

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name Eagle E14-63-1HN

Location Sec. 14 T6N R65W

State COLORADO

County WELD

Country USA

Rig Number PRECISION #829

API Number 05-123-38862

AFE # 139580

Region DJ BASIN

Field WATTENBERG

Spud Date 7/13/2014

Drilling Completed 7/21/2014

Surface Coordinates 40.4799, -104.6382

Ground Elevation 4736'

K.B. Elevation 4752'

Logged Interval 1000' **To** 12743'

Total Depth 12743'

Formation NIOBRARA C CHALK

Type of Drilling Fl... FW LSND

Operator

Company NOBLE ENERGY INC.

Address 1625 Broadway
Suite 2200
Denver, CO 80202

Geologist

Name Holly Duncan

Company Noble Energy, Inc.

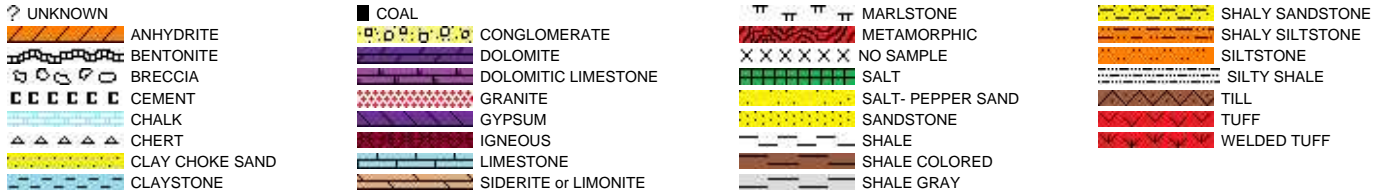
Address 1625 BROADWAY
DENVER, CO 80202

Other

Terry Acomb

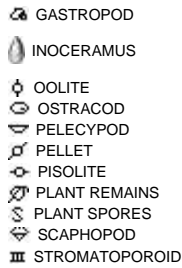
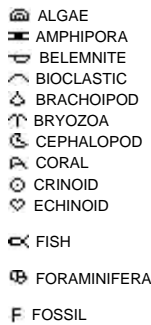
Columbine Logging
2385 S Lipan St
Denver, CO 80223

Rock Types

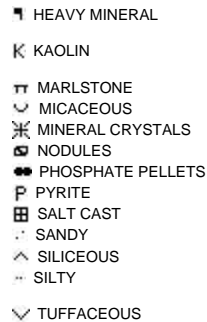
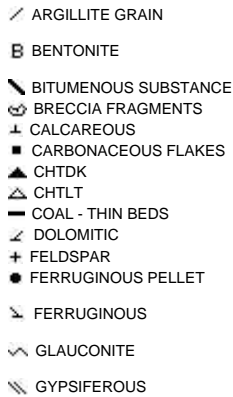
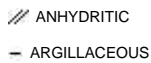


Accessories

Fossils



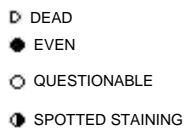
Minerals



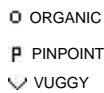
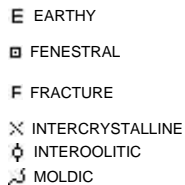
Stringer

Other Symbols

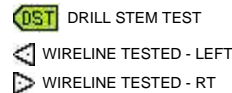
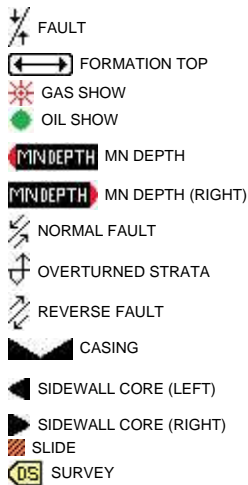
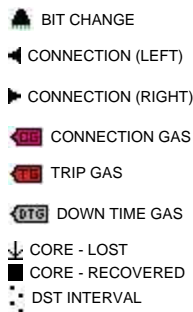
Oil Show



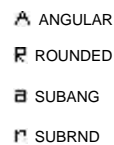
Porosity



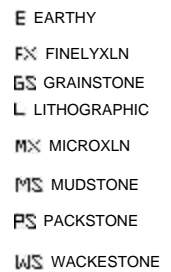
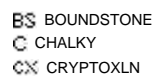
Engineering



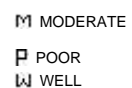
Rounding

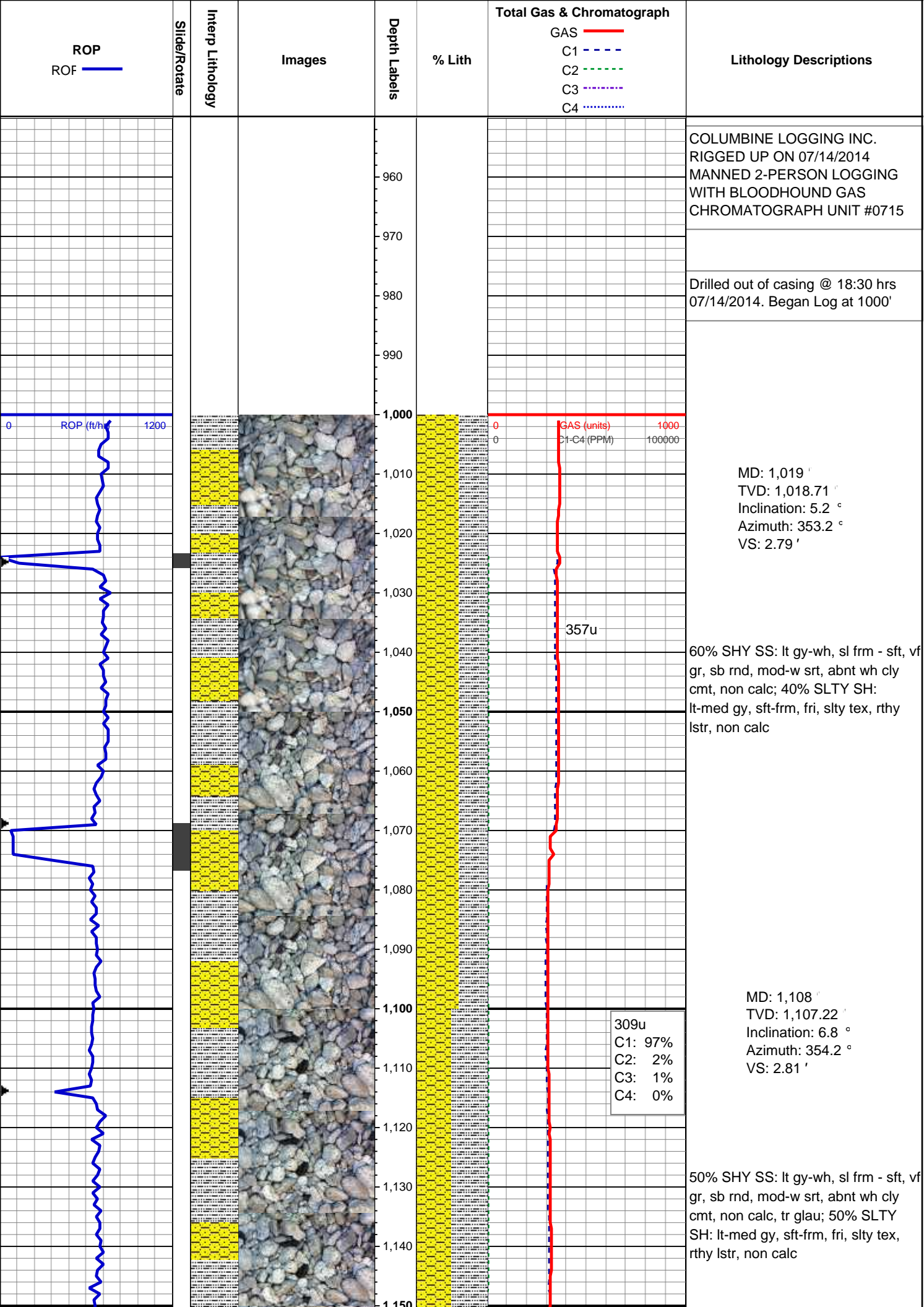


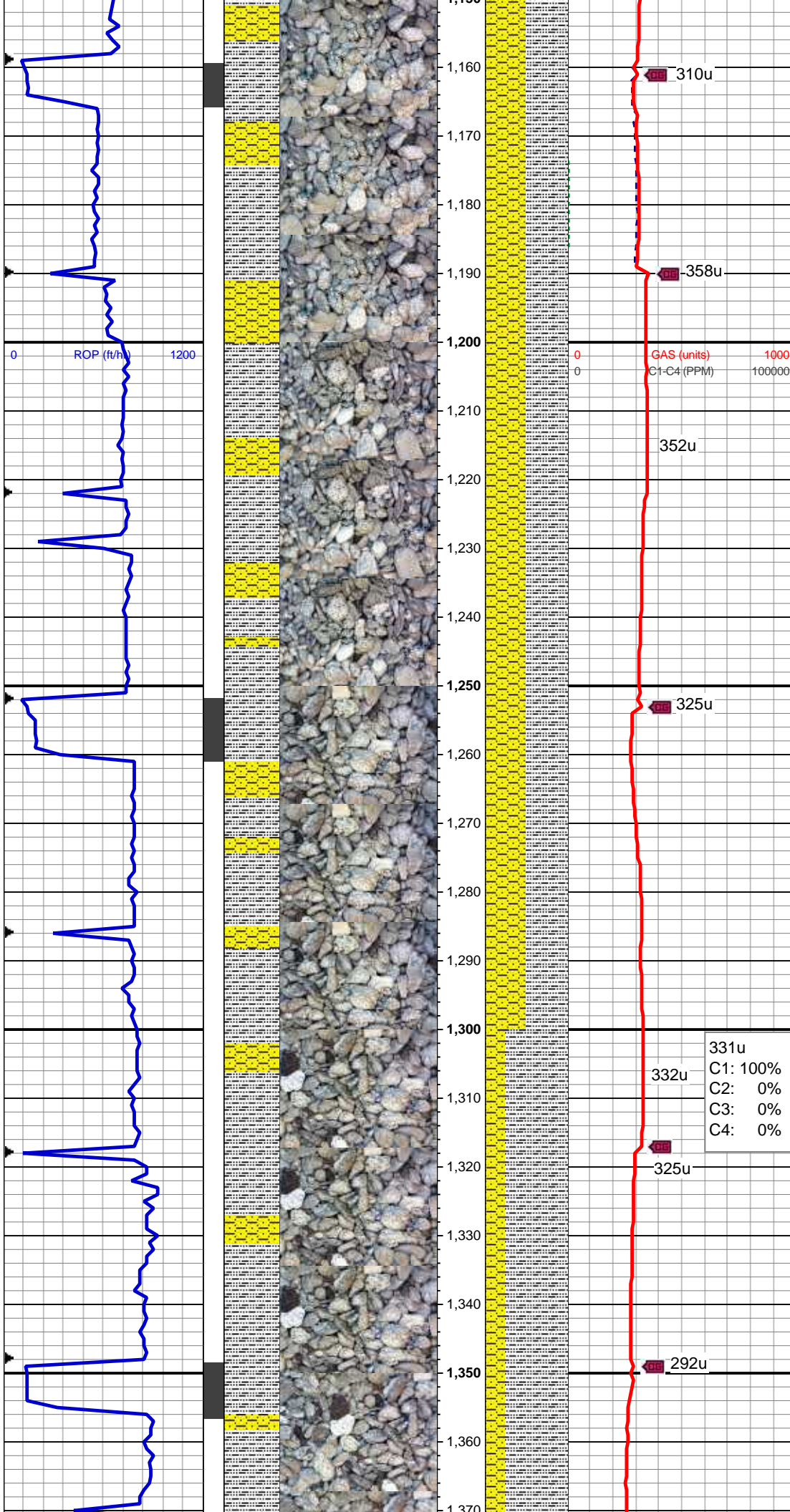
Textures



Sorting







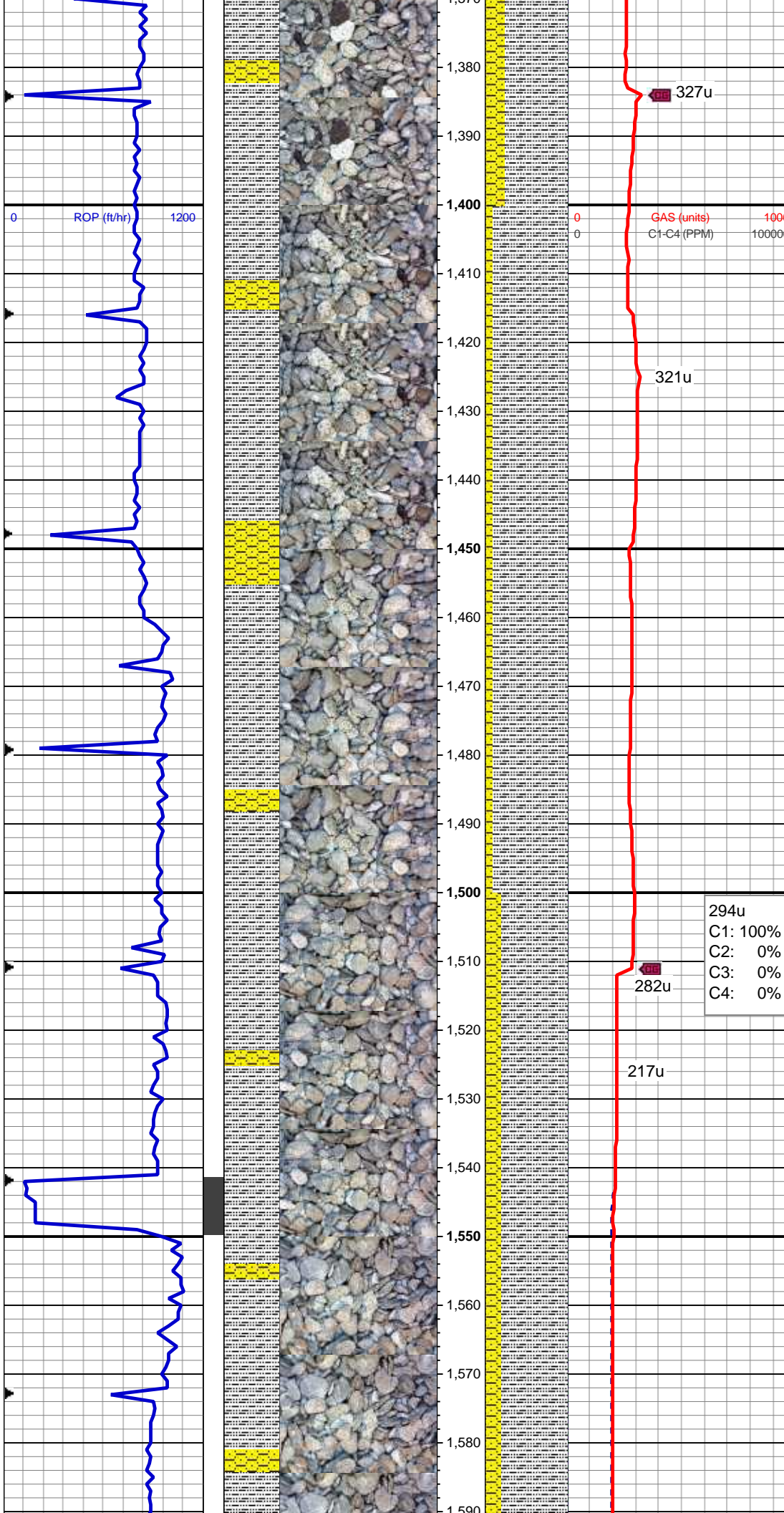
MD: 1,203 '
TVD: 1,201.41 '
Inclination: 8.2 °
Azimuth: 346.4 °
VS: 2.02 '

MW 8.5 / VIS 27

50% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc, tr glau; 50% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc

MD: 1,298 '
TVD: 1,295.21 '
Inclination: 10 °
Azimuth: 337.5 °
VS: -1.12 '

75% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc; 25% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc, tr glau



MD: 1,397 '
TVD: 1,392.64 '
Inclination: 10.5 °
Azimuth: 323.9 °
VS: -7.98 '

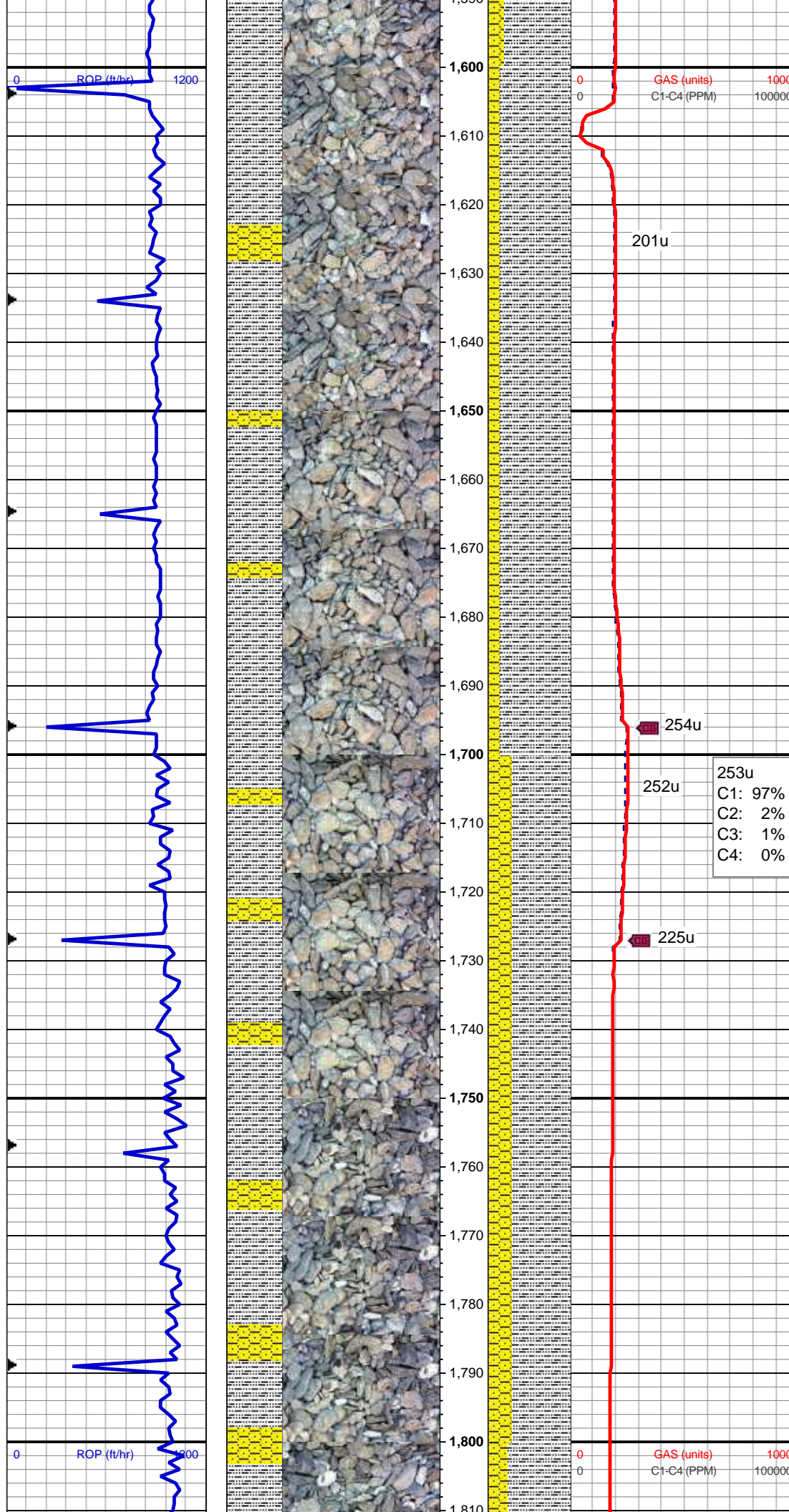
90% SLTY SH: lt-med gy, sft frm, fri,
sly tex, rthy lstr, non calc; 10% SHY
SS: lt gy-wh, sl frm - sft, vf gr, sb
rnd, mod-w srt, abnt wh cly cmt,
non calc

MD: 1,491 '
TVD: 1,485.09 '
Inclination: 10.4 °
Azimuth: 325.9 °
VS: -16.18 '

294u
C1: 100%
C2: 0%
C3: 0%
C4: 0%

80% SLTY SH: lt-med gy, sft frm, fri,
sly tex, rthy lstr, non calc; 20% SHY
SS: lt gy-wh, sl frm - sft, vf gr, sb
rnd, mod-w srt, abnt wh cly cmt,
non calc

MD: 1,583 '
TVD: 1,575.41 '
Inclination: 11.5 °
Azimuth: 318.4 °
VS: -25.33 '

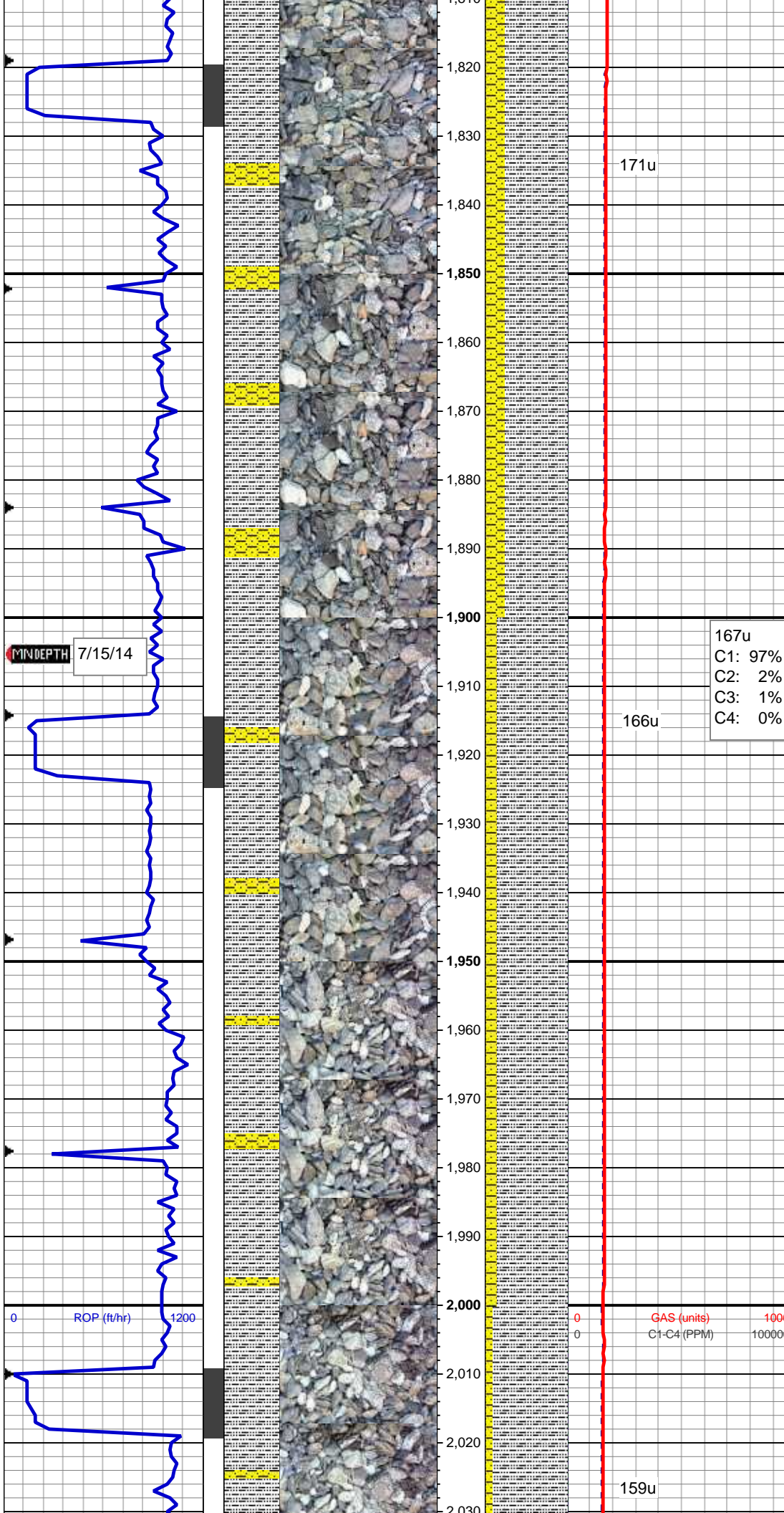


85% SLTY SH: lt-med gy, sft frm, fri,
sly tex, rthy lstr, non calc; 15% SHY
SS: lt gy-wh, sl frm - sft, vf gr, sb
rnd, mod-w srt, abnt wh cly cmt,
non calc

MD: 1,676 '
TVD: 1,666.62 '
Inclination: 11.1 °
Azimuth: 311.3 °
VS: -36.7 '

70% SLTY SH: lt-med gy, sft frm, fri,
sly tex, rthy lstr, non calc; 30% SHY
SS: lt gy-wh, sl frm - sft, vf gr, sb
rnd, mod-w srt, abnt wh cly cmt,
non calc

MD: 1,770 '
TVD: 1,758.98 '
Inclination: 10.3 °
Azimuth: 305.7 °
VS: -49.03 '



75% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc; 25% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc

MD: 1,864 '
TVD: 1,851.48 '
Inclination: 10.2 °
Azimuth: 304.3 °
VS: -61.58 '

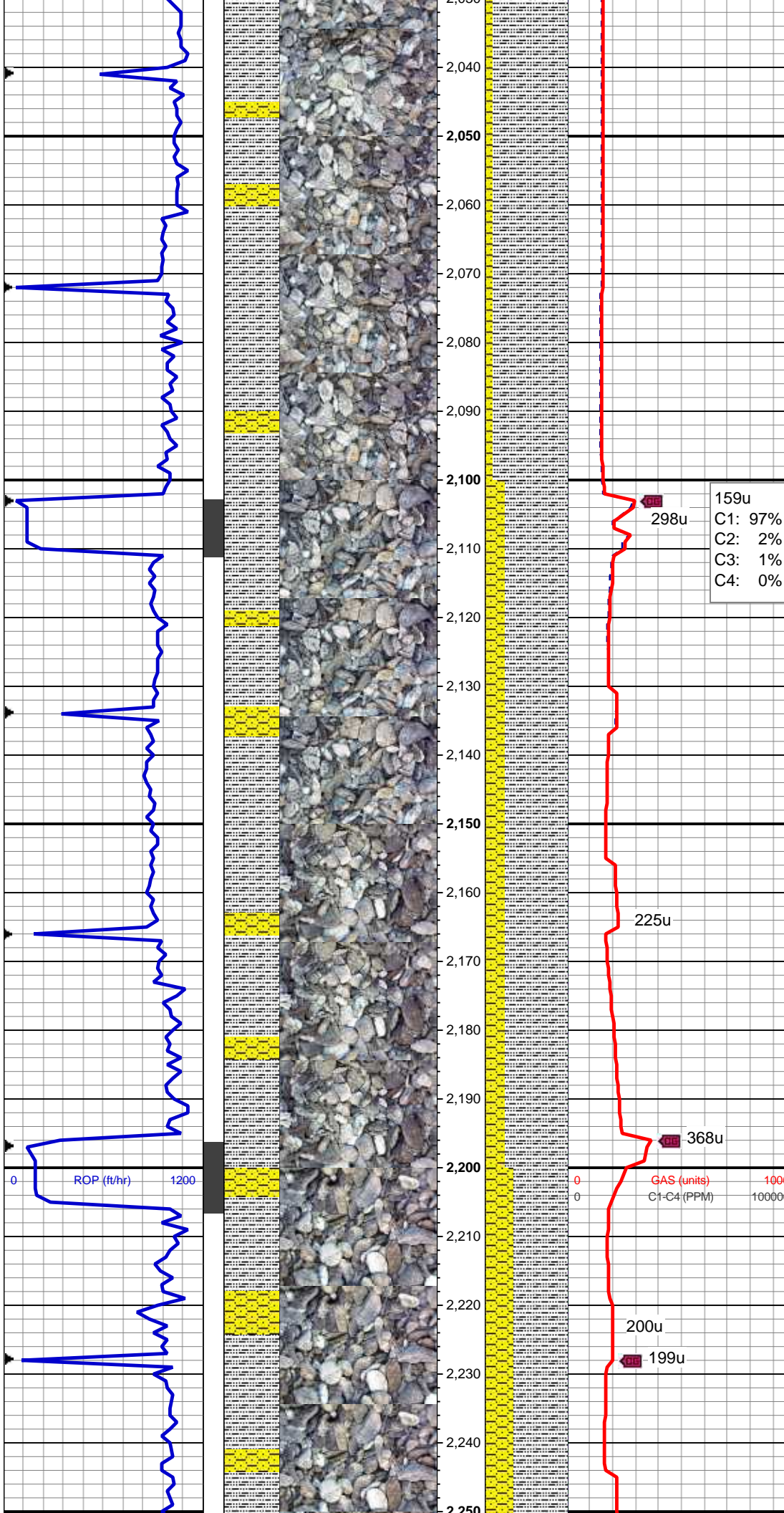
167u
C1: 97%
C2: 2%
C3: 1%
C4: 0%

85% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc; 15% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc

MD: 1,959 '
TVD: 1,944.85 '
Inclination: 11.1 °
Azimuth: 307.7 °
VS: -74.53 '

MW 8.5 / VIS 27

90% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc; 10% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb



rnd, mod-w srt, abnt wh cly cmt, non calc

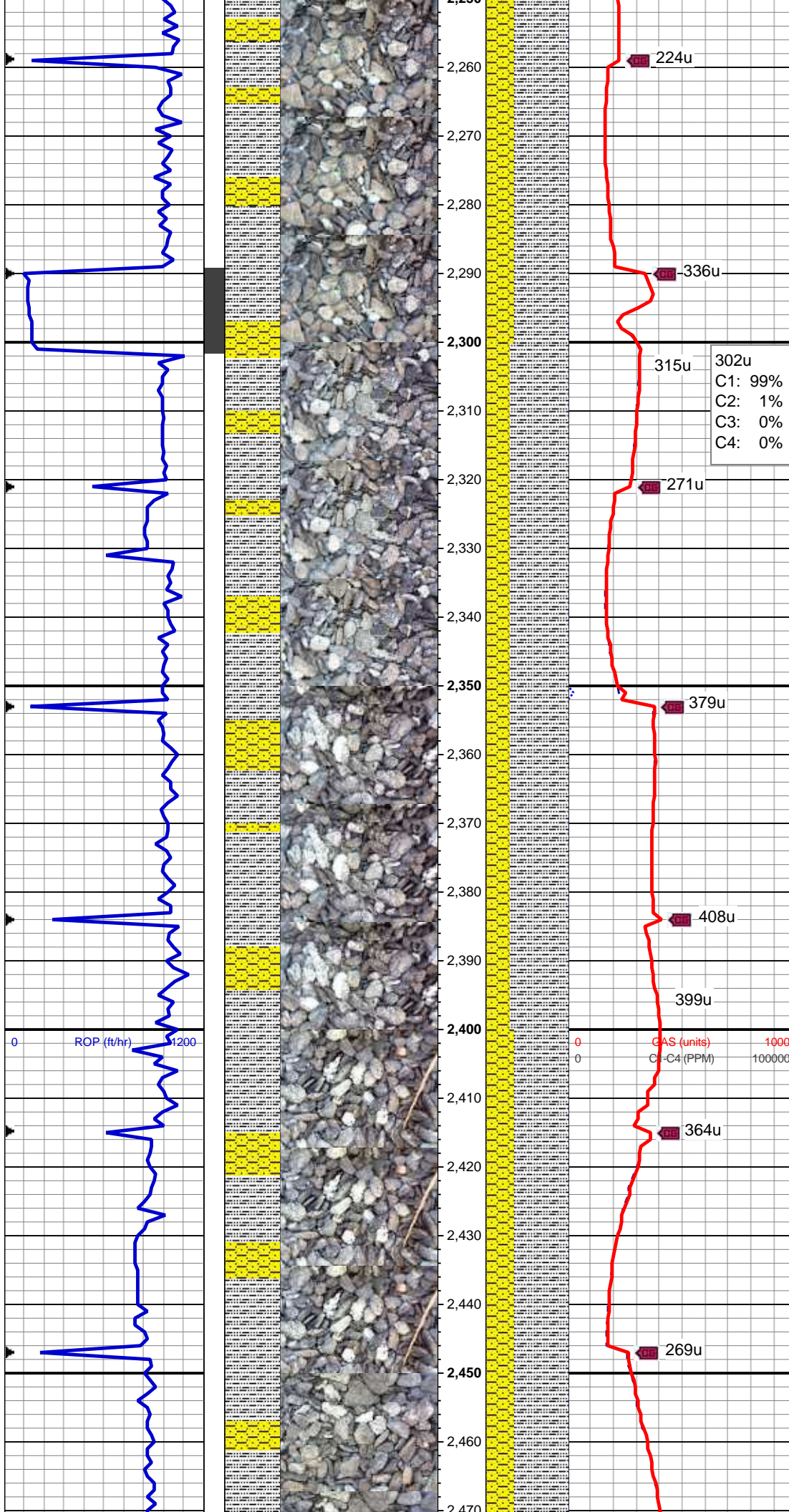
MD: 2,031 '
TVD: 2,035.1 '
Inclination: 11.3 °
Azimuth: 311.2 °
VS: -86.97 '

75% SLTY SH: lt-med gy, sft frm, fri, slty tex, rthy lstr, non calc; 25% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc

MD: 2,145 '
TVD: 2,127.26 '
Inclination: 11.4 °
Azimuth: 312.9 °
VS: -99.25 '

MD: 2,238 '
TVD: 2,218.49 '
Inclination: 11 °
Azimuth: 315.8 °
VS: -110.68 '

65% SLTY SH: lt med gy, sft frm, fri



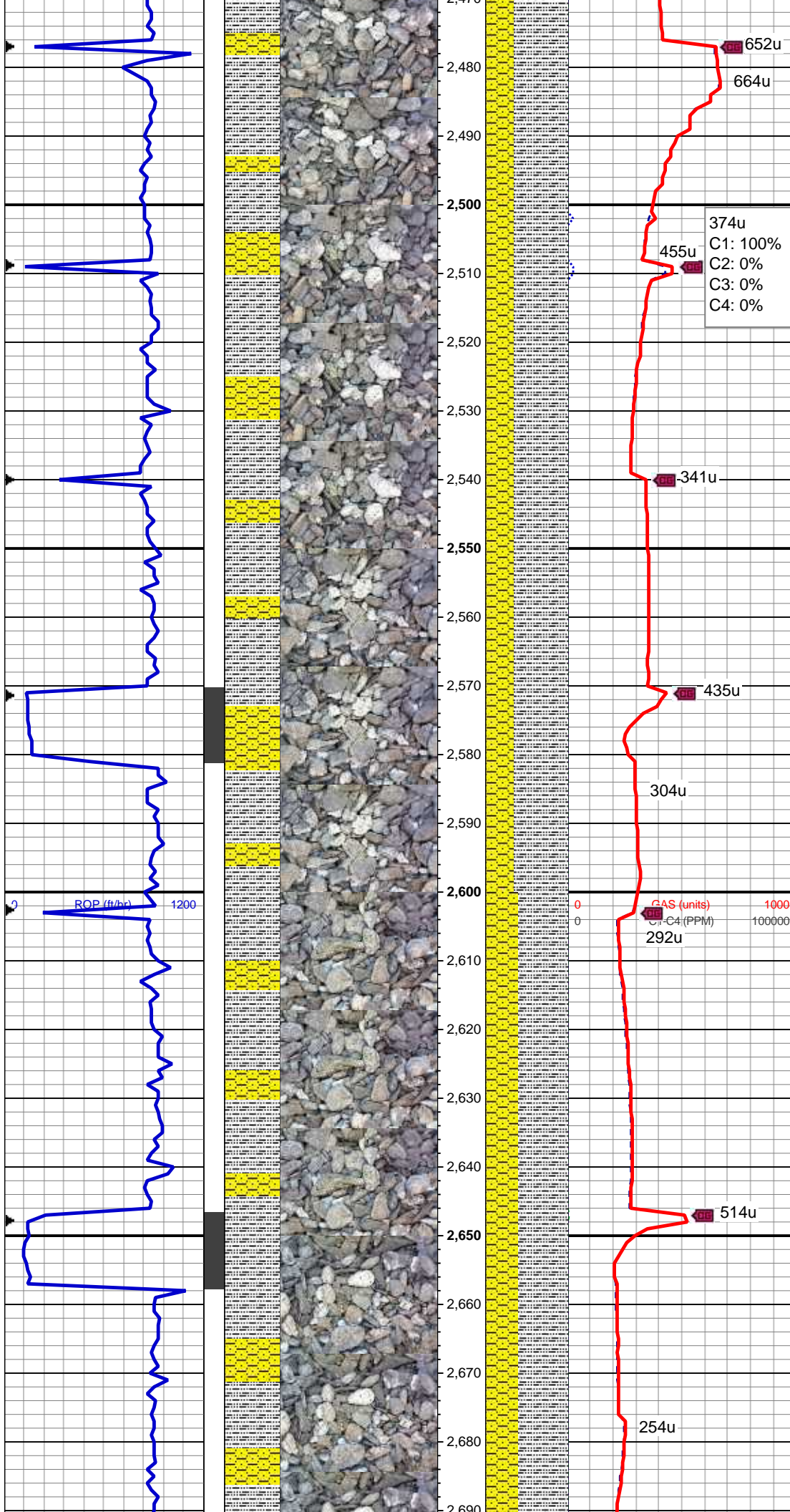
65% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc; 35% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc

MD: 2,332 '
TVD: 2,310.64 '
Inclination: 11.8 °
Azimuth: 322.2 °
VS: -121.19 '

70% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc, wh cly cmt; 30% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc

MD: 2,426 '
TVD: 2,402.73 '
Inclination: 11.3 °
Azimuth: 317.5 °
VS: -131.63 '

65% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc, wh cly cmt; 35% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc



MW 8.5 / VIS 27

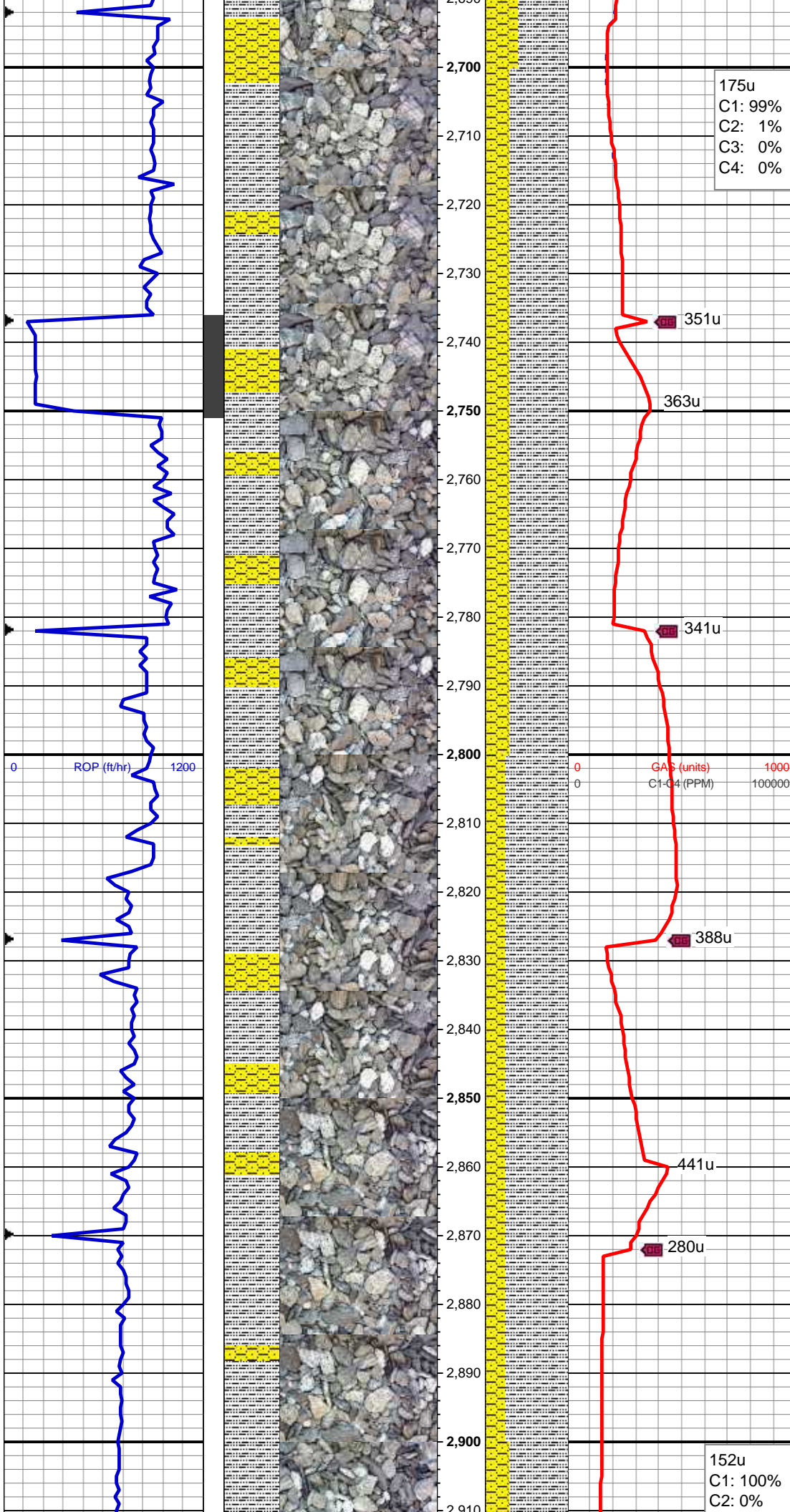
MD: 2,519 '
TVD: 2,494.02 '
Inclination: 10.7 °
Azimuth: 315.8 °
VS: -142.3 '

65% SLTY SH: lt-med gy, sft frm, fri, sly tex, rthy lstr, non calc, wh cly cmt; 35% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc

MD: 2,595 '
TVD: 2,568.68 '
Inclination: 10.9 °
Azimuth: 318.7 °
VS: -150.74 '

60% SLTY SH: lt-med gy, sft frm, fri, sly tex, rthy lstr, non calc, wh cly cmt; 40% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc

MD: 2,685 '
TVD: 2,657.04 '
Inclination: 11 °
Azimuth: 314.9 °
VS: -160.98 '



175u
C1: 99%
C2: 1%
C3: 0%
C4: 0%

70% SLTY SH: lt-med gy, sft-frm, fri,
sly tex, rthy lstr, non calc, wh cly
cmt; 30% SHY SS: lt gy-wh, sl frm -
sft, vf gr, sb rnd, mod-w srt, abnt wh
cly cmt, non calc, tr glau

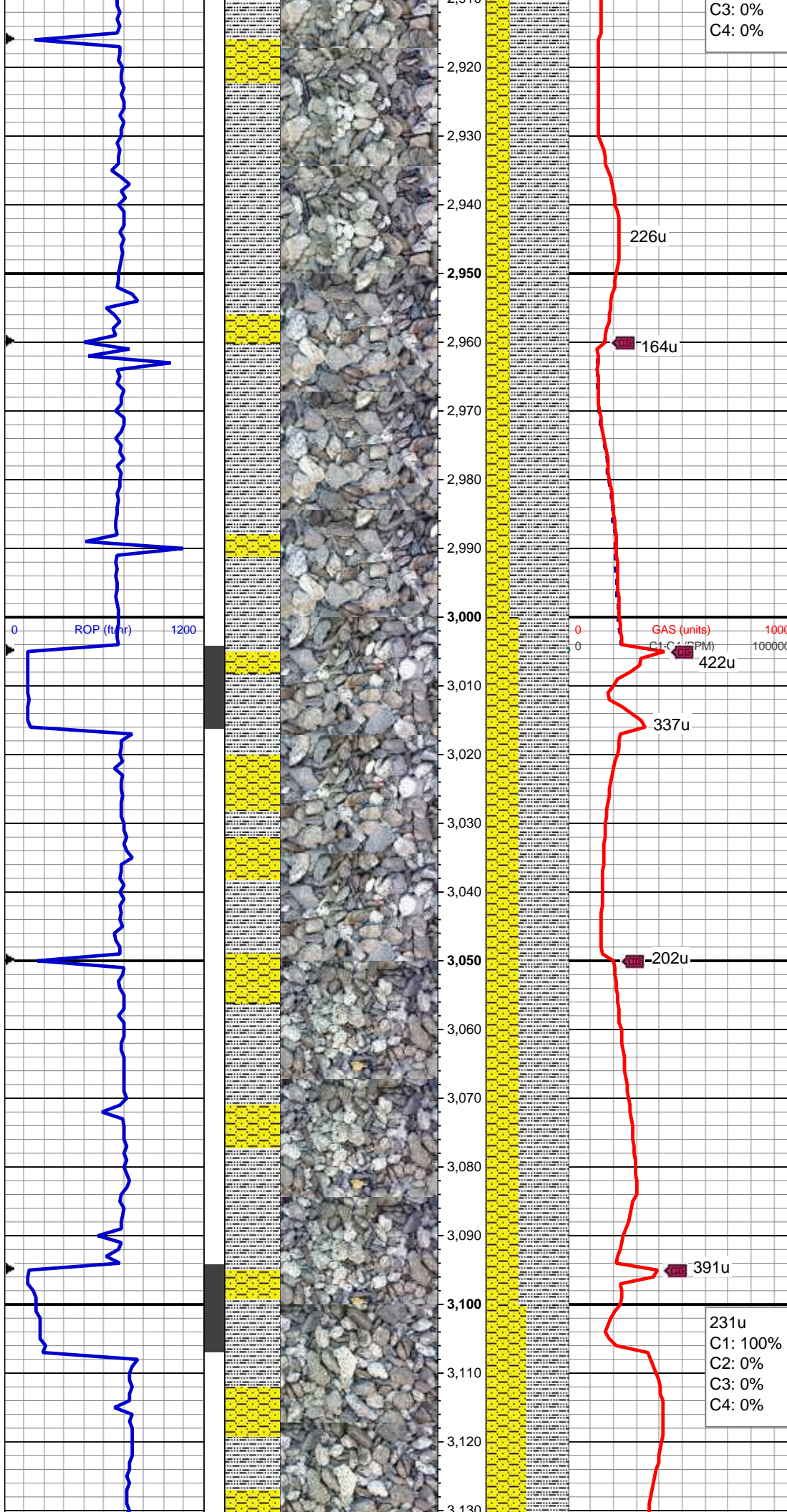
MD: 2,775 '
TVD: 2,745.32 '
Inclination: 11.5 °
Azimuth: 321.6 °
VS: -171.11 '

0 1000
0 100000
GAS (units)
C1-C4 (PPM)

75% SLTY SH: lt-med gy, sft-frm, fri,
sly tex, rthy lstr, non calc, wh cly
cmt; 25% SHY SS: lt gy-wh, sl frm -
sft, vf gr, sb rnd, mod-w srt, abnt wh
cly cmt, non calc

MD: 2,864 '
TVD: 2,832.51 '
Inclination: 11.6 °
Azimuth: 320.2 °
VS: -180.74 '

152u
C1: 100%
C2: 0%



70% SLTY SH: lt-med gy, sft frm, fri, slty tex, rthy lstr, non calc, wh cly cmt; 30% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc

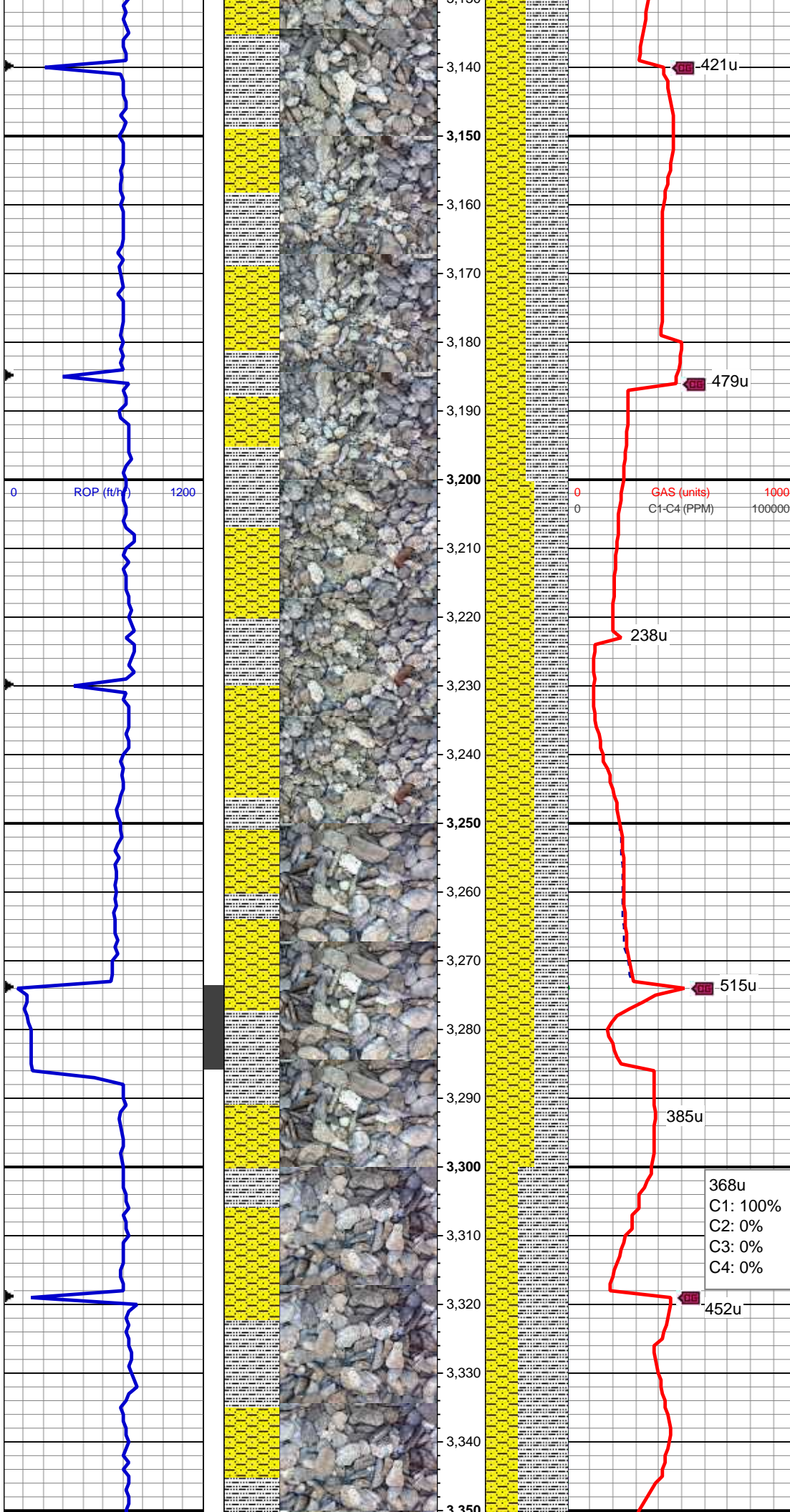
MD: 2,954 '
TVD: 2,920.81 '
Inclination: 10.7 °
Azimuth: 316.6 °
VS: -190.75 '

MD: 3,044 '
TVD: 3,009.22 '
Inclination: 10.9 °
Azimuth: 321.6 °
VS: -200.3 '

60% SLTY SH: lt-med gy, sft frm, fri, slty tex, rthy lstr, non calc, wh cly cmt; 40% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc

MW 8.5 / VIS 28

MD: 3,133 '
TVD: 3,096.62 '
Inclination: 10.9 °
Azimuth: 328.1 °
VS: -208.38 '



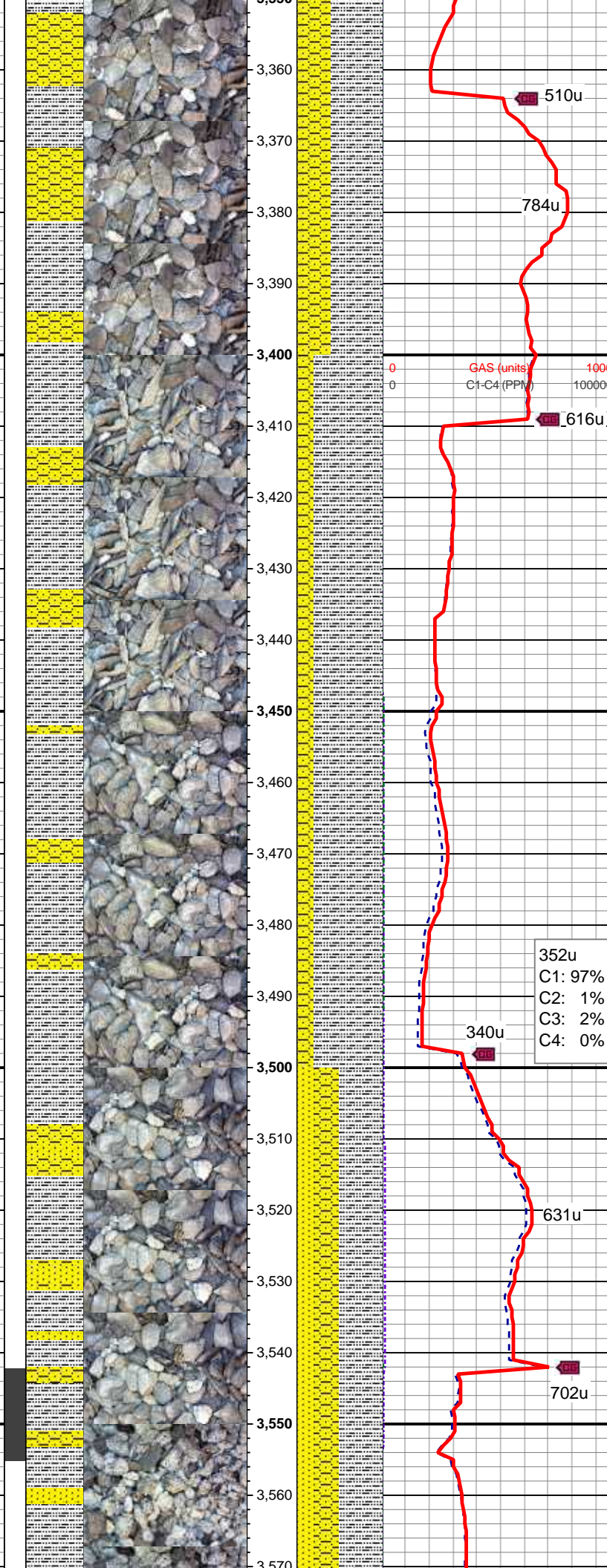
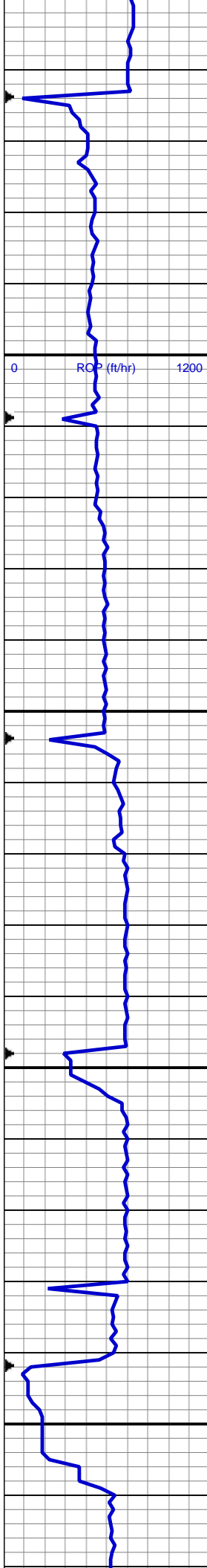
50% SLTY SH: lt-med gy, sft frm, fri, slty tex, rthy lstr, non calc, wh cly cmt; 50% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, abnt wh cly cmt, non calc

MD: 3,223 '
TVD: 3,185.16 '
Inclination: 9.8 °
Azimuth: 323 °
VS: -215.95 '

60% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, arg cmt, non calc; 40% SLTY SH: lt-med gy, sft frm, fri, slty tex, rthy lstr, non calc, arg cmt

MD: 3,312 '
TVD: 3,272.69 '
Inclination: 11 °
Azimuth: 327.9 °
VS: -223.49 '

60% SLTY SH: lt-med gy, sft frm, fri, slty tex, rthy lstr, non calc, arg cmt; 40% SHY SS: lt gy-wh, sl frm - sft, vf



10% SHY SS: lt gy wh, sl frm - sft, vf
gr, sb rnd, mod-w srt, arg cmt, non
calc

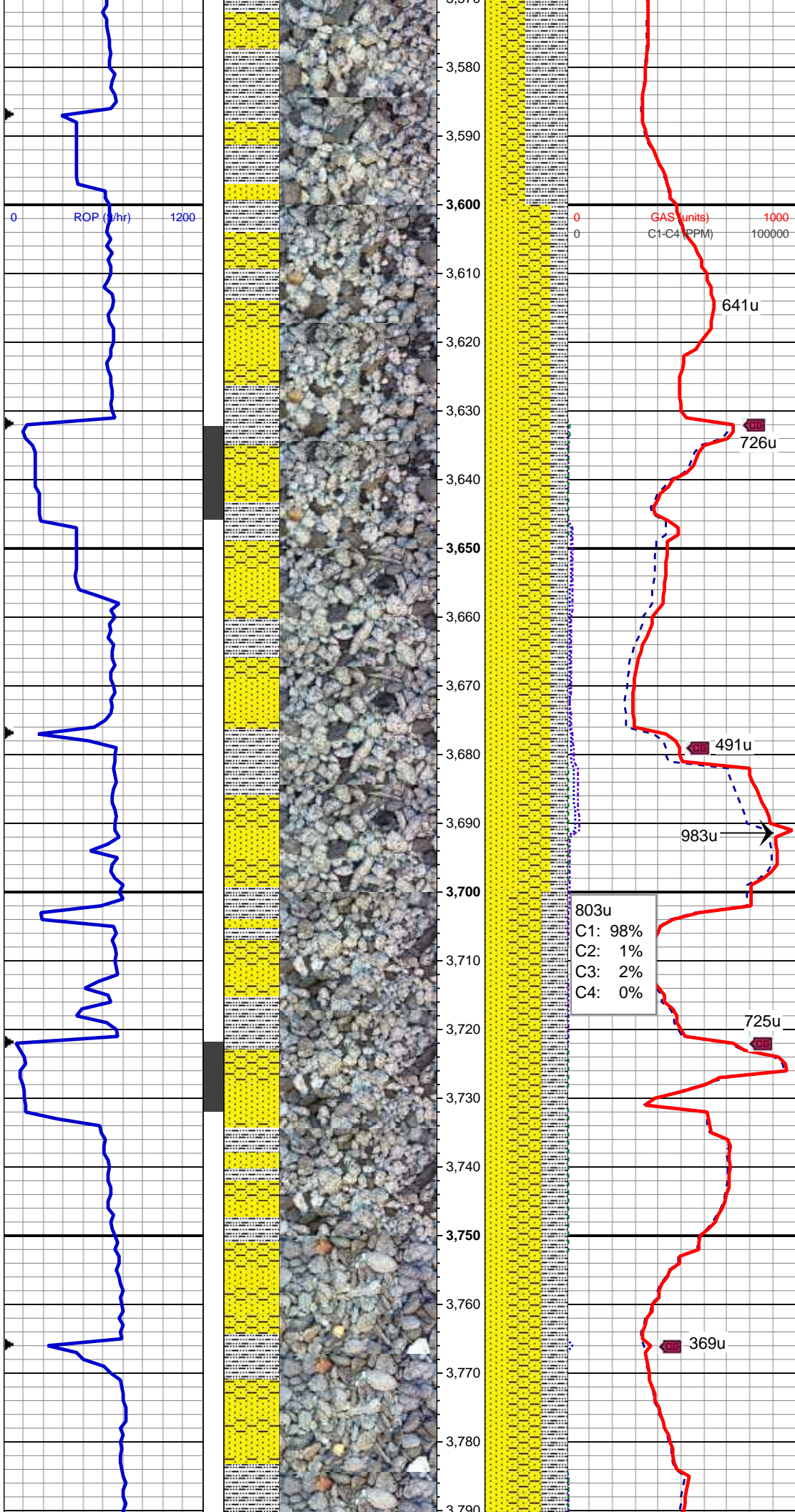
MD: 3,402 '
TVD: 3,361.16 '
Inclination: 10.2 °
Azimuth: 321.2 °
VS: -231.49 '

MW 8.5 / VIS 26

80% SLTY SH: lt-med gy, sft-frm, fri,
sly tex, rthy lstr, non calc, arg cmt;
20% SHY SS: lt gy-wh, sl frm - sft, vf
gr, sb rnd, mod-w srt, arg cmt, non
calc

MD: 3,492 '
TVD: 3,449.87 '
Inclination: 9.2 °
Azimuth: 317.8 °
VS: -239.98 '

50% SLTY SH: lt-med gy, sft-frm, fri,
sly tex, rthy lstr, non calc, arg cmt;
30% SHY SS: lt gy-wh, sl frm - sft, vf
gr, sb rnd, mod-w srt, arg cmt, non
calc; 20% SS: wh, sl frm - frm,
f-med gr, sb rnd, mod-w srt, arg-sil
cmt, non calc



MD: 3,581 '
TVD: 3,537.86 '
Inclination: 8.1 °
Azimuth: 320 °
VS: -247.61 '

MW 8.5 / VIS 27

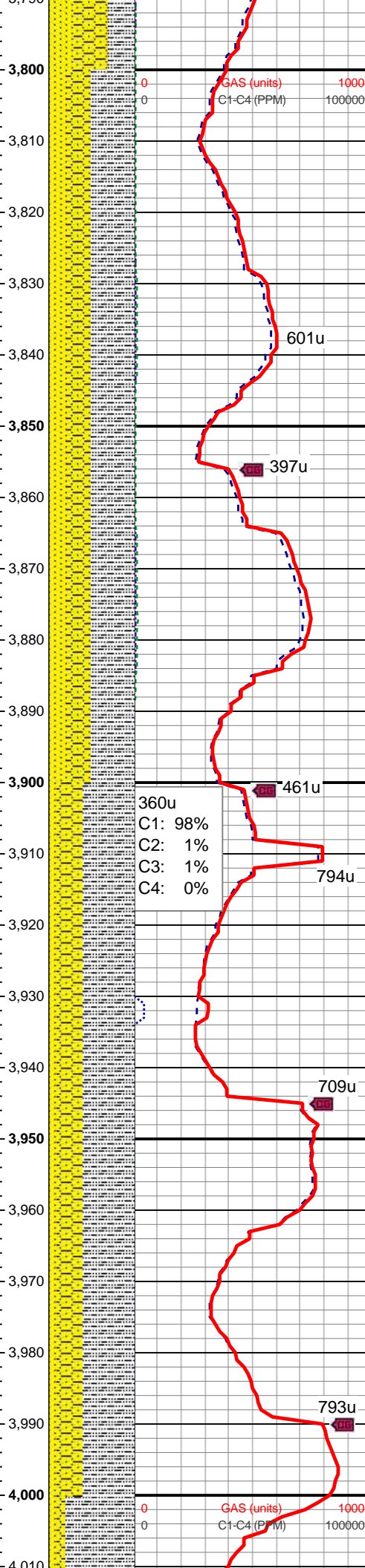
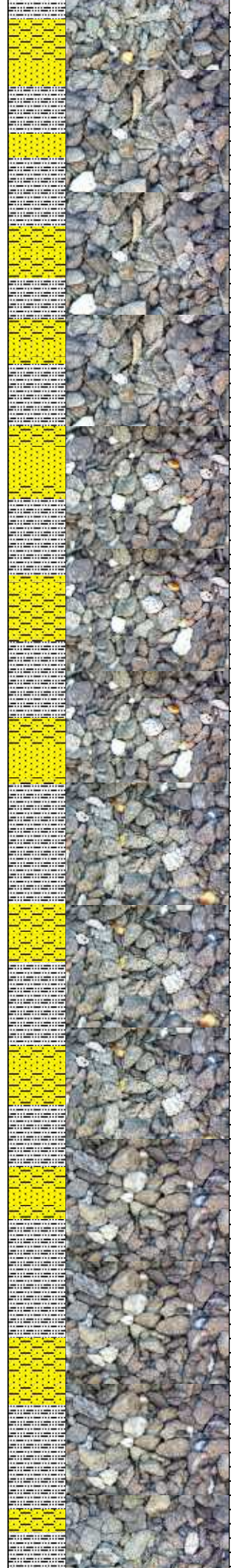
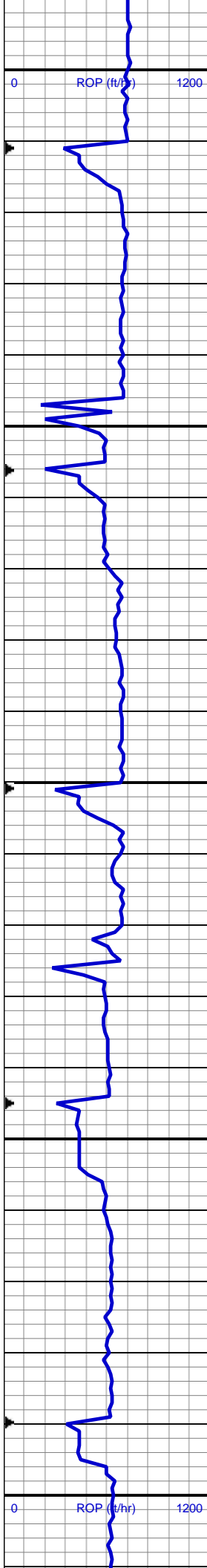
40% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, arg cmt, non calc; 40% SS: wh, sl frm - frm, f-med gr, sb rnd, mod-w srt, arg-sil cmt, non calc; 20% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc, arg cmt, tr bent

MD: 3,671 '
TVD: 3,626.92 '
Inclination: 8.5 °
Azimuth: 325.3 °
VS: -254.28 '

803u
C1: 98%
C2: 1%
C3: 2%
C4: 0%

40% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, arg cmt, non calc; 30% SS: wh, sl frm - frm, f-med gr, sb rnd, mod-w srt, arg-sil cmt, non calc; 30% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc, arg cmt

MD: 3,760 '
TVD: 3,714.79 '
Inclination: 9.8 °
Azimuth: 333.4 °
VS: -260.02 '

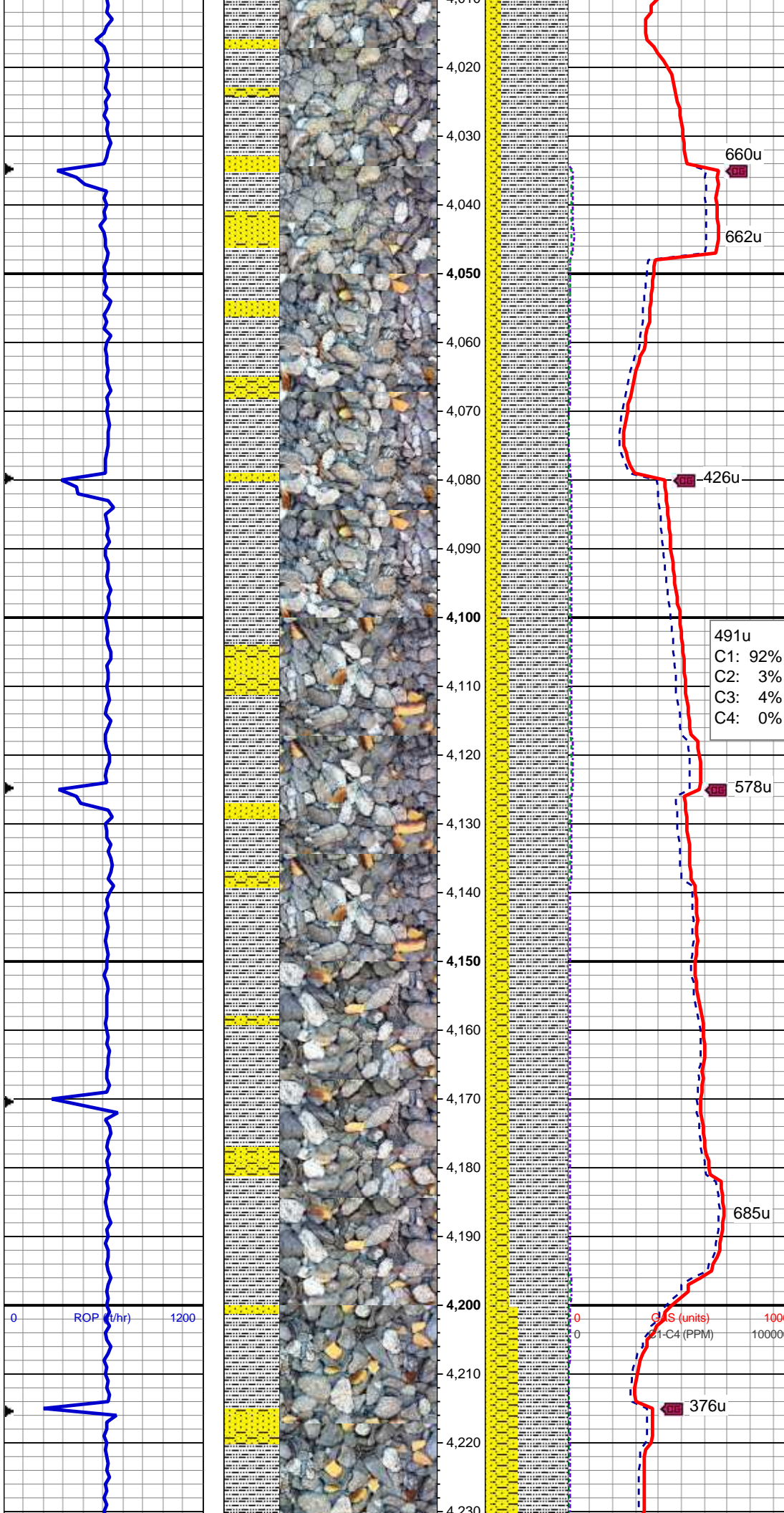


MD: 3,850 '
TVD: 3,803.38 '
Inclination: 10.5 °
Azimuth: 333.2 °
VS: -265.53 '

50% SLTY SH: lt-med gy, sft frm, fri, slty tex, rthy lstr, non calc, arg cmt; 30% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, arg cmt, non calc; 20% SS: wh, sl frm - frm, f-med gr, sb rnd, mod-w srt, arg-sil cmt, non calc

MD: 3,940 '
TVD: 3,891.73 '
Inclination: 11.5 °
Azimuth: 331 °
VS: -271.84 '

60% SLTY SH: lt-med gy, sft frm, fri, slty tex, rthy lstr, non calc, arg cmt; 30% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, arg cmt, non calc; 10% SS: wh, sl frm - frm, f-med gr, sb rnd, mod-w srt, arg-sil cmt, non calc



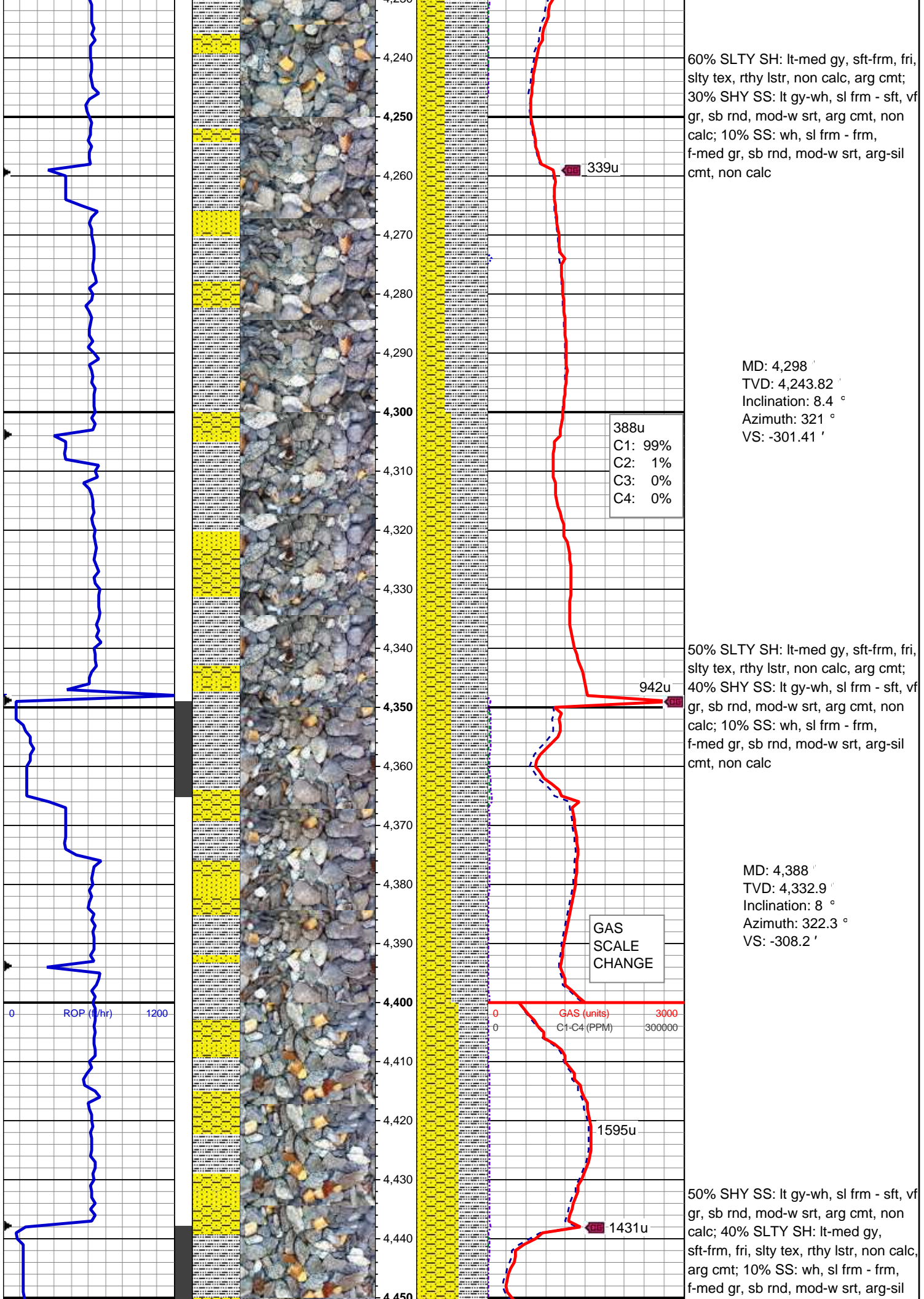
MD: 4,029 '
TVD: 3,978.92 '
Inclination: 11.6 °
Azimuth: 328.3 °
VS: -279.08 '

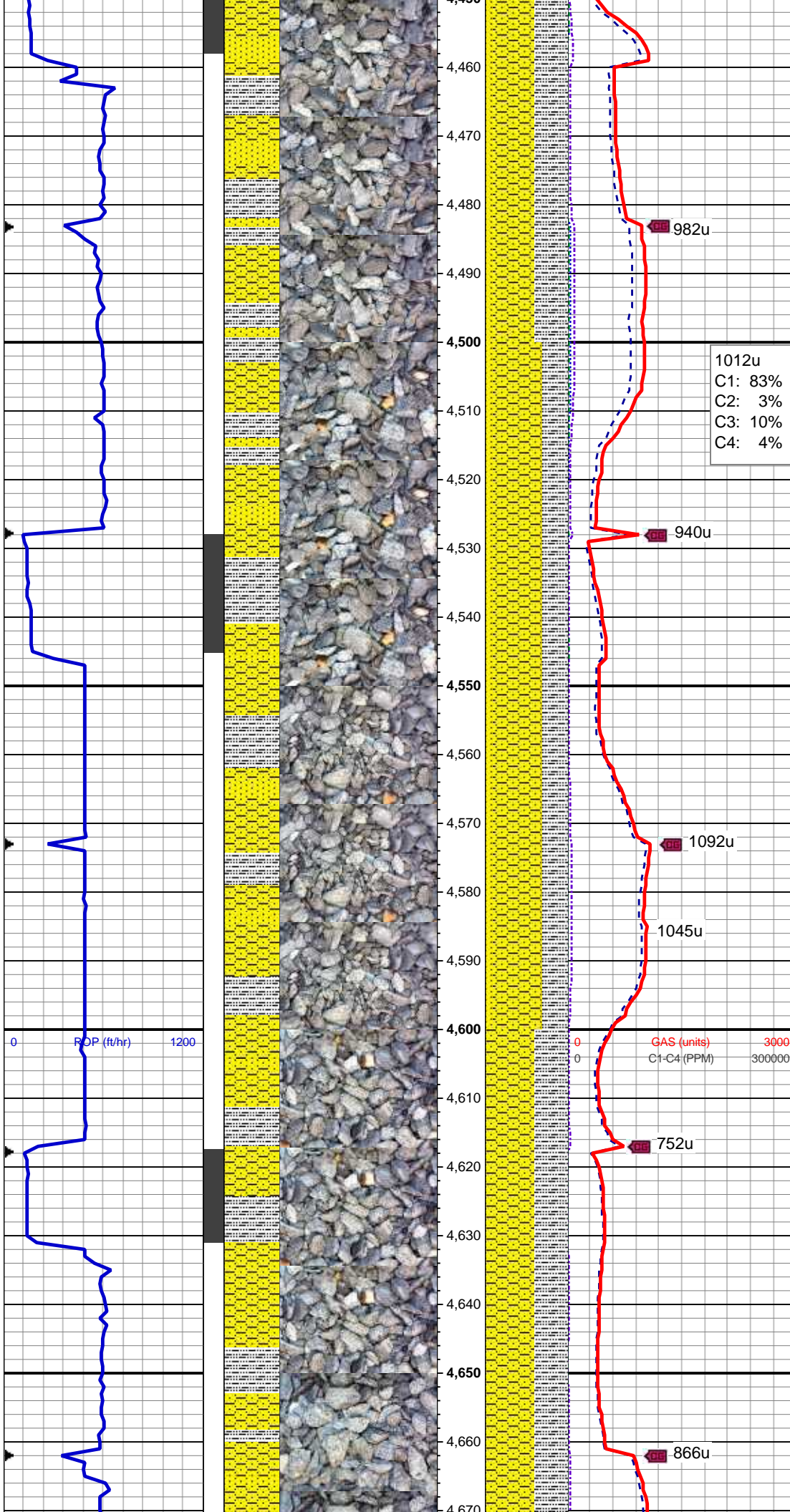
80% SLTY SH: lt-med gy, sft-frm, fri,
silty tex, rthy lstr, non calc, arg cmt;
10% SHY SS: lt gy-wh, sl frm - sft, vf
gr, sb rnd, mod-w srt, arg cmt, non
calc; 10% SS: wh, sl frm - frm,
f-med gr, sb rnd, mod-w srt, arg-sil
cmt, non calc

MD: 4,119 '
TVD: 4,067.22 '
Inclination: 10.7 °
Azimuth: 326.3 °
VS: -286.78 '

70% SLTY SH: lt-med gy, sft-frm, fri,
silty tex, rthy lstr, non calc, arg cmt;
20% SHY SS: lt gy-wh, sl frm - sft, vf
gr, sb rnd, mod-w srt, arg cmt, non
calc; 10% SS: wh, sl frm - frm,
f-med gr, sb rnd, mod-w srt, arg-sil
cmt, non calc

MD: 4,208 '
TVD: 4,154.88 '
Inclination: 9.2 °
Azimuth: 323 °
VS: -294.2 '





MD: 4,477 '
TVD: 4,420.98 '
Inclination: 8.5 °
Azimuth: 327.6 °
VS: -314.31 '

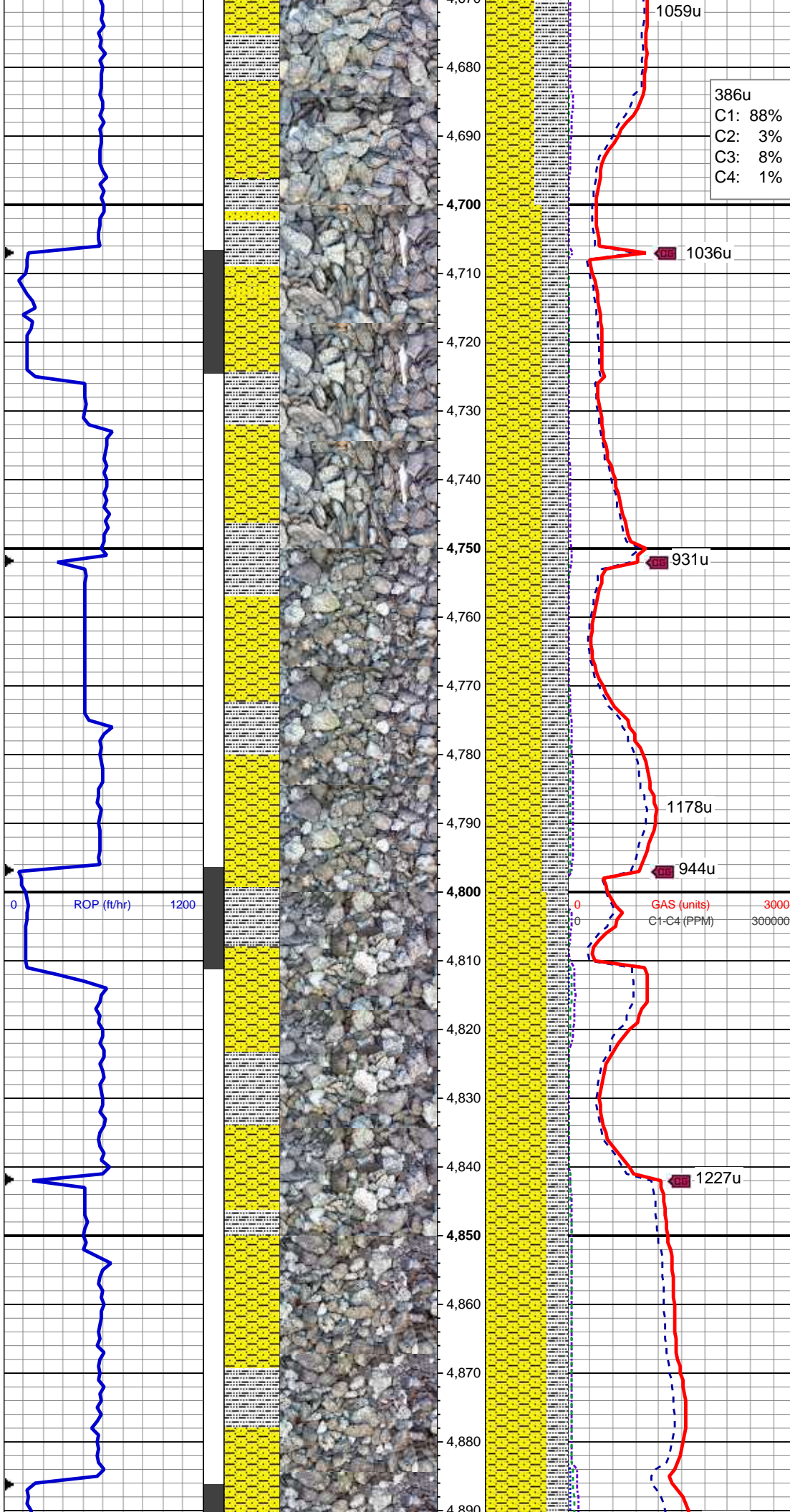
MW 8.6 / VIS 27

60% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, arg-sil cmt, non calc, grd to 10% SS; 30% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc, arg cmt

MD: 4,567 '
TVD: 4,509.76 '
Inclination: 10.4 °
Azimuth: 332.6 °
VS: -320.14 '

60% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, arg-sil cmt, non calc; 40% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc, arg cmt, tr bent, occ ss

MD: 4,657 '
TVD: 4,598.34 '
Inclination: 10 °
Azimuth: 323 °
VS: -327.04 '

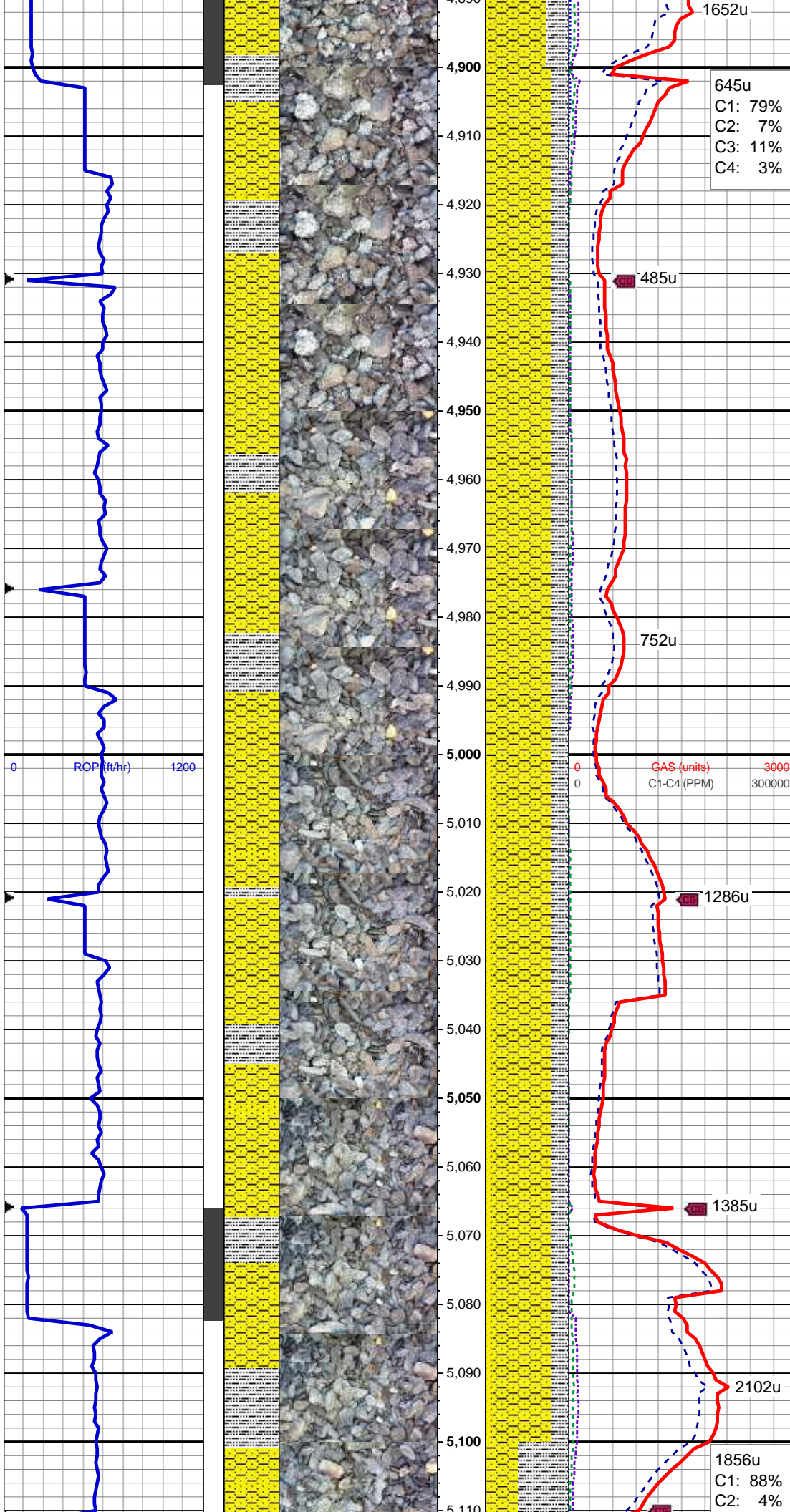


MW 8.6 / VIS 27

MD: 4,746 '
TVD: 4,686.07 '
Inclination: 9.5 °
Azimuth: 309.9 °
VS: -336.05 '

70% SHY SS: lt gy-wh, sl frm - sft, vf gr, sb rnd, mod-w srt, arg-sil cmt, non calc; 30% SLTY SH: lt-med gy, sft-frm, fri, slty tex, rthy lstr, non calc, arg cmt, occ bent, tr ss

MD: 4,836 '
TVD: 4,774.83 '
Inclination: 9.5 °
Azimuth: 309.2 °
VS: -346.38 '



MD: 4,925 '
TVD: 4,862.55 '
Inclination: 10 °
Azimuth: 306.3 °
VS: -357.2 '

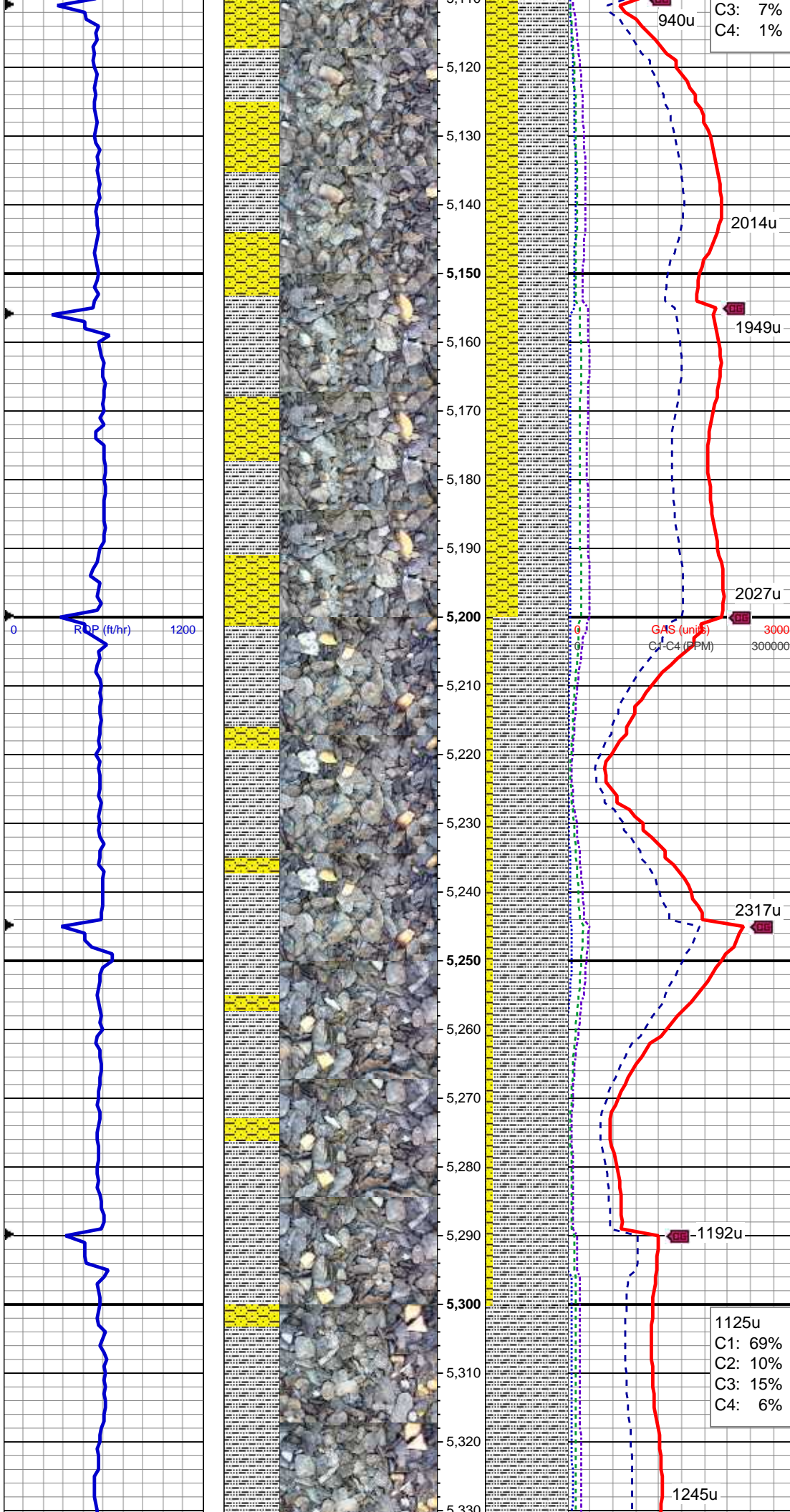
80% SHY SS: lt gy-wh, sl frm - sft, vf
gr, sb rnd, mod-w srt, arg-sil cmt,
non calc; 20% SLTY SH: lt-med gy,
sft-frm, fri, slty tex, rthy lstr, non calc,
arg cmt, occ bent, occ ss

MW 8.6 / VIS 27

MD: 5,015 '
TVD: 4,951.46 '
Inclination: 7.8 °
Azimuth: 298.3 °
VS: -367.97 '

70% SHY SS: lt gy-wh, sl frm-sft, vf-f
gr, sb rnd, p-mod srt, arg-sil cmt,
non calc, grdg to 10% SS; 20%
SLTY SH: lt-med gy, sft-frm, fri, sb
ang- sb rnd, slty tex, rthy lstr, non
calc, arg cmt, occ bent

MD: 5,105 '
TVD: 5,040.43 '
Inclination: 9.6 °
Azimuth: 307.8 °
VS: -378.38 '



60% SLTY SH: lt-med gy, sft frm, fri, sb ang- sb rnd, slty tex, rthy lstr, non calc, arg cmt; 40% SHY SS: lt gy-wh, sl frm-sft, vf-f gr, sb rnd, p-mod srt, arg-sil cmt, non calc, occ ss

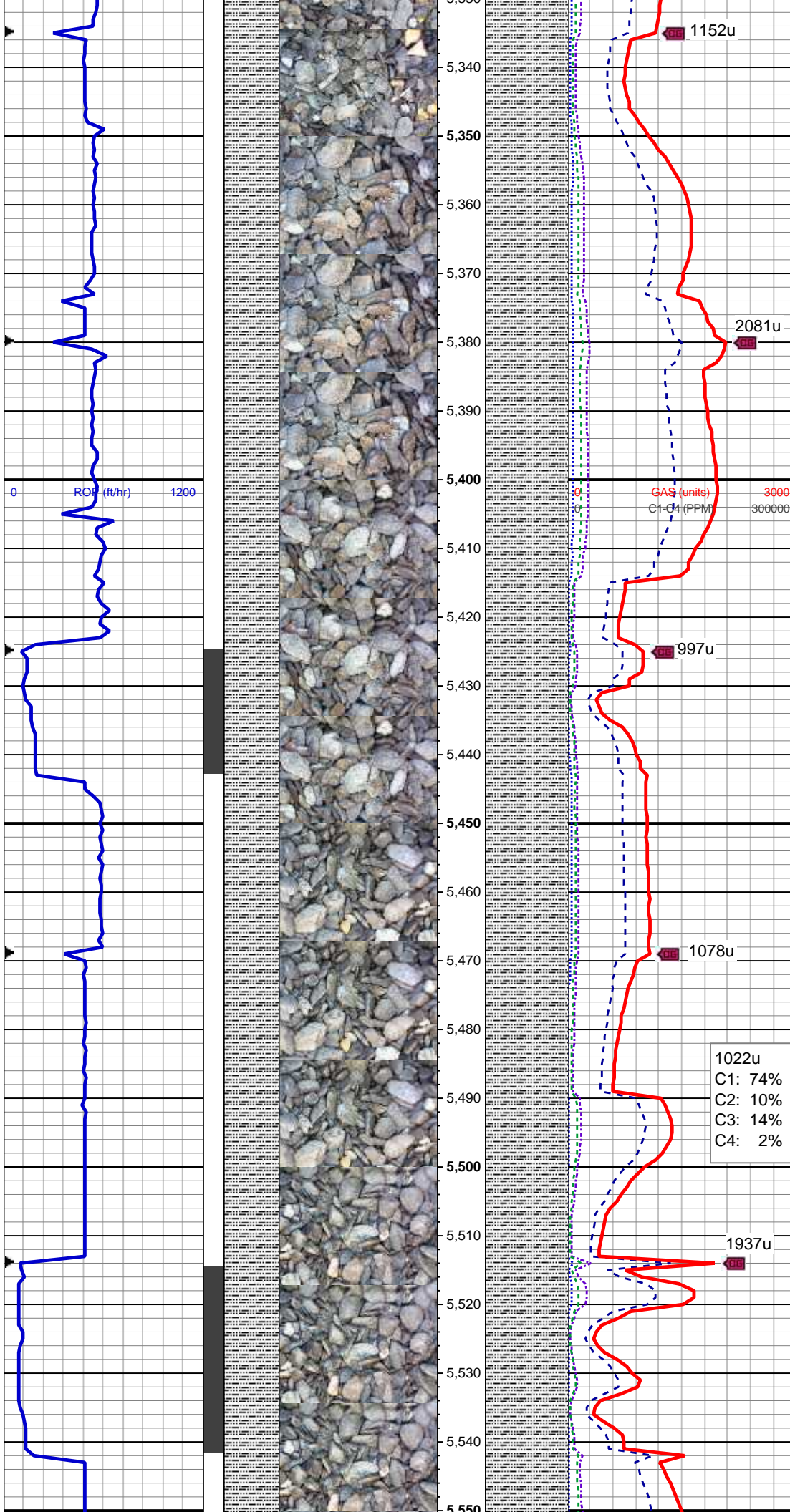
MD: 5,195 '
TVD: 5,129.34 '
Inclination: 8.2 °
Azimuth: 303.3 °
VS: -388.7 '

MW 8.6 / VIS 27

90% SLTY SH: lt-med gy, sft frm, fri, sb ang- sb rnd, slty tex, rthy lstr, non calc, arg cmt; 10% SHY SS: lt gy-wh, sl frm-sft, vf-f gr, sb rnd, p-mod srt, arg-sil cmt, non calc, occ ss

MD: 5,284 '
TVD: 5,217.61 '
Inclination: 6.5 °
Azimuth: 297.5 °
VS: -397.77 '

1125u
C1: 69%
C2: 10%
C3: 15%
C4: 6%



100% SLTY SH: lt-med gy, sft-frm, fri, sb ang- sb rnd, slty tex, rthy lstr, non calc, arg cmt, scat shy ss

MD: 5,374 '
TVD: 5,307.13 '
Inclination: 5.4 °
Azimuth: 291.6 °
VS: -405.74 '

MW 8.6 / VIS 27

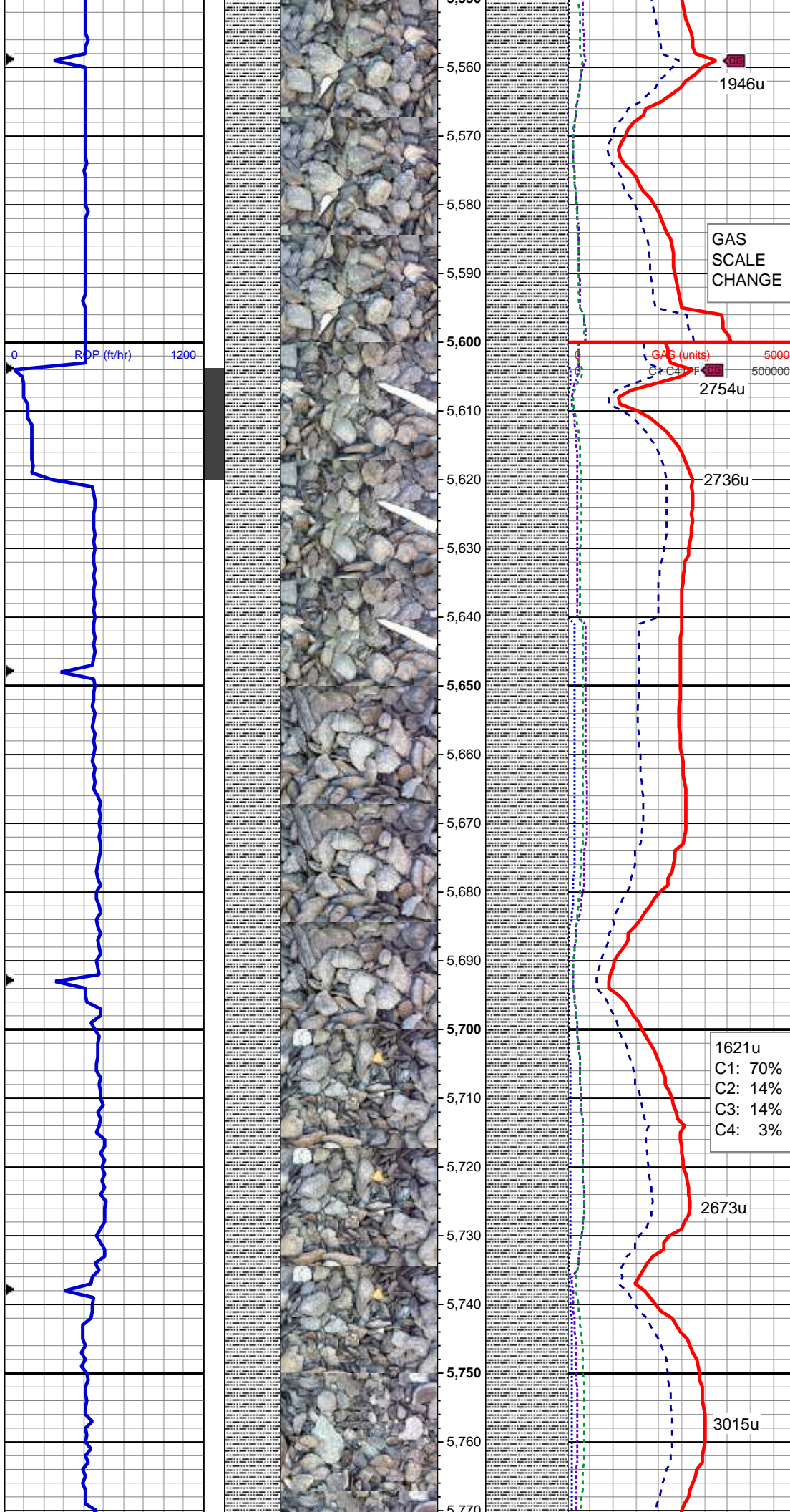
100% SLTY SH: lt-med gy, sft-frm, fri, sb ang-sb rnd, slty tex, rthy lstr, non calc, arg cmt, tr shy ss

MD: 5,463 '
TVD: 5,395.81 '
Inclination: 4.3 °
Azimuth: 274.9 °
VS: -412.71 '

1022u
C1: 74%
C2: 10%
C3: 14%
C4: 2%

100% SLTY SH: lt-med gy, sft-frm, fri, sb ang-sb rnd, slty tex, rthy lstr, non calc, arg cmt, tr shy ss

MD: 5,553 '
TVD: 5,485.67 '



Inclination: 2 °
Azimuth: 282.5 °
VS: -417.5 '

MW 8.7 / VIS 27

GAS
SCALE
CHANGE

GAS (units)
C1-C4
2754u

100% SLTY SH: lt-med gy, sft-frn,
fri, sb ang-sb rnd, slty tex, rthy lstr,
non calc, arg cmt, tr shy ss

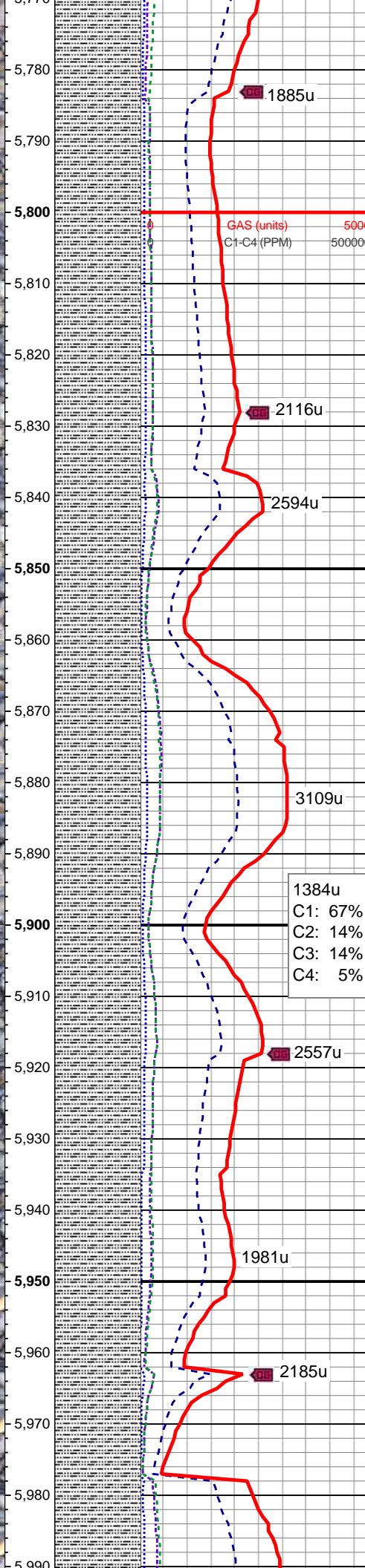
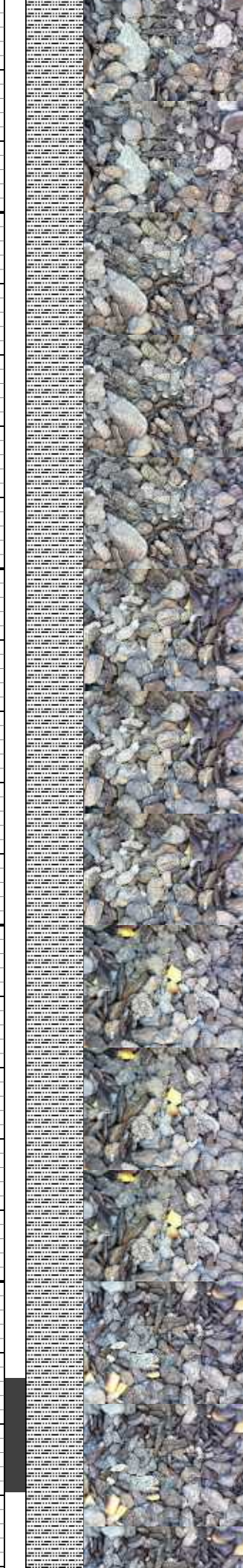
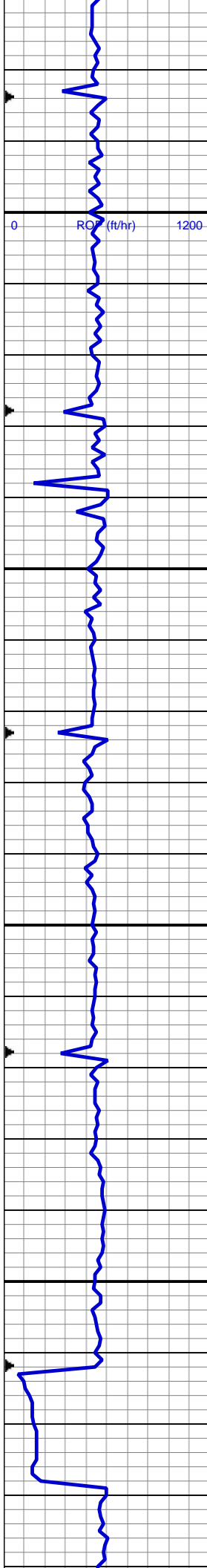
MD: 5,643 '
TVD: 5,575.65 '
Inclination: 0.6 °
Azimuth: 166.8 °
VS: -418.93 '

1621u
C1: 70%
C2: 14%
C3: 14%
C4: 3%

100% SLTY SH: lt-med gy, sft-frn,
fri, sb ang-sb rnd, slty tex, rthy lstr,
non calc, arg cmt, tr shy ss

MD: 5,732 '
TVD: 5,664.64 '
Inclination: 0.9 °
Azimuth: 131.4 °
VS: -418.41 '

3015u



MW 8.6 / VIS 28

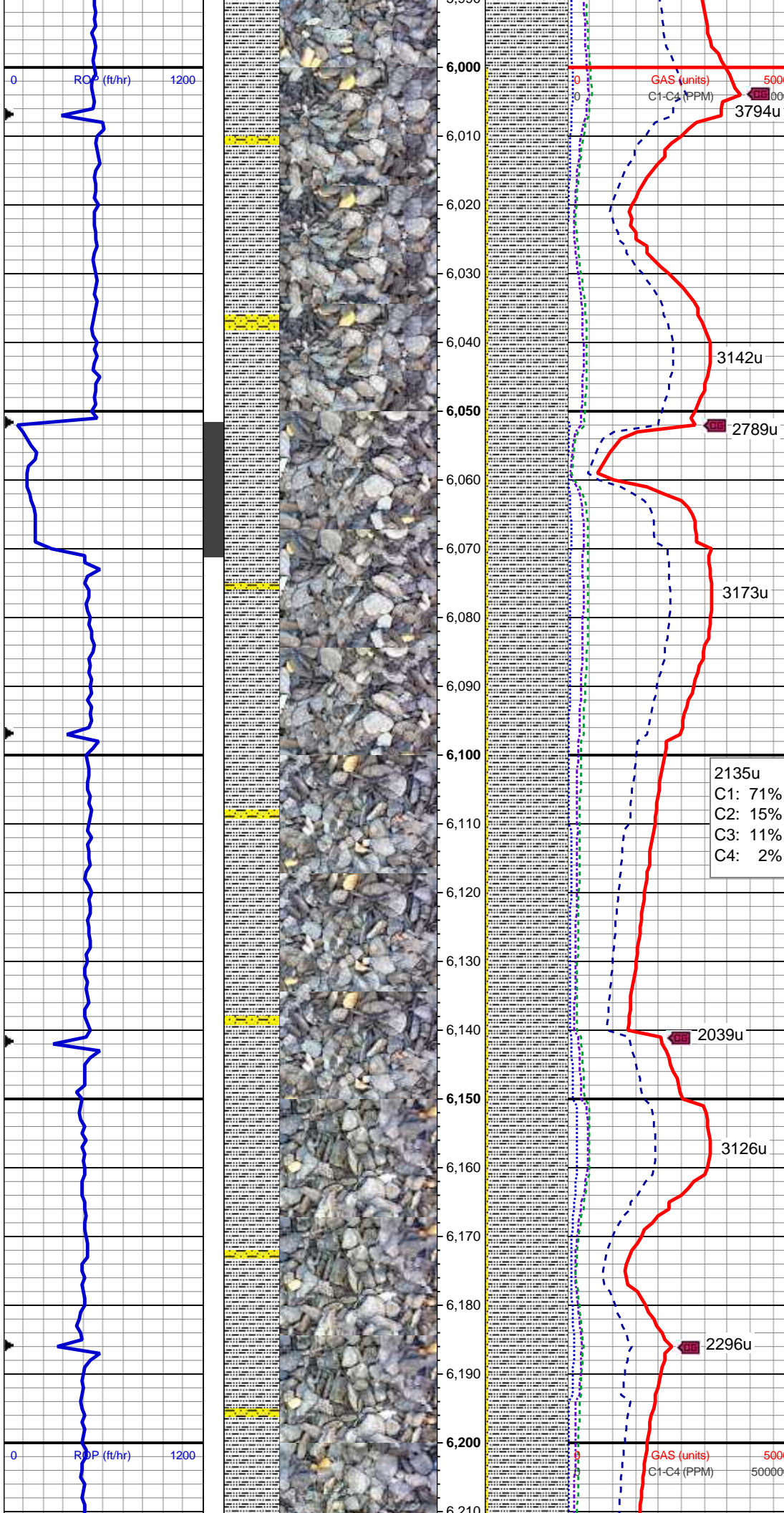
MD: 5,822 '
TVD: 5,754.63 '
Inclination: 1.3 °
Azimuth: 131.4 °
VS: -417.25 '

100% SLTY SH: lt-med gy, sft-frn, fri, sb ang-sb rnd, slty tex, rthy lstr, non calc, arg cmt, tr shy ss

MD: 5,912 '
TVD: 5,844.6 '
Inclination: 1.6 °
Azimuth: 127.7 °
VS: -415.66 '

100% SLTY SH: lt-med gy, sft-frn, fri, sb ang-sb rnd, slty tex, rthy lstr, non calc, arg cmt, tr shy ss

MD: 6,001 '



MD: 6,001 '
TVD: 5,933.56 '
Inclination: 2 °
Azimuth: 75.8 °
VS: -413.23 '

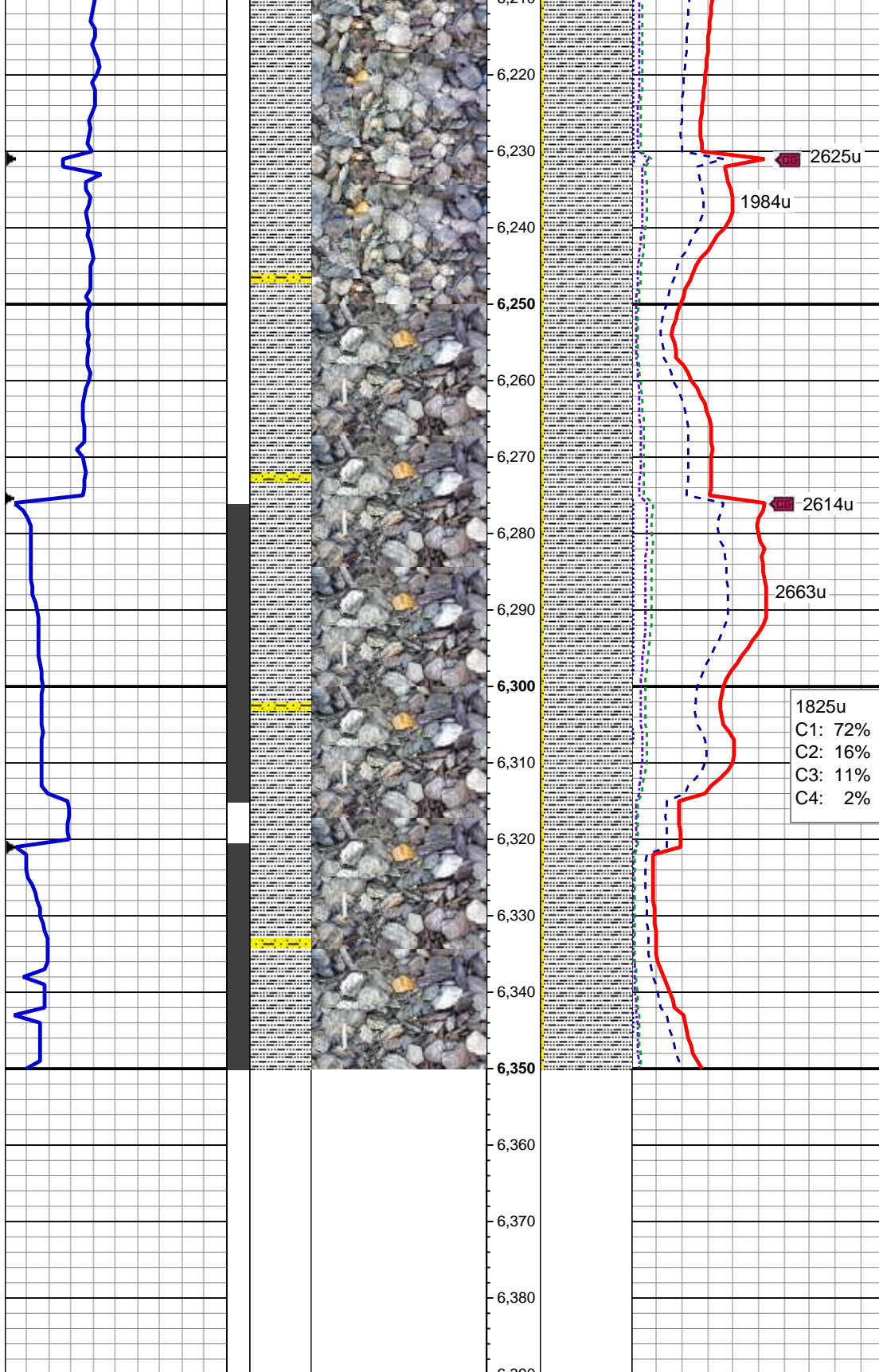
95% SLTY SH: lt-med gy, sft-frm, fri,
sb plty, sl slty tex, rthy lstr, non calc;
5% SHY SS: lt gy-wh, occ s&p, blk,
sl frm - sft, v f gr, sb rnd, mod-w srt,
tr cly cmt, non calc

MD: 6,091 '
TVD: 6,023.54 '
Inclination: 0.3 °
Azimuth: 88.2 °
VS: -411.44 '

MW 8.9 / VIS 31

95% SLTY SH: lt-med gy, sft-frm, fri,
sb plty, sl slty tex, rthy lstr, non calc;
5% SHY SS: lt gy-wh, occ s&p, blk,
sl frm - sft, v f gr, sb rnd, mod-w srt,
tr cly cmt, non calc

MD: 6,180 '
TVD: 6,112.53 '
Inclination: 1.2 °
Azimuth: 109.9 °
VS: -410.37 '



95% SLTY SH: lt-med gy, sft-frm, fri,
sb plty, sl slty tex, rthy lstr, non calc;
5% SHY SS: lt gy-wh, occ s&p, blk, y,
sl frm - sft, v f gr, sb rnd, mod-w srt,
tr cly cmt, non calc

MD: 6,270 '
TVD: 6,202.5 '
Inclination: 1.9 °
Azimuth: 111.1 °
VS: -408.2 '

MW 9.2/ VIS 30

MD: 6,315 '
TVD: 6,247.36 '
Inclination: 6.5 °
Azimuth: 94.7 °
VS: -405.04 '

95% SLTY SH: lt-med gy, sft-frm, fri,
sb plty, sl slty tex, rthy lstr, non calc;
5% SHY SS: lt gy-wh, occ s&p, blk, y,
sl frm - sft, v f gr, sb rnd, mod-w srt,
tr cly cmt, non calc

Log Continues on
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