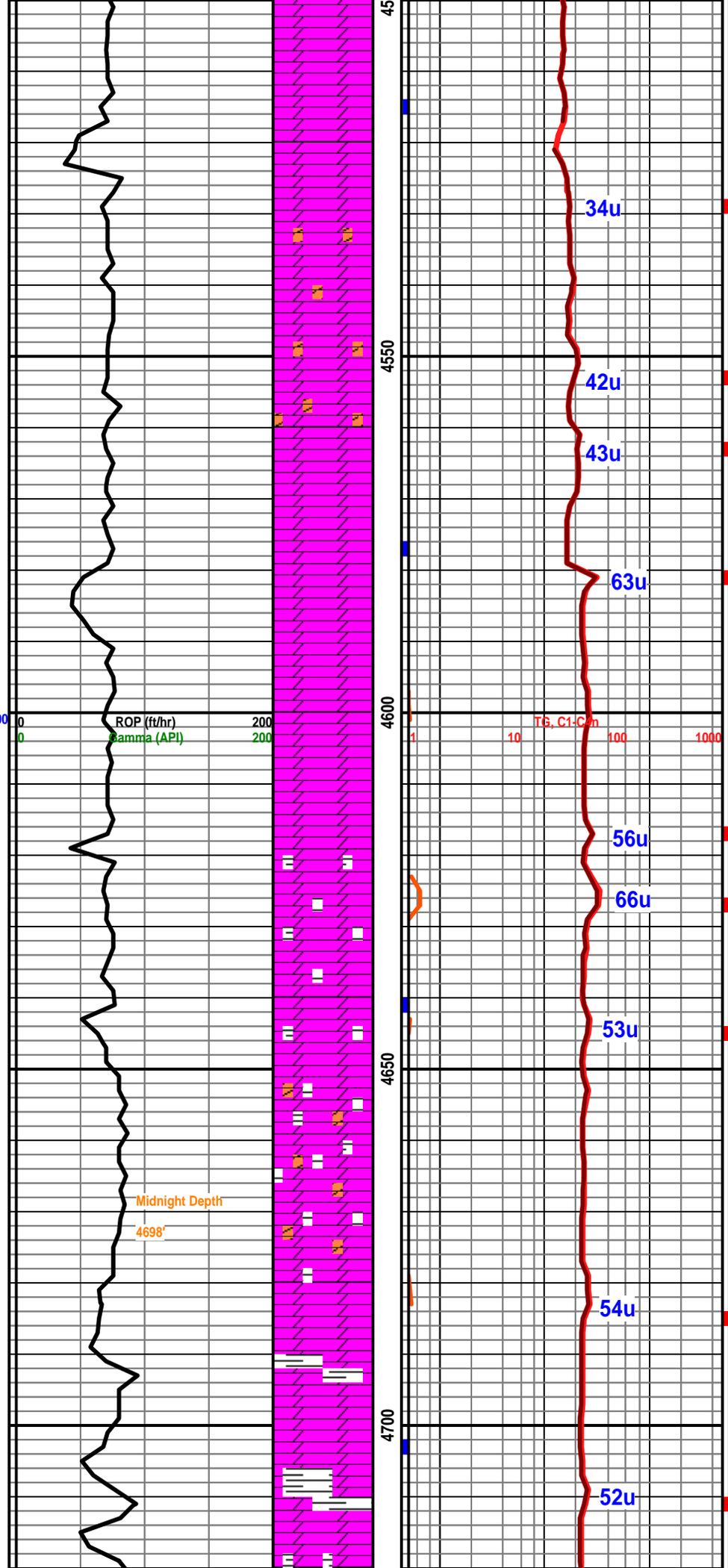
DOL,m-dkbrn,lt gy,
mcxln-crpxln,vxln,
hd,dns,

DOL,m-dkbrn,lt gy,
mcxln-crpxln,vxln,
hd,dns,TR, SH

DOL,m-dkgy,dkbrn,
mcxln-fxln,occ hd,
dns,tr SH

DOI,m-dkgy,occ ltbrn
vfxln-vfxln,occ arg,

DOI lt-mbrn m-dkgy

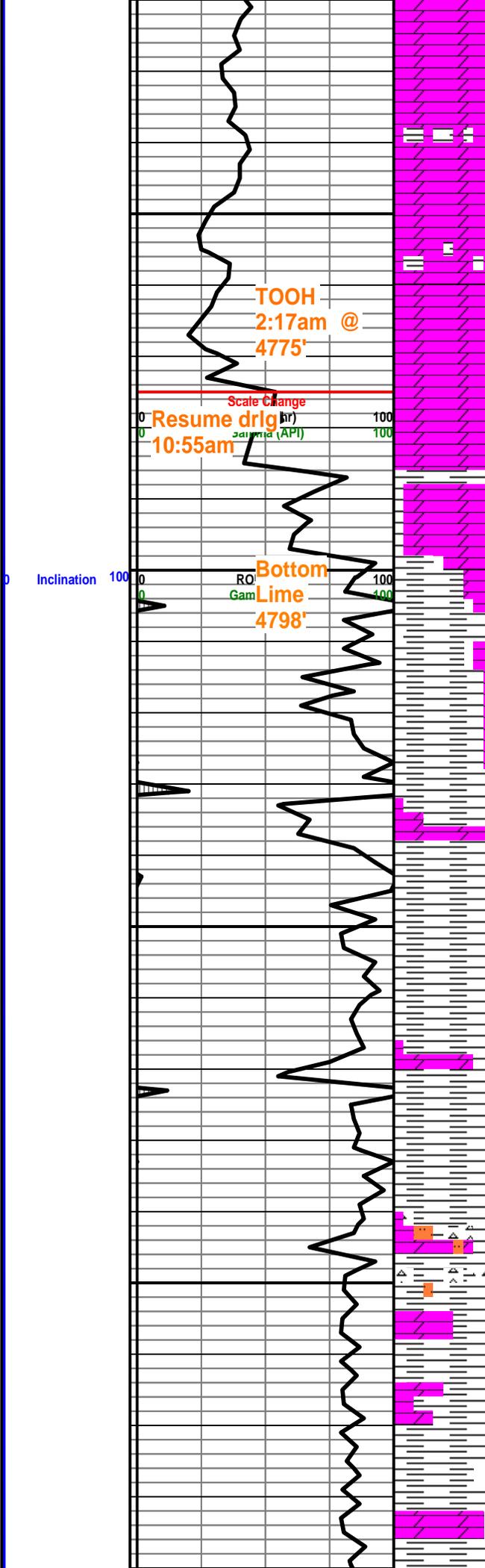


Soaping
WOB 2
PSI 431
RPM 57

Soaping
WOB 2
PSI 450
RPM 52

Soaping
WOB 2
PSI 450
RPM 52

Soaping
WOB 2
PSI 450
RPM 52



TOOH
2:17am @
4775'

Scale Change
Resume drlg
10:55am

Bottom
Lime
4798'

4750

4800

4850

4900

51u

49u

65u TG

9u CG

12u

13u

15u

23u CG

DOL,lt-mbrn,m-argy
mcxln-vfxln,occ fxln
occ arg,

DOL,lt-mbrn,tn,occ
dkr,vfxln-fxln,occ
arg,

SH,lt-mgy,lt-mgygrn,
tn,blky,frm,occ dolie,
occ plty,sl calc,

SH,lt-mgy,lt-mgygrn,
tn,blky,frm,occ dolie,
occ plty,sl calc,

SH,lt-mgy,lt-mgygrn,
tn,blky,frm,occ dolie,
occ plty,sl calc,
tr pyr,

DOL,vlt-mgy,gygrn,
tr rd,sltsts,tr chert,
hem,glau,

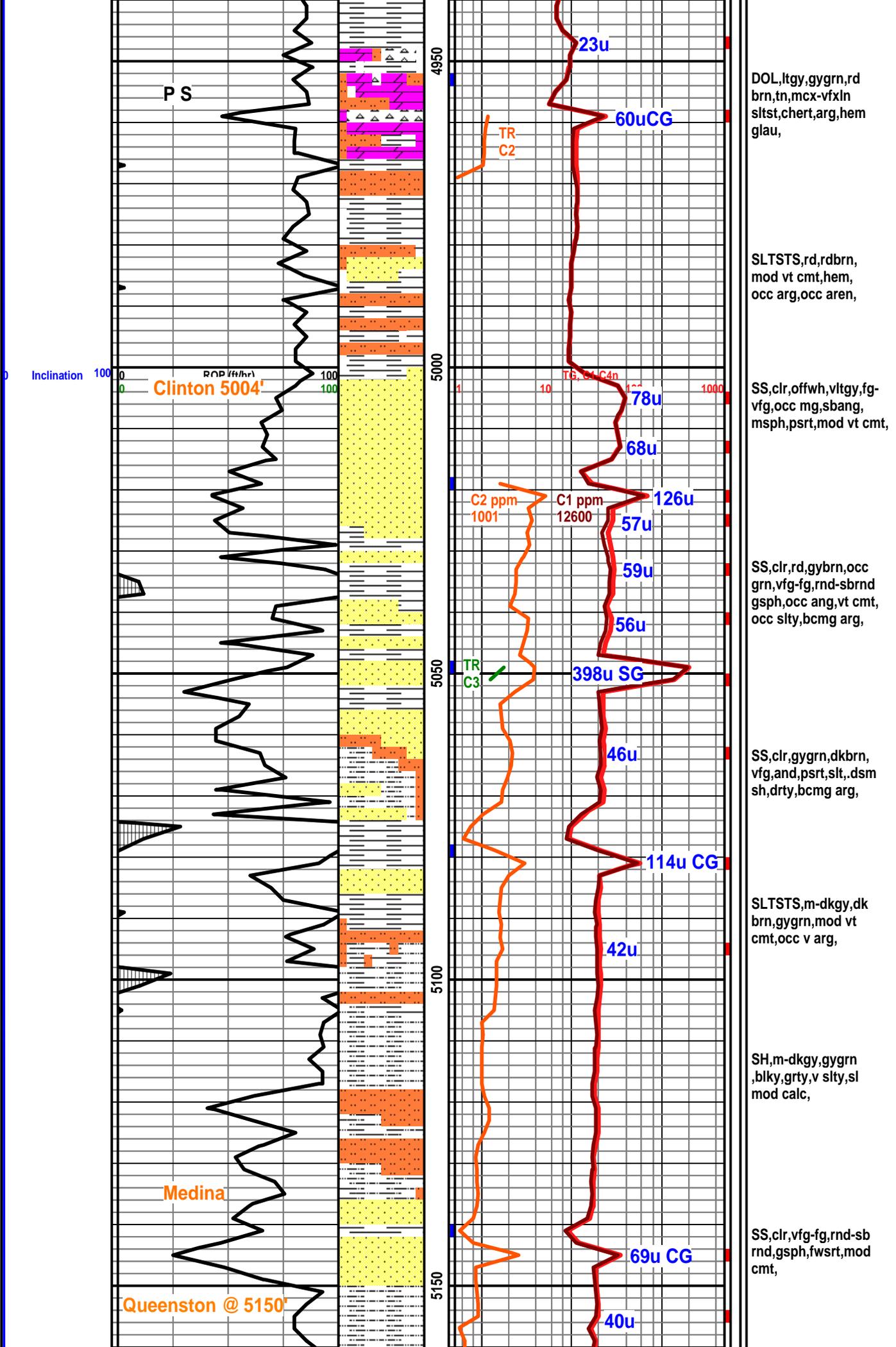
SH,gy,gygrn,rdbn
plty,occ blky,dolie
slty,hem,glau,

DOL,vltbrn,tn,gygrn
rdbn,mcx-vfxln,v-
arg,occ sltst,

Soaping
WOB 2
PSI 450
RPM 52

Soaping
WOB 2
PSI 450
RPM 52

Soaping
WOB 2
PSI 440
RPM 40



P S

Clinton 5004

Medina

Queenston @ 5150

23u

60uCG

TR C2

78u

68u

C2 ppm 1001

C1 ppm 12600

126u

57u

59u

56u

TR C3

398u SG

46u

114u CG

42u

DOL, ltgy, gygrn, rd brn, tn, mcx-vfxln slitst, chert, arg, hem glau,

SLTSTS, rd, rdbrn, mod vt cmt, hem, occ arg, occ aren,

SS, clr, offwh, vltgy, fg-vfg, occ mg, sbang, msph, psrt, mod vt cmt,

SS, clr, rd, gybrn, occ grn, vfg-fg, rnd-sbrnd gsph, occ ang, vt cmt, occ slty, bcmg arg,

SS, clr, gygrn, dkbrn, vfg, and, psrt, slt, dsm sh, drty, bcmg arg,

SLTSTS, m-dkgy, dkbrn, gygrn, mod vt cmt, occ v arg,

SH, m-dkgy, gygrn, blk, grty, v slty, sl mod calc,

SS, clr, vfg-fg, rnd-sbrnd, gsph, fwsrt, mod cmt,

40u

69u CG

4950

5000

5050

5100

5150

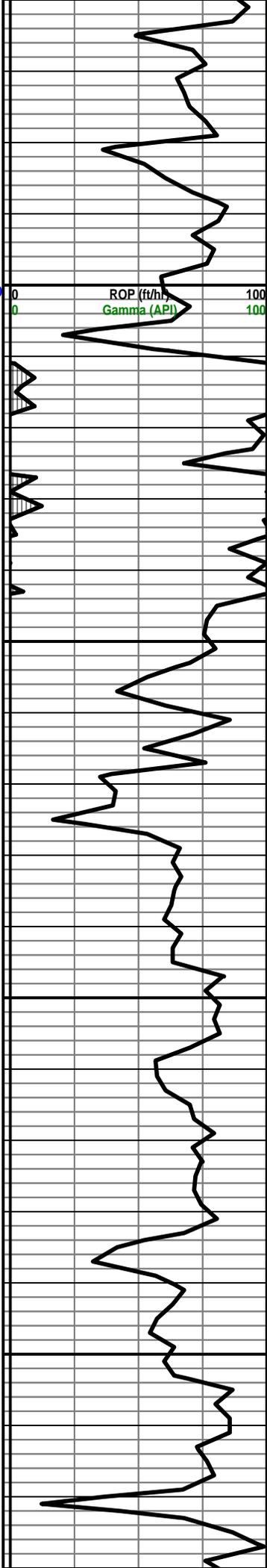
Soaping
WOB 2
PSI 435
RPM 40

Soaping
WOB 2
PSI 435
RPM 40

Soaping
WOB 2
PSI 435
RPM 40

Inclination 100

ROP (ft/h)
Gamma (API)



5200
5250
5300
5350

37u

45u

42u

72u
CG

66u cg

37u cg

SH,rd-brn,dkrd,blky,
occ grty,frm,-sbfrm,

SH,rd-brn,dkrd,blky,
occ grty,frm,-sbfrm

SH,rd-brn,dkrd,blky,
occ grty,frm,

SH,rd-brn,dkrd,blky,
occ grty,frm,-sbfrm

SH,rd brn,dkrd,tr of
grn,blky,mod grty, frm,sl
calc

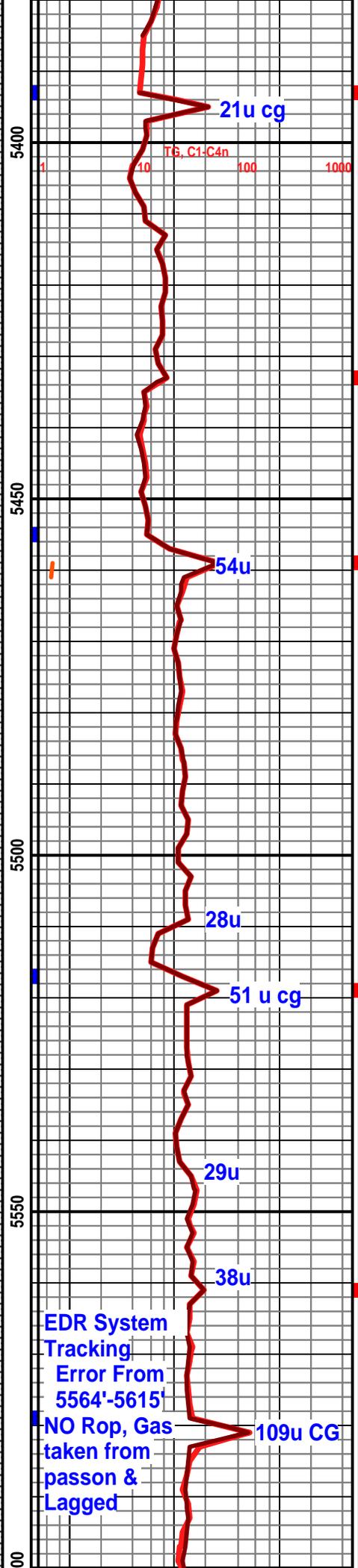
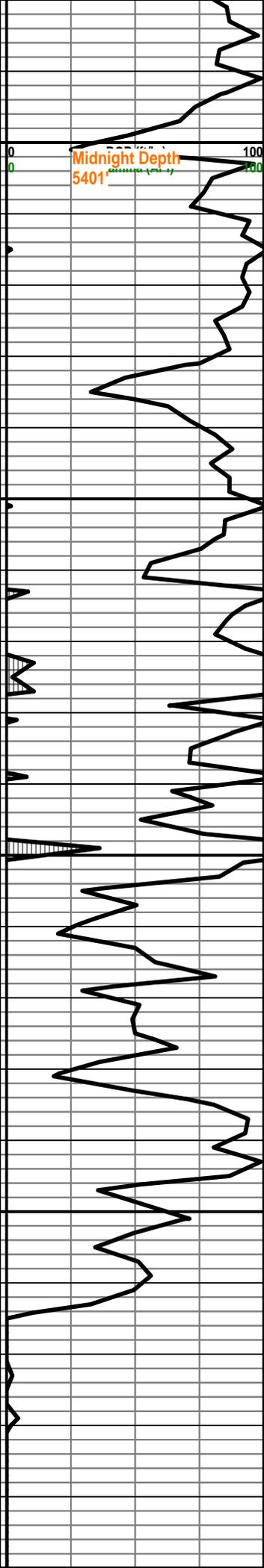
SH,rd, rbrn,tr of grn,
blocky,vgrity,sl slty,
vsl-ncalc

SH,rd-rbrn,tr of mgry,
blky,lrg cut,mod
grty,sl-mod slty,ncalc

Soaping
WOB 2
PSI 435
RPM 40

Inclination 100

Midnight Depth
5401'



SH,rd-rbrn-sl mr grn,sl grty, sl slty,ncalc

SH,rd,rbrn,grn, sl grty,sl slty,ncalc

SH:rdbrn w/fw mgry, mfm,slslty w/sm vftxt,blky,vslcalc-ncal Tr.SLTS

SH:rdbrn w/fw mgry, mfm,slslty w/sm vftxt,blky,vslcalc-ncal Tr.SLTS

SH:rdbrn-mgry,mfm, sltytxt w/fw vftxt,blky,vsl-ncalc Tr.SLTS

SH,lt-mgy,occ gygrn, plty,sbfrm-frm,sl calc,

SH,vlt-m gygrn,occ gybrn plty,sbfrm, occ grty,frm,mod calc,

SH,vlt-m gygrn,gybrn occ plty,sbfrm,occ grty,frm-bcmg lmy,

Inclination 100

TD @ 5615'
@ 7:25am

Resume Drlg
@ 5:50am

Stop Drlg @
8:23am
To run gyro,
load hole
TOOH
5699'

Resume
Drlg @
9:15am

MD 5688 TVD 5686.11
Az 321.9° Inc 3.3°

MD 5750 TVD 5748.01
Az 318.4° Inc 3.1°

MD 5782 TVD 5779.95
Az 311.4° Inc 4.1°

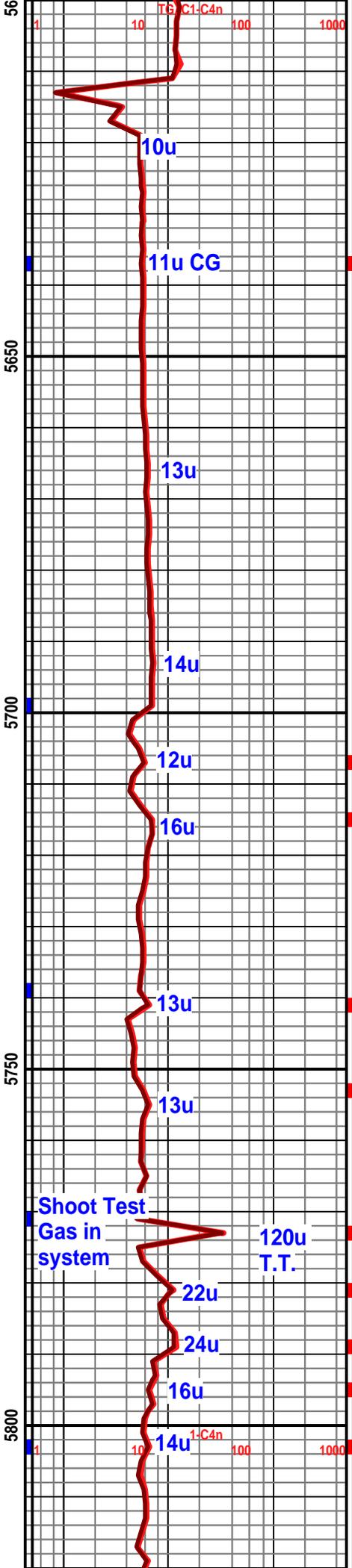
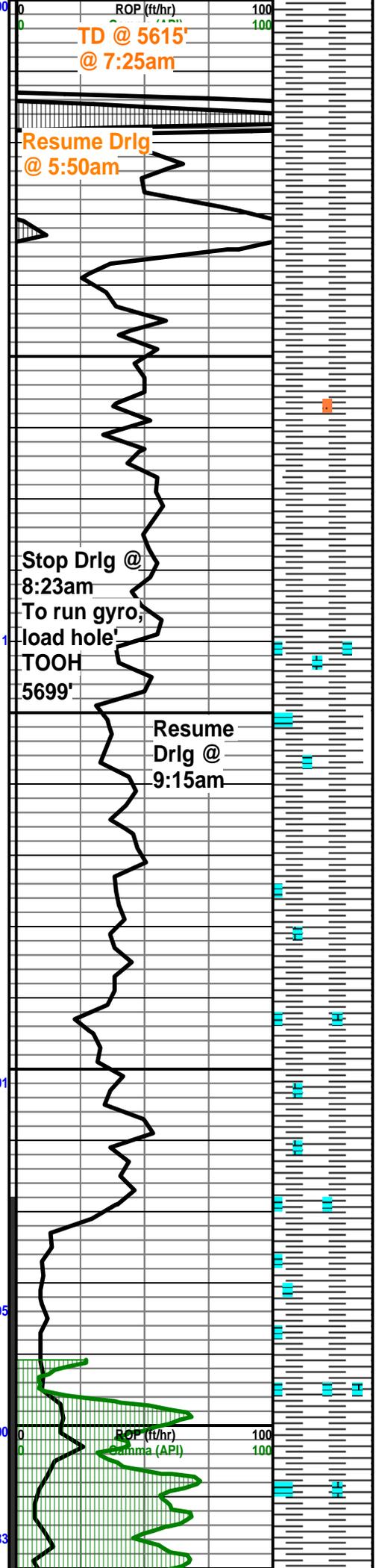
MD 5814 TVD 5811.83
Az 300° Inc 5.8°

Soaping
WOB 2.3
PSI 465
RPM 45

DRLG W
Fluid
WT 10.7
Vis 73

Fluid
WOB 6-9
PSI 2168
RPM 48

Slide
WOB 3-4
PSI 2125



SH:mgy w/fw vltbrn
occ,mfm,vftxt,blky,
slcalc

SH:mgy w/fw vltbrn
occ,mfm,vftxt,blky,
slcalc Tr SLTS

SH,lt-mgy,occ gybrn,
occ plty,smth imp,
occ blky,grty,lmy,

SH,lt-mgy,occ gybrn,
occ plty,smth imp,
occ blky,grty,lmy,
Bit #6 7 7/8" Smith
SD1513 in @ 5699
W/Downhole motor

SH,lt-mgy,gybrn,occ
plty,smth imp,occ blky
lmy,

SH,vlt-mgy,occ dkr,
occ gybrn,occ plty,
smth imp,occ blky,
lmy,

SH,vlt-mgy,occ dkgy,
occ LS incl,occ plty,
no calc,occ lmy, w/
foss

SH,vlt-mgy,occ dkgy,
occ brn,plty,sbfrm
smth,occ blky,lmy,

SH:vlt-mgy w/occ

MD 5845 TVD 5842.6
Az 295.6° Inc 8°

MD 5876 TVD 5873.21
Az 293.3° Inc 10.2°

MD 5908 TVD 5904.57
Az 291.4° Inc 12.6°

MD 5939 TVD 5934.67
Az 291.2° Inc 15.1°

MD 5971 TVD 5965.4
Az 291.6° Inc 17.3°

MD 6002 TVD 5994.81
Az 292.4° Inc 19.5°

Inclination 0 100
ROP (ft/hr) 0 100
Gamma (API) 0 100

MD 6034 TVD 6024.75
Az 293.4° Inc 21.8°

Midnight Depth
5866'

Utica
5970' MD
5964' TVD

Slide
WOB 5.3k
PSI 2248

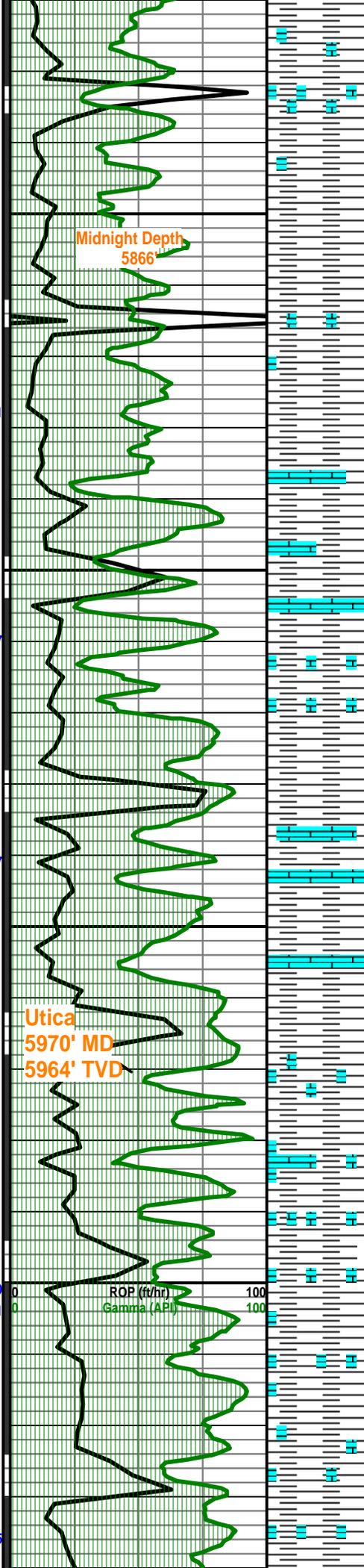
Mud Data
WT 10.75
Vis 59
BU 20min

Slide
WOB 9
PSI 2317

Mud Data
WT 10.7
Vis 58

Slide
WOB 9
PSI 2317

RRP 20



5850

5900

5950

6000

16u

17u

18u

19u CG

18u

18u

23u

25u CG

35u

25u

30u

37u

28u CG

44u

ltbrn,sbfrm,smth
blkylmy

SH:vlm-gry w/ occ
drkgry-brn,sbfrm,
smth,occ blkylmy
scatt flor,v-fnt cut,

SH:vlm-gry w/ occ
drkgry-ltbrn,sbfrm, smth,
blkylmy

SH:mgy-vltgry w/sm
drkgry w/occ
ltbrn,sbfrm,smth,
blkylmy

SH:mgy-vltgry w/sm
drkgry w/occ ltbrn
,sbfrm,smth,blkylmy
no flor,v-fnt cut

SH:mgy- mdrkgry
w/abdnt drkgry w/occ
ltbrn,sbfrm,smth,
blkylmy

SH,vlm-gry,occ gybrn,
plty,sbfrm,occ grty
lmy,frm,

SH,vlm-gry,occ dkr,
plty,smth,sbfrm,occ
blkylv calc,bcmg clnr,

T₁ C1-C4n

Slide
WOB 10
PSI 2328

MD 6065 TVD 6053.3
Az 294.2° Inc 24.1°

RPM 40

MD 6097 TVD 6082.2
Az 293.4° Inc 26.7°

Slide WOB
7
PSI 2389

MD 6128 TVD 6109.57
Az 292.3° Inc 29.3°

Mud Data
WT 11
Vis 58
BU 22

MD 6160 TVD 6137.14
Az 292.3° Inc 31.7°

WOB 6
PSI 2432

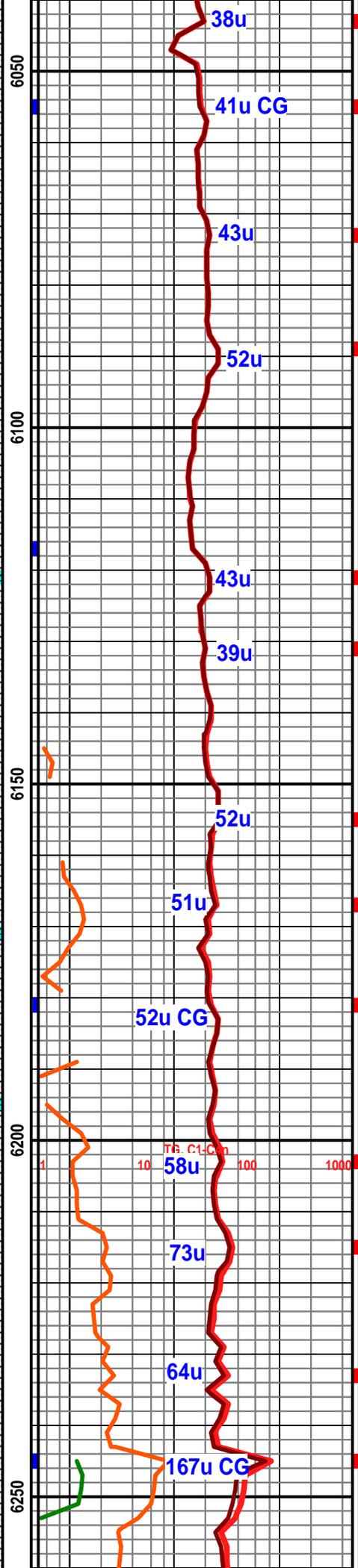
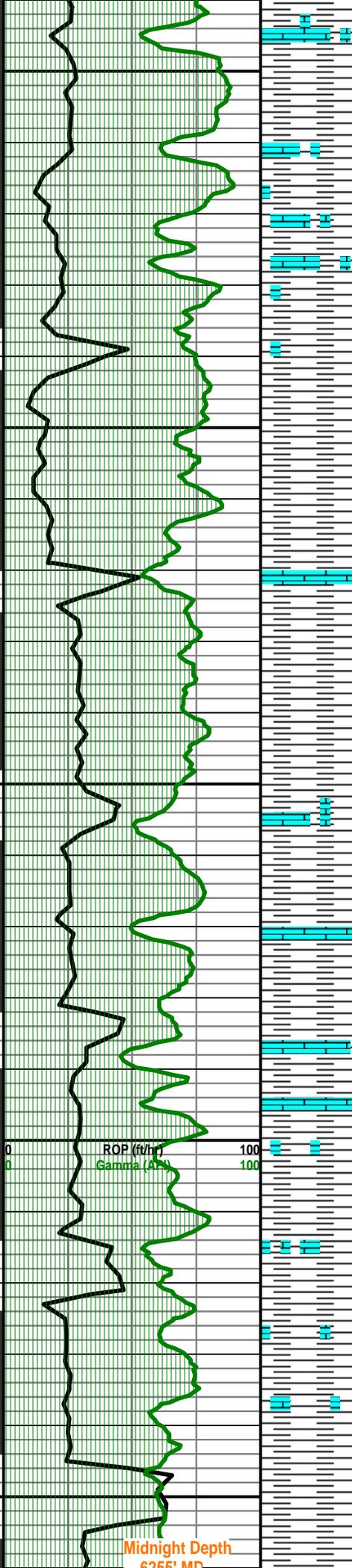
MD 6191 TVD 6163.18
Az 292.1° Inc 34°

0 Inclin 100

MD 6223 TVD 6189.33
Az 292° Inc 36.4°

WOB 6K
PSI 2440

MD 6255 TVD 6214.66
Az 291.8° Inc 38.9°



SH,vlt-mgy,occ dkr,
plty,smth,sbfrm,occ
blky,lmy,calc,

SH,vlt-mgy,occ dkr,
occ plty,smth,occ tr
foss,occ lmy,

SH,vlt-mgy,occ dkr,
plty,smth,occ blky,
tr LS strgr,foss,

SH,vlt-mgy,occ dkr,
plty,smth,sb-frm,occ
si -mod calc,clnr,

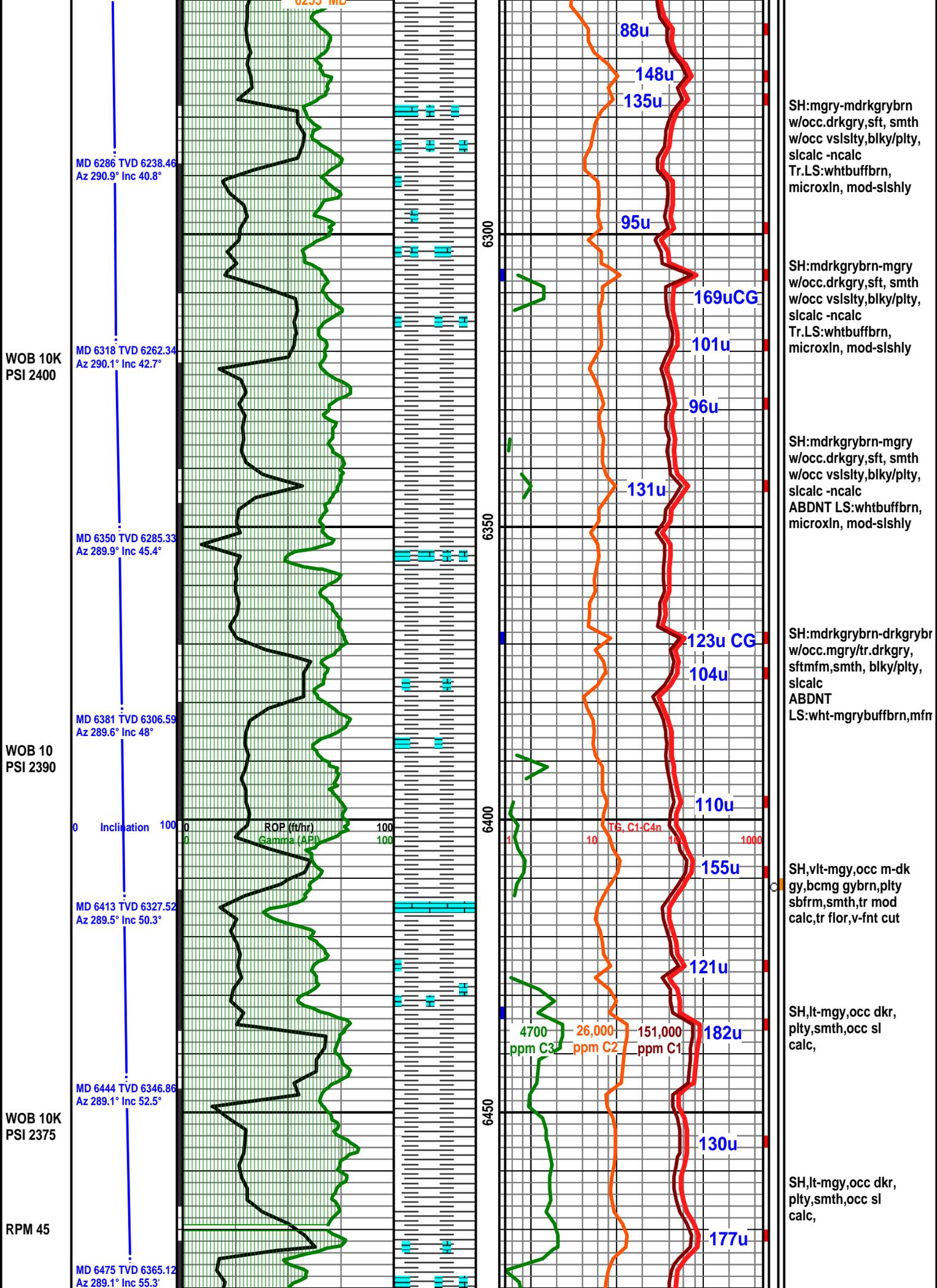
SH,vlt-mgy,occ dkr,
plty,smth,sb-frm,occ
si -mod calc,clnr,

SH:mgy-mltgy w/ occ.
drkgry, sft-mfm,plty/blky,
mcalc w/ occ. vcalc
ABDNT
LS:wht-drkgrybrn
cln-slsly

SH:mgy-mltgy w/ occ.
drkgry, sft-mfm,plty/blky,
mcalc w/ occ. vcalc
ABDNT
LS:wht-drkgrybrn, slsly
w/fw cln

SH:mgy-mdrkgry w/occ.
drkgry,sft,smth w/occ.
vslsly,blky/plty,mcalc
ABDNT
LS:modshly,mxln

Midnight Depth
6255' MD



RPM 45

WOB 9
PSI 2415

RPM 48

Mud Data
WT 11
VIS 57
BU 24min

WOB 16K
PSI 2470

MD 6507 TVD 6382.71
Az 289.1° Inc 58°

MD 6538 TVD 6398.68
Az 289.1° Inc 60°

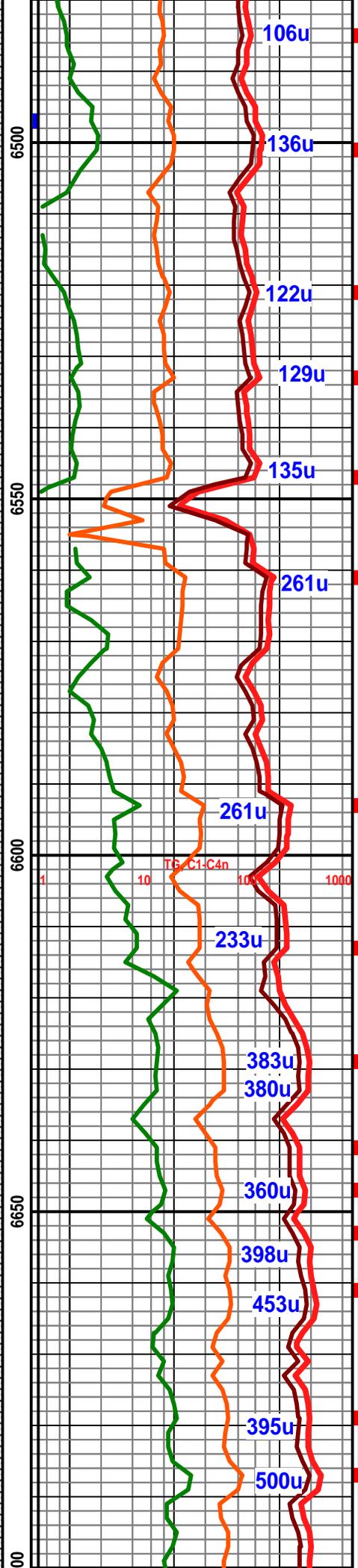
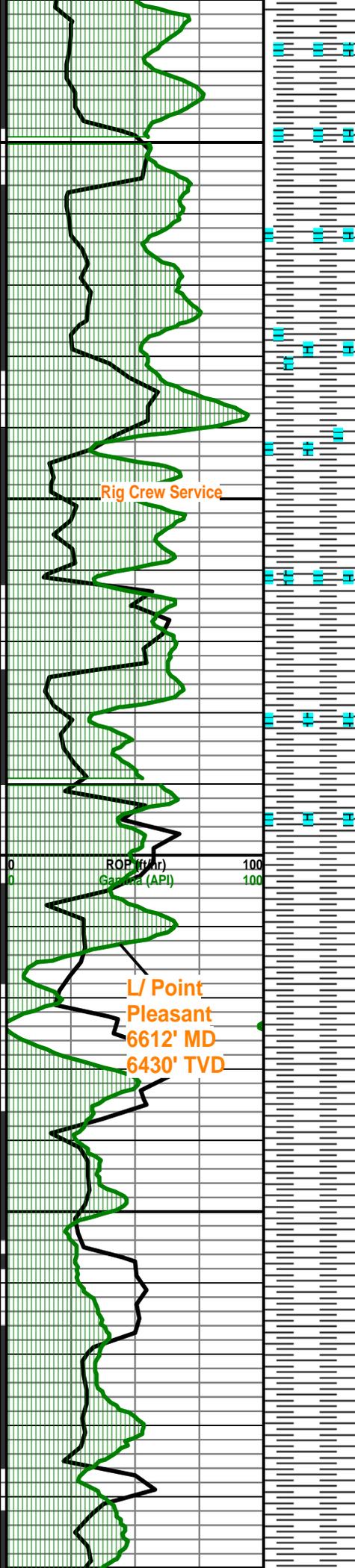
MD 6569 TVD 6413.68
Az 289.1° Inc 62.1°

MD 6600 TVD 6427.71
Az 288.4° Inc 64.1°

MD 6632 TVD 6441.23
Az 288.2° Inc 65.9°

MD 6663 TVD 6453.39
Az 288.9° Inc 67.9°

MD 6694 TVD 6464.45
Az 288.3° Inc 70.3°



SH,mgly,occ gybrn,
dkgy,plty,occ blk
frm,mod calc,

SH,mgly,occ gybrn,
dkgy,plty,occ blk
frm,mod calc,

SH,m-dkgy,occ gybrn
plty,smth,occ blk,
v-frm,lmy,foss,

SH,m-dkgy,dkbrn,occ
ltr,plrt,sbfrm,mod-
v calc,

SH,m-dkgy,dkbrn,
occ plrft,mfrm,occ
blk,vfrm,occ lmy,

SH,dkgy,dkgybrn,plty
sbfrm-frm,mod v calc,

SH,dkgy,dkgybrn,plty
sbfrm-frm,mod v calc, tr
pyr,

SH,dkgy,dkgybrn,plty
sbfrm-frm,mod v calc, tr
calcxls,

106u
136u
122u
129u
135u
261u
261u
233u
383u
380u
360u
398u
453u
395u
500u

12-17-11
RPM 0
WOB 12k
PSI 2466
SPM 202

WOB 16
PSI 2500

WOB 11
2630
RPM 38

MD 6726 TVD 6474.63
Az 288.4° Inc 72.6°

MD 6757 TVD 6483.41
Az 288.5° Inc 74.5°

MD 6788 TVD 6491.12
Az 289.1° Inc 76.7°

MD 6819 TVD 6497.48
Az 289.8° Inc 79.6°

MD 6851 TVD 6502.49
Az 290.2° Inc 82.4°

MD 6883 TVD 6505.92
Az 290.3° Inc 85.3°

MD 6914 TVD 6507.54
Az 291.3° Inc 88.7°

Midnight Depth
6778' MD

ROP (ft/hr)
Gamma (API)

67
6750
6800
6850
6900

395u CG

568u

510u

441u

457 CG

527u

527u

468u

244u

177u

245u

SH,dkgy,dkgybrn,plty
sbfrm-frm,mod v calc,tr
calcxls,

SH,dkgy,dkgybrn,plty
sbfrm-frm,mod v calc,tr
calcxls,

SH:drkgrybrn w/limey
marl-drkgry,mfm-sft,
smth,plty/ blk, mcalc
Tr.LS:wht-
drkgrybuffbrn,
modshly-cln ip.

SH:drkgrybrn w/limey
marl-drkgry,mfm-sft,
smth,plty/ blk, mcalc
ABDNT LS:wht-
drkgrybuffbrn,
modshly-cln ip.

SH:drkgrybrn w/limey
marl-drkgry,mfm-sft,
smth,plty/ blk, mcalc
ABDNT LS:wht-
drkgrybuffbrn,
modshly-cln ip.

SH:mdrkgrybuff w/limey
marl-drkgry,mfm-
sft,smth,plty/blk,
mcalc
ABDNT LS:
wht-drkgrybrnbuff,
modshly

LS,vlt-mbrn,dkgy,
mcx-vfxln,hd,cln,

LS,vlt-mbrn,dkgy,
vfx-fxln,occ mcxln,
dry v-fnt cut,

SH,dkgy,blk,sbfrm-v
frm,occ lmy,bcmg

WOB 22
PSI 2480

Wob 8k
PSI 2587
RPM 42

WOB 24
PSI 2570

RPM 42

WOB 19
PSI 2574

RPM 45

WOB 25
PSI 2590

WOB 33
PSI 2600
RPM 46

MD 6945 TVD 6507.73
Az 291.6° Inc 90.6°

MD 6976 TVD 6507.46
Az 293.9° Inc 90.4°

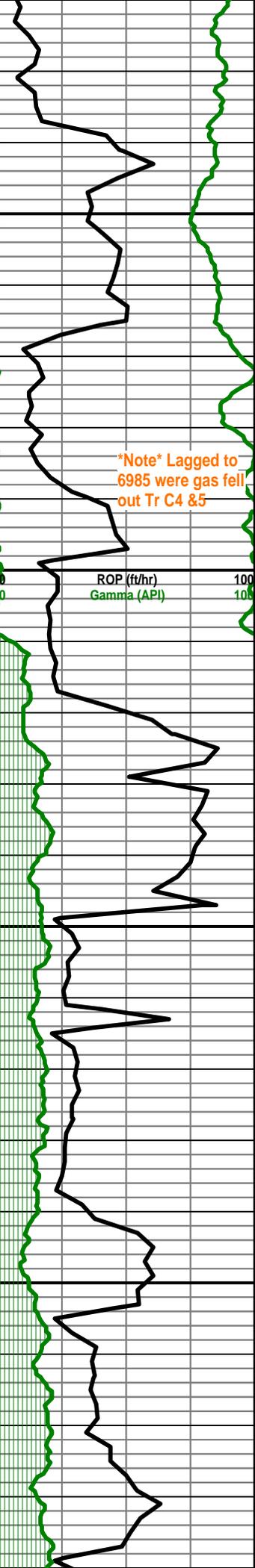
MD 7007 TVD 6507.4
Az 296° Inc 89.8°

MD 7039 TVD 6507.43
Az 296.9° Inc 90.1°

MD 7070 TVD 6507.13
Az 299.5° Inc 91°

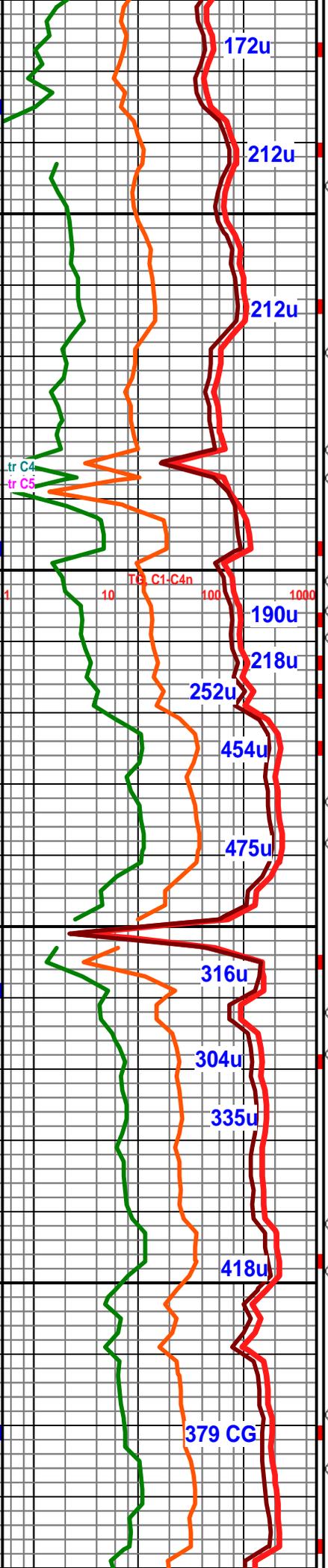
MD 7102 TVD 6506.41
Az 301.6° Inc 91.6°

MD 7133 TVD 6505.46
Az 304.5° Inc 91.9°



ROP (ft/hr)
Gamma (API)

6950
7000
7050
7100



cinr,v-int cut

SH,m-dkgy,occ gybrn blky,frm,v calc,tr calcxls,v-fnt cut,

SH,m-dkgy,occ gybrn blky,frm,v calc,tr calcxls,v-fnt cut,

SH,dkgy,blk,plty,occ brit,v calc,mod-g cut

SH,dkgy,blk,plty,brit frm,v calc,g-cut,

SH,blk,dkgy,plty,occ brit,sl-frm,calc,carb,g-cut,

SH,blk,dkgy,plty,occ brit,sl-frm,calc,carb,g-cut,

SH,dkgy,blk,plty,brit frm,v calc,g-cut,

SH,dkgy,blk,plty,brit frm,v calc,g-cut,

tr C4
tr C5

Tr C1-C4n

MD 7164 TVD 6504.54
Az 307° Inc 91.5°

MD 7196 TVD 6503.7
Az 309° Inc 91.5°

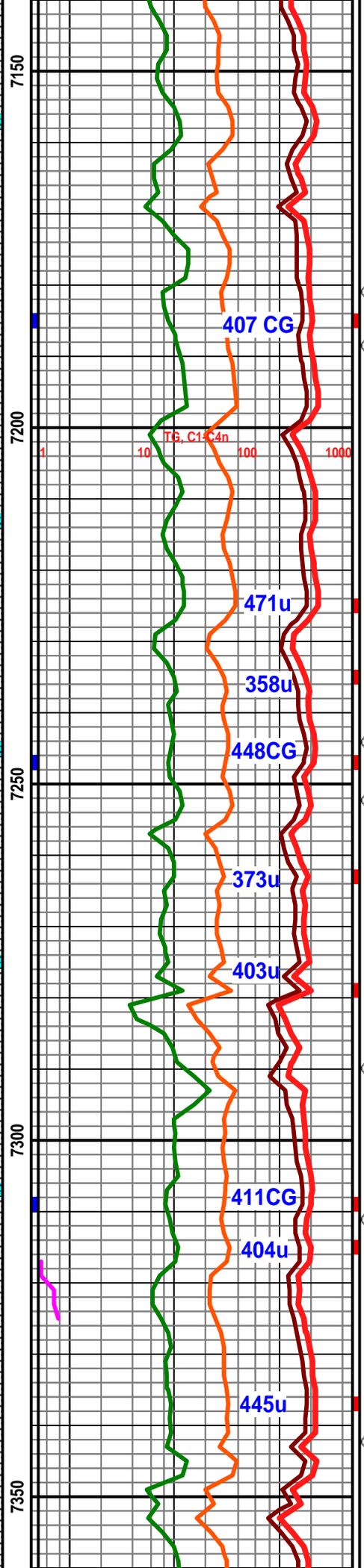
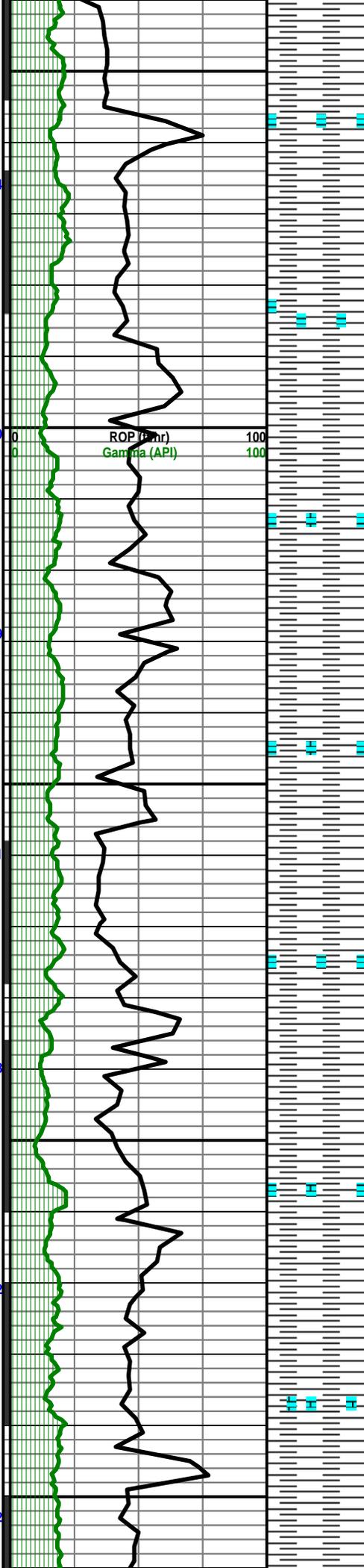
MD 7227 TVD 6502.89
Az 310.8° Inc 91.5°

MD 7258 TVD 6502.11
Az 313.1° Inc 91.4°

MD 7288 TVD 6501.48
Az 315.5° Inc 91°

MD 7319 TVD 6501.02
Az 317.9° Inc 90.7°

MD 7351 TVD 6500.52
Az 320.4° Inc 91.1°



SH: drkgry-drkgrybrn
w/limey
marl, sft-mfm, smth, blkyp/
mcalc
Tr. LS:
drkgry-wht, cln-vslshly

SH: drkgry-drkgrybrn
w/limey
marl, sft-mfm, smth, blkyp/
mcalc
Tr. LS:
drkgry-wht, cln-vslshly

SH: drkgry-drkgrybrn
w/limey
marl, sft-mfm, smth, blkyp/
mcalc
Tr. LS:
drkgry-wht, cln-vslshly

SH: drkgry-drkgrybrn
w/limey
marl, sft-mfm, smth, blkyp/
mcalc
Tr. LS:
drkgry-wht, cln-vslshly

SH: drkgry-brn-drkgry
w/limey
marl, sft-mfm, smth, blkyp/
mcalc
Tr. LS:
drkgry-wht, cln-vslshly

SH: drkgry-drkgrybrn
w/limey
marl, sft-mfm, smth, blkyp/
mcalc
Tr. LS:
drkgry-wht, cln-vslshly

SH: drkgry-drkgrybrn
w/limey
marl, sft-mfm, smth, blkyp/
mcalc
Tr. LS:
drkgry-wht, cln-vslshly

SH: drkarv w/limey

407 CG

471u

358u

448CG

373u

403u

411CG

404u

445u

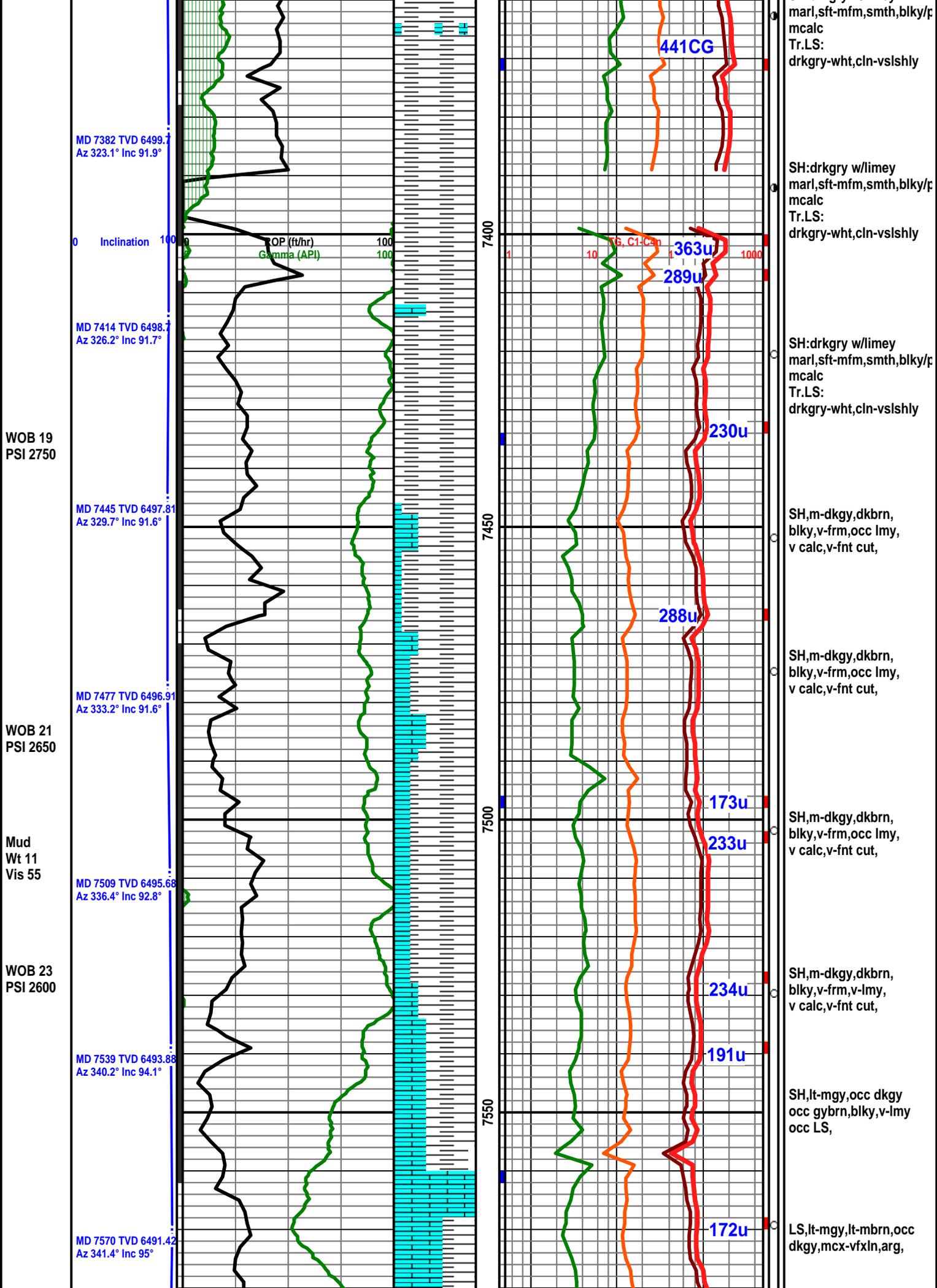
7150

7200

7250

7300

7350



MD 7382 TVD 6499.7
Az 323.1° Inc 91.9°

Inclination 100

ROP (ft/hr)
Gamma (API)

MD 7414 TVD 6498.7
Az 326.2° Inc 91.7°

WOB 19
PSI 2750

MD 7445 TVD 6497.81
Az 329.7° Inc 91.6°

MD 7477 TVD 6496.91
Az 333.2° Inc 91.6°

WOB 21
PSI 2650

Mud
Wt 11
Vis 55

MD 7509 TVD 6495.68
Az 336.4° Inc 92.8°

WOB 23
PSI 2600

MD 7539 TVD 6493.88
Az 340.2° Inc 94.1°

MD 7570 TVD 6491.42
Az 341.4° Inc 95°

441CG

363u

289u

230u

288u

173u

233u

234u

191u

172u

marl, sft-mfm, smth, blk/p
mcalc
Tr.LS:
drkgry-wht, cln-vslshly

SH: drkgry w/limey
marl, sft-mfm, smth, blk/p
mcalc
Tr.LS:
drkgry-wht, cln-vslshly

SH: drkgry w/limey
marl, sft-mfm, smth, blk/p
mcalc
Tr.LS:
drkgry-wht, cln-vslshly

SH, m-dkgy, dkbrn,
blk, v-fm, occ lmy,
v calc, v-fnt cut,

SH, m-dkgy, dkbrn,
blk, v-fm, occ lmy,
v calc, v-fnt cut,

SH, m-dkgy, dkbrn,
blk, v-fm, occ lmy,
v calc, v-fnt cut,

SH, m-dkgy, dkbrn,
blk, v-fm, v-lmy,
v calc, v-fnt cut,

SH, lt-mgy, occ dkgy
occ gybrn, blk, v-lmy
occ LS,

LS, lt-mgy, lt-mbrn, occ
dkgy, mcx-vfxln, arg,

Wob 21
PSI 2655

Inclination 100
MD 7601 TVD 6489.07
Az 341.3° Inc 93.7°

ROP (ft/hr)
Gamma (API)

WOB 10
PSI 2600
RPM 50

MD 7633 TVD 6487.11
Az 340.9° Inc 93.3°

SLIDE

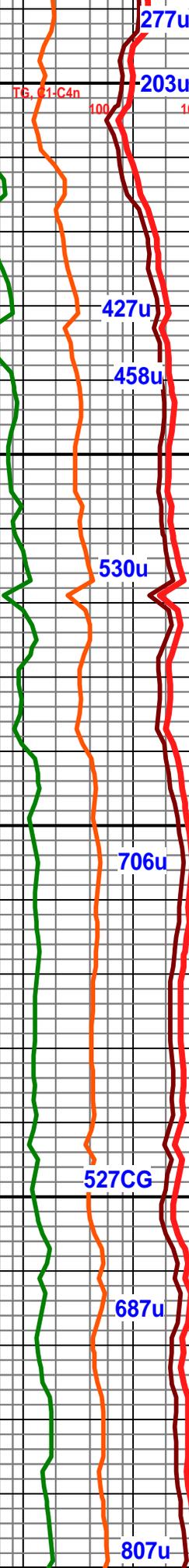
MD 7697 TVD 6483.99
Az 341.3° Inc 92.3°

12-19-11
RPM 37
WOB 11k
PSI 2597
SPM 202

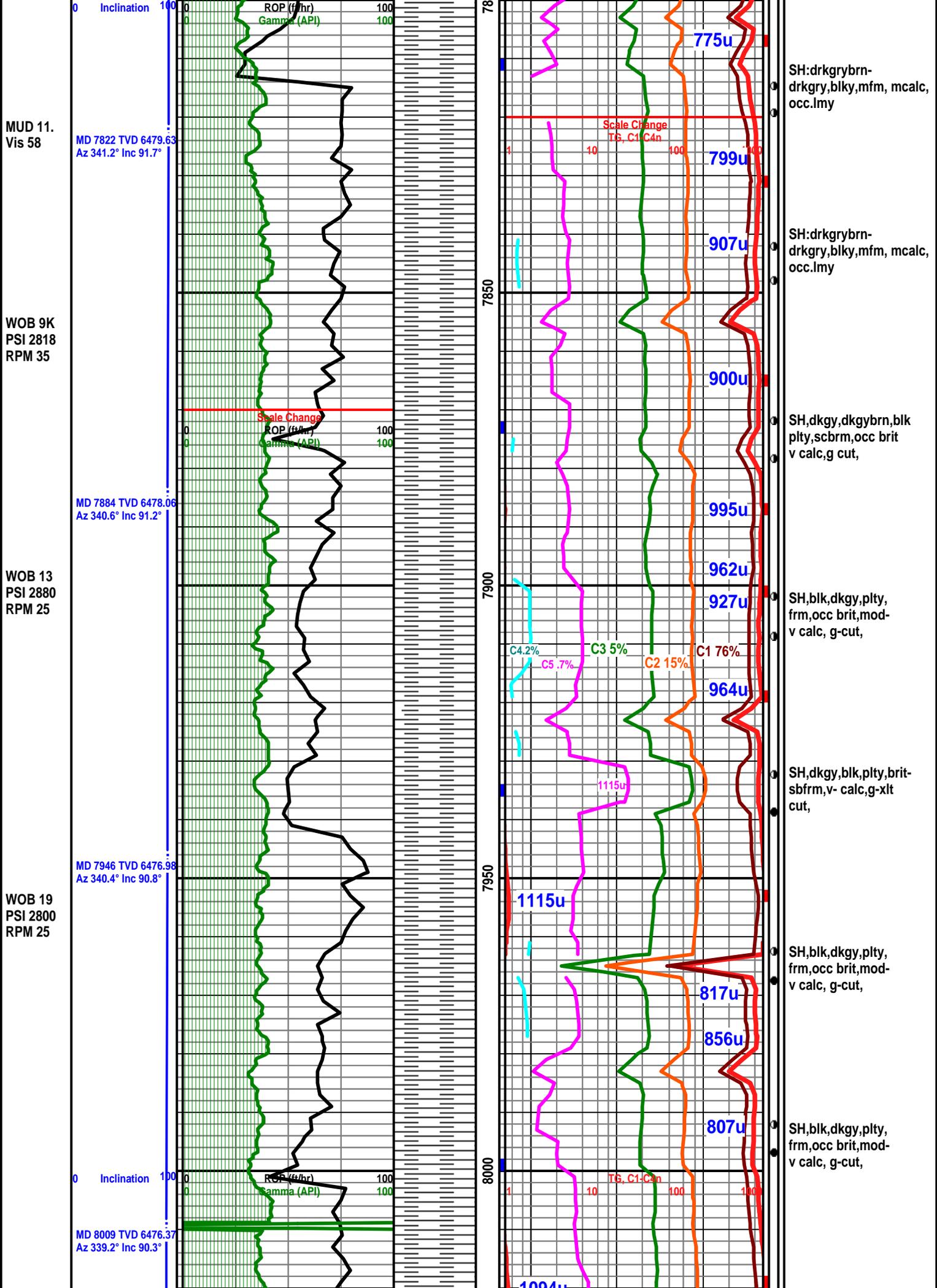
MD 7759 TVD 6481.66
Az 340.8° Inc 92°

Midnight Depth
7751'

7600
7650
7700
7750
8000



LS,vlt-mbrn,dkgy,
mcx-vfxln,hd,cln,
SH,m-dkgy,gybrn,
blky,frm,occ lmy,
v calc,
SH:mdrkgy-
drkgrybrn,blky,frm,
lmy,vcalc
SH:mdrkgy-
drkgrybrn,blky,frm,
lmy,vcalc
SH:drkgrybrn-drkgry,
smth,blky,
mfm-frm,mcalc
Tr.LS
SH:drkgrybrn-drkgry,
smth,blky,
mfm-frm,mcalc
Tr.LS
SH:drkgrybrn-
drkgry,blky,mfm, mcalc,
occ.lmy



WOB 21
PSI 2780
RPM 25

WOB 19
Psi 2780

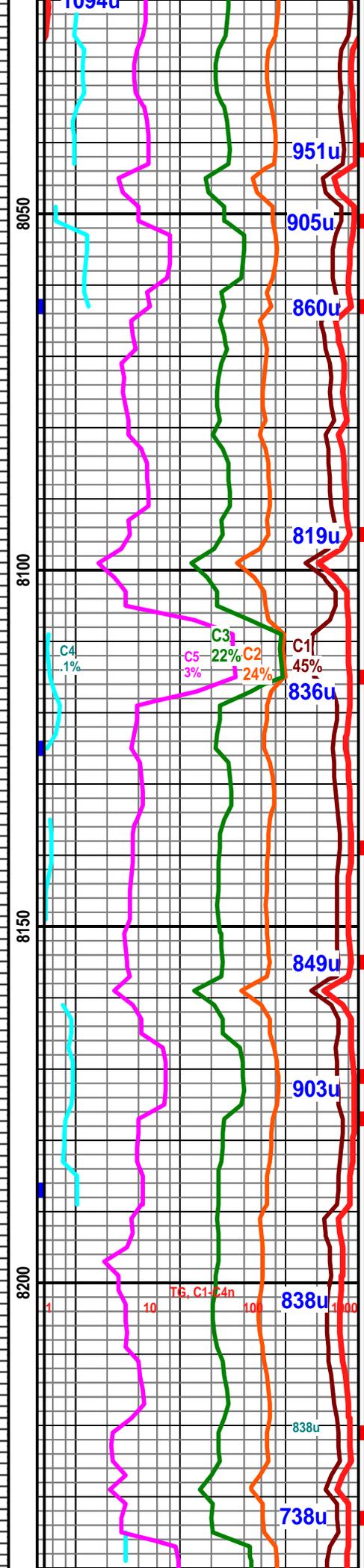
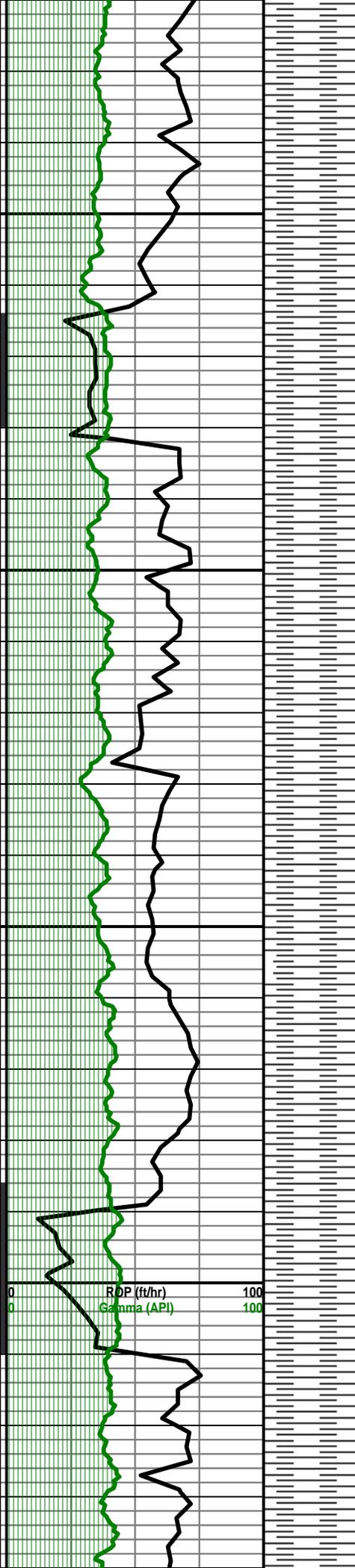
WOB 10
PSI 2811
RPM 41

WOB 10
PSI 2800
RPM 37

MD 8073 TVD 6476.09
Az 341.2° Inc 90.2°

MD 8135 TVD 6475.93
Az 340.5° Inc 90.1°

MD 8198 TVD 6475.44
Az 340.9° Inc 90.8°



SH,blk,dkgy,plty,
frm,occ brit,mod-
v calc, g-cut,

SH,blk,dkgy,plty,
frm,occ brit,mod-
calc,carb,g-cut,

SH,blk,dkgy,plty,
frm,occ brit,mod-
calc,carb,g-cut,

SH,blk,dkgy,plty,
frm,occ brit,mod-
v calc, g-cut,

SH,blk,dkgy,plty,
frm,occ brit,mod-
v calc, g-cut,

WOB 21
PSI 2783

MD 8261 TVD 6474.45
Az 342° Inc 91°

SLIDE
PSI 2780

MD 8323 TVD 6472.82
Az 342.1° Inc 92°

WOB 10
PSI 2878
RPM 40

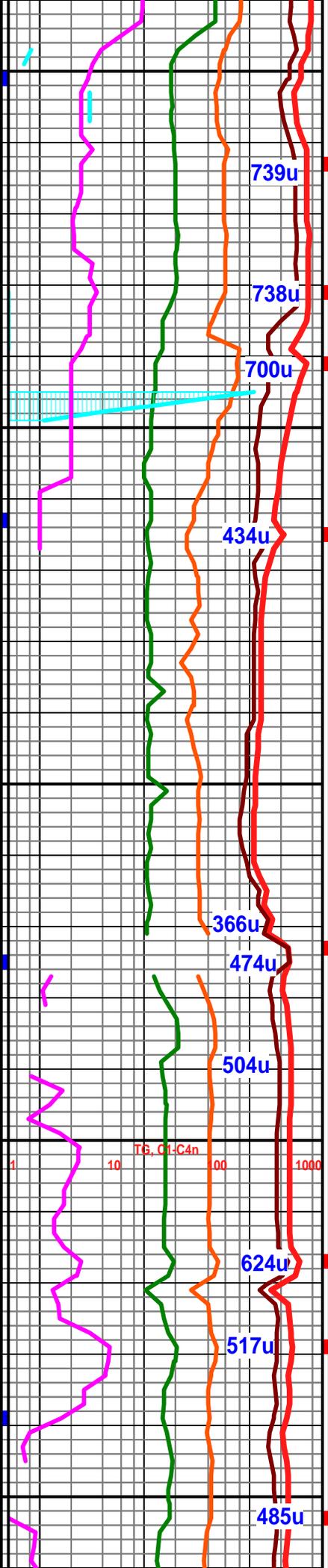
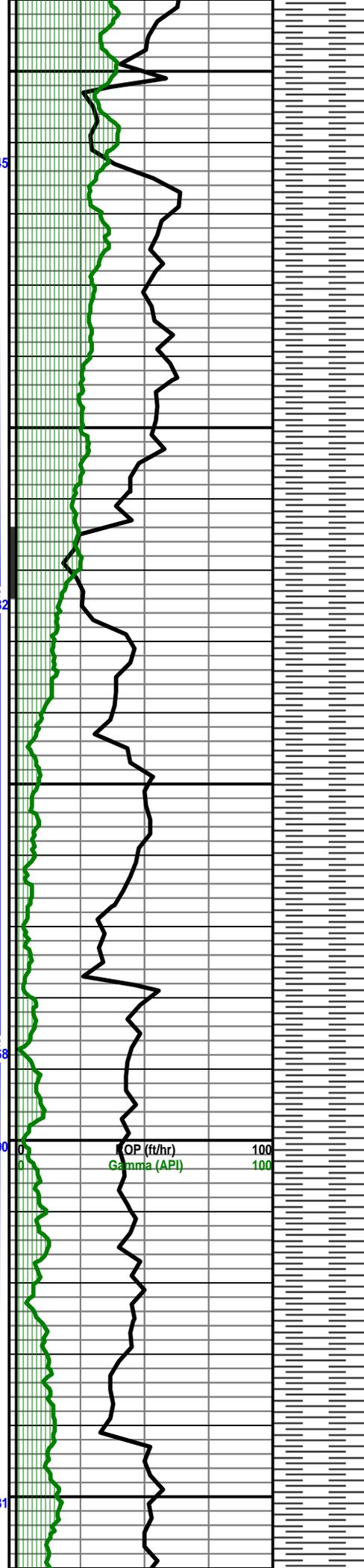
MD 8386 TVD 6470.68
Az 341.3° Inc 91.9°

WOB 10
PSI 2878
RPM 40

MD 8449 TVD 6468.81
Az 341.2° Inc 91.5°

Inclination 0 100
ROP (ft/hr) 0 100
Gamma (API) 0 100

8250
8300
8350
8400
8450



SH,blk,dkgy,plty, frm,occ brit,mod-v calc, g-cut,
SH,blk,dkgy,plty, frm,occ brit,mod-si-mod, g-cut,
SH,dkgy,occ blk,plty blkly,frm,v-calc,v-frm,m-g cut,
SH,dkgy,occ blk,plty blkly,v-frm,mod-v calc g-cut,
SH,dkgy,occ blk,plty blkly,v-frm,mod-v calc g-cut,
SH,dkgy,occ blk,plty blkly,v-frm,mod-v calc g-cut,
SH,dkgy,occ blk,plty blkly,v-frm,mod-v calc mod-good cut,
SH,dkgy,occ blk,plty blkly,v-frm,mod-v calc mod cut

739u

738u

700u

434u

366u

474u

504u

624u

517u

485u

TG, Cl-C4n 1 10 100 1000

WOB 10
PSI 2830
RPM 40

WOB 10
PSI 2830
RPM 40

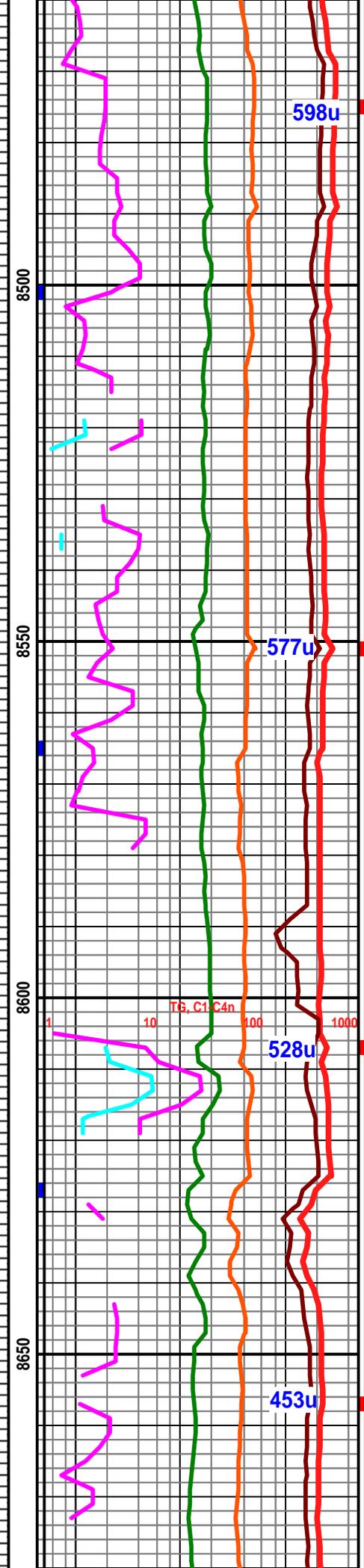
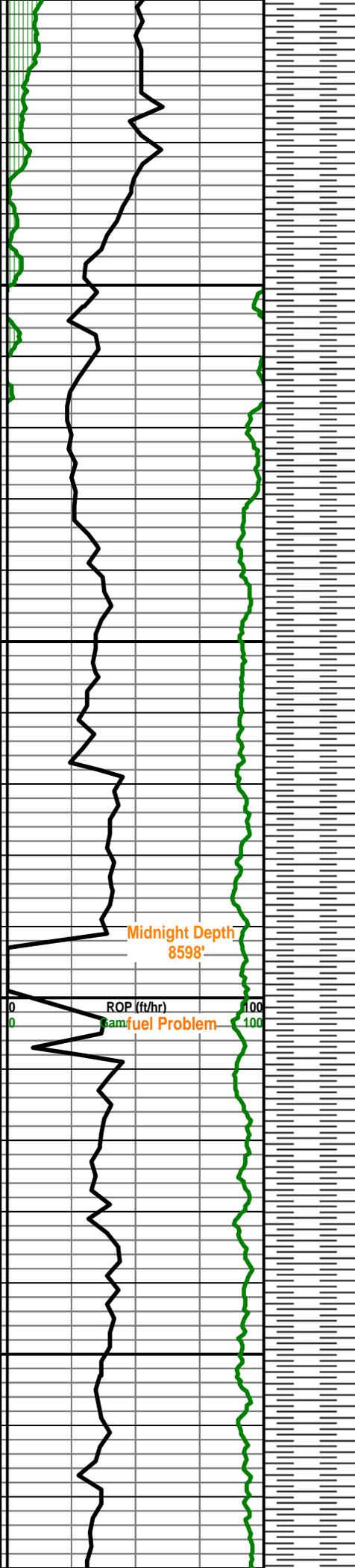
WOB 10
PSI 2830
RPM 40

MD 8512 TVD 6467.49
Az 340.5° Inc 90.9°

MD 8575 TVD 6466.89
Az 340.3° Inc 90.2°

Inclination 100

MD 8637 TVD 6466.99
Az 339.5° Inc 89.6°



598u SH,dkgy,occ blk,pty
blk,y,v frm,mod-v calc
m-good cut,

8500

SH,dkgy,occ
blk,pty,frm,mod
calc,good cut,

8550

577u SH,dkgy,occ
blk,pty,frm,v calc,good
cut,

SH,dkgy,occ blk,pty
blk,y,v frm,mod-v calc
mod cut

8600

528u SH,dkgy,dkgybrn,pty
sbfrm-frm,mod v calc,tr
calcxls,

1000

SH,dkgy,dkgybrn,pty
sbfrm-frm,mod v calc,tr
calcxls,

8650

453u SH,dkgy,dkgybrn,pty
sbfrm-frm,v calc,tr
calcxls,mod cut

SLIDE
PSI 2875

MD 8700 TVD 6467.43
Az 341° Inc 89.6°

WOB 10
RPM 40
PSI 2915

MD 8763 TVD 6467.98
Az 341.1° Inc 89.4°

slide
PSI 2888

Inclination 100

Service pumps &
rig P (ft/hr)
Gamma (API)

WOB 5
PSI 2862
RPM 42

MD 8825 TVD 6467.88
Az 342.7° Inc 90.8°

WOB 18
PSI 2978
RPM 14

MD 8888 TVD 6467.77
Az 343.5° Inc 89.4°

8700

8750

8800

8850

9000

522u

436 u

607u

630u

730u

644u

SH,dkgy,dkgybrn,ply
sbfrm-frm,v calc,tr
calcxls,mod cut

SH,dkgy,dkgybrn,ply
sbfrm-frm,od calc,
good cut,

SH,dkgy,dkgybrn,ply
sbfrm-frm,od calc,
good cut,

SH,blk,dkgy,ply,brit
sbfrm-frm,mod calc,tr
calcxls,

SH,blk,dkgy,ply,brit
sbfrm-frm,od calc,
good cut,

SH,blk,dkgy,ply,brit
sbfrm-,mod calc,
good cut,

SH,blk,dkgy,brit,ply
sbfrm,mod calc,
good cut

C5 -9%
C4 0%
C3 6.8%
C2 18%
C1 74%

C5 -6%
C3 5%
C2 16%
C1 78%

1 10 100 1000

TG, C1-C4

WOB 8
PSI 3031
RPM 42

slide
PSI 2910

WOB 10
PSI 3030
RPM 40

WOB 10
PSI 3030
RPM 40

WOB 10
PSI 3010
RPM 40

MD 8951 TVD 6468.37
Az 344.8° Inc 89.5°

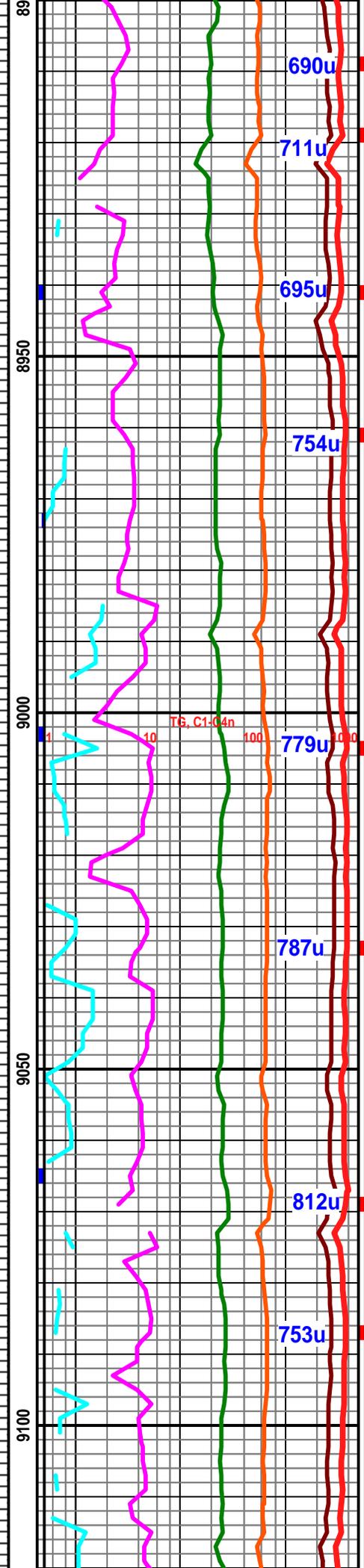
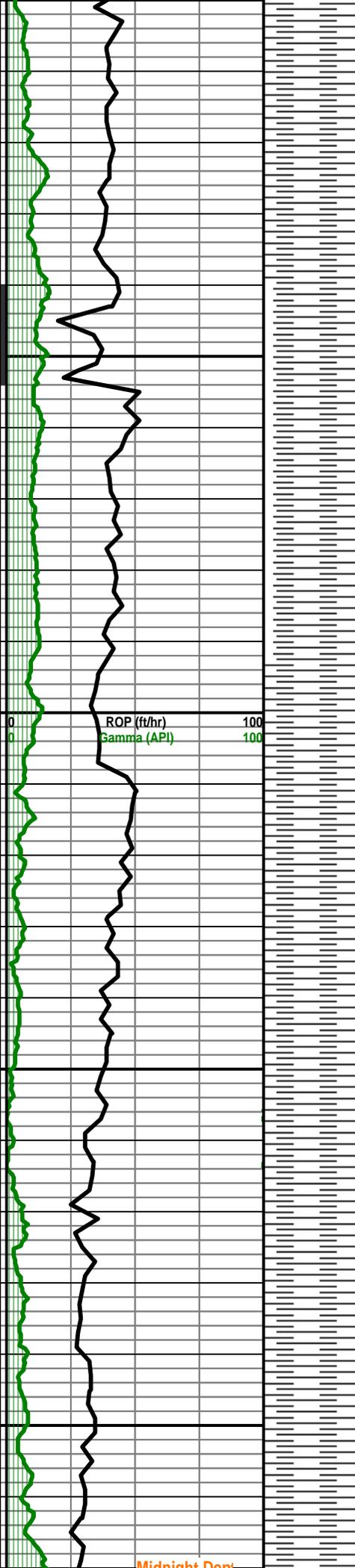
MD 9014 TVD 6468.92
Az 344° Inc 89.5°

MD 9078 TVD 6469.81
Az 343.5° Inc 88.9°

Inclination

ROP (ft/hr)
Gamma (API)

Midnight Dent



690u

711u

695u

754u

779u

787u

812u

753u

SH,blk,dkgy,brit,pty
sbfrm,mod calc,
good cut

SH,blk,dkgy,brit,pty
sbfrm,mod calc,
good cut

SH,blk,dkgy,brit,pty
sbfrm,mod calc,
mod cut

SH,blk,dkgy,brit,pty
sbfrm,mod calc,
good cut

SH,dkgy,occ dkbrn,
blky,sbfrm,frm,
mod calc,good cut

SH,dkgy,occ dkbrn,
blky,sbfrm,frm,
mod calc,good cut

SH,dkgy,occ dkbrn,
pty,blky,sbfrm,frm,
mod calc,

SH,dkgy,occ dkbrn,
pty,blky,sbfrm,frm,
v-calc,lym,good cut

89

8950

9000

9050

9100

TG, C1-0.4n

slide
PSI 3000

MD 9140 TVD 6470.95
Az 345° Inc 89°

WOB 10
PSI 3100
RPM 40

0 Inclin 100
MD 9202 TVD 6472.03
Az 344° Inc 89°

WOB 10
PSI 3100
RPM 40

slide
PSI 3000

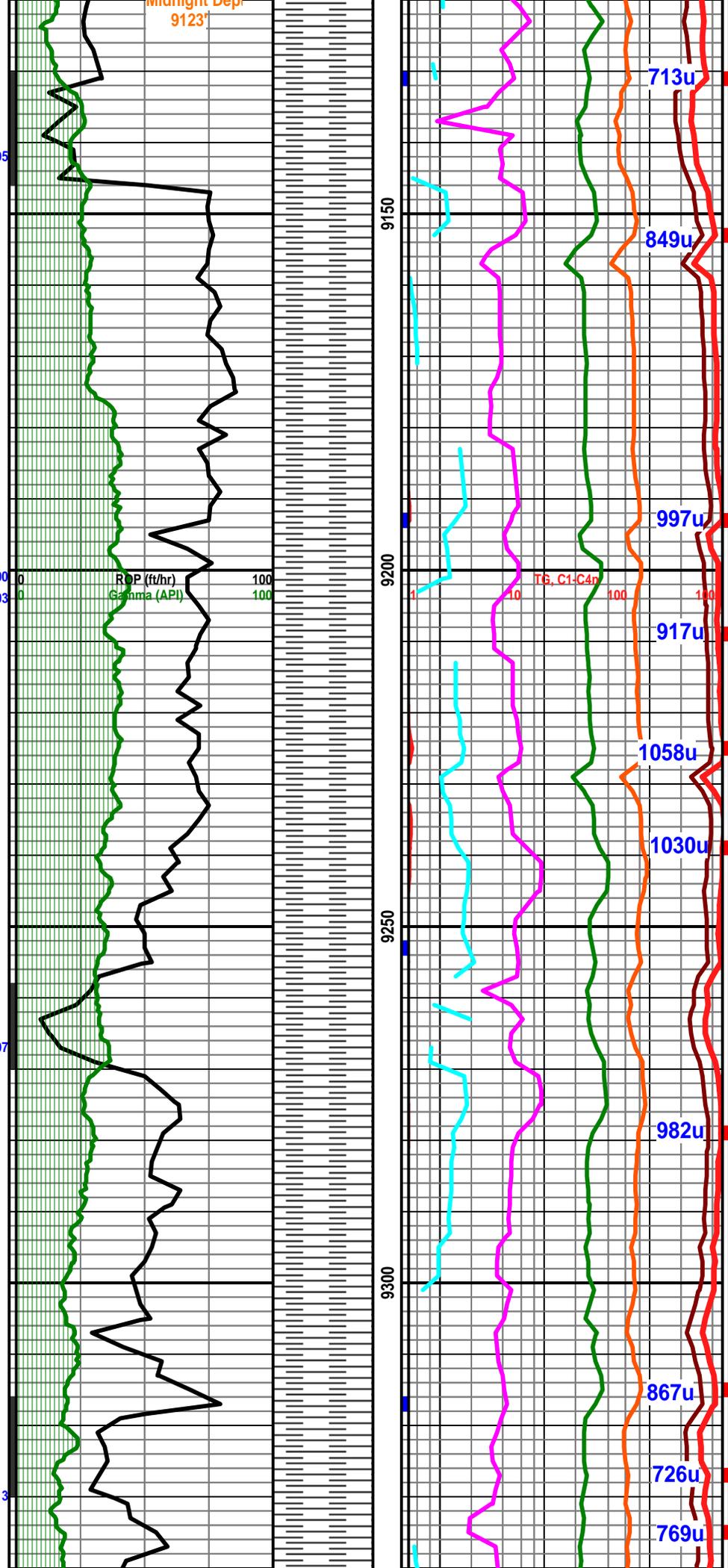
MD 9265 TVD 6472.97
Az 345° Inc 89.3°

WOB 10
PSI 3210
RPM 40

slide
PSI 3050

MD 9328 TVD 6473.13
Az 345.6° Inc 90.4°

Midnight Dep
9123'



713u

SH,dkgy,occ dkbrn,
plty,blky,sbfrm,frm,
v-calc,lym,good cut

849u

SH,dkgy,blk,occ dk
brn,blky,sft,sbfrm,
sl calc,good cut

997u

SH,dkgy,blk,occ dk
brn,blky,sft,sbfrm,
sl calc,good cut

917u

1058u

SH,dkgy,blk,occ dk
brn,blky,sft,sbfrm,
sl calc,

1030u

SH,blk,dkgy,plty,
sbfrm,frm,tr calcxln,
sl calc,

982u

SH,blk,dkgy,plty,brit
sbfrm,carb,sl -mod
calc,good cut,

867u

SH,blk,dkgy,plty,brit
sbfrm,carb,sl -mod
calc,good cut,

726u

769u

9150

9200

9250

9300

TG, C1-C4n

WOB 10
PSI 3080
RPM 40

MD 9391 TVD 6472.8
Az 344.9° Inc 90.2°

0 Inclination 100

ROP (ft/hr) 100
Gamma (API) 100

WOB 10
PSI 3068
RPM 44

MD 9454 TVD 6472.58
Az 345.7° Inc 90.2°

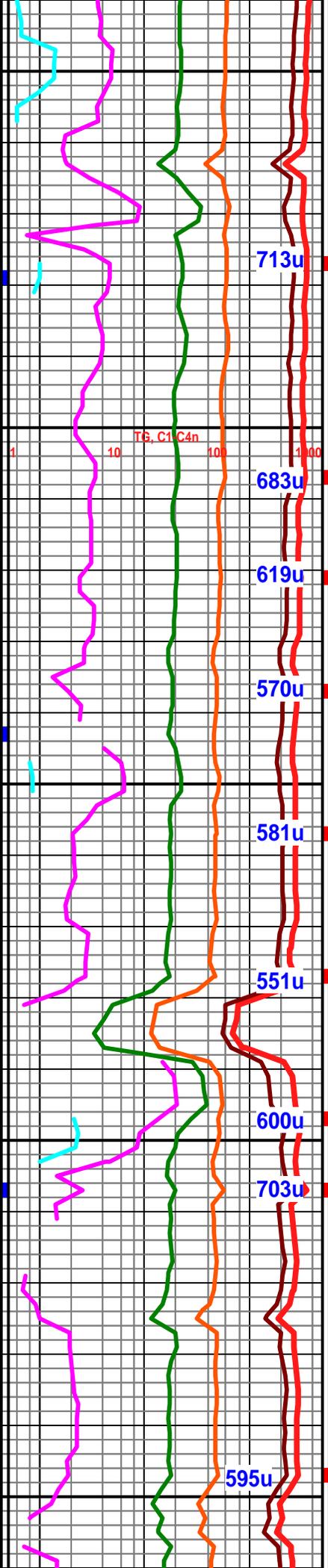
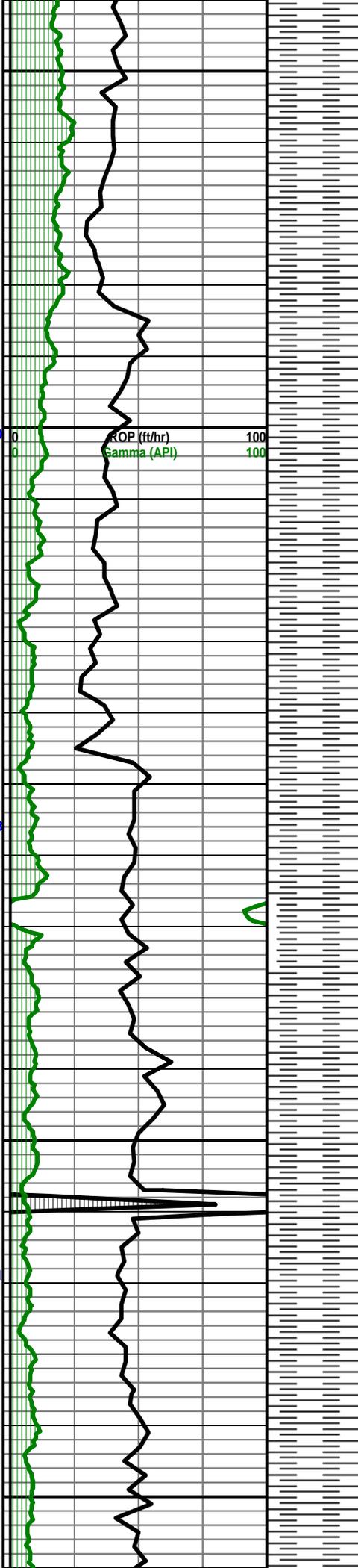
WOB 10
PSI 3090
RPM 46

WOB 11
PSI 3100
RPM 44

MD 9517 TVD 6472.31
Az 346.6° Inc 90.3°

WOB 10
PSI 3060
RPM 43

9350
9400
9450
9500
9550



SH,blk,dkgy,plty,brit
sbfrm,carb,sl -mod
calc,good cut,

713u

SH,blk,dkgy,plty,brit
sbfrm,carb,sl -mod
calc,good cut,

683u

619u

570u

SH,blk,dkgy,plty,
sbfrm-frm,mod-v
calc,mod-good cut,

581u

551u

SH,blk,dk-mgy,plty,
sbfrm-frm,mod-v
calc,occ lmy,mod-
good cut,

600u

703u

SH,blk,dkgy,plty,sbfrm
frm,mod-v calc,mod
-good cut,

595u

SH,blk,dkgy,plty,sbfrm
frm,mod-v calc,mod
-good cut,

WOB 11
PSI 3107
RPM 42

WOB 11
PSI 3095
RPM 52

WOB 11
PSI 3065
RPM 52

WOB 11
PSI 3065
RPM 52

slide
PSI 3050

WOB 11
PSI 3065
RPM 52

MD 9580 TVD 6472.09
Az 347.2° Inc 90.1°

MD 9642 TVD 6471.87
Az 347.9° Inc 90.3°

MD 9705 TVD 6471.65
Az 346.8° Inc 90.1°

MD 9768 TVD 6471.32
Az 346.7° Inc 90.5°

Inclination 0 100

ROP (ft/hr)
Gamma (API)

MIDnight Depth
9757'

Chromatograph calib @ 9571'

9600
9650
9700
9750

1 10 100 1000

632u

423u

507u

524u

SH,blk,dkgy,plty,sbfrm
frm,mod-v calc,mod
-good cut,
SH,blk,dkgy,plty,sbfrm
frm,mod-v calc,mod
-good cut,
SH,blk,dkgy,plty,sbfrm
frm,mod-v calc,mod
-good cut,
SH,blk,dkgy,plty,
sbfrm-frm,v calc,
mod-cut,
SH,blk,dkgy,plty,
sbfrm-frm,v calc,
mod-good cut, tr
pyrxln,lym,
SH,blk,dkgy,plty,
sbfrm-frm,v calc,
mod-good cut, tr
pyrxln,lym,
SH,blk,dkgy,plty,
sbfrm-frm,v calc,
mod-good cut, tr
pyrxln,lym

slide
PSI 2950

Inclination 100

ROP (ft/hr)
Gamma (API)

MD 9831 TVD 6470.61
Az 346° Inc 90.8°

WOB 11
PSI 3070
RPM 52

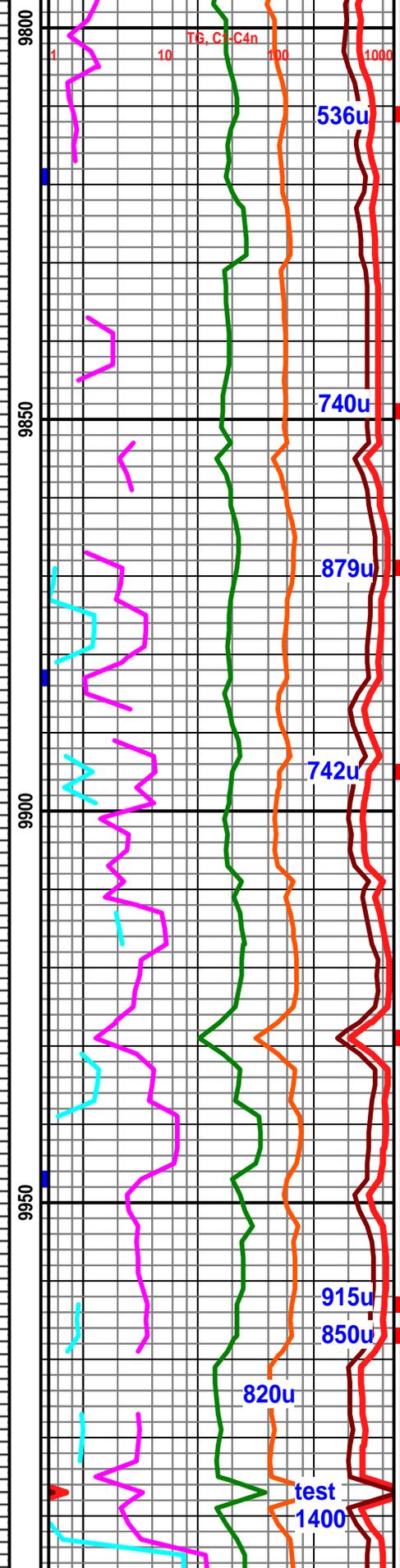
MD 9894 TVD 6470.06
Az 343.7° Inc 90.2°

slide
PSI 2950

WOB 11
PSI 3065
RPM 40

MD 9957 TVD 6469.89
Az 342.7° Inc 90.1°

WOB 11
RPM 41
PSI 3109



SH,blk,dkgy,plty
sbfrm-frm,v calc,
mod-good cut, tr
pyrxln,lmy,

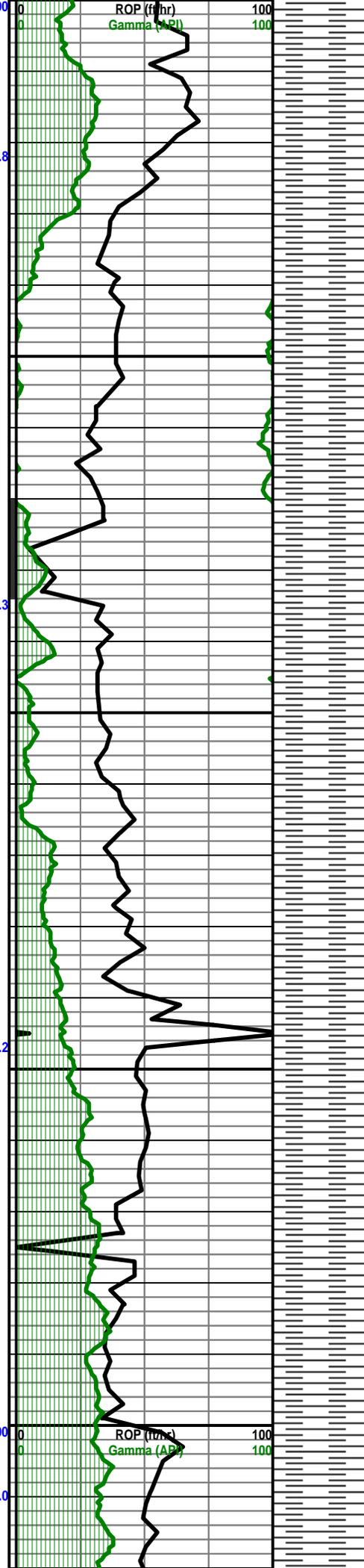
SH,dkgy,dkbrn,plty,
sbfrm,mod-v calc, tr
pyrxln,good cut,

SH,dkgy,dkbrn,plty,
brit,sbfrm,mod calc, tr
pyrxln,good cut,

SH,dkgy,dkbrn,plty,
brit,sbfrm,mod calc,
good cut,

WOB 11
RPM 42
PSI 3075

Inclination
MD 10020 TVD 6469.8
Az 343.4° Inc 90°



WOB 12
RPM 39
PSI 3096

MD 10083 TVD 6469.3
Az 342.9° Inc 90.9°

WOB 11
PSI 3111
RPM 40

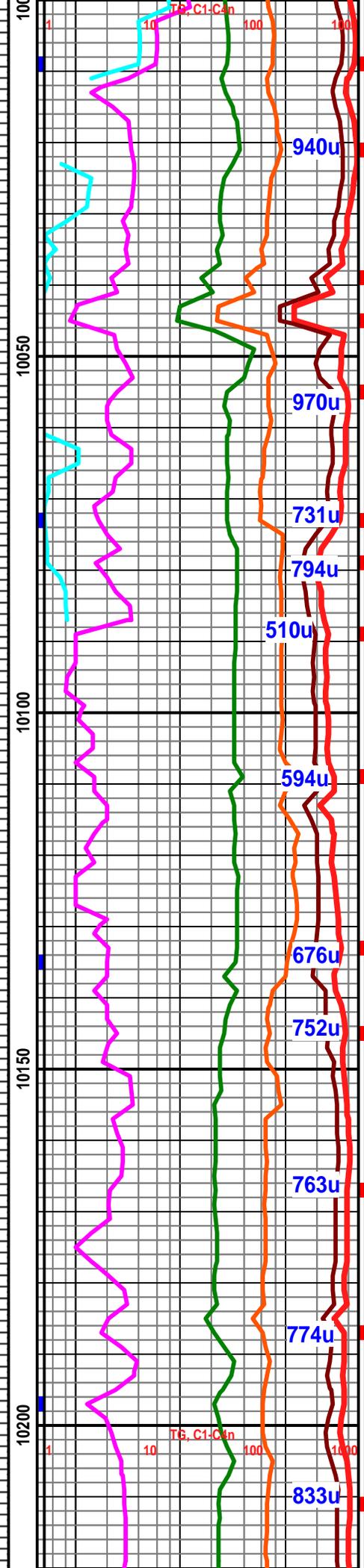
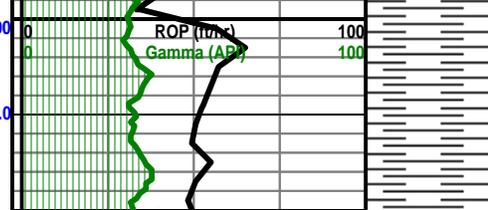
MD 10145 TVD 6466.2
Az 342.5° Inc 91.1°

WOB 11
PSI 3111
RPM 40

WOB 10
RPM 39
PSI 3156

Inclination
MD 10208 TVD 6467.0
Az 342.2° Inc 91.1°

WOB 11
RPM 39
PSI 783



940u

970u

731u

794u

510u

594u

676u

752u

763u

774u

833u

SH,dkgy,sbfrm,mod calc,
good cut,

SH,dkgy,dkbrn,plty,
brit,sbfrm,mod calc,
good cut,

SH,dkgy,mbrn,blky
v-frm,v-calc,
good cut,

SH,dkgy,dkbrn,plty,
brit,sbfrm,v calc,
good cut,

SH,dkgy,dkbrn,plty,
brit,sbfrm,mod calc,
good cut,

WOB 11
RPM 38
PSI 3172

WOB 11
RPM 40
PSI 3172

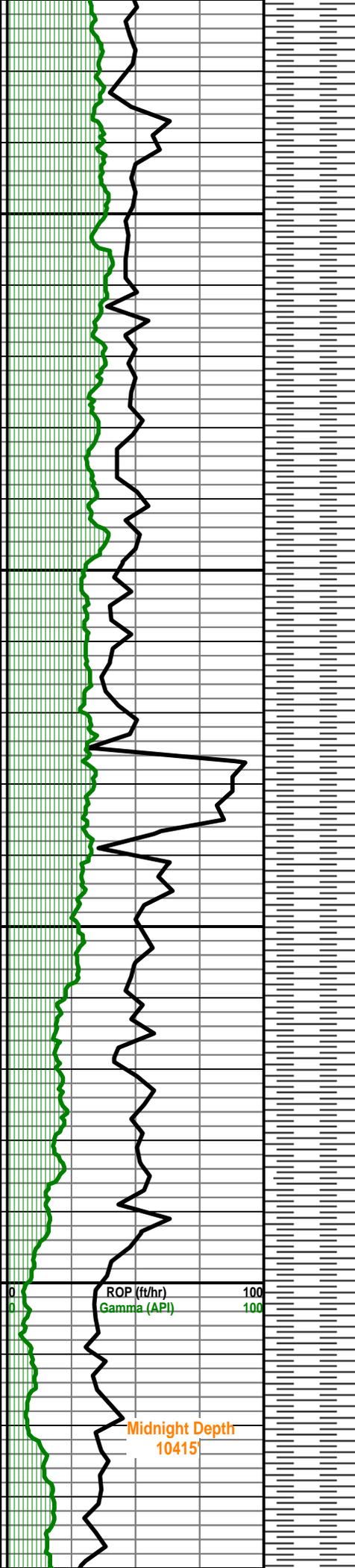
WOB 11
RPM 40
PSI 3172

WOB 11
RPM 40
PSI 3155

MD 10270 TVD 6466.0
Az 341.4° Inc 90.8°

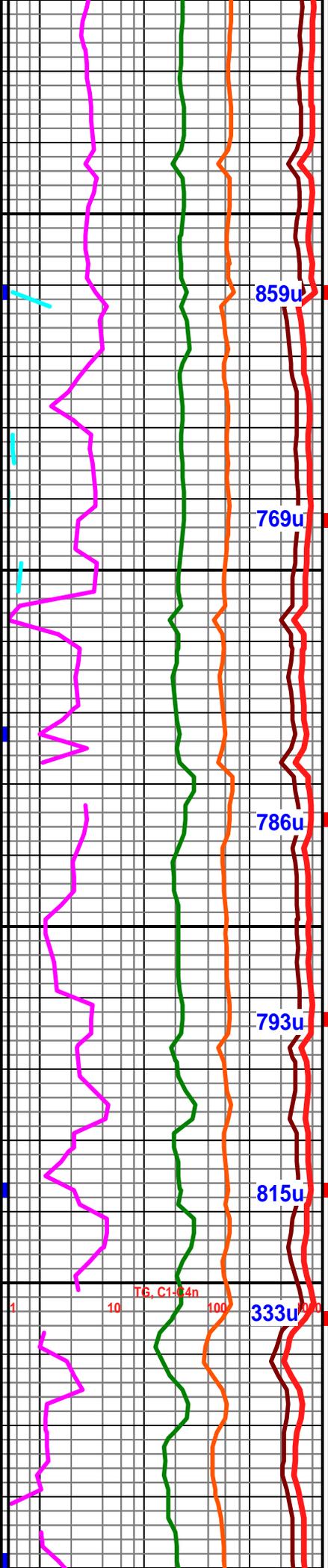
MD 10334 TVD 6465.5
Az 341° Inc 90.1°

MD 10396 TVD 6465.6
Az 341.5° Inc 89.6°



Midnight Depth
10415'

10250
10300
10350
10400



SH,dkgy,dkbrn,plty,
brit,sbfrm,mod calc,
good cut,

859u

SH,dkgy,dkbrn,plty,
brit,sbfrm,mod calc,
tr pyrln,good cut,

769u

SH,dkgy,dkbrn,plty,
brit,sbfrm,mod calc,
good cut,

786u

SH,dkgy,dkbrn,plty,
brit,sbfrm,mod calc,
good cut,

793u

SH,dkgy,dkbrn,plty,
brit,sbfrm,mod calc,
good cut,

815u

SH,dkgy,dkbrn,plty,
Subfrm,brit,v-mod
calc,mod good cut,

333u

SH,dkgy,brn,plty,
Subfrm,brit,v-mod
calc,good cut,

Slide
PSI 3010

MD 10458 TVD 6465.7
Az 340.5° Inc 90.2°

WOB 11
RPM 40
PSI 3155

MD 10521 TVD 6465.1
Az 340.7° Inc 90.9°

WOB 9
RPM 40
PSI 3200

MD 10583 TVD 6464.3
Az 340.8° Inc 90.6°

WOB 10
RPM 41
PSI 3205

Inclination 100
ROP (ft/hr)
Gamma (API)

WOB 9
RPM 41
PSI 3187

MD 10646 TVD 6463.7
Az 340.9° Inc 90.5°

WOB 10
RPM 39
PSI 3127

10450
10500
10550
10600
10650

701u
855u
871u
922u
1013u
910u
1018u
1015u
1034u

SH,dkgy,dkbrn,plty,
Subfrm,brit,v-mod
calc,good cut,
SH,dkgy,dkbrn,plty,
Subfrm,brit,v-mod
calc,good cut,
SH,dkgy,dkbrn,plty,
Subfrm,brit,v-mod
calc,mod good cut,
SH,dkgy,dkbrn,plty,
Subfrm,brit,v-mod
calc,tr pyrxln,mod
good cut,
SH,dkgy,dkbrn,plty,
Subfrm,brit,v-mod
calc,tr pyrxln,mod
good cut,
SH,dkgy,plty,brit,
sbfrm,mod calc,
good cut,
SH,dkgy,plty,brit,
sbfrm,mod calc,
good cut,

TR Iso C4

T6, C1-C4

TR Iso C4

WOB 9
RPM 40
PSI 3140

WOB 10
RPM 41
PSI 3204

WOB 11
RPM 40
PSI 3217

WOB 15
RPM 23
PSI 3242

WOB 11K
PSI 3230
RPM 40

MD 10710 TVD 6463.2
Az 340° Inc 90.5°

MD 10773 TVD 6462.7
Az 340.9° Inc 90.3°

Inclination

MD 10836 TVD 6461.9
Az 341° Inc 91.2°

ROP (W/hr)
Gamma (API)

10700

10750

10800

10850

TR Iso C4

TG, C1-04n

910U

933U

813U

805U

793U

767U

711u

616u

572u

679u

SH,dkgy,plty,brit,
sbfrm,mod calc,
good cut,

SH,dkgy,plty,brit,sbfrm,
calc,good cut

SH,dkgy,plty,brit,sbfrm,
calc,good cut

SH,dkgy,plty,brit,sbfrm,
calc,good cut

SH,blk,dkgy,plty,sb-
frm,brit,mod calc,
mod cut,

SH,blk,dkgy,plty,sb-
frm,brit,mod calc,
mod cut,

SH,blk,dkgy,plty,sb-
frm,brit,mod calc,
mod cut,

WOB 11K
PSI 3230
RPM 40

MD 10900 TVD 6460.4
Az 340.2° Inc 91.4°

WOB 54
PSI 3150

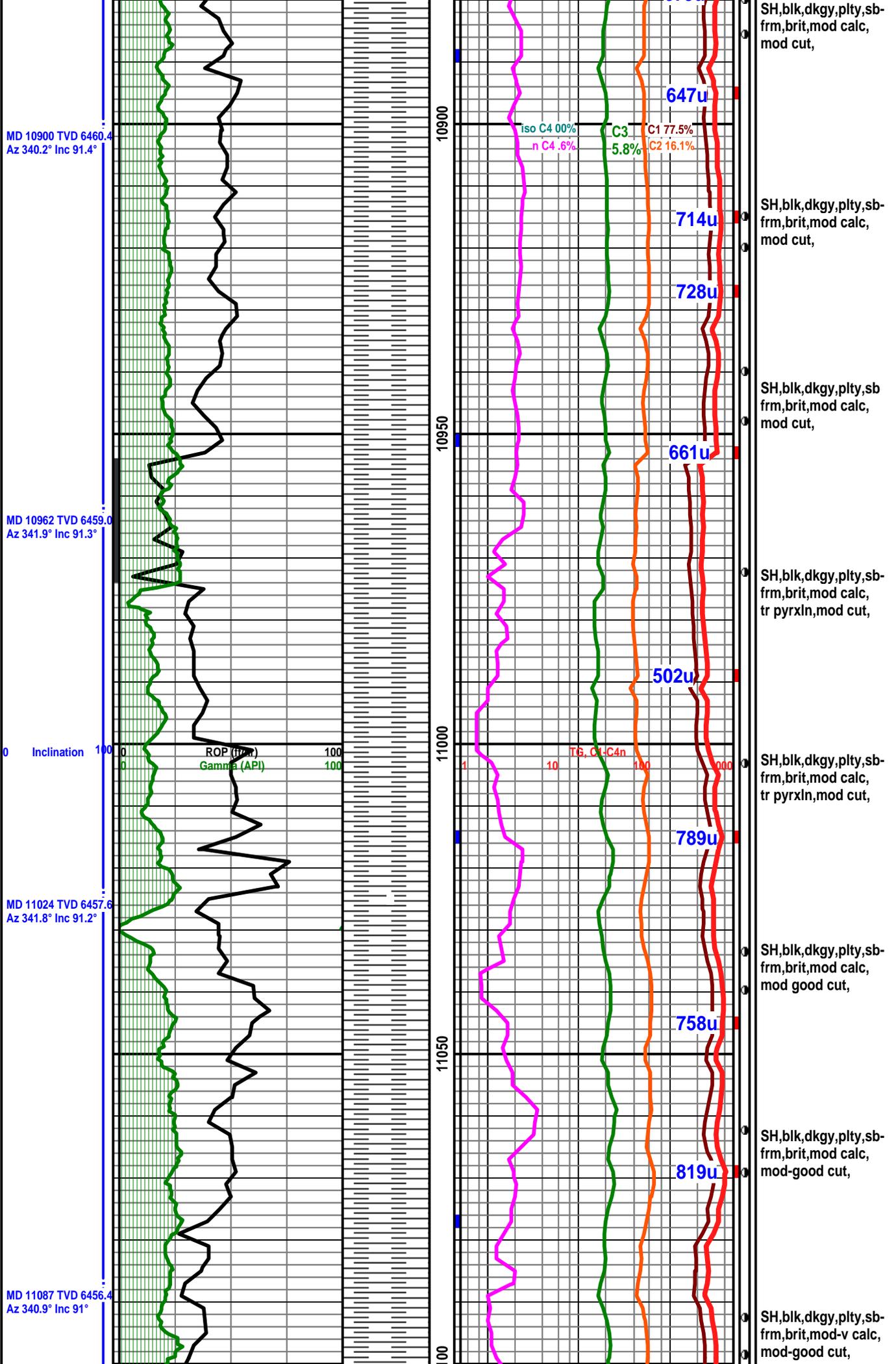
MD 10962 TVD 6459.0
Az 341.9° Inc 91.3°

WOB 9K
PSI 3300
RPM 40

MD 11024 TVD 6457.6
Az 341.8° Inc 91.2°

WOB 9K
PSI 3350
RPM 40

MD 11087 TVD 6456.4
Az 340.9° Inc 91°



647u

714u

728u

661u

502u

789u

758u

819u

SH, blk, dkgy, plty, sbfrm, brit, mod calc, mod cut,

SH, blk, dkgy, plty, sbfrm, brit, mod calc, mod cut,

SH, blk, dkgy, plty, sbfrm, brit, mod calc, mod cut,

SH, blk, dkgy, plty, sbfrm, brit, mod calc, tr pyrln, mod cut,

SH, blk, dkgy, plty, sbfrm, brit, mod calc, tr pyrln, mod cut,

SH, blk, dkgy, plty, sbfrm, brit, mod calc, mod good cut,

SH, blk, dkgy, plty, sbfrm, brit, mod calc, mod-good cut,

SH, blk, dkgy, plty, sbfrm, brit, mod-v calc, mod-good cut,

WOB 10K
PSI 3330
RPM 40

WOB 10K
PSI 3420
RPM 40

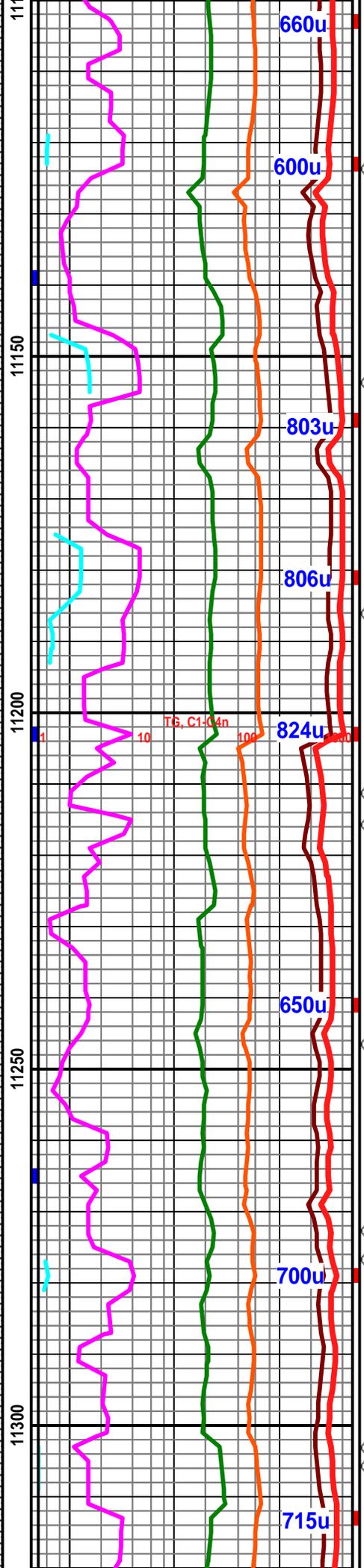
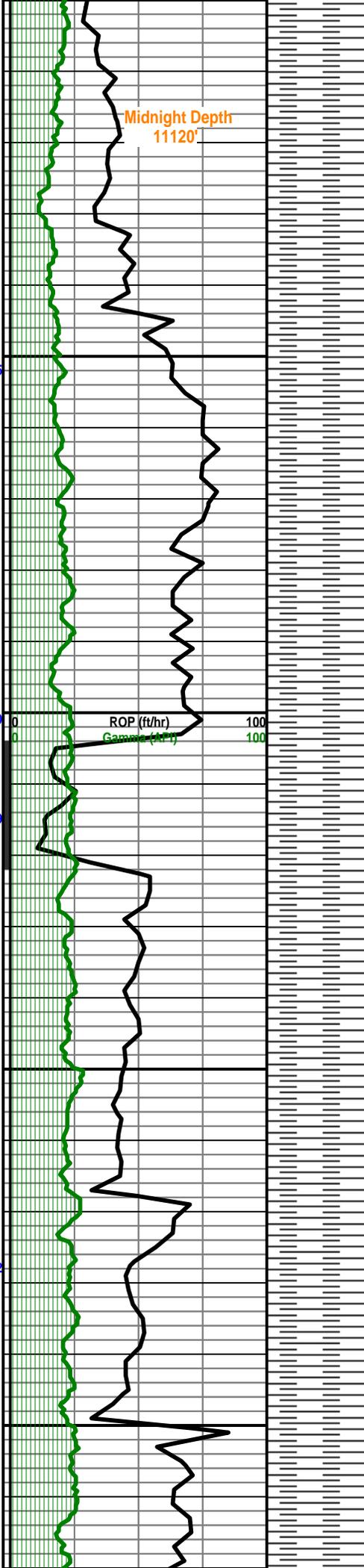
WOB 54
PSI 3290

WOB 11K
PSI 3400
RPM 40

MD 11150 TVD 6455.5
Az 339.7° Inc 90.6°

MD 11213 TVD 6454.9
Az 340° Inc 90.5°

MD 11276 TVD 6454.2
Az 340.6° Inc 90.9°



SH,blk,dkgy,plty,sb-
frm,brit,mod-v calc,
tr pyrXln,mod cut,

MD 11339 TVD 6452.9
Az 341.7° Inc 91.4°

0 Inclination 100
MD 11402 TVD 6451.3
Az 340.9° Inc 91.6°

MD 11466 TVD 6449.9
Az 343° Inc 90.8°

MD 11529 TVD 6449.1
Az 343.5° Inc 90.6°

ROP (ft/hr)
Gamma (API)

WOB 26
PSI 3110

WOB 10
PSI 3306
RPM 40

WOB 10
PSI 3306
RPM 40

11350

11400

11450

11500

767u

737u

682u

639u

796u

744u

749u

SH,blk,dkgy,plty,sb-frm,brit,mod calc, good cut,

Sh,blk,dkgy,plty,sb-frm,brit,mod calc, good cut,

SH,blk,dkgy,plty,sb-frm,brit,mod calc, mod cut,

SH,blk,dkgy,plty,sb-frm,brit,mod calc, fnt cut,

SH,blk,dkgy,plty,sb-frm,brit,mod calc, good cut,

SH,blk,dkgy,plty,sb-frm,brit,mod calc, good cut,

SH,blk,dkgy,plty,sb-frm,brit,mod calc, good cut,

TG, C1-C4n
1 10 100 1000

WOB 10
PSI 3306
RPM 40

WOB 10
PSI 3306
RPM 40

WOB 10
PSI 3306
RPM 40

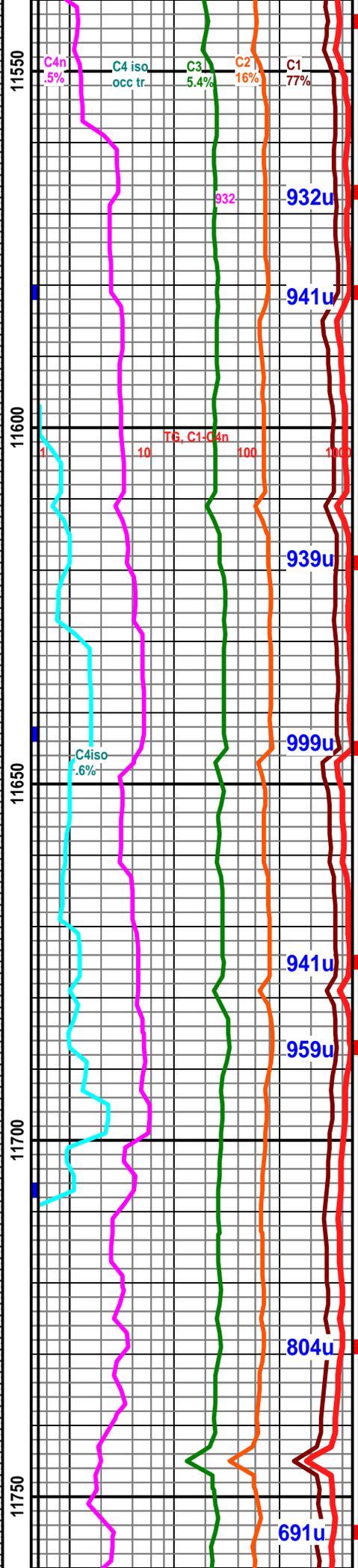
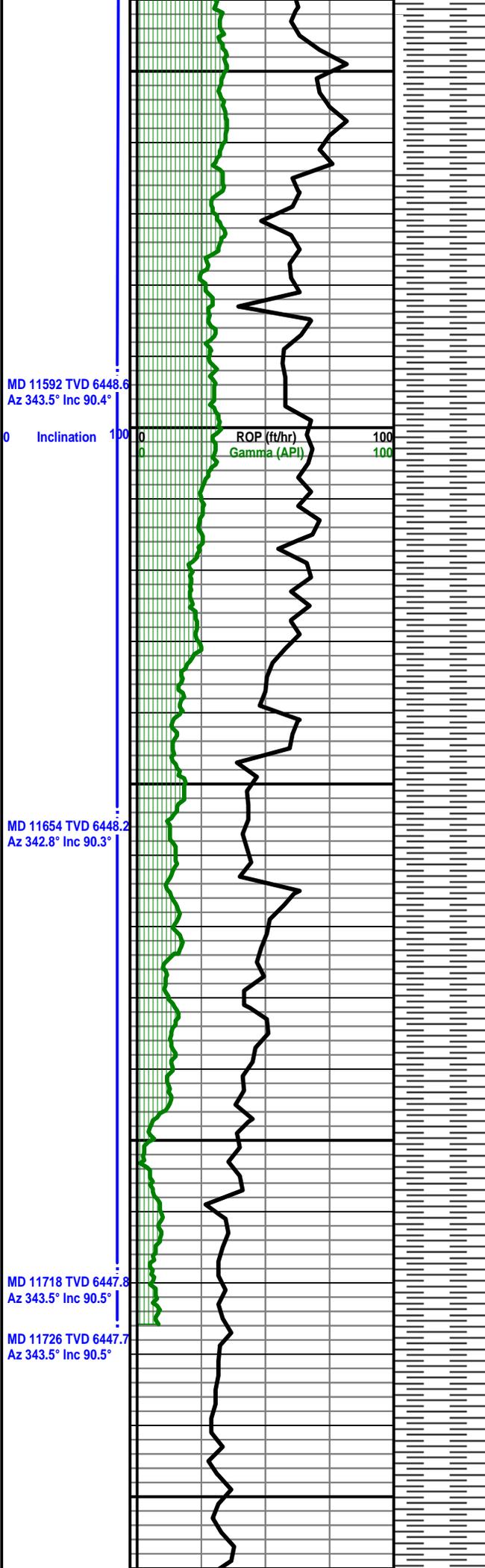
WOB 10
PSI 3180
RPM 40

MD 11592 TVD 6448.6
Az 343.5° Inc 90.4°

MD 11654 TVD 6448.2
Az 342.8° Inc 90.3°

MD 11718 TVD 6447.8
Az 343.5° Inc 90.5°

MD 11726 TVD 6447.7
Az 343.5° Inc 90.5°



SH,blk,dkg,plty,sb-frm,blk,calc,good cut,
SH,blk,dkg,plty,sb-frm,brit,mod calc,v-good cut,
SH,blk,dkg,plty,sb-frm,mod-sl calc,trace v-good cut

11550
11600
11650
11700
11750

932u
932u
939u
999u
941u
959u
804u
691u

WOB 12
PSI 3264
RPM 40

Drillers EST TD @ 11778' on
12/24/11 Loggers remain on
location until casing & cement
plud down on

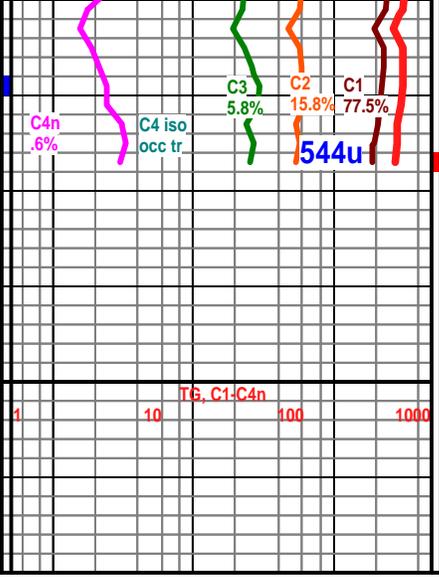
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appreciated

0 Inclination 100

100
100

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11800



pyl x m, v-good cut
SH, blk, dkg, plty, sb-
frm, brit, mod calc,
good cut,