



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

Well Name: Horsetail 08C-1739
Well Id: 05-123-42848-00
Location: Sec 8-T10N-R57W
License Number: 05-123-42848-00
Spud Date: 5/24/2016
Surface Coordinates: Lat.: 40.859925 Long.: -103.777136

Region: Redtail Field
Drilling Completed: 5/28/2016

Bottom Hole Coordinates:

Ground Elevation (ft): 4913
Logged Interval (ft): 5195 To: 16200
Formation: Ft. Hays, Codell
Type of Drilling Fluid: Water Based Mud

K.B. Elevation (ft): 4934
Total Depth (ft): 16200

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

OPERATOR

Company: Whiting Oil & Gas Corp.
Address: 1700 Broadway Suite 2300
Denver, CO 80290

GEOLOGIST

Name: Brian Reddick and Todd Nakata
Company: Acme Geologic Consulting
Address: 108 Berry Street
Little Rock, AR 72205

Drilling Company

Unit Drilling Company
Rig 409

Gas Detection

Mudlogging Systems, Inc., M Logger, Model TGC, Total Gas and Chromatograph

Comments

Lithologies and tops at drilled depths, not corrected to elogs. Where the well bore gas is 100% methane, the C1 line is moved to 85% for graphical purposes only.

ROCK TYPES

 Anhy
 Bent
 Brec
 Cht
 Clyst

 Coal
 Congl
 Dol
 Gyp
 Igne

 Lmst
 Meta
 Cyan mrlst
 Mrlst
 Salt

 Shale
 Shcol
 Shgy
 Sltst
 Ss







 Till
 Cyan chk
 Chalk

ACCESSORIES

MINERAL
 Anhy
 Arggrn
 Arg
 Bent
 Bit
 Brecfrag
 Calc
 Carb
 Chtdk
 Chtlt
 Dol
 Feldspar
 Ferrpel
 Ferr
 Glau

 Gyp
 Hvymin
 Kaol
 Marl
 Minxl
 Nodule
 Phos
 Pyr
 Salt
 Sandy
 Silt
 Sil
 Sulphur
 Tuff

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








 Ostra
 Pelec
 Pellet
 Pisolite
 Plant
 Strom

STRINGER
 Anhy
 Arg
 Bent
 Coal
 Dol
 Gyp
 Ls
 Mrst

 Sltstrg
 Ssstrg

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

POROSITY

-  Earthy
-  Fenest
-  Fracture
-  Inter
-  Moldic
-  Organic
-  Pinpoint







Vuggy

SORTING

-  Well
-  Moderate
-  Poor

OTHER SYMBOLS

ROUNDING

-  Rounded
-  Subrnd
-  Subang
-  Angular

OIL SHOW

-  Even



Spotted



Ques



Dead

INTERVAL



Core



Dst

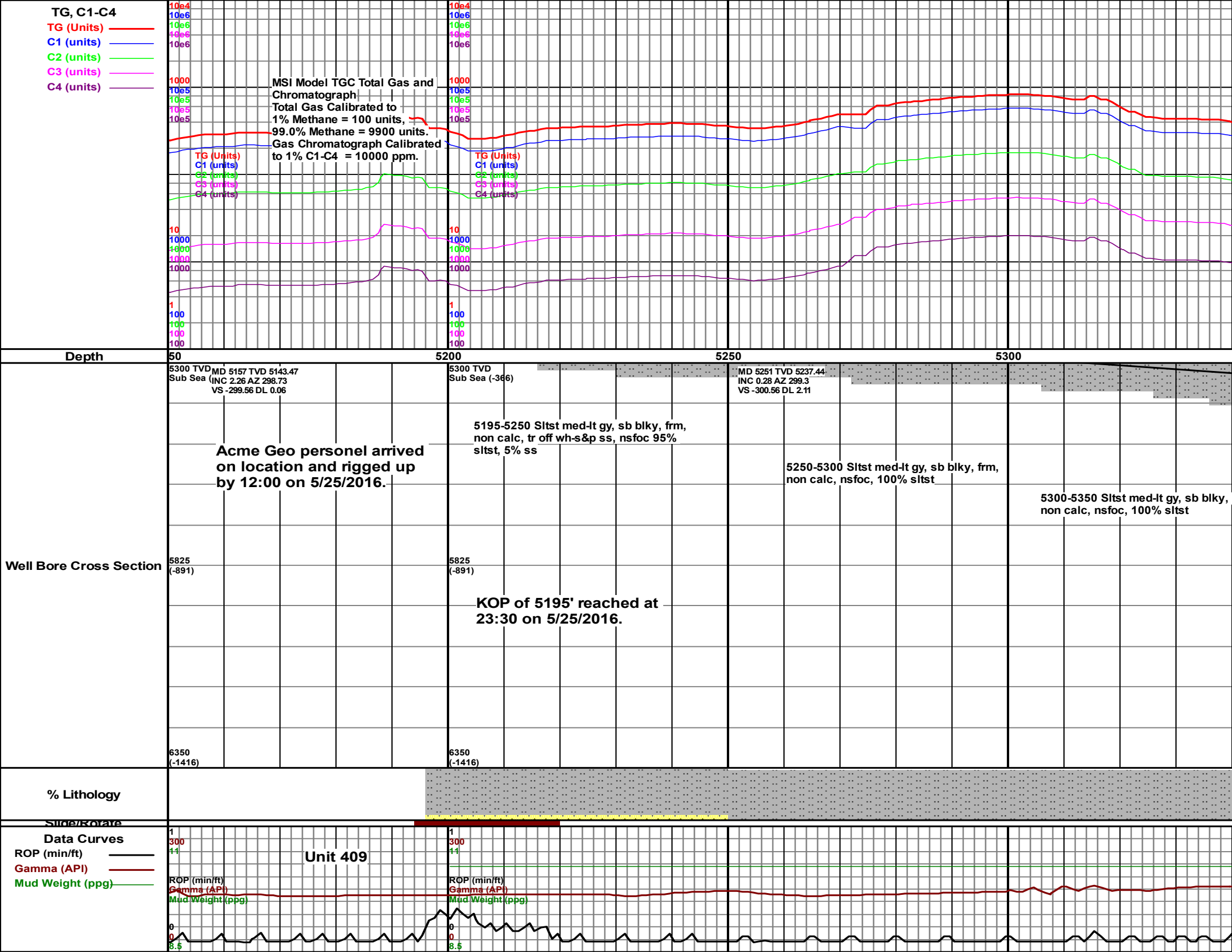
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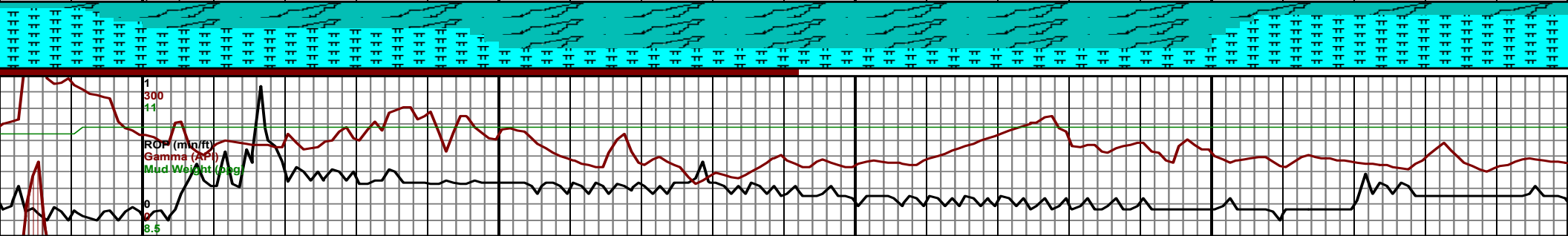
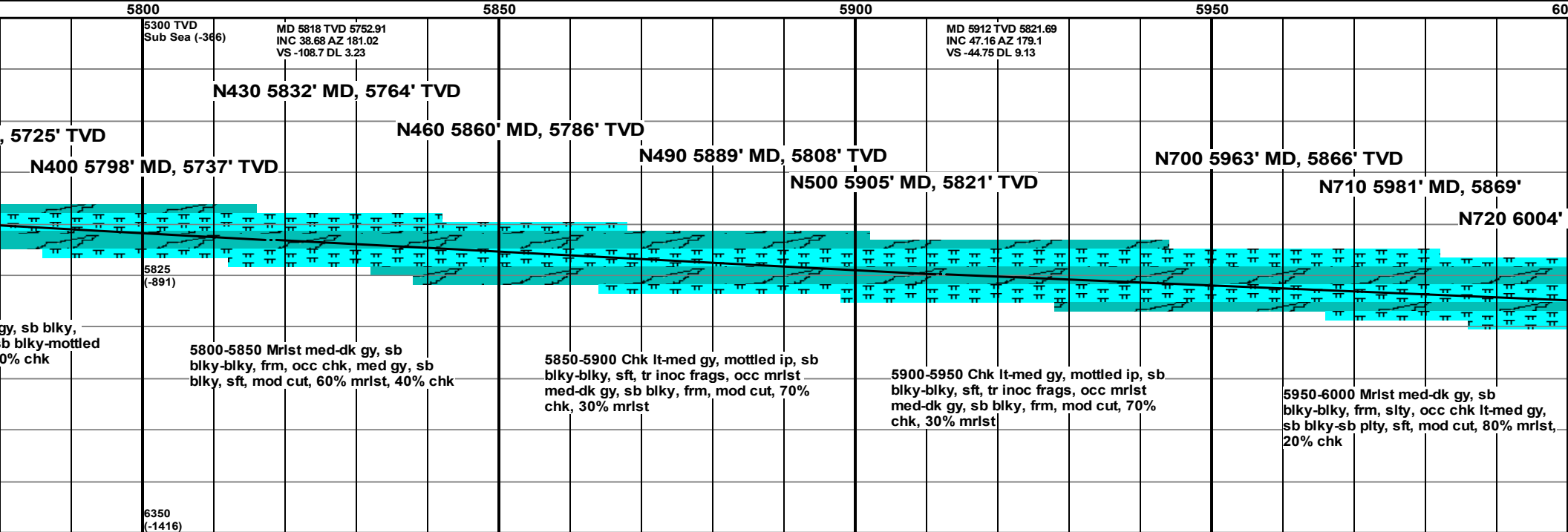
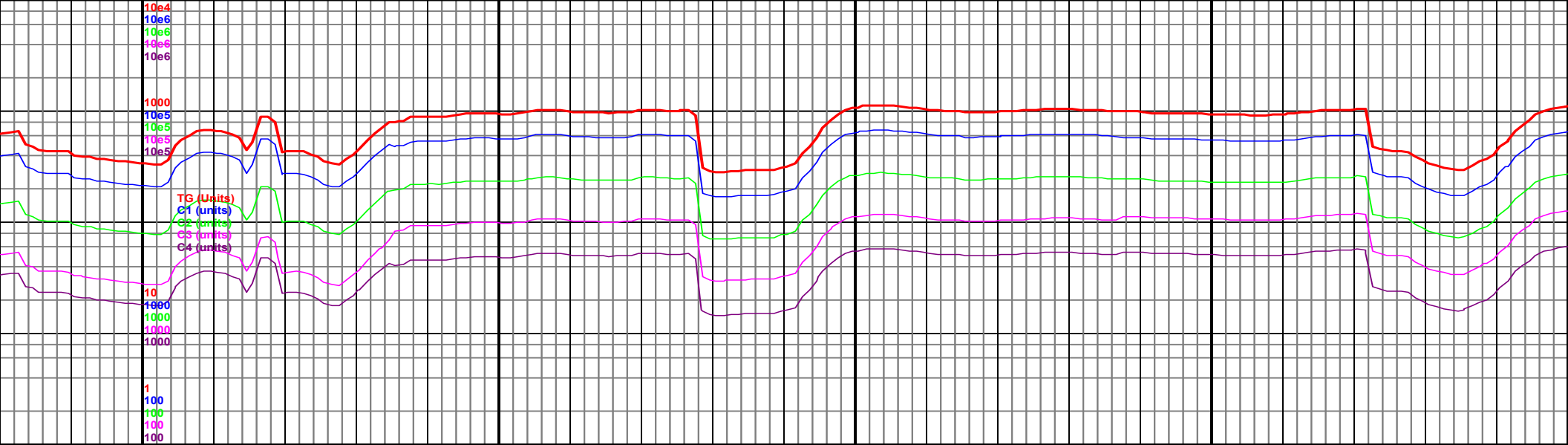


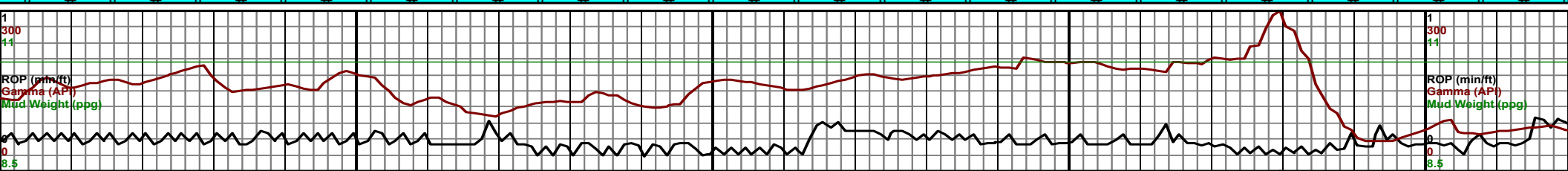
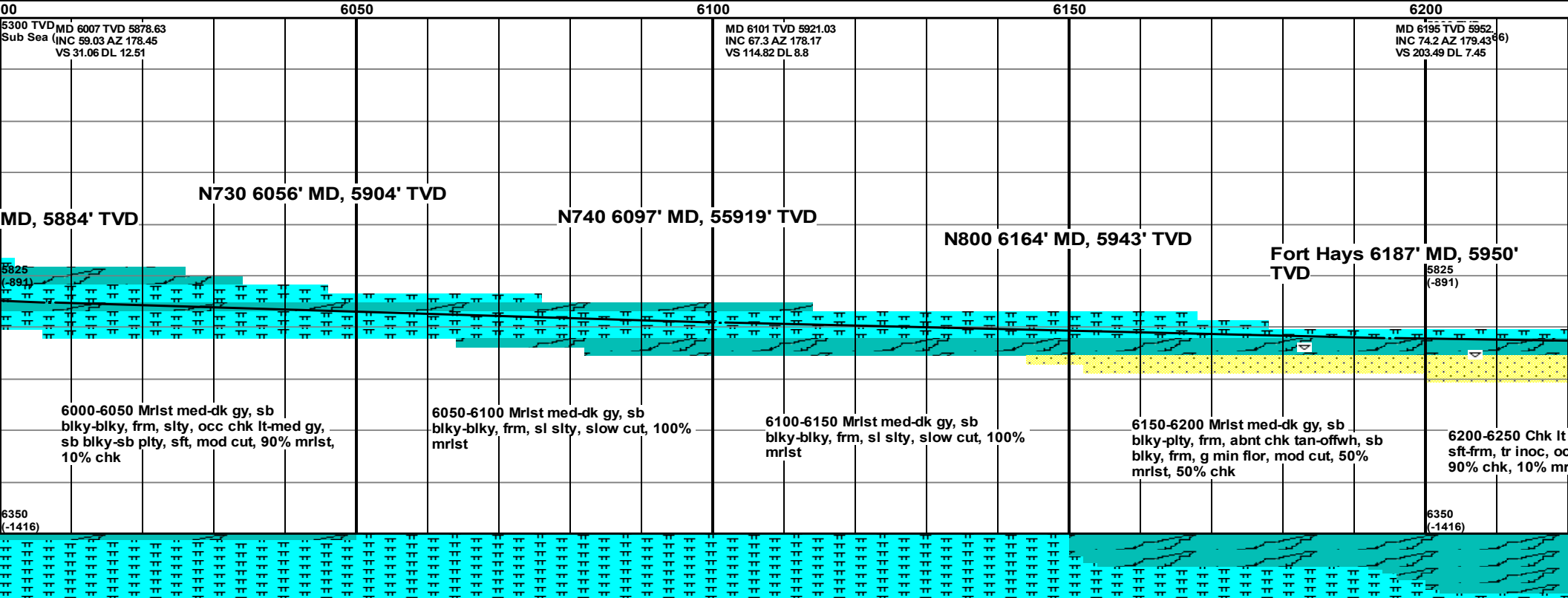
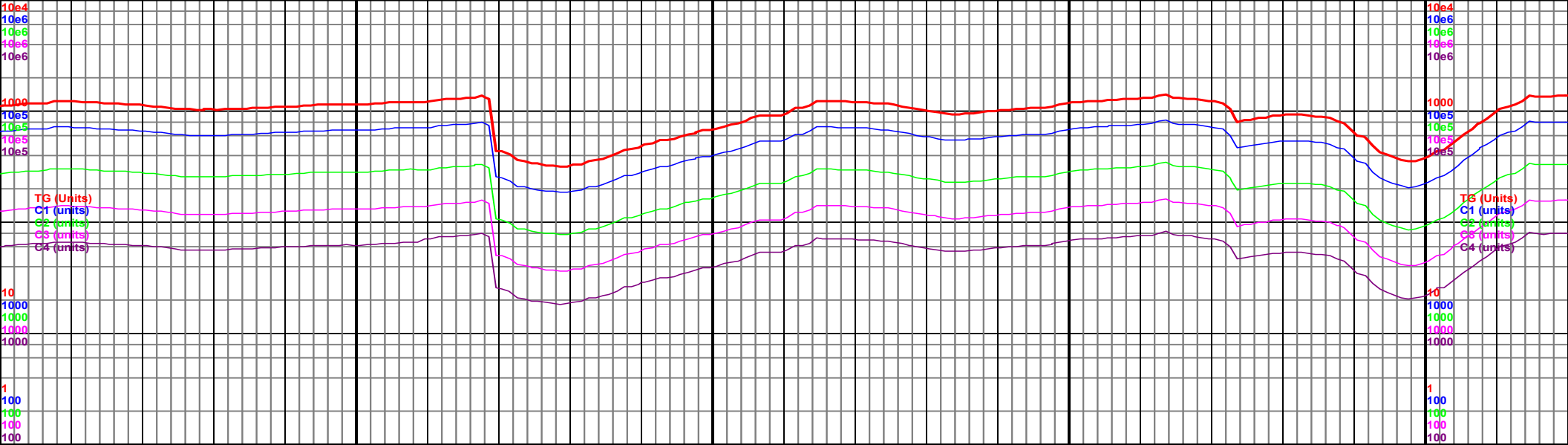
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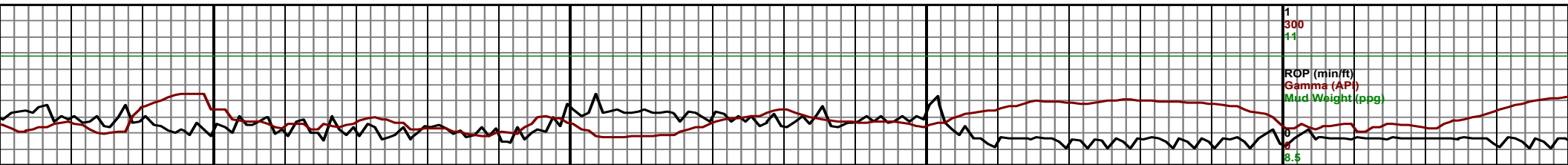
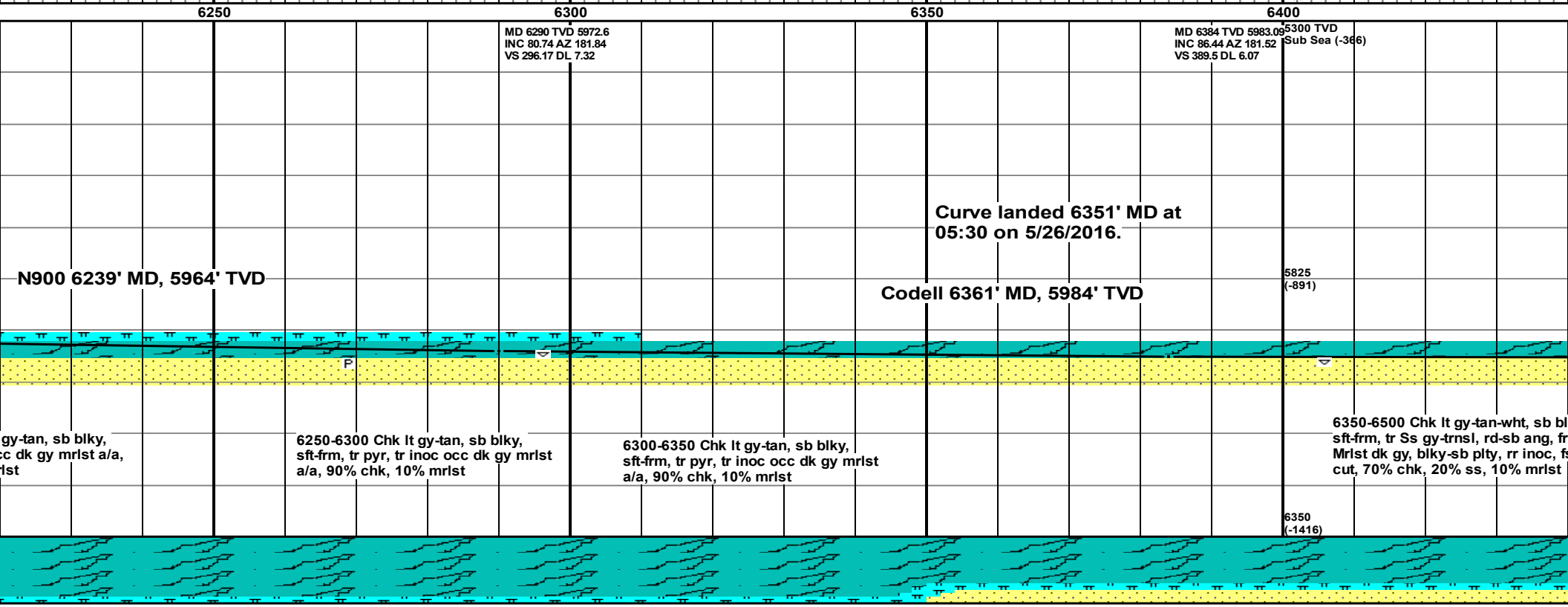
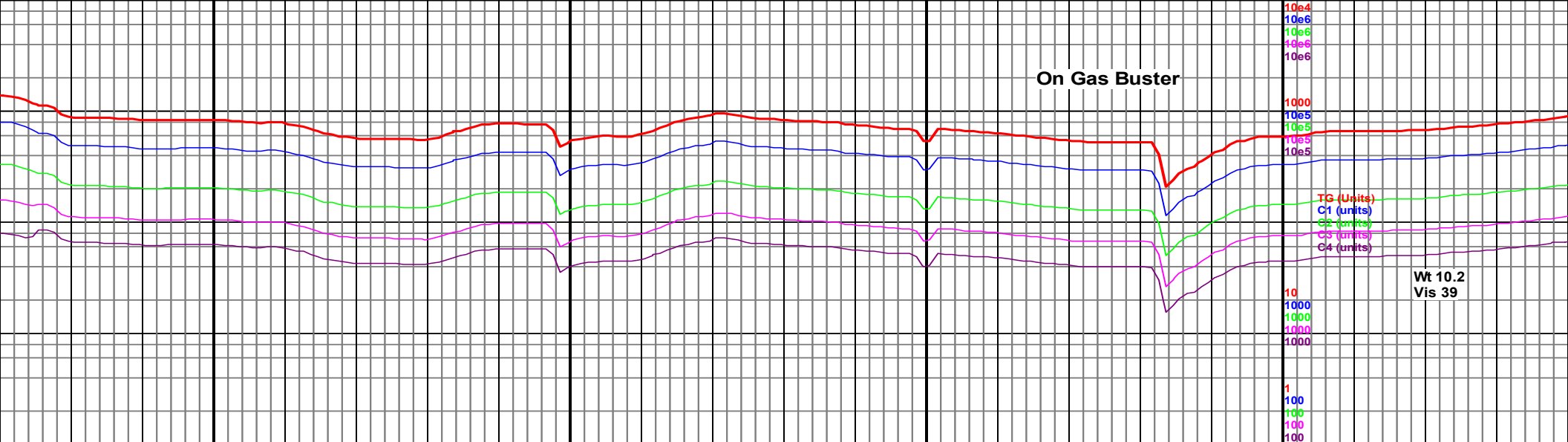


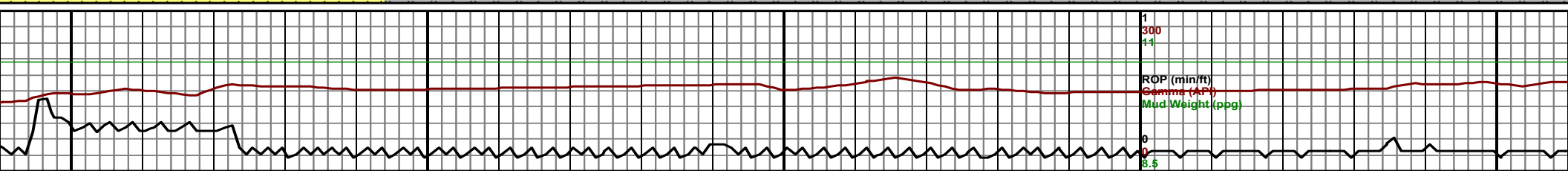
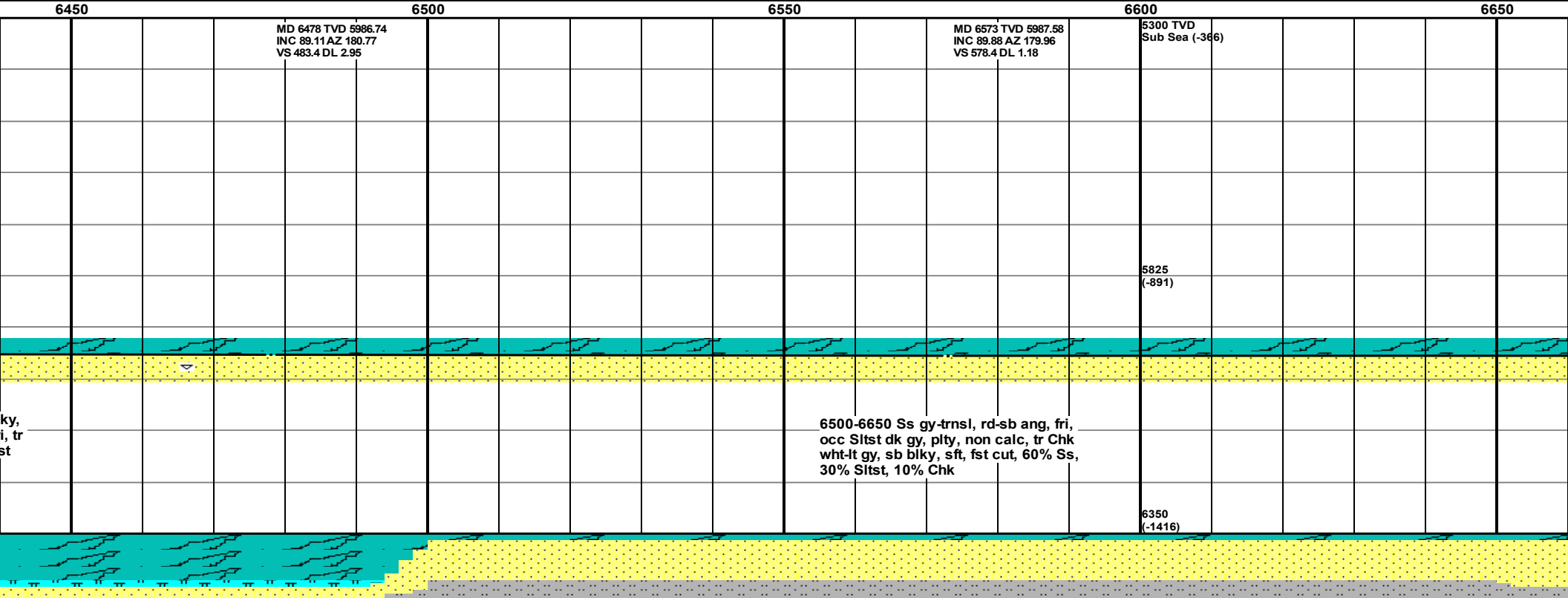
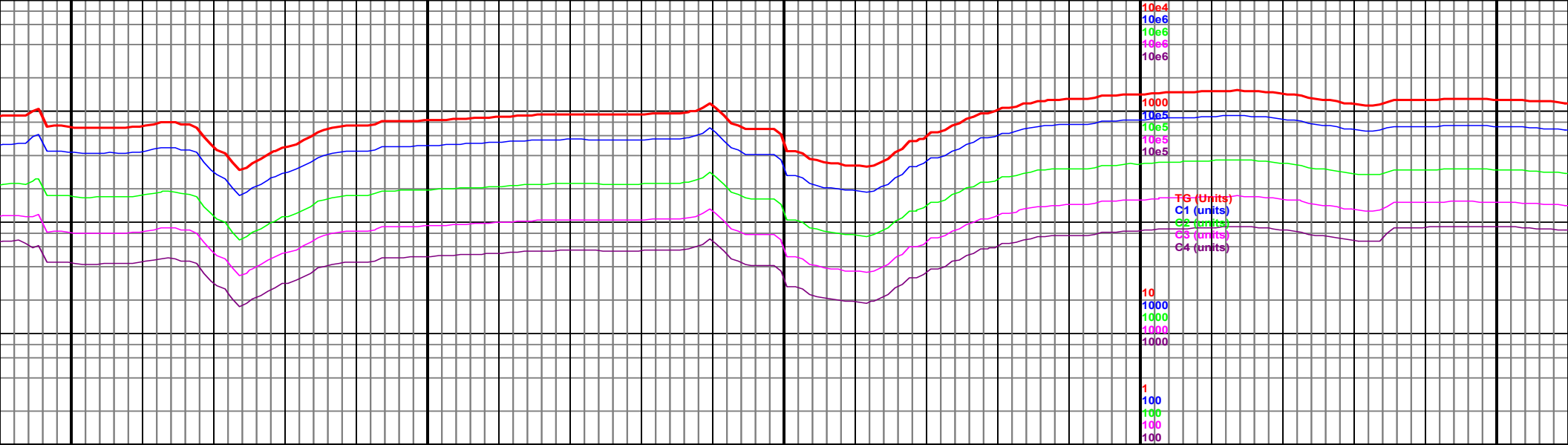
Sidewall

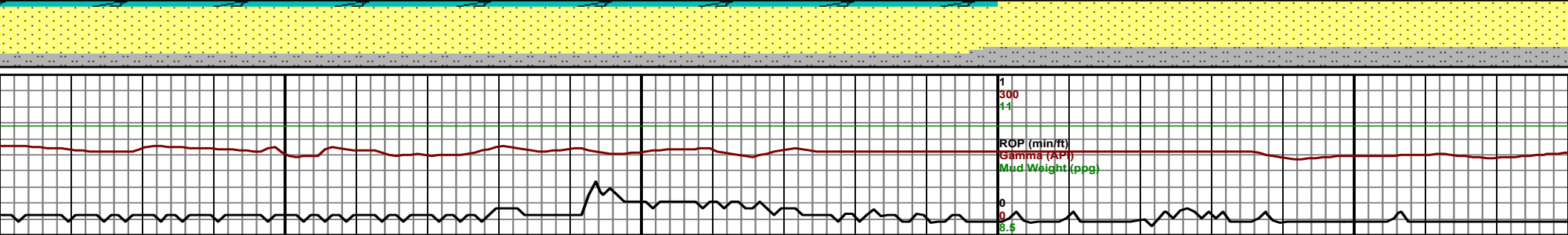
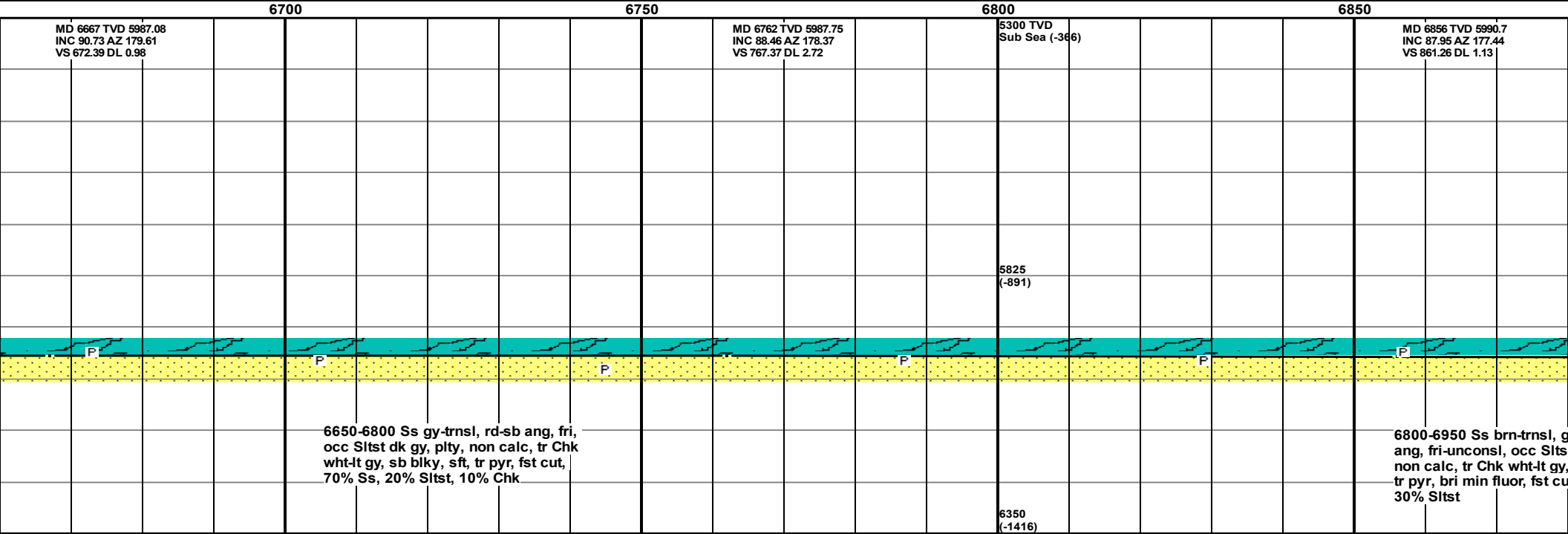
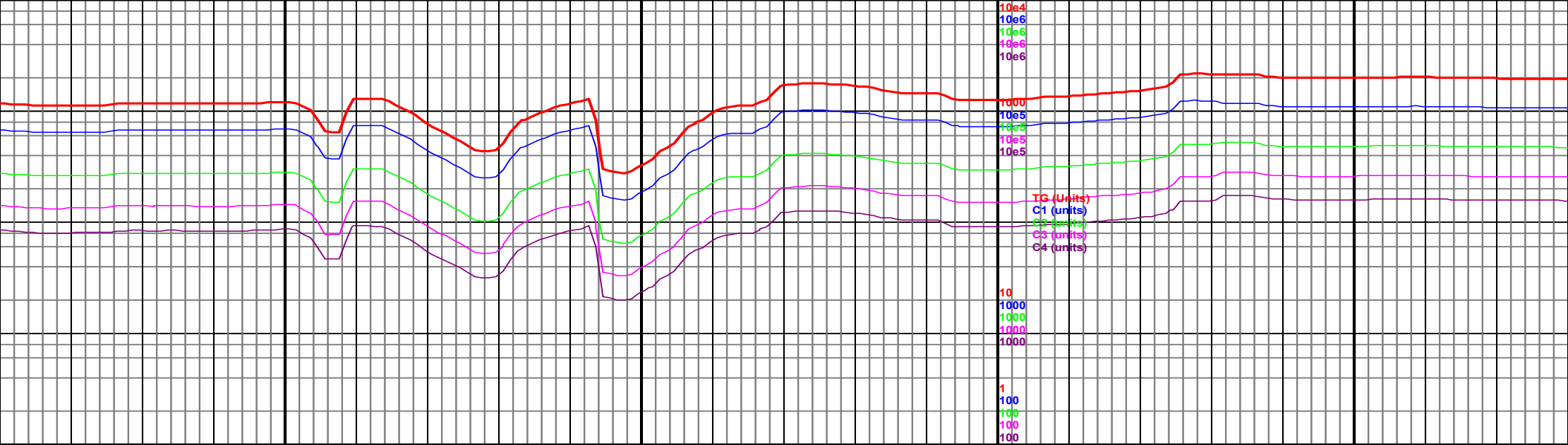


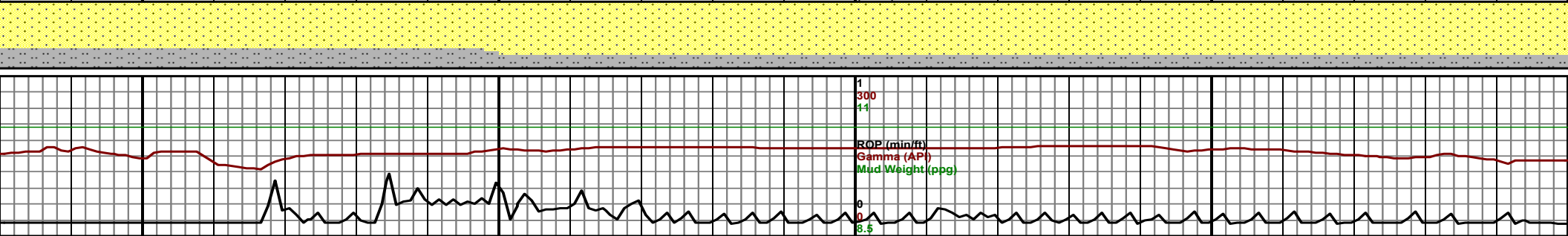
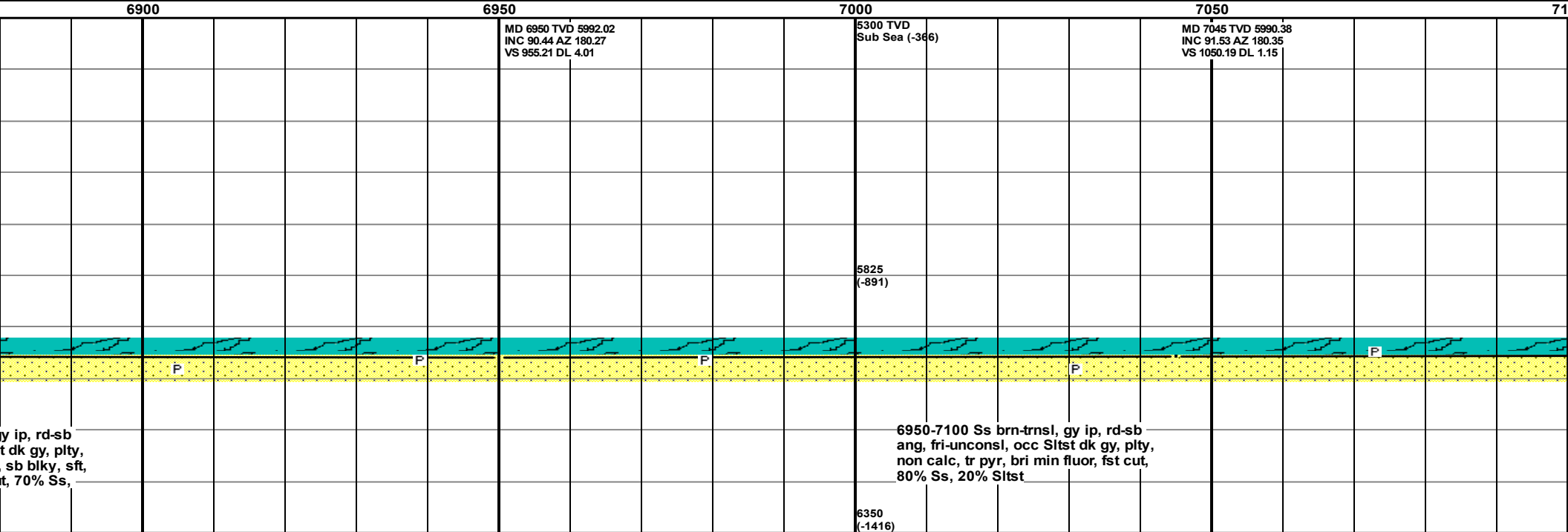
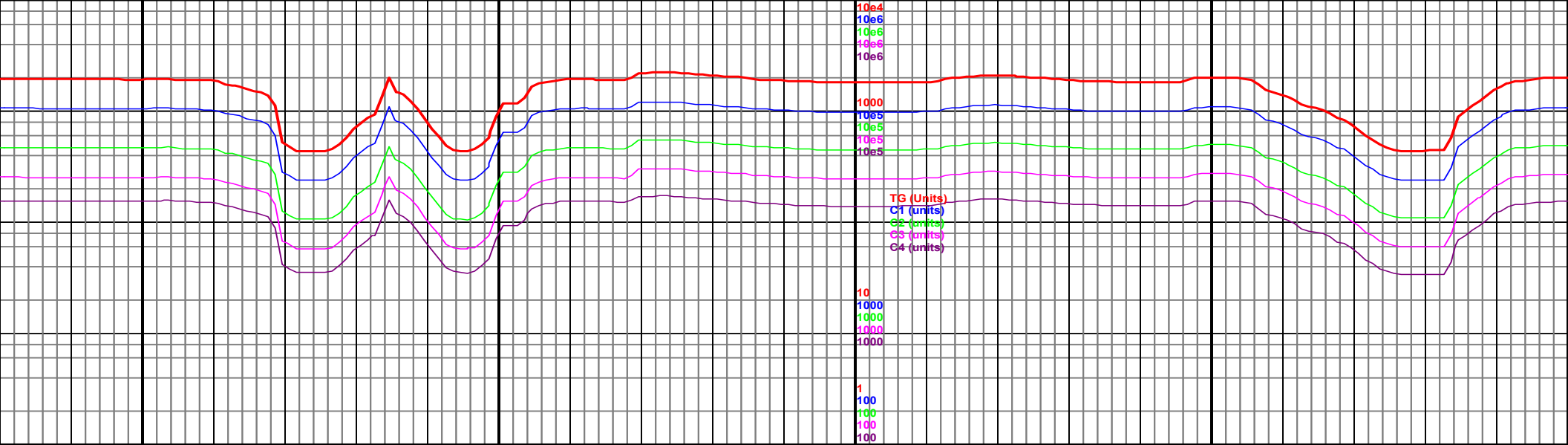


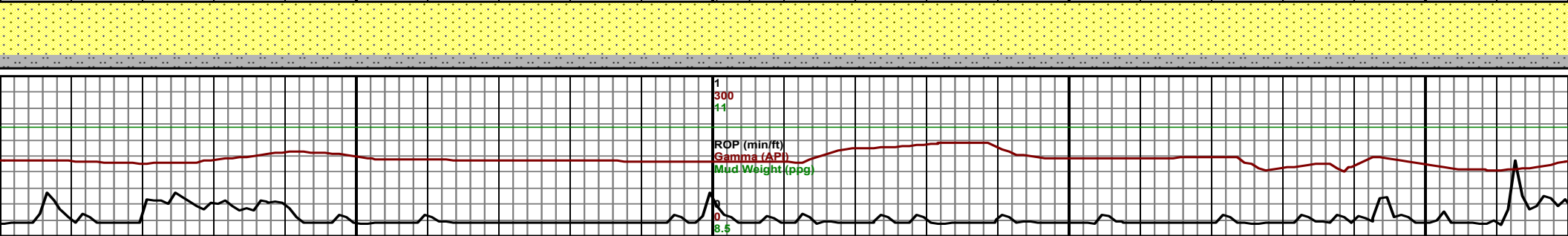
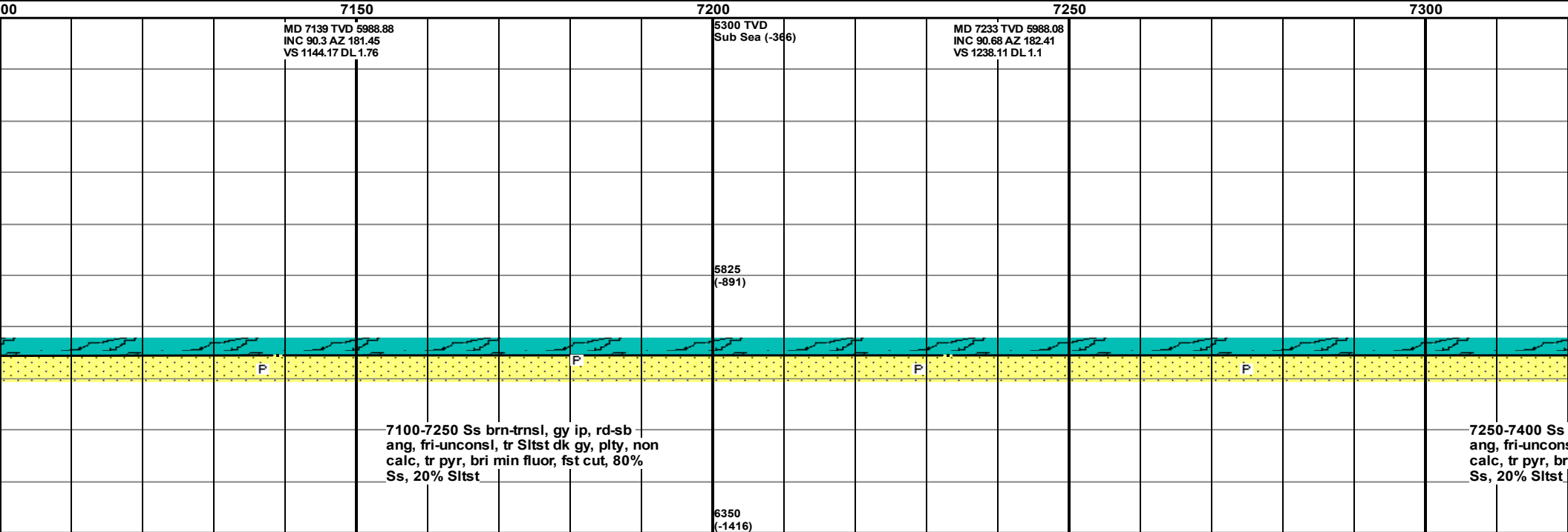
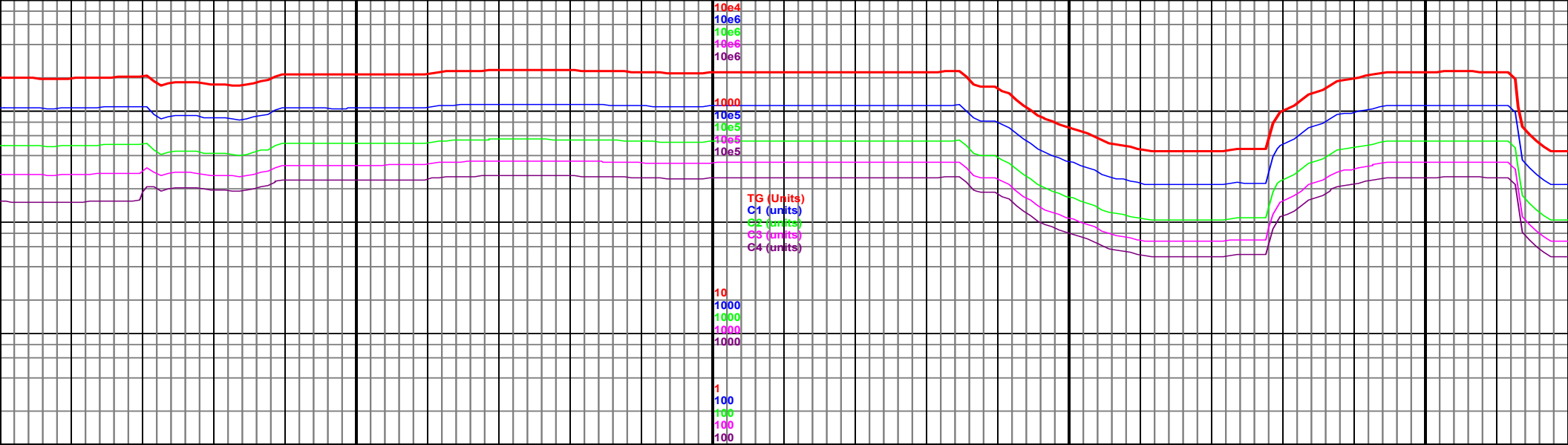


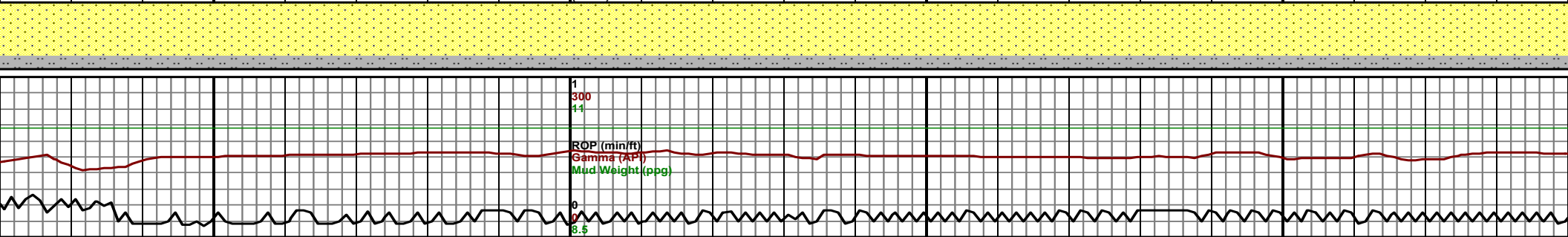
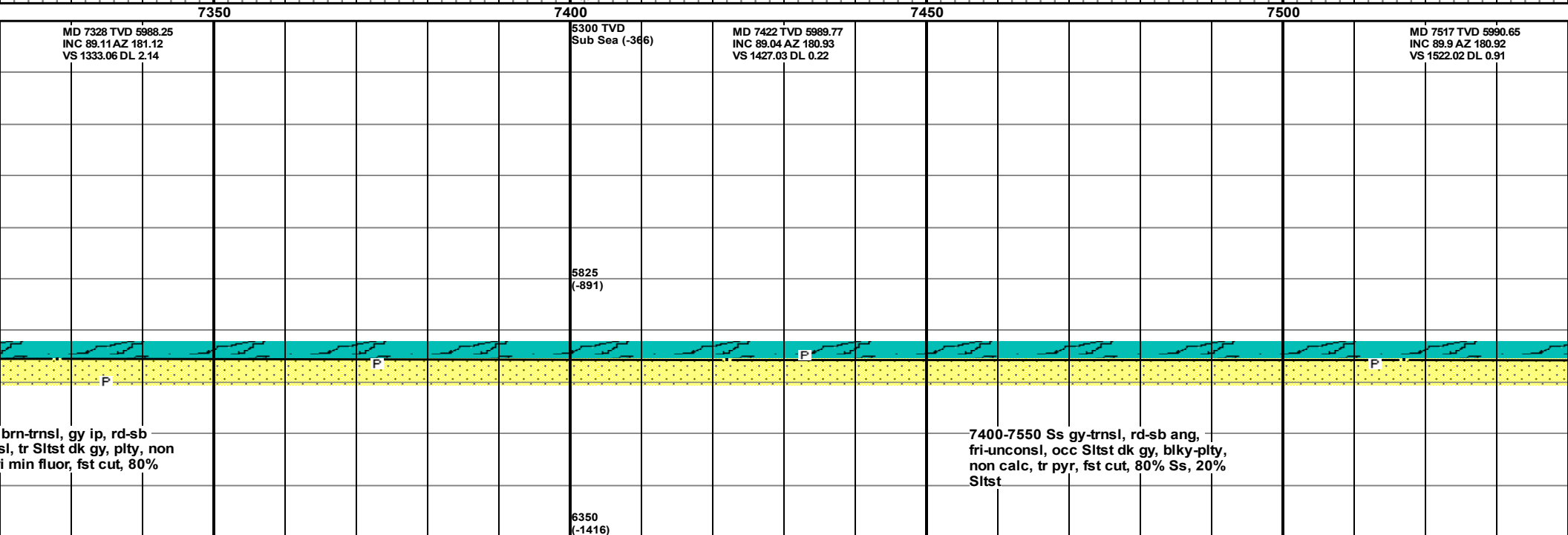
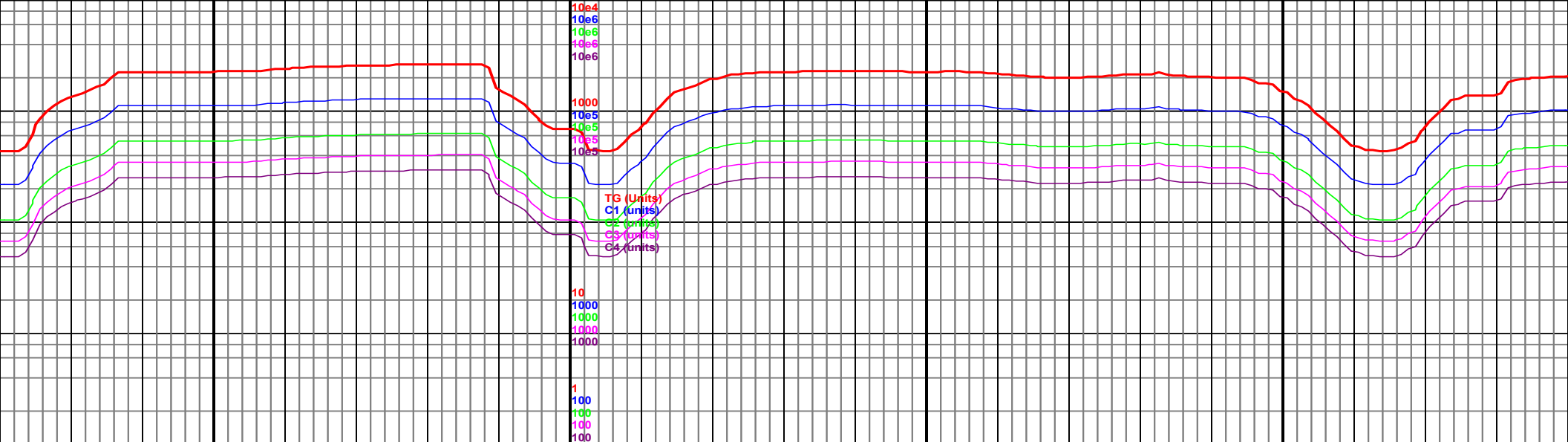


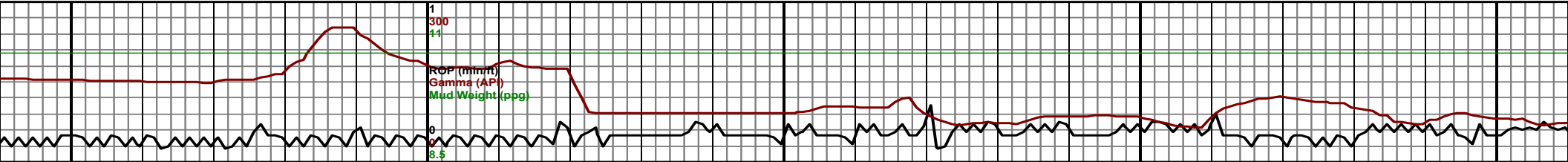
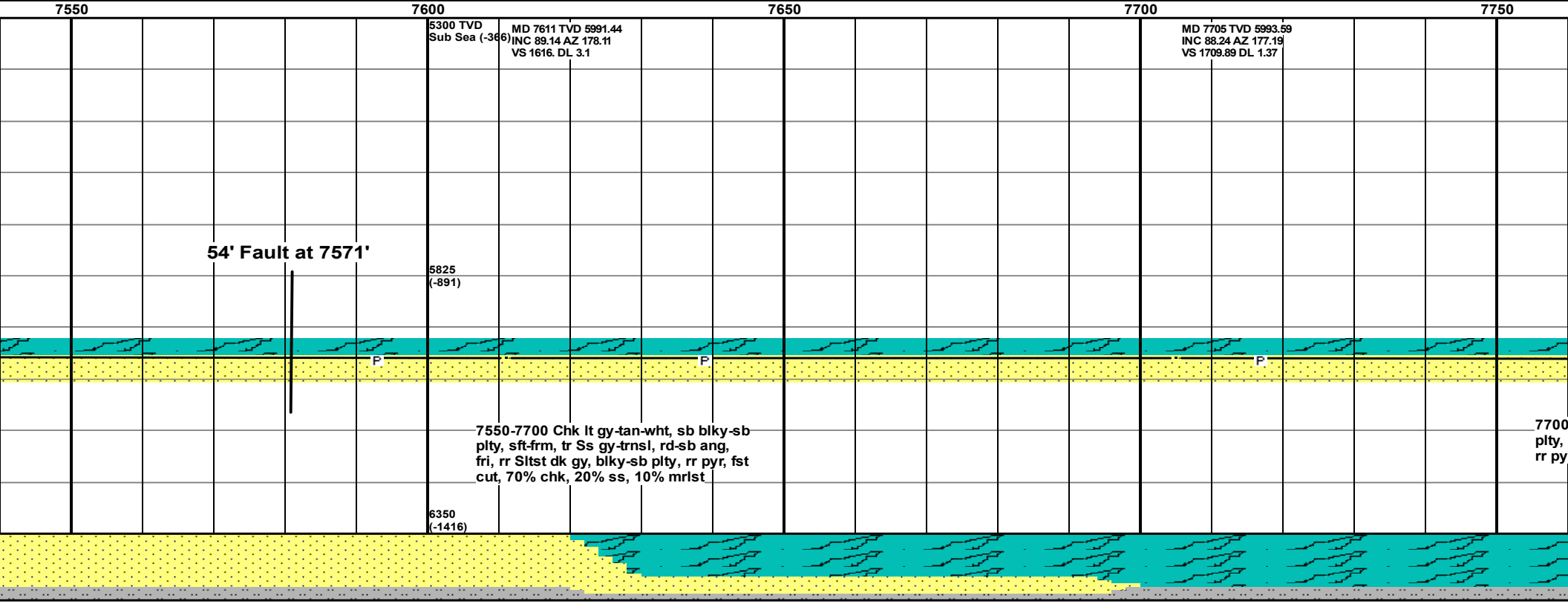
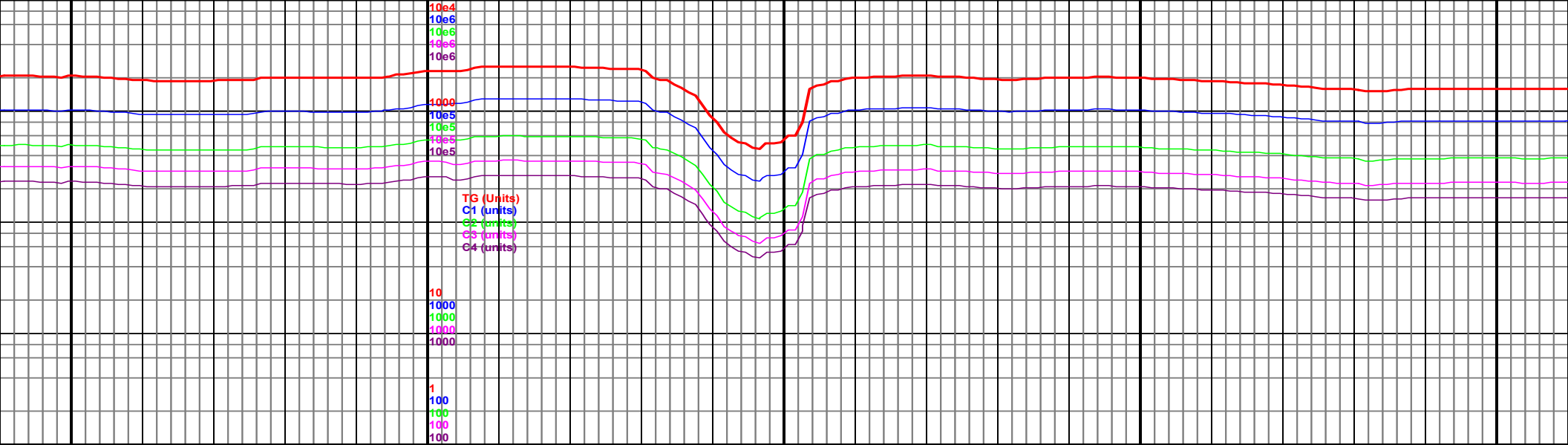


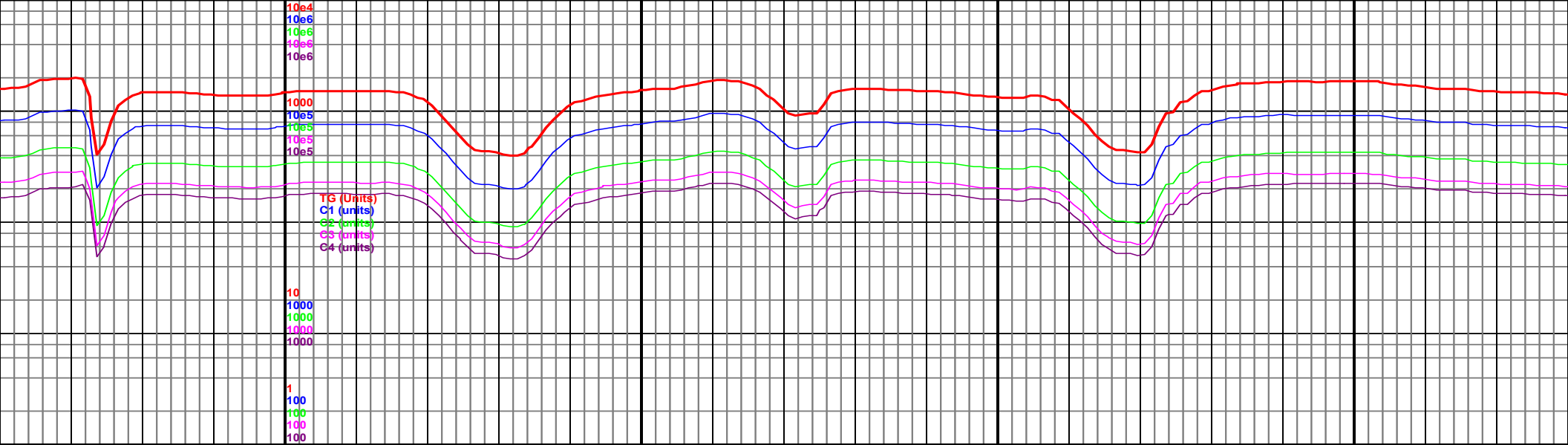












7800

7850

7900

7950

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INC 89.89 AZ 179.49
VS 1803.83 DL 3.01

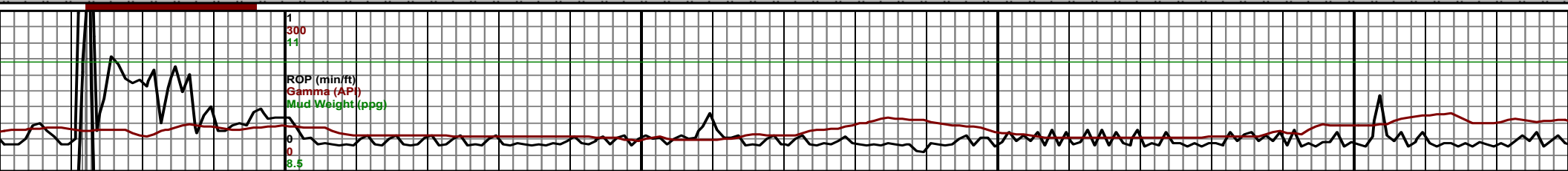
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INC 90.84 AZ 179.11
VS 1897.82 DL 1.09

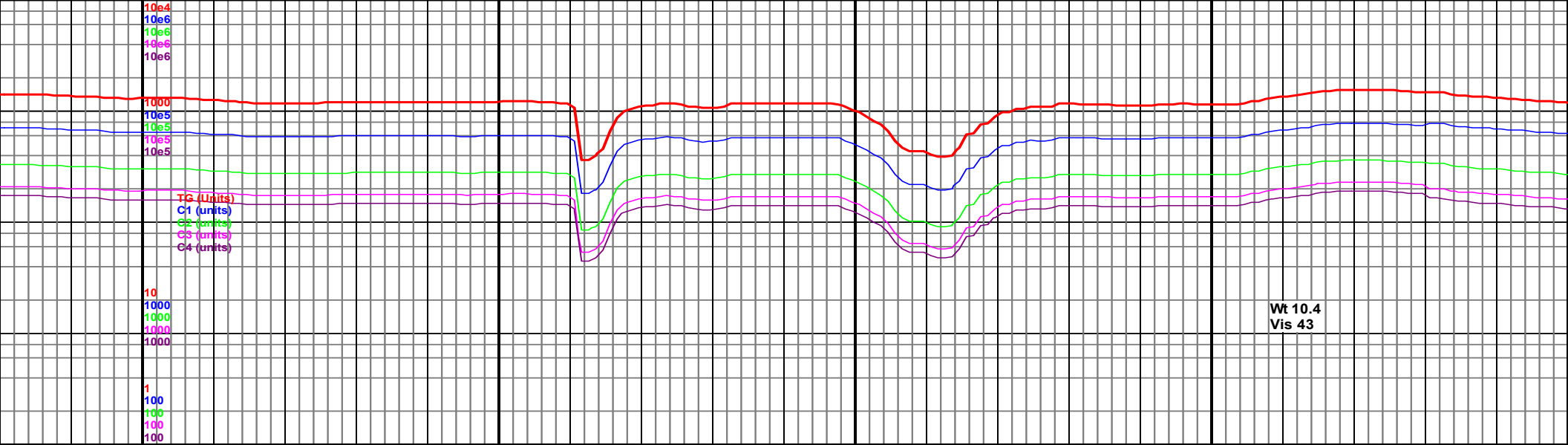
5825
(-891)

-7850 Chk lt gy-tan-wht, sb blk-y-sb
sft-frn, rr sltst dk gy, blk-y-sb plty,
r, fst cut, 80% chk, 20% sltst

7850-8000 Chk lt gy-tan-wht, sb blk-y-sb
plty, sft-frn, rr sltst dk gy, blk-y-sb plty,
rr pyr, fst cut, 90% chk, 10% sltst

6350
(-1416)





MD 7988 TVD 5993.18
INC 90.78 AZ 177.52 Sea (-386)
VS 1992.77 DL 1.67

MD 8082 TVD 5992.9
INC 89.56 AZ 179.58
VS 2086.73 DL 2.55

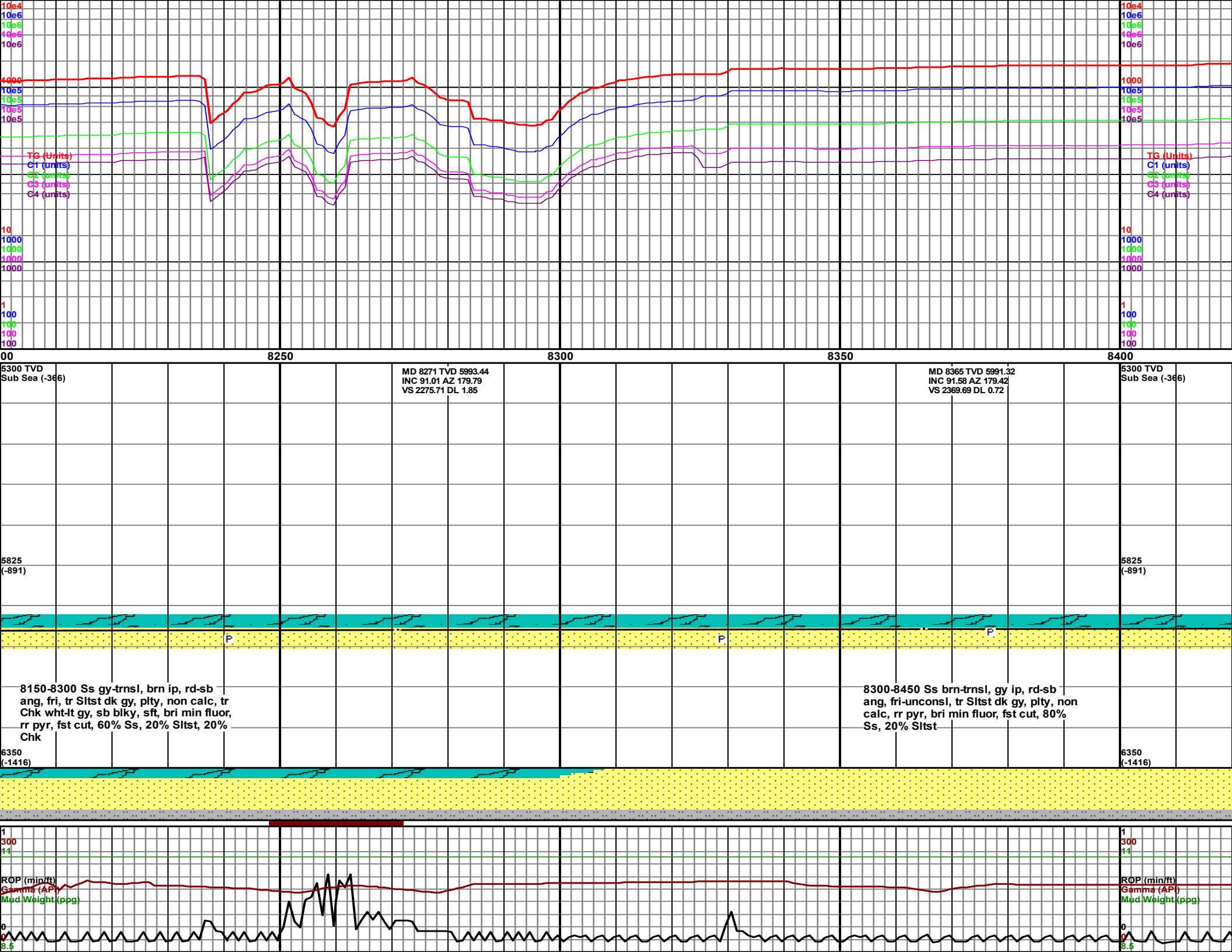
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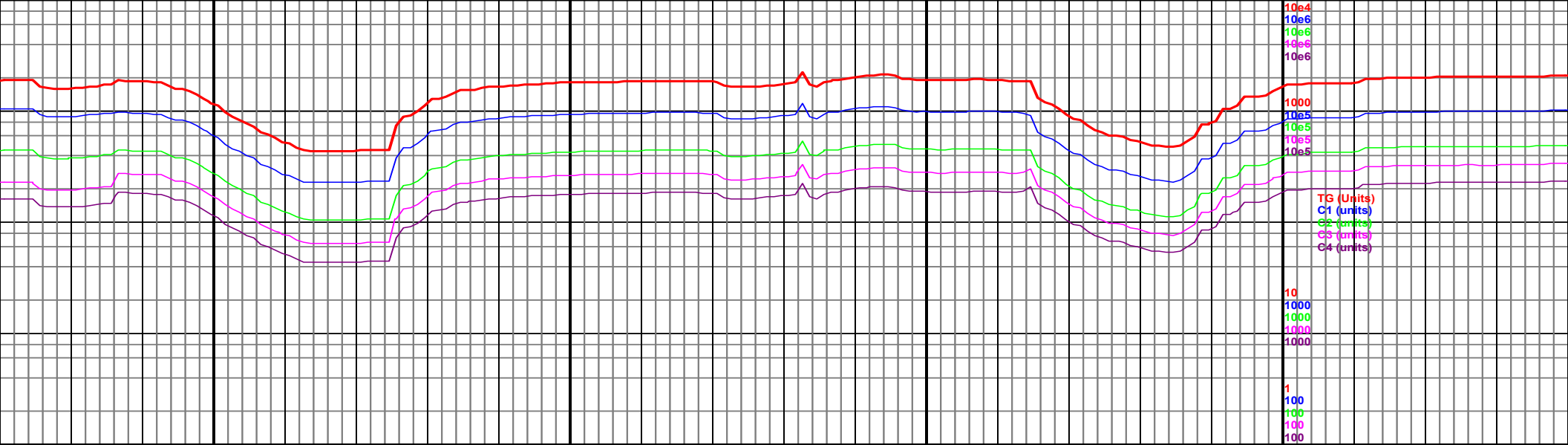
5825
(-891)

6350
(-1416)

8000-8150 Chk lt gy-tan-wht, sb blk-y-sb
ply, sft frm, mottled ip, rr sltst dk gy,
blk-y-sb ply, rr pyr, fst cut, 90% chk,
10% sltst

ROP (min/ft)
Gamma (API)
Mud Weight (ppg)





8450

8500

8550

8600

MD 8460 TVD 5988.64
INC 91.65 AZ 179.02
VS 2464.64 DL 0.43

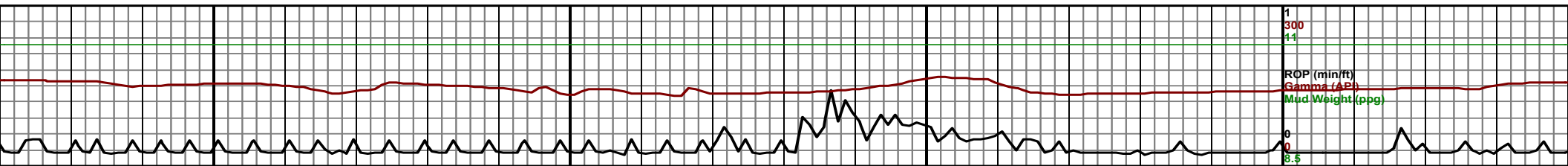
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INC 90.88 AZ 181.07
VS 2558.61 DL 2.33

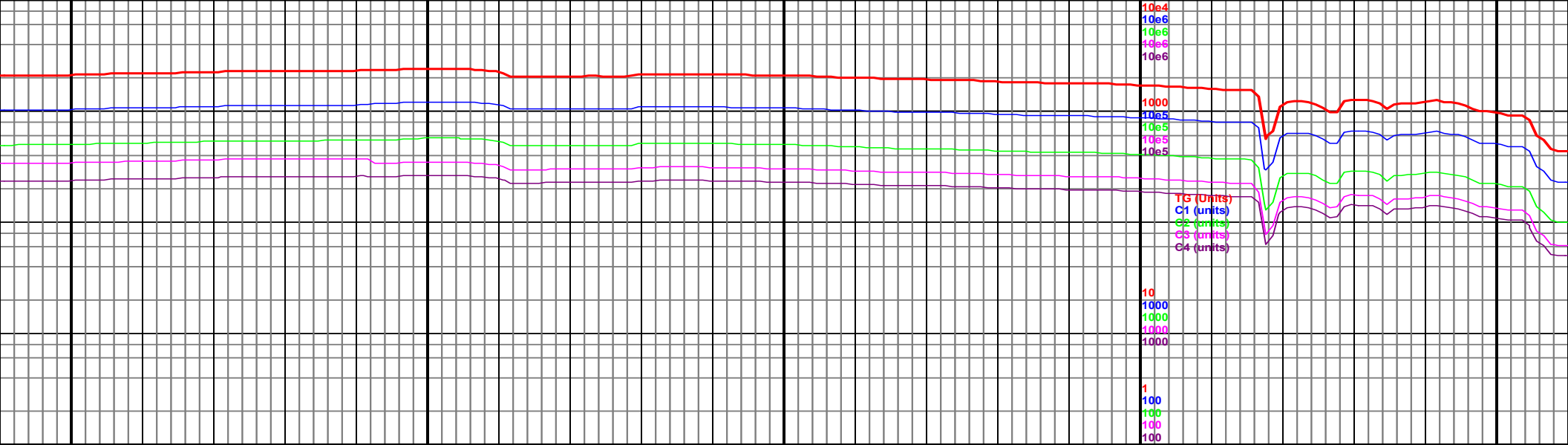
5300 TVD
Sub Sea (-346)

5825
(-891)

6350
(-1416)

8450-8600 Ss brn-trnsi-gy, rd-sb ang,
fri-unconsi, tr Sltst dk gy, plty, non
calc, rr pyr, bri min fluor, fst cut, 80%
Ss, 20% Sltst





8650

8700

8750

8800

8850

MD 8649 TVD 5984.74
INC 91.32 AZ 180.82
VS 2653.58 DL 0.53

MD 8743 TVD 5981.91
INC 92.13 AZ 180.07
VS 2747.53 DL 1.17

5300 TVD
Sub Sea (-386)

MD 8837 TVD 5980.15
INC 90.02 AZ 179.2
VS 2841.51 DL 2.43

P

P

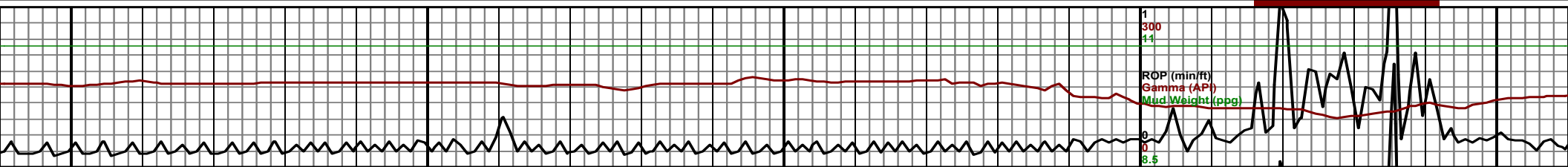
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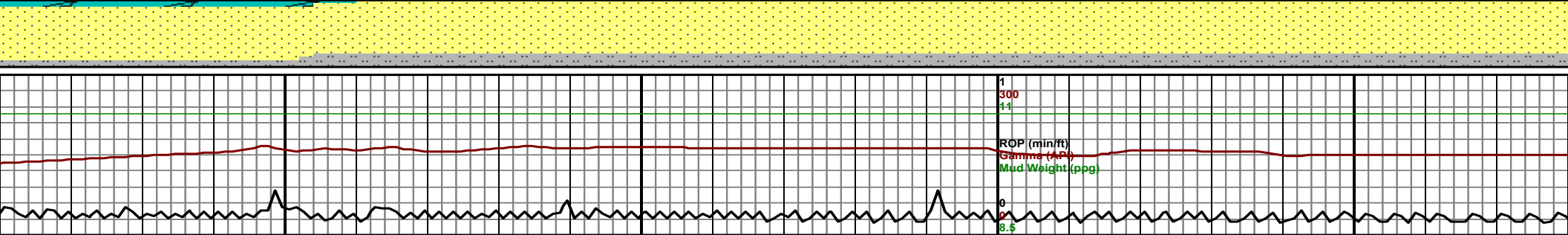
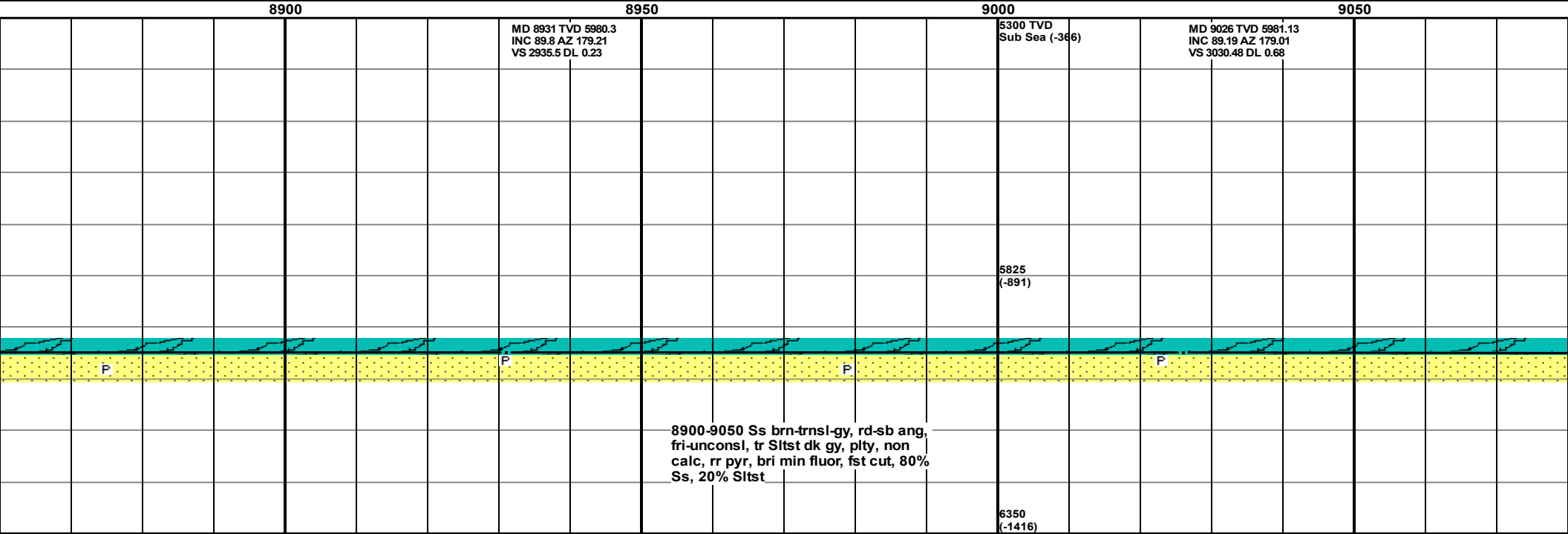
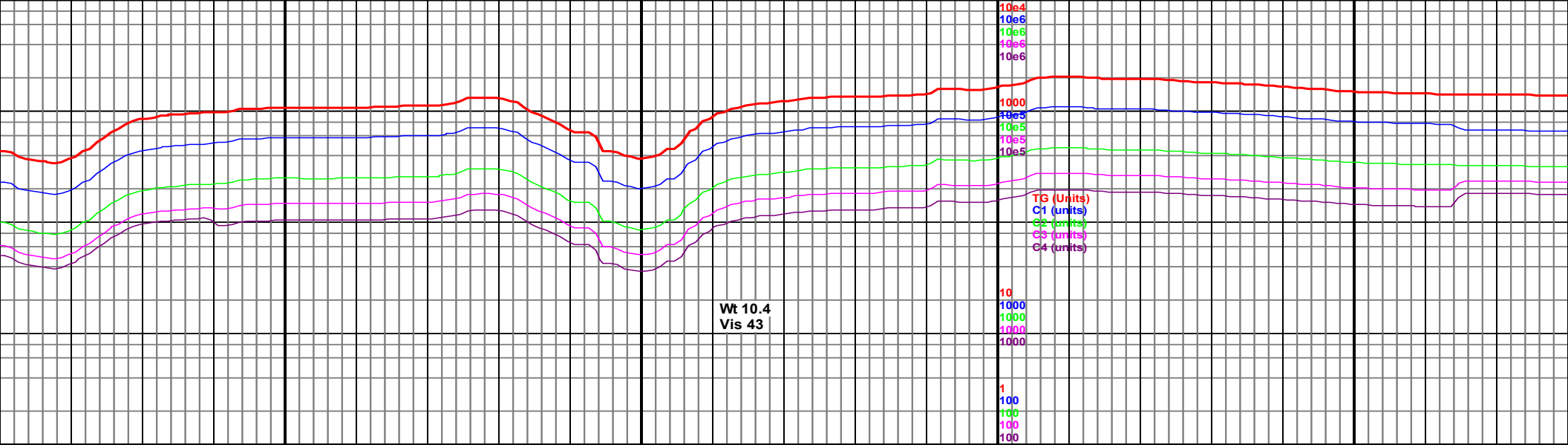
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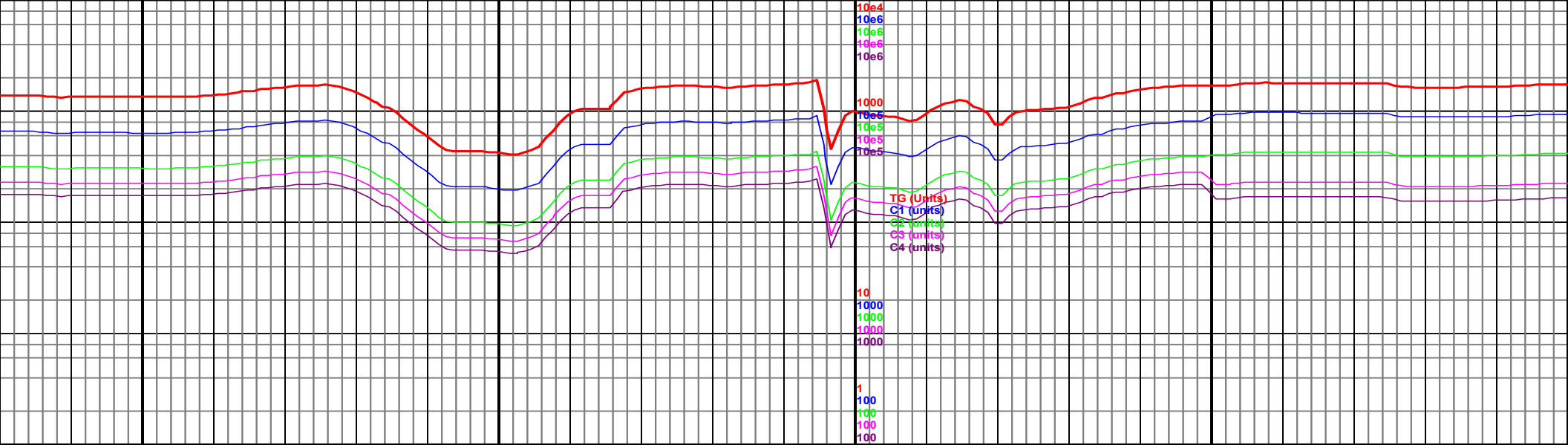
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unconsl-fri, grdg to sltst ip, non calc,
abnt Chk wht-lt gy, sb blk, sft, bri min
fluor, rr pyr, fst cut, 50% Ss, 50% Chk

8750-8900 Ss gy-trnsi-brn, rd-sb ang,
unconsl-fri, non calc, tr Sltst dk gy,
plty, non calc, tr Chk wht-lt gy, sb blk,
sft, bri min fluor, rr pyr, fst cut, 80% Ss,
10% Sltst, 10% Chk

6350
(-1416)







9100

9150

9200

9250

9300

MD 9120 TVD 5982.76
INC 88.82 AZ 179.03
VS 3124.45 DL 0.39

5300 TVD
Sub Sea (-386)

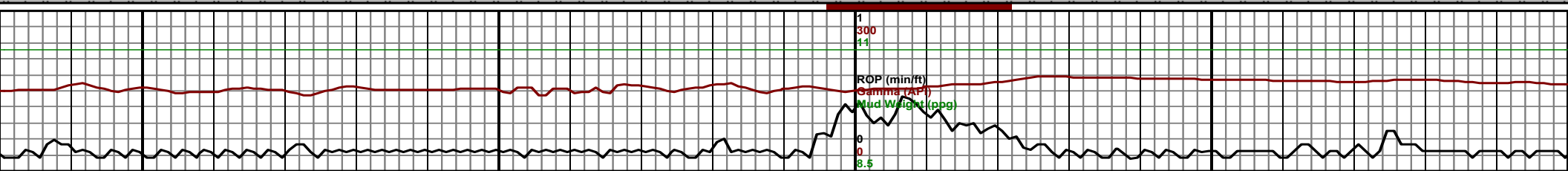
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INC 89.45 AZ 180.54
VS 3218.44 DL 1.74

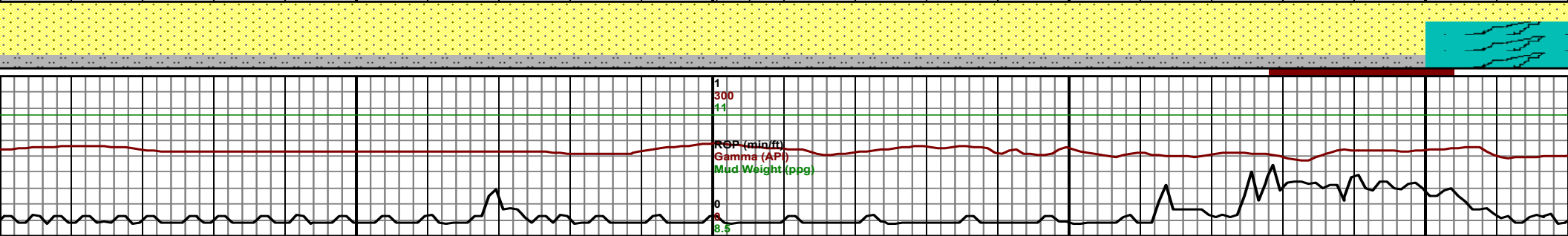
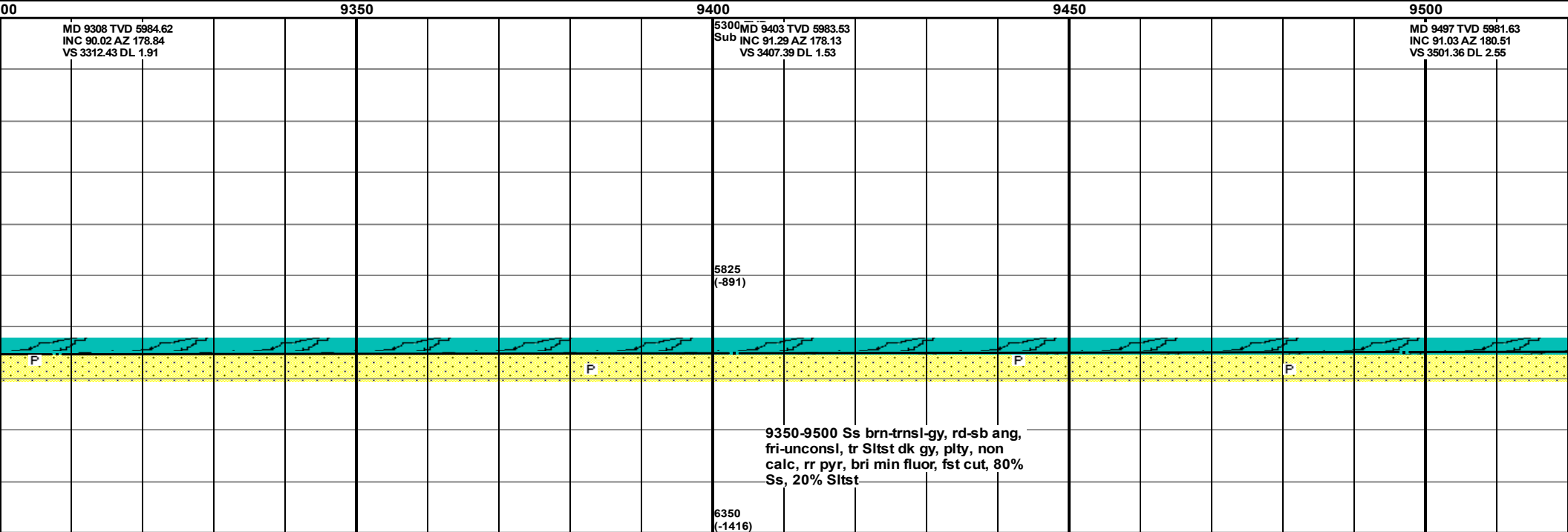
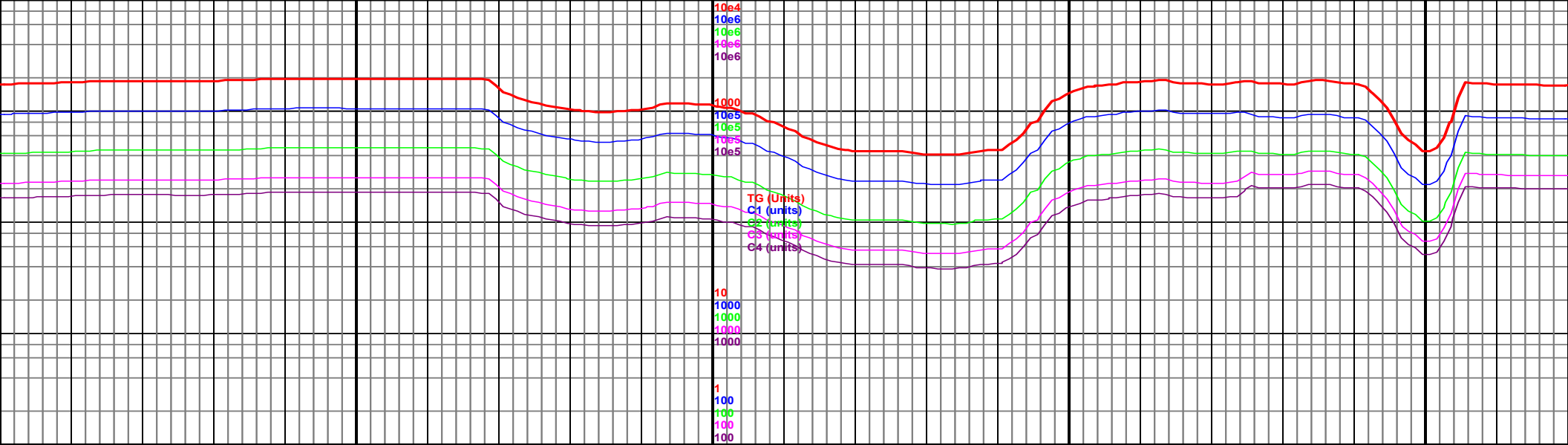
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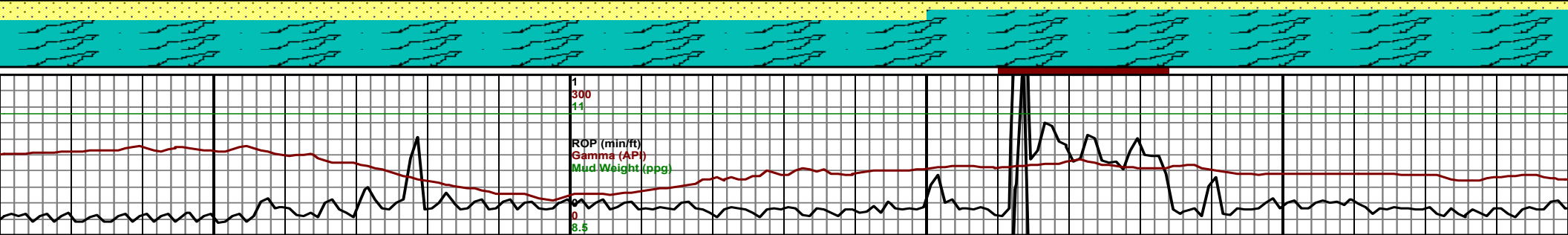
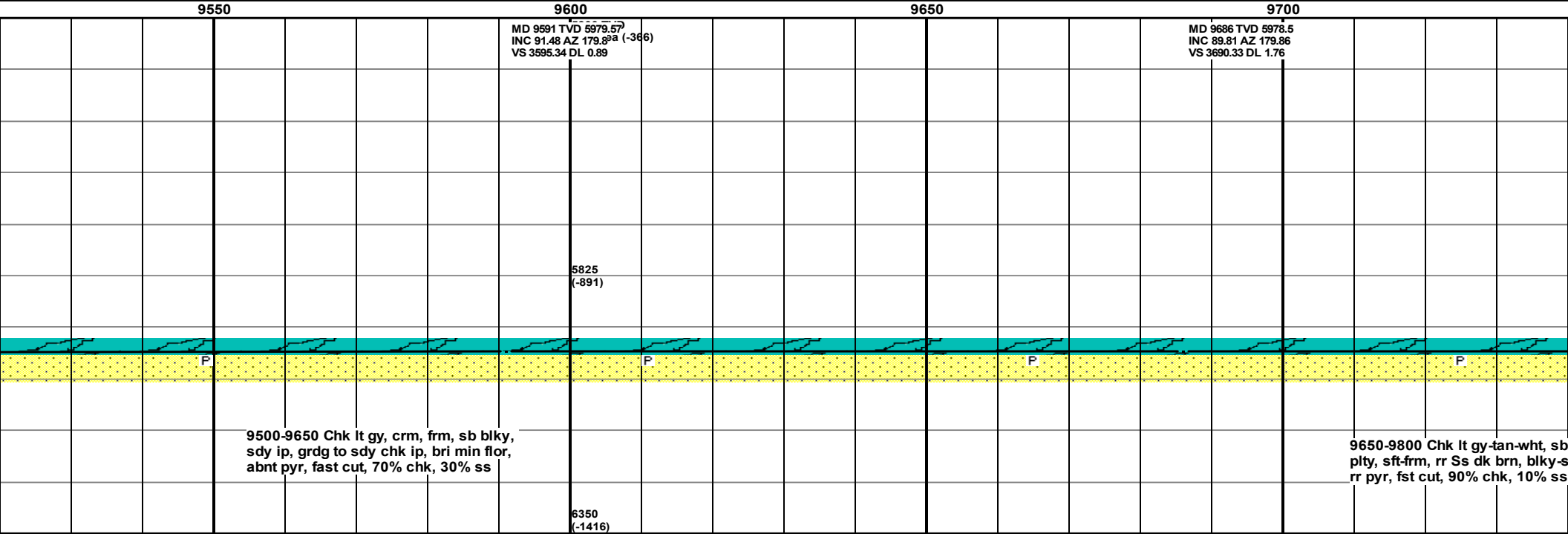
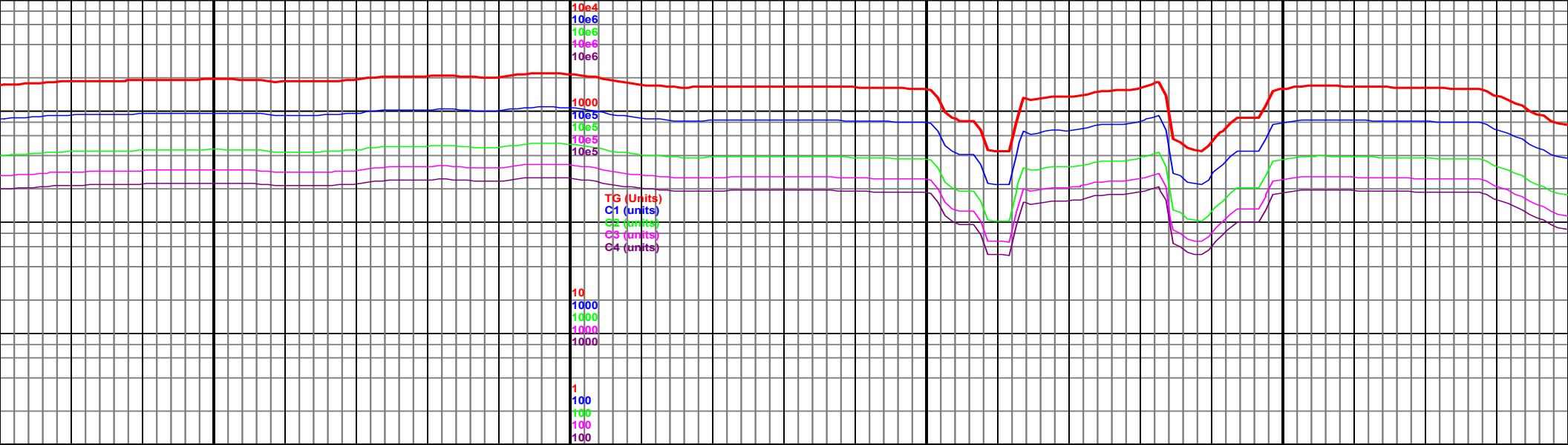
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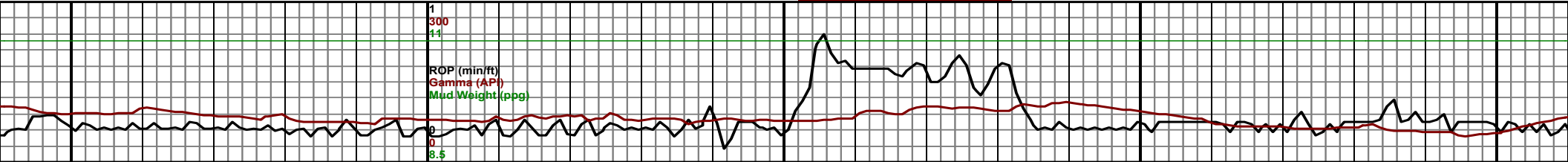
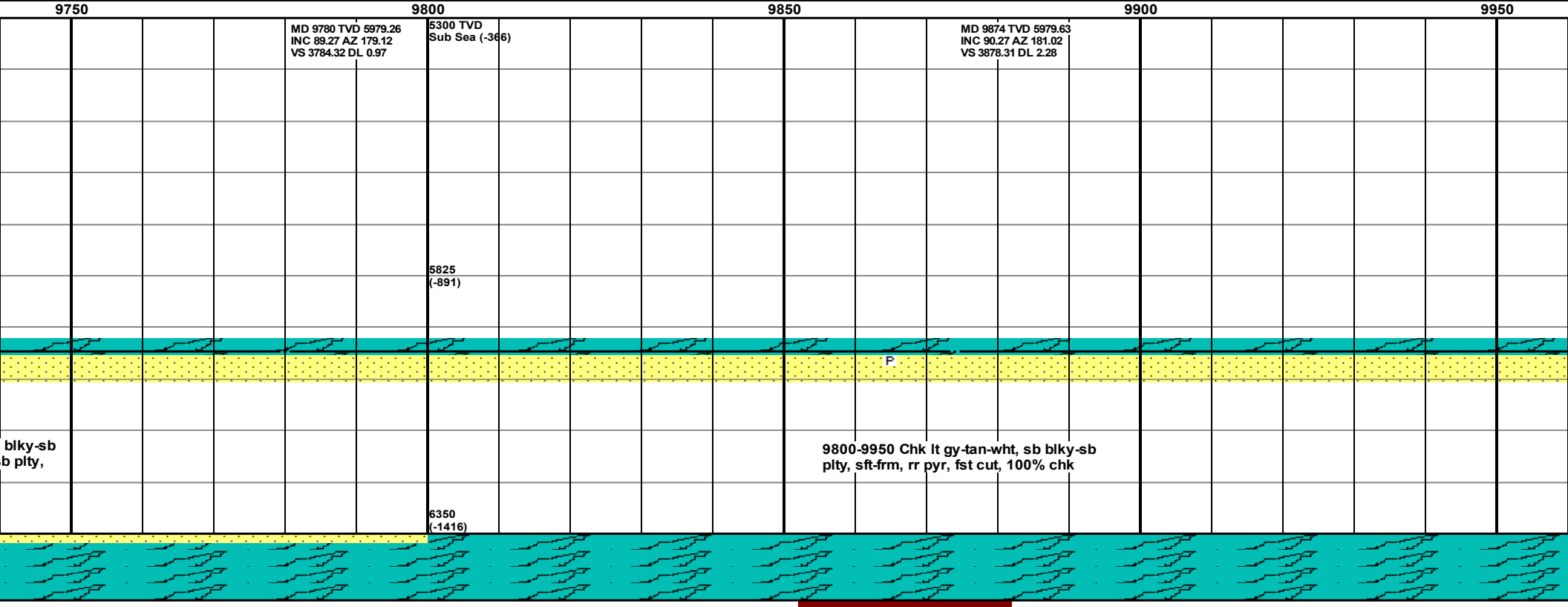
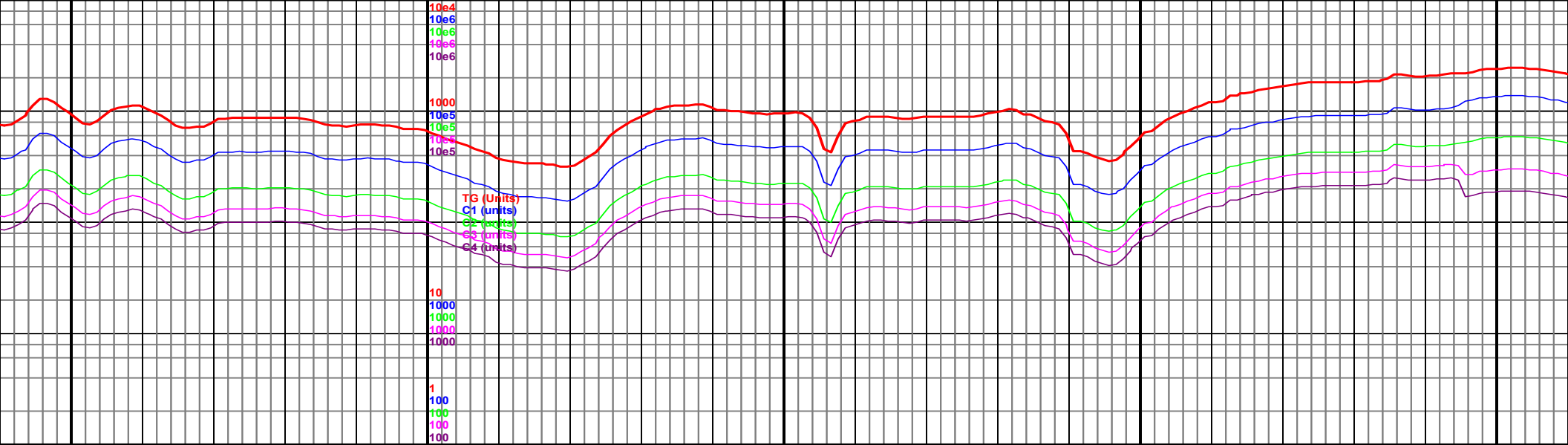
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calc, rr pyr, bri min fluor, fst cut, 80%
Ss, 20% Sltst

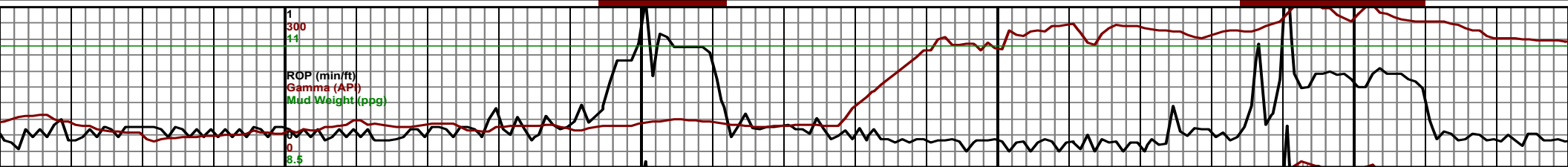
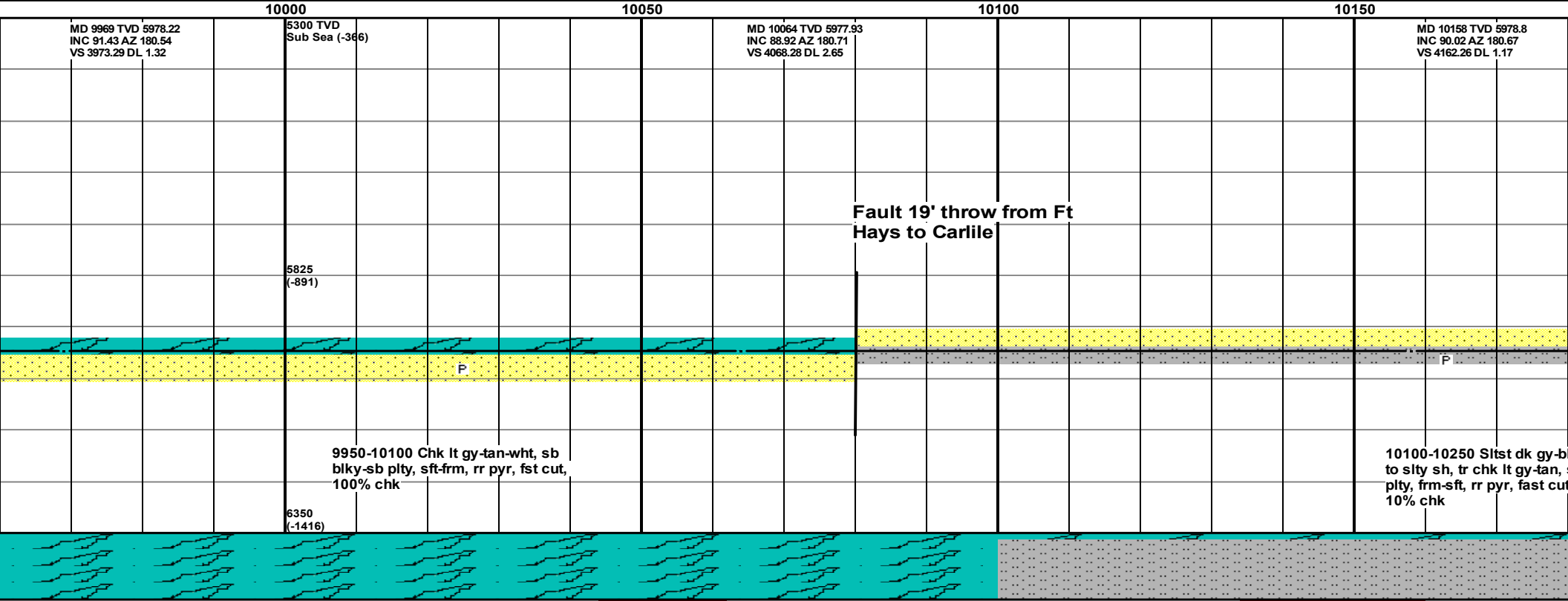
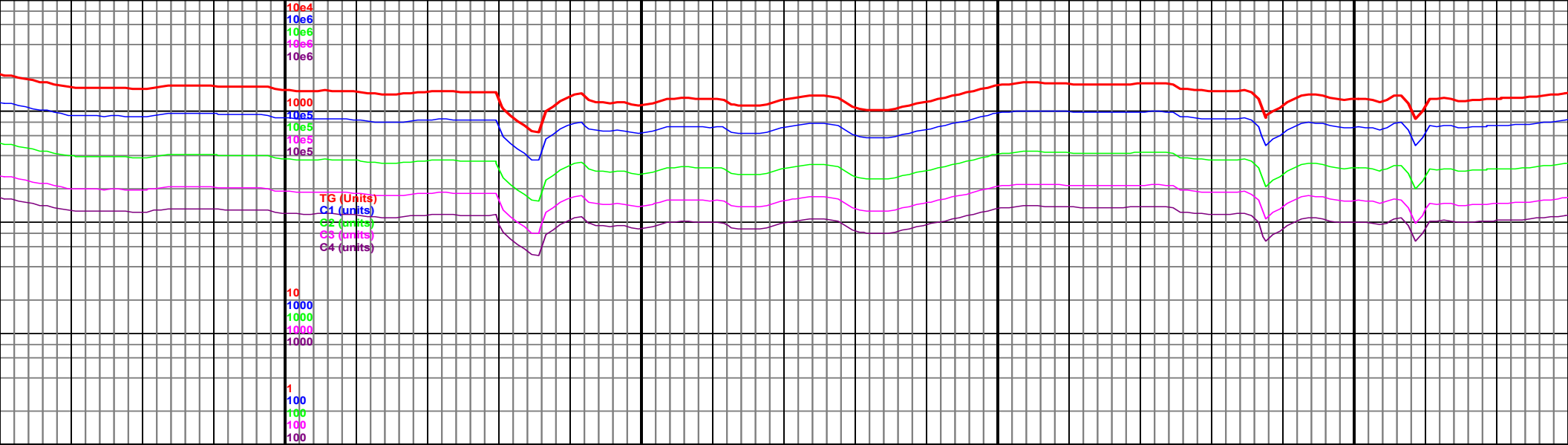
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fri-unconsl, tr Sltst dk gy, plty, non
calc, rr pyr, bri min fluor, fst cut, 80%
Ss, 20% Sltst

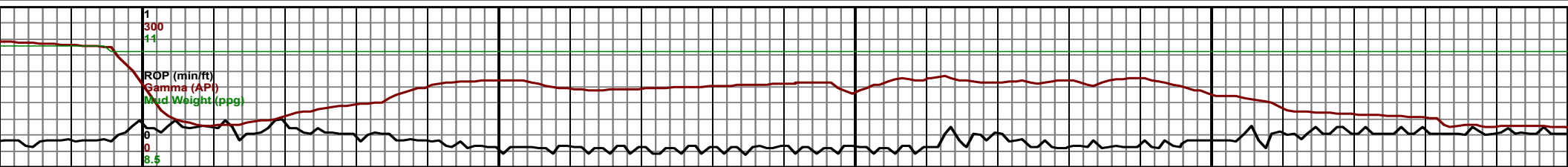
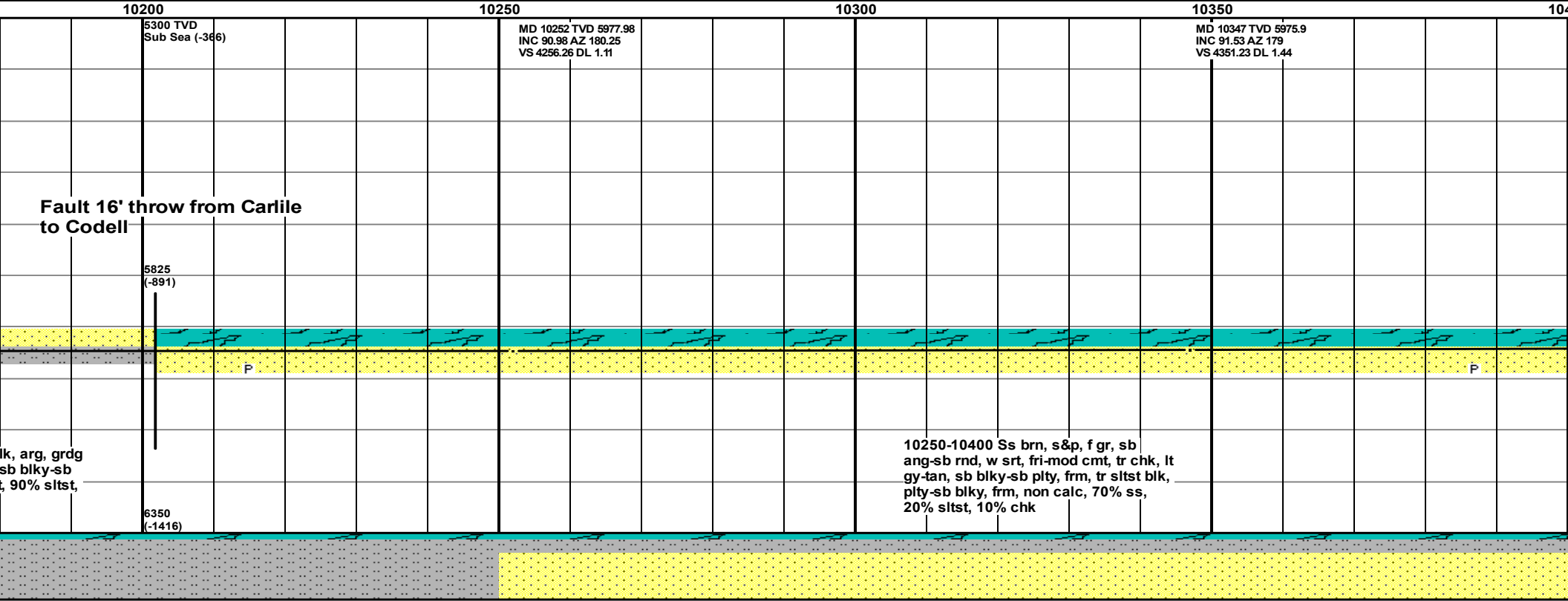
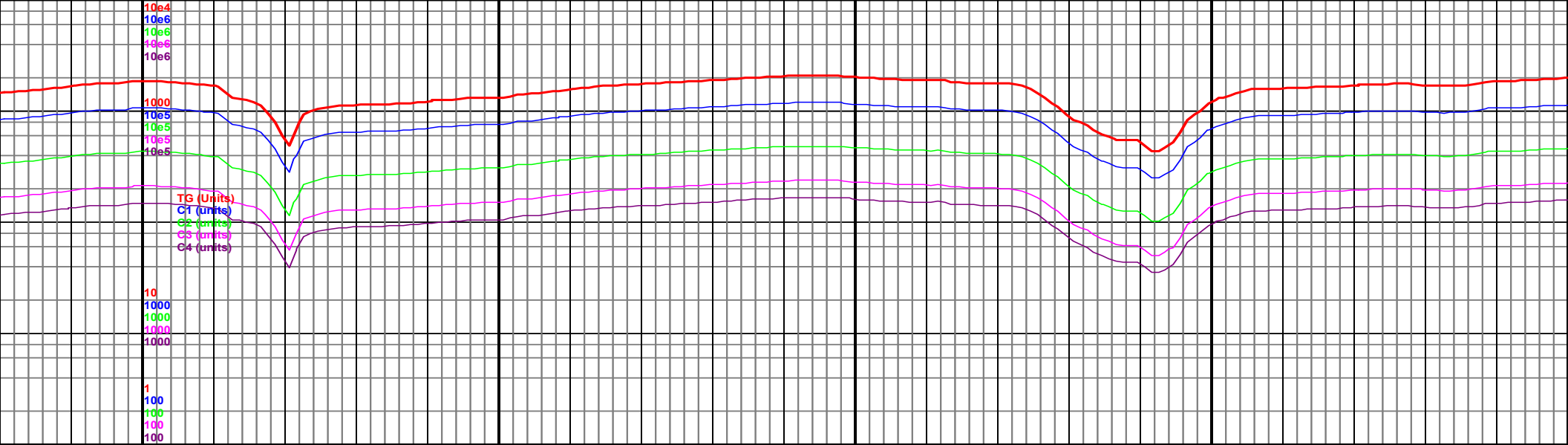


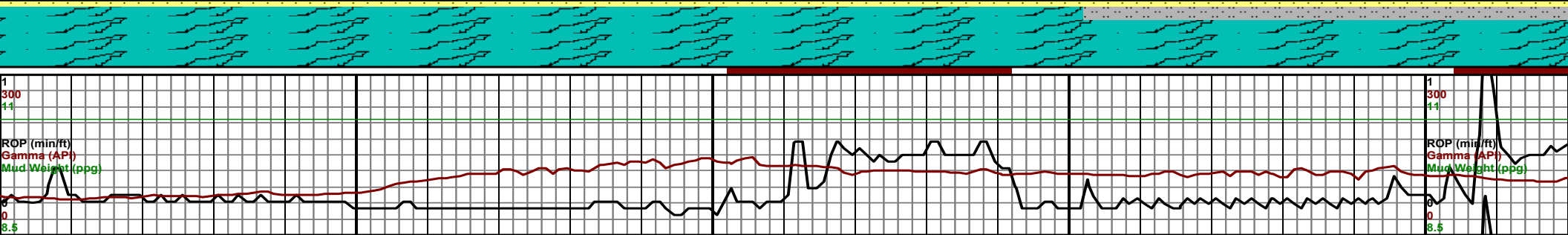
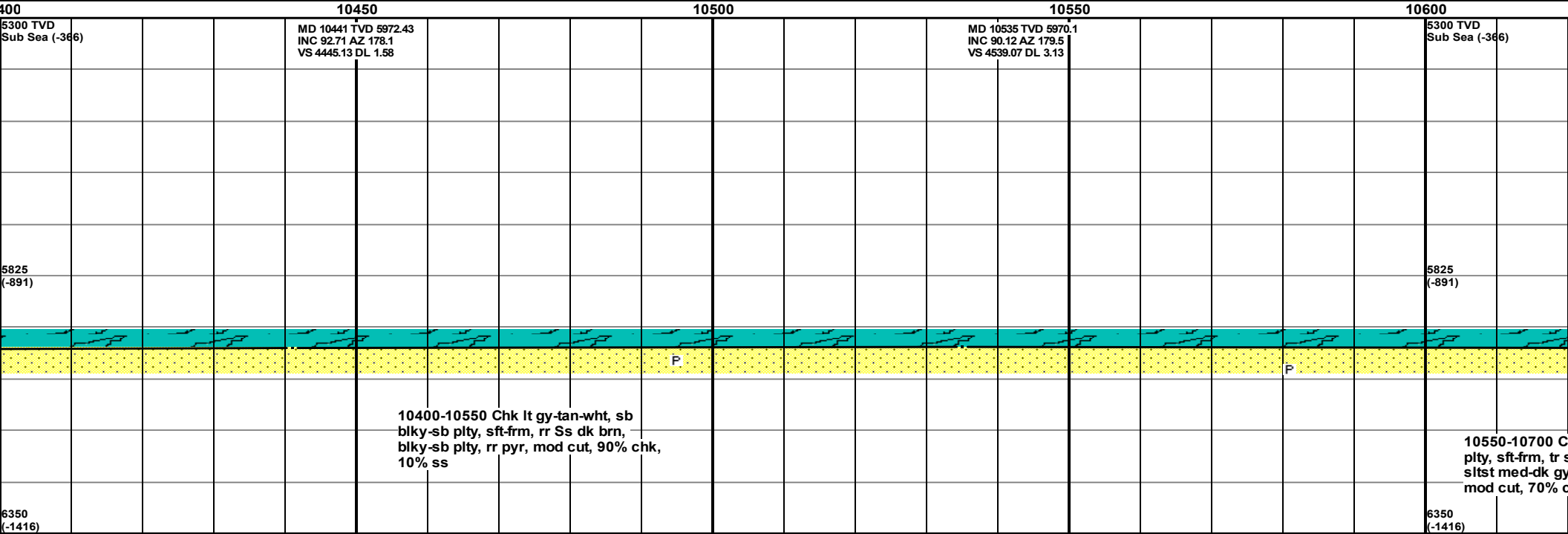
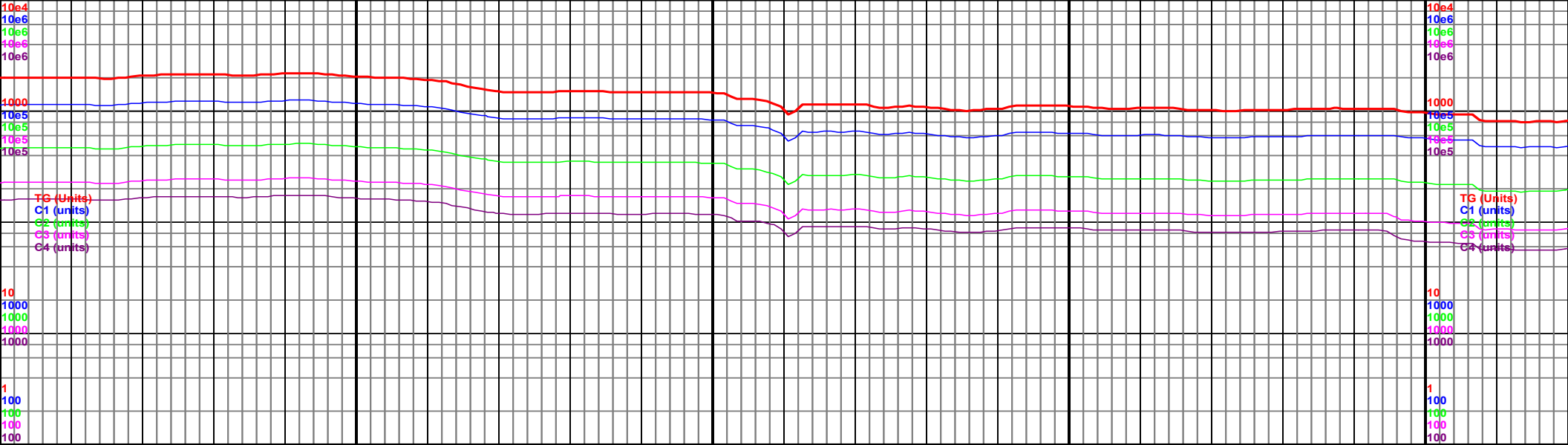


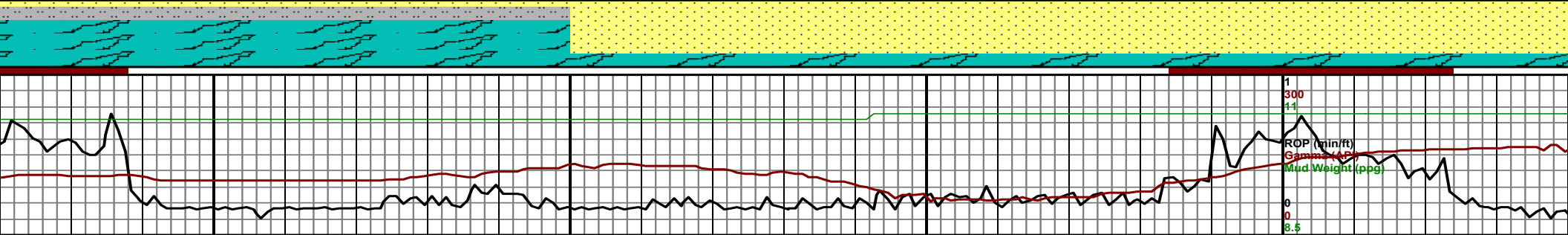
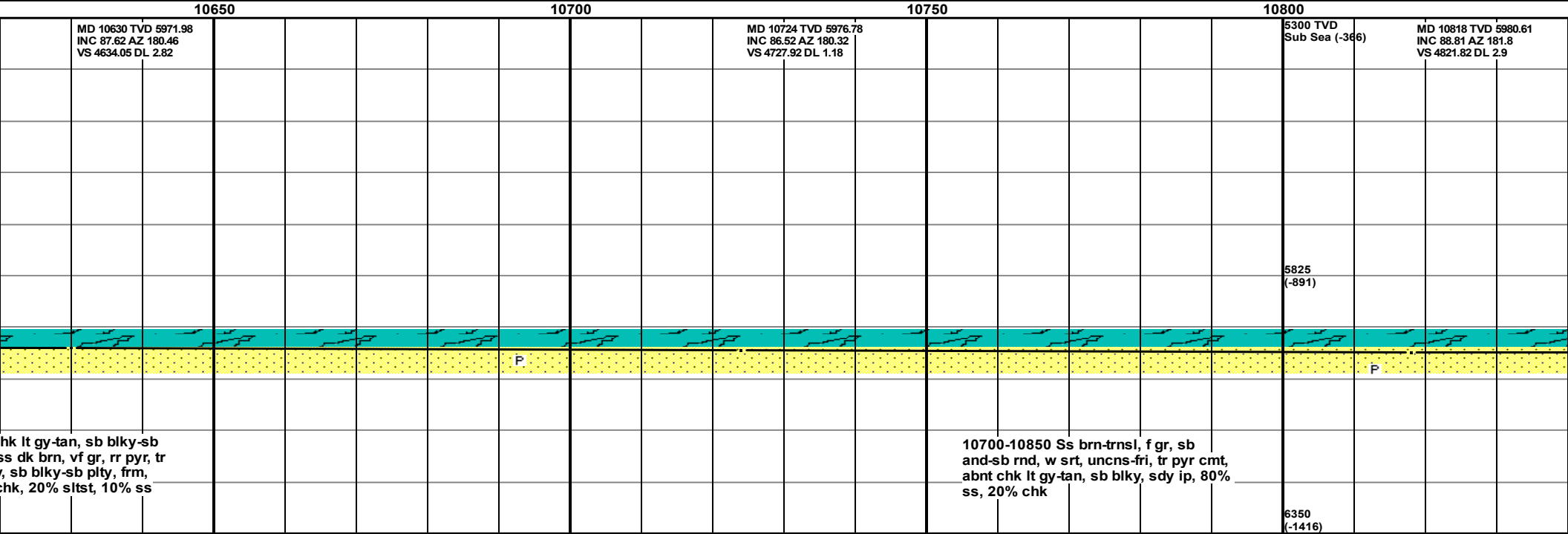
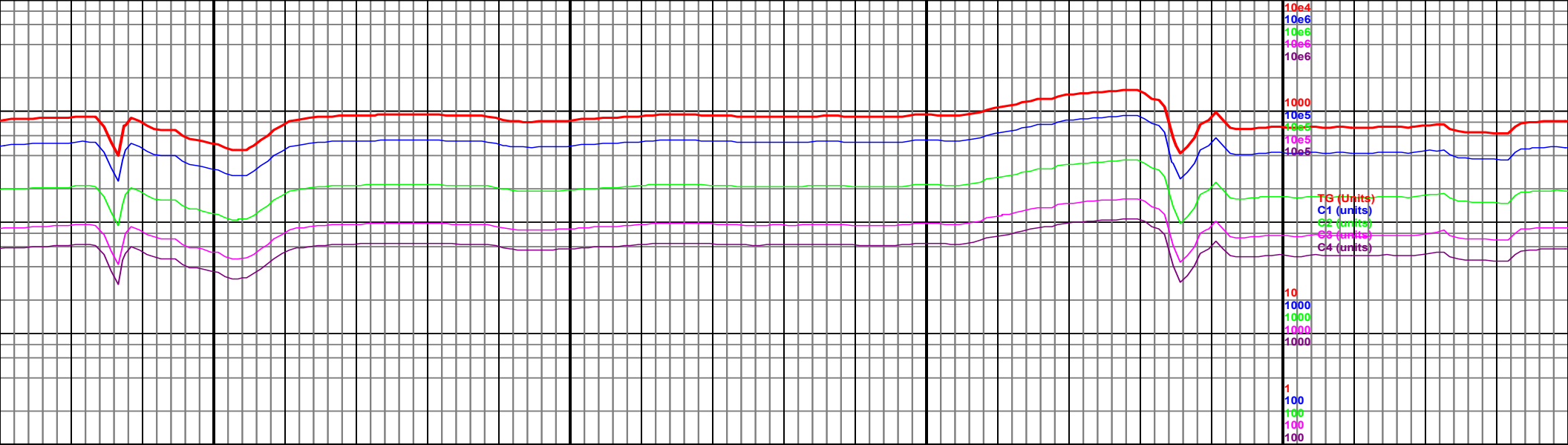


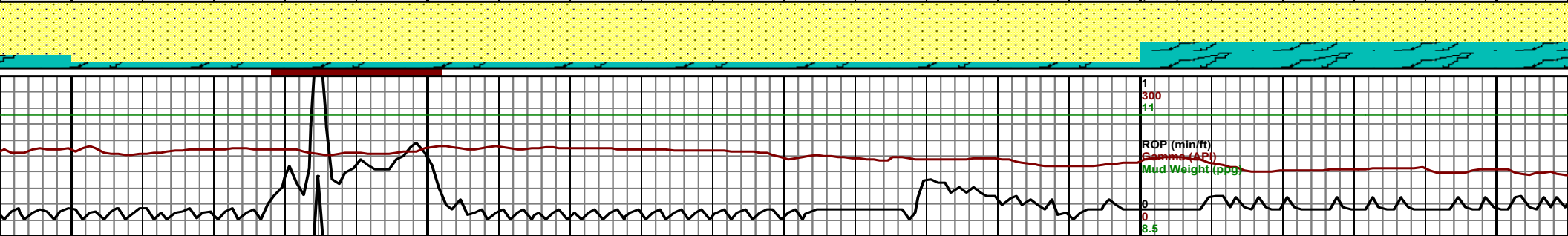
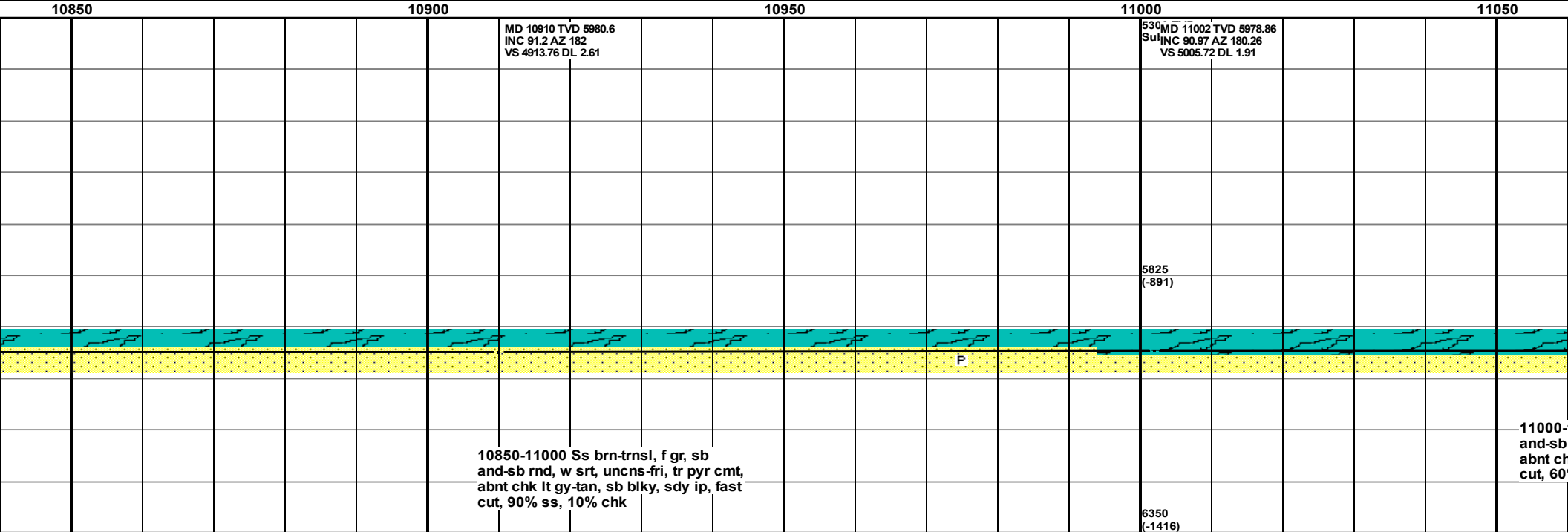
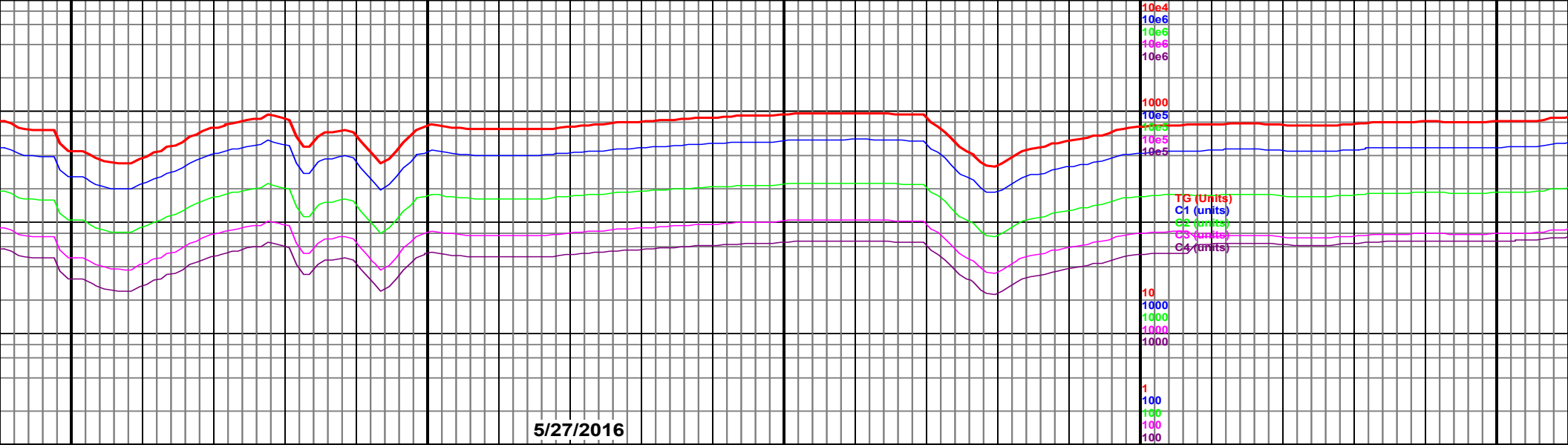


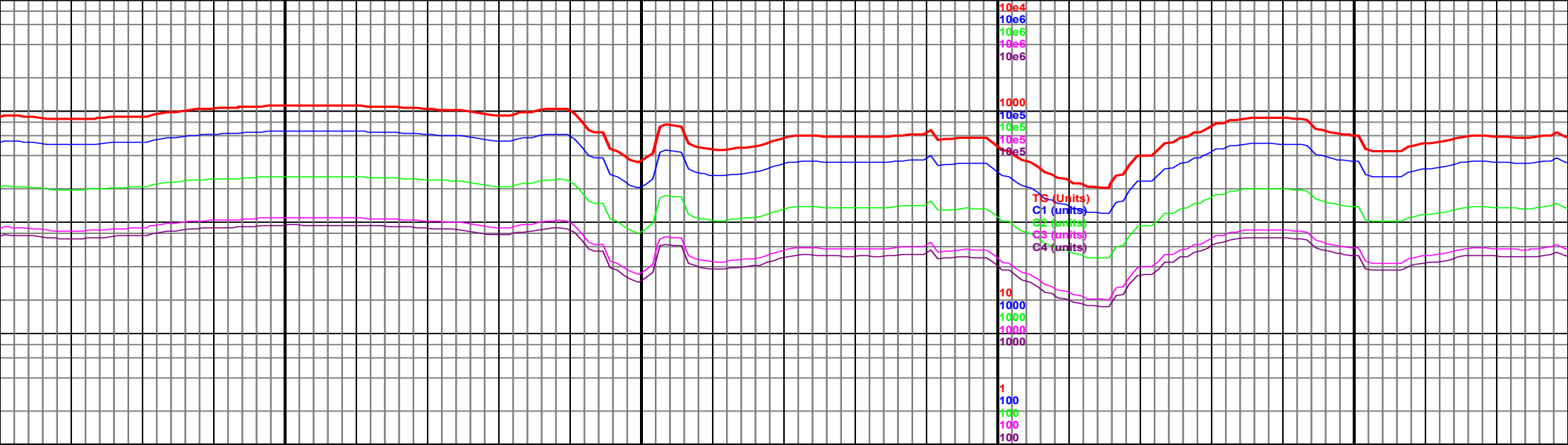












1100
MD 11093 TVD 5978.13
INC 89.95 AZ 177.34
VS 5096.69 DL 3.4

1150

MD 11184 TVD 5977.36
INC 91.02 AZ 178.9
VS 5187.63 DL 2.08

1200

300 TVD
Sub Sea (-386)

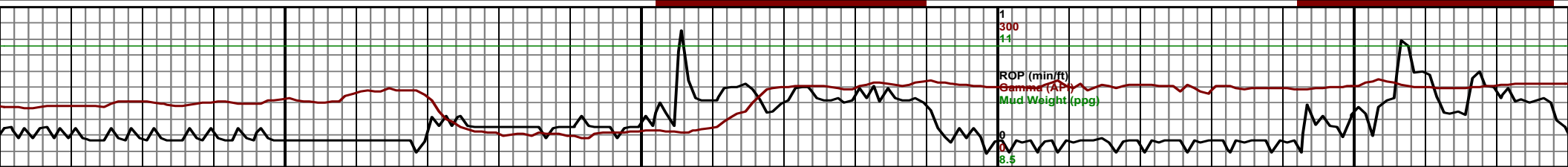
1250

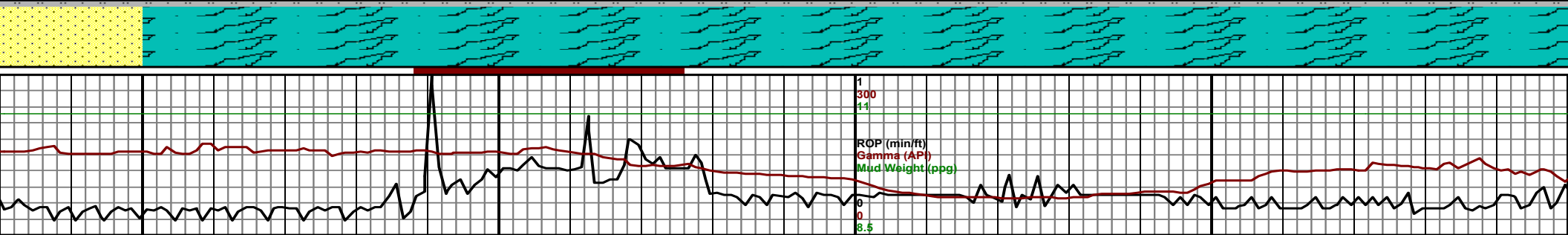
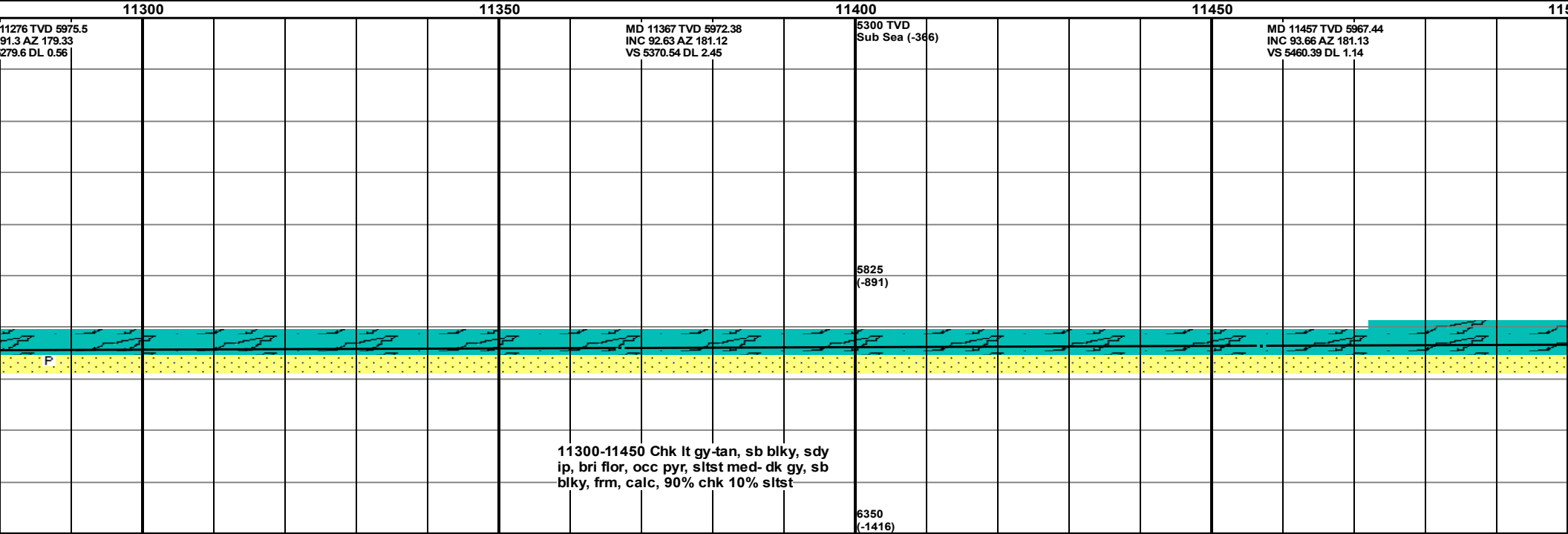
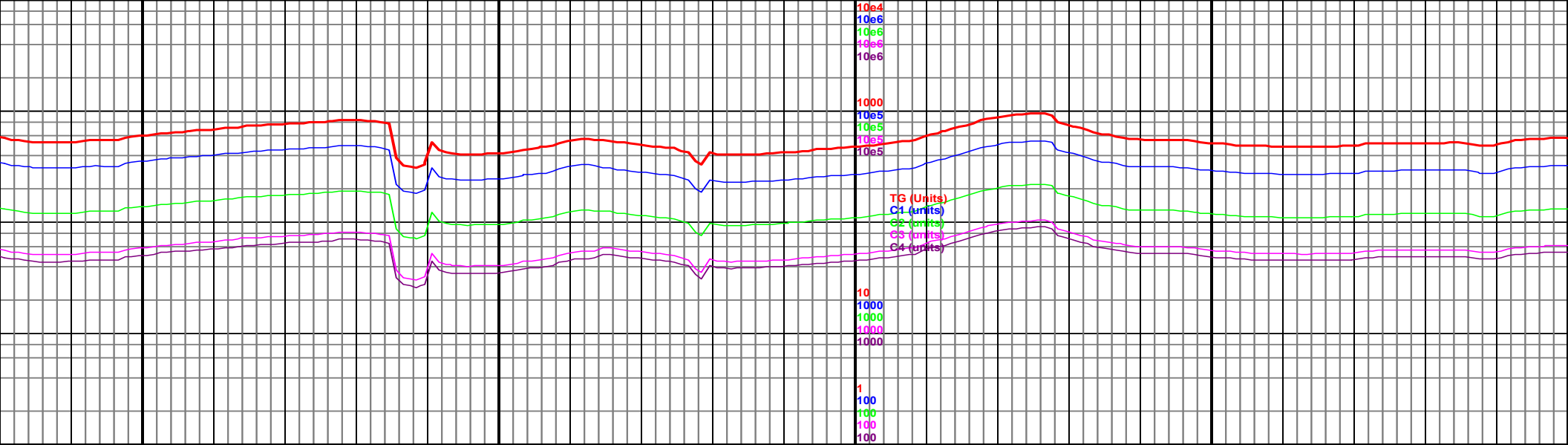
MD
INC
VS 5

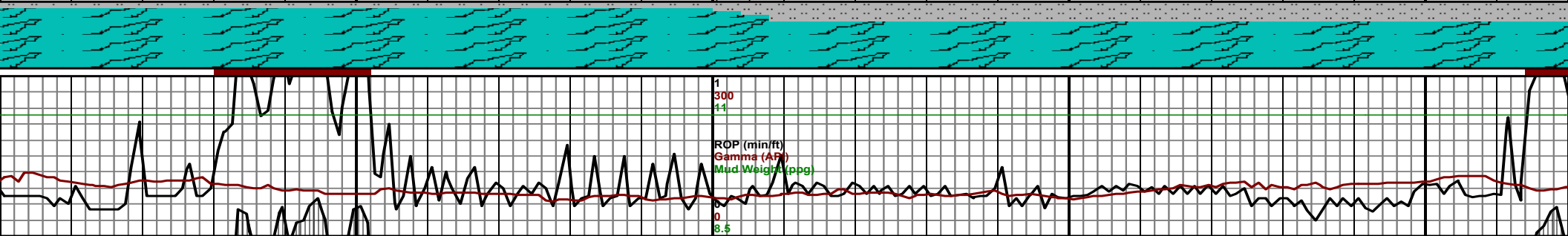
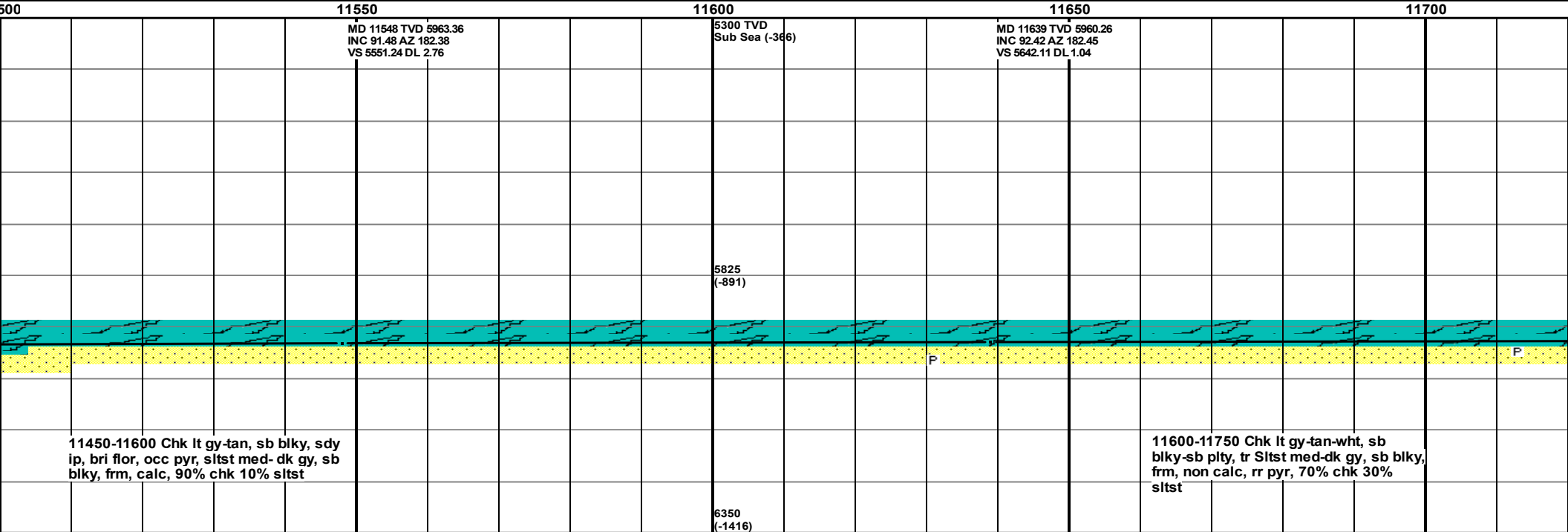
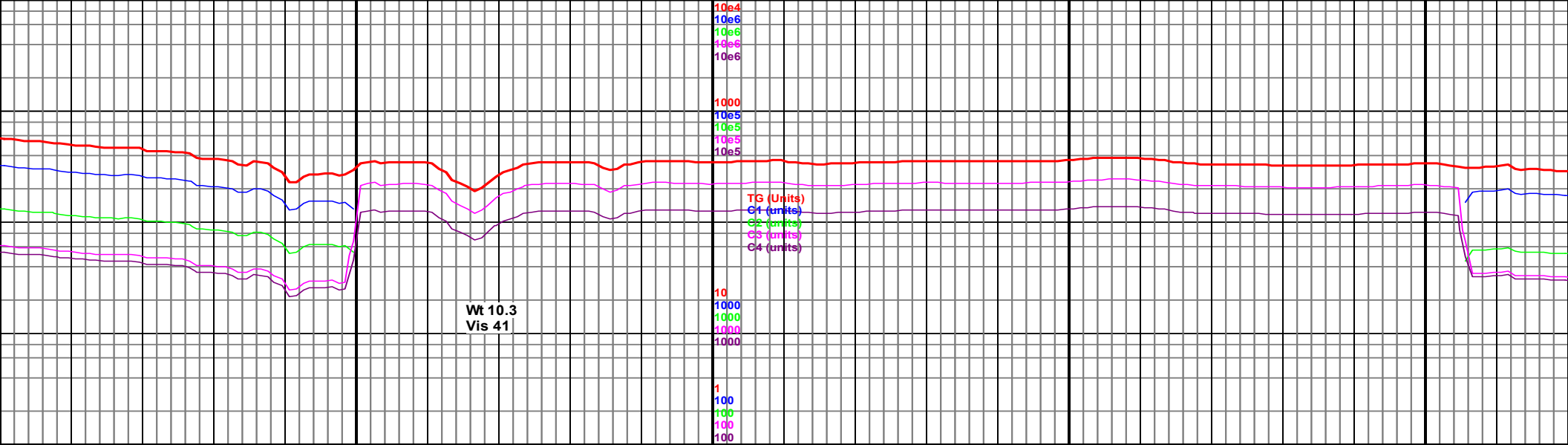
11150 Ss brn-trnsl, f gr, sb
rnd, w srt, uncns-fri, tr pyr cmt,
lk lt gy-tan, sb blk, sdy ip, mod
% ss, 40% chk

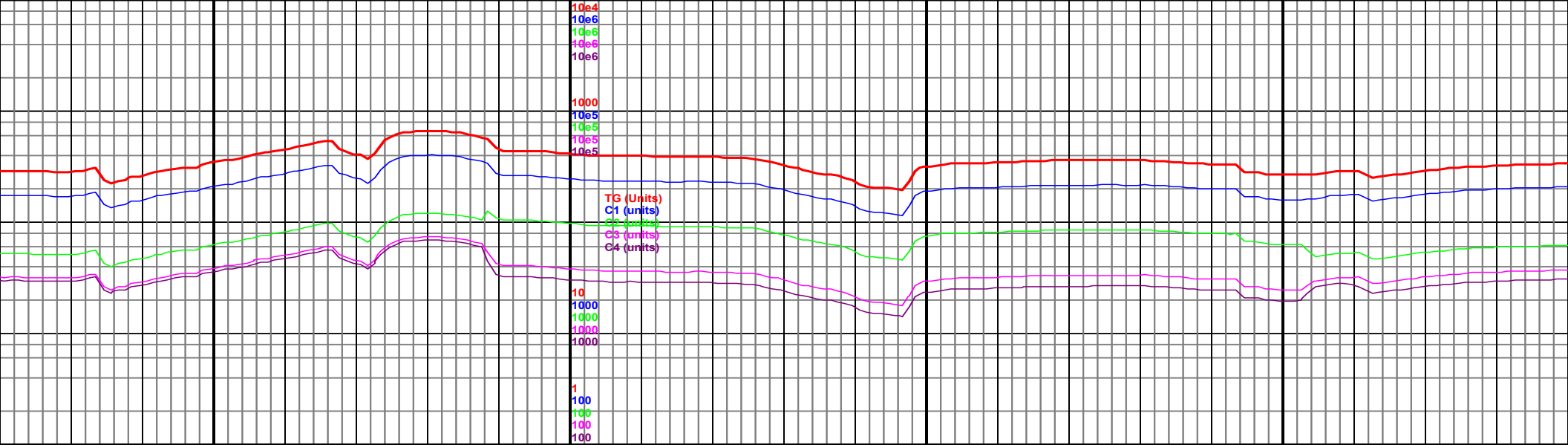
11150-11300 Ss brn-tan-trnsl, f gr, sb
ang-sb rnd, w srt, uncon-fri, tr pyr,
occ euhedral pyr, tr dk gy sltst, sb
blk, frm, mod cut, 90% ss, 10% sltst

6350
(-1416)









MD 11730 TVD 5958.02
INC 90.41 AZ 182.37
VS 5733. DL 2.21

5300 TVD
Sub Sea (-386)

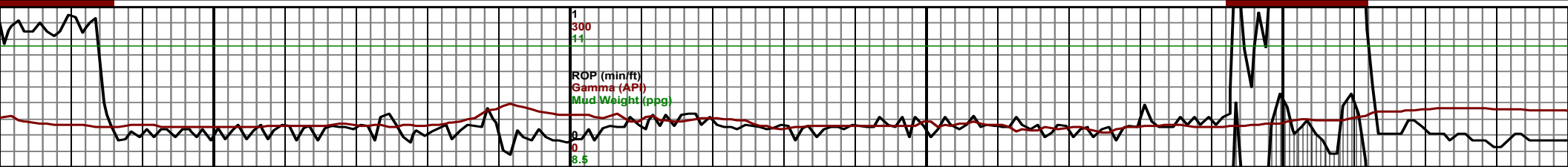
MD 11822 TVD 5957.84
INC 89.81 AZ 180.54
VS 5824.96 DL 2.09

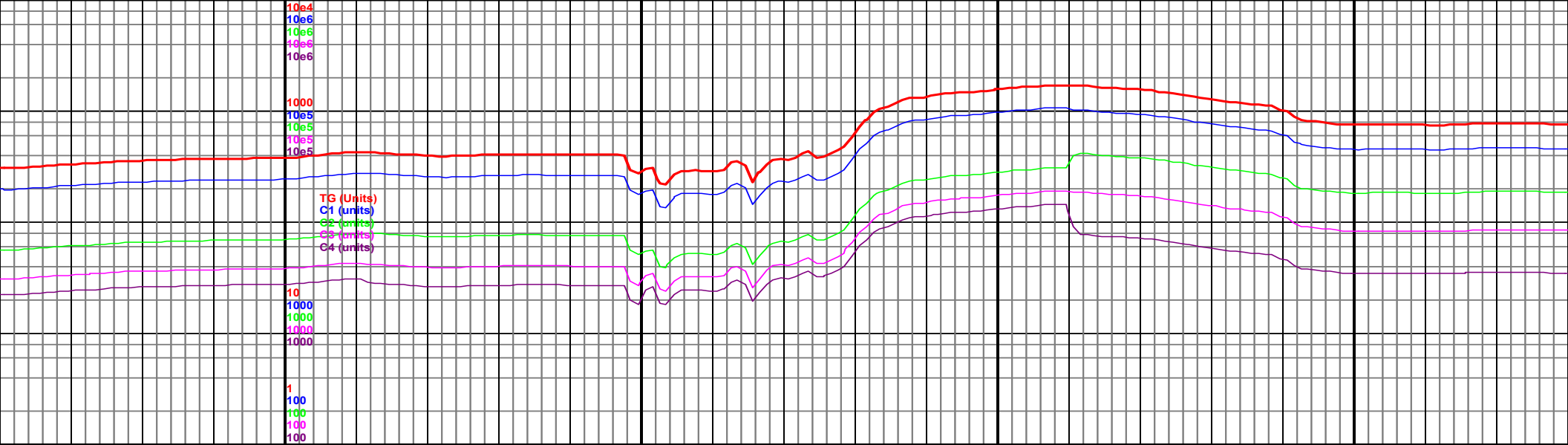
MD 11913 TVD 5958.24
INC 89.68 AZ 180.88
VS 5915.96 DL 0.4

5825
(-891)

11750-11900 Chk lt gy-tan-wht, sb
blky-sb plty, occ sltst med-dk gy, sb
blky, frm, non calc, 60% chk 40% sltst

6350
(-1416)





MD 12188 TVD 5958.53
INC 89.45 AZ 179.31 Sea (-346)
VS 6190.85 DL 0.79

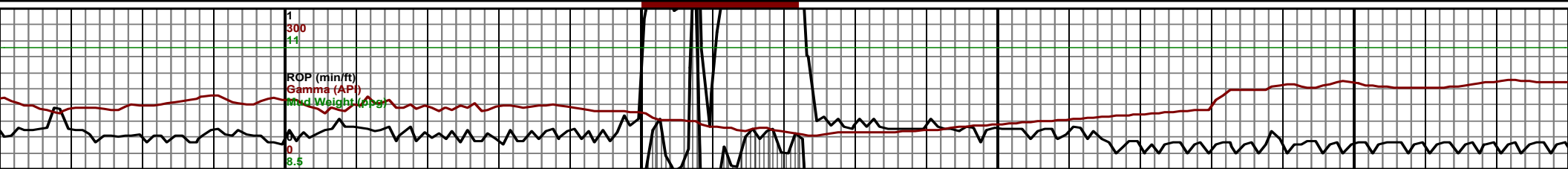
MD 12280 TVD 5959.12
INC 89.81 AZ 181.39
VS 6282.84 DL 2.29

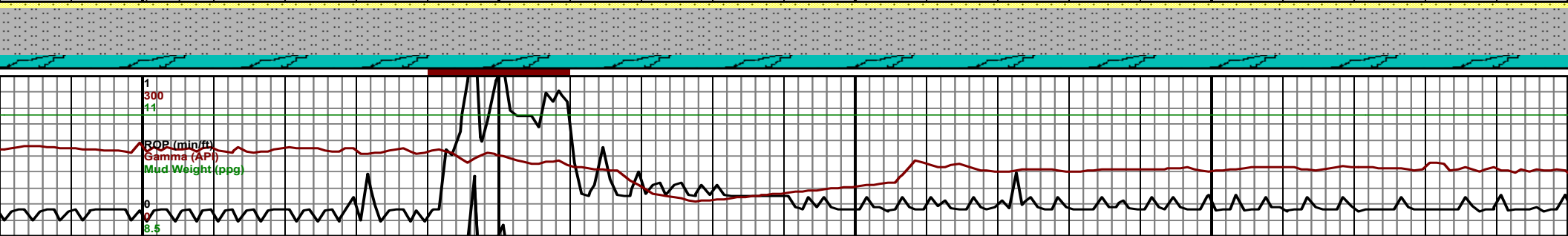
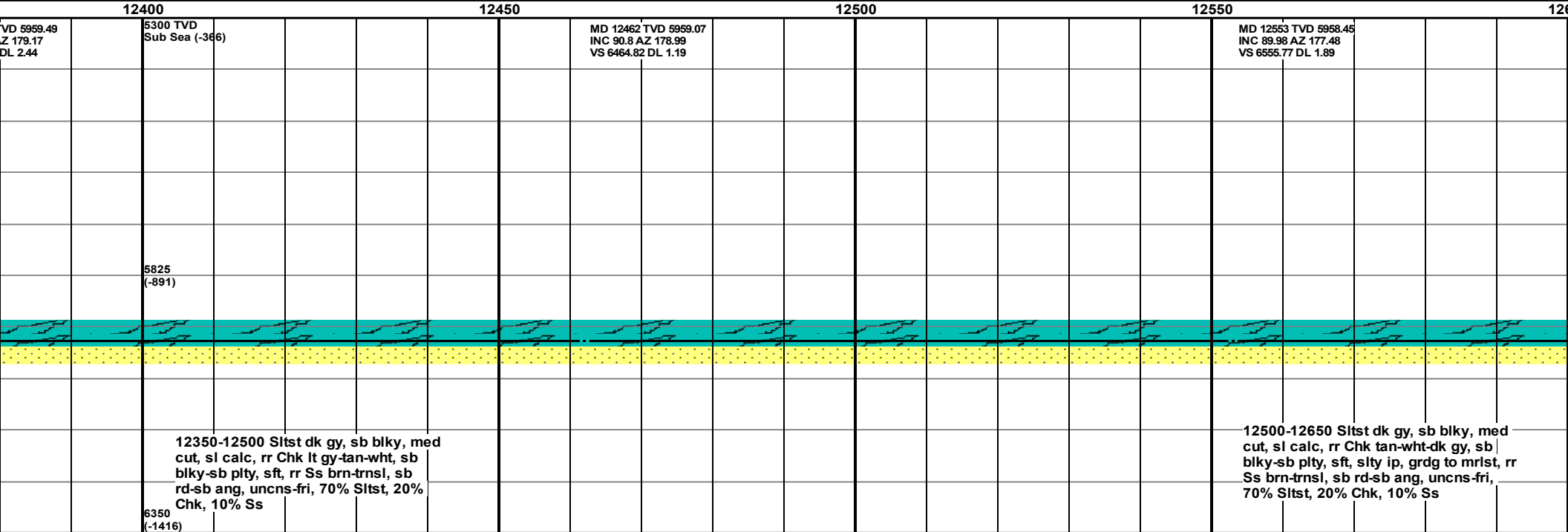
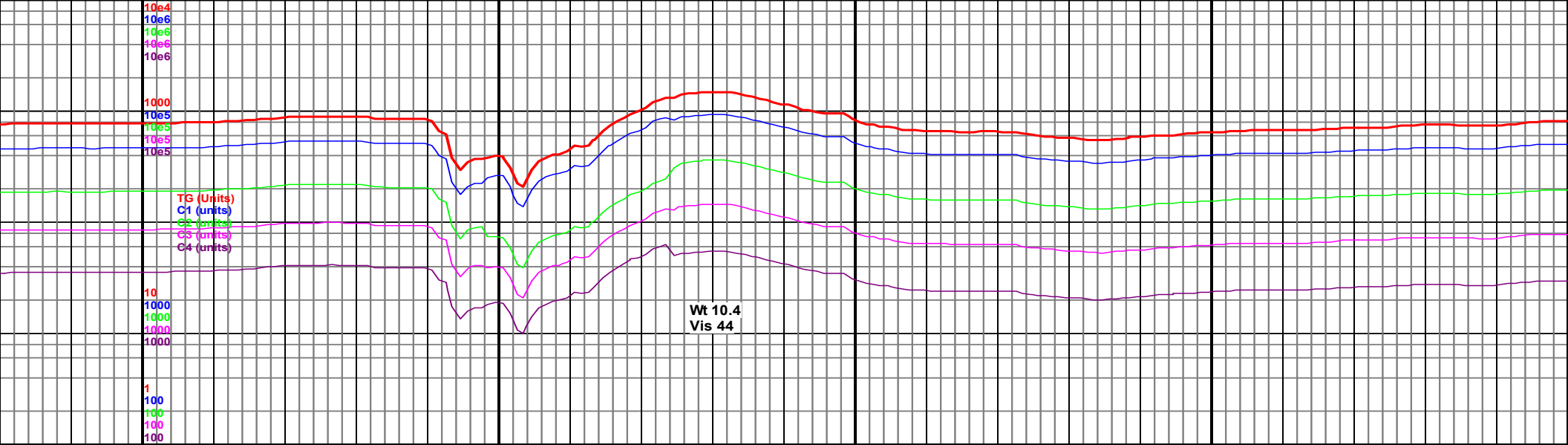
MD 12371 TVD 5960.12
INC 89.73 AZ 181.39
VS 6373.83 DL 2.29

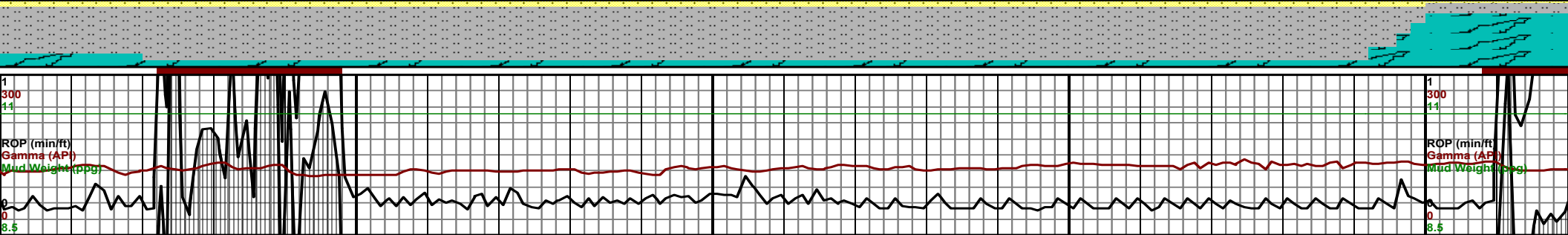
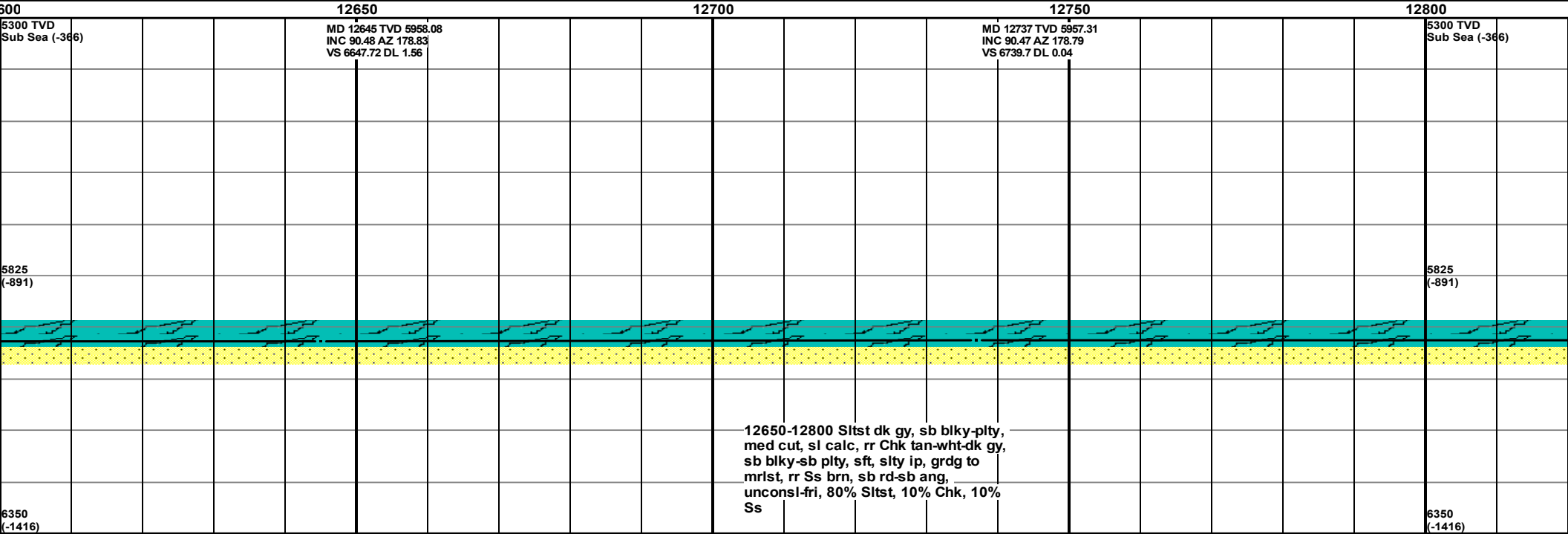
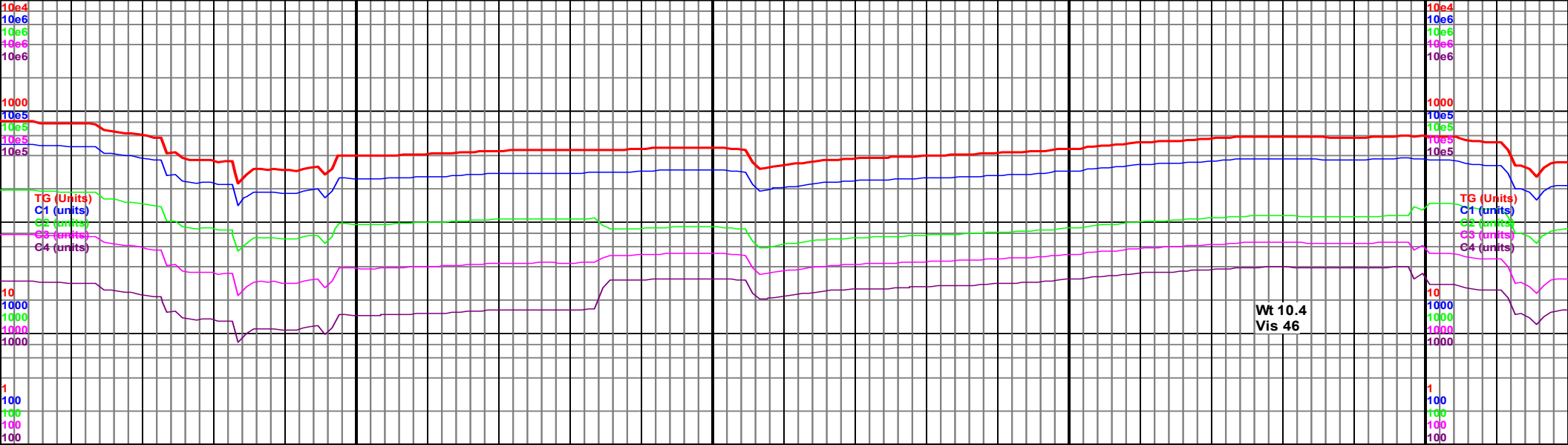
5825
(-891)

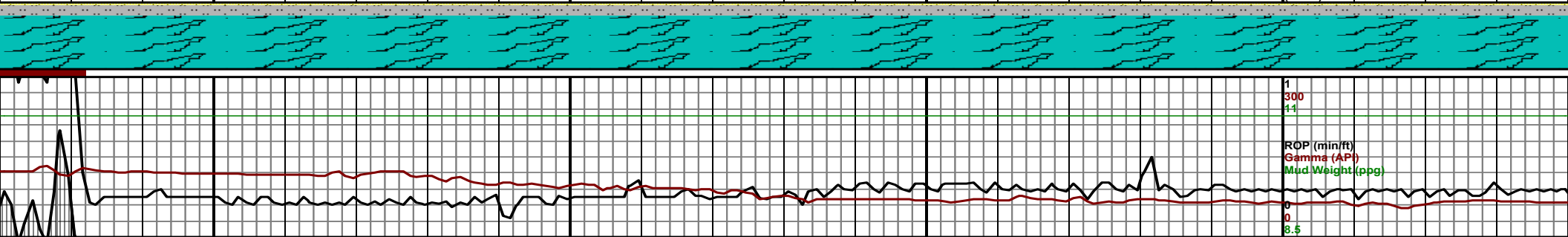
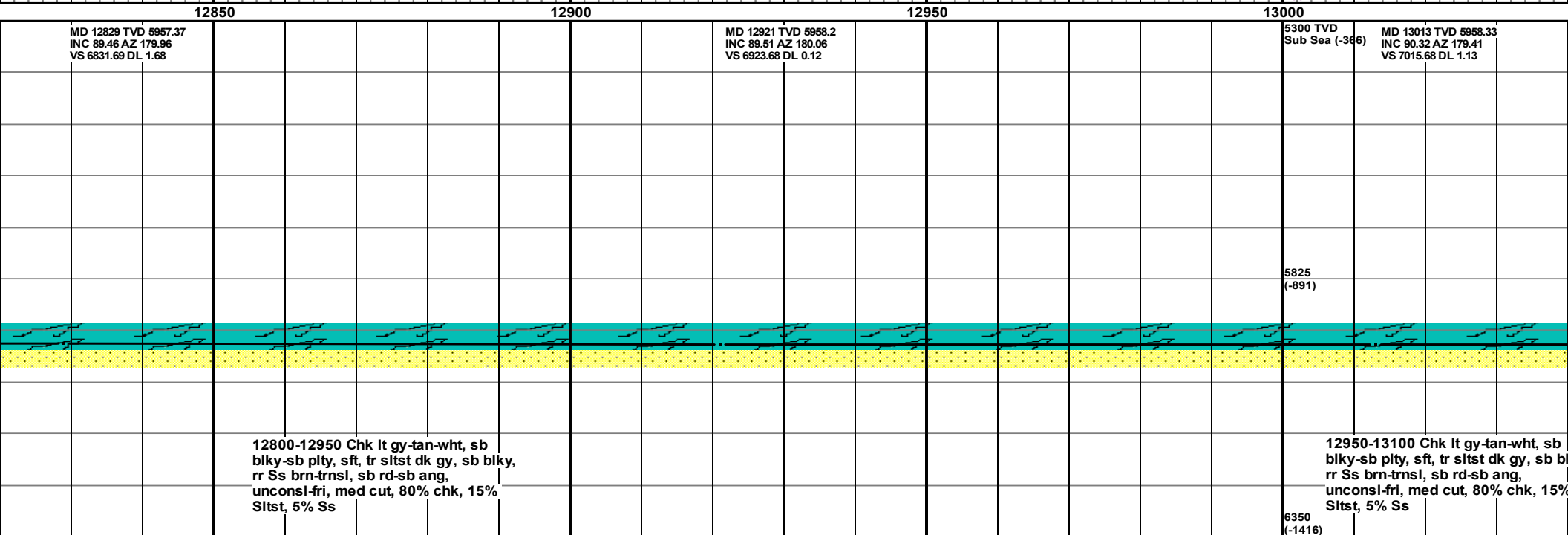
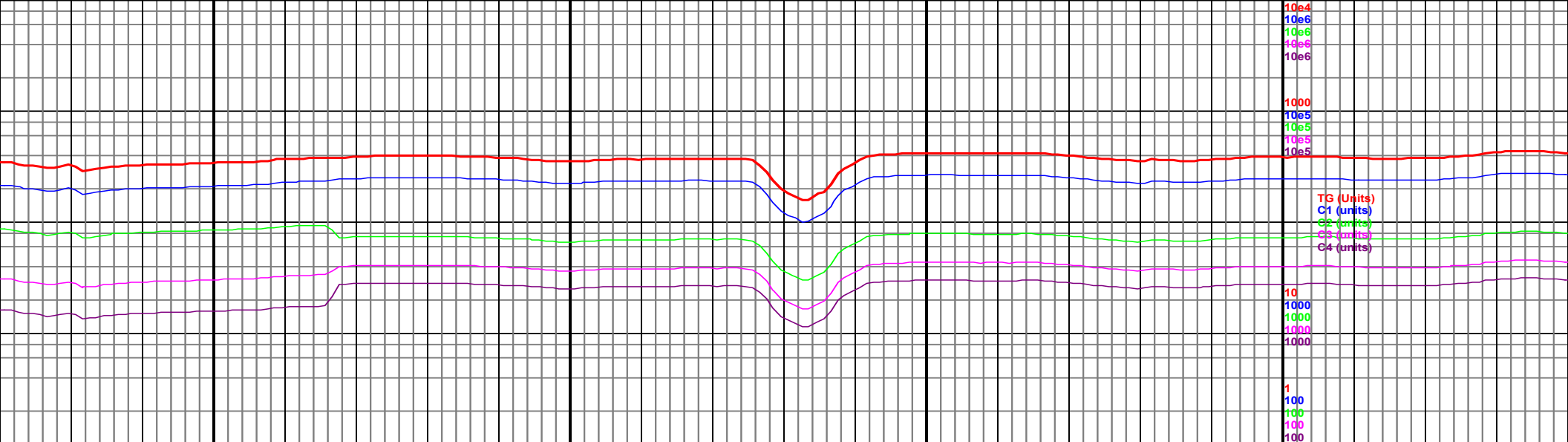
6350
(-1416)

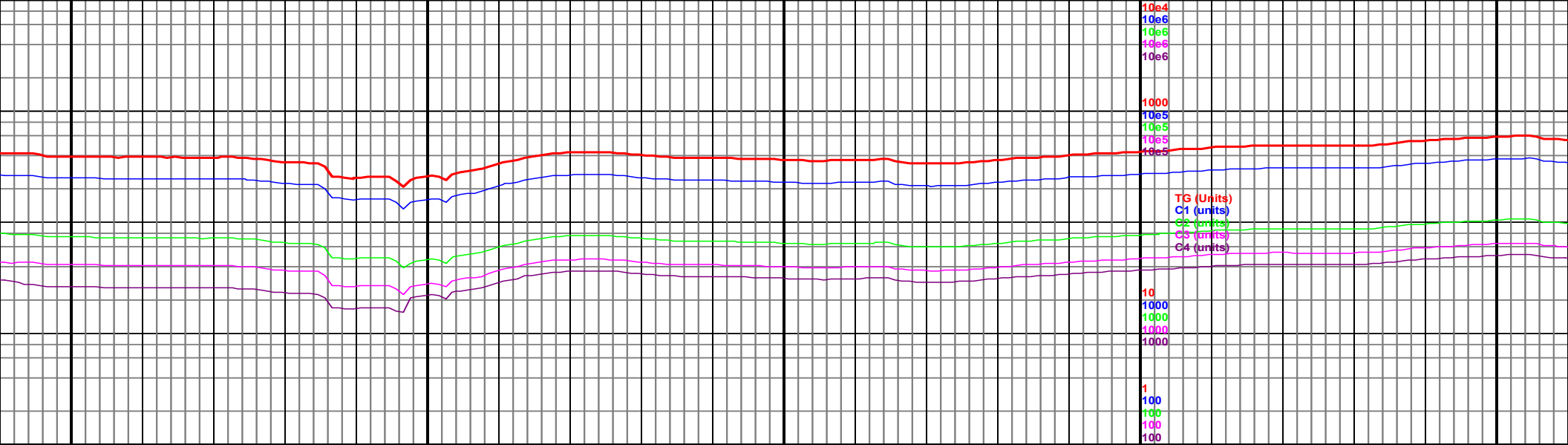
12200-12350 Chk lt gy-tan-wht, sb
blky-sb plty, sft, occ Ss brn-trnsl, sb
rd-sb ang, uncns-fri, tr sltst dk gy, sb
blky, med cut, 60% chk, 30% Ss, 10%
Sltst











13050

13100

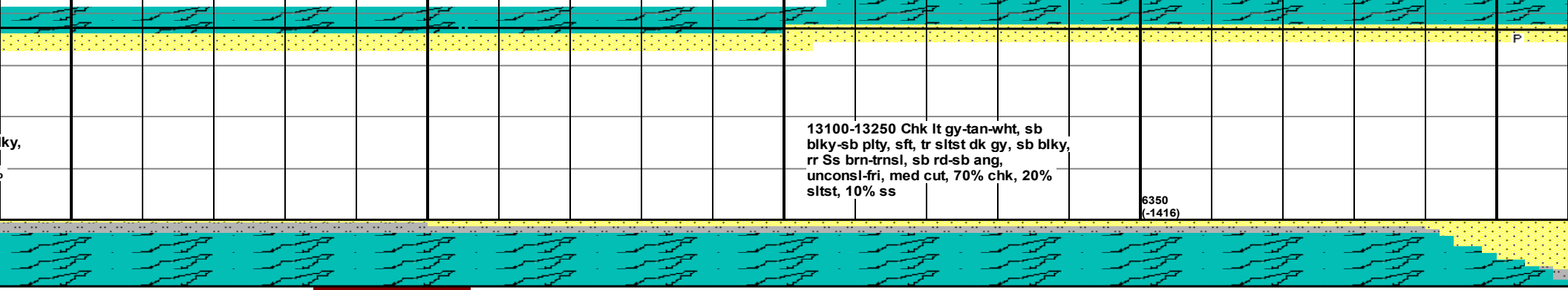
13150

13200

13250

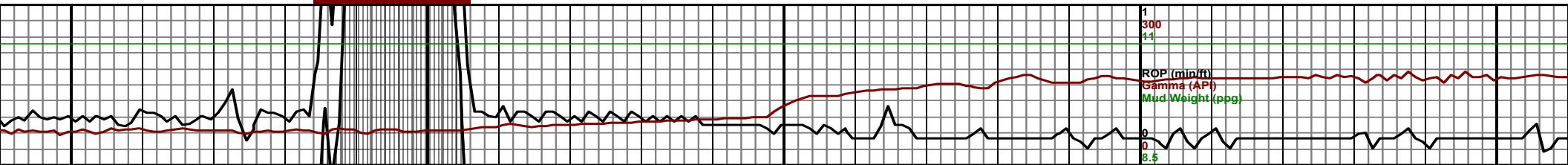
MD 13105 TVD 5958.9
INC 88.97 AZ 179.49
VS 7107.67 DL 1.47

MD 13196 TVD 5960.46
INC 89.07 AZ 178.08
VS 7198.64 DL 1.55



ky,

b



1

300

44

ROP (min/ft)

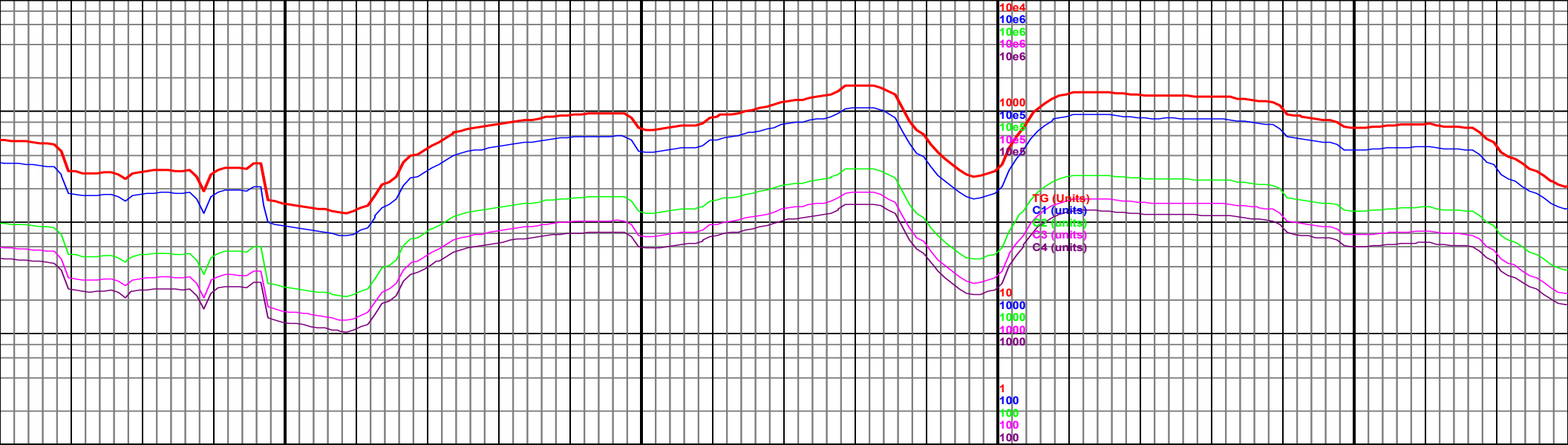
Gamma (API)

Mud Weight (ppg)

0

0

8.5



MD 13288 TVD 5962.09
INC 88.9 AZ 179.47
VS 7290.6 DL 1.52

MD 13380 TVD 5963.04
INC 89.92 AZ 179.82
VS 7382.59 DL 1.17

5300 TVD
Sub Sea (-346)

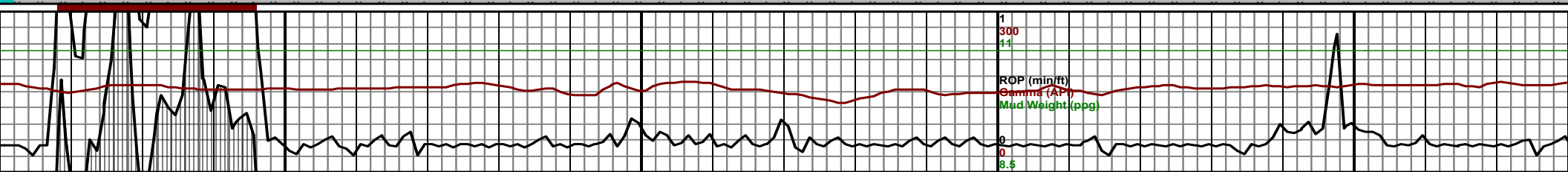
MD 13472
INC 90.29
VS 7474.5

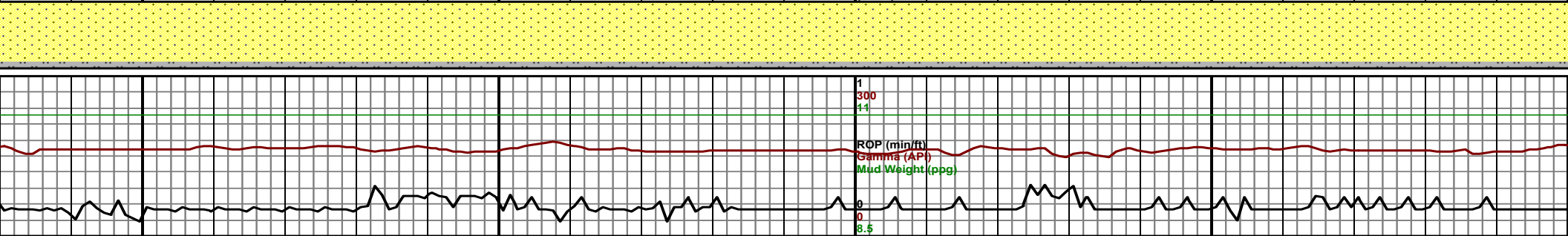
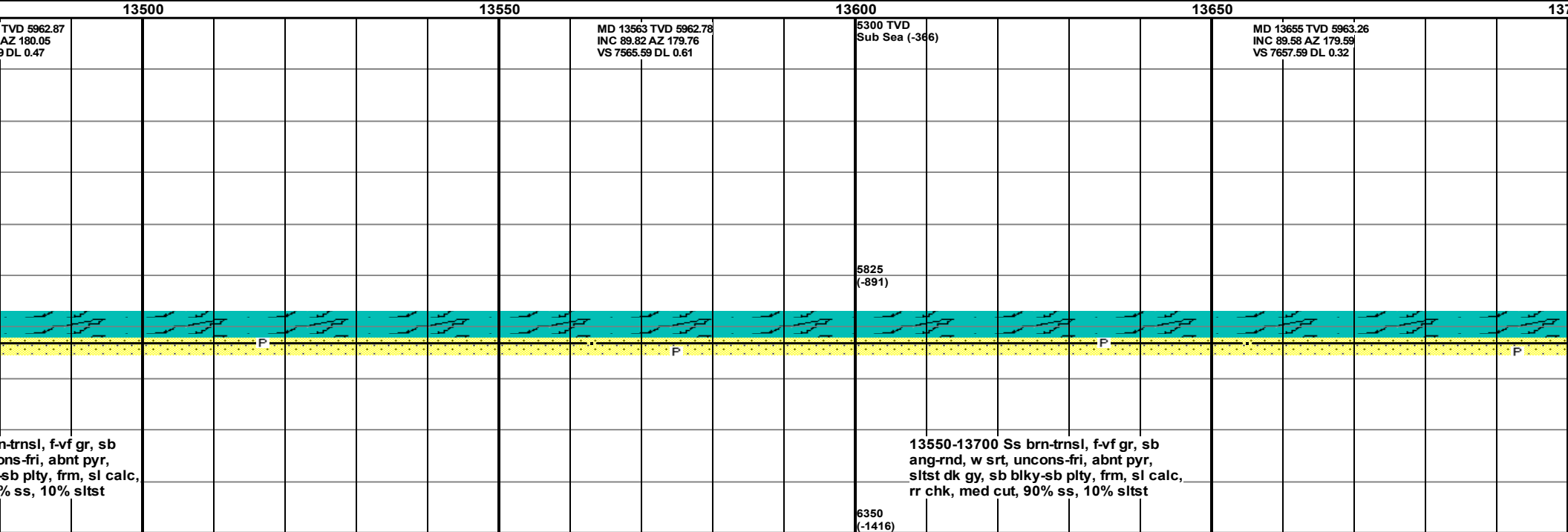
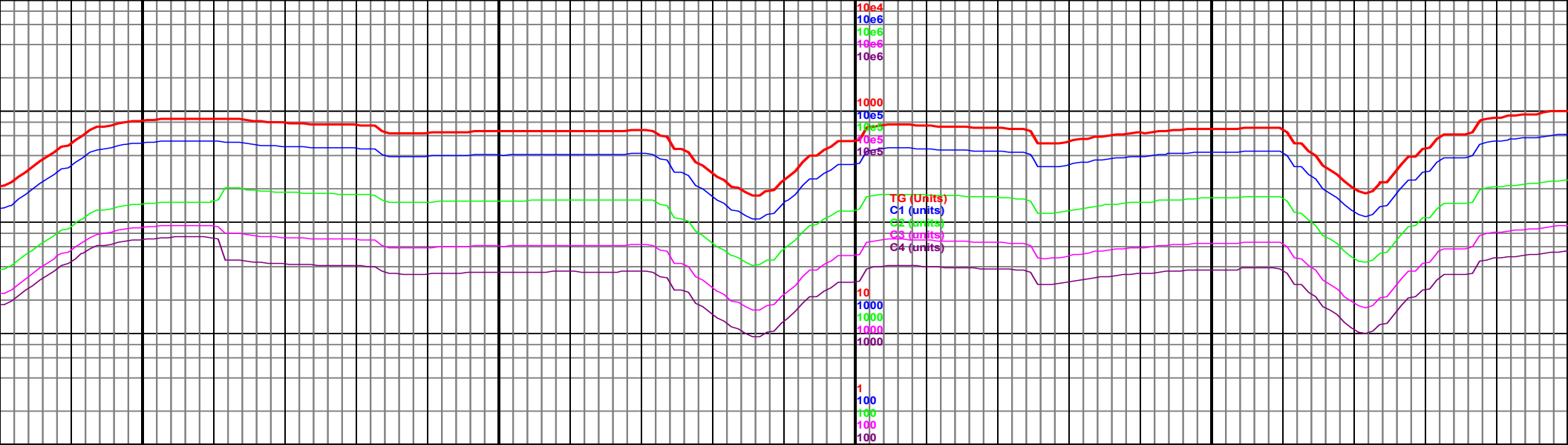
133250-13400 Ss brn-trnsl, f-vf gr, sb
ang-rnd, w srt, unconsl-fri, abnt pyr,
sltst dk gy, sb blkyl-sb plty, frm, sl calc,
rr chk, med cut, 80% ss, 20% sltst

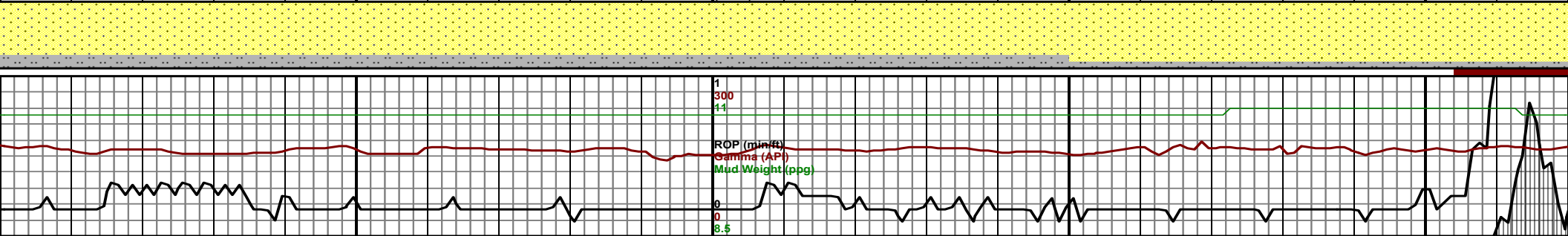
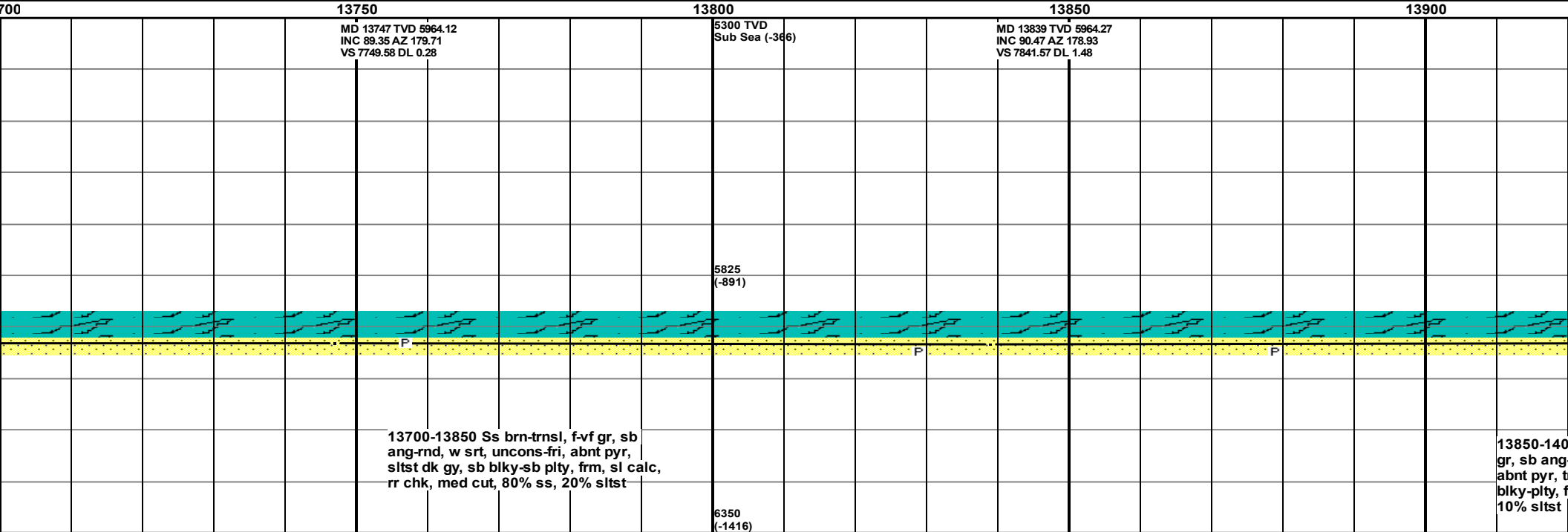
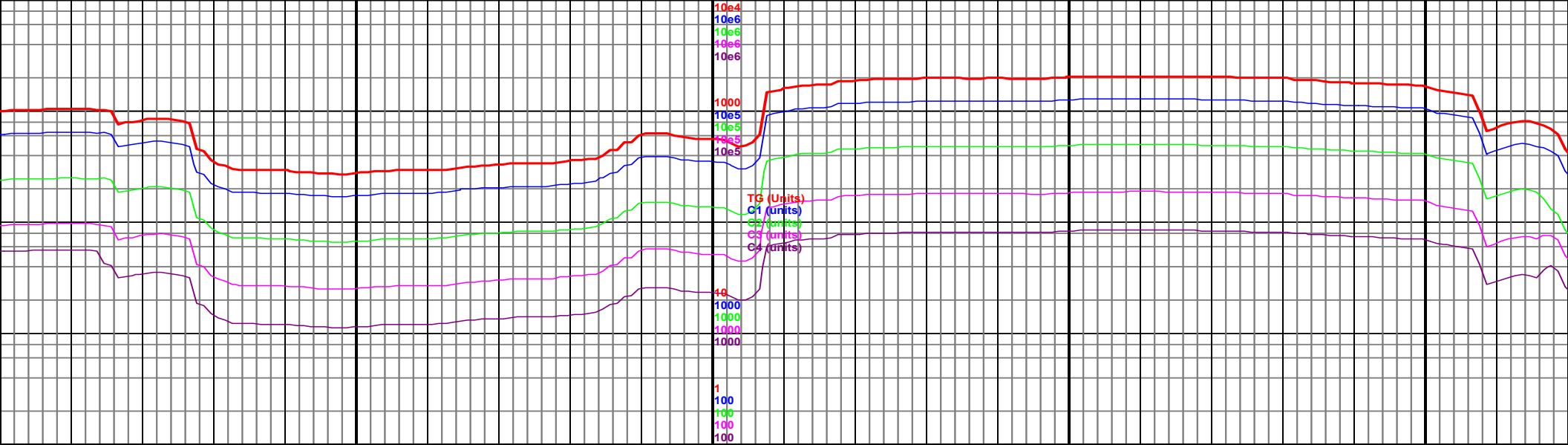
13400-13550 Ss brn
ang-rnd, w srt, unconsl-fri, abnt pyr,
sltst dk gy, sb blkyl-sb plty, frm, sl calc,
rr chk, med cut, 90% ss, 10% sltst

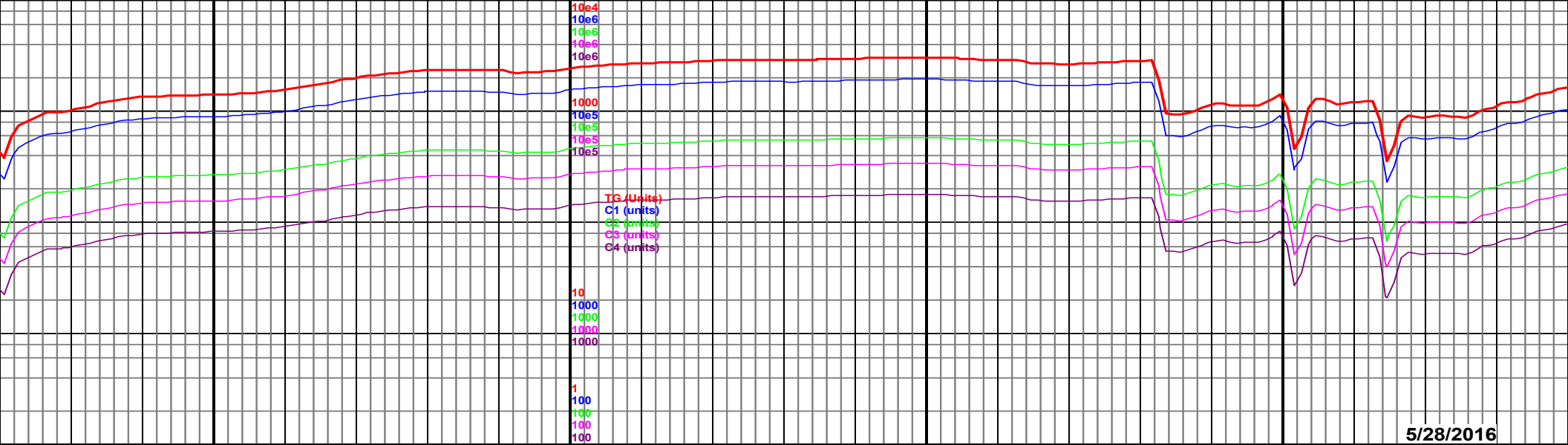
5825
(-891)

6350
(-1416)

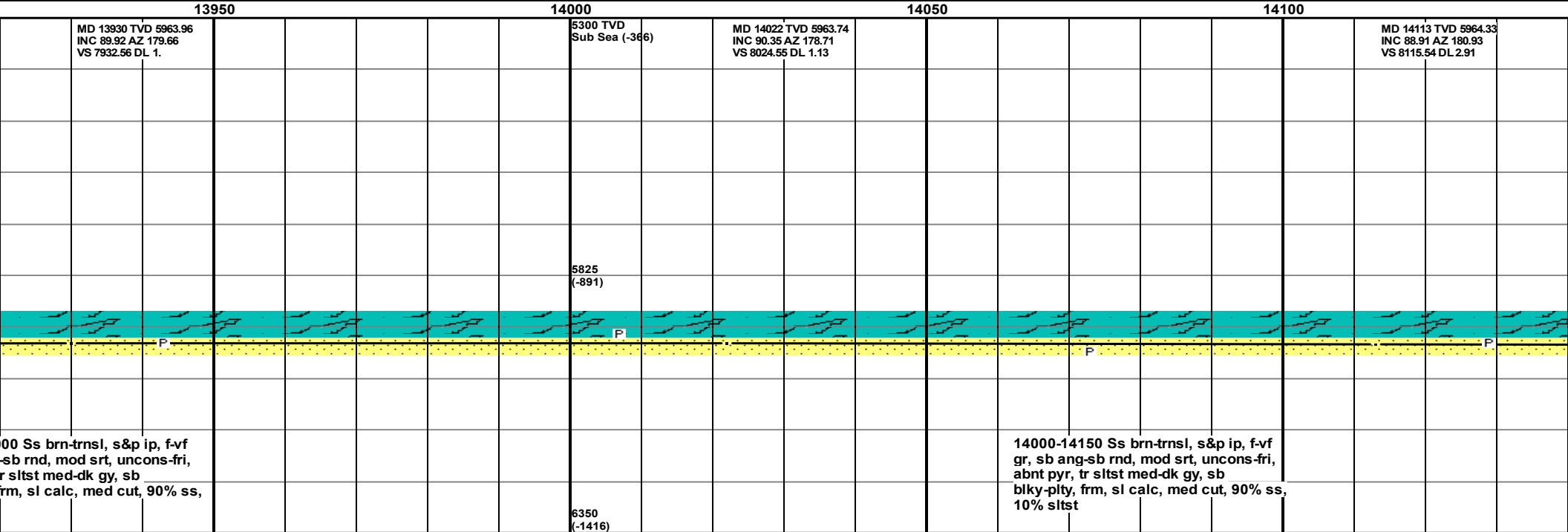






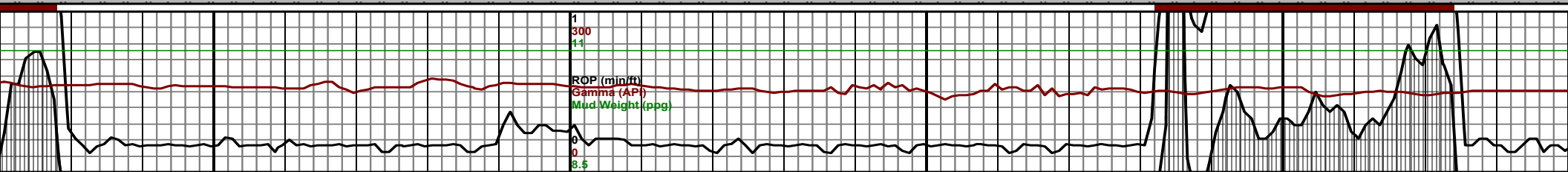


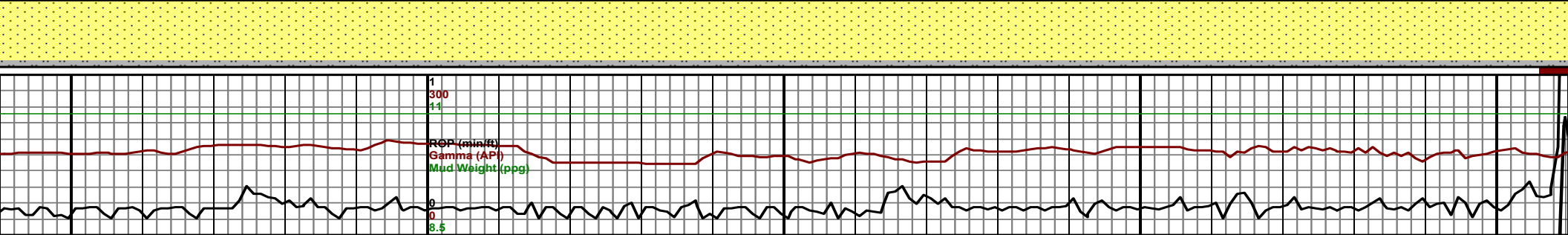
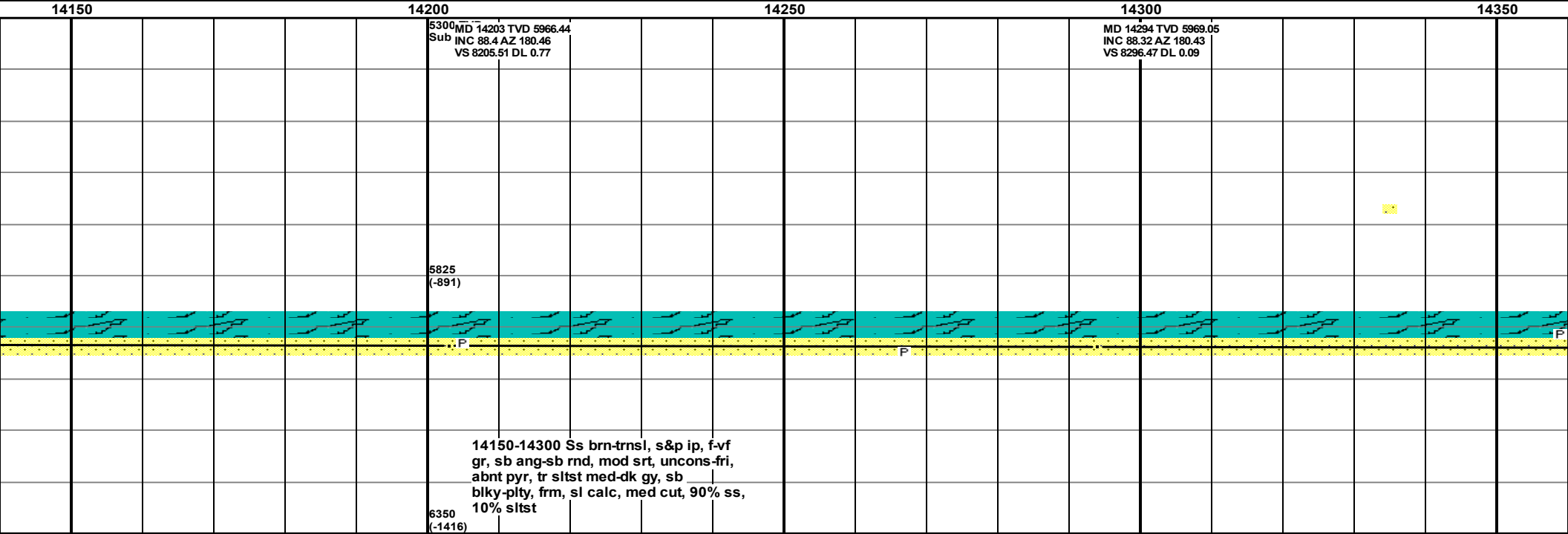
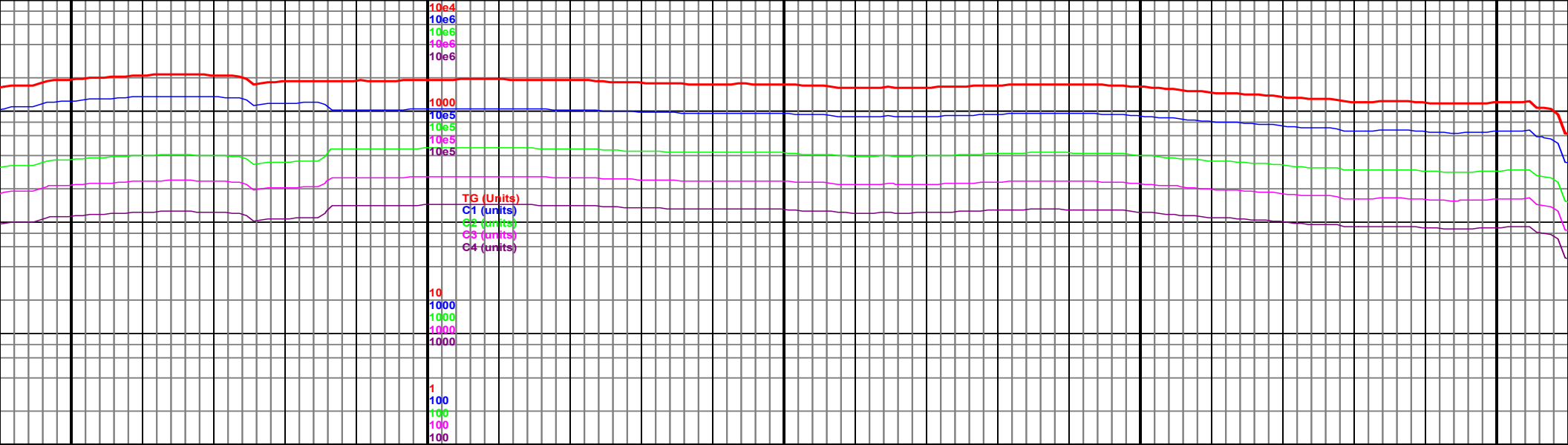
5/28/2016

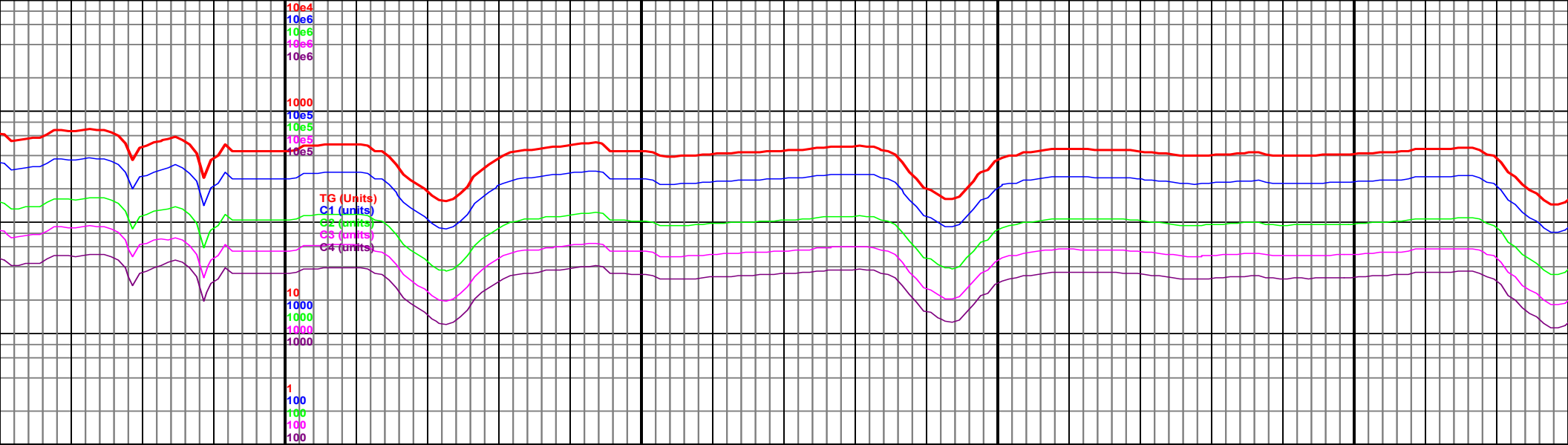


00 Ss brn-trnsl, s&p ip, f-vf
-sb rnd, mod srt, unconsl-fri,
r sltst med-dk gy, sb
rm, sl calc, med cut, 90% ss,

14000-14150 Ss brn-trnsl, s&p ip, f-vf
gr, sb ang-sb rnd, mod srt, unconsl-fri,
abnt pyr, tr sltst med-dk gy, sb
blky-pty, frm, sl calc, med cut, 90% ss,
10% sltst







MD 14385 TVD 5971.52
INC 88.56 AZ 182.34
VS 8387.41 DL 2.11

MD 14476 TVD 5973.06
INC 89.51 AZ 182.14
VS 8478.32 DL 1.07

MD 14568 TVD 5974.52
INC 89.2 AZ 182.14
VS 8570.25 DL 0.07

5825
(-891)

14300-14450 Ss brn-trnsl, s&p ip, f-vf
gr, sb ang-sb rnd, mod srt, uncons-fri,
occ pyr, tr sltst med-dk gy, sb blkly-plty,
frm, sl calc, med cut, 90% ss, 10%
sltst

14450-14600 Ss brn-trnsl, s&p ip, f-vf
gr, sb ang-sb rnd, mod srt, uncons-fri,
occ pyr, tr sltst med-dk gy, sb blkly-plty,
frm, sl calc, med cut, 90% ss, 10%
sltst

6350
(-1416)

