

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name Storis E24-77-1HN

Location SWSW SEC 24, T6N R5W

State COLORADO

County WELD

Country USA

Rig Number H&P 330

API Number 05-123-38161

Region DJ BASIN

Field WATTENBERG

Spud Date 5/15/2014

Drilling Completed 5/18/2014

Surface Coordinates 350' FSL 950' FWL

Ground Elevation 4,692'

K.B. Elevation 4,722'

Logged Interval 800' **To** 6,202'

Total Depth 6,202'

Formation NIOBRARA C CHALK

Type of Drilling Fl... LSND

Operator

Company NOBLE ENERGY INC.

Address 1625 Broadway Suite 2200
Denver, CO 80202

Geologist

Name RENEE CLACKLER

Company NOBLE ENERGY INC.

Address 1625 Broadway Suite 2200
Denver, CO 80202

Other

ANDREA ZUIDEMA

JESSICA SIEBERG

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
BRACHIOPOD
BRYOZOA
CEPHALOPOD
CORAL
CRINOID
ECHINOID
FISH
FORAMINIFERA

Fossil

GASTROPOD
INOCERAMUS
OOLITE
OSTRACOD
PELECYPOD
PELLET
PISOLITE
PLANT REMAINS
PLANT SPORES
SCAPHOPOD
STROMATOPOROID

Minerals

ANHYDRITIC
ARGILLACEOUS
ARGILLITE GRAIN
BENTONITE
BITUMENOUS SUBSTANCE
BRECCIA FRAGMENTS
CALCAREOUS
CARBONACEOUS FLAKES
CHTDK
CHTLT
COAL - THIN BEDS
DOLOMITIC
FELDSPAR
FERRUGINOUS PELLET

FERRUGINOUS
GLAUCONITE
GYPSIFEROUS
HEAVY MINERAL
KAOLIN
MARLSTONE
MINERAL CRYSTALS
NODULES
PHOSPHATE PELLETS
PYRITE
SALT CAST
SANDY
SILICEOUS
SILTY

TUFFACEOUS

Stringer

ANHYDRITE STRINGER
BENTONITE STRINGER
COAL STRINGER
DOLOMITE STRINGER
GYPSUM STRINGER
LIMESTONE STRINGER
MARLSTONE (CALC) STRG
MARLSTONE (DOL) STRG
SANDSTONE STRINGER
SHALE STRINGER
SILTSTONE STRINGER

Other Symbols

Oil Show

DEAD
EVEN
QUESTIONABLE
SPOTTED STAINING

Porosity

E EARTHY
FENESTRAL
FRACTURE
INTERCRYSTALLINE
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
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

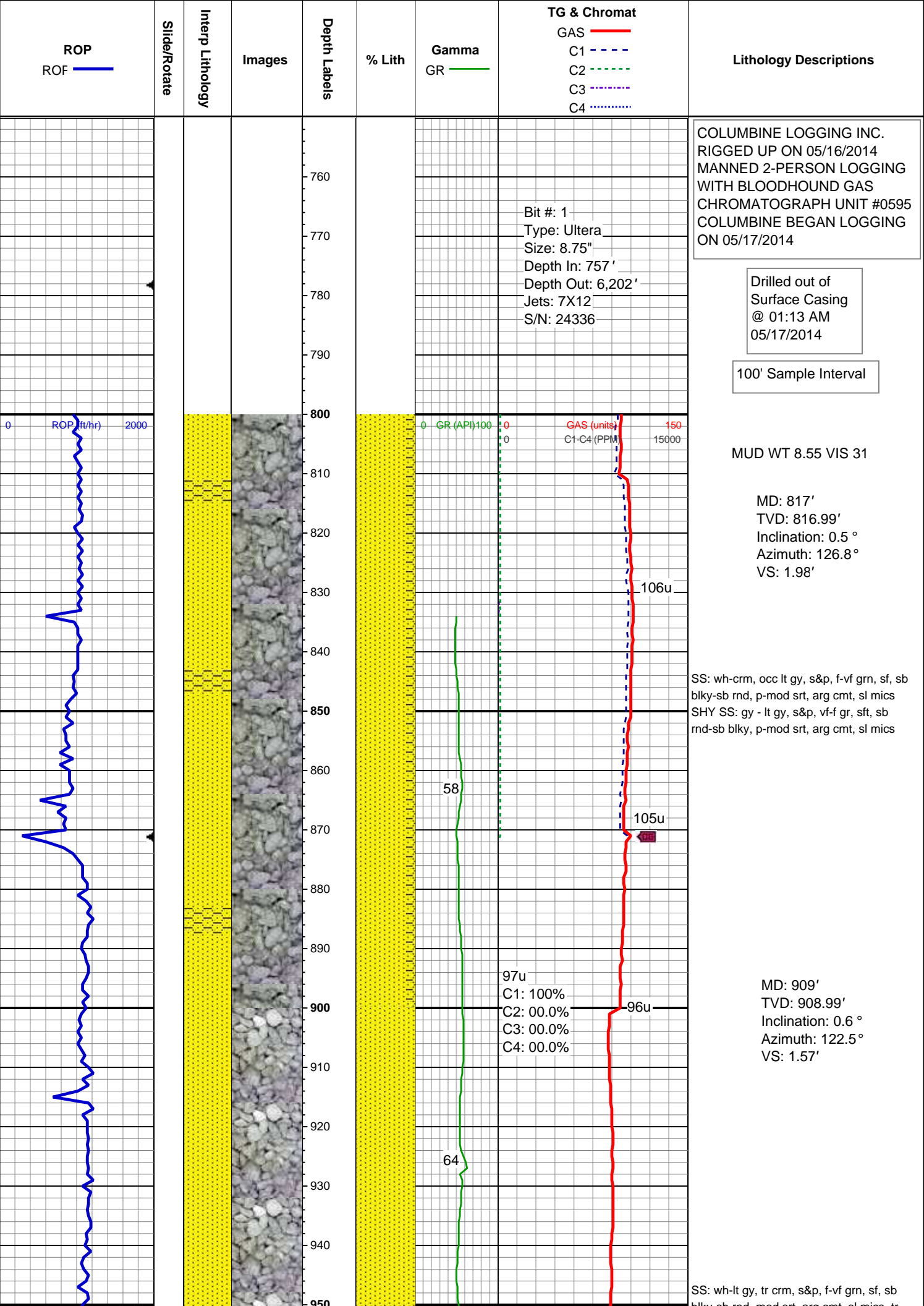
Textures

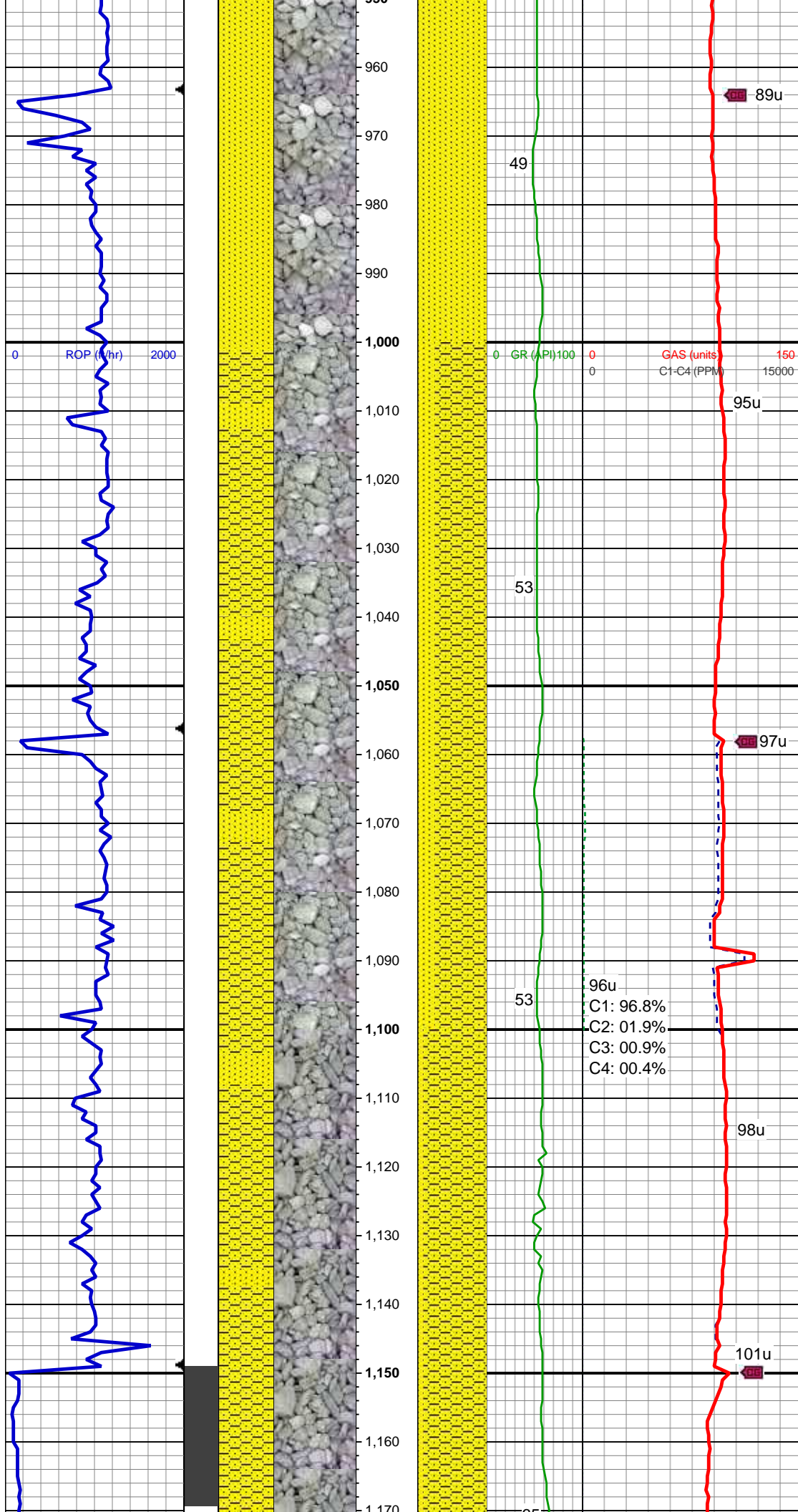
BOUNDSTONE
CHALKY
CRYPTOXLN

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

Sorting

M MODERATE
P POOR
W WELL





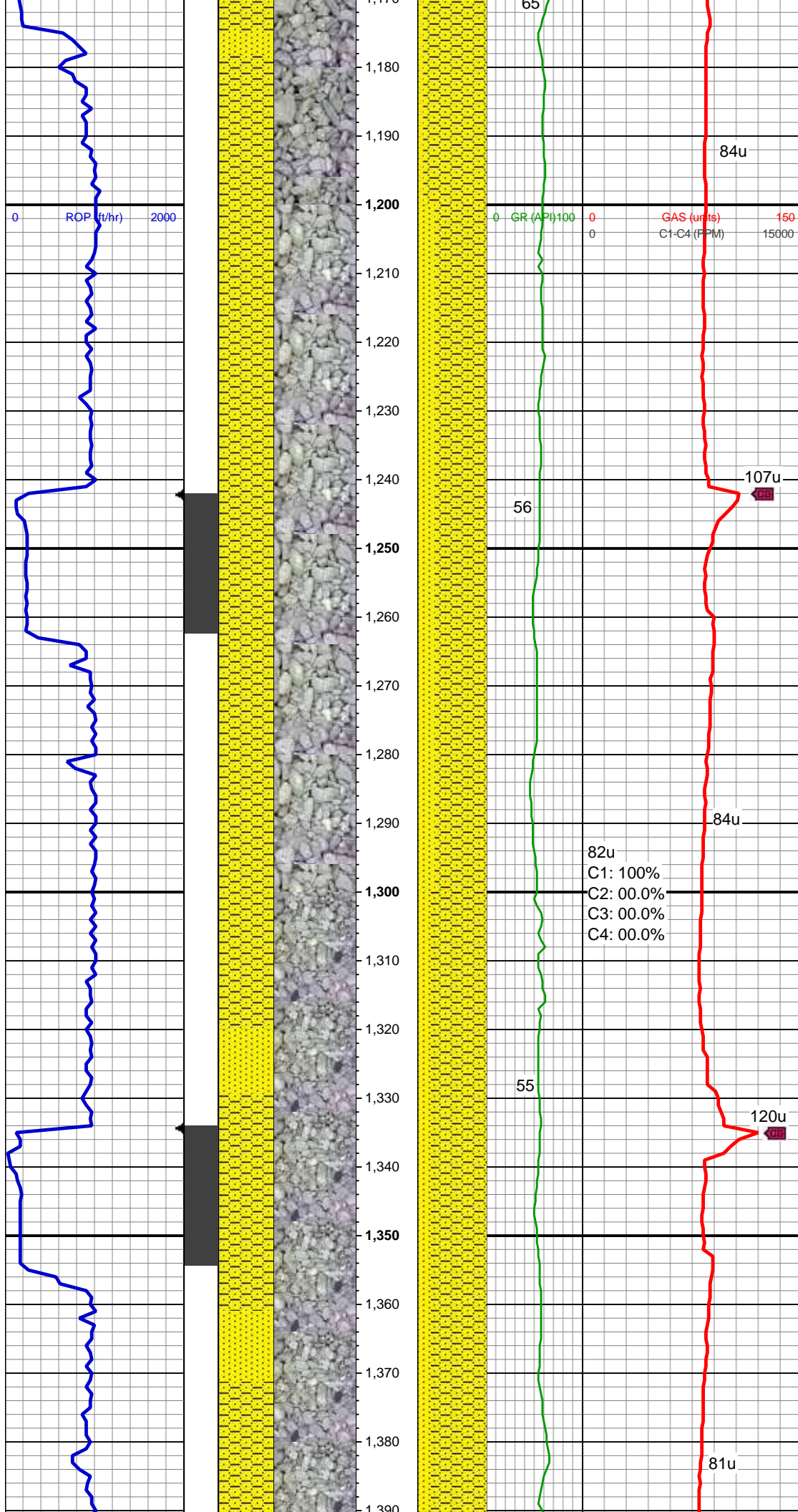
blky-sb md, mod srt, arg cmt, sr mics, tr
shy ss

MD: 1,002'
TVD: 1,001.98'
Inclination: 0.8 °
Azimuth: 105.5°
VS: 1.28'

SHY SS: gy - lt gy, tr wh, s&p, vf-f gr, sft,
sb rnd-sb blk, mod-w srt, arg cmt
SS: lt gy-wh, tr crm, s&p, vf-f gr, sb rnd-sb
blk, p-mod srt, arg cmt

MD: 1,095'
TVD: 1,094.97'
Inclination: 1 °
Azimuth: 91.8°
VS: 1.28'

SHY SS: gy - lt gy, occ wh, s&p, vf-f gr,
sft, sb rnd-sb blk, tr rnd, p-mod srt, arg
cmt
SS: lt gy-wh, s&p, vf-f gr, sb rnd-sb blk,
p-mod srt, tr glau, arg cmt



MD: 1,188'
TVD: 1,187.91'
Inclination: 3 °
Azimuth: 91.4 °
VS: 1.65'

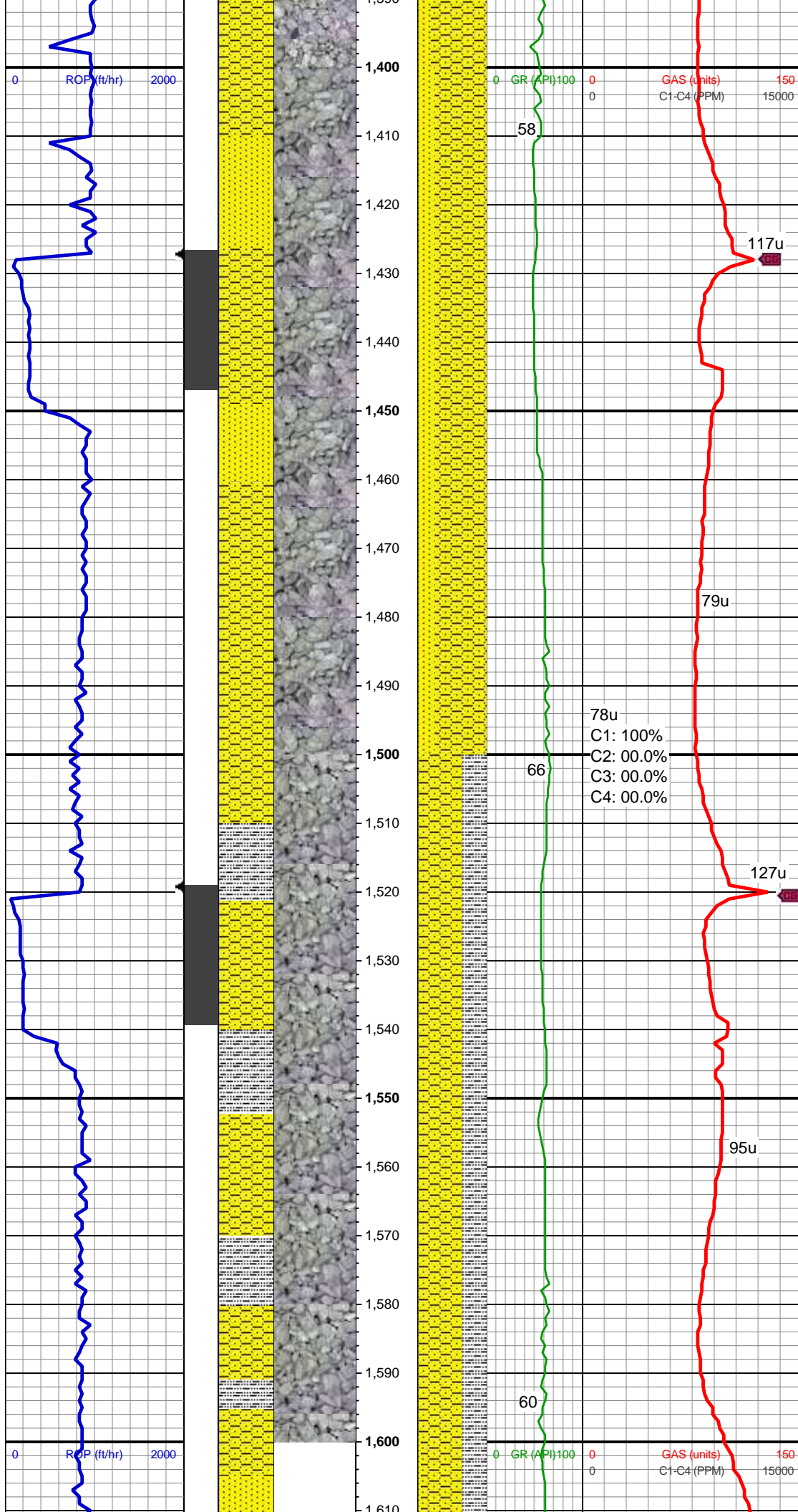
SHY SS: gy - lt gy, s&p, vf-f gr, sft, sb
rnd-sb blkly, mod-w srt, arg cmt
SS: lt gy-wh, tr trnsl, s&p, vf-f gr, sb rnd-sb
blkly, p-mod srt, occ glau, arg cmt

MD: 1,280'
TVD: 1,279.73'
Inclination: 4.4 °
Azimuth: 120 °
VS: 0.62'

82u
C1: 100%
C2: 00.0%
C3: 00.0%
C4: 00.0%

SHY SS: gy - lt gy, s&p, vf-f gr, sft, sb
rnd-sb ang, mod-w srt, arg cmt
SS: lt gy-wh, tr trnsl, s&p, vf-f gr, sb rnd-sb
ang, p-mod srt, occ glau, arg cmt

MD: 1,373'
TVD: 1,372.4'
Inclination: 5.3 °
Azimuth: 105.1 °
VS: -1.23'



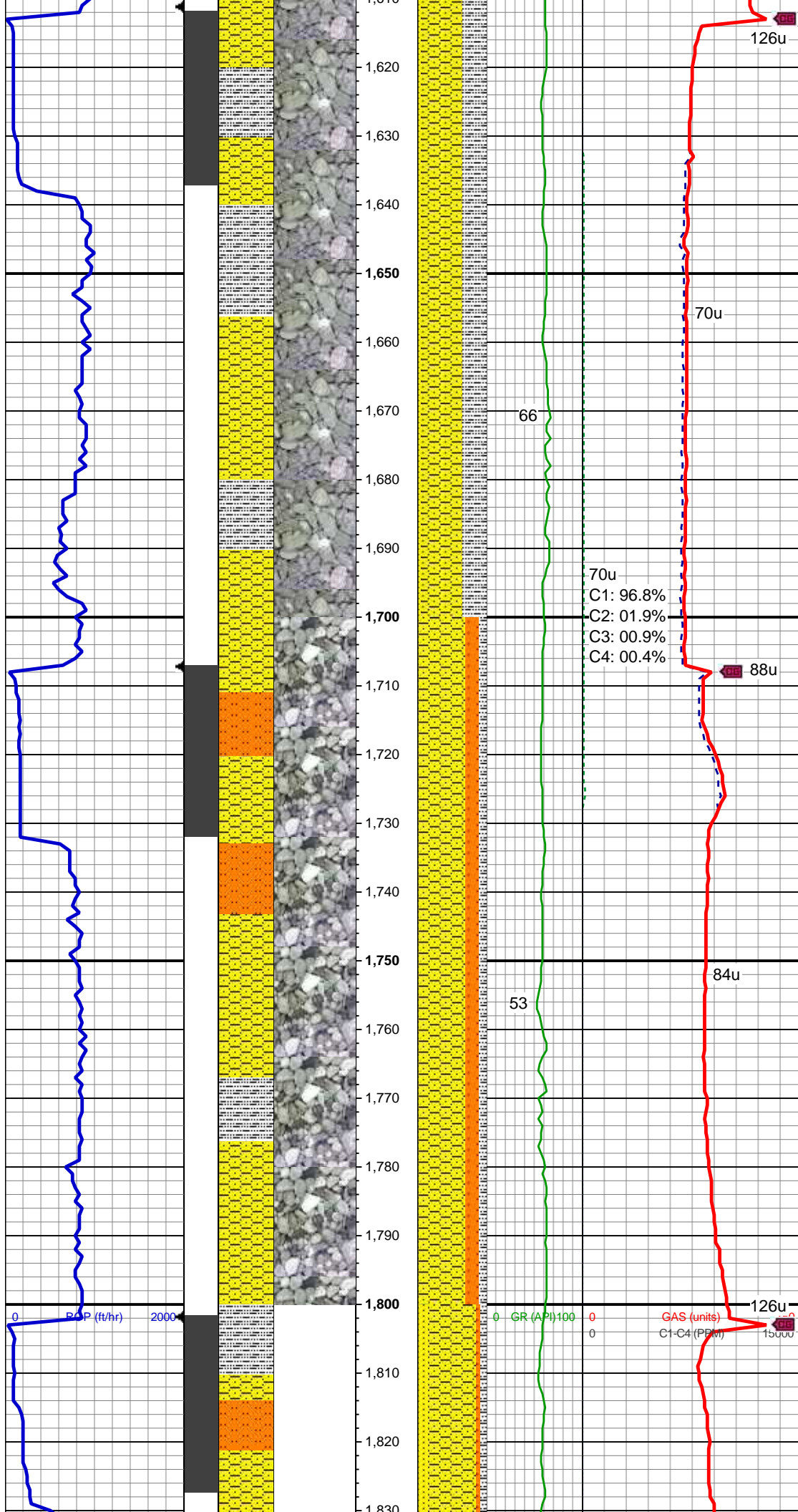
SHY SS: gy - lt gy, s&p, vf-f gr, sft, sb
rnd-sb ang, mod-w srt, arg cmt
SS: lt gy-wh, tr trnsl, s&p, vf-f gr, sb rnd-sb
ang, p-mod srt, occ glau, arg cmt

MD: 1,465'
TVD: 1,463.87'
Inclination: 7 °
Azimuth: 105.7 °
VS: -2.47'

SHY SS: gy - lt gy, s&p, vf-f gr, sft, sb
rnd-sb ang, mod-w srt, arg cmt, tr ss
SLTY SH: lt-med gy, occ dk gy, sft, sb
bky-sb plty, arg-rthy mtx, non calc

MD: 1,558'
TVD: 1,556.01'
Inclination: 8.6 °
Azimuth: 110.5 °
VS: -4.7'

MUD WT 8.70 VIS 30



SHY SS: gy - lt gy, s&p, vf-f gr, sft, sb
rnd-sb ang, mod-w srt, arg cmt
SLTY SH: lt-med gy, sft, sb blk-y-sb plty,
arg-rthy mtx, non calc
SS: lt gy-wh, tr trnsl, s&p, vf-f gr, sb rnd-sb
ang, p-mod srt, occ glau, arg cmt

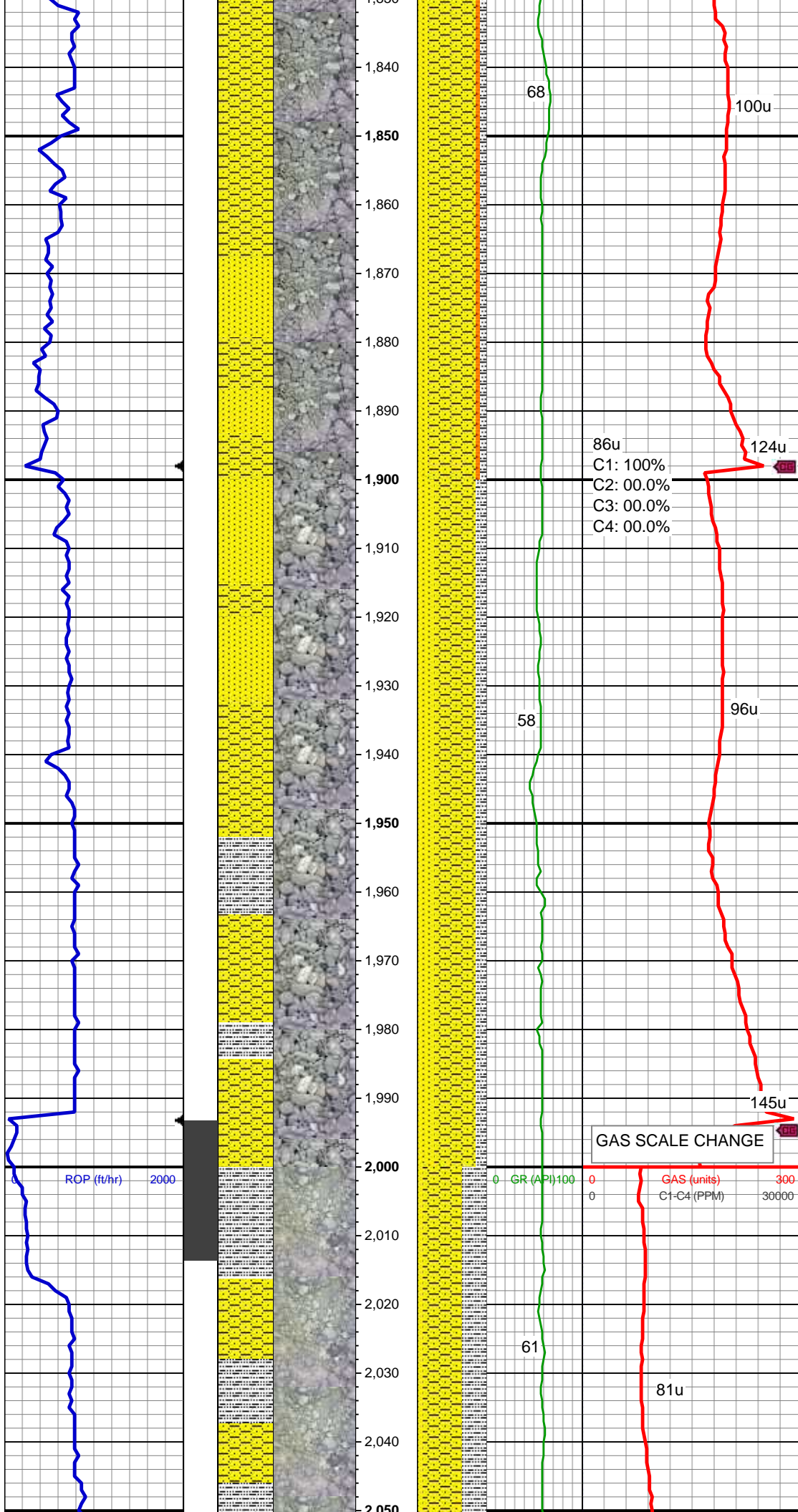
MD: 1,653'
TVD: 1,649.68'
Inclination: 10.6 °
Azimuth: 107.6 °
VS: -7.66'

70u
C1: 96.8%
C2: 01.9%
C3: 00.9%
C4: 00.4%

MD: 1,748'
TVD: 1,742.81'
Inclination: 12.2 °
Azimuth: 109.6 °
VS: -11.1'

SHY SS: gy - lt gy, s&p, vf-f gr, sft, sb
rnd-sb ang, mod-w srt, arg cmt, tr ss
SLTST: wh-crm, vf gr, sft, sb blk-y, v w srt
SLTY SH: lt-med gy, sft, sb blk-y-sb plty,
arg-rthy mtx, non calc

MD: 1,843'
TVD: 1,835.23'
Inclination: 14.5 °



Azimuth: 110.2°
VS: -15.58'

SHY SS: gy - lt gy, s&p, vf-f gr, sft, sb
rnd-sb ang, mod-w srt, arg cmt
SLTST: wh-crm, vf gr, sft, sb blkly, v w srt
SLTY SH: lt-med gy, sft, sb blkly-sb plty,
arg-rthy mtx, non calc
SS: lt gy-wh, tr trnsl, s&p, vf-f gr, sb rnd-sb
ang, p-mod srt, tr glau, arg cmt

MD: 1,939'
TVD: 1,928.38'
Inclination: 13.4°
Azimuth: 110.8°
VS: -20.53'

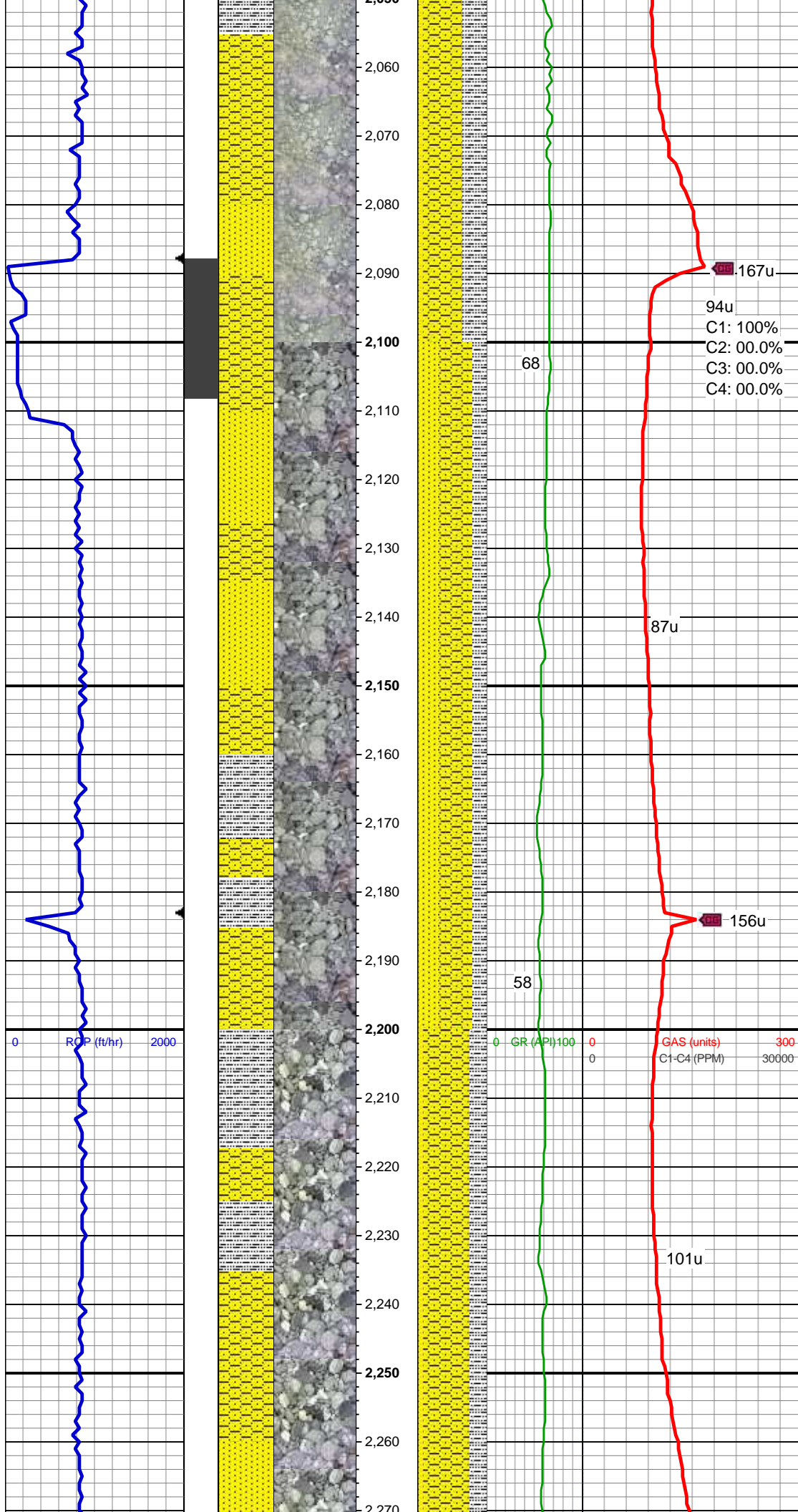
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt, tr sltst
SS: lt gy - wh, tr trnsl, s&p, vf-f gr, sb
rnd-sb ang, p-mod srt, tr glau, arg cmt
SLTY SH: lt-med gy, occ dk gy - blk, sft,
sb blkly - sb plty, arg - rthy mtx, non calc -
sl calc

MUD WT 8.55 VIS 29

GAS SCALE CHANGE

MD: 2,034'
TVD: 2,020.57'
Inclination: 14.5°
Azimuth: 111.1°
VS: -25.62'

SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt
SLTY SH: lt-med gy, sft, sb blkly - sb plty,



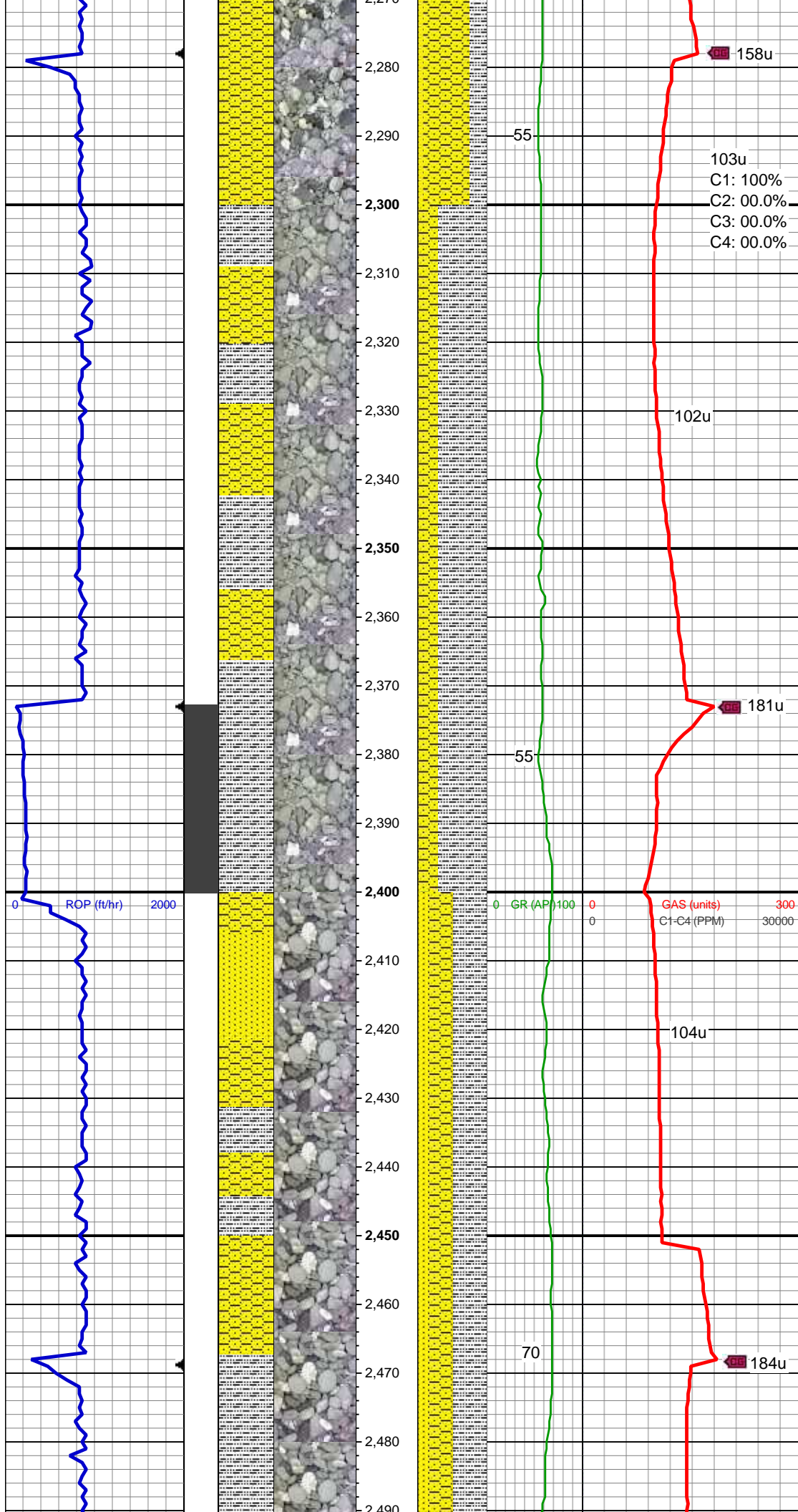
arg - rthy mtx, non calc
SS: lt gy - wh, tr trns, s&p, vf-f gr, sb
rnd-sb ang, p-mod srt, tr glau, arg cmt

MD: 2,129'
TVD: 2,112.28'
Inclination: 15.7 °
Azimuth: 109.5 °
VS: -30.82'

SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt
SS: lt gy - wh, tr trns, s&p, vf-f gr, sb
rnd-sb ang, p-mod srt, tr glau, arg cmt
SLTY SH: lt-med gy, tr dk gy - blk, sft, sb
blky - sb plty, arg - rthy mtx, non calc

MD: 2,224'
TVD: 2,203.85'
Inclination: 15.1 °
Azimuth: 107.8 °
VS: -35.43'

SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt
SLTY SH: lt-med gy, tr gry blk, sft, sb blky
- sb plty, arg - rthy mtx, non calc
SS: lt gy - wh, occ lt brn - tan, tr trns,
s&p, vf-f gr, sb rnd-sb ang, p-mod srt, arg
cmt

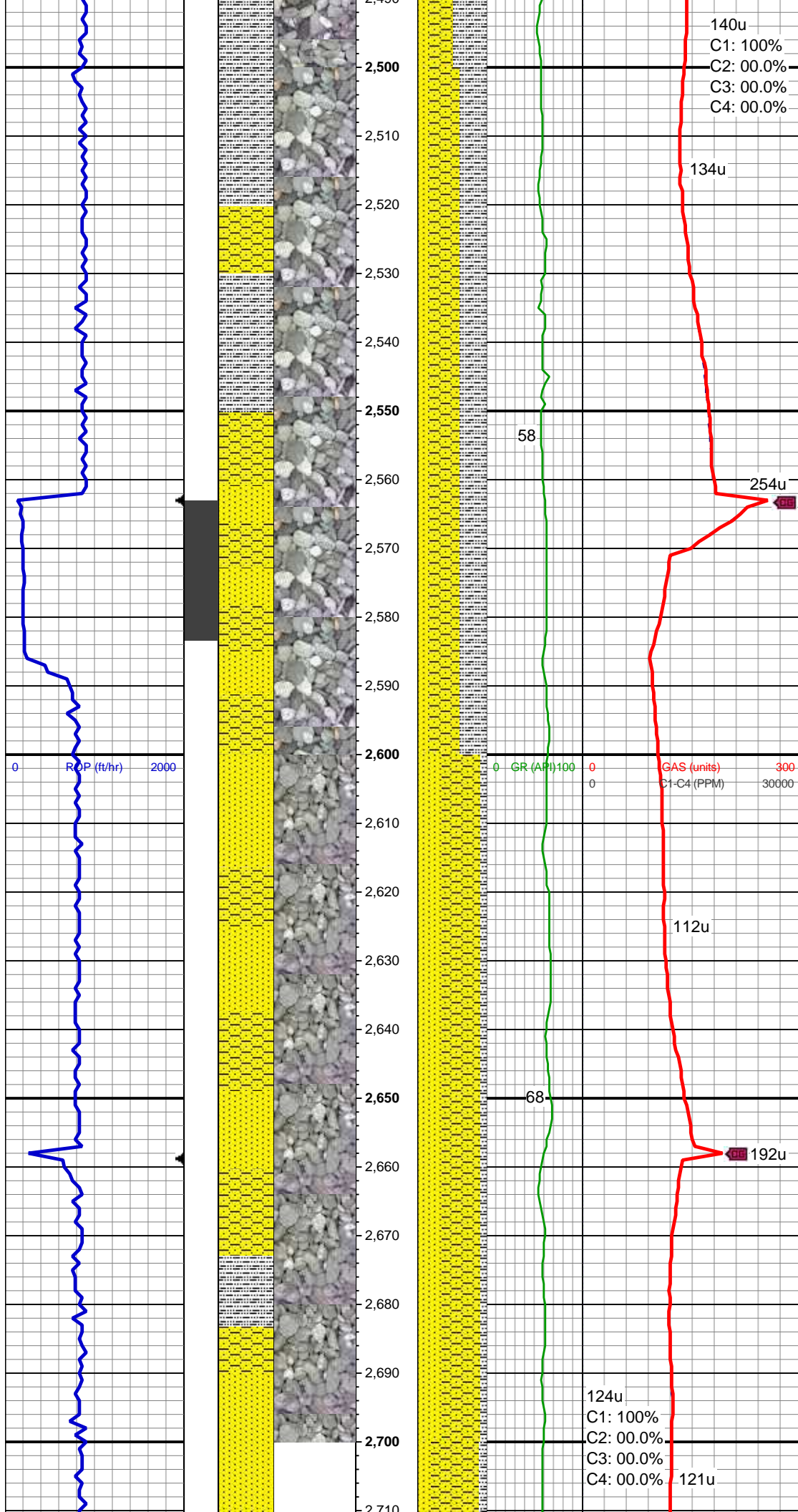


MD: 2,319'
TVD: 2,295.83'
Inclination: 13.9 °
Azimuth: 103.7 °
VS: -38.6'

SLTY SH: med gy - med brn, tr gry blk, sft, sb blk - sb plty, arg - rthy mtx, non calc
SHY SS: gy - lt gy, occ lt brn, s&p, vf - f gr, sft, sb rnd - sb ang, mod - w srt, arg cmt

MD: 2,414'
TVD: 2,387.88'
Inclination: 14.8 °
Azimuth: 112.7 °
VS: -42.75'

SLTY SH: lt-med gy, tr gry blk, sft, sb blk - sb plty, arg - rthy mtx, non calc
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb rnd - sb ang, mod - w srt, arg cmt
SS: lt gy - wh, occ lt brn - tan, tr trns, s&p, vf-f gr, sb rnd-sb ang, p-mod srt, tr glau, tr plty min, arg cmt



MD: 2,509'
TVD: 2,479.96'
Inclination: 13.7 °
Azimuth: 109.5 °
VS: -48.01'

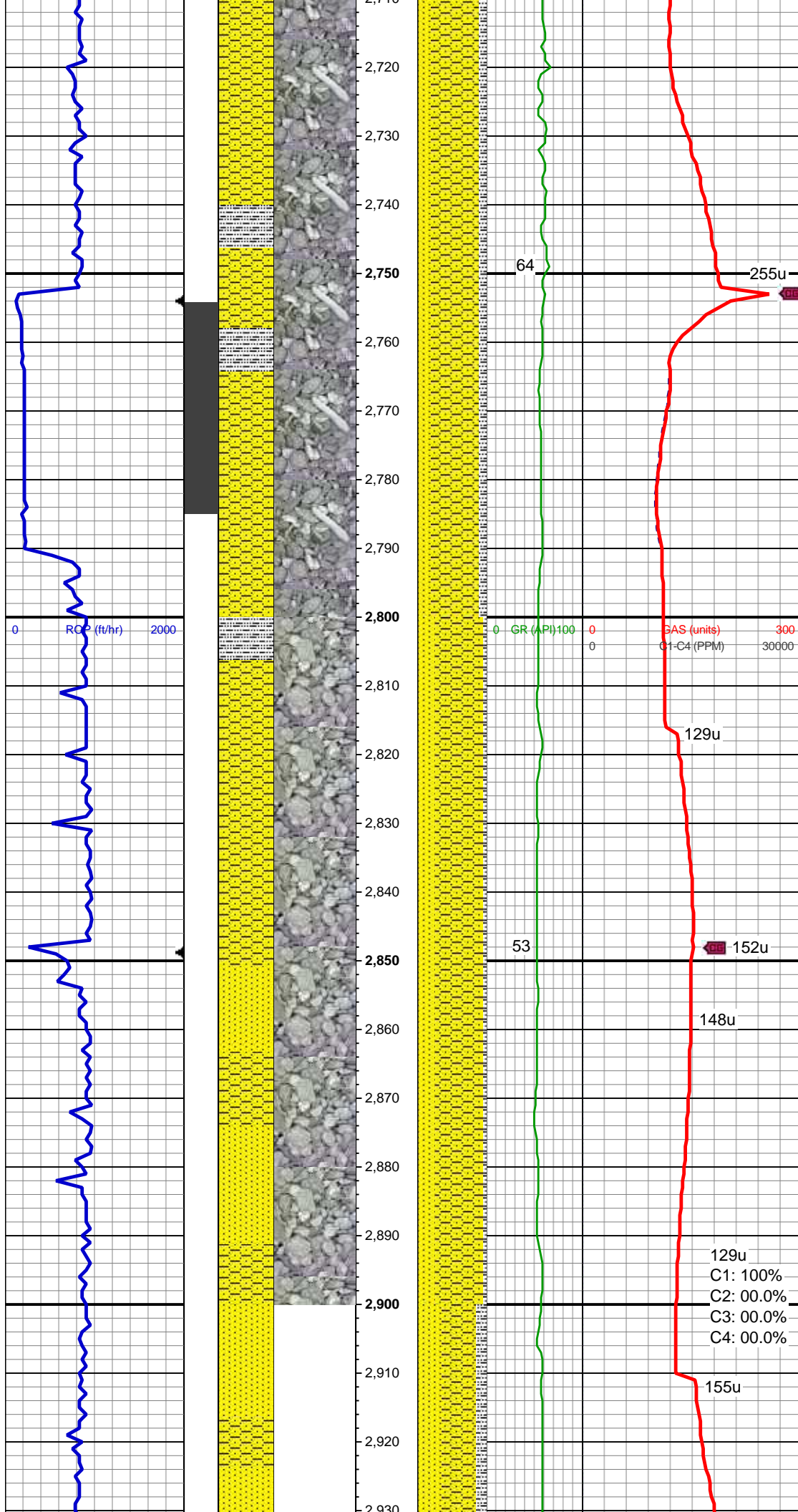
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt
SLTY SH: lt-med gy, tr gry blk, sft, sb blk
- sb plty, arg - rthy mtx, non calc
SS: lt gy - wh, occ lt brn - tan, tr trns
s&p, vf-f gr, sb rnd-sb ang, p-mod srt, tr
glau, tr plty min, arg cmt

MUD WT 8.70 VIS 31

MD: 2,604'
TVD: 2,572.2'
Inclination: 14 °
Azimuth: 112.3 °
VS: -53.02'

SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt
SS: lt gy - wh, occ lt brn - tan, tr trns
s&p, vf-f gr, sb rnd-sb ang, p-mod srt, tr
glau, arg cmt
SLTY SH: lt-med gy, tr gry blk, sft, sb blk
- sb plty, arg - rthy mtx, non calc

MD: 2,700'
TVD: 2,665.51'
Inclination: 13.2 °
Azimuth: 111.5 °
VS: -58.38'



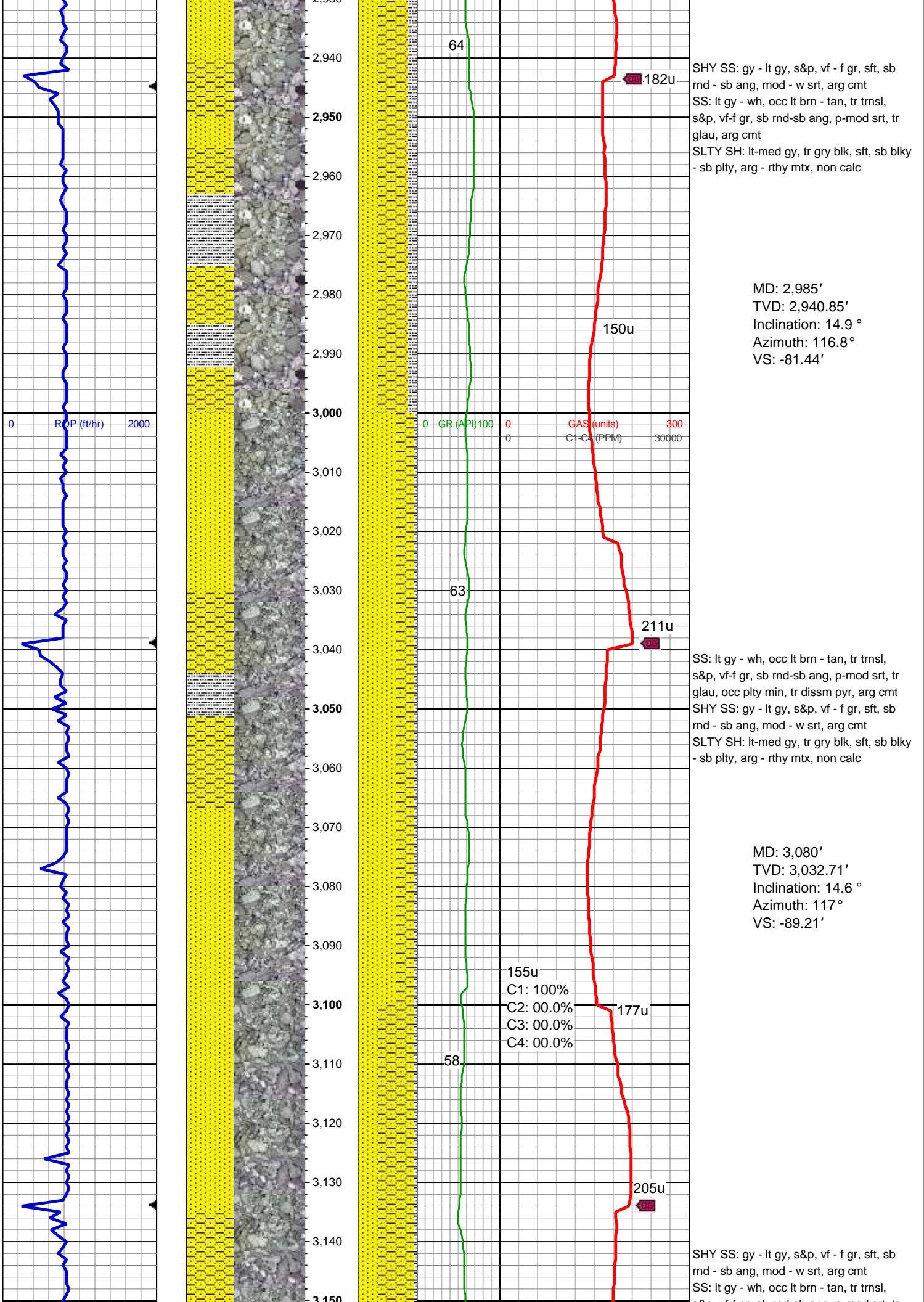
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt
SS: lt gy - wh, occ lt brn - tan, tr trnsl,
s&p, vf-f gr, sb rnd-sb ang, p-mod srt, tr
glau, tr dissim pyr, arg cmt
SLTY SH: lt-med gy, tr gry blk, sft, sb blkly
- sb plty, arg - rthy mtx, non calc

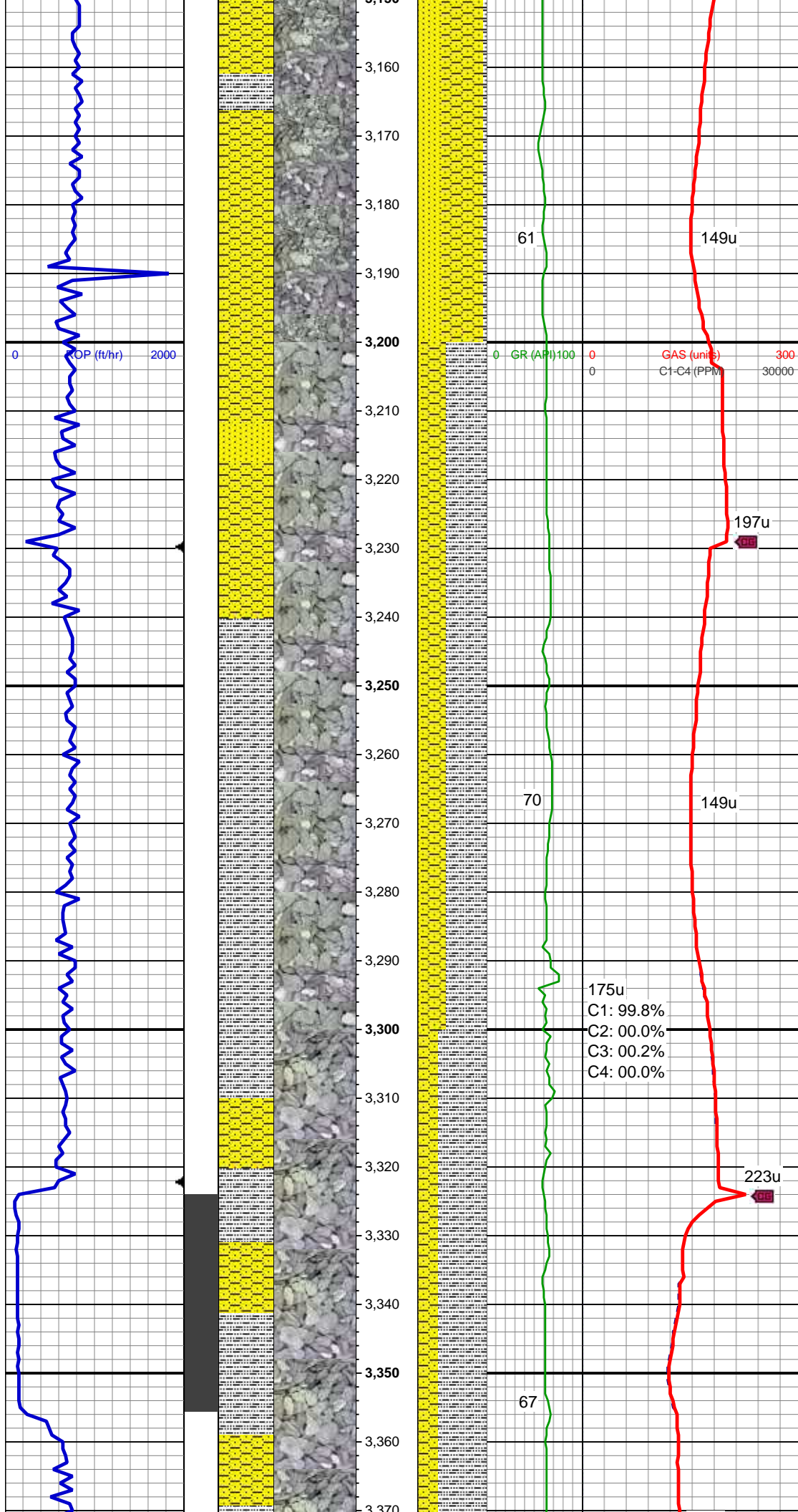
MD: 2,795'
TVD: 2,757.66'
Inclination: 14.9 °
Azimuth: 117.4 °
VS: -64.91'

SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt
SS: lt gy - wh, occ lt brn - tan, tr trnsl,
s&p, vf-f gr, sb rnd-sb ang, p-mod srt, tr
glau, tr dissim pyr, arg cmt
SLTY SH: lt-med gy, tr gry blk, sft, sb blkly
- sb plty, arg - rthy mtx, non calc

MD: 2,890'
TVD: 2,849.26'
Inclination: 15.8 °
Azimuth: 117.5 °
VS: -73.24'

129u
C1: 100%
C2: 00.0%
C3: 00.0%
C4: 00.0%





s&p, vf-f gr, sb rnd-sb ang, p-mod srt, tr glau, occ plty min, tr diss m pyr, arg cmt
SLTY SH: lt-med gy, tr gry blk, sft, sb blk
- sb plty, arg - rthy mtx, non calc

MD: 3,175'
TVD: 3,124.77'
Inclination: 14 °
Azimuth: 116.5 °
VS: -96.69'

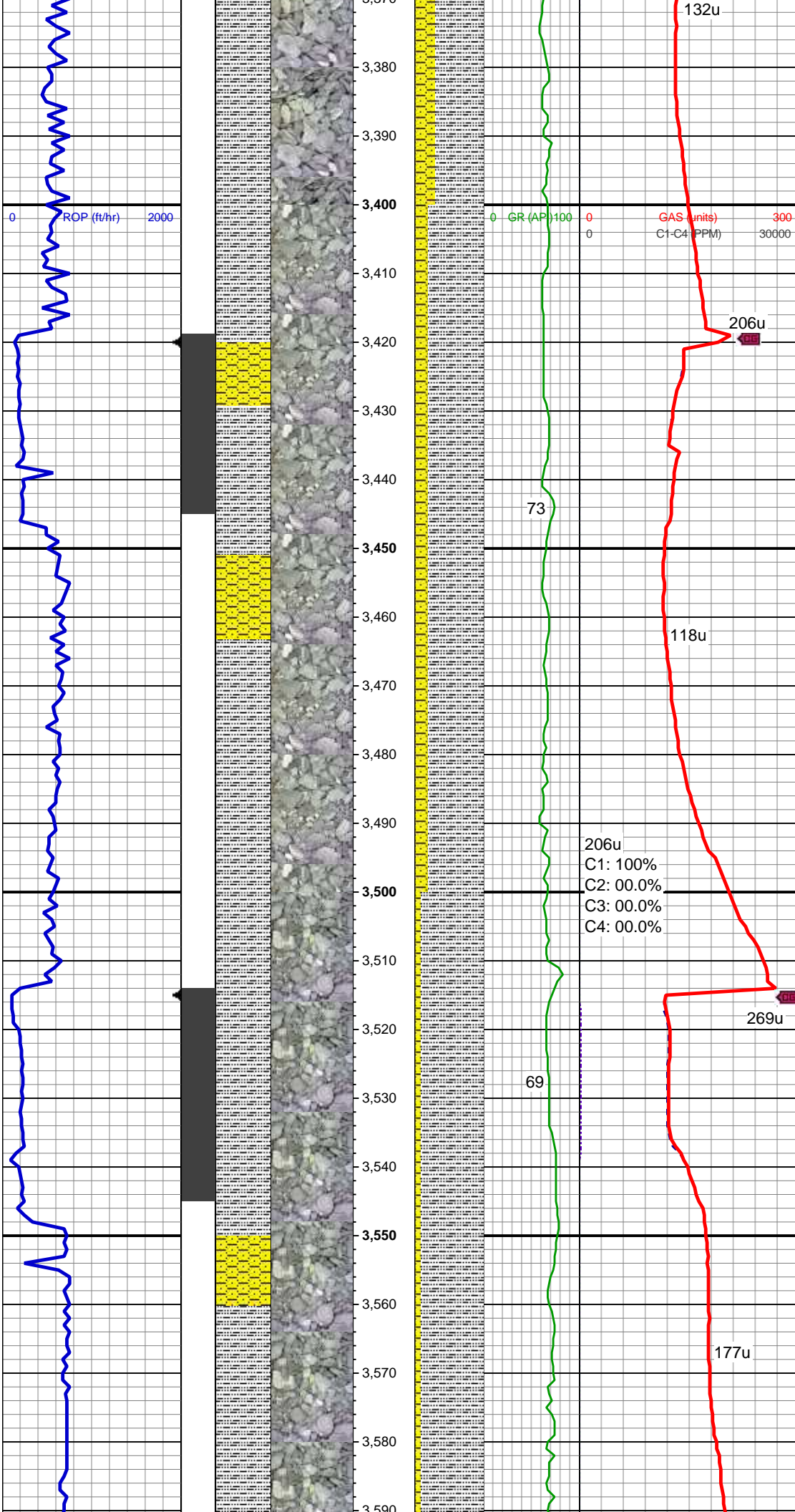
MUD WT 8.70 VIS 31

SLTY SH: med gy, tr gry blk, sft, sb blk
- sb plty, arg - rthy mtx, non calc
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb rnd - sb ang, mod - w srt, arg cmt
SS: lt gy - wh, occ lt brn - tan, tr trns, s&p, vf-f gr, sb rnd-sb ang, p-mod srt, arg cmt

MD: 3,270'
TVD: 3,217.36'
Inclination: 11.9 °
Azimuth: 115.2 °
VS: -103.18'

SLTY SH: med gy, tr gry blk, sft, sb blk
- sb plty, arg - rthy mtx, non calc
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb rnd - sb ang, mod - w srt, arg cmt

MD: 3,365'
TVD: 3,310.11'
Inclination: 12.1 °



Inclination: 13.1°
Azimuth: 110.9°
VS: -108.43'

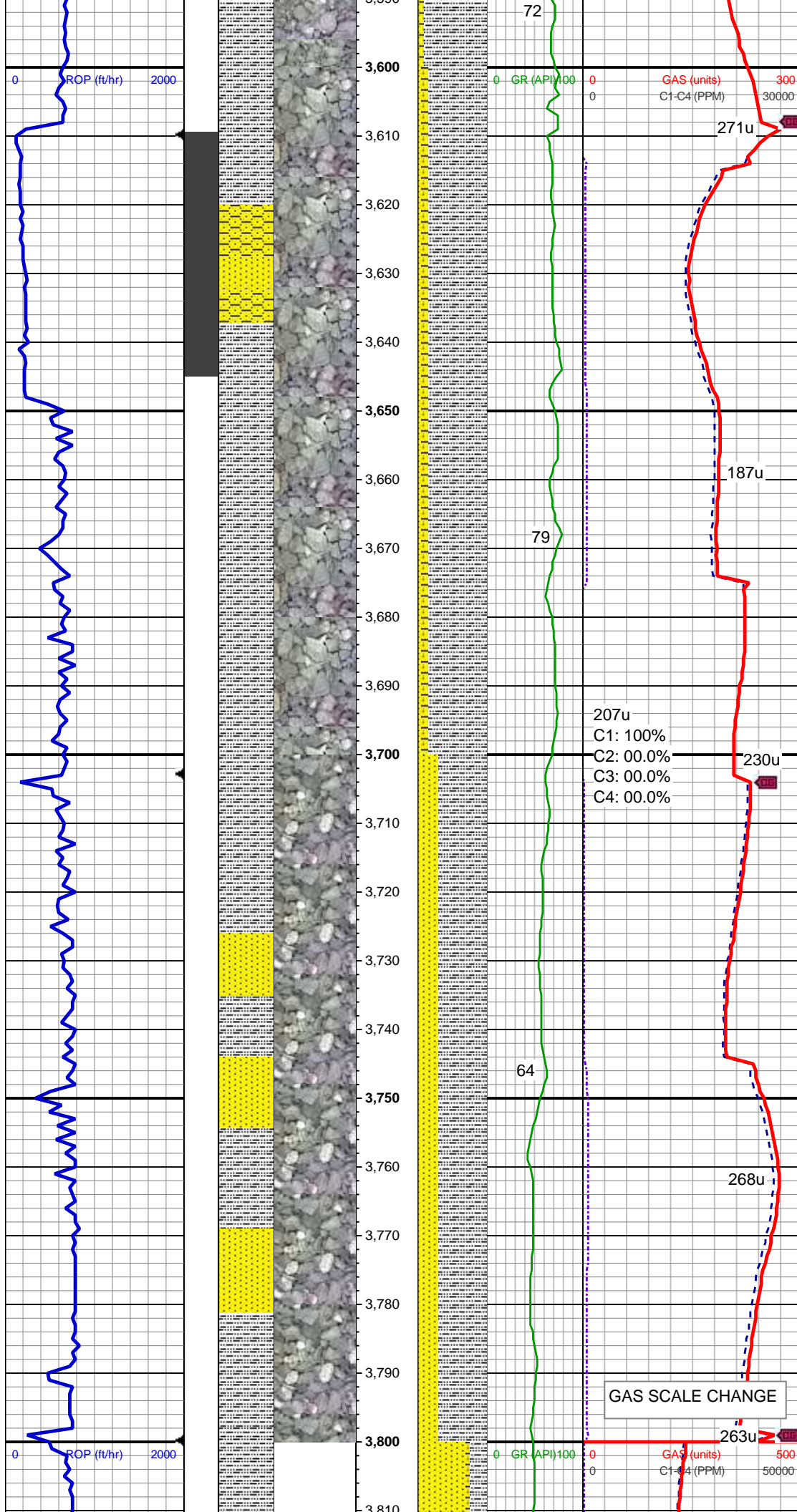
SLTY SH: med gy, tr gry blk, sft, sb blk -
sb plty, arg - rthy mtx, non calc
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt, tr ss

MD: 3,460'
TVD: 3,402.57'
Inclination: 13.4°
Azimuth: 116.4°
VS: -114.26'

206u
C1: 100%
C2: 00.0%
C3: 00.0%
C4: 00.0%

SLTY SH: med gy, tr gry blk, sft, sb blk -
sb plty, arg - rthy mtx, non calc
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt

MD: 3,555'
TVD: 3,494.92'
Inclination: 13.7°
Azimuth: 114.1°
VS: -120.82'



MD: 3,650'
TVD: 3,586.9'
Inclination: 15.2 °
Azimuth: 111.9°
VS: -126.89'

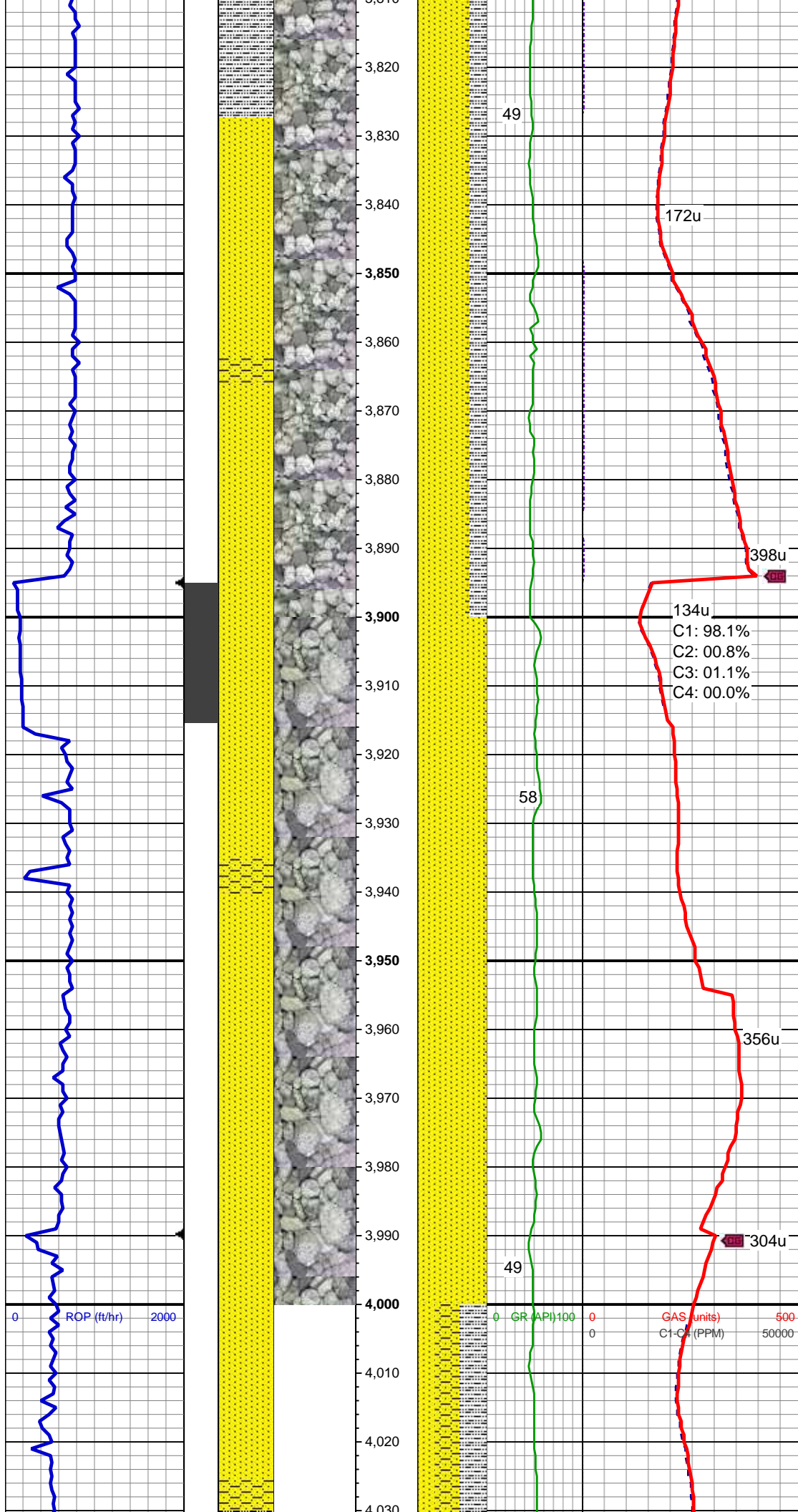
SLTY SH: med gy, tr gry blk, sft, sb blkly -
sb plty, arg - rthy mtz, non calc
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt
SS: lt gy - wh, tr trnsl, s&p, vf-f gr, sb
rnd-sb ang, p-mod srt, tr glau, tr diss
pyr, arg cmt

MUD WT 8.80 VIS 33

MD: 3,745'
TVD: 3,678.75'
Inclination: 14.4 °
Azimuth: 113.5°
VS: -133'

SLTY SH: med gy, tr gry blk, sft, sb blkly -
sb plty, arg - rthy mtz, non calc
SS: lt gy - wh, tr trnsl, s&p, vf-f gr, sb
rnd-sb ang, p-mod srt, tr glau, tr diss
pyr, arg cmt

GAS SCALE CHANGE



MD: 3,841'
TVD: 3,771.55'
Inclination: 15.2 °
Azimuth: 115.9°
VS: -140'

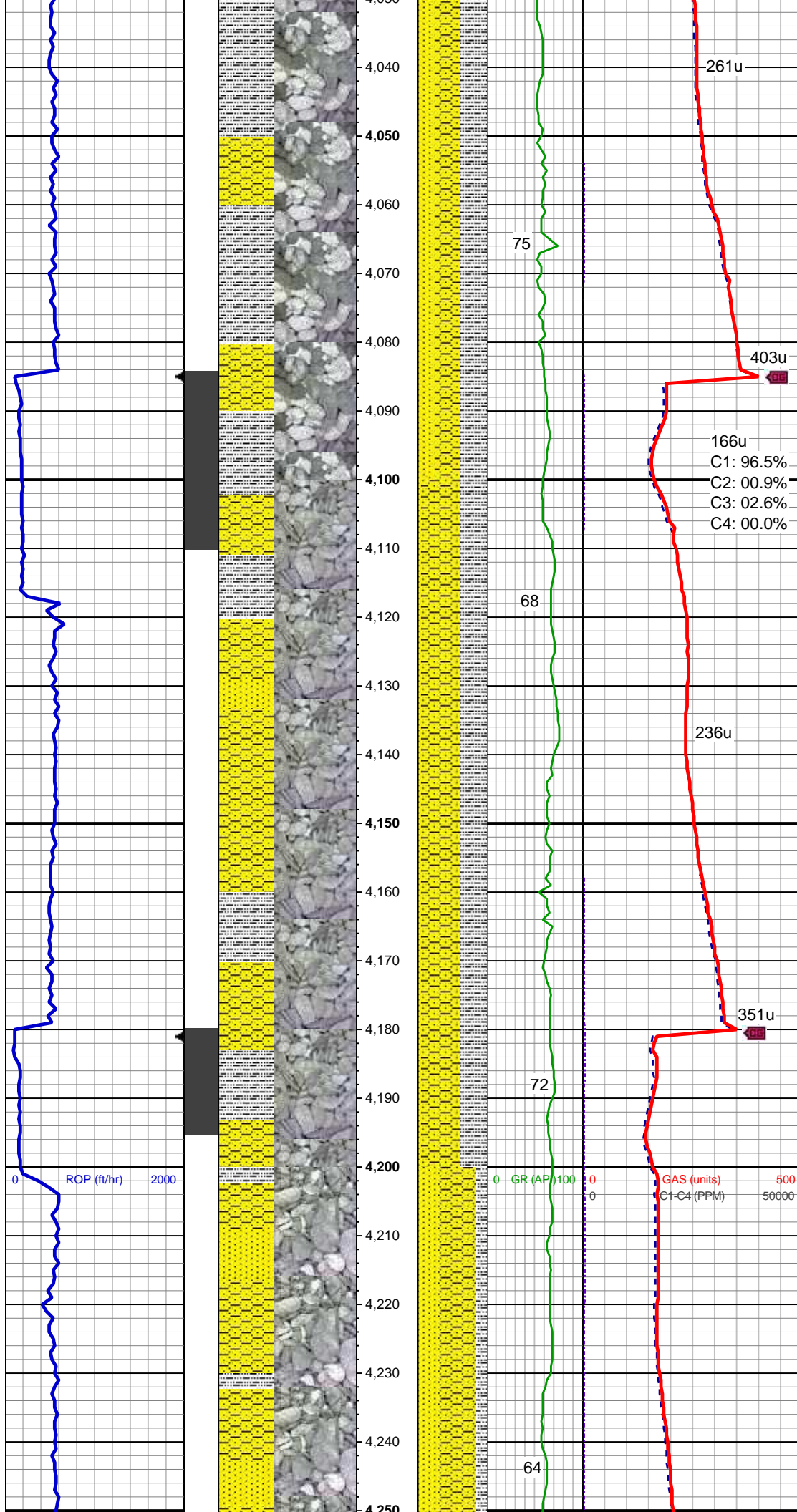
SS: lt gy - wh, tr trnsl, s&p, vf-f gr, sb
rnd-sb ang, p-mod srt, tr glau, tr dissm
pyr, arg cmt
SLTY SH: med gy, tr gry blk, sft, sb blk -
sb plty, arg - rthy mt, non calc
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt

MD: 3,936'
TVD: 3,862.96'
Inclination: 16.4 °
Azimuth: 110.3°
VS: -146.64'

SS: lt gy - wh, tr trnsl, s&p, vf-f gr, sb
rnd-sb ang, p-mod srt, tr glau, arg cmt
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt

MD: 4,031'
TVD: 3,953.9'
Inclination: 17.1 °
Azimuth: 109.5°

7 Azimuth: 105.0
VS: -152.23'



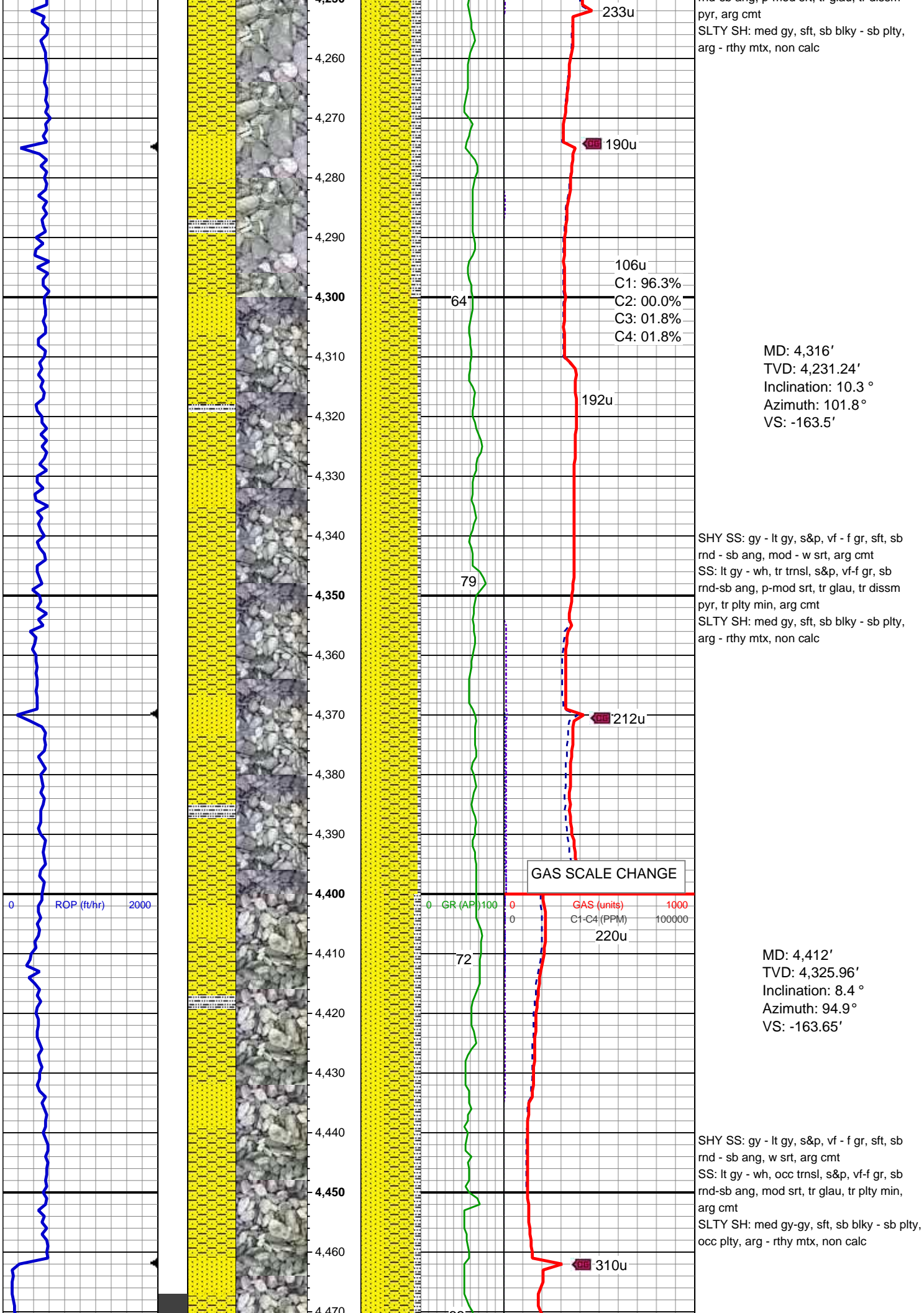
SLTY SH: med gy, tr gry blk, sft, sb blk -
sb plty, arg - rthy mtx, non calc
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt
SS: lt gy - wh, tr trns, s&p, vf-f gr, sb
rnd-sb ang, p-mod srt, tr glau, tr diss
pyr, arg cmt

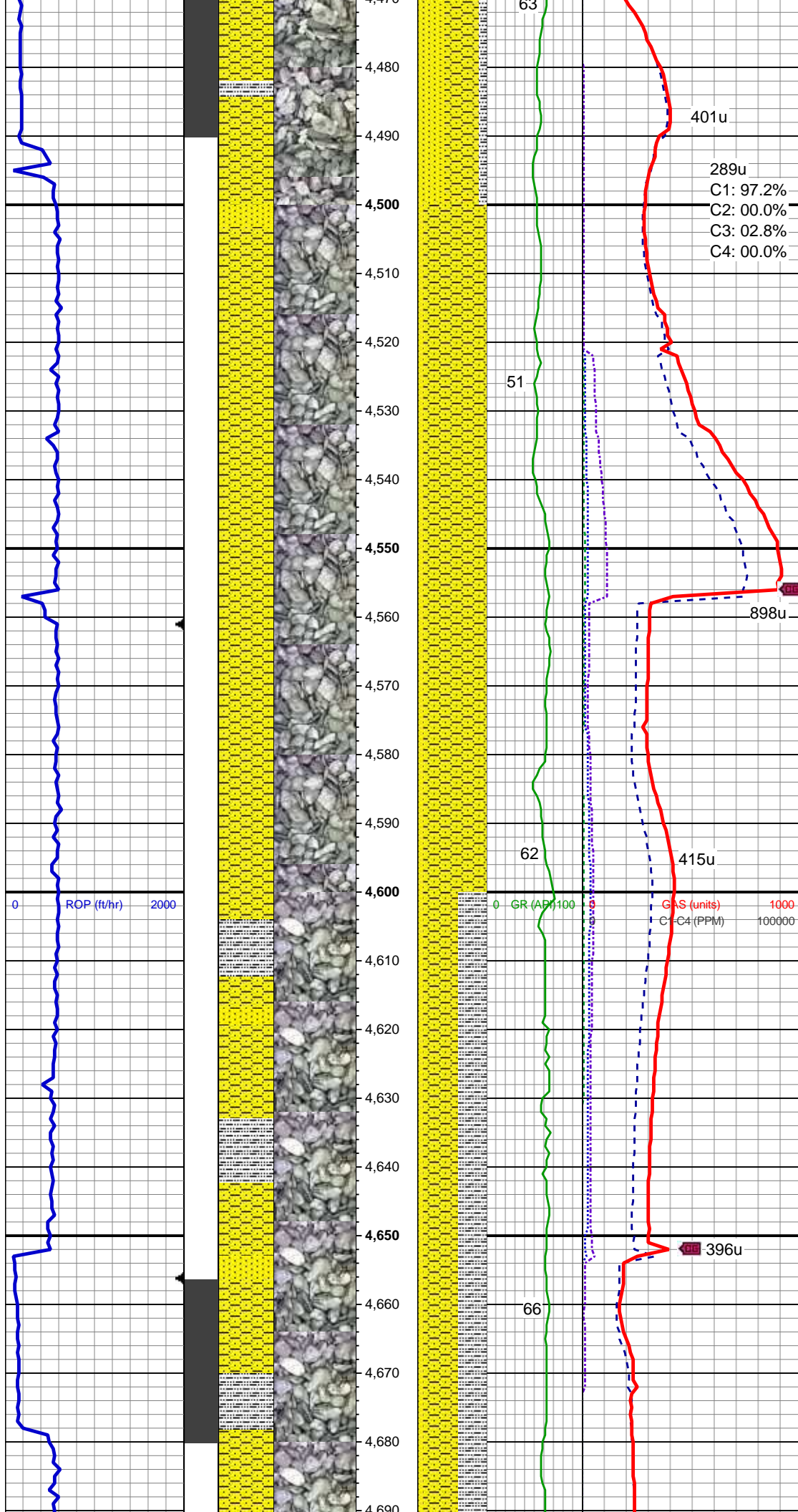
MD: 4,126'
TVD: 4,045.35'
Inclination: 14.2 °
Azimuth: 111.9 °
VS: -157.76'

SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt
SLTY SH: med gy, sft, sb blk - sb plty,
arg - rthy mtx, non calc
SS: lt gy - wh, tr trns, s&p, vf-f gr, sb
rnd-sb ang, p-mod srt, tr glau, tr diss
pyr, arg cmt

MD: 4,221'
TVD: 4,137.96'
Inclination: 11.5 °
Azimuth: 105.4 °
VS: -161.75'

SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod - w srt, arg cmt
SS: lt gy - wh, tr trns, s&p, vf-f gr, sb
rnd-sb ang, p-mod srt, tr glau, tr diss



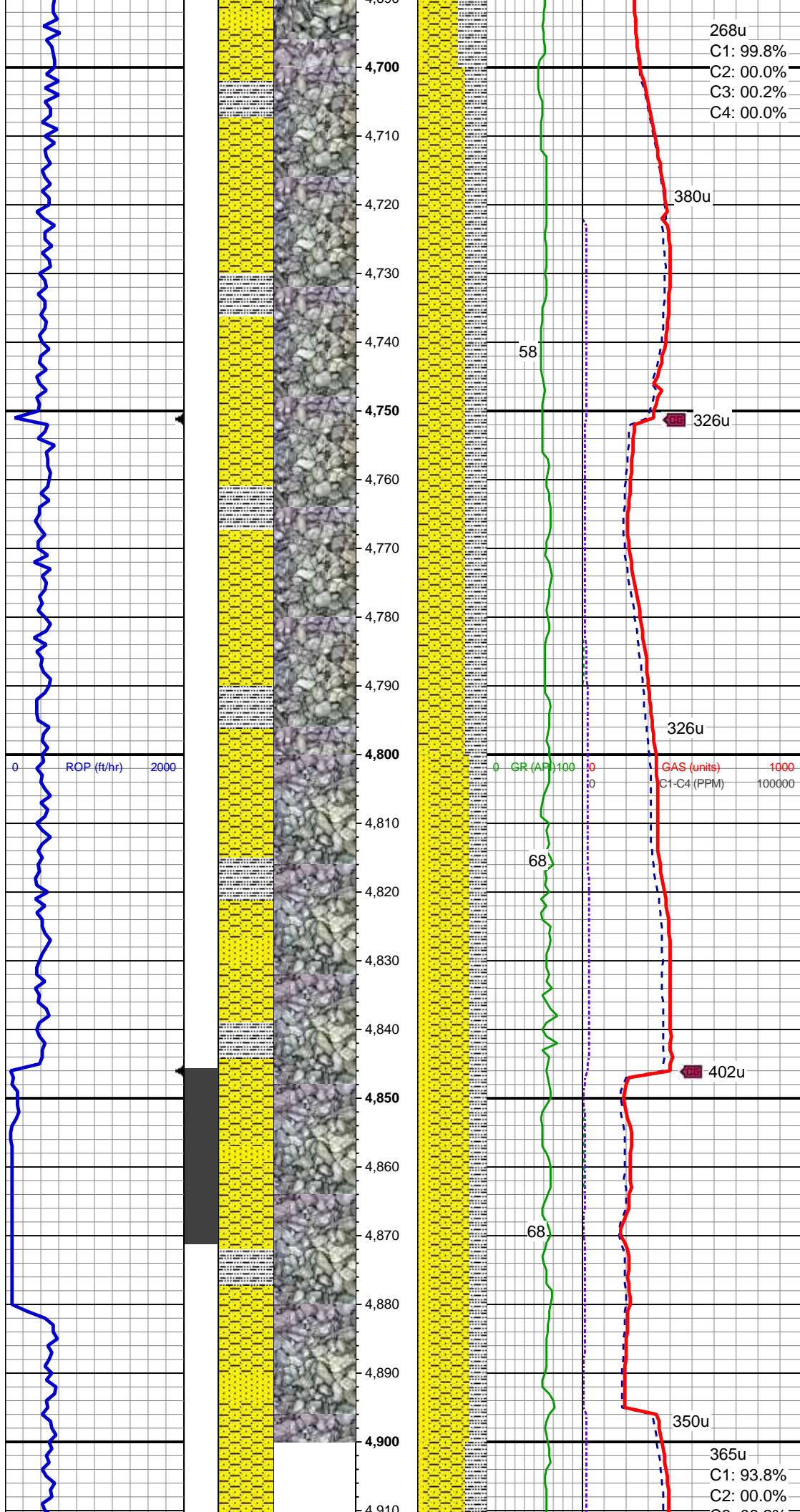


MD: 4,507'
TVD: 4,420.14'
Inclination: 6.6 °
Azimuth: 108.5 °
VS: -164.23'

SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, w srt, arg cmt
SS: lt gy - wh, tr trnsl, s&p, vf-f gr, sb
rnd-sb ang, mod srt, occ glau, tr plty min,
arg cmt, slty sh

MD: 4,602'
TVD: 4,514.59'
Inclination: 5.8 °
Azimuth: 99.4 °
VS: -165.32'

SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb ang, mod-w srt, arg cmt
SS: lt gy - wh, s&p, vf-f gr, sb rnd-sb ang,
p-mod srt, tr glau, arg cmt
SLTY SH: med gy-gy, sft, sb blkly - sb plty,
tr plty, arg - rthy mtz, non calc



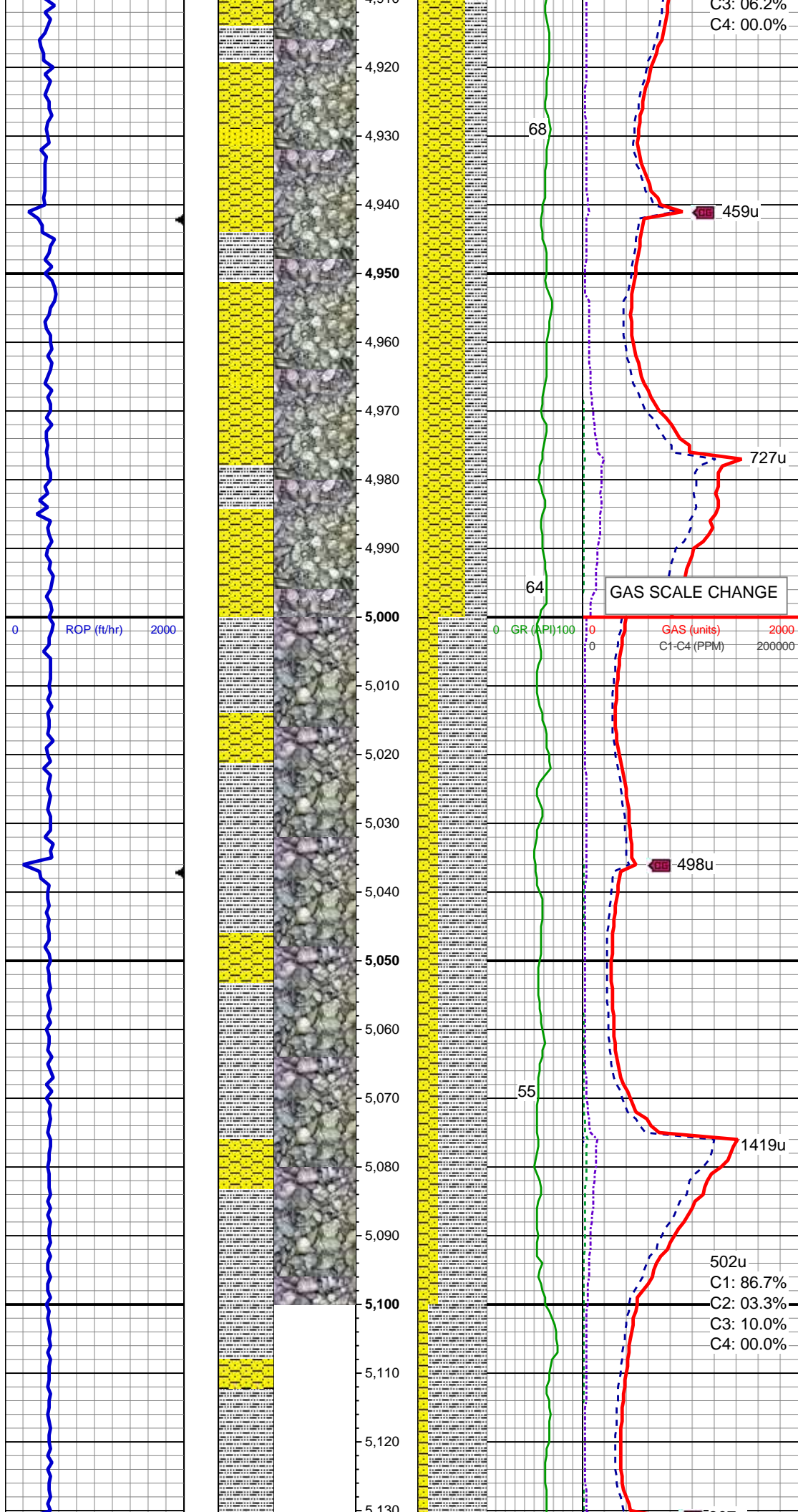
MD: 4,697'
TVD: 4,609.22'
Inclination: 4.4 °
Azimuth: 119.7 °
VS: -166.77'

SHY SS: gy - lt gy, tr med gy, s&p, vf - f
gr, sft, sb rnd - sb blkly, mod-w srt, arg cmt
SLTY SH: med gy-gy, sft, sb blkly - sb plty,
occ plty, arg - rthy mtx, non calc, occ ss

MD: 4,792'
TVD: 4,703.96'
Inclination: 4.1 °
Azimuth: 120.8 °
VS: -169.42'

SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb blkly, mod-w srt, arg cmt
SLTY SH: med gy-gy, sft, sb blkly - sb plty,
occ plty, arg - rthy mtx, non calc
SS: lt gy - wh, tr trnsf, s&p, vf-f gr, sb
rnd-sb blkly, p-mod srt, occ glau, arg cmt

MD: 4,887'
TVD: 4,798.83'
Inclination: 1.5 °
Azimuth: 107.1 °
VS: -170.93'

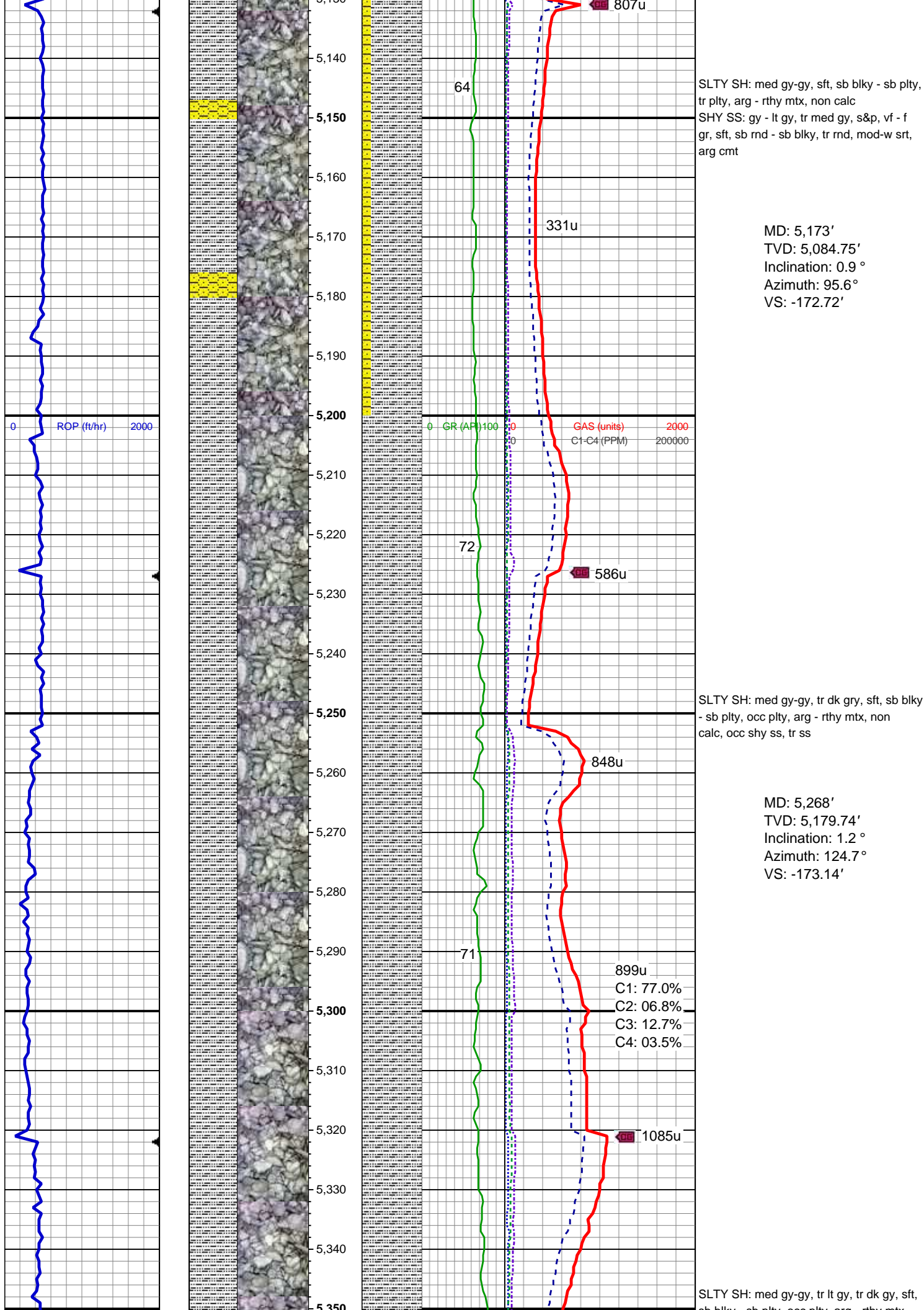


SHY SS: gy - med gy, s&p, vf - f gr, sft, sb
rnd - sb blkly, mod-w srt, arg cmt
SLTY SH: med gy-gy, tr dk gy, sft, sb blkly
- sb plty, occ plty, arg - rthy mtx, non
calc
SS: lt gy - wh, s&p, vf-f gr, sb rnd-sb blkly,
p-mod srt, occ glau, arg cmt

MD: 4,983'
TVD: 4,894.8'
Inclination: 1.4 °
Azimuth: 115.3 °
VS: -171.47'

SLTY SH: med gy-gy, sft, sb blkly - sb plty,
occ plty, arg - rthy mtx, non calc, tr ss
SHY SS: gy - lt gy, s&p, vf - f gr, sft, sb
rnd - sb blkly, mod-w srt, arg cmt

MD: 5,078'
TVD: 4,989.77'
Inclination: 1.5 °
Azimuth: 120.3 °
VS: -172.29'



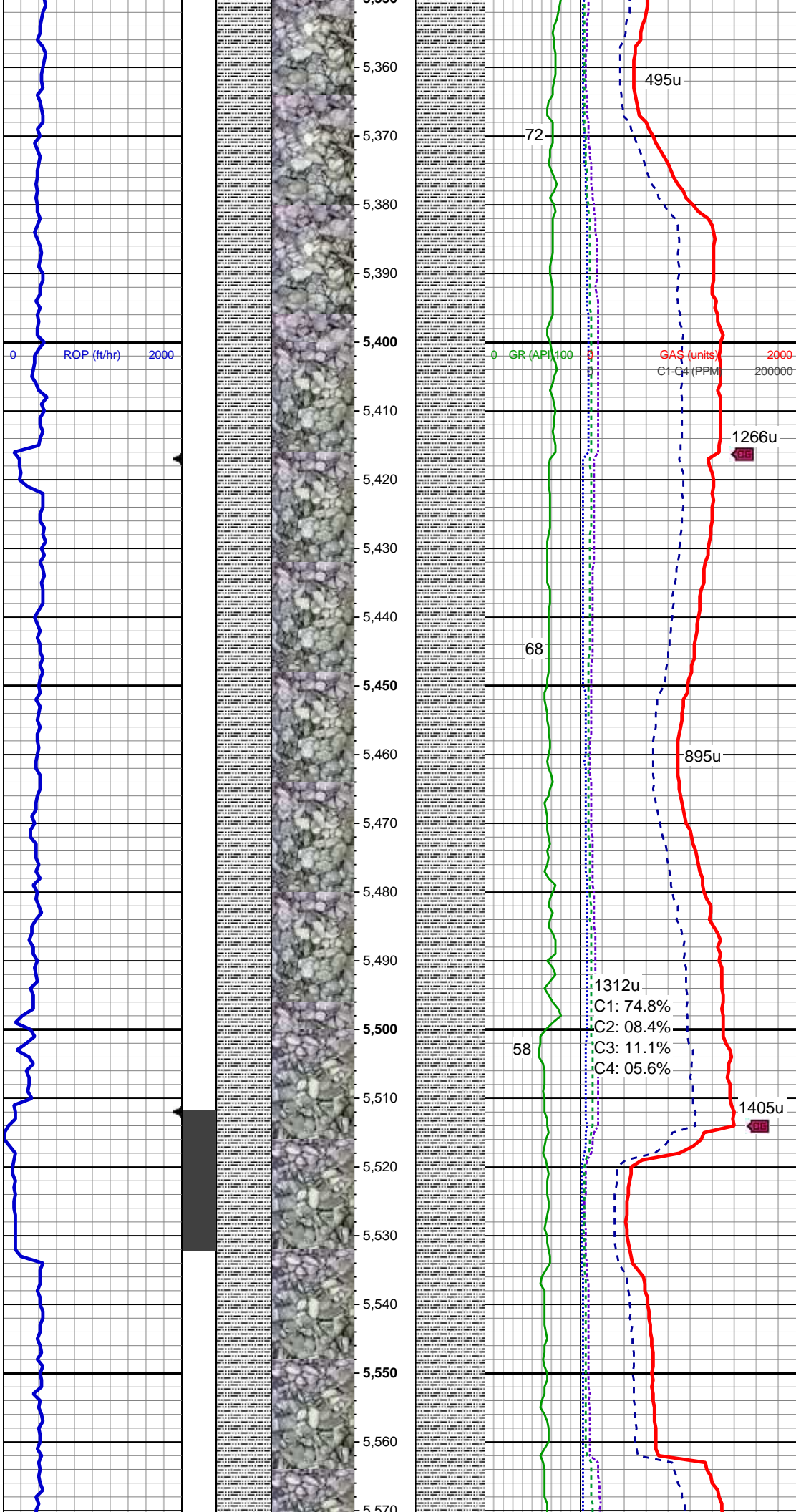
SLTY SH: med gy-gy, sft, sb blkly - sb plty,
tr plty, arg - rthy mtx, non calc
SHY SS: gy - lt gy, tr med gy, s&p, vf - f
gr, sft, sb rnd - sb blkly, tr rnd, mod-w srt,
arg cmt

MD: 5,173'
TVD: 5,084.75'
Inclination: 0.9 °
Azimuth: 95.6 °
VS: -172.72'

SLTY SH: med gy-gy, tr dk gry, sft, sb blkly
- sb plty, occ plty, arg - rthy mtx, non
calc, occ shy ss, tr ss

MD: 5,268'
TVD: 5,179.74'
Inclination: 1.2 °
Azimuth: 124.7 °
VS: -173.14'

SLTY SH: med gy-gy, tr lt gy, tr dk gy, sft,
sb blkly, sb plty, occ plty, arg - rthy mtx



SD blkly - sb plty, occ plty, arg - rthy mtz, non calc, tr shy ss

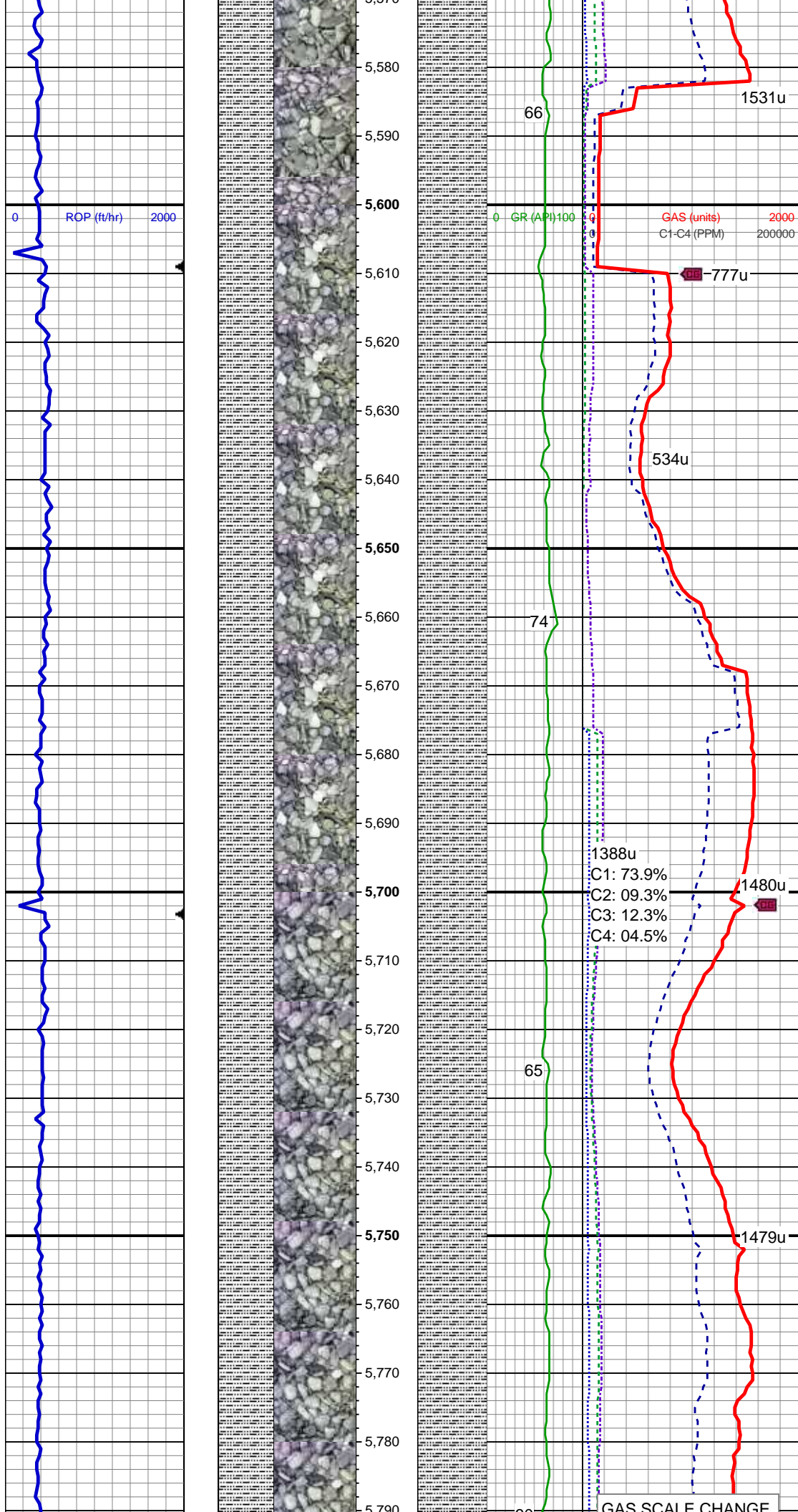
MD: 5,363'
TVD: 5,274.72'
Inclination: 0.8 °
Azimuth: 136.6 °
VS: -174.01'

SLTY SH: lt gy-gy, occ med gy, sft, sb blkly - sb plty, occ plty, arg - rthy mtz, non calc, tr shy ss, occ ss

MD: 5,458'
TVD: 5,369.71'
Inclination: 1.1 °
Azimuth: 111.9 °
VS: -174.64'

SLTY SH: med gy-gy, occ lt gy, sft, sb blkly - sb plty, occ plty, arg - rthy mtz, non calc, occ shy ss, tr ss

MD: 5,554'
TVD: 5,465.7'
Inclination: 0.2 °
Azimuth: 354.1 °



VS: -174.72'

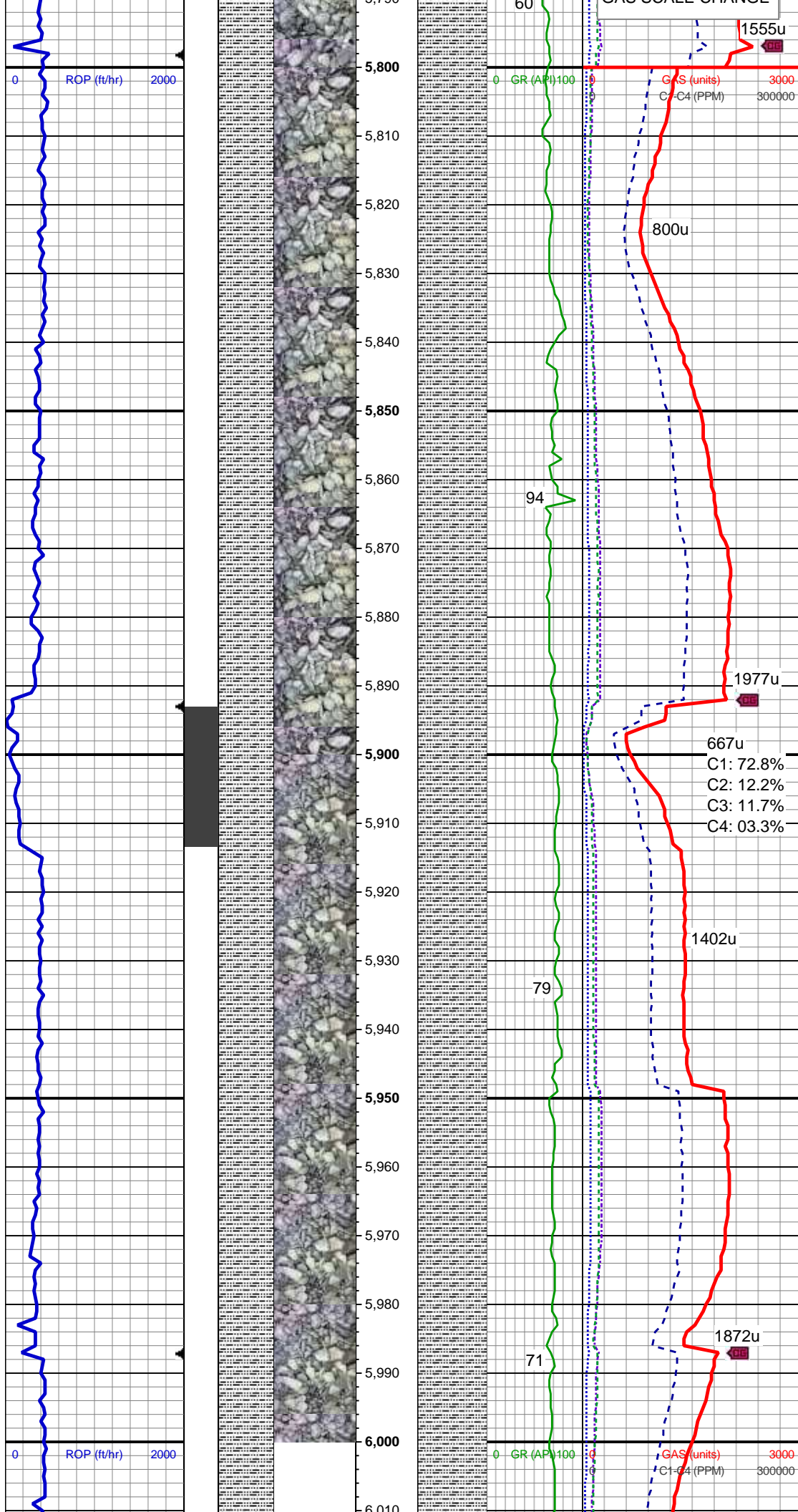
MUD WT 9.90 VIS 50

MD: 5,649'
TVD: 5,560.7'
Inclination: 1 °
Azimuth: 25.5 °
VS: -173.81'

SLTY SH: lt gy-gy, tr med gy, sft, sb blkly
- sb plty, occ plty, arg - rthy mtx, non calc

MD: 5,744'
TVD: 5,655.69'
Inclination: 0.4 °
Azimuth: 37.2 °
VS: -172.72'

SLTY SH: lt gy-gy, sft, sb blkly - sb plty, tr
plty, arg - rthy mtx, non calc, tr ss



MD: 5,839'
TVD: 5,750.69'
Inclination: 0.6 °
Azimuth: 173.3 °
VS: -172.9'

SLTY SH: lt gy-gy, occ med-dk gy, sft, sb
blky - sb plty, occ plty, arg - rthy mtx, tr
shy ss, non calc

MD: 5,933'
TVD: 5,844.68'
Inclination: 1.3 °
Azimuth: 344.7 °
VS: -172.4'

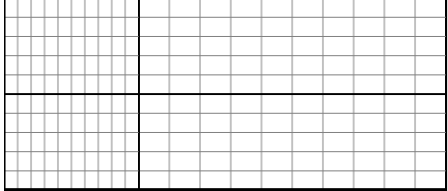
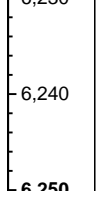
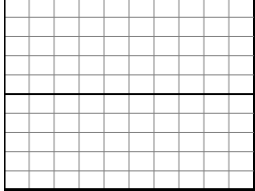
SLTY SH: lt gy-gy, tr med gy, sft, sb blky
- sb plty, occ plty, arg - rthy mtx, tr shy ss,
non calc

MD: 6,028'
TVD: 5,939.66'
Inclination: 1 °
Azimuth: 11.8 °
VS: -170.59'

MD: 6,123'
TVD: 6,034.65'
Inclination: 0.6 °
Azimuth: 7.2°
VS: -169.28'

TD @ 6,202' MD
05/17/2014 @ 10:36 PM

Thank you for choosing



Columbine Logging Inc.

