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#### Customer Information

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

**Geologist:** Cassidy Miller  
Noble Energy Inc.

#### Mud Logging Details

**Logger:** Andrew Christiano & Hannah Blatchford

**Log Interval:** 6650' MD to 16290' MD

**Start Date:** December 13, 2013

**Release Date:** December 19, 2013

#### Well Information

**Well Name:** NCLP PC AA04-69-1HN  
Horizontal

**Location:** 4-T6N-R63W  
660' FNL, 250' FWL

**County:** Weld Co.  
**State:** Colorado

**Drilling Rig:** H&P 321

**Total Depth:** 16290' MD

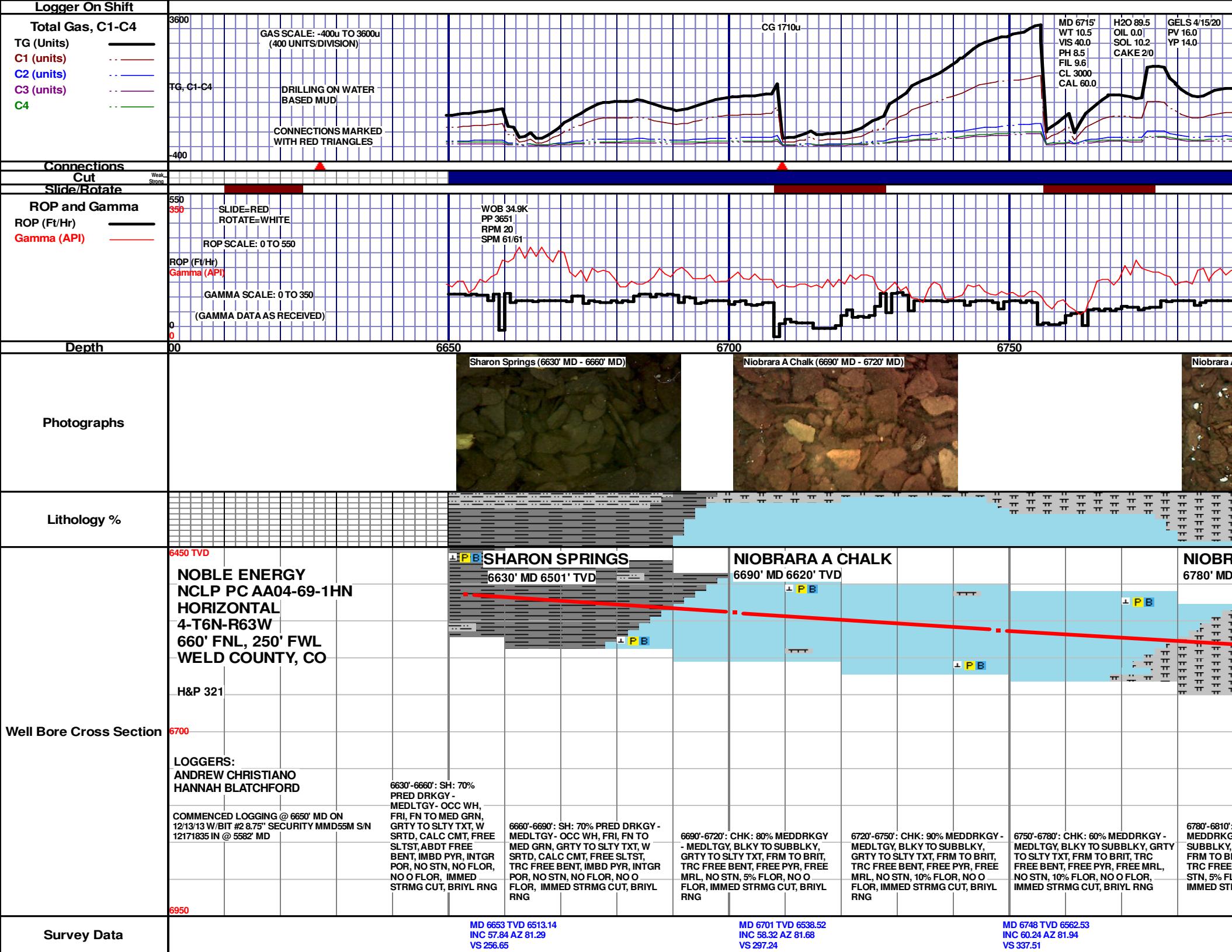
**TD Date:** December 19, 2013

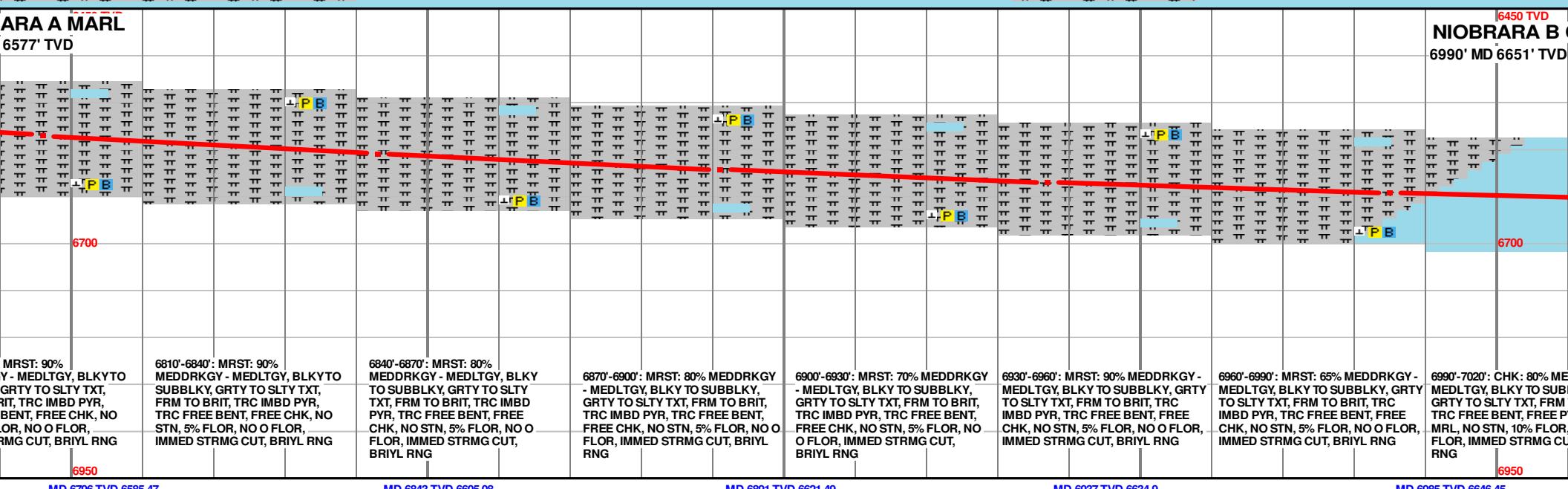
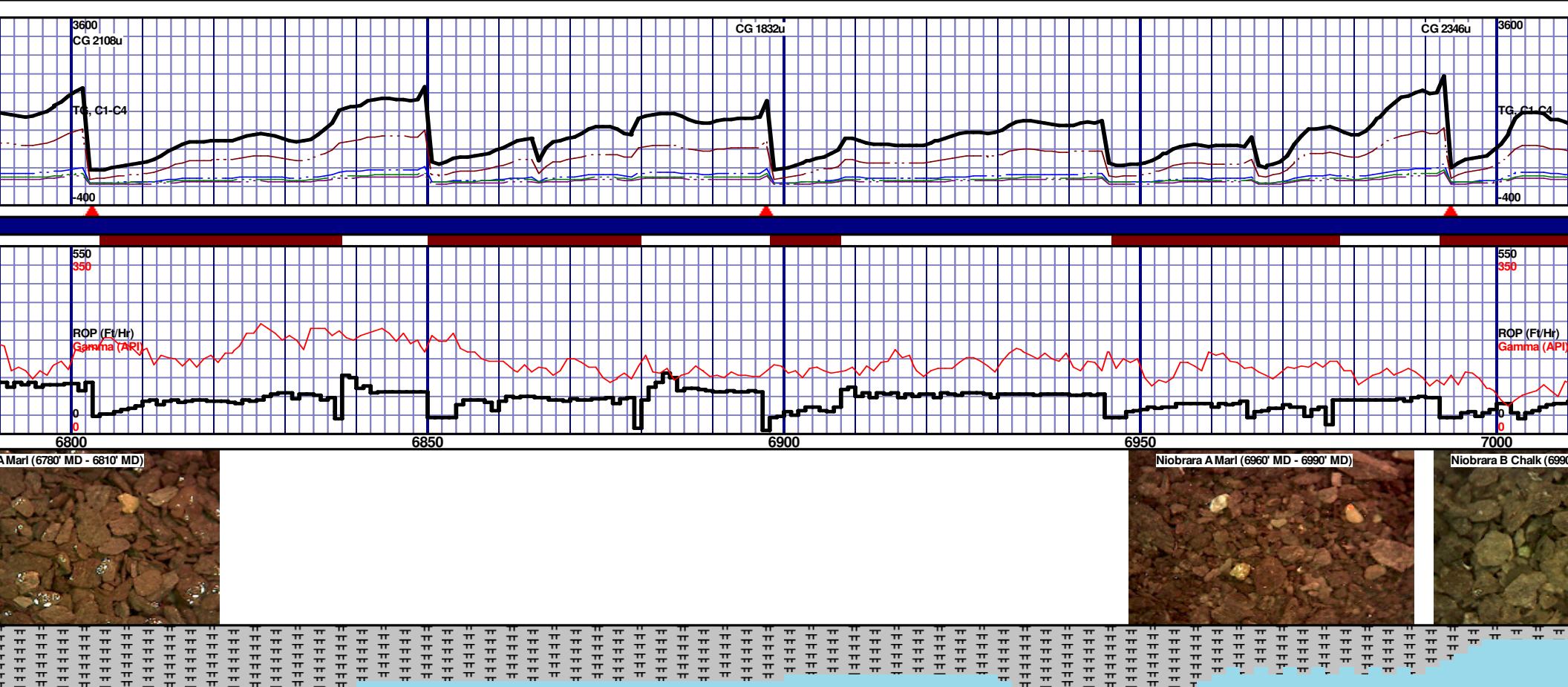
**Formation:** Niobrara B Chalk

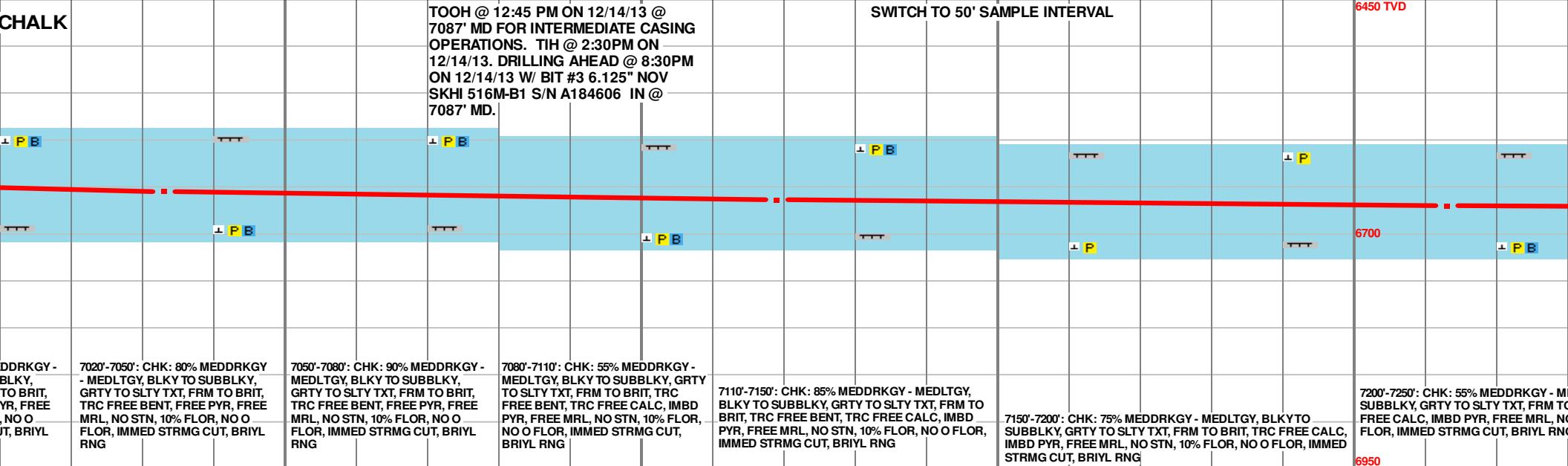
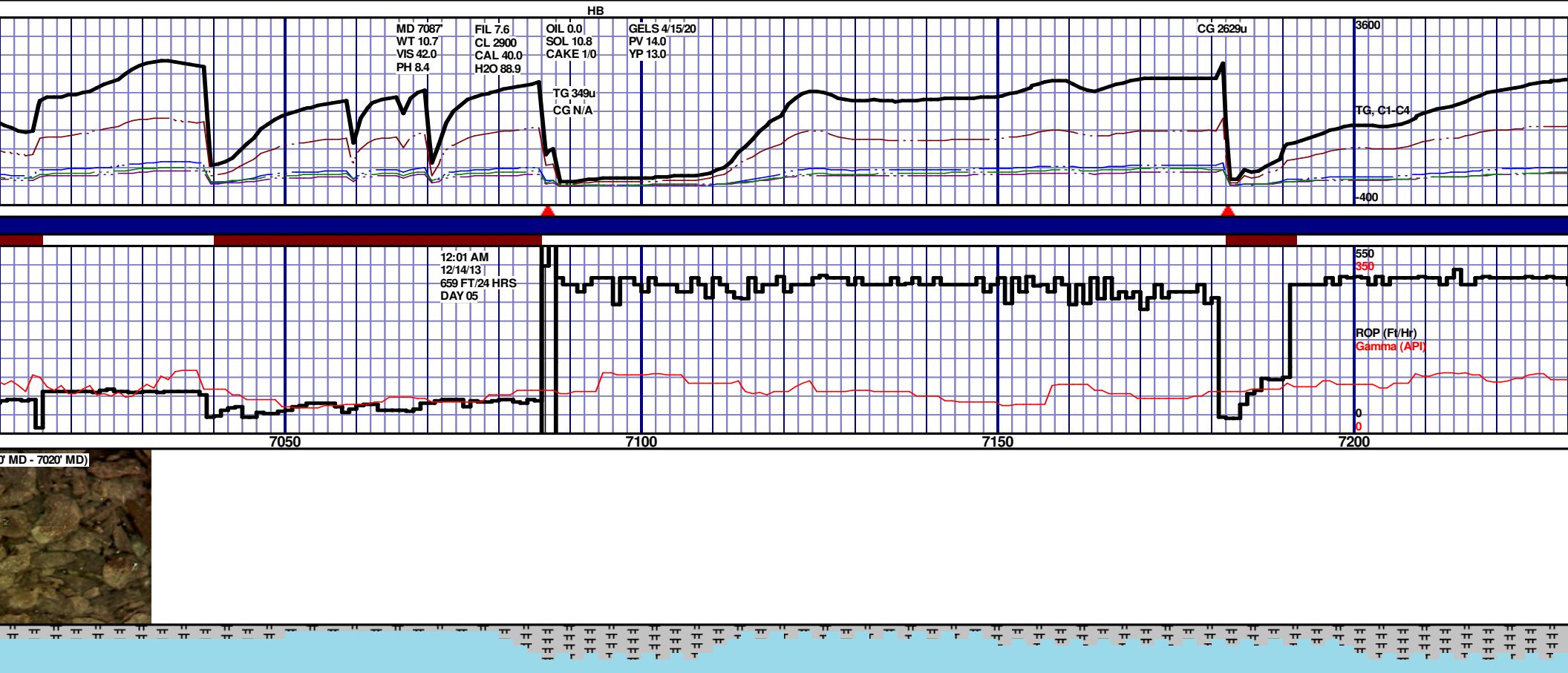
**KB Elevation:** 4740'

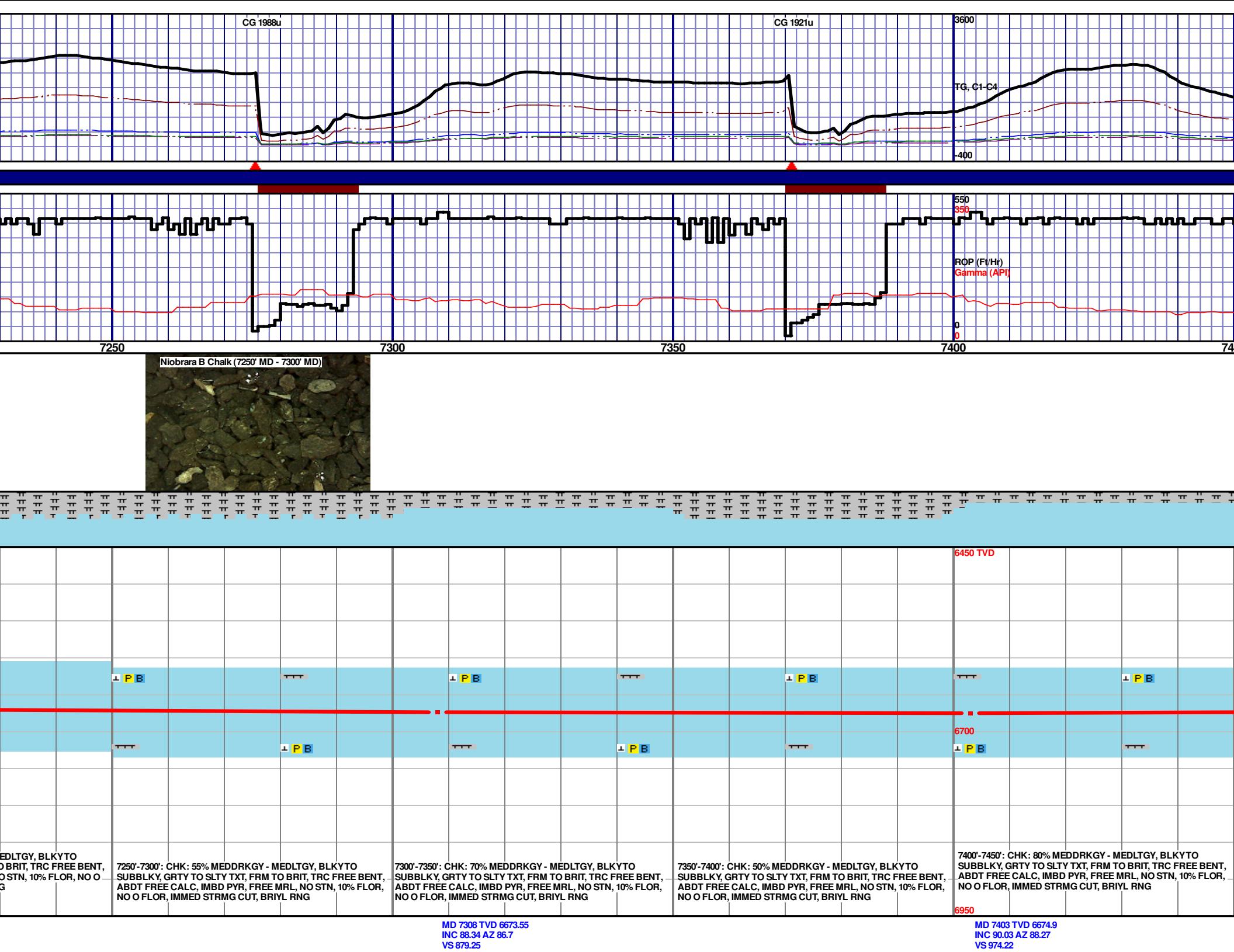
**GR Elevation:** 4710'

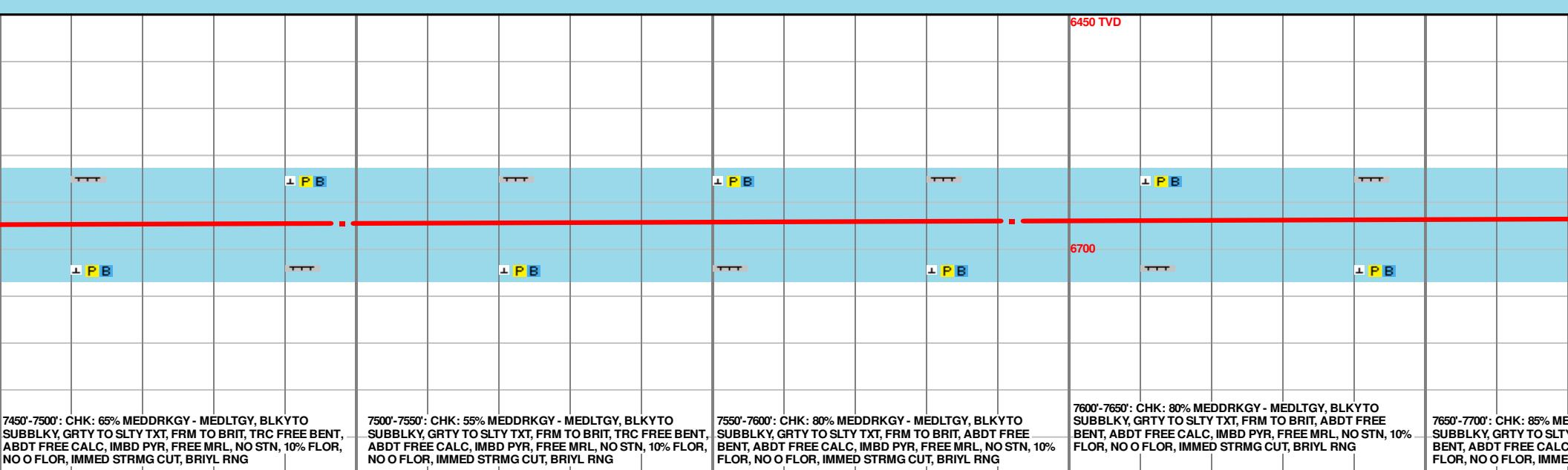
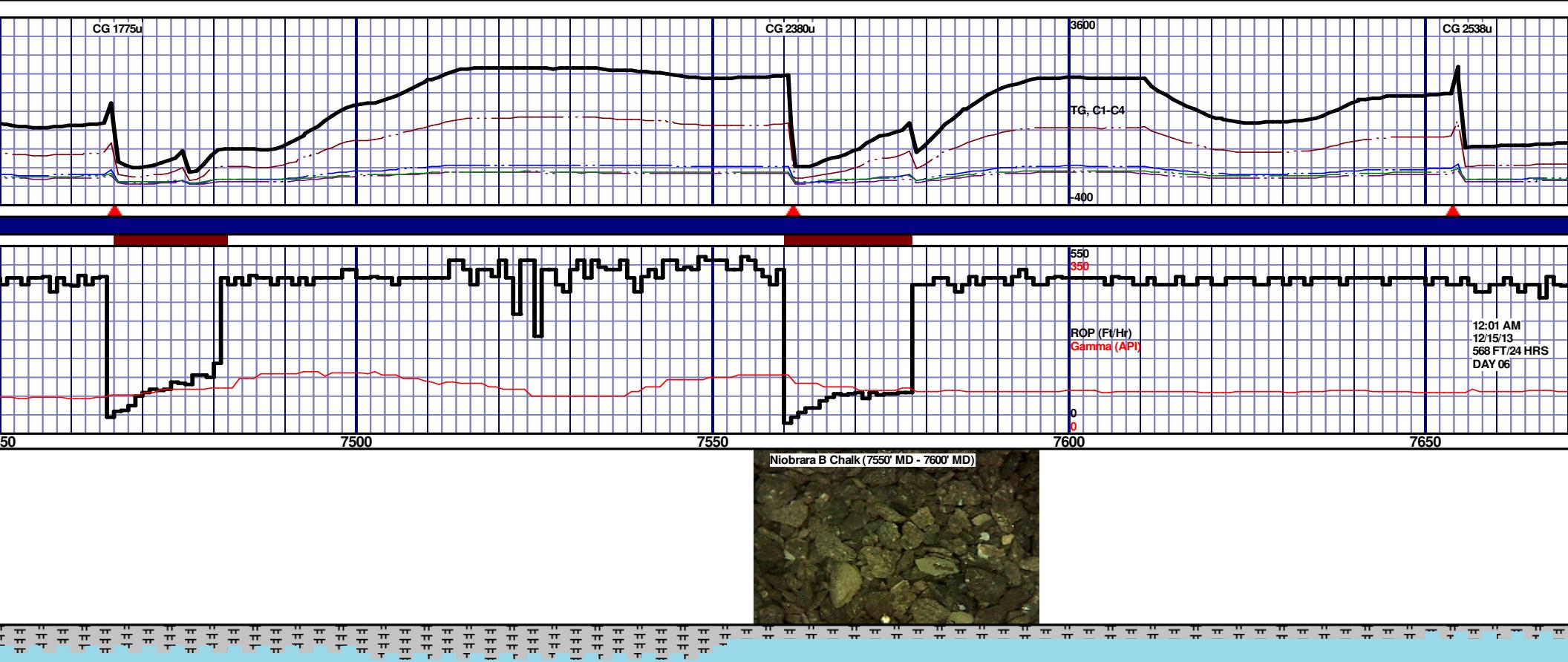
**API Number:** 05-123-37179-0000

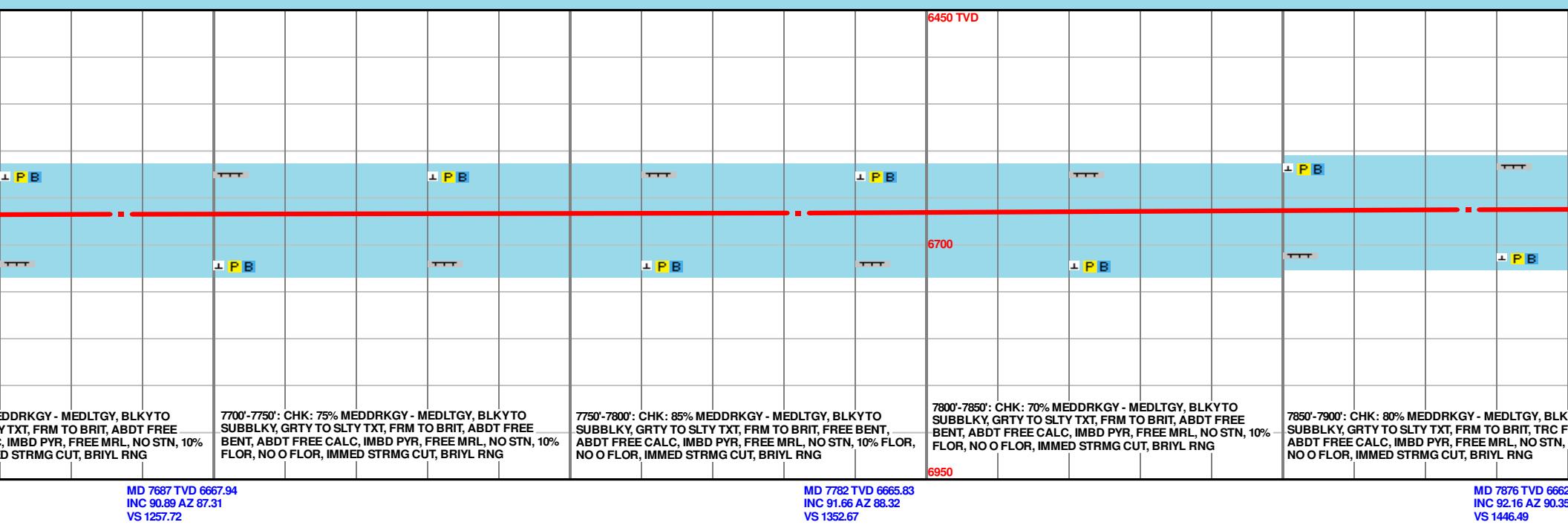
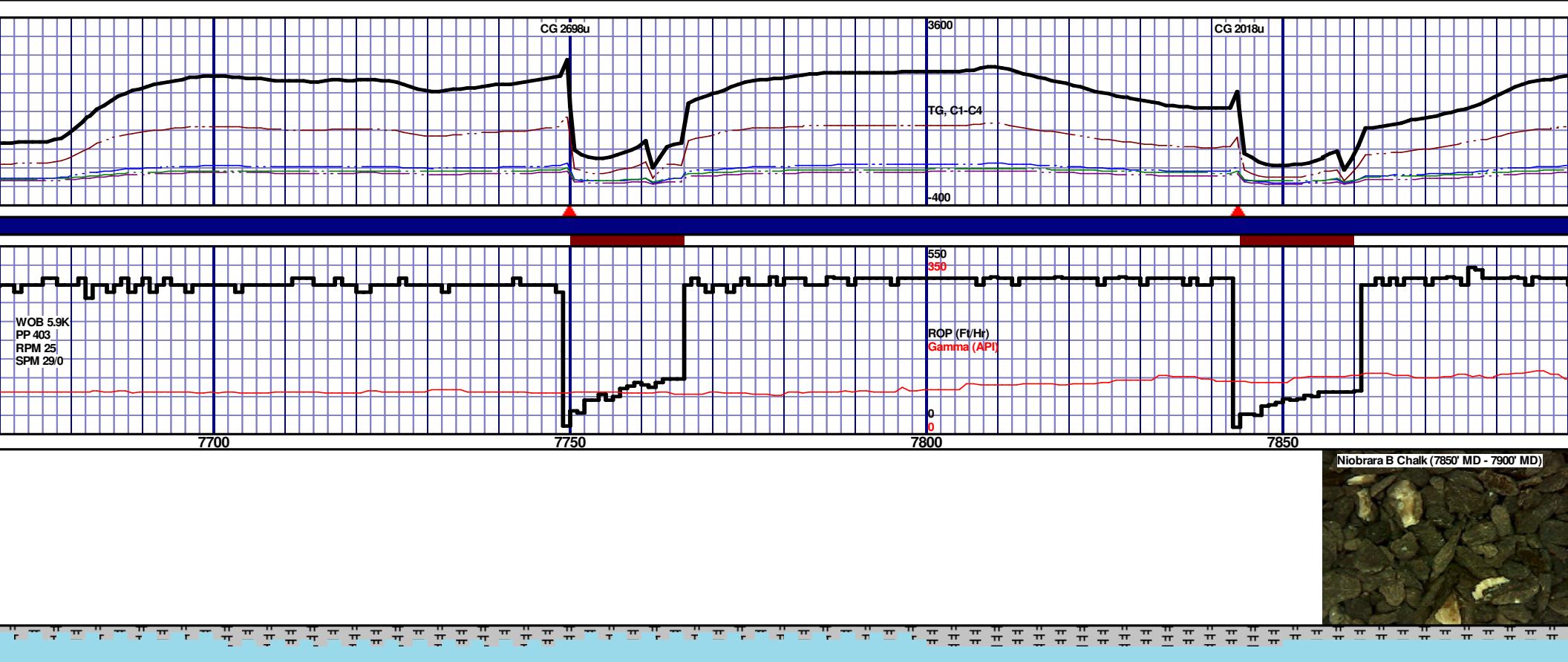


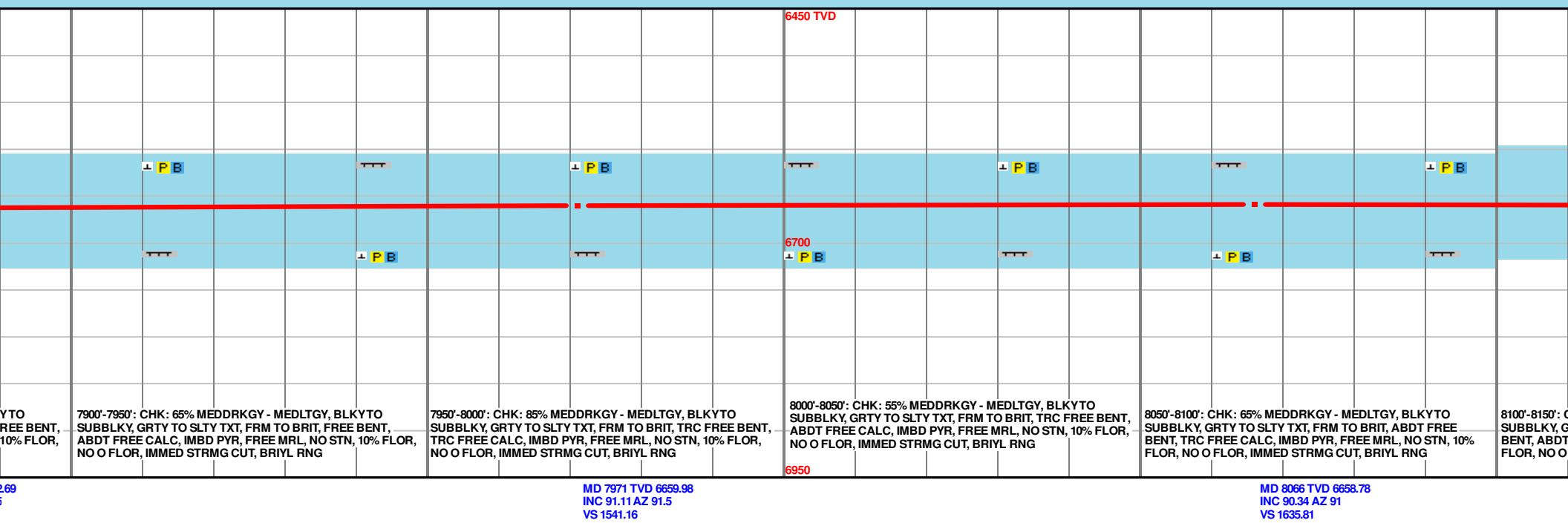
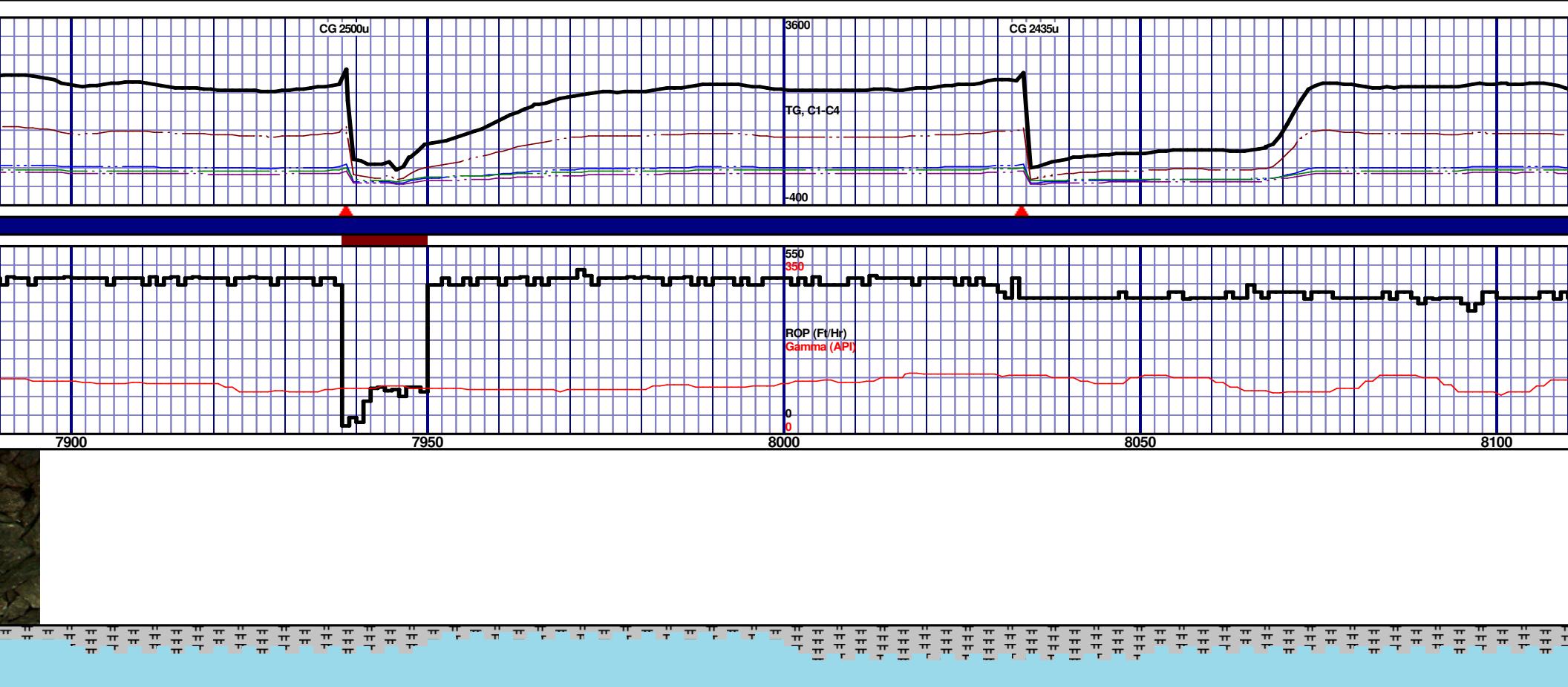


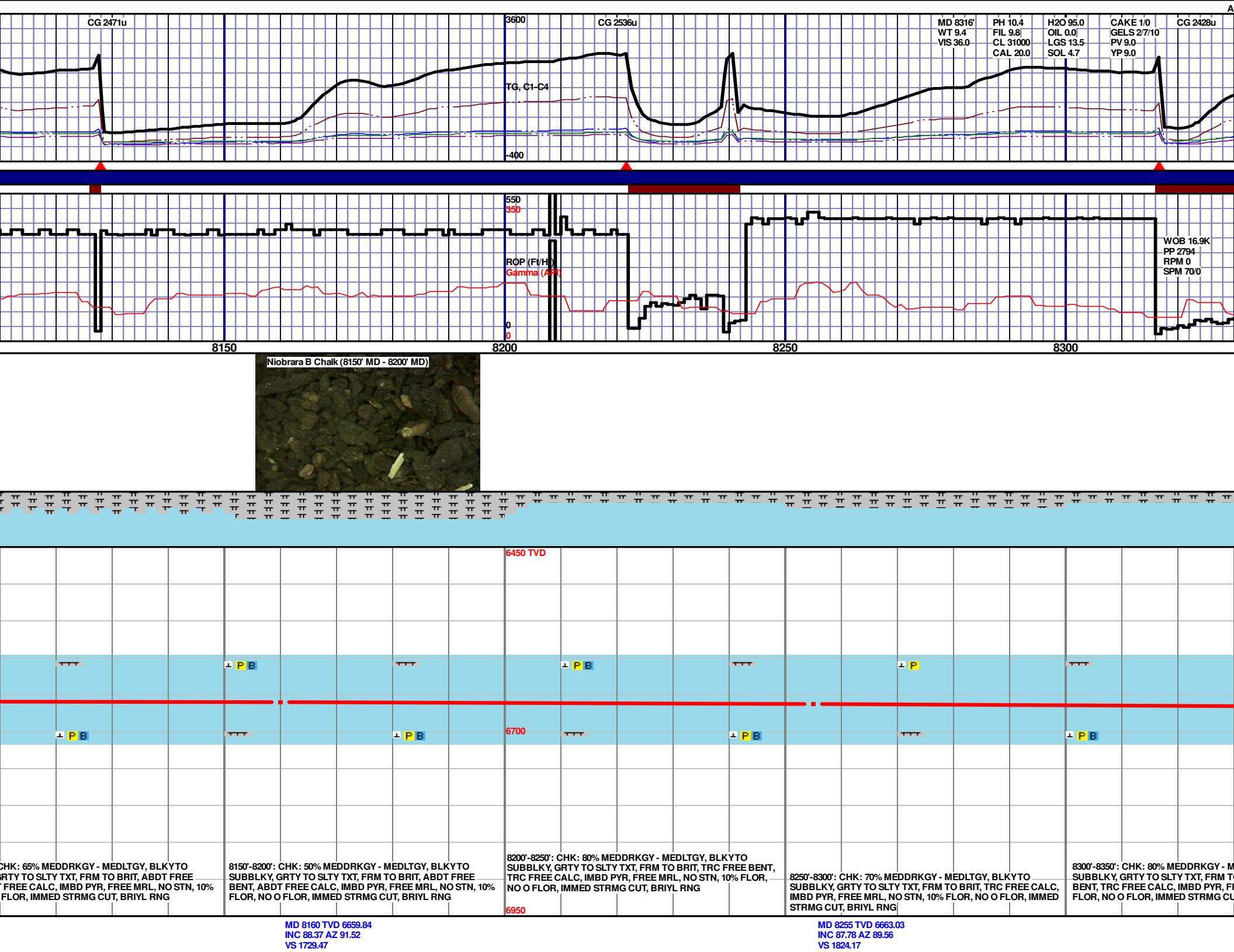


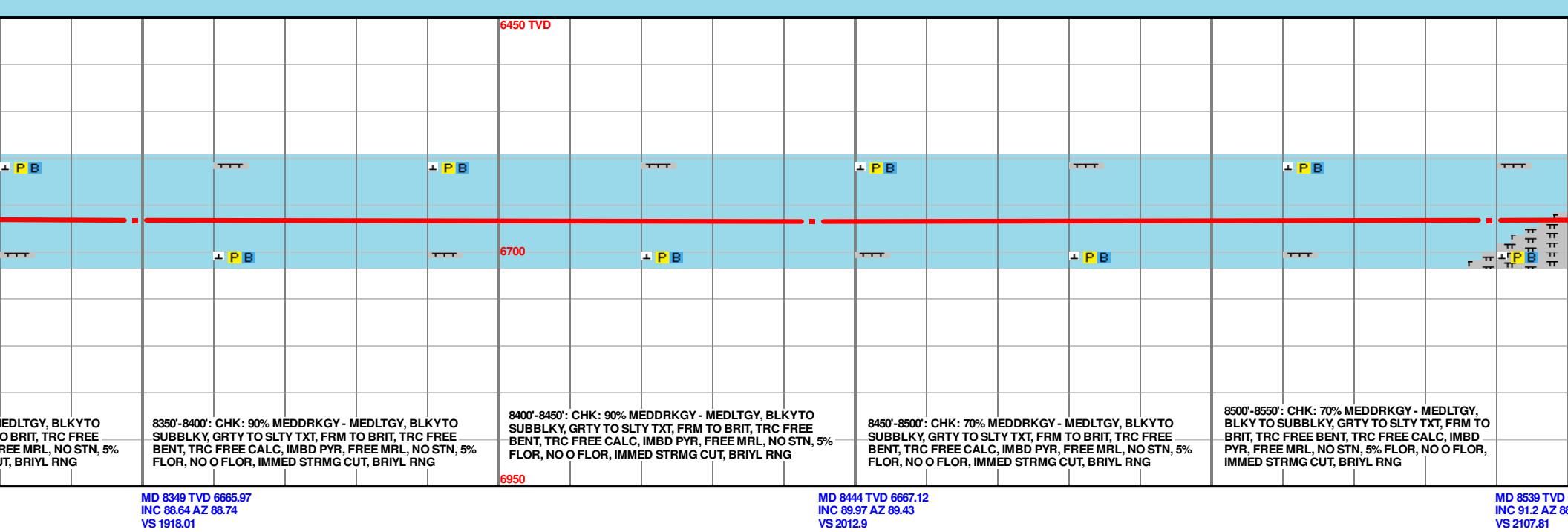
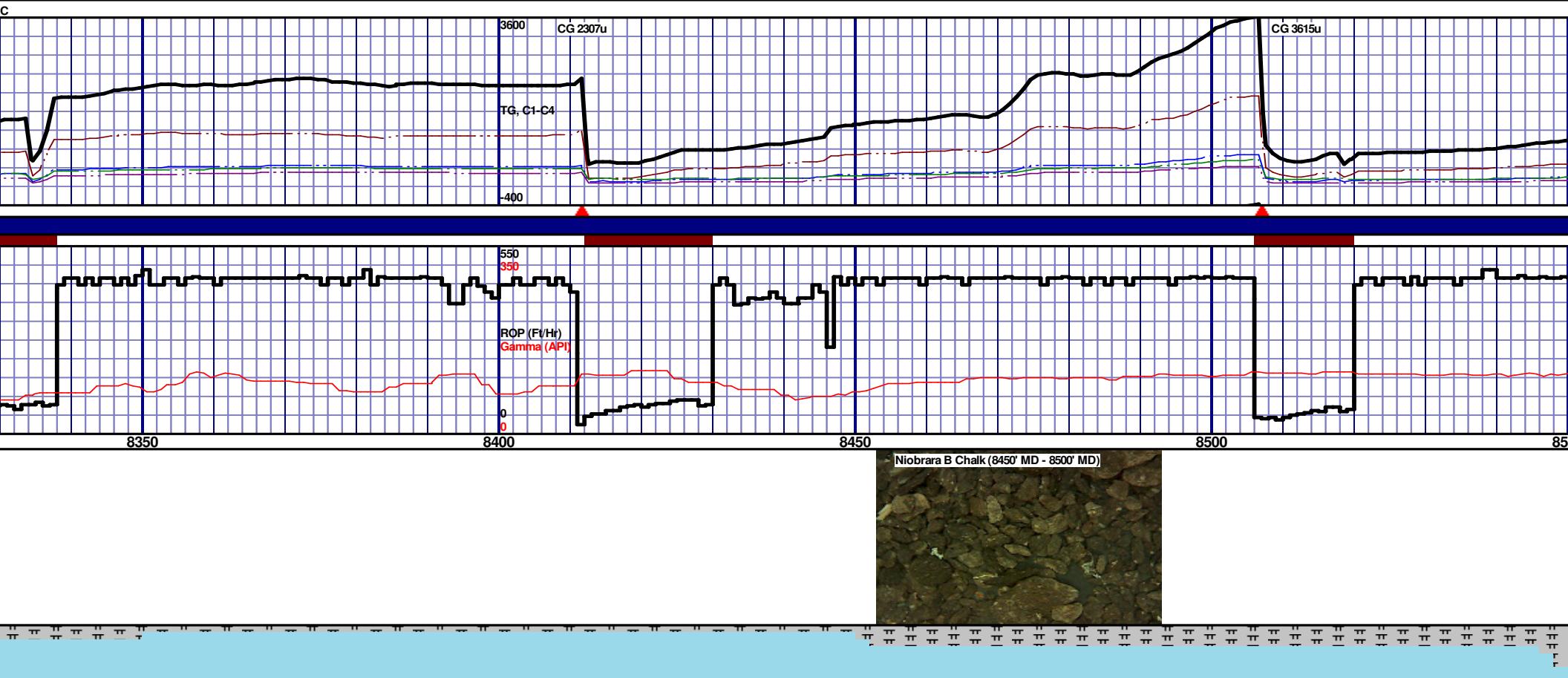


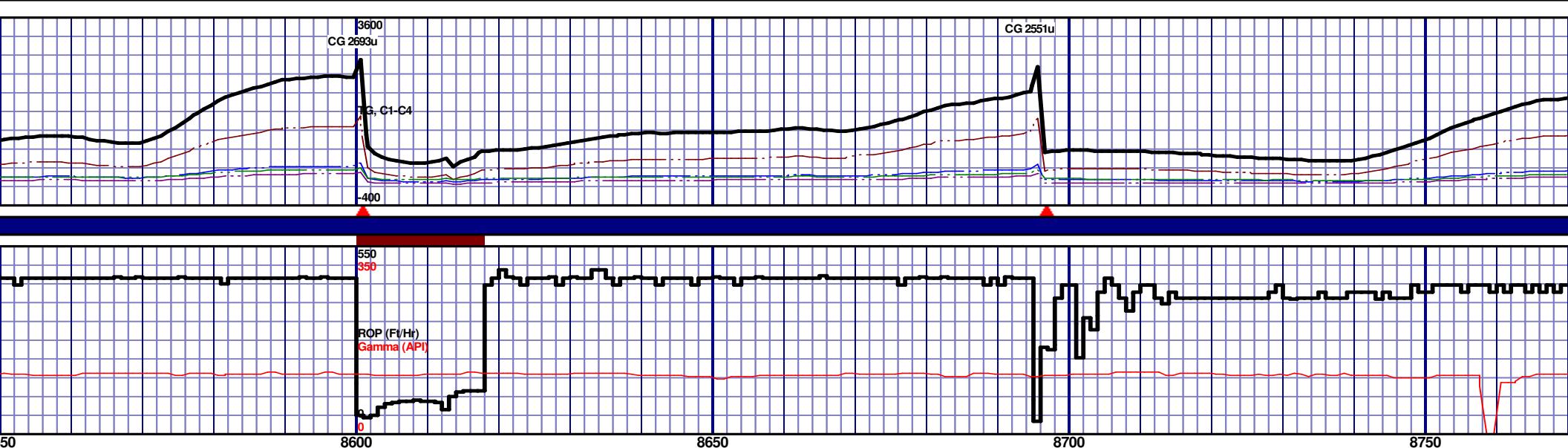






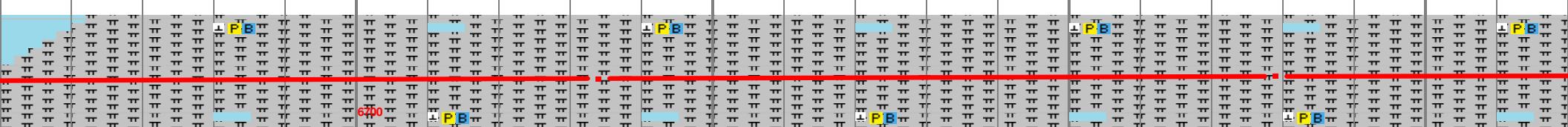






### NIOBRARA B MARL 8550' MD 6665' TVD

6450 TVD



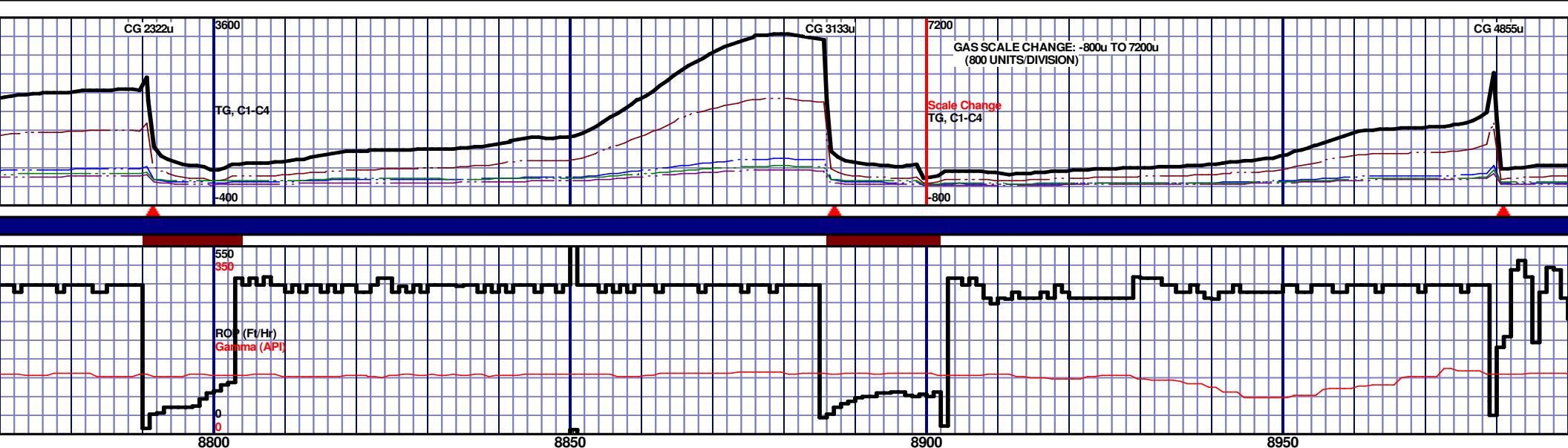
8550'-8600': MRST: 90% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, TRC FREE BENT, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

8600'-8650': MRST: 90% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, TRC FREE BENT, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

8650'-8700': MRST: 90% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, TRC FREE BENT, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

8700'-8750': MRST: 85% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, TRC FREE BENT, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

8750'-8800': MRST: 80% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, TRC FREE BENT, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG



Niobrara B Marl (8950' MD - 9000' MD)



EDDRKGY - MEDLTGY, BLKY TO  
TXT, FRM TO BRIT, TRC IMBD PYR,  
HK, NO STN, 5% FLOR, NO O FLOR,  
YL RNG

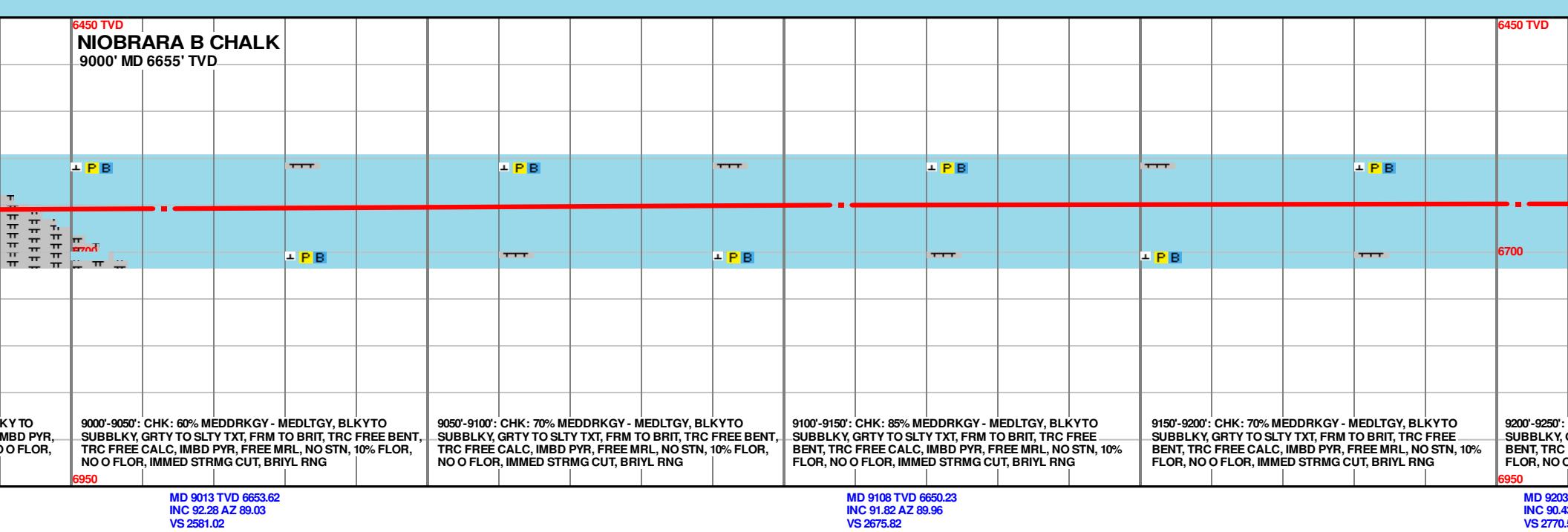
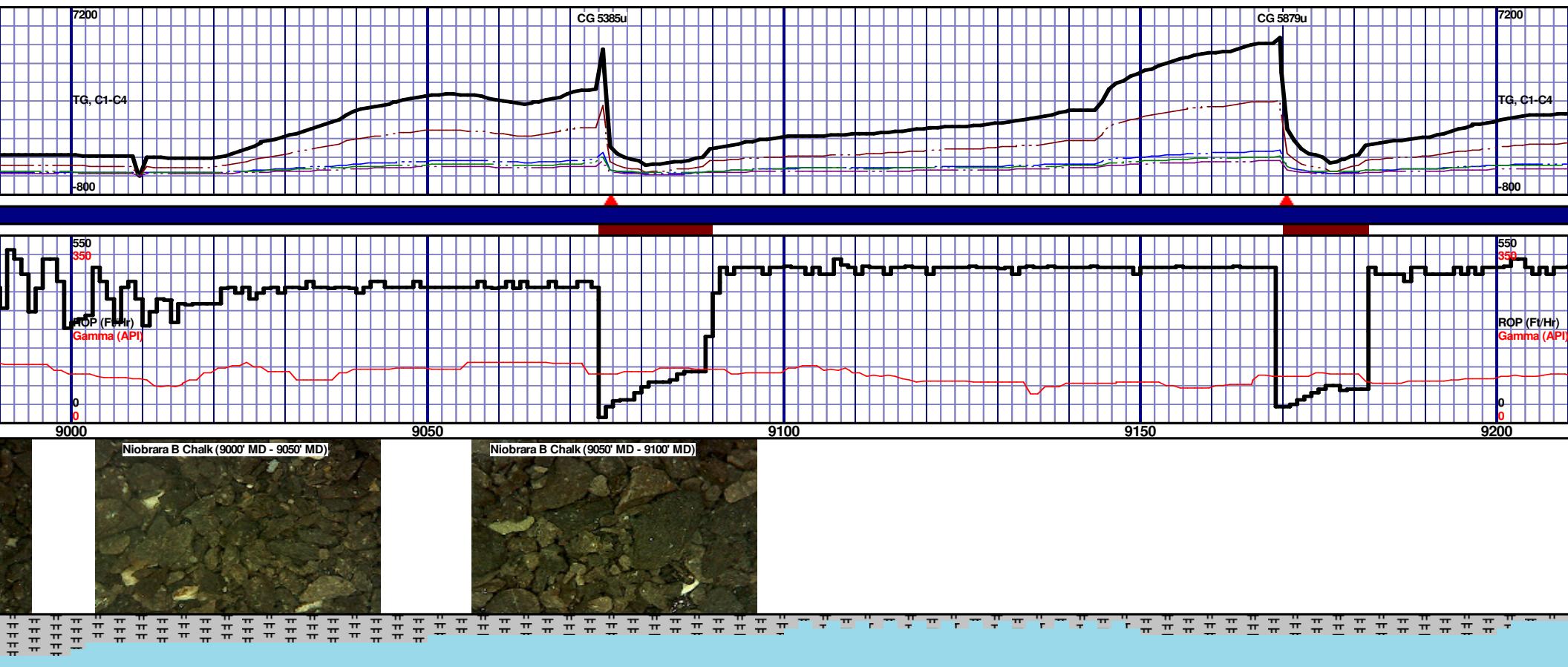
8800'-8850': MRST: 70% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
TRC FREE BENT, FREE CHK, NO STN, 5% FLOR, NO O FLOR,  
IMMED STRMG CUT, BRIYL RNG

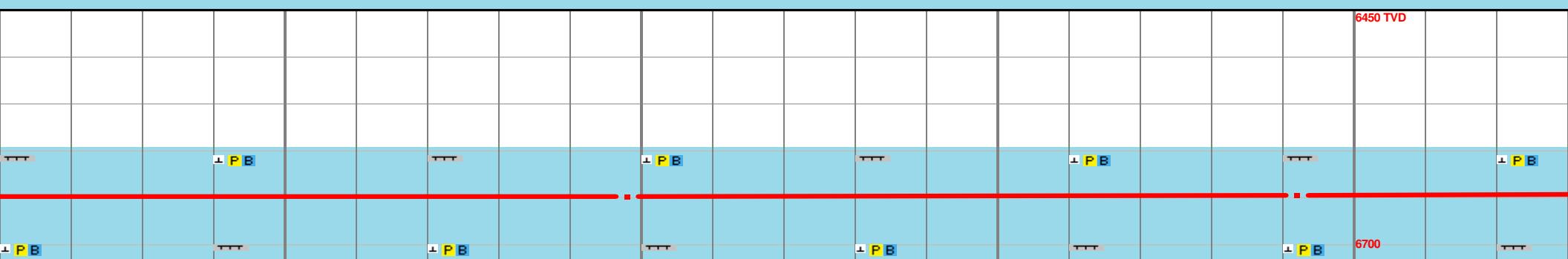
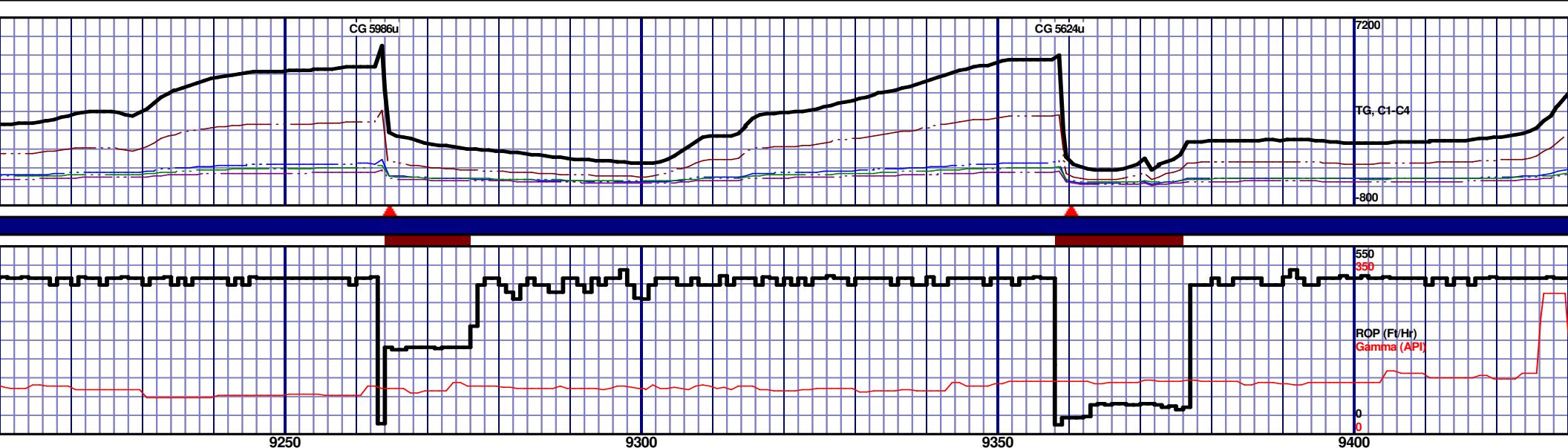
6950

8850'-8900': MRST: 80% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
TRC FREE BENT, FREE CHK, NO STN, 5% FLOR, NO O FLOR,  
IMMED STRMG CUT, BRIYL RNG

8900'-8950': MRST: 80% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
TRC FREE BENT, FREE CHK, NO STN, 5% FLOR, NO O FLOR,  
IMMED STRMG CUT, BRIYL RNG

8950'-9000': MRST: 60% MEDDRKGY - MEDLTGY, BL  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC I  
TRC FREE BENT, FREE CHK, NO STN, 5% FLOR, NO  
IMMED STRMG CUT, BRIYL RNG





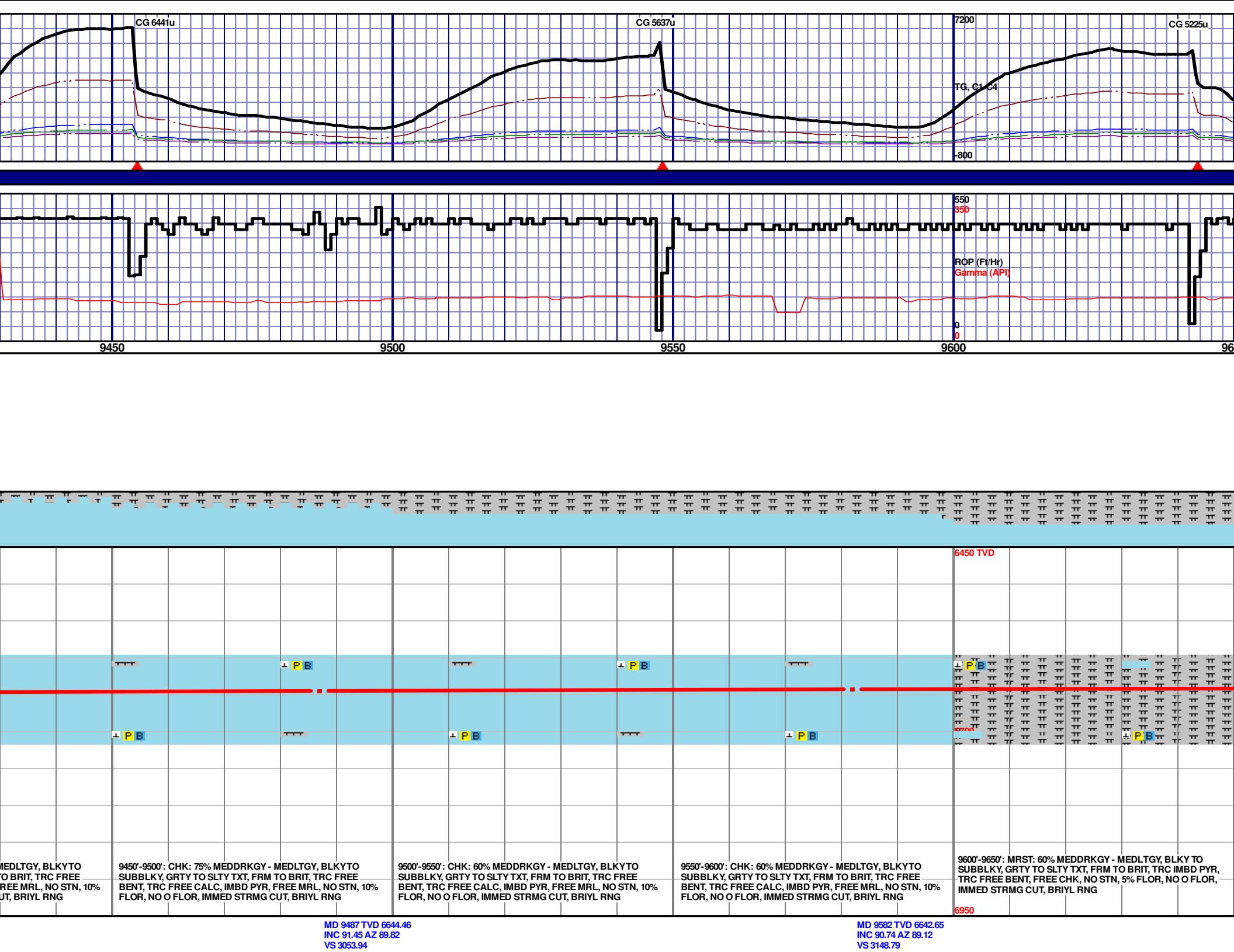
CHK: 90% MEDDRKGY - MEDLTGY, BLKY TO  
GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE  
FREE CALC, IMBD PYR, FREE MRL, NO STN, 10%  
FLOR, IMMED STRMG CUT, BRIYL RNG

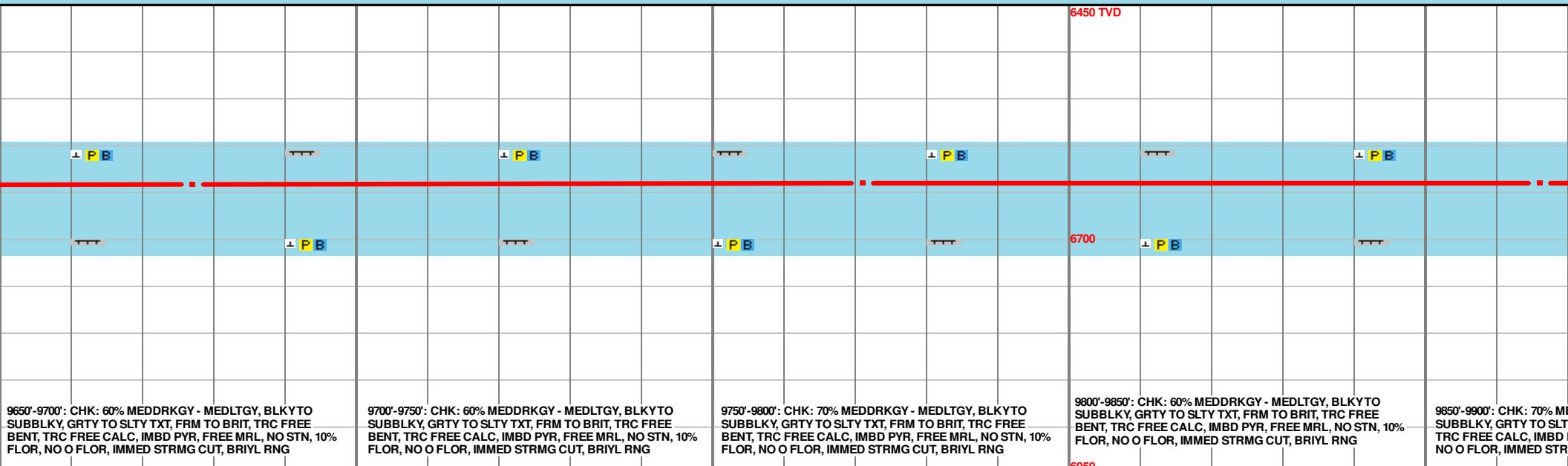
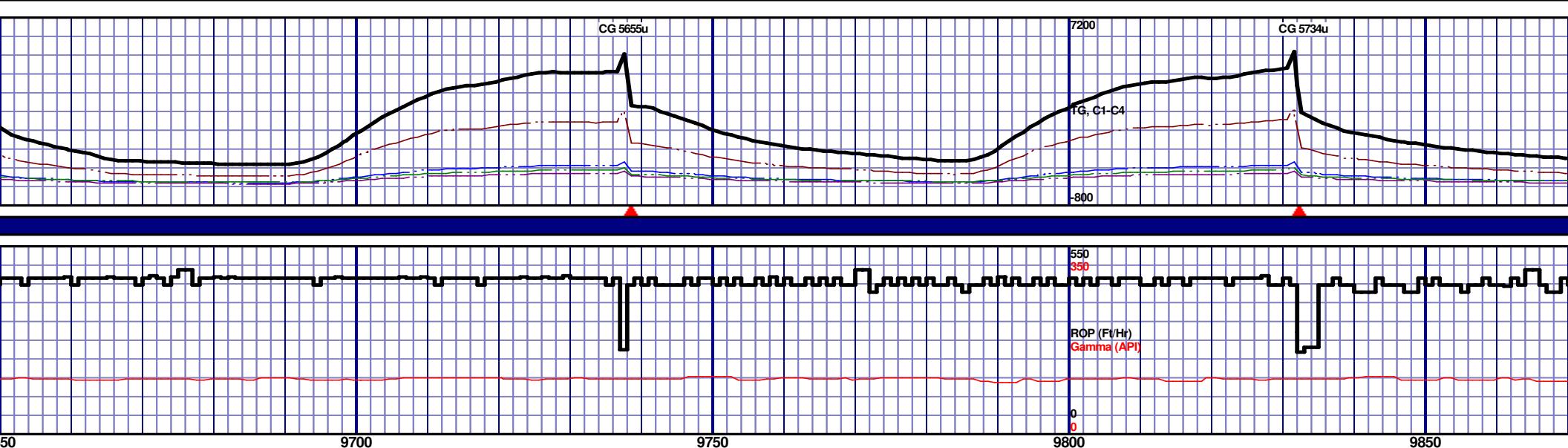
9250'-9300': CHK: 90% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE BENT,  
TRC FREE CALC, IMBD PYR, FREE MRL, NO STN, 10% FLOR,  
NO O FLOR, IMMED STRMG CUT, BRIYL RNG

9300'-9350': CHK: 70% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE BENT,  
TRC FREE CALC, IMBD PYR, FREE MRL, NO STN, 10% FLOR,  
NO O FLOR, IMMED STRMG CUT, BRIYL RNG

9350'-9400': CHK: 80% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE BENT,  
TRC FREE CALC, IMBD PYR, FREE MRL, NO STN, 10% FLOR,  
NO O FLOR, IMMED STRMG CUT, BRIYL RNG

9400'-9450': CHK: 85% MEDDRKGY -  
SUBBLKY, GRTY TO SLTY TXT, FRM TO  
BENT, TRC FREE CALC, IMBD PYR, F  
FLOR, NO O FLOR, IMMED STRMG C

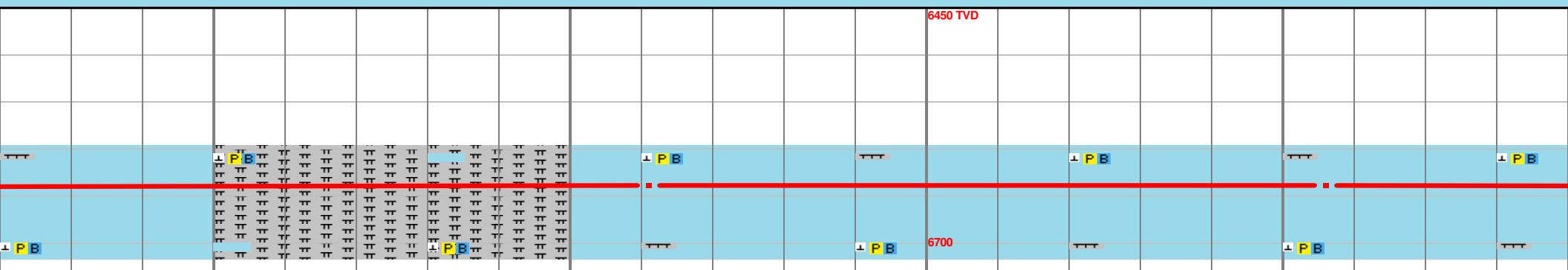
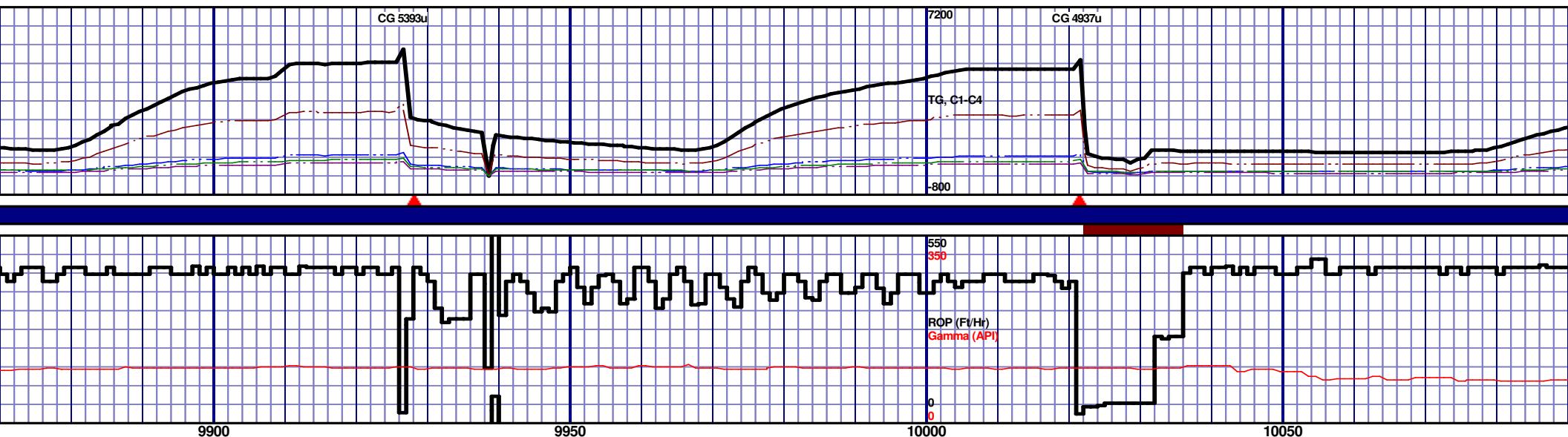




MD 9677 TVD 6641.49  
INC 90.65 AZ 89.23  
VS 3243.68

MD 9771 TVD 6640.4  
INC 90.68 AZ 89.52  
VS 3337.55

MD  
INC  
VS 3



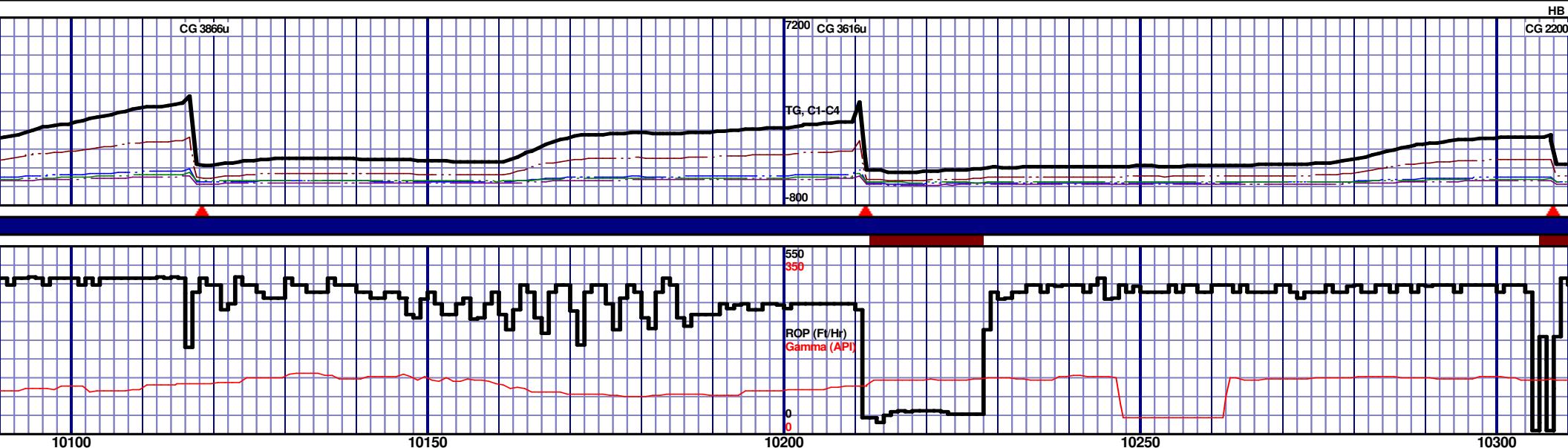
EDDRKGY - MEDLTGY, BLKY TO  
Y TXT, FRM TO BRIT, TRC FREE BENT,  
PYR, FREE MRL, NO STN, 10% FLOR,  
MG CUT, BRIYL RNG

9900'-9950': MRST: 60% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD  
PYR, TRC FREE BENT, FREE CHK, NO STN, 5% FLOR, NO O  
FLOR, IMMED STRMG CUT, BRIYL RNG

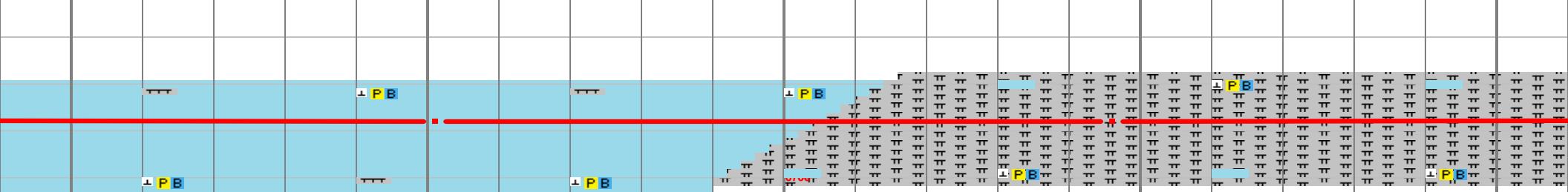
9950'-10000': CHK: 65% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE BENT,  
TRC FREE CALC, IMBD PYR, FREE MRL, NO STN, 10% FLOR,  
NO O FLOR, IMMED STRMG CUT, BRIYL RNG

10000'-10050': CHK: 55% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE  
BENT, TRC FREE CALC, IMBD PYR, FREE MRL, NO STN, 10%  
FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

10050'-10100': CHK: 65% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE  
BENT, TRC FREE CALC, IMBD PYR, FREE MRL, NO STN, 10%  
FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG



6450 TVD  
**NIOBRARA B MARL**  
10200' MD 6640' TVD



BLKY TO  
FREE  
NO STN, 10%  
G

10100'-10150': CHK: 55% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE  
BENT, TRC FREE CALC, IMBD PYR, FREE MRL, NO STN, 10%  
FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

10150'-10200': CHK: 65% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE  
BENT, TRC FREE CALC, IMBD PYR, FREE MRL, NO STN, 10%  
FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

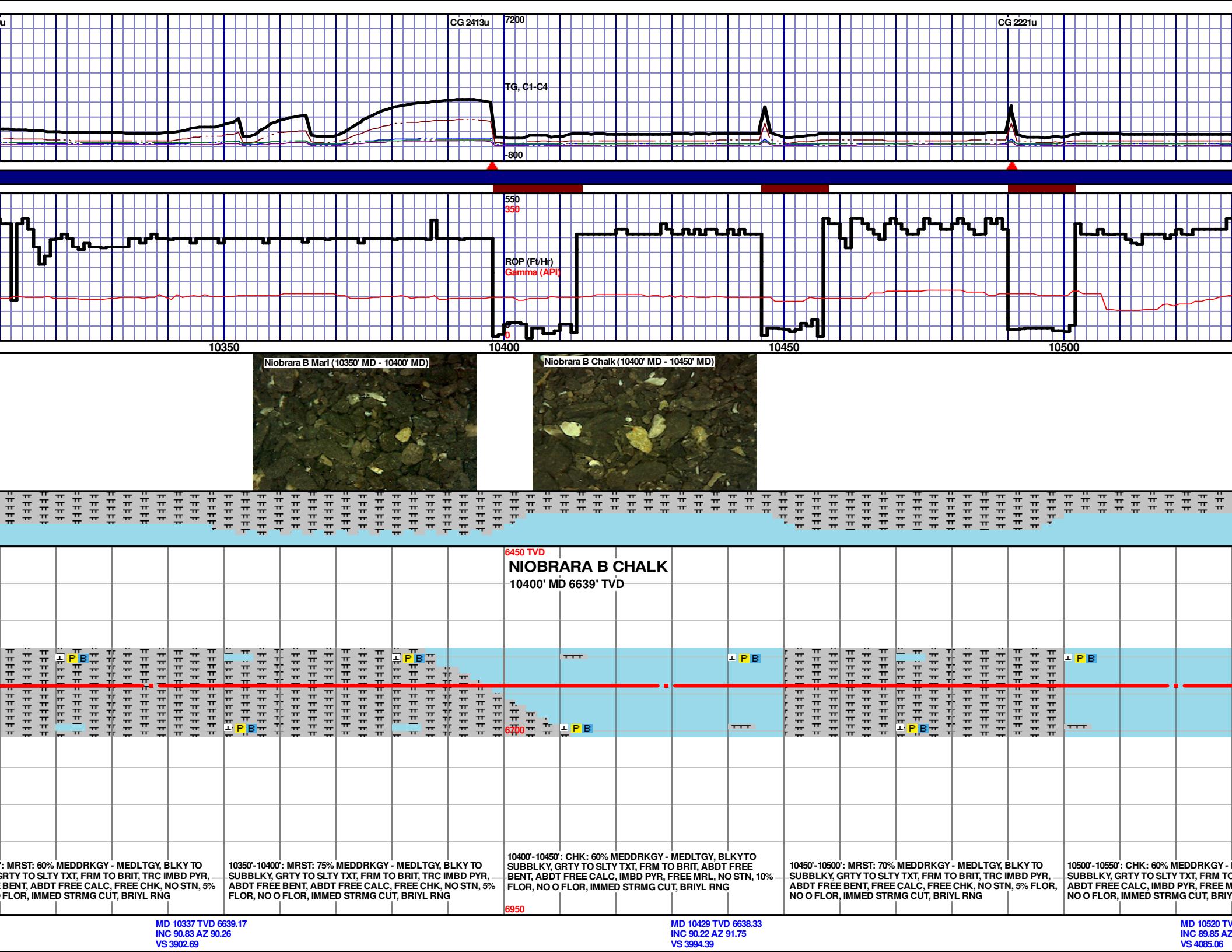
10200'-10250': MRST: 55% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
TRC FREE BENT, FREE CHK, NO STN, 5% FLOR, NO O FLOR,  
IMMED STRMG CUT, BRIYL RNG

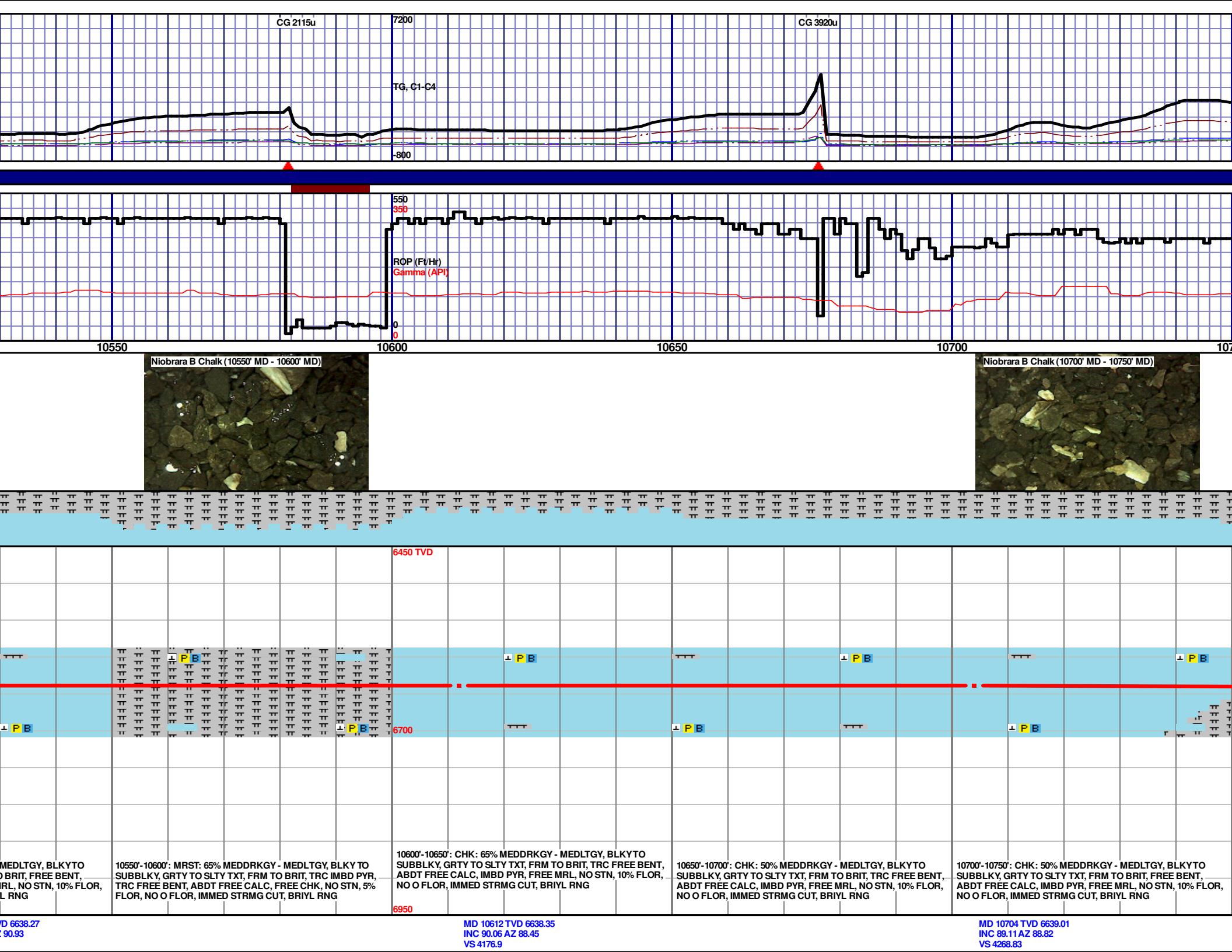
10250'-10300': MRST: 55% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
TRC FREE BENT, FREE CHK, NO STN, 5% FLOR, NO O FLOR,  
IMMED STRMG CUT, BRIYL RNG

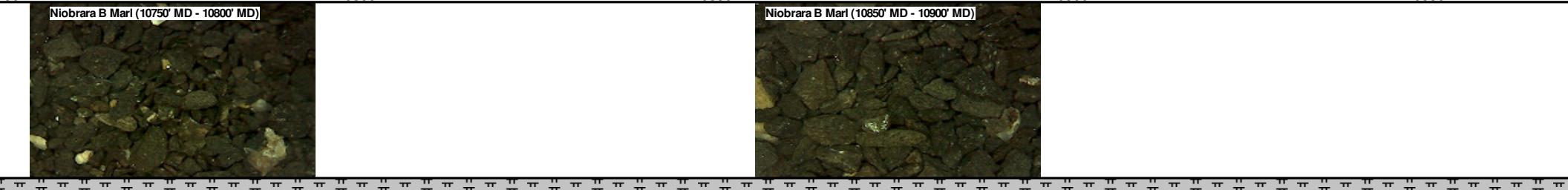
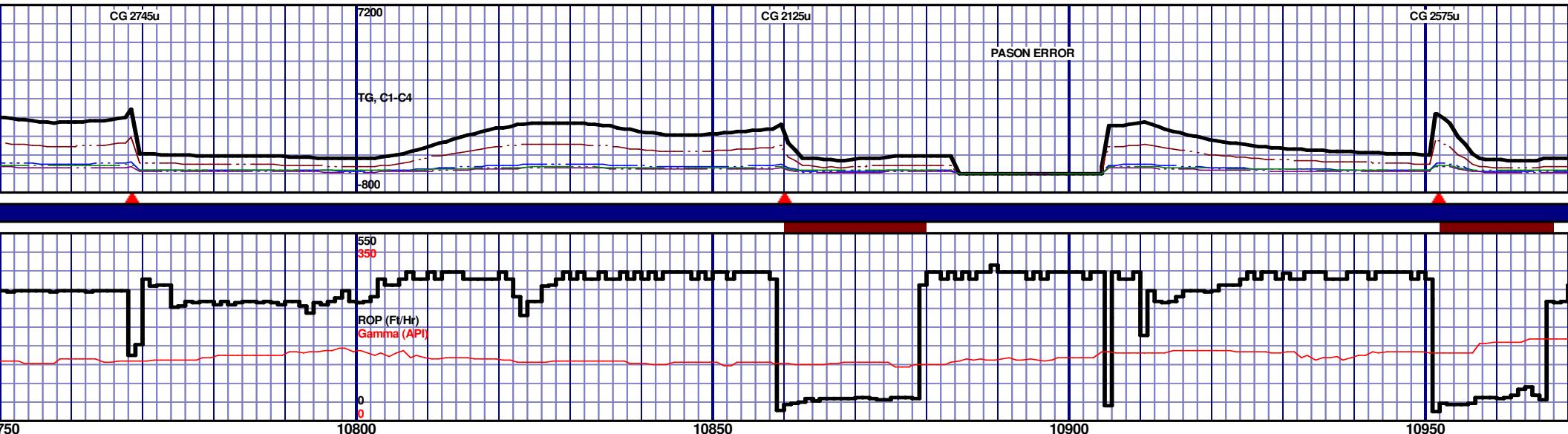
10300'-10350':  
SUBBLKY, G  
ABDT FREE  
FLOR, NO O

MD 10151 TVD 6639.95  
INC 88.7 AZ 89.08  
VS 3716.9

MD 10246 TVD 6640.42  
INC 90.74 AZ 88.33  
VS 3811.82

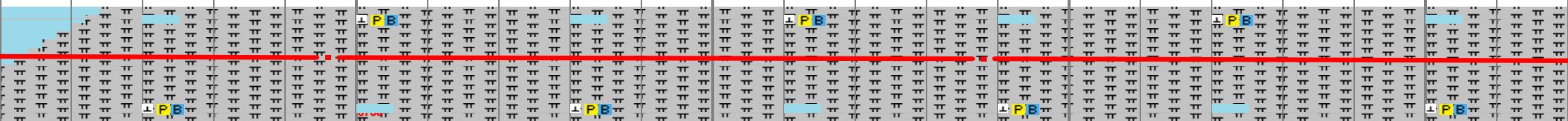






**NIOBRARA B MARL**  
10750' MD 6640' TVD

6450 TVD



10750'-10800': MRST: 90% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, FREE BENT, ABDT FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

10800'-10850': MRST: 90% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, FREE BENT, ABDT FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

6950

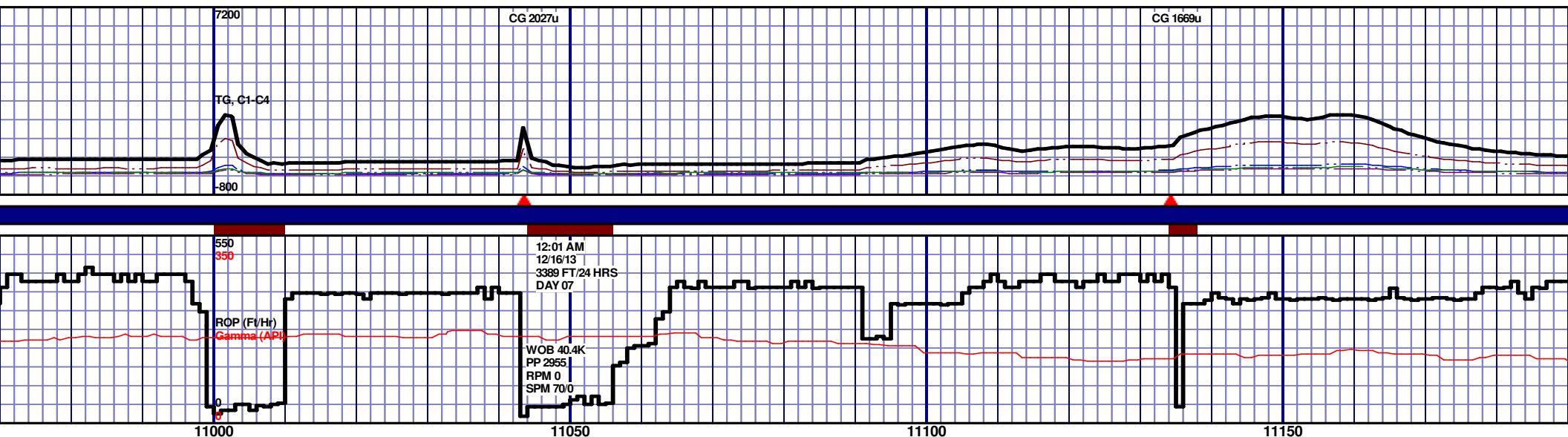
MD 10796 TVD 6640.64  
INC 88.86 AZ 92.62  
VS 4360.54

10850'-10900': MRST: 90% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, FREE BENT, ABDT FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

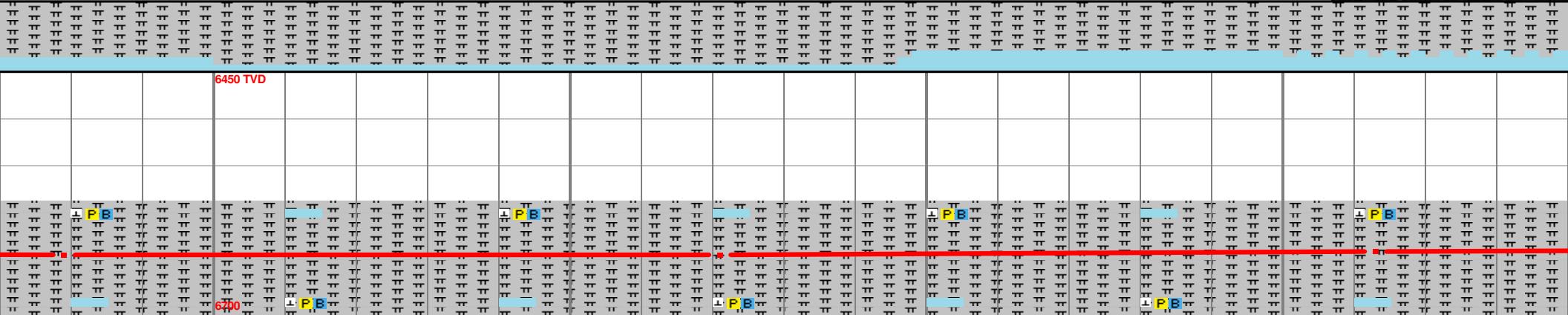
10900'-10950': MRST: 70% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, FREE BENT, ABDT FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

MD 10888 TVD 6642.72  
INC 88.55 AZ 86.63  
VS 4452.33

10950'-11000': MRST: 80%  
SUBBLKY, GRTY TO SLTY  
ABDT FREE BENT, ABDT  
FLOR, NO O FLOR, IMMED



Niobrara B Marl (11150' MD - 11200' MD)



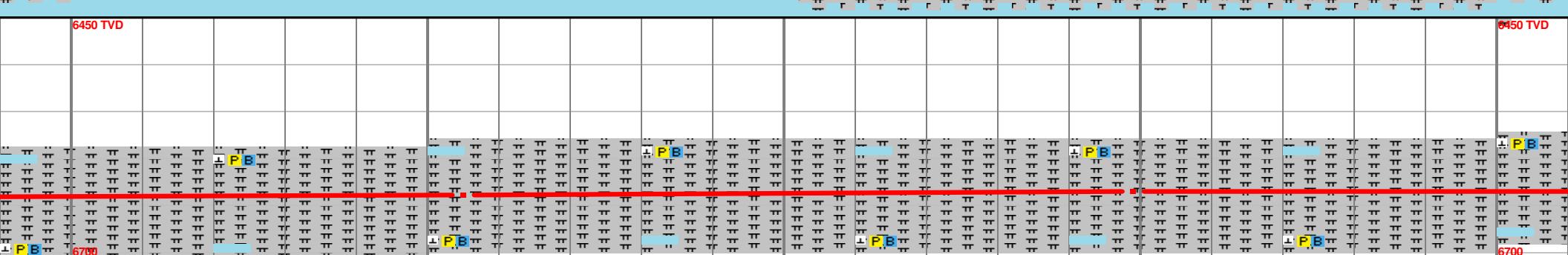
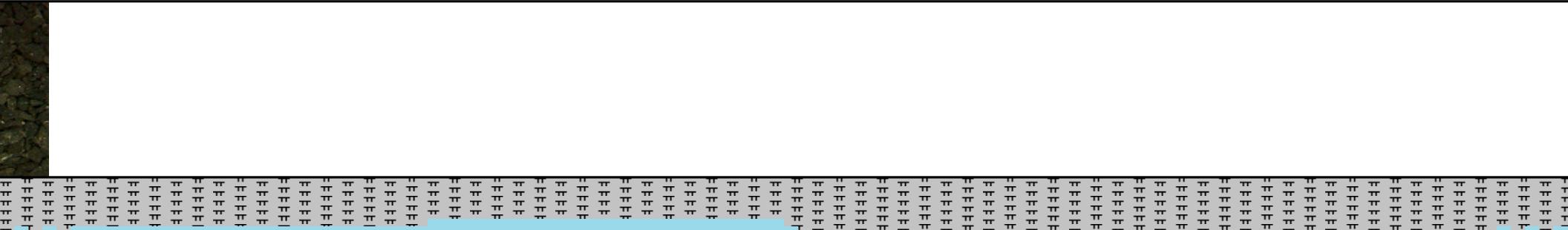
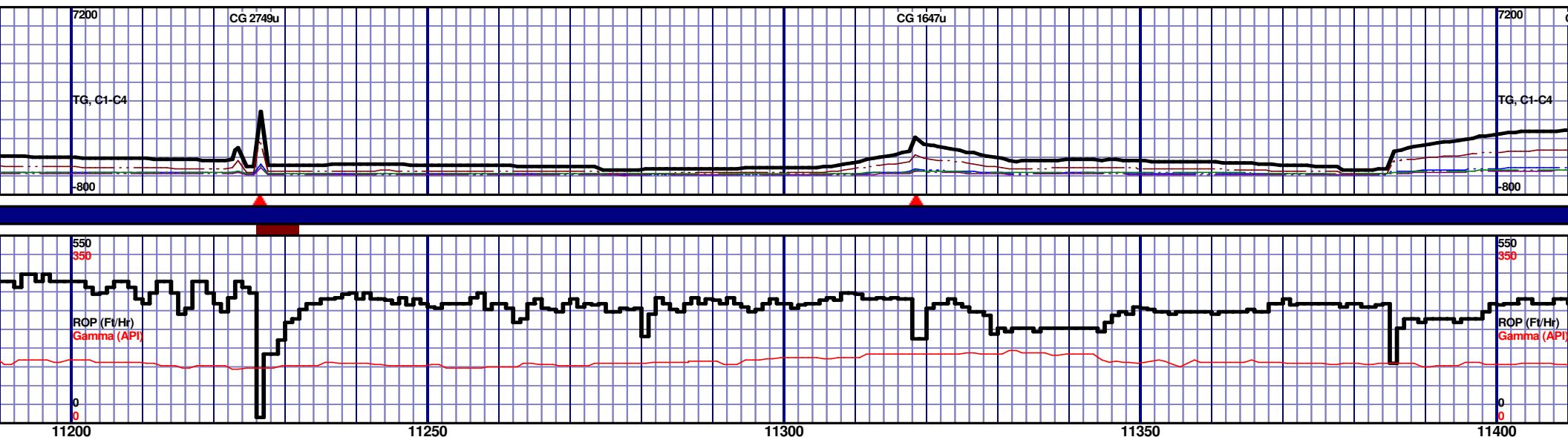
MEDDRKGY - MEDLTGY, BLKY TO  
TXT, FRM TO BRIT, TRC IMBD PYR,  
FREE CALC, FREE CHK, NO STN, 5%  
IMMED STRMG CUT, BRIYL RNG

11000'-11050': MRST: 90% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
TRC FREE PYR, ABDT FREE BENT, TRC FREE CALC, FREE  
CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT,  
BRIYL RNG  
6950

11050'-11100': MRST: 90% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
TRC FREE PYR, ABDT FREE BENT, TRC FREE CALC, FREE  
CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT,  
BRIYL RNG

11100'-11150': MRST: 70% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
ABDT FREE BENT, FREE CALC, FREE CHK, NO STN, 5% FLOR,  
NO O FLOR, IMMED STRMG CUT, BRIYL RNG

11150'-11200': MRST: 75% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
ABDT FREE BENT, TRC FREE CALC, FREE CHK, NO STN, 5% FLOR,  
NO O FLOR, IMMED STRMG CUT, BRIYL RNG

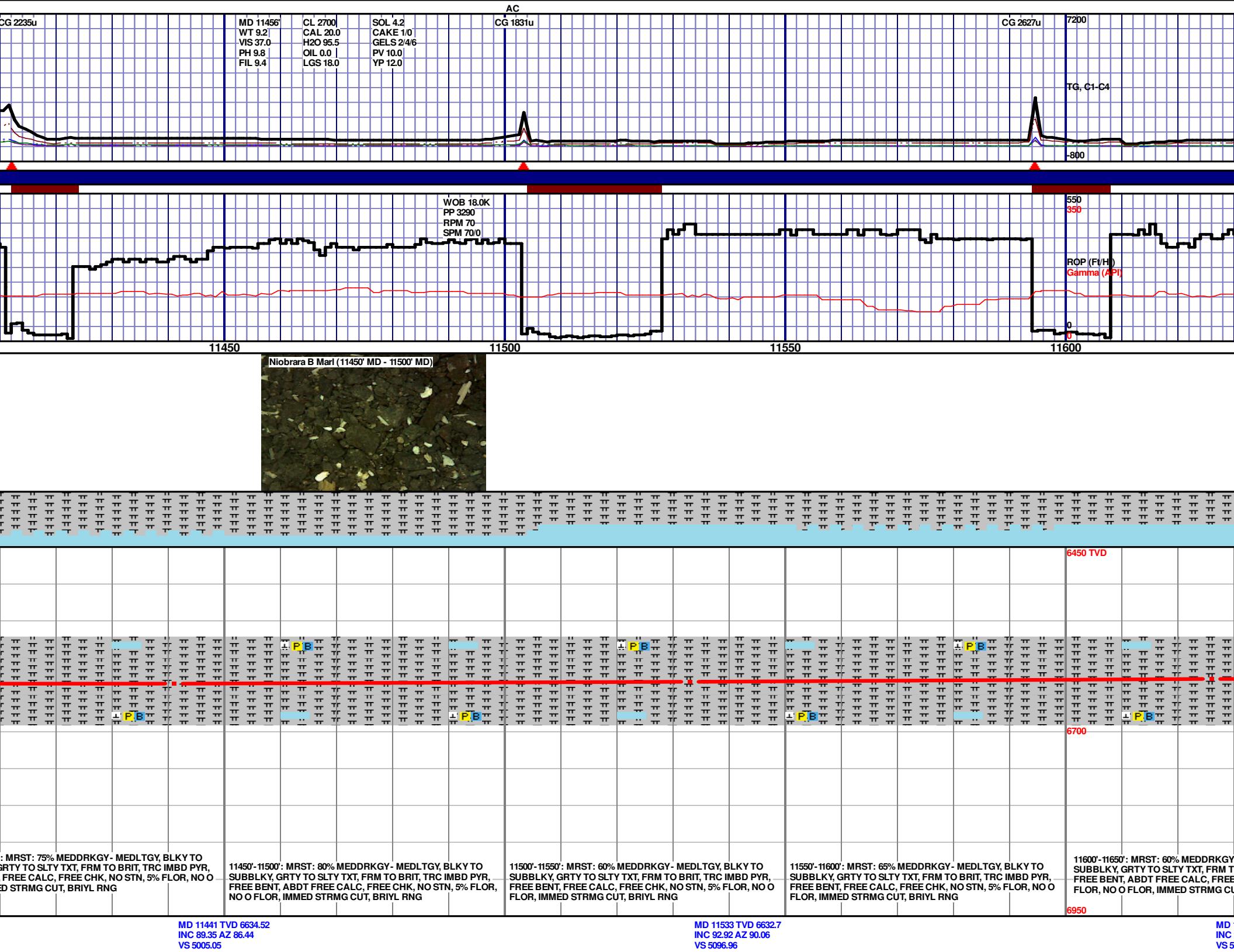


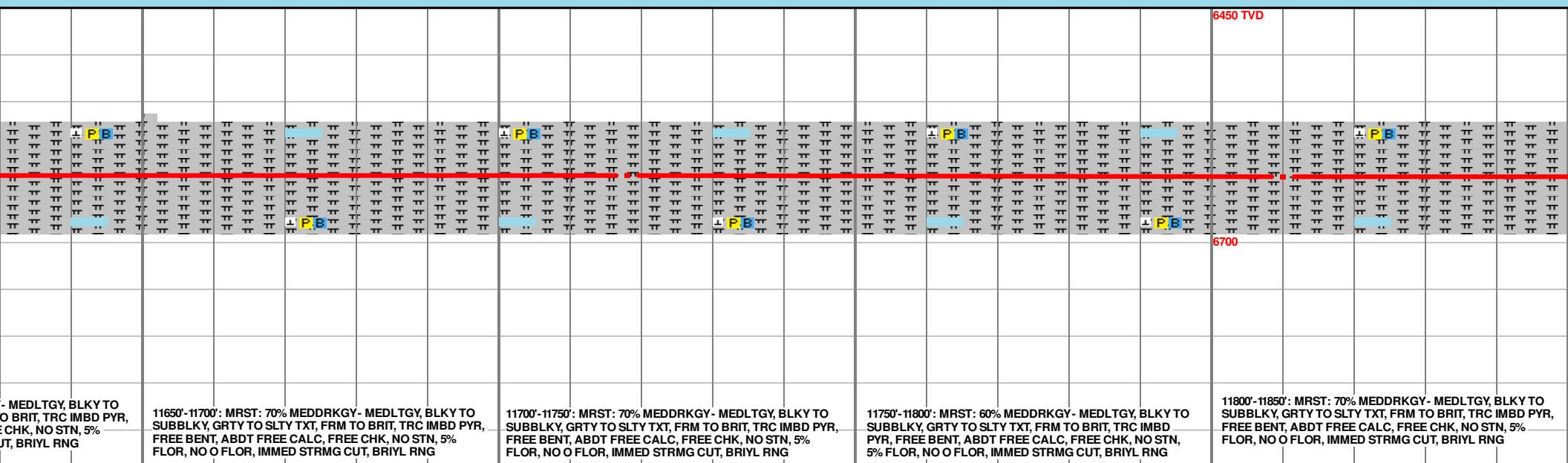
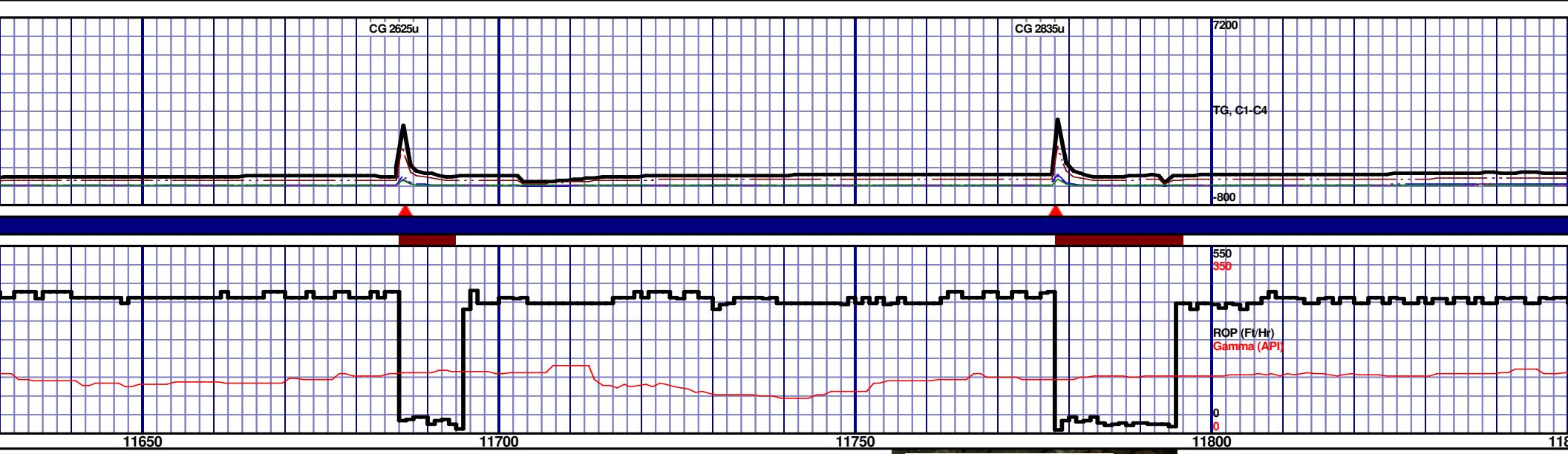
Geological Log Summary:

- 11200-11250': MRST: 70% MEDDRKGY- MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, ABDT FREE BENT, TRC FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG
- 11250'-11300': MRST: 60% MEDDRKGY- MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, ABDT FREE BENT, TRC FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG
- 11300'-11350': MRST: 85% MEDDRKGY- MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, ABDT FREE BENT, TRC FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG
- 11350'-11400': MRST: 85% MEDDRKGY- MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, FREE BENT, FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

MD 11255 TVD 6638.93  
INC 92.09 AZ 86.88  
VS 4819.13

MD 11349 TVD 6635.59  
INC 91.98 AZ 86.61  
VS 4913.06

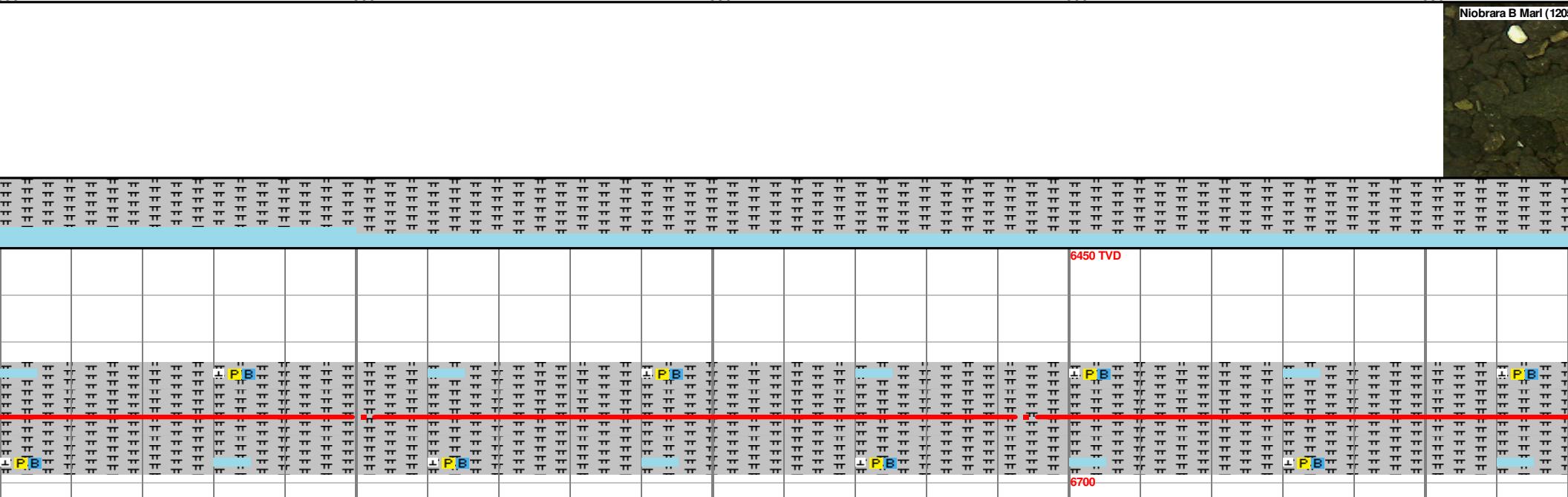
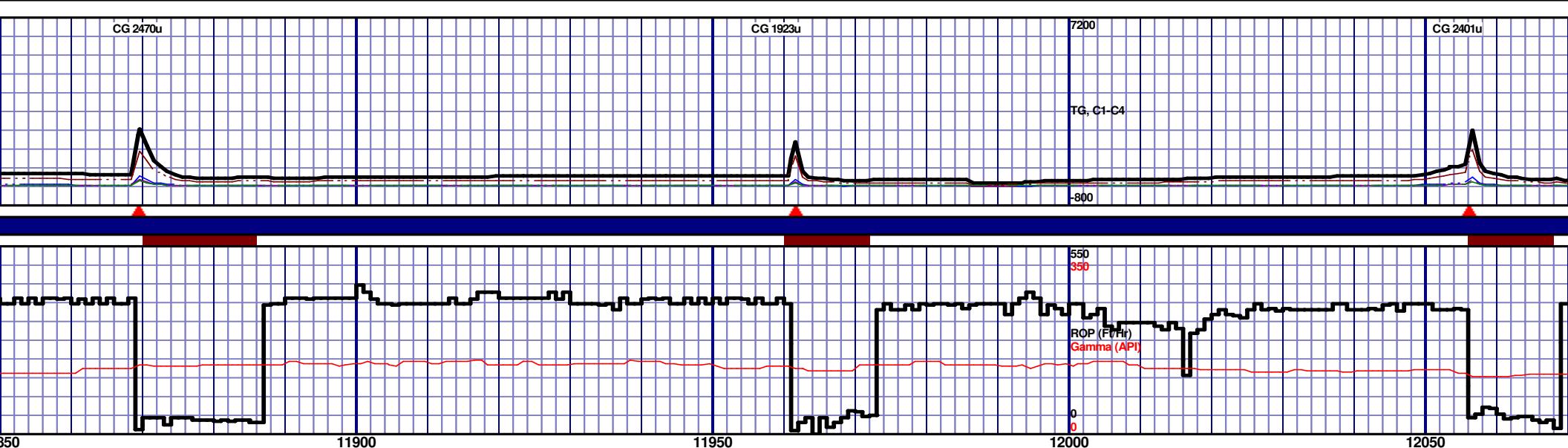




11626 TVD 6629.03  
91.6 AZ 90.9  
189.65

MD 11718 TVD 6628.96  
INC 88.49 AZ 89.2  
VS 5281.45

MD 11810 TVD 6630.37  
INC 89.75 AZ 88.47  
VS 5373.36



11850'-11900': MRST: 70% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, FREE BENT, ABDT FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

11900'-11950': MRST: 80% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, FREE BENT, FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

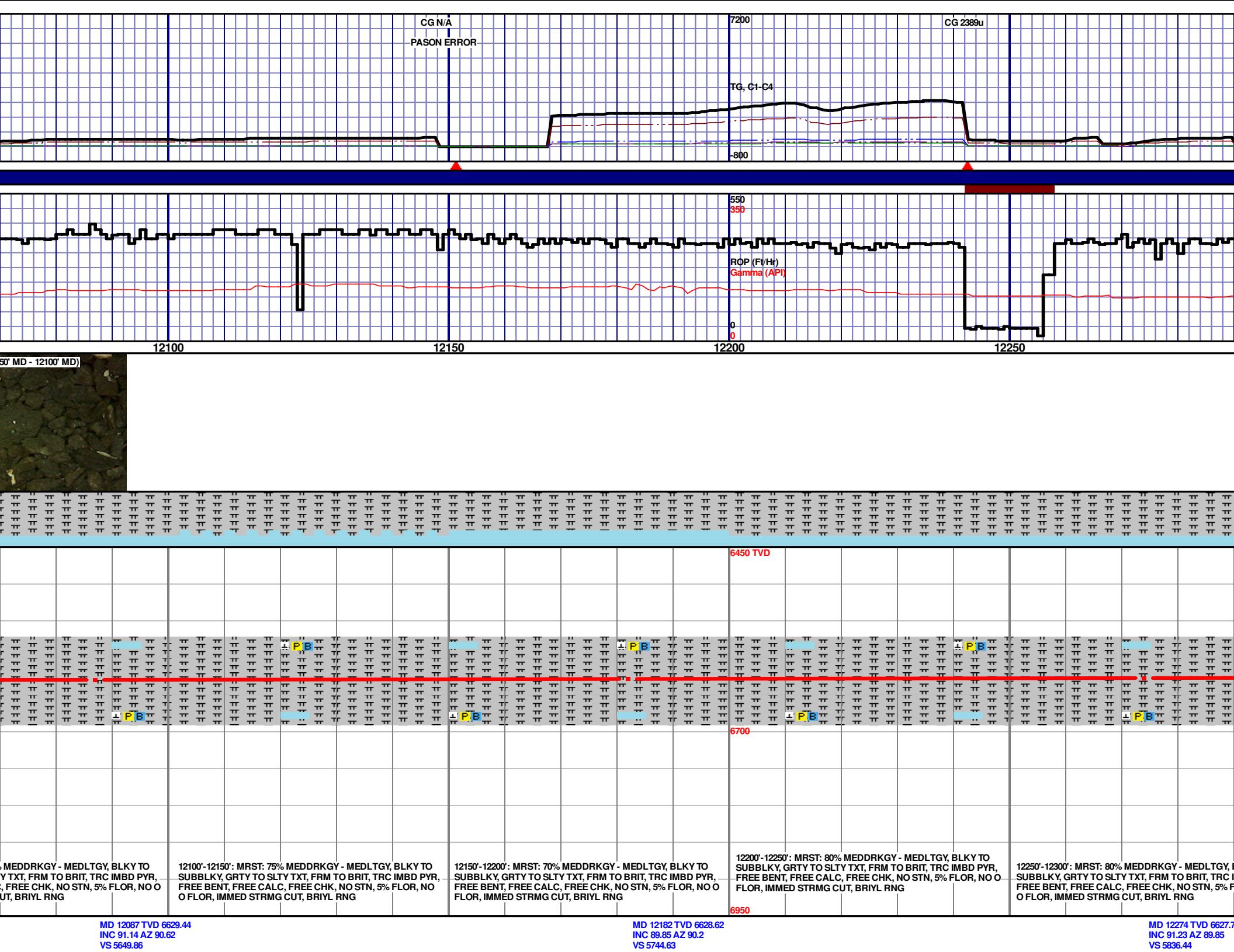
11950'-12000': MRST: 80% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, FREE BENT, FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

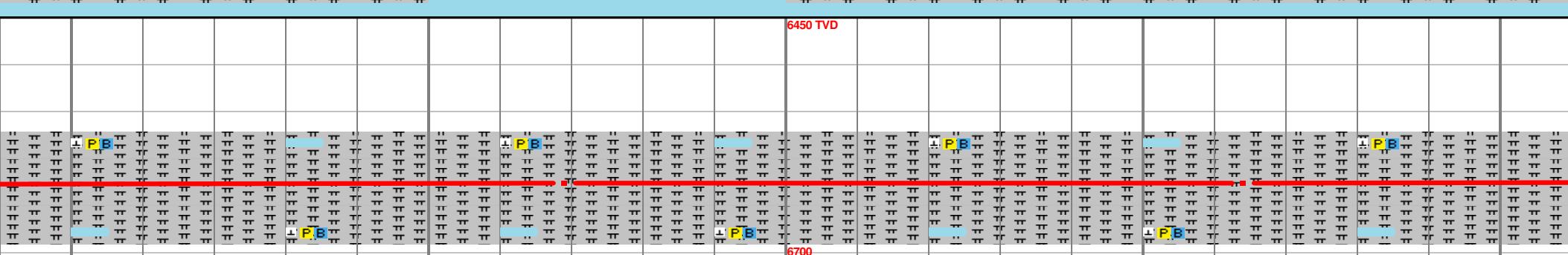
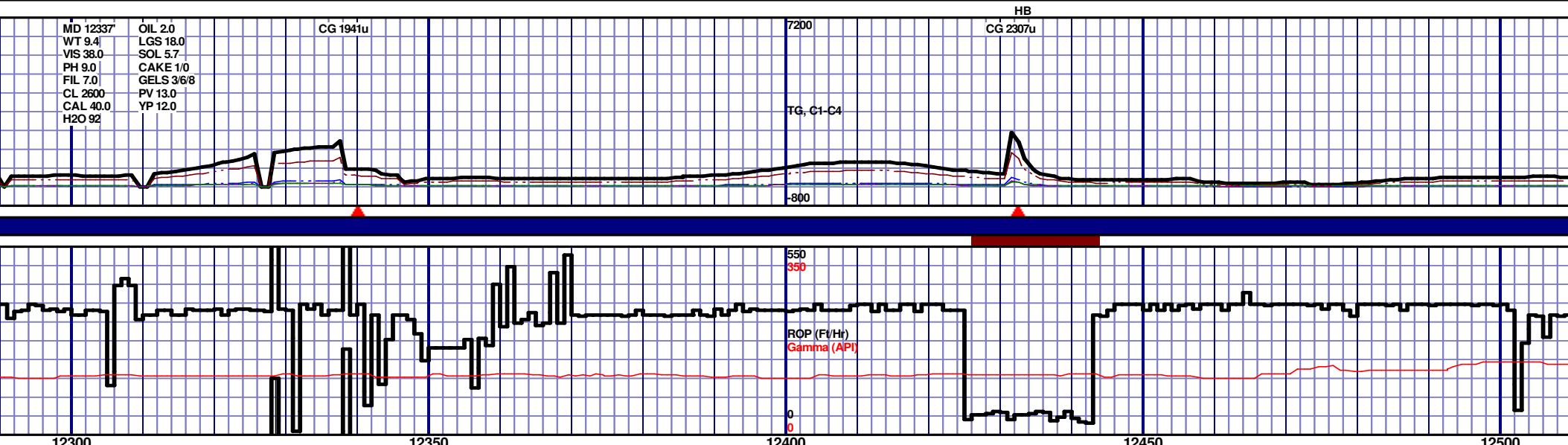
12000'-12050': MRST: 80% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, FREE BENT, FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

12050'-12100': MRST: 80% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR, FREE BENT, FREE CALC, FREE CHK, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

MD 11901 TVD 6630.37  
INC 90.25 AZ 89.44  
VS 5464.27

MD 11994 TVD 6630.27  
INC 89.88 AZ 90.27  
VS 5557.1





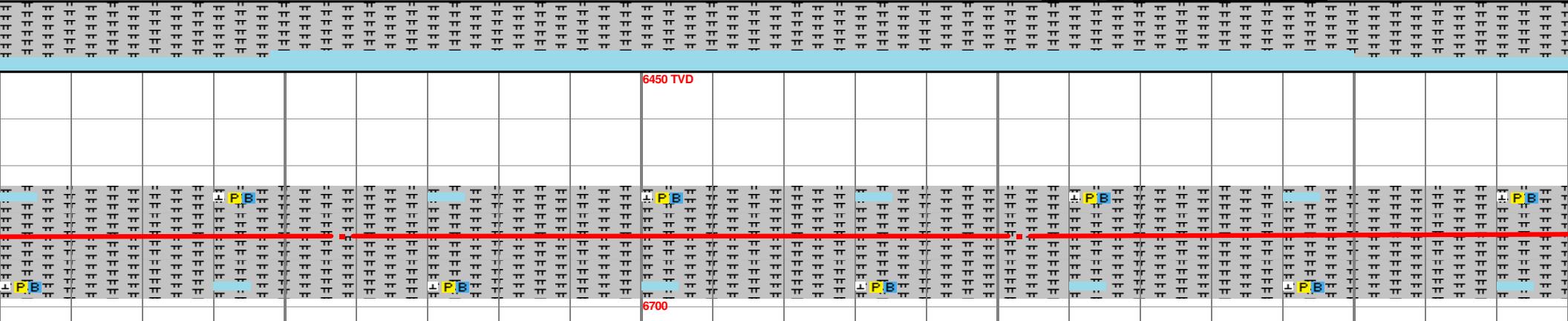
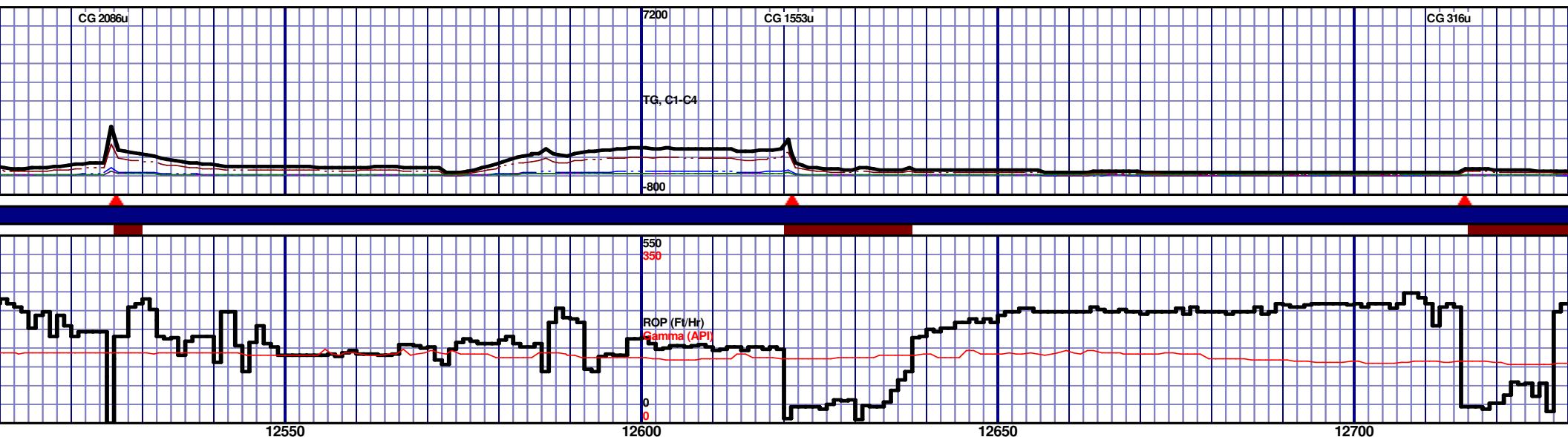
BLKY TO  
IMBD PYR,  
FLOR, NO  
12300'-12350': MRST: 80% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
FREE BENT, FREE CALC, FREE CHK, NO STN, 5% FLOR, NO  
O FLOR, IMMED STRMG CUT, BRIYL RNG

12350'-12400': MRST: 70% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
FREE BENT, FREE CALC, FREE CHK, NO STN, 5% FLOR, NO  
O FLOR, IMMED STRMG CUT, BRIYL RNG

12400'-12450': MRST: 80% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
ABDT FREE BENT, FREE CALC, FREE CHK, NO STN, 5% FLOR,  
NO O FLOR, IMMED STRMG CUT, BRIYL RNG

12450'-12500': MRST: 80% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
ABDT FREE BENT, FREE CALC, FREE CHK, NO STN, 5% FLOR,  
NO O FLOR, IMMED STRMG CUT, BRIYL RNG

12500'-12550':  
SUBBLKY, G  
ABDT FREE  
FLOR, NO O



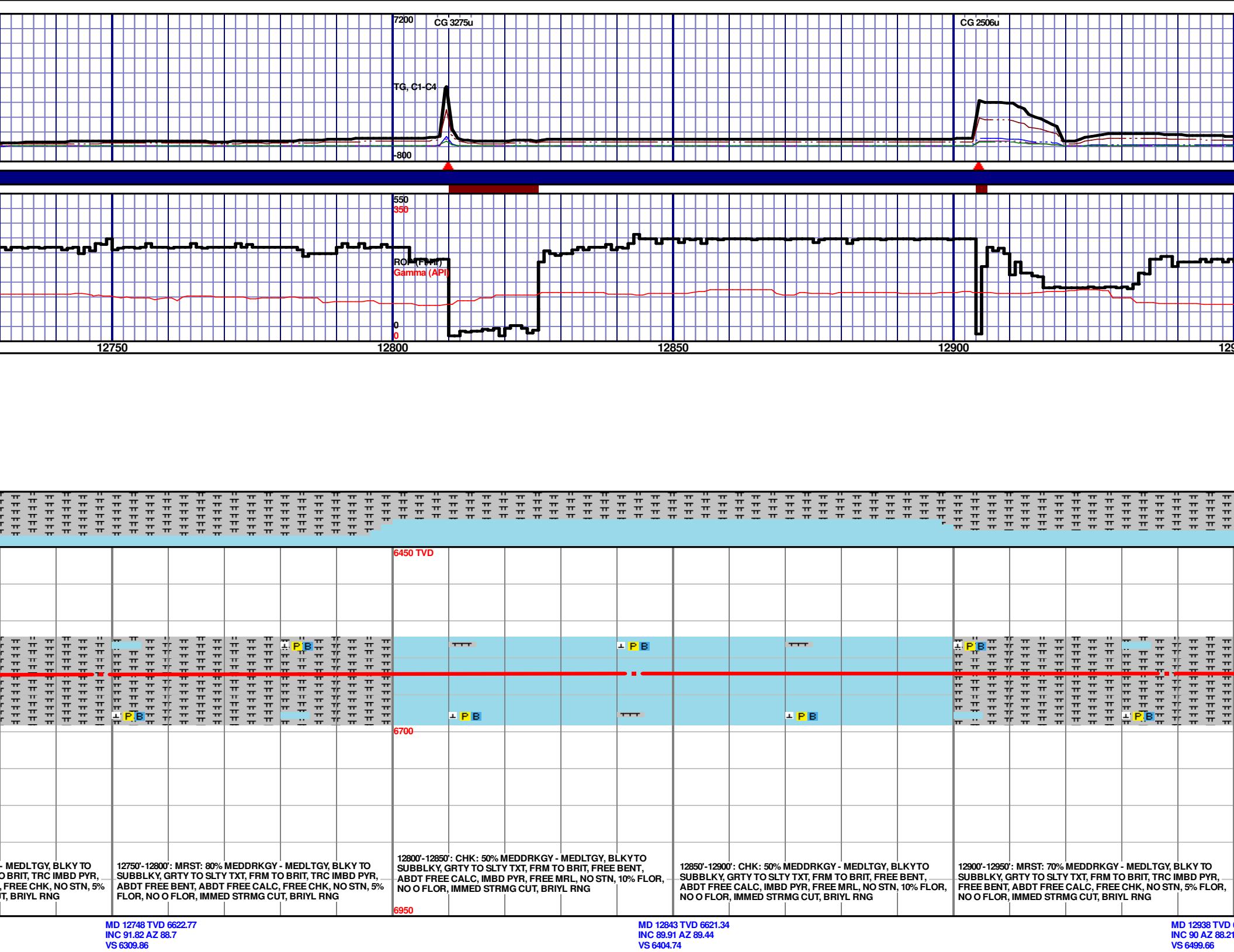
: MRST: 80% MEDDRKGY - MEDLTGY, BLKY TO  
SPTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
ABDT FREE CALC, FREE CHK, NO STN, 5%  
FLOR, IMMED STRMG CUT, BRIYL RNG

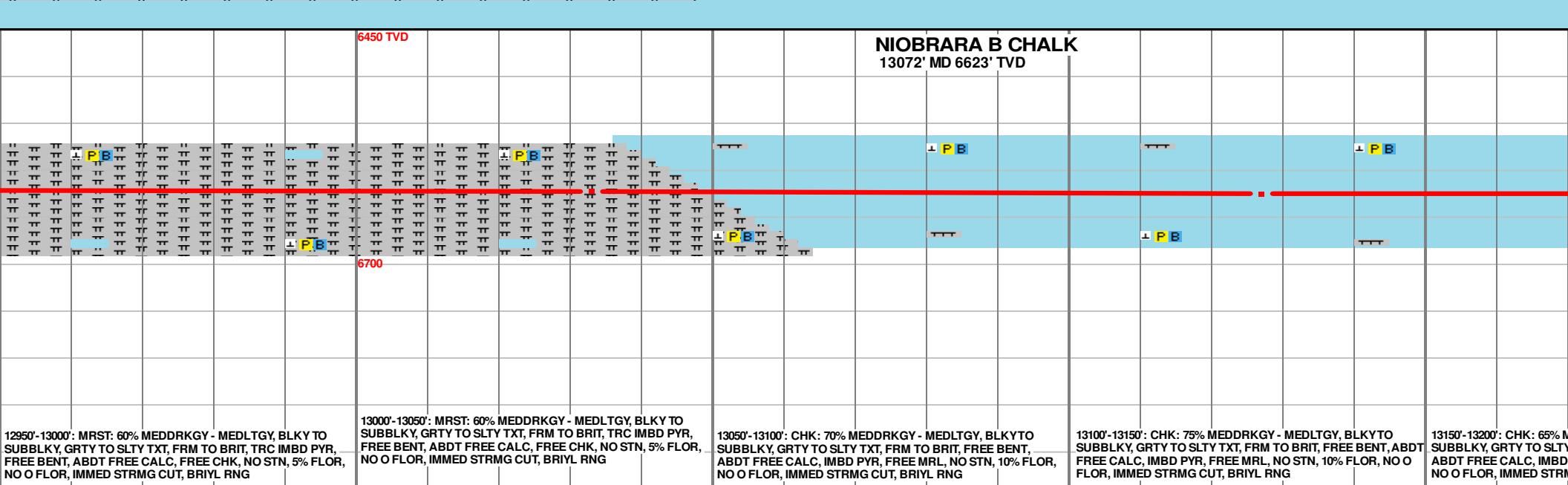
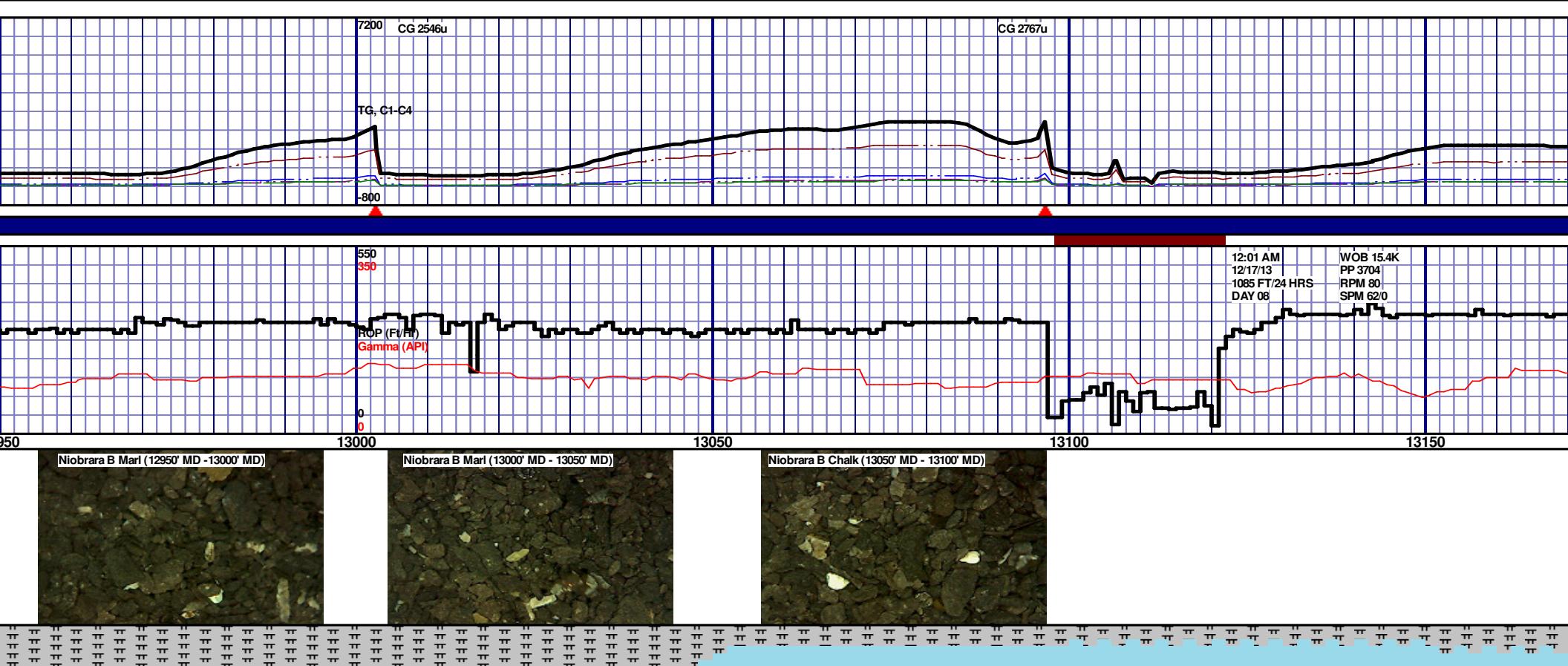
12550-12600: MRST: 70% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
ABDT FREE BENT, ABDT FREE CALC, FREE CHK, NO STN, 5%  
FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

12600'-12650': MRST: 70% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
ABDT FREE BENT, ABDT FREE CALC, FREE CHK, NO STN, 5%  
FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

12650'-12700': MRST: 70% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC IMBD PYR,  
ABDT FREE BENT, ABDT FREE CALC, FREE CHK, NO STN, 5%  
FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

12700'-12750': MRST: 80% MEDDRKGY  
SUBBLKY, GRTY TO SLTY TXT, FRM TO  
ABDT FREE BENT, ABDT FREE CALC,  
FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

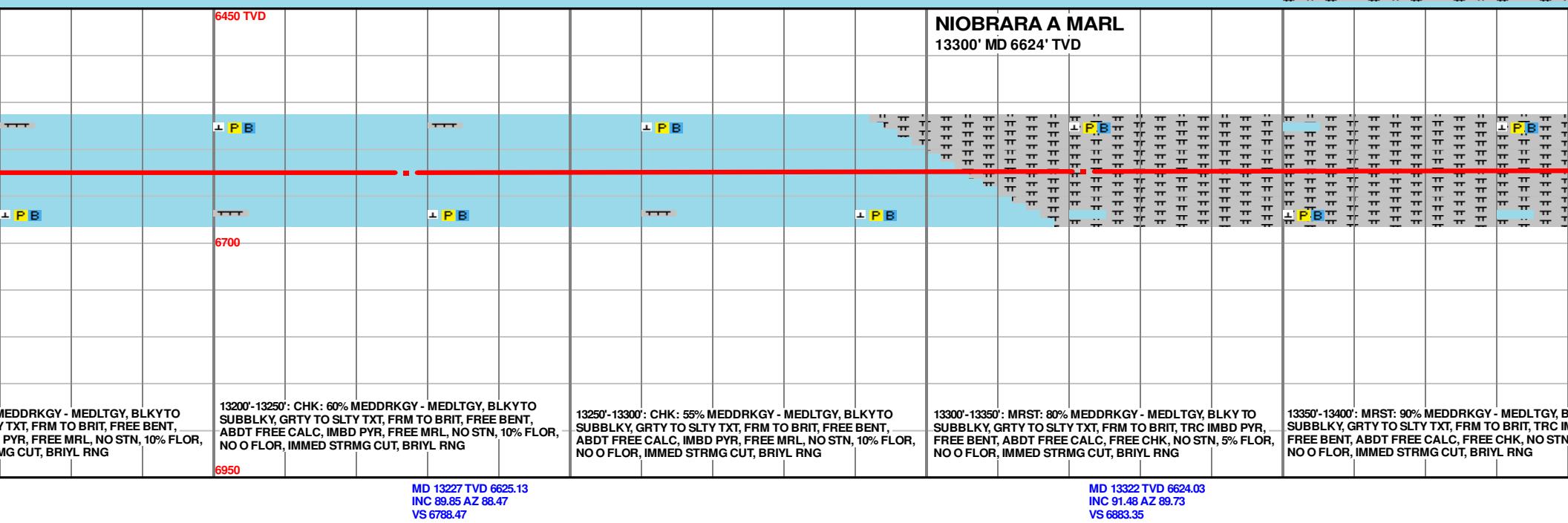
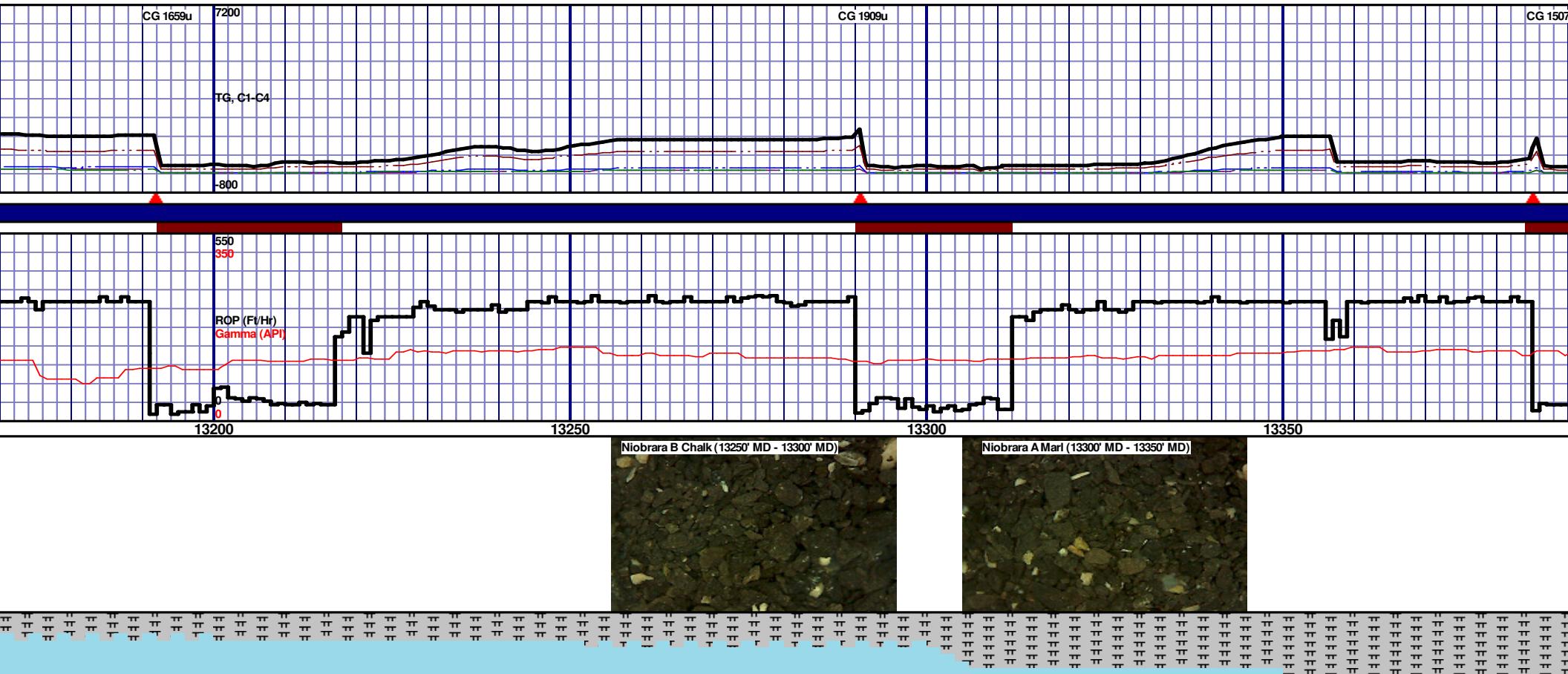


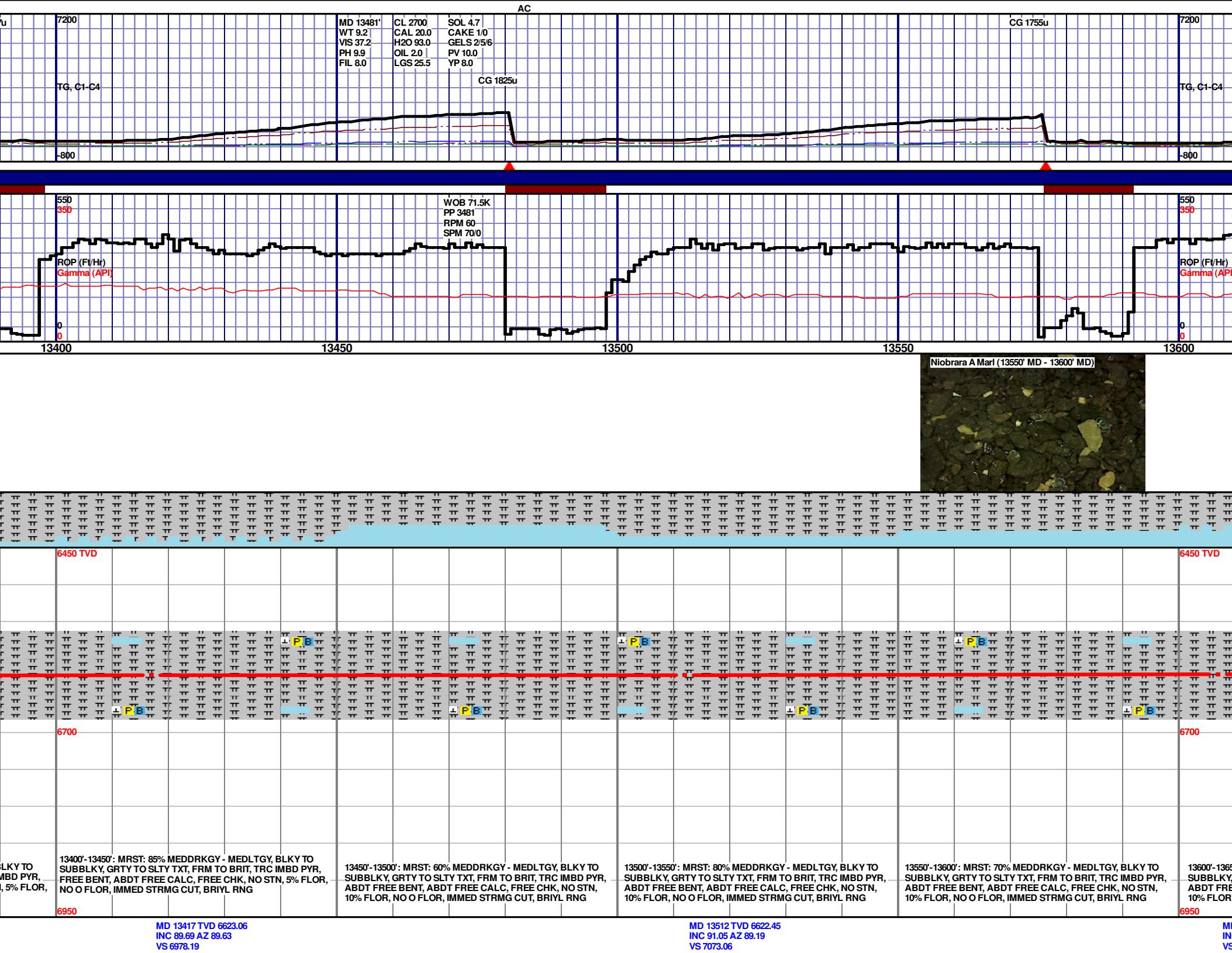


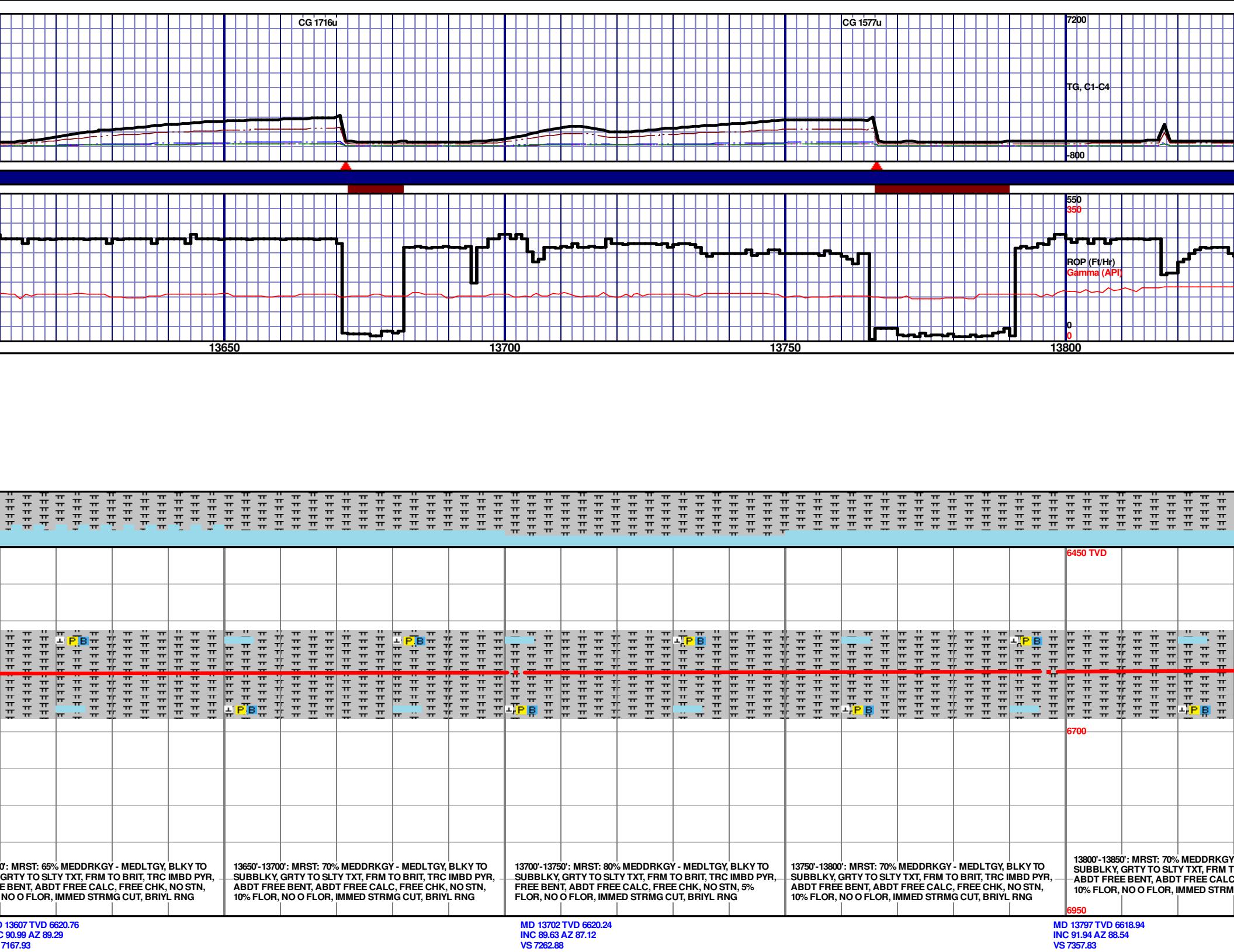
6621.41

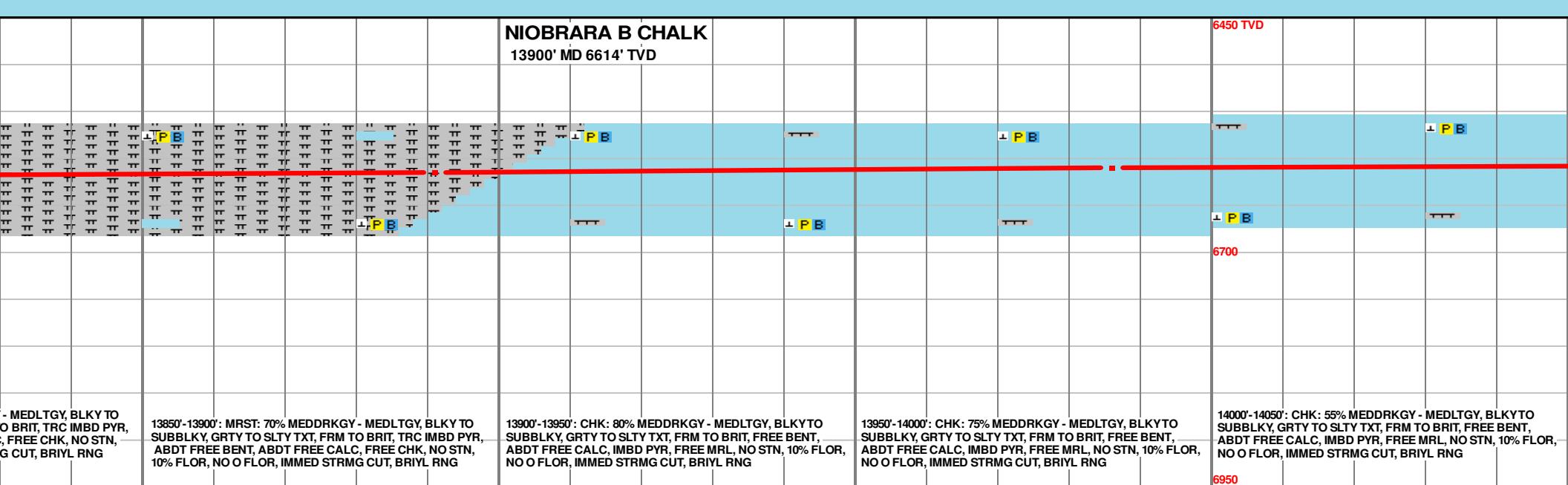
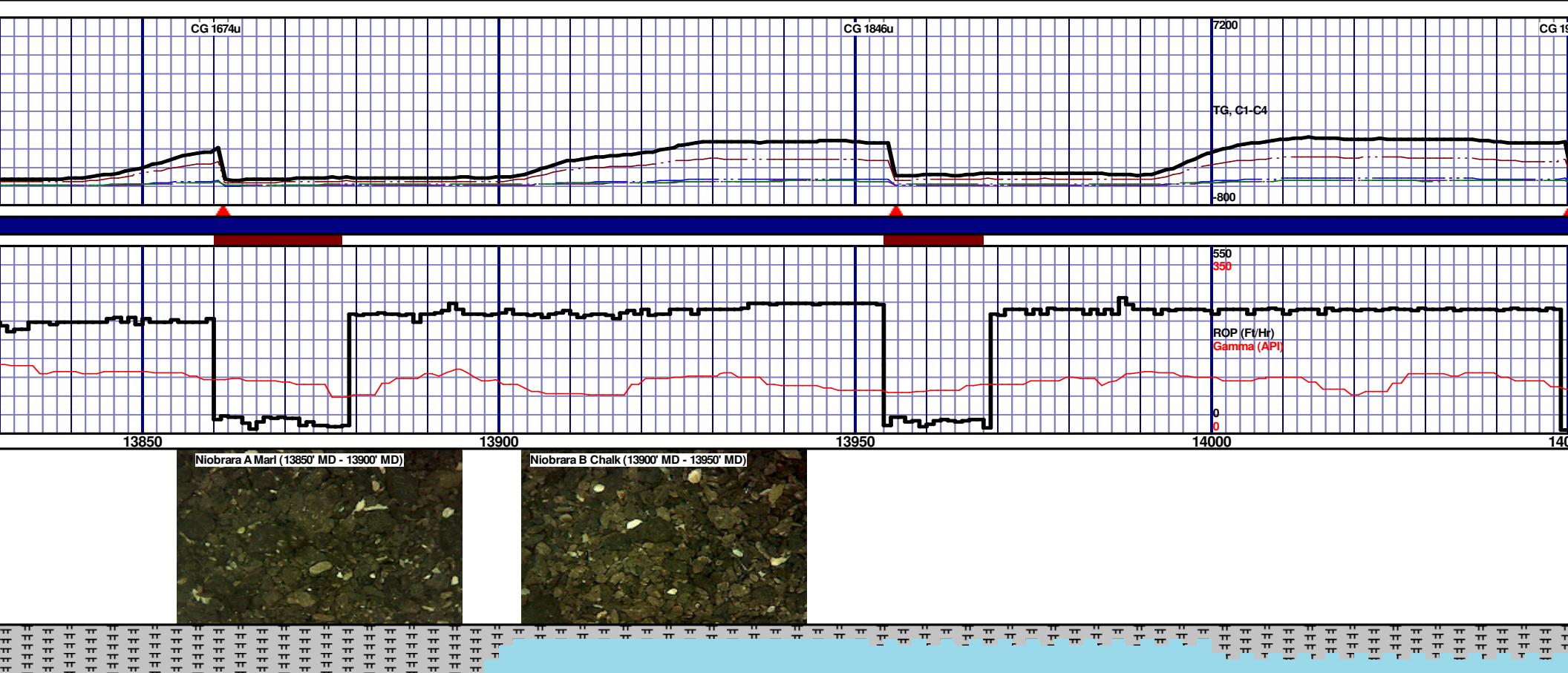
MD 13033 TVD 6622.66  
INC 88.49 AZ 88.48  
VS 6594.59

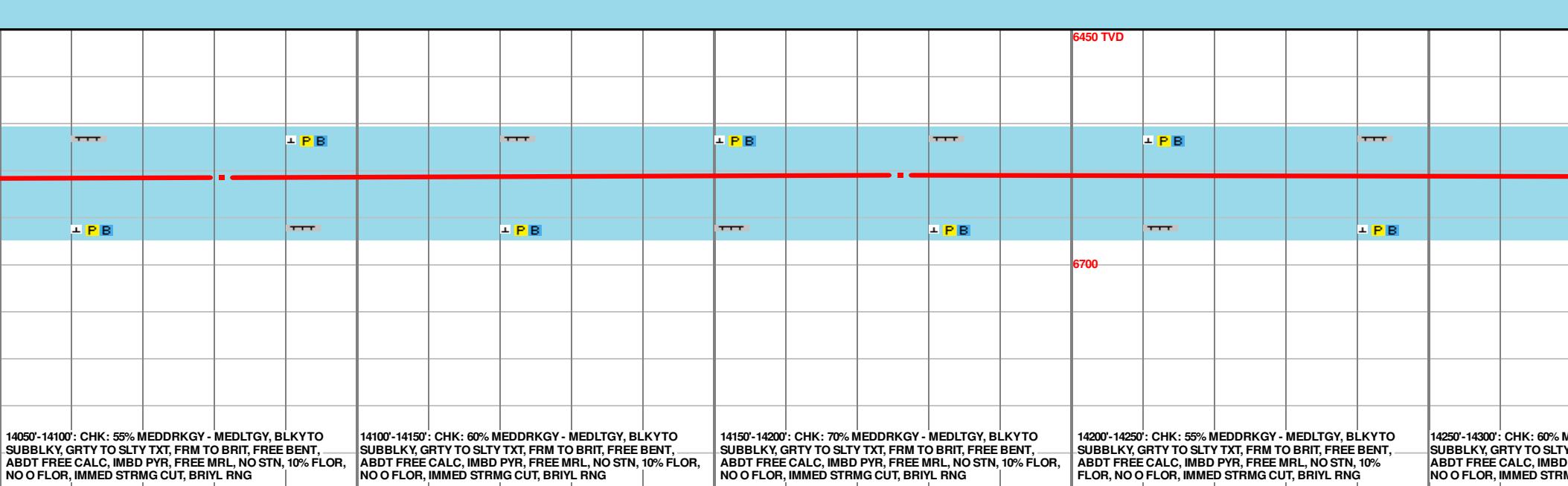
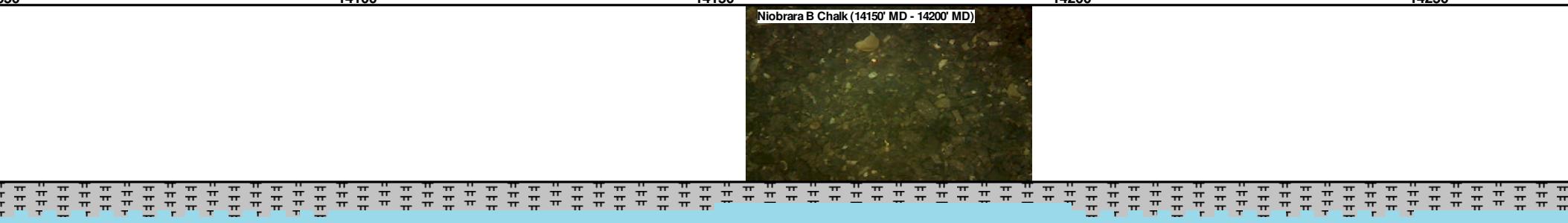
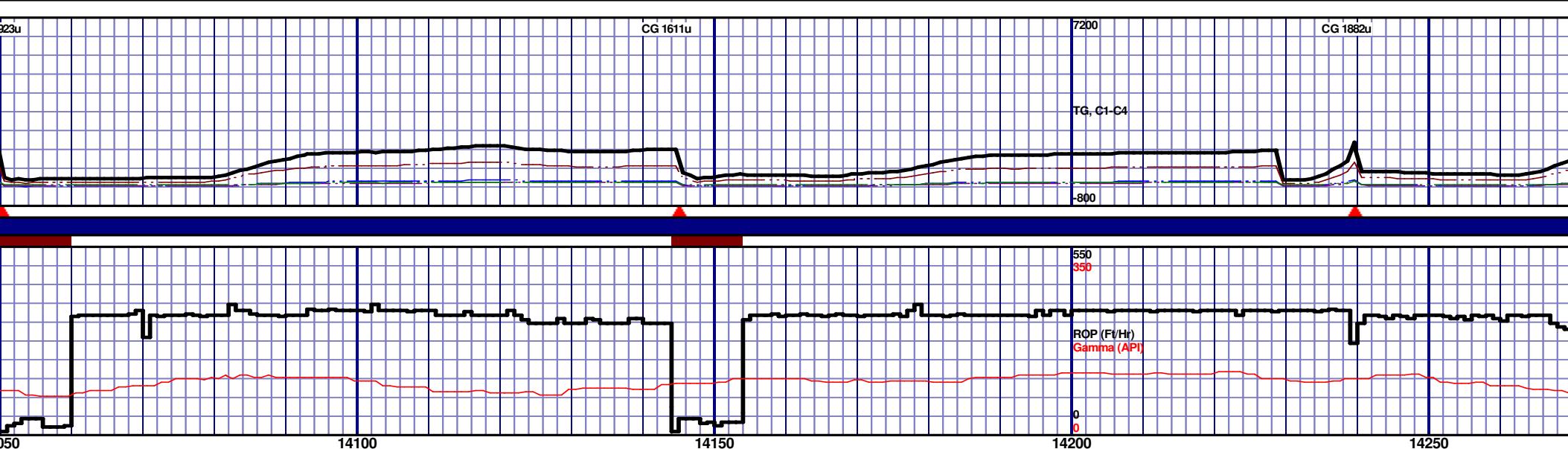
MD 13127 TVD 6624.44  
INC 89.35 AZ 88.1  
VS 6688.52





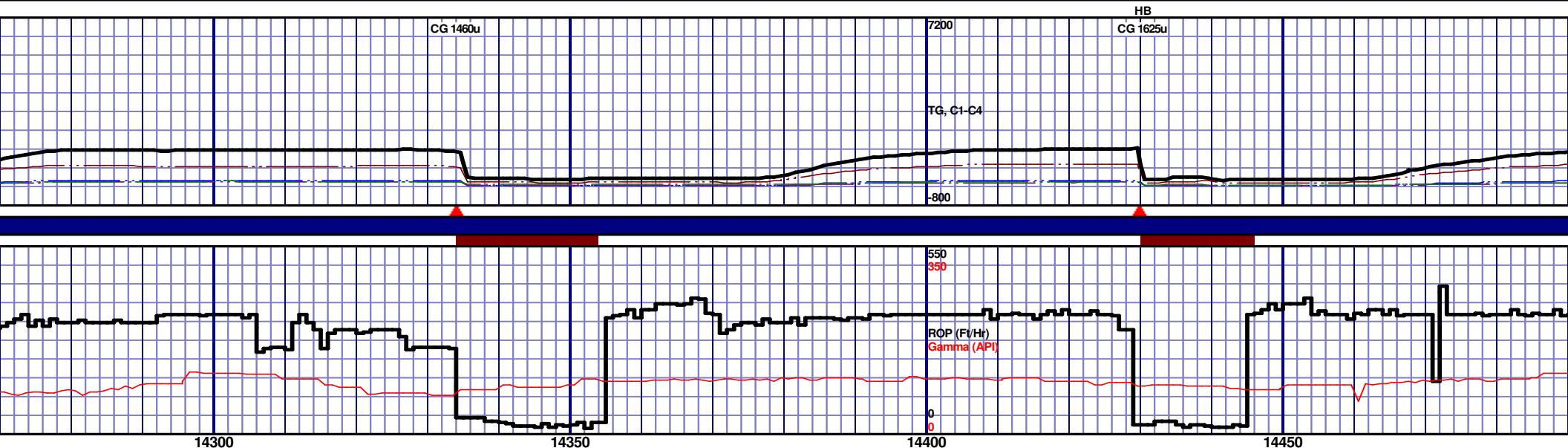




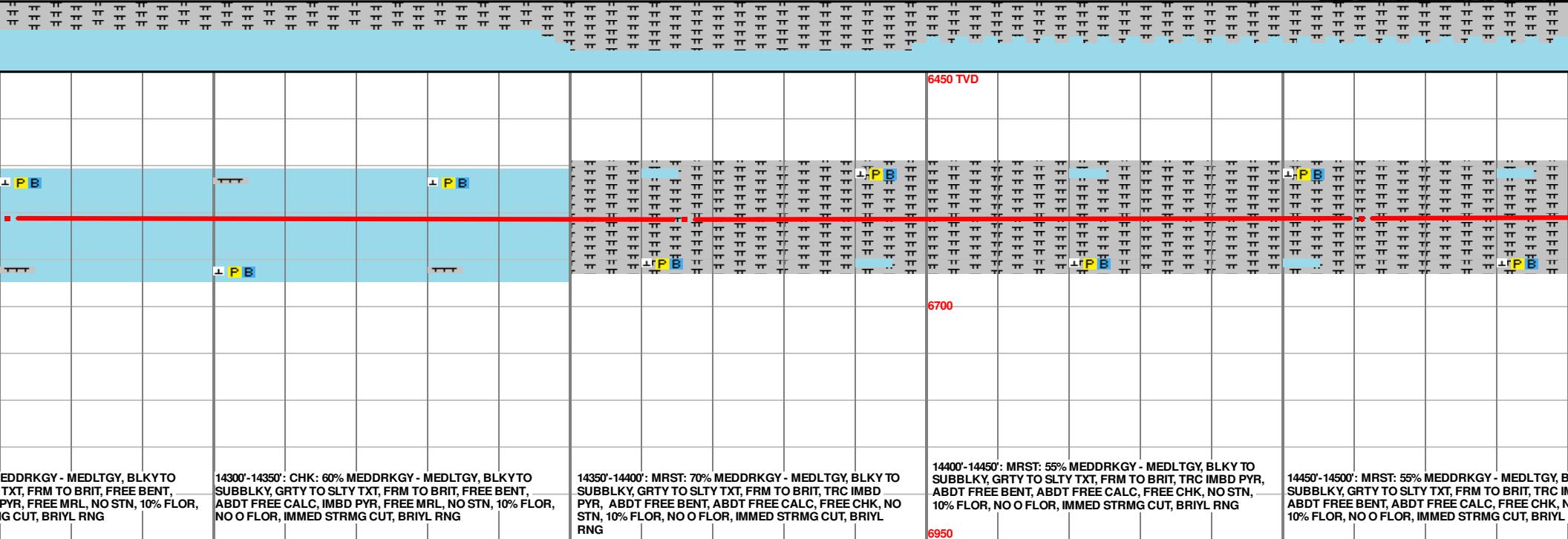


MD 14081 TVD 6607.13  
INC 91.88 AZ 91.87  
VS 7640.84

MD 14176 TVD 6605.27  
INC 90.37 AZ 90.89  
VS 7735.46



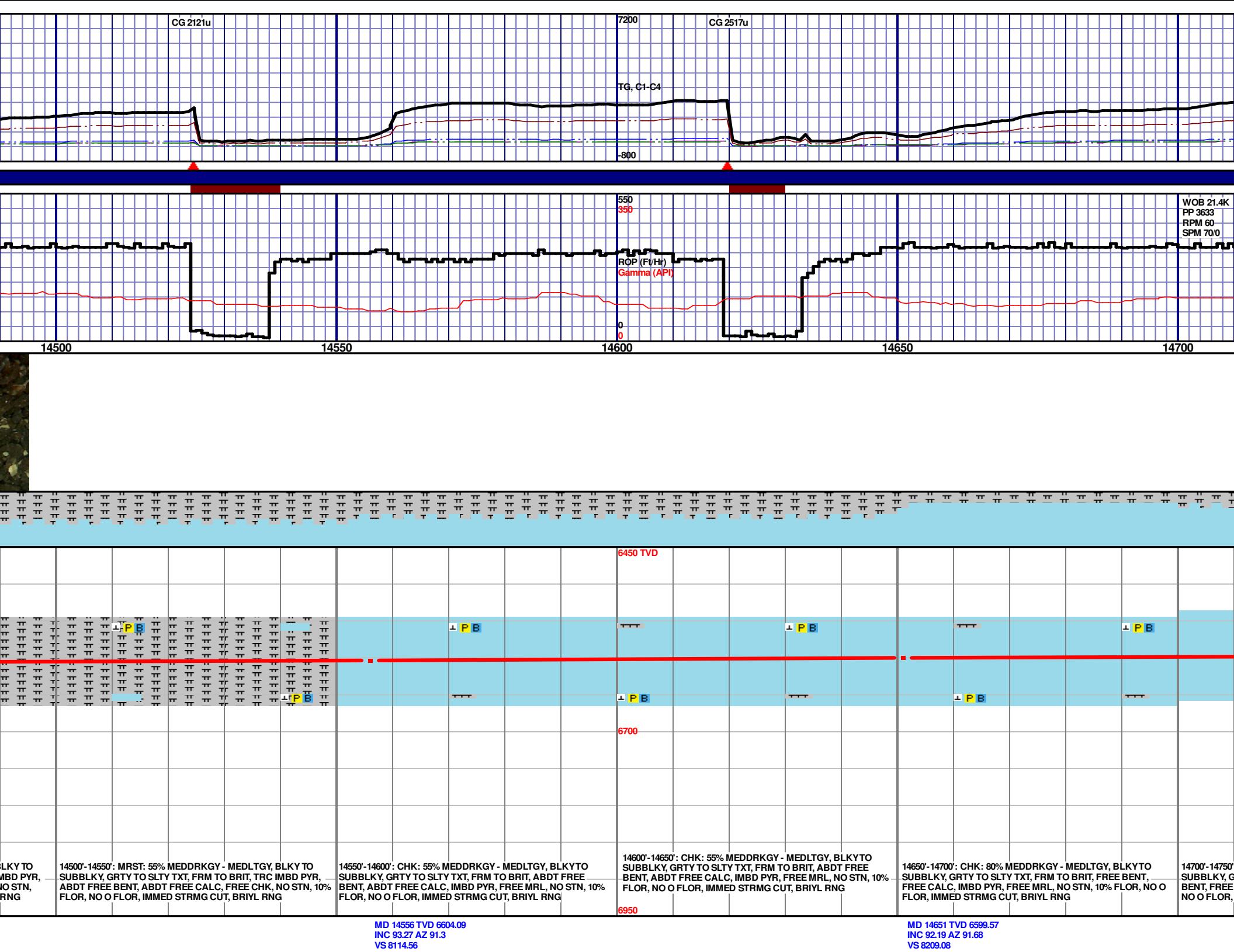
Niobrara B Chalk (14450' MD - 14500' MD)

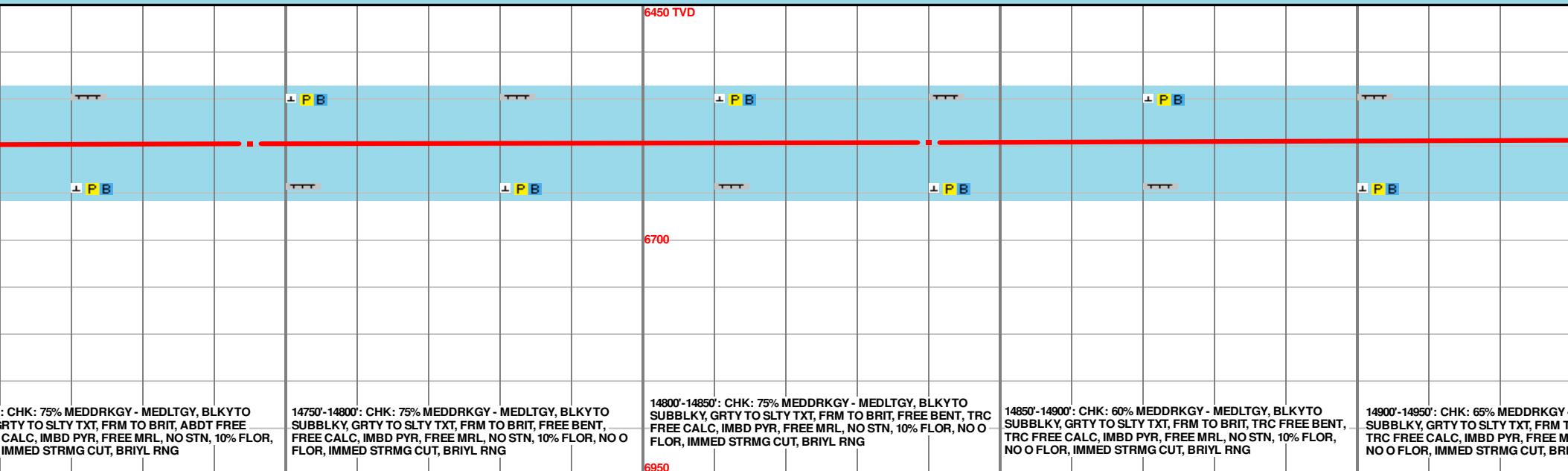
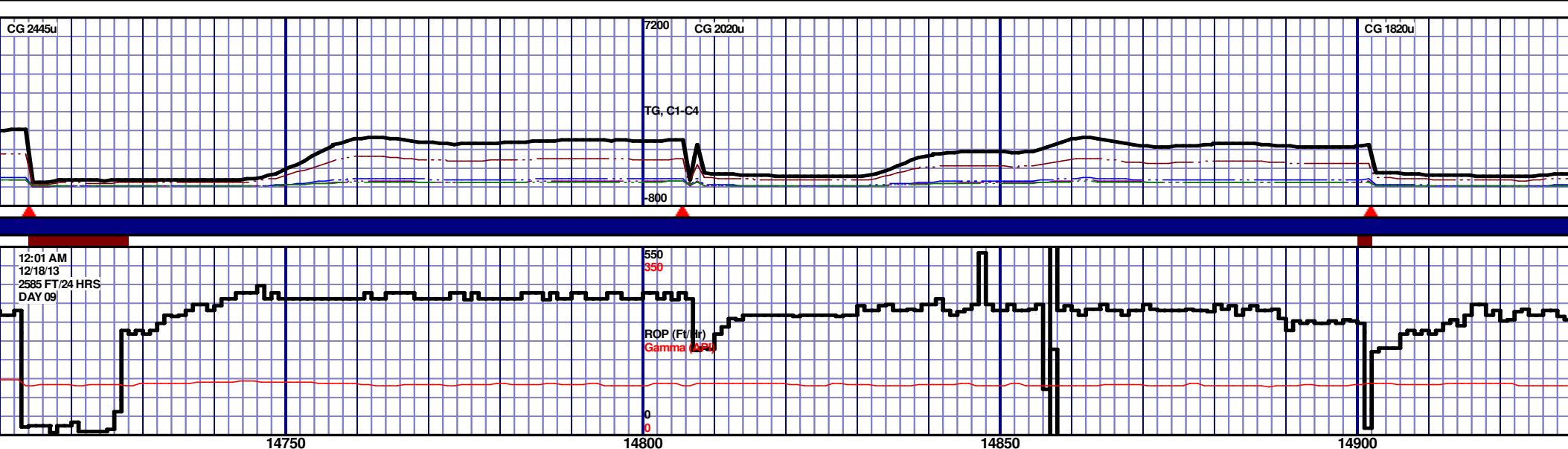


MD 14271 TVD 6606.01  
INC 88.73 AZ 90.16  
VS 7830.21

MD 14366 TVD 6606.88  
INC 90.22 AZ 89.58  
VS 7925.03

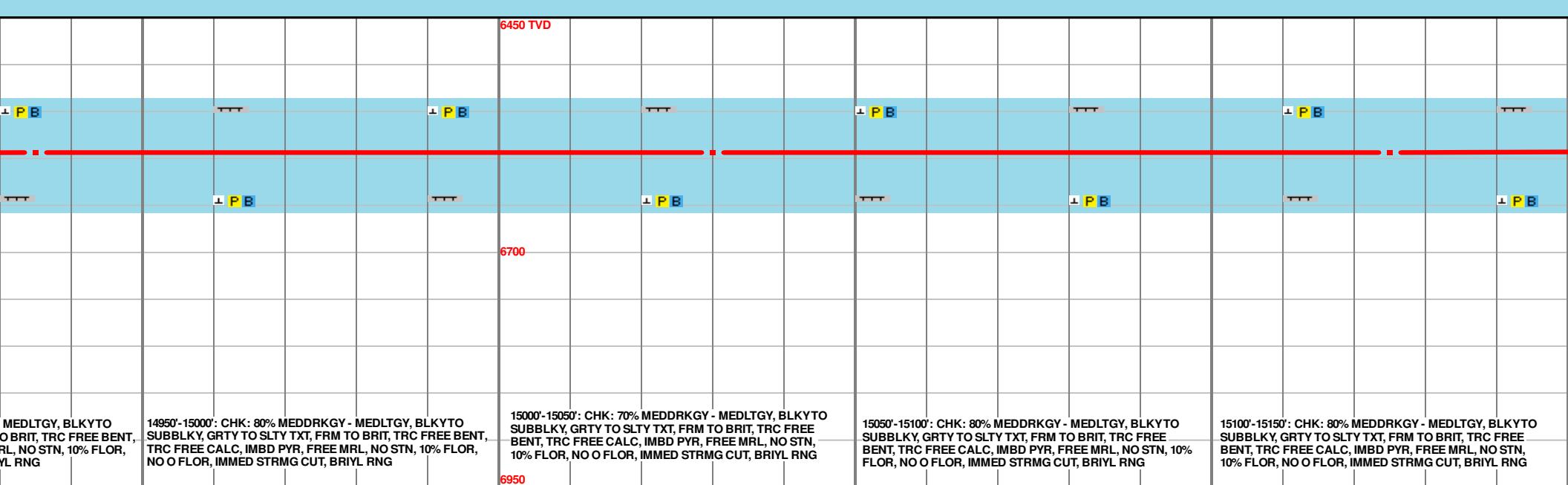
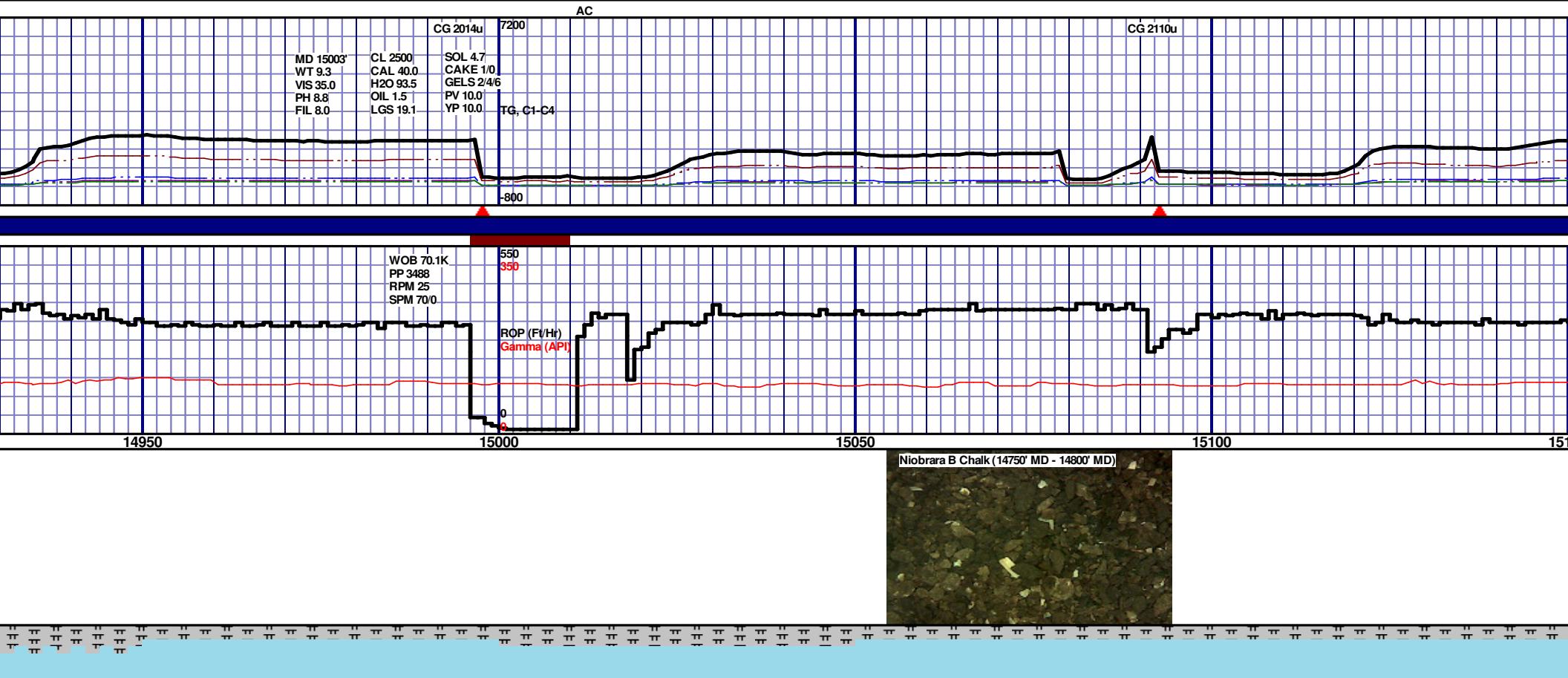
MD 14461 TVD 6606.75  
INC 89.94 AZ 90.04  
VS 8019.87





MD 14745 TVD 6597.11  
INC 90.8 AZ 90.22  
VS 8302.75

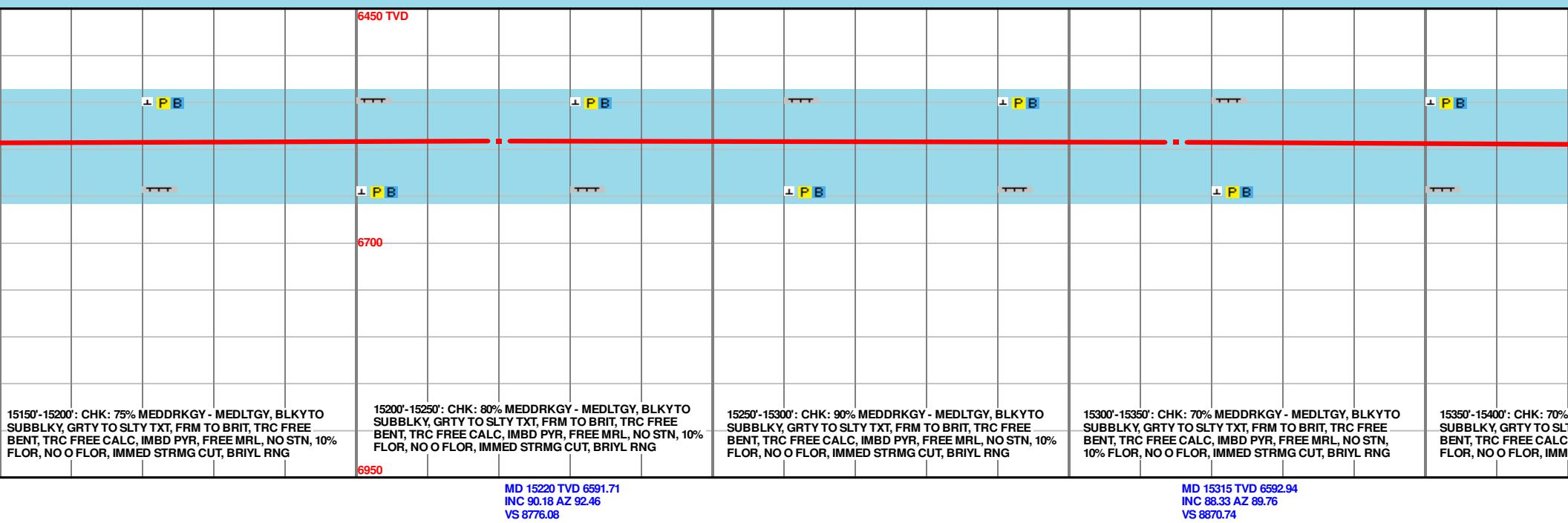
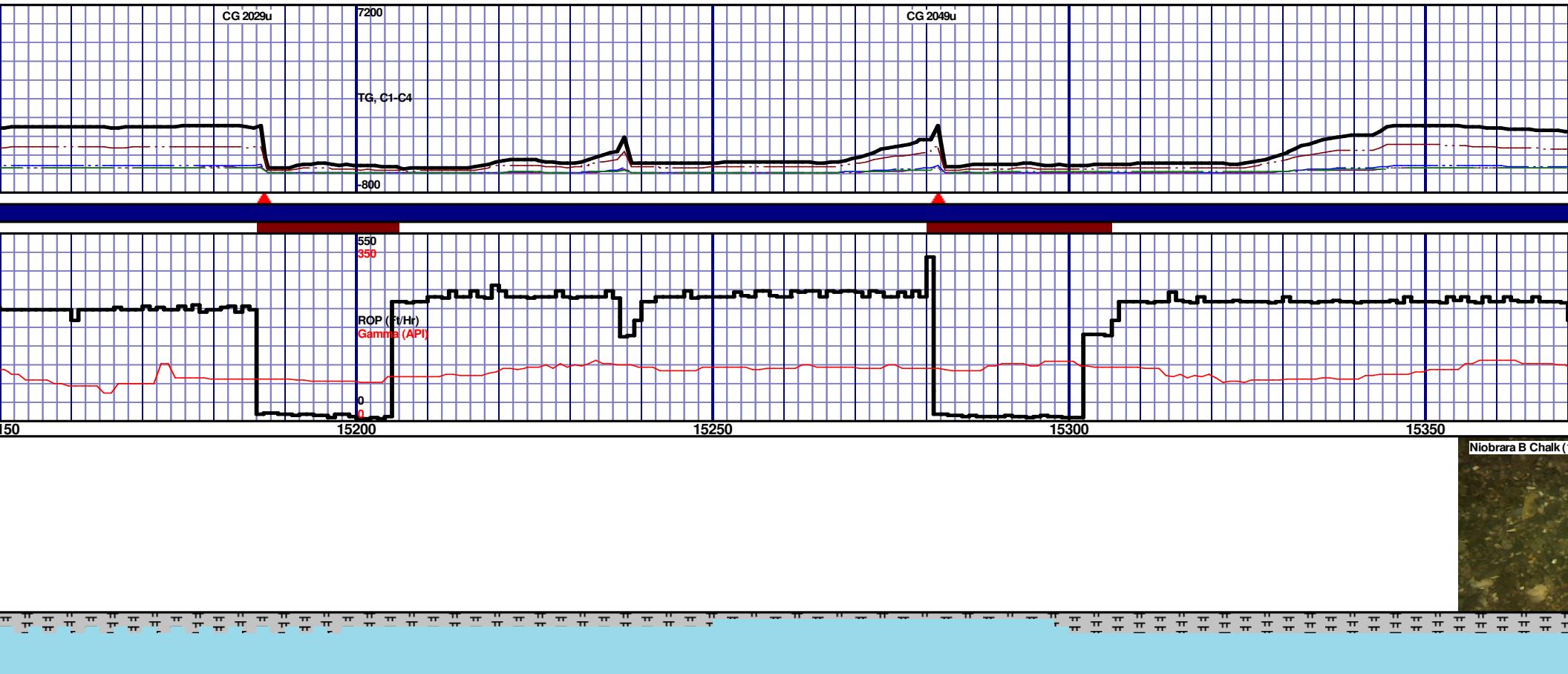
MD 14840 TVD 6595.94  
INC 90.62 AZ 89.5  
VS 8397.57

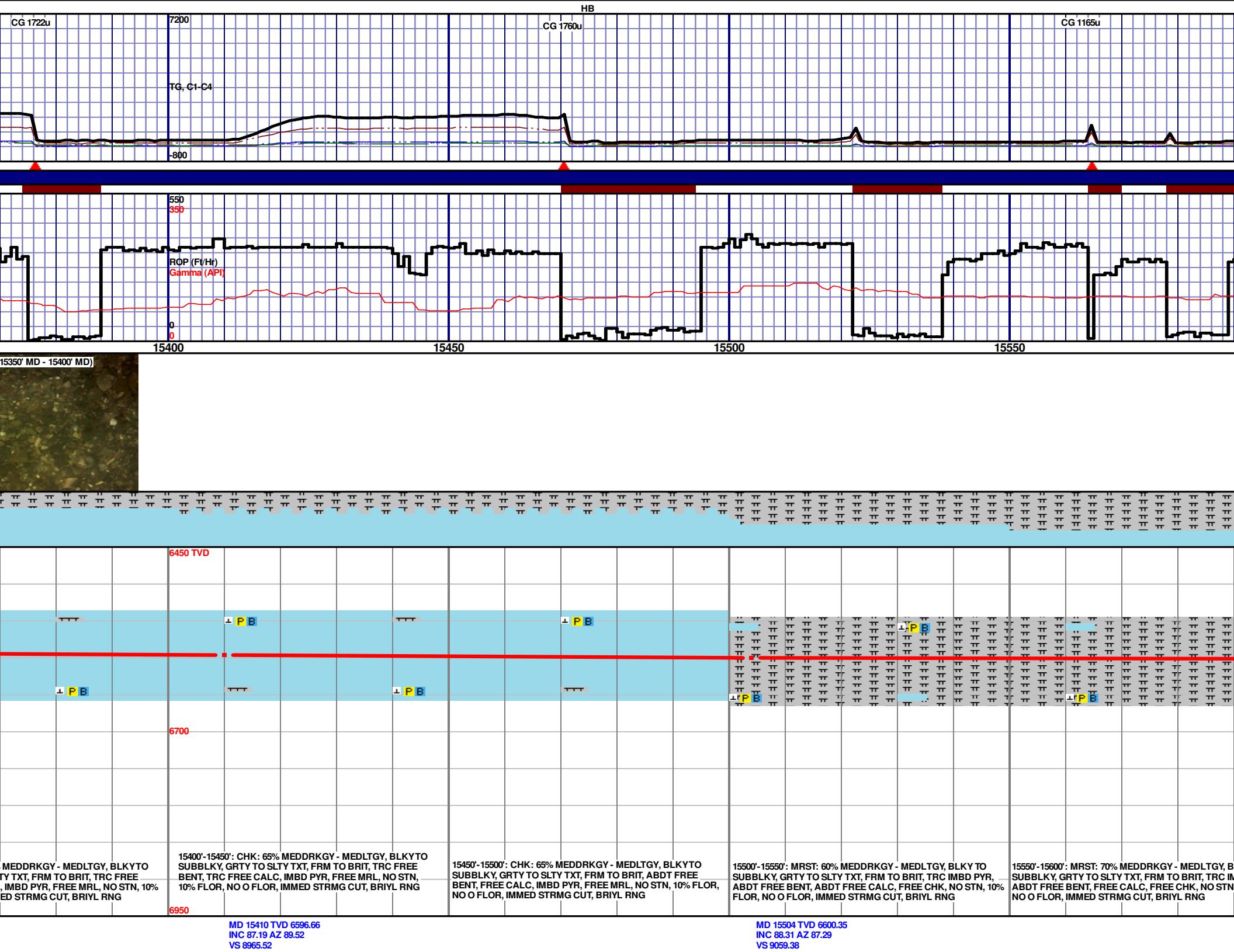


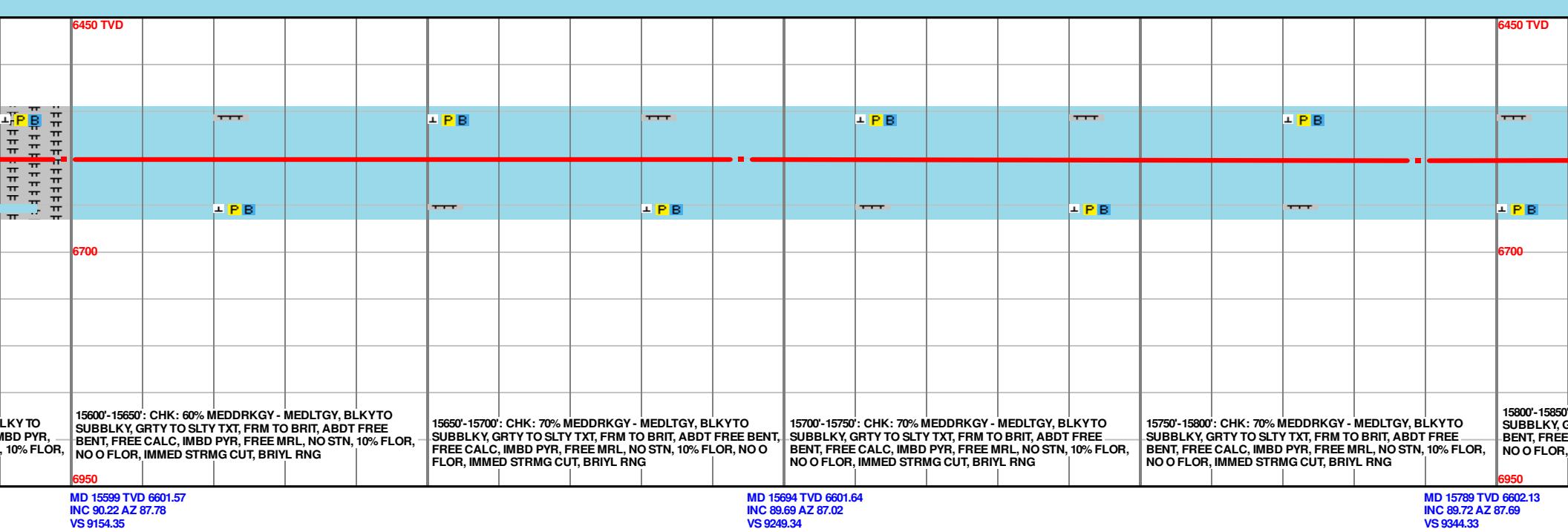
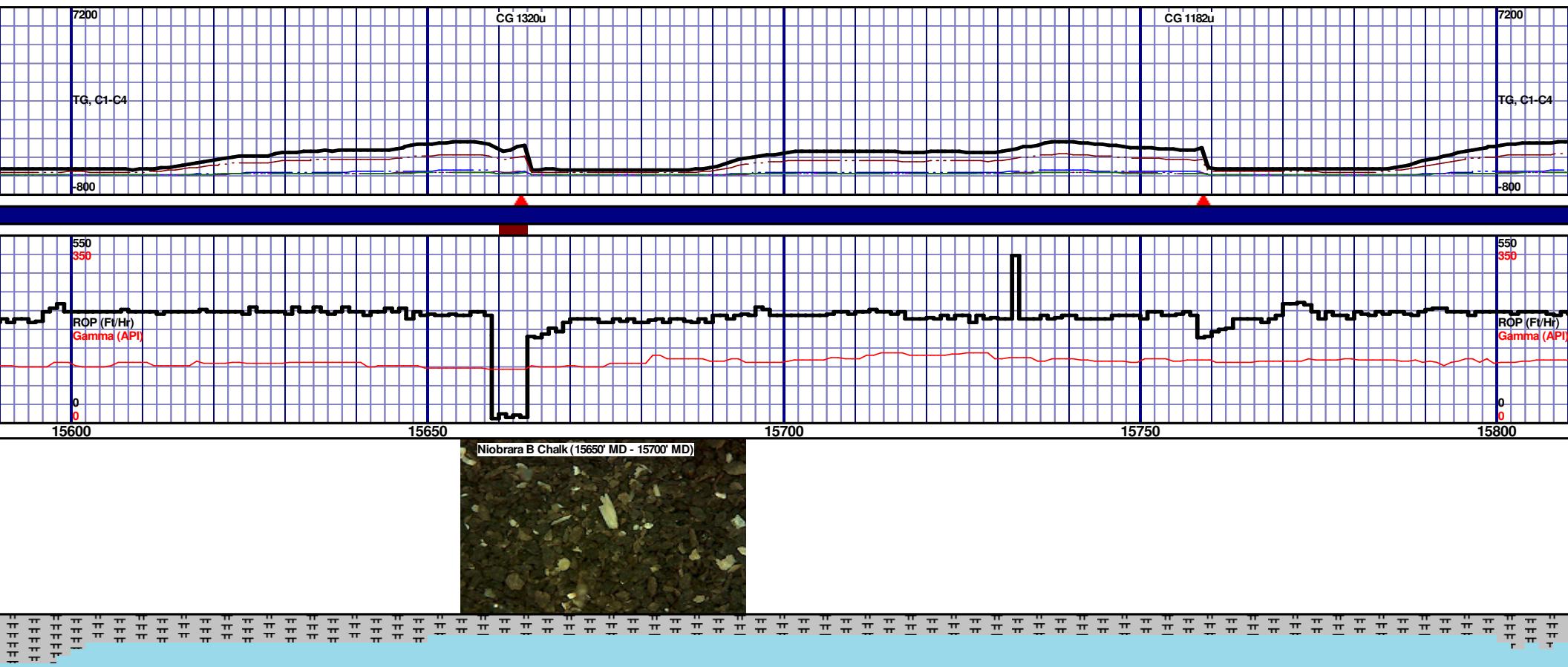
MD 14935 TVD 6594.33  
INC 91.32 AZ 89.67  
VS 8492.41

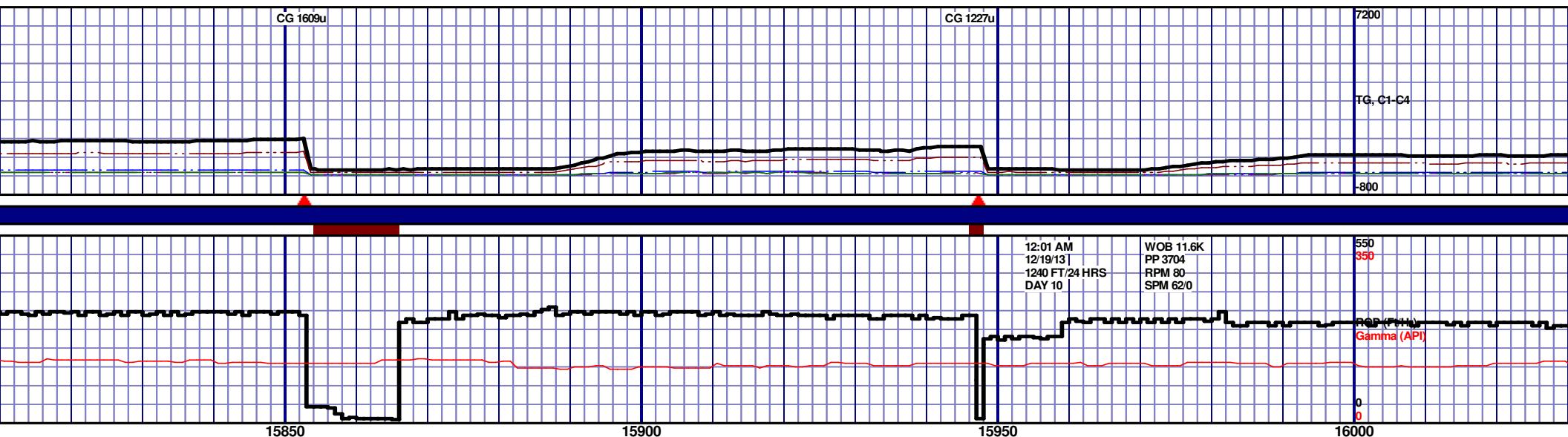
MD 15030 TVD 6594.15  
INC 88.89 AZ 90.49  
VS 8587.21

MD 15125 TVD 6593.47  
INC 91.94 AZ 93.59  
VS 8681.73









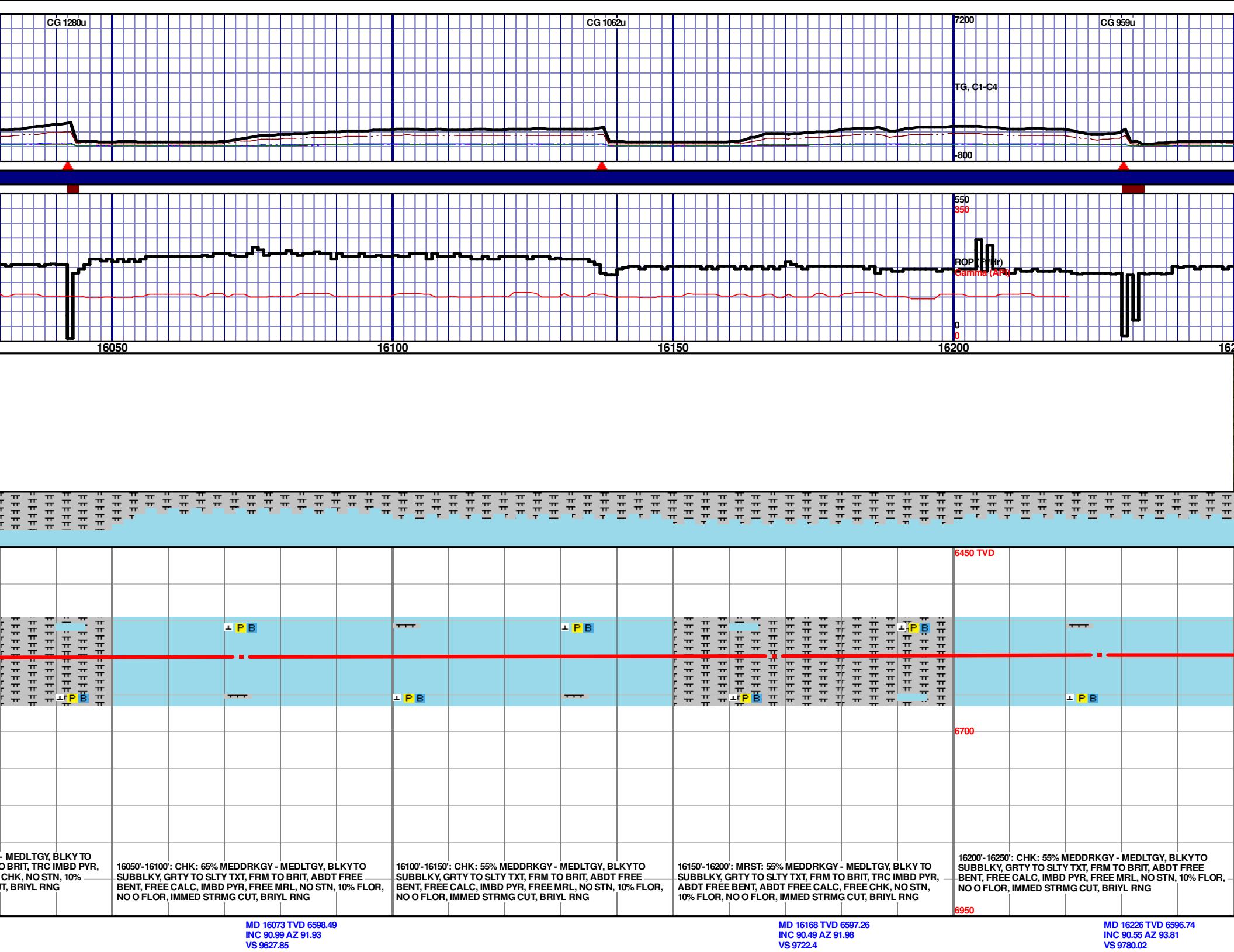
: CHK: 55% MEDDRKGY - MEDLTGY, BLKY TO  
GRY TO SLTY TXT, FRM TO BRIT, ABDT FREE  
CALC, IMBD PYR, FREE MRL, NO STN, 10% FLOR,  
IMMED STRMG CUT, BRIYL RNG

15850'-15900': CHK: 60% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, ABDT FREE  
BENT, FREE CALC, IMBD PYR, FREE MRL, NO STN, 10% FLOR,  
NO O FLOR, IMMED STRMG CUT, BRIYL RNG

15900'-15950': CHK: 65% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, ABDT FREE  
BENT, FREE CALC, IMBD PYR, FREE MRL, NO STN, 10% FLOR,  
NO O FLOR, IMMED STRMG CUT, BRIYL RNG

15950'-16000': CHK: 55% MEDDRKGY - MEDLTGY, BLKY TO  
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, ABDT FREE  
BENT, FREE CALC, IMBD PYR, FREE MRL, NO STN, 10% FLOR,  
NO O FLOR, IMMED STRMG CUT, BRIYL RNG

16000'-16050': MRST: 70% MEDDRKGY  
SUBBLKY, GRTY TO SLTY TXT, FRM TO  
ABDT FREE BENT, FREE CALC, FREE  
FLOR, NO O FLOR, IMMED STRMG CU

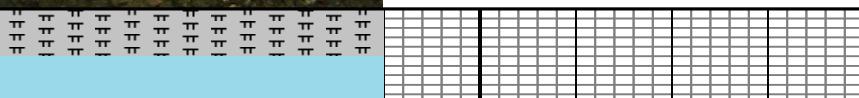


BOTTOMS UP GAS 817u

WOB 14.8K  
PP 3761  
RPM 80  
SPM 700

DRILLERS TD 2:30AM  
ON 12/19/13 @ 16290' MD

250 16300



TD @ 16290' MD

RELEASED ON 12/19/13

THANK YOU FROM  
ANDREW CHRISTIANO,  
HANNAH BLATCHFORD,  
AND HORIZON WELL  
LOGGING, LLC

16250'-16290': CHK: 50% MEDDRKGY - MEDLTGY,  
BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO  
BRIT, ABDT FREE BENT, FREE CALC, IMBD PYR,  
FREE MRL, NO STN, 10% FLOR, NO O FLOR,  
IMMED STRMG CUT, BRIYL RNG

PTB: MD 16290 TVD 6596.12  
INC 90.55 AZ 93.81  
VS 9843.49