



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

Well Name: Horsetail 30E-1935
API: 051234286900
Location: 30-T10N-R57W
License Number:
Spud Date: 10/15/2016
Surface Coordinates: 40.810703
-103.801122

Region: Wildcat Field
Drilling Completed: 10/19/2016

Bottom Hole
Coordinates:
Ground Elevation (ft): 4806
Logged Interval (ft): 5143 To: 14030
Formation: Codell
Type of Drilling Fluid: Water Based Mud

K.B. Elevation (ft): 4827
Total Depth (ft): 14030

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, Kyle Newman
Company: Acme Geologic Consulting
Address: 108 Berry Street
Little Rock, AR 72205

Drilling Company

Unit Drilling Company
Rig 406

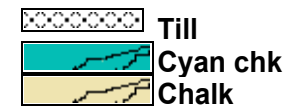
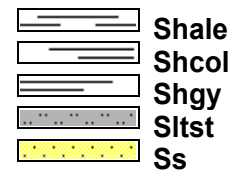
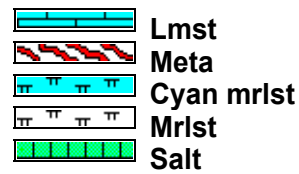
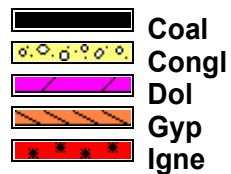
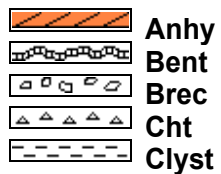
Gas Detection

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

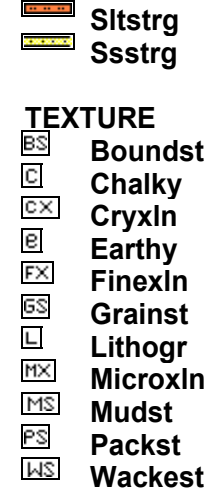
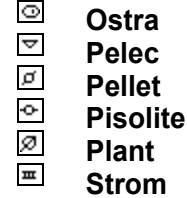
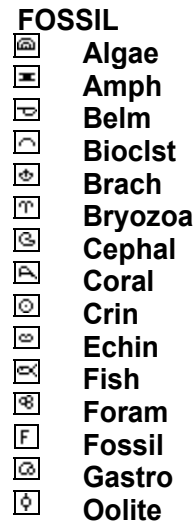
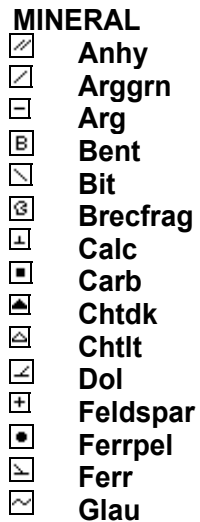
Comments

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



ACCESSORIES



POROSITY
[E] Earthy
[B] Fenest
[F] Fracture
[X] Inter
[Z] Moldic
[O] Organic
[P] Pinpoint

[V] Vuggy

SORTING
[W] Well
[M] Moderate
[P] Poor

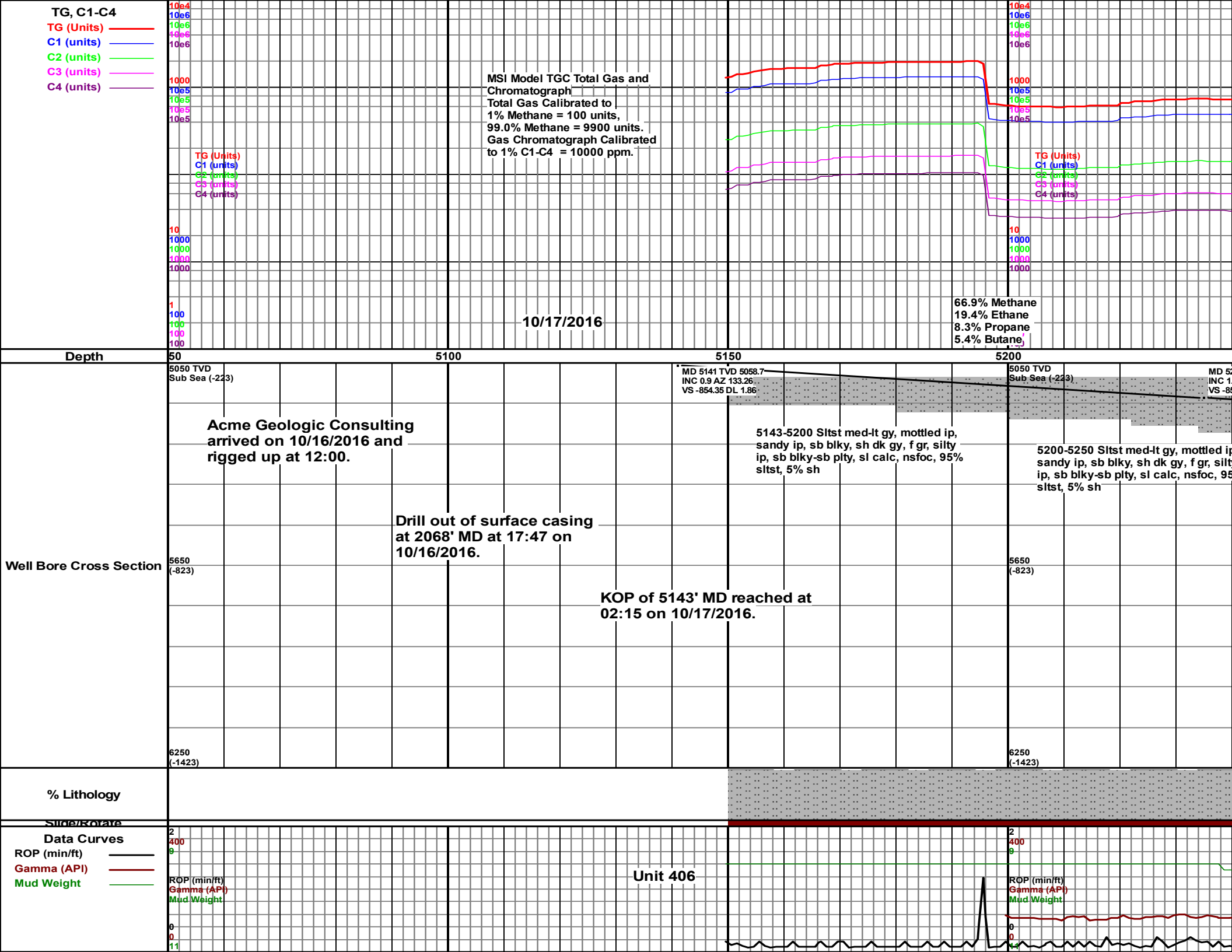
OTHER SYMBOLS
ROUNDING
[R] Rounded
[r] Subrnd
[a] Subang
[A] Angular

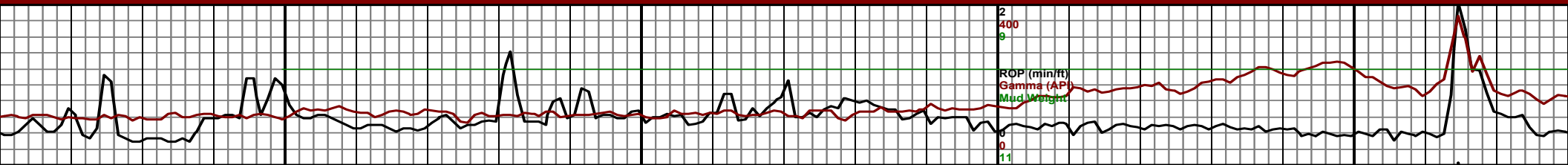
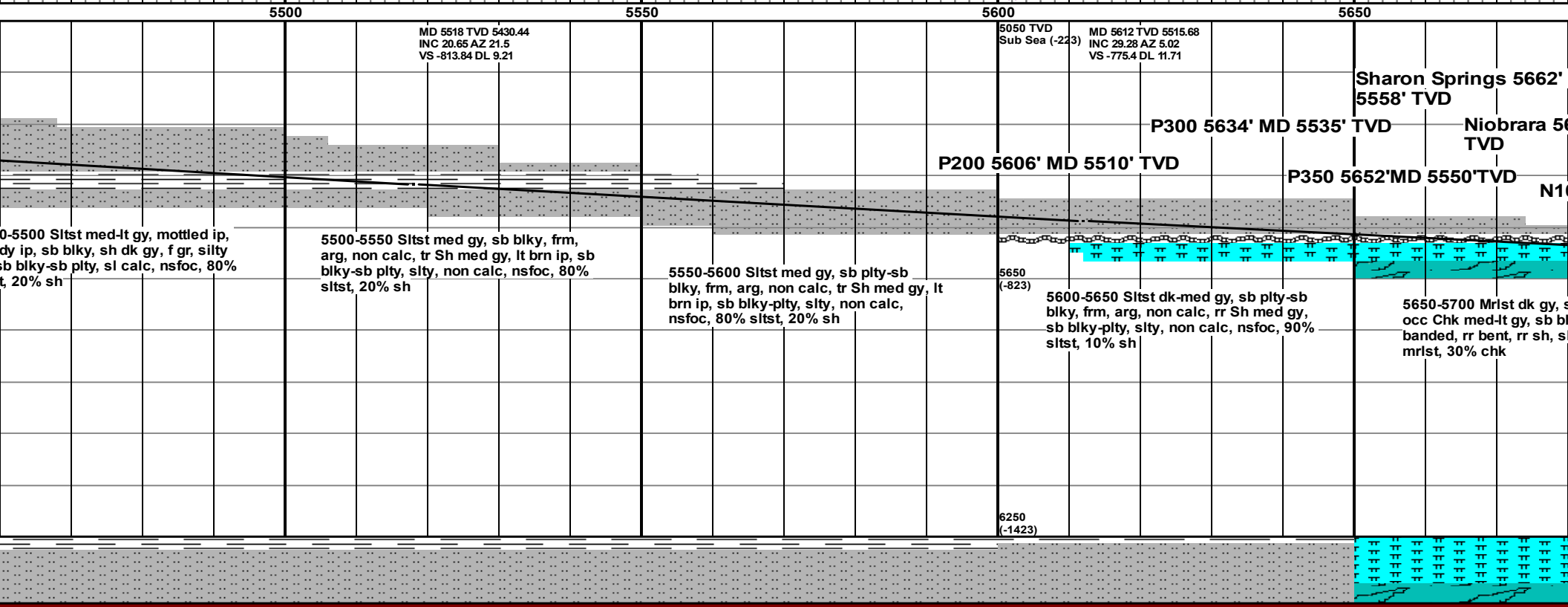
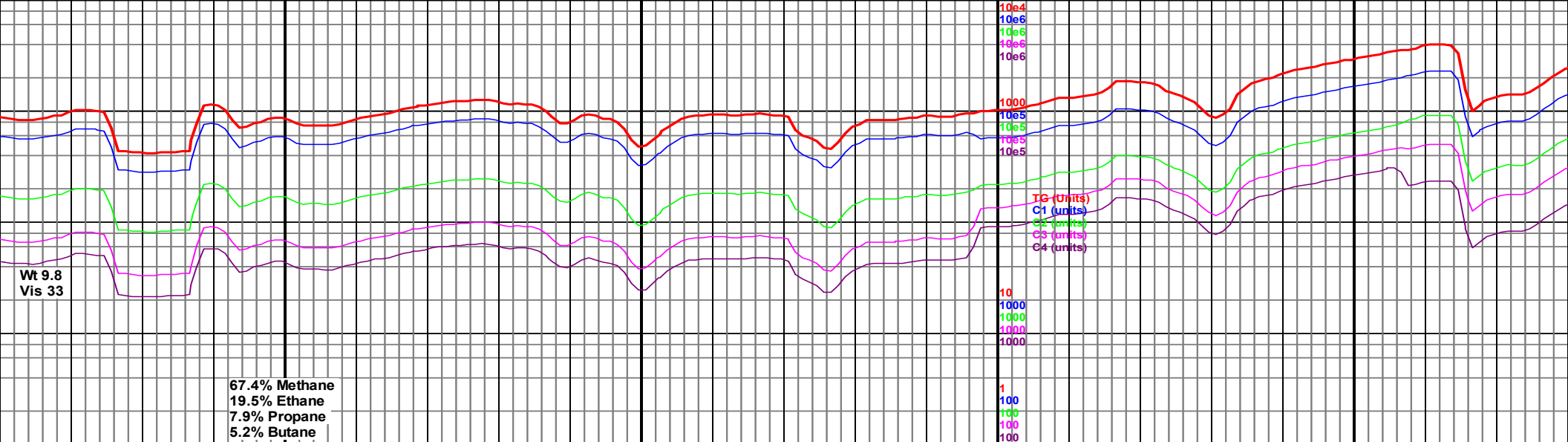
OIL SHOW
[•] Even

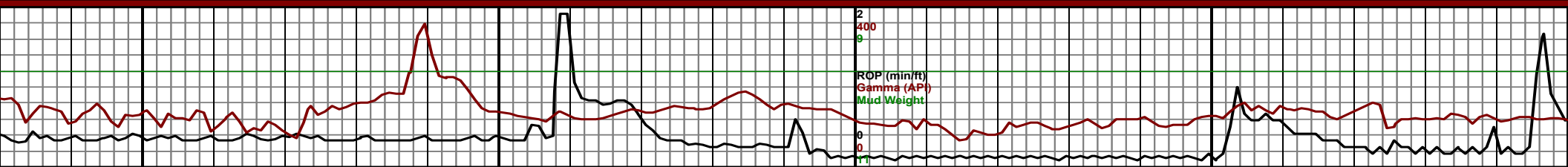
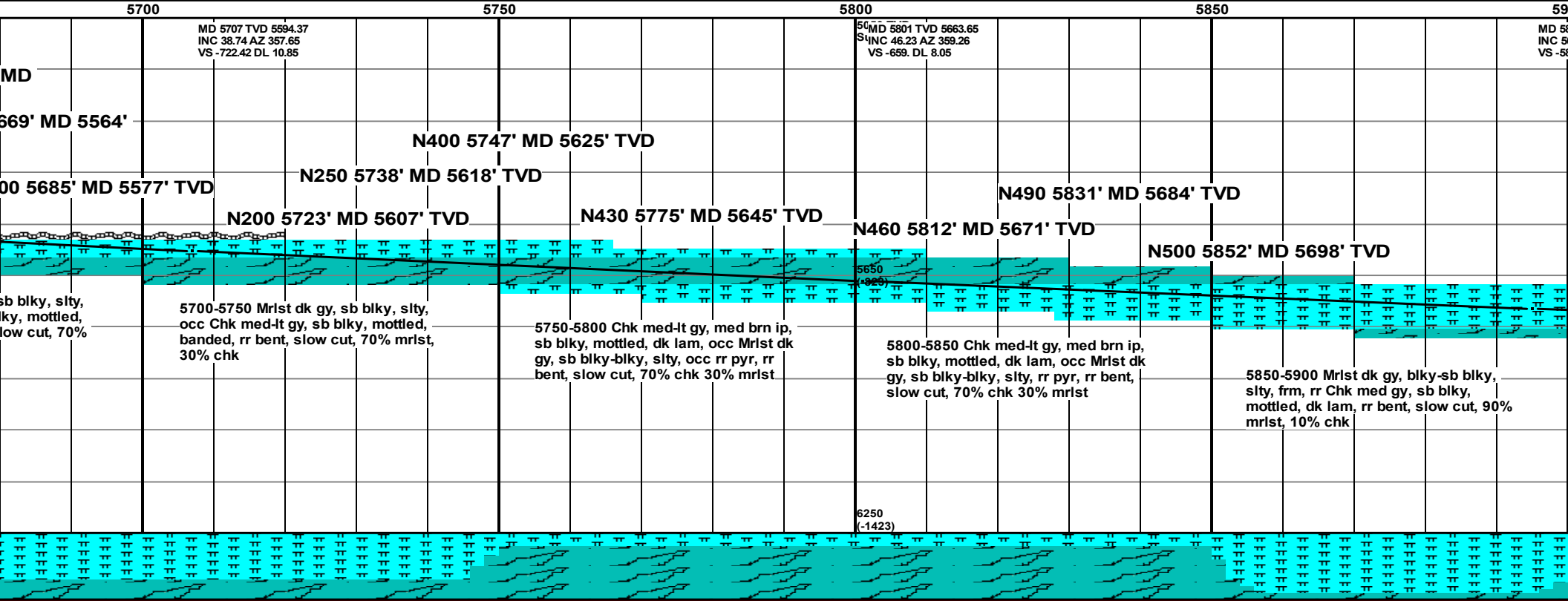
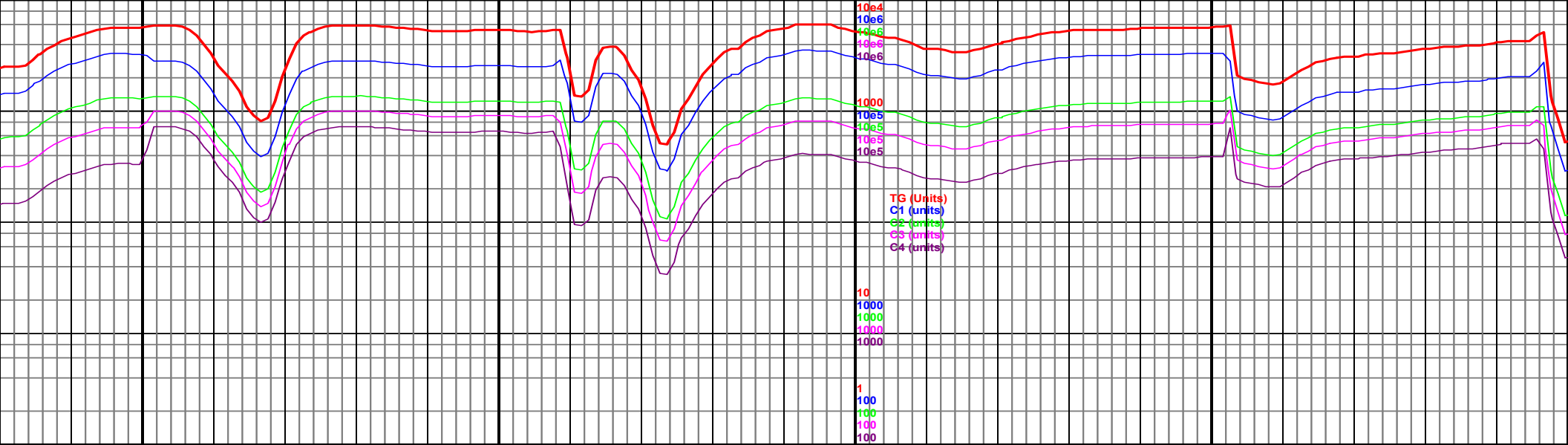
[•] Spotted
[○] Ques
[D] Dead

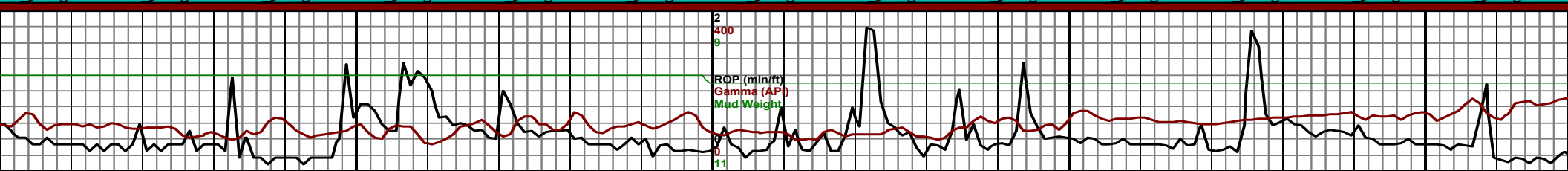
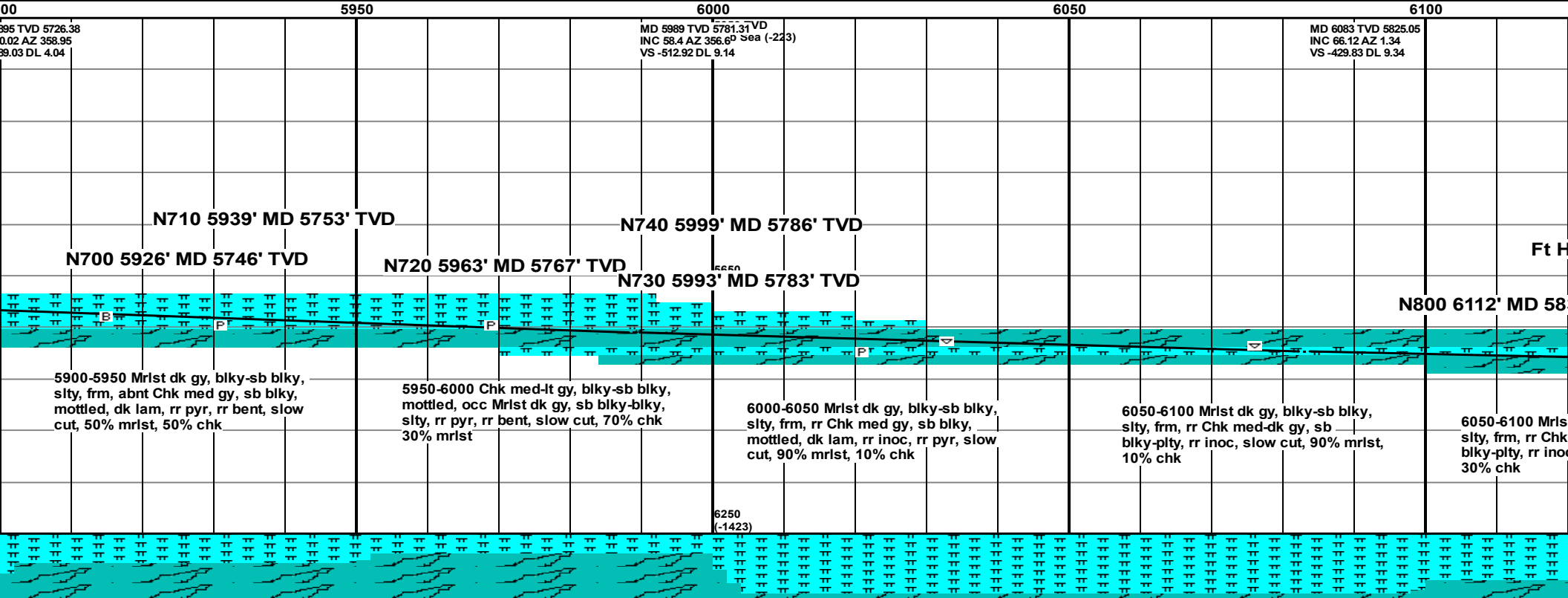
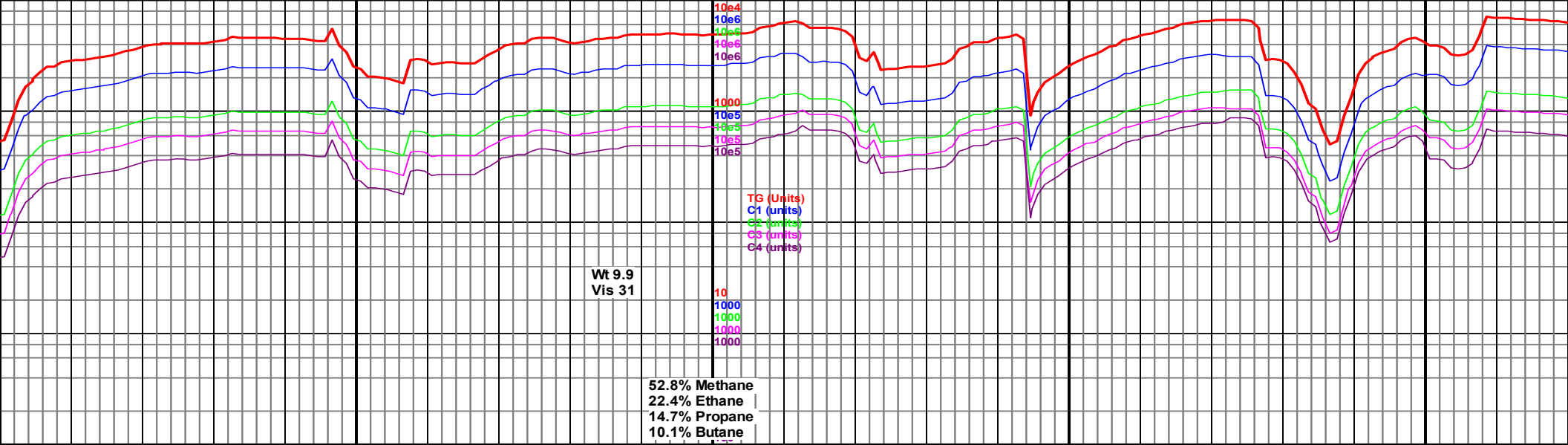
INTERVAL
[■] Core
[◻] Dst

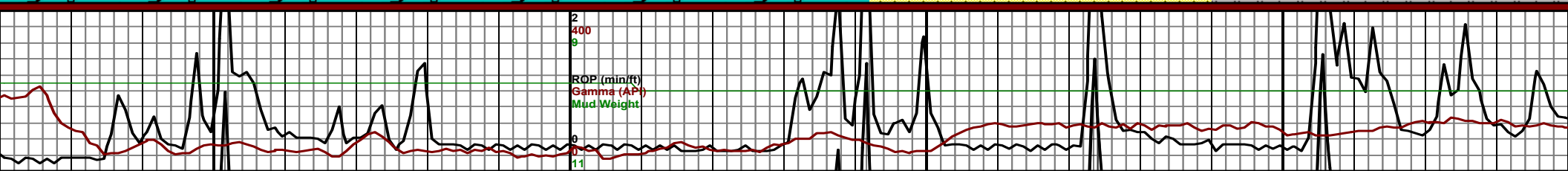
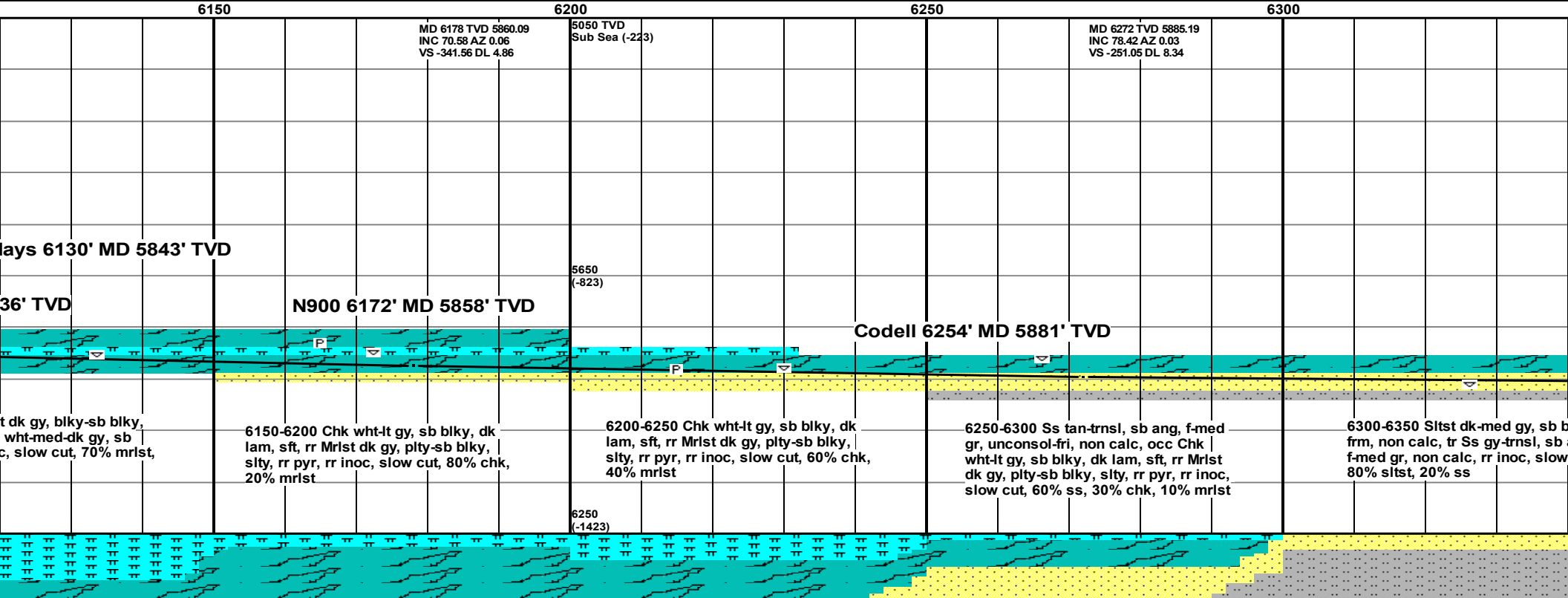
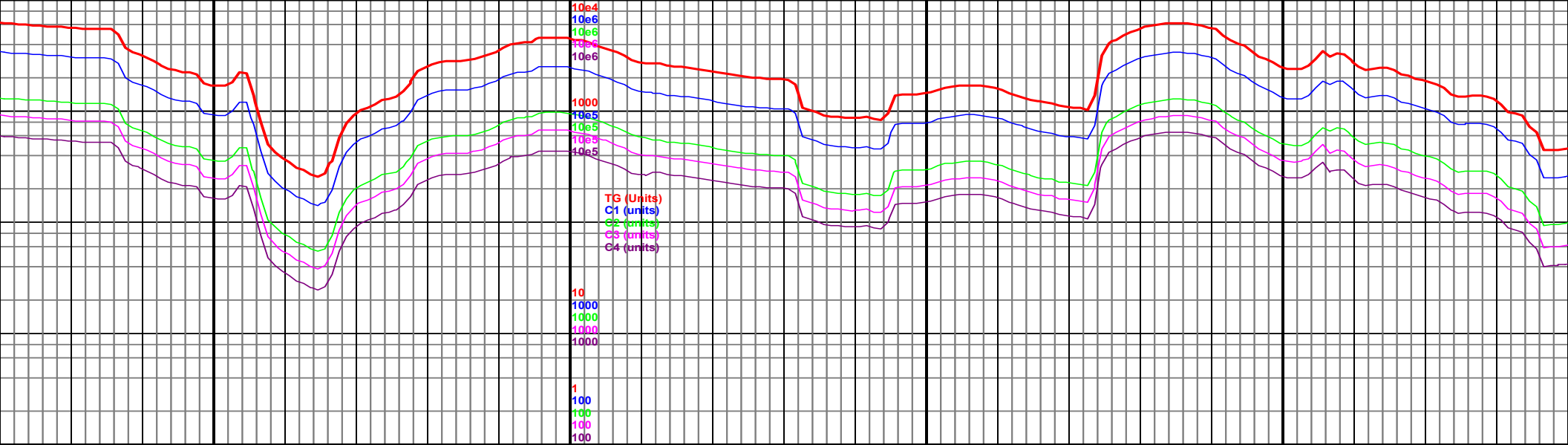
EVENT
[▽] Rft
[▶] Sidewall

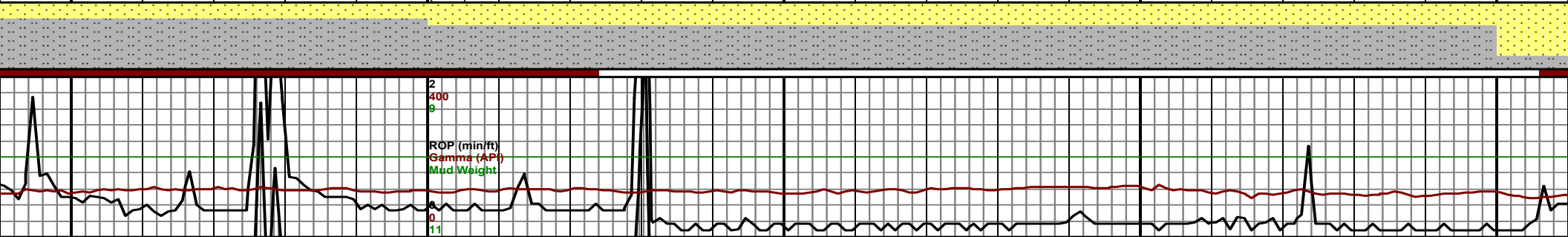
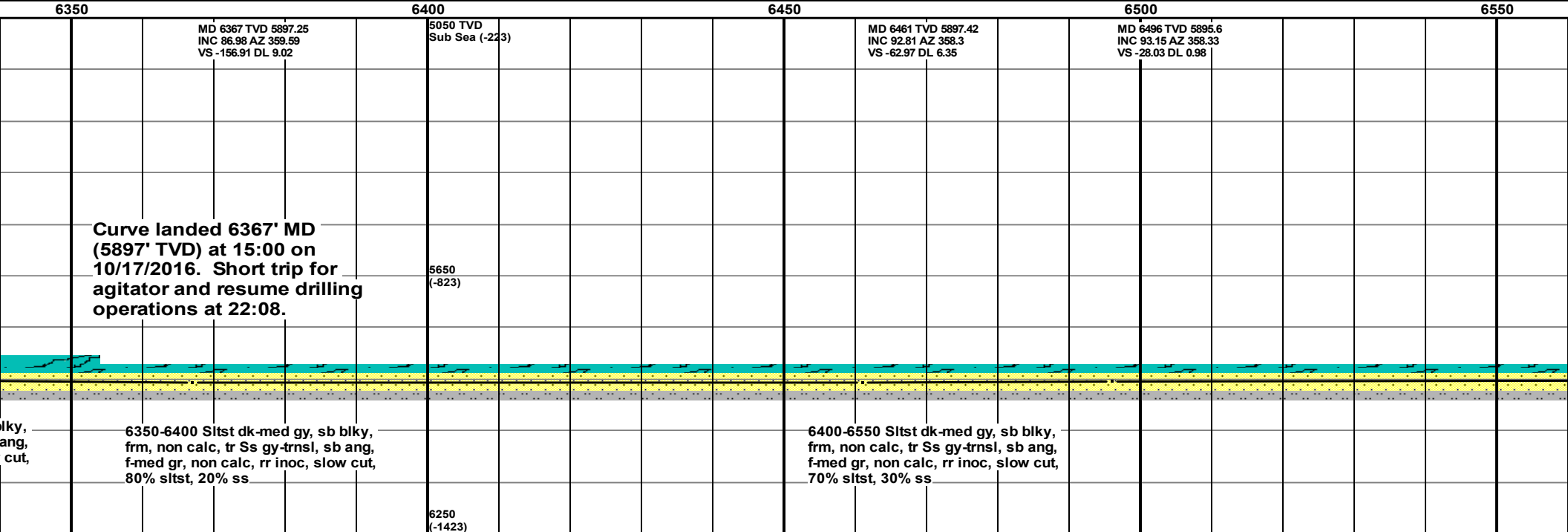
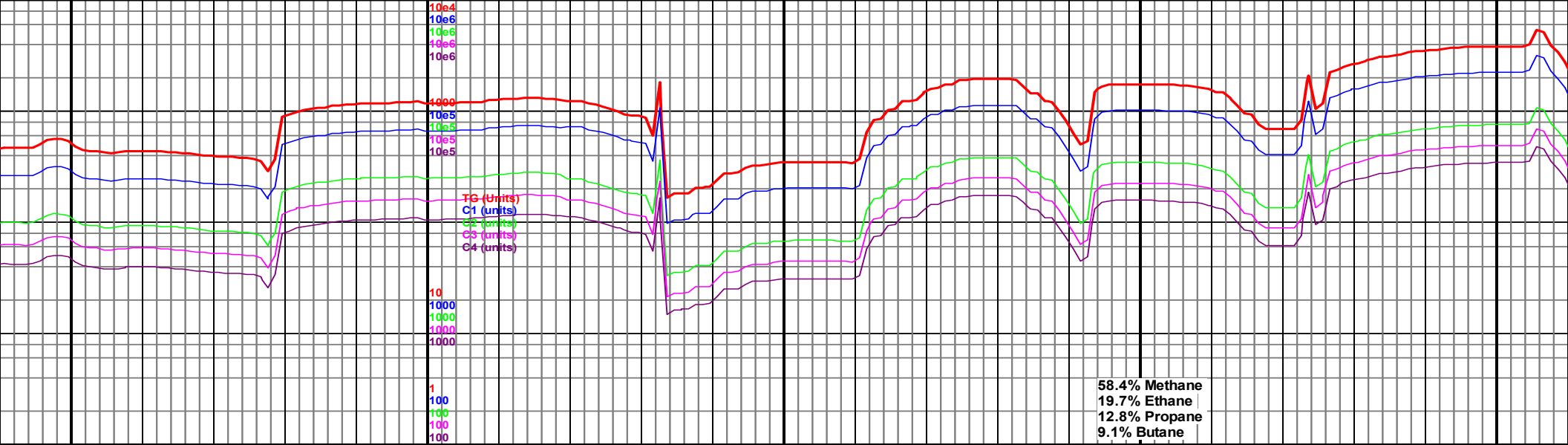


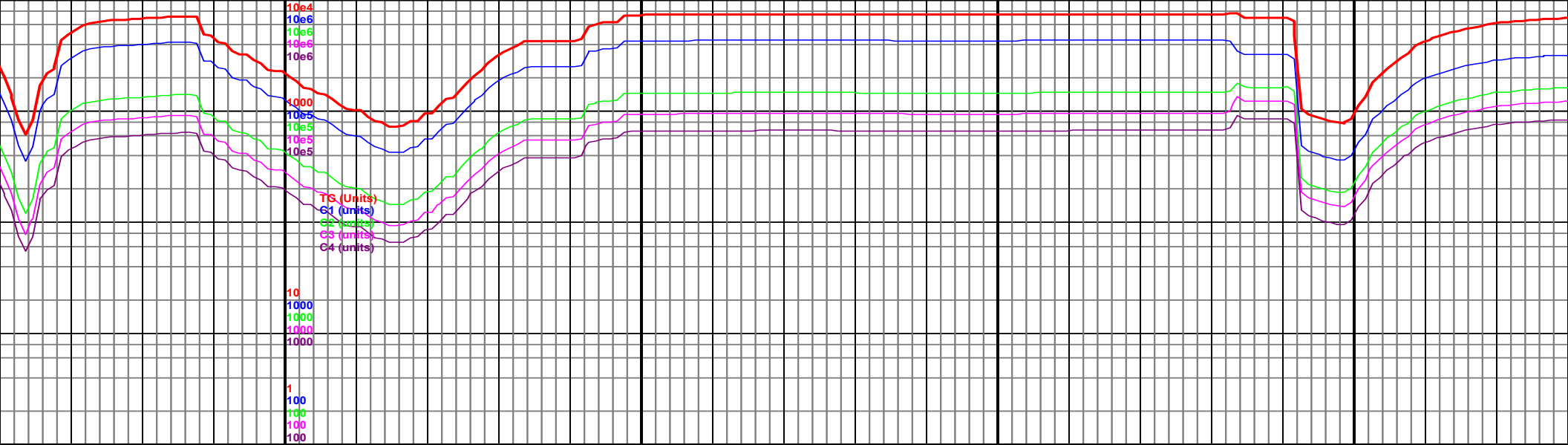












MD 6590 TVD 5892.49^D
INC 90.65 AZ 356.85^{ea} (-223)
VS 65.82 DL 3.09

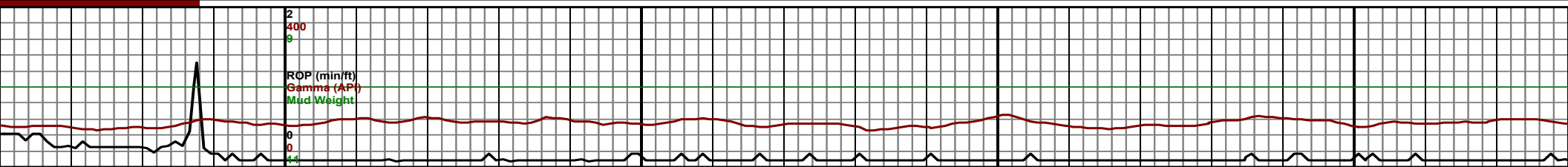
MD 6684 TVD 5891.67
INC 90.34 AZ 356.67
VS 159.67 DL 0.38

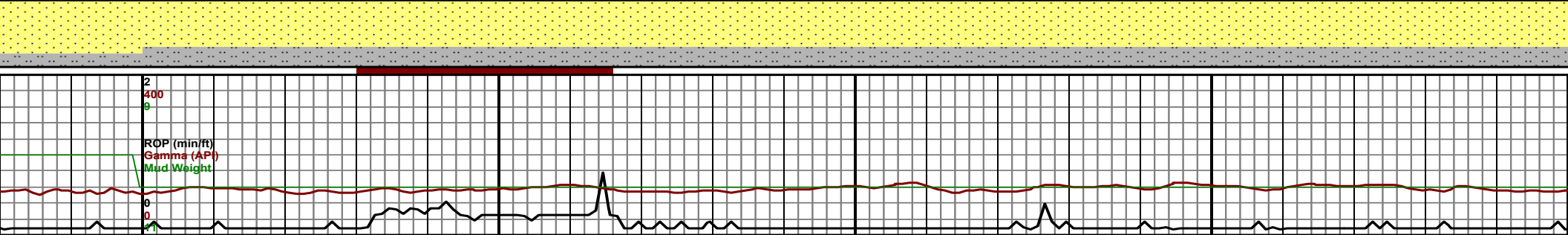
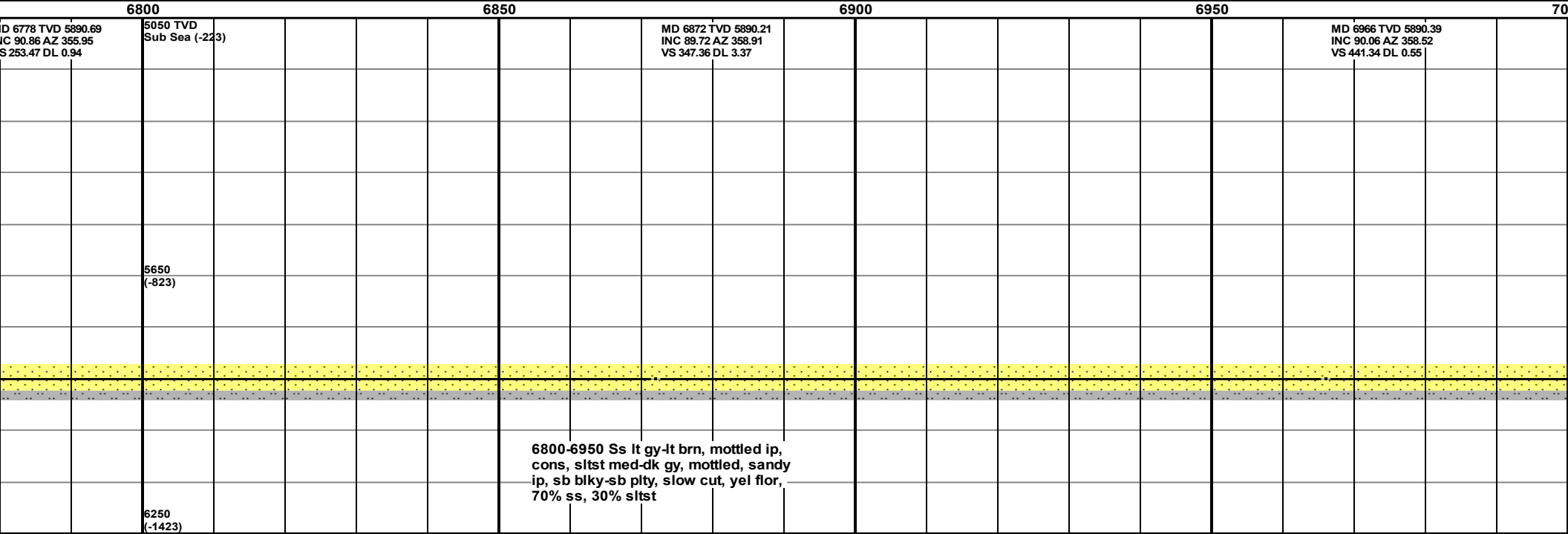
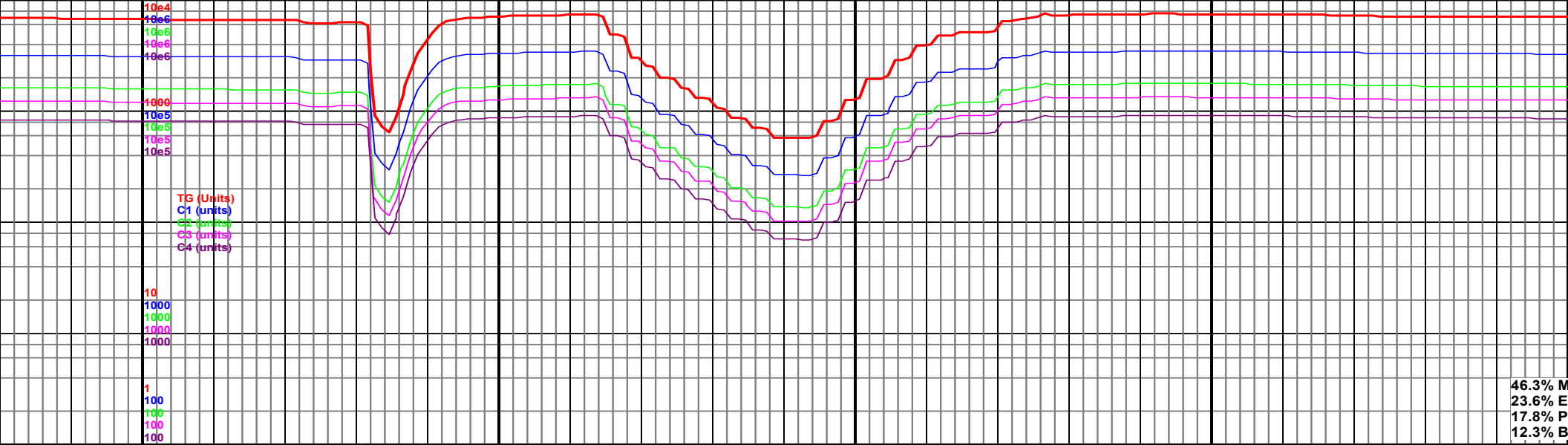
5650
(-823)

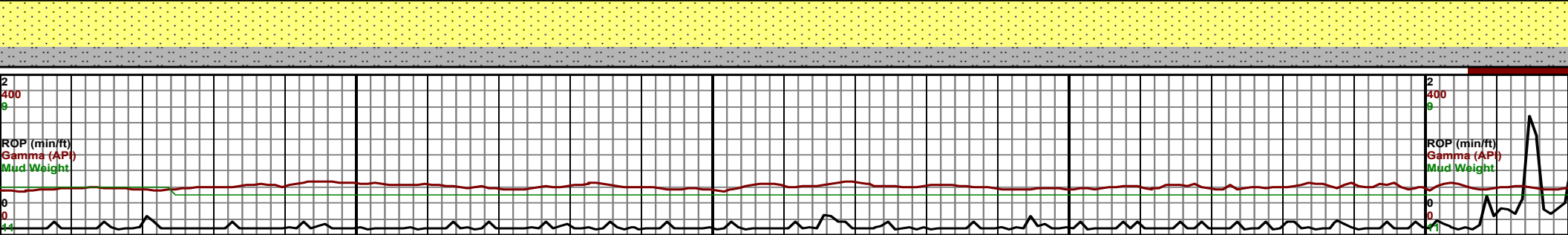
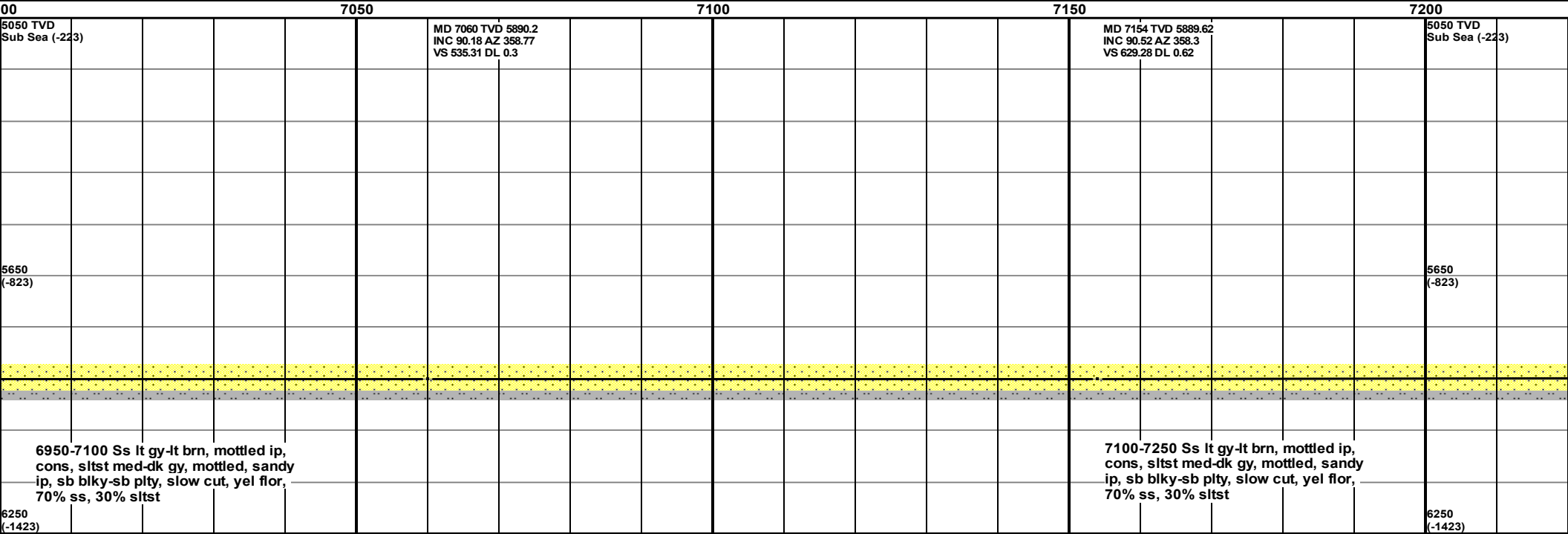
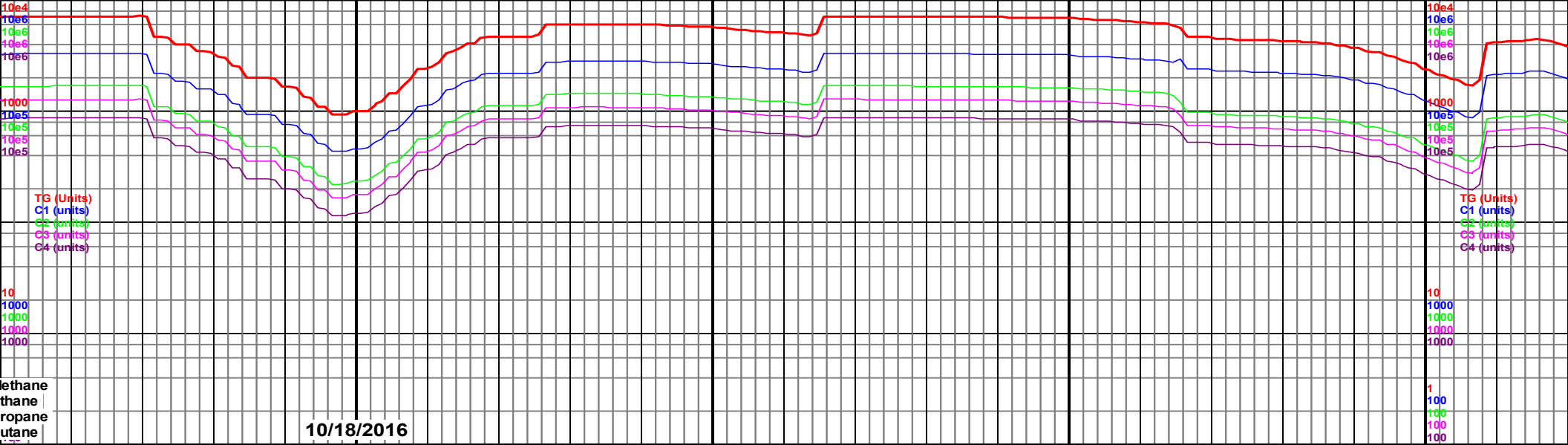
6550-6650 Ss lt gy-lt brn, mottled ip,
cons, sltst med-dk gy, mottled, sandy
ip, sb blk-y-sb plty, mod cut, yel flor,
80% ss, 20% sltst

6650-6800 Ss lt gy-lt brn, mottled ip,
cons, sltst med-dk gy, mottled, sandy
ip, sb blk-y-sb plty, mod cut, yel flor,
80% ss, 20% sltst

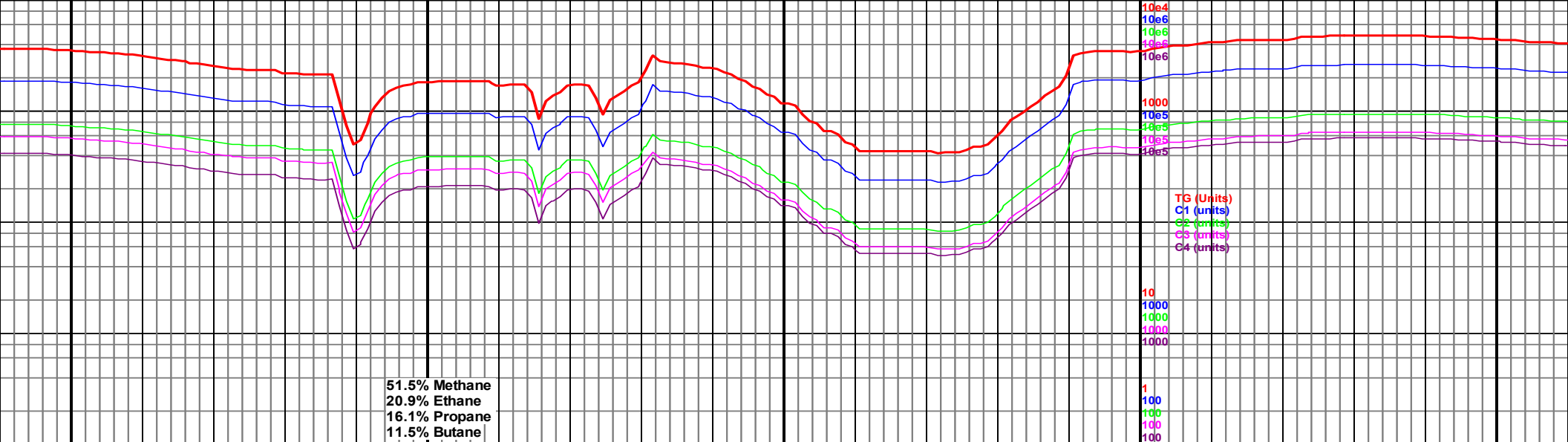
6250
(-1423)



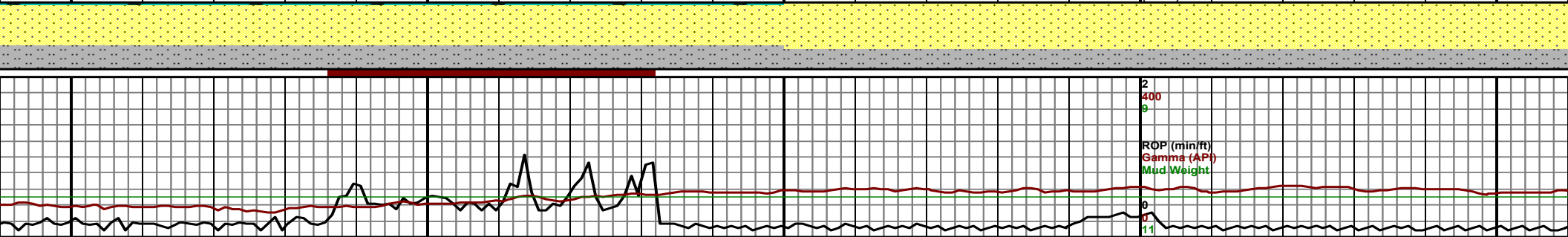


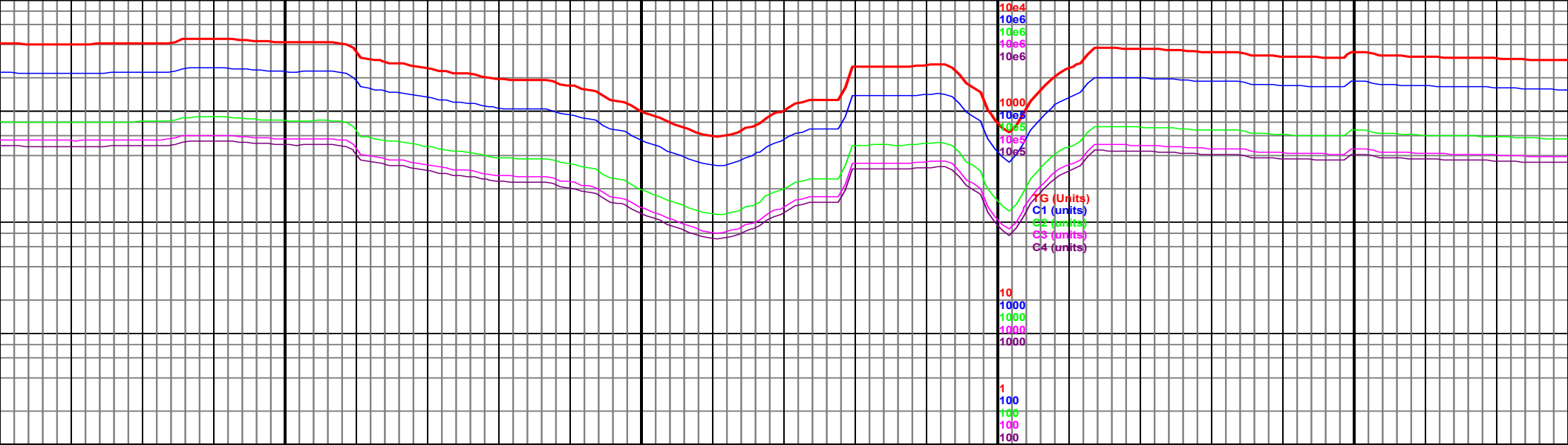


400
9
ROP (min/ft)
Gamma (API)
Mud Weight



7437 TVD 5887.51 C 90 AZ 358.03 912.23 DL 1.77	MD 7531 TVD 5888.4 INC 88.92 AZ 0.25 VS 1006.21 DL 2.63	5050 TVD Sub Sea (-223)	MD 7626 TVD 5889.81 INC 89.38 AZ 359.41 VS 1101.2 DL 1.01
7250-7400 Ss lt gy-brn, mottled ip, cons, mod frm, sltst med-dk gy, mottled ip, sandy ip, sb blk-y-sb plty, rr chk lt gy-wht, slty ip, mod sft, slow cut, 60% ss, 35% sltst, 5% chk		5650 (-823)	7550-7700 Ss lt gy-lt brn, mottled ip, cons, sltst med-dk gy, mottled, sandy ip, sb blk-y-sb plty, mod cut, yel flor, 70% ss, 30% sltst





7700

7750

7800

7850

MD 7719 TVD 5890.11
INC 90.25 AZ 359.71
VS 1194.19 DL 0.99

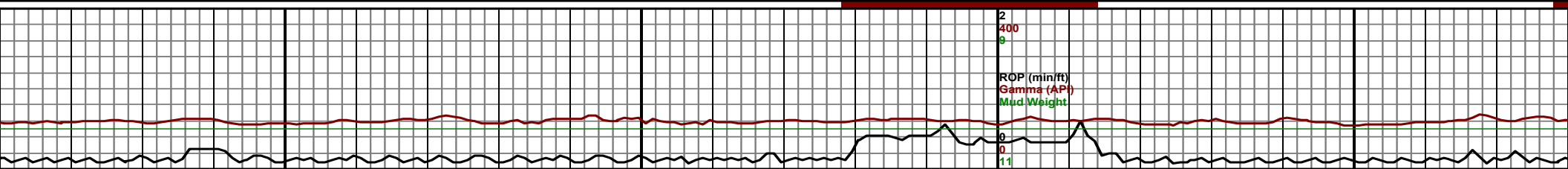
5050 TVD
Sub Sea (-223)

MD 7814 TVD 5890.26
INC 89.57 AZ 2.82
VS 1289.16 DL 3.35

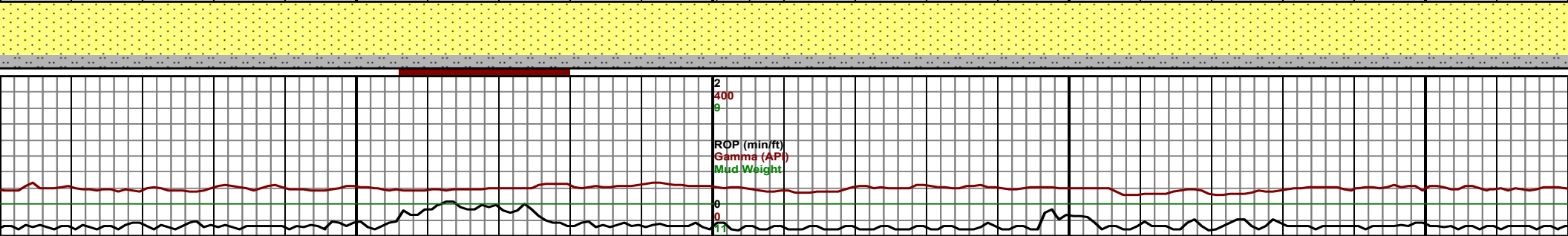
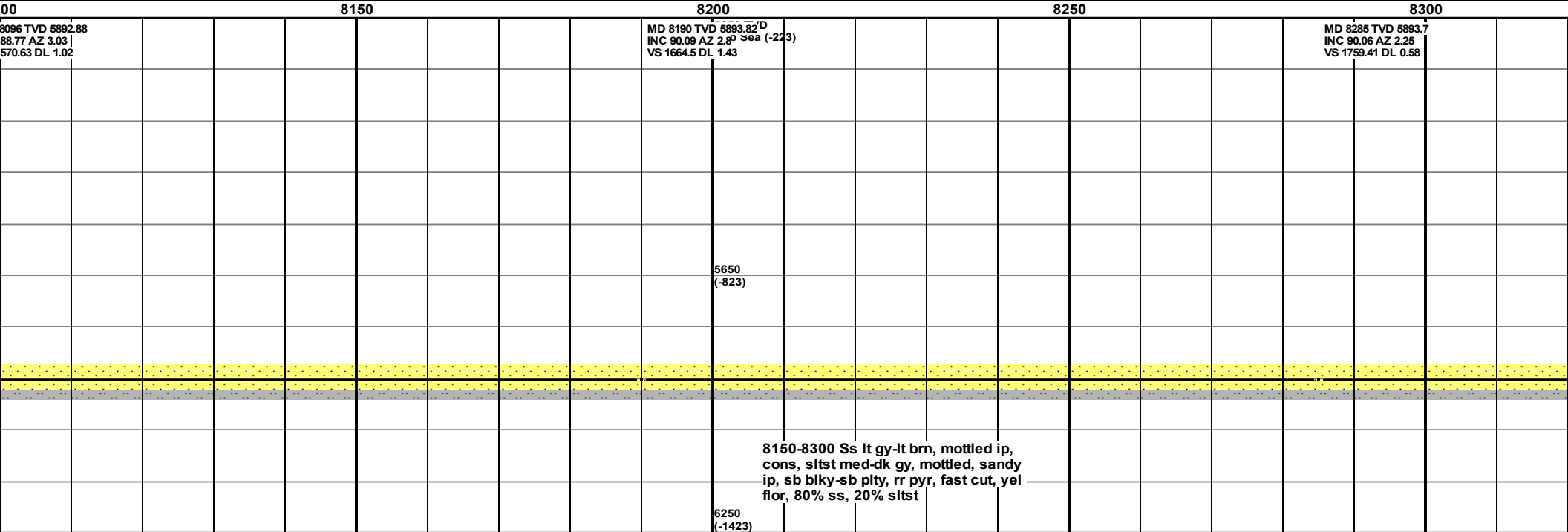
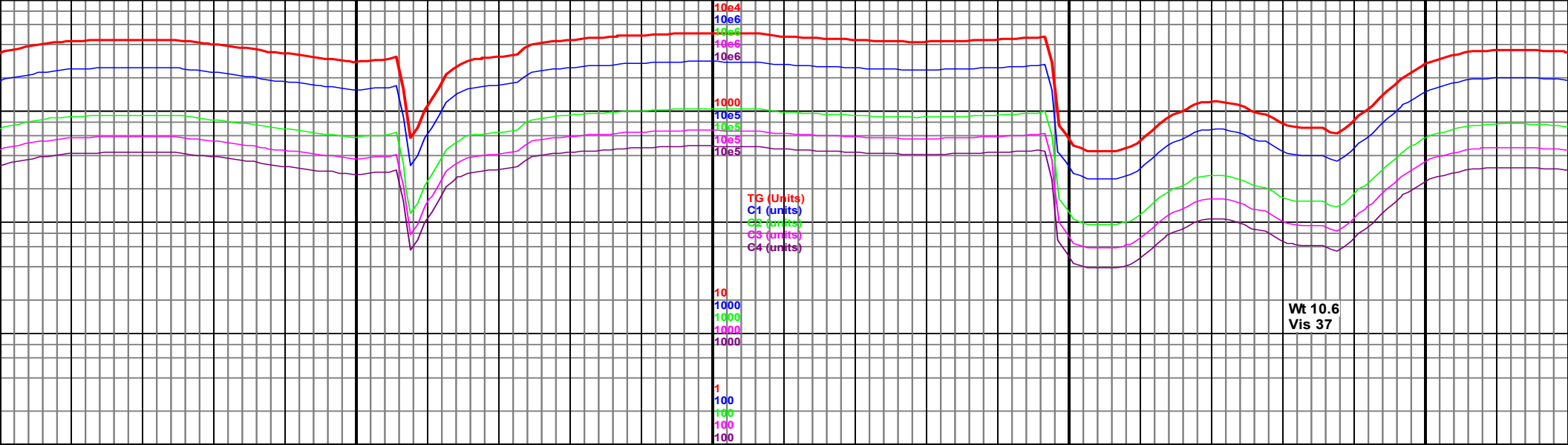
5650
(-823)

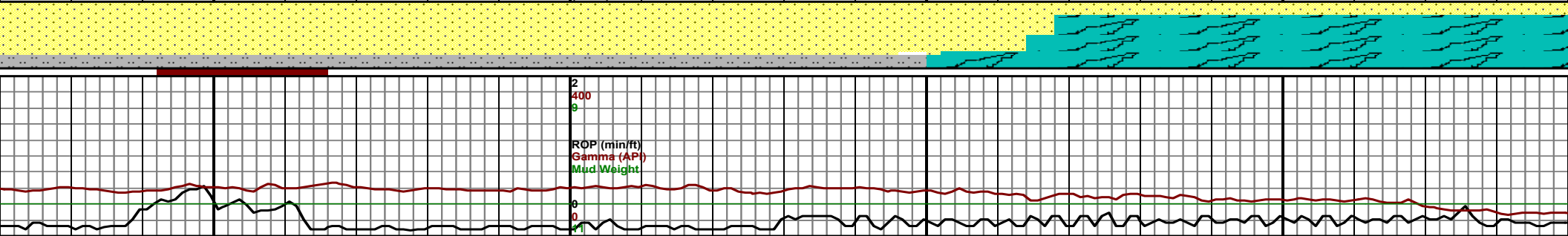
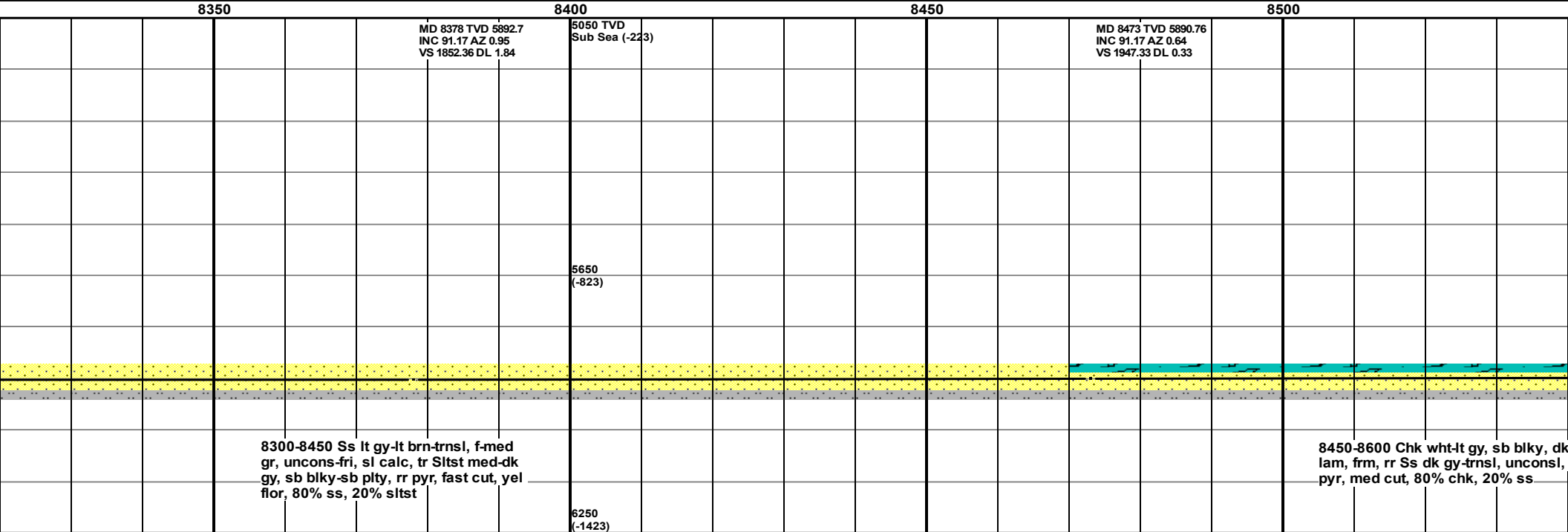
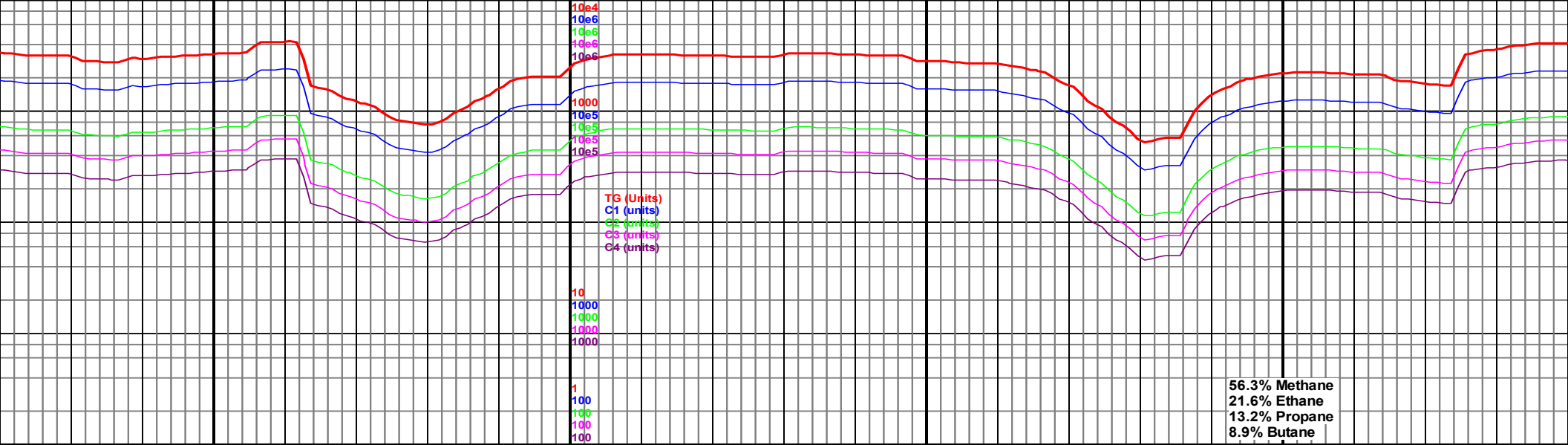
7700-7850 Ss lt gy-lt brn, mottled ip,
cons, sltst med-dk gy, mottled, sandy
ip, sb blk-y-sb plty, mod cut, yel flor,
80% ss, 20% sltst

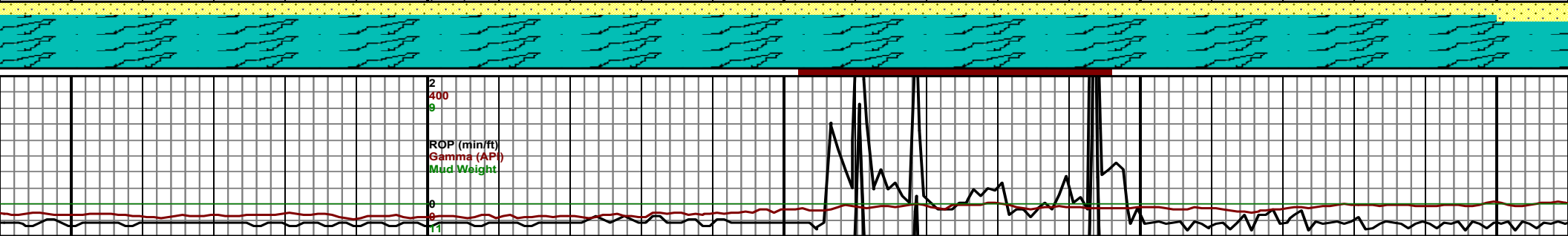
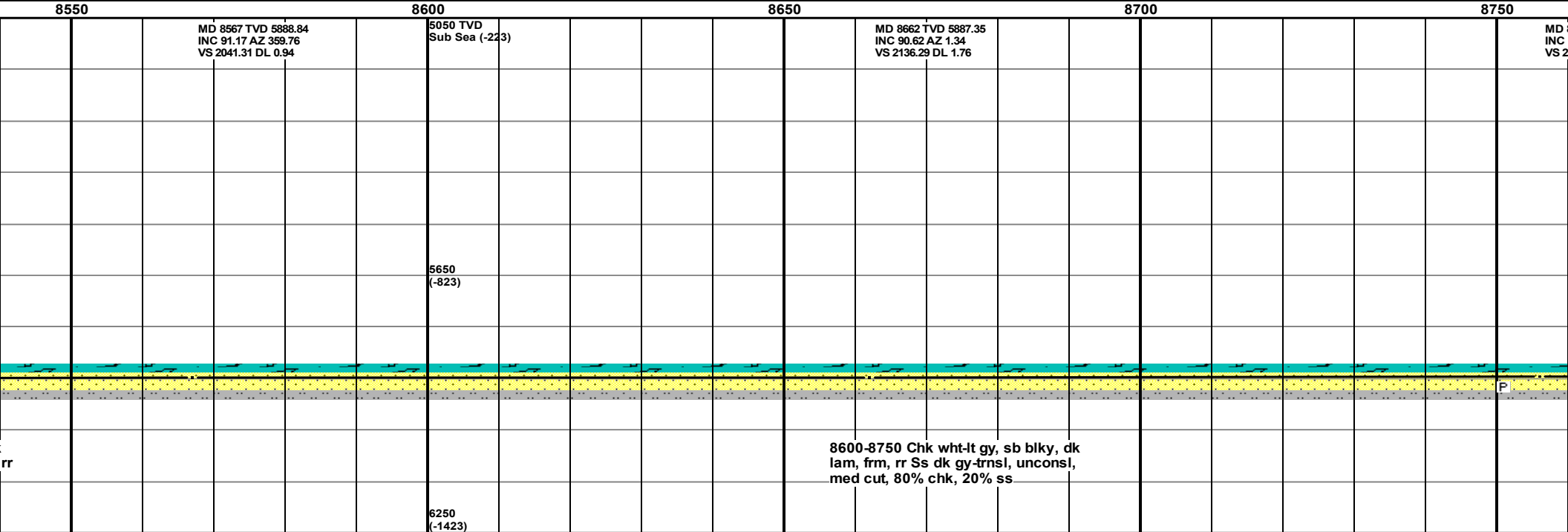
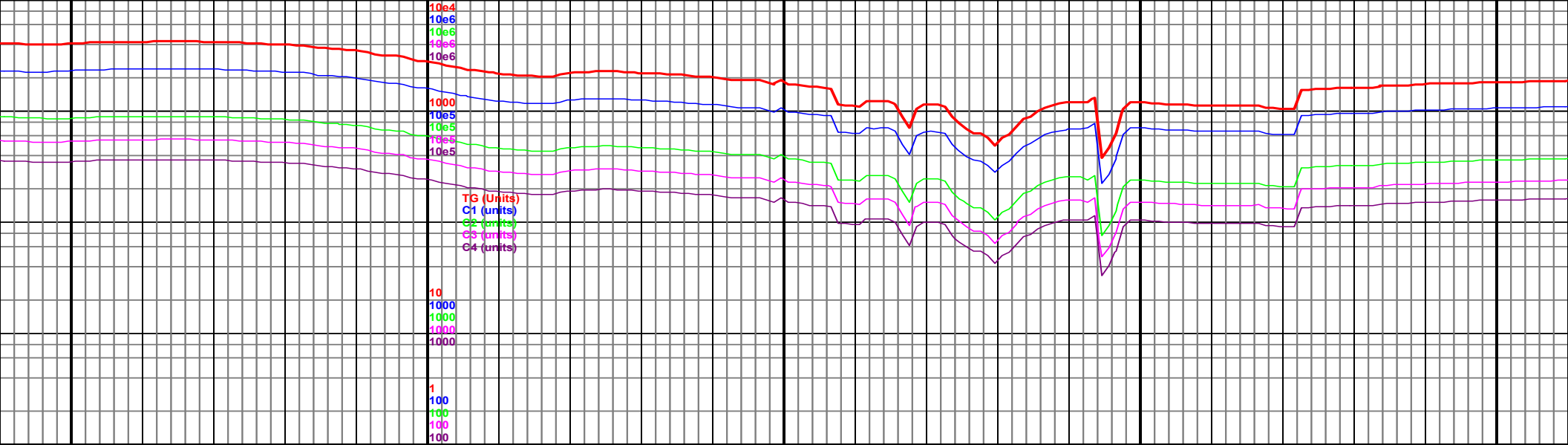
6250
(-1423)

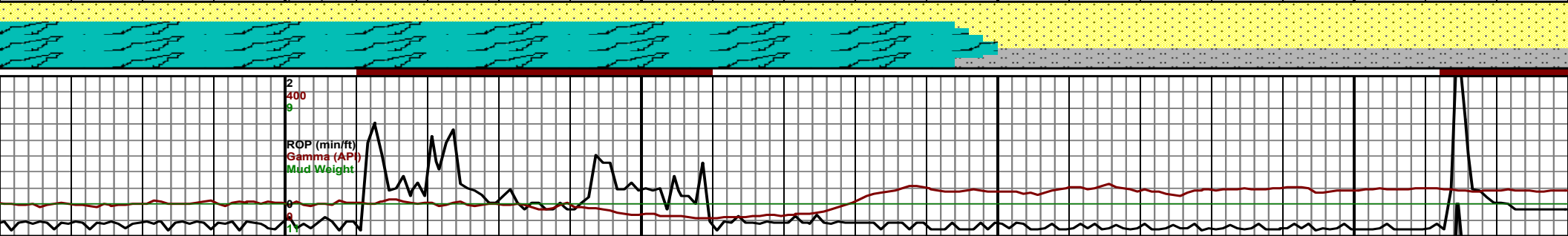
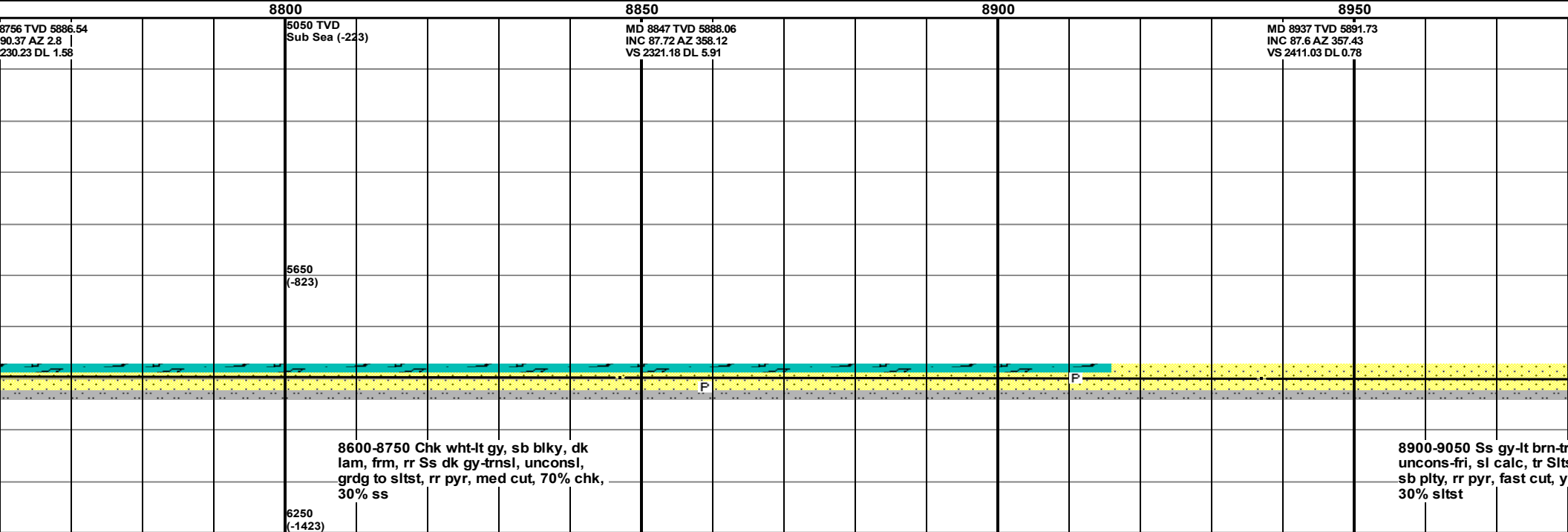
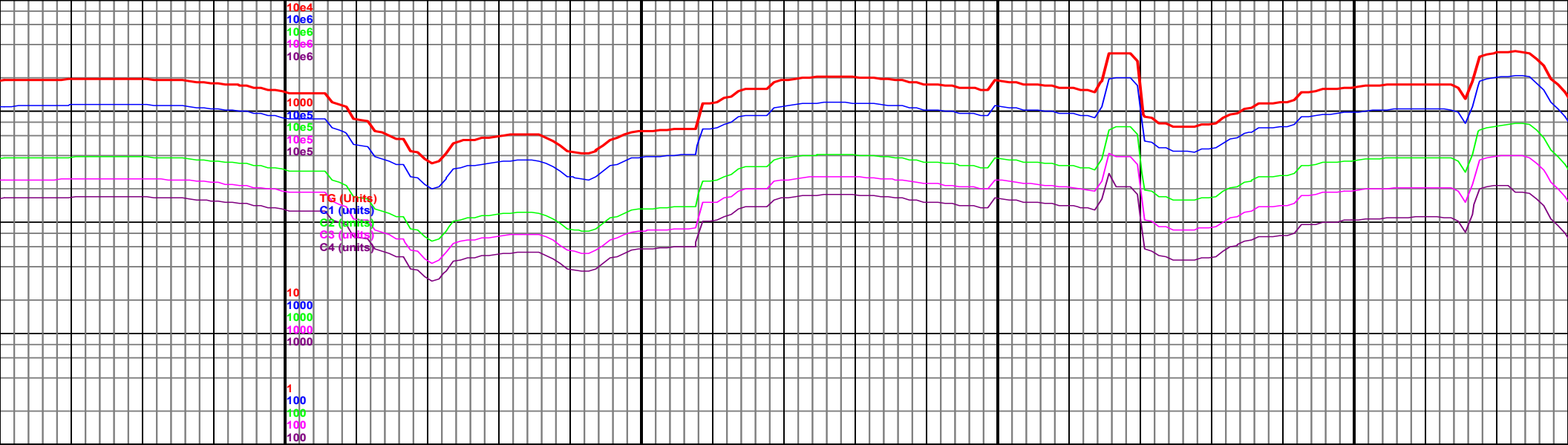


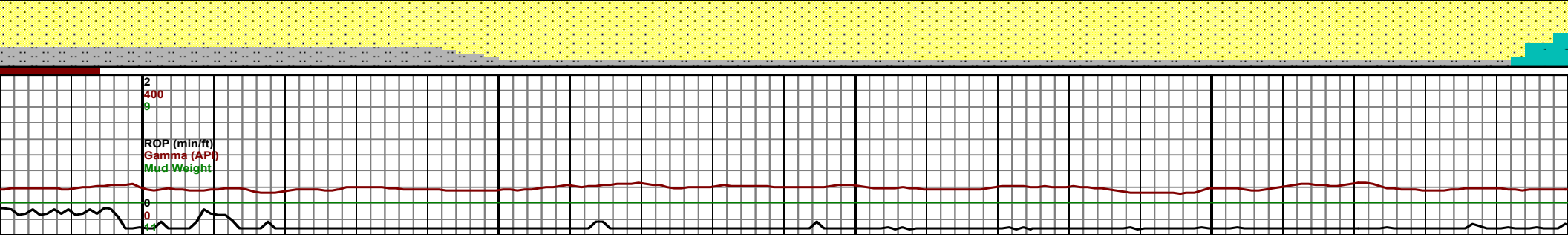
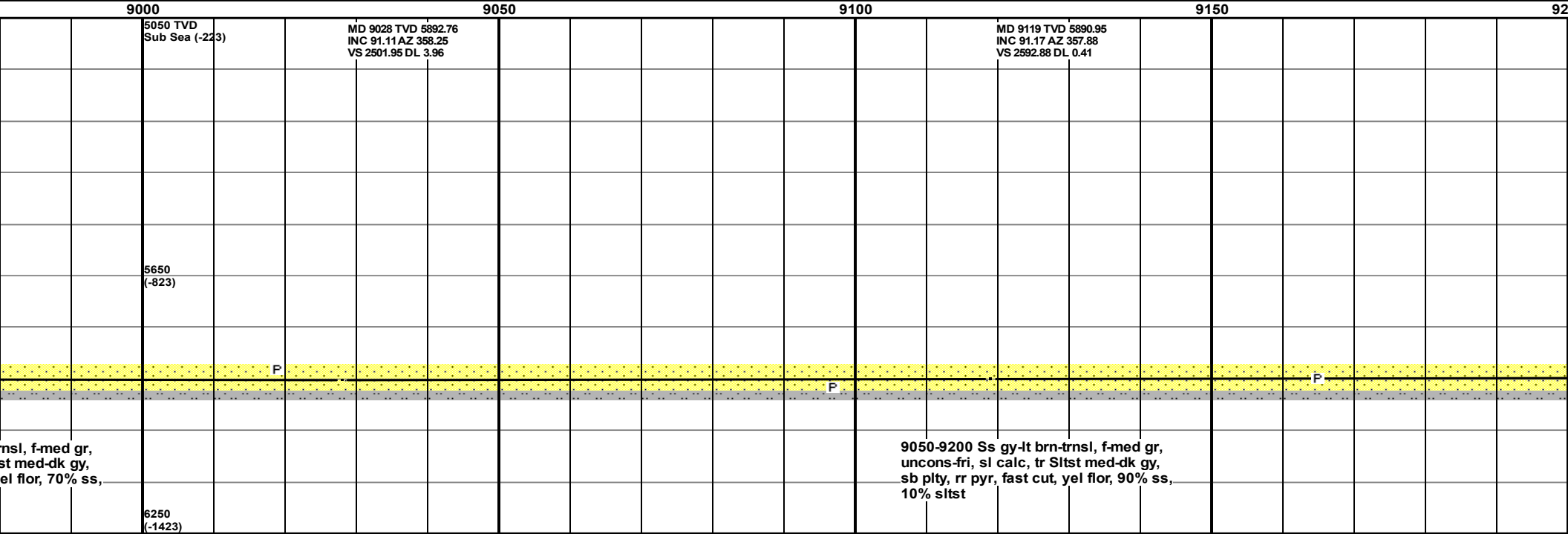
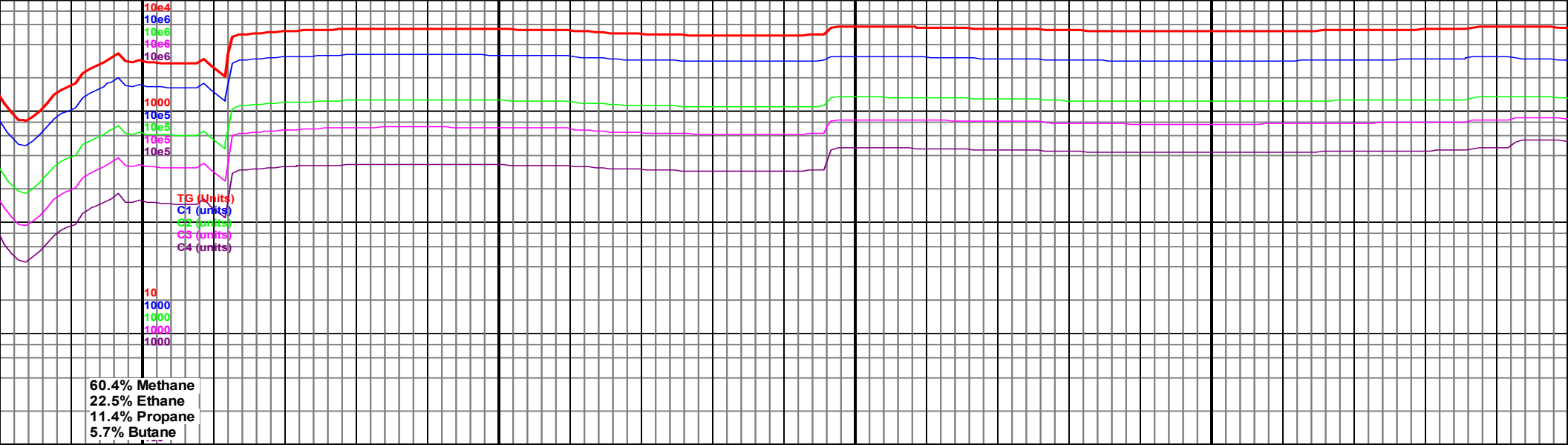
2
400
9
ROP (min/ft)
Gamma (API)
Mud Weight
0
0
11

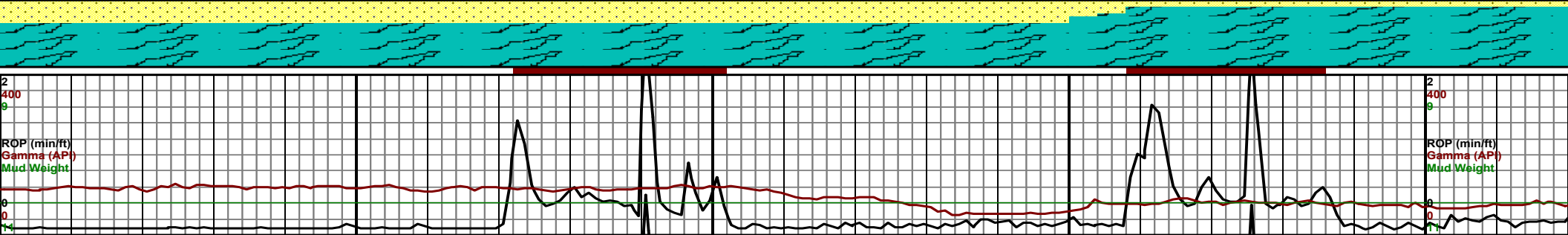
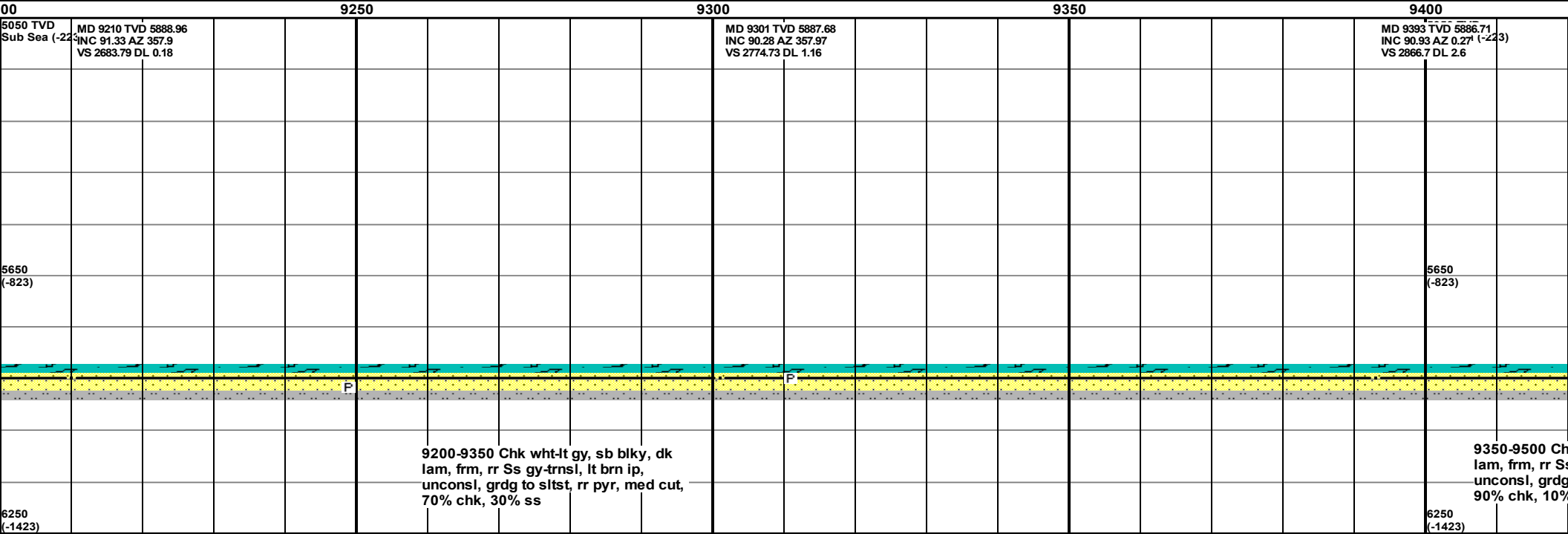
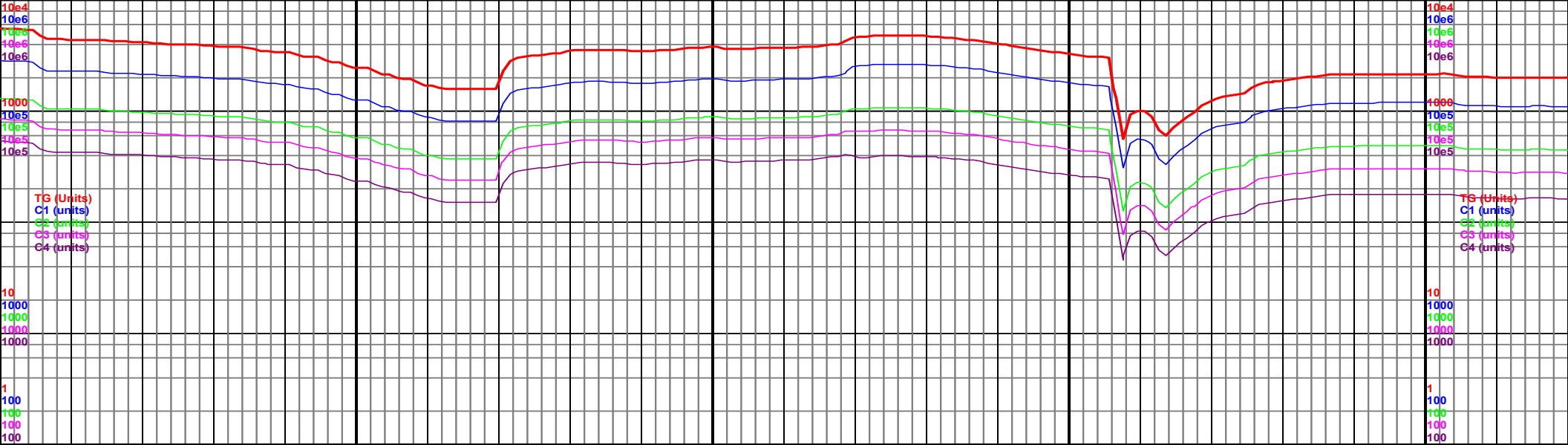


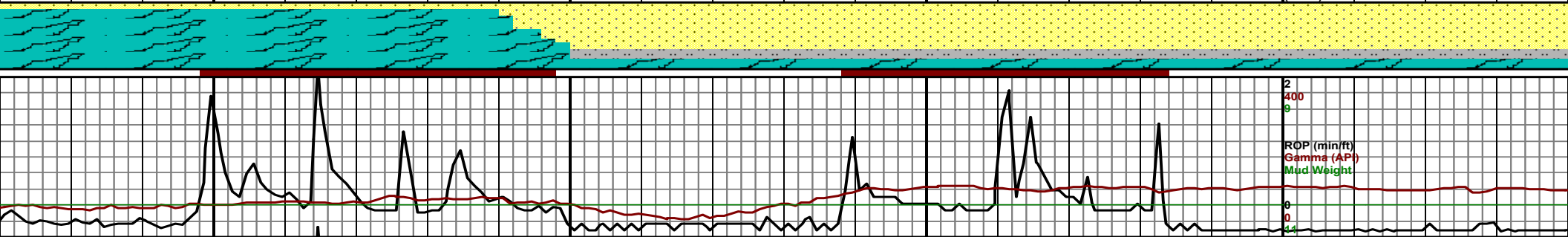
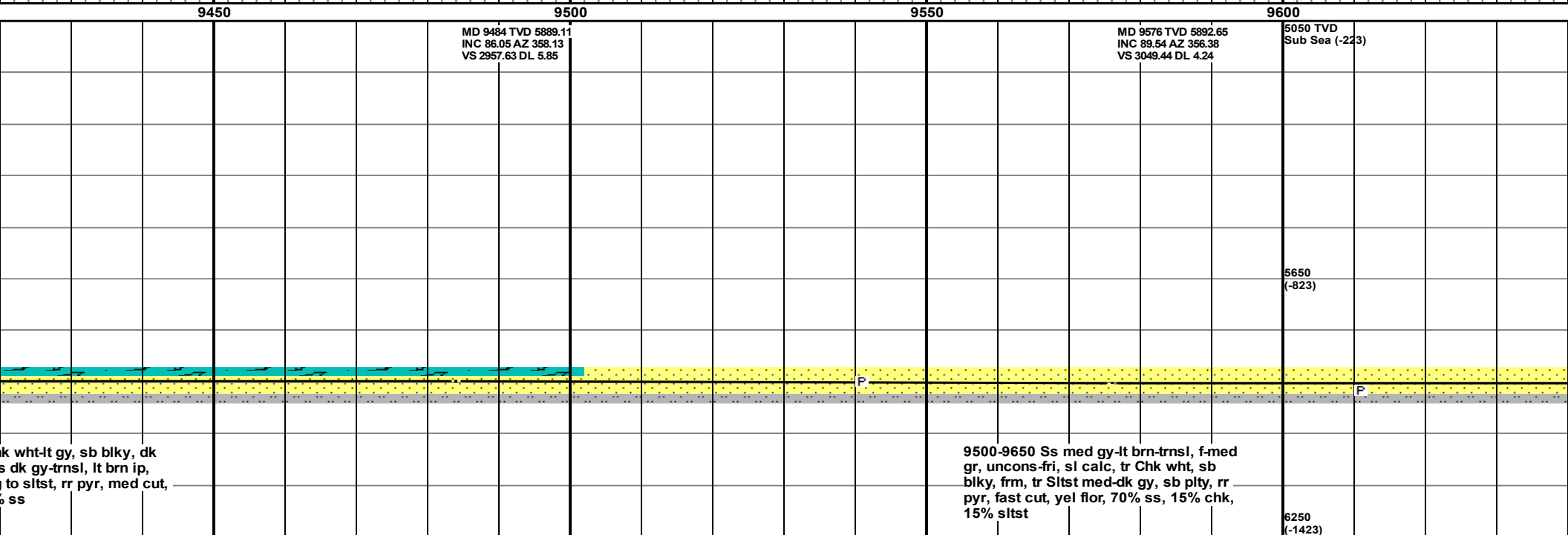
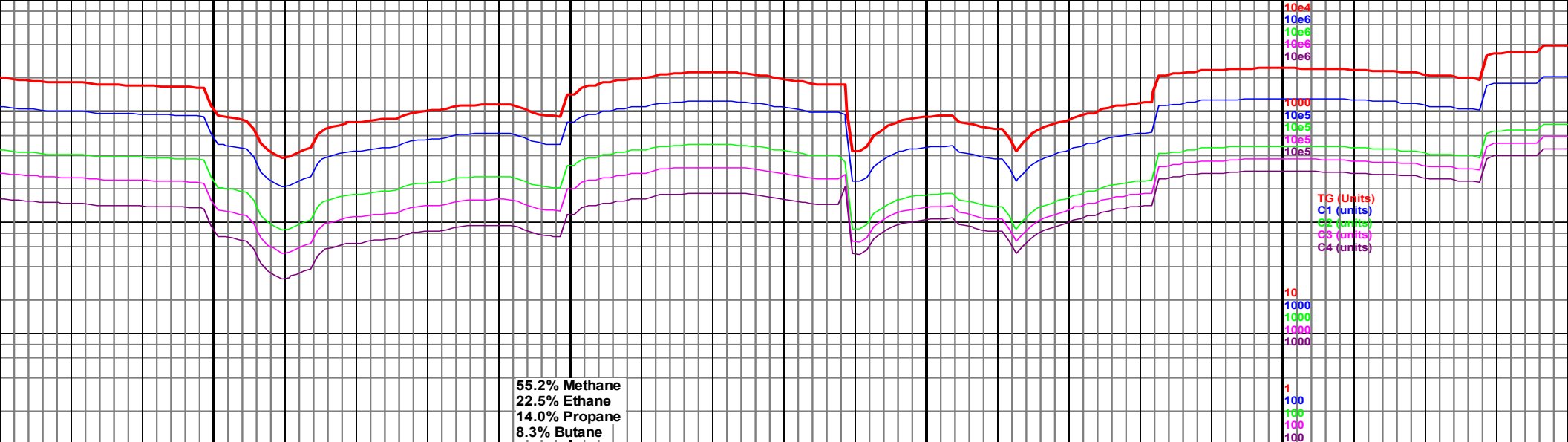


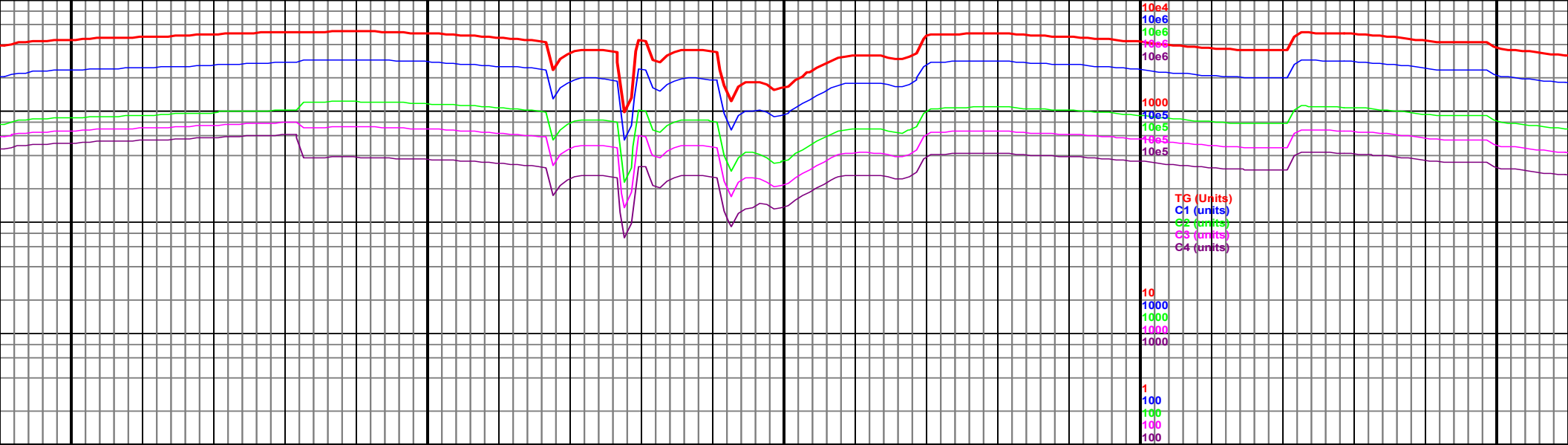












9650

MD 9667 TVD 5893.36
INC 89.57 AZ 356
VS 3140.23 DL 0.42

9700

9750

MD 9758 TVD 5893.18
INC 90.65 AZ 358.37
VS 3231.12 DL 2.86

9800

5050 TVD
Sub Sea (-223)

9850

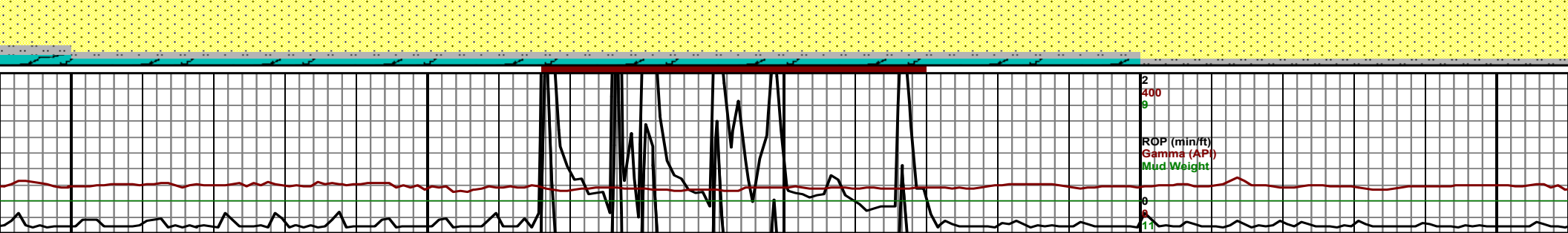
MD 9850 TVD
INC 90.52 AZ
VS 3323.08 D

9650-9800 Ss gy-lt brn-trnsl, f-med gr,
uncons-fri, sl calc, tr Sltst med-dk gy,
sb plty, rr Chk wht, sb blk, fast cut,
yel flor, 80% ss, 10% sltst, 10% chk

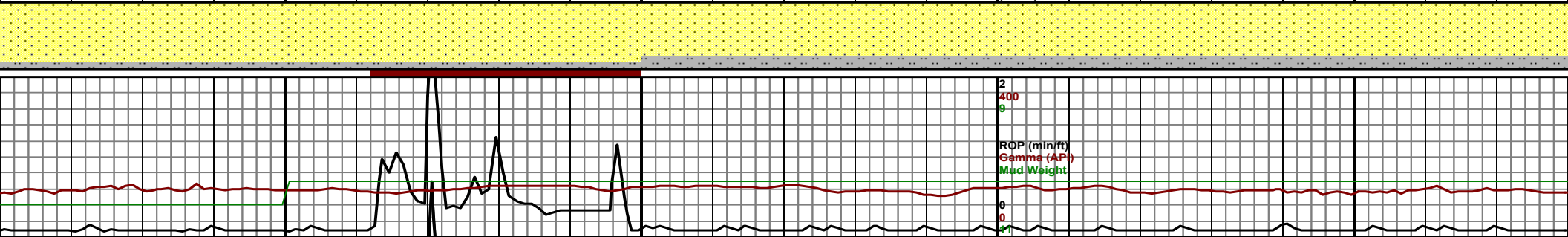
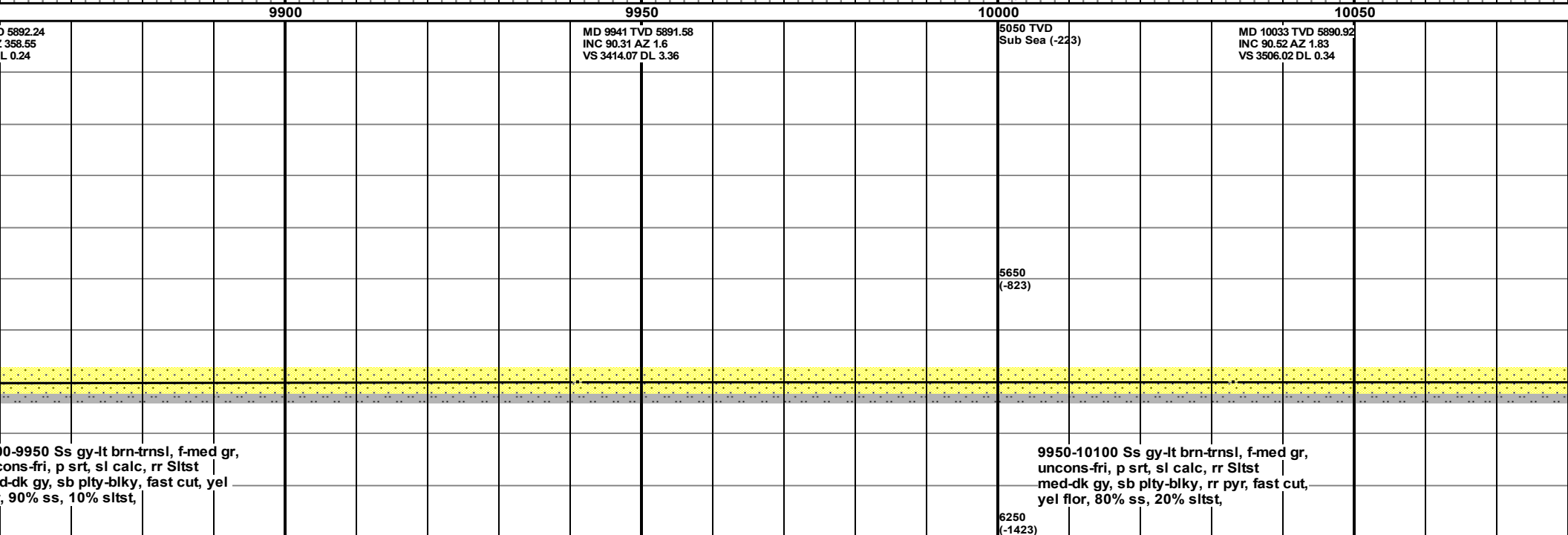
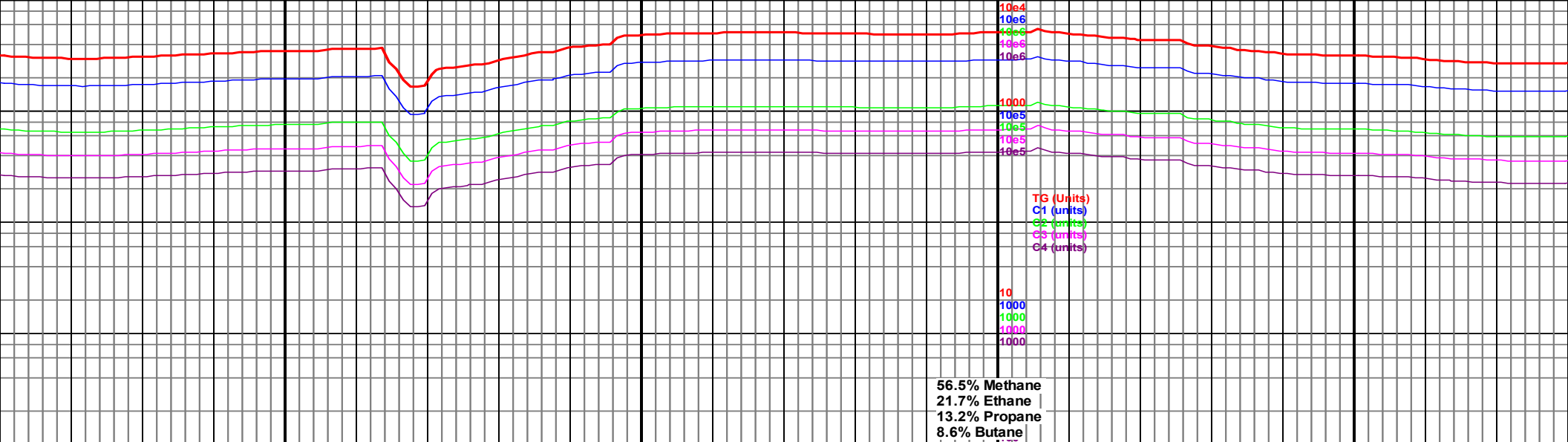
5650
(-823)

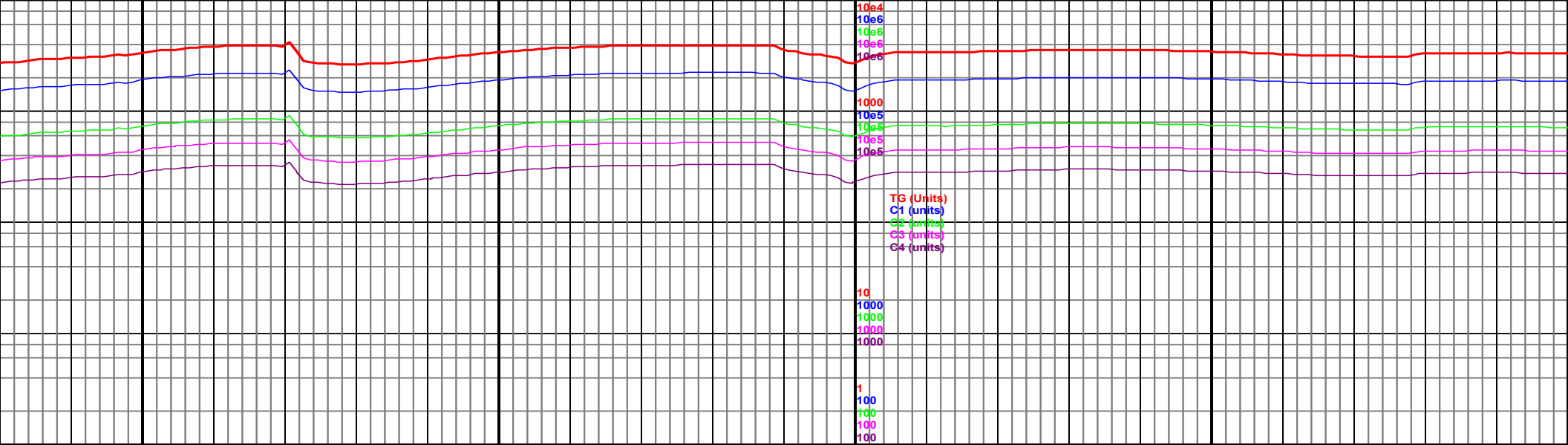
6250
(-1423)

9800
unc
me
flor



2
400
9
ROP (min/ft)
Gamma (API)
Mud Weight
0
11





10100

10150

10200

10250

10300

MD 10124 TVD 5891.16
INC 89.17 AZ 359.68
VS 3597.01 DL 2.79

5050 TVD
Sub Sea (-223)

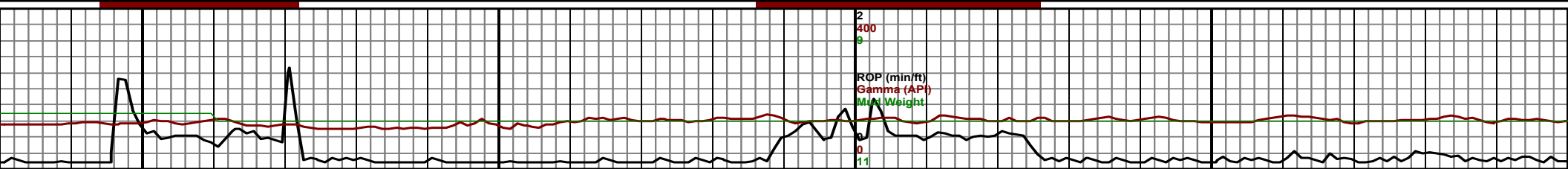
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VS 3689. DL 1.74

5650
(-823)

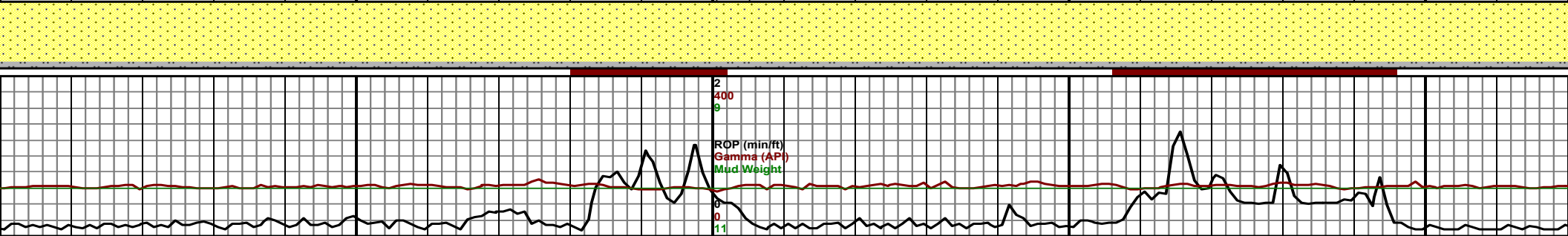
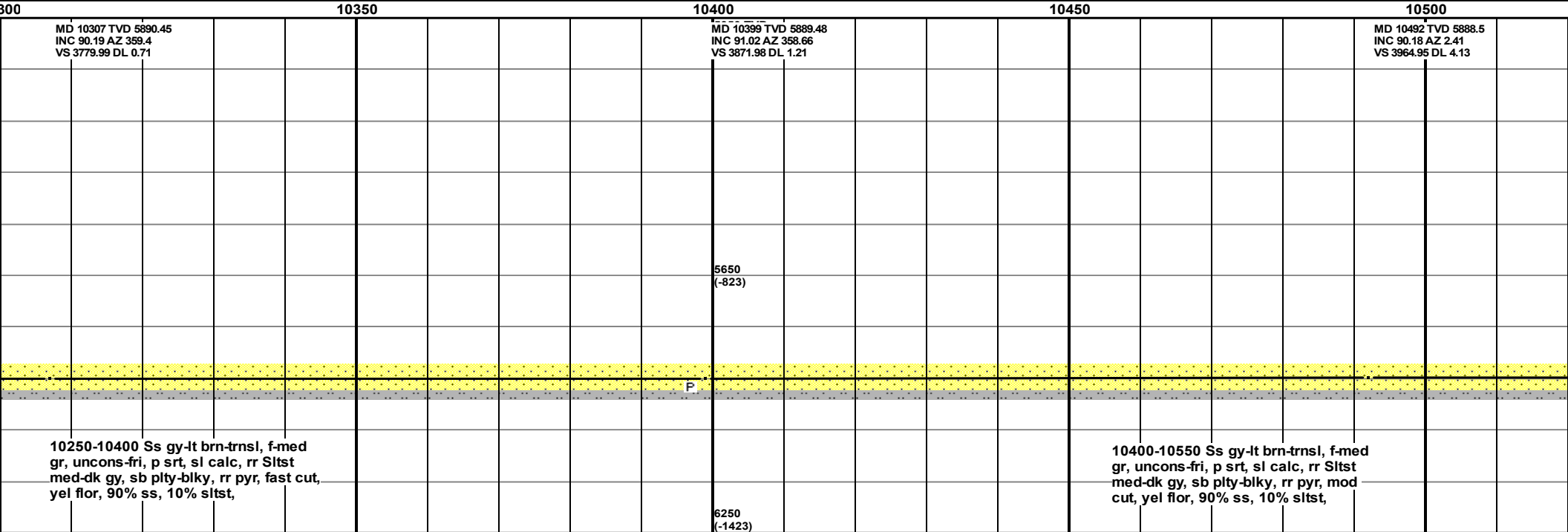
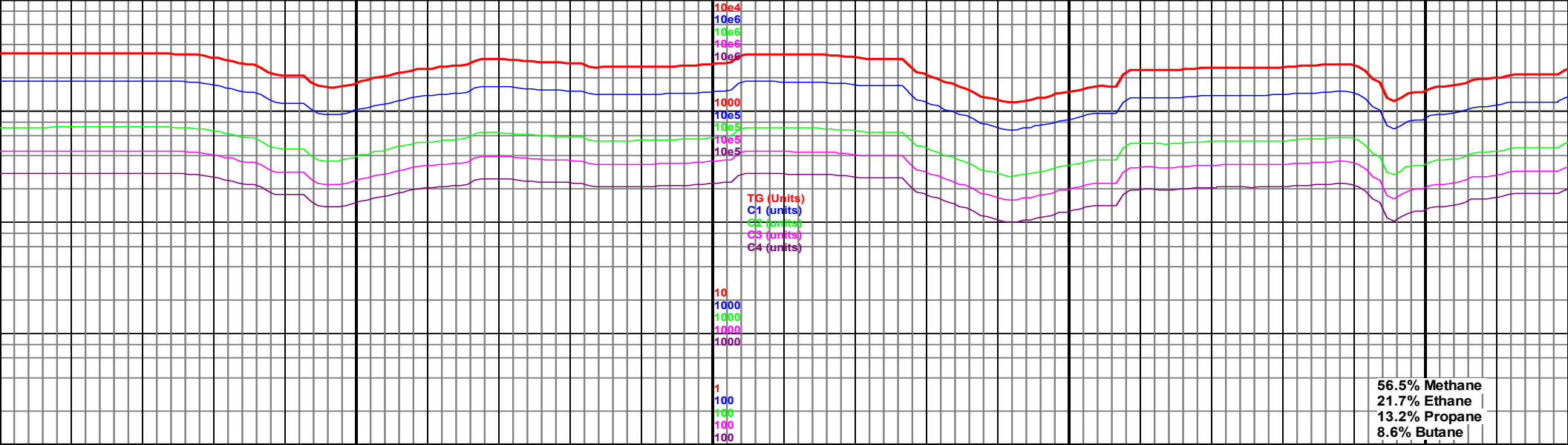
6250
(-1423)

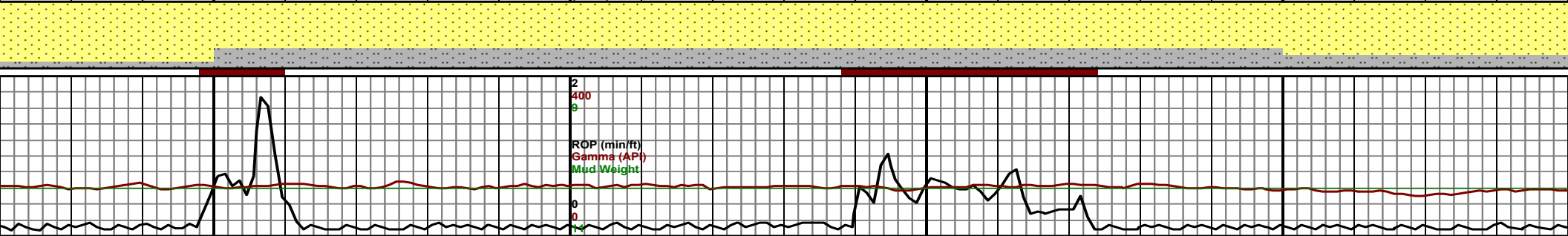
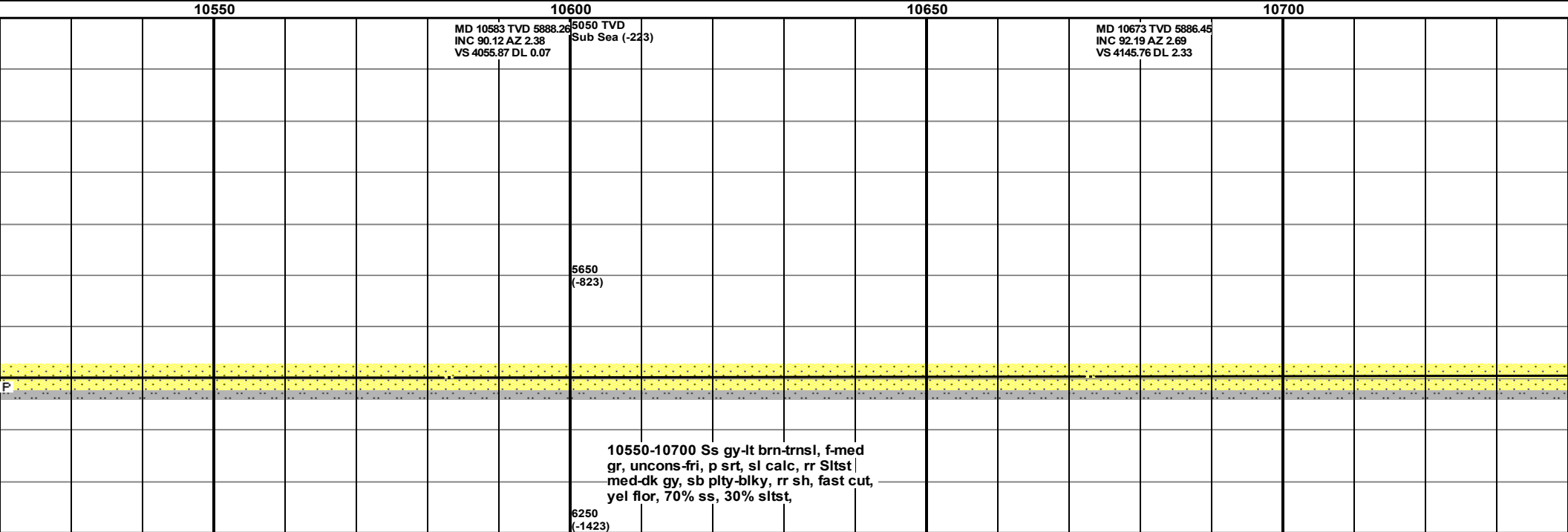
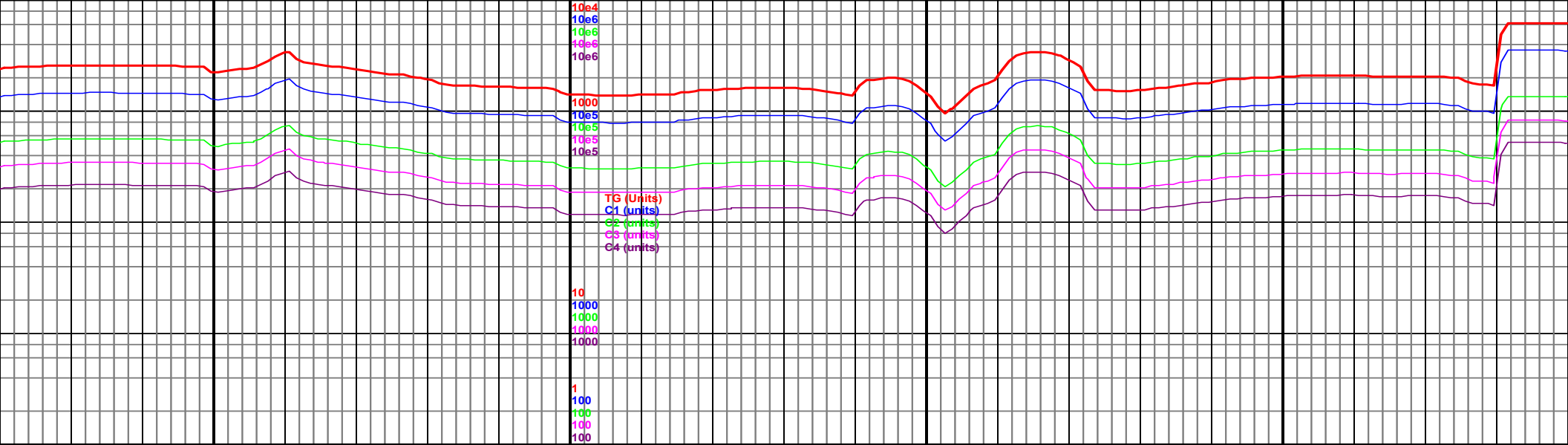
10100-10250 Ss gy-lt brn-trnsl, f-med
gr, uncons-fri, p srt, sl calc, rr Sltst
med-dk gy, sb plty-blky, rr pyr, fast cut,
yel flor, 90% ss, 10% sltst,

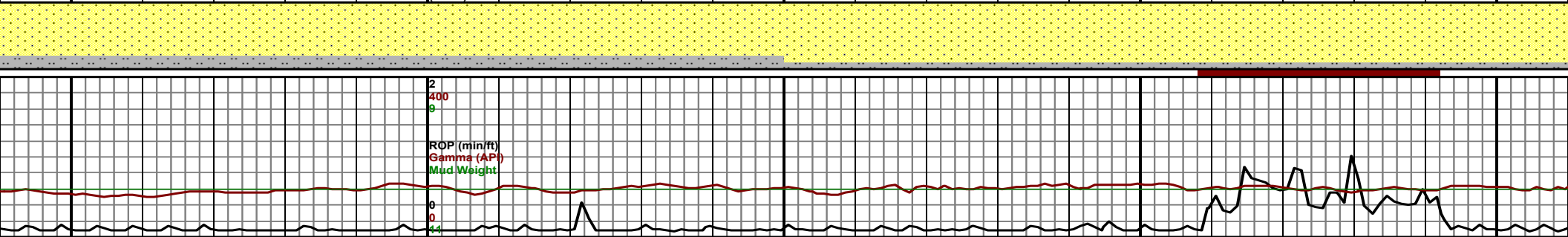
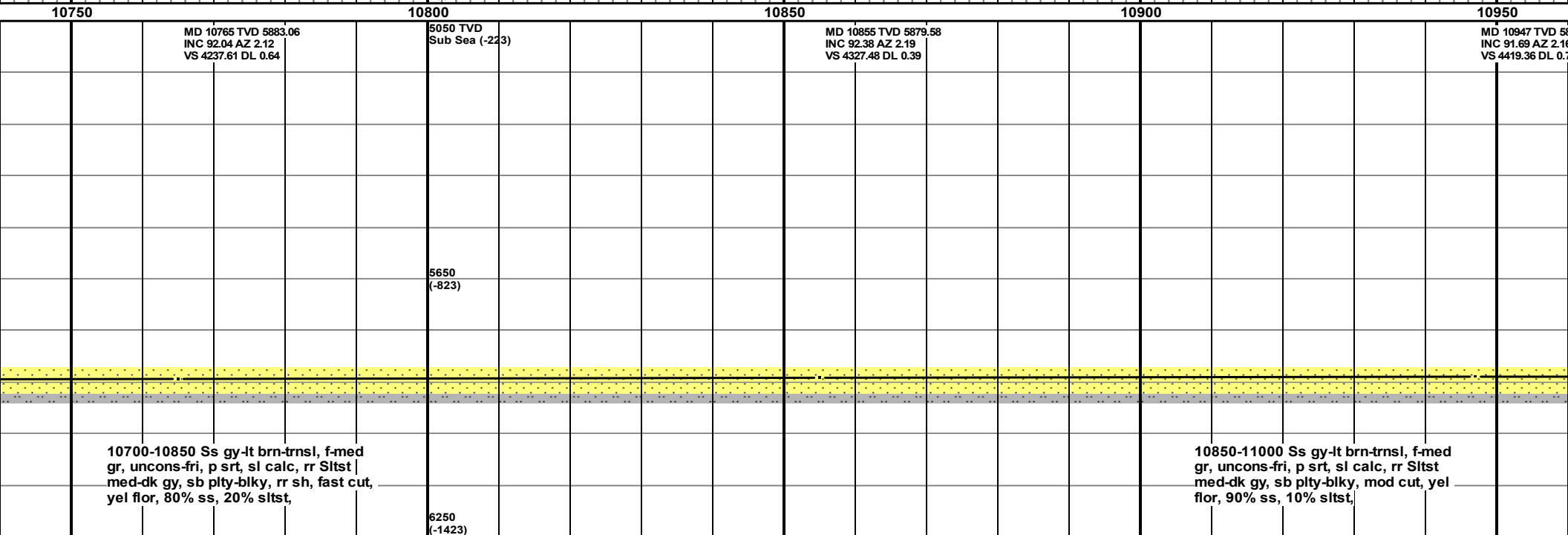
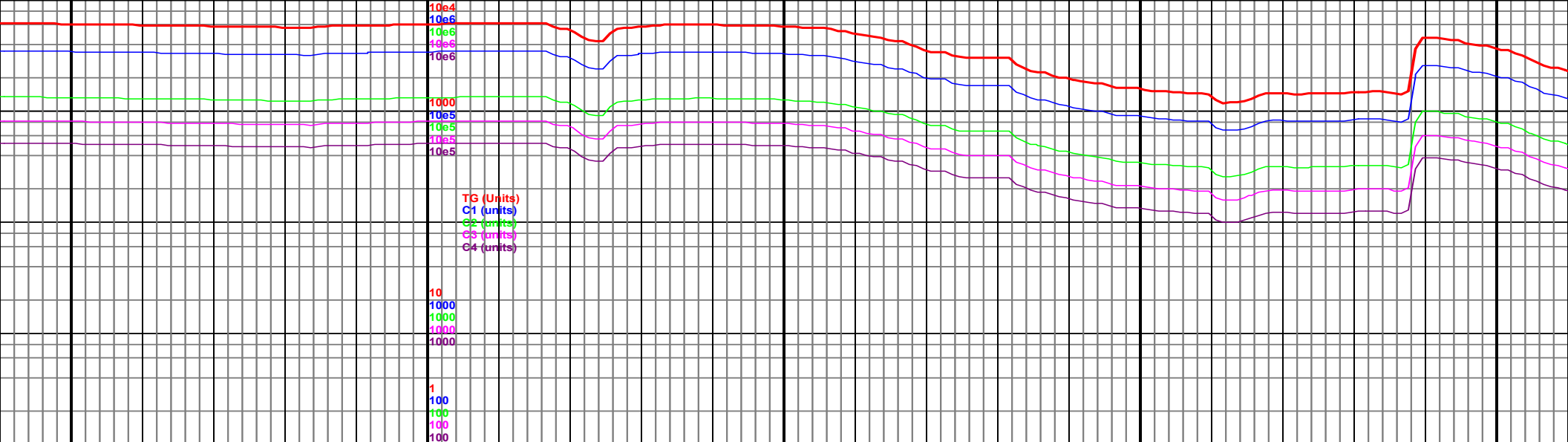
P.

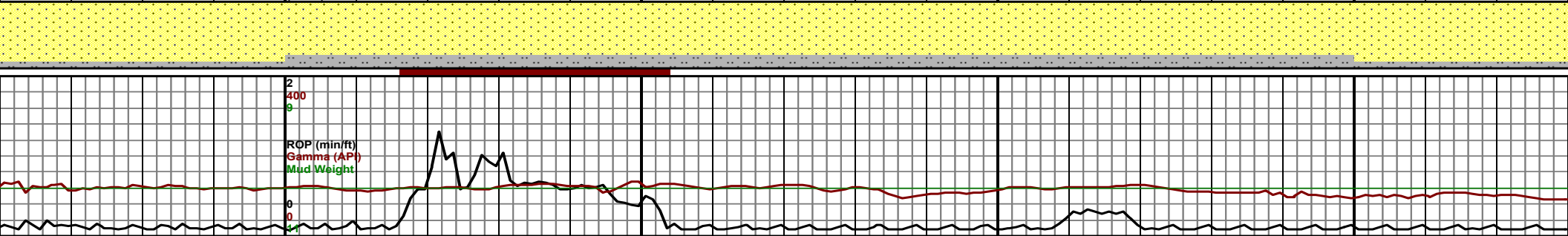
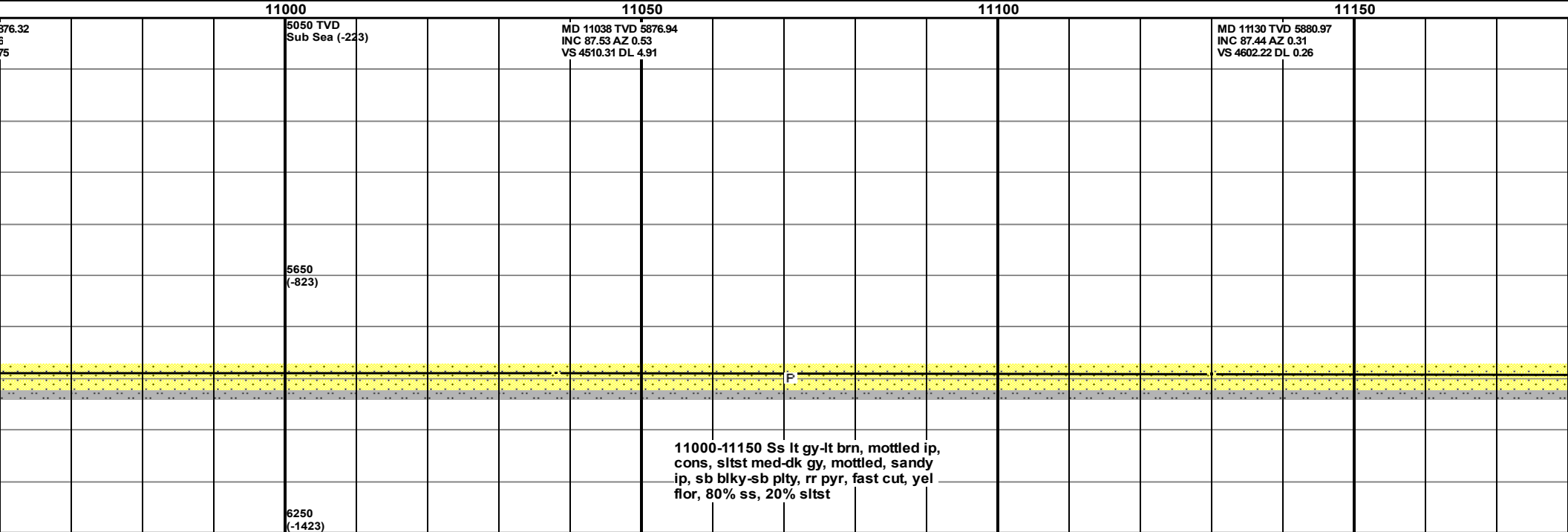
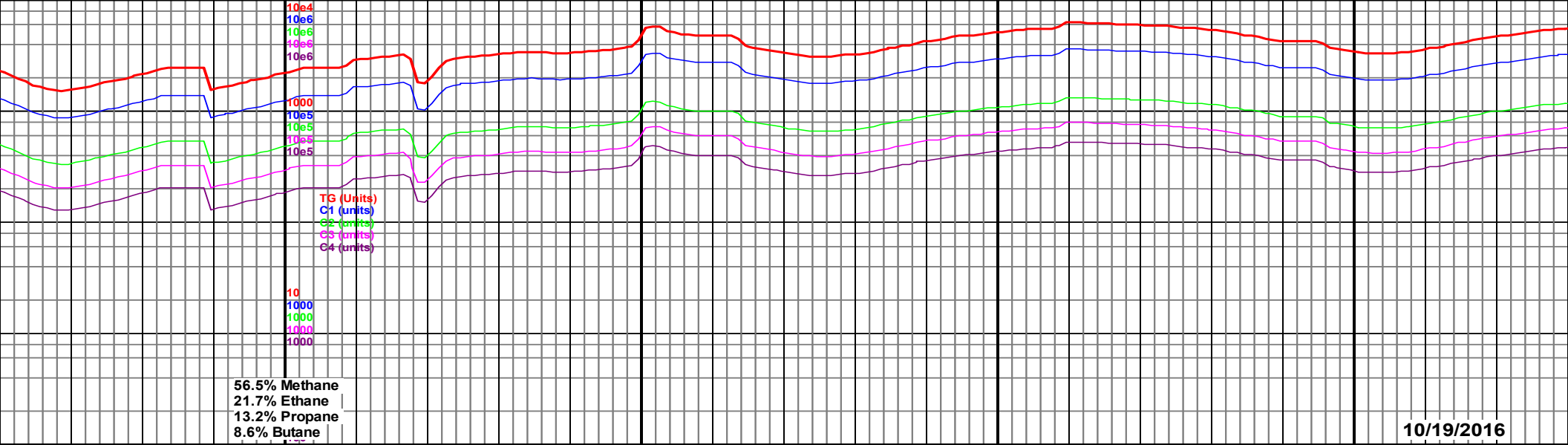


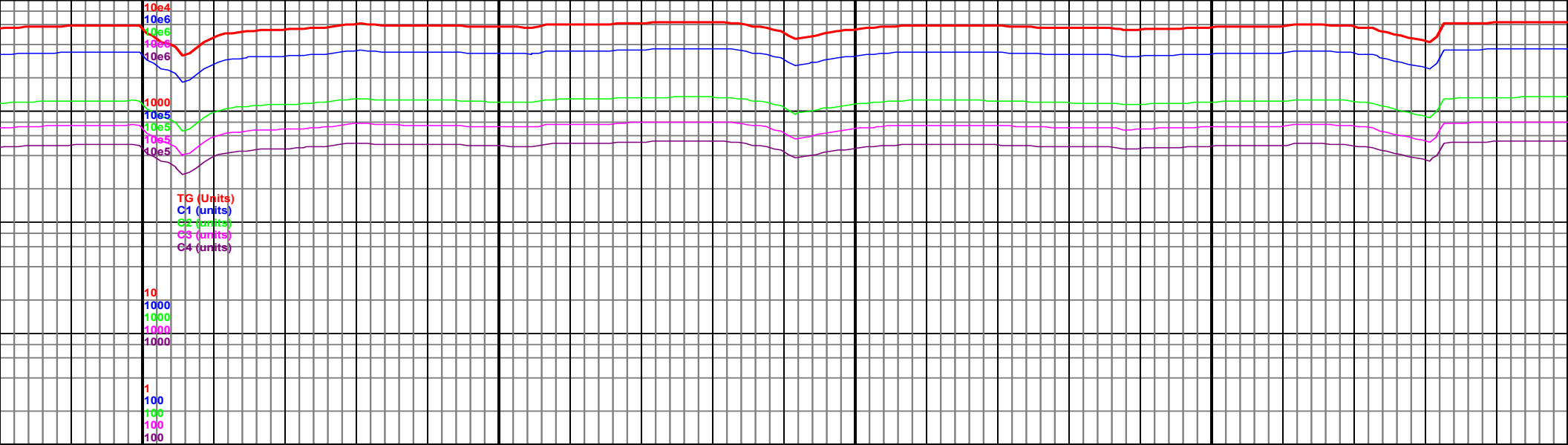
2
400
9
ROP (min/ft)
Gamma (API)
MWD Weight











11200 11250 11300 11350 11400

5050 TVD
Sub Sea (-223)

MD 11221 TVD 5882.67
INC 90.43 AZ 1
VS 4693.18 DL 3.37

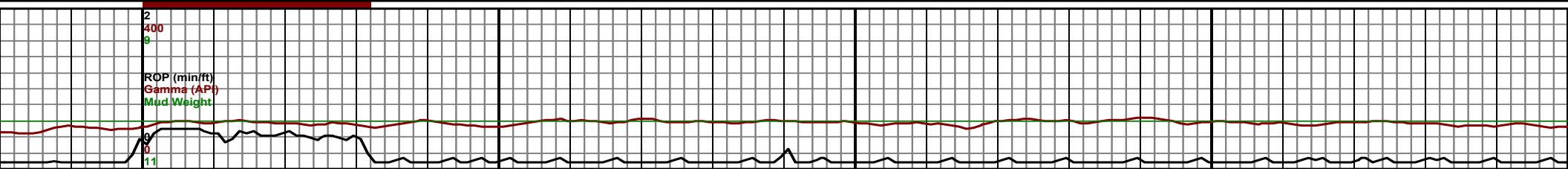
MD 11312 TVD 5881.54
INC 90.99 AZ 0.87
VS 4784.16 DL 0.63

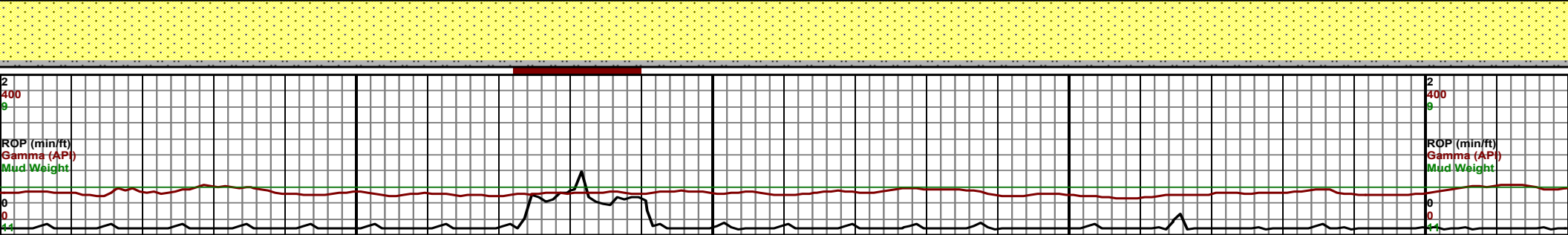
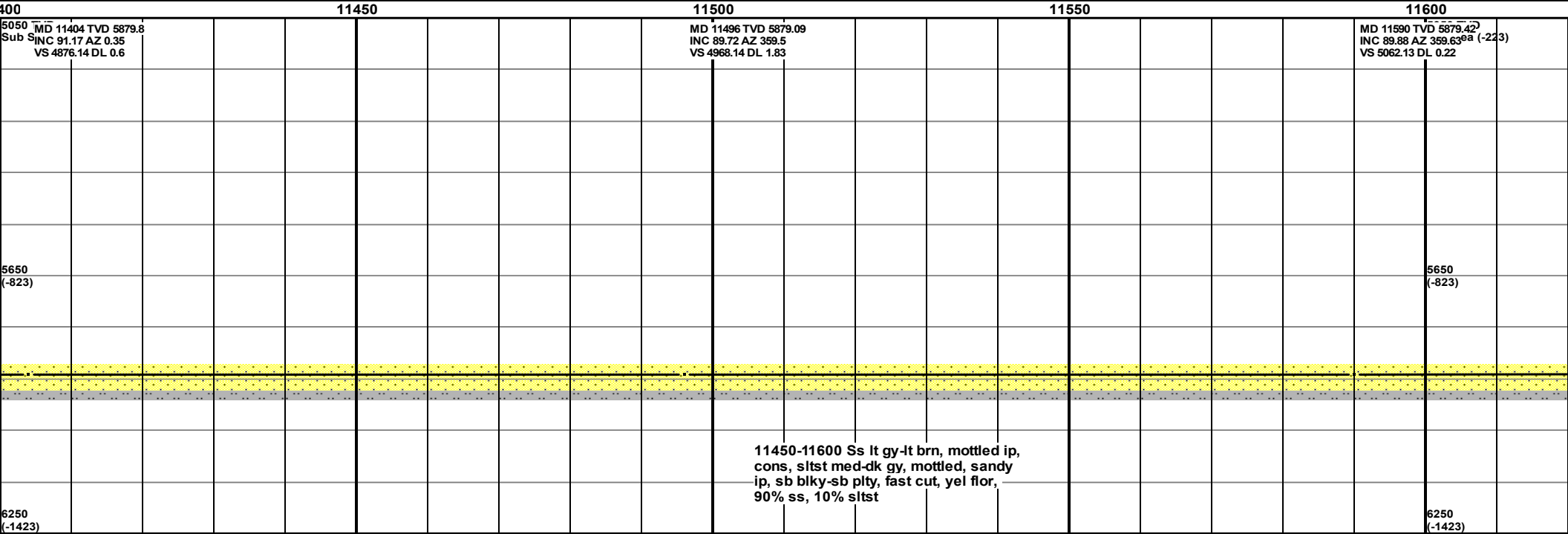
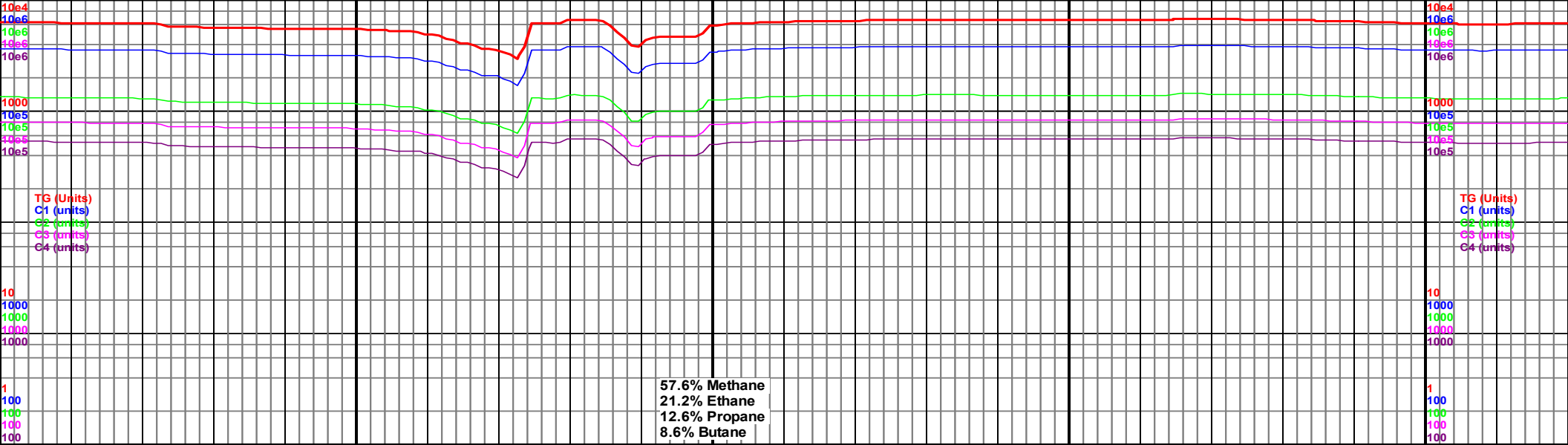
5650
(-823)

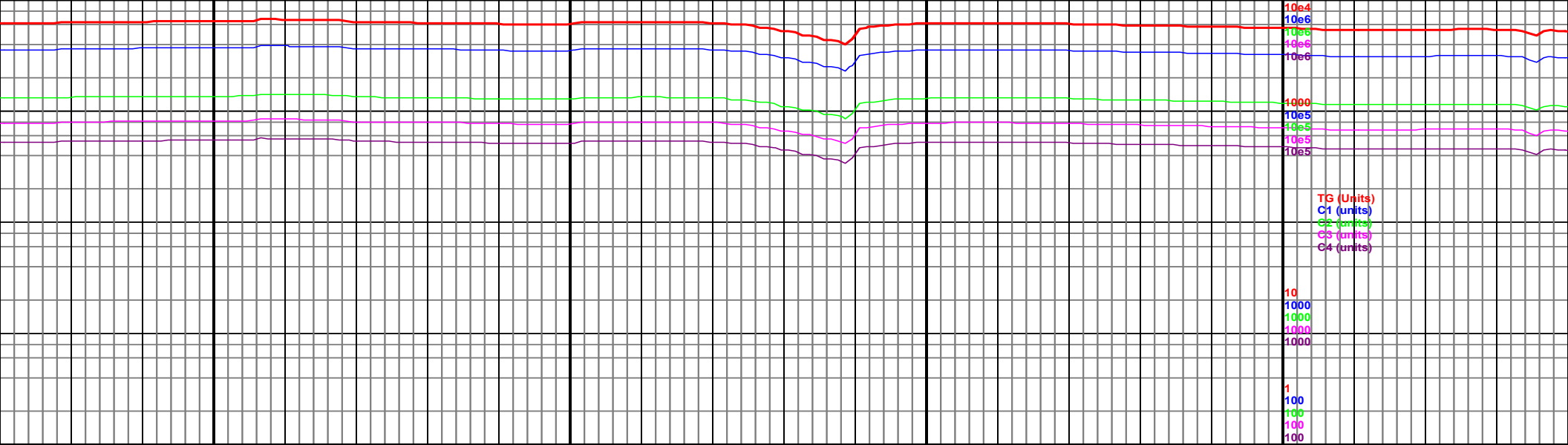
11150-11300 Ss lt gy-lt brn, mottled ip,
cons, sltst med-dk gy, mottled, sandy
ip, sb blk-y-sb plty, mod cut, yel flor,
90% ss, 10% sltst

6250
(-1423)

11300-11450 Ss lt gy-lt brn, mottled ip,
cons, sltst med-dk gy, mottled, sandy
ip, sb blk-y-sb plty, fast cut, yel flor,
90% ss, 10% sltst







11650

11700

11750

11800

MD 11685 TVD 5878.8
INC 90.86 AZ 0.61
VS 5157.13 DL 1.46

MD 11780 TVD 5877.07
INC 91.23 AZ 0.61
VS 5252.11 DL 0.39

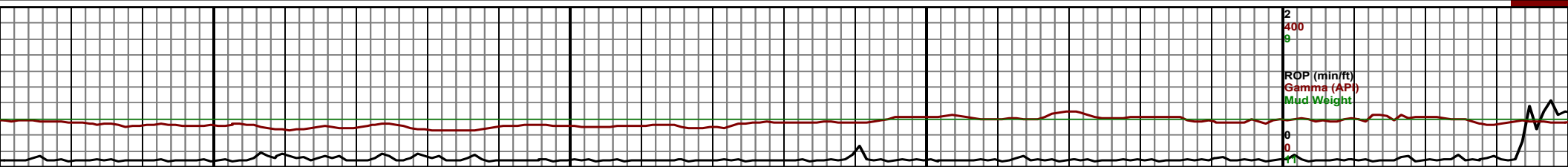
5050 TVD
Sub Sea (-223)

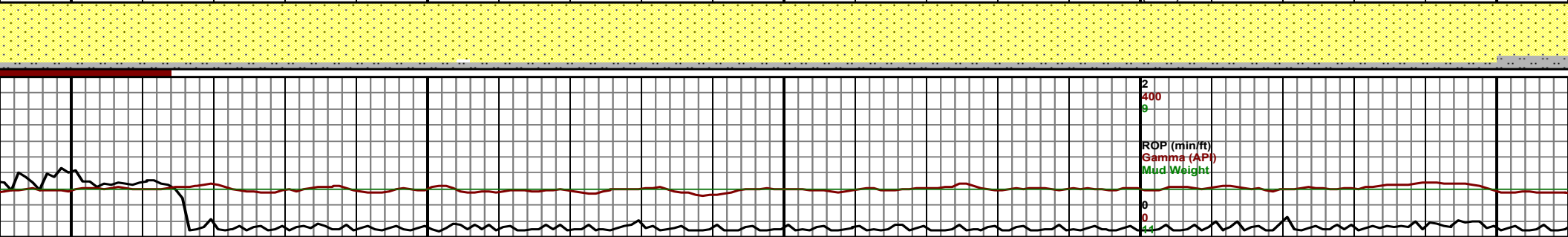
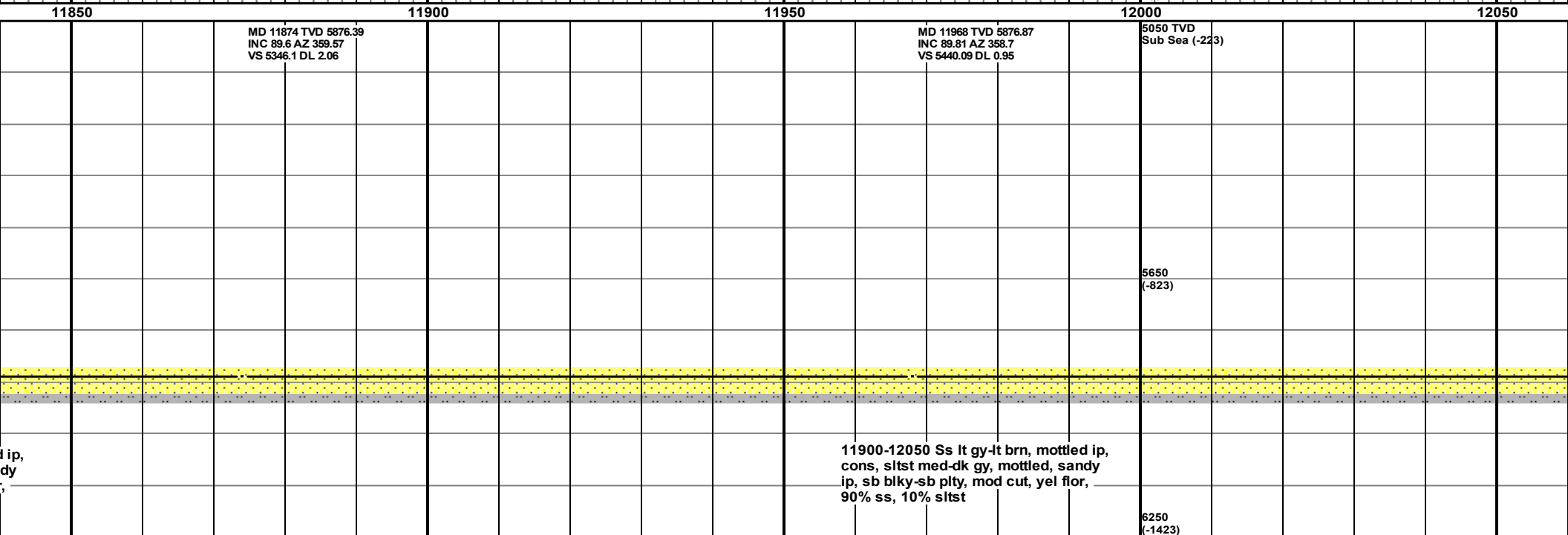
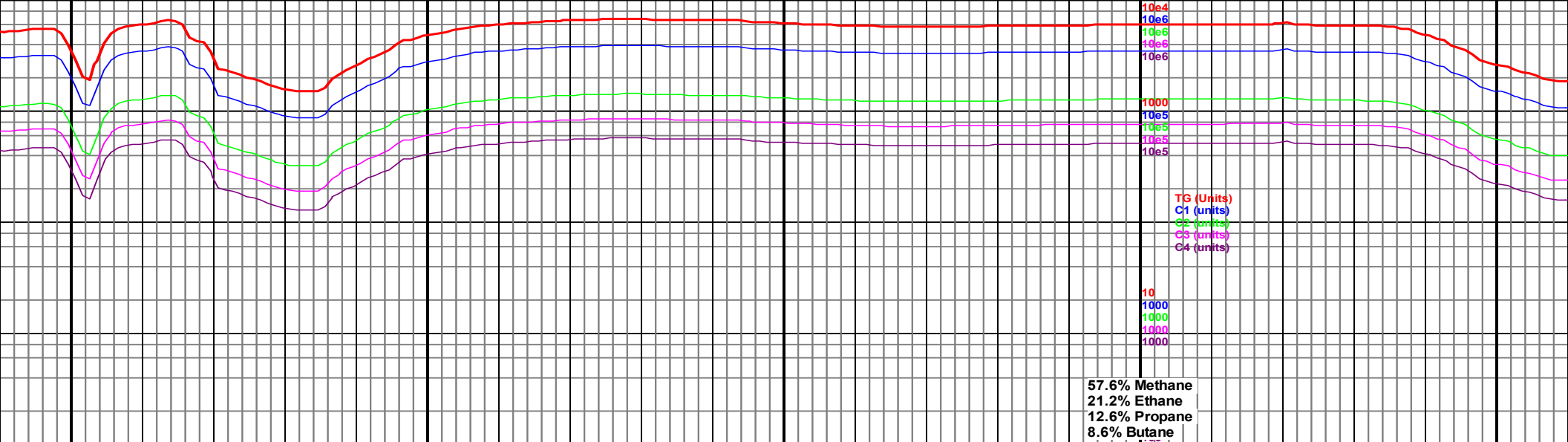
11600-11750 Ss lt gy-lt brn, mottled ip,
cons, sltst med-dk gy, mottled, sandy
ip, sb blk-y-sb plty, mod cut, yel flor,
90% ss, 10% sltst

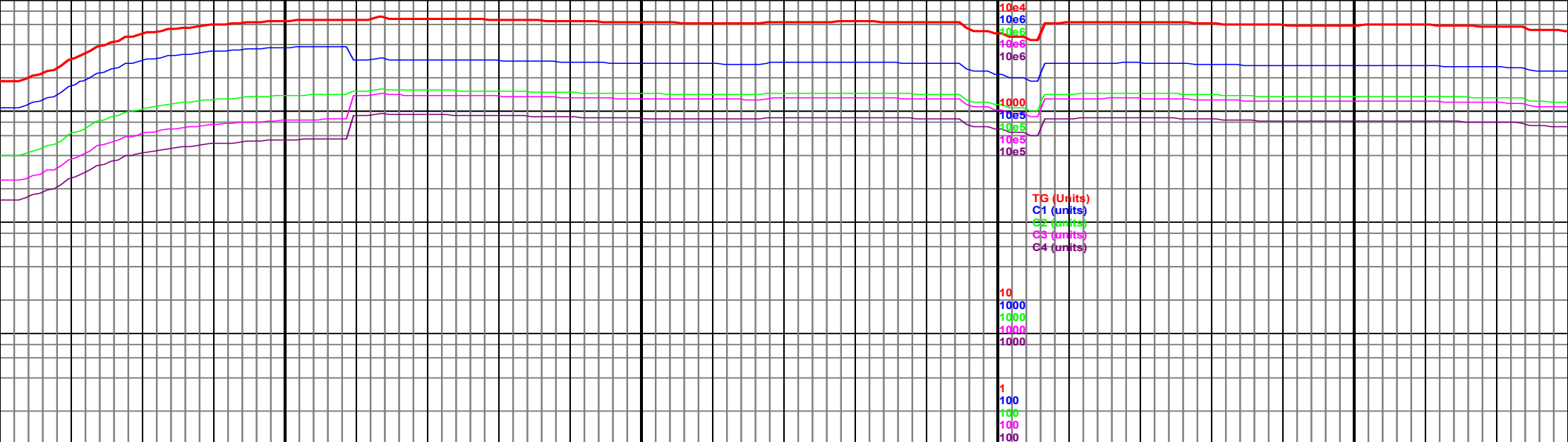
11750-11900 Ss lt gy-lt brn, mottled
cons, sltst med-dk gy, mottled, sandy
ip, sb blk-y-sb plty, mod cut, yel flor,
90% ss, 10% sltst

5650
(-823)

6250
(-1423)







MD 12063 TVD 5876.82
INC 90.25 AZ 358.69
VS 5535.06 DL 0.46

MD 12158 TVD 5876.43
INC 90.22 AZ 357.89
VS 5630.02 DL 0.84

5050 TVD
Sub Sea (-223)

MD 12252 TVD 5876.
INC 90.31 AZ 357.96
VS 5723.96 DL 0.12

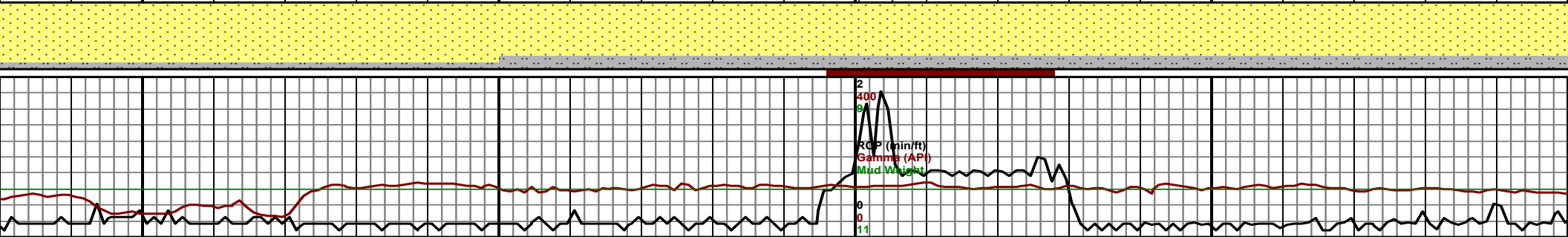
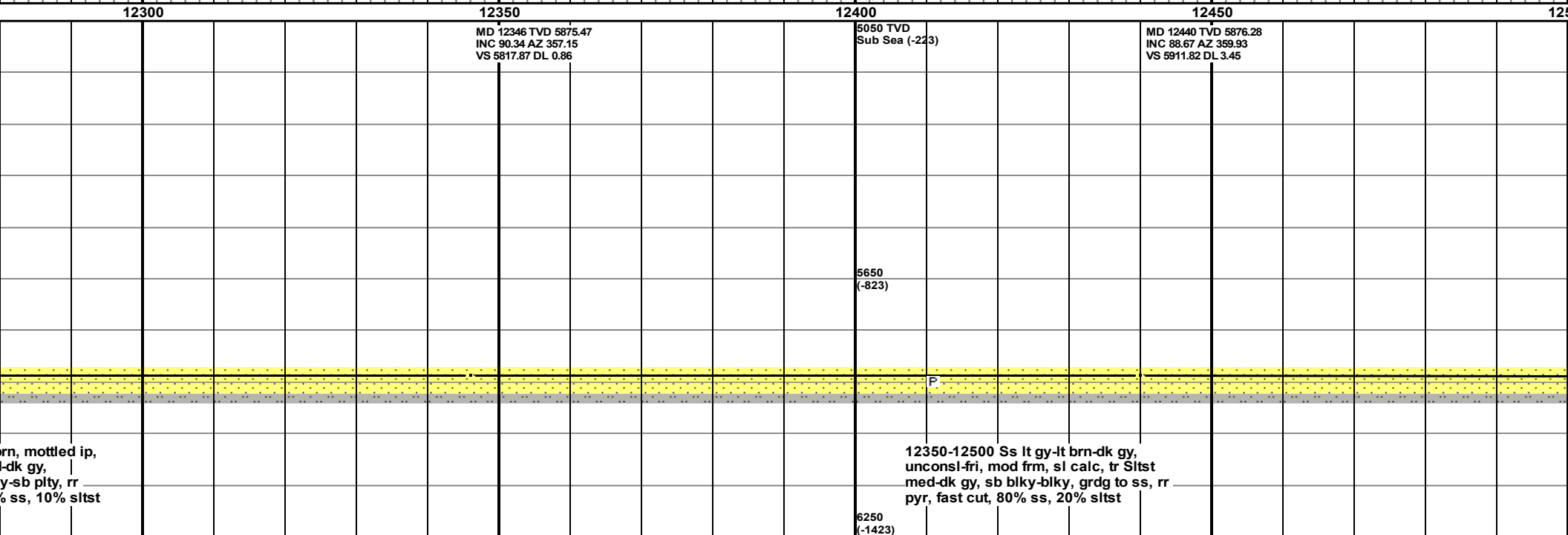
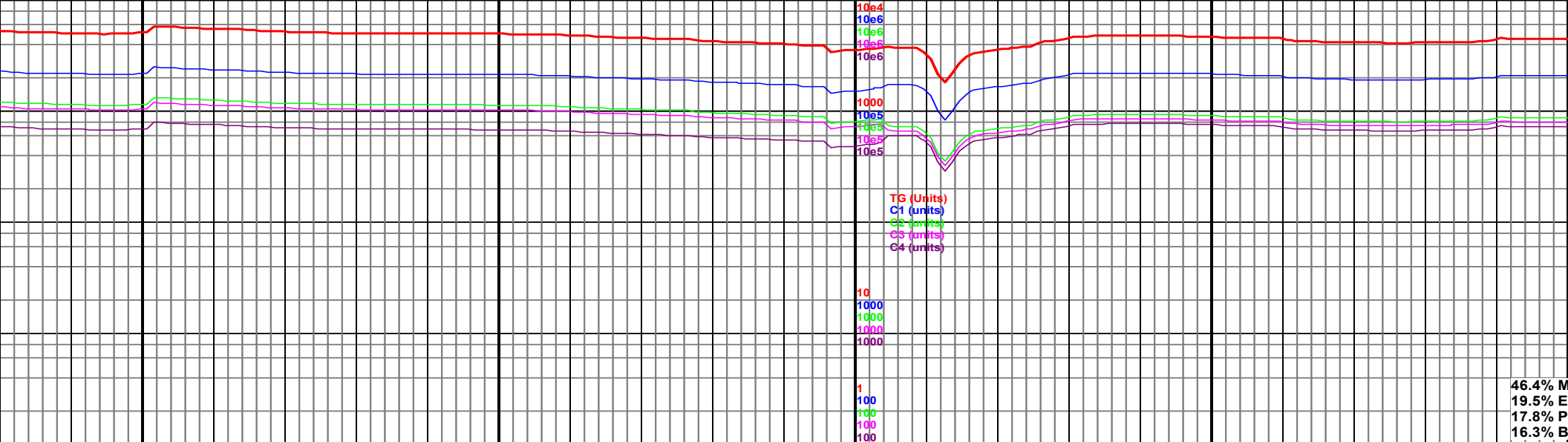
12050-12200 Ss lt gy-lt brn, mottled ip,
cons, sltst med-dk gy, mottled, sandy
ip, sb blk-y-sb plty, mod cut, yel flor,
80% ss, 20% sltst

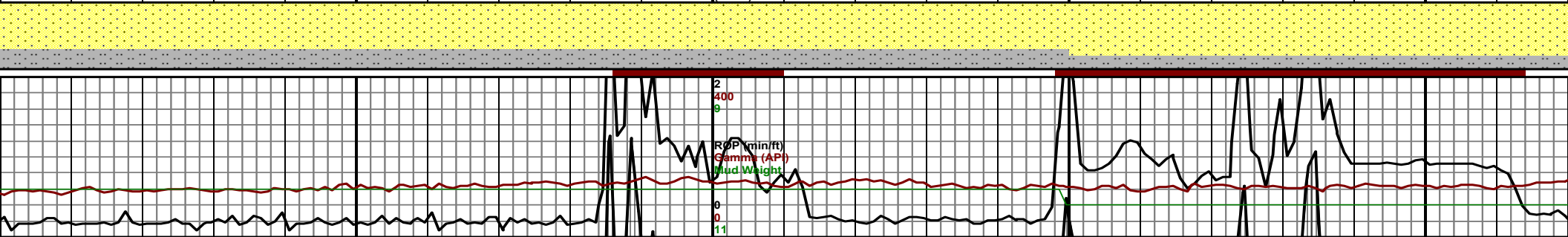
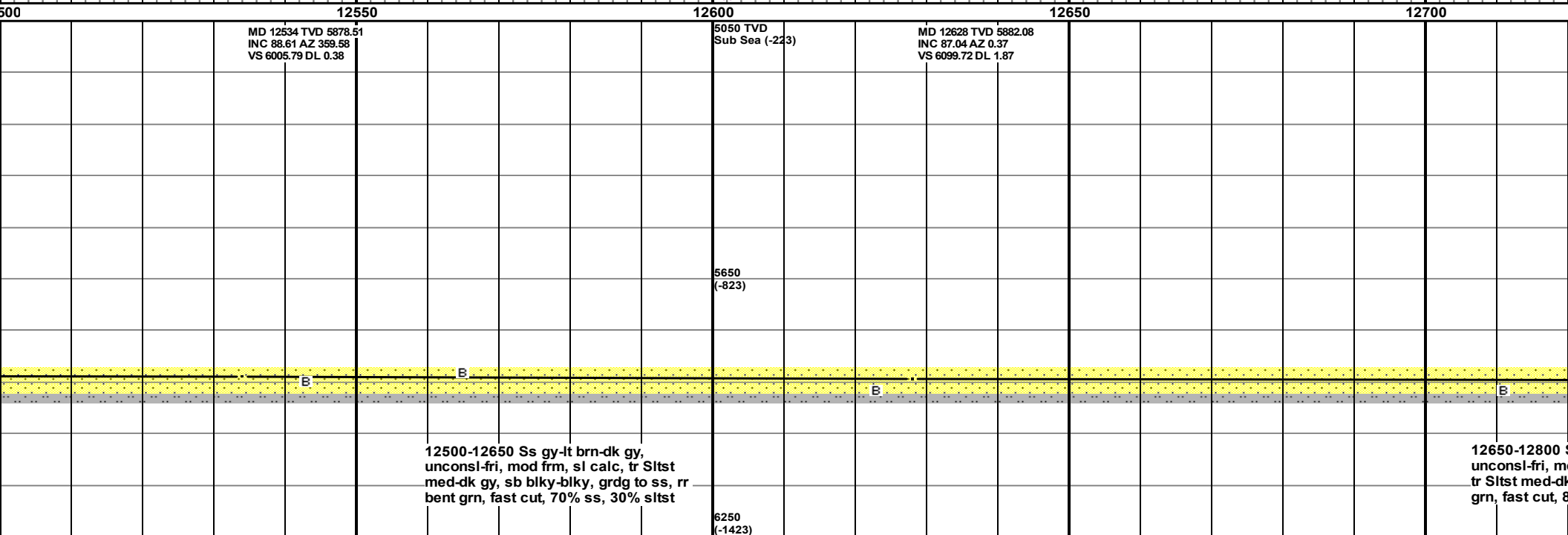
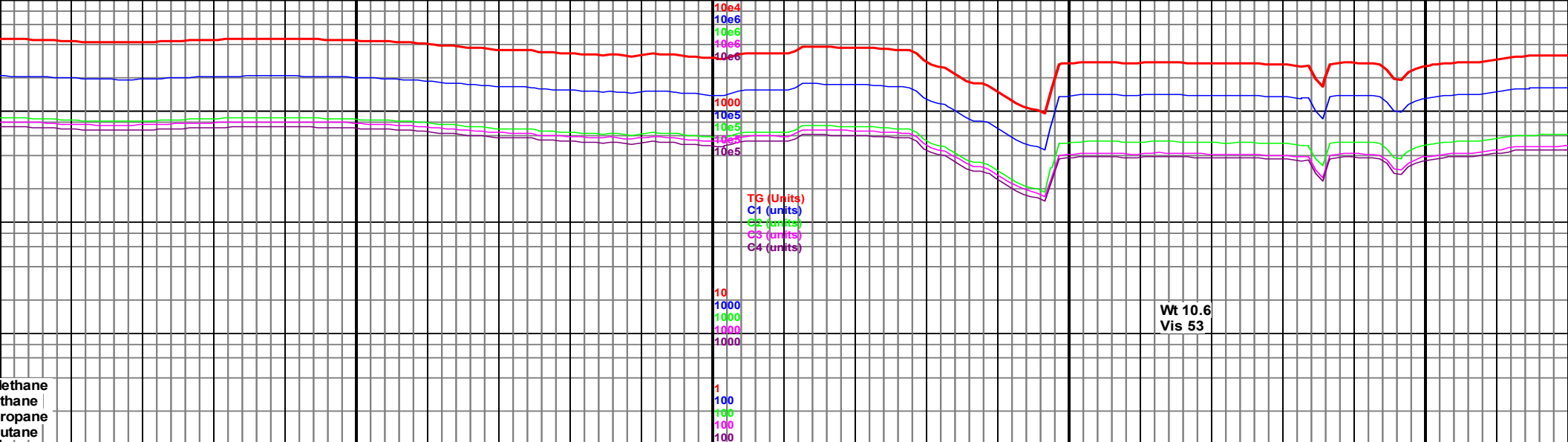
12200-12350 Ss lt gy-lt b
cons, mod frm, sltst med
mottled, sandy ip, sb blk
pyr, fast cut, yel flor, 90%

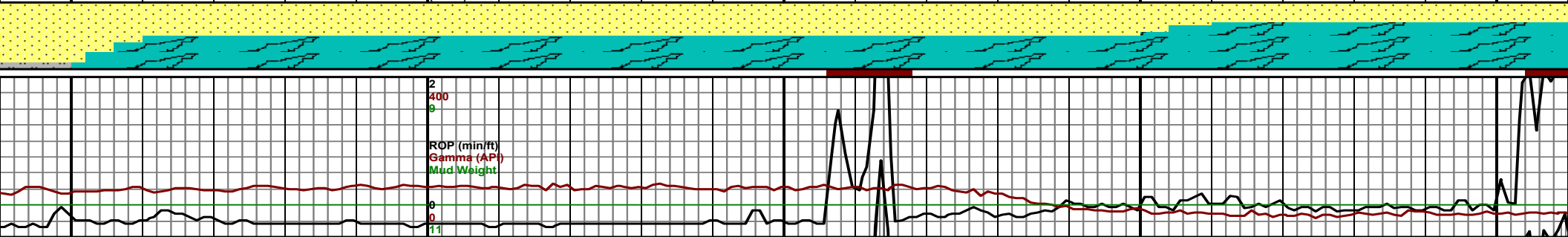
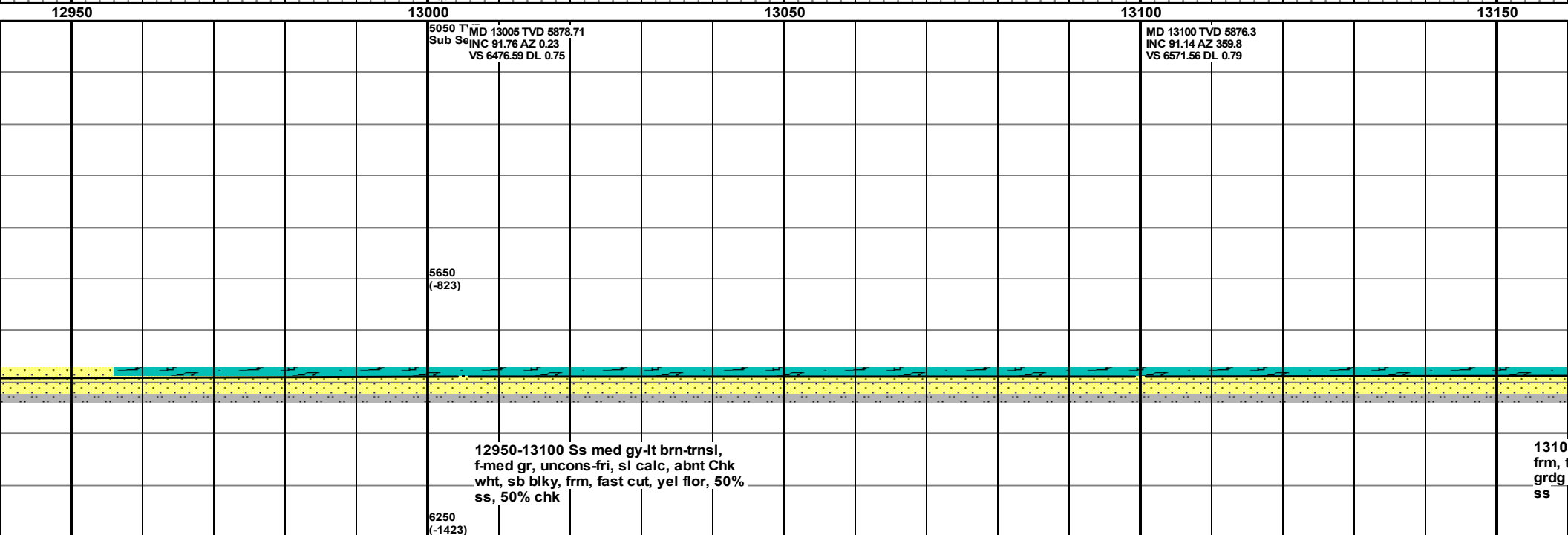
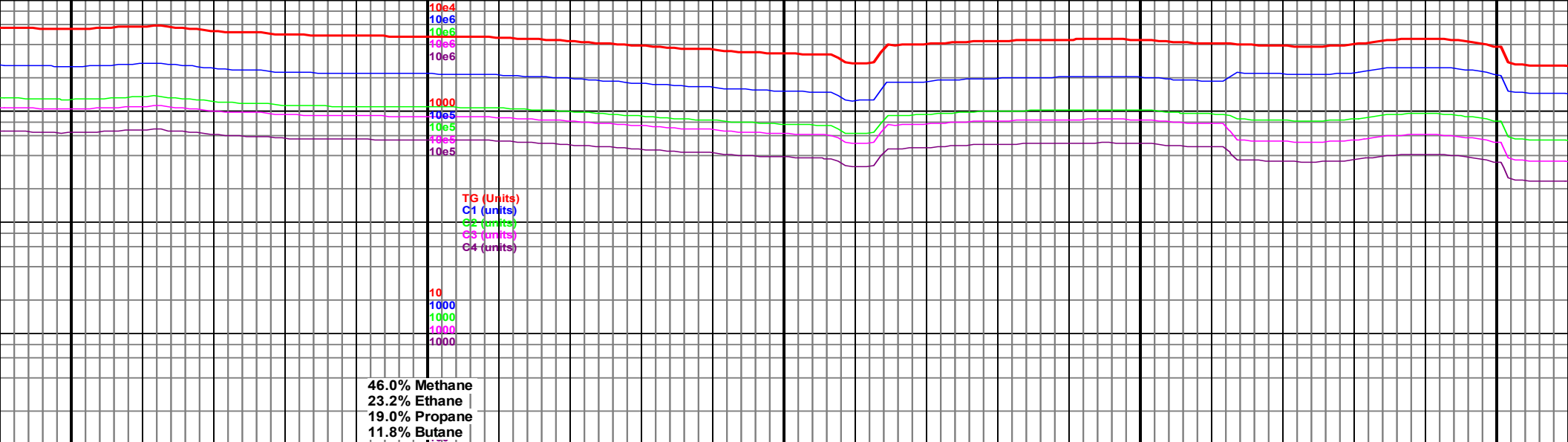
5650
(-823)

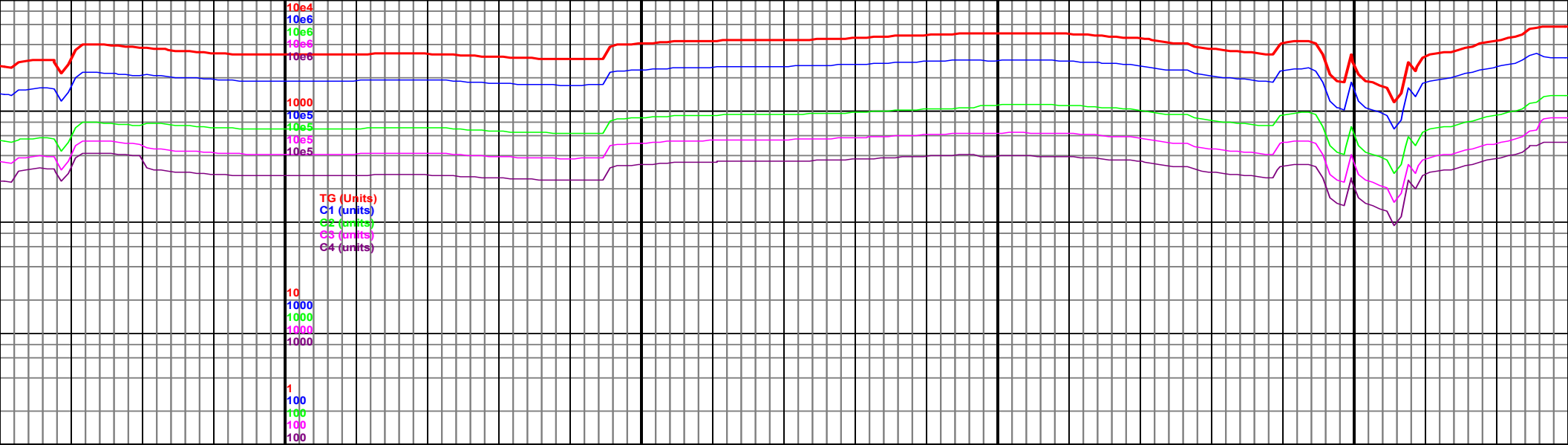
6250
(-1423)

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









13200
MD 13194 TVD 5876.21
INC 88.98 AZ 0.66 (-44.3)
VS 6665.56 DL 2.47

13250

13300

MD 13288 TVD 5878.4
INC 88.34 AZ 359.72
VS 6759.53 DL 1.21

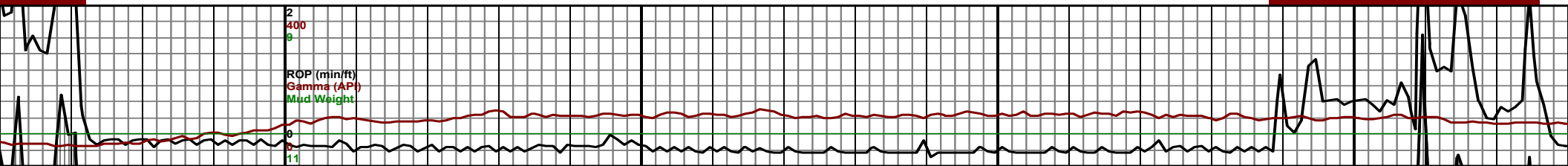
13350

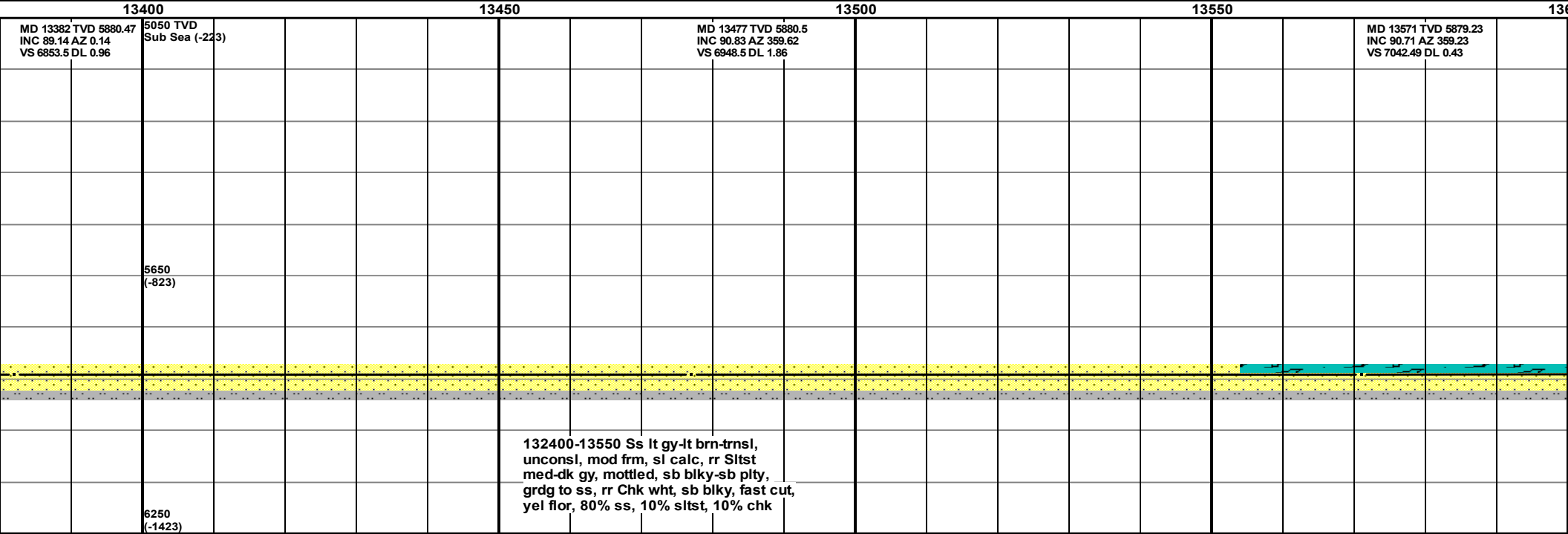
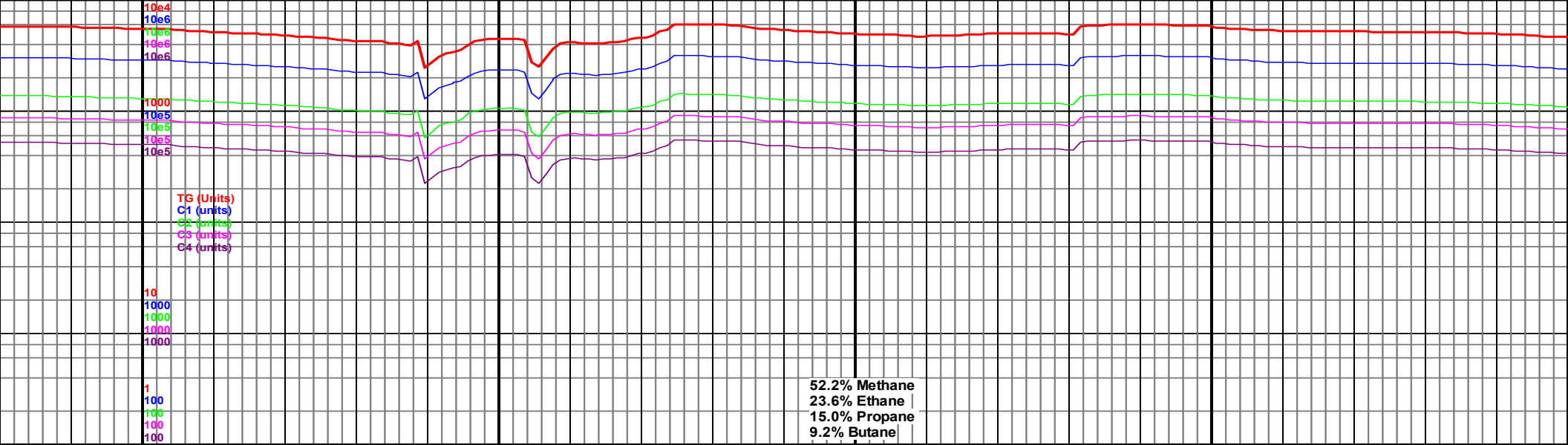
5650
(-823)

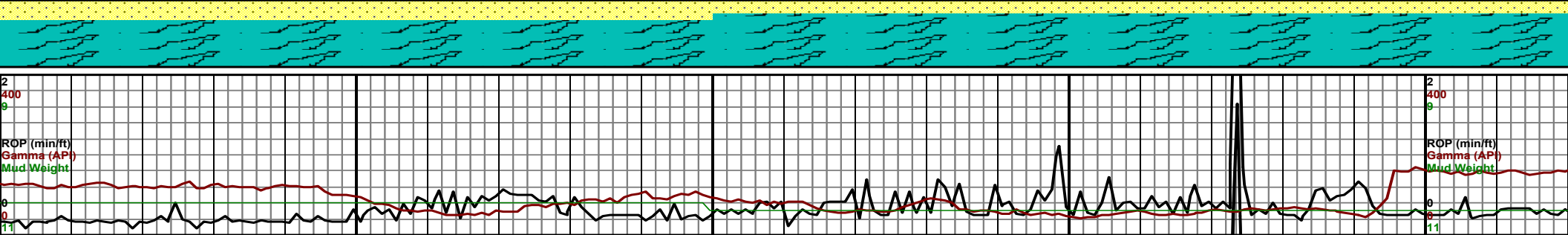
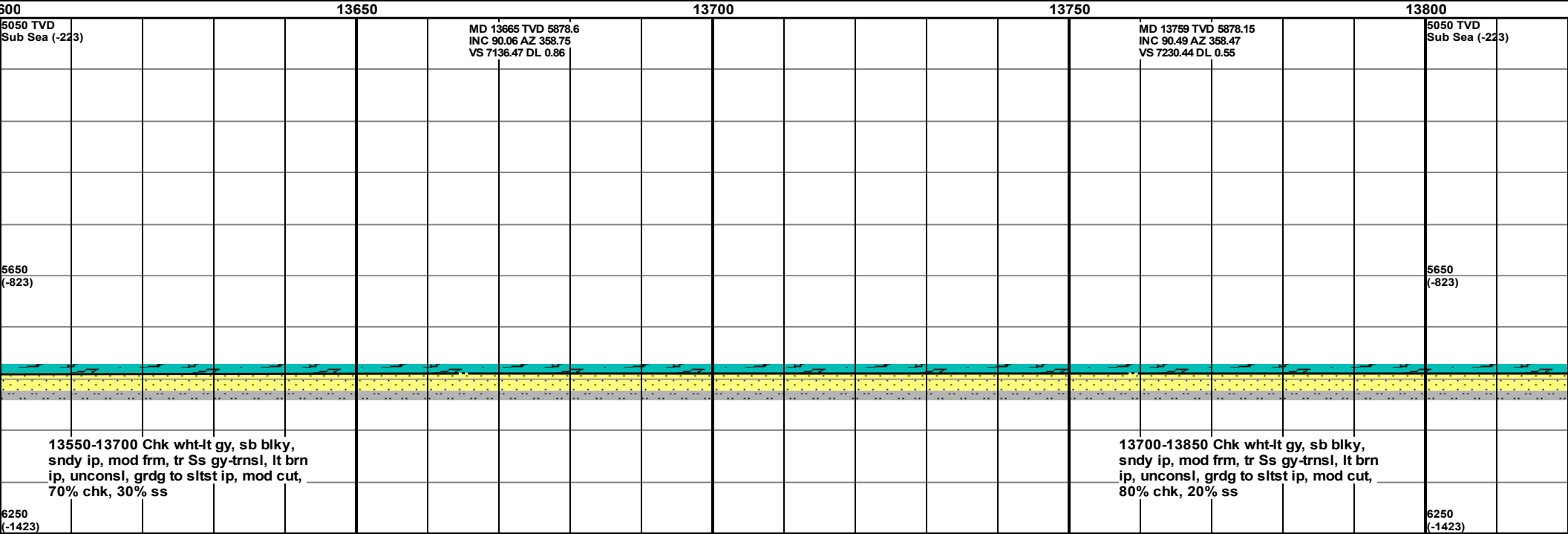
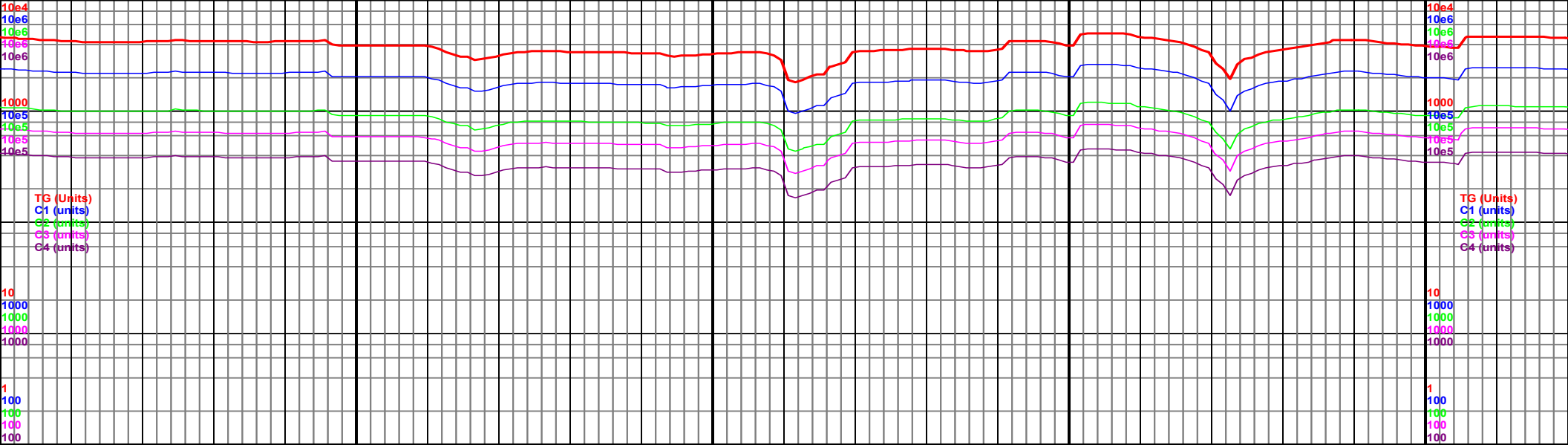
0-13250 Chk wht-lt gy, sb blk,
r Ss gy-trnsl, lt brn ip, unconsl,
to sltst ip, fast cut, 70% chk, 30%

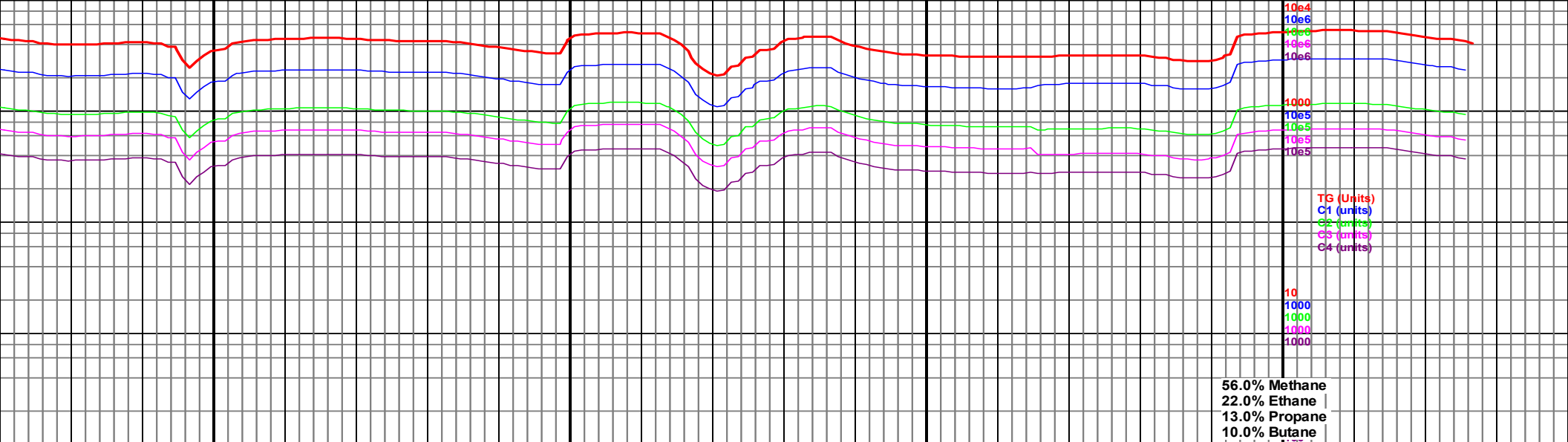
13250-13400 Ss lt gy-lt brn-trnsl,
unconsl, mod frm, sl calc, rr Slstst
med-dk gy, mottled, sb blkly-sb plty,
grdg to ss, rr Chk wht, sb blkly, fast cut,
yel flor, 80% ss, 10% sltst, 10% chk

6250
(-1423)









13850

MD 13853 TVD 5876.89
INC 91.05 AZ 358.61
VS 7324.4 DL 0.61

13900

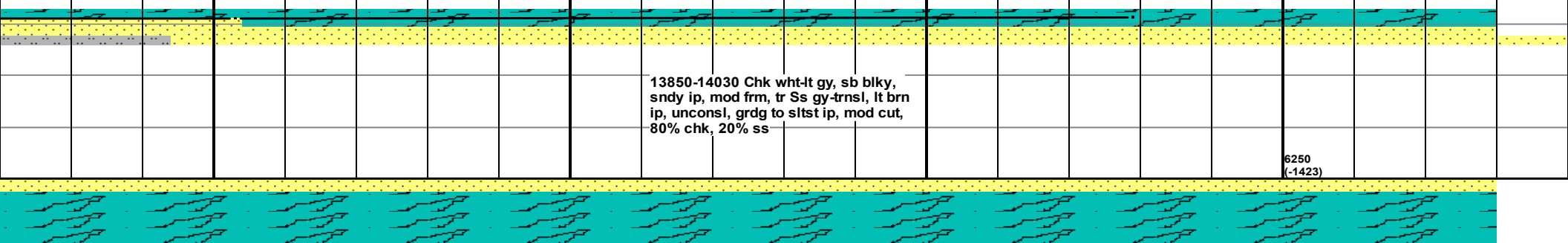
13950

14000

MD 13979 TVD 5874.24
INC 91.36 AZ 358.44
VS 7450.33 DL 0.28

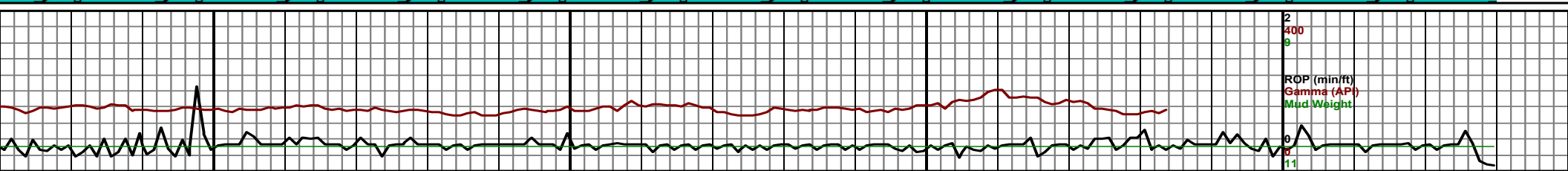
5050 TVD
Sub Sea (-223)

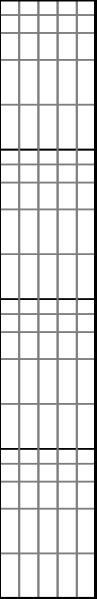
TD of 14030' MD reached
21:22 on 10/19/2016.



5650
(-823)

6250
(-1423)





14

at

