

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name TREBOR B11-69-1HN

Location SEC 11 T5N R64W

State COLORADO

County WELD

Country UNITED STATES

Rig Number H&P 330

API Number 05-123-37164

AFE # 136853

Spud Date 8/5/2013

Drilling Completed 8/11/2013

Surface Coordinat... 247 FNL
673 FWL
LAT/LONG 40.4204/-104.52462

Ground Elevation 4606

K.B. Elevation 4636

Logged Interval 2500 **To** 6005

Total Depth 2505

Formation PIERRE, PARKMAN, SUSSEX

Operator

Company Noble Energy Inc

Rock Types

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

Accessories

Fossils

ALGAE
 AMPHIPORA
 BELEMNITE
 BIOCLASTIC
 BRACHIOIPOD
 BRYOZOA
 CEPHALOPOD

F FOSSIL

GASTROPOD

INOCERAMUS

OOLITE

OSTRACOD

PELECYPOD

PELLET

PISOLITE

PLANT REMAINS

ANHYDRITIC

ARGILLACEOUS

ARGILLITE GRAIN

BENTONITE

BITUMENOUS SUBSTANCE

BRECCIA FRAGMENTS

CALCAREOUS

CARBONACEOUS FLAKES

CHTDK

FERRUGINOUS

GLAUCONITE

GYPSIFEROUS

HEAVY MINERAL

KAOLIN

MARLSTONE

MINERAL CRYSTALS

NODULES

PHOSPHATE PELLETS

TUFFACEOUS

Stringer

ANHYDRITE STRINGER

BENTONITE STRINGER

COAL STRINGER

DOLOMITE STRINGER

GYPSUM STRINGER

LIMESTONE STRINGER

CORAL
CRINOID
ECHINOID
FISH
FORAMINIFERA

PLANT SPORES
SCAPHOPOD
STROMATOPOROID

Minerals

CHTLT
COAL - THIN BEDS
DOLOMITIC
FELDSPAR
FERRUGINOUS PELLET

PYRITE
SALT CAST
SANDY
SILICEOUS
SILTY

MARLSTONE (CALC) STRG
MARLSTONE (DOL) STRG
SANDSTONE STRINGER
SHALE STRINGER
SILTSTONE STRINGER

Other Symbols

Oil Show

DEAD
EVEN
QUESTIONABLE
SPOTTED STAINING

Porosity

E EARTHY
F FENESTRAL
F FRACTURE
X INTERCRYSTALLINE
I INTEROOLITIC

MOLDIC
ORGANIC
PINPOINT
VUGGY

Engineering

BIT
CONNECTION (LEFT)
CONNECTION (RIGHT)
CONNECTION GAS
CORE - LOST
CORE - RECOVERED
DST INTERVAL

FAULT
FORMATION TOP
GAS SHOW
MN DEPTH
MN DEPTH
NORMAL FAULT
OIL SHOW
OVERTURNED STRATA
REVERSE FAULT
SIDEWALL CORE (LEFT)
SIDEWALL CORE (RIGHT)
SLIDE
SURVEY
TRIP GAS

WIRELINE TESTED - LEFT
WIRELINE TESTED - RT

Rounding

ANGULAR
ROUNDED
SUBANG
SUBRND

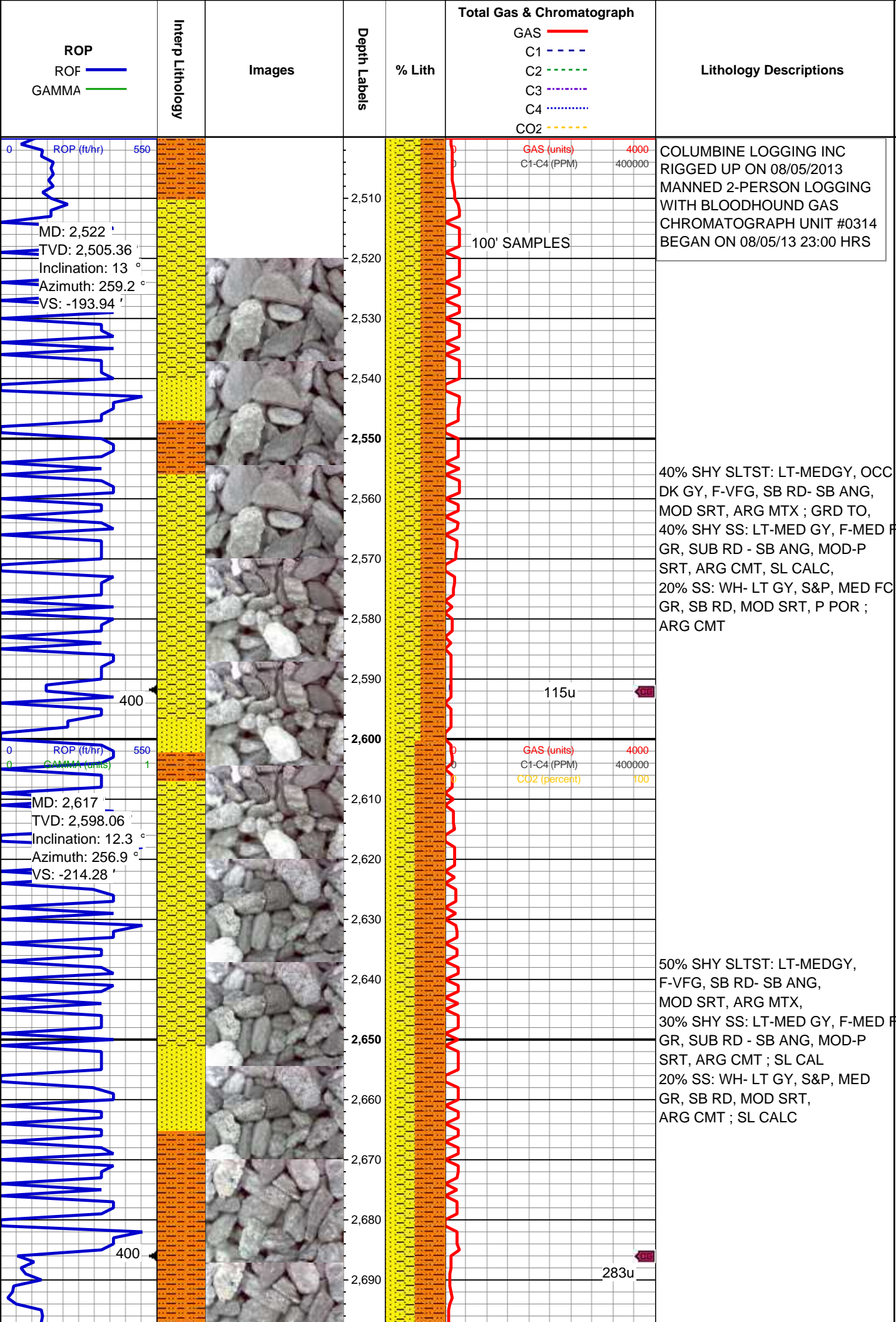
Textures

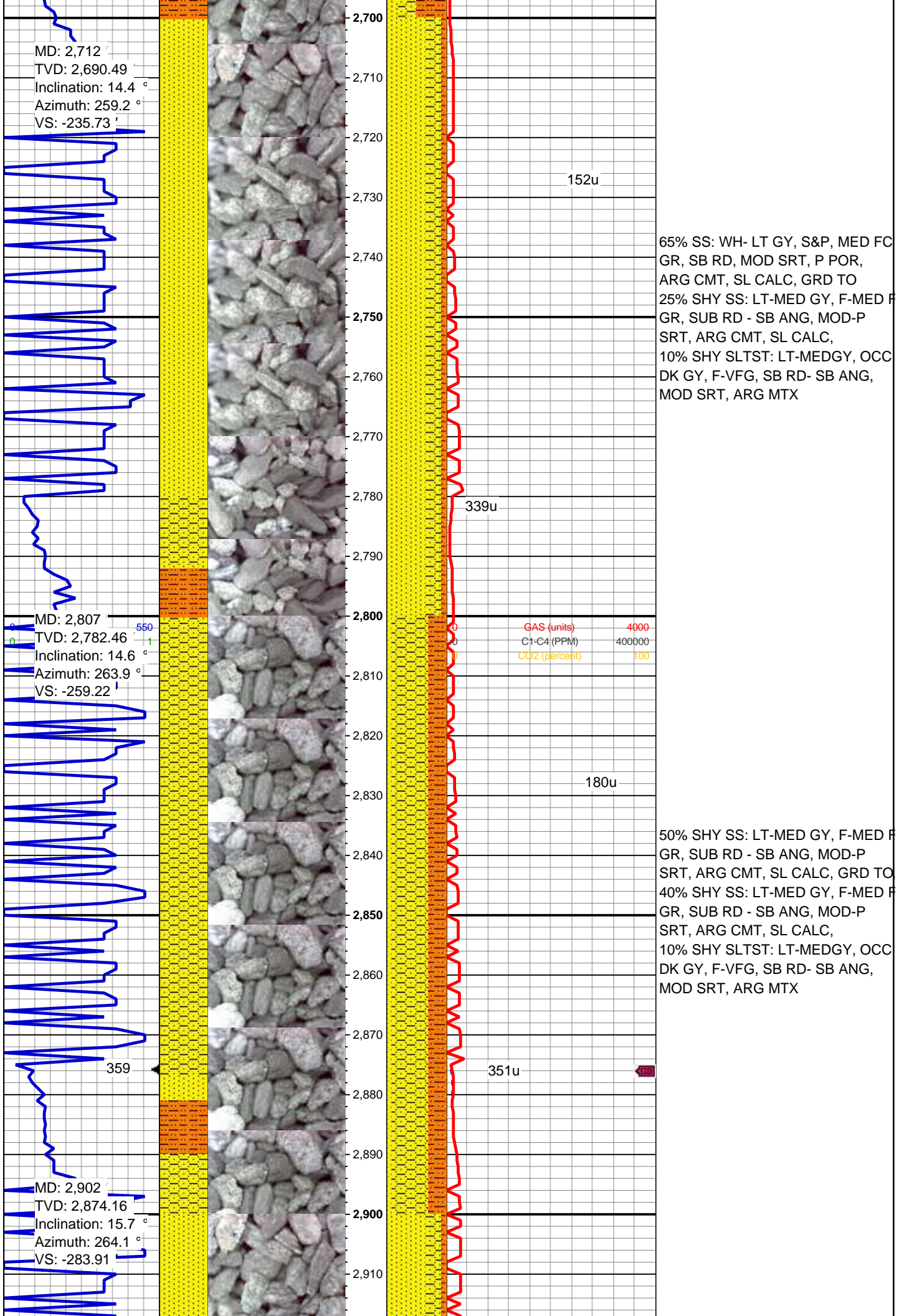
BOUNDSTONE
CHALKY
CRYPTOXLN

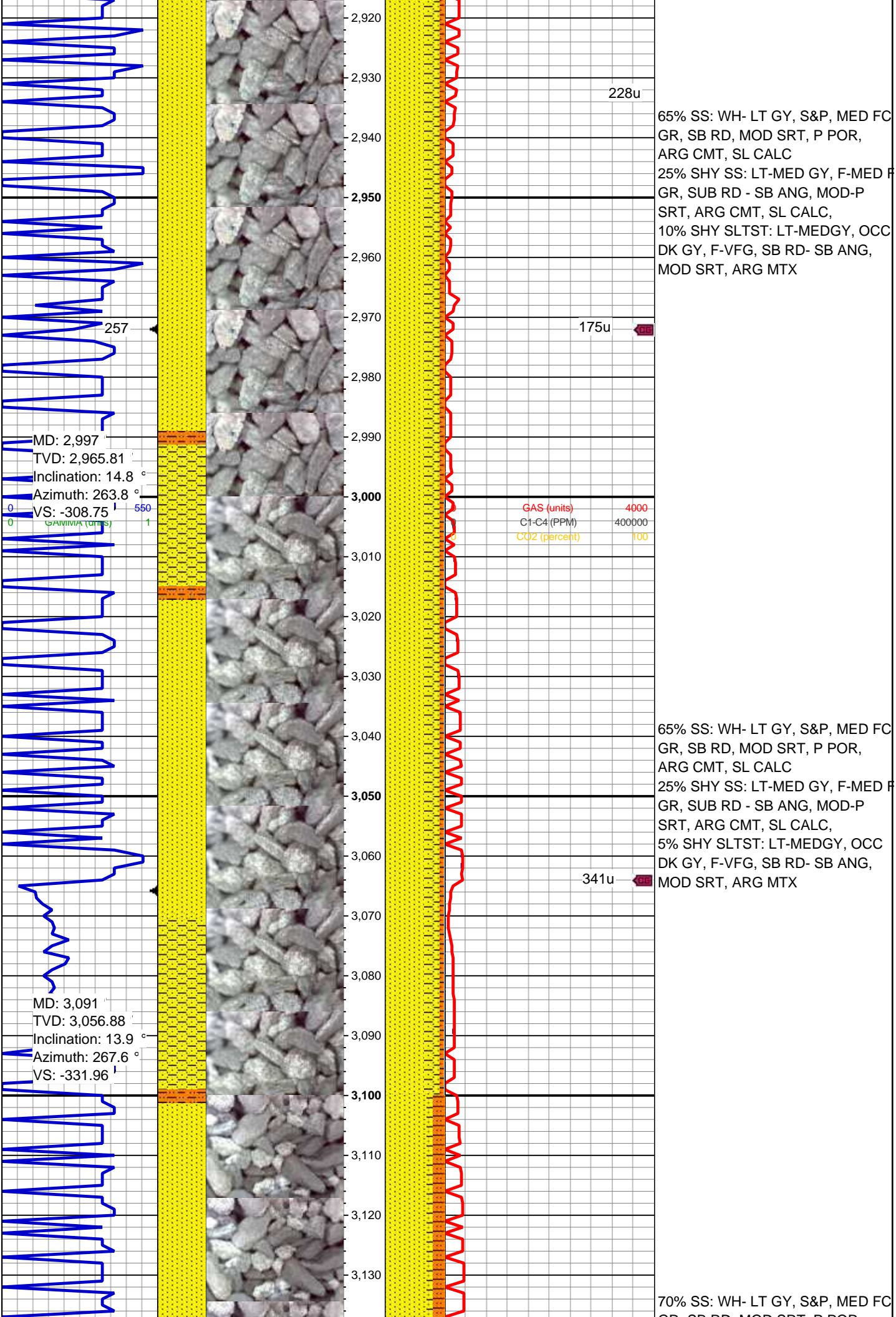
E EARTHY
FX FINELYXLN
GS GRAINSTONE
L LITHOGRAPHIC
MX MICROXLN
MS MUDSTONE
PS PACKSTONE
WS WACKESTONE

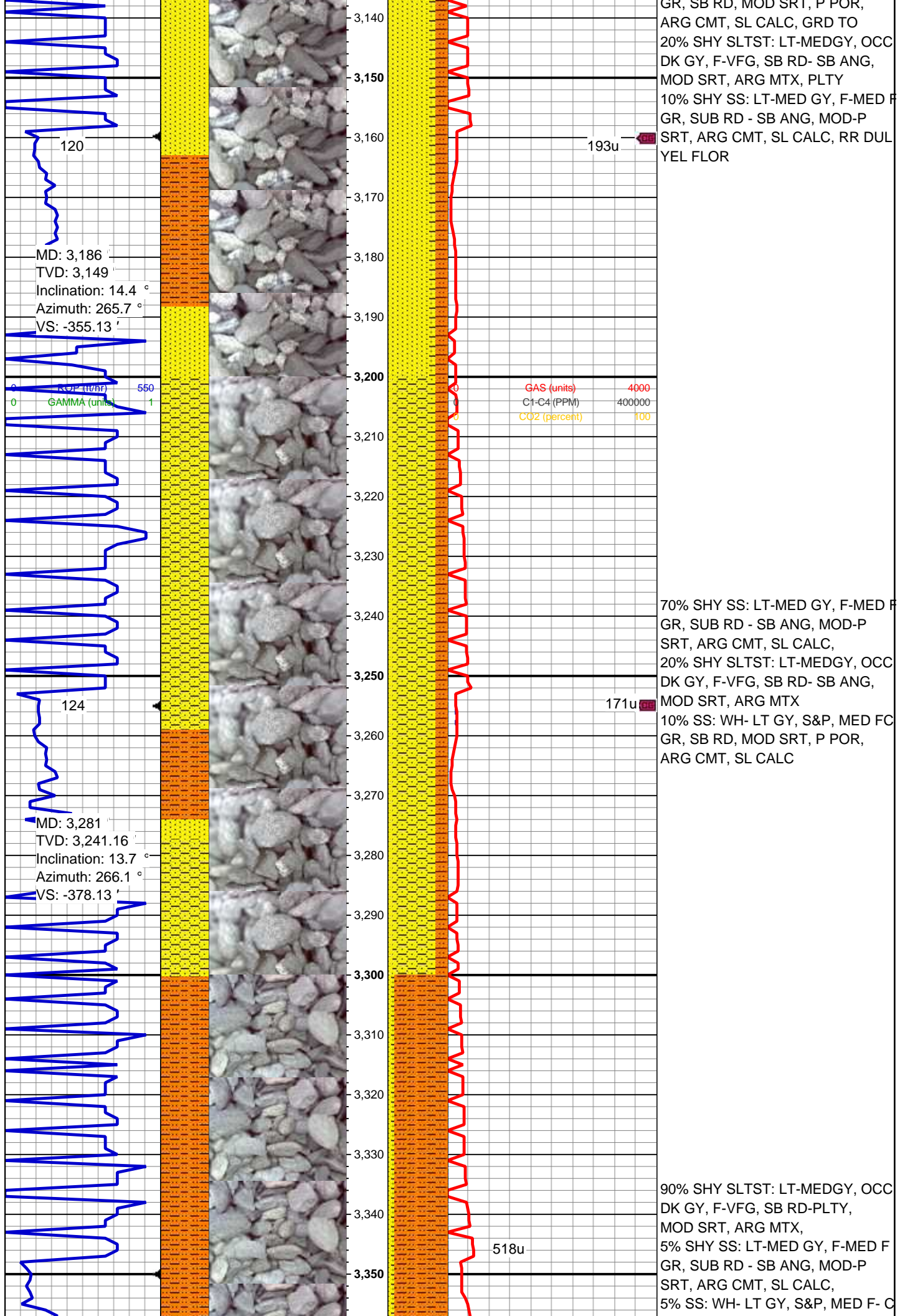
Sorting

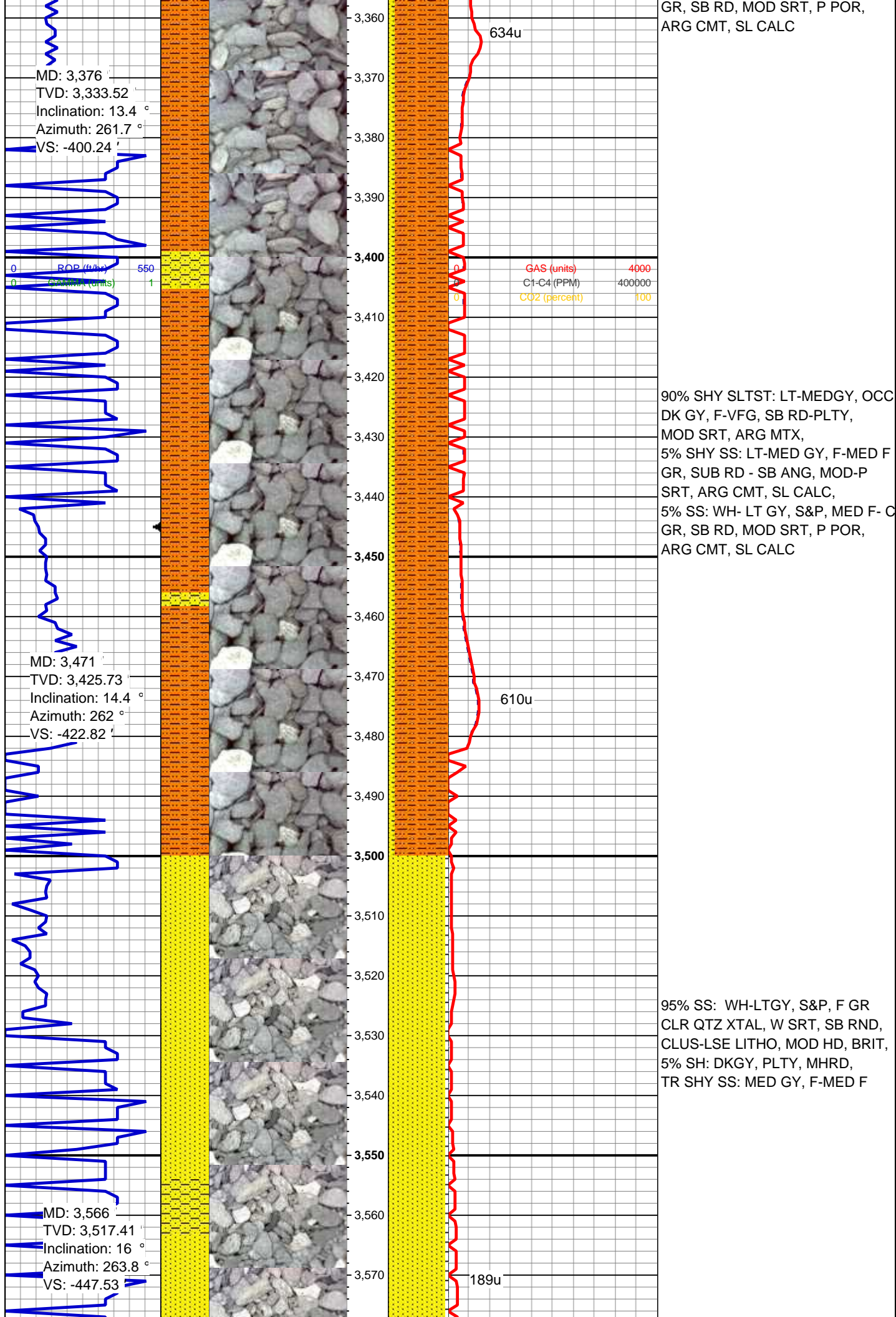
M MODERATE
P POOR
W WELL

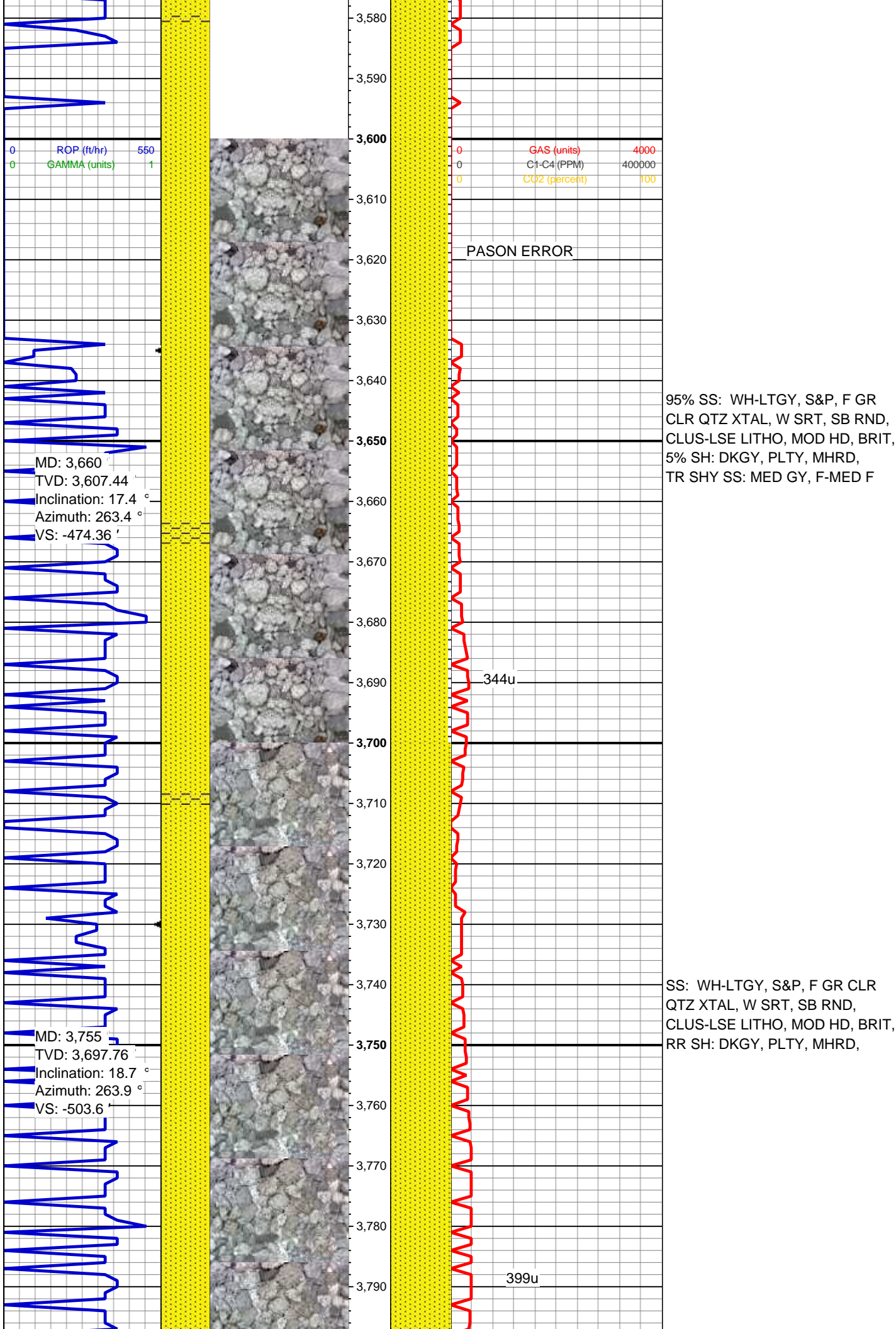


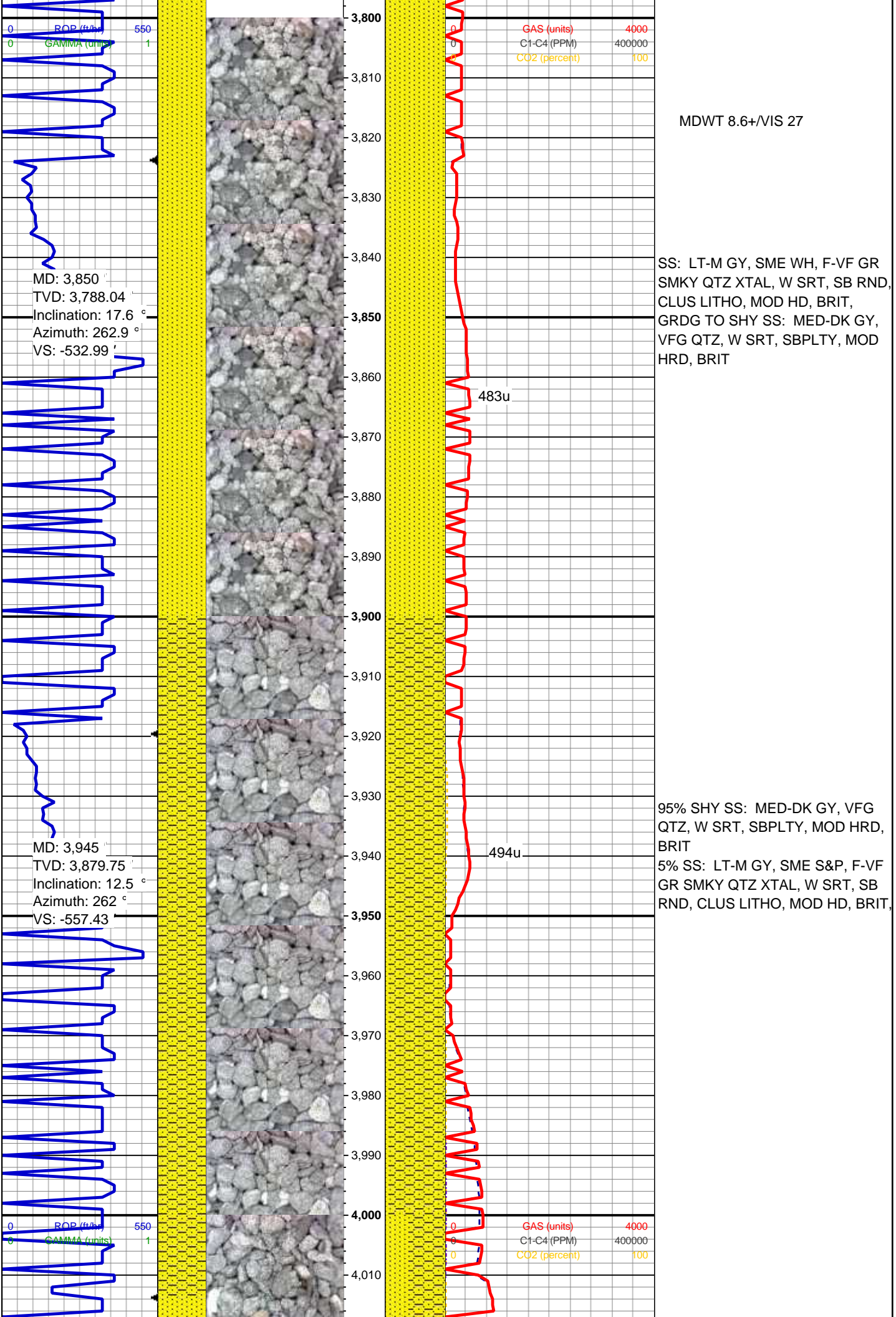


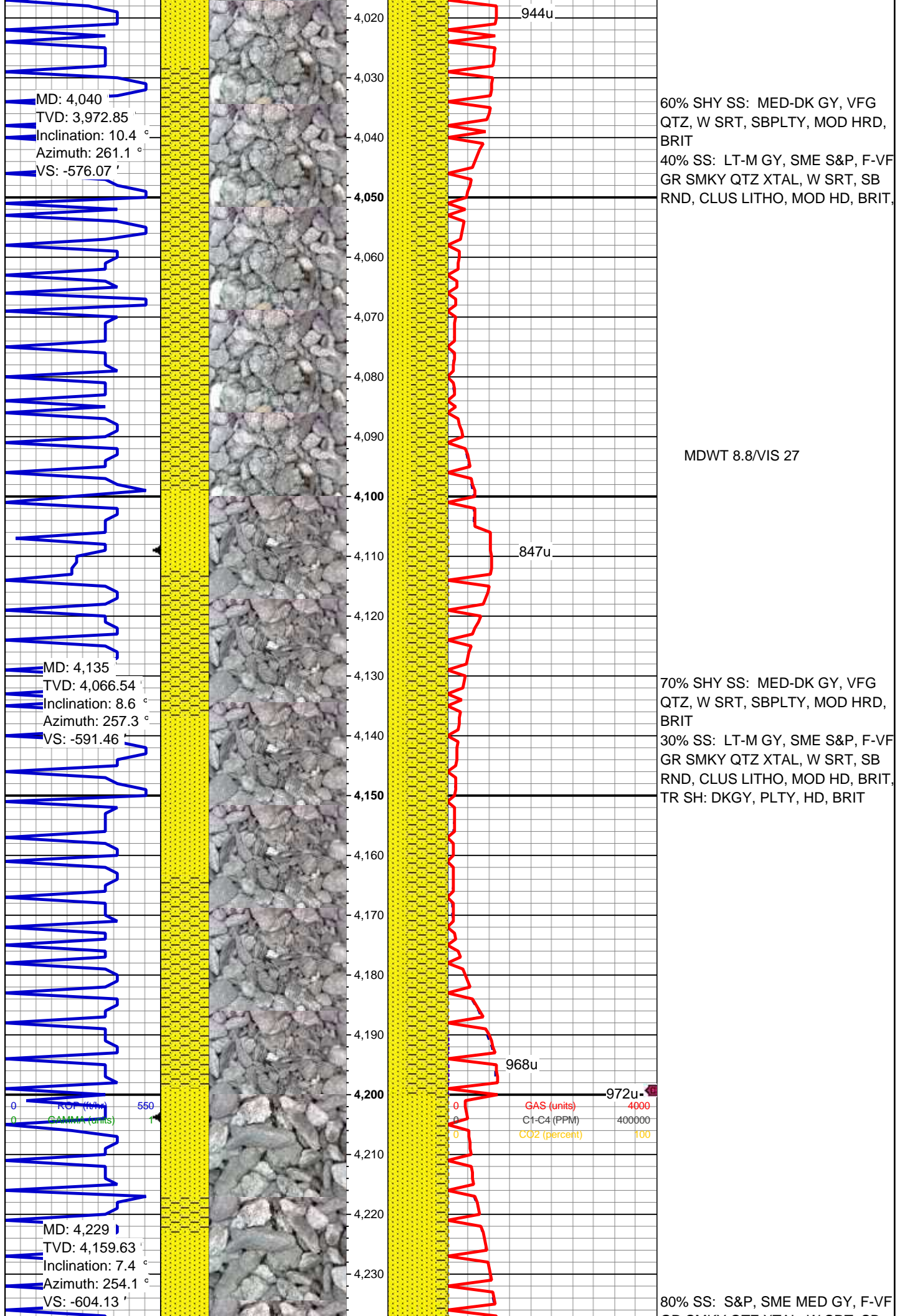


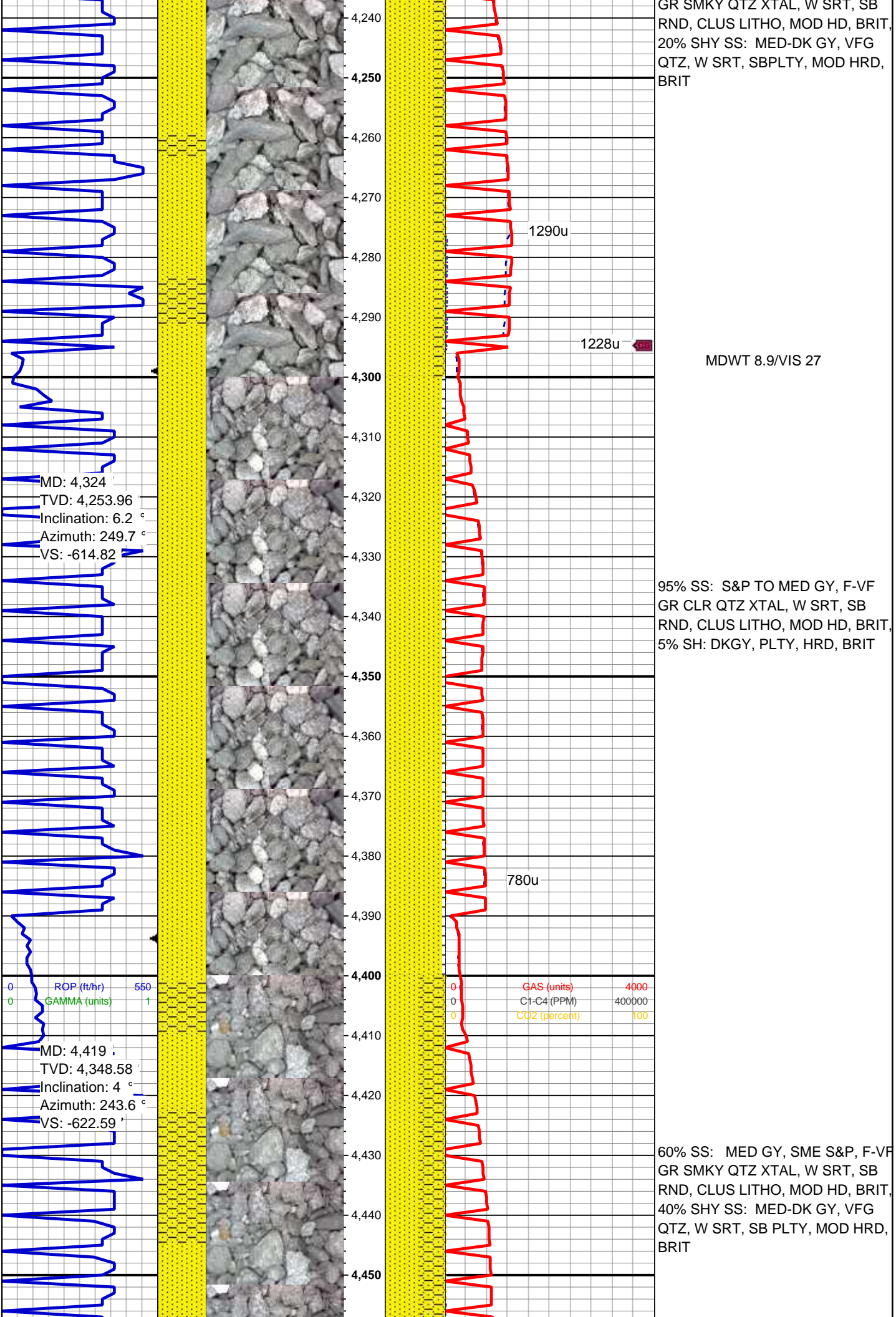












GR SMKY QTZ XTAL, W SRT, SB RND, CLUS LITHO, MOD HD, BRIT, 20% SHY SS: MED-DK GY, VFG QTZ, W SRT, SBPLTY, MOD HRD, BRIT

1290u

1228u

MDWT 8.9/VIS 27

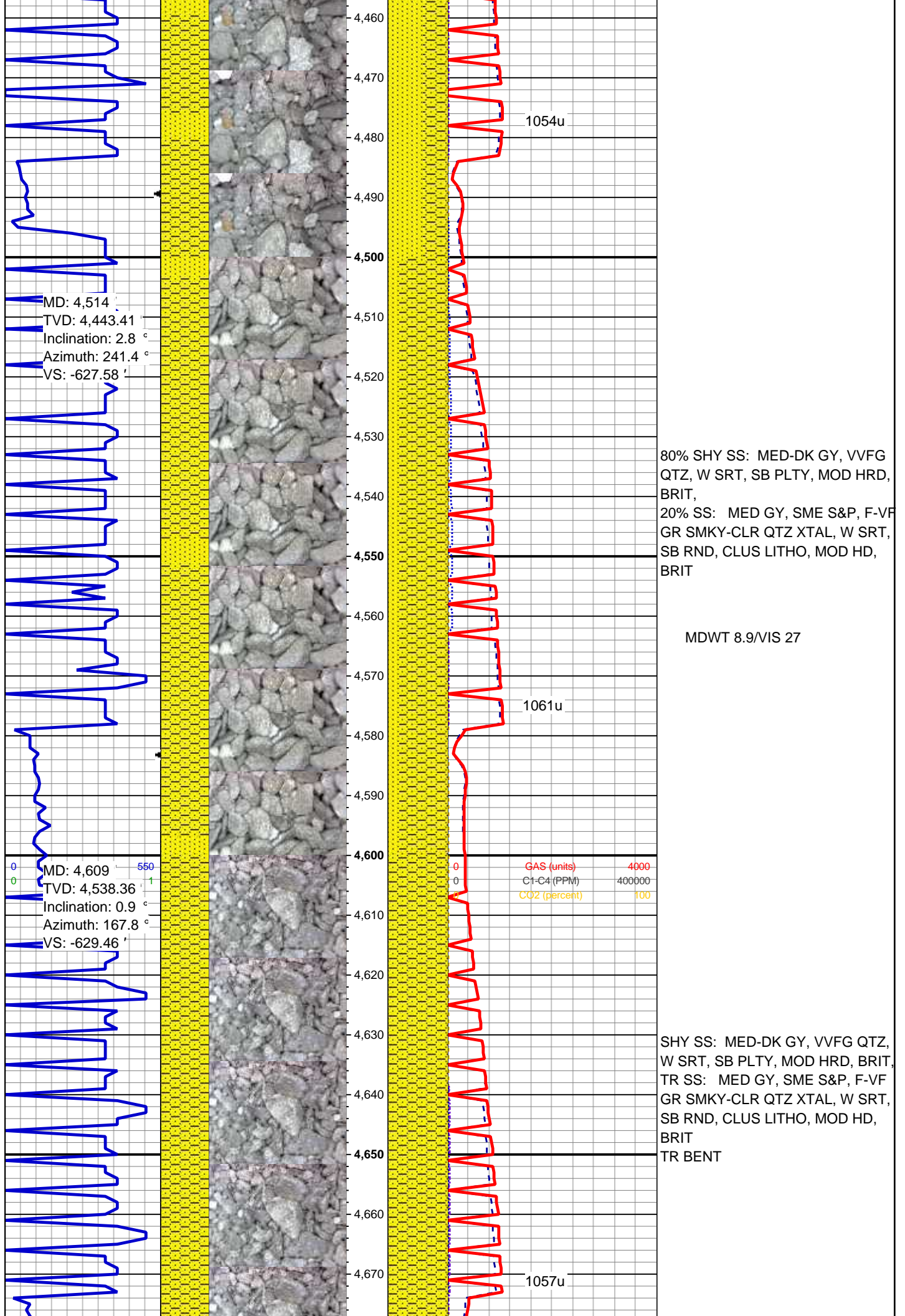
95% SS: S&P TO MED GY, F-VF GR CLR QTZ XTAL, W SRT, SB RND, CLUS LITHO, MOD HD, BRIT, 5% SH: DKG, PLTY, HRD, BRIT

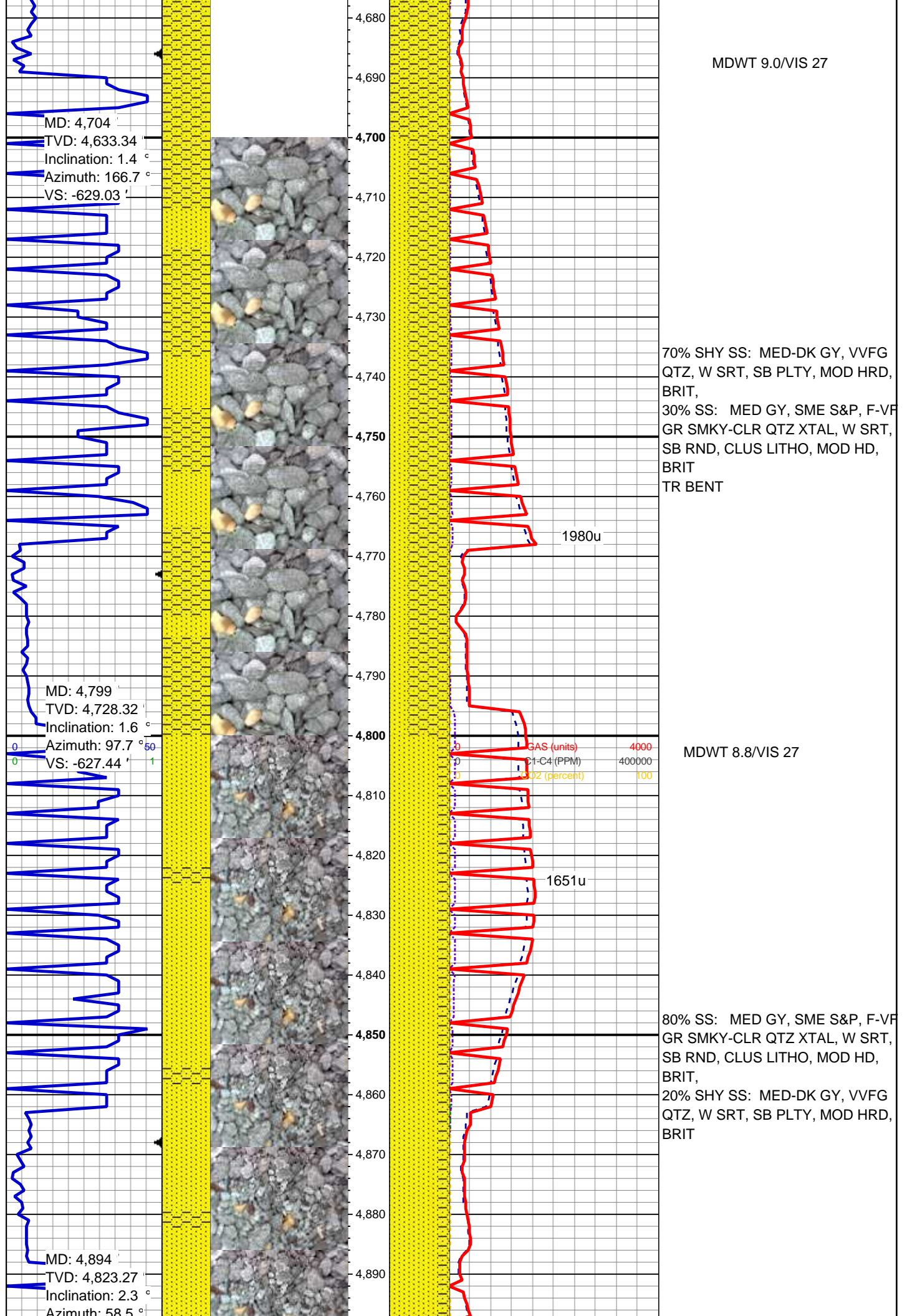
780u

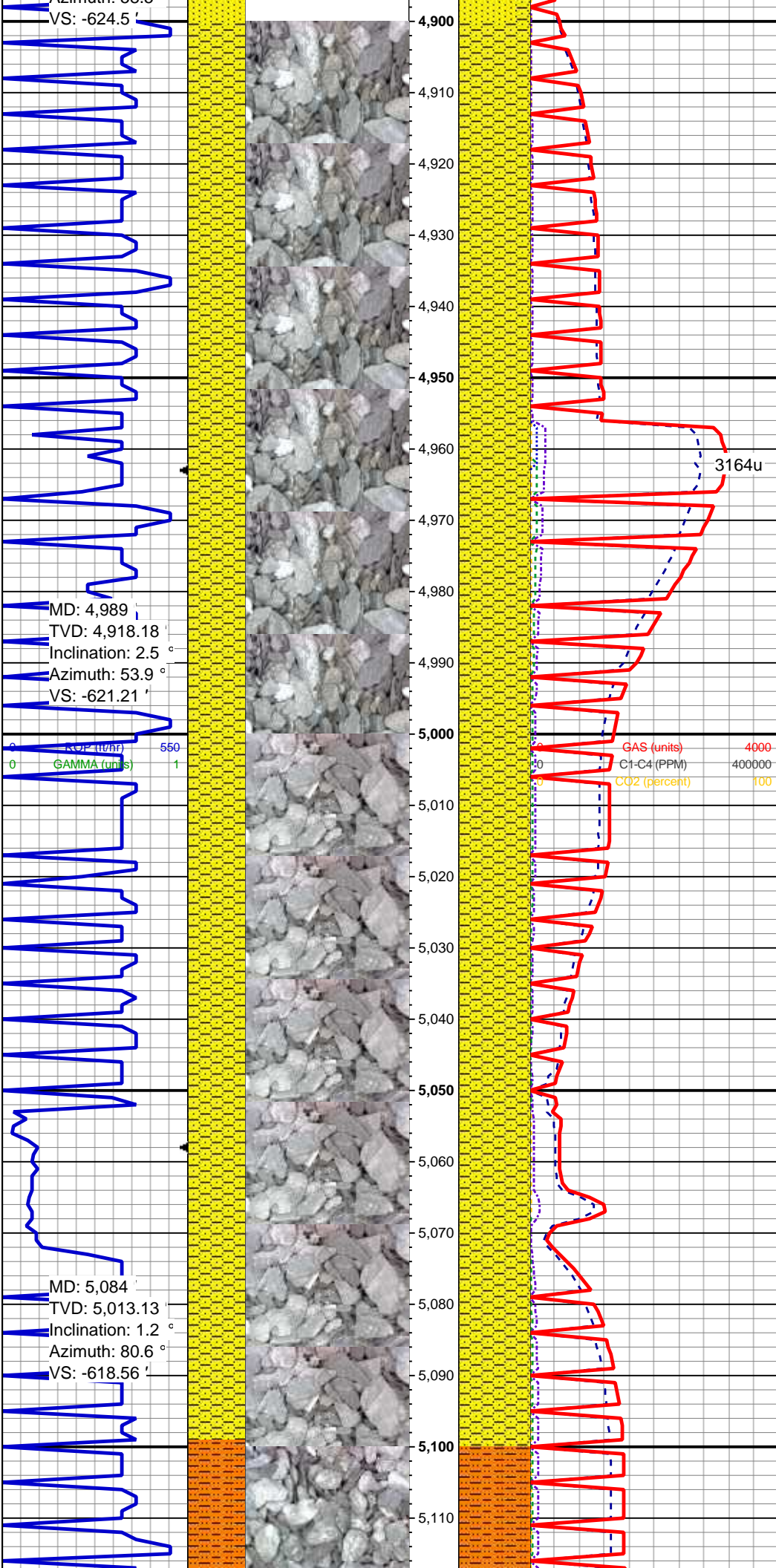
ROP (ft/hr) 550
GAMMA (units) 1

GAS (units) 4000
C1-C4 (PPM) 400000
CO2 (percent) 100

60% SS: MED GY, SME S&P, F-VF GR SMKY QTZ XTAL, W SRT, SB RND, CLUS LITHO, MOD HD, BRIT, 40% SHY SS: MED-DK GY, VFG QTZ, W SRT, SB PLTY, MOD HRD, BRIT







SHY SS: MED-DK GY, VVFG QTZ,
W SRT, SB PLTY, MOD HRD, BRIT,
TR SS: MED GY, SME S&P, F-VF
GR SMKY-CLR QTZ XTAL, W SRT,
SB RND, CLUS LITHO, MOD HD,
BRIT
RR BENT

MD: 4,989
TVD: 4,918.18
Inclination: 2.5 °
Azimuth: 53.9 °
VS: -621.21

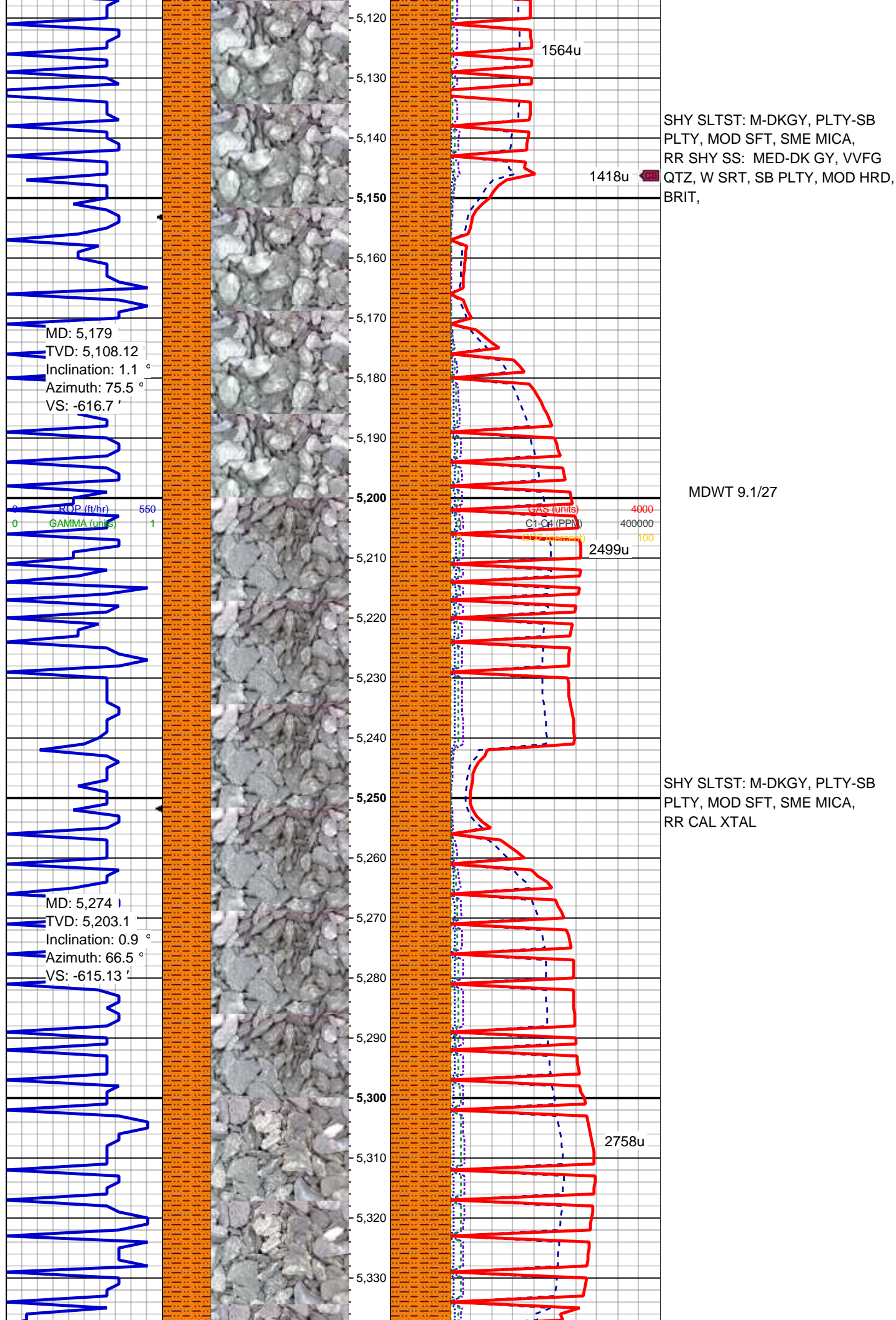
ROP (ft/hr) 550
GAMMA (units) 1

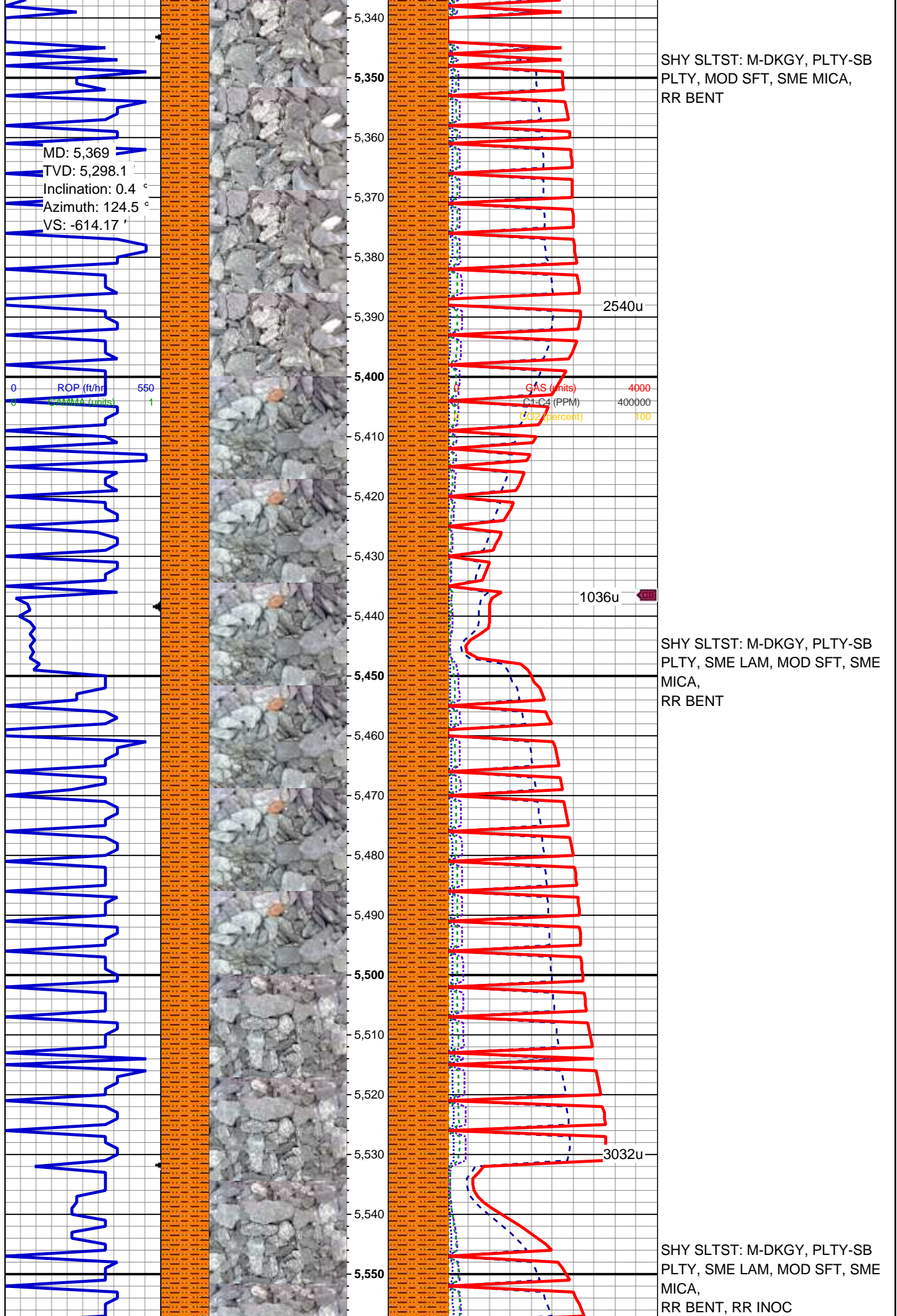
MD: 5,084
TVD: 5,013.13
Inclination: 1.2 °
Azimuth: 80.6 °
VS: -618.56

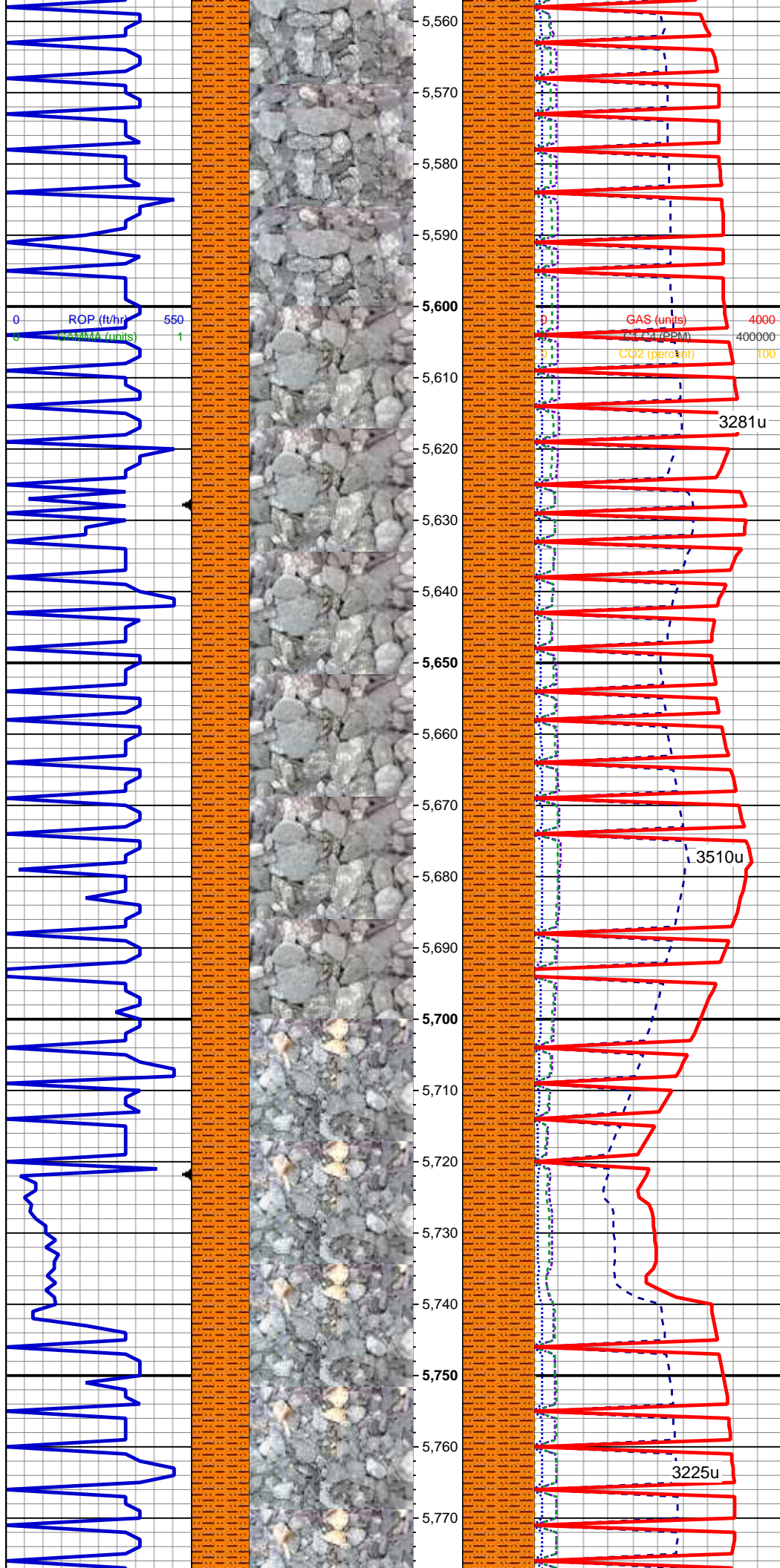
3164u

GAS (units) 4000
C1-C4 (PPM) 400000
CO2 (percent) 100

SHY SS: MED-DK GY, VVFG QTZ,
W SRT, SB PLTY, MOD HRD, BRIT,
TR SS: MED GY, SME S&P, F-VF
GR SMKY-CLR QTZ XTAL, W SRT,
SB RND, CLUS LITHO, MOD HD,
BRIT
RR BENT



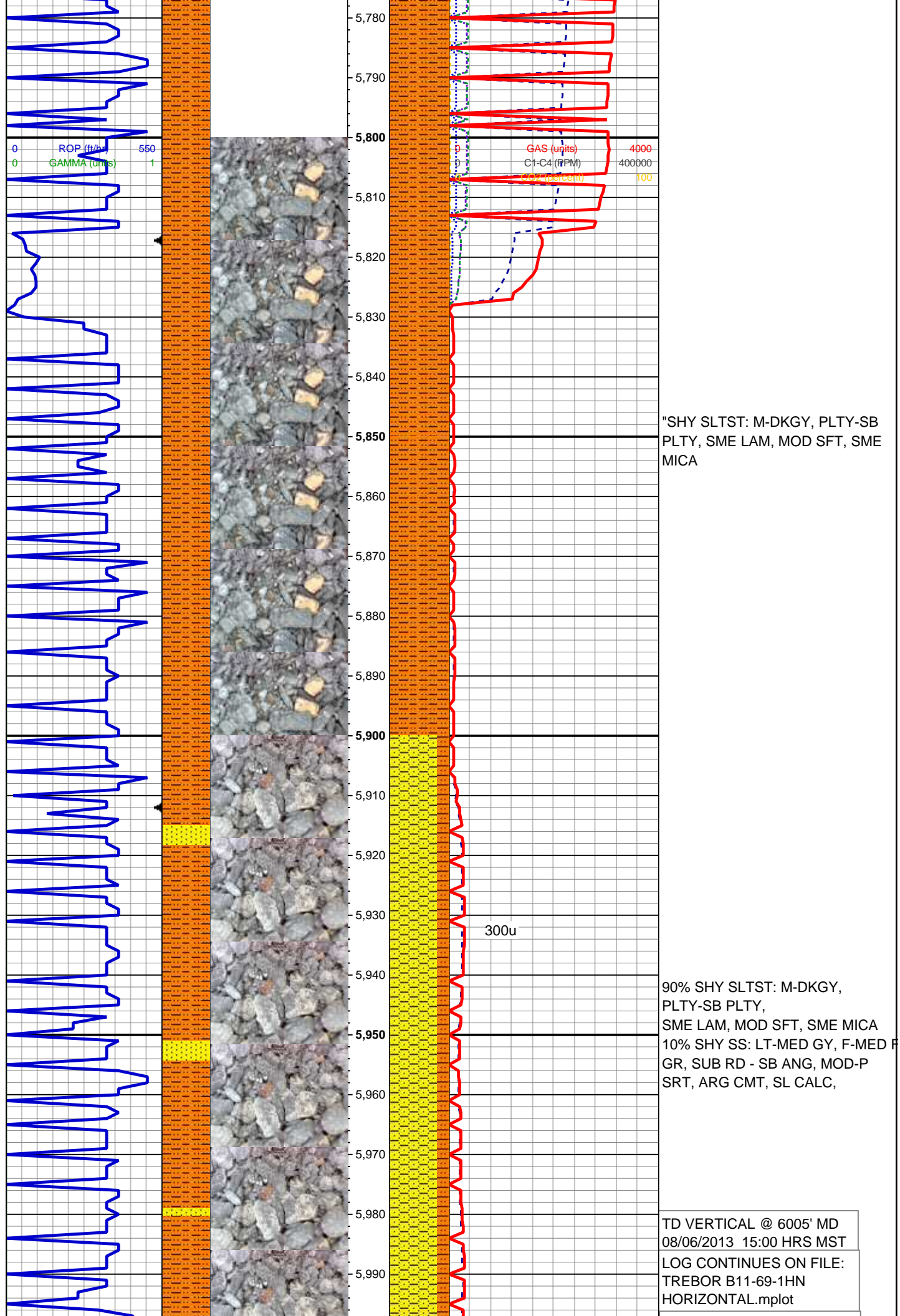


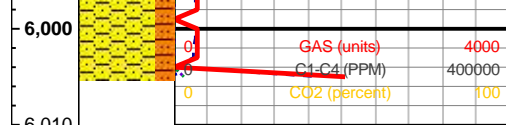
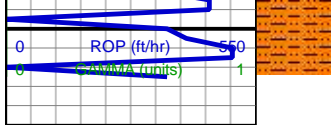


"SHY SLTST: M-DKGY, PLTY-SB
PLTY, SME LAM, MOD SFT, SME
MICA,
RR BENT, RR INOC FOS

MDWT 9.2/VIS 32

"SHY SLTST: M-DKGY, PLTY-SB
PLTY, SME LAM, MOD SFT, SME
MICA, RR INOC FOS





THANK YOU FOR USING
COLUMBINE LOGGING INC.