



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

Well Name: Razor 26L-3405B
Location: NWSW 26-T10N-R58W
License Number: 05-123-3798800
Spud Date: 6/25/2014
Surface Coordinates: Lat.: 40.808533 Long.: -103.839172
Bottom Hole Coordinates: Lat.: 40.789381 Long.: -103.837097
Ground Elevation (ft): 4734 **K.B. Elevation (ft):** 4751
Logged Interval (ft): 5200 **To:** **Total Depth (ft):**
Formation: Pierre, Sharon Springs, Niobrara B
Type of Drilling Fluid: Water Based Mud

Region: Redtail Field
Drilling Completed:

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 and Demond Taylor
Company: Acme Geologic Consulting
Address: 108 Berry Street
Little Rock, AR 72205

Drilling Company

Cade Drilling, LLC
Rig #23

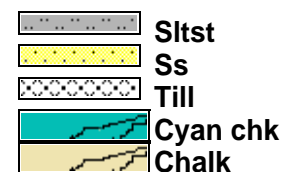
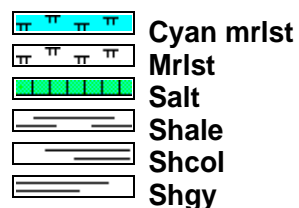
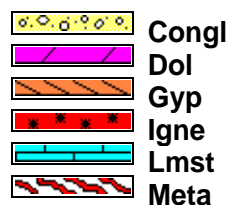
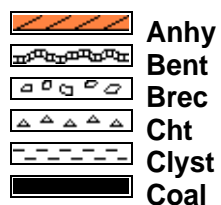
Gas Detection

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

Comments

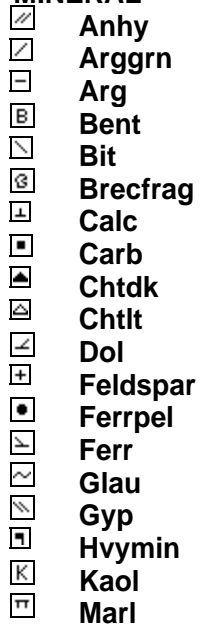
Lithologies and tops at drilled depths, not corrected to elogs. Where the well bore gas is 100% methane, the C1 line is moved to 85% for graphical purposes only.

ROCK TYPES

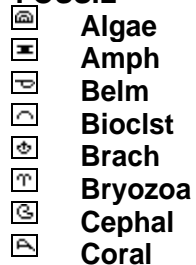


ACCESSORIES

MINERAL



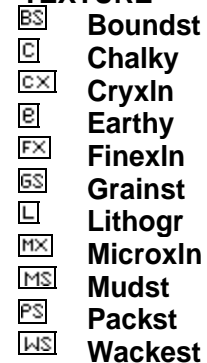
FOSSIL



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

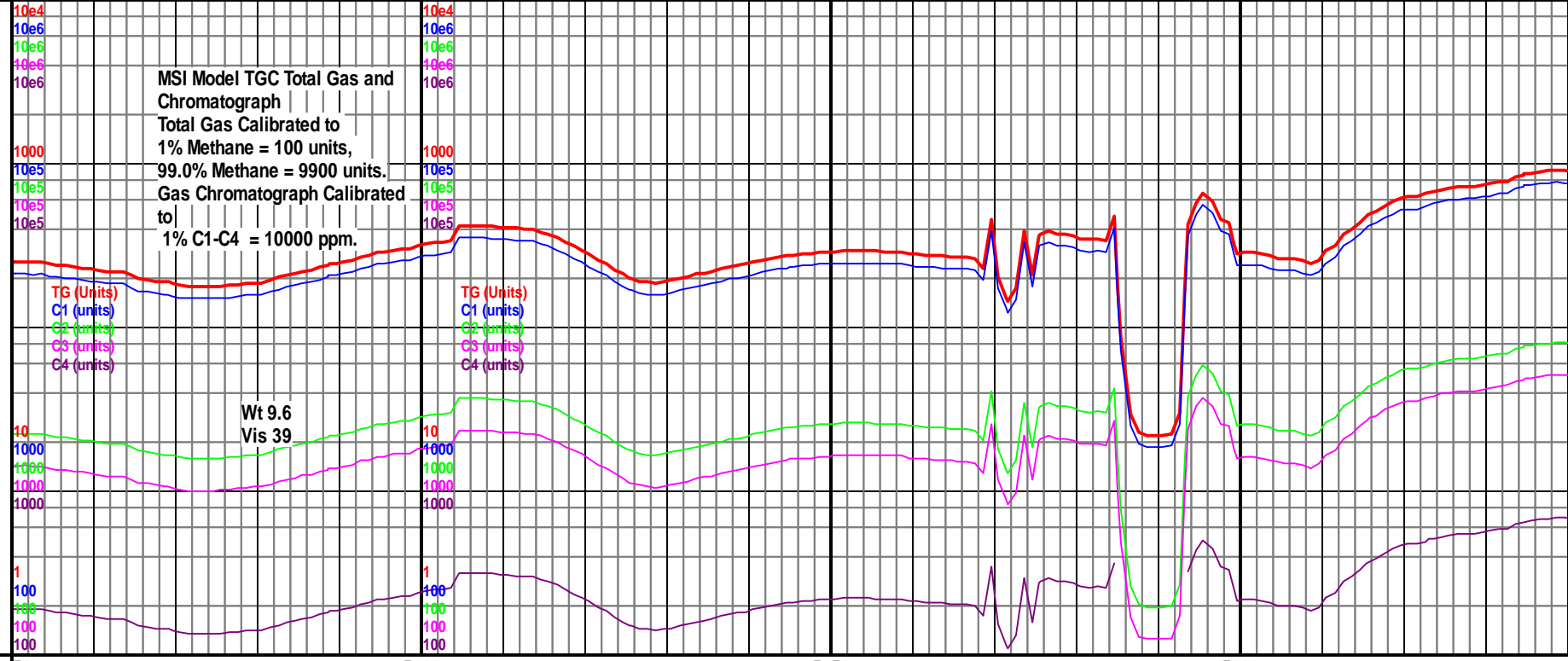
-  Core
-  Dst

EVENT

-  Rft
-  Sidewall

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

MSI Model TGC Total Gas and Chromatograph
Total Gas Calibrated to
1% Methane = 100 units,
99.0% Methane = 9900 units,
Gas Chromatograph Calibrated
to
1% C1-C4 = 10000 ppm.



Depth

50 5200 5250 5300

MD 5151 TVD 5033.13
Sub Sea (-749)
VS-510.33
MD 5242 TVD 5123.99
Sub Sea (-349)
VS-506.37
MD 5333 TVD 5173.99
Sub Sea (-490)
VS-490.33

Acme Geologic
Consulting rigged
up and operational
on 6/26/2014 at
12:00

5200-5250 Siltst gy-dk gy, sb blk, sft,
non calc, tr sh med gy, sb plty, nsfoc
80% Siltst, 20% sh

5250-5300 Siltst gy-dk gy, sb blk, sft,
non calc, tr sh med gy, sb plty, nsfoc
80% Siltst, 20% sh

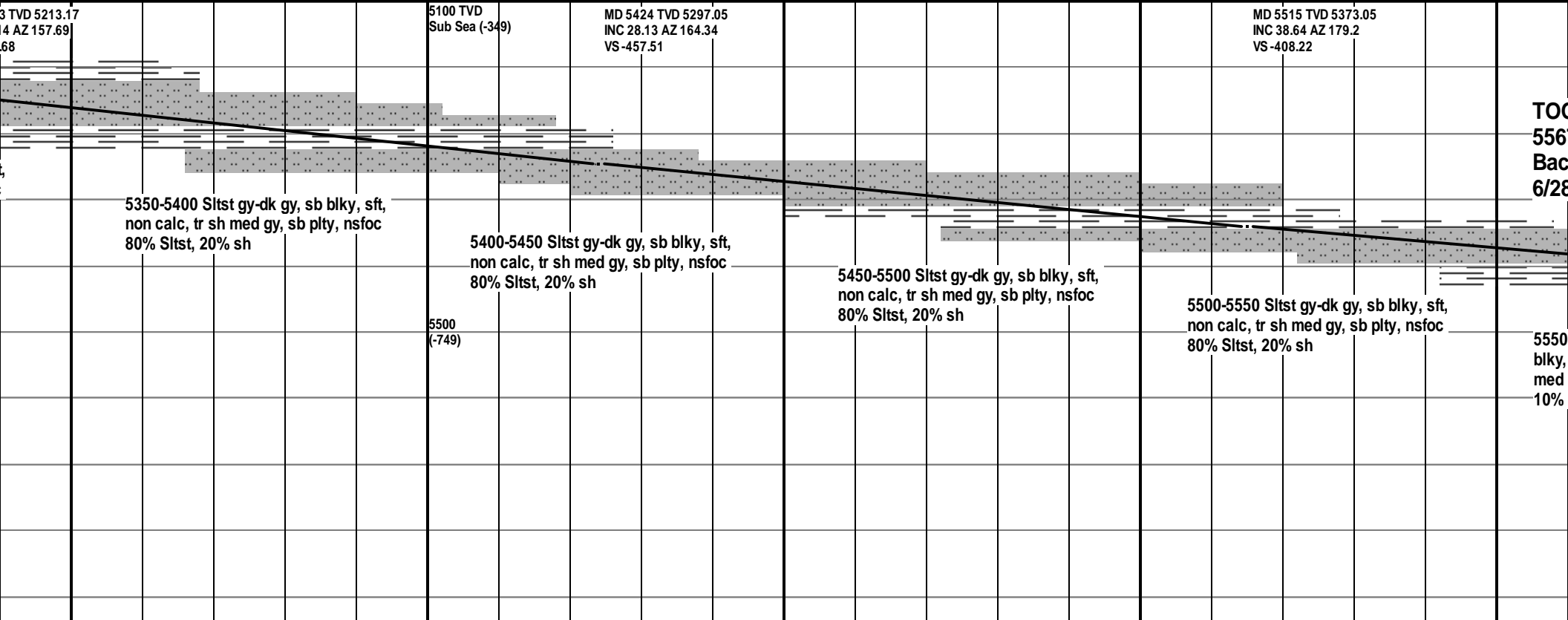
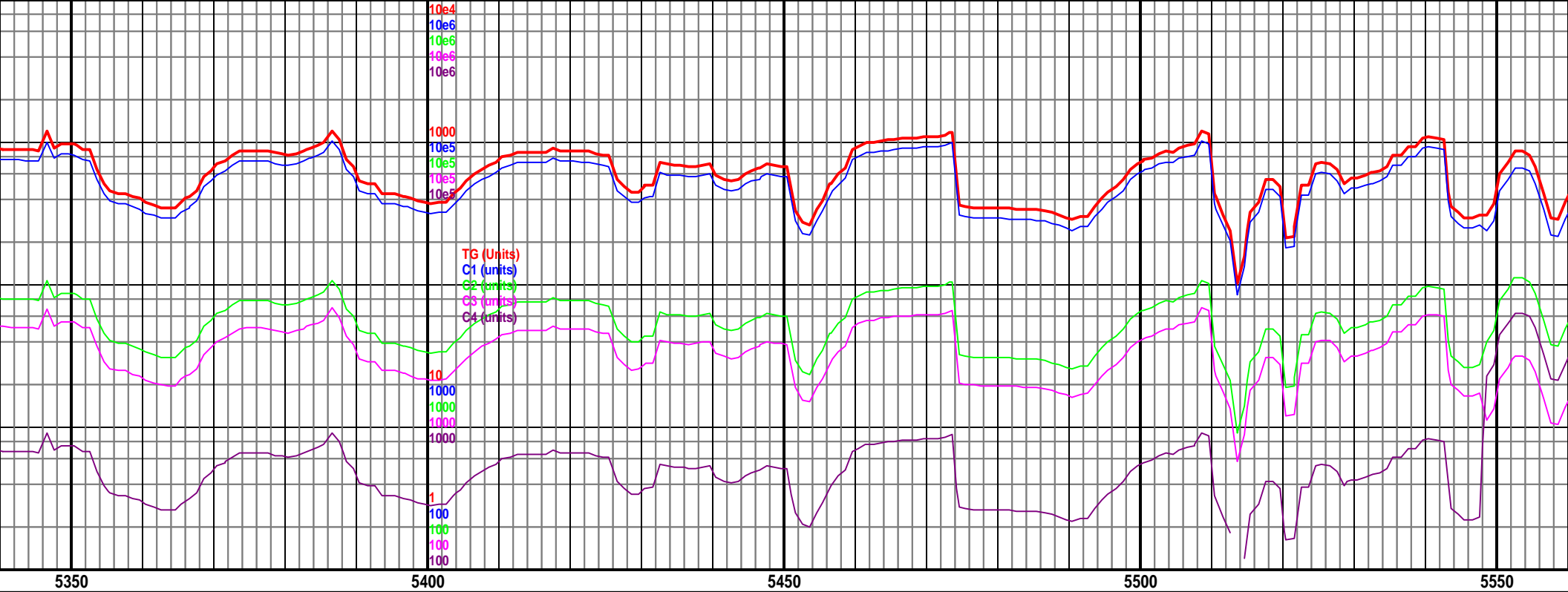
5300-5350 Siltst gy-dk gy, sb blk, sft,
non calc, tr sh med gy, sb plty, nsfoc
80% Siltst, 20% sh

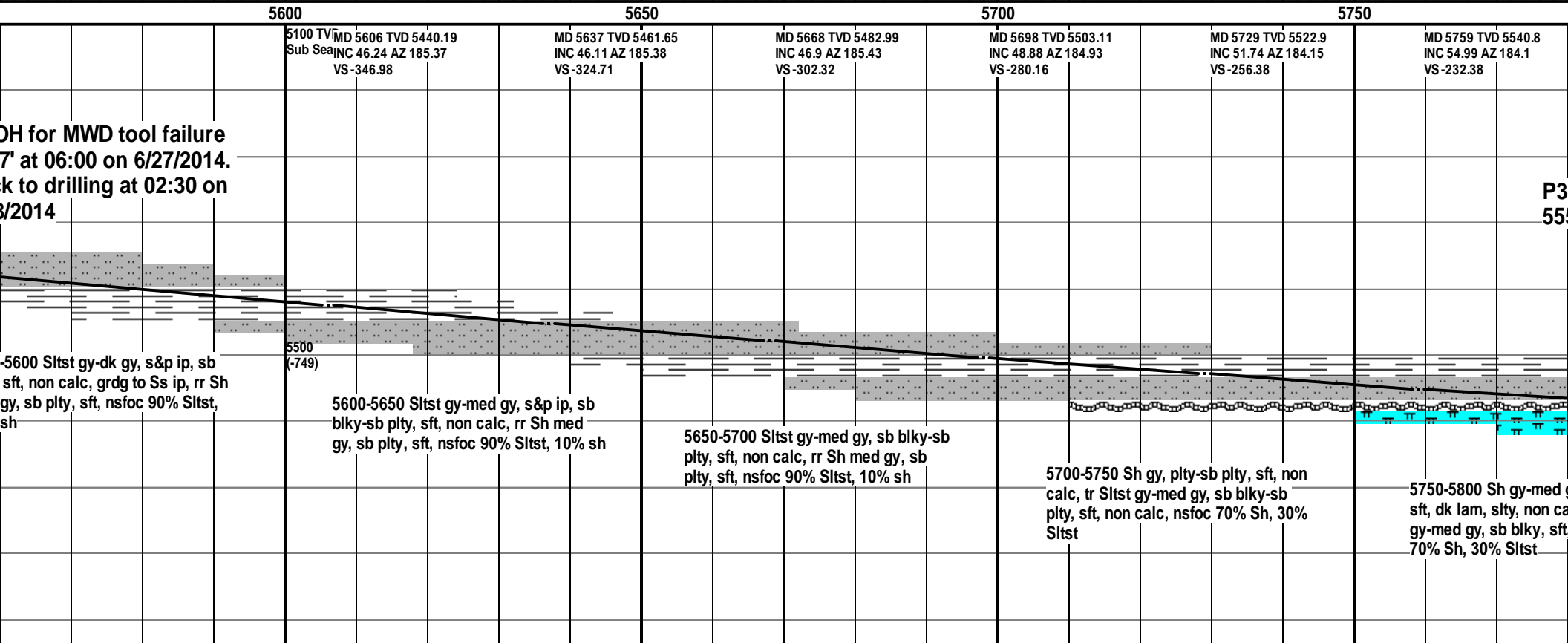
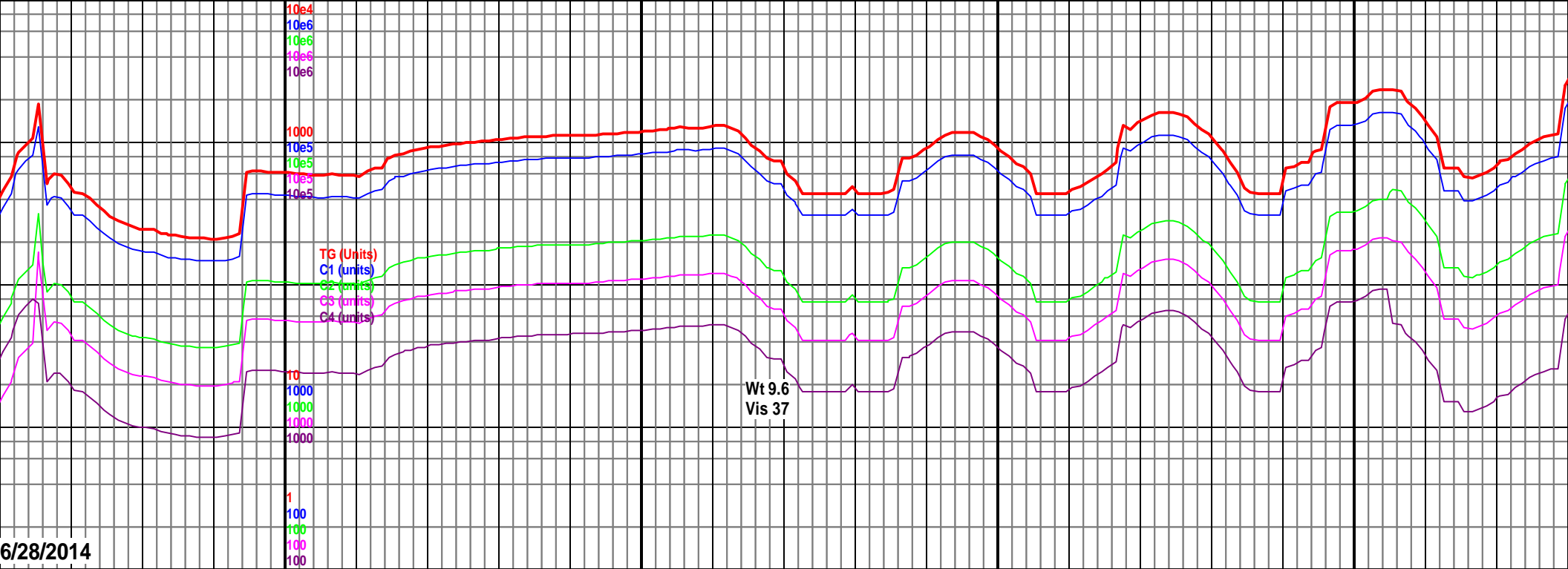
Well Bore Cross Section

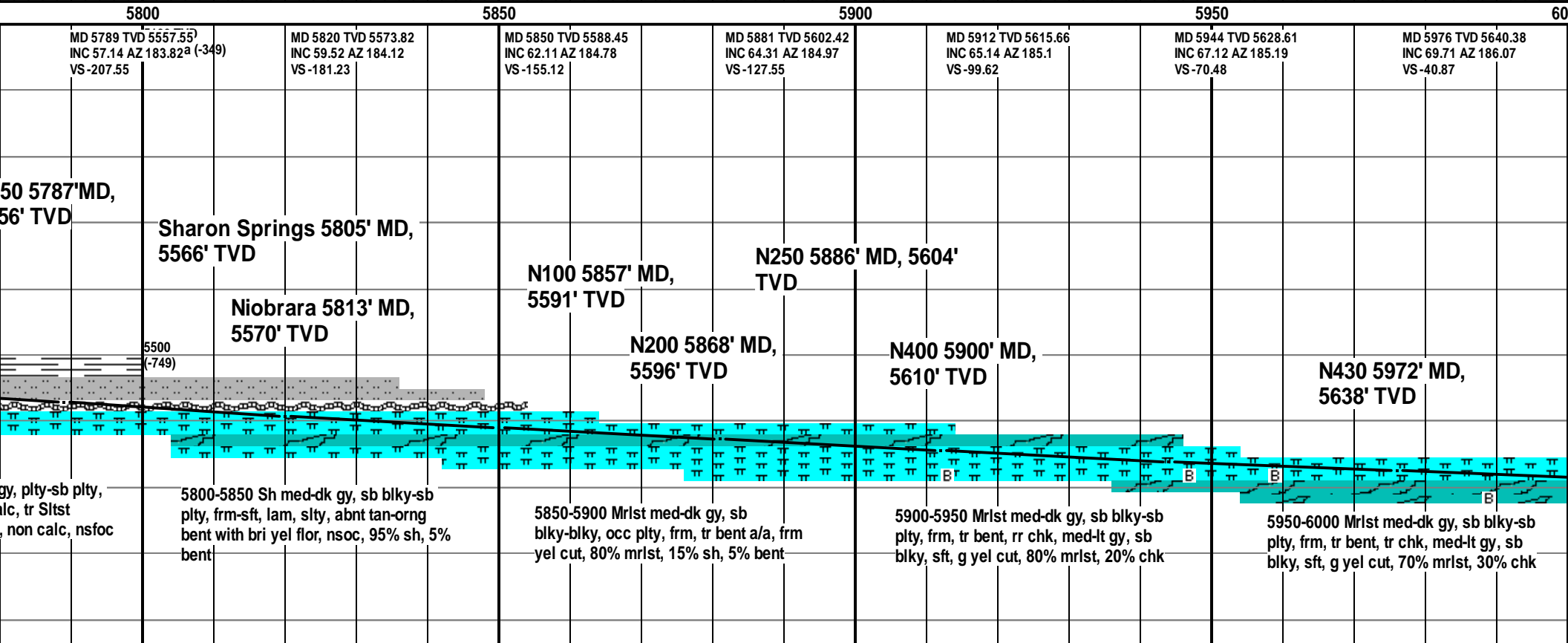
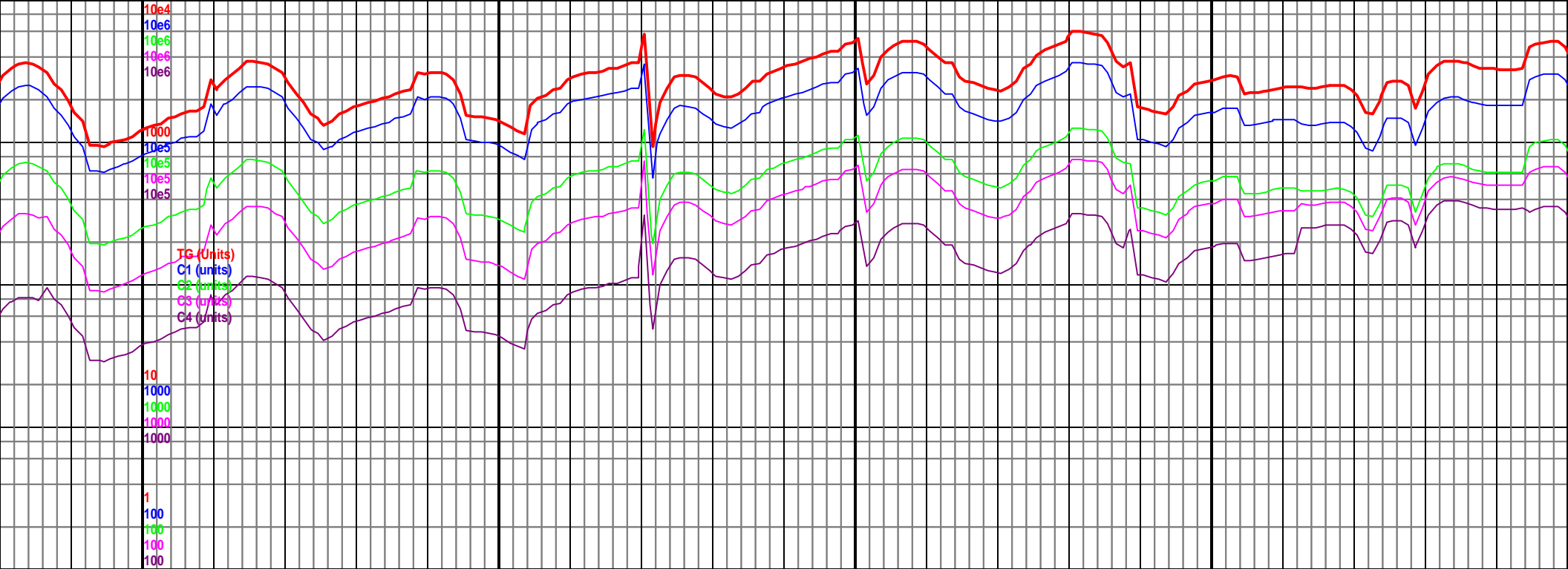
5500
(-749)

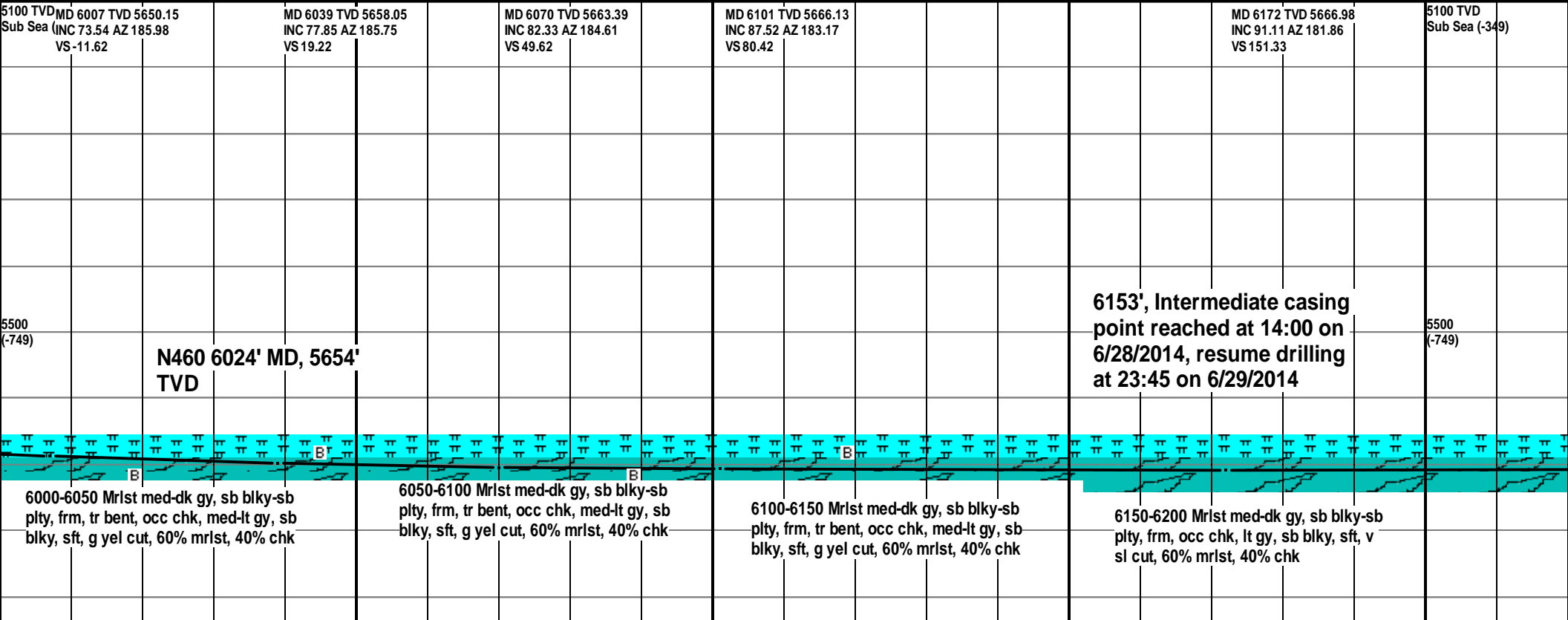
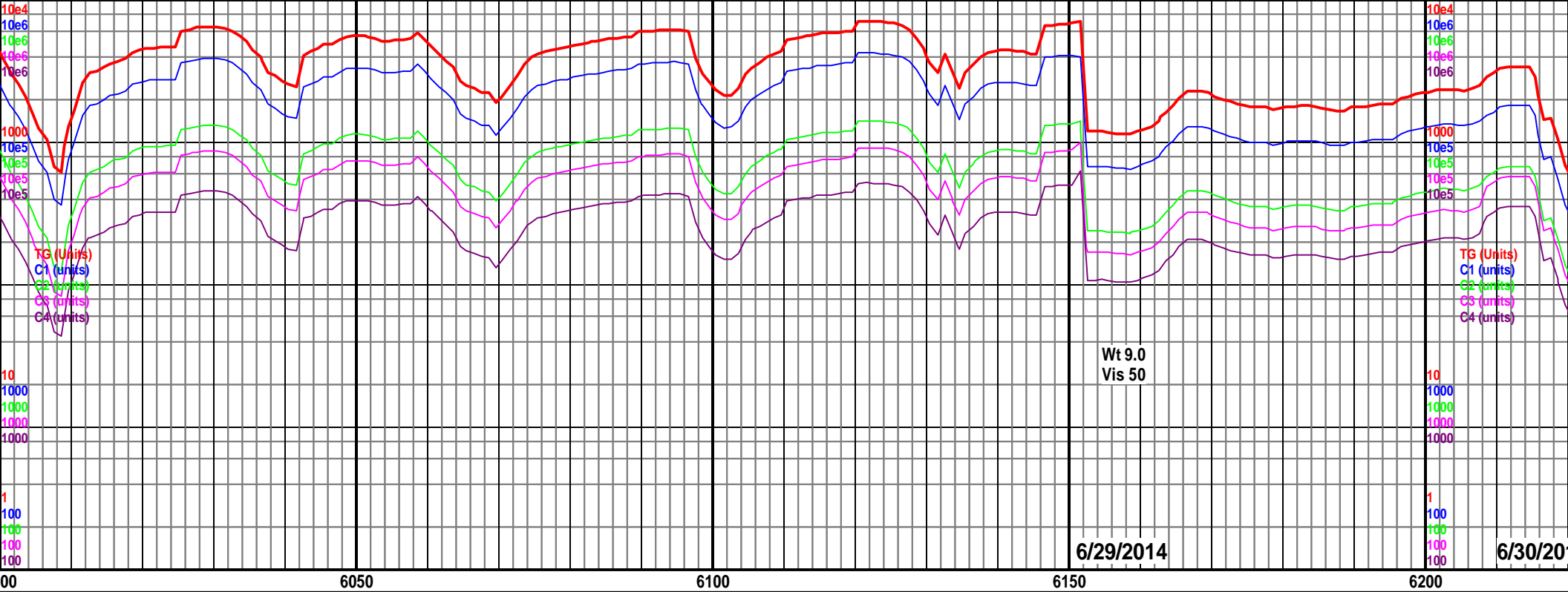
5500
(-749)

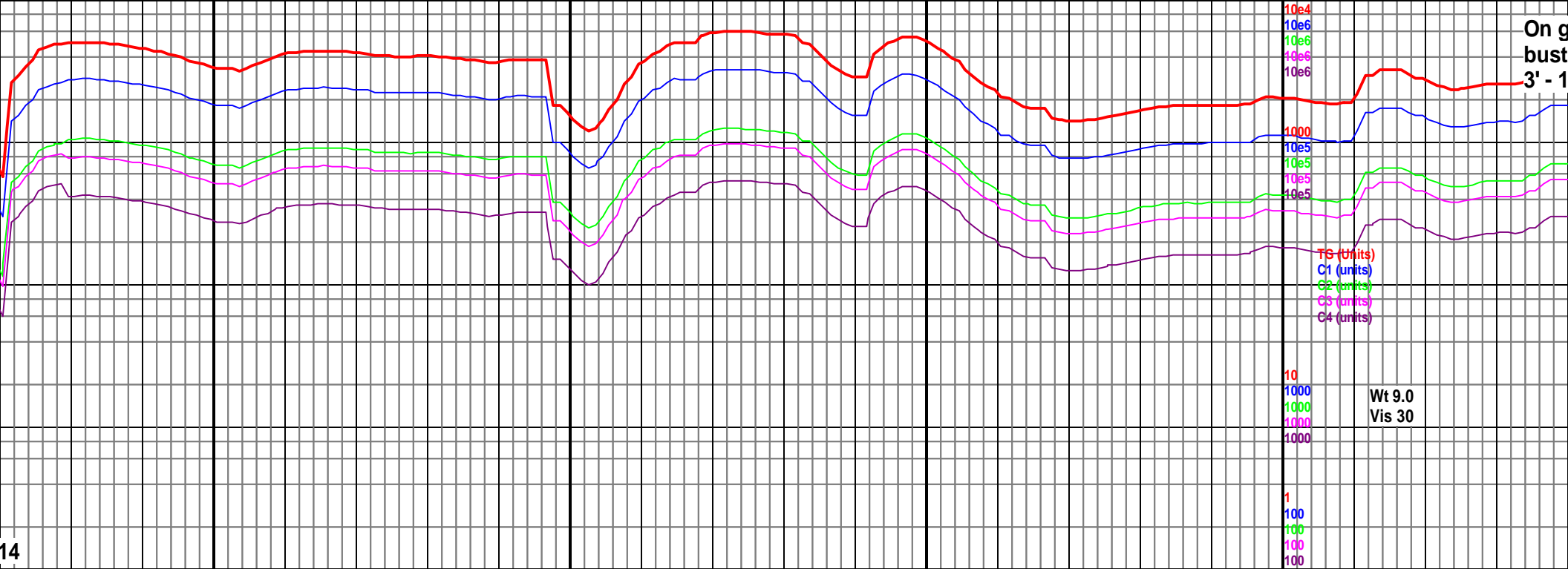
KOP 5202' reached at 12:58
on 6/27/2014



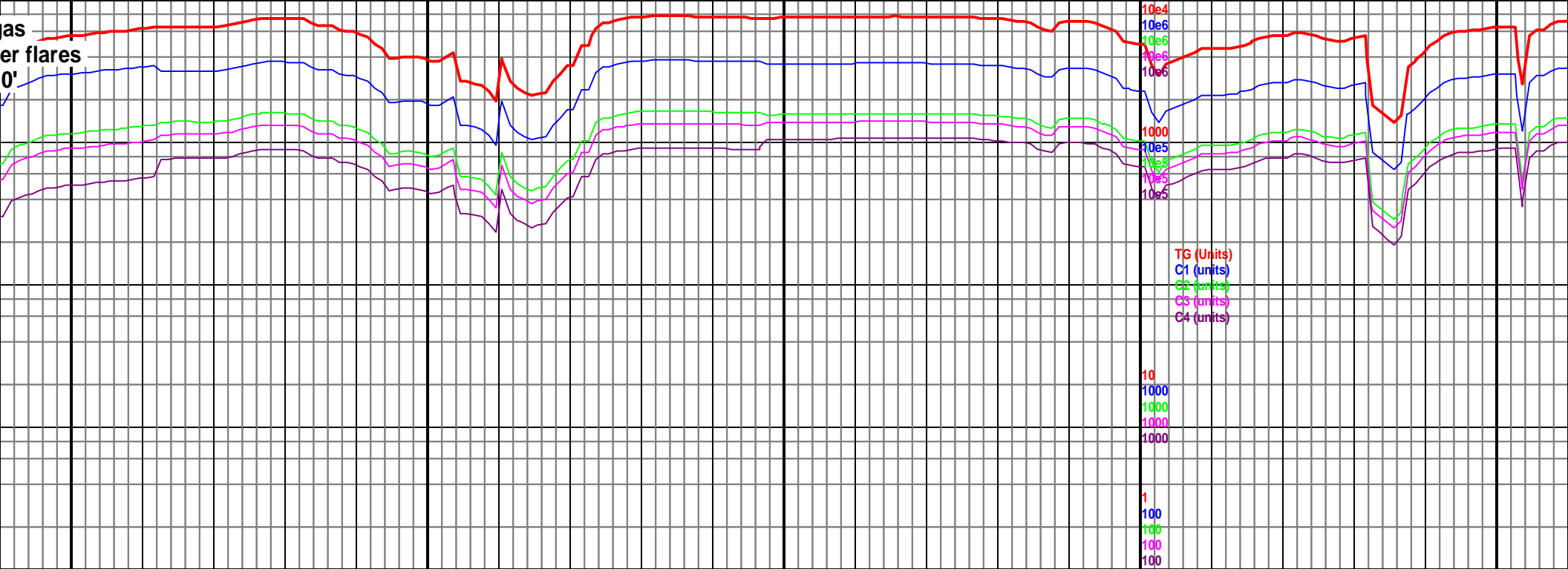




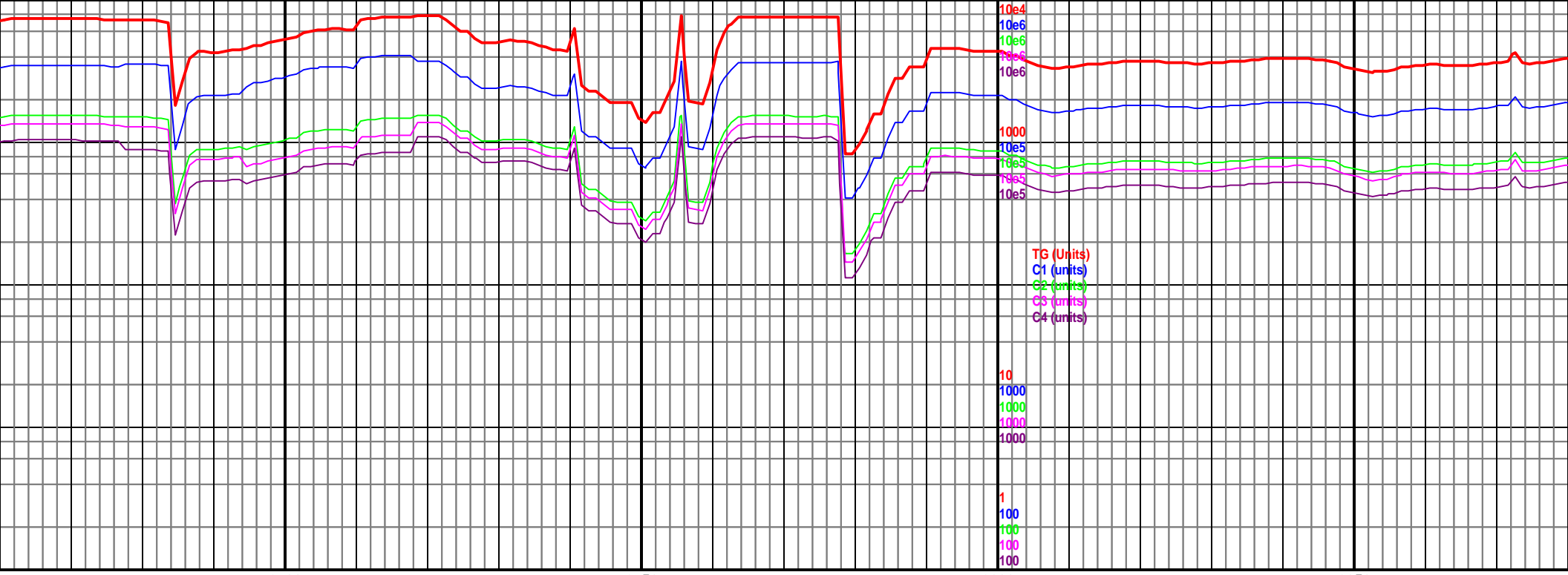




6250				6300				6350				6400			
MD 6266 TVD 5666.37 INC 89.63 AZ 179.09 VS 245.32								MD 6361 TVD 5666.49 INC 90.22 AZ 179.6 VS 340.31				5100 TVD Sub Sea (-349)			



6450	6500	6550	6600	6650
MD 6456 TVD 5666.21 INC 90.12 AZ 185.59 VS 435.17		MD 6551 TVD 5666.11 INC 90 AZ 189.9 VS 529.28	5100 TVD Sub Sea (-349)	MD 6646 TVD 5666.11 INC 89.51 AZ 184.5 VS 623.45
			5500 (-749)	
0 Chk lt gy-med gy, sb frm, mottled, tr Mrlst dk gy, ft, slty, rr bent, rr inoc, yl min oil on sample 70% chk 30%		6500-6600 Chk lt gy-gy, sb blk- sb plty, frm, mottled, rr Mrlst dk gy, sb blk, slty, rr bent, rr inoc, yl min fluor, vis oil on sample 90% chk 10% mrlst		6600-6700 Chk lt gy-gy, sb blk frm, mottled, rr Mrlst dk gy, sb blk, slty, rr bent, rr inoc, yl min fluor, vis oil on sample 90% chk 10% mrlst



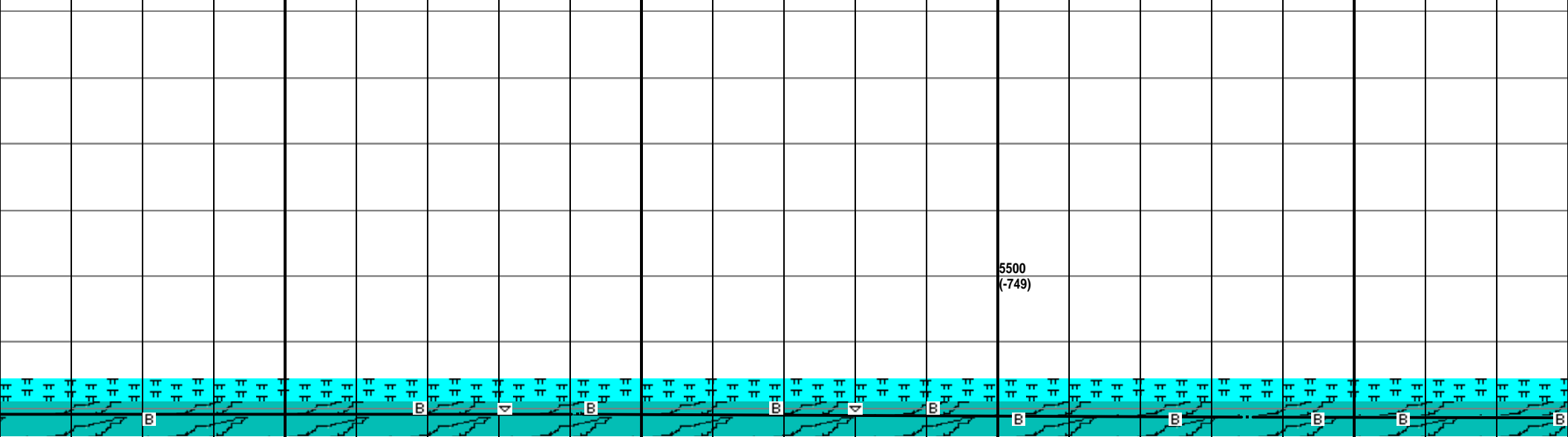
6700 6750 6800 6850

66.52
6.95

MD 6741 TVD 5667.49
INC 89.32 AZ 181.96
VS 718.26

5100 TVD
Sub Sea (-349)

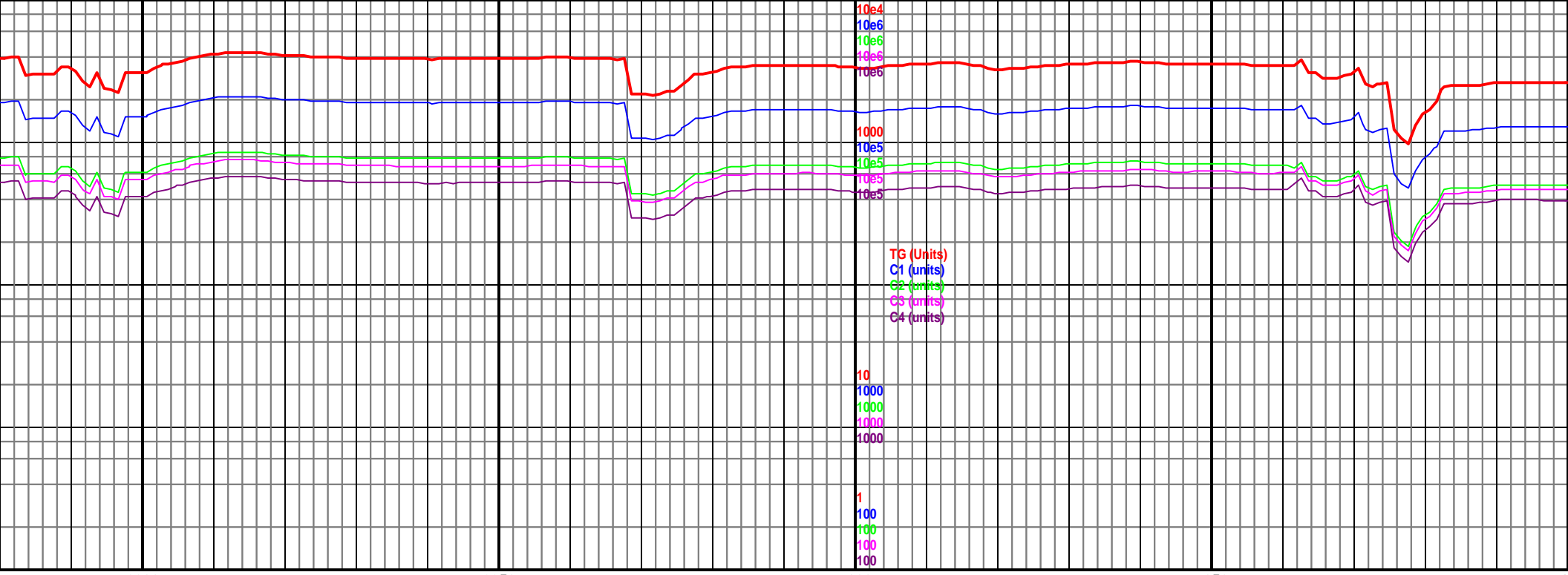
MD 6835 TVD 5670.1
INC 87.5 AZ 180.72
VS 812.2



gy-sb plty,
blkly, sft,
or, vis oil
t

6700-6800 Chk It gy-med gy, blkly-plty,
frm, mottled, rr Mrlst dk gy, sb blkly, sft,
slty, tr bent, rr inoc, yl min fluor, vis oil
on sample 90% chk 10% mrlst

6800-6900 Chk It gy-med gy, blkly-plty,
frm, mottled, rr Mrlst dk gy, sb blkly, sft,
slty, tr bent, rr inoc, yl min fluor, vis oil
on sample 90% chk 10% mrlst



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

10e6
10e5
10e4
10e3
10e2
10e1
1000
1000
1000
1000
100
100
100
100
100

6900

6950

7000

7050

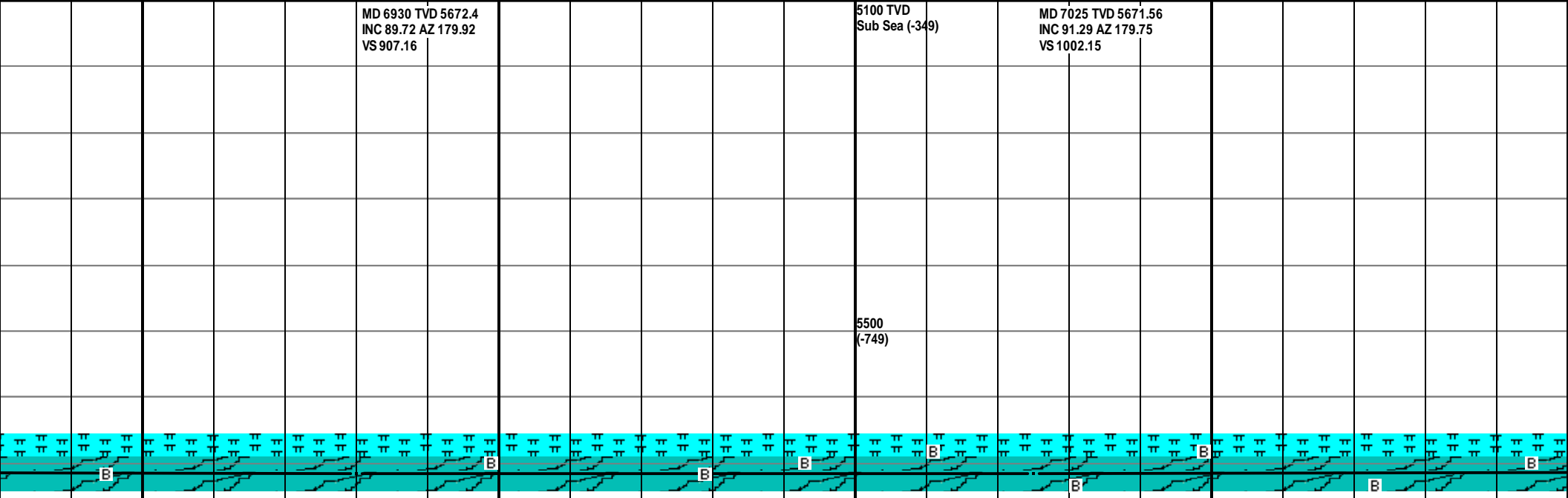
7100

MD 6930 TVD 5672.4
INC 89.72 AZ 179.92
VS 907.16

5100 TVD
Sub Sea (-349)

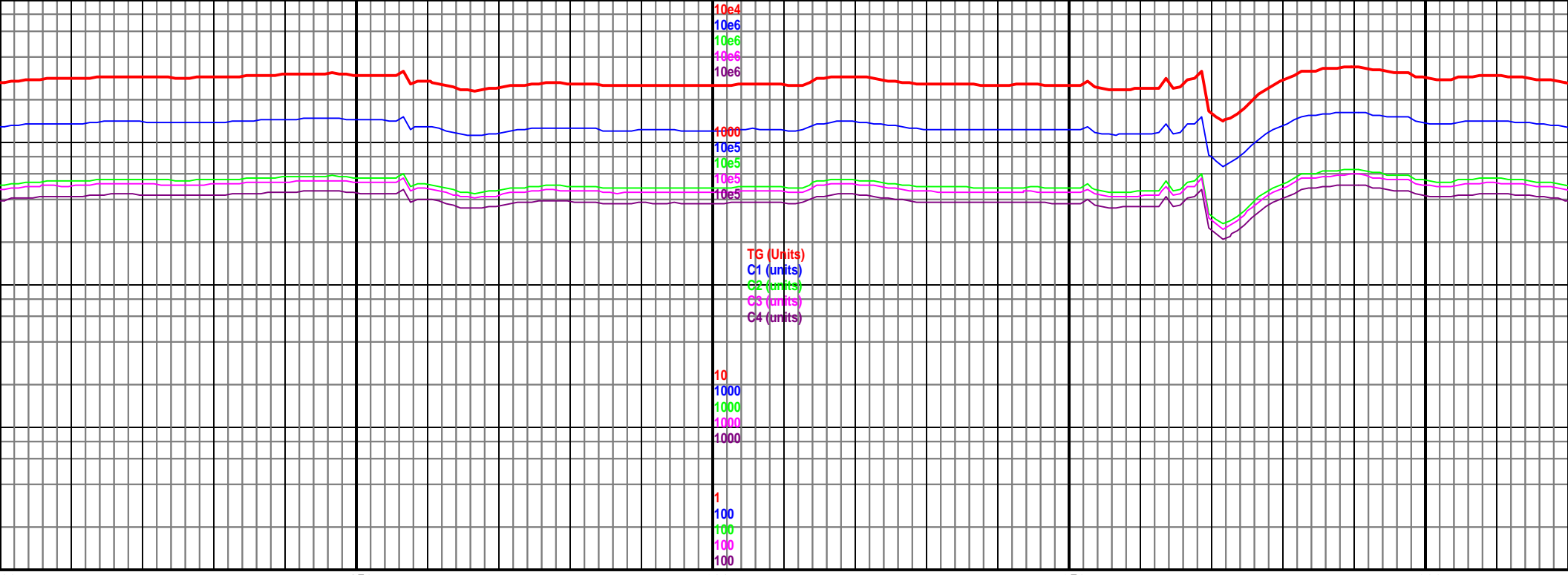
MD 7025 TVD 5671.56
INC 91.29 AZ 179.75
VS 1002.15

5500
(-749)



6900-7000 Chk lt gy-med gy, blk-ply,
frm, mottled, rr Mrlst dk gy, sb blk, sft,
slty, tr bent, rr inoc, yl min fluor, vis oil
on sample 90% chk 10% mrlst

7000-7100 Chk lt gy-med gy, blk-ply,
frm, mottled, rr Mrlst dk gy, sb blk, sft,
slty, tr bent, rr inoc, yl min fluor, vis oil
on sample 90% chk 10% mrlst



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

10
1000
10000
10000
10000

1
100
100
100
100

00 7150 7200 7250 7300

MD 7120 TVD 5670.54
INC 89.94 AZ 178.94
VS 1097.14

5100 TVD
Sub Sea (-349)

MD 7215 TVD 5670.03
INC 90.68 AZ 178.79
VS 1192.12

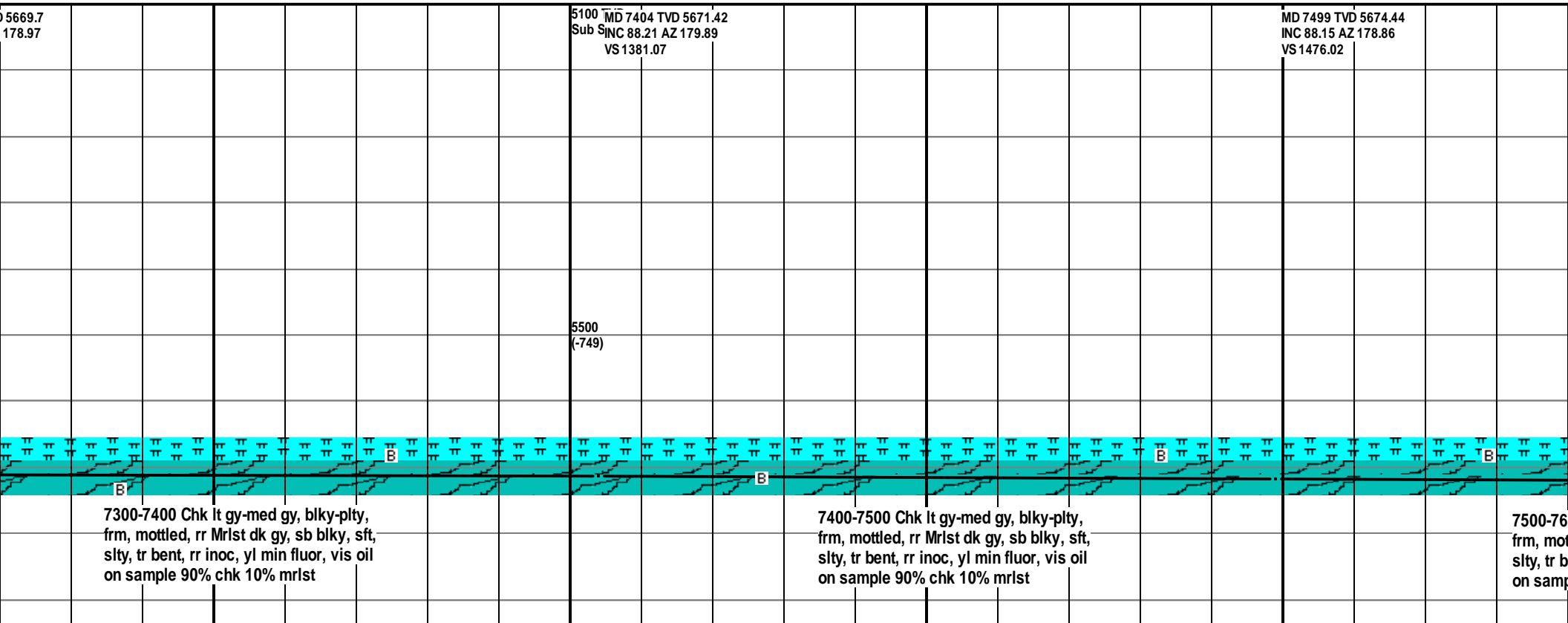
MD 7309 TVD
INC 89.72 AZ
VS 1286.1

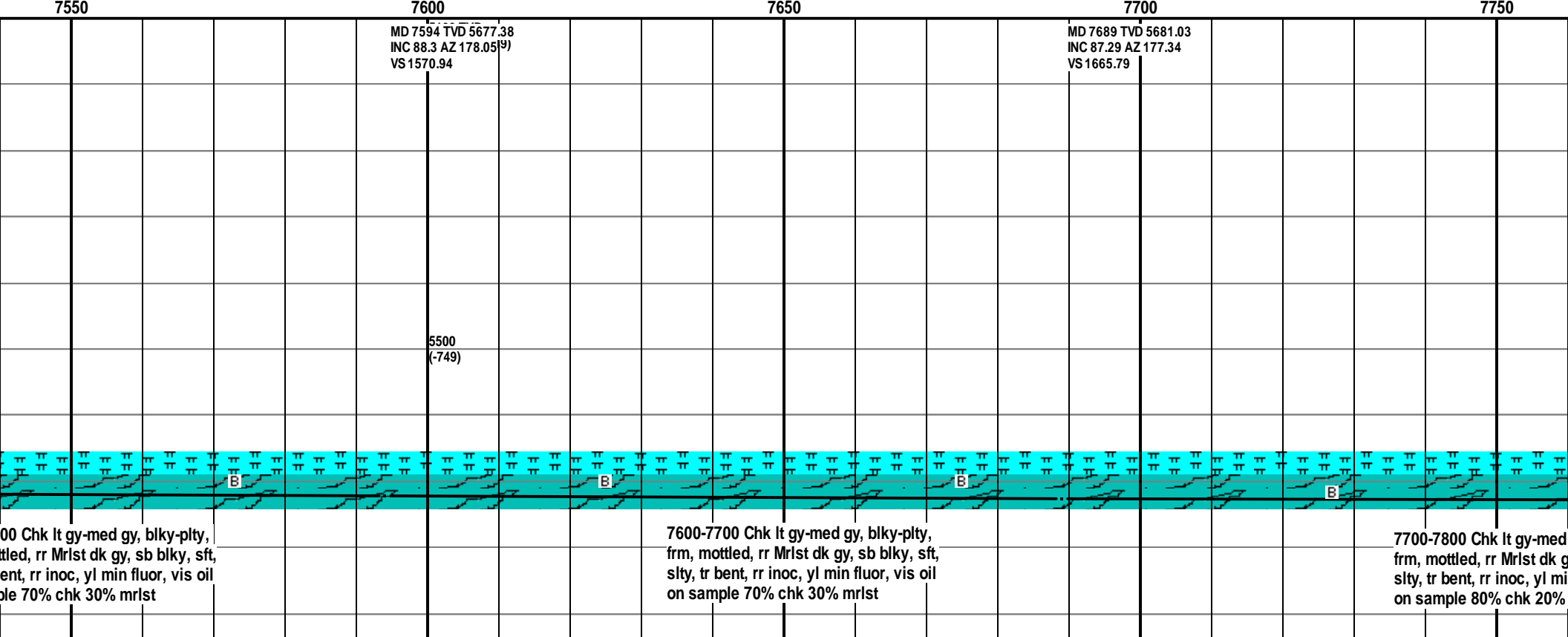
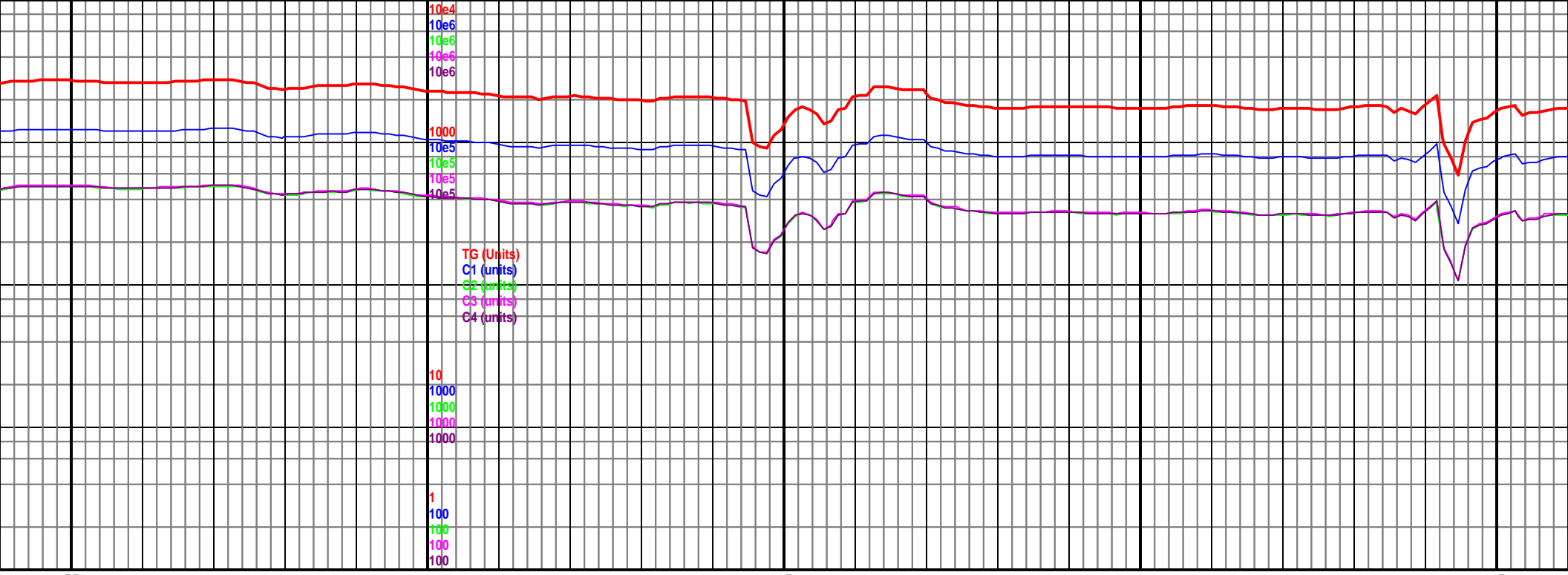
5500
(-749)

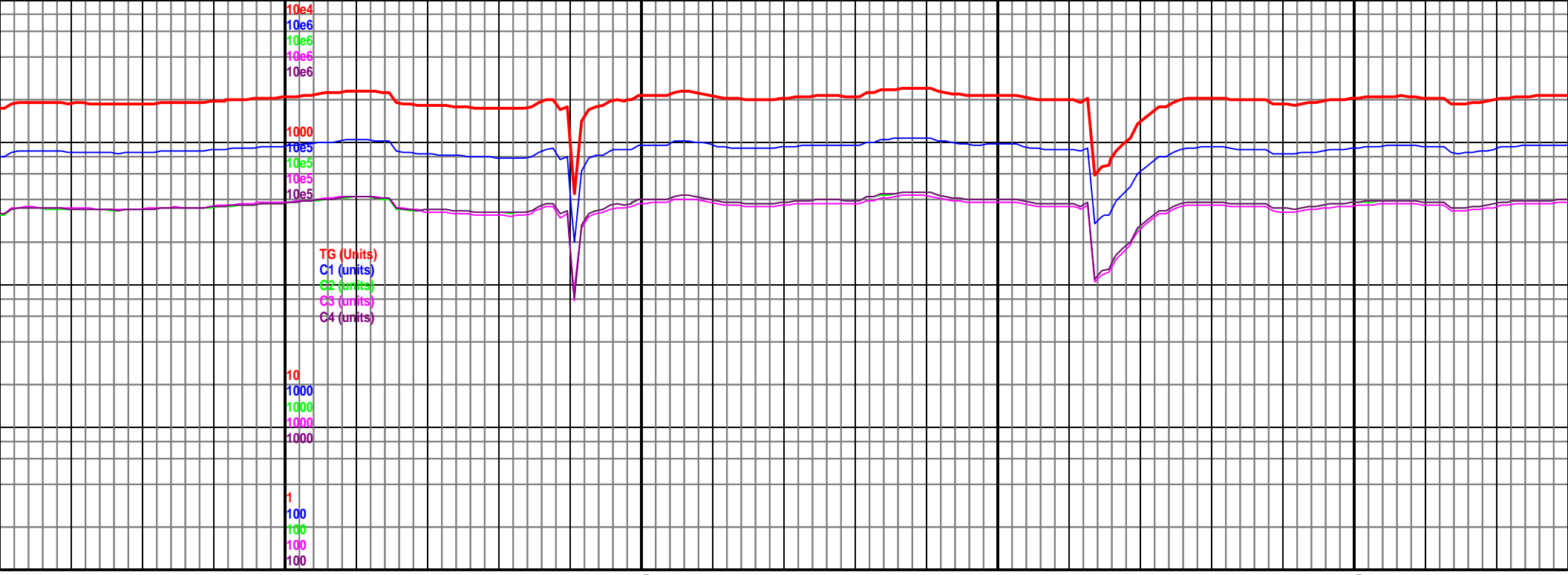


7100-7200 Chk lt gy-med gy, blk-pty,
frm, mottled, rr Mrlst dk gy, sb blk, sft,
slty, tr bent, rr inoc, yl min fluor, vis oil
on sample 90% chk 10% mrlst

7200-7300 Chk lt gy-med gy, blk-pty,
frm, mottled, rr Mrlst dk gy, sb blk, sft,
slty, tr bent, rr inoc, yl min fluor, vis oil
on sample 90% chk 10% mrlst







MD 7782 TVD 5683.61
INC 89.54 AZ 178.23
VS 1758.68

5100 TVD
Sub Sea (-349)

MD 7874 TVD 5684.
INC 89.97 AZ 179.38
VS 1850.65

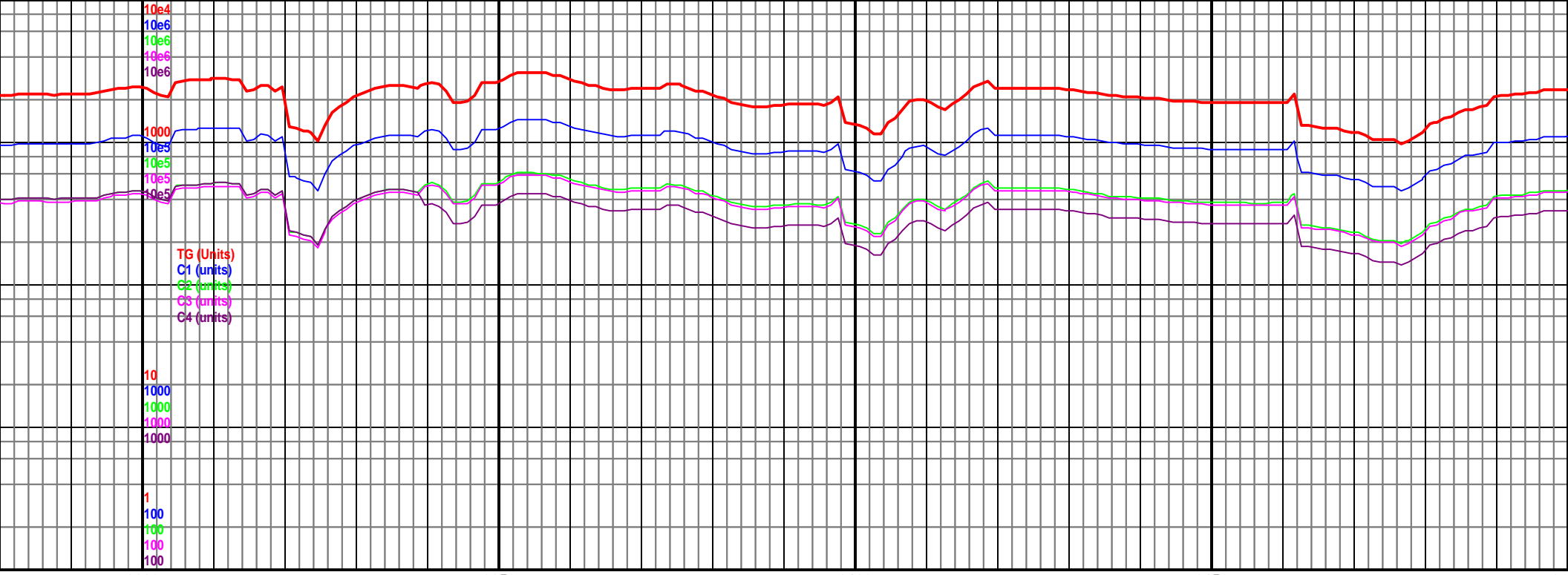
MD 7966 TVD 5684.
INC 91.36 AZ 178.23
VS 1942.63

5500
(-749)

gy, blkly-plty,
y, sb blkly, sft,
n fluor, vis oil
mrlst

7800-7900 Chk lt gy-med gy, blkly-plty,
frm, mottled, rr Mrlst dk gy, sb blkly, sft,
sfty, tr bent, rr inoc, yl min fluor, vis oil
on sample 90% chk 10% mrlst

7900-8000 Chk lt gy-med gy, blkly-plty,
frm, mottled, rr Mrlst dk gy, sb blkly, sft,
sfty, tr bent, rr inoc, yl min fluor, vis oil
on sample 60% Mrlst 40% chk



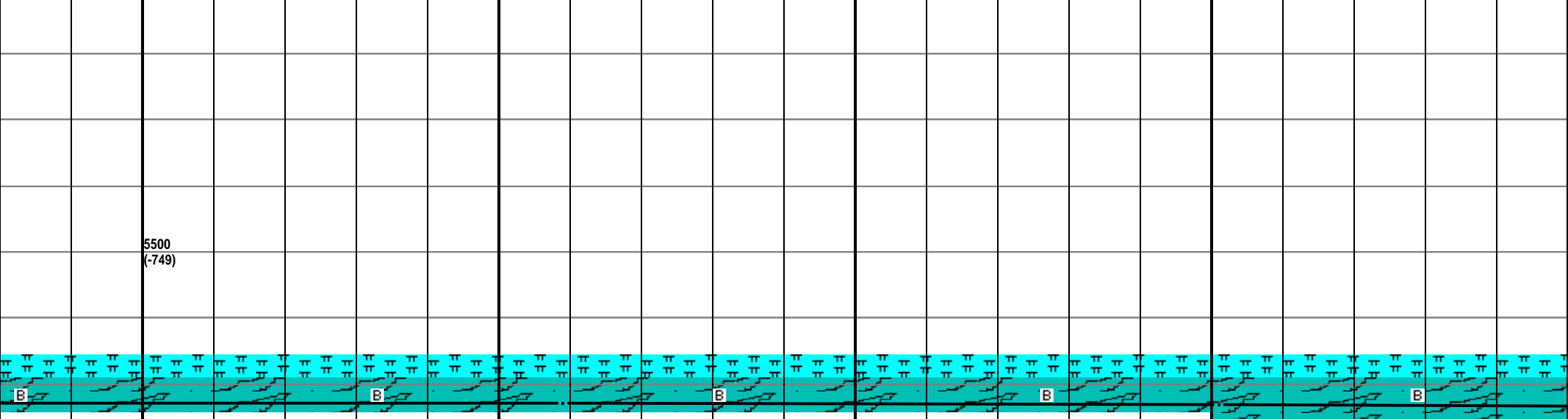
82.93 8000 8050 8100 8150 8200

5100 TVD
Sub Sea (-349)

MD 8059 TVD 5682.05
INC 89.72 AZ 180.38
VS 2035.62

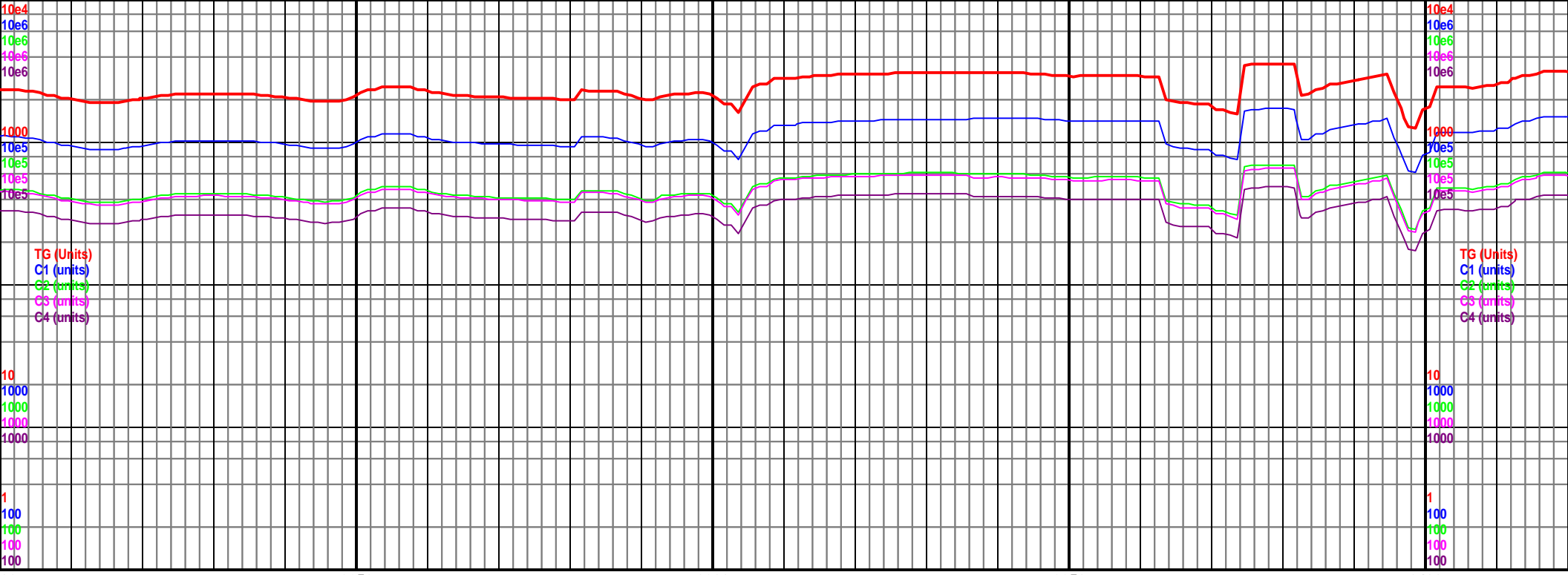
MD 8151 TVD 5684.13
INC 87.69 AZ 181.74
VS 2127.57

5500
(-749)

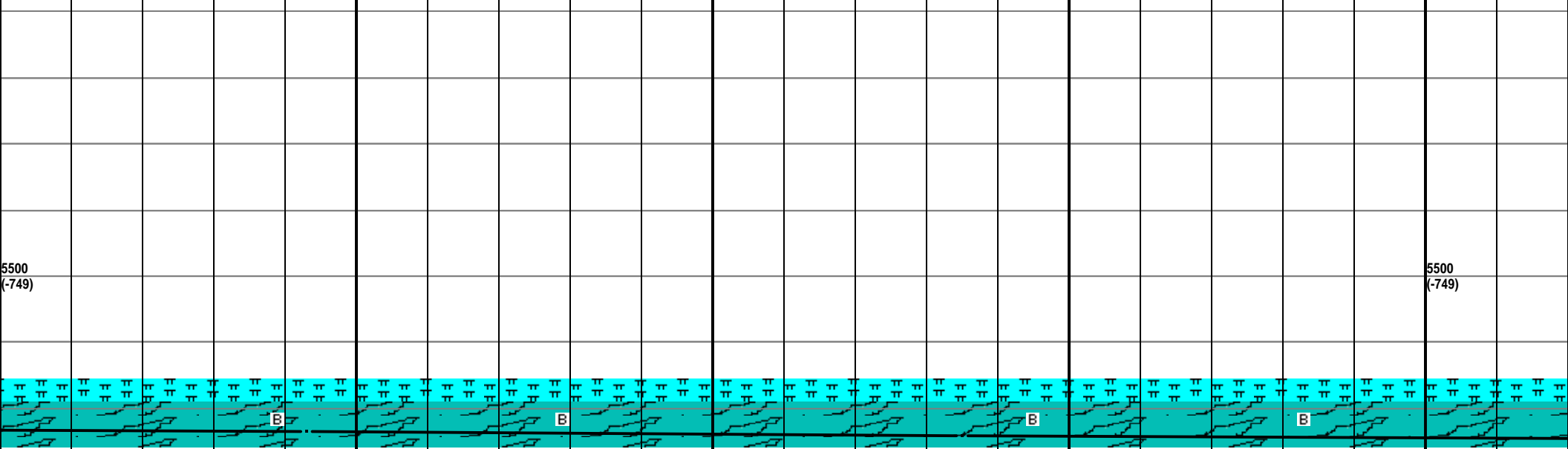


8000-8100 Chk lt gy-med gy, blk-pty,
frm, mottled, rr Mrlst dk gy, sb blk, sft,
sly, tr bent, rr inoc, yl min fluor, vis oil
on sample 70% chk 30% mrlst

8100-8200 Chk lt gy-med gy, blk-pty,
frm, mottled, rr Mrlst dk gy, sb blk, sft,
sly, tr bent, vis oil on sample 80% chk
20% mrlst

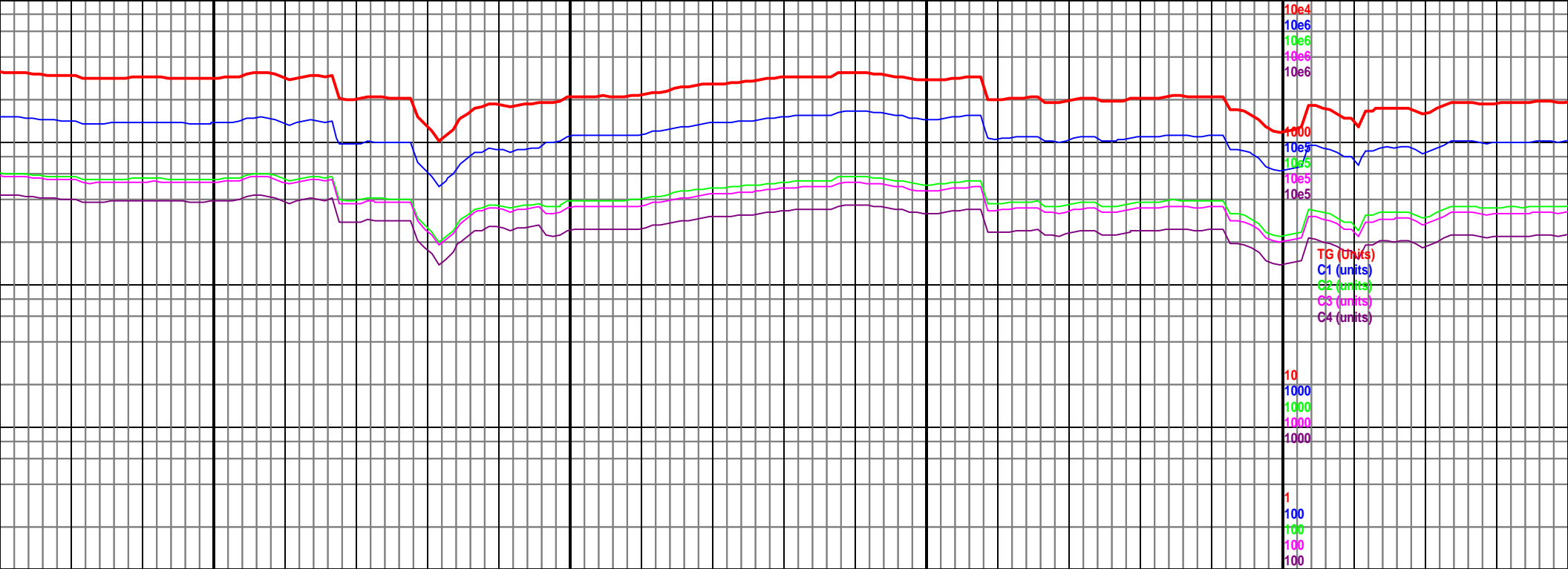


00	8250	8300	8350	8400
5100 TVD Sub Sea (-349)	MD 8243 TVD 5687.63 INC 87.96 AZ 180.97 VS 2219.48		MD 8335 TVD 5692.38 INC 86.11 AZ 181.93 VS 2311.32	5100 TVD Sub Sea (-349)



8200-8300 Chk lt gy-med gy, blk-pty,
frm, mottled, rr Mrlst dk gy, sb blk, sft,
slty, tr bent, vis oil on sample 90% chk
10% mrlst

8300-8400 Chk lt gy-med gy, blk-pty,
frm, mottled, rr Mrlst dk gy, sb blk, sft,
slty, tr bent, rr inoc, vis oil on sample
90% chk 10% mrlst



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

10
1000
10000
100000
1000000
10000000
100000000
1000000000

8450

8500

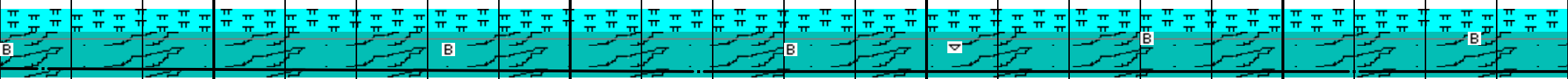
8550

8600

MD 8426 TVD 5697.06
INC 88 AZ 181.88
VS 2402.15

MD 8518 TVD 5699.83
INC 88.55 AZ 183.8
VS 2493.99

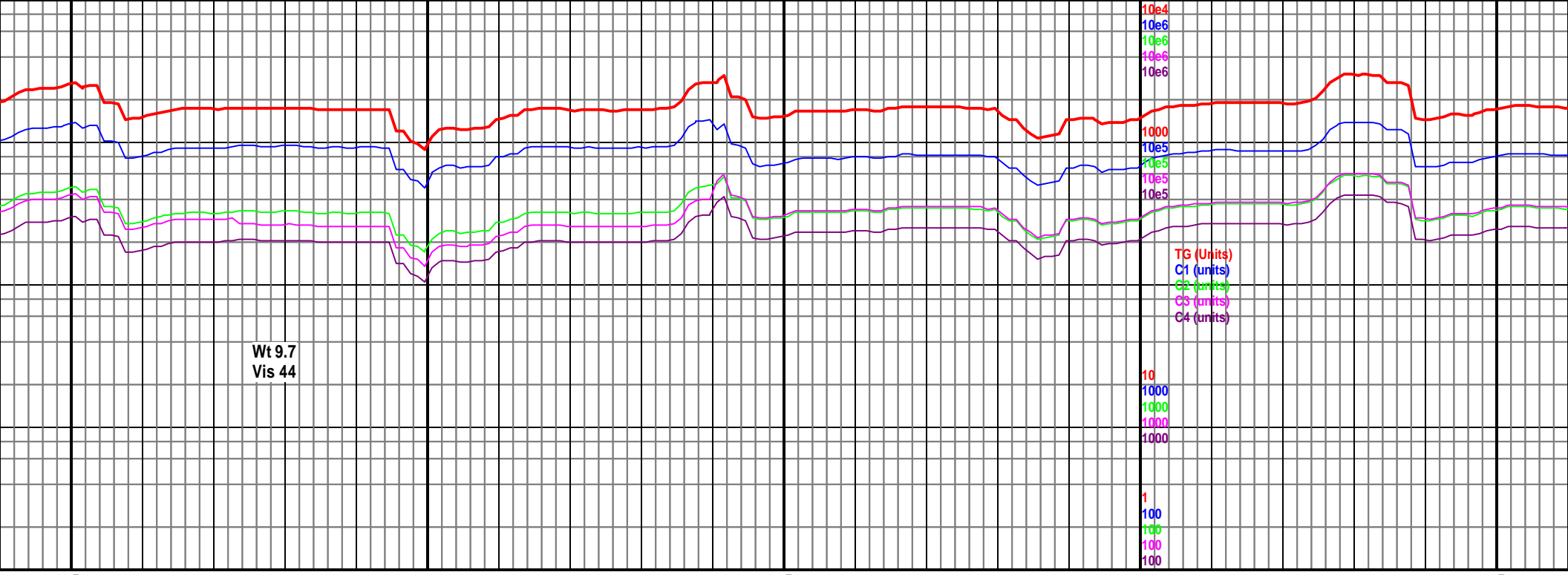
5100 TVD
Sub Sea (-34)
MD 8610 TVD 5700.6
INC 90.49 AZ 183.98
VS 2585.77



8400-8500 Chk lt gy-med gy, blkly-sb
blkly, frm, mottled, grdg to mrlst ip, tr
Mrlst dk gy, sb blkly, sft, slty, rr bent,
vis oil on sample 70% chk 30% mrlst

8500-8600 Chk gy-med brn, blkly-sb
plty, frm, mottled, abnt Mrlst dk gy, sb
blkly-sb plty, sft, slty, rr bent, rr inoc,
vis oil on sample 50% chk 50% mrlst

8600-8700
plty, frm,
blkly-sb p
vis oil on



Wt 9.7
Vis 44

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

10
1000
1000
1000
1000
1
100
100
100
100

8650

8700

8750

8800

8850

MD 8701 TVD 5699.28
INC 91.17 AZ 184.07
VS 2676.54

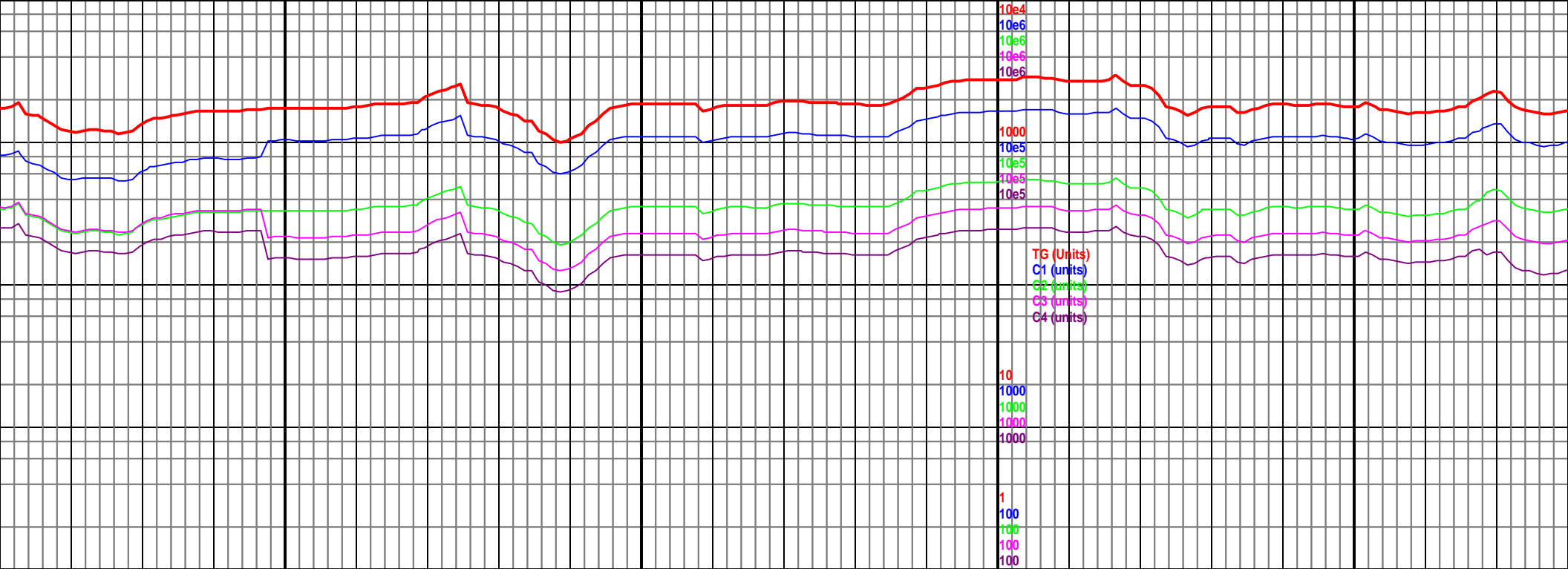
MD 8793 TVD 5697.87
INC 90.59 AZ 183.8⁽⁴⁹⁾
VS 2768.31

5500
(-749)

0 Chk gy-med brn, biky-sb
mottled, abnt Mrst dk gy, sb
lty, sft, slty, rr bent, rr inoc,
sample 50% chk 50% mrlst

8700-8800 Mrst dk gy, sb biky-sb plty,
sft, slty, dk lam, occ Chk gy-med brn,
sb biky, frm, grdg to mrlst, rr bent, rr
pyr, v sl cut 60% mrlst 40% chk

8800-8900 Mrst dk gy, sb biky
sft, slty, tr Chk med brn, sb biky
bent, rr pyr, rr inoc, v sl cut 80%
20% chk



8900

8950

9000

9050

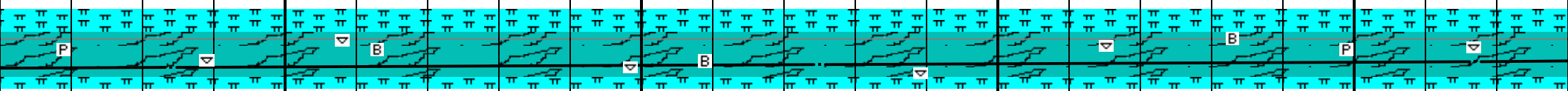
MD 8884 TVD 5695.31
INC 92.63 AZ 183.58
VS 2859.08

MD 8975 TVD 5691.93
INC 91.63 AZ 182.4
VS 2949.89

5100 TVD
Sub Sea (-349)

MD 9067 TVD 5691.93
INC 93.58 AZ 183.58
VS 3041.73

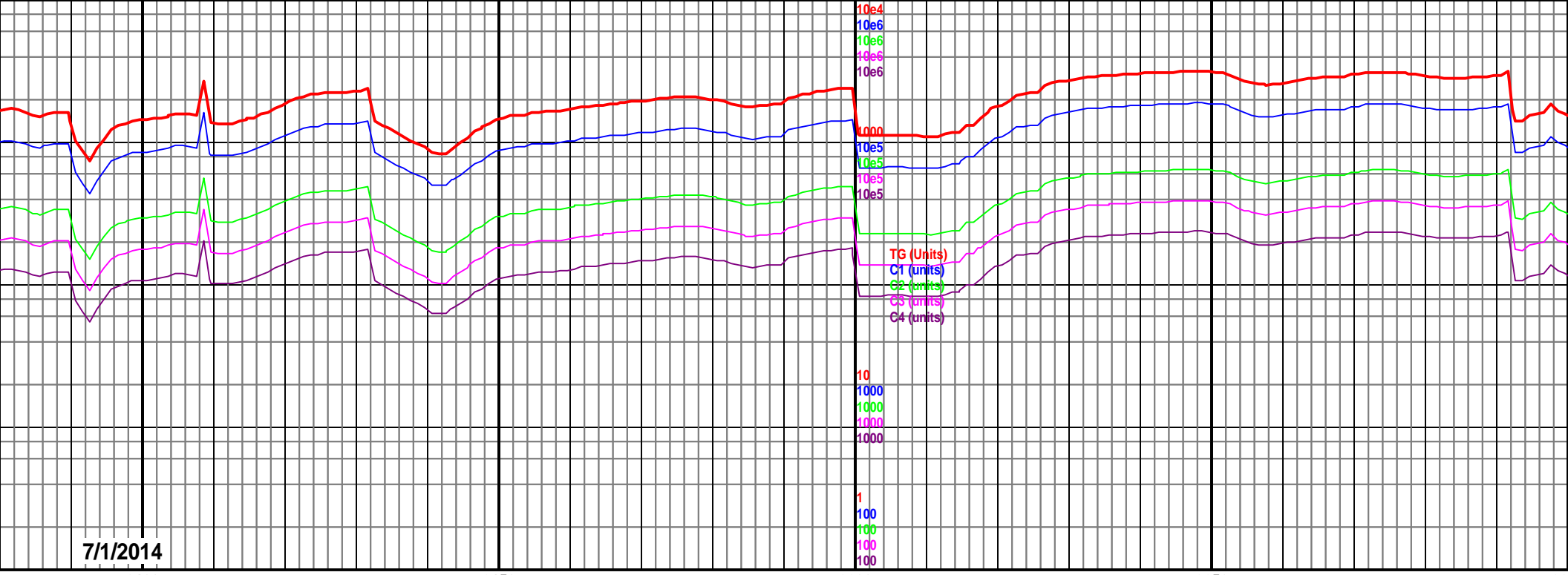
5500
(-749)



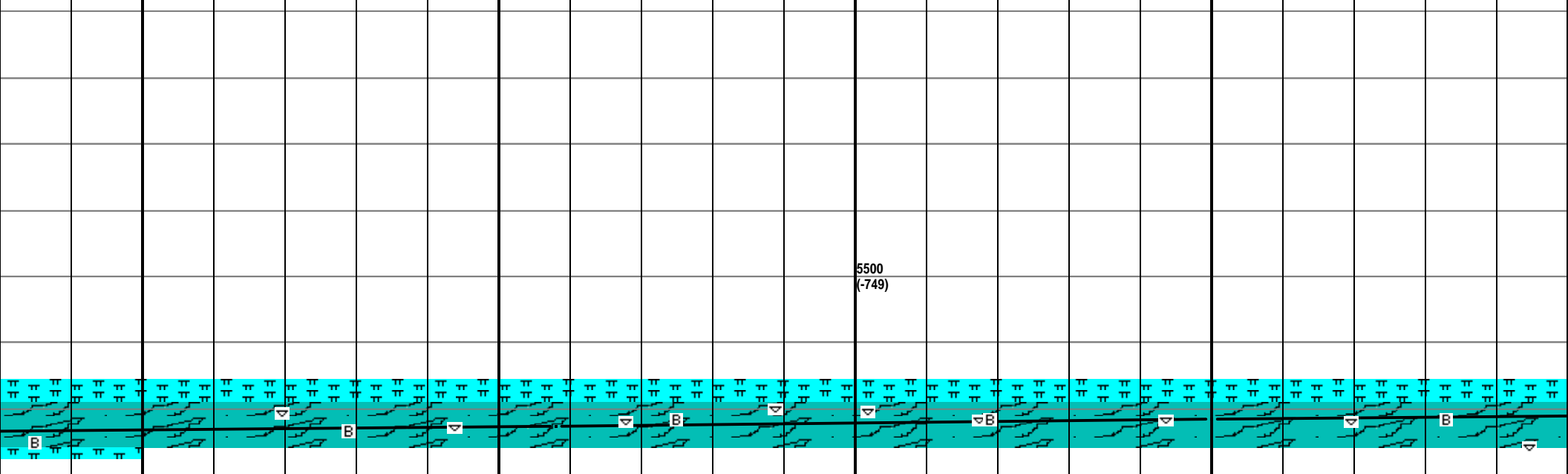
8800-8900 Mrlst dk gy, sb blk, sb plty,
sft, slty, tr Chk dk gy, sb blk, frm, tr
inoc, rr bent, v sl cut 80% mrlst 20%
chk

8800-8900 Mrlst dk gy, sb blk, sb plty,
sft, slty, tr Chk dk gy, sb blk, frm, tr
inoc, rr bent, v sl cut 80% mrlst 20%
chk

9000-9100 Mrlst dk gy, sb blk, sft,
slty, abnt Chk gy-lt gy, sb blk, frm,
mottled, rr inoc, rr bent, rr pyr, v sl cut
50% mrlst 50% chk

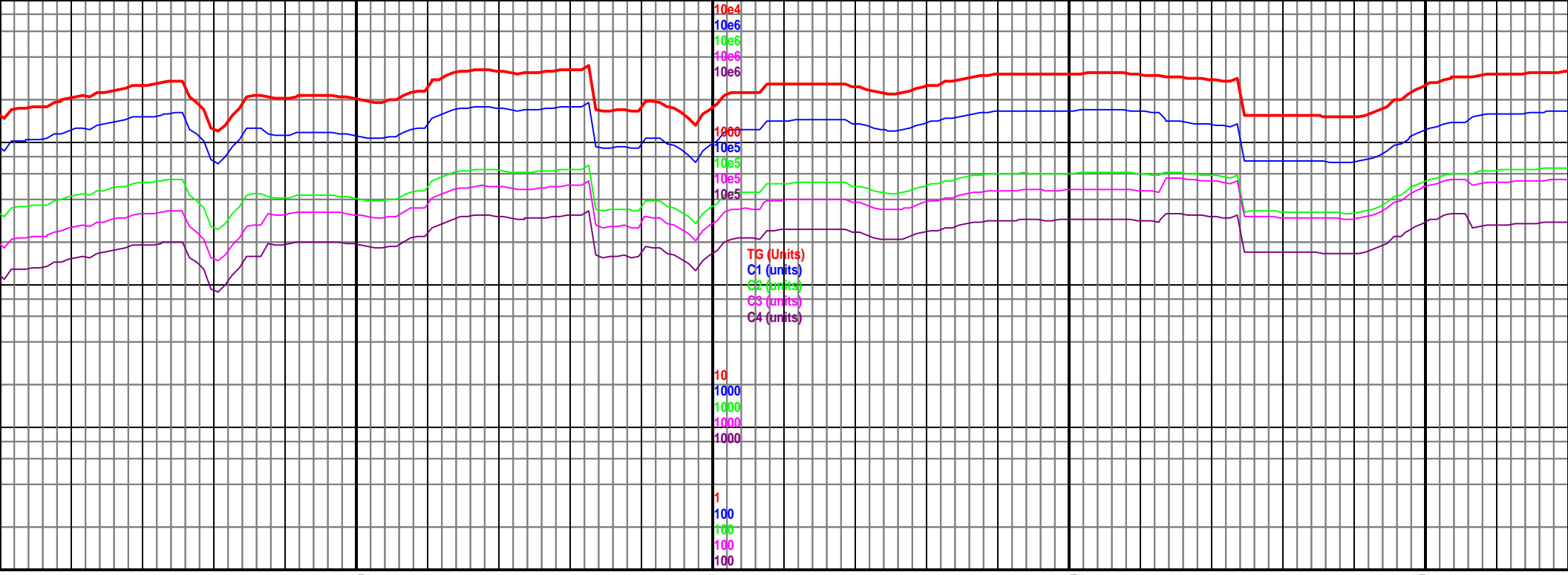


687.75 1.79	MD 9158 TVD 5681.35 INC 94.48 AZ 181.26 VS 3132.47	5100 TVD Sub Sea (-349)	MD 9250 TVD 5673.16 INC 95.74 AZ 180.56 VS 3224.09
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9100-9200 Chk lt gy-med gy, blkly-sb plty, frm, mottled, occ Mrlst dk gy, sb blkly-sb plty, sft, slty, rr bent, tr inoc, sl cut 70% chk 30% mrlst

9200-9300 Chk lt gy-gy, blkly-sb plty, frm, mottled, tr Mrlst dk gy, sb blkly-sb plty, sft, slty, rr bent, tr inoc, sl cut 80% chk 20% mrlst



00 9350 9400 9450 9500

MD 9341 TVD 5665.38
INC 94.07 AZ 181.56
VS 3314.74

5100 TVD
Sub Sea (-349)

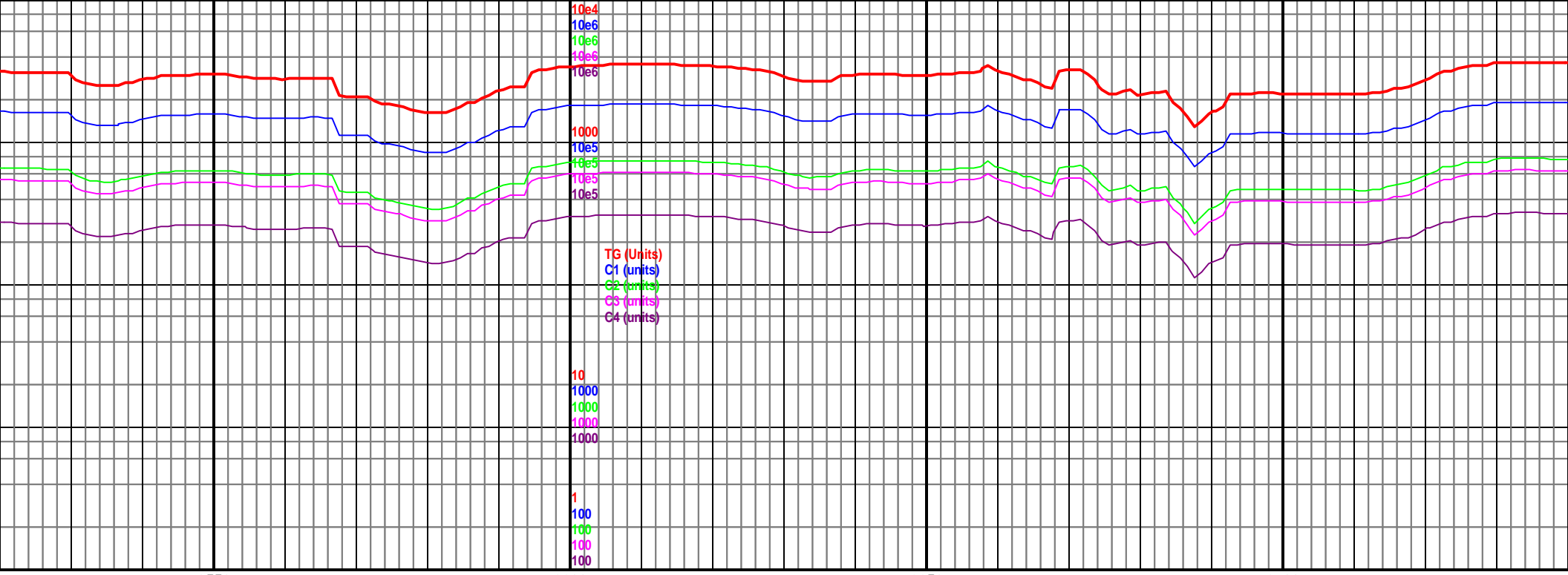
MD 9432 TVD 5661.44
INC 90.89 AZ 180.72
VS 3405.62

5500
(-749)



9300-9400 Chk lt gy-gy, blk-y-plty, frm,
mottled, tr Mrlst dk gy, sb blk-y-sb plty, sft,
sfty, rr bent, tr inoc, sl cut 80% chk 20%
mrlst

9400-9500 Chk lt gy-gy, blk-y-plty, frm,
mottled, tr Mrlst dk gy, sb blk-y-sb plty, sft,
sfty, rr bent, tr inoc, sl cut 80% chk 20%
mrlst



9500

9600

9650

9700

MD 9524 TVD 5659.79
INC 91.17 AZ 179.94
VS 3497.6

5100 TVD
Sub Sea (-349)

MD 9615 TVD 5657.48
INC 91.73 AZ 179.24
VS 3588.57

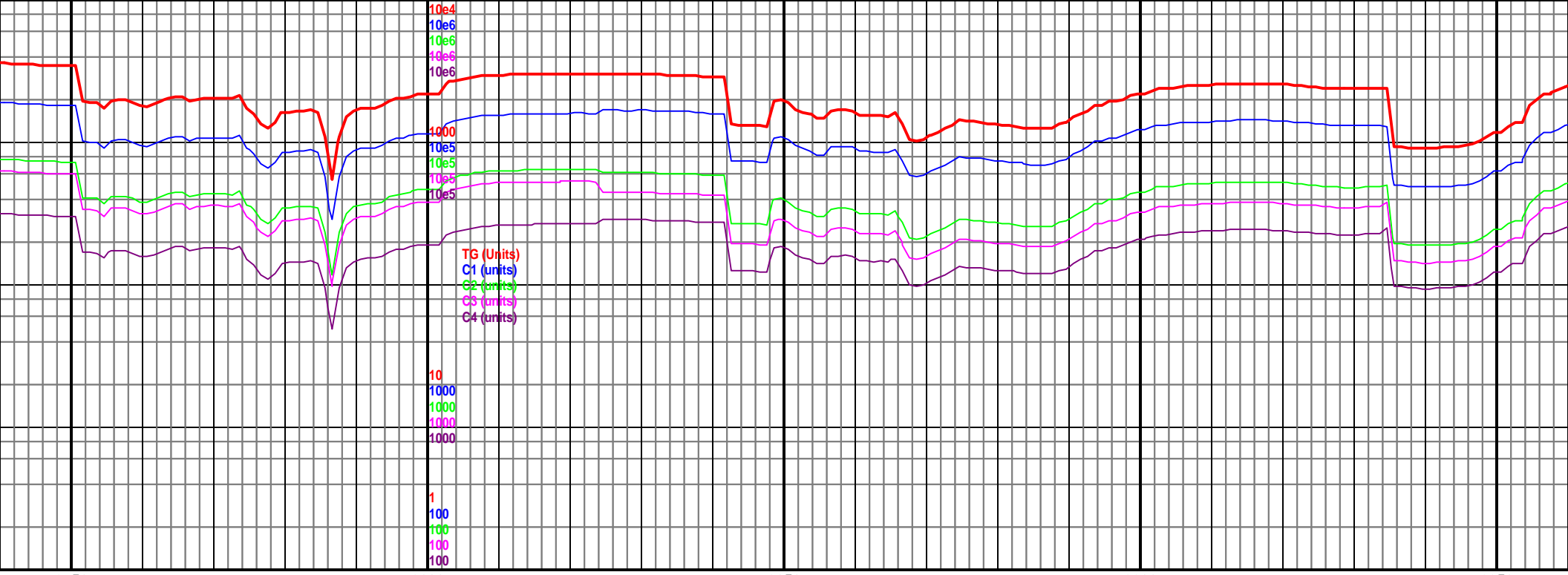
MD 9707 TVD 5654.76
INC 91.66 AZ 178.28
VS 3680.51

5500
(-749)

9500-9600 Chk lt gy-med gy, blk-pty,
frm, mottled, dk lam ip, rr Mrst gy-dk gy,
sb blk-sb pty, sft, slty, rr inoc, sl cut
90% chk 10% mrst

9600-9700 Chk lt gy-med gy, blk-pty,
frm, mottled, dk lam ip, rr Mrst gy-dk
gy, sb blk-sb pty, sft, slty, rr inoc, sl
cut 70% chk 30% mrst

9700-
pty,
blk-
inoc



9750

9800

9850

9900

9950

MD 9798 TVD 5653.86
INC 89.48 AZ 178.66
VS 3771.47

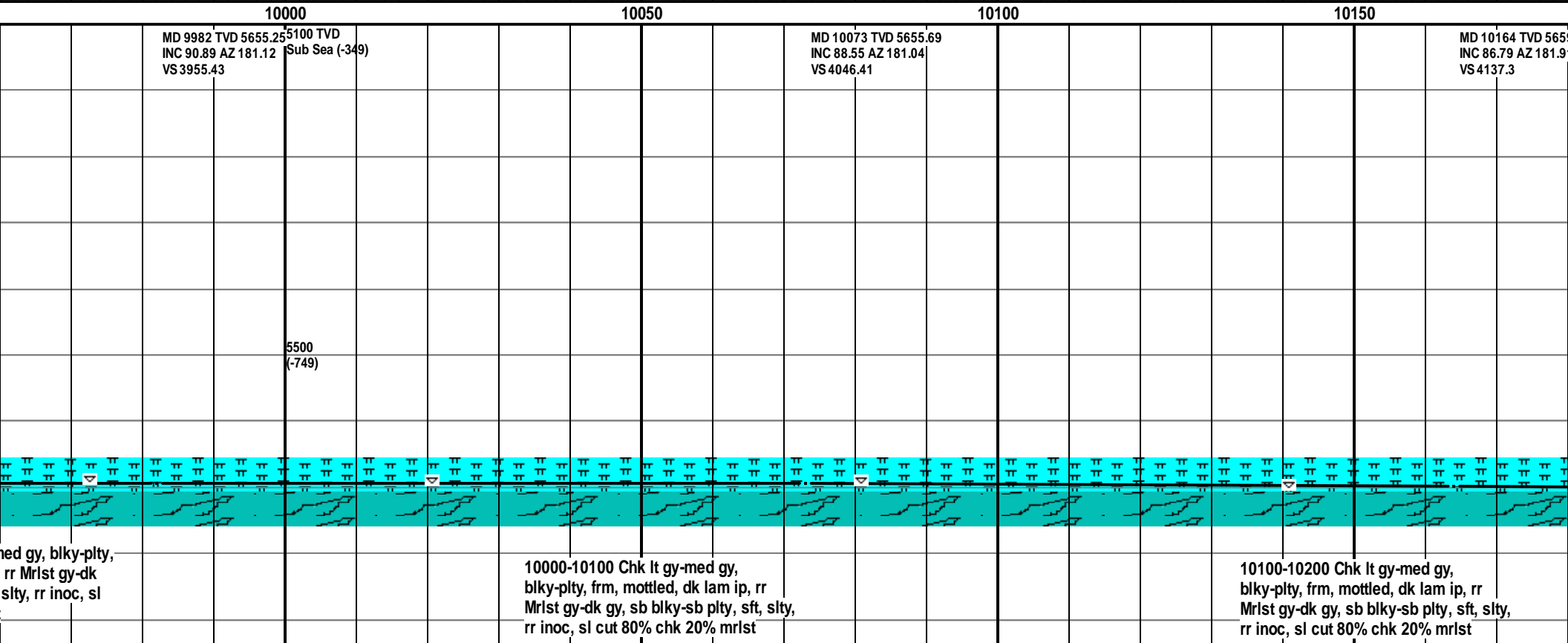
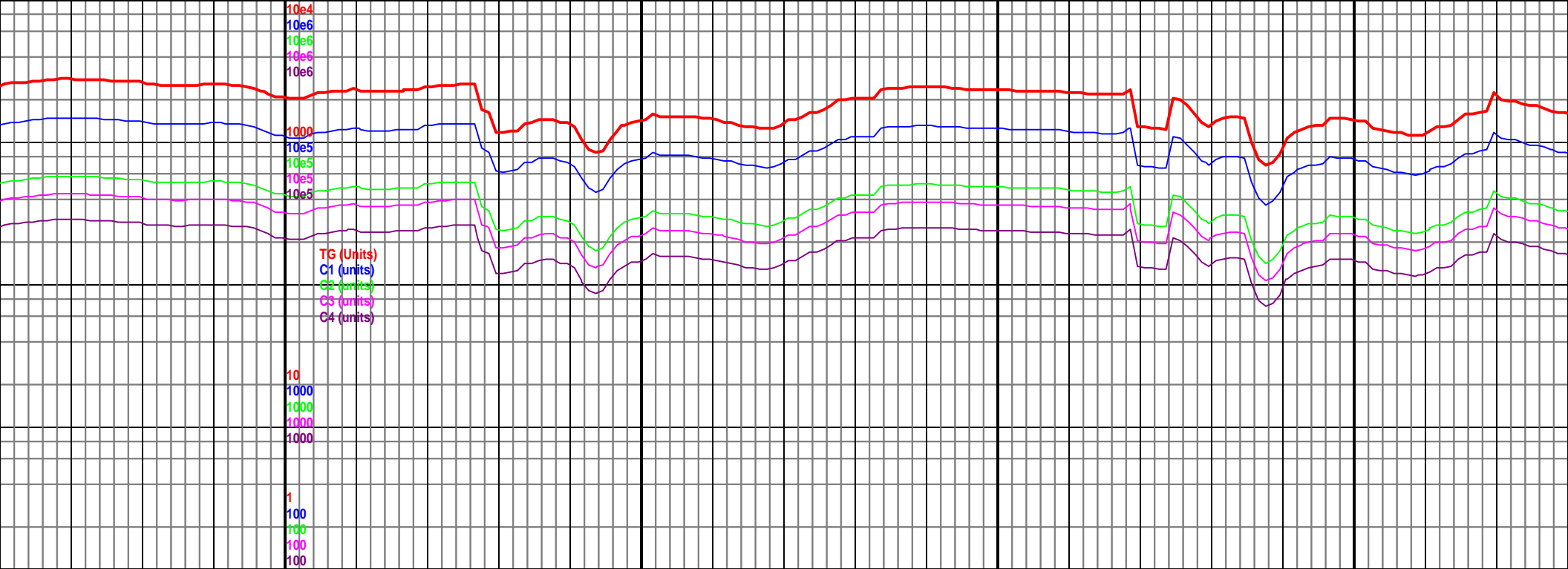
MD 9890 TVD 5655.12
INC 88.95 AZ 180.78
VS 3863.45

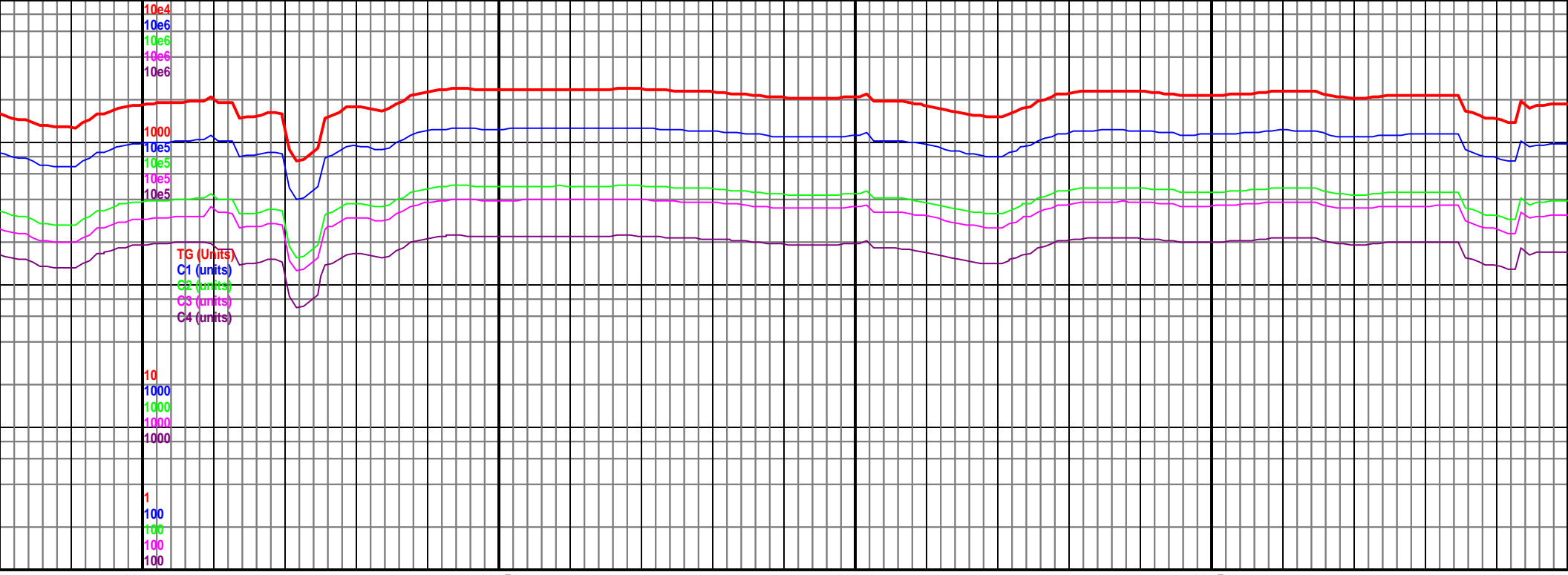
5500
(-749)

0-9800 Mrlst gy-dk gy, sb blk-y-sb
sft, slty, tr Chk lt gy-med gy,
-plty, frm, mottled, dk lam ip, rr
, sl cut 70% mrlst 30% chk

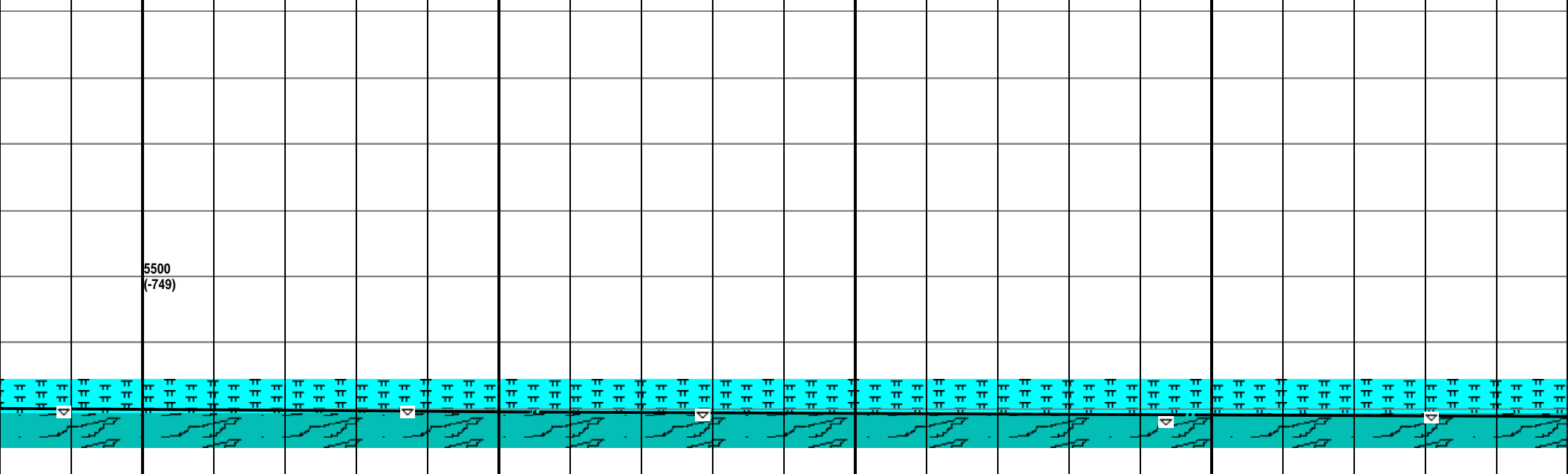
9800-9900 Mrlst gy-dk gy, sb blk-y-sb
plty, sft, slty, tr Chk lt gy-med gy,
blk-y-plty, frm, mottled, dk lam ip, rr
inoc, sl cut 60% mrlst 40% chk

9900-10000 Chk lt gy-n
frm, mottled, dk lam ip,
gy, sb blk-y-sb plty, sft,
cut 80% chk 20% mrlst



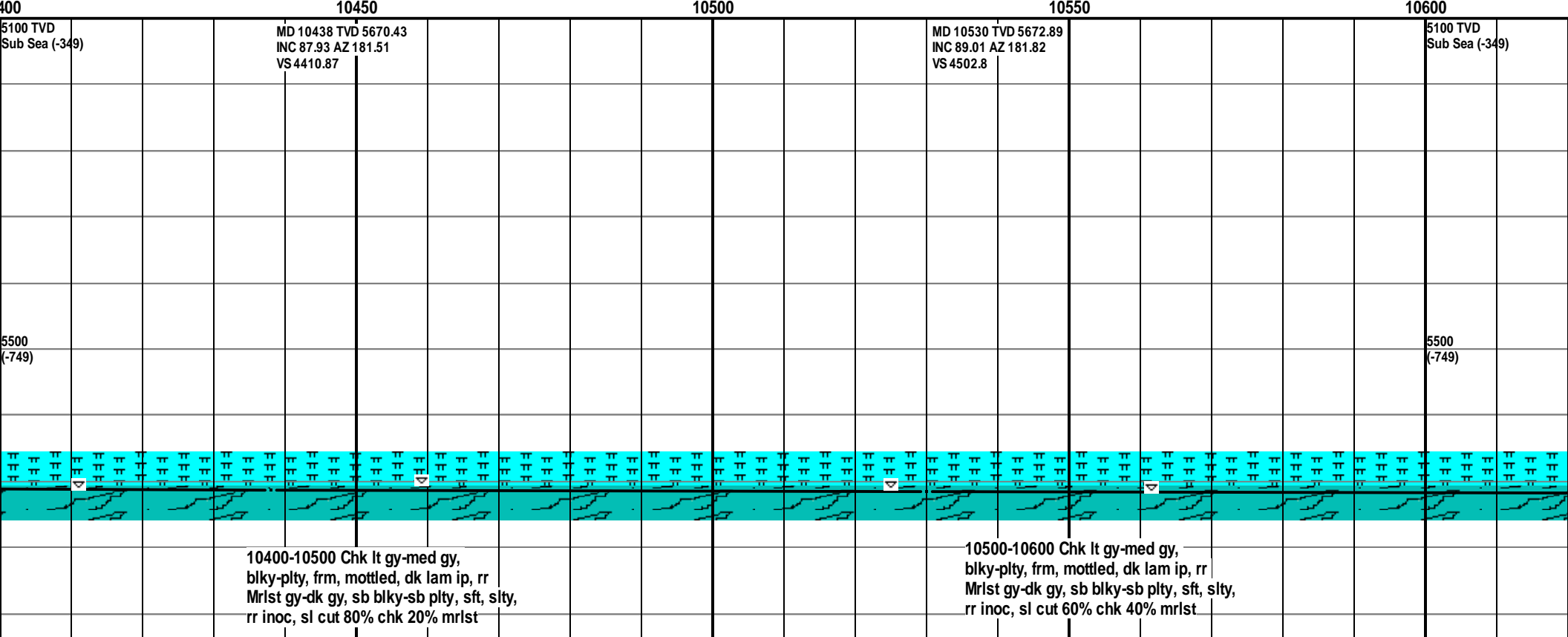
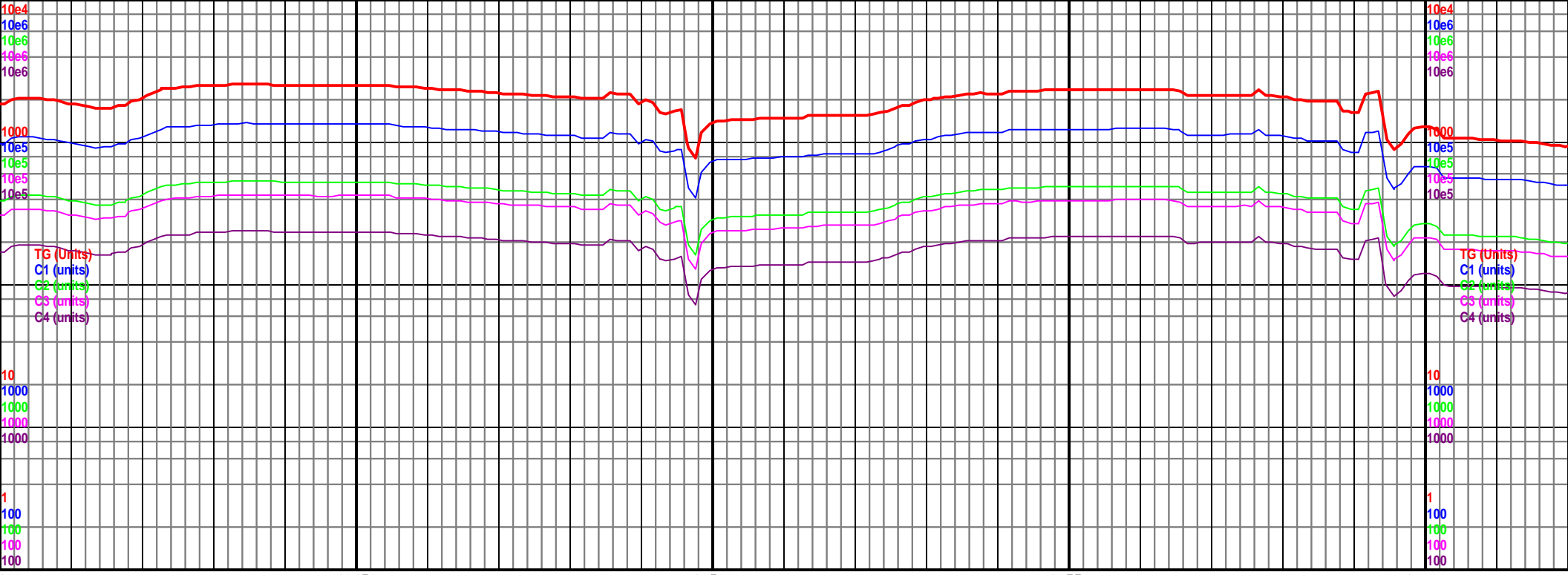


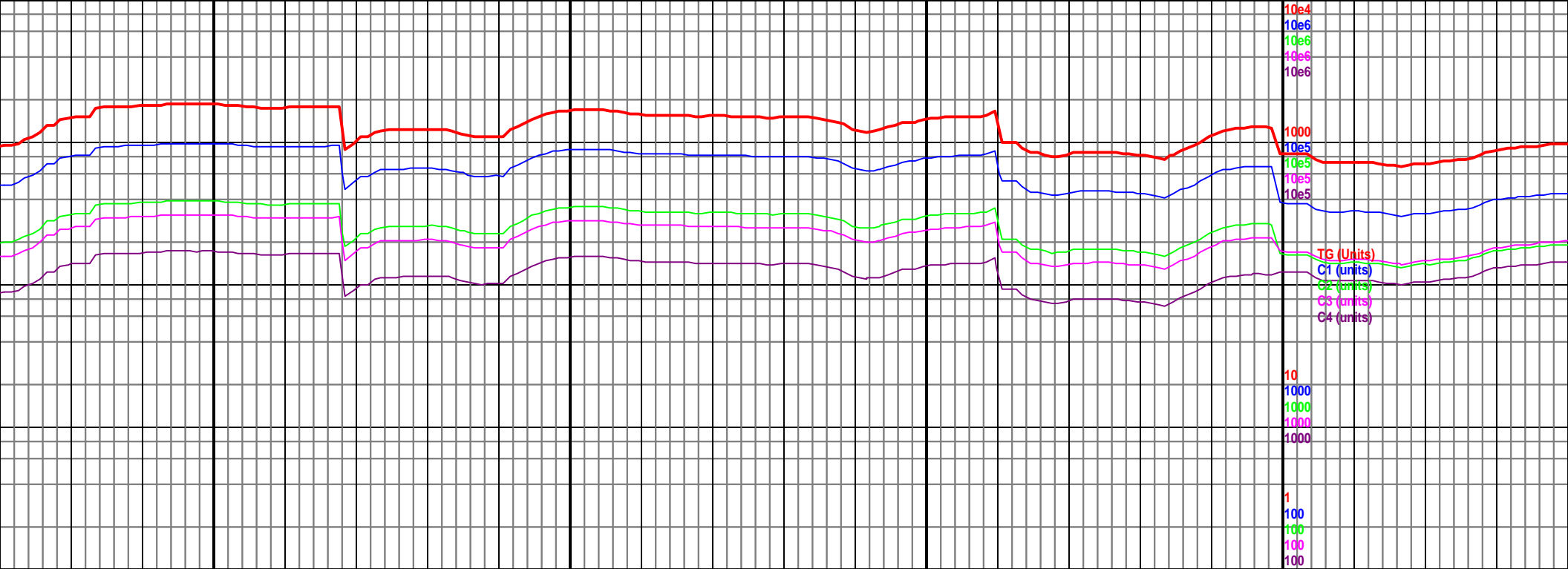
Depth (m)	MD	TVD (m)	INC (°)	AZ (°)	VS (m)
5100	Sub Sea	-349			
5500		-749			
10255	MD 10255	5663.68	87.81	182.69	4228.12
10347	MD 10347	5667.12	87.9	182.15	4319.98



10200-10300 Chk lt gy-med gy,
blky-pty, frm, mottled, dk lam ip, rr
Mrst gy-dk gy, sb blky-sb pty, sft, slty,
rr inoc, sl cut 80% chk 20% mrst

10300-10400 Chk lt gy-med gy,
blky-pty, frm, mottled, dk lam ip, rr
Mrst gy-dk gy, sb blky-sb pty, sft, slty,
rr inoc, sl cut 80% chk 20% mrst





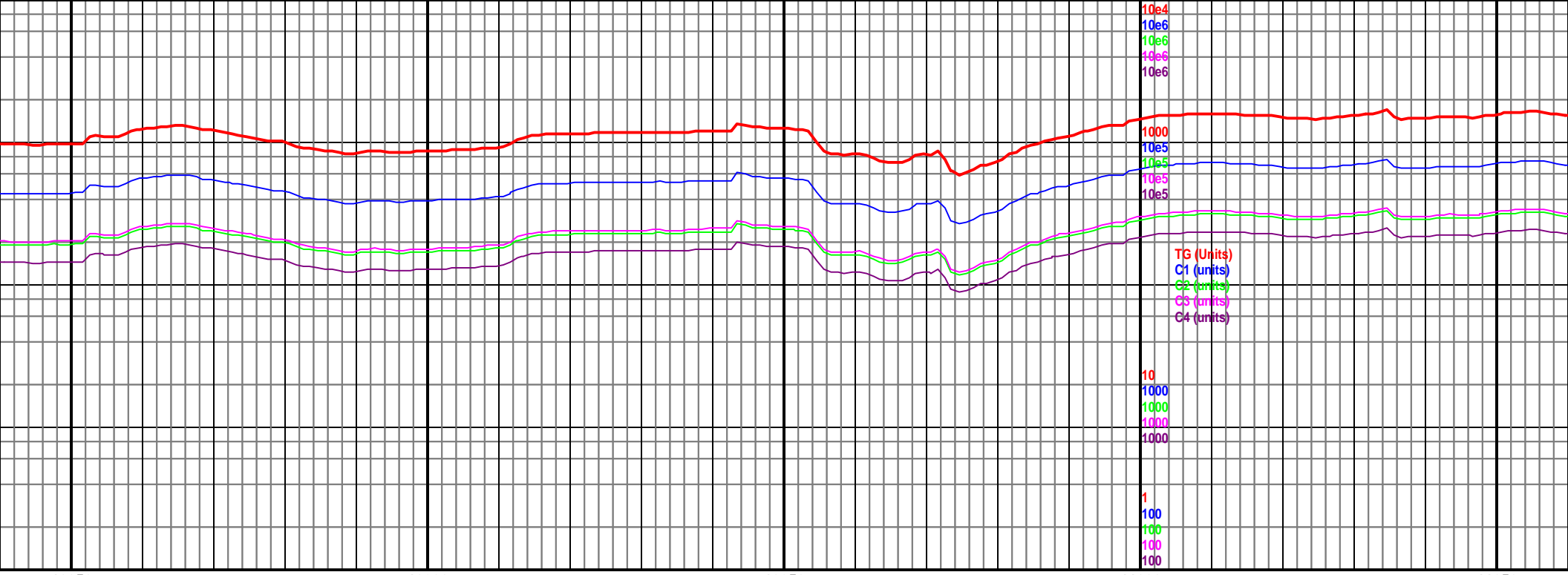
MD 10622 TVD 5674.18 INC 89.38 AZ 181.79 VS 4594.74	MD 10713 TVD 5675.14 INC 89.41 AZ 181.07 VS 4685.71	MD 10805 TVD 5676.16 INC 89.32 AZ 179.6 VS 4777.7
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5500
(-749)

10600-10700 Chk lt gy-med gy,
blky-pty, frm, mottled, dk lam ip, rr
Mrst gy-dk gy, sb blky-sb pty, sft, slty,
rr inoc, sl cut 70% chk 30% mrst

10700-10800 Chk lt gy-med gy,
blky-pty, frm, mottled, dk lam ip, rr
Mrst gy-dk gy, sb blky-sb pty, sft, slty,
rr inoc, sl cut 80% chk 20% mrst

10800-
blky-
Mrst
rr inoc



10850

10900

10950

11000

11050

MD 10897 TVD 5677.16
INC 89.44 AZ 178.76
VS 4869.68

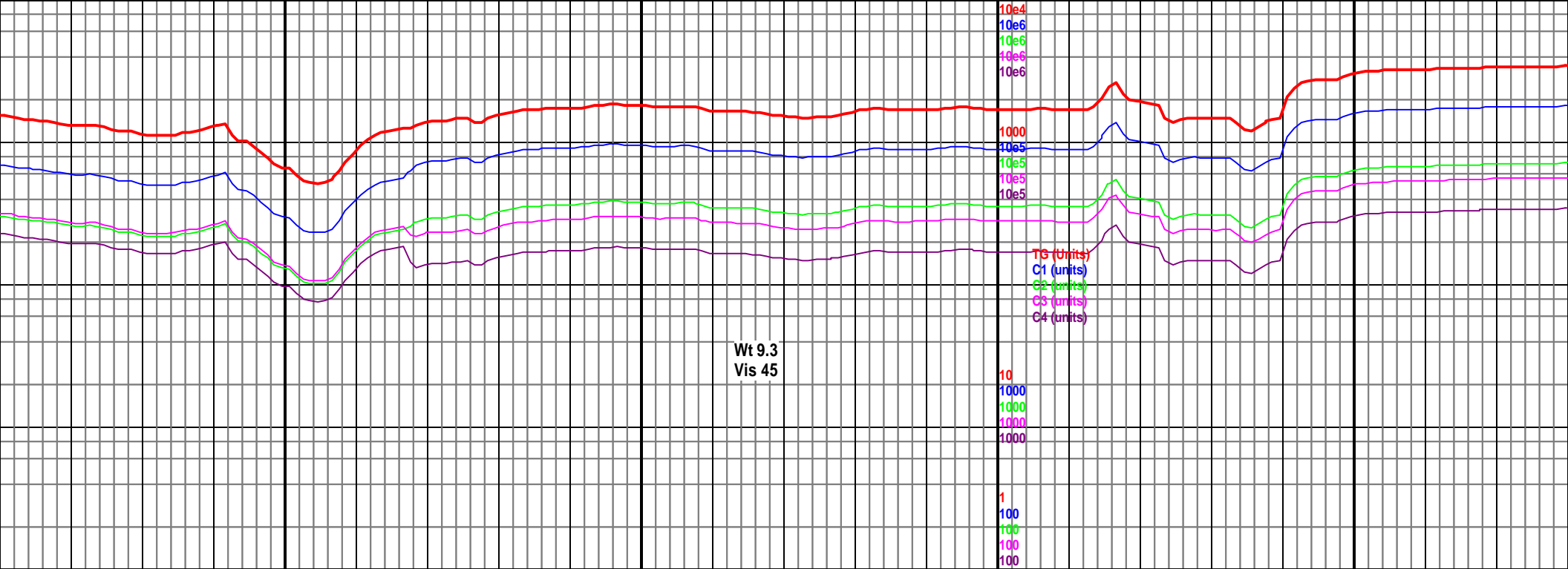
MD 10988 TVD 5678.19
INC 89.26 AZ 179.72^{ea} (-349)
VS 4960.67

5500
(-749)

0-10900 Chk lt gy-med gy,
plty, frm, mottled, dk lam ip, rr
gy-dk gy, sb blkgy-sb plty, sft, slty,
c, sl cut 80% chk 20% mrlst

10900-11000 Chk lt gy-med gy, sb
blkgy-plty, frm, mottled, abnt Mrlst gy-dk
gy, sb blkgy-sb plty, sft, slty, tr inoc, sl
cut 60% chk 40% mrlst

11000-11100 Chk gy-med gy, s
blkgy-plty, frm, mottled, grdg to
abnt Mrlst dk gy, sb blkgy-sb pl
slty, tr inoc, sl cut 50% chk 50



11100

11150

11200

11250

MD 11080 TVD 5679.1
INC 89.6 AZ 178.16
VS 5052.64

MD 11171 TVD 5680.03
INC 89.23 AZ 176.55
VS 5143.54

5100 TVD
Sub Sea (-349)

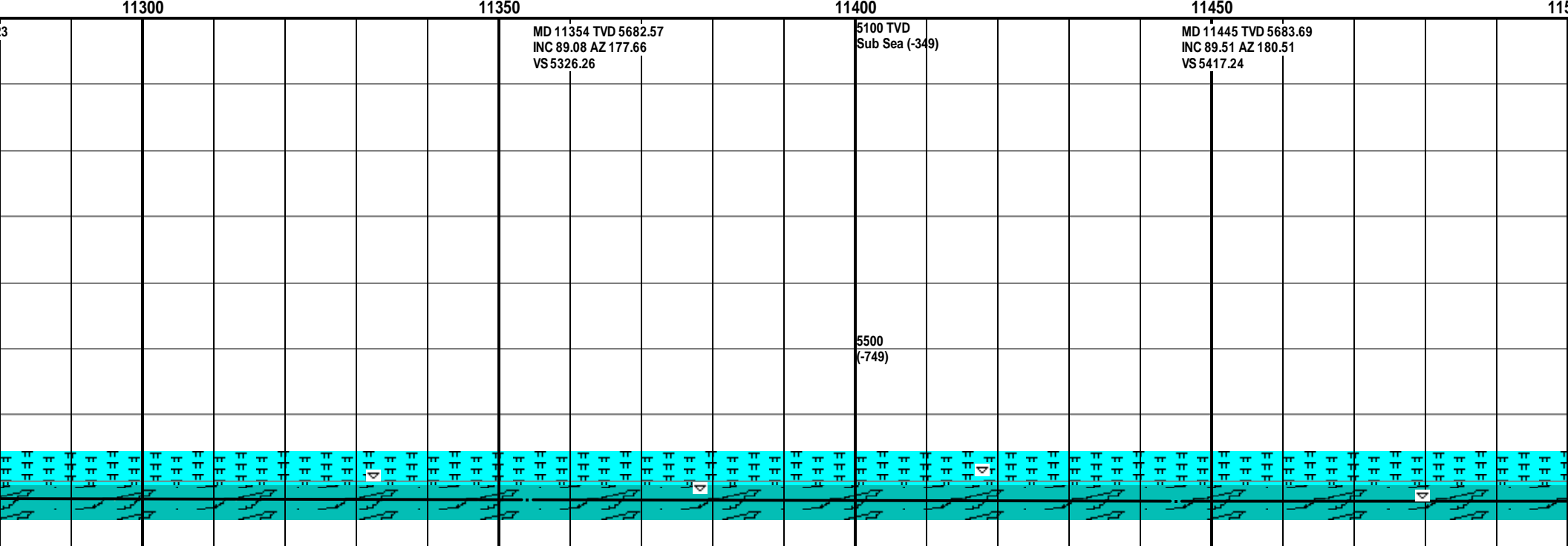
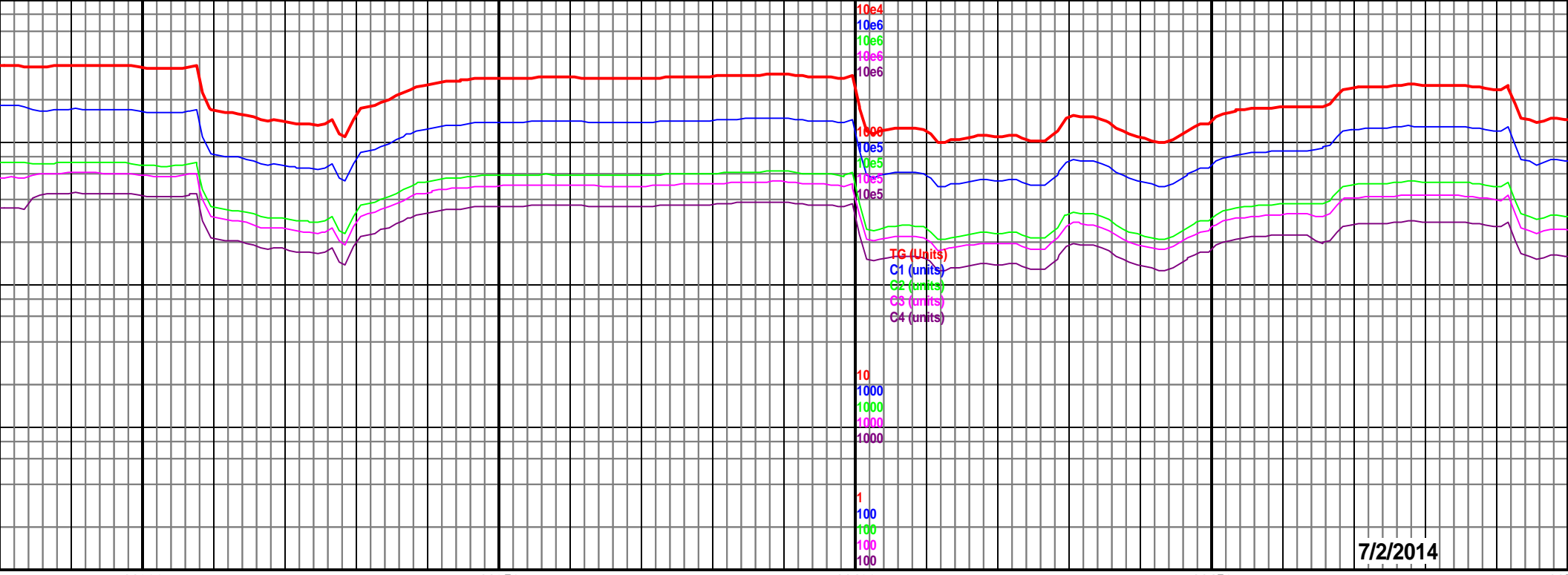
MD 11262 TVD 5681.2
INC 89.26 AZ 176.85
VS 5234.38

5500
(-749)

sb
mrlst ip,
ty, sft,
% mrlst

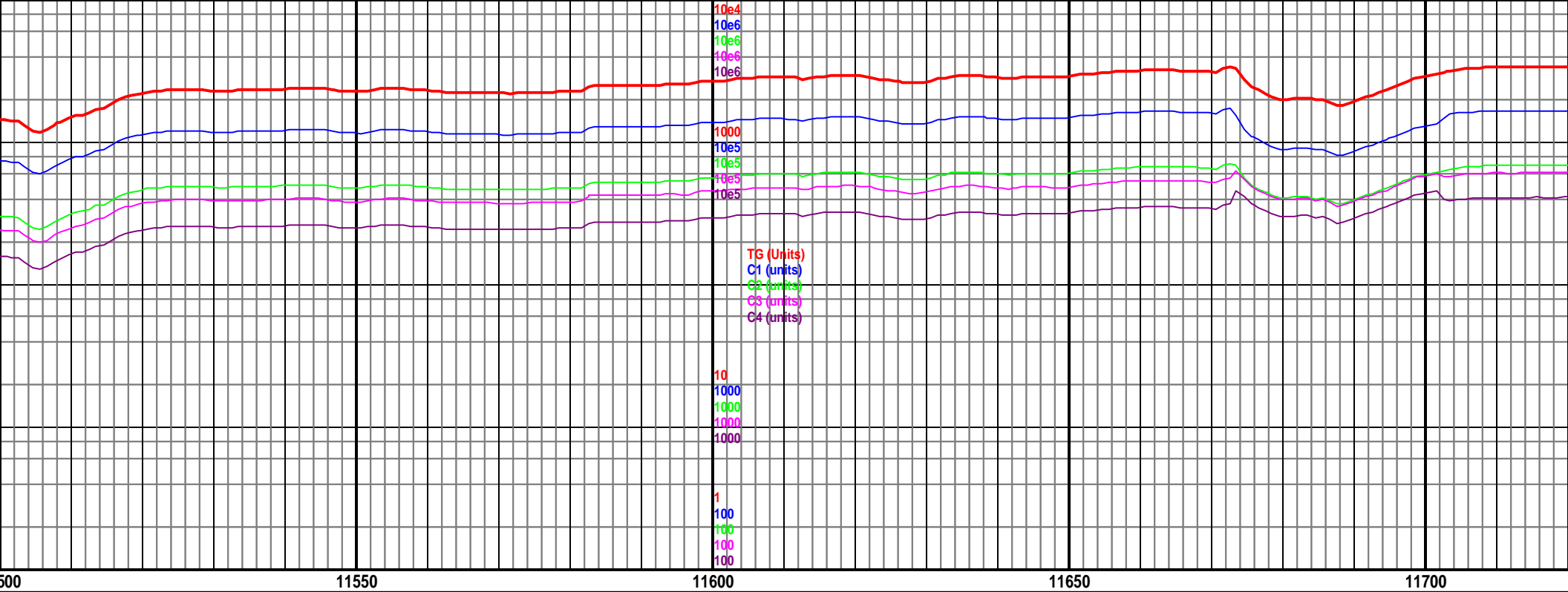
11100-11200 Chk lt gy-med gy, sb
blky-plty, frm, mottled, tr Mrlst gy-dk
gy, sb blky-blky, sft, slty, tr inoc, sl cut
70% chk 30% mrlst

11200-11300 Chk lt gy-gy, sb blky-blky,
frm, mottled, tr Mrlst gy-dk gy, sb
blky-blky, sft, slty, tr inoc, sl cut 80%
chk 20% mrlst

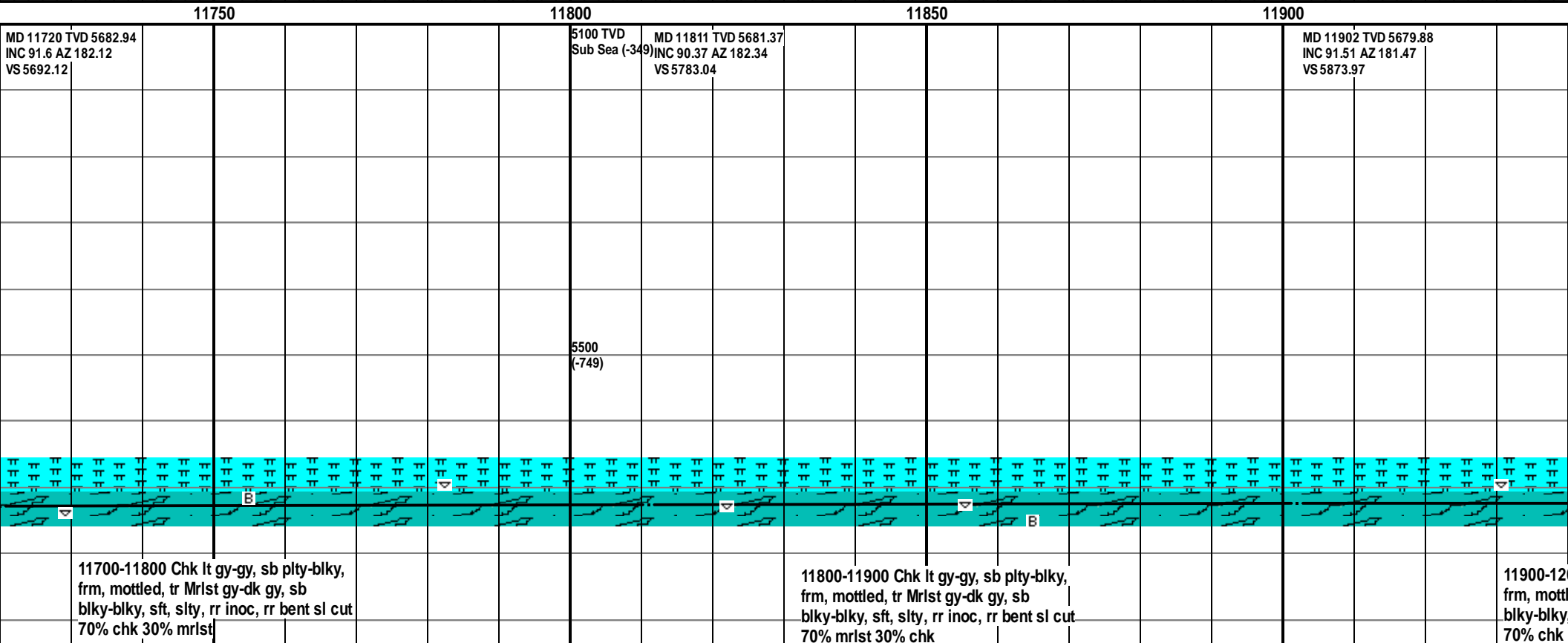


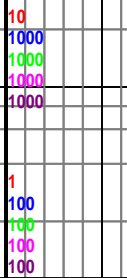
11300-11400 Chk lt gy-med brn, sb
plty-blky, frm, mottled, rr Mrlst gy-dk
gy, sb blky-blky, sft, slty, rr inoc, sl cut
90% chk 10% mrlst

11400-11500 Chk lt gy-med brn, sb
plty-blky, frm, mottled, rr Mrlst gy-dk
gy, sb blky-blky, sft, slty, rr inoc, sl cut
90% chk 10% mrlst



The diagram is a geological cross-section on a grid. A horizontal line represents the ground surface. Below it, a thick blue layer represents a specific geological unit. Within this blue layer, there are several small, dark, irregular shapes. A vertical line runs through the center of the diagram, representing a well. To the left of the well, there is a label: "MD 11537 TVD 5684.4 INC 89.6 AZ 181.97 VS 5509.21". To the right of the well, there is a label: "MD 11628 TVD 5684.47 INC 90.31 AZ 181.15 VS 5600.17". Below the blue layer, there are two labels: "11500-11600 Chk lt gy-med brn, plty-blky, frm, mottled, rr Mrlst gy-dk gy, sb blky-blky, sft, slty, rr inoc, sl cut 90% chk 10% mrlst" and "11600-11700 Chk lt gy-med brn, plty-blky, frm, mottled, rr Mrlst gy-dk gy, sb blky-blky, sft, slty, rr inoc, sl cut 90% chk 10% mrlst".



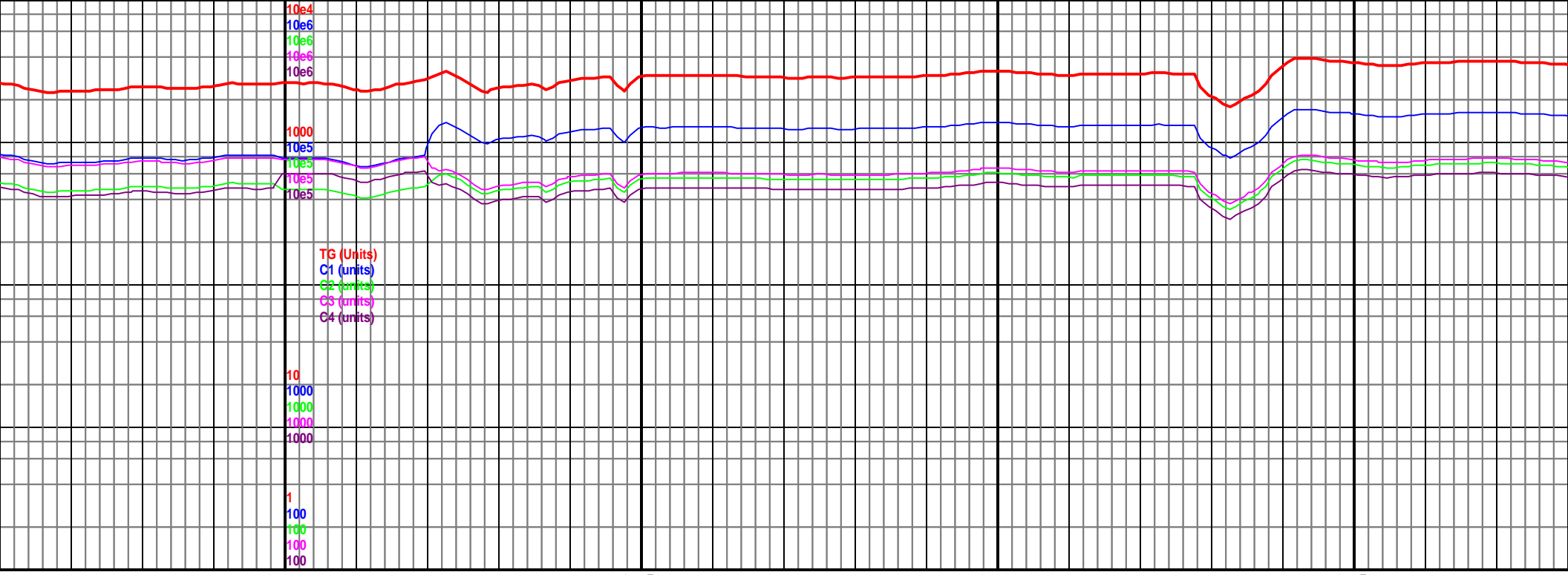


12150

MD 12084 TVD 5680.47
INC 88.61 AZ 181.51
VS 6055.9

	F	=
	F	F
	F	F

12100-12200 Chk lt gy-gy,
frm, mottled, tr Mrlst gy-dk
blky-blky, sft, slty, rr inoc,
cut 90% chk 10% mrlst



MD 12176 TVD 5681.98
INC 89.51 AZ 180.64
VS 6147.87

5100 TVD
Sub Sea (-349)

MD 12268 TVD 5683.33
INC 88.8 AZ 183.77
VS 6239.78

5500
(-749)

sb plty-blky,
gy, sb
rr bent, sl

12200-12300 Chk lt gy-gy, sb plty-blky,
frm, mottled, tr Mrlst gy-dk gy, sb
blky-blky, sft, slty, rr inoc, rr bent, sl
cut 90% chk 10% mrlst

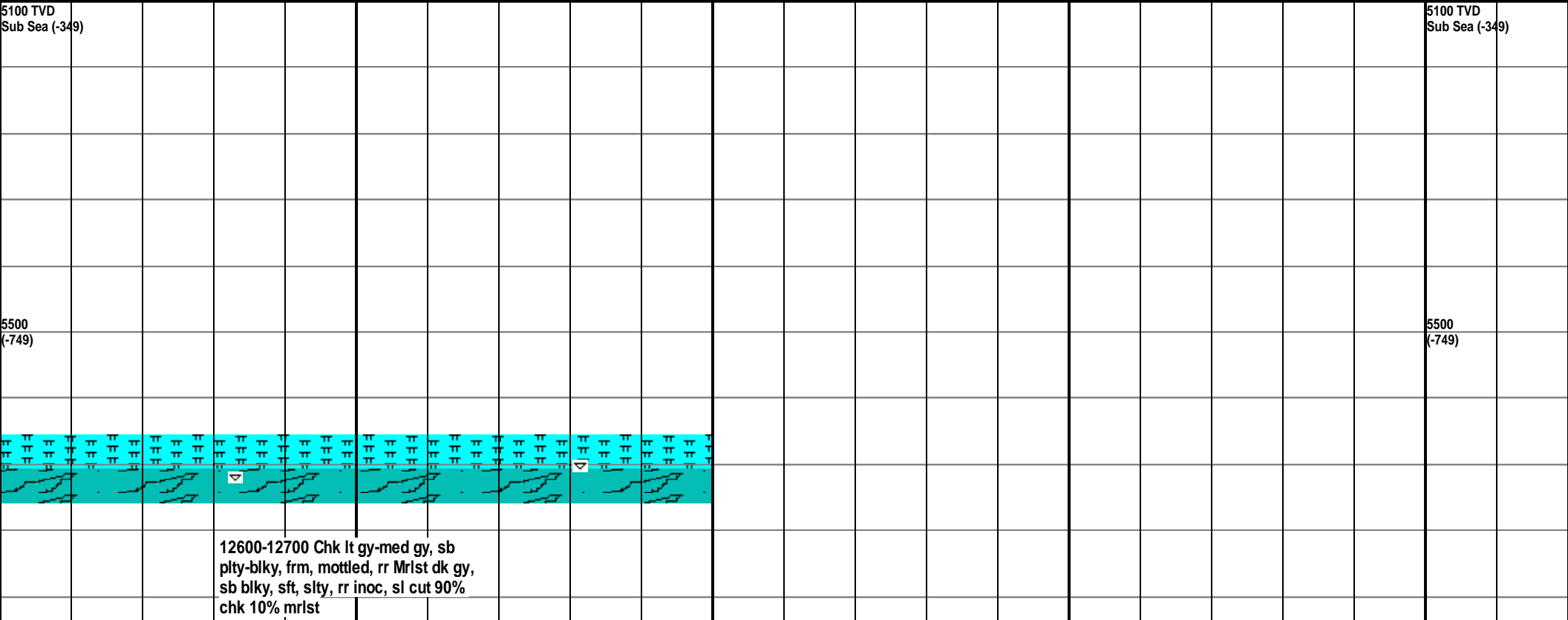
12300-12400 Chk lt gy-gy, sb plty-blky,
frm, mottled, tr Mrlst gy-dk gy, sb
blky-blky, sft, slty, rr inoc, rr bent, sl
cut 90% chk 10% mrlst

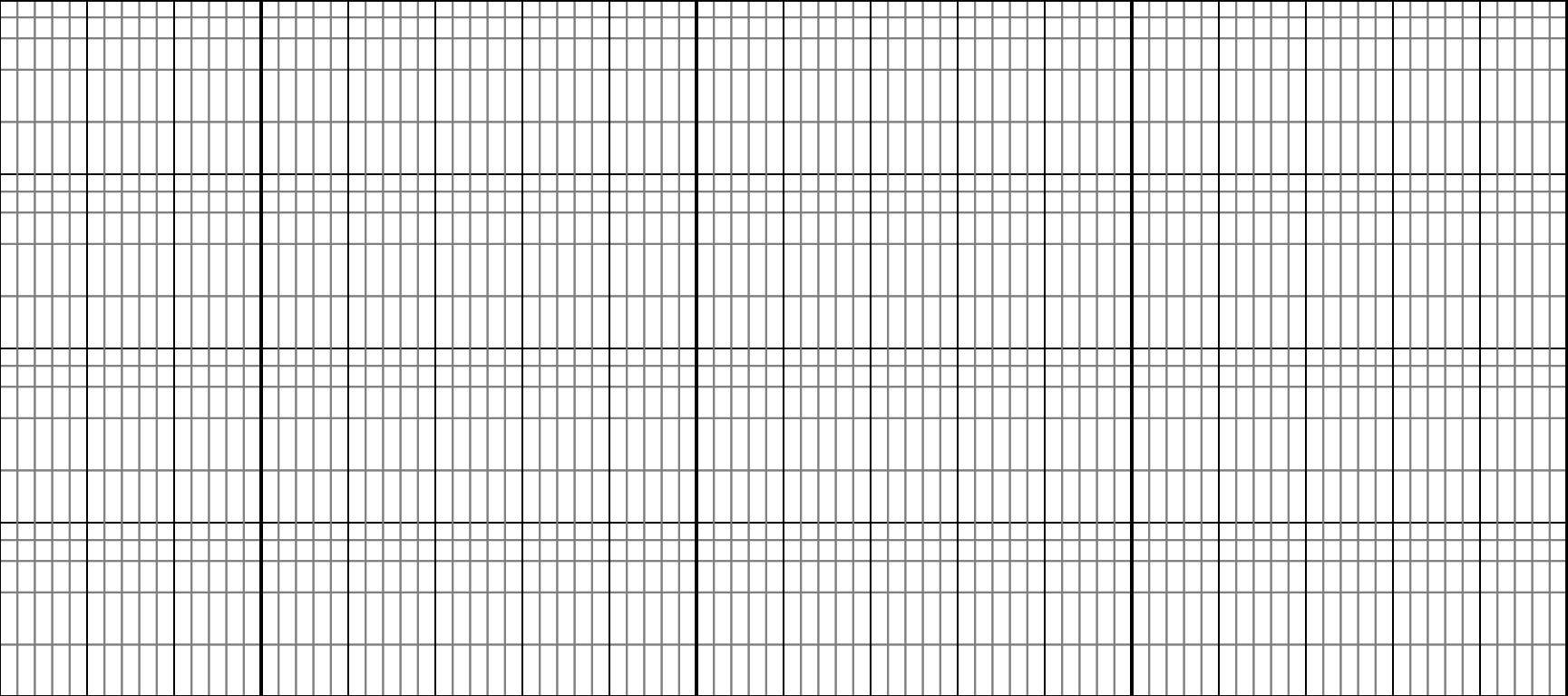


5500
(-749)



12500-12600	Chk lt gy-gy, sb blk-y-blky, frm, mottled, tr Mrlst gy-dk gy, sb blk-y, sft, slty, rr inoc, sl cut 90% chk 10% mrlst		
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12850

12900

12950

13

