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[WWW.HZMUD.COM/25](http://WWW.HZMUD.COM/25)

### Customer Information

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

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

### Mud Logging Details

**Logger:** Andrew Christiano  
& Sam Stelzer  
**Log Interval:** 6600' MD to 16306' MD  
**Start Date:** June 14, 2014  
**Release Date:** June 20, 2014

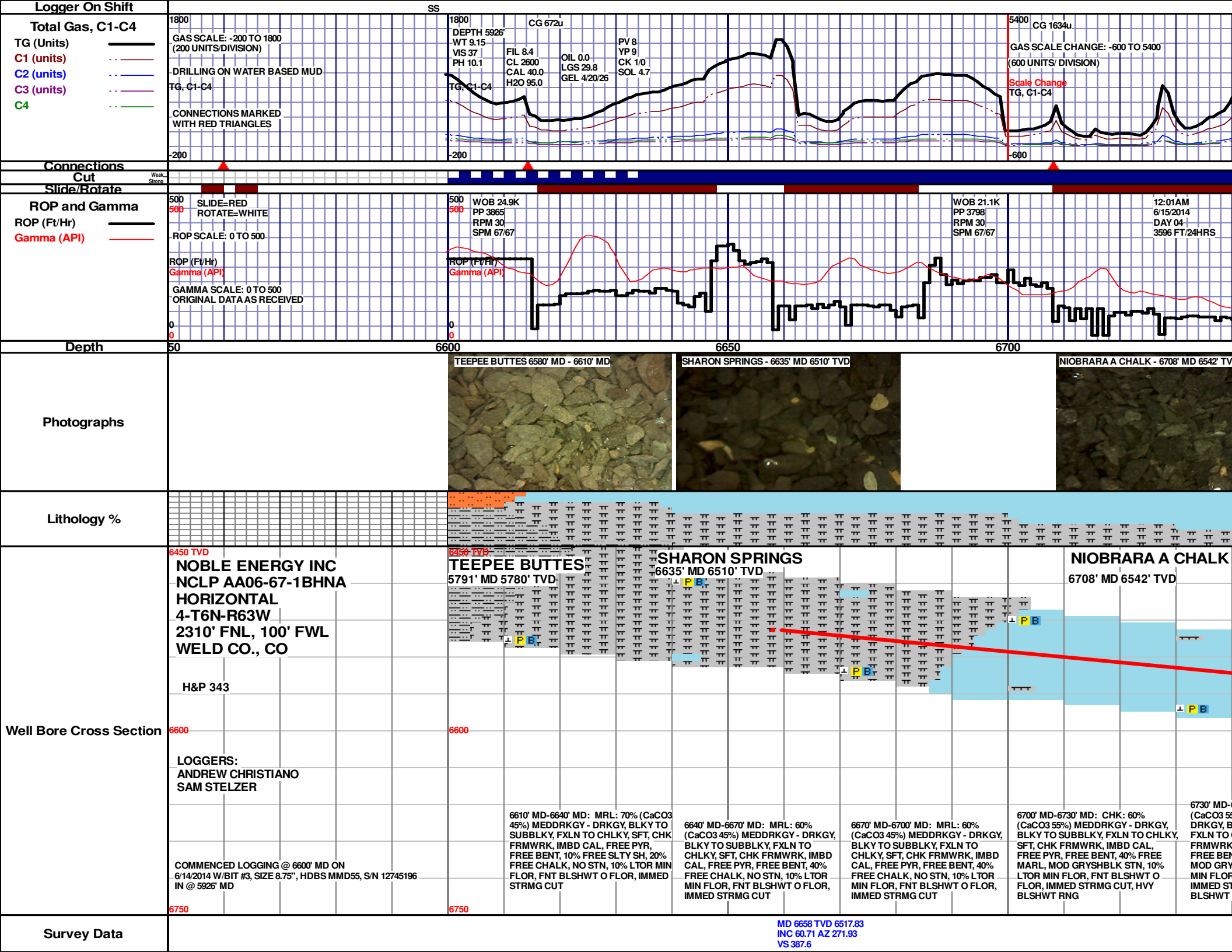
### Well Information

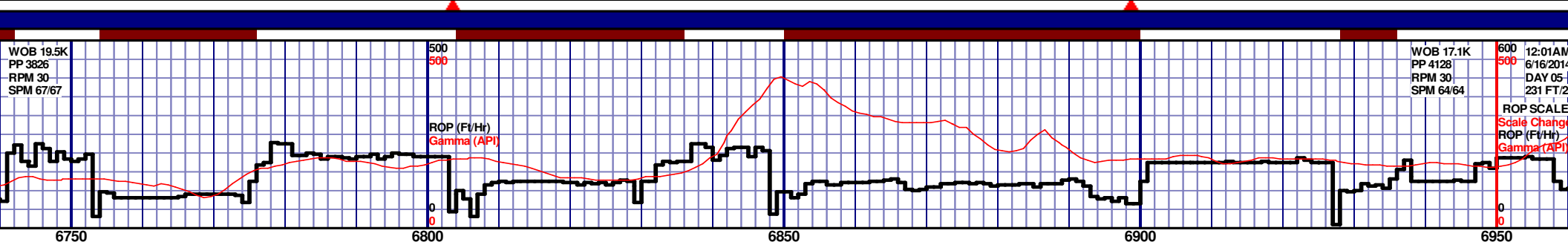
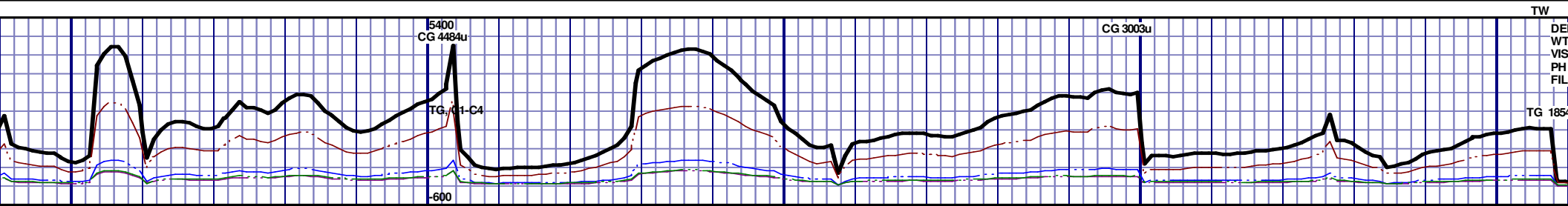
**Well Name:** NCLP AA06-66-1BHNA  
Horizontal

**Location:** 4-T6N-R63W  
2310' FNL, 100' FWL

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

**Drilling Rig:** H&P 343  
**Total Depth:** 16306' MD  
**TD Date:** June 20, 2014  
**Formation:** Niobrara A Marl  
**KB Elevation:** 4734'  
**GR Elevation:** 4710'  
**API Number:** 05-123-39070-0000



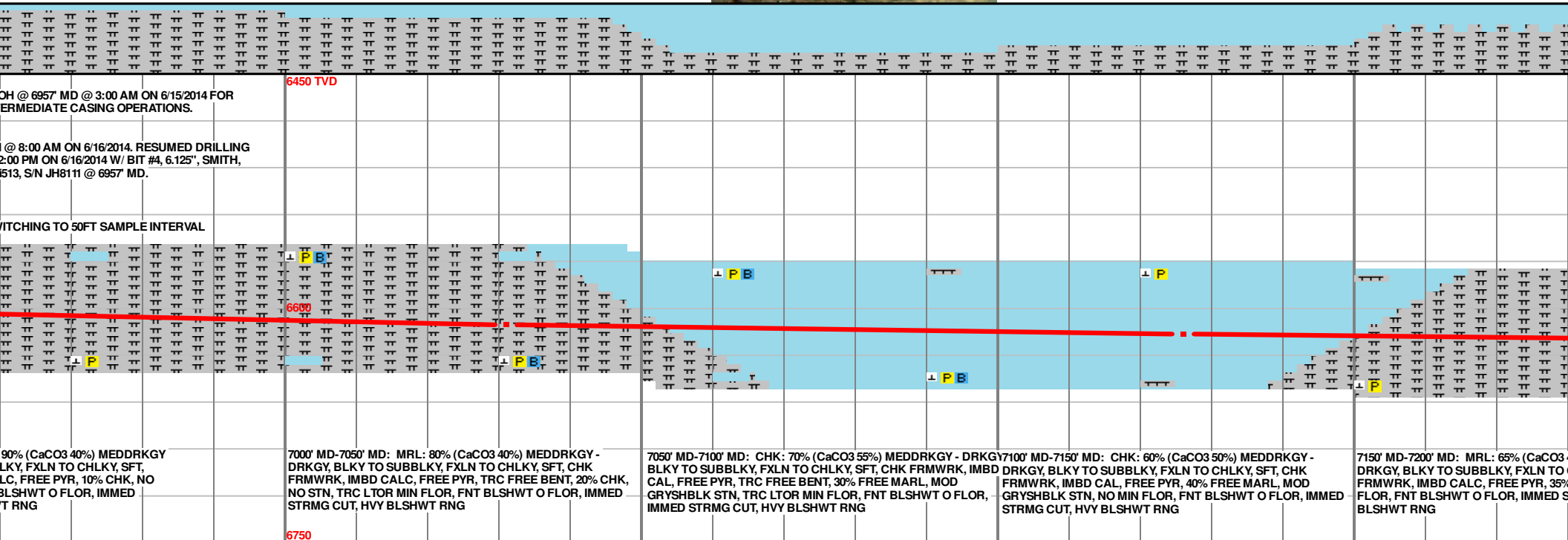
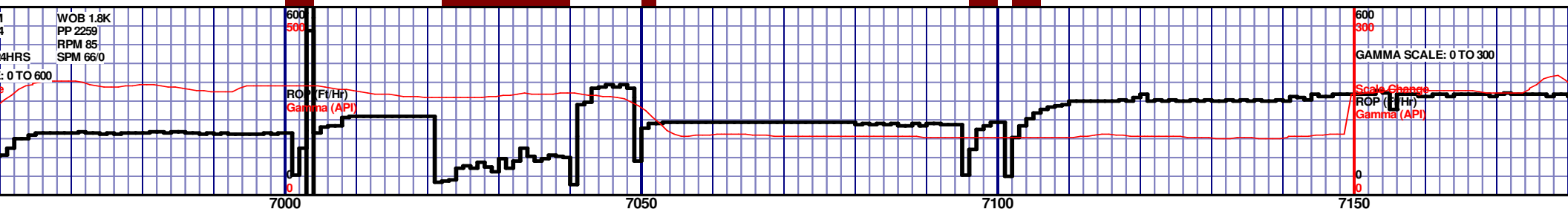


6750' MD: CHK: 70% (CaCO3 55%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, FREE BENT, 30% FREE MARL, MOD GRYSBLK STN, 10% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
6760' MD-6790' MD: CHK: 70% (CaCO3 55%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, FREE BENT, 30% FREE MARL, MOD GRYSBLK STN, 10% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
6790' MD-6820' MD: CHK: 55% (CaCO3 55%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, FREE BENT, 45% FREE MARL, MOD GRYSBLK STN, 10% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
6820' MD-6850' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, ABDT FREE BENT, 20% CHK, NO STN, 20% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
6850' MD-6880' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, FREE BENT, 30% CHK, NO STN, 10% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
6880' MD-6910' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, FREE BENT, 30% CHK, NO STN, 10% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
6910' MD-6940' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, ABDT FREE BENT, 10% CHK, NO STN, 20% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
6940' MD-7000' MD: MRL: - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, FREE PYR, ABDT FREE BENT, 10% CHK, NO STN, 20% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									

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INC 68.62 AZ 272.08  
VS 473.16

MD 6848 TVD 6587.87  
INC 75.27 AZ 271.27  
VS 563.22

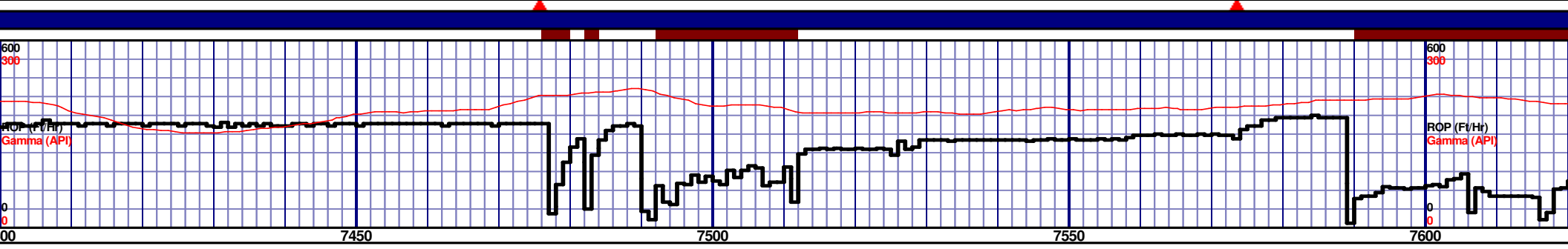
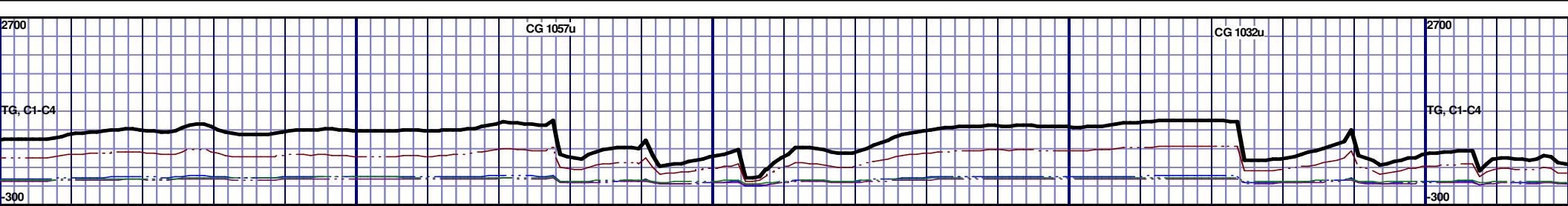
MD 6906 TVD 6598.68  
INC 83.23 AZ 271.01  
VS 620.06





45%) MEDDRKGY - CHLKY, SFT, CHK % CHK, NO STN, NO MIN STRMG CUT, HVY	7200' MD-7250' MD: MRL: 60% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, 40% CHK, NO STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	7250' MD-7300' MD: MRL: 90% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, 10% CHK, NO STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	7300' MD-7350' MD: MRL: 90% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, 10% CHK, NO STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	7350' MD-7400' MD: MRL: 80% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, 20% CHK, NO STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG
	6750			

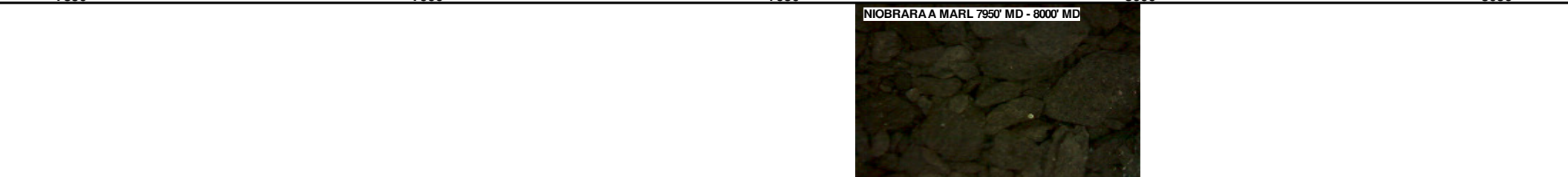
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INC 88 AZ 268.08  
VS 1028.82



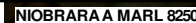
6450 TVD										6450 TVD									
7400' MD-7450' MD: MRL: 70% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, 30% CHK, NO STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG										7400' MD-7500' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
7500' MD-7550' MD: MRL: 80% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, 20% CHK, NO STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG										7550' MD-7600' MD: MRL: 90% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, 10% CHK, NO STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
7600' MD-7650' MD: MRL: 90% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, 10% CHK, NO STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG										7600' MD-7650' MD: MRL: 90% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, 10% CHK, NO STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									



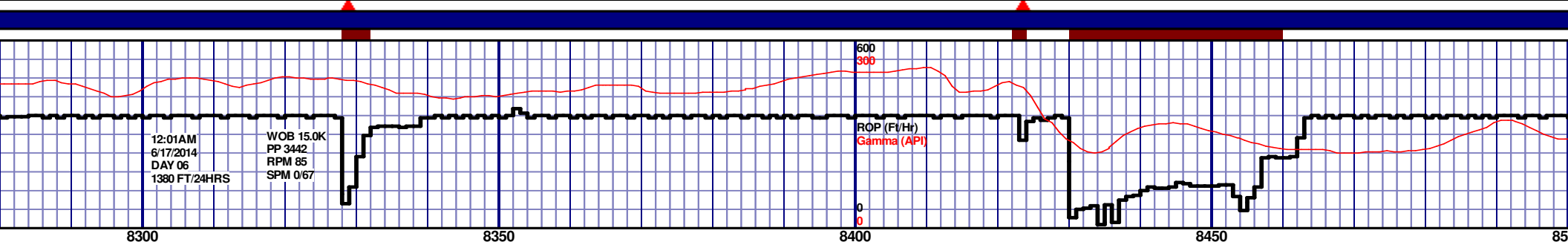
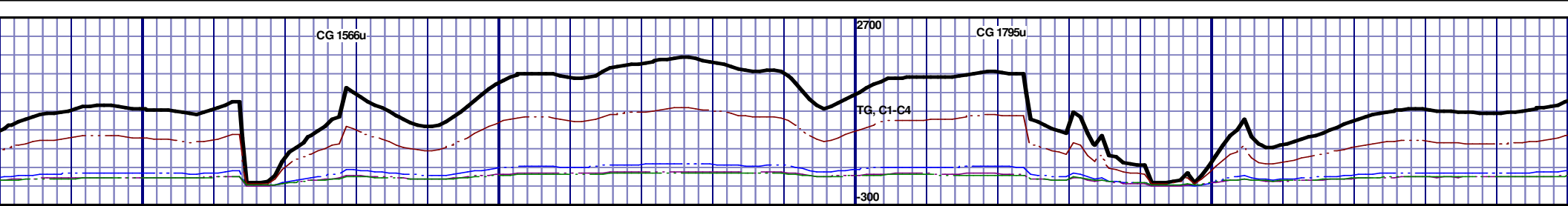








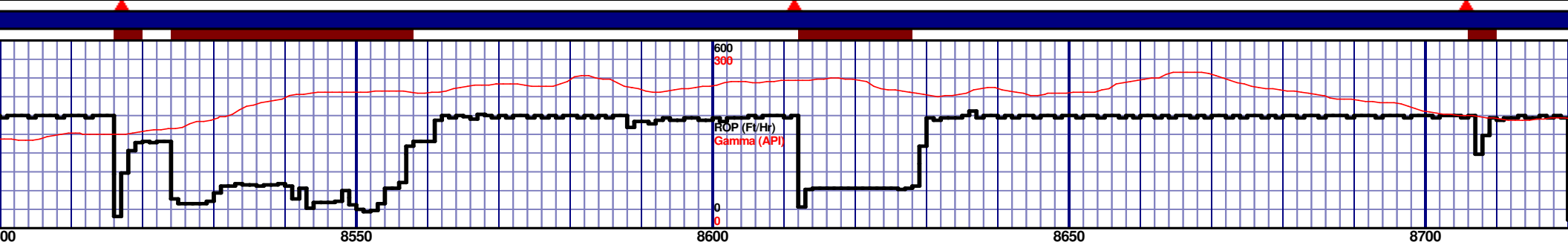
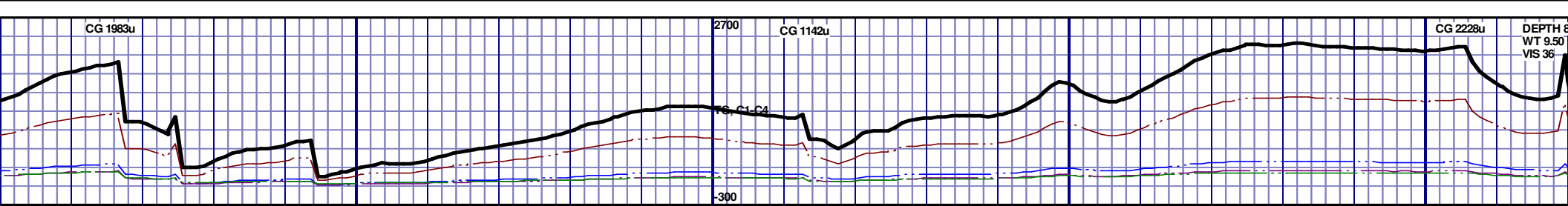
8250' MD-8300' MD: MRL: 90% (CaCO3  
DRKG, BLKY TO SUBBLKY, FXLN TO  
FRMWRK, IMBD CALC, FREE PYR, 10%  
L TOR MIN FLOR, FNT BLSHWT O FLO  
HVY BLSHWT RNG



8300' MD - 8300' MD	8300' MD - 8350' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	8350' MD - 8400' MD: MRL: 90% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	8400' MD - 8450' MD: MRL: 80% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	8450' MD - 8500' MD: MRL: 80% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG
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INC 92.19 AZ 267.95  
VS 2070.8

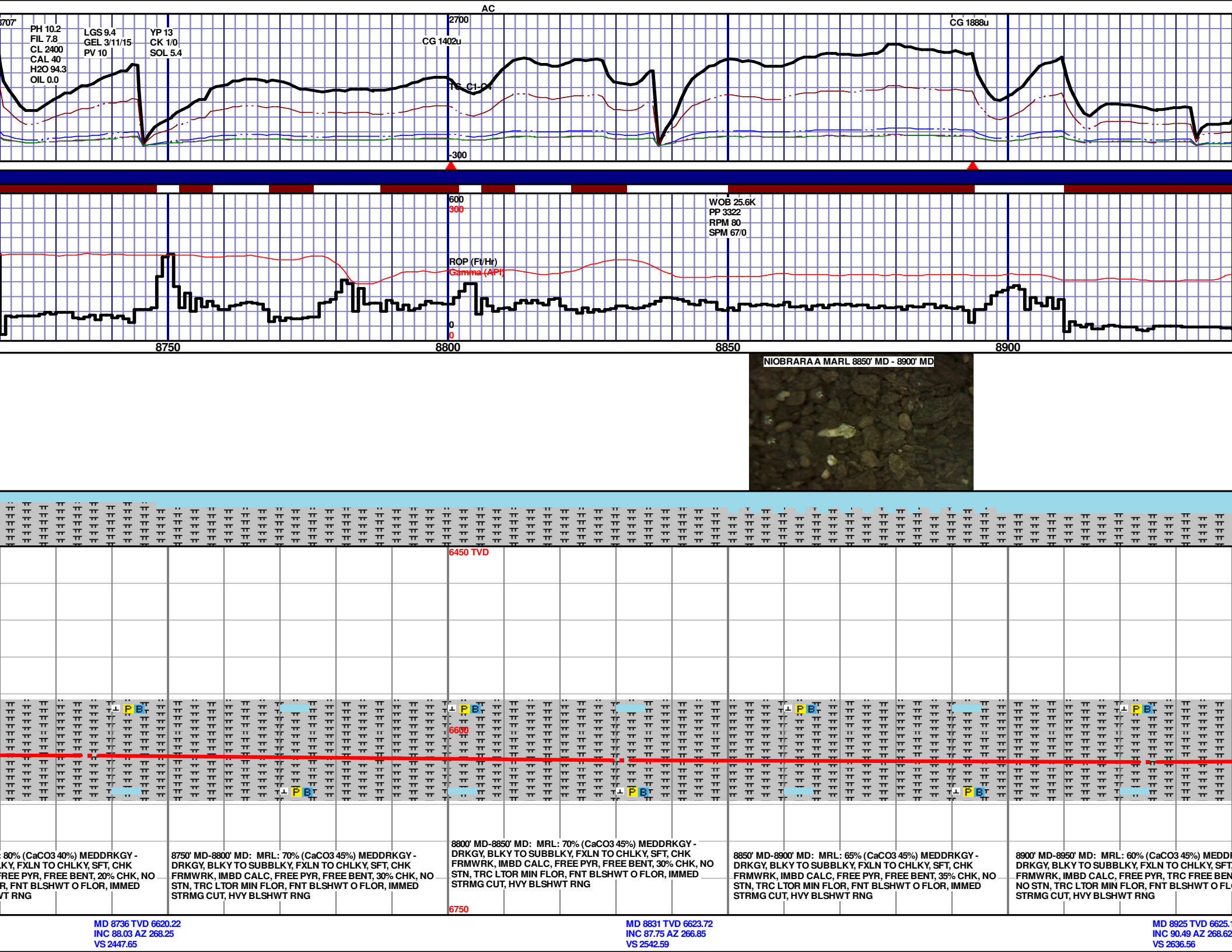
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VS 2164.76

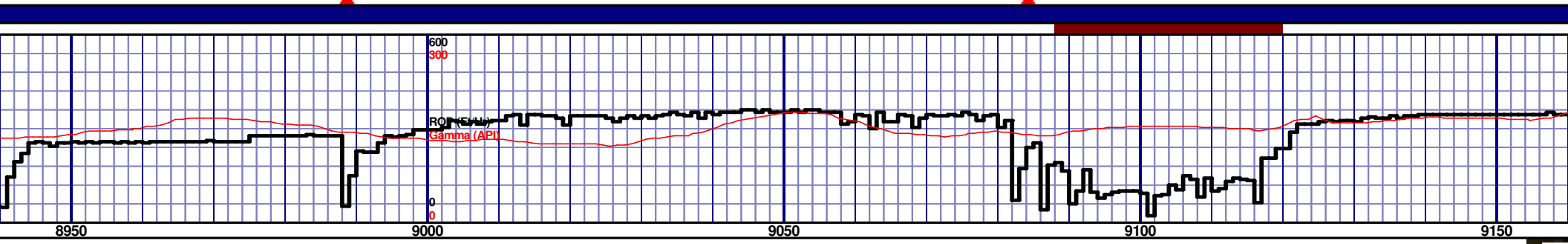
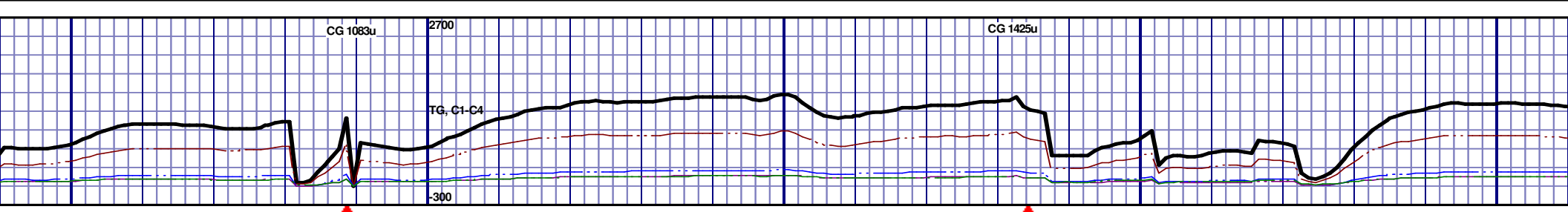


6450 TVD									
6600									
6750									
8500' MD-8550' MD: MRL: 95% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, FREE BENT, 5% CHK, NO STN, TRC L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
8550' MD-8600' MD: MRL: 95% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, FREE BENT, 5% CHK, NO STN, TRC L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
8600' MD-8650' MD: MRL: 95% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, FREE BENT, 5% CHK, NO STN, TRC L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
8650' MD-8700' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, FREE BENT, 10% CHK, NO STN, TRC L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
8700' MD-8750' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, FREE BENT, 10% CHK, NO STN, TRC L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									

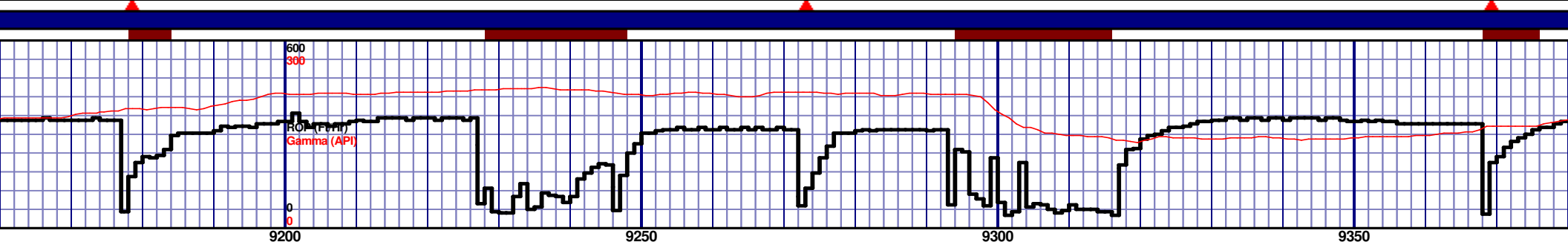
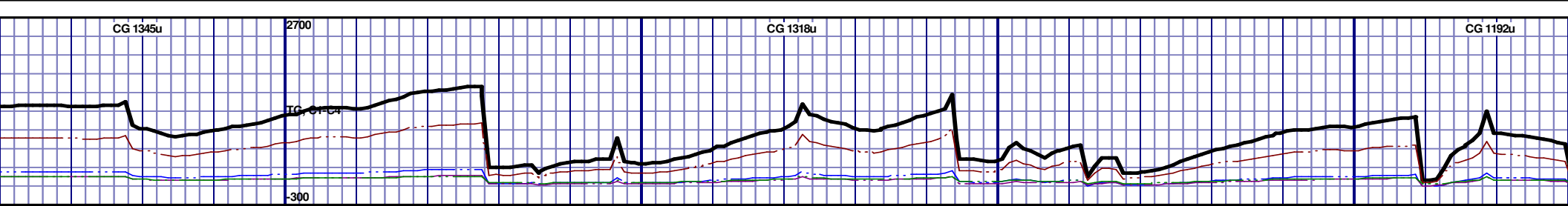
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INC 89.91 AZ 269.64  
VS 2258.73

MD 8642 TVD 6618.79  
INC 90.22 AZ 269.26  
VS 2353.69





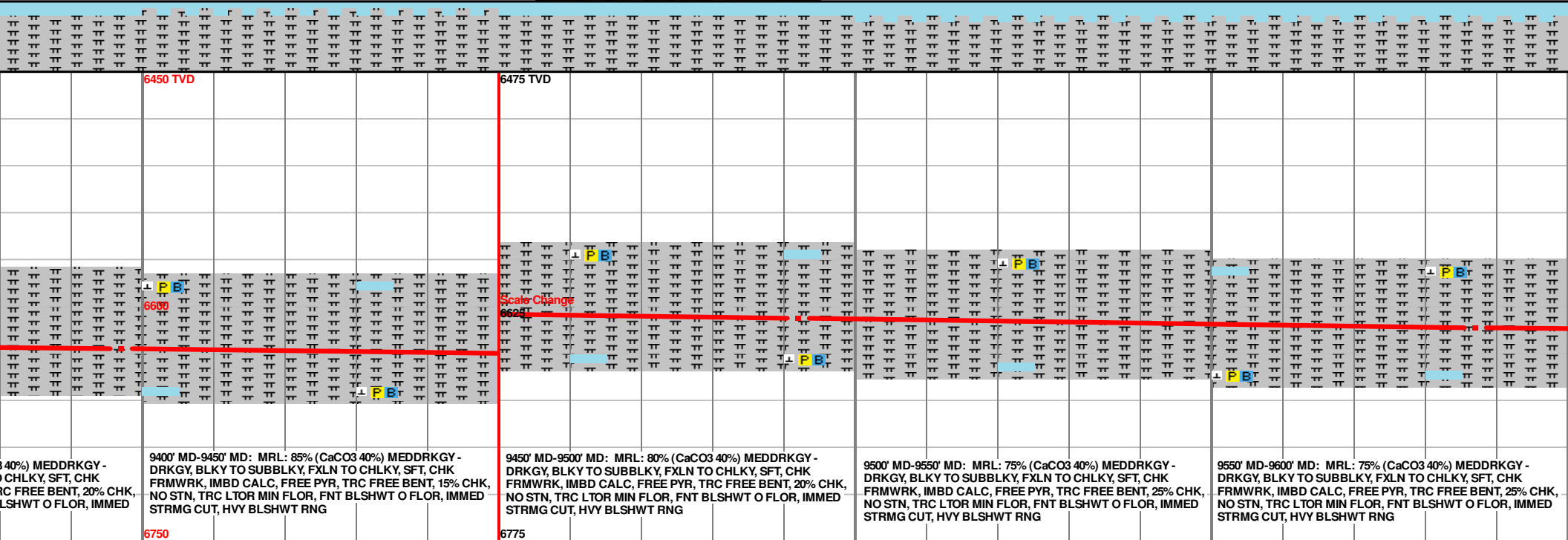
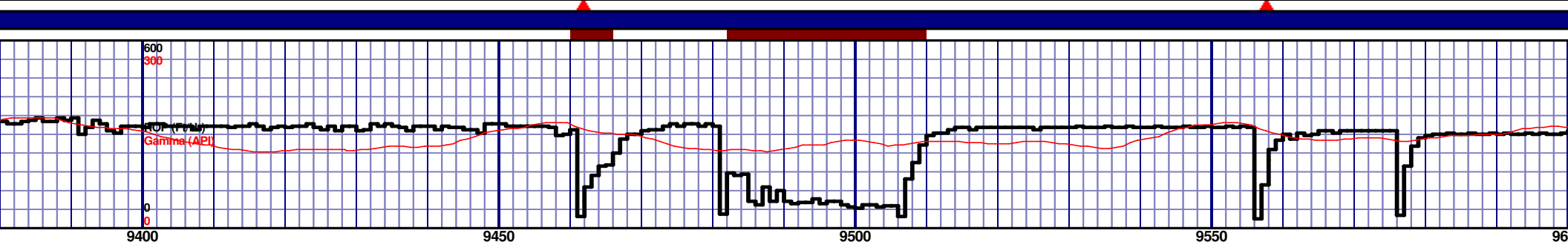
8950' MD-9000' MD: CHK: 55% (CaCO3 50%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CAL, TRC FREE BENT, FREE PYR, 45% FREE MARL, MOD GRYSHLK STN, NO MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG					9000' MD-9050' MD: MRL: 60% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 40% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG					9050' MD-9100' MD: MRL: 60% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 40% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG					9100' MD-9150' MD: MRL: 75% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 25% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG					9150' MD-9200' MD: MRL: 75% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 25% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG				
6450 TVD					6500					6550					6600					6650				



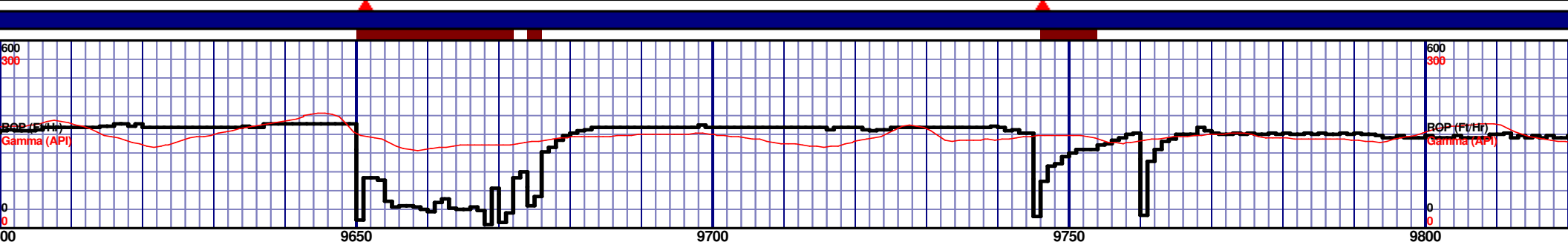
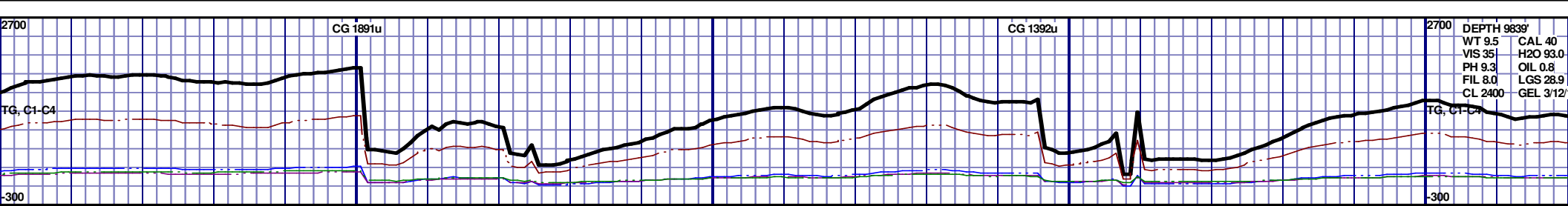
BRARAA MARL 9150' MD - 9200' MD									
6450 TVD									
6600									
9200' MD-9250' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
9250' MD-9300' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
9300' MD-9350' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
9350' MD-9400' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									

MD 9209 TVD 6620.89  
INC 90.37 AZ 267.51  
VS 2920.51

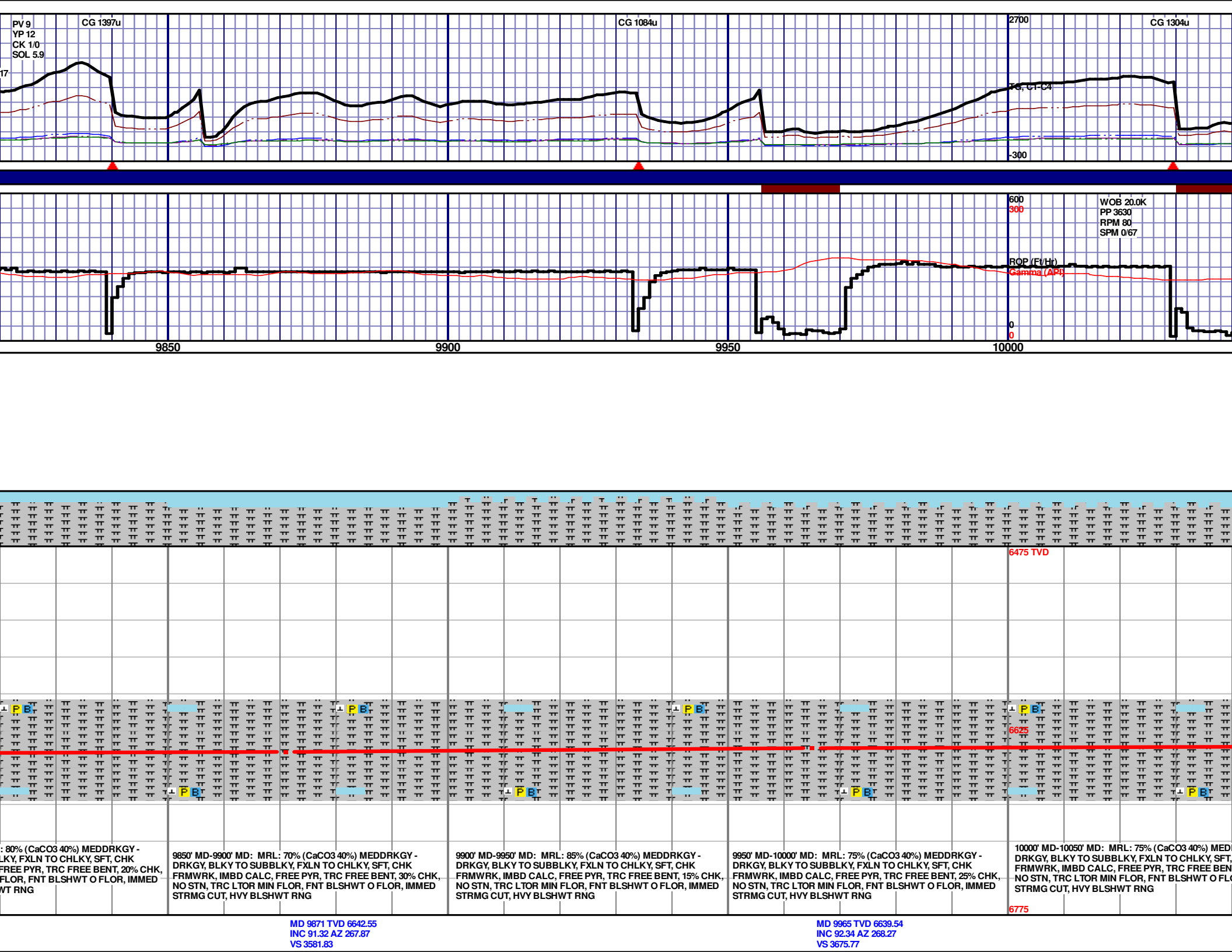
MD 9303 TVD 6622.38  
INC 87.81 AZ 267.65  
VS 3014.49







6475 TVD	6475 TVD	6475 TVD	6475 TVD	6475 TVD
9900' MD-9950' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	9250' MD-9300' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	9900' MD-9950' MD: MRL: 85% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 15% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	9750' MD-9800' MD: MRL: 75% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 25% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	9800' MD-9850' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

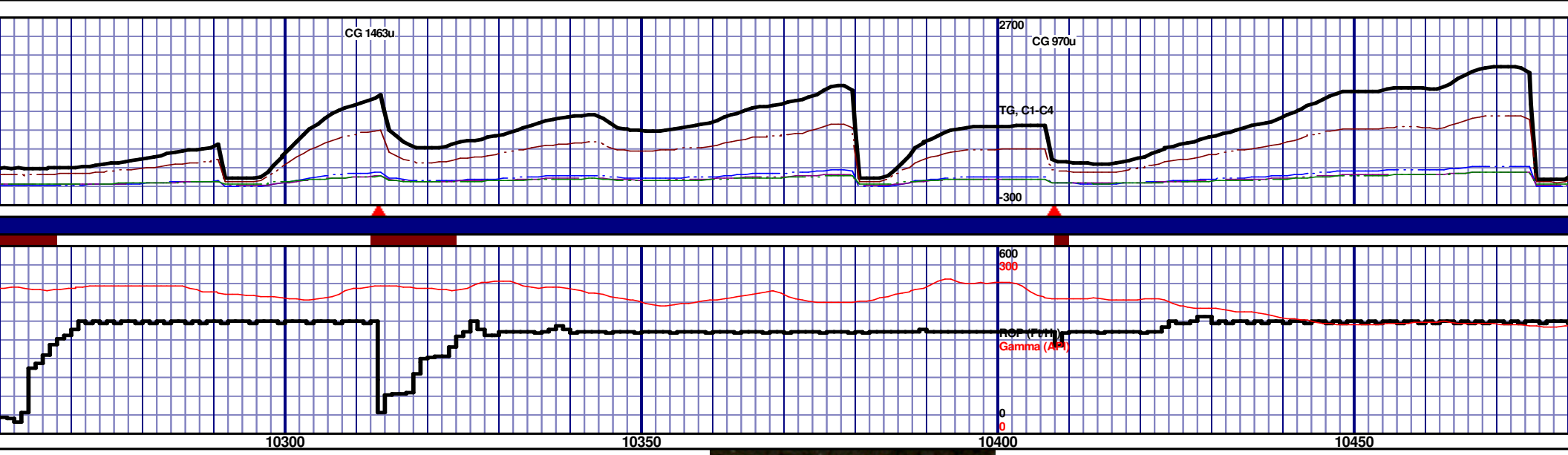




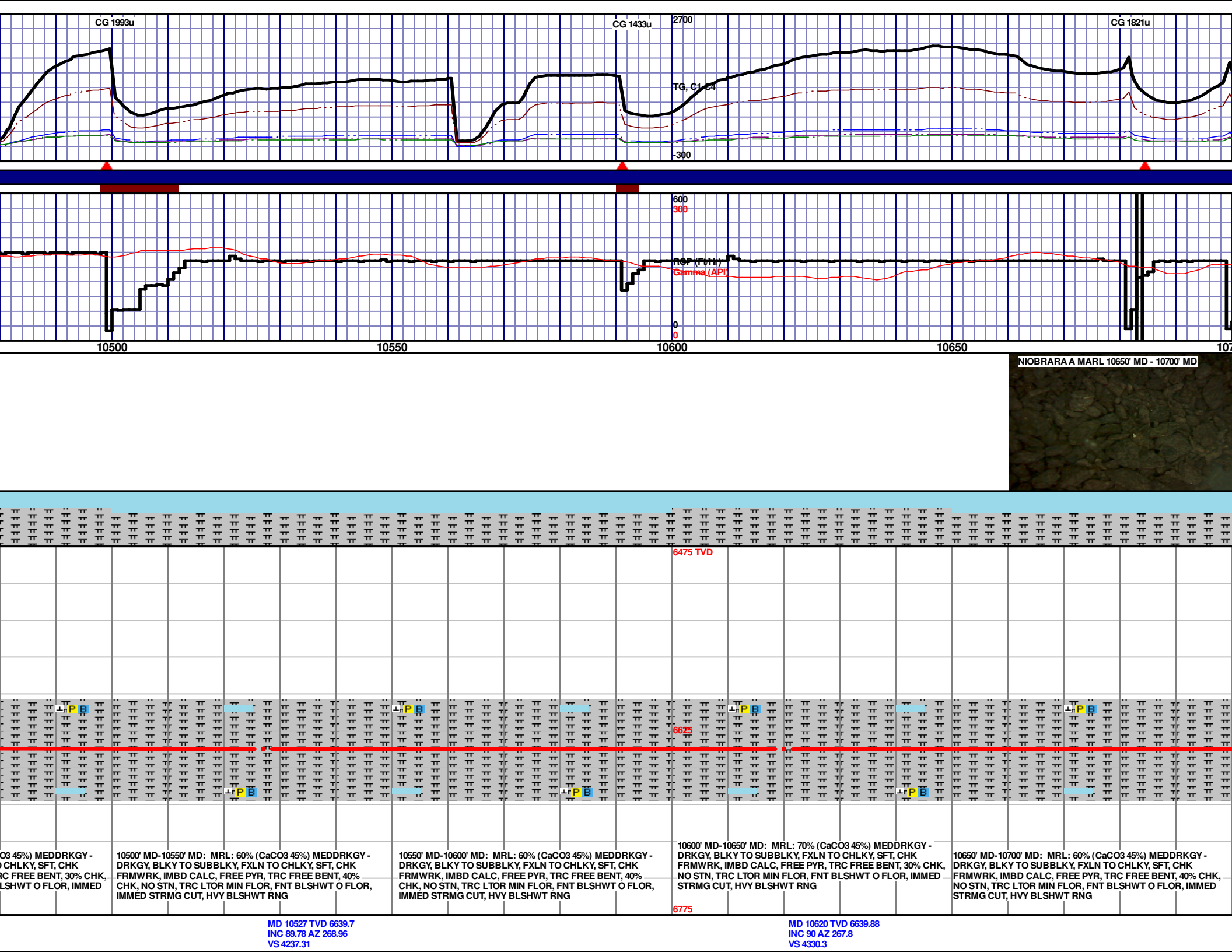
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VS 3770.74

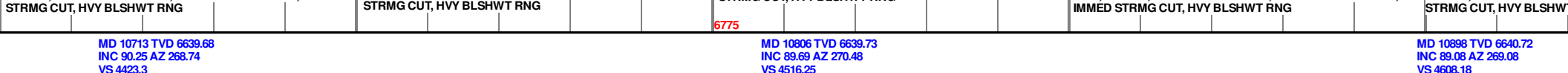
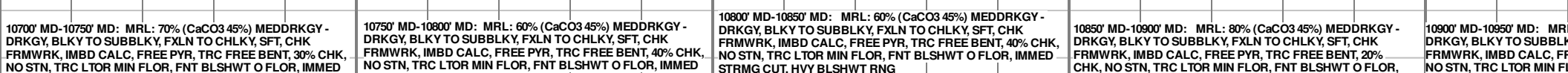
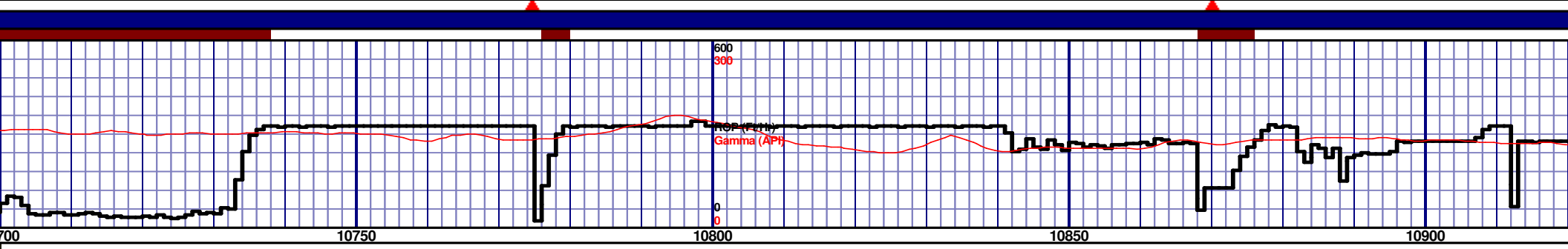
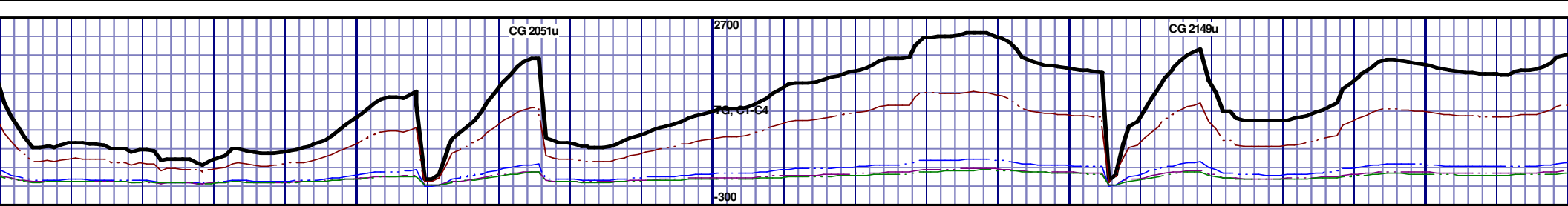
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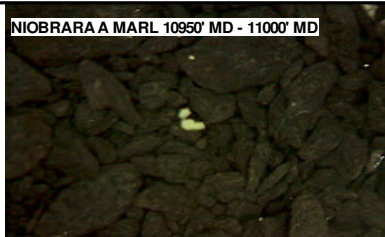
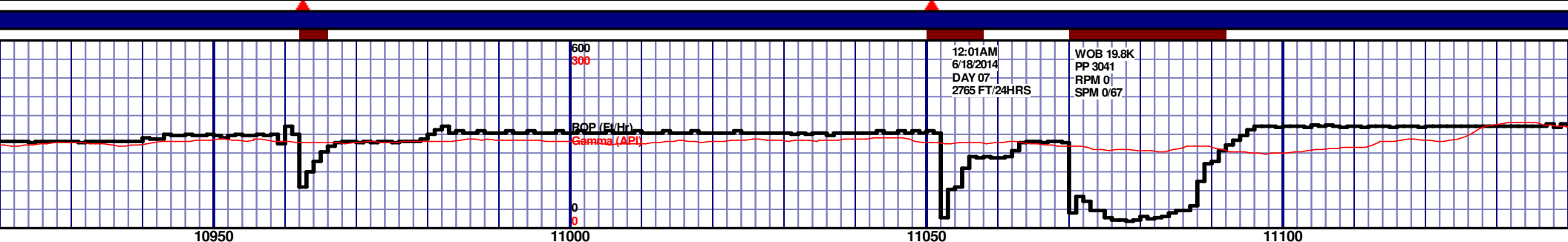
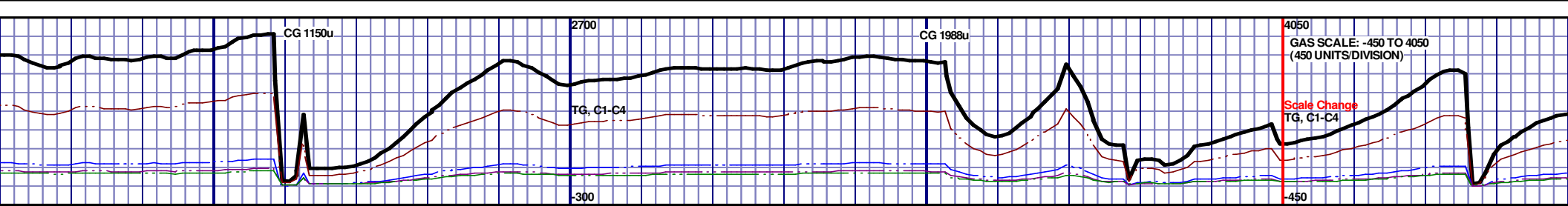
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INC 89.32 AZ 2  
VS 3959.66



10300' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
10300' MD-10350' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
10350' MD-10400' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
10400' MD-10450' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
10450' MD-10500' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									



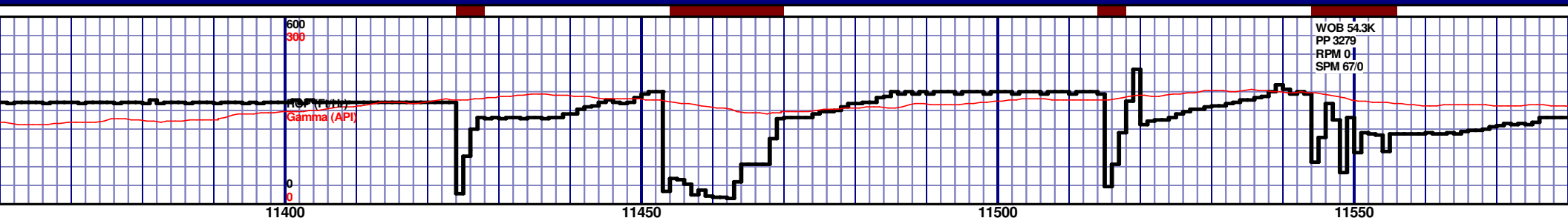


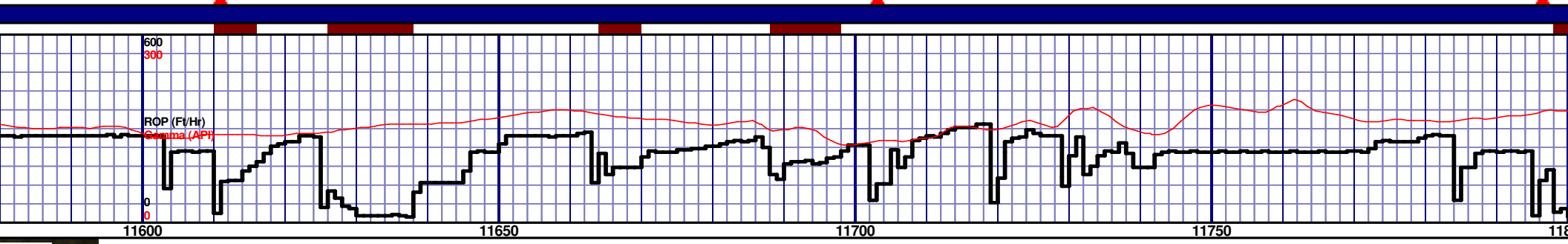
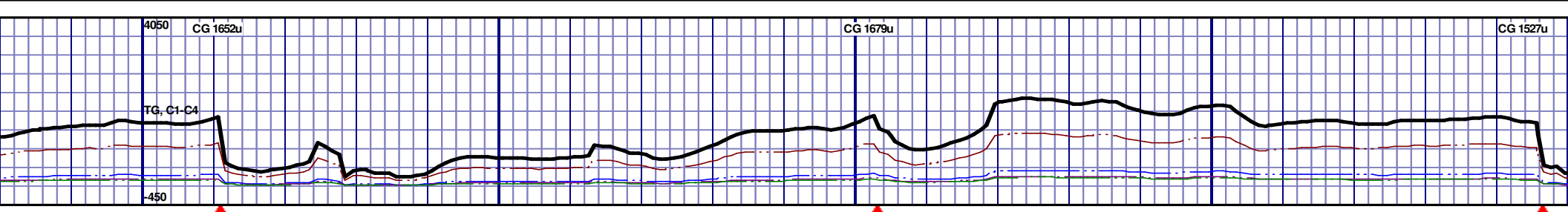


L: 80% (CaCO3 40%) MEDDRKGY - DRKGY, FXLN TO CHLKY, SFT, CHK FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RING										10950' MD-11000' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RING										11000' MD-11050' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RING										11050' MD-11100' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RING										11100' MD-11150' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RING									
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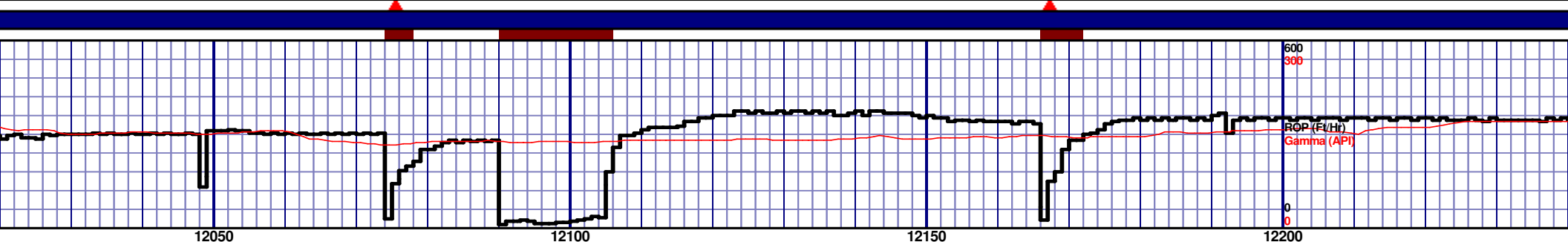


11600' MD									
6475 TVD									
6525 TVD									
6625									
6675									
6775									
11600' MD-11650' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
11650' MD-11700' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
11700' MD-11750' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
11750' MD-11800' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									

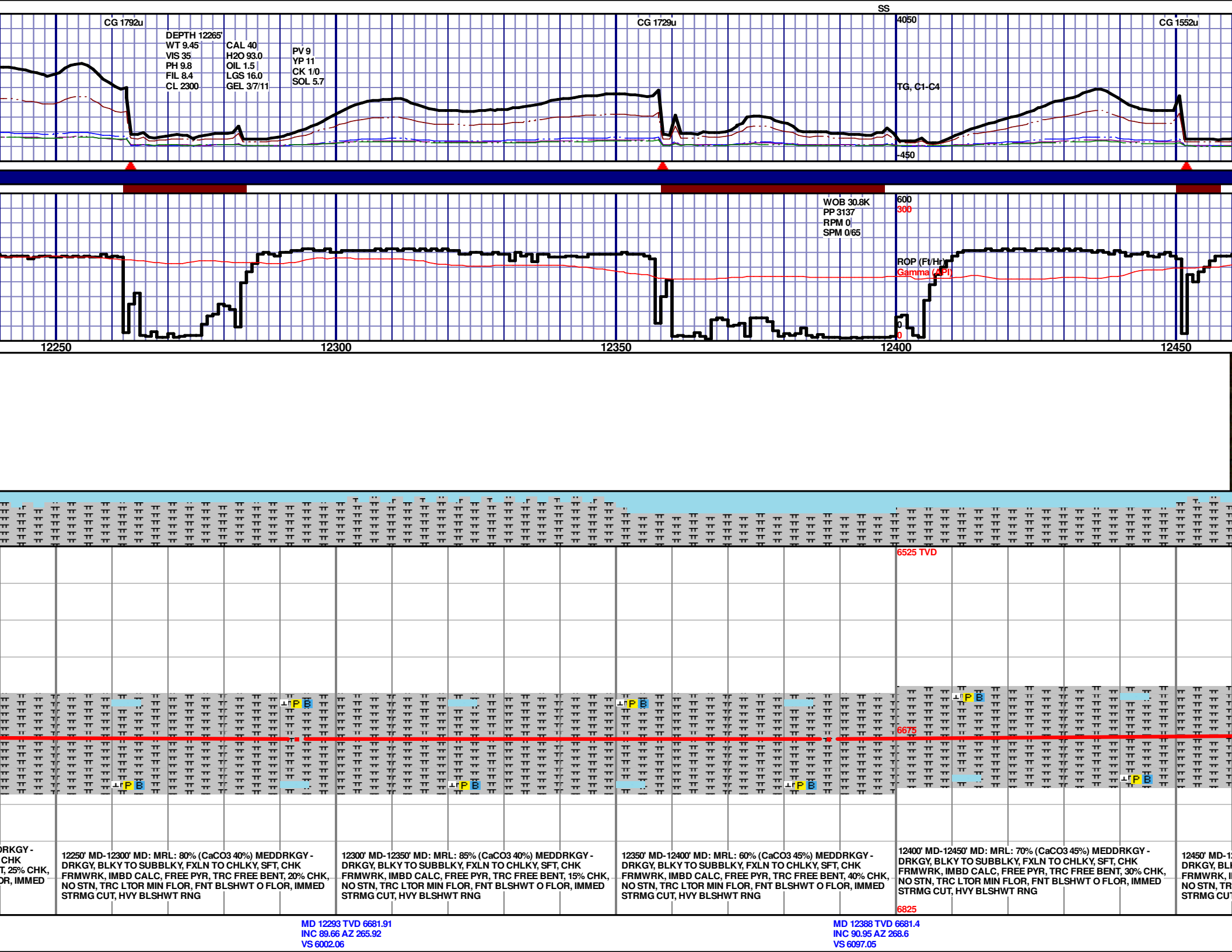
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INC 87.29 AZ 268.17  
VS 5350.78

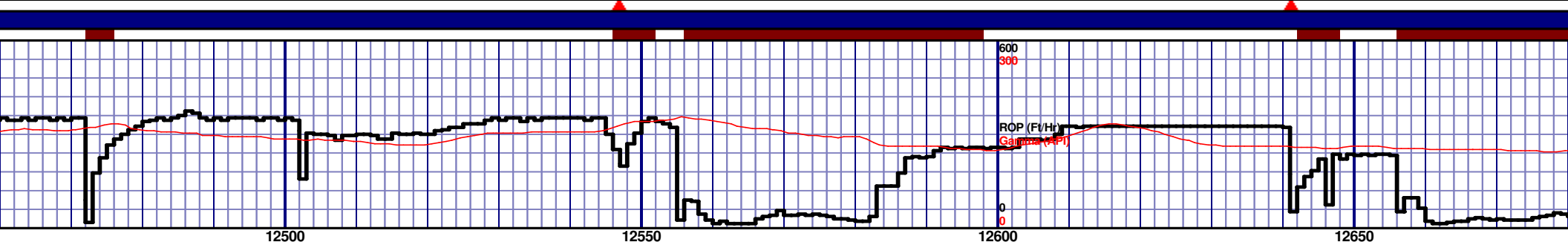
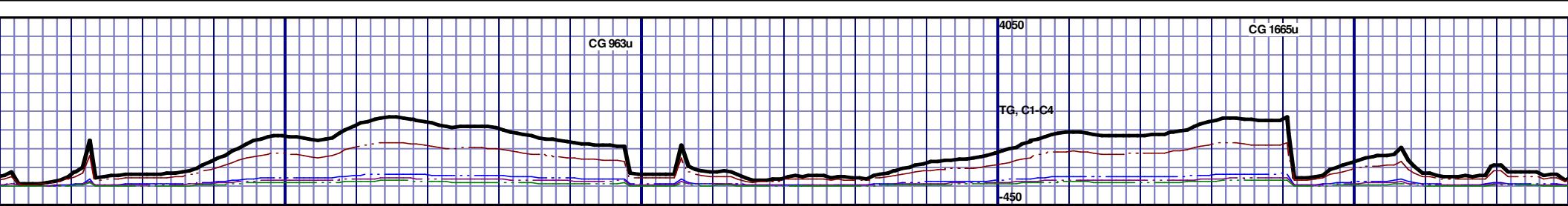
MD 11734 TVD 6660.29  
INC 85.59 AZ 267.46  
VS 5443.6





VD 6674.54	MD 12103 TVD 6677.51	MD 12198 TVD 6680.22
Z 267.24	INC 88.43 AZ 268.05	INC 88.3 AZ 267.25
	VS 5812.14	VS 5907.1

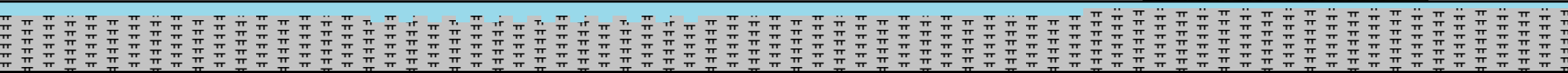
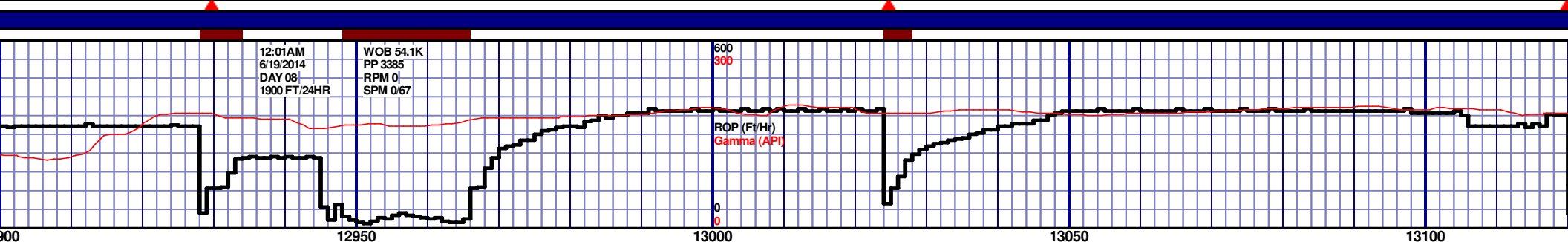




12500' MD - 12550' MD: MRL: 85% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 15% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG										12550' MD - 12600' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG										12600' MD - 12650' MD: MRL: 85% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 15% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG										12600' MD - 12650' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 15% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
6525 TVD										6525 TVD										6525 TVD										6525 TVD									

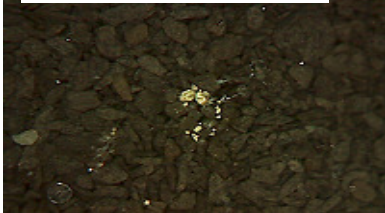
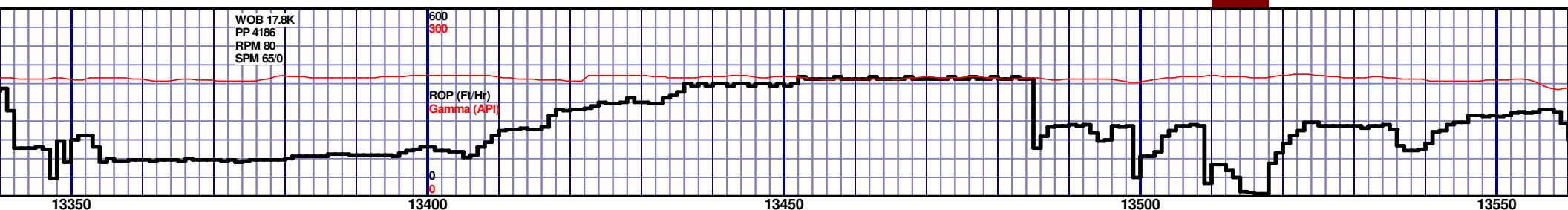


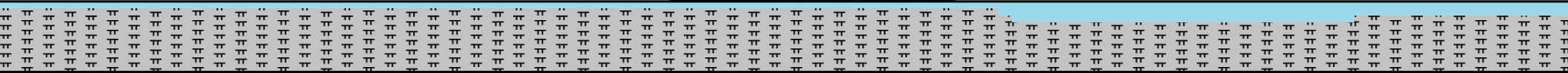
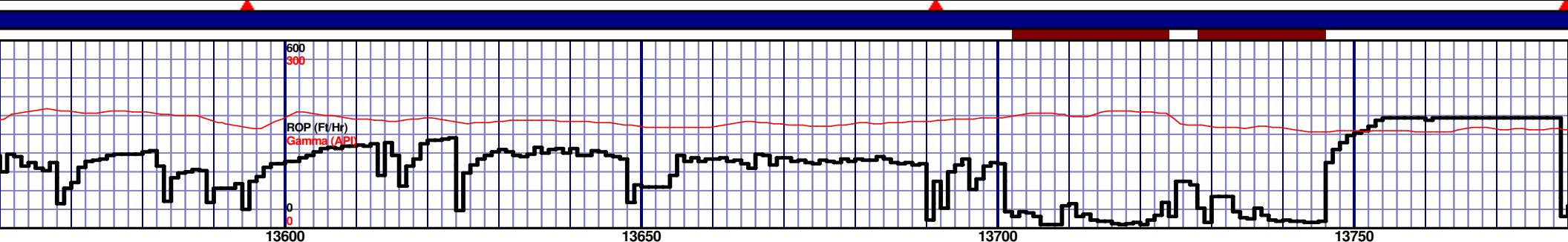




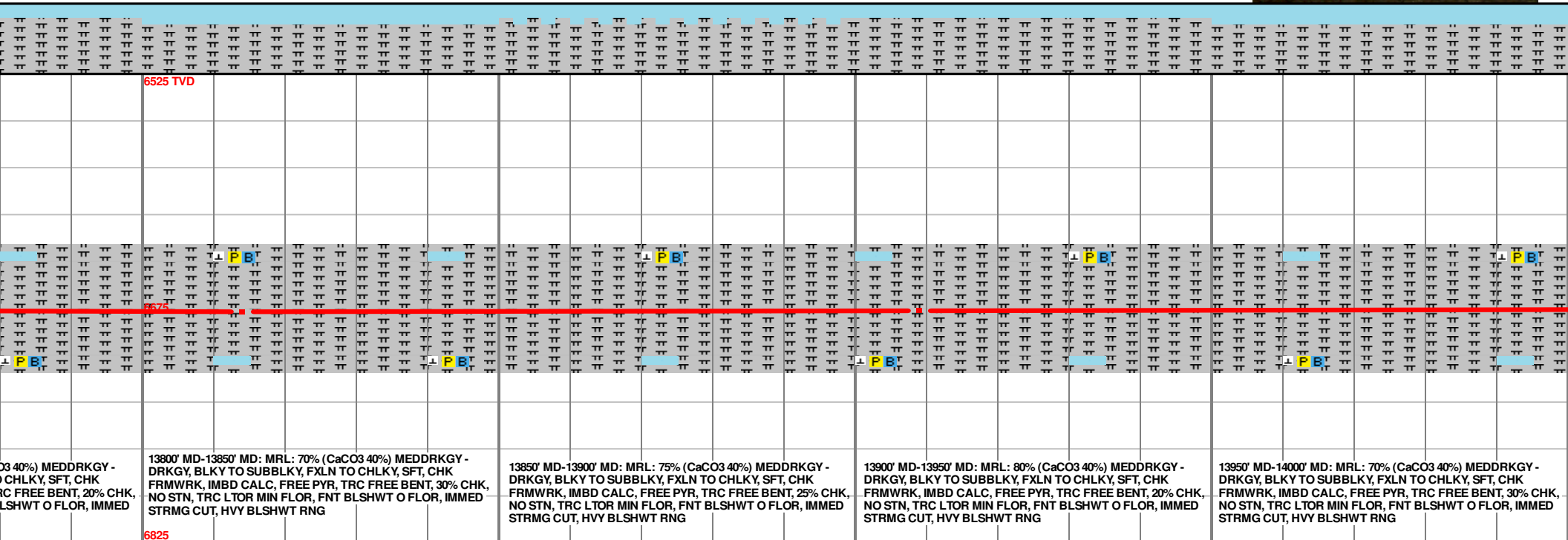
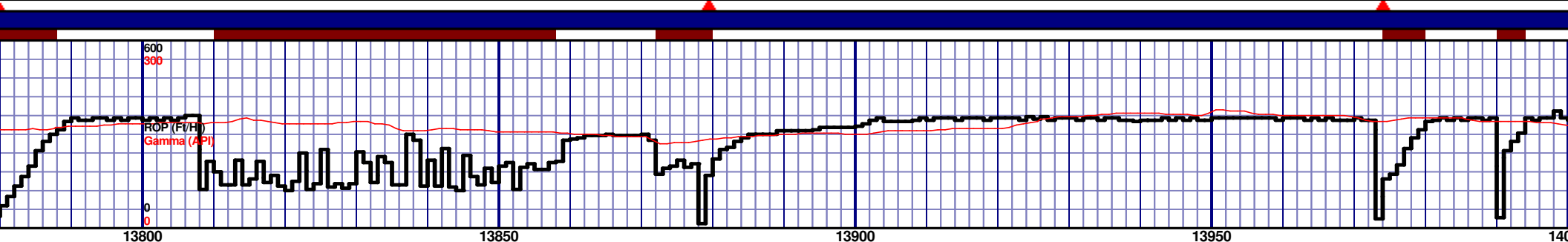
13050' MD-13100' MD: MR  
DRKG, BLKY TO SUBB  
FRMWRK, IMBD CALC, N  
NO STN, TRC LTOR MIN  
STRMG CUT, HVY BLSHV

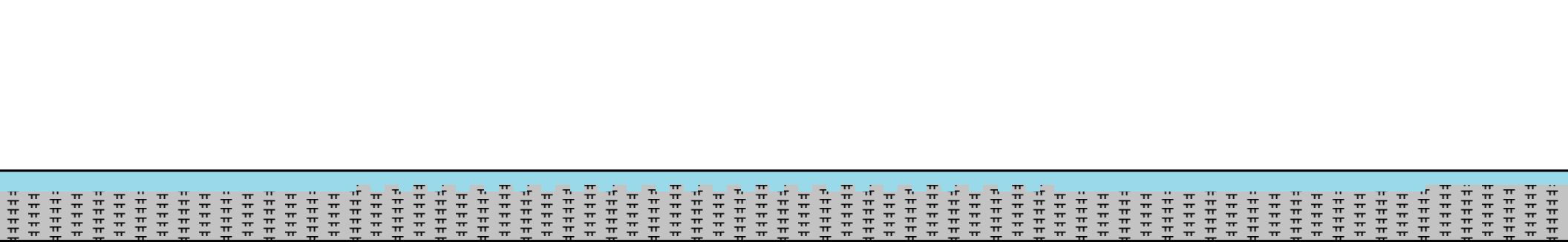
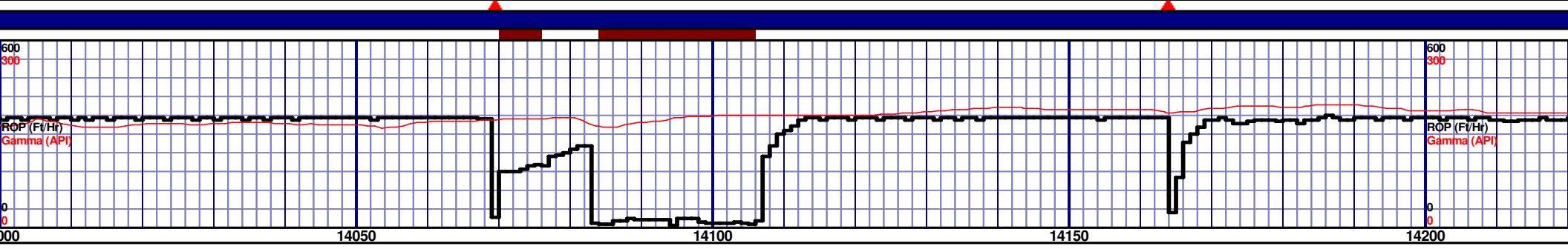
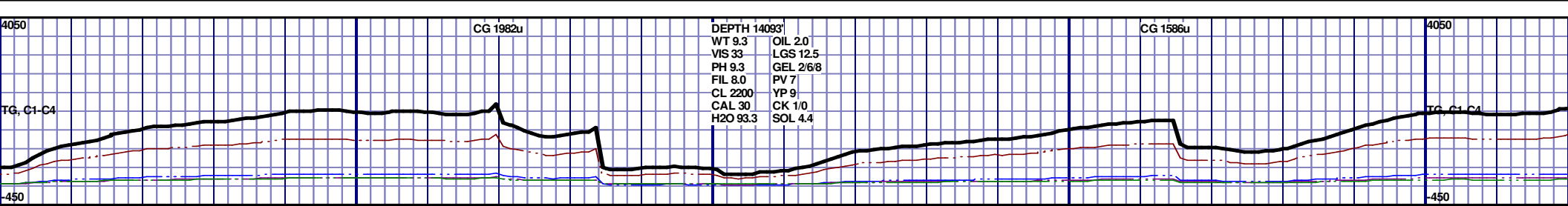


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MD 13625 TVD 6673.95	MD 13719 TVD 6676.1
INC 88.21 AZ 265.88	INC 89.17 AZ 267.56
VS 7333.03	VS 7426.98



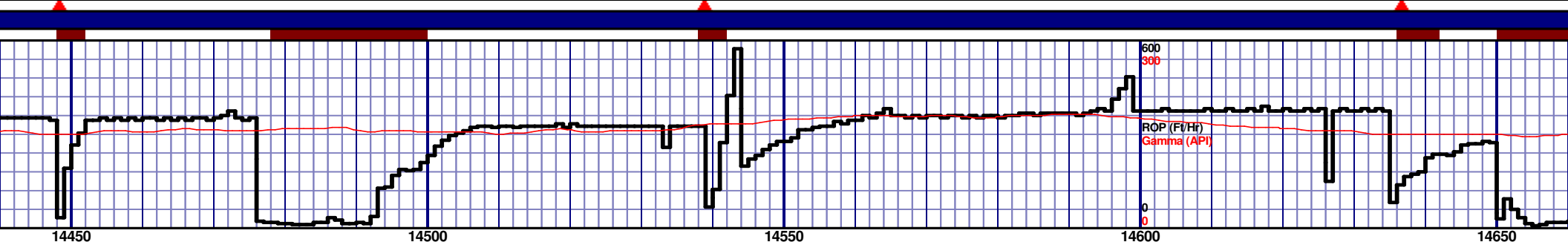
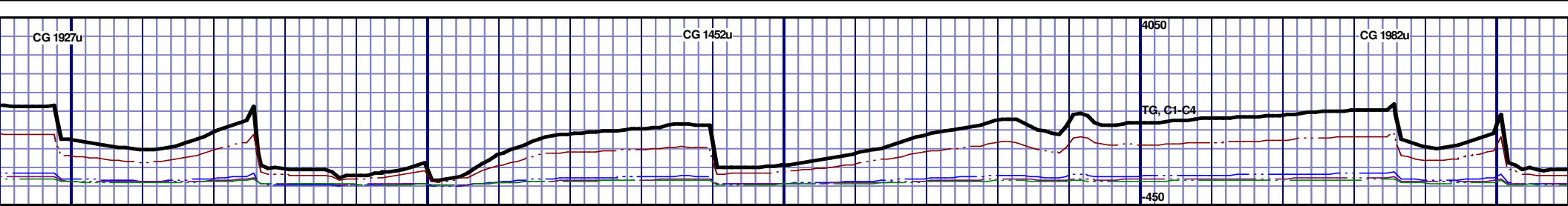


6525 TVD					6525 TVD				
14000' MD-14050' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG					14050' MD-14100' MD: MRL: 75% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 25% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG				
14100' MD-14150' MD: MRL: 75% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 25% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG					14150' MD-14200' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG				
14200' MD-14250' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG					14200' MD-14250' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG				





<p>14250' MD-14300' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>14300' MD-14350' MD: MRL: 85% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 15% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>14350' MD-14400' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 15% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>14400' MD-14450' MD: MRL: 80% (CaCO3 40%) MEDDRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>
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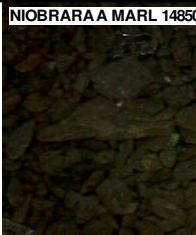
14450' MD-14500' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG										14500' MD-14550' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG										14550' MD-14600' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG										14600' MD-14650' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG										14650' MD-14700' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG										
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MD 14479 TVD 6674.24  
INC 89.69 AZ 267.86  
VS 8186.84

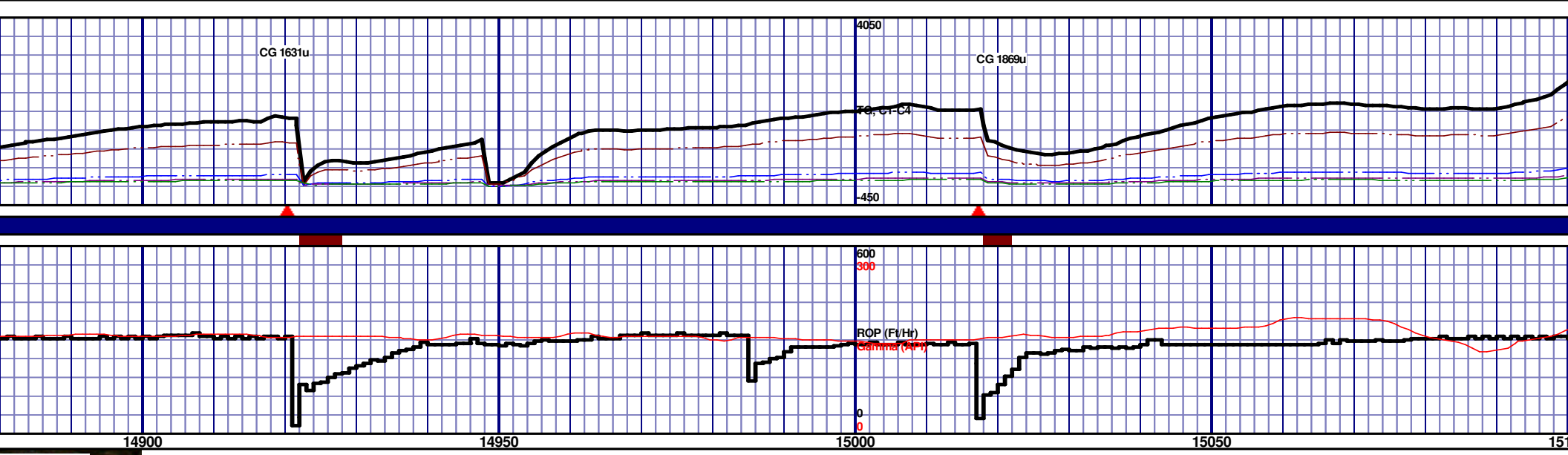
MD 14574 TVD 6674.85  
INC 89.57 AZ 267.39  
VS 8281.84

6525 TVD

6825



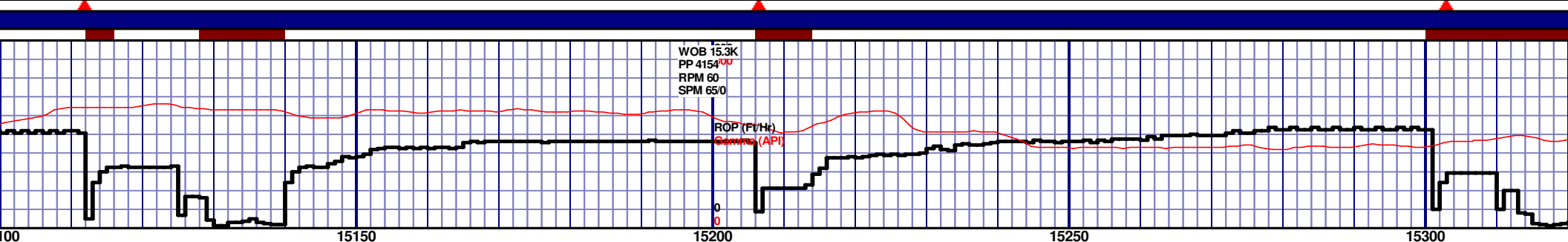
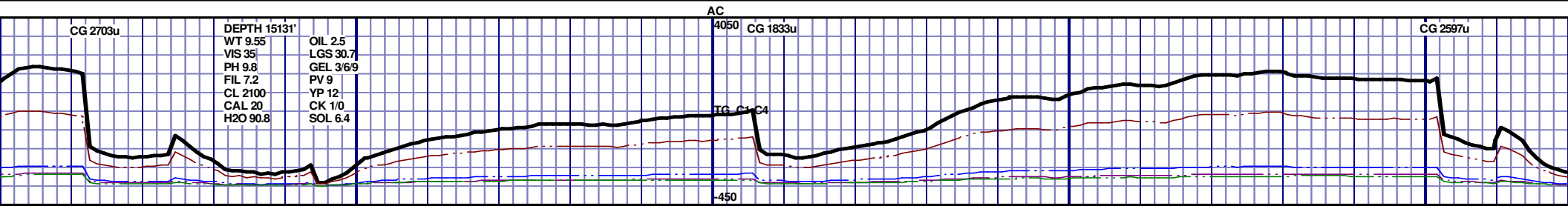
MD 14669 TVD 6675.31 INC 89.88 AZ 269.68 VS 8376.82	MD 14764 TVD 6674.69 INC 90.86 AZ 269.23 VS 8471.78	MD 14859 TVD 6674.19 INC 89.75 AZ 269.63 VS 8566.74
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14900' MD - 14900' MD	14900' MD - 14950' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	14950' MD - 15000' MD: MRL: 85% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 15% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	15000' MD - 15050' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	15050' MD - 15100' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG
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MD 14953 TVD 6675.15  
INC 89.08 AZ 268.44  
VS 8660.71

MD 15048 TVD 6676.96  
INC 88.74 AZ 267.52  
VS 8755.69



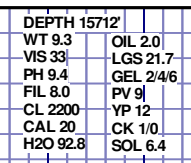
15100' MD-15150' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 10% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	15150' MD-15200' MD: MRL: 85% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 15% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	15200' MD-15250' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	15250' MD-15300' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	15300' MD-15350' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG
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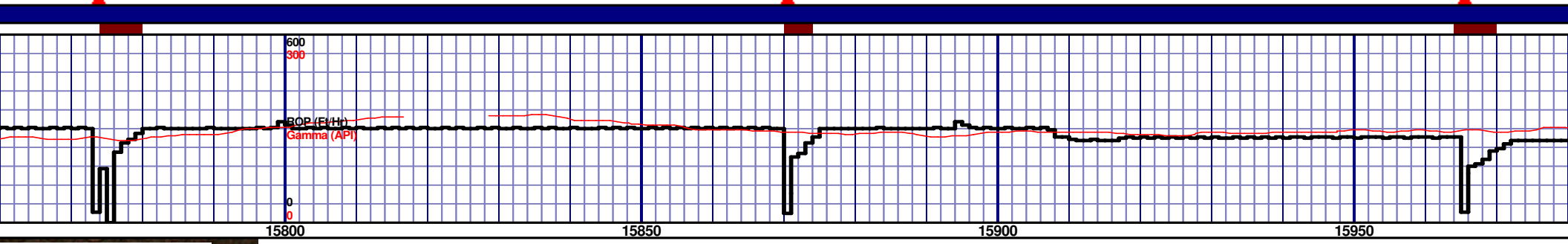
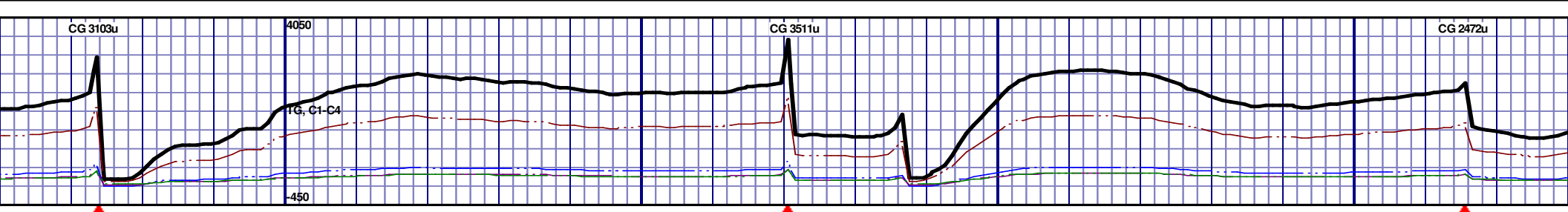
MD 15143 TVD 6678.79  
INC 89.05 AZ 268.46  
VS 8850.67

MD 15238 TVD 6680.16  
INC 89.29 AZ 267.68  
VS 8945.66



<p>L: 80% (CaCO3 40%) MEDDRKGY - DRKGY, FXLN TO CHLKY, SFT, CHK FREE PYR, TRC FREE BENT, 20% CHK, FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>15350' MD-15400' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 20% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>15400' MD-15450' MD: MRL: 65% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 35% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>15450' MD-15500' MD: MRL: 65% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 35% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>	<p>15500' MD-15550' MD: MRL: 70% (CaCO3 40%) MEDDRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWKR, IMBD CALC, FREE PYR, TRC FREE BENT, 35% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG</p>
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6825



15800' MD - 15850' MD - 15900' MD - 15950' MD - 16000' MD									
6525 TVD									
15800' MD - 15850' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
15850' MD - 15900' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
15900' MD - 15950' MD: MRL: 70% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
15950' MD - 16000' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 30% CHK, NO STN, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									

MD 15807 TVD 6676.39  
INC 88.64 AZ 271.9  
VS 9513.73

MD 15902 TVD 6678.3  
INC 89.05 AZ 271.25  
VS 9608.5







**TD @ 16306' MD**

**RELEASED ON 6/20/2014**

16300\* MD-16306\* MD: MRL: 80% (CaCO3 40%) MEDDRKGY-  
DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, CHK  
FRMWRK, IMBD CALC, FREE PYR, TRC FREE BENT, 20%  
CHK, NO STRM, TRC LTOR MIN FLOR, FNT BLSHWT O FLOR,  
IMMED STNGT CUT, HYY BLSHWT RNG

**THANK YOU FROM  
ANDREW CHRISTIANO,  
SAM STELZER  
AND HORIZON WELL  
LOGGING, LLC**