



7136 South Yale Avenue, Suite 414
Tulsa, Oklahoma 74136-6378

phone 918.925.9739

fax 866.534.4559

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: Casey Sensecqua &
Mike Yeager
Log Interval: 6500' MD to 11065' MD
Start Date: February 9, 2014
Release Date: February 12, 2014

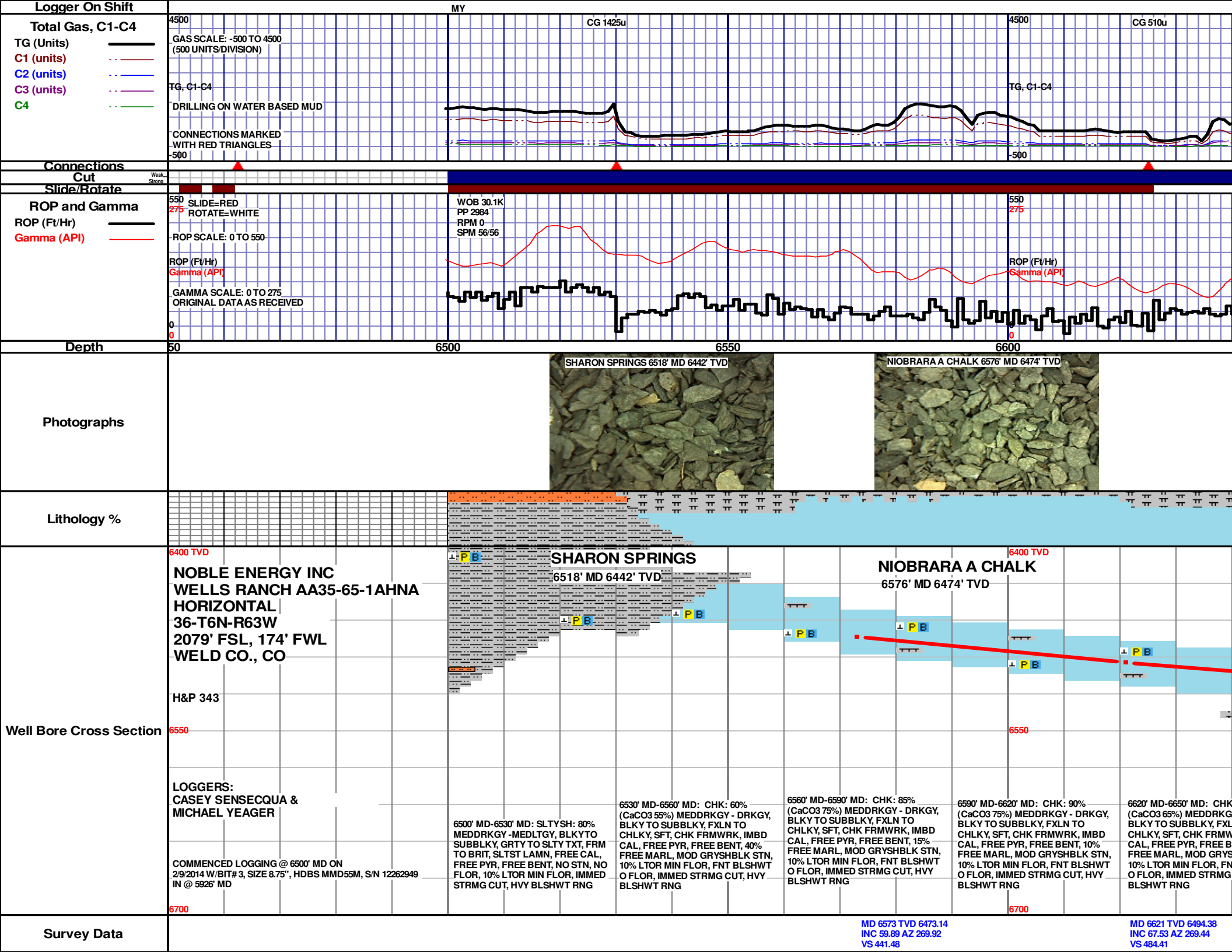
Well Information

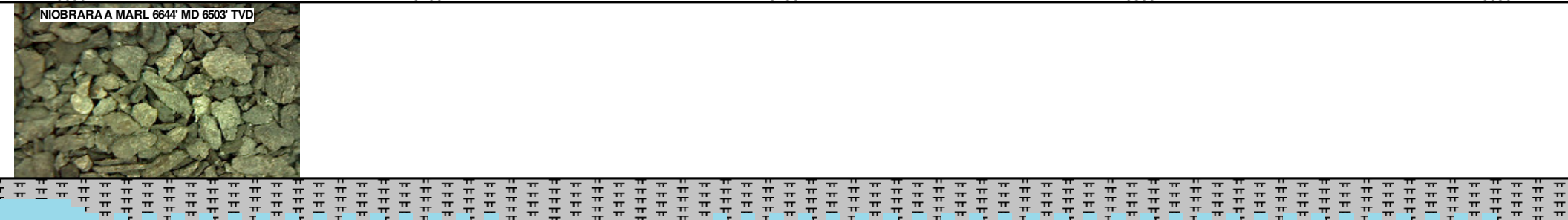
Well Name: Wells Ranch AA35-65-1AHNA
Horizontal

Location: 36-T6N-R63W
2079' FSL, 174' FWL

County: Weld
State: Colorado

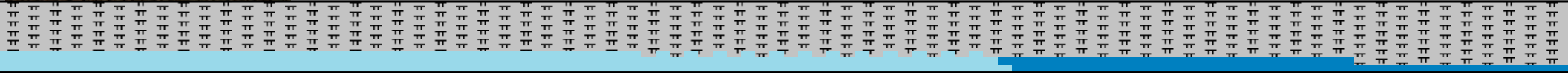
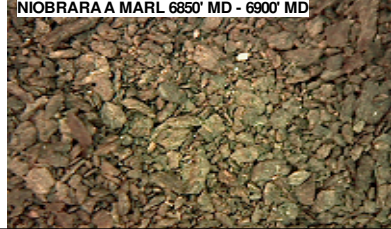
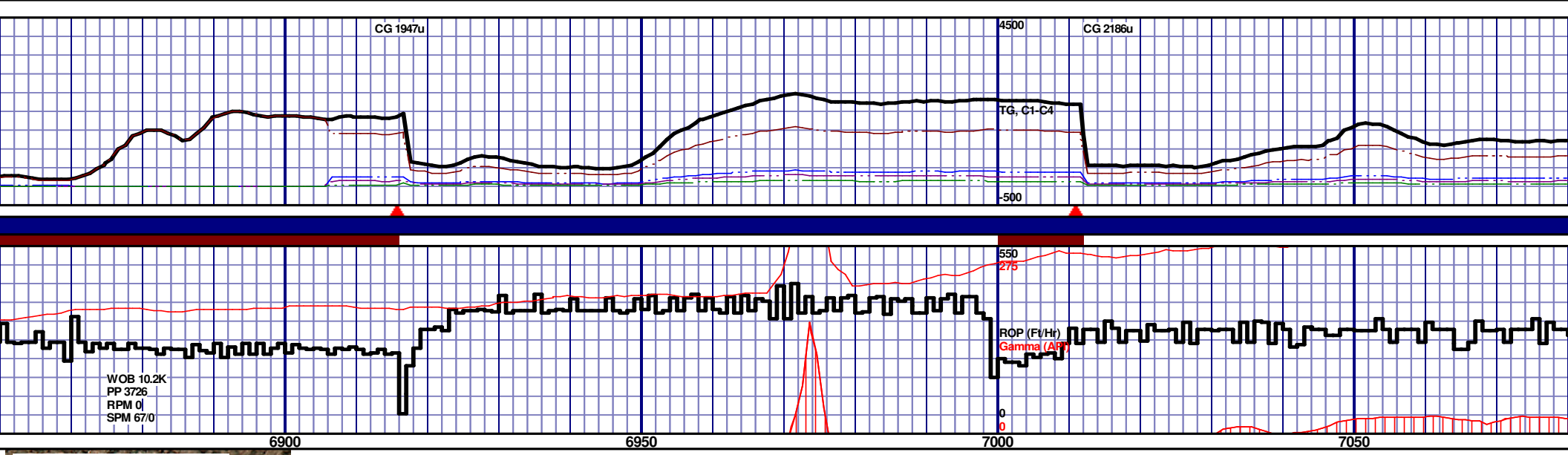
Drilling Rig: H&P 343
Total Depth: 11065' MD
TD Date: February 12, 2014
Formation: Niobrara A Marl
KB Elevation: 4799'
GR Elevation: 4775'
API Number: 05-123-38658-0000





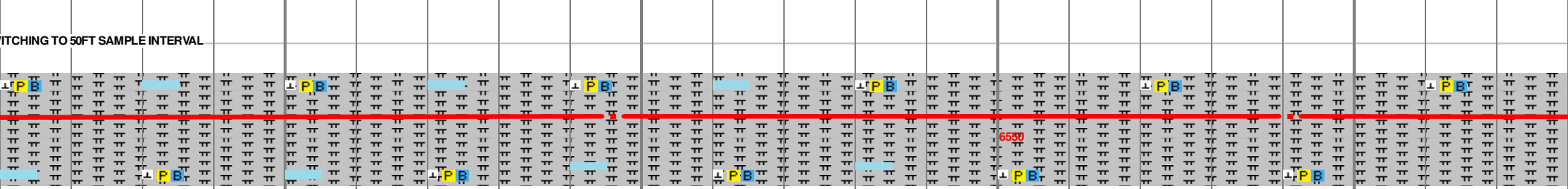
TOOH @ 6846' MD @ 2:45 AM ON 2/10/2014 FOR INTER-
CASING OPERATIONS. TIH @ 3:30AM ON 2/11/2014.
DRILLING @ 9:30 AM ON 2/11/2014 W/ BIT #4, 6.125",
PLD51355. S/N 8870 IN @ 6846' MD.



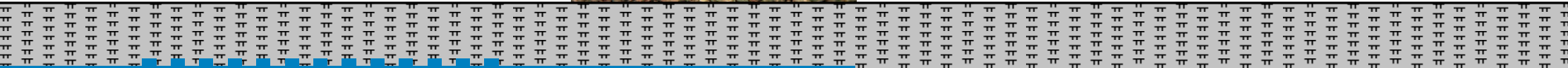
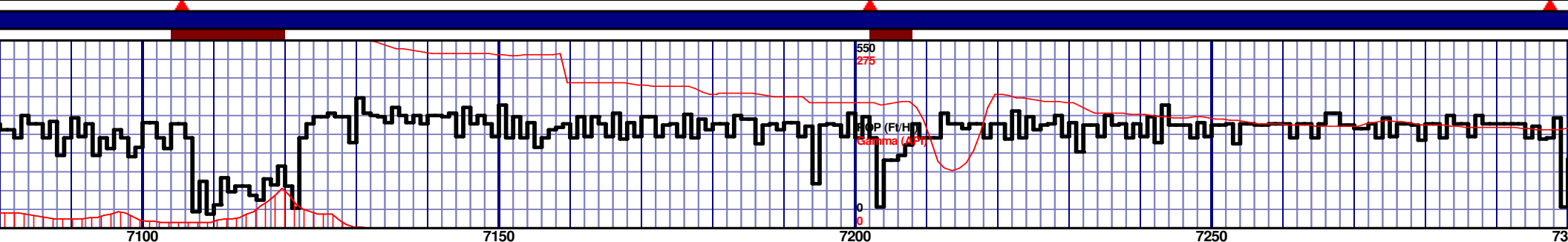
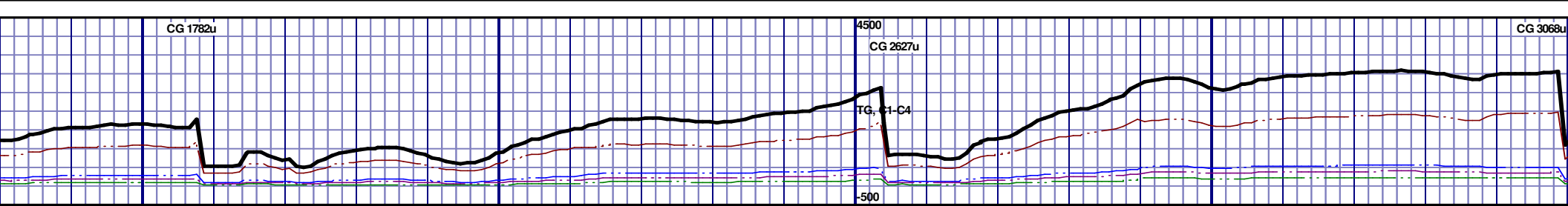


IMMEDIATE RESUMED CDC LOGIC

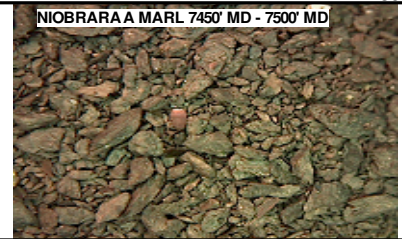
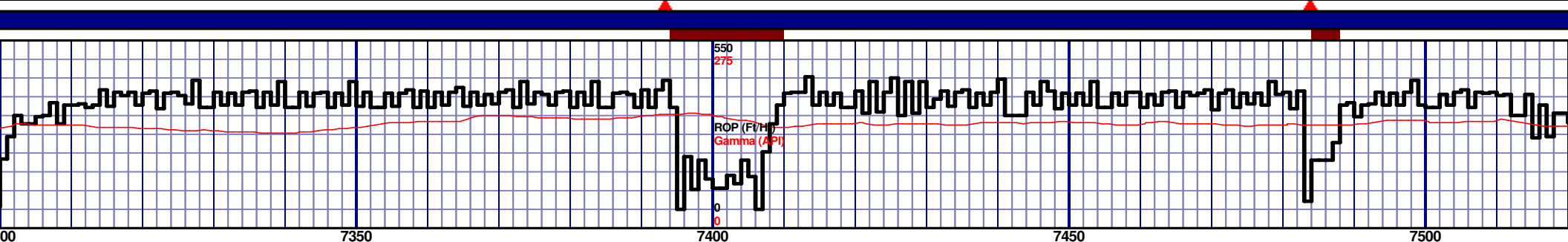
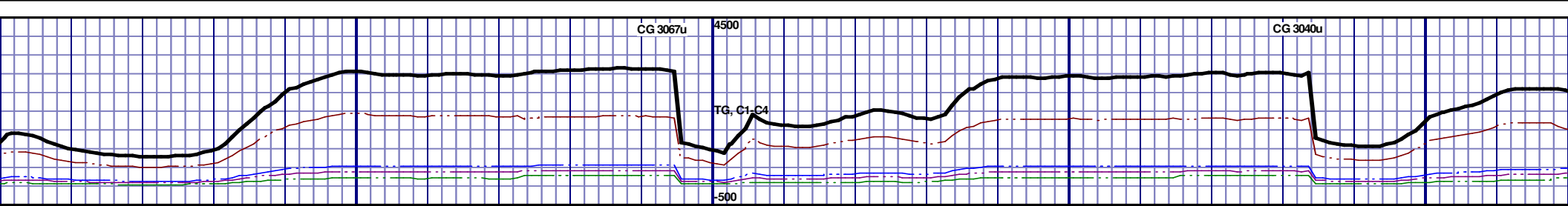
ITCHING TO 50FT SAMPLE INTERVAL



6900' MD: MRL: 70% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, FREE BENT, 30% FREE STN, 10% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	6900' MD-6950' MD: MRL: 70% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, FREE BENT, 30% FREE CHALK, NO STN, 10% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	6950' MD-7000' MD: MRL: 75% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, FREE BENT, 25% FREE CHALK, NO STN, 10% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	7000' MD-7050' MD: MRL: 80% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, 20% FREE BENT, NO STN, 20% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	7050' MD-7100' MD: MRL: 90% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, 20% FREE BENT, NO STN, 10% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG
---	--	--	--	--



										6400 TVD																			



7300' MD-7350' MD: MRL: 100% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, TRC FREE BENT, NO STN, 5% L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

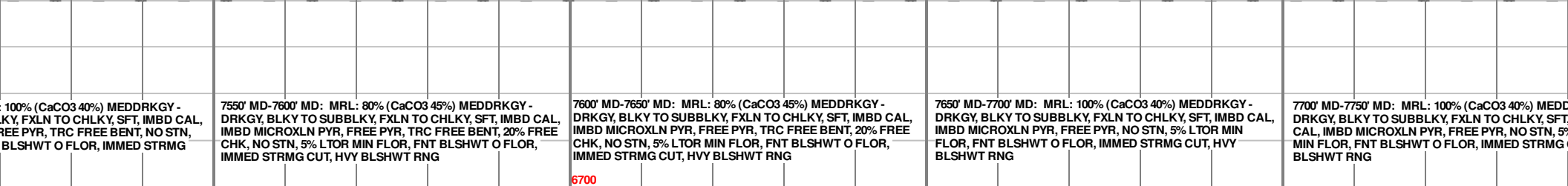
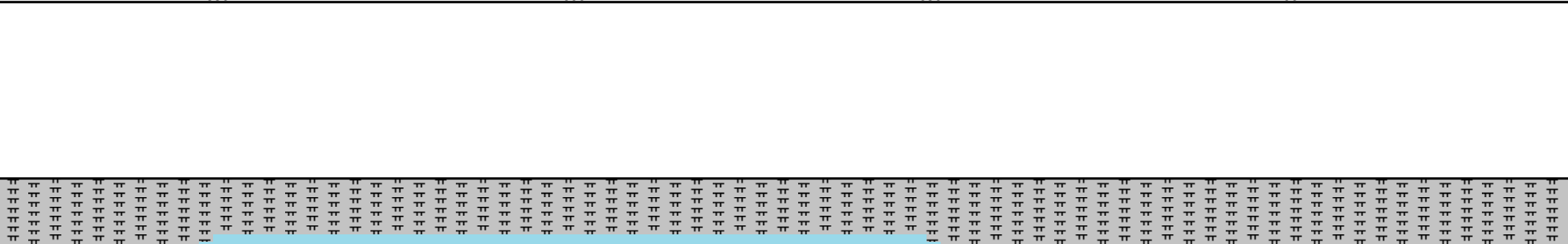
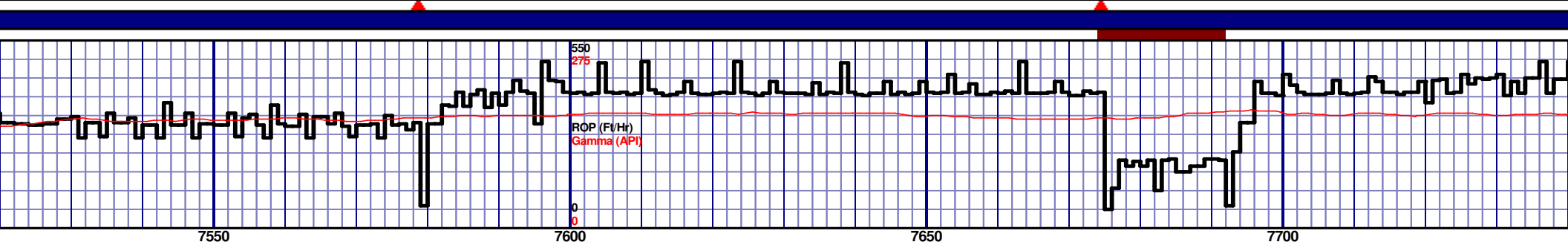
7350' MD-7400' MD: MRL: 100% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, TRC FREE BENT, NO STN, 5% L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

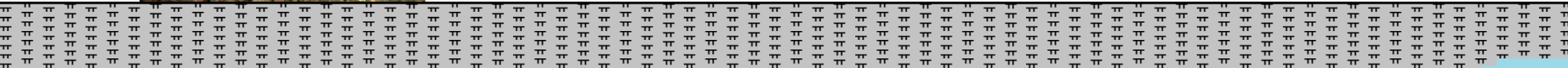
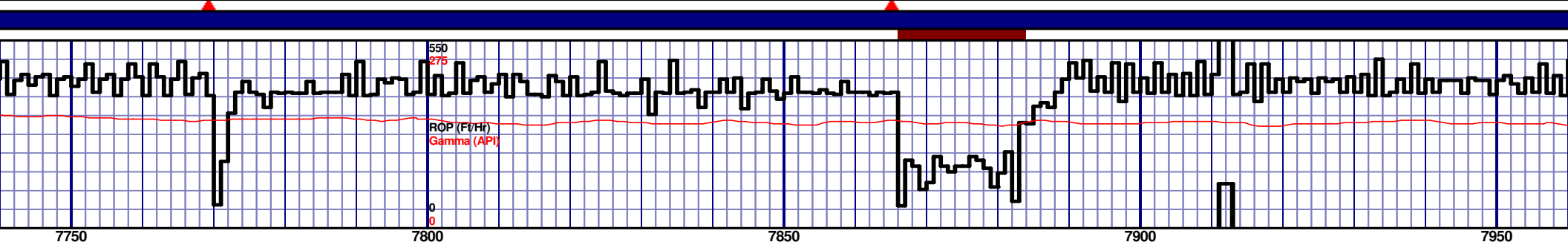
7400' MD-7450' MD: MRL: 100% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, TRC FREE BENT, NO STN, 5% L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

7450' MD-7500' MD: MRL: 100% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, TRC FREE BENT, NO STN, 5% L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

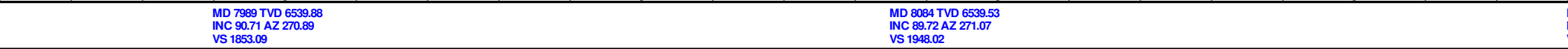
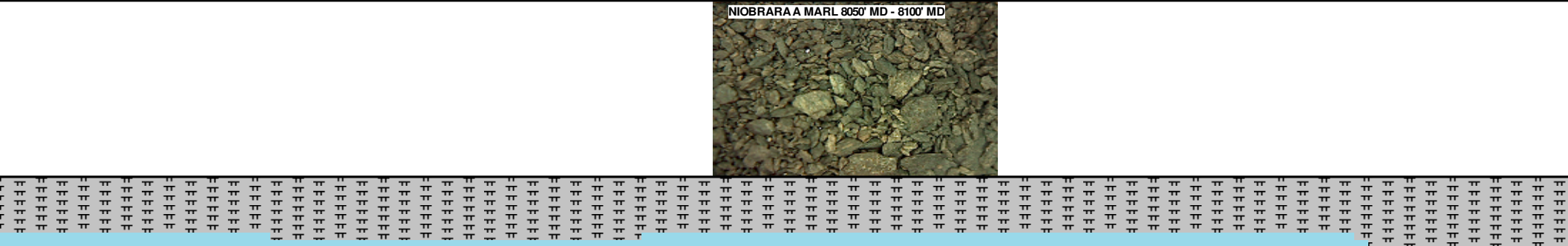
7500' MD-7550' MD: MRL: 100% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, TRC FREE BENT, NO STN, 5% L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG

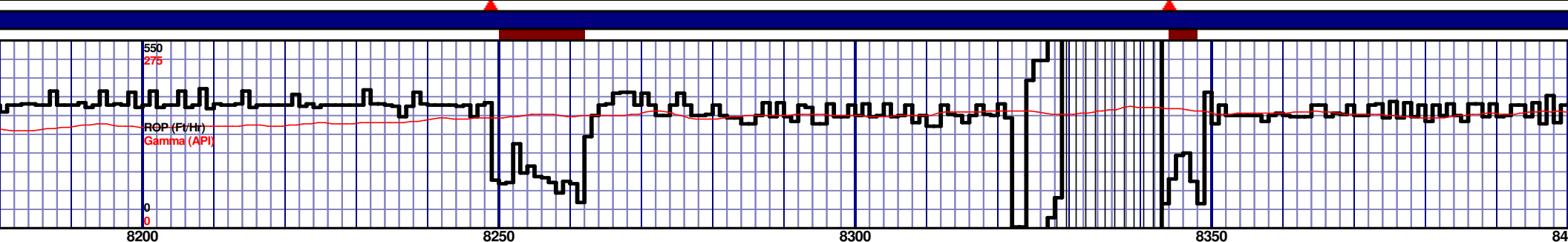
7300' MD-7350' MD: MRL: 100% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, TRC FREE BENT, NO STN, 5% L TOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG



[illegible]

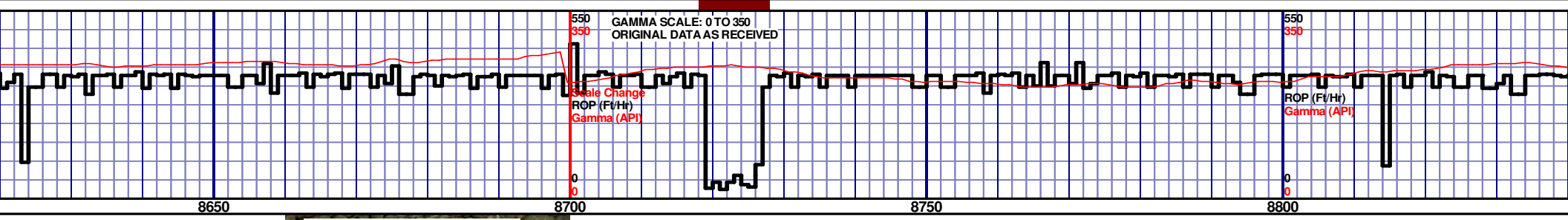
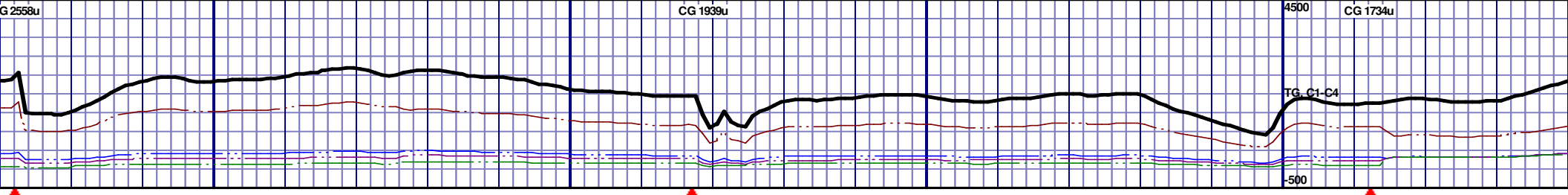
MD 7894 TVD 6540.8
INC 90.4 AZ 271.25
VS 1758.15





335%) MEDDRKGY - CHLKY, SFT, IMBD CAL, STN, 5% LTOR MIN FLOR, CUT, HVY BLSHWT RNG	8200' MD-8250' MD: MRL: 100% (CaCO3 35%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, NO STN, 5% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	8250' MD-8300' MD: MRL: 100% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, NO STN, 5% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	8300' MD-8350' MD: MRL: 90% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, 10% FREE CHK, NO STN, 5% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	8350' MD-8400' MD: MRL: 85% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, 15% FREE CHK, NO STN, 7% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG
6400 TVD	6530			
6700				

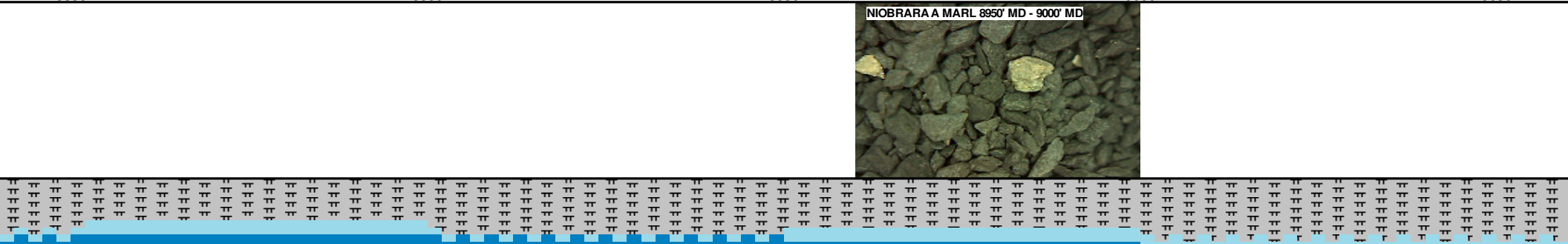




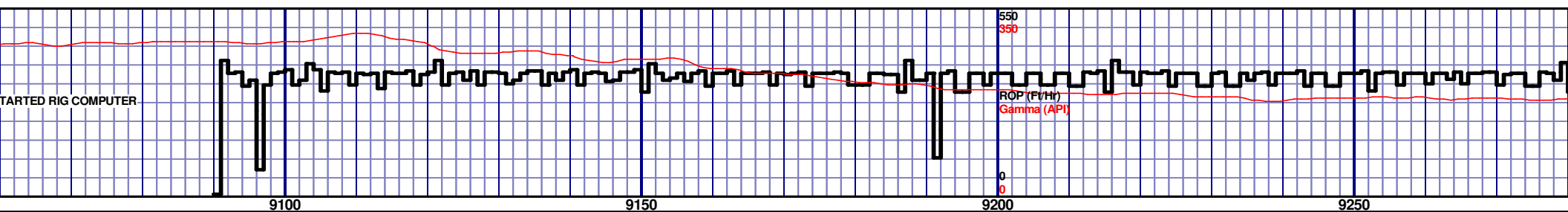
6400 TVD			
6530			
6700			
75% (CaCO3 40%) MEDDRKGY - KY, FXLN TO CHLKY, SFT, IMBD CAL, FREE PYR, 10% FREE BENT, 15% FREE CHK, NO STN, 15% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG			
8650' MD-8700' MD: MRL: 65% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, 15% FREE BENT, 20% FREE CHK, NO STN, 15% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG			
8700' MD-8750' MD: MRL: 70% (CaCO3 35%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, 20% FREE BENT, 10% FREE CHK, NO STN, 20% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG			
8750' MD-8800' MD: MRL: 65% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, 20% FREE BENT, 15% FREE CHK, NO STN, 20% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG			
8800' MD-8850' MD: MRL: 75% (CaCO3 35%) MEDDR DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD MICROXLN PYR, FREE PYR, 15% FREE BENT, CHK, NO STN, 15% LTOR MIN FLOR, FNT BLSHWT IMMED STRMG CUT, HVY BLSHWT RNG			

MD 8653 TVD 6539.47
INC 90.18 AZ 269.18
VS 2516.04

MD 8748 TVD 6539.68
INC 89.57 AZ 269.66
VS 2610.84

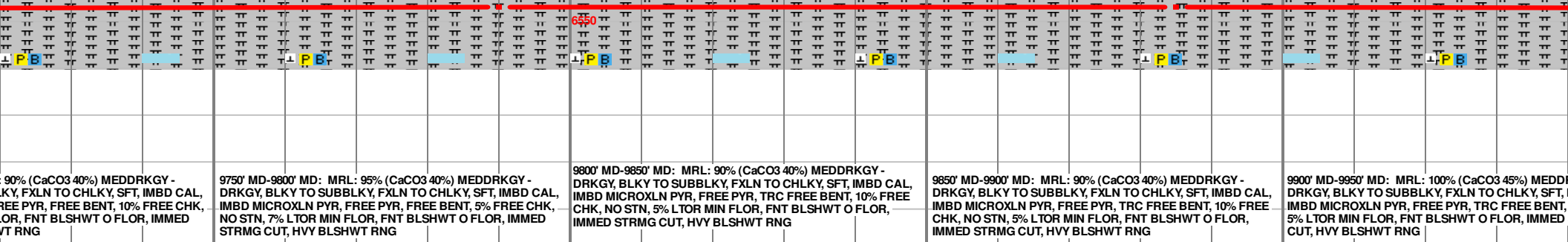
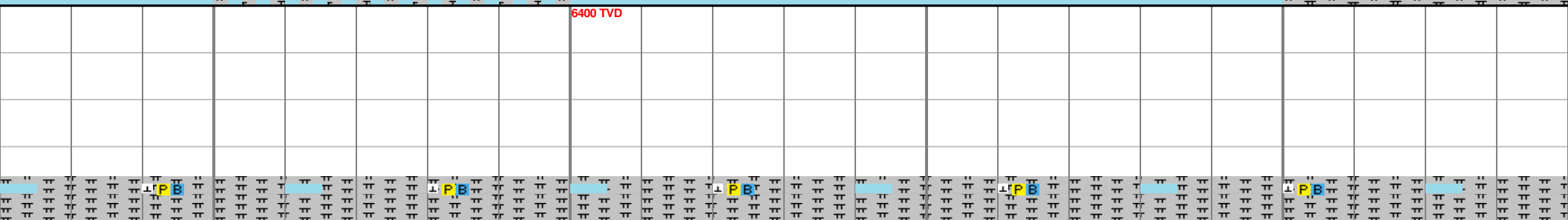
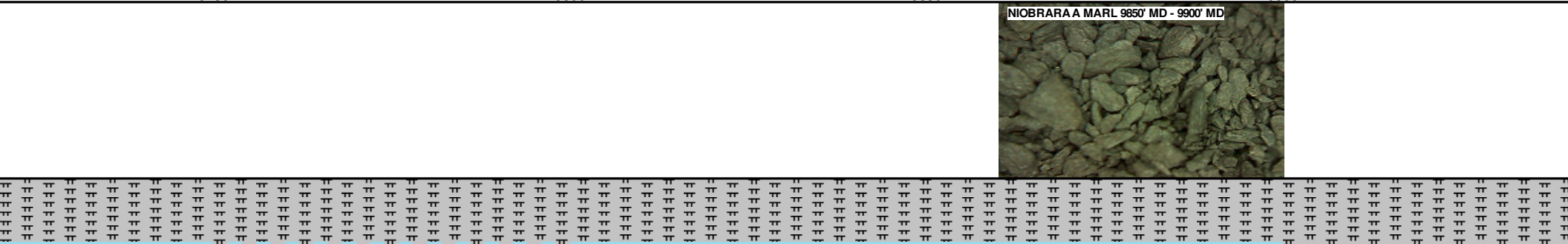
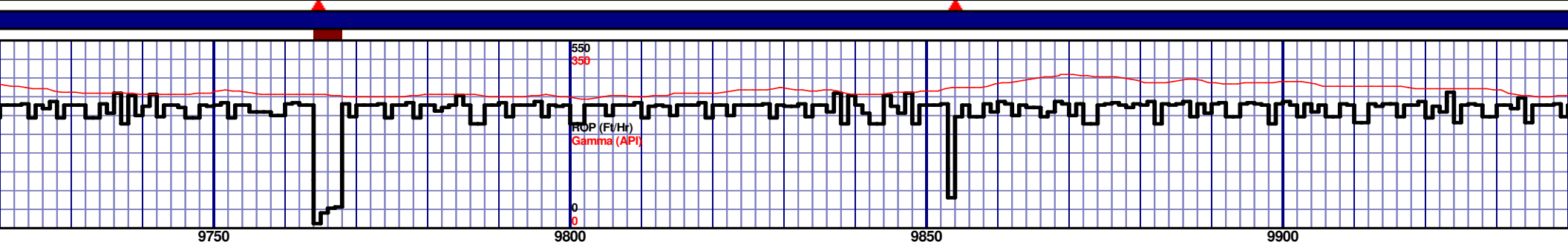


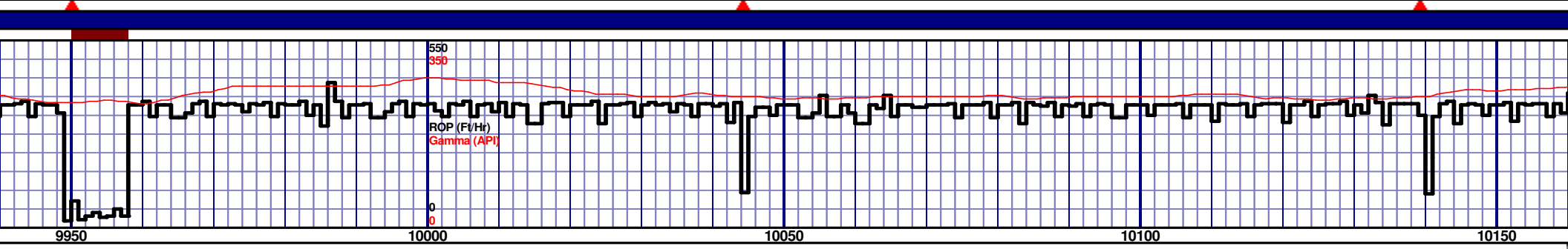
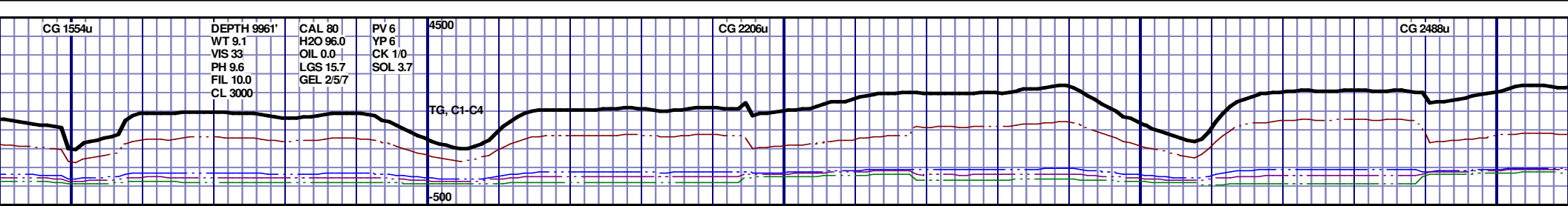
MD 8842 TVD 6539.98 INC 90.06 AZ 270.55 VS 2704.72	MD 8937 TVD 6540.19 INC 89.69 AZ 271.14 VS 2799.64	MD 9032 TVD 6540.57 INC 89.85 AZ 269.81 VS 2894.54
--	--	--



00' MD: MRL: 85% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, FREE BENT, 15% FREE CHK, NO STN, 7% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	9100' MD-9150' MD: MRL: 90% (CaCO3 35%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, FREE BENT, 10% FREE CHK, NO STN, 7% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	9150' MD-9200' MD: MRL: 80% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, 10% FREE BENT, 10% FREE CHK, NO STN, 10% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	9200' MD-9250' MD: MRL: 90% (CaCO3 35%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, FREE BENT, 10% FREE CHK, NO STN, 7% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG	9250' MD-9300' MD: MRL: 90% (CaCO3 35%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, FREE BENT, 10% FREE CHK, NO STN, 7% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG
--	---	--	---	---

MD 9221 TVD 6542.69
INC 89.6 AZ 269.6
VS 3083.14

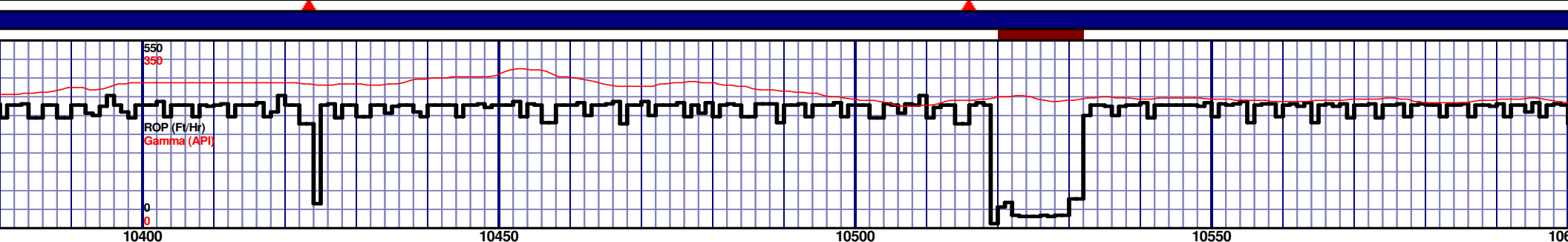
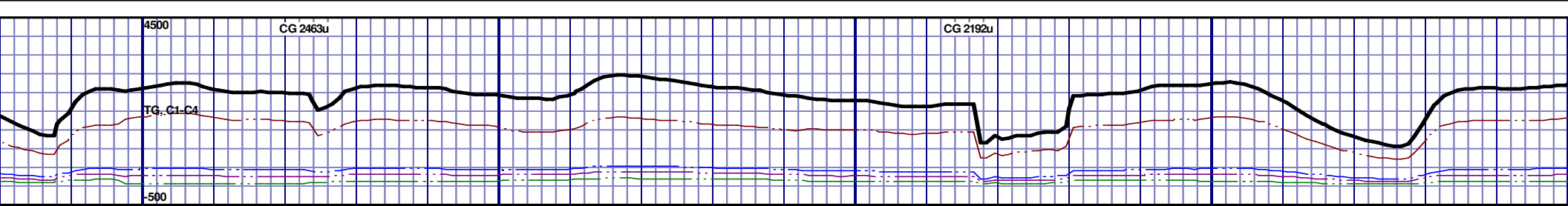




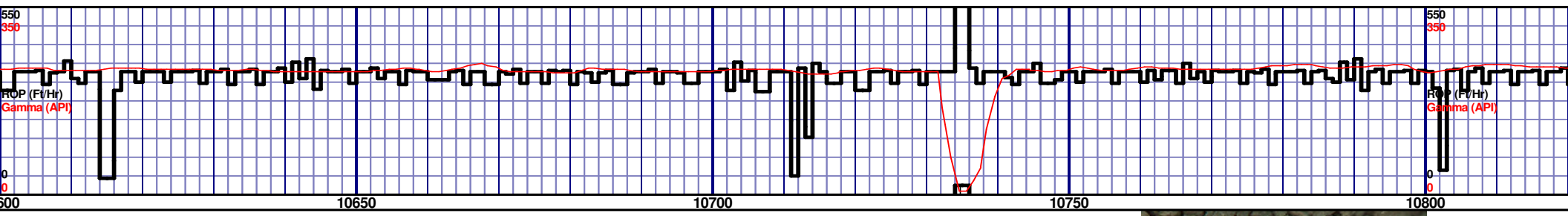
6400 TVD									
6530									
6700									
9950' MD-10000' MD: MRL: 100% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, FREE BENT, NO STN, 7% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
10000' MD-10050' MD: MRL: 95% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, TRC FREE BENT, 5% FREE CHK, NO STN, 5% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
10050' MD-10100' MD: MRL: 100% (CaCO3 45%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, FREE BENT, NO STN, 7% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
10100' MD-10150' MD: MRL: 95% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, FREE BENT, 5% FREE CHK, NO STN, 7% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									
10150' MD-10175' MD: MRL: 95% (CaCO3 40%) MEDDRKGY - DRKGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT, IMBD CAL, IMBD MICROXLN PYR, FREE PYR, FREE BENT, 5% FREE CHK, NO STN, 7% LTOR MIN FLOR, FNT BLSHWT O FLOR, IMMED STRMG CUT, HVY BLSHWT RNG									

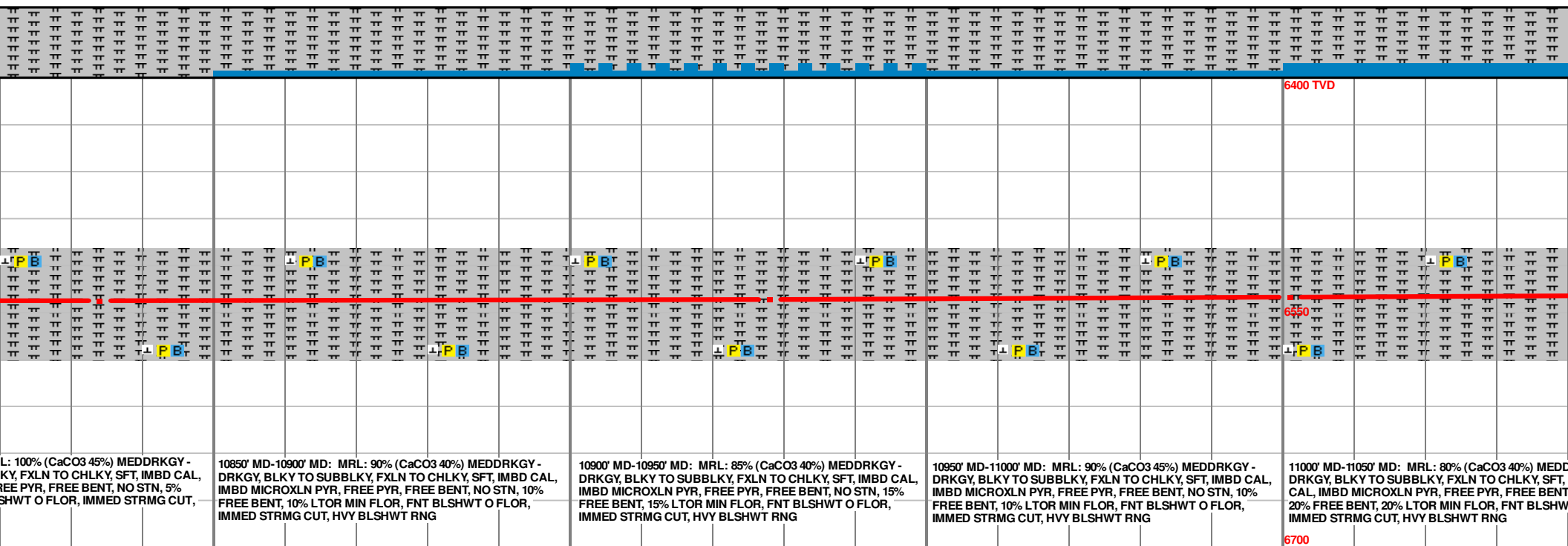
MD 9980 TVD 6541.9
INC 88.71 AZ 269.13
VS 3839.91

MD 10075 TVD 6543.61
INC 89.23 AZ 269.05
VS 3934.66



6400 TVD									

[illegible]



MD 11001 TVD 6540.2
INC 91.23 AZ 269.34
VS 4858.43

