



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

Well Name: Razor 33M-2804
API: 05-123-3925800
Location: SWSW 33-T10N-R58W, Weld County, CO
License Number: 05-123-3925800
Spud Date: 12/20/2014
Surface Coordinates: Lat.: 40.789186
Long.: -103.876525

Region: Redtail
Drilling Completed: 12/28/2014

Bottom Hole
Coordinates:
Ground Elevation (ft): 4729
Logged Interval (ft): 5127 To: 13178
Formation: Niobrara
Type of Drilling Fluid: Water Based Mud
K.B. Elevation (ft): 4747.5
Total Depth (ft): 13178

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: Craig Dreiling, Mark Denler
Company: Acme Geologic Consulting
Address: 108 Berry Street
Little Rock, AR 72205

Drilling Company

Pioneer #54


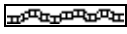
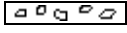
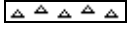
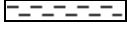
Gas Detection






Mudlogging Systems, Inc., M Logger, Model TGC, Total Gas and Chromatograph, #311



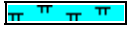
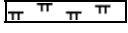

Comments

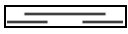
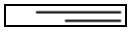
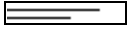


Lithologies and tops at drilled depths, not corrected to elogs. Where the well bore gas is 100% methane, the C1 line is moved to 85% for graphical purposes only.




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




OTHER SYMBOLS

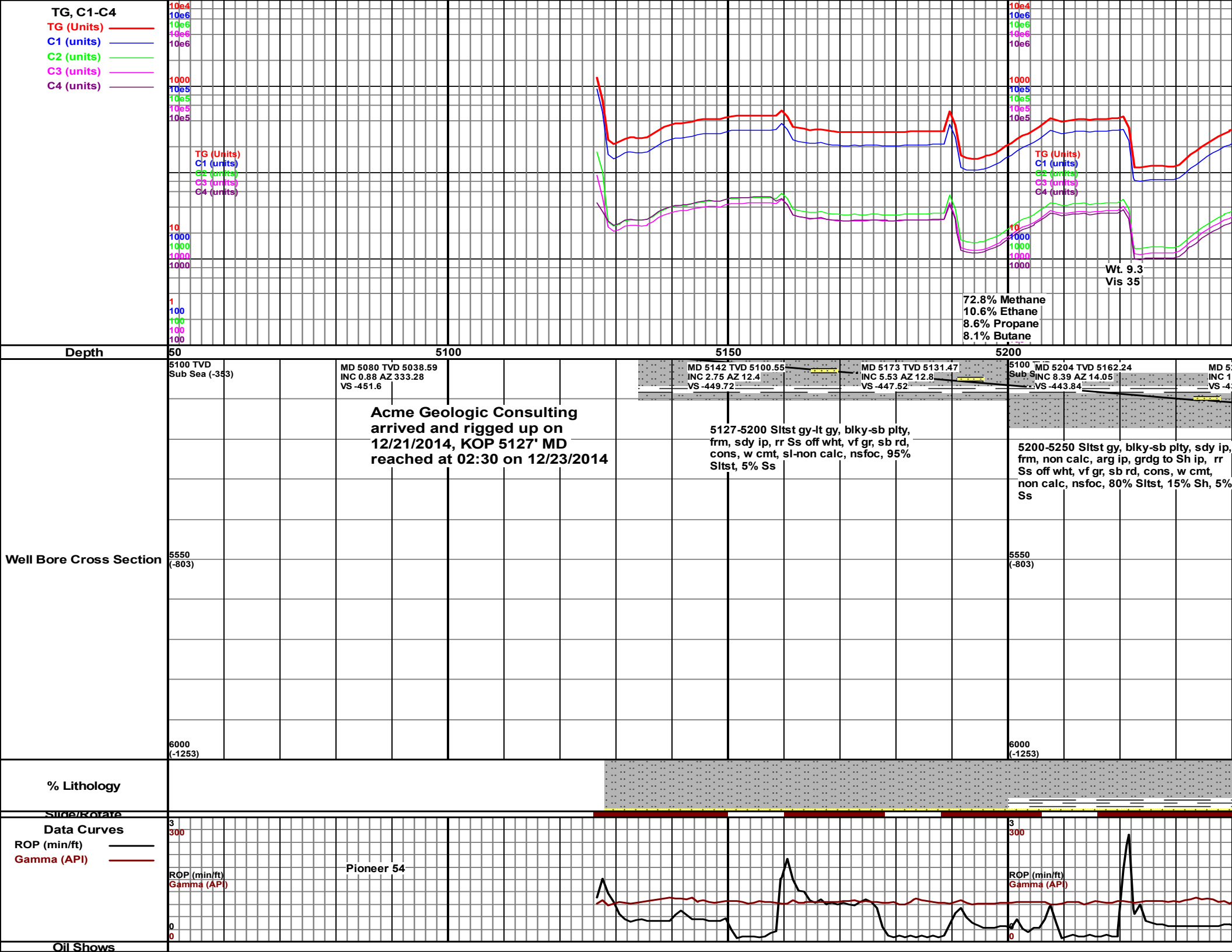
- POROSITY**
-  Earthy
 -  Fenest
 -  Fracture
 -  Inter
 -  Moldic
 -  Organic

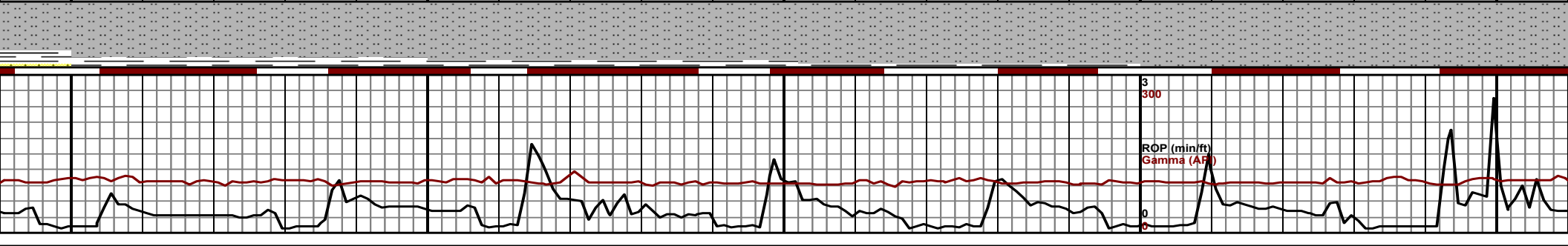
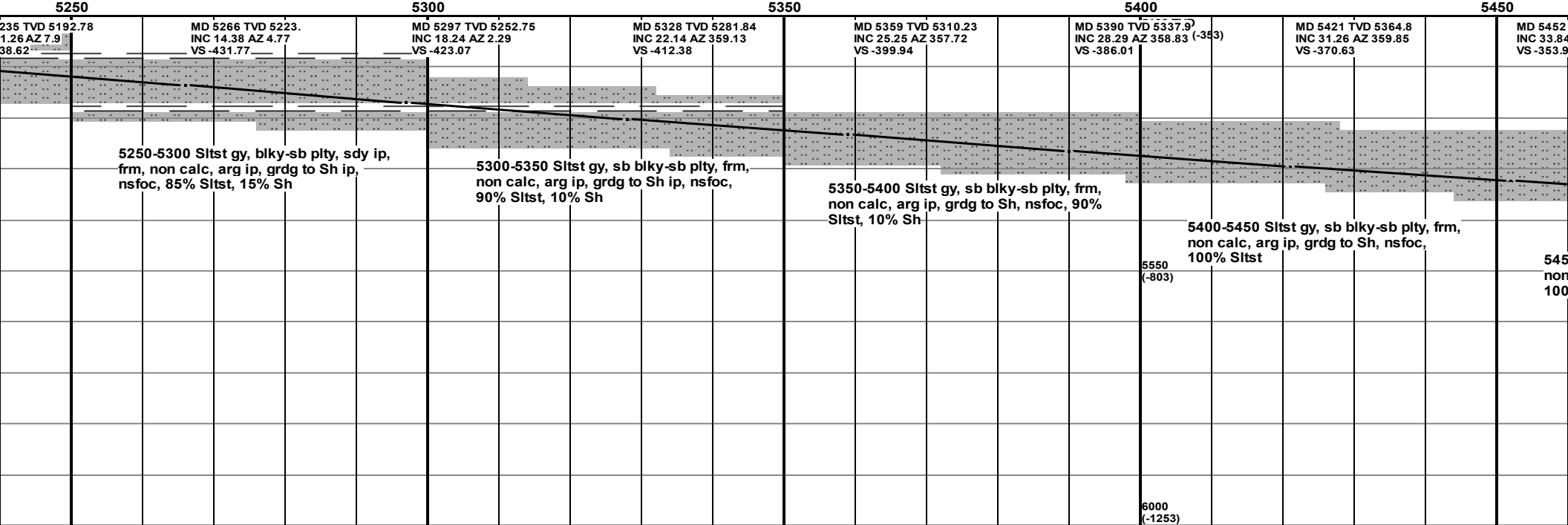
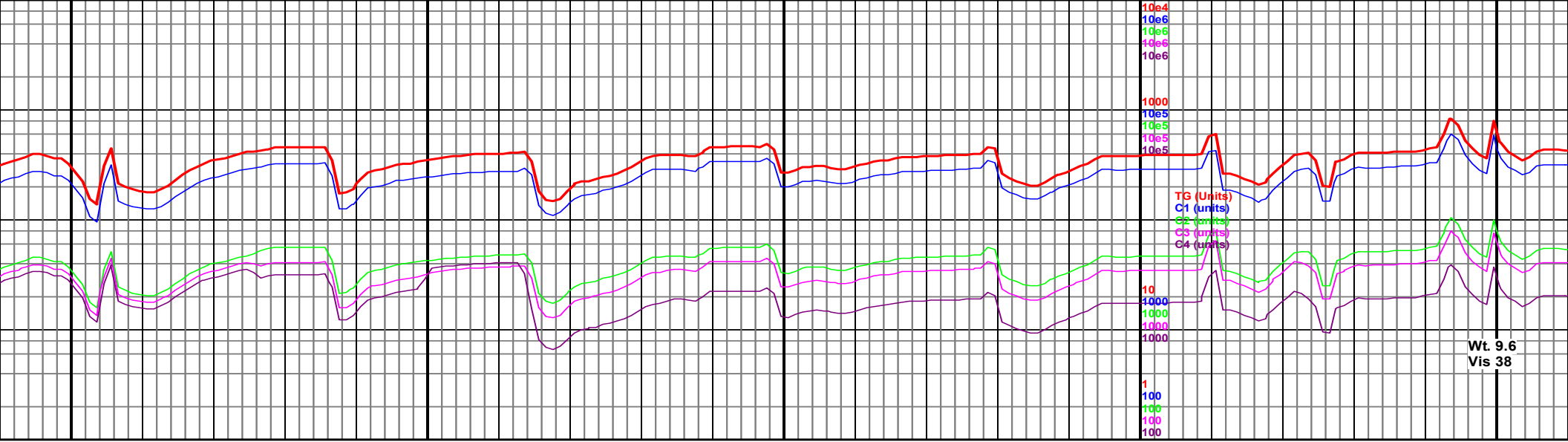
-  Pinpoint
 -  Vuggy
- SORTING**
-  Well
 -  Moderate
 -  Poor

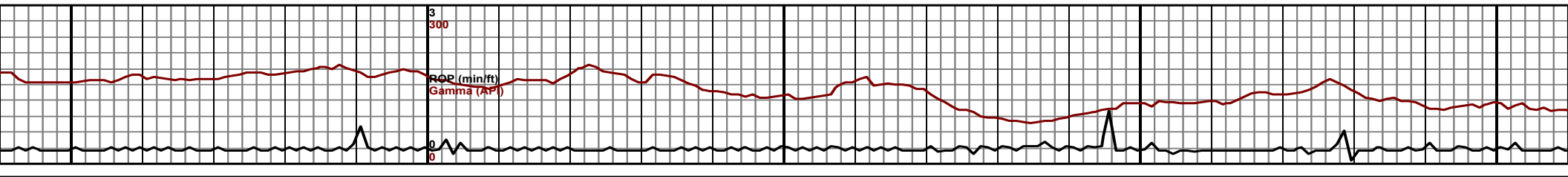
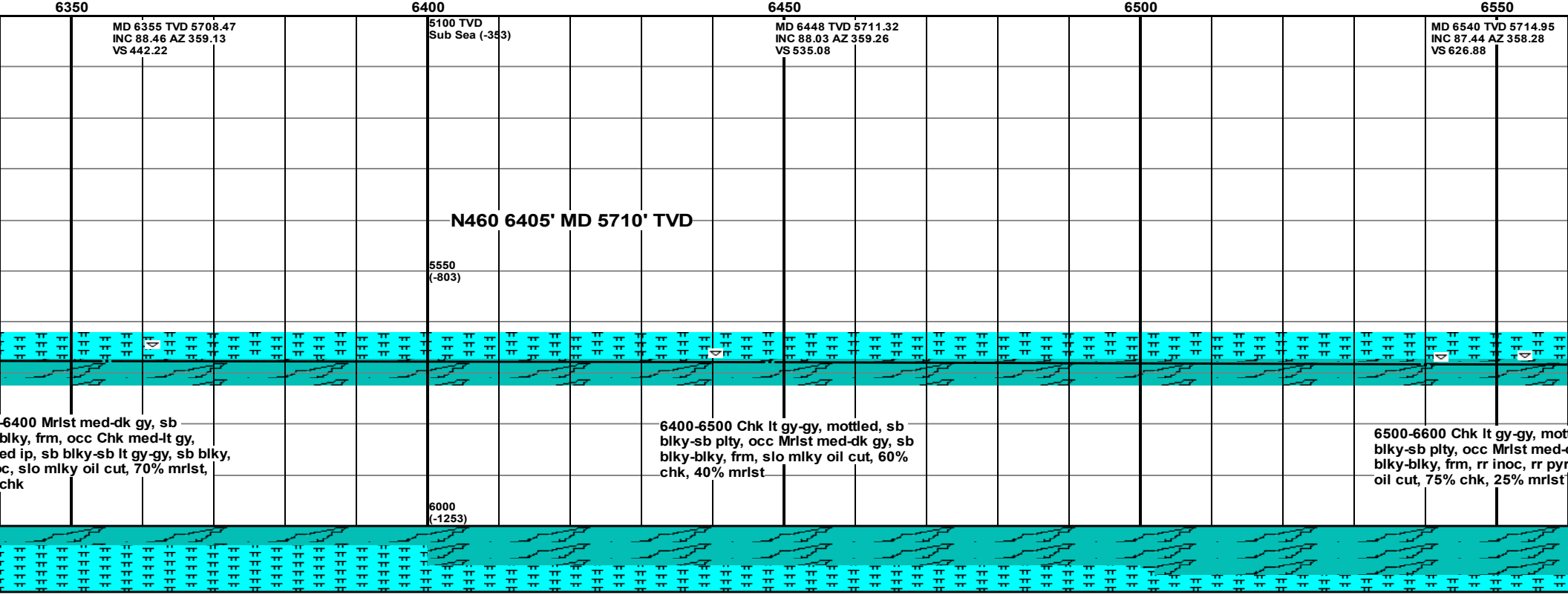
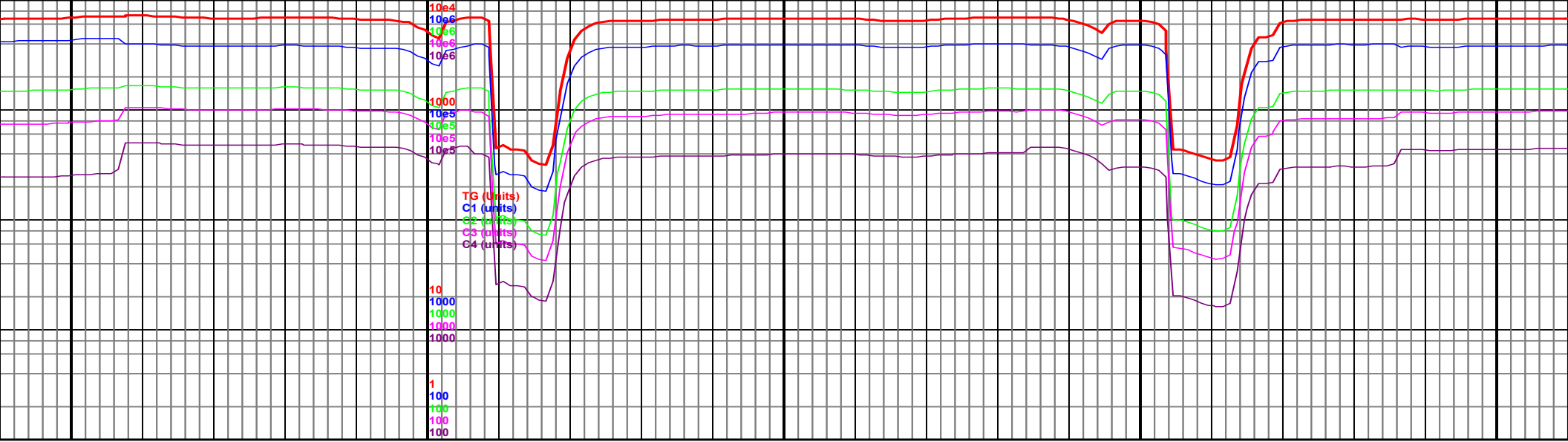
- ROUNDING**
-  Rounded
 -  Subrnd
 -  Subang
 -  Angular

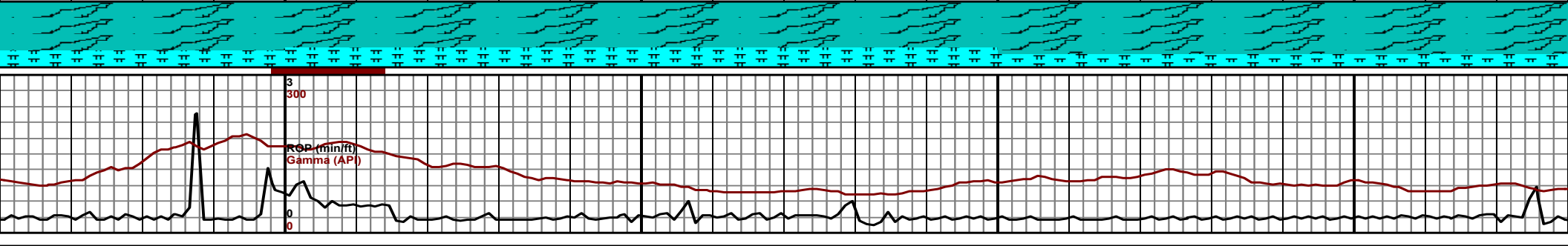
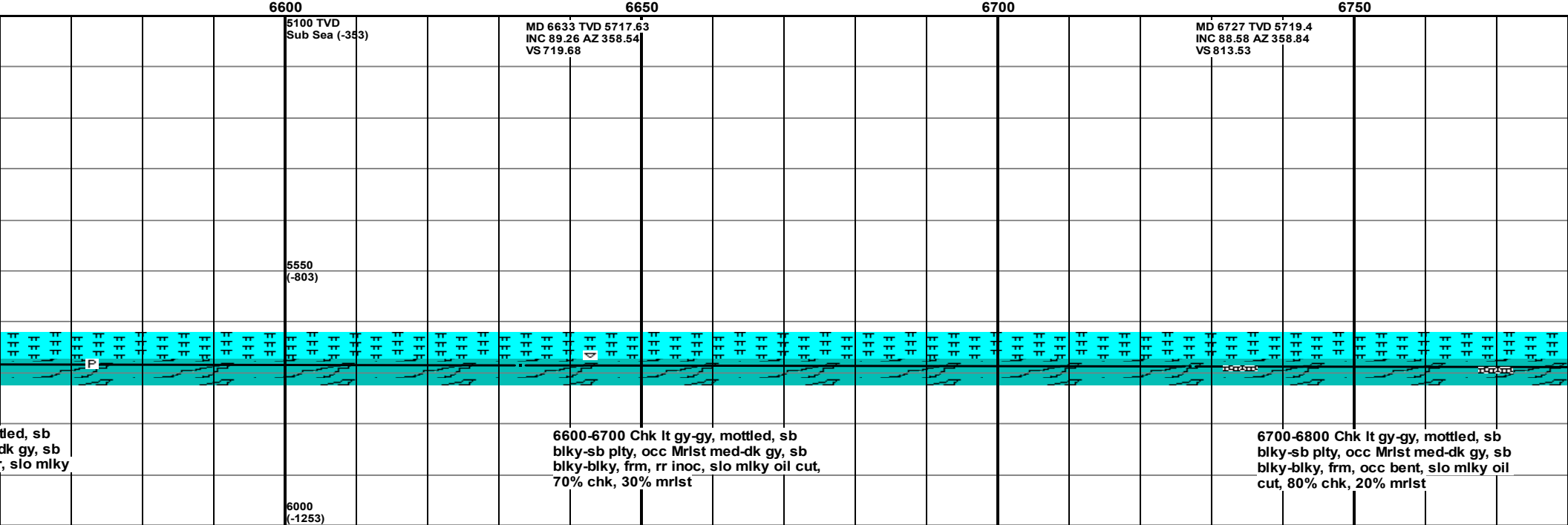
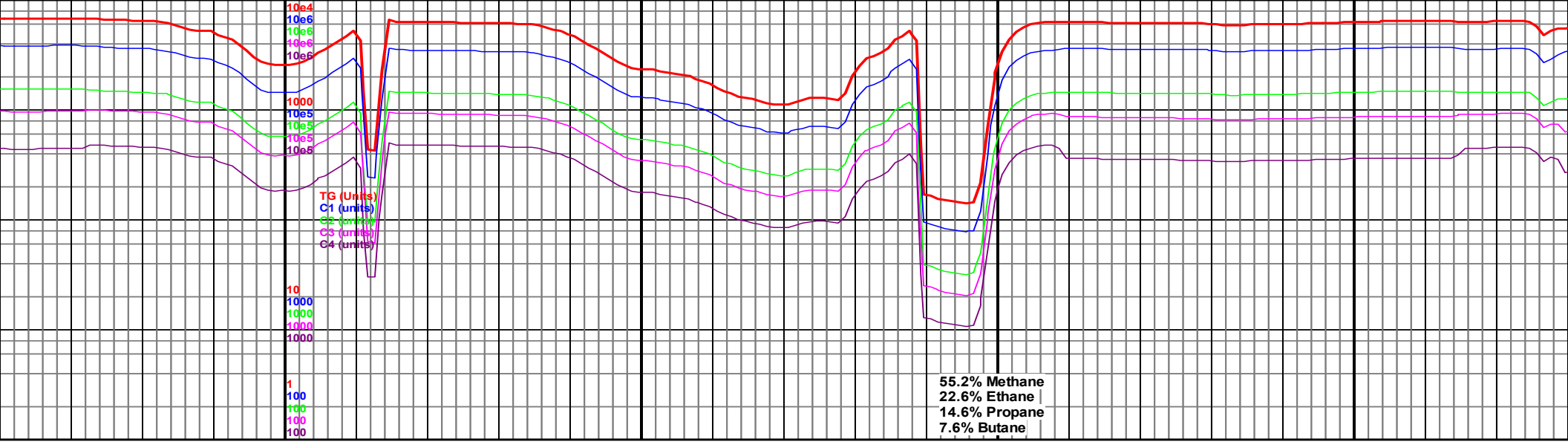
- OIL SHOW**
-  Good
 -  Fair
 -  Poor
- INTERVAL**
-  Core

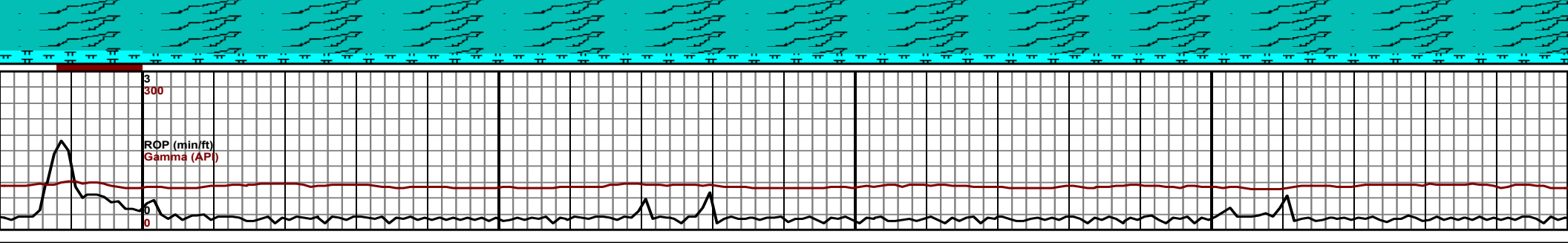
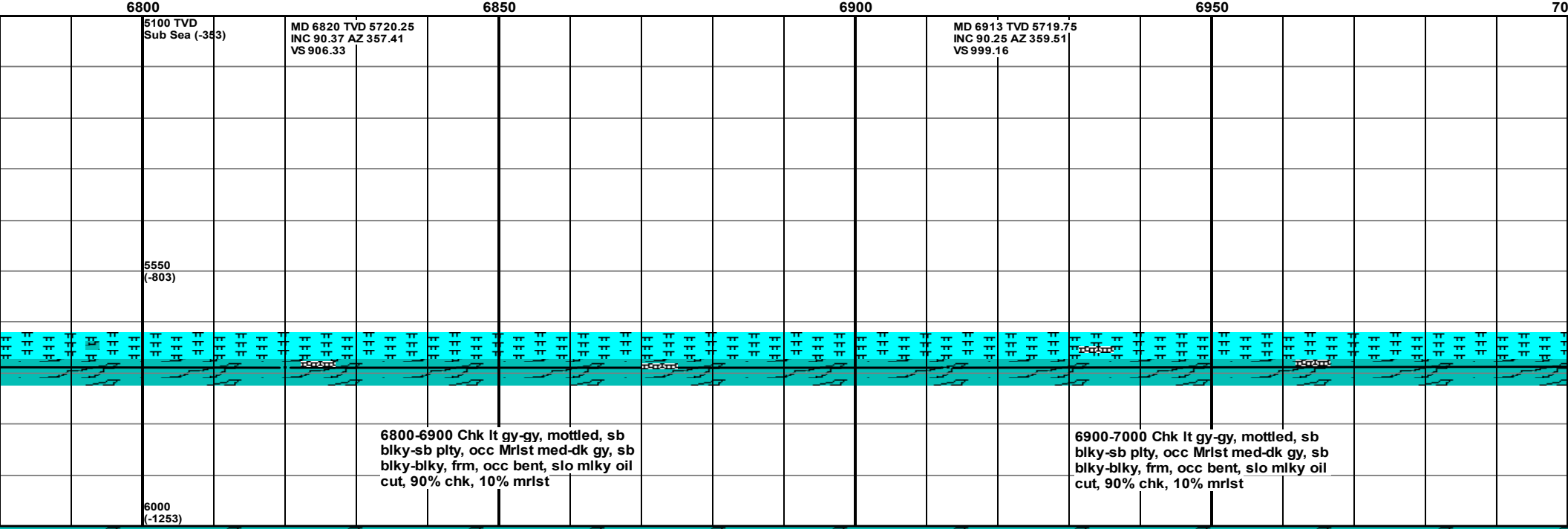
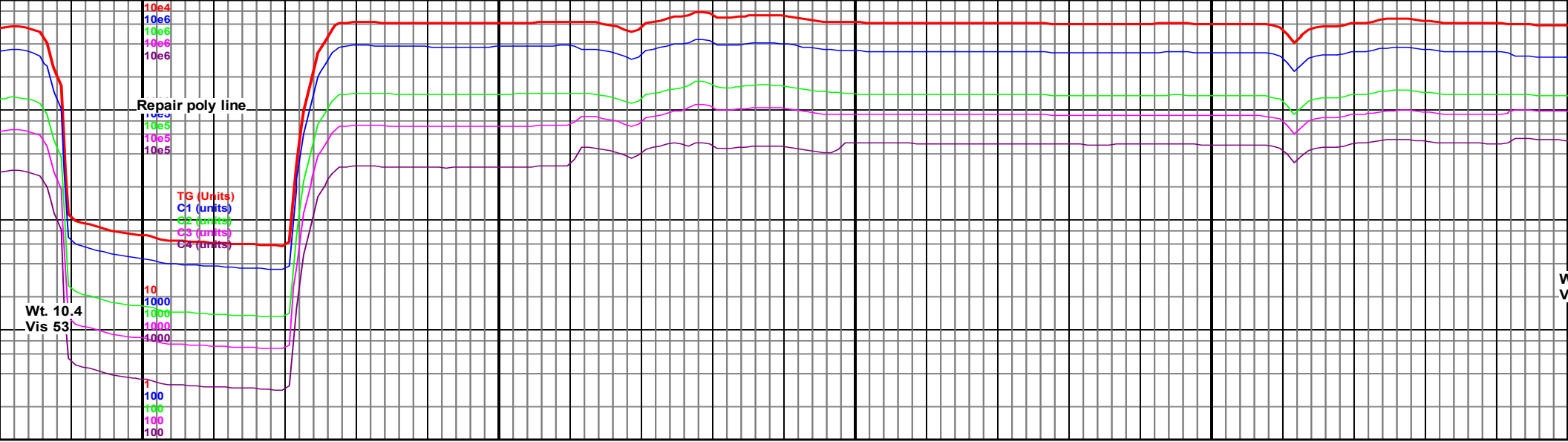
-  Dst
- EVENT**
-  Rft
 -  Sidewall

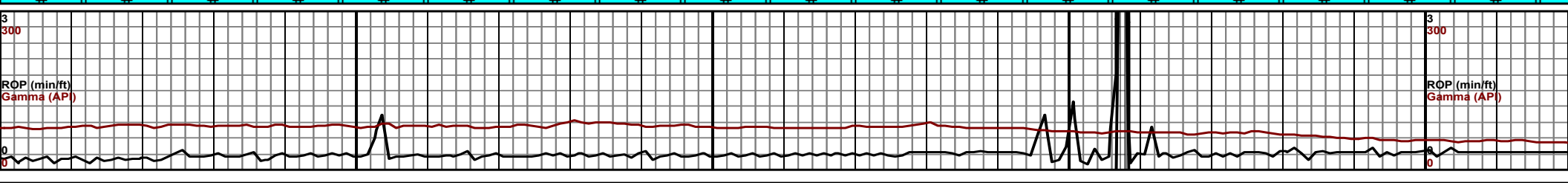
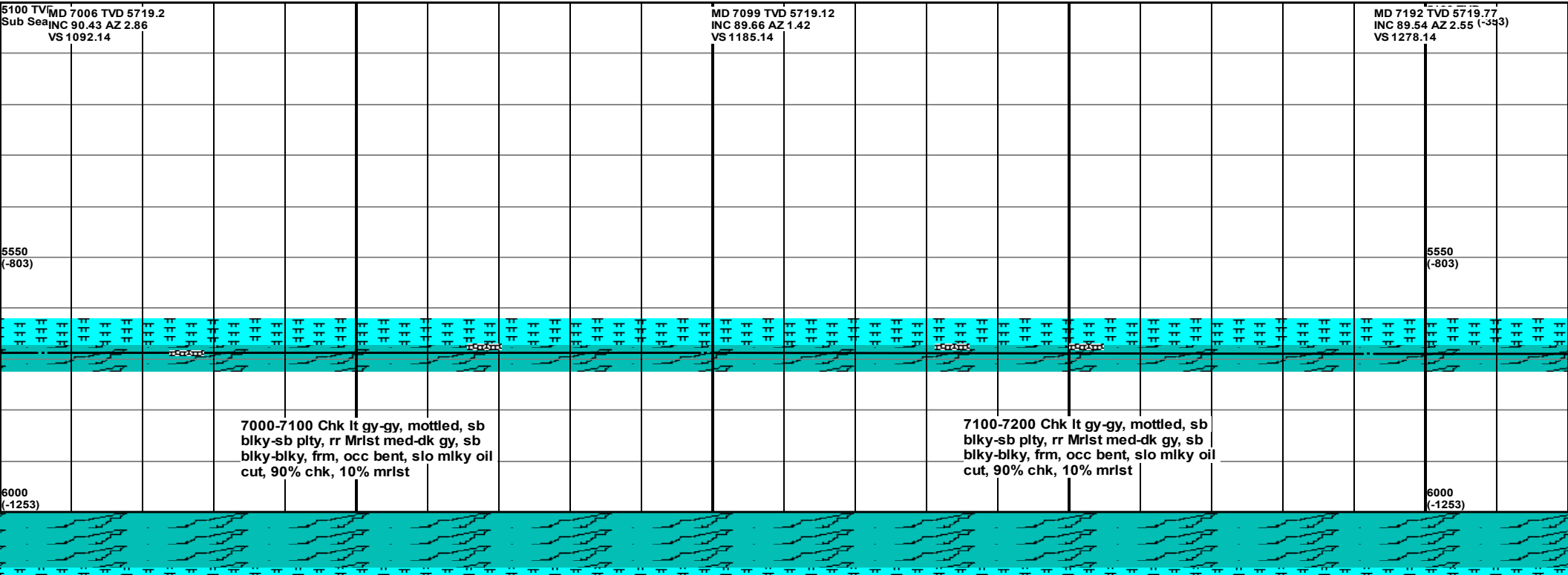
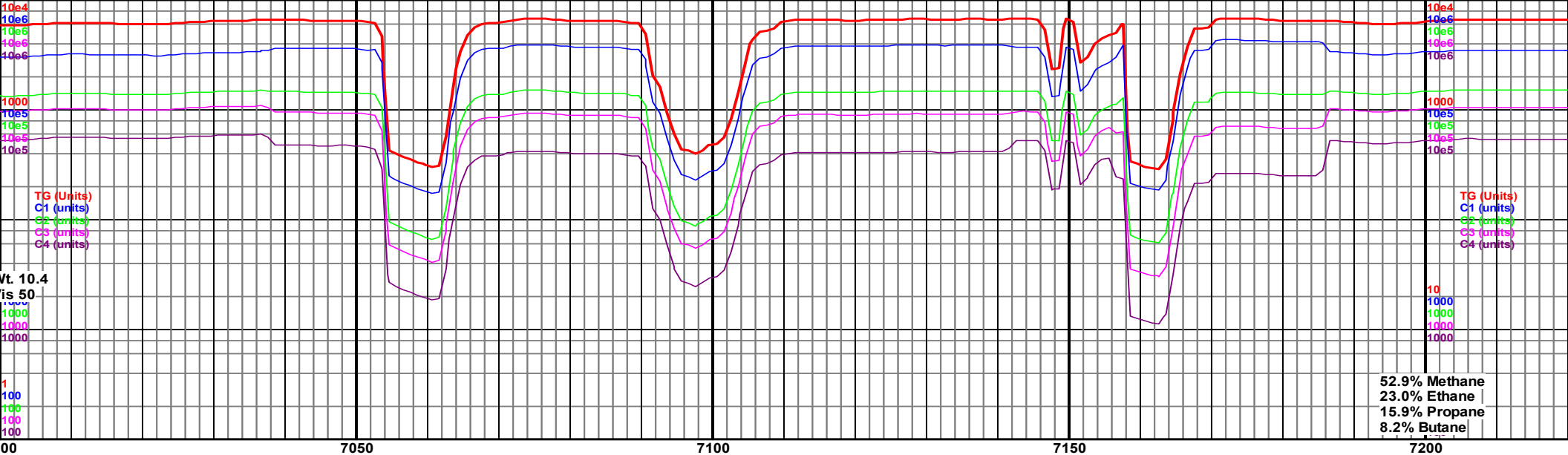


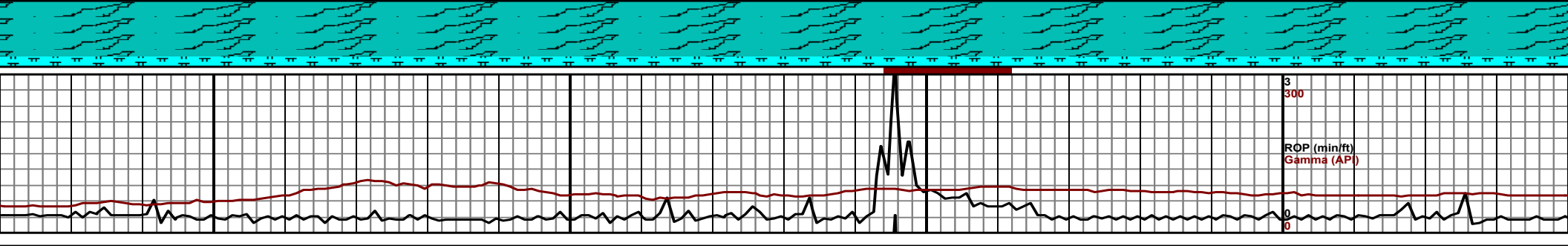
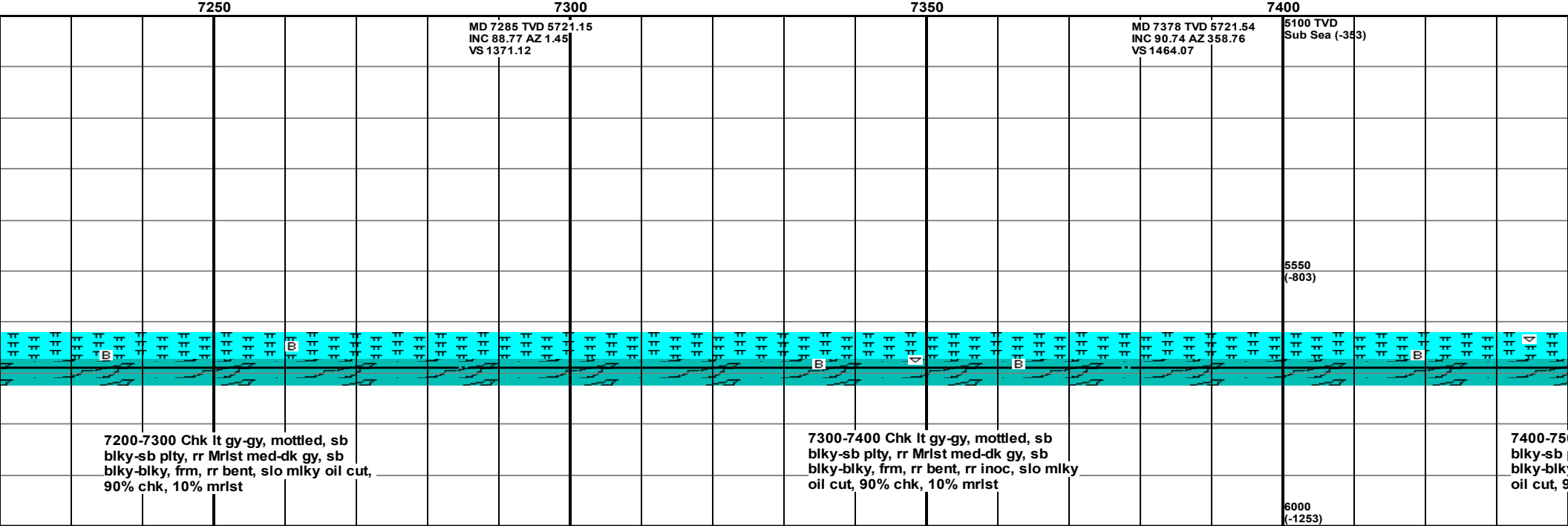
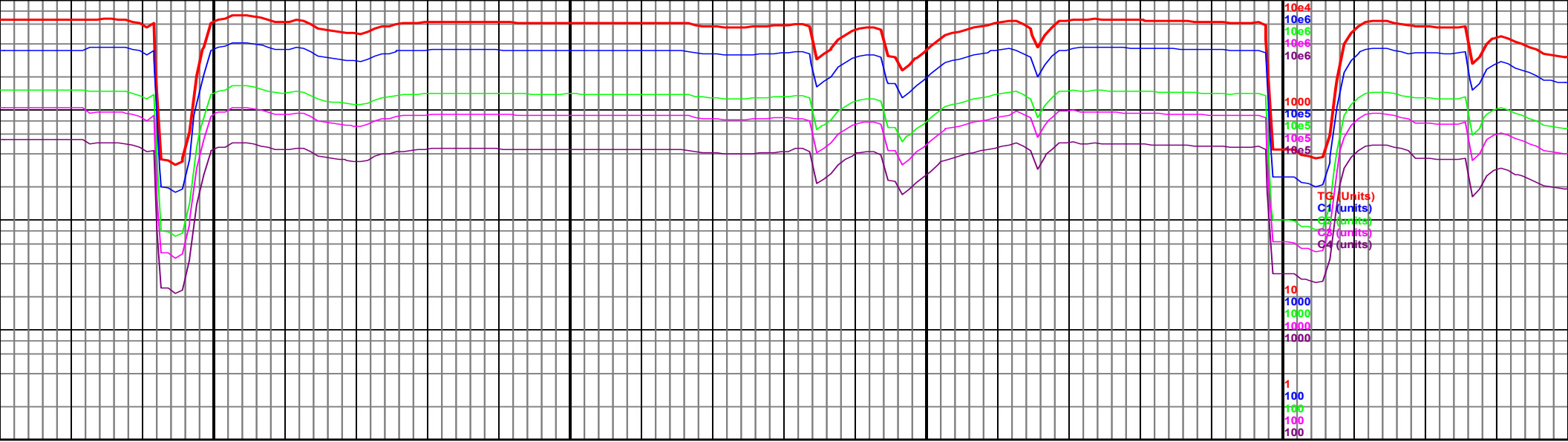


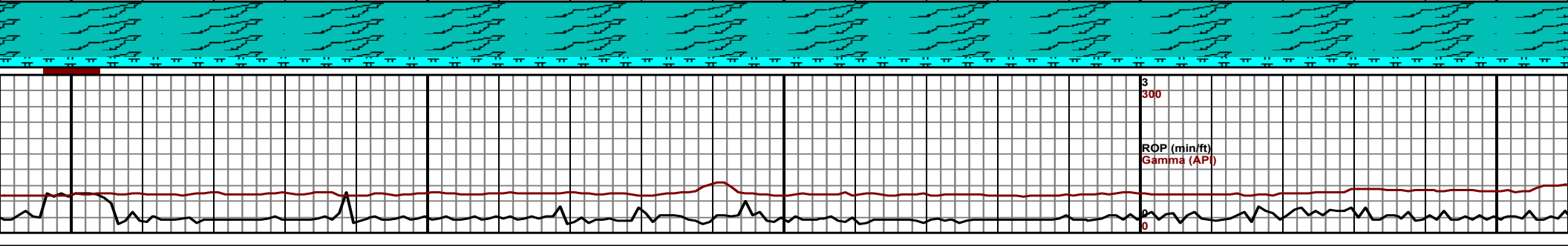
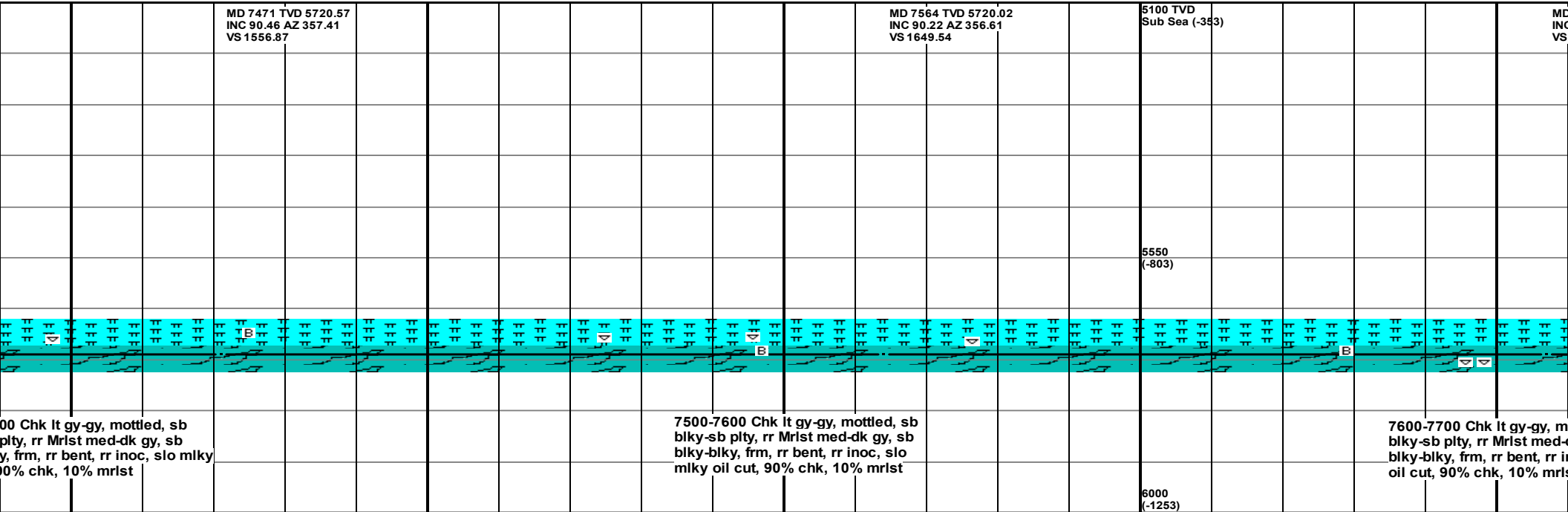
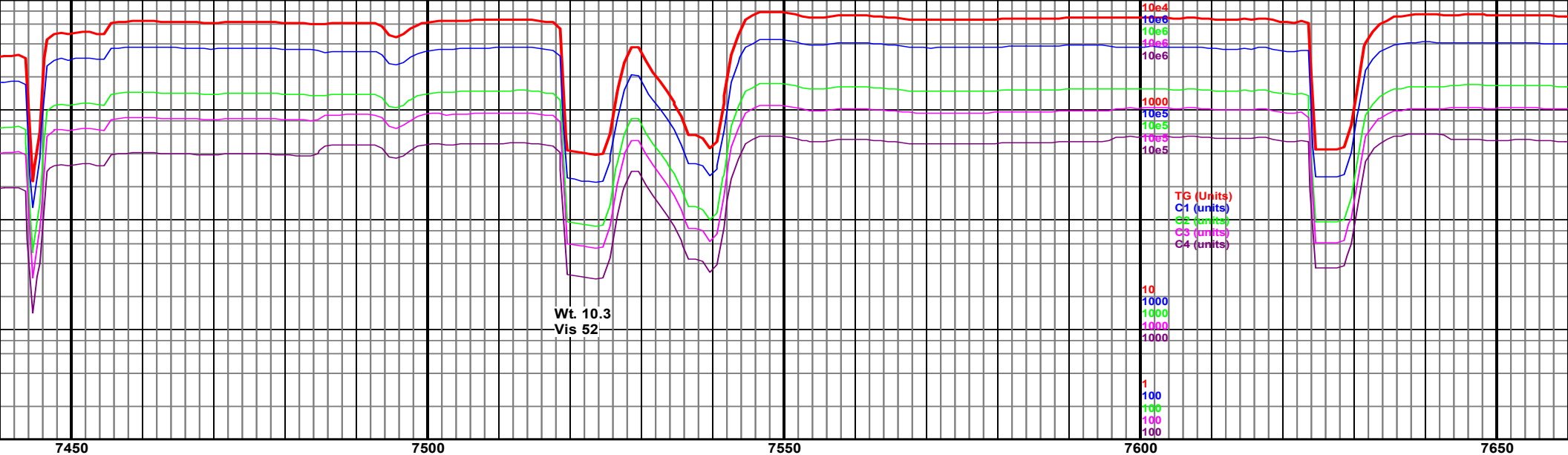


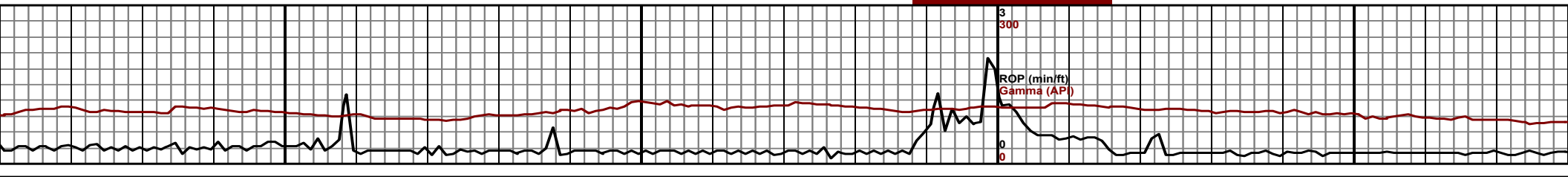
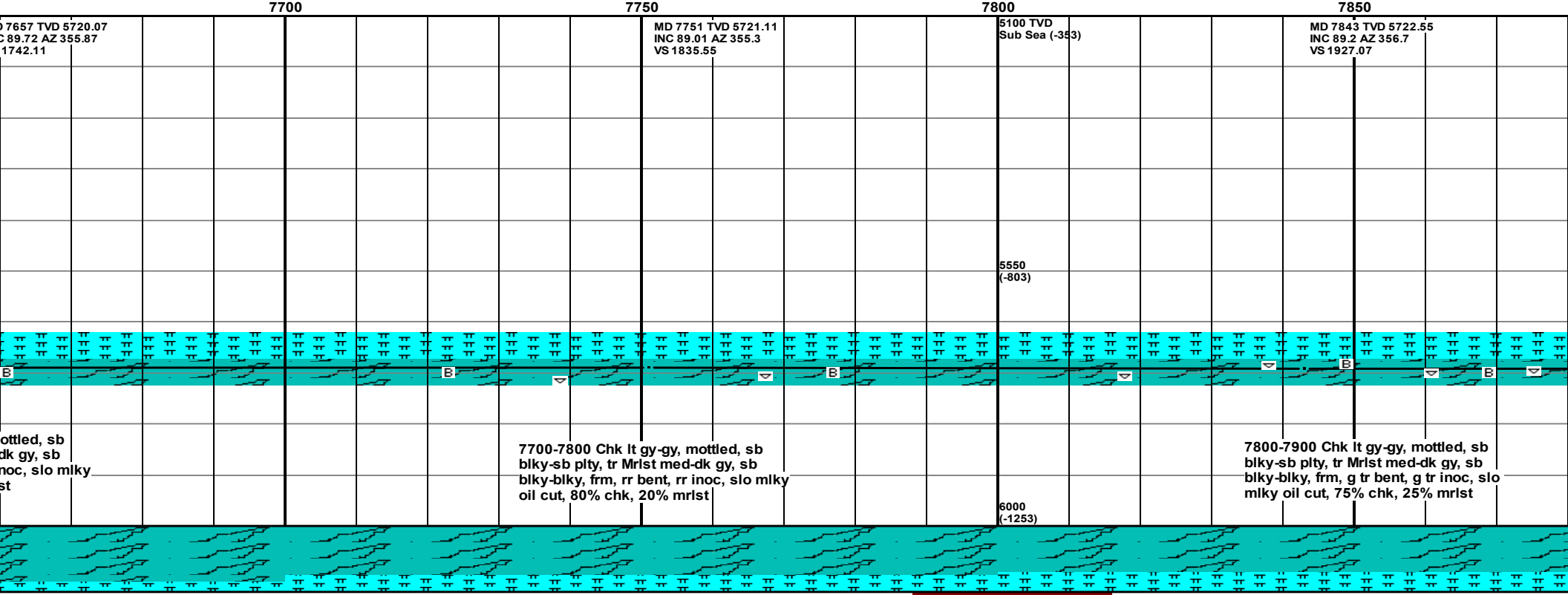
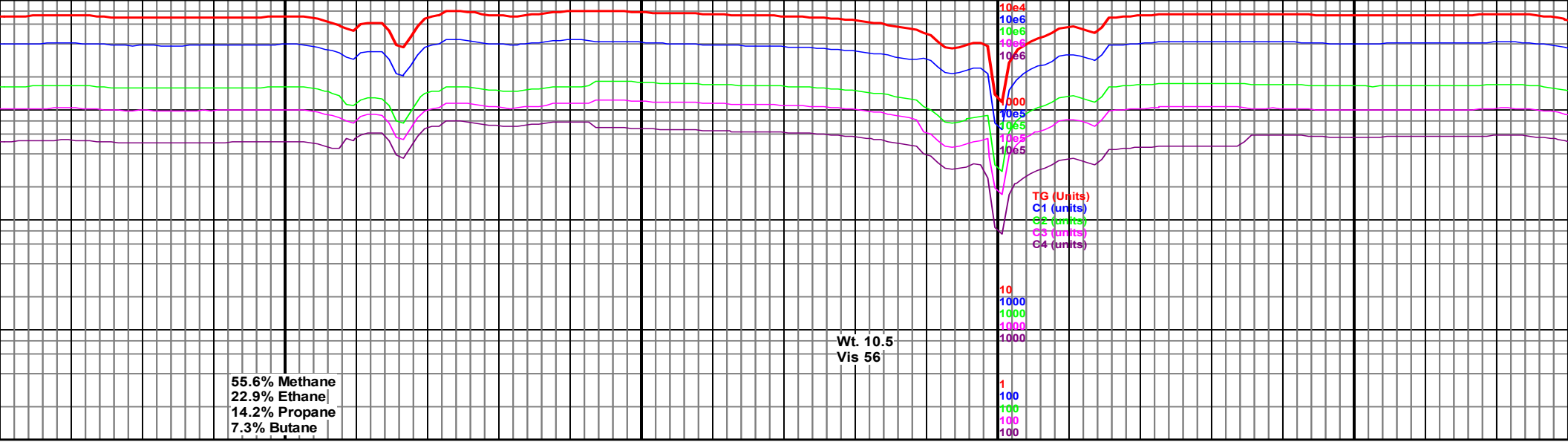


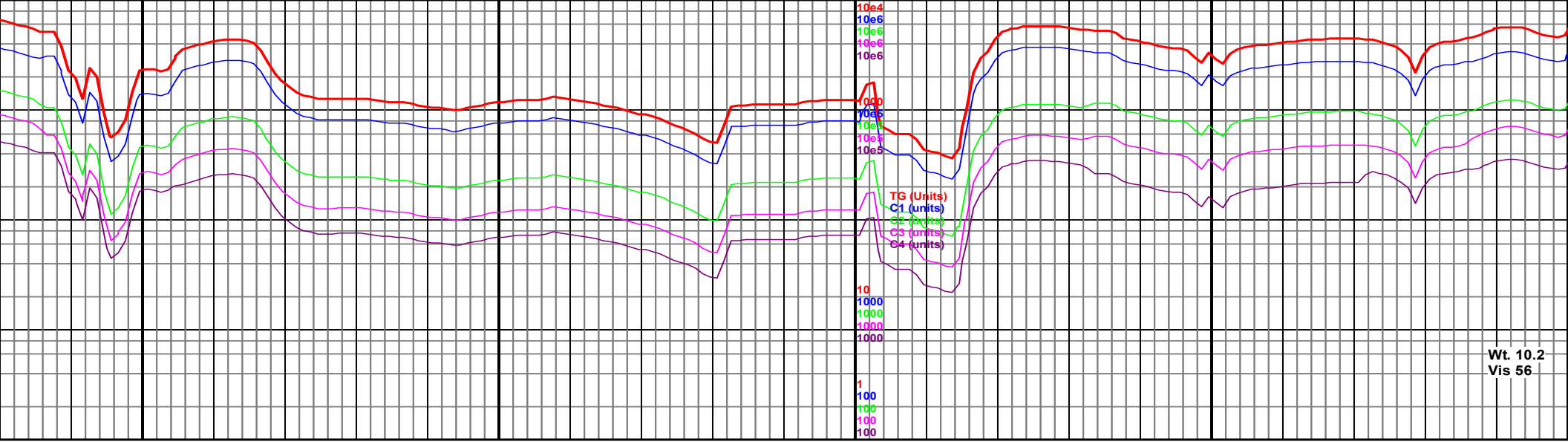




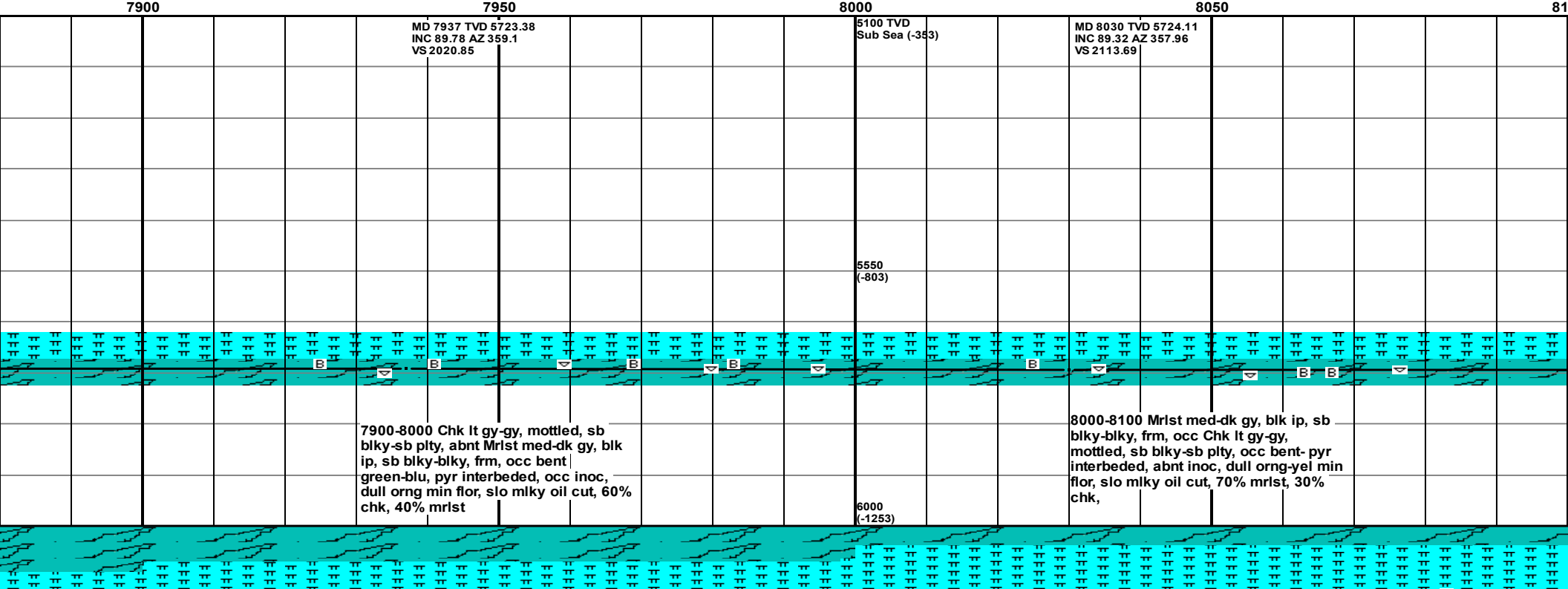






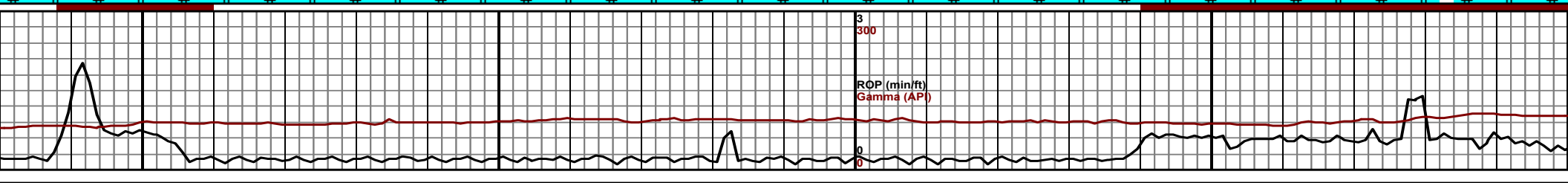


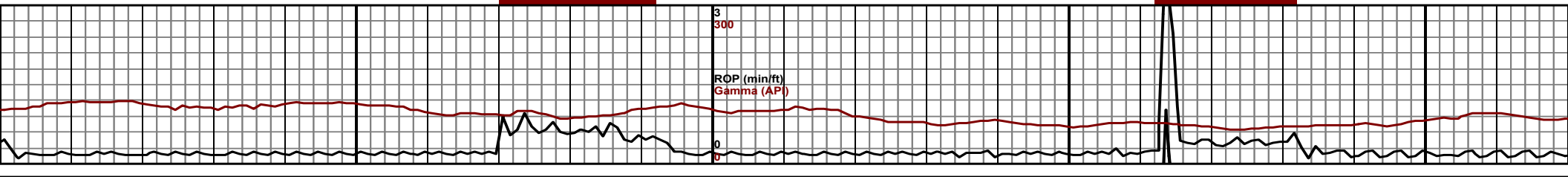
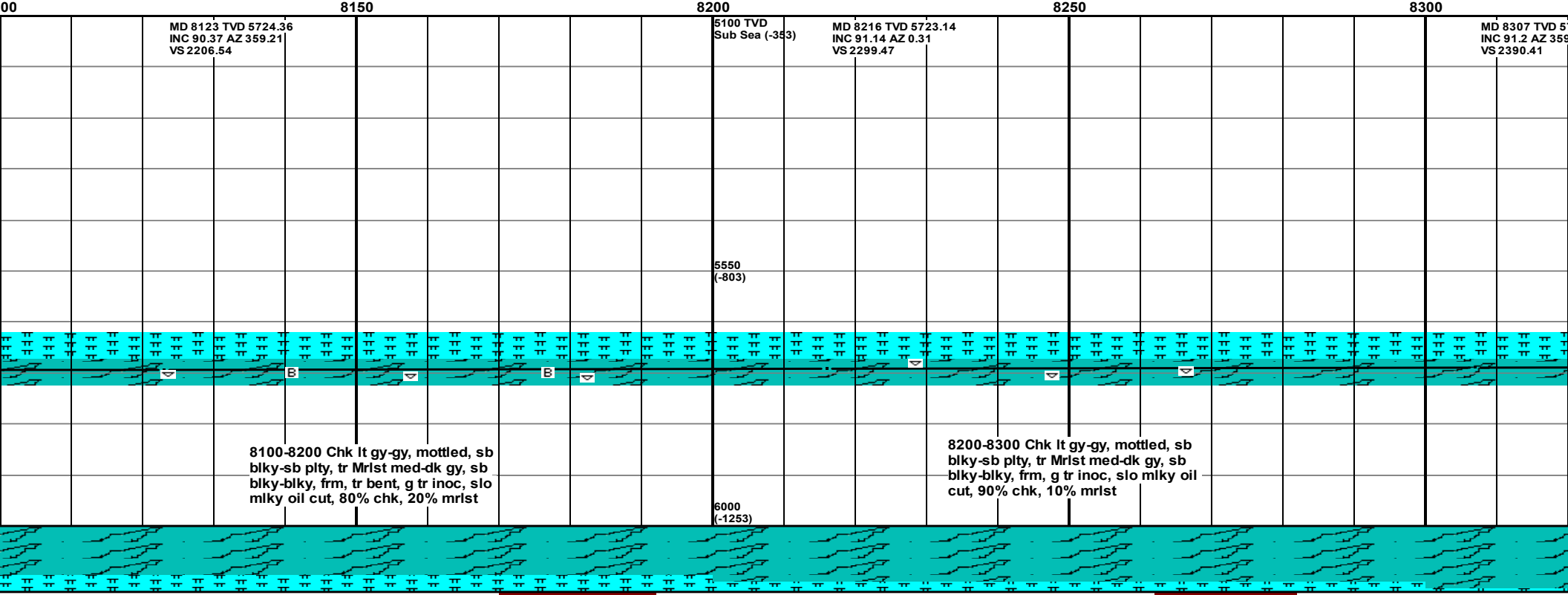
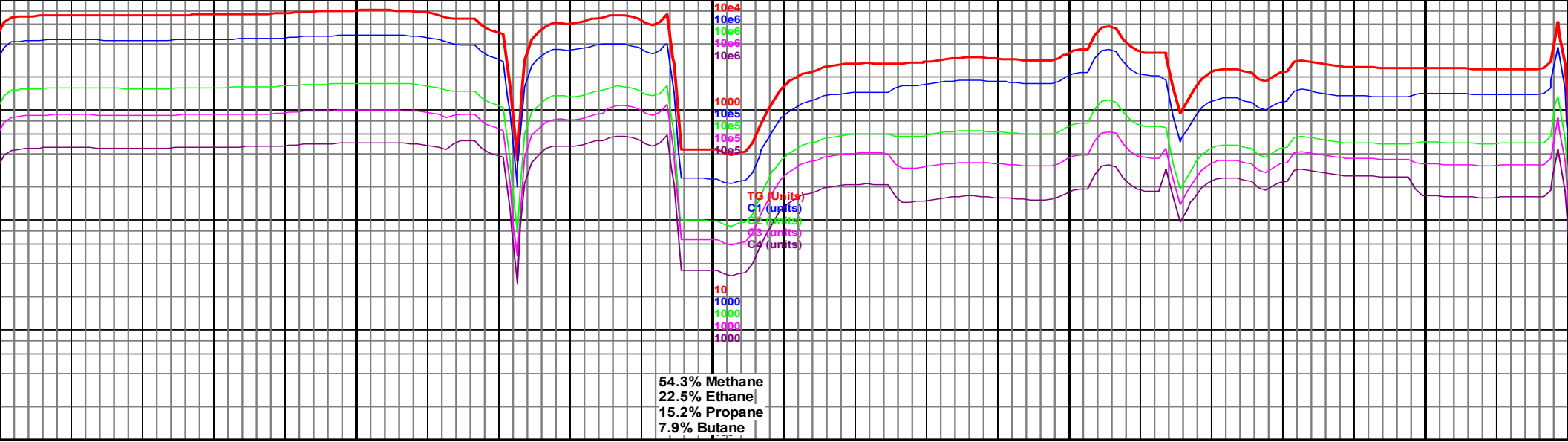
Wt. 10.2
Vis 56

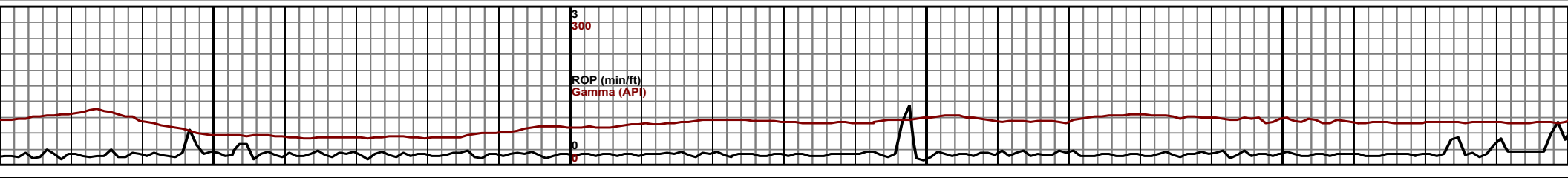
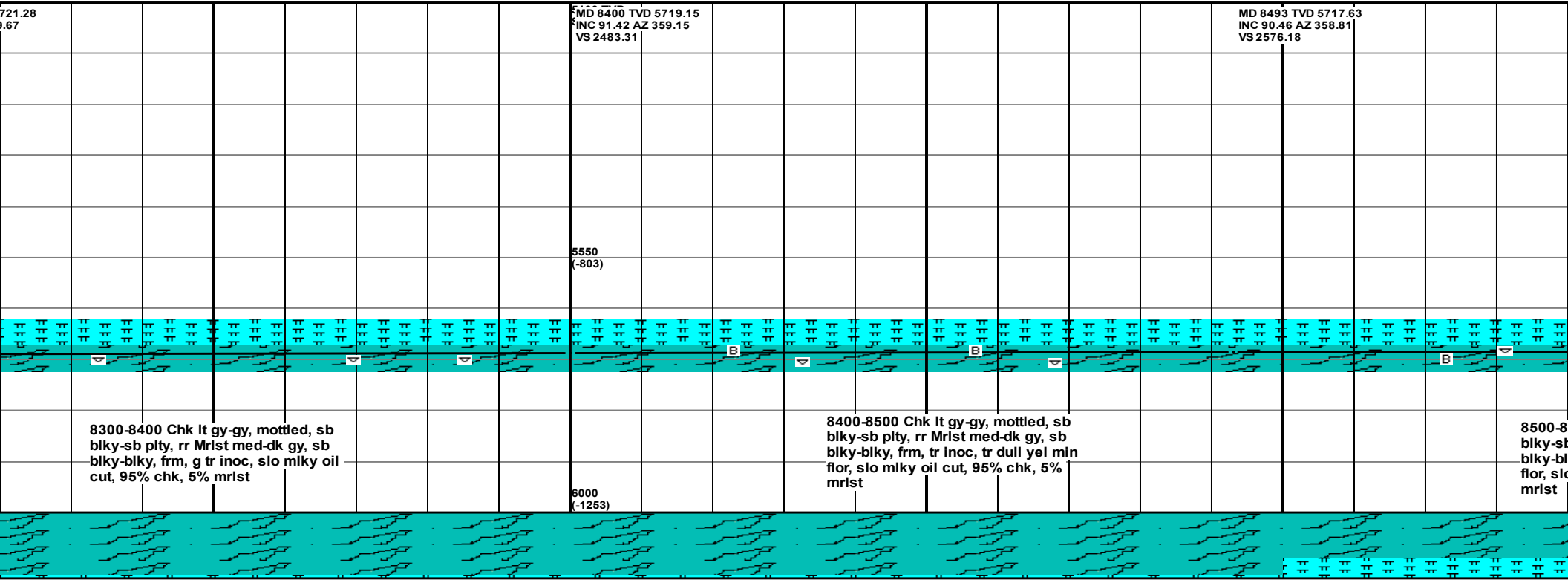
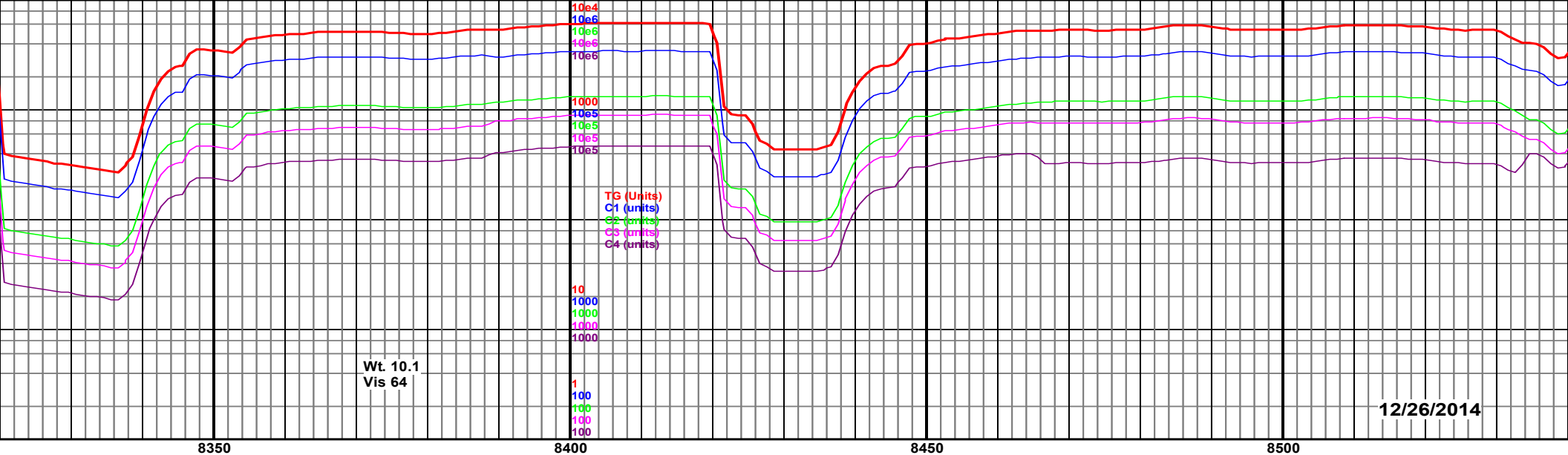


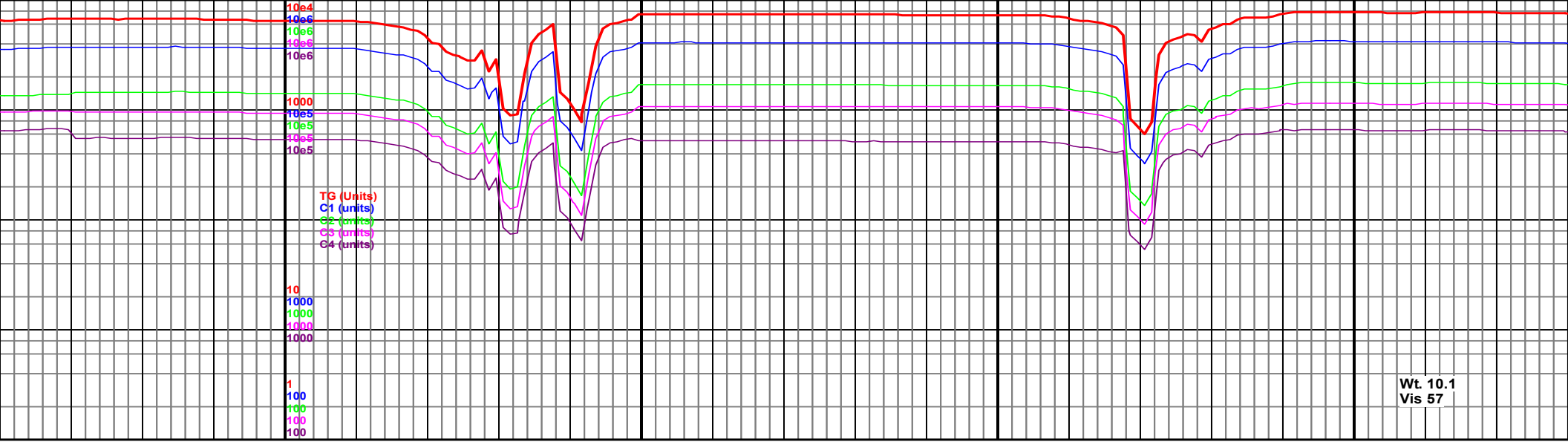
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blky-sb plty, abnt Mrst med-dk gy, blk
ip, sb blky-blky, frm, occ bent
green-blu, pyr interbeded, occ inoc,
dull orng min flor, slo mlky oil cut, 60%
chk, 40% mrst

8000-8100 Mrst med-dk gy, blk ip, sb
blky-blky, frm, occ Chk lt gy-gy,
mottled, sb blky-sb plty, occ bent- pyr
interbeded, abnt inoc, dull orng-yel min
flor, slo mlky oil cut, 70% mrst, 30%
chk,

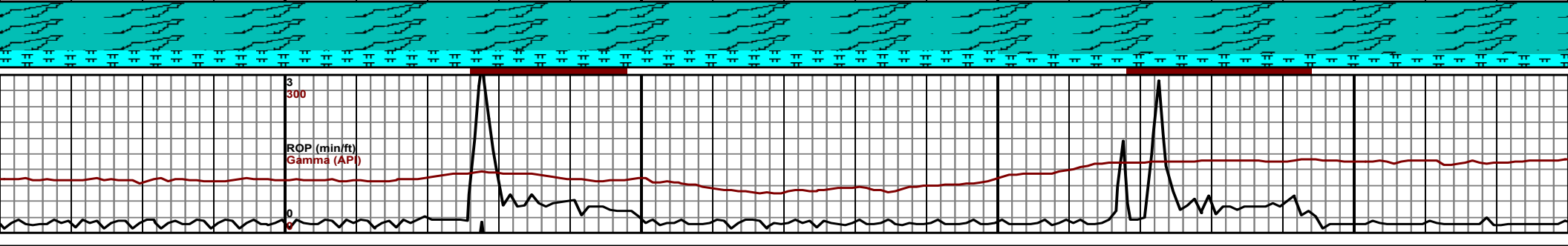


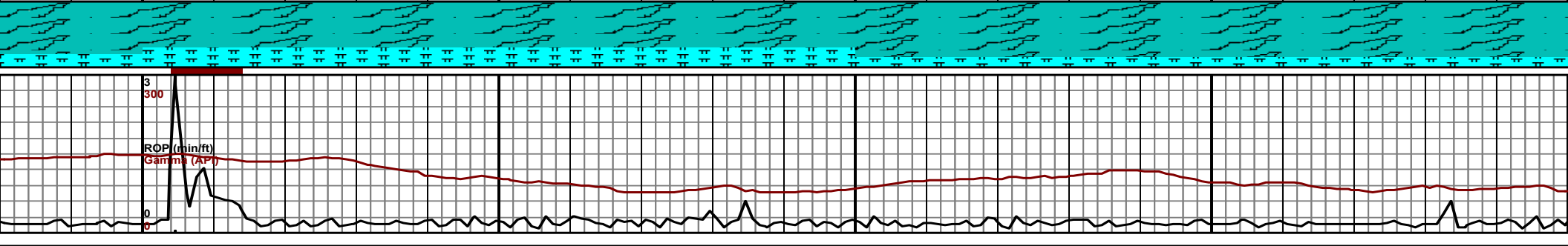
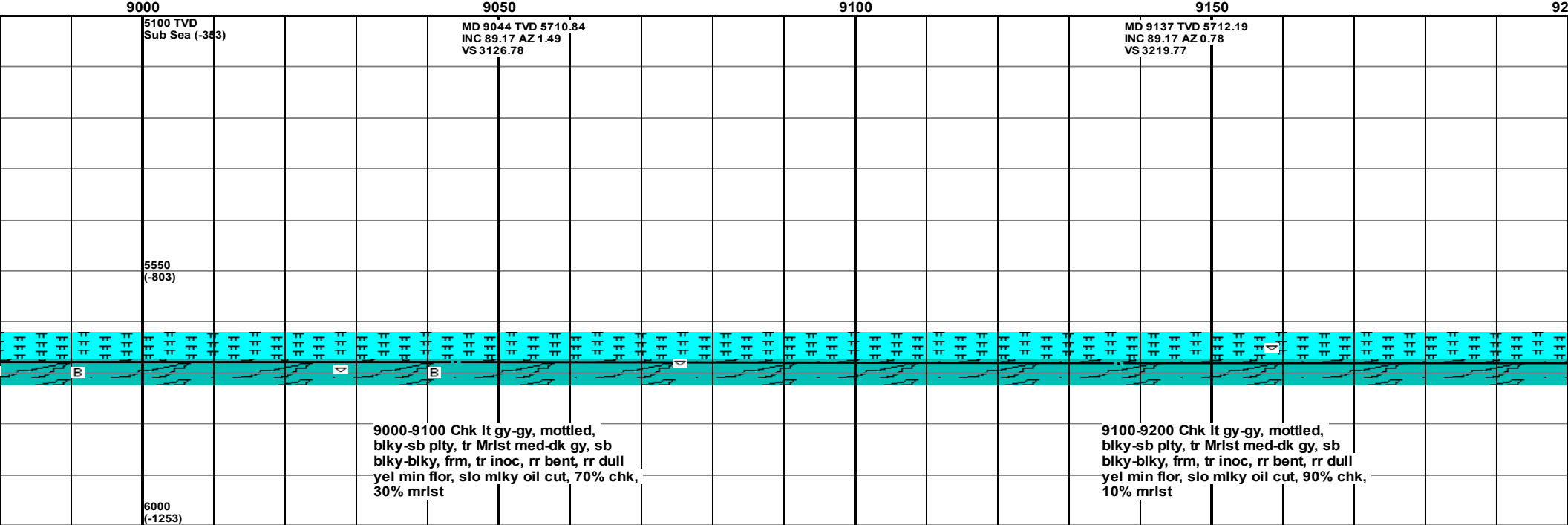
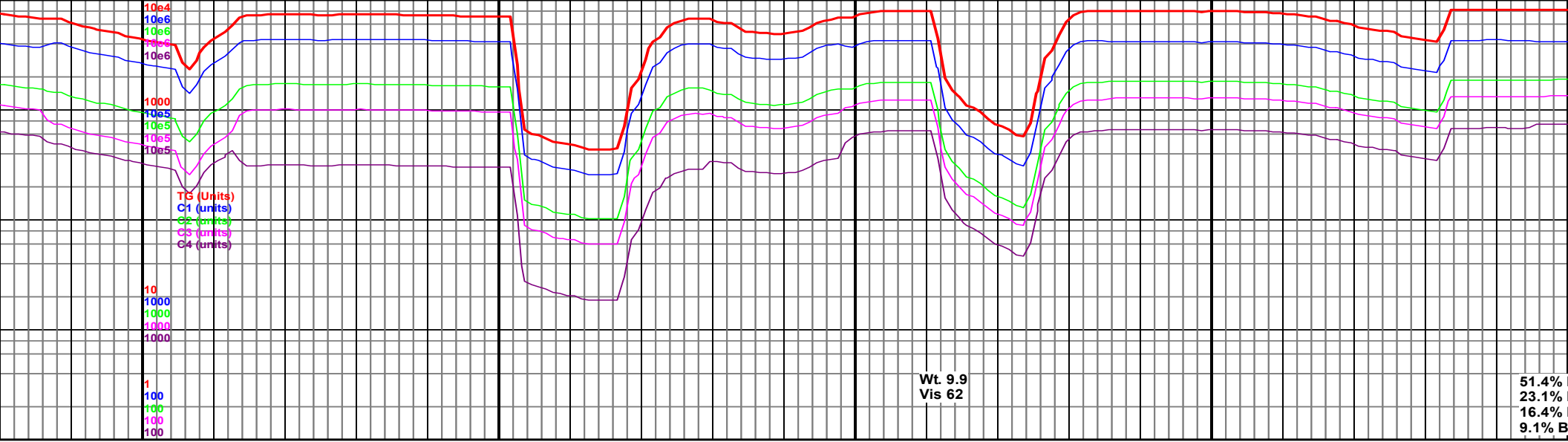


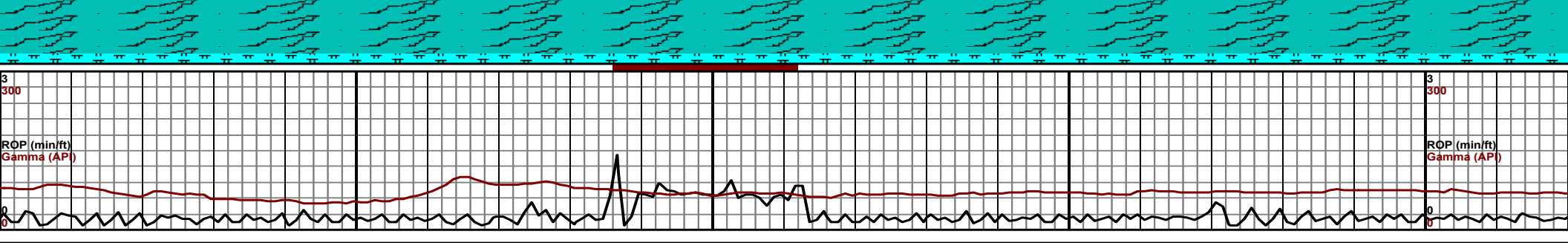
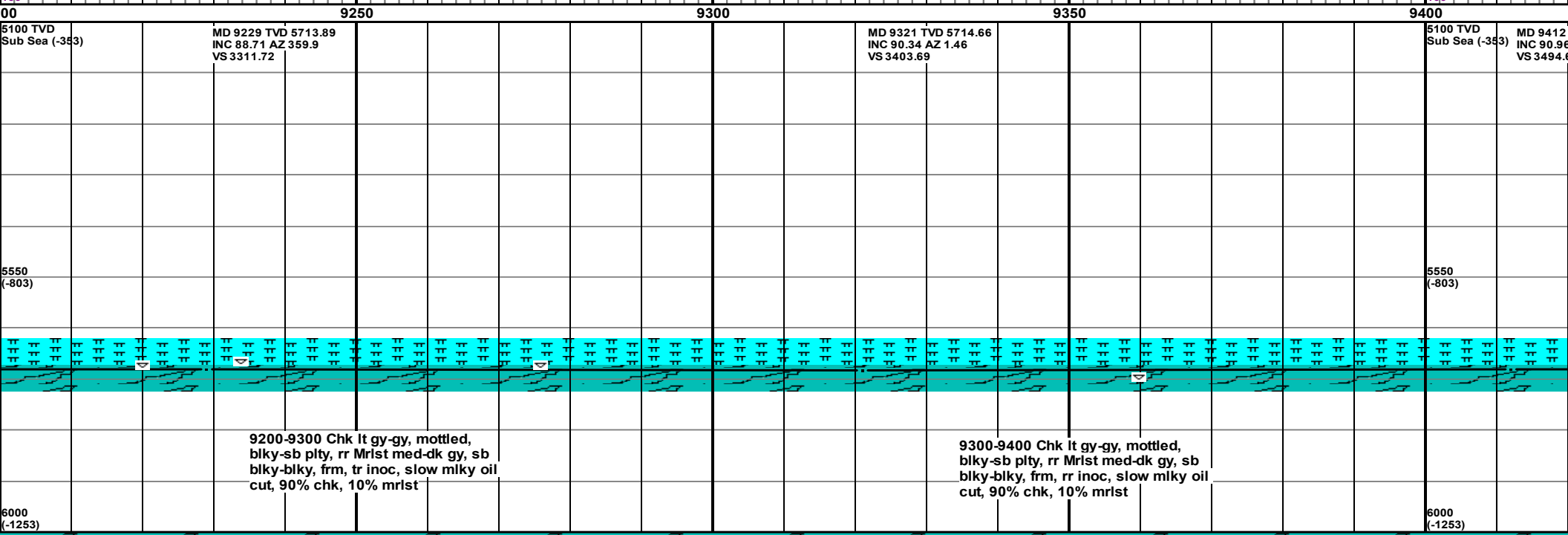
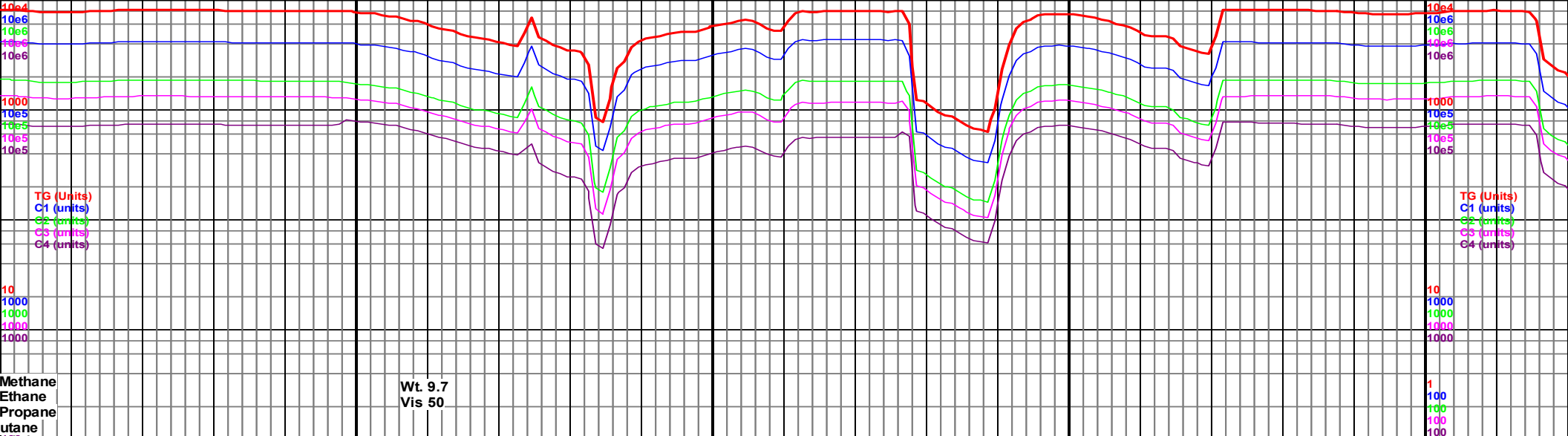


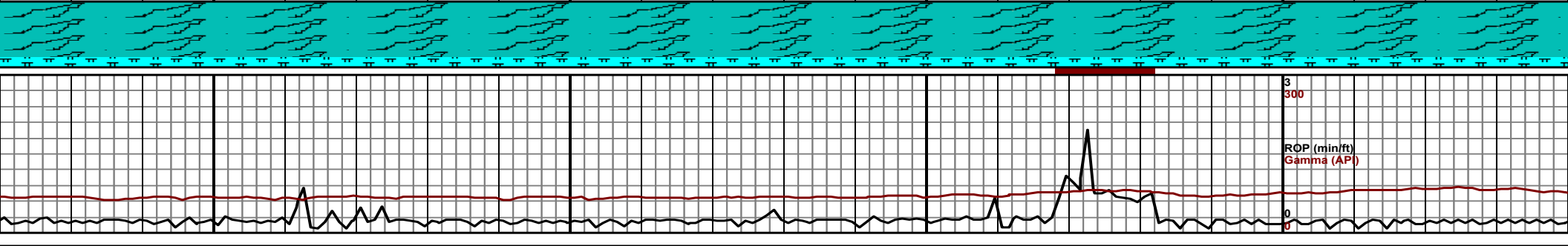
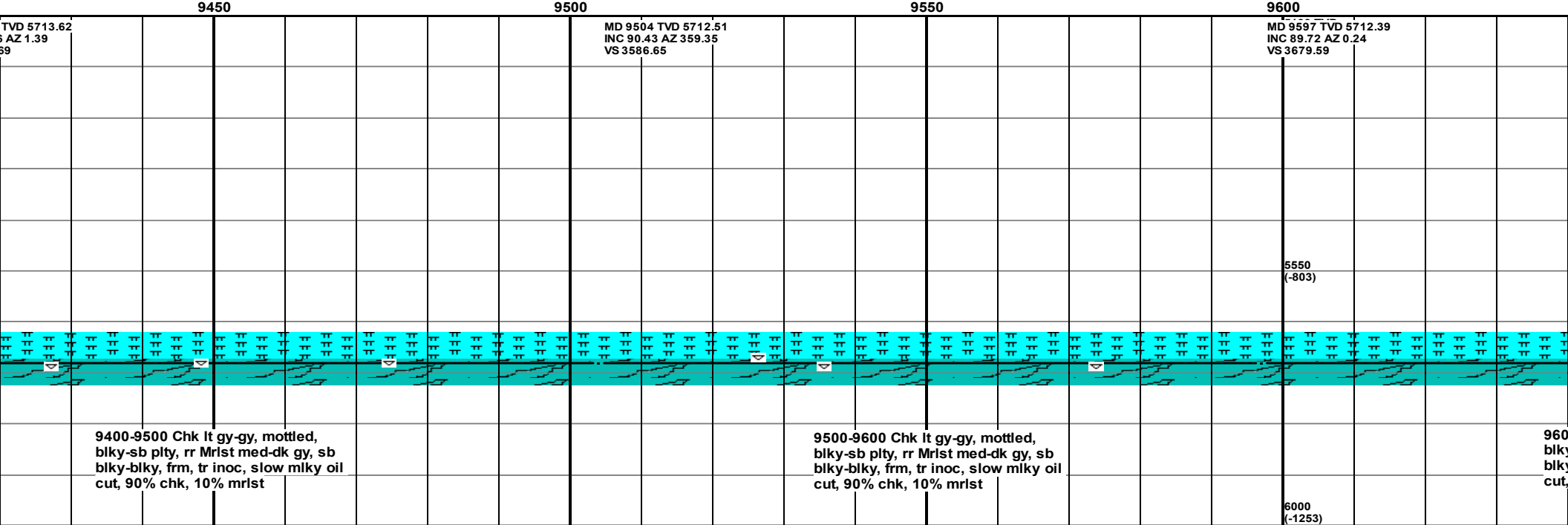
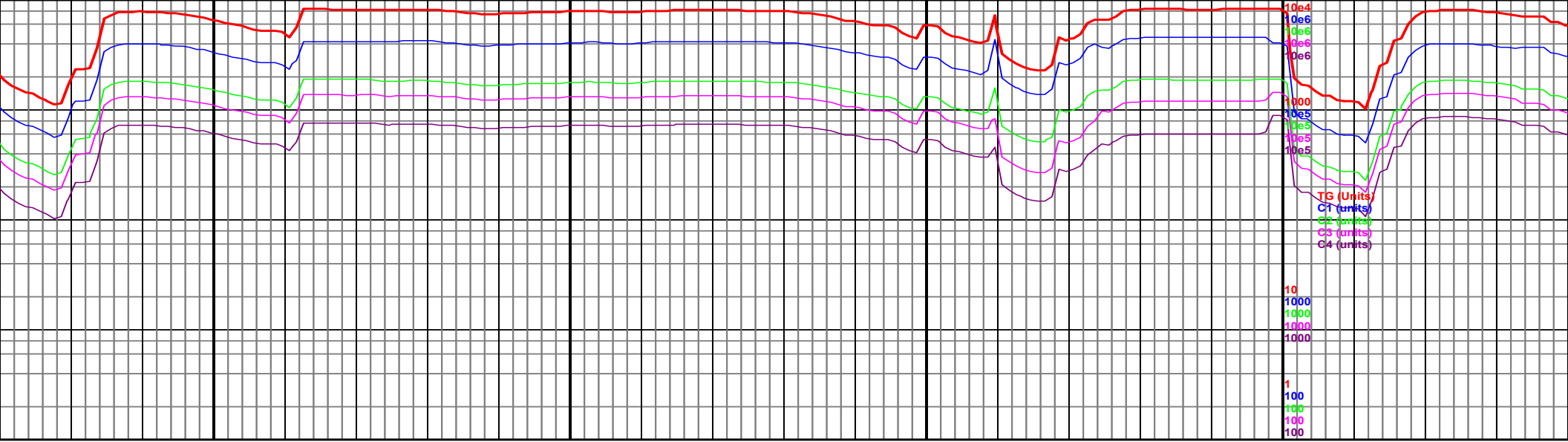


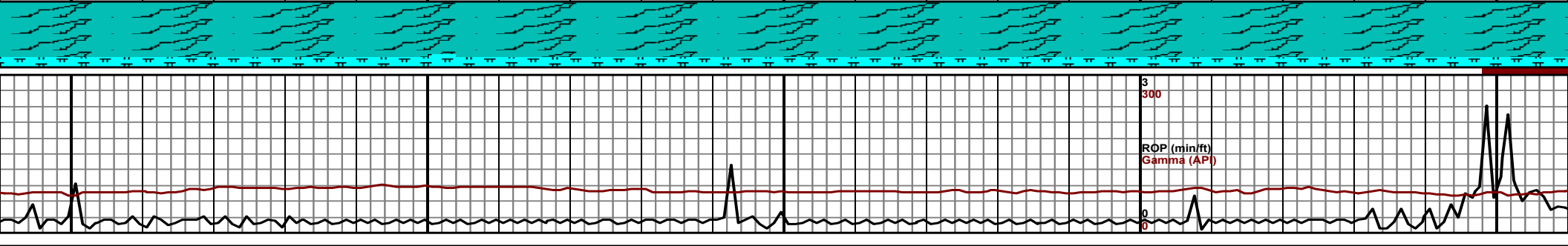
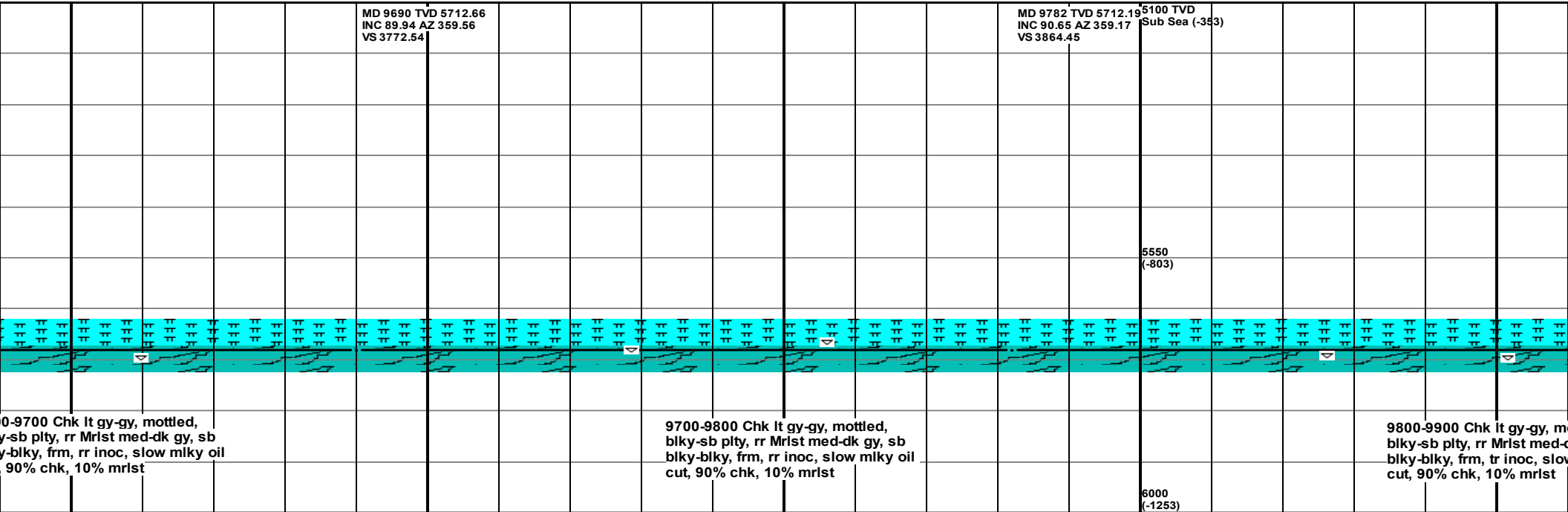
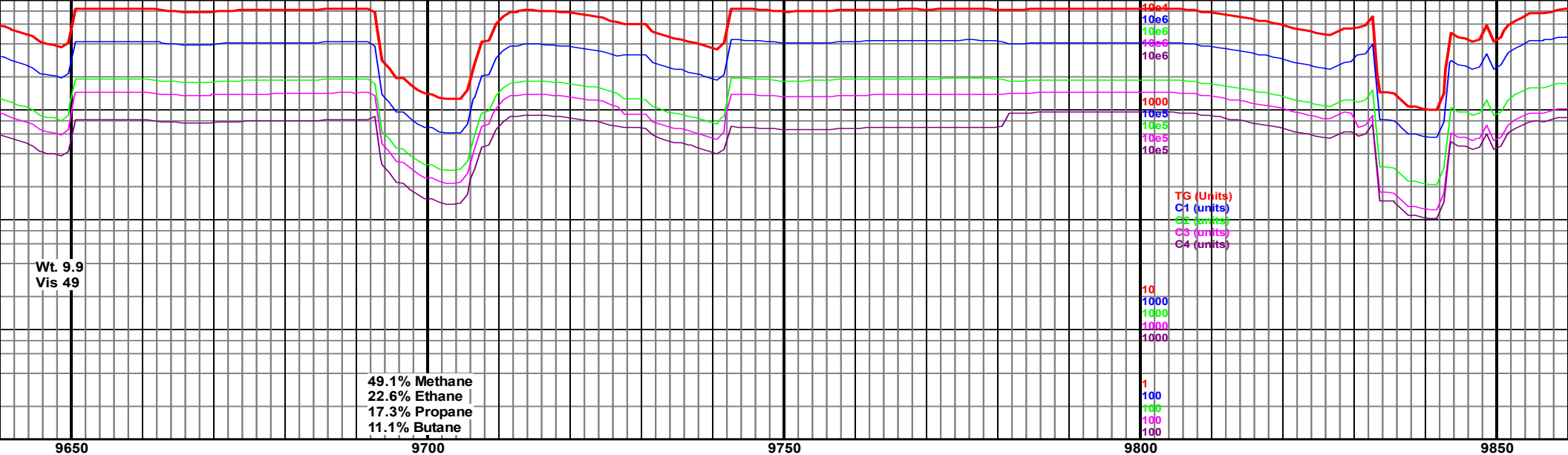
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<p>8800-8900 Chk lt gy-gy, mottled, blky-sb plty, occ Mrlst med-dk gy, sb blky-blky, frm, tr inoc, tr bent, rr dull yel min flor, slo mlky oil cut, 75% chk, 25% mrlst</p>																	

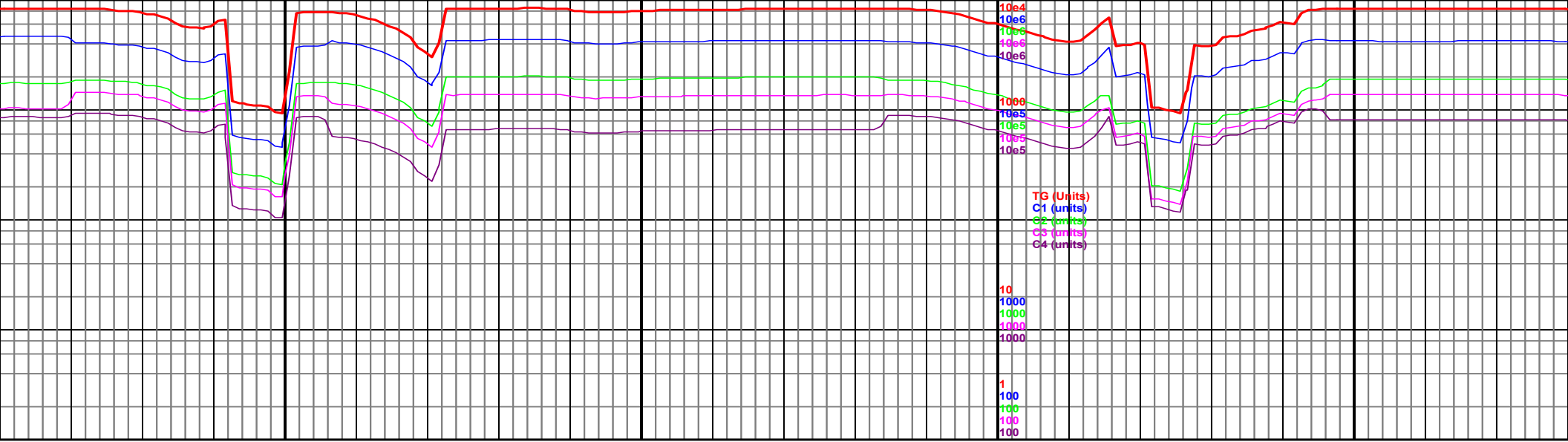




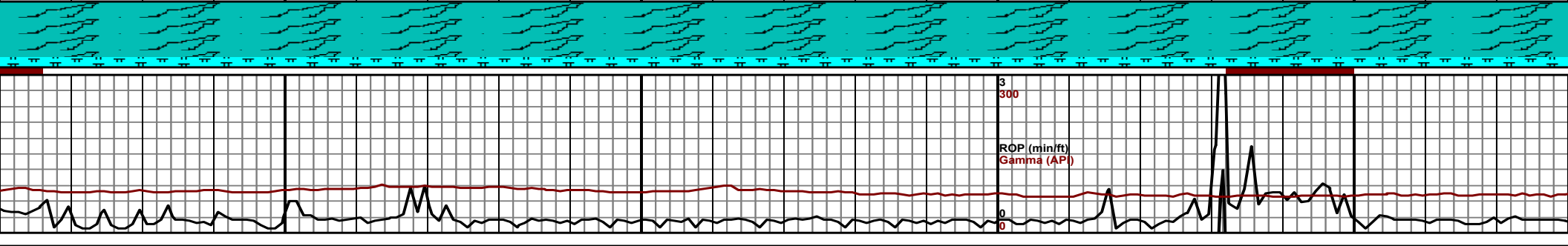


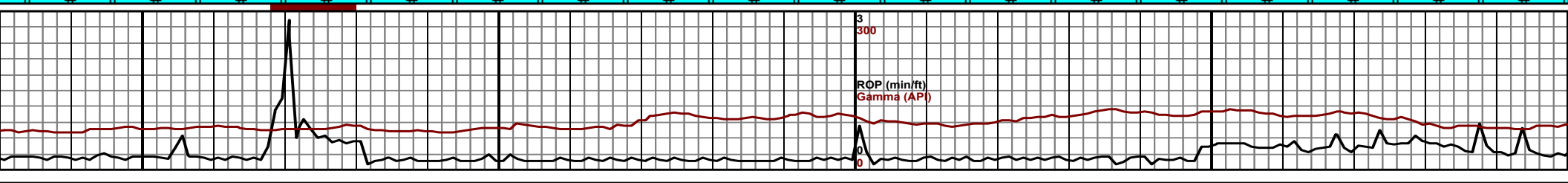
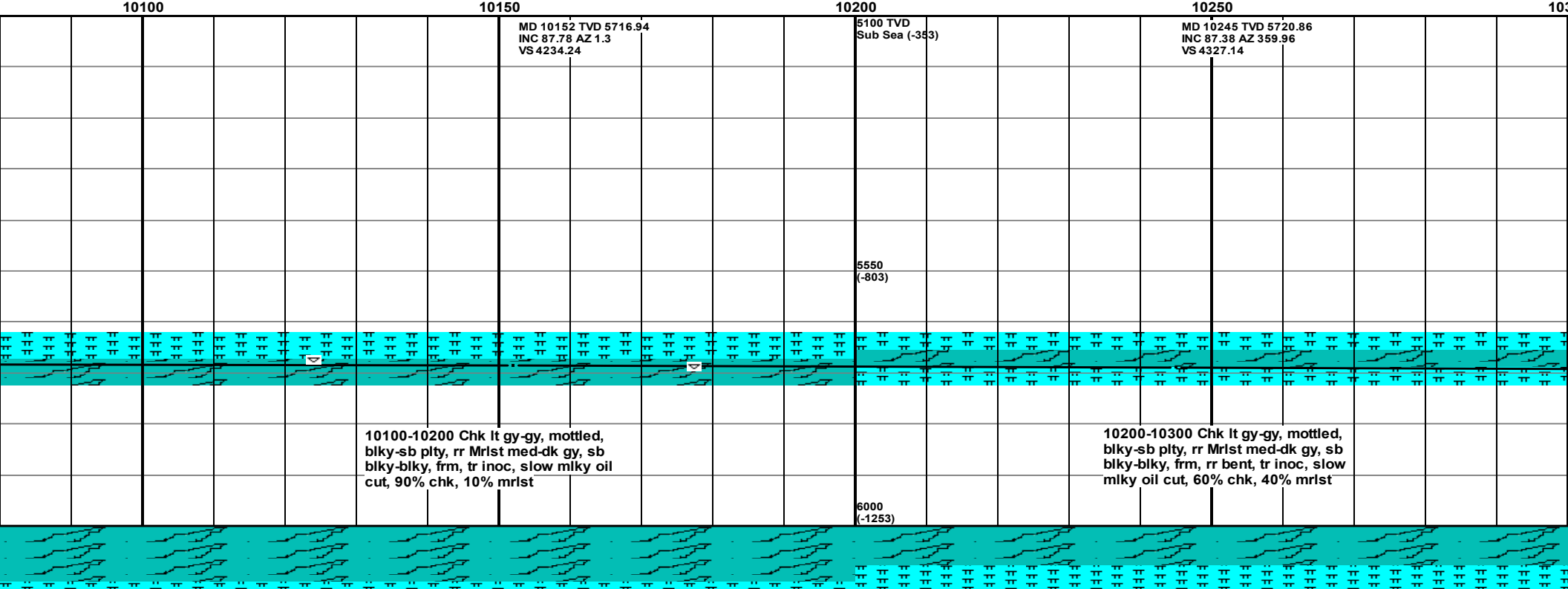
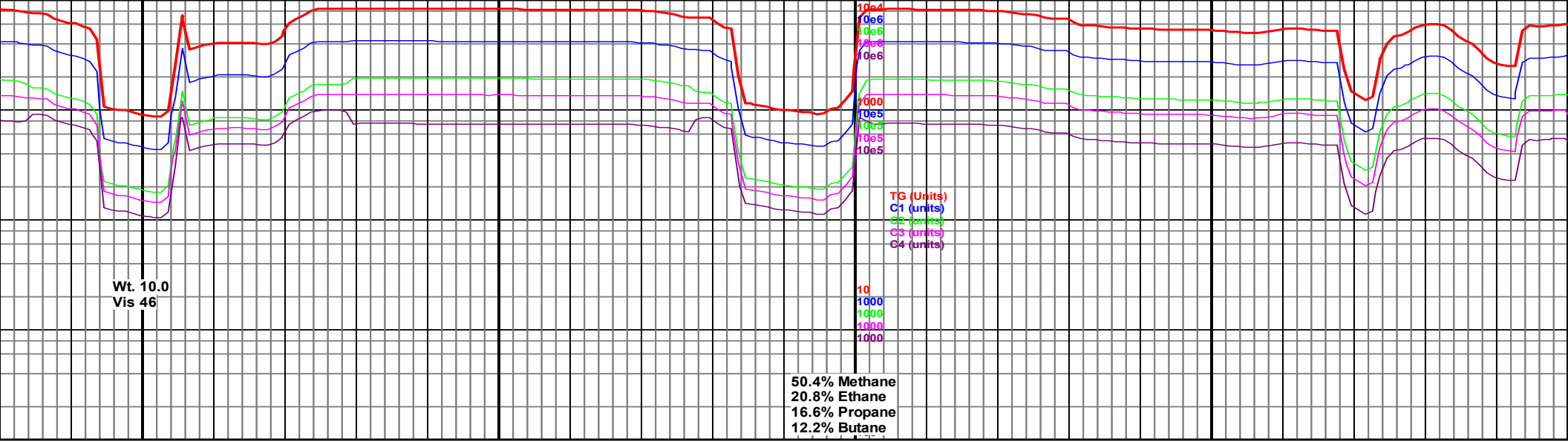


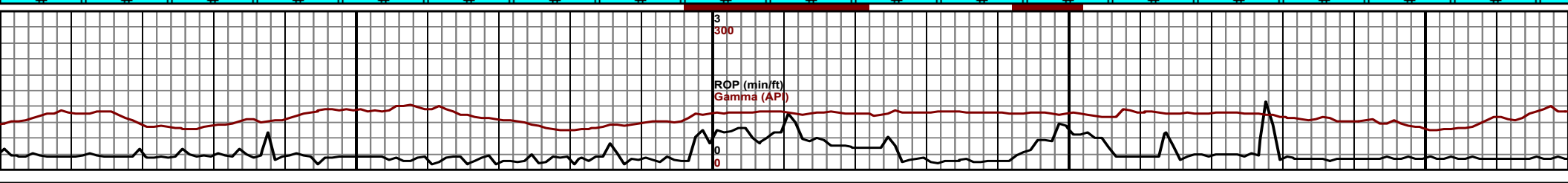
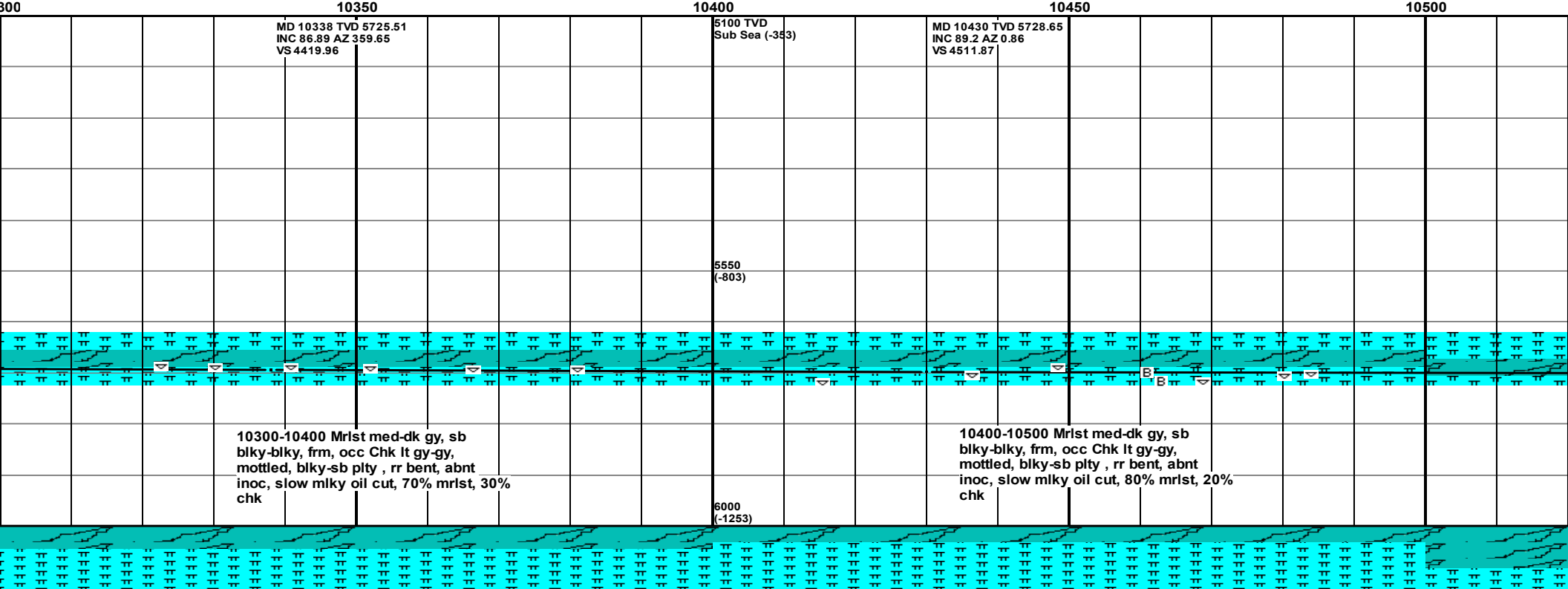
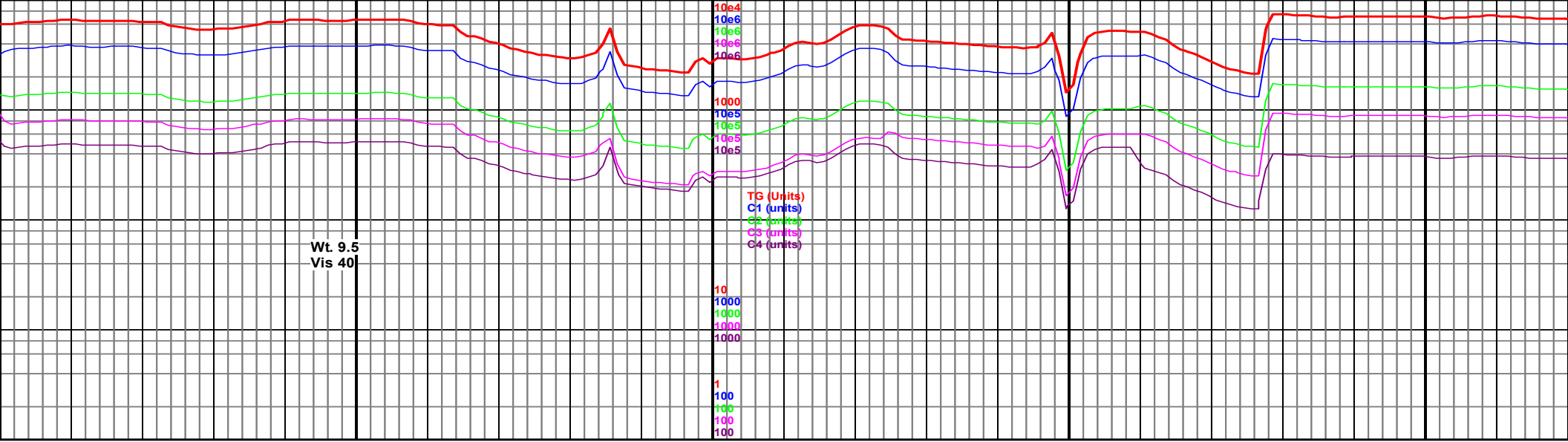


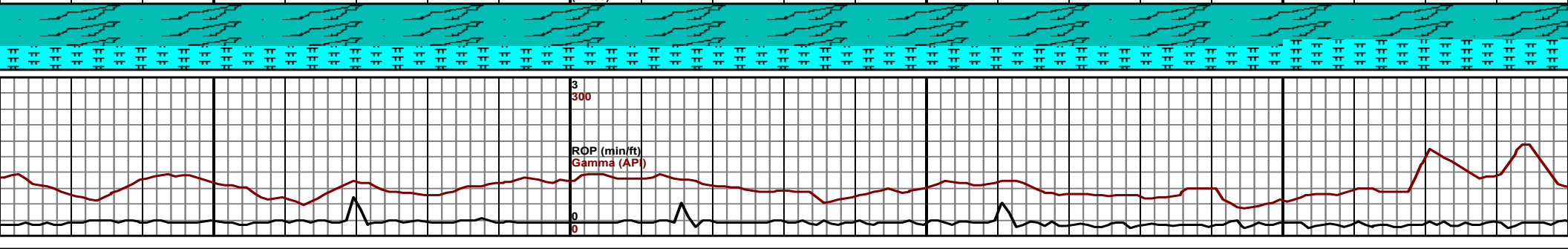
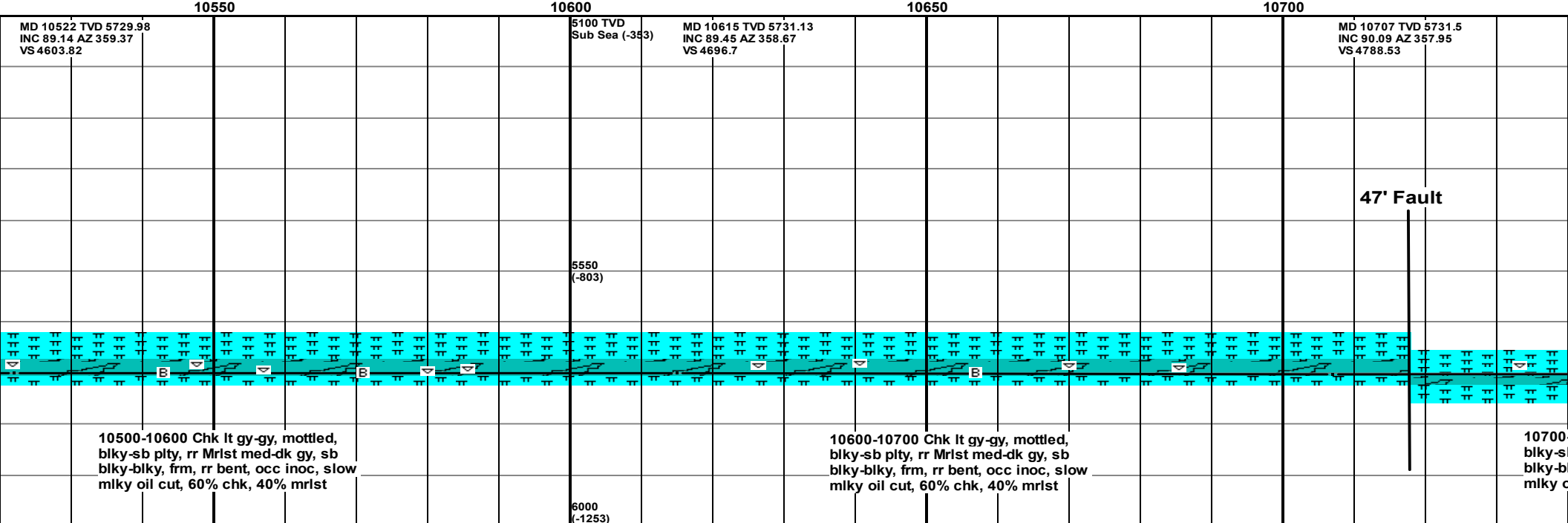
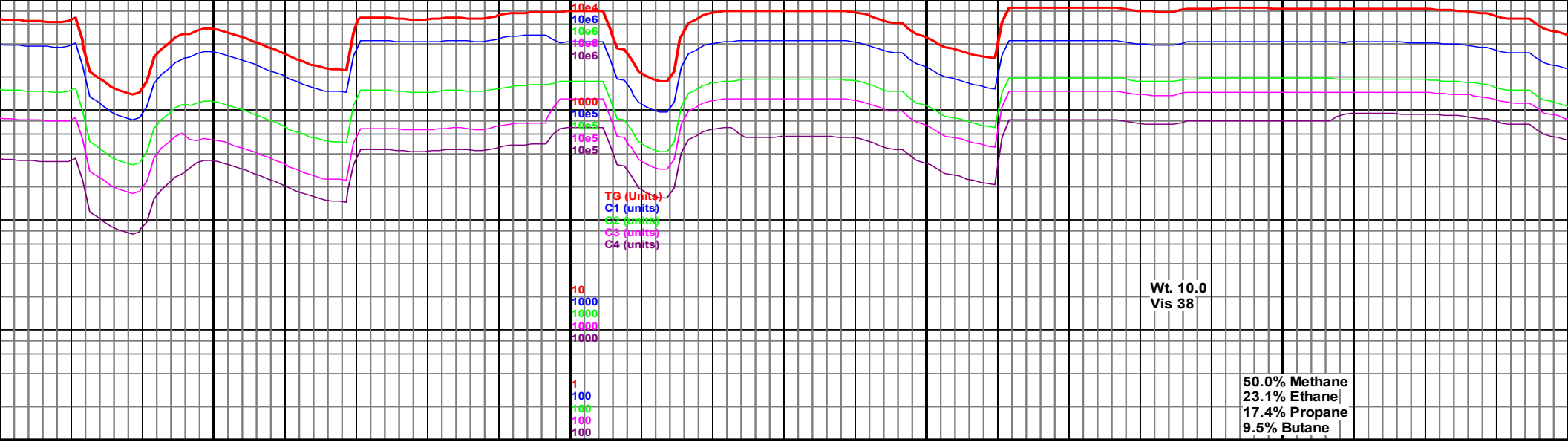


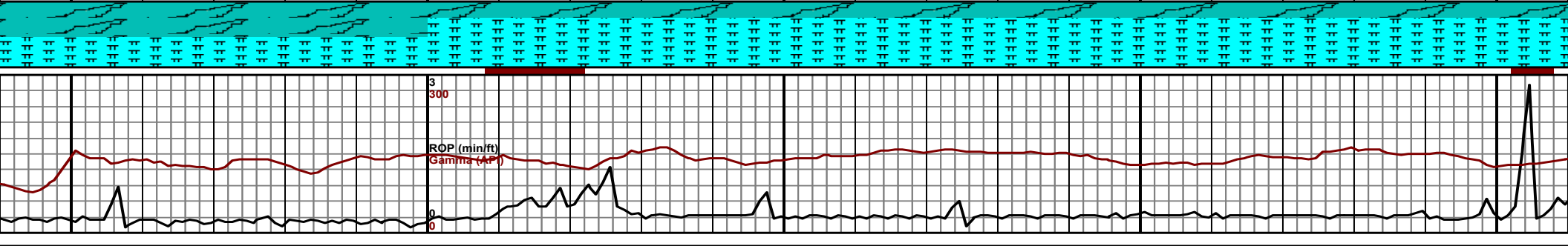
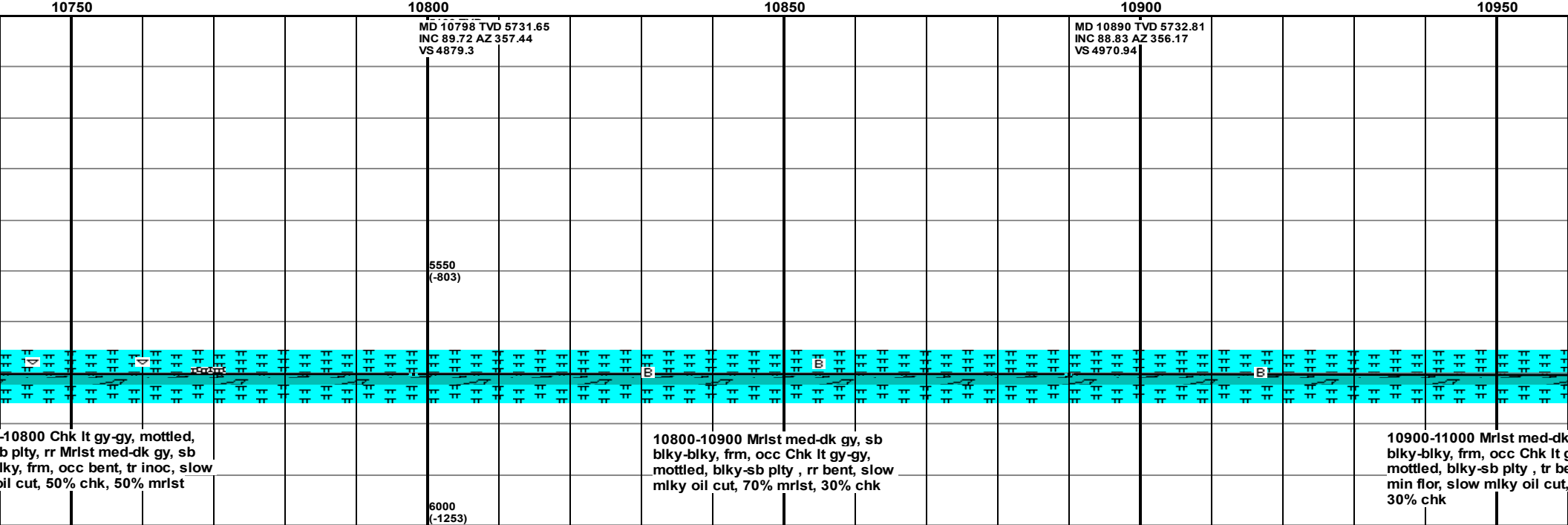
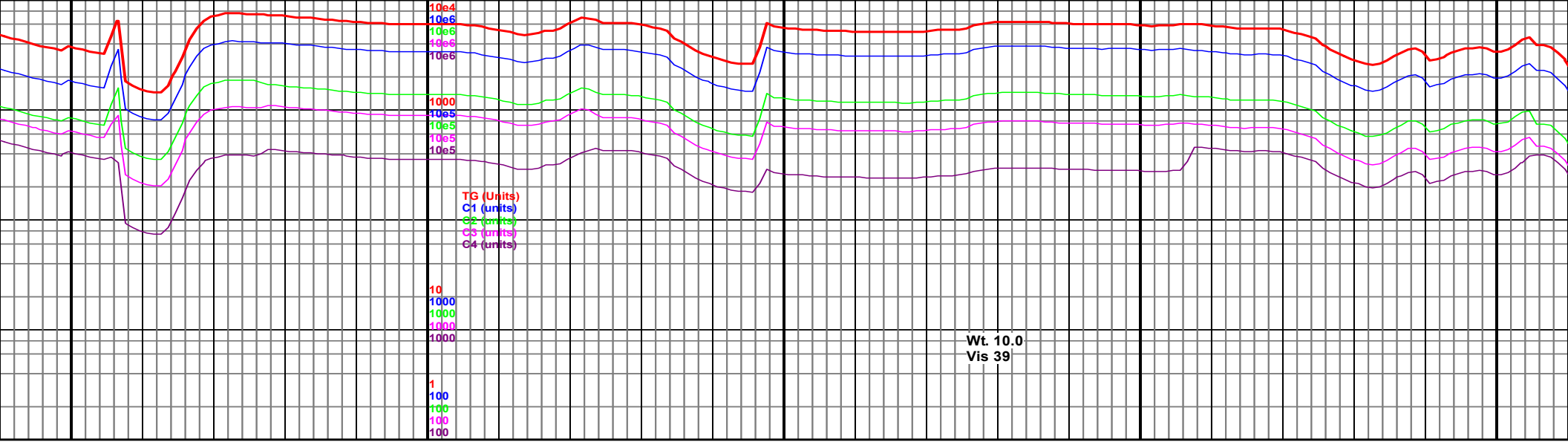
MD 9874 TVD 5712.48 INC 88.98 AZ 0 VS 3956.38				MD 9967 TVD 5713.52 INC 89.75 AZ 359.67 VS 4049.32				5100 TVD Sub Sea (-353)				MD 10060 TVD 5714.44 INC 89.11 AZ 0.87 VS 4142.28			
								5550 (-803)							
mottled, dk gy, sb w mlky oil				9900-10000 Chk lt gy-gy, mottled, blky-sb plty, rr Mrlst med-dk gy, sb blky-blky, frm, tr inoc, slow mlky oil cut, 90% chk, 10% mrlst				10000-10100 Chk lt gy-gy, mottled, blky-sb plty, rr Mrlst med-dk gy, sb blky-blky, frm, tr inoc, slow mlky oil cut, 90% chk, 10% mrlst							
								6000 (-1253)							

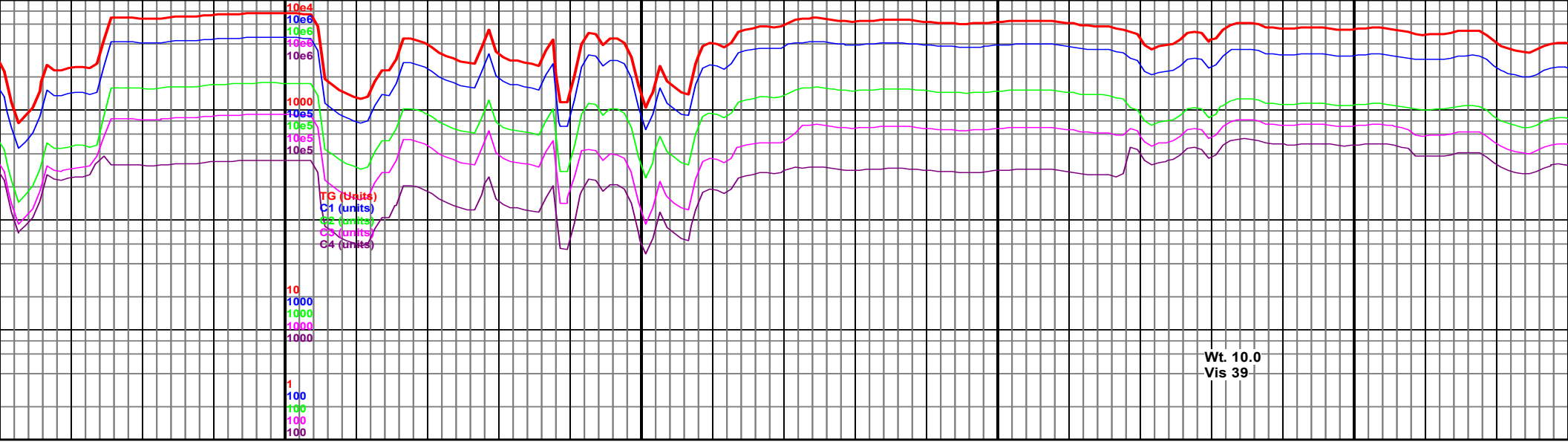




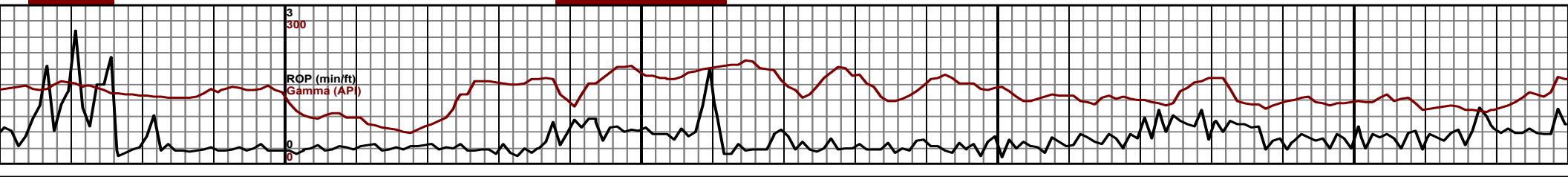


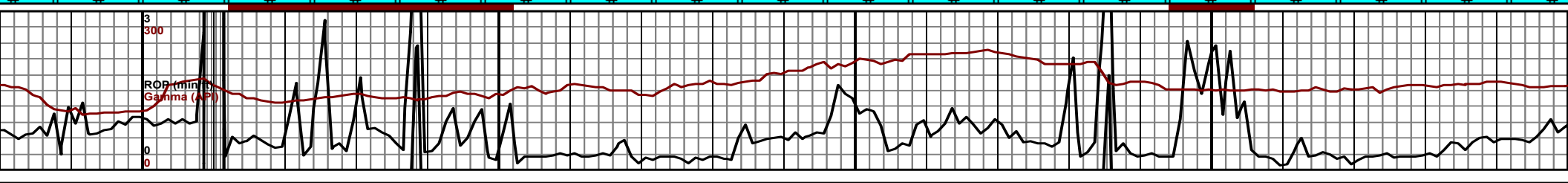
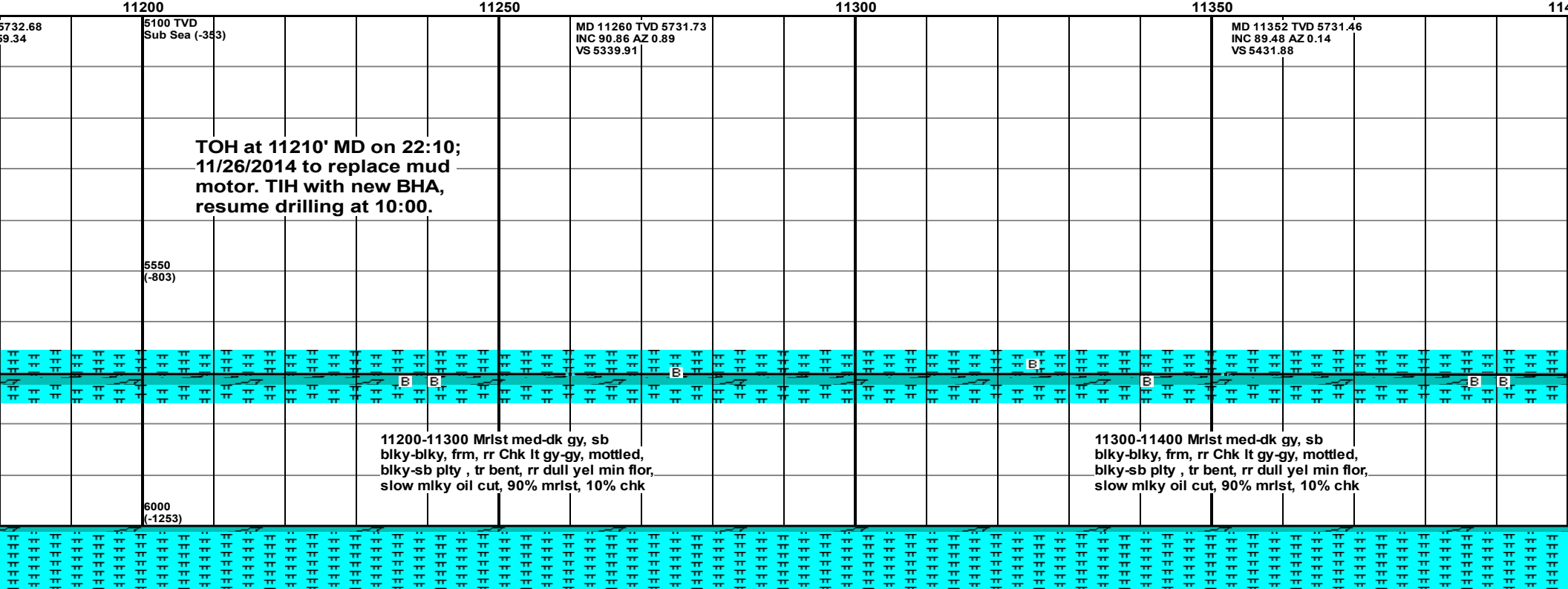
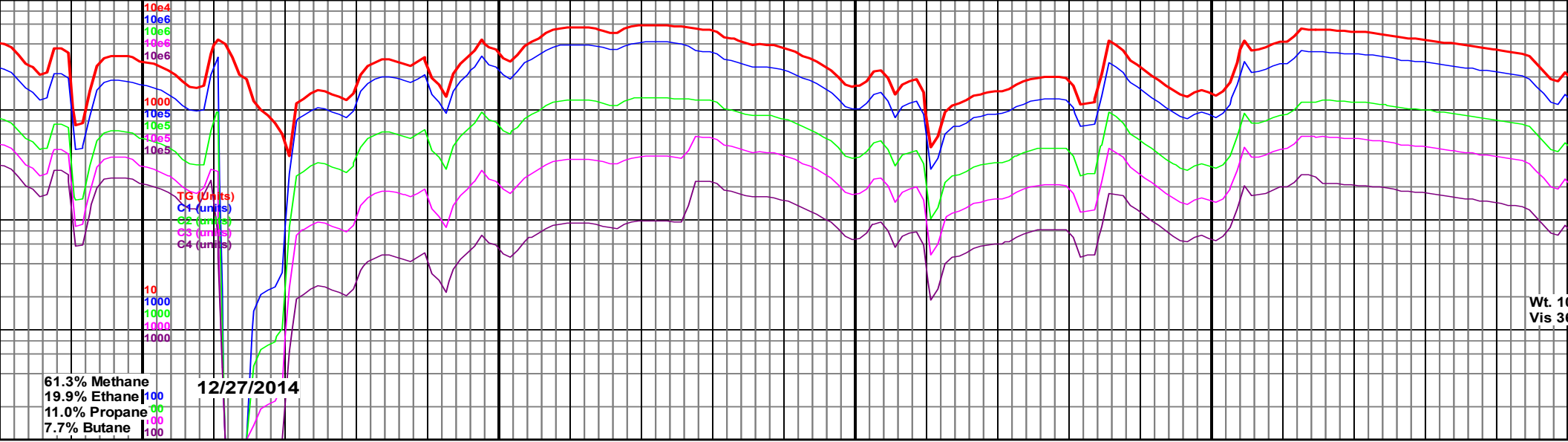


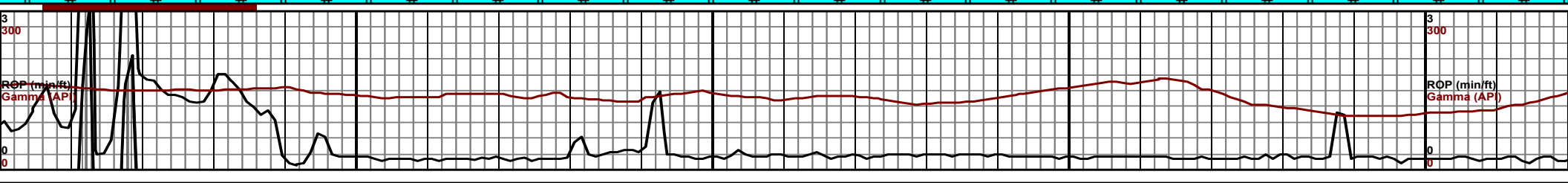
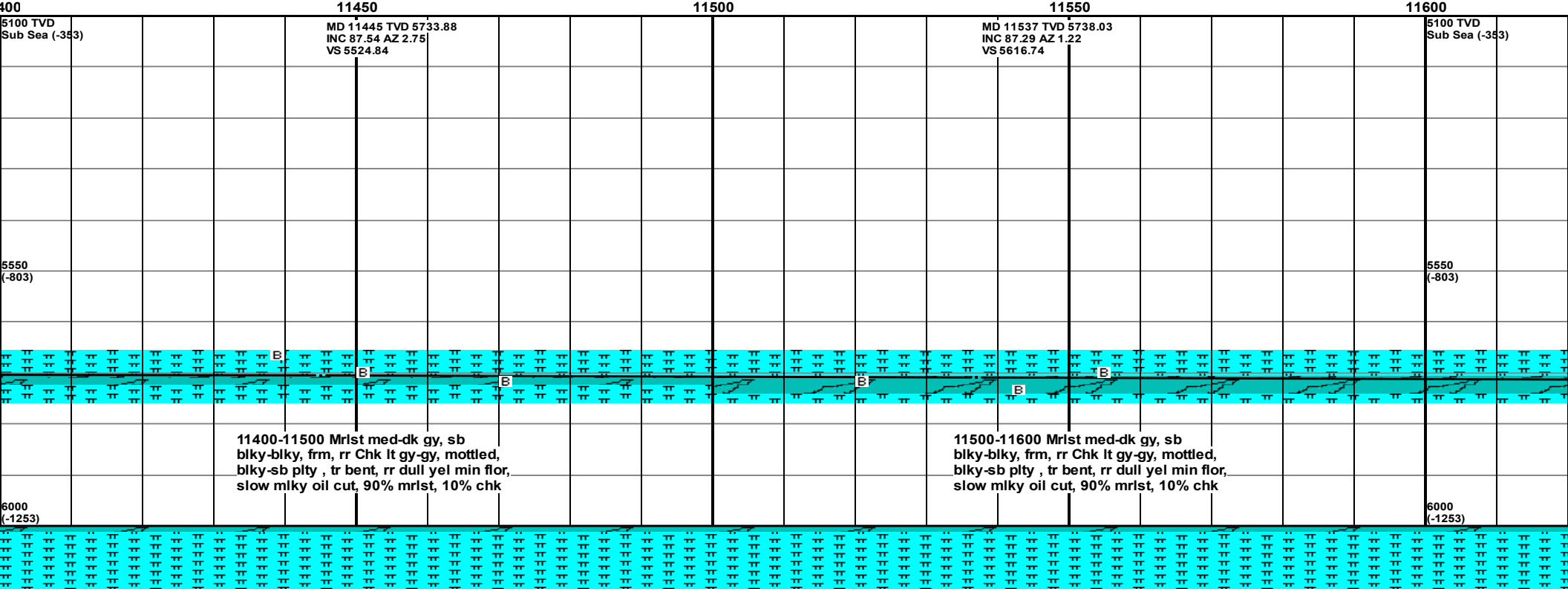
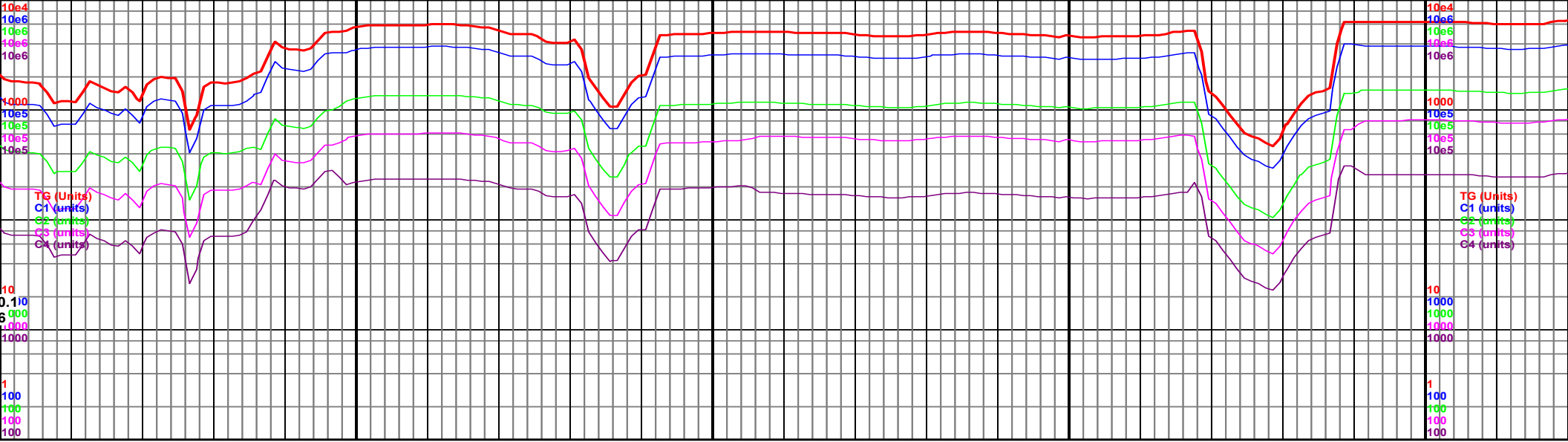


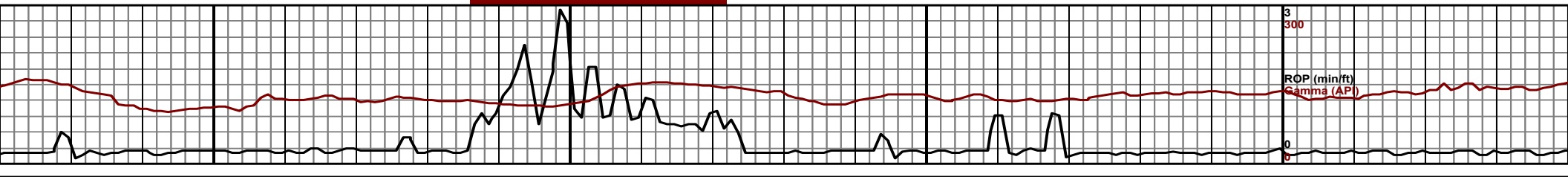
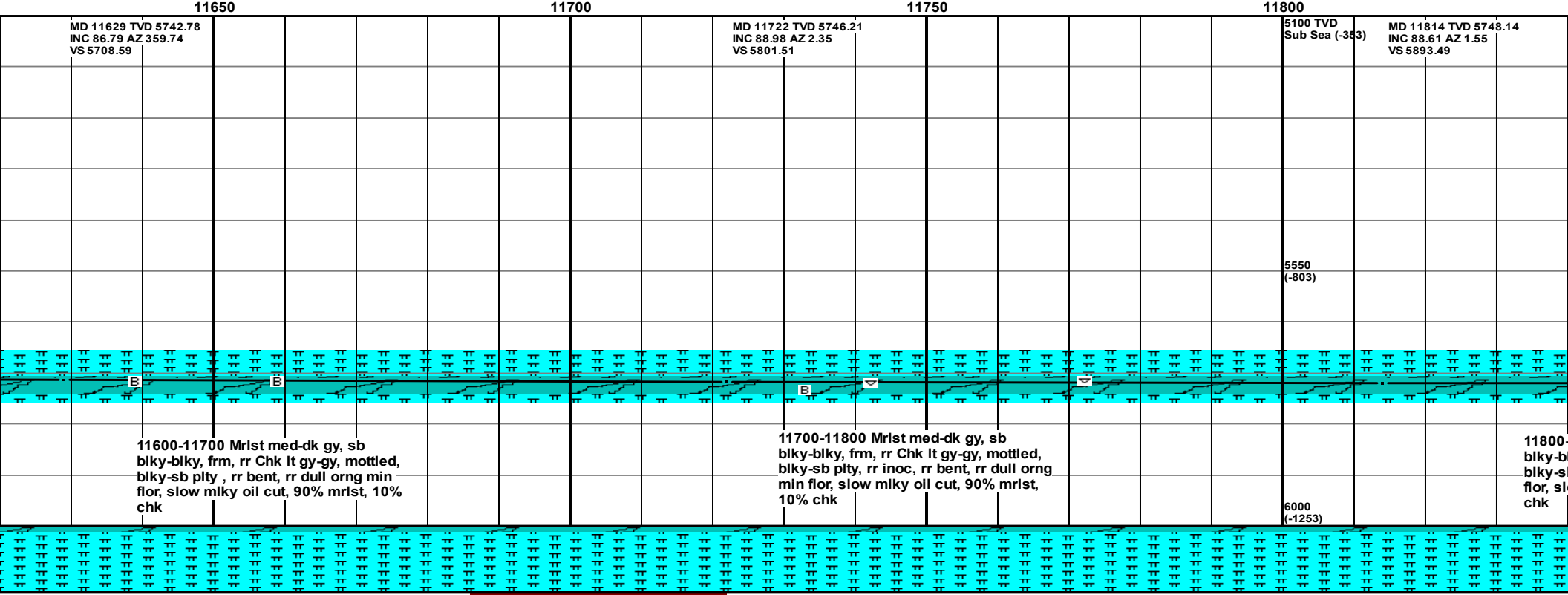
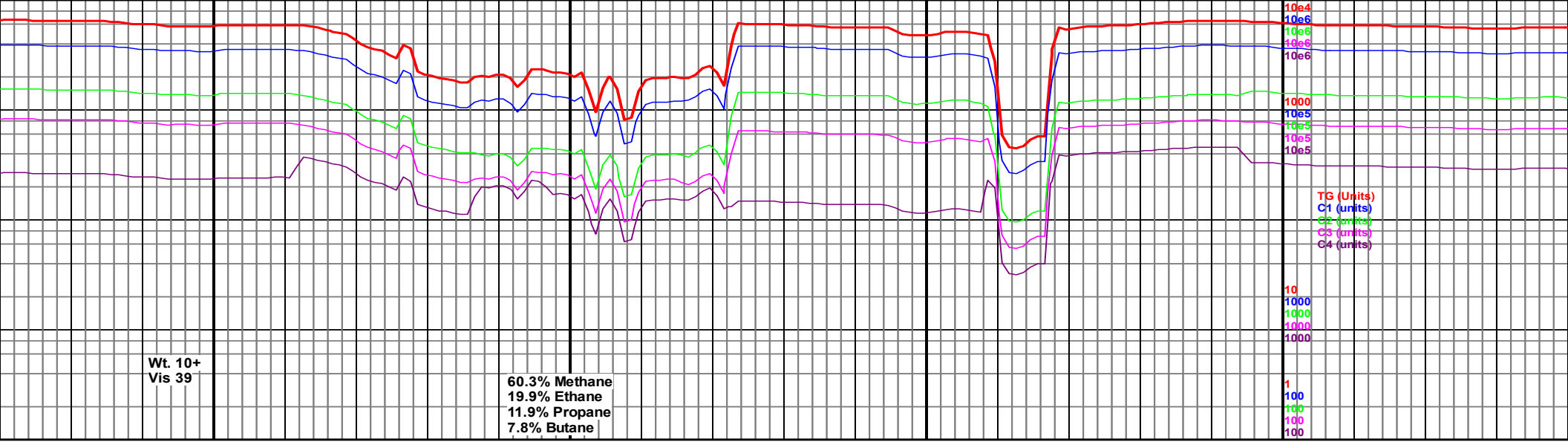


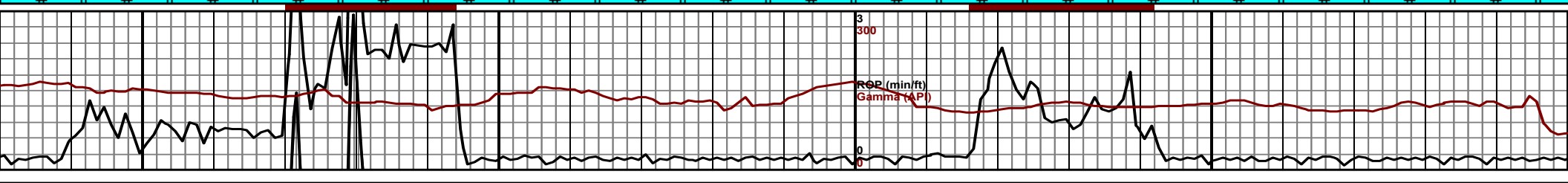
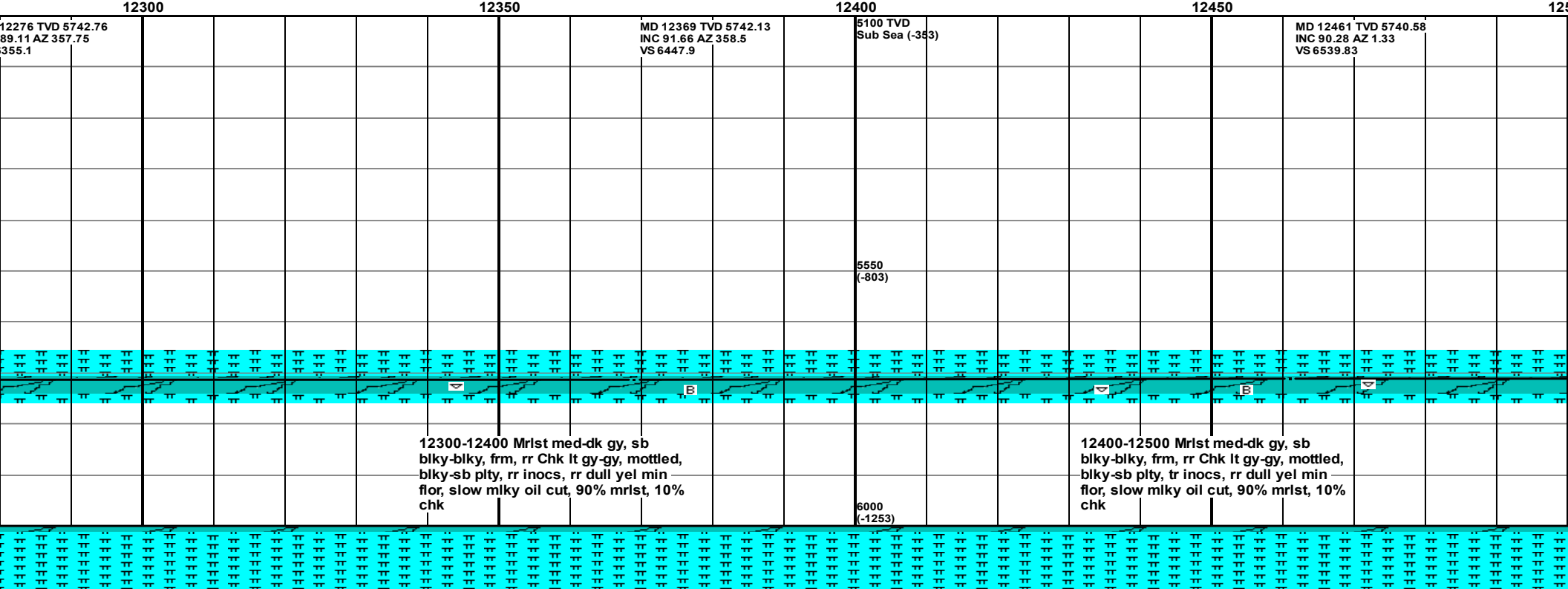
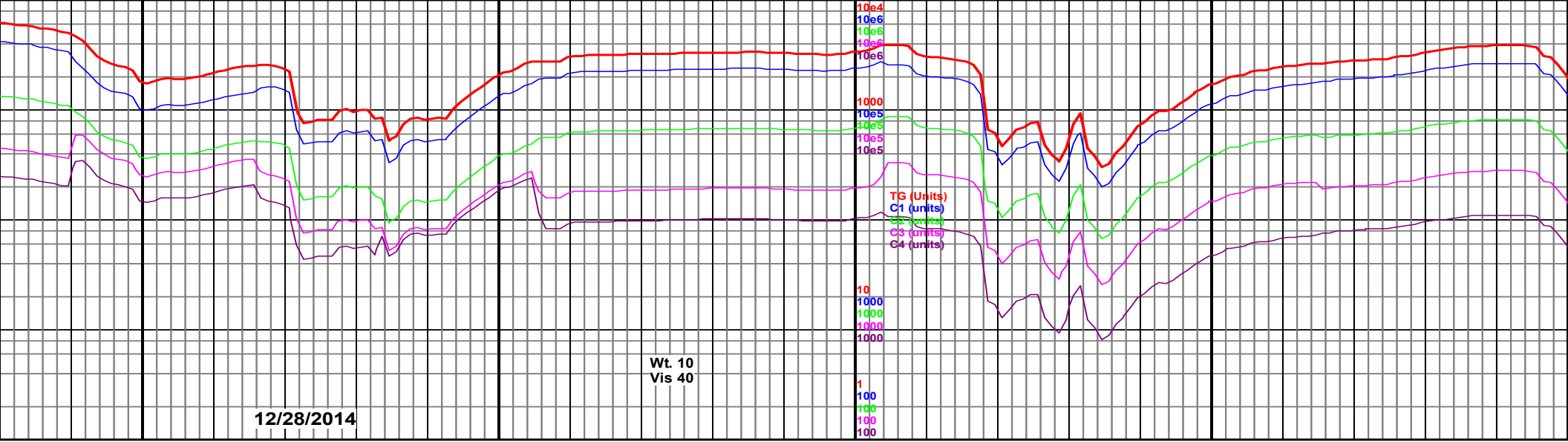
MD 10983 TVD 5733.95 INC 89.72 AZ 355.4 VS 5063.43	MD 11075 TVD 5733.57 INC 90.8 AZ 358.4 VS 5155.08																	MD 11167 TVD 5733.57 INC 90.31 AZ 358.4 VS 5246.96
5550 (-803)																		
gy, sb gy-gy, ent, tr dull yel 70% mlrst,																		
6000 (-1253)																		

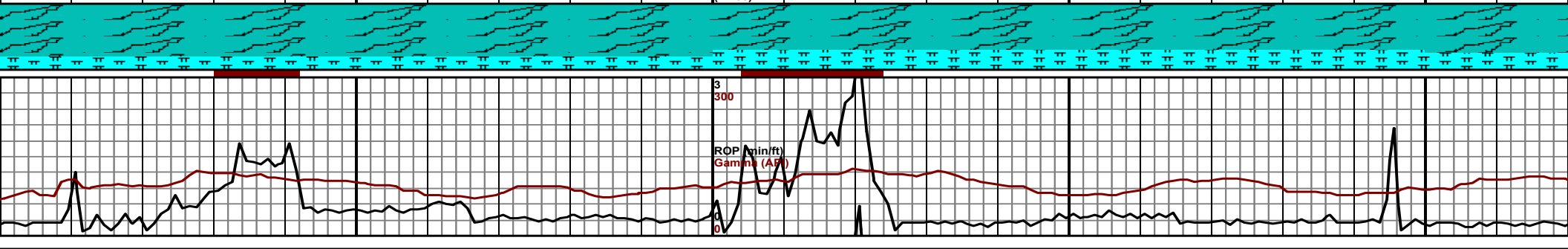
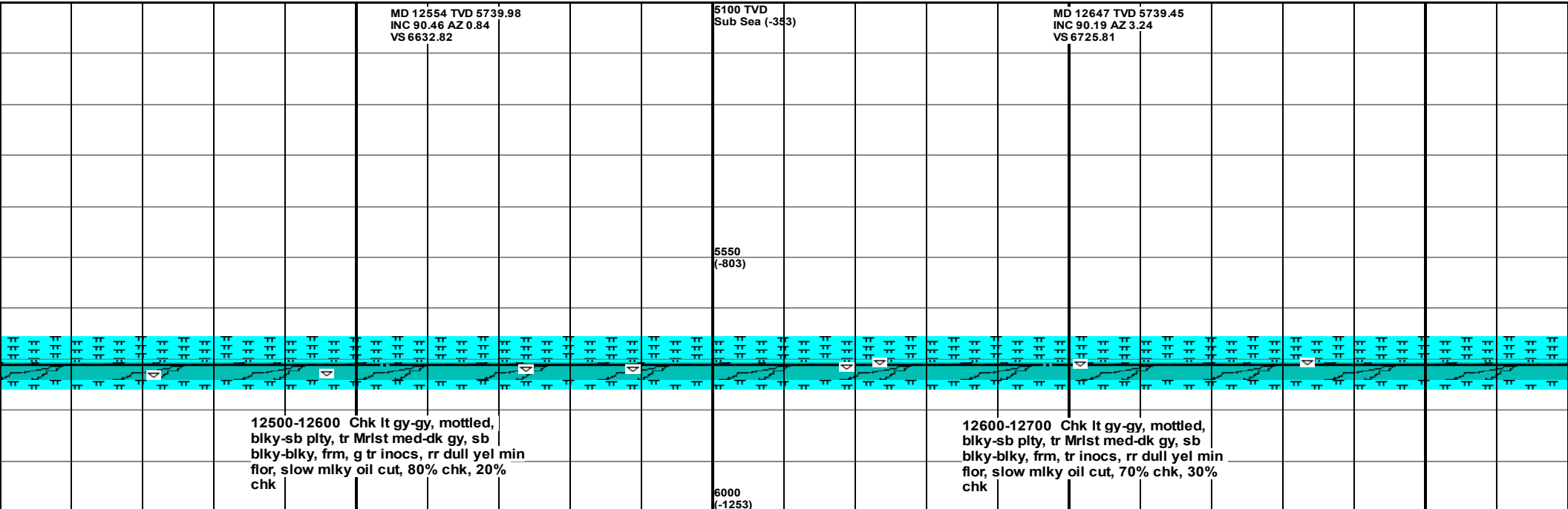
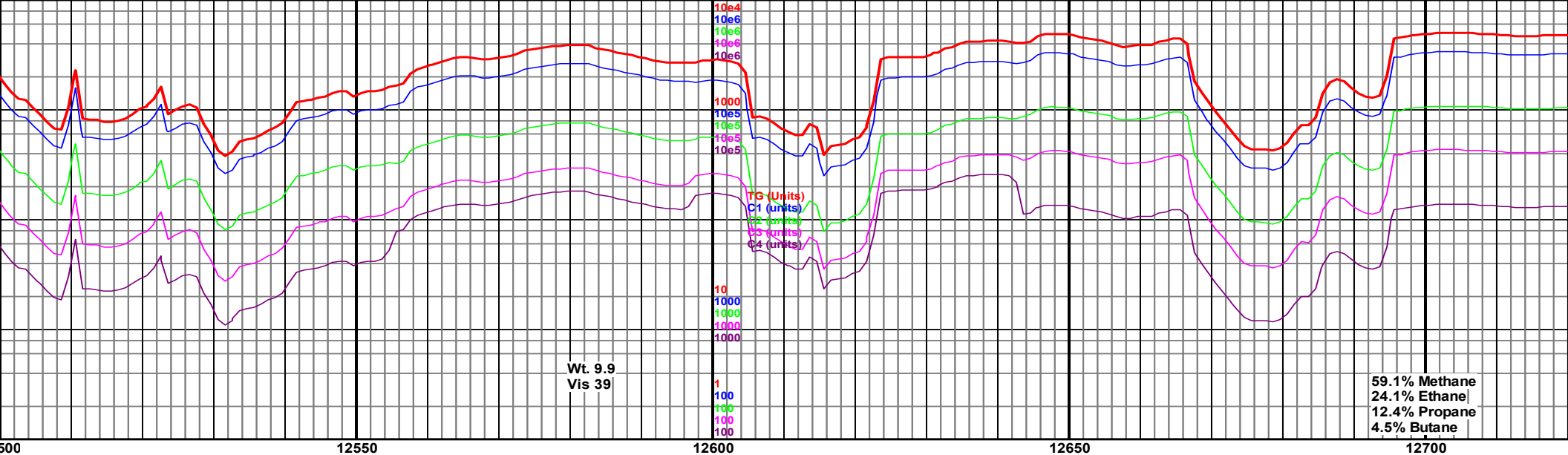


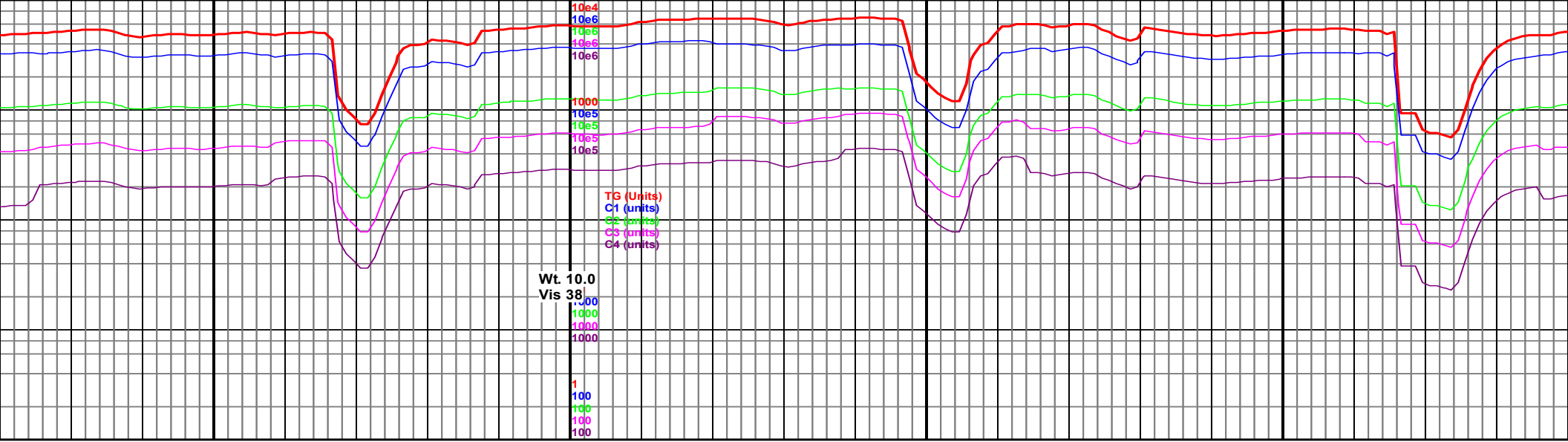












Wt. 10.0
Vis 38

1
100
100
100
100
100

12750

12800

12850

12900

MD 12739 TVD 5739.14
INC 90.19 AZ 3.11
VS 6817.78

5100 TVD
Sub Sea (-353)

MD 12832 TVD 5738.79
INC 90.25 AZ 2.55
VS 6910.76

MD 12924 TVD 5738.79
INC 90.09 AZ 1.89
VS 7002.76

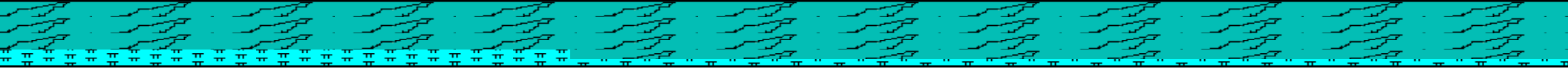
5550
(-803)

12700-12800 Chk lt gy-gy, mottled,
blky-sb plty, tr Mrlst med-dk gy, sb
blky-blky, frm, tr inocs, rr dull yel min
flor, slow mlky oil cut, 75% chk, 25%
chk

12800-12900 Chk lt gy-gy, mottled,
blky-sb plty, tr Mrlst med-dk gy, sb
blky-blky, frm, tr inocs, rr dull yel min
flor, slow mlky oil cut, 90% chk, 10%
chk

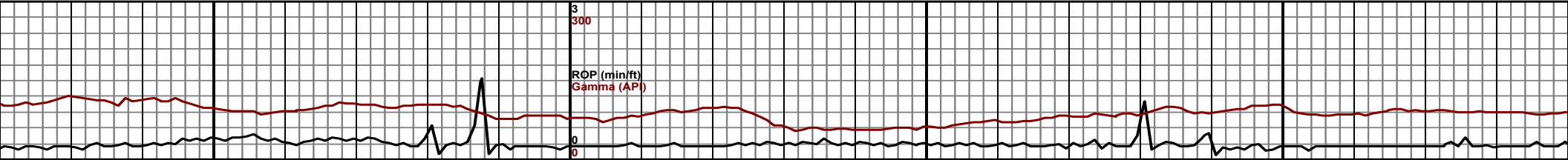
12
bl
bl
flor
chk

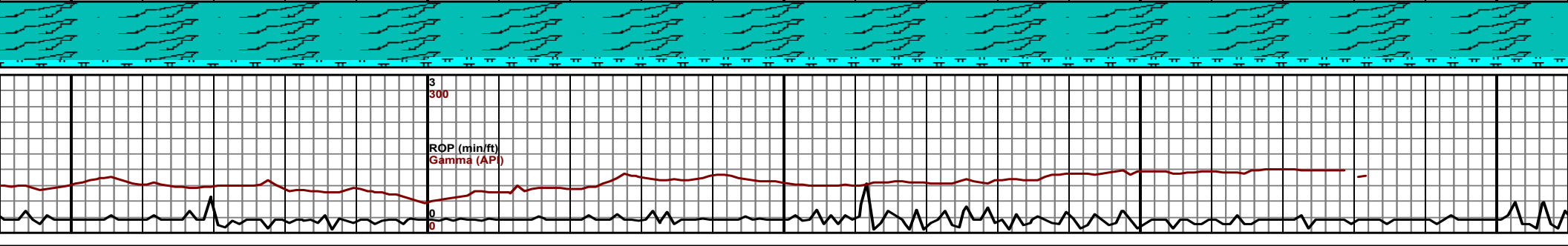
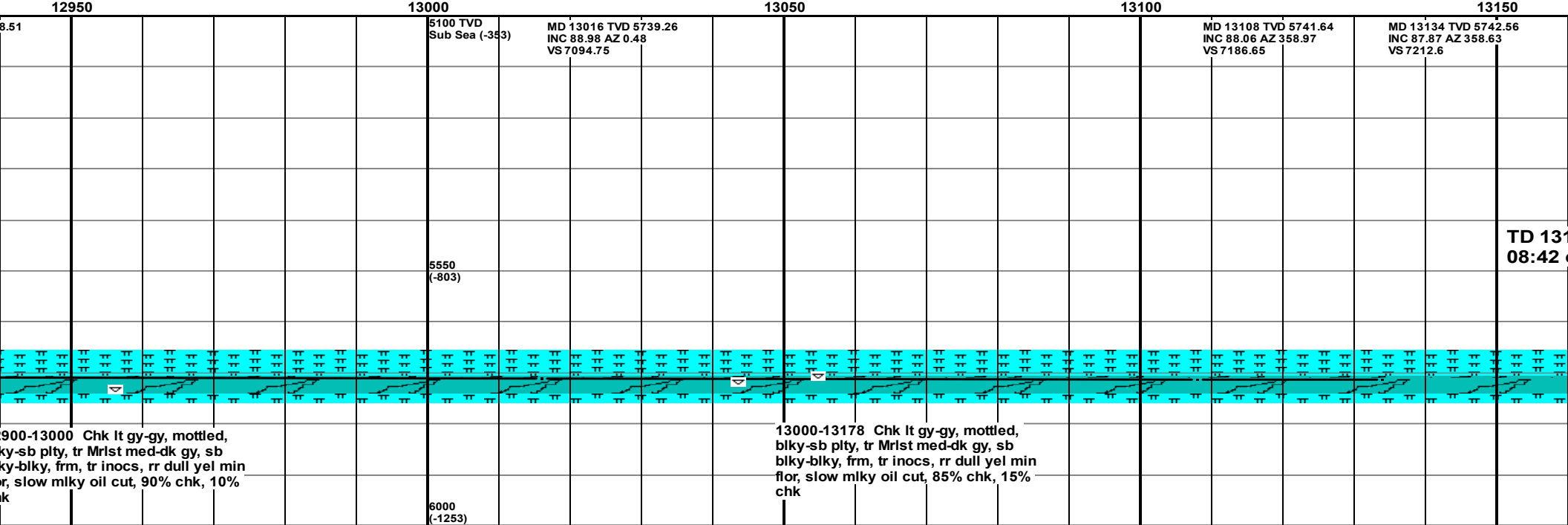
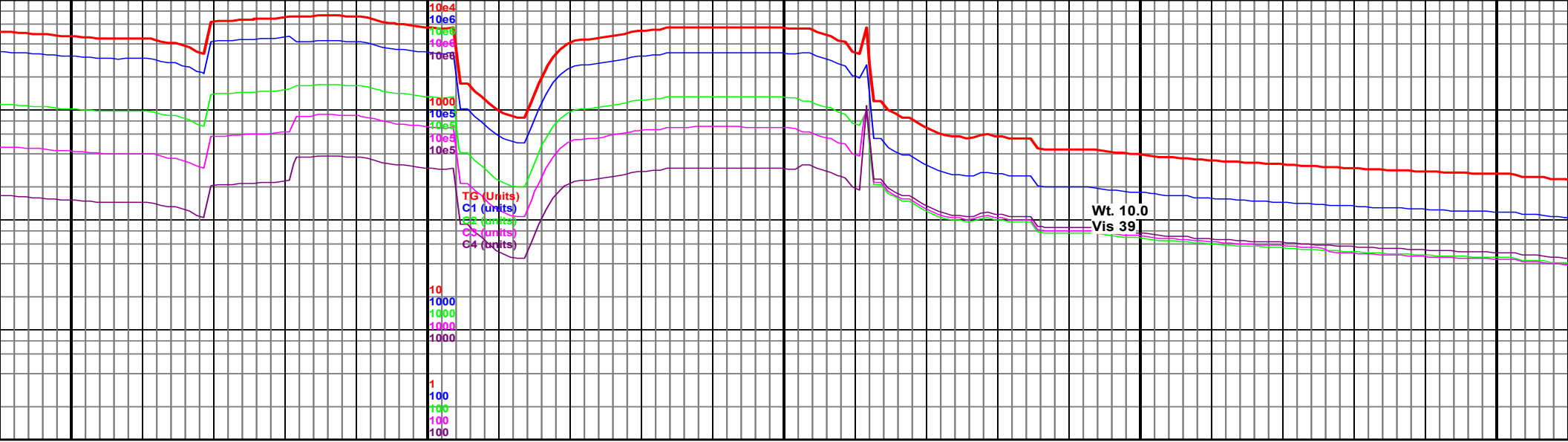
6000
(-1253)

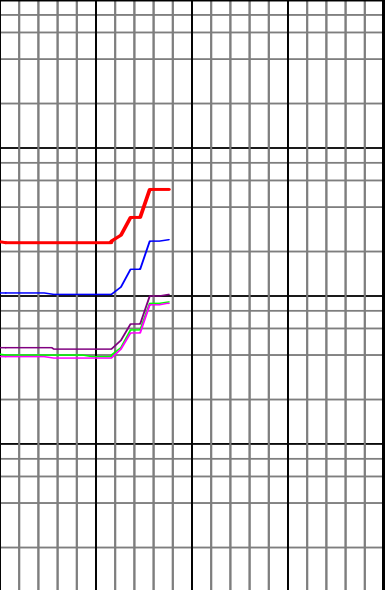


3
300

ROP (min/ft)
Gamma (API)







13

178' MD reached at
on 12/28/2014

