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Tulsa, Oklahoma 74136-6378

phone 918.925.9739
fax 866.534.4559

WWW.HZMUD.COM

Customer Information

Operator: Noble Energy Inc
1625 Broadway
Suite 2200
Denver, Colorado 80202

Geologist: Holly Sell
Noble Energy Inc.

Mud Logging Details

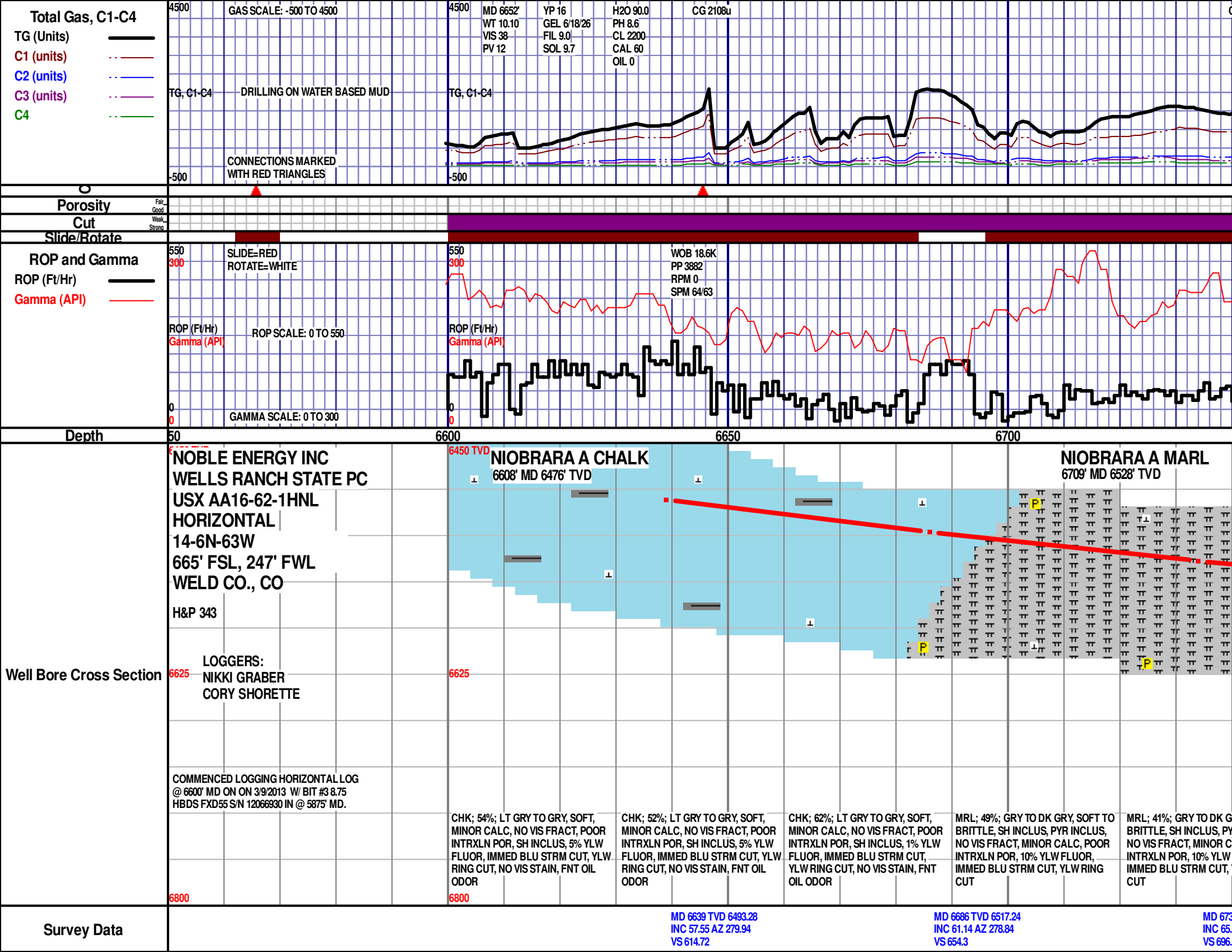
Logger: Nikki Graber
Cory Shorette
Log Interval: 6600' MD to 12782' MD
Start Date: March 9, 2013
Release Date: March 14, 2013

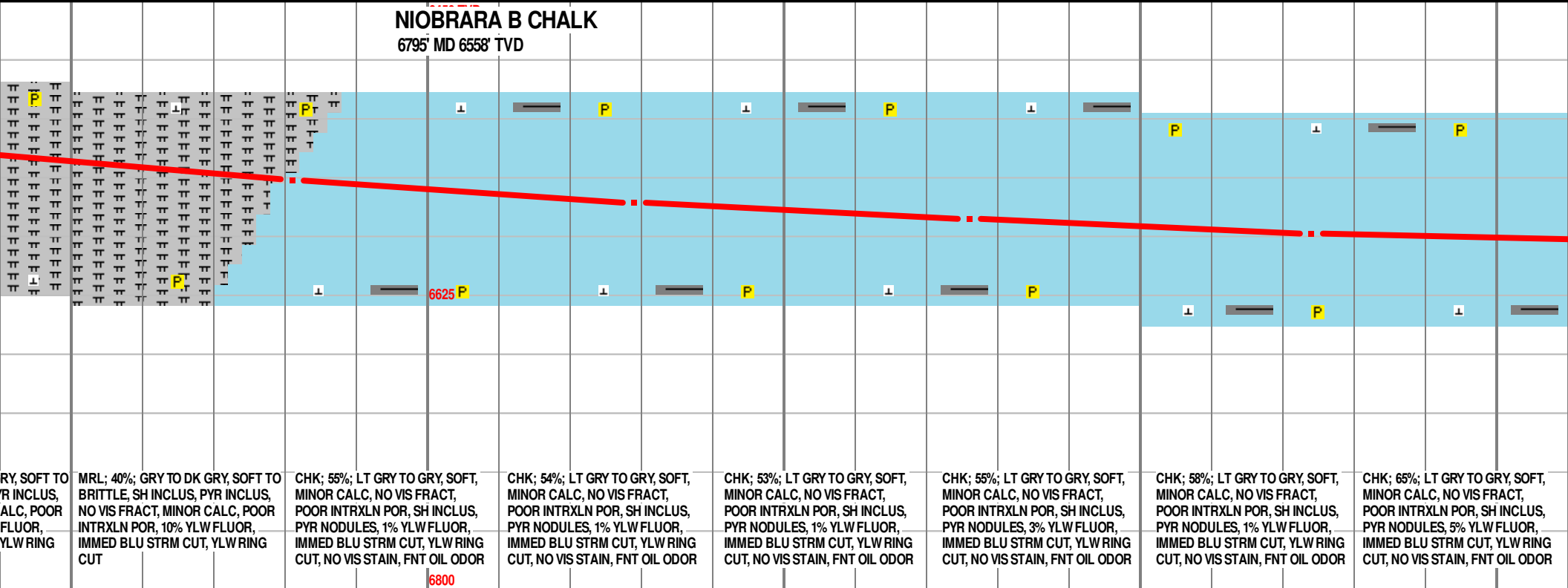
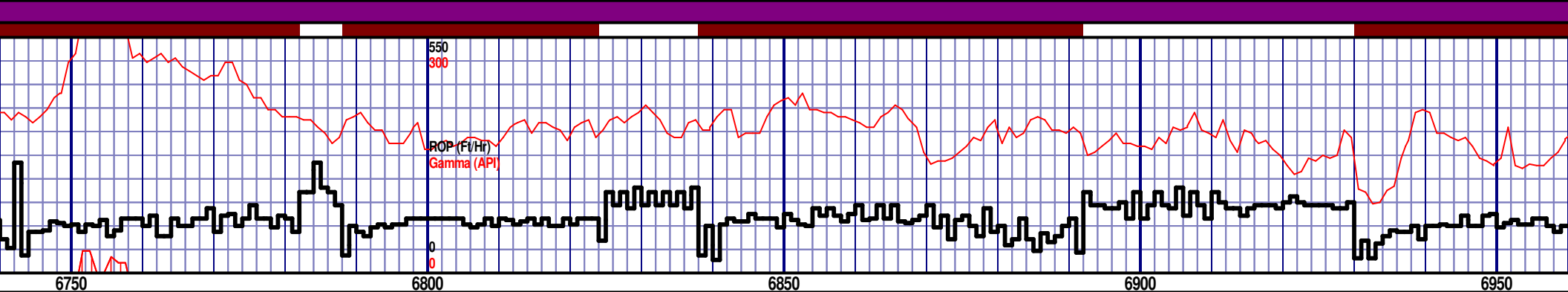
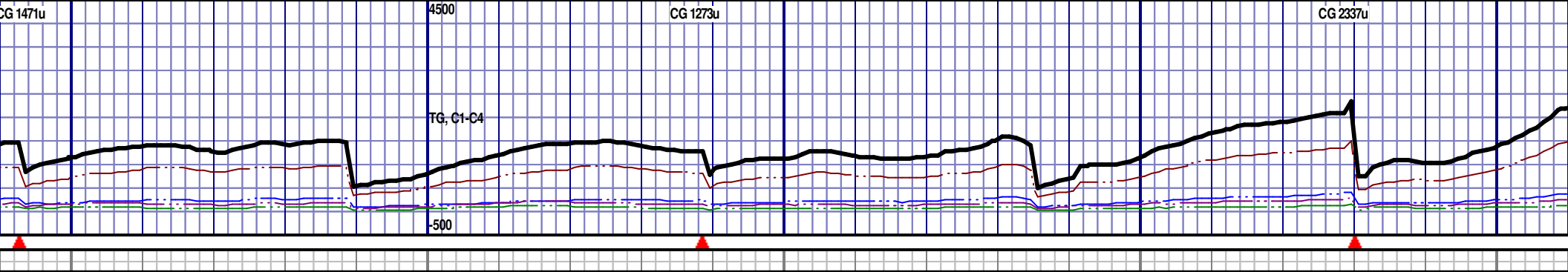
Well Information

Well Name: Wells Ranch State PC USX
AA16-62-1HNL Horizontal
Location: 14-6N-63W
665' FSL, 247' FWL

County: Weld
State: Colorado

Drilling Rig: H&P 343
Total Depth: 12782' MD
TD Date: March 13, 2013
Formation: Niobrara B Chalk
KB Elevation: 4769'
GR Elevation: 4745'
API Number: 05-123-36156





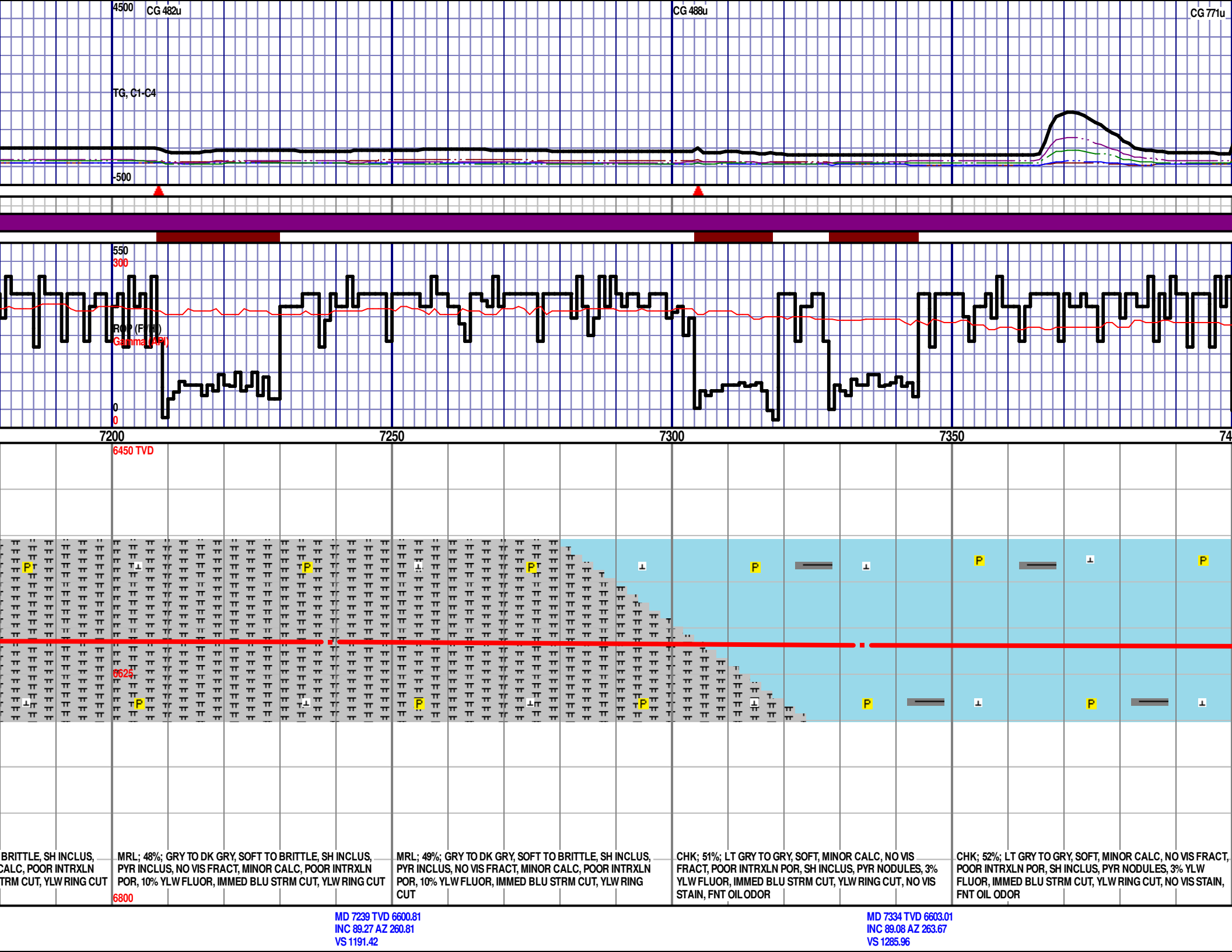
CG 689u

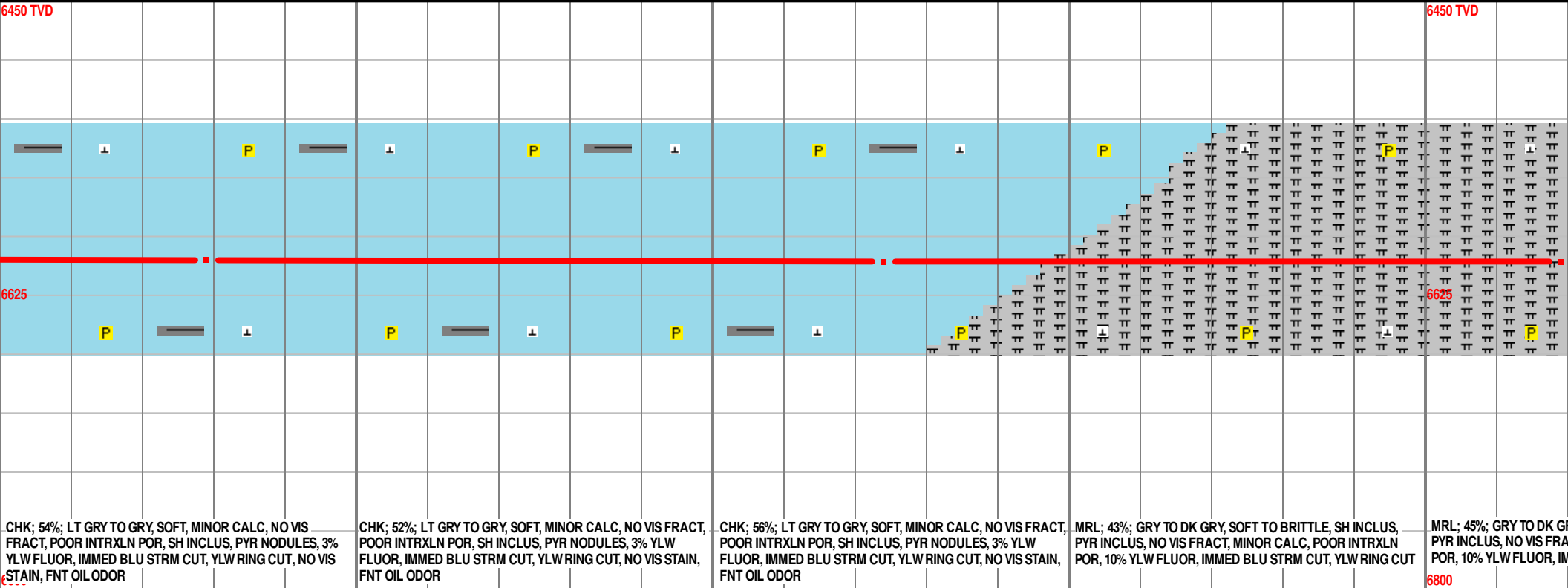
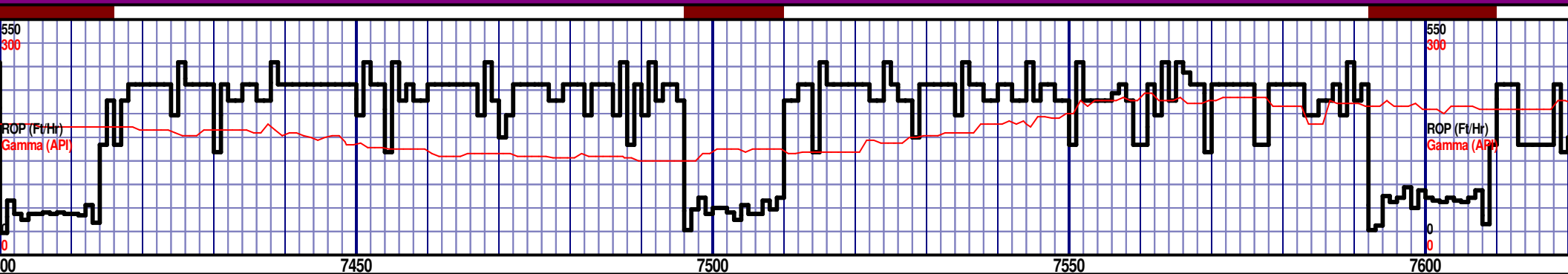
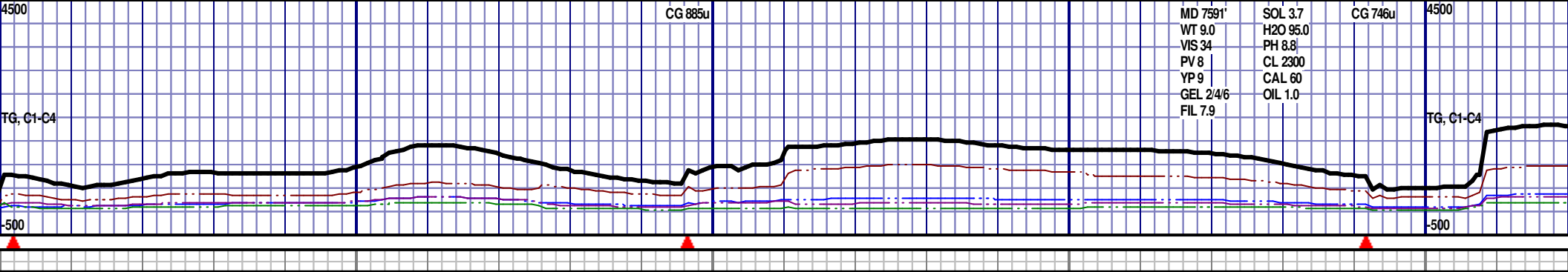


6625

MRL; 49%; GRY TO DK GRY, SOFT TO
PYR INCLUS, NO VIS FRACT, MINOR C
POR, 10% YLW FLUOR, IMMED BLU S

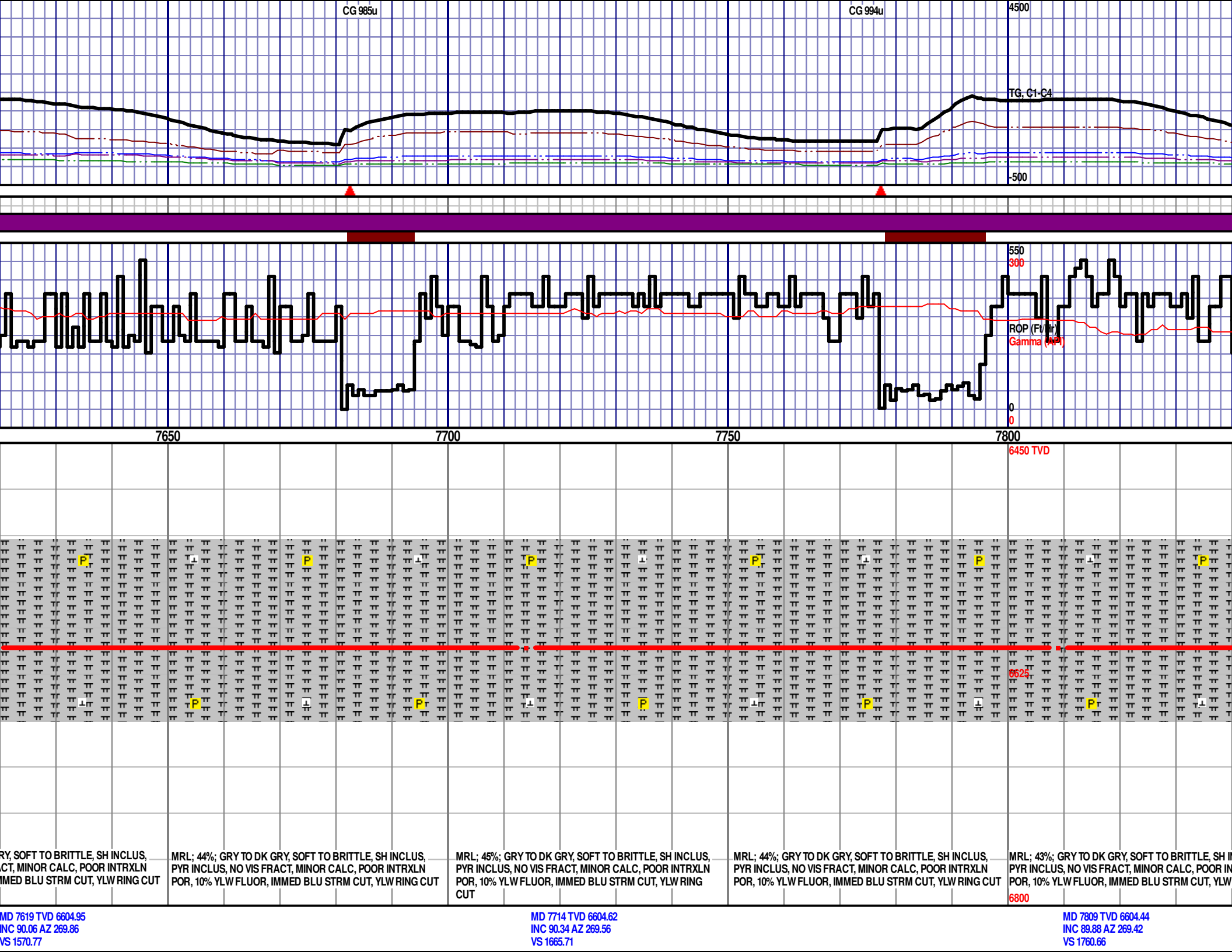
MD 7144 TVD 6599.2
INC 89.78 AZ 261.26
VS 1097.07





MD 7429 TVD 6604.01
INC 89.72 AZ 265.78
VS 1380.82

MD 7524 TVD 6604.62
INC 89.54 AZ 266.71
VS 1475.79



CG 985u

CG 994u

4500

TG, C1-C4

500

550

300

ROP (FV) Gamma (API)

0

0

7650

7700

7750

7800

6450 TVD

6625

6800

RY, SOFT TO BRITTLE, SH INCLUS,
CT, MINOR CALC, POOR INTRXLN
IMMED BLU STRM CUT, YLW RING CUT

MRL; 44%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS,
PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN
POR, 10% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT

MRL; 45%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS,
PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN
POR, 10% YLW FLUOR, IMMED BLU STRM CUT, YLW RING
CUT

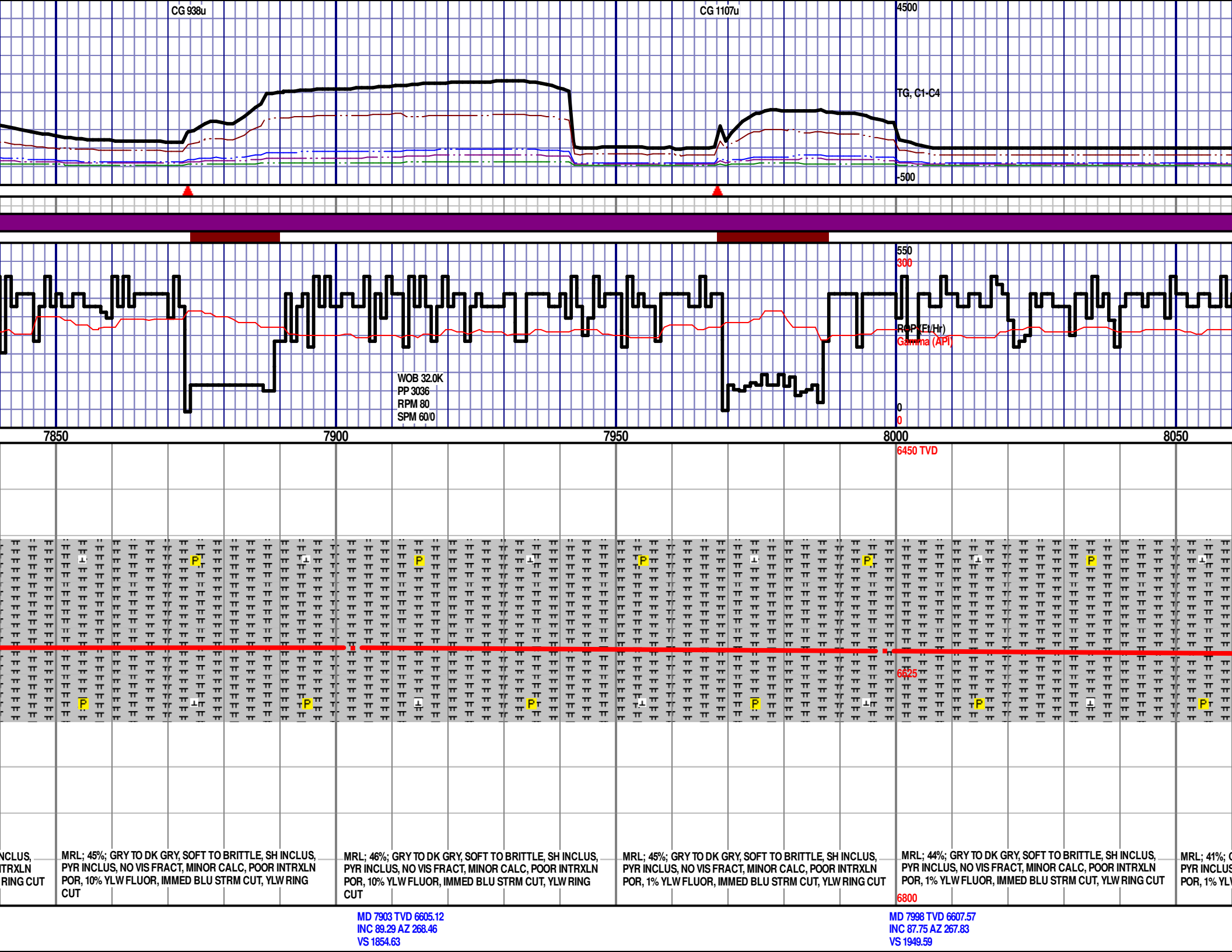
MRL; 44%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS,
PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN
POR, 10% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT

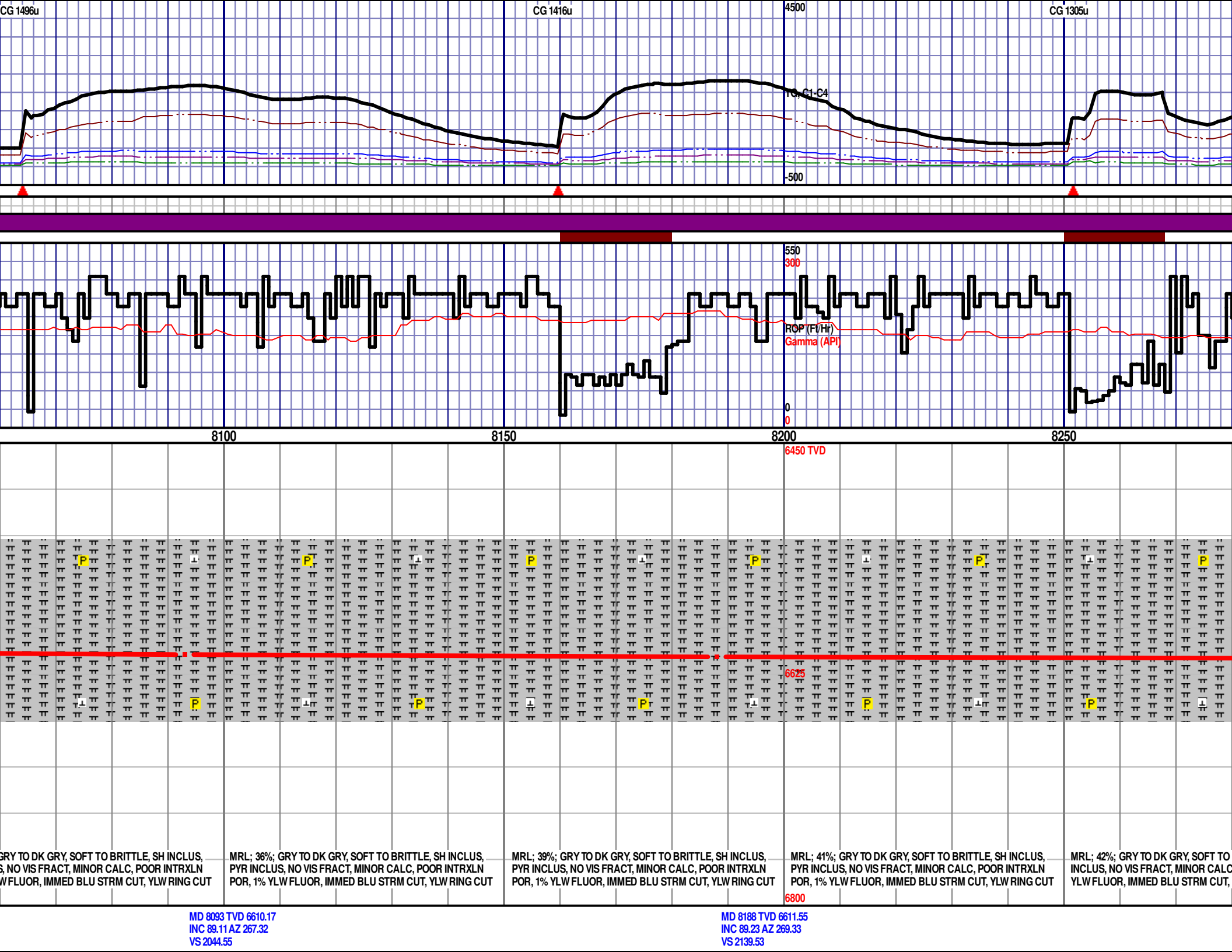
MRL; 43%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS,
PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN
POR, 10% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT

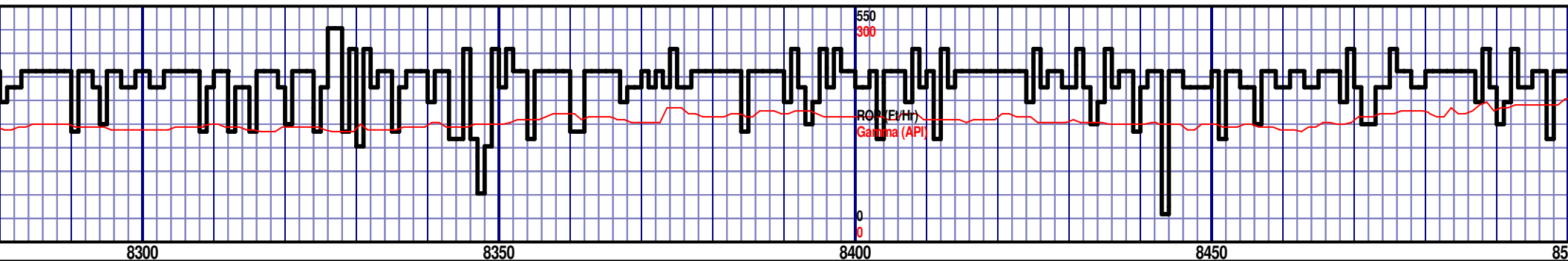
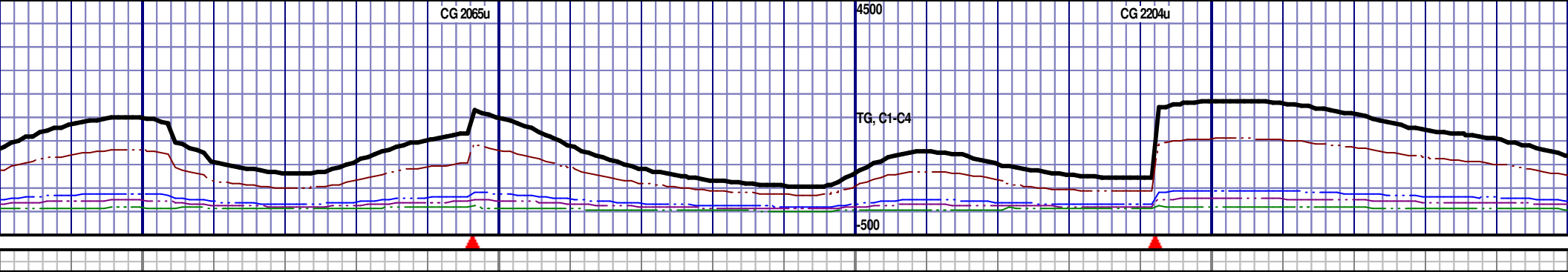
MD 7619 TVD 6604.95
INC 90.06 AZ 269.86
VS 1570.77

MD 7714 TVD 6604.62
INC 90.34 AZ 269.56
VS 1665.71

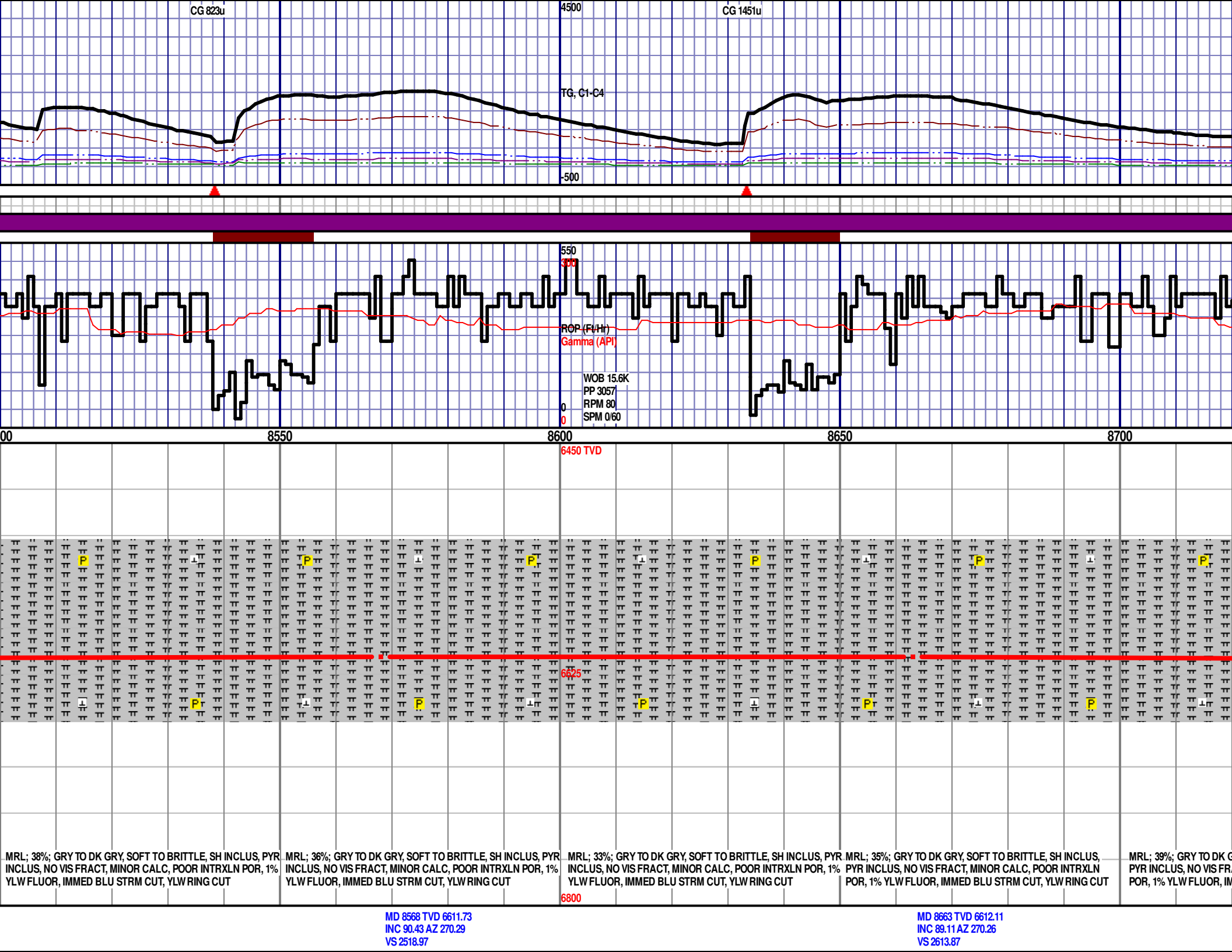
MD 7809 TVD 6604.44
INC 89.88 AZ 269.42
VS 1760.66

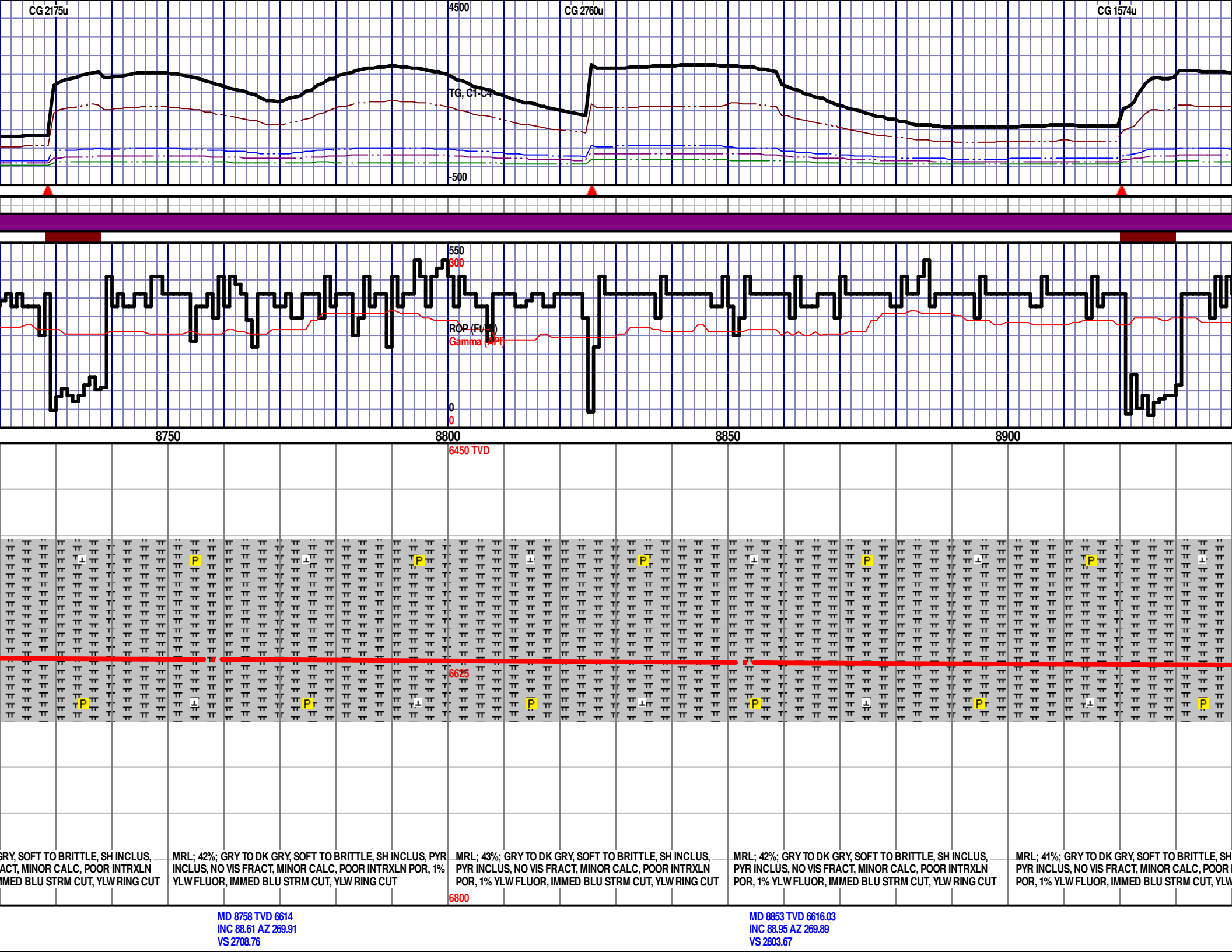


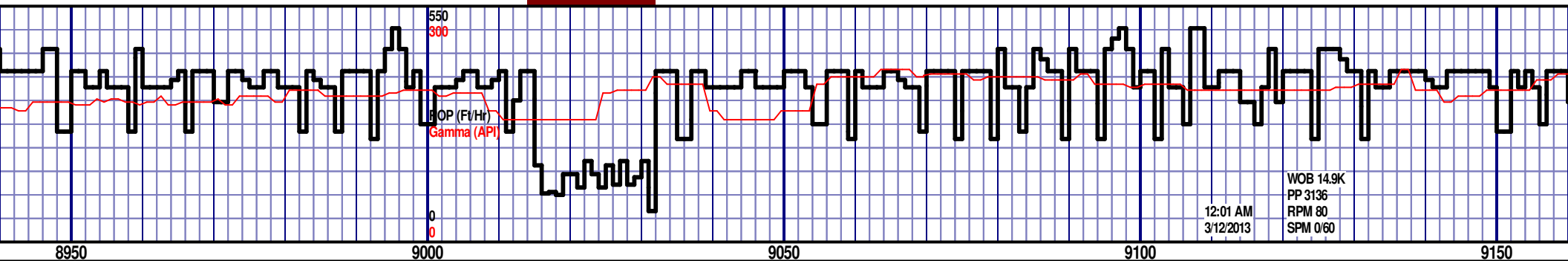
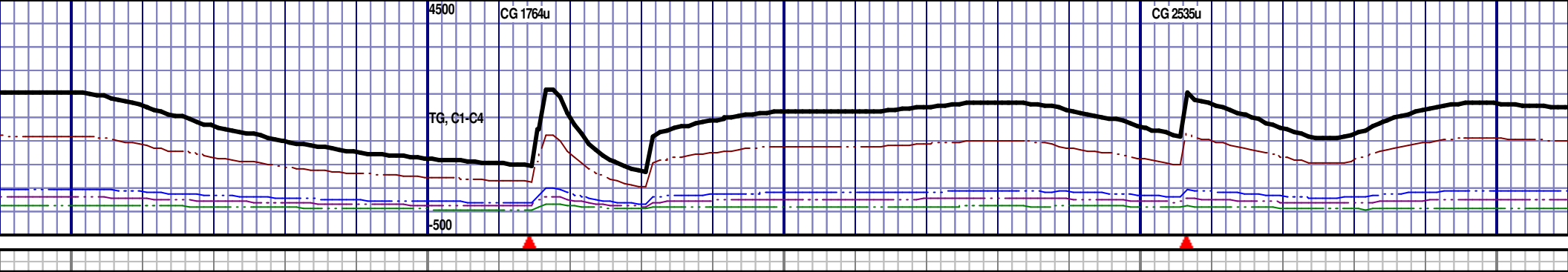




<p>BRITTLE, SH INCLUS, PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 1% YLW RING CUT</p>	<p>MRL: 39%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS, PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT</p>	<p>MRL: 41%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS, PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT</p>	<p>MRL: 45%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS, PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT</p>
<p>MD 8283 TVD 6612.85 INC 89.2 AZ 272.19 VS 2234.54</p>	<p>MD 8378 TVD 6613.72 INC 89.75 AZ 271.48 VS 2329.28</p>	<p>MD 8473 TVD 6613.01 INC 91.11 AZ 270.84 VS 2424.1</p>	<p>MD 8473 TVD 6613.01 INC 91.11 AZ 270.84 VS 2424.1</p>





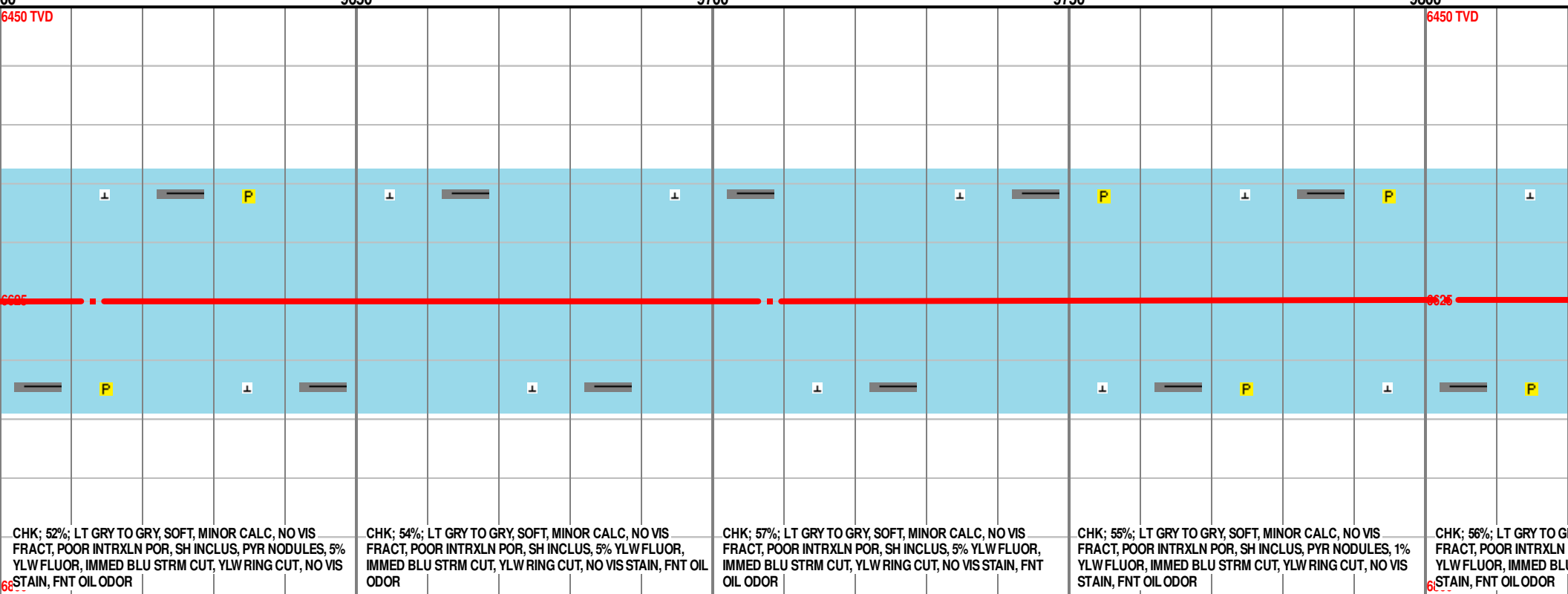
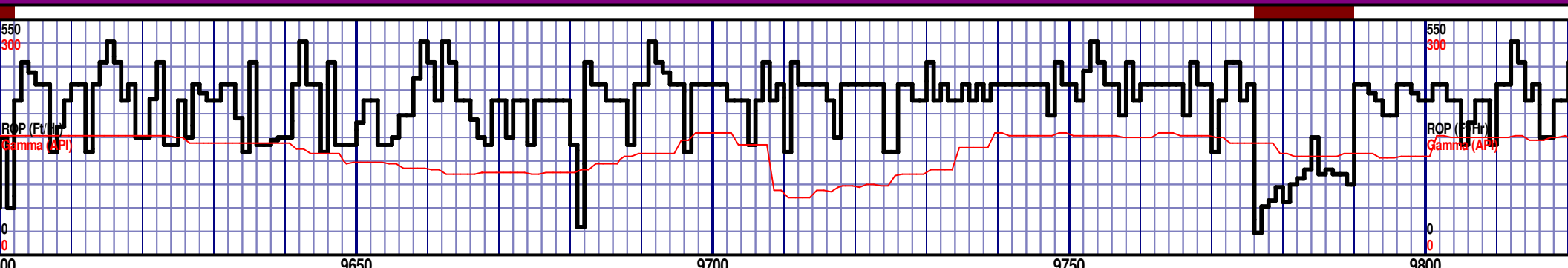
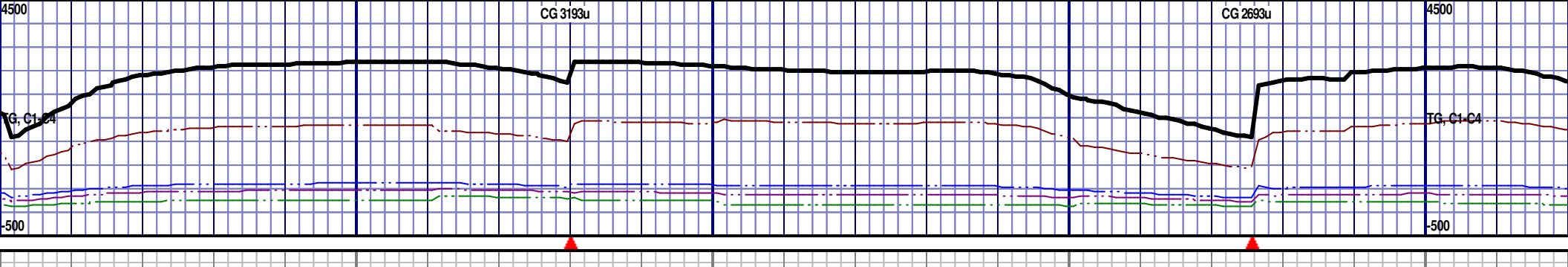


6450 TVD					6624					6800				
INCLUS, INTRXLN, YLW RING CUT					MRL: 39%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS, PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 5% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT					MRL: 36%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS, PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 5% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT				
					MRL: 35%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS, PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT					MRL: 32%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS, PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT				
					MRL: 35%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS, PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT					MRL: 35%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS, PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT				

MD 8948 TVD 6618.3
INC 88.31 AZ 270.24
VS 2898.56

MD 9043 TVD 6621.46
INC 87.87 AZ 267.47
VS 2993.48

MD 9138 TVD 6624.48
INC 88.49 AZ 267.61
VS 3088.43



CHK; 52%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 5% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

CHK; 54%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, 5% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

CHK; 57%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, 5% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

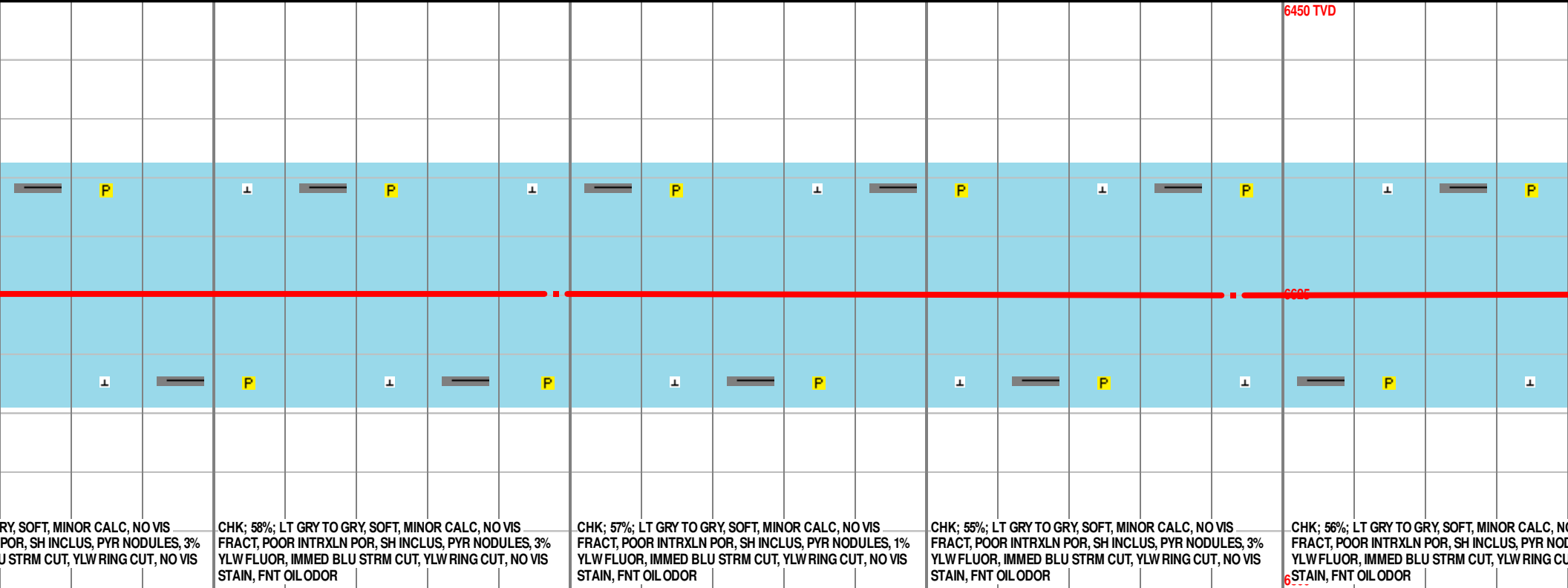
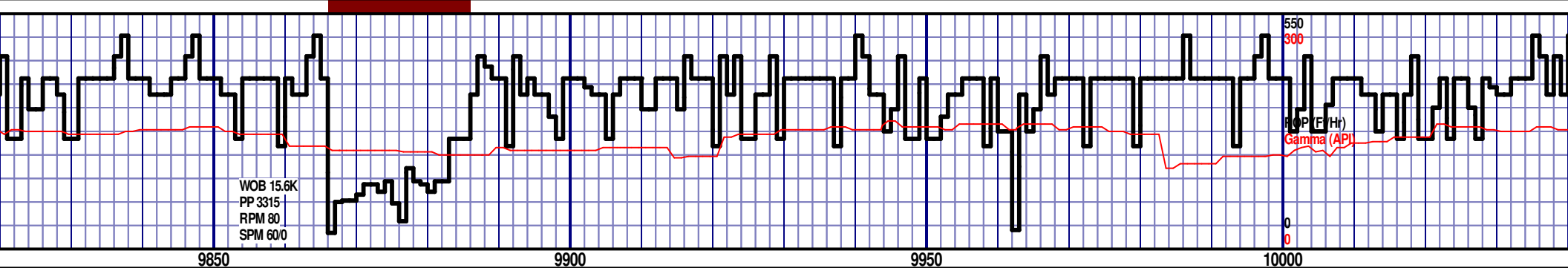
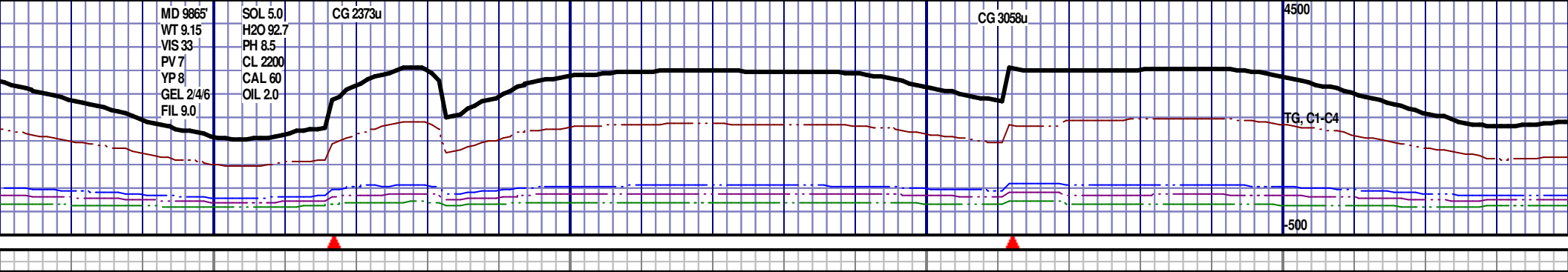
CHK; 55%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

CHK; 56%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

MD 9613 TVD 6625.37
INC 89.66 AZ 267.6
VS 3563.36

MD 9708 TVD 6624.91
INC 90.89 AZ 267.87
VS 3658.36

MD 9803 TVD 6623.71
INC 90.56 AZ 268.55
VS 3753.35



RY, SOFT, MINOR CALC, NO VIS
POR, SH INCLUS, PYR NODULES, 3%
U STRM CUT, YLW RING CUT, NO VIS

CHK; 58%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 3%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

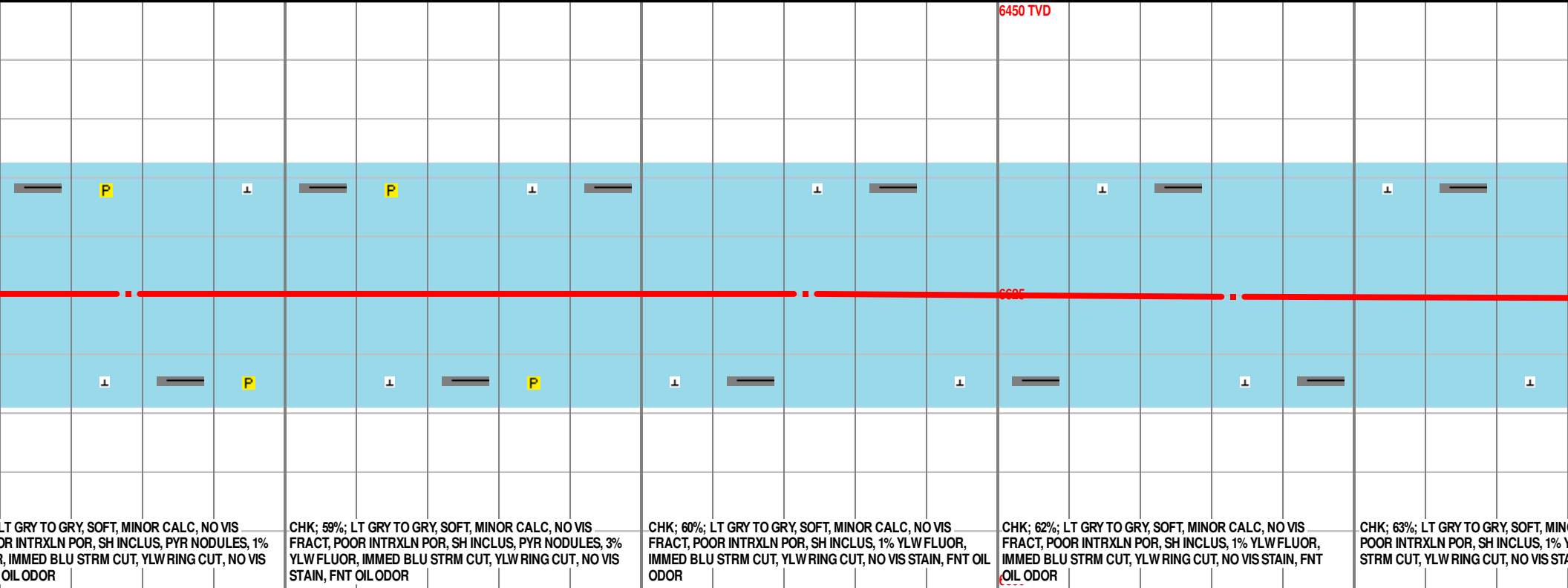
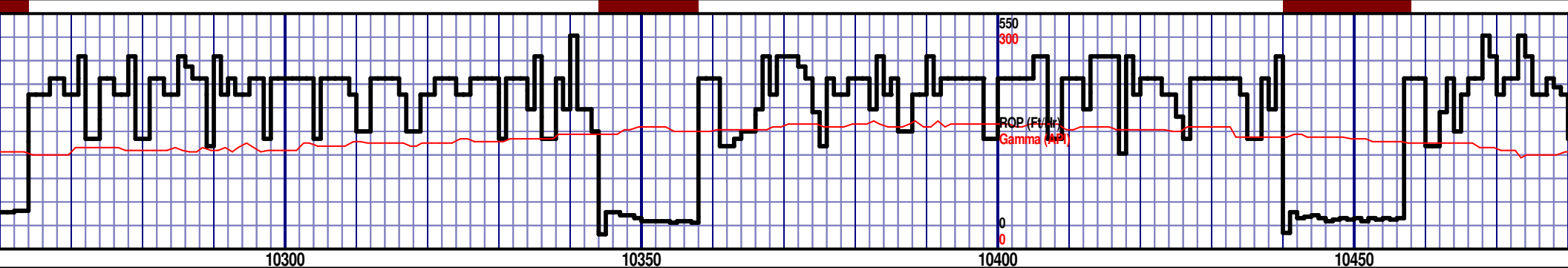
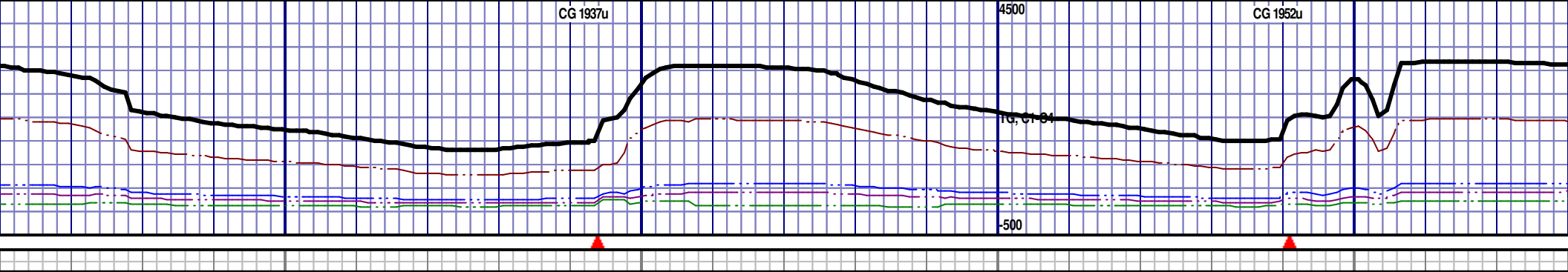
CHK; 57%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

CHK; 55%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 3%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

CHK; 56%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 3%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

MD 9898 TVD 6623.98
INC 89.11 AZ 267.41
VS 3848.34

MD 9993 TVD 6624.62
INC 90.12 AZ 266.54
VS 3943.33



LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1%
R, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
OIL ODOR

CHK; 58%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 3%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

CHK; 60%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, 1% YLW FLUOR,
IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL
ODOR

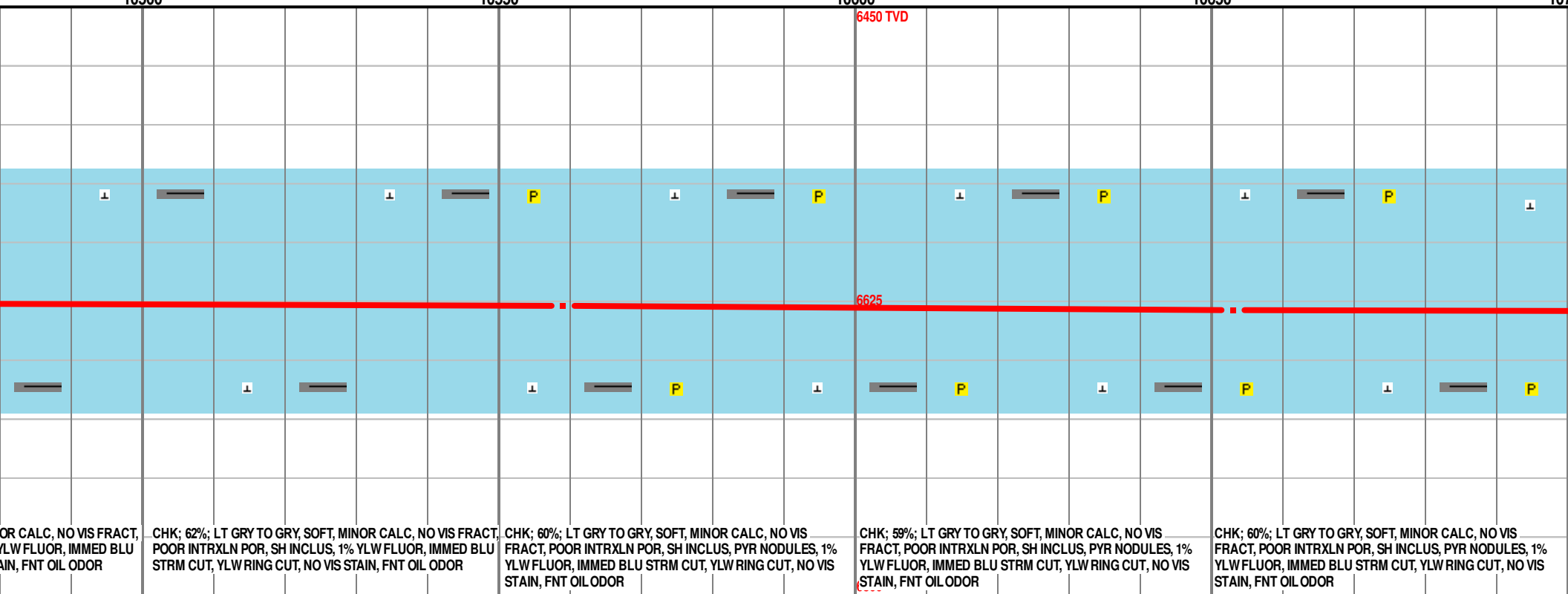
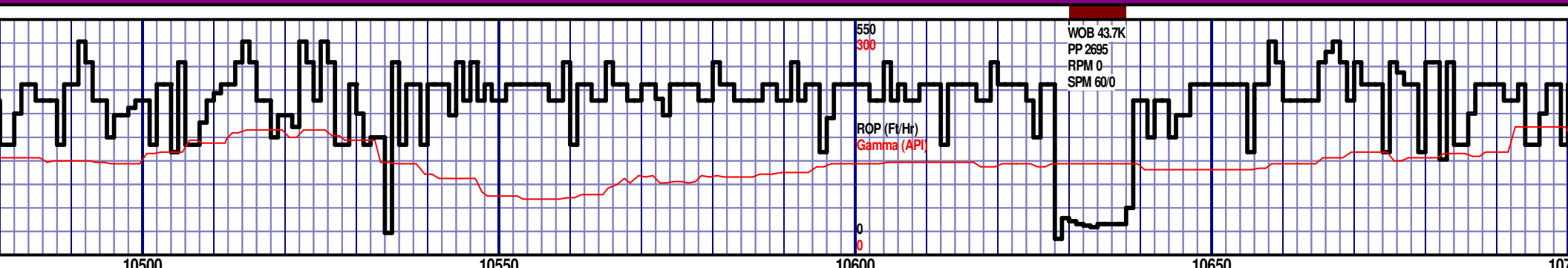
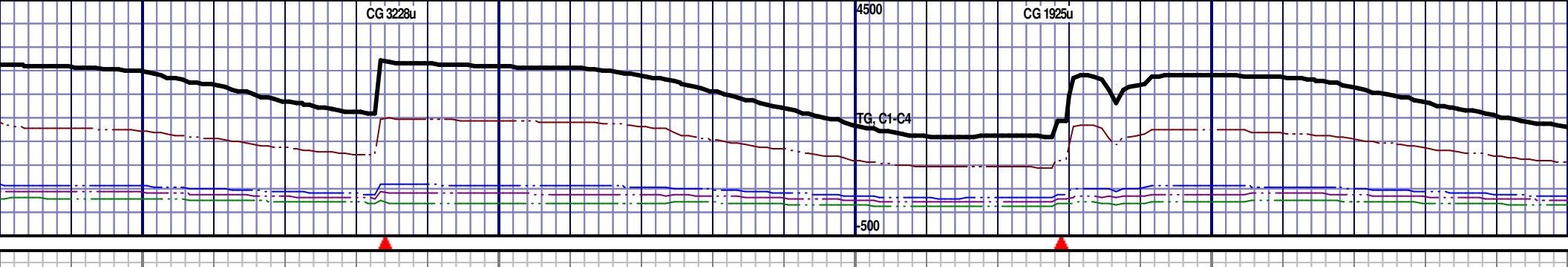
CHK; 62%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, 1% YLW FLUOR,
IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT
OIL ODOR

CHK; 63%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, 1% YLW FLUOR,
IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT
OIL ODOR

MD 10278 TVD 6624.13
INC 90.09 AZ 268.22
VS 4228.32

MD 10373 TVD 6624.01
INC 90.06 AZ 268.87
VS 4323.3

MD 10433 TVD 6625.44
INC 88.18 AZ 268.76
VS 4416.27



OR CALC, NO VIS FRACT, YLW FLUOR, IMMED BLU STAIN, FNT OIL ODOR

CHK; 62%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

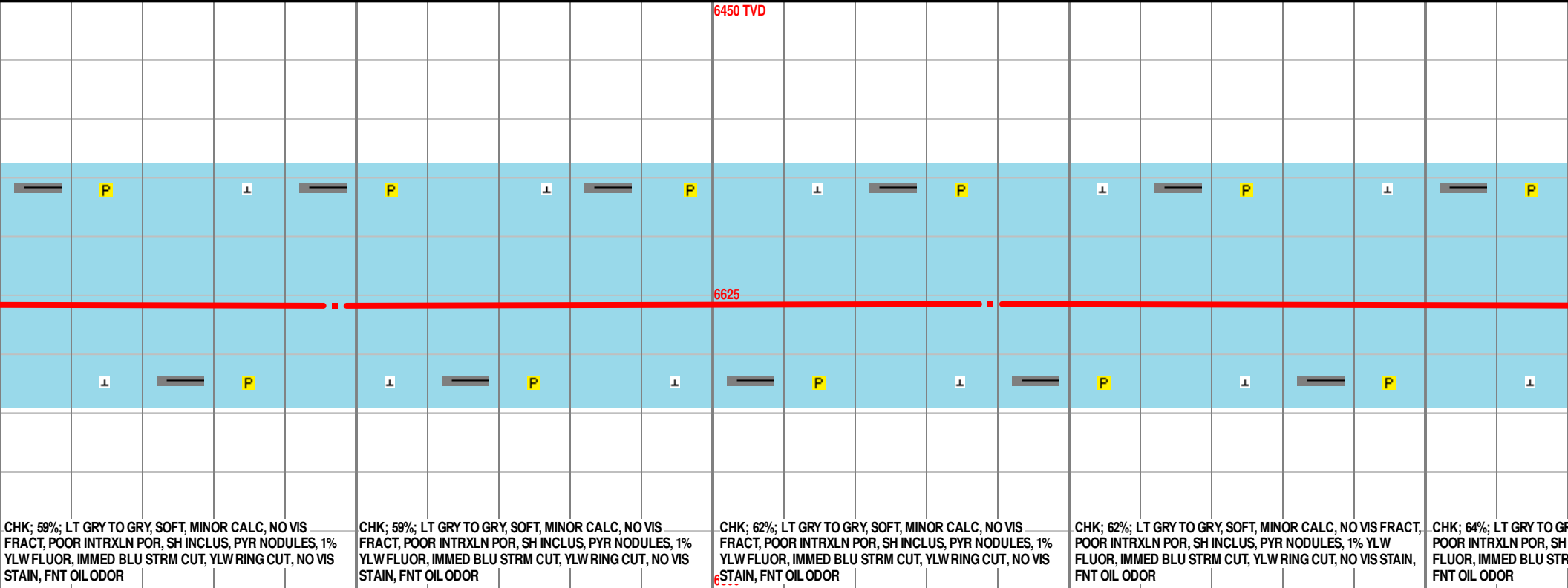
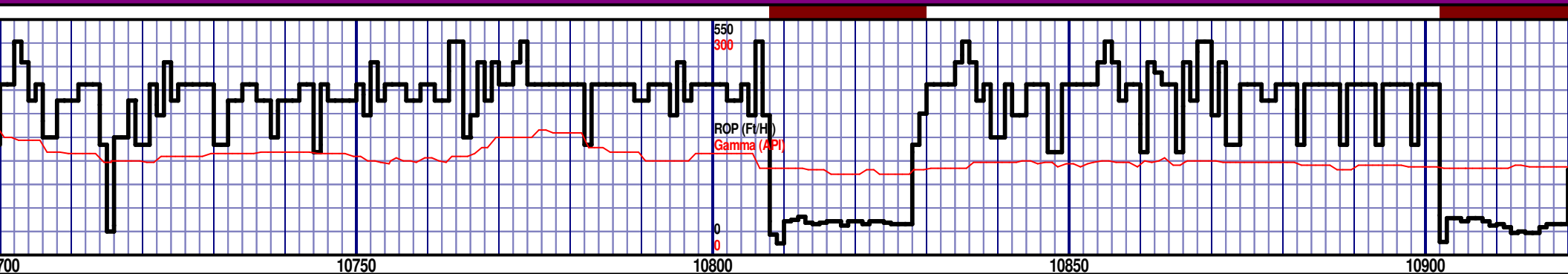
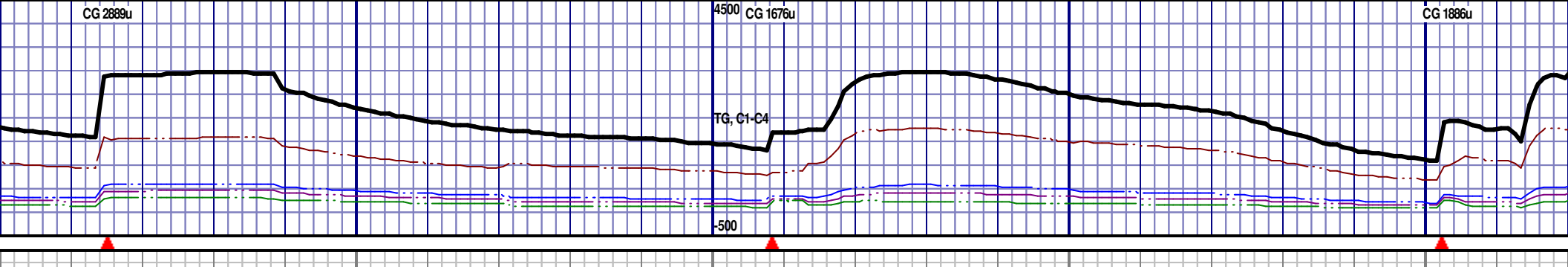
CHK; 60%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

CHK; 59%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

CHK; 60%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

MD 10559 TVD 6627.99
INC 88.68 AZ 268.29
VS 4509.22

MD 10653 TVD 6630.26
INC 88.55 AZ 269.36
VS 4603.18



CHK; 59%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

CHK; 59%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

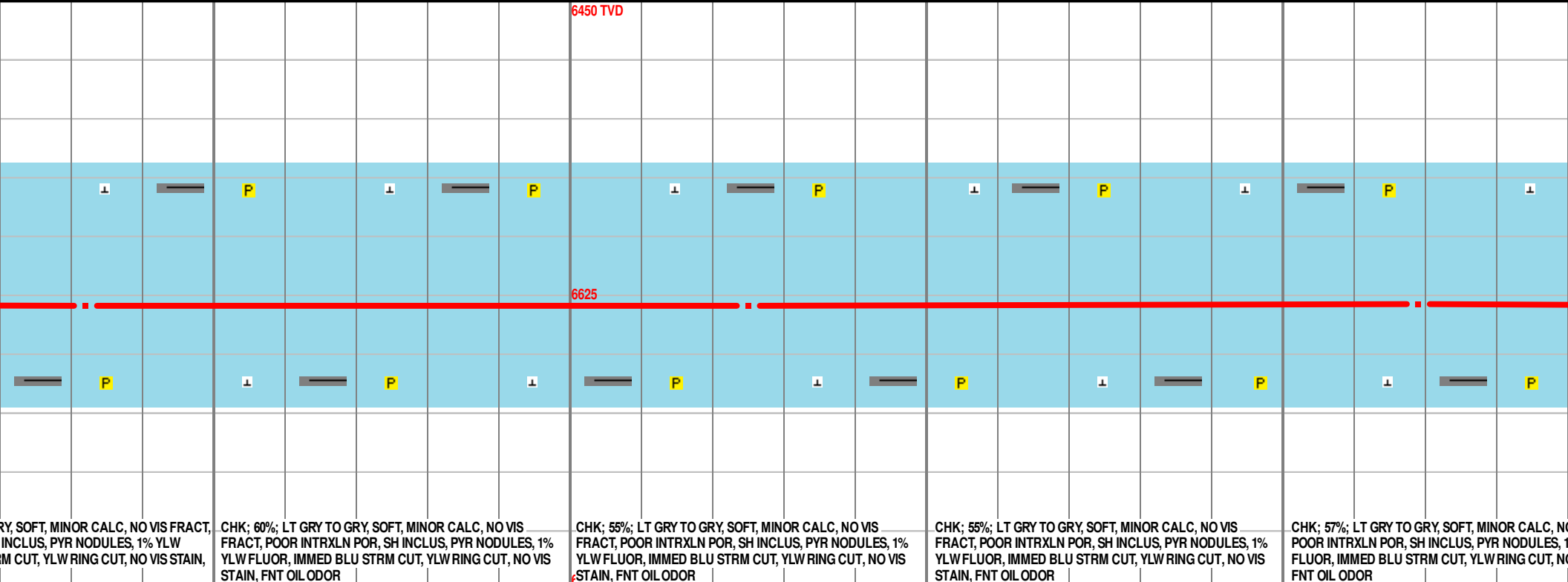
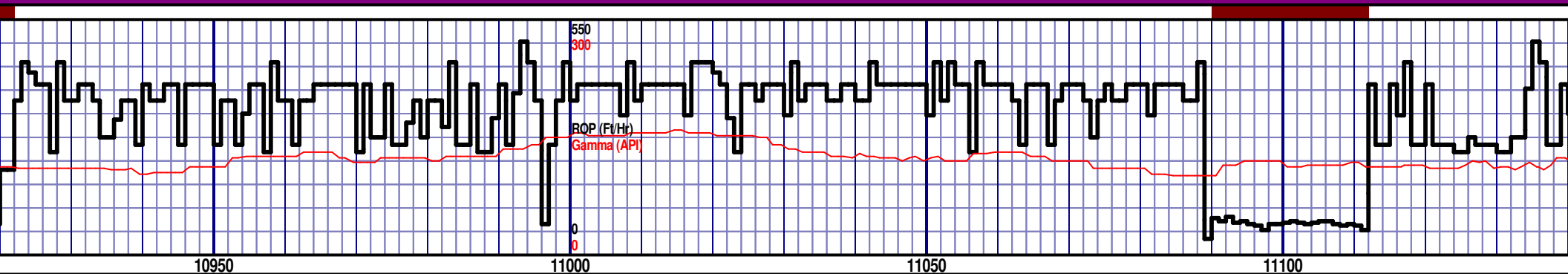
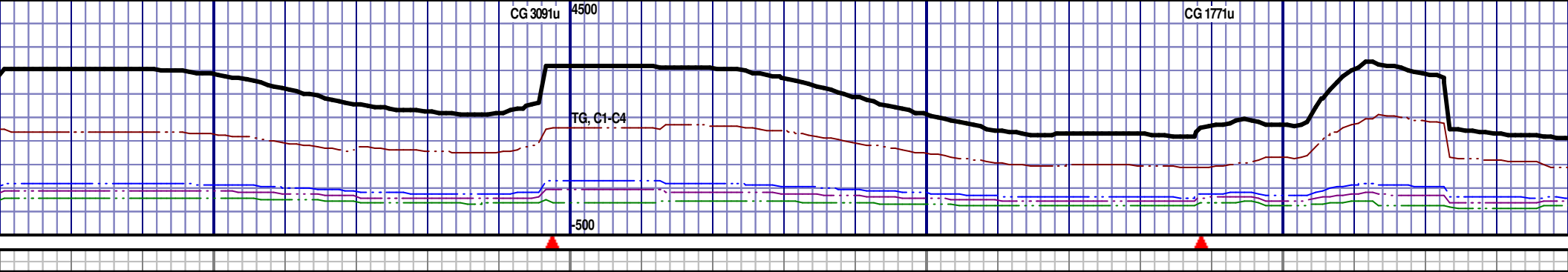
CHK; 62%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

CHK; 62%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

CHK; 64%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

MD 10747 TVD 6630.99
INC 90.56 AZ 269.7
VS 4697.12

MD 10839 TVD 6630.27
INC 90.34 AZ 269.71
VS 4789.06



RY, SOFT, MINOR CALC, NO VIS FRACT, INCLUS, PYR NODULES, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

CHK; 60%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

CHK; 55%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

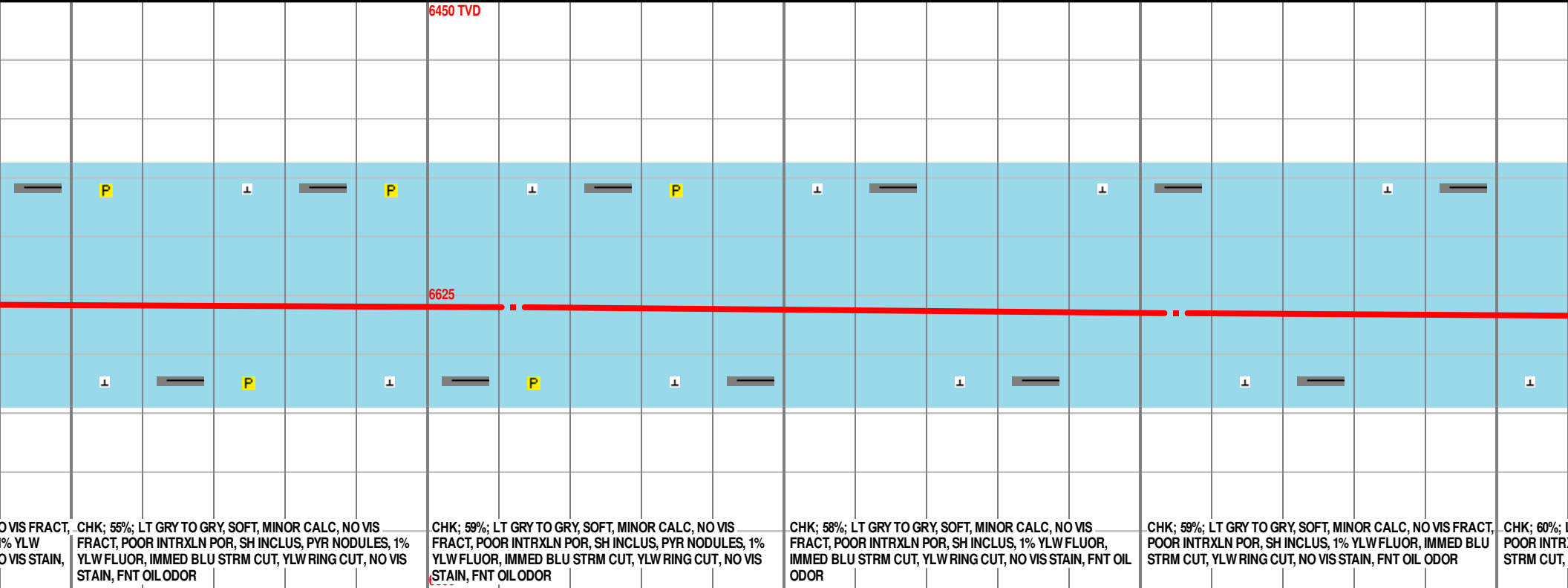
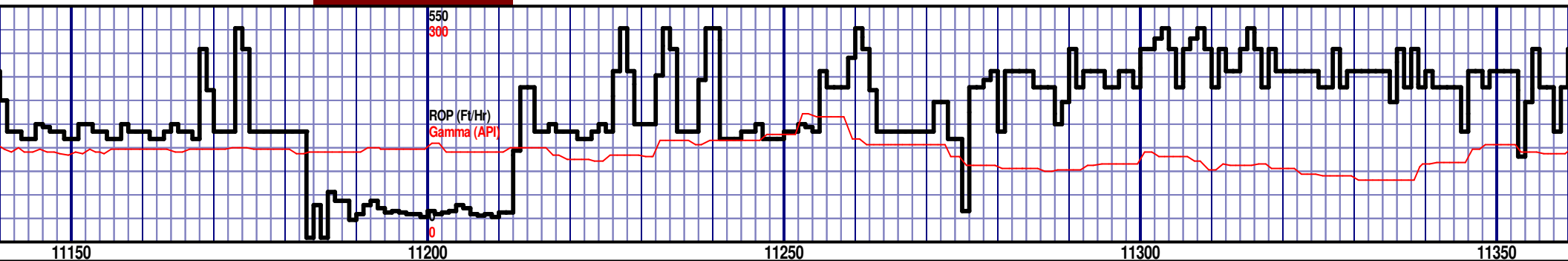
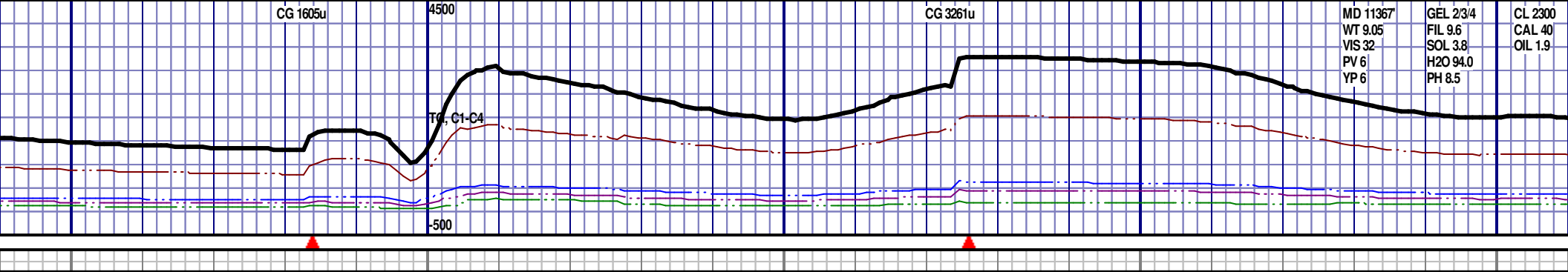
CHK; 55%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

CHK; 57%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

MD 10932 TVD 6630.94
INC 88.83 AZ 269.62
VS 4482

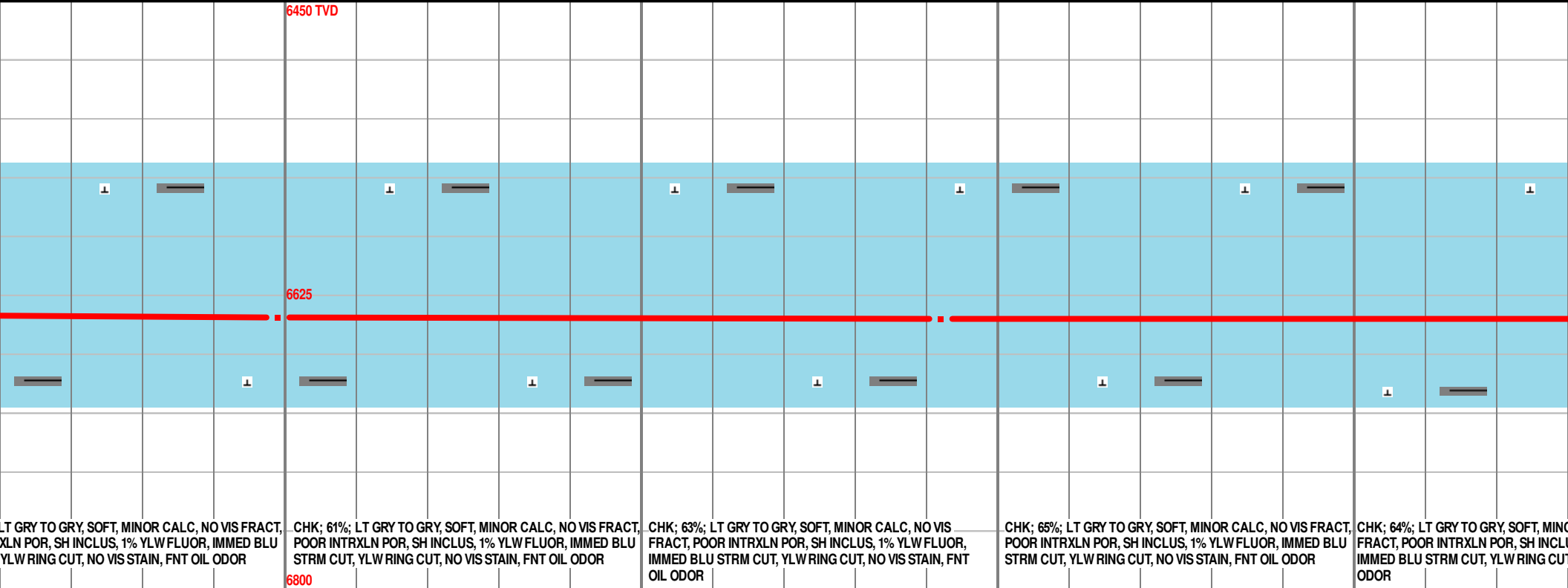
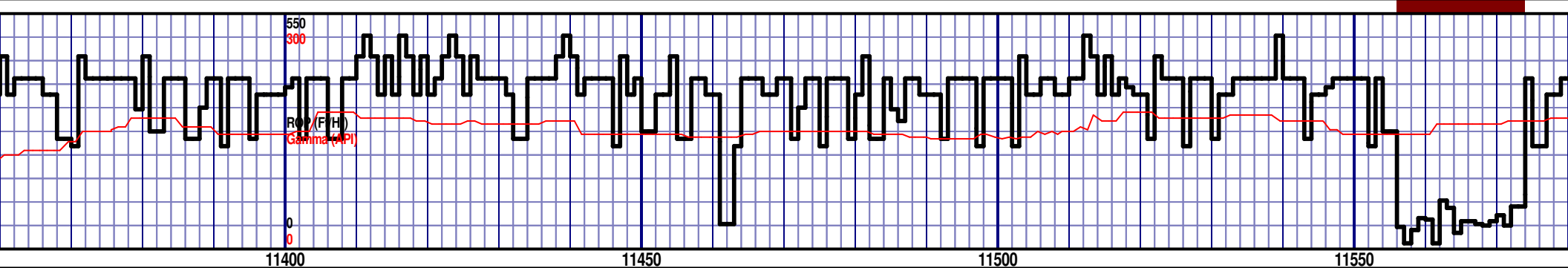
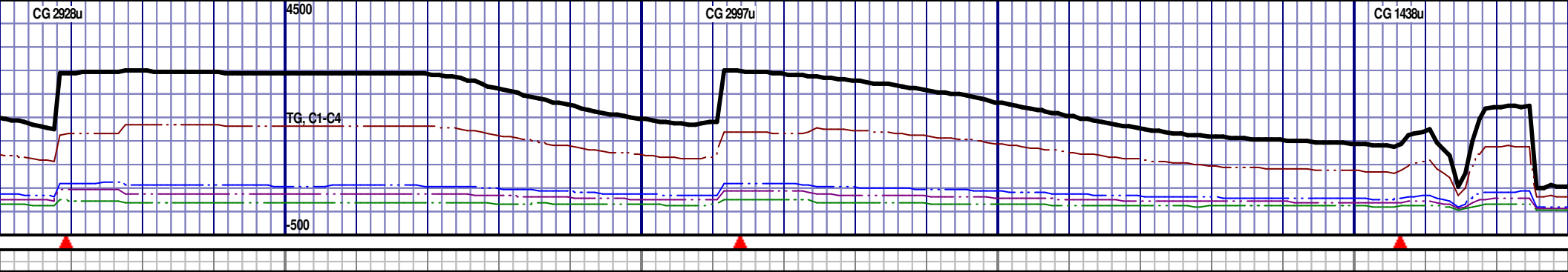
MD 11025 TVD 6631.36
INC 90.65 AZ 269.37
VS 4974.94

MD 11119 TVD 6630.55
INC 90.34 AZ 270.8
VS 5068.86



MD 11212 TVD 6632.23
INC 87.59 AZ 270.04
VS 5161.72

MD 11305 TVD 6635.83
INC 87.97 AZ 269.9
VS 5254.58



LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT,
POOR INTRXLN POR, SH INCLUS, 1% YLW FLUOR, IMMED BLU
STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

CHK; 61%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT,
POOR INTRXLN POR, SH INCLUS, 1% YLW FLUOR, IMMED BLU
STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

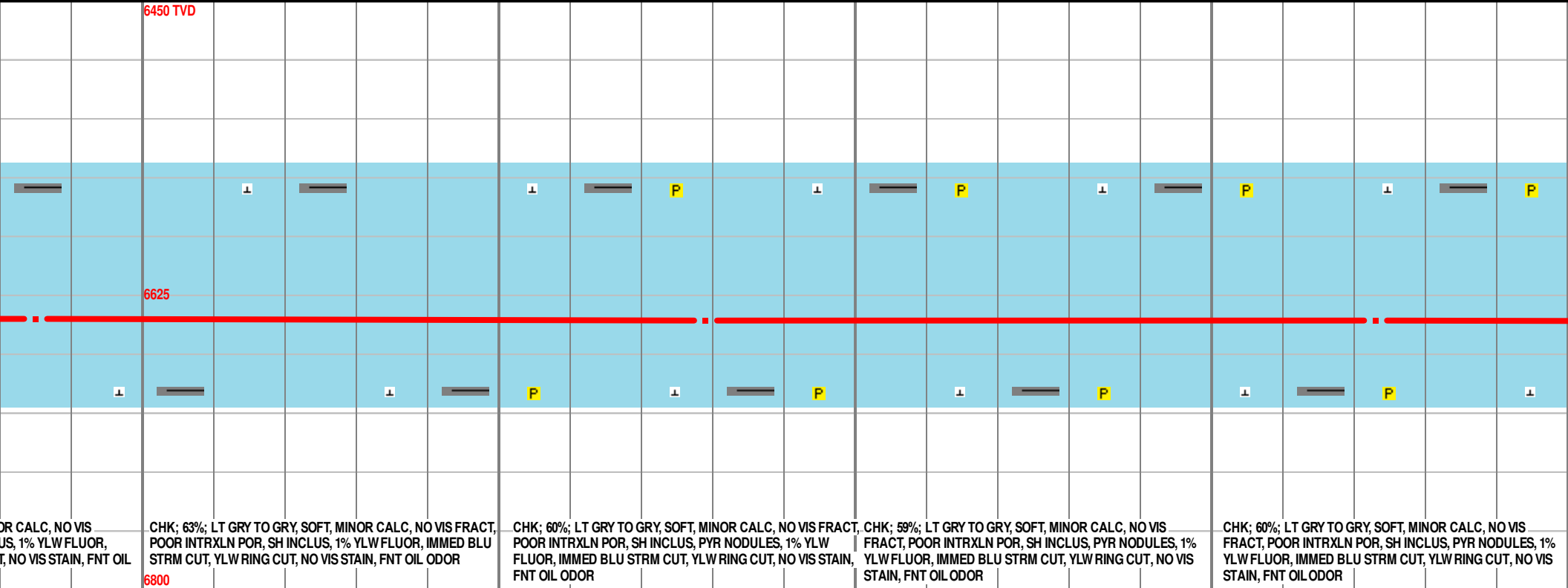
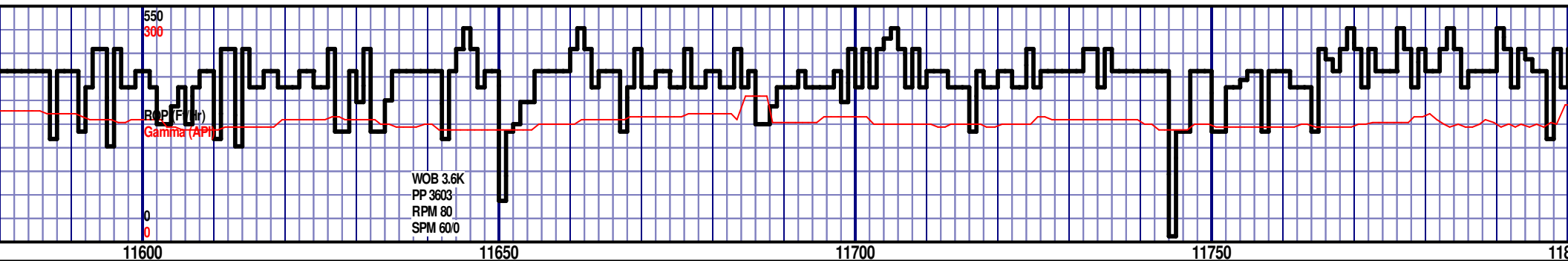
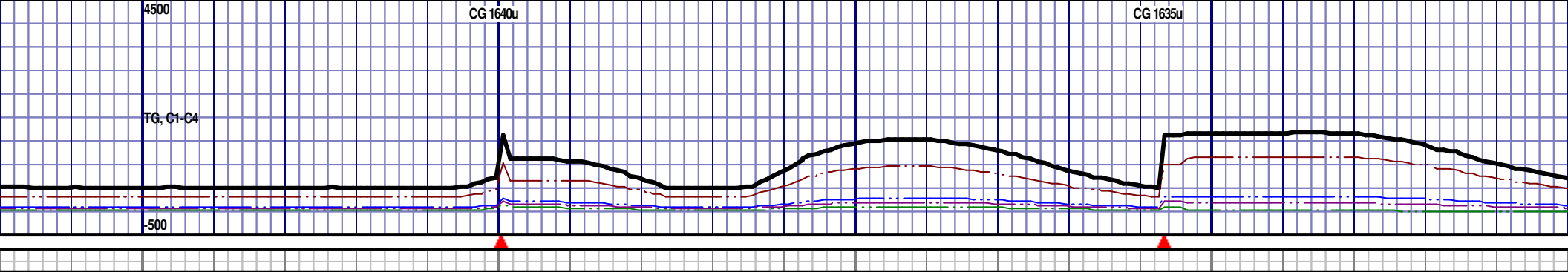
CHK; 63%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, 1% YLW FLUOR,
IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT
OIL ODOR

CHK; 65%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT,
POOR INTRXLN POR, SH INCLUS, 1% YLW FLUOR, IMMED BLU
STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

CHK; 64%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT,
POOR INTRXLN POR, SH INCLUS, 1% YLW FLUOR, IMMED BLU
STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR

MD 11399 TVD 6638.38
INC 88.92 AZ 269.43
VS 5348.49

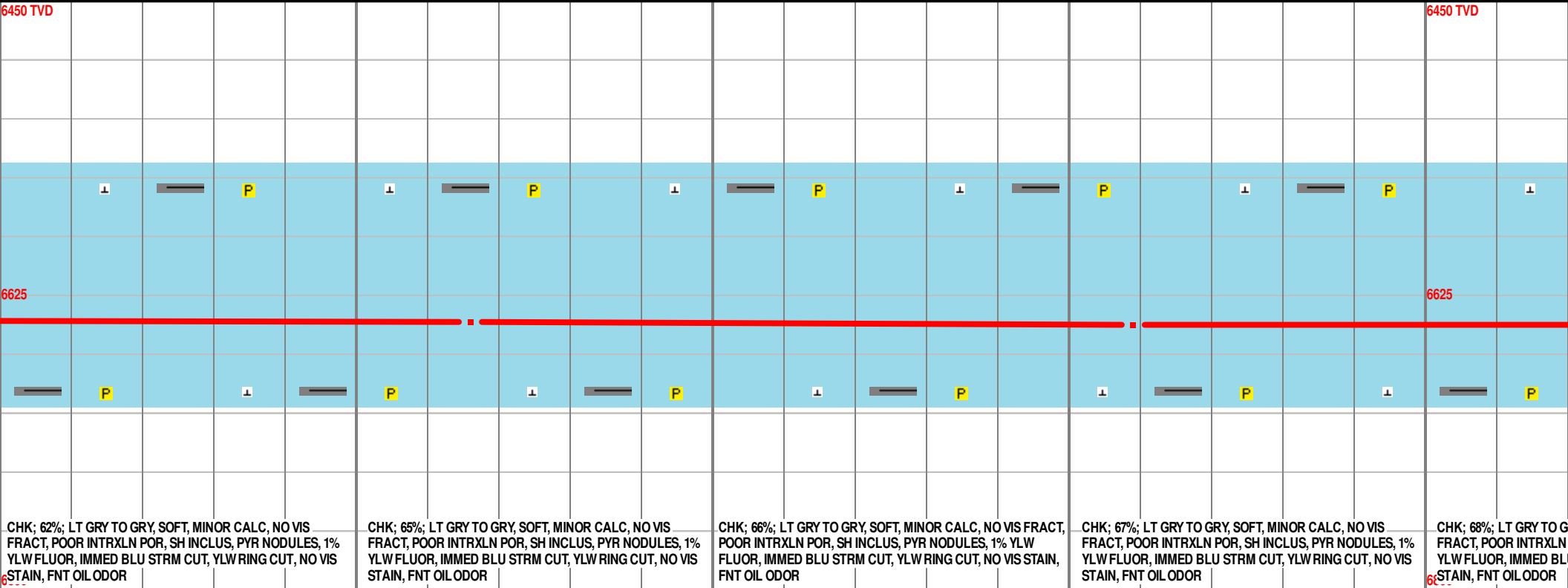
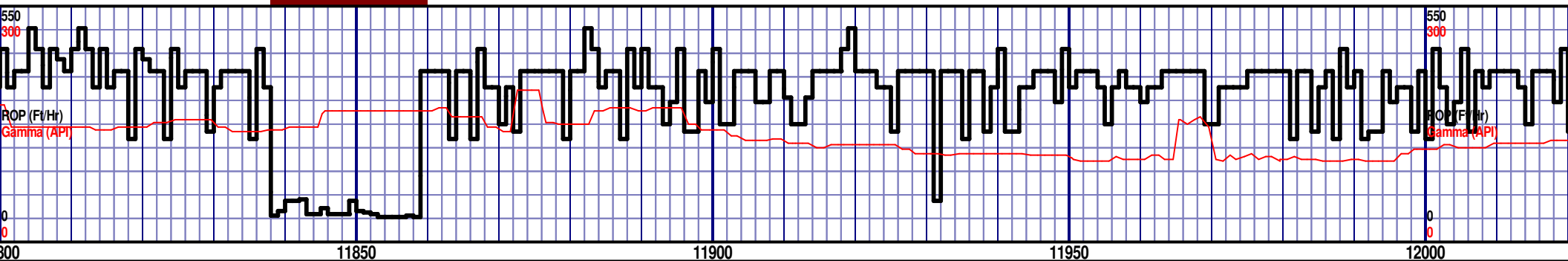
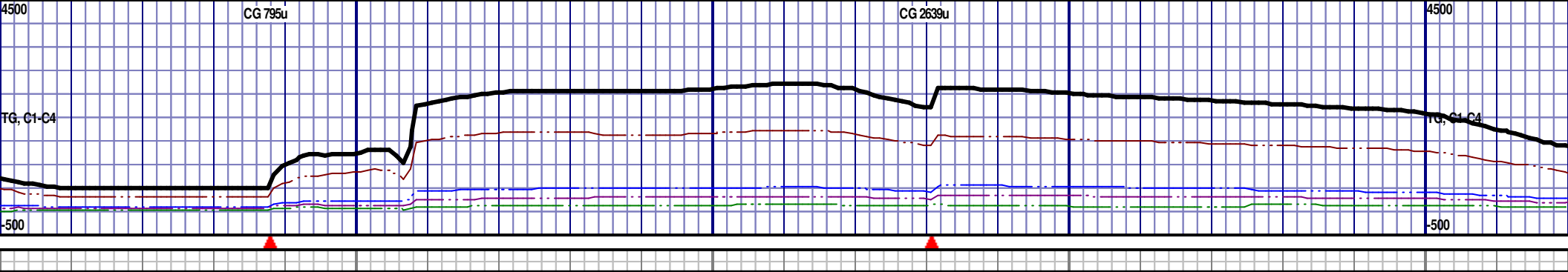
MD 11492 TVD 6638.89
INC 90.46 AZ 269.28
VS 5441.44



MD 11585 TVD 6639.24
INC 89.1 AZ 269.65
VS 5534.39

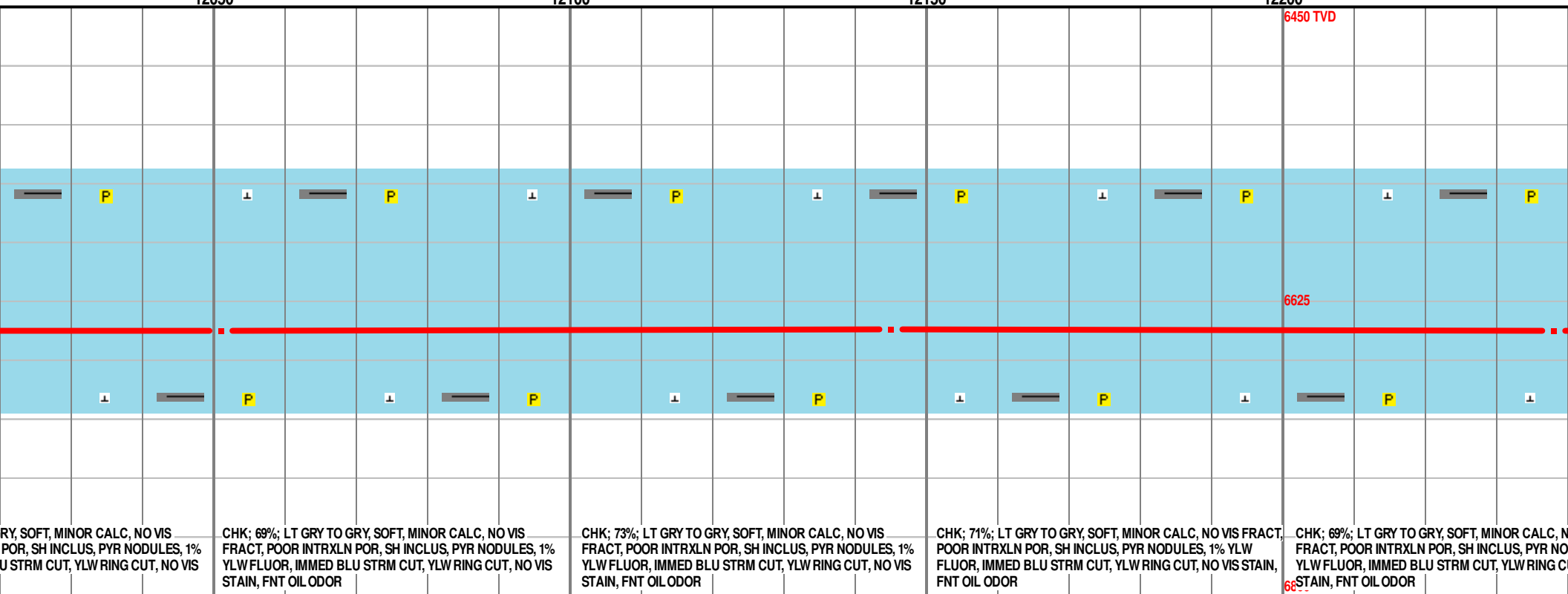
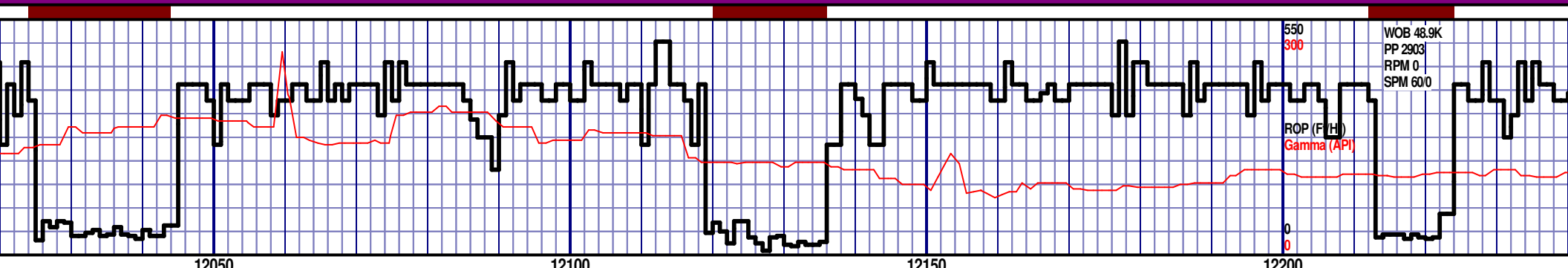
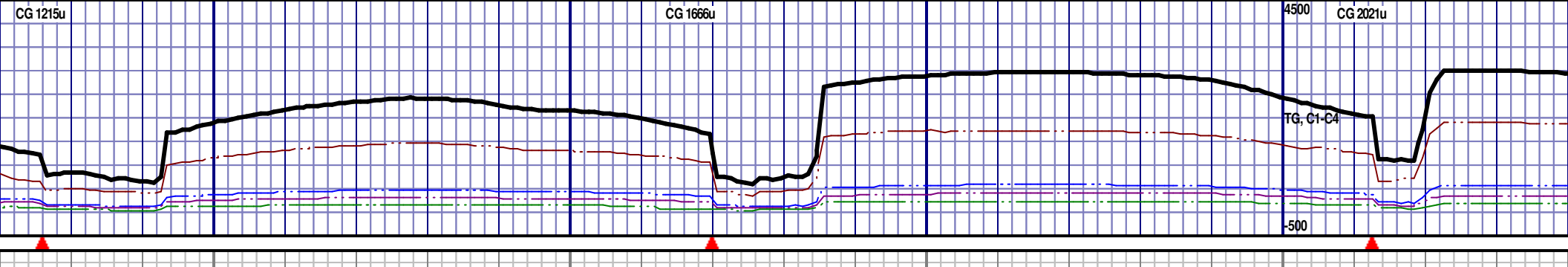
MD 11679 TVD 6640.19
INC 89.75 AZ 269.14
VS 5628.34

MD 11773 TVD 6640.14
INC 90.31 AZ 268.58
VS 5722.32



MD 11866 TVD 6640.92
INC 88.73 AZ 268.64
VS 5815.3

MD 11959 TVD 6642.2
INC 89.69 AZ 268.45
VS 5908.28



RY, SOFT, MINOR CALC, NO VIS
POR, SH INCLUS, PYR NODULES, 1%
U STRM CUT, YLW RING CUT, NO VIS

CHK; 69%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

CHK; 73%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

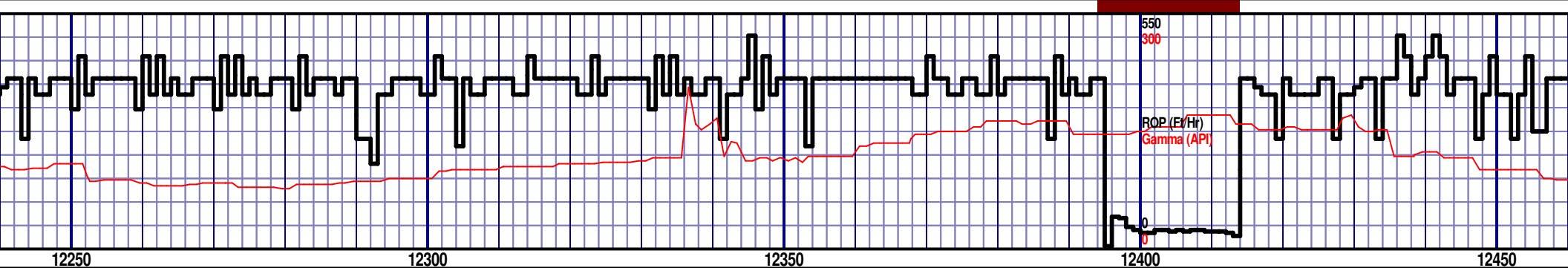
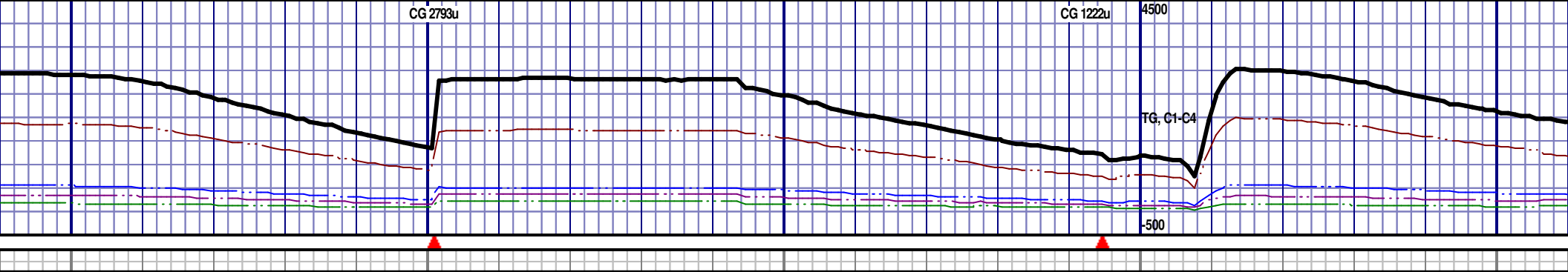
CHK; 71%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1% YLW
FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN,
FNT OIL ODOR

CHK; 69%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS
FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, 1%
YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS
STAIN, FNT OIL ODOR

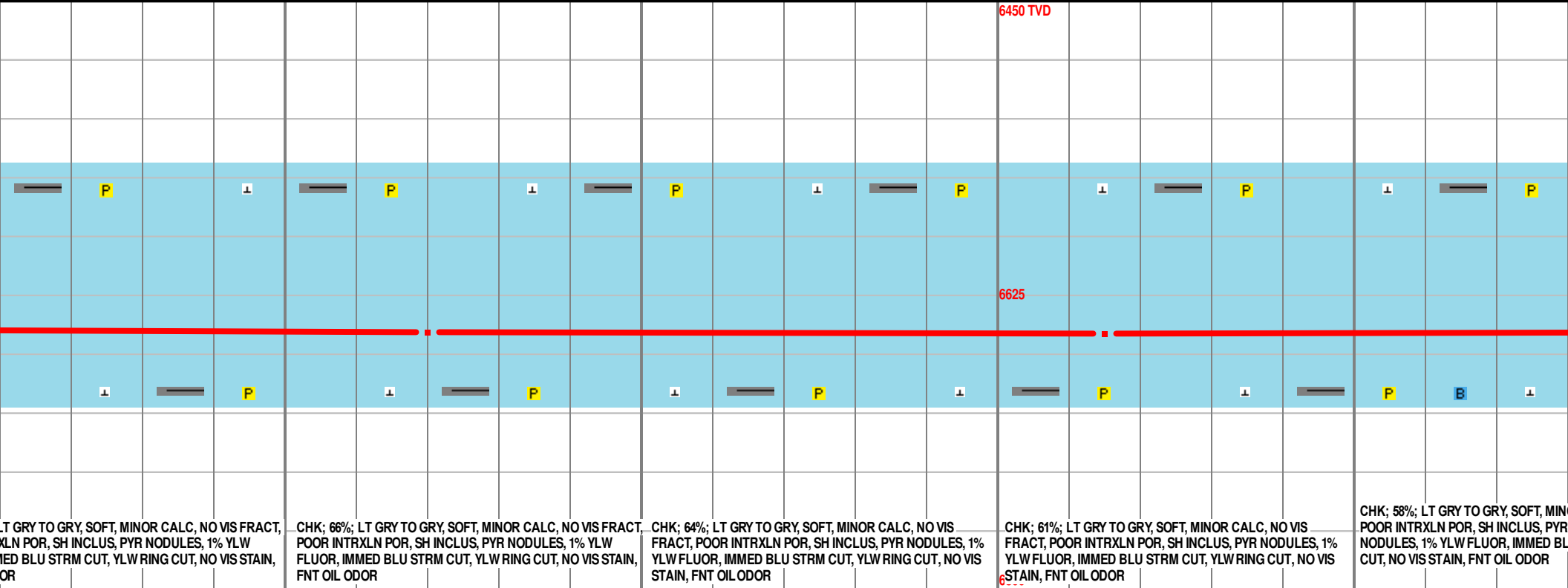
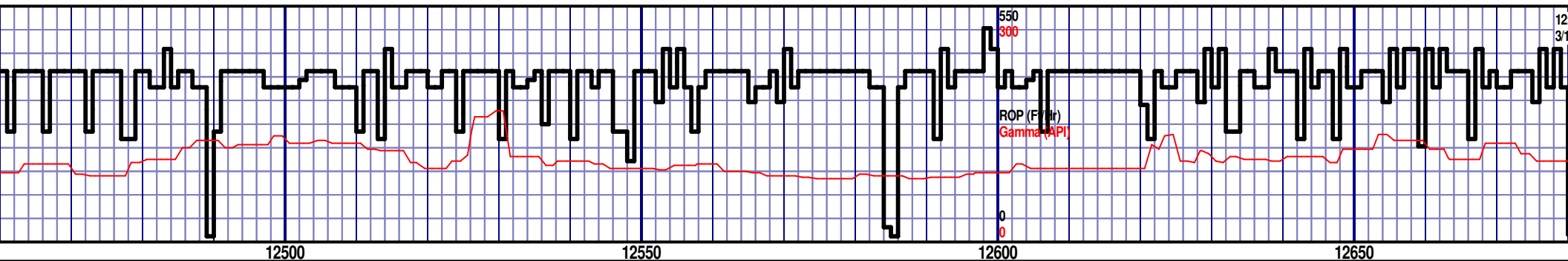
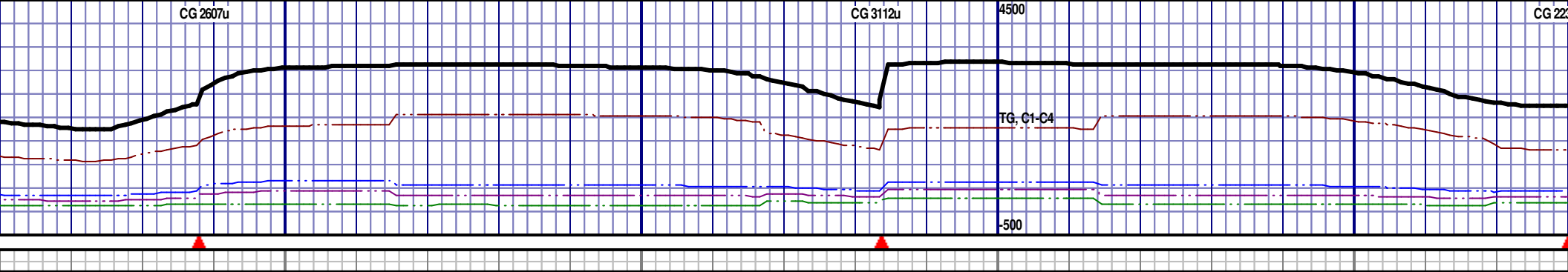
MD 12051 TVD 6642.1
INC 90.43 AZ 270.72
VS 6000.23

MD 12145 TVD 6641.72
INC 90.03 AZ 270.08
VS 6094.12

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V

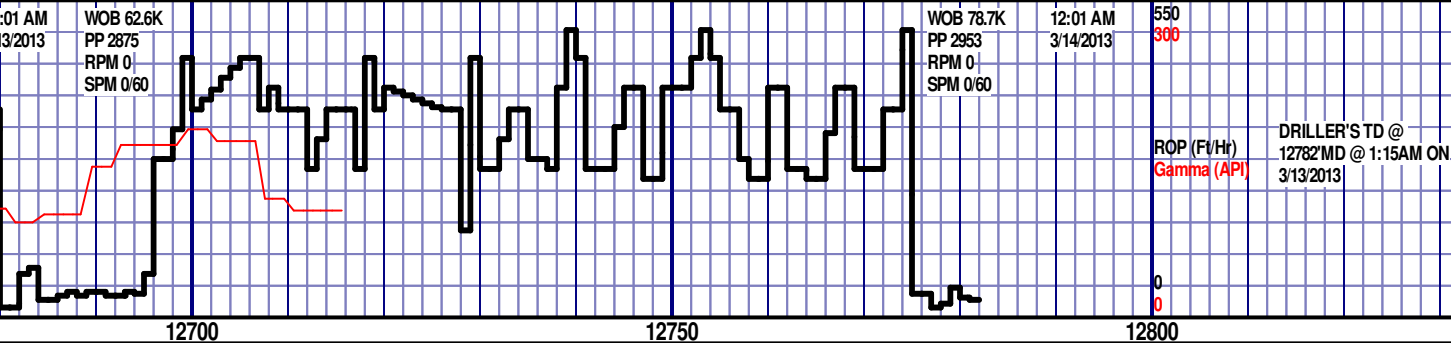
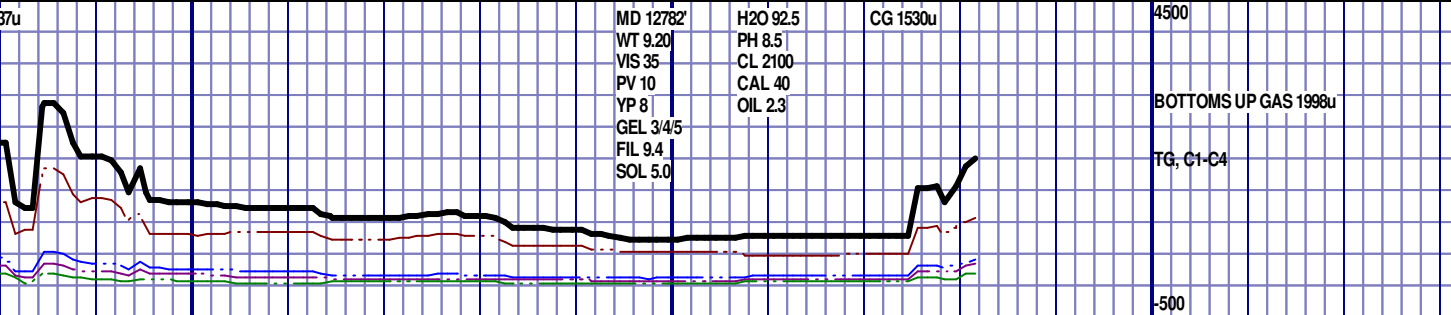


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MD 12520 TVD 6646.94
INC 89.11 AZ 270.11
VS 6468.85

MD 12615 TVD 6647.75
INC 87.91 AZ 269.16
VS 6563.79



TOOH @ 7:45 AM ON 3/13/2013 @ 12782' MD TO PERFORM A REMER RUN. TIH @ 2:50 PM ON 3/13/2013.					
6450 TVD					
TD @ 12782' MD					
RELEASED ON 3/14/2013					
6625					
THANK YOU FROM CORY SHORETTE, NIKKI GRABER, AND HORIZON WELL LOGGING, LLC					
6800					
OR CALC, NO VIS FRACT, NODULES, BENT U STRM CUT, YLW RING	CHK; 57%; LT GRY TO GRY, SOFT, MINOR CALC, NO VIS FRACT, POOR INTRXLN POR, SH INCLUS, PYR NODULES, BENT NODULES, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO VIS STAIN, FNT OIL ODOR	MRL; 38%; GRY TO DK GRY, SOFT TO BRITTLE, SH INCLUS, PYR INCLUS, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 1% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT			

MD 12710 TVD 6646.86
INC 91.17 AZ 271.27
VS 6658.68

PTB: MD 12782 TVD 6645.39
INC 91.17 AZ 271.27
VS 6730.52