



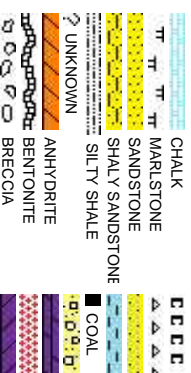
Scale: 5" / 100'
Measured Depth Log

Well Name	Castor Federal LD15-72HN		
Location	NENE SEC. 15 T9N R58W		
State	COLORADO	County	WELD
Country	UNITED STATES		
API Number	05-123-37433	Rig Number	H&P 273
Region	DJ BASIN	Field	WILDCAT
Spud Date	12/8/2013	Drilling Completed	12/15/2013
Surface Coordinates	300' FNL; 660' FEL		
Ground Elevation	4704'	K.B. Elevation	4728'
Logged Interval	4860'	To	9861'
Formation	NIOBRARA B MARL		
Type of Drilling Fluid	LSND		

Company NOBLE ENERGY INC
Address 1625 Broadway Suite
Denver, CO 80202

Name SARAH COMPTON
Company NOBLE ENERGY INC
Address 1625 Broadway Suite
Denver, CO 80202

Wellsite Geologist #1: LAURA
Wellsite Geologist #2: CONO
Wellsite Geological Services



Operator

NC.

2200

Geologist

NC.

2200

Other

A KELLGGER PESICKA

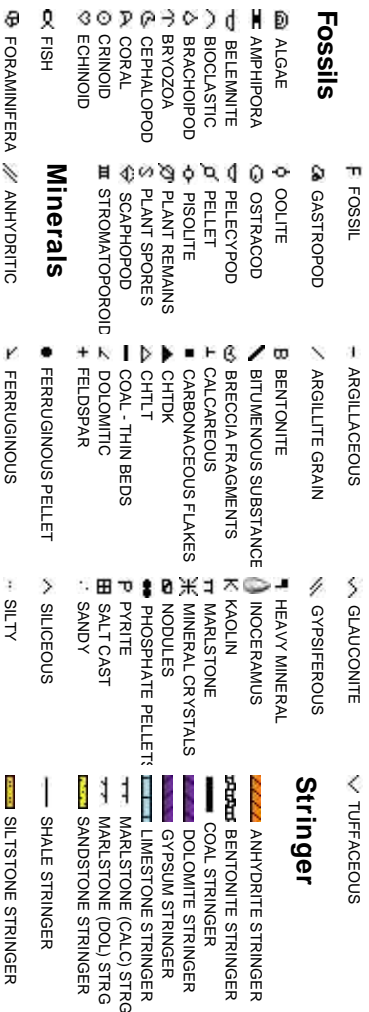
Provided By Columbine Logging Inc.

Rock Types



Accessories

Fossils

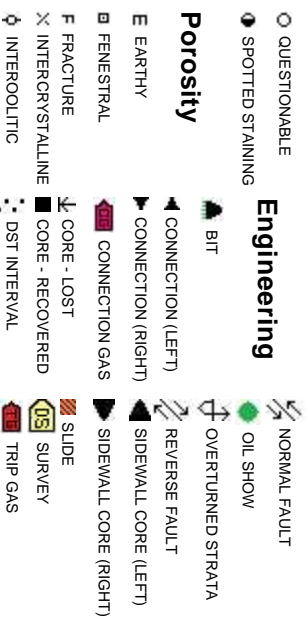


Other Symbols

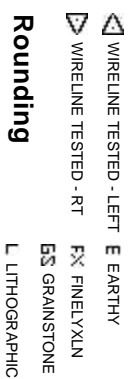
Oil Show



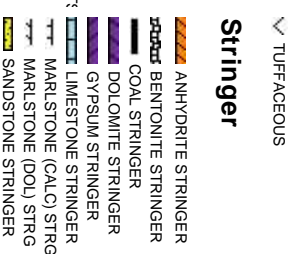
Engineering

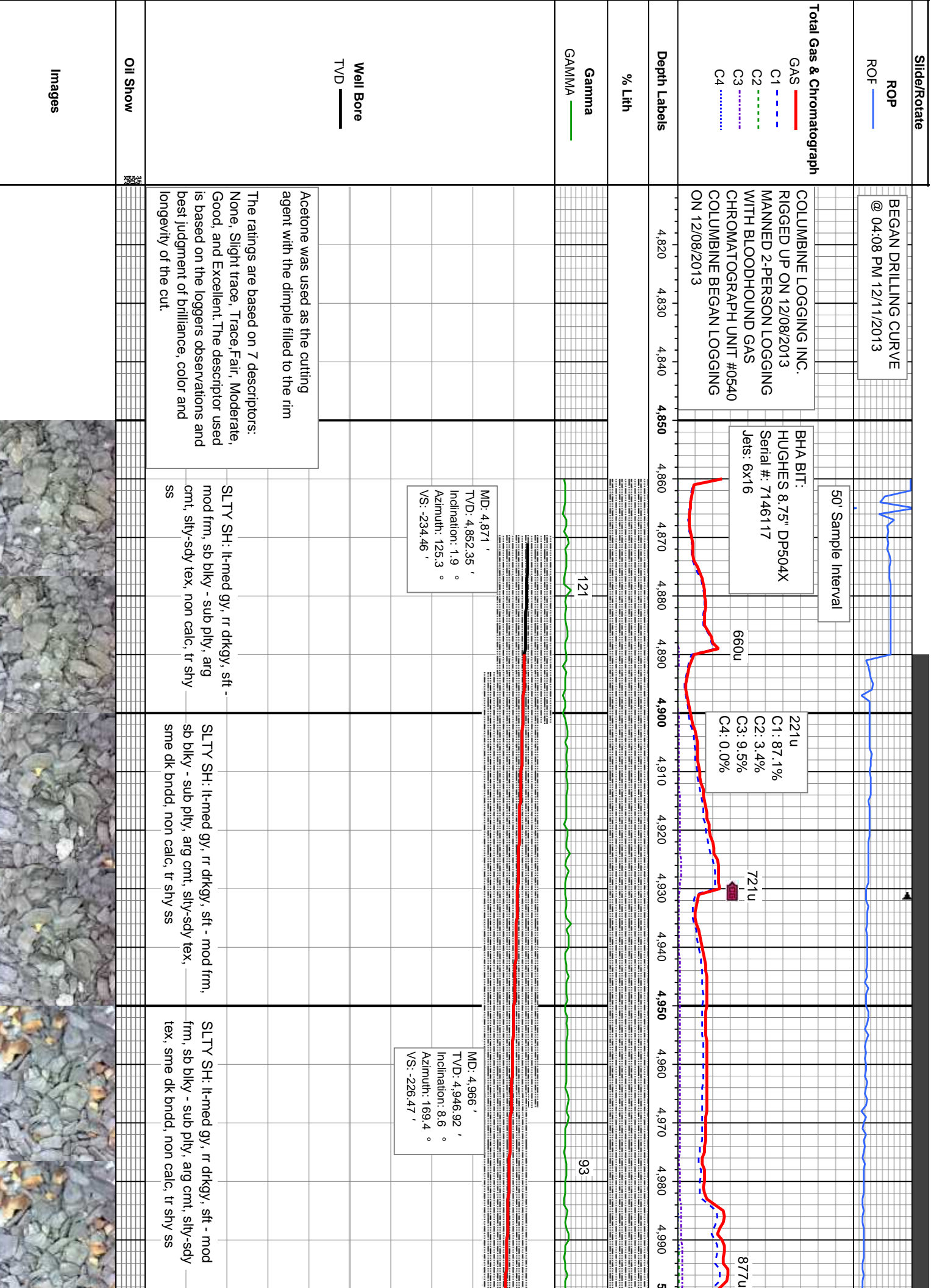


Rounding



Textures

**Stringer**



BEGAN DRILLING CURVE
@ 04:08 PM 12/11/2013

50' Sample Interval

BHA BIT:
HUGHES 8.75" DP504X
Serial #: 7146117
Jets: 6x16

221u
C1: 87.1%
C2: 3.4%
C3: 9.5%
C4: 0.0%

721u

877u

660u

121

93

MD: 4,871 '
TVD: 4,852.35 '
Inclination: 1.9 °
Azimuth: 125.3 °
VS: -234.46 '

MD: 4,966 '
TVD: 4,946.92 '
Inclination: 8.6 °
Azimuth: 169.4 °
VS: -226.47 '

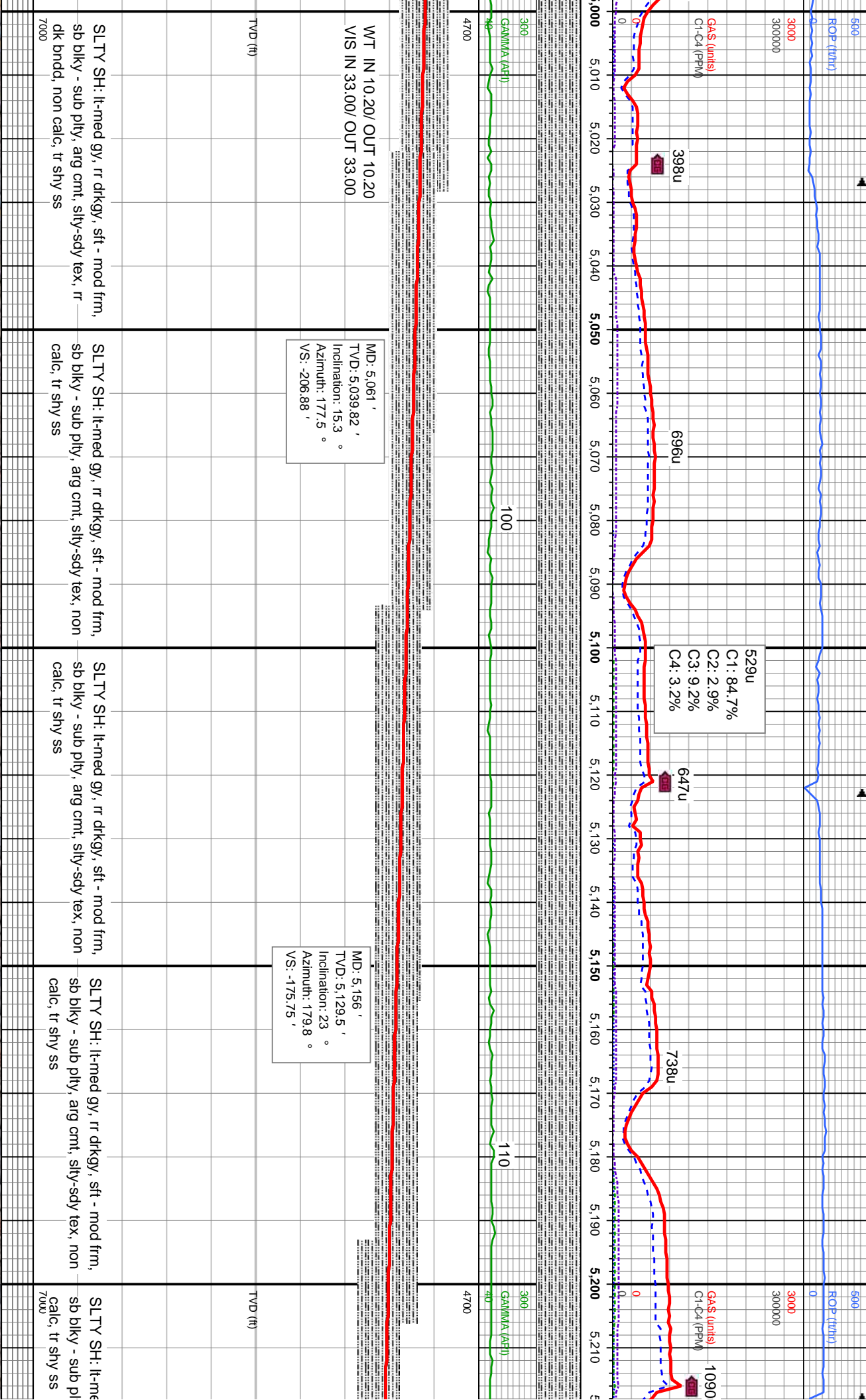
Acetone was used as the cutting agent with the dimple filled to the rim

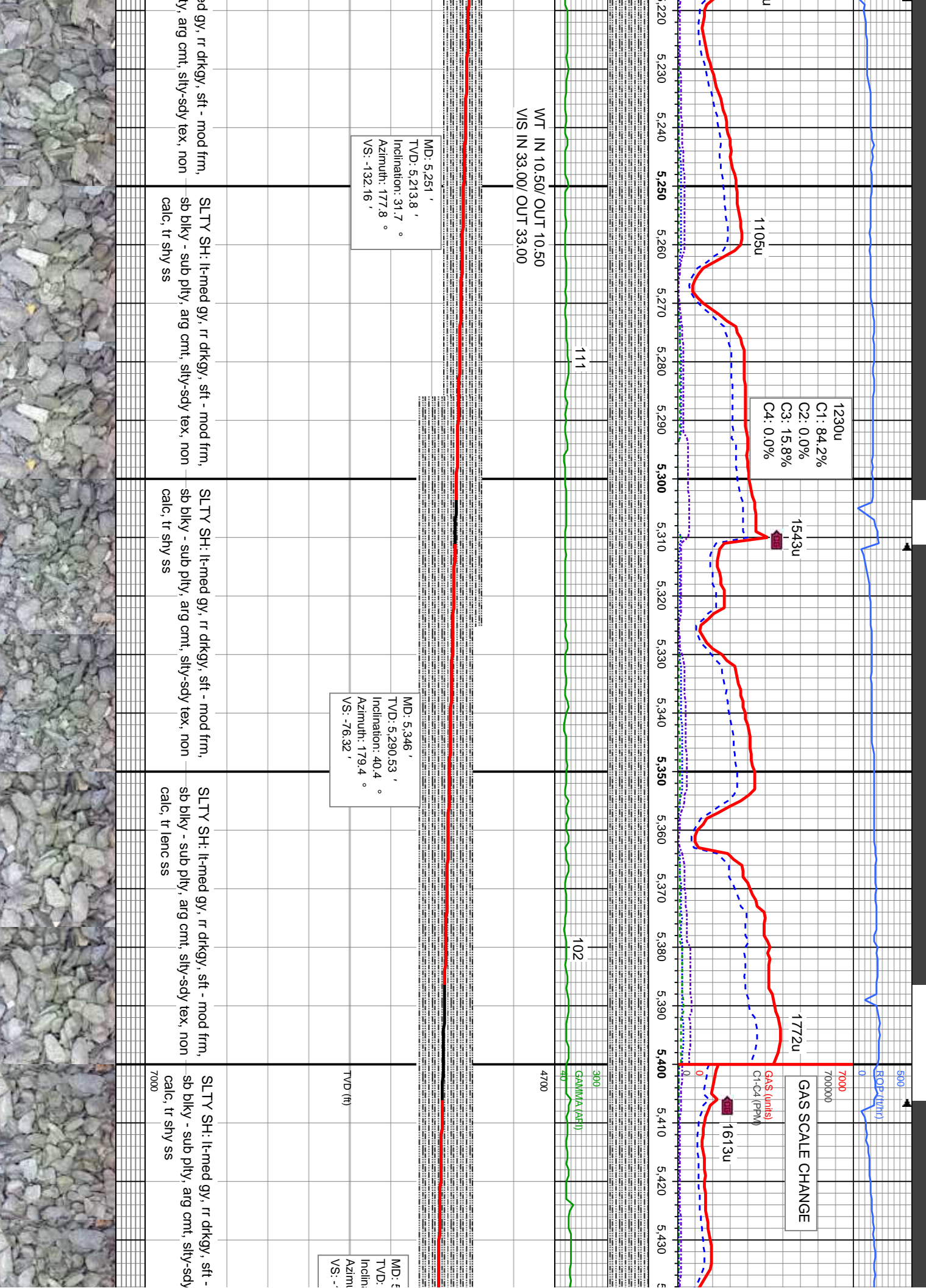
The ratings are based on 7 descriptors: None, Slight trace, Trace,Fair, Moderate, Good, and Excellent. The descriptor used is based on the loggers observations and best judgment of brilliance, color and longevity of the cut.

SLTY SH: lt-med gy, rr drkgy, sft - mod frm, sb blkly - sub ply, arg cnt, sily-sdy tex, non calc, tr shy ss

SLTY SH: lt-med gy, rr drkgy, sft - mod frm, sb blkly - sub ply, arg cnt, sily-sdy tex, sme dk bnnd, non calc, tr shy ss

SLTY SH: lt-med gy, rr drkgy, sft - mod frm, sb blkly - sub ply, arg cnt, sily-sdy tex, sme dk bnnd, non calc, tr shy ss

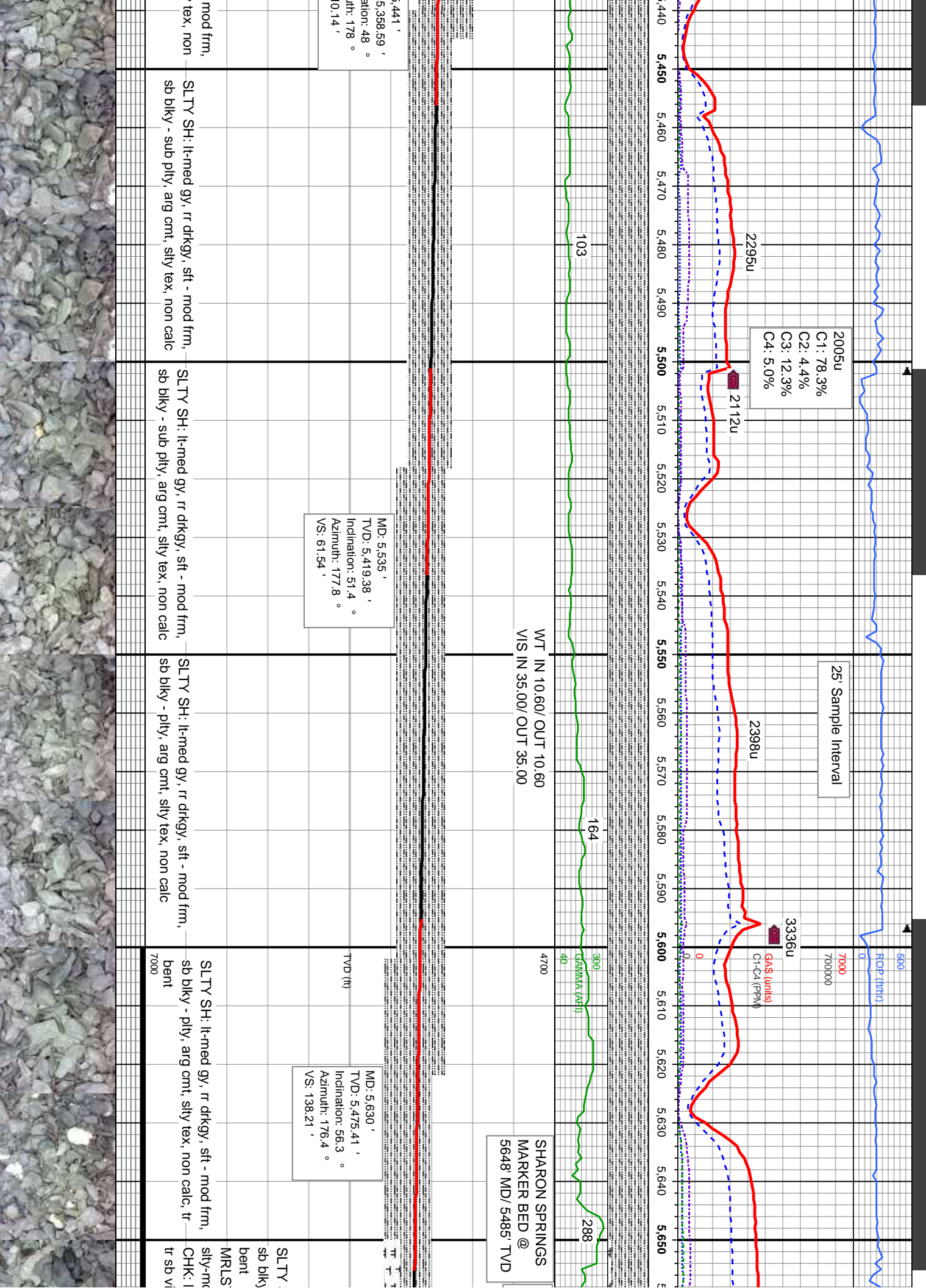




MD: 5,251 '
TVD: 5,213.8 '
Inclination: 31.7 °
Azimuth: 177.8 °
VS: -132.16 '

MD: 5,346 '
TVD: 5,290.53 '
Inclination: 40.4 °
Azimuth: 179.4 °
VS: -76.32 '

MD: 5,430 '
TVD: 5,385.0 '
Inclination: 40.4 °
Azimuth: 179.4 °
VS: -76.32 '



2005u
C1: 78.3%
C2: 4.4%
C3: 12.3%
C4: 5.0%

25' Sample Interval

3336u
GAS (units)
C1-C4 (PPM)

SHARON SPRINGS
MARKER BED @
5648' MD/ 5485' TVD

MD: 5,535 '
TVD: 5,419.38 '
Inclination: 51.4 °
Azimuth: 177.8 °
VS: 61.54 '

MD: 5,630 '
TVD: 5,475.41 '
Inclination: 56.3 °
Azimuth: 176.4 °
VS: 138.21 '

12/12/2013

590

ROP (ft/h)

7000

700000

34S (units)

C1-C4 (PPM)

3428u

4490u

4580u

3407u

4394u

C1: 65.6%
C2: 6.8%
C3: 15.8%
C4: 11.8%

5662 MD/ 5493 TVD

NIO A CHALK @
5686 MD/ 5506 TVD

NIO A MARL @
5741 MD/ 5534 TVD

WT IN 10.60/ OUT 10.60
VIS IN 32.00/ OUT 32.00

NIO B CHALK @
5855 MD/ 5590 TVD

WT IN
VIS IN

171

138

267

390

GAUMMA (API)

149

TVD (ft)

MD: 5,725 '
TVD: 5,526.66 '
Inclination: 58.4 °
Azimuth: 177.3 °
VS: 218.18 '

MD: 5,820 '
TVD: 5,575.58 '
Inclination: 59.6 °
Azimuth: 177.1 °
VS: 299.61 '

SH: lt-med gy, rr dkgy, sft - mod frm,
- ply, arg cmt, silty tex, non calc, tr

T: gy-gy brn, sft-fm, sb blk- sb ply,
st tex, v calc
gy-crm, sl sft, sb blk, mot-wxy tex,
t str, v calc

CHALK: lt gy-crm, sl sft, sb blk, mot-wxy
tex, v mot ip, sme sb vit lstr, v calc
MARLSTONE: gy-gy brn, sft-fm, sb blk- sb
ply, silty-mot tex, v calc, tr bent

CHALK: lt gy-crm, sl sft, sb blk, mot-wxy
tex, v mot ip, sme sb vit lstr, v calc
MARLSTONE: gy-gy brn, sft-fm, sb blk- sb
ply, silty-mot tex, v calc, tr bent

MARLSTONE: gy-gy brn, sft-fm, sb blk-
sb ply, silty-mot tex, v calc, tr bent
CHALK: lt gy-crm, sl sft, sb blk, mot-wxy
tex, v mot ip, sme sb vit lstr, v calc

CHALK: lt gy-crm, sl sft,
tex, v mot ip, sme sb vit l
MARLSTONE: gy-gy brn
sb ply, silty-mot tex, v ca
frag



DATE: 12/13/2013

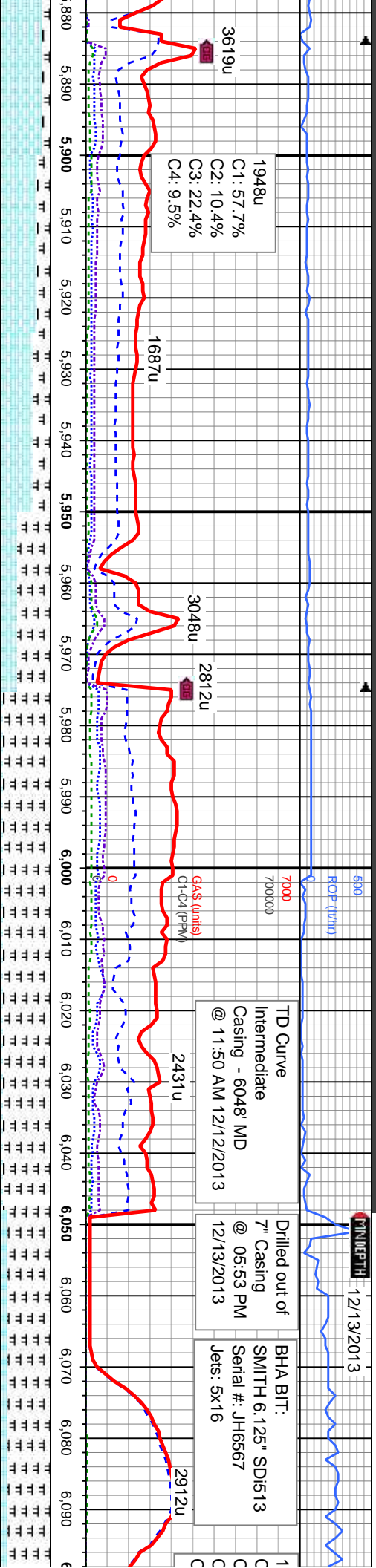
TD Curve
Intermediate
Casing - 6048 MD
@ 11:50 AM 12/12/2013

Drilled out of
7" Casing
@ 05:53 PM
12/13/2013

BHA BIT:
SMITH 6.125" SD513
Serial #: JH6567
Jets: 5x16

1948u
C1: 57.7%
C2: 10.4%
C3: 22.4%
C4: 9.5%

GA\$ (units)
C1-C4 (PPM)



NIO B MARL @
5941 MD/ 5623' TVD

WT IN 10.75/ OUT 10.75
VIS IN 33.00/ OUT 33.00

WT IN 10.80/ OUT 10.80
VIS IN 34.00/ OUT 34.00

WT IN 10.90/ OUT 10.90
VIS IN 34.00/ OUT 34.00

MD: 5.915 '
TVD: 5.615.67 '
Inclination: 70.4 °
Azimuth: 177 °
VS: 385.57 '

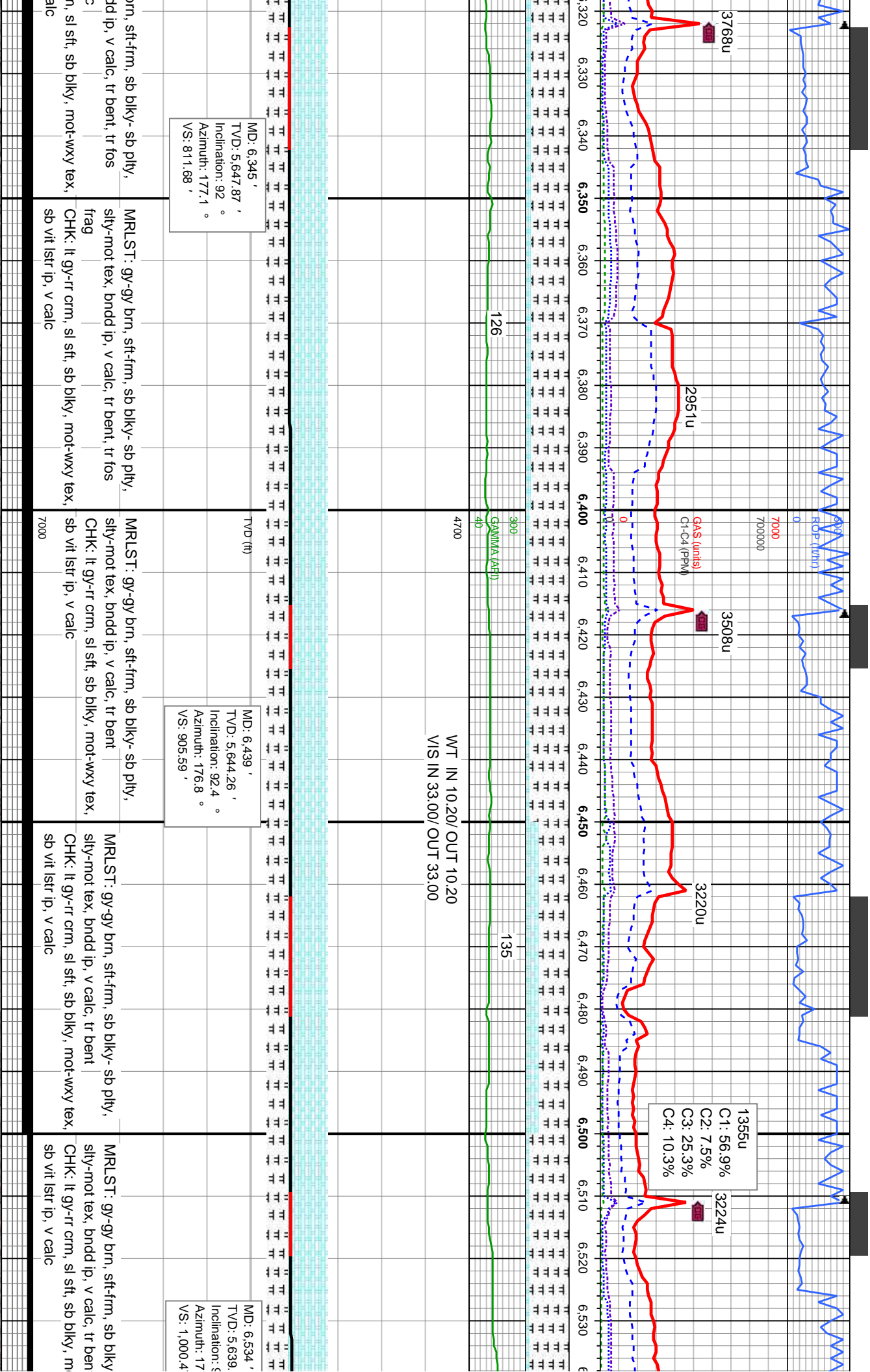
MD: 5.950 '
TVD: 5.625.72 '
Inclination: 75.5 °
Azimuth: 176.8 °
VS: 419.1 '

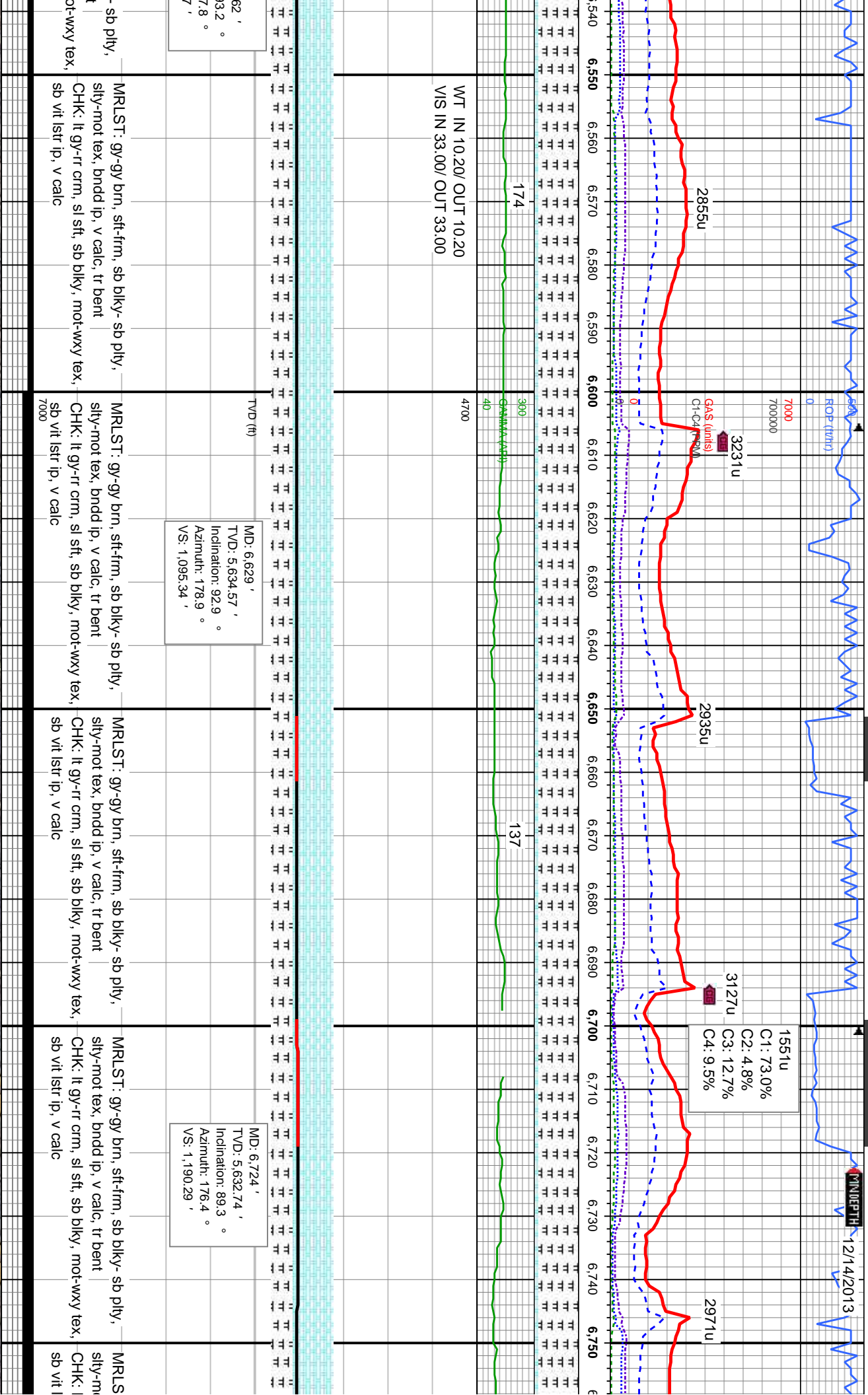
MD: 5.988 '
TVD: 5.634.08 '
Inclination: 79.1 °
Azimuth: 177.7 °
VS: 456.16 '

MD: 6.066 '
TVD: 5.642.86 '
Inclination: 82.4 °
Azimuth: 179.4 °
VS: 533.6 '

sb blkly, mot-wxy str, v calc	CHALK: lt gy-crm, sl sft, sb blkly, mot-wxy tex, v mot ip, sme sb vit lstr, v calc	MARLSTONE: gy-gy brn, sft-frm, sb blkly- frag, abnt calc conc	CHALK: lt gy-crm, sl sft, sb blkly, mot-wxy tex, v mot ip, sme sb vit lstr, v calc
sft-frm, sb blkly- c, tr bent, tr fos	MARLSTONE: gy-gy brn, sft-frm, sb blkly- frag, abnt calc conc	CHALK: lt gy-crm, sl sft, sb blkly, mot-wxy tex, v mot ip, sme sb vit lstr, v calc	MARLSTONE: gy-gy brn, sft-frm, sb blkly- frag, abnt calc conc







1551u
C1: 73.0%
C2: 4.8%
C3: 12.7%
C4: 9.5%

3231u
Gas (units)
C1-C4 (%)

2971u

2935u

2855u

MD: 6,724 '
TVD: 5,632.74 '
Inclination: 89.3 °
Azimuth: 176.4 °
VS: 1,190.29 '

MD: 6,629 '
TVD: 5,634.57 '
Inclination: 92.9 °
Azimuth: 178.9 °
VS: 1,095.34 '

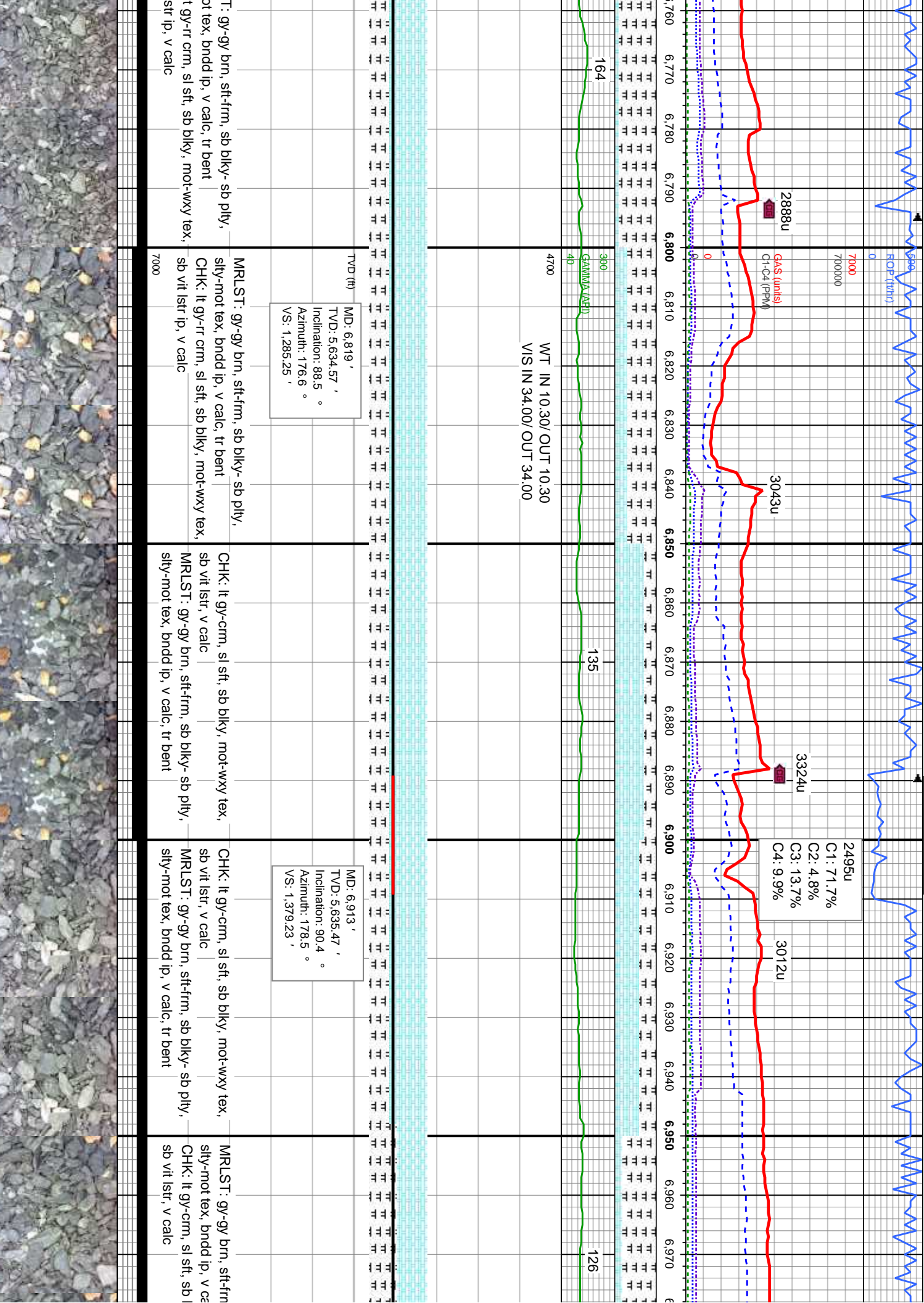
TVD (ft)

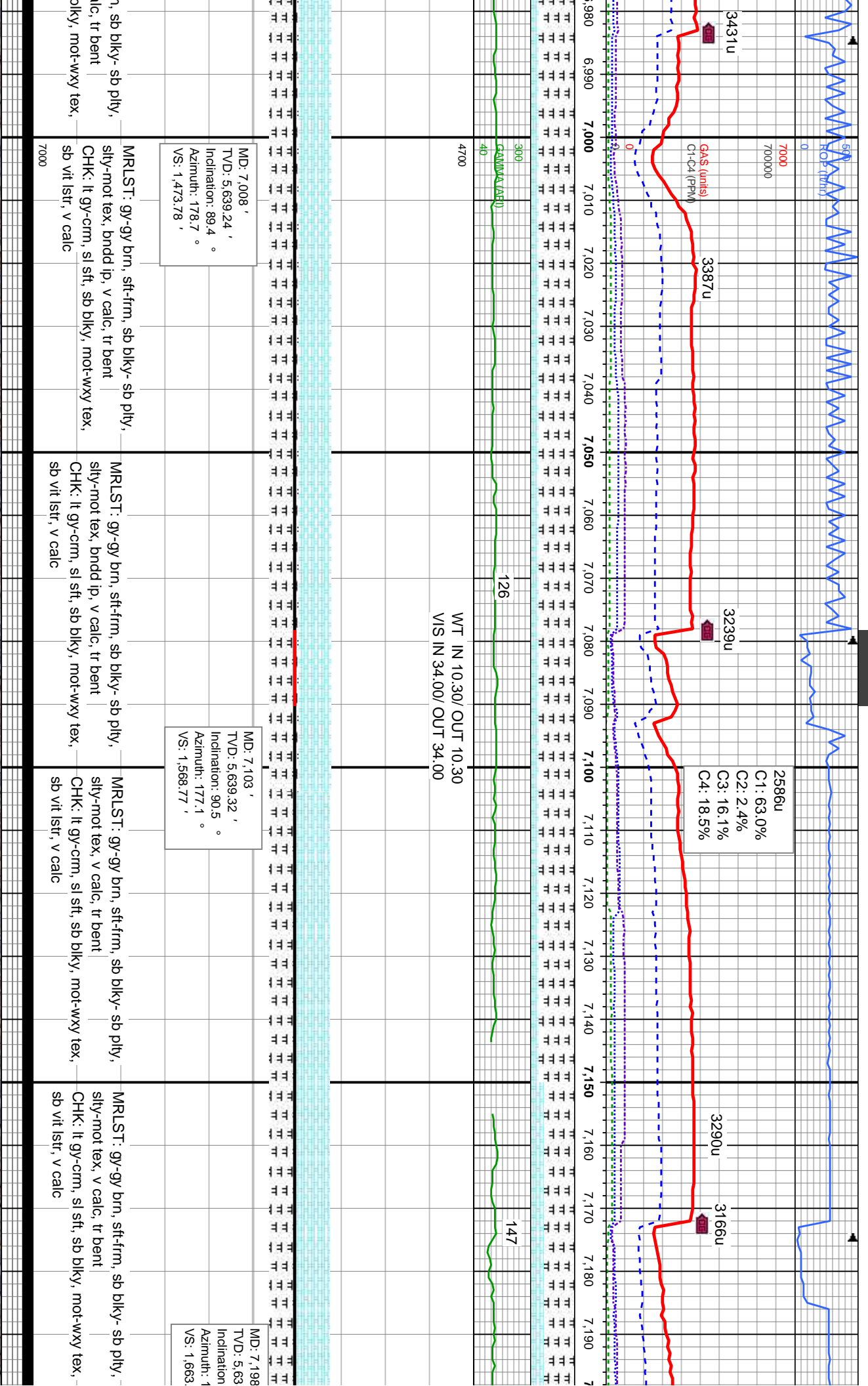
MR LST: gy-gy brn, sft-fm, sb blkly- sb ply, sily-mot tex, bndd ip, v calc, tr bent
CHK: lt gy-rr crm, sl sft, sb blkly, mot-wxy tex, sb vit lsir ip, v calc

MR LST: gy-gy brn, sft-fm, sb blkly- sb ply, sily-mot tex, bndd ip, v calc, tr bent
CHK: lt gy-rr crm, sl sft, sb blkly, mot-wxy tex, sb vit lsir ip, v calc

MR LST: gy-gy brn, sft-fm, sb blkly- sb ply, sily-mot tex, bndd ip, v calc, tr bent
CHK: lt gy-rr crm, sl sft, sb blkly, mot-wxy tex, sb vit lsir ip, v calc

MR LST: gy-gy brn, sft-fm, sb blkly- sb ply, sily-mot tex, bndd ip, v calc, tr bent
CHK: lt gy-rr crm, sl sft, sb blkly, mot-wxy tex, sb vit lsir ip, v calc



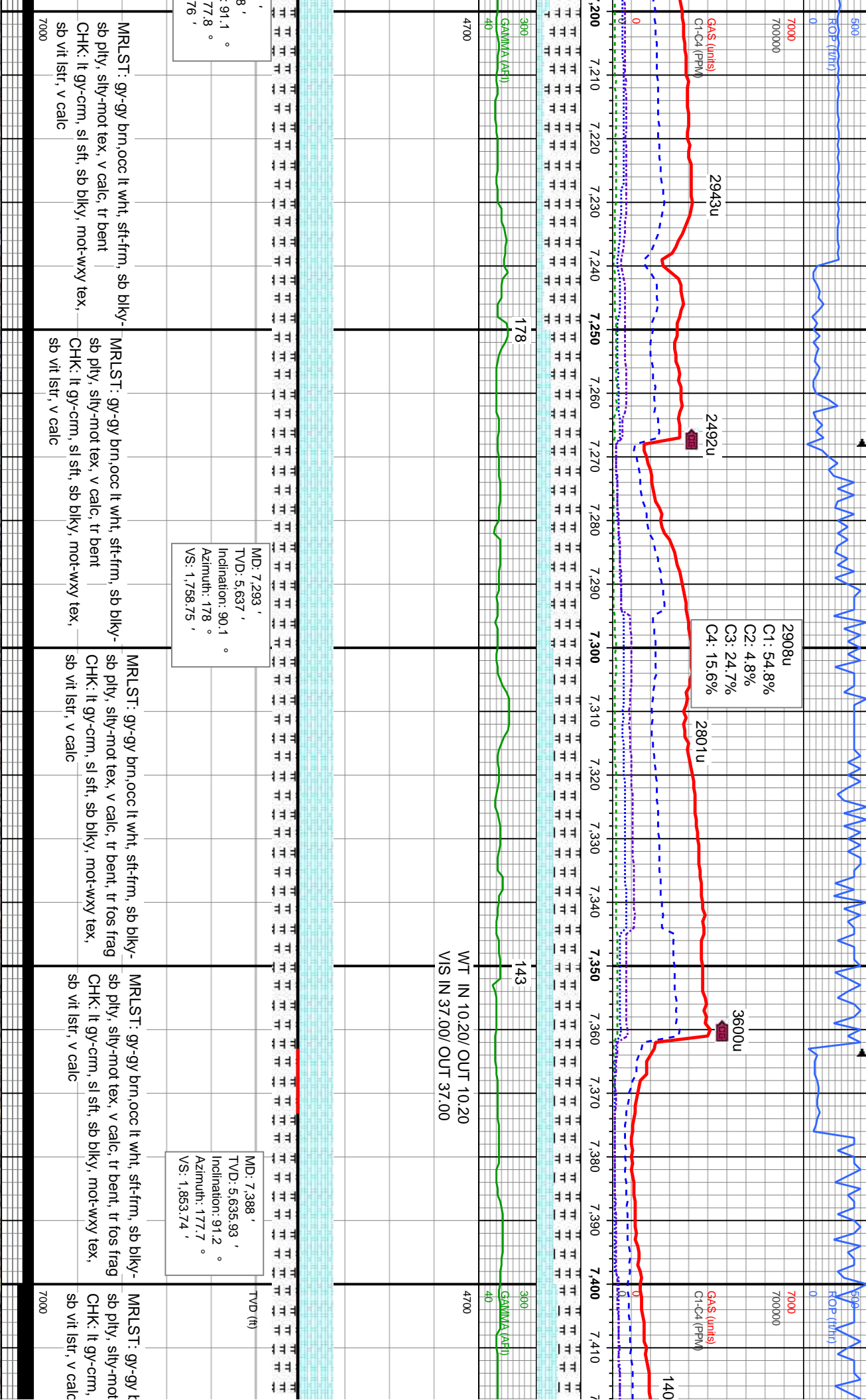


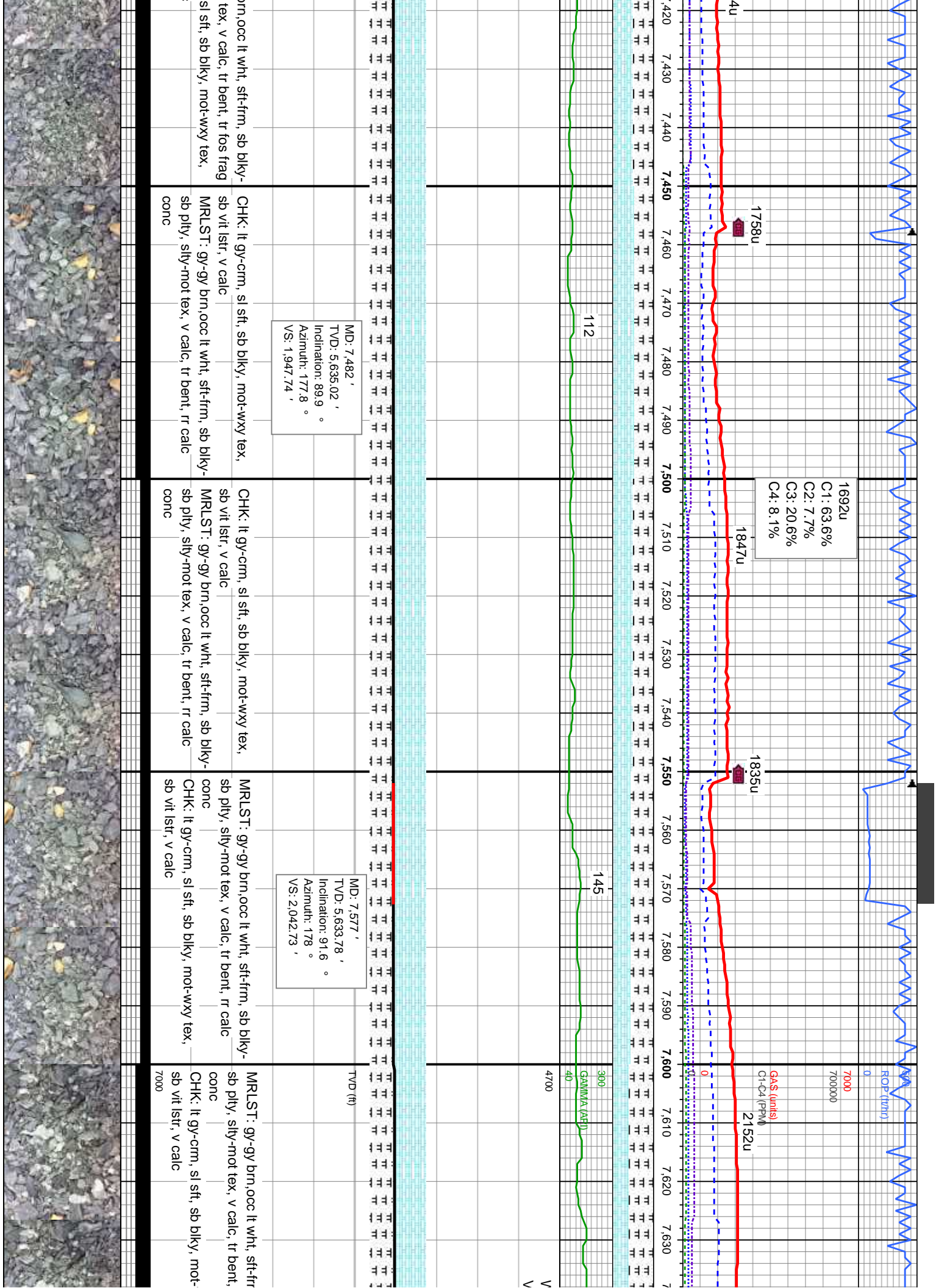
MD: 7.008 '
TVD: 5.639.24 '
Inclination: 89.4 °
Azimuth: 178.7 °
VS: 1.473.78 '

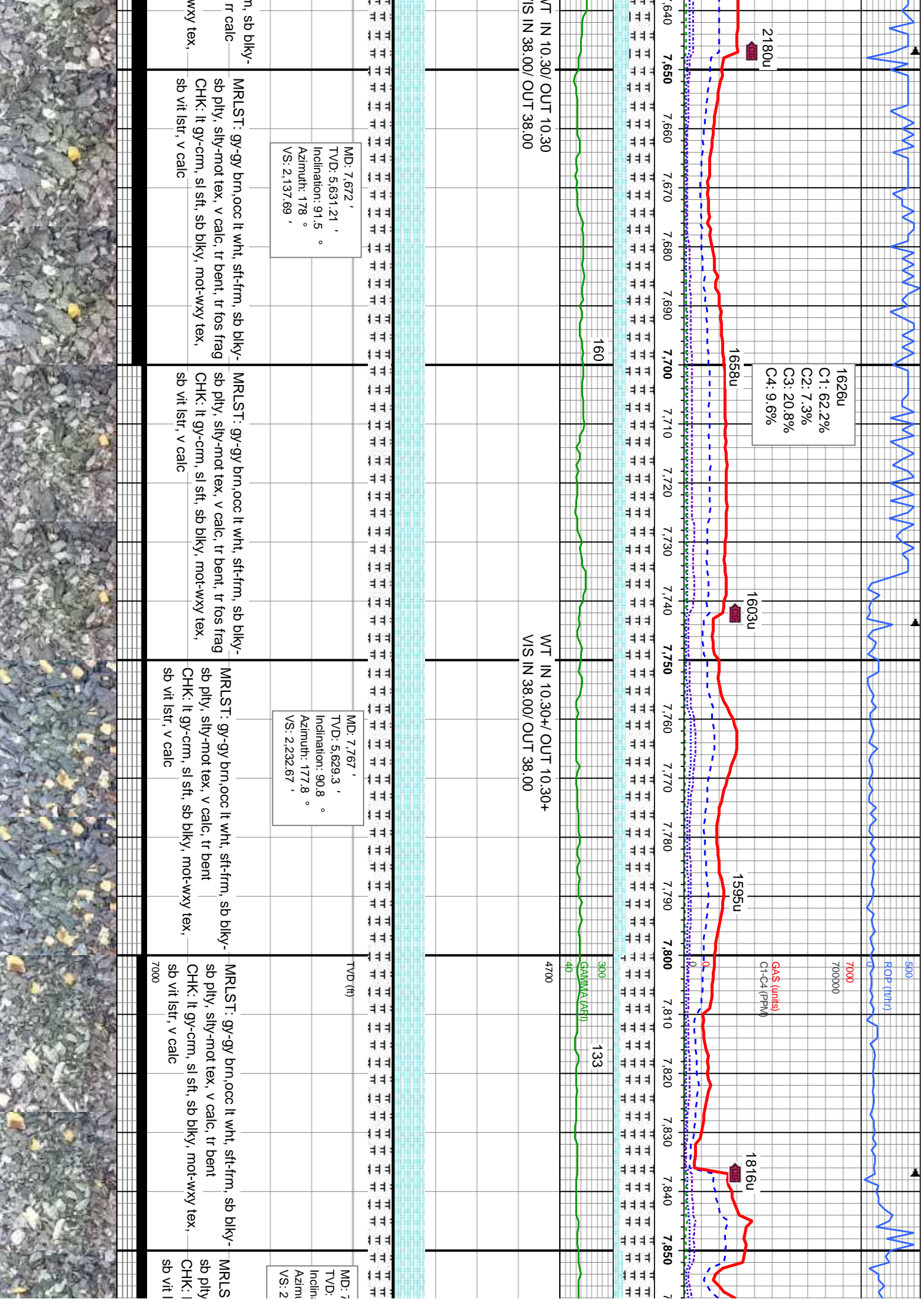
2586u
C1: 63.0%
C2: 2.4%
C3: 16.1%
C4: 18.5%

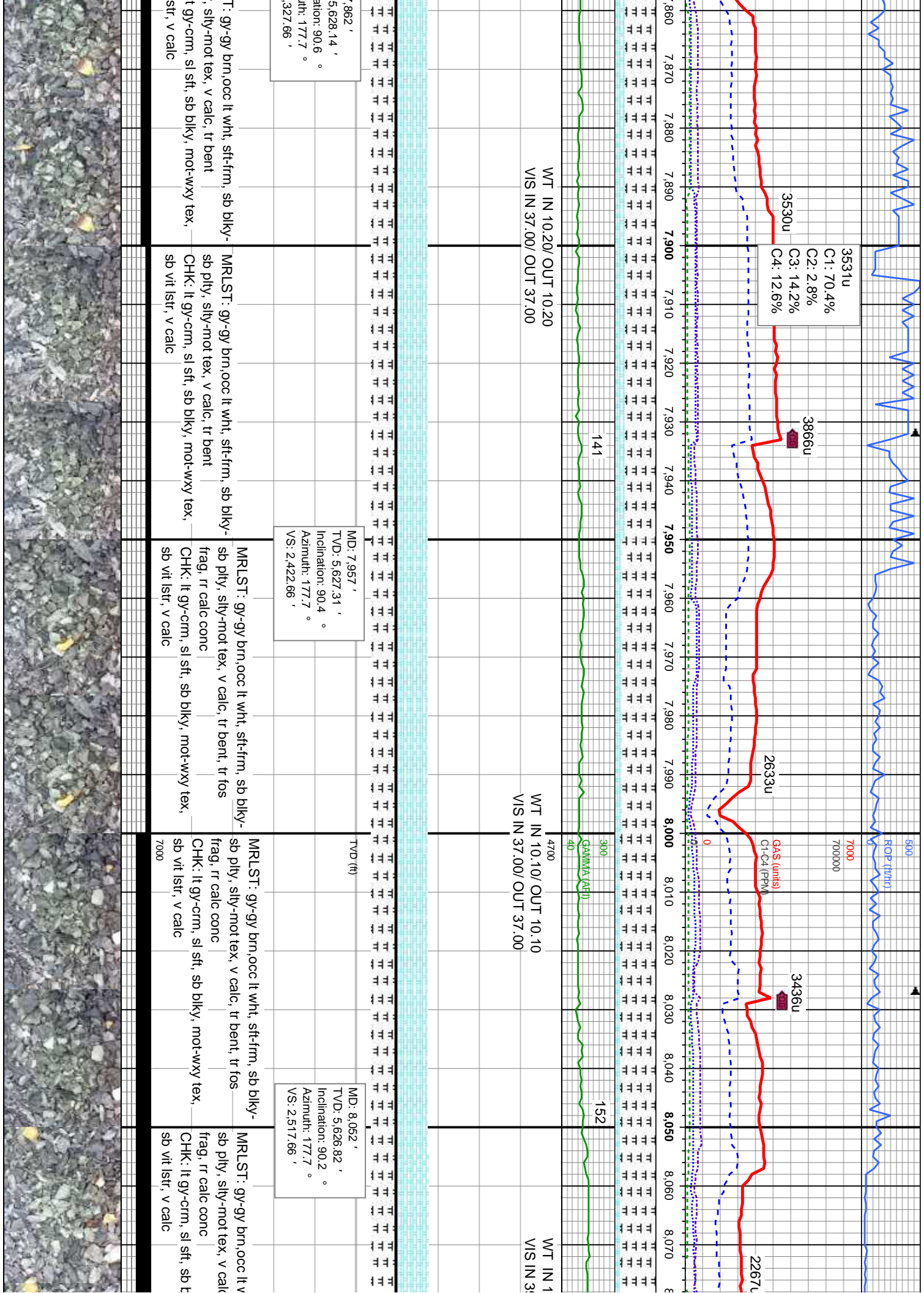
MD: 7.103 '
TVD: 5.639.32 '
Inclination: 90.5 °
Azimuth: 177.1 °
VS: 1.568.77 '

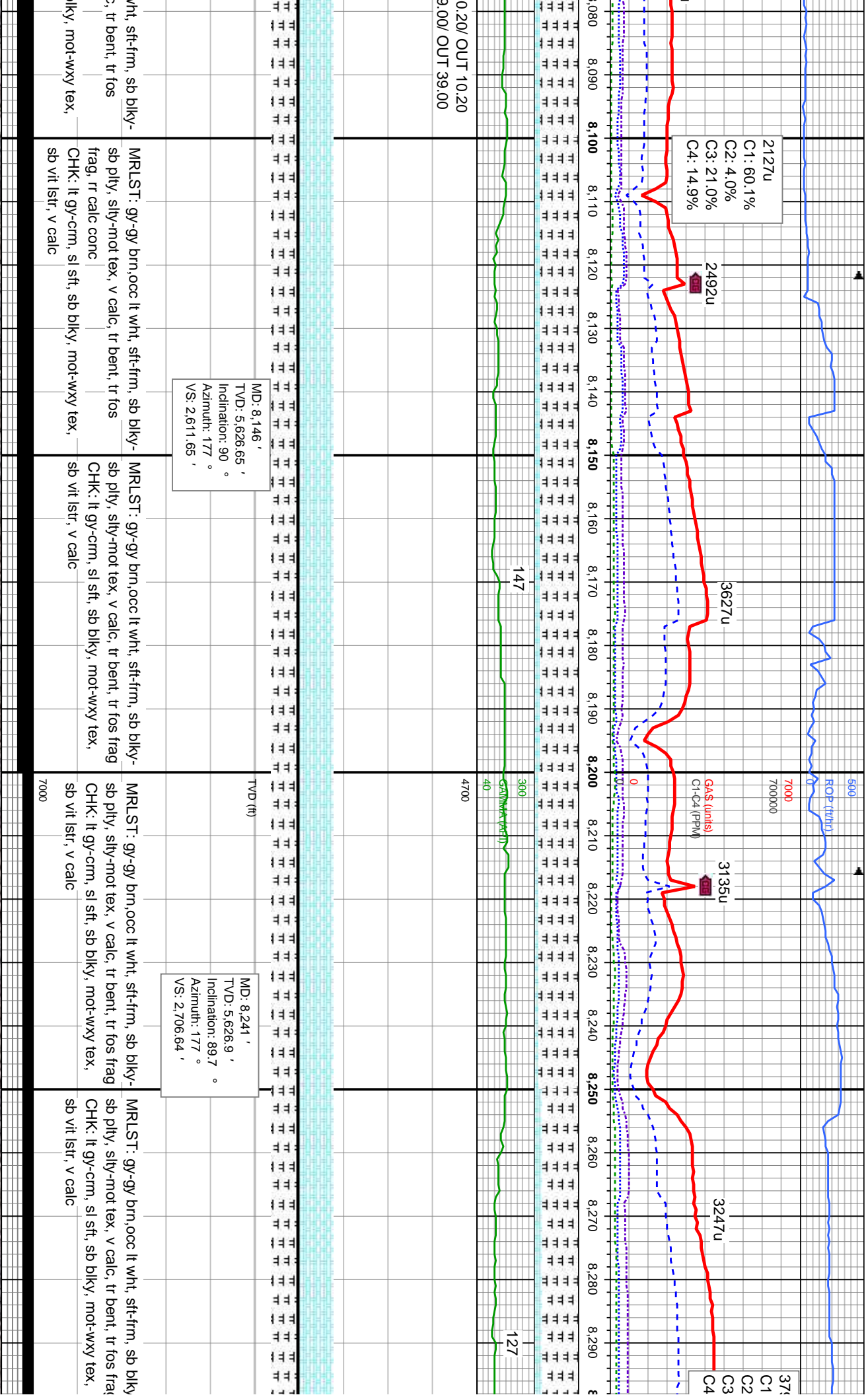
MD: 7.198 '
TVD: 5.63
Inclination
Azimuth: 1
VS: 1.663

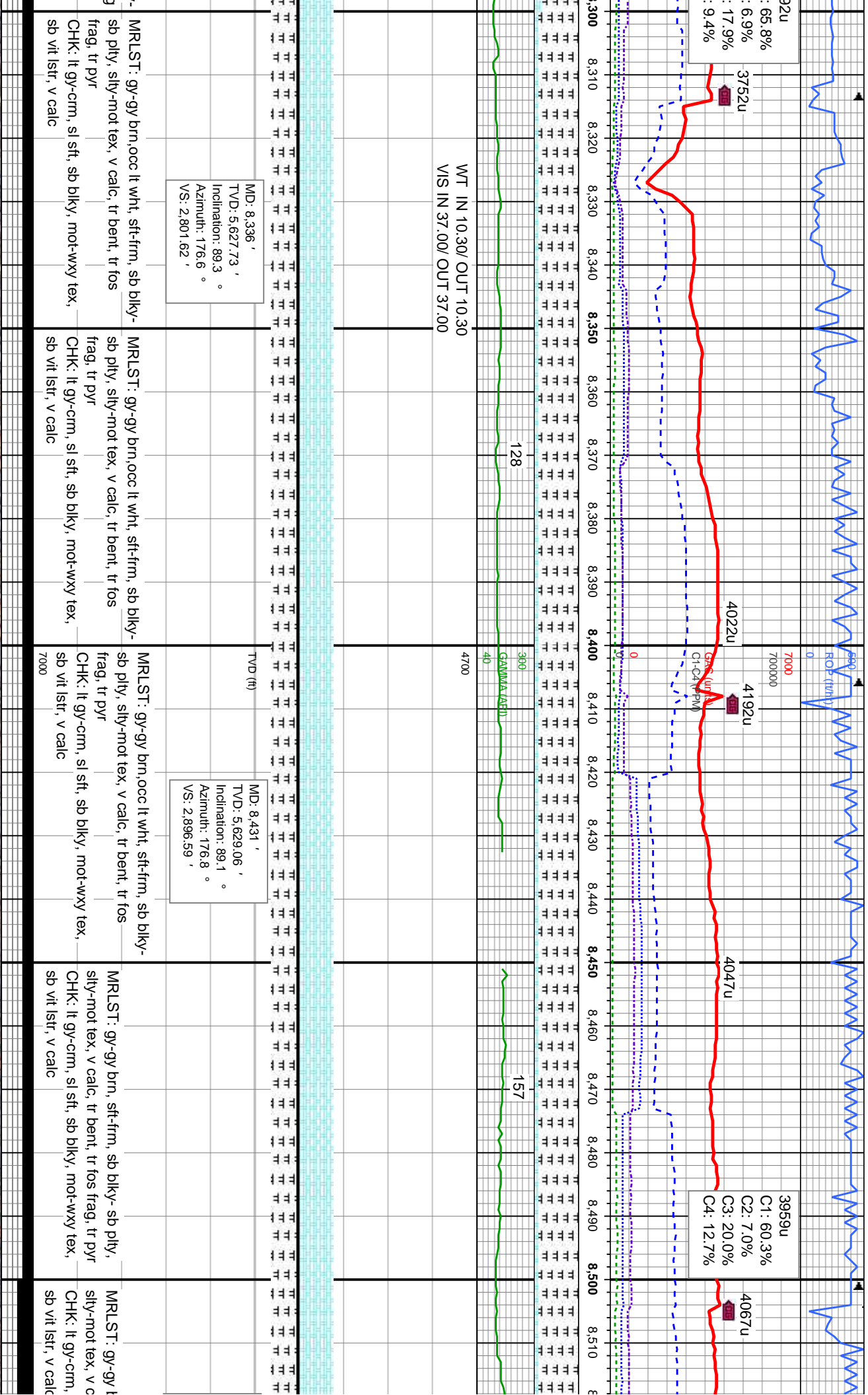


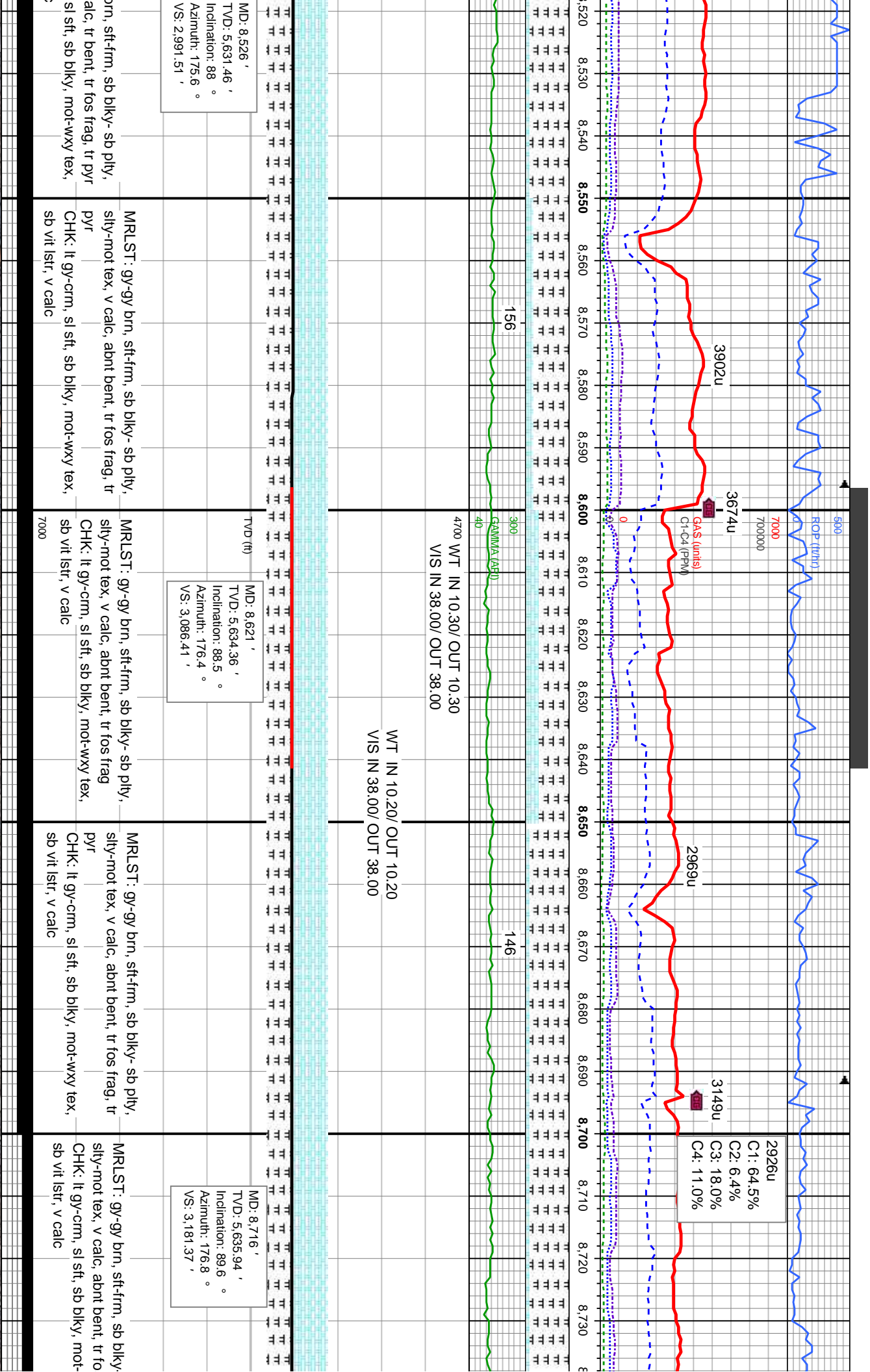


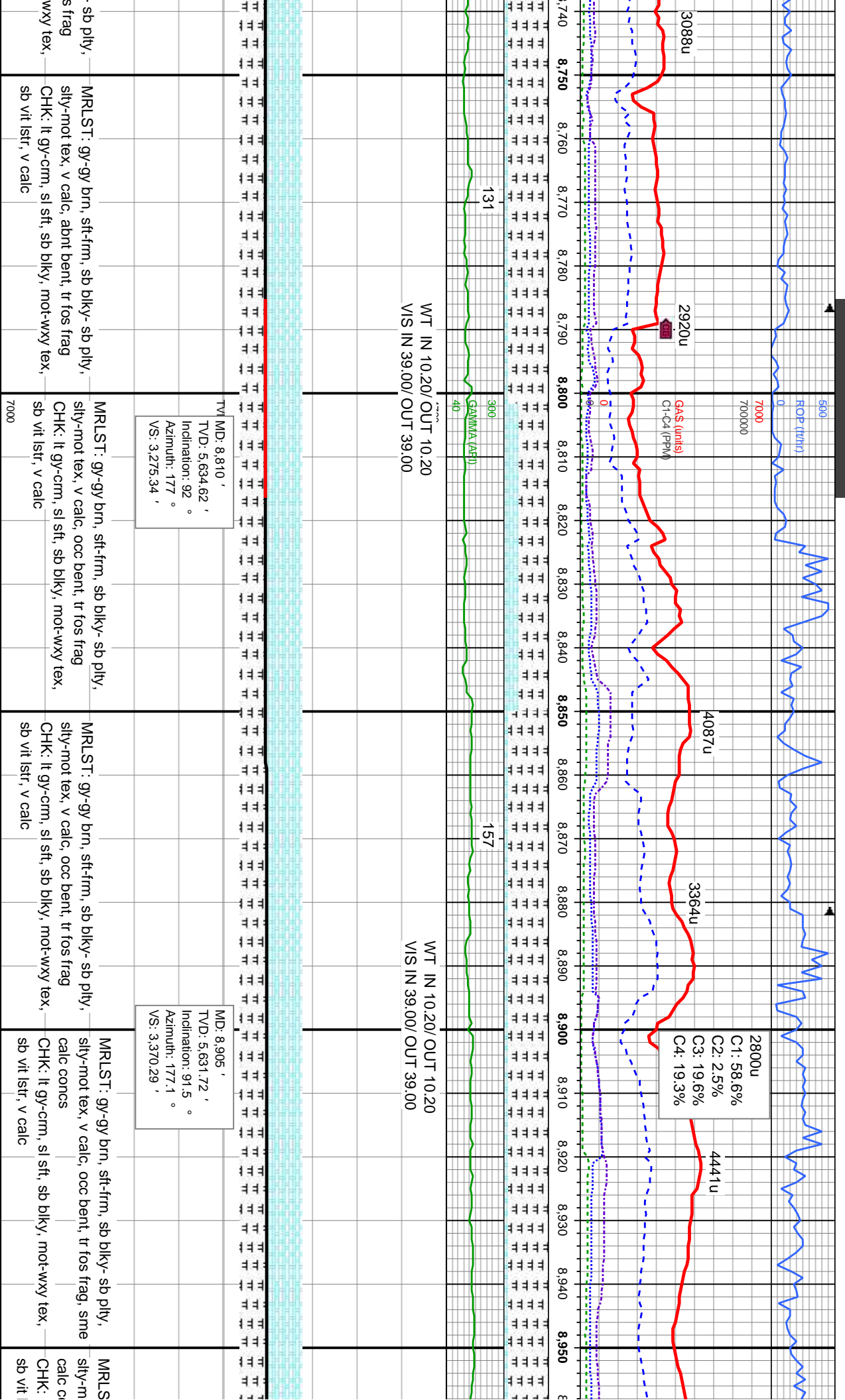


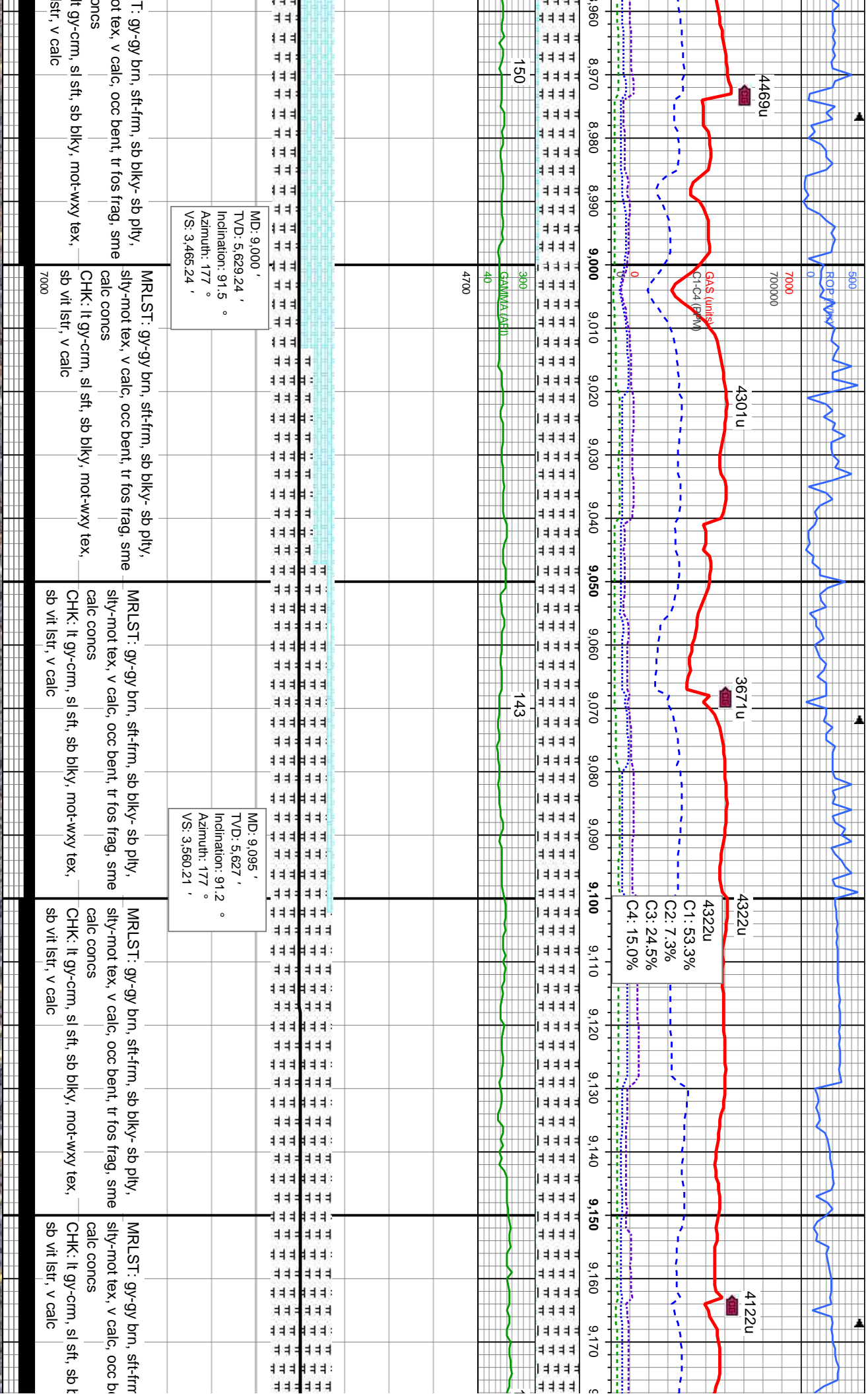


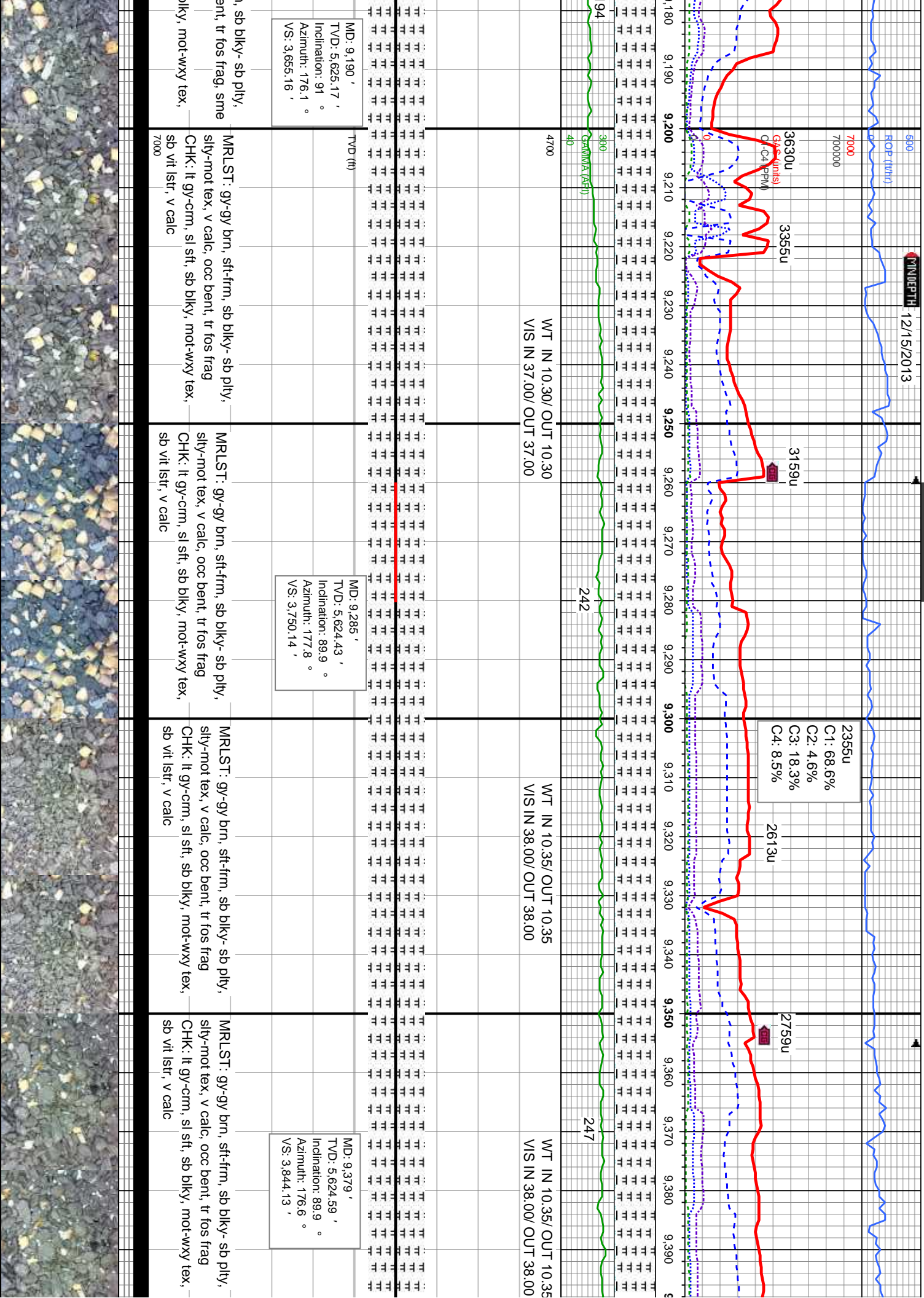


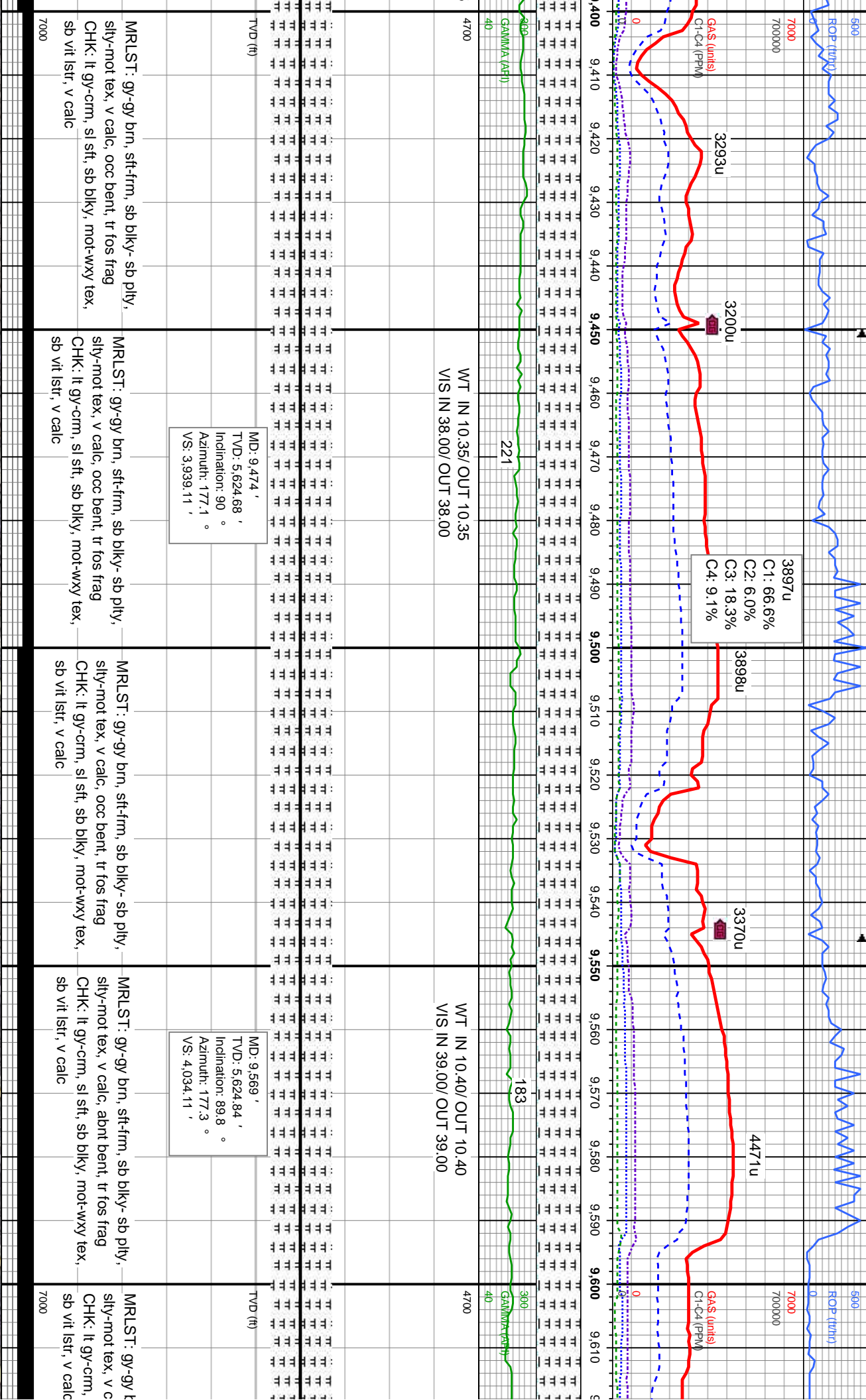


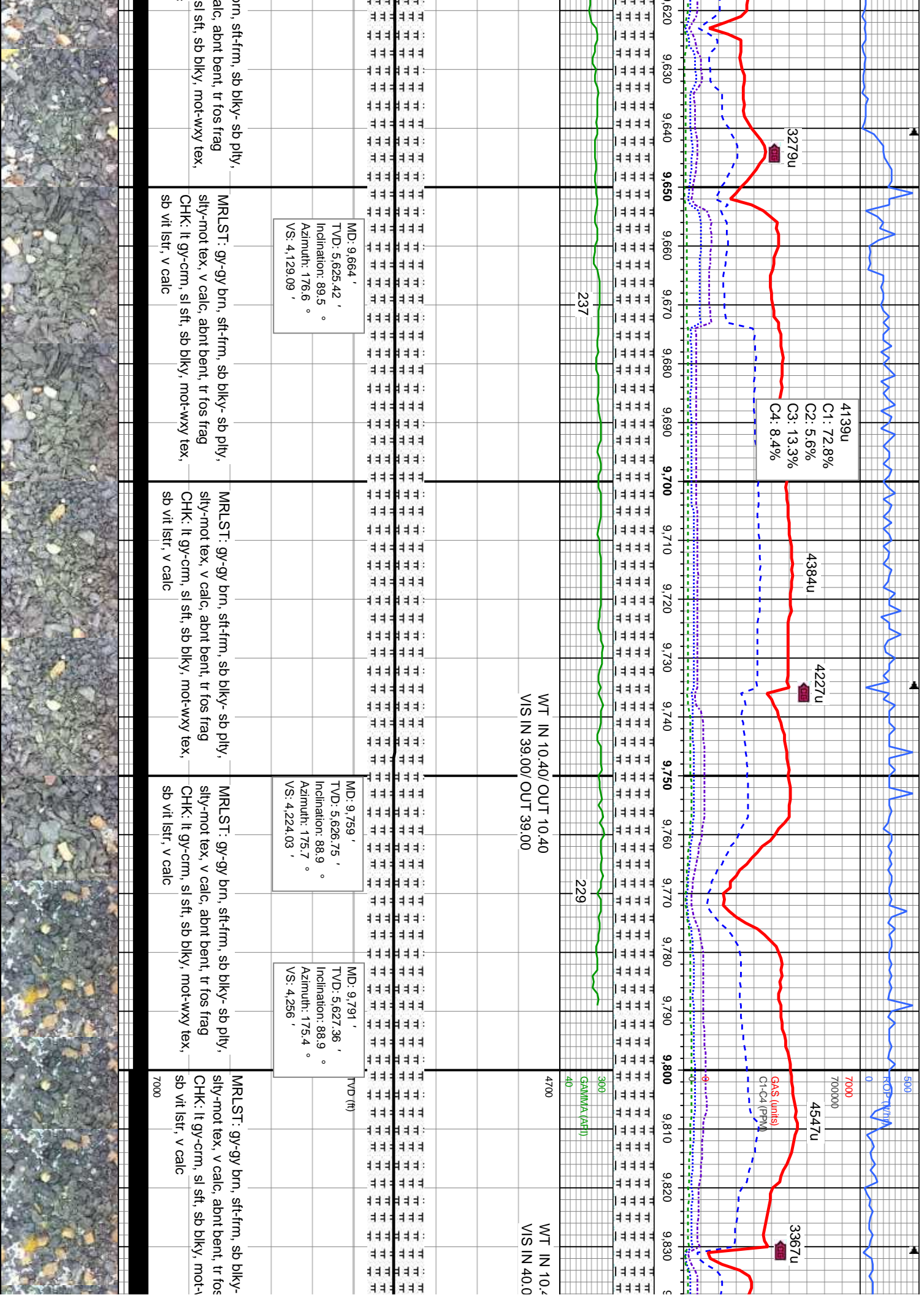


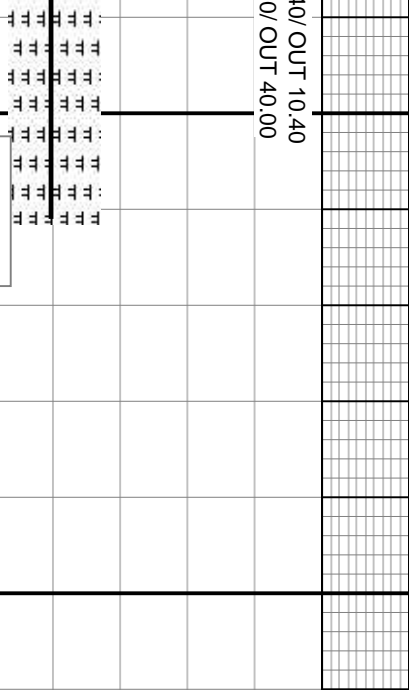












MD: 9,861 '
TVD: 5,628.71 '
Inclination: 88.9 °
Azimuth: 175.4 °
VS: 4,325.92 '

sb plty, frag
wxy tex,

40/OUT	10.40
0/OUT	40.00