



Scale: 5" / 100'  
Measured Depth Log

**Well Name** Carlson B-15-16HC

**Location** NENE Sec 15 T5N R65W

**State** Colorado **County** Weld

**Country** United States **Rig Number** Frontier (Utah) 8

**API Number** 05-123-41710 **AFE #** 2014WELDB15.16HN\_1

**Region** DJ Basin **Field** Wattenberg

**Spud Date** 7/9/2015

**Surface Coordinates** N 40.403694 W 104.640862

**Ground Elevation** 4621' **K.B. Elevation** 4643'

**Logged Interval** 6000'

**Formation** Codell

**Type of Drilling Fluid** FWLSND

## Operator

**Company** Bayswater Exploration & Production, LLC.

**Address** 730 17th St.  
Denver, CO 80202

## Geologist

**Name** Mark E. Brown

**Company** Bayswater Exploration & Production, LLC.

**Address** 730 17th St.  
Denver, CO 80202



## Other

**Robert Davis** Lead Senior Wellsite Geologist

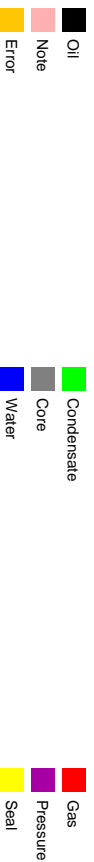
**Ben Katka** Wellsite Geologist

**Columbine Logging Computer** 148

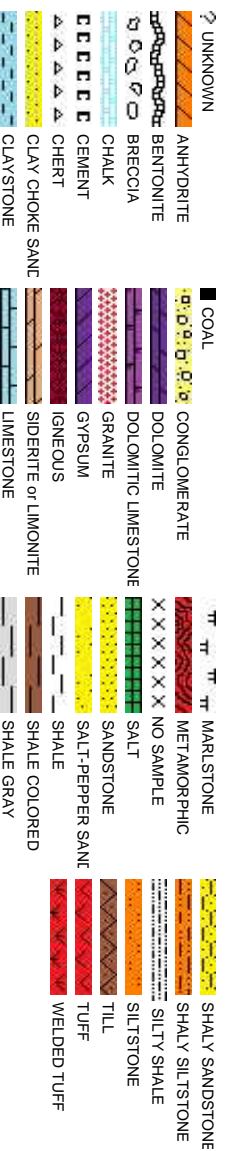
**Bloodhound Unit** 298

**Tracy Lawson** Wellsite Geoligist

## Zone Color Coding

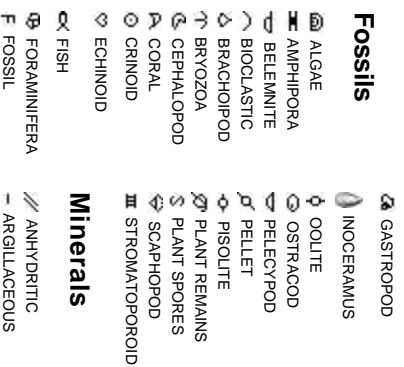


## Rock Types

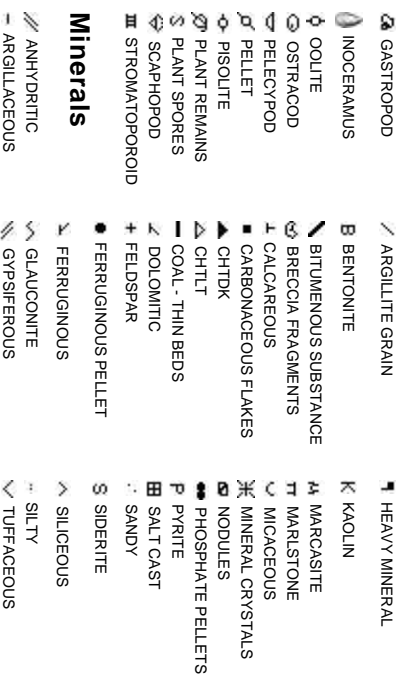
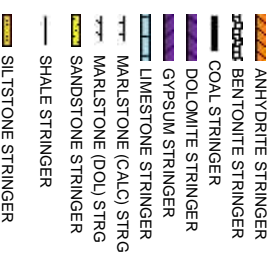


## Accessories

## Fossils



## Minerals

**Springer**

## Other

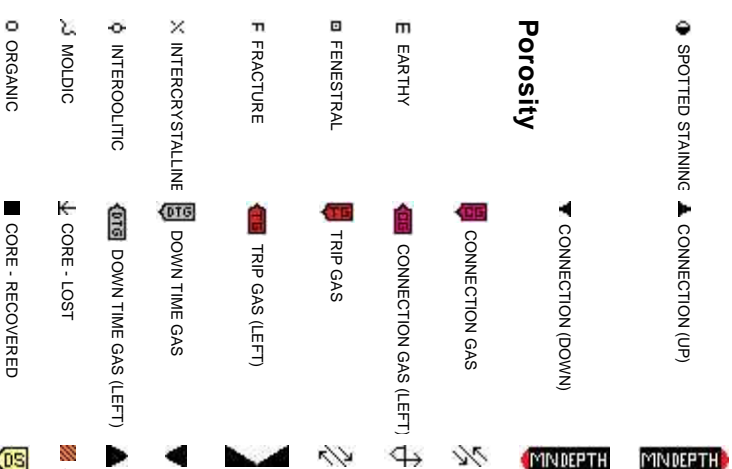
## Oil Show



# Engineering



## Porosity



# er Symbols

IST INTERVAL      ▽ WIRELINE TESTED - LEFT    E EARTHY

FAULT      Δ WIRELINE TESTED - RT    FX FINELYXLN

FORMATION TOP       DRILL STEM TEST      GS GRAINSTONE

GAS SHOW       MN DEPTH      L LITHOGRAPHIC

OIL SHOW      MX MICROXLN

MN DEPTH UP      **Rounding**      MS MUDSTONE

MN DEPTH (DOWN)      A ANGULAR      PS PACKSTONE

NORMAL FAULT      R ROUNDED      WS WACKESTONE

OVERTURNED STRATA      B SUBANG

REVERSE FAULT      P SUBRND      **Sorting**

CASING      M MODERATE

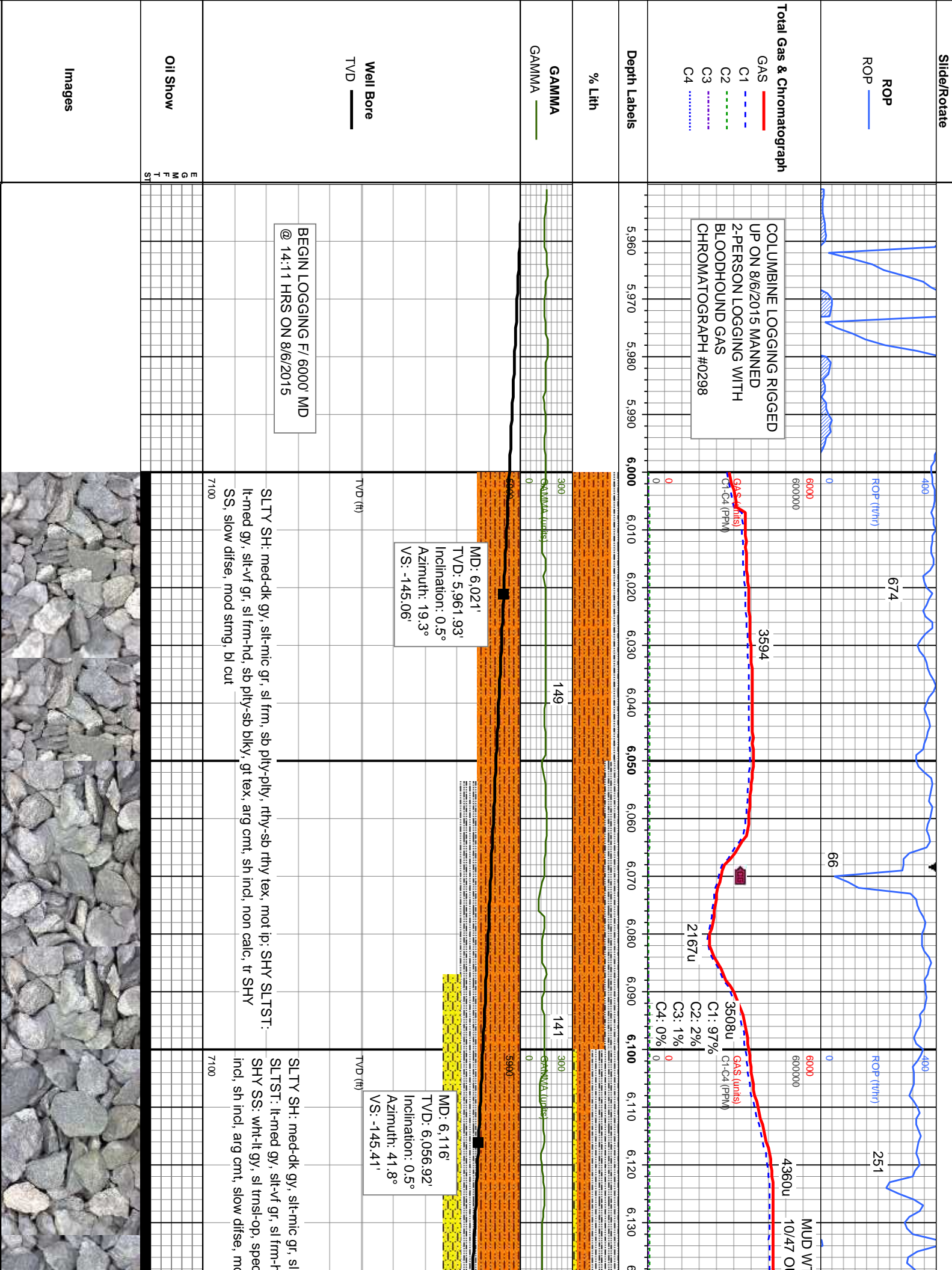
## Textures

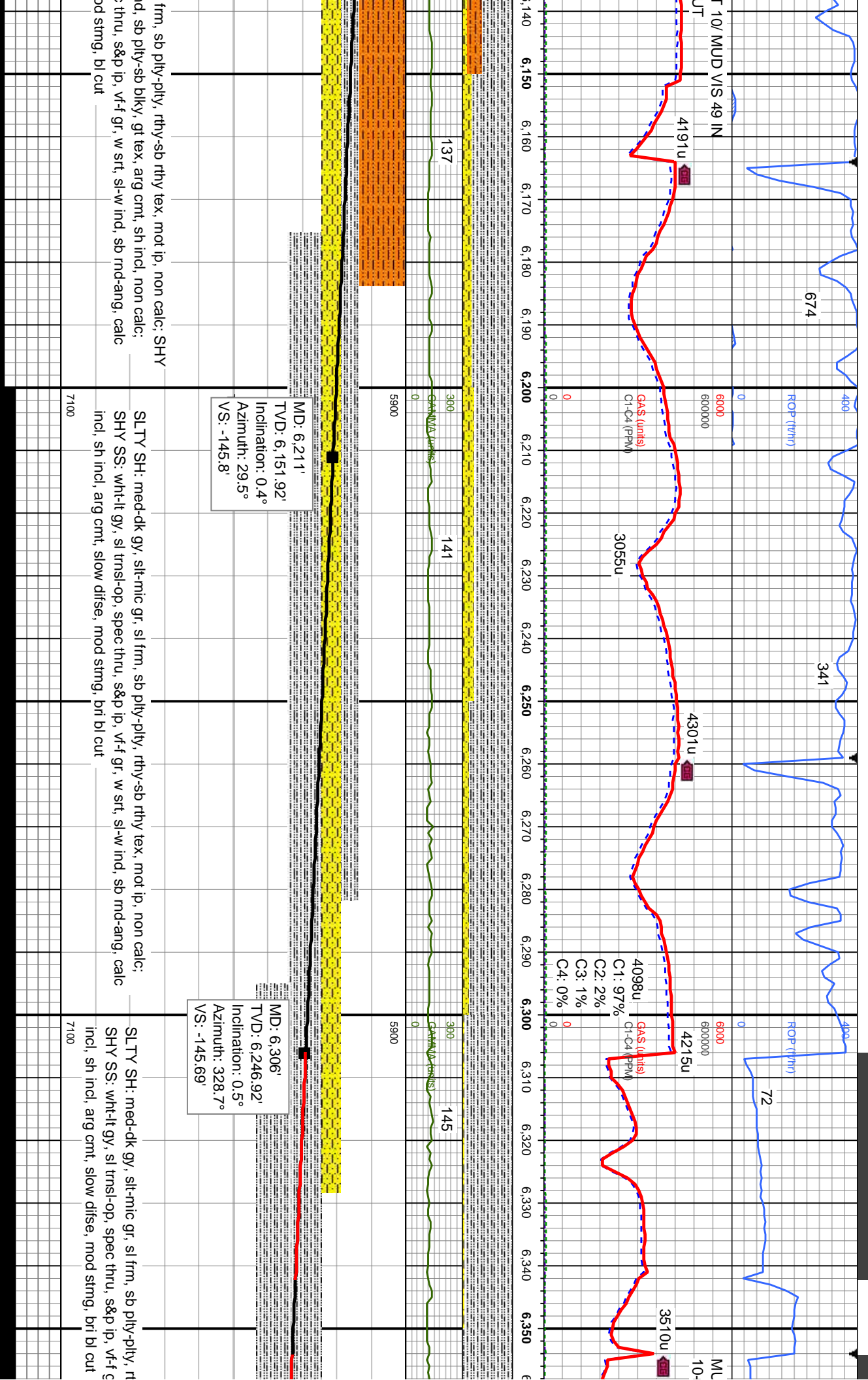
SIDEWALL CORE (LEFT)      P POOR

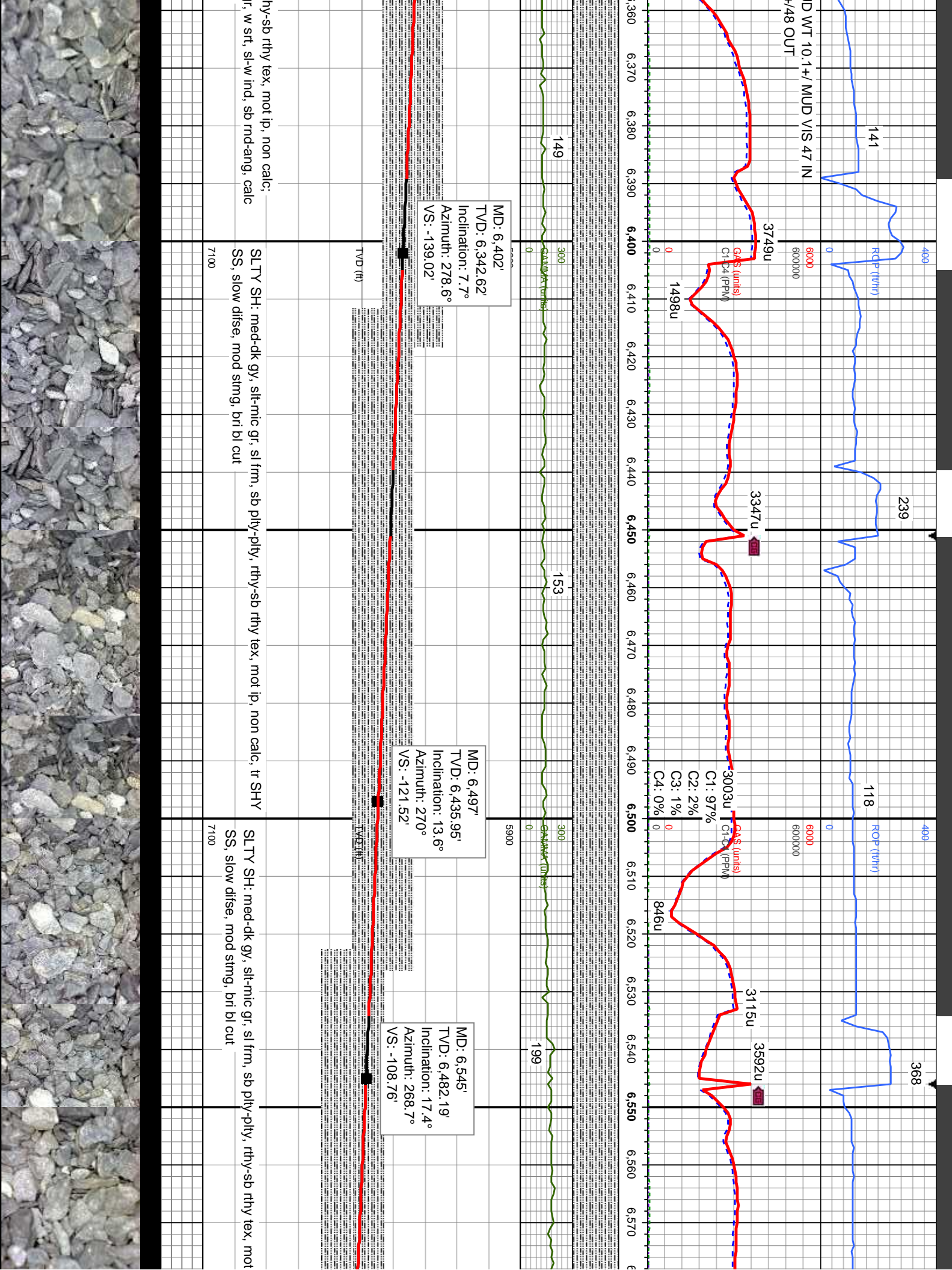
SIDEWALL CORE (RIGHT)      BS BOUNDSTONE      W WELL

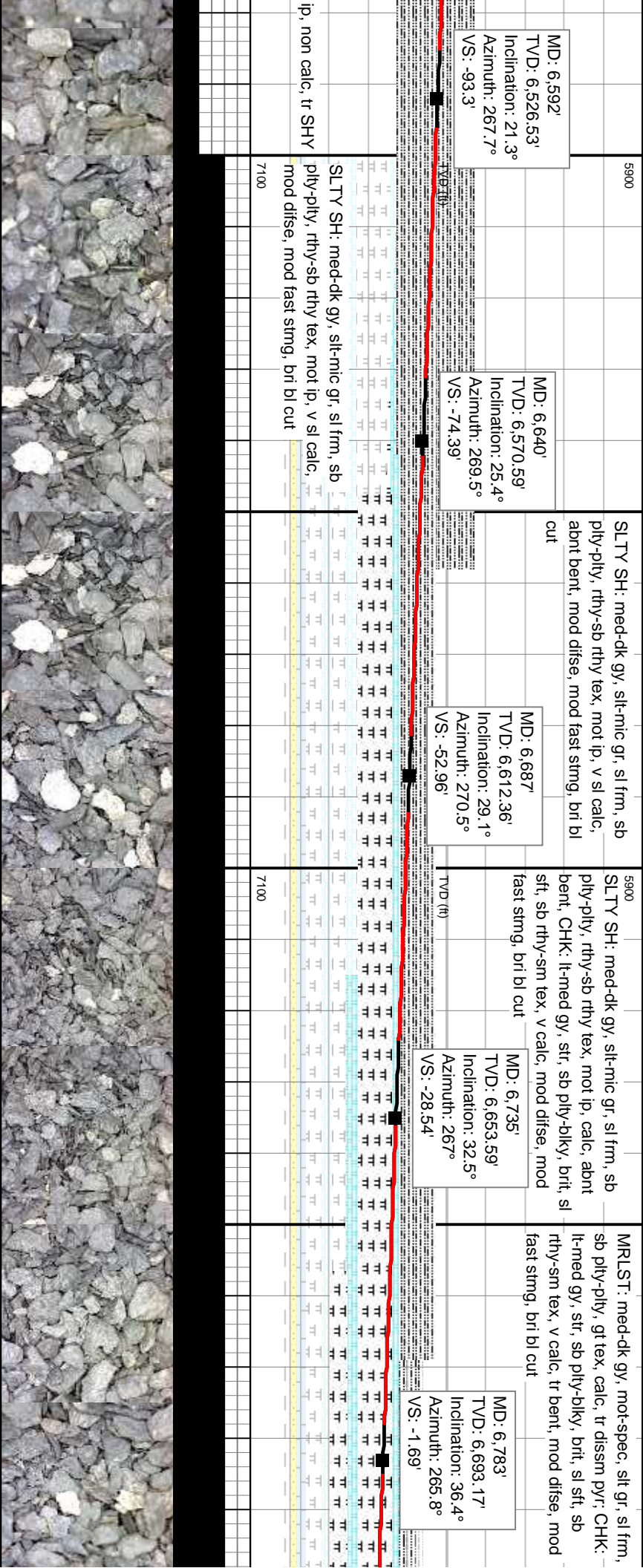
ILUDE      C CHALKY

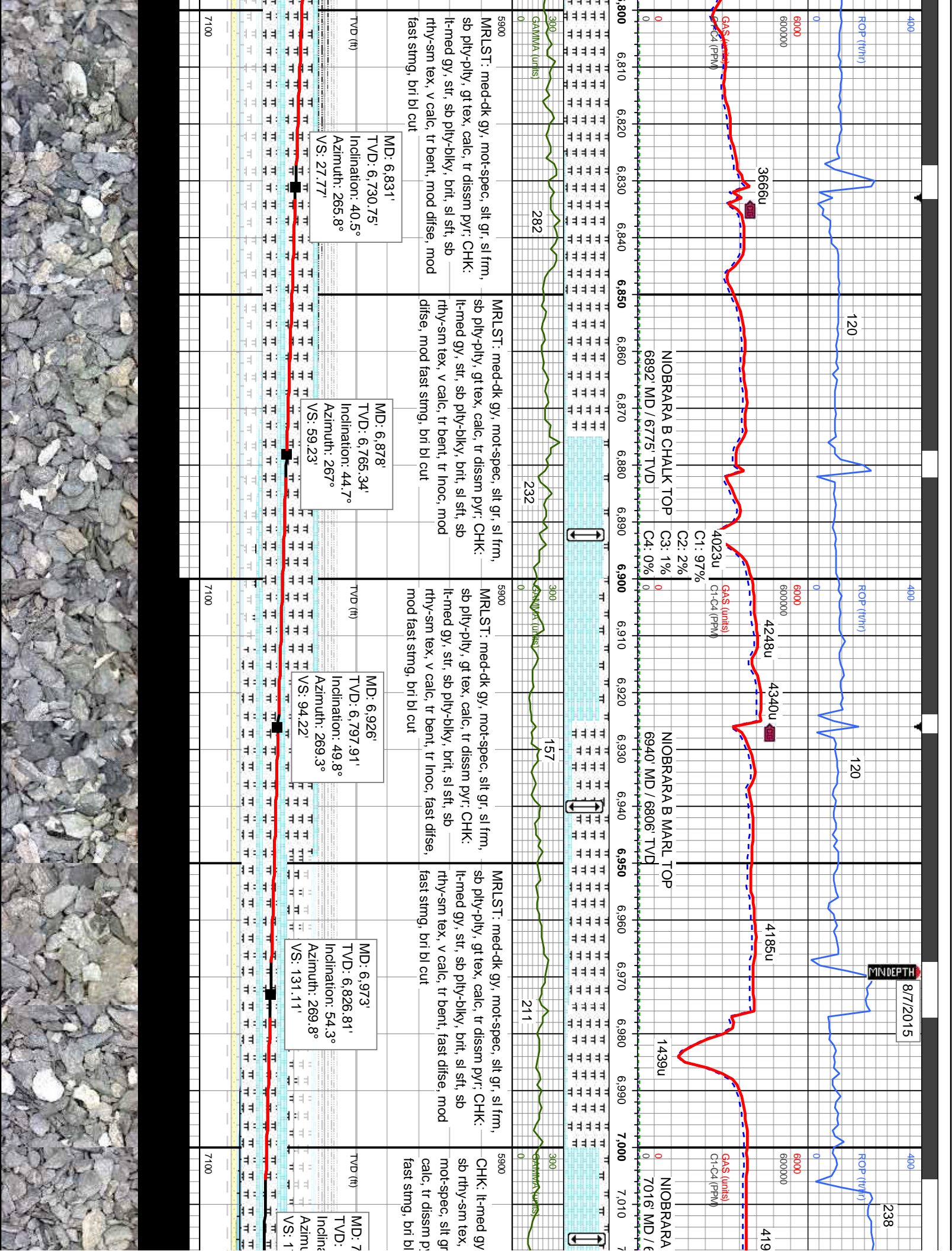
SURVEY      CX CRYPTOXLN

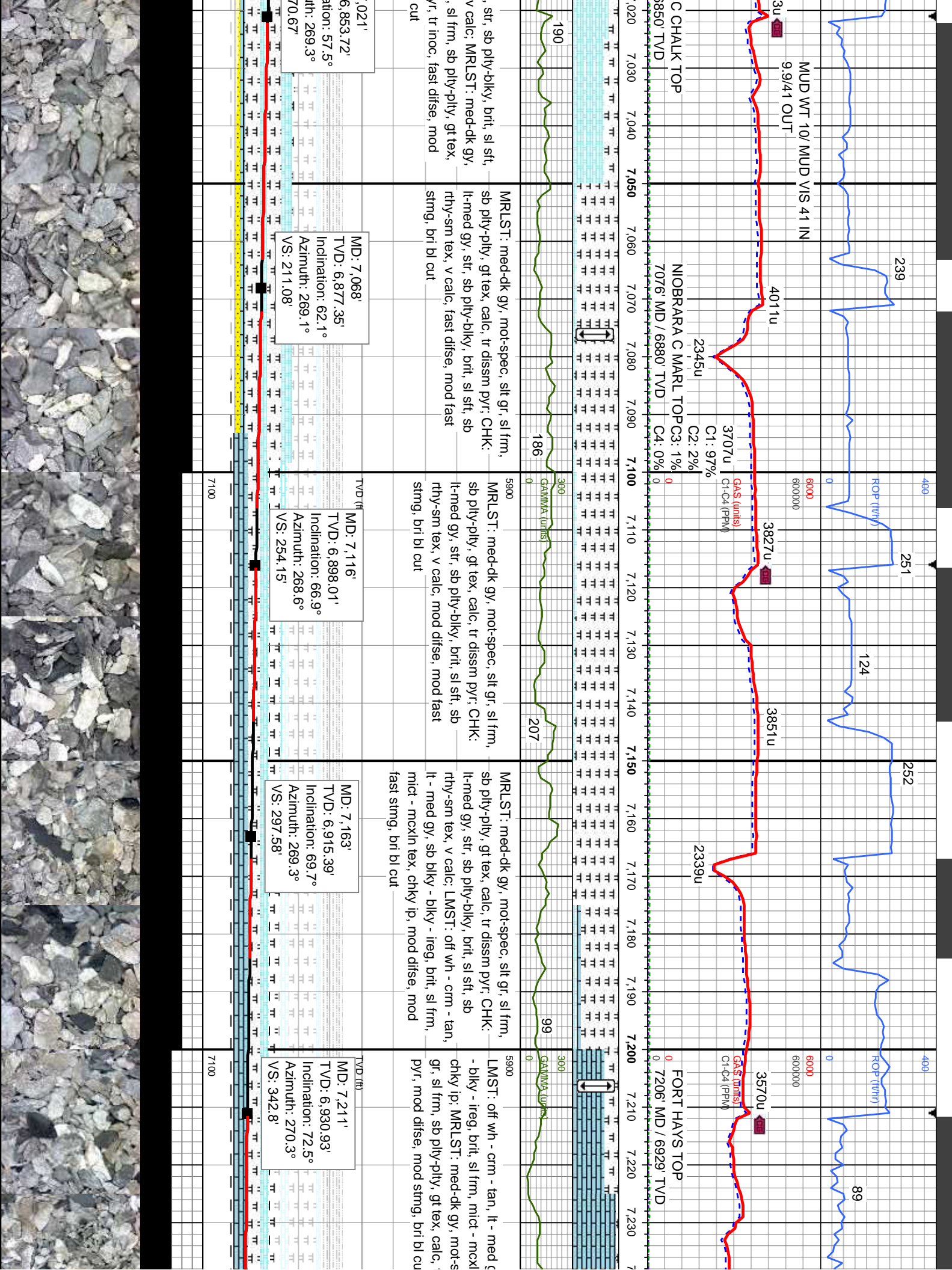








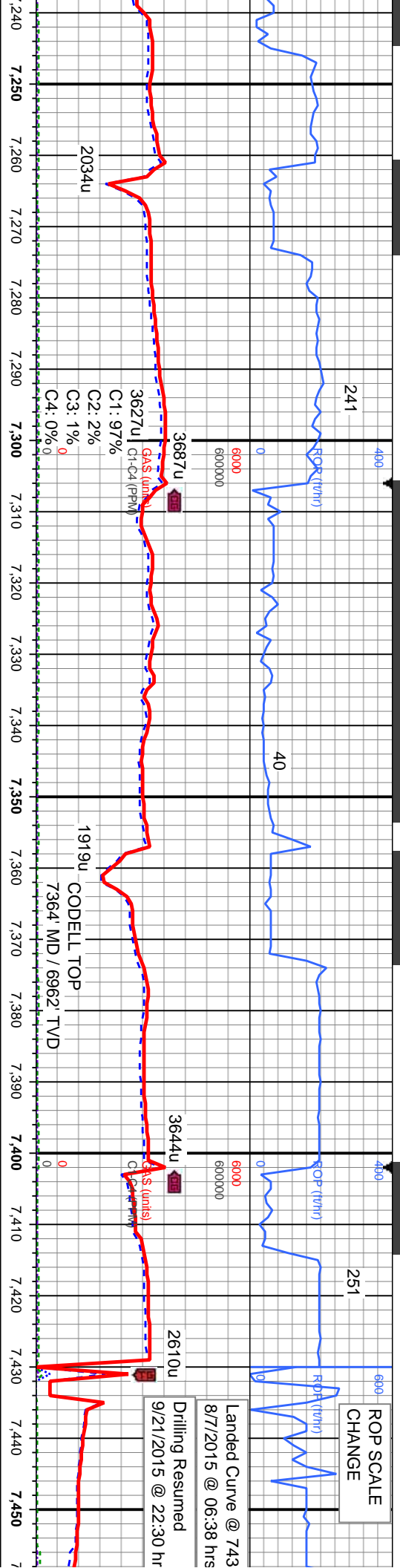




ROP SCALE  
CHANGE

Landed Curve @ 743  
8/7/2015 @ 06:38 hrs

Drilling Resumed  
9/21/2015 @ 22:30 hr



LMST: off wh - cfm - tan, lt - med gy, sb blkly -  
blkly - ireg, brit, sl frm, mict - mckln tex, chky  
ip; MRLST: med-dk gy, mot-spec, sit gr, sl  
frm, sb ply-pty, gt tex, calc, tr dissm pyr,  
mod difse, mod sting, bri bl cut

LMST: off wh - cfm - tan, lt - med gy, sb blkly -  
blkly - ireg, brit, sl frm, mict - mckln tex, chky  
ip; tr MRLST, mod difse, mod sting, bri bl cut

LMST: wh, crm-tan, lt-medgy, sb  
blkly-blky-ireg, ply ip, brit, sl frm, sm tex,  
mict-mckln; SS: med-dk gy, brn-dk brn, sl  
frm-hd, brit, vf-f gr, ang-sr, p srt, arg calc  
cmt, mod difse, mod sting, bri bl cut

SS: med-dk gy, brn-dk brn, sl frm-hd, brit,  
vf-f gr, ang-sr, p srt, arg calc cmt; LMST:  
wh, crm-tan, lt-medgy, sb blkly-blky-ireg, ply  
ip, brit, sl frm, sm tex, mict-mckln, mod  
difse, mod sting, bri bl cut

MD: 7,258'  
TVD: 6,943.61'  
Inclination: 76.2°  
Azimuth: 269.8°  
VS: 387.89'

MD: 7,306'  
TVD: 6,953.96'  
Inclination: 78.9°  
Azimuth: 269.5°  
VS: 434.56'

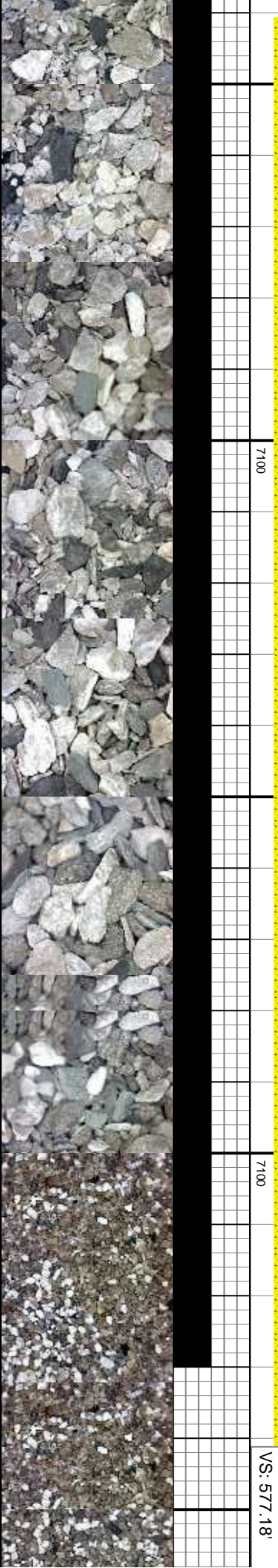
MD: 7,354'  
TVD: 6,960.84'  
Inclination: 84.6°  
Azimuth: 269.5°  
VS: 481.83'

MD: 7,380'  
TVD: 6,963.02'  
Inclination: 85.8°  
Azimuth: 269.3°  
VS: 507.62'

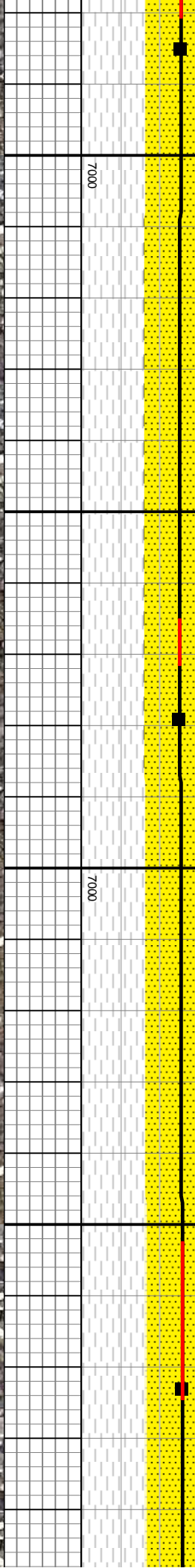
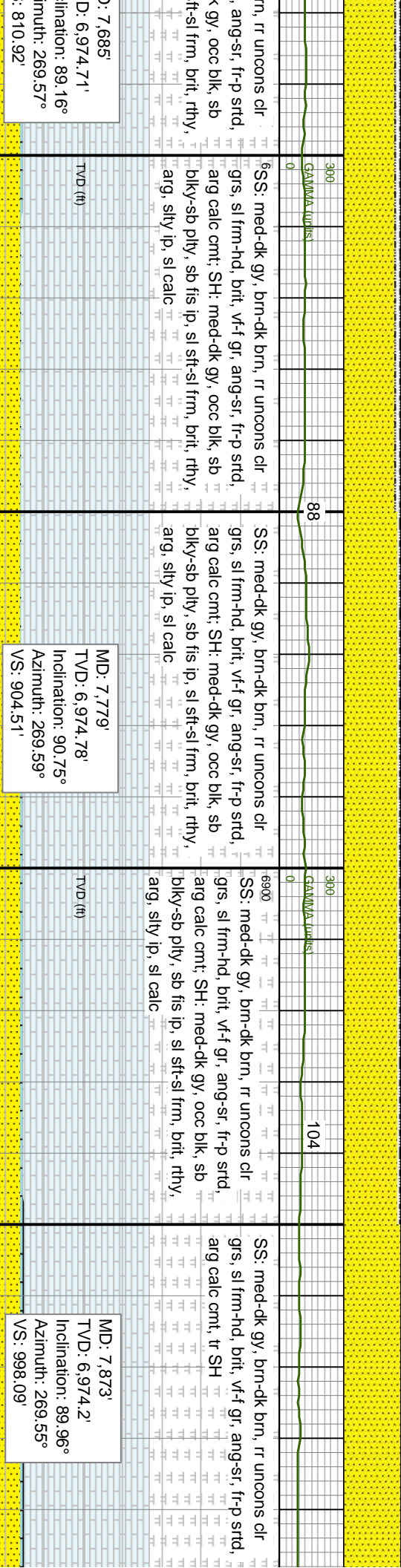
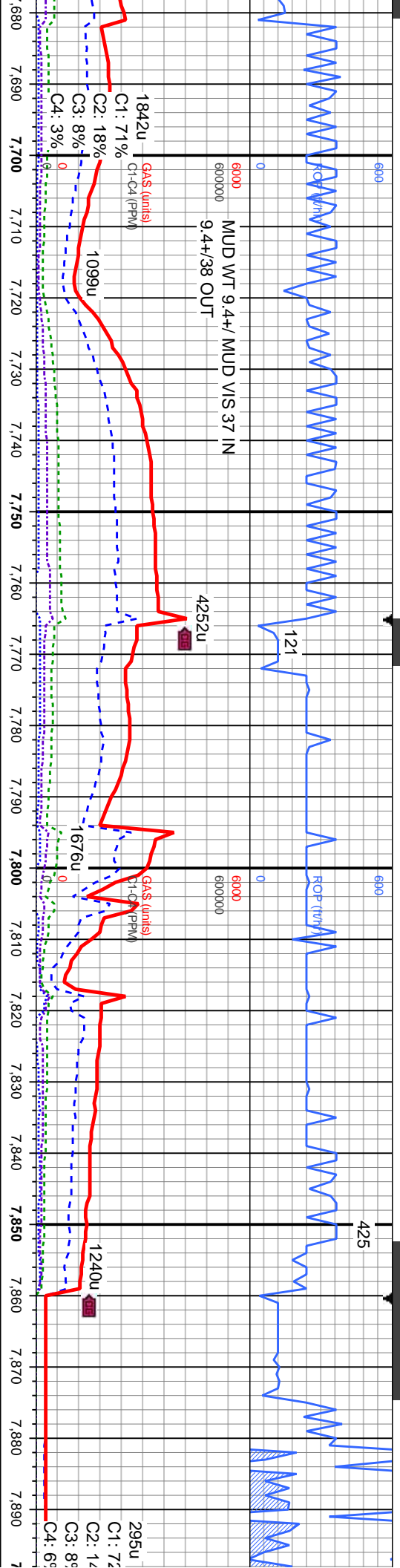
MD: 7,430'  
TVD: 6,965.42'  
Inclination: 88.7°  
Azimuth: 269.3°  
VS: 557.31'

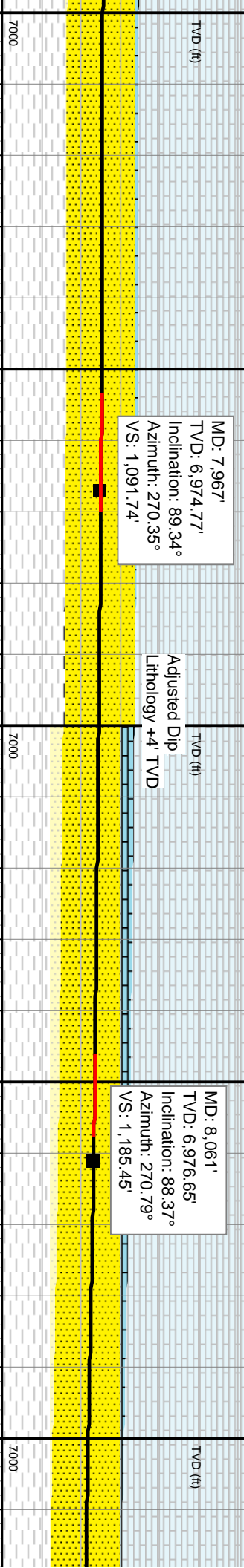
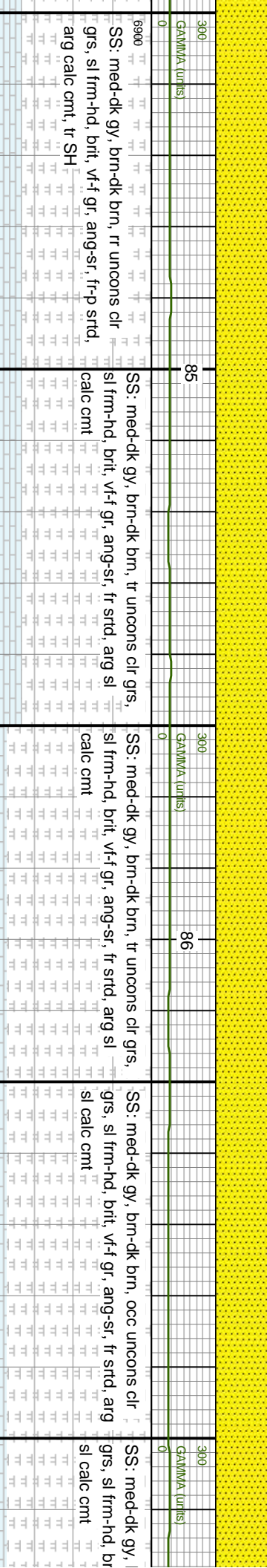
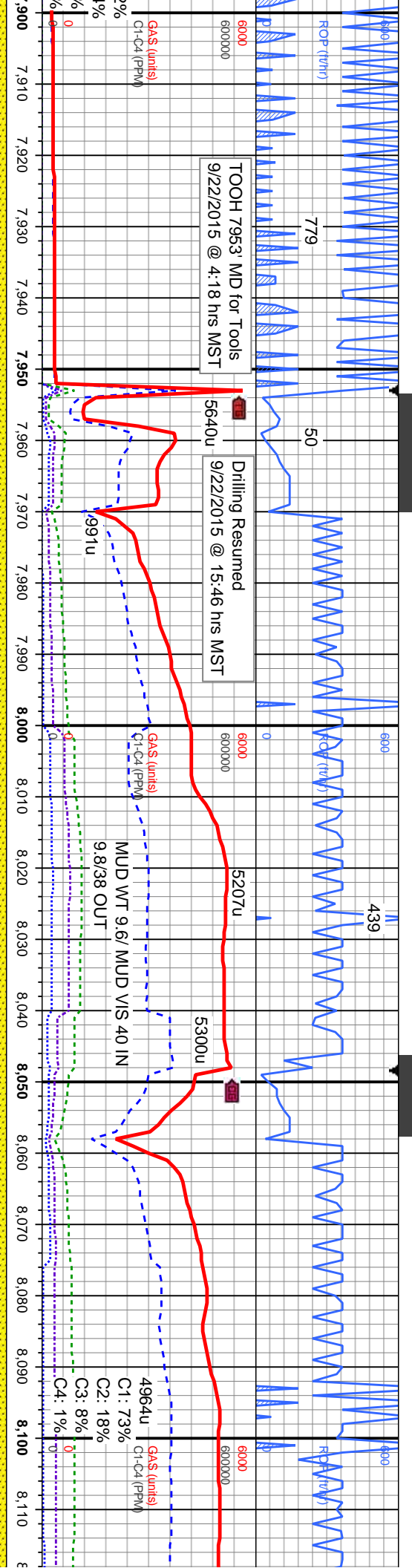
MD: 7,450'  
TVD: 6,966.74'  
Inclination: 88.1°  
Azimuth: 269.4°  
VS: 577.18'

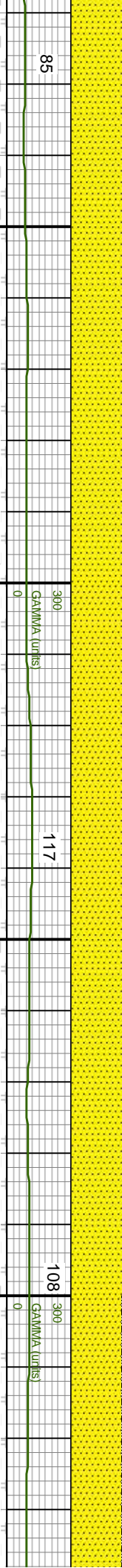
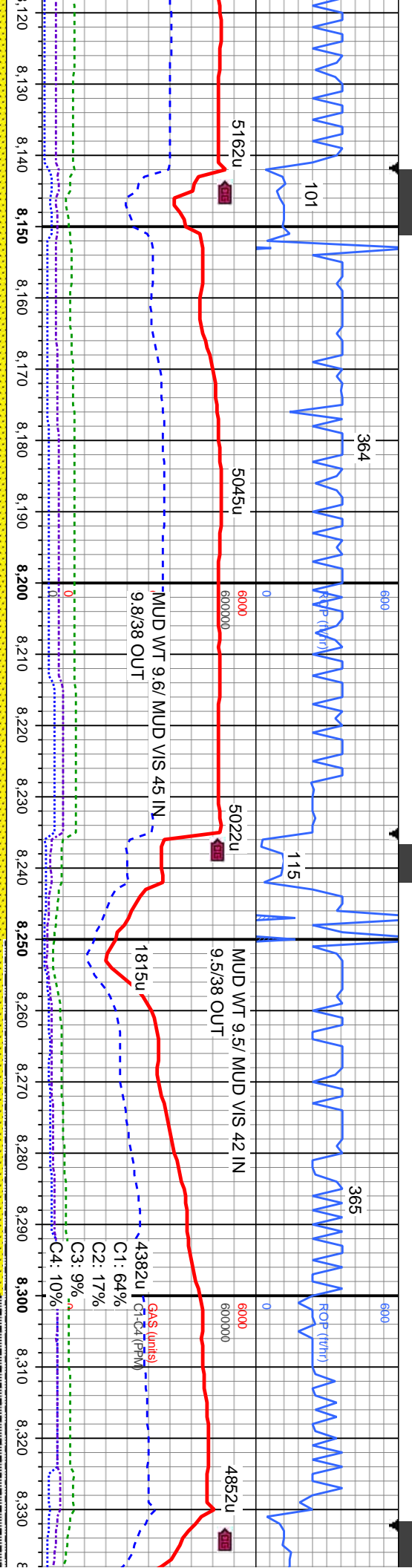
TVD SCALE CHAN











85  
SS: med-dk gy, brn-dk brn, occ unconcs cl  
grs, sl frm-hd, brit, vf-f gr, ang-sr, fr std, arg  
sl calc cnt

SS: med-dk gy, brn-dk brn, occ unconcs cl  
grs, sl frm-hd, brit, vf-f gr, ang-sr, fr std, arg  
sl calc cnt

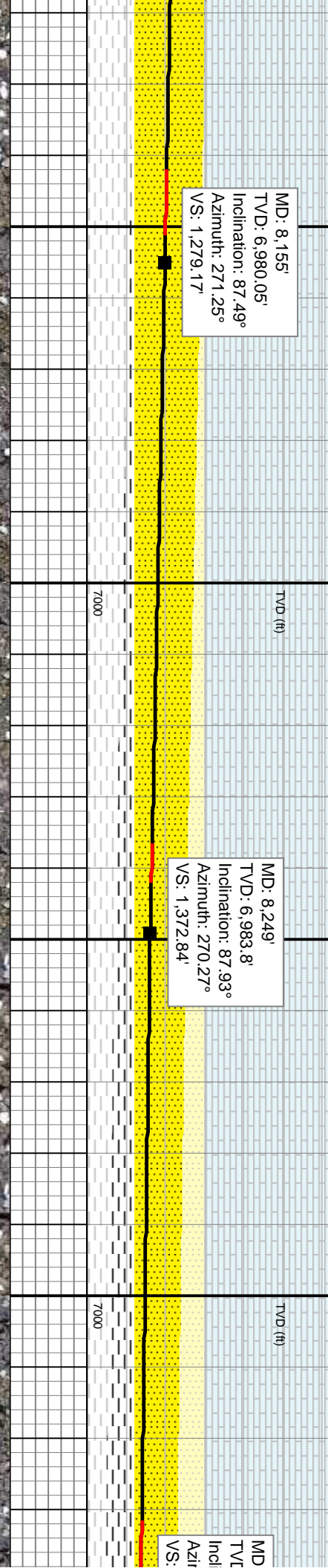
SS: med-dk gy, brn-dk brn, r unconcs cl  
grs, sl frm-hd, brit, vf-f gr, ang-sr, fr-p std,  
arg calc cnt; SH: med-dk gy, occ blk, sb  
biky-sb ply, sb fis ip, sl sft-si frm, brit, rthy,  
arg, silty ip, sl calc

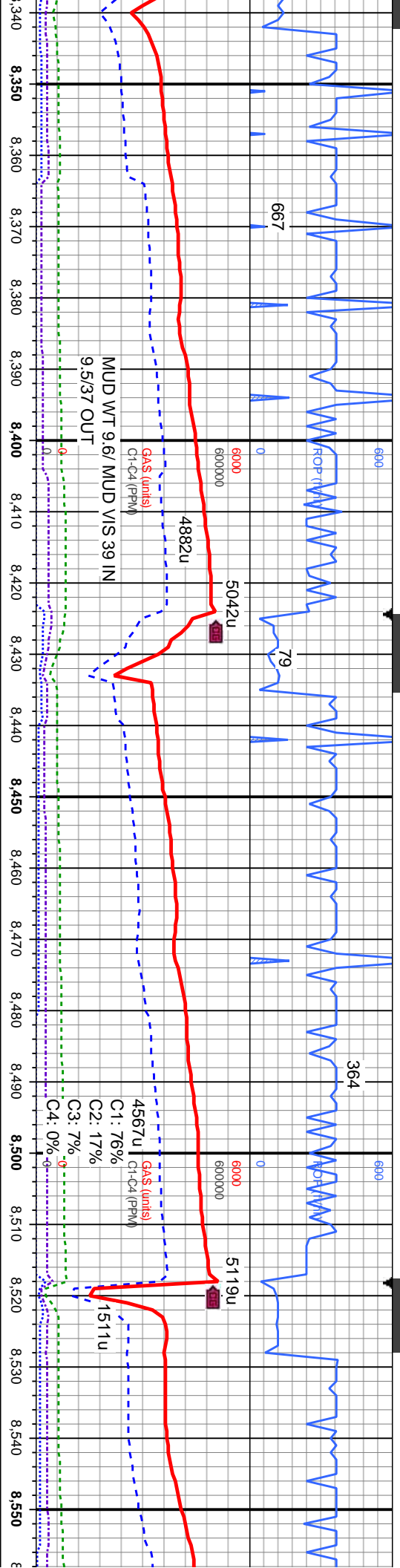
SS: med-dk gy, brn-dk brn, r unconcs cl  
grs, sl frm-hd, brit, vf-f gr, ang-sr, fr-p std,  
arg calc cnt; SH: med-dk gy, occ blk, sb  
biky-sb ply, sb fis ip, sl sft-si frm,  
arg, sl silty, sl calc

MD: 8,155'  
TVD: 6,980.05'  
Inclination: 87.49°  
Azimuth: 271.25°  
VS: 1,279.17'

MD: 8,249'  
TVD: 6,983.8'  
Inclination: 87.93°  
Azimuth: 270.27°  
VS: 1,372.84'

MD  
TVD  
Incl  
Azim  
VS





SS: med-dk gy, brn-dk brn, tr unconcs cl	SS: med-dk gy, brn-dk brn, tr unconcs cl	SS: med-dk gy, brn-dk brn, occ unconcs cl	SS: med-dk gy, brn-dk brn, occ unconcs cl	SS: med-dk gy, brn-dk brn, occ unconcs cl
grs, sl frm-hd, brit, vf-f gr, ang-sr, fr-p strd,	grs, sl frm-hd, brit, vf-f gr, ang-sr, fr-p strd,	grs, sl frm-hd, brit, vf-f gr, ang-sr, fr strd, arg	grs, sl frm-hd, brit, vf-f gr, ang-sr, fr strd,	grs, sl frm-hd, brit, vf-f gr, ang-sr, fr strd,
arg calc cnt; SH: med-dk gy, occ blk, sb	arg calc cnt; SH: med-dk gy, occ blk, sb	sl calc cnt	arg sl calc cnt	sl frm-l, calc cnt
blky-sb ply, sb fis ip, sl sft-sl frm, brit, rthy,	blky-sb ply, sb fis ip, sl sft-sl frm, brit, rthy,			
arg, sl sily, sl calc	arg, sl sily, sl calc			

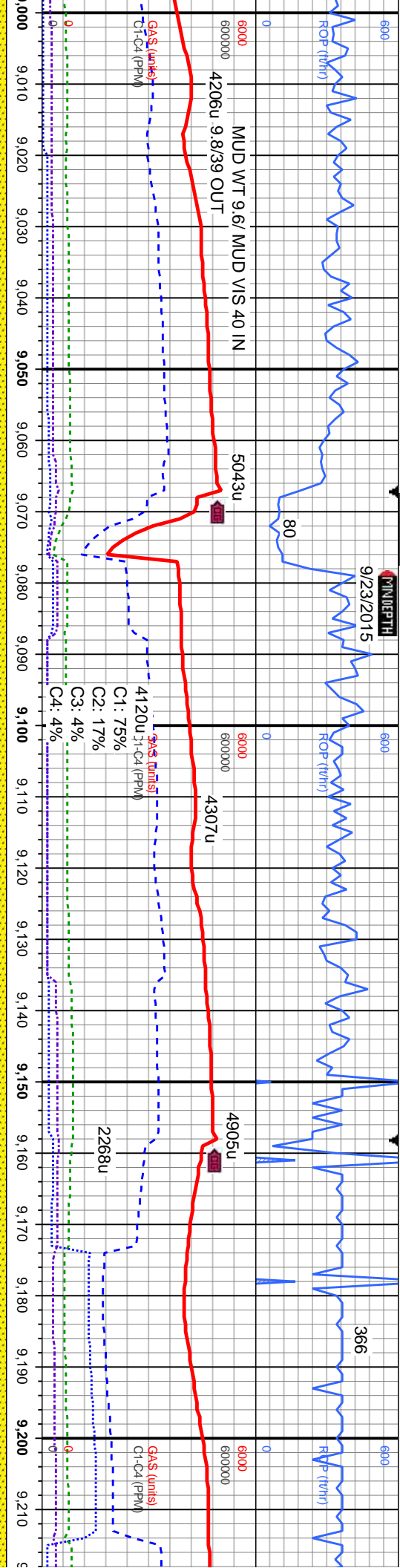
8,344'	MD: 8.437'	MD: 8.529'
6,986.28'	TVD: 6,986.49'	TVD: 6,985.99'
Inclination: 89.08°	Inclination: 90.66°	Inclination: 89.96°
Azimuth: 268.96°	Azimuth: 268.85°	Azimuth: 269.31°
1,467.4'	VS: 1,559.89'	VS: 1,651.41'

94	95
300	300
GAMMA (units)	GAMMA (units)
0	0
TVD (ft)	TVD (ft)
7000	7000
Adjusted Dip	Adjusted Dip
Lithology +3' TVD	Lithology +3' TVD

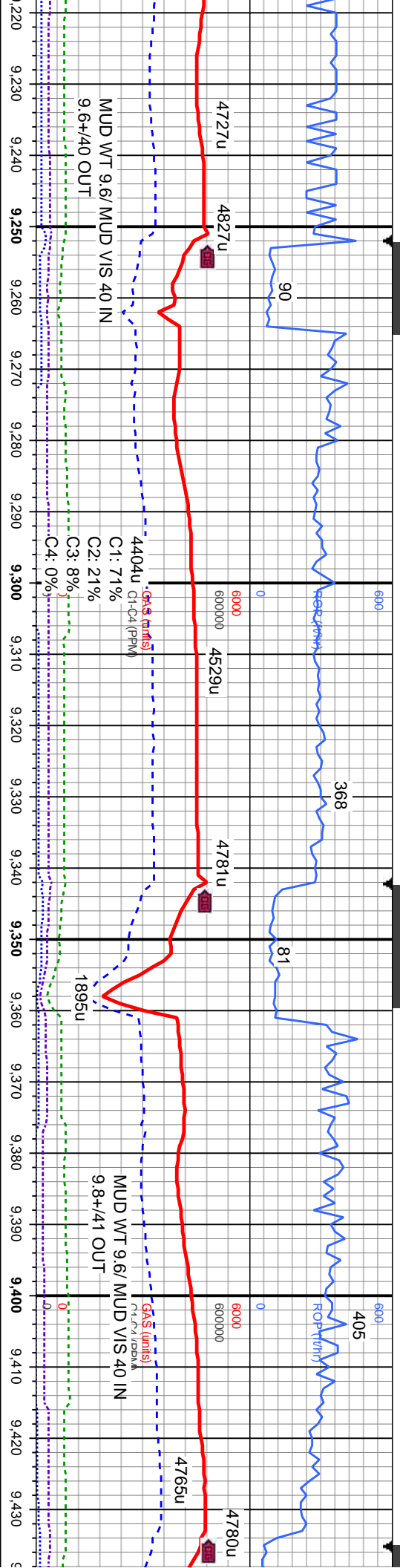








300	87	300	93	300	79
GAMMA (units)		GAMMA (units)		GAMMA (units)	
6SS: med-dk gy, brn-dk brn, tr unconc clr	SS: med-dk gy, brn-dk brn, tr unconc clr	SS: med-dk gy, brn-dk brn, occ clr, sl	SS: med-dk gy, brn-dk brn, occ clr, sl	6SS: med-dk gy	
grs, sl frm-hd, brit, vf-f gr, ang-sr, fr strd, arg	grs, sl frm-hd, brit, vf-f gr, ang-sr, fr strd, arg	frm-hd, brit, vf-f gr, ang-sr, fr strd, arg sl	frm-hd, brit, vf-f gr, ang-sr, fr strd, arg sl	frm-hd, brit, vf-f gr, ang-sr, fr strd, arg sl	frm-hd, brit, vf-f
sl calc cnt	arg sl calc cnt	calc cnt	calc cnt	calc cnt	calc cnt
TVD (ft)		TVD (ft)		TVD (ft)	
MD: 9.078'	MD: 9.170'				
TVD: 6.978.11'	TVD: 6.974.58'				
Inclination: 92.42°	Inclination: 91.98°				
Azimuth: 270.48°	Azimuth: 269.88°				
VS: 2.197.69'	VS: 2.289.3'				
7000	7000	7000	7000	7000	7000

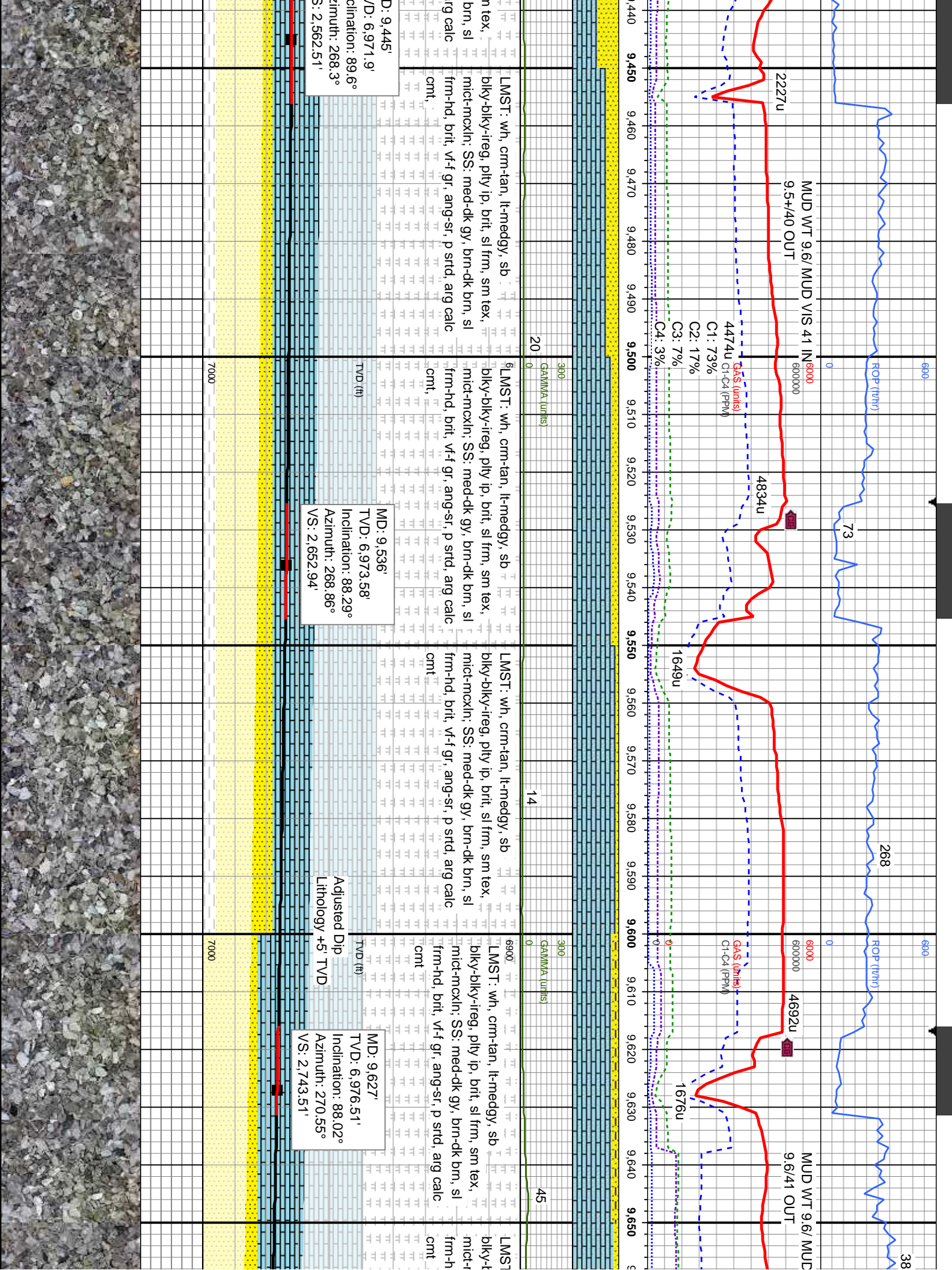


MD: 9.262'  
TVD: 6.972.25'  
Inclination: 90.92°  
Azimuth: 268.51°  
VS: 2,380.81'

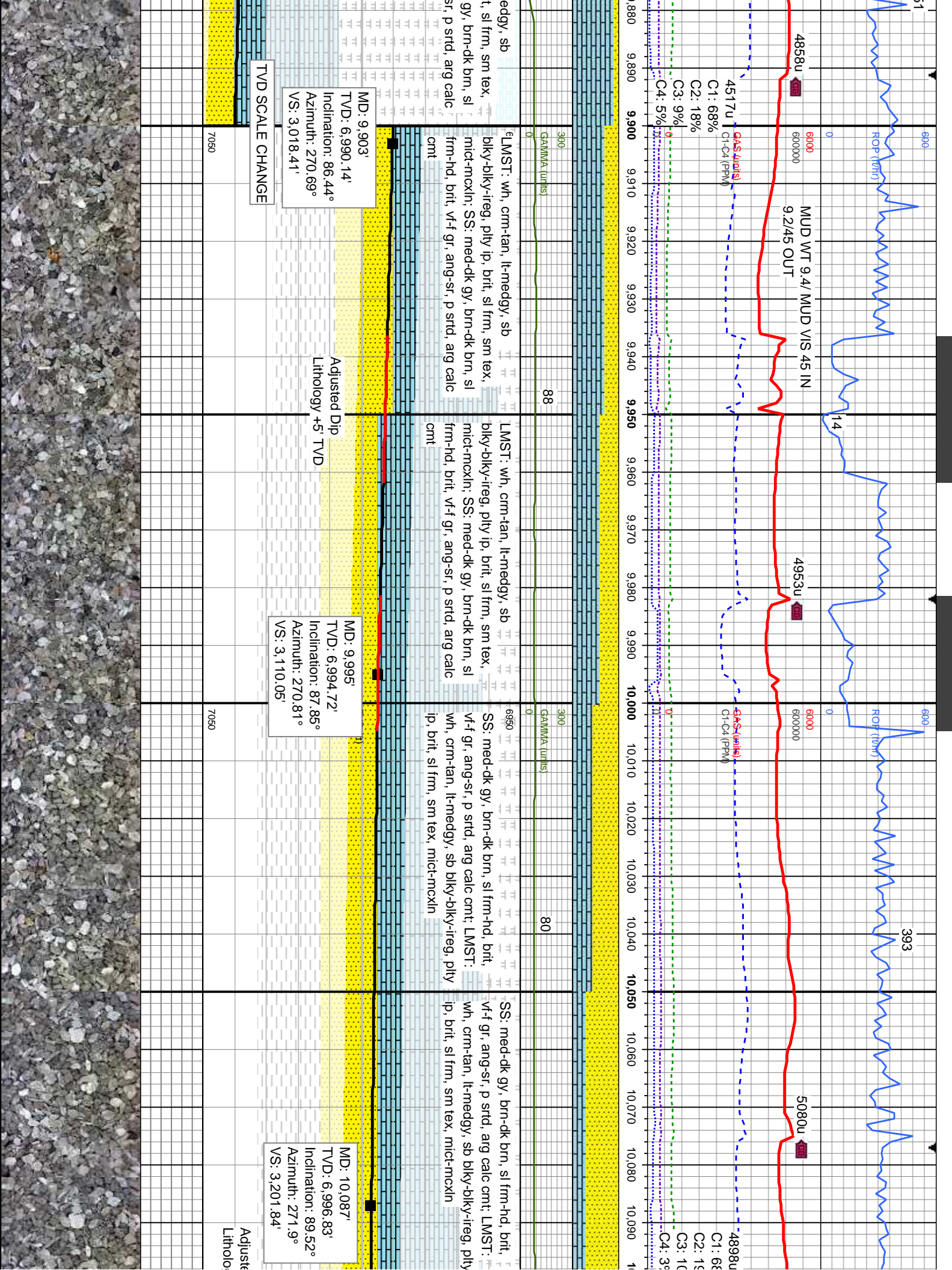
MD: 9.353'  
TVD: 6.971.55'  
Inclination: 89.96°  
Azimuth: 267.8°  
VS: 2,471.17'

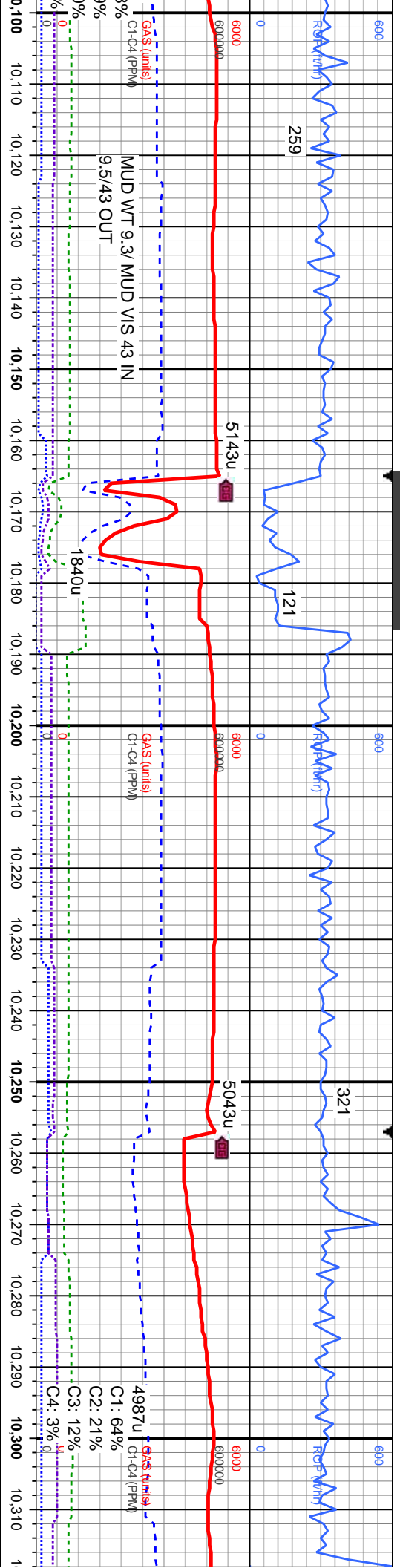
SS: med-dk gy, brn-dk brn, occ clr, sl		86	300	GA(MMA (units)	38
frn-hd, brit, vf-f gr, ang-sr, fr strd, arg sl					
calc cnt					
69 SS: med-dk gy, brn-dk brn, occ clr, sl					
frn-hd, brit, vf-f gr, ang-sr, fr strd, arg					
calc cnt, tr is					
LMST: wh, ctm-tan, lt-medgy, sb					
blky-blky-ireg, ply ip, brit, sl frm, sr					
mict-mexlin; SS: med-dk gy, brn-dk					
frn-hd, brit, vf-f gr, ang-sr, p strd, a					
cnt,					
M					
TV					
In					
A:					
V/					

Adjusted Dip  
Lithology +5' TVD









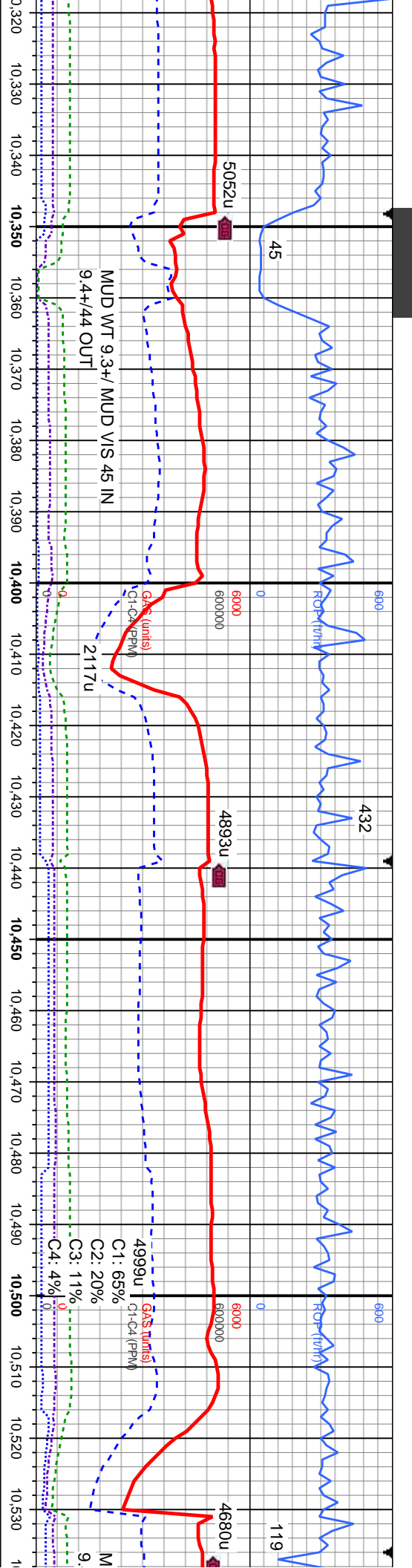
SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srid, arg calc cnt; LMST: wh, crm-tan, lt-medgy, sb blk-y-biky-ireg, pty ip, brit, sl frm, sm tex, mict-mcxln	SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srid, arg calc cnt; LMST: wh, crm-tan, lt-medgy, sb blk-y-biky-ireg, pty ip, brit, sl frm, sm tex, mict-mcxln	SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srid, arg calc cnt; LMST: wh, crm-tan, lt-medgy, sb blk-y-biky-ireg, pty ip, brit, sl frm, sm tex, mict-mcxln	SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p srid, arg calc cnt; LMST: wh, crm-tan, lt-medgy, sb blk-y-biky-ireg, pty ip, brit, sl frm, sm tex, mict-mcxln
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MD: 10,178'  
TVD: 6,998.64'  
Inclination: 88.2°  
Azimuth: 270.29°  
VS: 3,292.62'

MD: 10,269'  
TVD: 7,002.06'  
Inclination: 87.49°  
Azimuth: 269.65°  
VS: 3,383.21'

Adjusted Dip  
Lithology +4' TVD





SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p strd, arg calc cnt; LMST: wh, crm-tan, lt-medgy, sb blk-y-blky-ireg, pty ip, brit, sl frm, sm tex, mict-mcxln

SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p strd, arg calc cnt; LMST: wh, crm-tan, lt-medgy, sb blk-y-blky-ireg, pty ip, brit, sl frm, sm tex, mict-mcxln

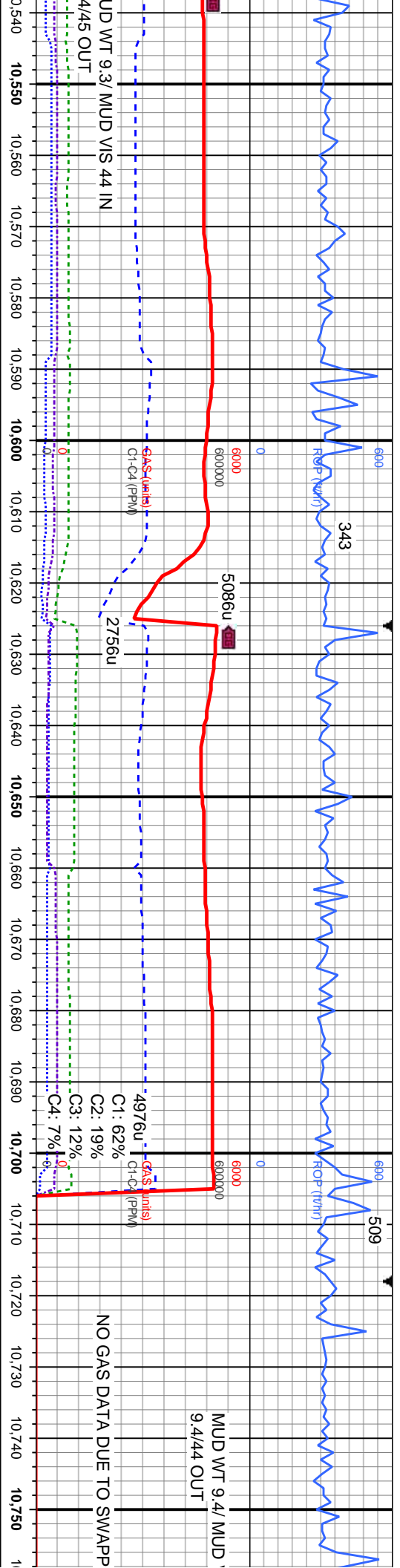
SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p strd, arg calc cnt; LMST: wh, crm-tan, lt-medgy, sb blk-y-blky-ireg, pty ip, brit, sl frm, sm tex, mict-mcxln

MD: 10,361'  
TVD: 7,004.61'  
Inclination: 89.34°  
Azimuth: 270.3°  
VS: 3,474.83'

MD: 10,453'  
TVD: 7,005.52'  
Inclination: 89.52°  
Azimuth: 270.14°  
VS: 3,566.52'

Adjusted Dip  
Lithology +2 TVD

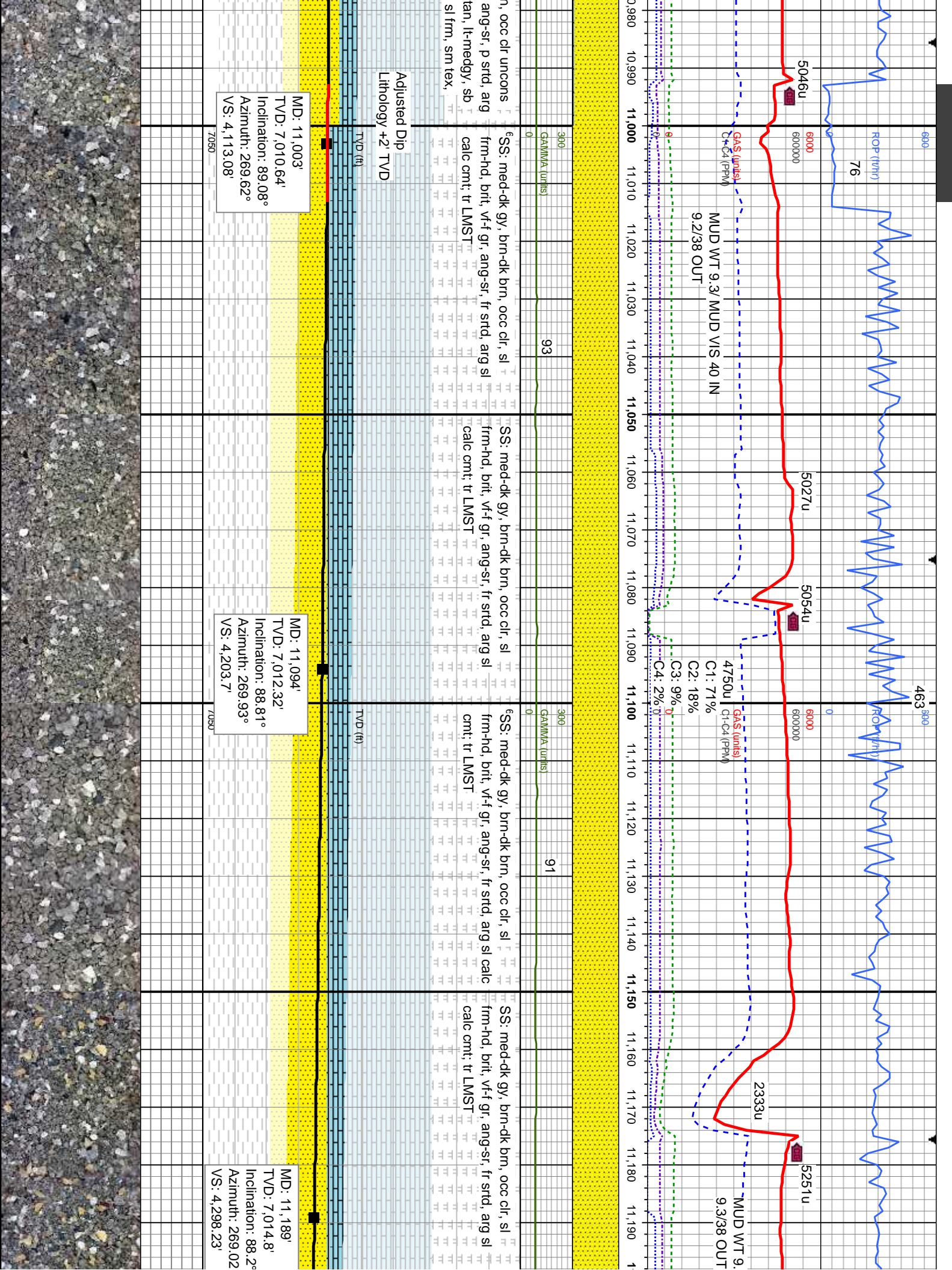
M  
TV  
In  
Az  
VS



SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p strd, arg calc cmt; LMST: wh, crm-tan, lt-medgy, sb blk-y-bkly-ireg, ply ip, brit, sl frm, sm tex, mict-mcxln	SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p strd, arg calc cmt; LMST: wh, crm-tan, lt-medgy, sb blk-y-bkly-ireg, ply ip, brit, sl frm, sm tex, mict-mcxln	SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p strd, arg calc cmt; LMST: wh, crm-tan, lt-medgy, sb blk-y-bkly-ireg, ply ip, brit, sl frm, sm tex, mict-mcxln	SS: med-dk gy, brn-dk brn, sl frm-hd, brit, vf-f gr, ang-sr, p strd, arg calc cmt; LMST: wh, crm-tan, lt-medgy, sb blk-y-bkly-ireg, ply ip, brit, sl frm, sm tex, mict-mcxln
MD: 10.545' TVD: 7,006.36' Inclination: 89.43° Azimuth: 269.17° VS: 3,658.12'	MD: 10.637' TVD: 7,007.28' Inclination: 89.43° Azimuth: 269.04° VS: 3,749.65'	MD: 10.728' TVD: 7,008.05' Inclination: 89.6° Azimuth: 268.64° VS: 3,840.13'	
7050	7050	7050	









9/24/2015

9/24/2015

345

423

ROP (TVH)

ROP (TVH)

ROP (TVH)

MUD WT 9.1+ / MUD VIS 39 IN

MUD WT 9.2+ / MUD VIS 44 IN

MUD WT 9.3 / MUD VIS 42 I

MUD WT 9.1+ / MUD VIS 40 IN

MUD WT 9.2 / MUD VIS 42 IN

GAS (units)

Gr-C4 (PPM)

11,420 11,430 11,440 11,450 11,460 11,470 11,480 11,490 11,500 11,510 11,520 11,530 11,540 11,550 11,560 11,570 11,580 11,590 11,600 11,610 11,620 11,630 1

86

84

91

GAMMA (units)

GAMMA (units)

SS: med-dk gy, brn-dk brn, occ unconc cl  
grs, sl frm-hd, brit, vf-f gr, ang-sr, fr strd, arg  
sl calc cnt;

SS: med-dk gy, brn-dk brn, occ unconc cl  
grs, sl frm-hd, brit, vf-f gr, ang-sr, fr strd,  
arg sl calc cnt

SS: med-dk gy, brn-dk brn, occ unconc cl  
grs, sl frm-hd, brit, vf-f gr, ang-sr, fr strd, arg  
sl calc cnt

SS: med-dk gy, brn-dk brn, occ un  
grs, sl frm-hd, brit, vf-f gr, ang-sr, f

MD: 11,471'  
TVD: 7,019.35'  
Inclination: 90.13°  
Azimuth: 268.95°  
VS: 4,578.48'

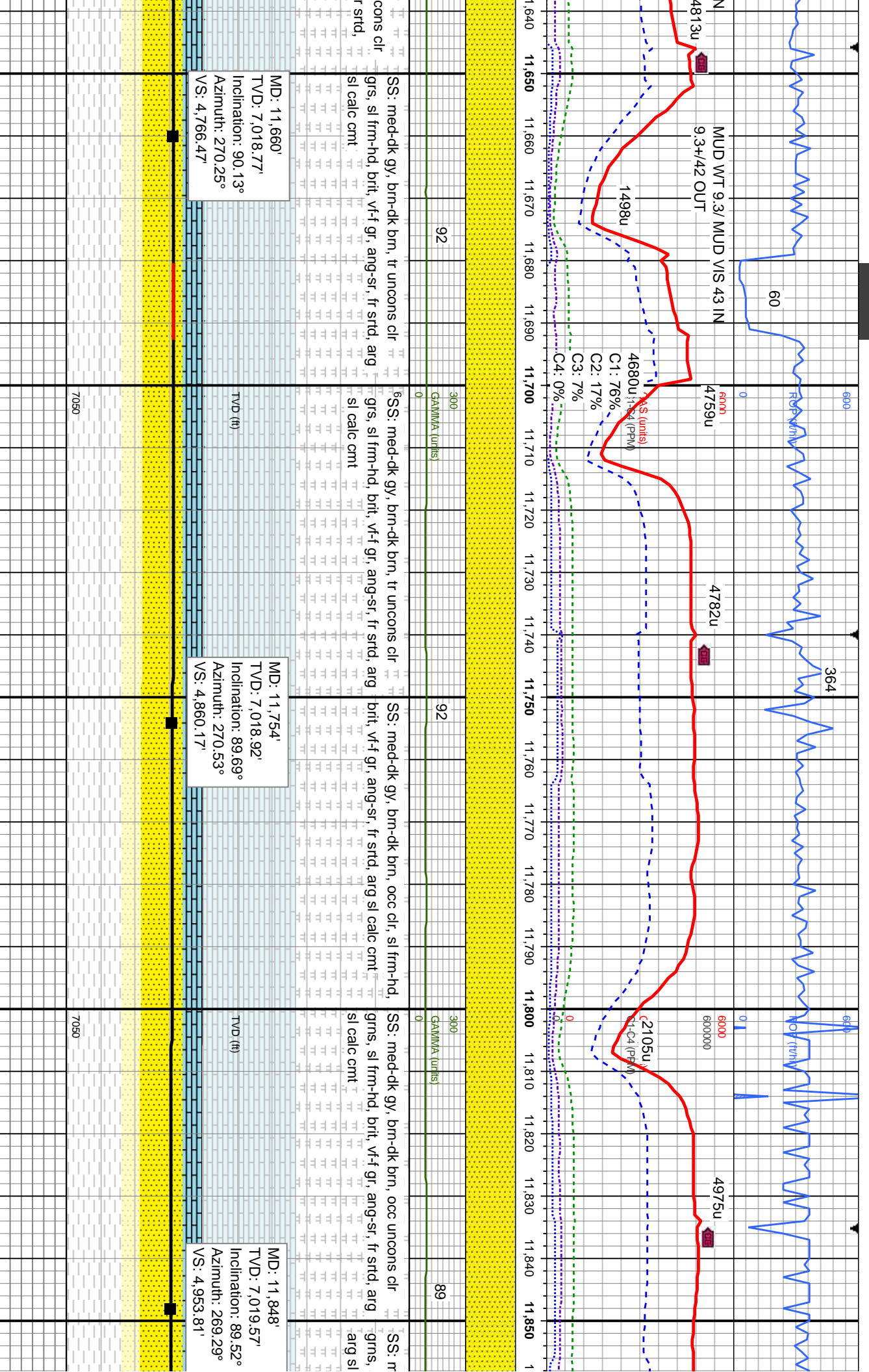
MD: 11,566'  
TVD: 7,019.06'  
Inclination: 90.22°  
Azimuth: 268.43°  
VS: 4,672.92'

TVD (ft)

TVD (ft)

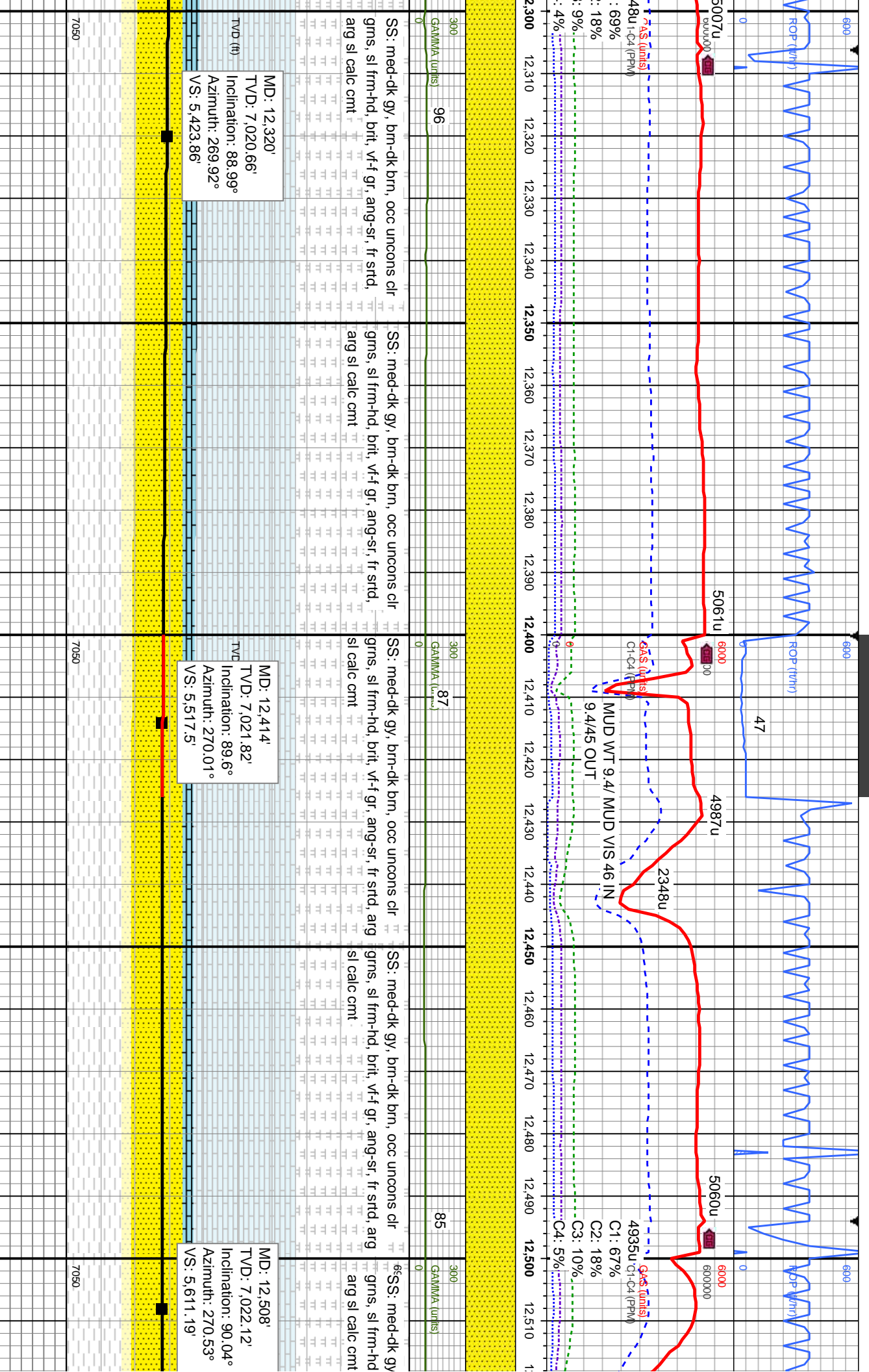
7050

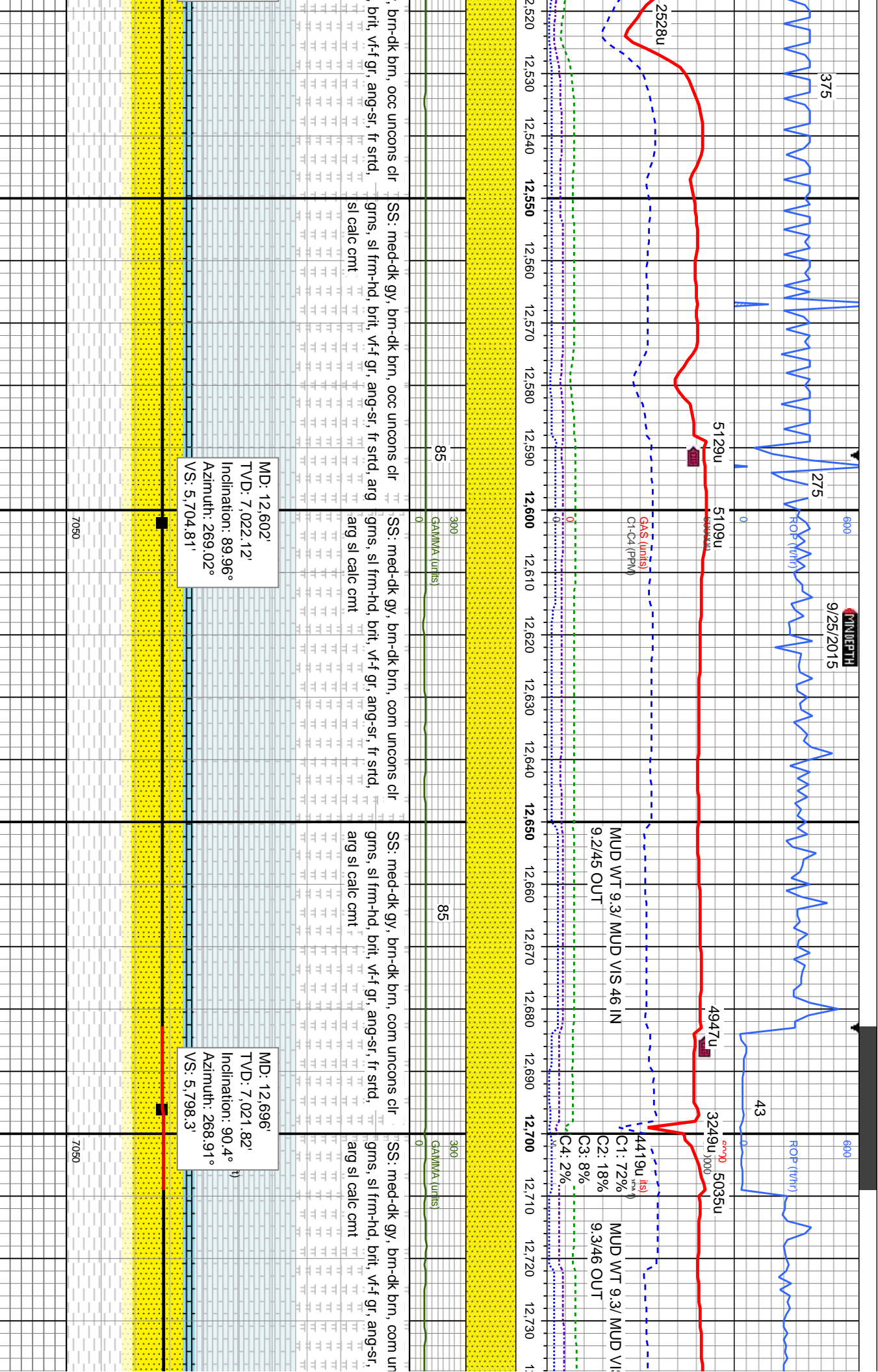
7050

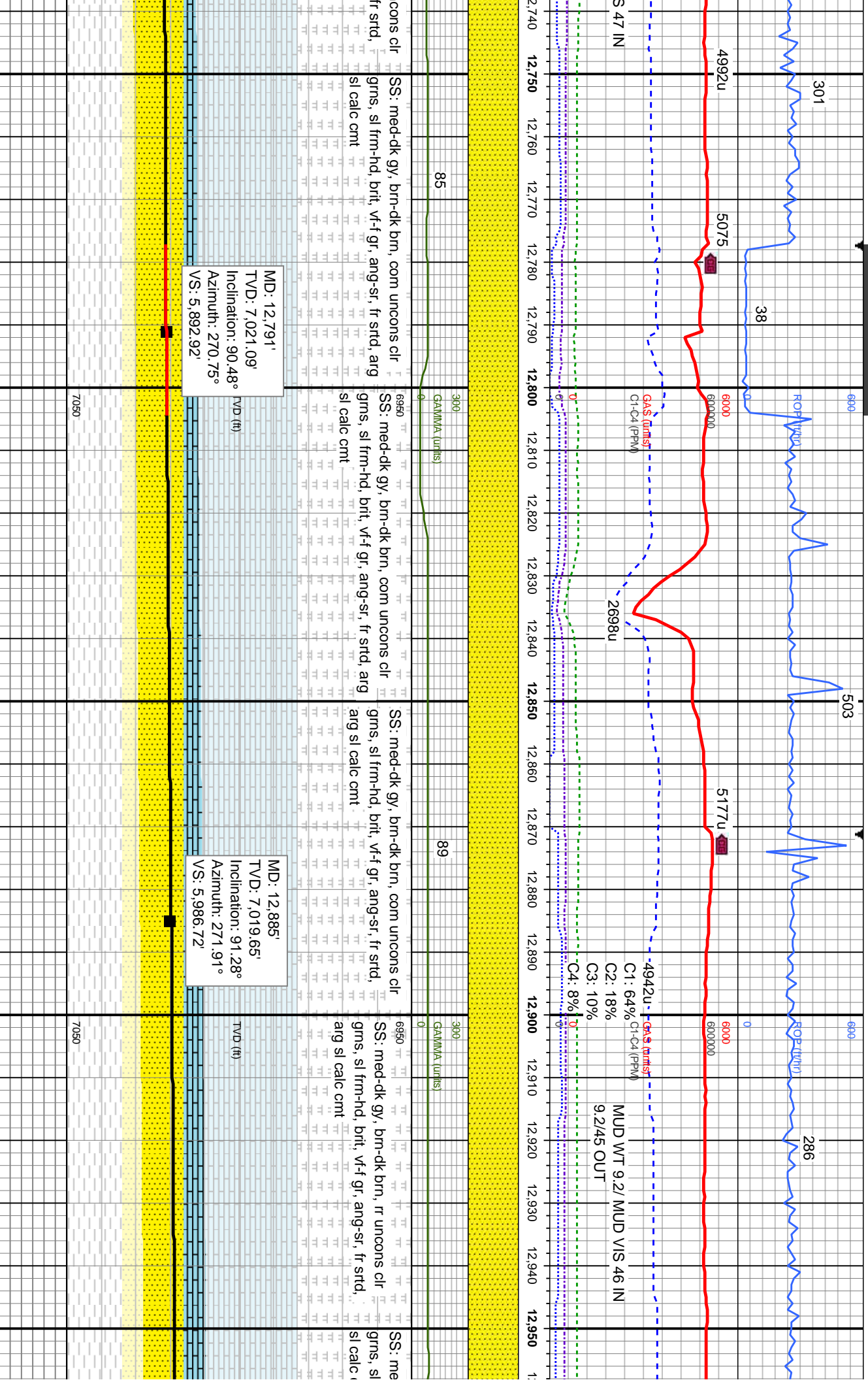




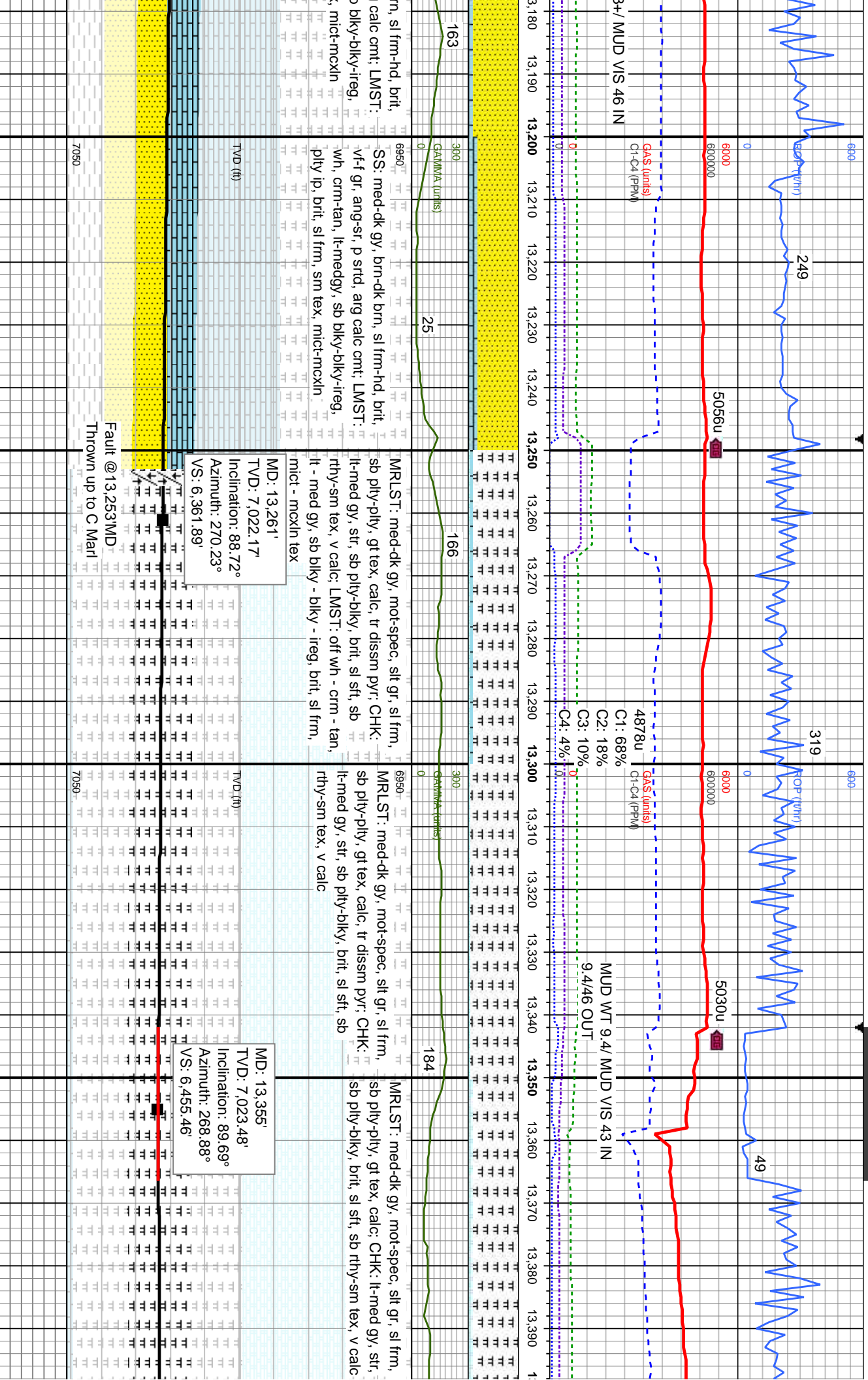


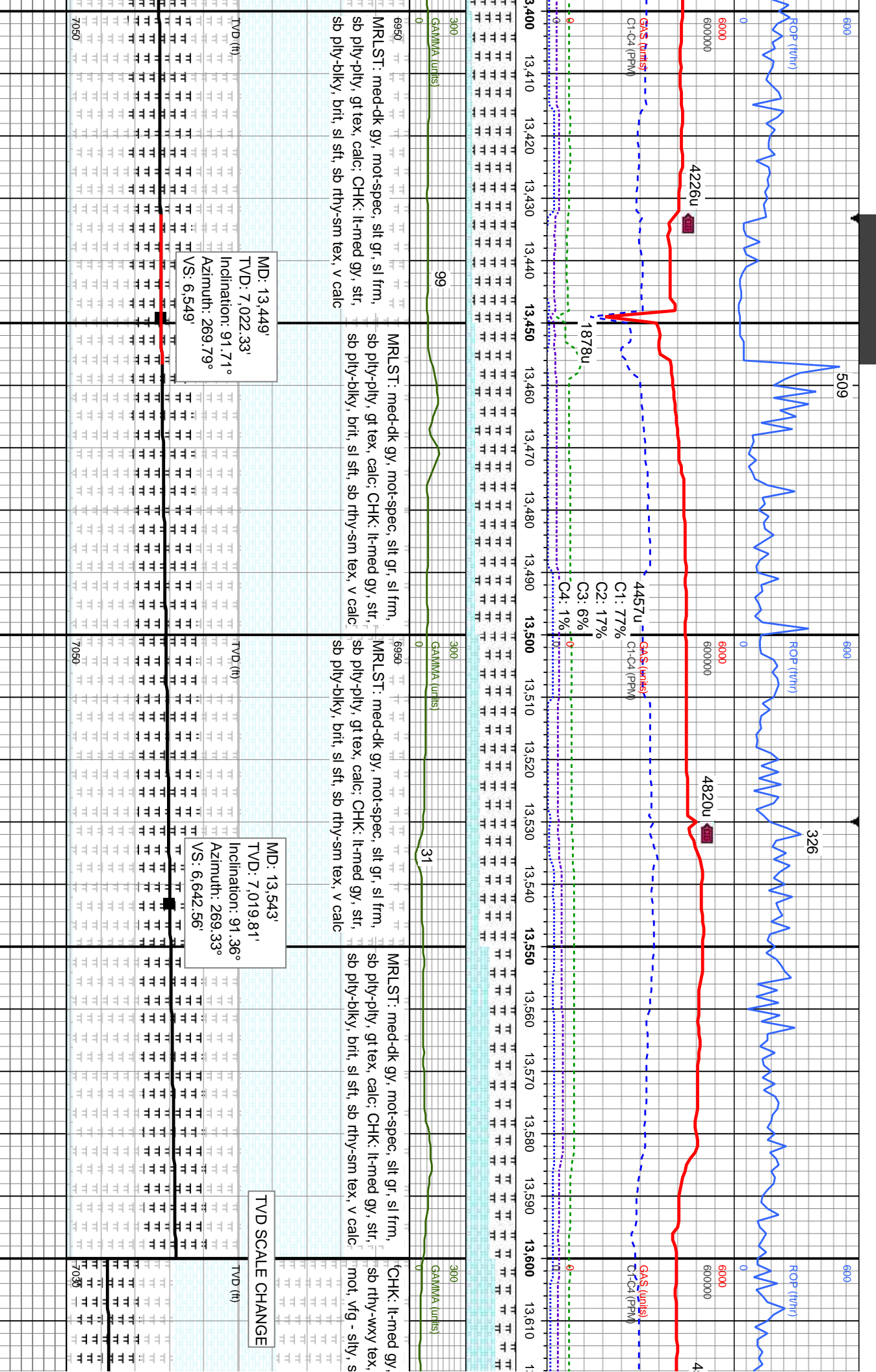






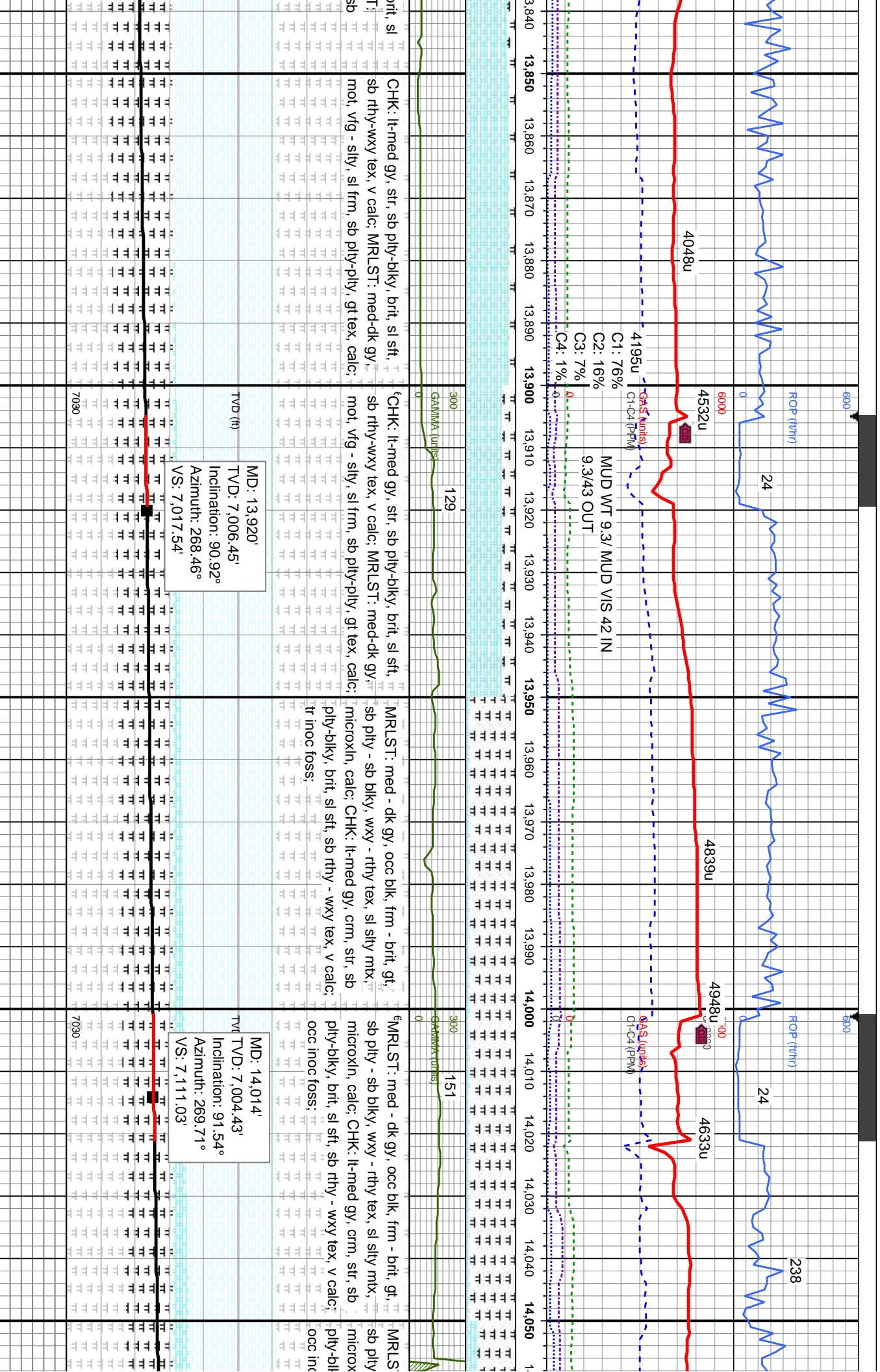




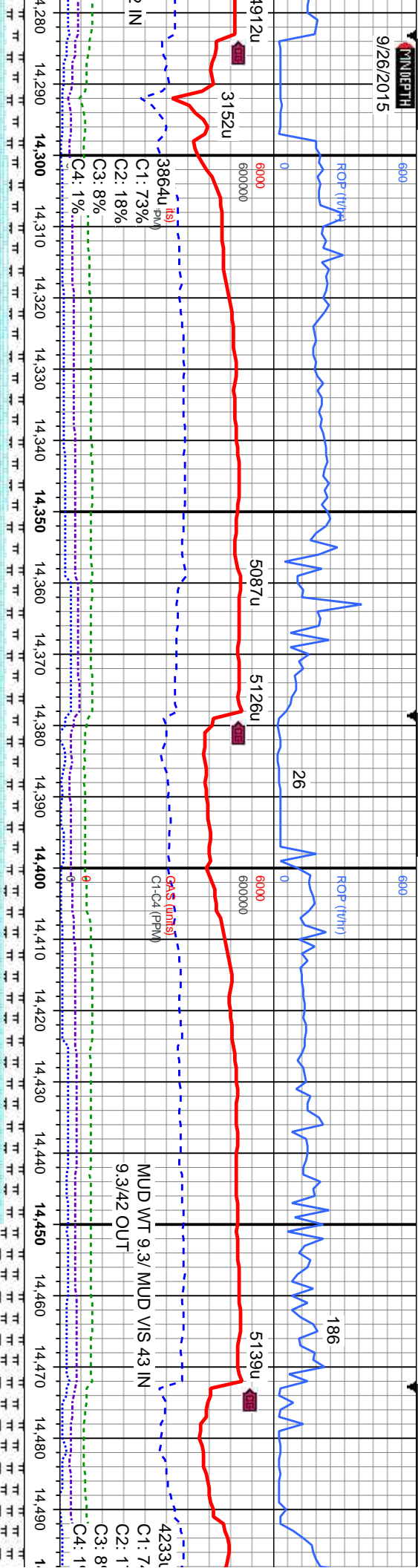


TVD SCALE CHANGE









MD: 14,297'  
TVD: 6,998.12'  
Inclination: 91.19°  
Azimuth: 268.5°  
VS: 7,392.89'

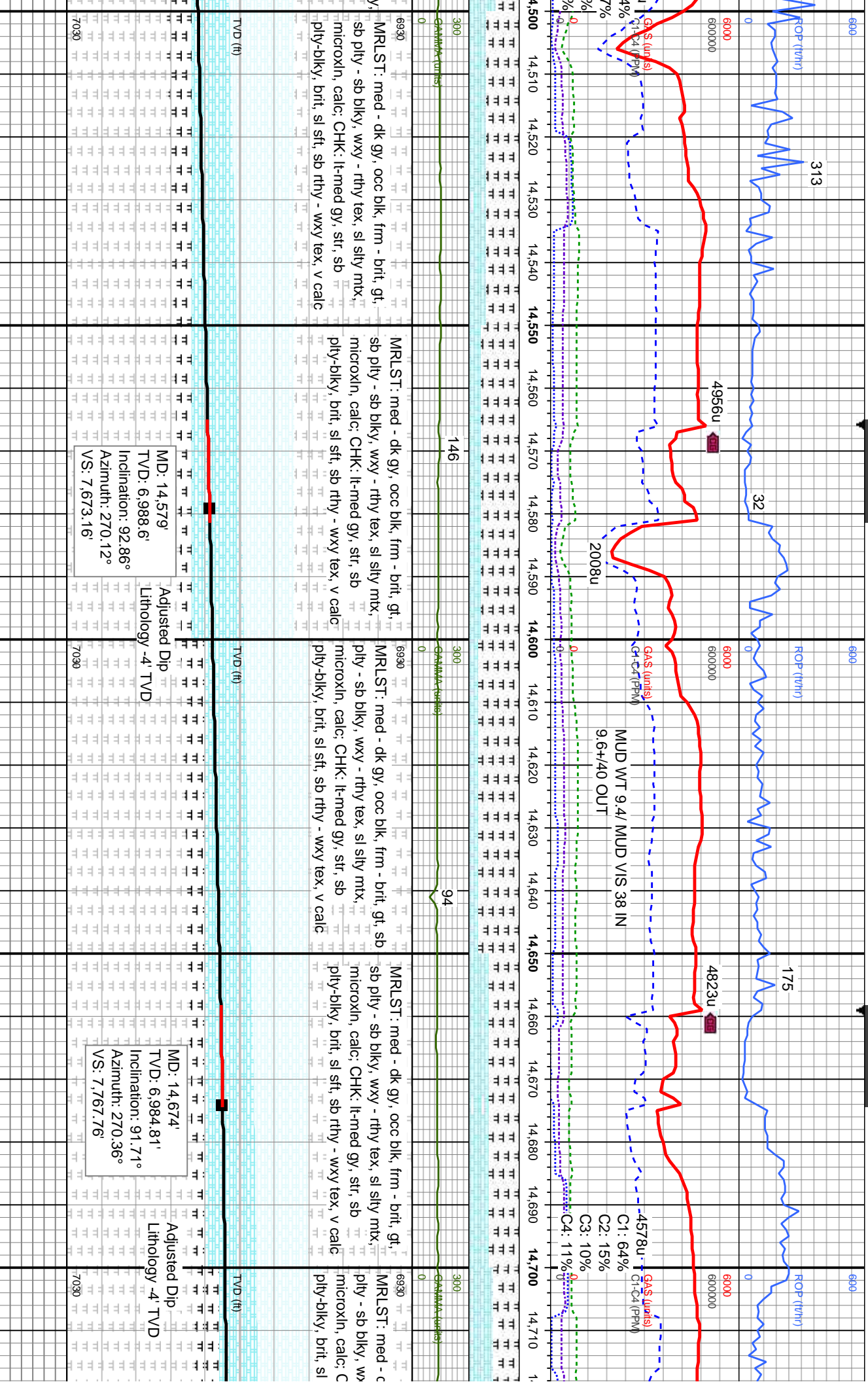
MD: 14,391'  
TVD: 6,995.74'  
Inclination: 91.71°  
Azimuth: 268.19°  
VS: 7,486.24'

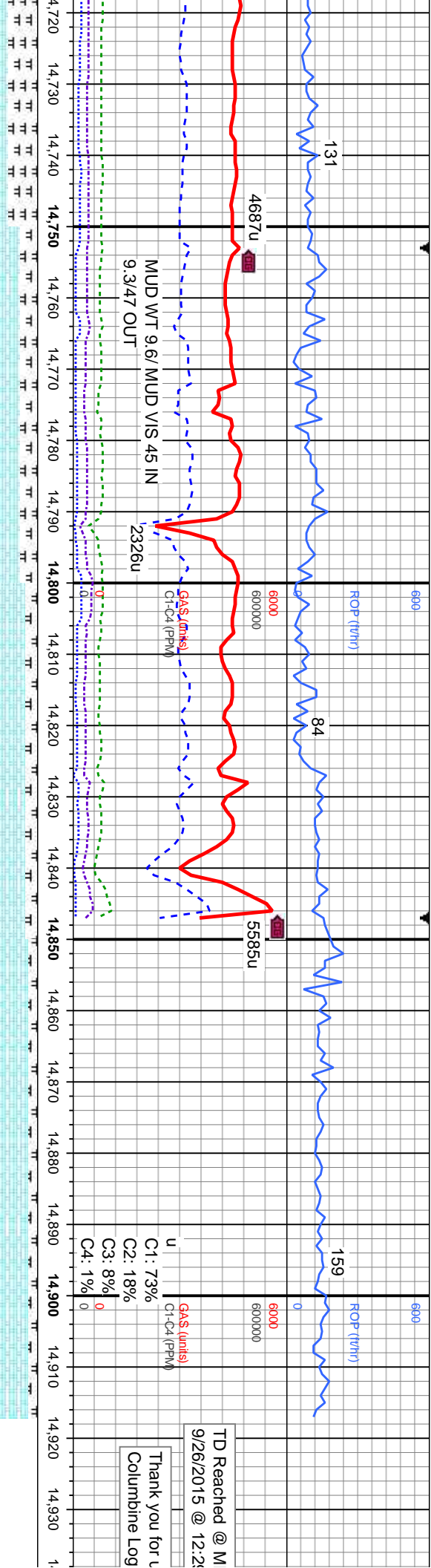
MD: 14,485'  
TVD: 6,992.64'  
Inclination: 92.07°  
Azimuth: 269.23°  
VS: 7,579.64'

CHK: lt-med gy, crn, str, sb pty-blky, brit, sl sft, sb rthy - wxy tex, v calc; MRLST: med - dk gy, occ blk, frm - brit, gt, sb pty - sb blk, wxy - rthy tex, sl silty mtx, microxin, calc, tr inoc foss; rr dissn pyr	CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy - wxy tex, v calc; MRLST: med - dk gy, occ blk, frm - brit, gt, sb pty - sb blk, wxy - rthy tex, sl silty mtx, microxin, calc, tr inoc foss; rr dissn pyr	CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy - wxy tex, v calc; MRLST: med - dk gy, occ blk, frm - brit, gt, sb pty - sb blk, wxy - rthy tex, sl silty mtx, microxin, calc, tr inoc foss; rr dissn pyr	CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy - wxy tex, v calc; MRLST: med - dk gy, occ blk, frm - brit, gt, sb pty - sb blk, wxy - rthy tex, sl silty mtx, microxin, calc, tr inoc foss; rr dissn pyr
Gamma (API)	Gamma (API)	Gamma (API)	Gamma (API)
0	164	73	138
300	300	300	300
7030'	7030'	7030'	7030'

Adjusted Dip  
Lithology -5' TVD

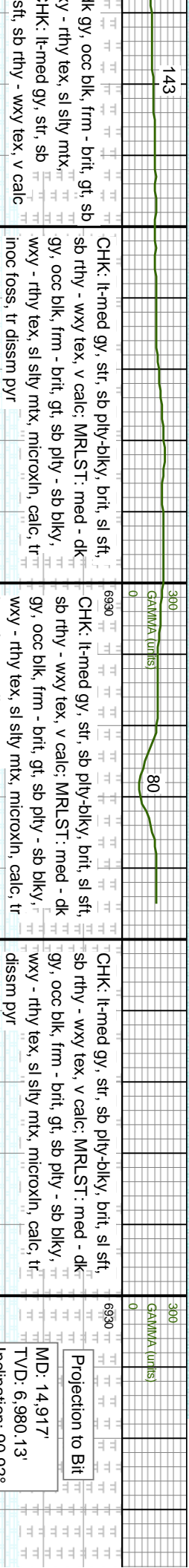
MUD WT 9.3/ MUD VIS 43 IN  
9.3/42 OUT





TD Reached @ M  
9/26/2015 @ 12:22

Thank you for u  
Columbine Log



MD: 14,768'  
TVD: 6,982.58'  
Inclination: 91.01°  
Azimuth: 268.08°  
VS: 7,861.27'

MD: 14,836'  
TVD: 6,981.43'  
Inclination: 90.92°  
Azimuth: 267.4°  
VS: 7,928.72'

CHK: lt-med gy, str, sb pty-biky, brit, sl sft, sb rthy - wxy tex, v calc; MRLST: med - dk gy, occ blk, frm - brit, gt, sb pty - sb biky, wxy - rthy tex, sl silty mtx, microxin, calc, tr dissn pyr

MD: 14,917'  
TVD: 6,980.13'  
Inclination: 90.92°  
Azimuth: 267.4°  
VS: 8,009.02'

Projection to Bit

