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### Customer Information

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

**Geologist:** Holly Duncan  
Noble Energy Inc.

### Mud Logging Details

**Logger:** Casey Sensecqua & Alfredo Sanchez  
**Log Interval:** 6600' MD to 11560' MD  
**Start Date:** August 10, 2013  
**Release Date:** August 14, 2013

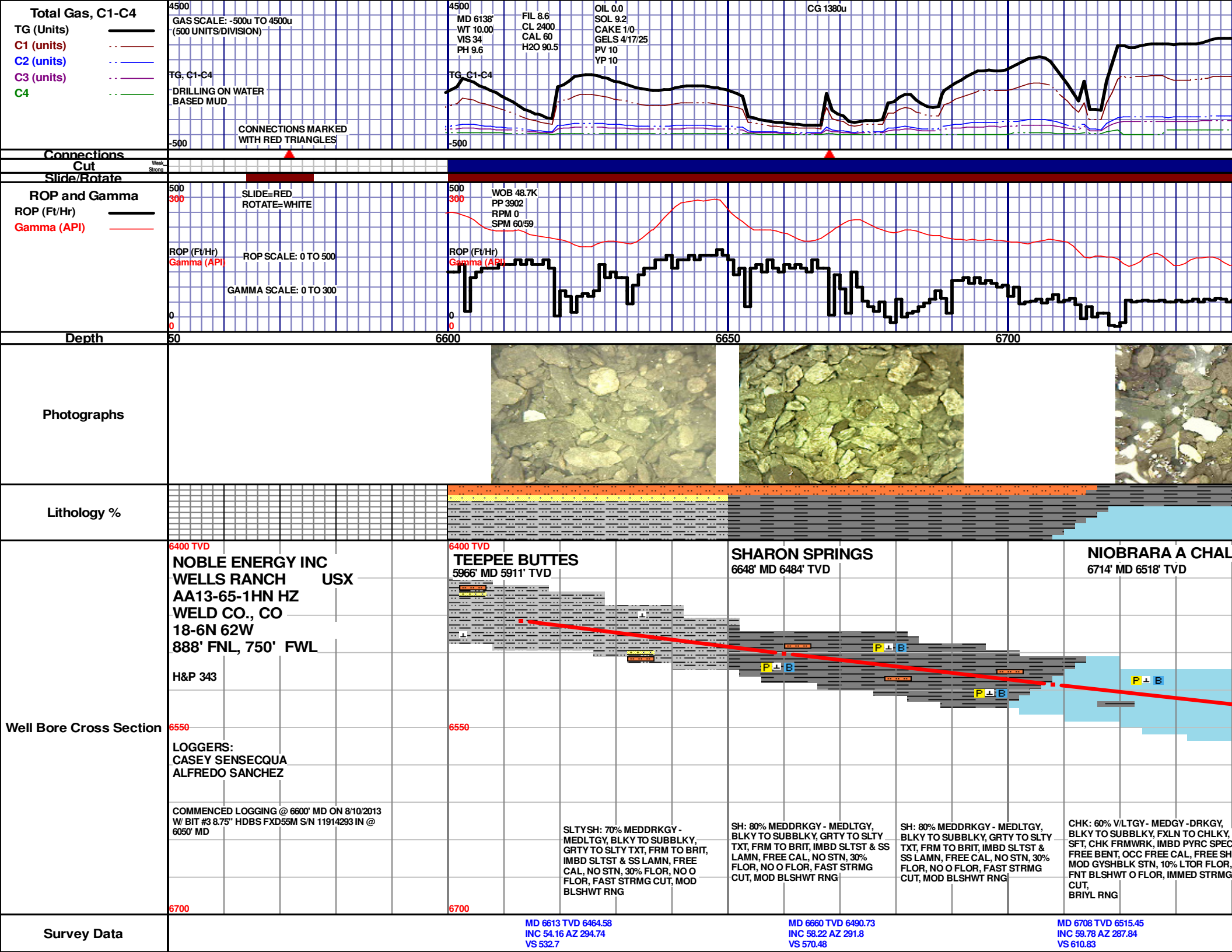
### Well Information

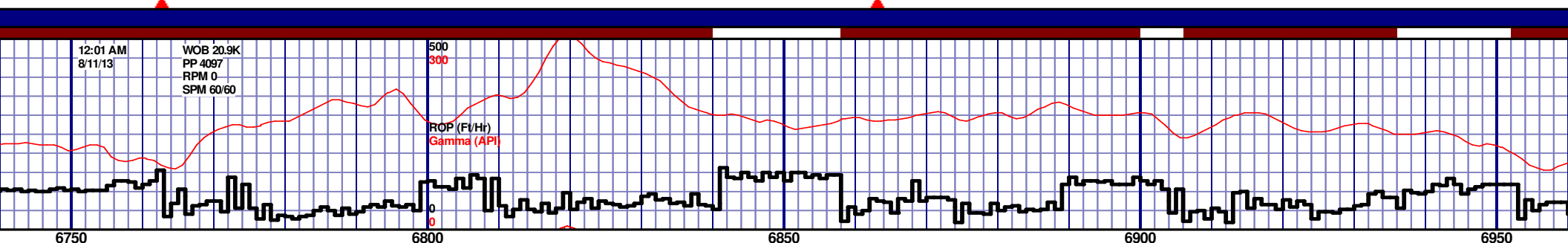
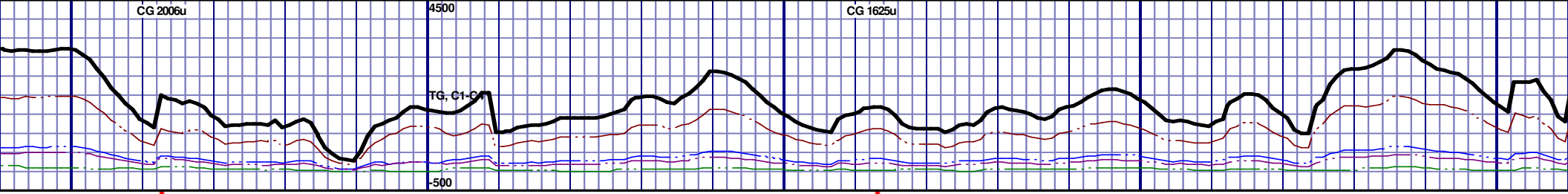
**Well Name:** Wells Ranch USX  
AA13-65-1HN HZ

**Location:** 18-6N 62W  
888' FNL, 750' FWL

**County:** Weld  
**State:** Colorado

**Drilling Rig:** H&P 343  
**Total Depth:** 11560' MD  
**TD Date:** August 14, 2013  
**Formation:** Niobrara B Chalk  
**KB Elevation:** 4855'  
**GR Elevation:** 4831'  
**API Number:** 05-123-36827-0000





K										NIOBRARA A MARL										NIOBRARA									
										6820' MD 6568' TVD										6948' MD 6609.4									



4500 CG 1266u

MD 7243'	FIL 16.8
WT 9.45	CL 2600
VIS 30	CAL 80
PH 11.3	H2O 94.8

FIL 16.8  
CL 2600  
CAL 80  
H2O 94.8

OIL	0.0
SOL	4.9
CAKE	1/0

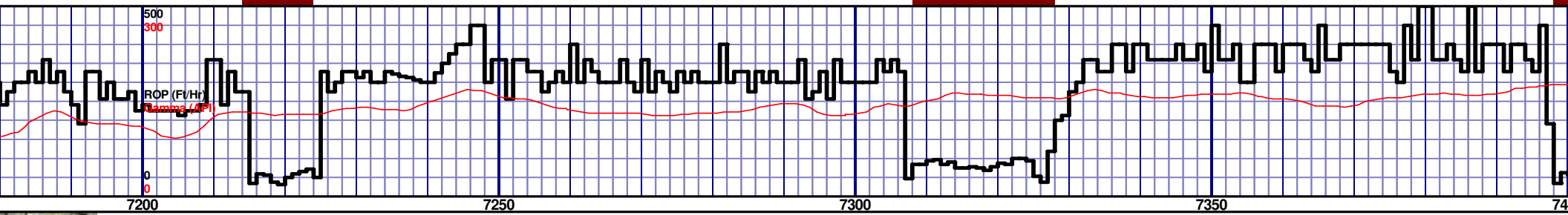
GELS 2/5/7  
PV 6  
YP 4

CG 1619u

CG 147

TG, C1-C4

**-500**

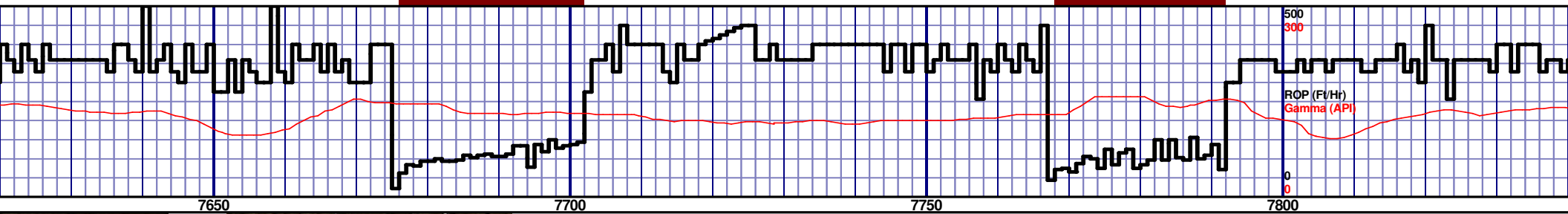
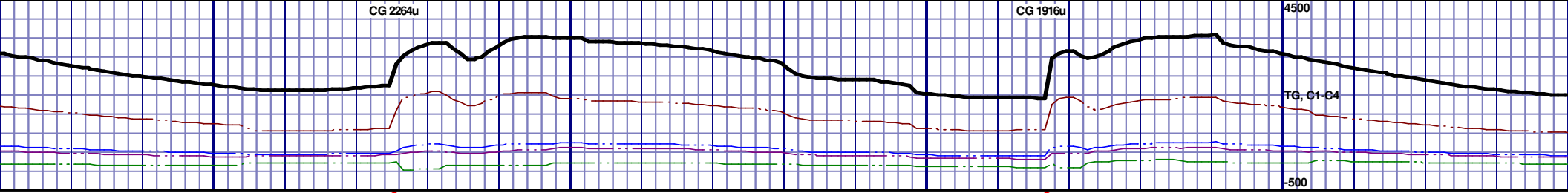
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INC 85.77 AZ 267.49  
VS 1116.84

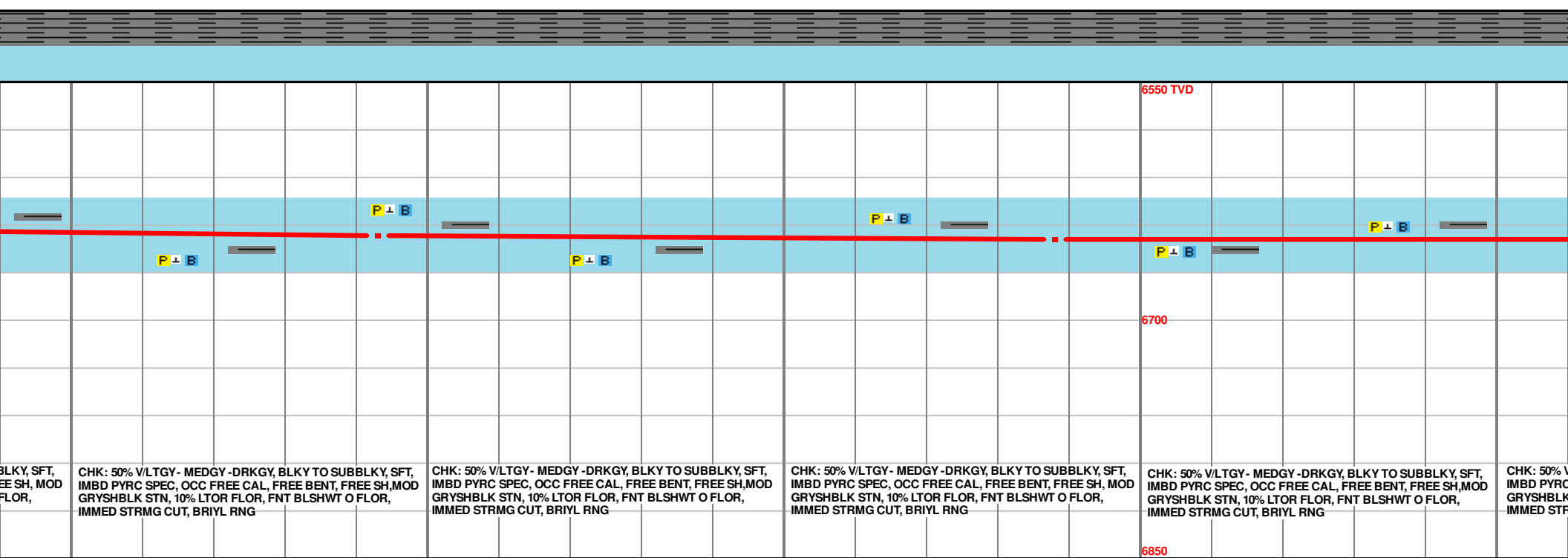
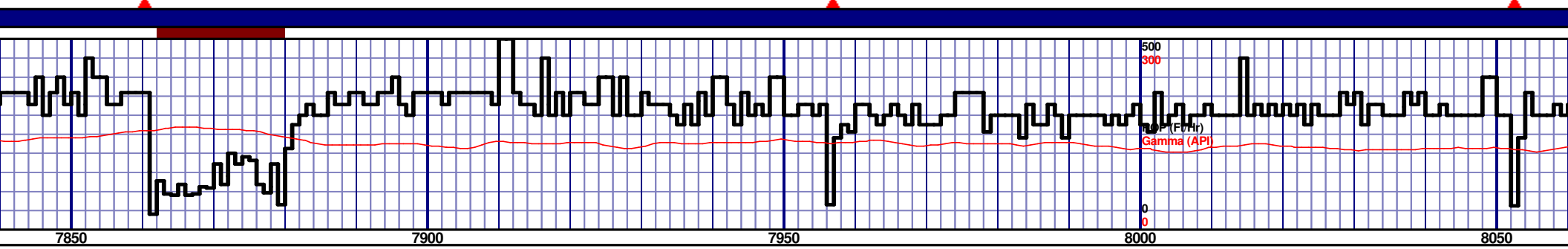
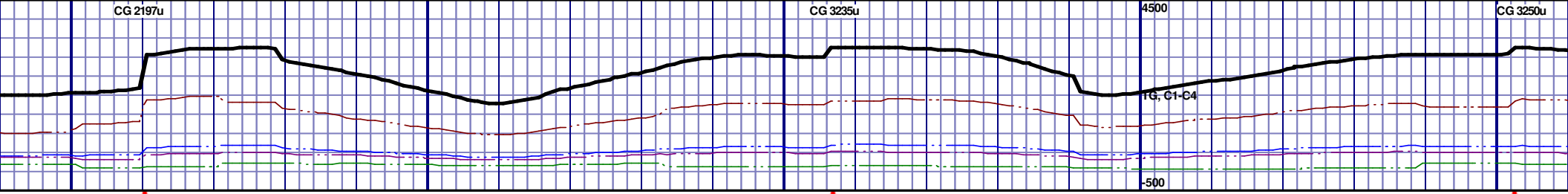
MD 7335 TVD 6649.82  
INC 88.33 AZ 269.07  
VS 1207.22







NIOBRARA B CHALK										6550 TVD									
7650' MD 6643' TVD																			

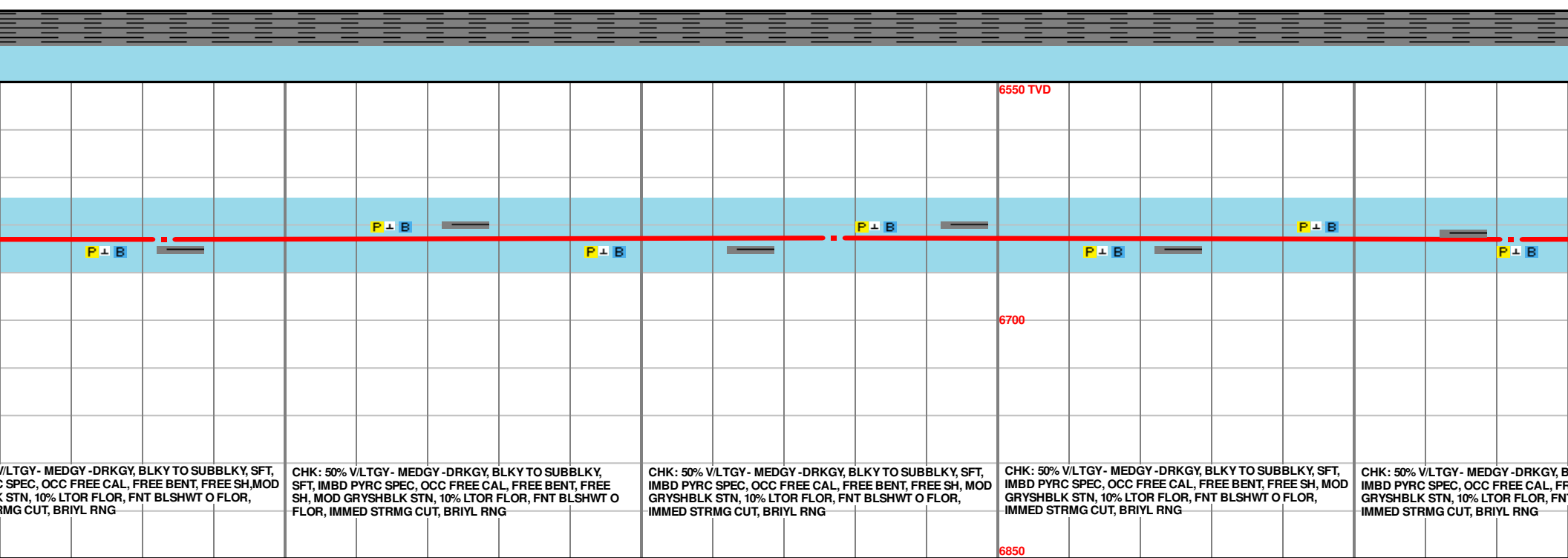
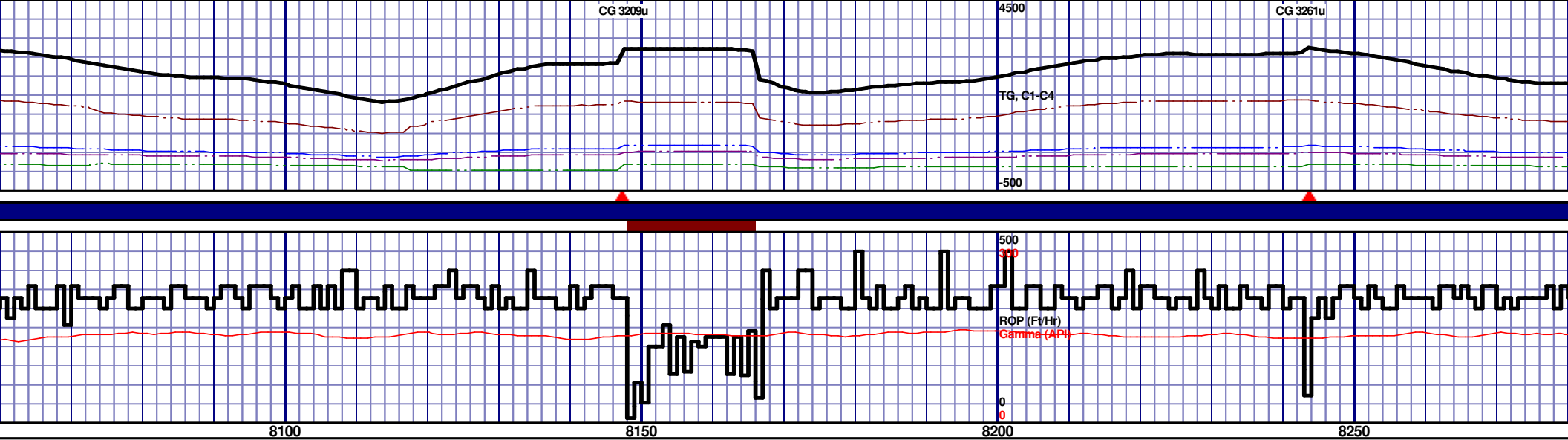


CHK: 50% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE BENT, FREE SH,MOD GRYSBLK STN, 10% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG

MD 7893 TVD 6646.81  
INC 88.28 AZ 271.15  
VS 1759.73

MD 7988 TVD 6648.85  
INC 89.26 AZ 270.69  
VS 1853.85

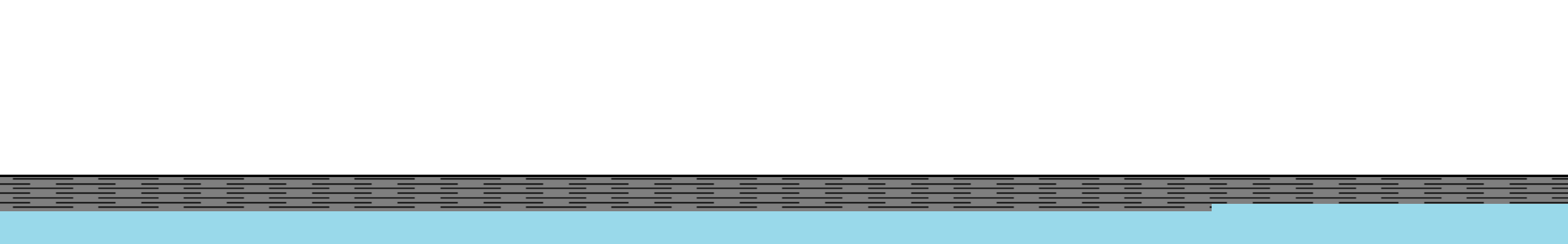
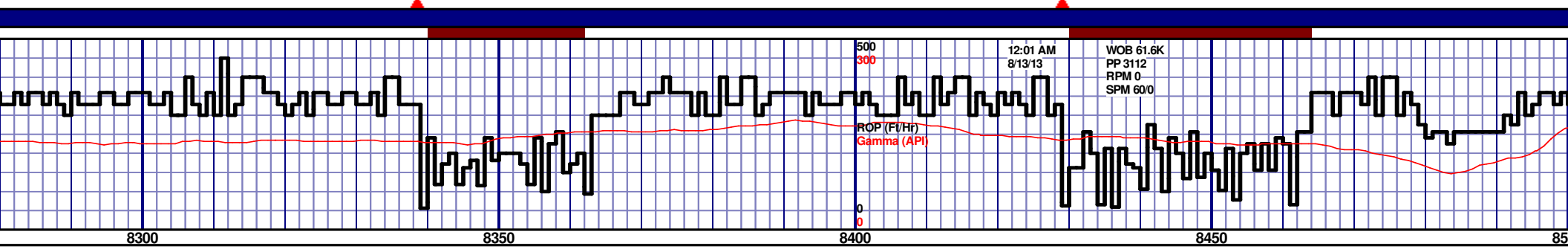
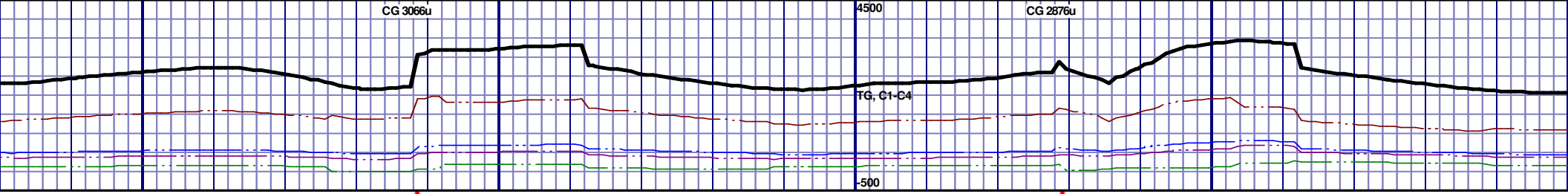




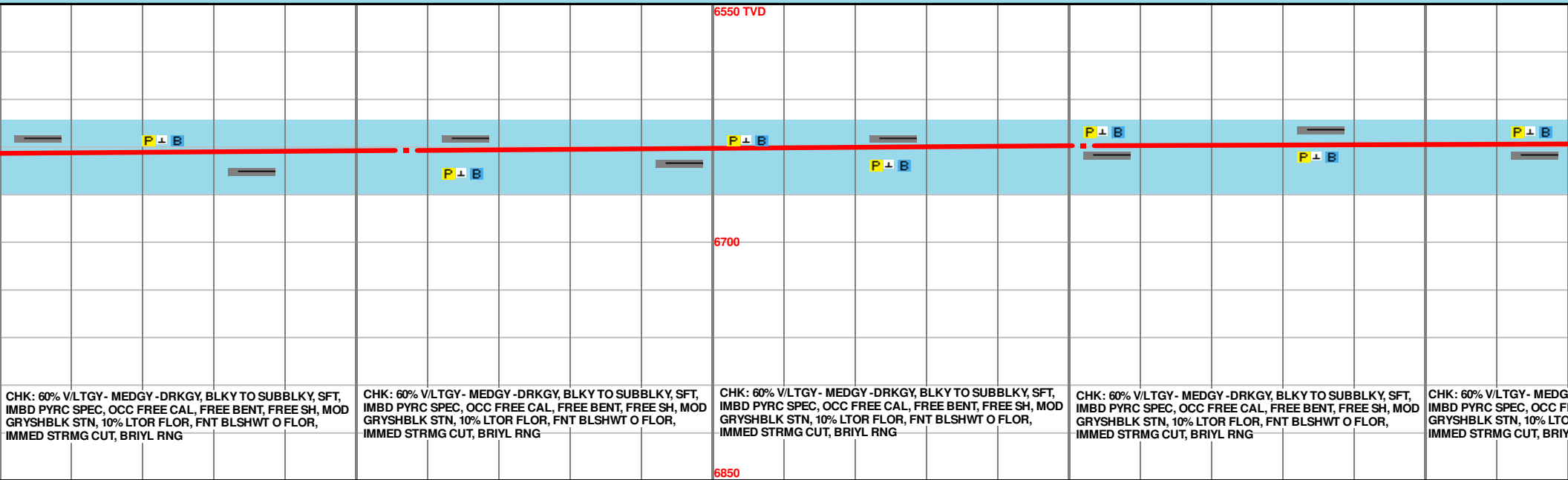
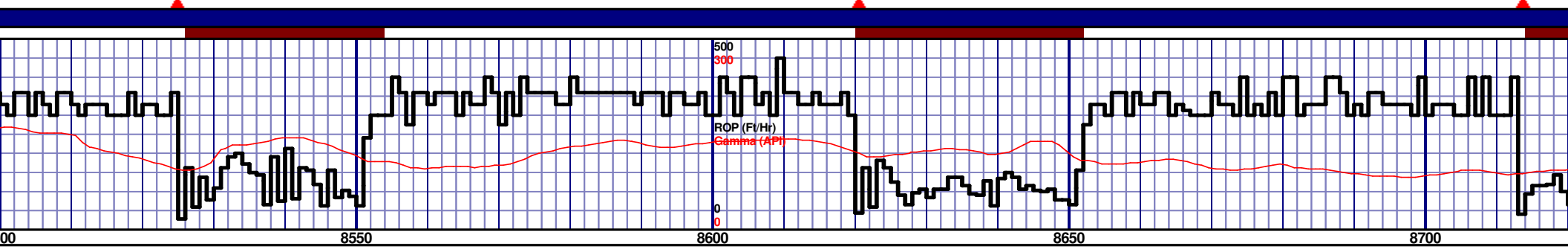
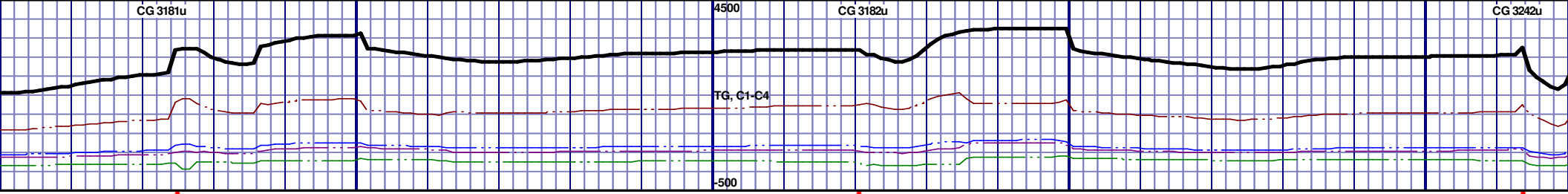
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INC 90.89 AZ 269.54  
VS 1947.81

MD 8177 TVD 6648.27  
INC 89.66 AZ 268.73  
VS 2040.52

MD 8272 TVD 6648.27  
INC 89.85 AZ 268.73  
VS 2133.4



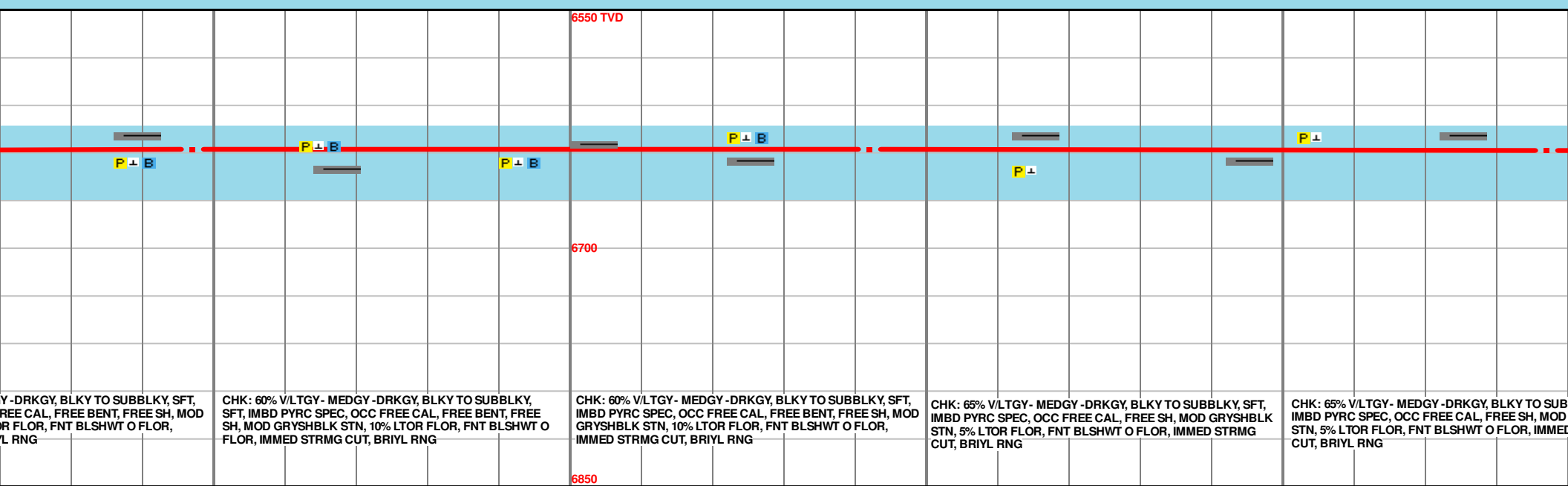
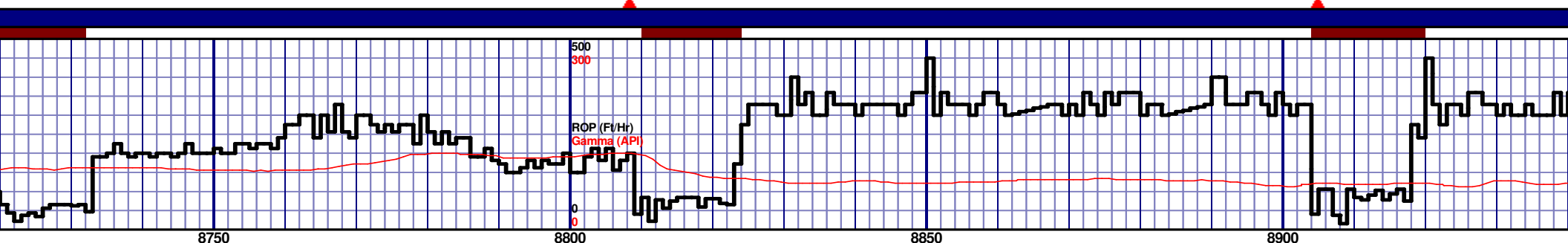
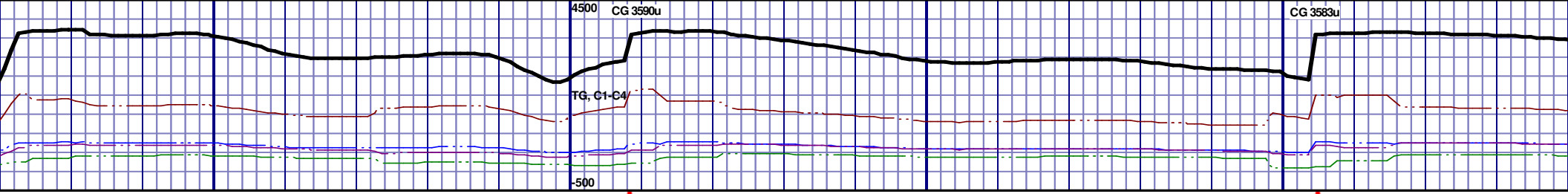
CHK: 50% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE BENT, FREE SH, MOD GRYSBLK STN, 10% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG					CHK: 50% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE BENT, FREE SH, MOD GRYSBLK STN, 10% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG					CHK: 50% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE BENT, FREE SH, MOD GRYSBLK STN, 10% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG					CHK: 60% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE BENT, FREE SH, MOD GRYSBLK STN, 10% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG				
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CHK: 60% VLTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE BENT, FREE SH, MOD GRYSBLK STN, 10% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG

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INC 92.1 AZ 268.22  
VS 2411.01

MD 8652 TVD 6639.16  
INC 91.2 AZ 270.37  
VS 2504.71



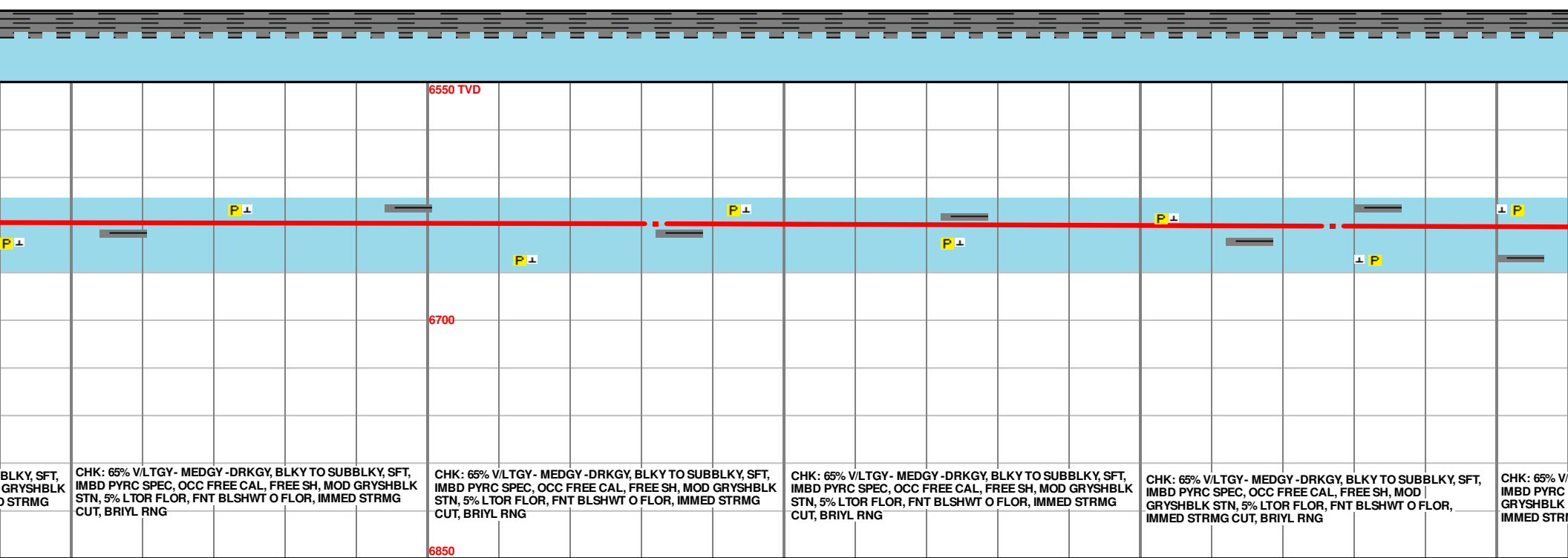
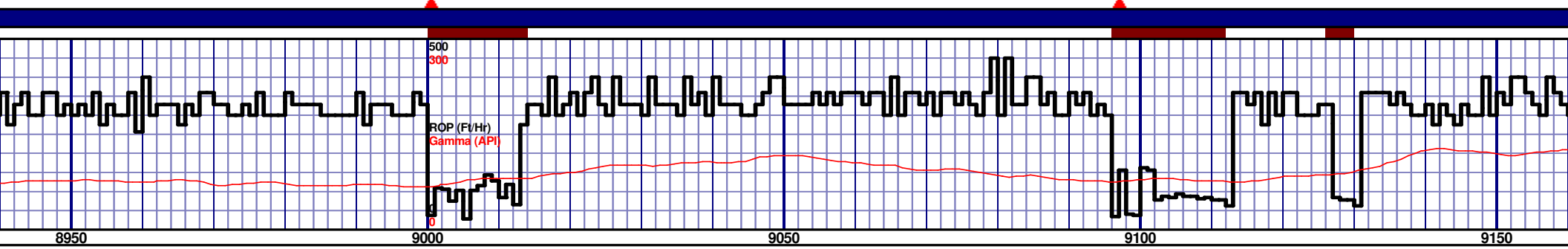
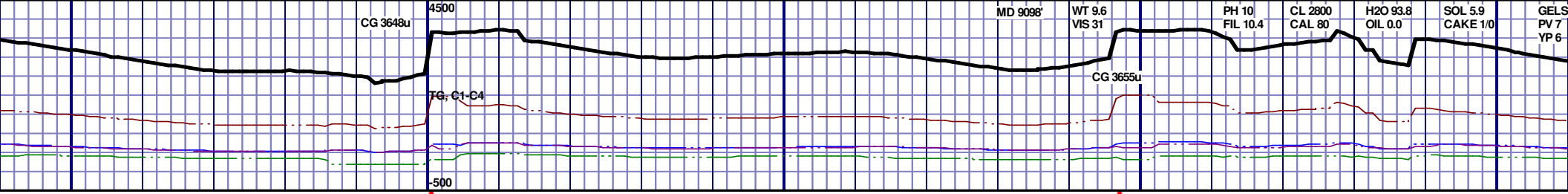
Y-DRKGY, BLKY TO SUBBLKY, SFT, FREE CAL, FREE BENT, FREE SH, MOD OR FLOR, FNT BLSHWT O FLOR, L RNG

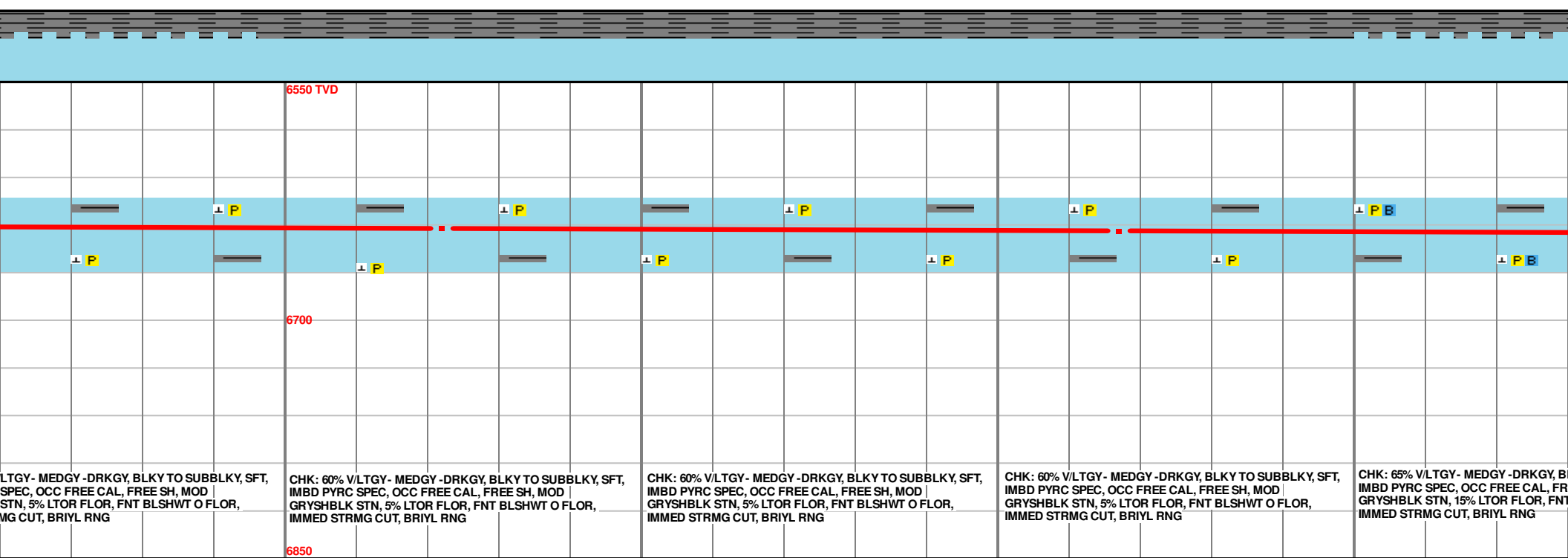
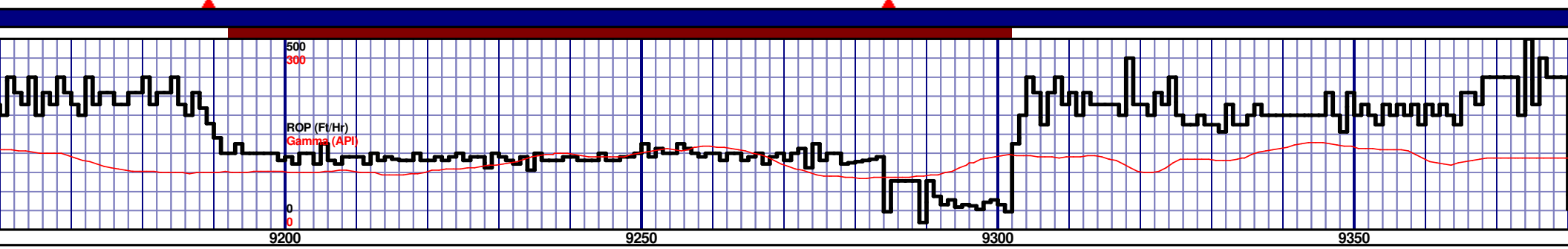
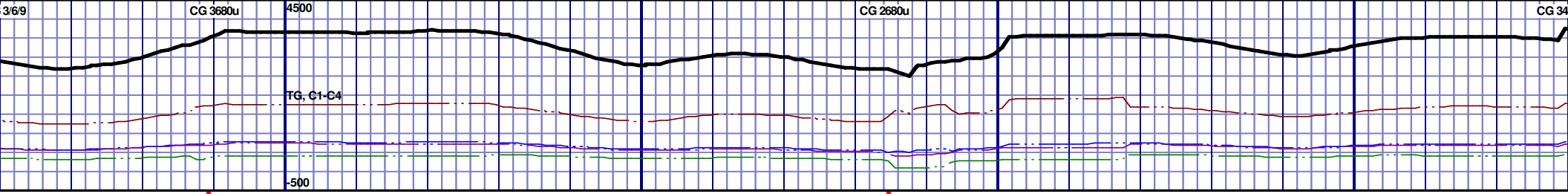
CHK: 60% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE BENT, FREE SH, MOD GRYSHBLK STN, 10% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG

CHK: 60% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE BENT, FREE SH, MOD GRYSHBLK STN, 10% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG

CHK: 65% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE SH, MOD GRYSHBLK STN, 5% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG

CHK: 65% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE SH, MOD GRYSHBLK STN, 5% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG





LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE SH, MOD GRYSBLK STN, 5% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG

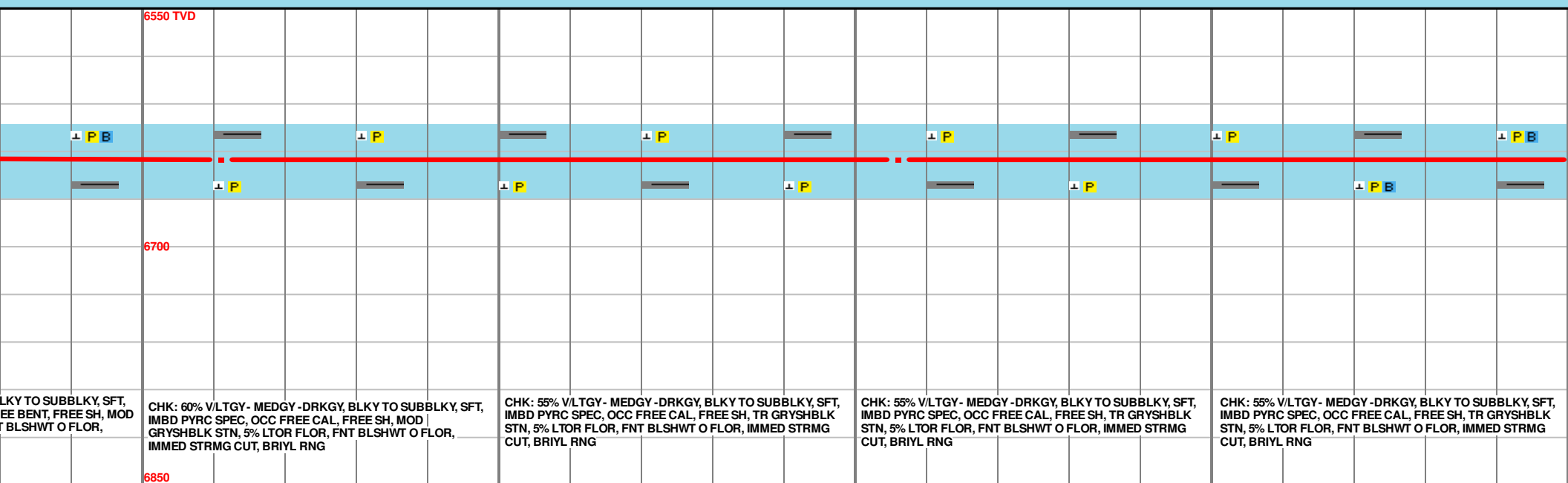
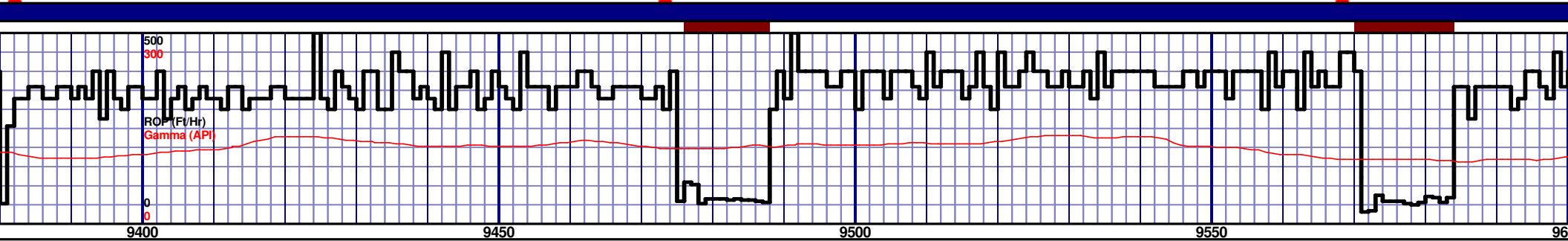
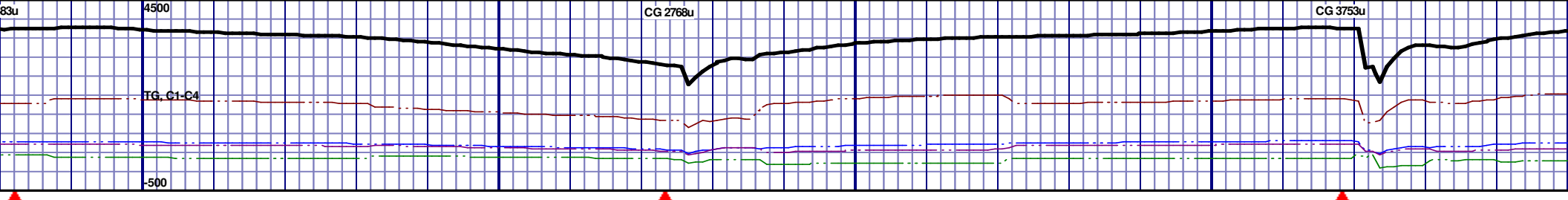
CHK: 60% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE SH, MOD GRYSBLK STN, 5% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG

CHK: 60% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE SH, MOD GRYSBLK STN, 5% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG

CHK: 60% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE SH, MOD GRYSBLK STN, 5% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG

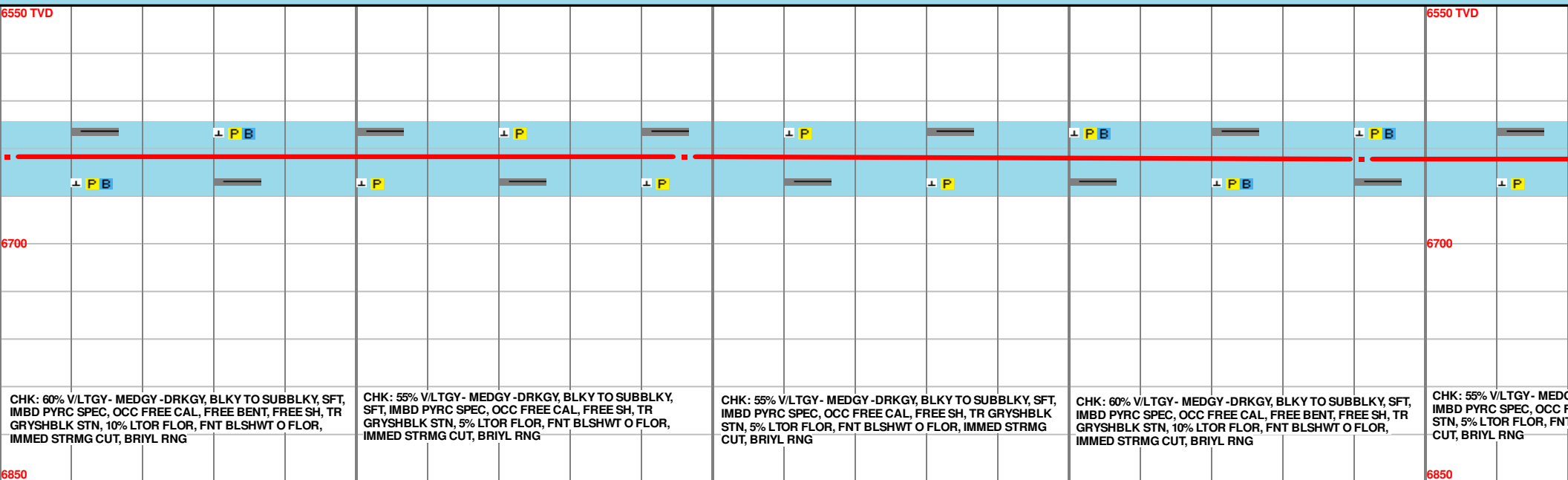
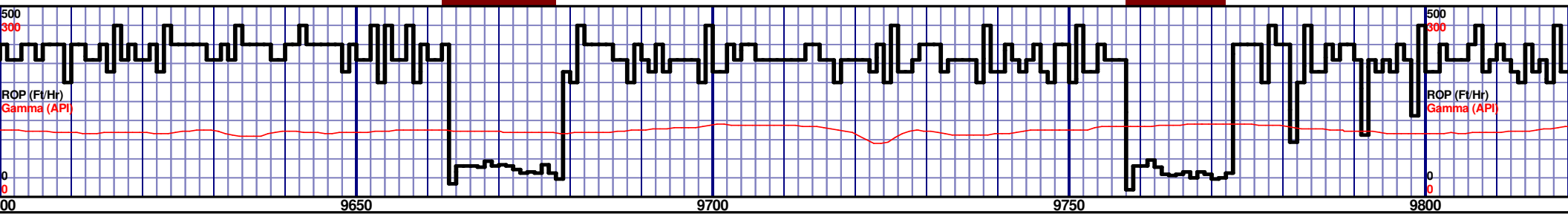
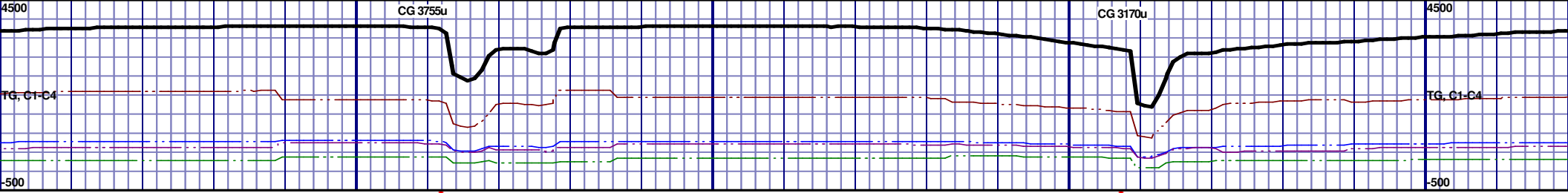
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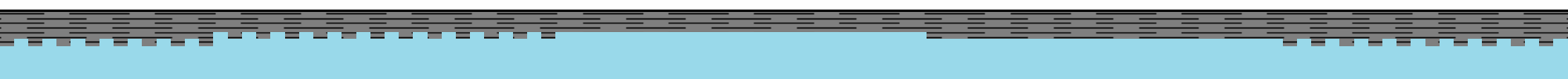
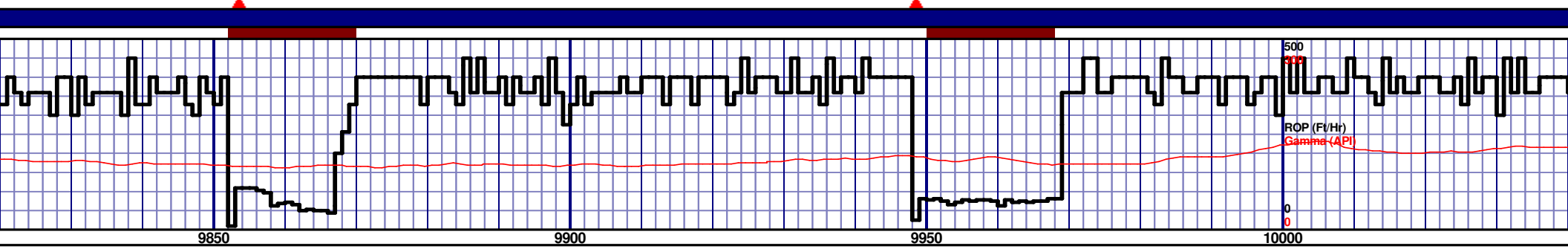
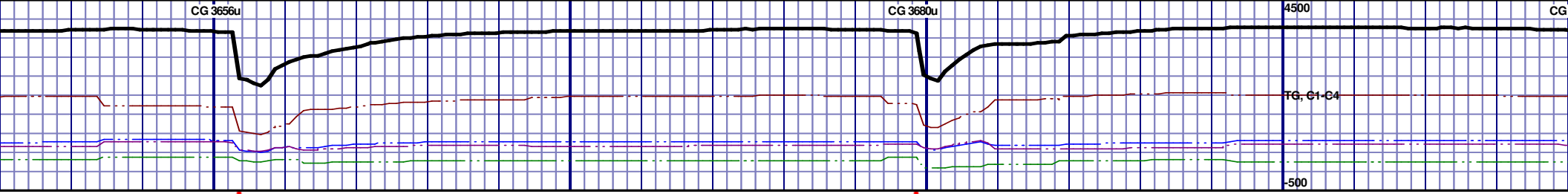




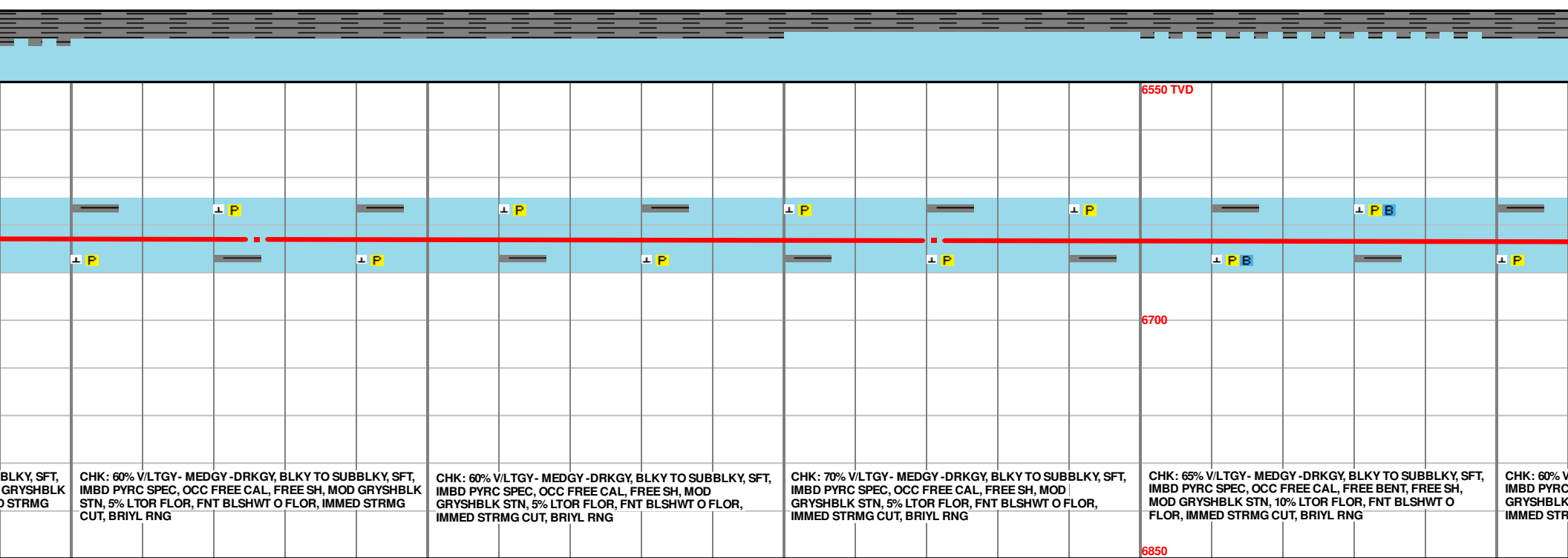
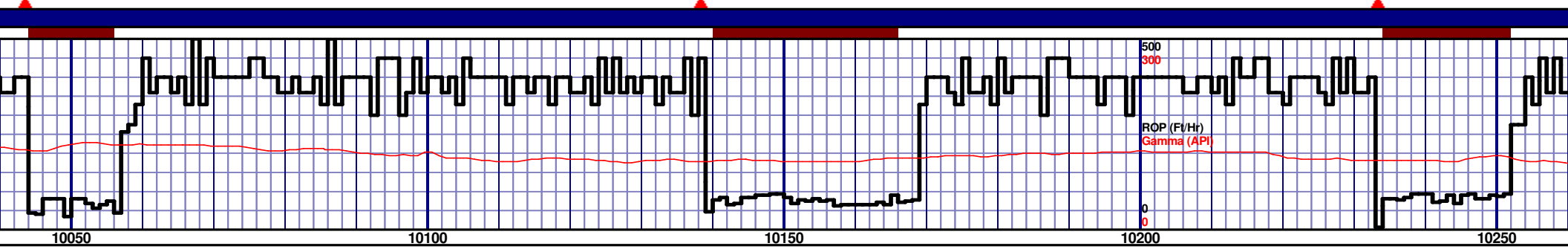
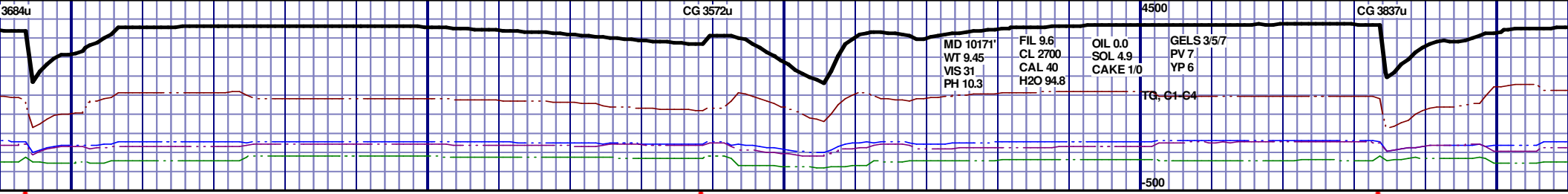
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INC 89.23 AZ 269.94  
VS 3256.87

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INC 90.77 AZ 271.87  
VS 3351.01



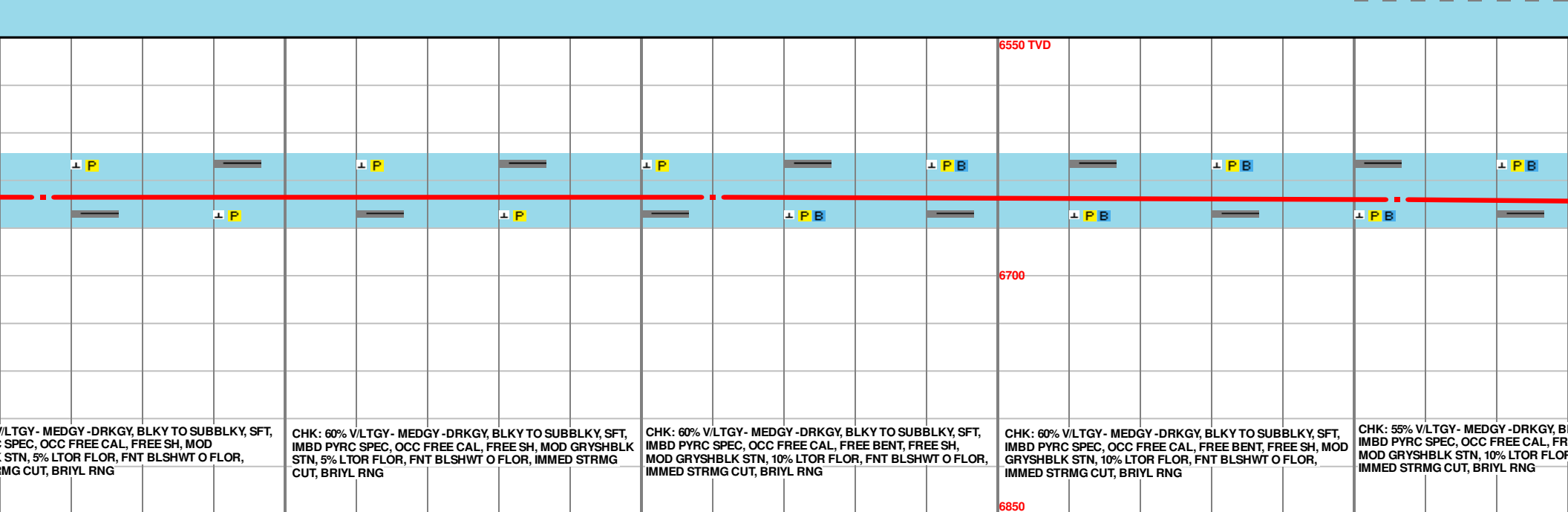
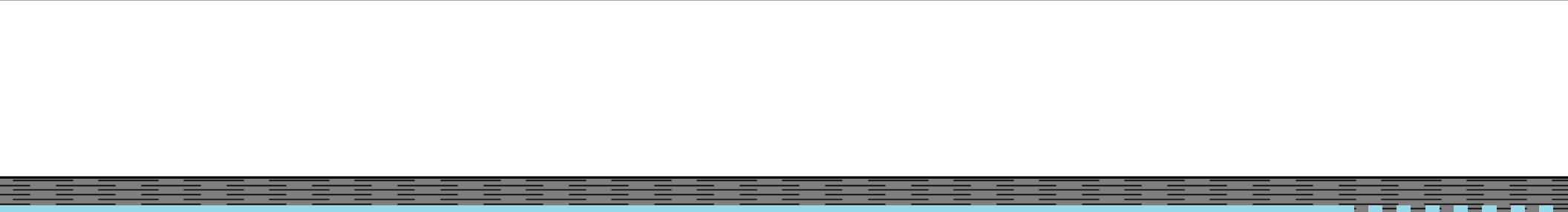
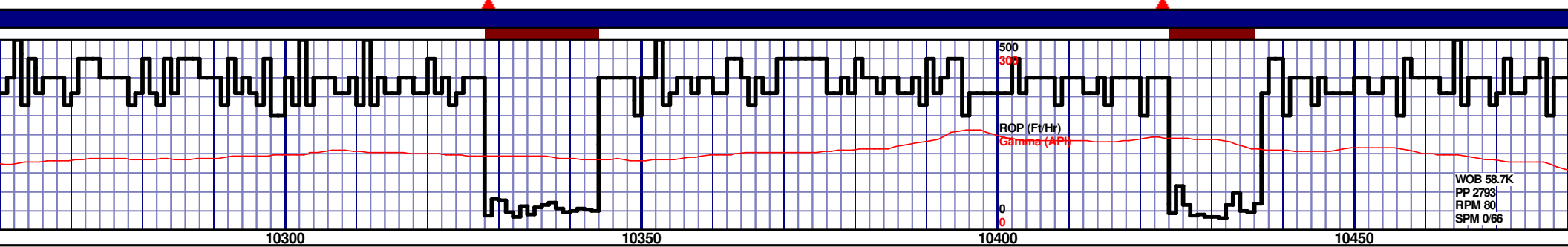
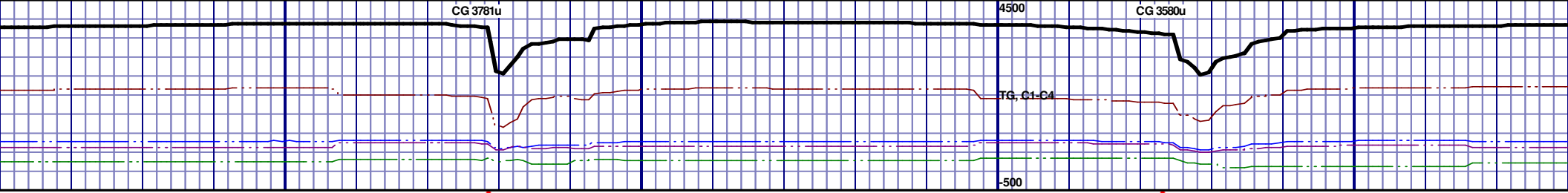


																								6550 TVD																							



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INC 89.6 AZ 270.99  
VS 3915.53

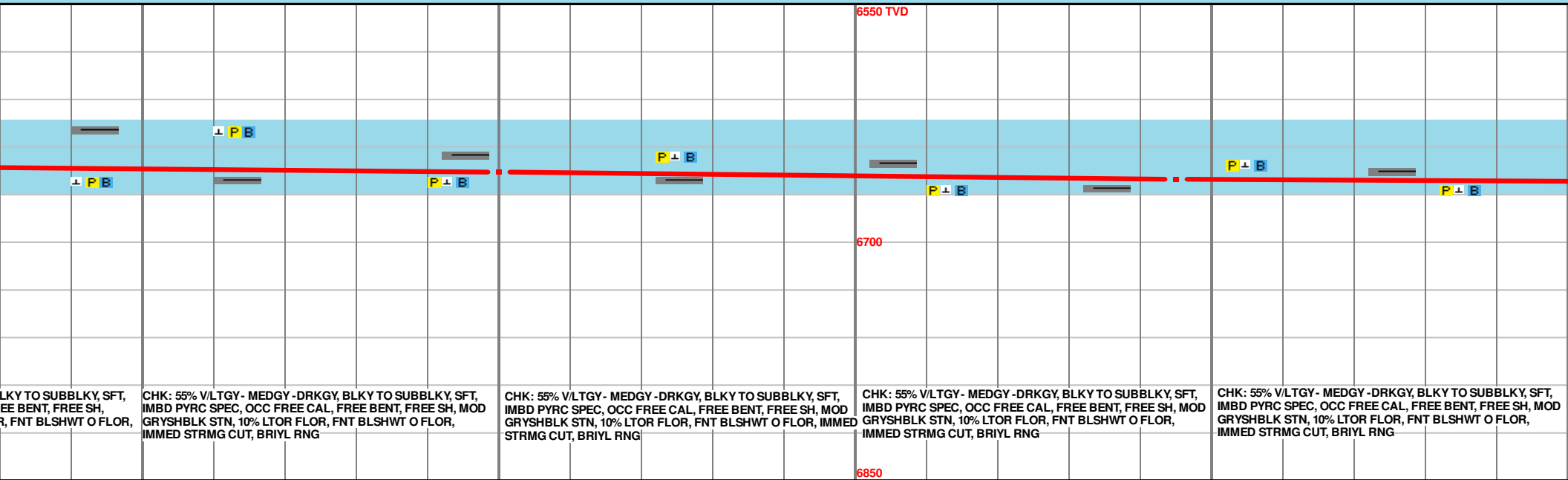
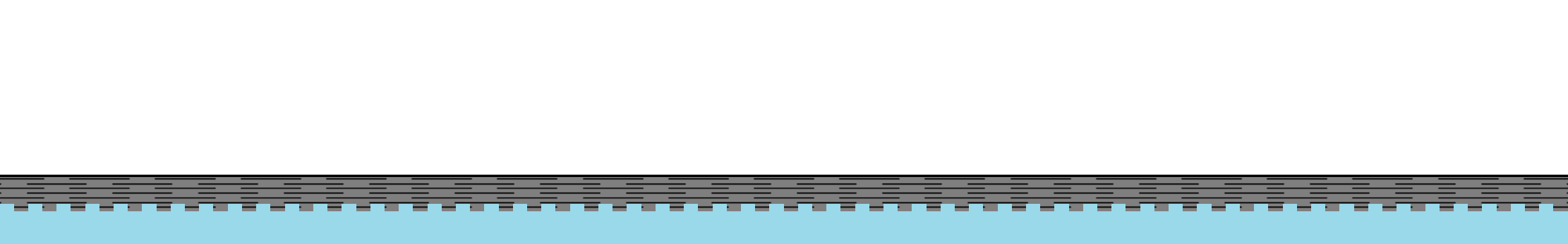
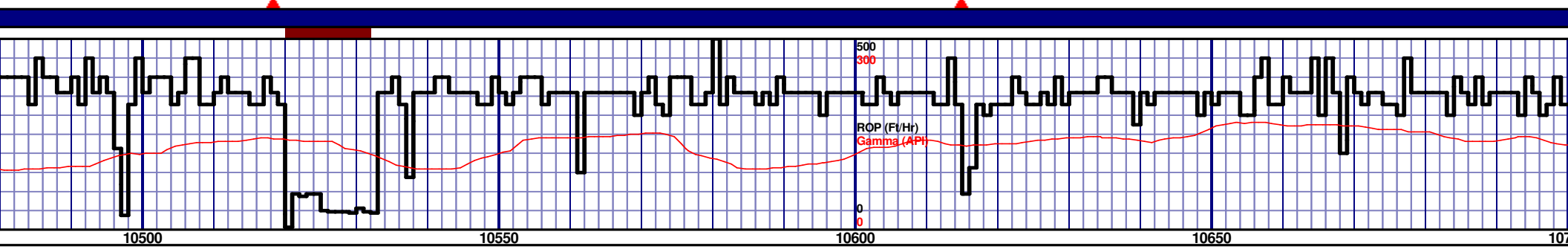
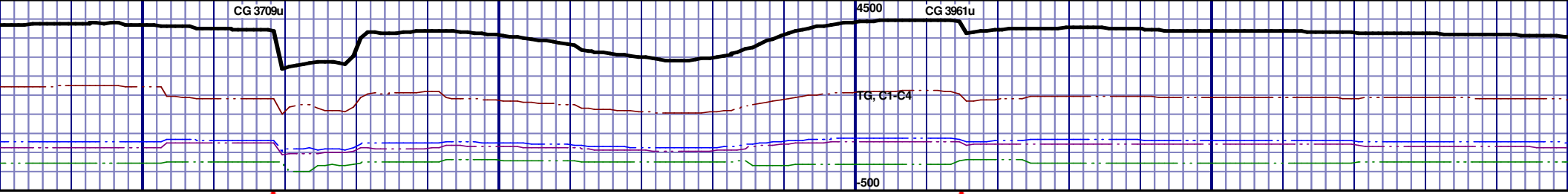
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INC 89.44 AZ 268.27  
VS 4009.36



MD 10266 TVD 6650.19  
INC 90.28 AZ 268.86  
VS 4102.9

MD 10360 TVD 6650.39  
INC 89.48 AZ 268.86  
VS 4195.54

MD 10456 TVD 6652.09  
INC 88.49 AZ 269.01  
VS 4290.16

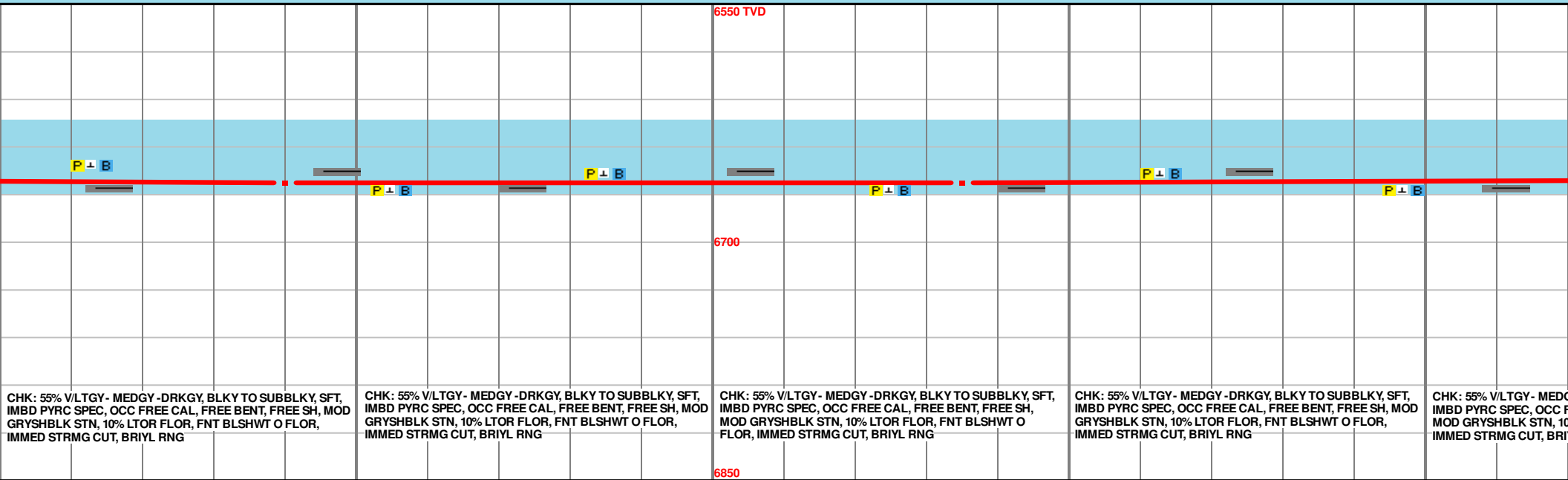
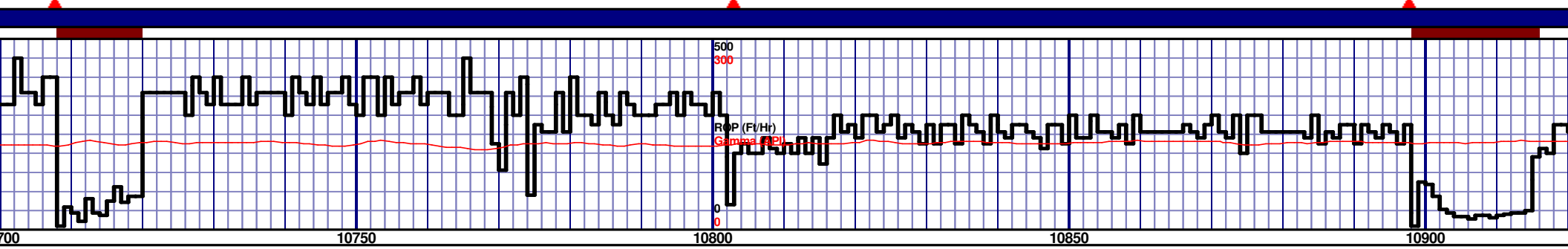
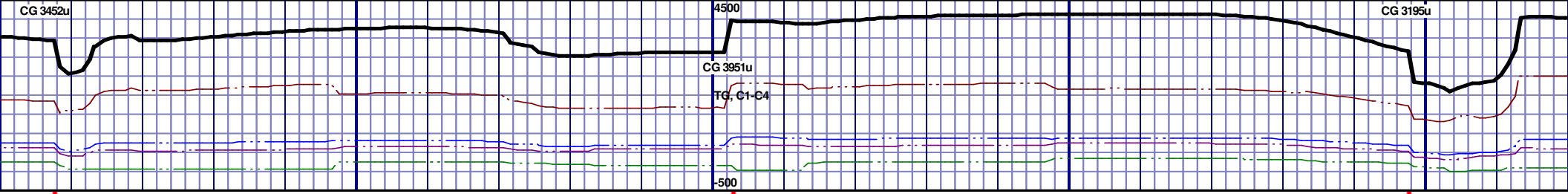


CHK: 55% V/LTGY - MEDGY - DRKGY, BLKY TO SUBBLKY, SFT, IMBD PYRC SPEC, OCC FREE CAL, FREE BENT, FREE SH, MOD GRYSBLK STN, 10% LTOR FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, BRIYL RNG

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VS 4382.83

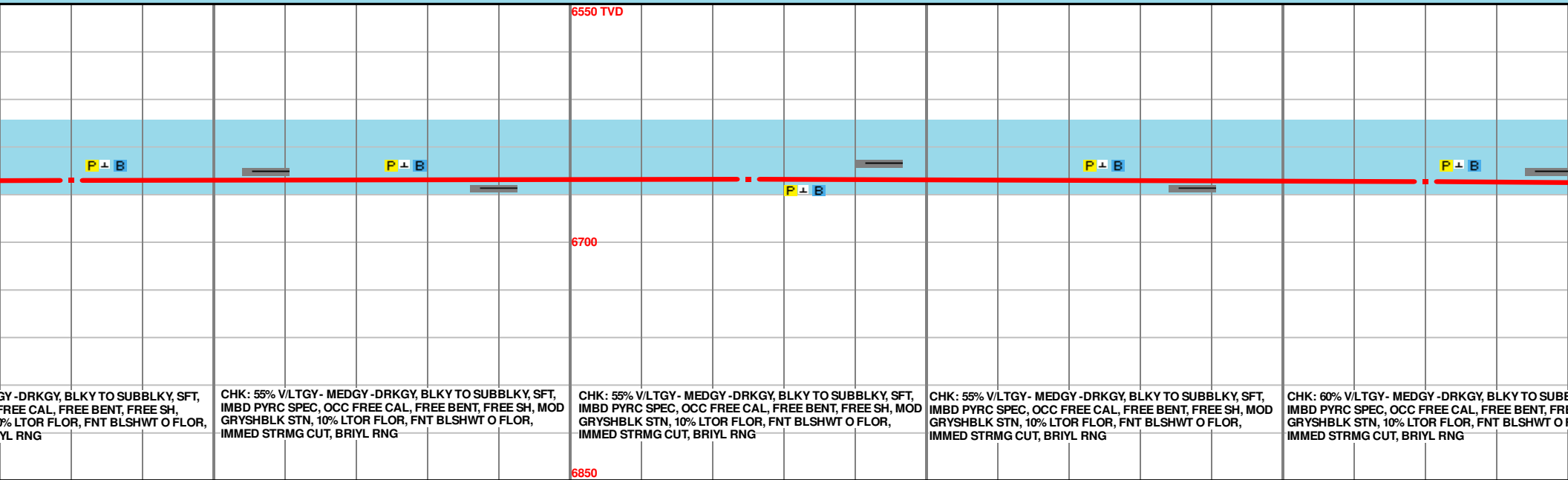
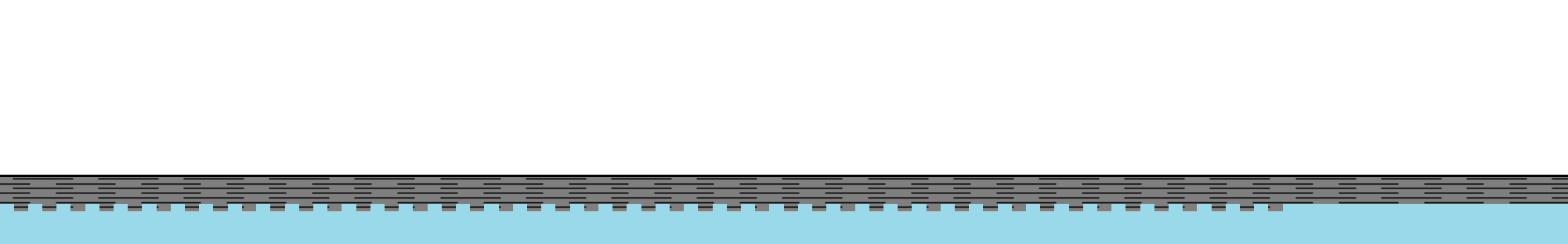
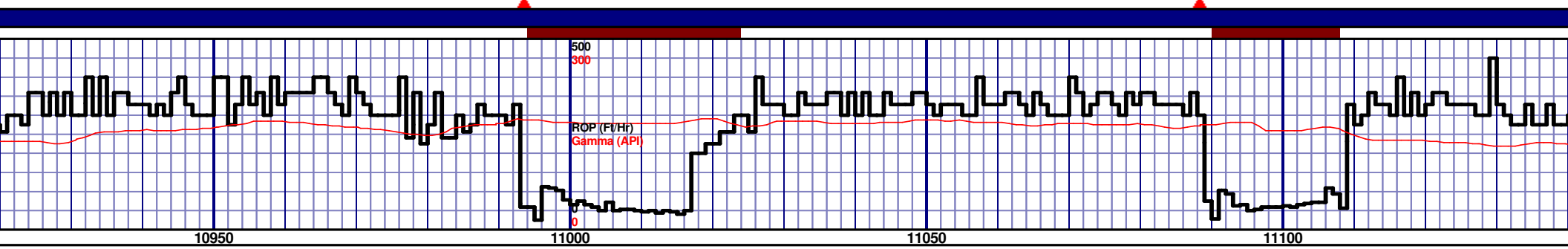
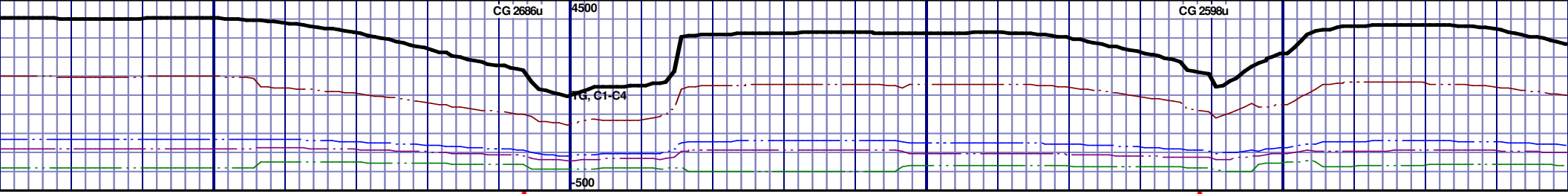
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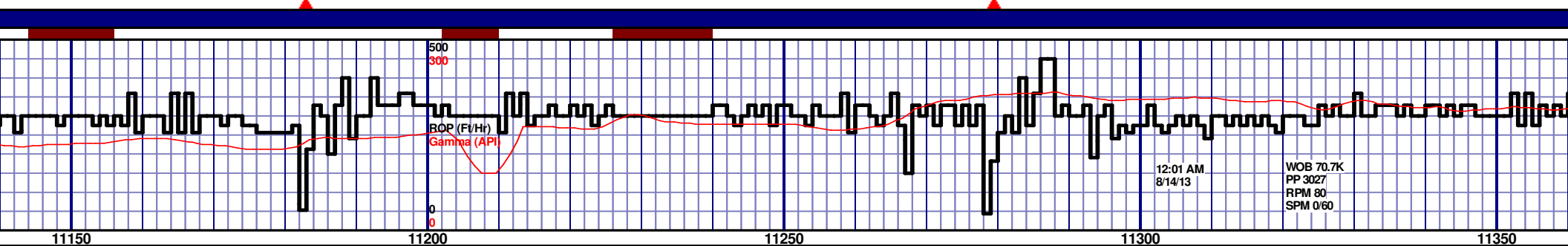




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VS 4569.84

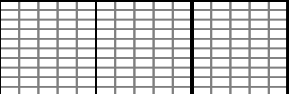
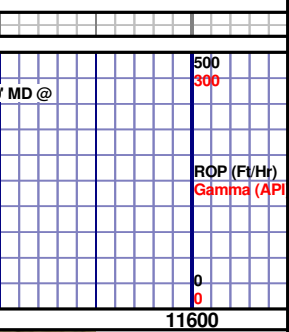
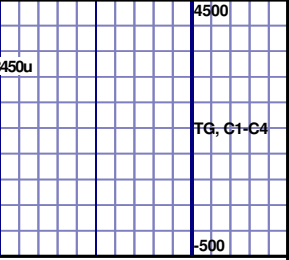
MD 10835 TVD 6662.67  
INC 90.99 AZ 267.88  
VS 4663.13



[illegible]

MD 11310 TVD 6666.1  
INC 89.32 AZ 270.36  
VS 5133.04





6550 TVD

TD @ 11560' MD

SED ON 8/14/2013

ANK YOU FROM  
EY SENSECQUA, 0  
REDO SANCHEZ  
HORIZON WELL  
GING, LLC

