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WWW.HZMUD.COM/25

Customer Information

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

Geologist: Holly Duncan
Noble Energy Inc.

Mud Logging Details

Logger: Hannah Blatchford &
Thomas Wacholz

Log Interval: 6600' MD to 12099' MD

Start Date: March 28, 2014

Release Date: March 31, 2014

Well Information

Well Name: Wells Ranch AE30-64HNC
Horizontal

Location: 29-T6N-R62W
1903' FSL, 65' FWL

County: Weld
State: Colorado

Drilling Rig: H&P 321

Total Depth: 12099' MD

TD Date: March 31, 2014

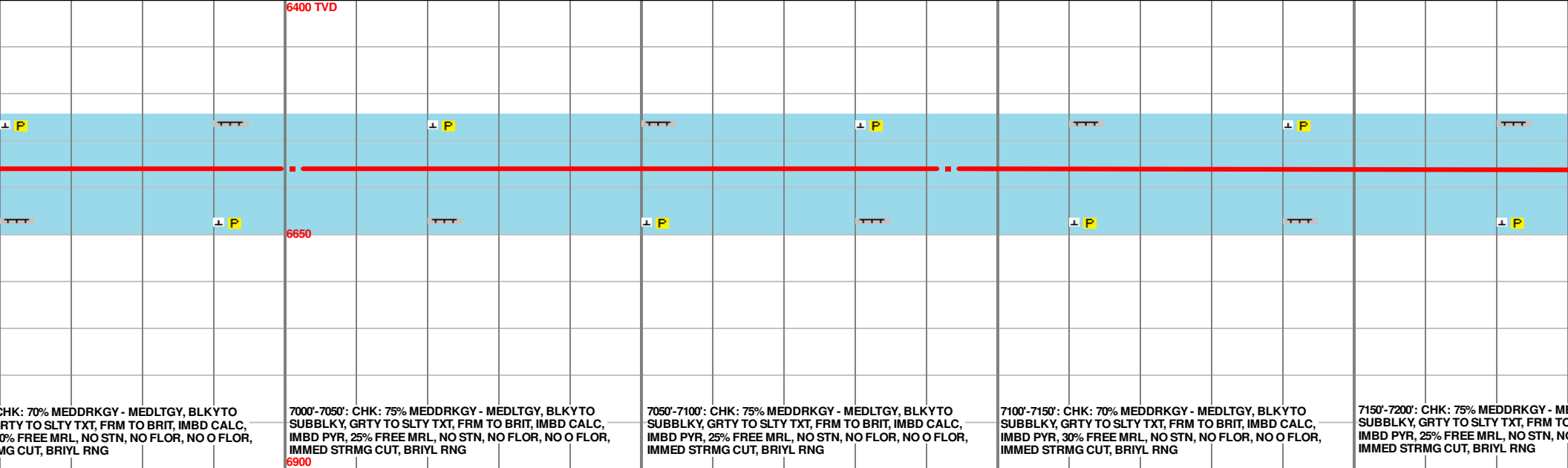
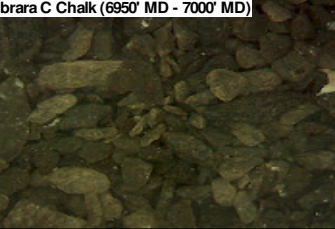
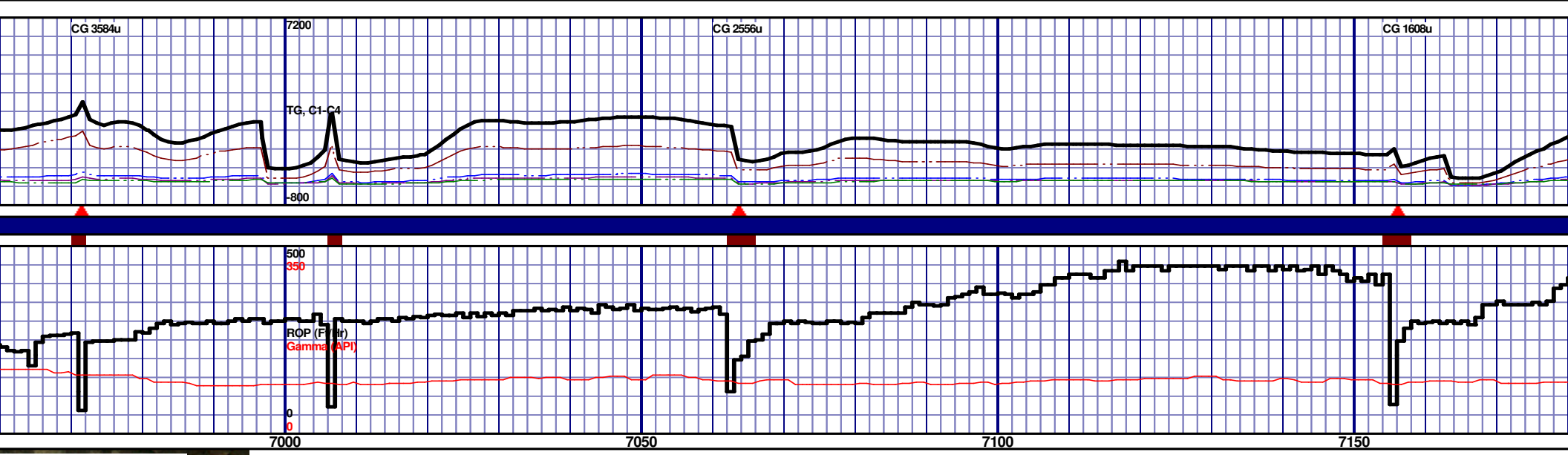
Formation: Niobrara C Chalk

KB Elevation: 4787'

GR Elevation: 4757'

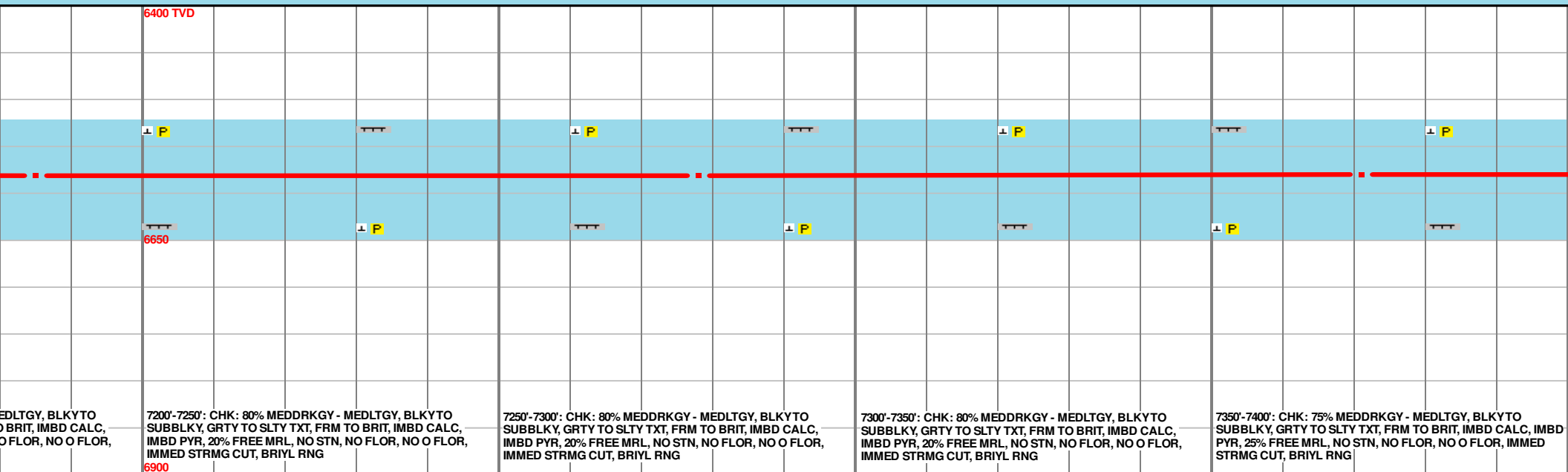
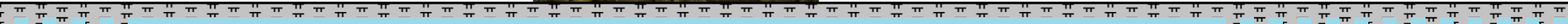
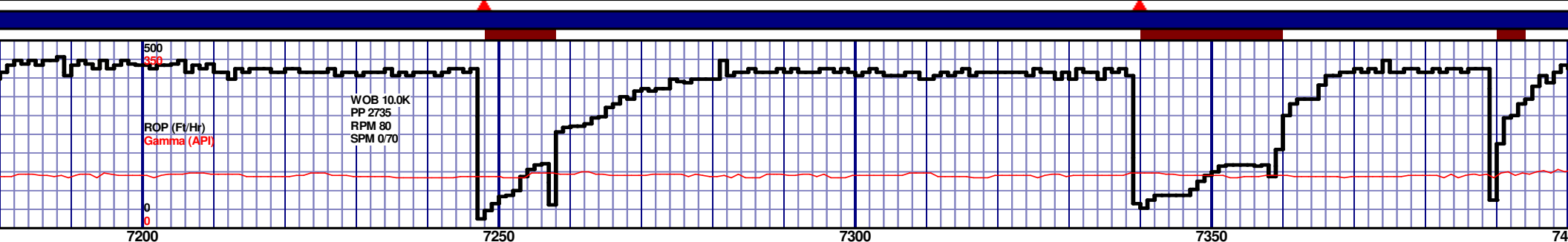
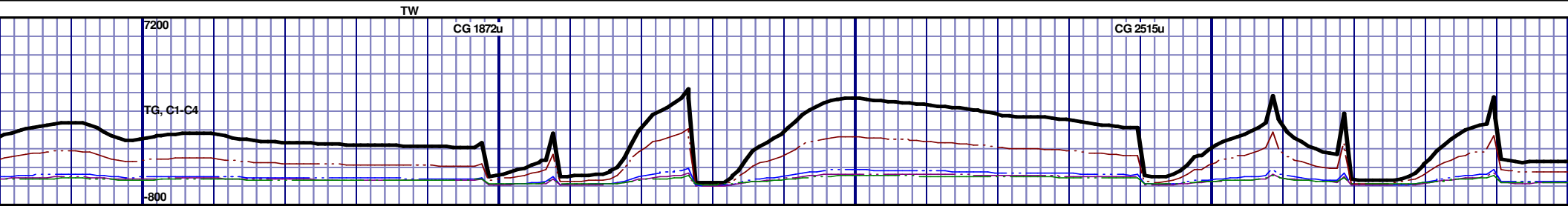
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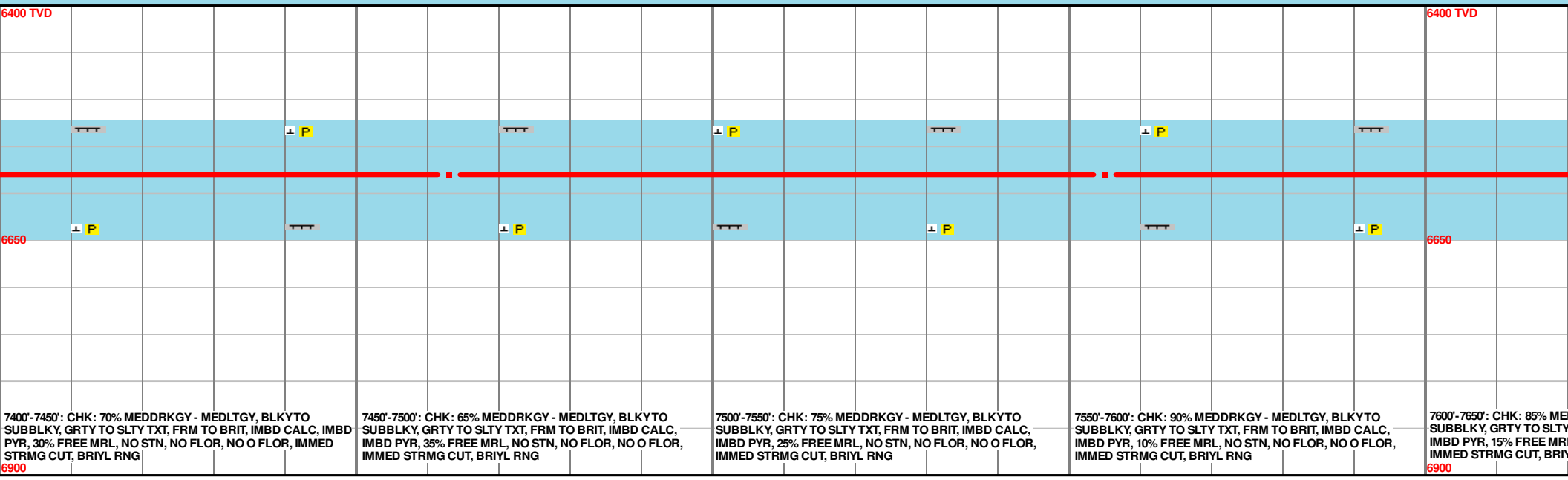
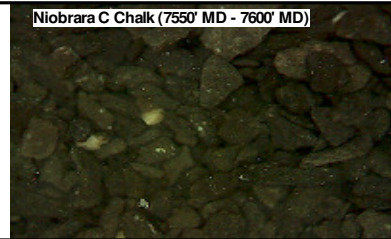
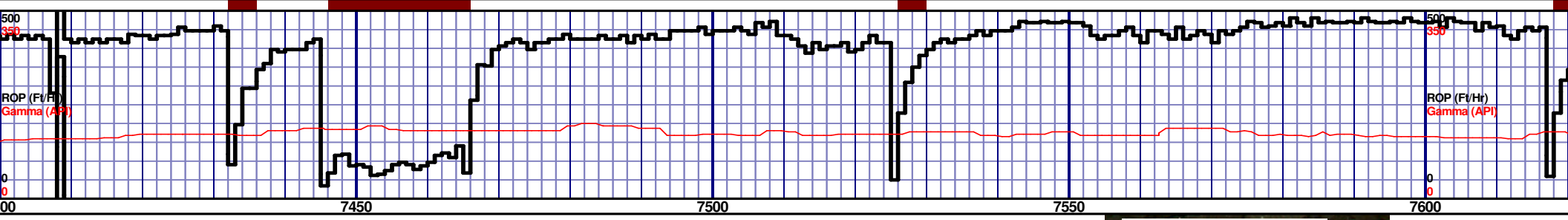
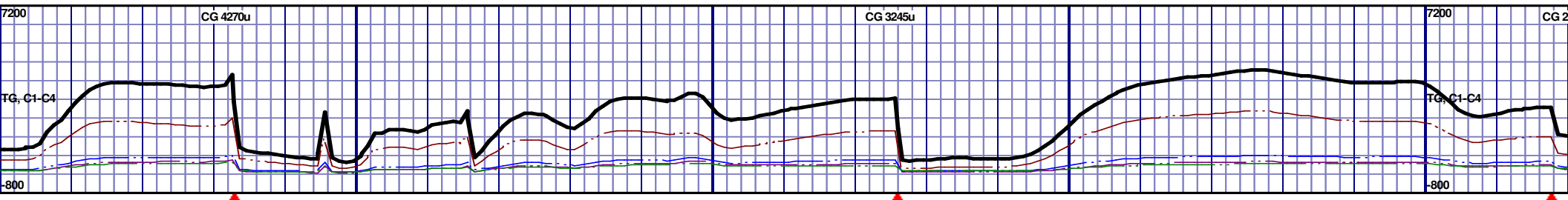
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INC 70.88 AZ 268.28
VS 435.18



MD 7001 TVD 6580.26
INC 89.94 AZ 269.57
VS 715.05

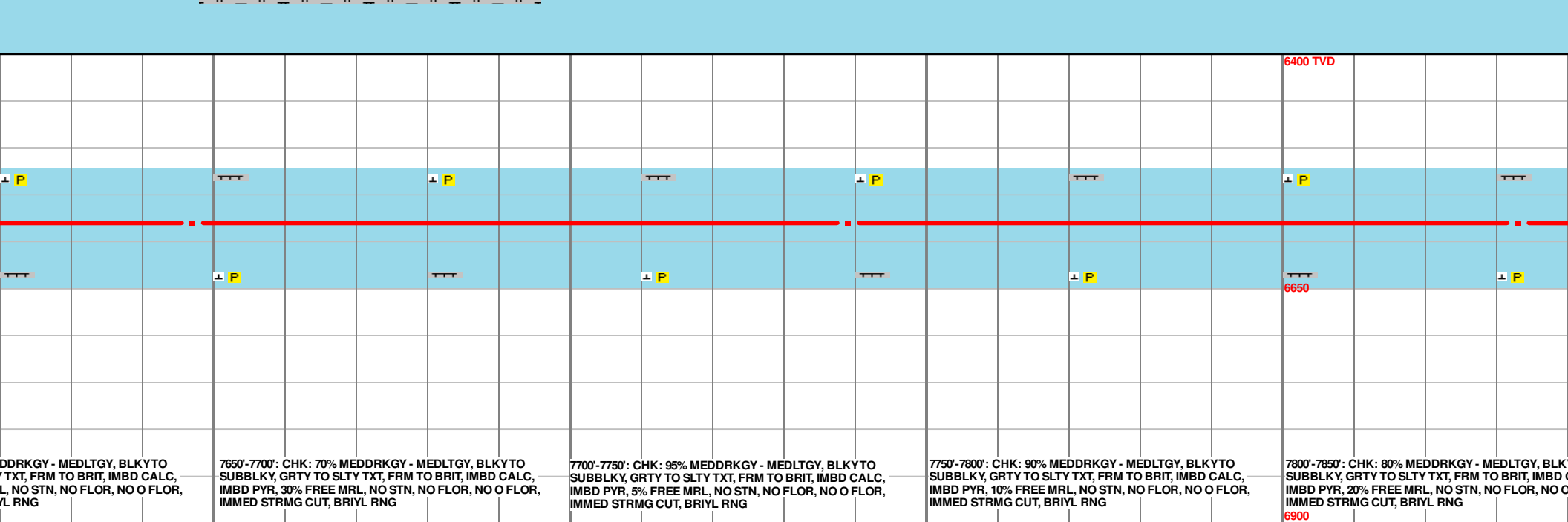
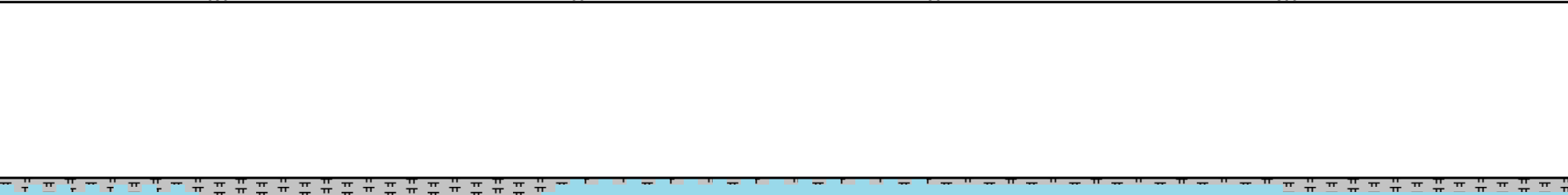
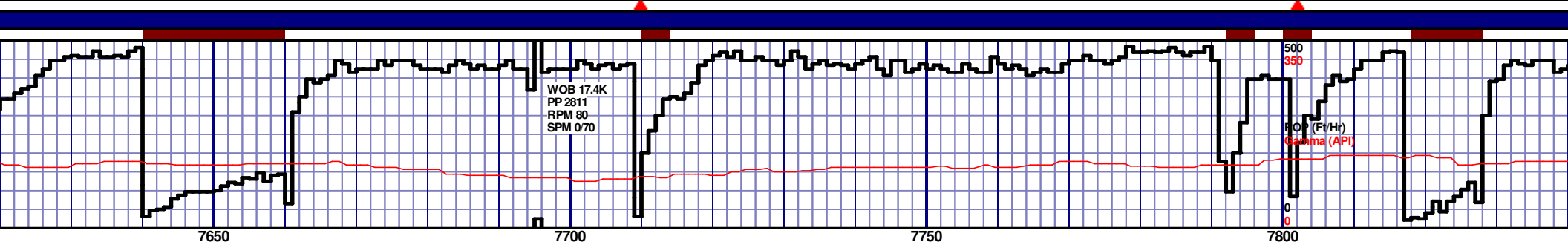
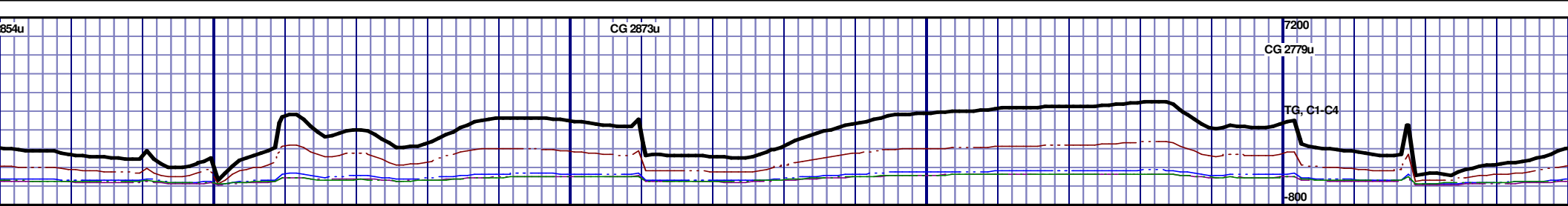
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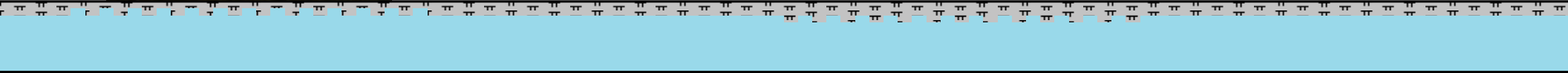
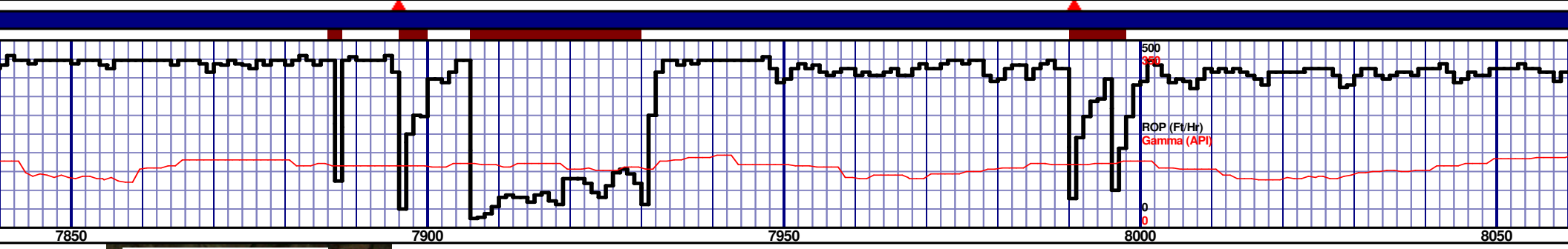
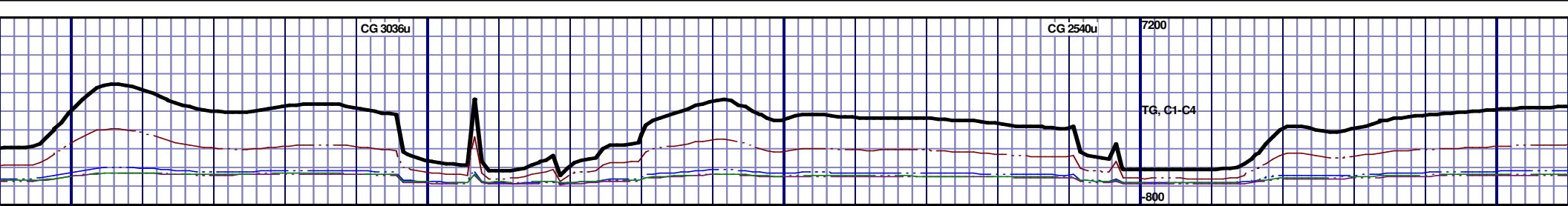




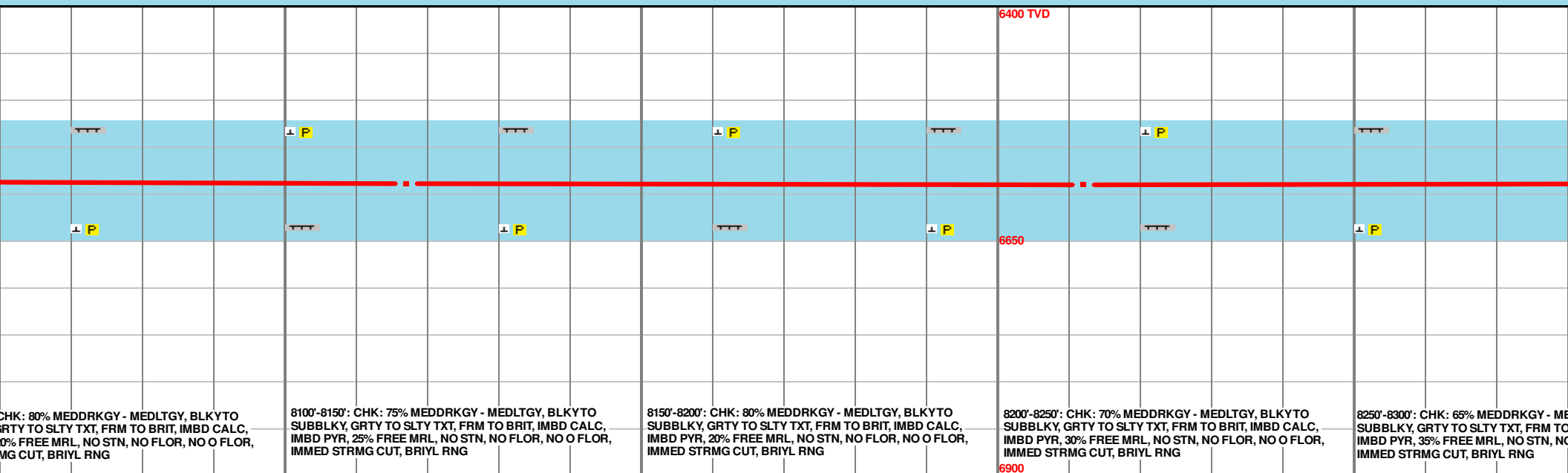
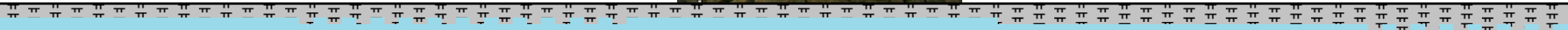
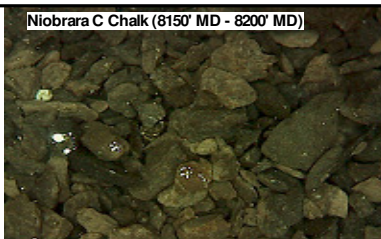
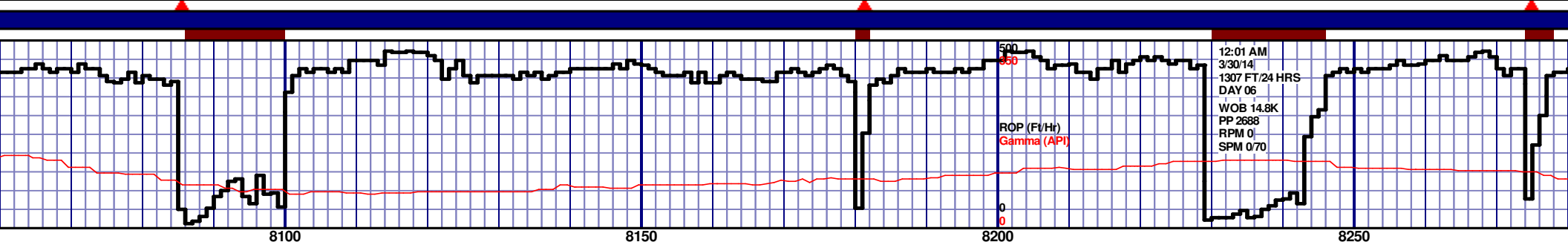
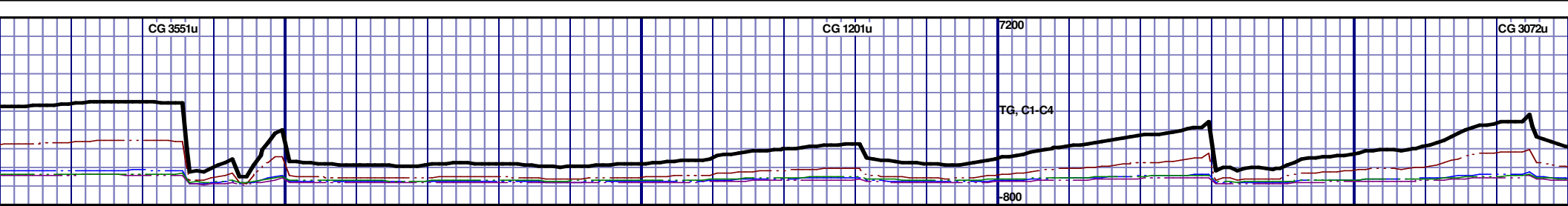
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VS 1176.83

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INC 90.37 AZ 270.52
VS 1268.82



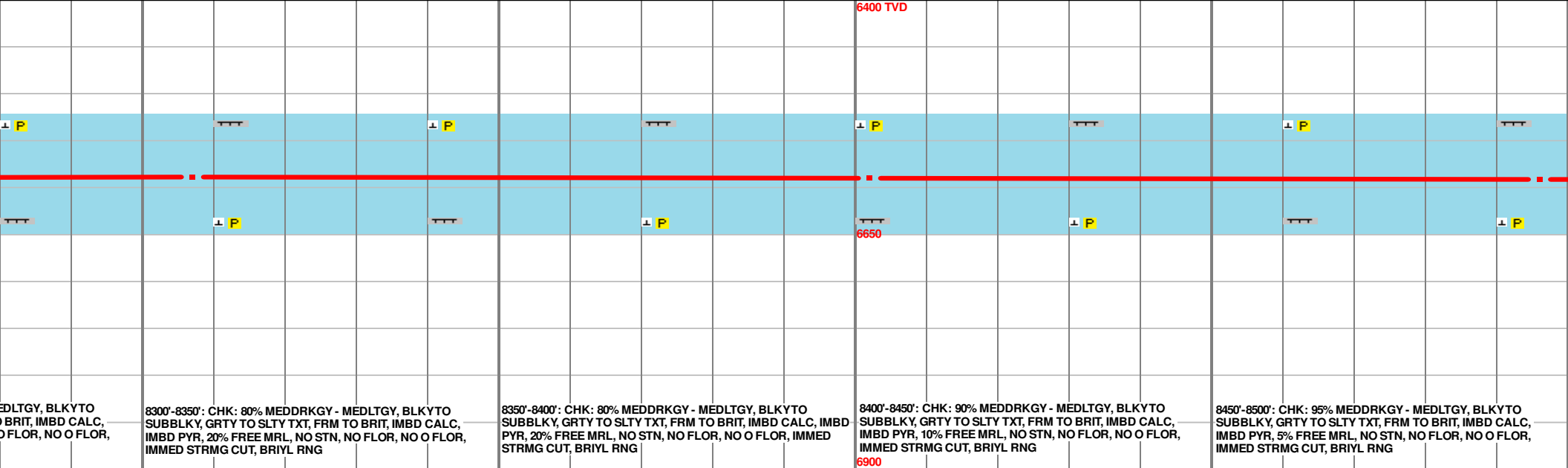
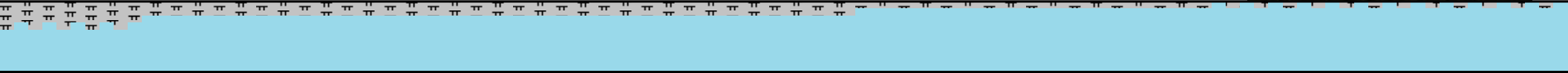
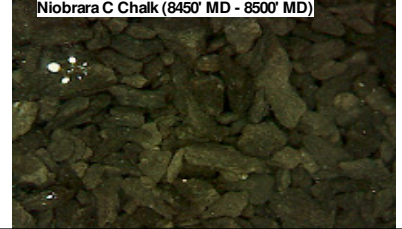
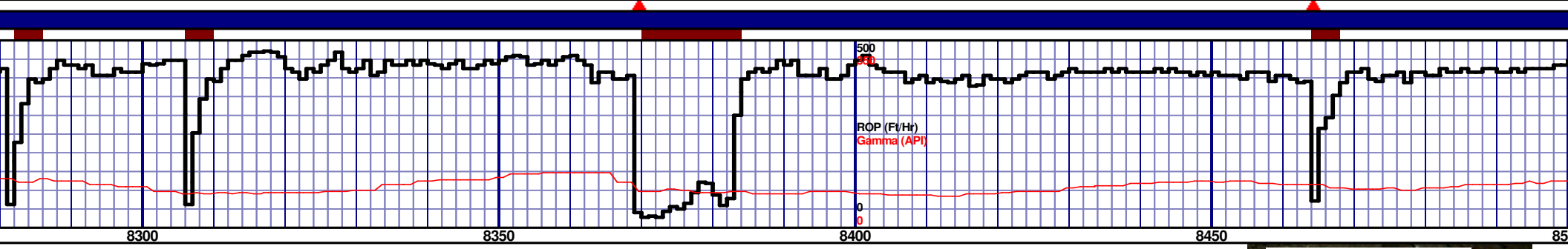
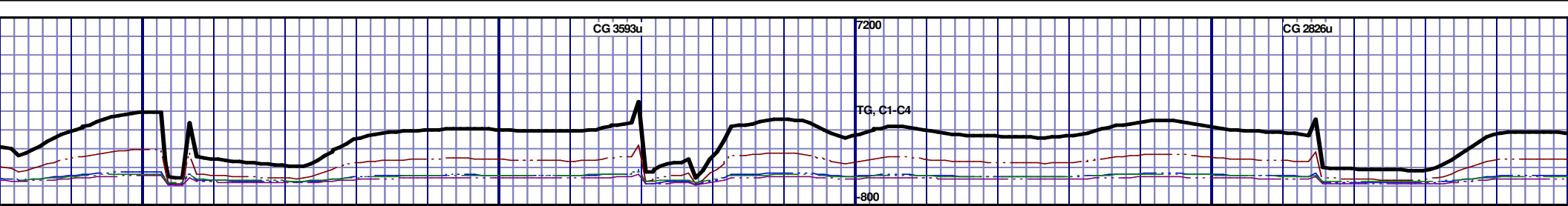


					6400 TVD				
					6650				
					6900				
7850'-7900': CHK: 85% MEDDRKGY - MEDLTGY, BLKYO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, IMBD PYR, 15% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG					7900'-7950': CHK: 80% MEDDRKGY - MEDLTGY, BLKYO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, IMBD PYR, 20% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG				
7950'-8000': CHK: 75% MEDDRKGY - MEDLTGY, BLKYO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, IMBD PYR, 25% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG					8000'-8050': CHK: 80% MEDDRKGY - MEDLTGY, BLKYO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, IMBD PYR, 20% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG				
8050'-8100': CHK: 80% MEDDRKGY - MEDLTGY, BLKYO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, IMBD PYR, 20% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG									



MD 8117 TVD 6589.03
INC 88.67 AZ 265.25
VS 1830.47

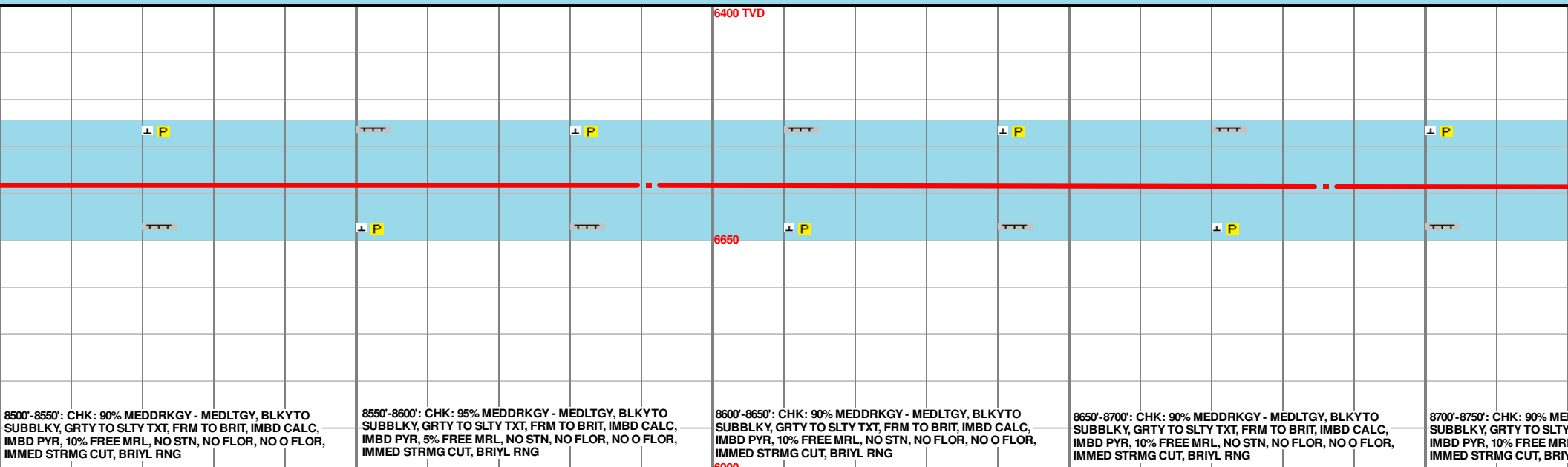
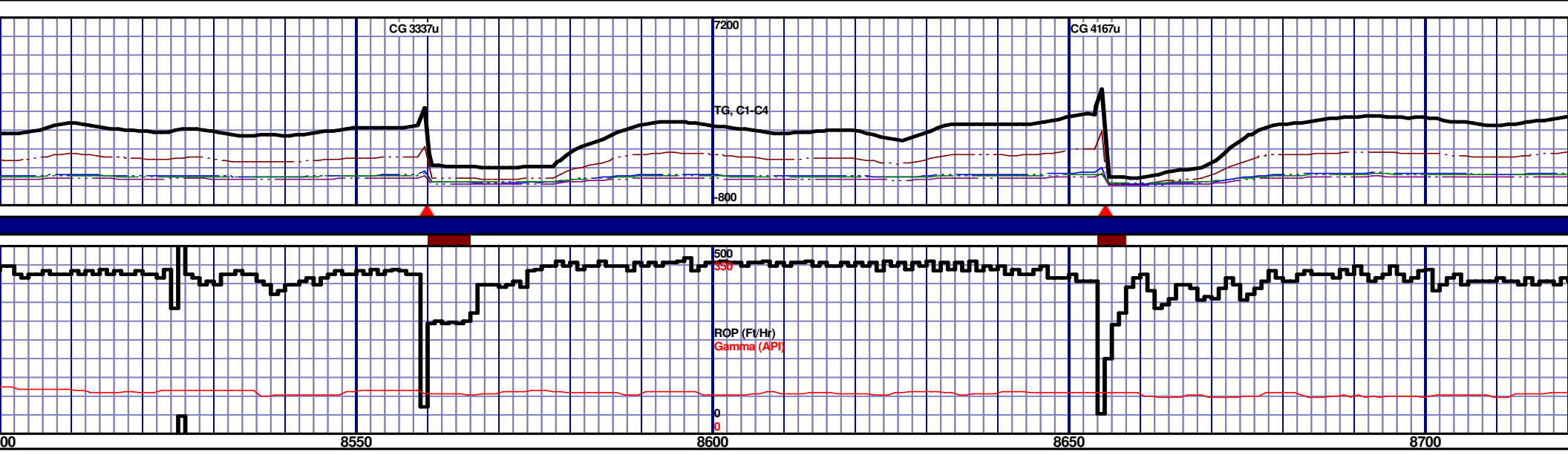
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VS 1925.36

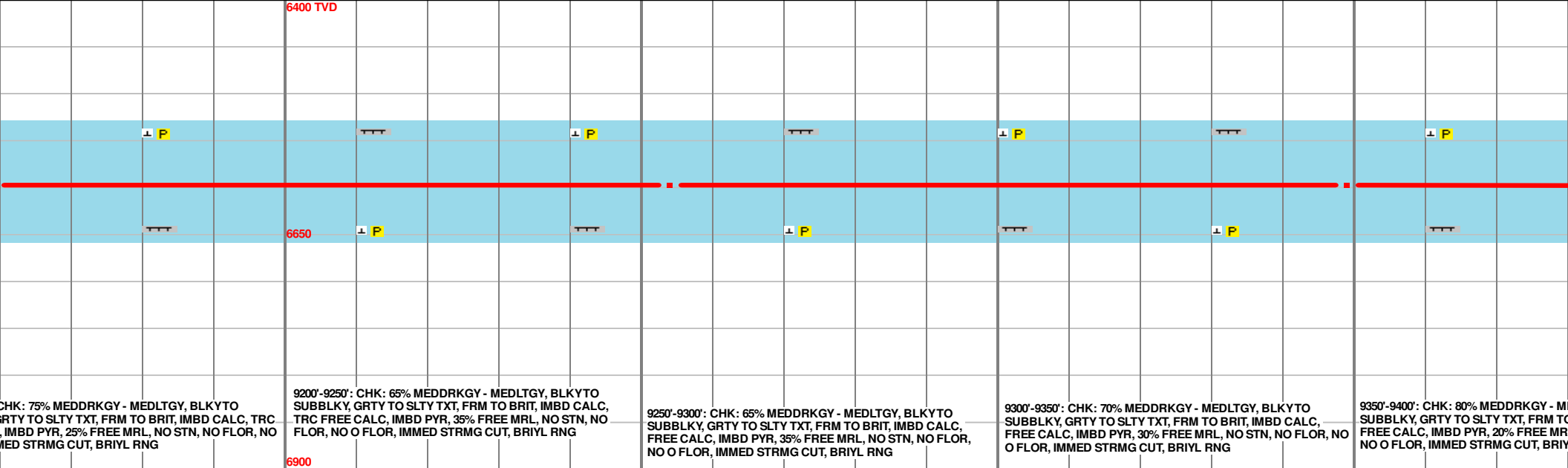
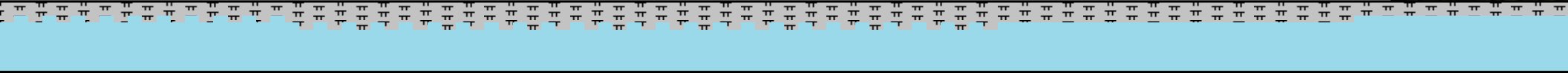
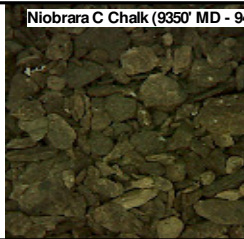
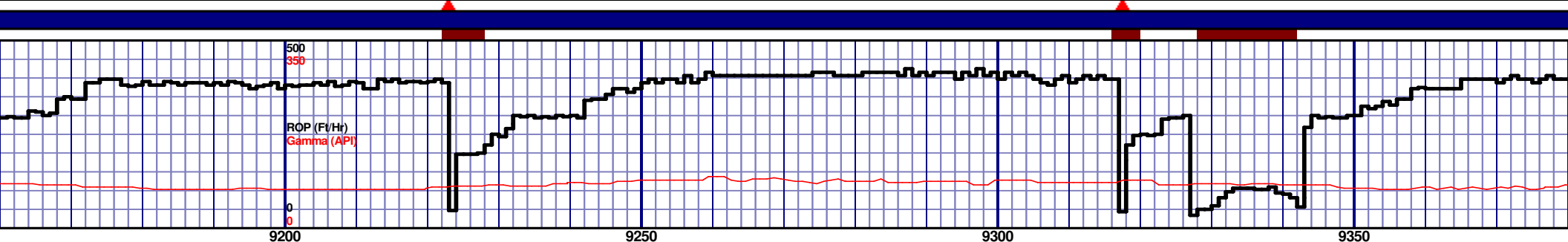
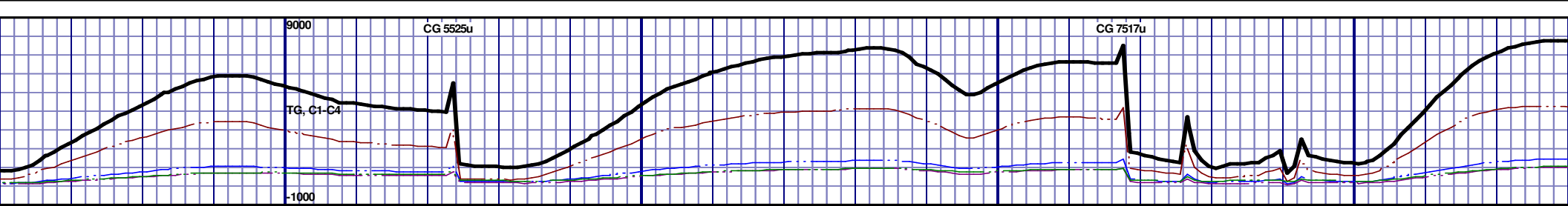


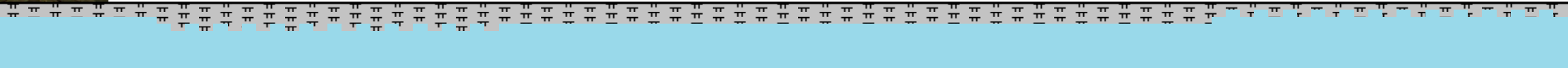
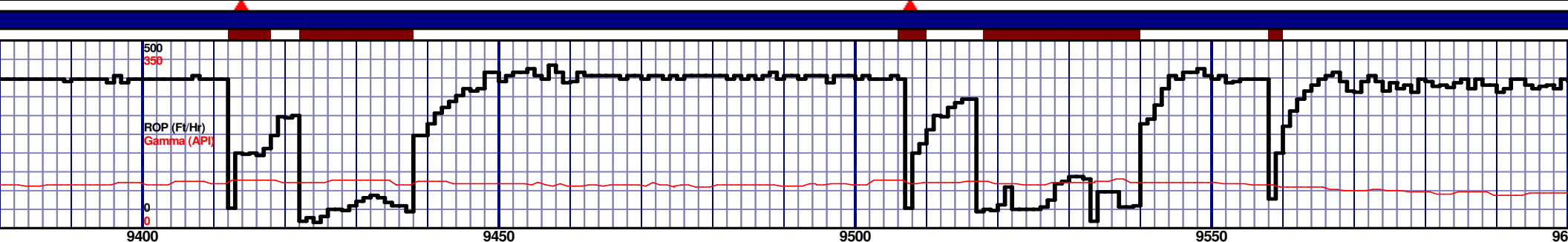
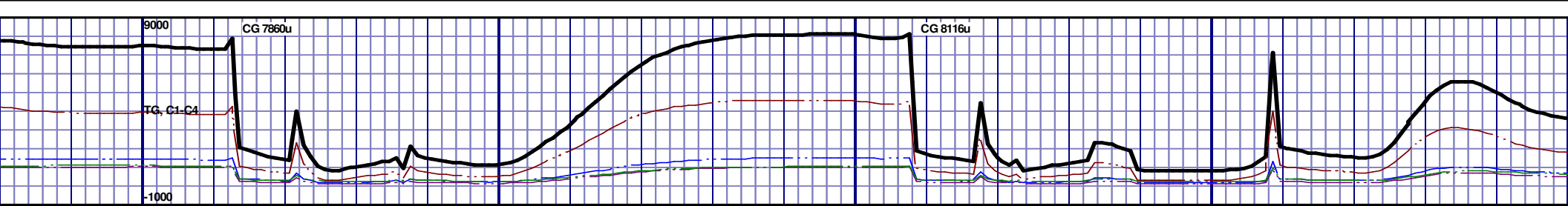
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INC 90.03 AZ 266.82
VS 2020.31

MD 8402 TVD 6589.53
INC 88.95 AZ 268.31
VS 2115.27

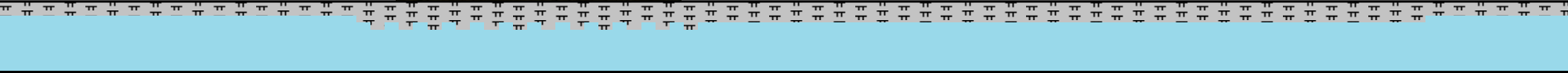
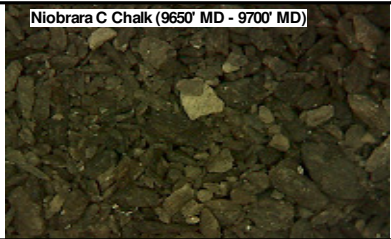
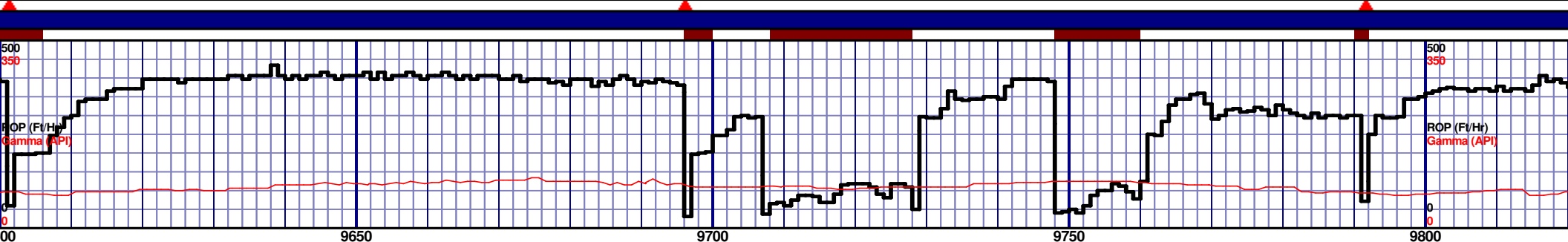
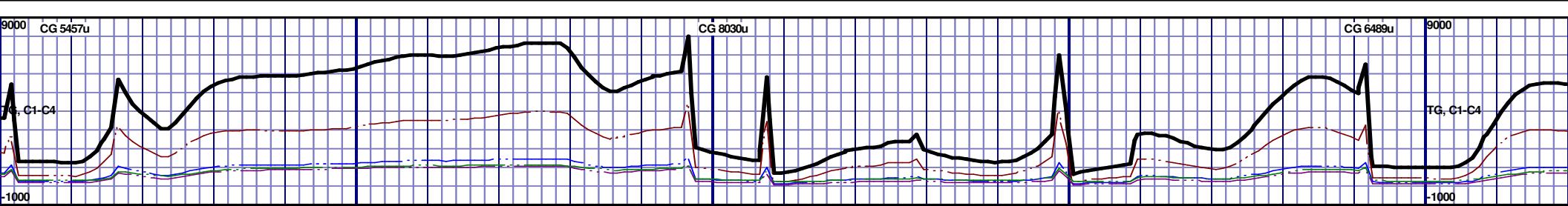
MD 8402 TVD 6589.53
INC 88.95 AZ 268.31
VS 2115.27







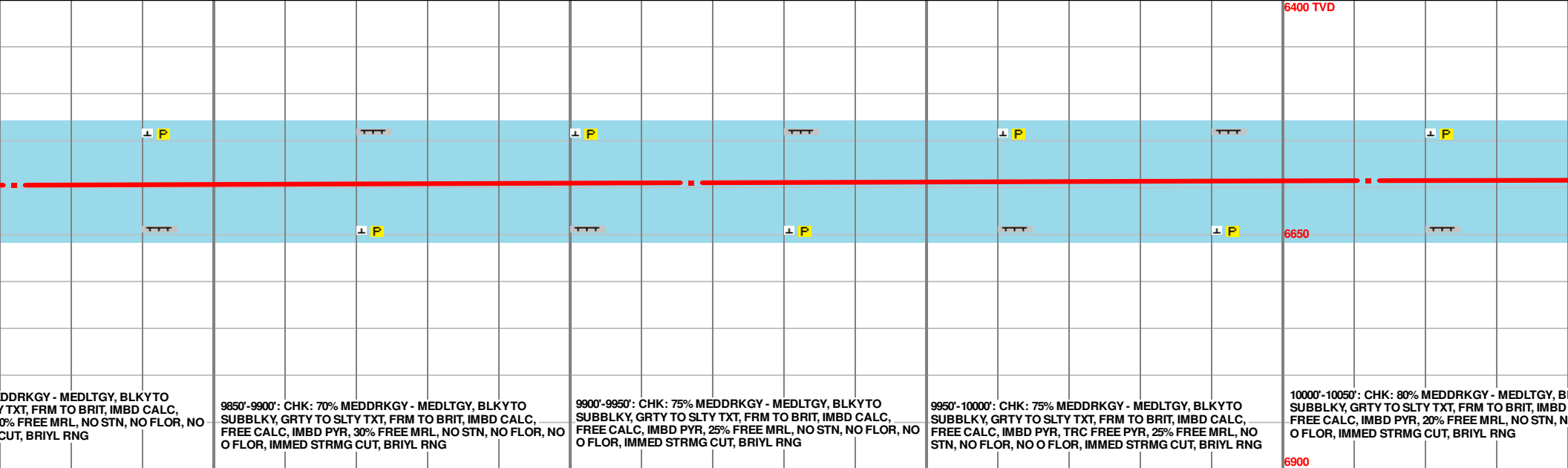
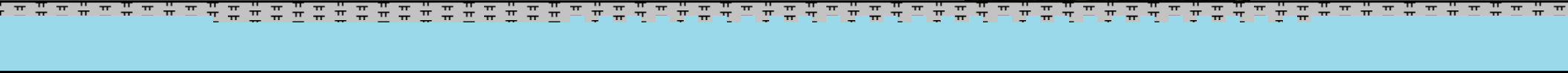
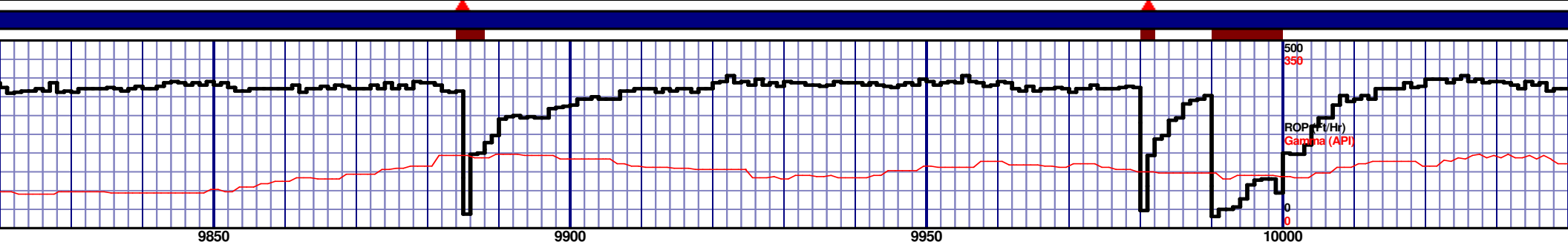
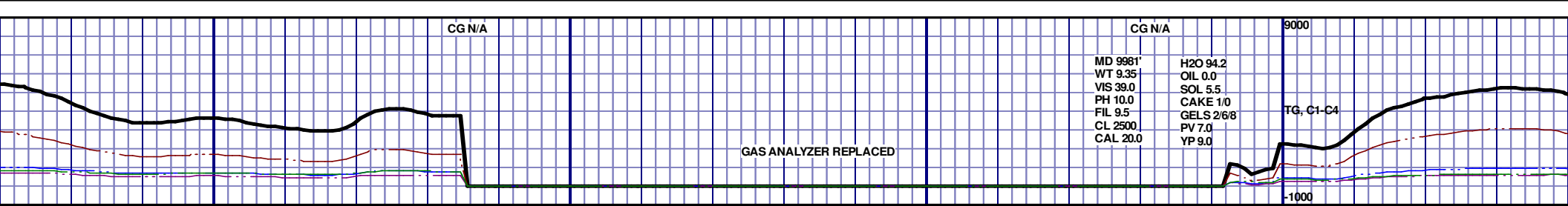
<p>6400 TVD</p>	<p>9400'-9450': CHK: 65% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 35% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>9450'-9500': CHK: 70% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, TRC FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>9500'-9550': CHK: 70% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>9550'-9600': CHK: 85% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, TRC FREE CALC, IMBD PYR, 15% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>
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<p>6400 TVD</p> <p>ROP (F/Hr) Gamma (API)</p> <p>9600'-9650': CHK: 80% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 20% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p> <p>6650</p> <p>6900</p>	<p>9650'-9700': CHK: 65% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 35% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>9700'-9750': CHK: 70% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, TRC FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>9750'-9800': CHK: 70% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, TRC FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>9800'-9850': CHK: 80% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 20% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p> <p>6400 TVD</p> <p>6650</p> <p>6900</p>
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INC 88.89 AZ 268.79
VS 3345.96

MD 9728 TVD 6598.41
INC 90.31 AZ 270.63
VS 3440.95



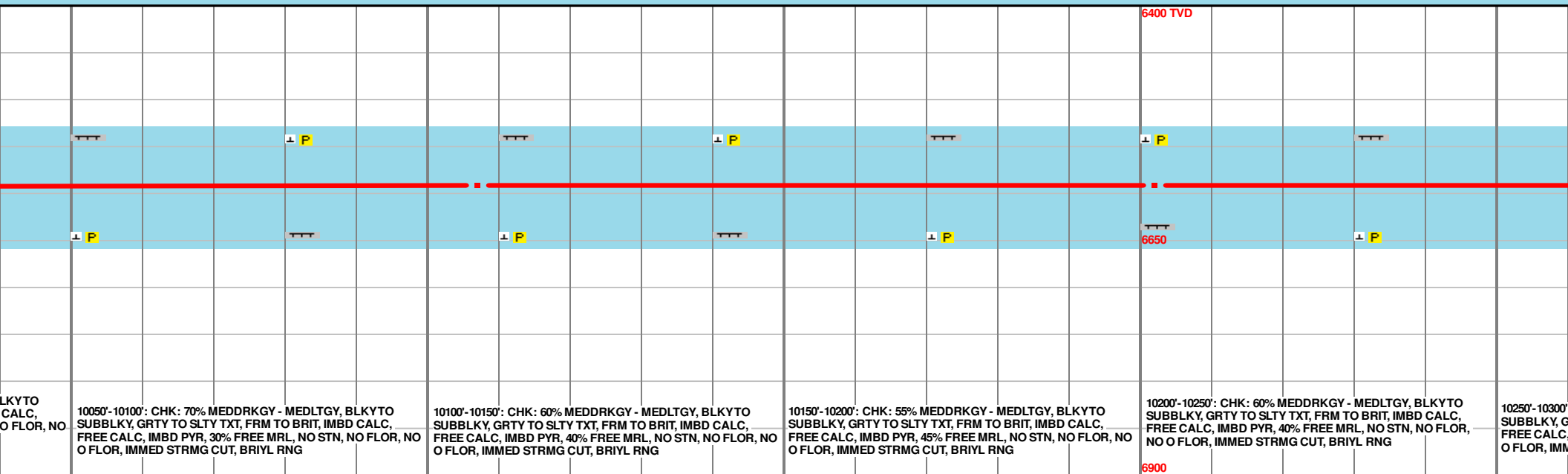
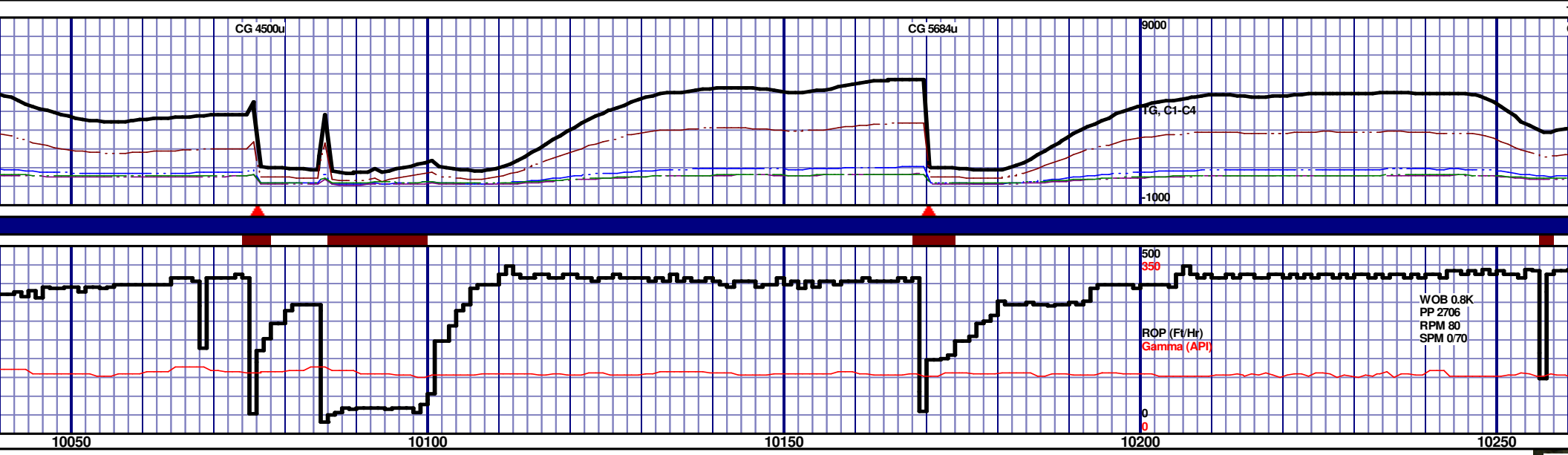
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INC 90.74 AZ 270.79
VS 3534.91

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FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, NO FLOR, NO
O FLOR, IMMED STRMG CUT, BRIYL RNG

9900'-9950': CHK: 75% MEDDRKGY - MEDLTGY, BLKYTO
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC,
FREE CALC, IMBD PYR, 25% FREE MRL, NO STN, NO FLOR, NO
O FLOR, IMMED STRMG CUT, BRIYL RNG

9950'-10000': CHK: 75% MEDDRKGY - MEDLTGY, BLKYTO
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC,
FREE CALC, IMBD PYR, TRC FREE PYR, 25% FREE MRL, NO
STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

10000'-10050': CHK: 80% MEDDRKGY - MEDLTGY, B
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD
FREE CALC, IMBD PYR, 20% FREE MRL, NO STN, N
O FLOR, IMMED STRMG CUT, BRIYL RNG



10050'-10100': CHK: 70% MEDDRKGY - MEDLTGY, BLKYTO
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC,
FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, NO FLOR, NO
O FLOR, IMMED STRMG CUT, BRIYL RNG

10100'-10150': CHK: 60% MEDDRKGY - MEDLTGY, BLKYTO
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC,
FREE CALC, IMBD PYR, 40% FREE MRL, NO STN, NO FLOR, NO
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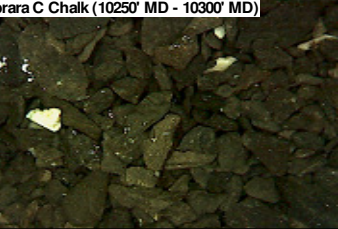
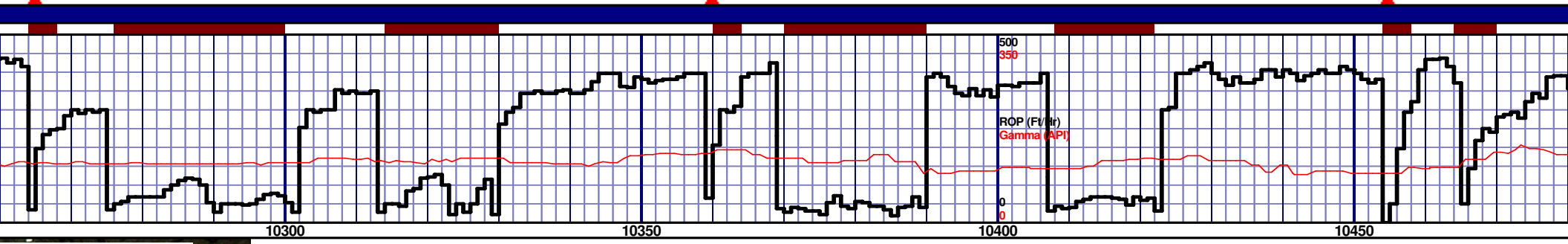
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FREE CALC, IMBD PYR, 45% FREE MRL, NO STN, NO FLOR, NO
O FLOR, IMMED STRMG CUT, BRIYL RNG

10200'-10250': CHK: 60% MEDDRKGY - MEDLTGY, BLKYTO
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC,
FREE CALC, IMBD PYR, 40% FREE MRL, NO STN, NO FLOR,
NO O FLOR, IMMED STRMG CUT, BRIYL RNG

10250'-10300': CHK: 60% MEDDRKGY - MEDLTGY, BLKYTO
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC,
FREE CALC, IMBD PYR, 40% FREE MRL, NO STN, NO FLOR,
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MD 10107 TVD 6591.52
INC 90.06 AZ 270.19
VS 3819.79

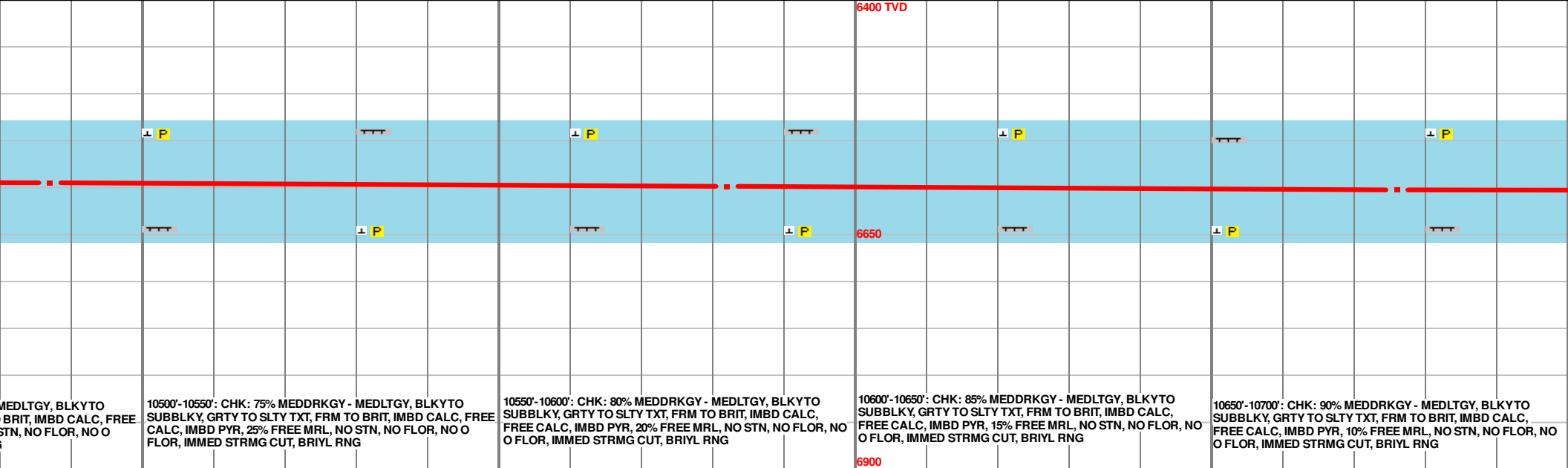
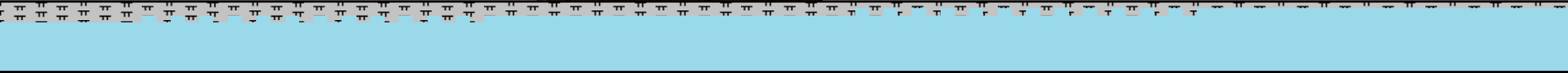
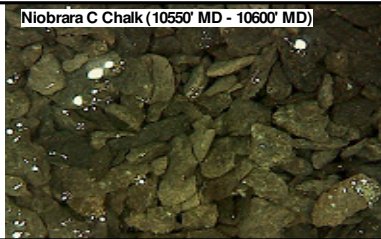
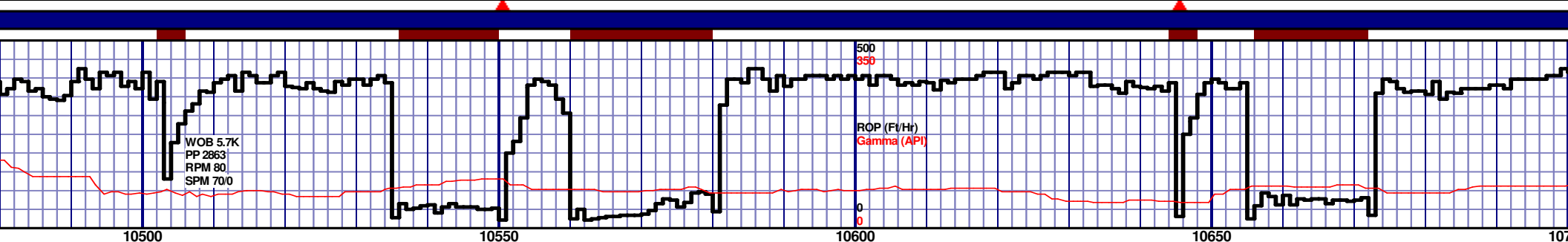
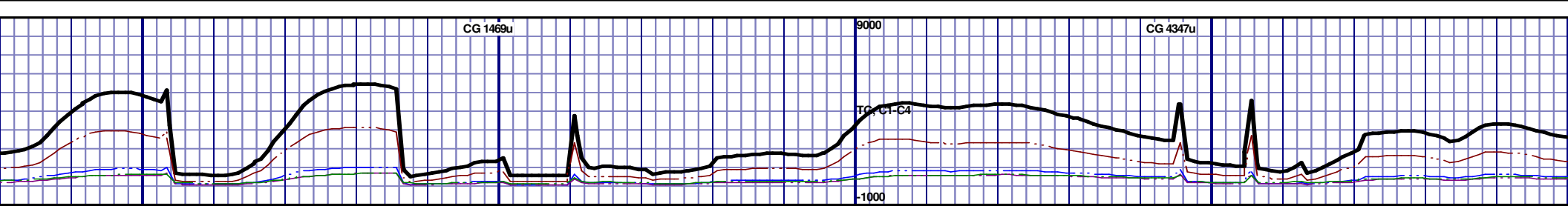
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INC 90.43 AZ 273.8
VS 3914.65

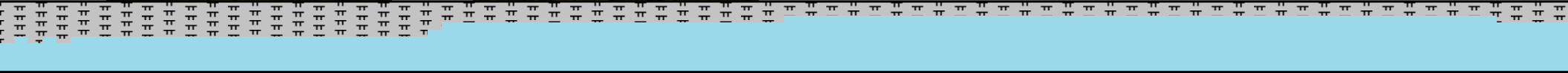
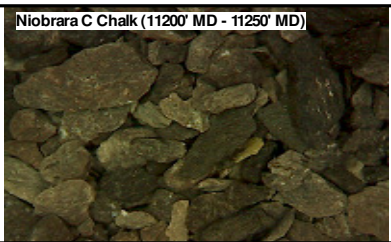
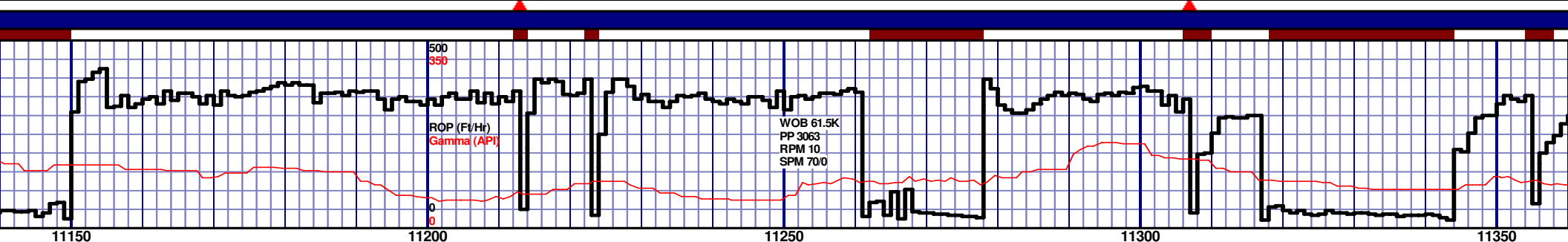
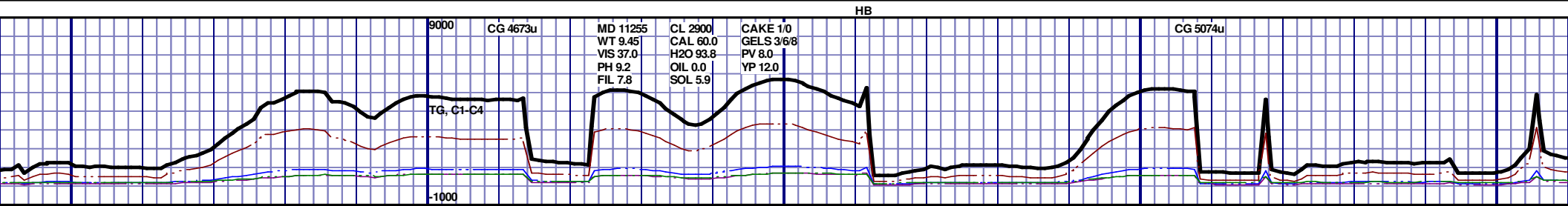


<p>6400 TVD</p> <p>6650</p> <p>6900</p>	<p>10300'-10350': CHK: 60% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 40% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>10350'-10400': CHK: 70% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>10400'-10450': CHK: 60% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 40% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>	<p>10450'-10500': CHK: 70% MEDDRKGY - MEDLTGY, BLKYTO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG</p>
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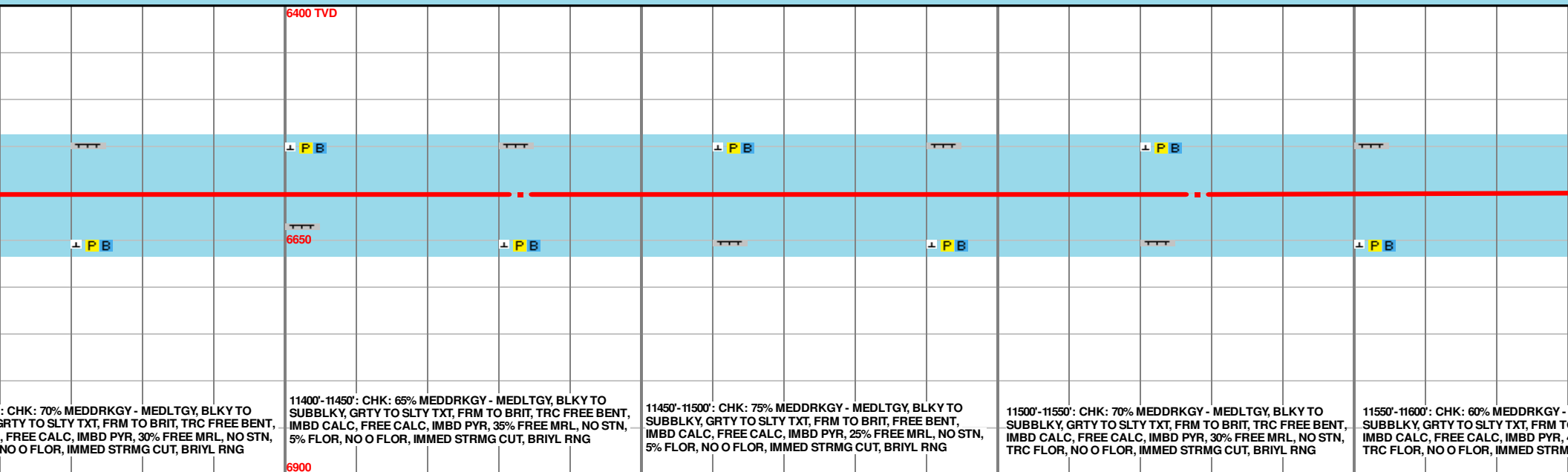
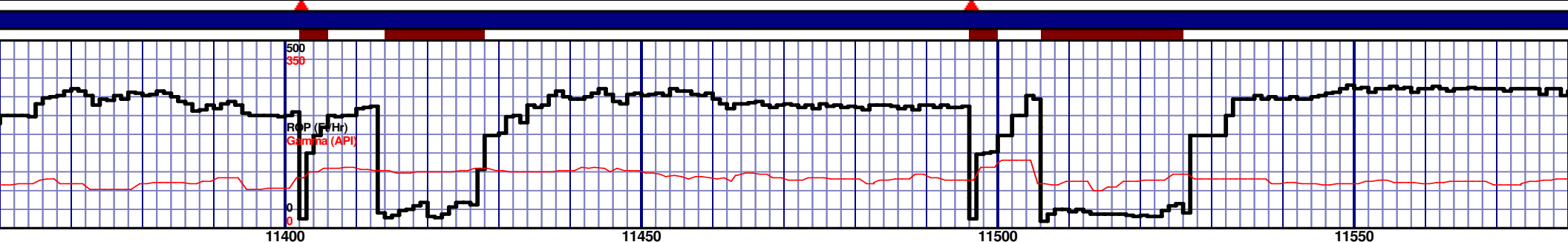
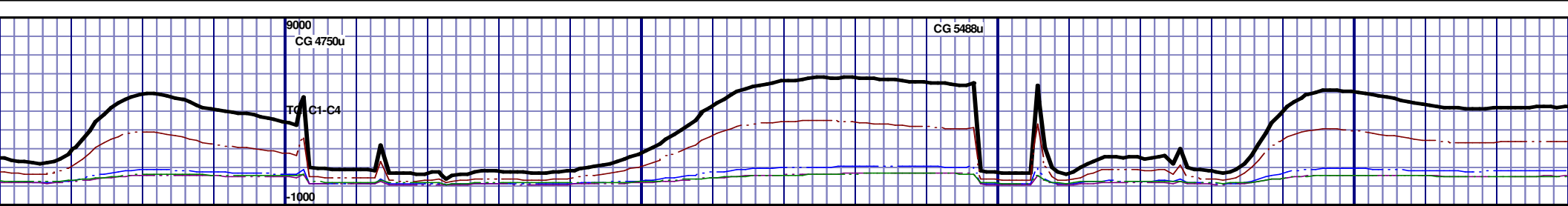
MD 10297 TVD 6590.9
INC 89.82 AZ 275.66
VS 4009.18

MD 10392 TVD 6592.38
INC 88.4 AZ 271.48
VS 4103.86





					6400 TVD NIOBRARA C CHALK 11202' MD 6599' TVD									
										</				



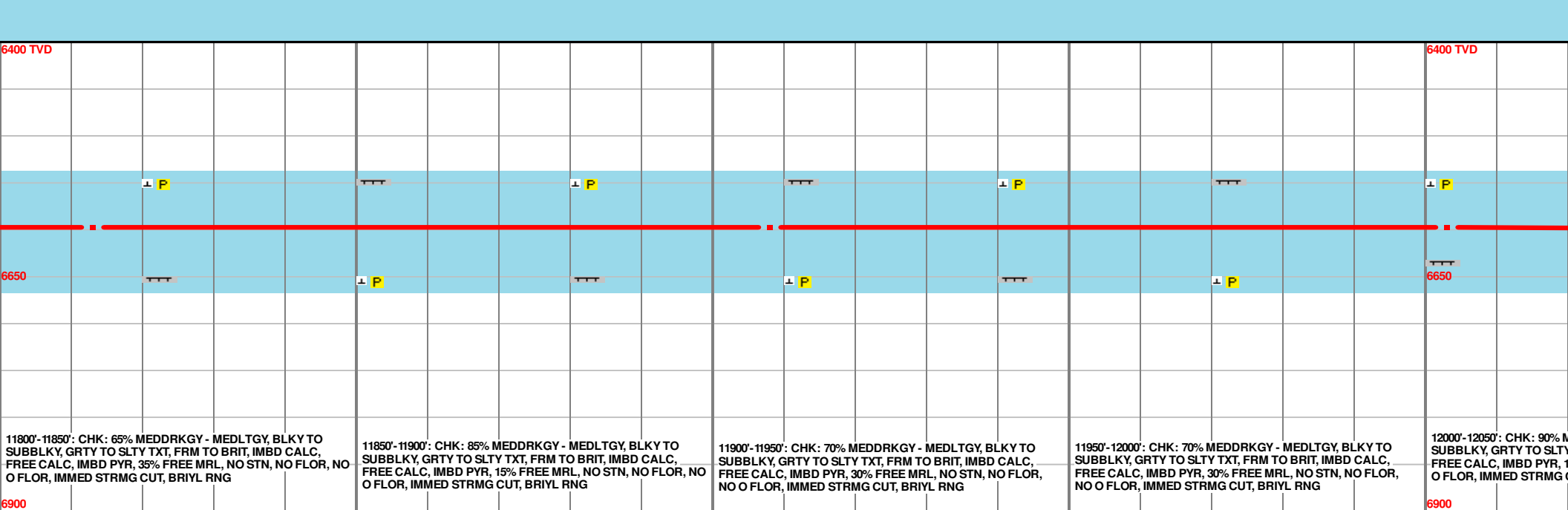
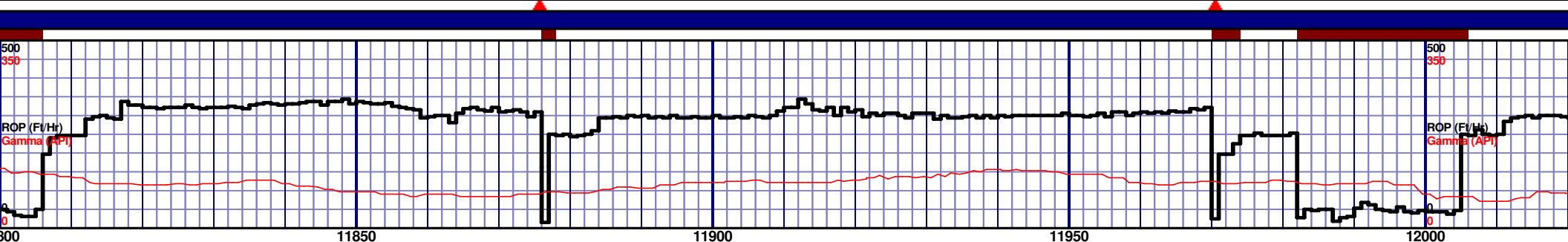
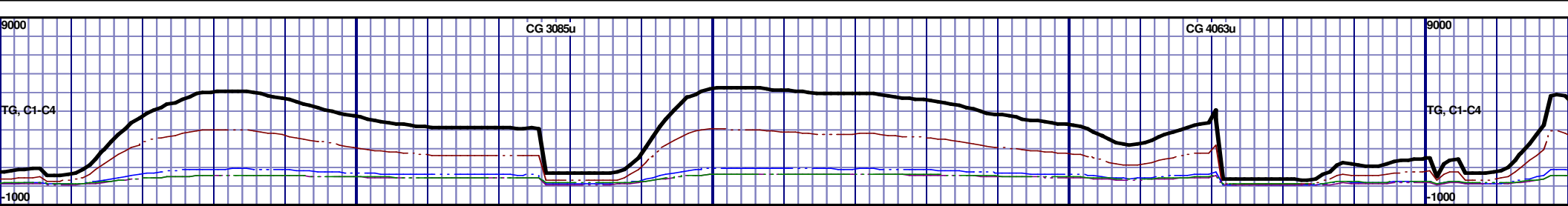
CHK: 70% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE BENT, IMBD CALC, FREE CALC, IMBD PYR, 35% FREE MRL, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

11400'-11450': CHK: 65% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE BENT, IMBD CALC, FREE CALC, IMBD PYR, 35% FREE MRL, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

11450'-11500': CHK: 75% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE BENT, IMBD CALC, FREE CALC, IMBD PYR, 25% FREE MRL, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

11500'-11550': CHK: 70% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE BENT, IMBD CALC, FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

11550'-11600': CHK: 60% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, TRC FREE BENT, IMBD CALC, FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, 5% FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG



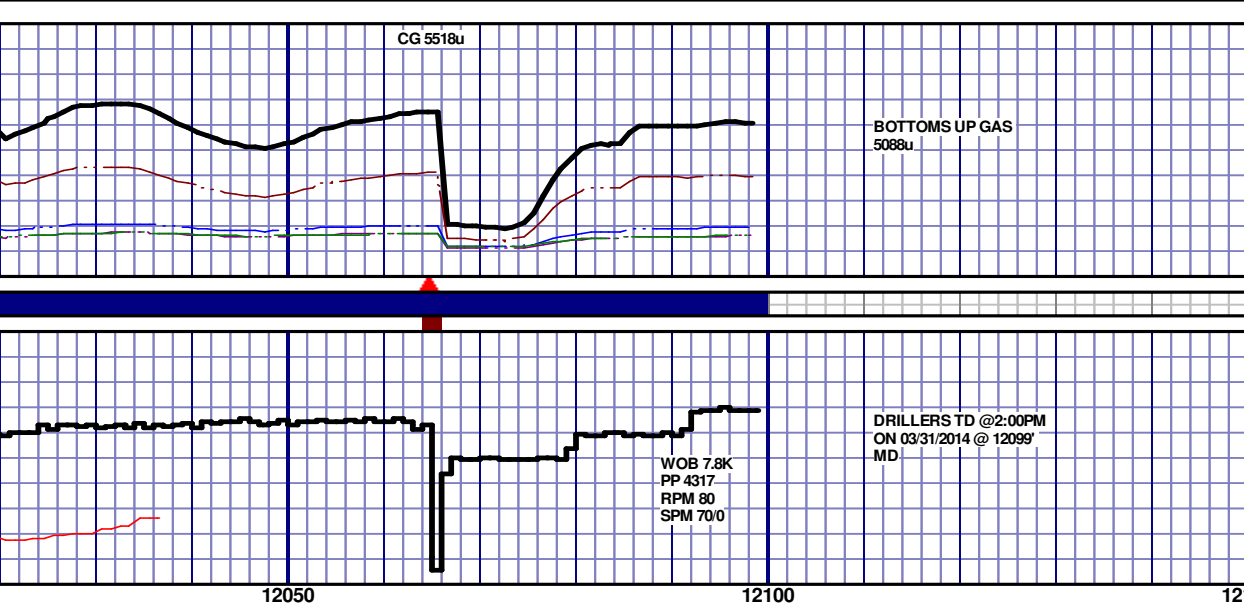
11800'-11850': CHK: 65% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 35% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

11850'-11900': CHK: 85% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 15% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

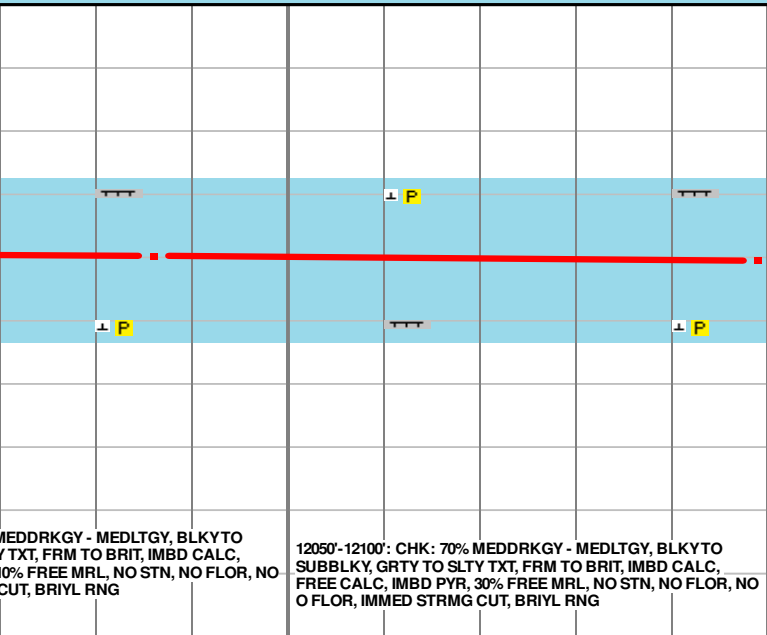
11900'-11950': CHK: 70% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

11950'-12000': CHK: 70% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG

12000'-12050': CHK: 90% MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC, FREE CALC, IMBD PYR, 10% FREE MRL, NO STN, NO FLOR, NO O FLOR, IMMED STRMG CUT, BRIYL RNG



Niobrara C Chalk (12050' MD - 12099' MD)



TD @ 12099' MD

RELEASED ON 3/31/14

THANK YOU FROM
HANNAH BLATCHFORD,
THOMAS WACHOLZ
AND HORIZON WELL
LOGGING, LLC

MEDDRKGY - MEDLTGY, BLKYTO
/TXT, FRM TO BRIT, IMBD CALC.
0% FREE MRL, NO STN, NO FLOR, NO
CUT, BRIYL RNG

12050'-12100': CHK: 70% MEDDRKGY - MEDLTGY, BLKYTO
SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, IMBD CALC.
FREE CALC, IMBD PYR, 30% FREE MRL, NO STN, NO FLOR, NO
O FLOR, IMMED STRMG CUT, BRIYL RNG