



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

Well Name: Razor 26L-3501A
Location: NWSW 26-T10N-R58W
License Number: 05-123-37990
Spud Date: 6/1/2014
Surface Coordinates: Lat.: 40.808739 Long.: -103.839531
Bottom Hole Coordinates: Lat.: 40.789372 Long.: -103.840672
Ground Elevation (ft): 4734
Logged Interval (ft): To:
Formation: Pierre, Sharon Springs, Niobrara A
Type of Drilling Fluid: Water Based Mud

Region: Redtail Field
Drilling Completed:
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: Todd Nakata, Demond Taylor and Eli Denbesten
Company: Acme Geologic Consulting
Address: 108 Berry Street
Little Rock, AR 72205

Drilling Company

Cade Drilling, LLC
Rig #23

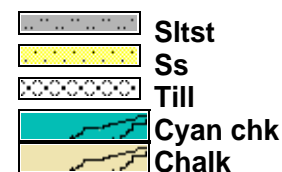
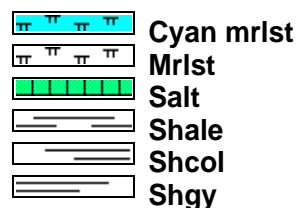
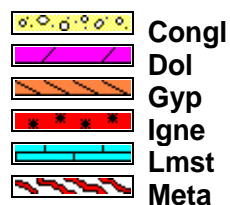
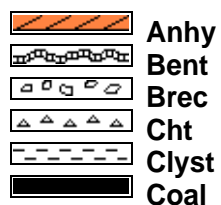
Gas Detection

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

Comments

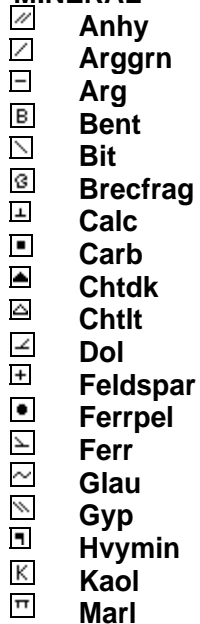
Lithologies and tops at drilled depths, not corrected to elogs. Where the well bore gas is 100% methane, the C1 line is moved to 85% for graphical purposes only.

ROCK TYPES

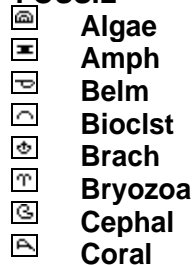


ACCESSORIES

MINERAL



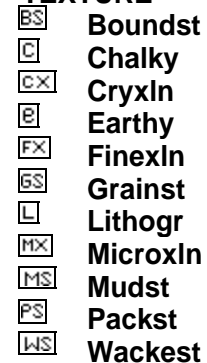
FOSSIL



STRINGER











TEXTURE



OTHER SYMBOLS




POROSITY

-  Earthy
-  Fenest
-  Fracture
-  Inter
-  Moldic
-  Organic
-  Pinpoint
-  Vuggy

SORTING





-  Well
-  Moderate
-  Poor

ROUNDING

-  Rounded
-  Subrnd
-  Subang

-  Angular

OIL SHOW

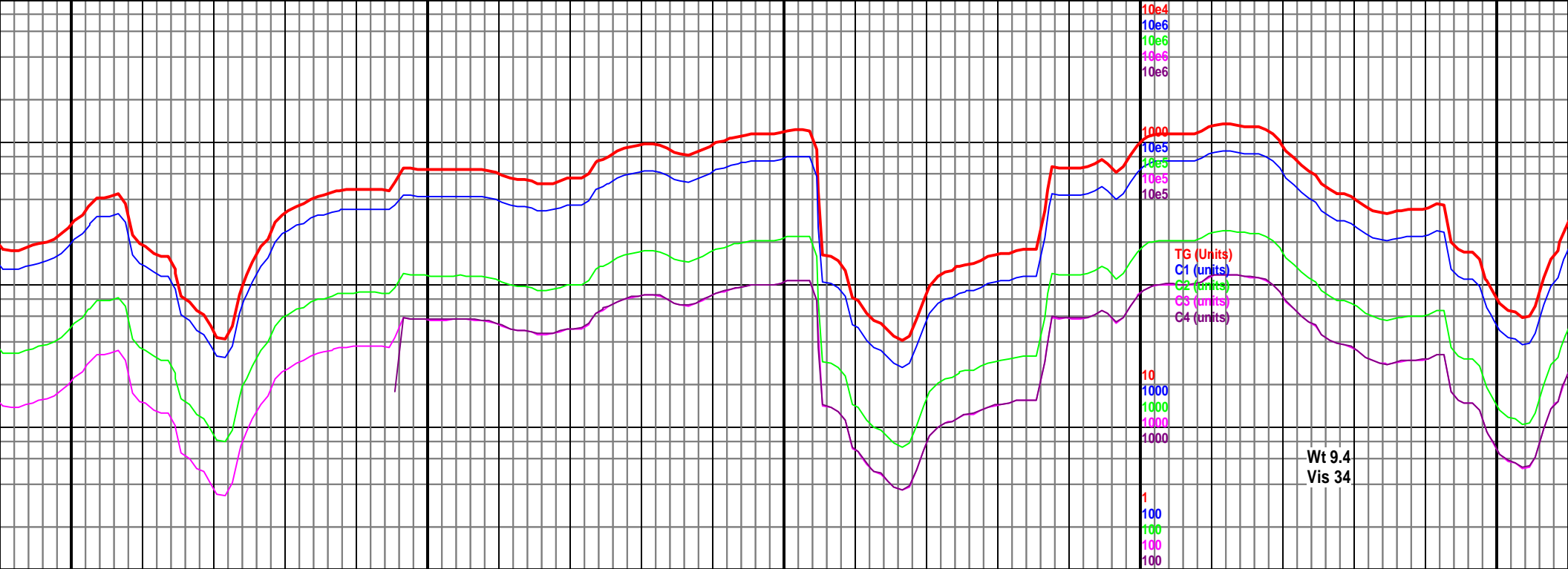
-  Even
-  Spotted
-  Ques
-  Dead

INTERVAL

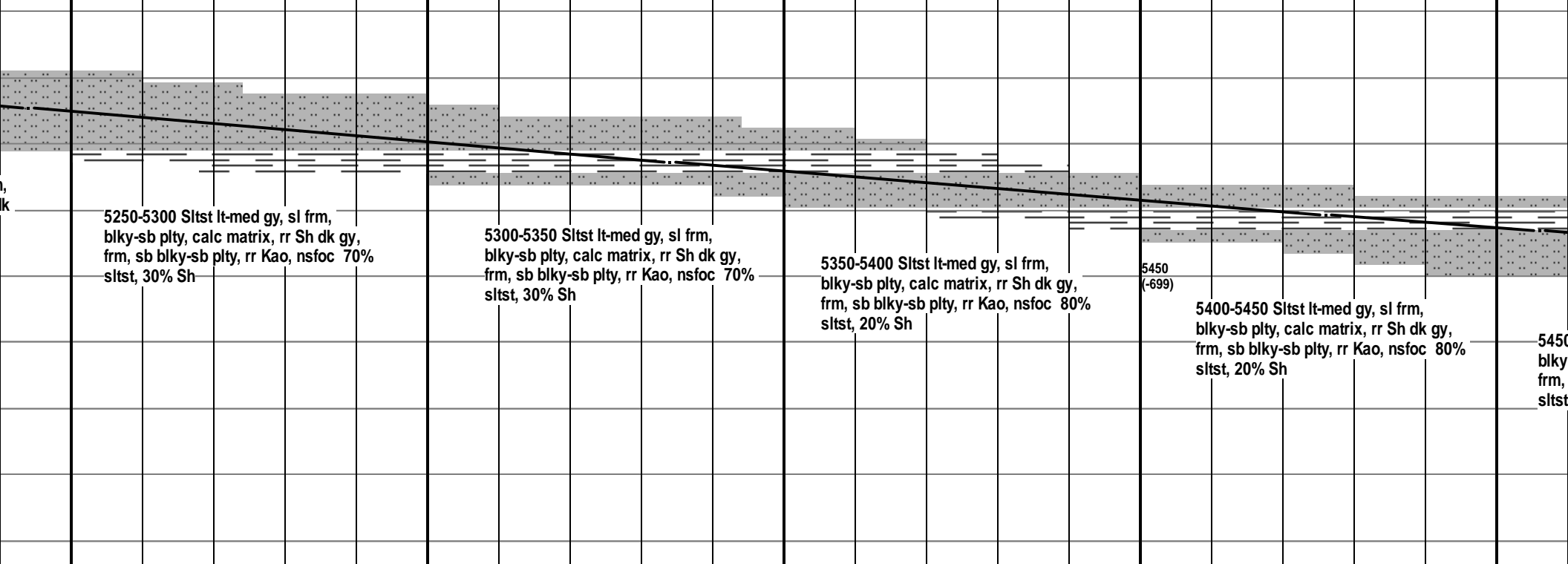
-  Core
-  Dst

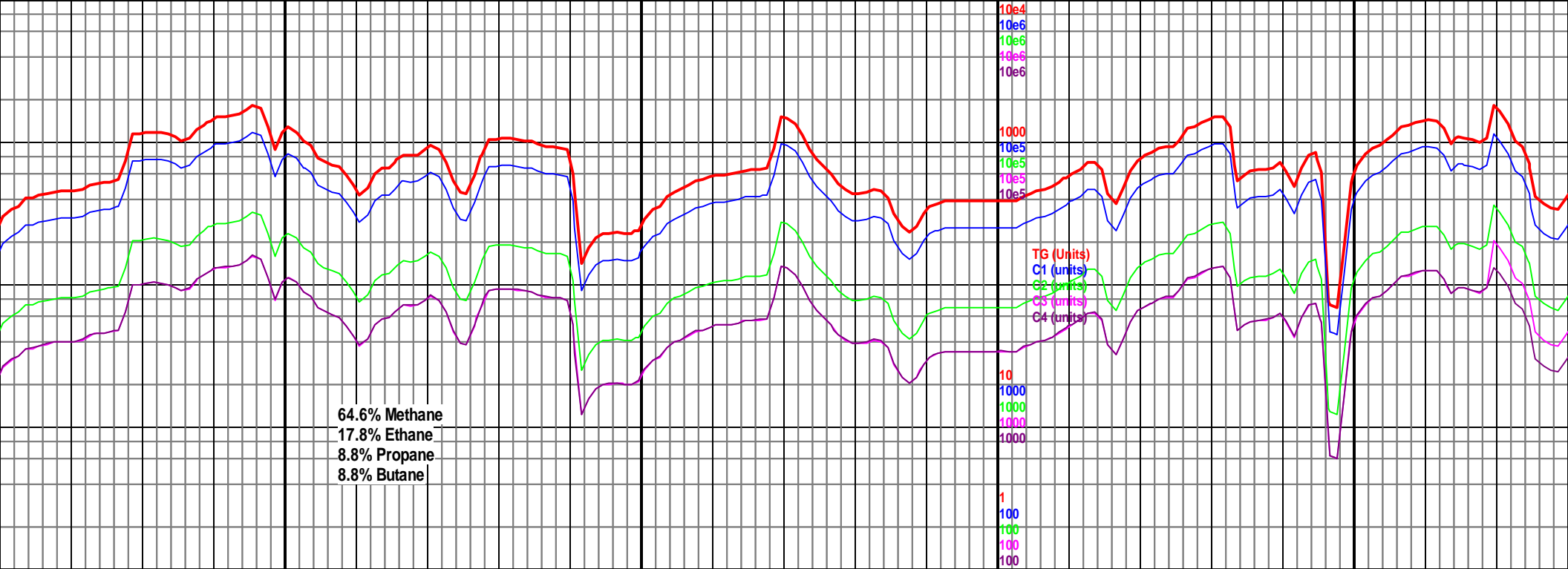
EVENT

-  Rft
-  Sidewall



5250	5300	5350	5400	5450
MD 5244 TVD 5221.07 INC 36.35 AZ 182.14 VS -47.81		MD 5334 TVD 5293.94 INC 35.52 AZ 182.54 VS 4.96	5000 TVD Sub Sea (-249)	MD 5426 TVD 5366.35 INC 40.62 AZ 178.88 VS 61.65

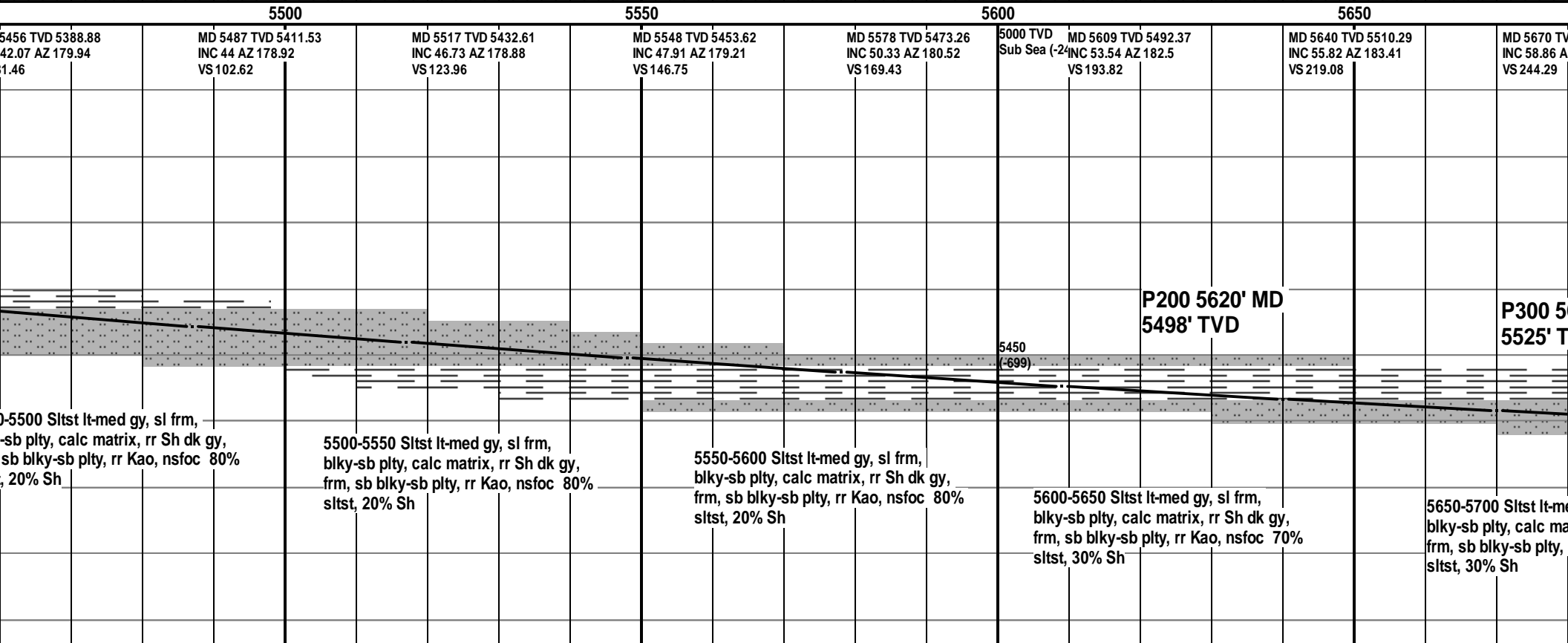


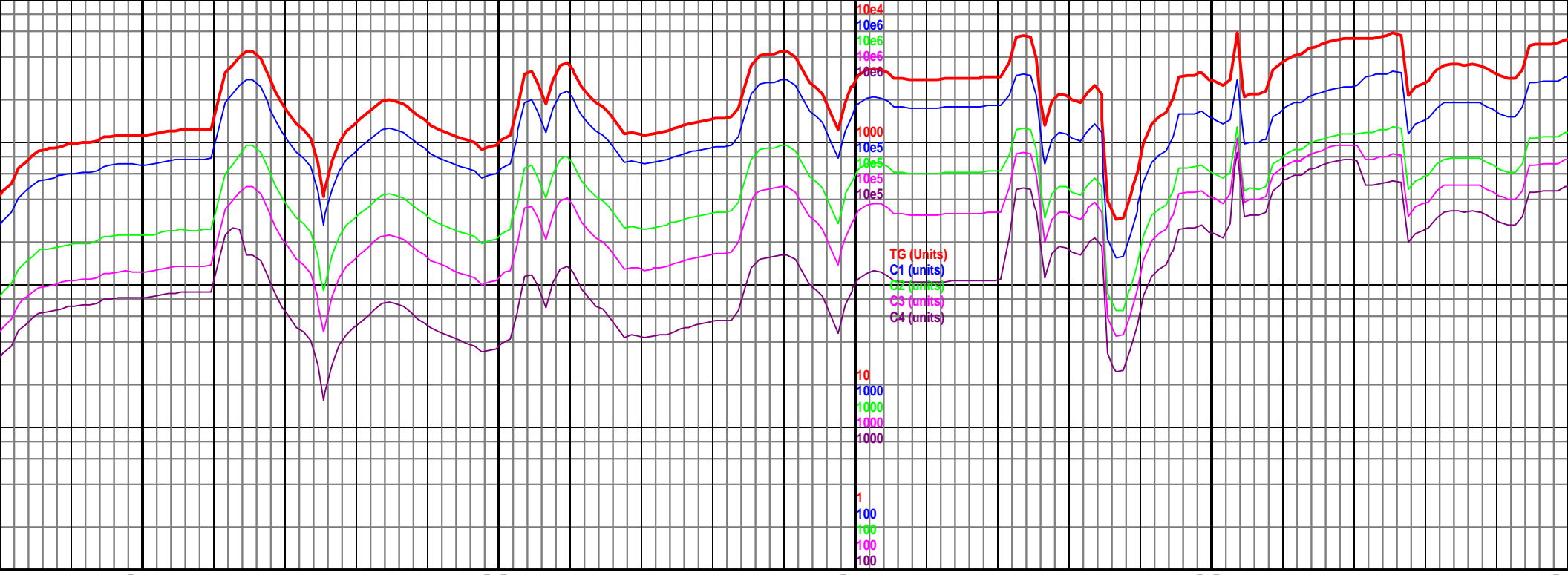


64.6% Methane
17.8% Ethane
8.8% Propane
8.8% Butane

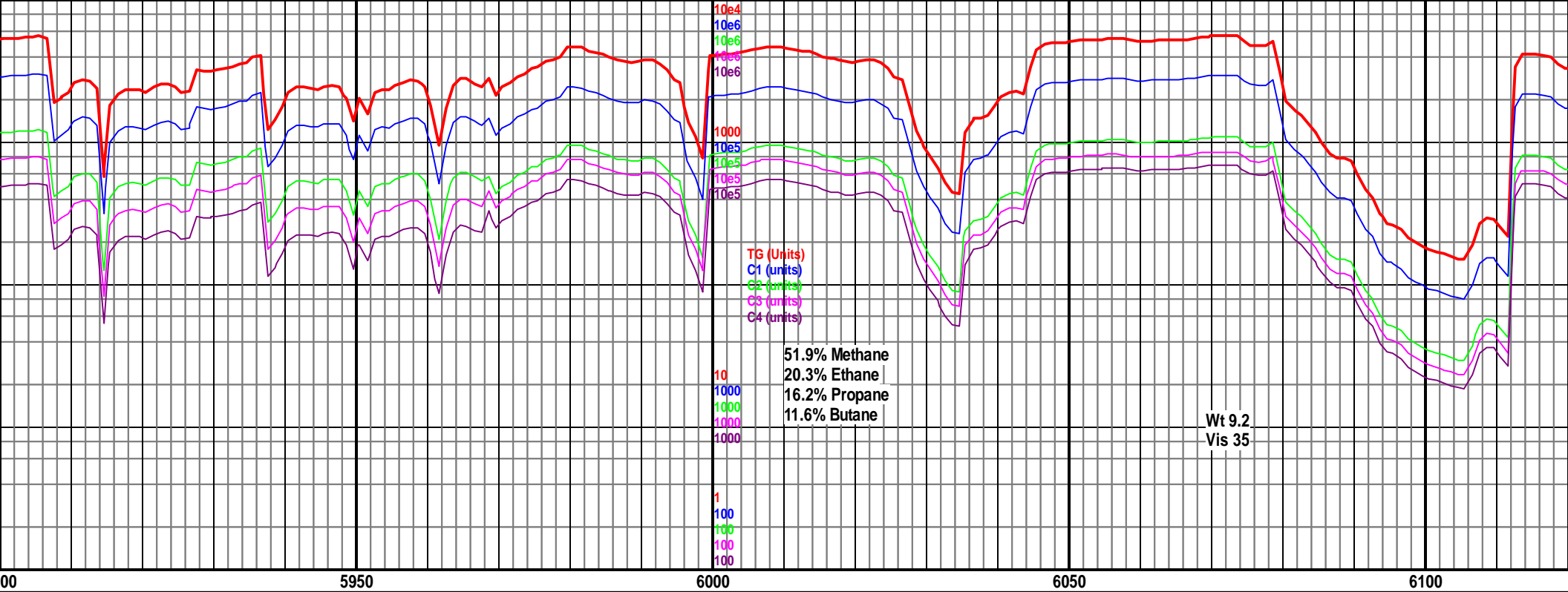
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)

10e4
10e6
10e6
10e6
10e6
10e6
10
1000
1000
1000
1000
1000
1
100
100
100
100
100





5700			5750			5800			5850			5900											
MD 5526.48 Z 183.11			MD 5701 TVD 5541.93 INC 61.36 AZ 182.51 VS 271.13			MD 5731 TVD 5555.4 INC 65.27 AZ 181.78 VS 297.91			MD 5762 TVD 5567.12 INC 70.29 AZ 180.78 VS 326.59			MD 5792 TVD 5576.33 INC 73.93 AZ 179.82(49) VS 355.14			MD 5822 TVD 5583.94 INC 76.66 AZ 179.76 VS 384.15			MD 5853 TVD 5590.71 INC 78.11 AZ 179.87 VS 414.4			MD 5883 TVD 5596.5 INC 79.65 AZ 179.74 VS 443.84		



MD 5914 TVD 5MD 5926 TVD 5602.28
 INC 83.52 AZ 171 INC 84.62 AZ 179.6
 VS 474.5 VS 486.43

MD 5978MD 5985 TVD 5604.65 TVD
 INC 90 A INC 91.12 AZ 179.47 ID Sea (-249)
 VS 538.3 VS 545.35

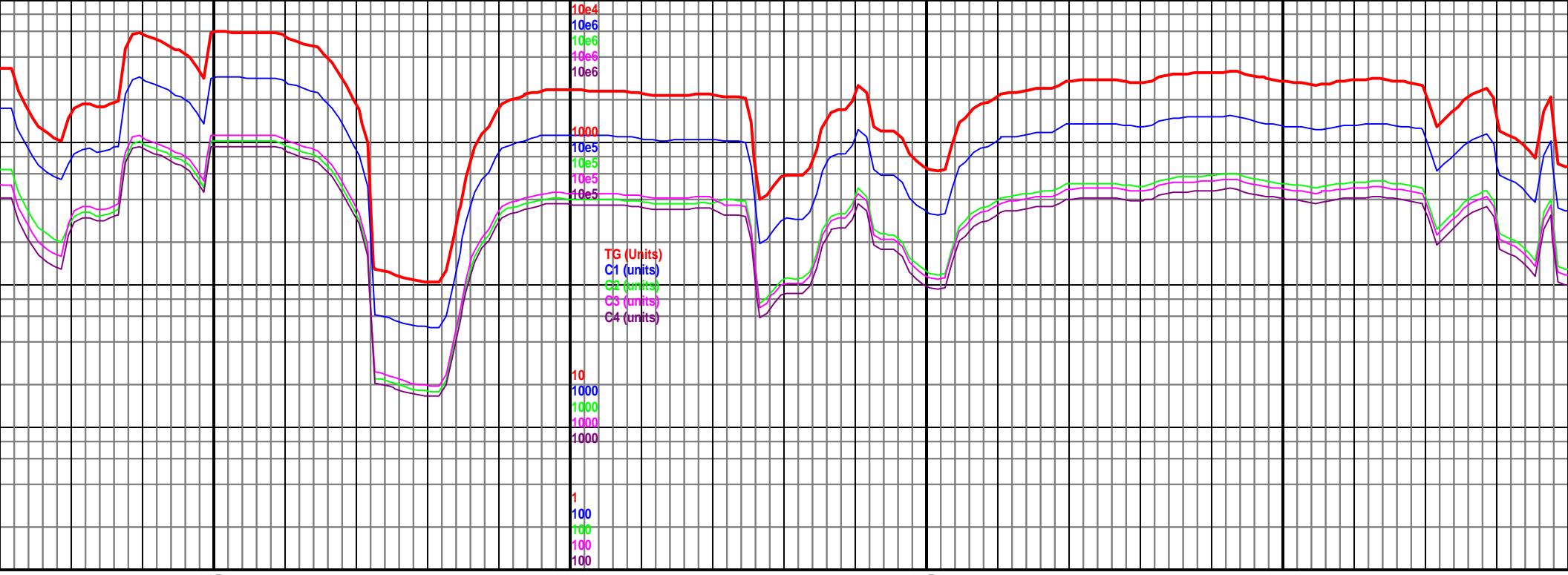
MD 6079 TVD 5603.53
 INC 90.24 AZ 180.15
 VS 639.35

Intermediate casing 5978'
 at 18:30 on 6/3/2014.
 Resumed drilling at 02:20
 on 6/5/2014.

5450
 (-699)

5900-5978 Chk lt-med gy, sl frm, sb
 blk, sb wxy, rr mrlst med-dk gy, frm,
 plty, slty ip, rr bent, fst oil cut, 90%
 Chk, 10% mrlst

5978-6100 Chk lt-med gy, sl frm, sb blk,
 sb wxy, rr mrlst med-dk gy, frm, plty, slty
 ip, rr bent, tr bri yel min flor, fst oil cut,
 90% Chk, 10% mrlst



6150

6200

6250

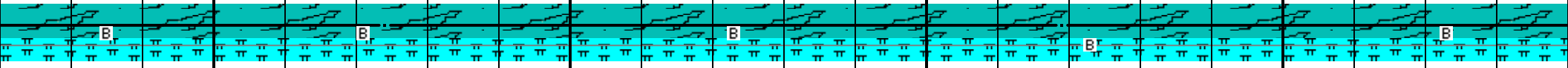
6300

MD 6174 TVD 5603.35
INC 89.98 AZ 181.53
VS 734.33

5000 TVD
Sub Sea (-249)

MD 6269 TVD 5603.27
INC 90.11 AZ 182.55
VS 829.27

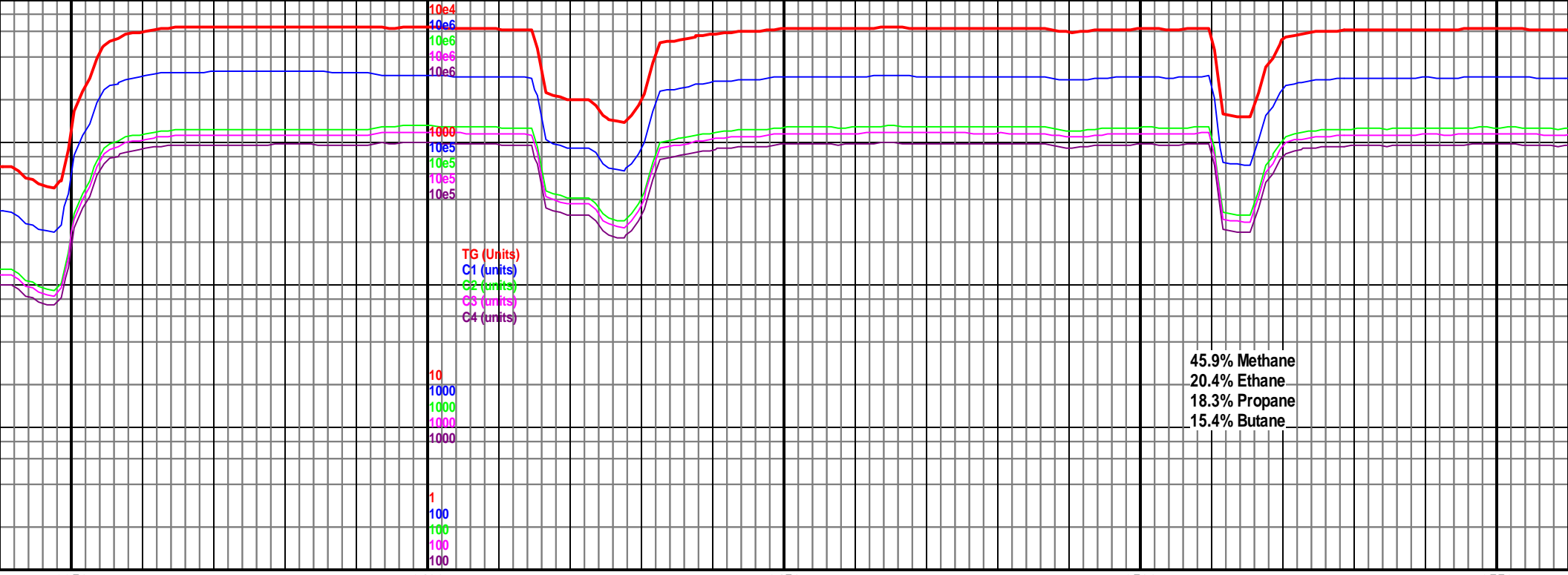
5450
(-699)



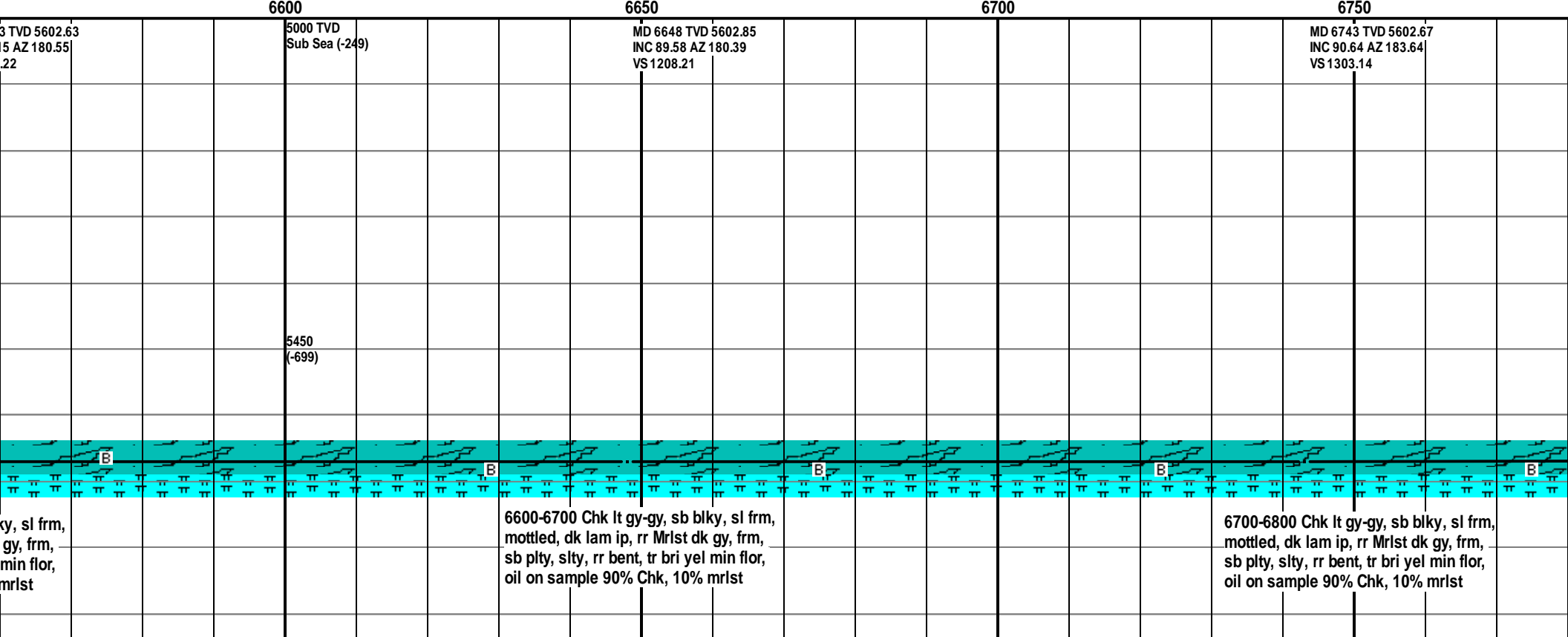
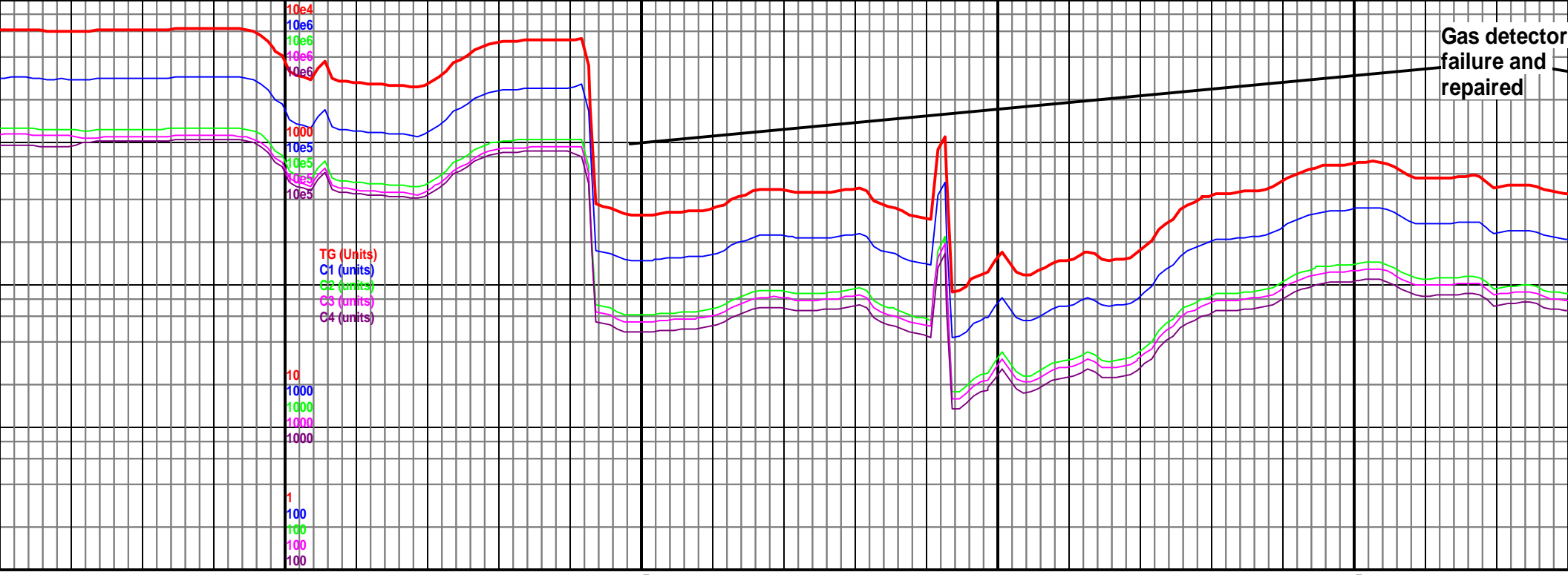
6100-6200 Chk lt-med gy, sl frm, sb blk, sb wxy, rr mrlst med-dk gy, frm, plty, slty ip, rr bent, tr bri yel min flor, fst oil cut, 90% Chk, 10% mrlst

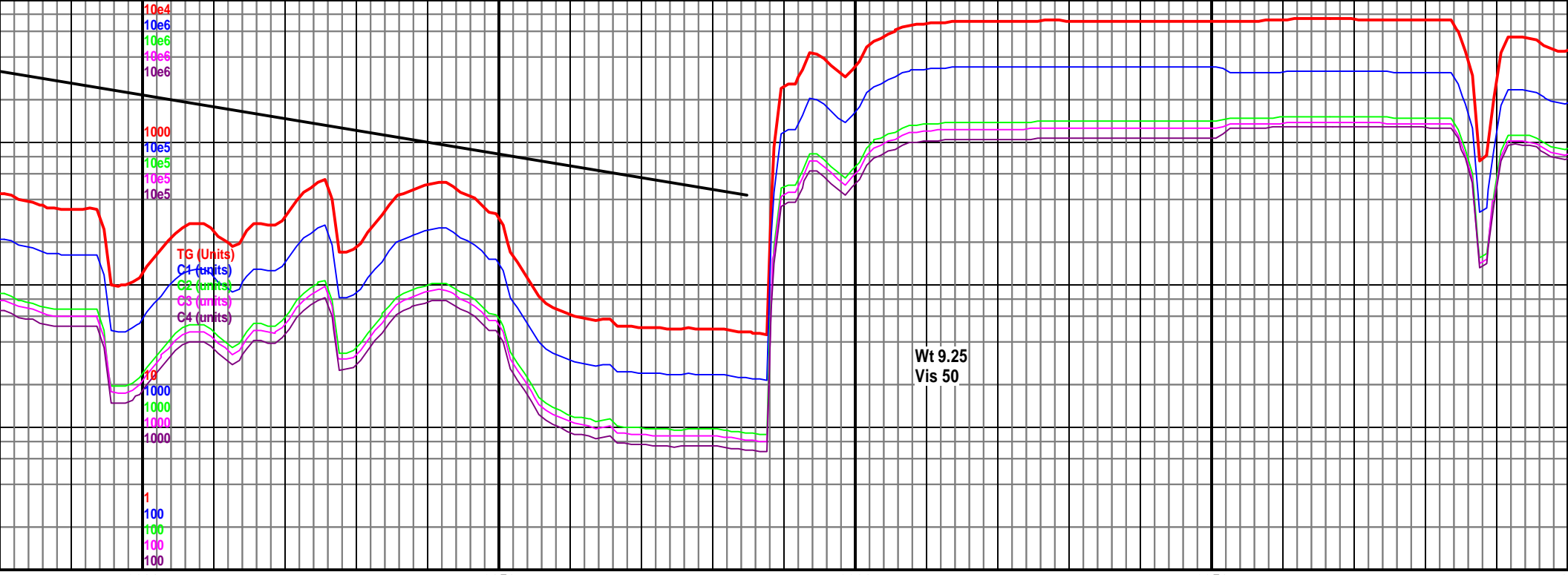
6200-6300 Chk lt-med gy, sl frm, sb blk, sb wxy, rr mrlst med-dk gy, frm, plty, slty ip, rr bent, tr bri yel min flor, fst oil cut, 90% Chk, 10% mrlst

6300-6400 mottled, r plty, slty oil on san



6350	6400	6450	6500	6550
MD 6363 TVD 5603.06 INC 90.15 AZ 180.9 VS 923.23	5000 TVD Sub Sea (-249) 5450 (-699)	MD 6458 TVD 5602.85 INC 90.11 AZ 180.25 VS 1018.22	MD 6553 TVD 5602.85 INC 90.11 AZ 180.25 VS 1018.22	MD 6553 TVD 5602.85 INC 90.11 AZ 180.25 VS 1018.22
0 Chk lt gy-gy, sb blk, sl frm, r Mrlst med-dk gy, frm, sb p, rr bent, tr bri yel min flor, mple 90% Chk, 10% mrlst	6400-6500 Chk lt gy-gy, sb blk, sl frm, mottled, dk lam ip, rr Mrlst dk gy, frm, sb plty, slty, rr bent, tr bri yel min flor, oil on sample 90% Chk, 10% mrlst		6500-6600 Chk lt gy-gy, sb blk, mottled, dk lam ip, rr Mrlst dk sb plty, slty, rr bent, tr bri yel oil on sample 90% Chk, 10% mrlst	





6800 6850 6900 6950 7000

5000 TVD
Sub Sea (-249)

MD 6838 TVD 5601.32
INC 90.99 AZ 183.55
VS 1397.94

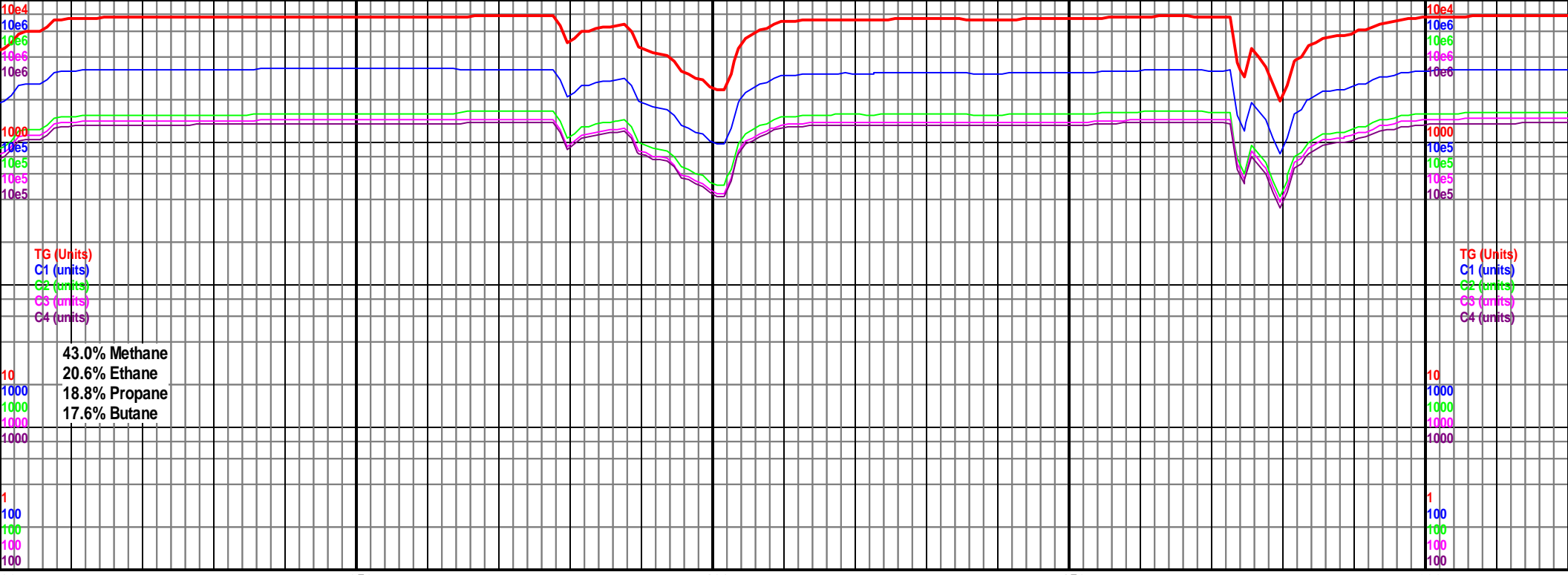
MD 6933 TVD 5599.75
INC 90.9 AZ 182.69
VS 1492.79

5450
(-699)

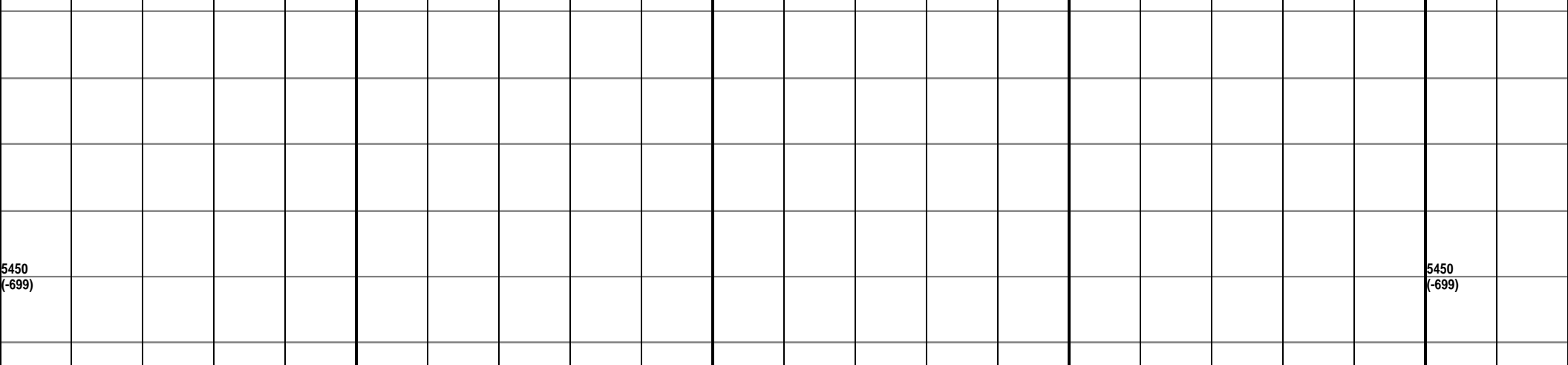


6800-6900 Chk lt gy-gy, sb blk, sl frm,
mottled, dk lam ip, rr Mrst dk gy, frm,
sb plty, slty, rr bent, tr bri yel min flor,
oil on sample 90% Chk, 10% Mrst

6900-7000 Chk lt gy-gy, sb plty-sb blk,
sl frm, mottled, dk lam, rr Mrst dk gy,
frm, sb blk, slty, rr bent, rr bri yel min
flor, oil on sample 90% Chk, 10% Mrst

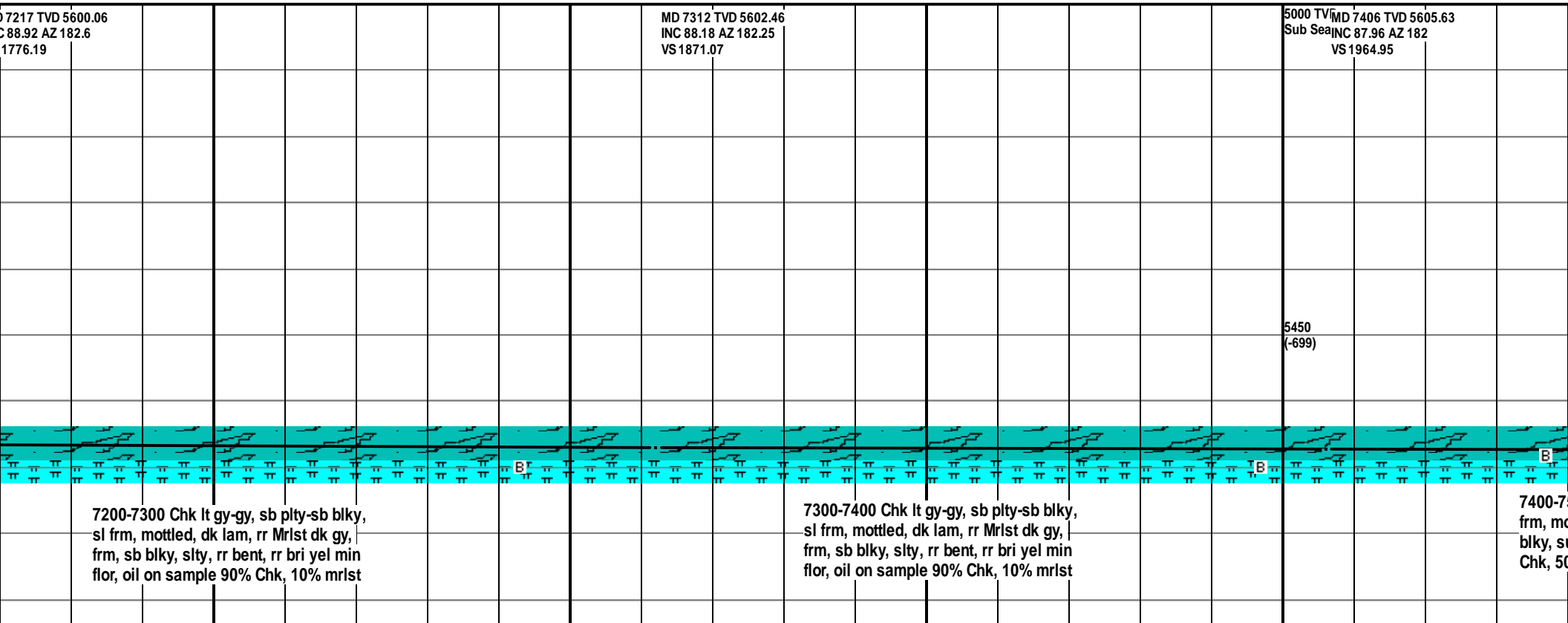


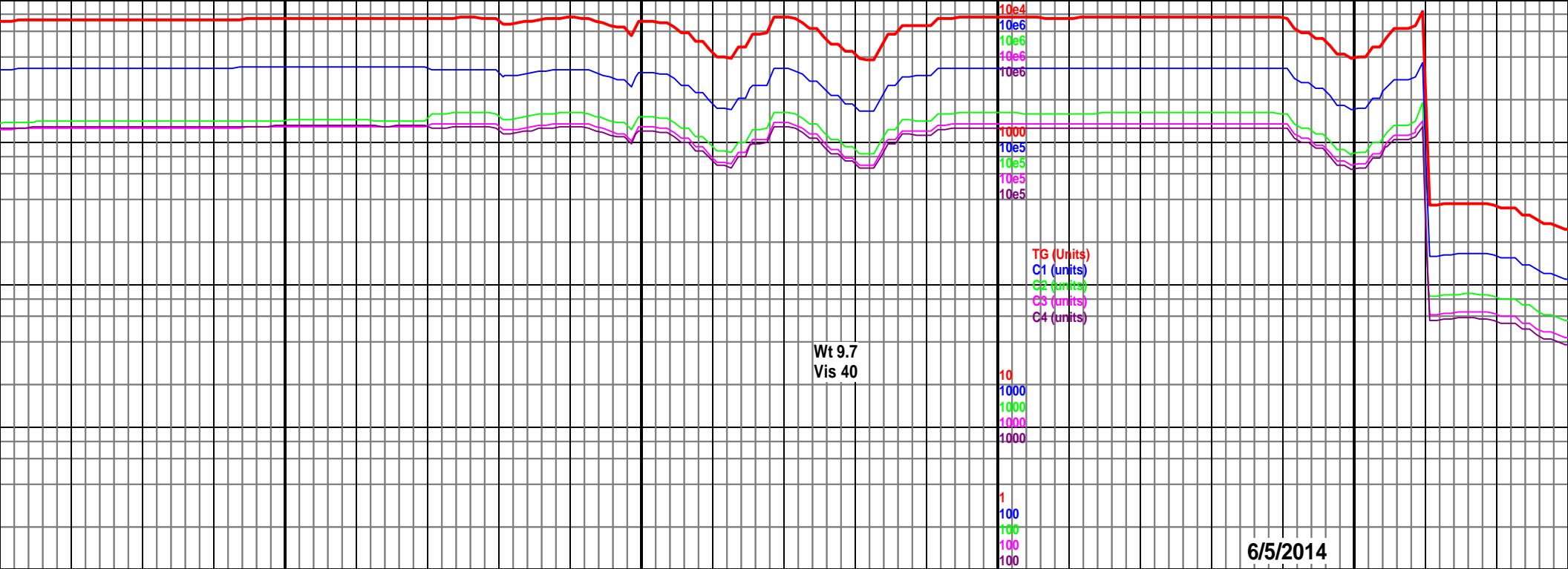
5000 TVD Sub Sea (-249)	MD 7027 TVD 5599.11 INC 89.89 AZ 183.72 VS 1586.64	MD 7122 TVD 5599.18 INC 90.02 AZ 184.61 VS 1681.39	5000 TVD Sub Sea (-249)	MD INC VS
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7000-7100 Chk lt gy-gy, sb plty-sb blk, sl frm, mottled, dk lam, rr Mrlst dk gy, frm, sb blk, slty, rr bent, rr bri yel min flor, oil on sample 90% Chk, 10% mrlst

7100-7200 Chk lt gy-gy, sb plty-sb blk, sl frm, mottled, dk lam, rr Mrlst dk gy, frm, sb blk, slty, rr bent, rr bri yel min flor, oil on sample 90% Chk, 10% mrlst





Wt 9.7
Vis 40

6/5/2014

MD 7684 TVD 5609.54
INC 89.32 AZ 181.19
VS 2242.86

MD 7777 TVD 5610.47
INC 89.54 AZ 182.68
VS 2335.8

5000 TVD
Sub Sea (-249)

MD 7869 TVD
INC 89.49 AZ
VS 2427.71

TOOH for MWD tool failure
7845' at 22:00 on 6/5/2014.
Back to drilling at 14:00 on
6/6/2014

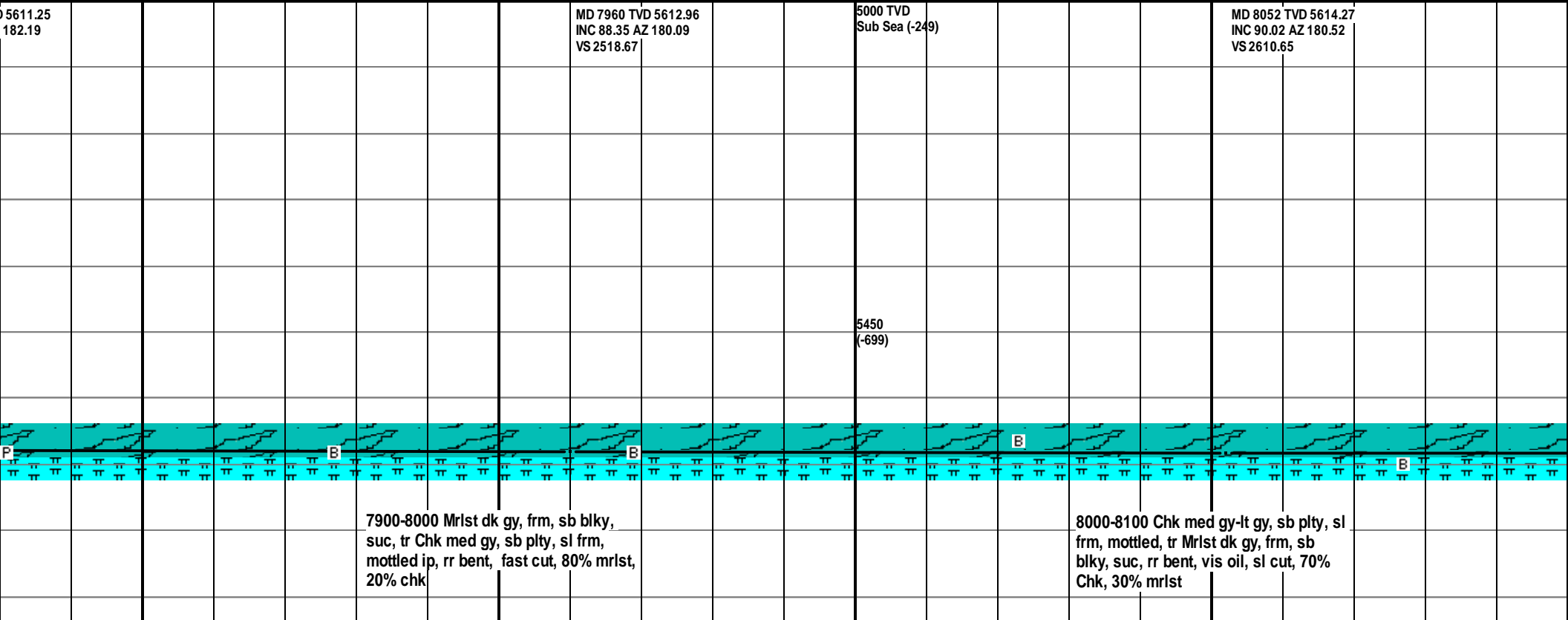
5450
(-699)

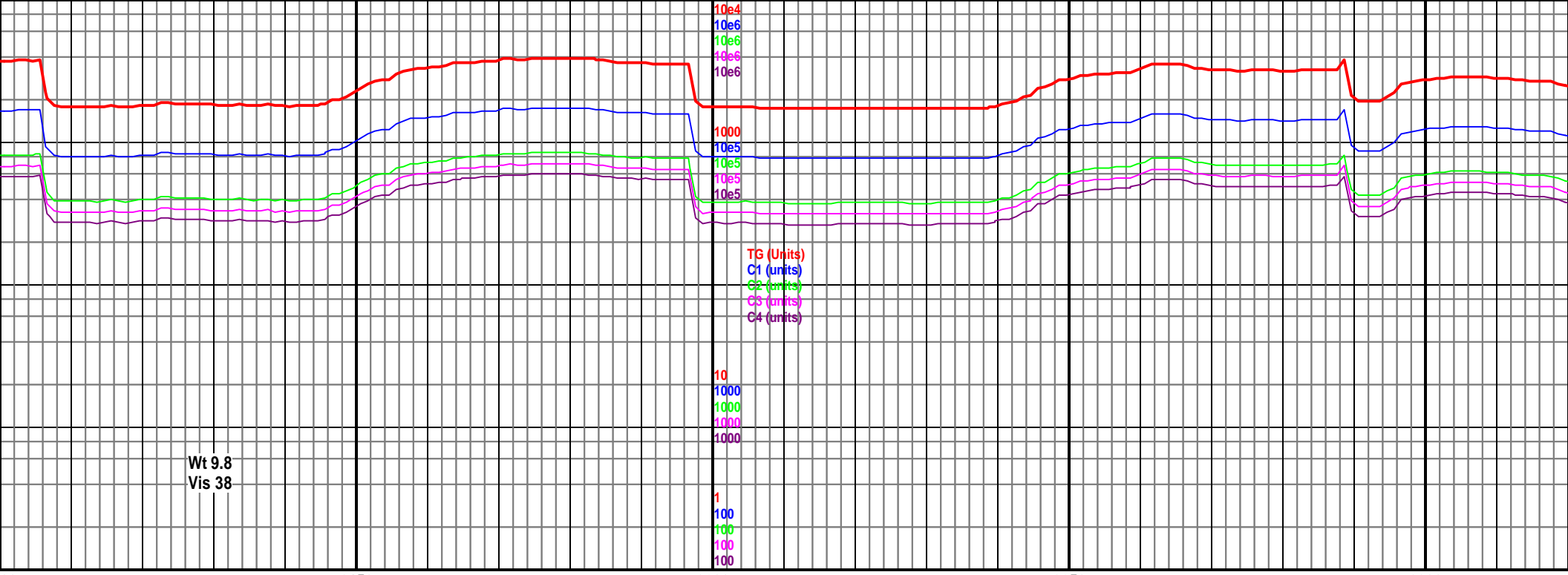


plty, sl
frm, sb
cut, 50%

7700-7800 Chk med gy-gy, sb plty, sl
frm, mottled, abnt Mrlst dk gy, frm, sb
blky, suc, rr bent, rr pyr, fast cut, 50%
Chk, 50% mrlst

7800-7900 Chk med gy-gy, sb plty, sl
frm, mottled, abnt Mrlst dk gy, frm, sb
blky, suc, rr bent, rr pyr, fast cut, 60%
Chk, 40% mrlst





Wt 9.8
Vis 38

MD 8143 TVD 5614.34
INC 89.89 AZ 180.08
VS 2701.65

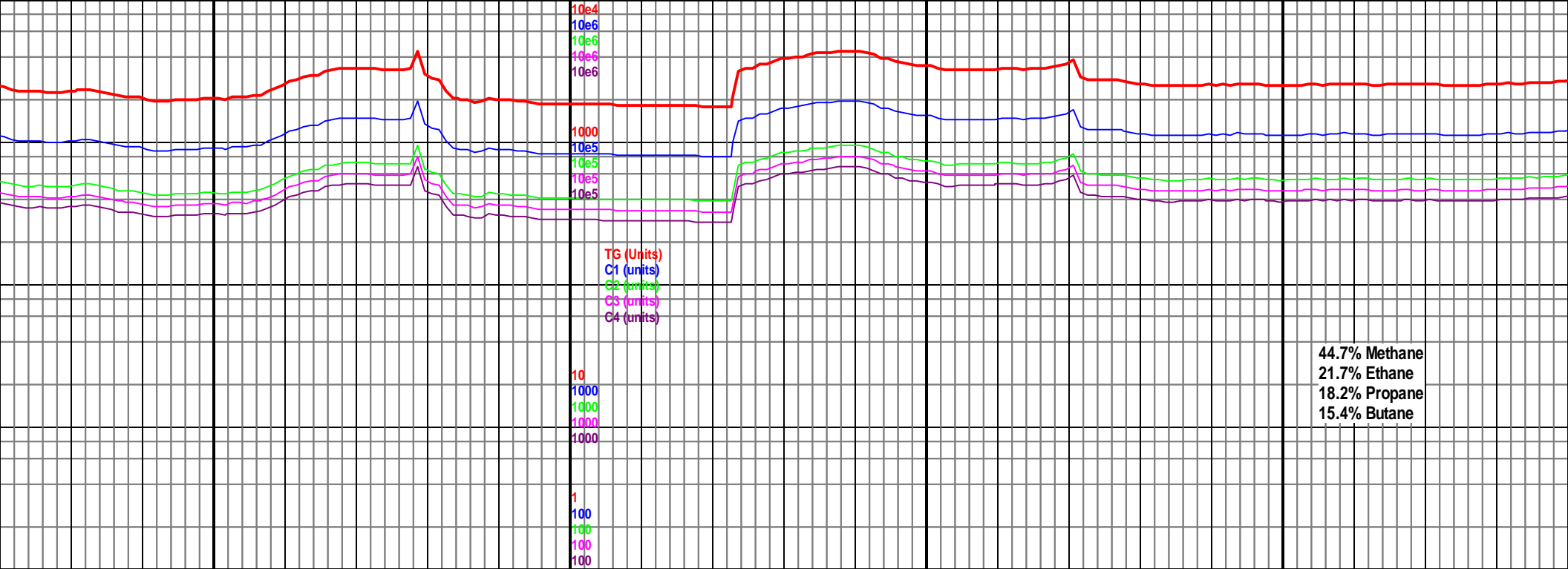
5000 TVD
Sub Sea (-249)

MD 8235 TVD 5614.42
INC 90.02 AZ 179.9
VS 2793.65

5450
(-699)

8100-8200 Chk med gy-lt gy, sb plty, sl
frm, mottled, abnt Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 60%
Chk, 40% mrlst

8200-8300 Chk med gy-lt gy, sb plty, sl
frm, mottled, abnt Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 60%
Chk, 40% mrlst



44.7% Methane
21.7% Ethane
18.2% Propane
15.4% Butane

8350 8400 8450 8500

MD 8326 TVD 5614.03
INC 90.46 AZ 179.68
VS 2884.65

5000 TVD
Sub Sea (-249)

MD 8417 TVD 5614.18
INC 89.36 AZ 182.34
VS 2975.63

MD 8509 TVD 5615.24
INC 89.32 AZ 182.66
VS 3067.53

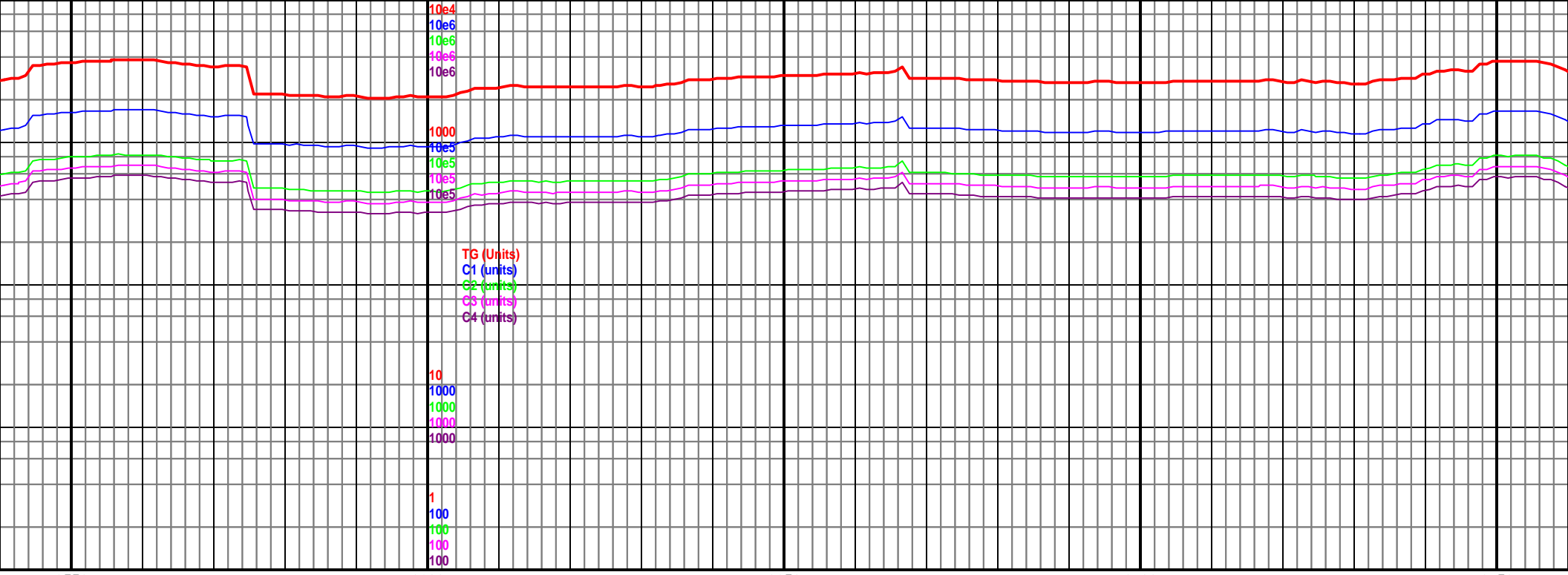
5450
(-699)



8300-8400 Chk med gy-lt gy, sb plty, sl
frm, mottled, abnt Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 50%
Chk, 50% mrlst

8400-8500 Chk med gy-lt gy, sb plty, sl
frm, mottled, abnt Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 50%
Chk, 50% mrlst

8500-8600
frm, mottled, abnt Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 50%
Chk, 50% mrlst



TG (Units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)

10
1000
10000
100000
1000000

1
100
1000
10000
100000

8550 8600 8650 8700 8750

MD 8600 TVD 5616.56
INC 89.01 AZ 182.24
VS 3158.44

MD 8692 TVD 5616.74
INC 90.77 AZ 180.94
VS 3250.4

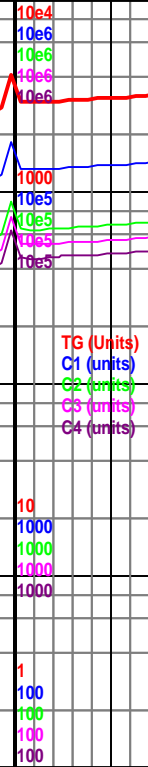
5450
(-699)



0 Chk med gy-lt gy, sb plty, sl
led, abnt Mrlst dk gy, frm, sb
, rr bent, vis oil, sl cut, 50%
mrls

8600-8700 Chk med gy-lt gy, sb plty, sl
frm, mottled, abnt Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, fst cut, 50%
Chk, 50% mrls

8700-8800 Chk med gy-lt gy, s
frm, mottled, abnt Mrlst dk gy,
blky, suc, vis oil, fst cut, 50%
mrls



8800	8850	8900	8950
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05	5000 TVD	
	Sub Sea (-249)	

MD 8875 TVD 5613.31
INC 90.77 AZ 179.59
VS 3433.34

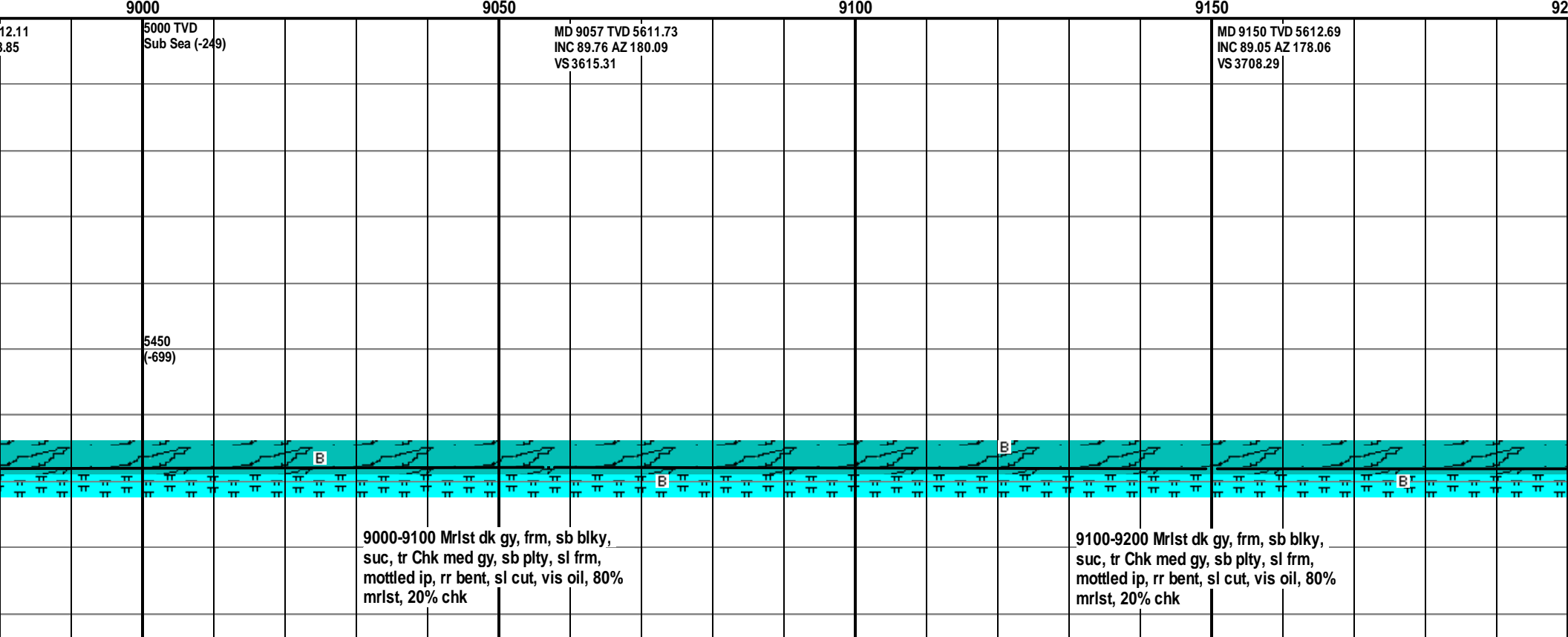
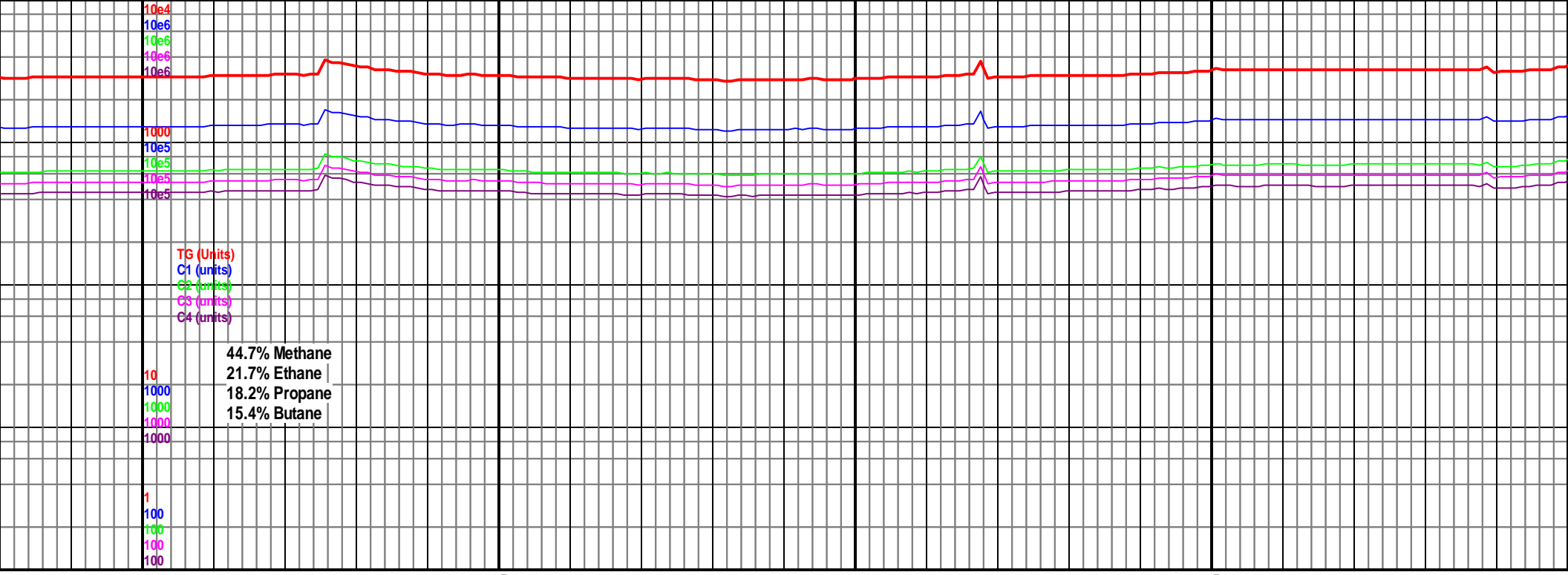
MD 8966 TVD 56
INC 90.73 AZ 178
VS 3524.32

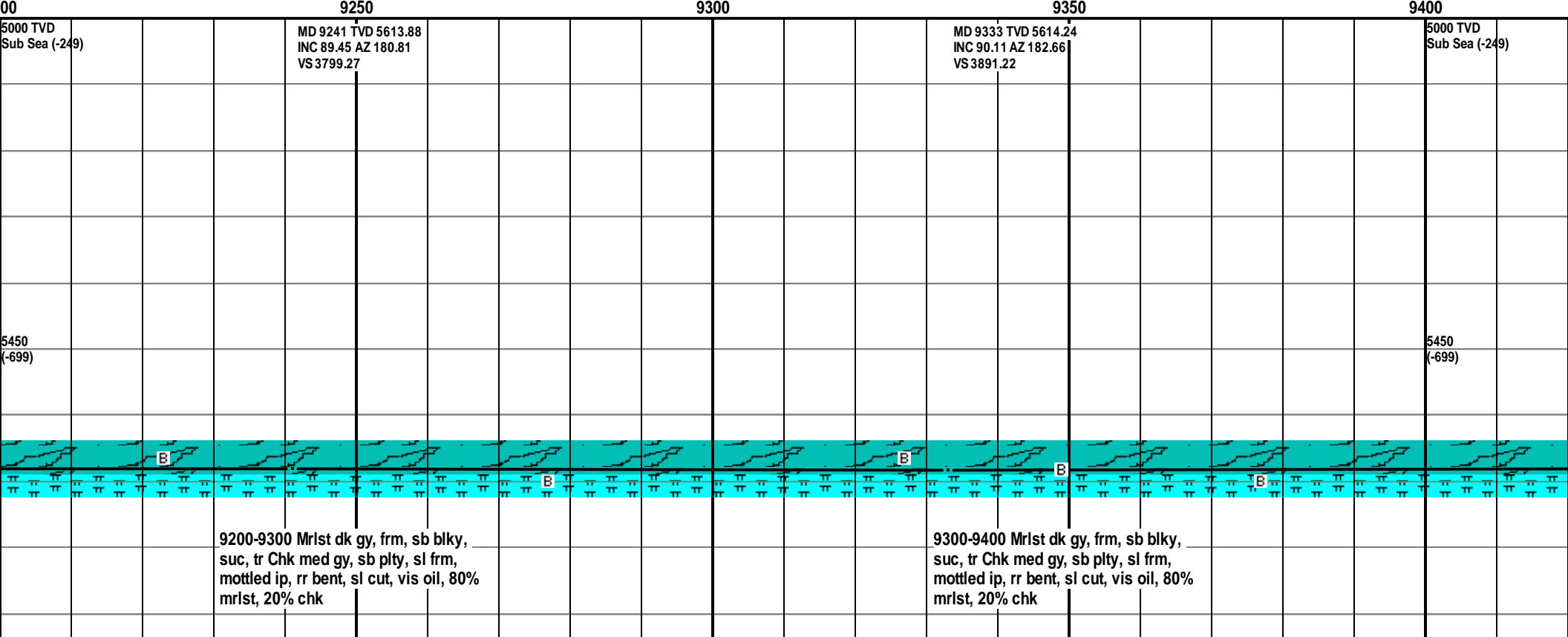
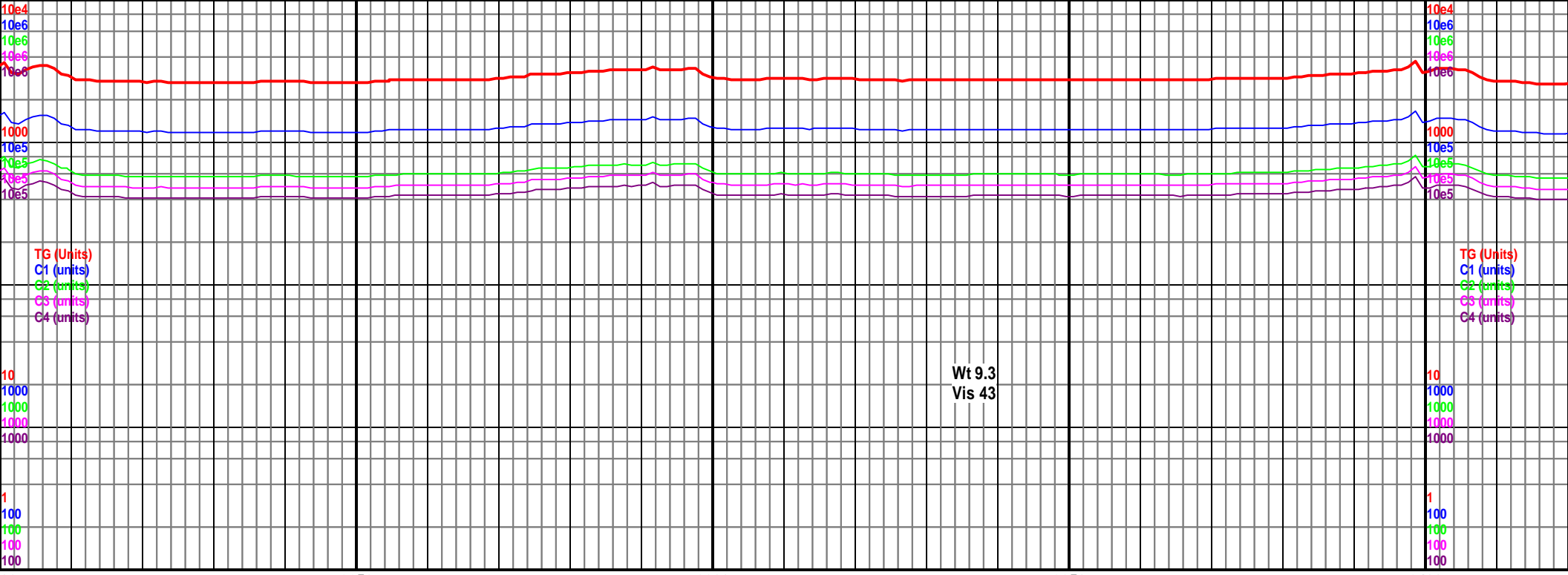
5450
(-699)

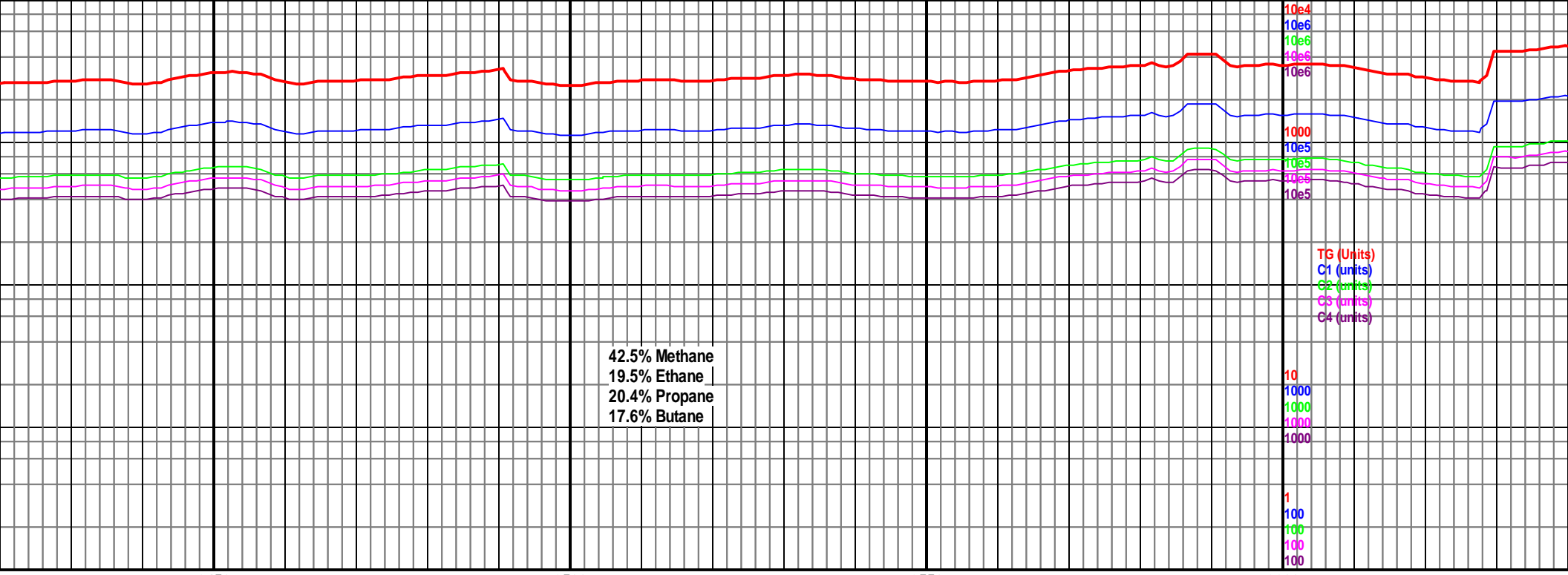
b plty, sl
frm, sb
Chk, 50%

8800-8900 Chk med gy-lt gy, sb plty, sl
frm, mottled, abnt Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, fst cut, 50%
Chk, 50% mrls

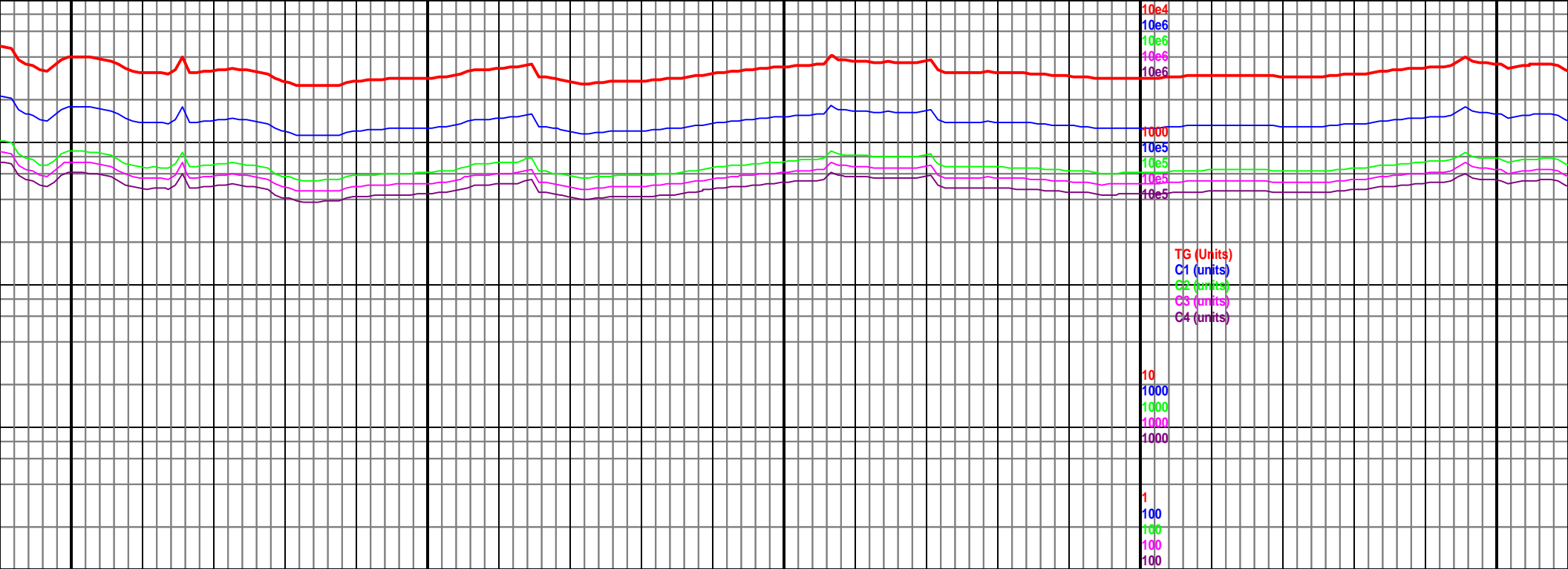
8900-9000	Chk med gy-lt gy, sb plty, sl frm, mottled, abnt Mrlst dk gy, frm, sb blk, suc, rr bent, vis oil, fst cut, 50% Chk, 50% mrls
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<p>MD 9425 TVD 5612.37 INC 92.22 AZ 182.81 VS 3983.09</p> <p>9400-9500 Mrlst dk gy, frm, sb blk, suc, tr Chk med gy, sb plty, sl frm, mottled ip, rr bent, sl cut, vis oil, 80% mrlst, 20% chk</p>	<p>MD 9517 TVD 5608.77 INC 92.26 AZ 181.92 VS 4074.95</p> <p>9500-9600 Mrlst dk gy, frm, sb blk, suc, tr Chk med gy, sb plty, sl frm, mottled ip, rr bent, sl cut, vis oil, 60% mrlst, 40% chk</p>	<p>MD 9609 TVD 5606.9 Sub Sea (-24) INC 90.07 AZ 180.39 VS 4166.9</p> <p>9600-9650 Mrlst dk gy, frm, sb blk, suc, tr Chk med gy, sb plty, sl frm, mottled ip, rr bent, sl cut, vis oil, 60% mrlst, 40% chk</p>
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9650

9700

9750

9800

9850

MD 9701 TVD 5607.18
INC 89.58 AZ 178.86
VS 4258.89

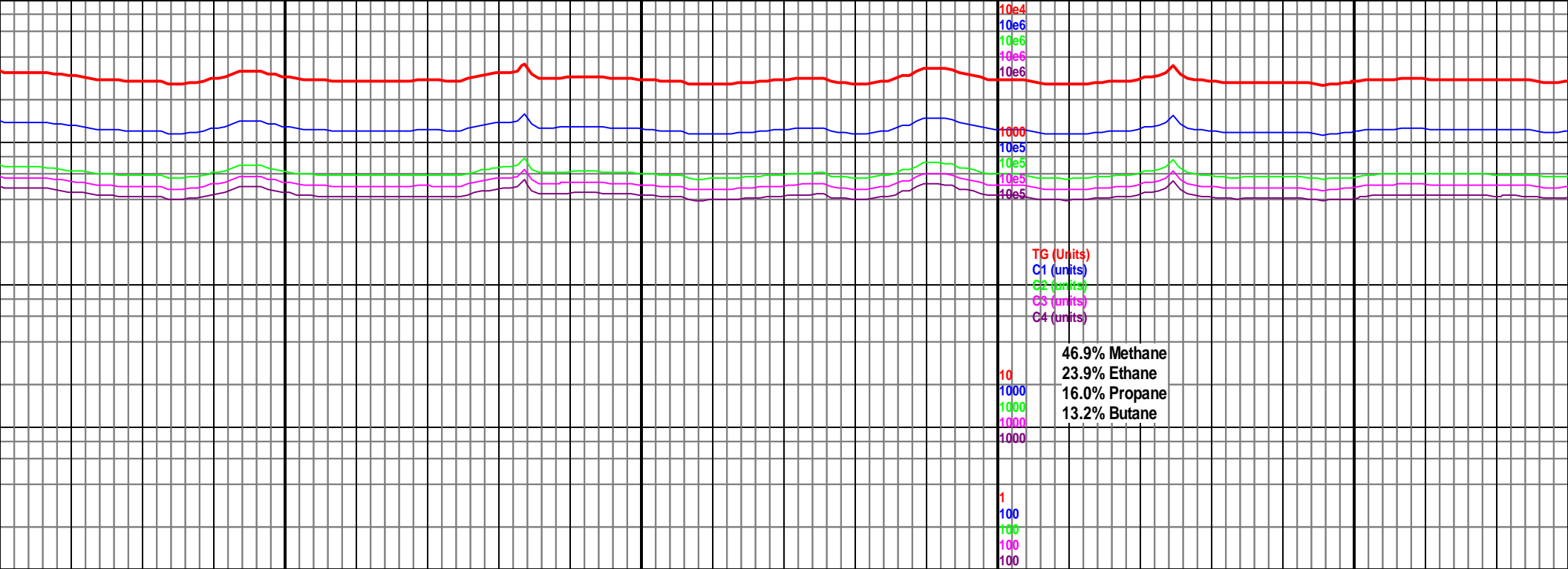
MD 9792 TVD 5607.53
INC 89.98 AZ 180.23⁽⁴⁹⁾
VS 4349.89

5450
(-699)

700 Mrlst dk gy, frm, sb blk,
Chk med gy, sb plty, sl frm,
d ip, rr bent, sl cut, vis oil, 70%
30% chk

9700-9800 Mrlst dk gy, frm, sb blk,
suc, tr Chk med gy, sb plty, sl frm,
mottled ip, rr bent, sl cut, vis oil, 60%
mrlst, 40% chk

9800-9900 Mrlst dk gy, frm, sb
suc, tr Chk med gy, sb plty, sl
mottled ip, rr bent, sl cut, vis
mrlst, 40% chk



MD 9883 TVD 5606.03
INC 91.91 AZ 181.05
VS 4440.86

MD 9974 TVD 5602.78
INC 92.18 AZ 180.57
VS 4531.8

5000 TVD
Sub Sea (-249)

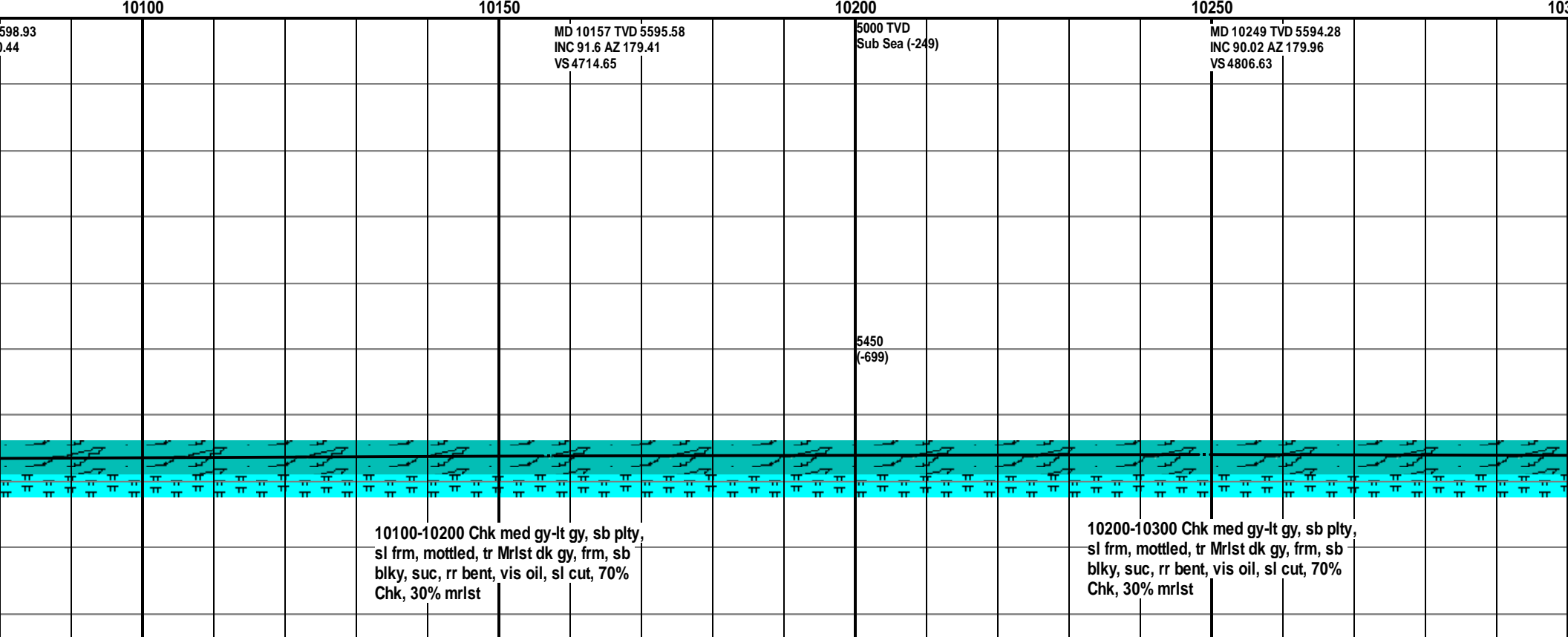
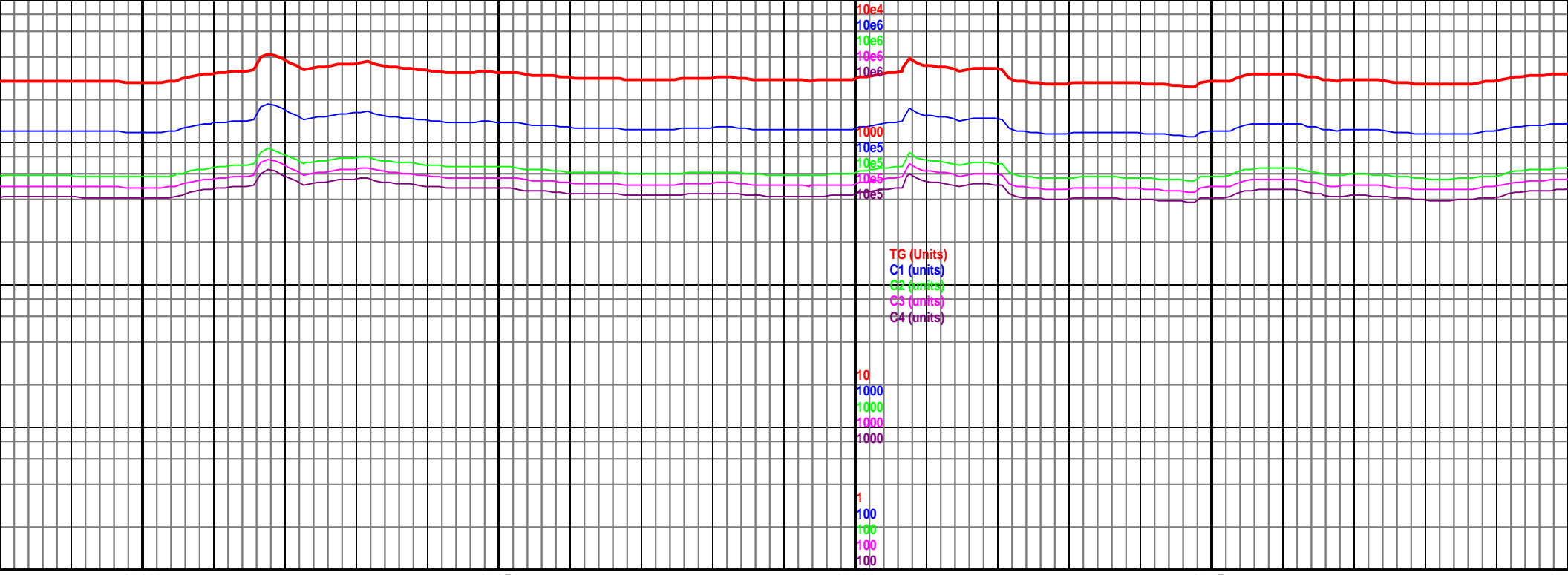
MD 10066 TVD 5602.78
INC 92.62 AZ 180.57
VS 4623.71

5450
(-699)

blky,
frm,
oil, 60%

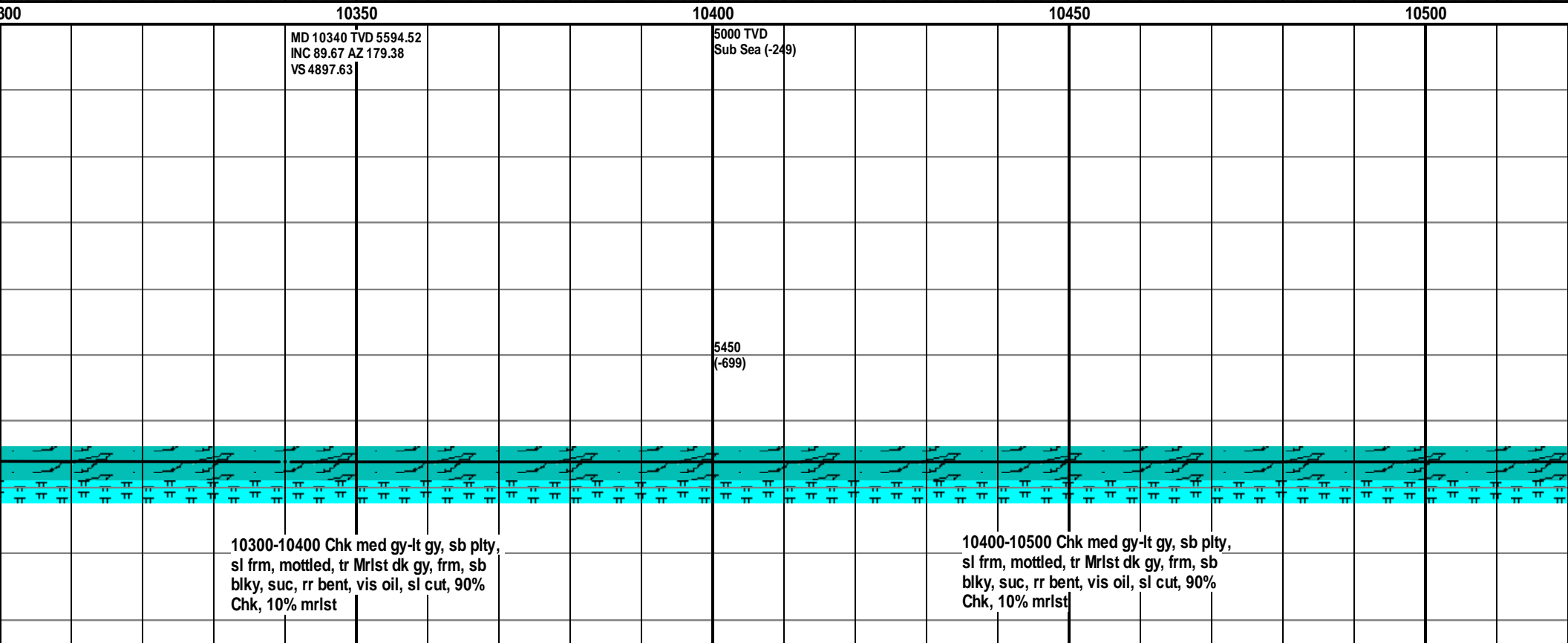
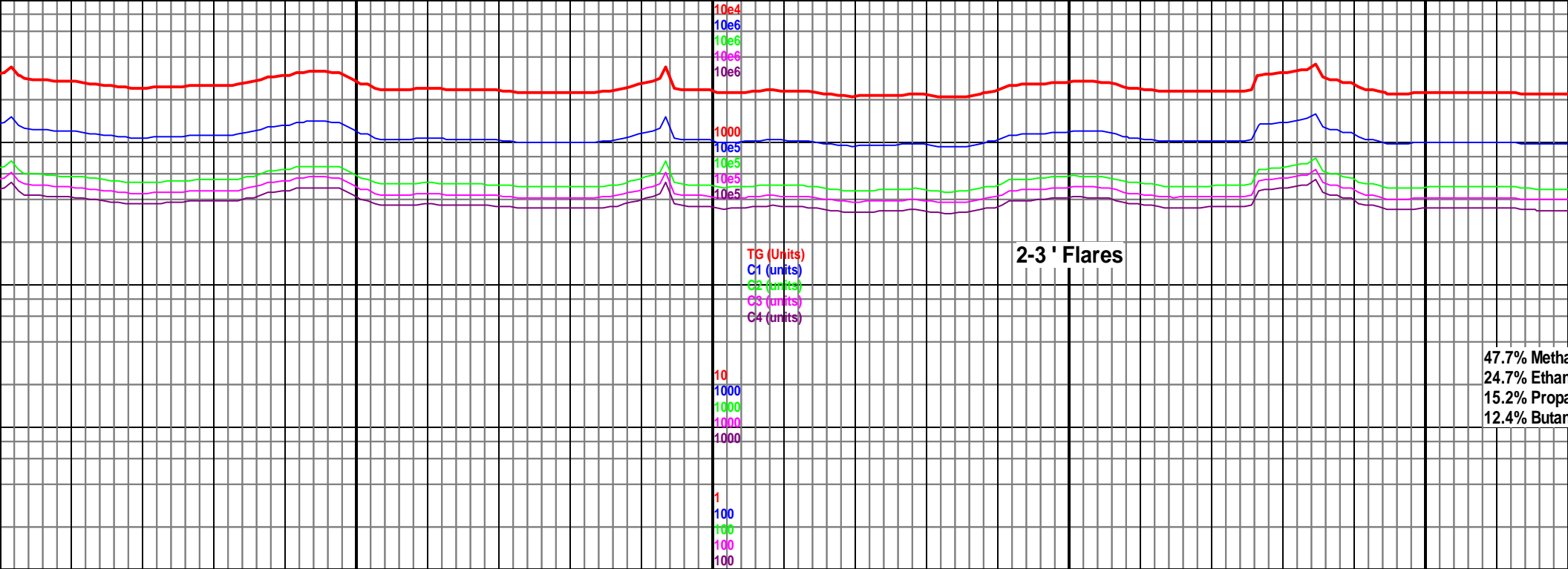
9900-10000 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 70%
Chk, 30% mrlst

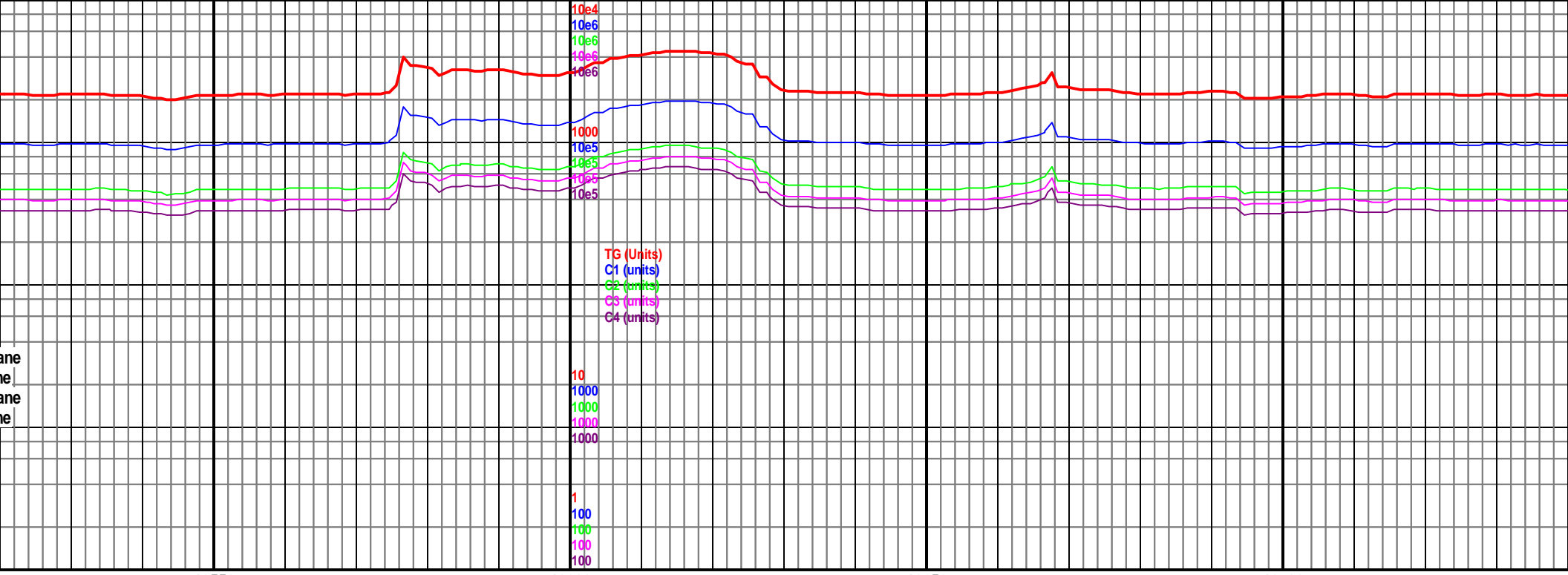
10000-10100 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 70%
Chk, 30% mrlst



10100-10200 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 70%
Chk, 30% mrlst

10200-10300 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 70%
Chk, 30% mrlst





10550

10600

10650

10700

MD 10524 TVD 5595.58
INC 89.67 AZ 179.1
VS 5081.61

5000 TVD
Sub Sea (-249)

MD 10616 TVD 5596.01
INC 89.8 AZ 181.6
VS 5173.6

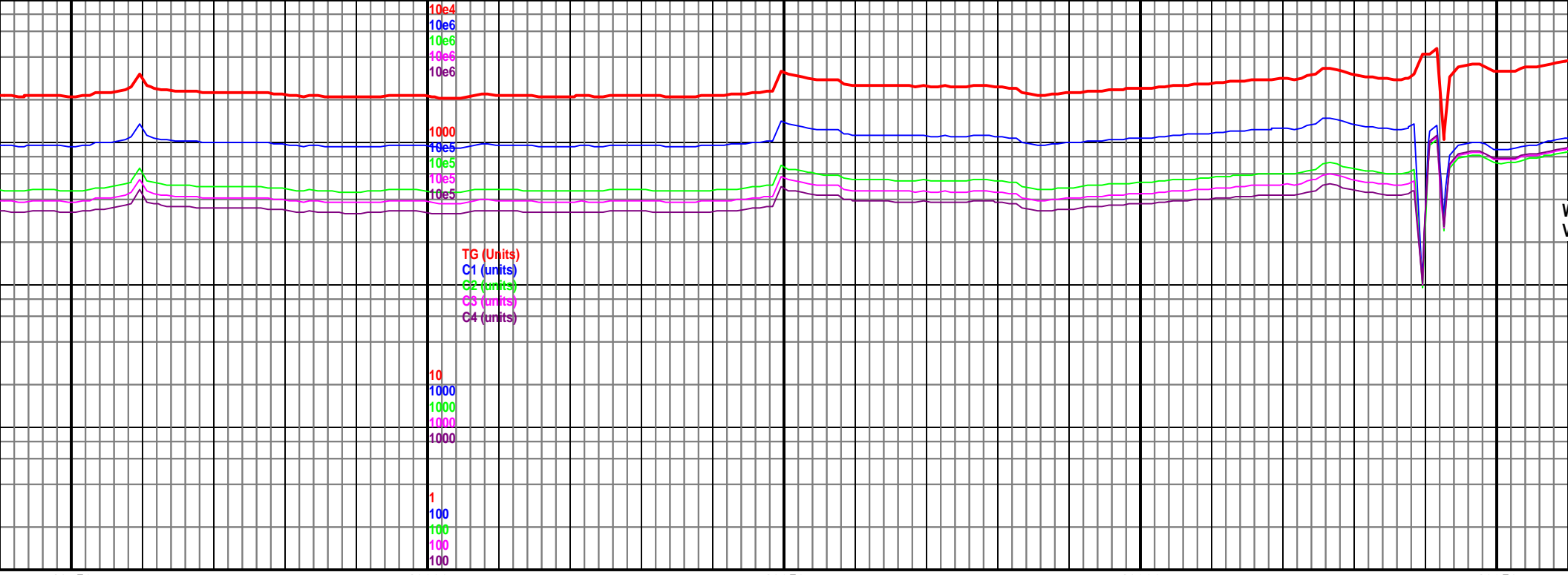
MD 10707 TVD 5596.08
INC 90.11 AZ 181.91
VS 5264.56

5450
(-699)

10500-10600 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 90%
Chk, 10% mrlst

10600-10700 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 90%
Chk, 10% mrlst

10700-10800 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 90%
Chk, 10% mrlst



10750

10800

10850

10900

10950

MD 10798 TVD 5595.83
INC 90.2 AZ 181.59
VS 5355.52

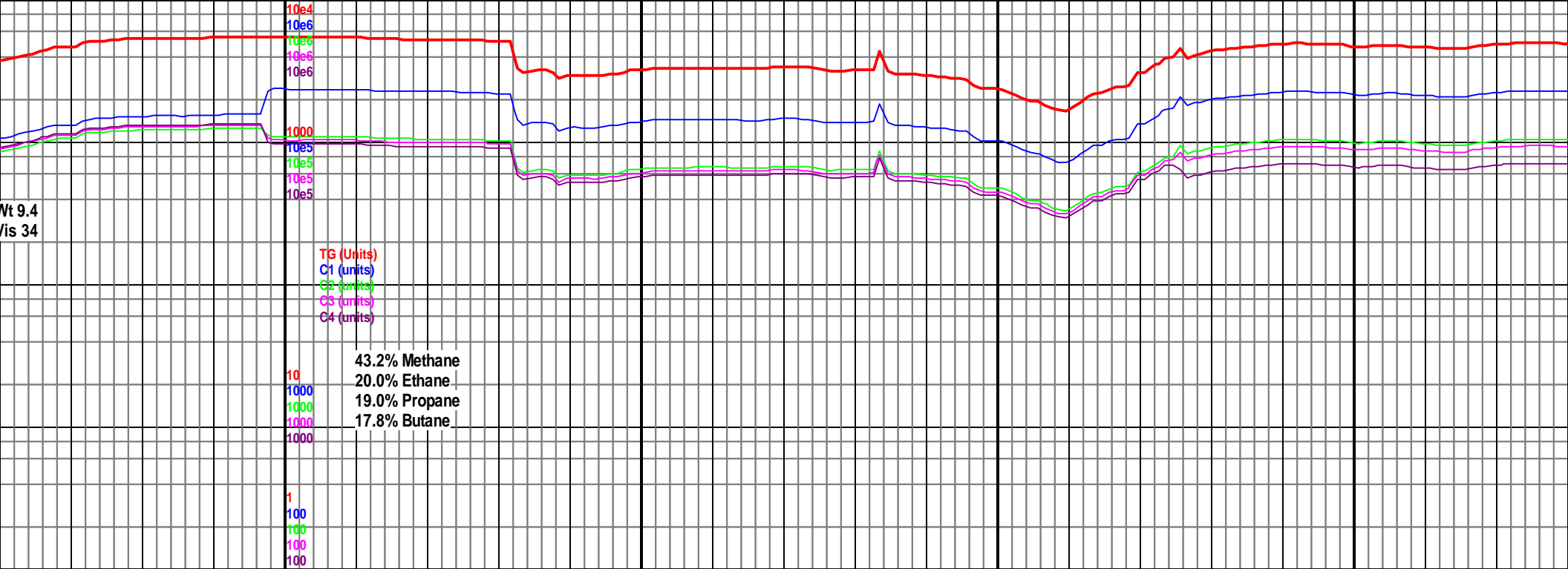
MD 10889 TVD 5595.41
INC 90.33 AZ 181.15
VS 5446.49

5450
(-699)

10750-10800 Chk med gy-lt gy, sb plty,
mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 90%
Chk, 10% mrlst

10800-10900 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 90%
Chk, 10% mrlst

10900-11000 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 90%
Chk, 10% mrlst



MD 10981 TVD 5596.12
INC 88.79 AZ 182.69
VS 5538.43

5000 TVD
Sub Sea (-249)

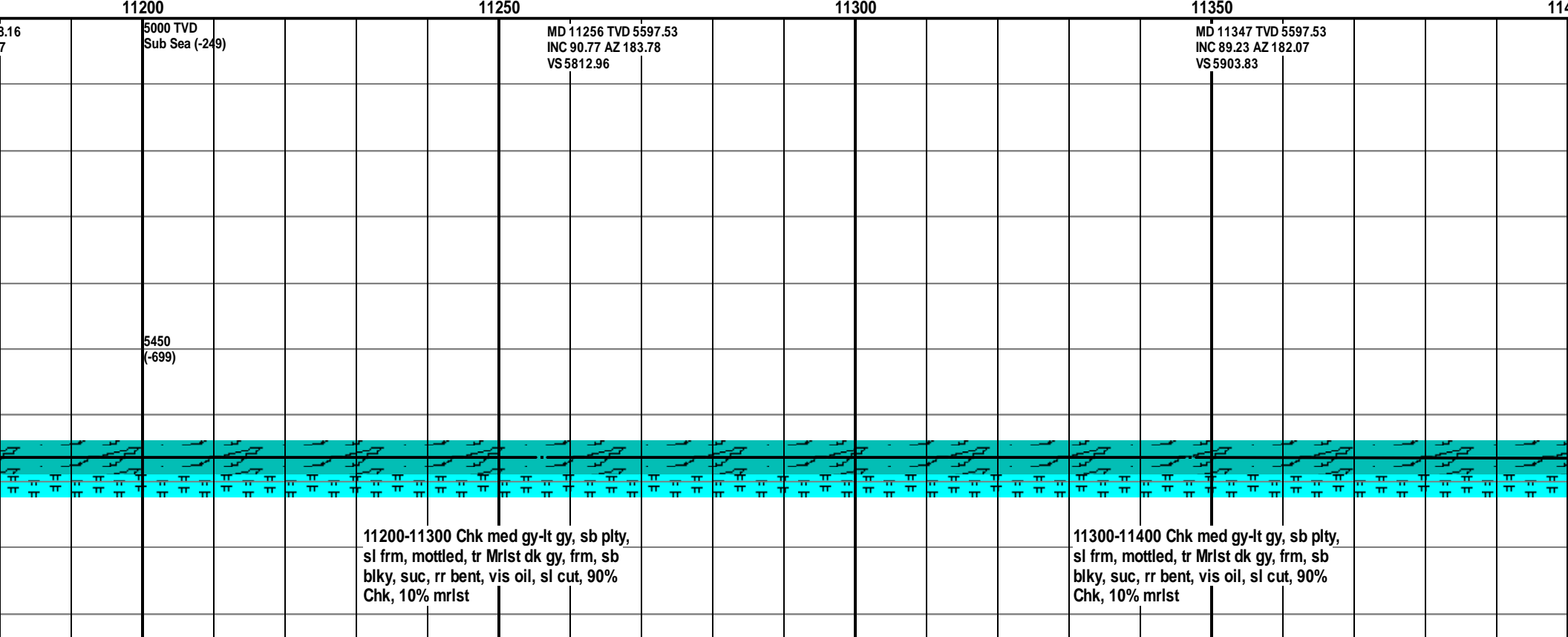
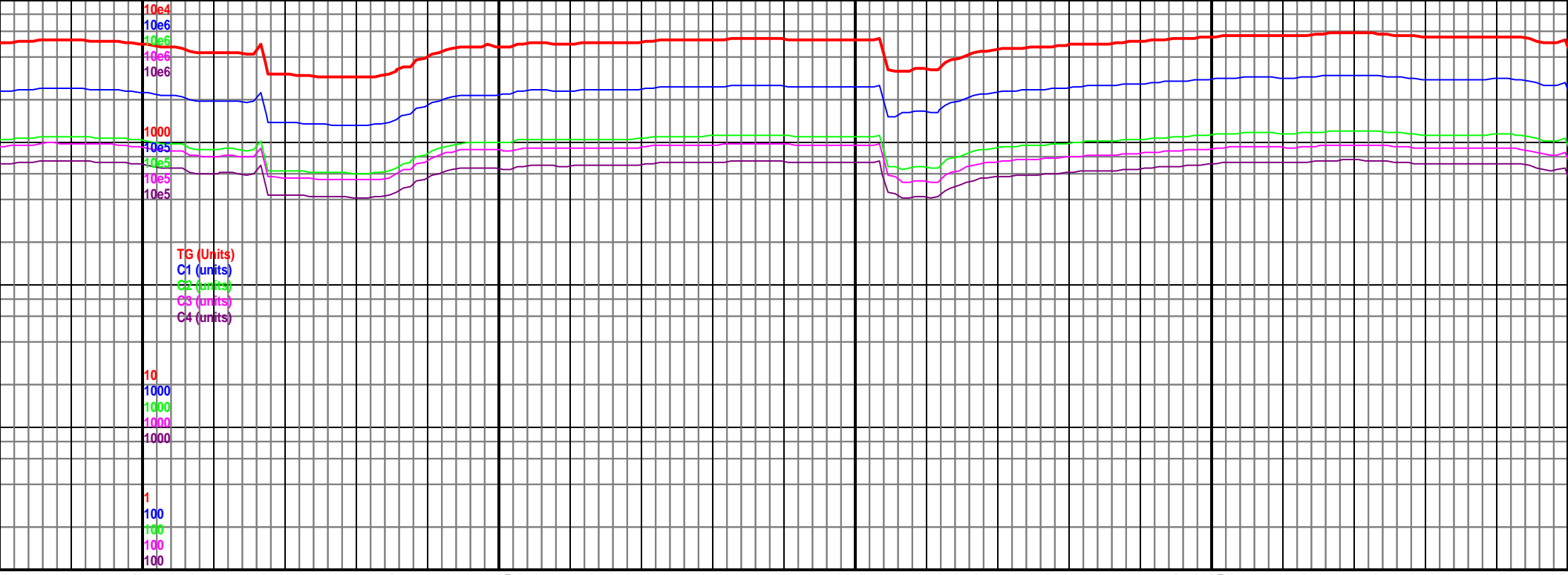
5450
(-699)

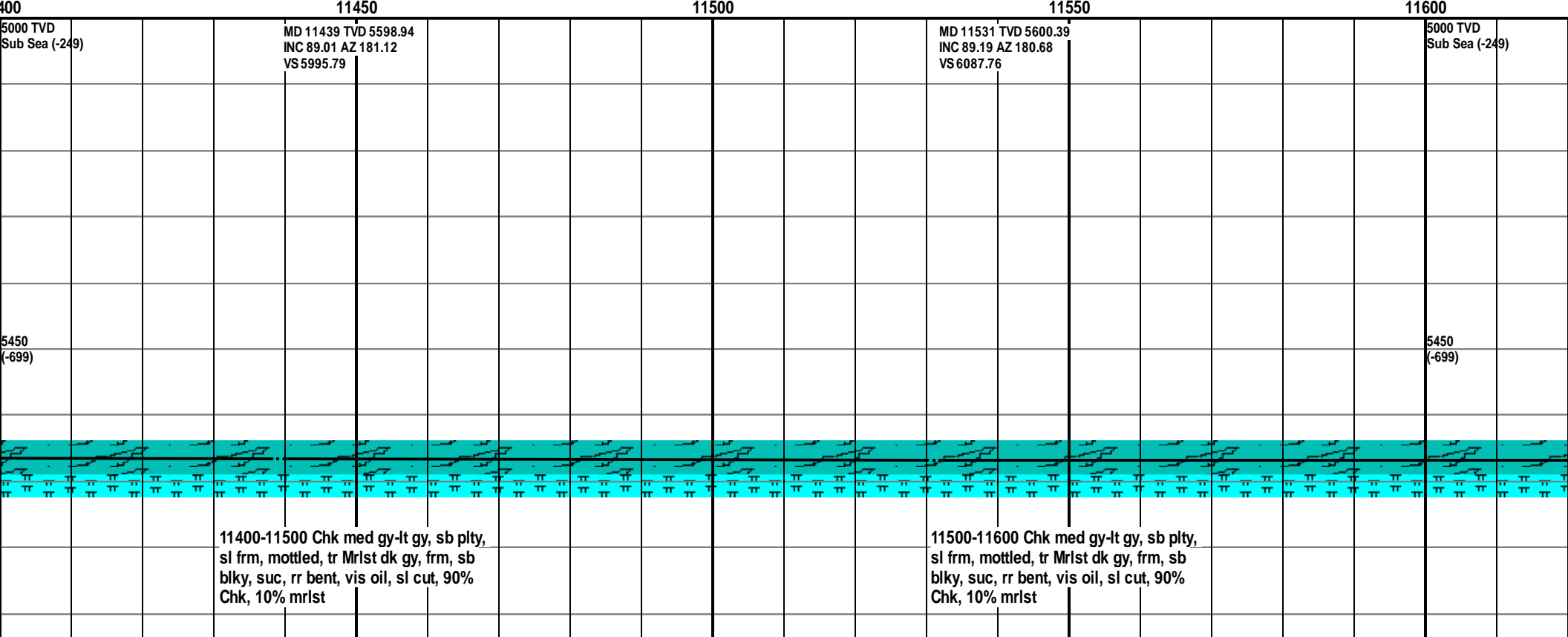
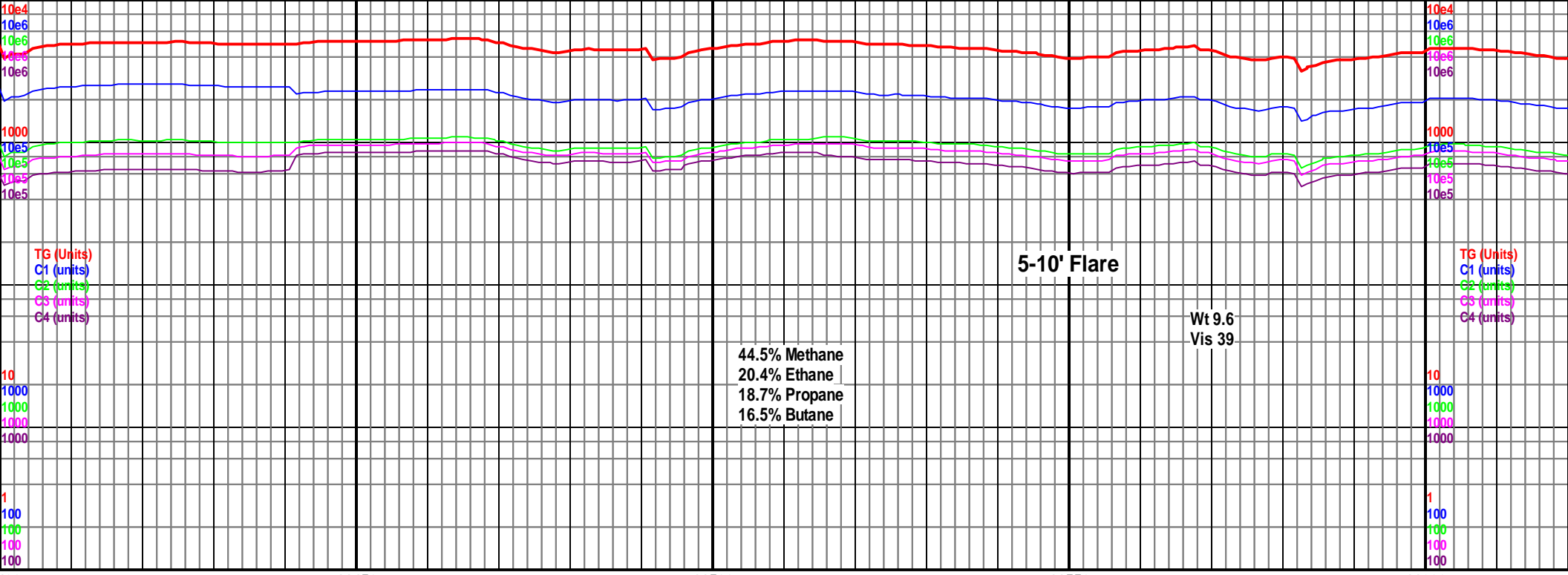
MD 11073 TVD 5597.64
INC 89.32 AZ 183.33
VS 5630.29

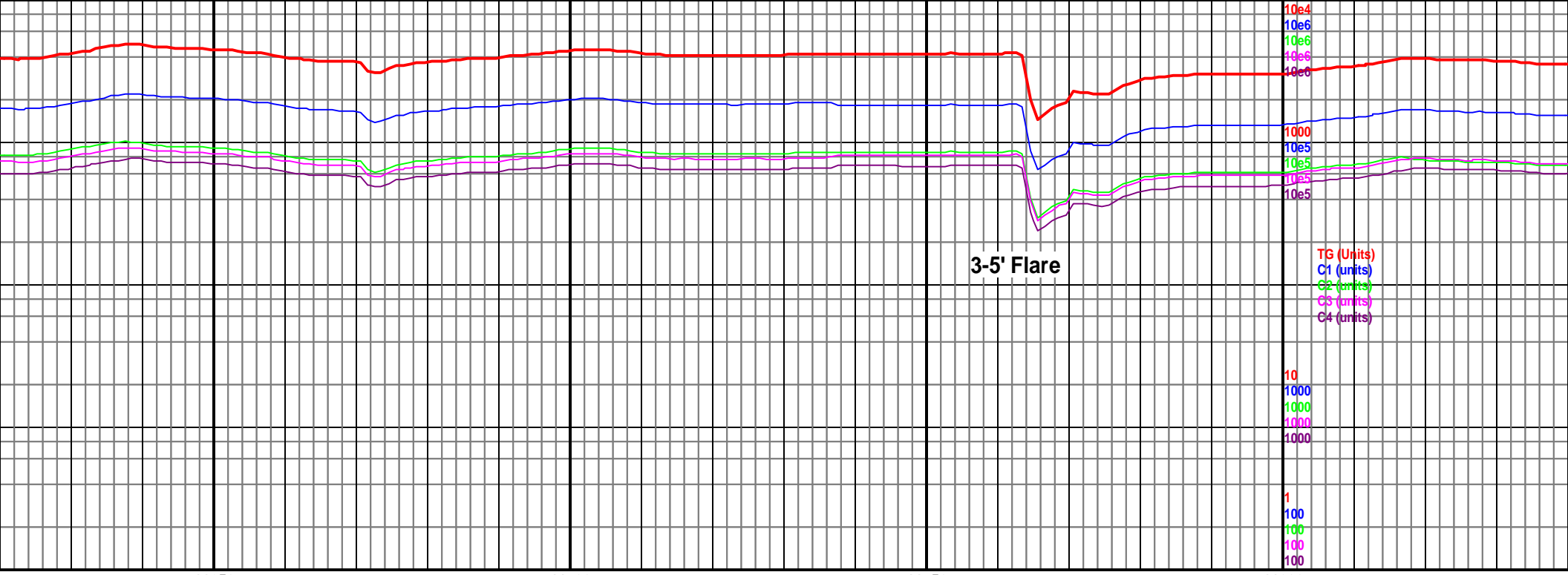
MD 11164 TVD 5598.14
INC 90.02 AZ 183.27
VS 5721.14

11000-11100 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 90%
Chk, 10% mrlst

11100-11200 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 90%
Chk, 10% mrlst







TG (Units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)

11650 11700 11750 11800

MD 11621 TVD 5601.87
INC 88.92 AZ 180.21
VS 6177.75

MD 11712 TVD 5603.69
INC 88.79 AZ 179.39
VS 6268.73

MD 11804 TVD 5605.35
Sub S INC 89.14 AZ 179.83
VS 6360.71

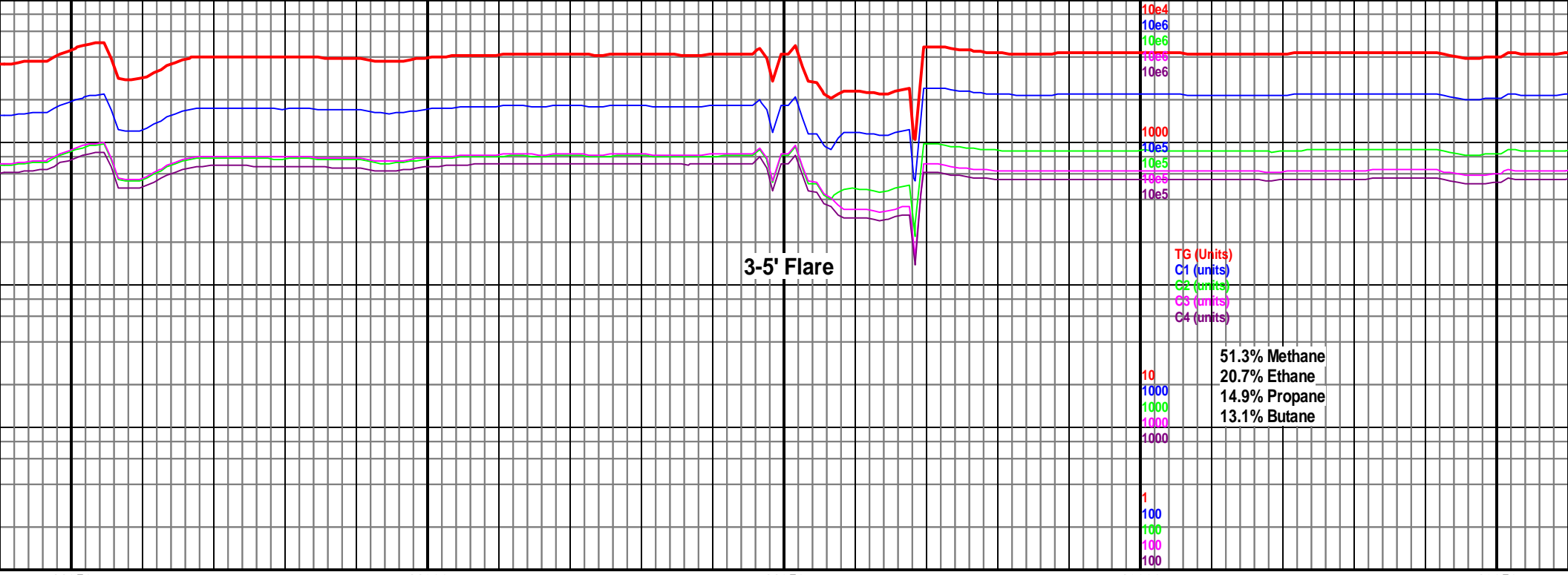
5450
(-699)



11600-11700 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 90%
Chk, 10% mrlst

11700-11800 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 90%
Chk, 10% mrlst

11800-11900 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 90%
Chk, 10% mrlst



3-5' Flare

TG (Units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)

51.3% Methane
20.7% Ethane
14.9% Propane
13.1% Butane

11850

11900

11950

12000

12050

MD 11896 TVD 5606.84
INC 89.01 AZ 179.63
VS 6452.7

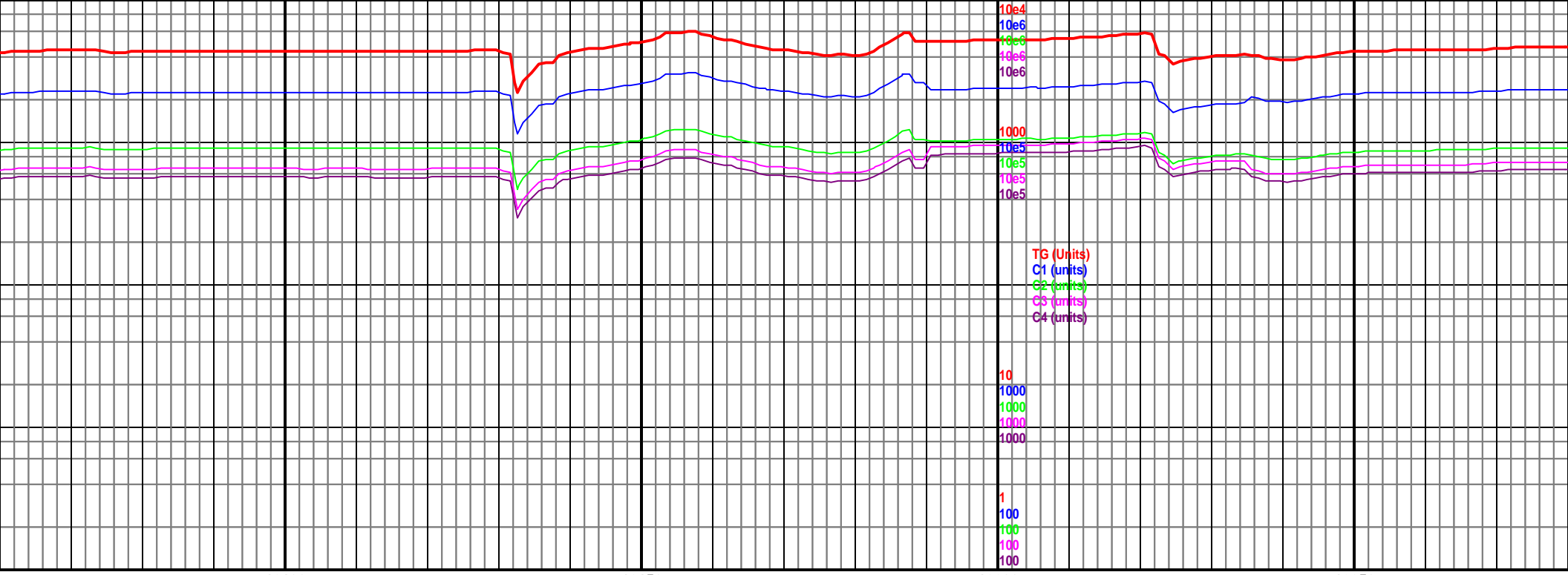
MD 11987 TVD 5607.96'D
INC 89.58 AZ 181.39 Sea (-249)
VS 6543.68

5450
(-699)

900 Chk med gy-lt gy, sb plty,
mottled, tr Mrlst dk gy, frm, sb
, rr bent, vis oil, sl cut, 90%
mrlst

11900-12000 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 90%
Chk, 10% mrlst

12000-12100 Chk med gy-lt gy,
sl frm, mottled, tr Mrlst dk gy, f
blky, suc, rr bent, vis oil, sl cu
Chk, 10% mrlst



TG (Units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)

10e4
10e6
10e5
1000
100
1

12100

12150

12200

12250

MD 12079 TVD 5608.24
INC 90.07 AZ 181.15
VS 6635.66

MD 12170 TVD 5608.55
INC 89.54 AZ 179.71
VS 6726.66

5000 TVD
Sub Sea (-249)

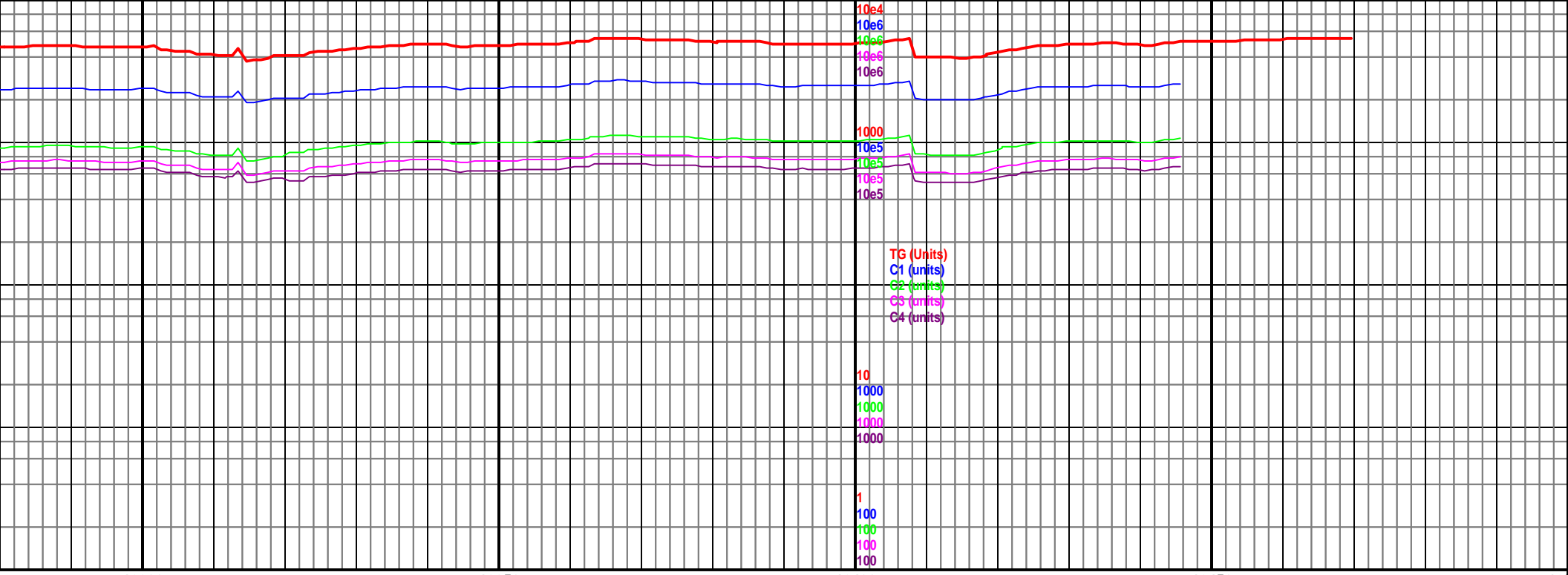
MD 12262 TVD 5608.4
INC 90.55 AZ 179.14
VS 6818.65

5450
(-699)

, sb plty,
frm, sb
t, 90%

12100-12200 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 70%
Chk, 30% mrlst

12200-12300 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 70%
Chk, 30% mrlst



TG (Units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)

10
1000
1000
1000
1000
1
100
100
100
100

12300

12350

12400

12450

12500

MD 12357 TVD 5607.56
INC 90.55 AZ 179.14
VS 6913.63

5000 TVD
Sub Sea (-249)

MD 12420 TVD 5607.34
INC 89.85 AZ 177.98
VS 6976.61

5450
(-699)

TD reached 12470' at
06:00 on 6/8/2014.

12300-12400 Chk med gy-lt gy, sb plty,
sl frm, mottled, tr Mrlst dk gy, frm, sb
blky, suc, rr bent, vis oil, sl cut, 70%
Chk, 30% mrlst

12400-12470 Chk med gy-gy, sb plty-sb
blky, sl frm, mottled, tr Mrlst dk gy, frm,
sb blky, suc, rr bent, vis oil, sl cut,
60% Chk, 40% mrlst