



Scale: 5" / 100'
Measured Depth Log

Well Name Wells Ranch AE30-69HNB(HORZ)

Location Sec 29, T6N, R62W

State Colorado

Country USA

API Number 05-123-38675

Region DJ Basin

Spud Date 4/27/2014

Surface Coordinates Sec 29, T6N, R62W
267' FNL, 65' FWL

County Weld

Rig Number H&P 322

AFE # 140184

Field Wattenberg

Drilling Completed 5/4/2014

Ground Elevation 4777'

K.B. Elevation 4801'

Logged Interval 6000' To 12113'

Total Depth 12113'

Formation Niobrara "B" Marl

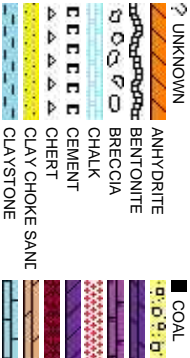
Type of Drilling Fluid Water/Poly/Mud

Company Noble Energy Inc

Name EVAN HOWELL

Company NOBLE ENERGY INC

Address 1625 Broadway suite
Denver, Colorado 80202



Slide/Rotate

ROP

ROF

Total Gas & Chromatograph

GAS

C1

C2

C3

C4

Depth Labels

% Lith

Gamma

GR

Well Bore

TVD

Oil Show

Images

Began Build @ 5868' MD; 1320 hrs, 04/30/2014

ROP (ft/hr)

LOG CONTINUED FROM:
WELLS RANCH
AE30-69HNB(VERT).mplot

BEGIN 50' SAMPLE INTERVALS

COLUMBINE LOGGING INC. RIGGED UP ON 04/28/2014
MANNED 2-PERSON LOGGING WITH BLOODHOUND
GAS CHROMATOGRAPH UNIT #0315

ROP (ft/hr)

2000

200000

GAS (units)
C1-C4 (PPM)

681u

535u

518u

257

MU

5,930 5,940 5,950 5,960 5,970 5,980 5,990 6,000 6,010 6,020 6,030 6,040 6,050 6,060 6,070 6,080 6,090 6,100

250

102

6000

MD: 6,037 '
TVD: 6,014.52 '
Inclination: 11.18 °
Azimuth: 267.71 °
VS: 41.35 '

MD: 6,084 '
TVD: 6,060.32 '
Inclination: 14.67 °
Azimuth: 263.97 °
VS: 51.81 '

TVD (ft)

BHA # 2

Bit Size: 6.750

Manufacturer: HDBS

Model: MMD55M

Serial Number: 12447711

Nozzles: 5X16

Motor Number: 2

Manufacturer: Sperry Drilling

Model: SperryDrill

Serial Number: 675-0109

Bend: 2

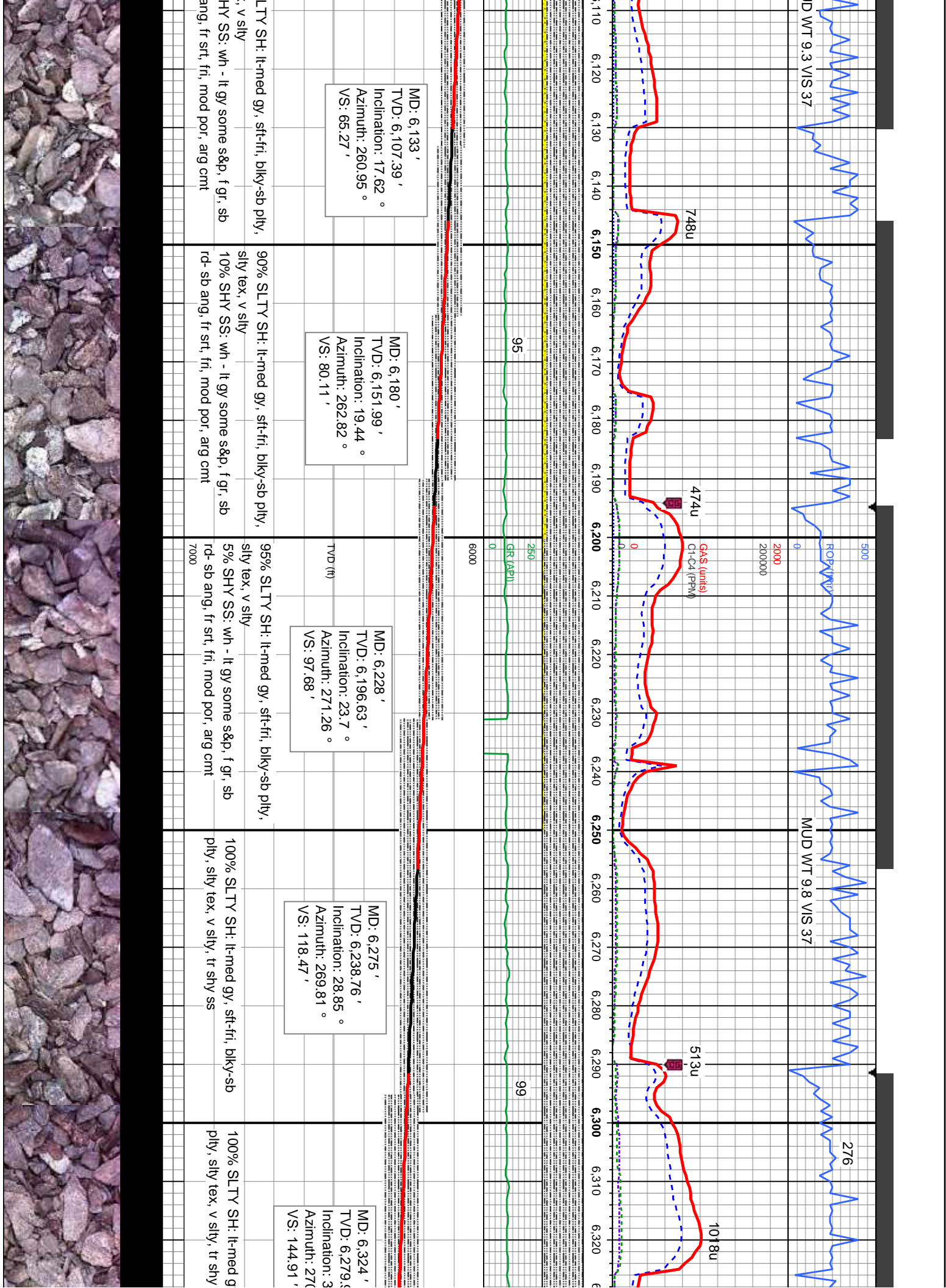
90% SLTY SH: lt-med gy, sft-fri, blk-y-sb pty, silty tex, v silty
10% SHY SS: wh - lt gy some s&p, f gr, sb rd- sb ang, fr srt, fri, mod por, arg cmt

90% SLTY SH: lt-med gy, sft-fri, blk-y-sb pty, silty tex, v silty
10% SHY SS: wh - lt gy some s&p, f gr, sb rd- sb ang, fr srt, fri, mod por, arg cmt

90% S
silty tex
10% S
rd- sb a

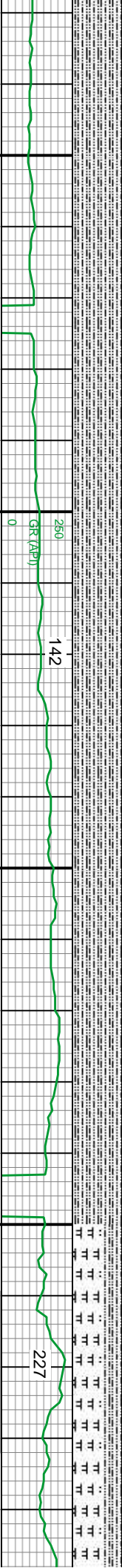
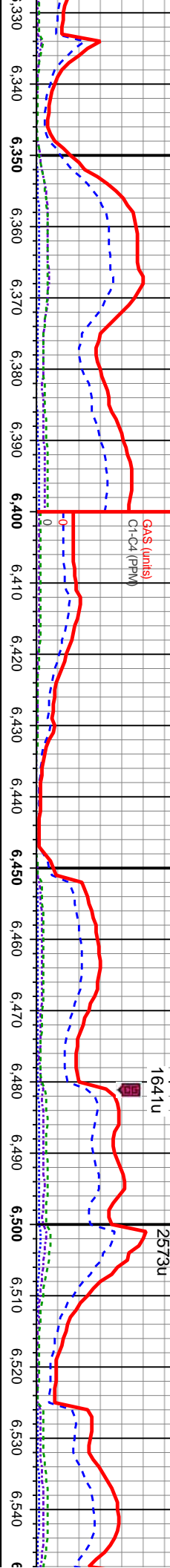
5868
5869
5870
5871
5872
5873
5874
5875
5876







GAS SCALE CHANGE



MD: 6,371 '
TVD: 6,316.35 '
Inclination: 42. °
Azimuth: 270.97 °
VS: 174.64 '

MD: 6,420 '
TVD: 6,351.43 '
Inclination: 46.55 °
Azimuth: 270.09 °
VS: 208.83 '

MD: 6,467 '
TVD: 6,383.27 '
Inclination: 48.14 °
Azimuth: 269.78 °
VS: 243.39 '

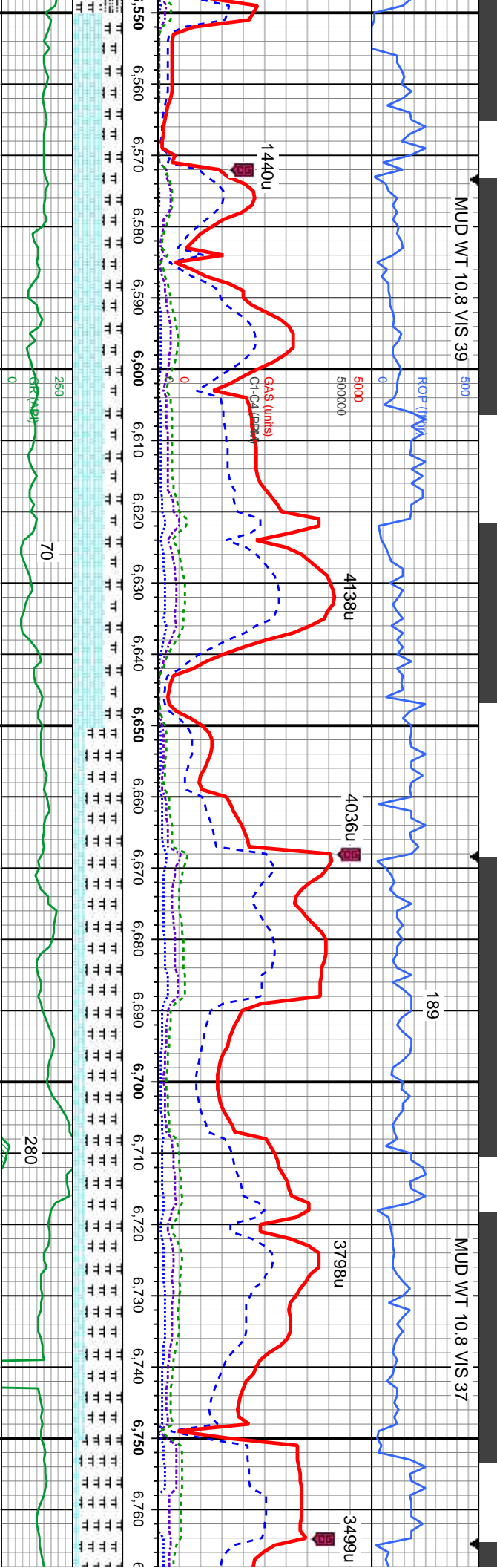
MD: 6,515 '
TVD: 6,414.53 '
Inclination: 50.57 °
Azimuth: 270.08 °
VS: 279.8 '

LOGGER TOP NIOBARARA TOP 6516' MD 6415' TVD

LOGGER TOP

100% SLTY SH: lt-med gy, sft-fri, blk-y-sb
100% SLTY SH: lt-med gy, sft-fri, blk-y-sb
100% SLTY SH: lt-med gy, sft-fri, blk-y-sb
60% MRLST: med gy, grty - rthy tex, vit lstr,
calc, sb fis, sl tr pyr
40% SLTY SH: lt-med gy, sft-fri, blk-y-sb
silty tex, v silty, tr shly ss





MD: 6,562 '
TVD: 6,442.44 '
Inclination: 56.55 °
Azimuth: 268.59 °
VS: 317.58 '

MD: 6,611 '
TVD: 6,467.68 '
Inclination: 61.43 °
Azimuth: 266.89 °
VS: 359.49 '

MD: 6,658 '
TVD: 6,488.96 '
Inclination: 64.7 °
Azimuth: 266.33 °
VS: 401.26 '

MD: 6,706 '
TVD: 6,507.21 '
Inclination: 70.59 °
Azimuth: 268.17 °
VS: 445.54 '

MD: 6,753 '
TVD: 6,520.94 '
Inclination: 75.44 °
Azimuth: 267.01 °
VS: 490.39 '

"A" CHALK 6580' MD 6452' TVD

LOGGER TOP "A" MARL 6640' MD 6481' TVD

60% CHK: lt gy - off wh, tr lt gy brn, sft - mod
frm, sb pty - sb blk, sb wxy - rthy tex, v calc,
40% MRLST: med gy, grty - rthy tex, vit lst, v
calc, sb fis

60% CHK: lt gy - off wh, tr lt gy brn, sft - mod
frm, sb pty - sb blk, sb wxy - rthy tex, v calc,
40% MRLST: med gy, grty - rthy tex, vit lst, v
calc, sb fis

75% MRLST: med gy, grty - rthy tex, v vit lst,
v calc, sb fis

25% CHK: lt gy - off wh, tr lt gy brn, sft - mod
frm, sb pty - sb blk, sb wxy - rthy tex, v calc

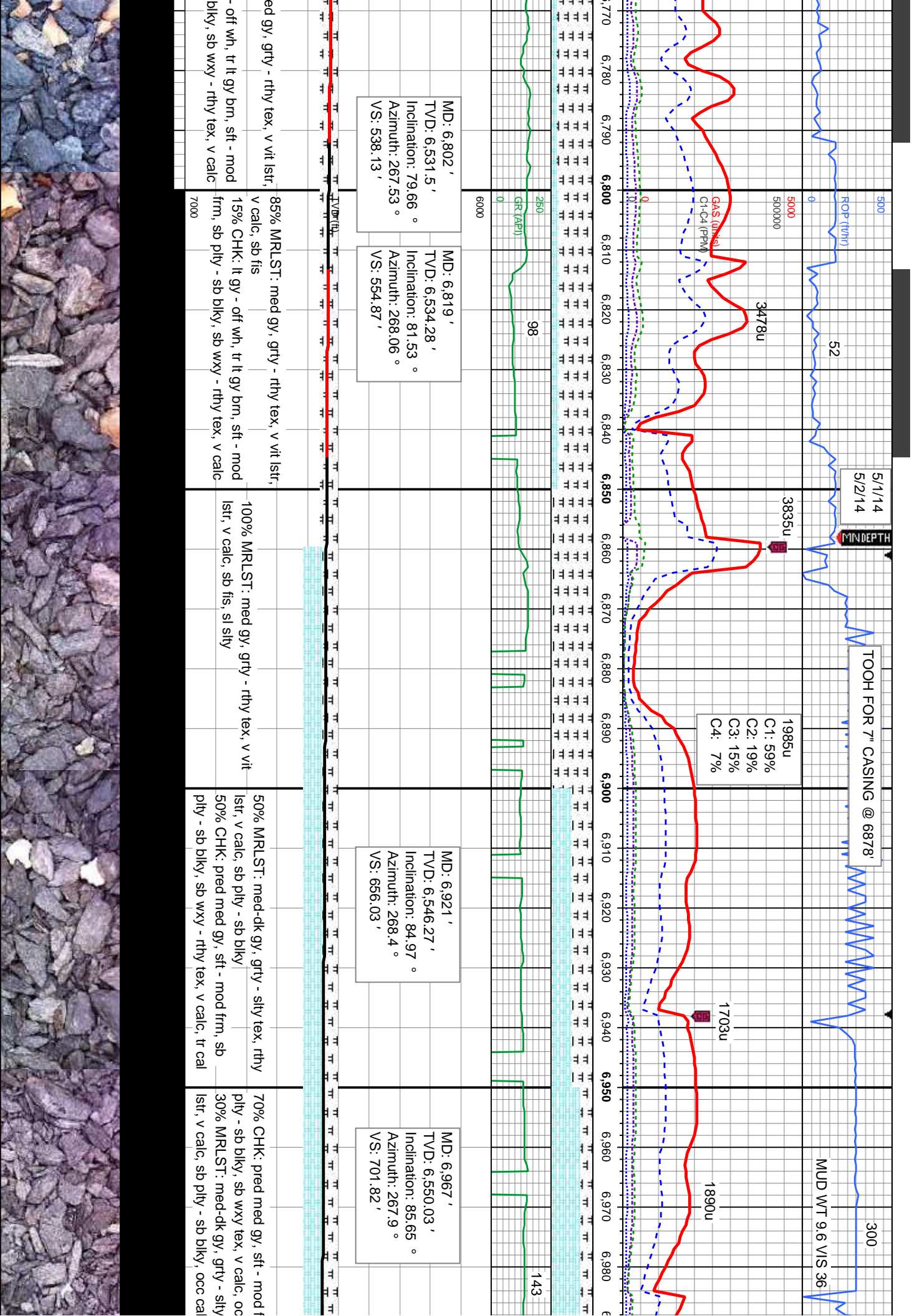
75% MRLST: med gy, grty - rthy tex, v vit lst,
v calc, sb fis

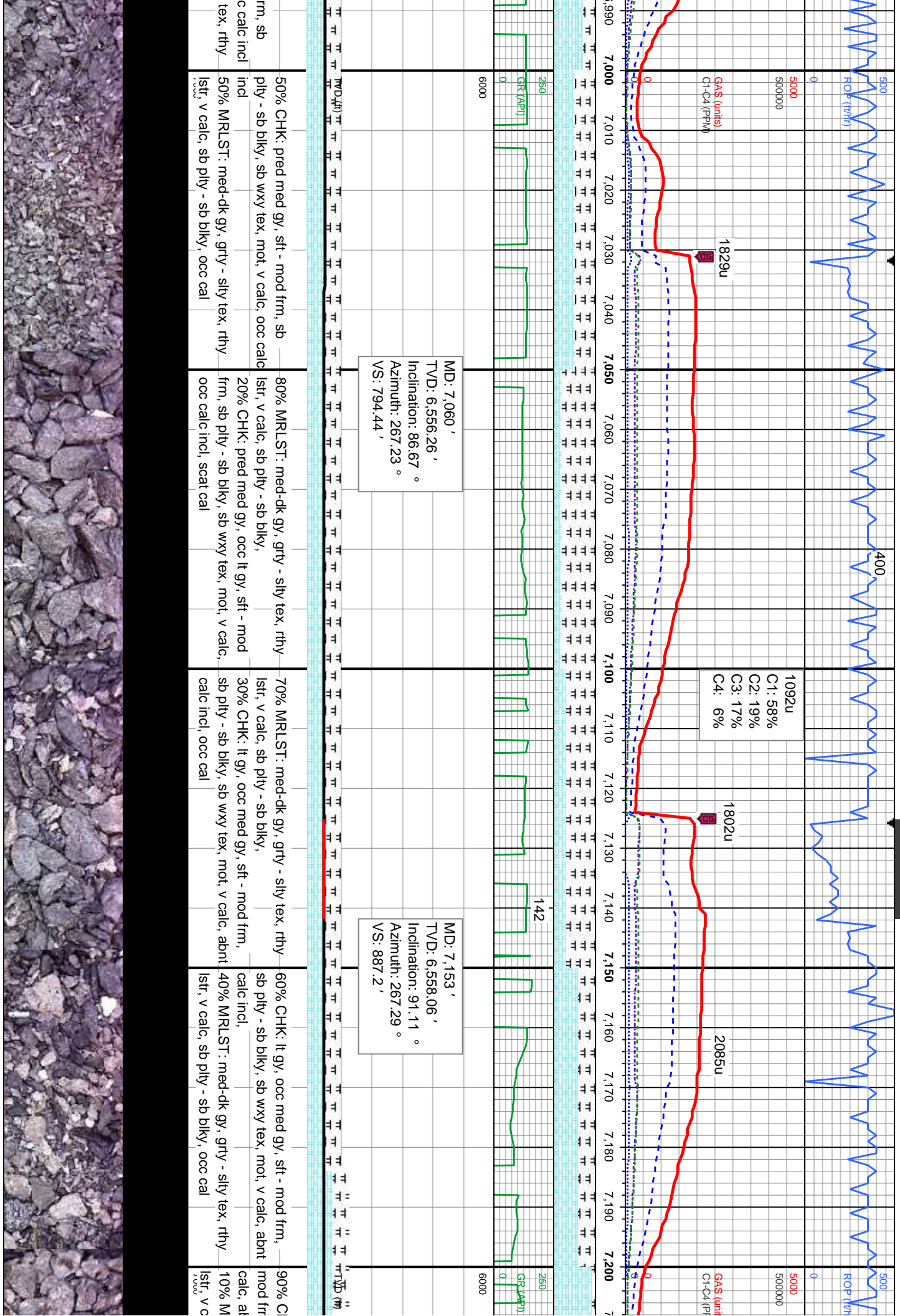
25% CHK: lt gy - off wh, tr lt gy brn, sft - mod
frm, sb pty - sb blk, sb wxy - rthy tex, v calc

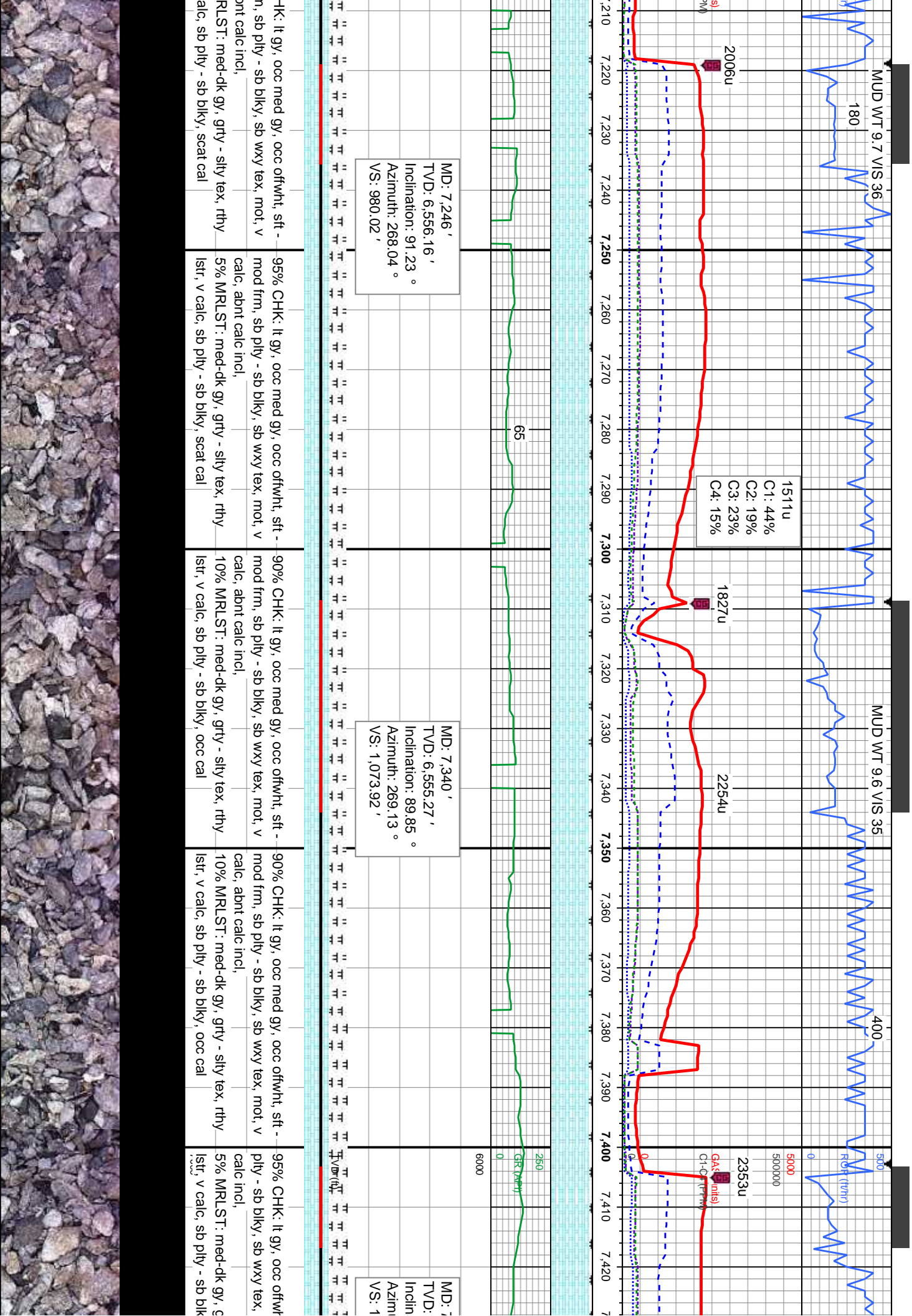
85% MRLST: m
v calc, sb fis

15% CHK: lt gy
frm, sb pty - sb









MUD WT 9.7 VIS 36

MUD WT 9.6 VIS 35

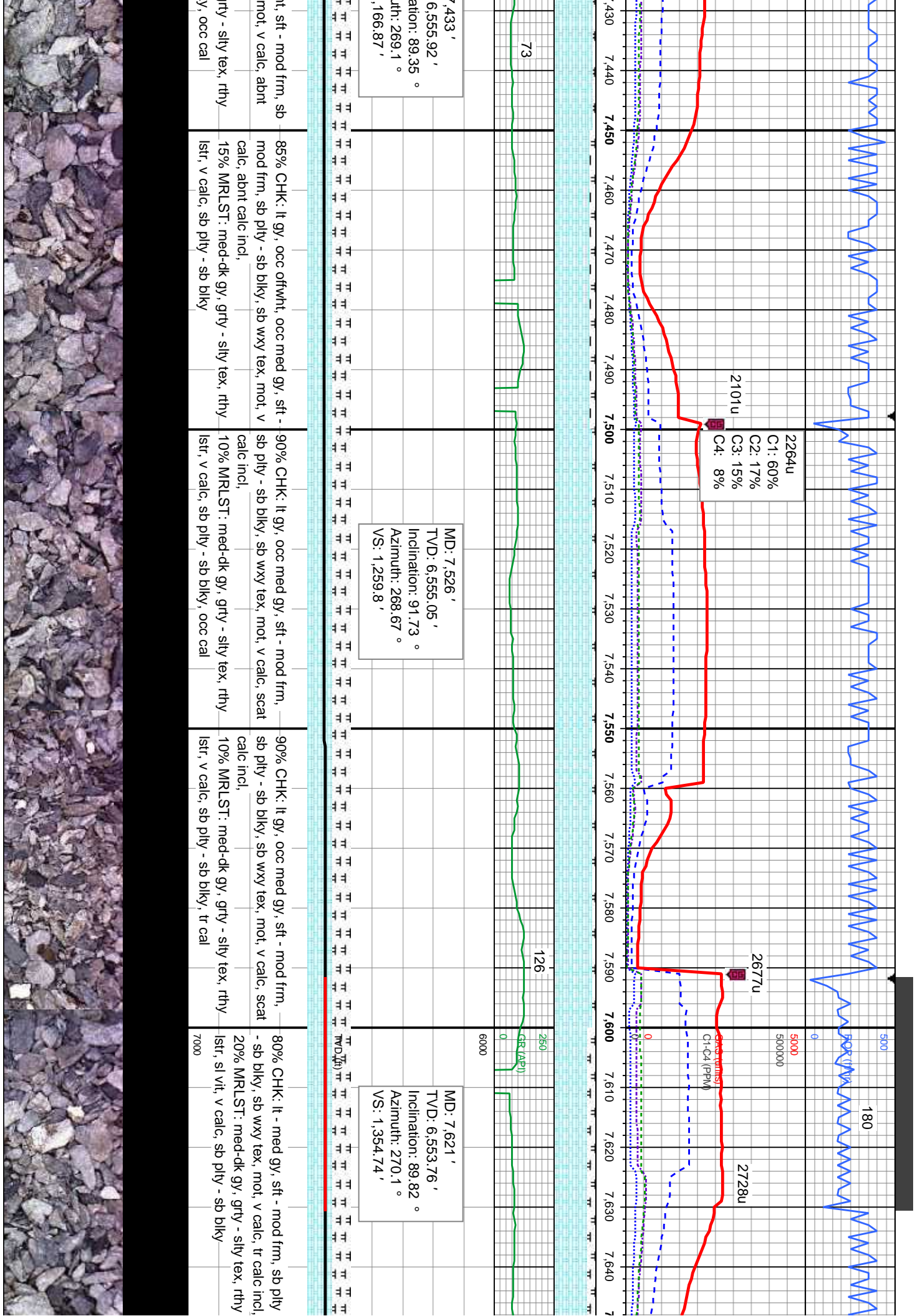
1511u
C1: 44%
C2: 19%
C3: 23%
C4: 15%

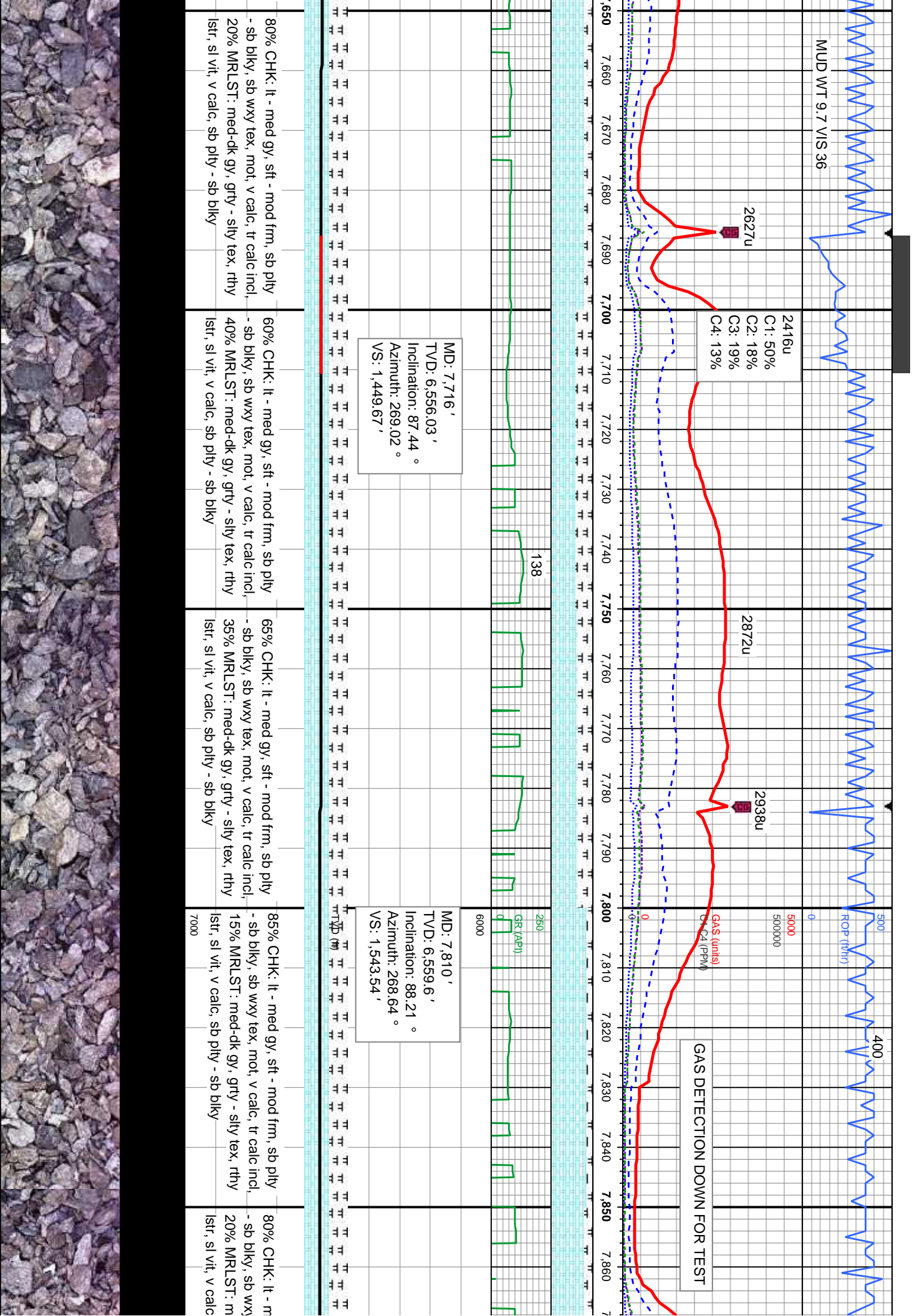
MD: 7,246'
TVD: 6,556.16'
Inclination: 91.23°
Azimuth: 268.04°
VS: 980.02'

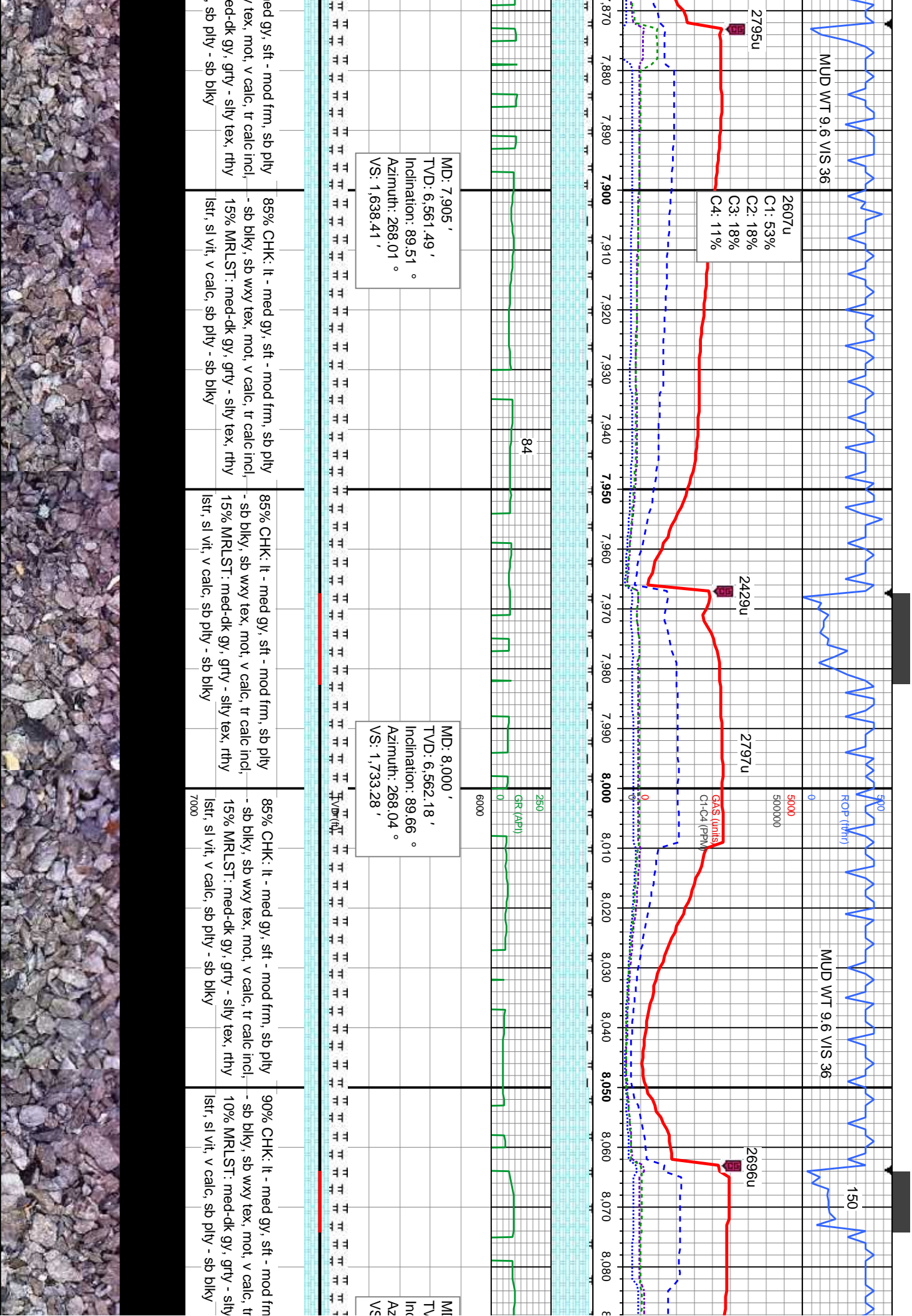
MD: 7,340'
TVD: 6,555.27'
Inclination: 89.85°
Azimuth: 269.13°
VS: 1,073.92'

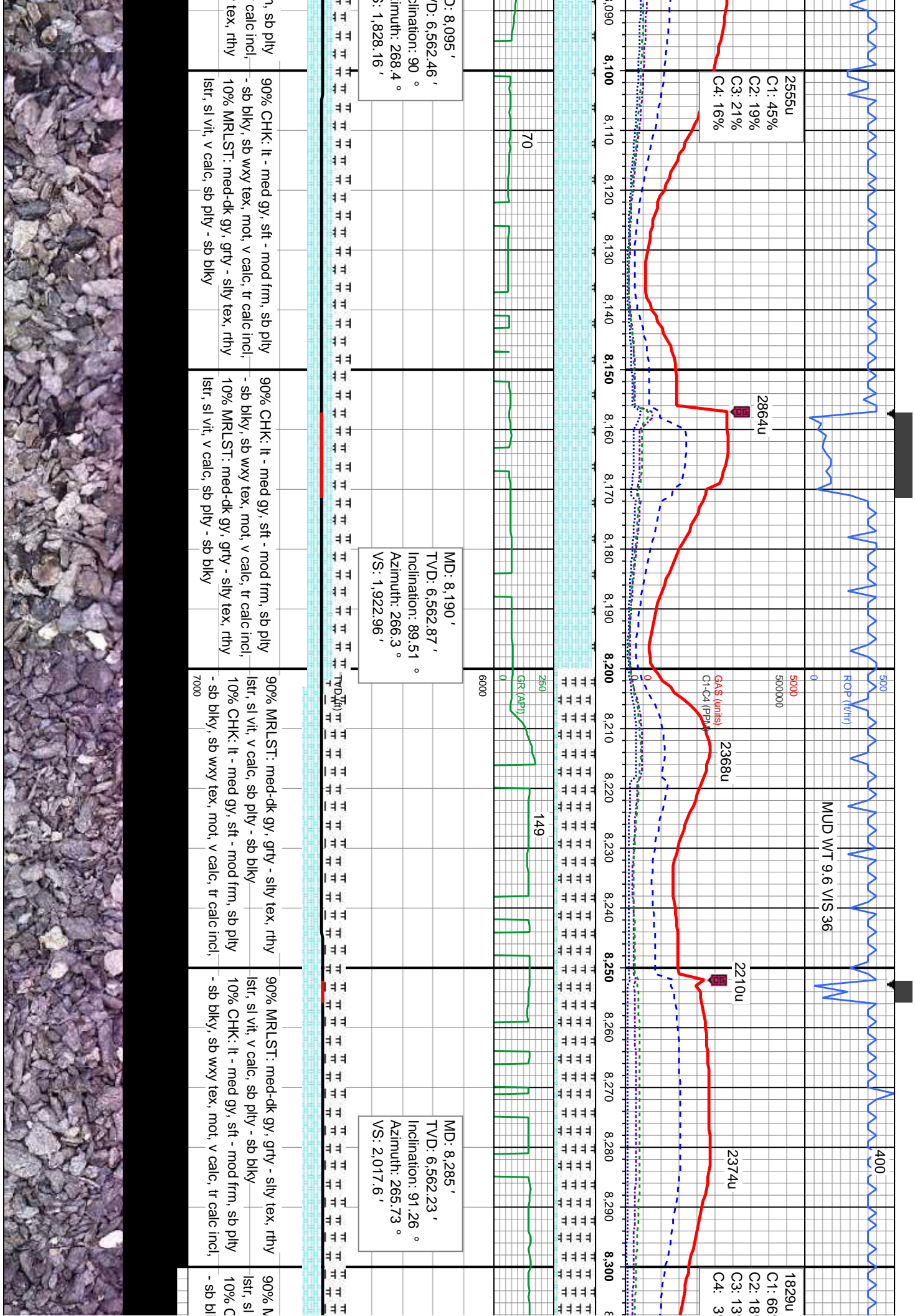
MD: 7,400'
TVD: 6,555.27'
Inclination: 89.85°
Azimuth: 269.13°
VS: 1,073.92'

CHK: lt gy, occ med gy, occ offwht, sft - n, sb ply - sb blk, sb wxy tex, mot, v calc incl,	95% CHK: lt gy, occ med gy, occ offwht, sft - mod frm, sb ply - sb blk, sb wxy tex, mot, v calc, abnt calc incl,	90% CHK: lt gy, occ med gy, occ offwht, sft - mod frm, sb ply - sb blk, sb wxy tex, mot, v calc, abnt calc incl,	90% CHK: lt gy, occ med gy, occ offwht, sft - mod frm, sb ply - sb blk, sb wxy tex, mot, v calc, abnt calc incl,	95% CHK: lt gy, occ offwht, sft - ply - sb blk, sb wxy tex, calc incl,
RLST: med-dk gy, grty - silty tex, rthy alc, sb ply - sb blk, scat cal	5% MRLST: med-dk gy, grty - silty tex, rthy lstr, v calc, sb ply - sb blk, scat cal	10% MRLST: med-dk gy, grty - silty tex, rthy lstr, v calc, sb ply - sb blk, occ cal	10% MRLST: med-dk gy, grty - silty tex, rthy lstr, v calc, sb ply - sb blk, occ cal	5% MRLST: med-dk gy, g lstr, v calc, sb ply - sb blk









2555u
C1: 45%
C2: 19%
C3: 21%
C4: 16%

2864u

Gas (units)
C1-C4 (ppm)

2368u

2210u

2374u

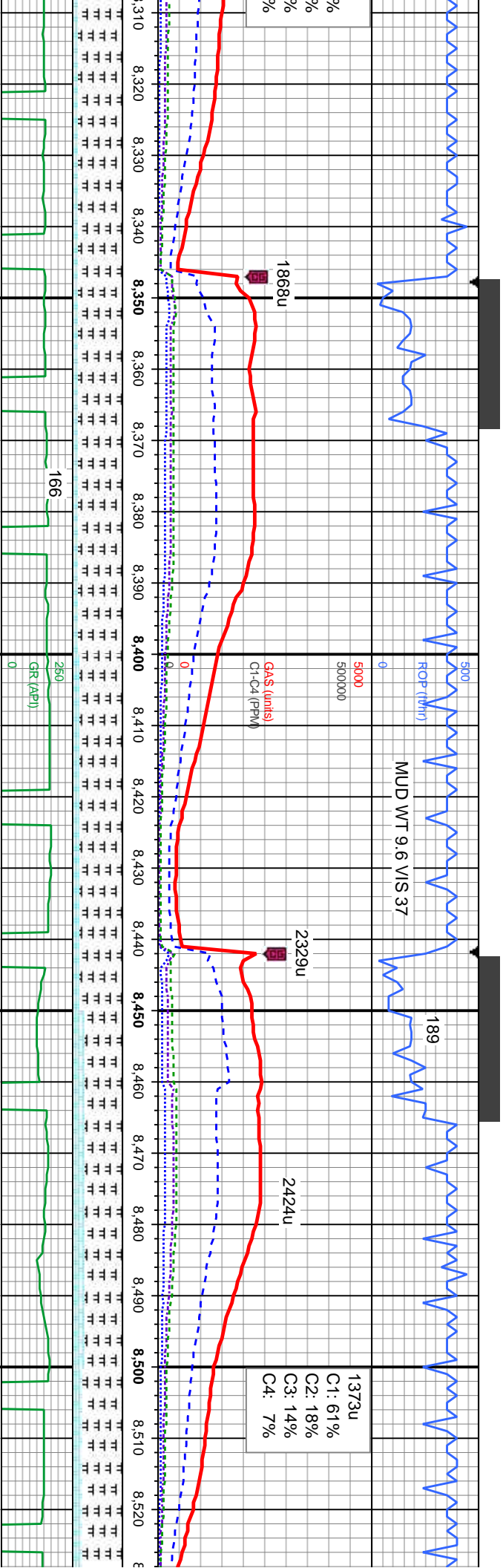
1829u
C1: 66
C2: 18
C3: 13
C4: 3

D: 8,095 '
D: 6,562.46 '
Inclination: 90 °
Azimuth: 268.4 °
VS: 1,828.16 '

MD: 8,190 '
TVD: 6,562.87 '
Inclination: 89.51 °
Azimuth: 266.3 °
VS: 1,922.96 '

MD: 8,285 '
TVD: 6,562.23 '
Inclination: 91.26 °
Azimuth: 265.73 °
VS: 2,017.6 '

90% CHK: lt - med gy, sft - mod frm, sb pily	90% CHK: lt - med gy, sft - mod frm, sb pily	90% MRLST: med-dk gy, grty - sily tex, rthy	90% MRLST: med-dk gy, grty - sily tex, rthy	90% MRLST: med-dk gy, grty - sily tex, rthy
calc incl, tex, rthy	- sb blk, sb wxy tex, mot, v calc, tr calc incl, 10% MRLST: med-dk gy, grty - sily tex, rthy	lstr, sl vit, v calc, sb pily - sb blk	lstr, sl vit, v calc, sb pily - sb blk	lstr, sl vit, v calc, sb pily - sb blk
	lstr, sl vit, v calc, sb pily - sb blk			

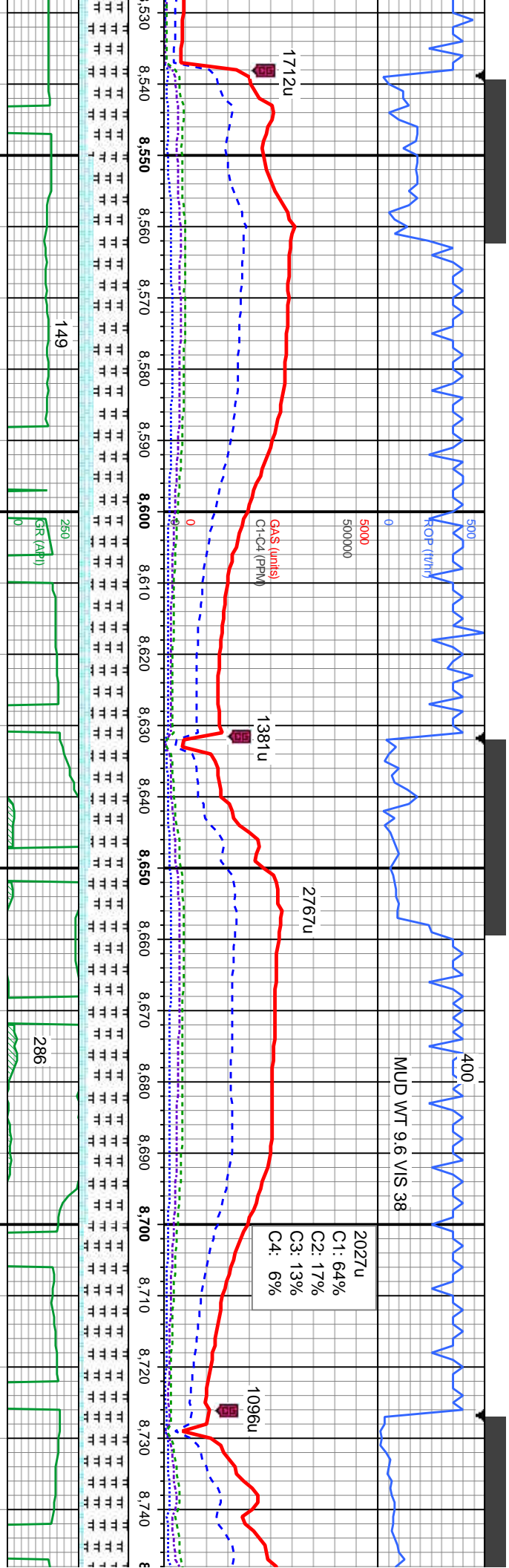


MD: 8,380 '
TVD: 6,561 '
Inclination: 90.22 °
Azimuth: 265.55 °
VS: 2,112.17 '

MD: 8,474 '
TVD: 6,559.7 '
Inclination: 91.36 °
Azimuth: 267.34 °
VS: 2,205.85 '

90% MRLST: med-dk gy, grty - silty tex, rthy	85% MRLST: med-dk gy, grty - silty tex, rthy	75% MRLST: med-dk gy, grty - silty tex, rthy	80% MRLST: med-dk gy, grty - silty tex, rthy
1st, sl vit, v calc, sb ply - sb blk	1st, sl vit, v calc, sb ply - sb blk	1st, sl vit, v calc, sb ply - sb blk	1st, sl vit, v calc, sb ply - sb blk
10% CHK: lt - med gy, sft - mod frm, sb ply	15% CHK: lt - med gy, sft - mod frm, sb ply	25% CHK: lt - med gy, sft - mod frm, sb ply	20% CHK: lt - med gy, sft - mod frm, sb ply
- sb blk, sb wxy tex, mot, v calc, tr calc incl,	- sb blk, sb wxy tex, mot, v calc, tr calc incl,	- sb blk, sb wxy tex, mot, v calc, tr calc incl,	- sb blk, sb wxy tex, mot, v calc, tr calc incl,





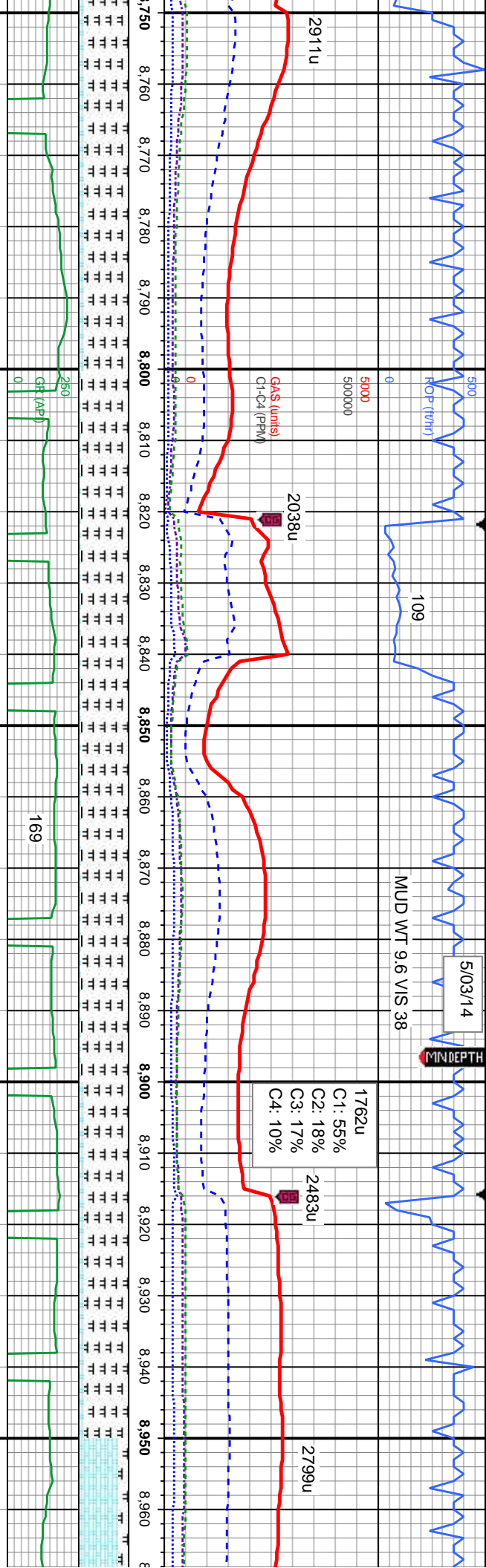
MD: 8,569 '
TVD: 6,557.76 '
Inclination: 90.99 °
Azimuth: 267.75 °
VS: 2,300.66 '

MD: 8,664 '
TVD: 6,556.53 '
Inclination: 90.49 °
Azimuth: 268.96 °
VS: 2,395.55 '

2027u
C1: 64%
C2: 17%
C3: 13%
C4: 6%

grty - silty tex, rthy	70% MRLST: med-dk gy, grty - silty tex, rthy	75% MRLST: med-dk gy, grty - silty tex, rthy	80% MRLST: med-dk gy, grty - silty tex, rthy	90% MRLST: med-dk gy, grty - silty tex, rthy
sb blkly	lsfr, sl vit, v calc, sb ply - sb blkly	lsfr, sl vit, v calc, sb ply - sb blkly	lsfr, sl vit, v calc, sb ply - sb blkly	lsfr, vit lsfr, v calc, sb ply - sb blkly
- mod frm, sb ply	30% CHK: lt - med gy, sft - mod frm, sb ply	25% CHK: lt - med gy, sft - mod frm, sb ply	20% CHK: lt - med gy, sft - mod frm, sb ply	10% CHK: lt - med gy, sft - mod frm, sb ply
, v calc, tr calc incl,	- sb blkly, sb wxy tex, mot, v calc, tr calc incl,	- sb blkly, sb wxy tex, mot, v calc, tr calc incl,	- sb blkly, sb wxy tex, mot, v calc, tr calc incl,	- sb blkly, sb wxy tex, mot, v calc, tr calc incl,





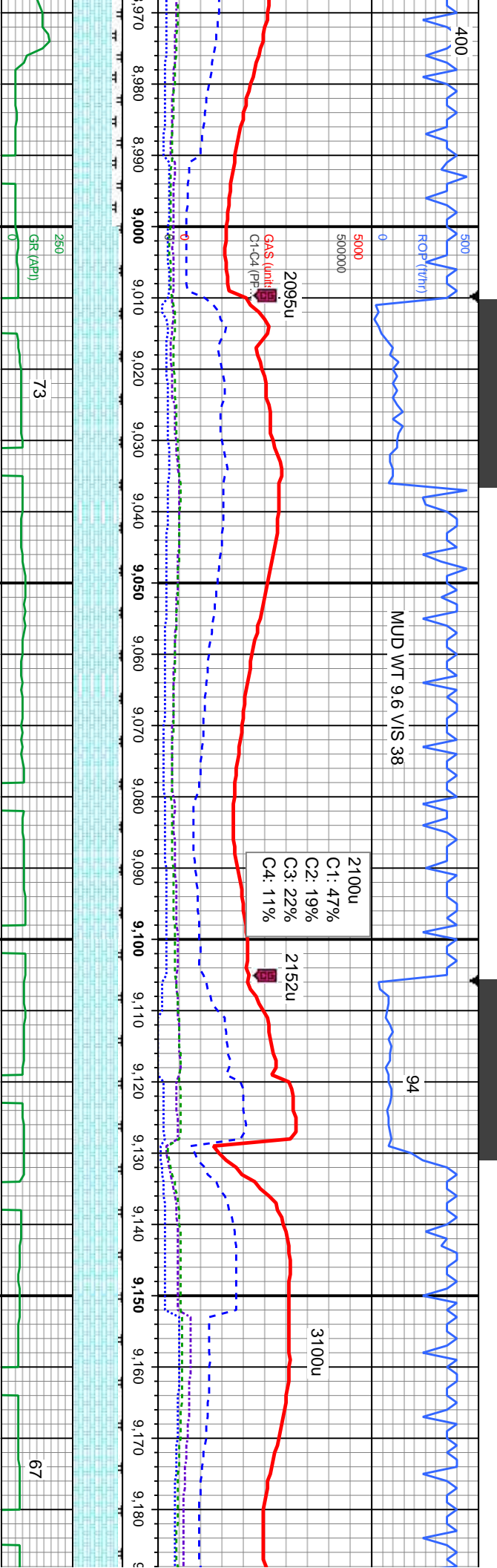
MD: 8,758 '
VD: 6,556 '
Inclination: 90.15 °
Azimuth: 269.5 °
S: 2.489.5 '

MD: 8,853 '
TVD: 6,556.54 '
Inclination: 89.2 °
Azimuth: 268.82 °
VS: 2,584.44 '

MD: 8,947 '
TVD: 6,556.36 '
Inclination: 91.02 °
Azimuth: 267.43 °
VS: 2,678.32 '

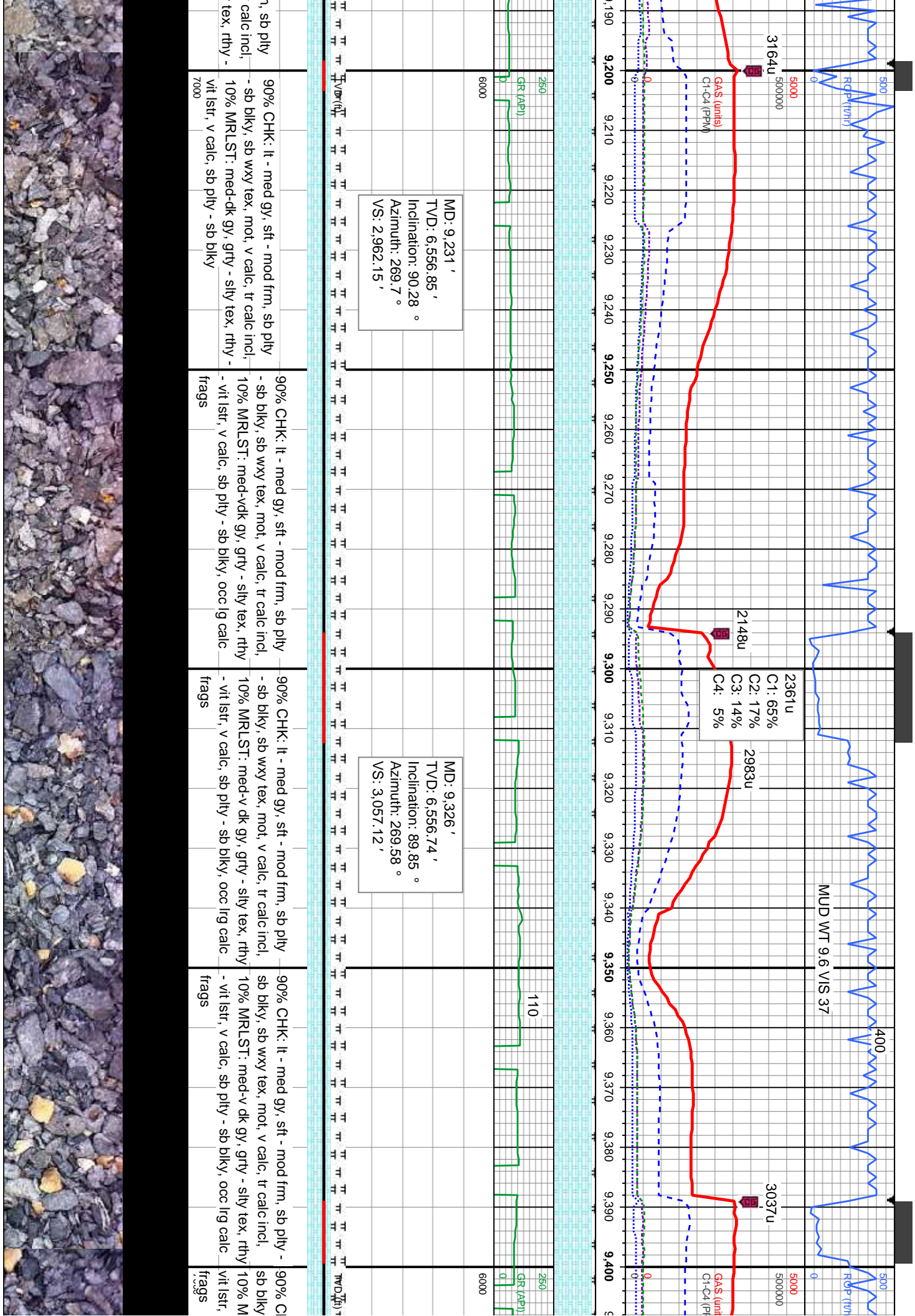
90% MRLST: med-dk gy, grty - silty tex, rthy lsr, vit lsr, v calc, sb pily - sb blkly 10% CHK: lt - med gy, sft - mod frm, sb pily - sb blkly, sb wxy tex, mot, v calc, tr calc incl,	95% MRLST: med-dk gy, grty - silty tex, rthy lsr, vit lsr, v calc, sb pily - sb blkly 5% CHK: lt - med gy, sft - mod frm, sb pily - sb blkly, sb wxy tex, mot, v calc, tr calc incl,	95% MRLST: med-dk gy, grty - silty tex, rthy lsr, vit lsr, v calc, sb pily - sb blkly 5% CHK: lt - med gy, sft - mod frm, sb pily - sb blkly, sb wxy tex, mot, v calc, tr calc incl,	90% MRLST: med-dk gy, grty - silty tex, rthy lsr, vit lsr, v calc, sb pily - sb blkly 10% CHK: lt - med gy, sft - mod frm, sb pily - sb blkly, sb wxy tex, mot, v calc, tr calc incl,	80% CHK: lt - m - sb blkly, sb wxy 20% MRLST: m vit lsr, v calc, st
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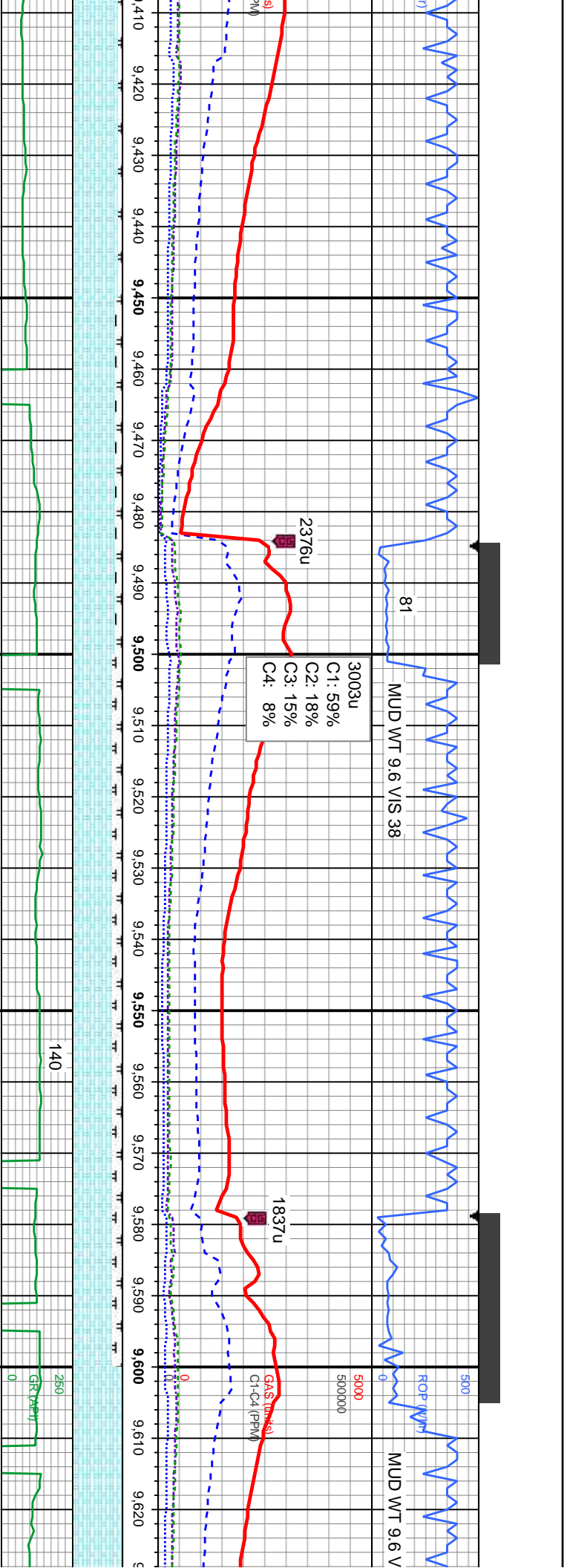




ed gy, sft - mod frm, sb pily	95% CHK: lt - med gy, sft - mod frm, sb pily	95% CHK: lt - med gy, sft - mod frm, sb pily	90% CHK: lt - med gy, sft - mod frm, sb pily	90% CHK: lt - med gy, sft - mod frm, sb pily
tex, mot, v calc, tr calc incl,	- sb blkly, sb wxy tex, mot, v calc, tr calc incl,	- sb blkly, sb wxy tex, mot, v calc, tr calc incl,	- sb blkly, sb wxy tex, mot, v calc, tr calc incl,	- sb blkly, sb wxy tex, mot, v calc, tr calc incl,
ed-dk gy, grty - silty tex, rthy -	5% MRLST: med-dk gy, grty - silty tex, rthy -	5% MRLST: med-dk gy, grty - silty tex, rthy -	10% MRLST: med-dk gy, grty - silty tex, rthy -	10% MRLST: med-dk gy, grty - silty
pily - sb blkly	vit lstr, v calc, sb pily - sb blkly	vit lstr, v calc, sb pily - sb blkly	vit lstr, v calc, sb pily - sb blkly	vit lstr, v calc, sb pily - sb blkly
	7000			







MD: 9,421 '
TVD: 6,556.35 '
Inclination: 90.62 °
Azimuth: 268.36 °
VS: 3,152.06 '

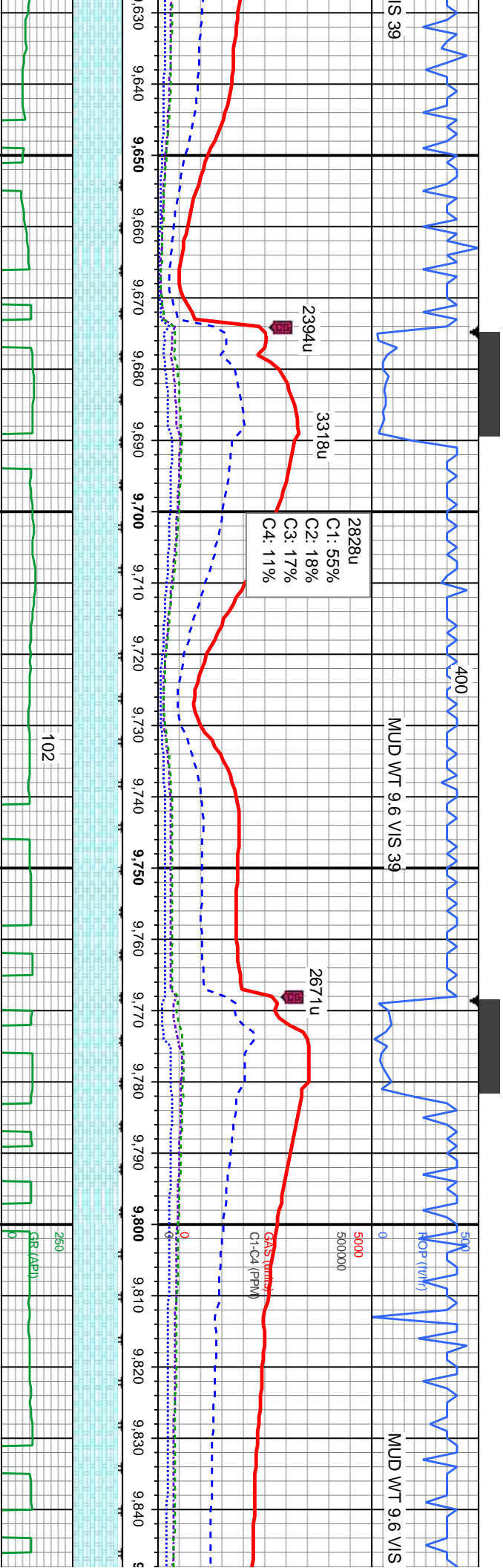
3003u
C1: 59%
C2: 18%
C3: 15%
C4: 8%

MD: 9,516 '
TVD: 6,555.43 '
Inclination: 90.49 °
Azimuth: 268.23 °
VS: 3,246.95 '

MD: 9,611 '
TVD: 6,557.87 '
Inclination: 86.57 °
Azimuth: 267.69 °
VS: 3,341.76 '

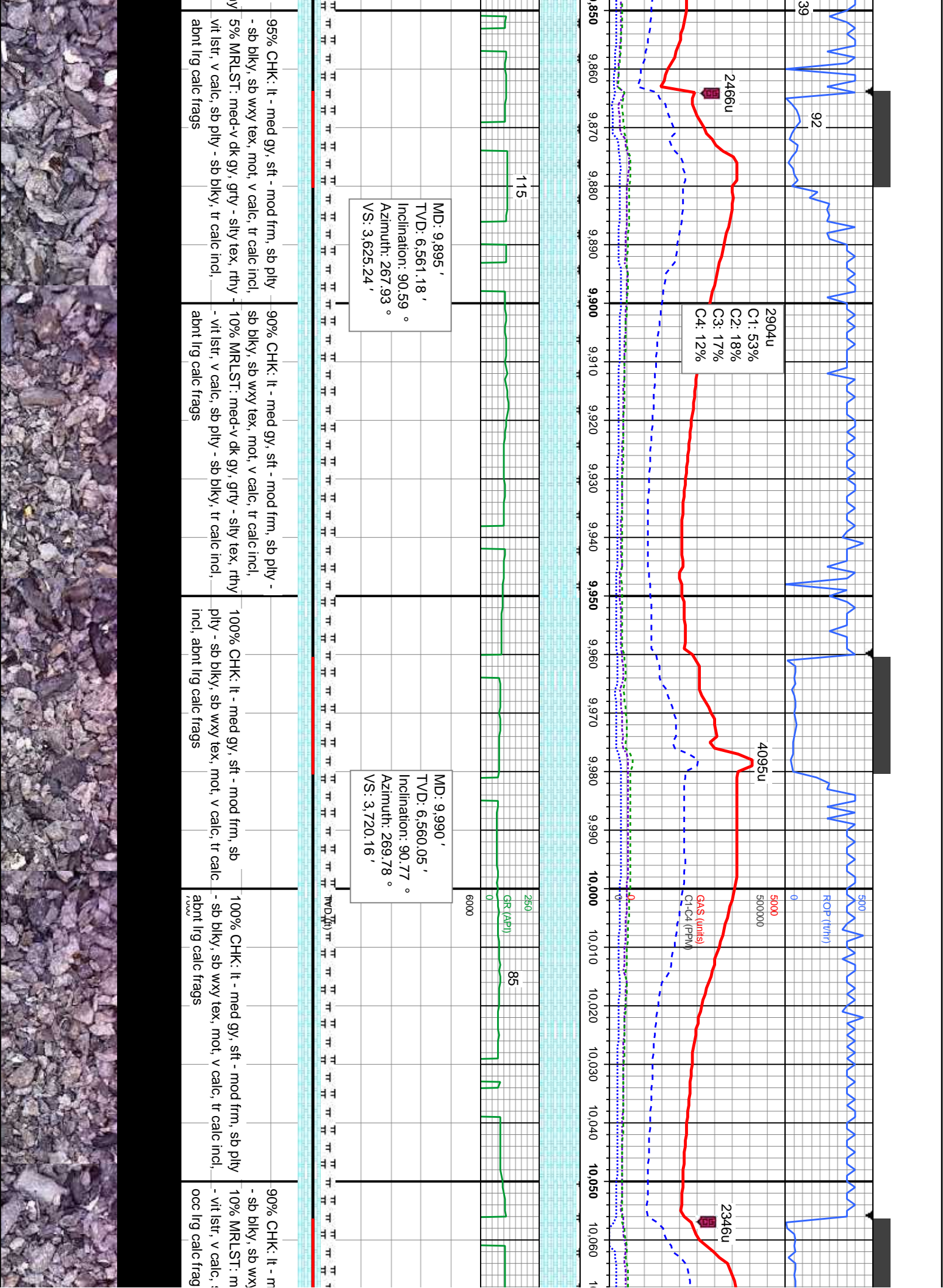
HK: lt - med gy, sft - mod frm, sb pty - sb wxy tex, mot, v calc, tr calc incl, RLST: med-v dk gy, grty - silty tex, rthy - v calc, sb pty - sb blk, occ lrg calc	85% CHK: lt - med gy, sft - mod frm, sb pty - sb blk, sb wxy tex, mot, v calc, tr calc incl, 5% MRLST: med-v dk gy, grty - silty tex, rthy - vit lstr, v calc, sb pty - sb blk, occ lrg calc frags, tr bent	80% CHK: lt - med gy, sft - mod frm, sb pty - sb blk, sb wxy tex, mot, v calc, tr calc incl, 20% MRLST: med-v dk gy, grty - silty tex, rthy - vit lstr, v calc, sb pty - sb blk, tr calc incl, scat lrg calc frags	80% CHK: lt - med gy, sft - mod frm, sb pty - sb blk, sb wxy tex, mot, v calc, tr calc incl, 20% MRLST: med-v dk gy, grty - silty tex, rthy - vit lstr, v calc, sb pty - sb blk, tr calc incl, scat lrg calc frags	100% CHK: lt - med gy, sft - mod frm, sb pty - sb blk, sb wxy tex, mot, v calc, tr calc incl, occ lrg calc frag
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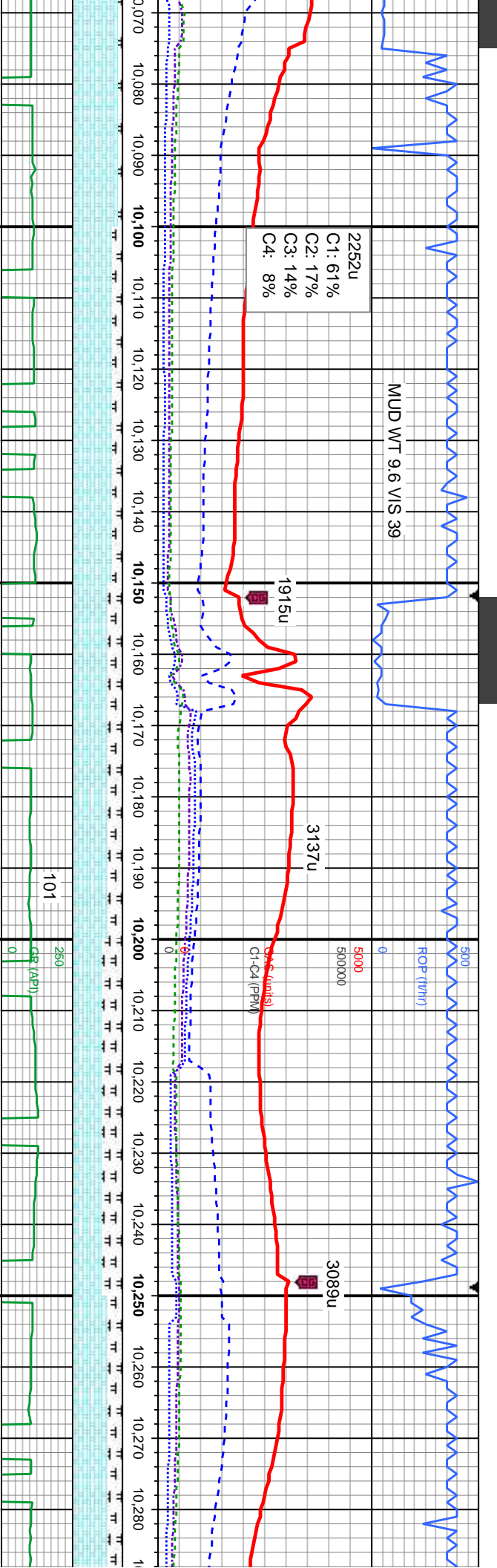




9,630	9,640	9,650	9,660	9,670	9,680	9,690	9,700	9,710	9,720	9,730	9,740	9,750	9,760	9,770	9,780	9,790	9,800	9,810	9,820	9,830	9,840	9,850
95% CHK: lt - med gy, sft - mod frm, sb pily - sb blk, sb wxy tex, mot, v calc, tr calc incl, 5% MRLST: med-v dk gy, grty - silty tex, rthy - vit lstr, v calc, sb pily - sb blk, tr calc incl, occ lrg calc frags																						
90% CHK: lt - med gy, sft - mod frm, sb pily - sb blk, sb wxy tex, mot, v calc, tr calc incl, 10% MRLST: med-v dk gy, grty - silty tex, rthy - vit lstr, v calc, sb pily - sb blk, tr calc incl, occ lrg calc frags																						
95% CHK: lt - med gy, sft - mod frm, sb pily - sb blk, sb wxy tex, mot, v calc, tr calc incl, 5% MRLST: med-v dk gy, grty - silty tex, rthy - vit lstr, v calc, sb pily - sb blk, tr calc incl, abnt lrg calc frags																						
90% CHK: lt - med gy, sft - mod frm, sb pily - sb blk, sb wxy tex, mot, v calc, tr calc incl, 10% MRLST: med-v dk gy, grty - silty tex, rthy - vit lstr, v calc, sb pily - sb blk, tr calc incl, abnt lrg calc frags																						







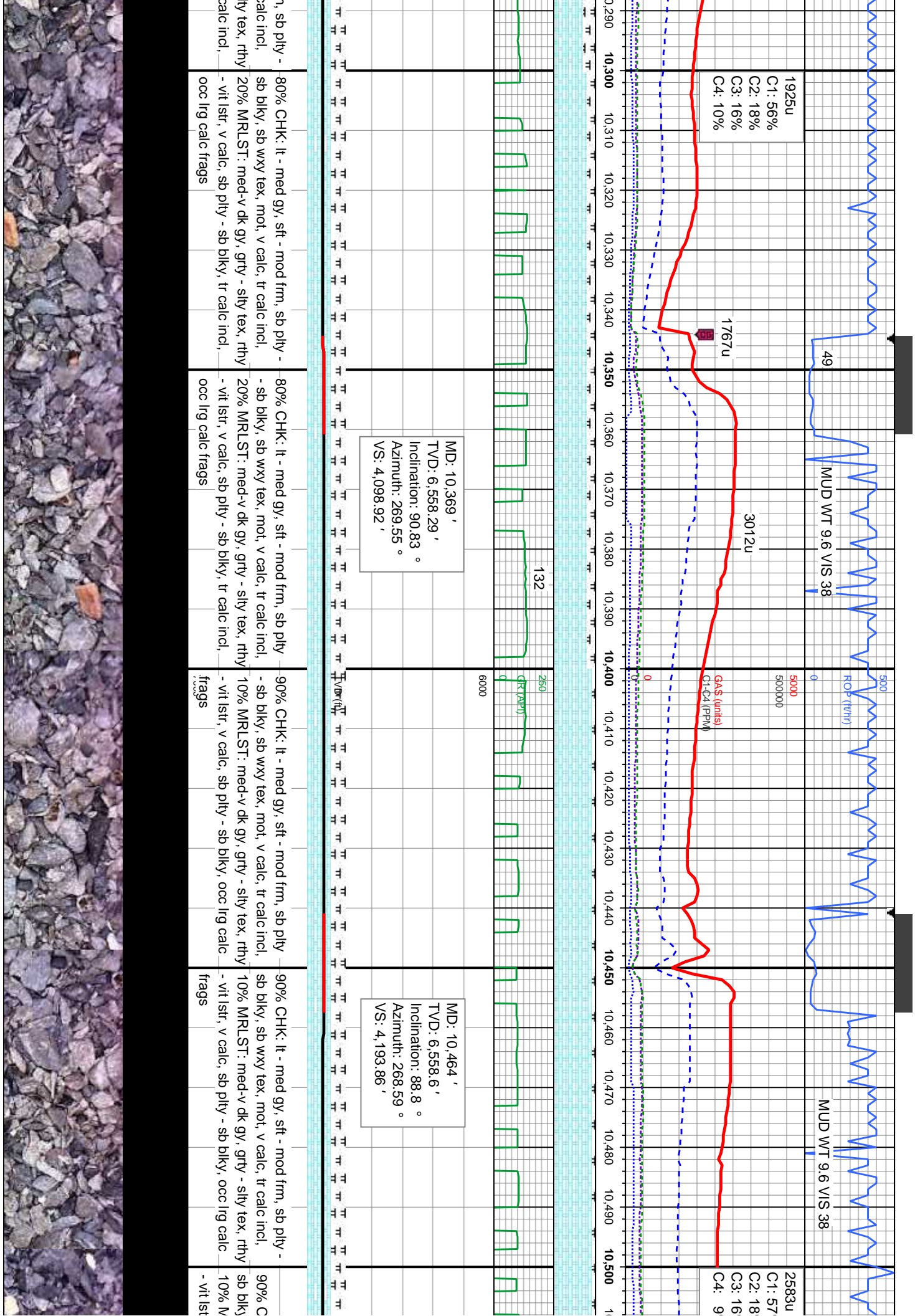
MD: 10,085 '
TVD: 6,559.29 '
Inclination: 90.15 °
Azimuth: 269.99 °
VS: 3,815.14 '

MD: 10,180 '
TVD: 6,559.68 '
Inclination: 89.38 °
Azimuth: 268.53 °
VS: 3,910.09 '

MD: 10,275 '
TVD: 6,559.58 '
Inclination: 90.74 °
Azimuth: 268.48 °
VS: 4,004.99 '

med gy, sft - mod frm, sb ply - tex, mot, v calc, tr calc incl,	80% CHK: lt - med gy, sft - mod frm, sb ply - sb blk, sb wxy tex, mot, v calc, occ calc incl,	70% CHK: lt - med gy, sft - mod frm, sb ply - sb blk, sb wxy tex, mot, v calc, occ calc incl,	60% CHK: lt - med gy, sft - mod frm, sb ply - sb blk, sb wxy tex, mot, v calc, occ calc incl,	70% CHK: lt - med gy, sft - mod frm, sb ply - sb blk, sb wxy tex, mot, v calc, tr calc incl,
med-v dk gy, grty - silty tex, rthy	20% MRLST: med-v dk gy, grty - silty tex, rthy	30% MRLST: med-v dk gy, grty - silty tex, rthy	40% MRLST: med-v dk gy, grty - silty tex, rthy	30% MRLST: med-v dk gy, grty - silty tex, rthy
sb ply - sb blk, tr calc incl,	vit lstr, v calc, sb ply - sb blk, tr calc incl, tr	vit lstr, v calc, sb ply - sb blk, tr calc incl, tr	vit lstr, v calc, sb ply - sb blk, tr calc incl, tr	vit lstr, v calc, sb ply - sb blk, tr calc incl, tr
	lig calc frags	lig calc frags	lig calc frags	occ lig calc frags





1925u
C1: 56%
C2: 18%
C3: 16%
C4: 10%

1767u

3012u

MD: 10,369 '
TVD: 6,558.29 '
Inclination: 90.83 °
Azimuth: 269.55 °
VS: 4,098.92 '

MD: 10,464 '
TVD: 6,558.6 '
Inclination: 88.8 °
Azimuth: 268.59 °
VS: 4,193.86 '

80% CHK: It - med gy, sft - mod frm, sb pty -
sb blk, sb wxy tex, mot, v calc, tr calc incl,
20% MRLST: med-v dk gy, grty - silty tex, rthy
- vit lstr, v calc, sb pty - sb blk, tr calc incl,
occ lrg calc frags

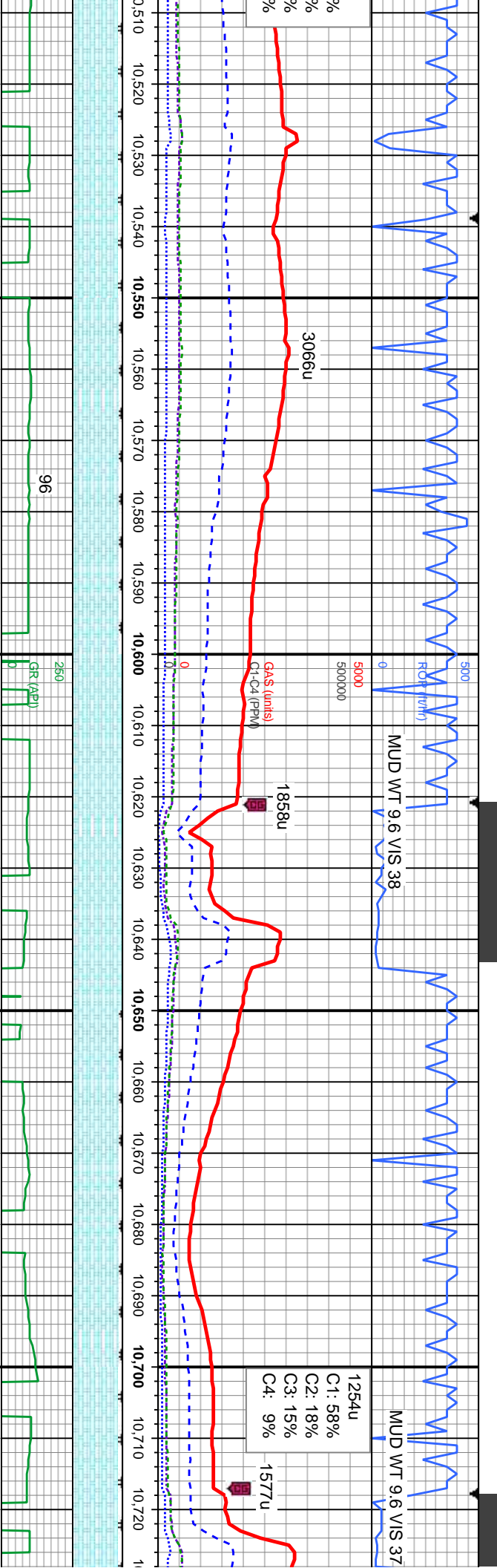
80% CHK: It - med gy, sft - mod frm, sb pty -
sb blk, sb wxy tex, mot, v calc, tr calc incl,
20% MRLST: med-v dk gy, grty - silty tex, rthy
- vit lstr, v calc, sb pty - sb blk, tr calc incl,
occ lrg calc frags

90% CHK: It - med gy, sft - mod frm, sb pty -
sb blk, sb wxy tex, mot, v calc, tr calc incl,
10% MRLST: med-v dk gy, grty - silty tex, rthy
- vit lstr, v calc, sb pty - sb blk, occ lrg calc
frags

90% CHK: It - med gy, sft - mod frm, sb pty -
sb blk, sb wxy tex, mot, v calc, tr calc incl,
10% MRLST: med-v dk gy, grty - silty tex, rthy
- vit lstr, v calc, sb pty - sb blk, occ lrg calc
frags

90% C
sb blk
10% M

2583u
C1: 57
C2: 18
C3: 16
C4: 9

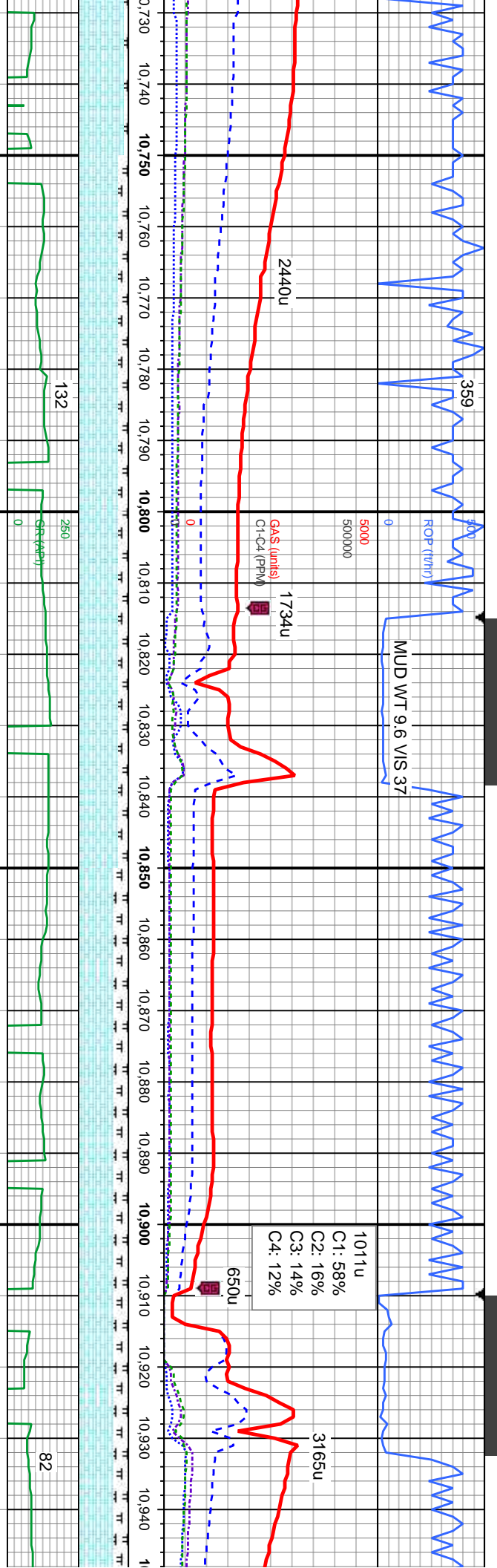


MD: 10,559 '
TVD: 6,560.75 '
Inclination: 88.61 °
Azimuth: 266.19 °
VS: 4,288.64 '

MD: 10,654 '
TVD: 6,561.64 '
Inclination: 90.31 °
Azimuth: 267.38 °
VS: 4,383.37 '

CHK: lt - med gy, sft - mod frm, sb pty - 95% CHK: lt - med gy, sft - mod frm, sb pty - sb wxy tex, mot, v calc, tr calc incl, 5% MRLST: med-v dk gy, grty - silty tex, rthy - vlt lstr, v calc, sb pty - sb blkly, tr calc incl	95% CHK: lt - med gy, sft - mod frm, sb pty - sb blkly, sb wxy tex, mot, v calc, tr calc incl, 5% MRLST: med-v dk gy, grty - silty tex, rthy - vlt lstr, v calc, sb pty - sb blkly, tr calc incl	100% CHK: lt - med gy, sft - mod frm, sb pty - sb blkly, sb wxy tex, mot, v calc, tr calc incl	95% CHK: lt - med gy, sft - mod frm, sb pty - sb blkly, sb wxy tex, mot, v calc, scat calc incl, 5% MRLST: med-v dk gy, grty - silty tex, rthy - vlt lstr, v calc, sb pty - sb blkly, tr calc incl, tr	90% CHK: lt - med gy, sft - mod frm, sb pty - sb blkly, sb wxy tex, mot, v calc, scat calc incl, 10% MRLST: med-v dk gy, grty - silty tex, rthy - vlt lstr, v calc, sb pty - sb blkly, tr calc incl
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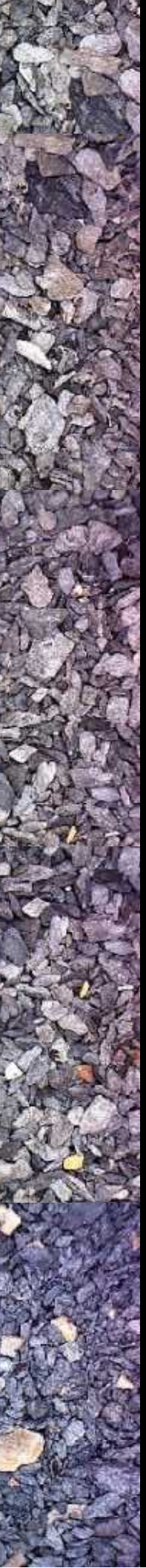


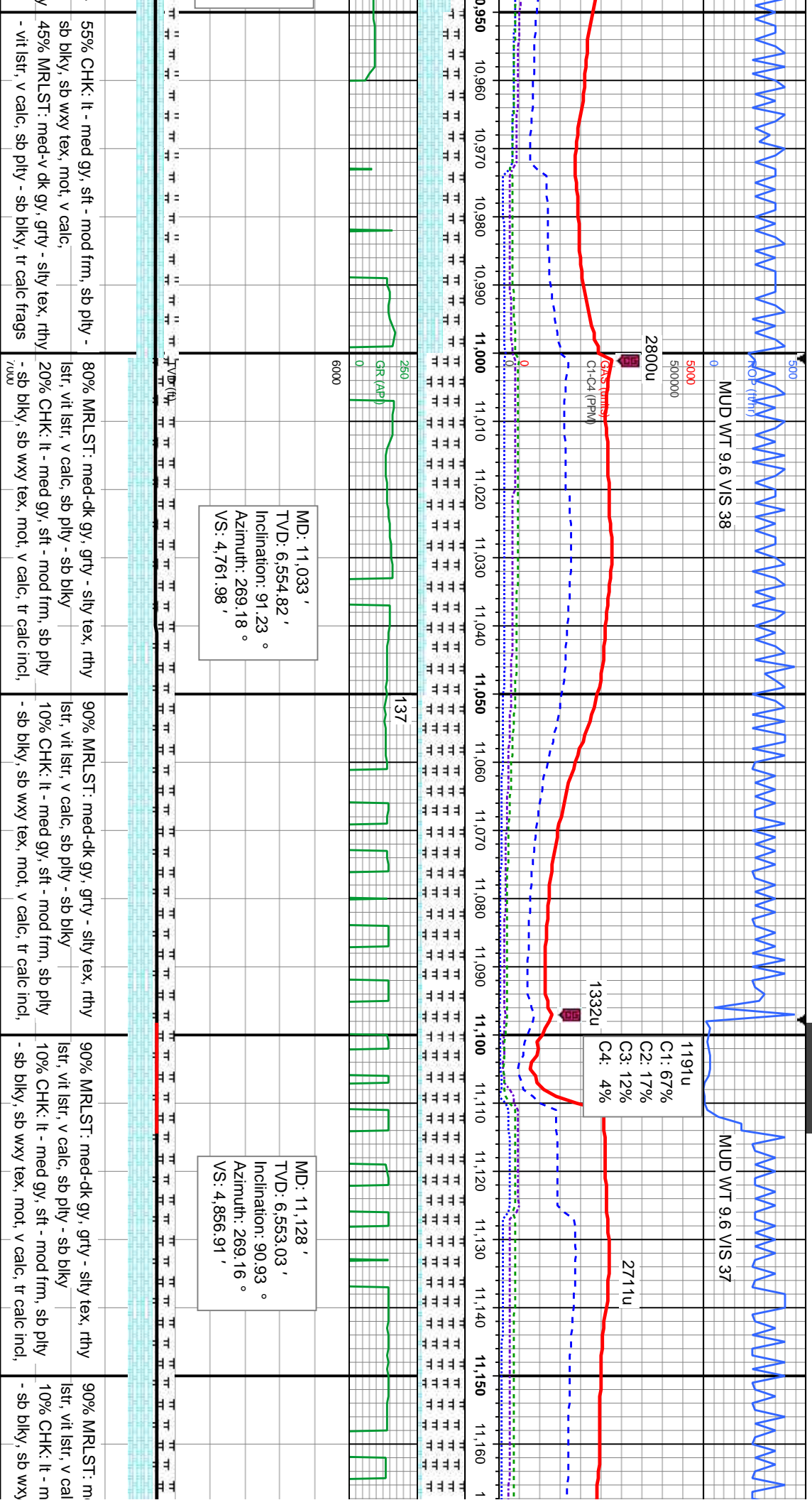
MD: 10,749 '
TVD: 6,559.8 '
Inclination: 91.91 °
Azimuth: 267.81 °
VS: 4,478.18 '

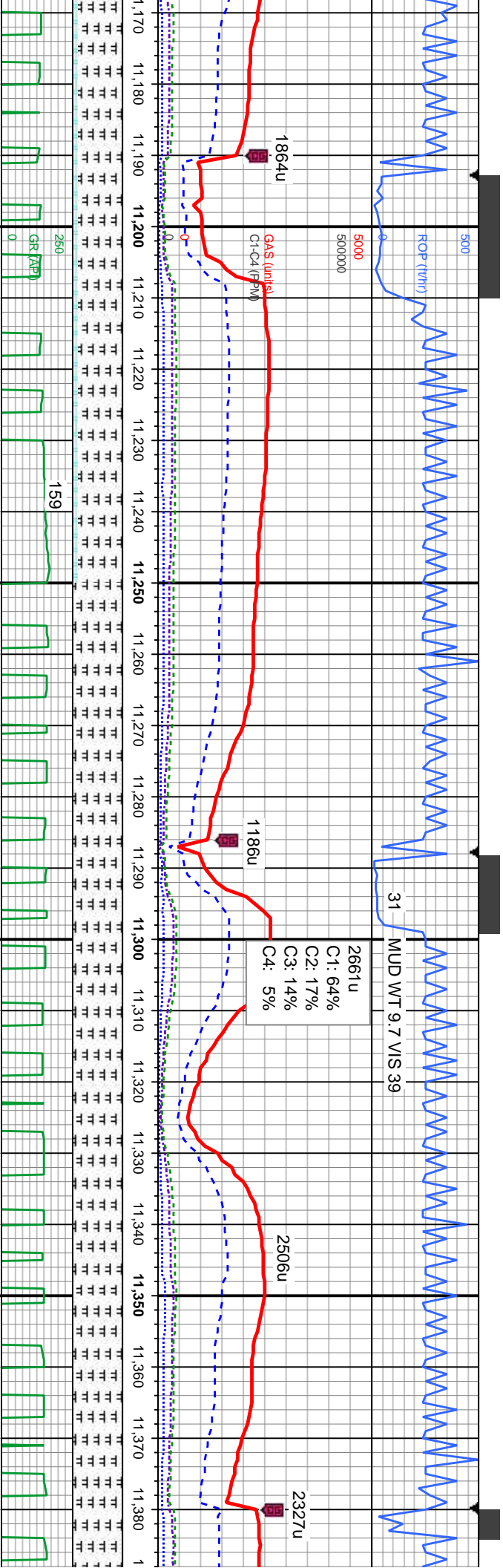
MD: 10,843 '
TVD: 6,556.92 '
Inclination: 91.6 °
Azimuth: 269.53 °
VS: 4,572.06 '

MD: 10,938 '
TVD: 6,555.72 '
Inclination: 89.85 °
Azimuth: 269.9 °
VS: 4,667.02 '

- mod frm, sb pily - v calc,	80% CHK: lt - med gy, sft - mod frm, sb pily - sb blk, sb wxy tex, mot, v calc, 20% MRLST: med-v dk gy, grty - silty tex, rthy - vit lstr, v calc, sb pily - sb blk, tr calc frags	80% CHK: lt - med gy, sft - mod frm, sb pily - sb blk, sb wxy tex, mot, v calc, 20% MRLST: med-v dk gy, grty - silty tex, rthy - vit lstr, v calc, sb pily - sb blk, tr calc frags	70% CHK: lt - med gy, sft - mod frm, sb pily - sb blk, sb wxy tex, mot, v calc, 30% MRLST: med-v dk gy, grty - silty tex, rthy - vit lstr, v calc, sb pily - sb blk, tr calc frags	70% CHK: lt - med gy, sft - mod frm, sb pily - sb blk, sb wxy tex, mot, v calc, 30% MRLST: med-v dk gy, grty - silty tex, rthy - vit lstr, v calc, sb pily - sb blk, tr calc frags
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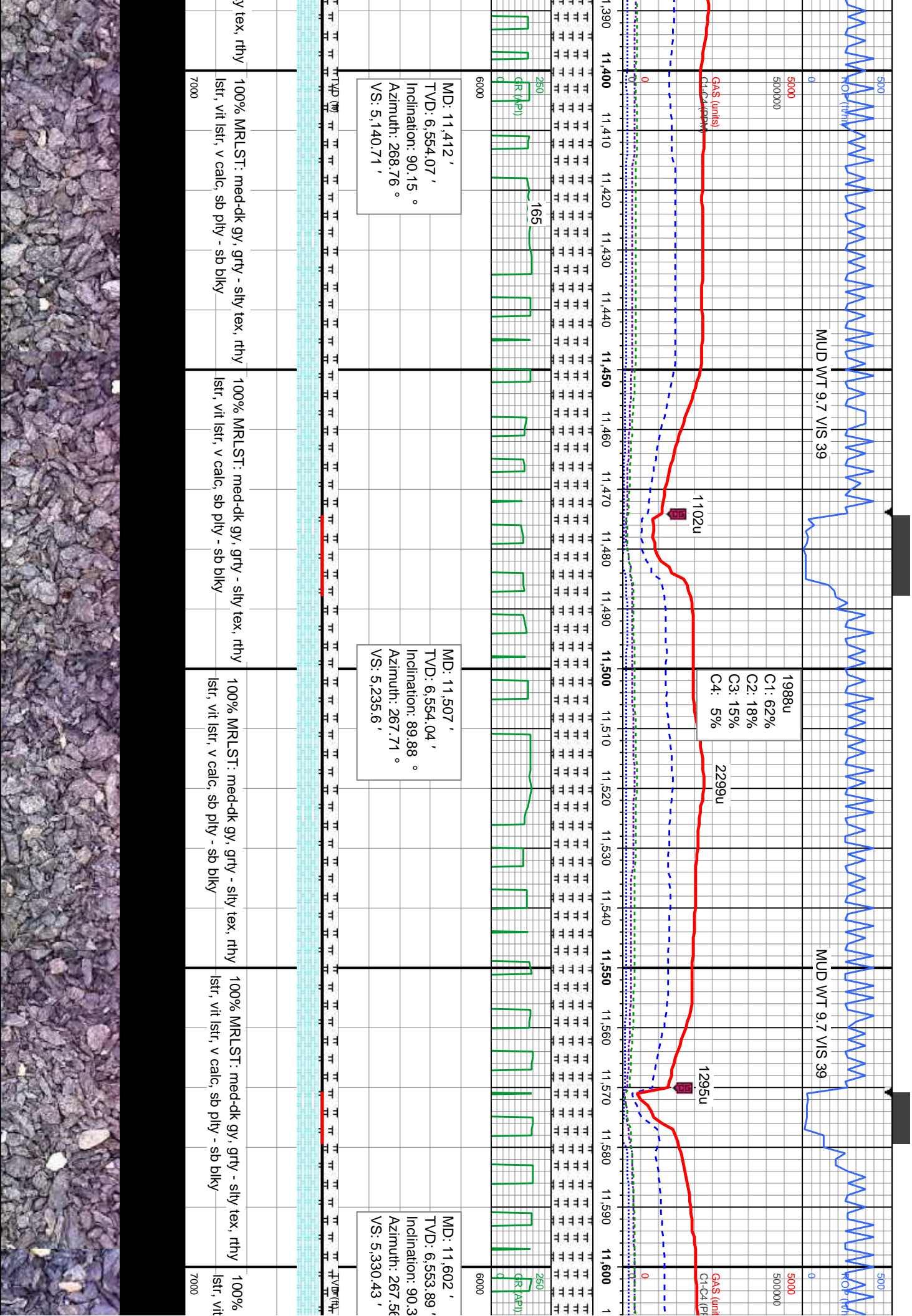


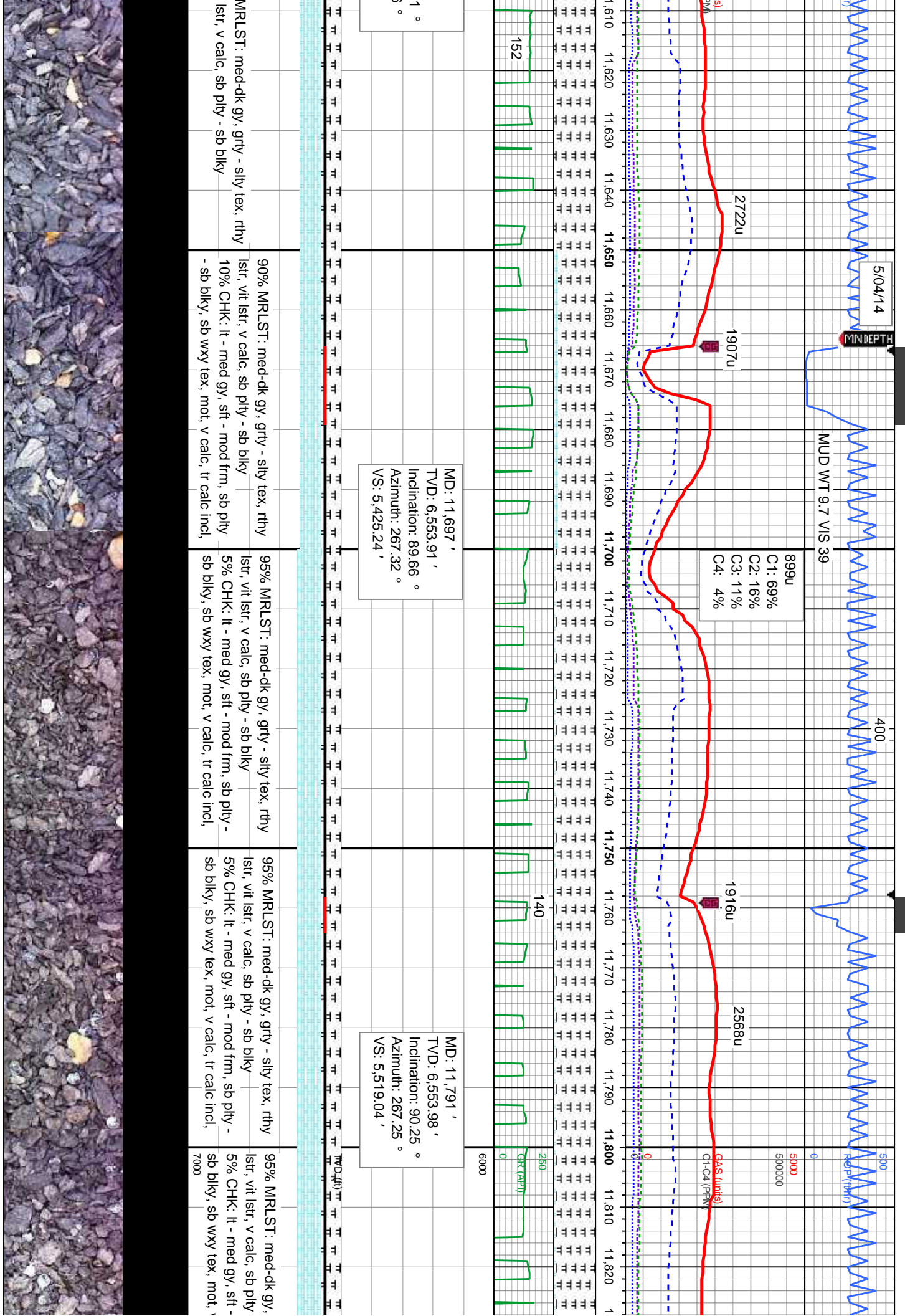
MD: 11,223 '
TVD: 6,552.36 '
Inclination: 89.88 °
Azimuth: 268.96 °
VS: 4,951.85 '

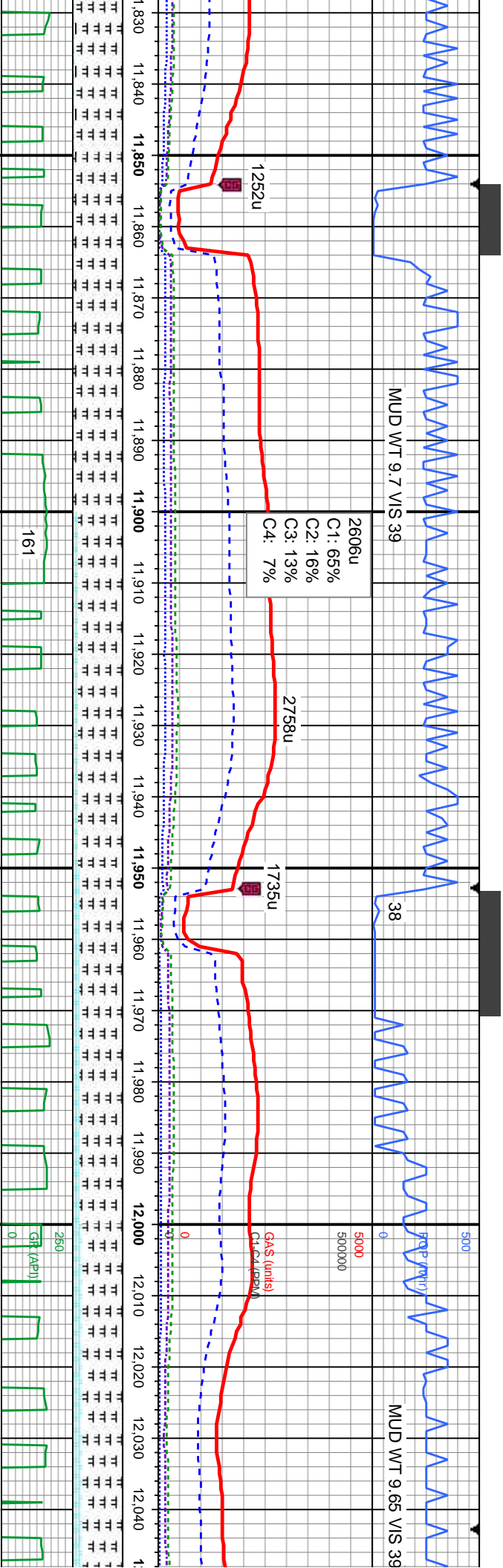
MD: 11,317 '
TVD: 6,563.32 '
Inclination: 88.95 °
Azimuth: 268.86 °
VS: 5,045.78 '

med-dk gy, grty - silty tex, rthy	90% MRLST: med-dk gy, grty - silty tex, rthy	100% MRLST: med-dk gy, grty - silty tex, rthy	100% MRLST: med-dk gy, grty - silty tex, rthy
c, sb pily - sb blk	lstr, vit lstr, v calc, sb pily - sb blk	lstr, vit lstr, v calc, sb pily - sb blk	lstr, vit lstr, v calc, sb pily - sb blk
med gy, sft - mod frm, sb pily	10% CHK: lt - med gy, sft - mod frm, sb pily		100% MRLST: med-dk gy, grty - silty tex, rthy
tex, mot, v calc, tr calc incl, 7000	-sb blk, sb wxy tex, mot, v calc, tr calc incl, 7000		lstr, vit lstr, v calc, sb pily - sb blk









MD: 11,886 '
TVD: 6,553.42 '
Inclination: 90.43 °
Azimuth: 267.74 °
VS: 5,613.86 '

MD: 11,981 '
TVD: 6,553.06 '
Inclination: 90 °
Azimuth: 268.33 °
VS: 5,708.73 '

MD: 12,040 '
TVD: 6,553.06 '
Inclination: 90 °
Azimuth: 268.33 °
VS: 5,770.00 '

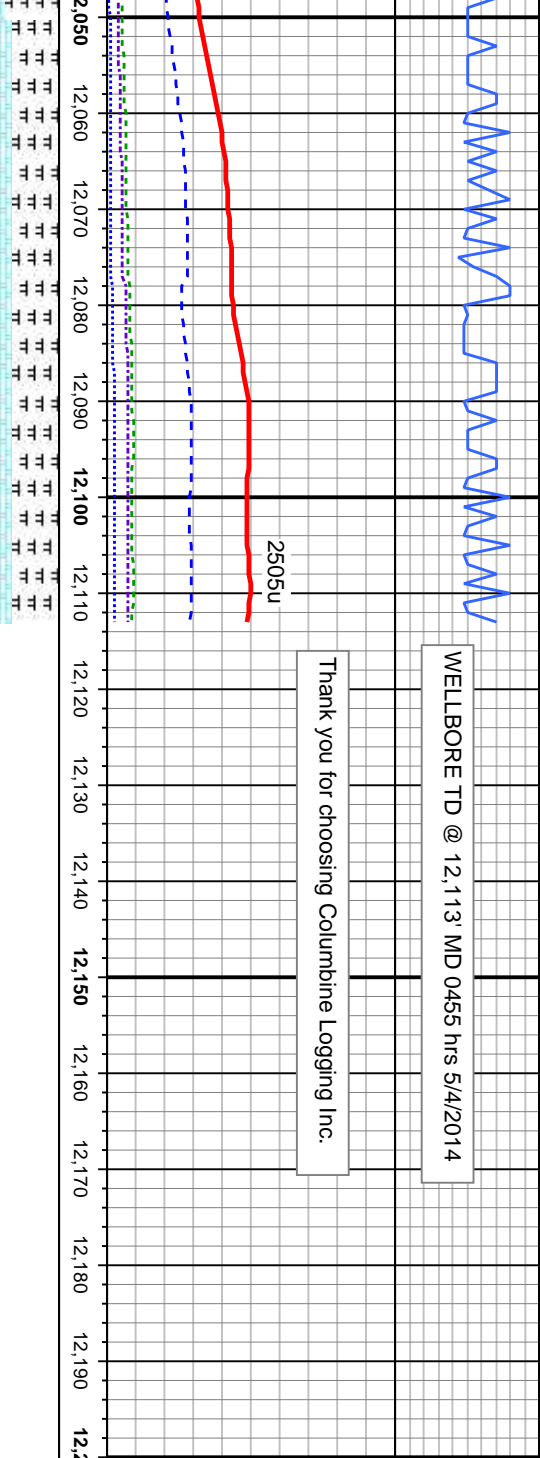
grty - silty tex, rthy - sb blkly	90% MRLST: med-dk gy, grty - silty tex, rthy lstr, vit lstr, v calc, sb pily - sb blkly	85% MRLST: med-dk gy, grty - silty tex, rthy lstr, vit lstr, v calc, sb pily - sb blkly	80% MRLST: med-dk gy, grty - silty tex, rthy lstr, vit lstr, v calc, sb pily - sb blkly
mod frm, sb pily - / calc, tr calc incl	10% CHK: lt - med gy, sft - mod frm, sb pily - sb blkly, sb wxy tex, mot, v calc, tr calc incl	15% CHK: lt - med gy, sft - mod frm, sb pily - sb blkly, sb wxy tex, mot, v calc, tr calc incl	20% CHK: lt - med gy, sft - mod frm, sb pily - sb blkly, sb wxy tex, mot, v calc, tr calc incl
100% MRLST: med-dk gy, grty - silty tex, rthy lstr, vit lstr, v calc, sb pily - sb blkly			



WELLBORE TD @ 12,113' MD 0455 hrs 5/4/2014

Thank you for choosing Columbine Logging Inc.

2505u



PROJECTED:

MD: 12,113'
 TVD: 6,552.13'
 Inclination: 90.55 °
 Azimuth: 267.65 °
 VS: 5,840.52'

MD: 12,113'
 TVD: 6,552.73'
 Inclination: 90.55 °
 Azimuth: 267.65 °
 VS: 5,840.52'

70% MRLST: med-dk gy, grty - silty tex, rthy
lsfr, vit lsfr, v calc, sb plty - sb blkly
30% CHK: lt - med gy, sft - mod frm, sb plty
- sb blkly, sb wxy tex, mot, v calc, tr calc incl

