



7136 South Yale Avenue, Suite 414

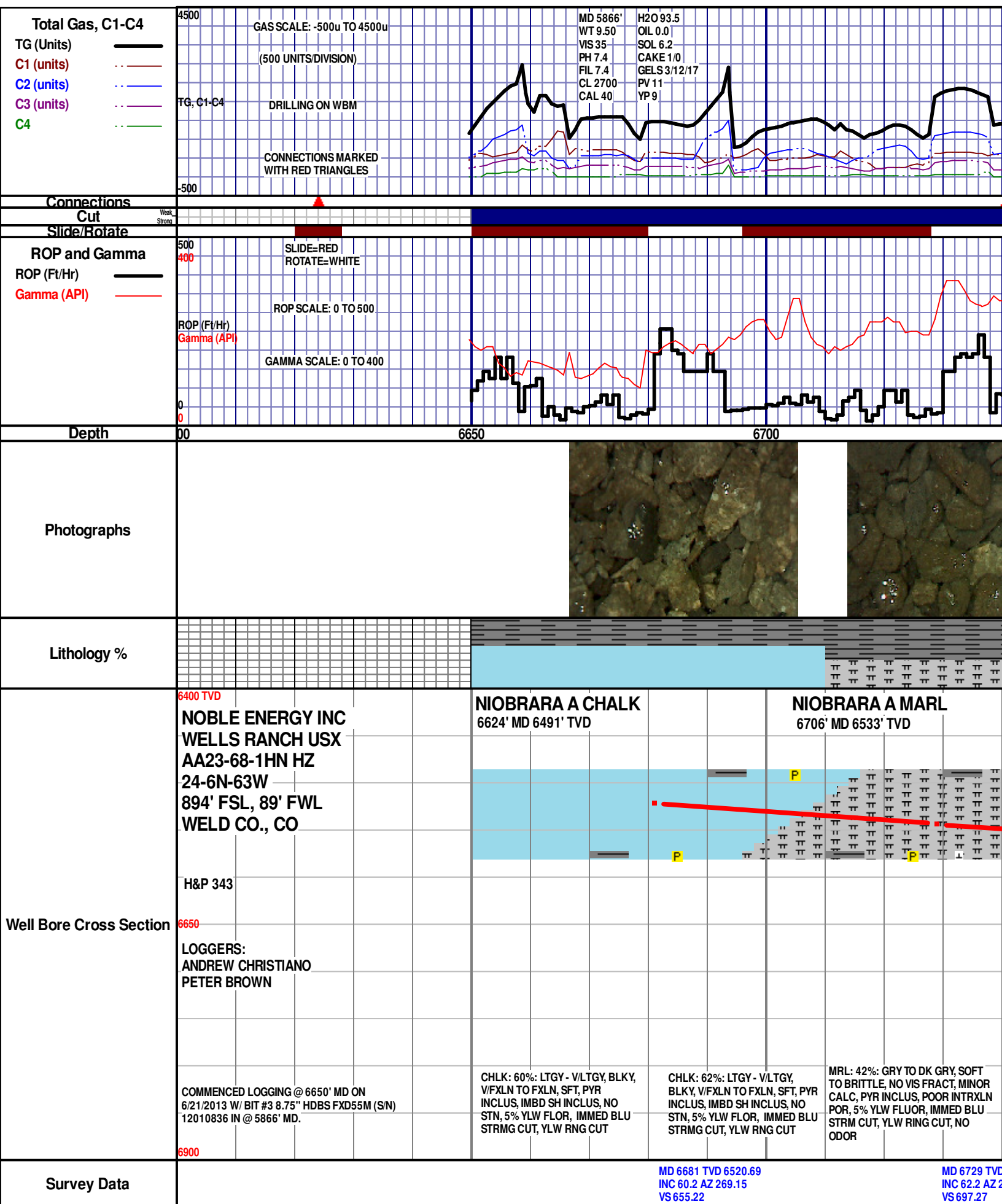
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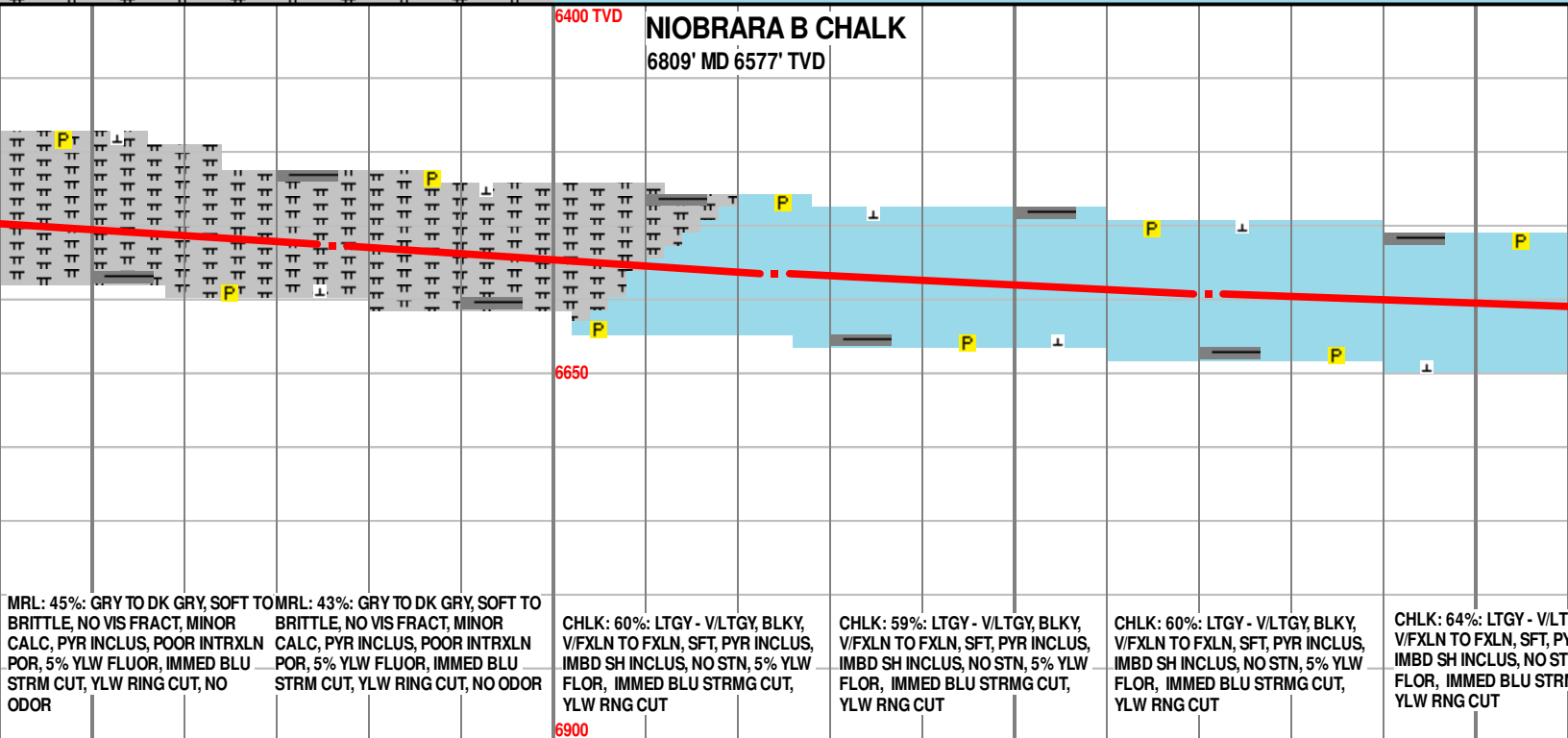
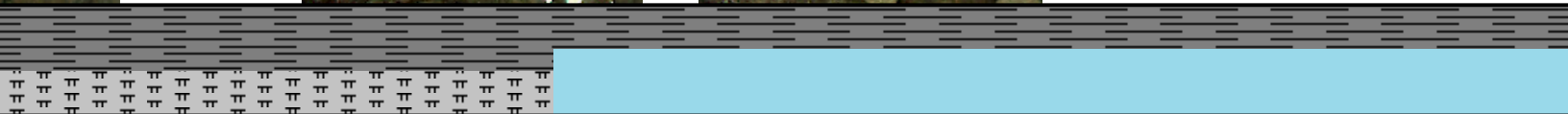
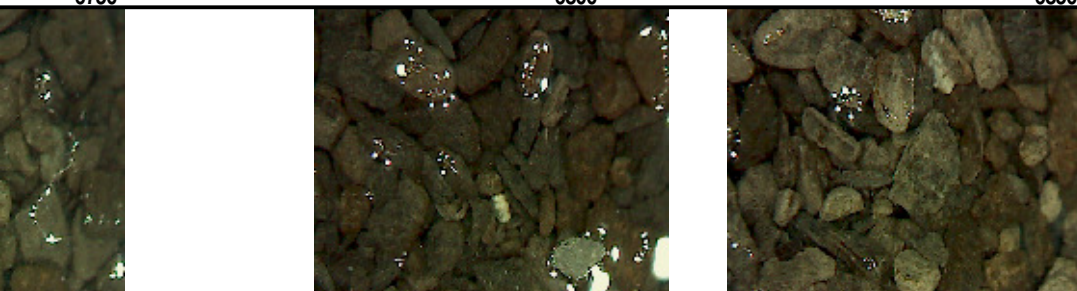
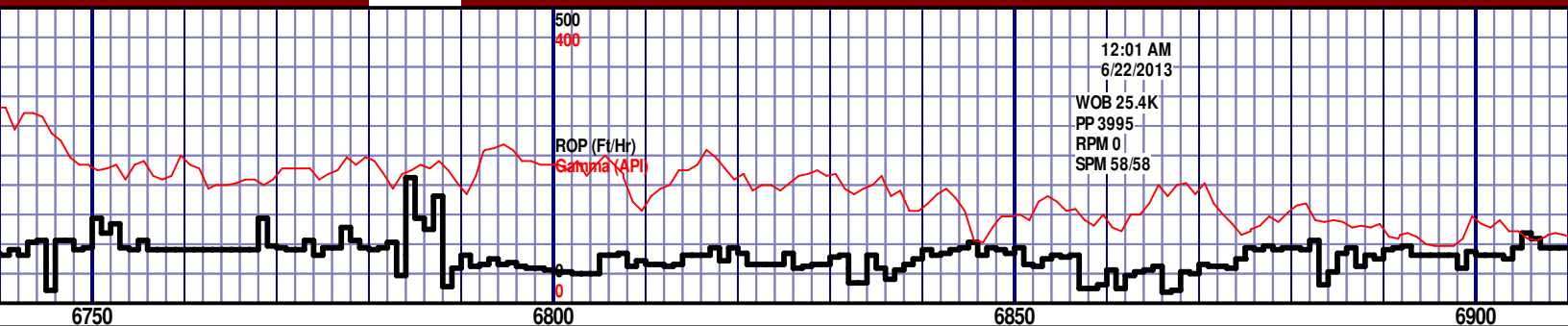
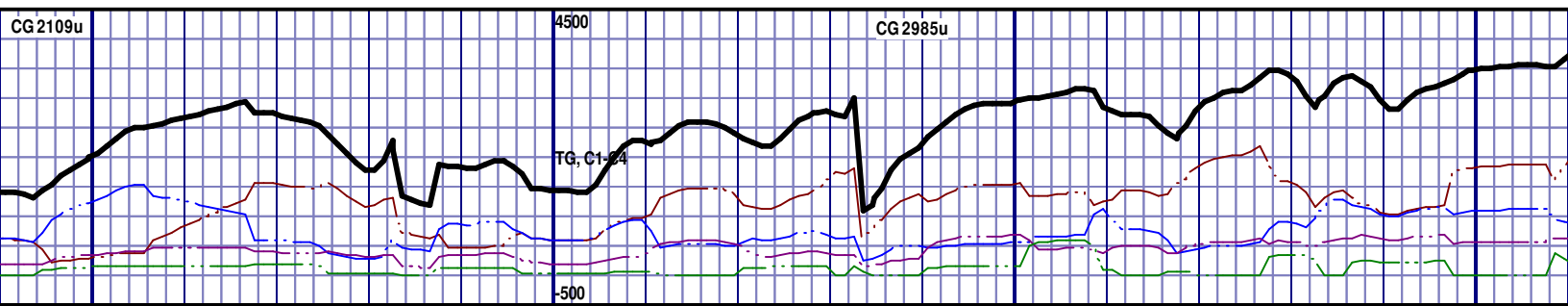
phone 918.925.9739

fax 866.534.4559

[WWW.HZMUD.COM](http://WWW.HZMUD.COM)

Customer Information	Well Information
<p>Operator: <b>Noble Energy Inc</b> 1625 Broadway Suite 2200 Denver, Colorado 80202</p> <p>Geologist: <b>Holly Duncan</b> Noble Energy Inc.</p>	<p>Well Name: <b>Wells Ranch USX</b> <b>AA23-68-1HN HZ</b></p> <p>Location: <b>24-6N-63W</b> 894' FSL, 89' FWL</p> <p>County: <b>Weld</b> State: <b>Colorado</b></p> <p>Drilling Rig: <b>H&amp;P 343</b> Total Depth: <b>11057' MD</b> TD Date: <b>June 25, 2013</b> Formation: <b>Niobrara B Chalk</b> KB Elevation: <b>4817'</b> GR Elevation: <b>4793'</b> API Number: <b>05-123-37170</b></p>
<p><b>Mud Logging Details</b></p> <p>Logger: <b>Andrew Christiano &amp; Peter Brown</b> Log Interval: <b>6650' MD to 11057' MD</b> Start Date: <b>June 21, 2013</b> Release Date: <b>June 25, 2013</b></p>	



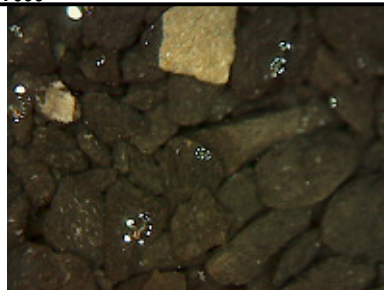
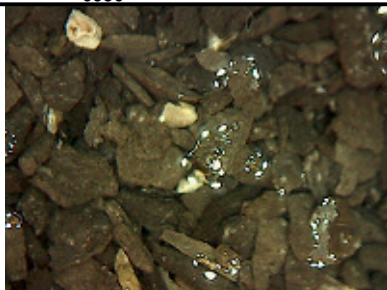
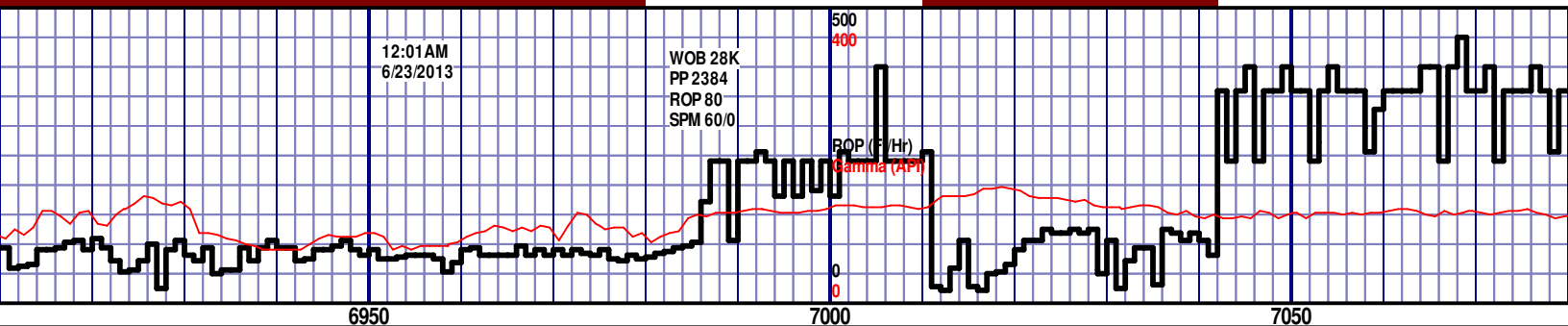


6543.81  
70.03

MD 6776 TVD 6564.37  
INC 65.9 AZ 271.15  
VS 739.52

MD 6824 TVD 6582.24  
INC 70.39 AZ 271.04  
VS 784.06

MD 6871 TVD 6596.21  
INC 75.02 AZ 271.2  
VS 828.93



TOOH @ 3:00 AM ON 6/22/2013 @ 6980' MD FOR  
INTERMEDIATE CASING. TIH @ 6:00AM ON  
6/23/13, RESUMED DRILLING @ 10:45AM ON  
6/23/13 W/ BIT 4 6.125" HDBS FXD54 S/N  
12105151

6400 TVD  
NIOBRARA B MARL  
7000' MD 6618' TVD

SAMPLE INTERVAL CHANGED TO 50'

GY, BLKY,  
YR INCLUS,  
N, 5% YLW  
MG CUT,

CHLK: 62%: LTGY - V/LTGY, BLKY,  
V/FXLN TO FXLN, SFT, PYR INCLUS,  
IMBD SH INCLUS, NO STN, 5% YLW  
FLOR, IMMED BLU STRMG CUT,  
YLW RNG CUT

**CHLK: 63%: LTGY - V/LTGY, BLKY,  
V/FXLN TO FXLN, SFT, PYR INCLUS,  
IMBD SH INCLUS, NO STN, 5% YLW  
FLOR, IMMED BLU STRMG CUT,  
YLW RNG CUT**

MRL: 45%: GRAY TO DK GRAY, SOFT TO BRITTLE, NO VIS  
FRACT, MINOR CALC, PYR INCLUS, POOR INTRXLN POR,  
5% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO  
ODOR

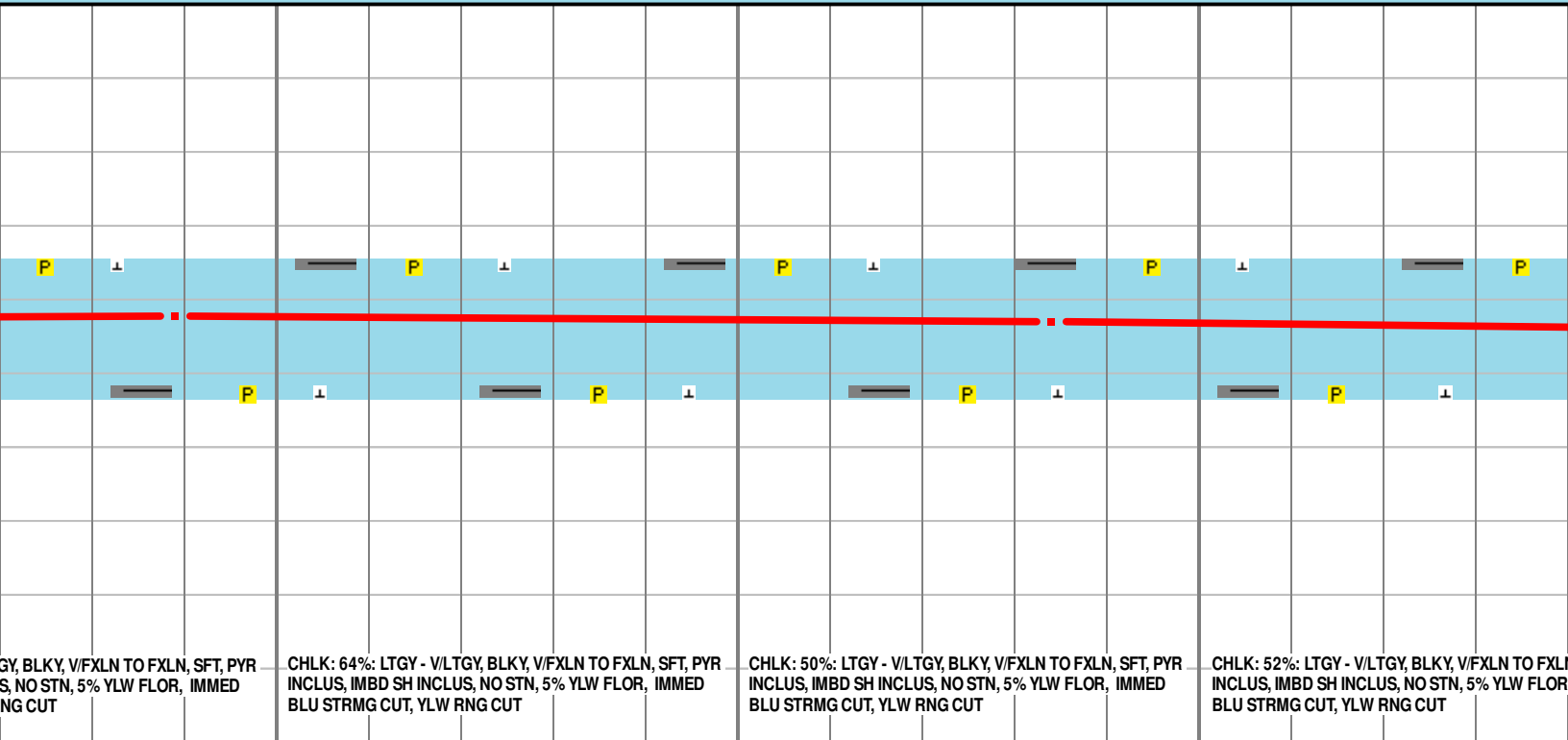
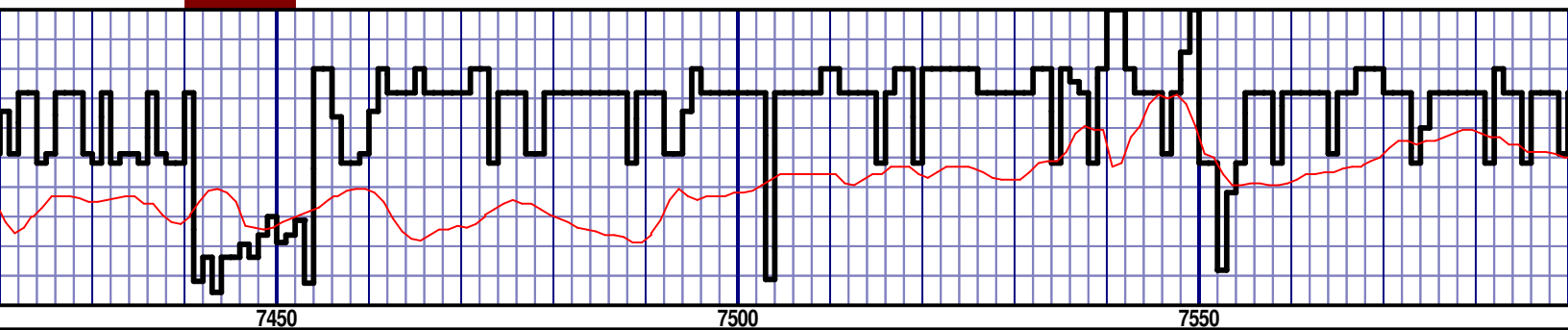
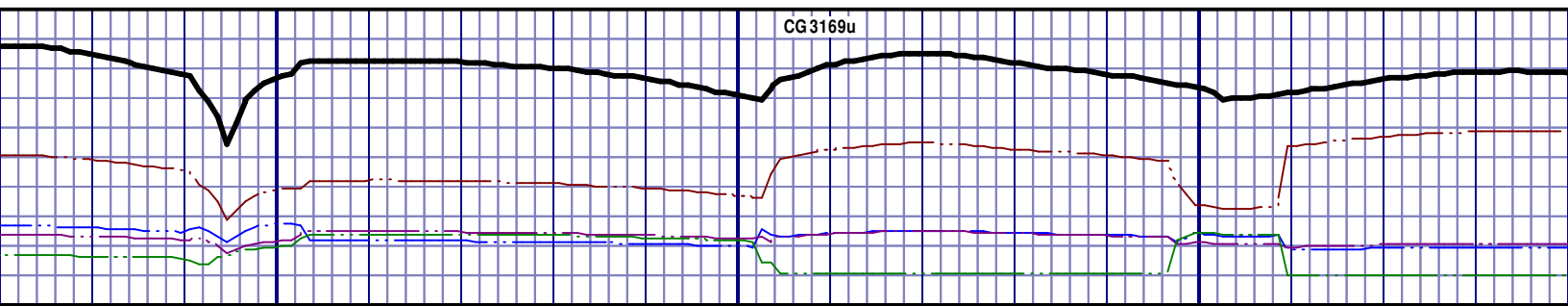
MRL: 45%: GRY TO DK GRY, SOFT TO  
FRACT, MINOR CALC, POOR INTRXL  
IMMER BLU STEM OUT YLW RING C

MD 6924 TVD 6607.76  
INC 79.79 AZ 268.87  
VS 880.63

MD 7028 TVD 6619.9  
INC 86.79 AZ 267.17  
VS983.72







GY, BLKY, V/FXLN TO FXLN, SFT, PYR  
S, NO STN, 5% YLW FLOR, IMMED  
NG CUT

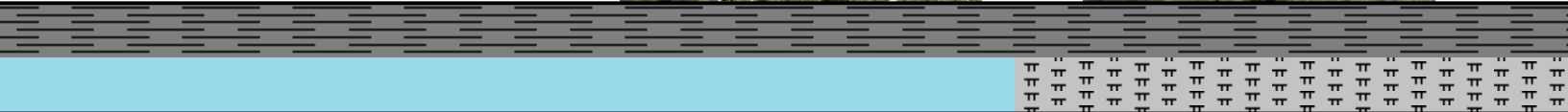
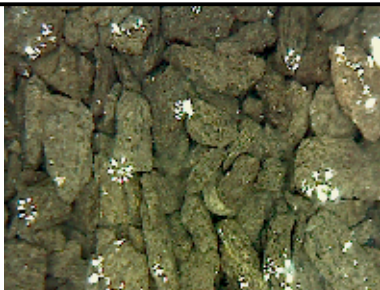
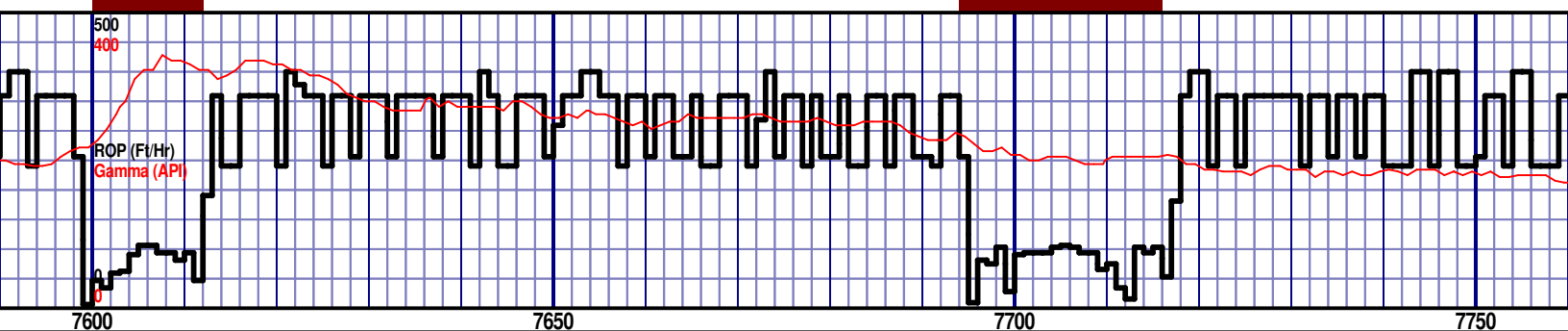
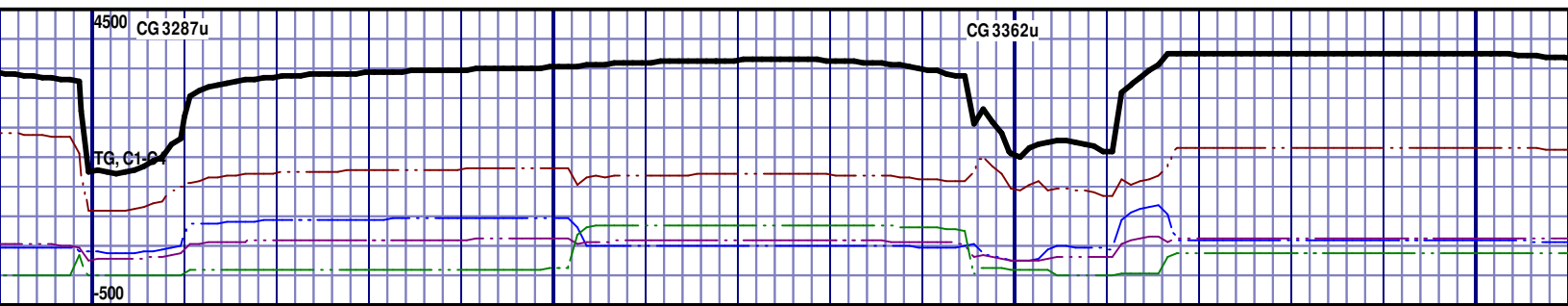
CHLK: 64%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR  
INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED  
BLU STRMG CUT, YLW RNG CUT

CHLK: 50%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR  
INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED  
BLU STRMG CUT, YLW RNG CUT

CHLK: 52%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN  
INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR  
BLU STRMG CUT, YLW RNG CUT

MD 7439 TVD 6611.66  
INC 89.51 AZ 273.33  
VS 1393.91

MD 7534 TVD 6615.11  
INC 86.33 AZ 273.15  
VS 1488.75



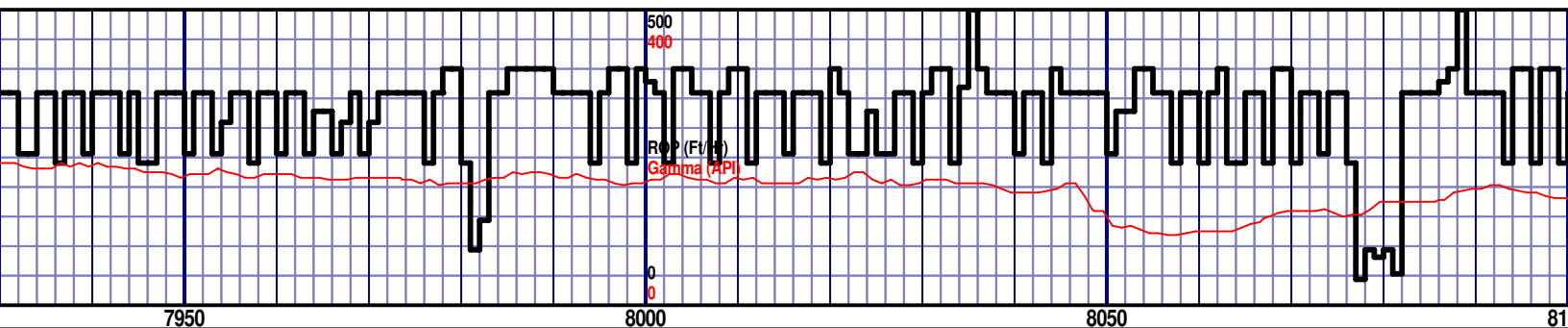
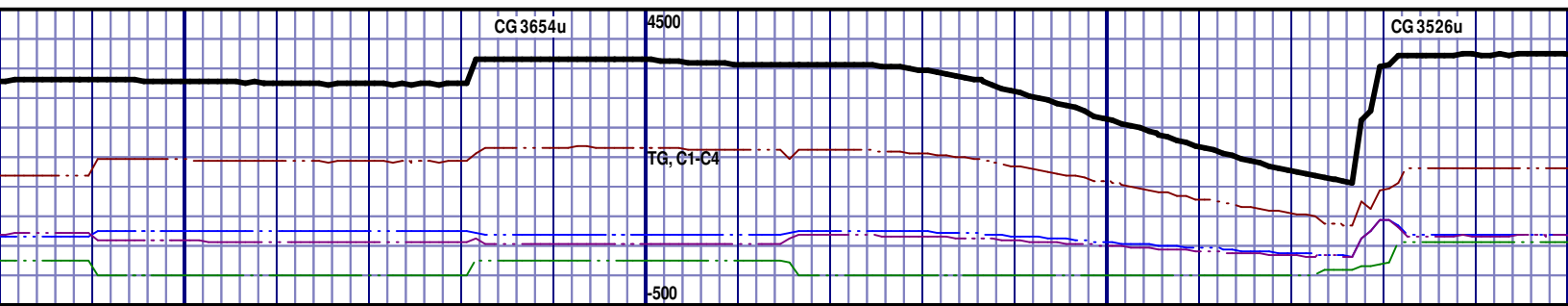
	<p>6400 TVD</p> <p>6650</p> <p>6900</p> <p>CHLK: 51%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT</p>	<p>NIOBRARA A MARL</p> <p>7692' MD 6623' TVD</p> <p>MRL: 50%: GRY TO DK GRY, SOFT TO BRITTLE, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 5% YLW FLUOR, IMMED BLU STRMG CUT, YLW RING CUT, NO ODOR</p>	<p>MRL: 50%: GRY TO DK GRY, SOFT TO BRITTLE, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 5% YLW FLUOR, IMMED BLU STRMG CUT, YLW RING CUT, NO ODOR</p>	<p>MRL: 50%: GRY TO DK GRY, SOFT TO BRITTLE, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 5% YLW FLUOR, IMMED BLU STRMG CUT, YLW RING CUT, NO ODOR</p>
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MD 7629 TVD 6621.45  
INC 86.02 AZ 271.43  
VS 1583.51

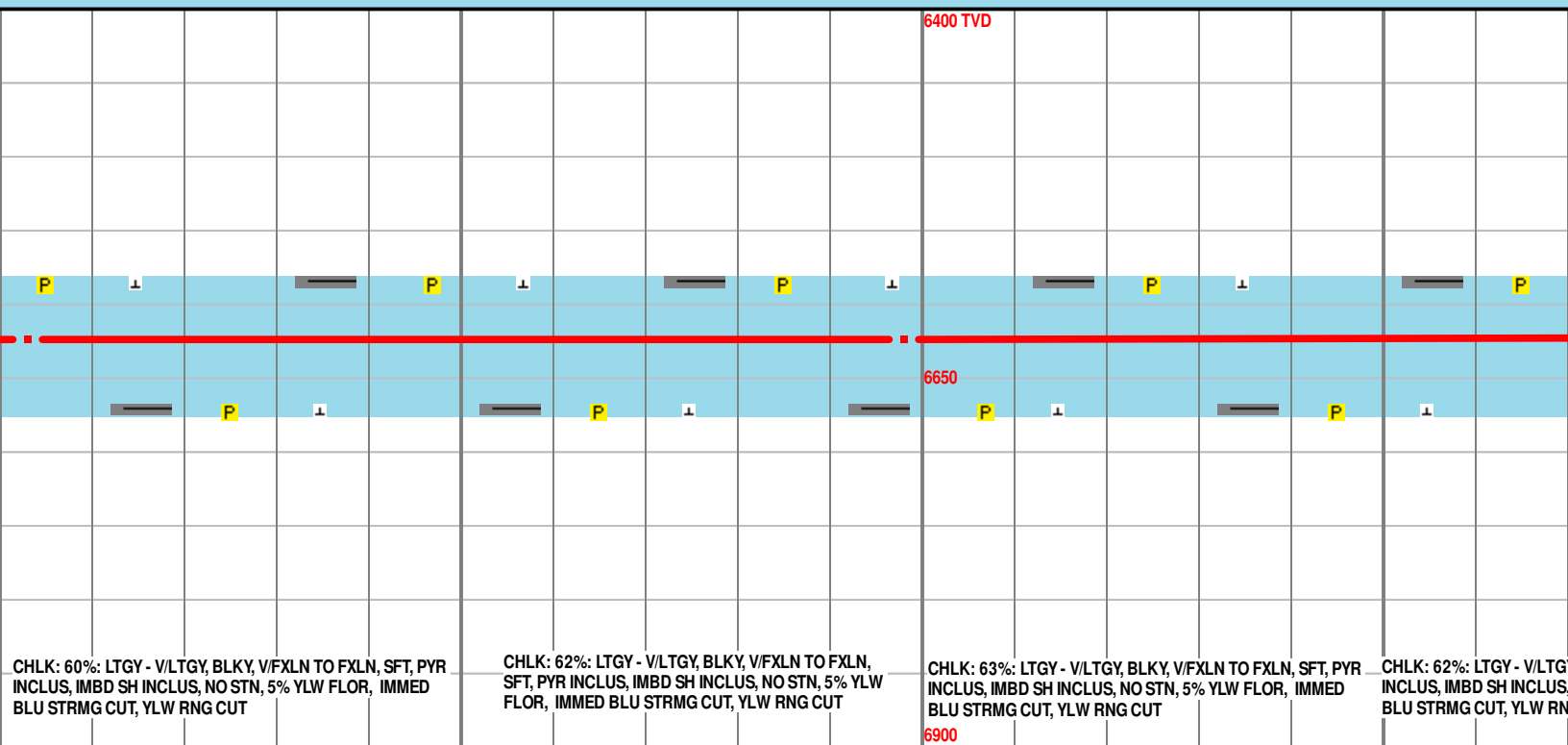
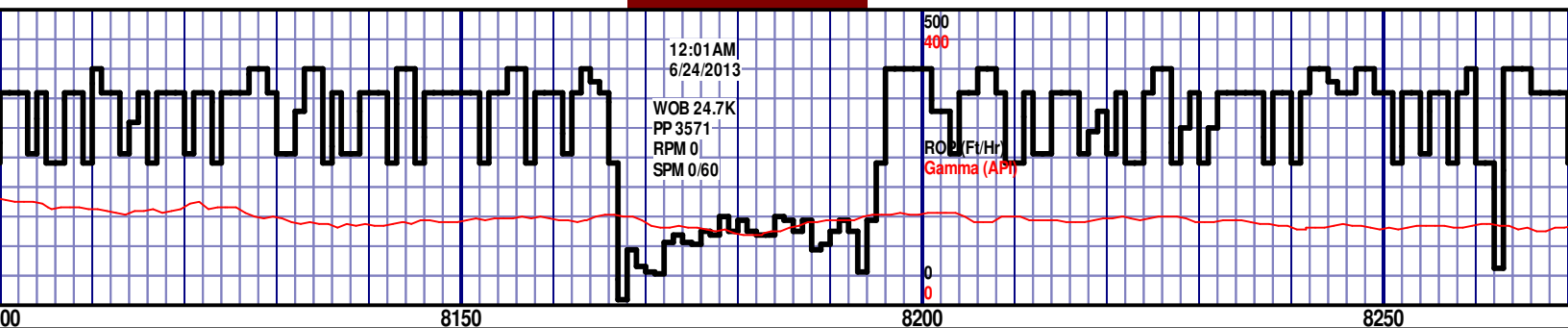
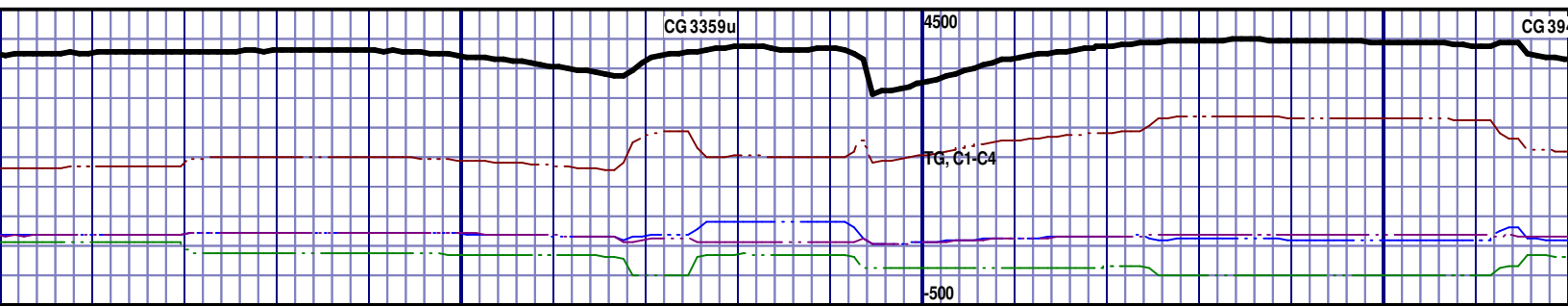
MD 7724 TVD 6625.97  
INC 88.52 AZ 270.52  
VS 1678.39







6400 TVD									
NIOBRARA B CHALK									
8048' MD 6625' TVD									
BRITTLE, NO VIS									
FRACT, MINOR CALC, POOR INTRXLN POR, 5% YLW FLUOR,									
IMMED BLU STRM CUT, YLW RING CUT, NO ODOR									
CHLK: 59%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR									
INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED									
BLU STRMG CUT, YLW RNG CUT									
6900									



CHLK: 60%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT

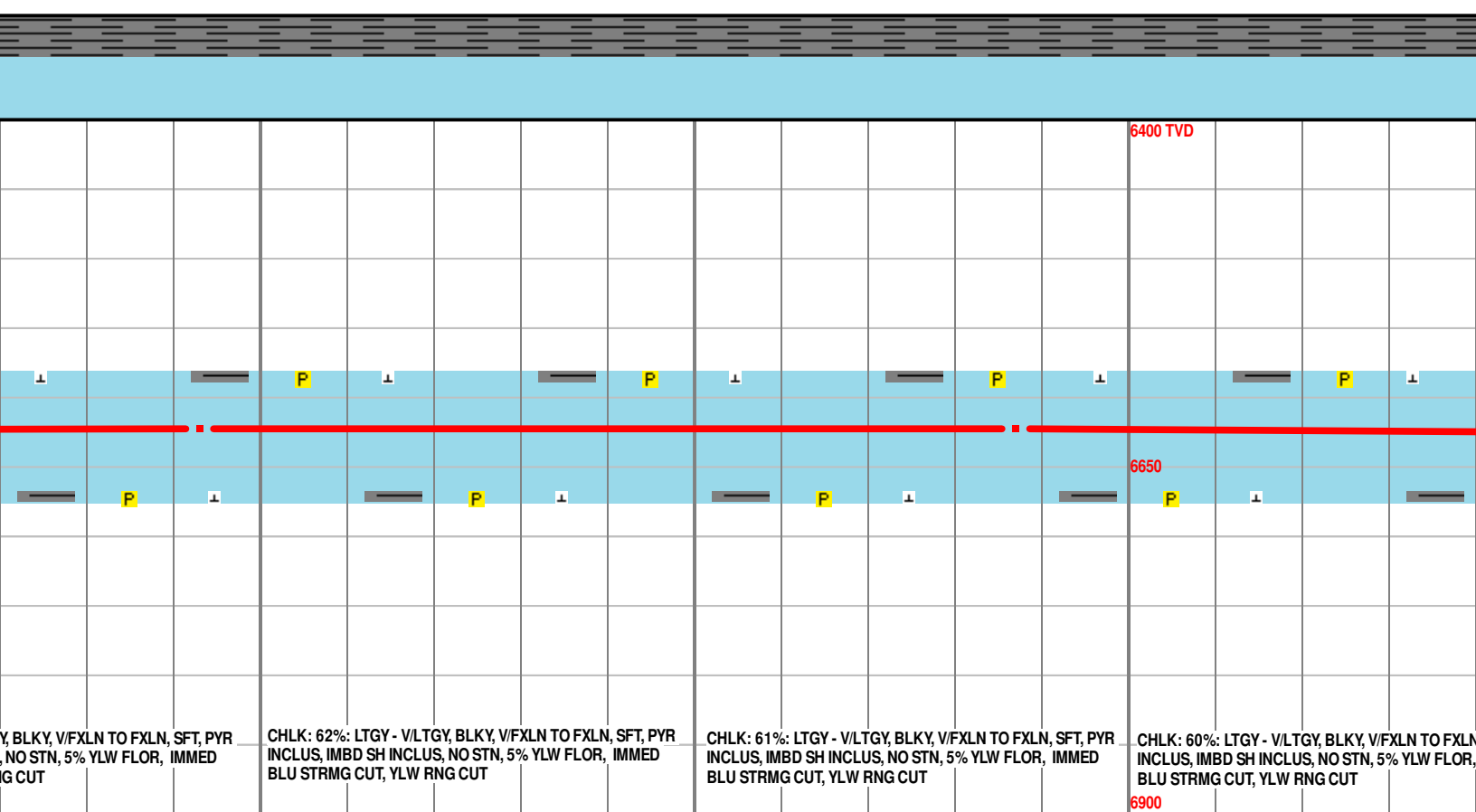
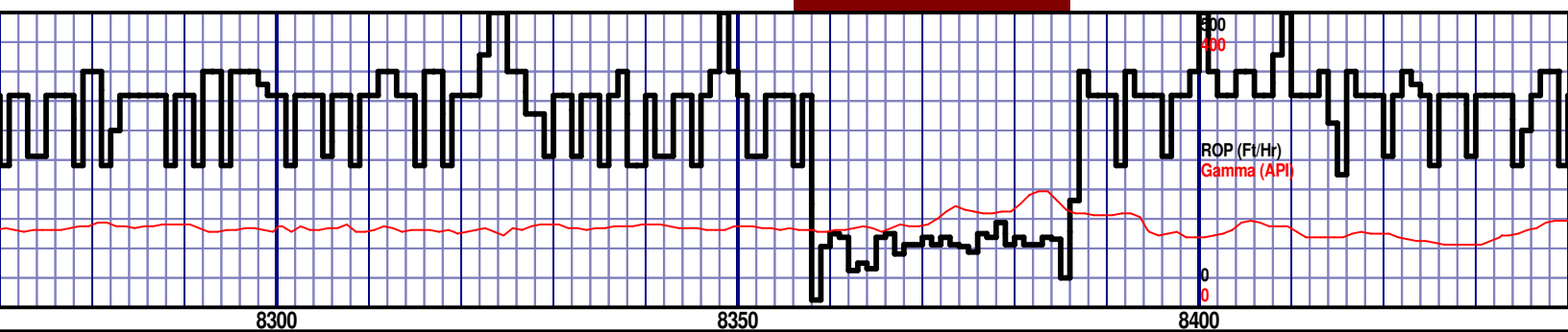
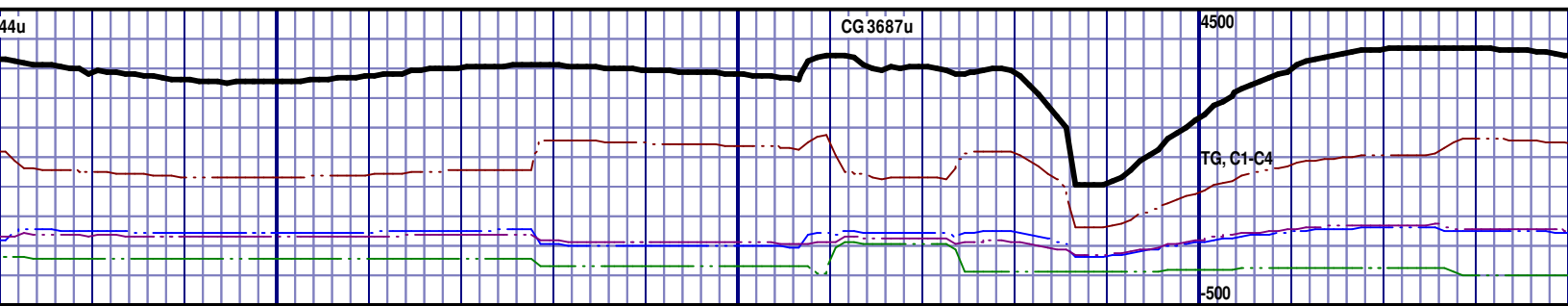
CHLK: 62%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT

CHLK: 63%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT

CHLK: 62%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT

MD 8103 TVD 6624.13  
INC 91.57 AZ 268.86  
VS 2057.15

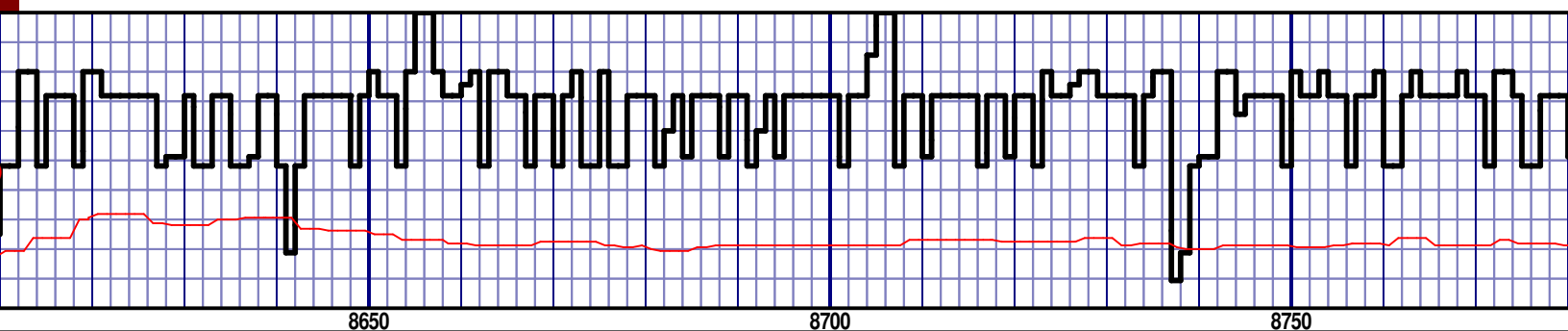
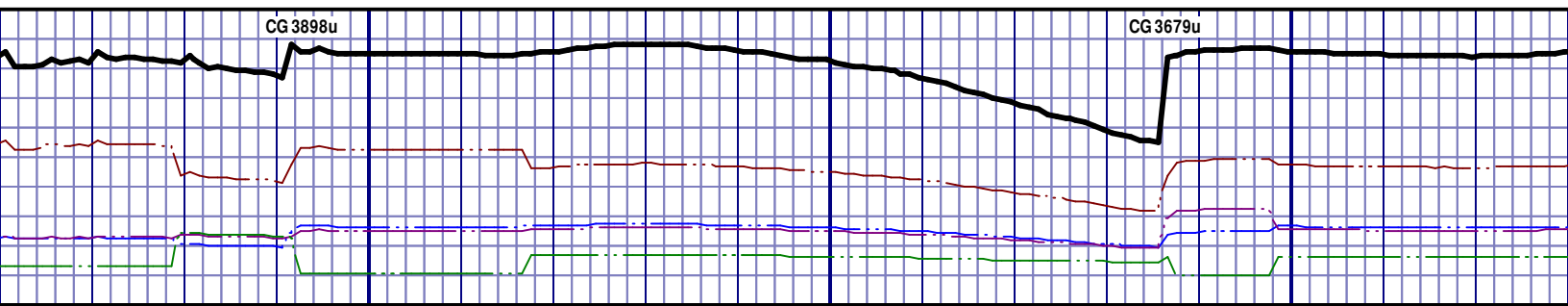
MD 8198 TVD 6623.29  
INC 89.44 AZ 269.86  
VS 2152.11



MD 8293 TVD 6622.65  
INC 91.33 AZ 270.07  
VS 2247.09

MD 8387 TVD 6622.44  
INC 88.92 AZ 271.16  
VS 2341.08

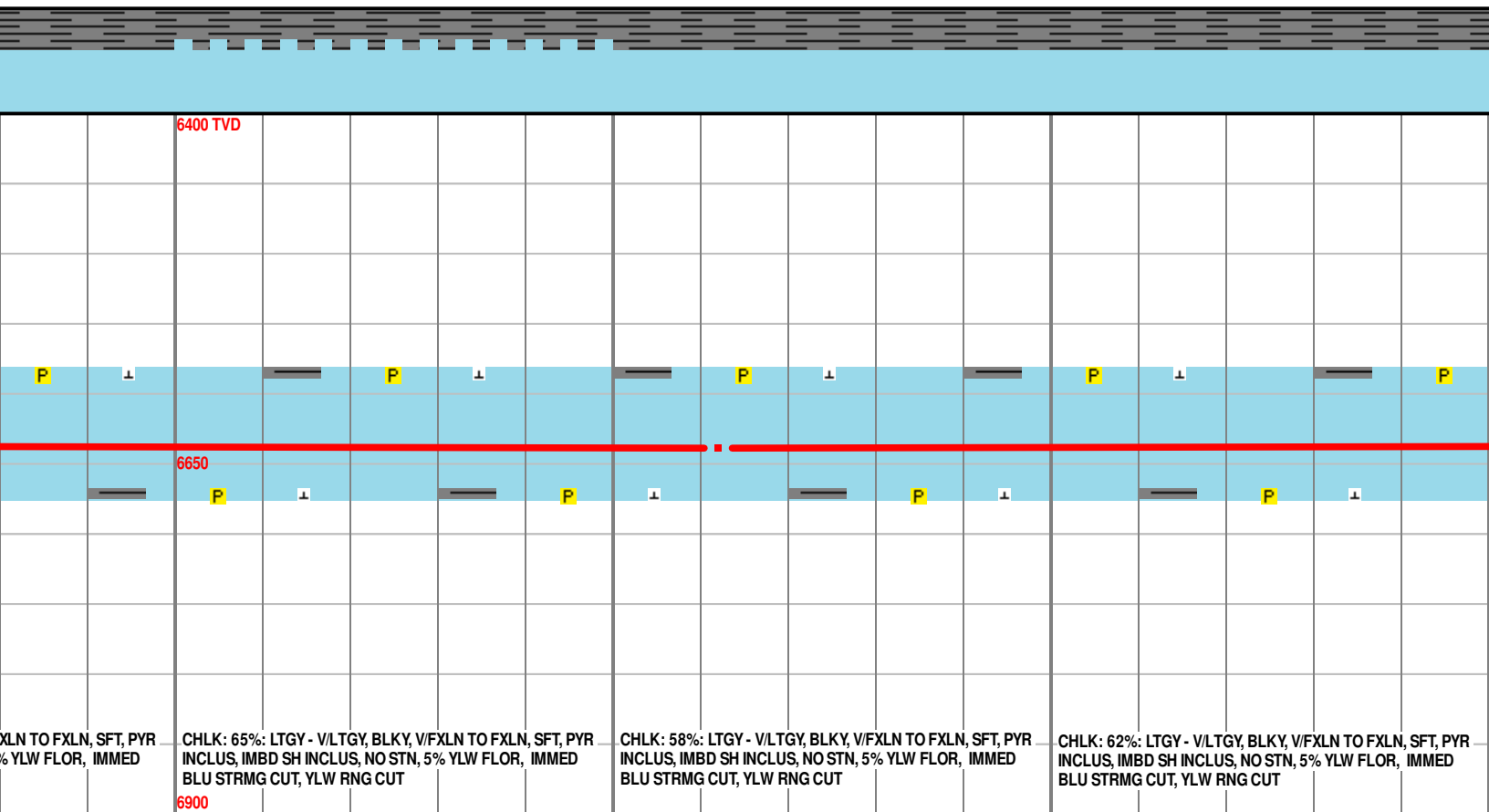
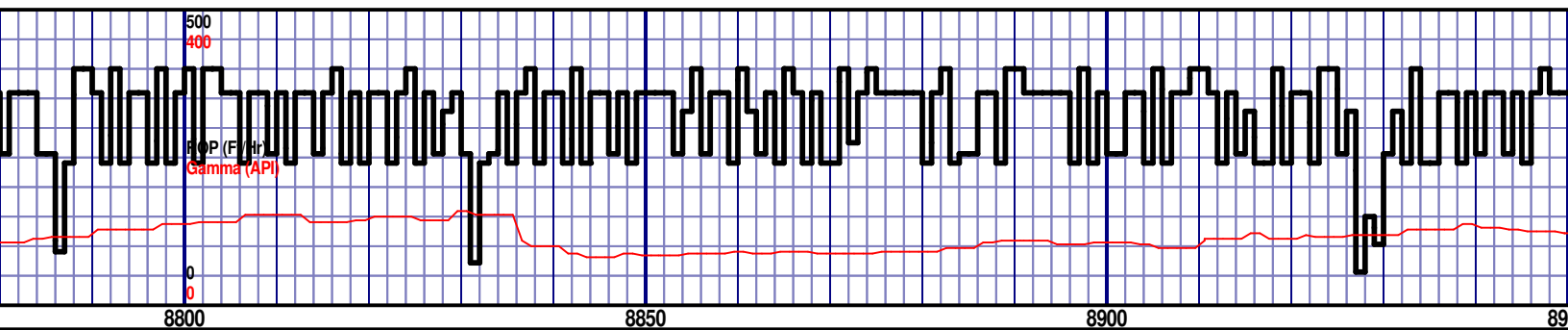
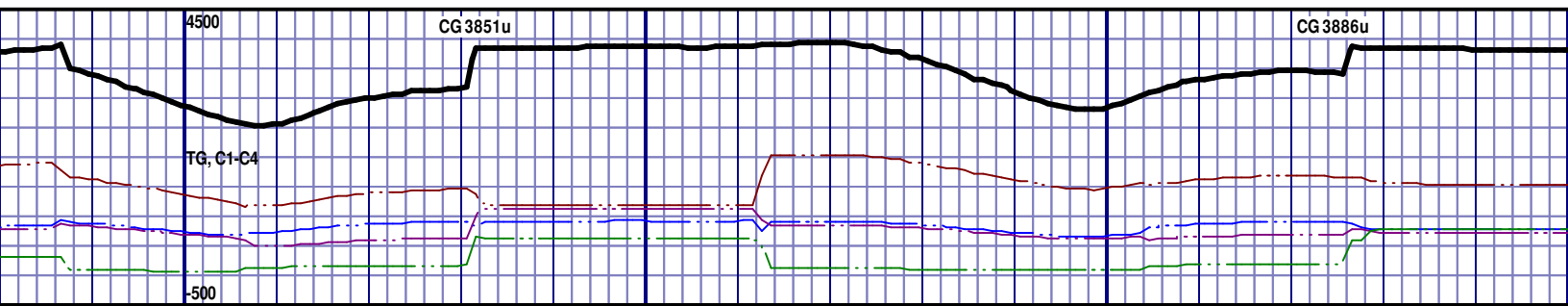




<p>LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR BD SH INCLUS, NO STN, 5% YLW FLOR, IMMED CUT, YLW RNG CUT</p>	<p>CHLK: 63%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT</p>	<p>CHLK: 59%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT</p>	<p>CHLK: 63%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT</p>
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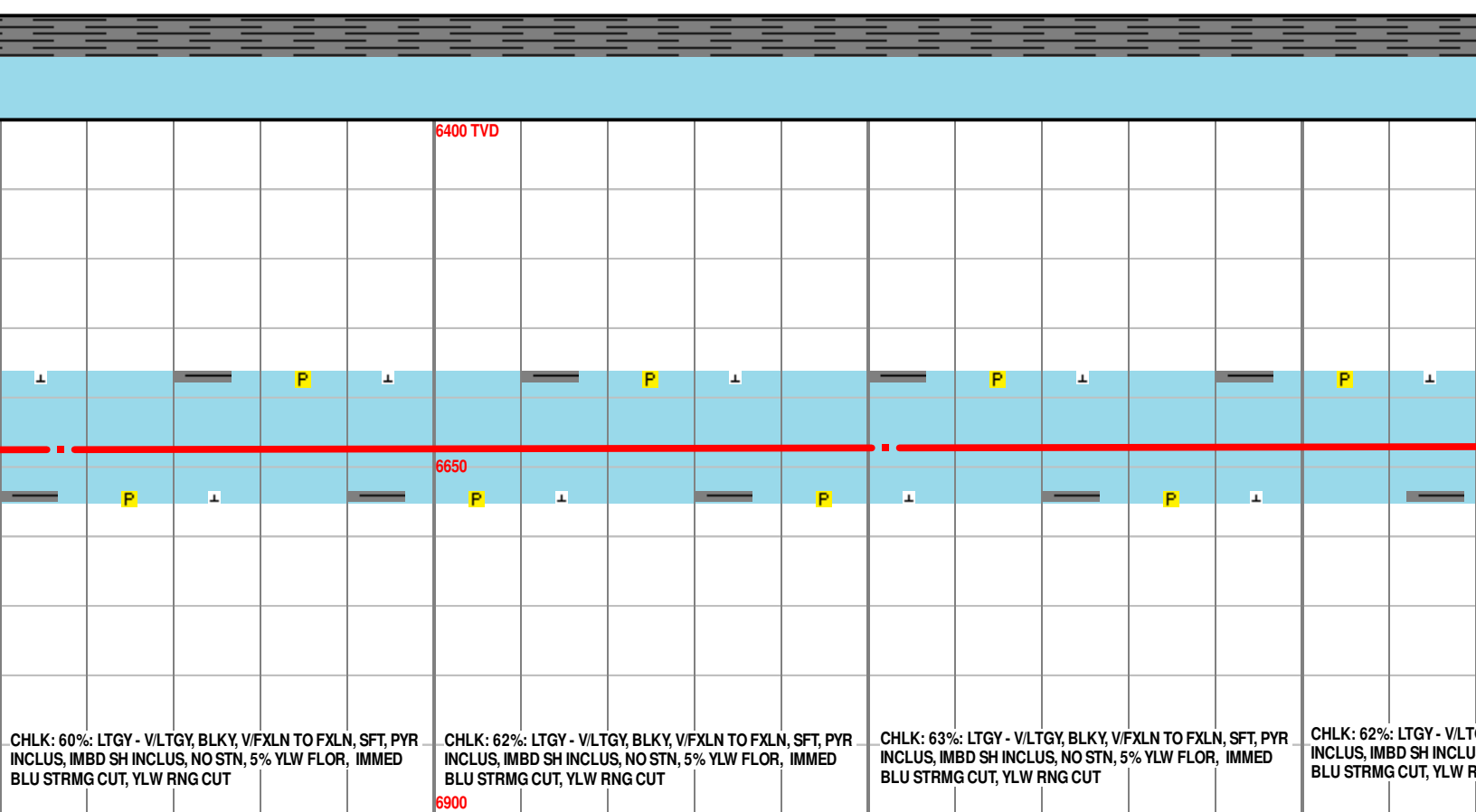
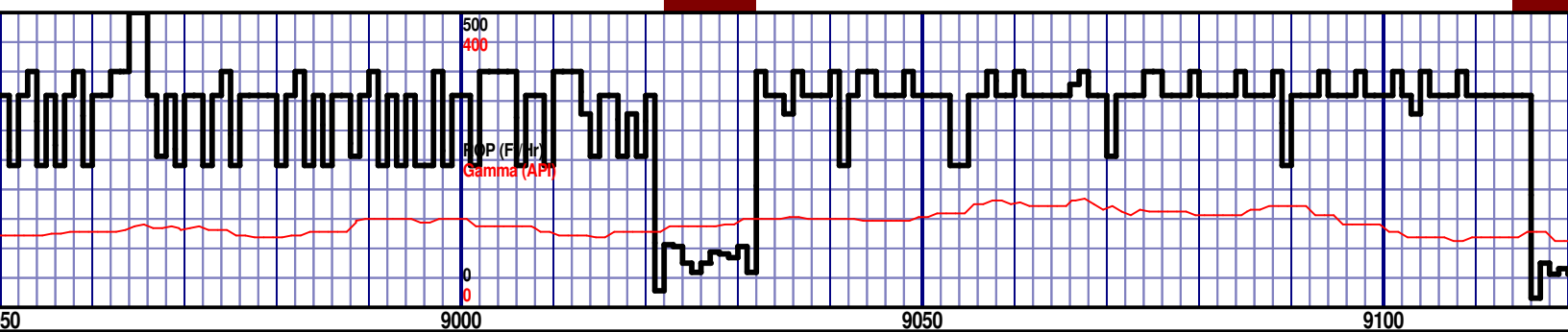
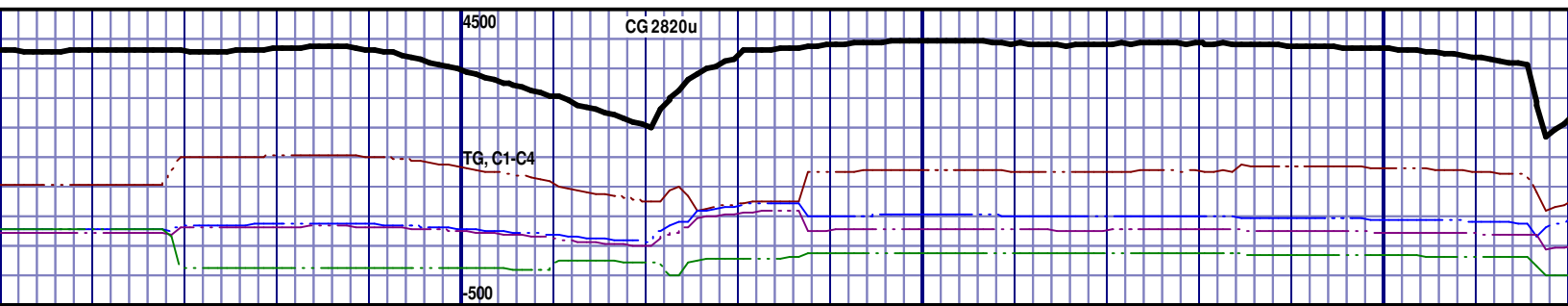
MD 8672 TVD 6635.86  
INC 88.46 AZ 270.02  
VS 2625.74

MD 8767 TVD 6635.86  
INC 89.38 AZ 269.02  
VS 2720.71



637.65  
69.88

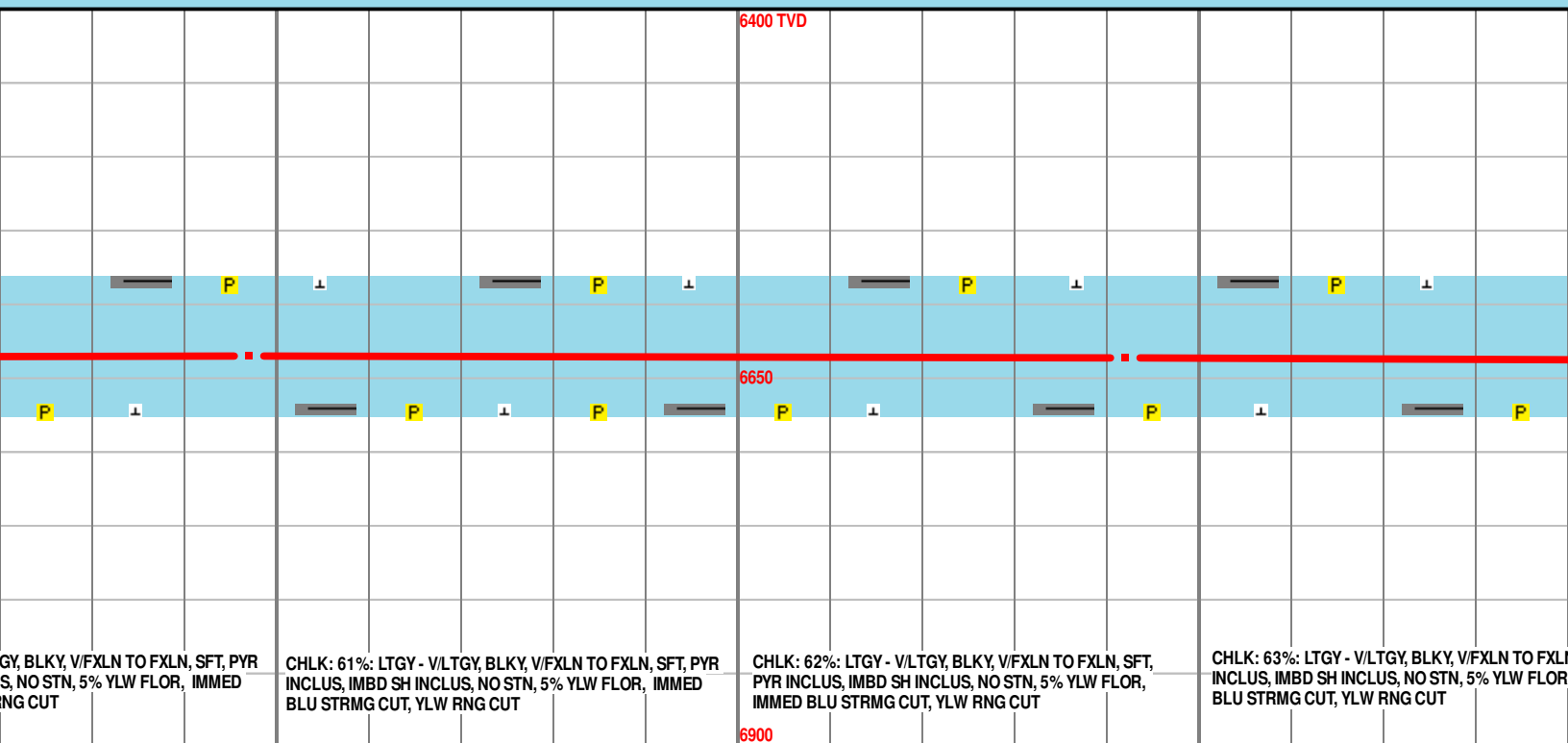
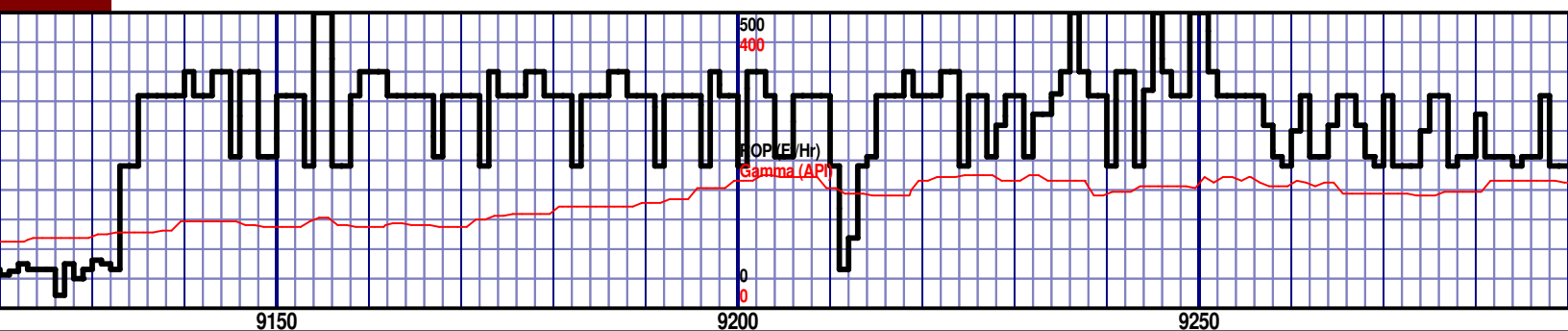
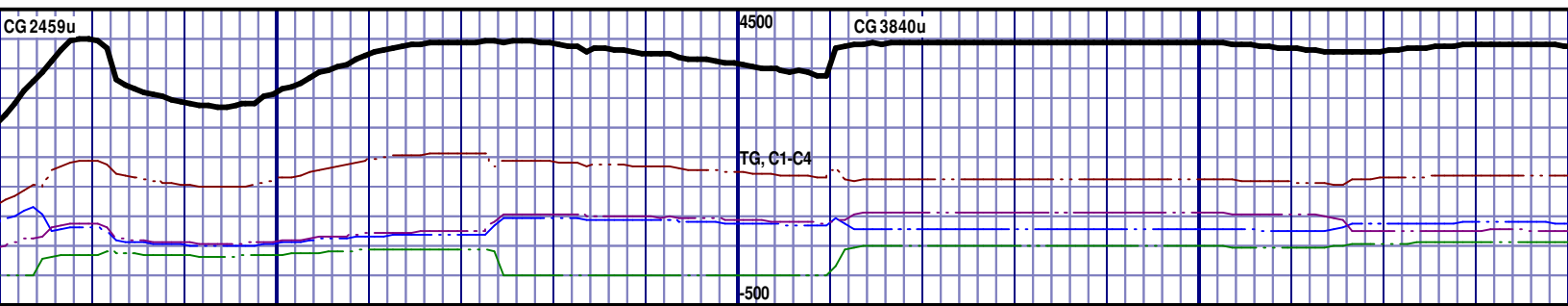
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INC 90.03 AZ 269.79  
VS 2815.69



MD 8957 TVD 6637.37  
INC 90.89 AZ 270.08  
VS 2910.67

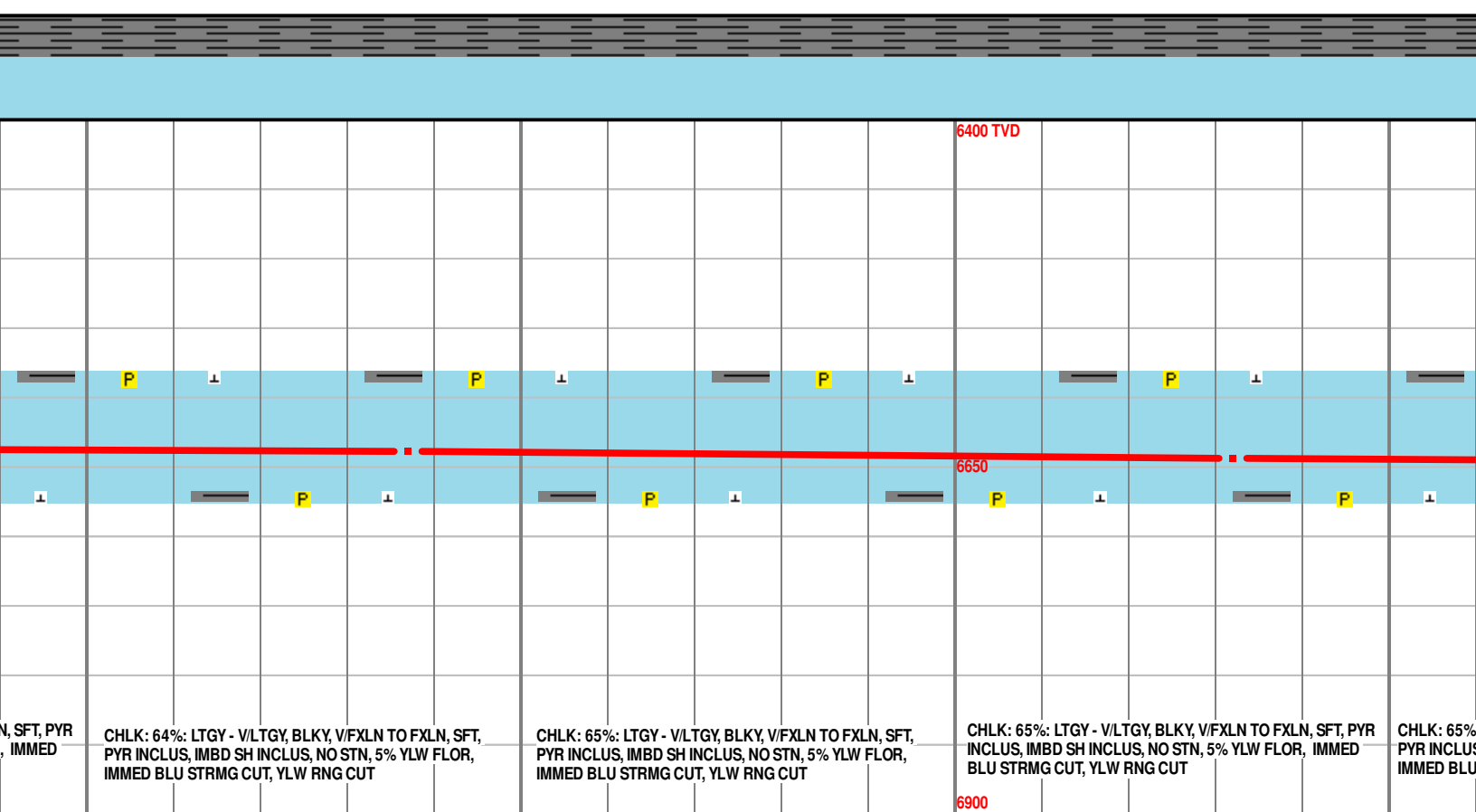
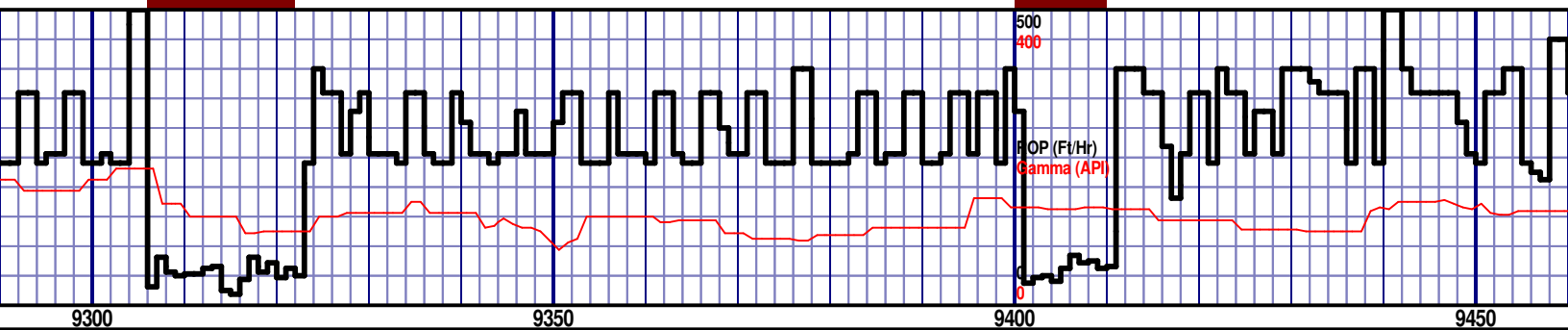
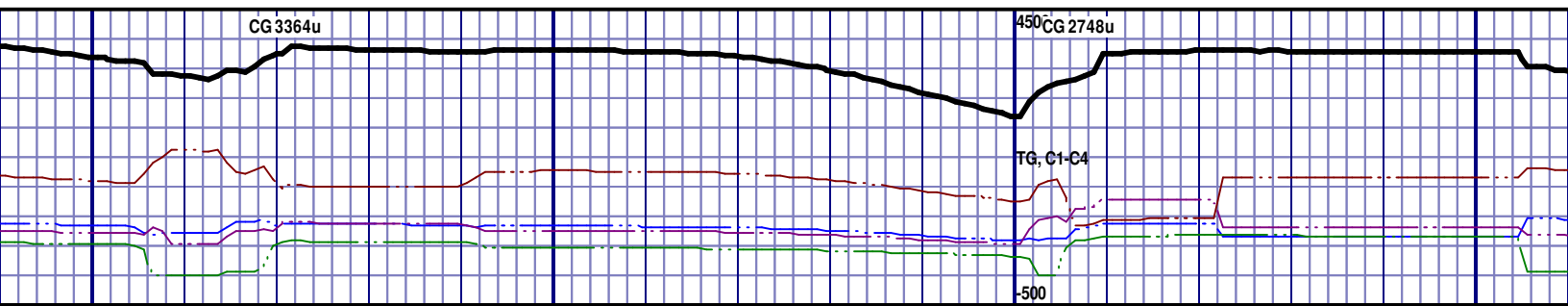
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INC 90.99 AZ 268.33  
VS 3005.62





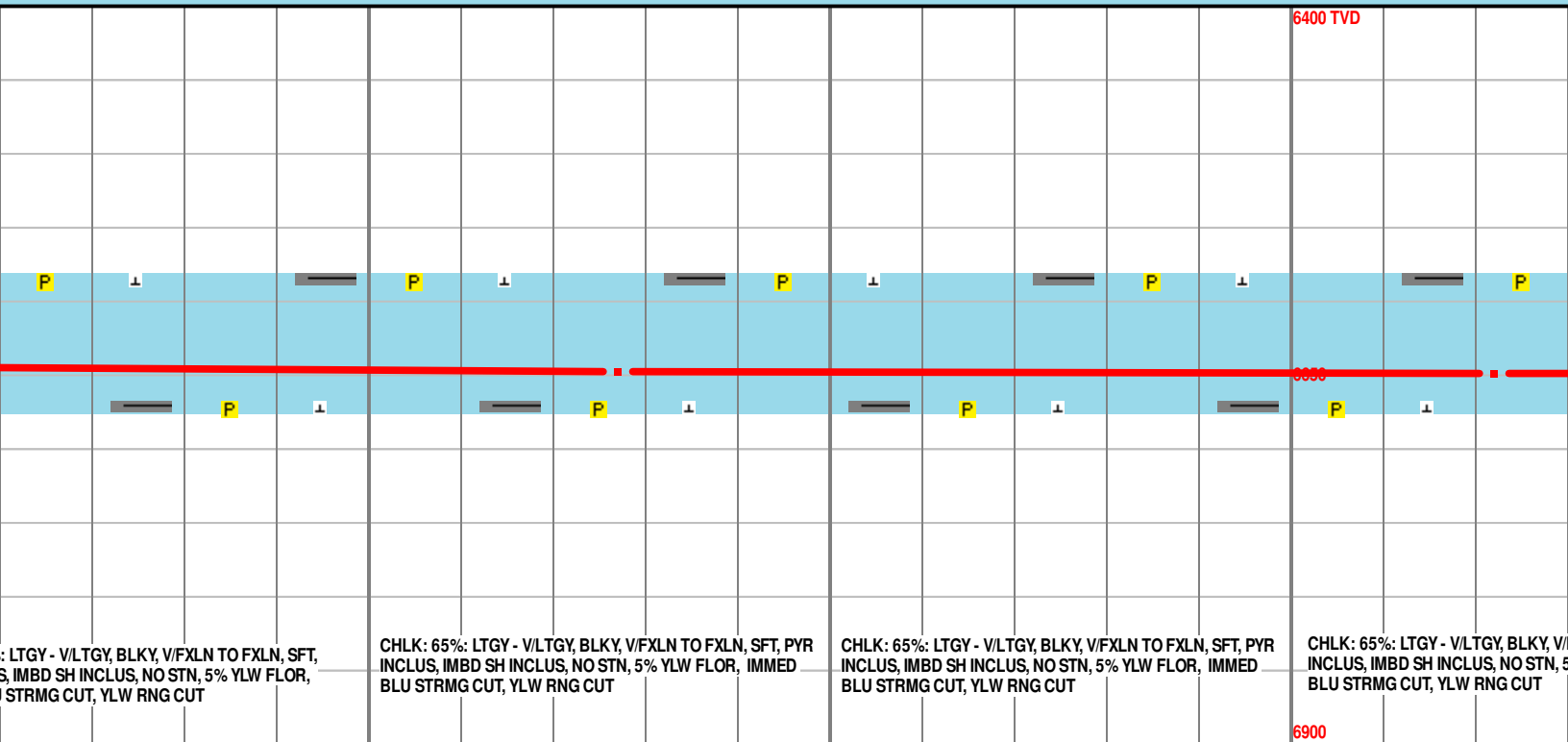
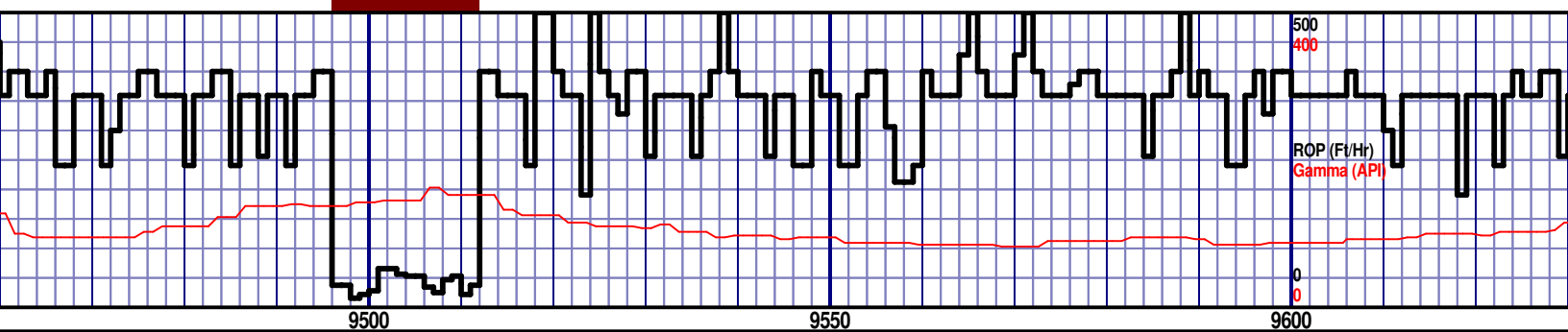
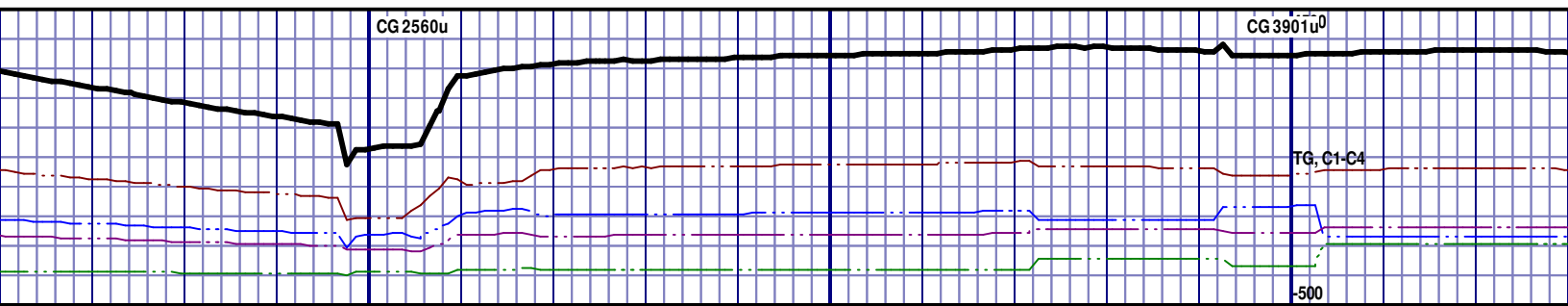
MD 9147 TVD 6635.61  
INC 89.26 AZ 267.83  
VS 3100.51

MD 9242 TVD 6636.02  
INC 90.25 AZ 267.97  
VS 3195.38



MD 9337 TVD 6638.43  
INC 86.85 AZ 268.35  
VS 3290.23

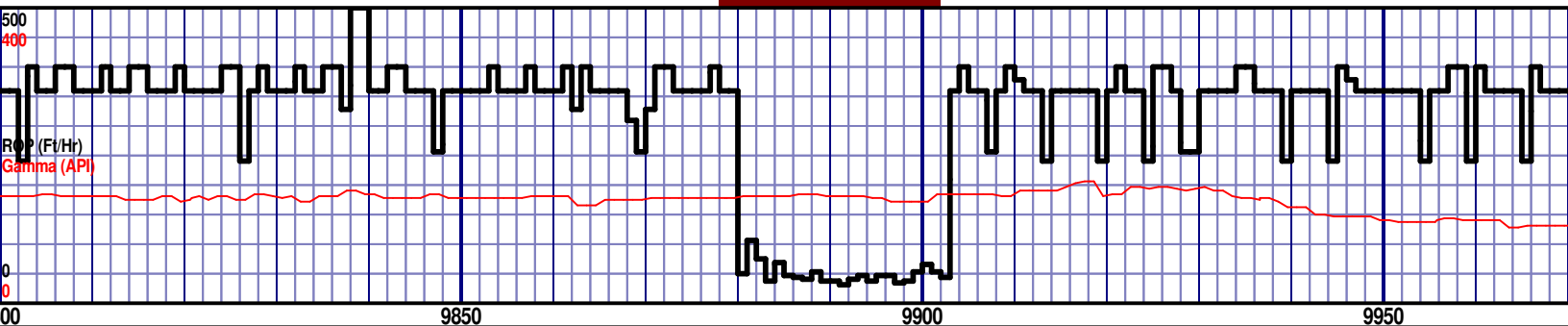
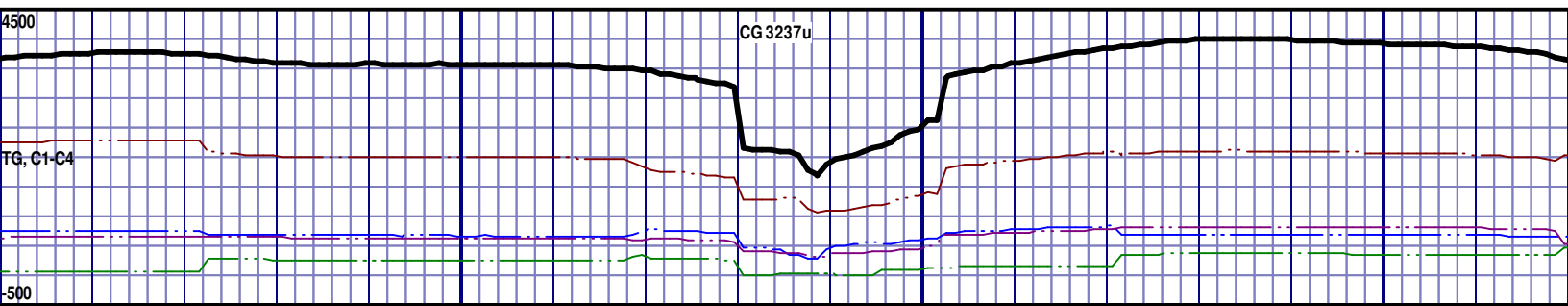
MD 9432 TVD 6643.72  
INC 86.76 AZ 268.63  
VS 3385.01



MD 9527 TVD 6647.58  
INC 88.58 AZ 269.35  
VS 3479.87

MD 9622  
INC 90.25  
VS 3574.8





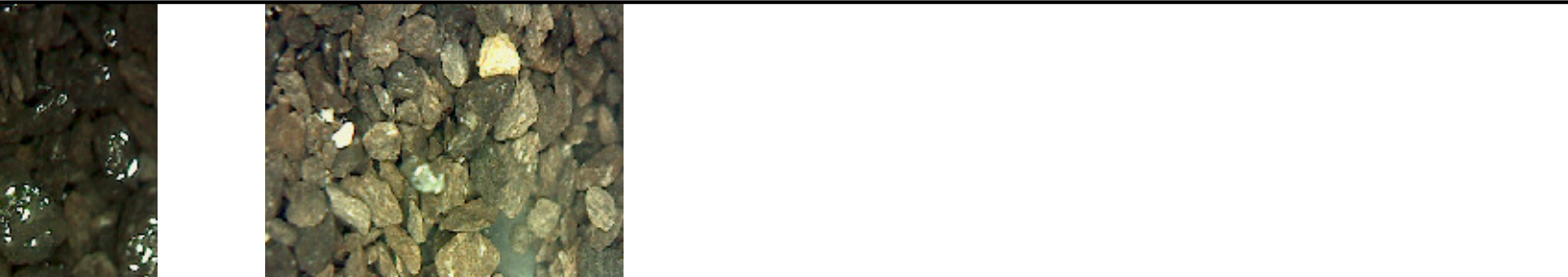
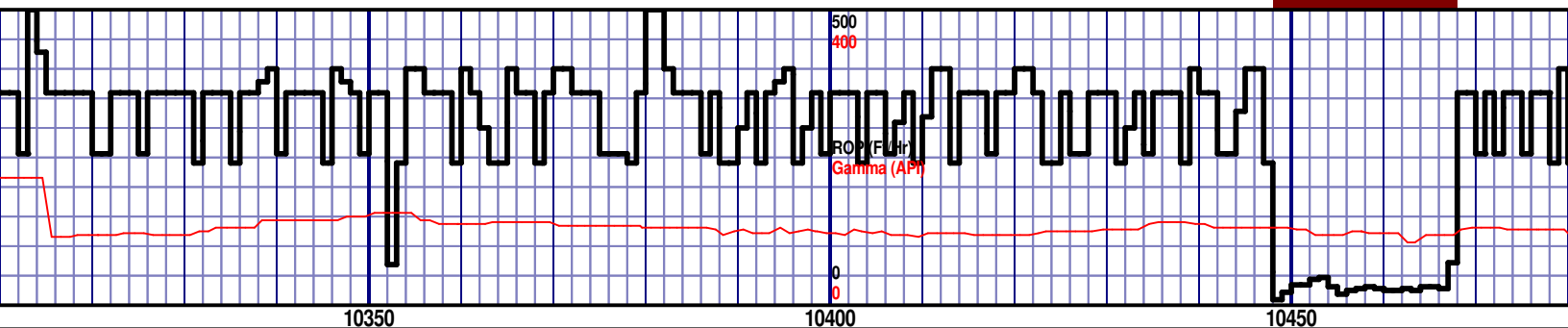
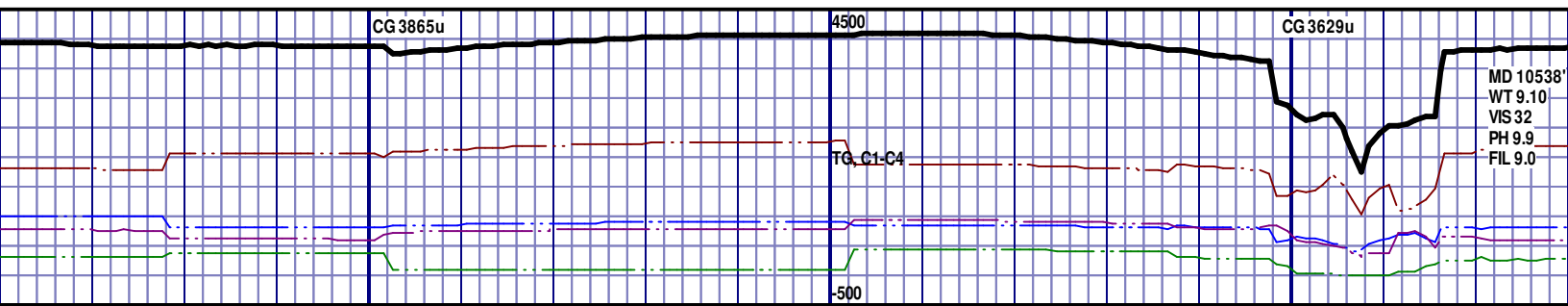
6400 TVD									
MRL: 49%: GRY TO DK GRY, SOFT TO BRITTLE, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 5% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO ODOR									
MRL: 48%: GRY TO DK GRY, SOFT TO BRITTLE, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 5% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO ODOR									
MRL: 48%: GRY TO DK GRY, SOFT TO BRITTLE, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 5% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO ODOR									
MRL: 48%: GRY TO DK GRY, SOFT TO BRITTLE, NO VIS FRACT, MINOR CALC, POOR INTRXLN POR, 5% YLW FLUOR, IMMED BLU STRM CUT, YLW RING CUT, NO ODOR									
6900									

MD 9812 TVD 6649.04  
INC 89.17 AZ 266.45  
VS 3764.62

MD 9906 TVD 6650.66  
INC 88.86 AZ 268.26  
VS 3858.43





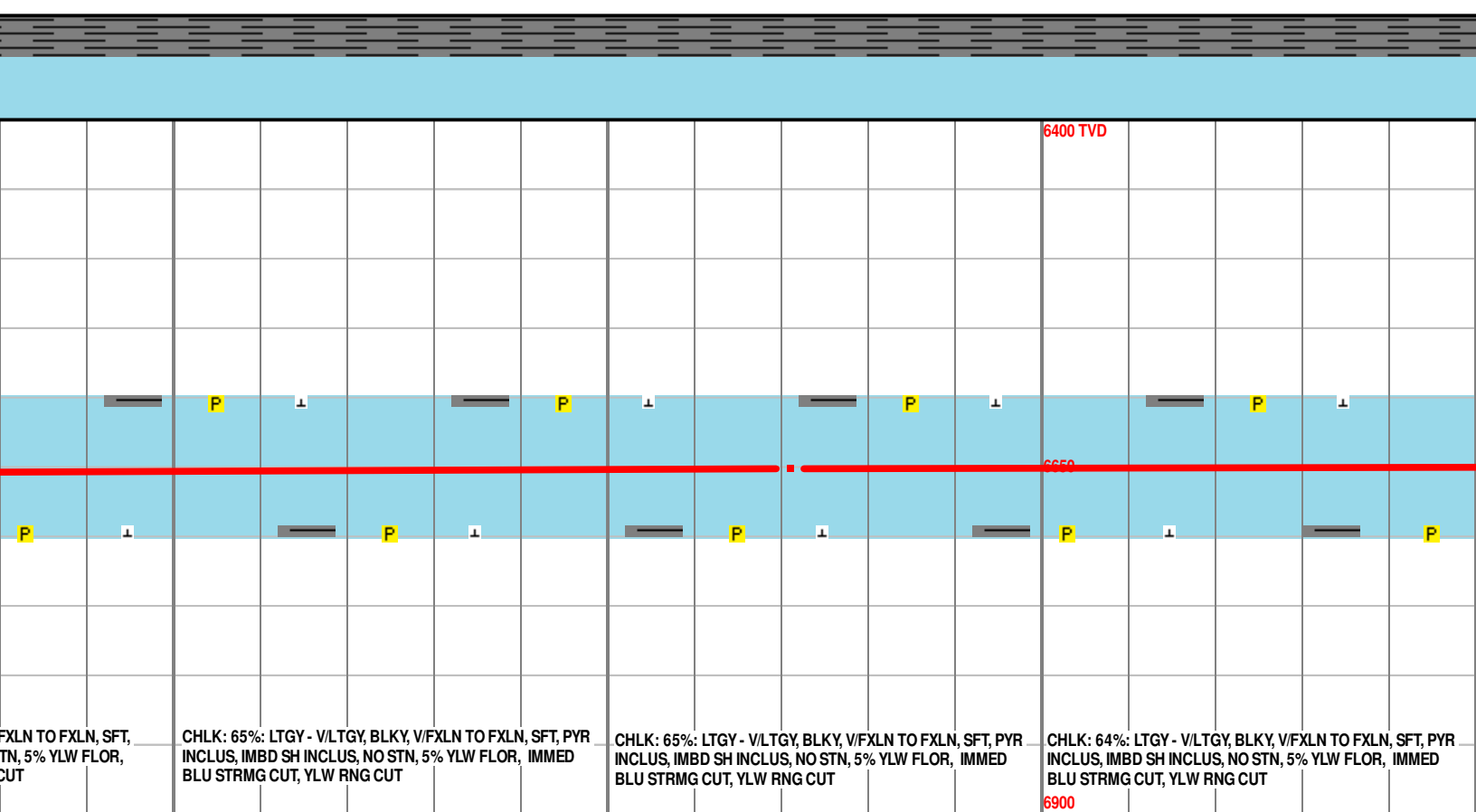
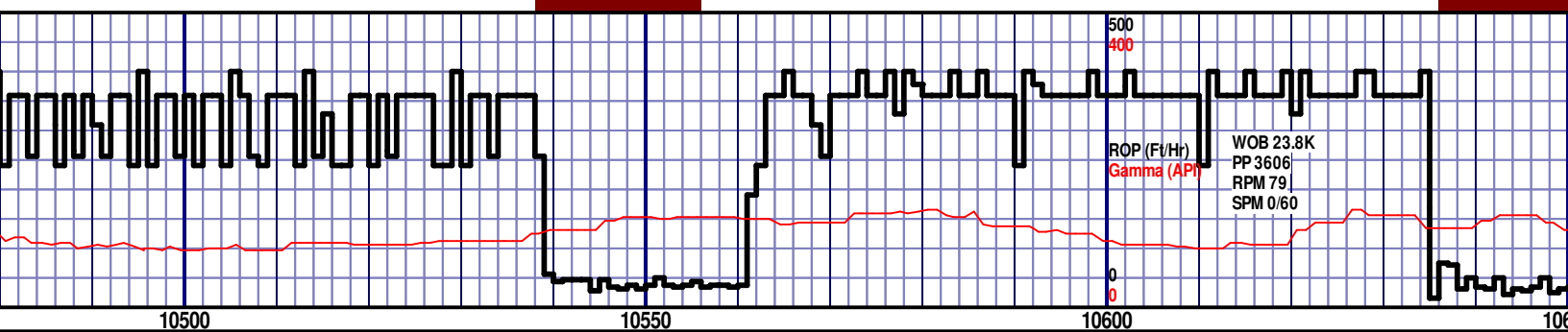
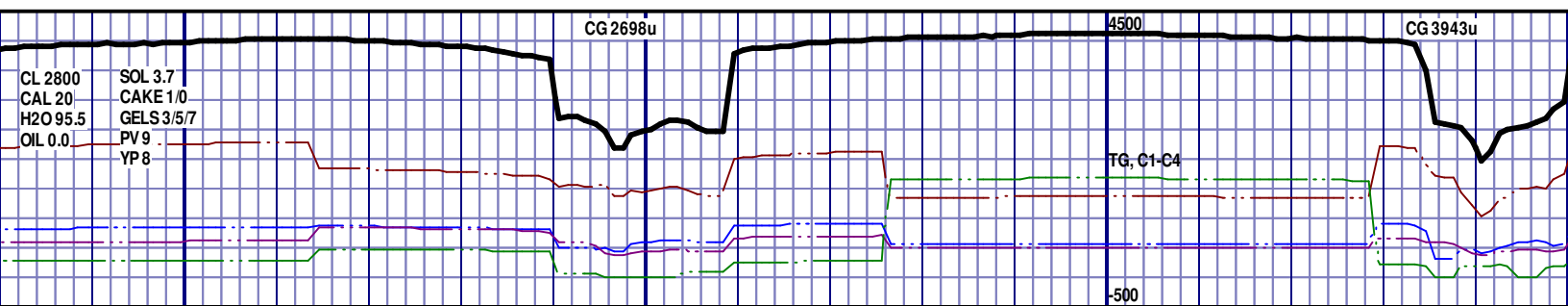


NIOBRARA B CHALK									
10315' MD 6656' TVD									
6400 TVD									
6650									
6900									
CHLK: 58%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT									
CHLK: 60%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT									
CHLK: 63%: LTGY - V/LTGY, BLKY, V/FXLN TO FXLN, SFT, PYR INCLUS, IMBD SH INCLUS, NO STN, 5% YLW FLOR, IMMED BLU STRMG CUT, YLW RNG CUT									

MD 10381 TVD 6656.38  
INC 91.2 AZ 274  
VS 4333.21

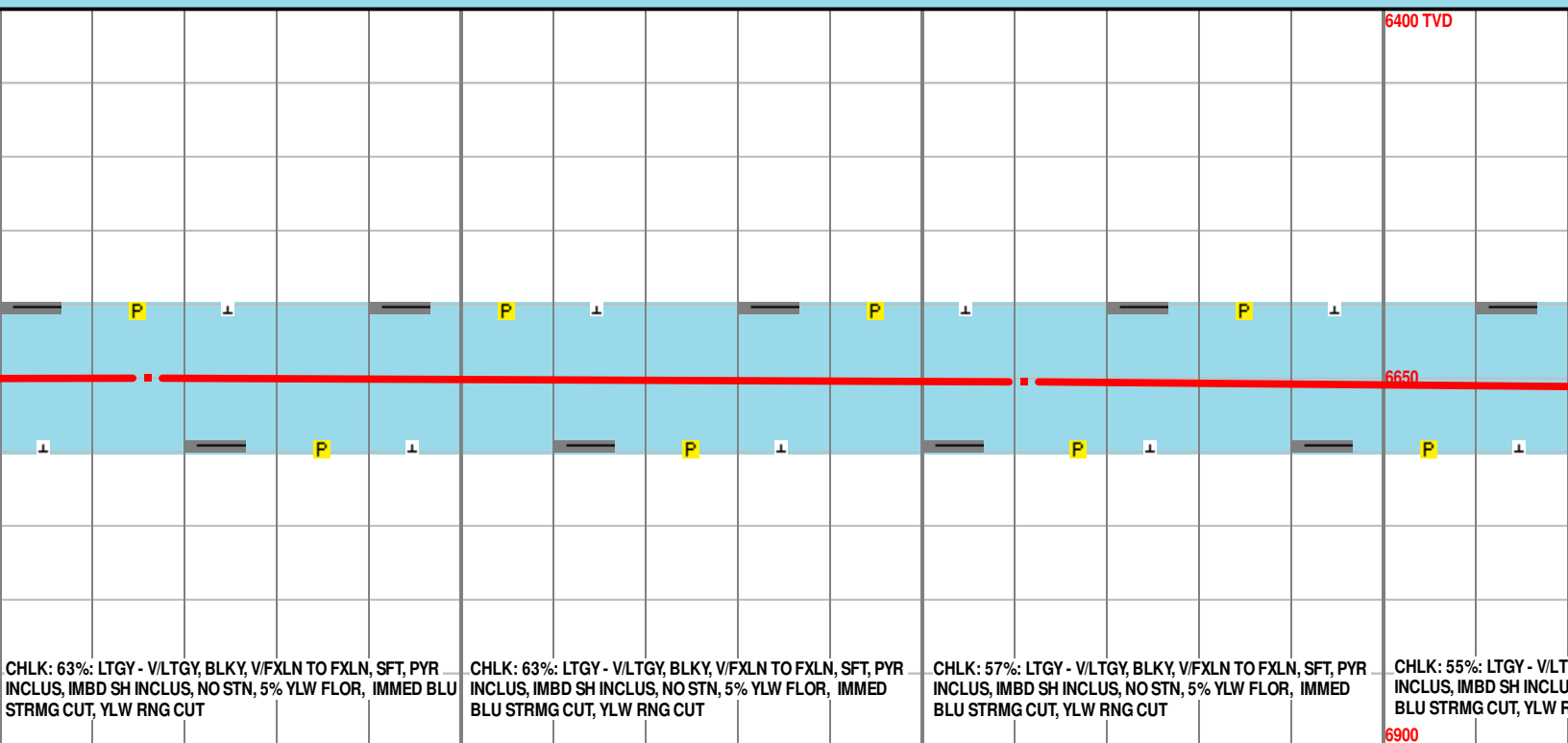
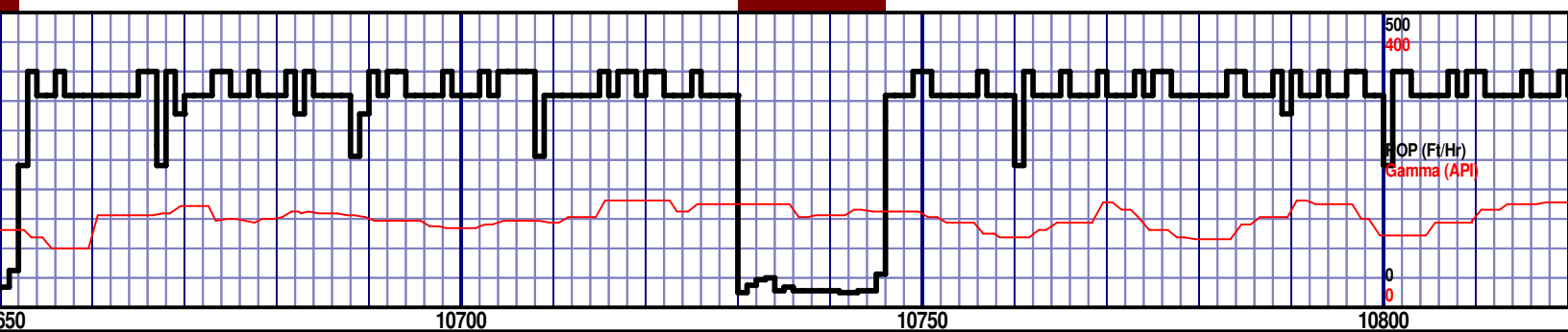
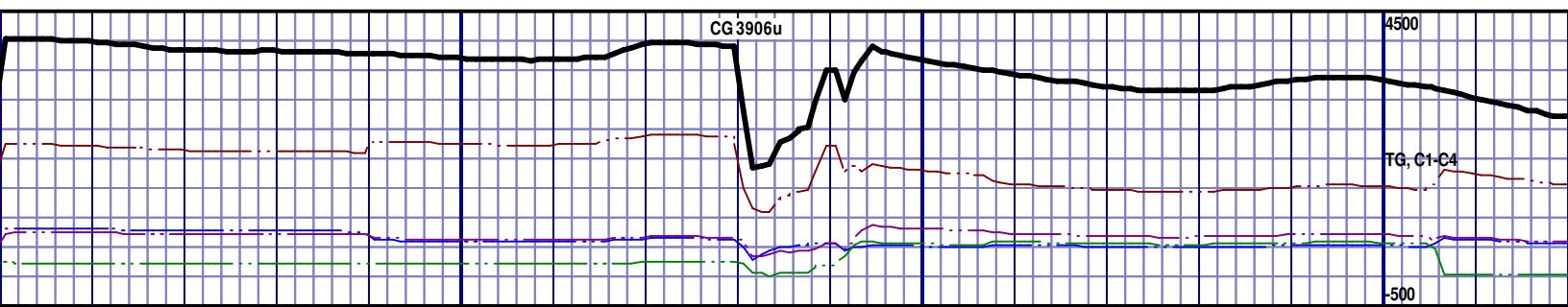
MD  
INC  
VS 4





10476 TVD 6653.29  
92.53 AZ 271.68  
428.1

MD 10571 TVD 6650.73  
INC 90.56 AZ 271.95  
VS 4523.04



MD 10666 TVD 6650.4  
INC 89.85 AZ 270.47  
VS 4618.04

MD 10761 TVD 6652.44  
INC 87.69 AZ 269.12  
VS 4712.99



