



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

Well Name: Horsetail 07G-1812
Well Id: 05-123-42121-00
Location: Sec 7-T10N-R57W
License Number: 05-123-42121-00
Spud Date: 3/6/2016
Surface Coordinates: Lat.: 40.853628 Long.: -103.791233

Region: Redtail Field
Drilling Completed: 3/11/2016

Bottom Hole Coordinates:

Ground Elevation (ft): 4892
Logged Interval (ft): 5126 To: 14010
Formation: Niobrara B
Type of Drilling Fluid: Water Based Mud

K.B. Elevation (ft): 4913
Total Depth (ft): 14010

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: Eli DenBesten and Brian Reddick
Company: Acme Geologic Consulting
Address: 108 Berry Street
Little Rock, AR 72205

Drilling Company

Unit Drilling Company
Rig 409

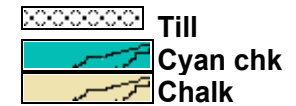
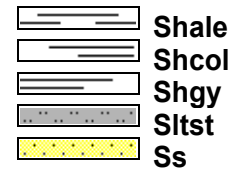
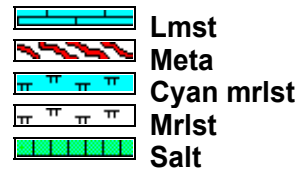
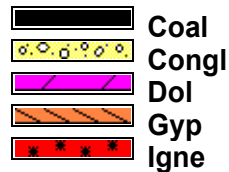
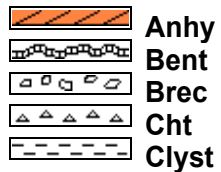
Gas Detection

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

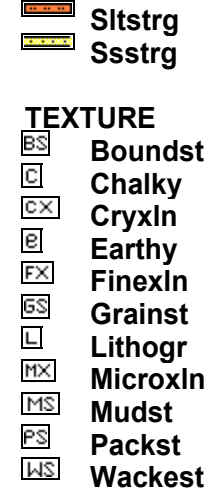
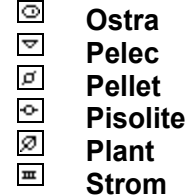
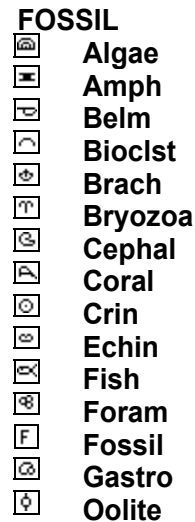
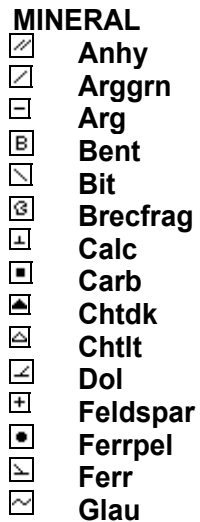
Comments

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

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







Vuggy

SORTING

-  Well
-  Moderate
-  Poor

OTHER SYMBOLS

ROUNDING

-  Rounded
-  Subrnd
-  Subang
-  Angular

OIL SHOW

-  Even



Spotted



Ques



Dead

INTERVAL



Core



Dst

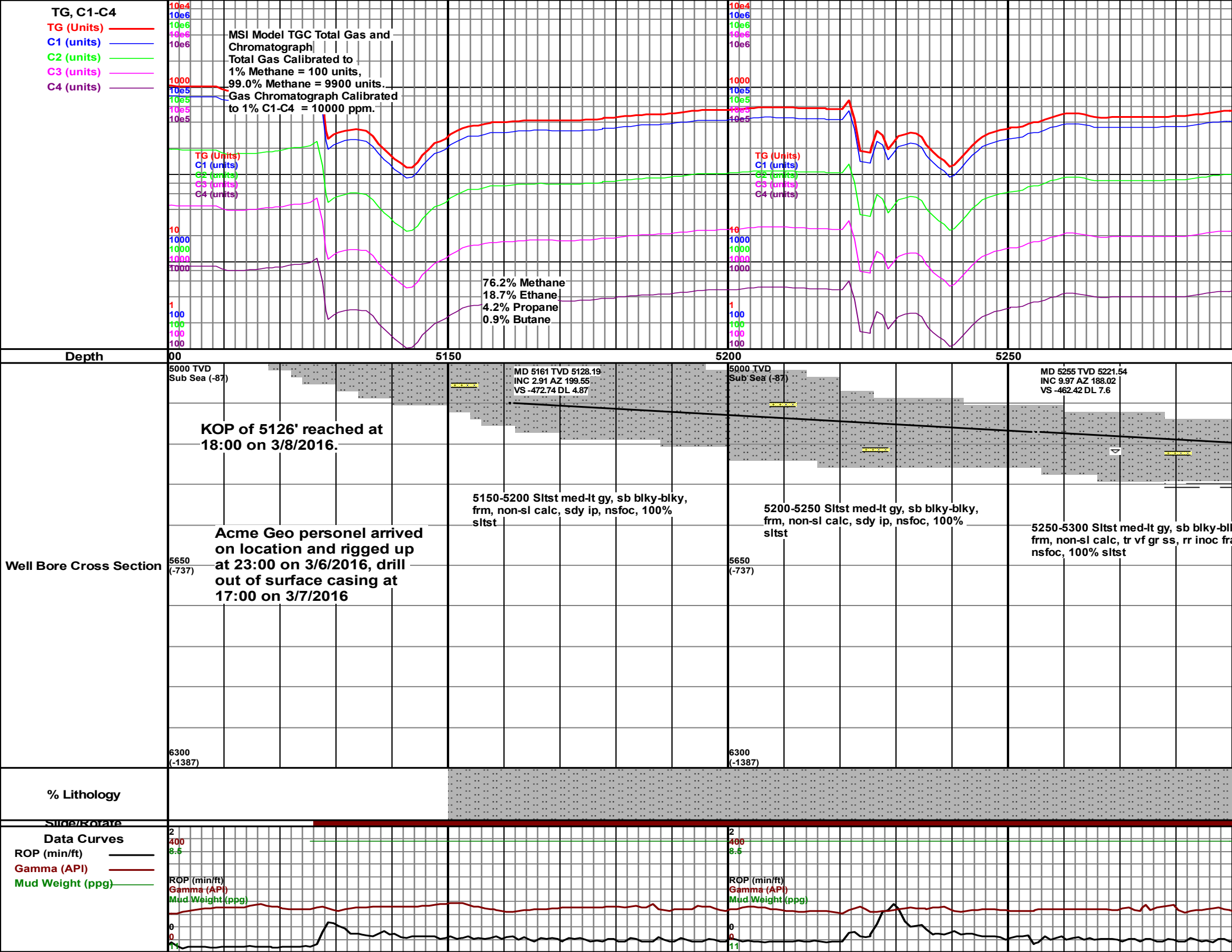
EVENT

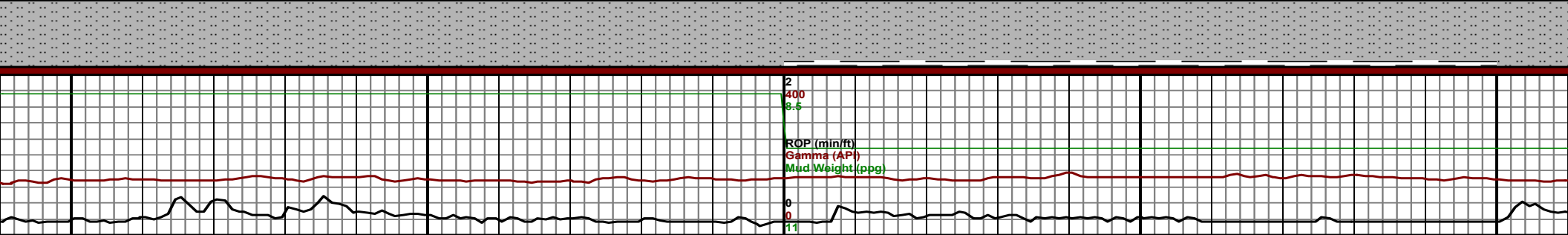
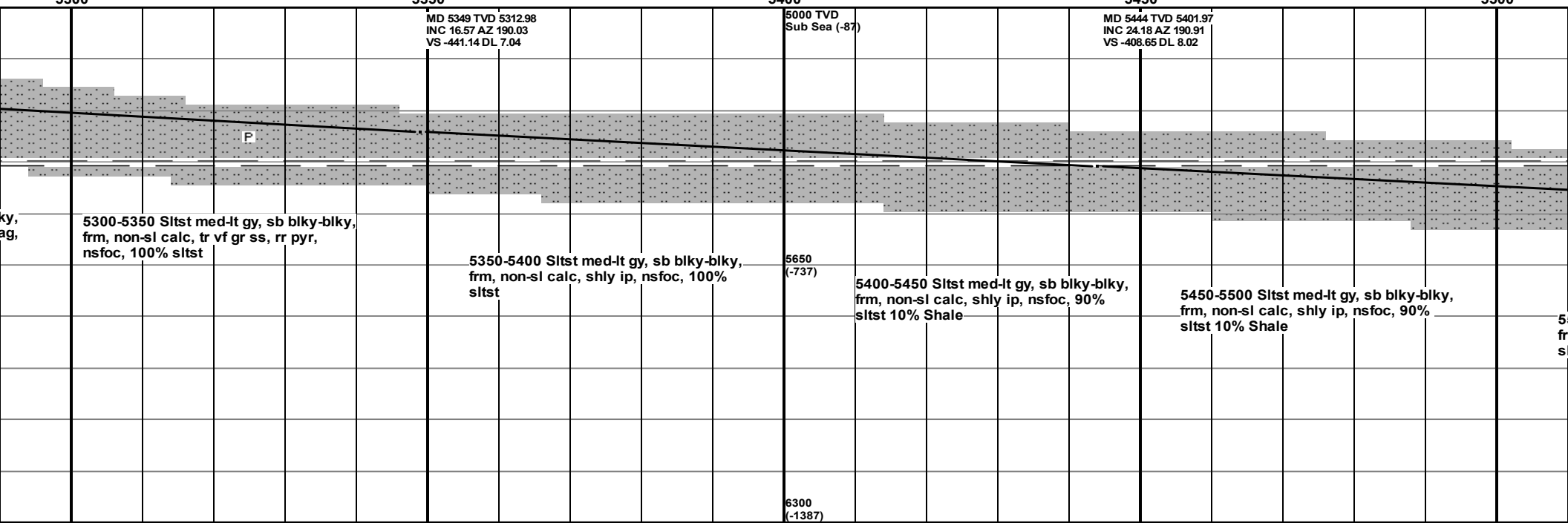
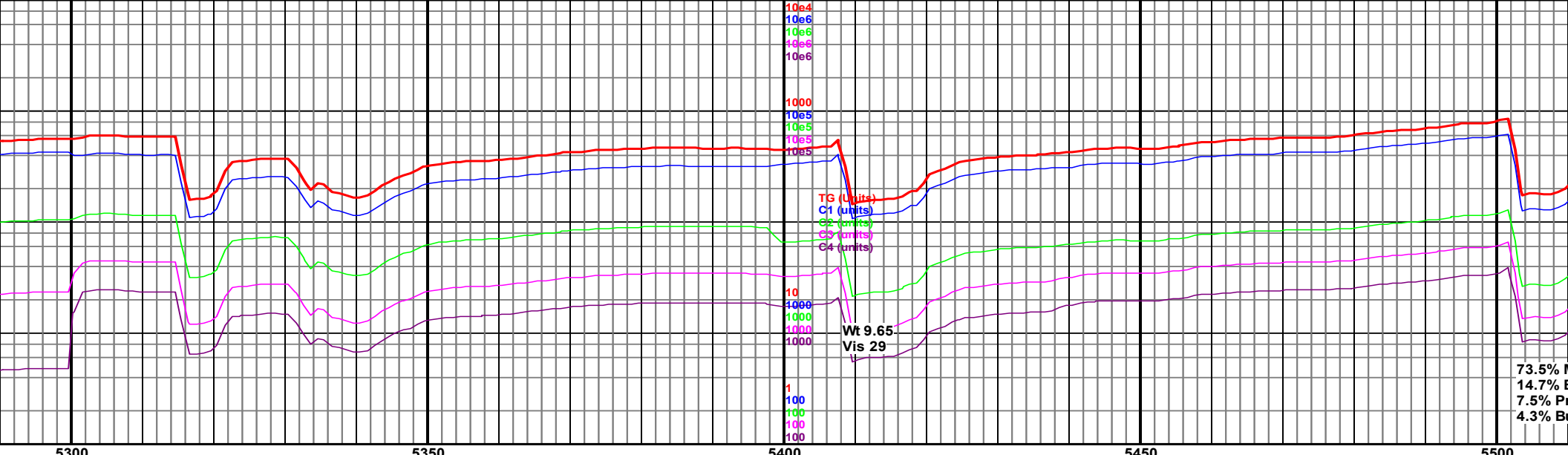


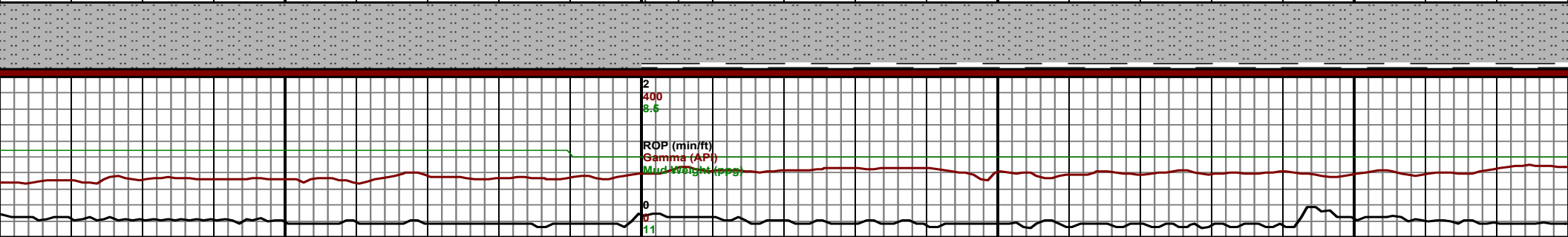
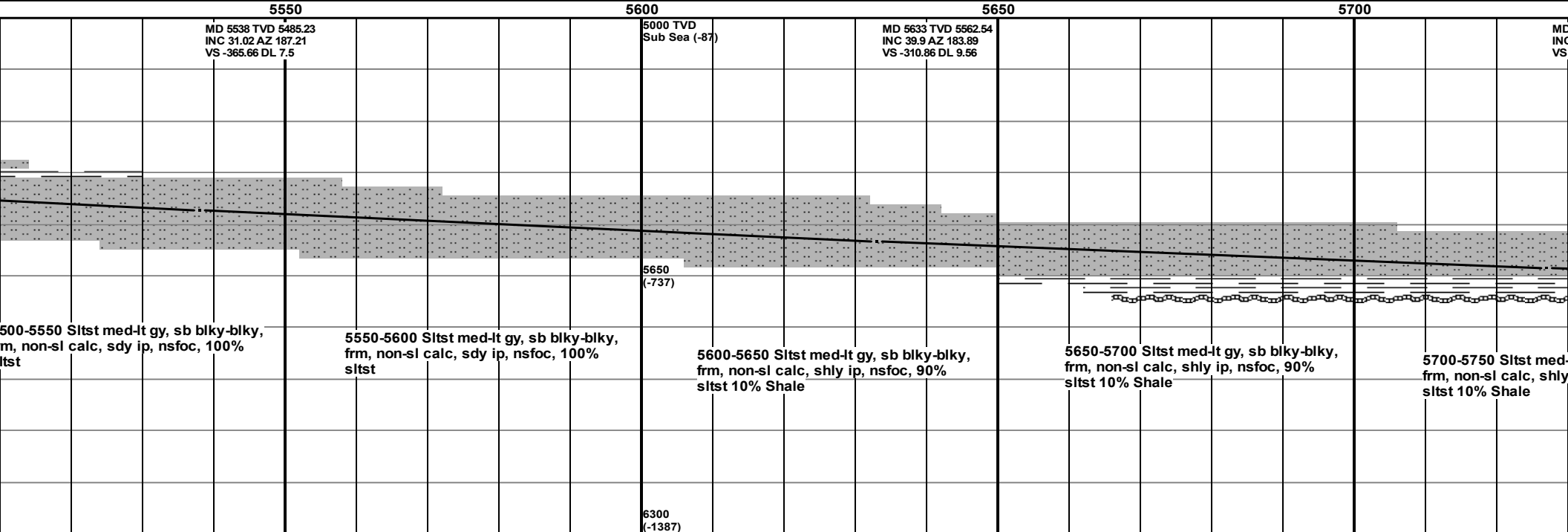
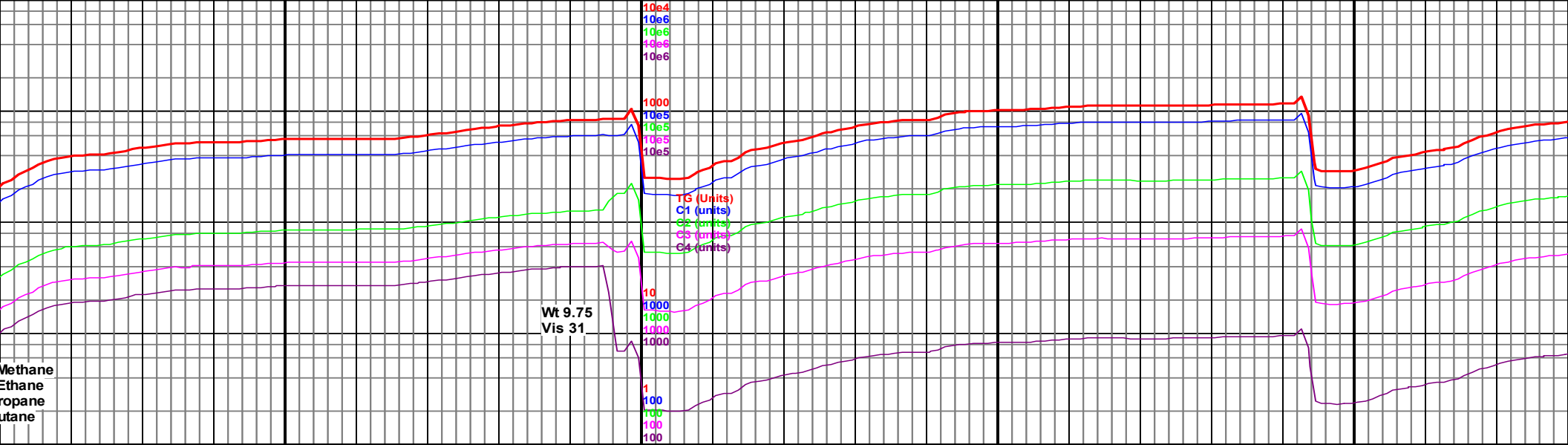
Rft

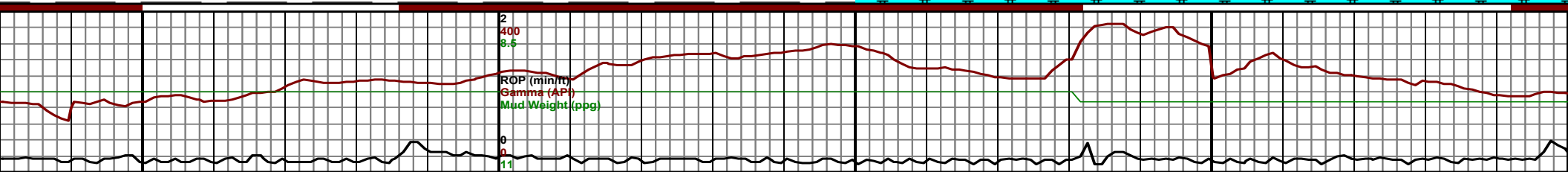
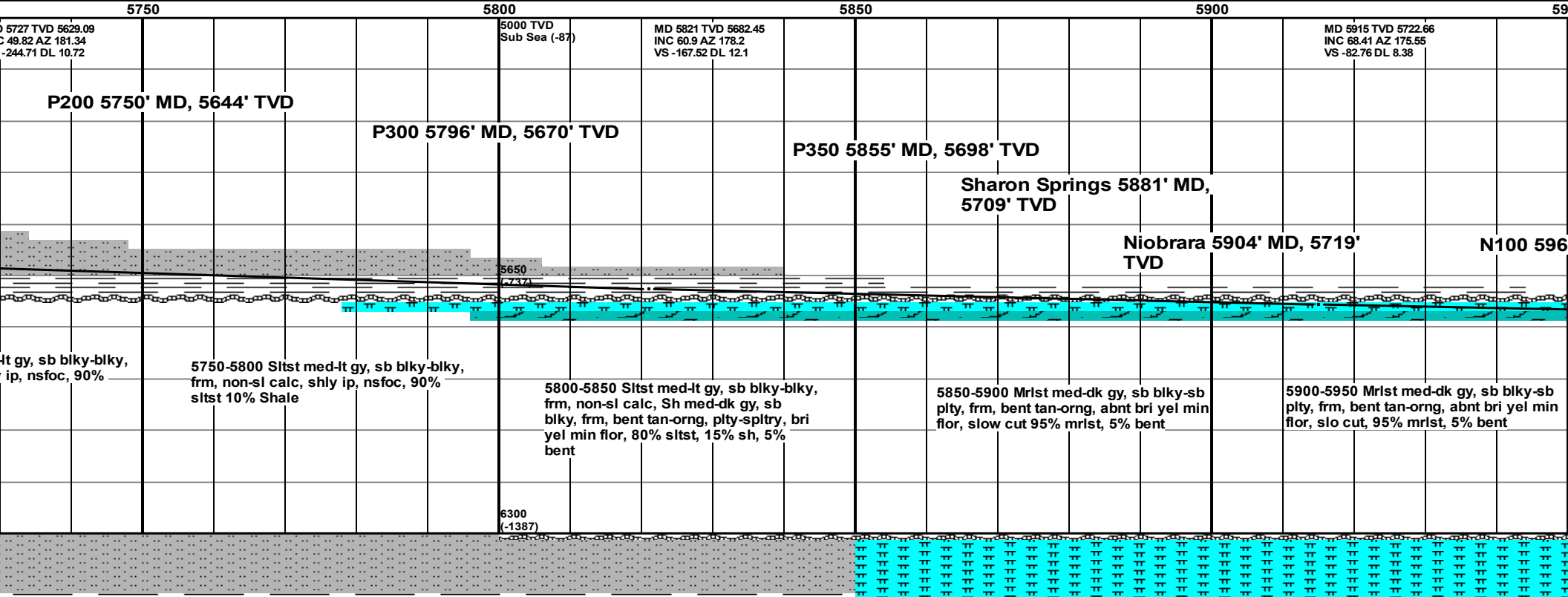
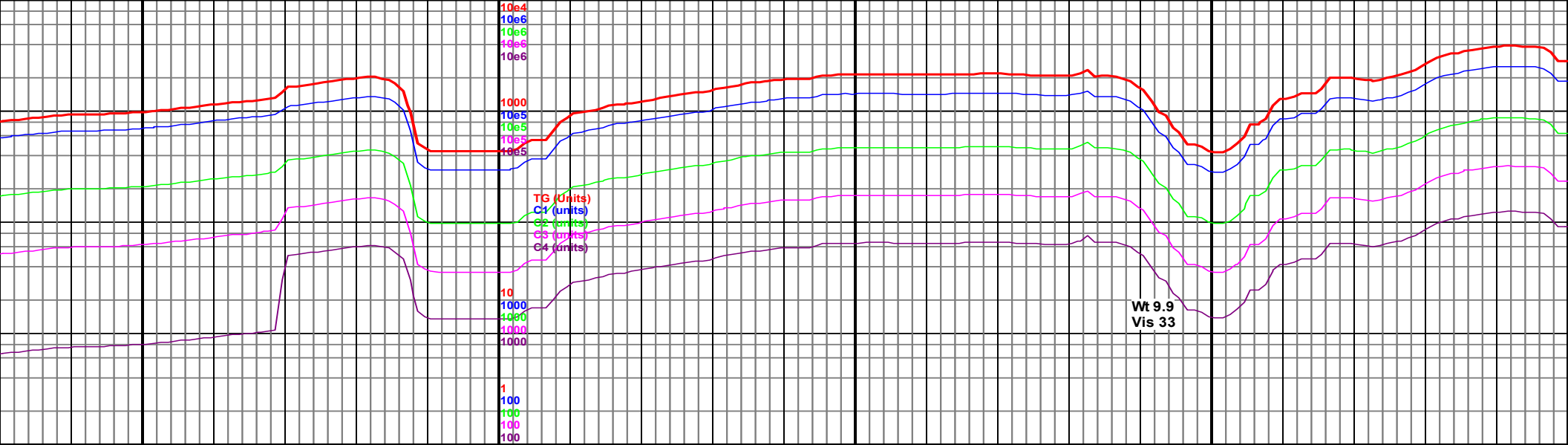


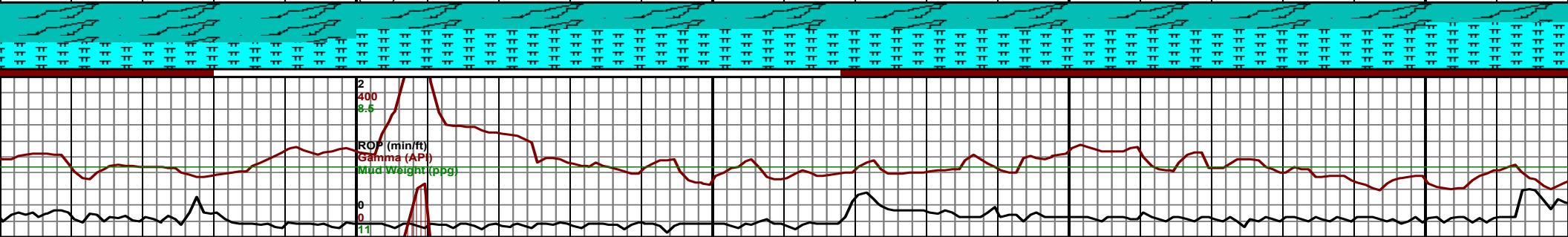
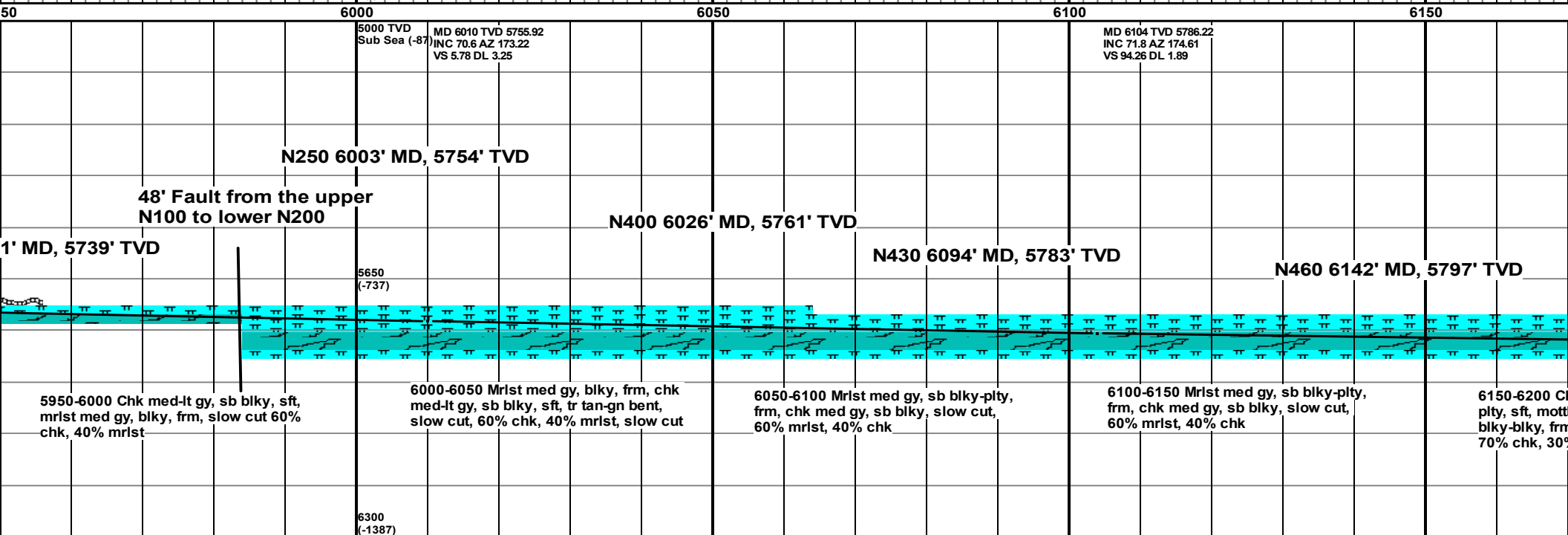
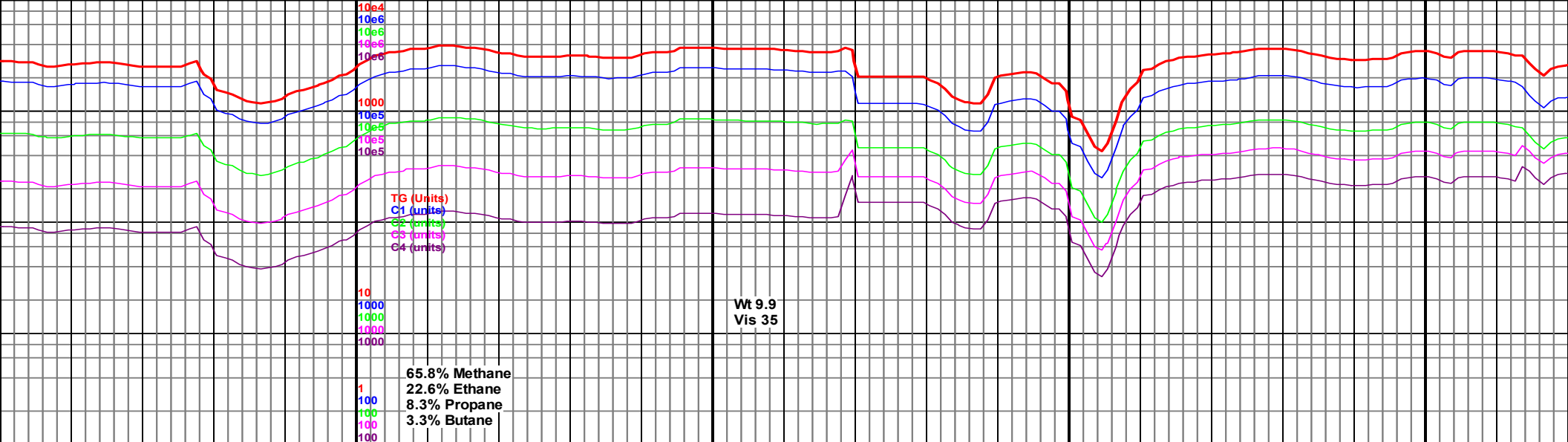
Sidewall

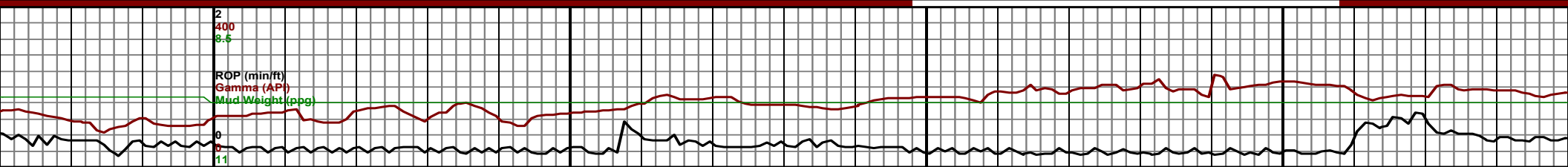
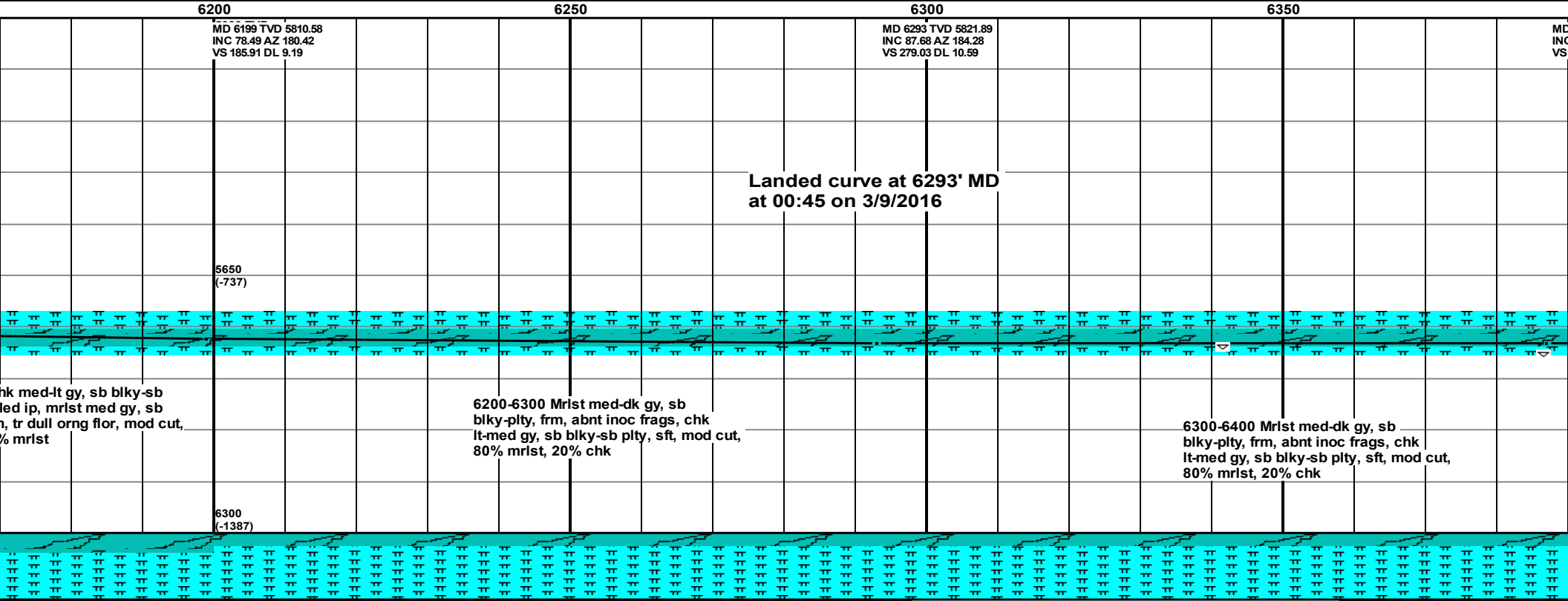
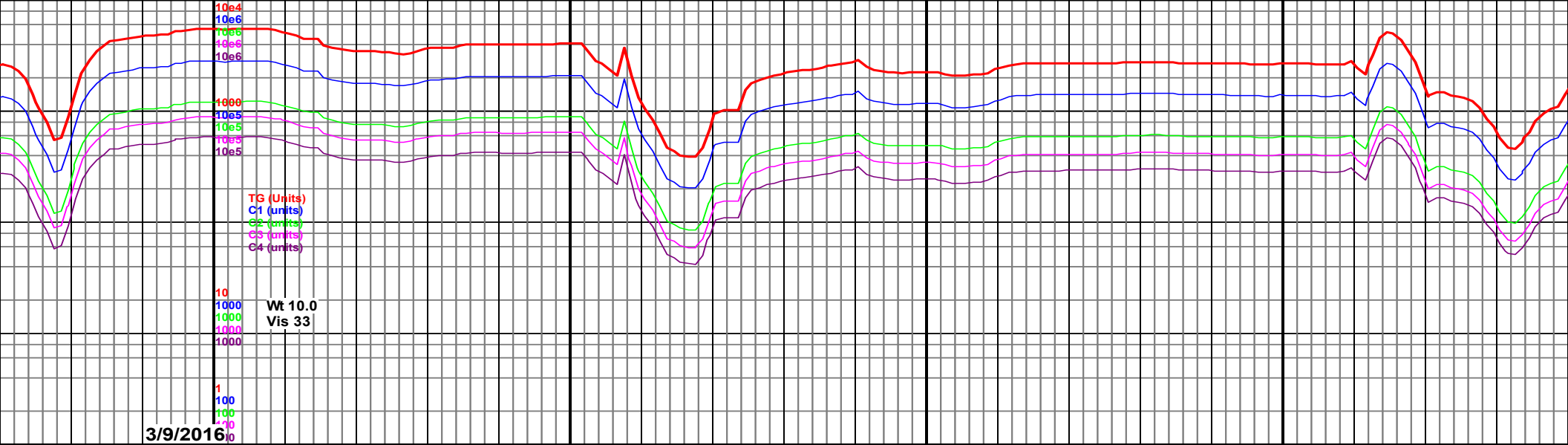


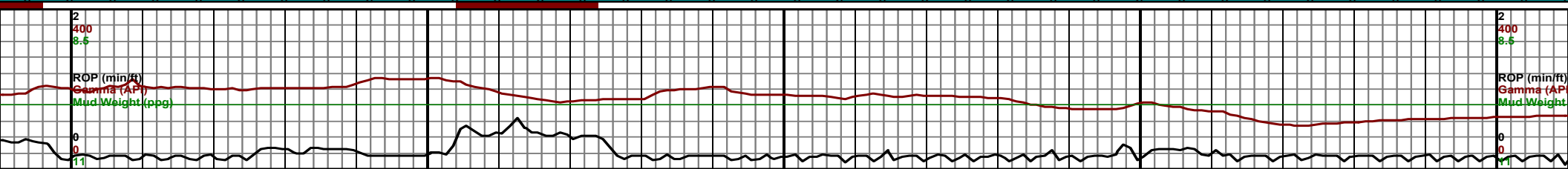
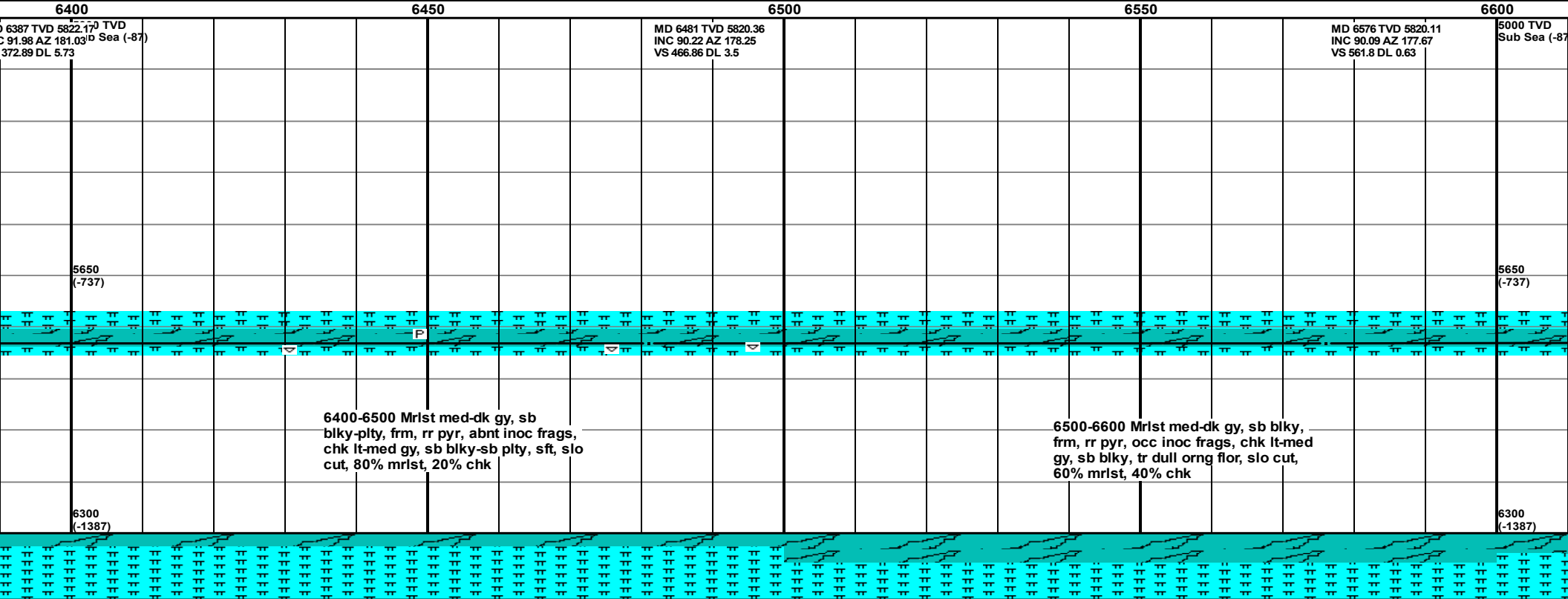
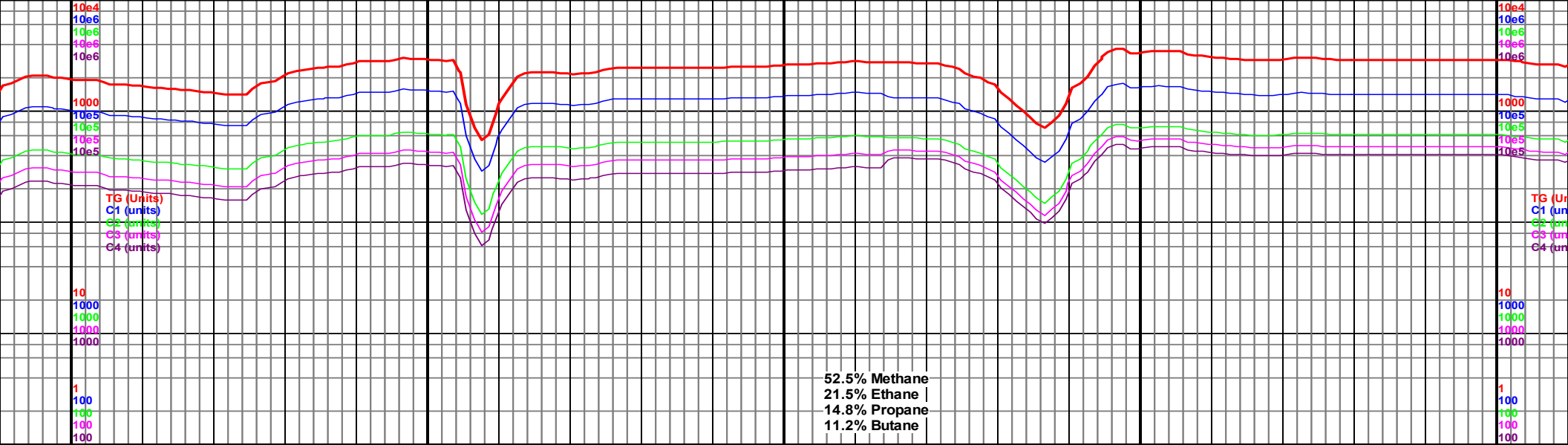


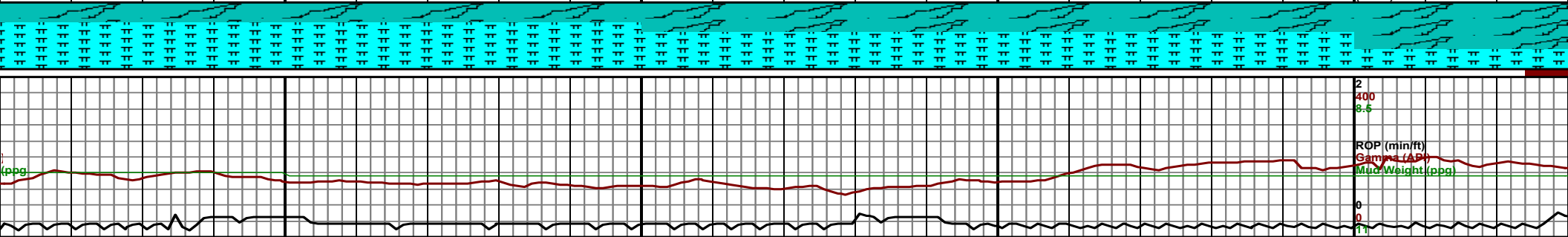
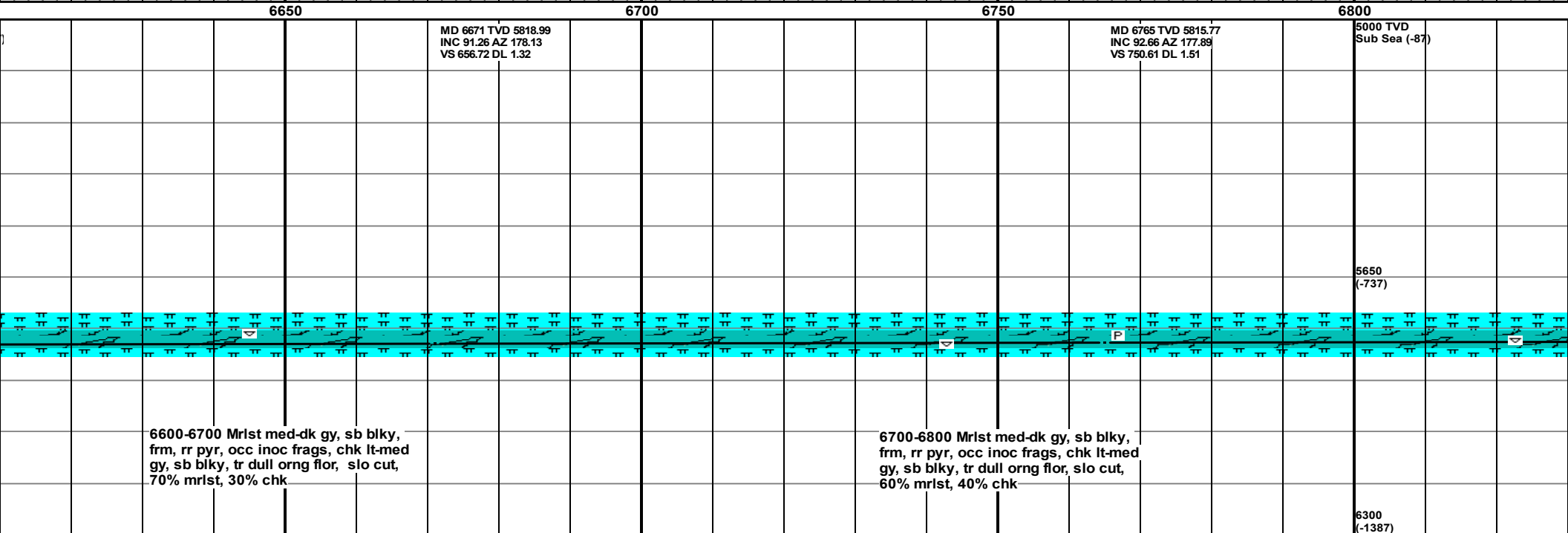
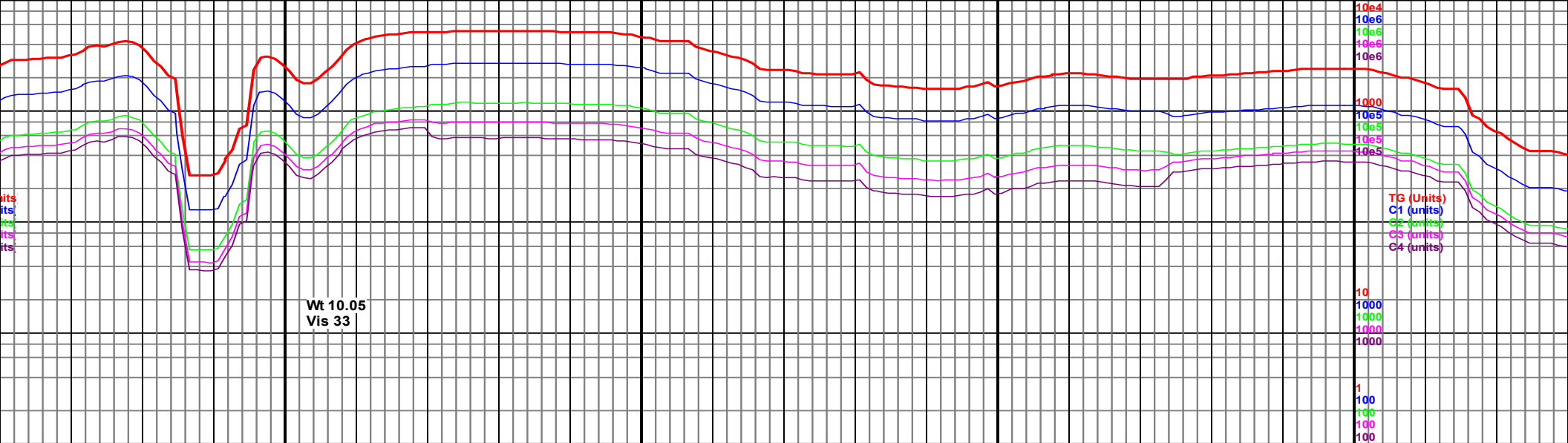


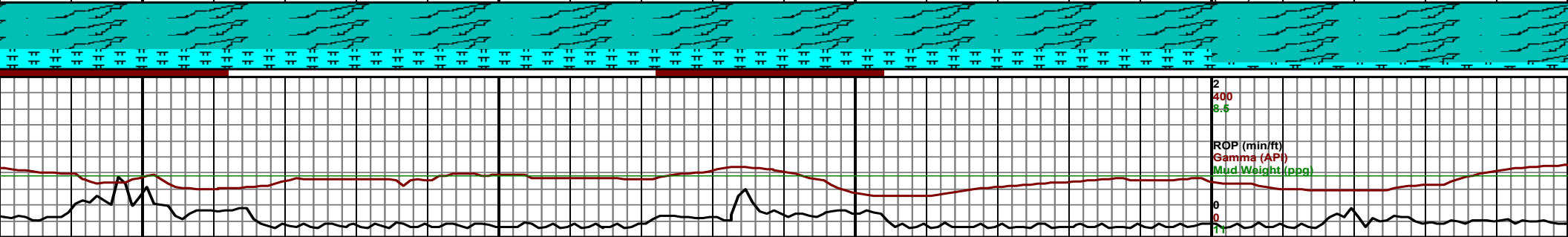
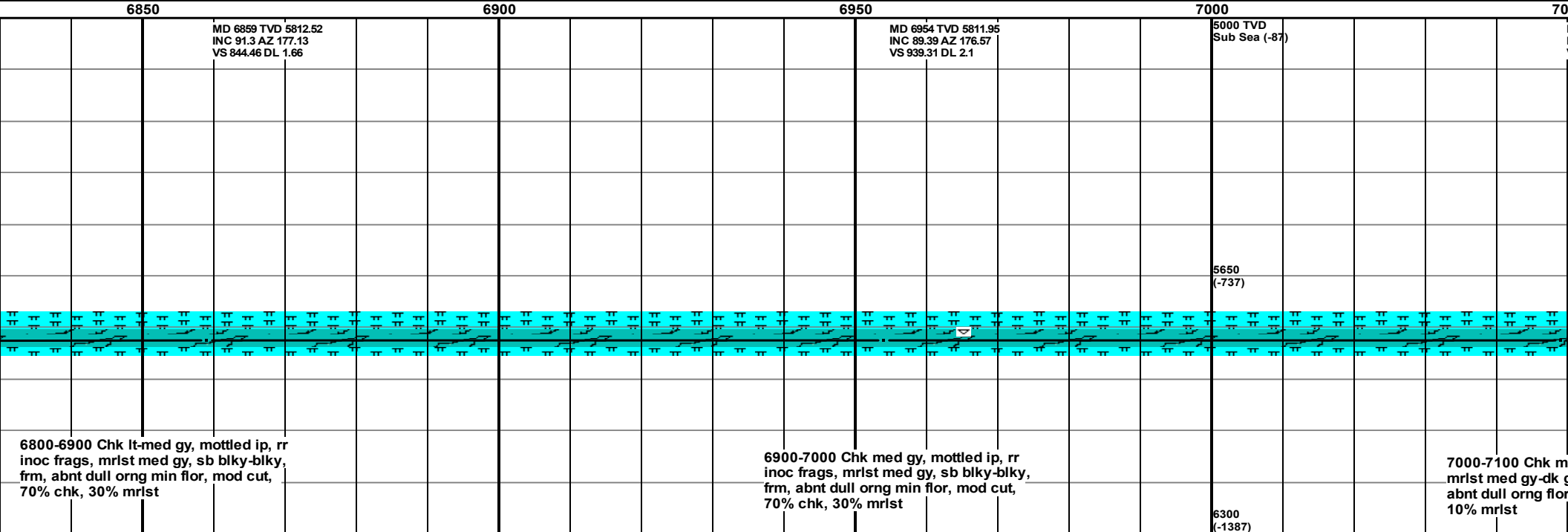
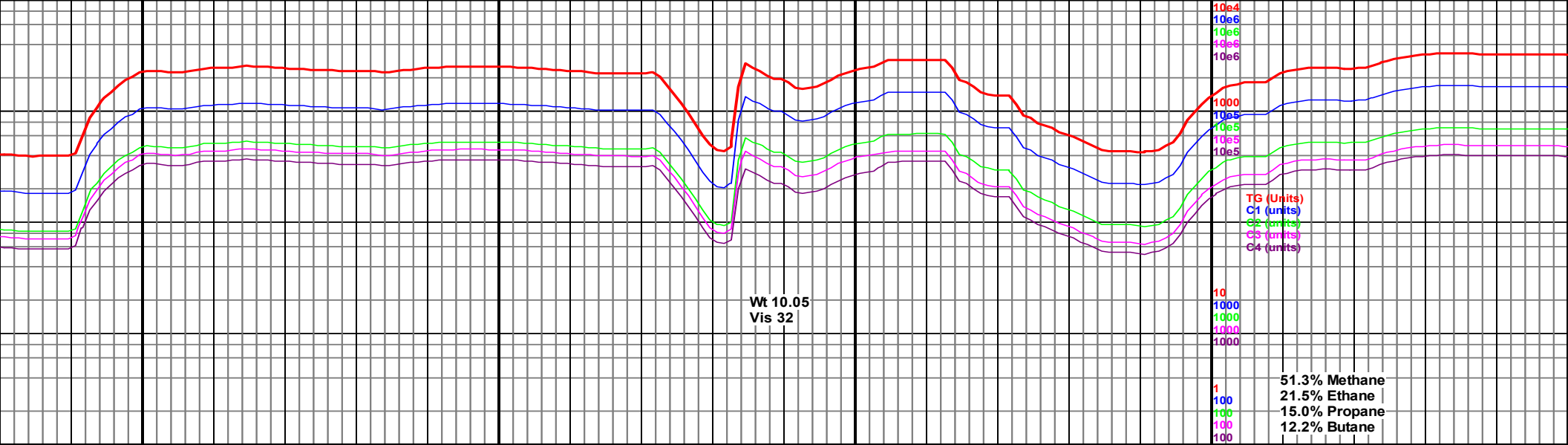


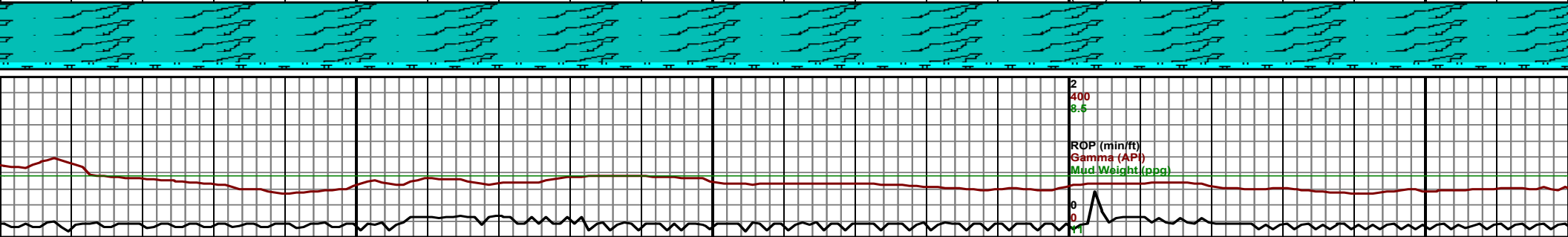
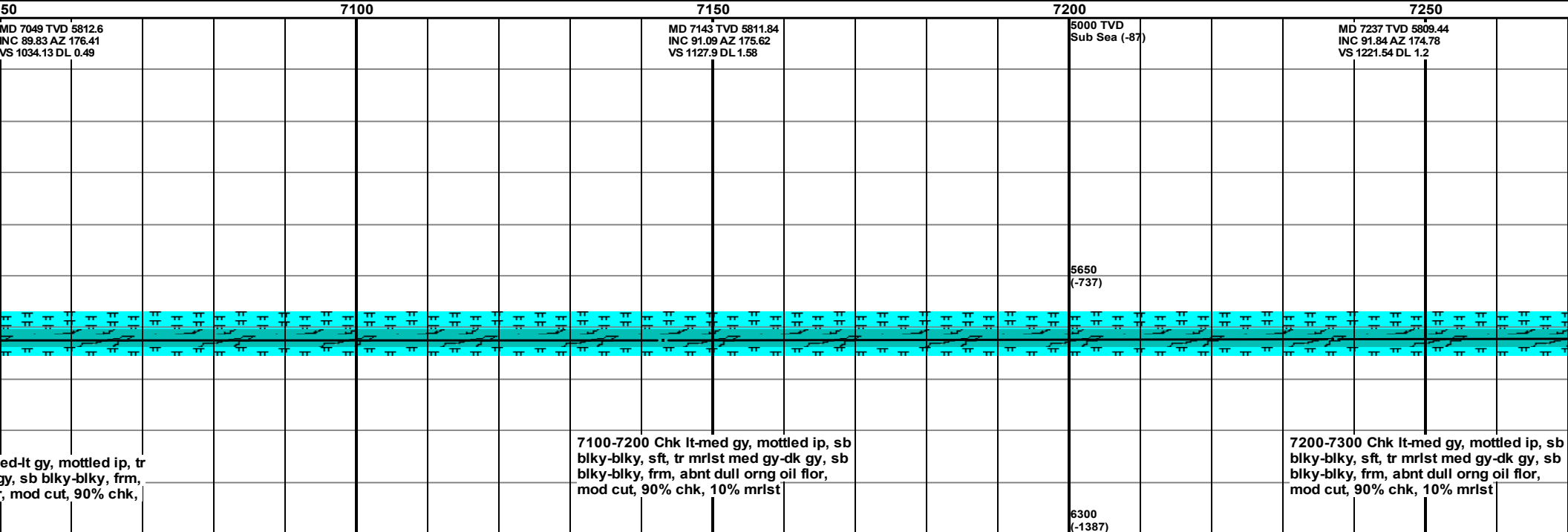
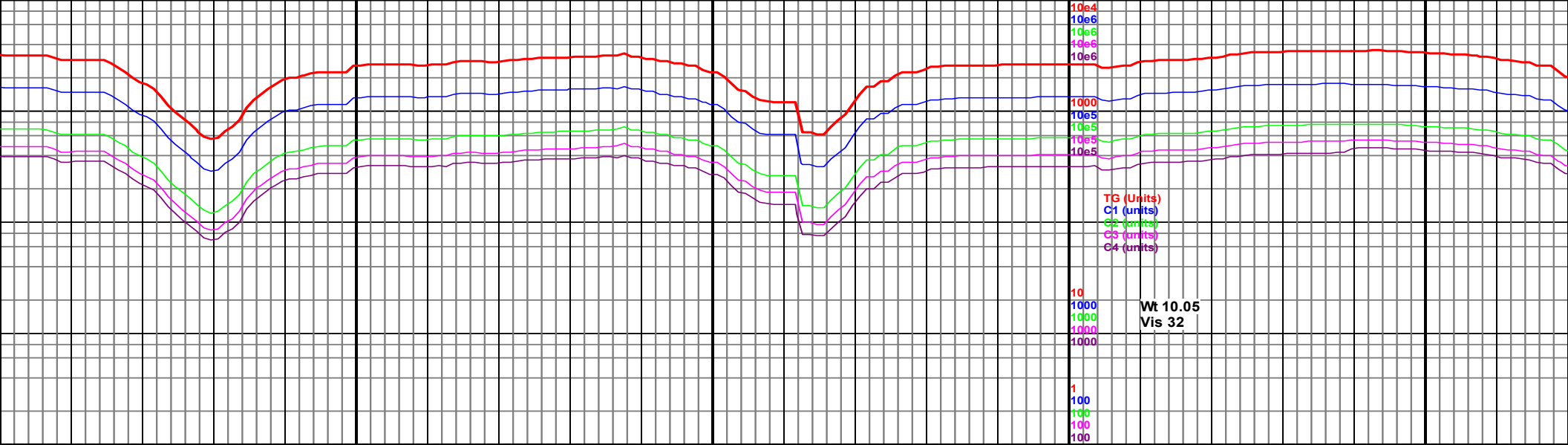


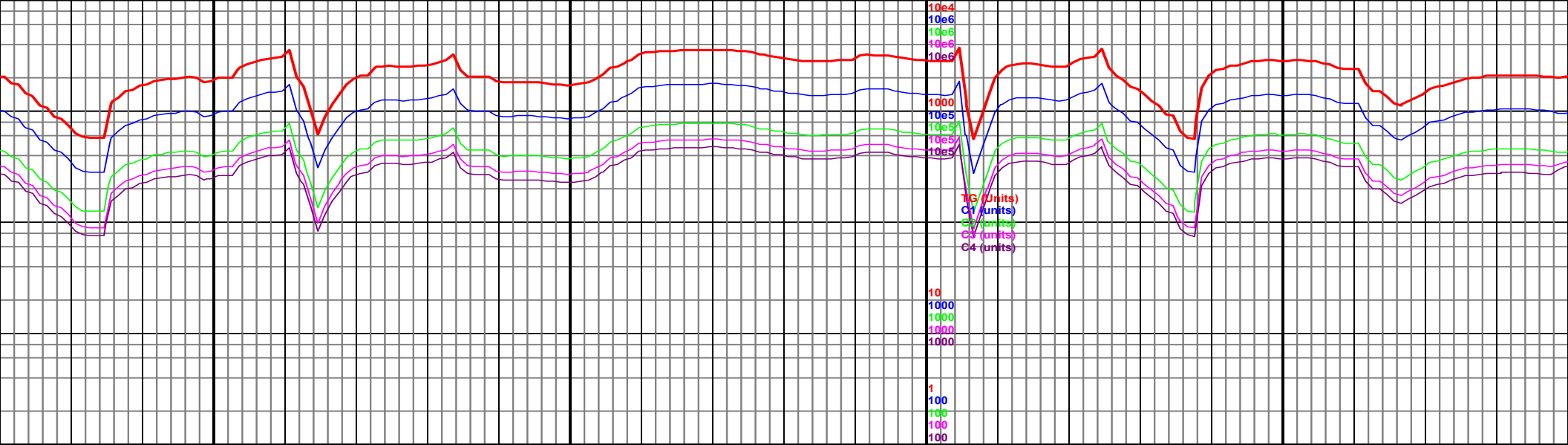












7300

7350

7400

7450

MD 7331 TVD 5806.83
INC 91.34 AZ 180.36
VS 1315.38 DL 5.96

5000 TVD
Sub Sea (-87)

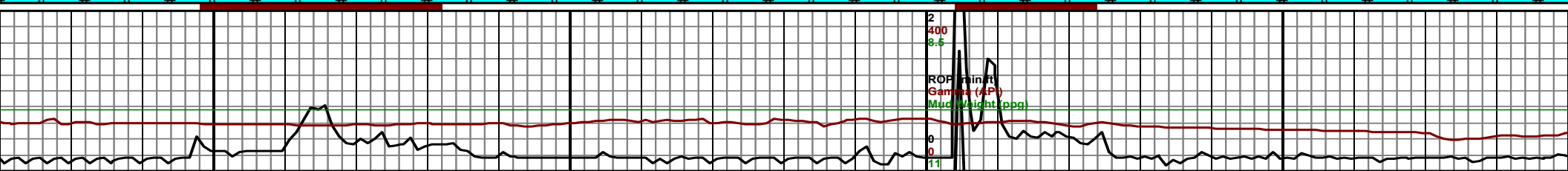
MD 7425 TVD 5805.99
INC 89.69 AZ 180.54
VS 1409.37 DL 1.77

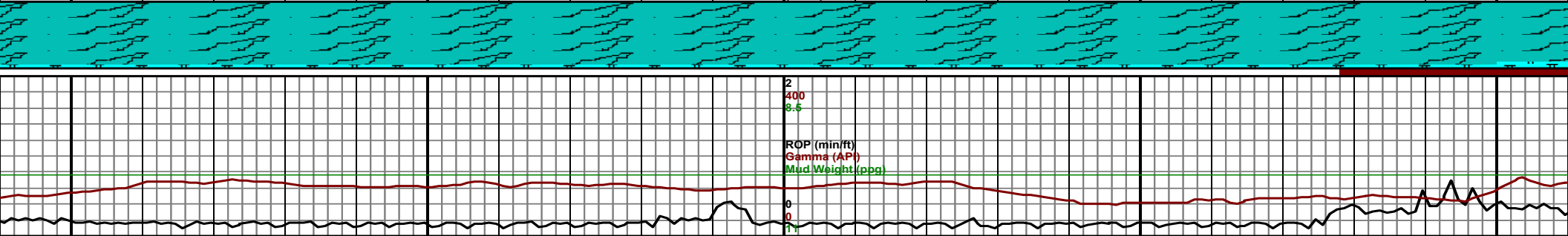
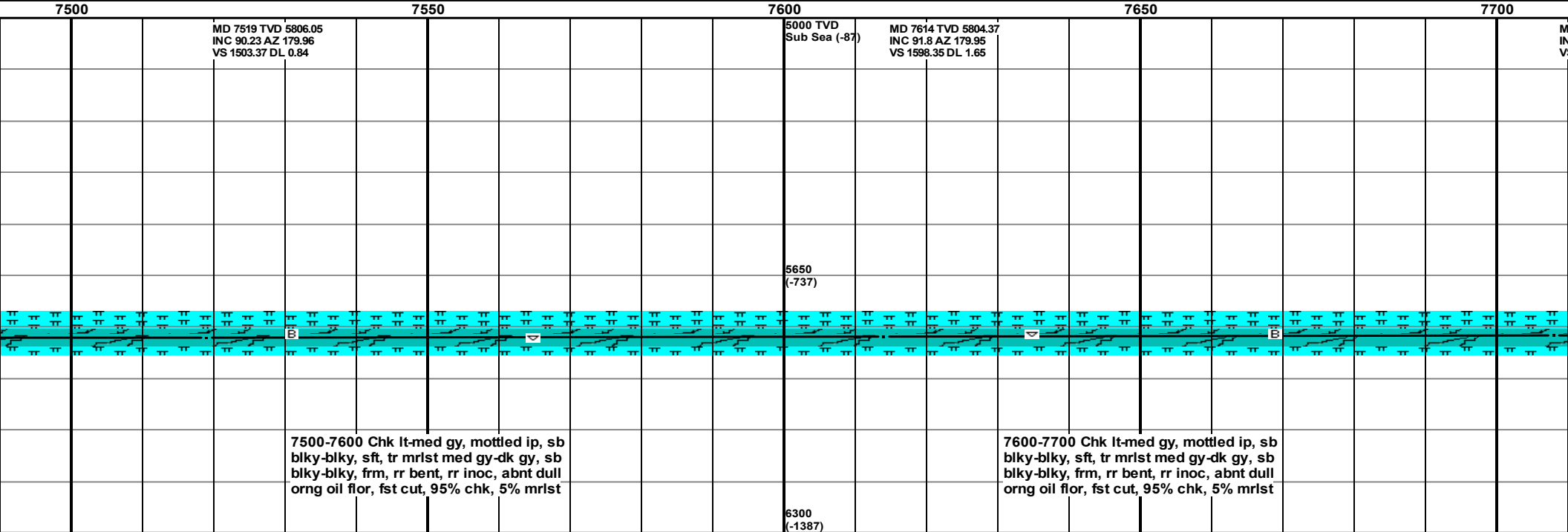
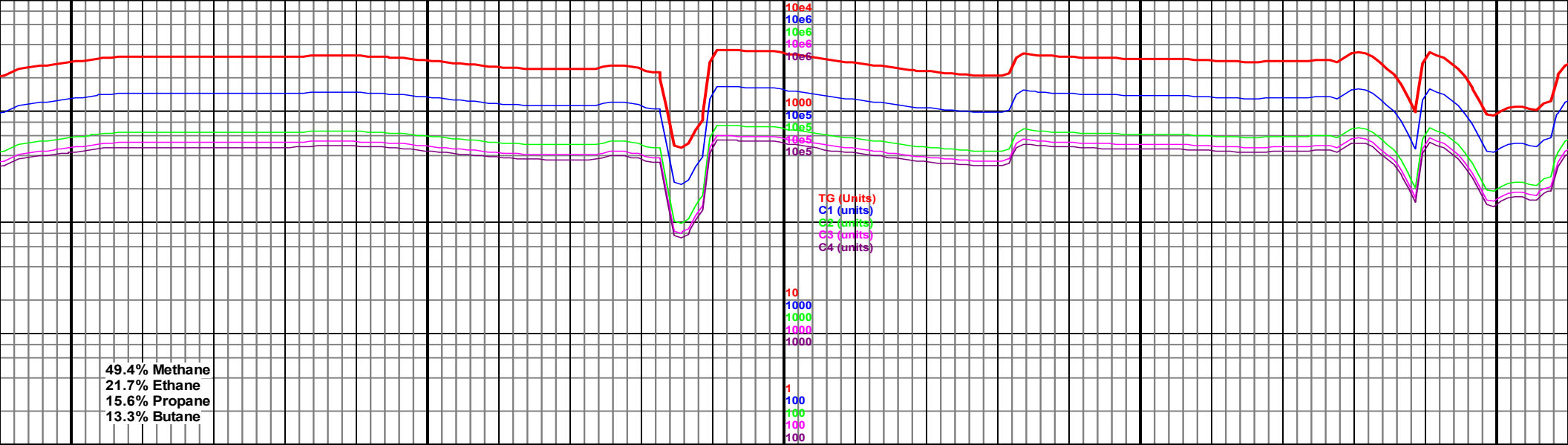


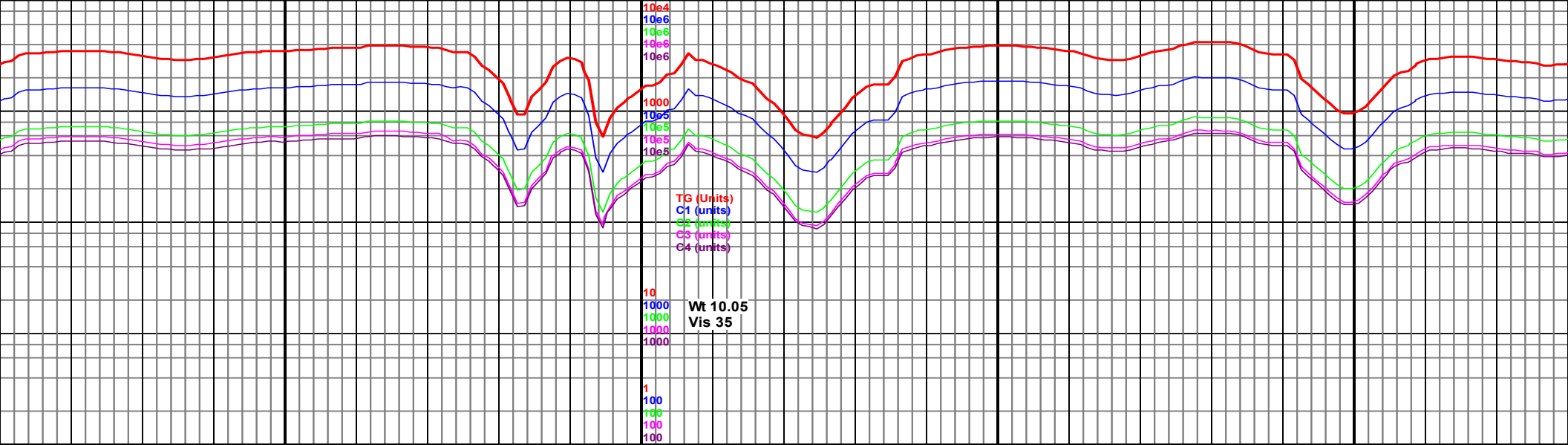
7300-7400 Chk lt-med gy, mottled ip, sb
blky-blky, sft, tr mrlst med gy-dk gy, sb
blky-blky, frm, rr inoc, abnt dull orng oil
flor, mod cut, 95% chk, 5% mrlst

7400-7500 Chk lt-med gy, mottled ip, sb
blky-blky, sft, tr mrlst med gy-dk gy, sb
blky-blky, frm, rr bent, rr inoc, abnt dull
orng oil flor, fst cut, 95% chk, 5% mrlst

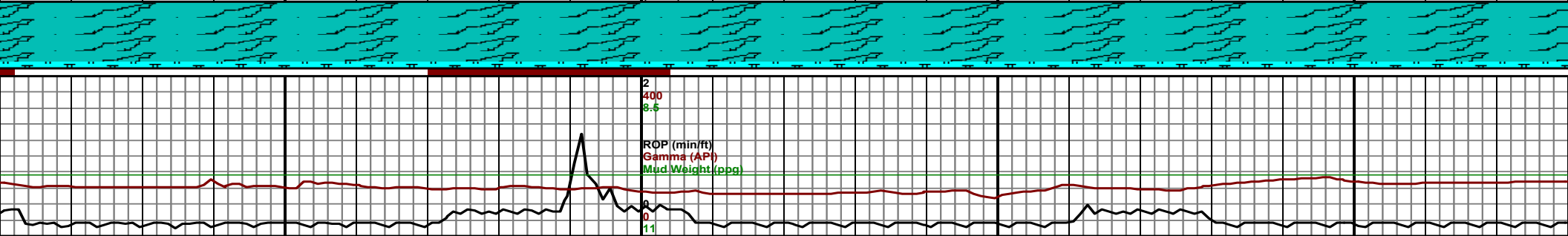
6300
(-1387)

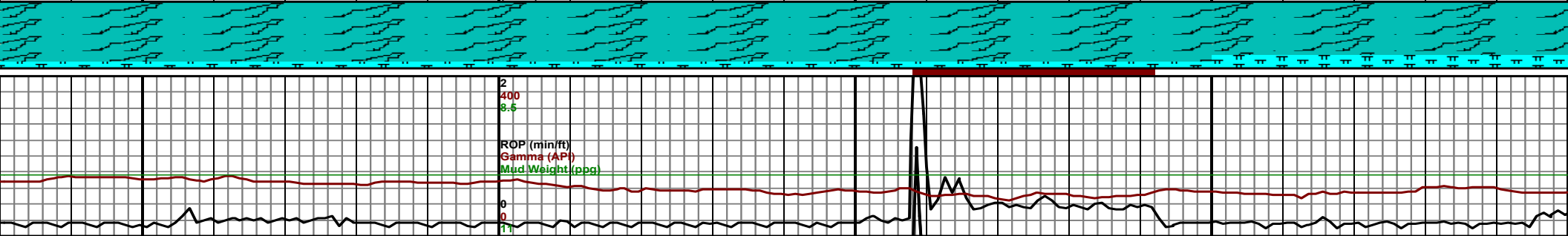
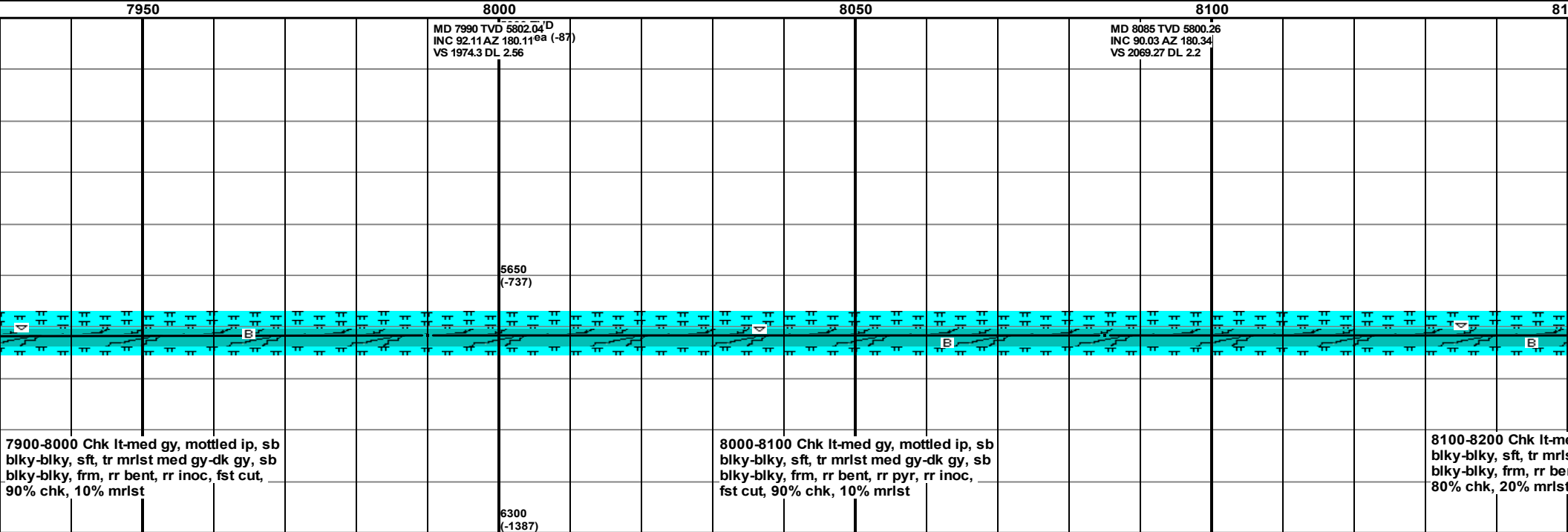
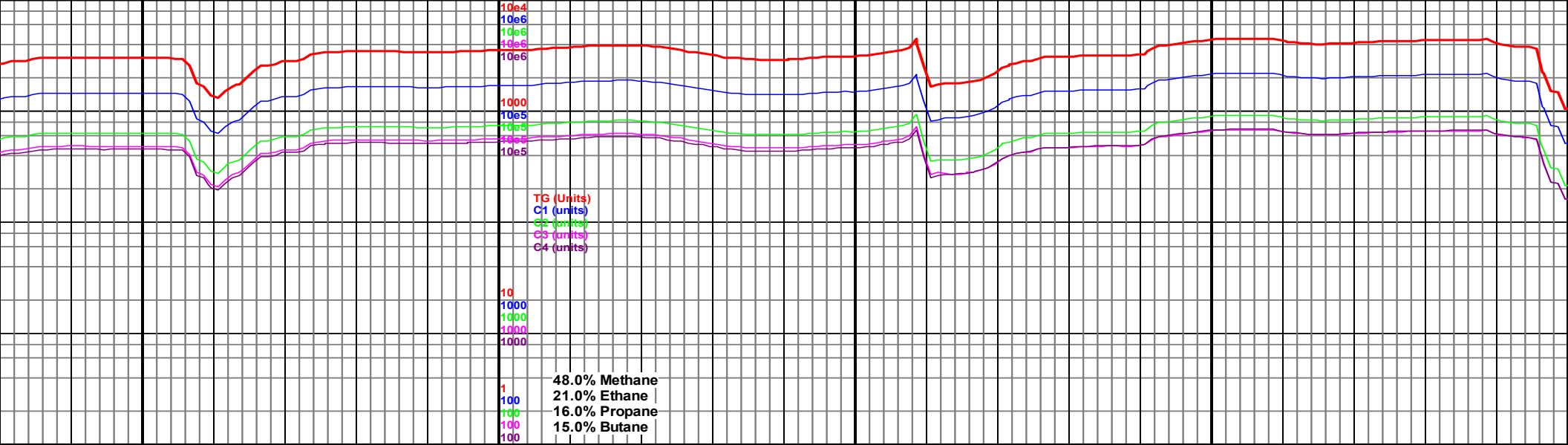


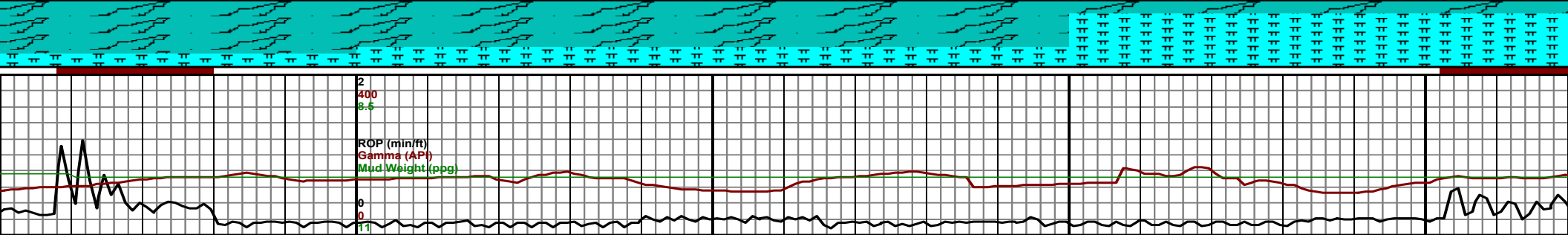
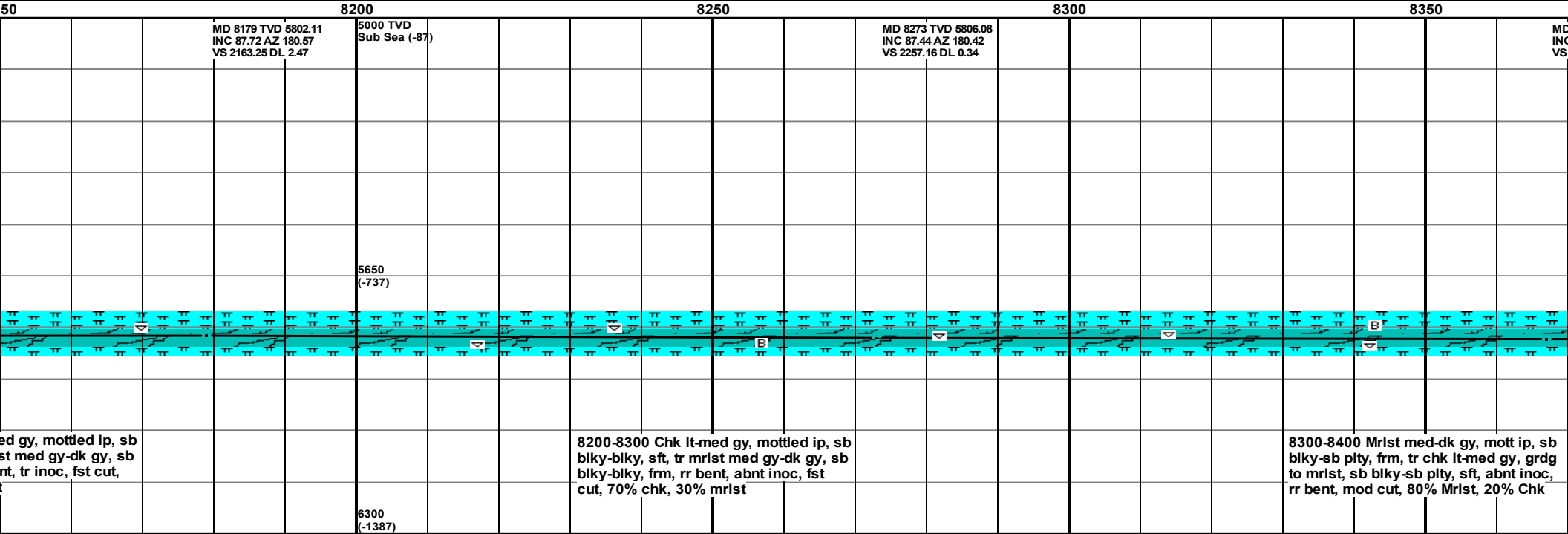
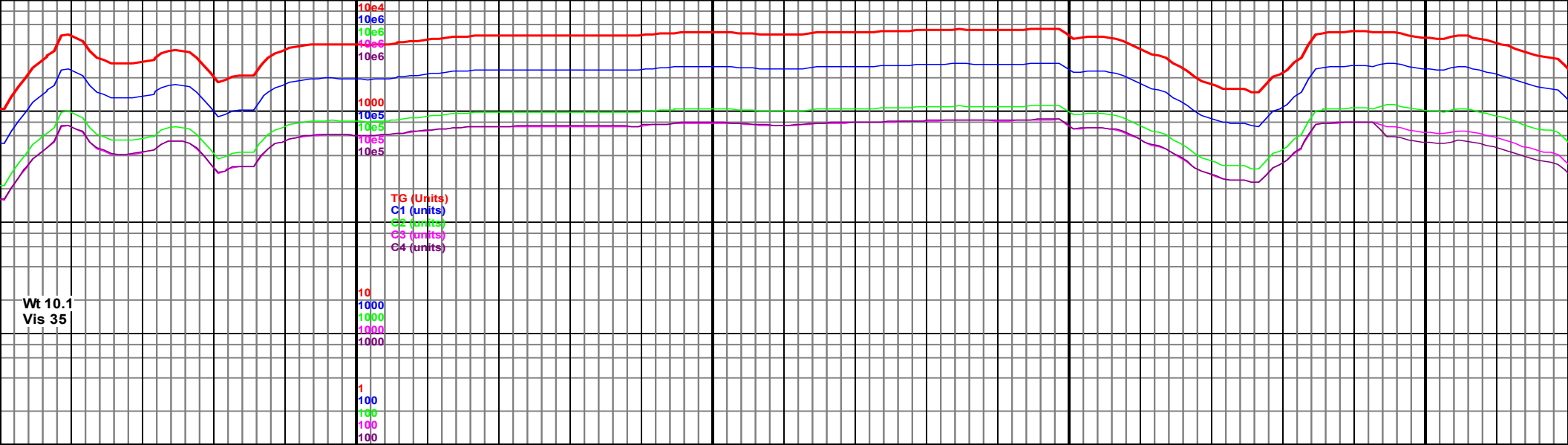


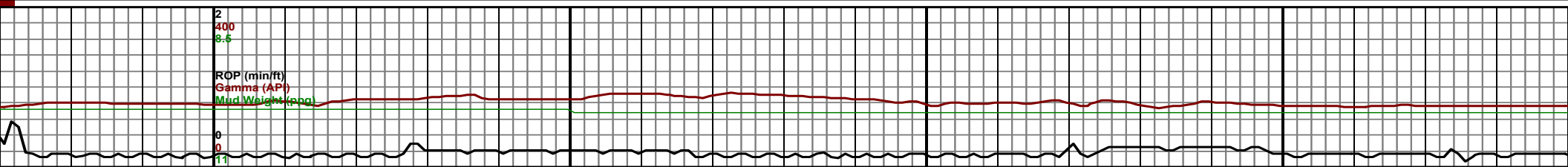
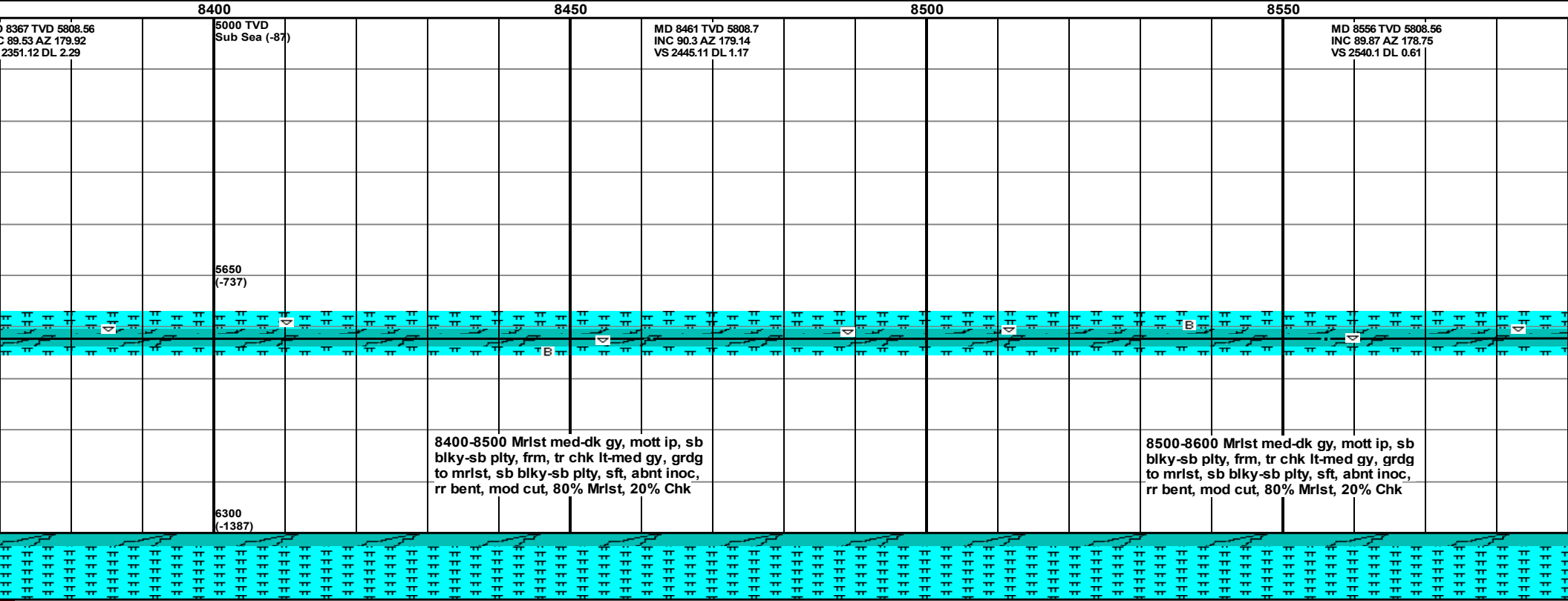
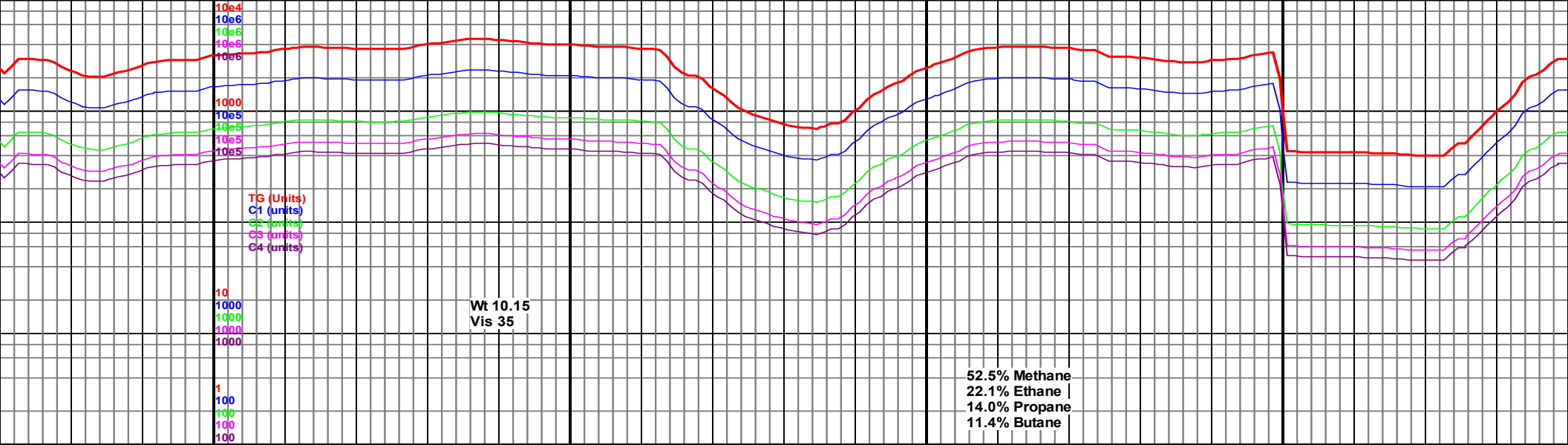


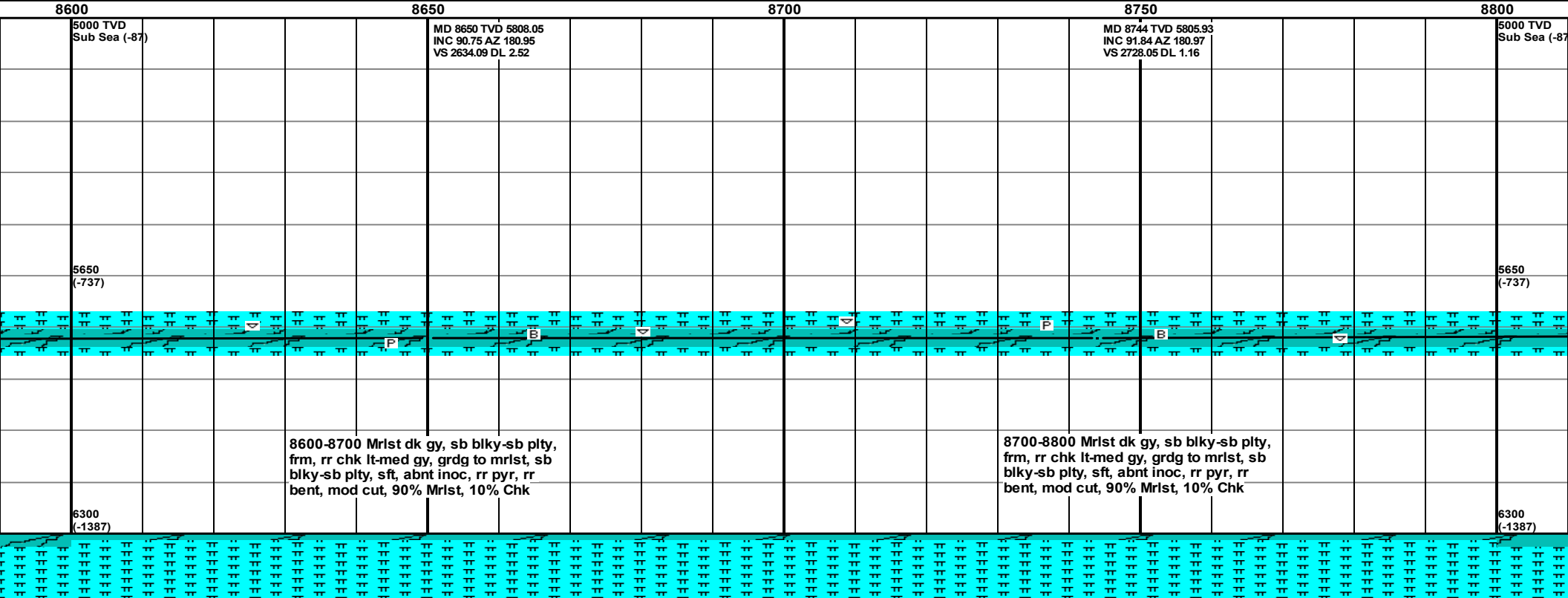
ID 7708 TVD 5802.62 INC 90.33 AZ 179.11 S 1692.33 DL 1.8		MD 7801 TVD 5802.87 INC 89.36 AZ 179.88 VS 1785.32 DL 1.33		MD 7896 TVD 5803.59 INC 89.78 AZ 179.5 VS 1880.32 DL 0.6
7700-7800 Chk lt-med gy, mottled ip, sb blky-blky, sft, tr mrlst med gy-dk gy, sb blky-blky, frm, rr bent, rr inoc, abnt dull orng oil flor, fst cut, 90% chk, 10% mrlst		7800-7900 Chk lt-med gy, mottled ip, sb blky-blky, sft, tr mrlst med gy-dk gy, sb blky-blky, frm, rr bent, rr inoc, abnt dull orng oil flor, fst cut, 90% chk, 10% mrlst		

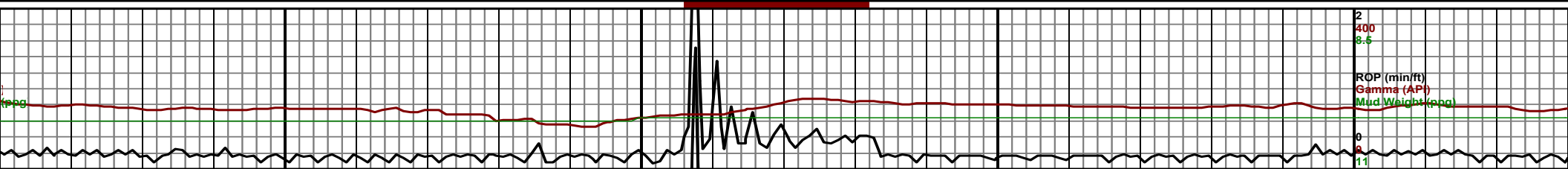
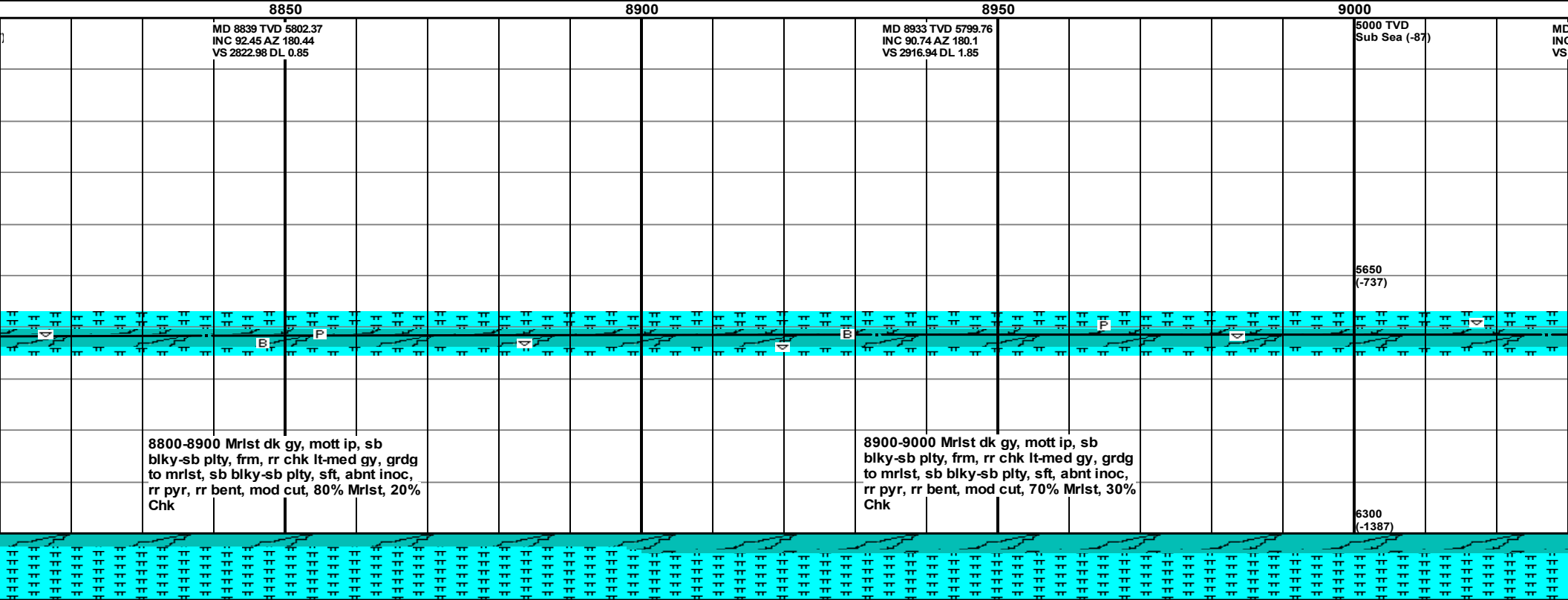
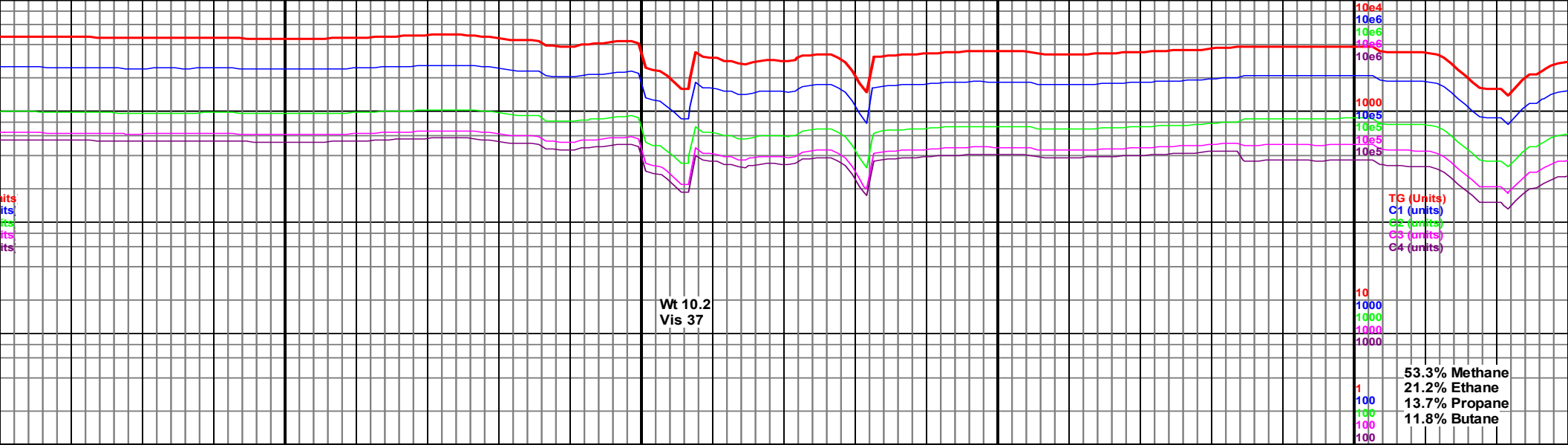


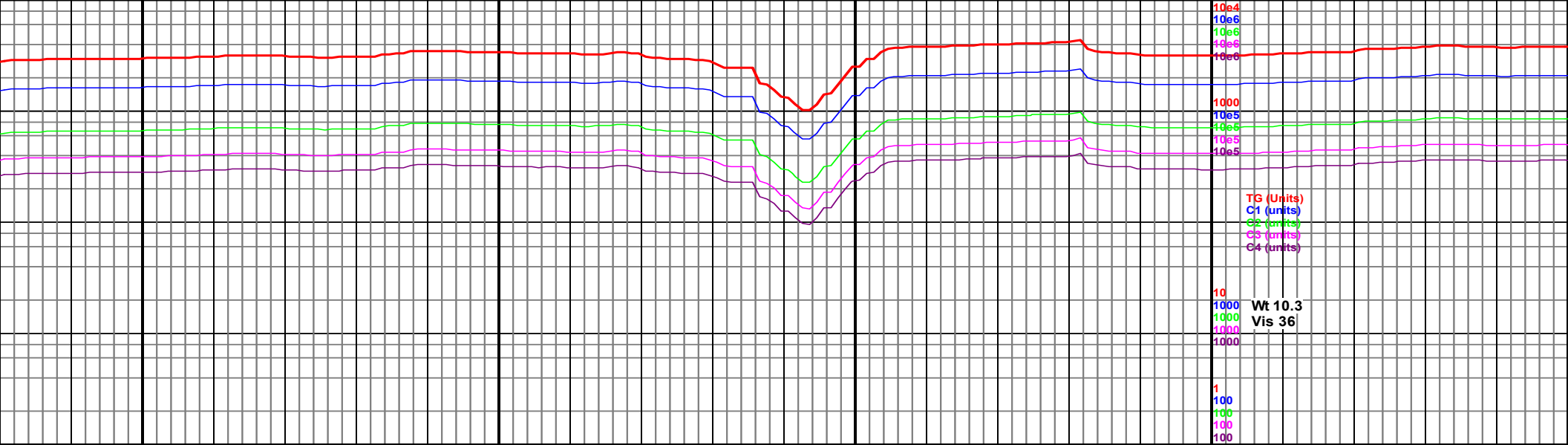




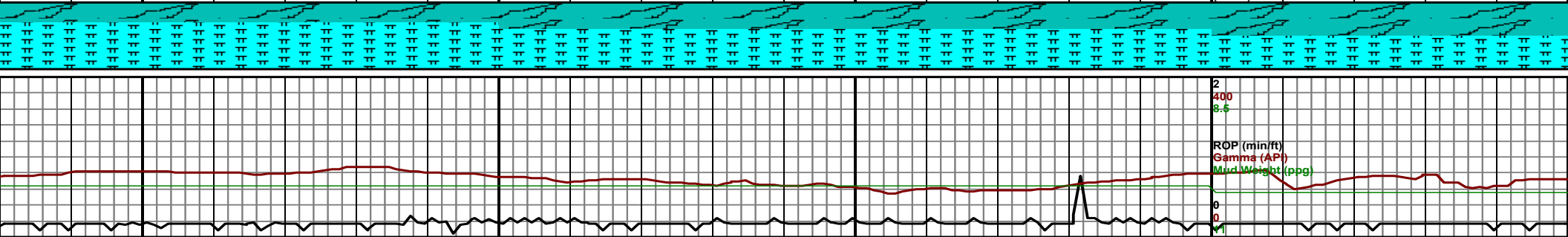


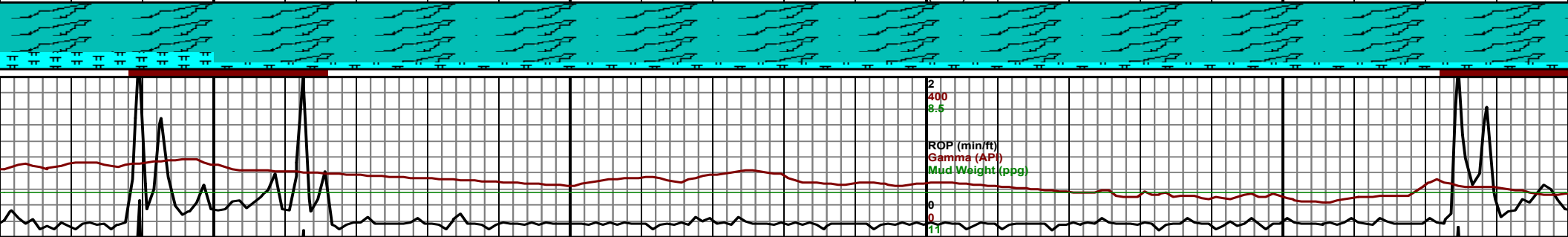
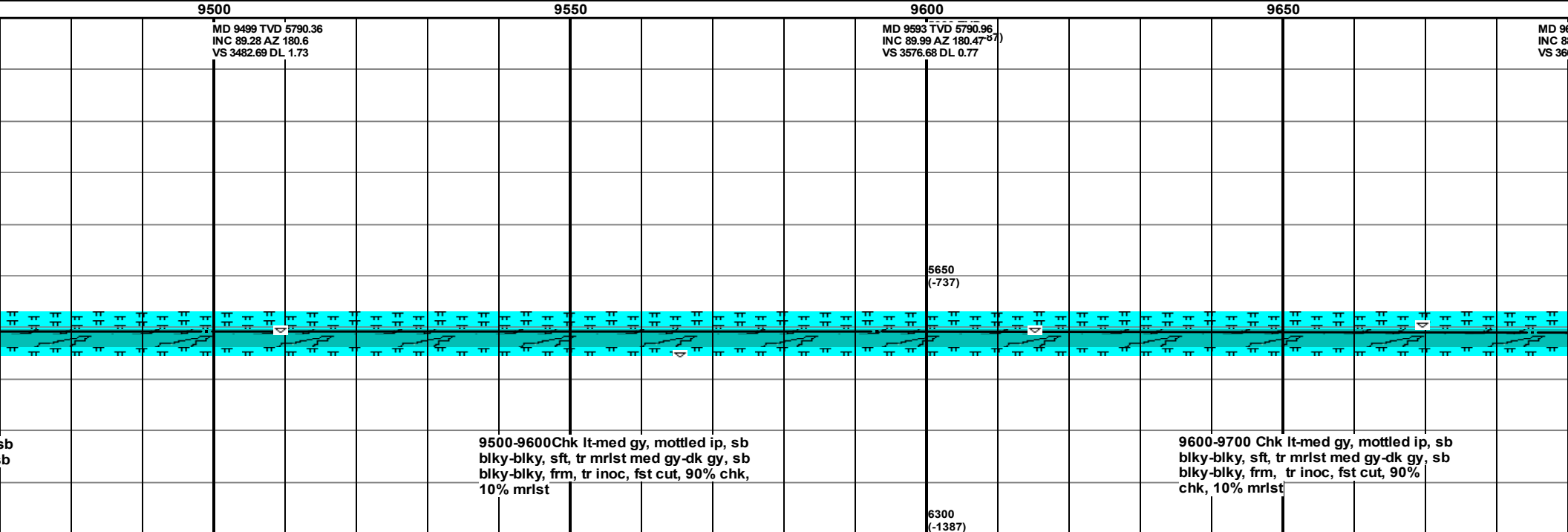
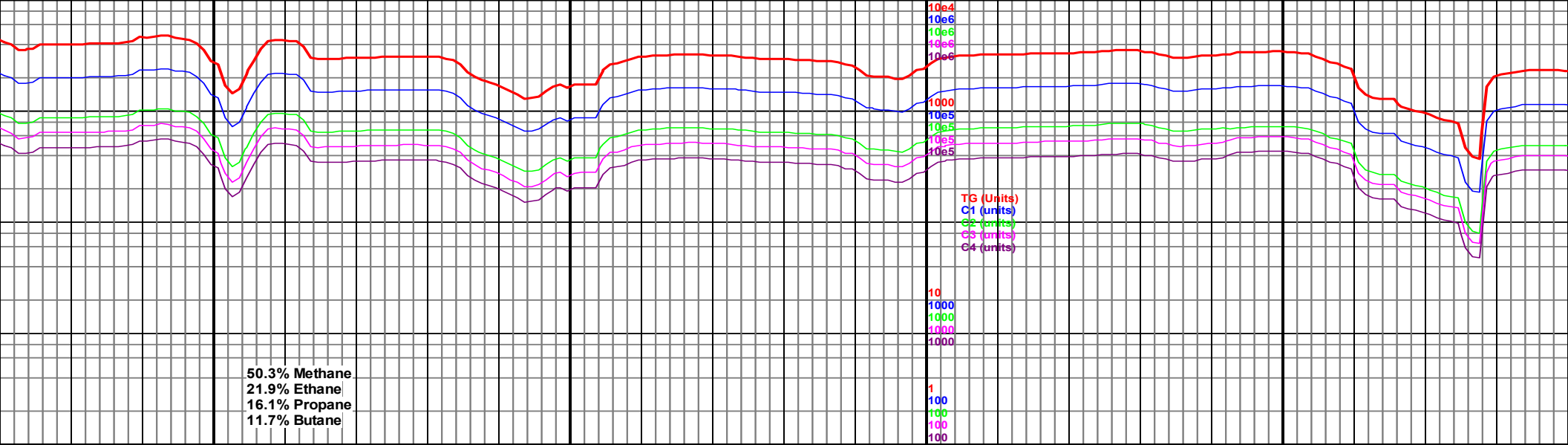


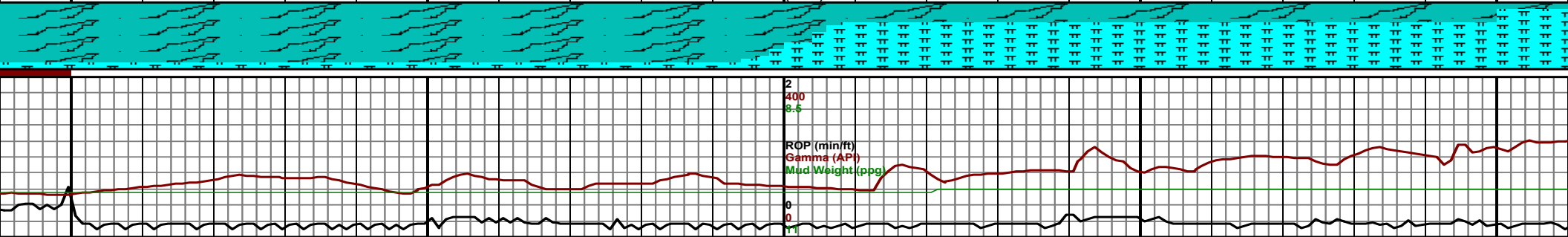
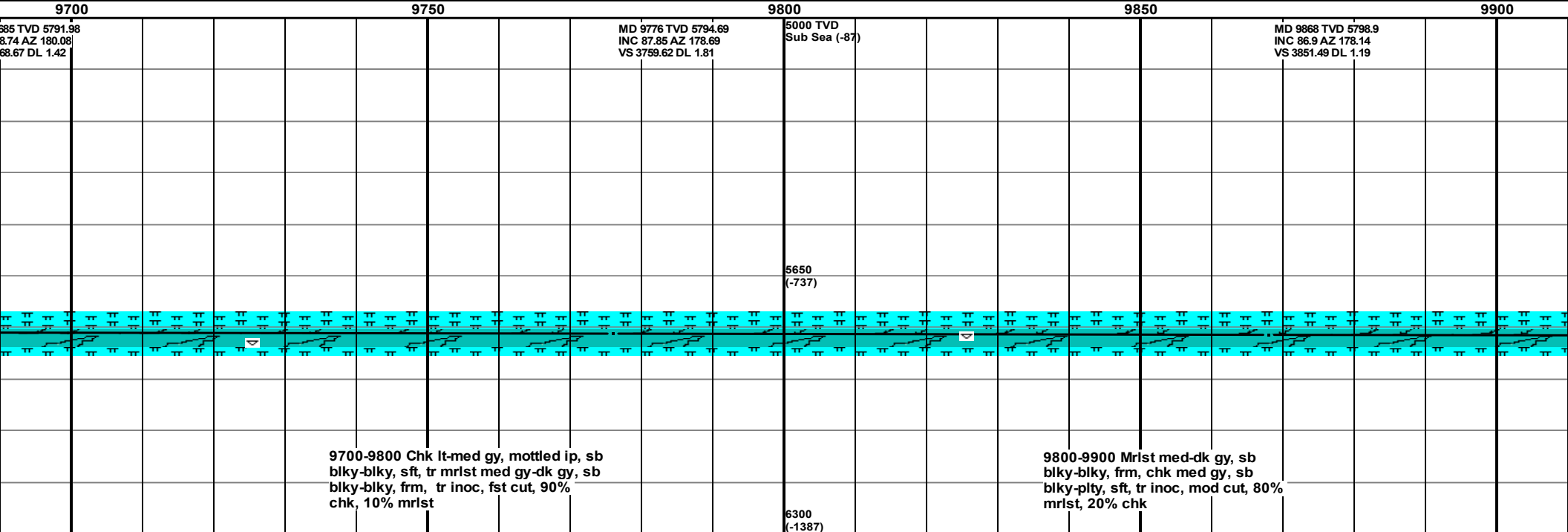
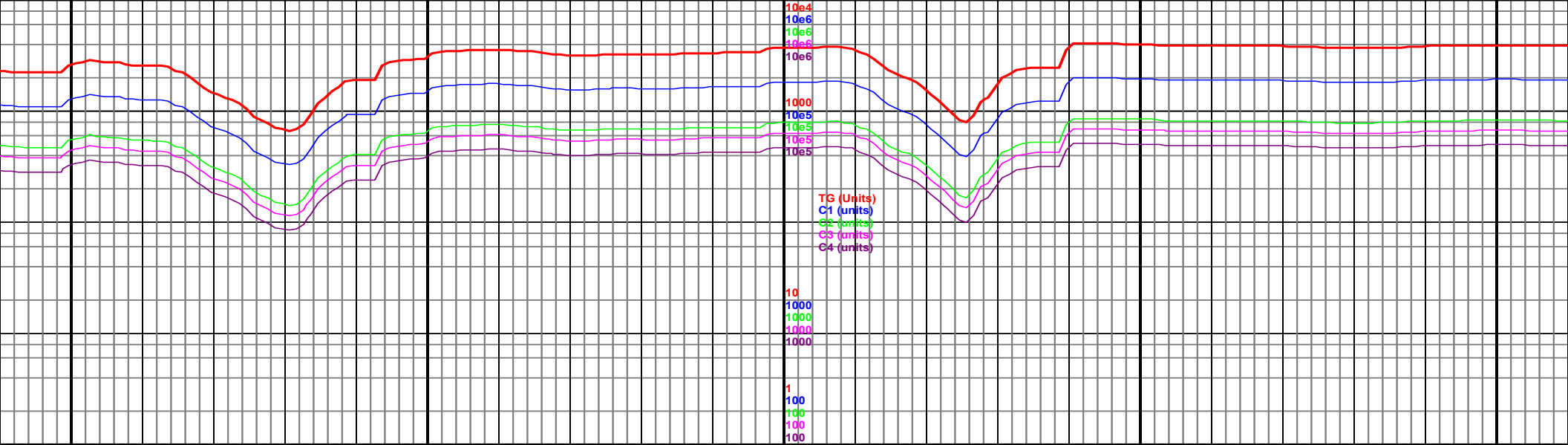


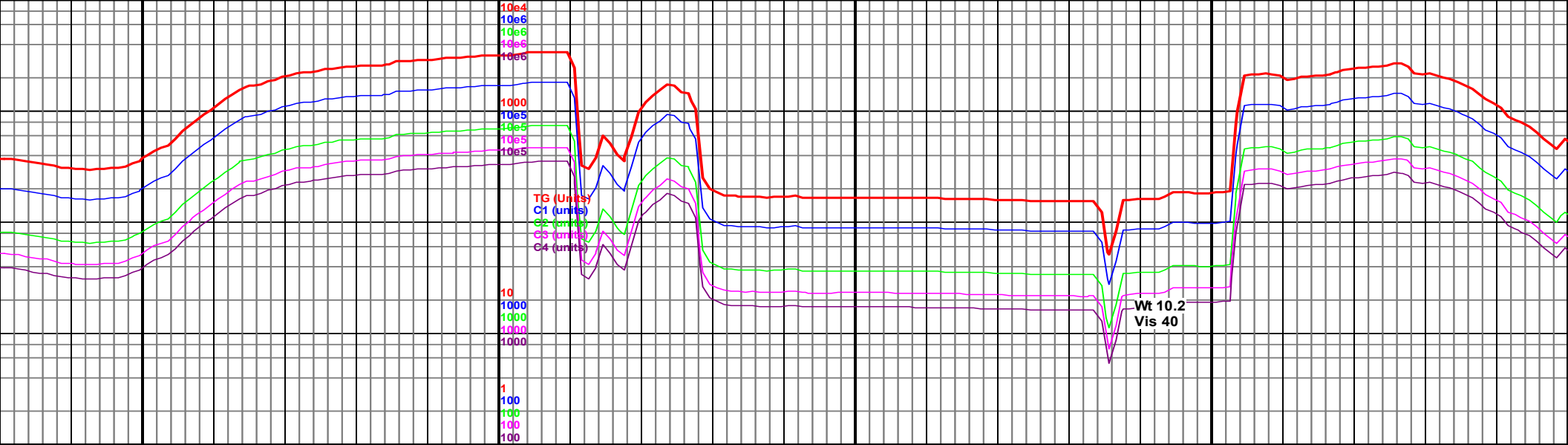


9050				9100				9150				9200				9250							
9027 TVD 5798.43 C 90.87 AZ 180.32 3010.93 DL 0.27								MD 9121 TVD 5796.72 INC 91.22 AZ 178.77 VS 3104.9 DL 1.69								5000 TVD Sub Sea (-87)				MD 9216 TVD 5793.34 INC 92.86 AZ 177.97 VS 3199.8 DL 1.92			

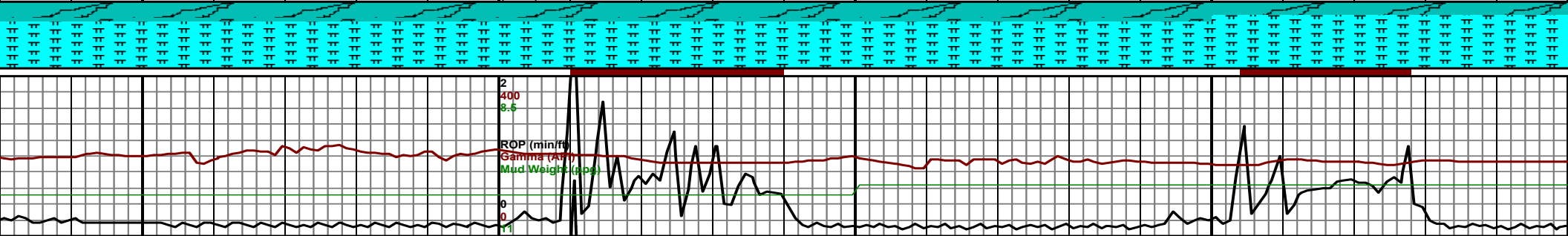


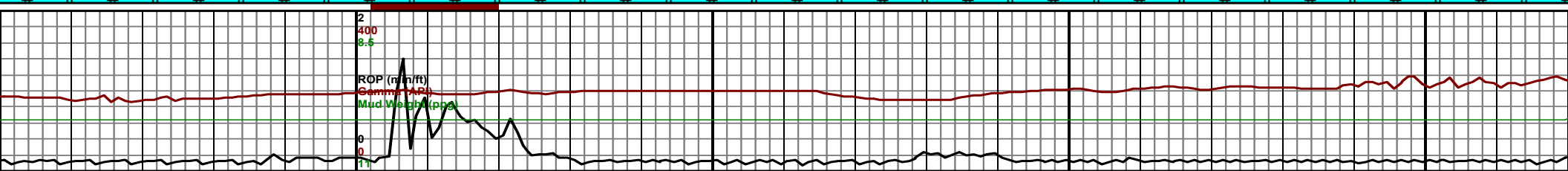
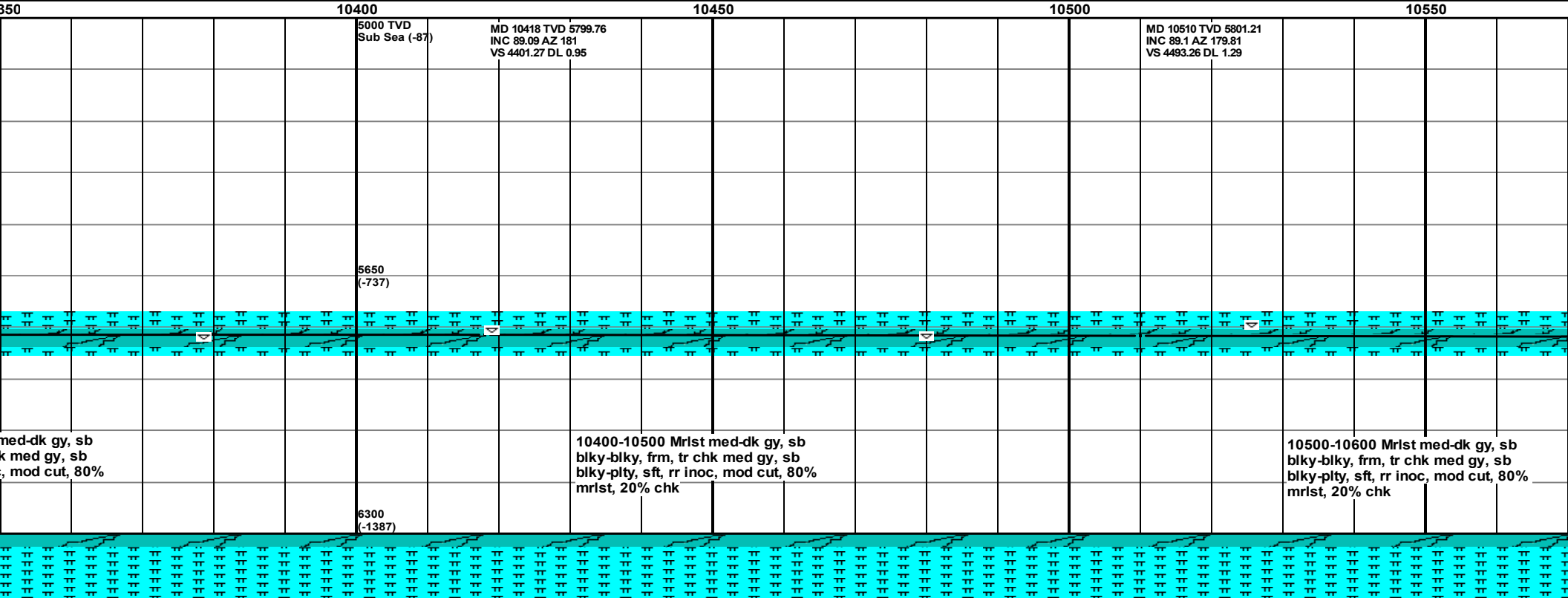
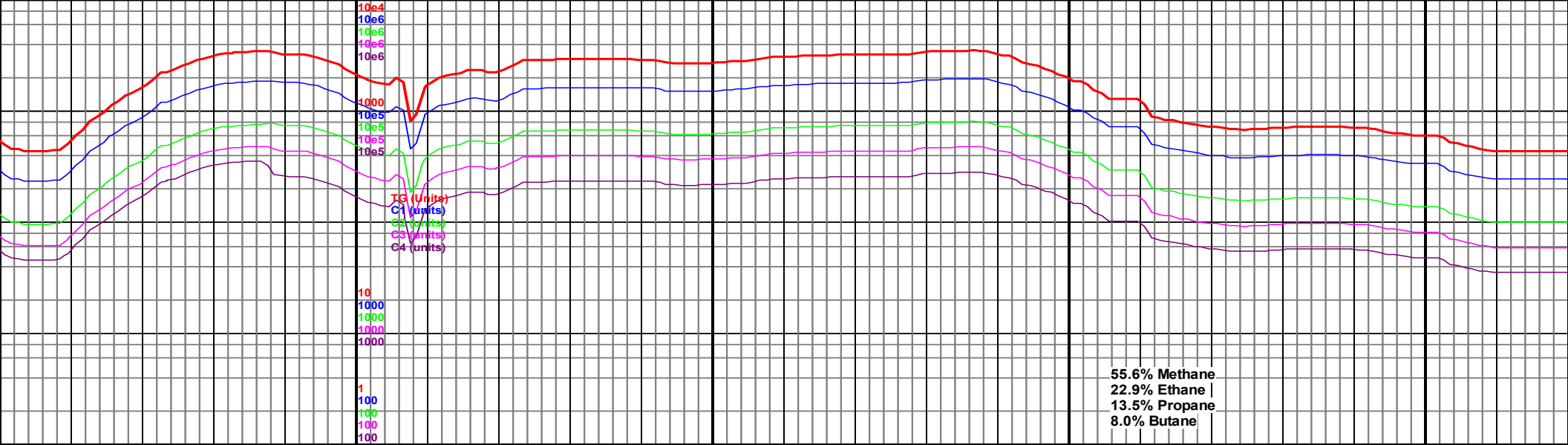


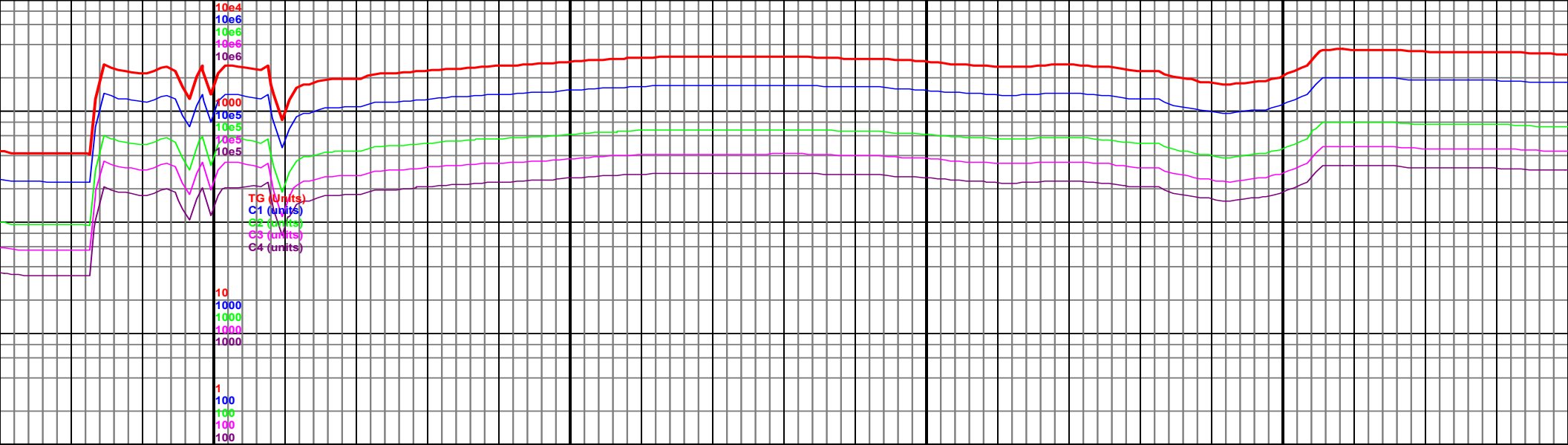




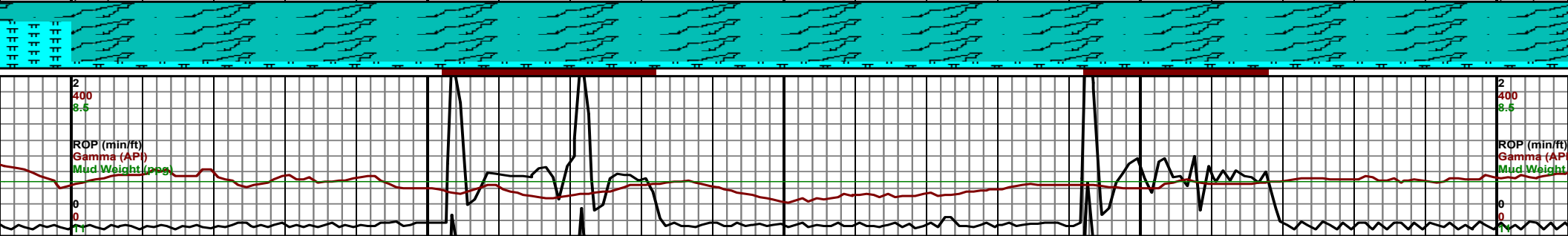
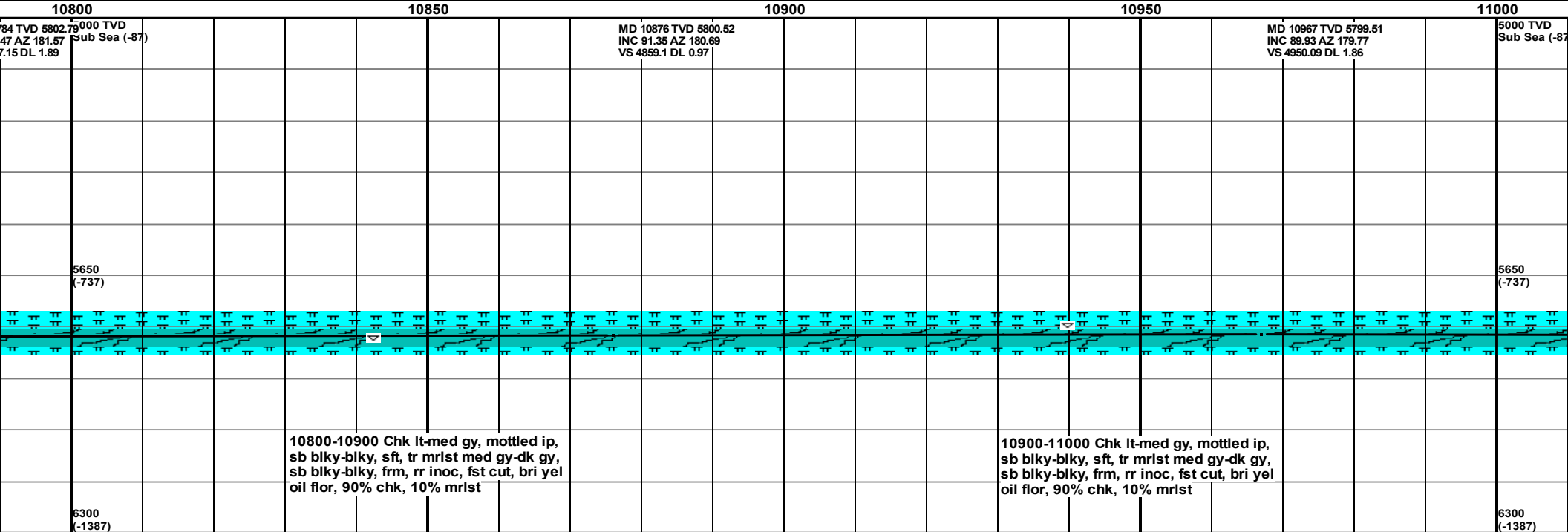
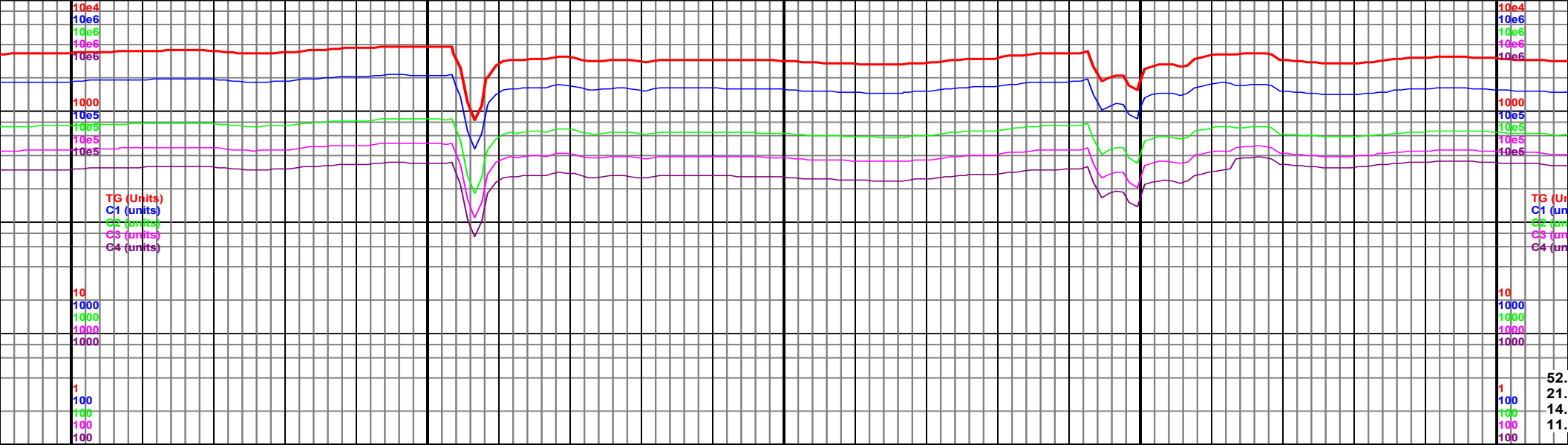
<p>10150</p> <p>MD 10144 TVD 5801.28 INC 91.66 AZ 178.25 VS 4127.34 DL 1.84</p> <p>10100-10200 Mrlst med-dk gy, sb blky-blky, frm, tr chk med gy, sb blky-plty, sft, tr inoc, mod cut, 70% mrlst, 30% chk</p>	<p>10200</p> <p>5000 TVD Sub Sea (-87)</p> <p>5650 (-737)</p> <p>6300 (-1387)</p> <p>10200-10300 Mrlst med-dk gy, sb blky-blky, frm, tr chk med gy, sb blky-plty, sft, rr inoc, mod cut, 70% mrlst, 30% chk</p>	<p>10250</p> <p>MD 10236 TVD 5799.45 INC 90.62 AZ 179.02 VS 4219.29 DL 1.41</p>	<p>10300</p> <p>MD 10327 TVD 5799. INC 89.95 AZ 180.99 VS 4310.29 DL 2.29</p> <p>10300-10400 Mrlst r blky-blky, frm, tr chl blky-plty, sft, rr inoc mrlst, 20% chk</p>
---	---	---	--

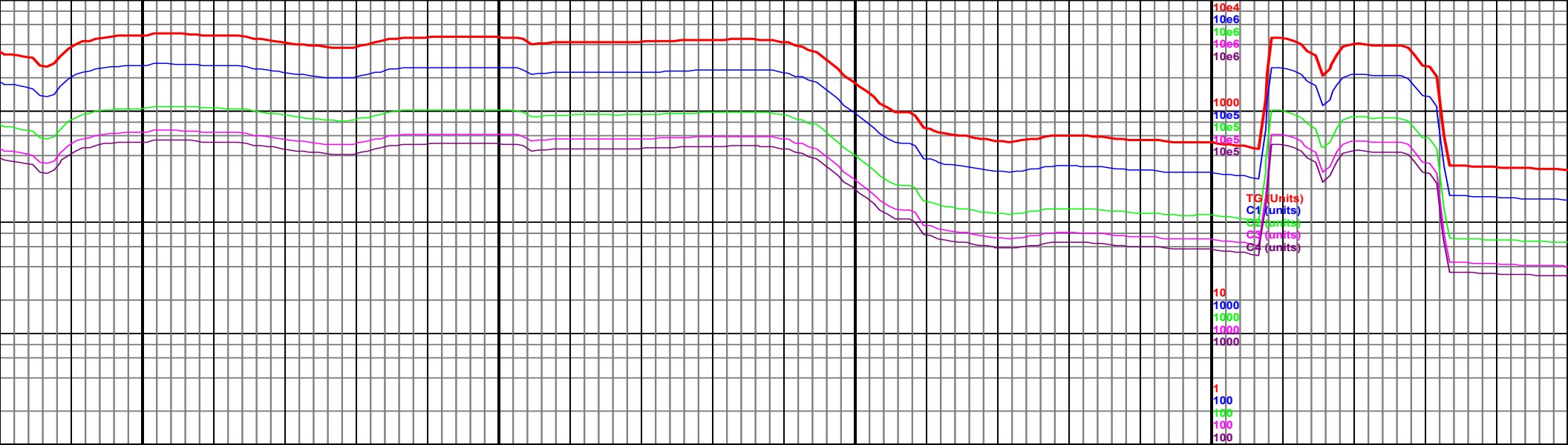




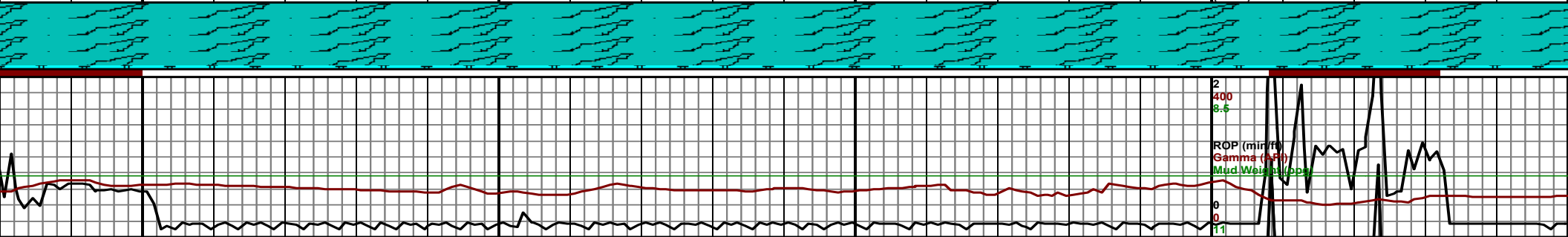


10600										10650										10700										10750										10800									
MD 10601 TVD 5802.76 INC 88.95 AZ 181.04 VS 4584.24 DL 1.36																				MD 10693 TVD 5803.78 INC 89.78 AZ 181.89 VS 4676.2 DL 1.29																				MD 10781 TVD 5804.79 INC 91.78 AZ 182.89 VS 4767.2 DL 1.29									
5650 (-737)																																																	





<p>MD 11243 TVD 5801.93 INC 89.53 AZ 181.35 VS 5226.06 DL 2.77</p> <p>11200-11300 Chk It-med gy, sb blky-blky, sft, rr mrlst med gy-dk gy, sb blky-blky, frm, rr bent, rr inoc, fst cut, bri yel oil flor, 95% chk, 5% mrlst</p>	<p>MD 11335 TVD 5801.95 INC 90.45 AZ 181.78 VS 5318.02 DL 1.1</p> <p>11300-11400 Chk It-med gy, sb blky-blky, sft, rr mrlst med gy-dk gy, sb blky-blky, frm, rr inoc, fst cut, bri yel oil flor, 95% chk, 5% mrlst</p>	<p>MD 11428 TVD 5801.82 INC 89.71 AZ 182.32 VS 5410.96 DL 0.99</p> <p>11400-11500 Chk It sft, rr mrlst med gy, rr inoc, fst cut, 95%</p>
--	--	--



Front end loader
parked on gas line

Wt 10.1
Vis 38

53.5% Methane
22.1% Ethane
13.4% Propane
11.0% Butane

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

10
1000
1000
1000
1000
1
100
100
100
100

11500 11550 11600 11650

MD 11519 TVD 5803.23
INC 88.51 AZ 182.51
VS 5501.87 DL 1.34

5000 TVD
Sub Sea (-87)

MD 11611 TVD 5804.78
INC 89.56 AZ 181.98
VS 5593.78 DL 1.28

5650
(-737)

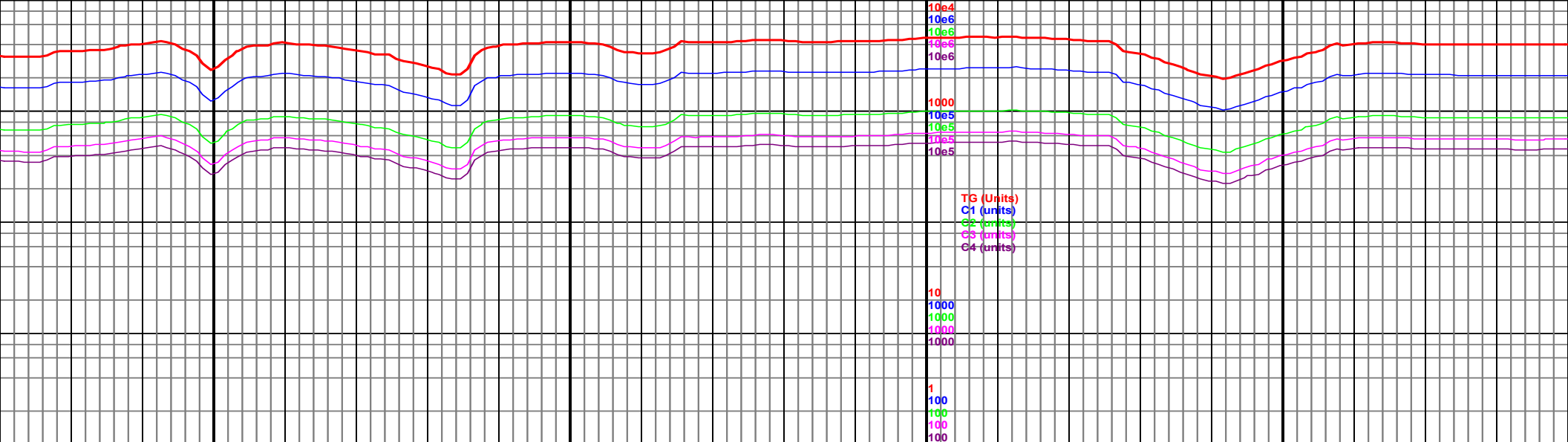
gy, sb blkly-sb plty,
sb blkly-blky, frm,
Chk, 5% Mrlst

11500-11600 Chk lt gy, sb blkly-sb plty,
sft, rr mrlst med gy, sb blkly-blky, frm,
rr inoc, fst cut, 90% Chk, 10% Mrlst

11600-11700 Chk lt gy, sb blkly-sb plty,
sft, rr mrlst med gy, sb blkly-blky, frm,
occ inoc, fst cut, 90% Chk, 10% Mrlst

6300
(-1387)

2
400
8.5
ROP (min/ft)
Gamma (API)
Mud Weight (ppg)



11700

11750

11800

11850

MD 11702 TVD 5805.6
INC 89.41 AZ 181.1
VS 5684.74 DL 0.98

MD 11794 TVD 5806.58
INC 89.37 AZ 180.35
VS 5776.73 DL 0.82

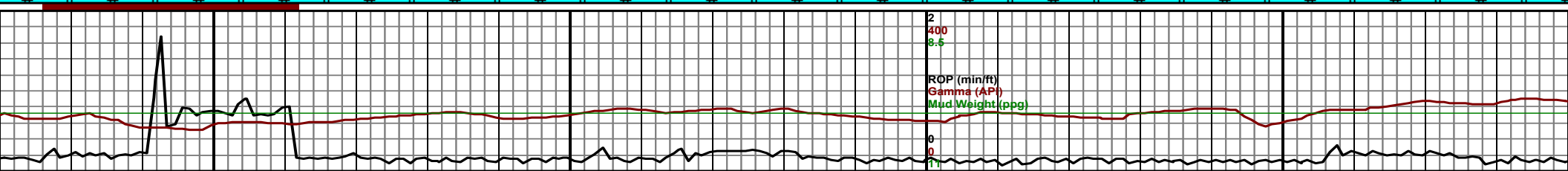
MD 11794 TVD 5806.58
INC 89.37 AZ 180.35
VS 5776.73 DL 0.82

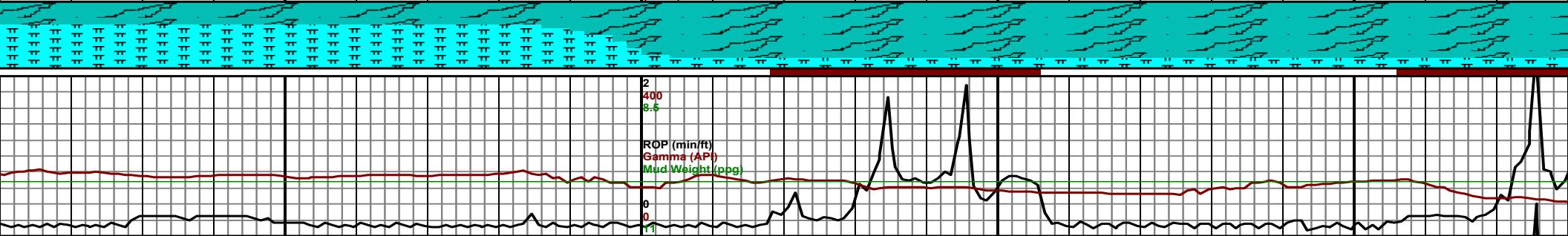
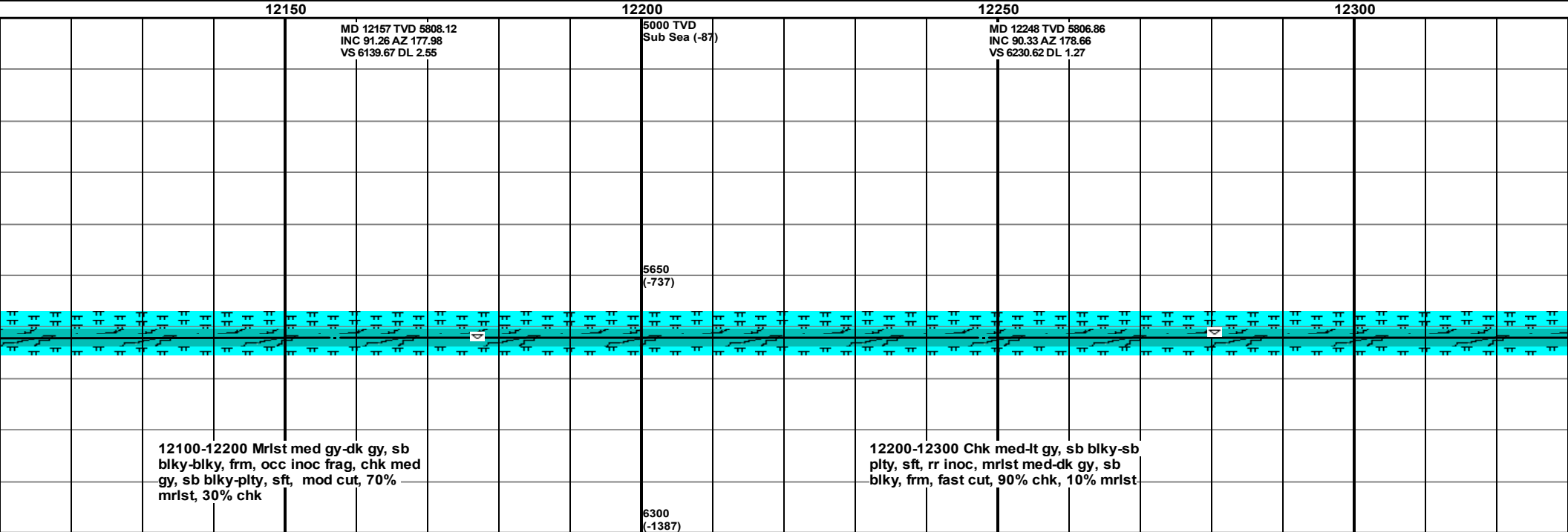
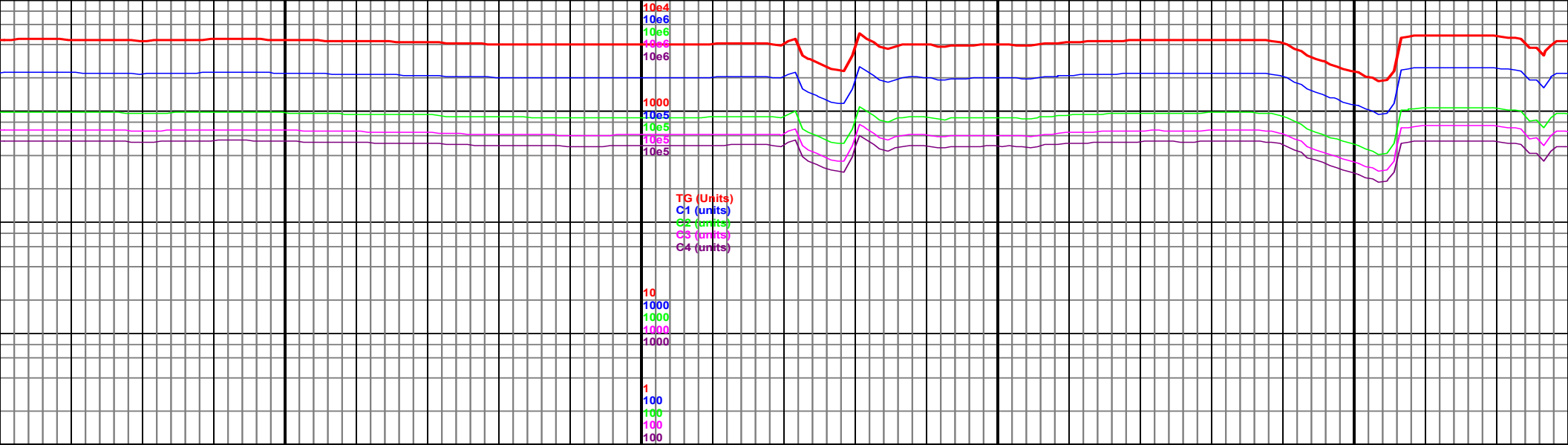


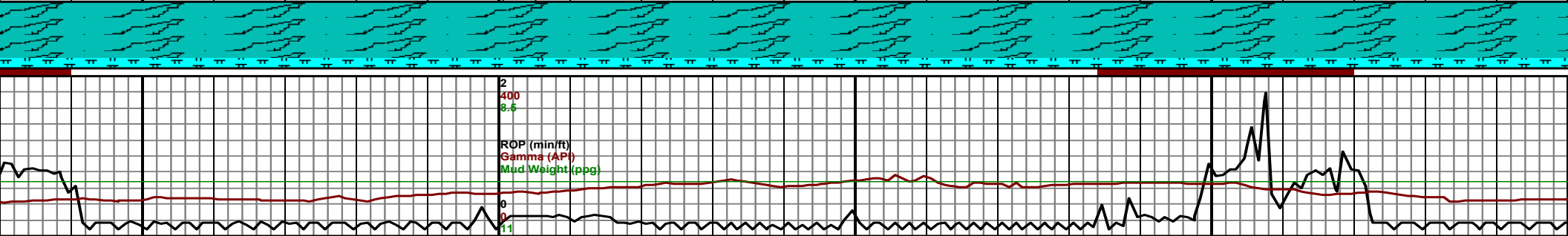
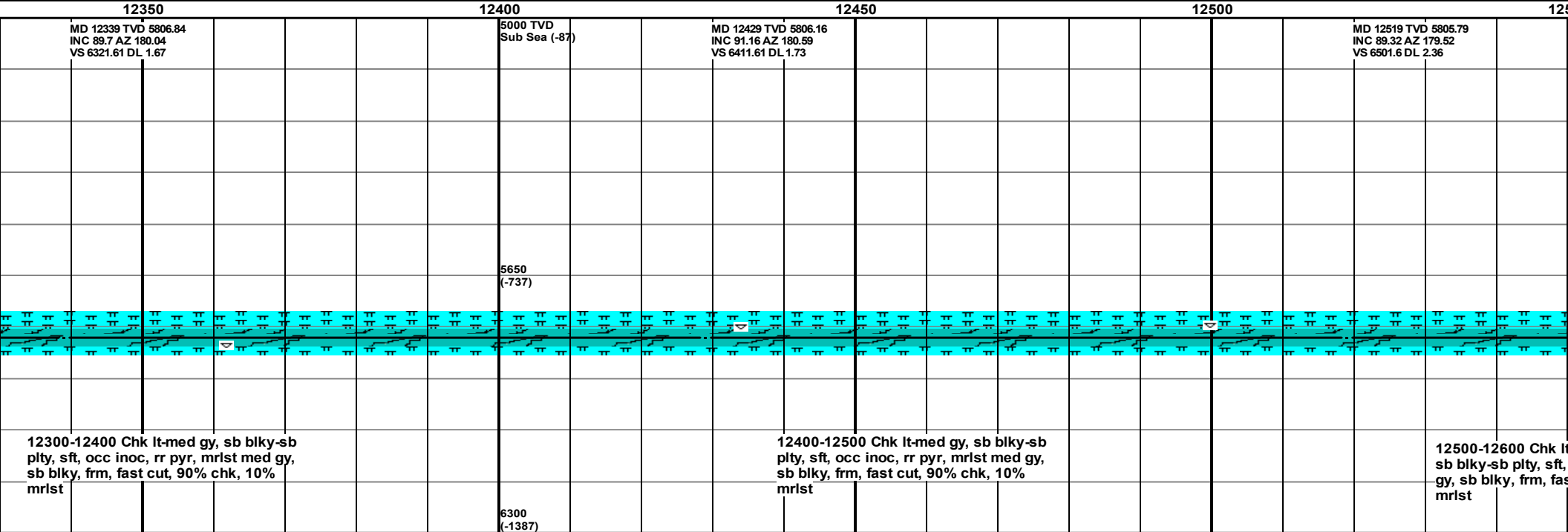
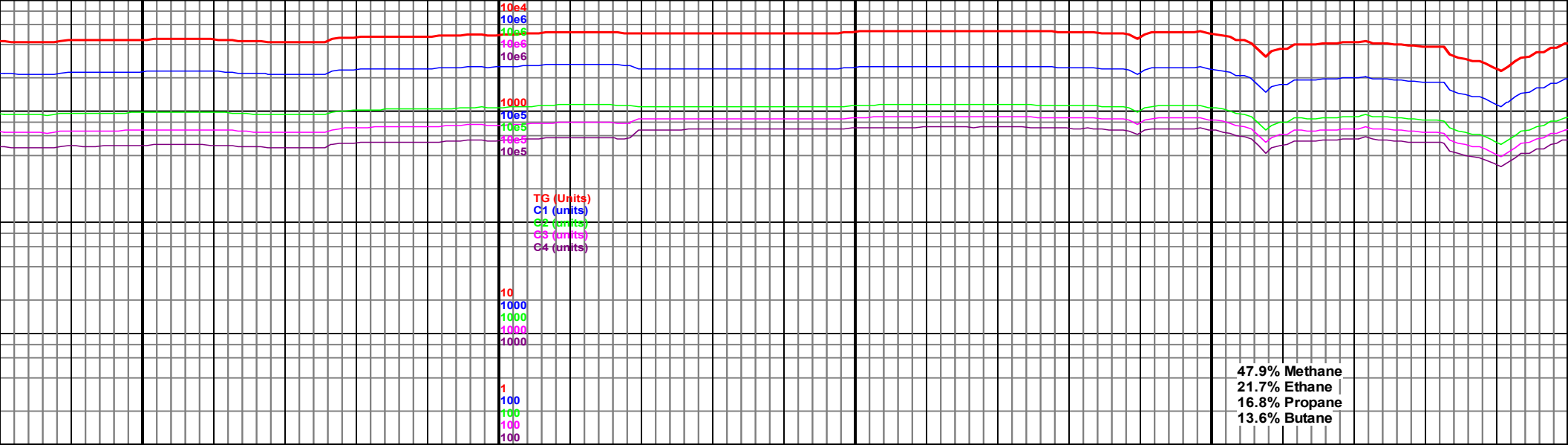
11700-11800 Chk lt gy, sb blkgy-sb plty,
sft, rr mrlst med gy, sb blkgy-blky, frm,
rr inoc, fst cut, 90% Chk, 10% Mrlst

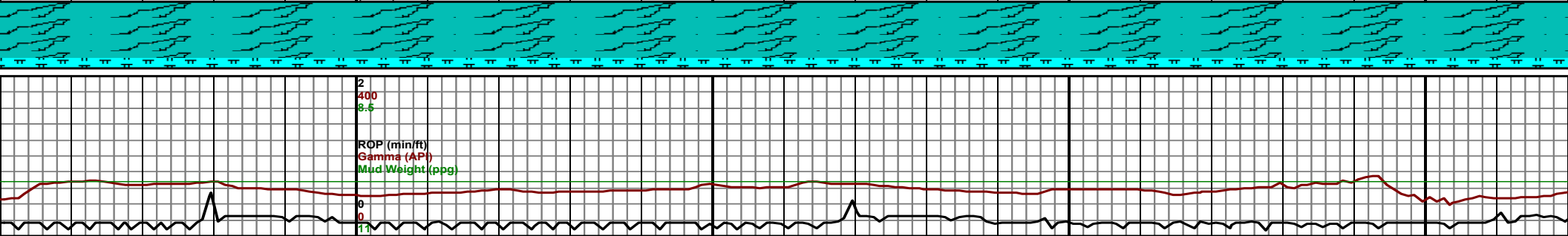
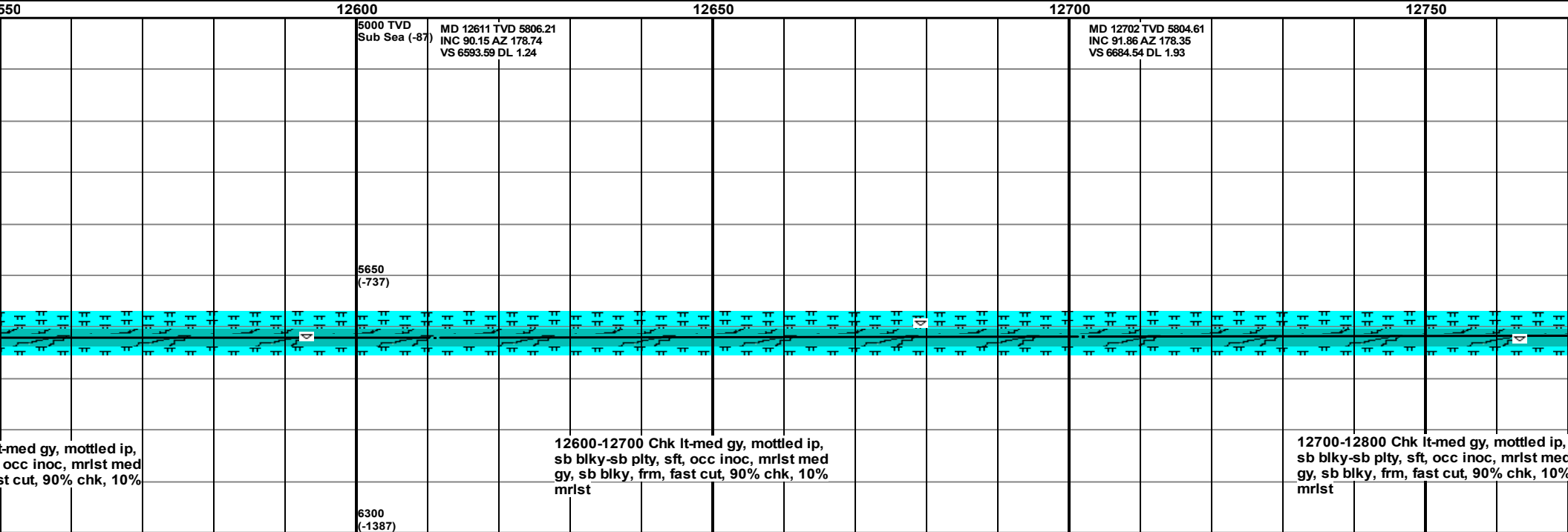
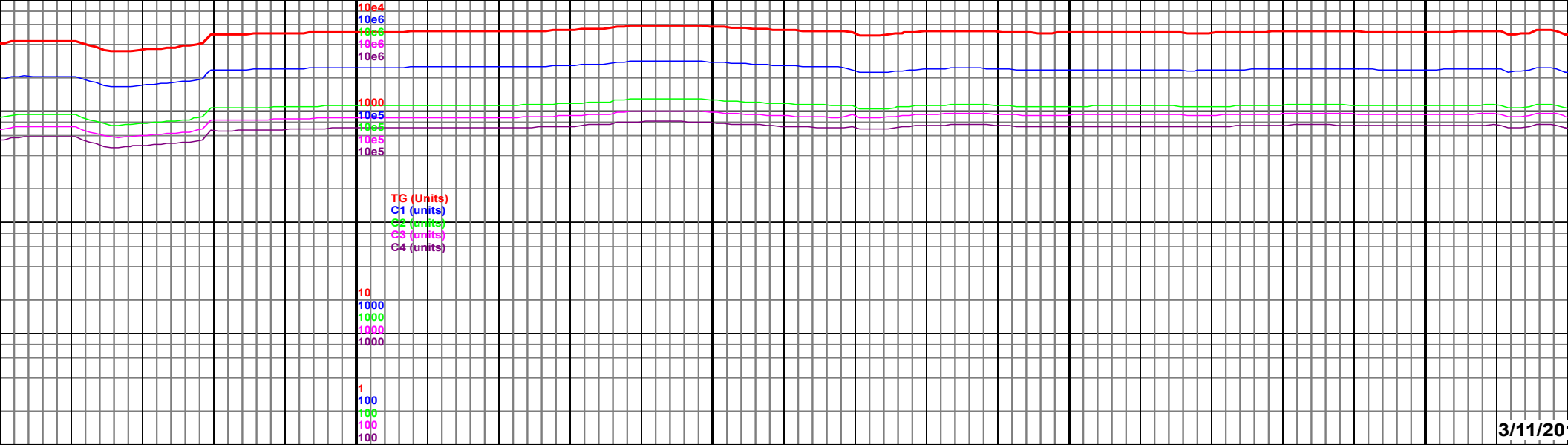
11800-11900 Chk med gy, sb blkgy-plty,
sft, mrlst med gy-dk gy, sb lbky-blky,
frm, occ inoc frag, mod cut, 50% chk,
50% mrlst

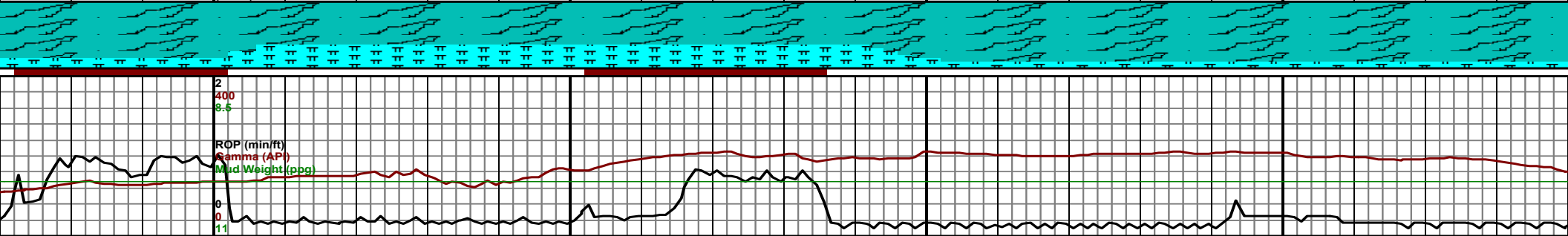
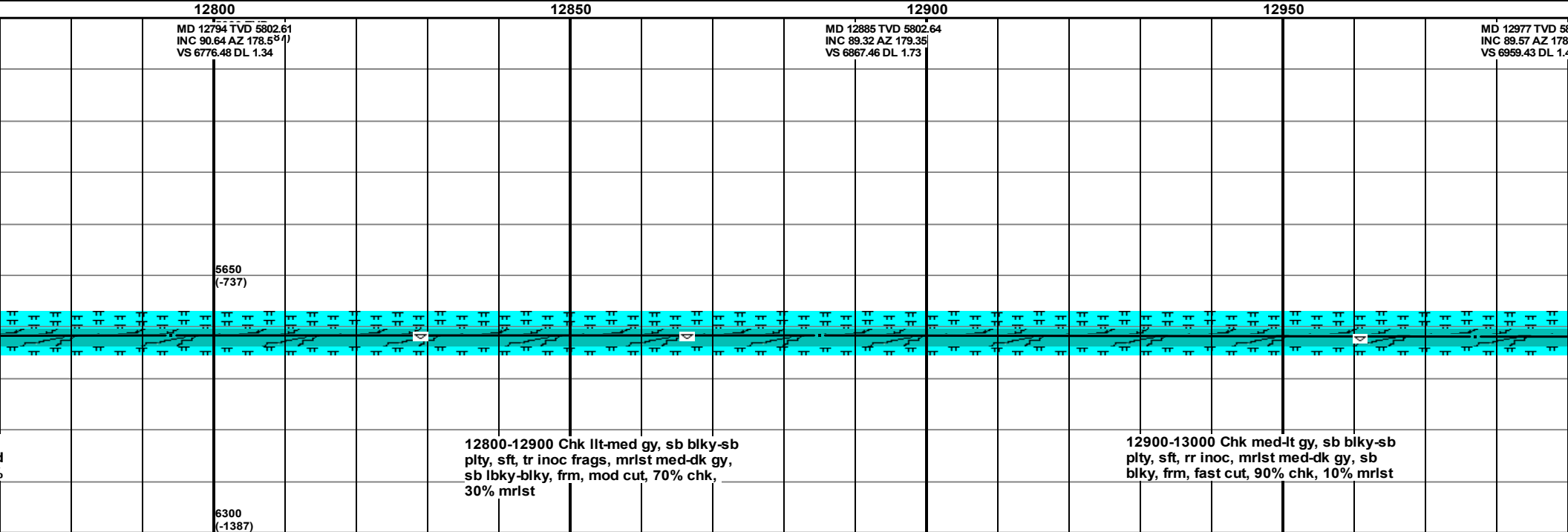
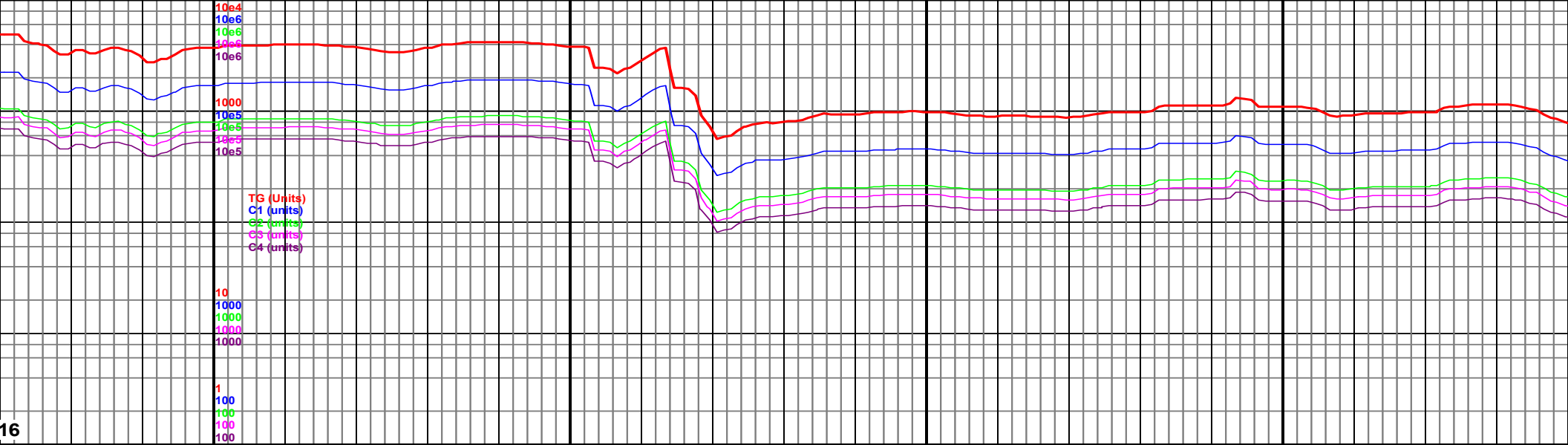
6300
(-1387)

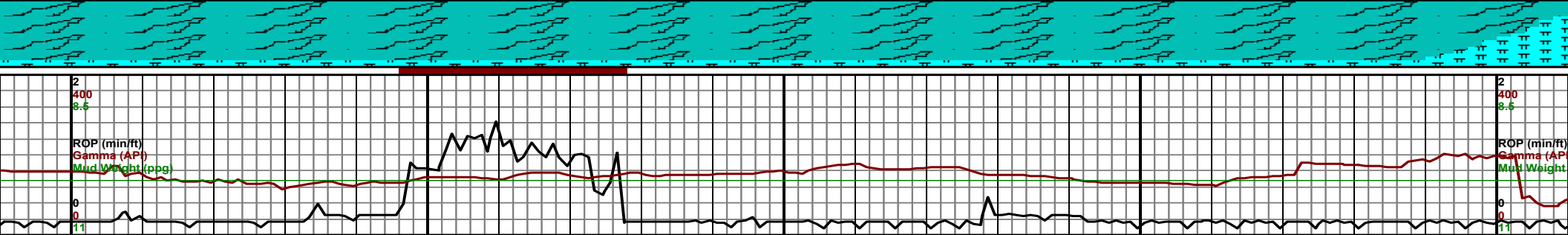
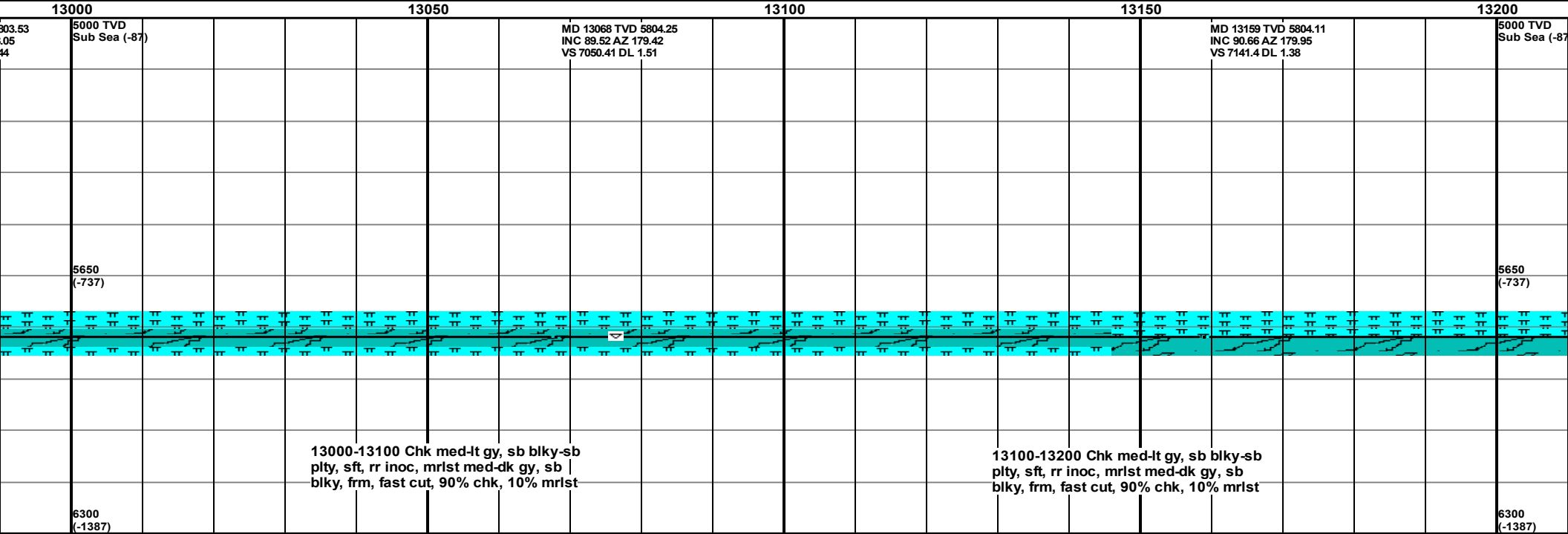
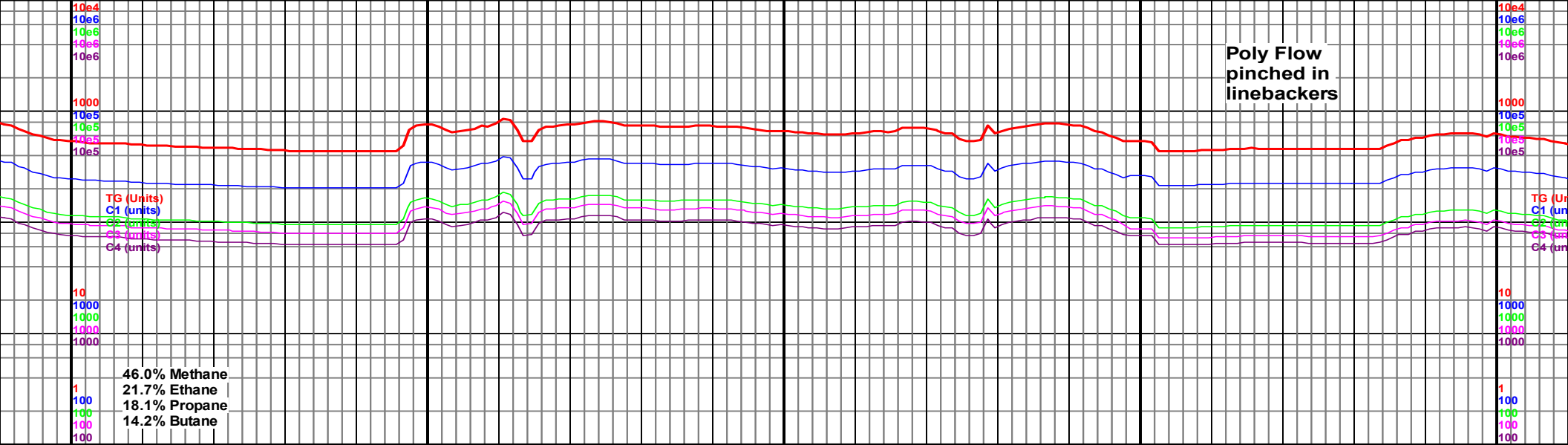


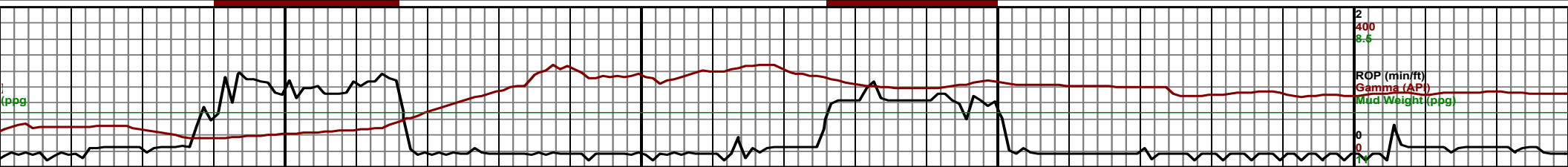
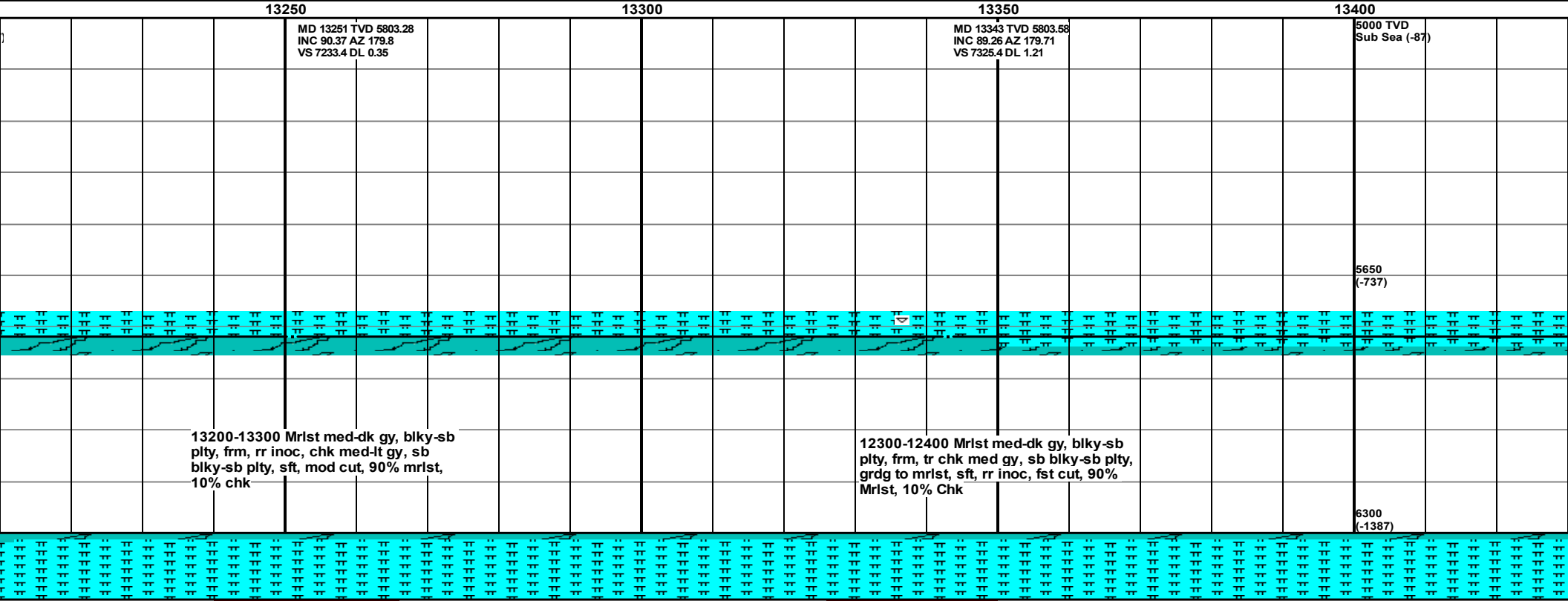
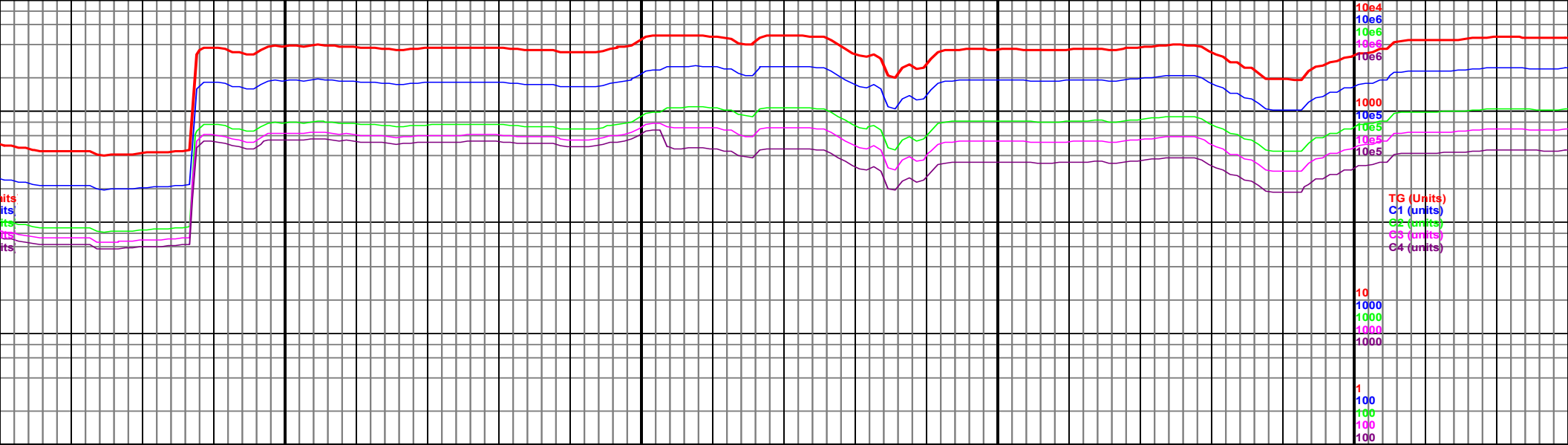


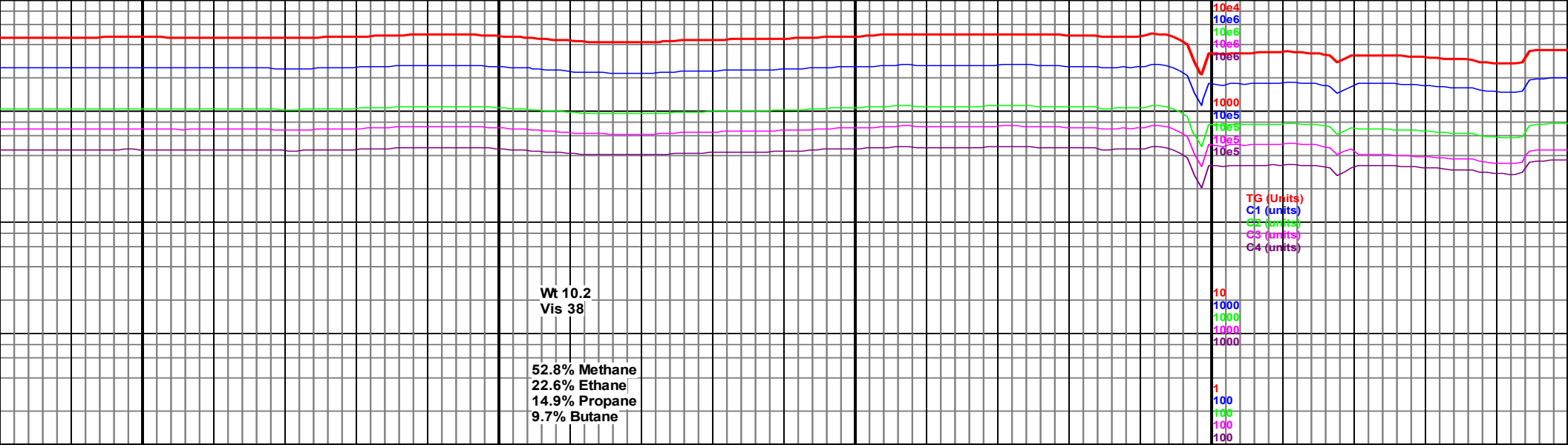












13450	13500	13550	13600	13650
MD 13435 TVD 5804.63 INC 89.43 AZ 180.43 VS 7417.39 DL 0.8		MD 13526 TVD 5804.57 INC 90.65 AZ 180.44 VS 7508.39 DL 1.34	5000 TVD Sub Sea (-87)	MD 13618 TVD 5804.74 INC 89.14 AZ 180.68 VS 7600.38 DL 1.66

