



# Empirica

Scale: 5' / 100'  
Measured Depth Log

**Well Name** Windsor\_LV\_D\_14-H\_Horizontal

**Location** SEC.14-T6N-R67W

**State** Colorado

**County** Weld

**Country** USA

**Rig Number** H&P 319

**API Number** 051233817300

**AFE #** 14-755

**Region** DJ Basin

**Field** Wattenberg

**Spud Date** 12/2/2014

**Drilling Completed** 12/6/2014

**Ground Elevation** 4846'

**K.B. Elevation** 4896'

**Logged Interval** 6,850' To 11,620'

**Total Depth** 4,770'

**Formation** Codell

**Type of Drilling Fluid** WBM

## Operator

**Company** Extraction Oil & Gas, LLC

**Address** 1888 Sherman St, Suite 200  
Denver, Colorado 80203

## Geologist

**Name** Justin Perry & Geoff Sterling

**Company** ALS Empirica

**Address** 6360 W Sam Houston Pkwy N  
Suite 100  
Houston, TX 77041

## Other

**Logging Start Date** 12/03/2014

















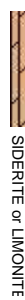









## Zone Color Coding

Oil  
Note  
Error





Condensate  
Core  
Water

Gas  
Pressure  
Seal

## Rock Types

 UNKNOWN	 CHERT	 SILTSTONE	 IGNEOUS
 ANHYDRITE	 COAL	 SANDSTONE	 METAMORPHIC
 GYPSUM	 MARLSTONE	 CONGLOMERATE	 CEMENT
 SALT	 CHALK	 BRECCIA	 SILTY SH
 SIDERITE or LIMONITE	 SHALE	 TILL	 SHY SS
 LIMESTONE	 SHALE GRAY	 BENTONITE	
 DOLOMITE	 SHALE COLORET	 TUFF	


## Other

 ORGANIC	 FAULT
 PINPOINT	 FLOW





## Oil Show

 DEAD	 VUGGY	 GAS SHOW
 EVEN		

## Engineering

 QUESTIONABLE	 NORMAL
 SPOTTED STAINING	 OIL SHOW

## Casing

## Porosity

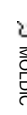
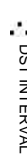

		
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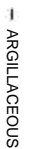

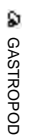






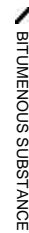

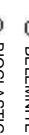
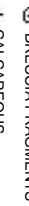
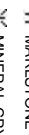

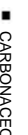
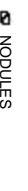



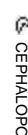
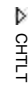

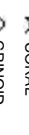



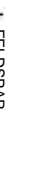




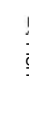
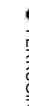

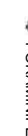
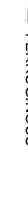





		
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## Accessories

 FOSSIL		
		
		
		
		
		
		
		
		
		
		
		
		
		
		

## Minerals

# Symbols

 WIRELINE TESTED - RT  FINELY XLN

FORMATION TOP  MN DEPTH  BS GRAINSTONE

HOW  L LITHOGRAPHIC

 MN DEPTH  MX MICROXLN

 L FAULT  MS MUDSTONE

 ROUNDED  PS PACKSTONE

 SUBANG  WS WACKESTONE

 SE FAULT  F SUBRND

ALL CORE (LEFT)

## Sorting

ALL CORE (RIGHT)  M MODERATE


## Textures

 BOUNDSTONE

 POOR

 CHALKY

 WELL

 CRYPTOXLN

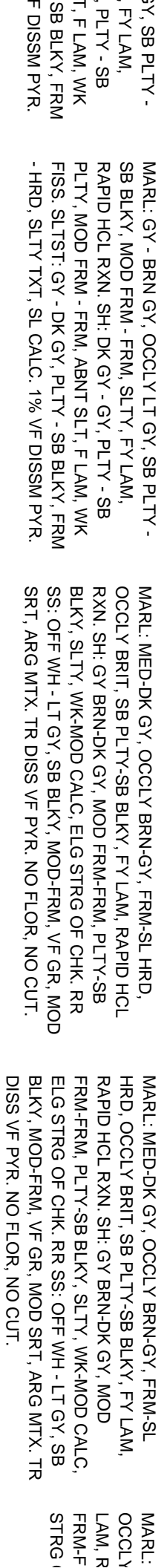
NE TESTED - LEFT  E EARTHY

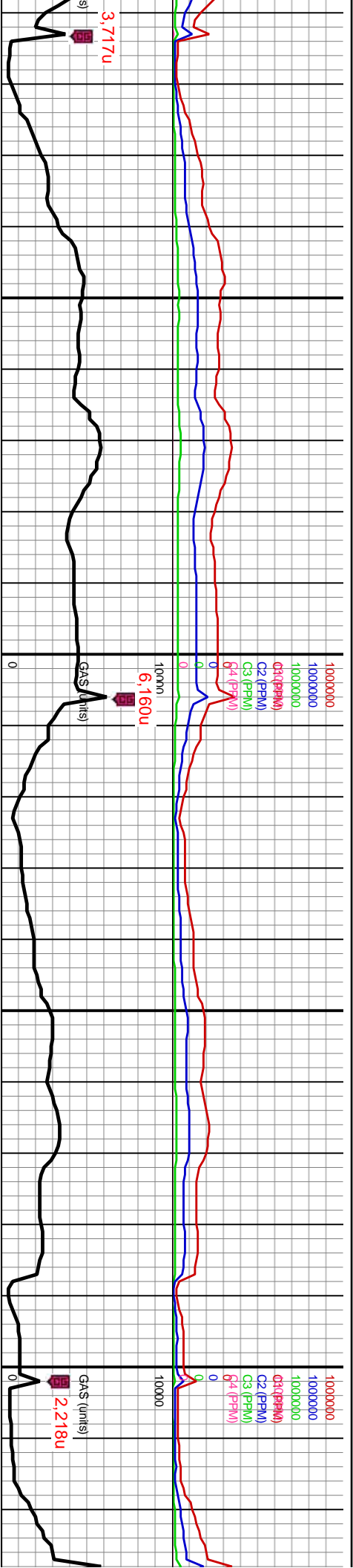












MED-DK GY, OCCLY BRN-GY, FRM-SL HRD, BRIT, PREDY SB PLTY, SME SB BLKY, FY APID HCL RXN. SH: GY BRN-DK GY, MOD FRM-FRM, PLTY-SB BLKY, SLTY, MOD CALC, ELG STRG OF CHK. TR DISS VF PYR. NO FLOR, NO CUT.

MARL: MED-DK GY, OCCLY BRN-GY, FRM-SL HRD, OCCLY BRIT, PREDY SB PLTY, SME SB BLKY, FY LAM, RAPID HCL RXN. SH: GY BRN-DK GY, MOD FRM-FRM, PLTY-SB BLKY, SLTY, MOD CALC, ELG STRG OF CHK. TR DISS VF PYR. NO FLOR, NO CUT.

MARL: MED-DK GY, OCCLY BRN-GY, FRM-SL HRD, OCCLY BRIT, PREDY SB PLTY, SME SB BLKY, FY LAM, RAPID HCL RXN. SH: GY BRN-DK GY, MOD FRM-FRM, PLTY-SB BLKY, SLTY, MOD CALC, ELG STRG OF CHK. TR DISS VF PYR. NO FLOR, NO CUT.

CHK: OFF WH - CRPTXL, VF-F DK GY, PLTY - LT GY - GY, FR MOD SRD, VV GY - LT GY, TR RND. TR BENT,



MD: 7.342' Inclination: 62.4° Azimuth: 270.1° TVD: 7.161.8'

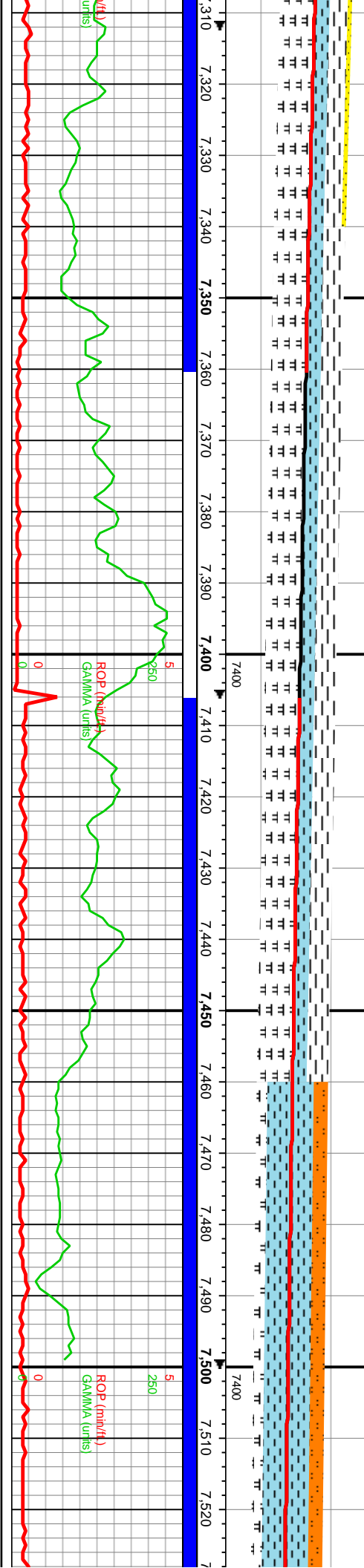
WOB: 27.4 RPM: 30 PP: 4600 SPM: 140

MD: 7.437' Inclination: 69.6° Azimuth: 267.9° TVD: 7.199.9'

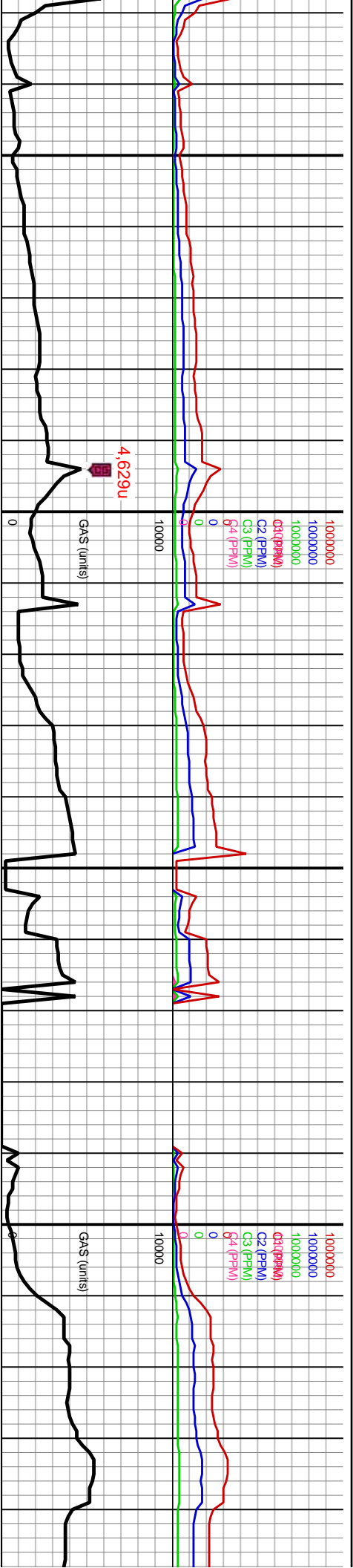
MD: 7.437' Inclination: 69.6° Azimuth: 267.9° TVD: 7.199.9'

MUD IN MW 10.2 VIS 36

MUD IN MW 10.2 VIS 37







LT GY, PLTY-SB BLKY, MOD FRM-SL HRD,  
GR SLT TO ARG MTX, RAPID HCL RXN. MARL:  
SSB PLTY, FRM - SL HRD, MOD CALC. SLTST:  
M - SL HRD, BRIT, SB PLTY-SB BLKY, PLY -  
WK CALC, TR VF DISSM PYR. FEW SCAT SD:  
NSL, SB BLKY, FRM - SL HRD, PLY SRTD, SB  
NO FLOR, NO CUT.

PREDY SD: LT GY, TRNSL TO TRNSP, FRI-SL HRD,  
OCCLY BRIT, SB ANG-SB RND, PLY - MOD SRT, QTZ  
ARENITE, VF - F GR, CAL CMT. CHK: OFF WH - LT GY,  
PLTY-SB BLKY, MOD FRM-SL HRD, CRPTXL, VF-F GR SLT  
TO ARG MTX, RAPID HCL RXN. MARL: DK GY, PLTY - SB  
PLTY, FRM - SL HRD, MOD CALC. VF DISSM PYR. NO  
FLOR, NO CUT.

SD: LT GY - LT BRN GY, TRNSL TO TRNSP, SB BLKY, OCCLY SB  
PLTY, FRI - SL FRI, OCCLY BRIT, SB ANG - SB RND, MOD - W SRT,  
QTZ ARENITE, VFU - ML SIZE, DOMINANTLY SIL CMT, V WK CALC,  
TR GLAU. SLTST: LT GY, SB PLTY - SB BLKY, MOD FRM - FRM, VF  
GRND. MARL: DK GY, SB PLTY, MOD FRM, VF LAM, MOD CALC. CHK:  
GY BRN, SB PLTY - SB BLKY, FRM - SL HRD, VF LAM RAPID HCL  
RXN. TR VF DISSM PYR. ABNT CMT. NO FLOR, NO CUT.



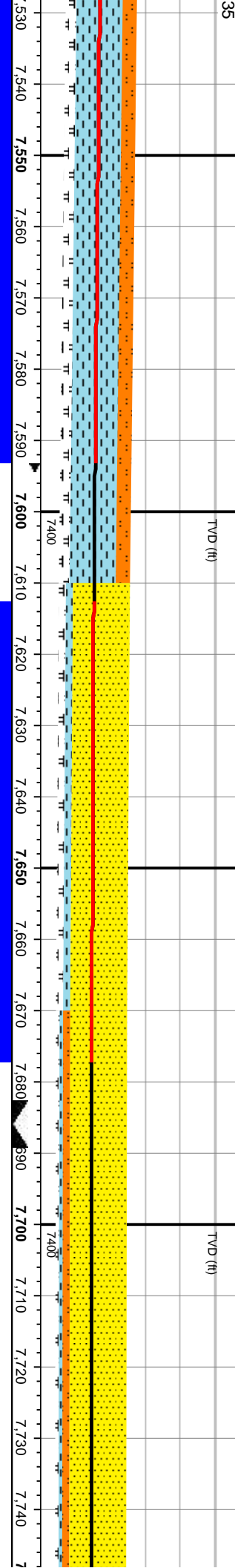
531'  
ation: 72.9°  
uth: 267.4°  
7.230.1°

WOB: 72.3  
RPM: 0  
PP: 4467  
SPM: 140

MD: 7.62°  
Inclination: 83.6°  
Azimuth: 267.9°  
TVD: 7.249.0°

TOOH at 7686' MD  
For Intermediate  
Casing @ 02:04 on  
12/04/2014.  
Resumed Drilling @  
21:30 on 12/05/2014

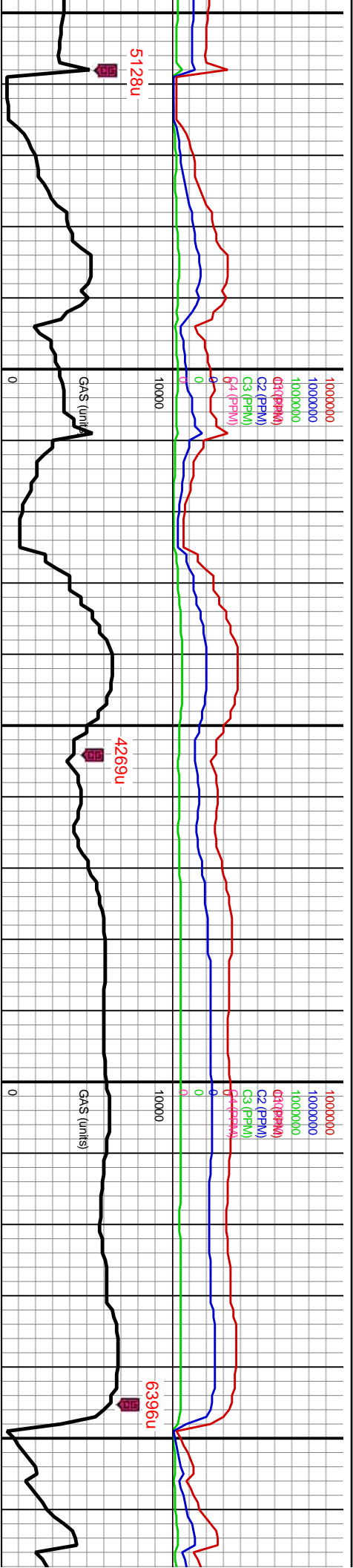
MD: 7.71°  
Inclination: 89.7°  
Azimuth: 268.1°  
TVD: 7.254.1°



MINDEPTH  
12/4/14

ROP (min/h)  
GAMMA (units)

ROP (min/h)  
GAMMA (units)



SD: LT GY - LT BRN GY, TRNSL TO TRNSP, SB BLKY, OCCLY SB  
PLTY, FRI - SL FRI, OCCLY BRIT, SB ANG - SB RND, MOD - W SRT,  
QIZ ARENITE, VFU - ML SIZE, DOMINANTLY SIL CMT, V WK CALC,  
TR GLAU. SLTST: LT GY, SB PLTY - SB BLKY, MOD FRM - FRM, VF  
GRND. MARL: DK GY, SB PLTY, MOD FRM, VF LAM, MOD CALC. CHK:  
GY BRN, SB PLTY - SB BLKY, FRM - SL HRD, VF LAM RAPID HCL  
RXN. TR VF DISSM PYR. ABNT CMT. NO FLOR, NO CUT.

SD: LT GY - LT BRN GY, TRNSL TO TRNSP, SB BLKY, OCCLY SB  
PLTY, FRI - SL FRI, OCCLY BRIT, SB ANG - SB RND, MOD - W SRT,  
QIZ ARENITE, VFU - ML SIZE, DOMINANTLY SIL CMT, WK - MOD  
CALC, TR GLAU. SLTST: LT GY, SB PLTY - SB BLKY, MOD FRM -  
FRM, VF GRND. SCAT MARL: DK GY, SB PLTY, MOD FRM, VF LAM,  
MOD CALC. TR VF DISSM PYR. NO FLOR, NO CUT.

SD: LT GY - LT BRN GY, TRNSL TO TRNSP, SB BLKY, OCCLY SB  
PLTY, FRI - SL FRI, OCCLY BRIT, SB ANG - SB RND, MOD - W SRT,  
QIZ ARENITE, VFU - ML SIZE, DOMINANTLY SIL CMT, WK - MOD  
CALC, TR GLAU. SLTST: LT GY, SB PLTY - SB BLKY, MOD FRM - FRM,  
GRND. TR VF DISSM PYR. NO FLOR, NO CUT.

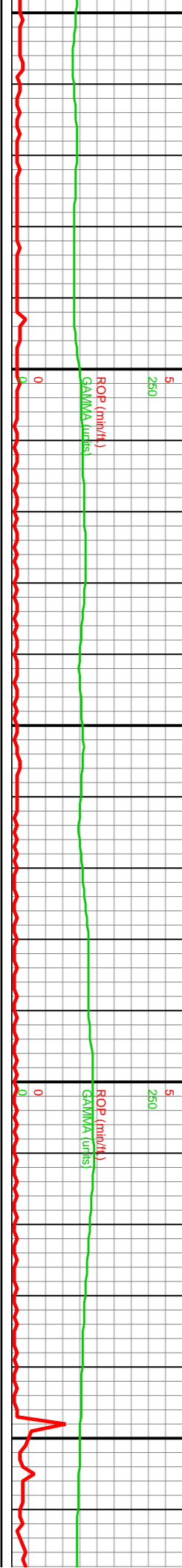
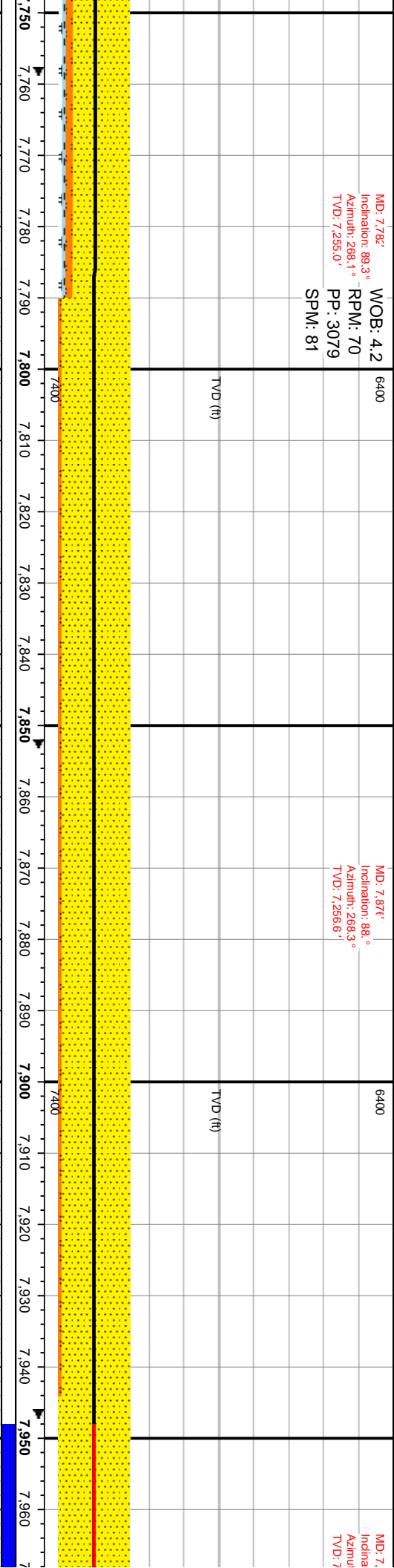


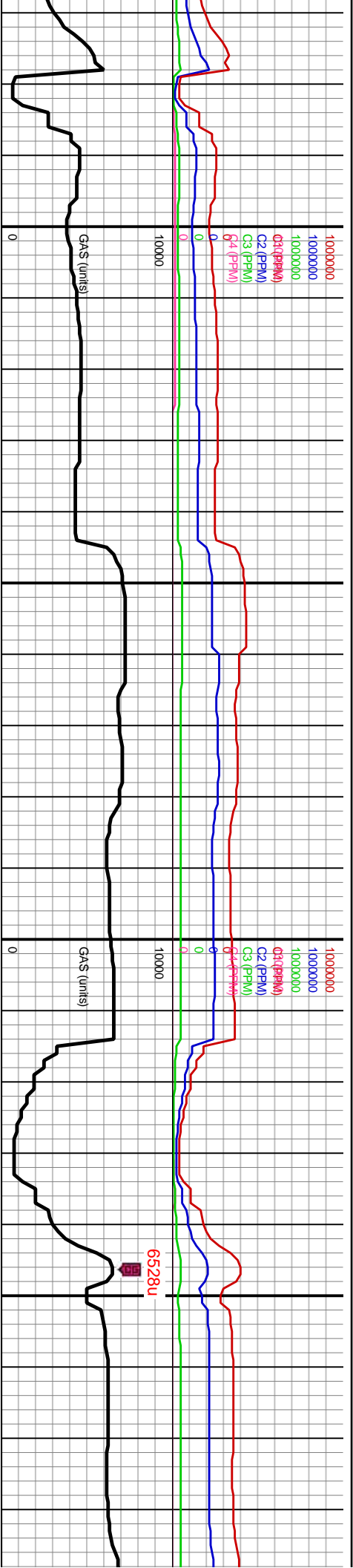
MD: 7.782'  
Inclination: 89.3°  
Azimuth: 288.1°  
TVD: 7.255.0'

WOB: 4.2  
RPM: 70  
PP: 3079  
SPM: 81

MD: 7.876'  
Inclination: 88.°  
Azimuth: 268.3°  
TVD: 7.256.6'

MD: 7.950'  
Inclination: 88.°  
Azimuth: 268.3°  
TVD: 7.256.6'





SD: LT BRN GY, TRNSL TO TRNSP, SB BLKY, OCCLY  
SB PLTY, FRI - SL FRI, OCCLY BRIT, SB ANG - SB  
RND, MOD - W SRT, QTZ ARENITE, VF GRND, MOD  
CALC, TR GLAU, DISSM CARB MAT IN INSTL SPACE.  
TR VF DISSM PYR. NO FLOR, NO CUT.

SD: LT BRN GY, TRNSL TO TRNSP, SB BLKY, OCCLY  
SB PLTY, FRI - SL FRI, OCCLY BRIT, SB ANG - SB  
RND, MOD - W SRT, QTZ ARENITE, VF GRND, MOD  
CALC, TR GLAU, DISSM CARB MAT IN INSTL SPACE.  
TR VF DISSM PYR. NO FLOR, NO CUT.

SD: LT BRN GY, TRNSL TO TRNSP, SB BLKY, OCCLY  
SB PLTY, FRI - SL FRI, OCCLY BRIT, SB ANG - SB  
RND, MOD - W SRT, QTZ ARENITE, VF GRND, MOD  
CALC, TR GLAU, DISSM CARB MAT IN INSTL SPACE.  
TR DISSM PYR, SCAT CMT. NO FLOR, NO CUT.

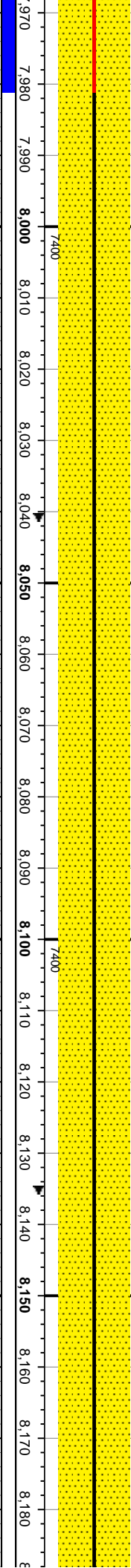


WOB: 18.3  
RPM: 70  
PP: 4043  
SPM: 86

TVD (ft)

TVD (ft)

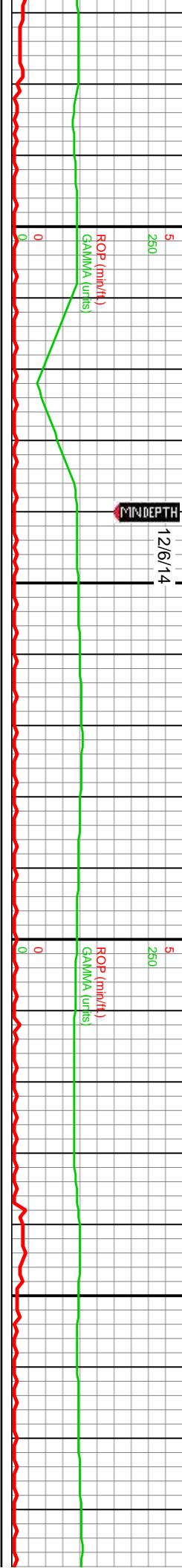
MD: 8.15'  
Inclination: 90.3°  
Azimuth: 269.7°  
TVD: 7.258.2'

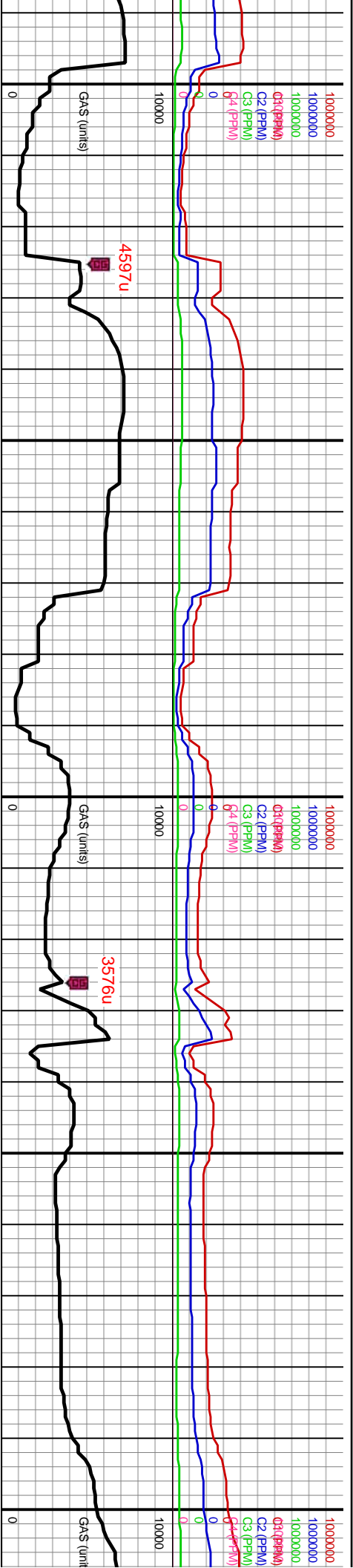


MINDEPTH  
12/6/14

ROP (min/ft)  
GAMMA (units)

ROP (min/ft)  
GAMMA (units)



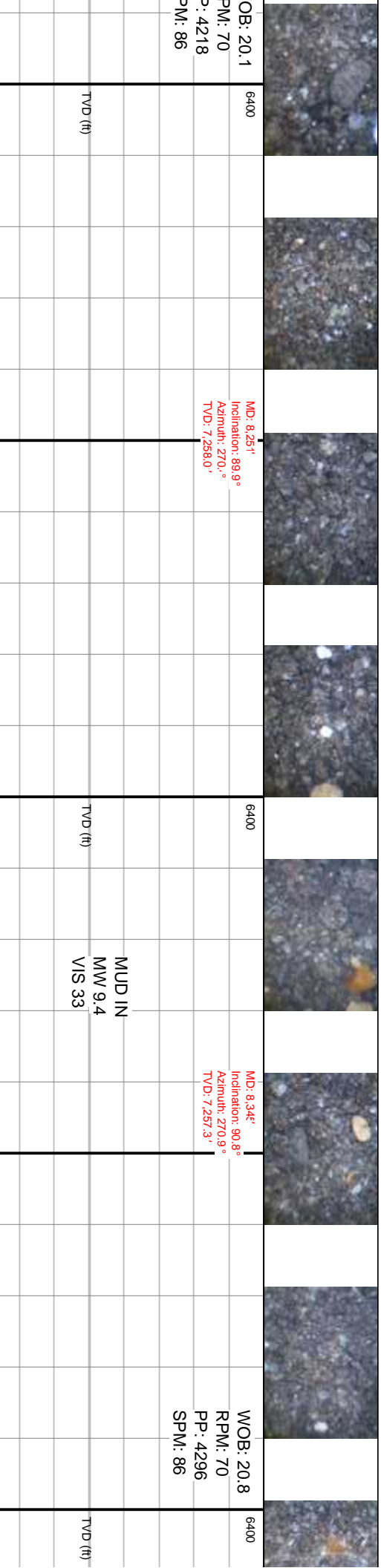


SD: LT BRN GY, TRANSL TO TRANSP, SB BLKY, OCCLY  
SB PLTY, FRI - SL FRI, OCCLY BRIT, SB ANG - SB  
RND, MOD - W SRT, QTZ ARENITE, VF GRND, MOD  
CALC, TR GLAU, DISSM CARB MAT IN INSTL SPACE.  
TR DISSM PYR, SCAT CMT. NO FLOR, NO CUT.

SD: LT BRN GY, TRANSL TO TRANSP, SB BLKY, FRI -  
SL FRI, OCCLY BRIT, SB ANG - SB RND, MOD - W  
SRT, QTZ ARENITE, F - VF GRND, WK CALC, TR  
GLAU, DISSM CARB MAT IN INSTL SPACE. TR  
DISSM PYR, RR CMT. NO FLOR, NO CUT.

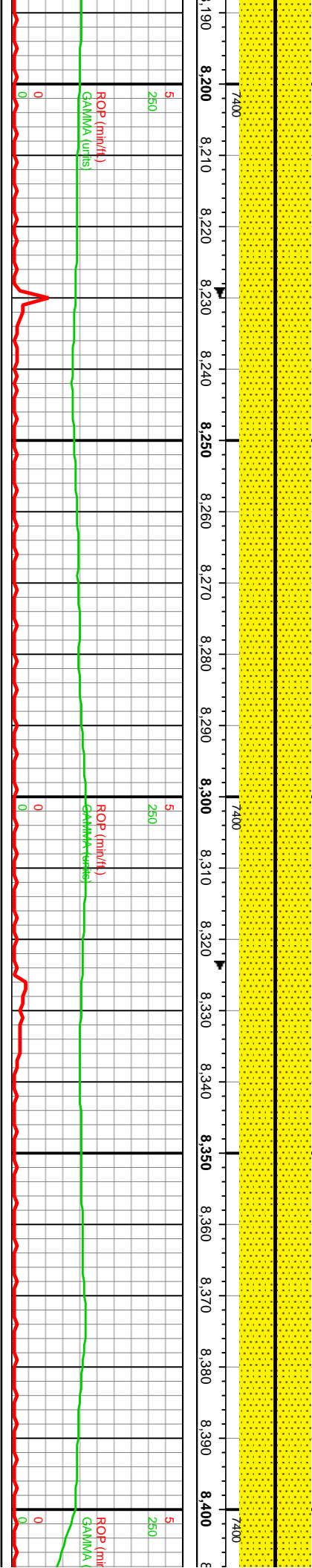
SD: LT BRN GY, TRANSL TO TRANSP, SB BLKY, FRI -  
SL FRI, OCCLY BRIT, SB ANG - SB RND, MOD - W  
SRT, QTZ ARENITE, F - VF GRND, WK CALC, TR  
GLAU, DISSM CARB MAT IN INSTL SPACE. TR  
DISSM PYR, RR CMT. NO FLOR, NO CUT.

SD: LT  
FRI, BR  
W SRT  
DISSM  
PYR, R

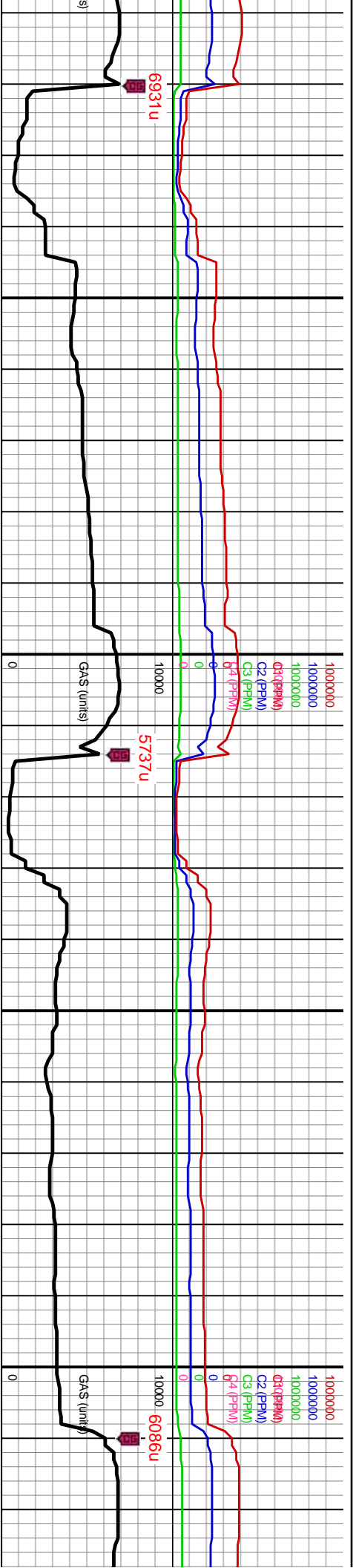


MUD IN  
MW 9.4  
VIS 33

WOB: 20.8  
RPM: 70  
PP: 4296  
SPM: 86







SD: LT BRN, TRANSL TO TRANSP, SB BLKY, FRI - SL  
FRI, BRIT, QIZ ARENITE, SB ANG - SB RND, MOD -  
W SRT, F - VF GRND, WK CALC, TR GLAU, OCC  
DISSM CARB MAT IN INSTL SPACE. TR DISSM  
PYR, RR CMT. NO FLOR, NO CUT.

SD: LT BRN, TRANSL TO TRANSP, SB BLKY, FRI - SL  
FRI, BRIT, QIZ ARENITE, SB ANG - SB RND, MOD -  
W SRT, F - VF GRND, WK CALC, TR GLAU, OCC  
DISSM CARB MAT IN INSTL SPACE. TR DISSM  
PYR, RR CMT. NO FLOR, NO CUT.

SD: LT BRN, TRANSL TO TRANSP, SB BLKY, FRI - SL  
FRI, BRIT, QIZ ARENITE, SB ANG - SB RND, MOD -  
W SRT, F - VF GRND, WK CALC, TR GLAU, OCC  
DISSM CARB MAT IN INSTL SPACE. TR DISSM  
PYR, RR CMT. NO FLOR, NO CUT.

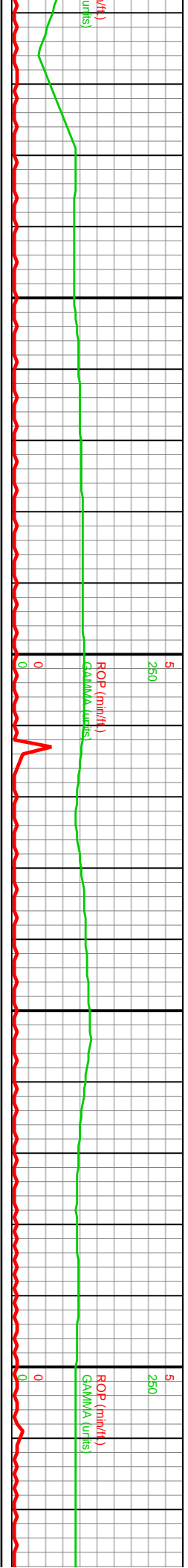
SD: LT BRN, TRANSL, SB BLKY, FRI - SL  
QIZ ARENITE, F - VF GRND, WK CALC, TR GLAU,  
INSTL SPACE, WK CALC, TR GLAU, INSTL SPACE,  
FLOR, NO CUT.

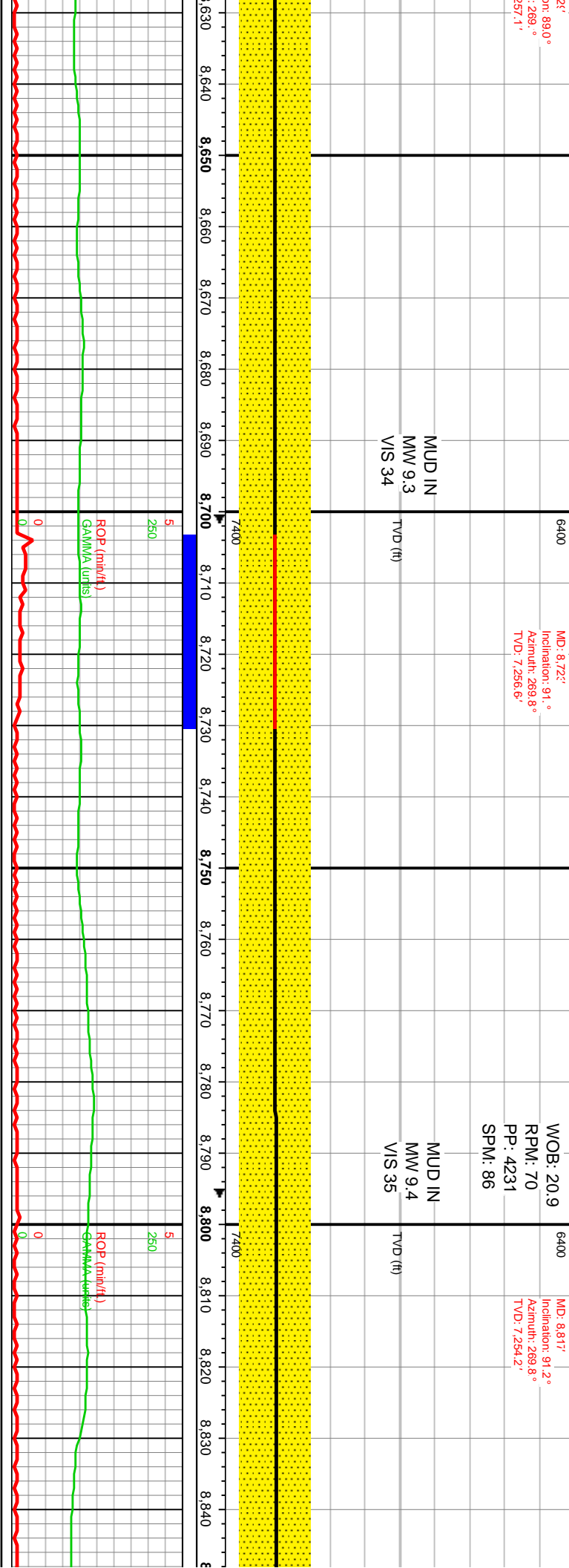
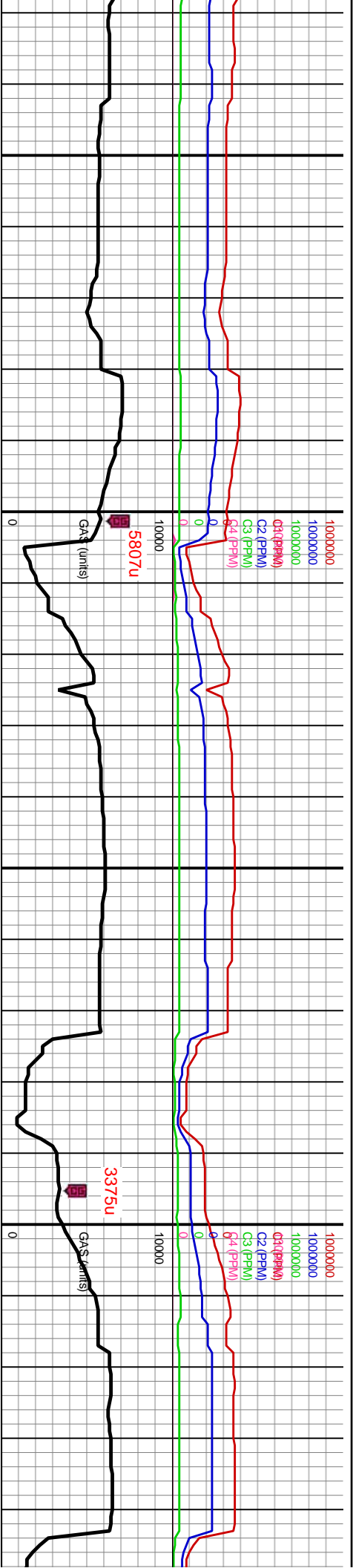


MD: 8.44'  
Inclination: 90.°  
Azimuth: 270.3°  
TVD: 7.256.2'

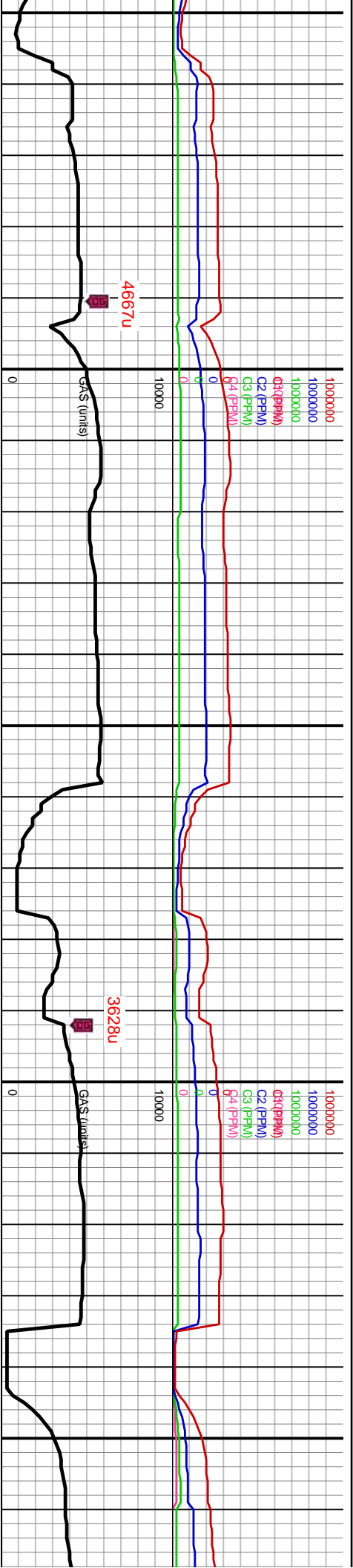
WOB: 20.7  
RPM: 70  
PP: 4237  
SPM: 86

MD: 8.6'  
Inclination: 90.°  
Azimuth: 270.3°  
TVD: 7.256.2'







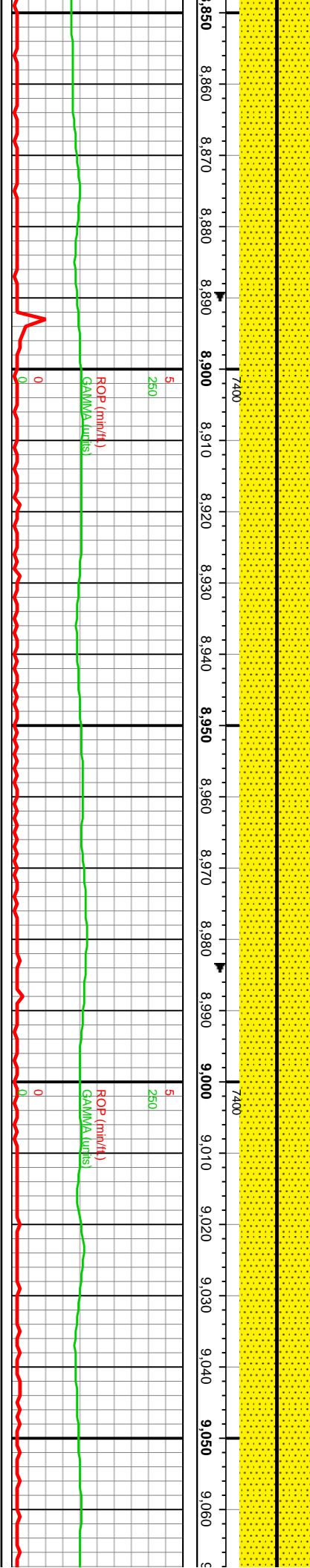
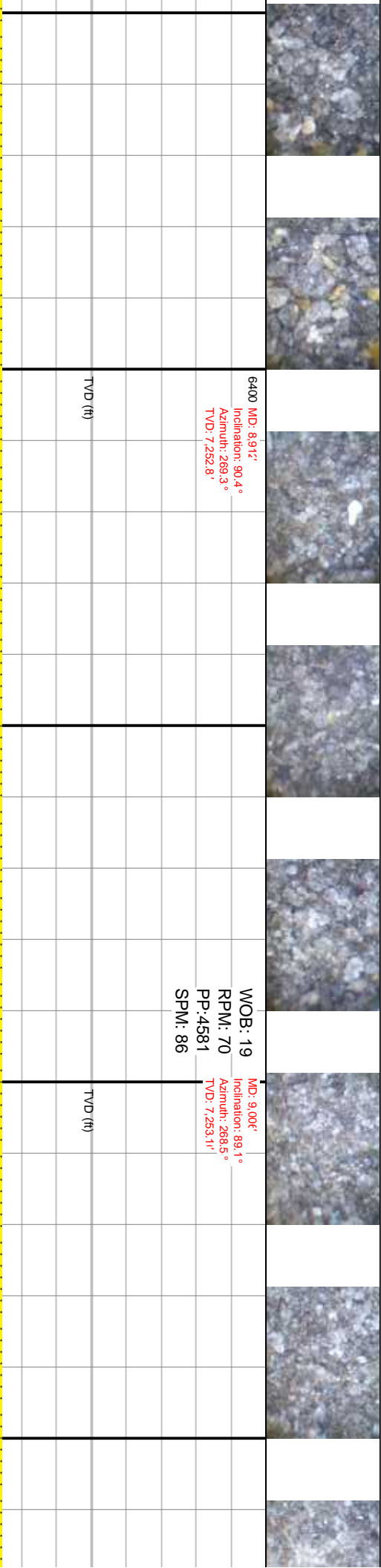


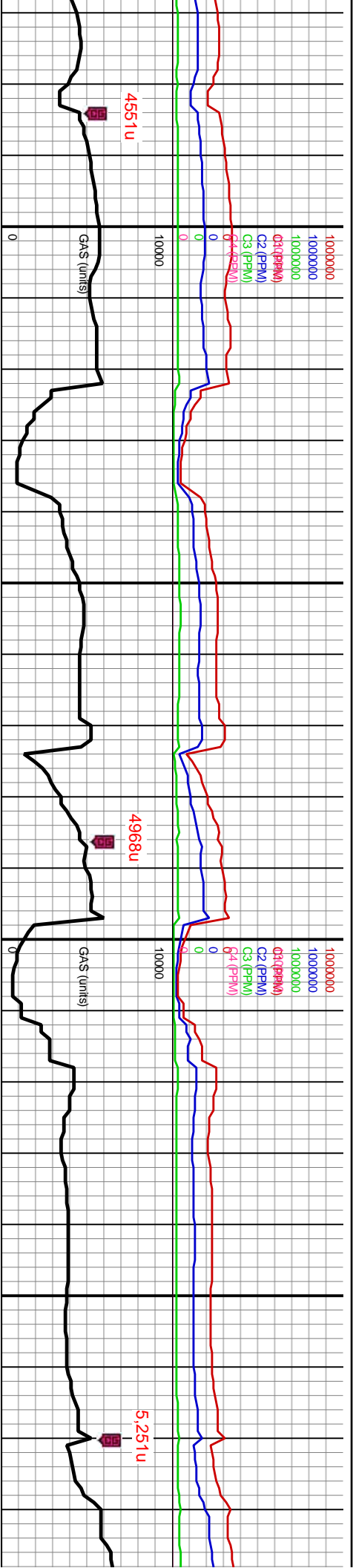
TRNSP, SB BLKY, V/F GRND, SB GLAU, OCC ACE, WK CALC. TR

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL FRI, BRIT, QTZ ARENITE, V/F GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, OCC DISSM CARB MAT IN INTSTL SPACE, WK - MOD CALC. TR DISSM PYR. RR GY SLTST, PLTY - SB PLTY, MOD FRM. NO FLOP, NO CUT.

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL FRI, BRIT, QTZ ARENITE, V/F GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, OCC DISSM CARB MAT IN INTSTL SPACE, WK - MOD CALC. TR DISSM PYR. RR GY SLTST, PLTY - SB PLTY, MOD FRM. NO FLOP, NO CUT.

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL FRI, BRIT, QTZ ARENITE, V/F GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, OCC DISSM CARB MAT IN INTSTL SPACE, WK CALC. TR DISSM PYR. NO FLOP, NO CUT.





SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL FRI, BRIT, QTZ ARENITE, VF GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, OCC DISSM CARB MAT IN INSTL SPACE, WK CALC. TR DISSM PYR. NO FLOR, NO CUT.

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL FRI, BRIT, QTZ ARENITE, VF GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, OCC DISSM CARB MAT IN INSTL SPACE, WK CALC. TR DISSM PYR. NO FLOR, NO CUT.

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL FRI, BRIT, VF GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, WK - MOD CALC. TR DISSM PYR. RR GY SLTST, PLTY - SB PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL FRI, BRIT, QTZ ARENITE, VF GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, WK - MOD CALC. TR DISSM PYR. NO FLOR, NO CUT.



MD: 9.101' 100  
Inclination: 88.1°  
Azimuth: 268.1°  
TVD: 7.255.4'

TVD (ft)

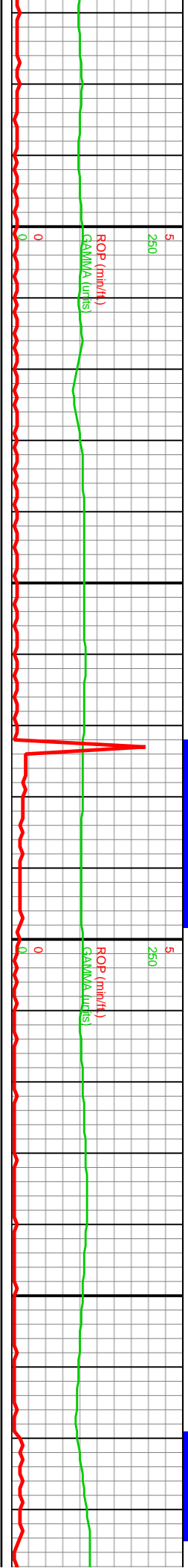
MUD IN:  
MW 9.5  
VIS 35

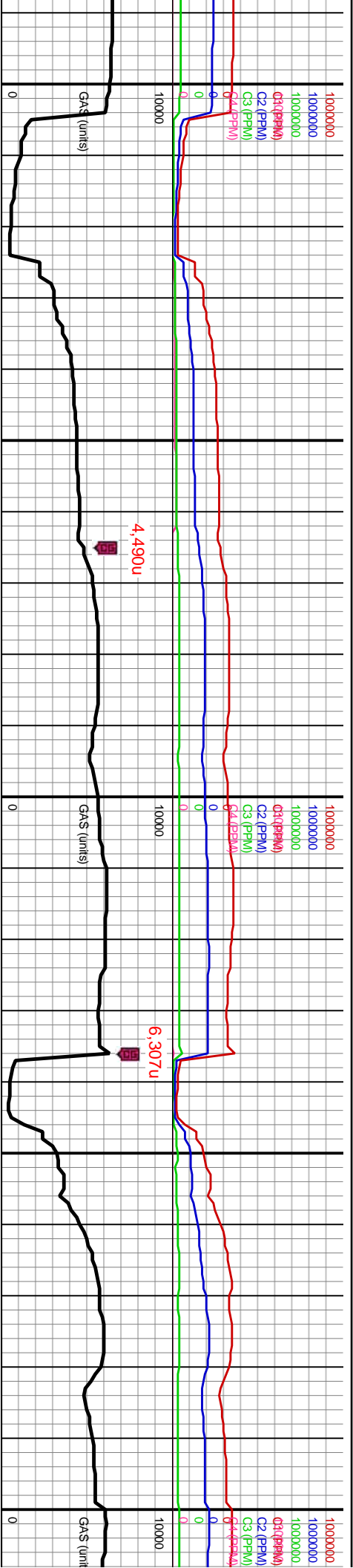
MD: 9.191'  
Inclination: 89.4°  
Azimuth: 268.9°  
TVD: 7.257.4'

WOB: 26.3  
RPM: 0  
PP: 4132  
SPM: 86

TVD (ft)

MD: 9.251'  
Inclination: 88.1°  
Azimuth: 268.1°  
TVD: 7.255.4'



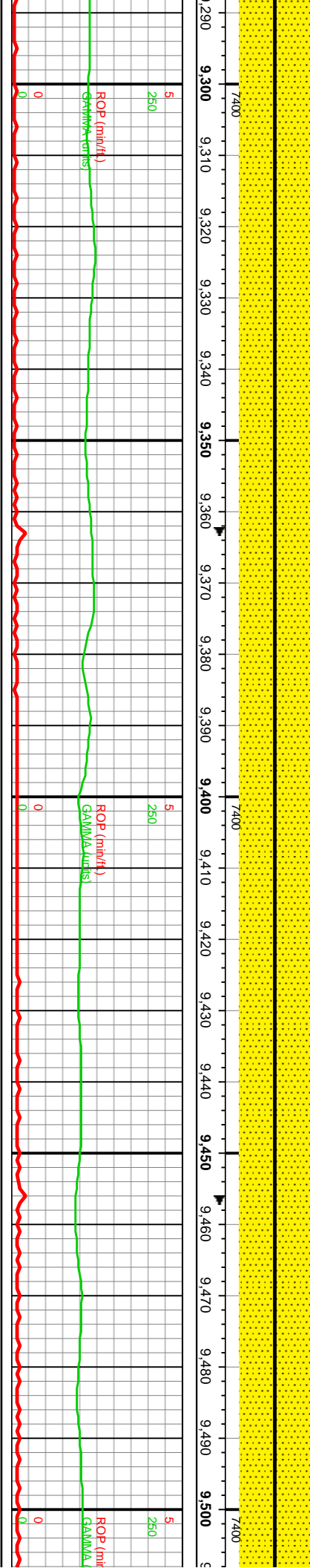
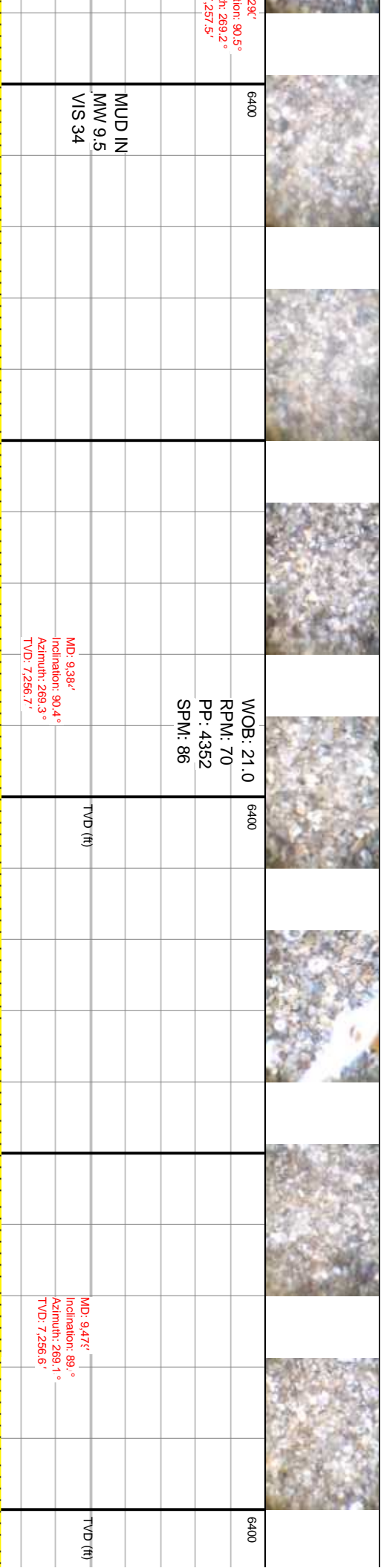


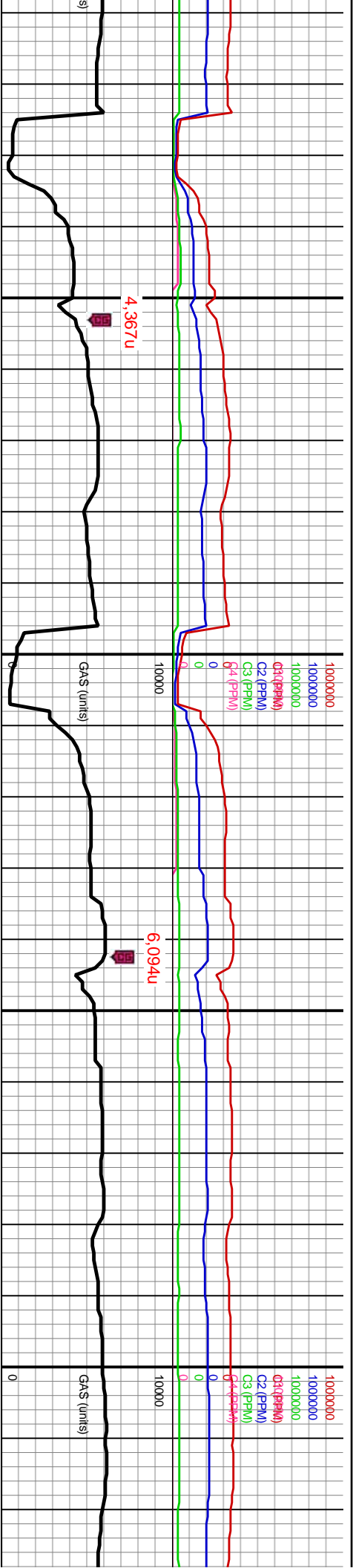
- LT BRN GY, TRNSL - TRNSP, SB  
- SL FRI, BRIT, VF GRND, SB ANG  
MOD - W SRT, TR GLAU, WK -  
C. TR DISSM PYR. RR GY SLTST,  
PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY,  
FRI - SL FRI, BRIT, VF GRND, SB ANG - SB RND, MOD  
- W SRT, TR GLAU, WK - MOD CALC. TR DISSM PYR.  
RR GY SLTST, PLTY - SB PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRNSL - TRNSP,  
SB BLKY, FRI - SL FRI, BRIT, VF GRND, SB  
ANG - SB RND, MOD - W SRT, TR GLAU, WK  
- MOD CALC. TR DISSM PYR. RR GY SLTST,  
PLTY - SB PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRNSL  
FRI - SL FRI, BRIT, VF GRND, SB  
MOD - W SRT, TR GLAU, WK - W  
DISSM PYR. RR GY SLTST, PLT  
FRM.

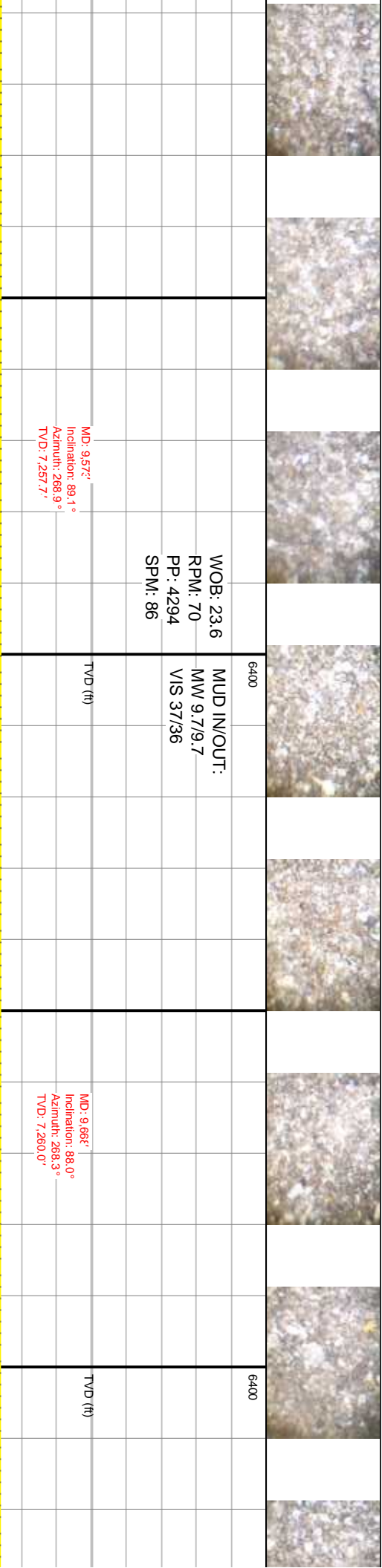




- TRNSP, SB BLKY, 3 ANG - SB RND, MOD CALC. TR  
y - SB PLTY, MOD

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL FRI, BRIT, VF GRND, SB ANG - RND, MOD - W SRT, TR GLAU, WK - MOD CALC. TR DISSM PYR, RR GY SLTST, PLTY - SB PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL FRI, BRIT, VF GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, WK - MOD CALC. TR DISSM PYR, RR GY SLTST, PLTY - SB PLTY, MOD FRM.

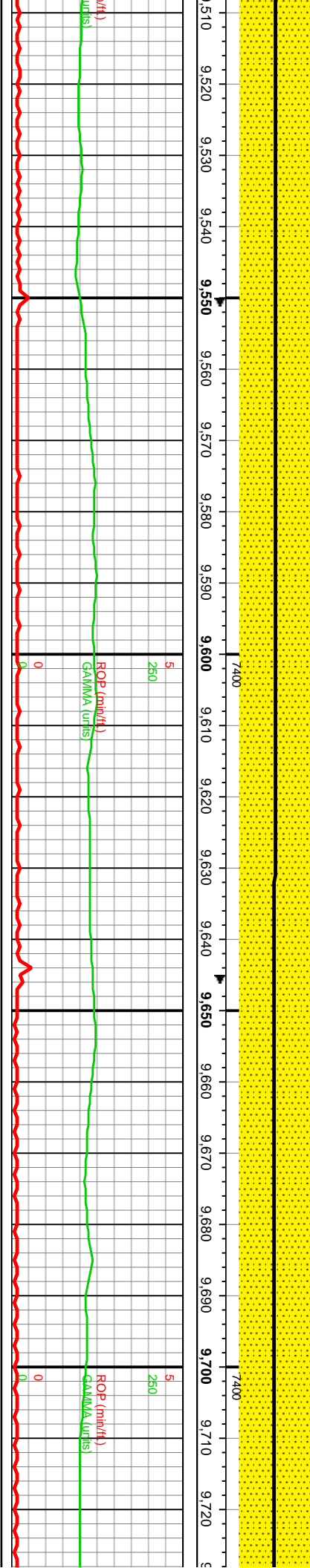


MD: 9,572'  
Inclination: 89.1°  
Azimuth: 268.9°  
TVD: 7,257.7'

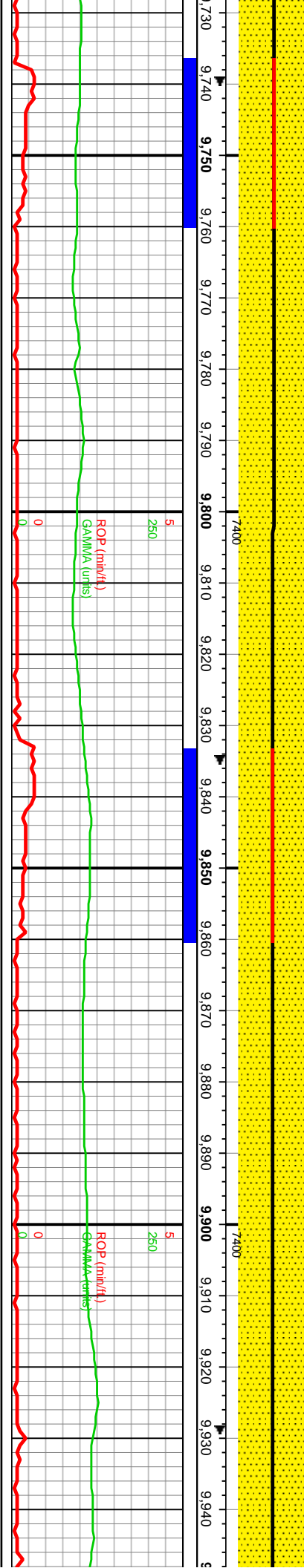
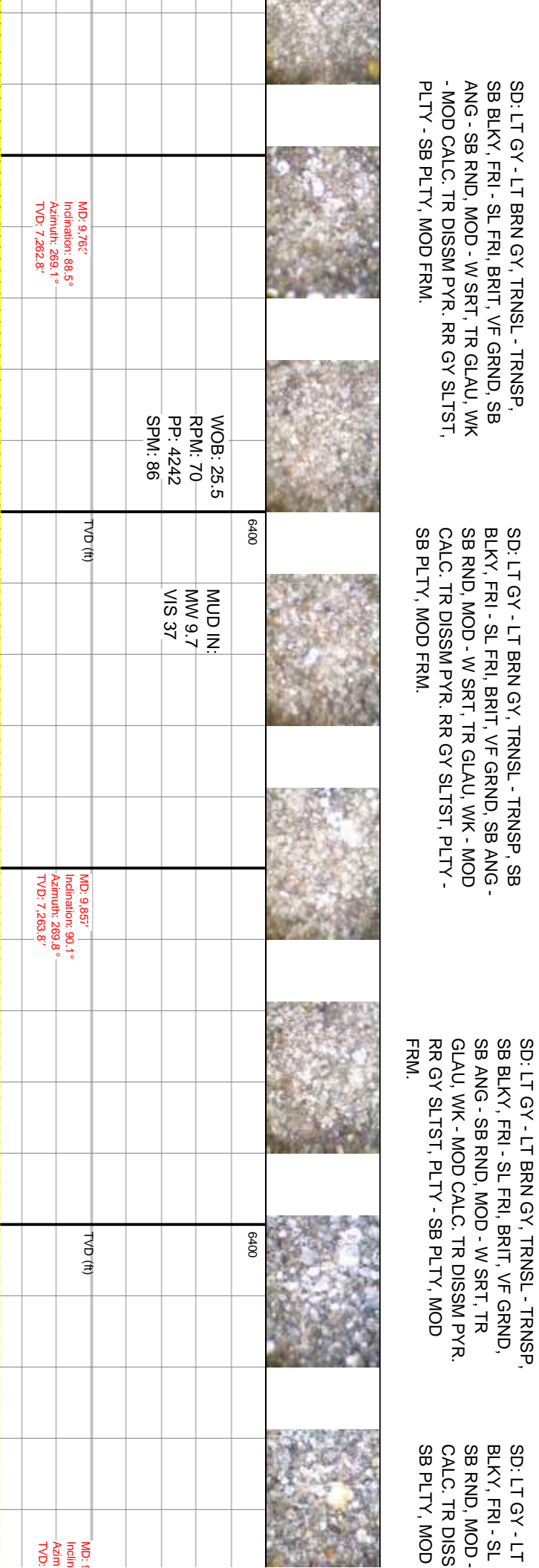
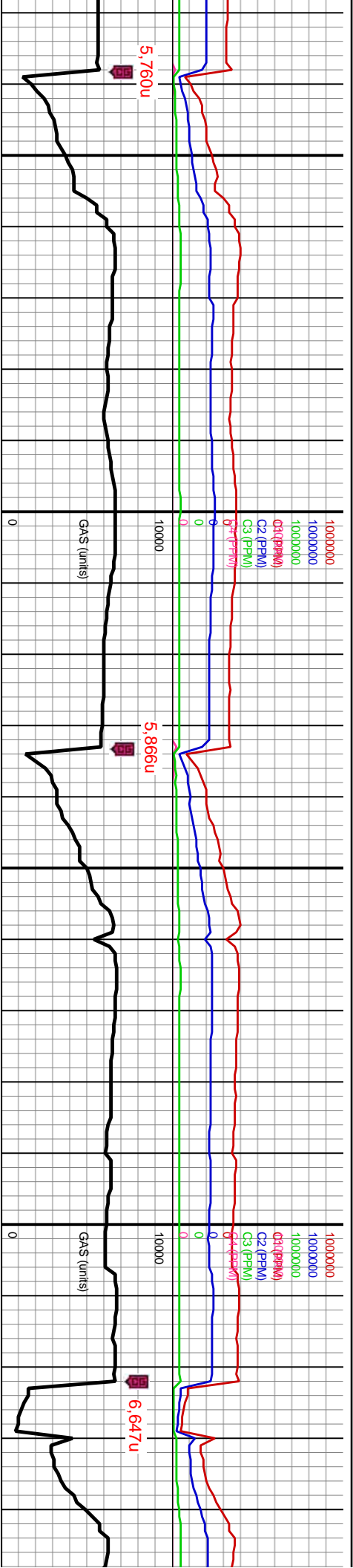
WOB: 23.6  
RPM: 70  
PP: 4294  
SPM: 86

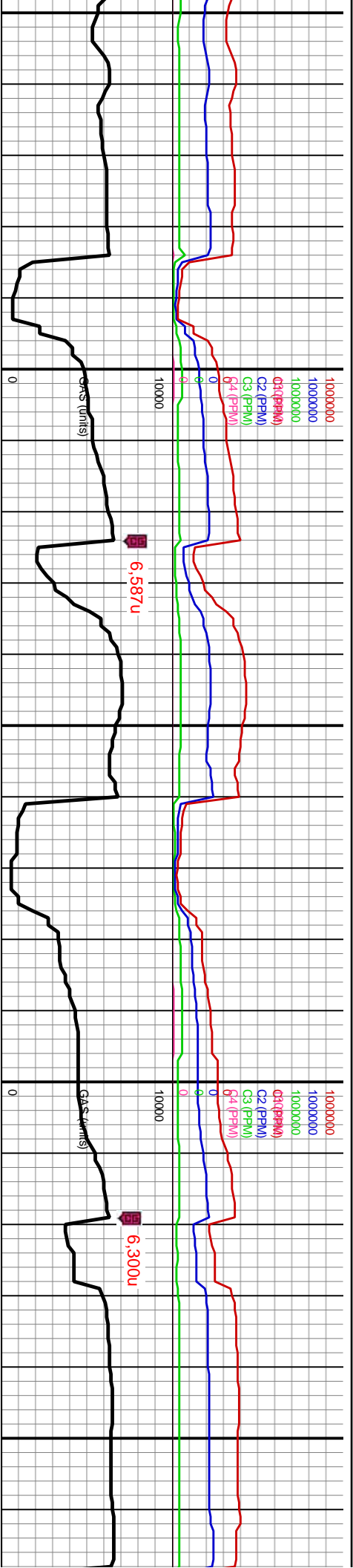
MUD IN/OUT:  
MW 9.7/9.7  
VIS 37/36

MD: 9,662'  
Inclination: 88.0°  
Azimuth: 268.3°  
TVD: 7,260.0'



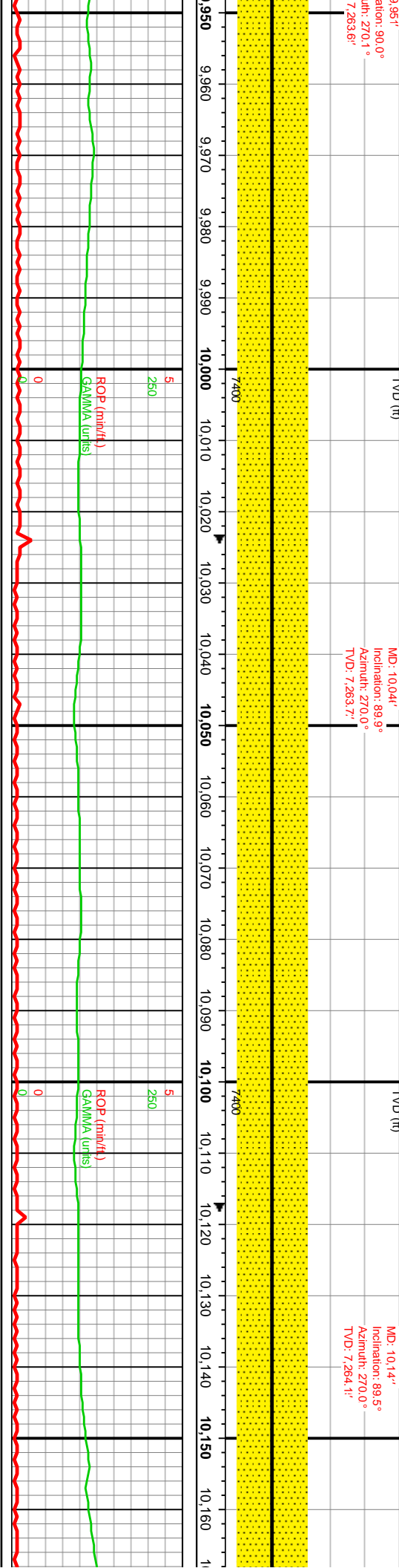
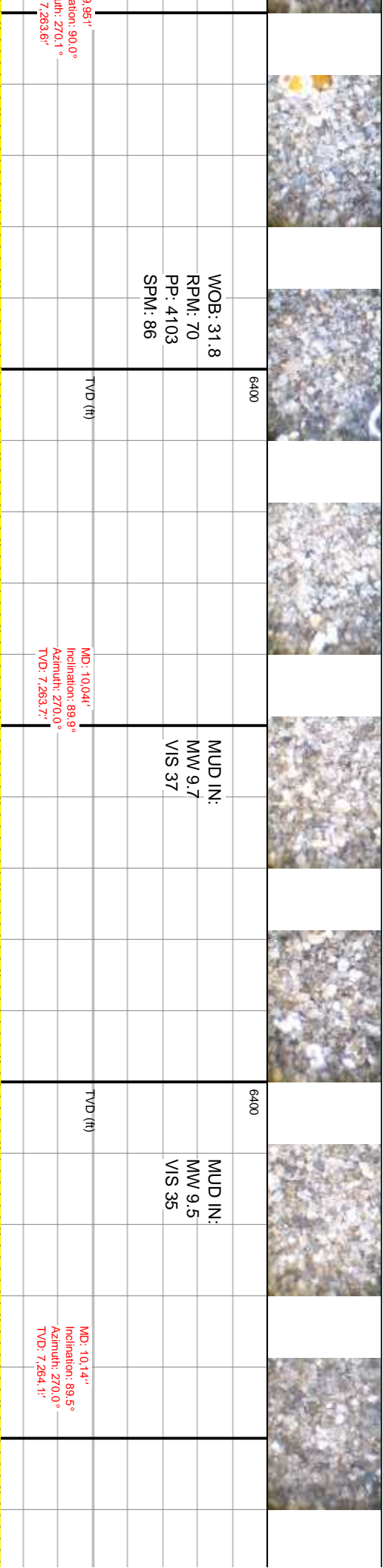




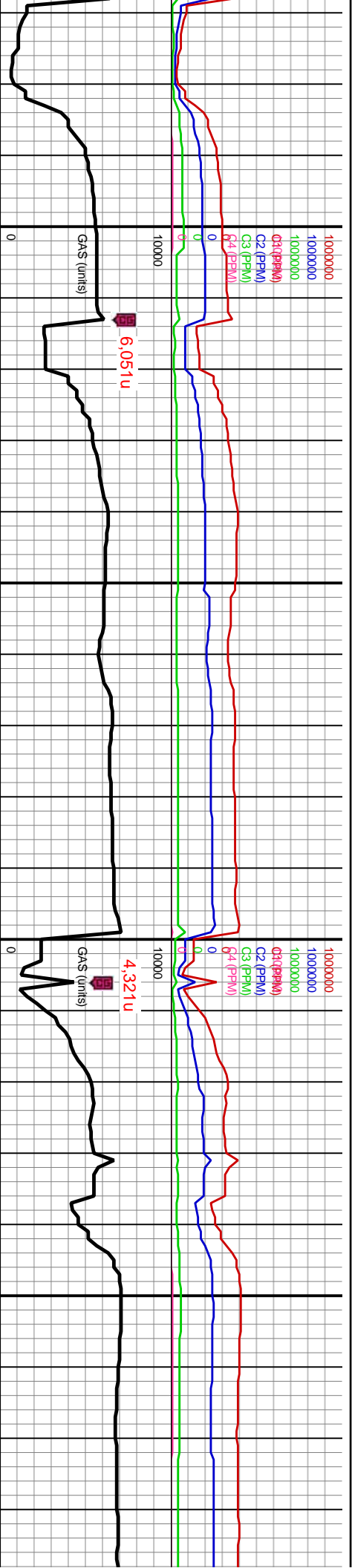


SD: LT GY - LT BRN GY, TRANSL - TRANSP, SB BLKY, FRI - SL FRI, BRIT, VF GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, WK - MOD CALC, TR DISSM PYR, RR GY SLTST, PLTY - SB PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRANSL - TRANSP, SB BLKY, FRI - SL FRI, BRIT, VF GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, WK - MOD CALC, TR DISSM PYR, RR GY SLTST, PLTY - SB PLTY, MOD FRM.





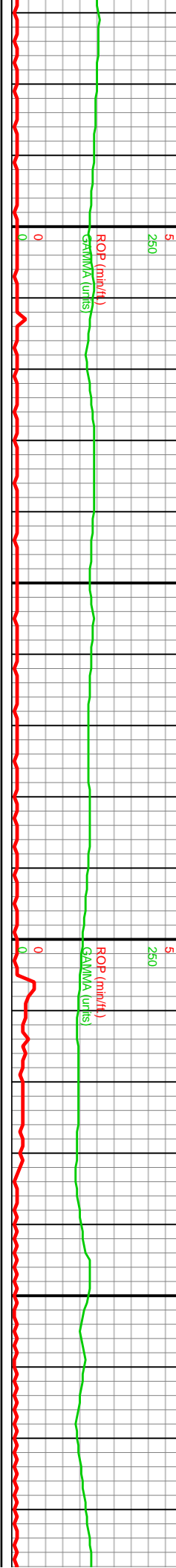
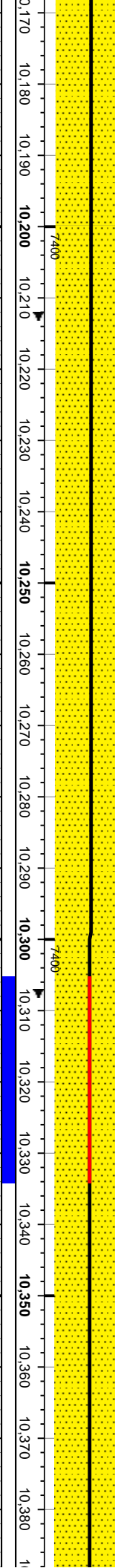
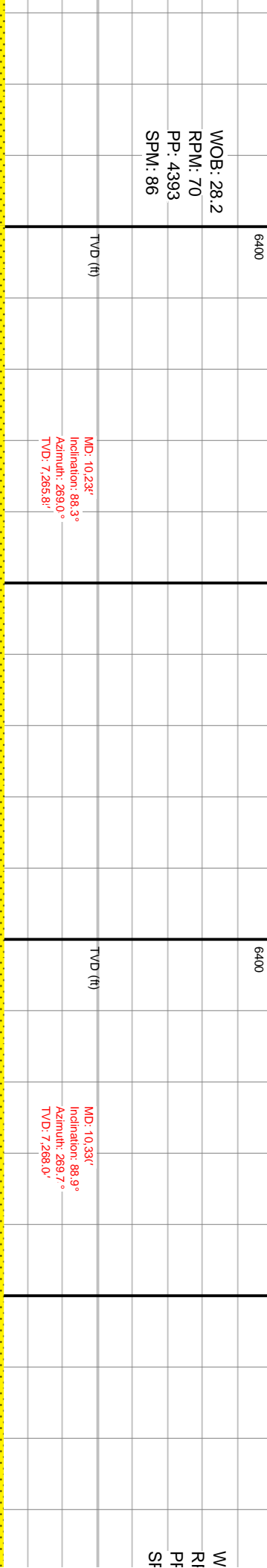


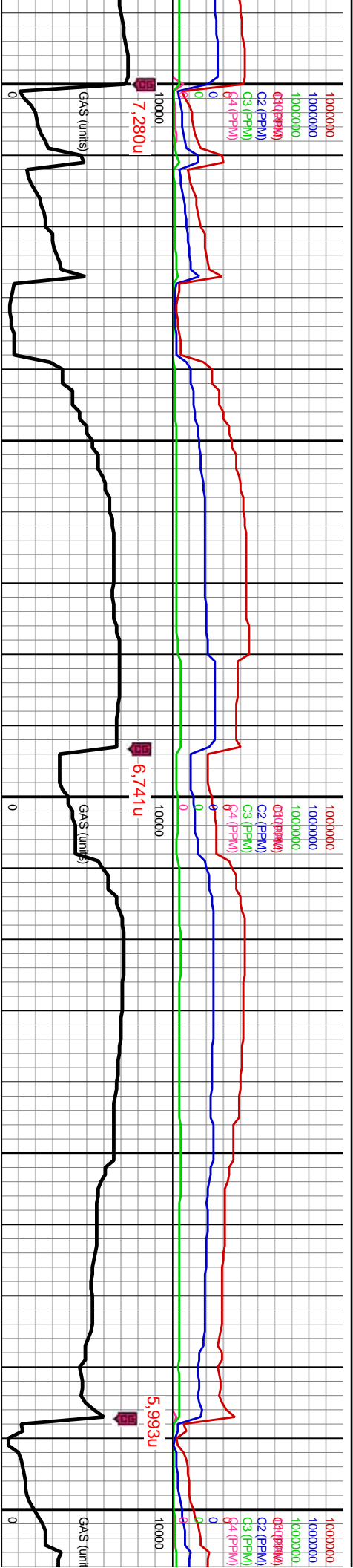
SD: LT GY - LT BRN GY, TRNSL -  
TRNSP, SB BLKY, FRI - SL FRI, BRIT,  
VF GRND, SB ANG - SB RND, MOD - W  
SRT, TR GLAU, WK - MOD CALC. TR  
DISSM PYR. RR GY SLTST, PLTY - SB  
PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRNSL -  
TRNSP, SB BLKY, FRI - SL FRI,  
BRIT, VF GRND, SB ANG - SB RND,  
MOD - W SRT, TR GLAU, WK - MOD  
CALC. TR DISSM PYR. RR GY  
SLTST, PLTY - SB PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB  
BLKY, FRI - SL FRI, BRIT, VF GRND, SB ANG  
- SB RND, MOD - W SRT, TR GLAU, WK -  
MOD CALC. TR DISSM PYR. RR GY SLTST,  
PLTY - SB PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRNSP, SB  
TRNSP, SB BLKY, FRI - S  
BRIT, VF GRND, SB ANG  
MOD - W SRT, TR GLAU,  
CALC. TR DISSM PYR. R  
SLTST, PLTY - SB PLTY,



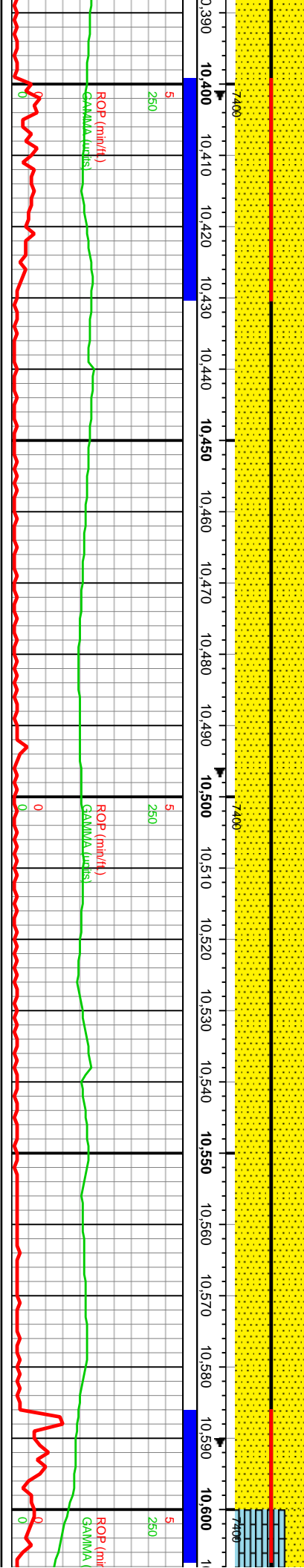
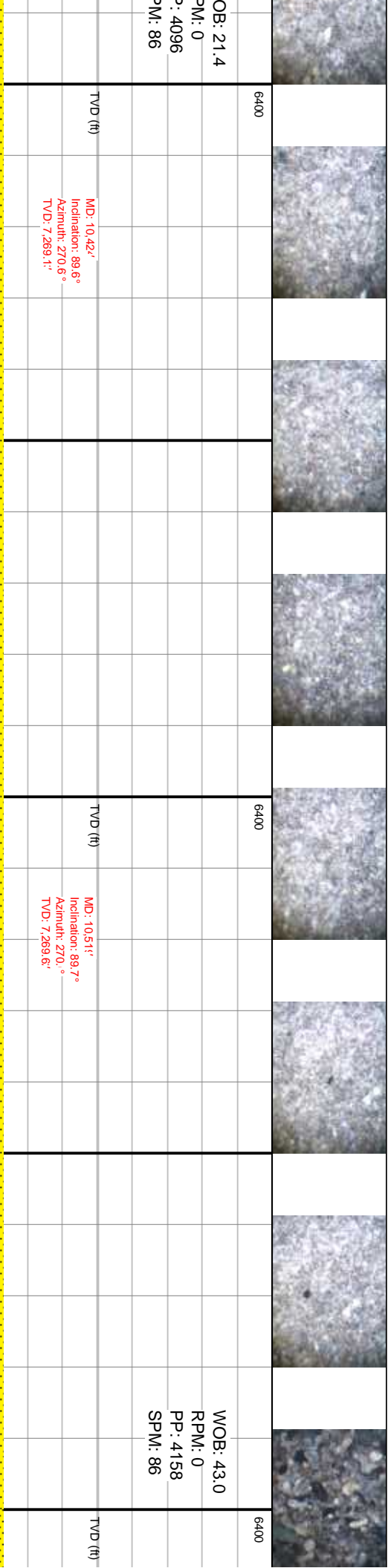


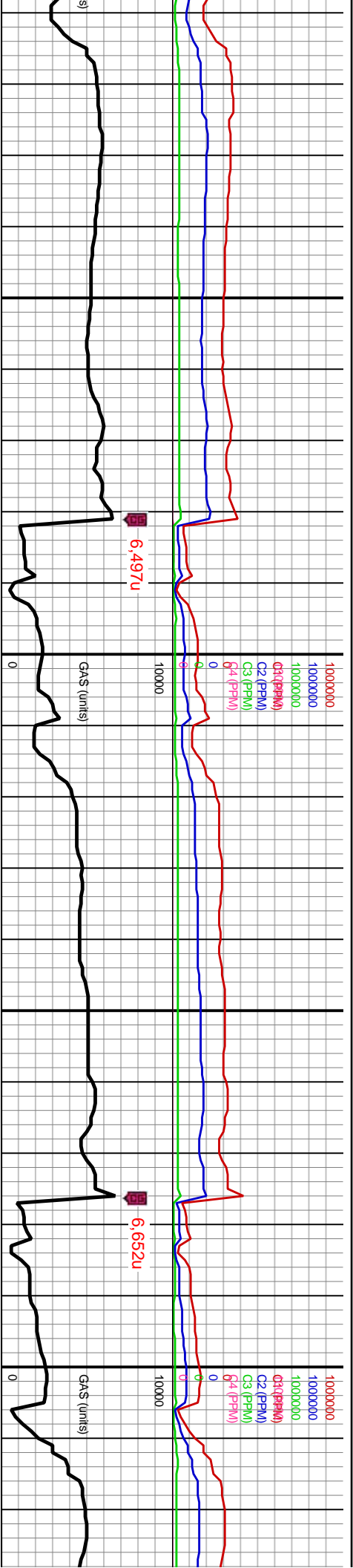
FRNSL - LT FRI, - SB RND, WK - MOD R GY - MOD FRM.

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL FRI, BRIT, VF GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, WK - MOD CALC, TR DISSM PYR, RR GY SLTST, PLTY - SB PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL FRI, BRIT, VF GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, WK - MOD CALC, TR DISSM PYR, RR GY SLTST, PLTY - SB PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL FRI, BRIT, VF GRND, SB ANG - SB RND, MOD - W SRT, TR GLAU, WK - MOD CALC, TR DISSM PYR, RR GY SLTST, PLTY - SB PLTY, MOD FRM.

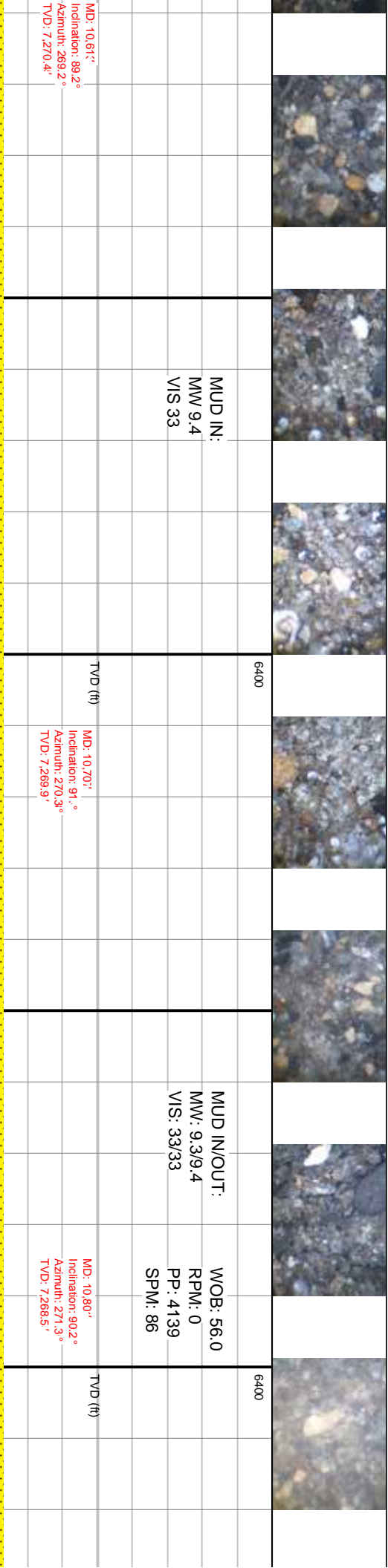




LT GY - DK GY, WKST, MICROXLN, CHKY, SDY; SD:  
GY - LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL  
I, BRIT, VF GRND, SB ANG - SB RND, MOD - W SRT,  
GLAU, WK - MOD CALC. TR DISSM PYR. RR GY  
TST, PLTY - SB PLTY, MOD FRM.

LS: LT GY - DK GY, WKST, MICROXLN, CHKY, SDY;  
SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB BLKY,  
FRI - SL FRI, BRIT, VF GRND, SB ANG - SB RND, MOD  
- W SRT, TR GLAU, WK - MOD CALC. TR DISSM PYR.  
RR GY SLTST, PLTY - SB PLTY, MOD FRM.

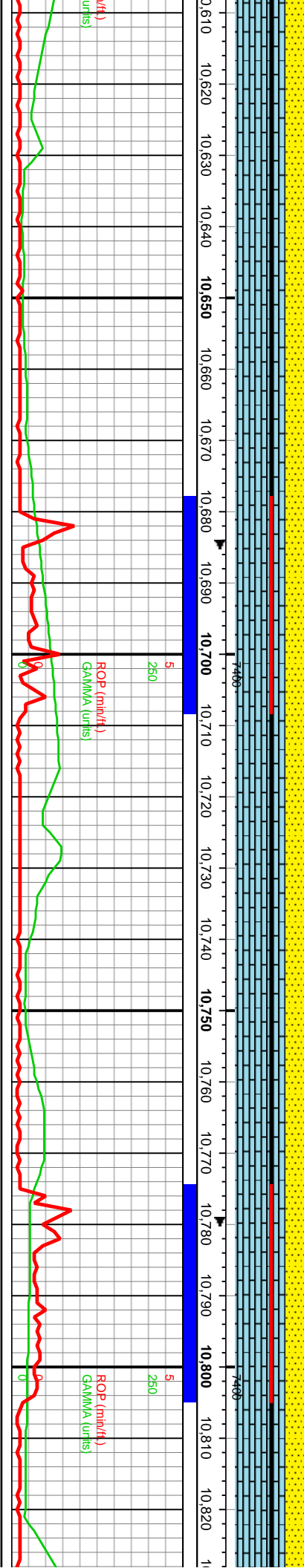
LS: LT GY - DK GY, WKST, MICROXLN, CHKY, SD  
- LT BRN GY, TRNSL - TRNSP, SB BLKY, FRI - SL  
VF GRND, SB ANG - SB RND, MOD - W SRT, TR C  
MOD CALC. TR DISSM PYR. RR GY SLTST, PLTY  
MOD FRM.



MD: 10.61'  
Inclination: 89.2°  
Azimuth: 269.2°  
TVD: 7.270.4'

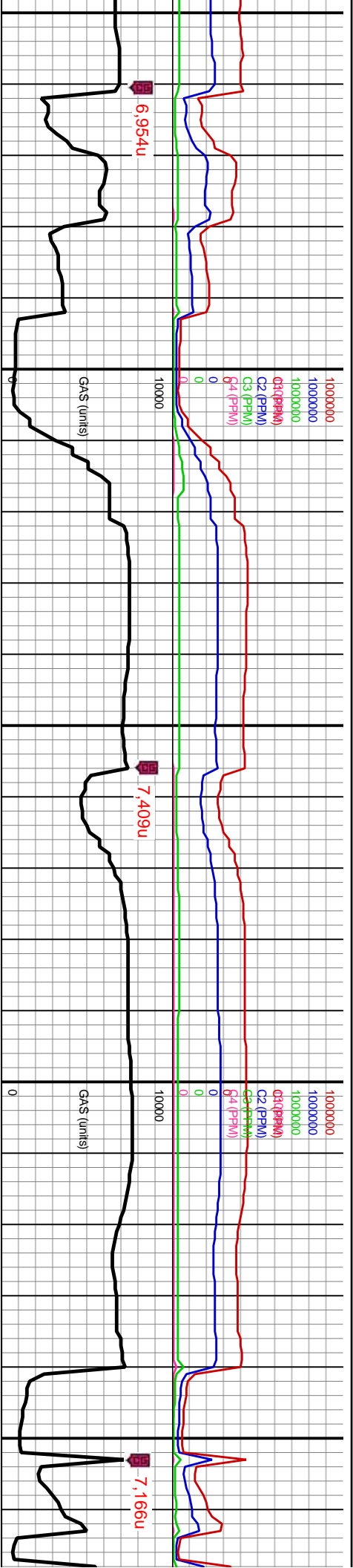
MD: 10.70'  
Inclination: 91.°  
Azimuth: 270.3°  
TVD: 7.268.9'

MD: 10.80'  
Inclination: 90.2°  
Azimuth: 271.3°  
TVD: 7.268.5'









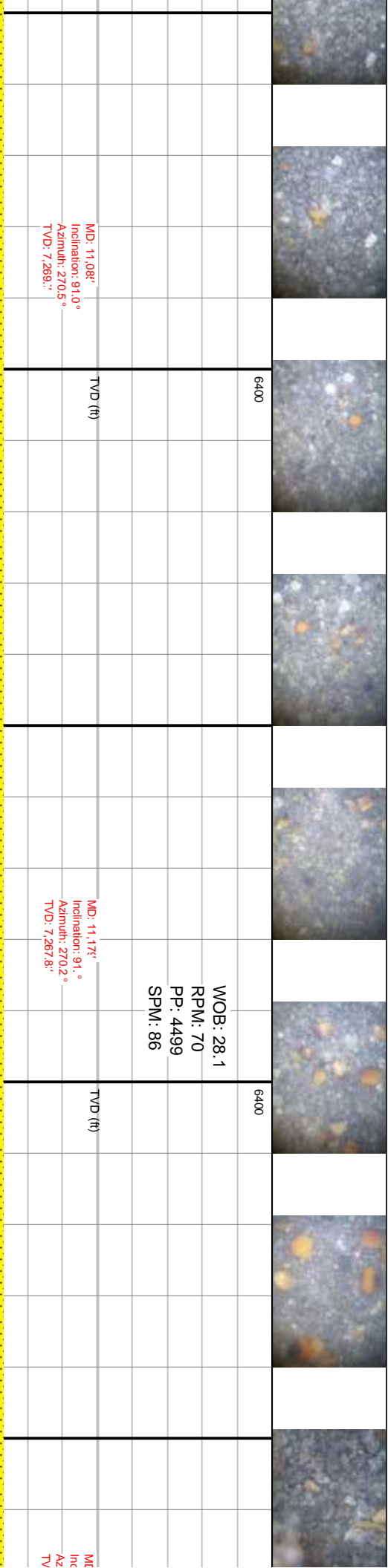
BRN GY, TRNSL - TRNSP,  
BLKY, FRI, BRIT, VF GRND,  
MOD - MOD - W SRT, TR  
D CALC. TR DISSM PYR.  
PLTY - SB PLTY, MOD

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB  
BLKY, FRI - SL FRI, BRIT, VF GRND, SB ANG  
- SB RND, MOD - W SRT, TR GLAU, WK -  
MOD CALC. TR DISSM PYR. RR GY SLTST,  
PLTY - SB PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRNSL - TRNSP, SB  
BLKY, FRI - SL FRI, BRIT, VF GRND, SB ANG -  
SB RND, MOD - W SRT, TR GLAU, WK - MOD  
CALC. TR DISSM PYR. RR GY SLTST, PLTY -  
SB PLTY, MOD FRM.

SD: LT GY - LT BRN GY, TRNSL -  
TRNSP, SB BLKY, FRI - SL FRI, BRIT,  
VF GRND, SB ANG - SB RND, MOD - W  
SRT, TR GLAU, WK - MOD CALC. TR  
DISSM PYR. RR GY SLTST, PLTY - SB  
PLTY, MOD FRM.

SD: LT  
TRNSP  
VF GRI  
RND, T  
DISSM  
PLTY, I

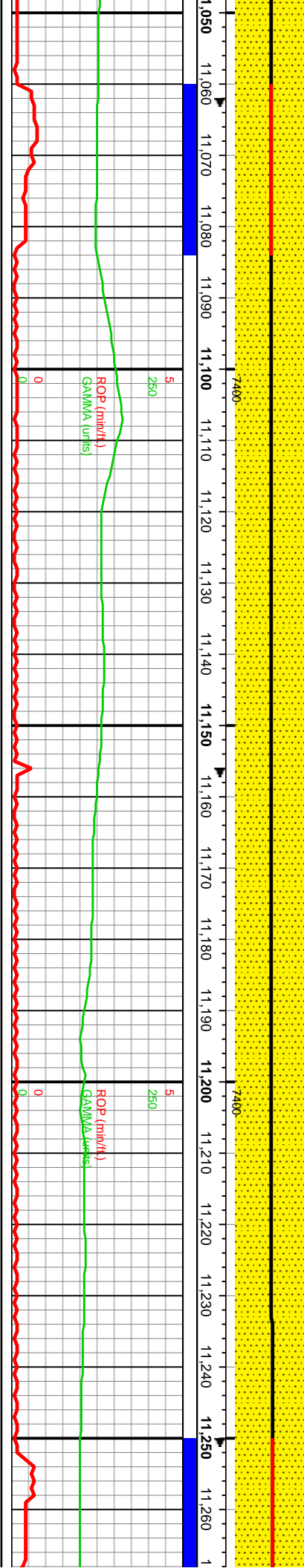


MD: 11.08°  
Inclination: 91.0°  
Azimuth: 270.5°  
TVD: 7.269.7

WOB: 28.1  
RPM: 70  
PP: 4499  
SPM: 86

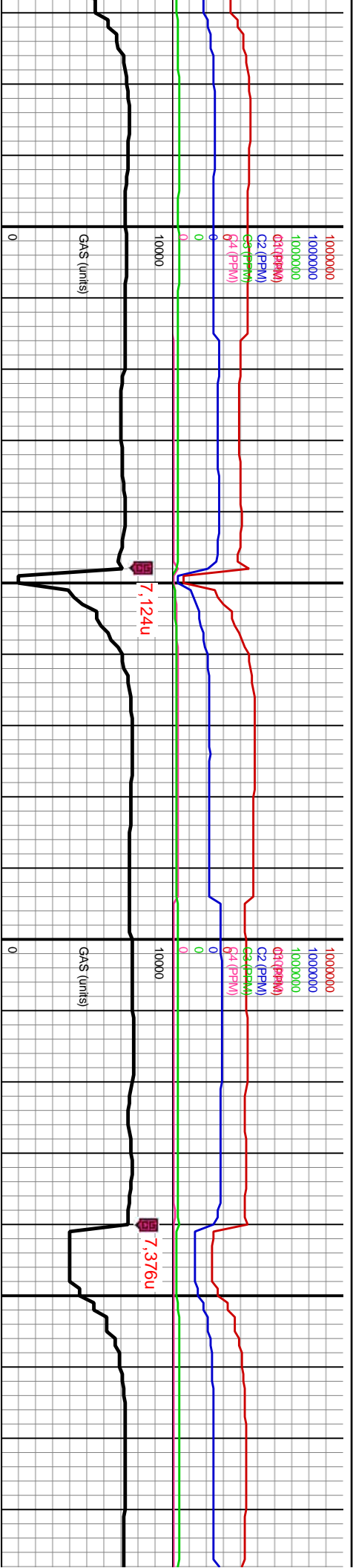
MD: 11.17°  
Inclination: 91.°  
Azimuth: 270.2°  
TVD: 7.267.8

MD:  
Inc  
Az  
TV

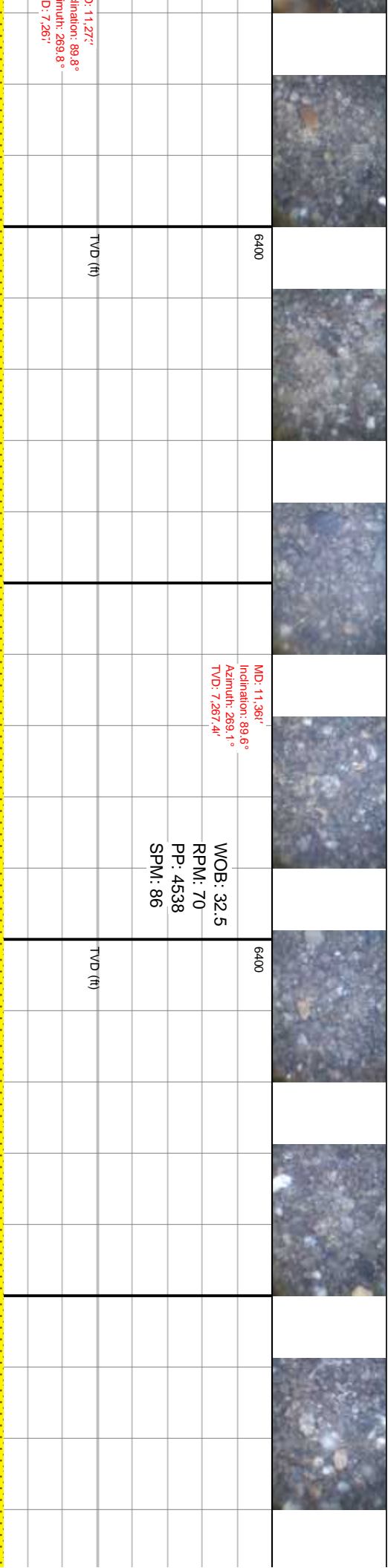


ROP (min/ft)  
GAMMA (units)

ROP (min/ft)  
GAMMA (units)



GY - LT BRN GY, TRNSL - SD: LT GY - LT BRN GY, TRNSL - SD: LT GY - LT BRN GY, TRNSL -  
SB BLKY, FRI - SL FRI, BRIT, TRNSP, SB BLKY, FRI - SL FRI, BRIT, TRNSP, SB BLKY, FRI - SL FRI, BRIT,  
MOD - W SRT, SB ANG - SB VF GRND, MOD - W SRT, SB ANG - SB VF GRND, MOD - W SRT, SB ANG - SB  
RR GLAU, WK - MOD CALC. TR RND, TR GLAU, WK - MOD CALC. TR RND, TR GLAU, WK - MOD CALC. TR  
DISSM PYR. RR GY SLTST, PLTY - SB DISSM PYR. RR GY - DK GK SLTST, PLTY - SB PLTY, MOD FRM.



2° 11.27' N  
Inclination: 89.8°  
Azimuth: 269.8°  
D: 7.267'

MD: 11.361'  
Inclination: 89.6°  
Azimuth: 269.1°  
TVD: 7.2674'

WOB: 32.5  
RPM: 70  
PP: 4538  
SPM: 86

