



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

Well Name: Razor Federal 26L-2304B
Location: NWSW 26-T10N-R58W
License Number: 05-123-37987
Spud Date: 4/25/2014
Surface Coordinates: Lat.: 40.808533 Long.: -103.839292

Region: Redtail Field
Drilling Completed: 4/xx/12

Bottom Hole Coordinates: Lat.: 40.831222 Long.: -103.838053

Ground Elevation (ft): 4734'
Logged Interval (ft): 5150' **To:**
Formation: Pierre, Sharon Springs, Niobrara B
Type of Drilling Fluid: Water Based Mud

K.B. Elevation (ft): 4751'
Total Depth (ft):

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: Luke Schwantes, Lauren Roddy and Camille Warren
Company: Acme Geologic Consulting
Address: 108 Berry Street
Little Rock, AR 72205

Drilling Company

Cade Drilling, LLC
Rig #23


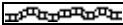
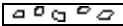


Gas Detection






Mudlogging Systems, Inc., M Logger, Model TGC, Total Gas and Chromatograph, #458




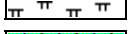

Comments

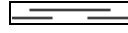
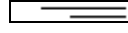

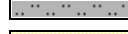
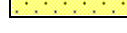
Lithologies and tops at drilled depths, not corrected to elogs. Where the well bore gas is 100% methane, the C1 line is moved to 85% for graphical purposes only.




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
-  Subrond
-  Subang
-  Angular

OIL SHOW

-  Even



Spotted



Ques



Dead

INTERVAL



Core



Dst

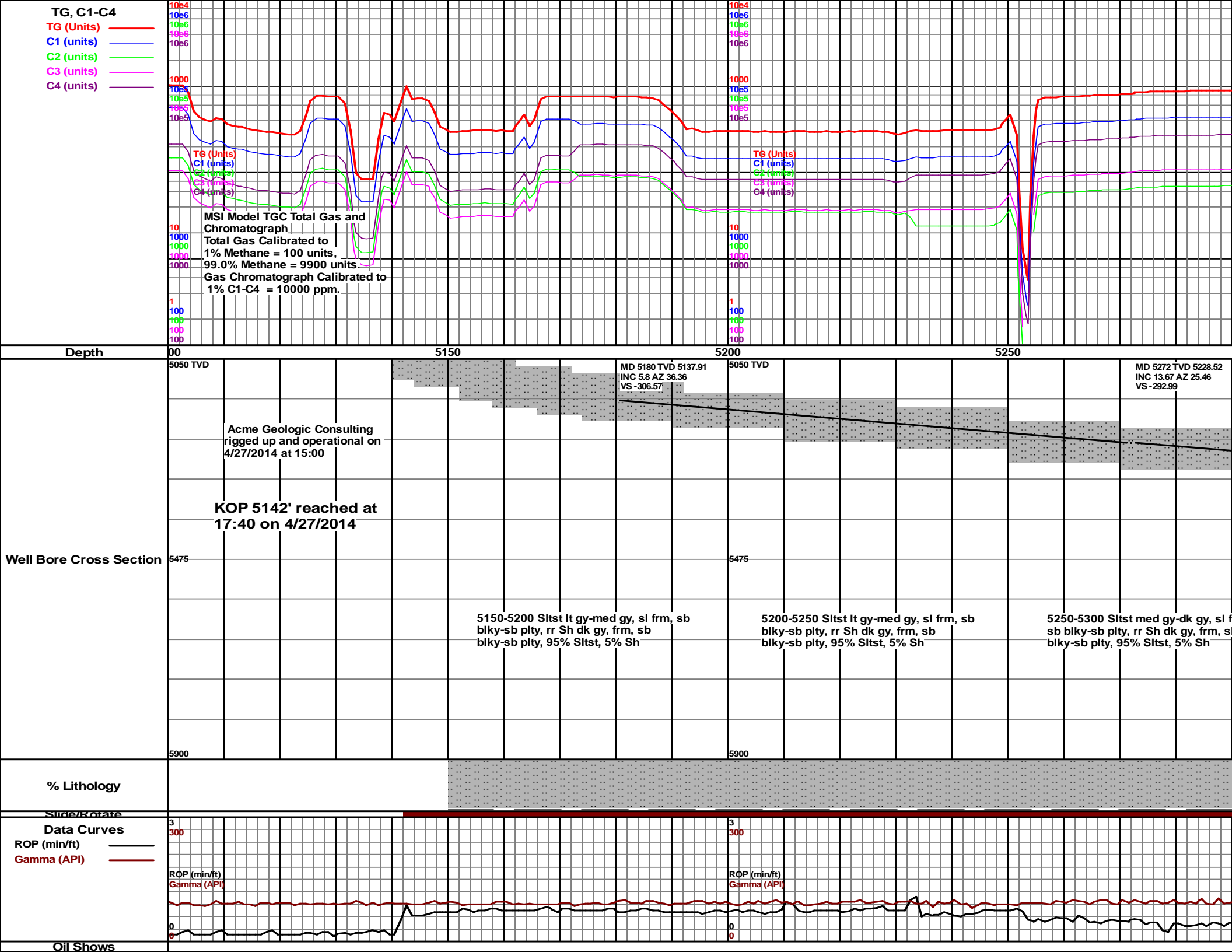
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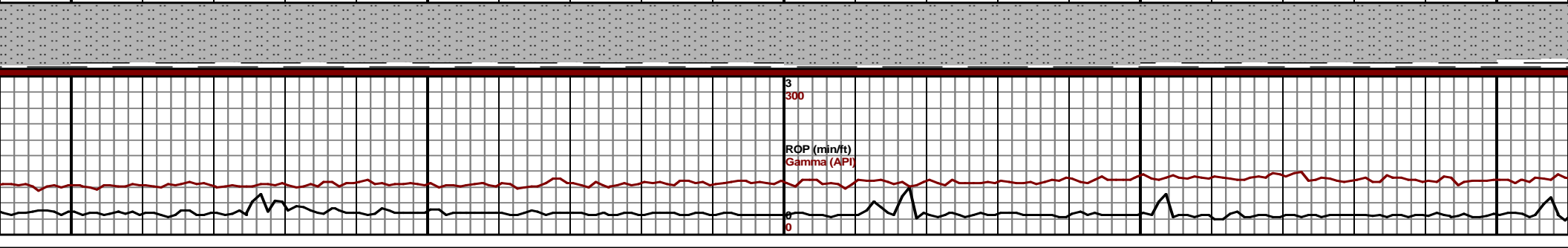
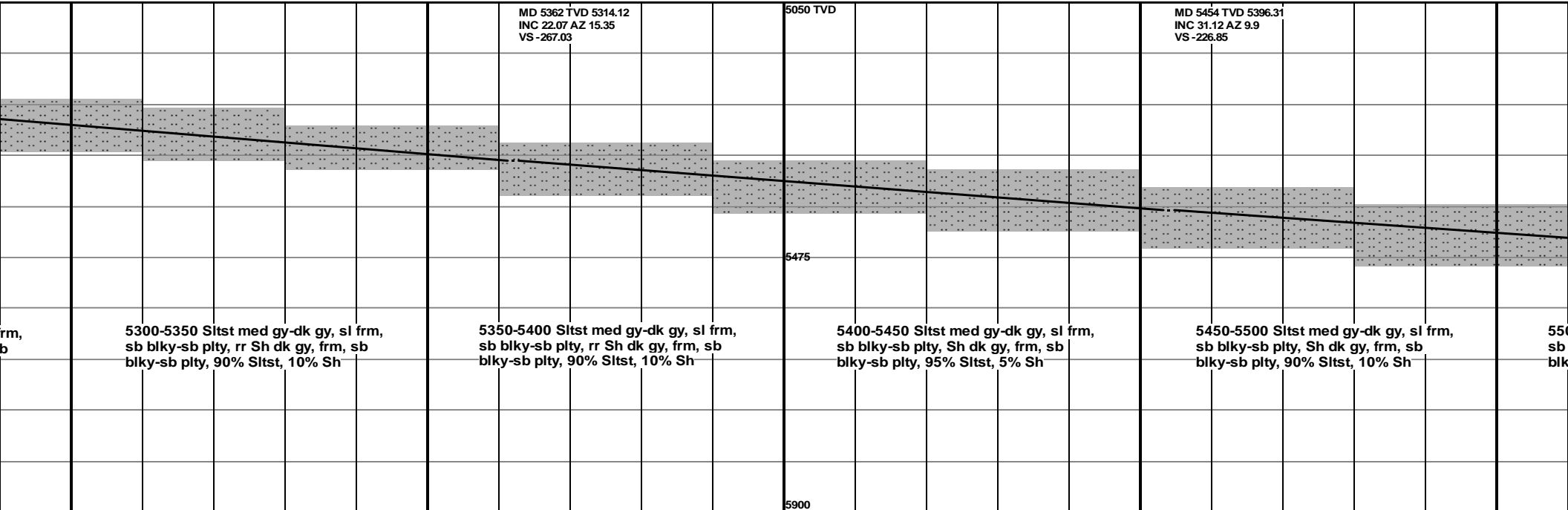
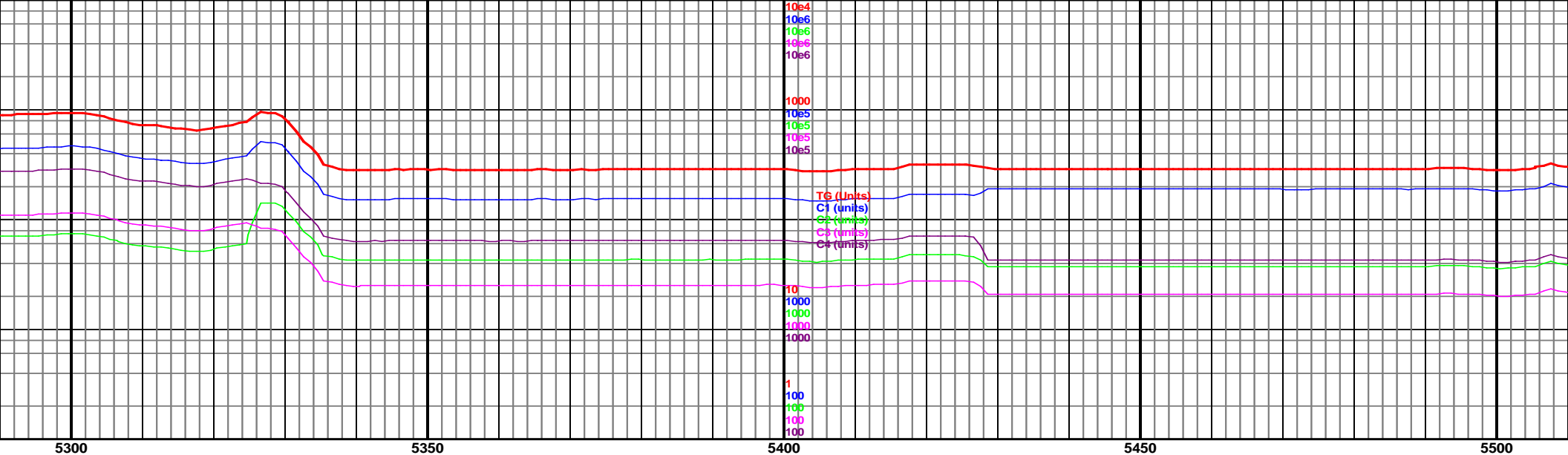


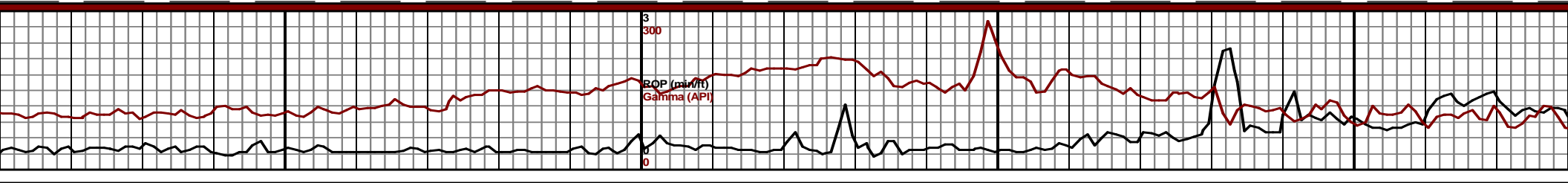
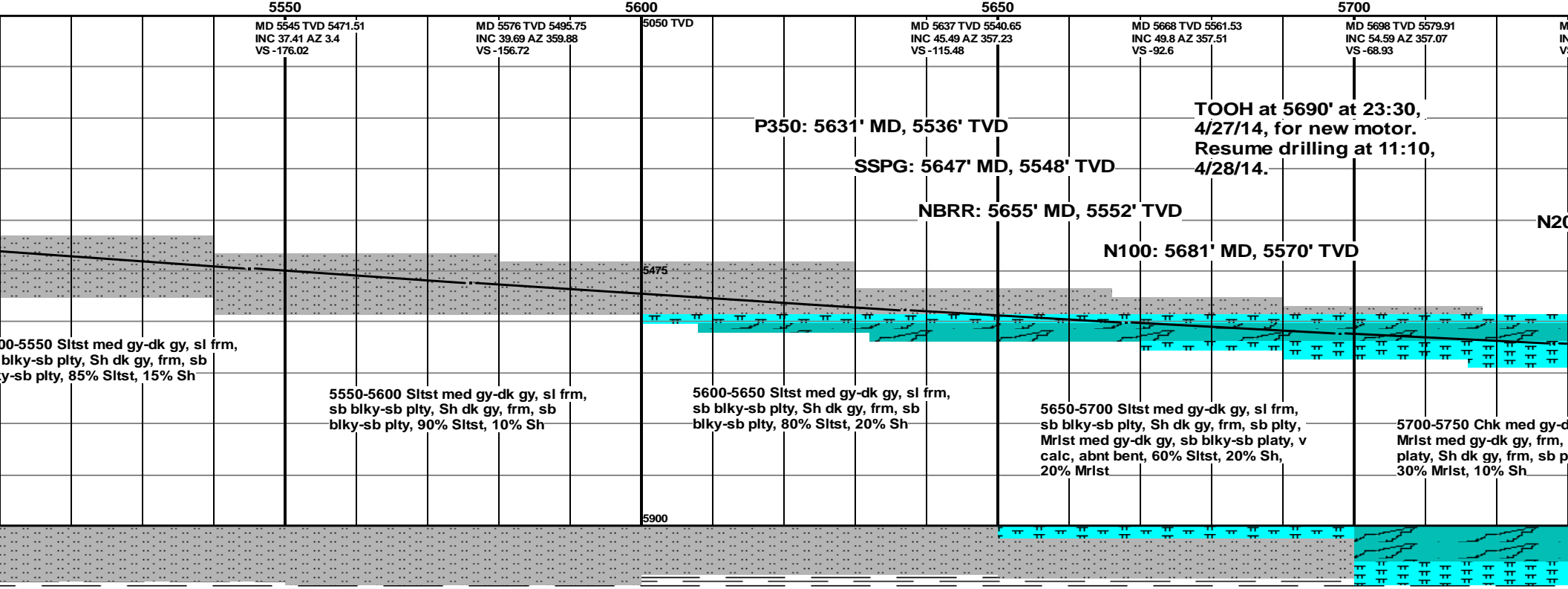
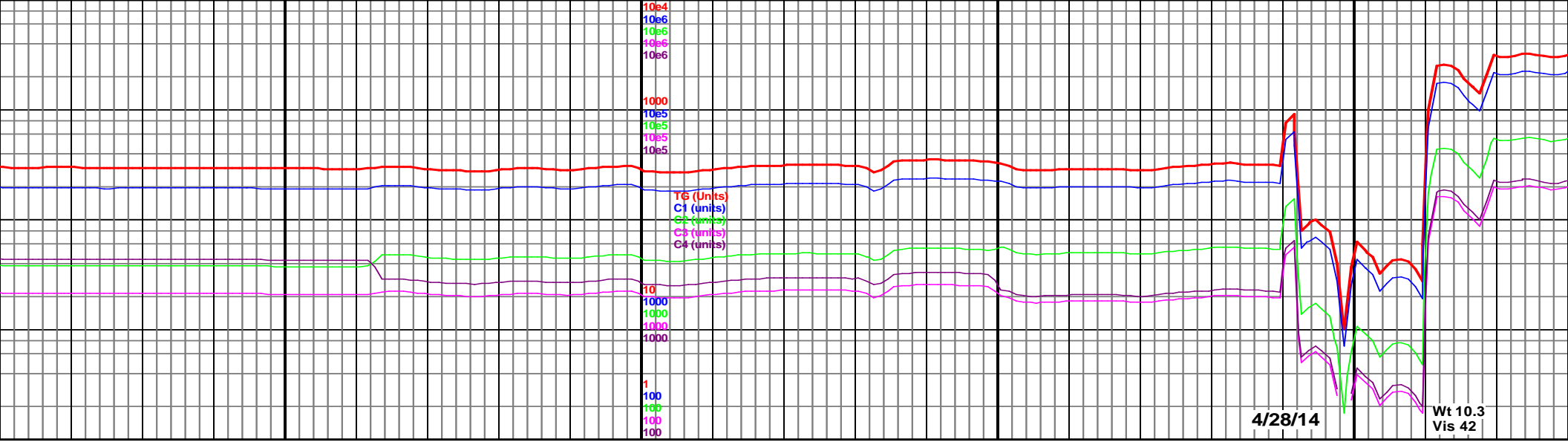
Rft

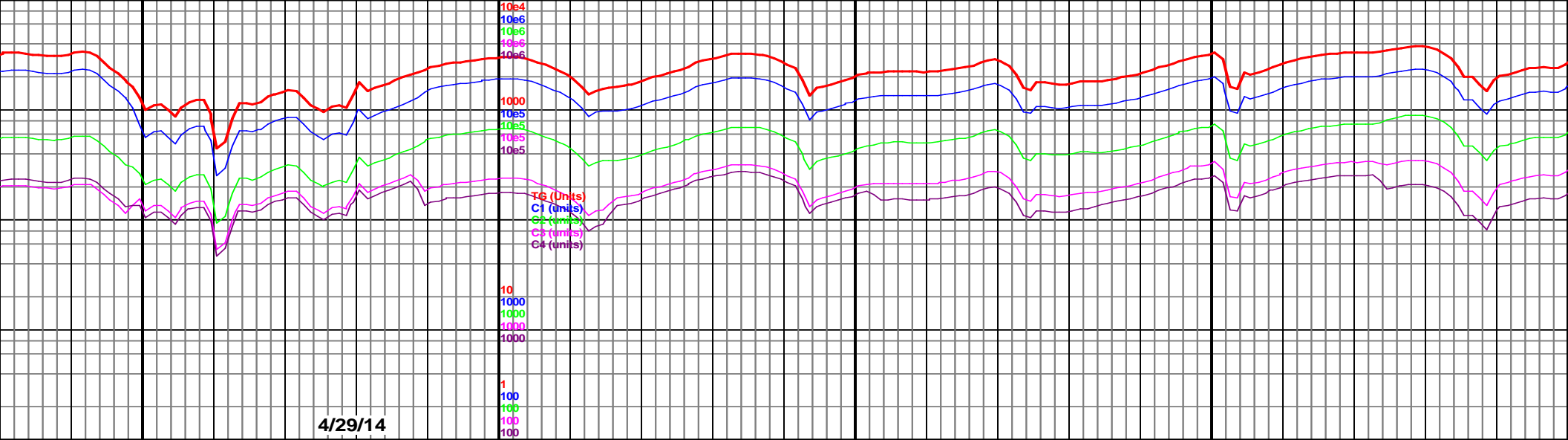


Sidewall









MD 5728 TVD 5596.15 INC 59.82 AZ 356.1 VS -43.76	MD 5759 TVD 5610.37 INC 65.58 AZ 355.31 VS -16.31	MD 5789 TVD 5622.25 INC 67.74 AZ 355.66 VS 11.15	MD 5819 TVD 5633.17 INC 69.58 AZ 356.19 VS 39.02	MD 5850 TVD 5643.18 INC 72.75 AZ 356.37 VS 68.3	MD 5881 TVD 5651.29 INC 76.88 AZ 356.98 VS 98.16	MD 5911 TVD 5657.46 INC 79.38 AZ 356.89 VS 127.47	MD 5943 INC 81.0 VS 158.9
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TOOH at 5748' at 12:40,
4/28/14, for new motor.
Resume drilling at 22:47,
4/28/14.

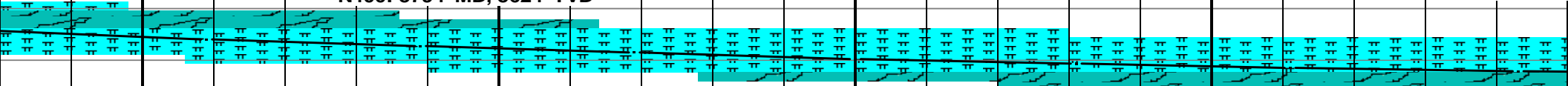
00: 5743' MD, 5602' TVD

N250: 5780' MD, 5618' TVD

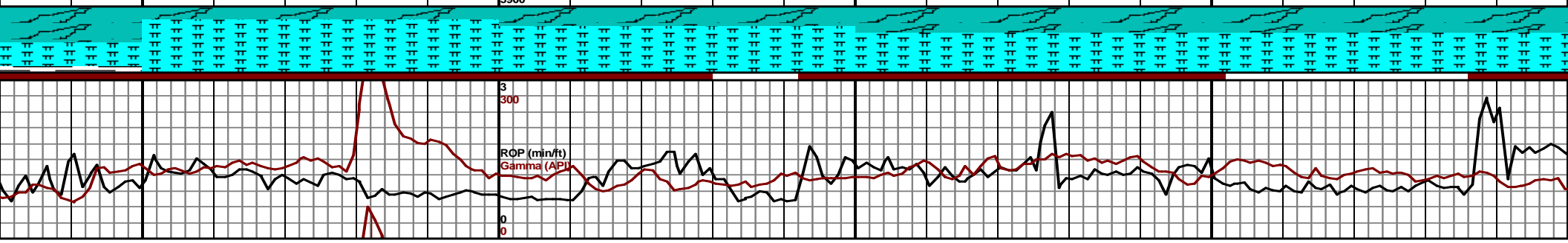
N400: 5794' MD, 5624' TVD

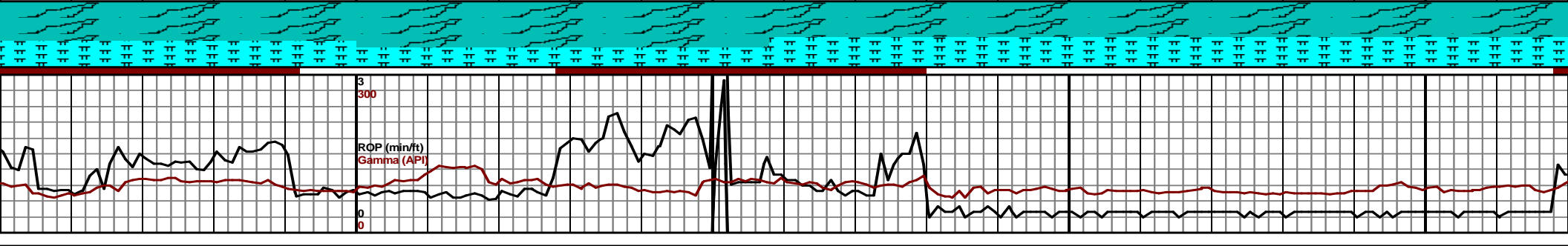
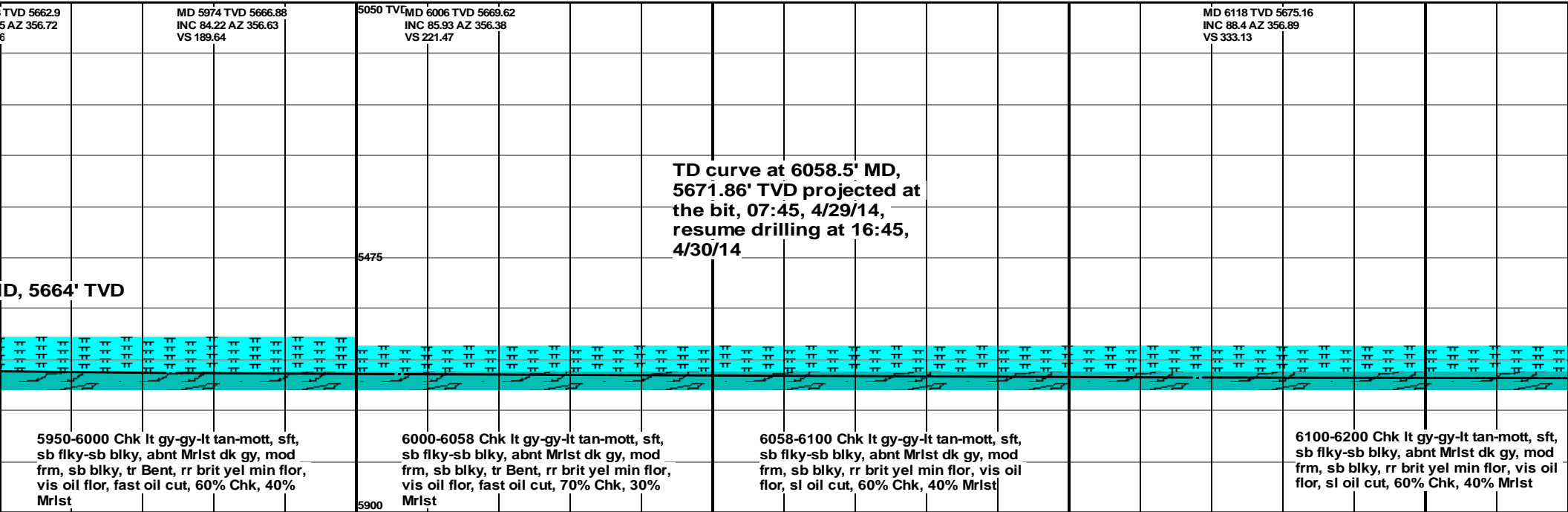
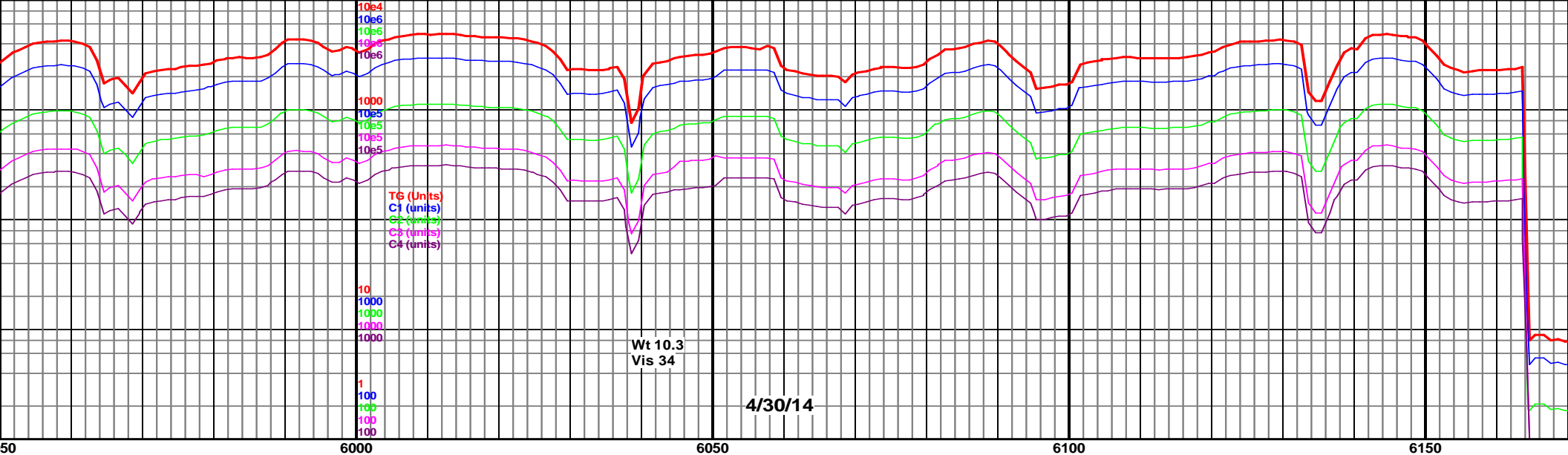
N430: 5868' MD, 5648' TVD

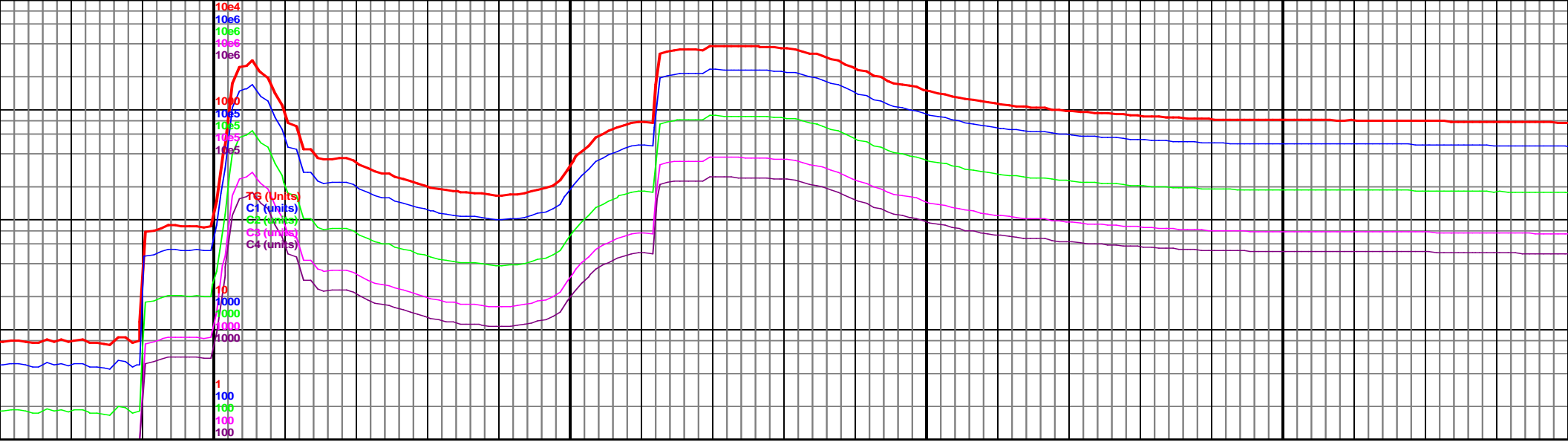
N460: 5949' MD



dk gy, sub blk, sb blk, 60% Chk,	5750-5800 Mrst med gy-dk gy, frm, sb blk-sb platy, Chk lt gy-med gy, sub blk, tr bent, 80% Mrst, 20% Chk	5800-5850 Mrst med gy-dk gy, frm, sb blk-sb platy, Chk lt gy-med gy, sub blk, rr bent, sl oil cut, 70% Mrst, 30% Chk	5850-5900 Mrst med gy-dk gy, frm, sb blk-sb platy, Chk lt gy-med gy, sub blk, rr bent, bri yel min flor, fst oil cut, 60% Mrst, 40% Chk	5900-5950 Mrst med gy-dk gy, frm, sb blk-sb platy, Chk lt gy-med gy, sub blk, rr bent, bri yel min flor, fst oil cut, 60% Mrst, 40% Chk
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6200

6250

6300

6350

5050 TVD

MD 6213 TVD 5676.25
INC 90.29 AZ 357.07
VS 427.98

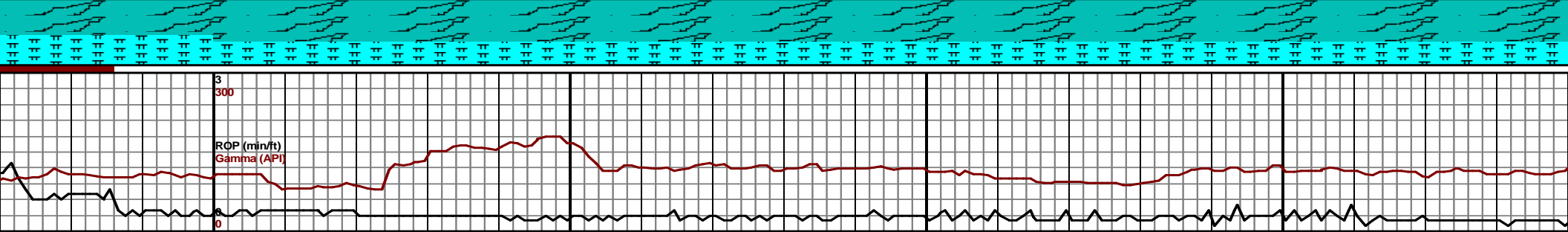
MD 6308 TVD 5675.48
INC 90.64 AZ 357.16
VS 522.86

5475

5900

6200-6300 Chk lt gy-gy-lt tan-mott, sft,
sb flky-sb blk, occ Mrlst dk gy, mod
frm, sb blk, rr bent, abnt brit yel min
flor, vis oil flor, sl oil cut, 70% Chk,
30% Mrlst

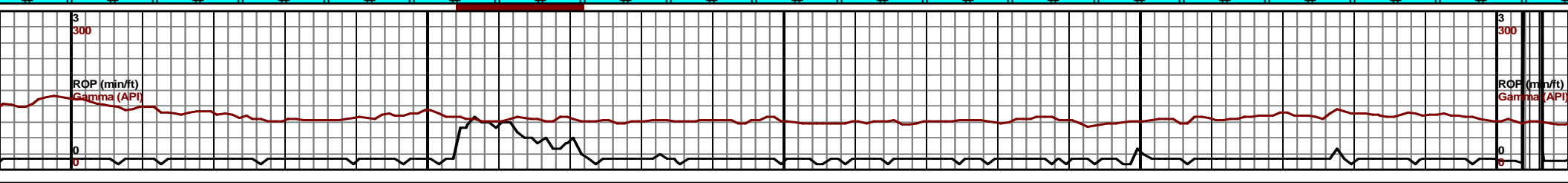
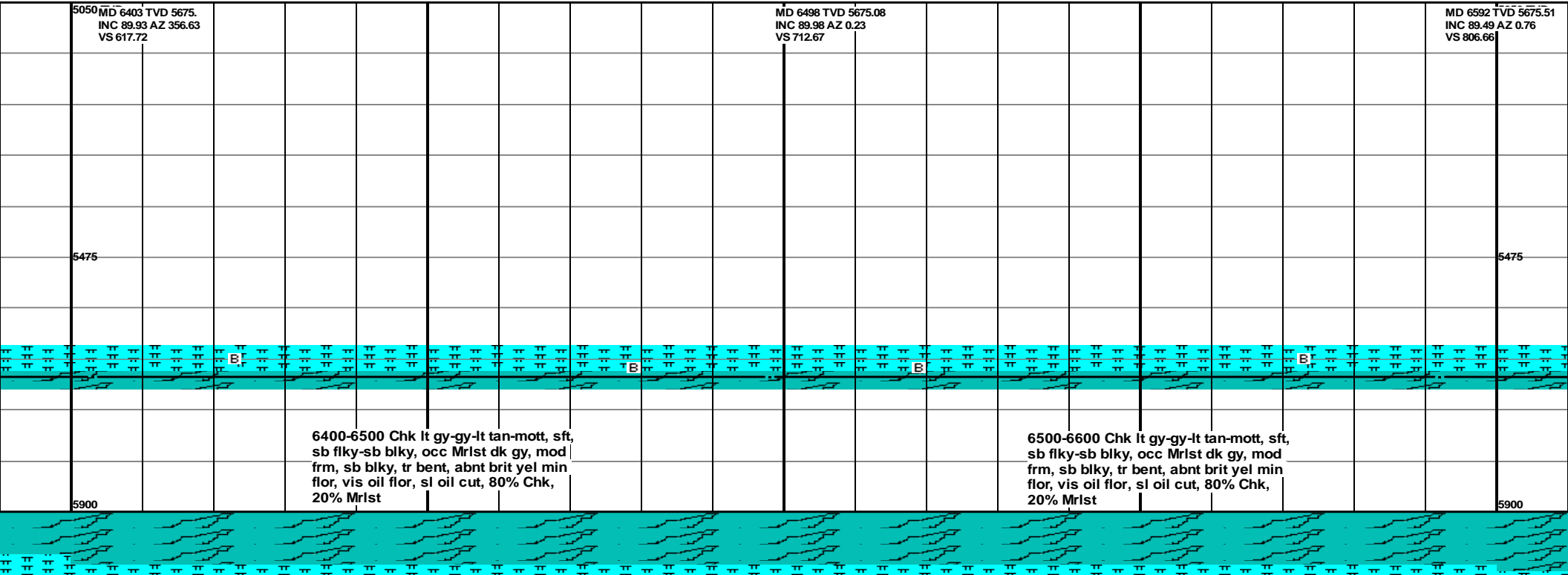
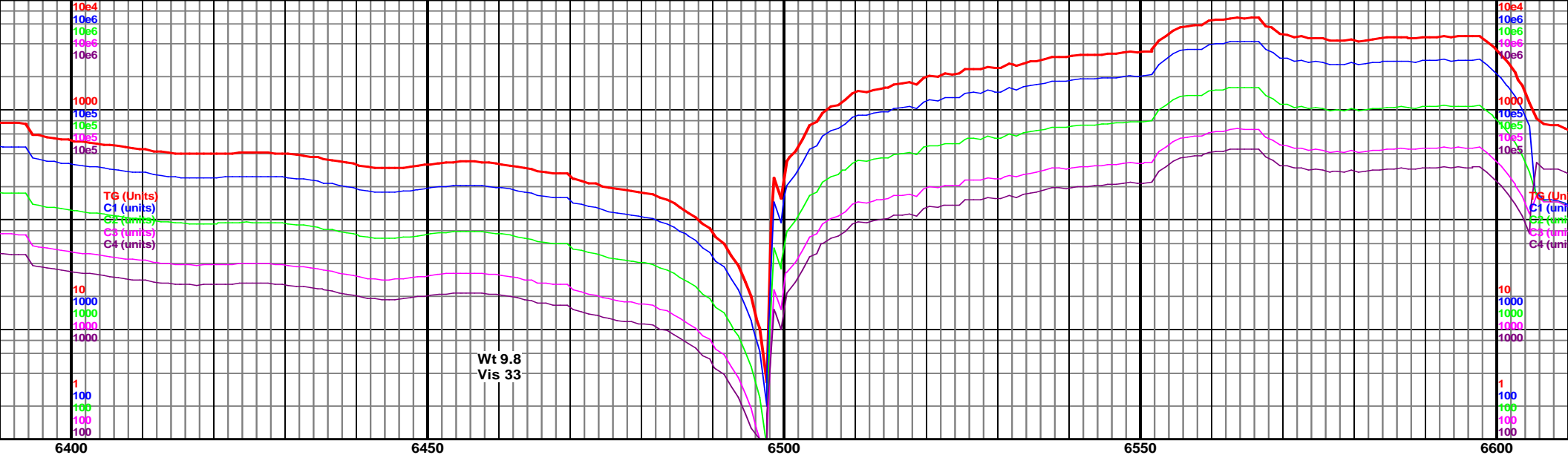
6300-6400 Chk lt gy-gy-lt tan-mott, sft,
sb flky-sb blk, occ Mrlst dk gy, mod
frm, sb blk, tr bent, abnt brit yel min
flor, vis oil flor, sl oil cut, 70% Chk,
30% Mrlst

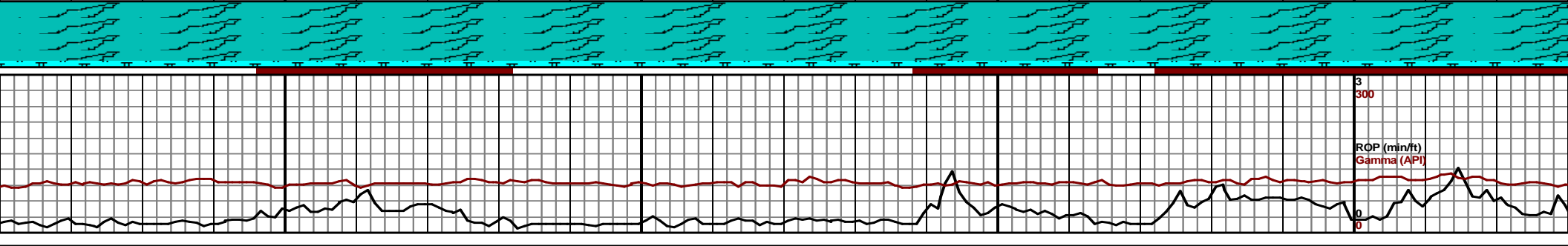
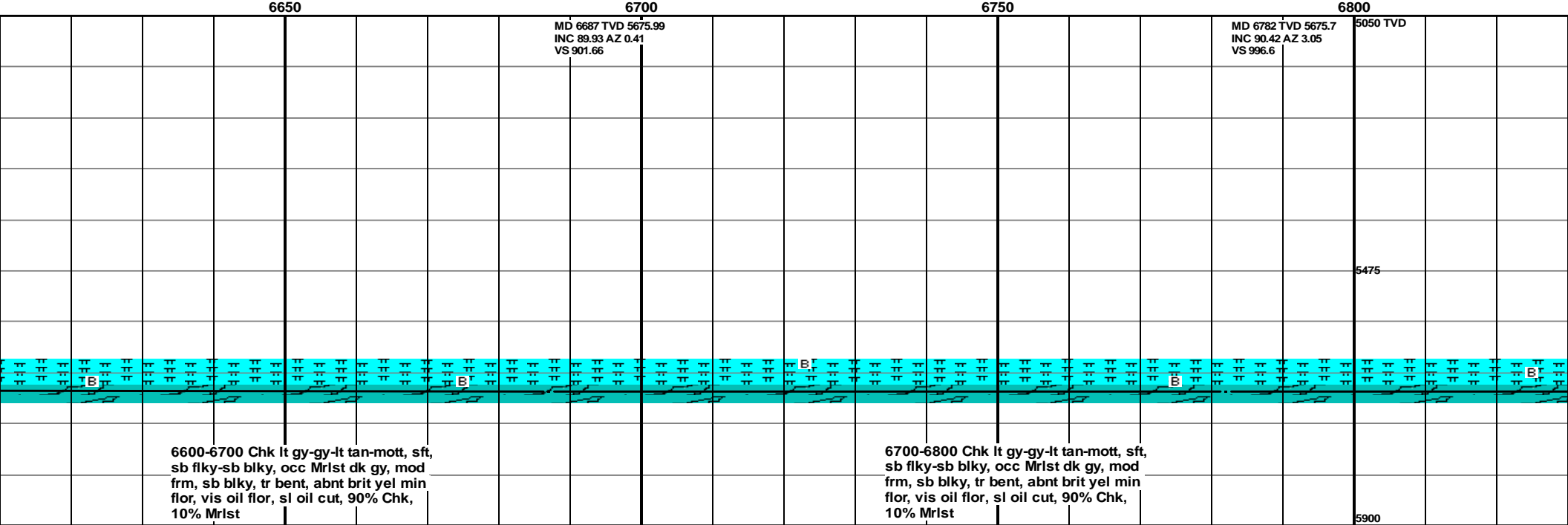
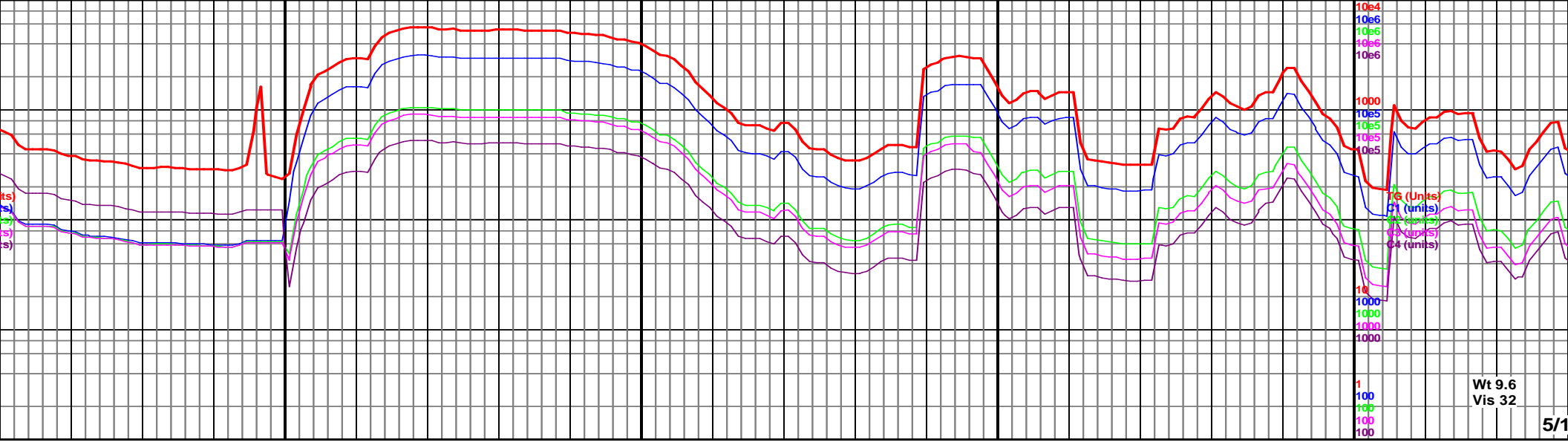


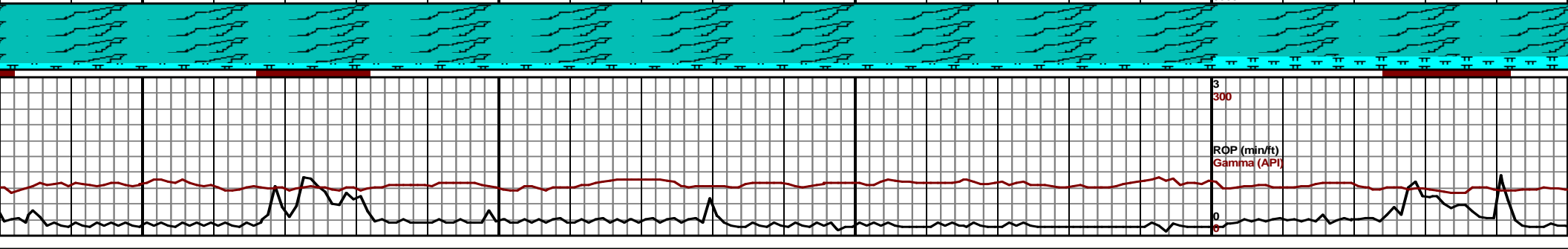
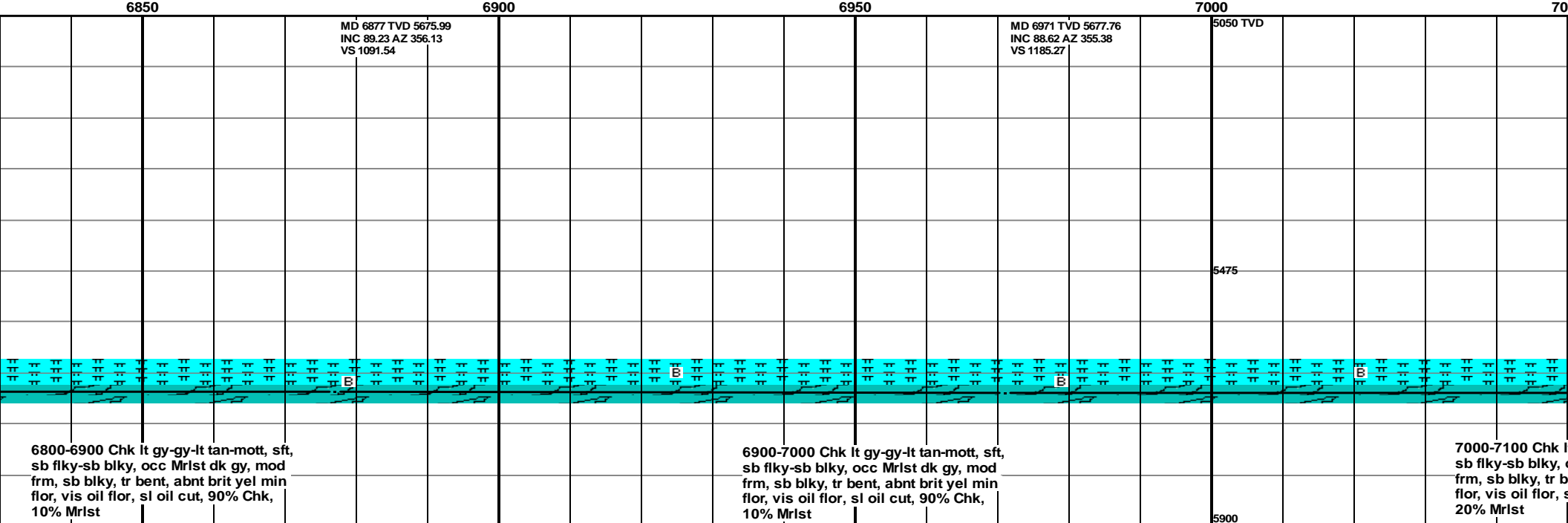
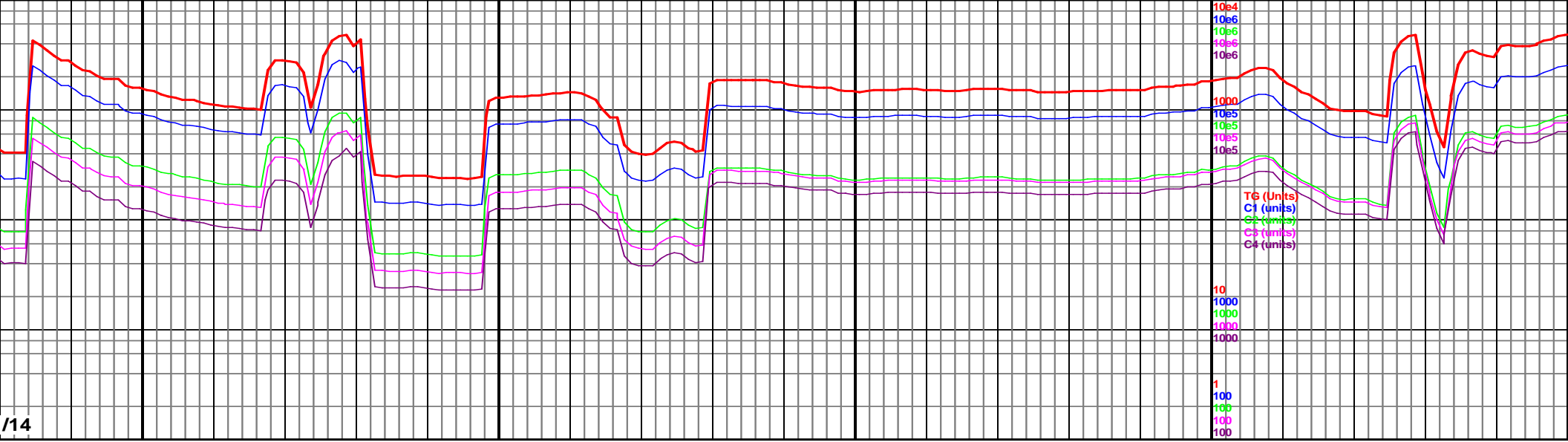
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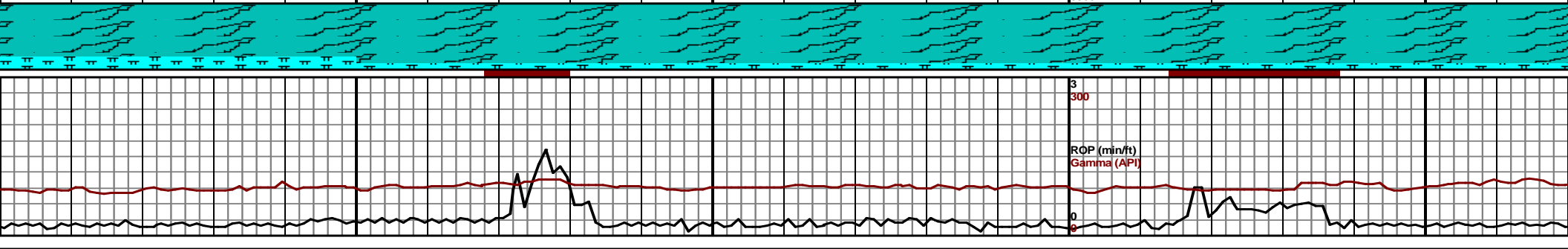
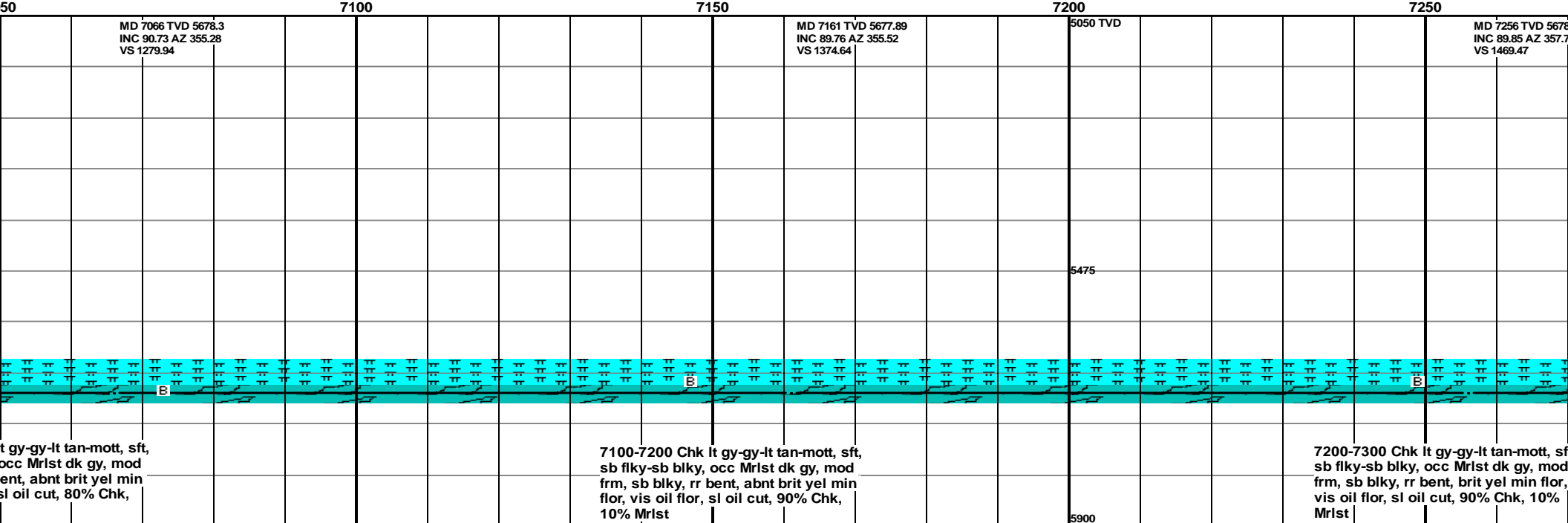
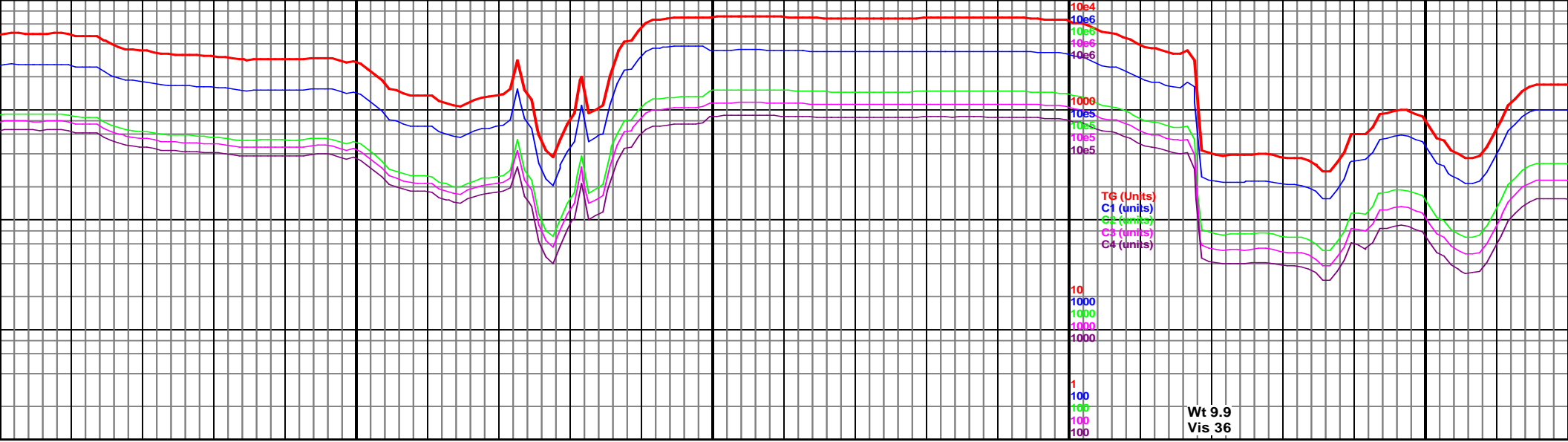
ROP (min/ft)
Gamma (API)

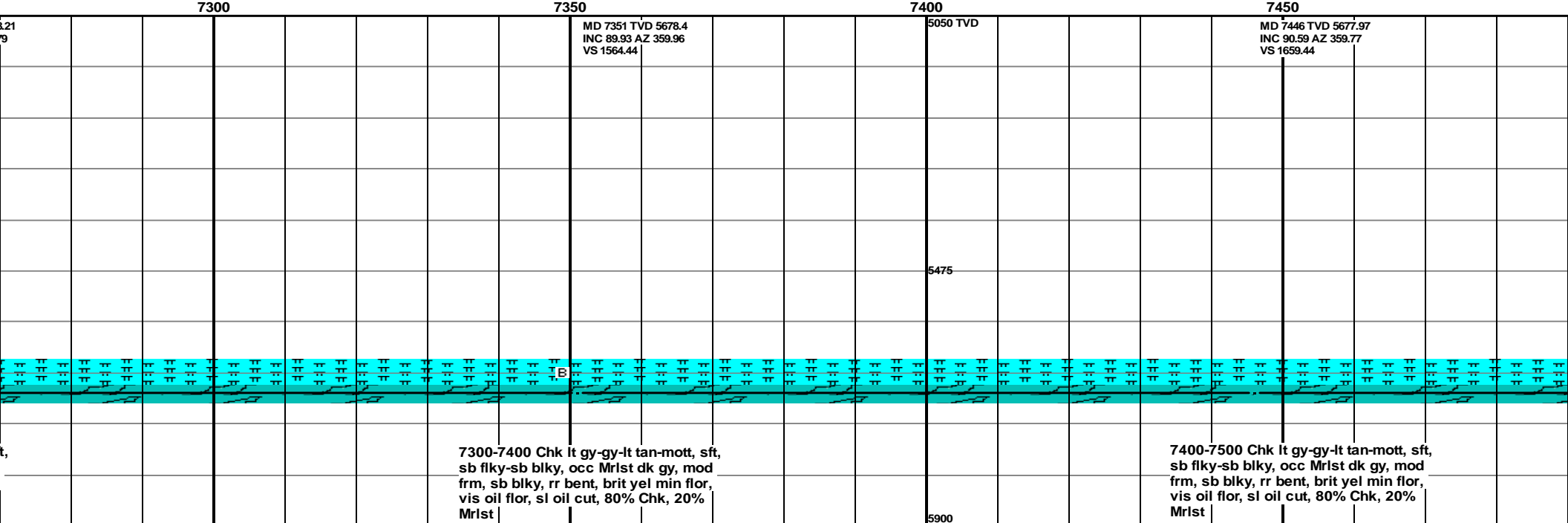
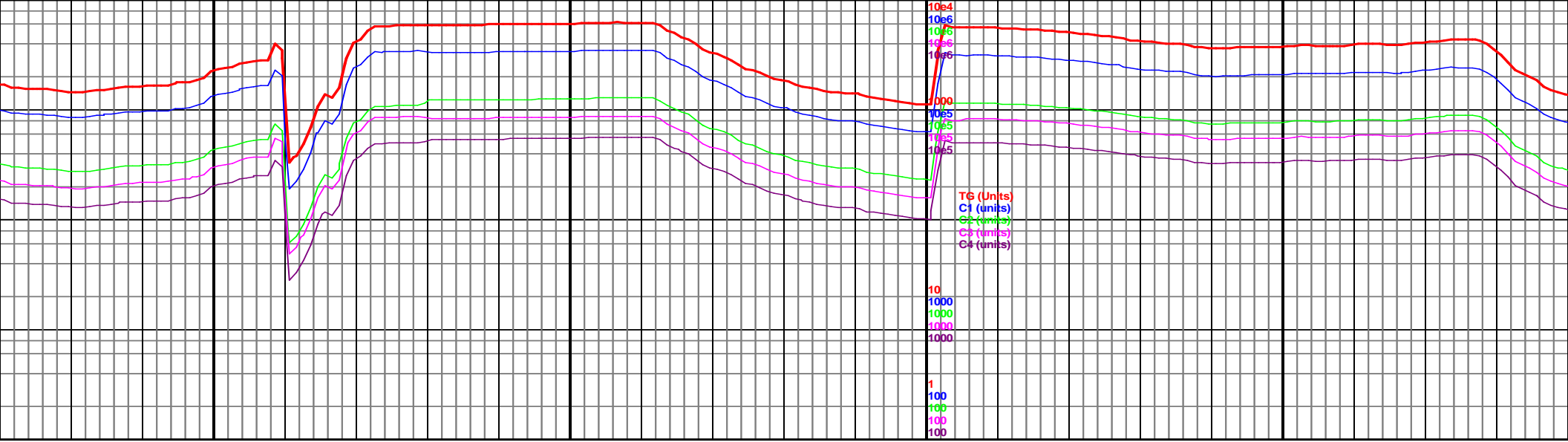
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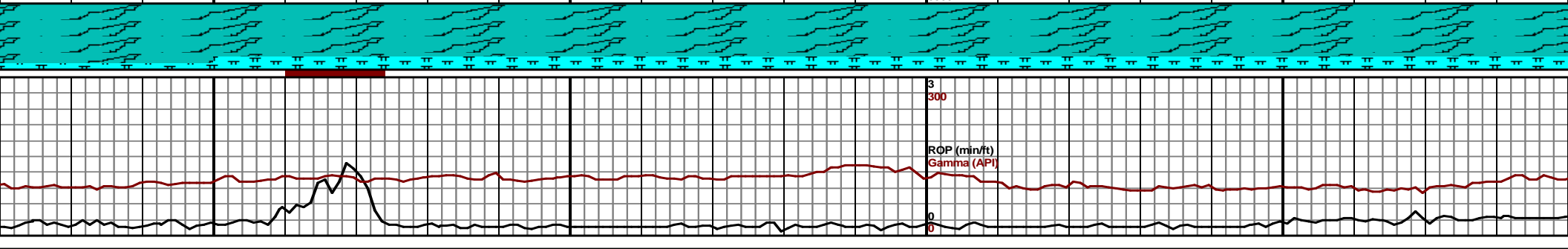


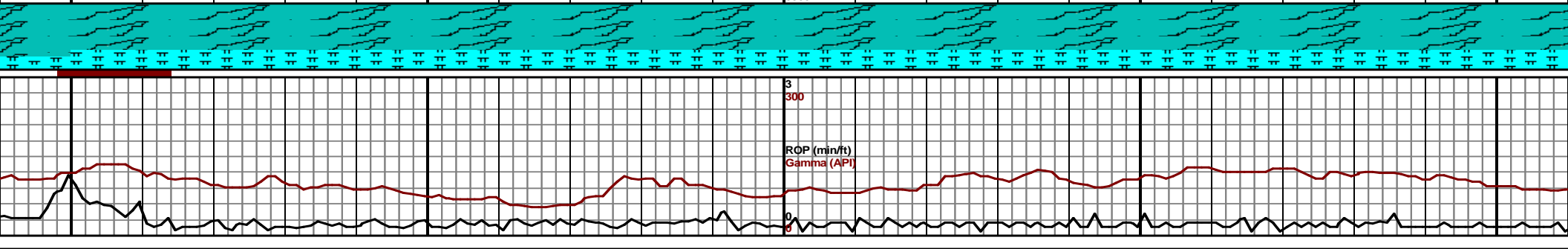
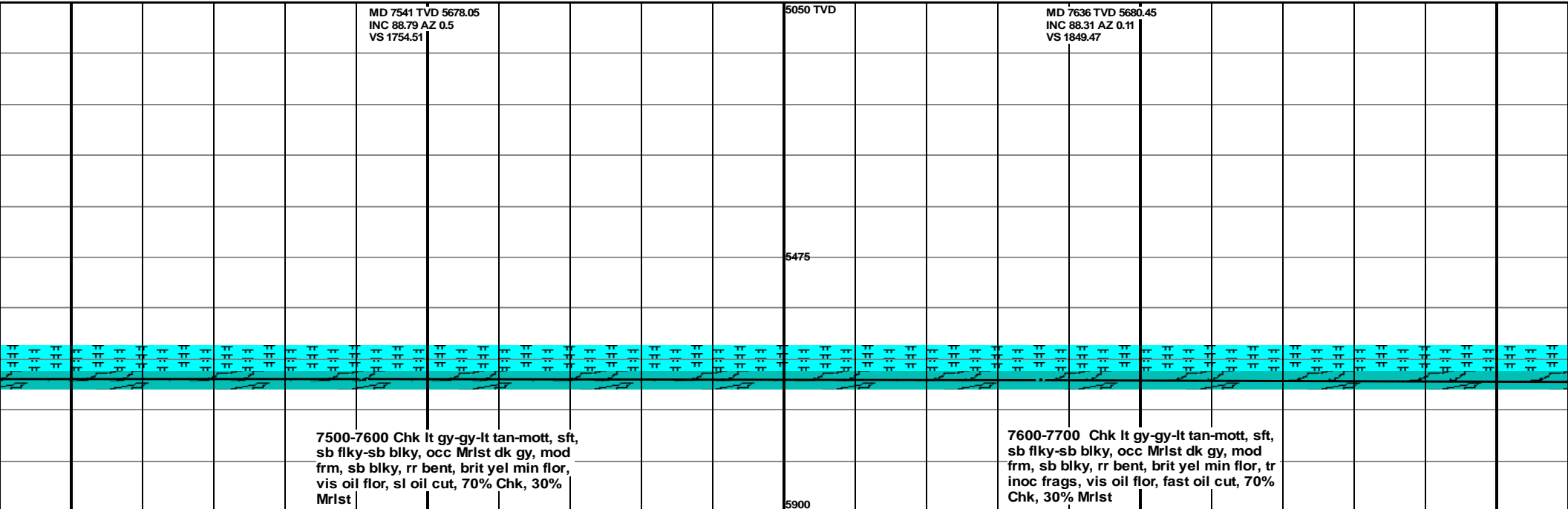
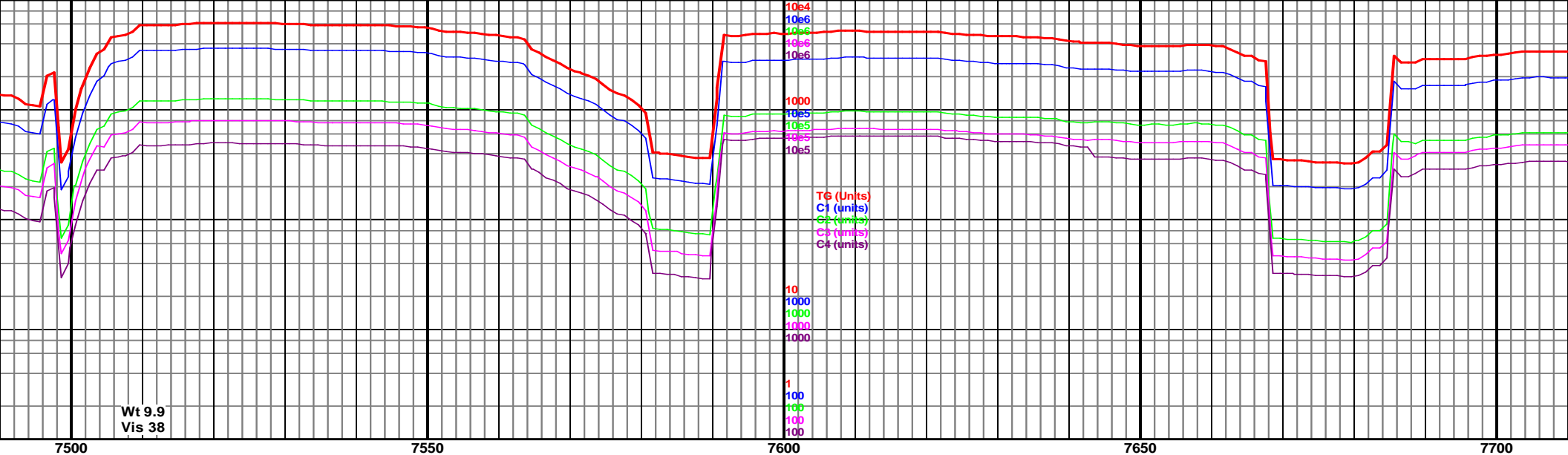


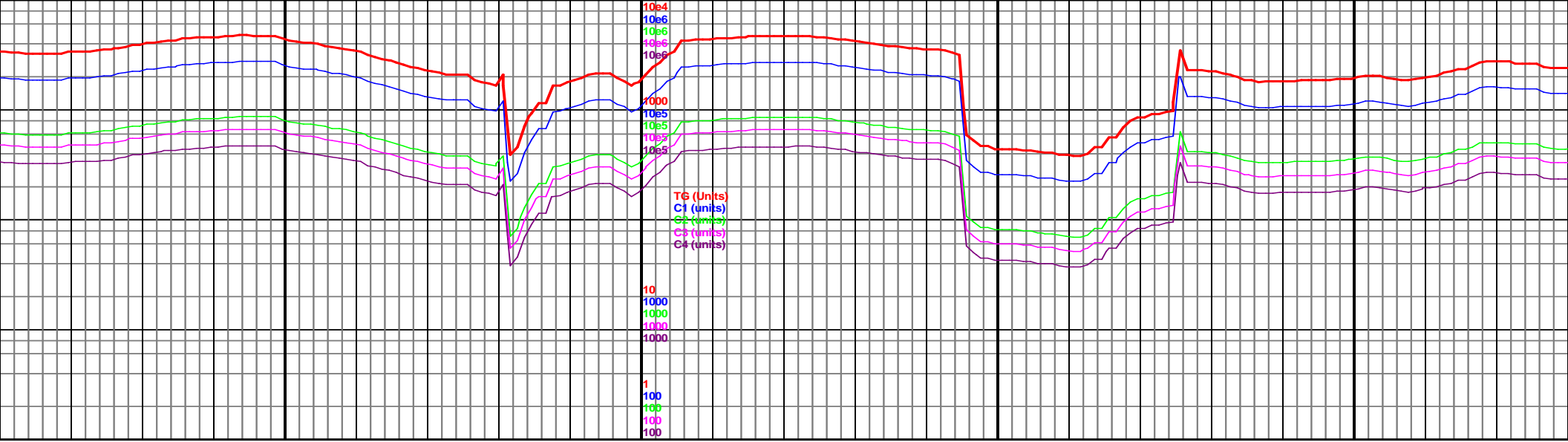


7300-7400 Chk lt gy-gy-lt tan-mott, sft, sb flky-sb blk, occ Mrlst dk gy, mod frm, sb blk, rr bent, brit yel min flor, vis oil flor, sl oil cut, 80% Chk, 20% Mrlst

7400-7500 Chk lt gy-gy-lt tan-mott, sft, sb flky-sb blk, occ Mrlst dk gy, mod frm, sb blk, rr bent, brit yel min flor, vis oil flor, sl oil cut, 80% Chk, 20% Mrlst





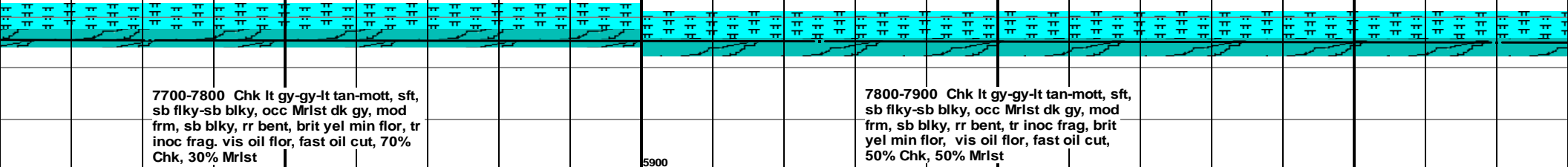


MD 7731 TVD 5683.98
INC 87.43 AZ 359.17
VS 1944.4

5050 TVD

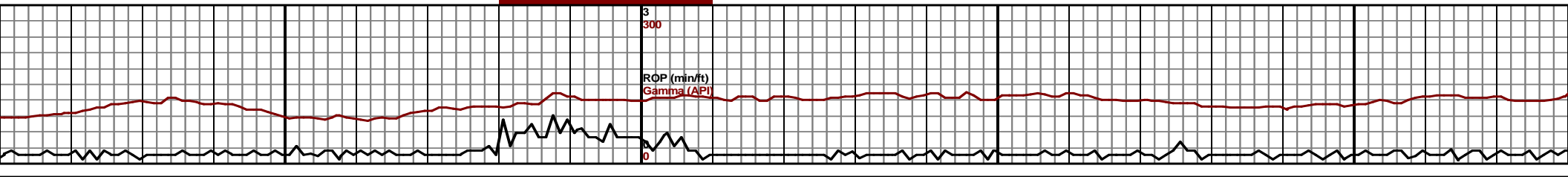
MD 7825 TVD 5686.39
INC 89.63 AZ 359.73
VS 2038.36

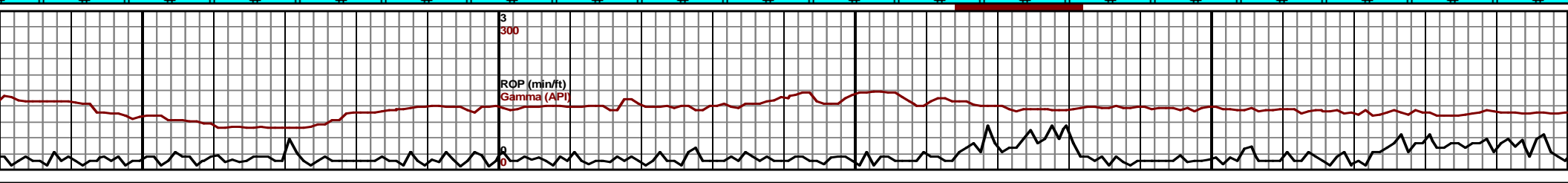
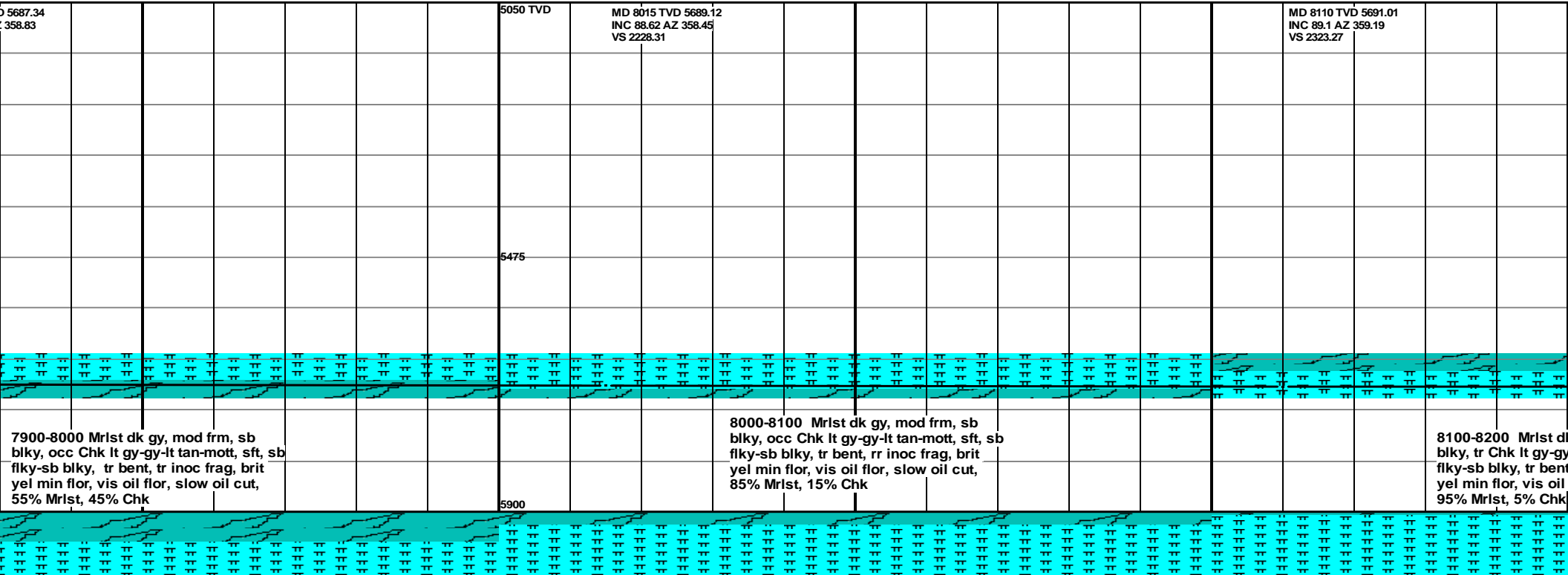
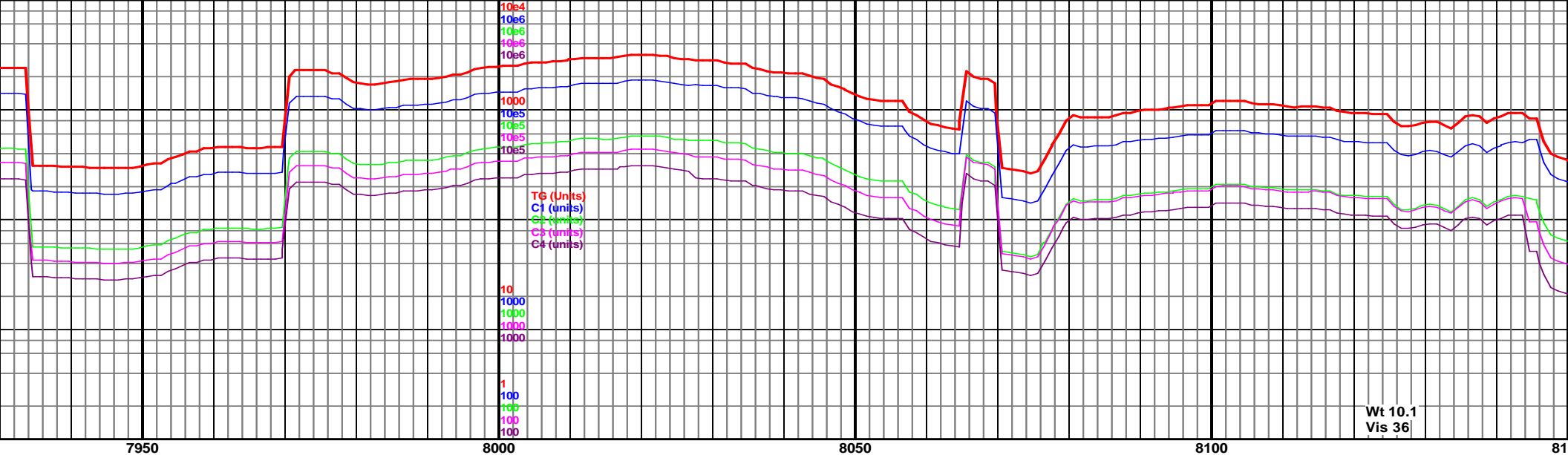
MD 7920 TVD
INC 89.23 AZ
VS 2133.35

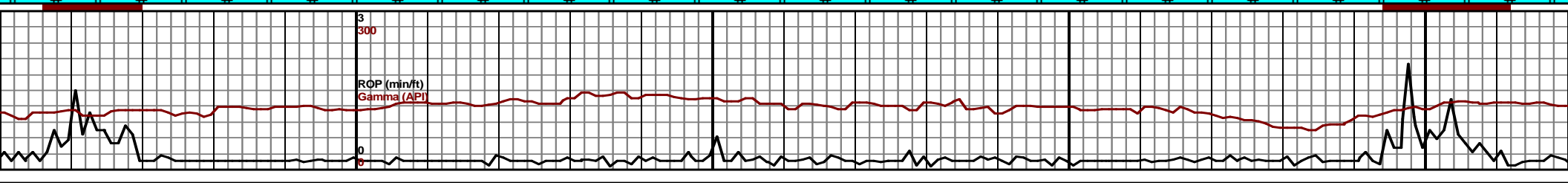
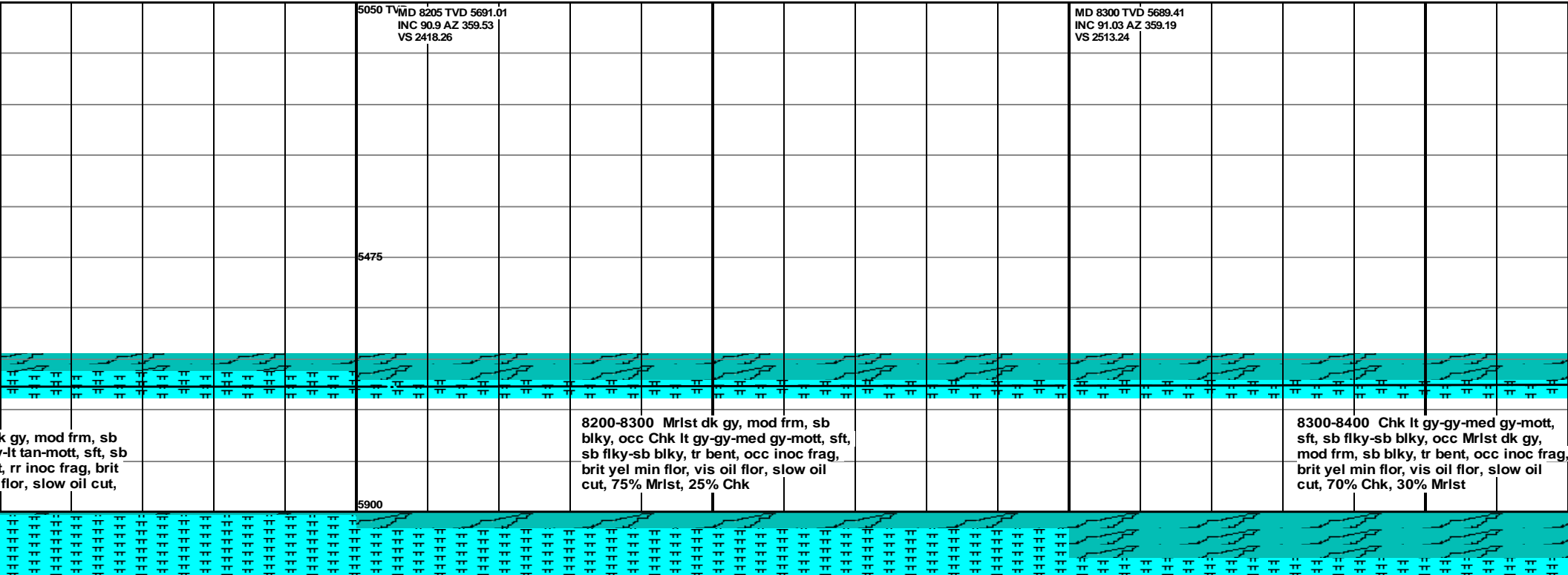
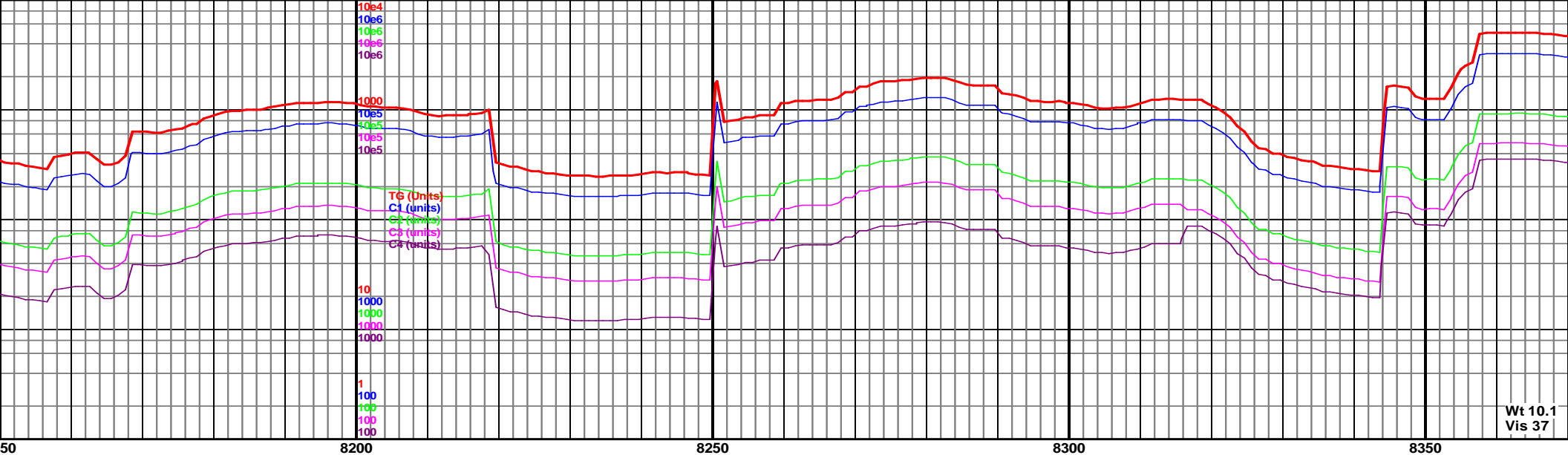


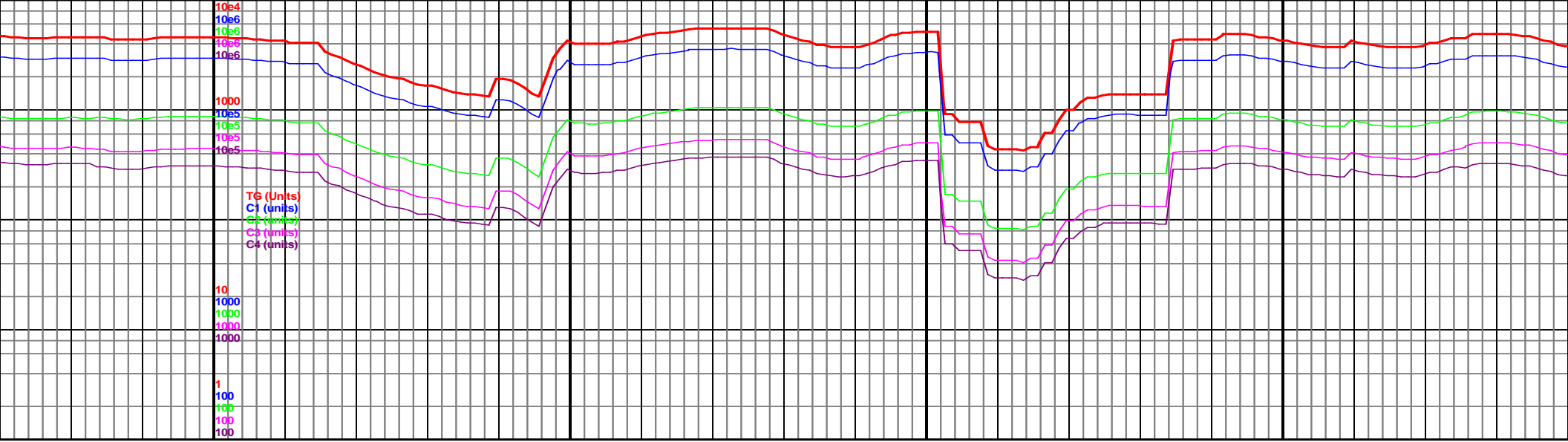
7700-7800 Chk lt gy-gy-lt tan-mott, sft,
sb flky-sb blk, occ Mrlst dk gy, mod
frm, sb blk, rr bent, brit yel min flor, tr
inoc frag. vis oil flor, fast oil cut, 70%
Chk, 30% Mrlst

7800-7900 Chk lt gy-gy-lt tan-mott, sft,
sb flky-sb blk, occ Mrlst dk gy, mod
frm, sb blk, rr bent, tr inoc frag, brit
yel min flor, vis oil flor, fast oil cut,
50% Chk, 50% Mrlst









MD 8395 TVD 5688.25
INC 90.37 AZ 359.2
VS 2608.22

MD 8490 TVD 5689.06
INC 88.66 AZ 359.53
VS 2703.21

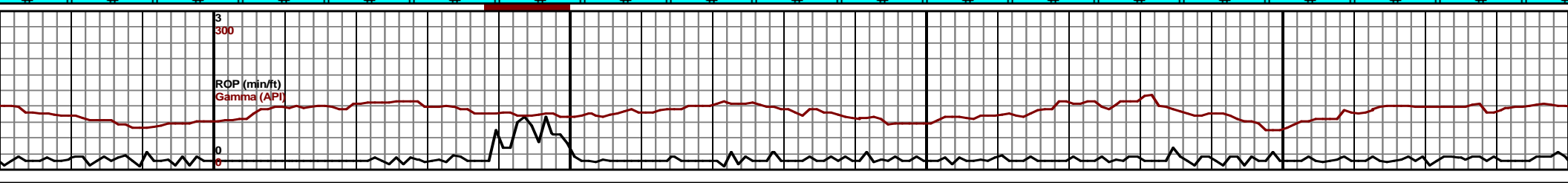
MD 8585 TVD 5689.06
INC 87.66 AZ 359.53
VS 2703.21

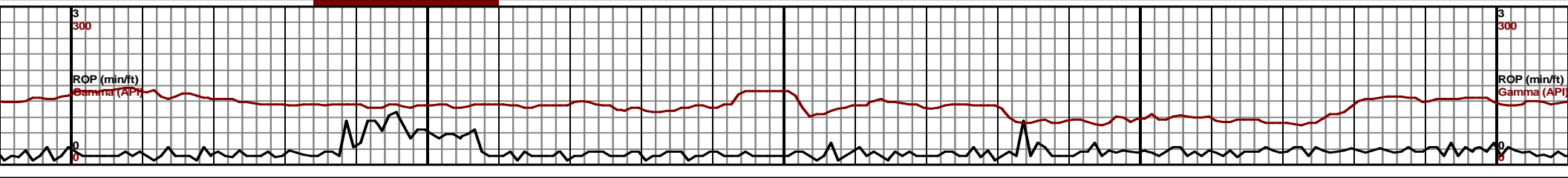
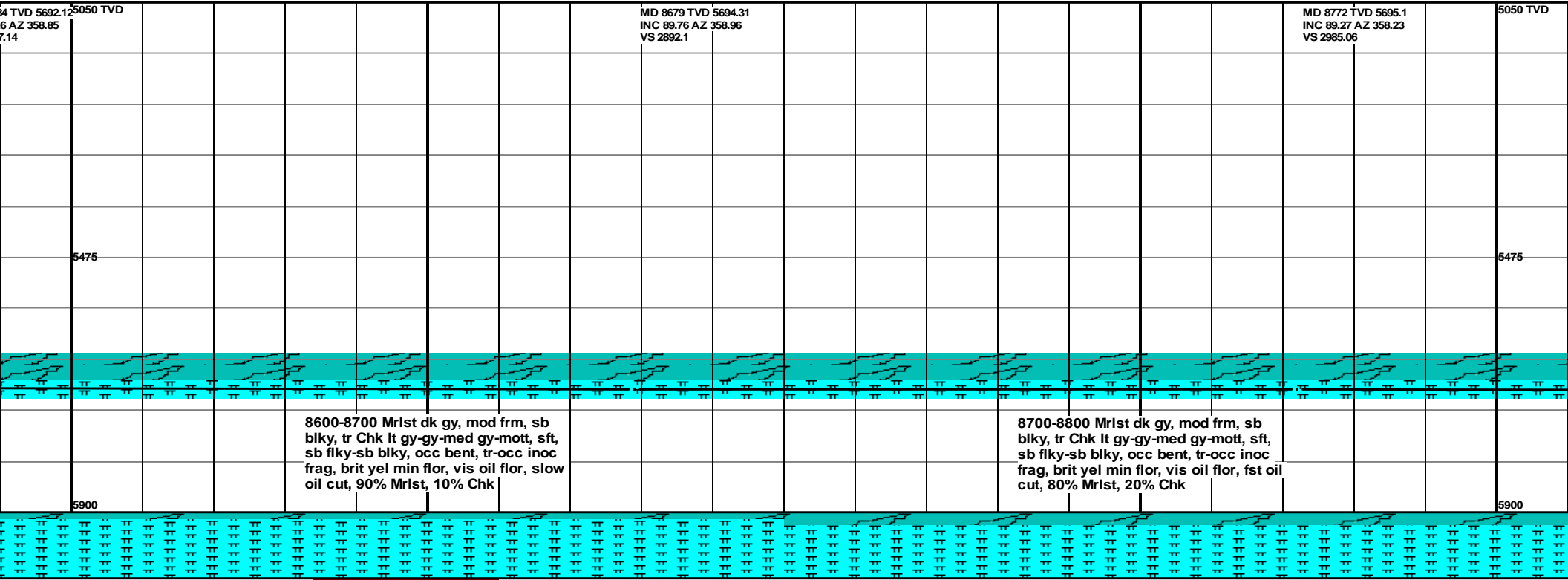
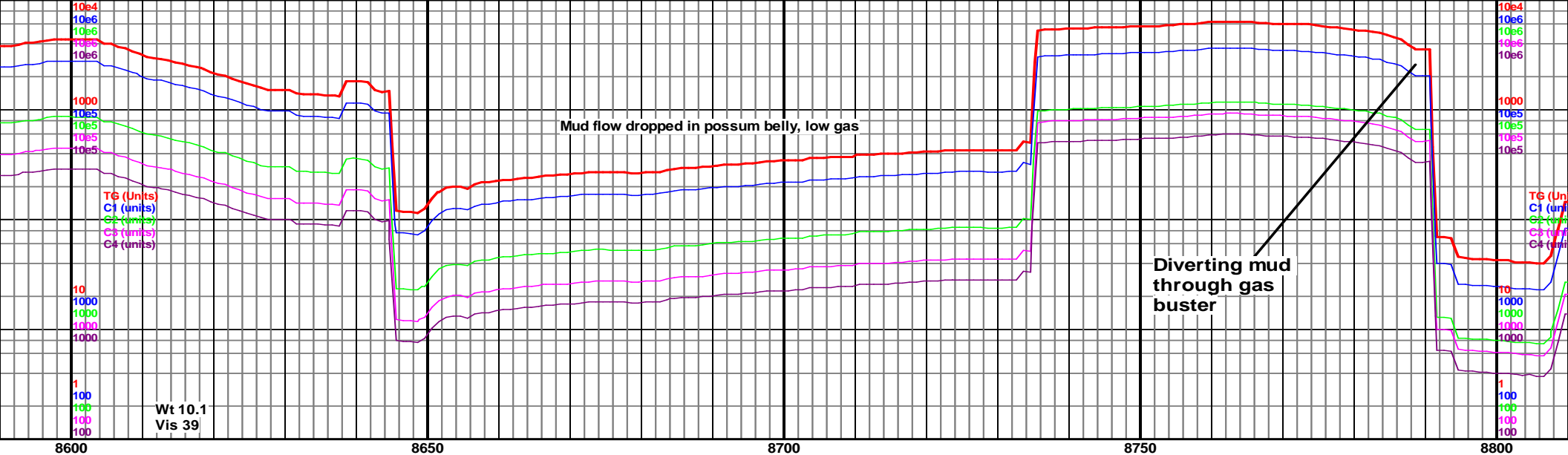
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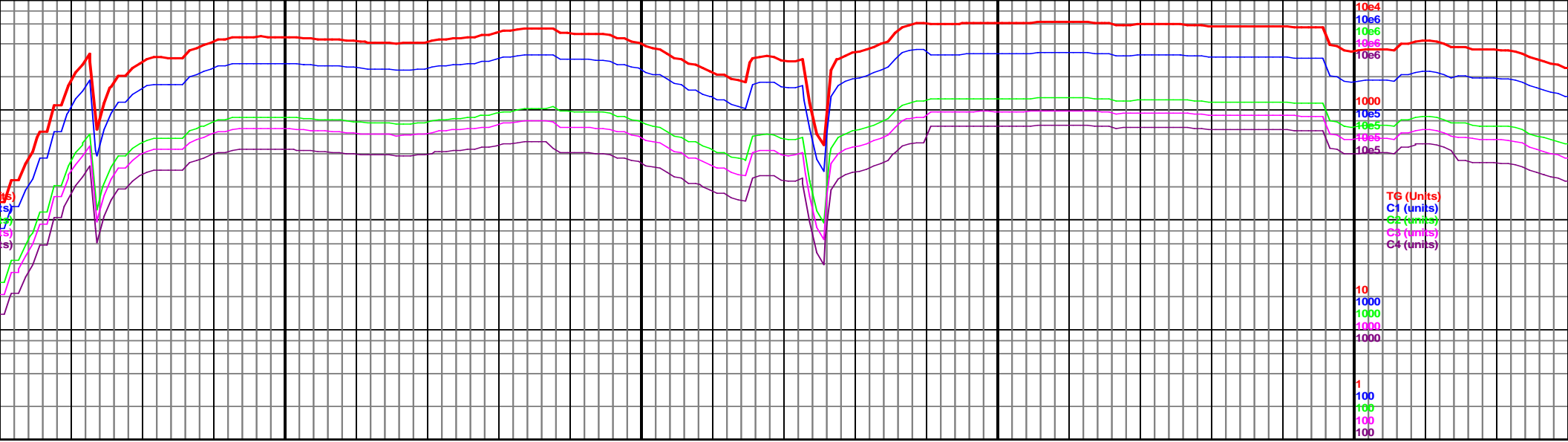
8400-8500 Chk lt gy-gy-med gy-mott,
sft, sb flky-sb blkly, occ Mrlst dk gy,
mod frm, sb blkly, tr bent, occ inoc frag,
brit yel min flor, vis oil flor, slow oil
cut, 60% Chk, 40% Mrlst

8500-8600 Mrlst dk gy, mod frm, sb
blkly, tr Chk lt gy-gy-med gy-mott, sft,
sb flky-sb blkly, occ bent, tr inoc frag,
brit yel min flor, vis oil flor, slow oil
cut, 90% Mrlst, 10% Chk

5900







8850

8900

8950

9000

MD 8864 TVD 5697.29
INC 88 AZ 357.6
VS 3076.98

MD 8956 TVD 5699.3
INC 89.49 AZ 357.79
VS 3168.88

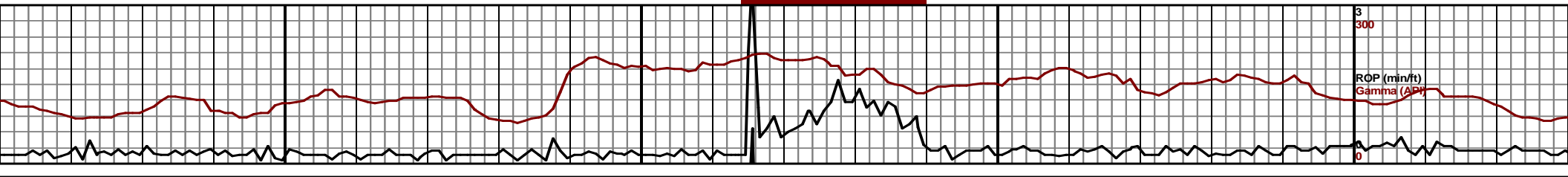
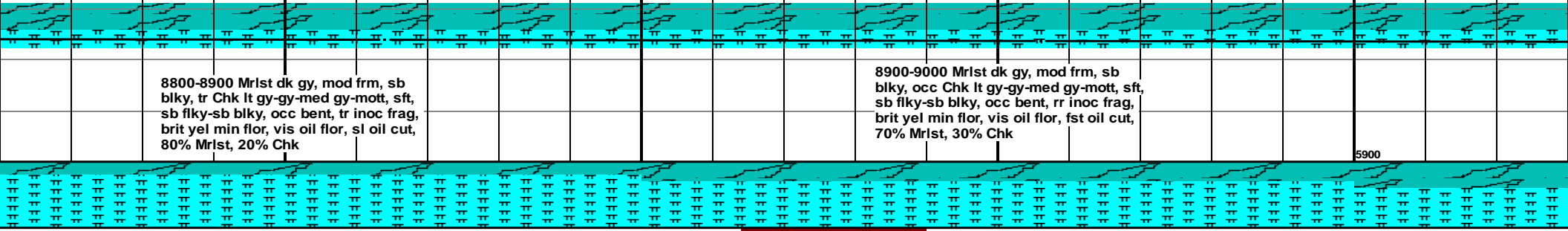
5050 TVD

5475

5900

8800-8900 Mrlst dk gy, mod frm, sb
blky, tr Chk lt gy-gy-med gy-mott, sft,
sb flky-sb blky, occ bent, tr inoc frag,
brit yel min flor, vis oil flor, sl oil cut,
80% Mrlst, 20% Chk

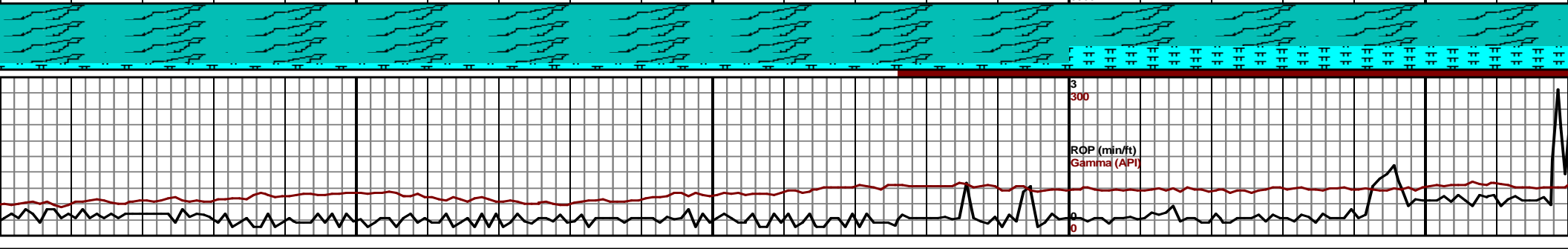
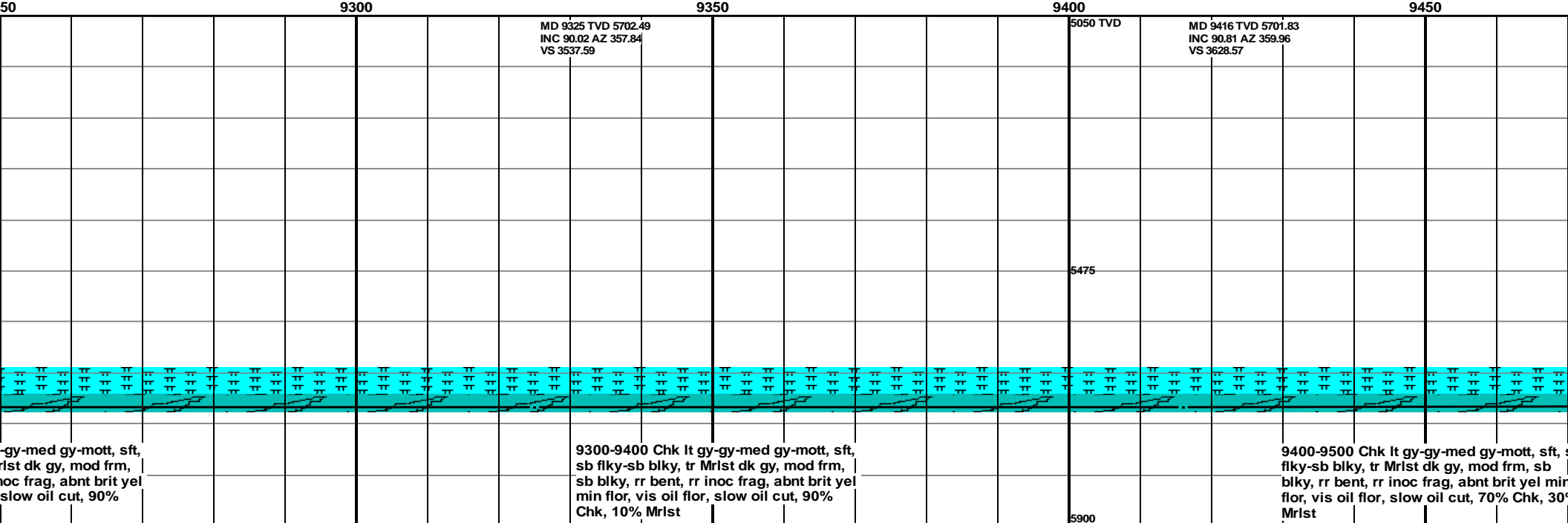
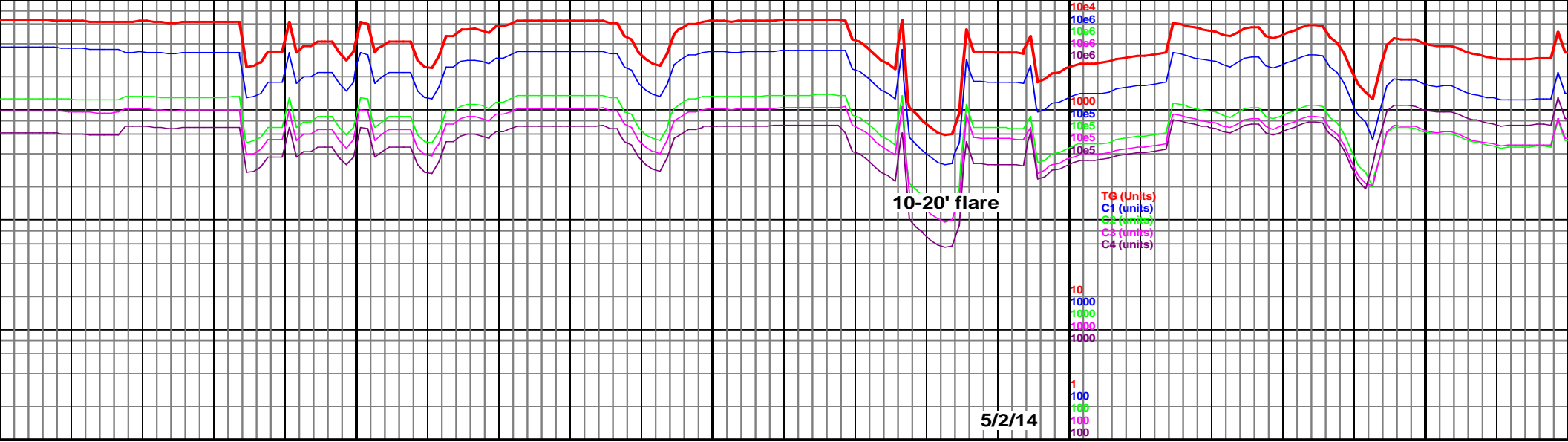
8900-9000 Mrlst dk gy, mod frm, sb
blky, occ Chk lt gy-gy-med gy-mott, sft,
sb flky-sb blky, occ bent, rr inoc frag,
brit yel min flor, vis oil flor, fst oil cut,
70% Mrlst, 30% Chk

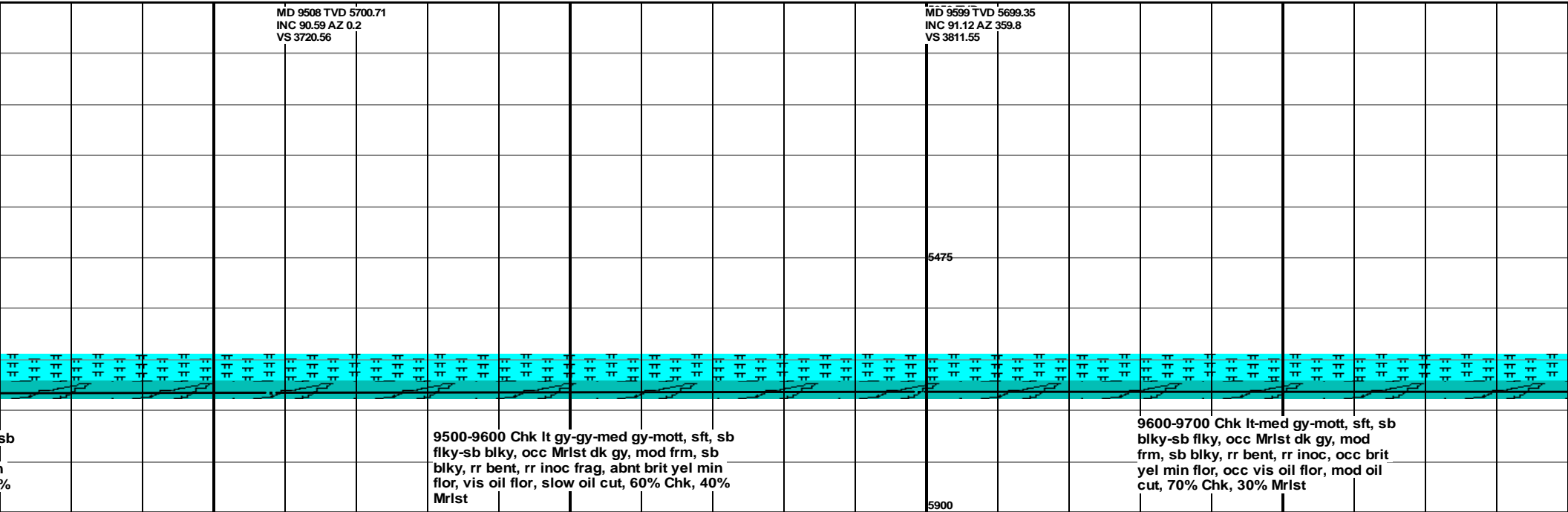


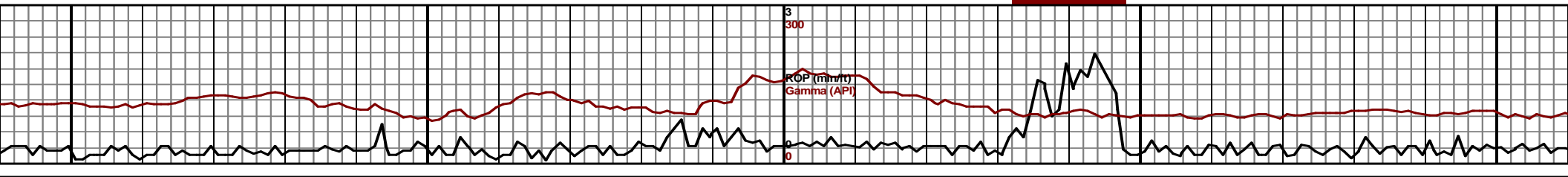
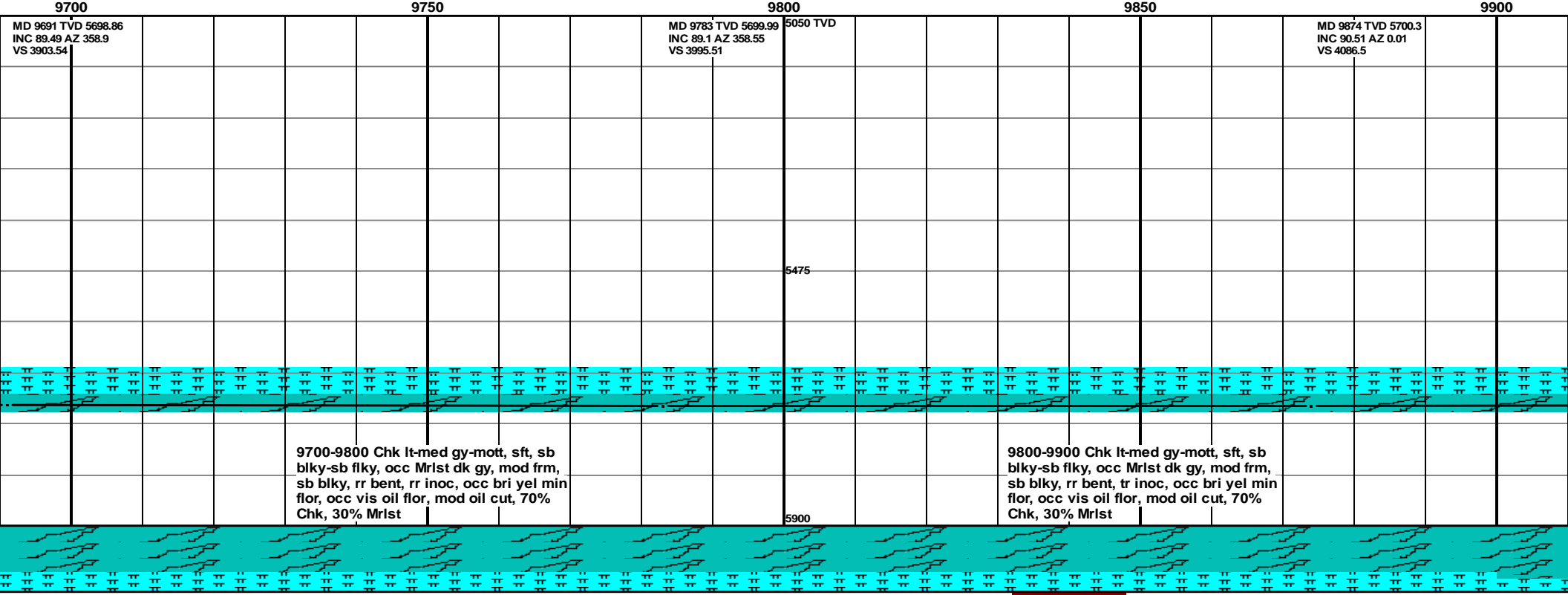
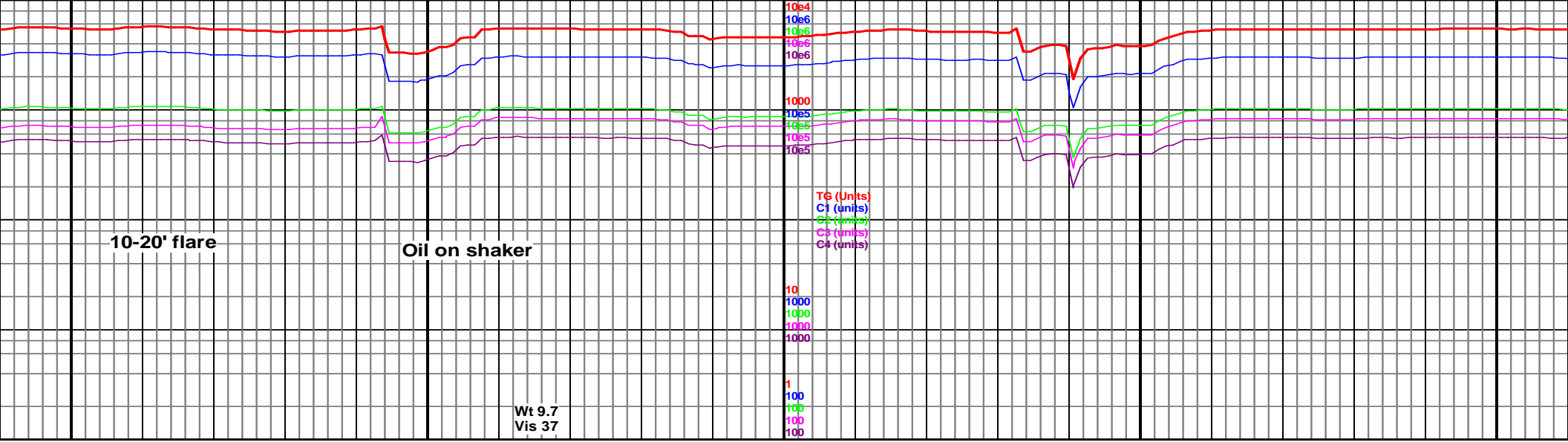
3
300

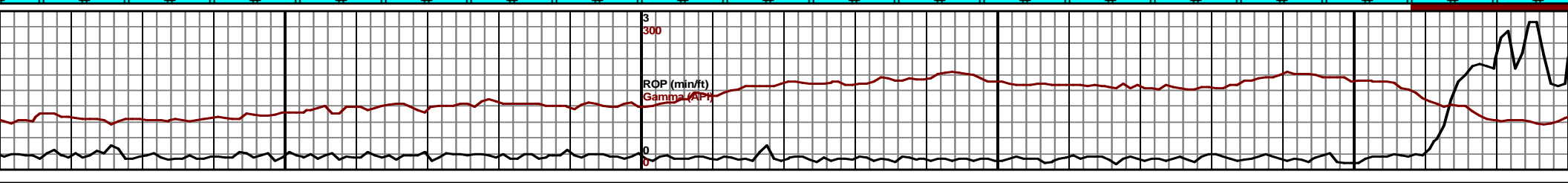
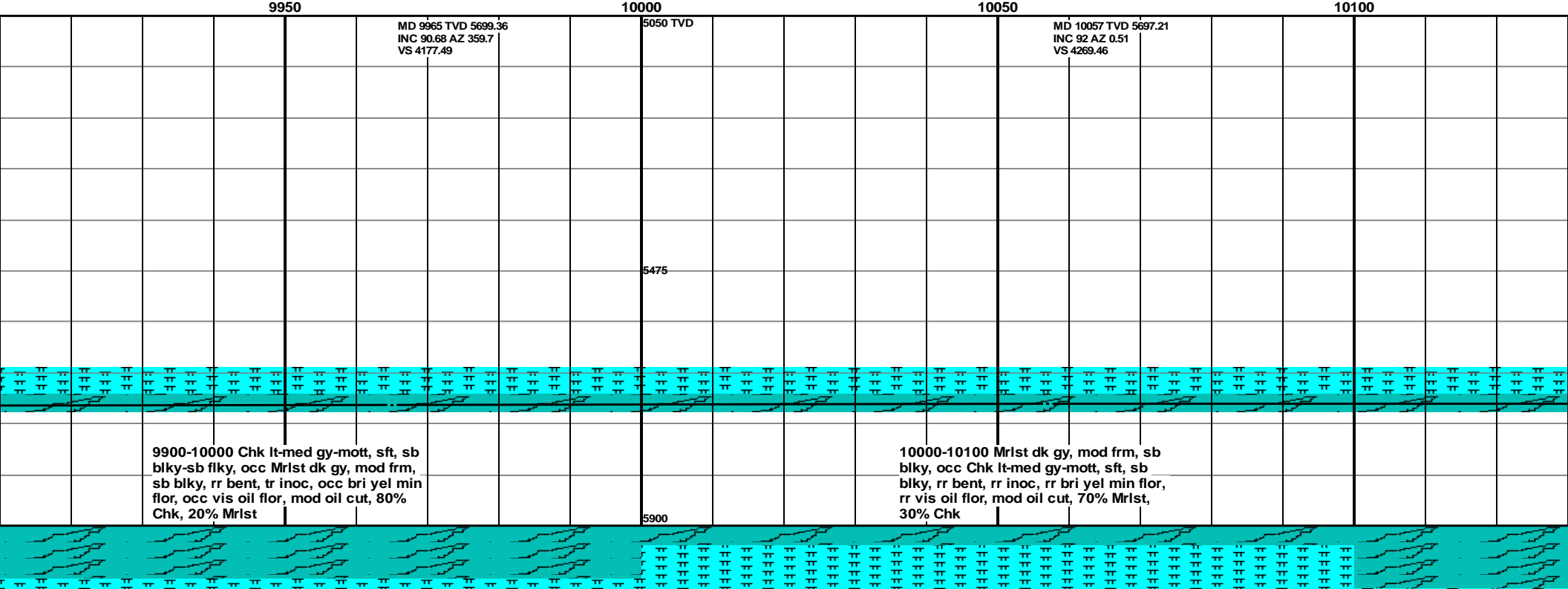
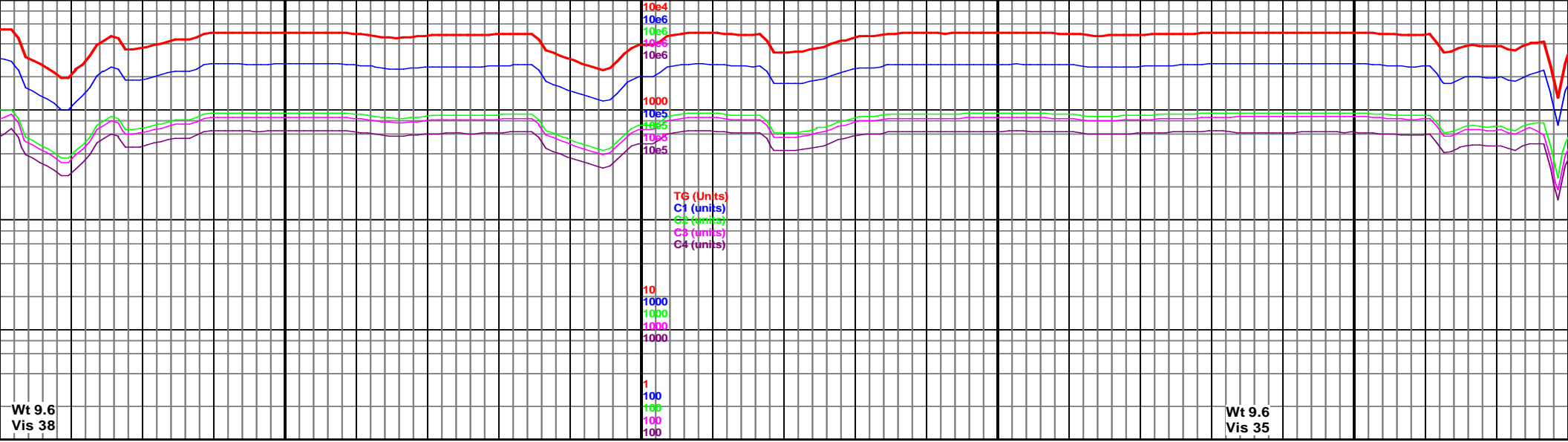
ROP (min/ft)
Gamma (API)

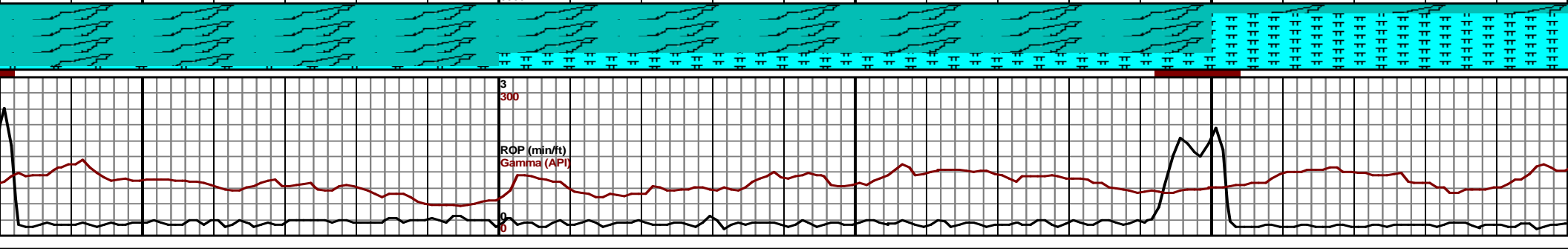
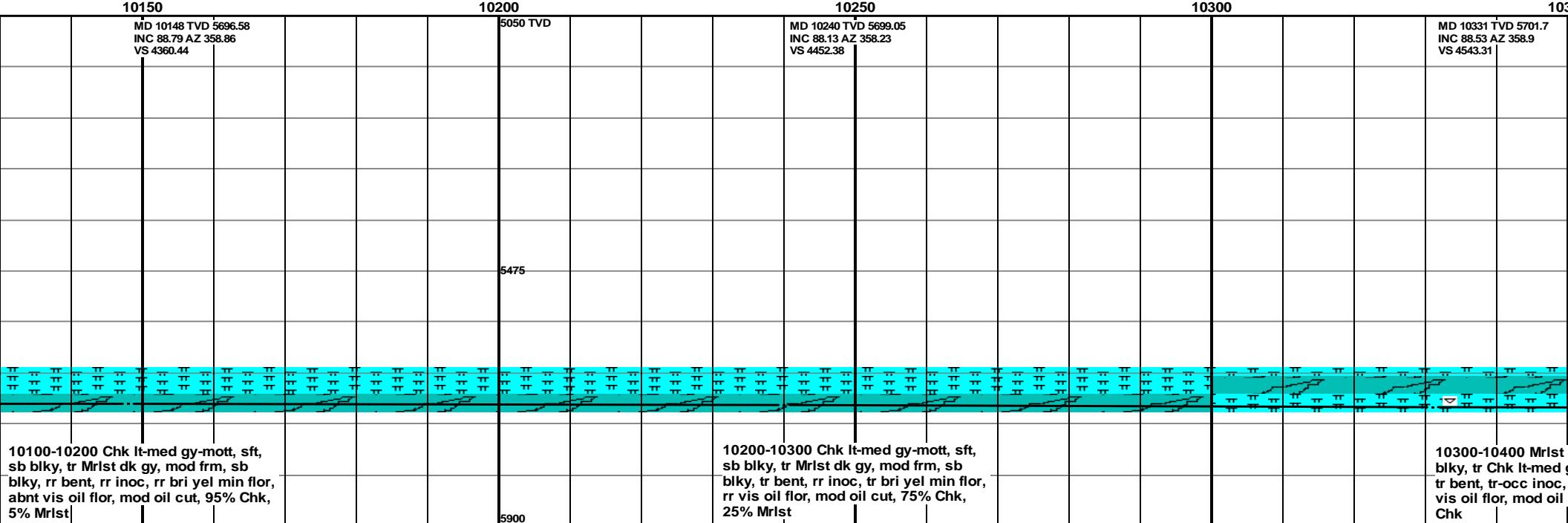
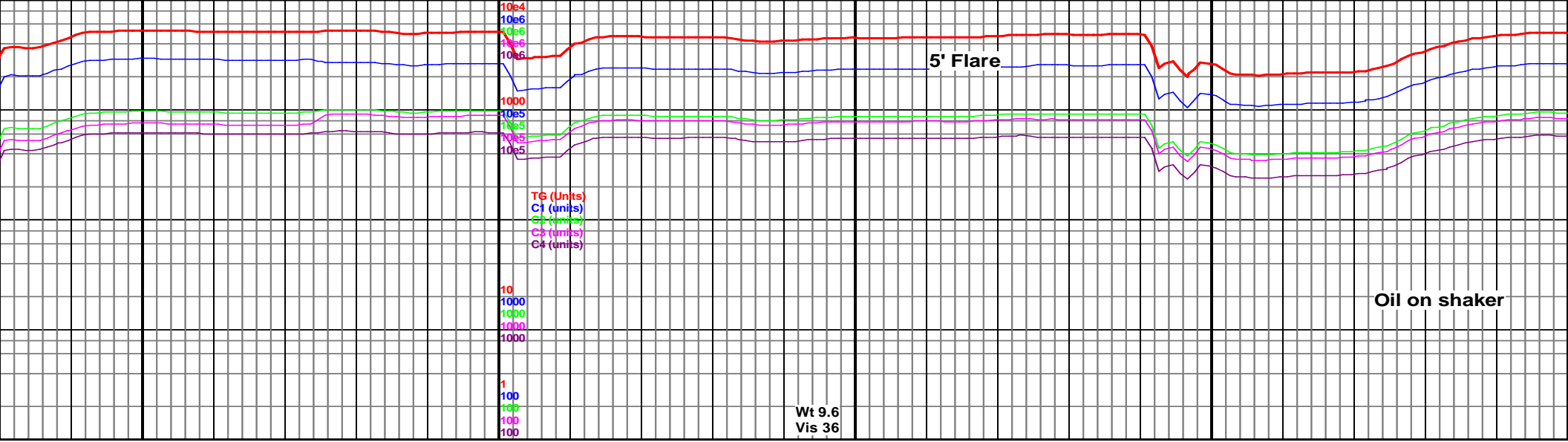
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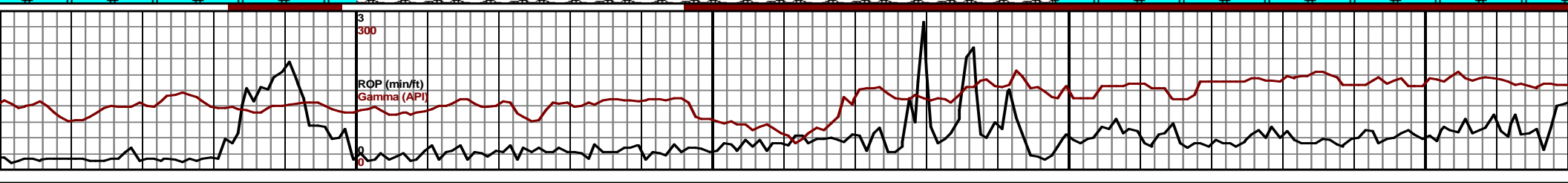
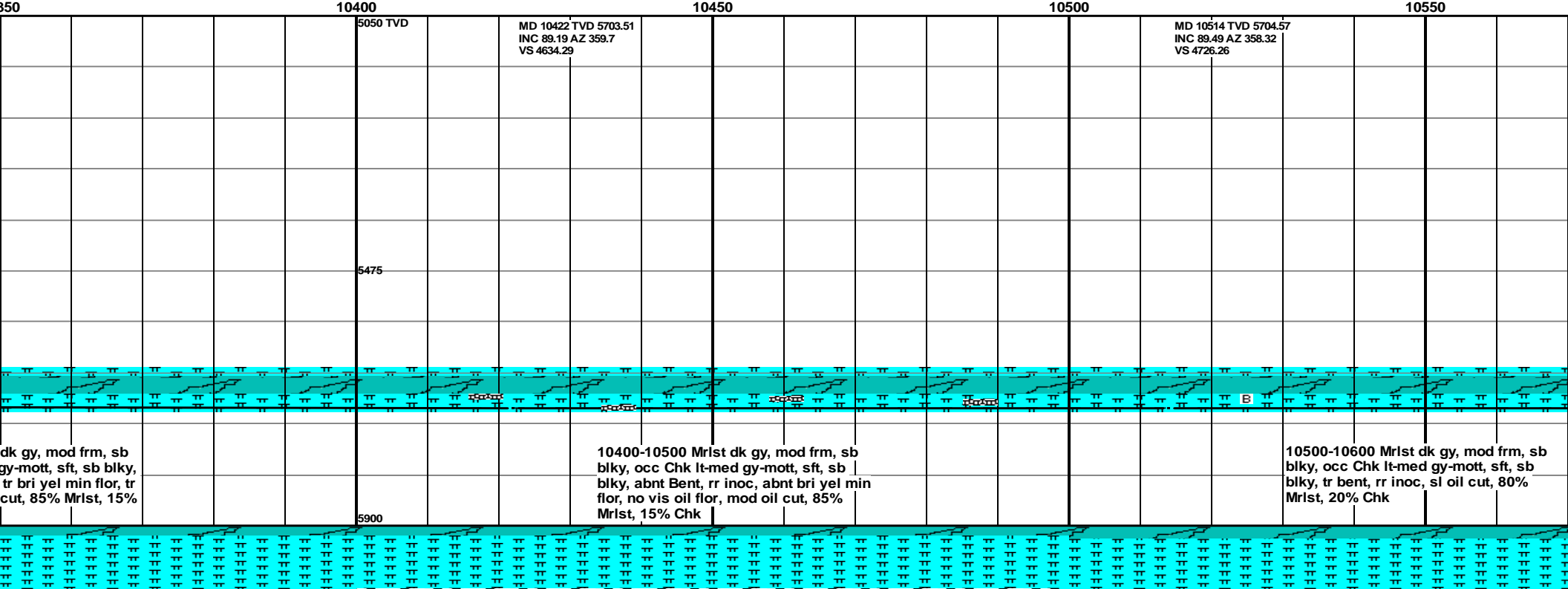
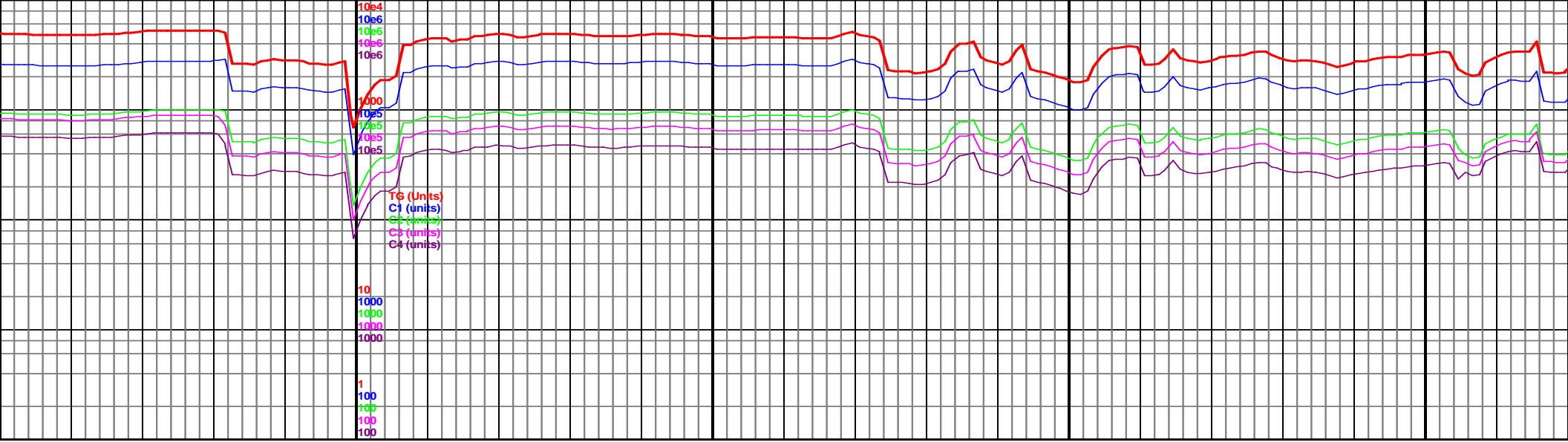


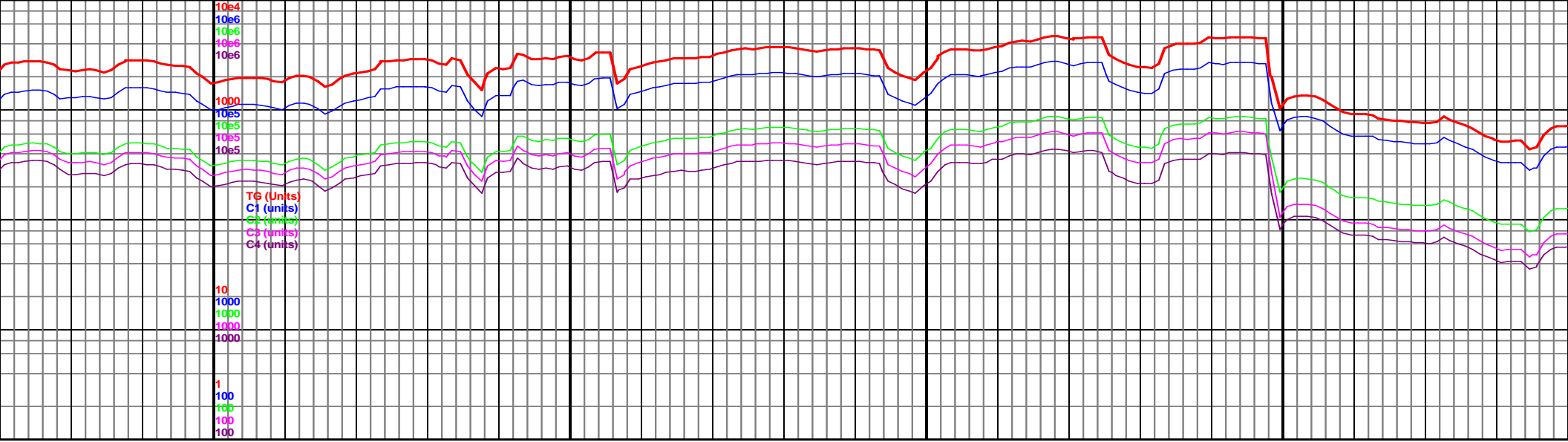












10600

10650

10700

10750

MD 10605 TVD 5703.64
INC 91.69 AZ 359.62
VS 4817.24

MD 10697 TVD 5700.47
INC 92.26 AZ 359.09
VS 4909.18

MD 10753 TVD 5698.47
INC 91.82 AZ 358.39
VS 4965.13

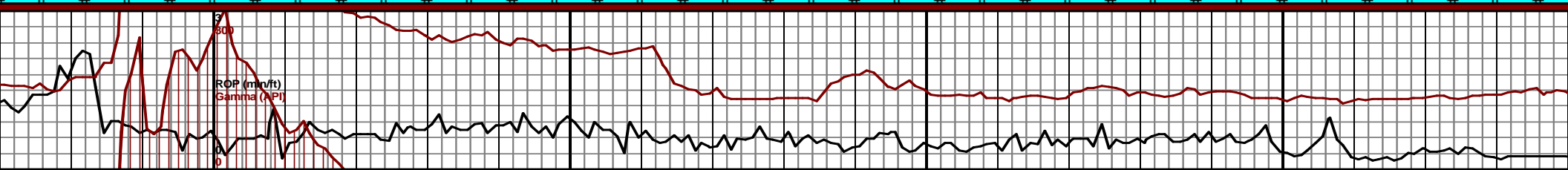
5475



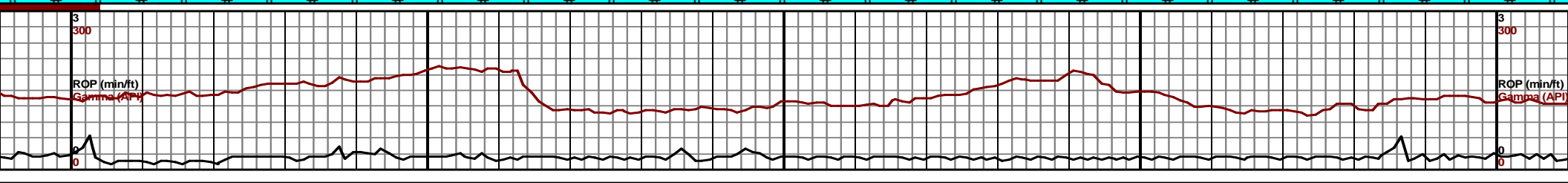
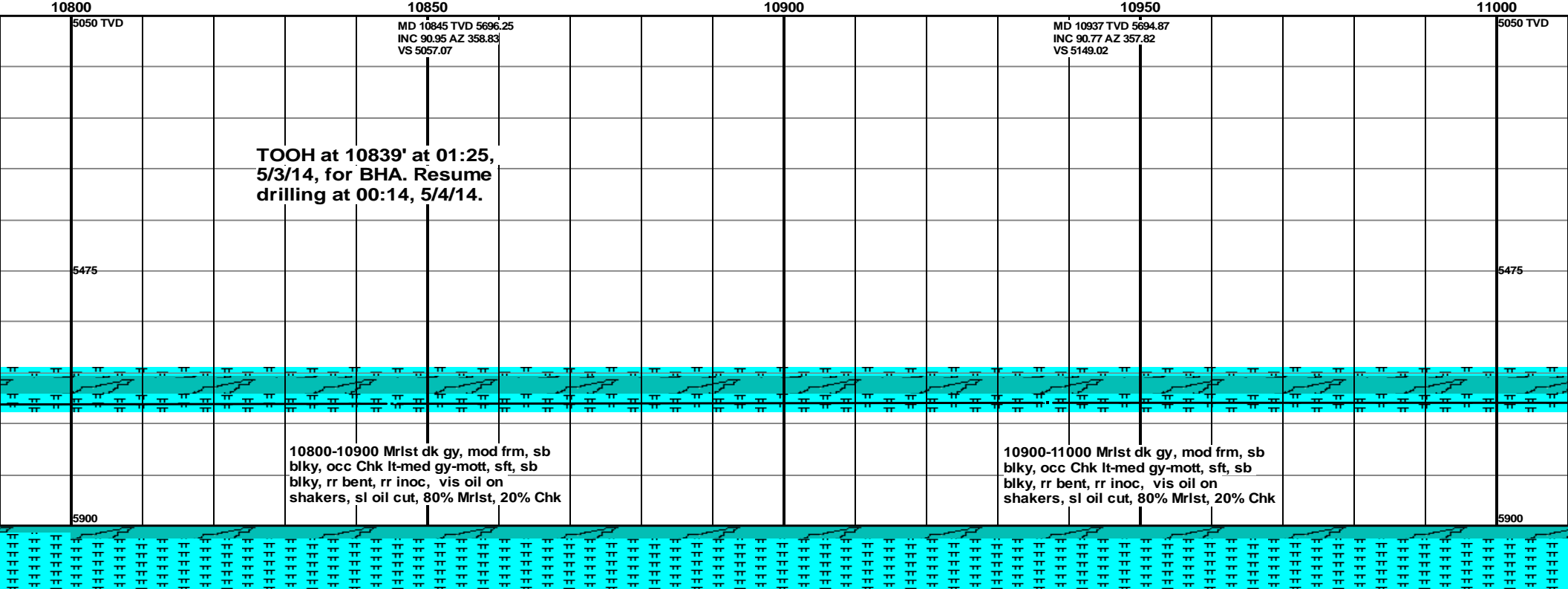
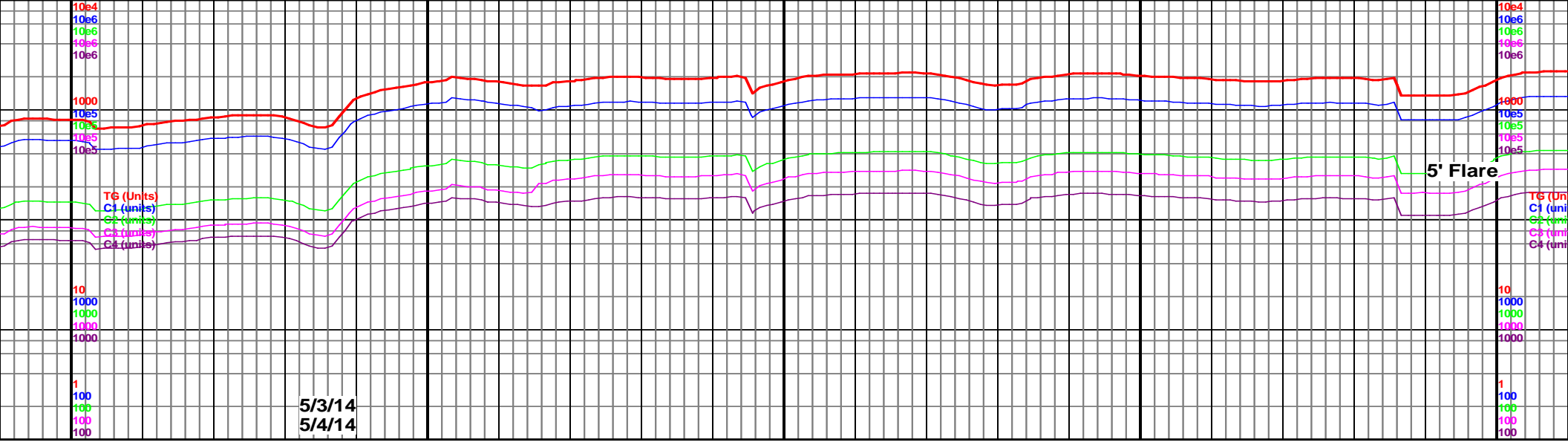
10600-10700 Mrlst dk gy, mod frm, sb
blky, rr Chk lt-med gy-mott, sft, sb blky,
rr bent, rr inoc, vis oil on shakers, sl
oil cut, 90% Mrlst, 10% Chk

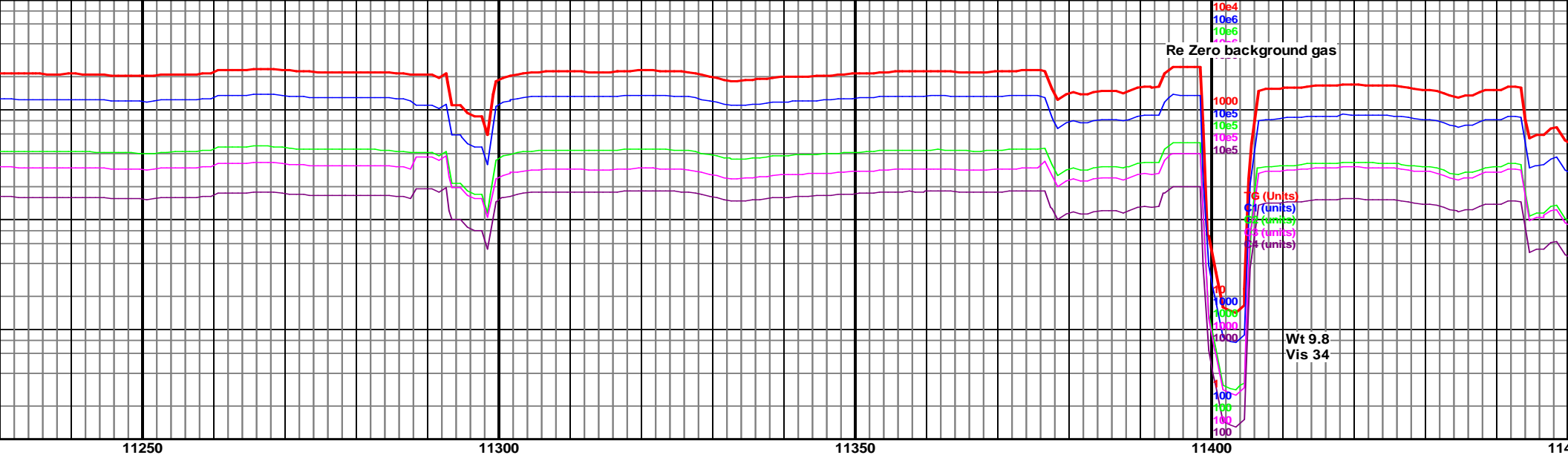
10700-10800 Mrlst dk gy, mod frm, sb
blky, rr Chk lt-med gy-mott, sft, sb blky,
rr bent, rr inoc, vis oil on shakers, sl
oil cut, 90% Mrlst, 10% Chk

5900



ROP (min/ft)
Gamma (API)





11250

11300

11350

11400

11450

MD 11302 TVD 5690.6
INC 90.42 AZ 358.29
VS 5513.8

MD 11393 TVD 5690.39
INC 89.85 AZ 358.18
VS 5604.76

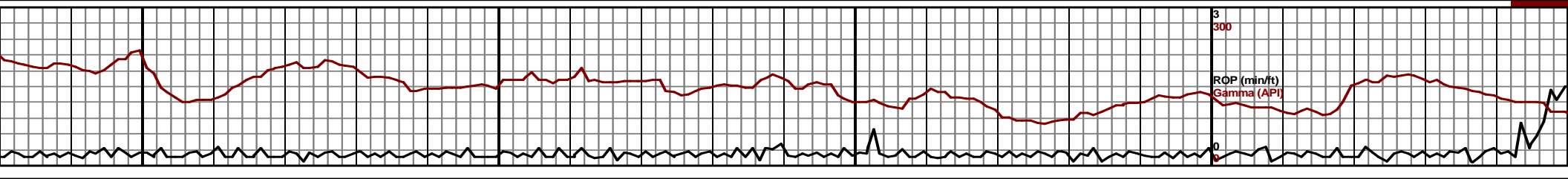
5475

11200-11300 Mrlst med-dk gy, mod frm,
sb blk-y-sb flky, tr Chk, lt gy, sb blk-y, rr
bent, rr inoc, rr bri yel min flor, sl oil
cut, 90% mrlist, 10% Chk

11300-11400 Chk lt-med gy, sft, sb
blk-y, abnt Mrlist dk gy, frm, sb blk-y, rr
bent, rr bri yel min flor, occ vis oil flor,
mod fst oil cut, 60% Chk, 40% Mrlist

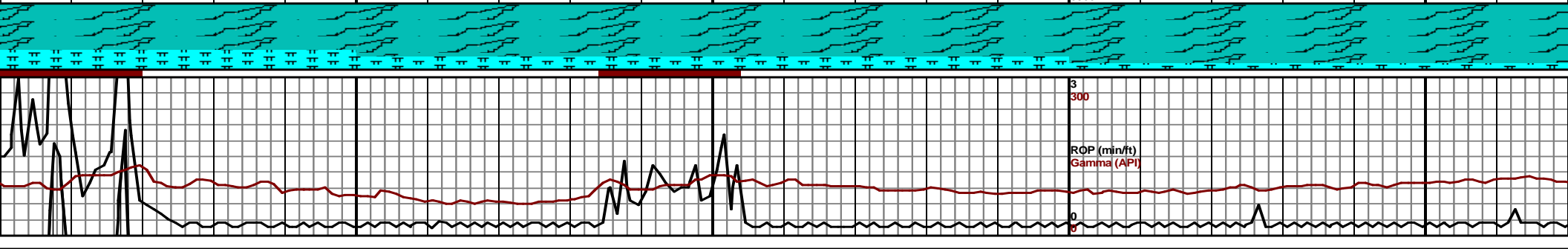
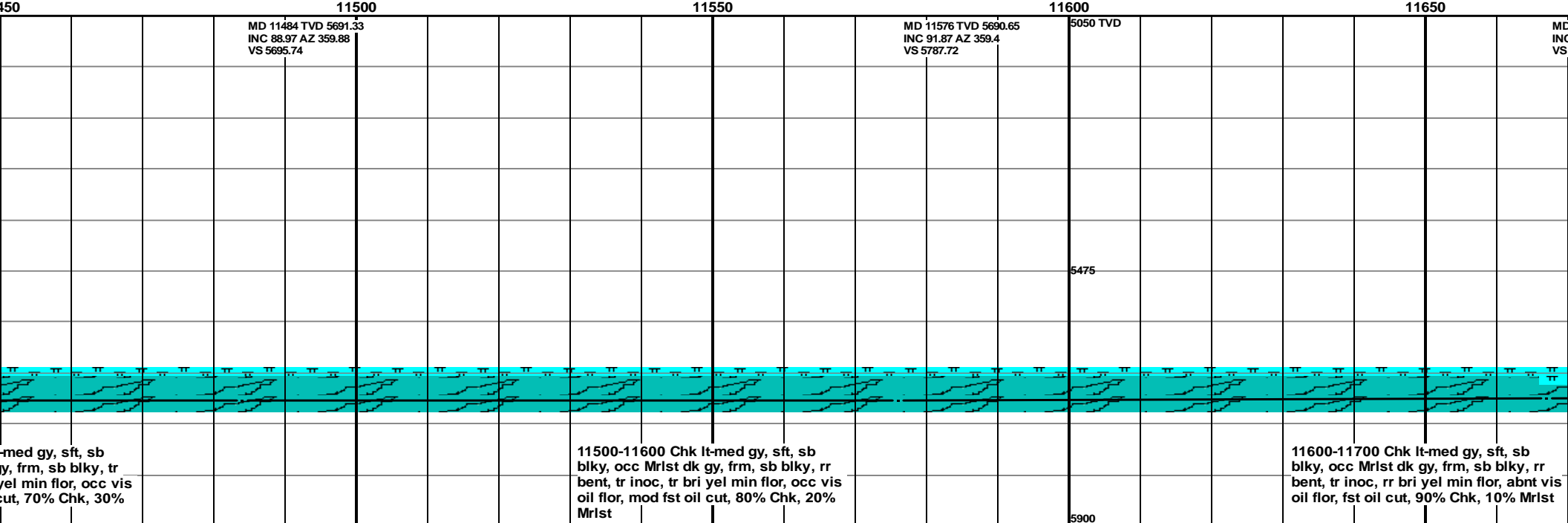
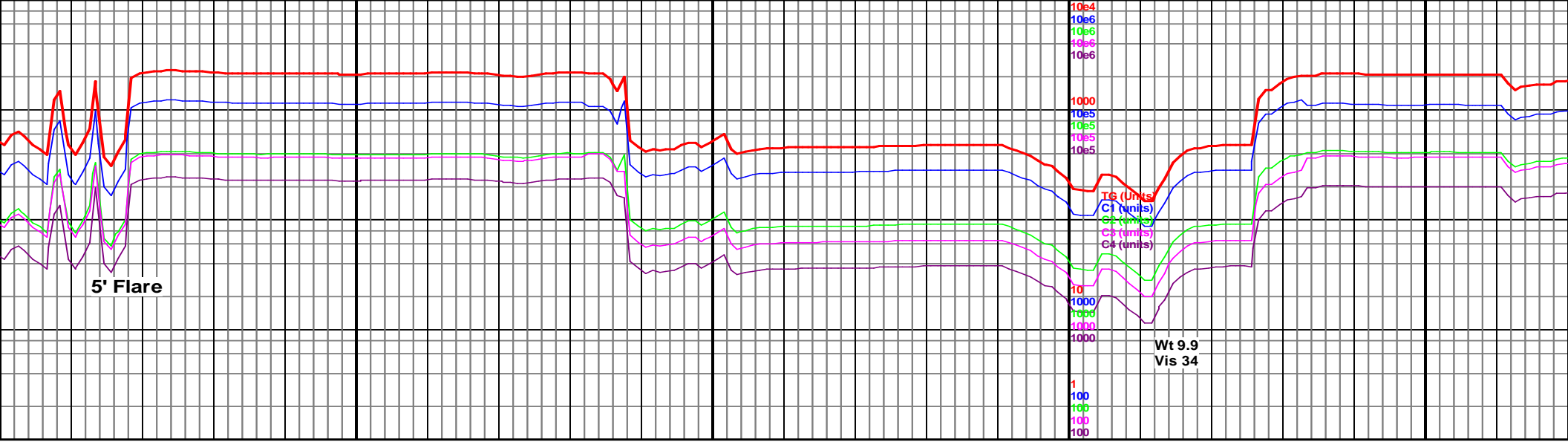
11400-11500 Chk lt-med gy, sft, sb
blk-y, abnt Mrlist dk gy, frm, sb blk-y, rr
bent, rr inoc, tr bri yel min flor, mod fst oil cut,
Mrlist

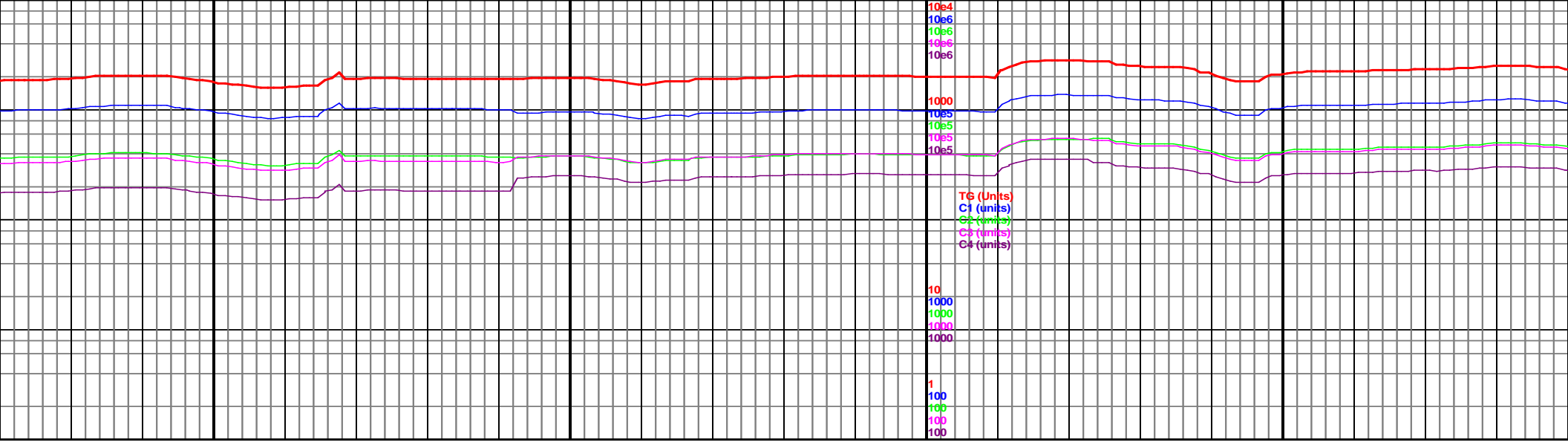
5900



3
300

ROP (min/ft)
Gamma (API)





11667 TVD 5687.44
C 92.18 AZ 359.02
5878.66

MD 11760 TVD 5683.94
INC 92.13 AZ 358.13
VS 5971.56

5050 TVD

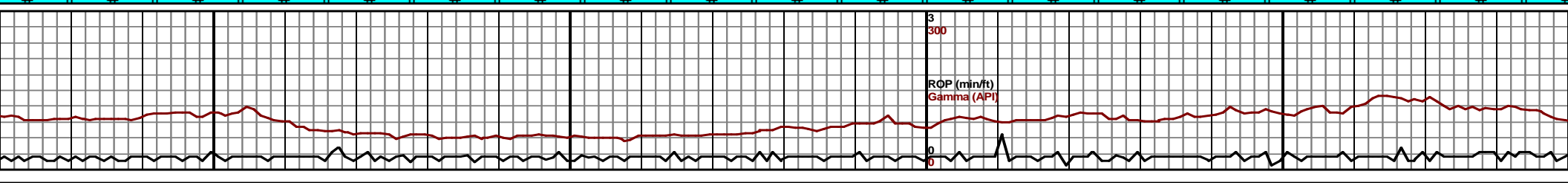
MD 11851 TVD 5680.41
INC 92.31 AZ 357.35
VS 6062.42

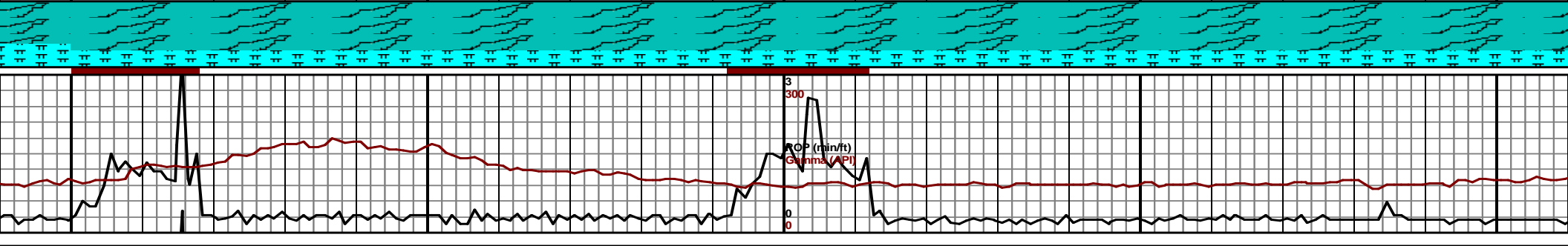
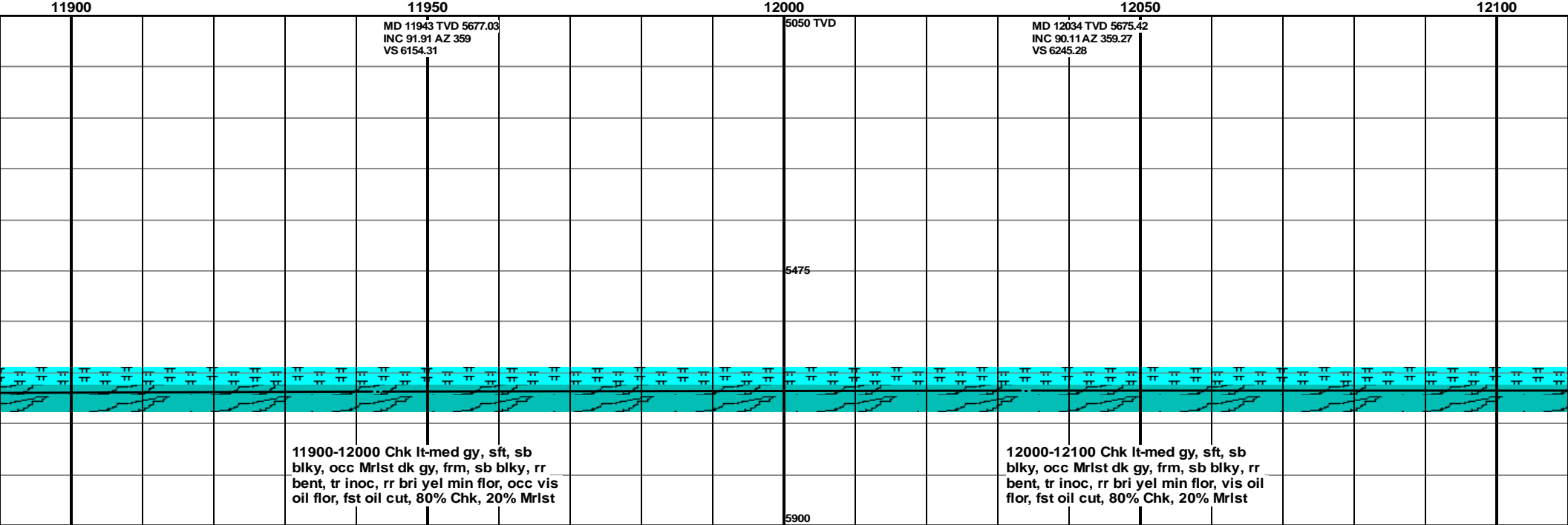
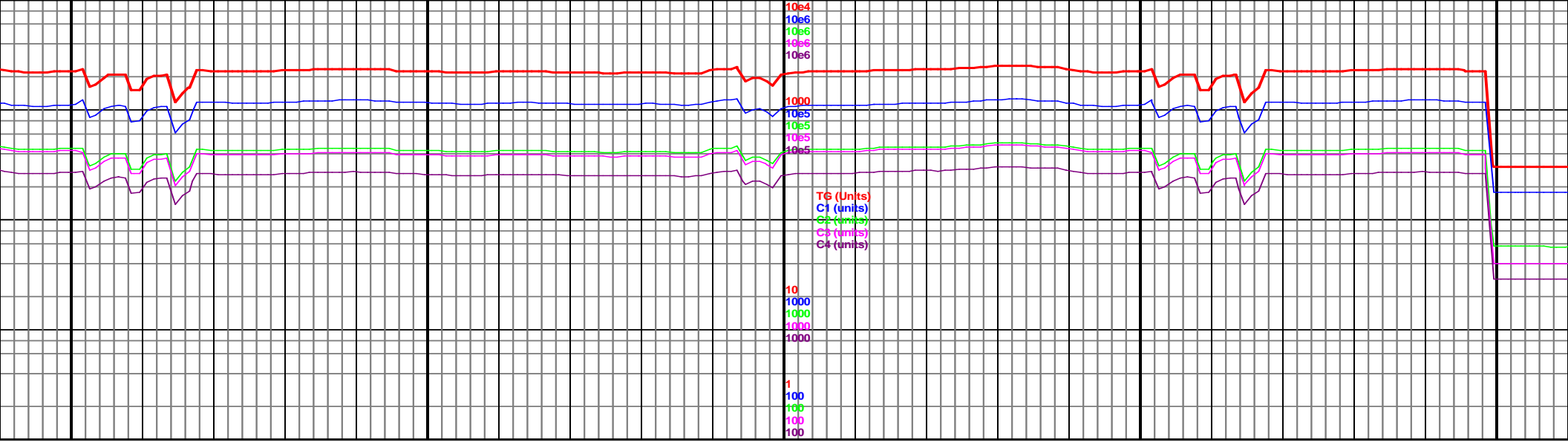
11700-11800 Chk lt-med gy, sft, sb
blky, occ Mrlst dk gy, frm, sb blky, rr
bent, tr inoc, rr bri yel min flr, abnt vis
oil flr, fst oil cut, 90% Chk, 10% Mrlst

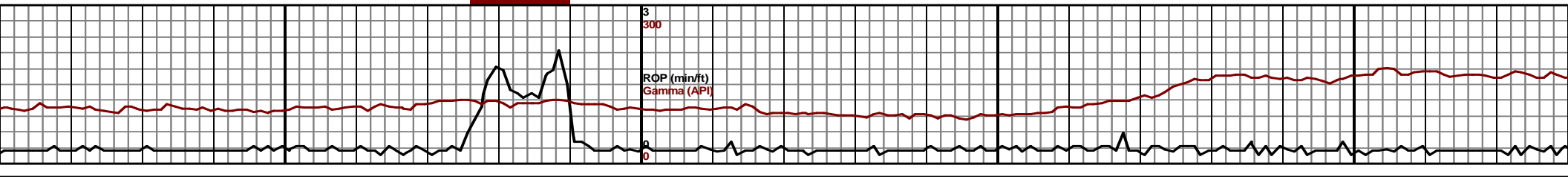
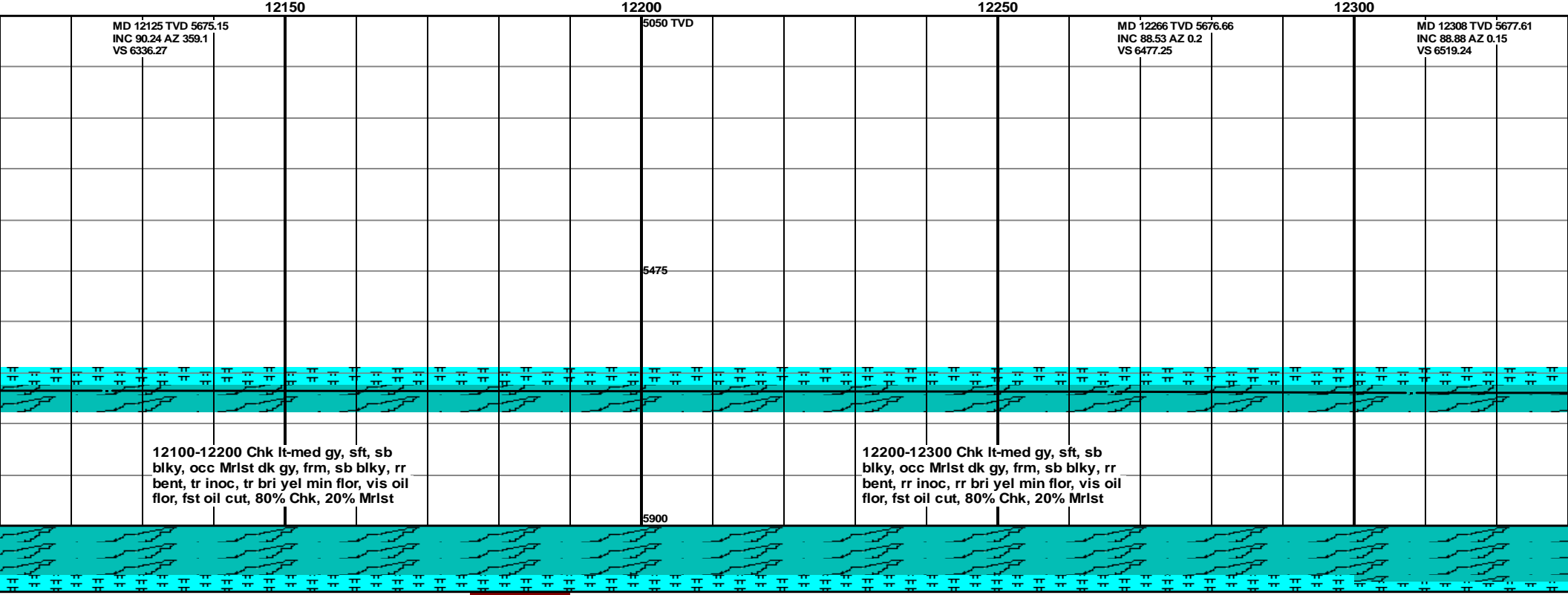
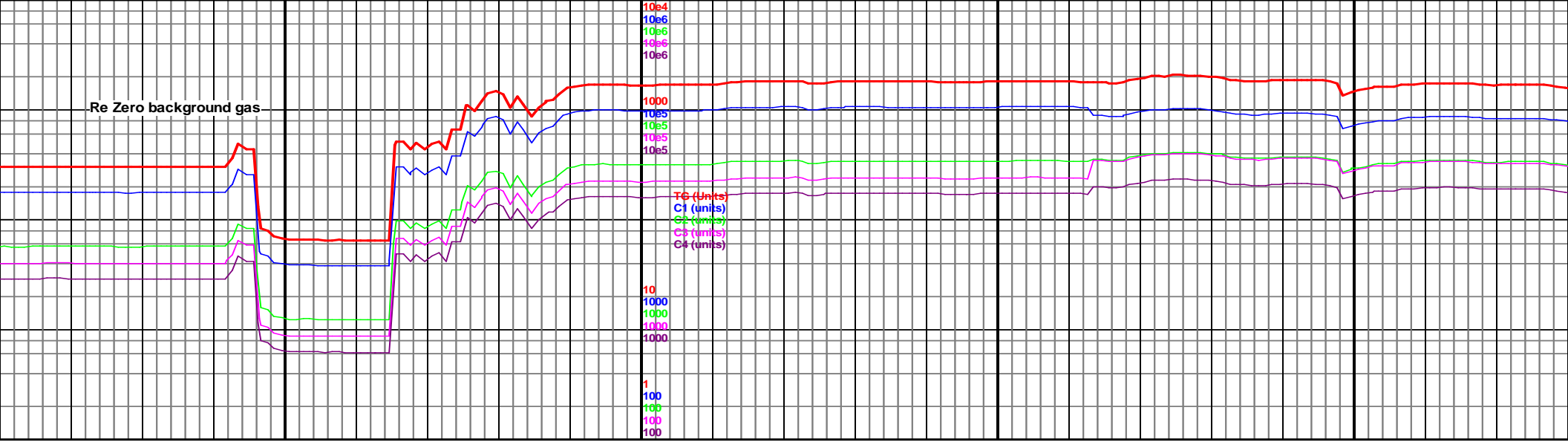
11800-11900 Chk lt-med gy, sft, sb
blky, occ Mrlst dk gy, frm, sb blky, rr
bent, tr inoc, rr bri yel min flr, tr vis oil
flr, fst oil cut, 70% Chk, 30% Mrlst

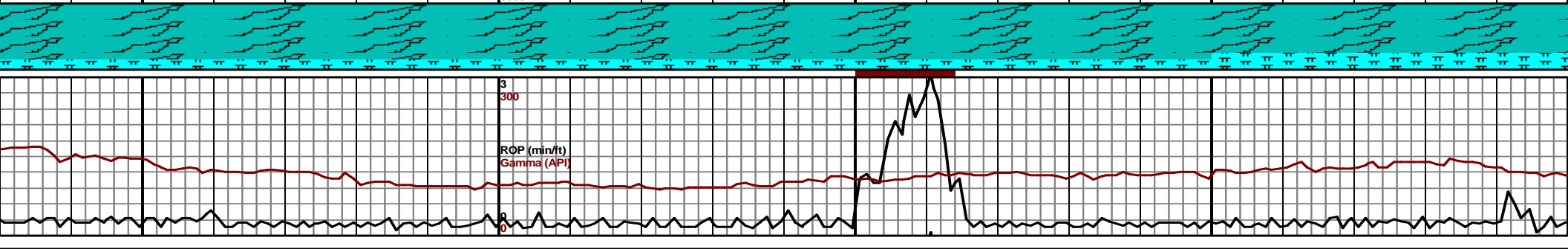
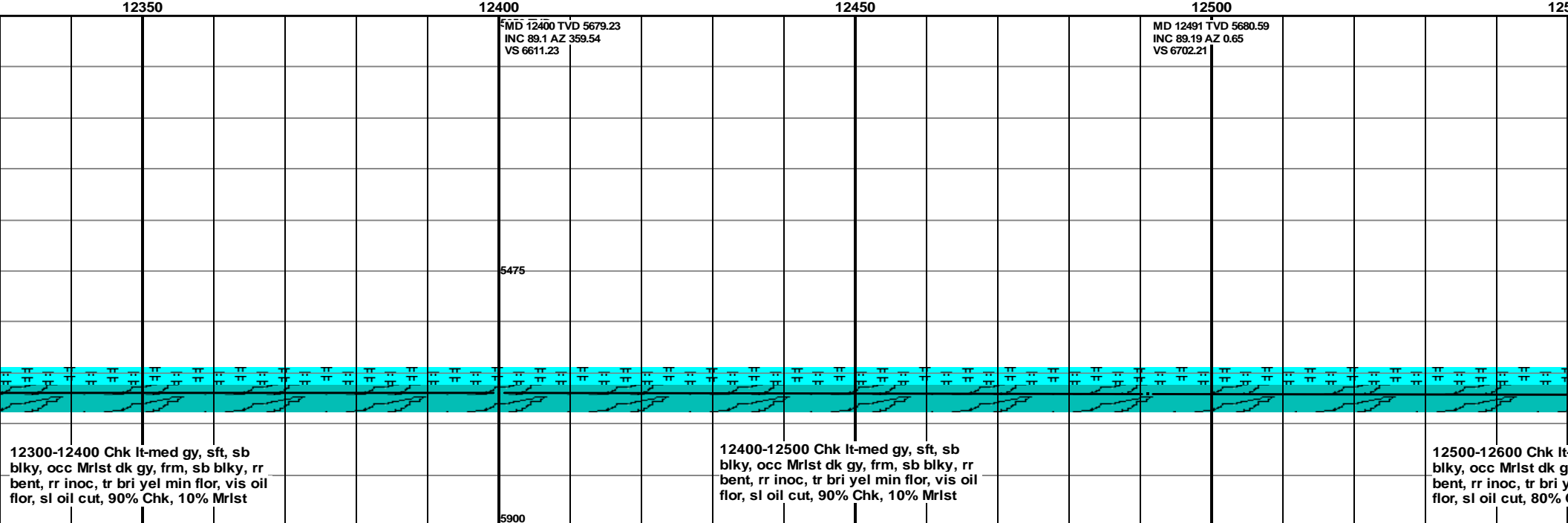
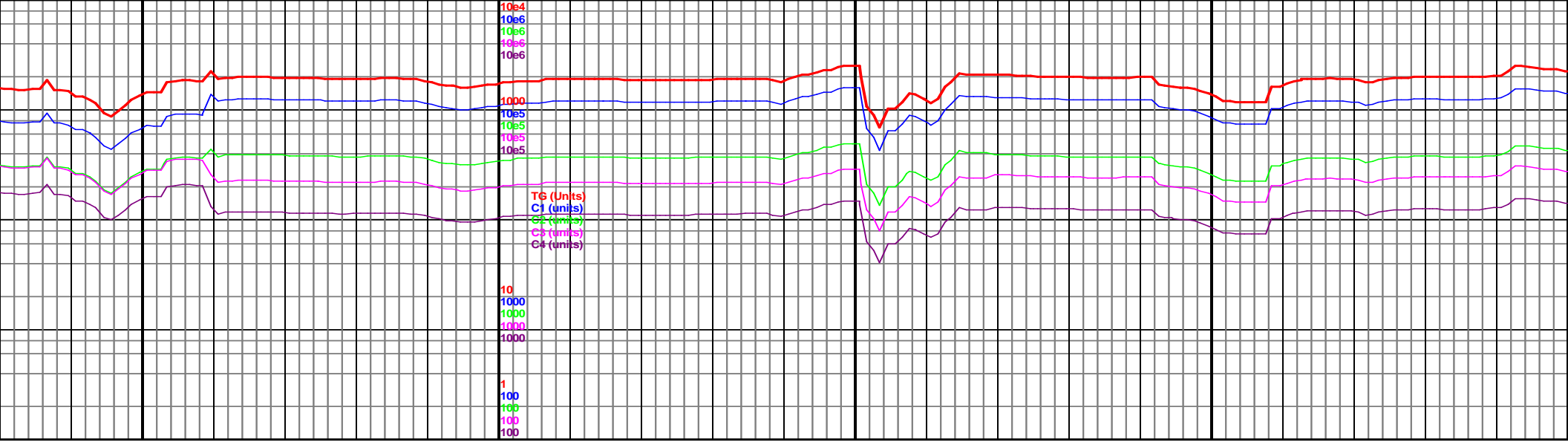
5475

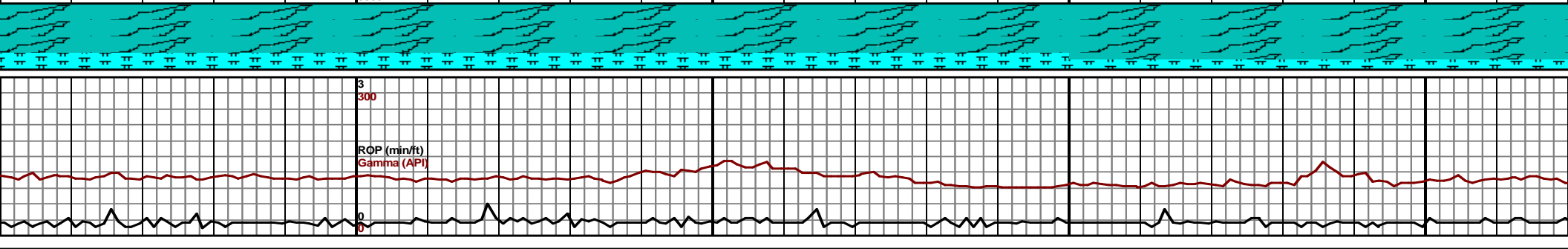
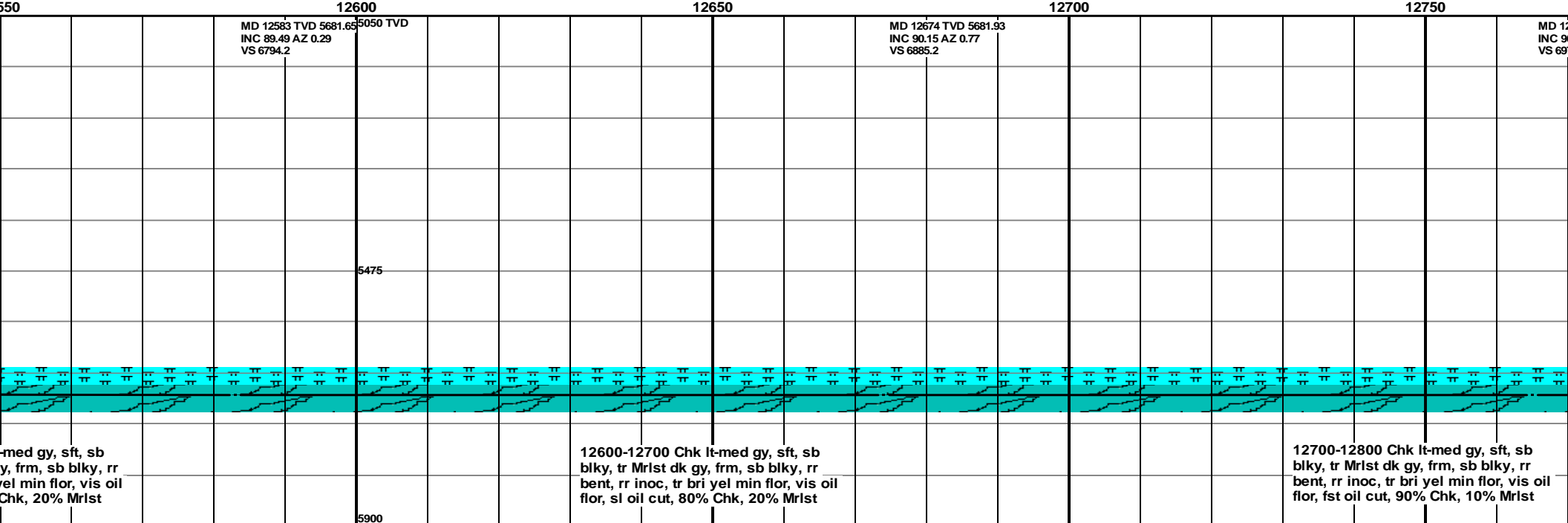
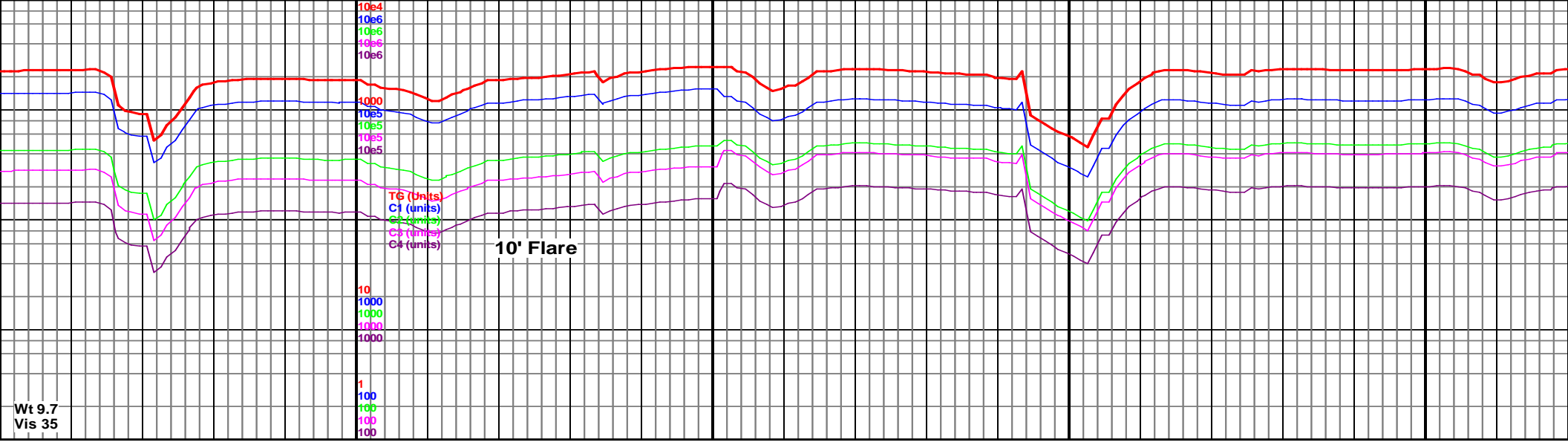
5900

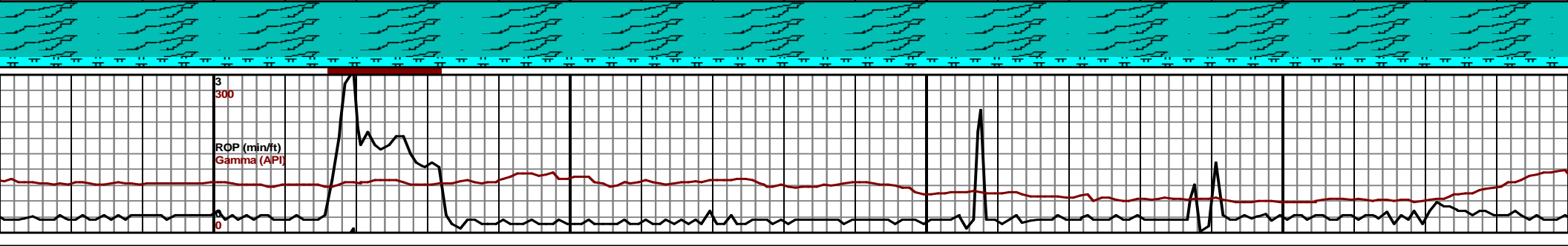
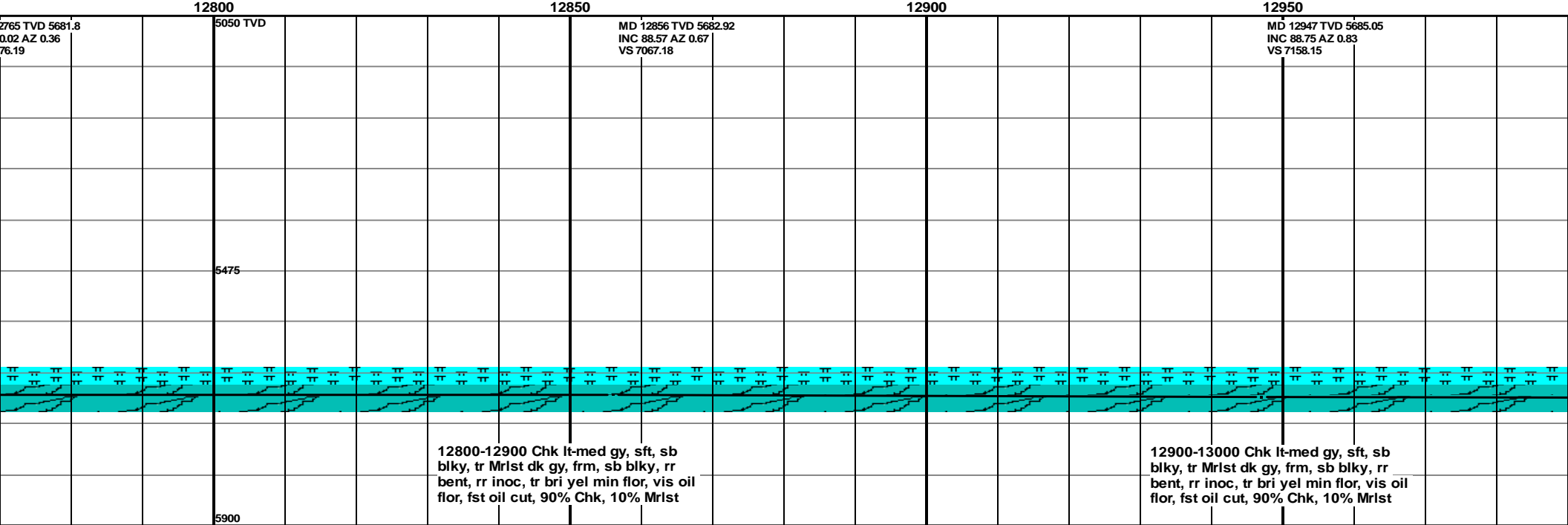
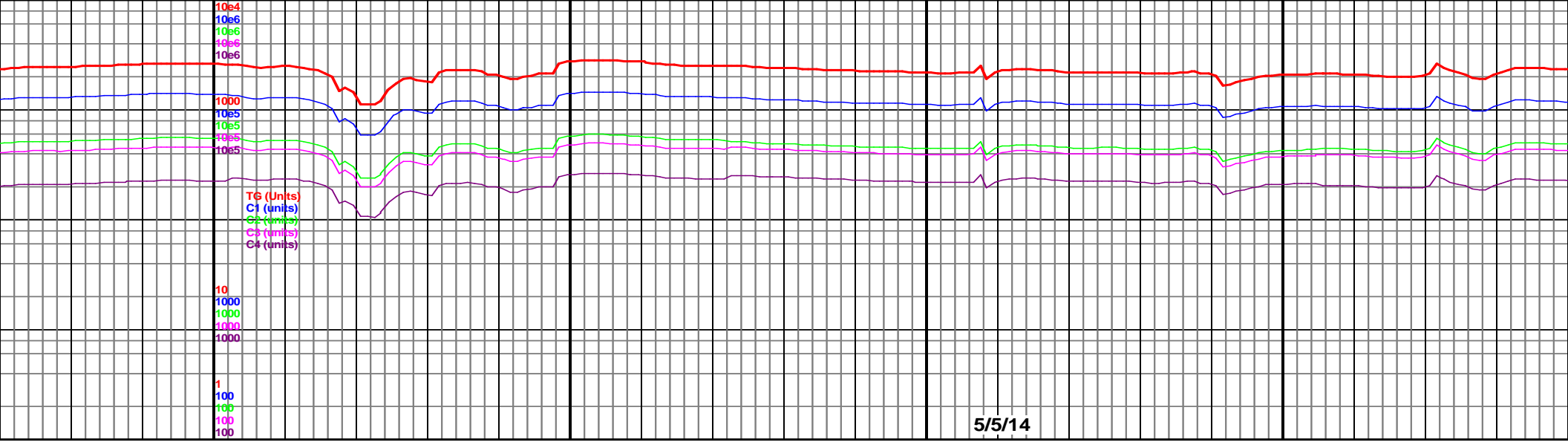


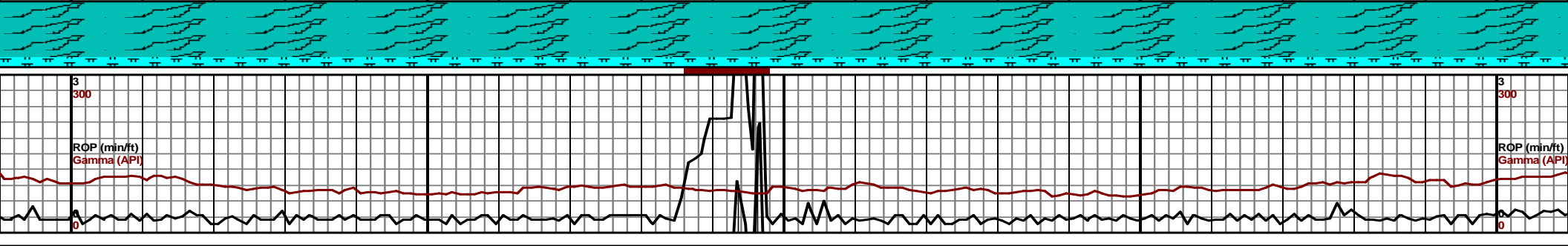
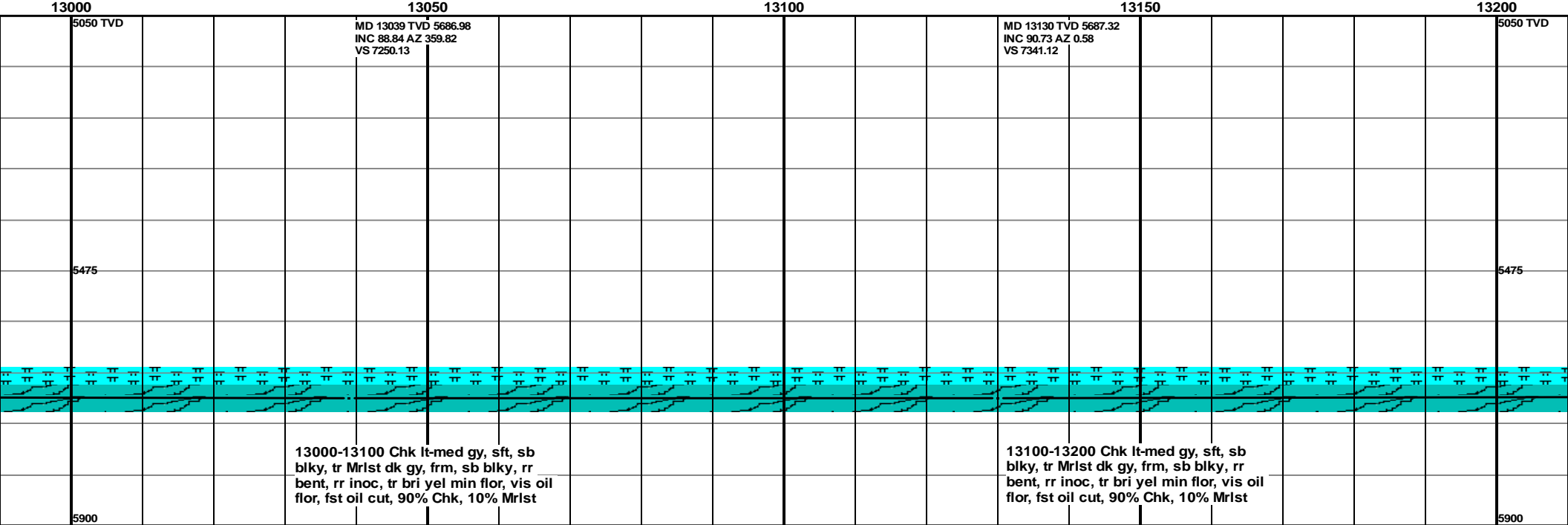
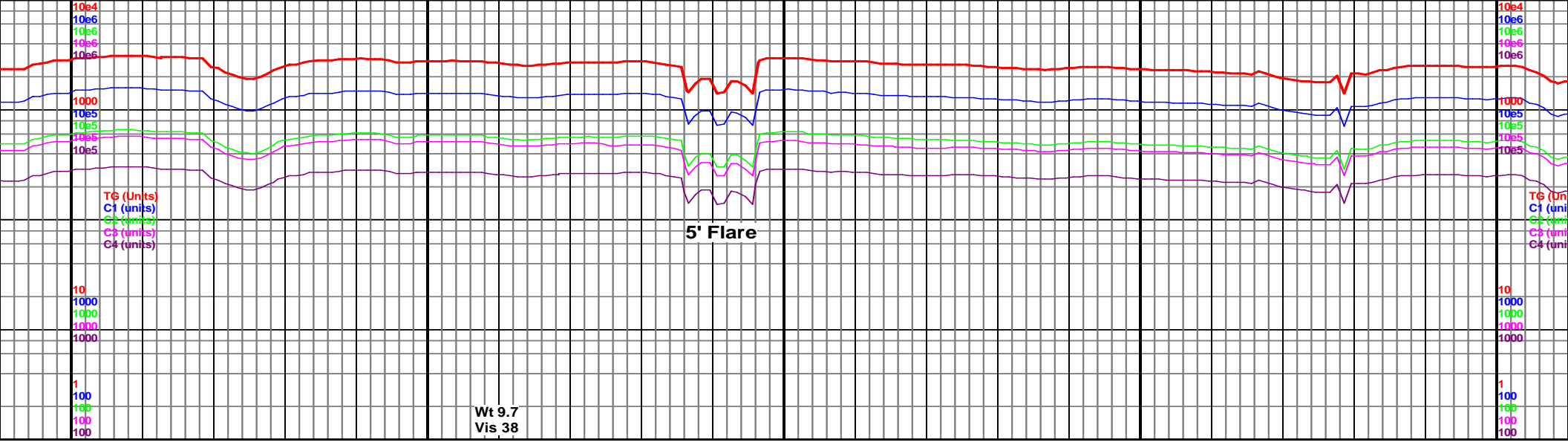


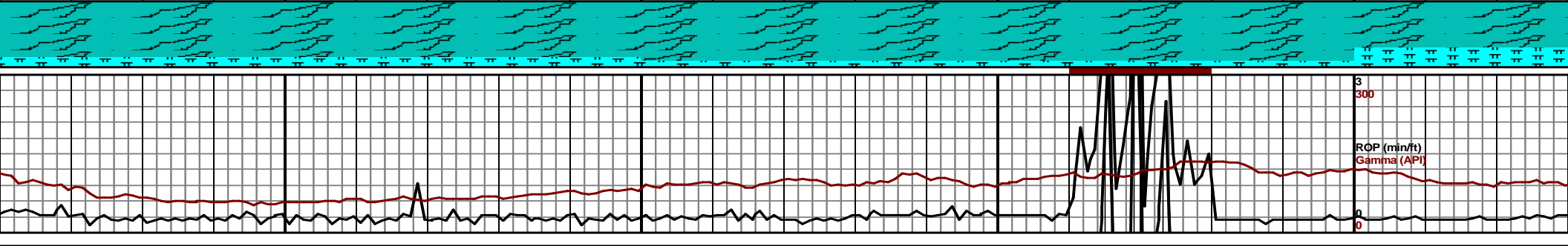
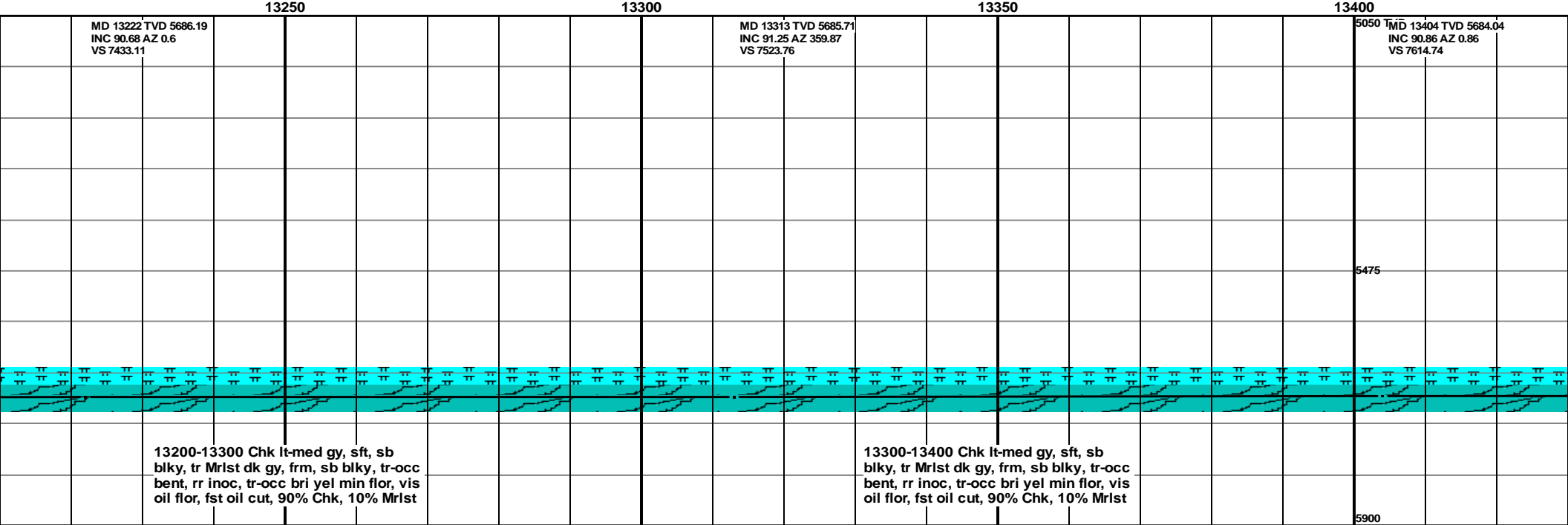
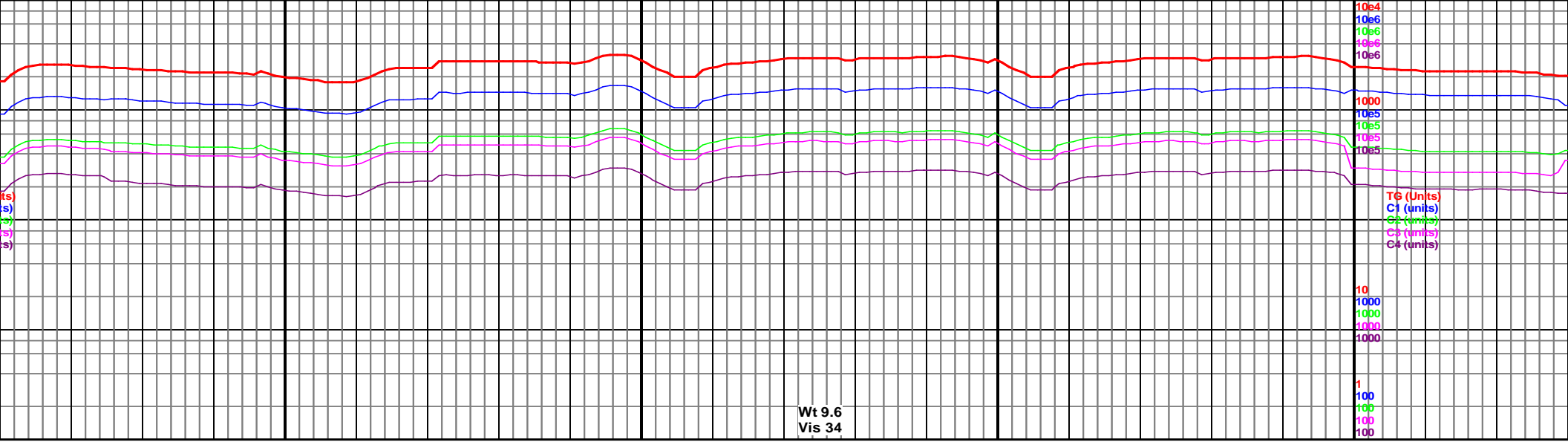


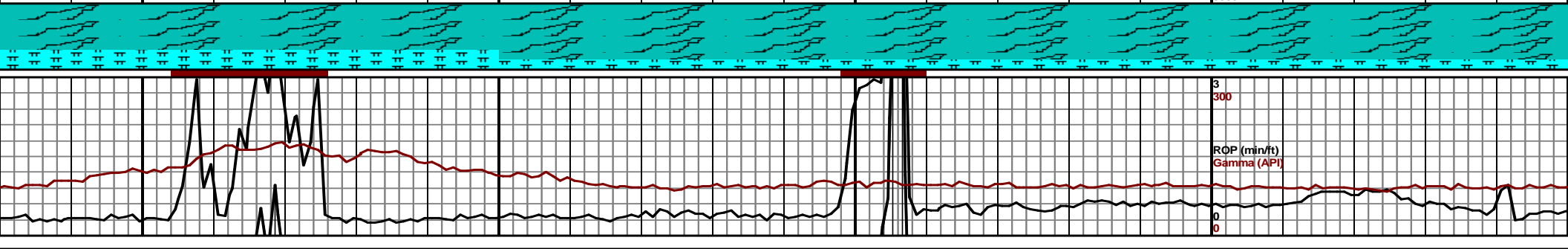
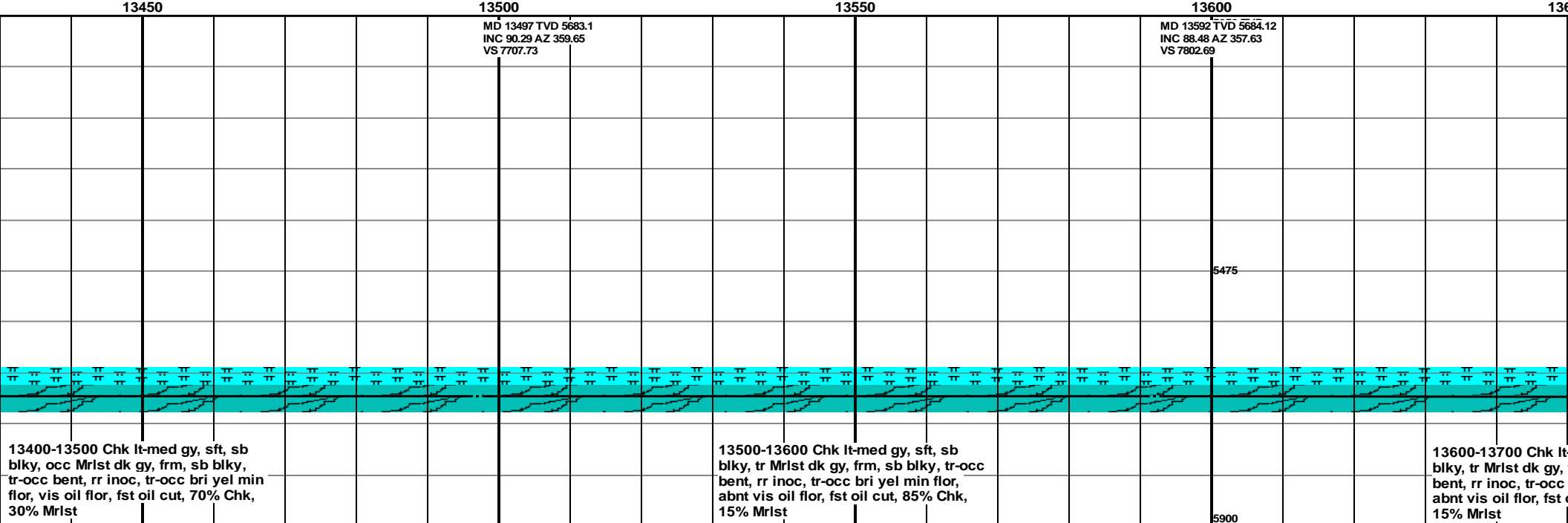
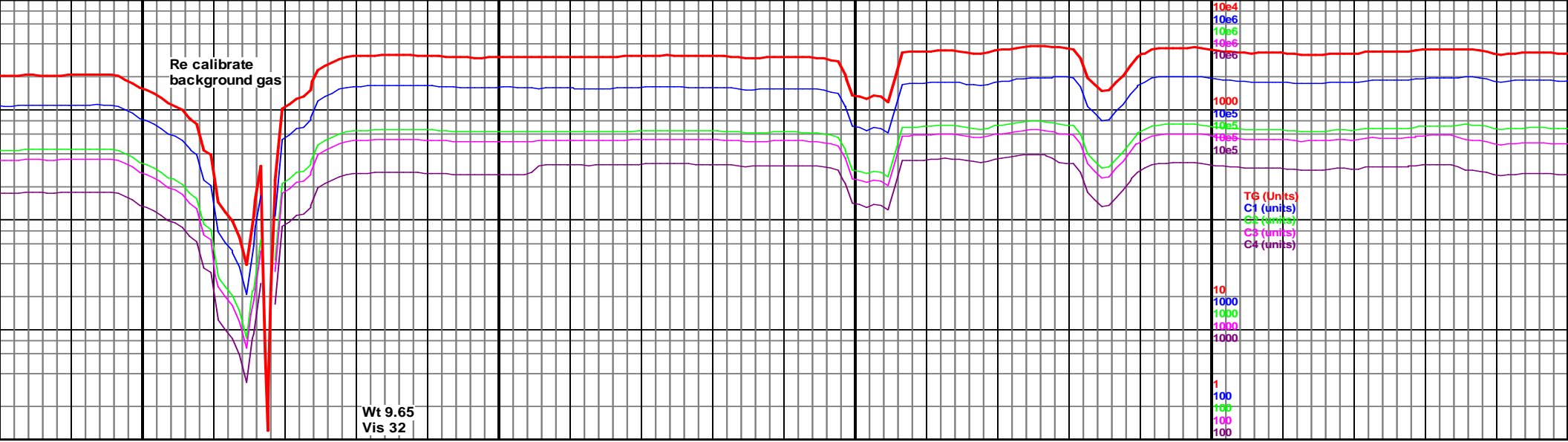


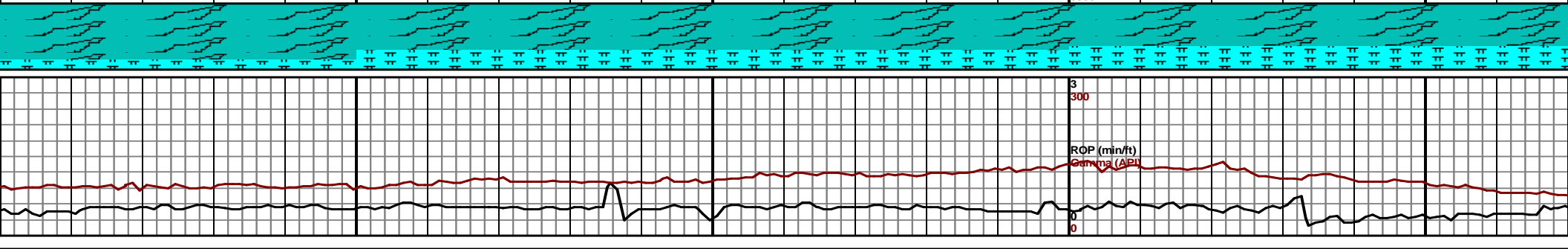
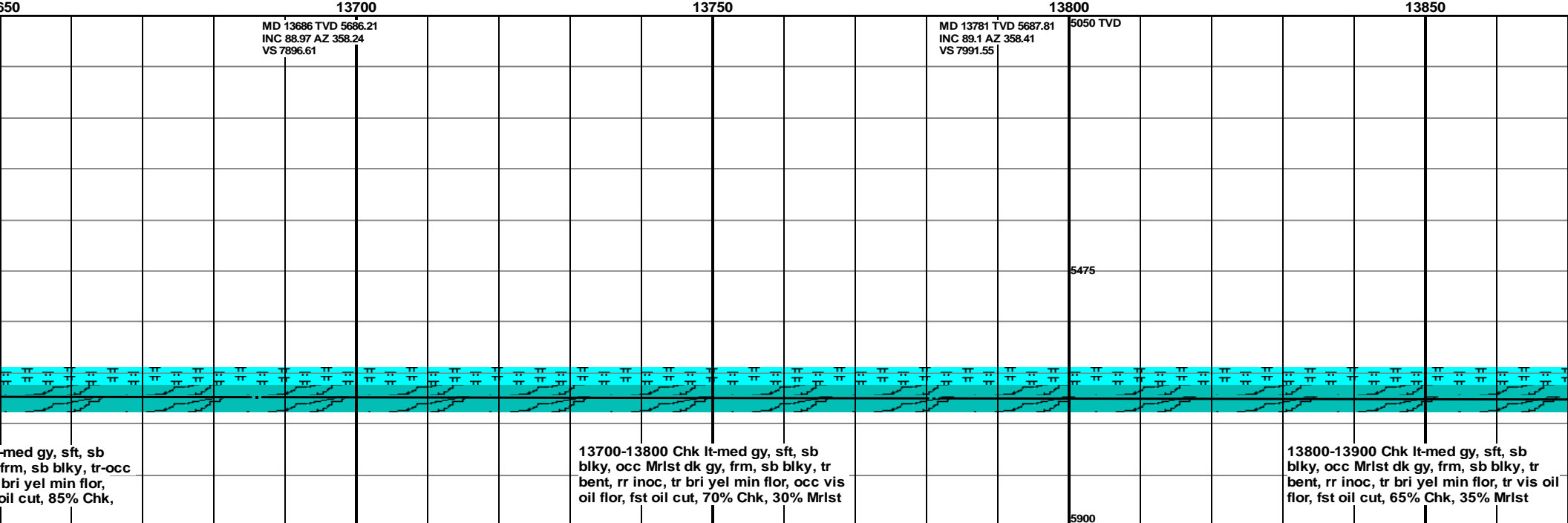
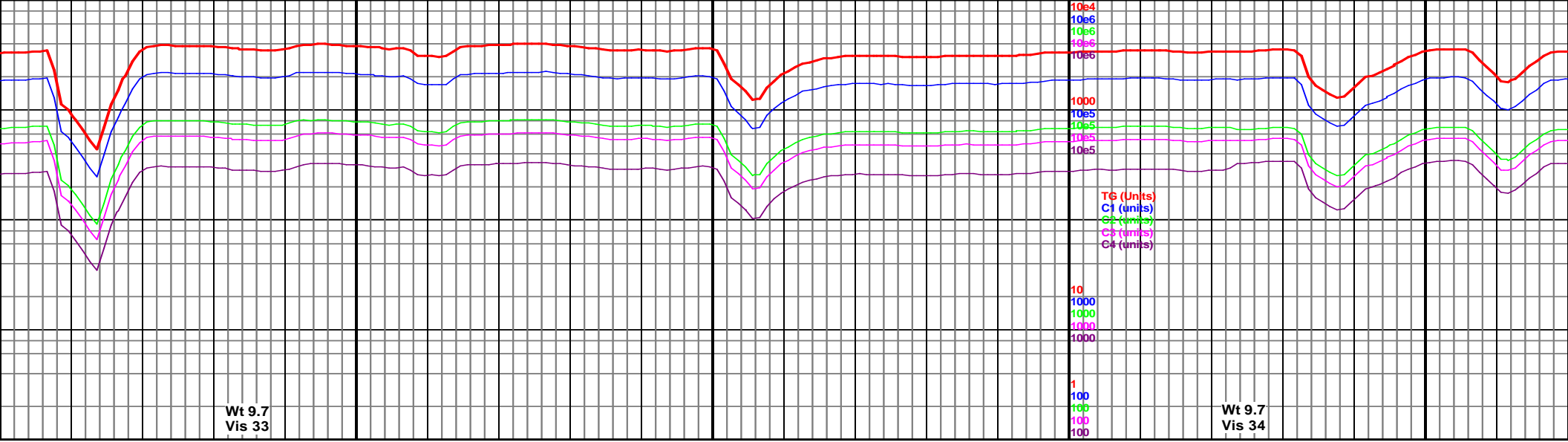


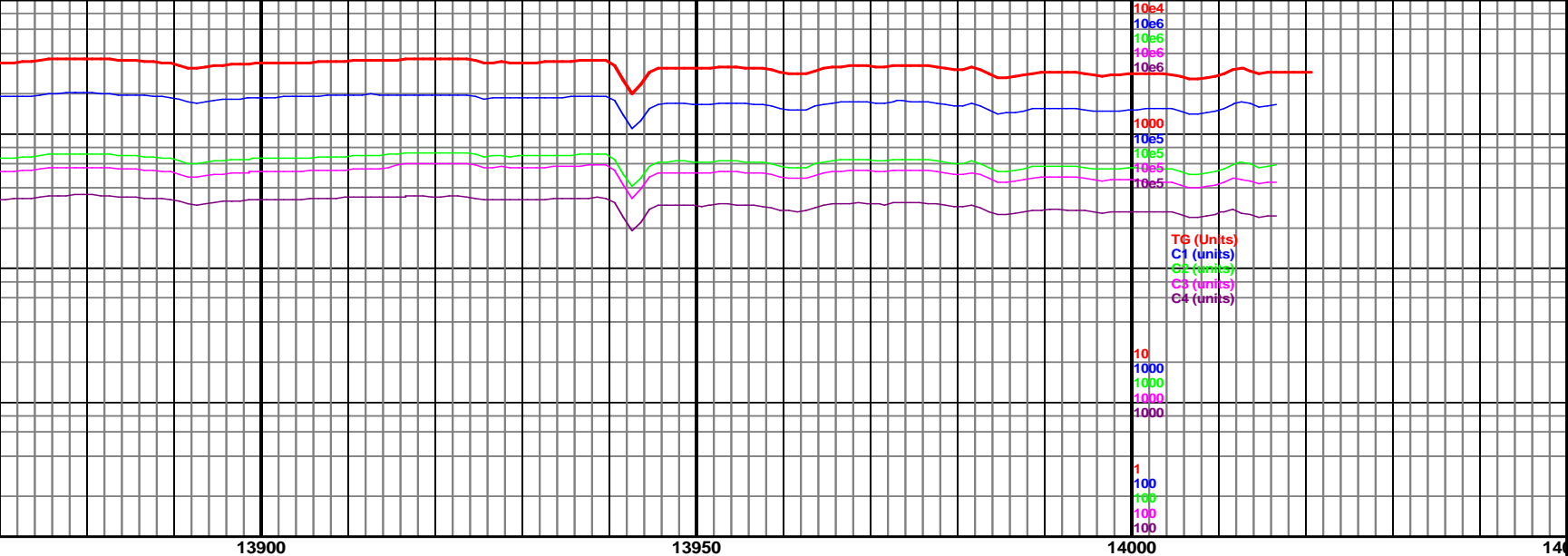












MD 13876 TVD 5689.31
INC 89.1 AZ 357.9
VS 8086.49

MD 13971 TVD 5690.25
INC 89.76 AZ 358.06
VS 8181.43

5050 TVD

TD at 14021' MD, 5690.46'
TVD at 14:05, 5/5/14.

5475

13900-14000 Chk lt-med gy, sft, sb
blky, occ Mrlst dk gy, frm, sb blky, occ
bent, rr inoc, occ bri yel min flor, rr vis
oil flor, fst oil cut, 60% Chk, 40% Mrlst

5900

