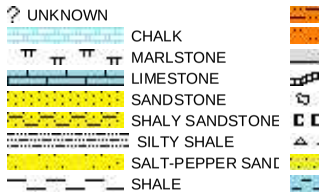
COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name	Seyler B10-64-1HN
Location	NWSW Sec. 10 T5N R64W
State	COLORADO
County	WELD
Country	USA
Rig Number	ENSIGN 121
API Number	05-123-37181-0000
AFE #	136849
Region	DJ BASIN
Field	KERSEY
Spud Date	10/1/2013
Drilling Completed	10/7/2013
Surface Coordinates	2203' FSL x 509' FEL
Bottom Hole Coordinates	1650' FSL x 700' FEL
Ground Elevation	4598
K.B. Elevation	4611
Logged Interval	6100 **To** 10758
Total Depth	10758
Formation	NIOBRARA B CHALK
Type of Drilling Fluid	H2O, LSND

Company Noble Energy In
Address 1625 Broadway
Denver, CO 802

Name John-Michael V
Company COLUMBINE L
Address 2385 S LIPAN
DENVER, CO 8



Operator

nc

Suite 2000
202

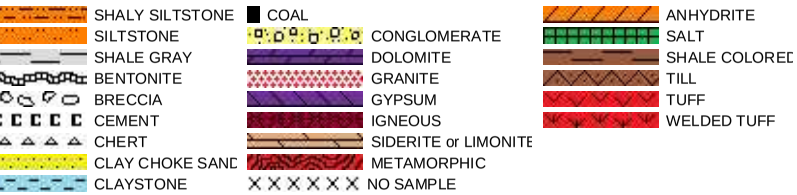
Geologist

illeneuve, Terry Acomb

OGGING, INC.

30223

Rock Types



Accessories

Fossils

FOSSIL
GASTROPOD
ALGAE
AMPHIPORA
BELEMNITE
BIOCLASTIC
BRACHOIPOD
BRYOZOA
CEPHALOPOD
CORAL
CRINOID
ECHINOID
FISH
FORAMINIFERA
OOLITE
OSTRACOD
PELECYPOD
PELLET
PISOLITE
PLANT REMAINS
PLANT SPORES
SCAPHOPOD
STROMATOPOROID

Minerals

ANHYDRITIC
ARGILLACEOUS
ARGILLITE GRAIN
BENTONITE
BITUMENOUS SUBSTANCE
BRECCIA FRAGMENTS
CALCAREOUS
CARBONACEOUS FLAKES
CHTDK
CHTLT
COAL - THIN BEDS
DOLOMITIC
FELDSPAR
FERRUGINOUS PELLET
FERRUGINOUS
GLAUCONITE
GYPSIFEROUS
HEAVY MINERAL
INOCERAMUS
KAOLIN
MARLSTONE
MINERAL CRYSTALS
NODULES
PHOSPHATE PELLETS
PYRITE
SALT CAST
SANDY
SILICEOUS
SILTY
TUFFACEOUS

Stringer

ANHYDRITE STRINGER
BENTONITE STRINGER
COAL STRINGER
DOLOMITE STRINGER
GYPSUM STRINGER
LIMESTONE STRINGER
MARLSTONE (CALC) STRG
MARLSTONE (DOL) STRG
SANDSTONE STRINGER
SHALE STRINGER
SILTSTONE STRINGER

Other Symbols

Oil Show

DEAD
EVEN
QUESTIONABLE
SPOTTED STAINING

Porosity

EARTHY
FENESTRAL
FRACTURE
INTERCRYSTALLINE
INTEROOLITIC
MOLDIC
ORGANIC
PINPOINT
VUGGY

Engineering

BIT
CONNECTION (LEFT)
CONNECTION (RIGHT)
CONNECTION GAS
CORE - LOST
CORE - RECOVERED
DST INTERVAL
FAULT
FORMATION TOP
GAS SHOW
MN DEPTH
NORMAL FAULT
OIL SHOW
OVERTURNED STRATA
REVERSE FAULT
SIDEWALL CORE (LEFT)
SIDEWALL CORE (RIGHT)
SLIDE
SURVEY
TRIP GAS
WIRELINE TESTED - LEFT
WIRELINE TESTED - RT

Rounding

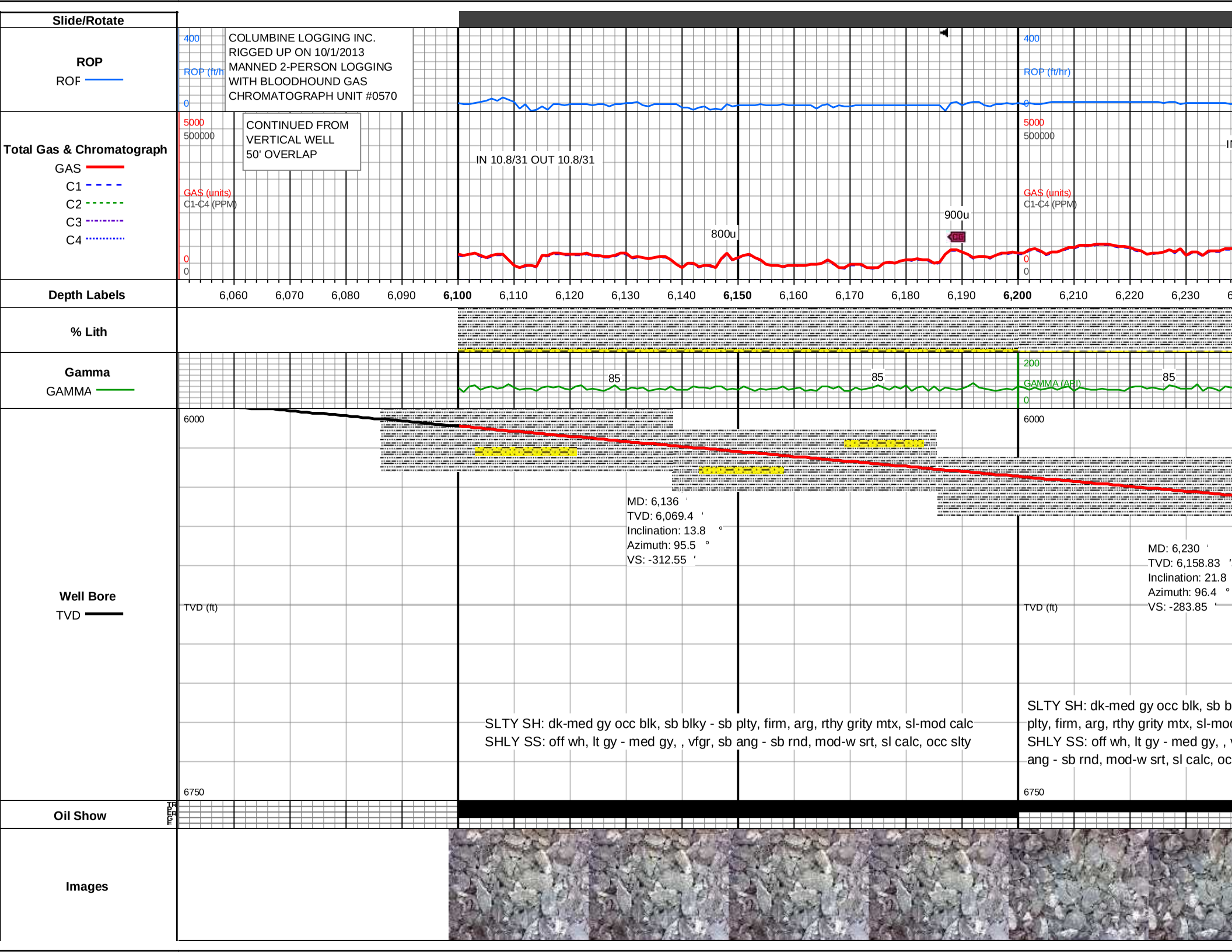
ANGULAR
ROUNDED
SUBANG
SUBRND

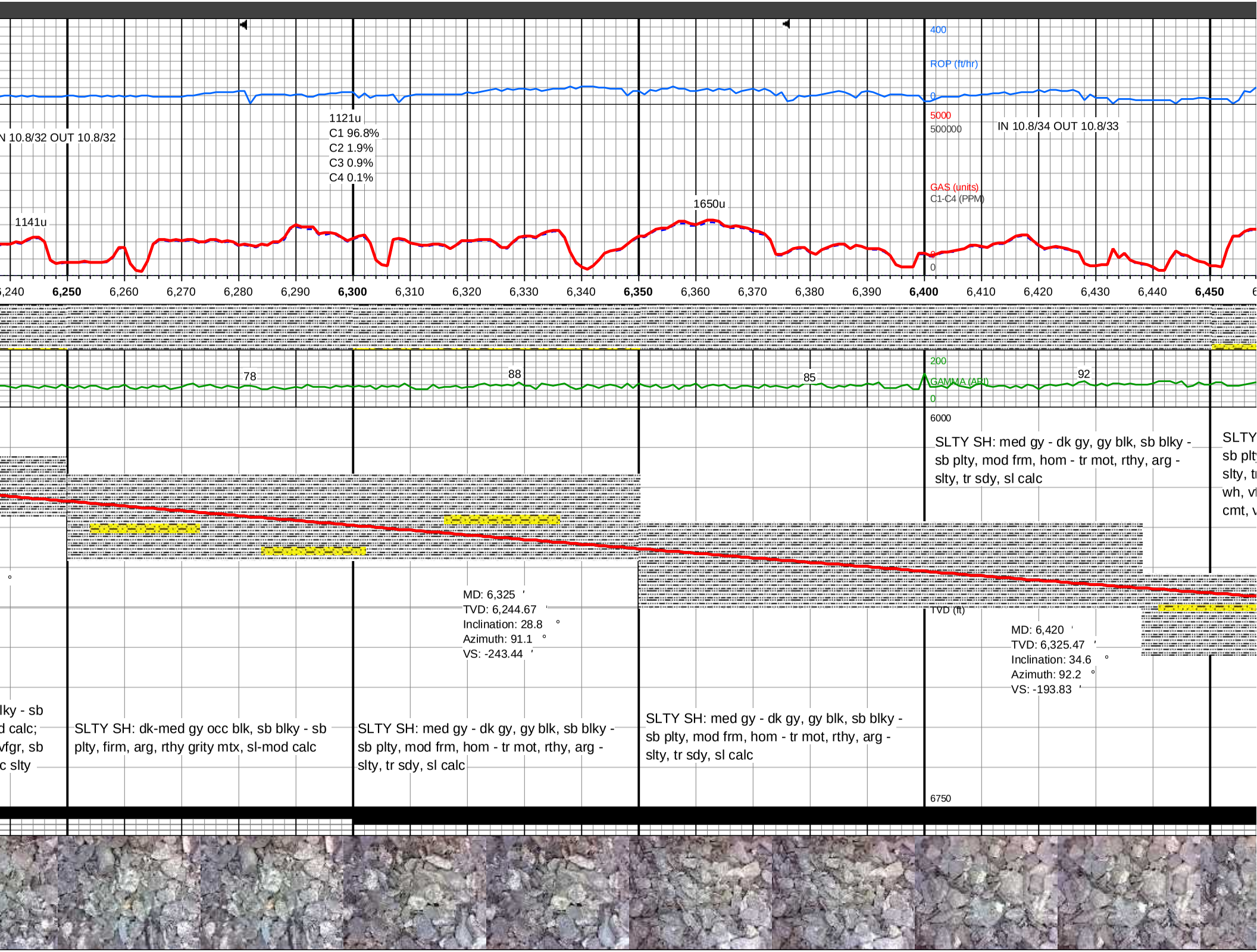
Textures

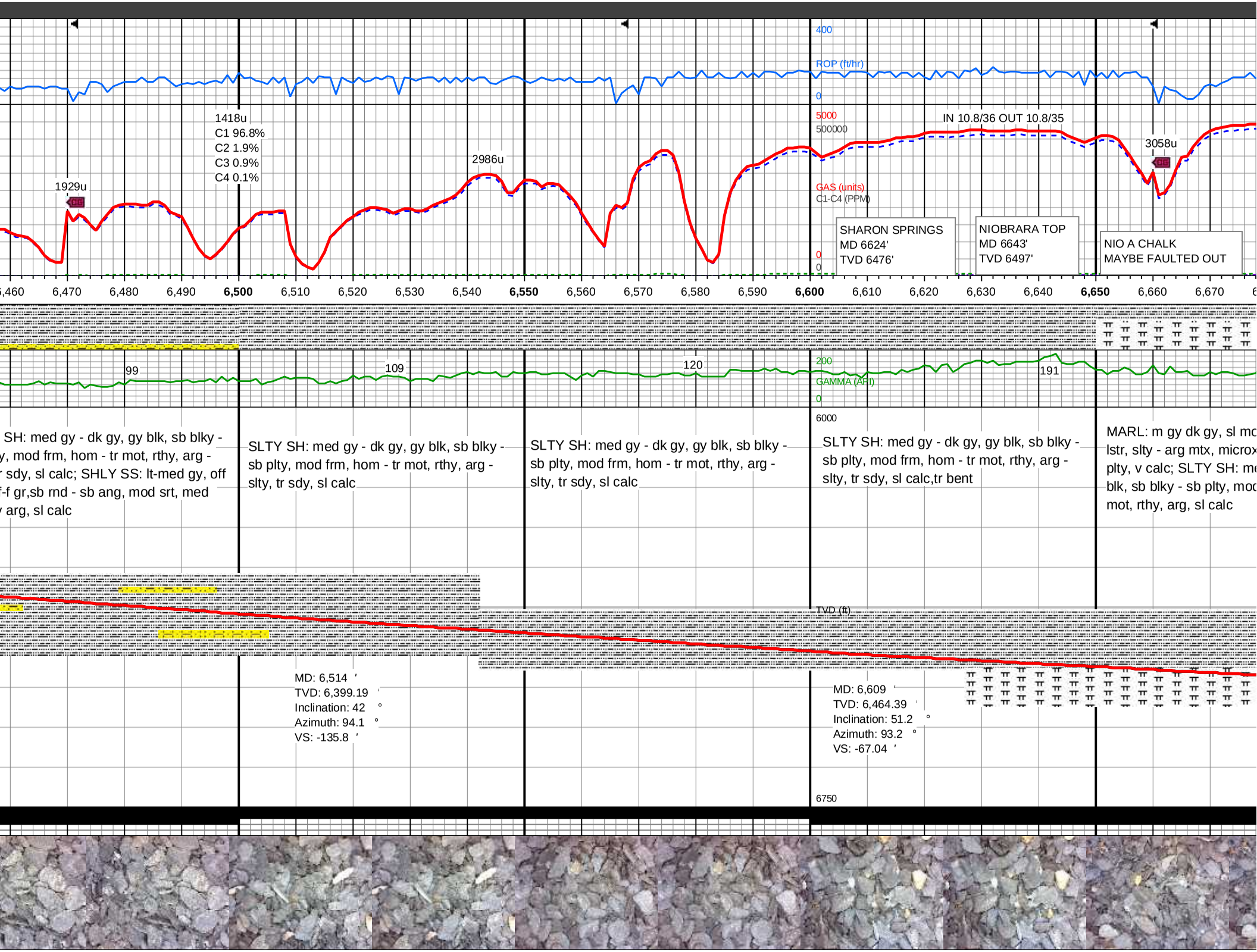
BOUNDSTONE
CHALKY
CRYPTOXLN
EARTHY
FINELYXLN
GRAINSTONE
LITHOGRAPHIC
MICROXLN
MUDSTONE
PACKSTONE
WACKESTONE

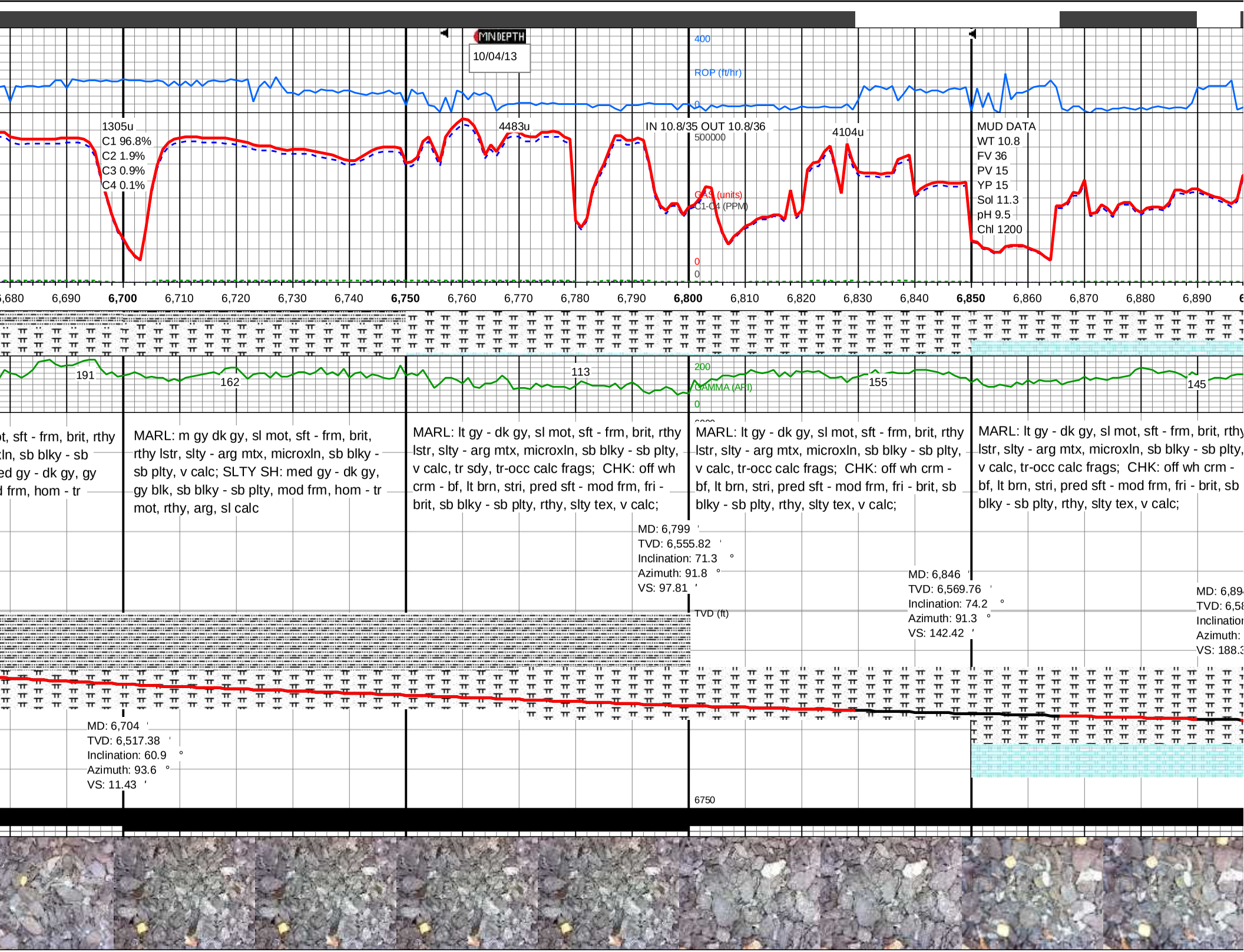
Sorting

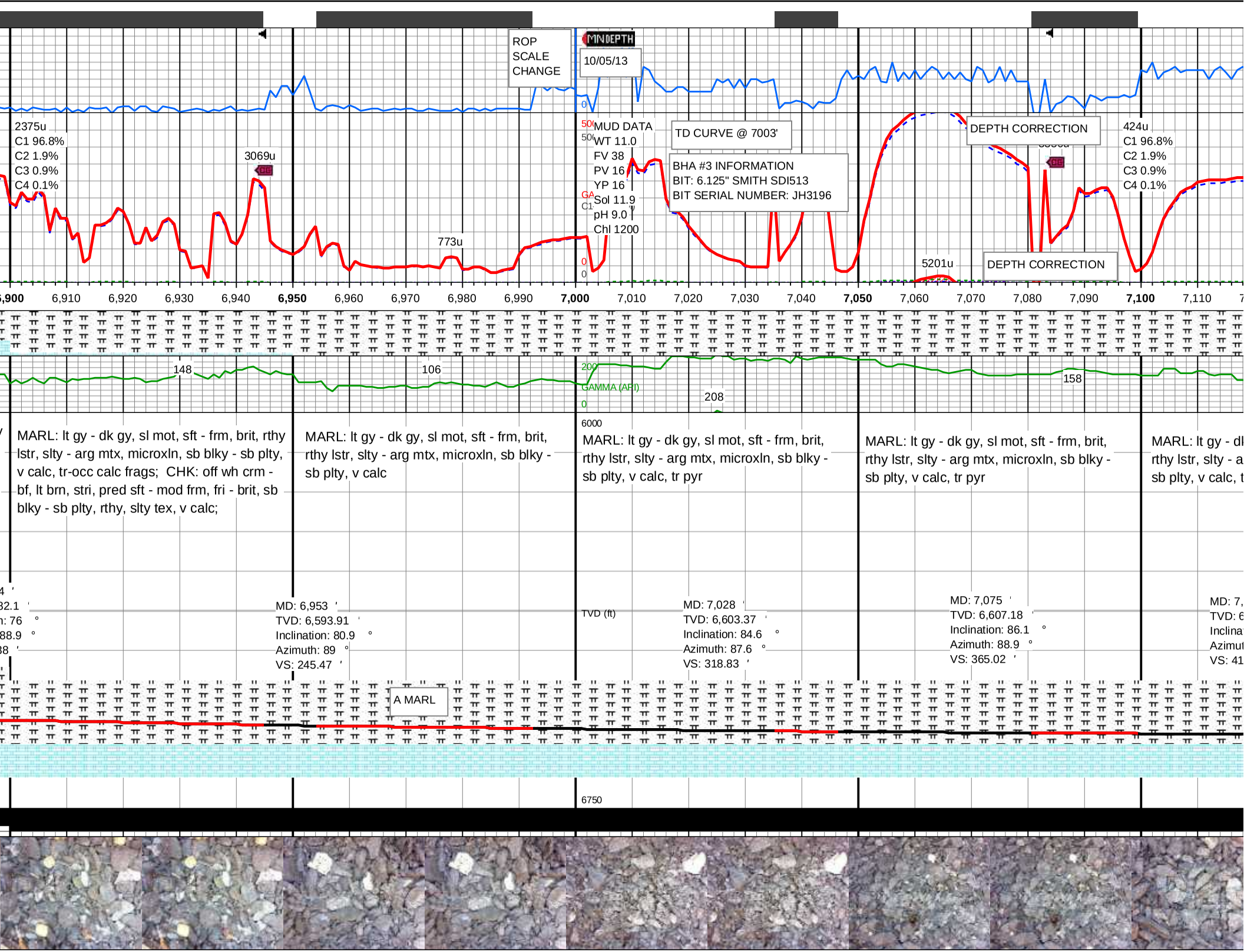
MODERATE
POOR
WELL

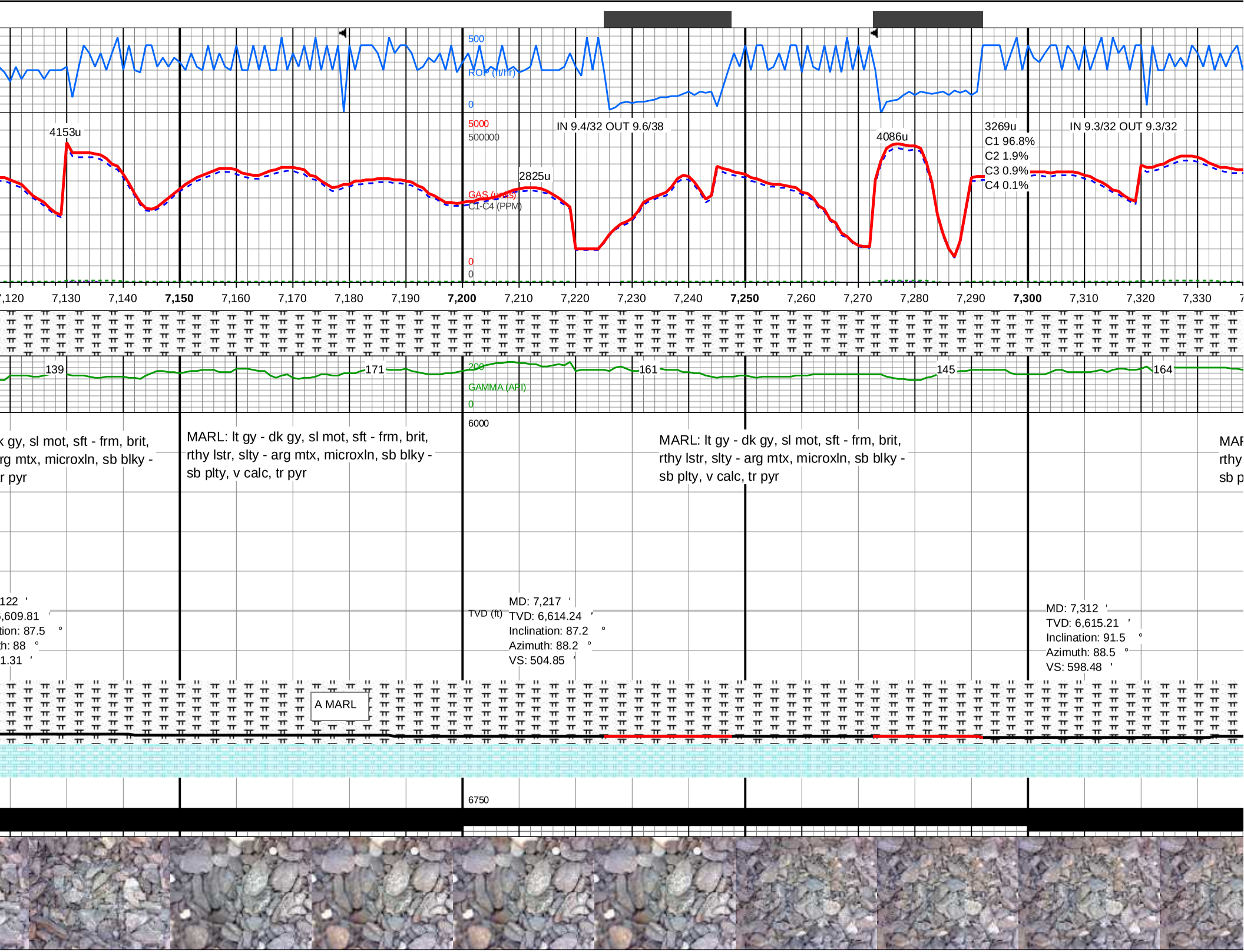

Slide/Rotate
ROP
ROP
400
ROP (ft/h
0
COLUMBINE LOGGING INC.
RIGGED UP ON 10/1/2013
MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT #0570
Total Gas & Chromatograph
GAS
C1
C2
C3
C4
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
CONTINUED FROM
VERTICAL WELL
50' OVERLAP
IN 10.8/31 OUT 10.8/31
800u
900u
Depth Labels
6,060
6,070
6,080
6,090
6,100
6,110
6,120
6,130
6,140
6,150
6,160
6,170
6,180
6,190
6,200
6,210
6,220
6,230
% Lith
Gamma
GAMMA
85
85
85
200
GAMMA (API)
0
Well Bore
TVD
6000
TVD (ft)
6750
MD: 6,136
TVD: 6,069.4
Inclination: 13.8
Azimuth: 95.5
VS: -312.55
MD: 6,230
TVD: 6,158.83
Inclination: 21.8
Azimuth: 96.4
VS: -283.85
SLTY SH: dk-med gy occ blk, sb blky - sb plty, firm, arg, rthy grity mtx, sl-mod calc
SHLY SS: off wh, lt gy - med gy, , vfgr, sb ang - sb rnd, mod-w srt, sl calc, occ slty
SLTY SH: dk-med gy occ blk, sb b
plty, firm, arg, rthy grity mtx, sl-mod
SHLY SS: off wh, lt gy - med gy, ,
ang - sb rnd, mod-w srt, sl calc, oc
Oil Show
Images

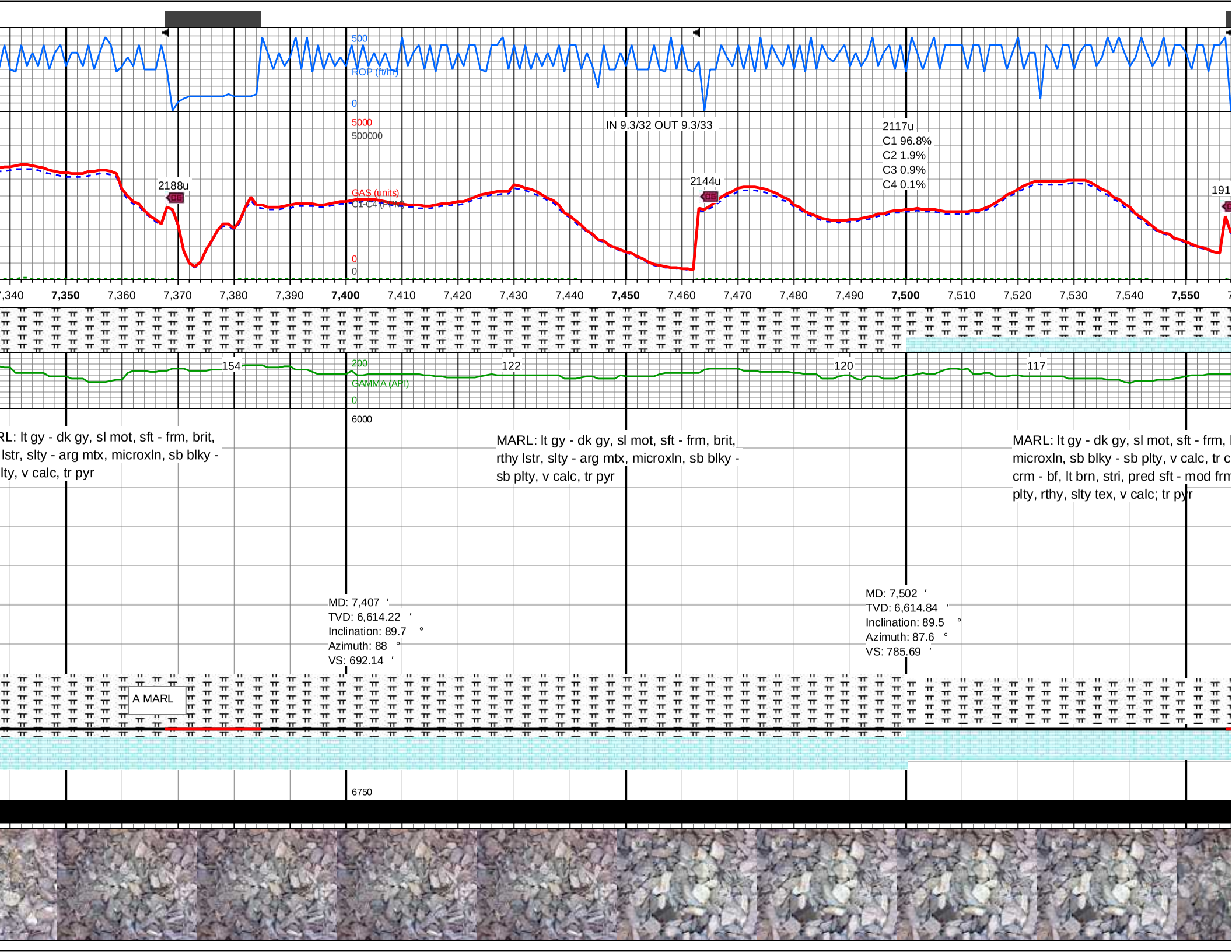

400
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
IN 10.8/34 OUT 10.8/33
N 10.8/32 OUT 10.8/32
1121u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
1141u
1650u
6,240
6,250
6,260
6,270
6,280
6,290
6,300
6,310
6,320
6,330
6,340
6,350
6,360
6,370
6,380
6,390
6,400
6,410
6,420
6,430
6,440
6,450
78
88
85
92
200
GAMMA (API)
0
6000
SLTY SH: med gy - dk gy, gy blk, sb blky - sb plty, mod frm, hom - tr mot, rthy, arg - slty, tr sdy, sl calc
MD: 6,325 '
TVD: 6,244.67 '
Inclination: 28.8 °
Azimuth: 91.1 °
VS: -243.44 '
TVD (ft)
MD: 6,420 '
TVD: 6,325.47 '
Inclination: 34.6 °
Azimuth: 92.2 °
VS: -193.83 '
6750
lky - sb
d calc;
vfgr, sb
c slty
SLTY SH: dk-med gy occ blk, sb blky - sb plty, firm, arg, rthy grity mtx, sl-mod calc
SLTY SH: med gy - dk gy, gy blk, sb blky - sb plty, mod frm, hom - tr mot, rthy, arg - slty, tr sdy, sl calc
SLTY SH: med gy - dk gy, gy blk, sb blky - sb plty, mod frm, hom - tr mot, rthy, arg - slty, tr sdy, sl calc

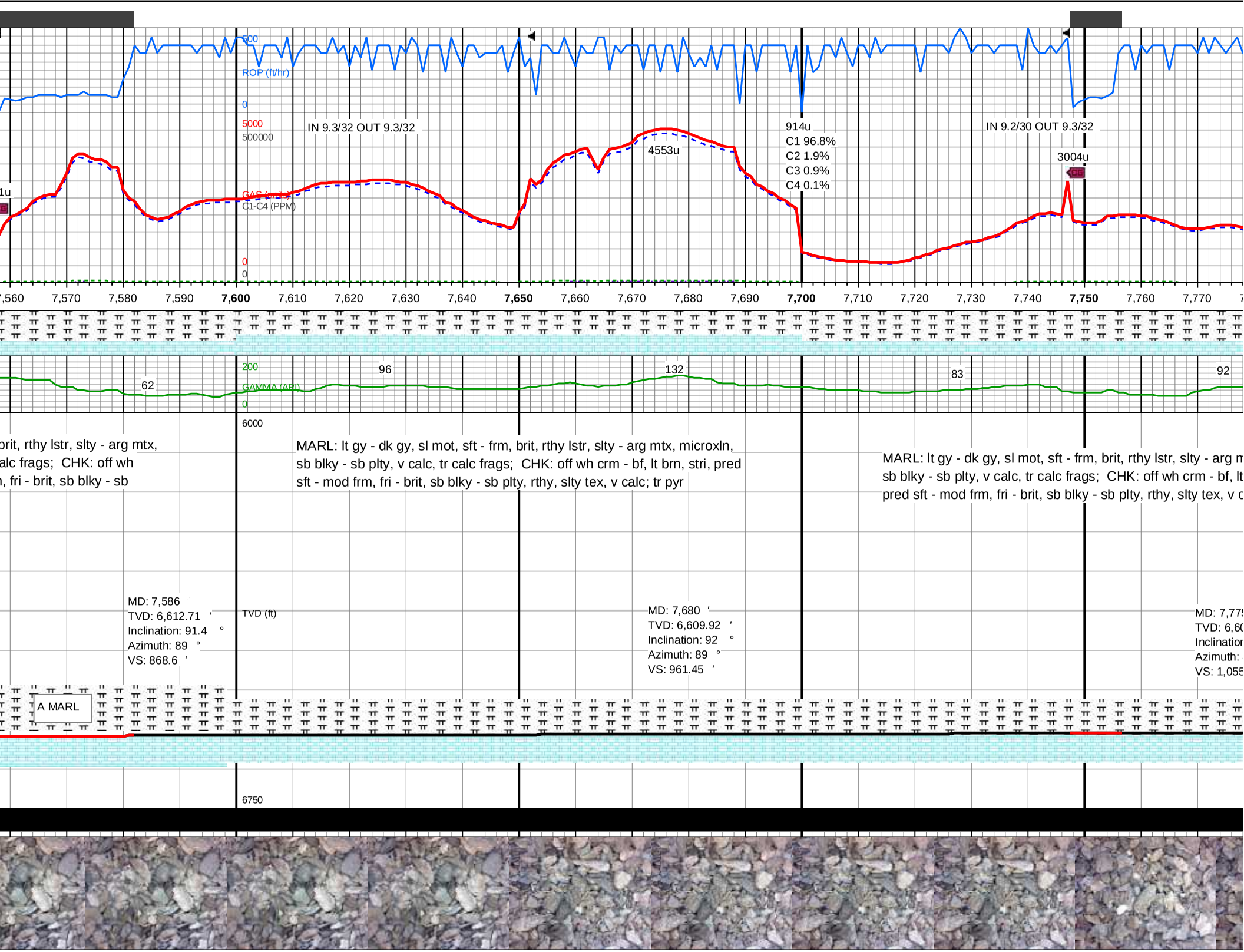

400
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
1929u
1418u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
2986u
IN 10.8/36 OUT 10.8/35
3058u
SHARON SPRINGS
MD 6624'
TVD 6476'
NIOBRARA TOP
MD 6643'
TVD 6497'
NIO A CHALK
MAYBE FAULTED OUT
6,460
6,470
6,480
6,490
6,500
6,510
6,520
6,530
6,540
6,550
6,560
6,570
6,580
6,590
6,600
6,610
6,620
6,630
6,640
6,650
6,660
6,670
99
109
120
191
200
GAMMA (API)
0
6000
SH: med gy - dk gy, gy blk, sb blky -
y, mod frm, hom - tr mot, rthy, arg -
r sdy, sl calc; SHLY SS: lt-med gy, off
f-f gr,sb rnd - sb ang, mod srt, med
y arg, sl calc
SLTY SH: med gy - dk gy, gy blk, sb blky -
sb plty, mod frm, hom - tr mot, rthy, arg -
slty, tr sdy, sl calc
SLTY SH: med gy - dk gy, gy blk, sb blky -
sb plty, mod frm, hom - tr mot, rthy, arg -
slty, tr sdy, sl calc
SLTY SH: med gy - dk gy, gy blk, sb blky -
sb plty, mod frm, hom - tr mot, rthy, arg -
slty, tr sdy, sl calc,tr bent
MARL: m gy dk gy, sl mo
lstr, slty - arg mtx, microx
plty, v calc; SLTY SH: m
blk, sb blky - sb plty, mod
mot, rthy, arg, sl calc
TVD (ft)
MD: 6,514 '
TVD: 6,399.19 '
Inclination: 42 °
Azimuth: 94.1 °
VS: -135.8 '
MD: 6,609 '
TVD: 6,464.39 '
Inclination: 51.2 °
Azimuth: 93.2 °
VS: -67.04 '
6750

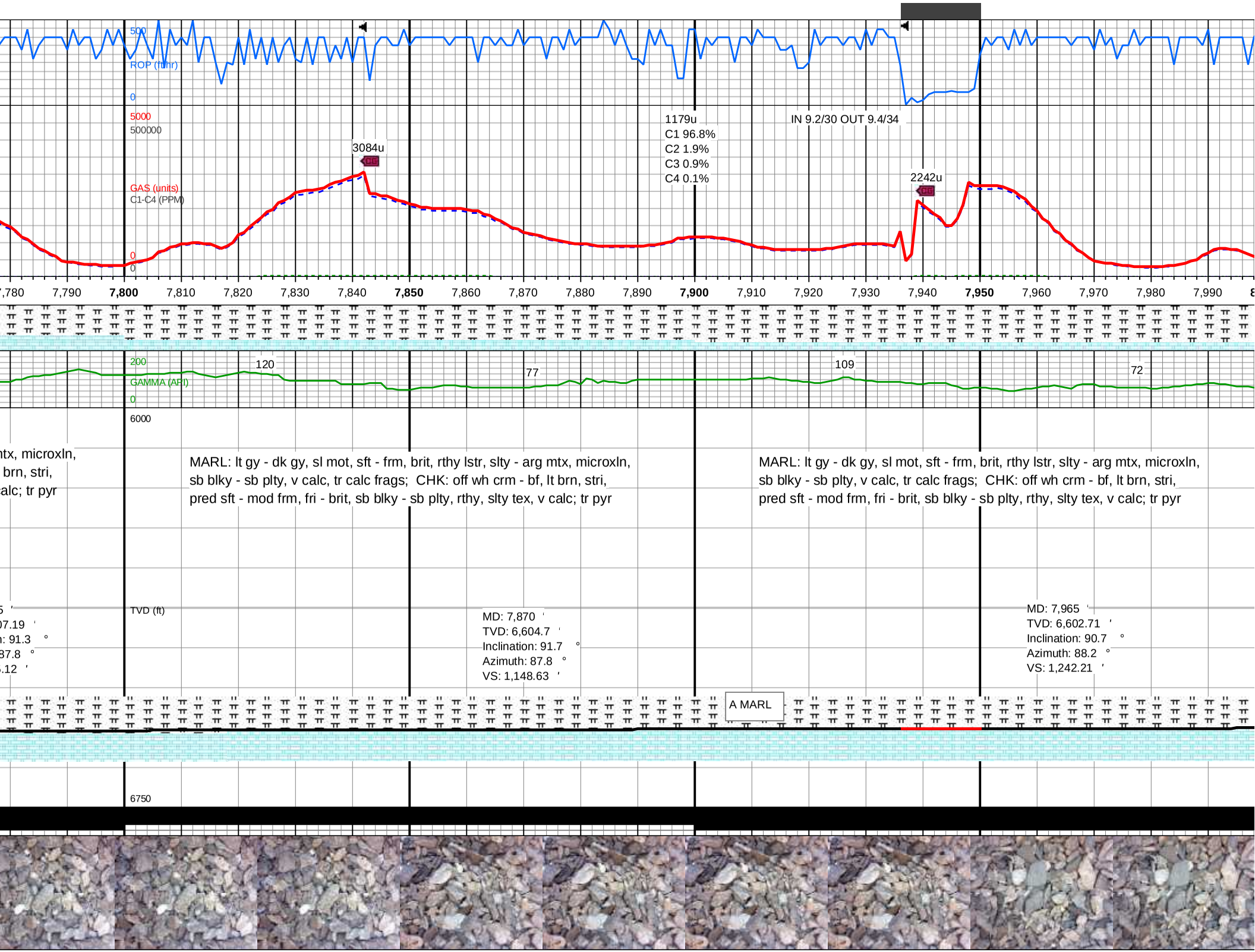

MNDEPTH
10/04/13
400
ROP (ft/hr)
0
1305u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
4483u
IN 10.8/35 OUT 10.8/36
500000
4104u
MUD DATA
WT 10.8
FV 36
PV 15
YP 15
Sol 11.3
pH 9.5
Chl 1200
GAS (units)
C1-C4 (PPM)
0
0
6,680
6,690
6,700
6,710
6,720
6,730
6,740
6,750
6,760
6,770
6,780
6,790
6,800
6,810
6,820
6,830
6,840
6,850
6,860
6,870
6,880
6,890
191
162
113
200
GAMMA (API)
0
155
145
ot, sft - frm, brit, rthy
kln, sb blky - sb
ed gy - dk gy, gy
d frm, hom - tr
MARL: m gy dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc; SLTY SH: med gy - dk gy, gy blk, sb blky - sb plty, mod frm, hom - tr mot, rthy, arg, sl calc
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, tr sdy, tr-occ calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc;
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, tr-occ calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc;
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, tr-occ calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc;
MD: 6,799
TVD: 6,555.82
Inclination: 71.3 °
Azimuth: 91.8 °
VS: 97.81
MD: 6,846
TVD: 6,569.76
Inclination: 74.2 °
Azimuth: 91.3 °
VS: 142.42
MD: 6,894
TVD: 6,58
Inclination
Azimuth:
VS: 188.3
TVD (ft)
MD: 6,704
TVD: 6,517.38
Inclination: 60.9 °
Azimuth: 93.6 °
VS: 11.43
6750

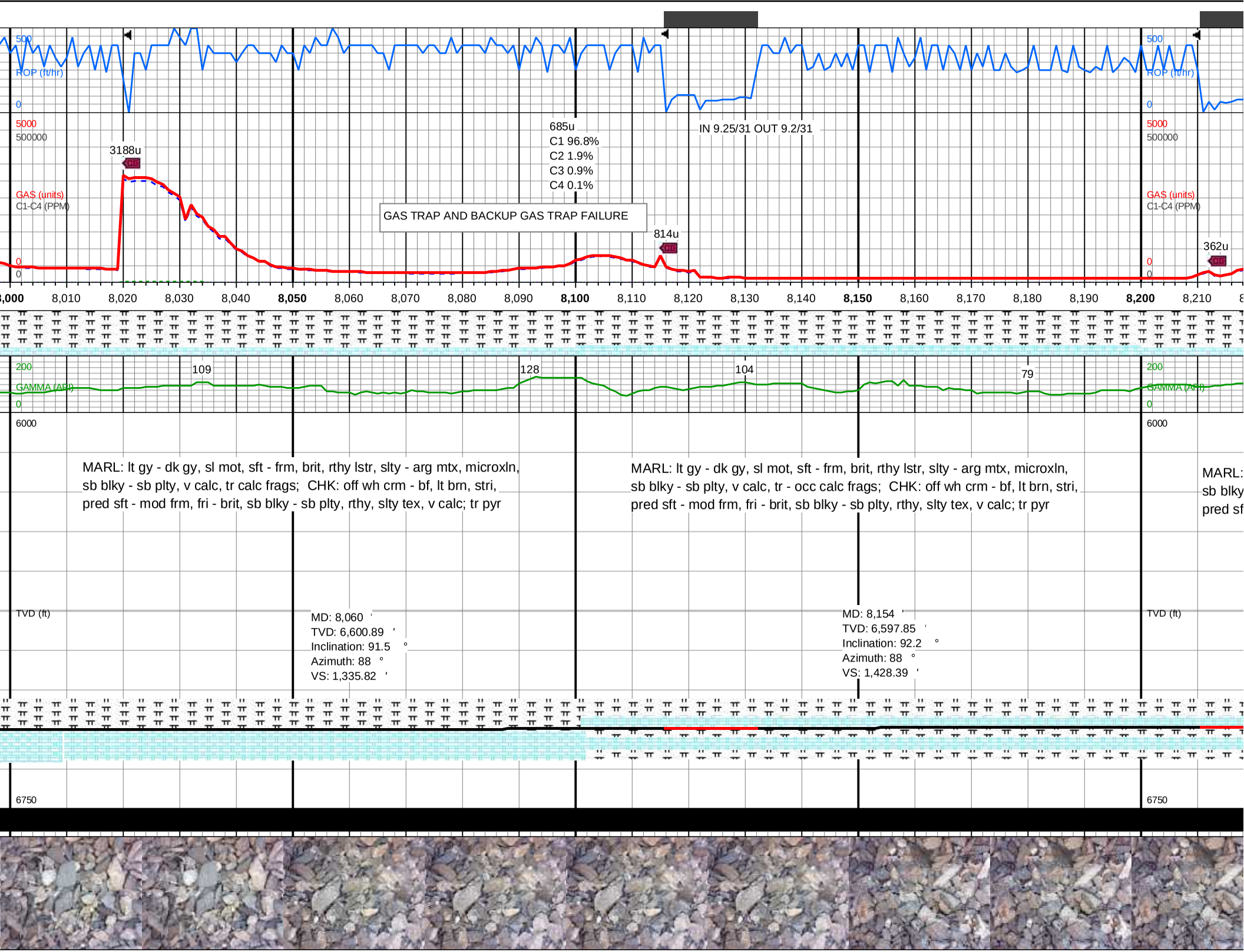

ROP SCALE CHANGE
MNDEPTH
10/05/13
2375u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
3069u
773u
MUD DATA
WT 11.0
FV 38
PV 16
YP 16
Sol 11.9
pH 9.0
Chl 1200
TD CURVE @ 7003'
BHA #3 INFORMATION
BIT: 6.125" SMITH SDI513
BIT SERIAL NUMBER: JH3196
DEPTH CORRECTION
5201u
DEPTH CORRECTION
424u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
6,900 6,910 6,920 6,930 6,940 6,950 6,960 6,970 6,980 6,990 7,000 7,010 7,020 7,030 7,040 7,050 7,060 7,070 7,080 7,090 7,100 7,110
148
106
GAMMA (API)
208
158
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, tr-occ calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc;
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, tr pyr
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, tr pyr
MD: 6,953
TVD: 6,593.91
Inclination: 80.9
Azimuth: 89
VS: 245.47
TVD (ft)
MD: 7,028
TVD: 6,603.37
Inclination: 84.6
Azimuth: 87.6
VS: 318.83
MD: 7,075
TVD: 6,607.18
Inclination: 86.1
Azimuth: 88.9
VS: 365.02
A MARL
6750

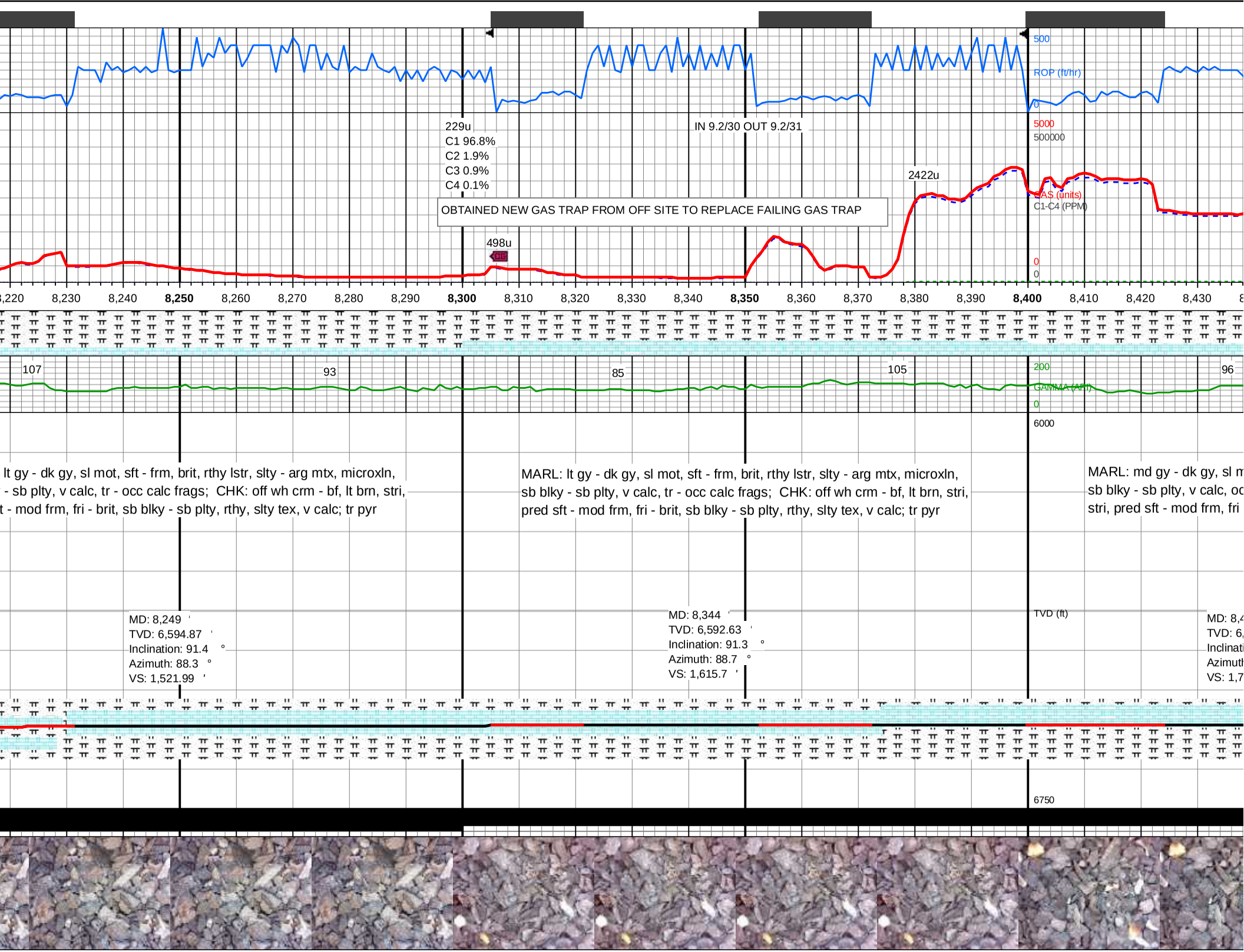

500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
4153u
2825u
IN 9.4/32 OUT 9.6/38
4086u
3269u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
IN 9.3/32 OUT 9.3/32
7,120
7,130
7,140
7,150
7,160
7,170
7,180
7,190
7,200
7,210
7,220
7,230
7,240
7,250
7,260
7,270
7,280
7,290
7,300
7,310
7,320
7,330
139
171
200
GAMMA (API)
0
6000
161
145
164
k gy, sl mot, sft - frm, brit,
rg mtx, microxln, sb blky -
r pyr
MARL: lt gy - dk gy, sl mot, sft - frm, brit,
rthy lstr, slty - arg mtx, microxln, sb blky -
sb plty, v calc, tr pyr
MARL: lt gy - dk gy, sl mot, sft - frm, brit,
rthy lstr, slty - arg mtx, microxln, sb blky -
sb plty, v calc, tr pyr
MAR
rthy
sb p
122 '
,609.81 '
tion: 87.5 °
h: 88 °
1.31 '
TVD (ft)
MD: 7,217 '
TVD: 6,614.24 '
Inclination: 87.2 °
Azimuth: 88.2 °
VS: 504.85 '
MD: 7,312 '
TVD: 6,615.21 '
Inclination: 91.5 °
Azimuth: 88.5 °
VS: 598.48 '
A MARL
6750

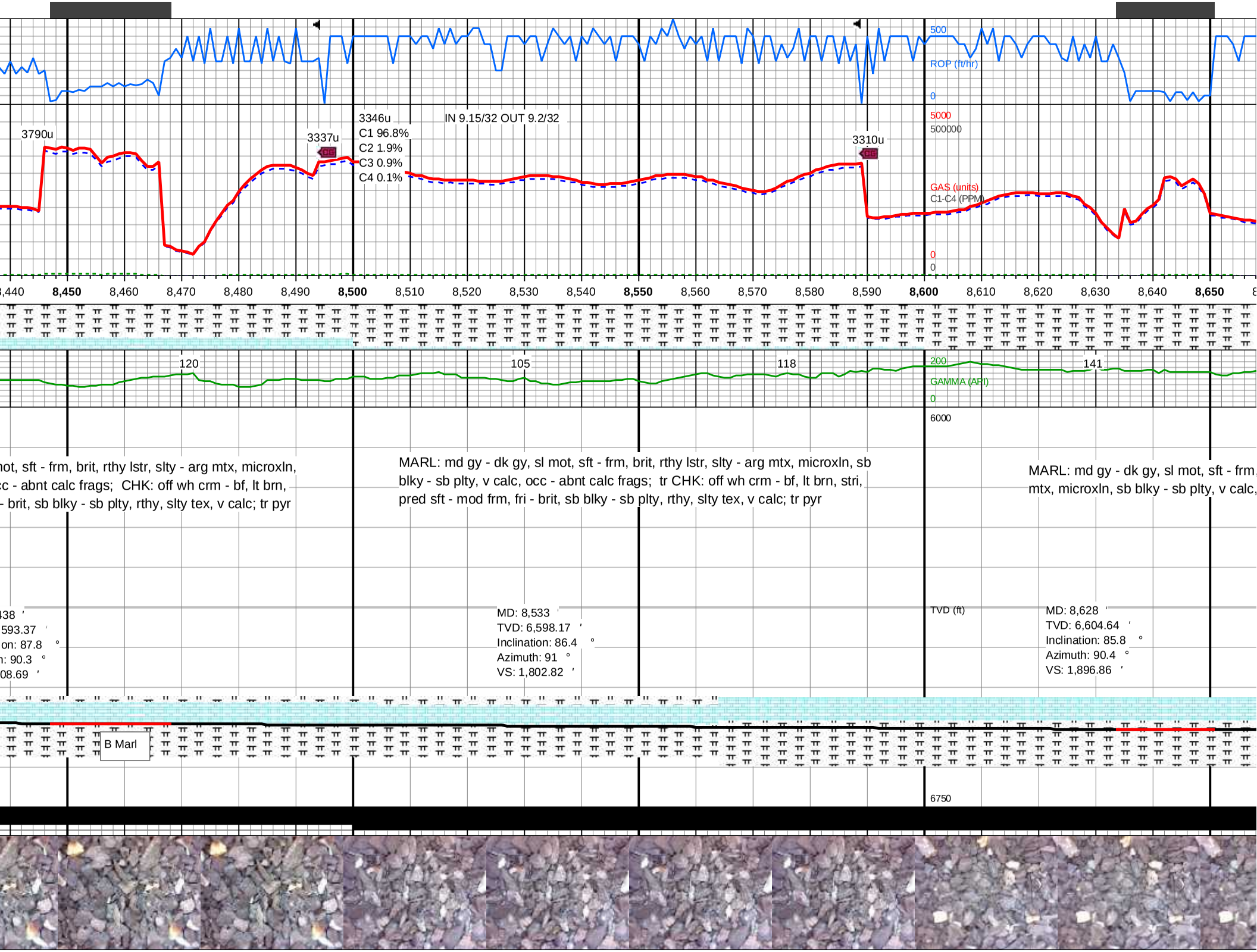

500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (units)
0
0
IN 9.3/32 OUT 9.3/33
2188u
2144u
2117u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
191
7,340
7,350
7,360
7,370
7,380
7,390
7,400
7,410
7,420
7,430
7,440
7,450
7,460
7,470
7,480
7,490
7,500
7,510
7,520
7,530
7,540
7,550
154
122
120
117
200
GAMMA (API)
0
6000
RL: lt gy - dk gy, sl mot, sft - frm, brit,
lstr, slty - arg mtx, microxln, sb blky -
lty, v calc, tr pyr
MARL: lt gy - dk gy, sl mot, sft - frm, brit,
rthy lstr, slty - arg mtx, microxln, sb blky -
sb plty, v calc, tr pyr
MARL: lt gy - dk gy, sl mot, sft - frm,
microxln, sb blky - sb plty, v calc, tr c
crm - bf, lt brn, stri, pred sft - mod frm
plty, rthy, slty tex, v calc; tr pyr
MD: 7,407 '
TVD: 6,614.22 '
Inclination: 89.7 °
Azimuth: 88 °
VS: 692.14 '
MD: 7,502 '
TVD: 6,614.84 '
Inclination: 89.5 °
Azimuth: 87.6 °
VS: 785.69 '
A MARL
6750

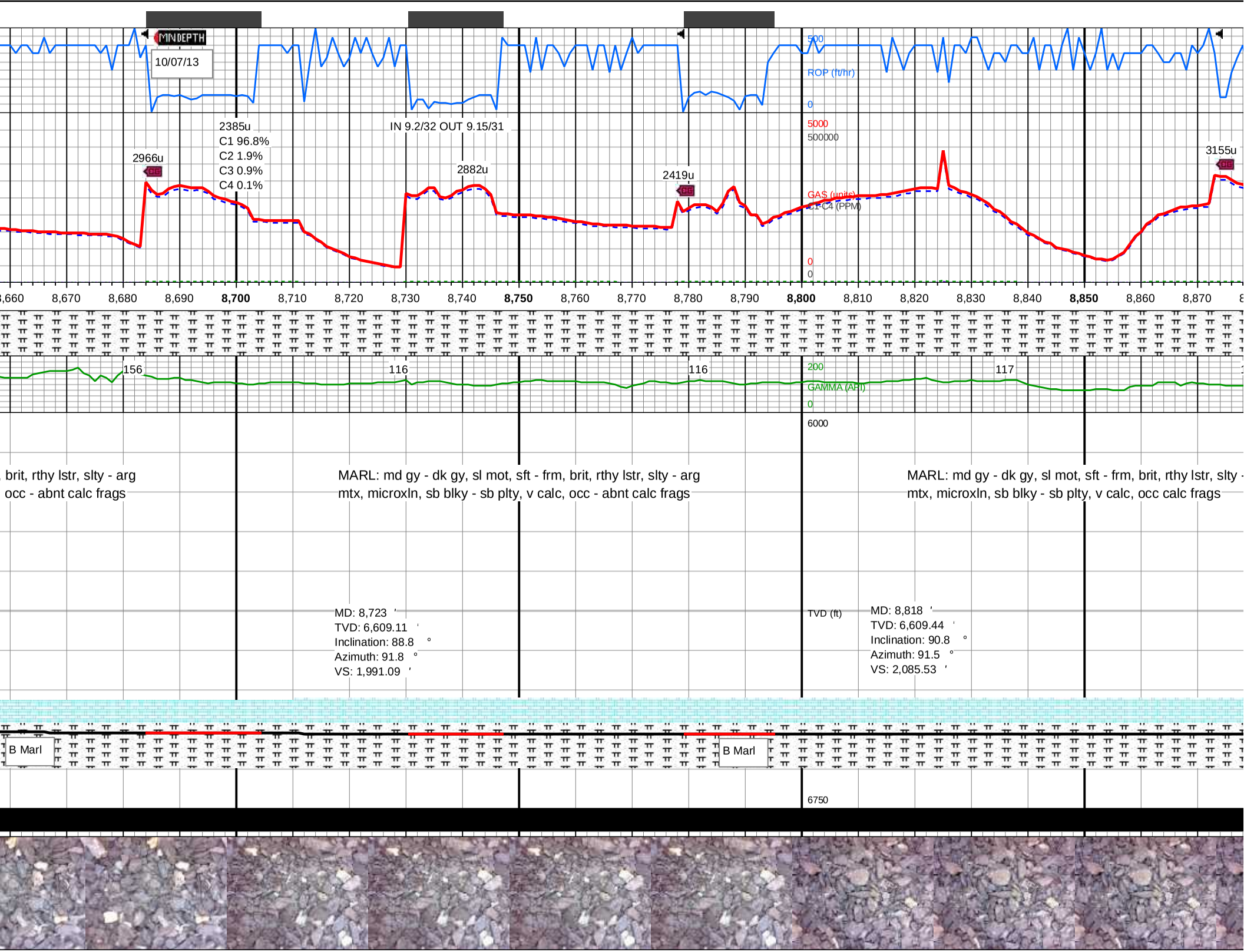

500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
IN 9.3/32 OUT 9.3/32
4553u
914u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
IN 9.2/30 OUT 9.3/32
3004u
1u
7,560
7,570
7,580
7,590
7,600
7,610
7,620
7,630
7,640
7,650
7,660
7,670
7,680
7,690
7,700
7,710
7,720
7,730
7,740
7,750
7,760
7,770
200
GAMMA (API)
0
62
96
132
83
92
6000
brit, rthy lstr, slty - arg mtx,
alc frags; CHK: off wh
, fri - brit, sb blky - sb
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln,
sb blky - sb plty, v calc, tr calc frags; CHK: off wh crm - bf, lt brn, stri, pred
sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc; tr pyr
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg m
sb blky - sb plty, v calc, tr calc frags; CHK: off wh crm - bf, lt
pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v c
MD: 7,586 '
TVD: 6,612.71 '
Inclination: 91.4 °
Azimuth: 89 °
VS: 868.6 '
TVD (ft)
MD: 7,680 '
TVD: 6,609.92 '
Inclination: 92 °
Azimuth: 89 °
VS: 961.45 '
MD: 7,775
TVD: 6,60
Inclination
Azimuth:
VS: 1,055
A MARL
6750

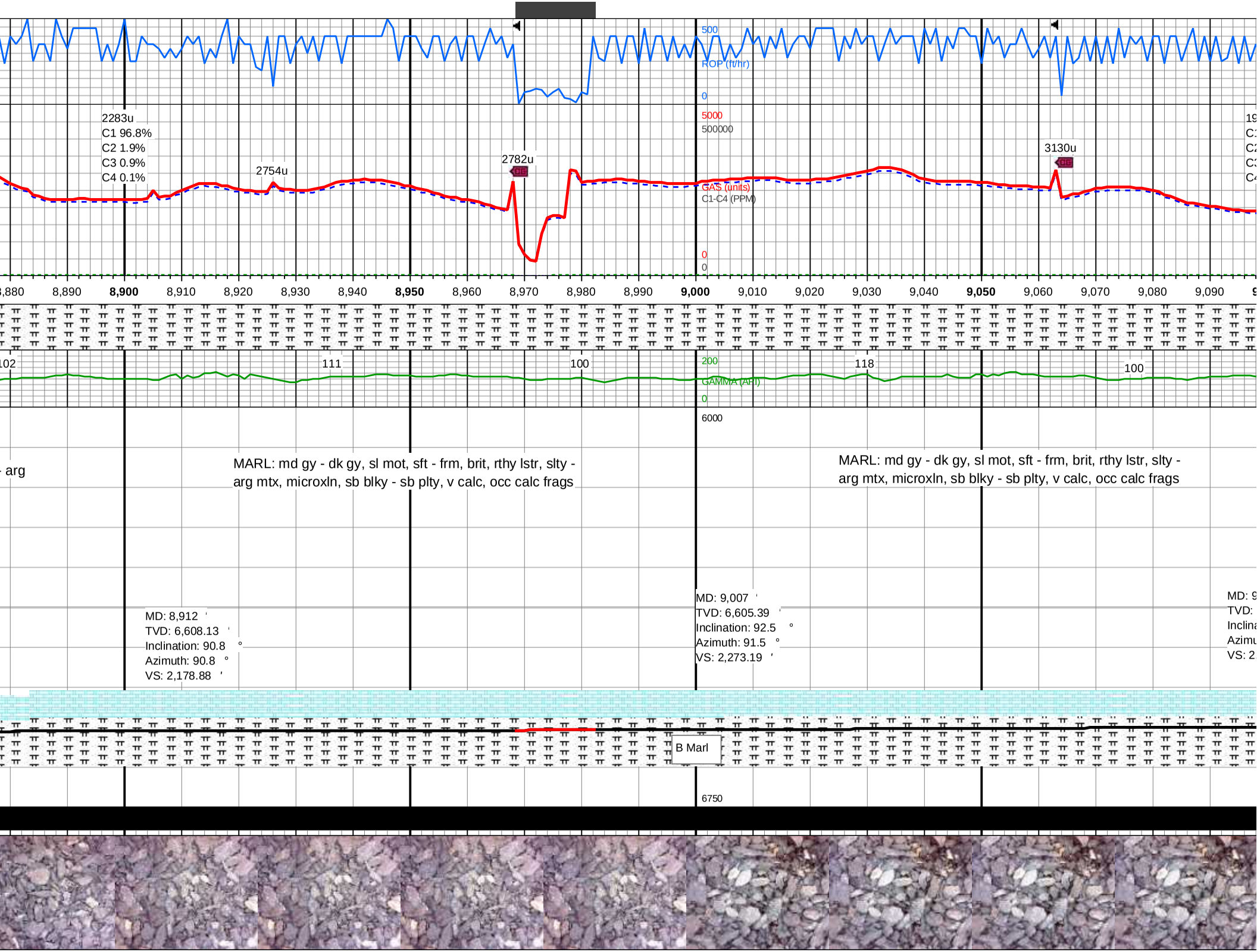

500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
3084u
1179u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
IN 9.2/30 OUT 9.4/34
2242u
7,780
7,790
7,800
7,810
7,820
7,830
7,840
7,850
7,860
7,870
7,880
7,890
7,900
7,910
7,920
7,930
7,940
7,950
7,960
7,970
7,980
7,990
200
GAMMA (API)
0
120
77
109
72
6000
ntx, microxln,
brn, stri,
alc; tr pyr
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, tr calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc; tr pyr
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, tr calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc; tr pyr
TVD (ft)
MD: 7,870
TVD: 6,604.7
Inclination: 91.7 °
Azimuth: 87.8 °
VS: 1,148.63
MD: 7,965
TVD: 6,602.71
Inclination: 90.7 °
Azimuth: 88.2 °
VS: 1,242.21
A MARL
6750

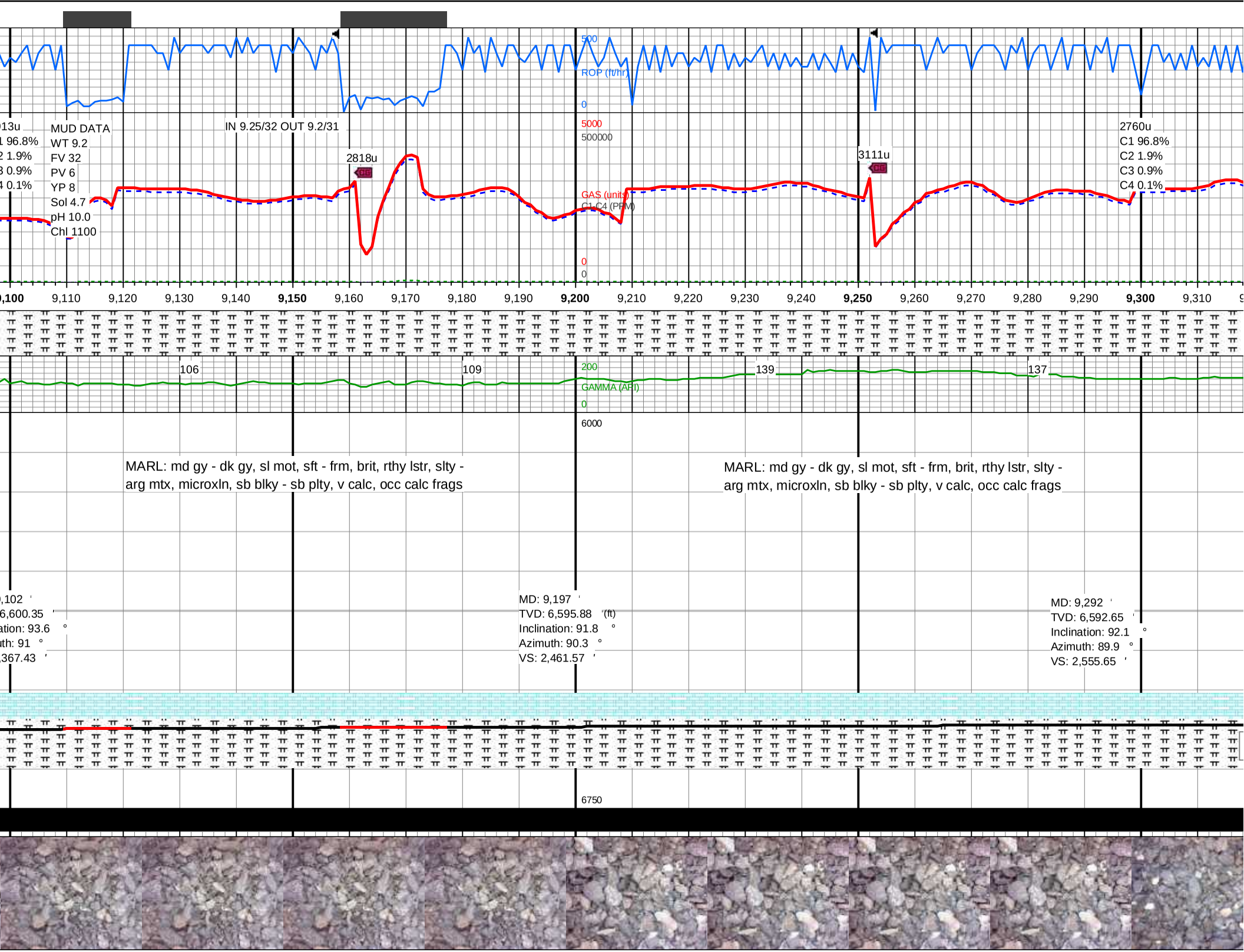

500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
3188u
685u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
IN 9.25/31 OUT 9.2/31
GAS TRAP AND BACKUP GAS TRAP FAILURE
814u
362u
8,000
8,010
8,020
8,030
8,040
8,050
8,060
8,070
8,080
8,090
8,100
8,110
8,120
8,130
8,140
8,150
8,160
8,170
8,180
8,190
8,200
8,210
200
GAMMA (API)
0
109
128
104
79
6000
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, tr calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc; tr pyr
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, tr - occ calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc; tr pyr
TVD (ft)
MD: 8,060 '
TVD: 6,600.89 '
Inclination: 91.5 °
Azimuth: 88 °
VS: 1,335.82 '
MD: 8,154 '
TVD: 6,597.85 '
Inclination: 92.2 °
Azimuth: 88 °
VS: 1,428.39 '
6750

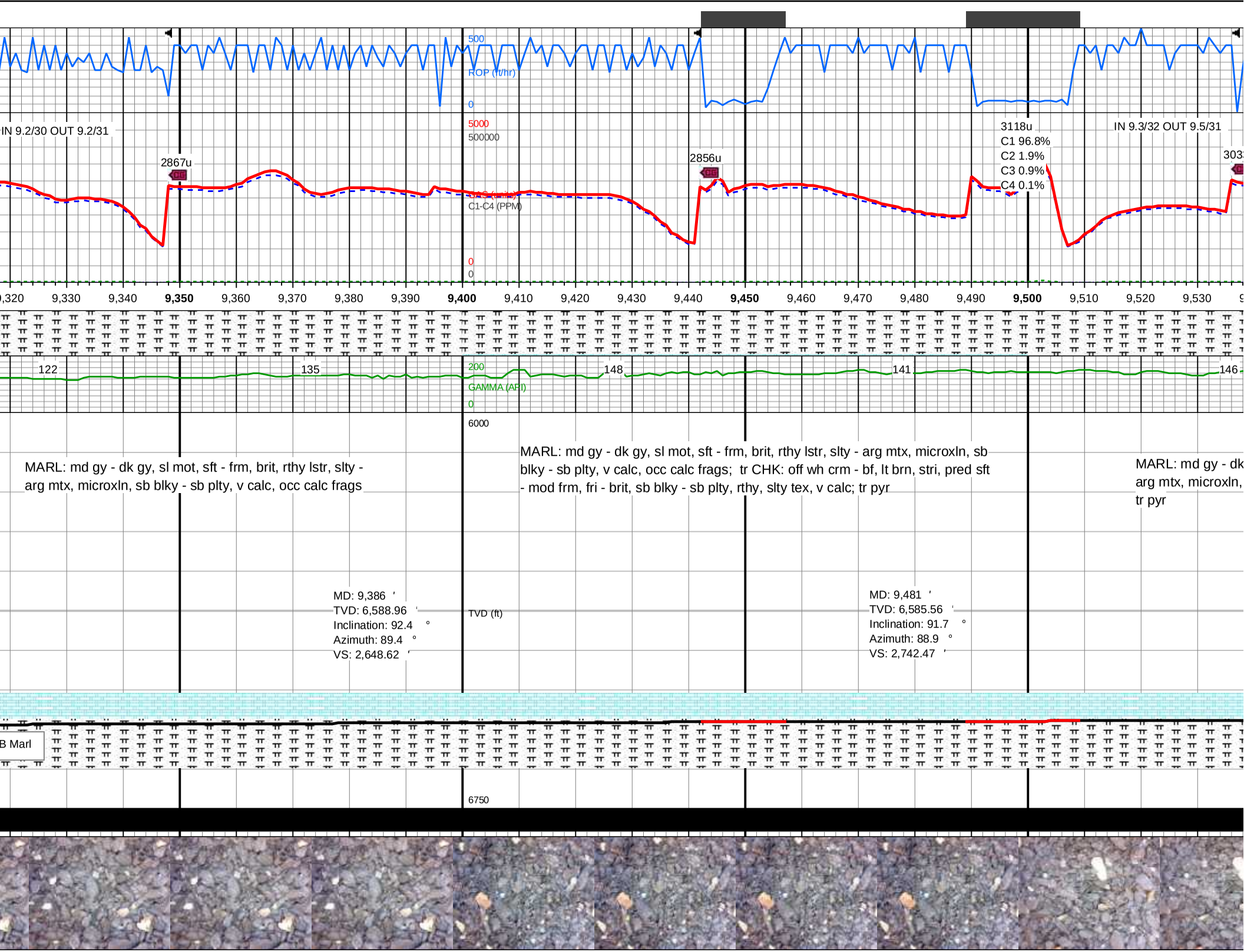

500
ROP (ft/hr)
0
5000
500000
229u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
IN 9.2/30 OUT 9.2/31
2422u
OBTAINED NEW GAS TRAP FROM OFF SITE TO REPLACE FAILING GAS TRAP
498u
GAS (units)
C1-C4 (PPM)
0
0
8,220
8,230
8,240
8,250
8,260
8,270
8,280
8,290
8,300
8,310
8,320
8,330
8,340
8,350
8,360
8,370
8,380
8,390
8,400
8,410
8,420
8,430
107
93
85
105
96
200
GAMMA (API)
0
6000
lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln,
- sb plty, v calc, tr - occ calc frags; CHK: off wh crm - bf, lt brn, stri,
t - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc; tr pyr
MARL: lt gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln,
sb blky - sb plty, v calc, tr - occ calc frags; CHK: off wh crm - bf, lt brn, stri,
pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc; tr pyr
MARL: md gy - dk gy, sl m
sb blky - sb plty, v calc, oc
stri, pred sft - mod frm, fri
MD: 8,249
TVD: 6,594.87
Inclination: 91.4 °
Azimuth: 88.3 °
VS: 1,521.99
MD: 8,344
TVD: 6,592.63
Inclination: 91.3 °
Azimuth: 88.7 °
VS: 1,615.7
MD: 8,4
TVD: 6,
Inclinati
Azimuth
VS: 1,7
TVD (ft)
6750

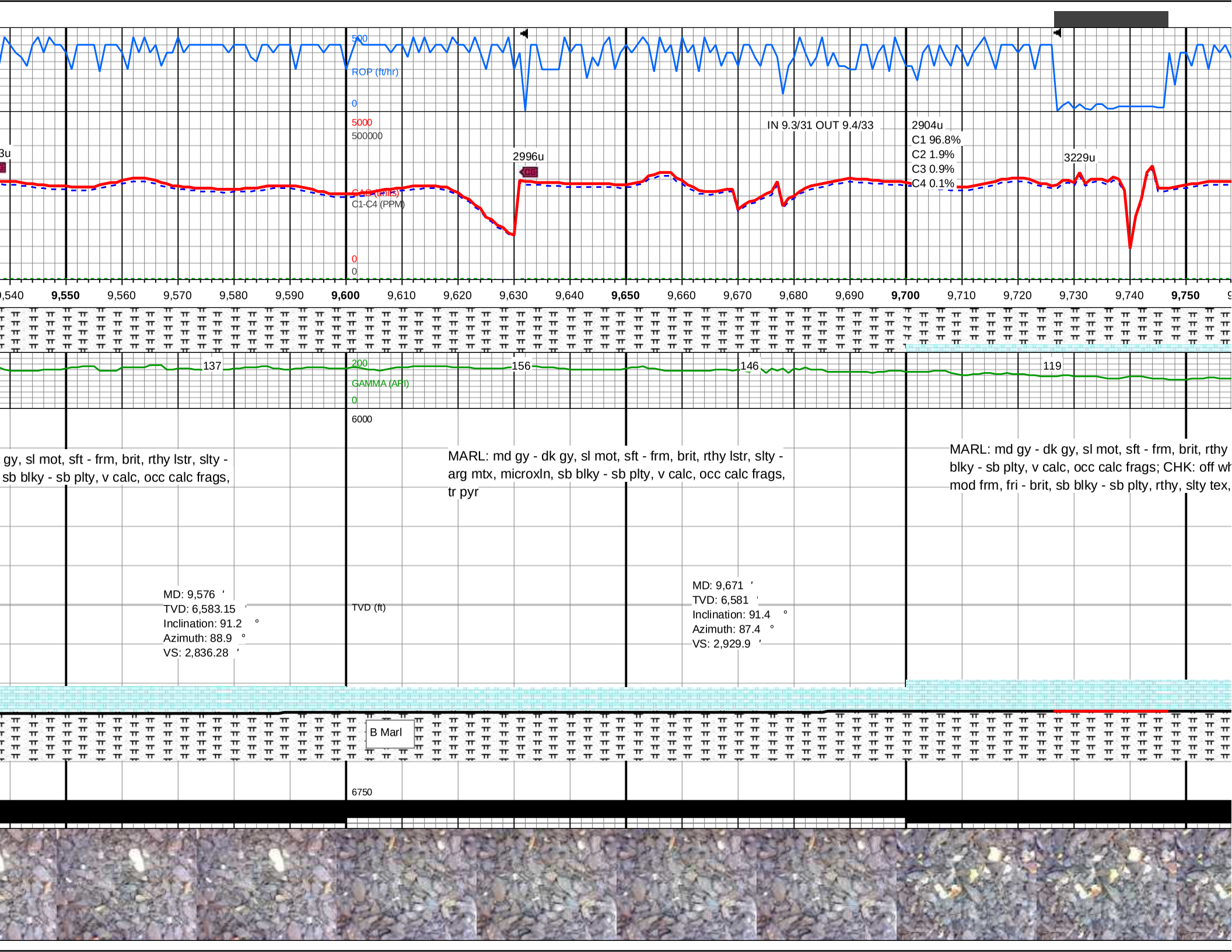

500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
3790u
3337u
3346u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
IN 9.15/32 OUT 9.2/32
3310u
8,440
8,450
8,460
8,470
8,480
8,490
8,500
8,510
8,520
8,530
8,540
8,550
8,560
8,570
8,580
8,590
8,600
8,610
8,620
8,630
8,640
8,650
120
105
118
141
200
GAMMA (API)
0
6000
hot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln,
cc - abnt calc frags; CHK: off wh crm - bf, lt brn,
- brit, sb blky - sb plty, rthy, slty tex, v calc; tr pyr
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, occ - abnt calc frags; tr CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc; tr pyr
MARL: md gy - dk gy, sl mot, sft - frm,
mtx, microxln, sb blky - sb plty, v calc,
438 '
593.37 '
on: 87.8 °
n: 90.3 °
08.69 '
MD: 8,533 '
TVD: 6,598.17 '
Inclination: 86.4 °
Azimuth: 91 °
VS: 1,802.82 '
TVD (ft)
MD: 8,628 '
TVD: 6,604.64 '
Inclination: 85.8 °
Azimuth: 90.4 °
VS: 1,896.86 '
B Marl
6750

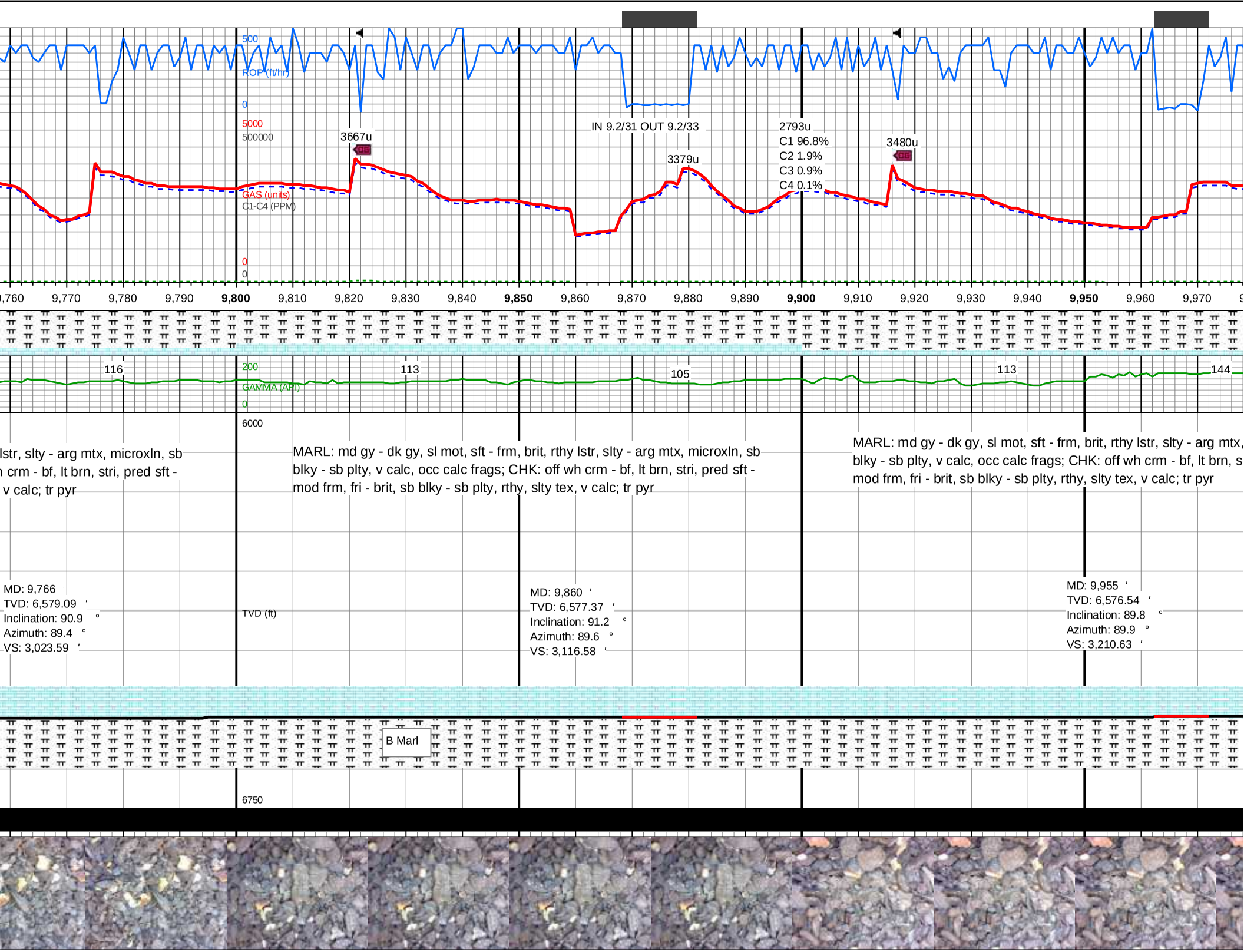

MNDEPTH
10/07/13
2385u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
2966u
IN 9.2/32 OUT 9.15/31
2882u
2419u
3155u
500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
8,660
8,670
8,680
8,690
8,700
8,710
8,720
8,730
8,740
8,750
8,760
8,770
8,780
8,790
8,800
8,810
8,820
8,830
8,840
8,850
8,860
8,870
156
116
116
117
200
GAMMA (API)
0
6000
brit, rthy lstr, slty - arg
occ - abnt calc frags
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg
mtx, microxln, sb blky - sb plty, v calc, occ - abnt calc frags
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty -
mtx, microxln, sb blky - sb plty, v calc, occ calc frags
MD: 8,723 '
TVD: 6,609.11 '
Inclination: 88.8 °
Azimuth: 91.8 °
VS: 1,991.09 '
TVD (ft)
MD: 8,818 '
TVD: 6,609.44 '
Inclination: 90.8 °
Azimuth: 91.5 °
VS: 2,085.53 '
B Marl
B Marl
6750

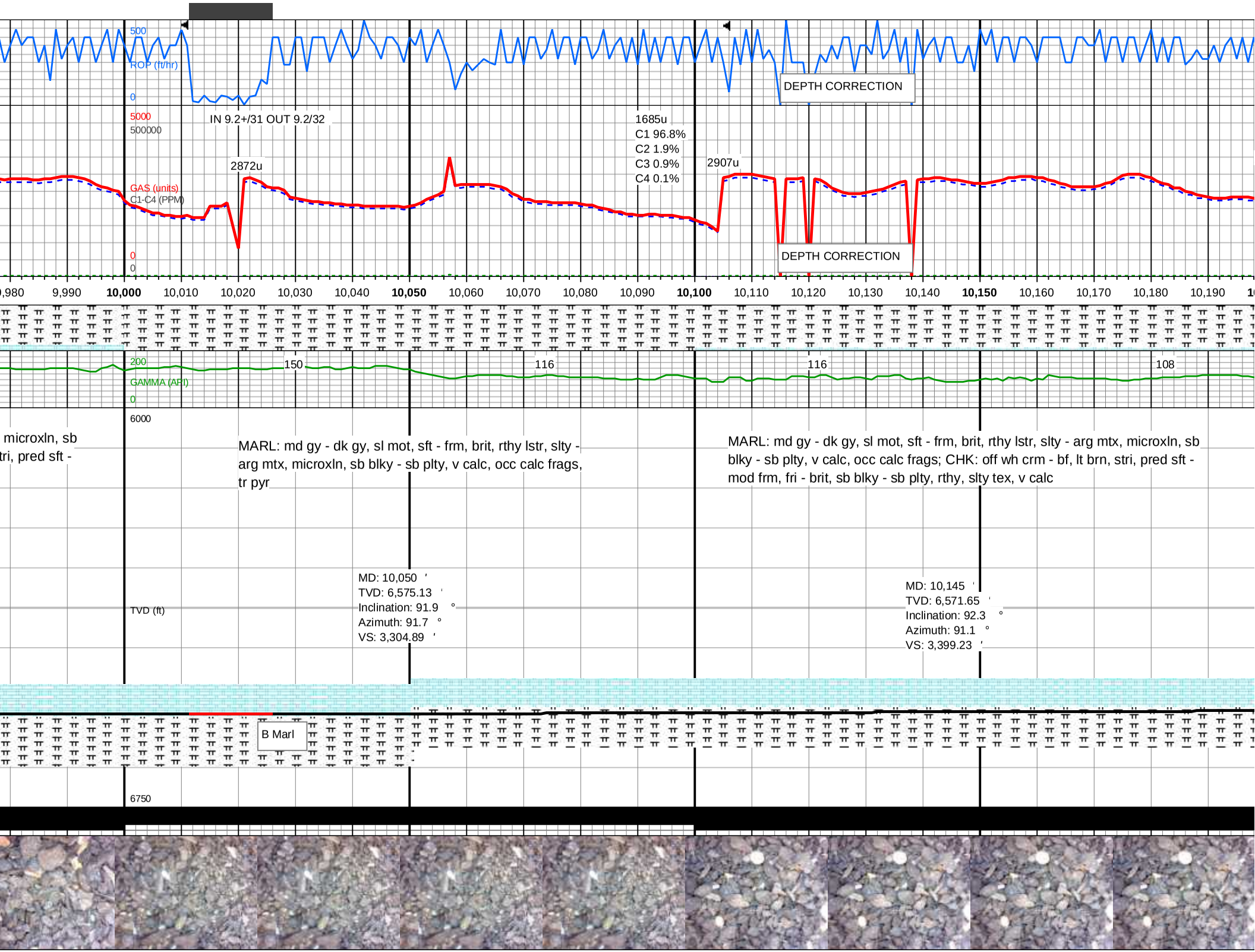

500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
2283u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
2754u
2782u
3130u
GIS
8,880
8,890
8,900
8,910
8,920
8,930
8,940
8,950
8,960
8,970
8,980
8,990
9,000
9,010
9,020
9,030
9,040
9,050
9,060
9,070
9,080
9,090
102
111
100
200
GAMMA (API)
0
6000
118
100
- arg
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, occ calc frags
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, occ calc frags
MD: 8,912 '
TVD: 6,608.13 '
Inclination: 90.8 °
Azimuth: 90.8 °
VS: 2,178.88 '
MD: 9,007 '
TVD: 6,605.39 '
Inclination: 92.5 °
Azimuth: 91.5 °
VS: 2,273.19 '
B Marl
6750

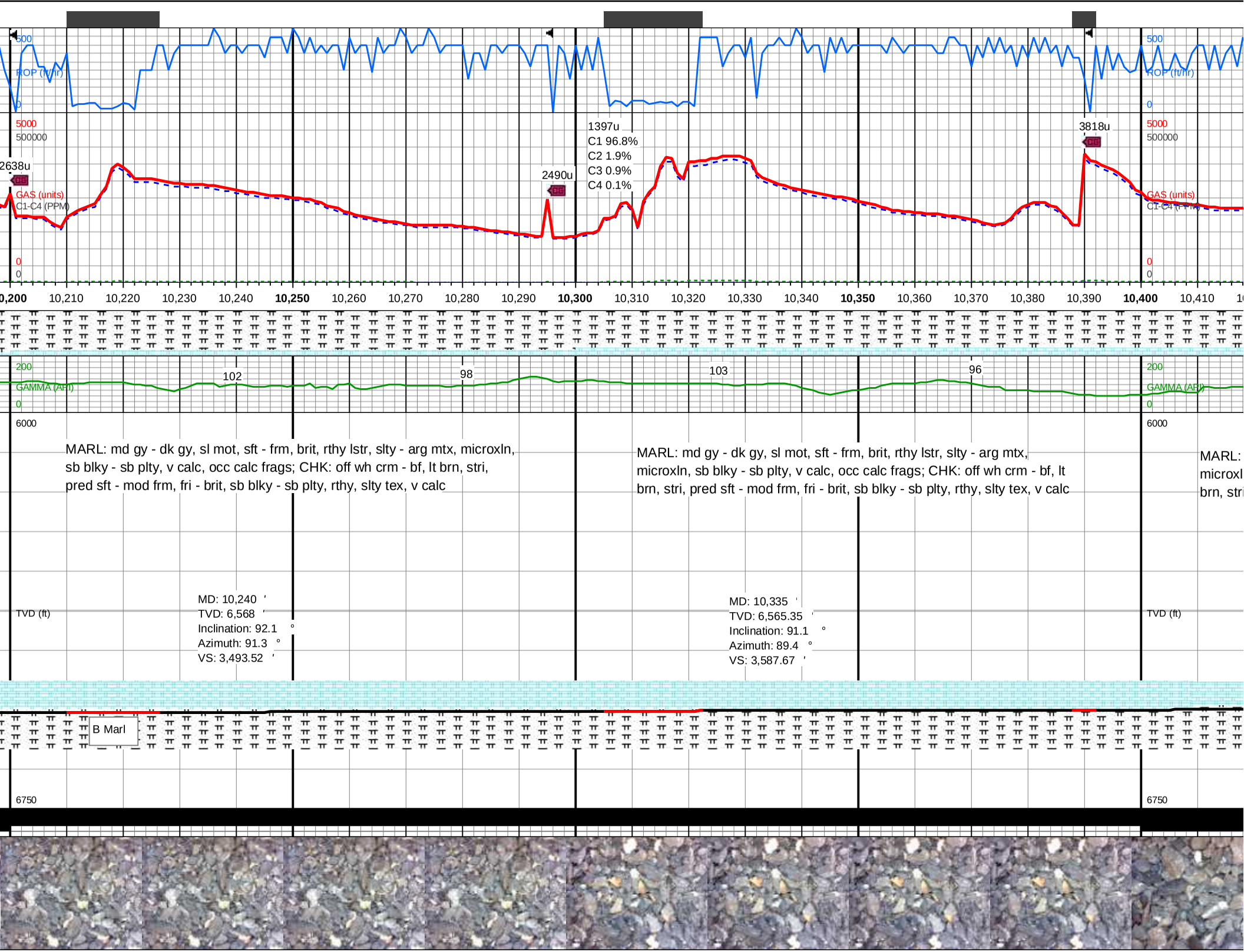

500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
913u
1 96.8%
2 1.9%
3 0.9%
4 0.1%
MUD DATA
WT 9.2
FV 32
PV 6
YP 8
Sol 4.7
pH 10.0
Chl 1100
IN 9.25/32 OUT 9.2/31
2818u
3111u
2760u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
9,100
9,110
9,120
9,130
9,140
9,150
9,160
9,170
9,180
9,190
9,200
9,210
9,220
9,230
9,240
9,250
9,260
9,270
9,280
9,290
9,300
9,310
106
109
200
GAMMA (API)
0
6000
139
137
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, occ calc frags
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, occ calc frags
,102
6,600.35
ation: 93.6 °
uth: 91 °
,367.43
MD: 9,197
TVD: 6,595.88 (ft)
Inclination: 91.8 °
Azimuth: 90.3 °
VS: 2,461.57
MD: 9,292
TVD: 6,592.65
Inclination: 92.1 °
Azimuth: 89.9 °
VS: 2,555.65
6750

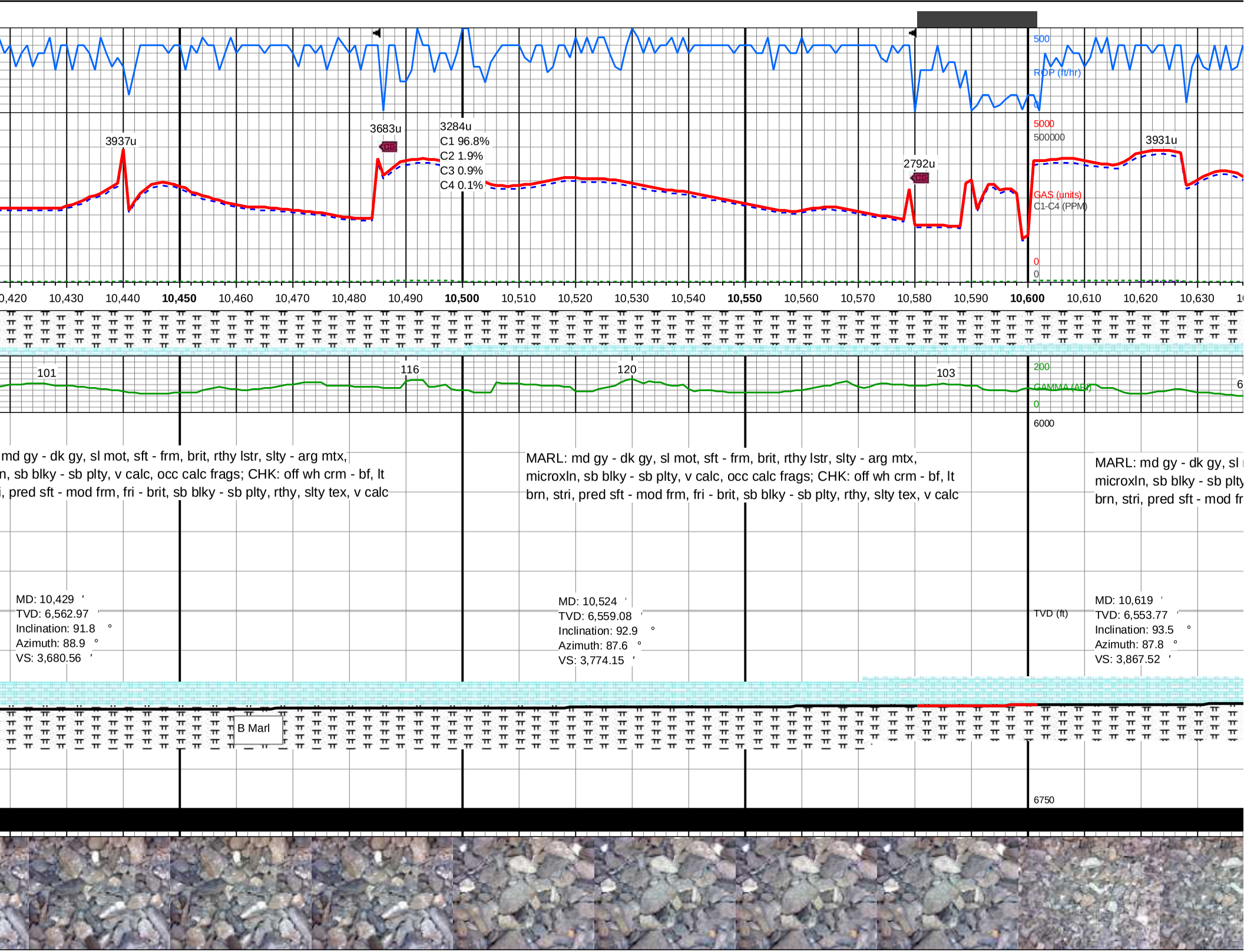

500
ROP (ft/hr)
0
5000
500000
C1-C4 (PPM)
0
0
IN 9.2/30 OUT 9.2/31
2867u
2856u
3118u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
IN 9.3/32 OUT 9.5/31
9,320
9,330
9,340
9,350
9,360
9,370
9,380
9,390
9,400
9,410
9,420
9,430
9,440
9,450
9,460
9,470
9,480
9,490
9,500
9,510
9,520
9,530
122
135
200
GAMMA (API)
0
148
141
146
6000
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, occ calc frags
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, occ calc frags; tr CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc; tr pyr
MARL: md gy - dk
arg mtx, microxln,
tr pyr
MD: 9,386 '
TVD: 6,588.96 '
Inclination: 92.4 °
Azimuth: 89.4 °
VS: 2,648.62 '
TVD (ft)
MD: 9,481 '
TVD: 6,585.56 '
Inclination: 91.7 °
Azimuth: 88.9 °
VS: 2,742.47 '
B Marl
6750

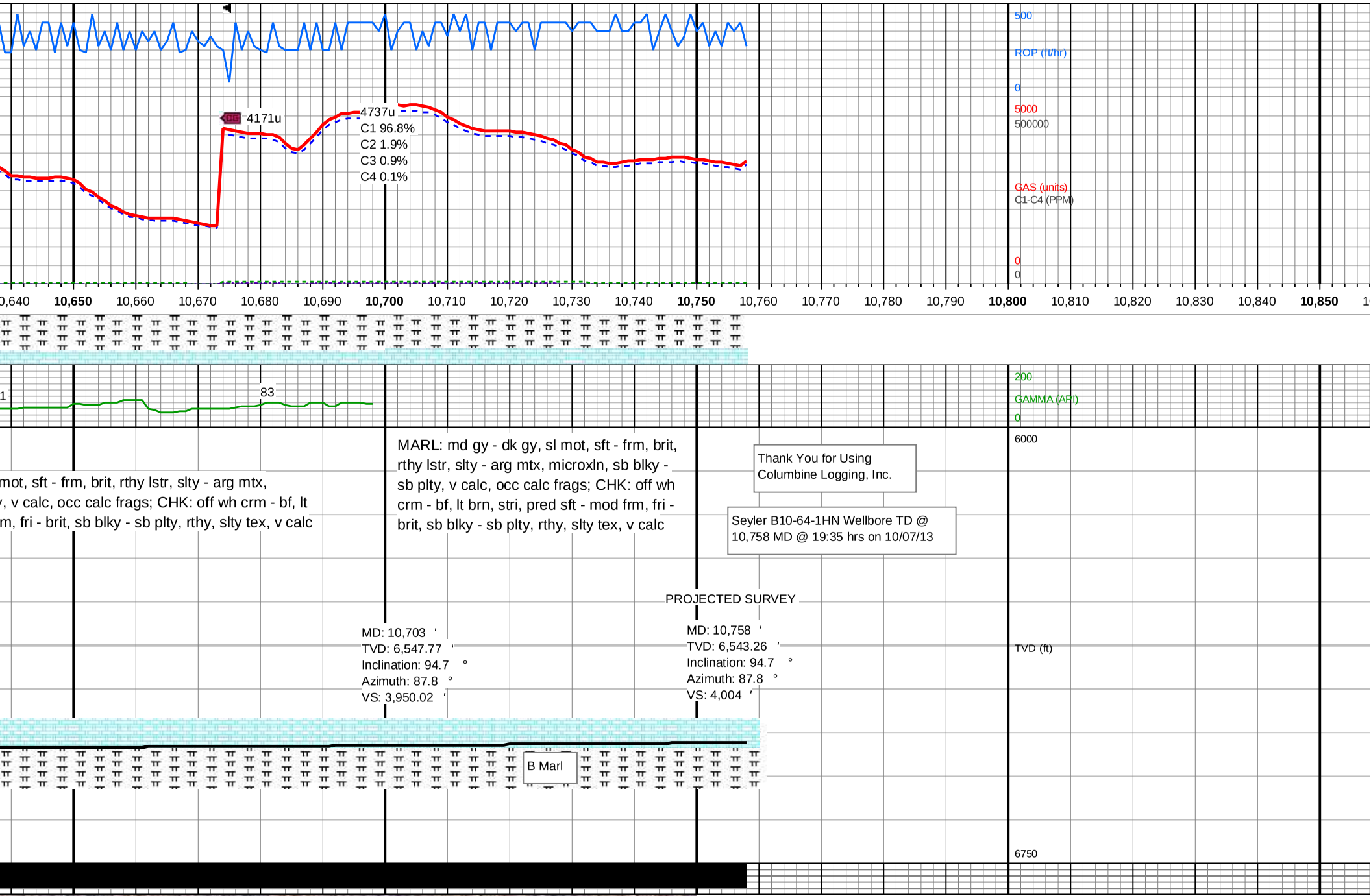

500
ROP (ft/hr)
0
5000
500000
C1-C4 (PPM)
0
0
3u
2996u
IN 9.3/31 OUT 9.4/33
2904u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
3229u
9,540
9,550
9,560
9,570
9,580
9,590
9,600
9,610
9,620
9,630
9,640
9,650
9,660
9,670
9,680
9,690
9,700
9,710
9,720
9,730
9,740
9,750
137
156
146
119
200
GAMMA (API)
0
6000
gy, sl mot, sft - frm, brit, rthy lstr, slty -
sb blky - sb plty, v calc, occ calc frags,
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty -
arg mtx, microxln, sb blky - sb plty, v calc, occ calc frags,
tr pyr
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy
blky - sb plty, v calc, occ calc frags; CHK: off wh
mod frm, fri - brit, sb blky - sb plty, rthy, slty tex,
MD: 9,576 '
TVD: 6,583.15 '
Inclination: 91.2 °
Azimuth: 88.9 °
VS: 2,836.28 '
TVD (ft)
MD: 9,671 '
TVD: 6,581 '
Inclination: 91.4 °
Azimuth: 87.4 °
VS: 2,929.9 '
B Marl
6750

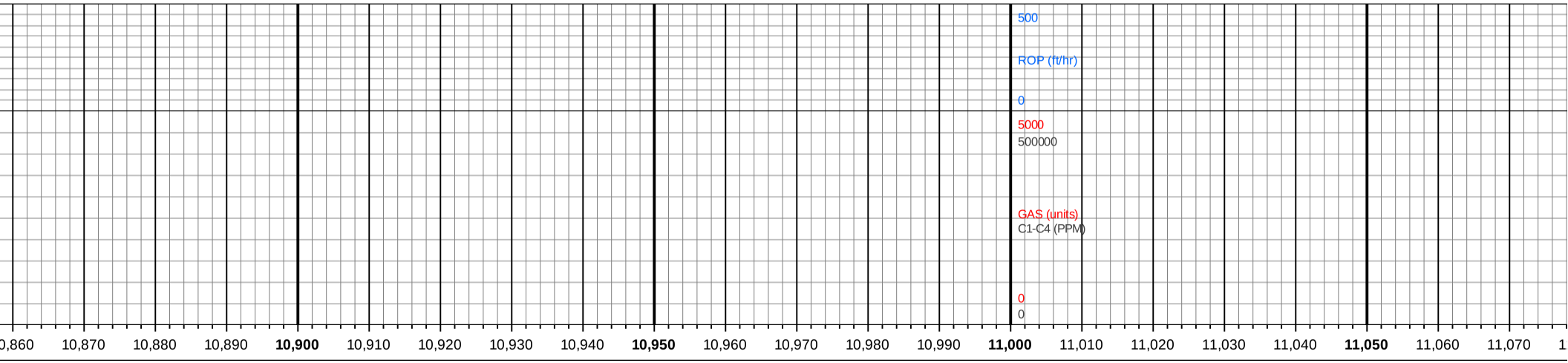

500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
3667u
IN 9.2/31 OUT 9.2/33
3379u
2793u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
3480u
9,760
9,770
9,780
9,790
9,800
9,810
9,820
9,830
9,840
9,850
9,860
9,870
9,880
9,890
9,900
9,910
9,920
9,930
9,940
9,950
9,960
9,970
116
200
GAMMA (API)
0
6000
113
105
113
144
lstr, slty - arg mtx, microxln, sb
crm - bf, lt brn, stri, pred sft -
v calc; tr pyr
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb
blky - sb plty, v calc, occ calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft -
mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc; tr pyr
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx,
blky - sb plty, v calc, occ calc frags; CHK: off wh crm - bf, lt brn, s
mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc; tr pyr
MD: 9,766 '
TVD: 6,579.09 '
Inclination: 90.9 °
Azimuth: 89.4 °
VS: 3,023.59 '
TVD (ft)
MD: 9,860 '
TVD: 6,577.37 '
Inclination: 91.2 °
Azimuth: 89.6 °
VS: 3,116.58 '
MD: 9,955 '
TVD: 6,576.54 '
Inclination: 89.8 °
Azimuth: 89.9 °
VS: 3,210.63 '
B Marl
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
IN 9.2+/31 OUT 9.2/32
2872u
1685u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
2907u
DEPTH CORRECTION
DEPTH CORRECTION
9,980
9,990
10,000
10,010
10,020
10,030
10,040
10,050
10,060
10,070
10,080
10,090
10,100
10,110
10,120
10,130
10,140
10,150
10,160
10,170
10,180
10,190
200
GAMMA (API)
0
6000
150
116
116
108
microxln, sb
tri, pred sft -
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, occ calc frags, tr pyr
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, occ calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc
TVD (ft)
MD: 10,050 '
TVD: 6,575.13 '
Inclination: 91.9 °
Azimuth: 91.7 °
VS: 3,304.89 '
MD: 10,145 '
TVD: 6,571.65 '
Inclination: 92.3 °
Azimuth: 91.1 °
VS: 3,399.23 '
B Marl
6750

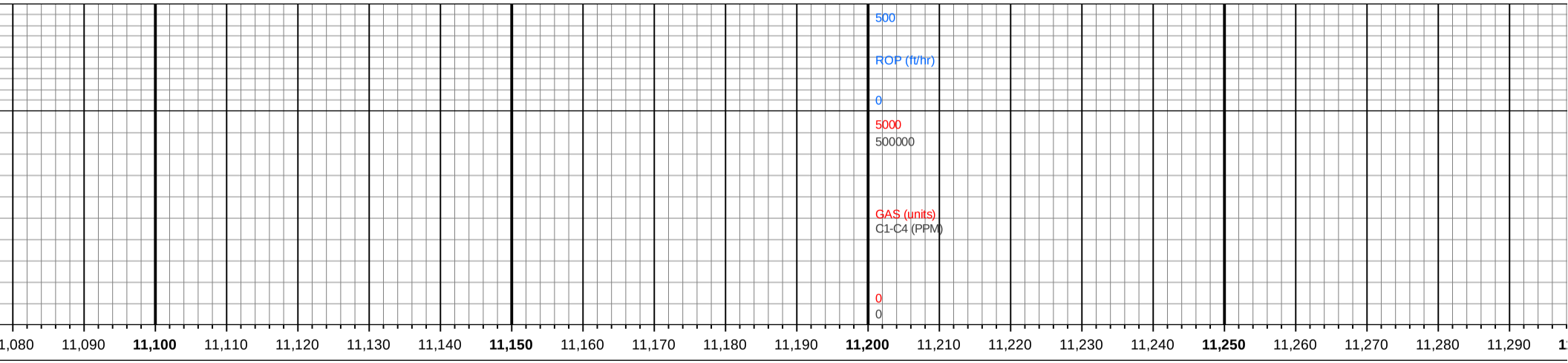

500
ROP (ft/hr)
0
5000
500000
2638u
GAS (units)
C1-C4 (PPM)
0
0
2490u
1397u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
3818u
10,200
10,210
10,220
10,230
10,240
10,250
10,260
10,270
10,280
10,290
10,300
10,310
10,320
10,330
10,340
10,350
10,360
10,370
10,380
10,390
10,400
200
GAMMA (API)
0
102
98
103
96
6000
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, occ calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, occ calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc
MARL:
microxl
brn, stri
TVD (ft)
MD: 10,240 '
TVD: 6,568 '
Inclination: 92.1 °
Azimuth: 91.3 °
VS: 3,493.52 '
MD: 10,335 '
TVD: 6,565.35 '
Inclination: 91.1 °
Azimuth: 89.4 °
VS: 3,587.67 '
TVD (ft)
B Marl
6750
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
3937u
3683u
3284u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
2792u
3931u
10,420
10,430
10,440
10,450
10,460
10,470
10,480
10,490
10,500
10,510
10,520
10,530
10,540
10,550
10,560
10,570
10,580
10,590
10,600
10,610
10,620
10,630
101
116
120
103
200
GAMMA (API)
0
6000
md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx,
n, sb blky - sb plty, v calc, occ calc frags; CHK: off wh crm - bf, lt
, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx,
microxln, sb blky - sb plty, v calc, occ calc frags; CHK: off wh crm - bf, lt
brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc
MARL: md gy - dk gy, sl
microxln, sb blky - sb plty
brn, stri, pred sft - mod fr
MD: 10,429 '
TVD: 6,562.97 '
Inclination: 91.8 °
Azimuth: 88.9 °
VS: 3,680.56 '
MD: 10,524 '
TVD: 6,559.08 '
Inclination: 92.9 °
Azimuth: 87.6 °
VS: 3,774.15 '
TVD (ft)
MD: 10,619 '
TVD: 6,553.77 '
Inclination: 93.5 °
Azimuth: 87.8 °
VS: 3,867.52 '
B Marl
6750

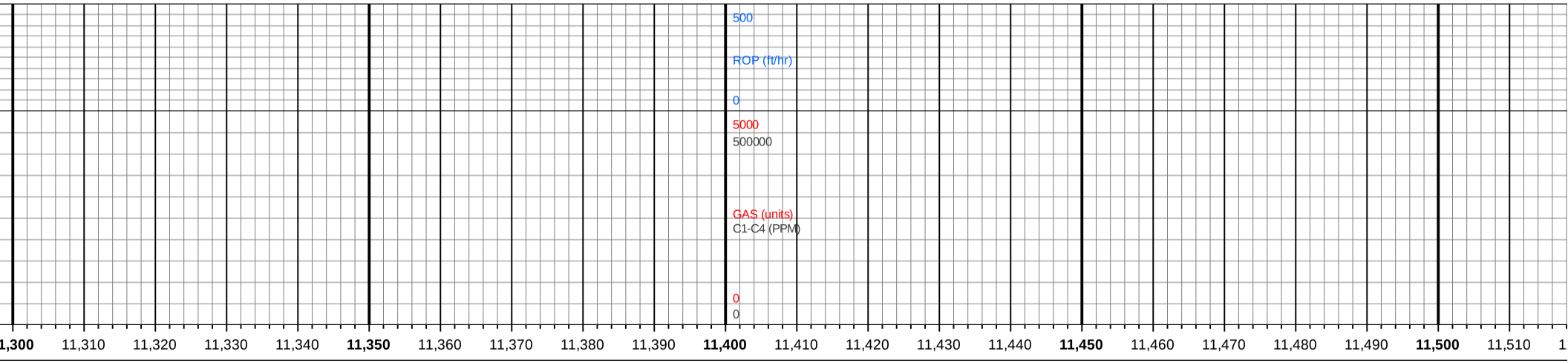

500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
4171u
4737u
C1 96.8%
C2 1.9%
C3 0.9%
C4 0.1%
0,640
10,650
10,660
10,670
10,680
10,690
10,700
10,710
10,720
10,730
10,740
10,750
10,760
10,770
10,780
10,790
10,800
10,810
10,820
10,830
10,840
10,850
200
GAMMA (API)
0
83
6000
mot, sft - frm, brit, rthy lstr, slty - arg mtx,
, v calc, occ calc frags; CHK: off wh crm - bf, lt
m, fri - brit, sb blky - sb plty, rthy, slty tex, v calc
MARL: md gy - dk gy, sl mot, sft - frm, brit, rthy lstr, slty - arg mtx, microxln, sb blky - sb plty, v calc, occ calc frags; CHK: off wh crm - bf, lt brn, stri, pred sft - mod frm, fri - brit, sb blky - sb plty, rthy, slty tex, v calc
Thank You for Using Columbine Logging, Inc.
Seyler B10-64-1HN Wellbore TD @ 10,758 MD @ 19:35 hrs on 10/07/13
PROJECTED SURVEY
MD: 10,703 '
TVD: 6,547.77 '
Inclination: 94.7 °
Azimuth: 87.8 °
VS: 3,950.02 '
MD: 10,758 '
TVD: 6,543.26 '
Inclination: 94.7 °
Azimuth: 87.8 °
VS: 4,004 '
TVD (ft)
B Marl
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
10,860
10,870
10,880
10,890
10,900
10,910
10,920
10,930
10,940
10,950
10,960
10,970
10,980
10,990
11,000
11,010
11,020
11,030
11,040
11,050
11,060
11,070


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
11,080
11,090
11,100
11,110
11,120
11,130
11,140
11,150
11,160
11,170
11,180
11,190
11,200
11,210
11,220
11,230
11,240
11,250
11,260
11,270
11,280
11,290


200
GAMMA (API)
0
6000
TVD (ft)
6750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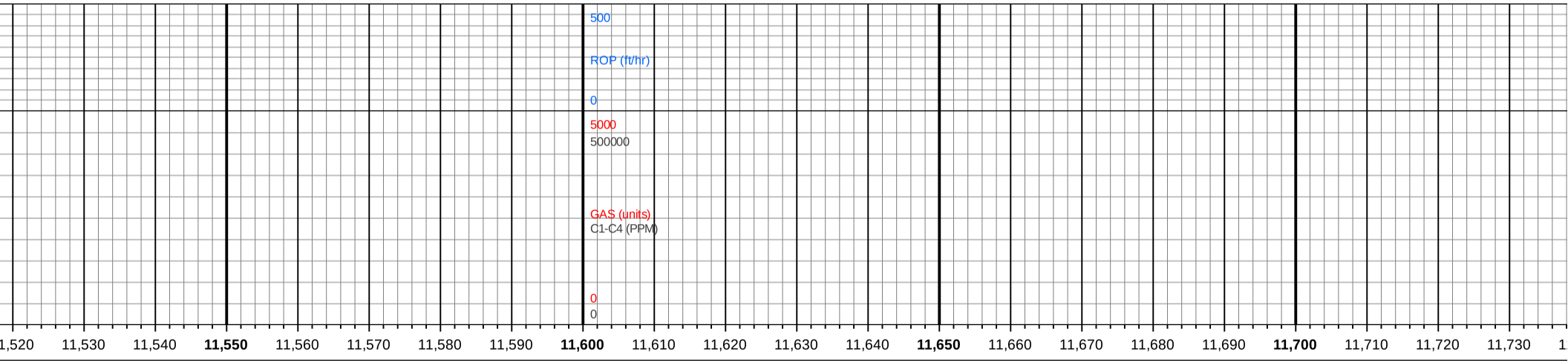
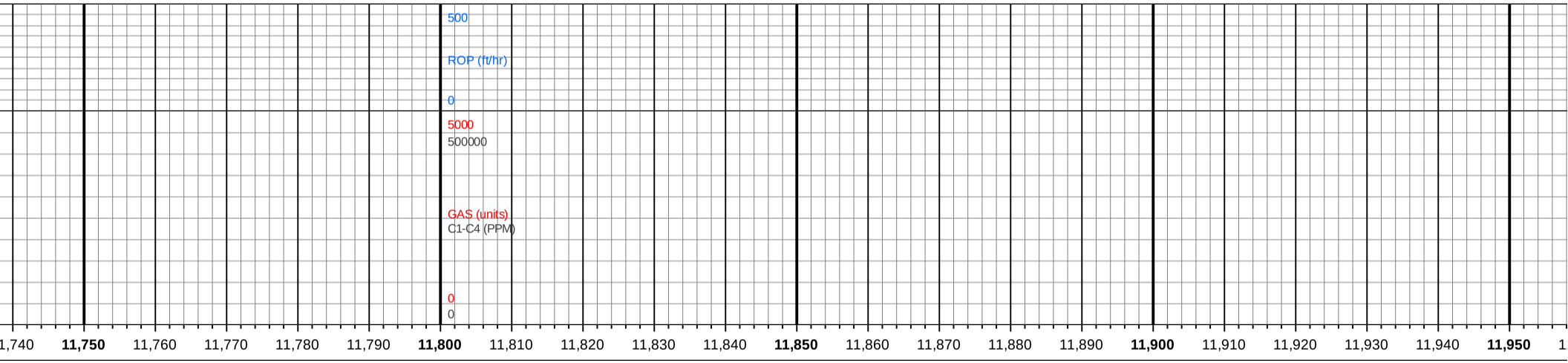
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
1,300
11,310
11,320
11,330
11,340
11,350
11,360
11,370
11,380
11,390
11,400
11,410
11,420
11,430
11,440
11,450
11,460
11,470
11,480
11,490
11,500
11,510


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
11,520
11,530
11,540
11,550
11,560
11,570
11,580
11,590
11,600
11,610
11,620
11,630
11,640
11,650
11,660
11,670
11,680
11,690
11,700
11,710
11,720
11,730


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
1,740
11,750
11,760
11,770
11,780
11,790
11,800
11,810
11,820
11,830
11,840
11,850
11,860
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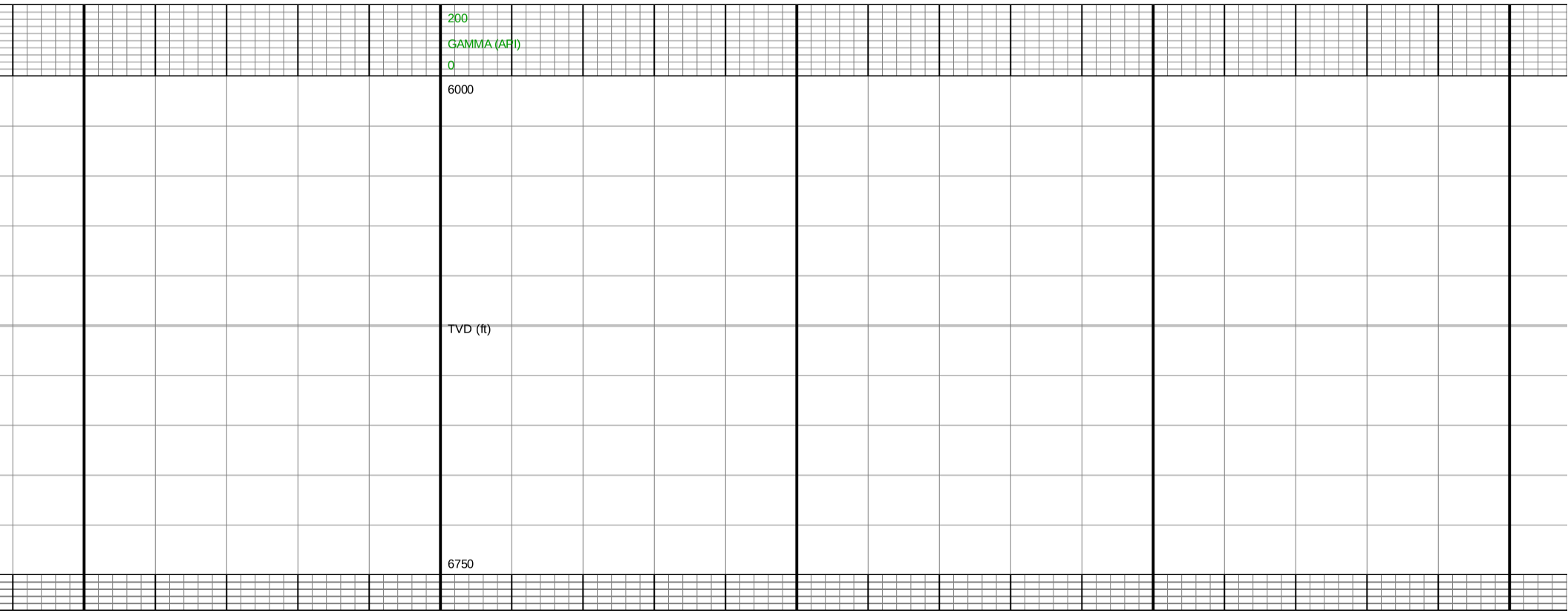
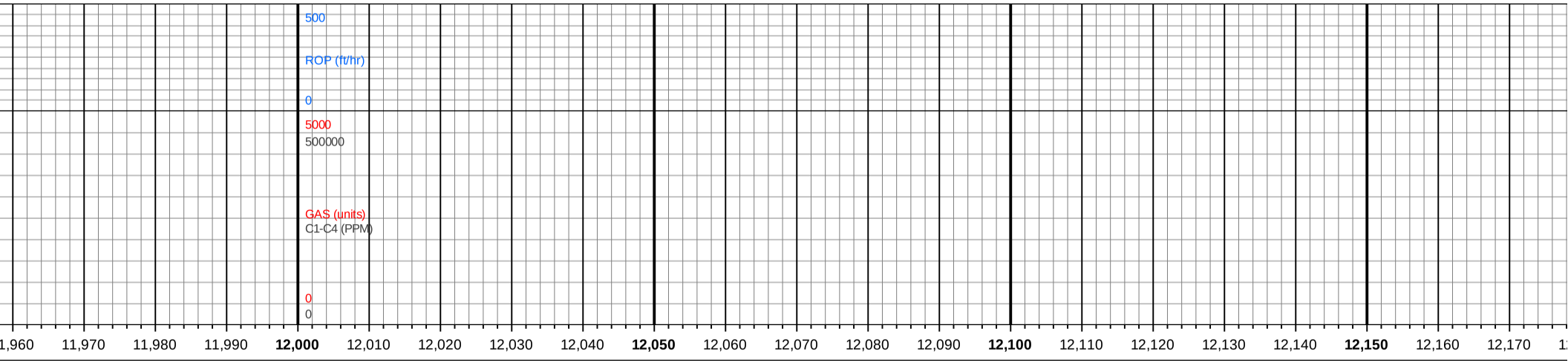
11,900
11,910
11,920
11,930
11,940
11,950


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
11,960
11,970
11,980
11,990
12,000
12,010
12,020
12,030
12,040
12,050
12,060
12,070
12,080
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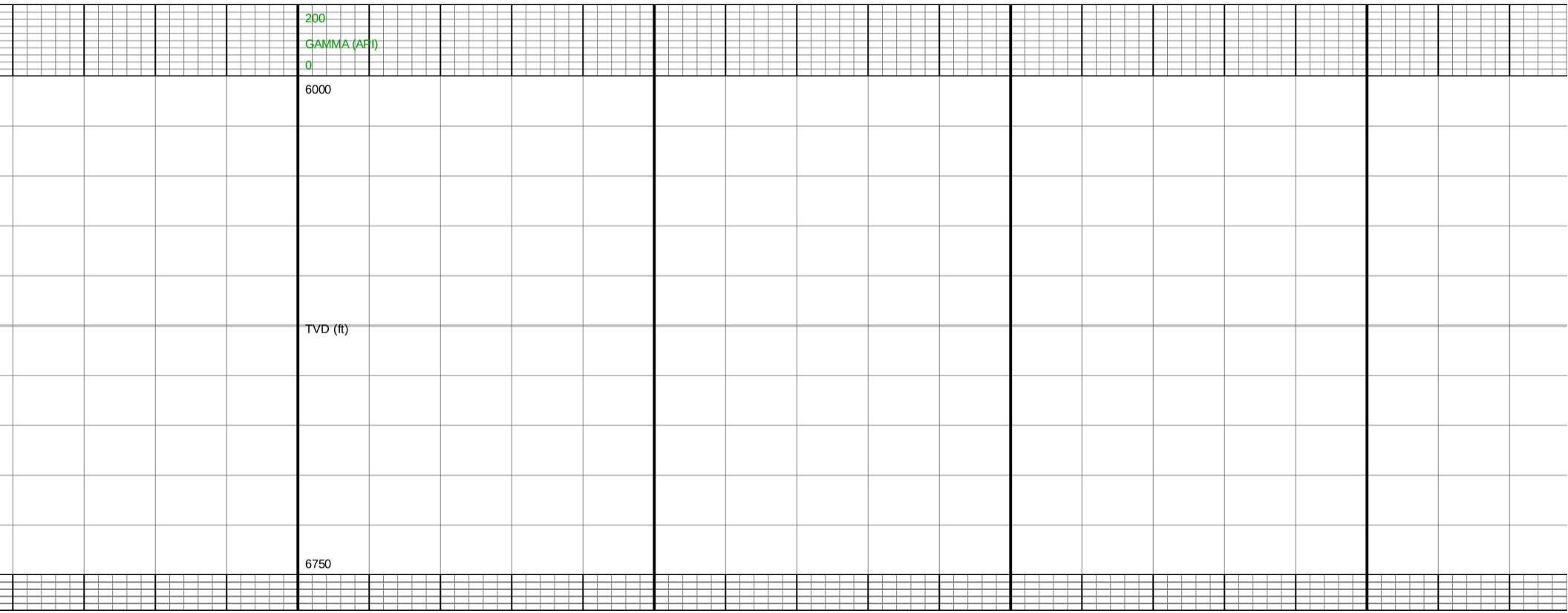
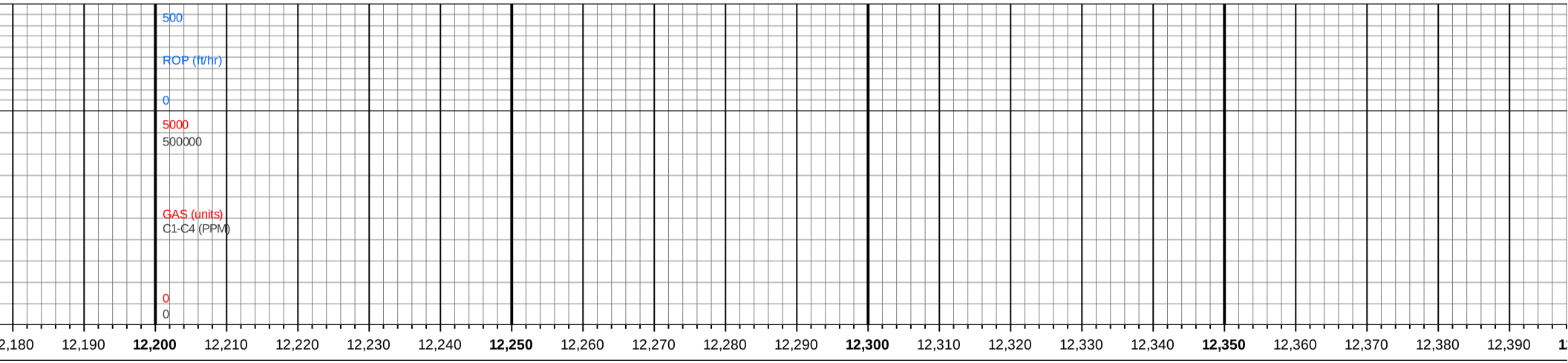
12,120
12,130
12,140
12,150
12,160
12,170


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
12,180
12,190
12,200
12,210
12,220
12,230
12,240
12,250
12,260
12,270
12,280
12,290
12,300
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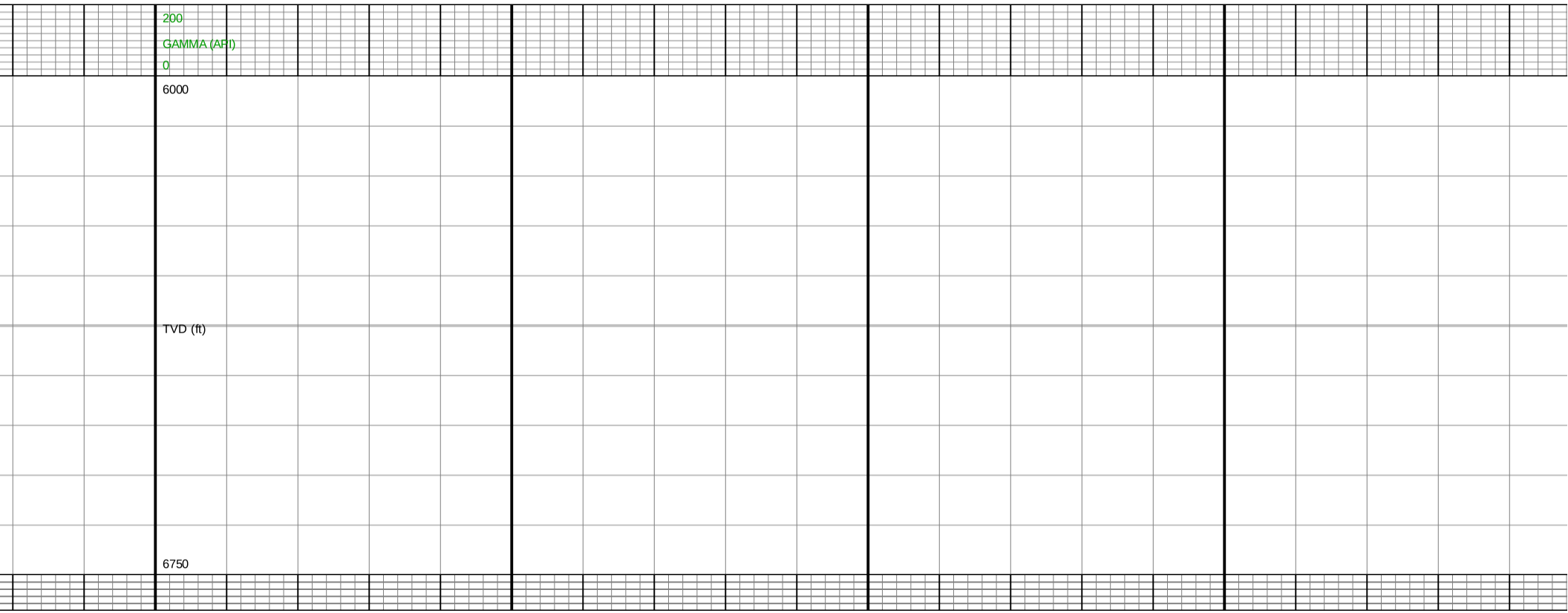
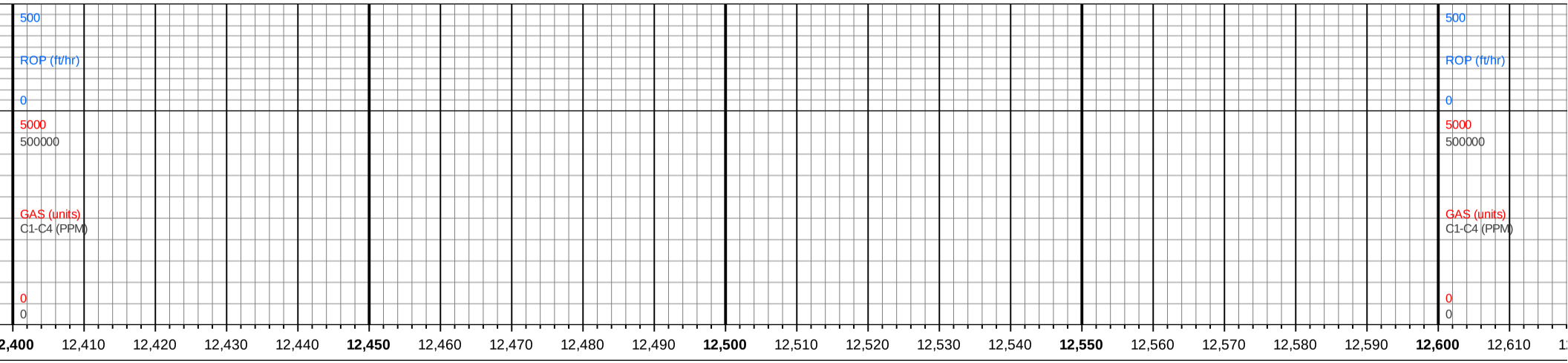
12,340
12,350
12,360
12,370
12,380
12,390


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
2,400
12,410
12,420
12,430
12,440
12,450
12,460
12,470
12,480
12,490
12,500
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12,530
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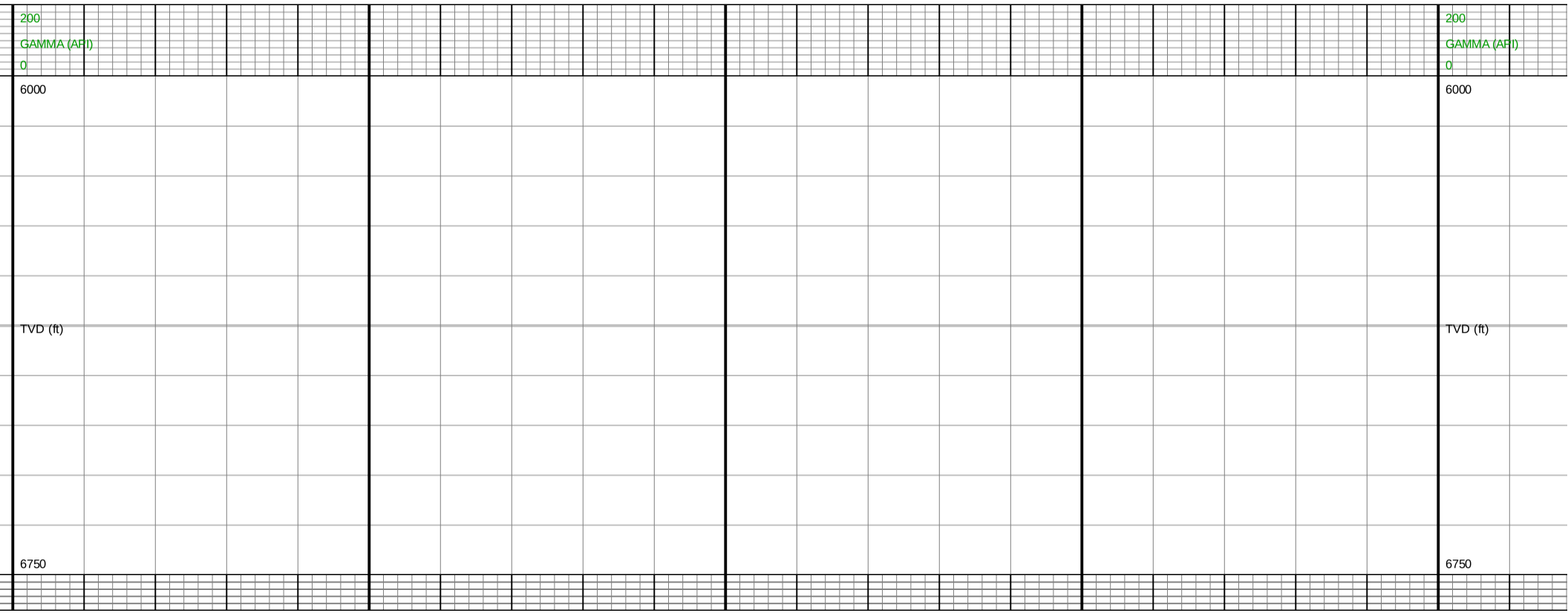
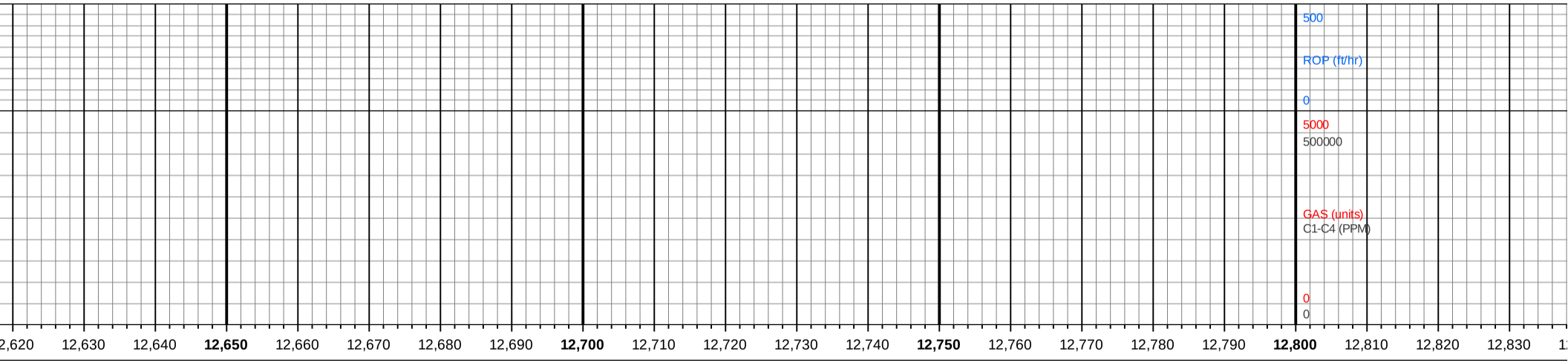
12,550
12,560
12,570
12,580
12,590
12,600
12,610


200
GAMMA (API)
0
6000
TVD (ft)
6750
200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
2,620
12,630
12,640
12,650
12,660
12,670
12,680
12,690
12,700
12,710
12,720
12,730
12,740
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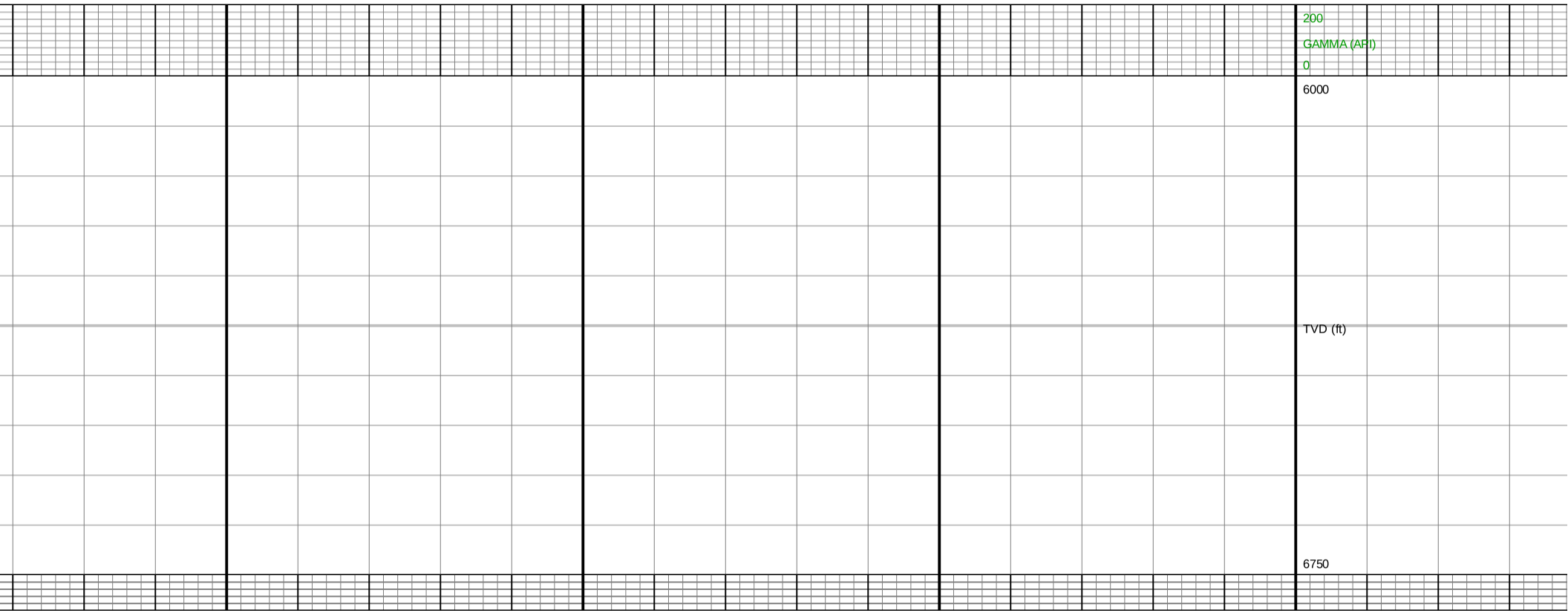
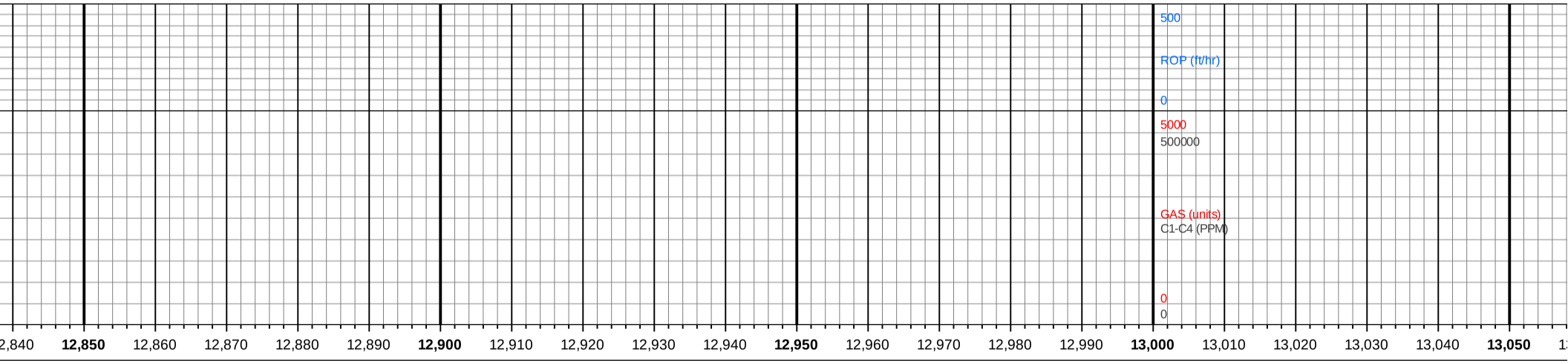
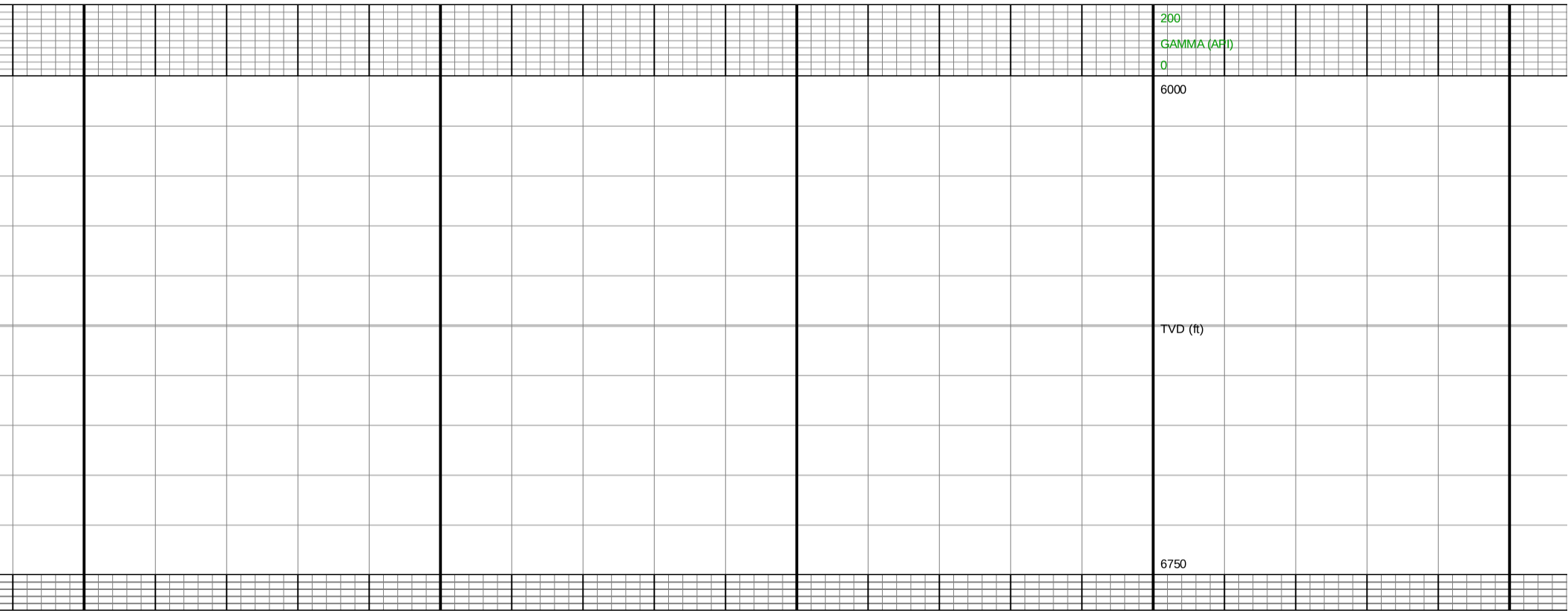
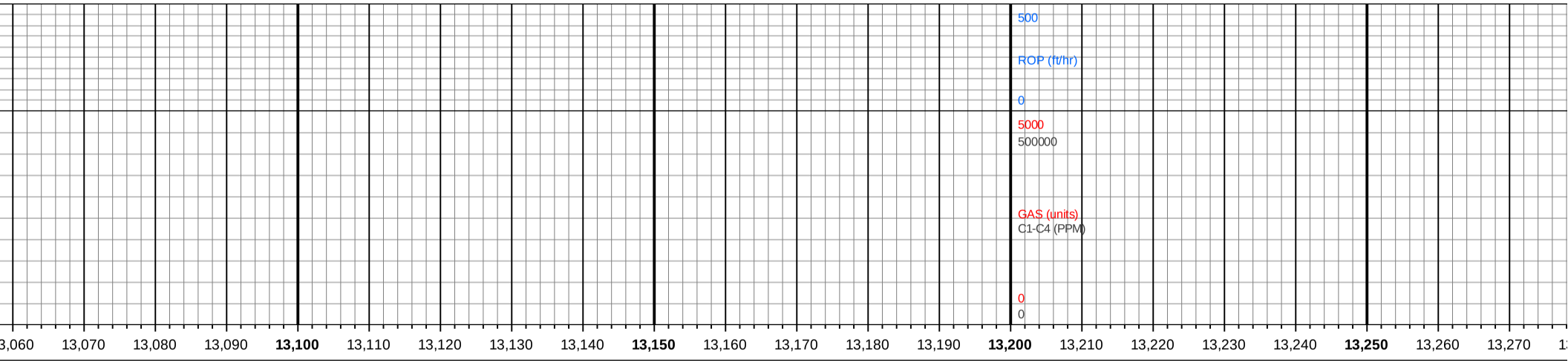
12,780
12,790
12,800
12,810
12,820
12,830

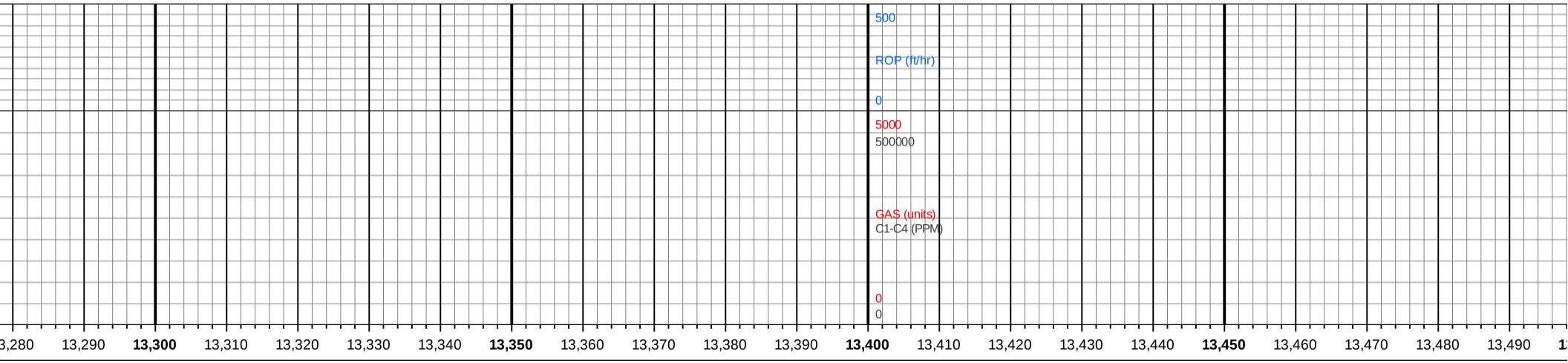

200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
12,840
12,850
12,860
12,870
12,880
12,890
12,900
12,910
12,920
12,930
12,940
12,950
12,960
12,970
12,980
12,990
13,000
13,010
13,020
13,030
13,040
13,050


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
3,060
13,070
13,080
13,090
13,100
13,110
13,120
13,130
13,140
13,150
13,160
13,170
13,180
13,190
13,200
13,210
13,220
13,230
13,240
13,250
13,260
13,270


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
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0
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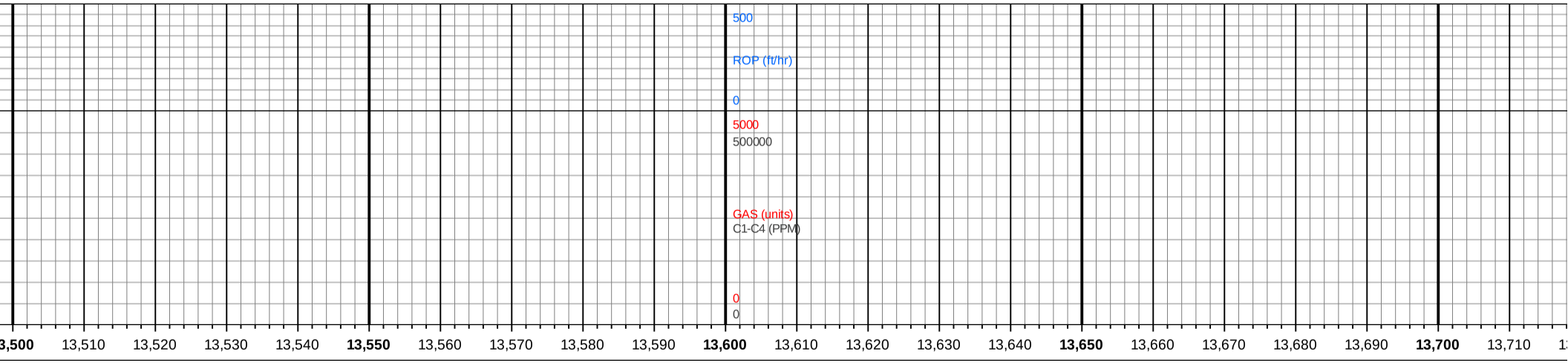
13,290
13,300
13,310
13,320
13,330
13,340
13,350
13,360
13,370
13,380
13,390
13,400
13,410
13,420
13,430
13,440
13,450
13,460
13,470
13,480
13,490


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
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0
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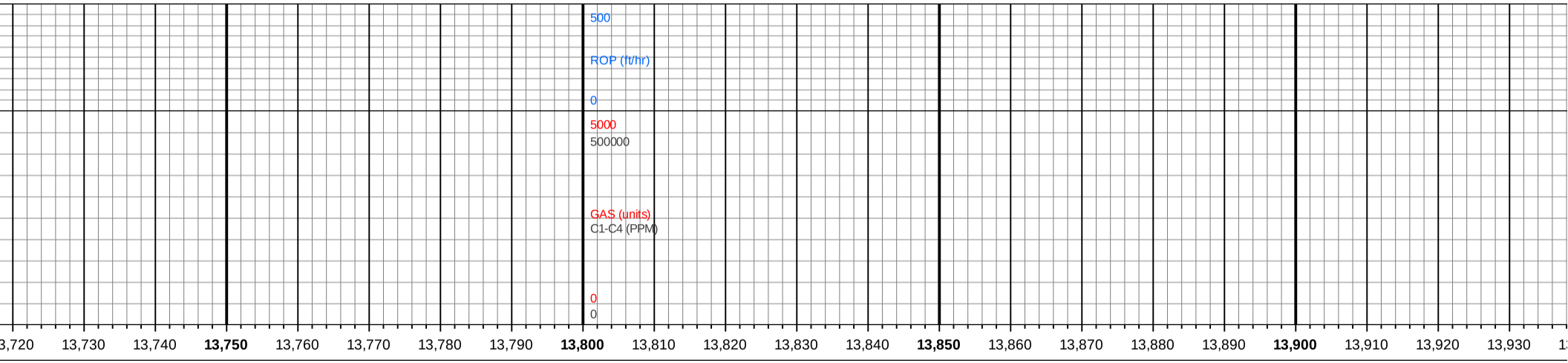
13,510
13,520
13,530
13,540
13,550
13,560
13,570
13,580
13,590
13,600
13,610
13,620
13,630
13,640
13,650
13,660
13,670
13,680
13,690
13,700
13,710


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
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13,730
13,740
13,750
13,760
13,770
13,780
13,790
13,800
13,810
13,820
13,830
13,840
13,850
13,860
13,870
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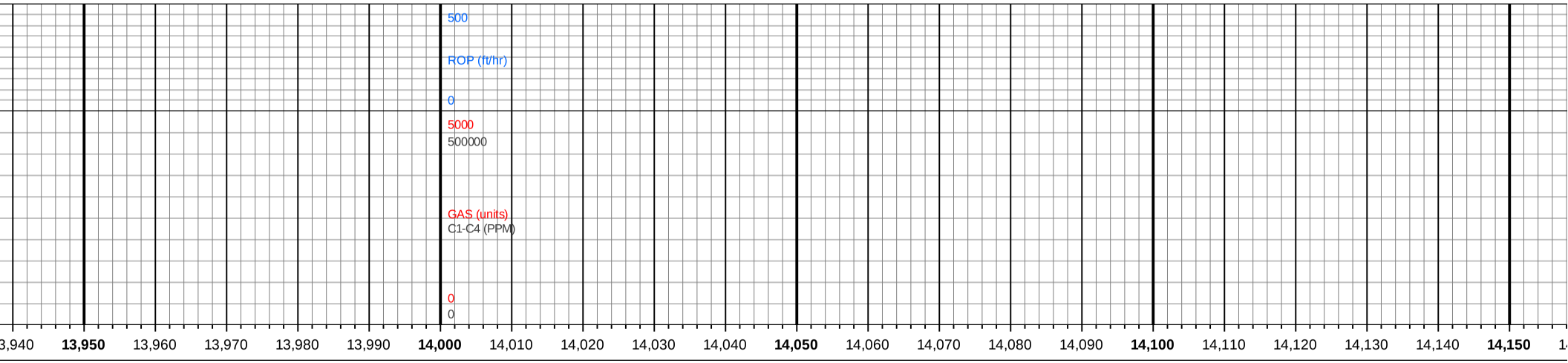
13,900
13,910
13,920
13,930


200
GAMMA (API)
0
6000
TVD (ft)
6750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ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
3,940
13,950
13,960
13,970
13,980
13,990
14,000
14,010
14,020
14,030
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14,050
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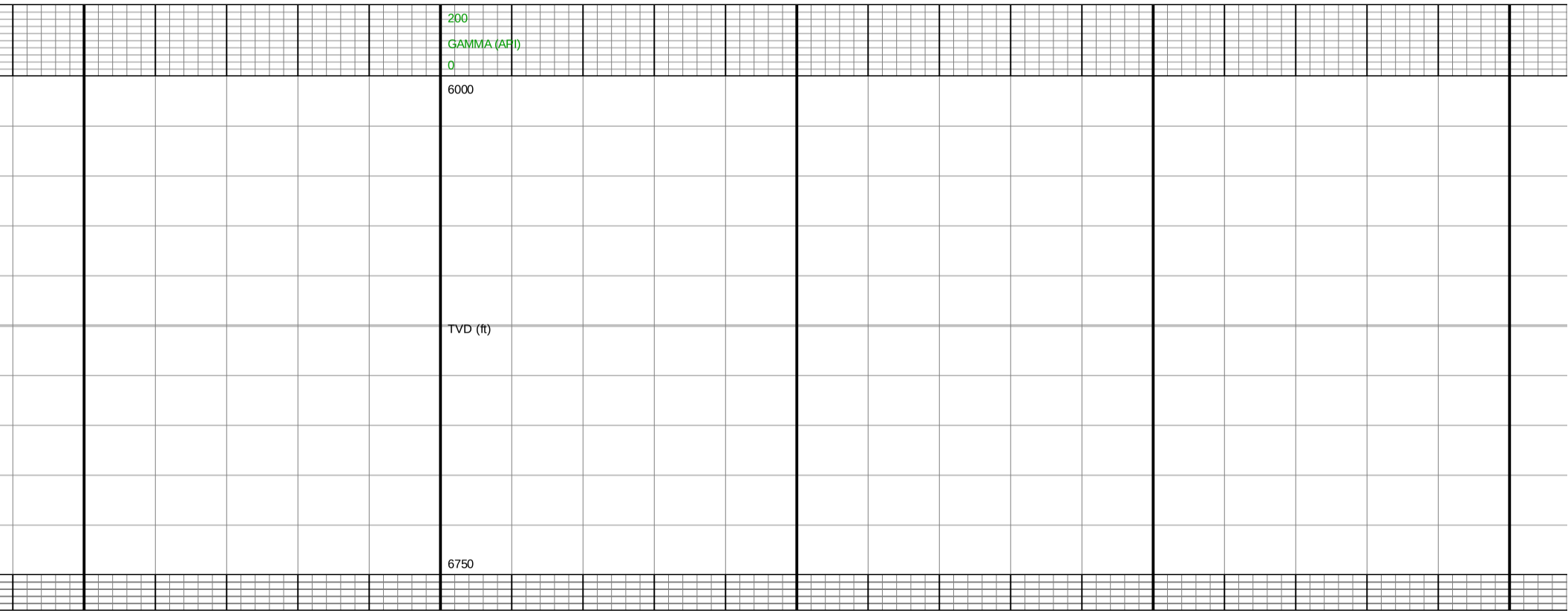
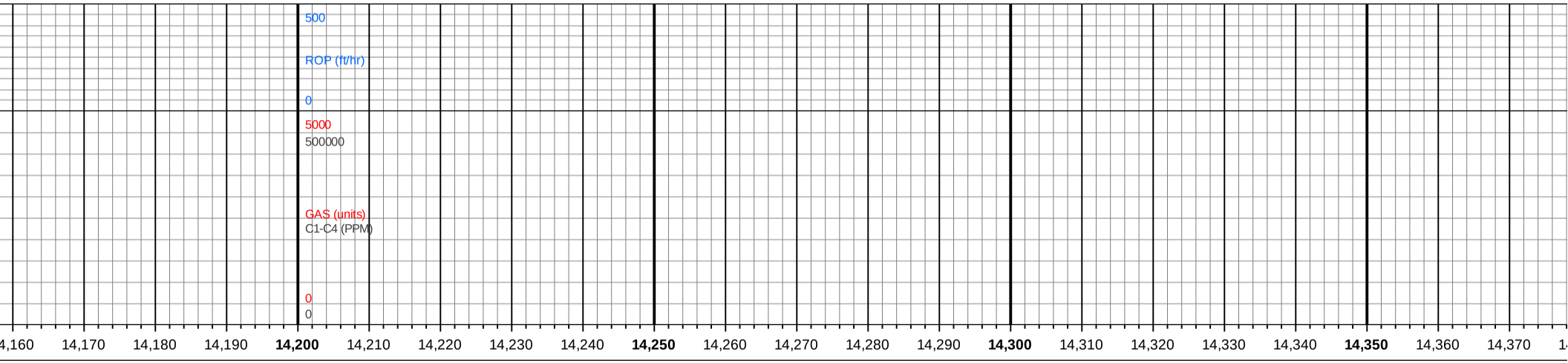
14,140
14,150


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
4,160
14,170
14,180
14,190
14,200
14,210
14,220
14,230
14,240
14,250
14,260
14,270
14,280
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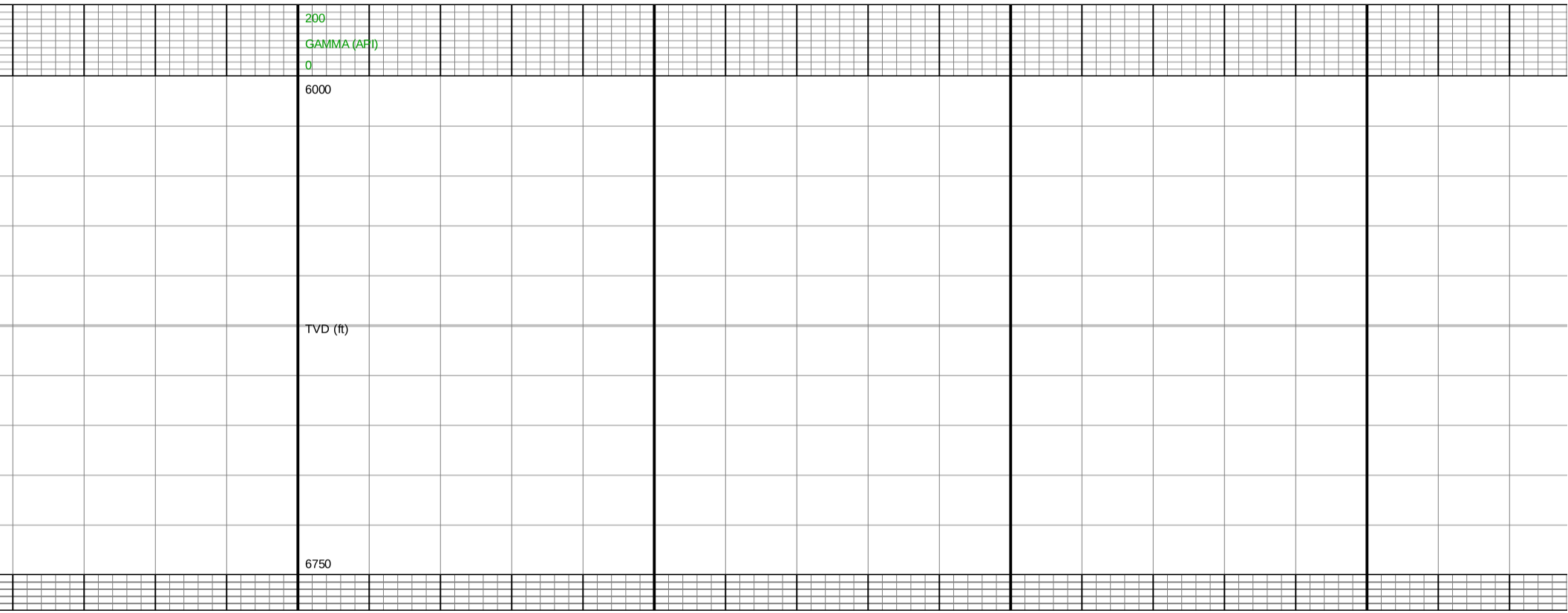
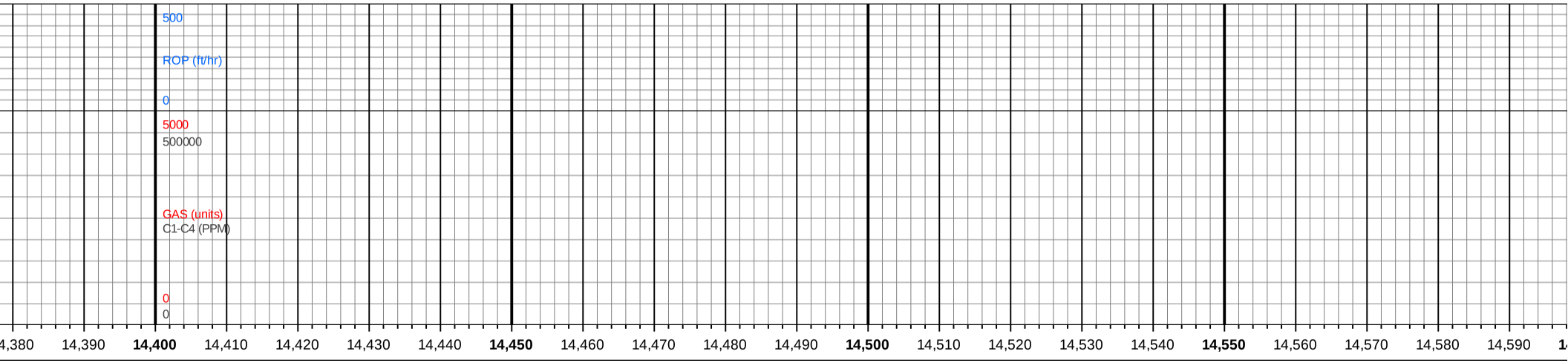
14,320
14,330
14,340
14,350
14,360
14,370


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
14,380
14,390
14,400
14,410
14,420
14,430
14,440
14,450
14,460
14,470
14,480
14,490
14,500
14,510
14,520
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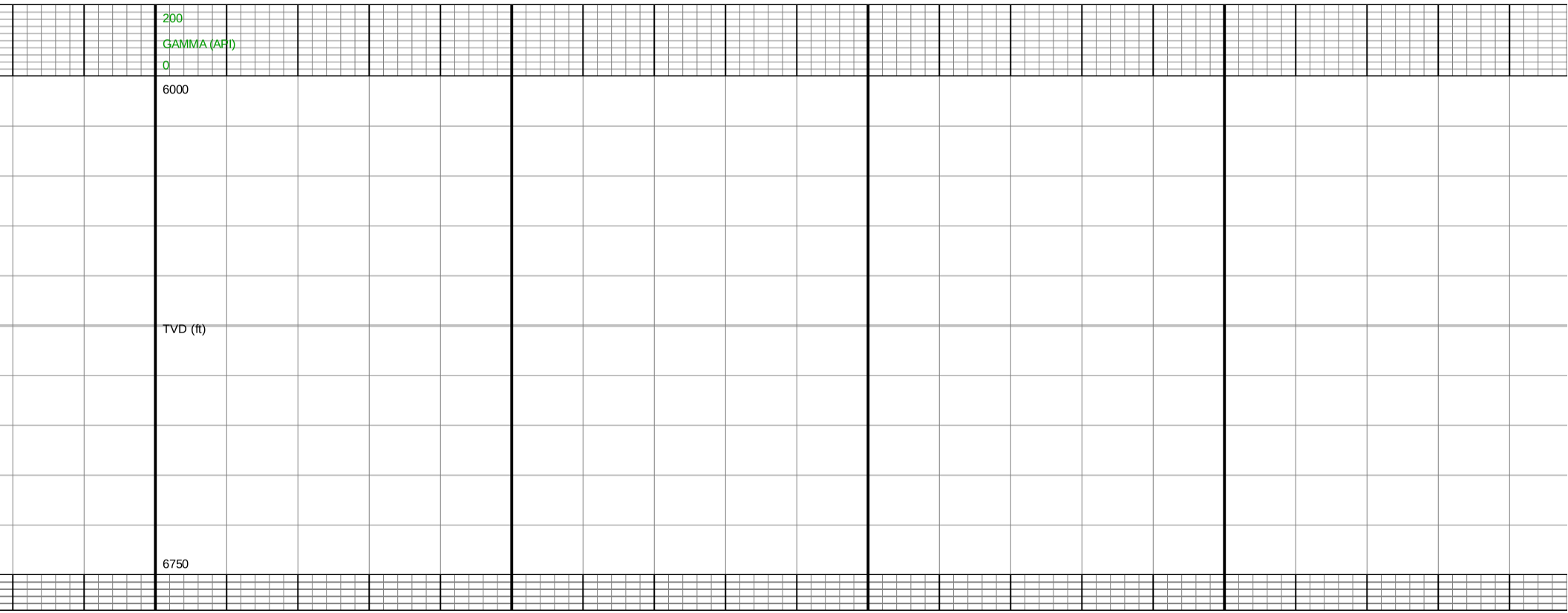
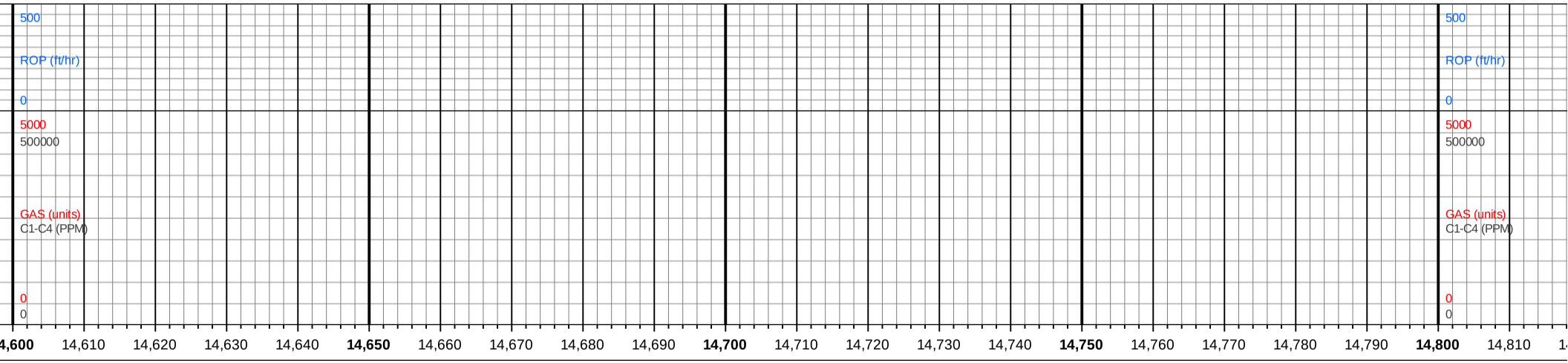
14,540
14,550
14,560
14,570
14,580
14,590


200
GAMMA (API)
0
6000
TVD (ft)
6750


500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
500
ROP (ft/hr)
0
5000
500000
GAS (units)
C1-C4 (PPM)
0
0
4,600
14,610
14,620
14,630
14,640
14,650
14,660
14,670
14,680
14,690
14,700
14,710
14,720
14,730
14,740
14,750
14,760
14,770
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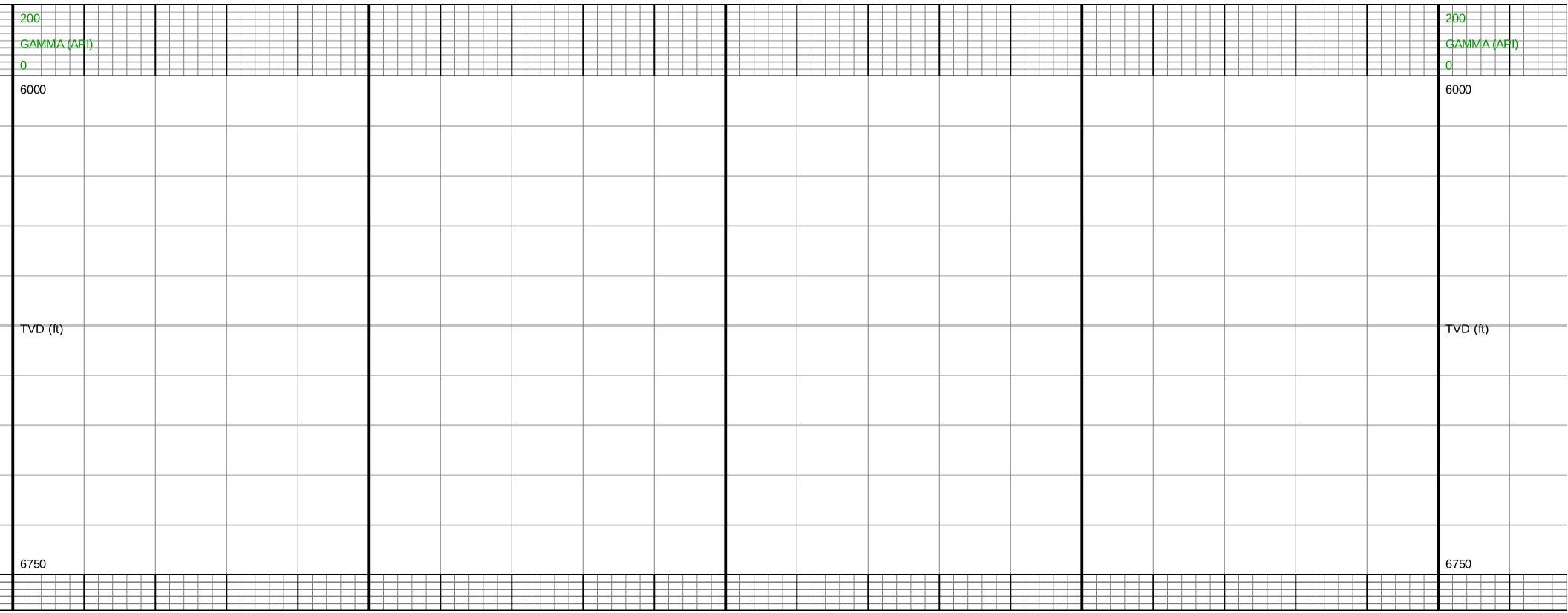
14,810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TVD (ft)
6750
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GAMMA (API)
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TVD (ft)
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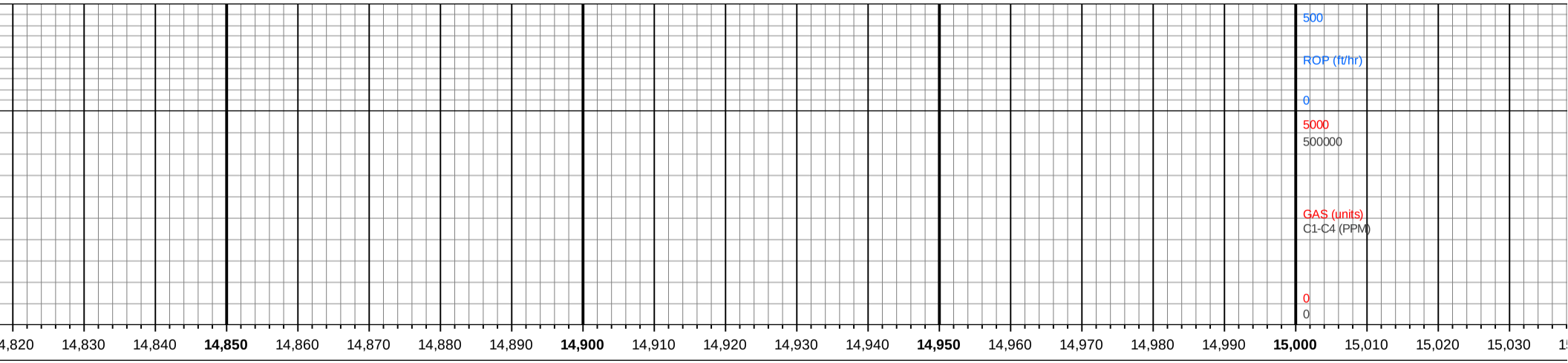
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GAS (units)
C1-C4 (PPM)
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14,850
14,860
14,870
14,880
14,890
14,900
14,910
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14,940
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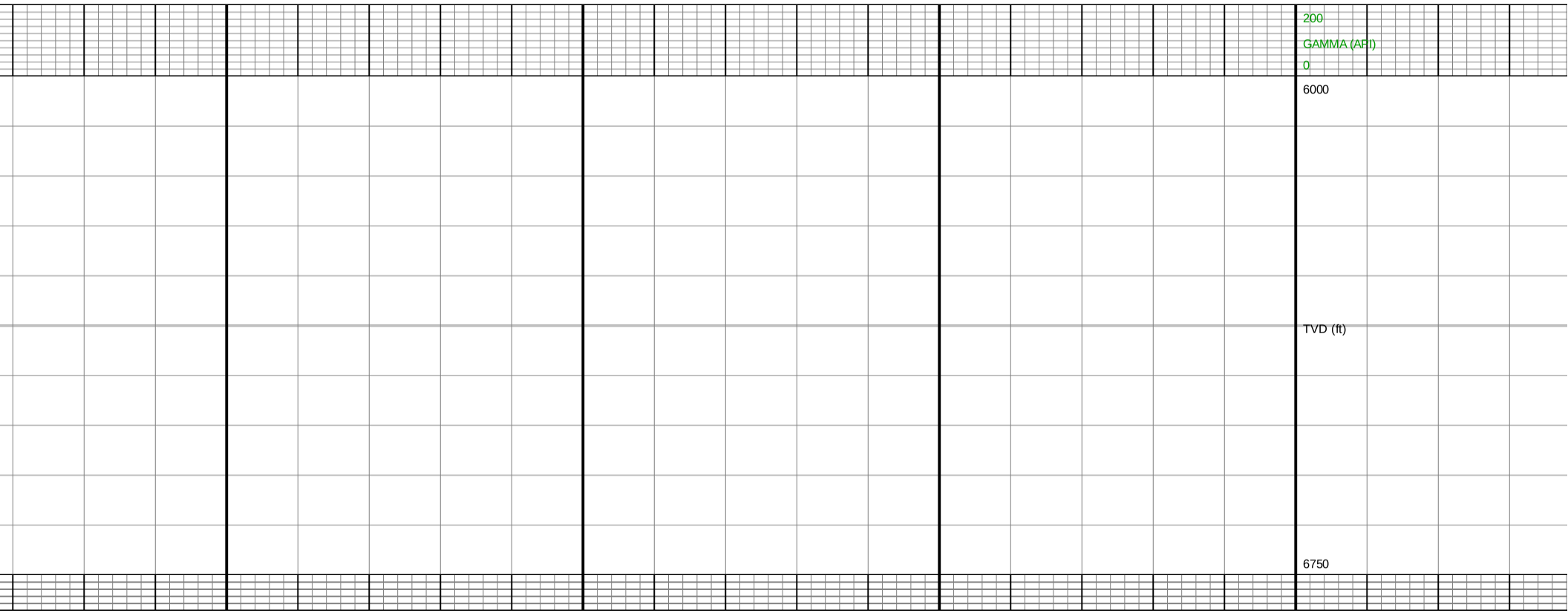
14,960
14,970
14,980
14,990
15,000
15,010
15,020
15,030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TVD (ft)
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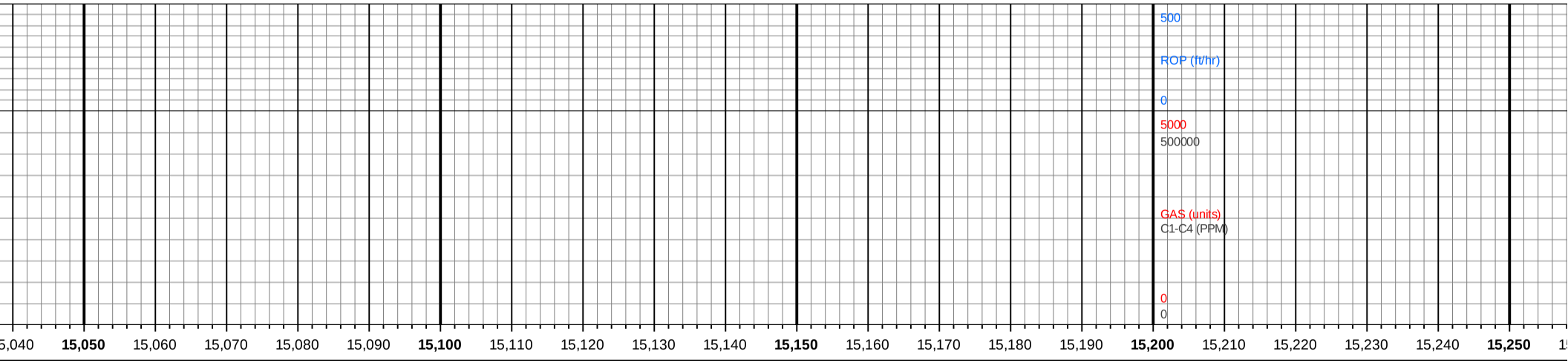
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500000
GAS (units)
C1-C4 (PPM)
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0
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15,050
15,060
15,070
15,080
15,090
15,100
15,110
15,120
15,130
15,140
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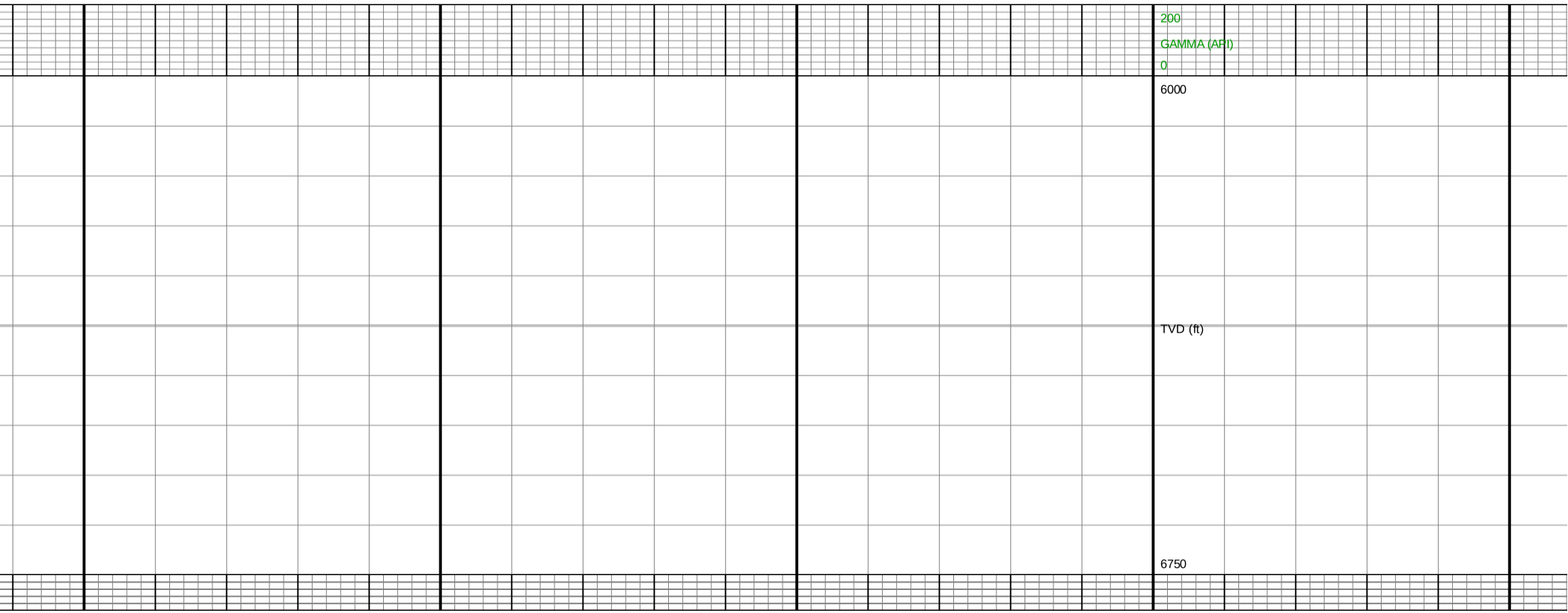
15,200
15,210
15,220
15,230
15,240
15,250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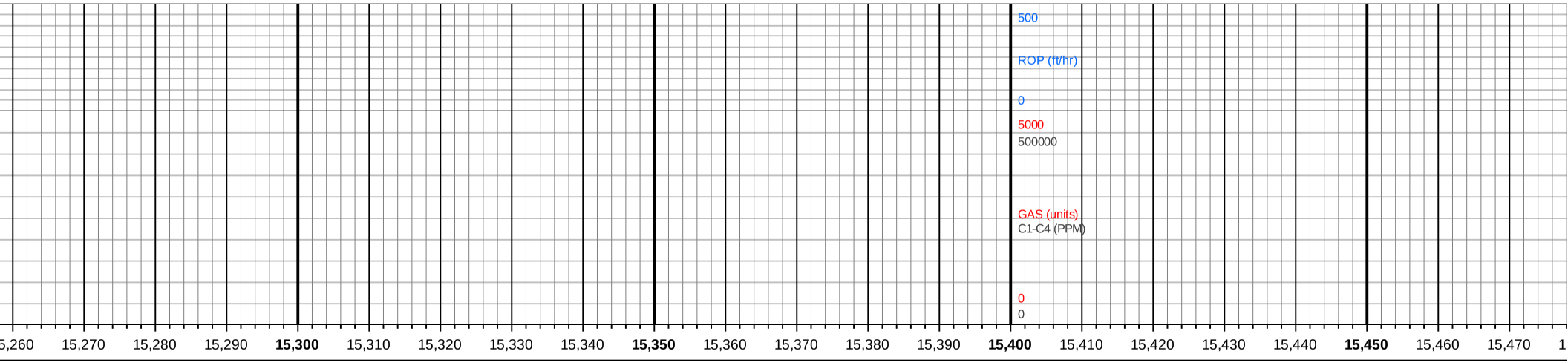
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ROP (ft/hr)
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5000
500000
GAS (units)
C1-C4 (PPM)
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15,290
15,300
15,310
15,320
15,330
15,340
15,350
15,360
15,370
15,380
15,390
15,400
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15,440
15,450
15,460
15,470


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GAMMA (API)
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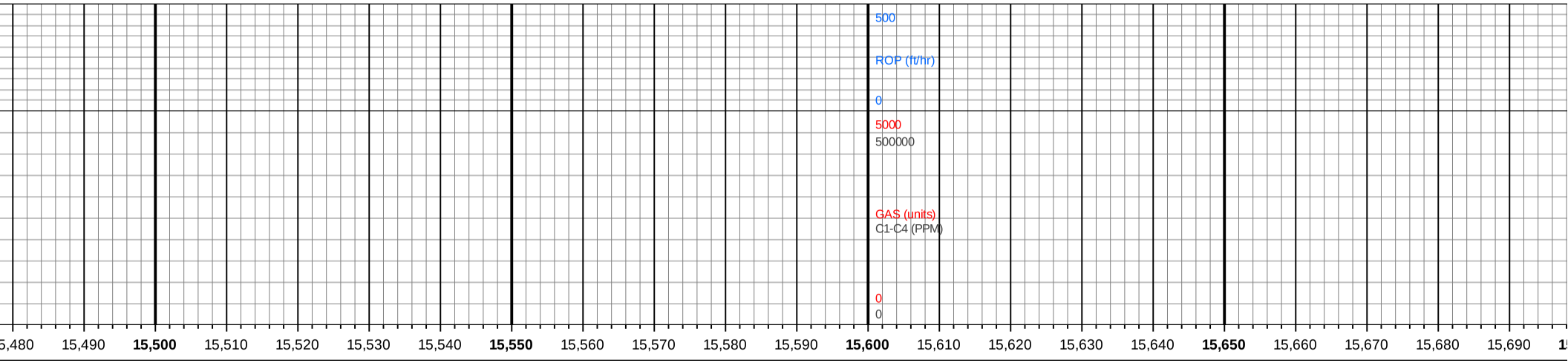
6000
TVD (ft)
6750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5000
500000
GAS (units)
C1-C4 (PPM)
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15,500
15,510
15,520
15,530
15,540
15,550
15,560
15,570
15,580
15,590
15,600
15,610
15,620
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15,660
15,670
15,680
15,690


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GAMMA (API)
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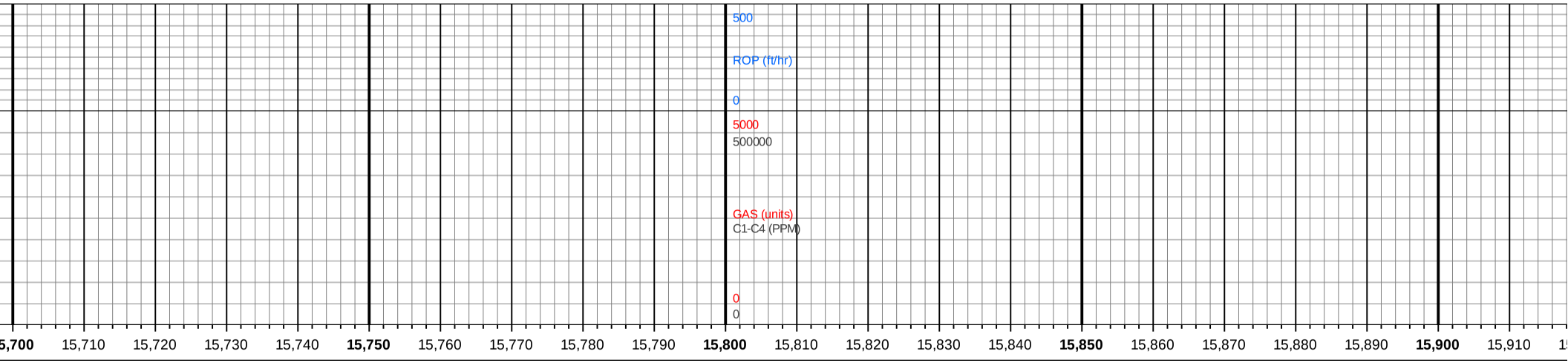
6000
TVD (ft)
6750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5000
500000
GAS (units)
C1-C4 (PPM)
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0
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15,720
15,730
15,740
15,750
15,760
15,770
15,780
15,790
15,800
15,810
15,820
15,830
15,840
15,850
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15,890
15,900
15,910


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GAMMA (API)
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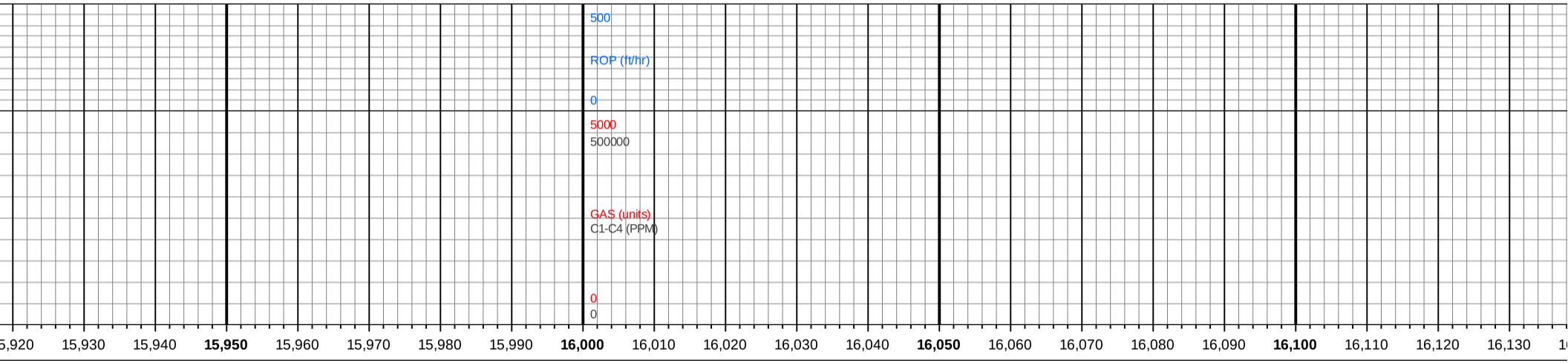
6000
TVD (ft)
6750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500000
GAS (units)
C1-C4 (PPM)
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15,940
15,950
15,960
15,970
15,980
15,990
16,000
16,010
16,020
16,030
16,040
16,050
16,060
16,070
16,080
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16,100
16,110
16,120
16,130


200
GAMMA (API)
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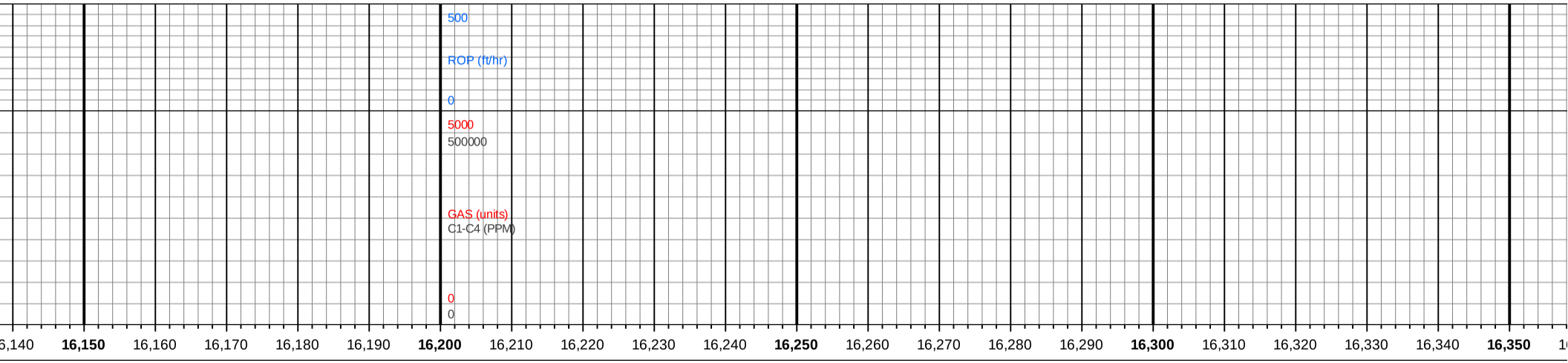
6000
TVD (ft)
6750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5000
500000
GAS (units)
C1-C4 (PPM)
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0
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16,160
16,170
16,180
16,190
16,200
16,210
16,220
16,230
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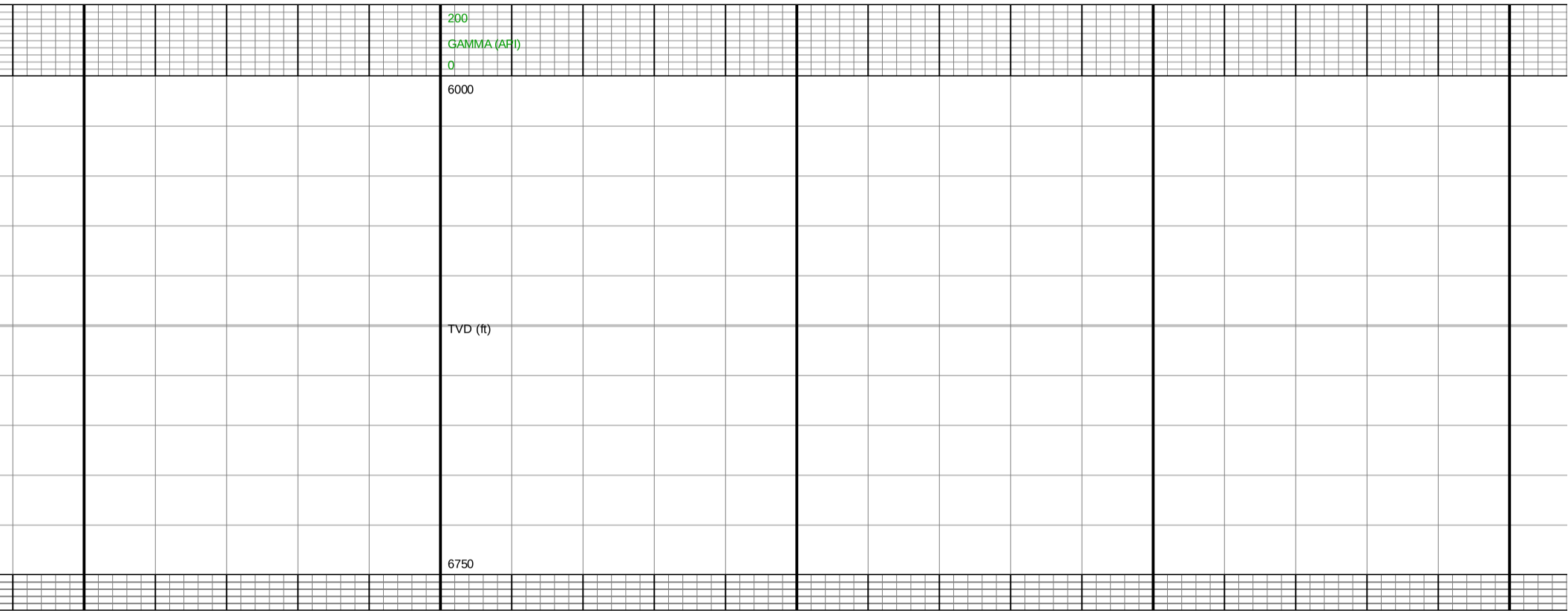
16,340
16,350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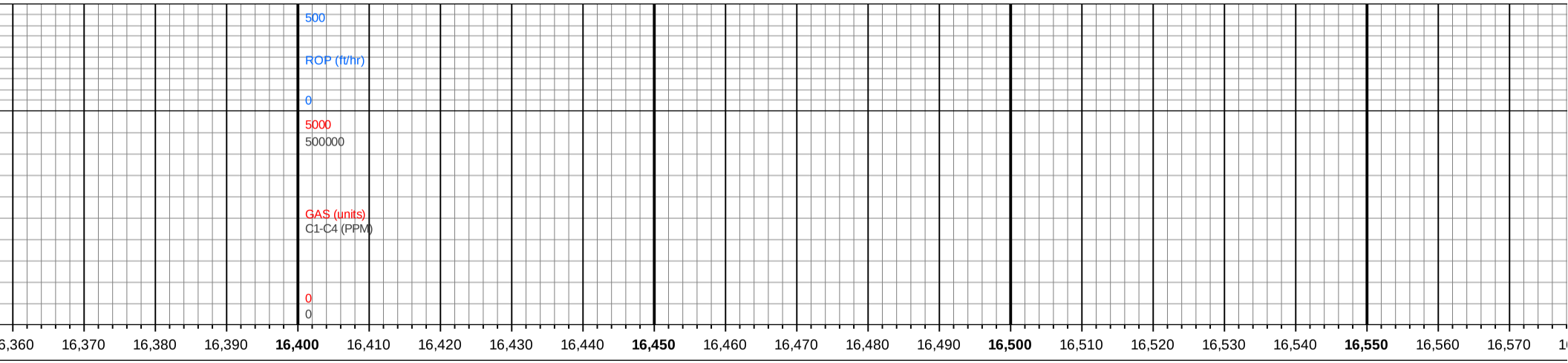
6000
TVD (ft)
6750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ROP (ft/hr)
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5000
500000
GAS (units)
C1-C4 (PPM)
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0
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16,370
16,380
16,390
16,400
16,410
16,420
16,430
16,440
16,450
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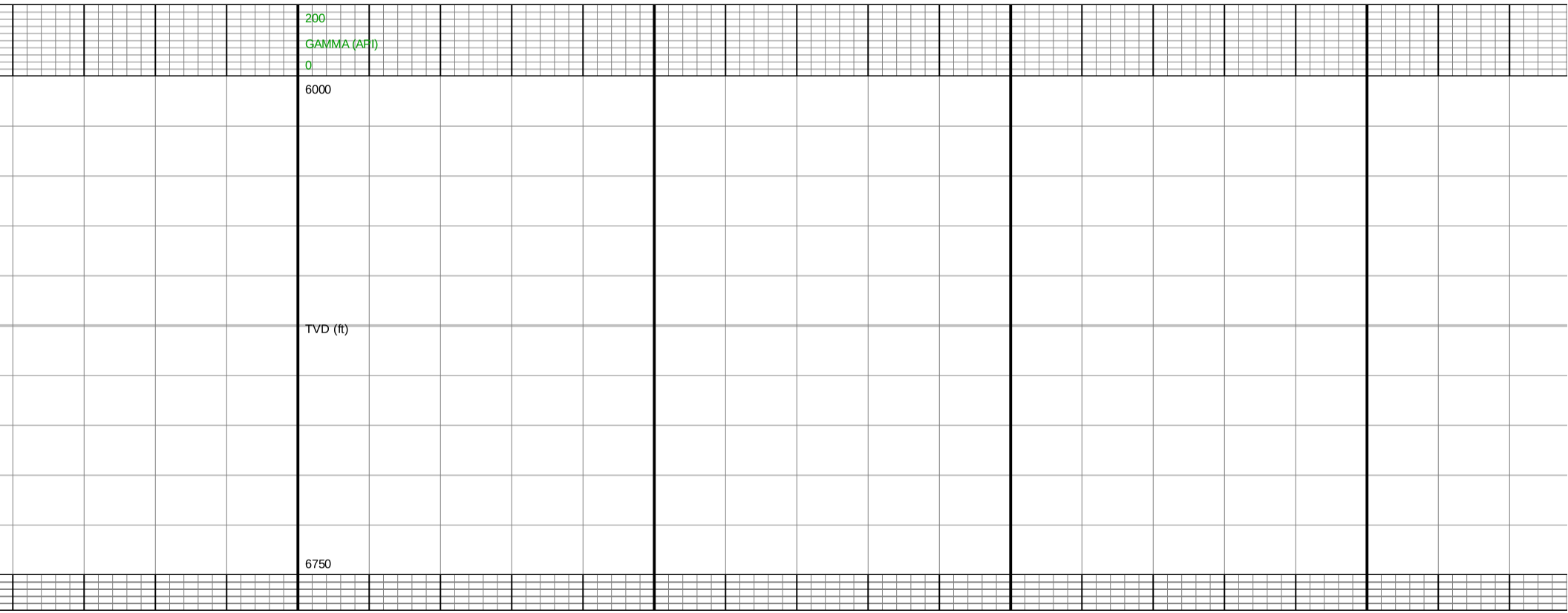
16,540
16,550
16,560
16,570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GAMMA (API)
0
6000
TVD (ft)
6750

500

ROP (ft/hr)

0

5000

500000

GAS (units)

C1-C4 (PPM)

0

0

6,580 16,590 **16,600** 16,610 16,620 16,630 16,640 **16,650** 16,660 16,670 16,680 16,690 **16,700** 16,710 16,720 16,730 16,740 **16,750** 16,760 16,770 16,780 16,790

200

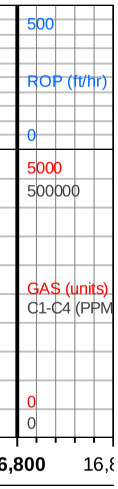
GAMMA (API)

0

6000

TVD (ft)

6750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500000
GAS (units)
C1-C4 (PPM
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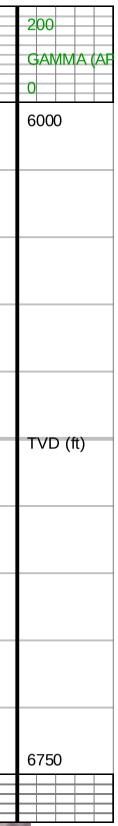
16,8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GAMMA (AP
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6000
TVD (ft)
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