



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

Well Name: Horsetail 18-0713H
Location: SWSW 18-T10N-R57W
License Number: 05-123-36702
Spud Date: 7/16/2013
Surface Coordinates: Lat.: 40.832522 Long.: -103.800778

Region: Redtail Field
Drilling Completed:

Bottom Hole Coordinates: Lat.: 40.851633 Long.: -103.801111

Ground Elevation (ft): 4823
Logged Interval (ft): 5100 To: K.B. Elevation (ft): 4841
Formation: Pierre, Sharon Springs, Niobrara
Type of Drilling Fluid: Water Based Mud
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: Todd Nakata, Craig Dreiling
Company: Acme Geologic Consulting
Address: 108 Berry Street
Little Rock, AR 72205

Drilling Company

Cade Drilling, LLC
Rig 21


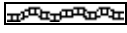
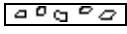
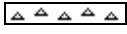
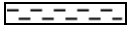
Gas Detection






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




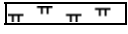

Comments

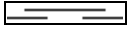
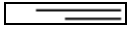
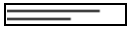


Lithologies and tops at drilled depths, not corrected to elogs. Where the well bore gas is 100% methane, the C1 line is moved to 85% for graphical purposes only.




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
-  Subrond
-  Subang
-  Angular

OIL SHOW

-  Even



Spotted



Ques



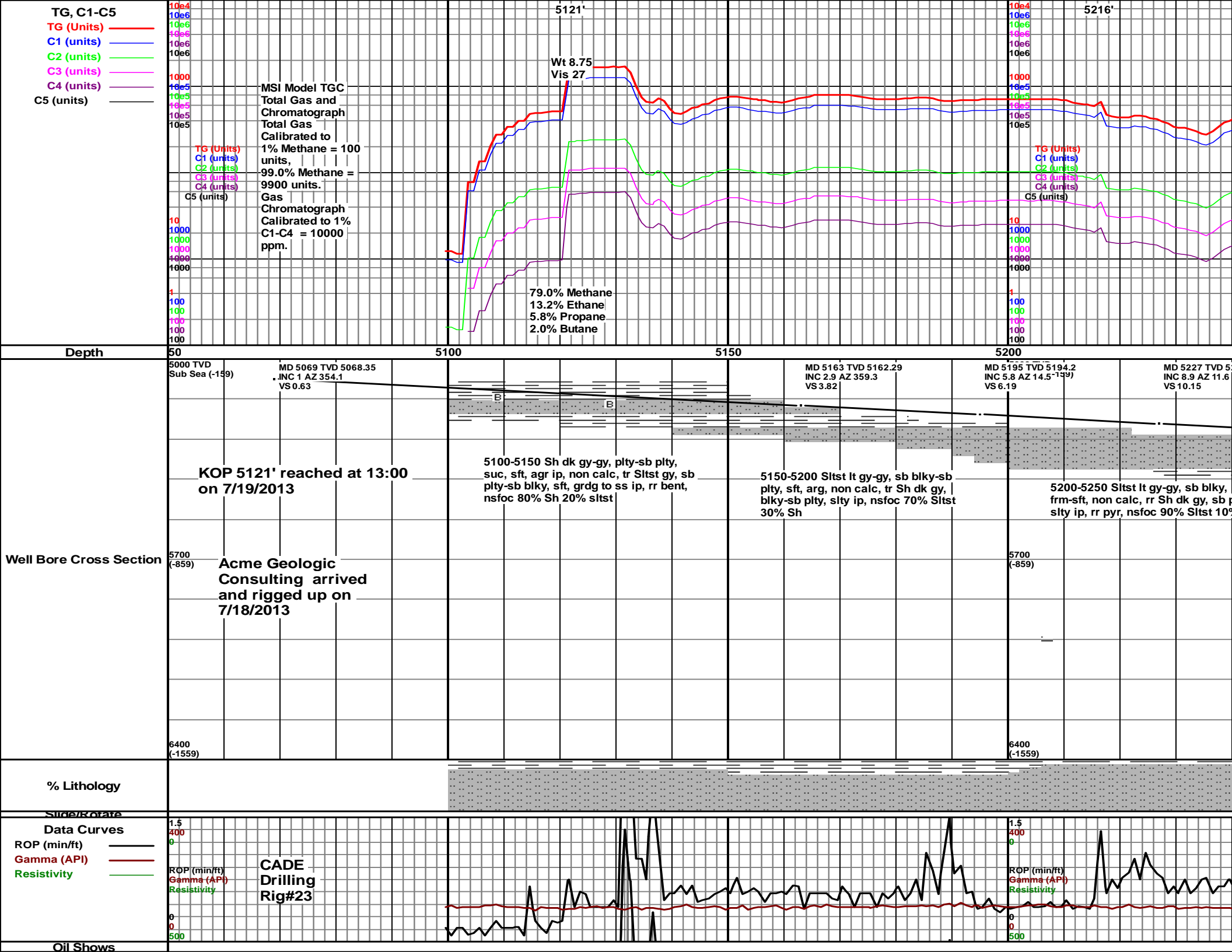
Dead

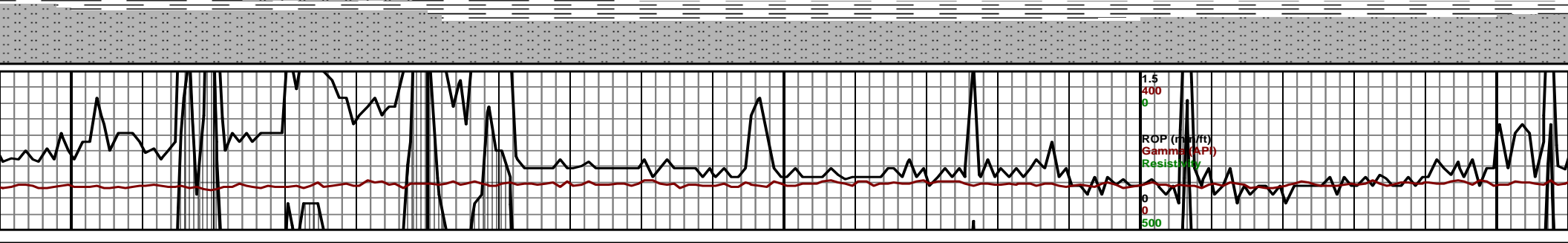
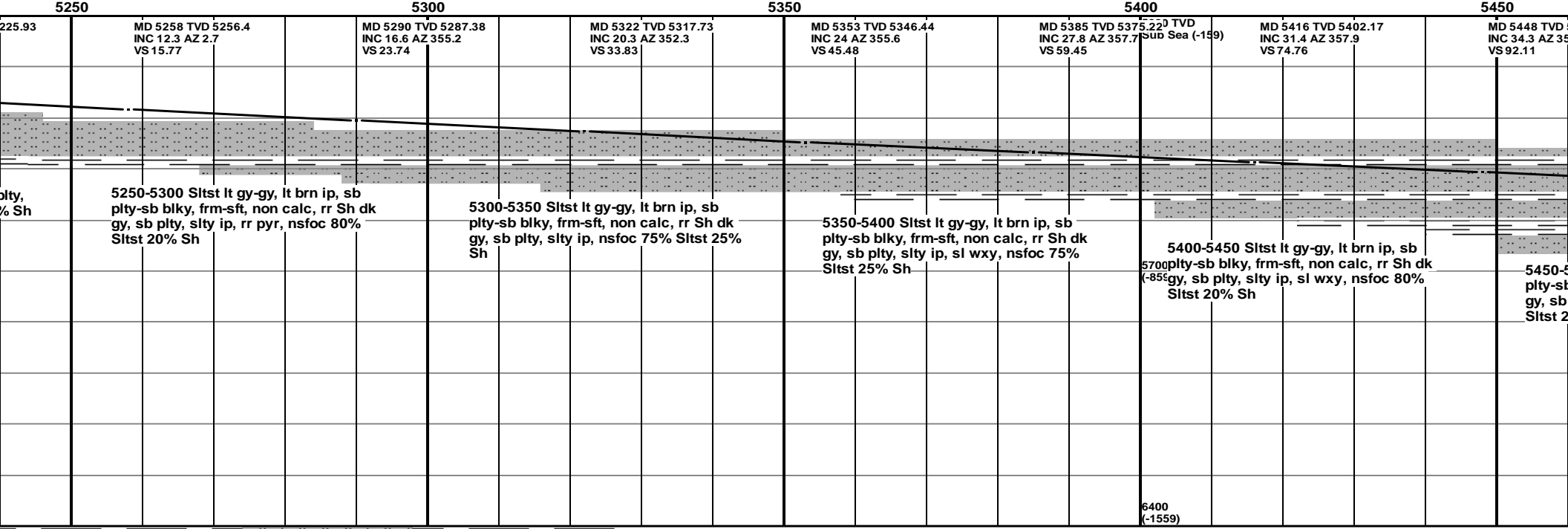
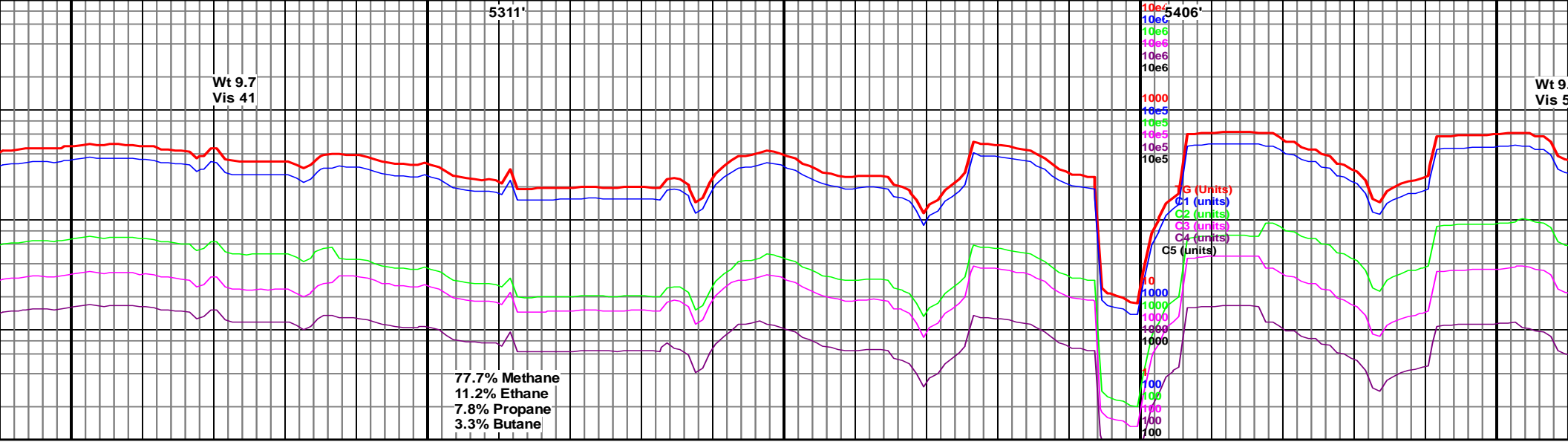
INTERVAL

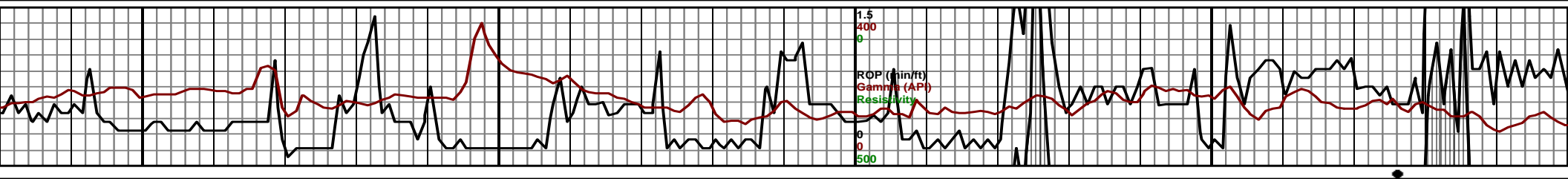
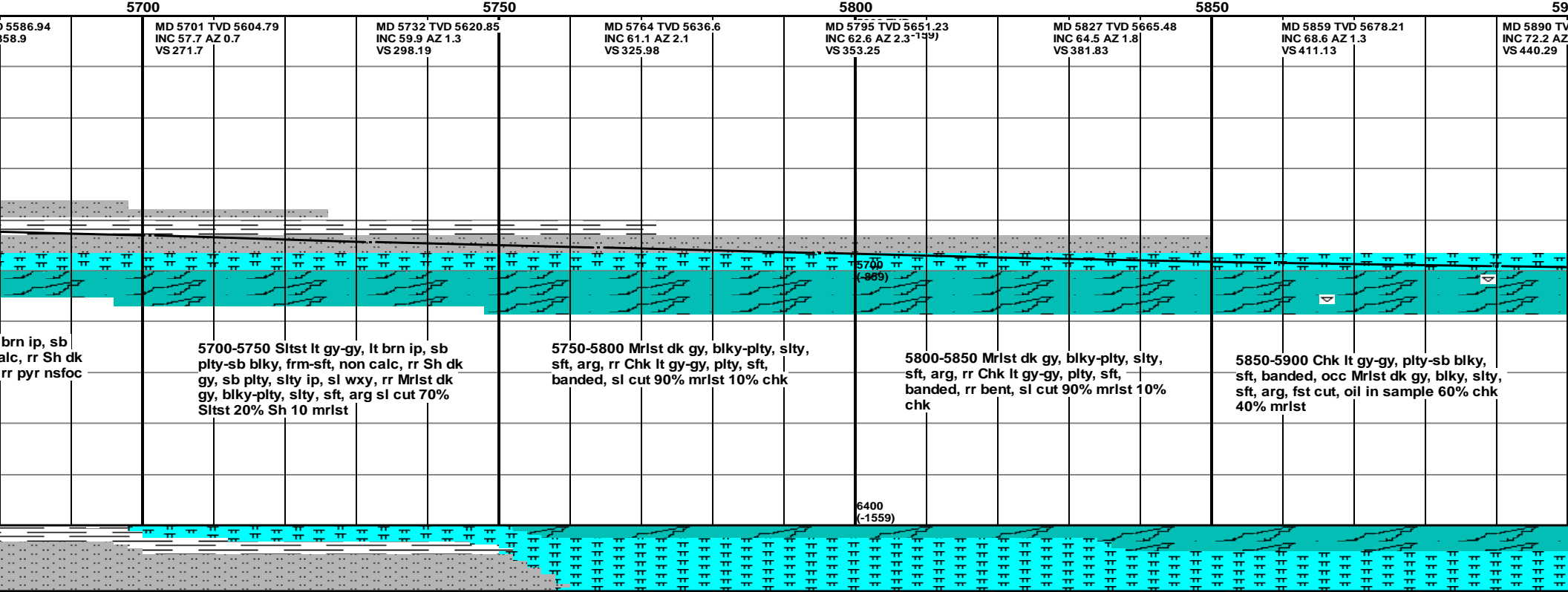
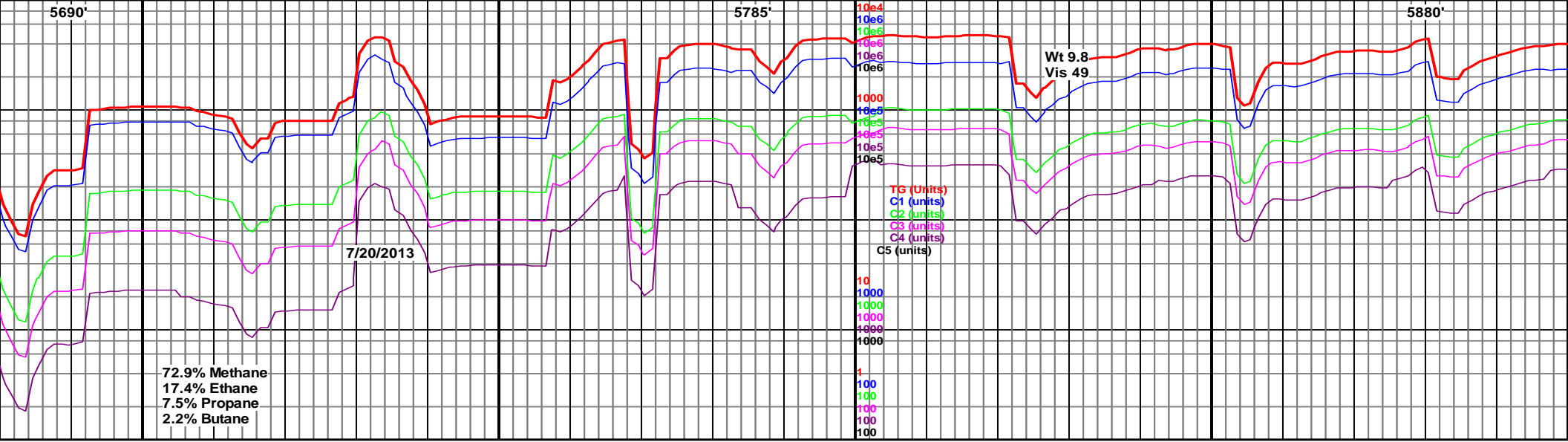
-  Core
-  Dst

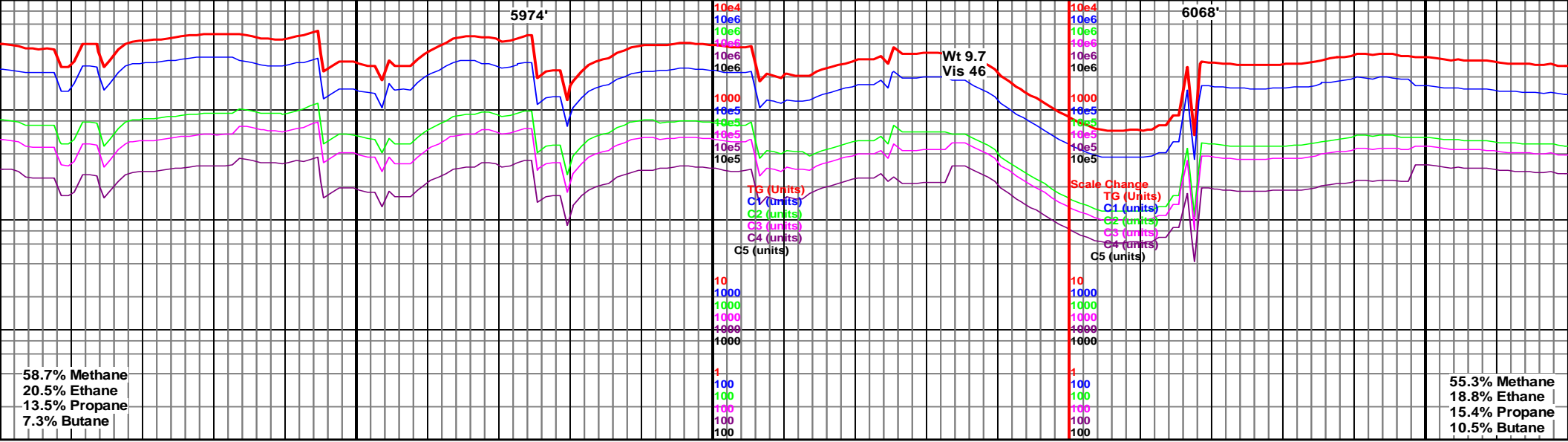
EVENT

-  Rft
-  Sidewall

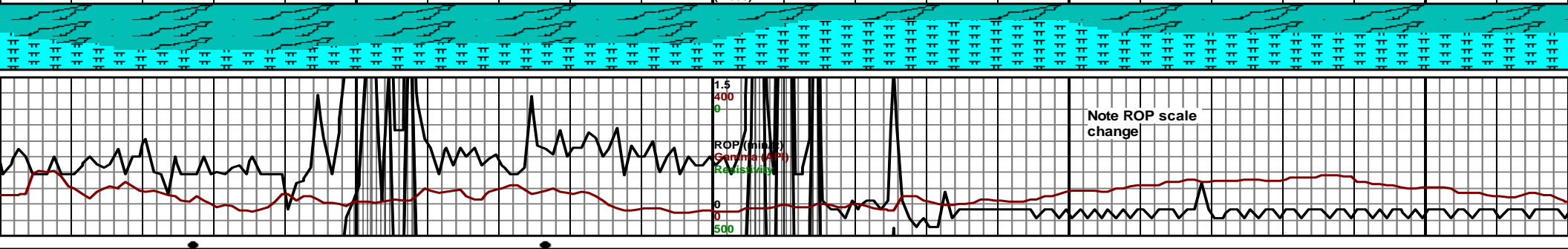


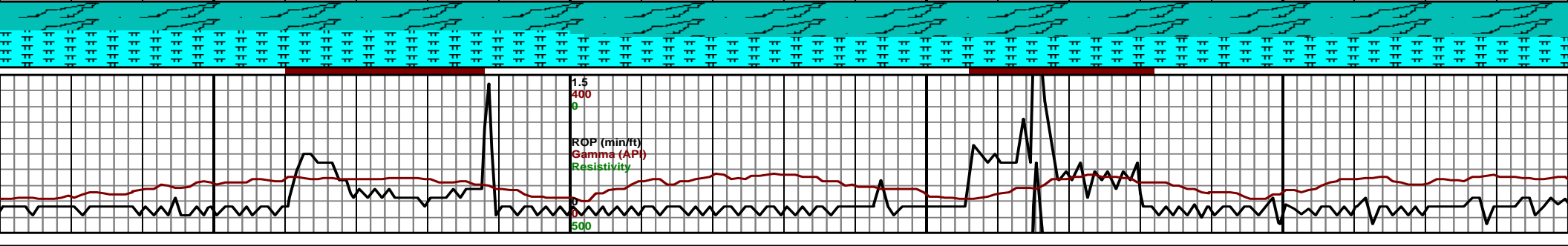
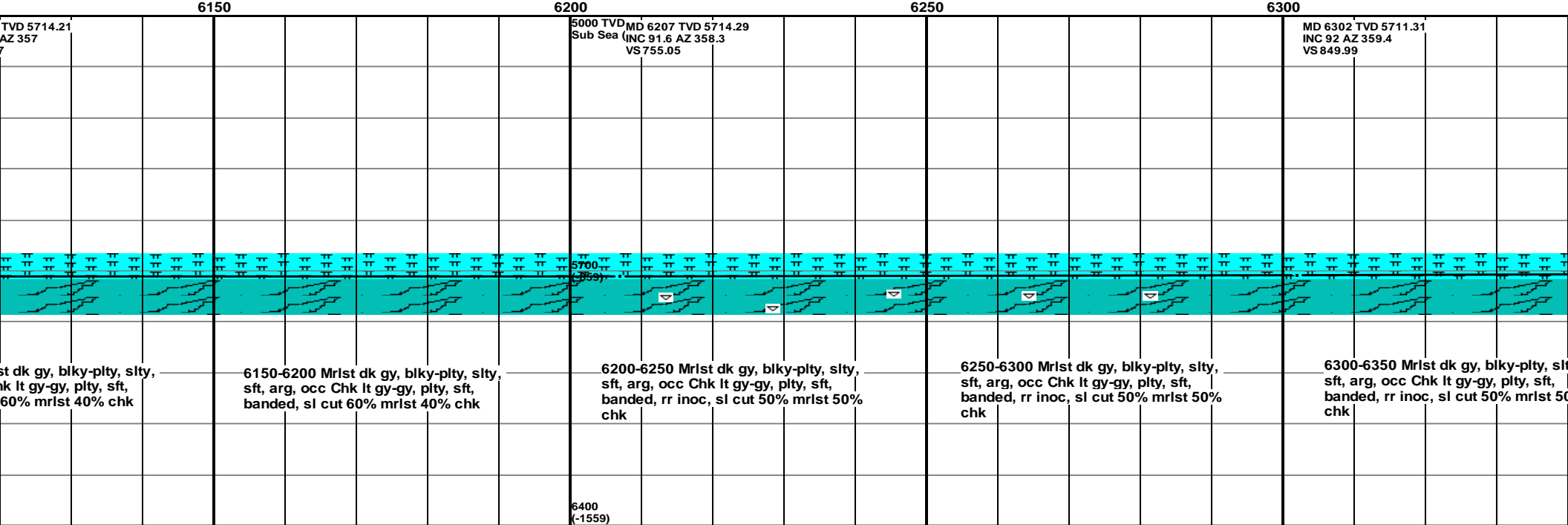
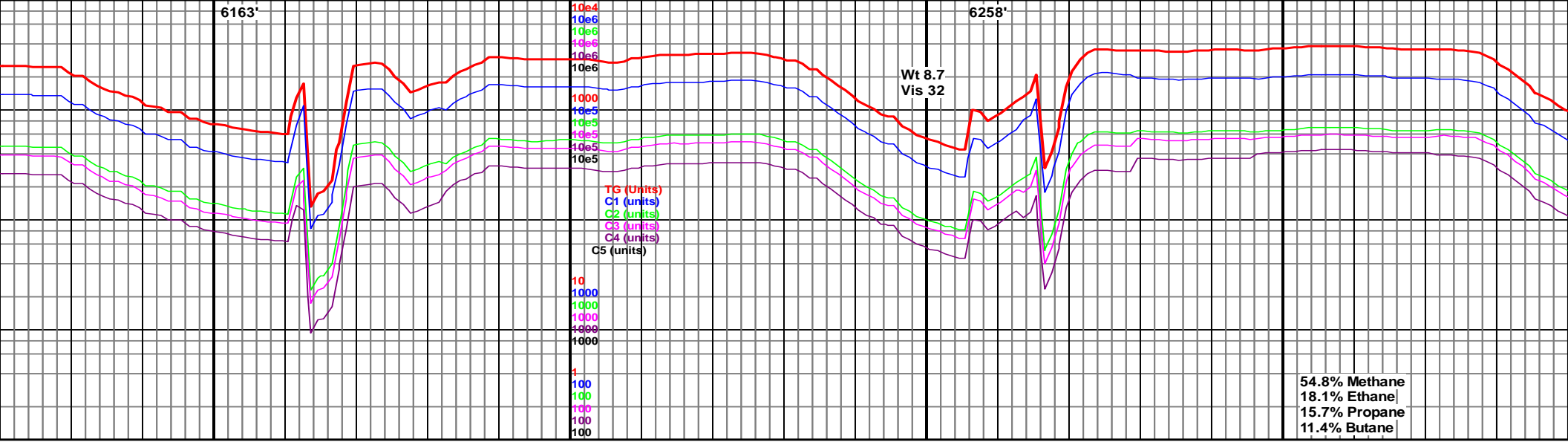


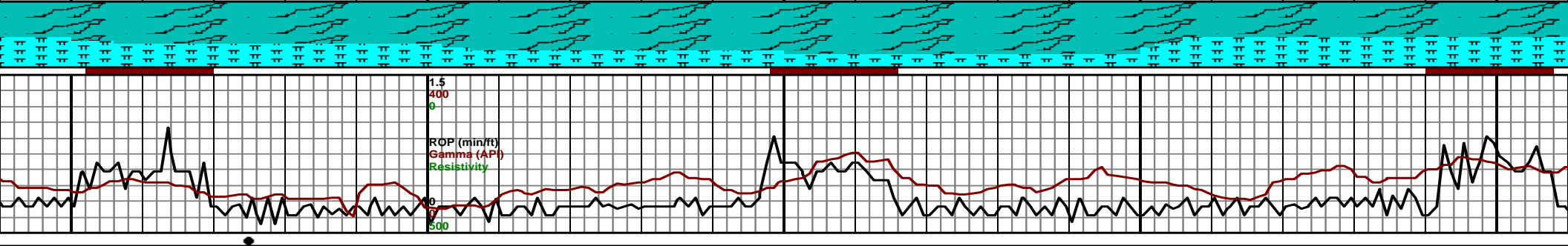
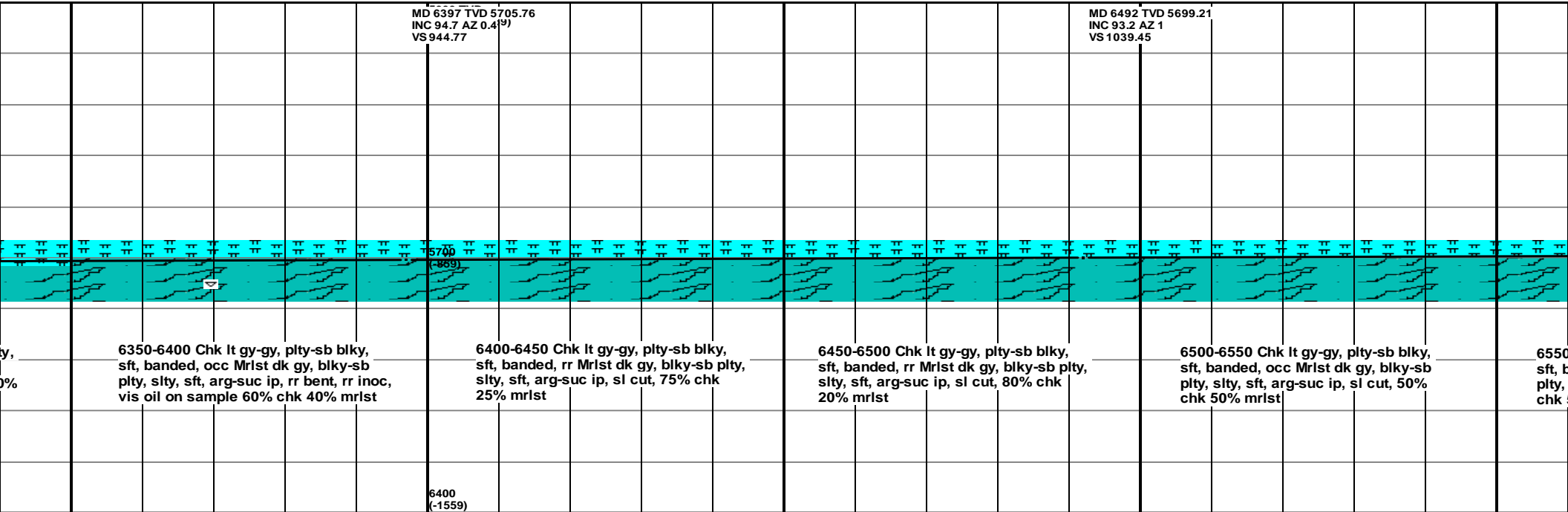
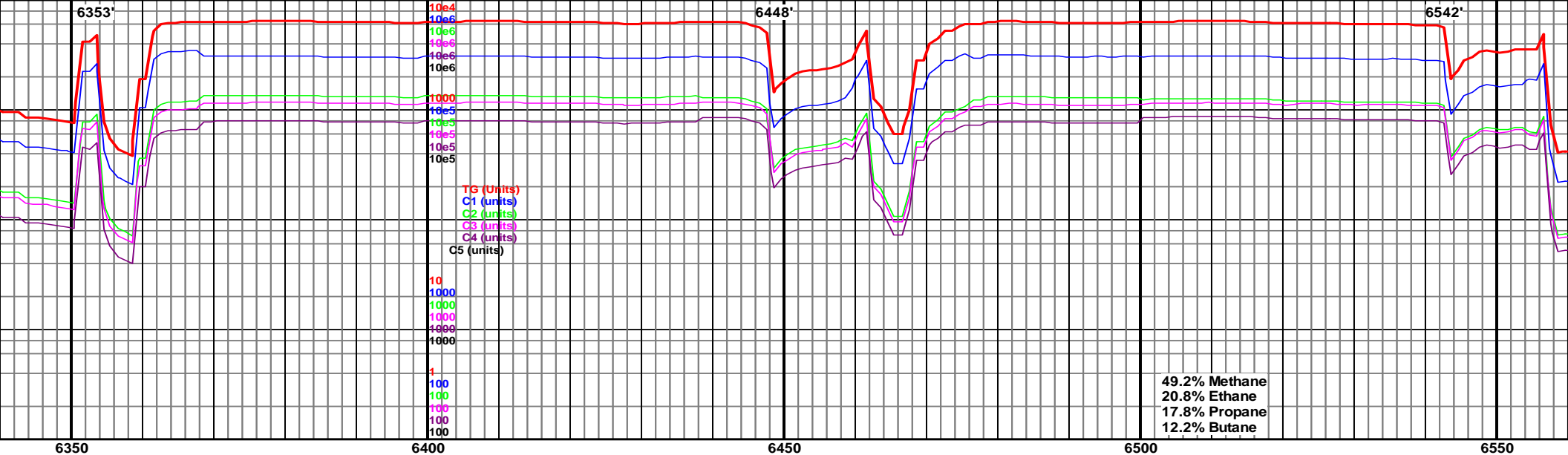


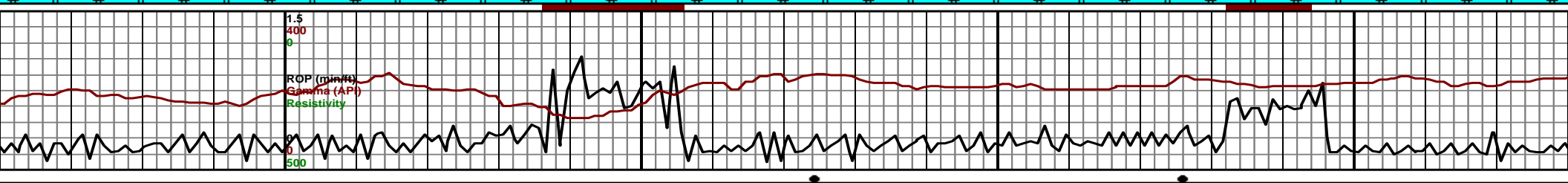
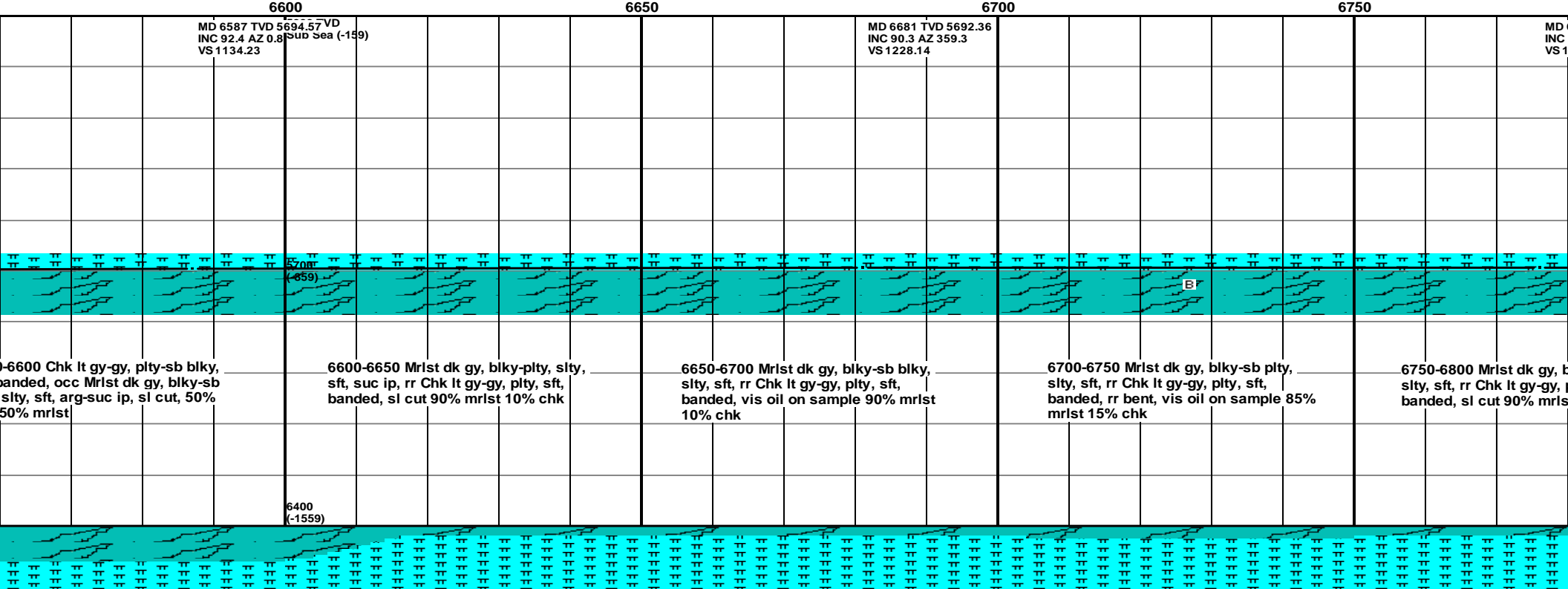
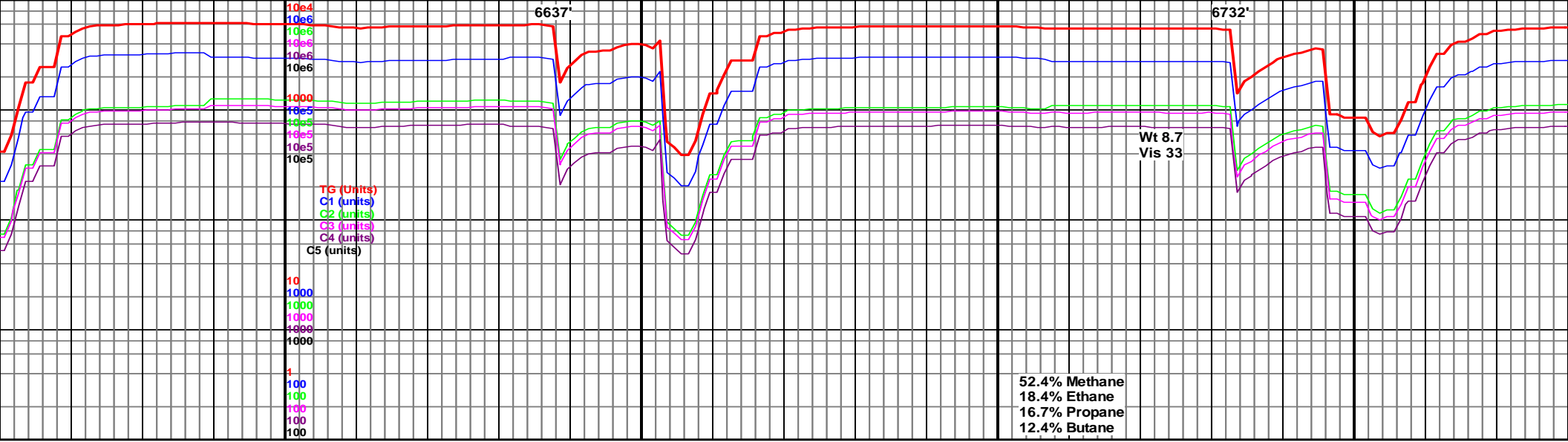


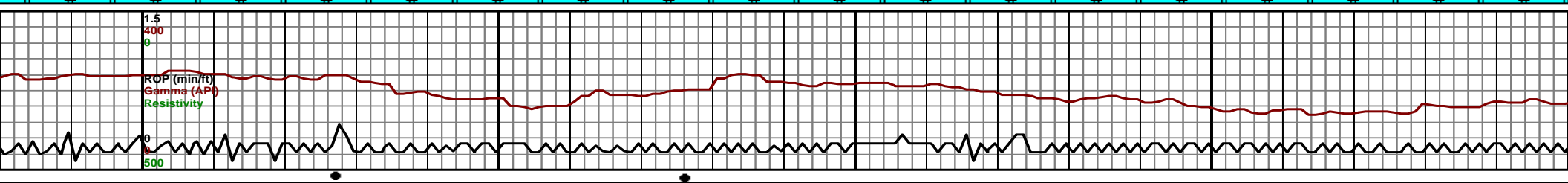
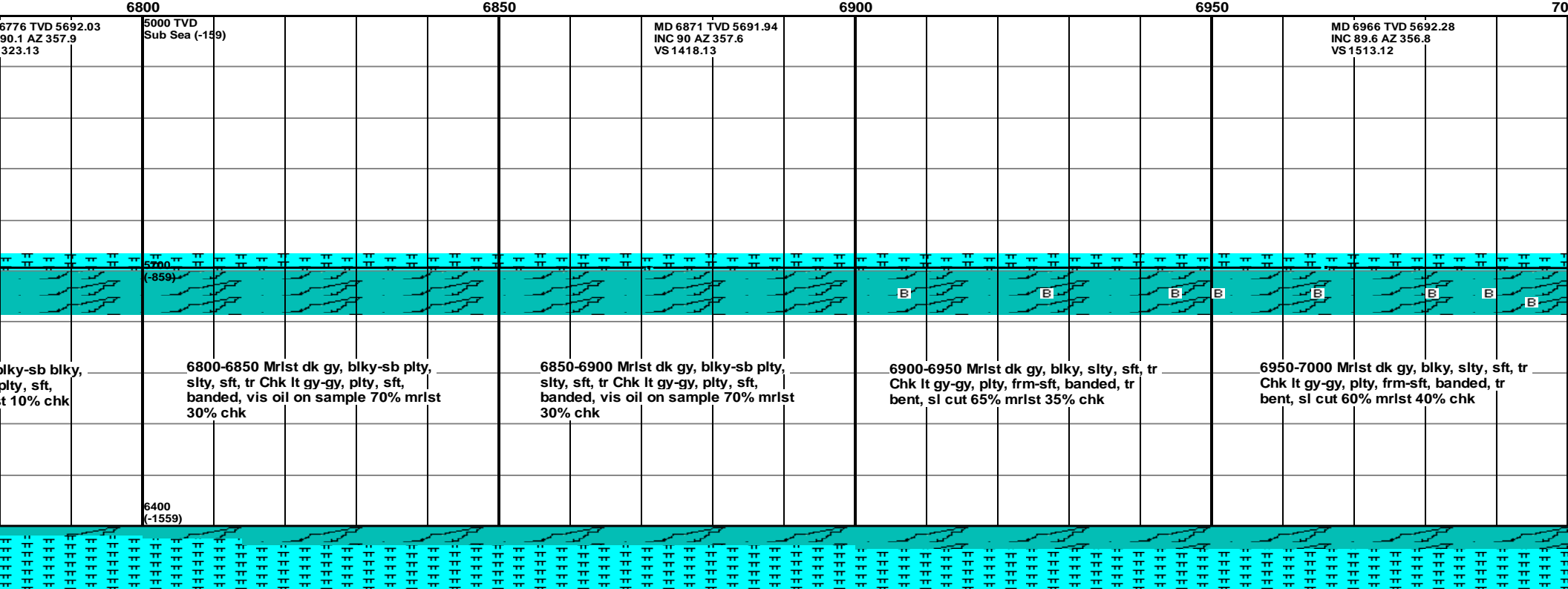
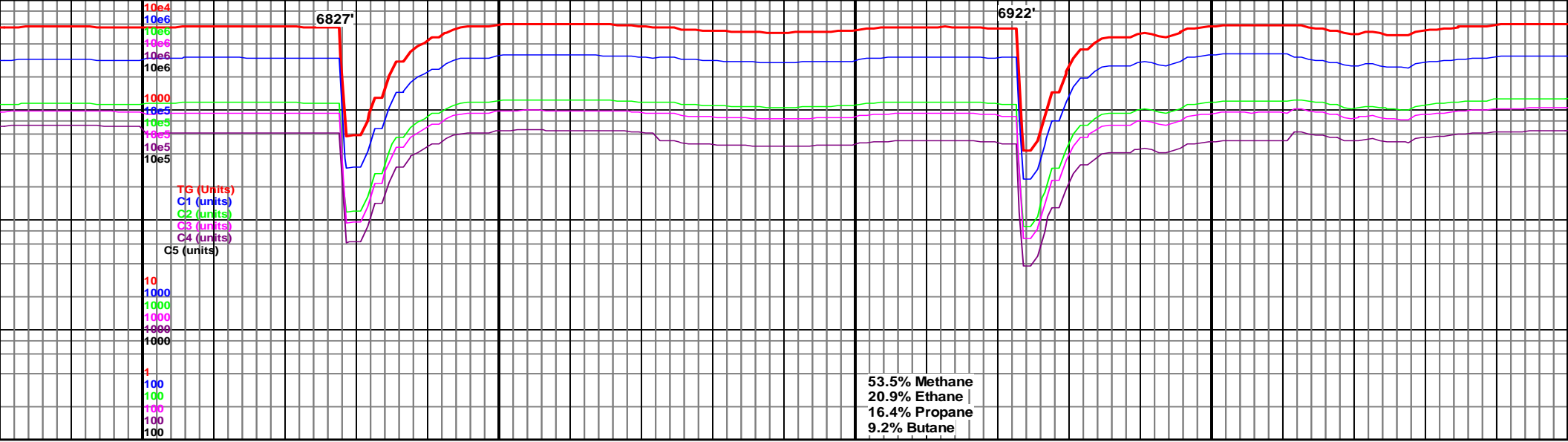
00	5950	6000	6050	6100
D 5688.61 0.5	MD 5922 TVD 5697.19 INC 76.7 AZ 359.3 VS 471.1	MD 5953 TVD 5703.05 INC 81.5 AZ 358.8 VS 501.53	MD 5973 TVD 5705.48 INC 84.5 AZ 358.2 VS 521.37	5000 TVD Sub Sea (-159)
Intermediate Casing 6025' at 05:45 on 7/20/2013				
5900-5950 Chk lt gy-gy, plty-sb blk, sft, banded, occ Mrlst dk gy, blk, slty, sft, arg, rr bent, rr inoc, rr pyr, fst cut, oil in sample 80% chk 20% mrlst				
5950-6000 Chk lt gy-gy, plty-sb blk, sft, banded, occ Mrlst dk gy, blk-sb plty, slty, sft, arg-suc ip, rr bent, rr inoc, fst cut, oil in sample 70% chk 30% mrlst				
6000-6050 Mrlst dk gy, blk-plty, slty, sft, arg, rr Chk lt gy-gy, plty, sft, banded, rr bent, rr inoc, sl cut 90% mrlst 10% chk				
6050-6100 Mrlst dk gy, blk-plty, slty, sft, arg, occ Chk lt gy-gy, plty, sft, banded, rr bent, rr inoc, sl cut 60% mrlst 40% chk				
6100-6150 Mrlst sft, arg, occ Chk lt gy-gy, plty, sft, banded, sl cut				

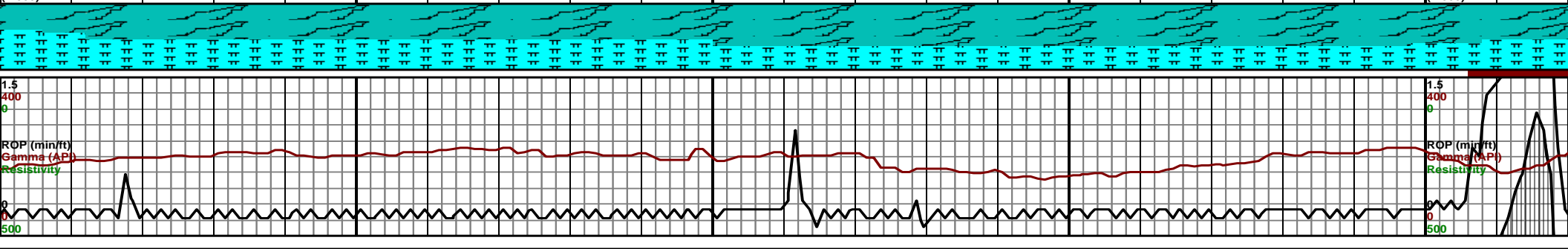
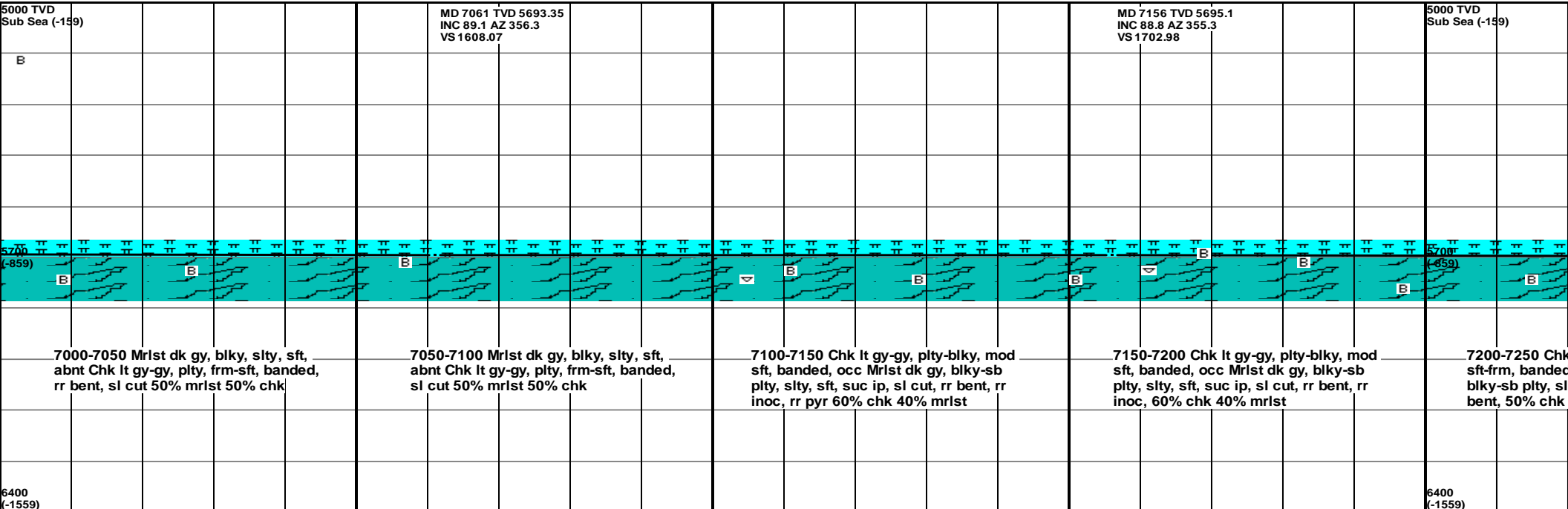
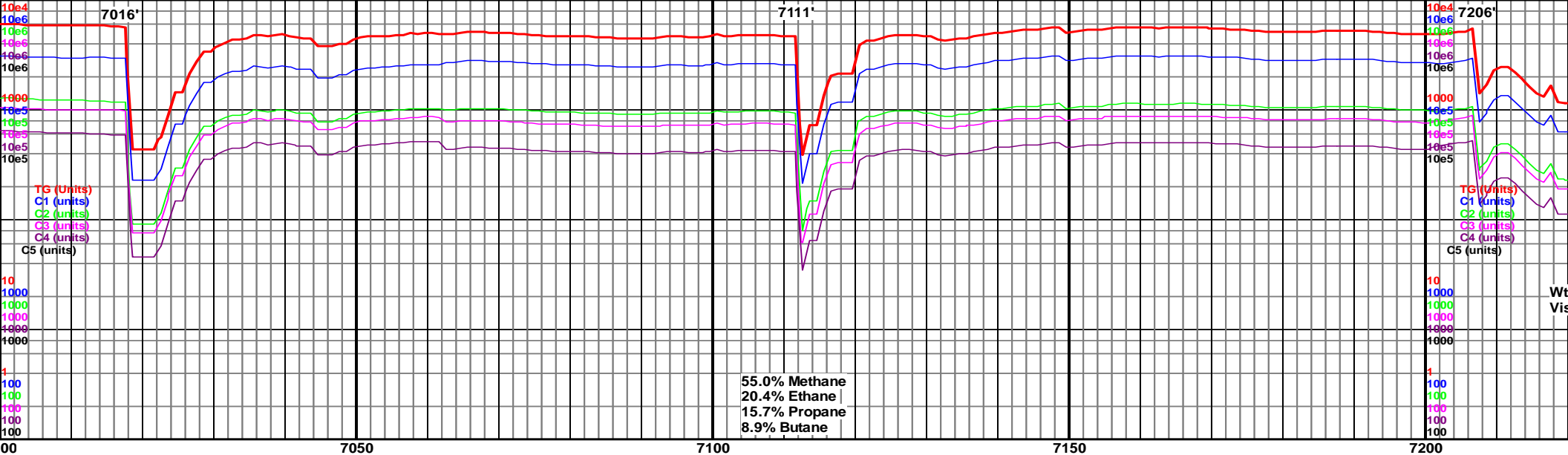


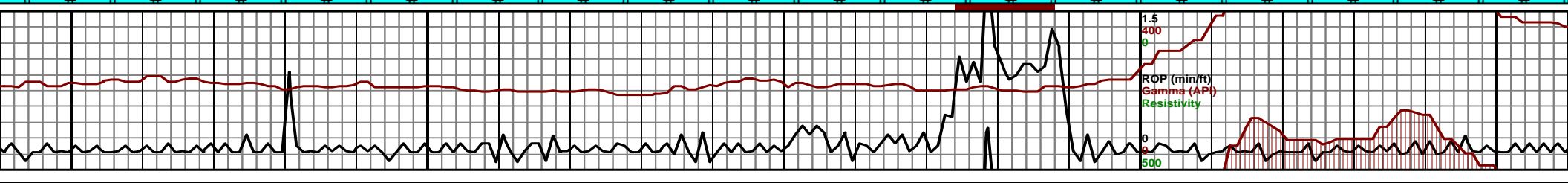
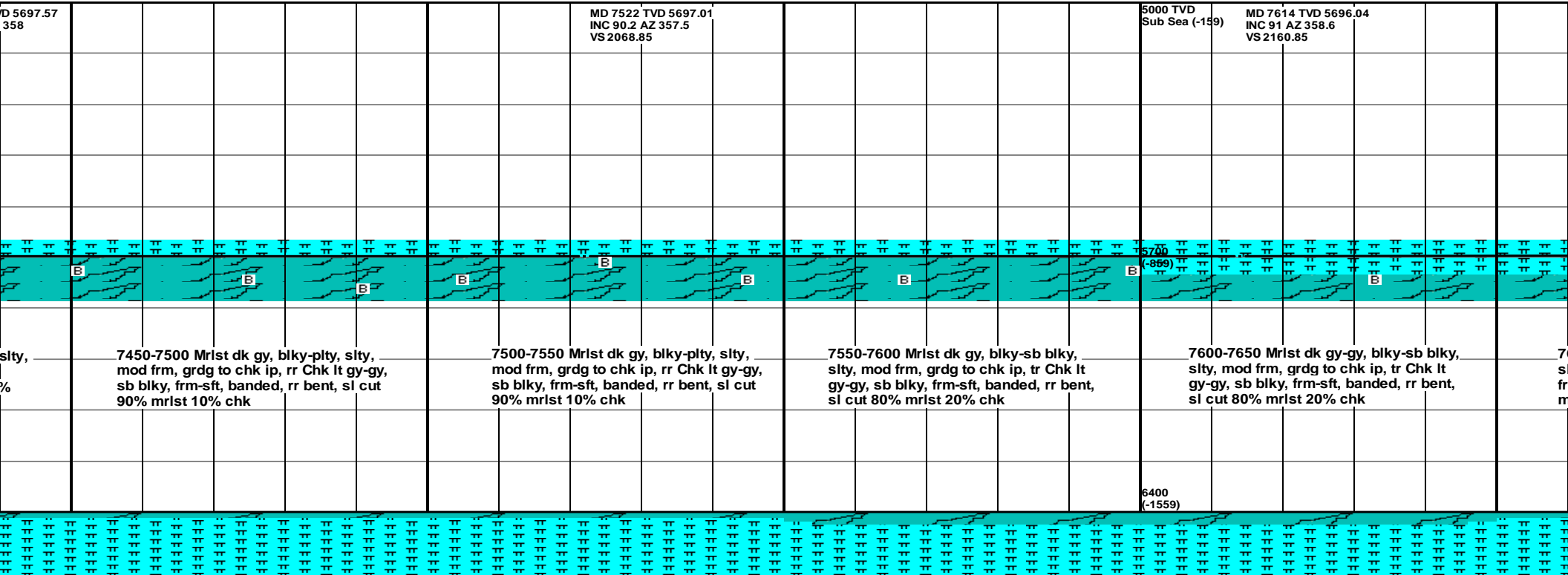


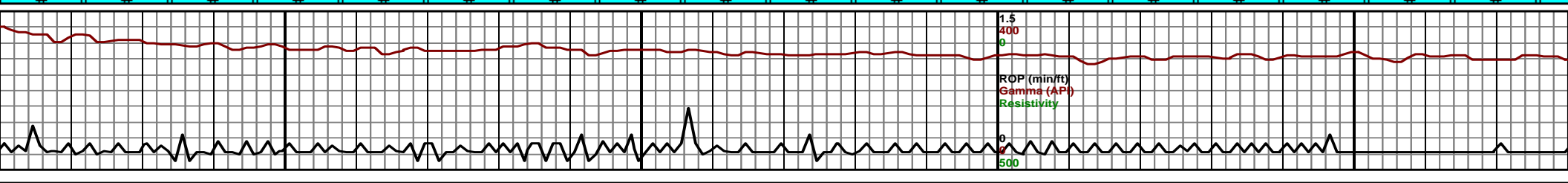
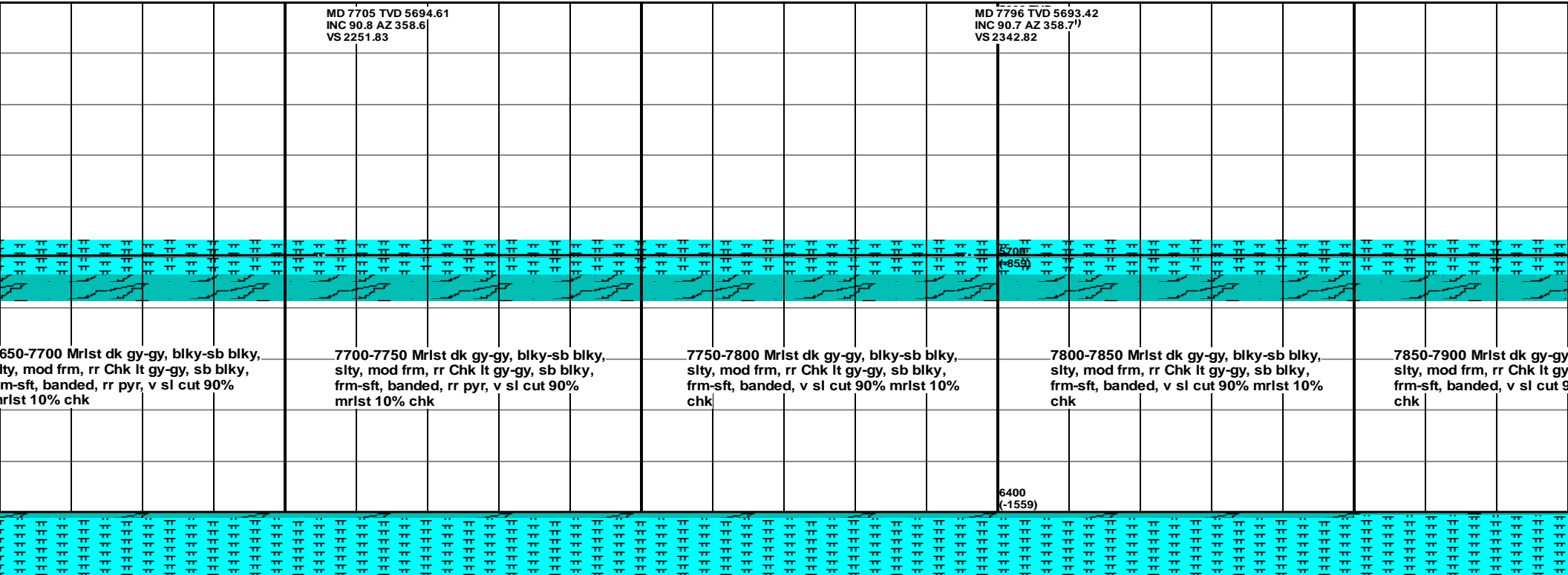
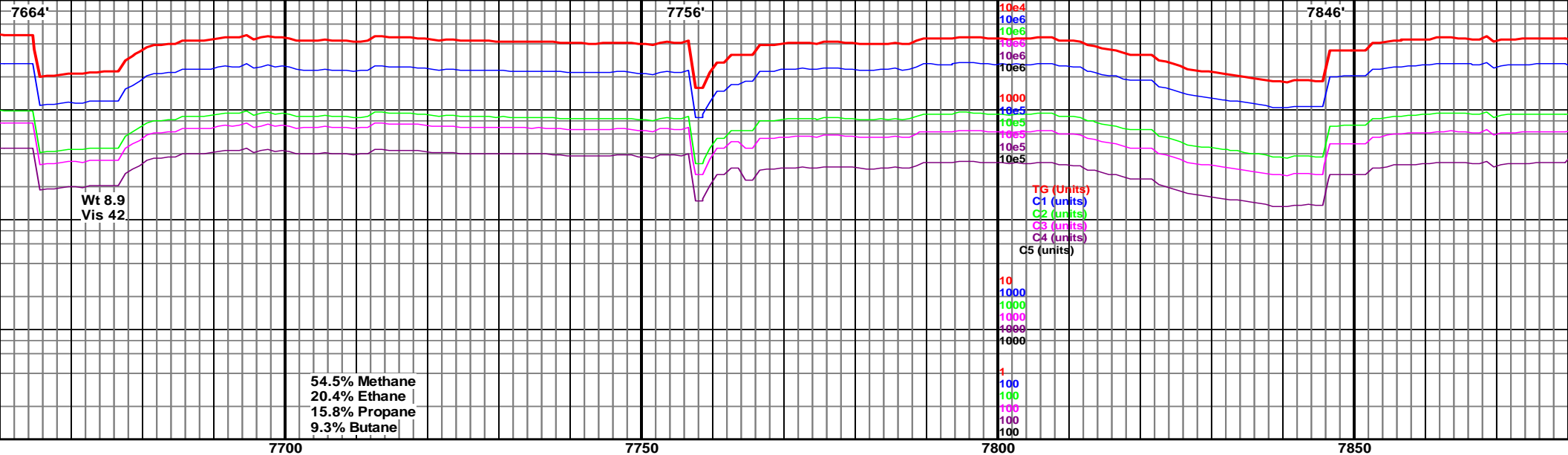


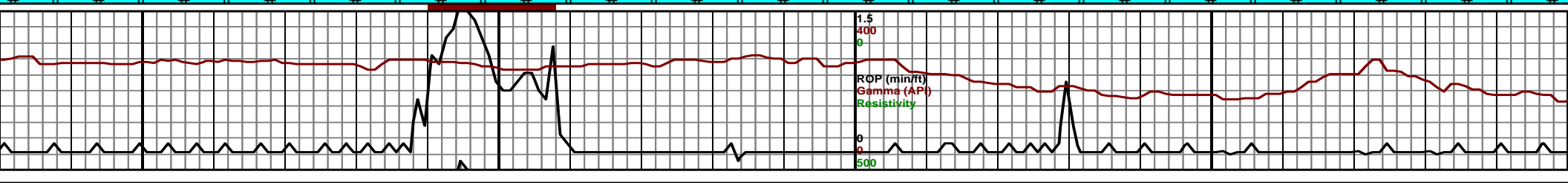
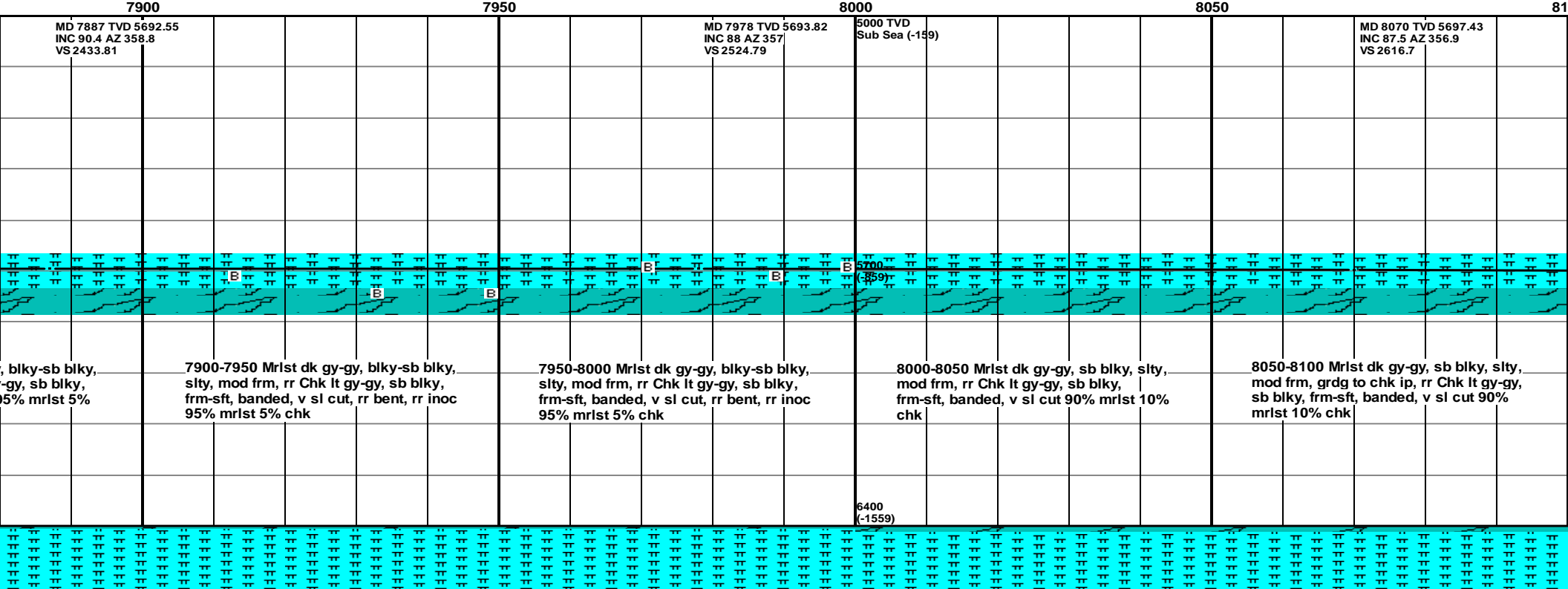
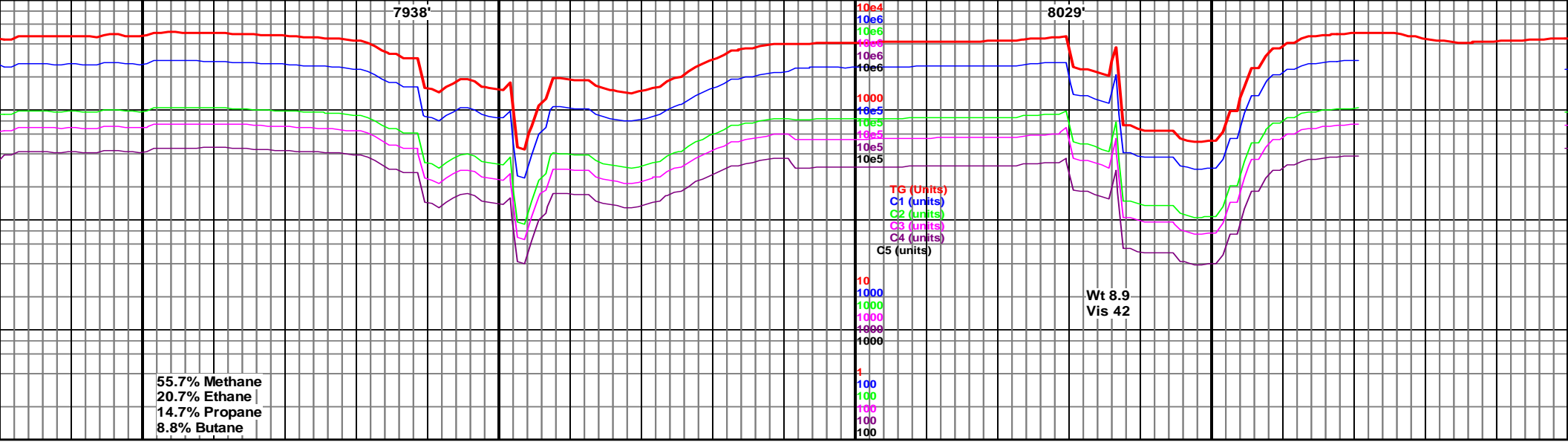


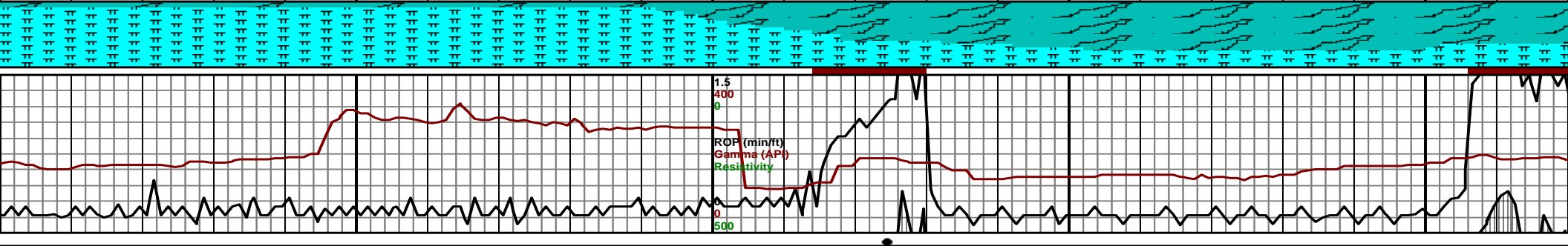
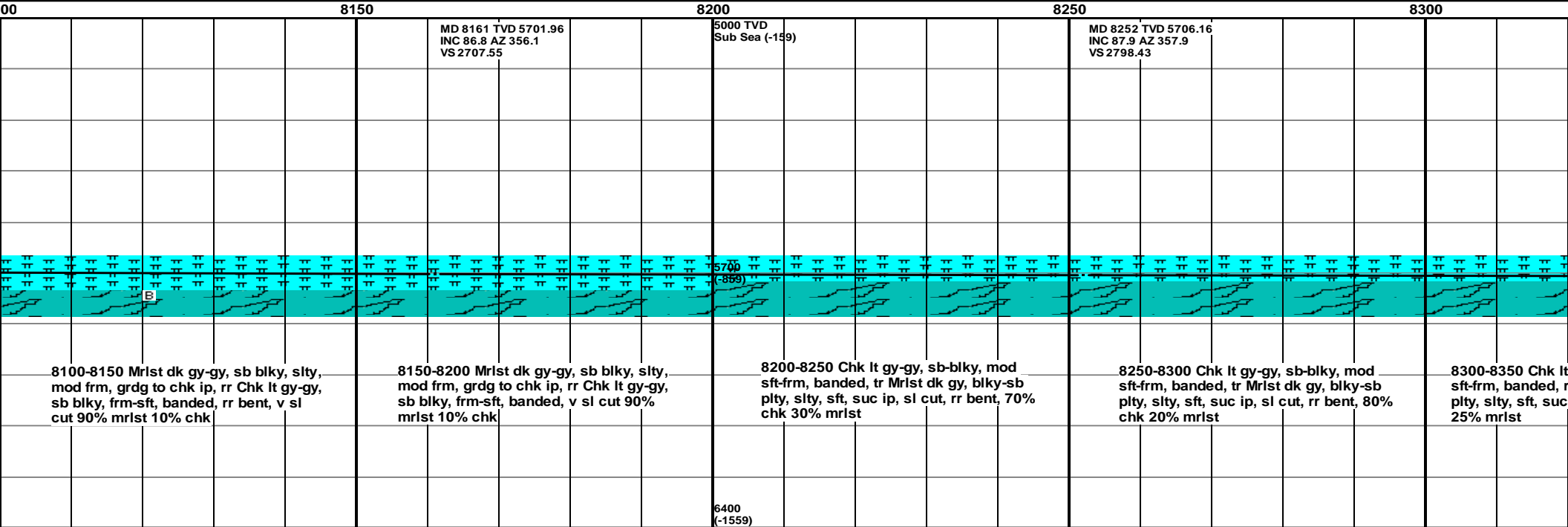
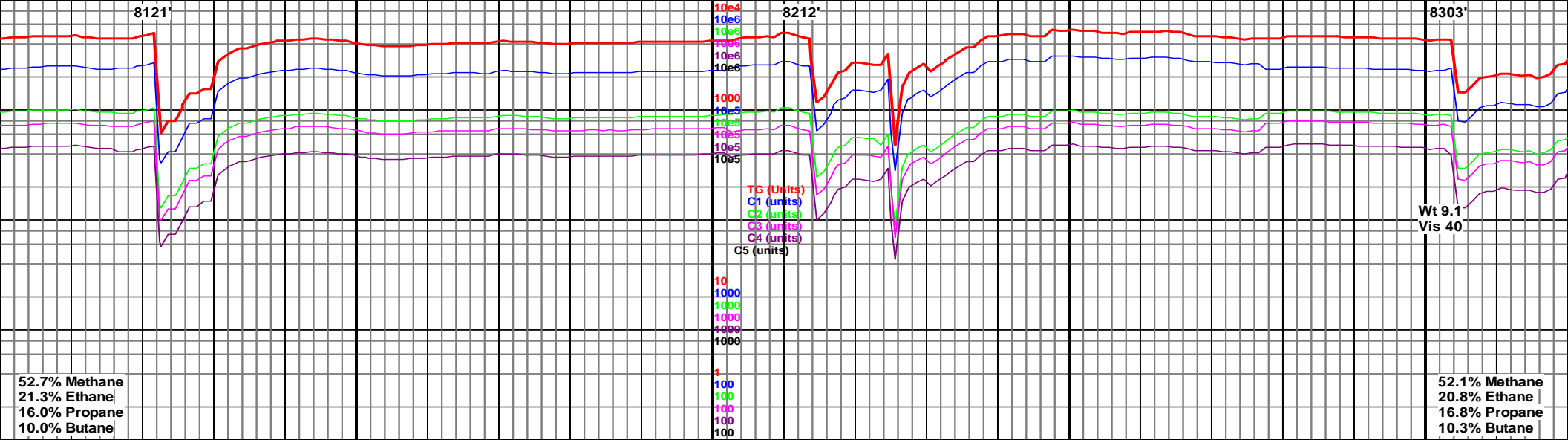


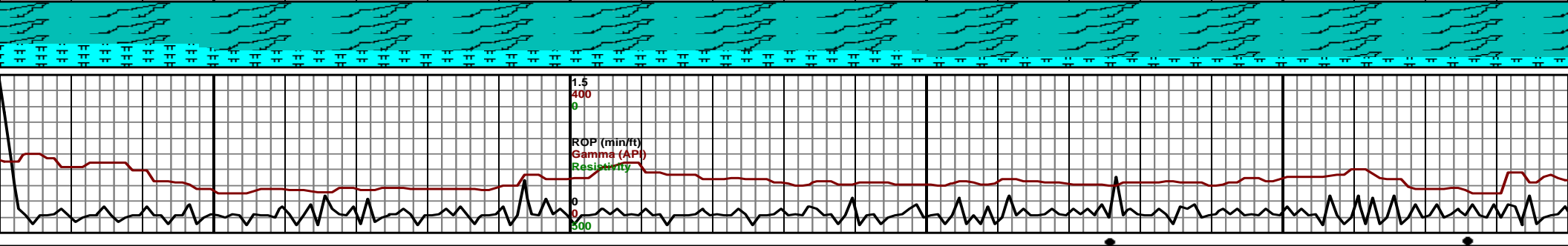
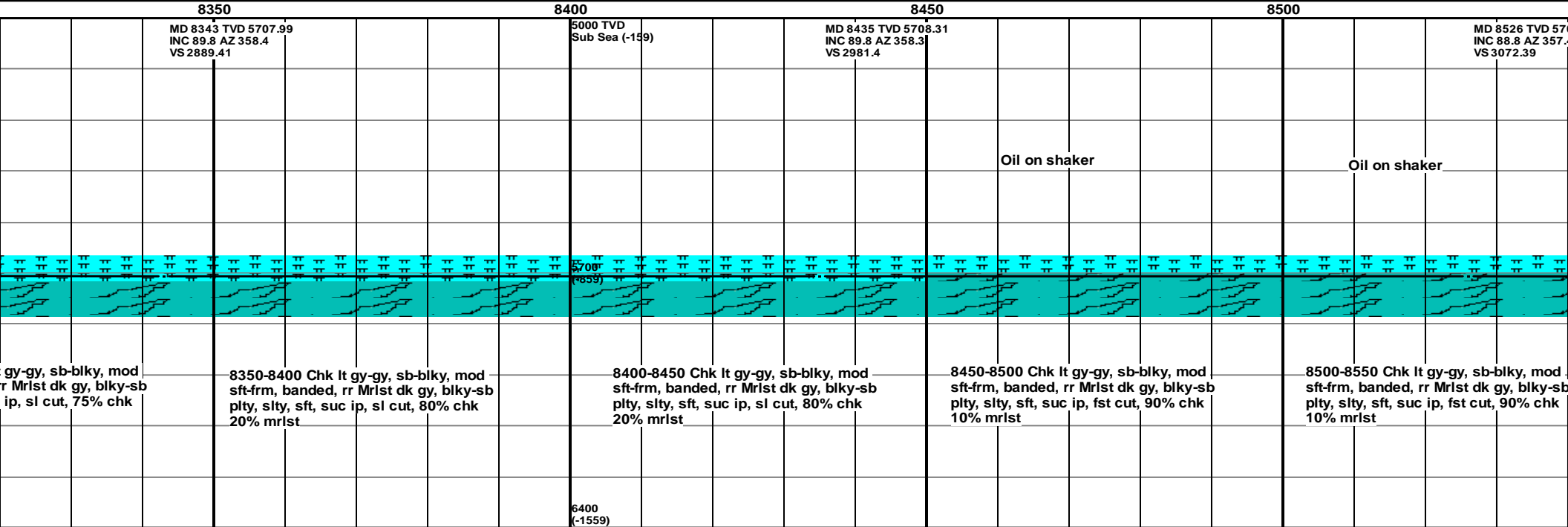
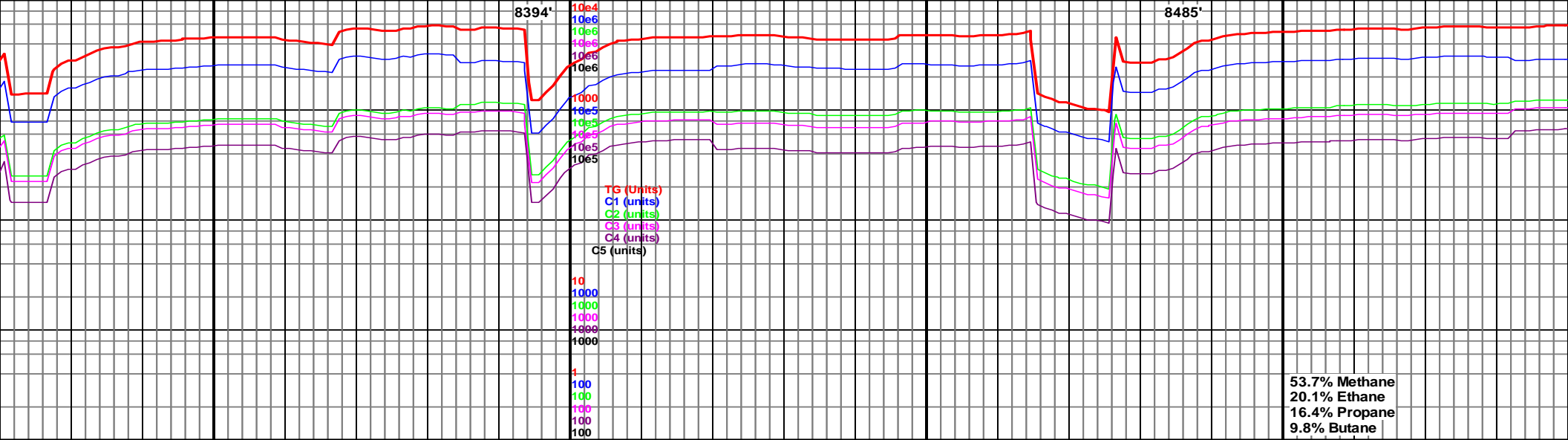


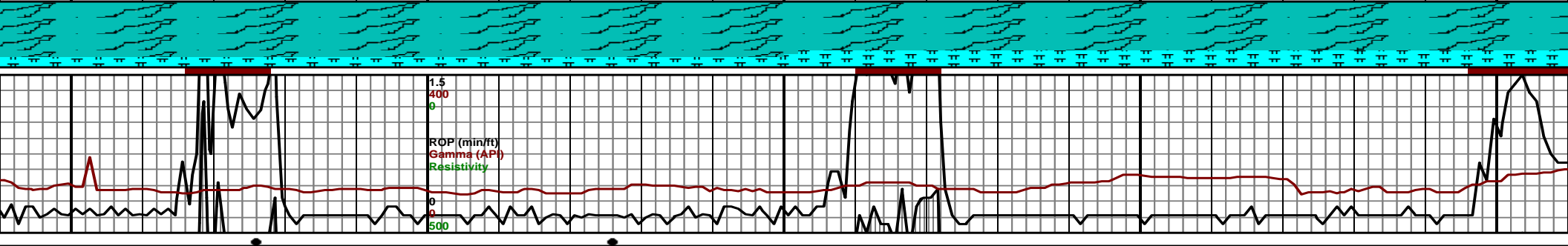
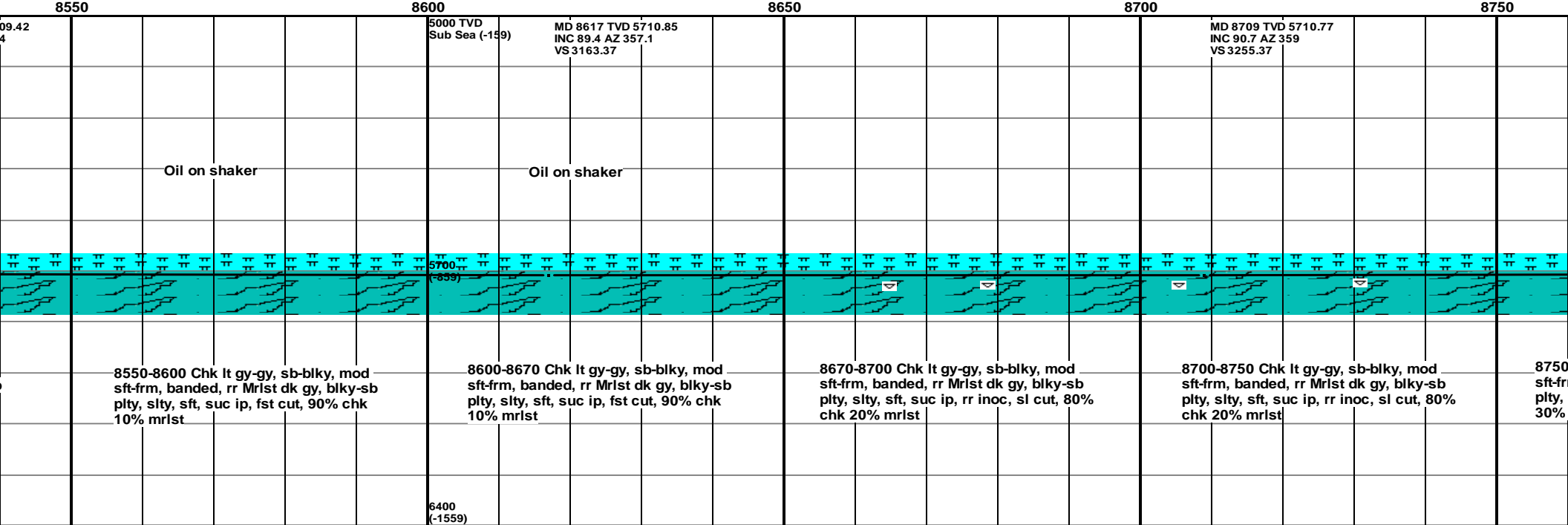
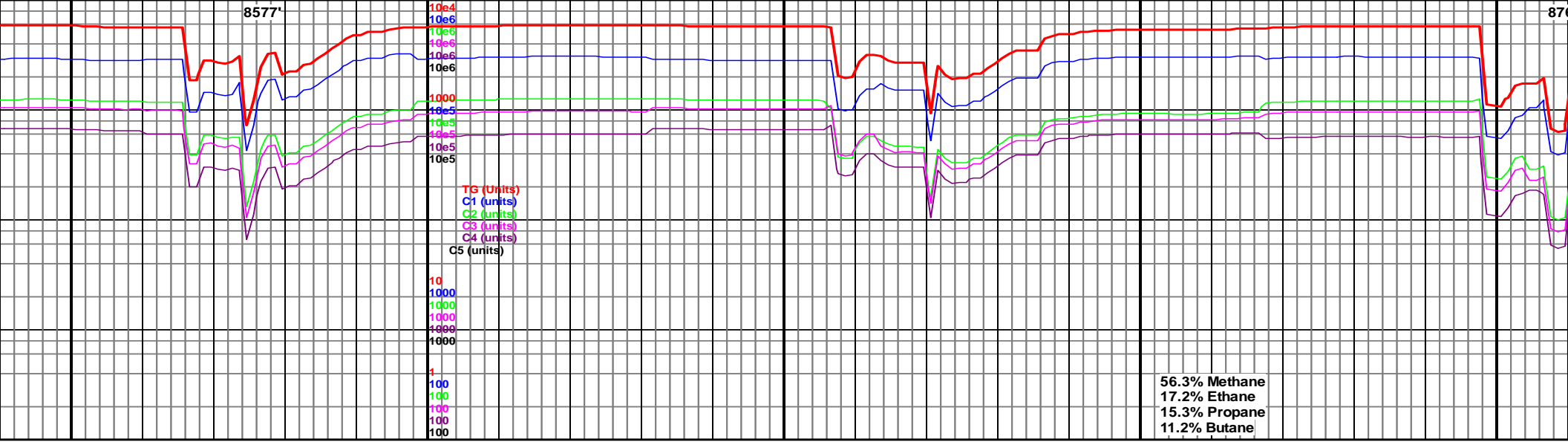


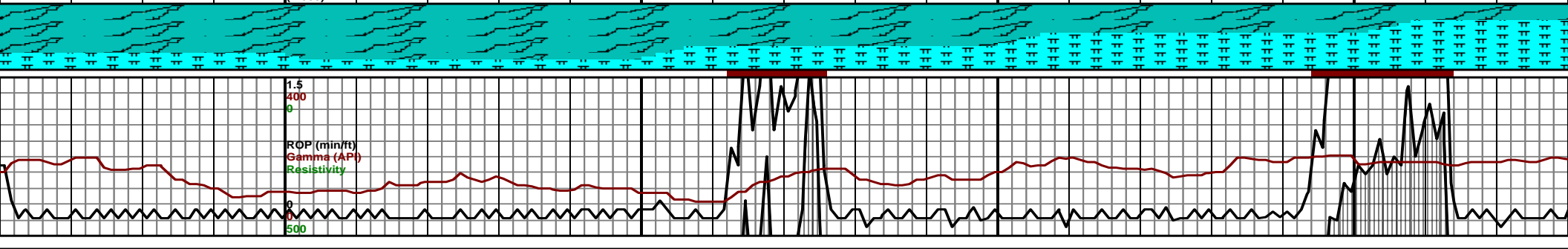
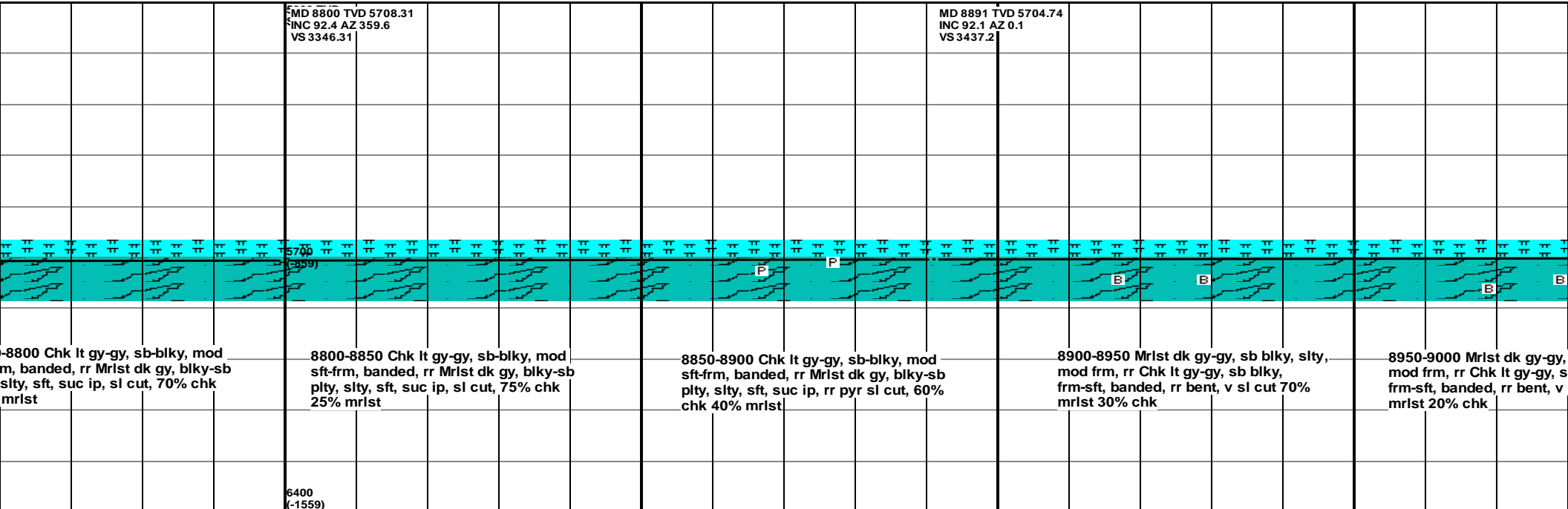
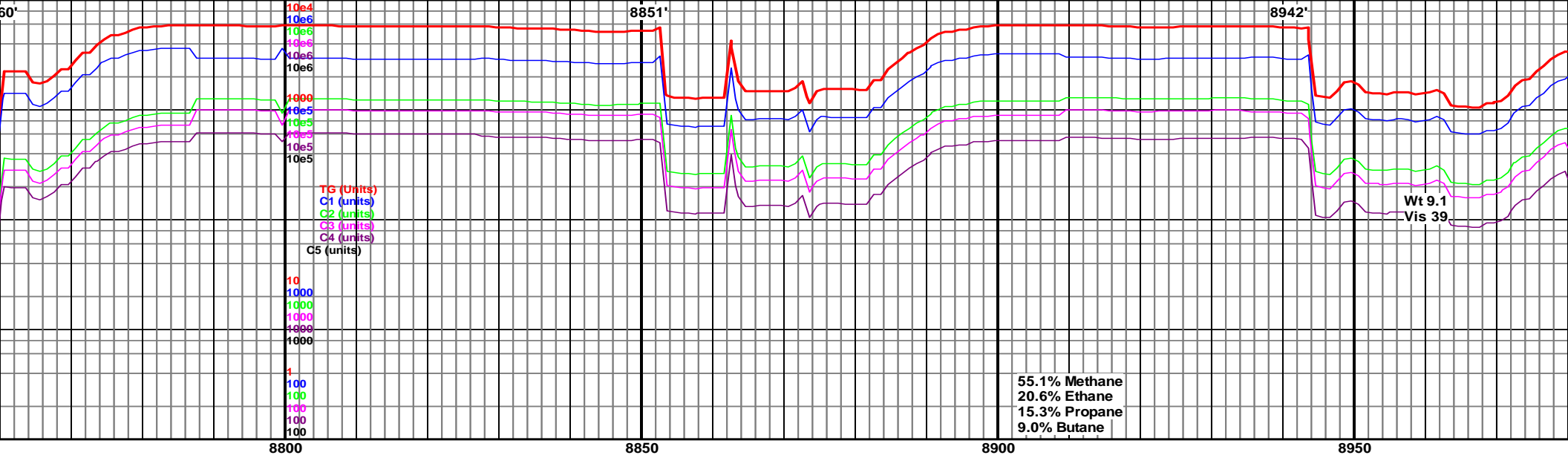


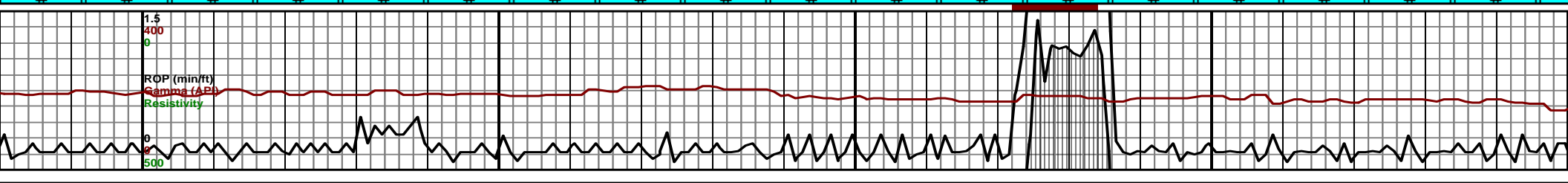
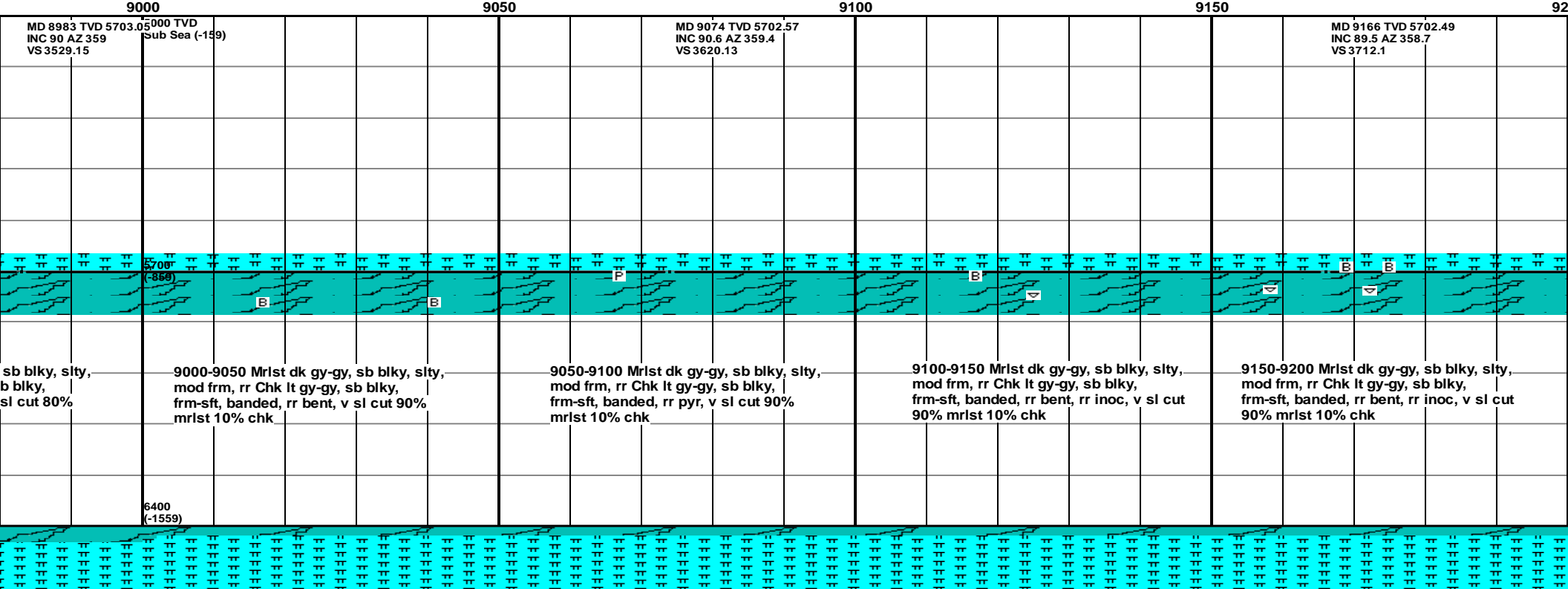
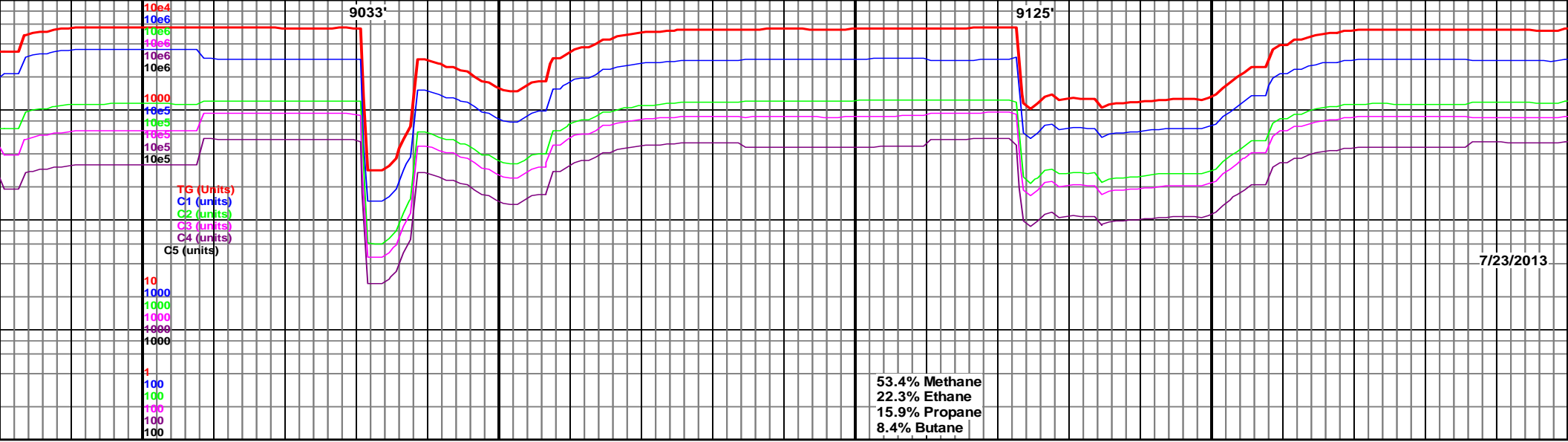


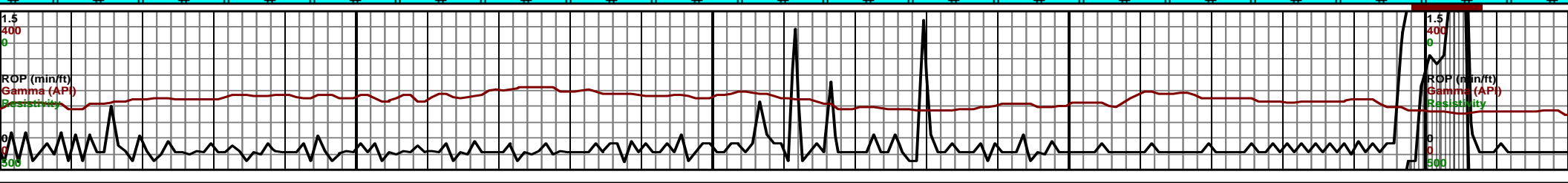
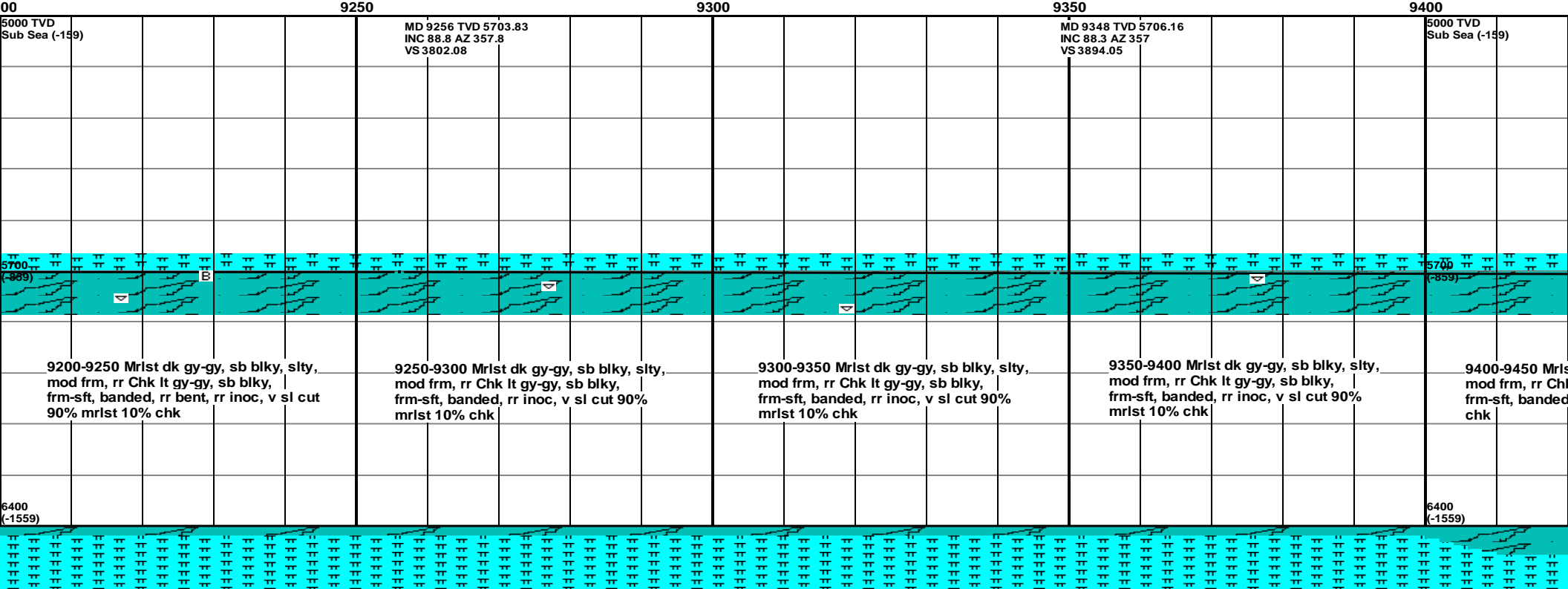
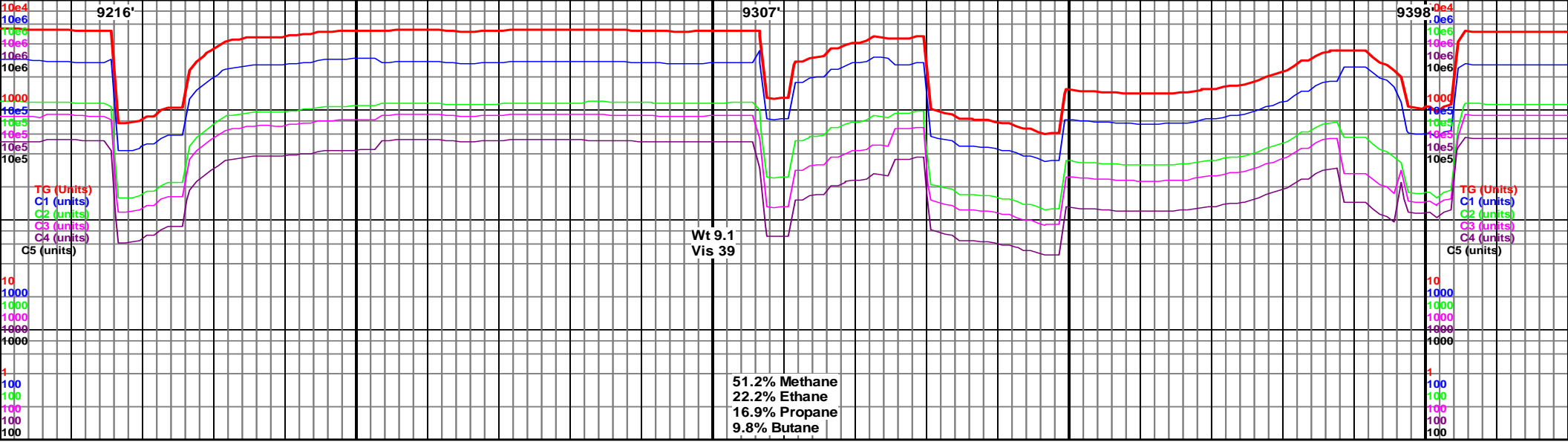


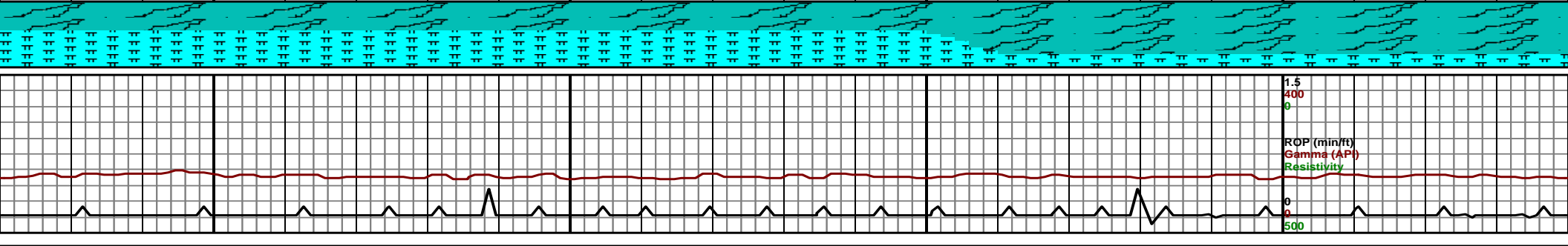
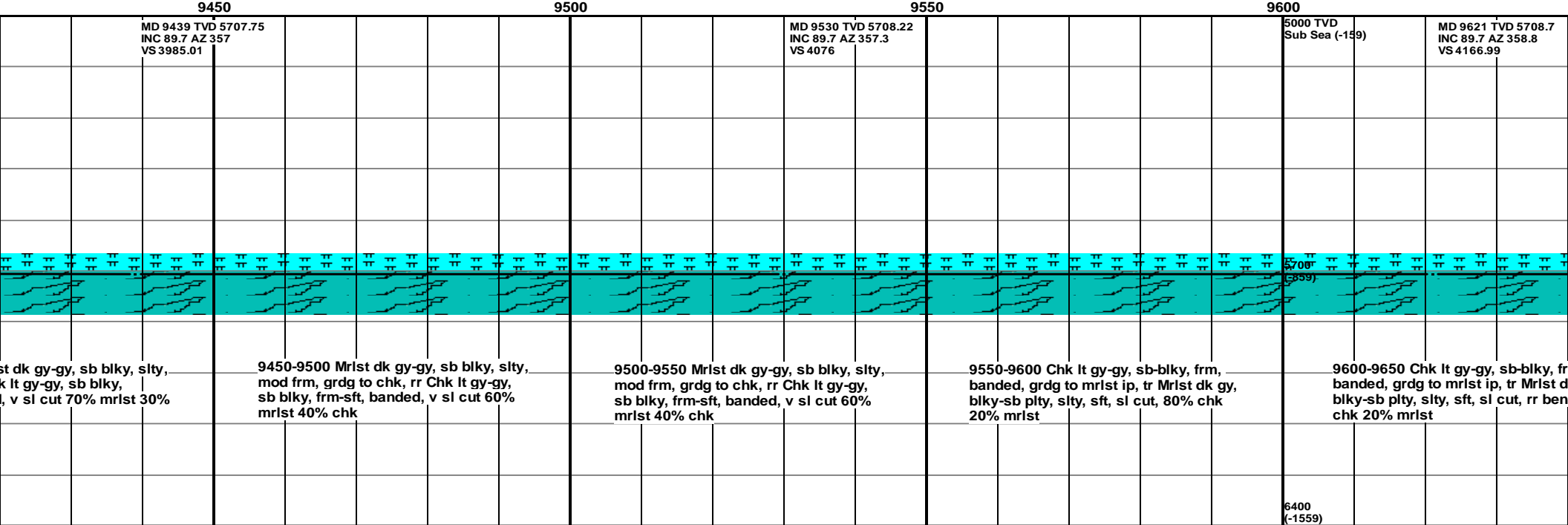
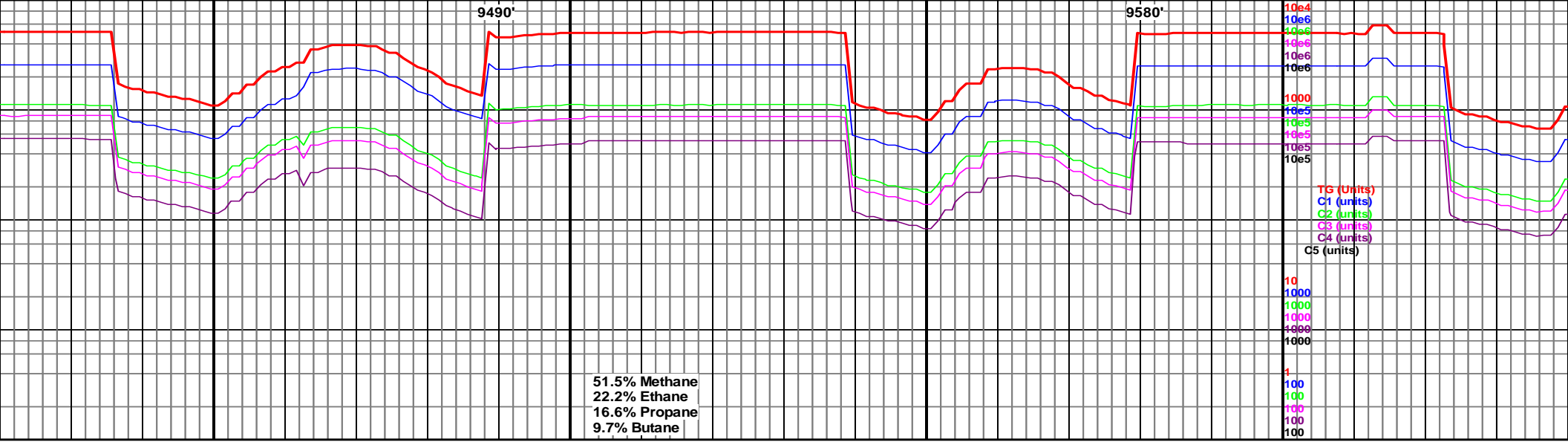


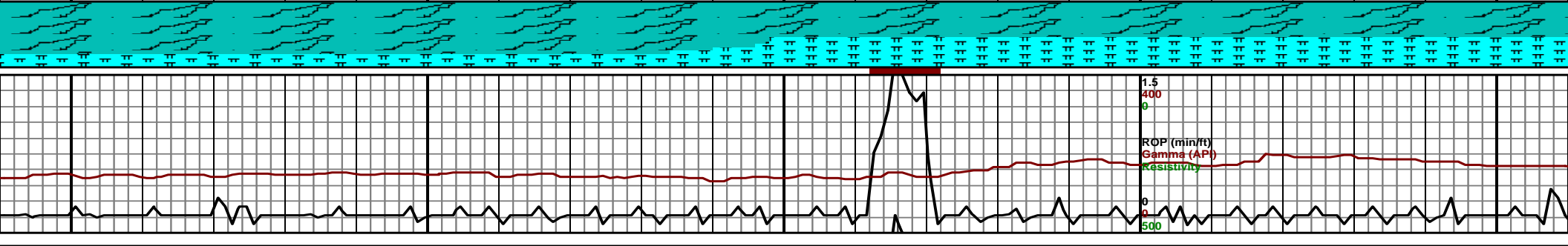
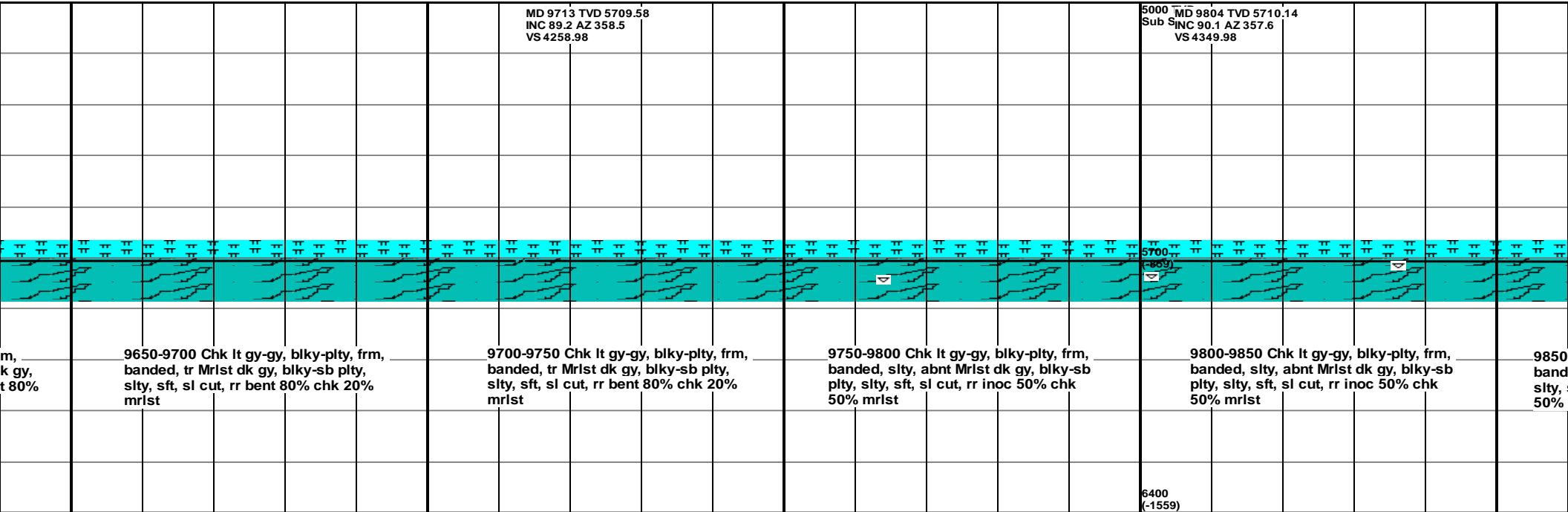
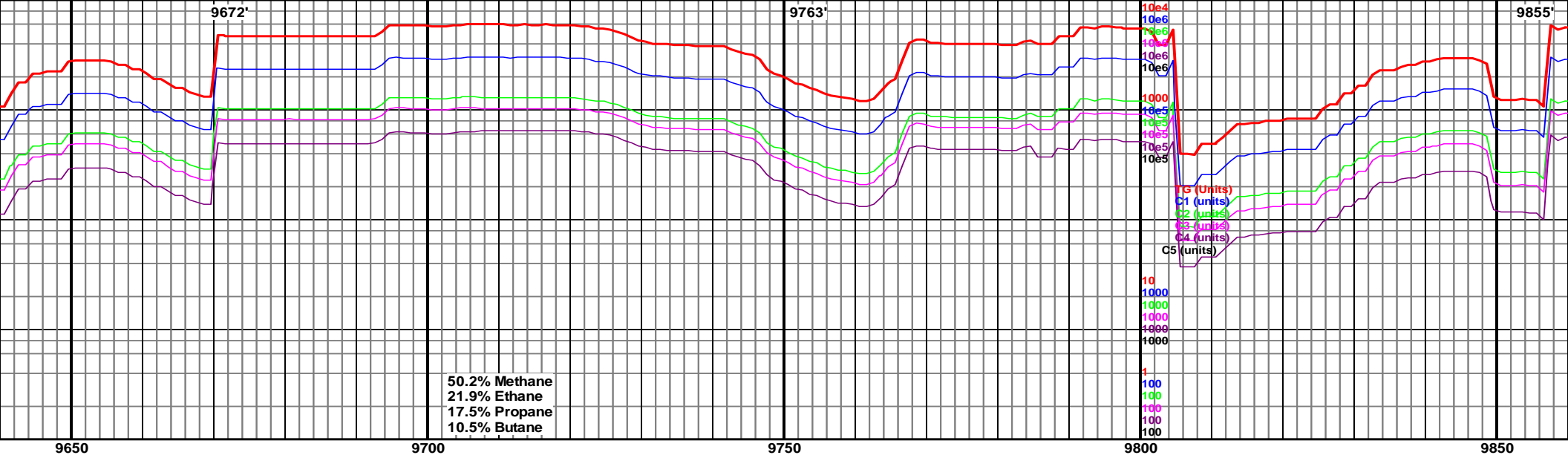


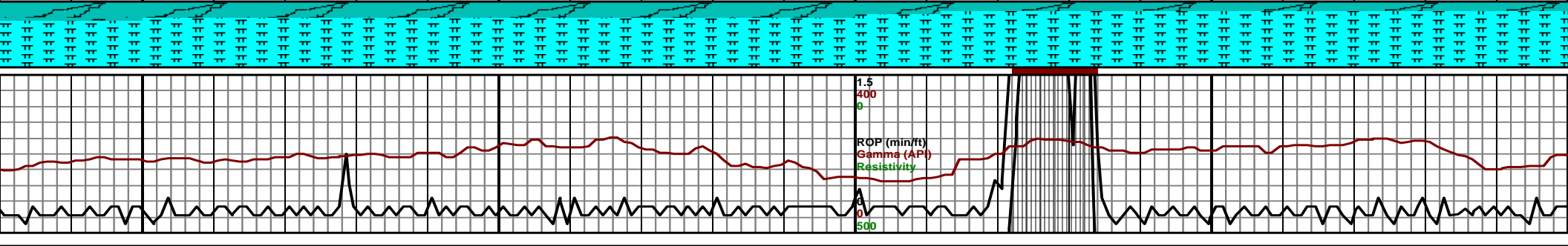
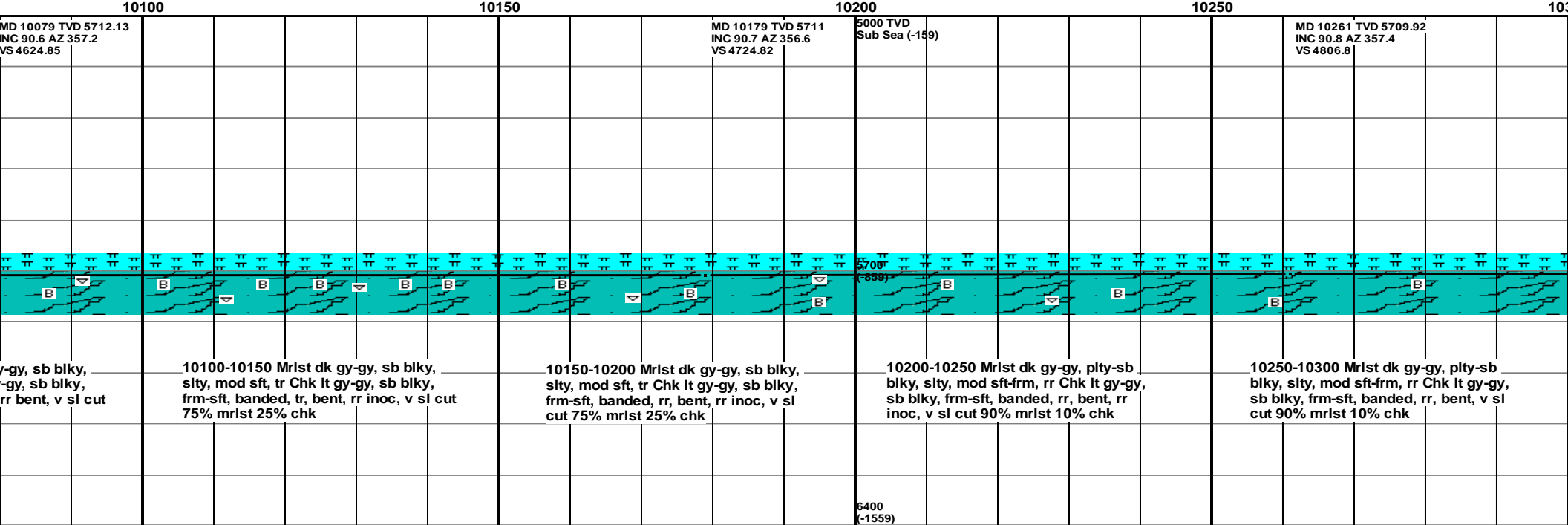
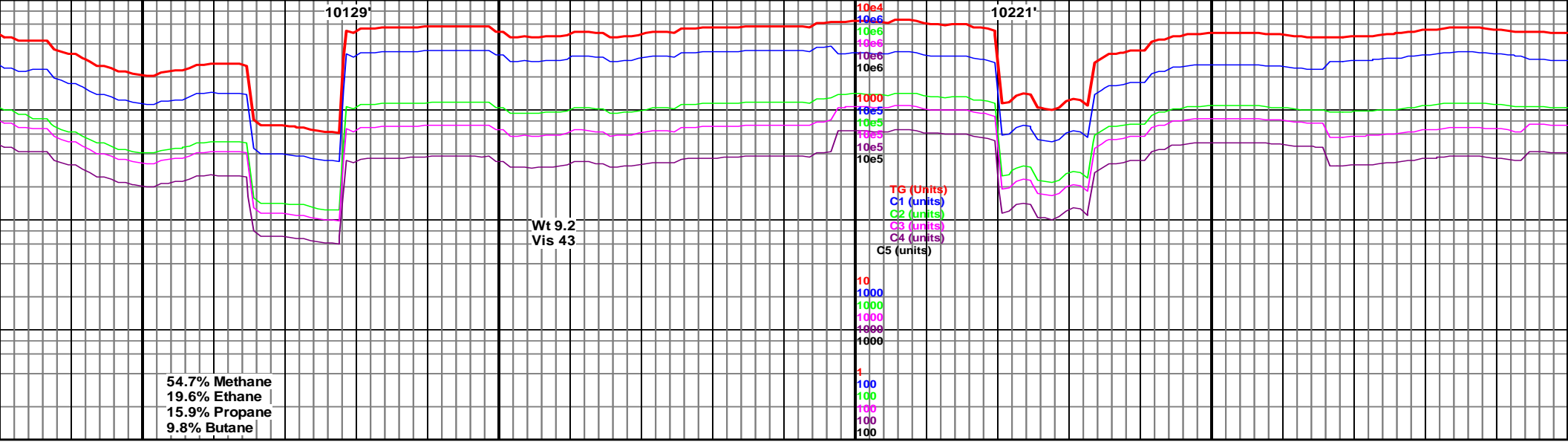


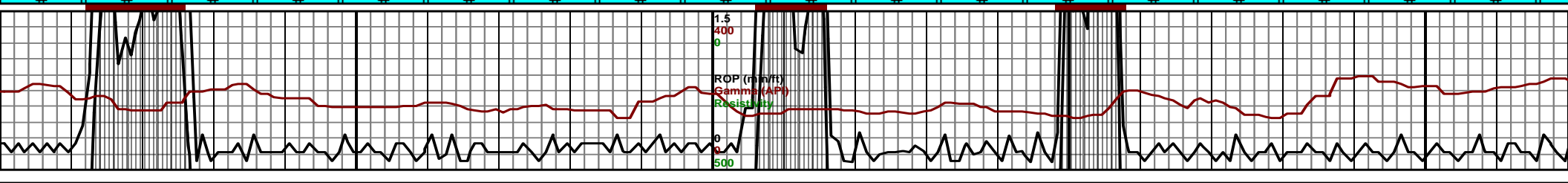
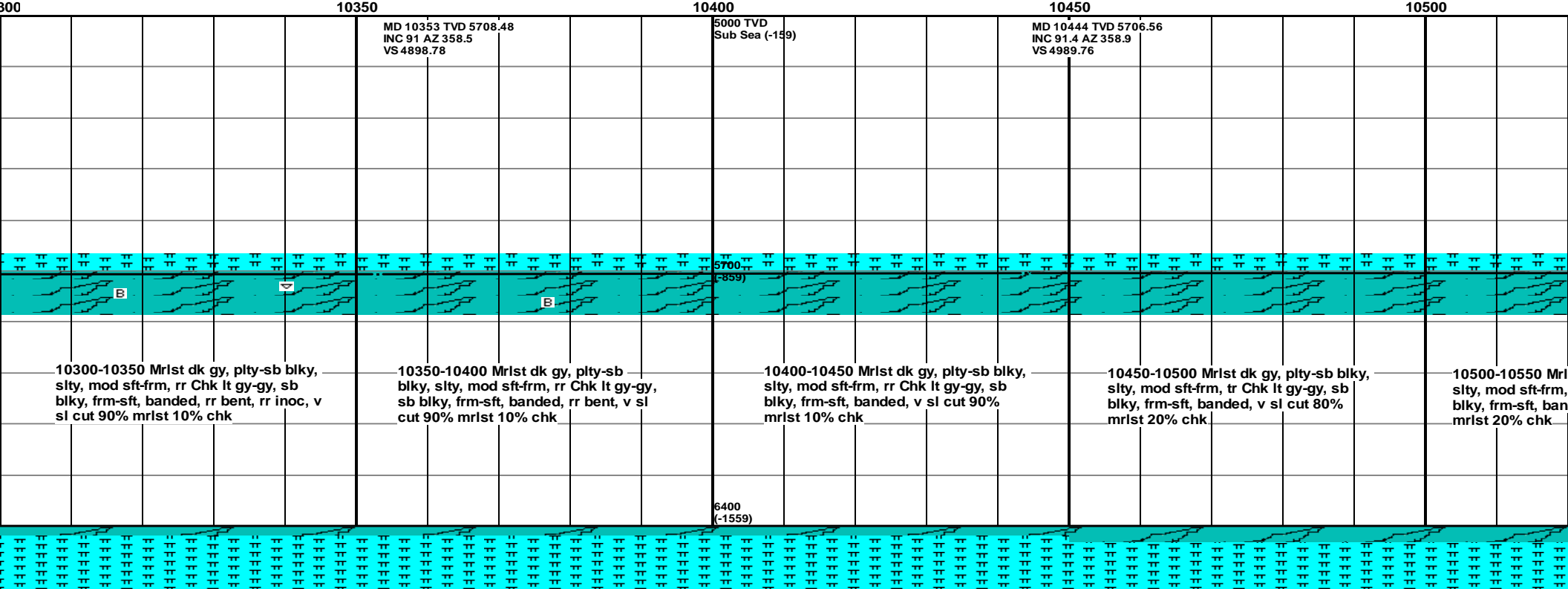
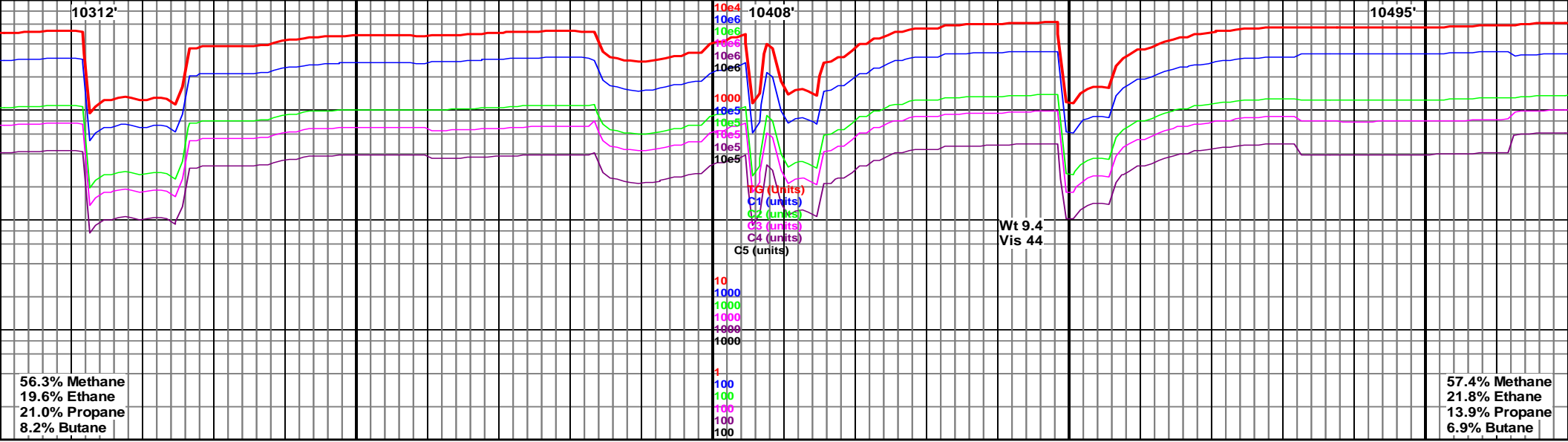


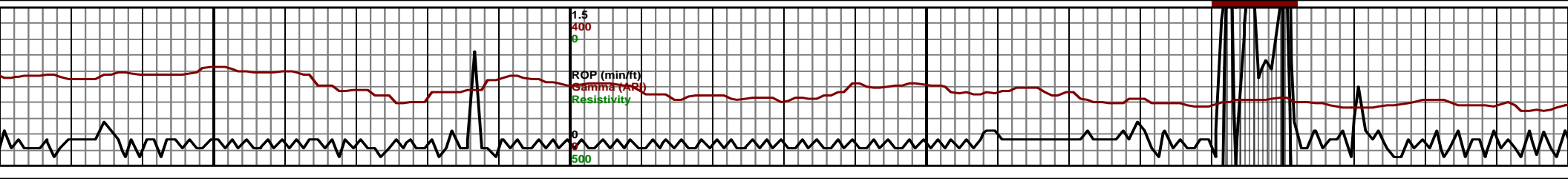
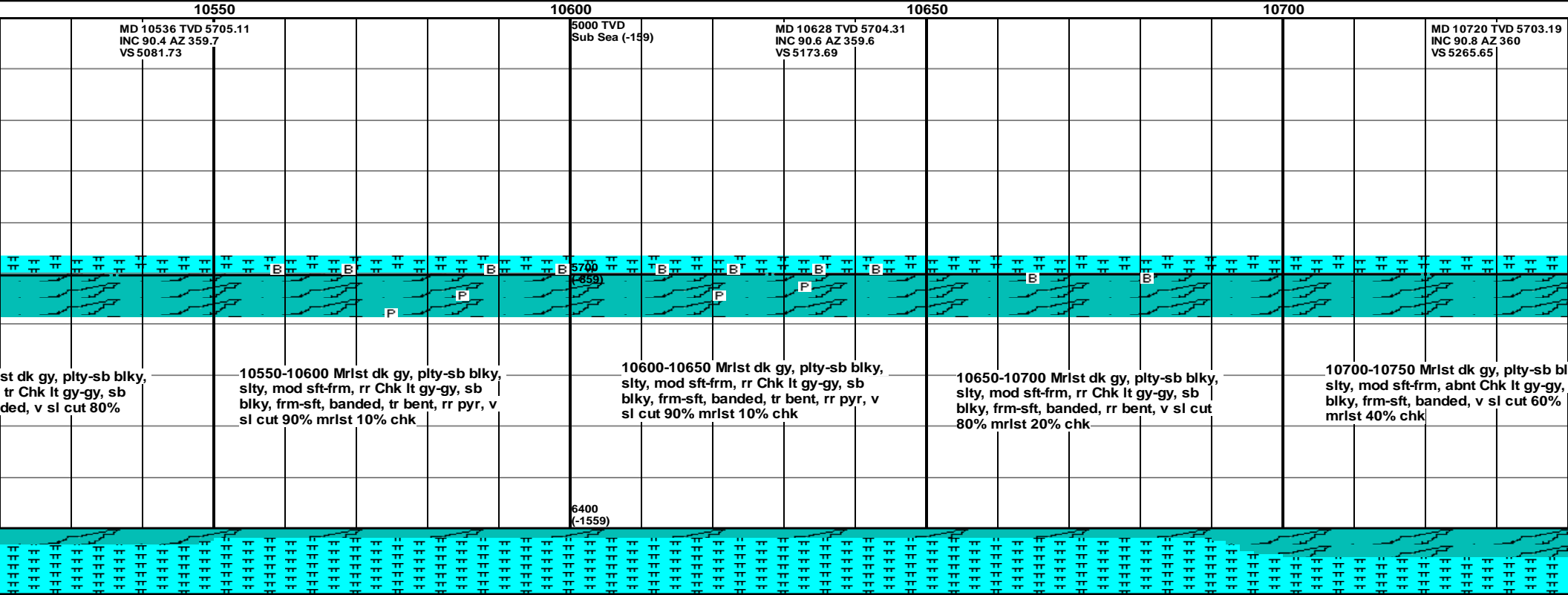
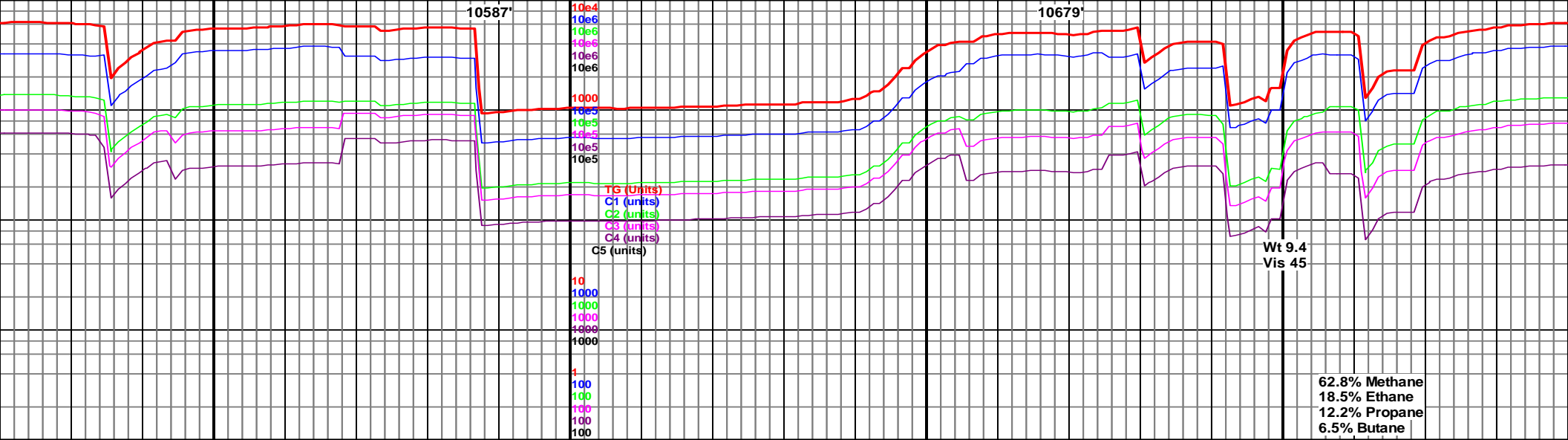


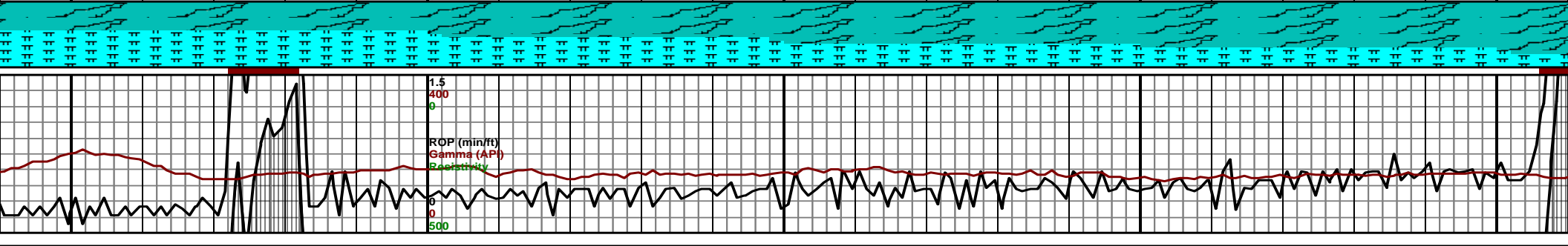
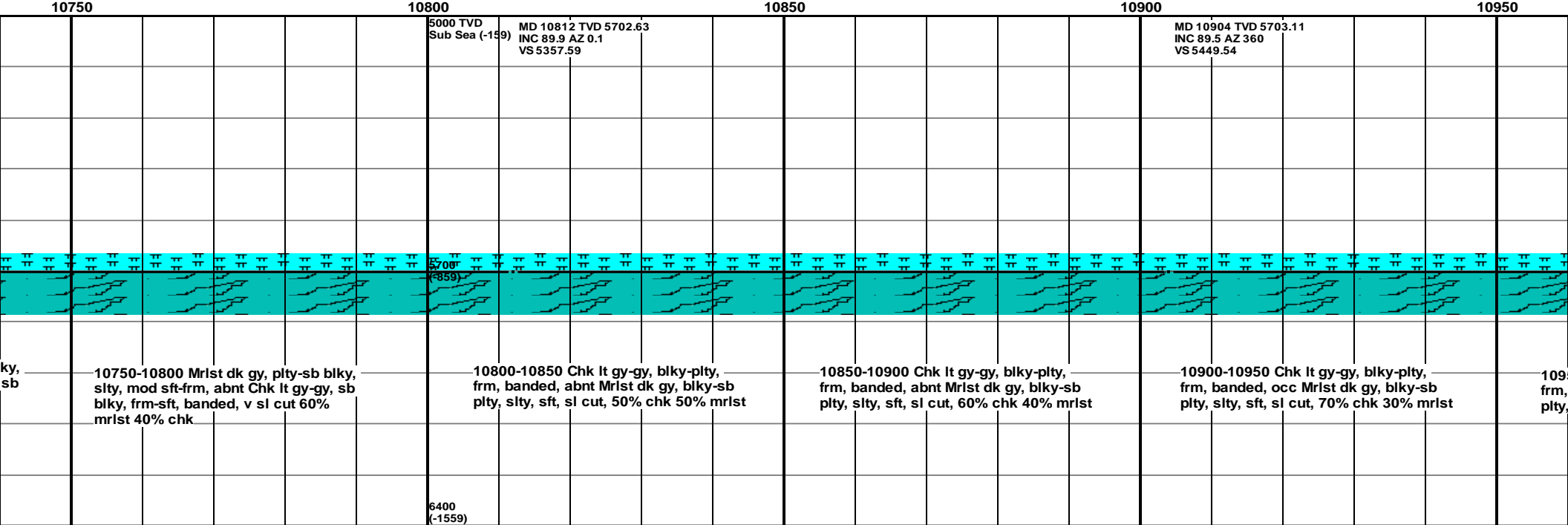
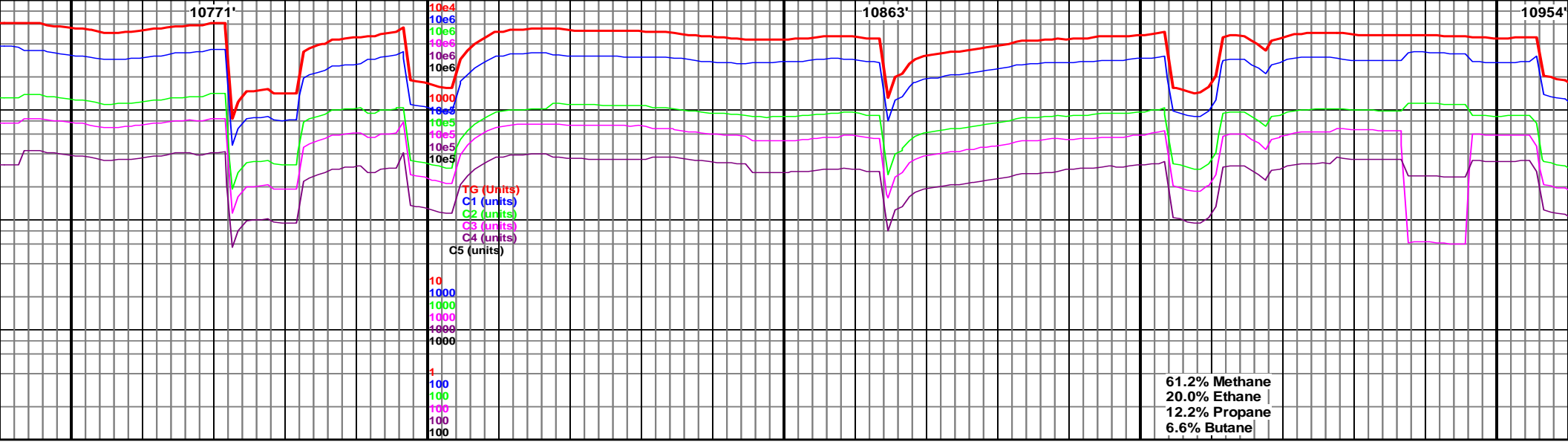


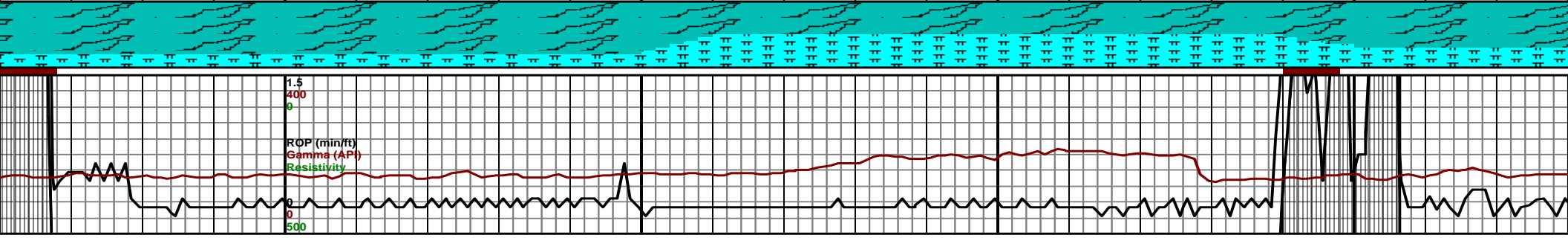
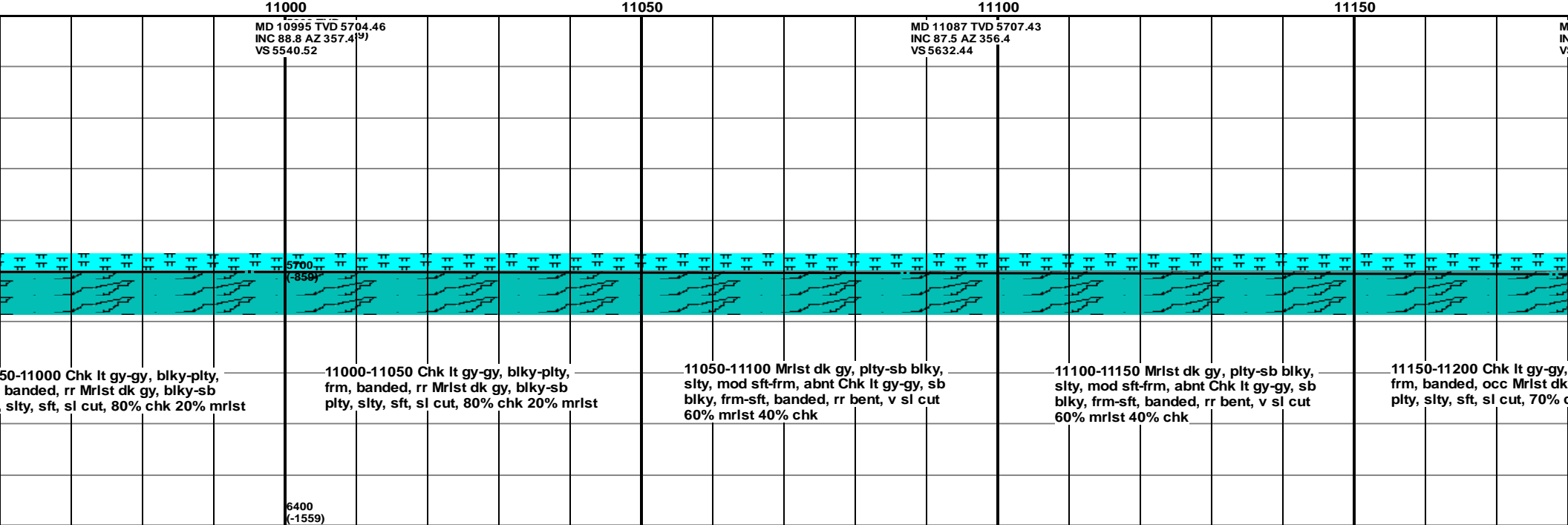
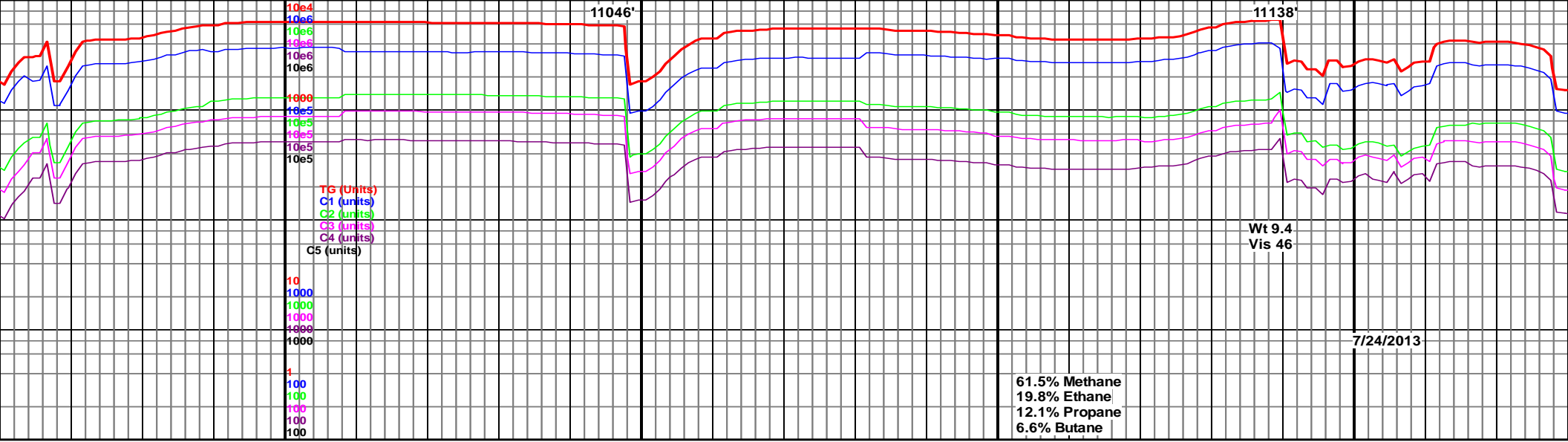


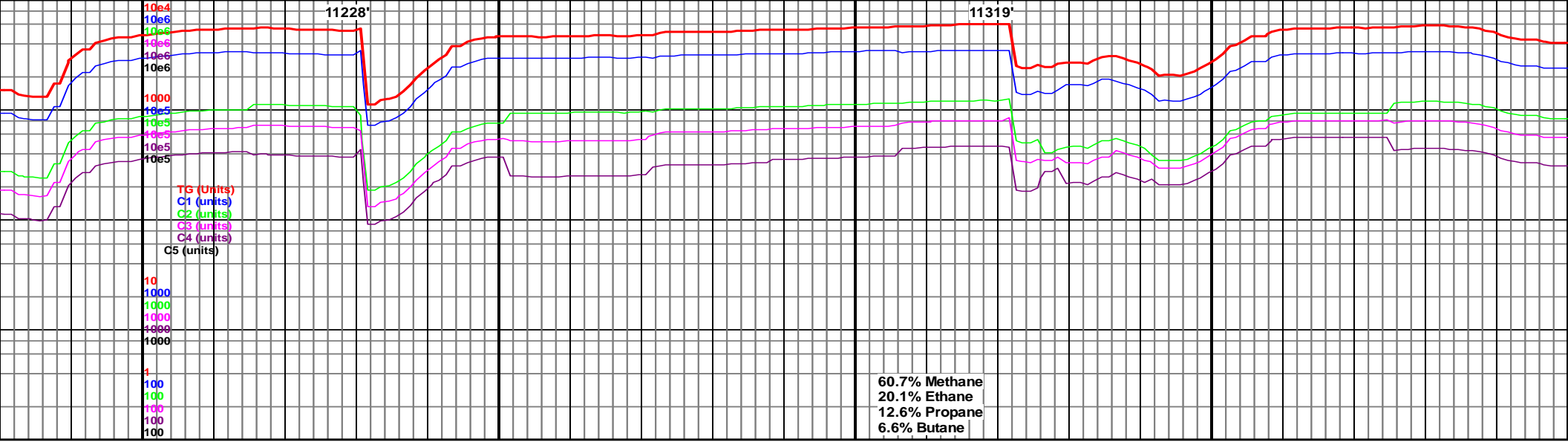












ID 11178 TVD 5710.52 INC 88.6 AZ 356.6 SS 5723.35	5000 TVD Sub Sea (-159)	MD 11269 TVD 5712.98 INC 88.3 AZ 356.4 VS 5814.28	MD 11360 TVD 5714.57 INC 89.7 AZ 358.3 VS 5905.25
blky-plty, gy, blky-sb chk 30% mrlst	11200-11250 Chk lt gy-gy, blky-plty, frm, banded, occ Mrlst dk gy, blky-sb plty, slty, sft, sl cut, 70% chk 30% mrlst	11250-11300 Chk lt gy-gy, blky-plty, frm, banded, rr Mrlst dk gy, blky-sb plty, slty, sft, sl cut, 90% chk 10% mrlst	11300-11350 Chk lt gy-gy, blky-plty, frm, banded, rr Mrlst dk gy, blky-sb plty, slty, sft, sl cut, 90% chk 10% mrlst

