



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

Well Name: Razor Federal 12F-1305A
Well Id: 05-123-38719-00
Location: SENW 12-T10N-R58W
License Number: 05-123-38719-00
Spud Date: 11/12/2015
Surface Coordinates: Lat.: 40.854456 Long.: -103.817919

Region: Redtail Field
Drilling Completed: 11/17/2015

Bottom Hole
Coordinates:
Ground Elevation (ft): 4937
Logged Interval (ft): 5325 To: 13910
Formation: Pierre, Sharon Springs, Niobrara A, Niobrara B
Type of Drilling Fluid: Water Based Mud

K.B. Elevation (ft): 4958
Total Depth (ft): 13910

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


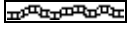
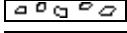
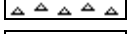
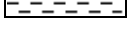
Gas Detection






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




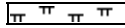

Comments

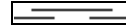




Lithologies and tops at drilled depths, not corrected to elogs. Where the well bore gas is 100% methane, the C1 line is moved to 85% for graphical purposes only.




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

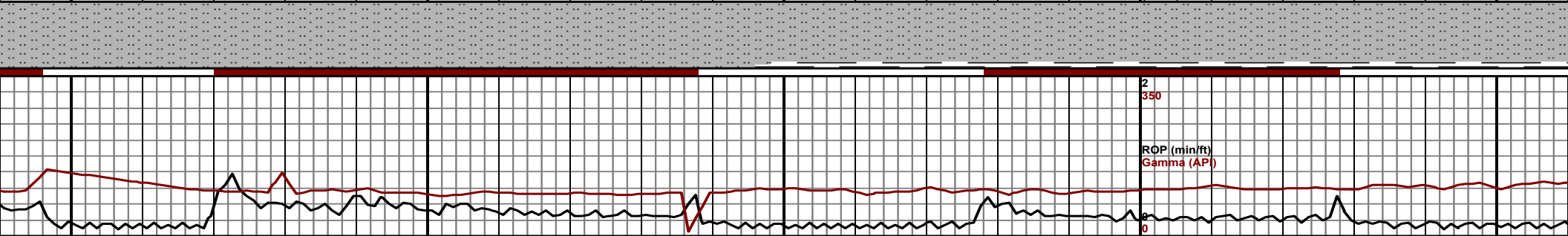
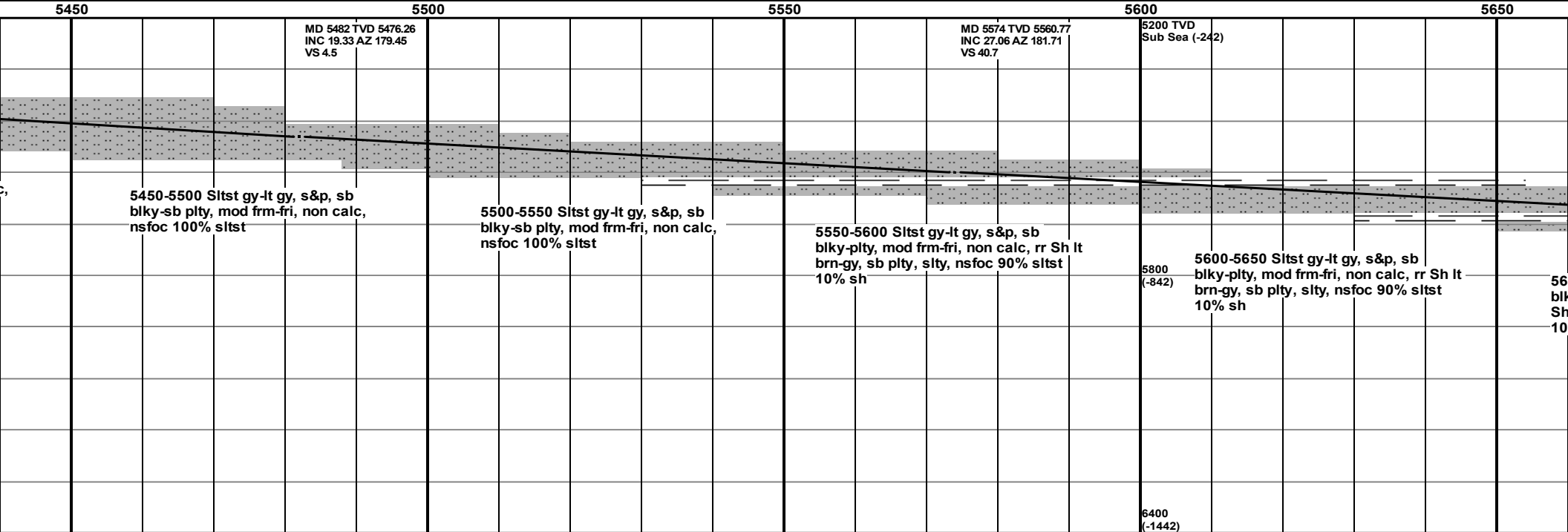
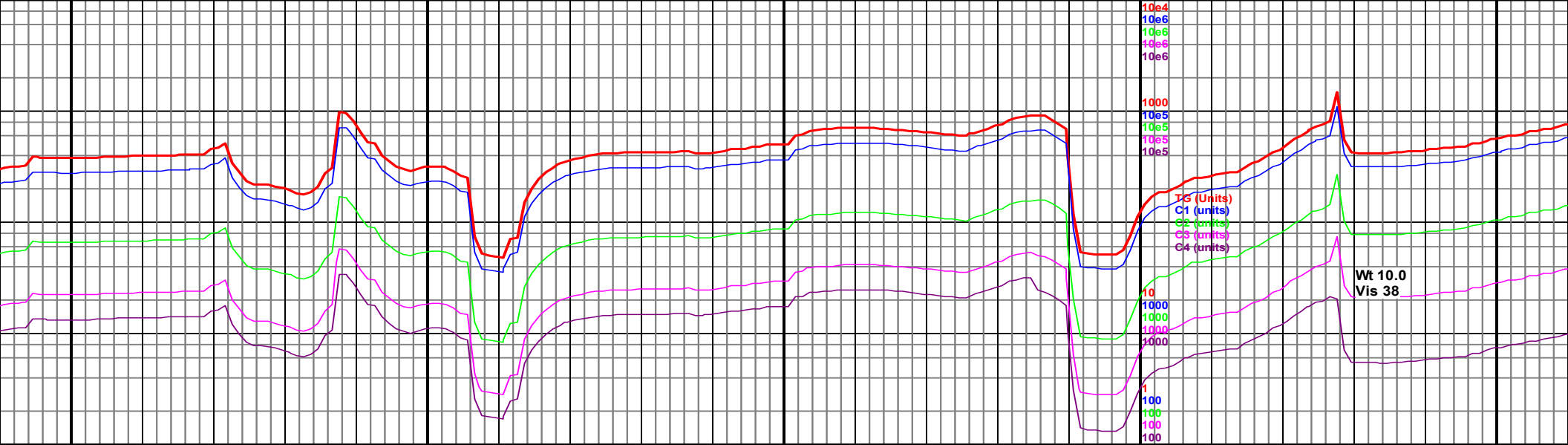
ROUNDING
 Rounded
 Subrnd
 Subang
 Angular

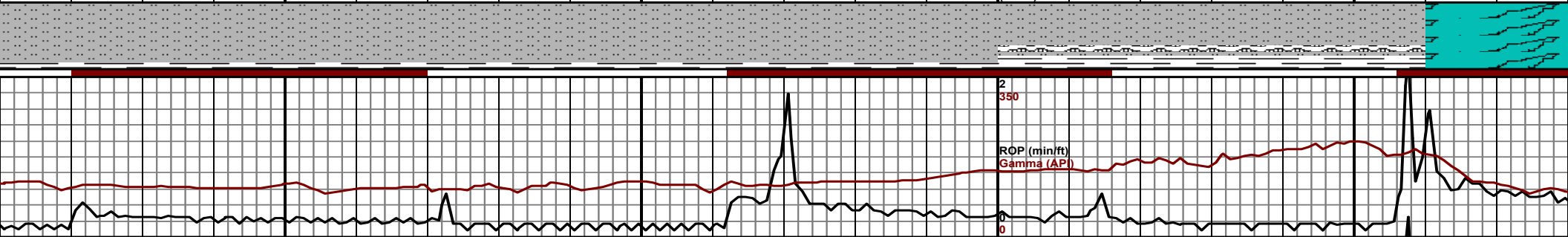
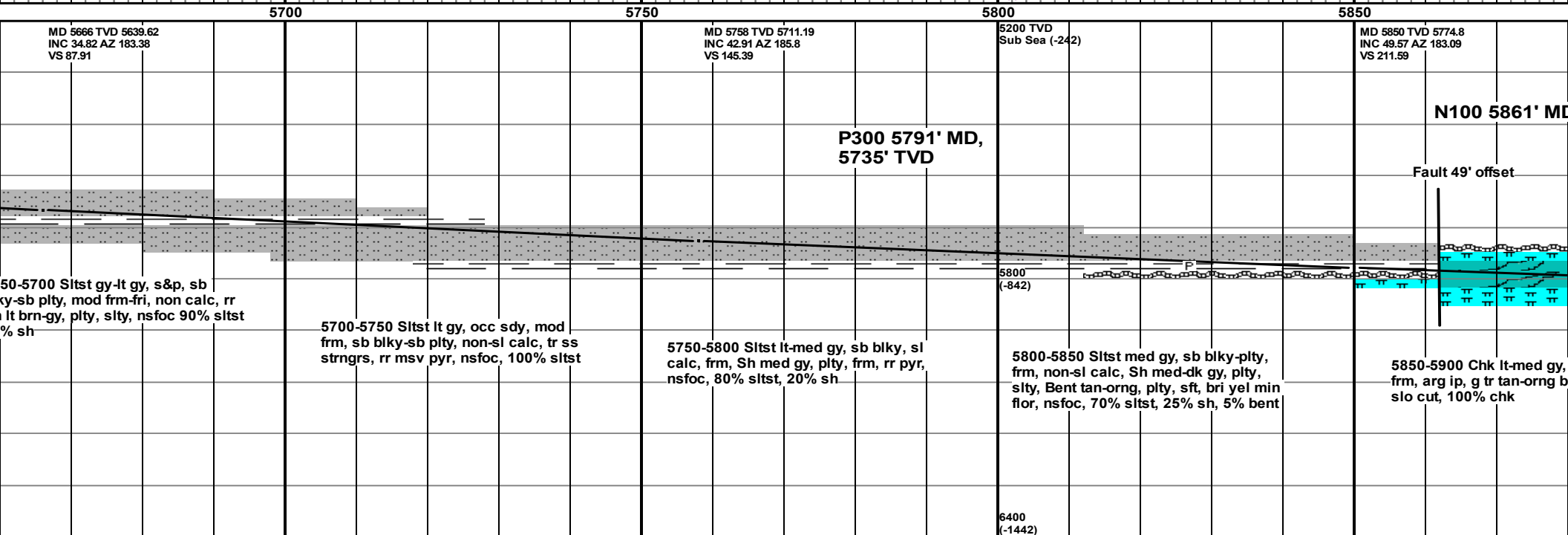
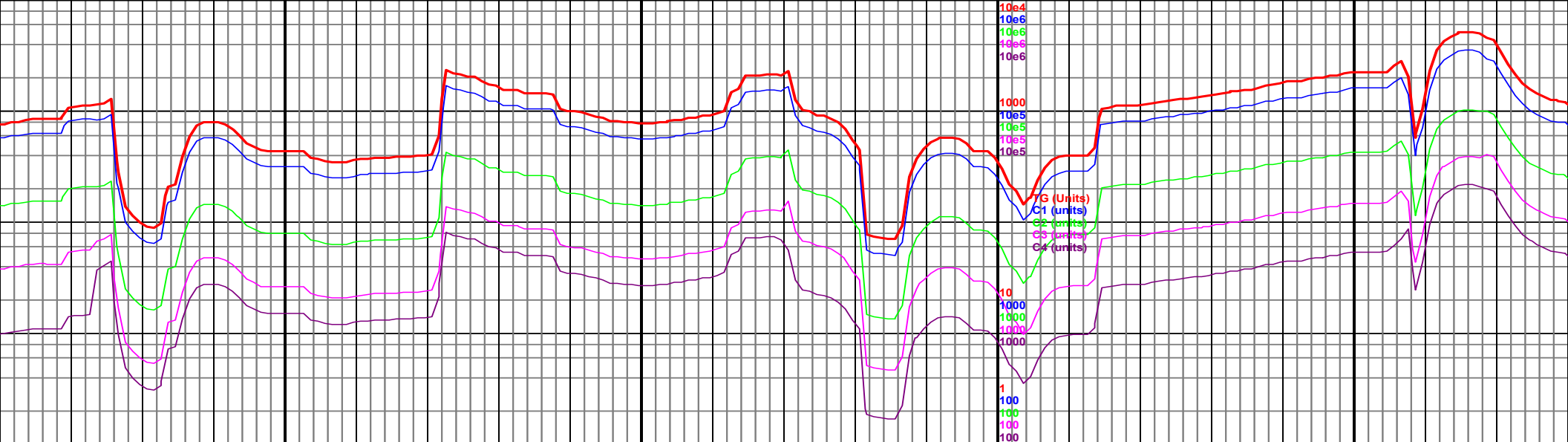
OIL SHOW
 Even

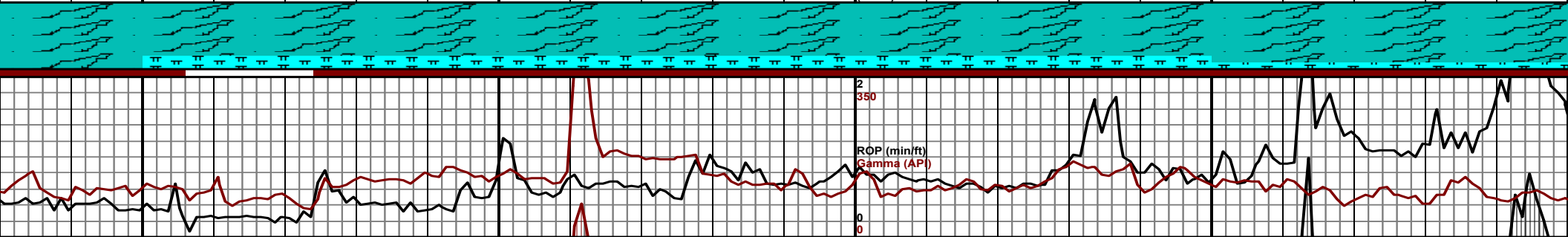
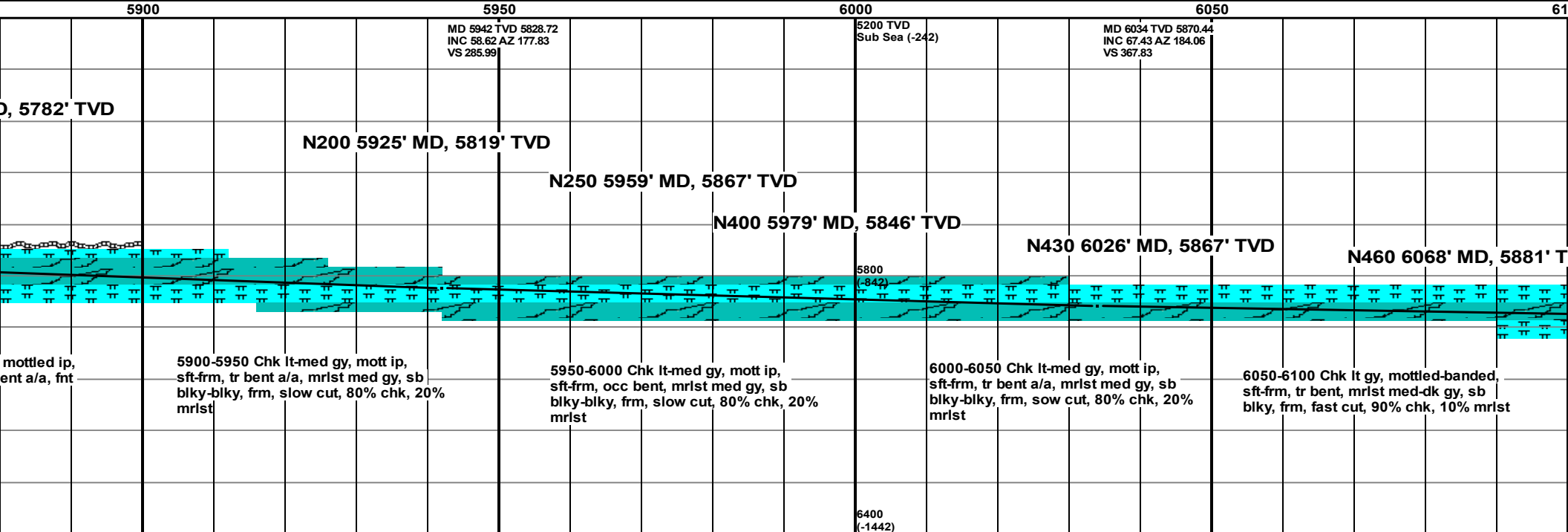
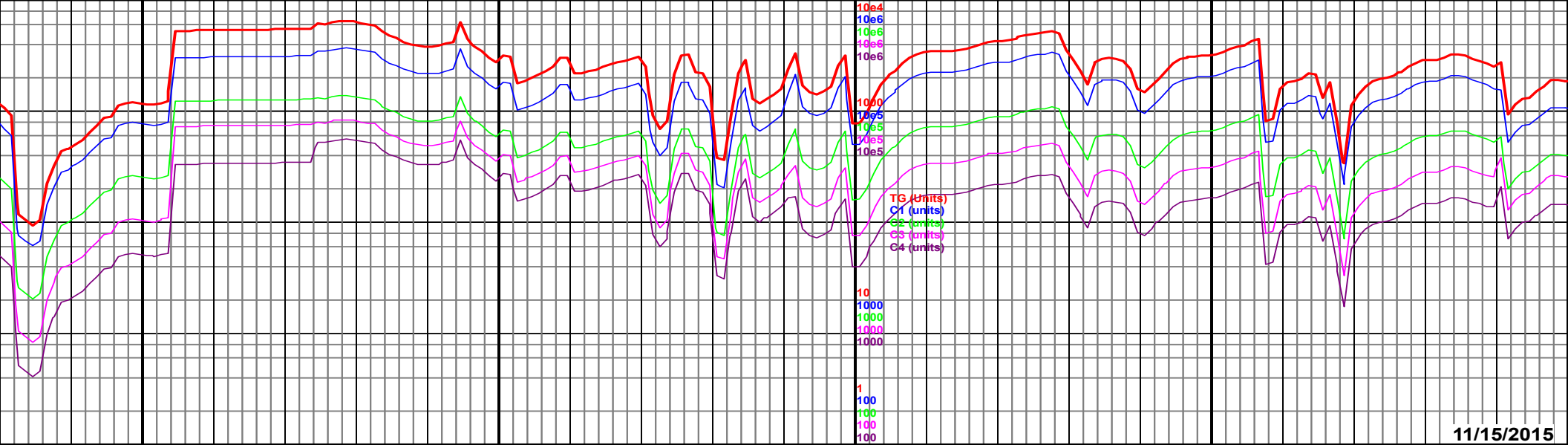
 Spotted
 Ques
 Dead

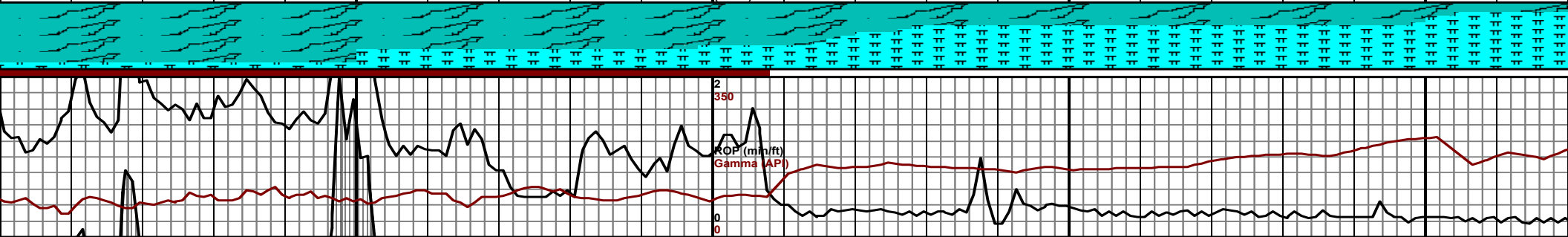
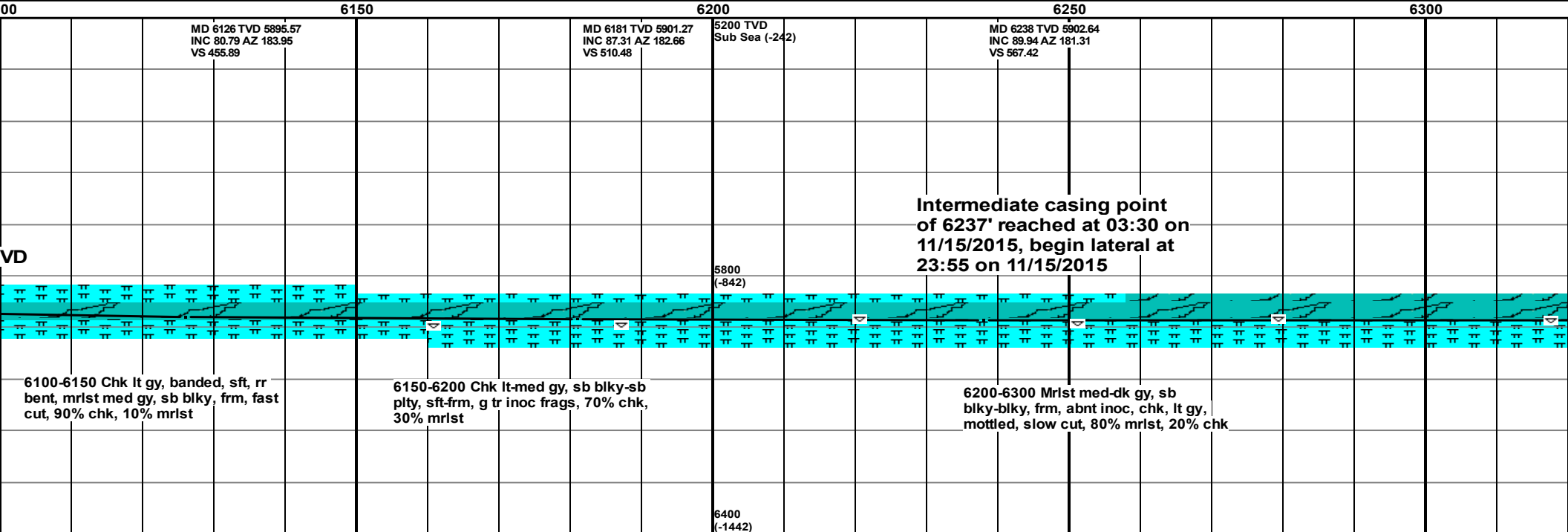
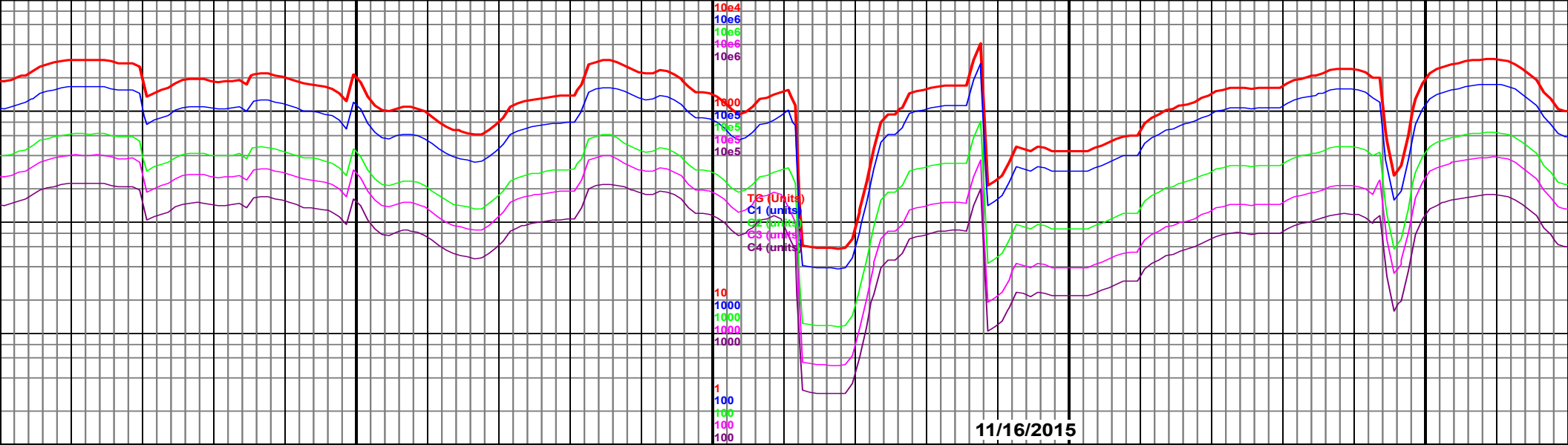
INTERVAL
 Core
 Dst

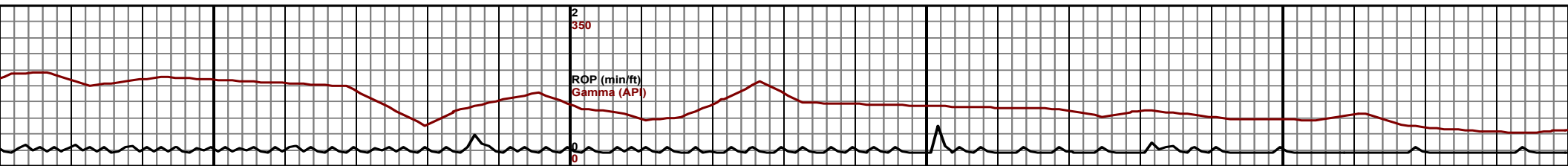
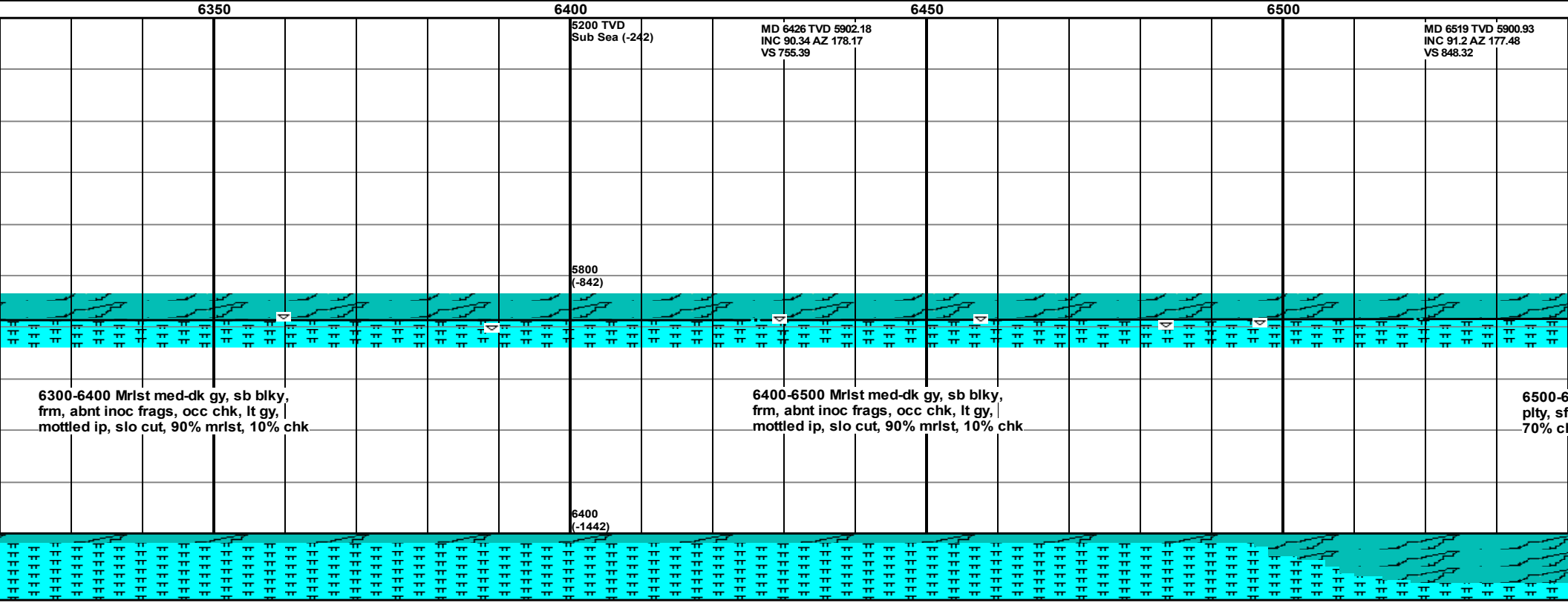
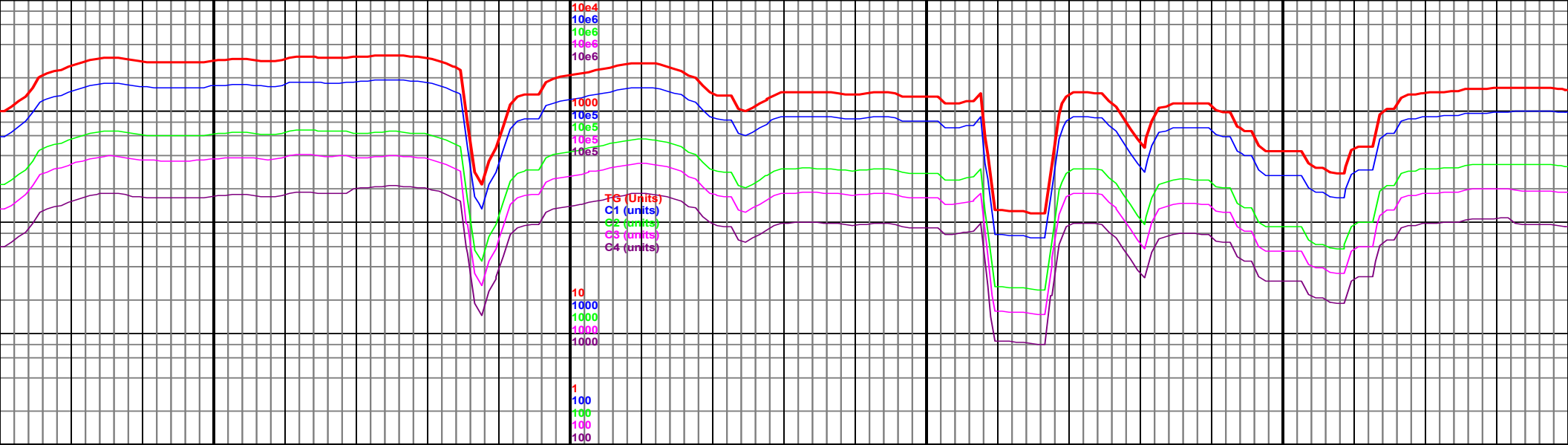
EVENT
 Rft
 Sidewall

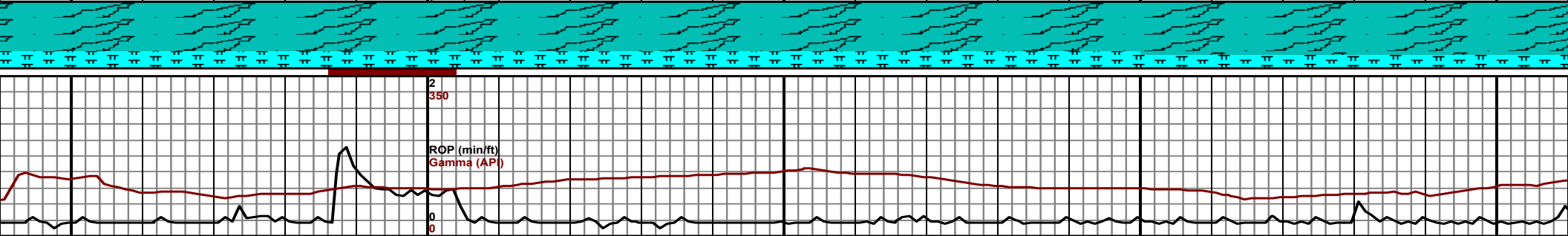
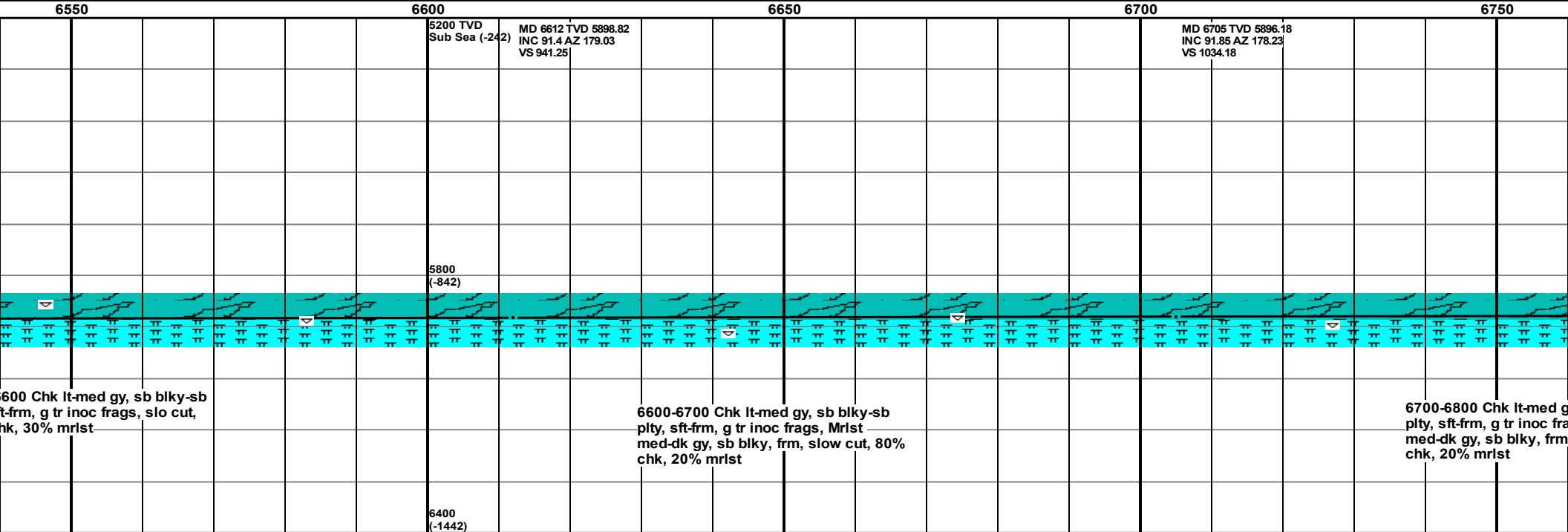
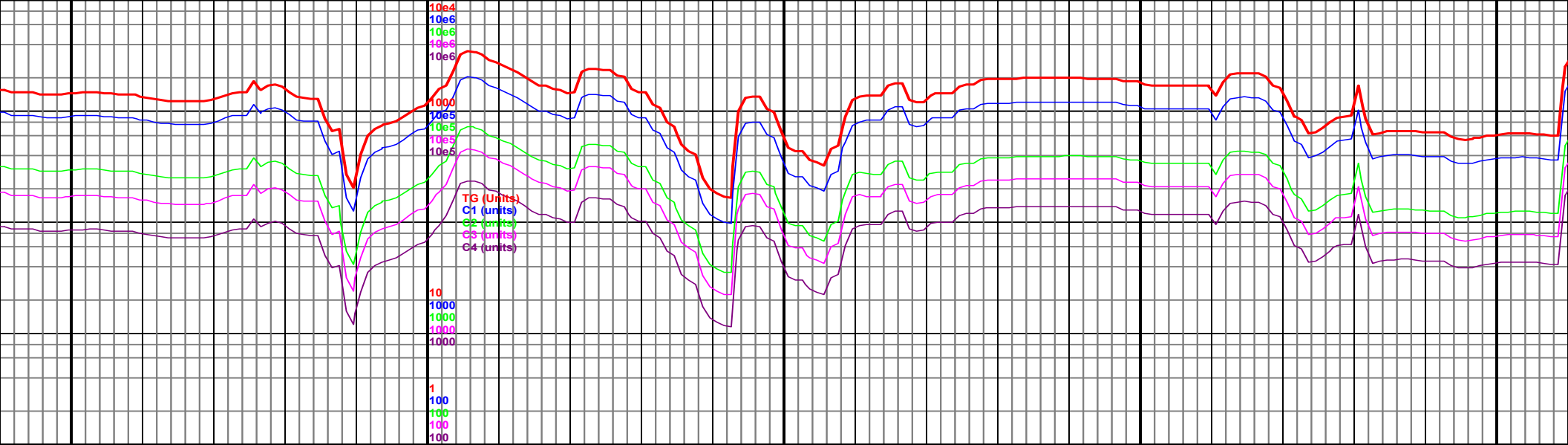


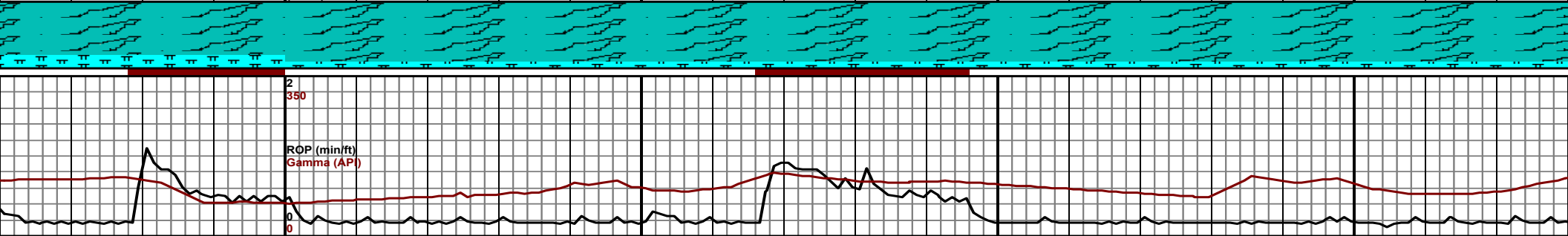
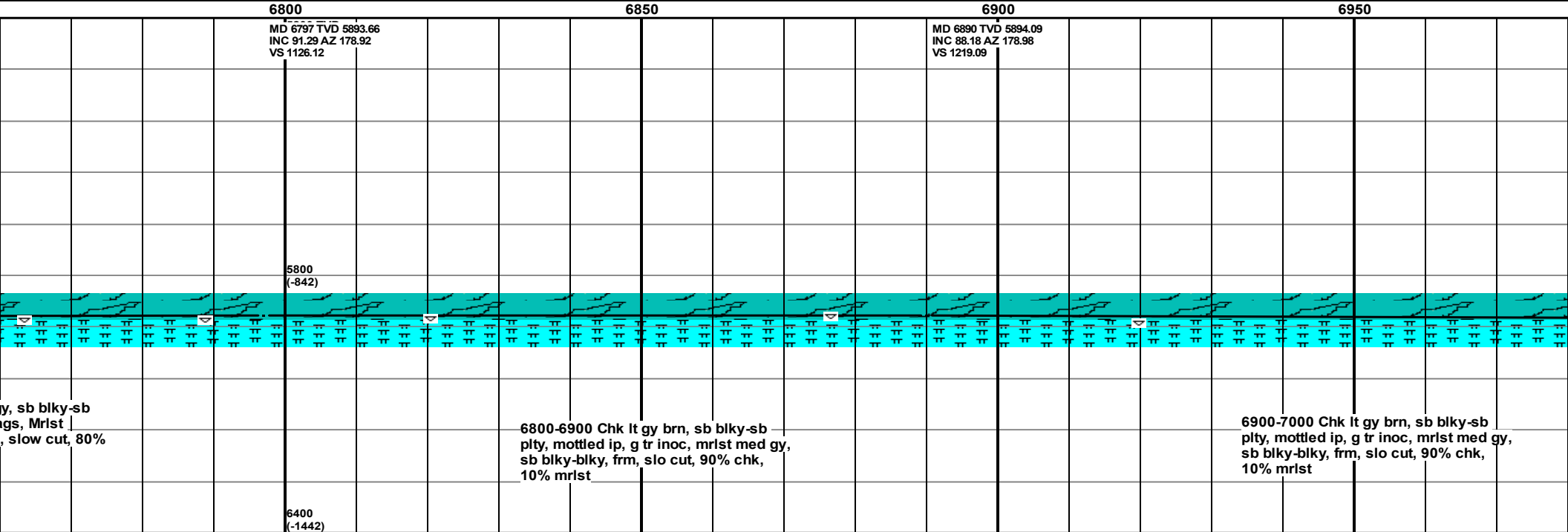
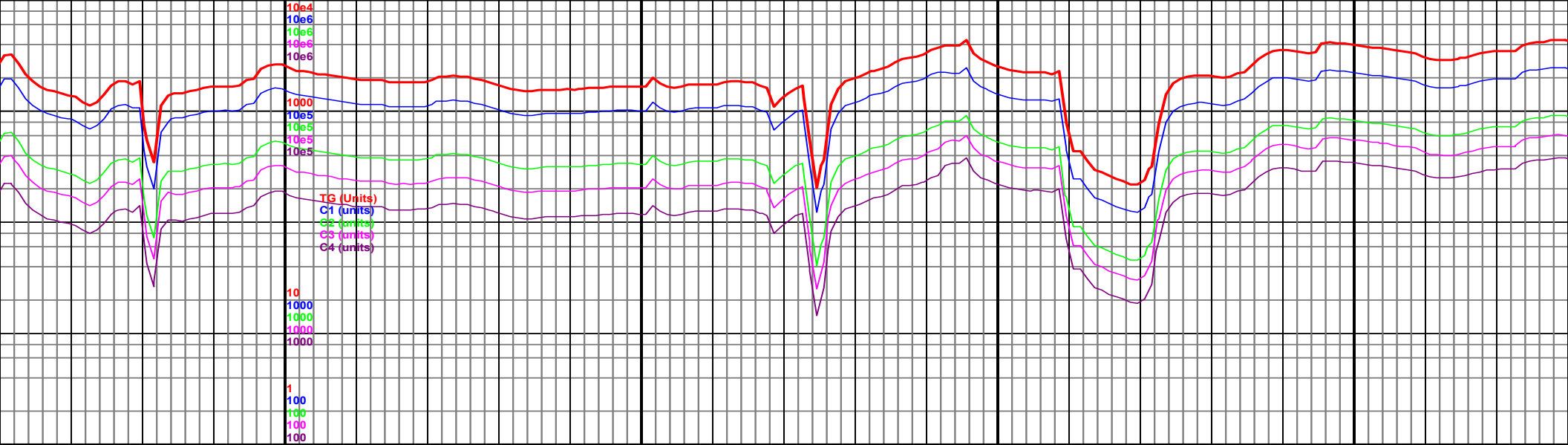


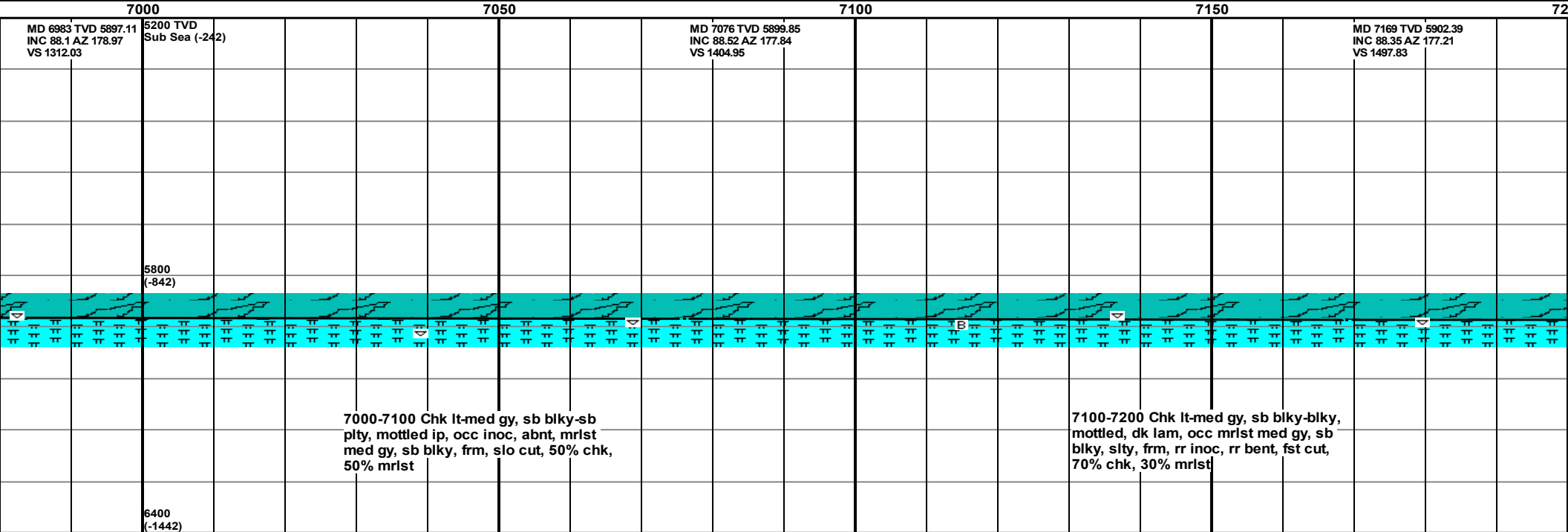
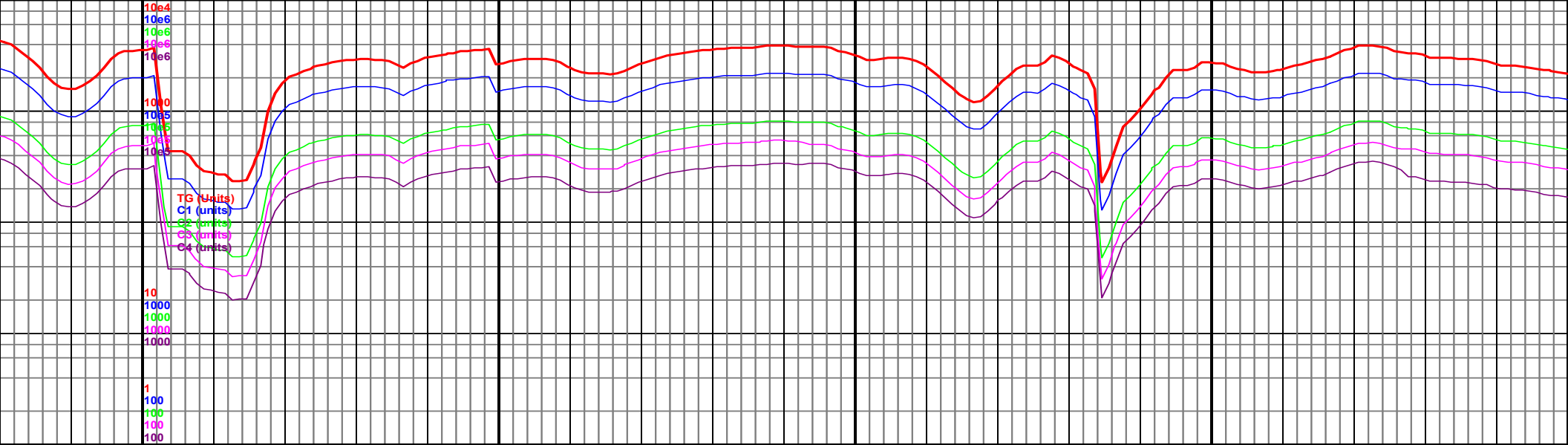






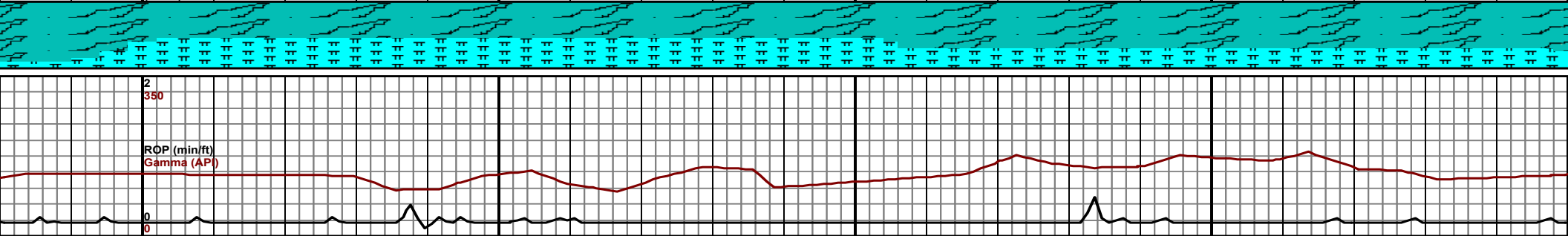


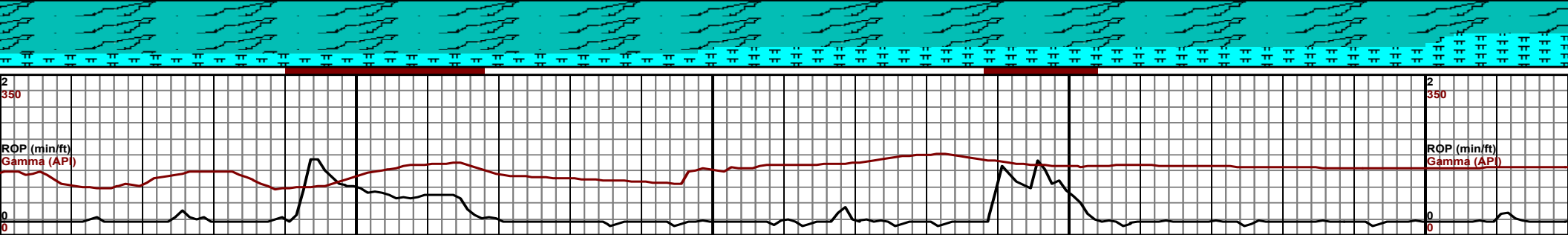
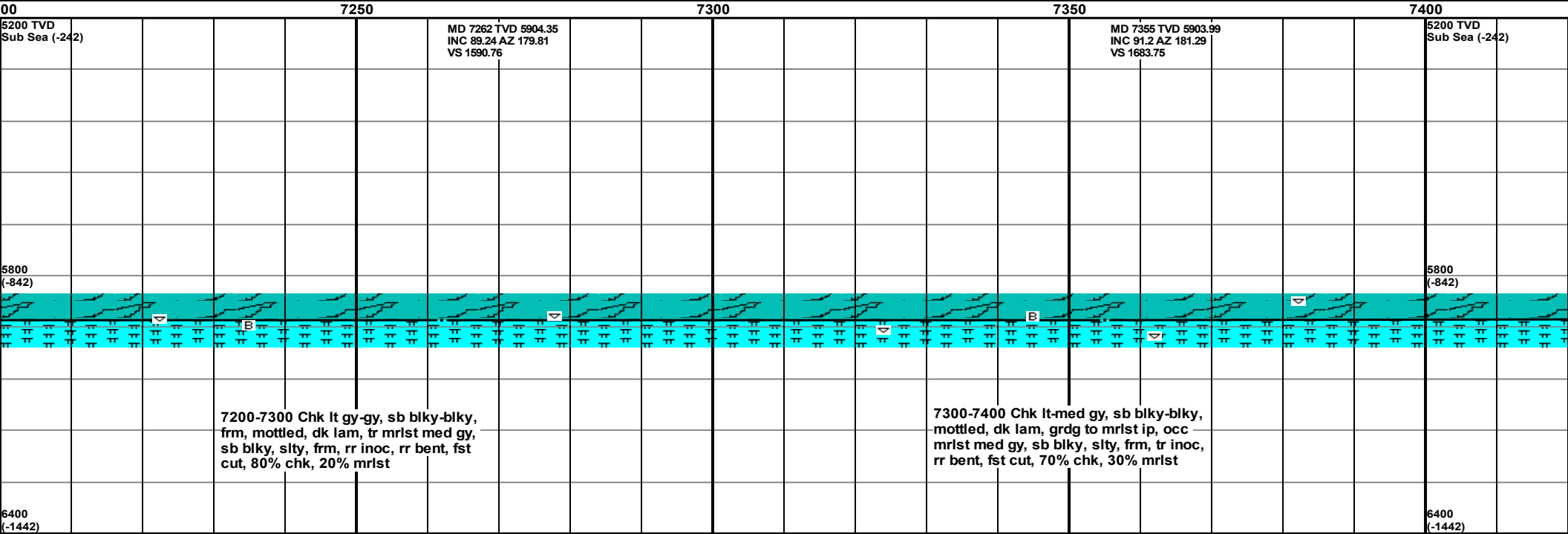
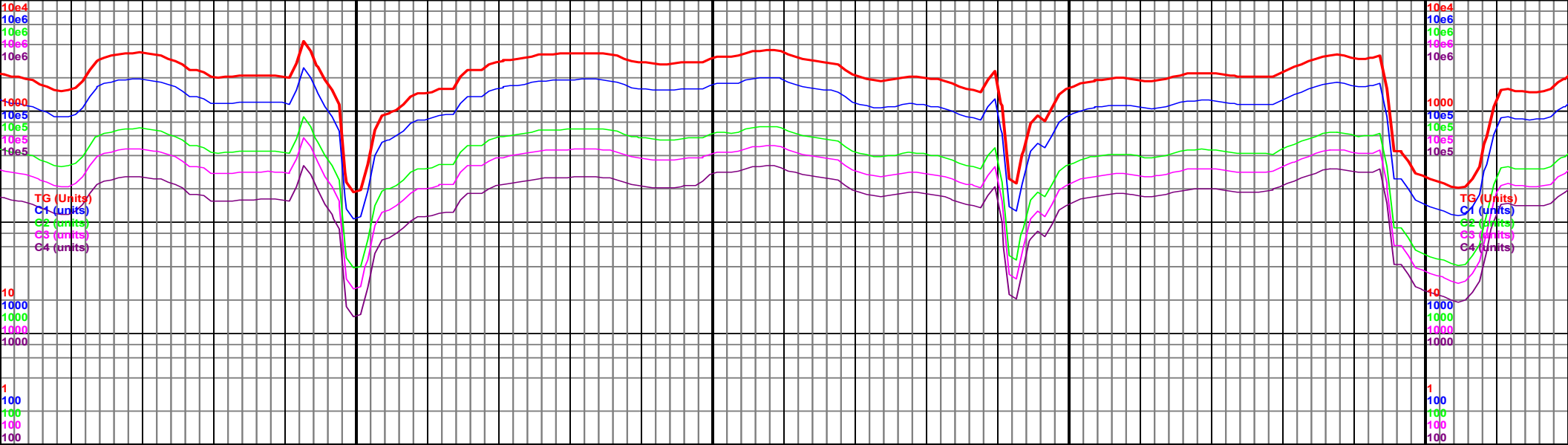


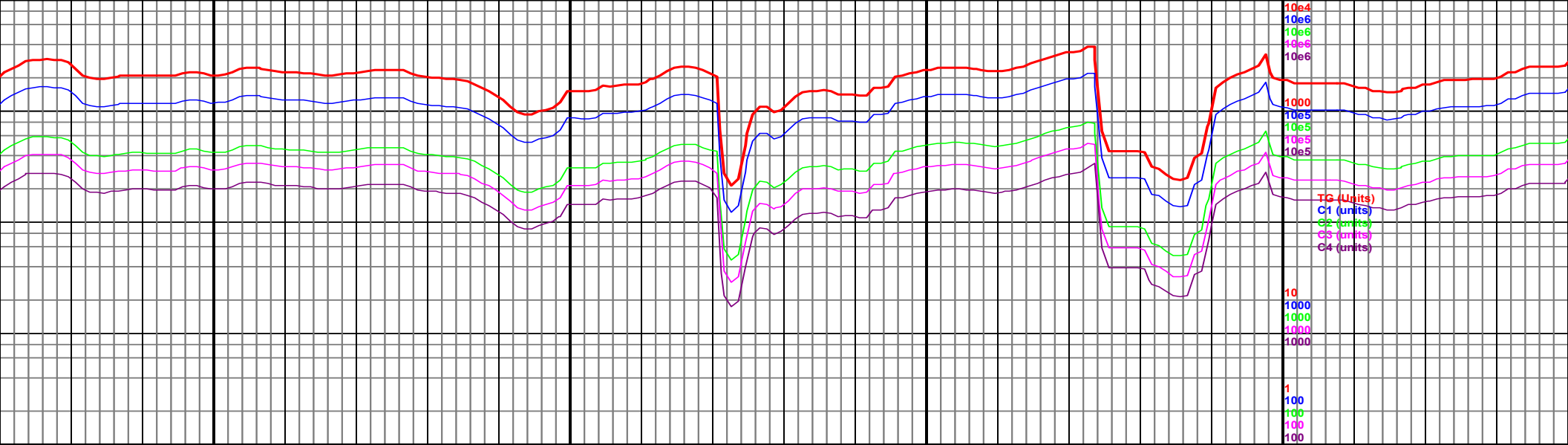


7000-7100 Chk lt-med gy, sb blkly-sb
plty, mottled ip, occ inoc, abnt, mrlst
med gy, sb blkly, frm, slo cut, 50% chk,
50% mrlst

7100-7200 Chk lt-med gy, sb blkly-blky,
mottled, dk lam, occ mrlst med gy, sb
blkly, slty, frm, rr inoc, rr bent, fst cut,
70% chk, 30% mrlst







7450

7500

7550

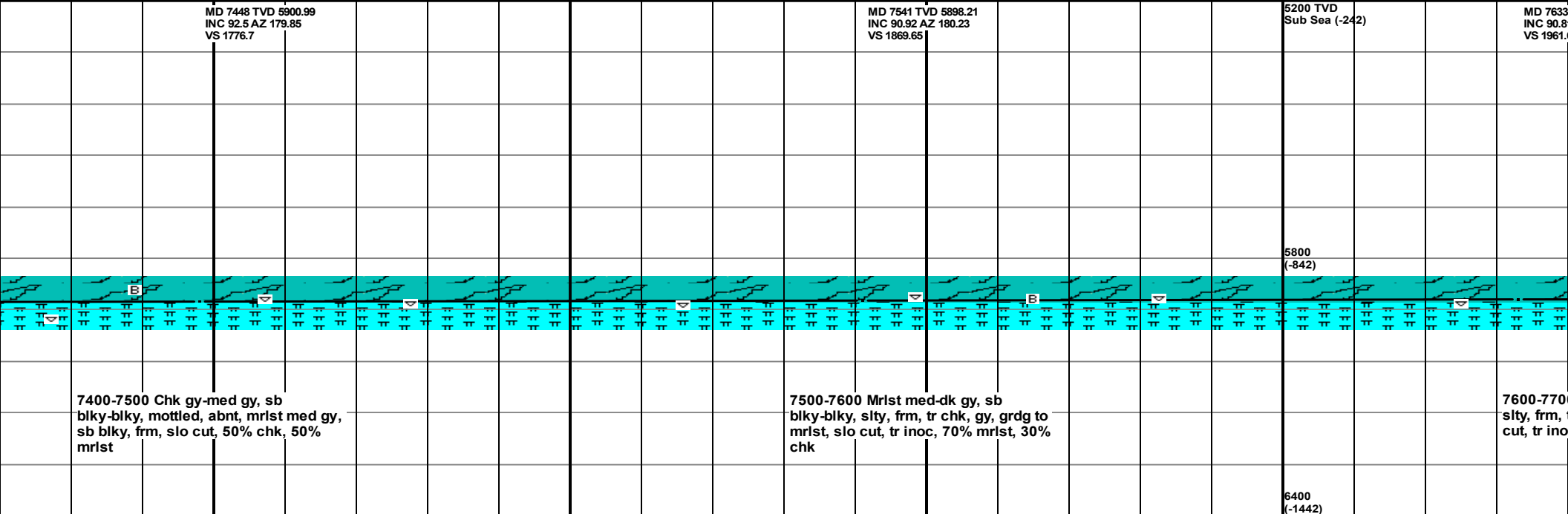
7600

MD 7448 TVD 5900.99
INC 92.5 AZ 179.85
VS 1776.7

MD 7541 TVD 5898.21
INC 90.92 AZ 180.23
VS 1869.65

5200 TVD
Sub Sea (-242)

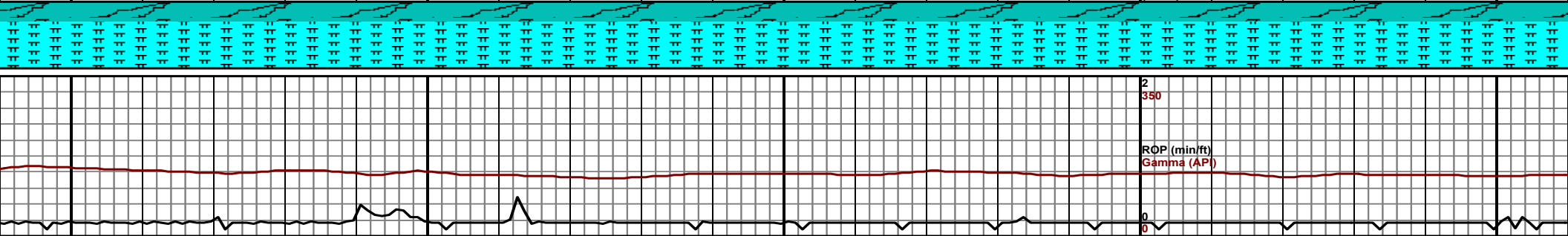
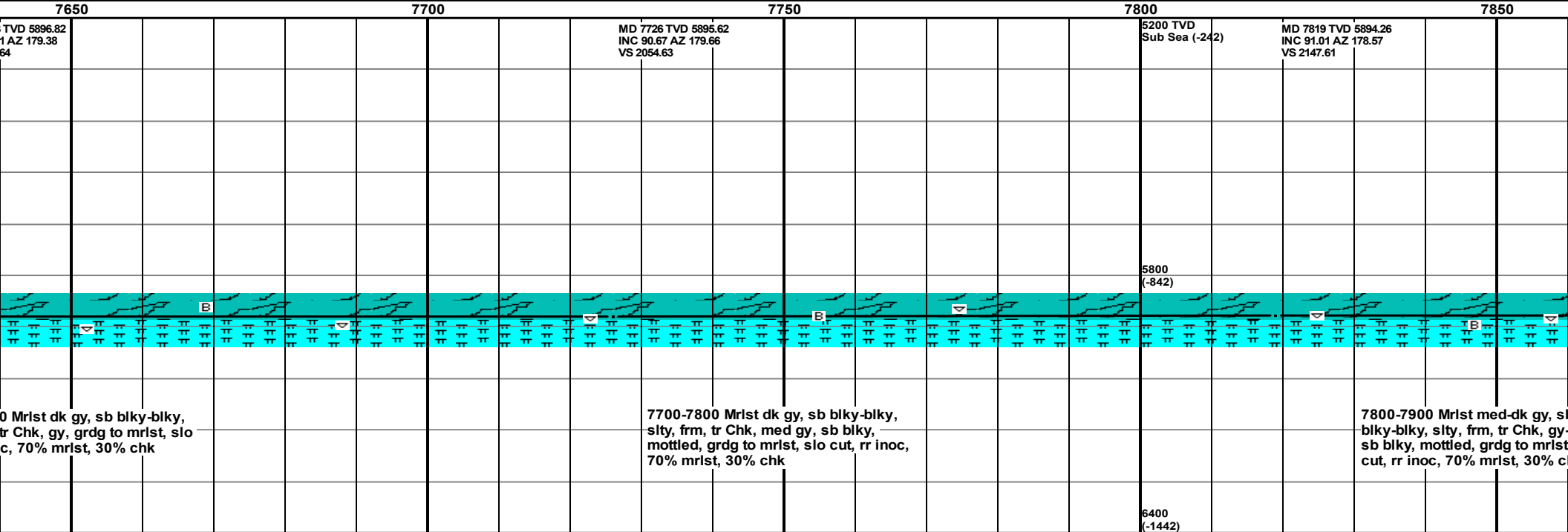
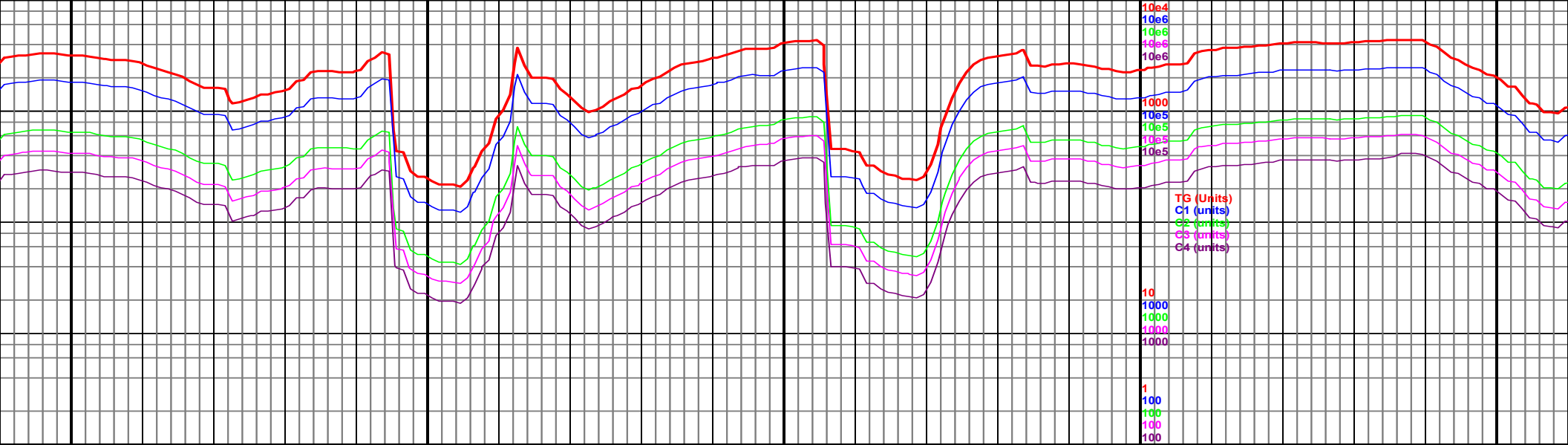
MD 7633
INC 90.8
VS 1961.1

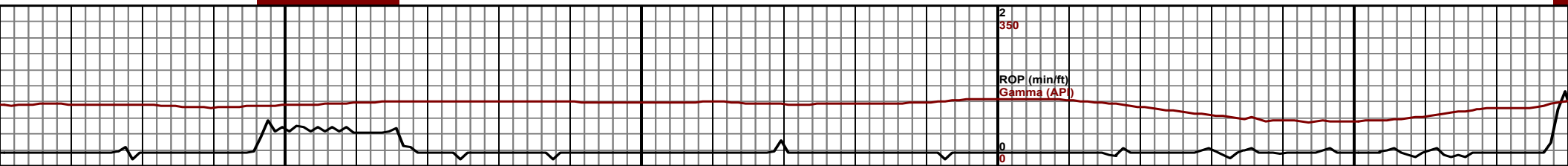
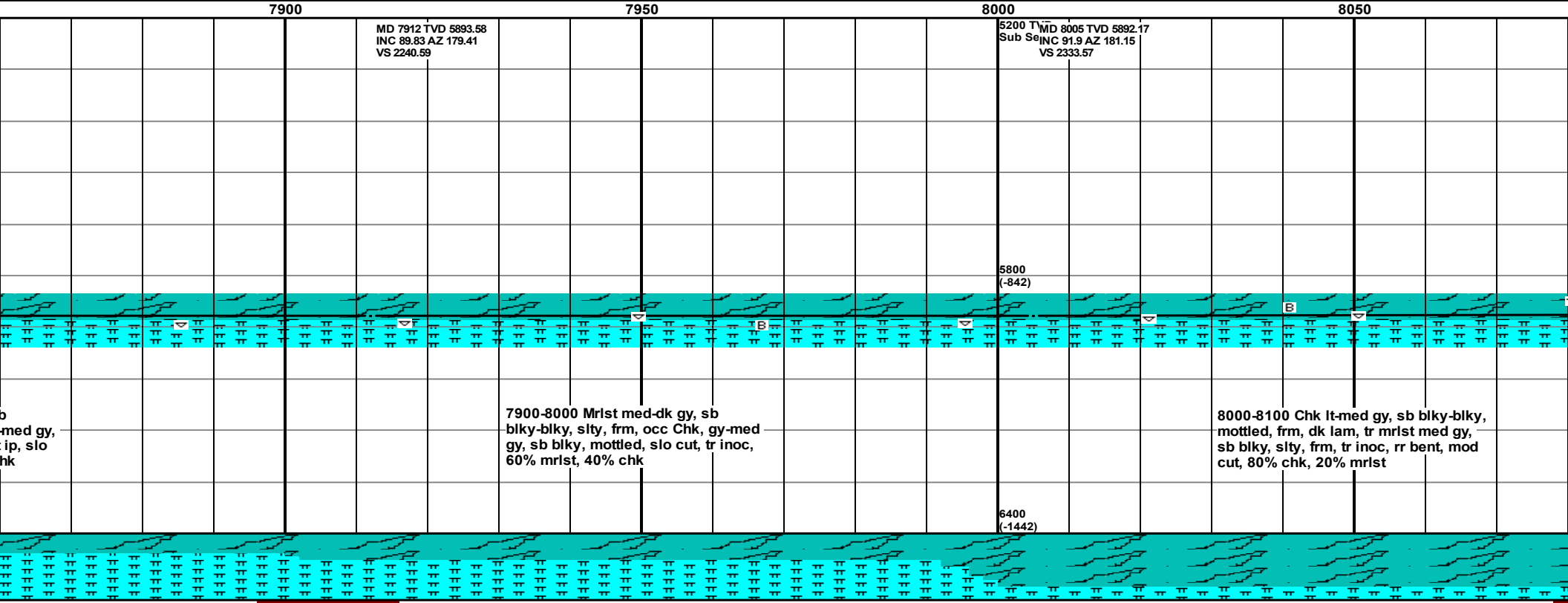
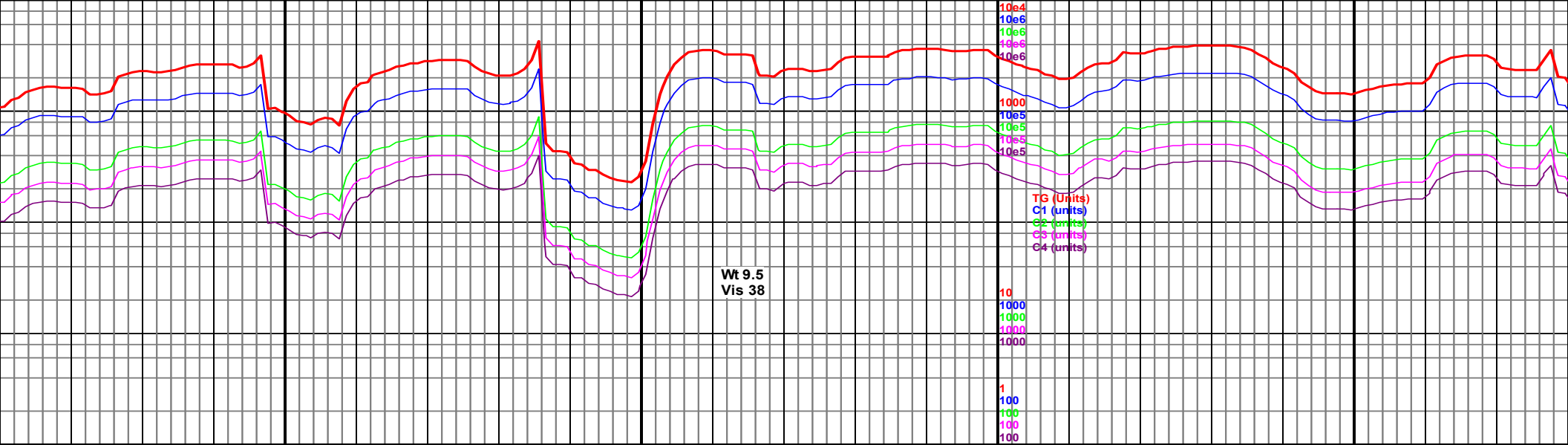


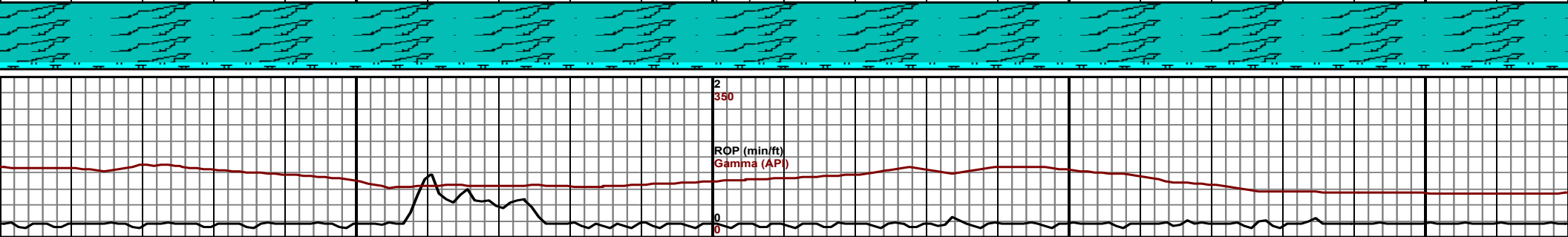
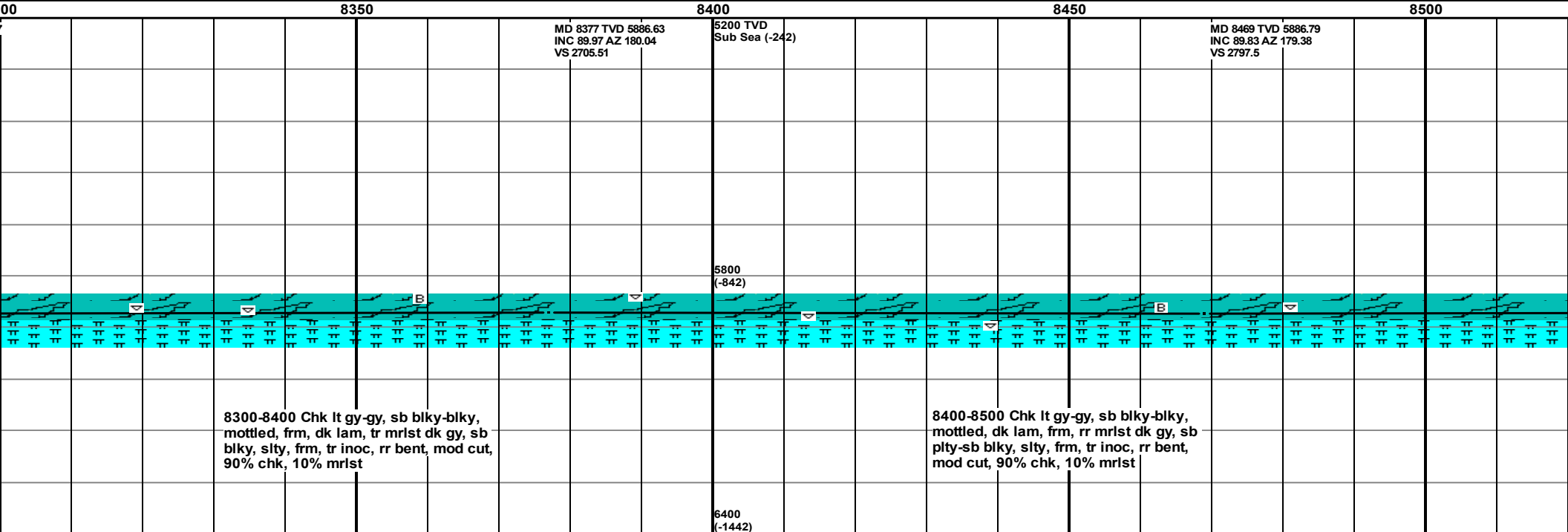
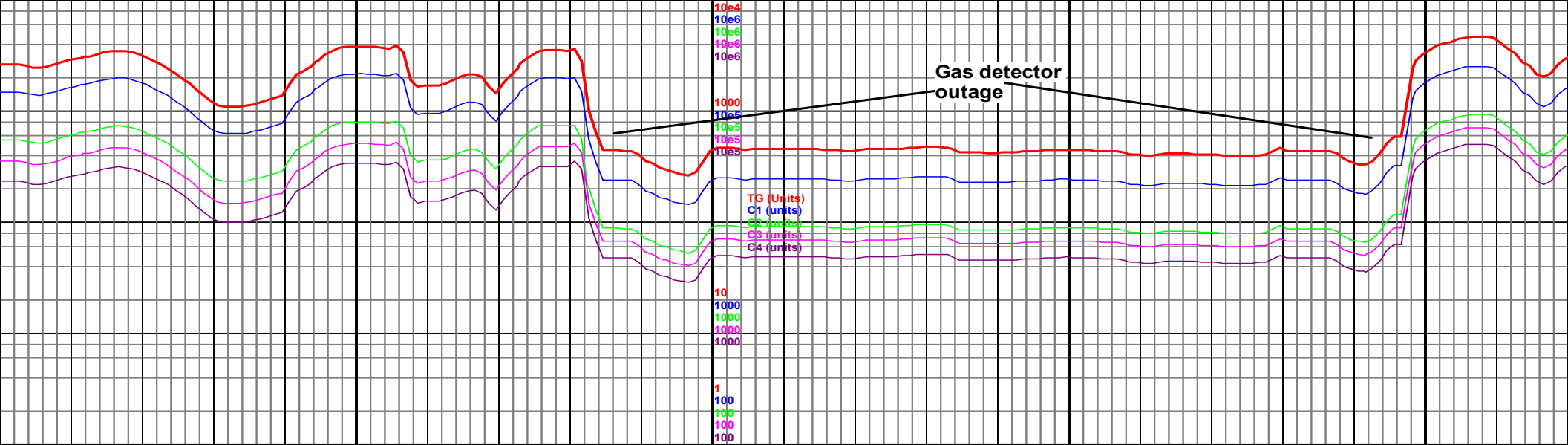
2
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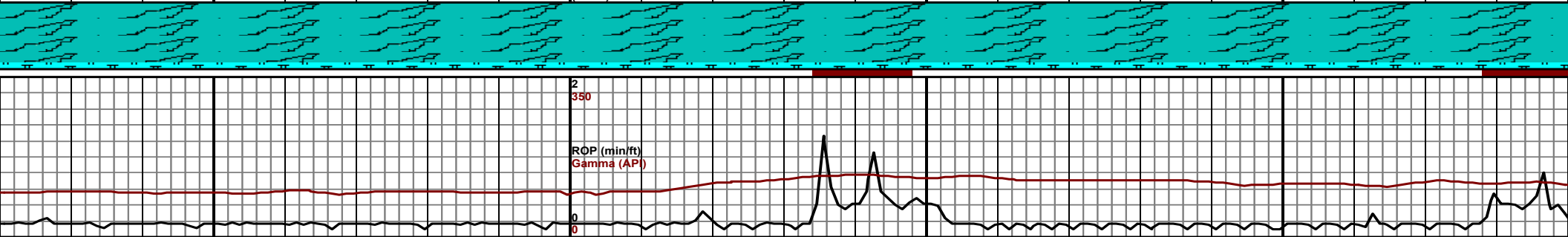
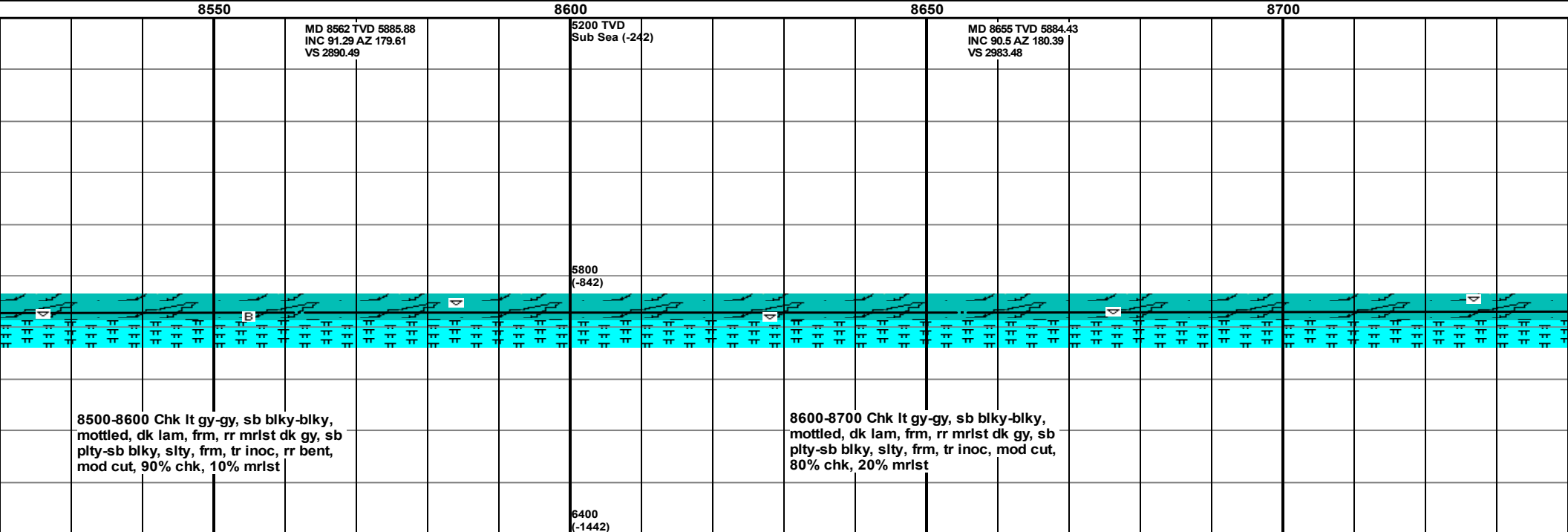
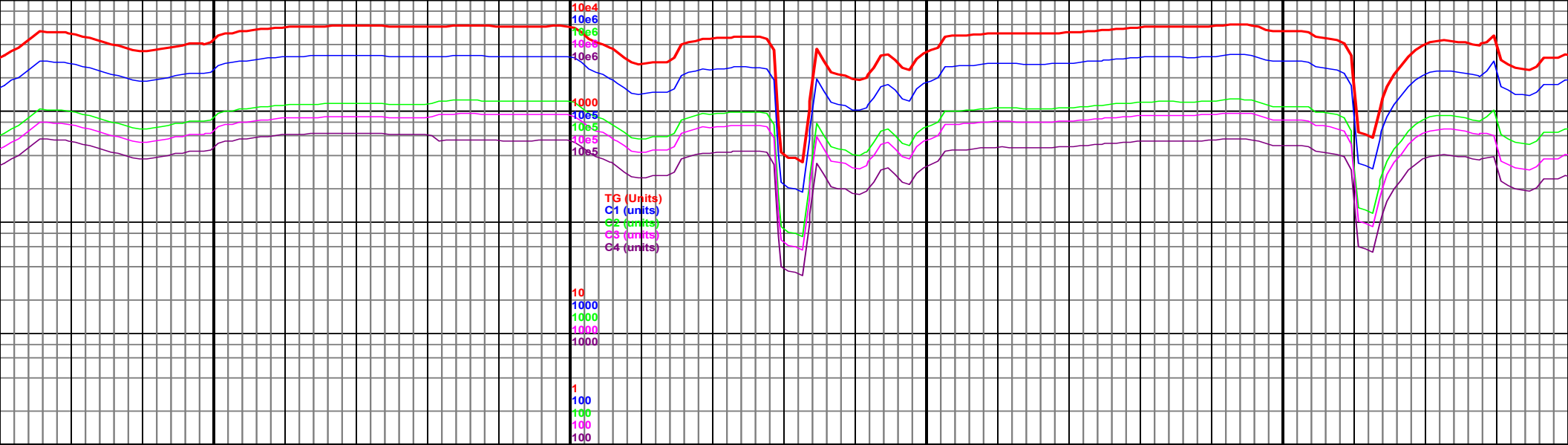
ROP (min/ft)
Gamma (API)

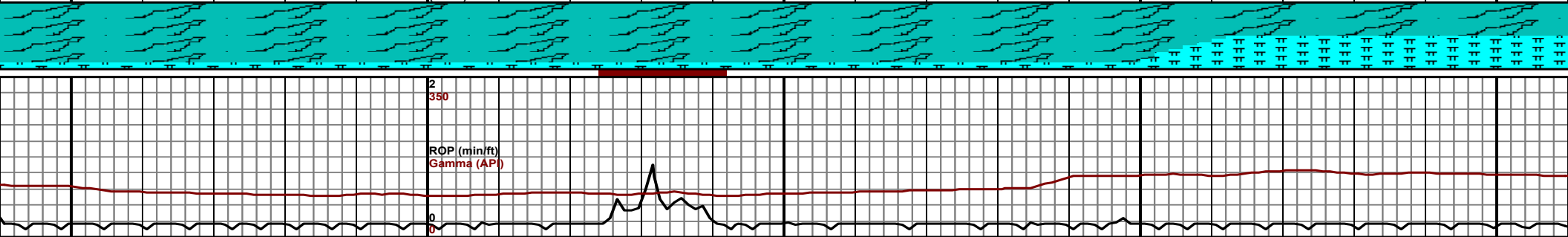
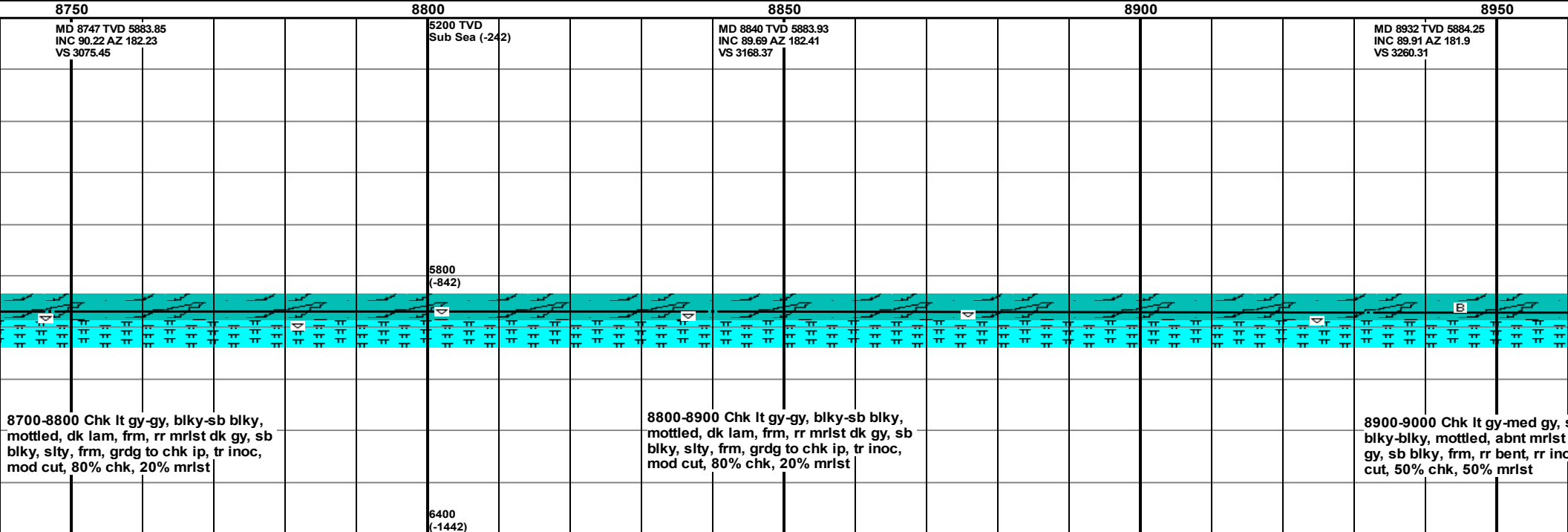
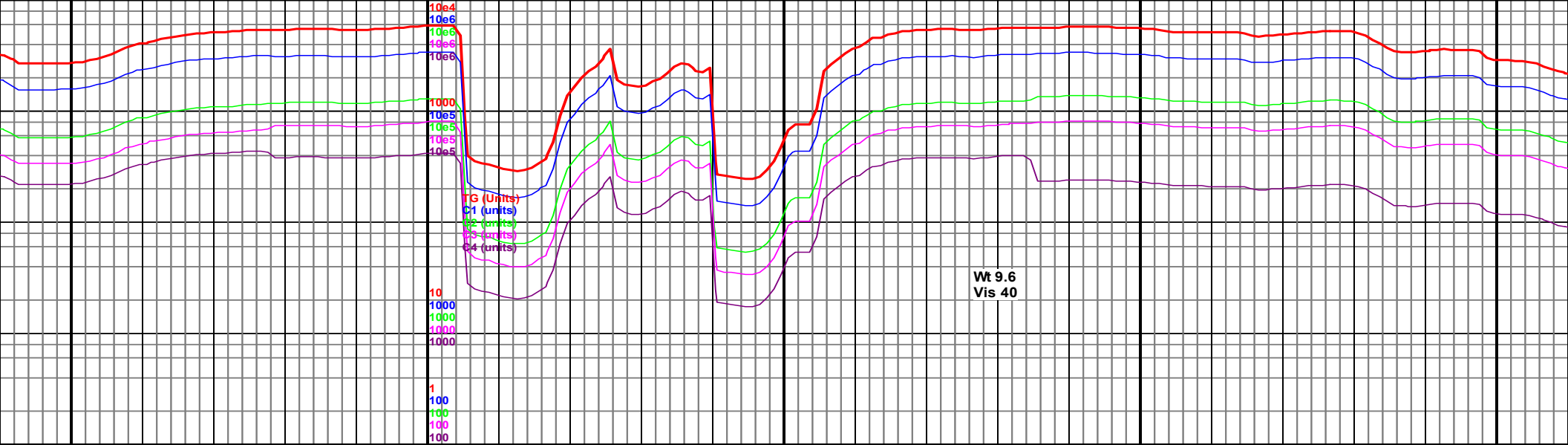
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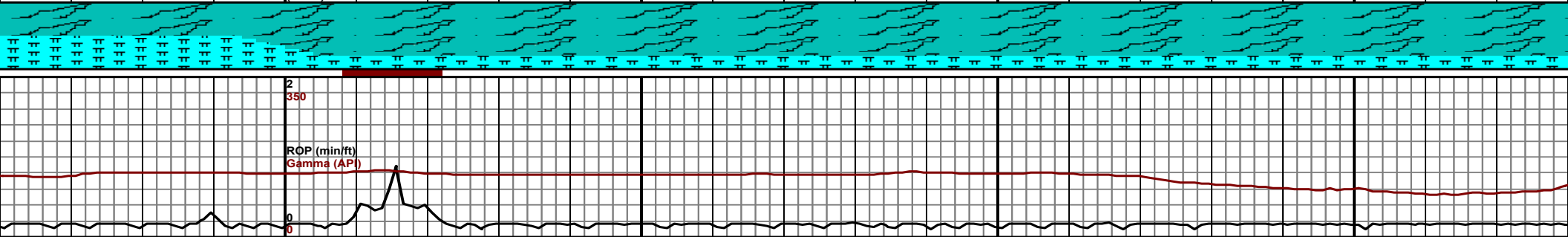
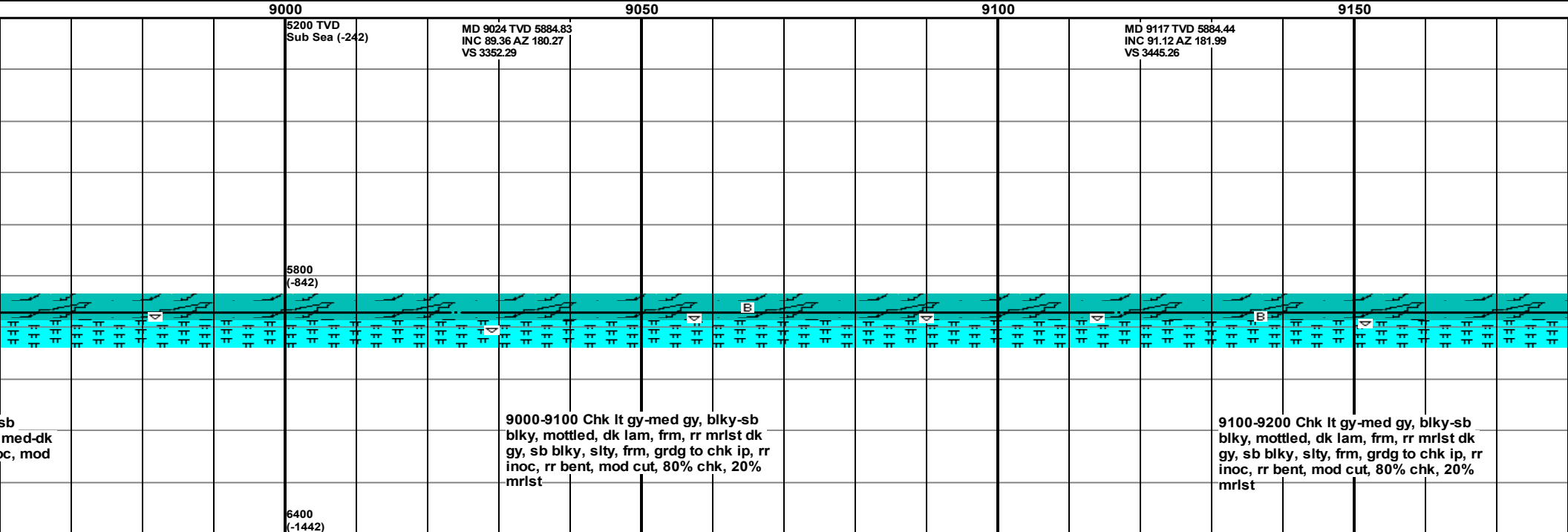
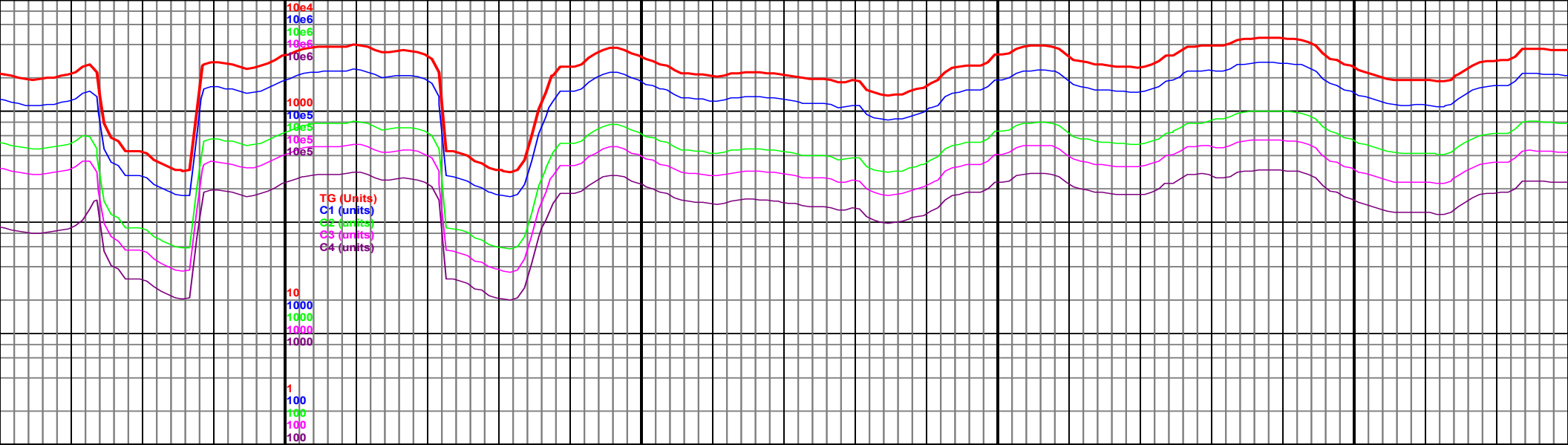


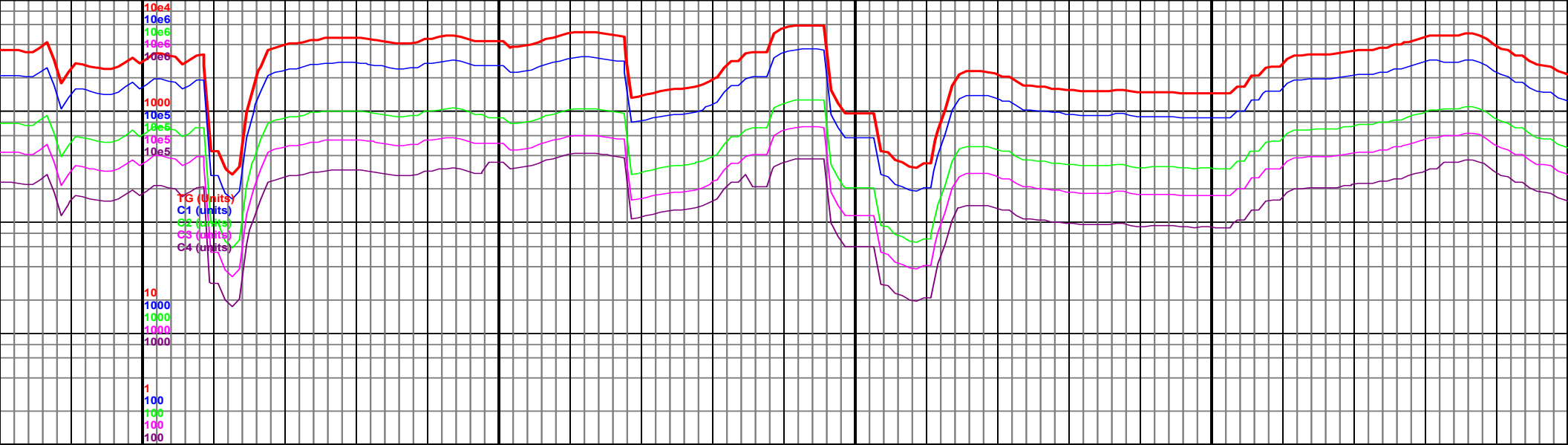












9200 9250 9300 9350 9400

5200 TVD
Sub Sea (-24)
MD 9209 TVD 5884.78
INC 88.46 AZ 180.25
VS 3537.23

MD 9301 TVD 5886.89
INC 88.91 AZ 181.22
VS 3629.2

MD 9393
INC 89.9
VS 3721.

5800
(-842)

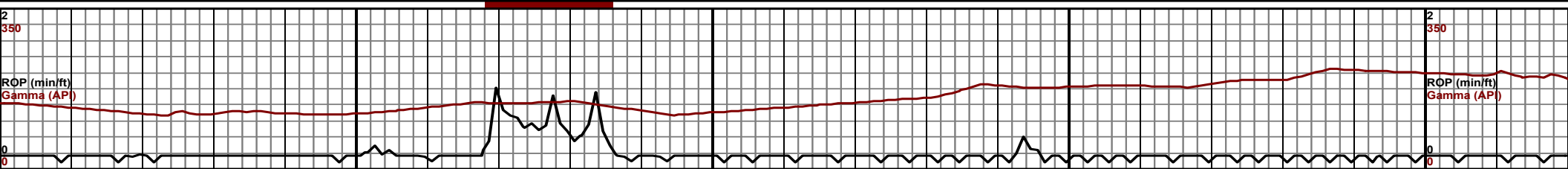
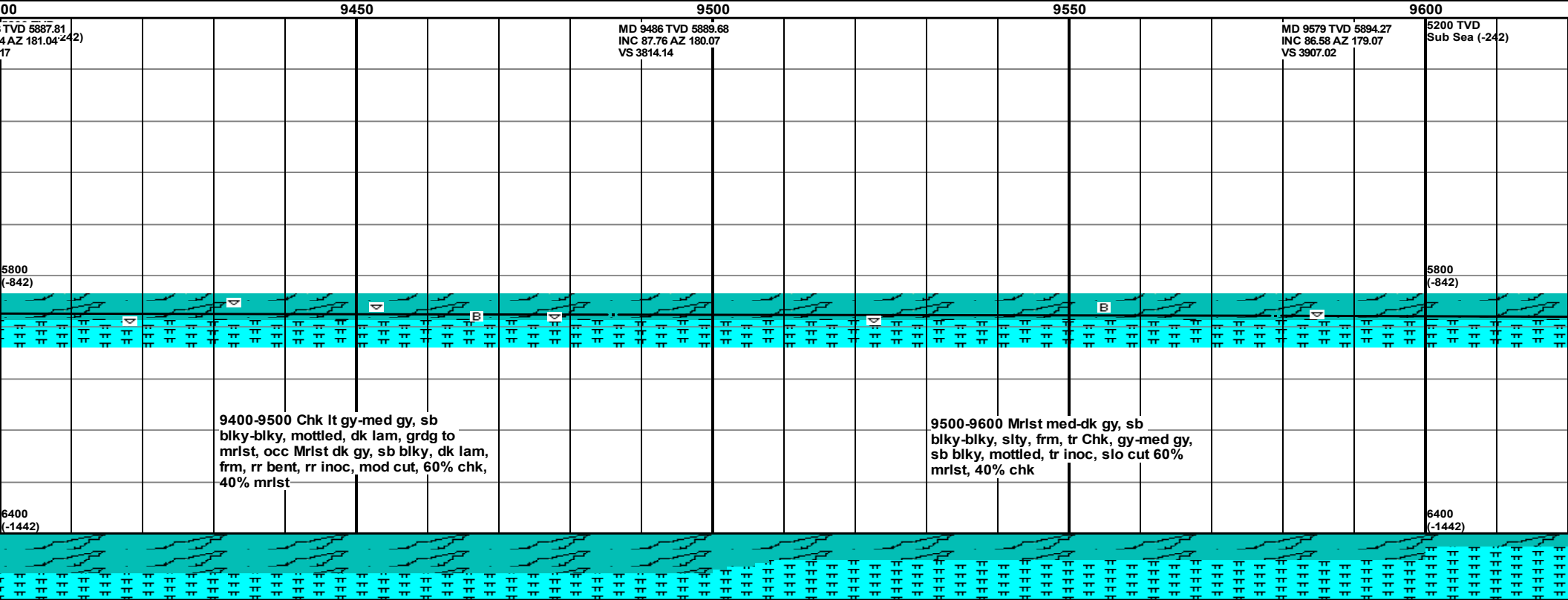
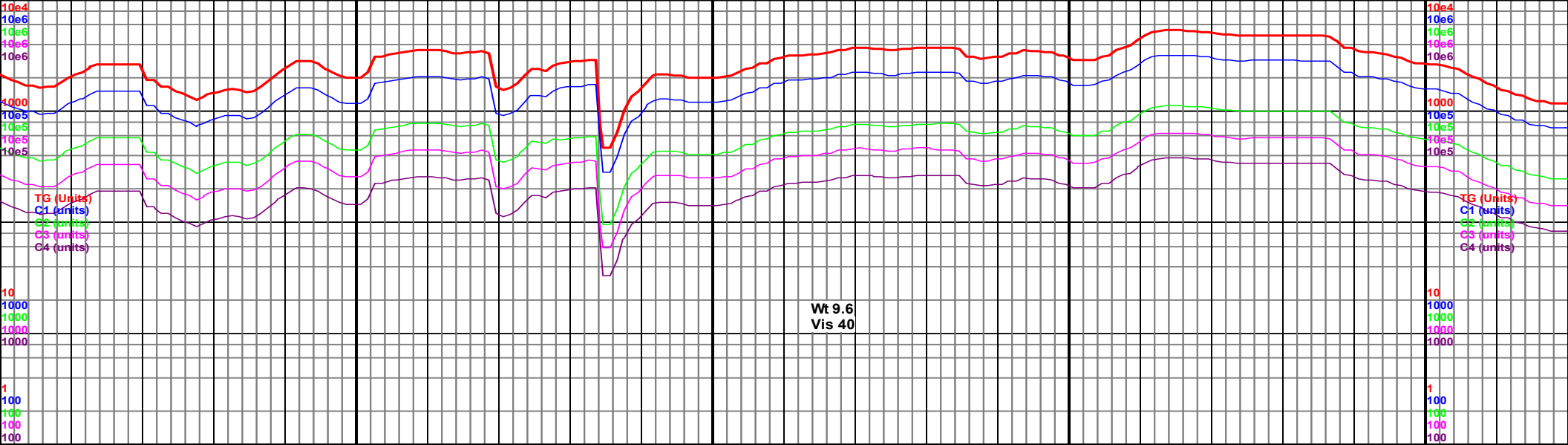
6400
(-1442)

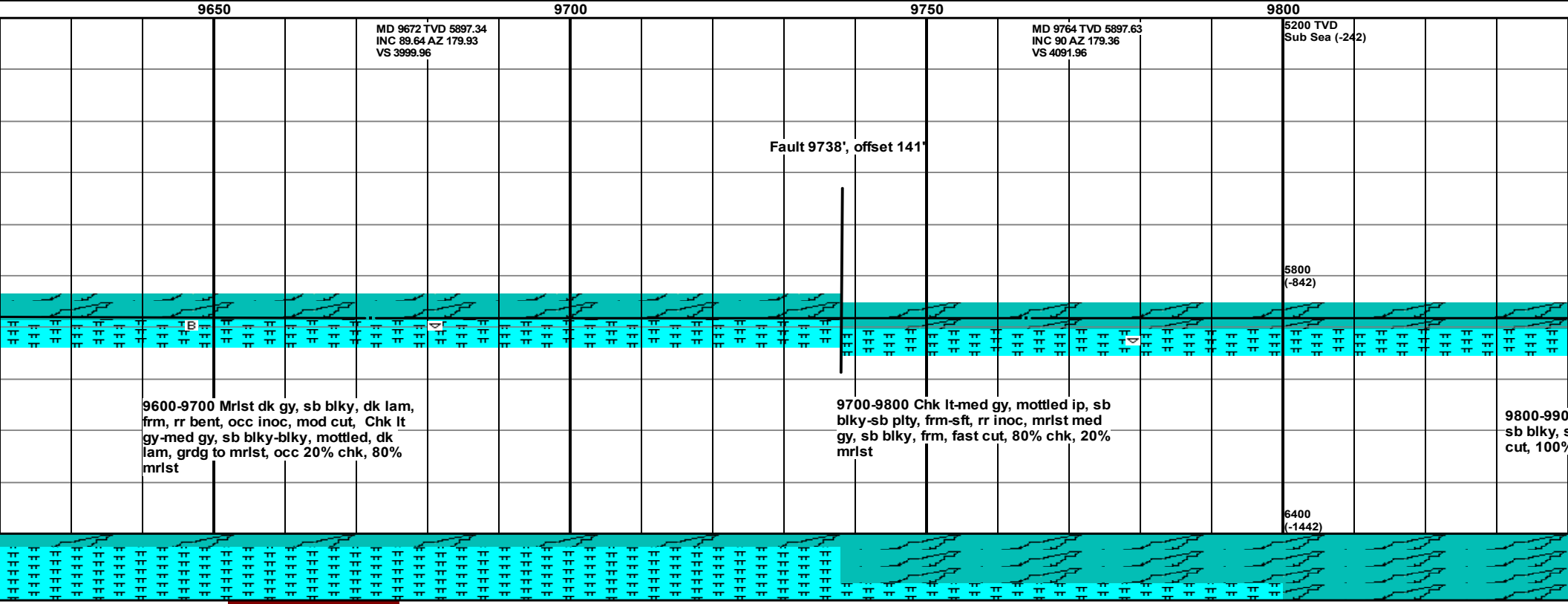
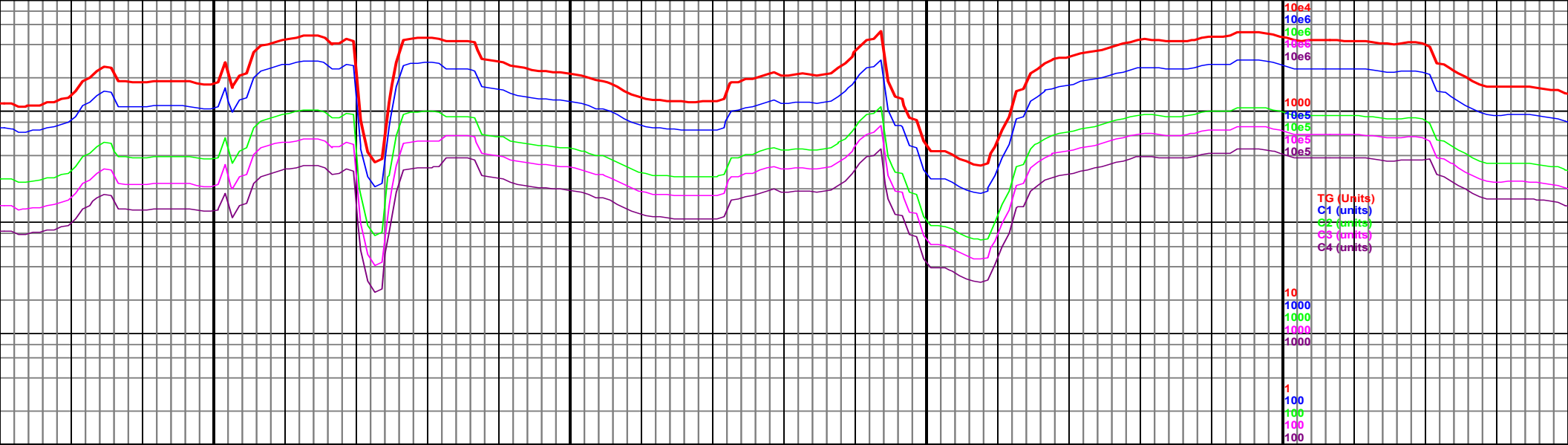
9200-9300 Chk lt gy-med gy, sb
biky-biky, mottled, abnt Mrlst med-dk
gy, sb blk, frm, grdg to chk ip, rr bent,
rr inoc, mod cut, 50% chk, 50% mrlst

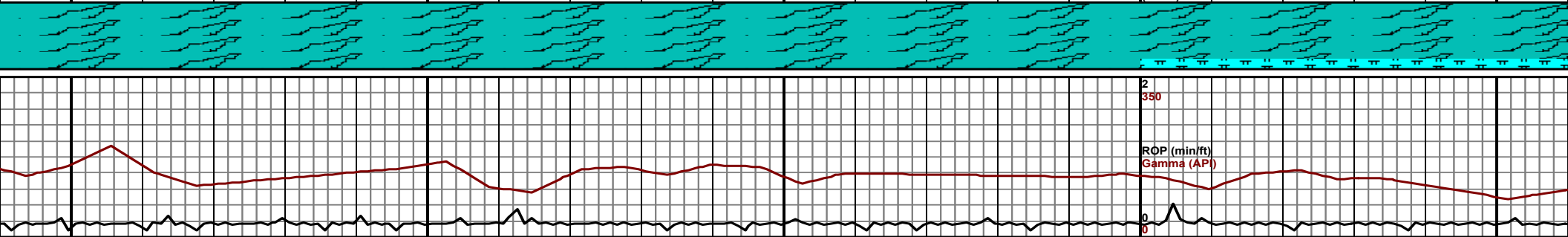
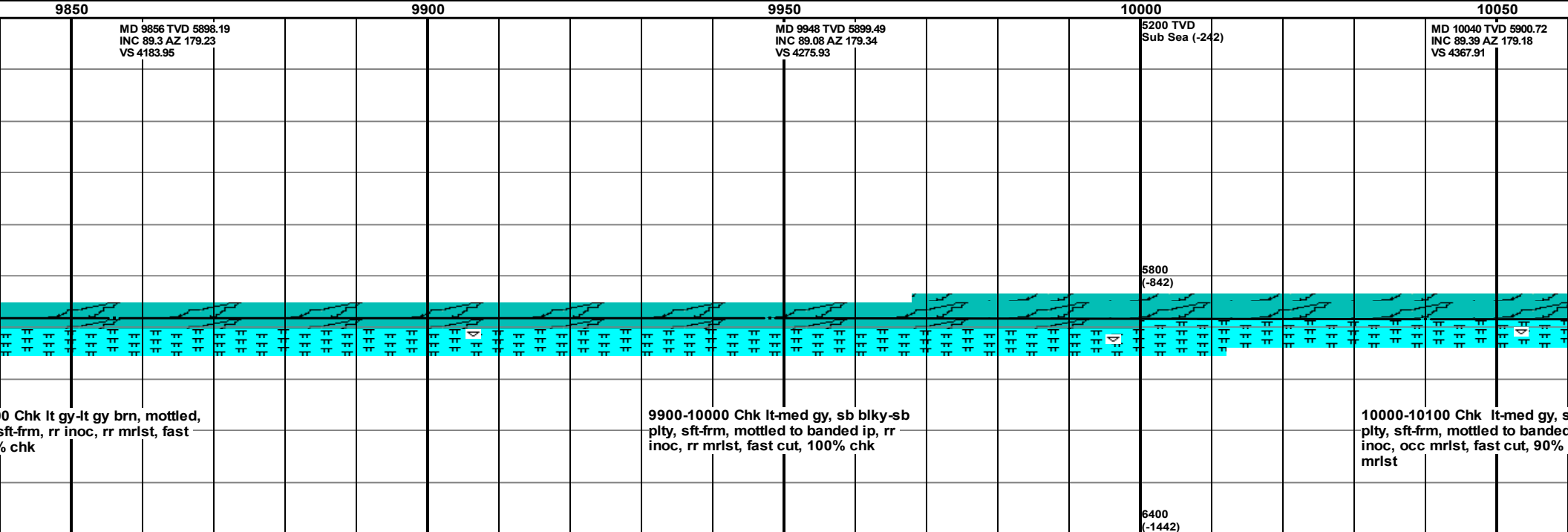
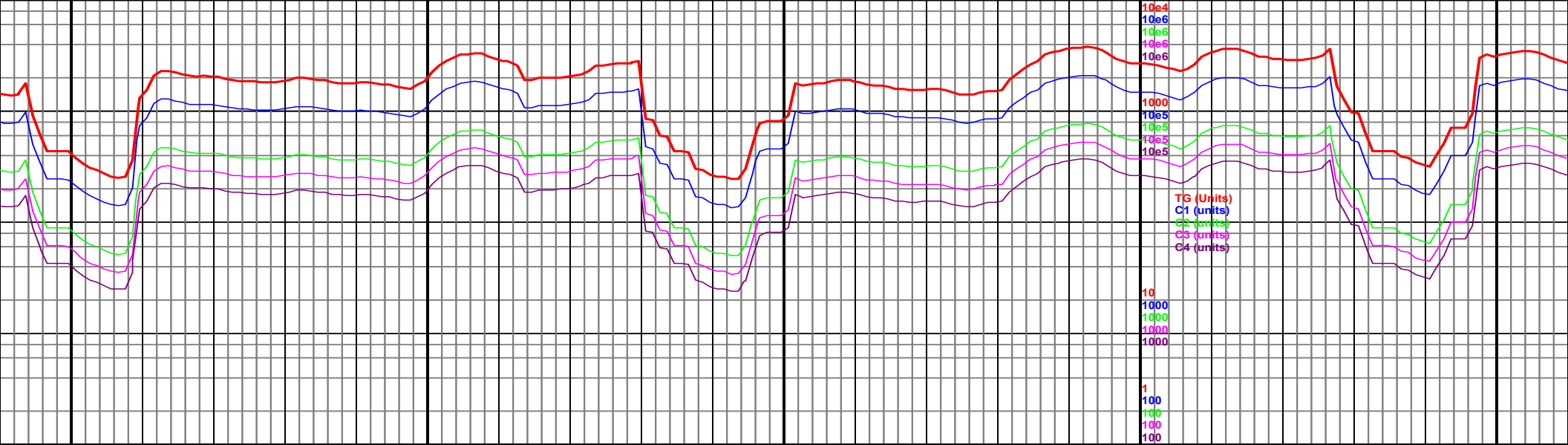
9300-9400 Chk lt gy-med gy, sb
biky-biky, mottled, dk lam, abnt Mrlst
med-dk gy, sb blk, dk lam, frm, rr
bent, rr inoc, rr pyr, mod cut, 60% chk,
40% mrlst

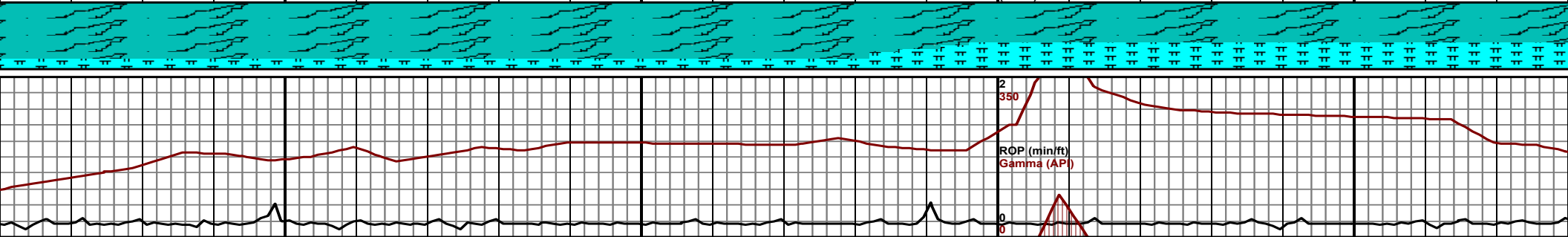
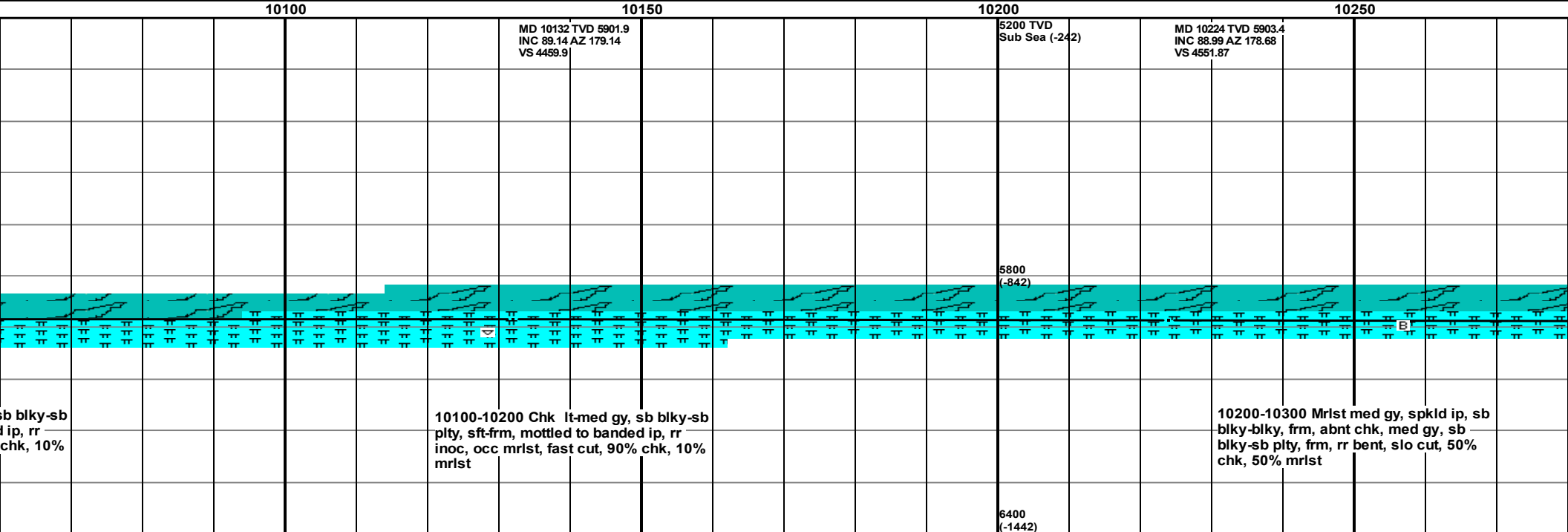
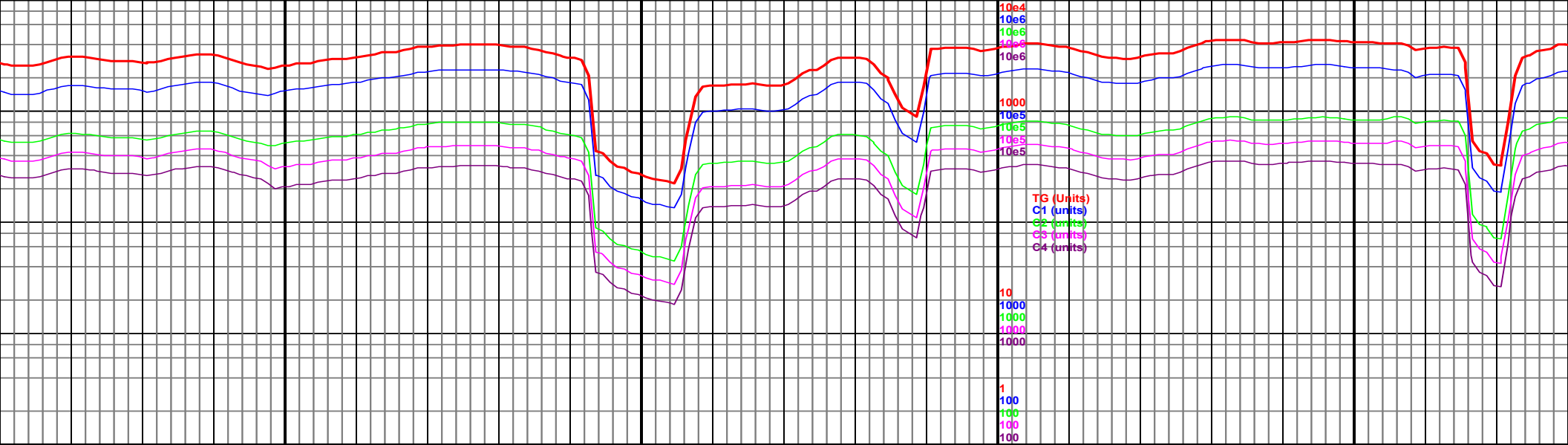
ROP (min/ft)
Gamma (API)

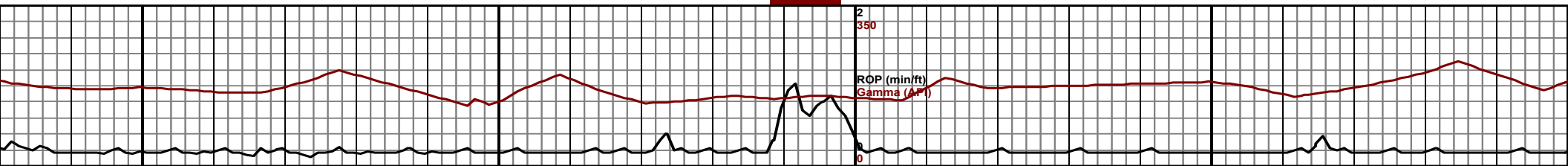
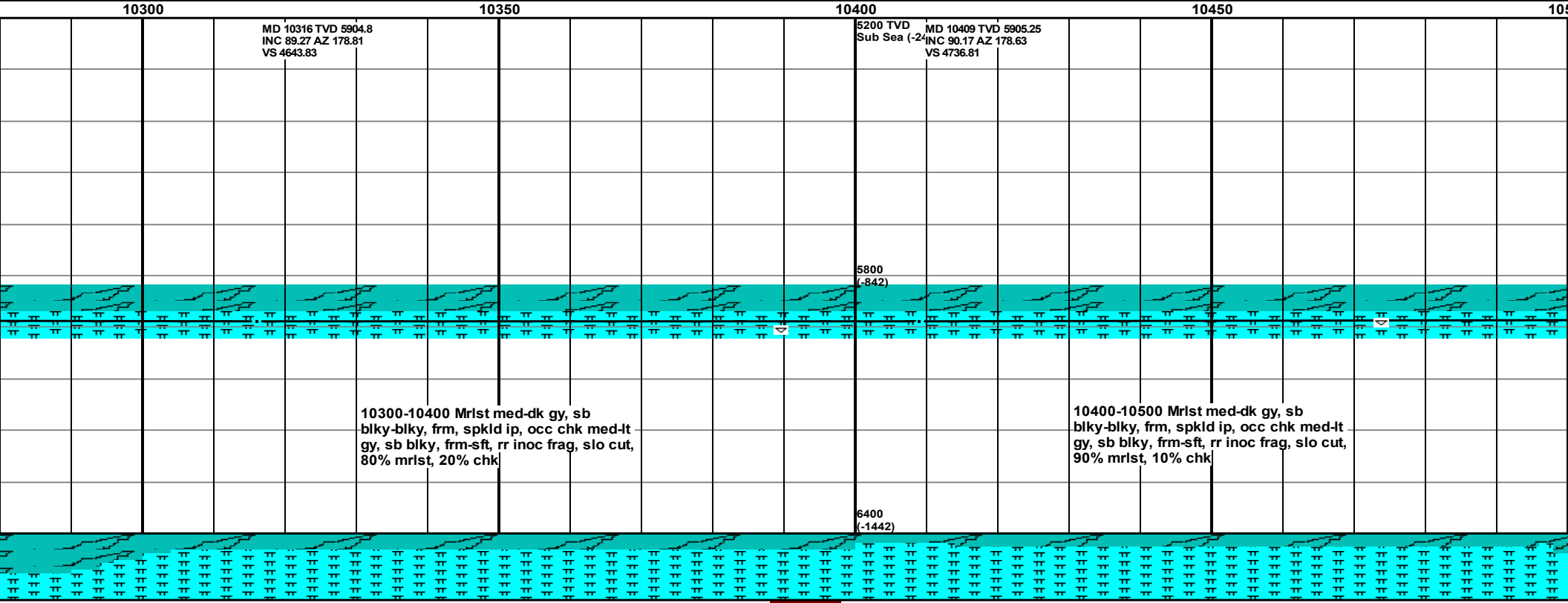
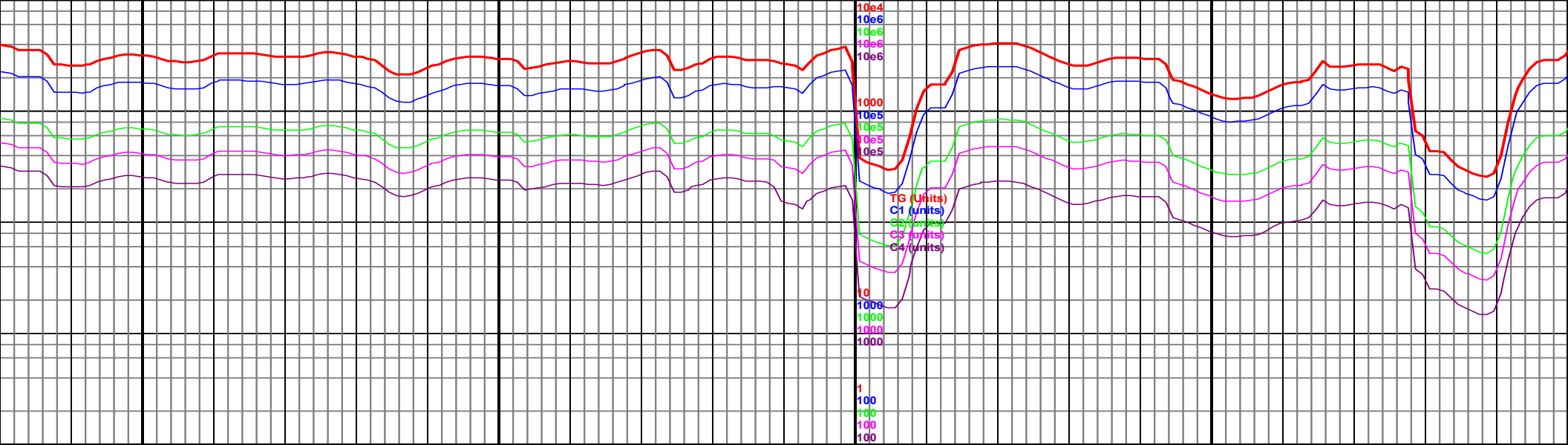


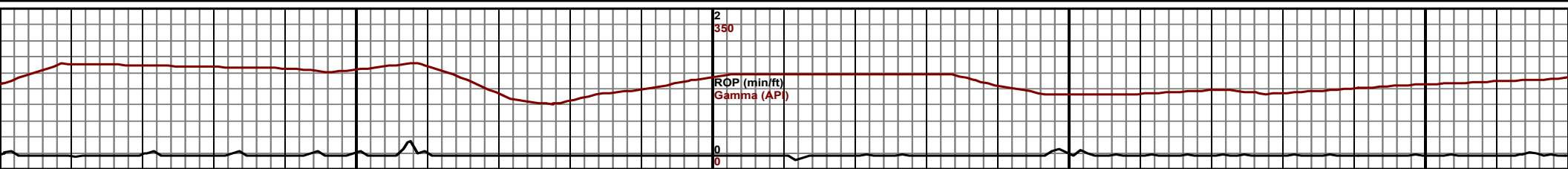
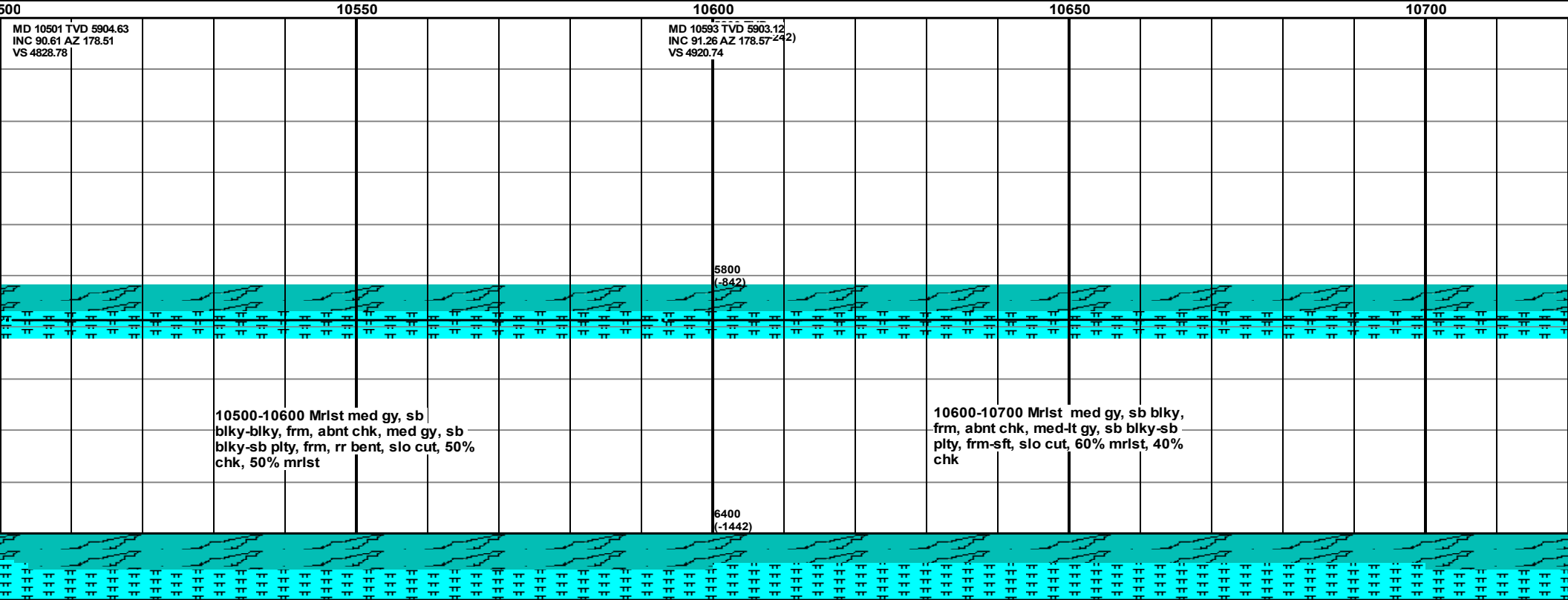
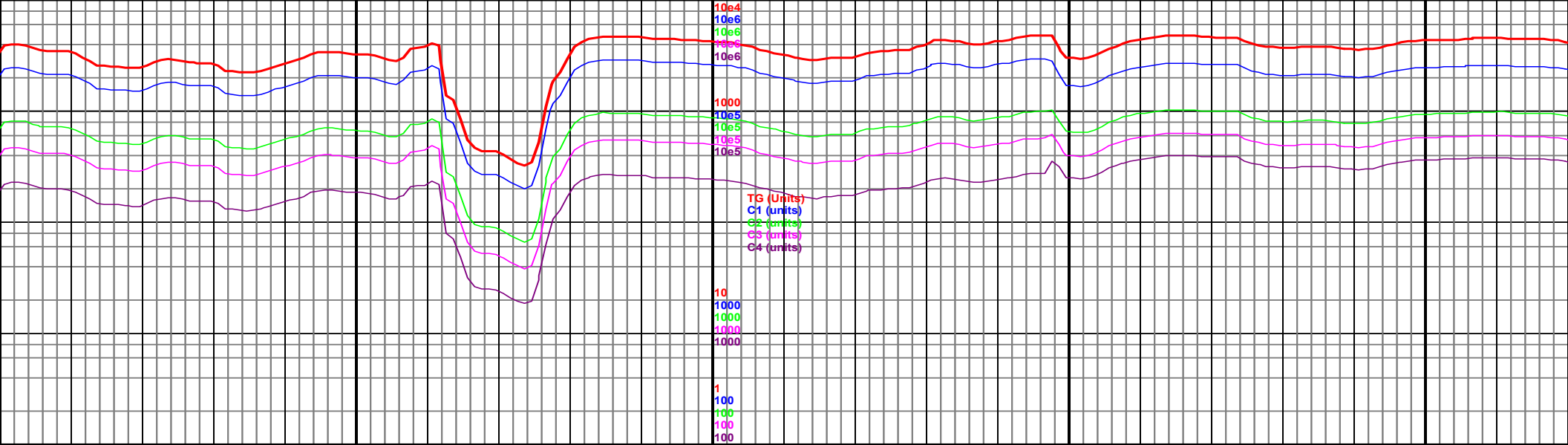


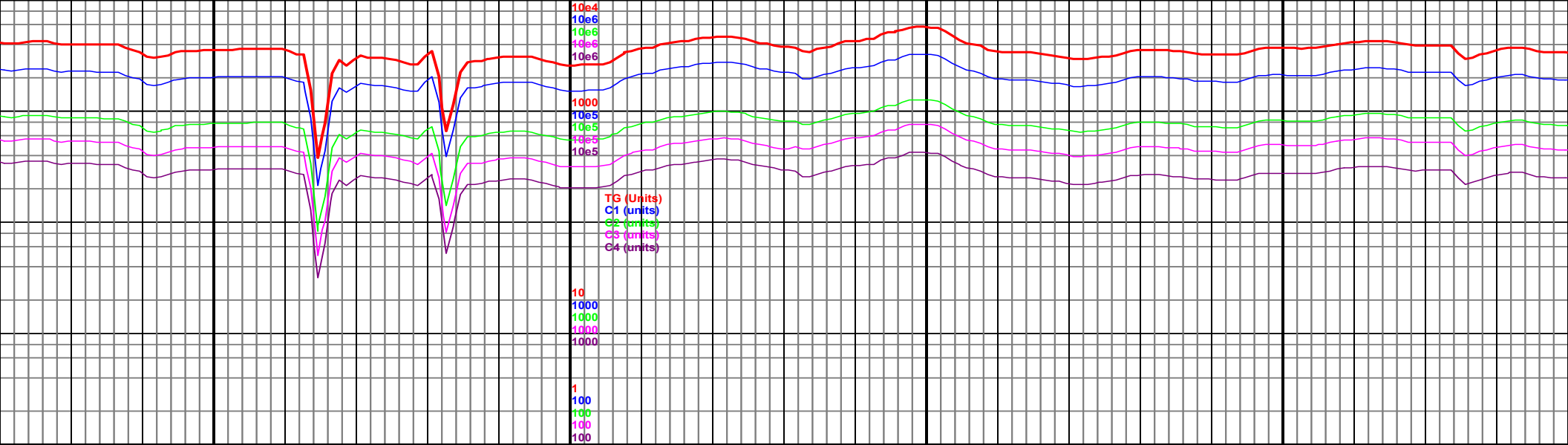












10750

10800

10850

10900

MD 10777 TVD 5899.8
INC 90.81 AZ 178.51
VS 5104.64

5200 TVD
Sub Sea (-242)

MD 10869 TVD 5899.15
INC 90 AZ 178.86
VS 5196.62

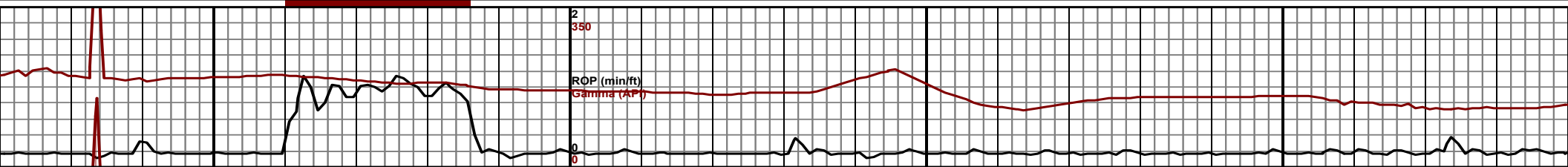
10700-10800 Chk, med gy, sb blkly-sb
plty, spkld ip, sft, fnt orng flr, mrlst
med gy, sb blkly-blky, frm, slo cut, 50%
chk, 50% mrlst

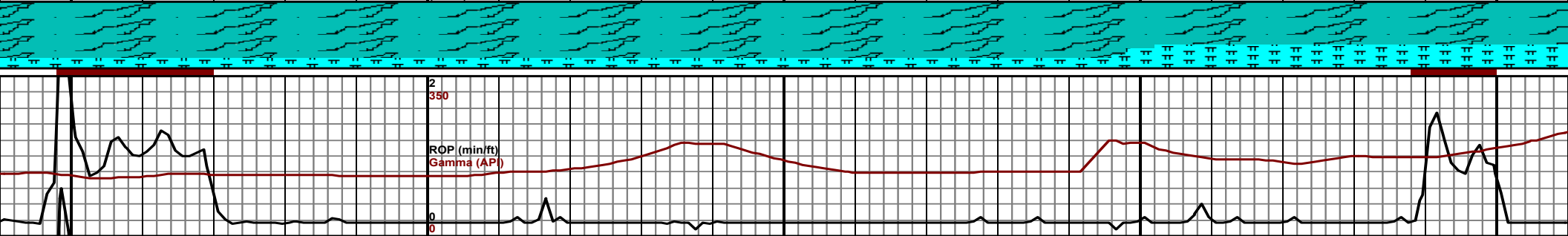
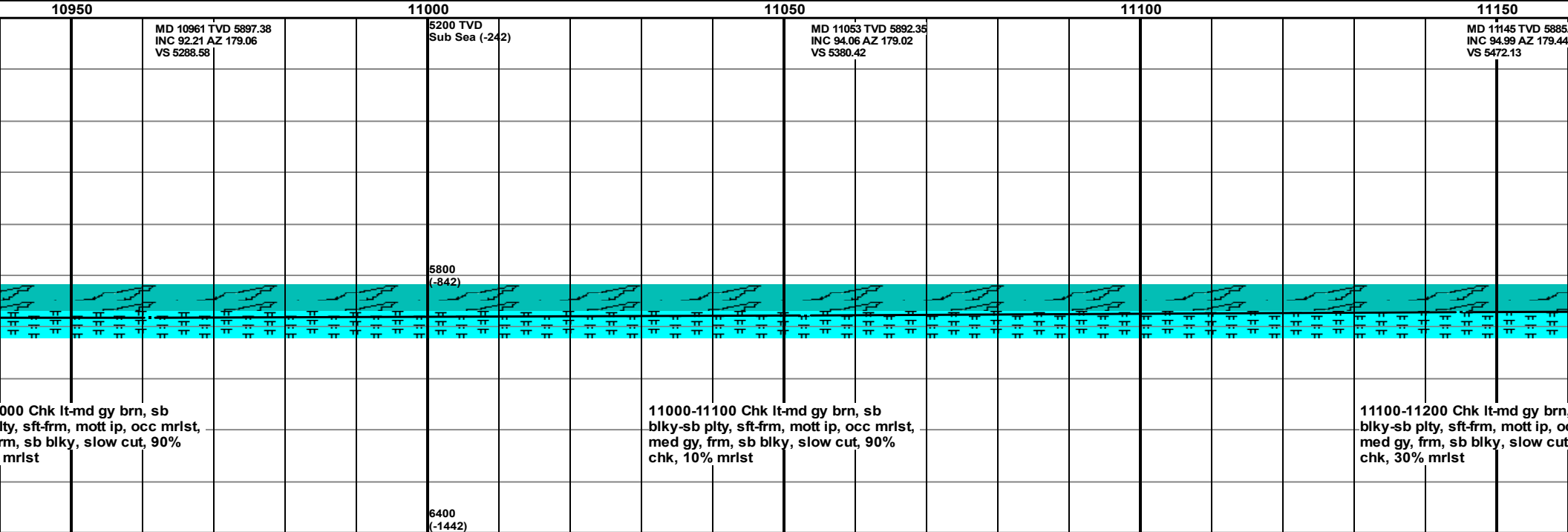
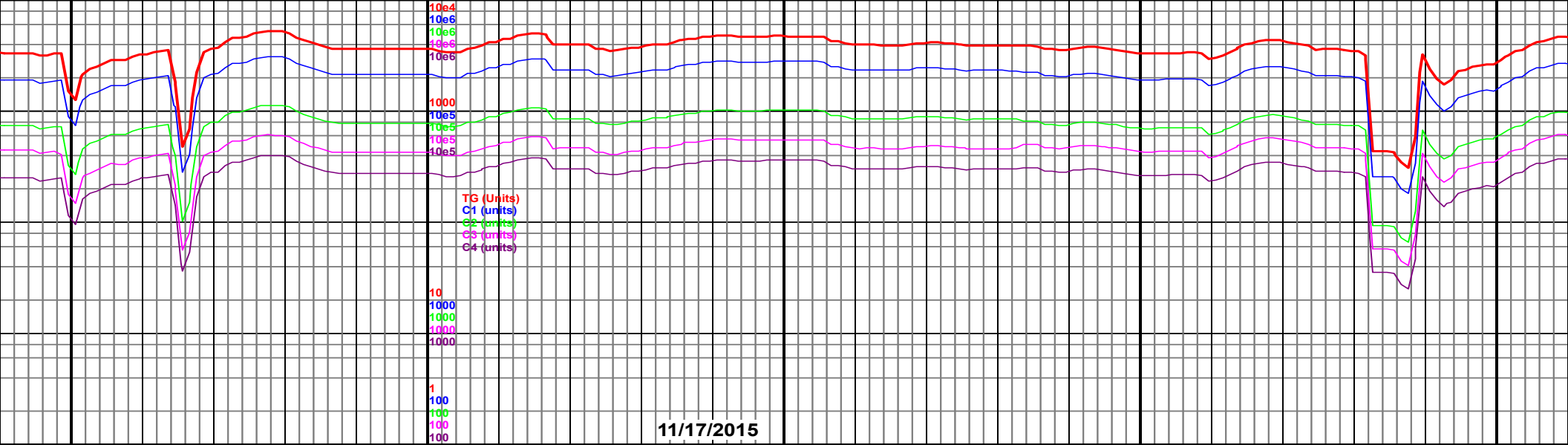
10800-10900 Chk lt-med gy, sb blkly-sb
plty, spkld ip, sft, fnt orng flr, occ
mrlst med gy, sb blkly-blky, frm, fast
cut, 90% chk, 10% mrlst

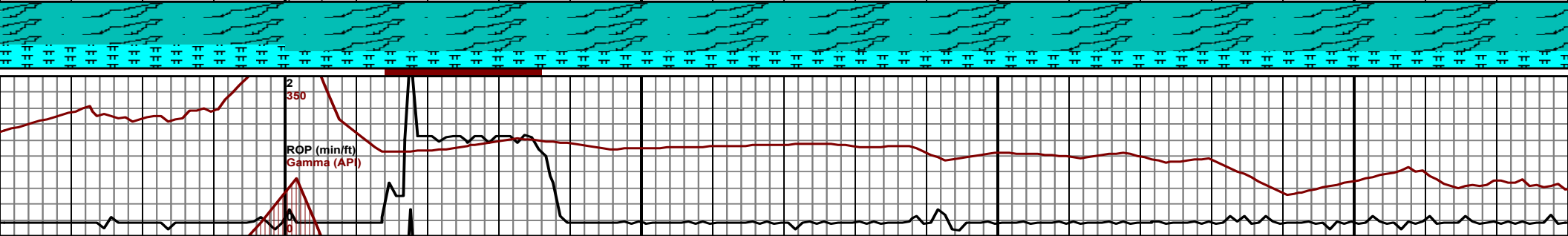
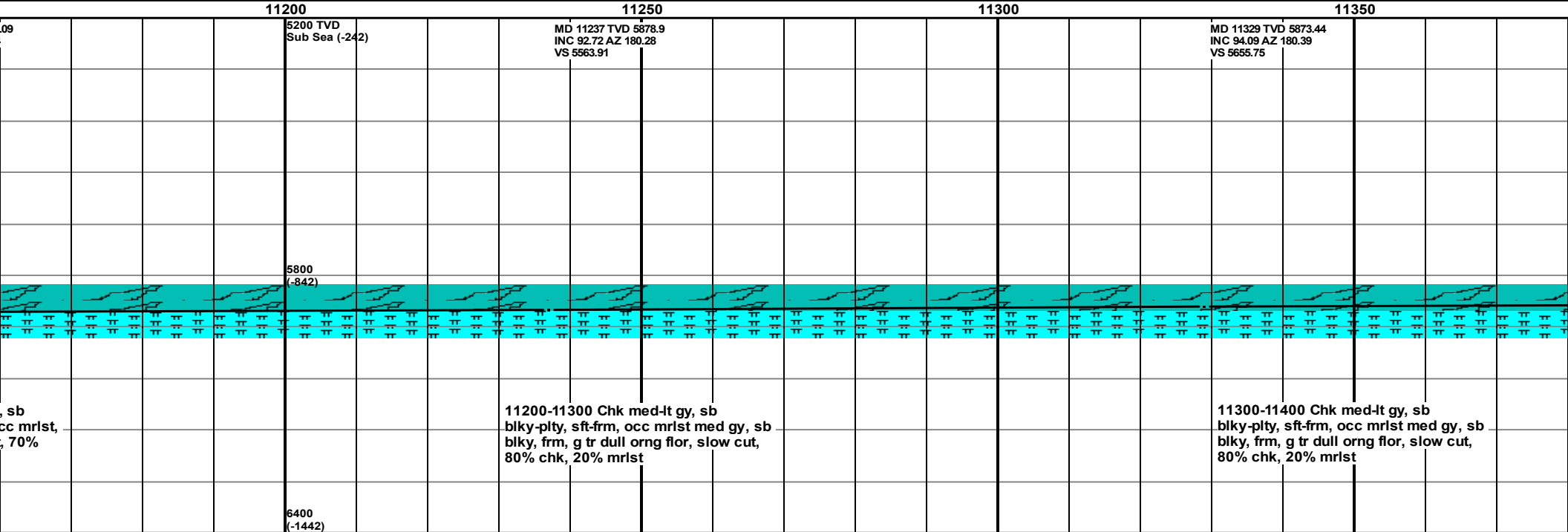
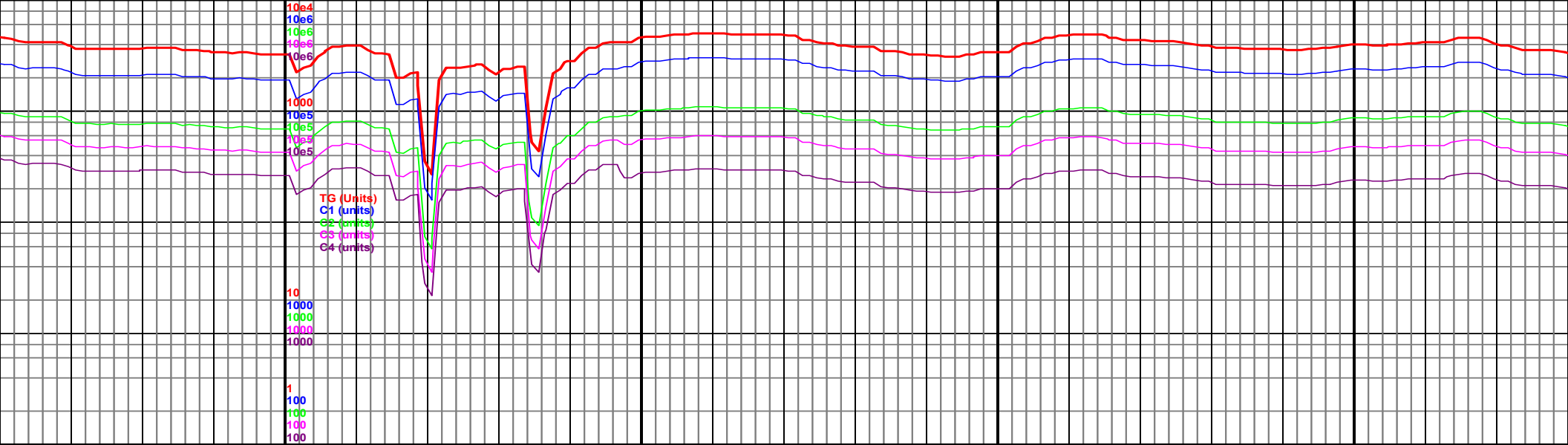
10900-11000 Chk blkly-sb plty,
med gy, fnt orng flr, fast cut, 90%
chk, 10% mrlst

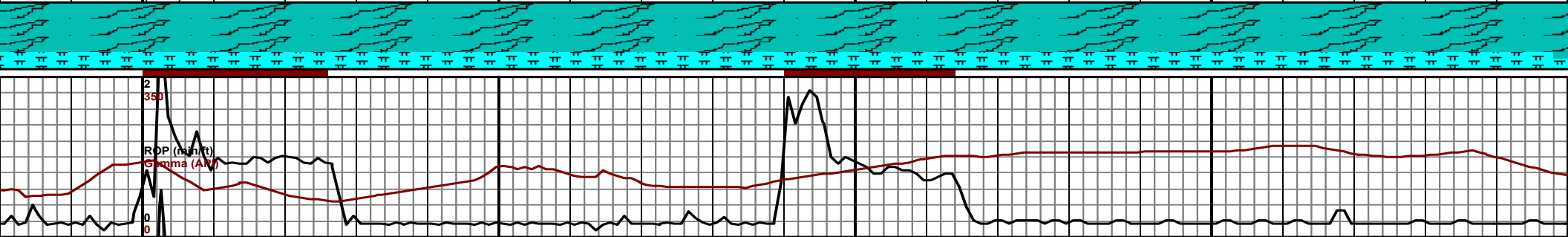
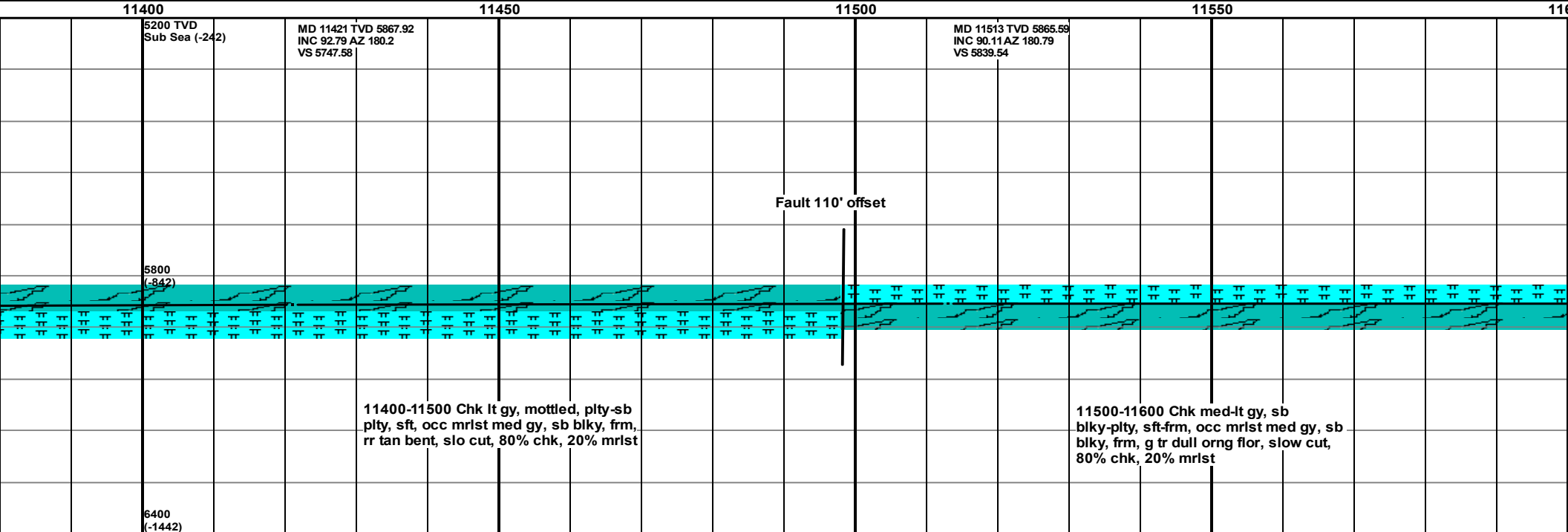
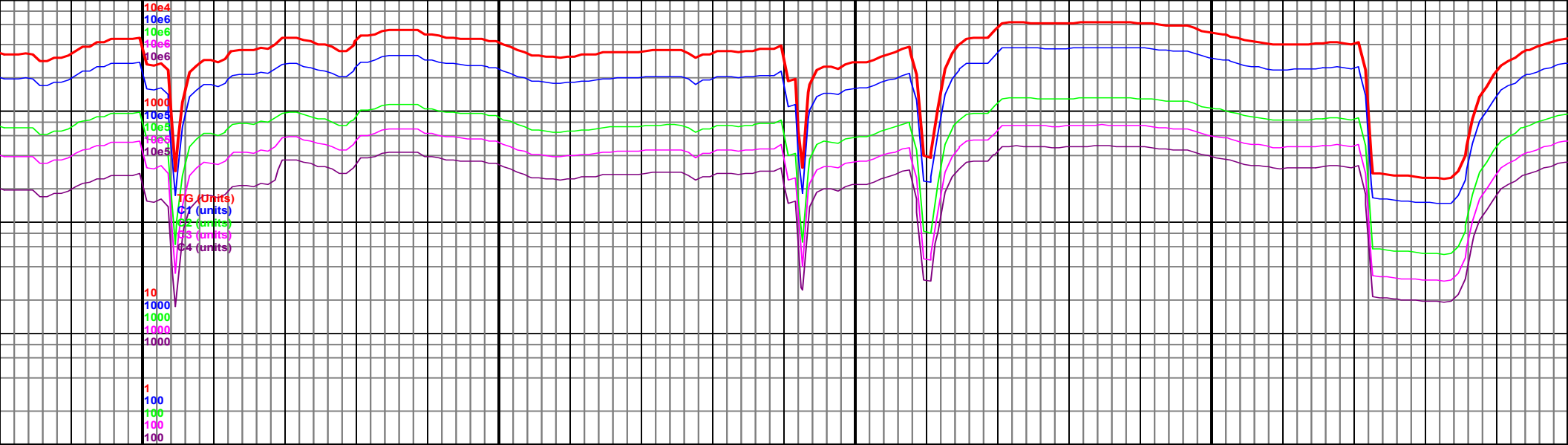
5800
(-842)

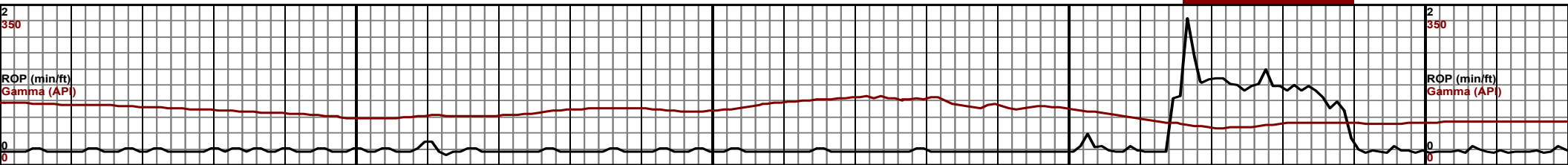
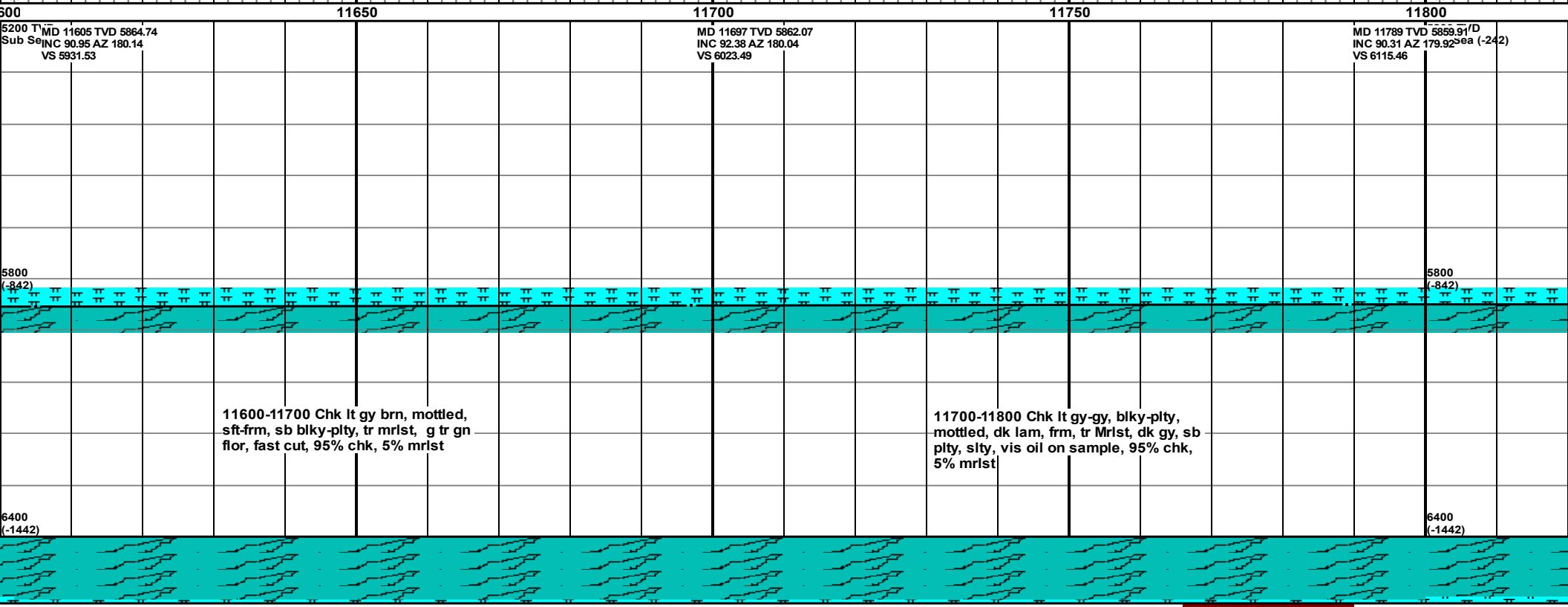
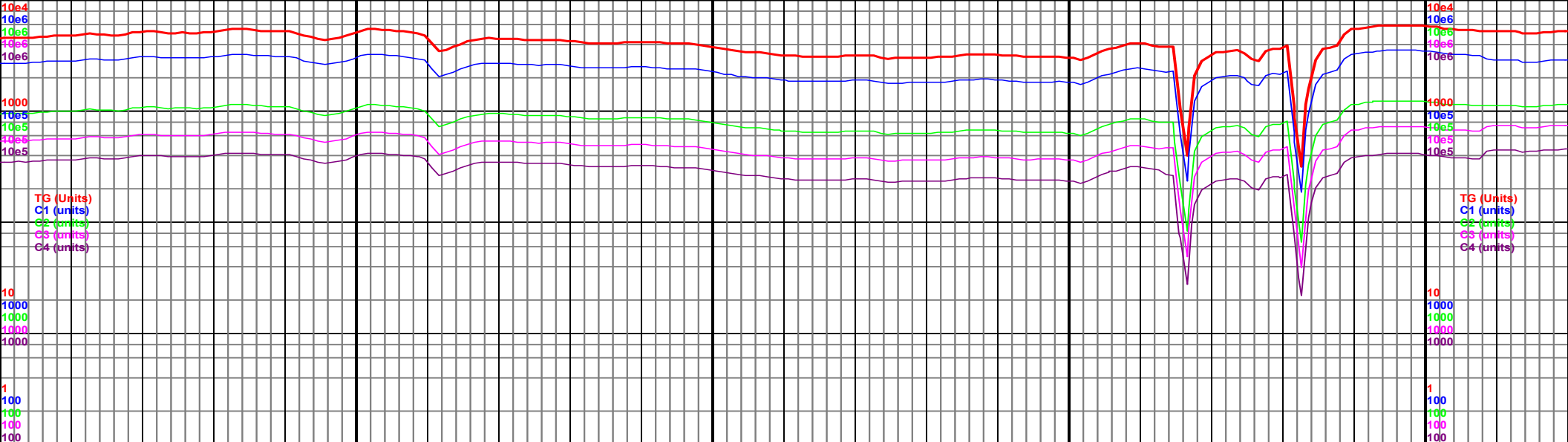
6400
(-1442)

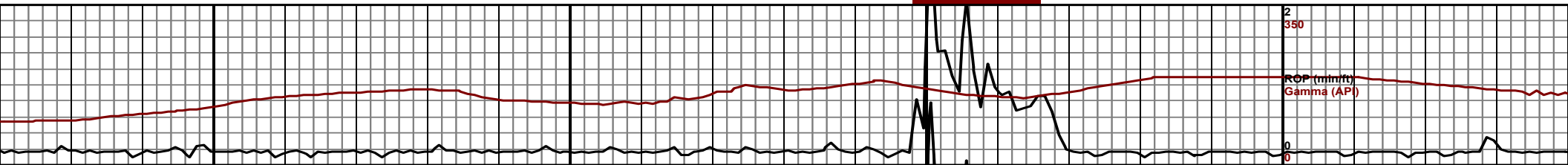
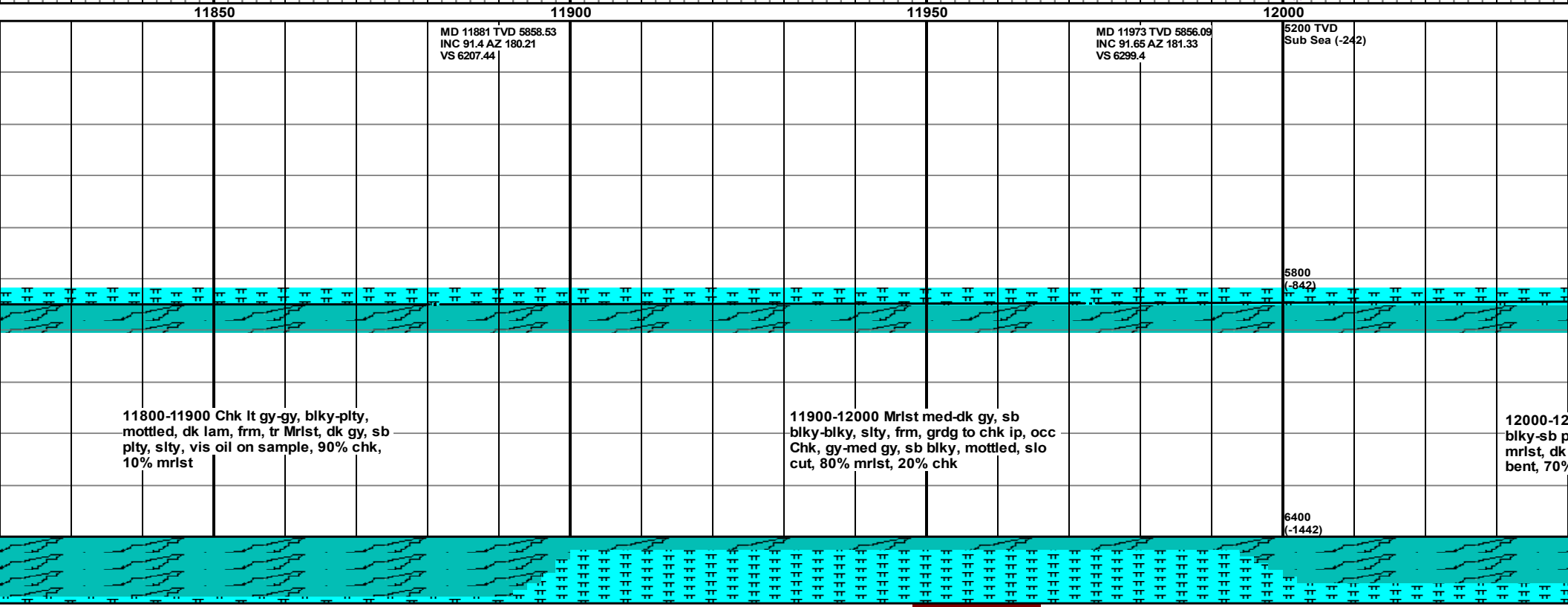
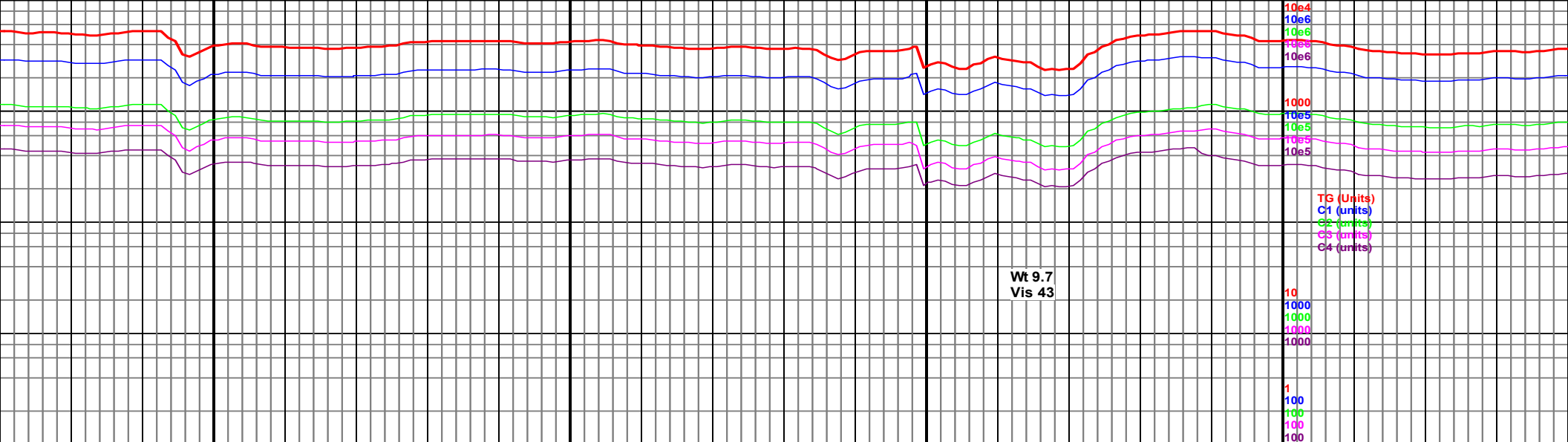


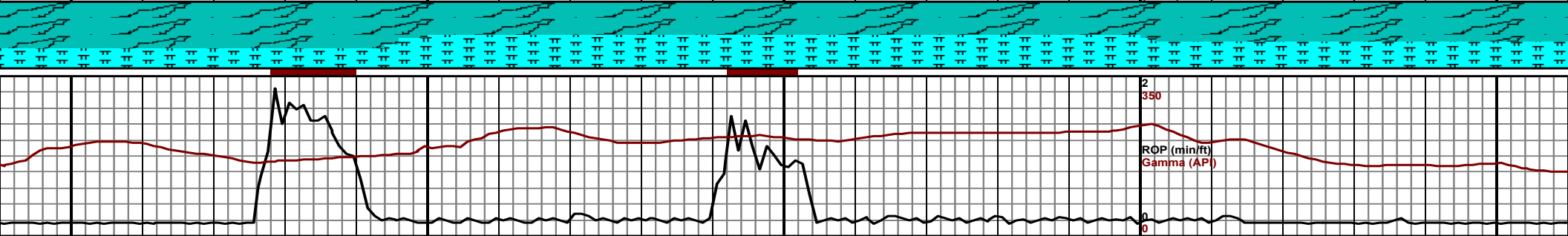
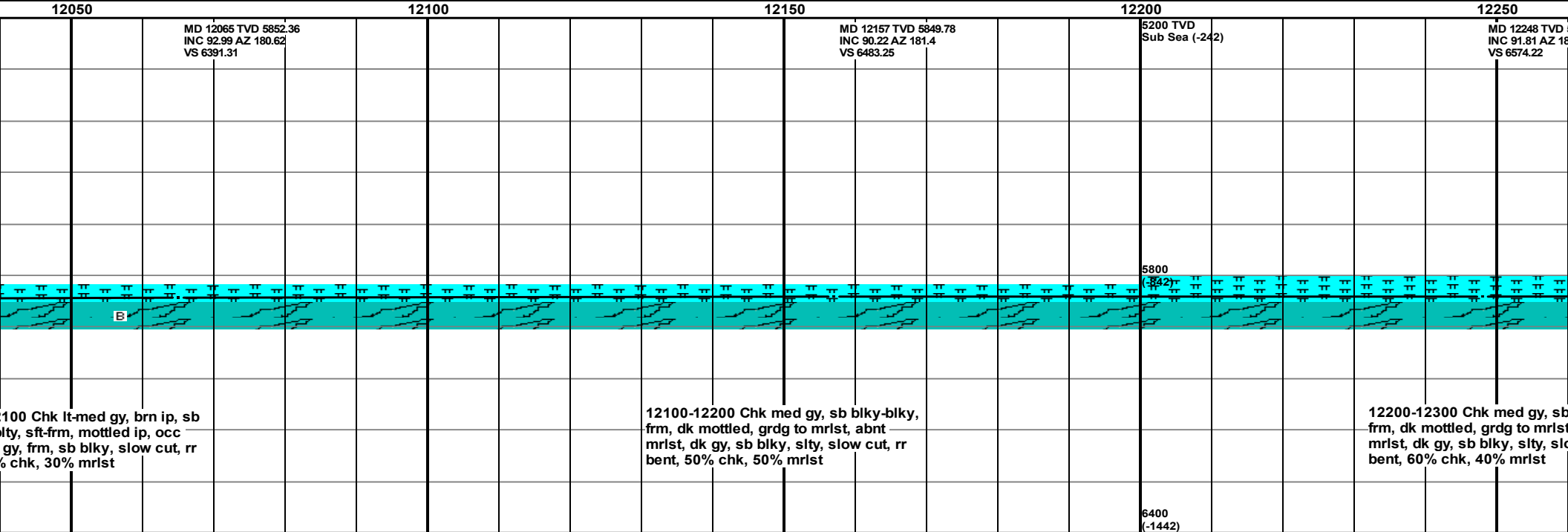
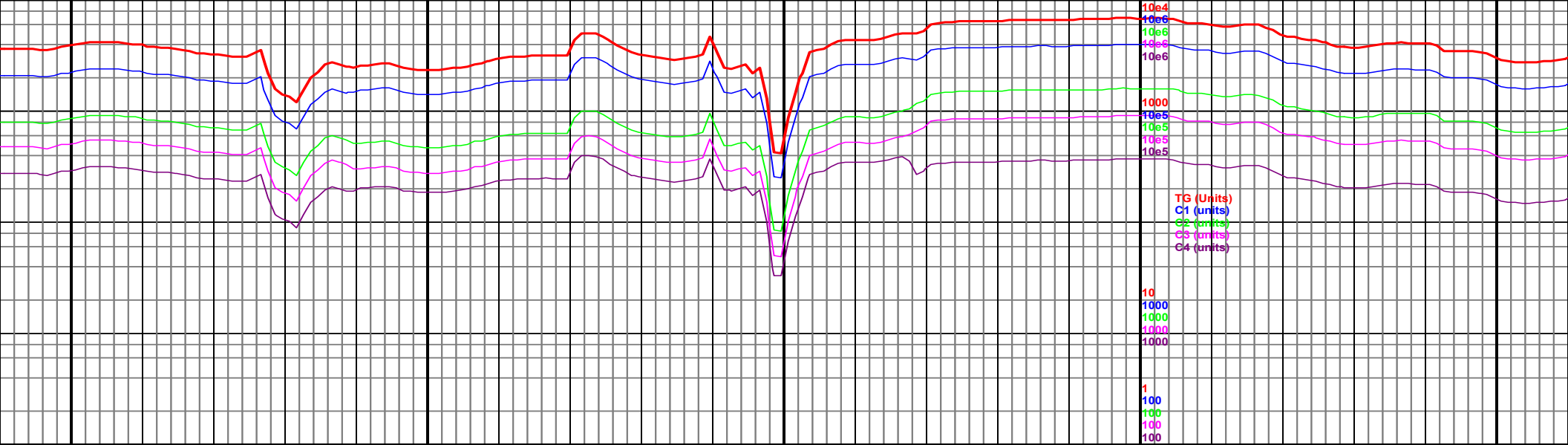


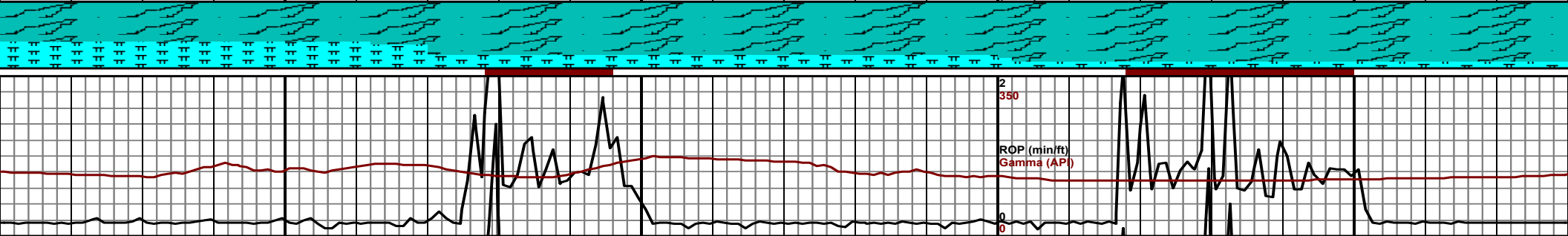
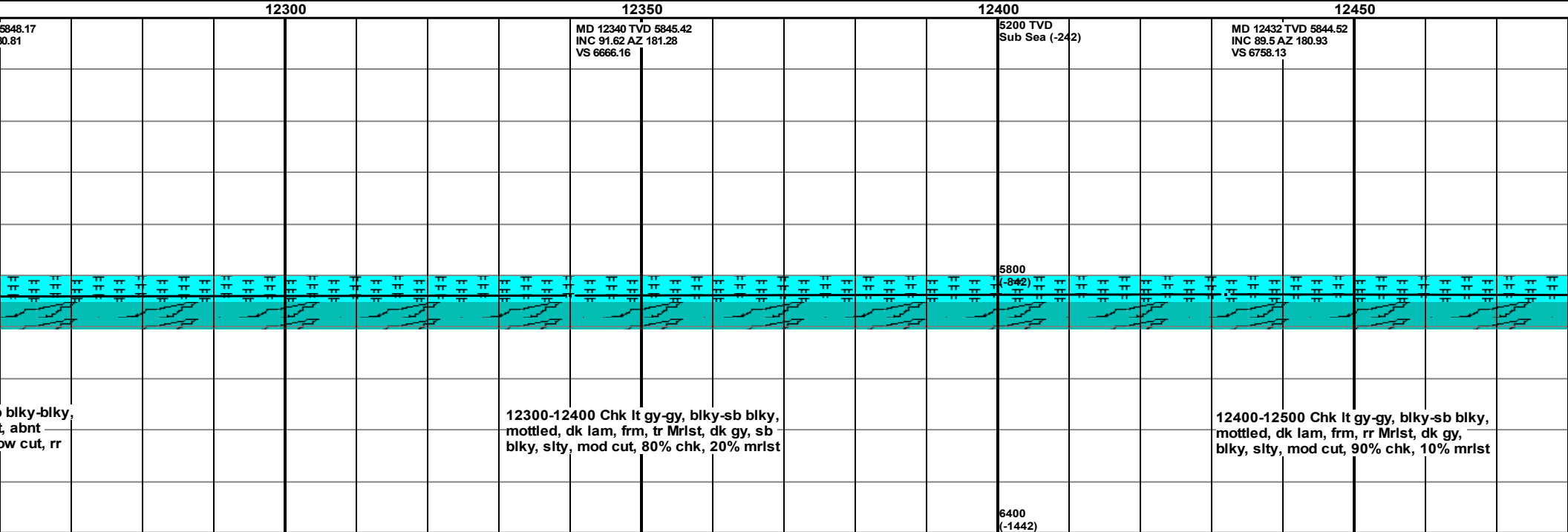
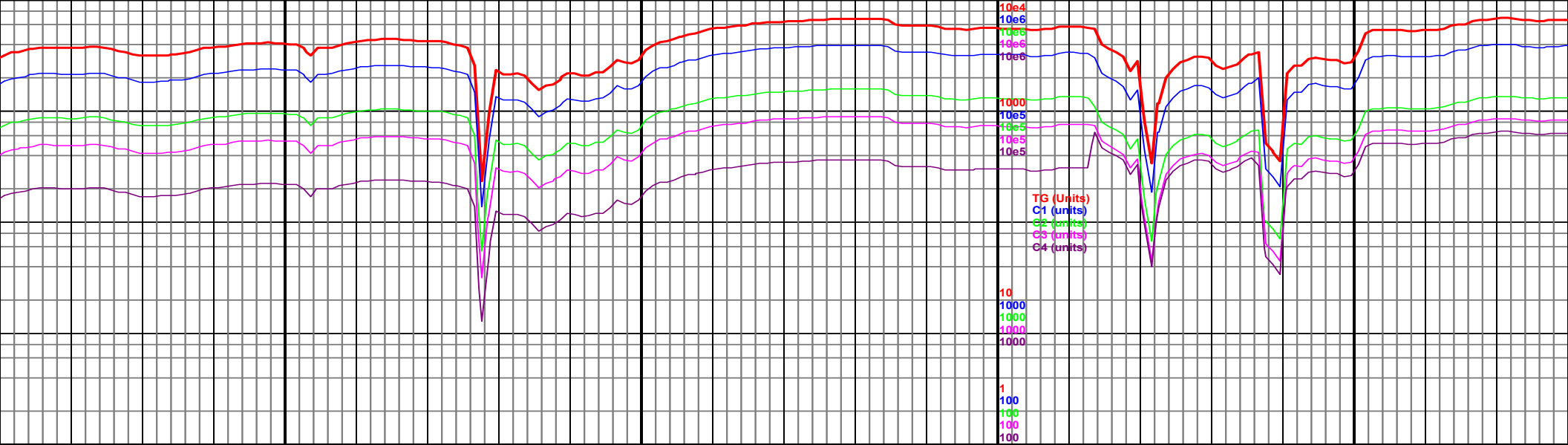


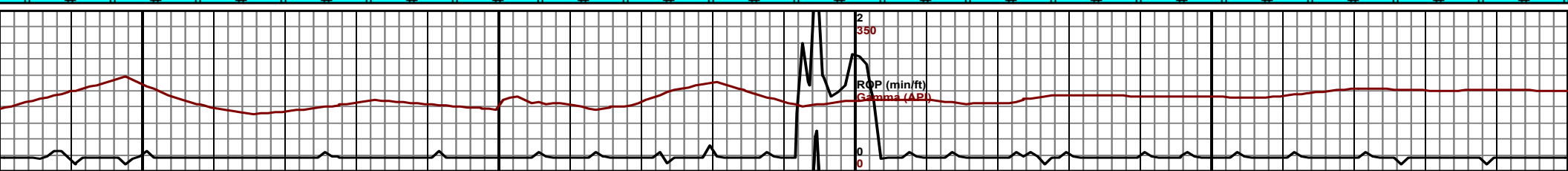
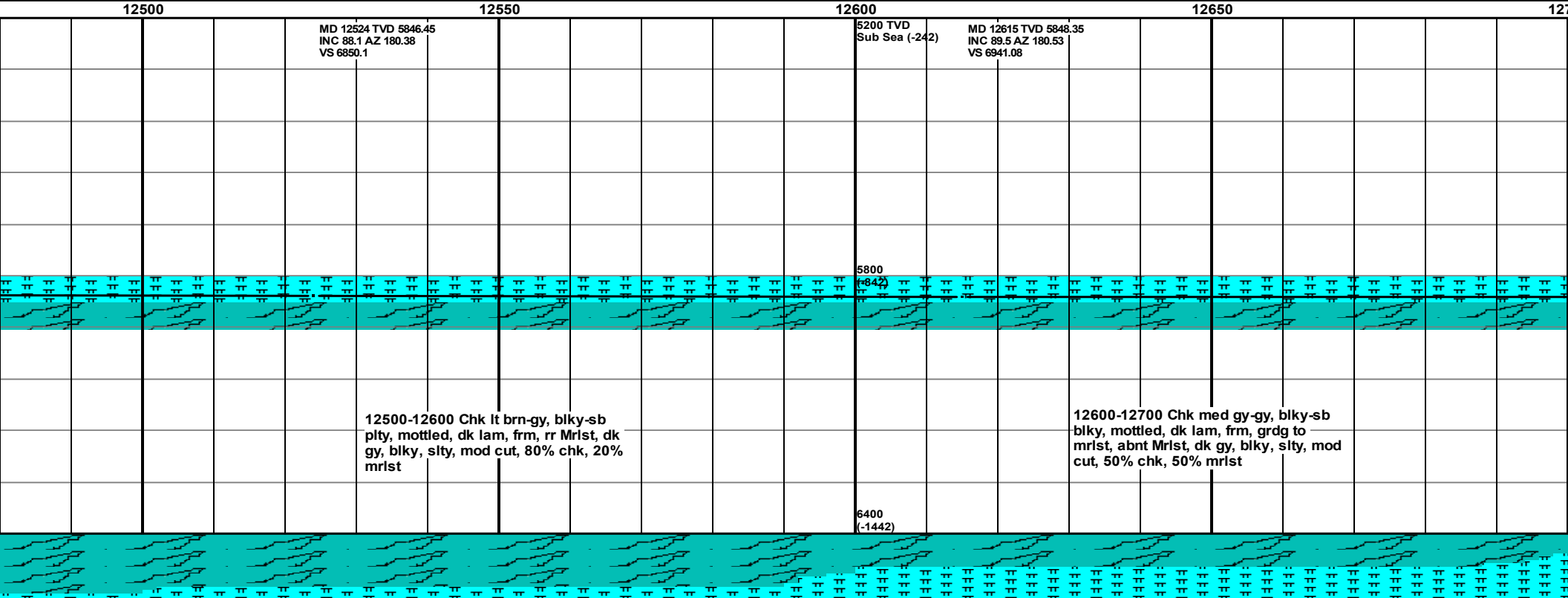
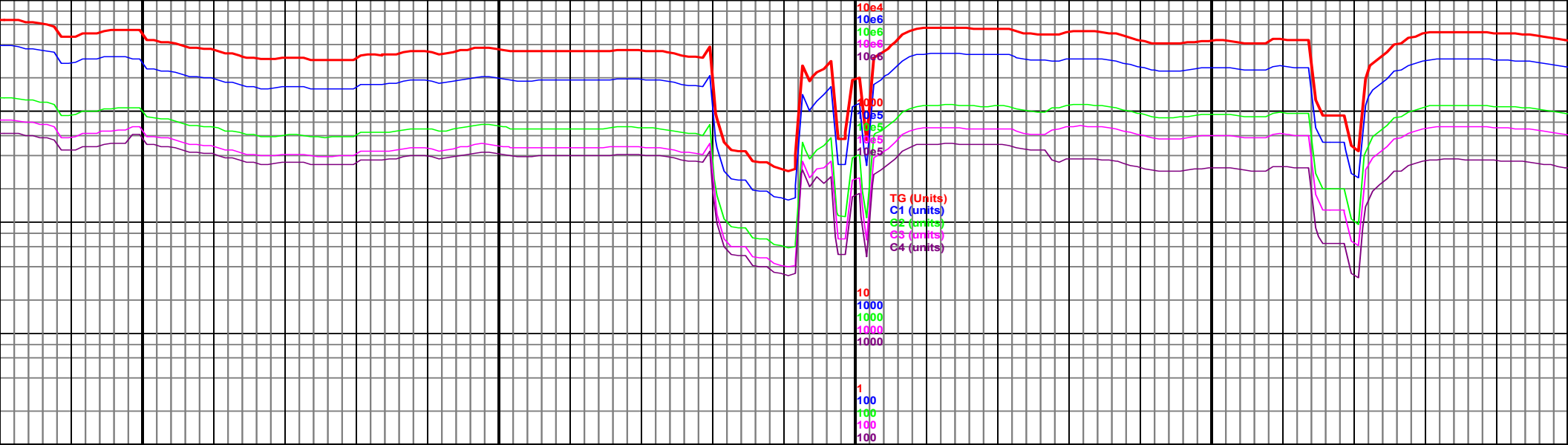


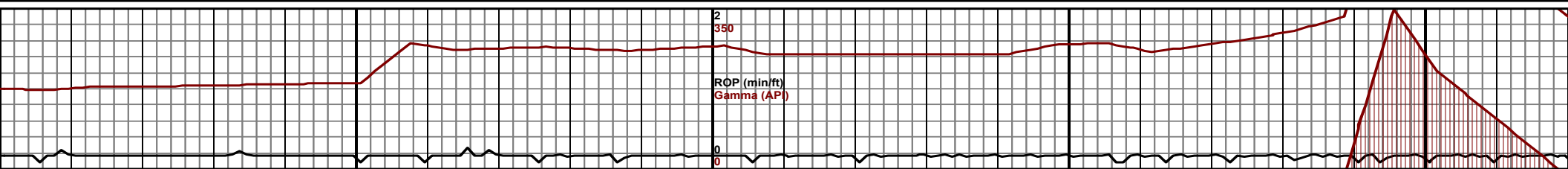
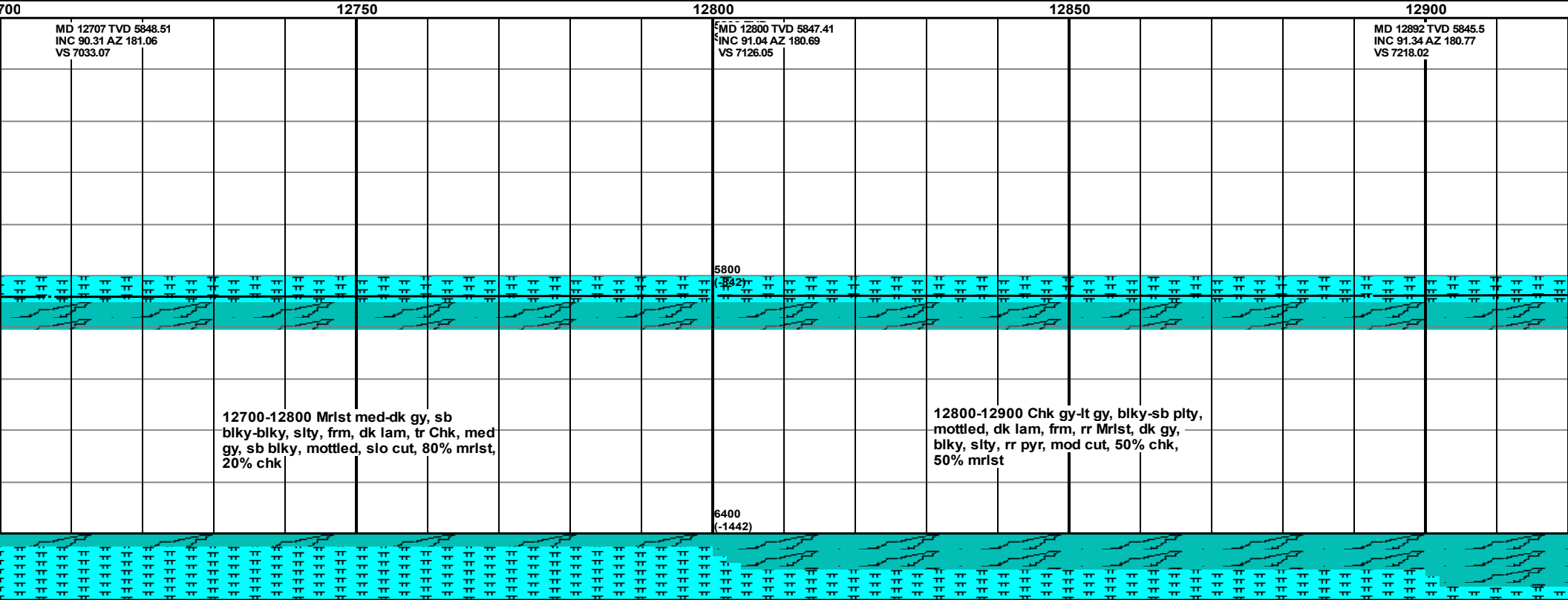
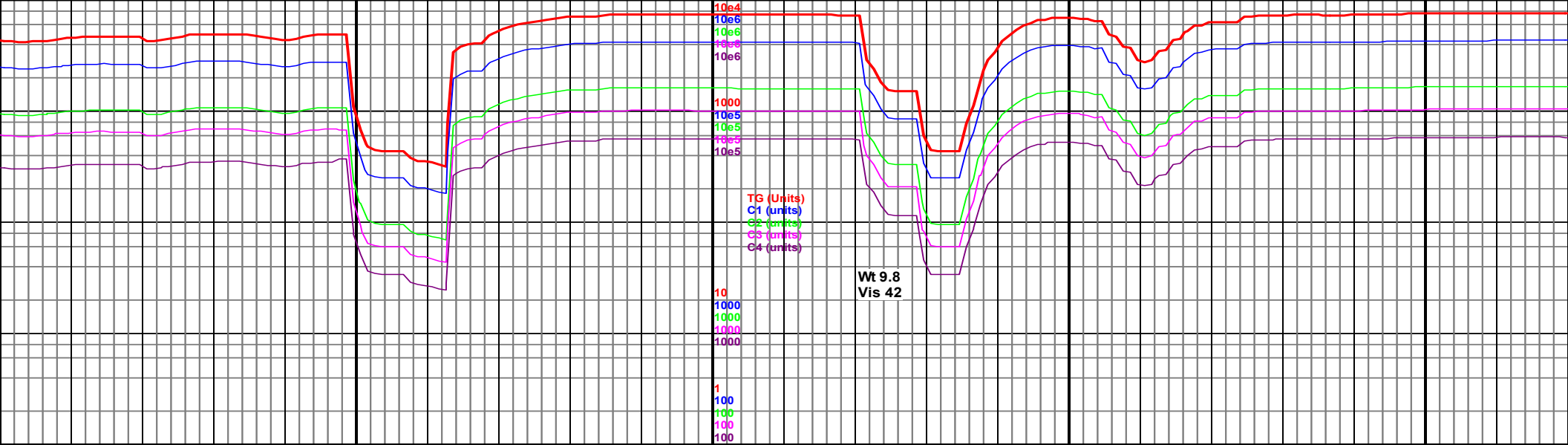


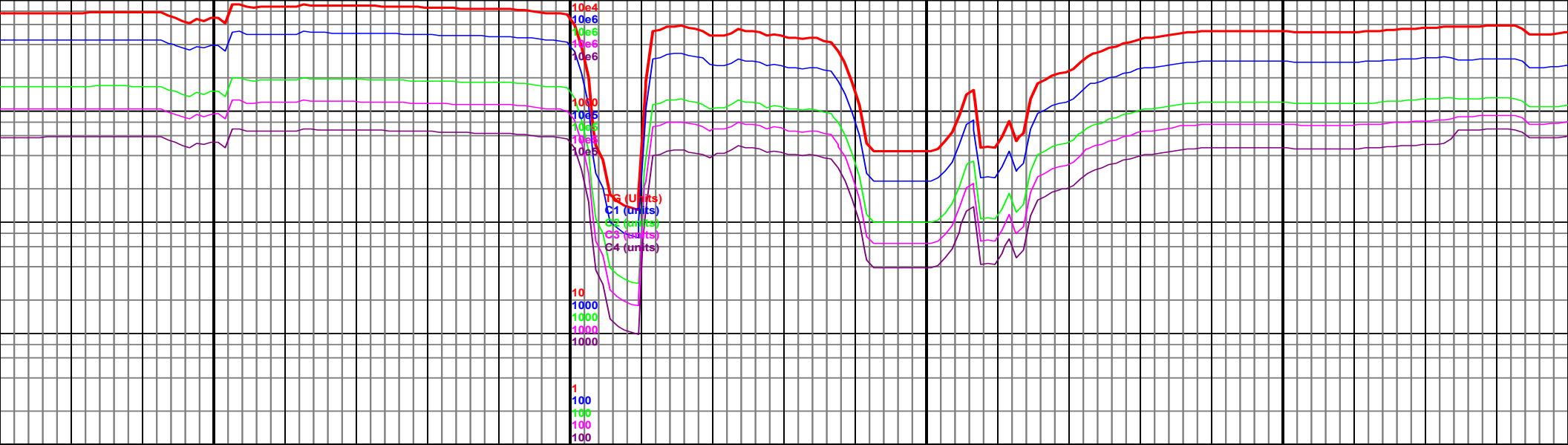












12950

13000

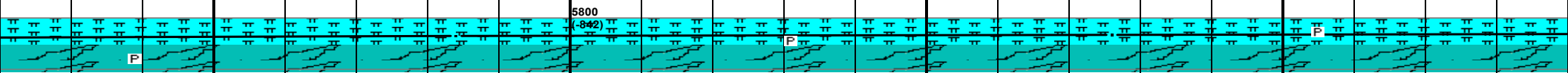
13050

13100

MD 12984 TVD 5842.6
INC 92.27 AZ 179.86
VS 7309.97

5200 TVD
Sub Sea (-242)

MD 13076 TVD 5839.21
INC 91.96 AZ 179.57
VS 7401.91



12900-13000 Chk lt brn-lt gy, blk-y-sb
plty, mottled, dk lam, frm, rr Mrlst, dk
gy, blk-y, slty, rr pyr, mod cut, 80% chk,
20% mrlist

13000-13100 Chk lt brn-lt gy, blk-y-sb
plty, mottled, dk lam, frm, rr Mrlst, dk
gy, blk-y, slty, rr pyr, mod cut, 80% chk,
20% mrlist

13100-13
mottled,
blk-y, slty
20% mrlist

6400
(-1442)

