



Scale: 5" / 100'  
Measured Depth Log

**Well Name** Fiscus Federal LD15-77-1HN

**Location** NENW SEC15 T9N R58W

**State** CO

**Country** USA

**API Number** 05-123-37369

**Region** DENVER-JULESBURG BASIN

**Spud Date** 11/3/2014

**Surface Coordinates** 280' FNL, 1720' FWL

Lat/Long: 40.75786/-103.85363

**County** WELD

**Rig Number** PRECISION 828

**AFE #** 200239

**Field** WILDCAT

**Drilling Completed** 11/9/2014

**Ground Elevation** 4701'

**K.B. Elevation** 4717'

**Logged Interval** 5000' **To** 9990'

**Total Depth** 9990'

**Formation** PIERRE (TEEPEE BUTTES, SHARON SPRINGS), NIOBRARA (SMOKY HILLS A, B, & C LAYERS)

**Type of Drilling Fluid** LSND

**Company** Noble Energy Inc

**Address** 1625 Broadway  
Denver, CO 80202

**Name** TERESA MALESARDI

**Company** NOBLE ENERGY INC.










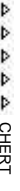
























**Address** 1625 Broadway  
Denver, CO 80202

**WELLSITE GEOLOGISTS:**





















































Operator

Geologist

Rock Types

 UNKNOWN	 BRECCIA	 GRANITE	 SHALE
 CHALK	 CEMENT	 GYPSUM	 SHALE COLOR
 MARLSTONE	 CHERT	 IGNEOUS	 SHALE GRAY
 SANDSTONE	 CLAY CHOKE SAND	 SIDERITE or LIMONITE	 SILTSTONE
 SHALY SANDSTONE	 CLAYSTONE	 LIMESTONE	 TILL
 SILTY SHALE	 COAL	 METAMORPHIC	 TUFF
 SHALY SILTSTONE	 CONGLOMERATE	 NO SAMPLE	 WELDED TUFF
 ANHYDRITE	 DOLOMITE	 SALT	
 BENTONITE	 DOLOMITIC LIMESTONE	 SALT-PEPPER SAND	

Accessories

 GASTROPOD	 ARGILLITE GRAIN	 HEAVY MINERAL	 ANHYDRITE STRINGER
 INOCERAMUS	 B BENTONITE	 K KAOLIN	 BENTONITE STRINGER
 ALGAE	 BITUMENOUS SUBSTANCE	 M MARLSTONE	 COAL STRINGER
 AMPHIPORA	 BRECCIA FRAGMENTS	 M MICACEOUS	 DOLOMITE STRINGER
 BELEMNITE	 C CALCAREOUS	 M MINERAL CRYSTALS	 GYPSUM STRINGER
 BIOCLASTIC	 C CARBONACEOUS FLAKES	 N NODULES	 LIMESTONE STRINGER
 BRACHIOPOD	 C CHTDK	 P PHOSPHATE PELLETS	 MARLSTONE (CALC) STRG
 BRYOZOA	 C CHTLT	 P PYRITE	 MARLSTONE (DOL) STRG
 CEPHALOPOD	 C COAL - THIN BEDS	 S SALT CAST	 SANDSTONE STRINGER
 CORAL	 D DOLOMITIC	 S SANDY	 SHALE STRINGER
 CRINOID	 F FELDSPAR	 S SILICEOUS	 SILTSTONE STRINGER
 ECHINOID	 F FERRUGINOUS PELLET	 S SILTY	
 FISH	 F FERRUGINOUS	 T TUFFACEOUS	
 FORAMINIFERA	 A ANHYDRITIC	 G GLAUCONITE	
 F FOSSIL	 A ARGILLACEOUS	 G GYPSIFEROUS	

Other

GARY L. MYERS  
C.S. METZ  
JASON BEACH

LOG CONTINUES FROM FILE: Fiscus Federal LD15-77-1HN Vert.mplot  
GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING, INC.

Other Symbols

Oil Show

- P PINPOINT
- V VUGGY
- F FAULT
- WIRELINE TESTED - LEFT
- WIRELINE TESTED - RT
- FX FINELYXLN

D DEAD

Engineering

- FORMATION TOP
- DRILL STEM TEST
- GS GRAINSTONE

EVEN

- GAS SHOW
- MINDEPTH MN DEPTH
- L LITHOGRAPHIC

QUESTIONABLE

- BIT
- OIL SHOW
- MX MICROXLN

SPOTTED STAINING

- CONNECTION (UP)
- MINDEPTH MN DEPTH UP
- MS MUDESTONE

Rounding

- CONNECTION (DOWN)
- MINDEPTH MN DEPTH (DOWN)
- A ANGULAR
- PS PACKSTONE

Porosity

- CONNECTION GAS
- NORMAL FAULT
- R ROUNDED
- WS WACKESTONE

E EARTHY

- CONNECTION GAS (LEFT)
- OVERTURNED STRATA
- B SUBANG

FENESTRAL

- TRIP GAS
- REVERSE FAULT
- R SUBRND

Sorting

- F FRACTURE
- TRIP GAS (LEFT)
- CASING
- M MODERATE

Textures

- INTERCRYSTALLINE
- DOWN TIME GAS
- SIDEWALL CORE (LEFT)
- P POOR

- INTEROOLITIC
- DOWN TIME GAS (LEFT)
- SIDEWALL CORE (RIGHT)
- BS BOUNDSTONE
- W WELL

- MOLDIC
- CORE - LOST
- SLIDE
- C CHALKY

- ORGANIC
- CORE - RECOVERED
- SURVEY
- CX CRYPTOXLN

Survey Plan

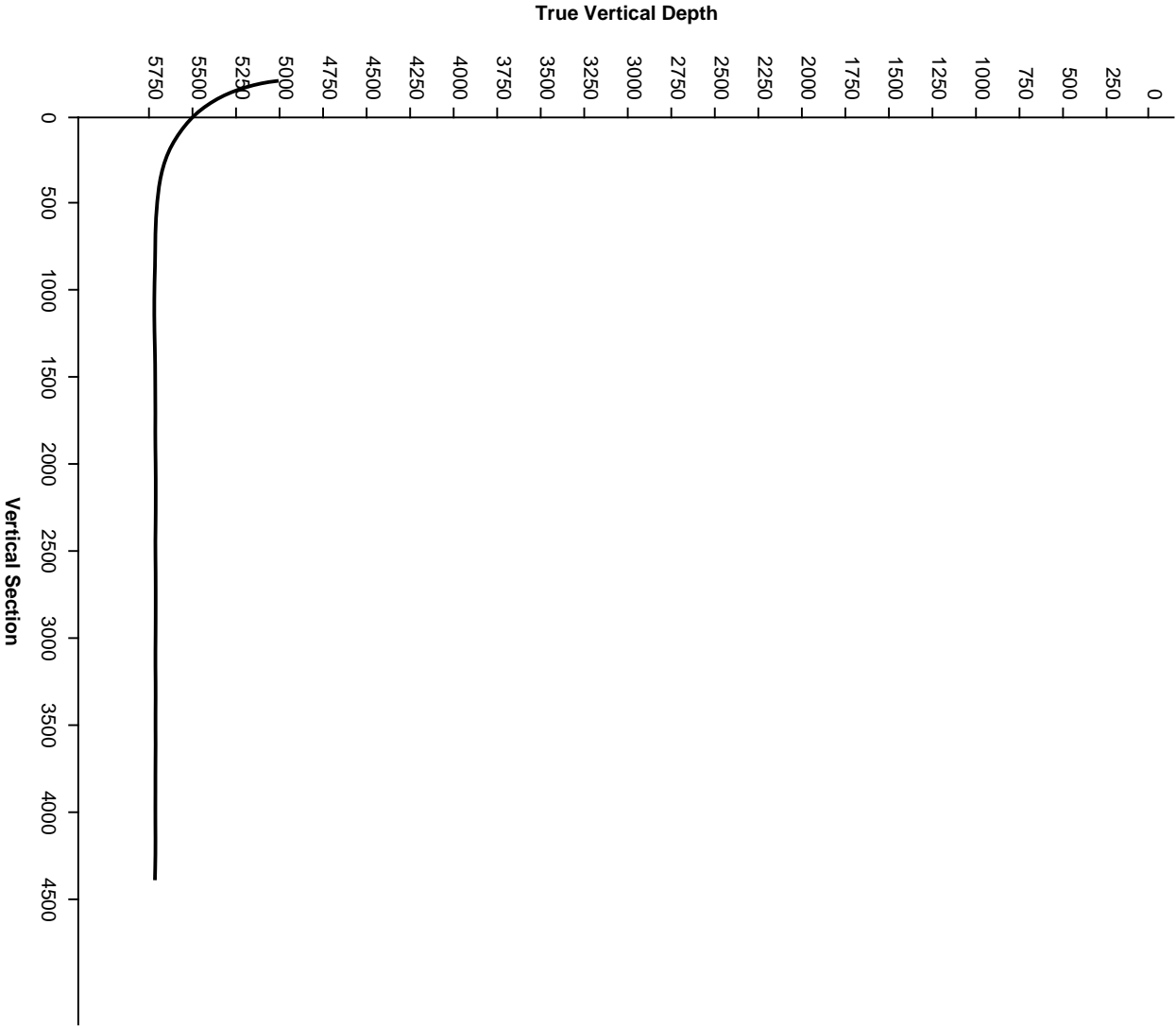
400  
300  
200  
100  
0  
100  
200

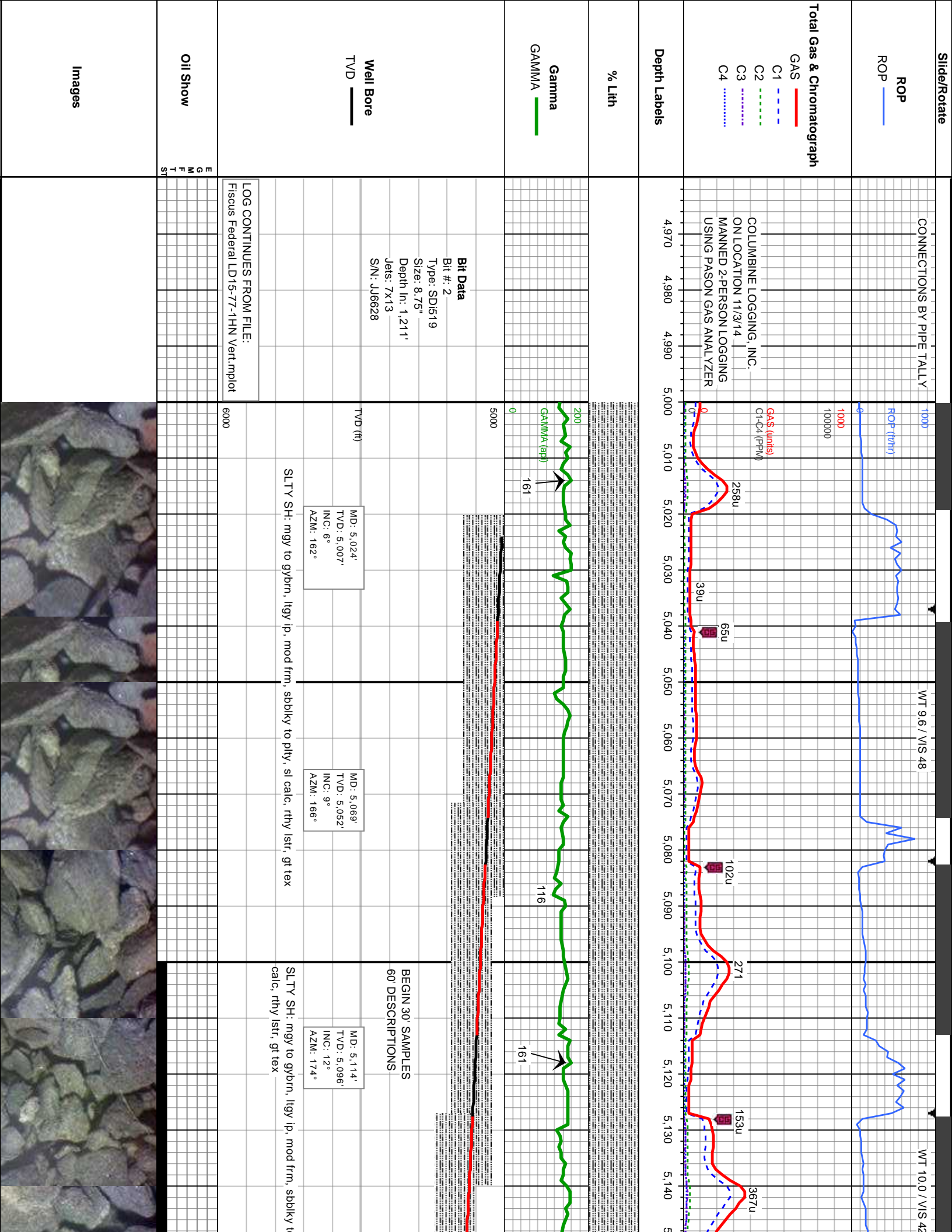
Northing

0

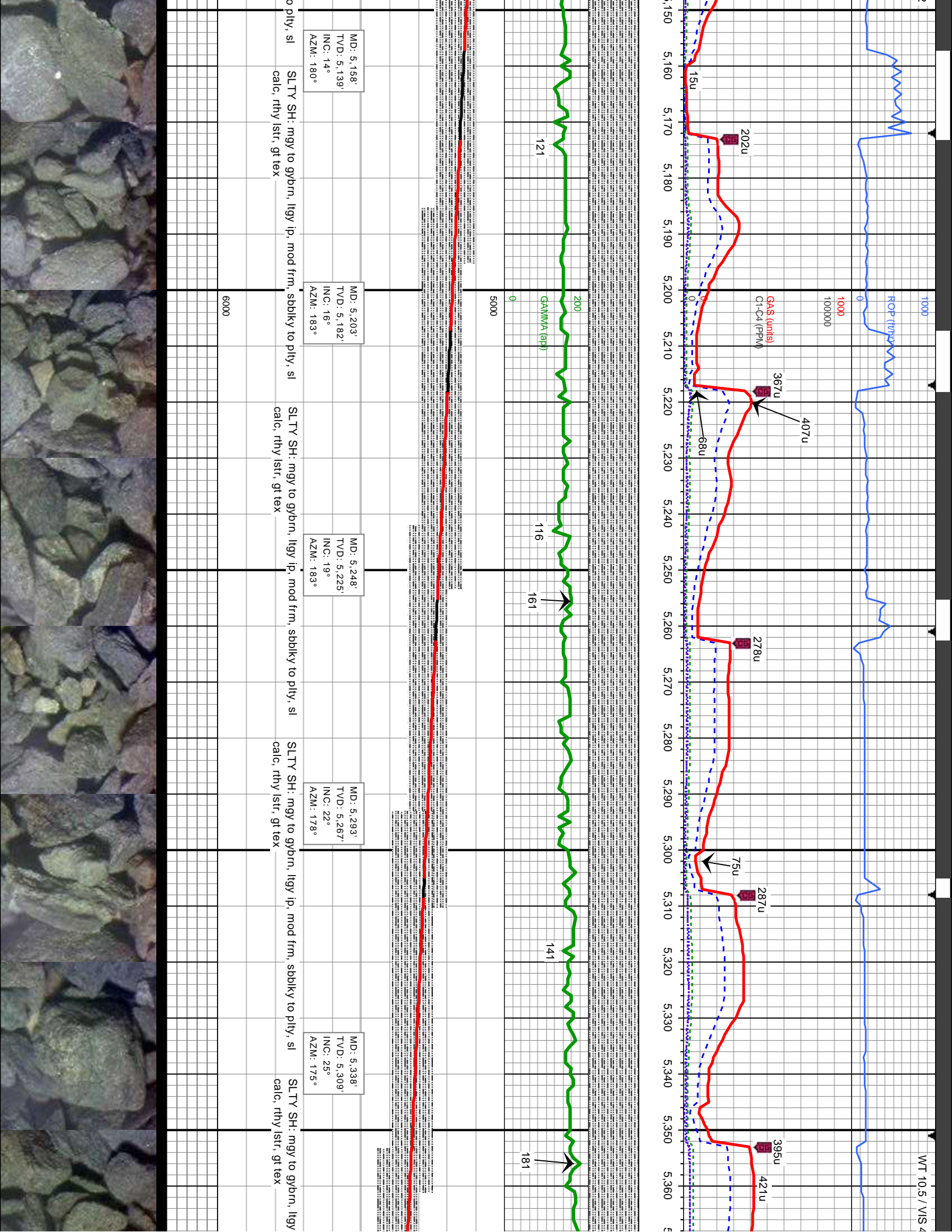
Easting

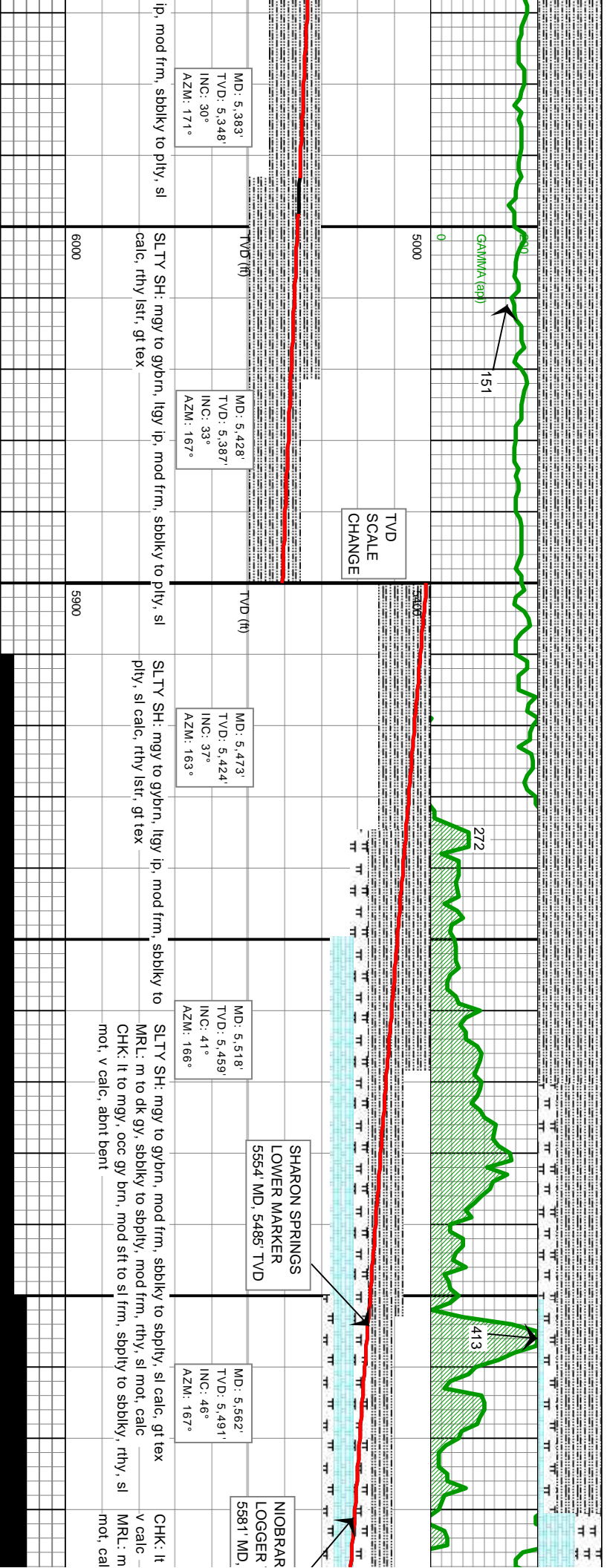
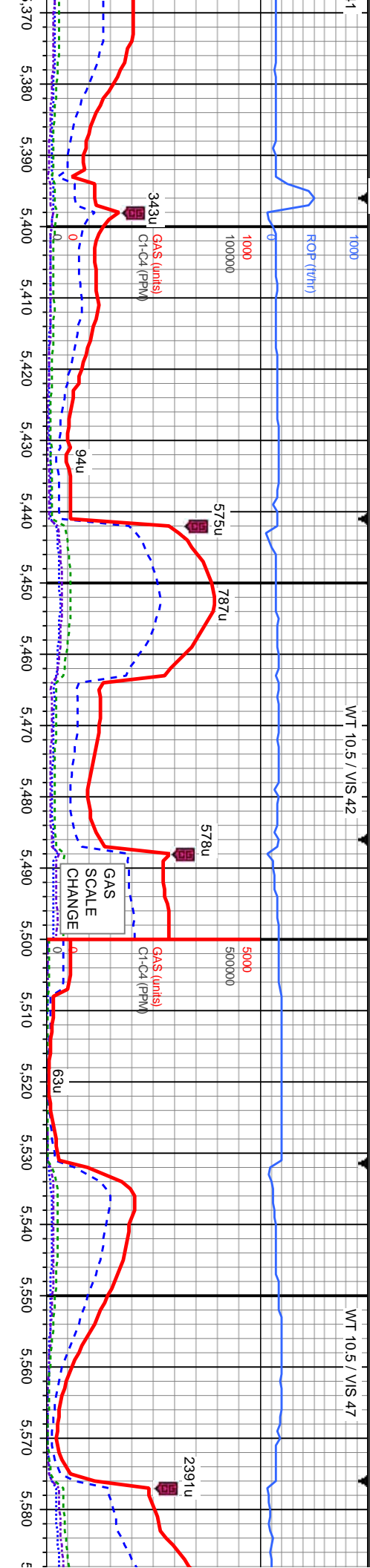
Survey Elevation



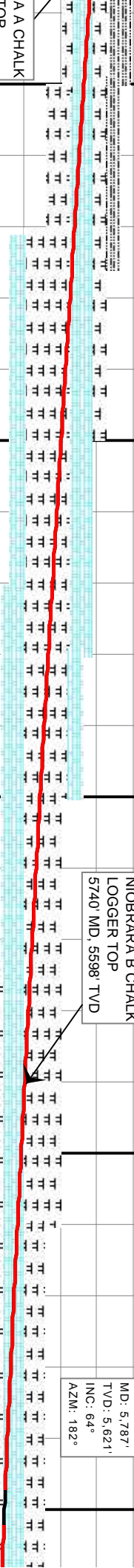
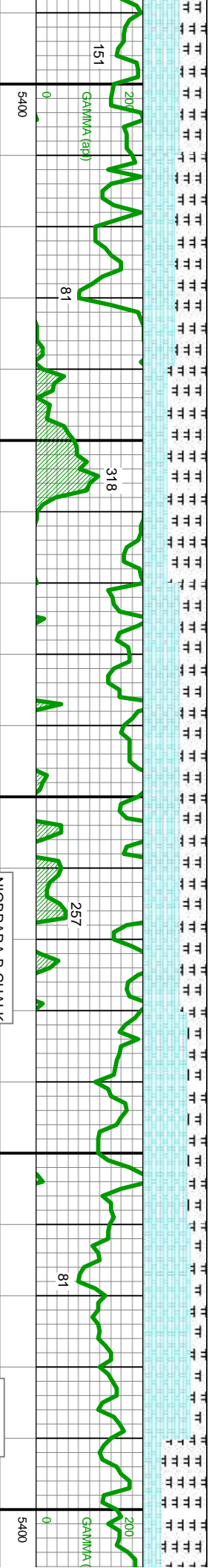
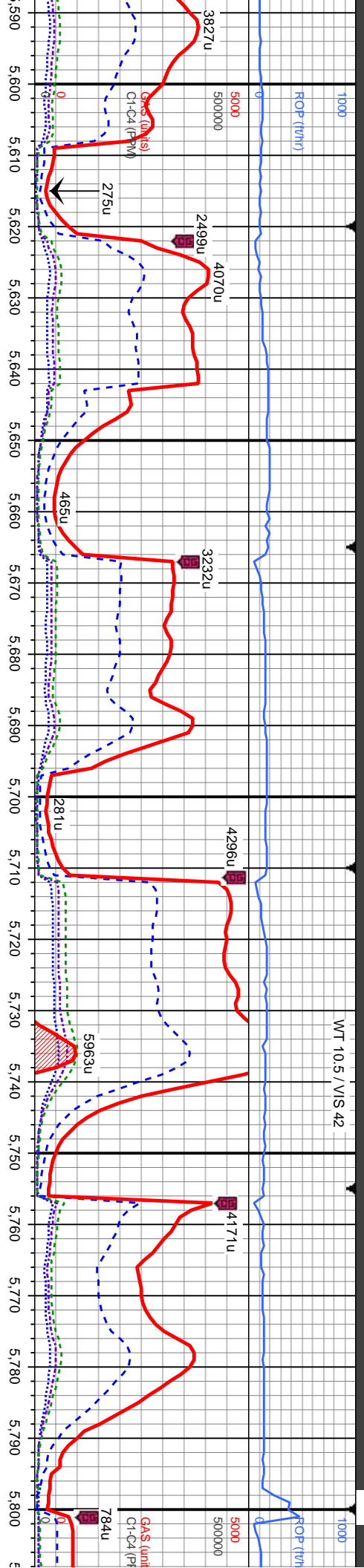












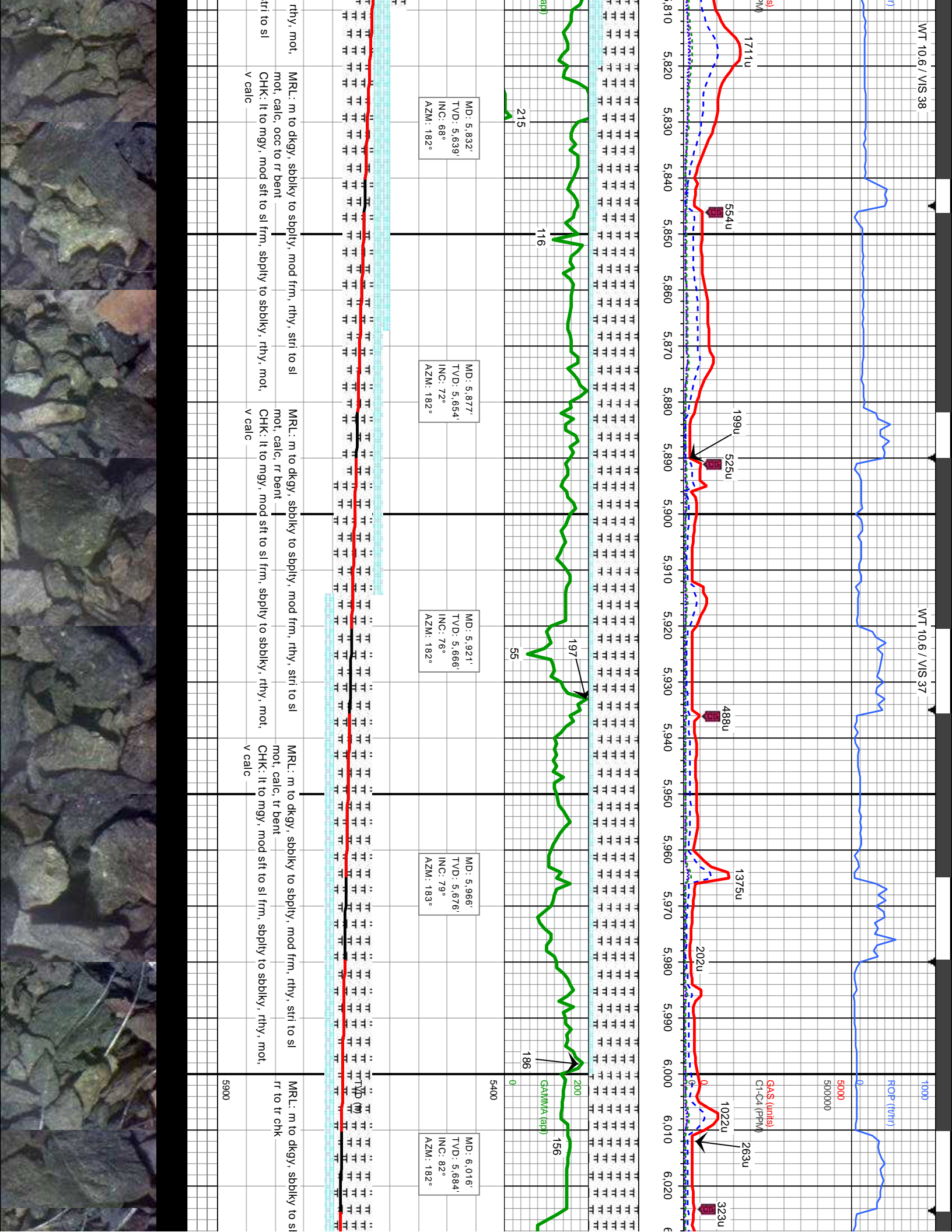
to mgy, mod sft to sl frm, sbply to sbblky, rthy, mot,  
v calc  
MR: m to dkgy, sbblky to sbply, mod frm, rthy, stri to sl  
mot, calc, occ bent

CHK: It to mgy, mod sft to sl frm, sbply to sbblky, rthy, mot,  
v calc  
MR: m to dkgy, sbblky to sbply, mod frm, rthy, stri to sl  
mot, calc, occ bent

CHK: It to mgy, mod sft to sl frm, sbply to sbblky, rthy, mot,  
v calc  
MR: m to dkgy, sbblky to sbply, mod frm, rthy, stri to sl  
mot, calc, occ bent

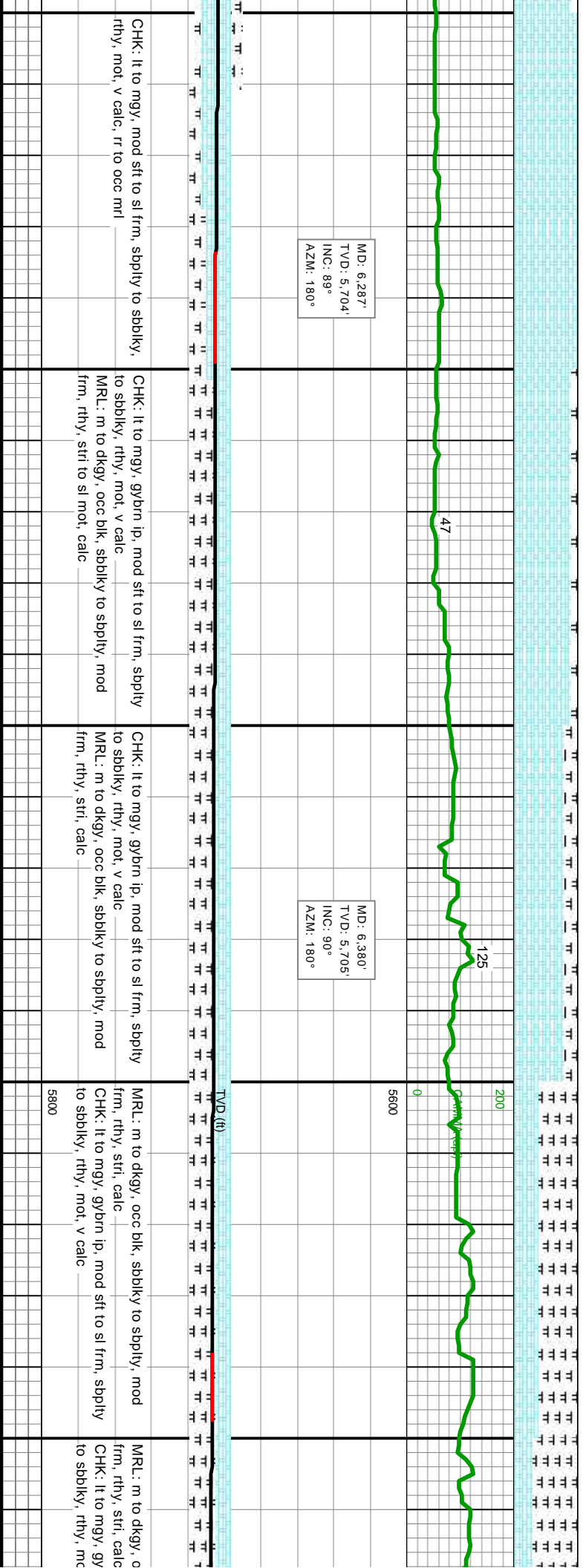
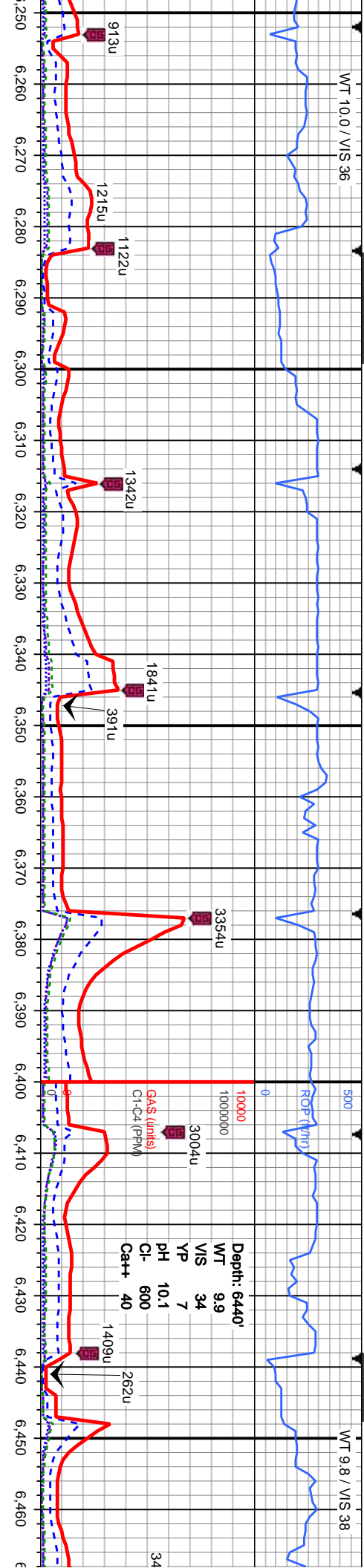




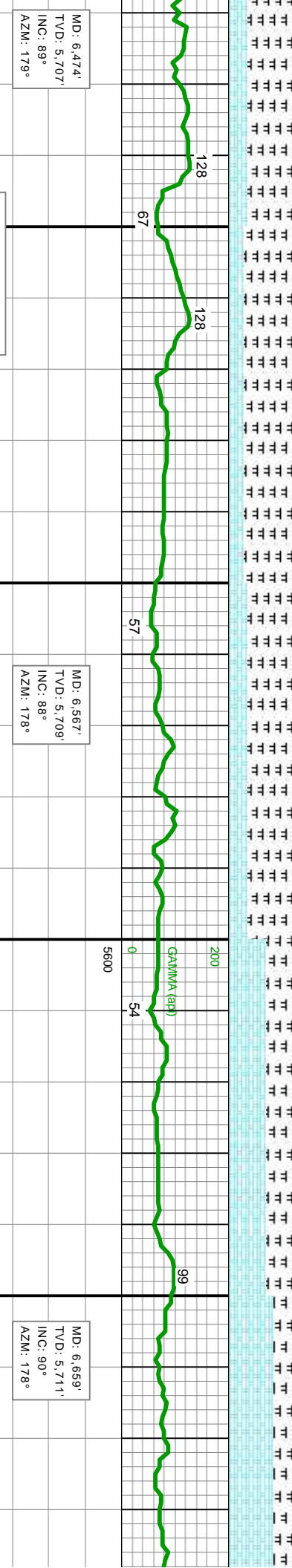
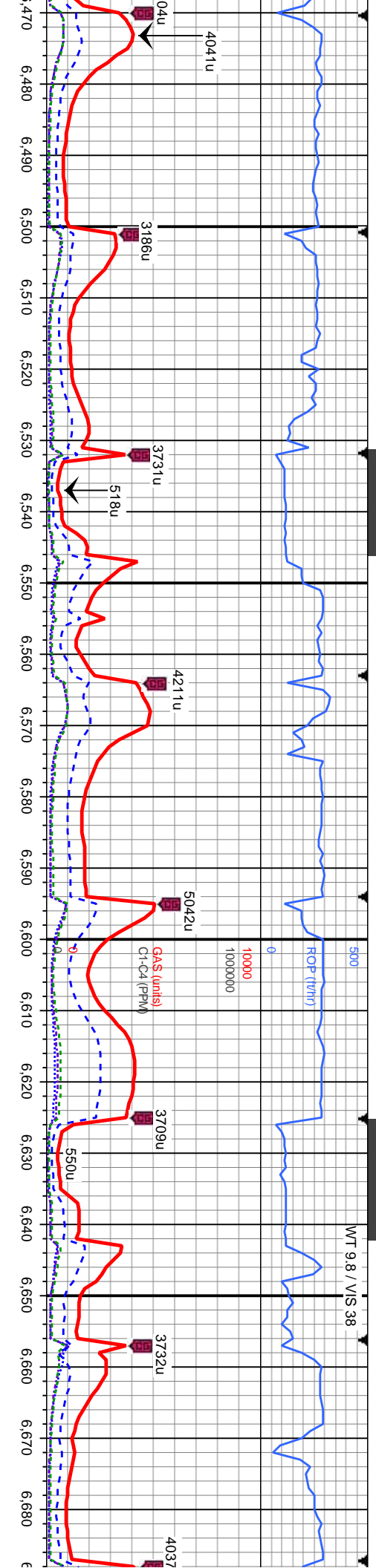












MD: 6.474'  
TVD: 5.707'  
INC: 89°  
AZM: 179°

MD: 6.567'  
TVD: 5.709'  
INC: 88°  
AZM: 178°

MD: 6.659'  
TVD: 5.711'  
INC: 90°  
AZM: 178°

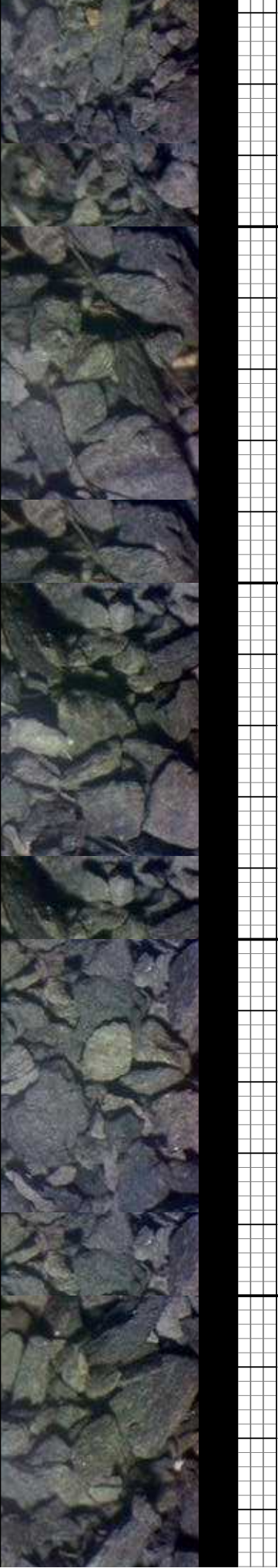
cc blk, sbblky to sbply, mod  
brn ip, mod sft to sl frm, sbply  
t, v calc

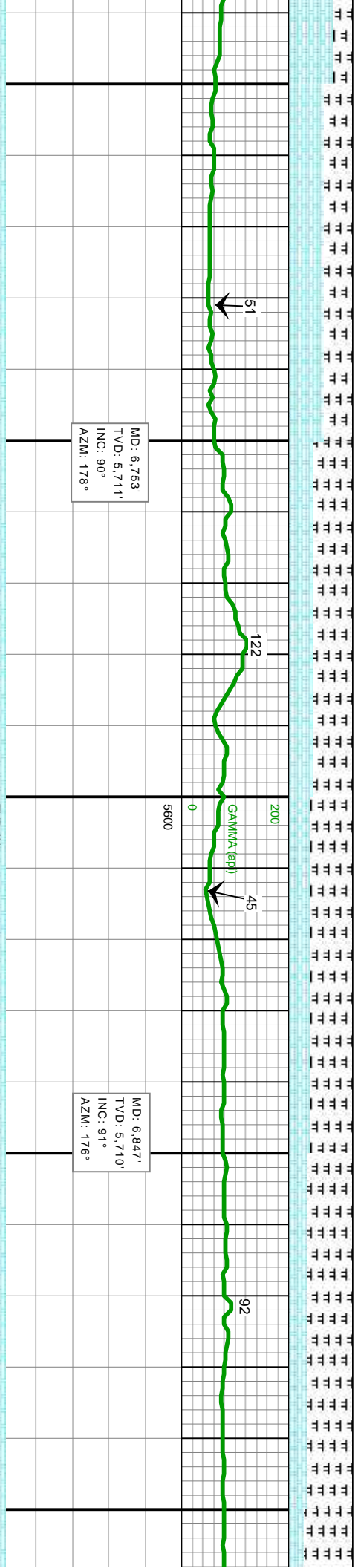
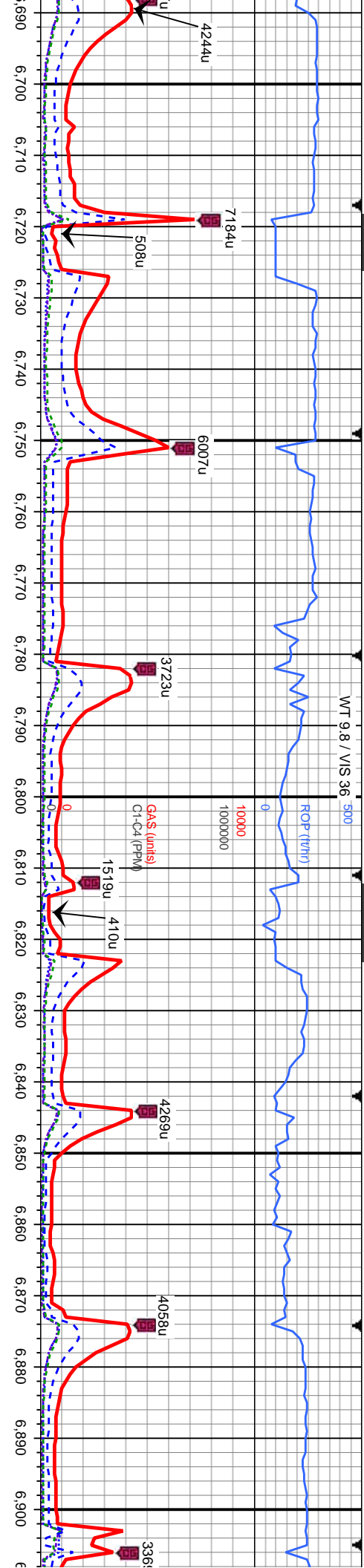
MRL: m to dkgy, sbblky to sbply, mod frm, rthy,  
stri, calc, rr cal incl, tr fos frag  
CHK: lt to mgy, mod sft to sl frm, sbply to  
sbply, rthy, mot, v calc

MRL: m to dkgy, sbblky to sbply, mod frm, rthy,  
stri, calc, rr cal incl, tr fos frag  
CHK: lt to mgy, mod sft to sl frm, sbply to  
sbply, rthy, mot, v calc

CHK: lt to mgy, mod sft to sl frm, sbply to  
sbply, rthy, mot to stri, v calc  
MRL: m to dkgy, sbblky to sbply, mod frm, rthy,  
stri, gt, calc, rr cal incl, tr fos frag, sl tr bent

CHK: lt to mgy, mod sft to sl frm, sbbl  
sbply, rthy, mot to stri, v calc  
MRL: m to dkgy, sbblky to sbply, mod  
stri, gt, calc, rr cal incl, tr fos frag, sl tr

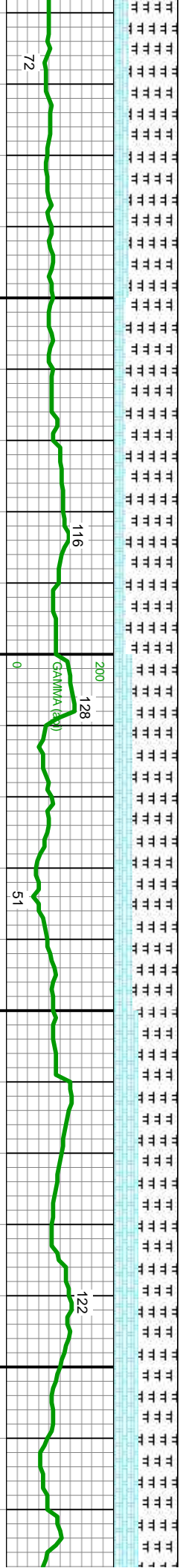
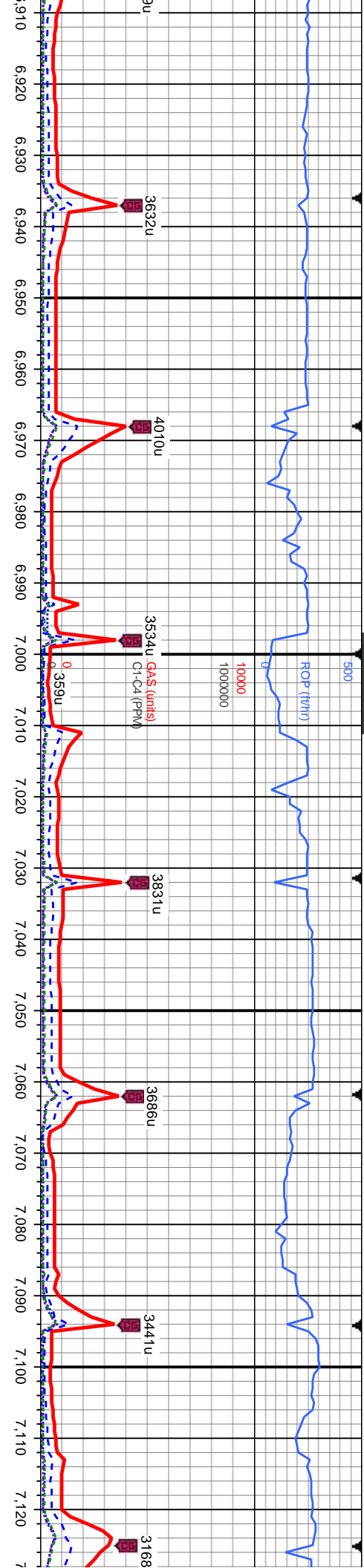




CHK: It to mgy, mod sft to sl frm, sbbkly to sbbly, rthy, mot to strf, v calc, occ cal incl	MRL: m to dkgy, sbbkly to sbbly, mod frm, rthy, strf, gt, calc, tr fos frag	MRL: m to dkgy, sbbkly to sbbly, mod frm, rthy, strf, gt, calc, tr fos frag, sl tr bent	MRL: m to dkgy, sbbkly to sbbly, mod frm, rthy, strf, gt, calc, tr fos frag, sl tr bent
MRL: m to dkgy, sbbkly to sbbly, mod frm, rthy, strf, gt, calc, tr fos frag, sl tr bent	CHK: It to mgy, mod sft to sl frm, sbbkly to sbbly, rthy, mot to strf, v calc, occ cal incl	CHK: It to mgy, mod sft to sl frm, sbbkly to sbbly, rthy, mot to strf, v calc, occ cal incl	CHK: It to mgy, mod sft to sl frm, sbbkly to sbbly, rthy, mot to strf, v calc







MD: 6.942'  
TVD: 5.708'  
INC: 91°  
AZM: 175°

MD: 7.036'  
TVD: 5.706'  
INC: 91°  
AZM: 177°

MD  
TVD  
INC  
AZM

to dkgy, sbbly to sbbly, mod frm, rthy, calc  
to mgy, mod sft to sl frm, sbbly to rthy, mot to strf, v calc

MRL: m to dkgy, sbbly to sbbly, mod frm, rthy, strf, gt, calc, tr fos frag  
CHK: lt to mgy, mod sft to sl frm, sbbly to sbbly, rthy, mot to strf, v calc, rr cal incl

MRL: m to dkgy, sbbly to sbbly, mod frm, rthy, strf, gt, calc, tr fos frag, tr bent  
CHK: lt to mgy, mod sft to sl frm, sbbly to sbbly, rthy, mot to strf, v calc, rr cal incl

MRL: m to dkgy, sbbly to sbbly, mod frm, rthy, strf, gt, calc, rr cal incl, tr fos  
CHK: lt to mgy, mod sft to sl frm, sbbly to sbbly, rthy, mot to strf, v calc

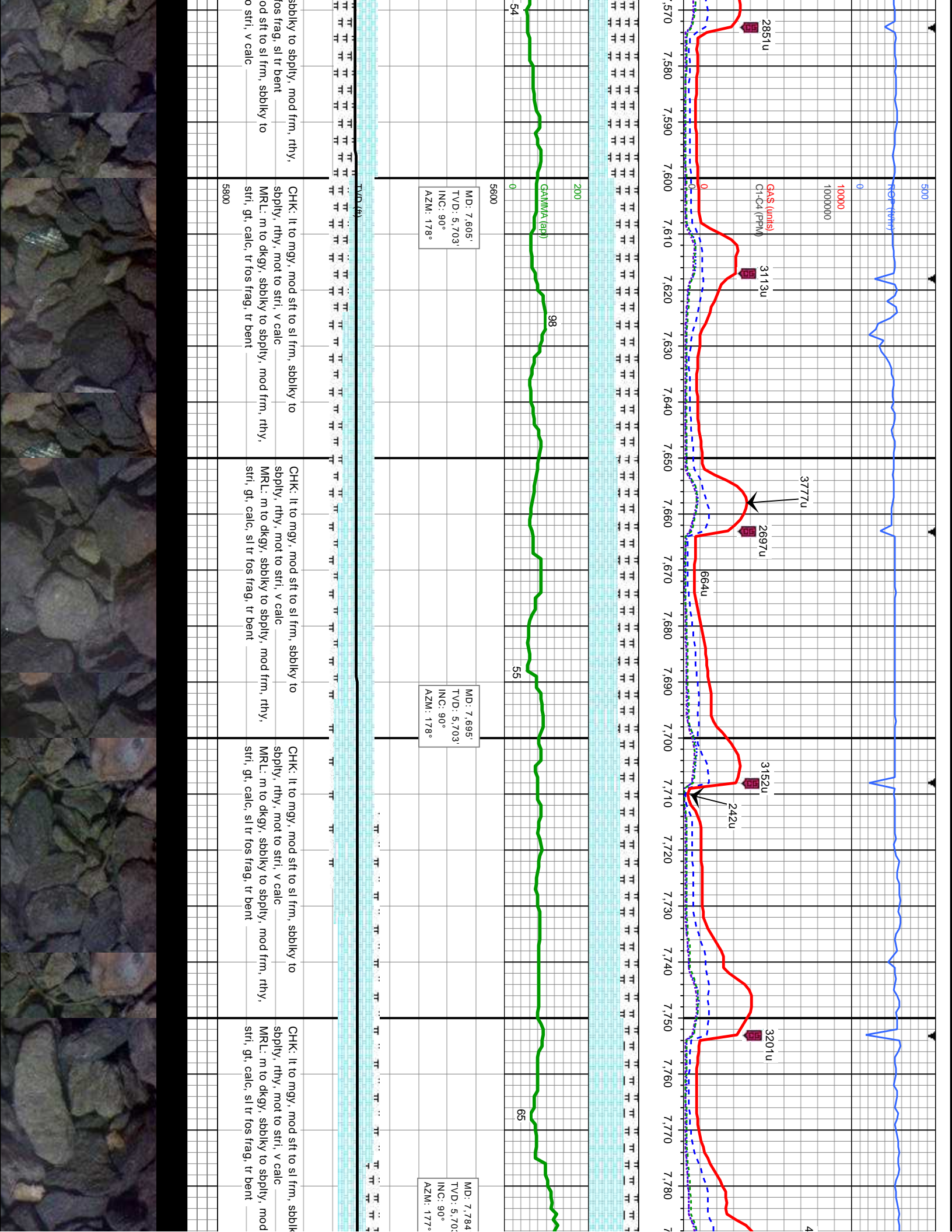




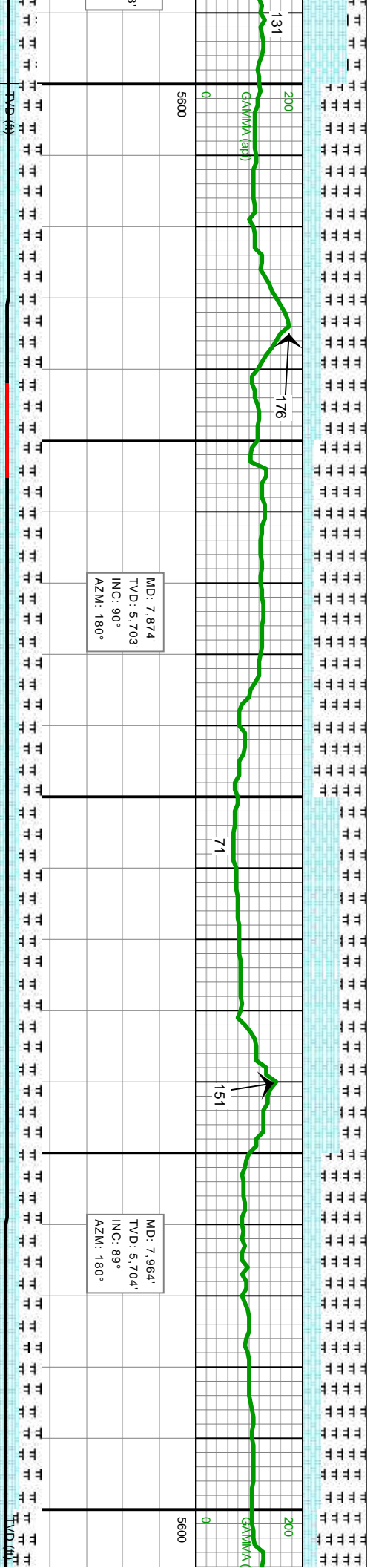
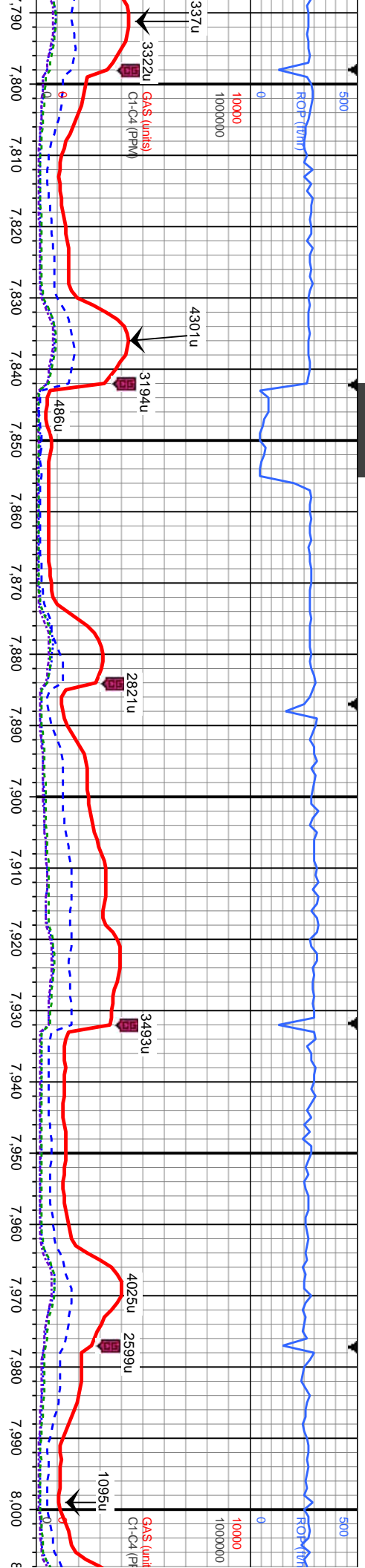








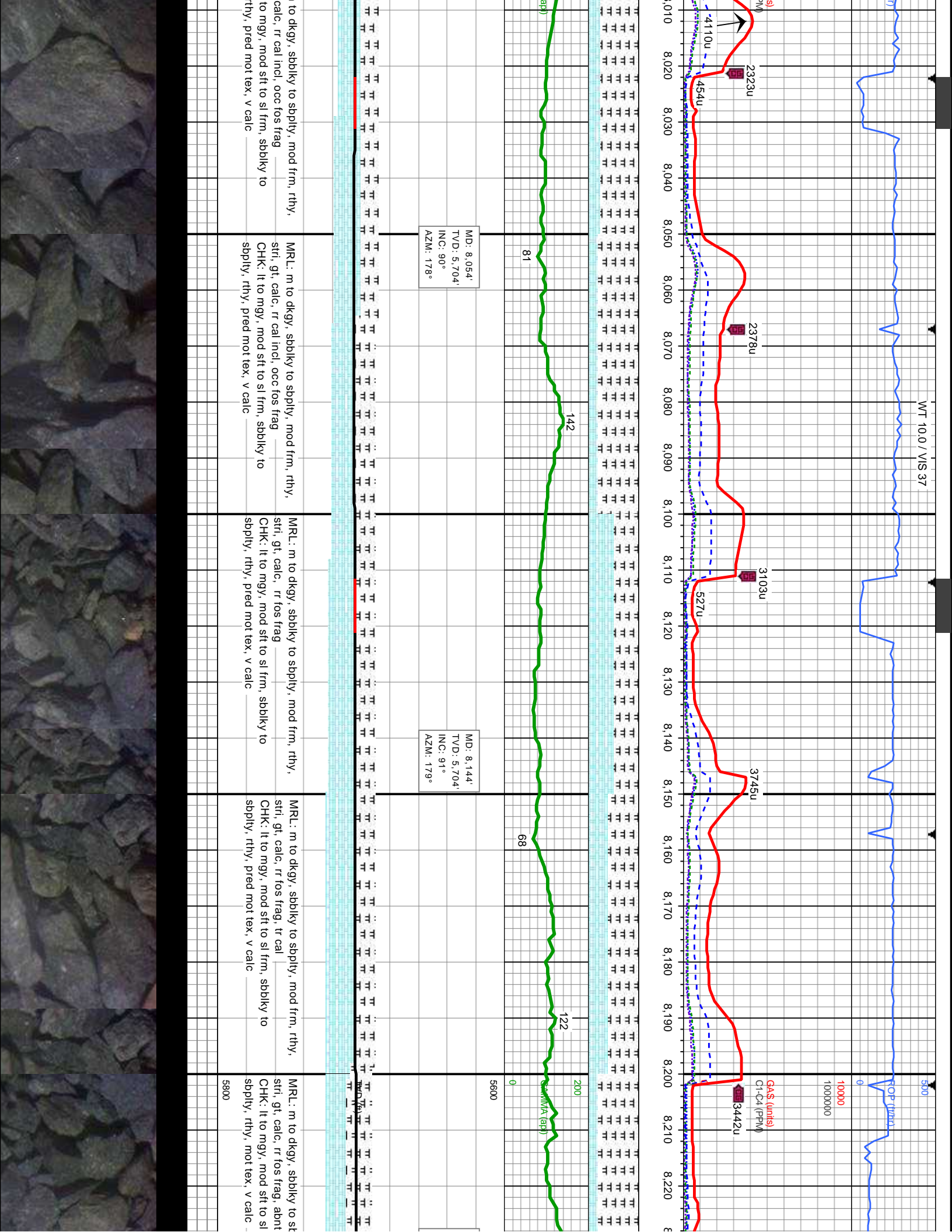




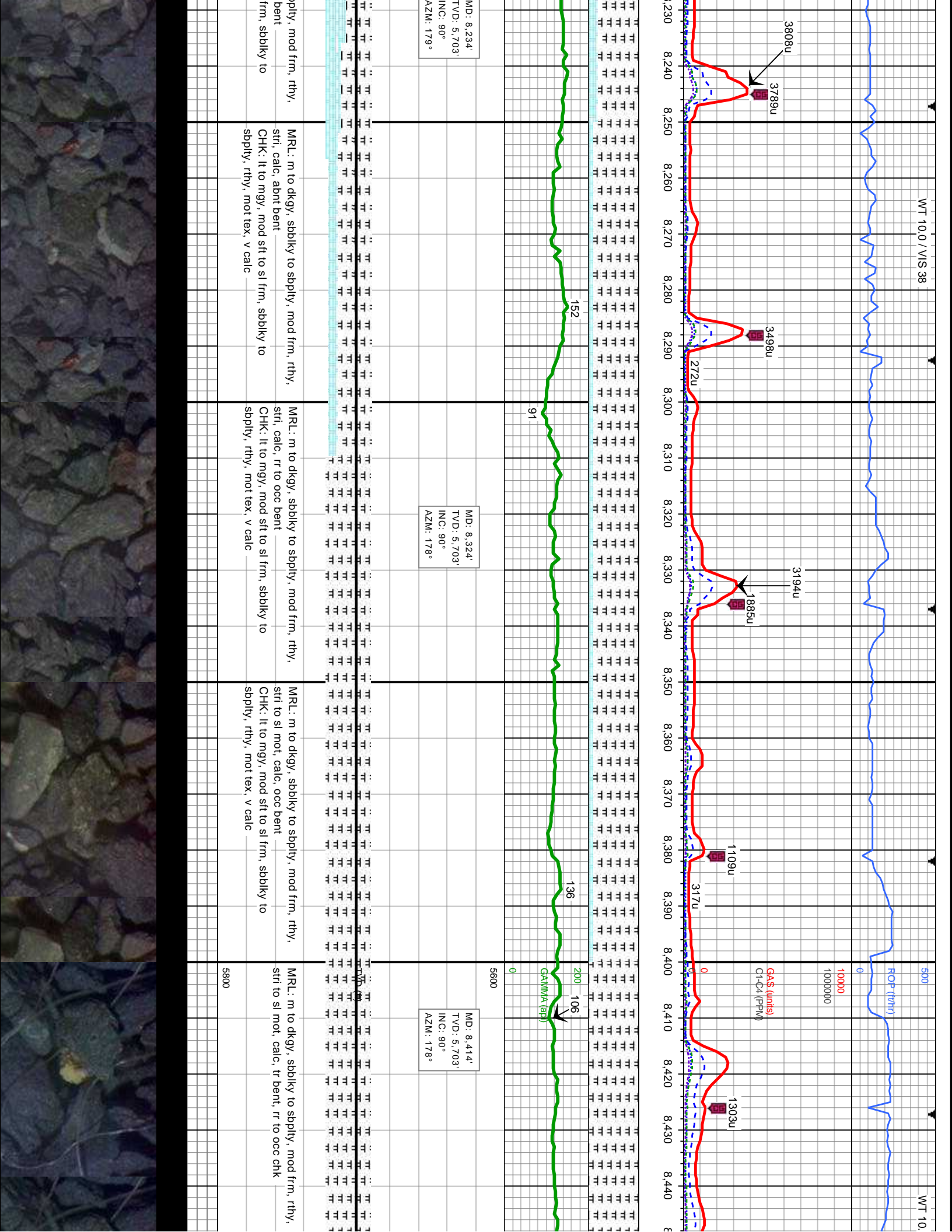
MD: 7.874'  
TVD: 5.703'  
INC: 90°  
AZM: 180°

MD: 7.964'  
TVD: 5.704'  
INC: 89°  
AZM: 180°

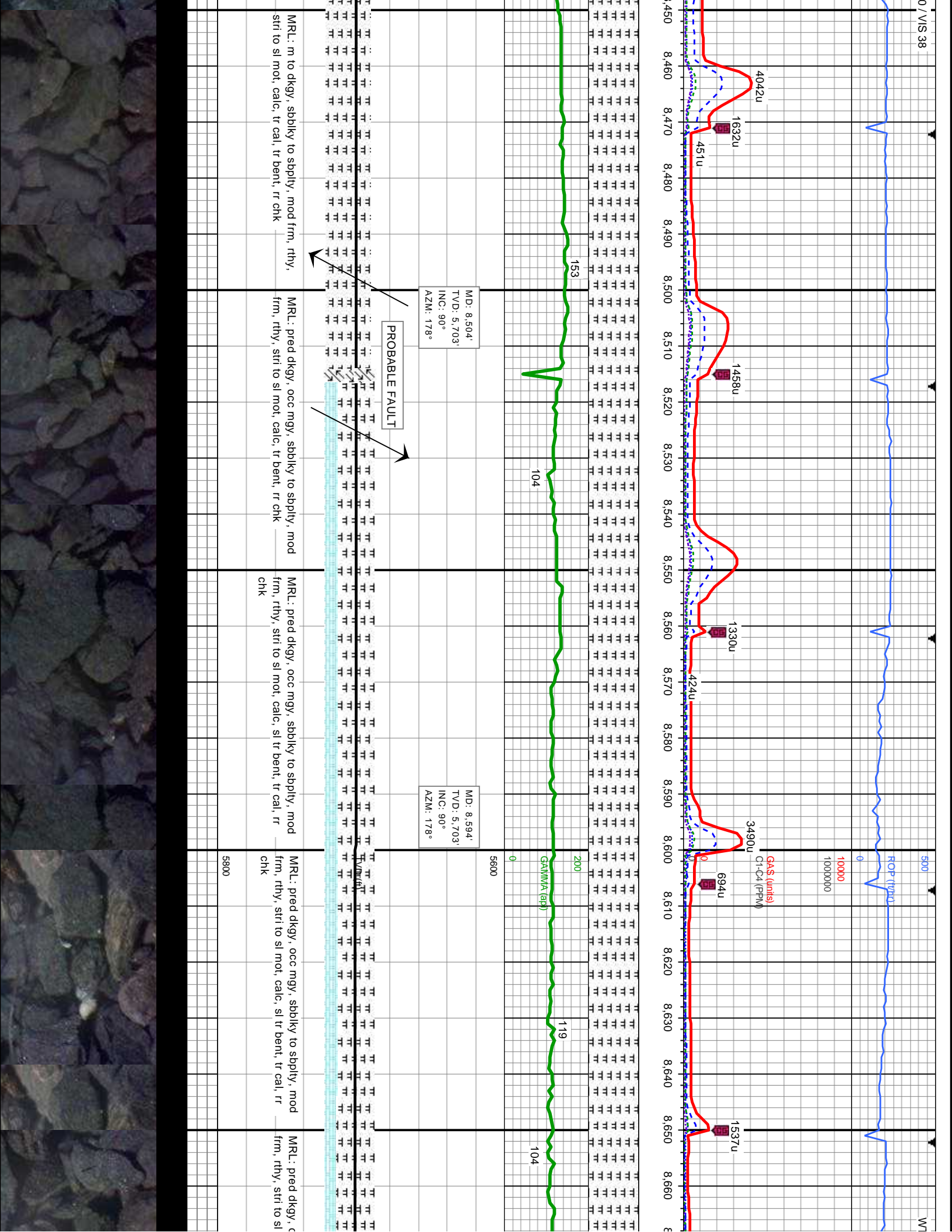
ROP (ft/min)	GA\$ (units)	C1-C4 (PPM)	GAMMA (cp)	MRL: m to dkgy, sbbly to sbply, mod frm, rthy, strf, gt, calc, rr cal incl, tr fos frag, tr bent	MRL: m to dkgy, sbbly to sbply, mod frm, rthy, strf, gt, calc, occ cal incl, occ fos frag, sl tr bent	CHK: lt to mgy, mod sft to sl frm, sbbly to sbply, rthy, mot, v calc	CHK: lt to mgy, mod sft to sl frm, sbbly to sbply, rthy, mot, v calc	CHK: lt to mgy, mod sft to sl frm, sbbly to sbply, rthy, mod sft to sl frm, sbbly to sbply, rthy, pred mot tex, v calc	MRL: m to dkgy, sbbly to sbply, mod frm, rthy, strf, gt, calc, rr cal incl, occ fos frag, sl tr bent	MRL: m to dkgy, sbbly to sbply, mod frm, rthy, strf, gt, calc, rr cal incl, occ fos frag, sl tr bent	CHK: lt to mgy, mod sft to sl frm, sbbly to sbply, rthy, pred mot tex, v calc
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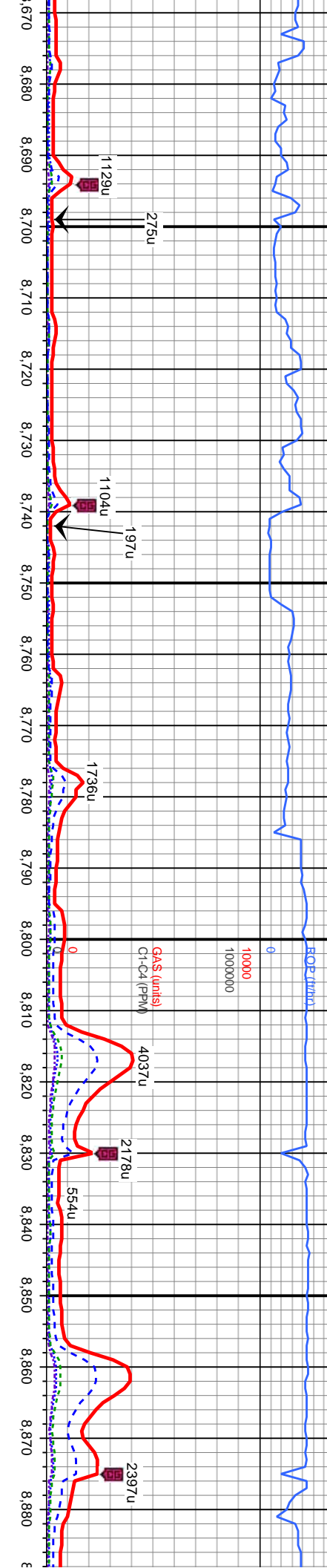












MD: 8.683'  
TVD: 5,704'  
INC: 89°  
AZM: 178°

MD: 8.773'  
TVD: 5,704'  
INC: 91°  
AZM: 177°

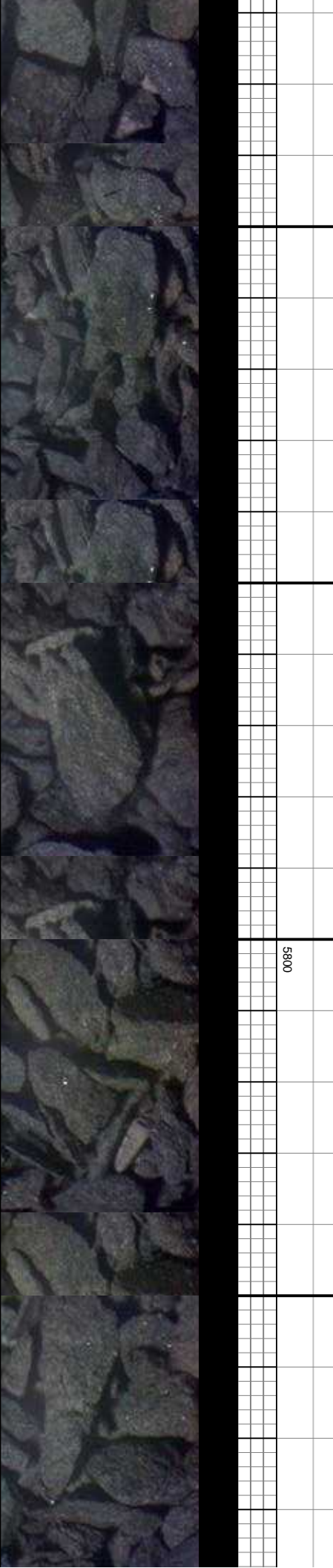
MD: 8.863'  
TVD: 5,703'  
INC: 90°  
AZM: 178°

occ mgy, sbblky to sbply, mod  
mot, calc, sl tr bent, tr cal

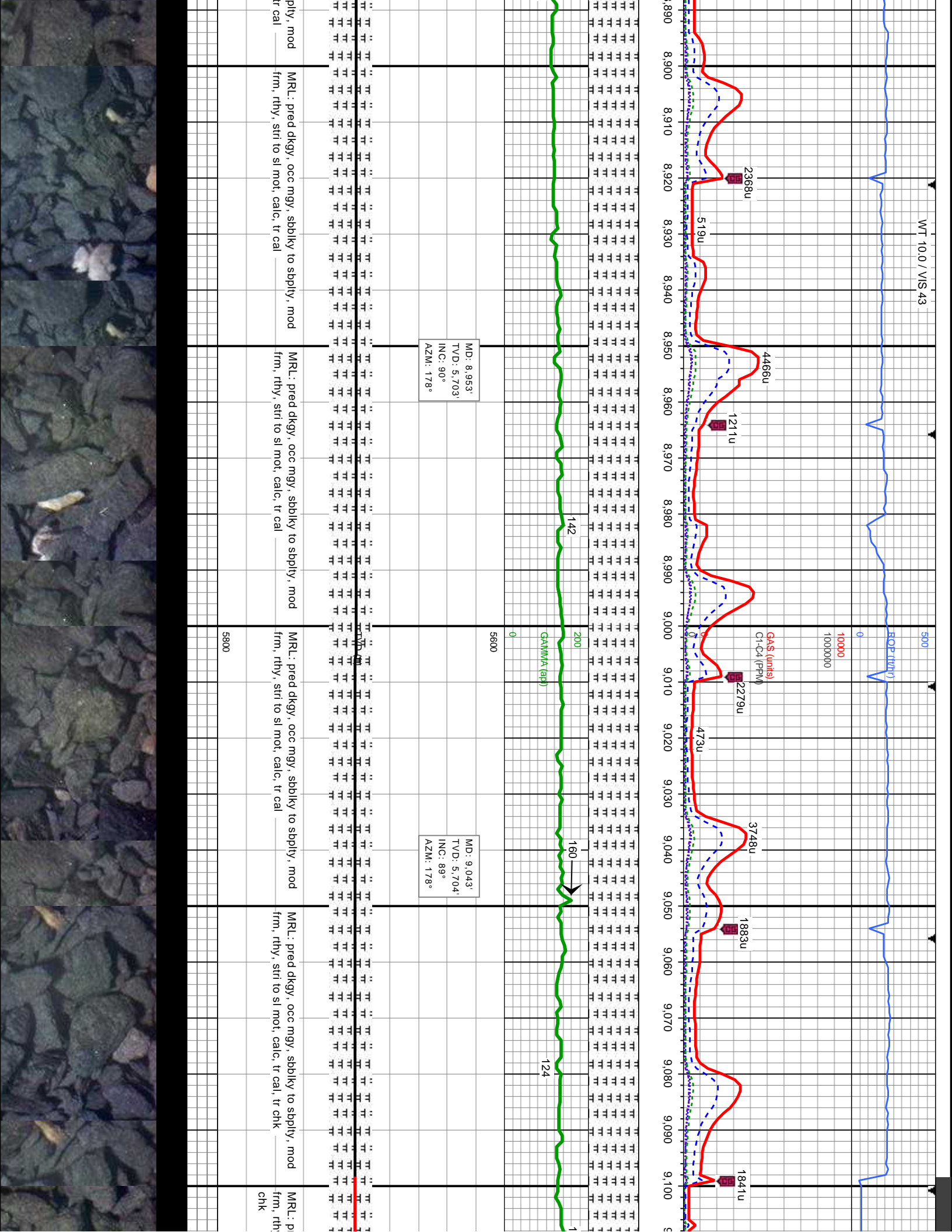
MRL: pred dkgy, occ mgy, sbblky to sbply, mod  
frm, rthy, stri to sl mot, calc, tr cal

MRL: pred dkgy, occ mgy, sbblky to sbply, mod  
frm, rthy, stri to sl mot, calc, sl tr bent, tr cal

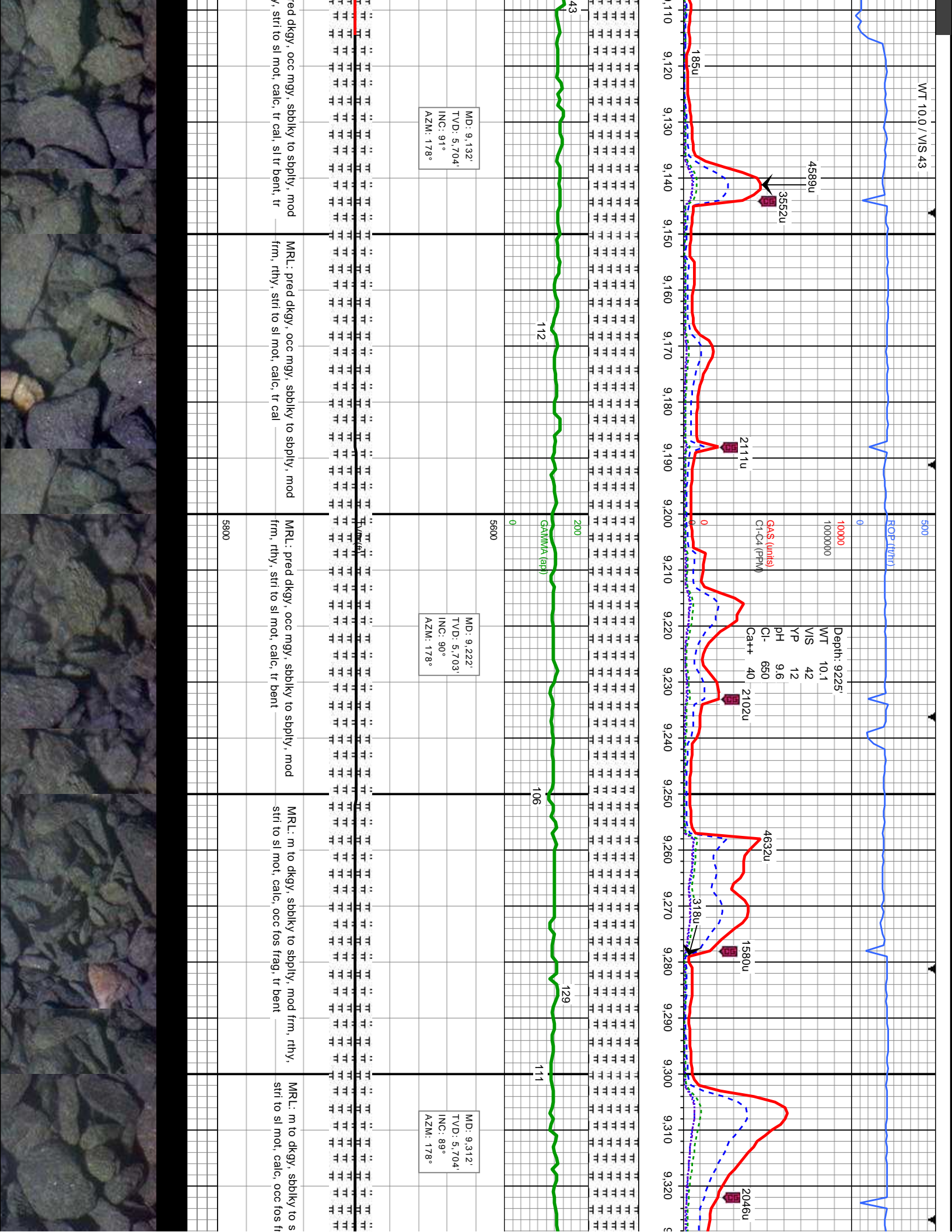
MRL: pred dkgy, occ mgy, sbblky to sbply, mod  
frm, rthy, stri to sl mot, calc, sl tr bent,

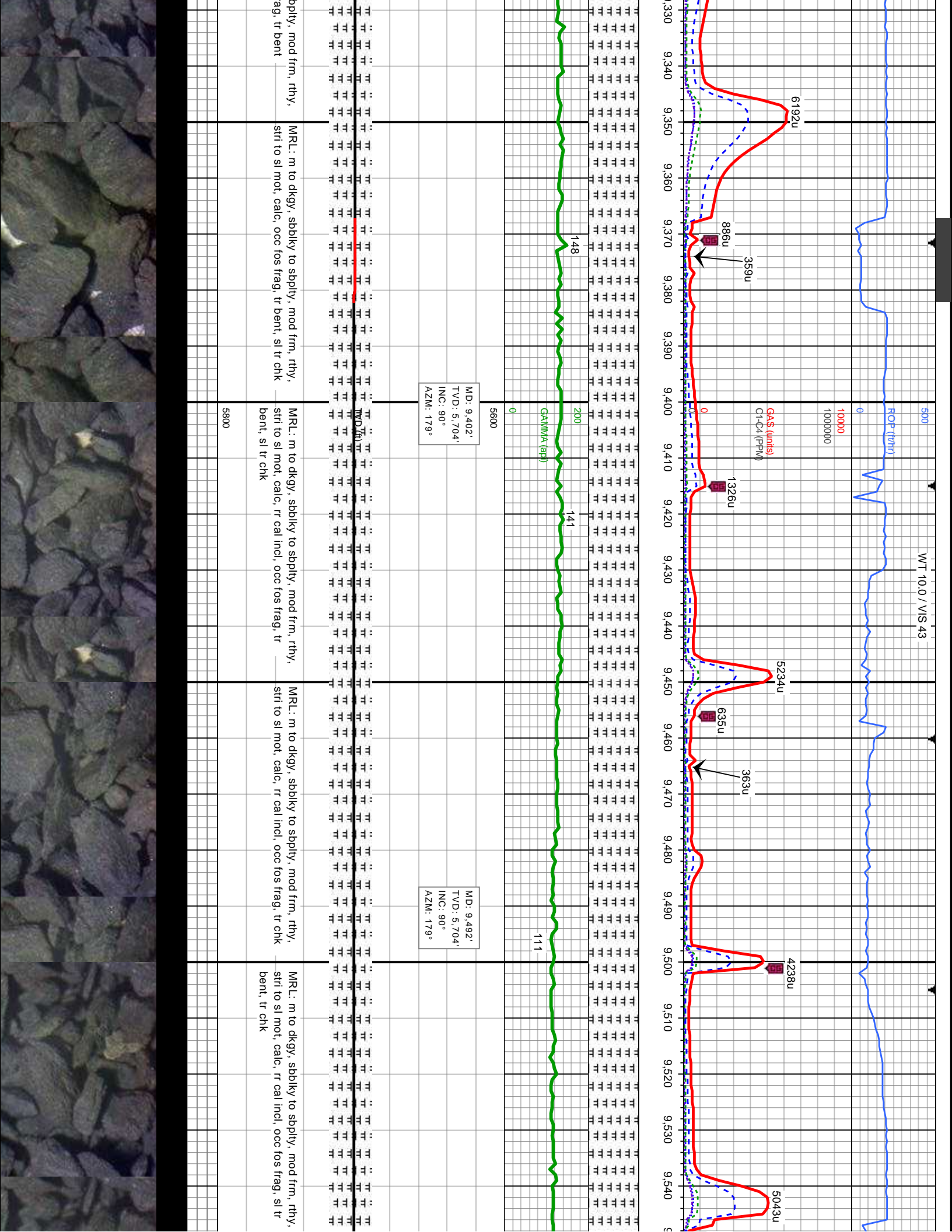




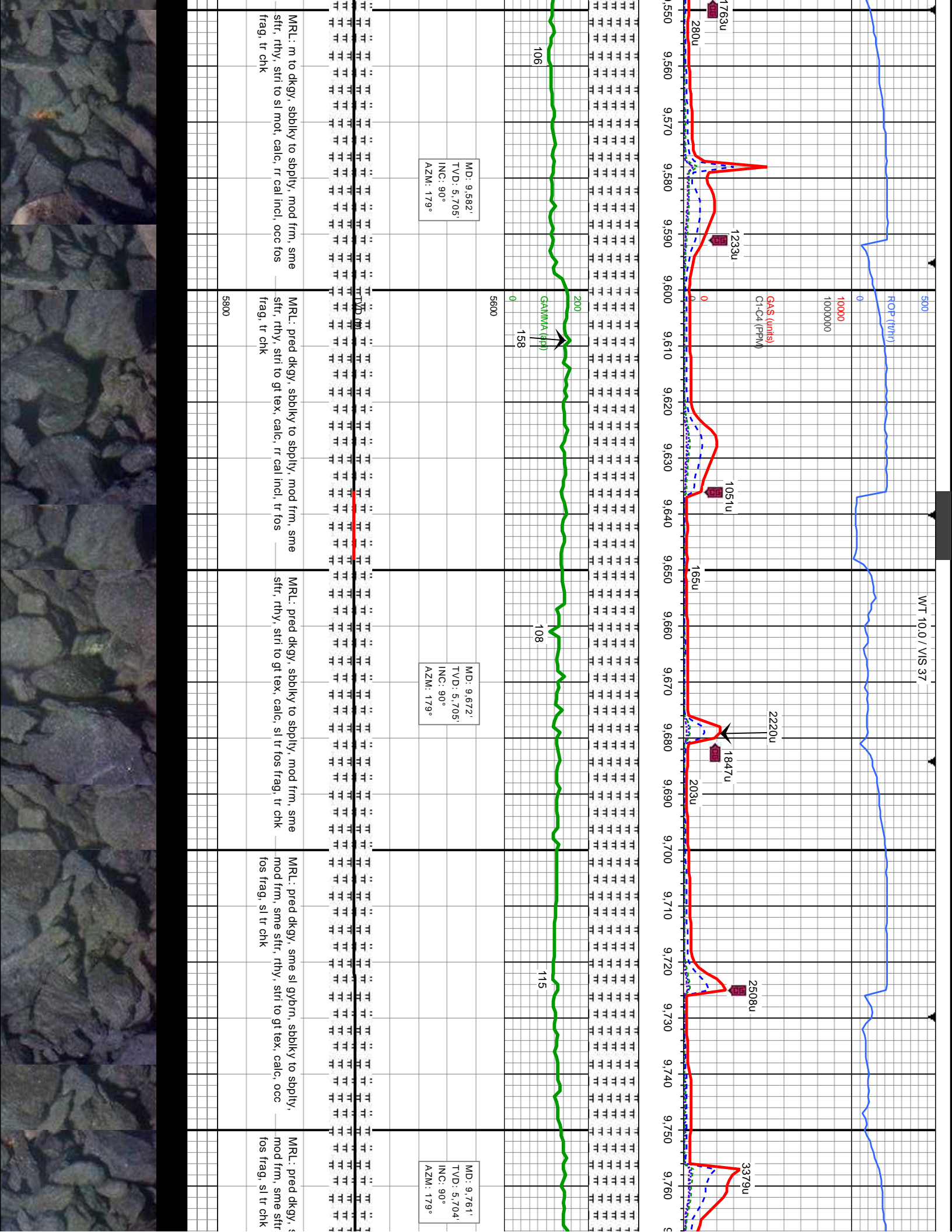






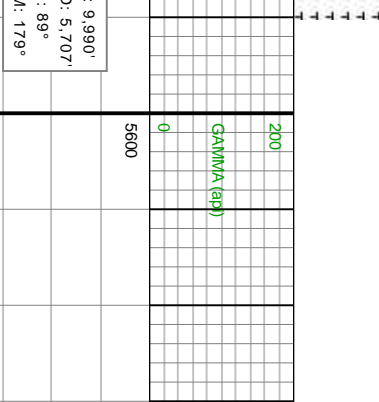
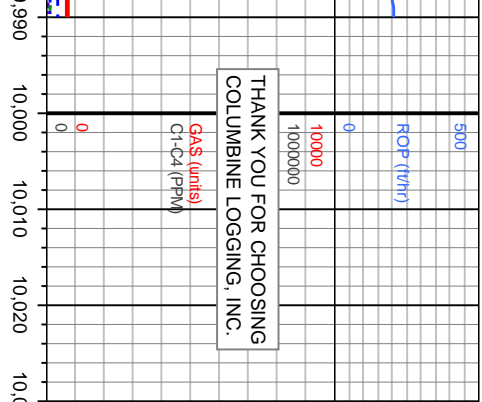












TD @ MD 9990'	
11:47 MST, 11/9/14	
Bit Data	
Bit #: 3	
Depth In: 6,074'	
Depth Out: 9,990'	
Hours: 34 hrs	
Avg Ft/Hr: 114 '/hr	
5800	