

# COLUMBINE LOGGING

Scale: 5" / 100'  
Measured Depth Log

**Well Name** Mahalo State AA09-74-1AHNC

**Location** Sec. 4 T6N R63W

**State** Colorado

**County** Weld

**Country** USA

**Rig Number** PD 829

**API Number** 05-123-39015

**AFE #** 200334

**Region** DJ Basin

**Field** Wattenberg

**Spud Date** 1/12/2015

**Drilling Completed** 1/21/2015

**Surface Coordinates** 325'FSL & 2340'FEL, Sec.4

**Bottom Hole Coordinates** 30'FNL & 1860'FEL, Sec.16

**Ground Elevation** 4694'

**K.B. Elevation** 4694'

**Logged Interval** 852' **To** 5980'

**Total Depth** 11481'

**Formation** Niobrara C Chalk

**Type of Drilling Fluid** FW LSND

## Operator

**Company** NOBLE ENERGY INC.

**Address** 1625 BROADWAY  
DENVER, CO 80202

## Geologist

**Name** Holly Duncan

**Company** Noble Energy, Inc.

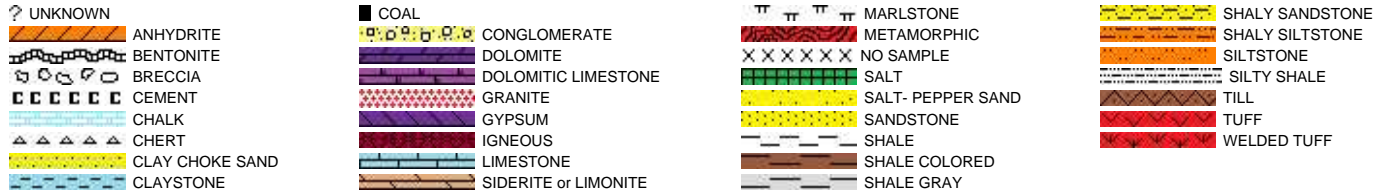
**Address** 1625 BROADWAY  
DENVER, CO 80202

## Other

Well Site Geologists

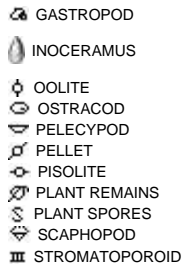
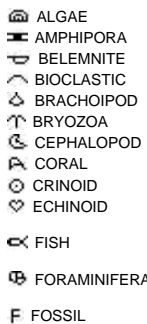
Ryan Shilling  
Ted Stockwell

## Rock Types

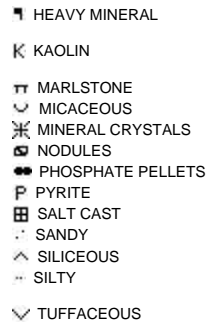
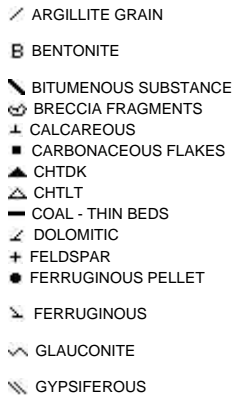
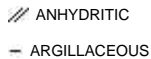


## Accessories

### Fossils



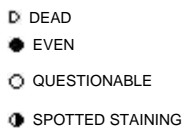
### Minerals



### Stringer

## Other Symbols

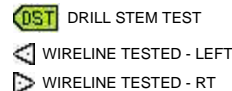
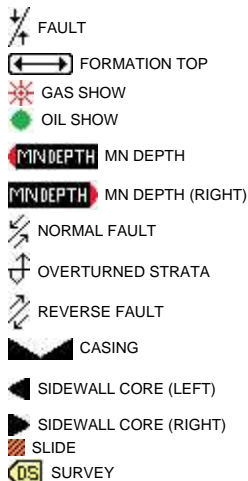
### Oil Show



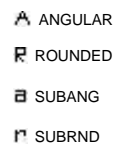
### Porosity



### Engineering



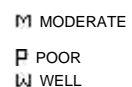
### Rounding

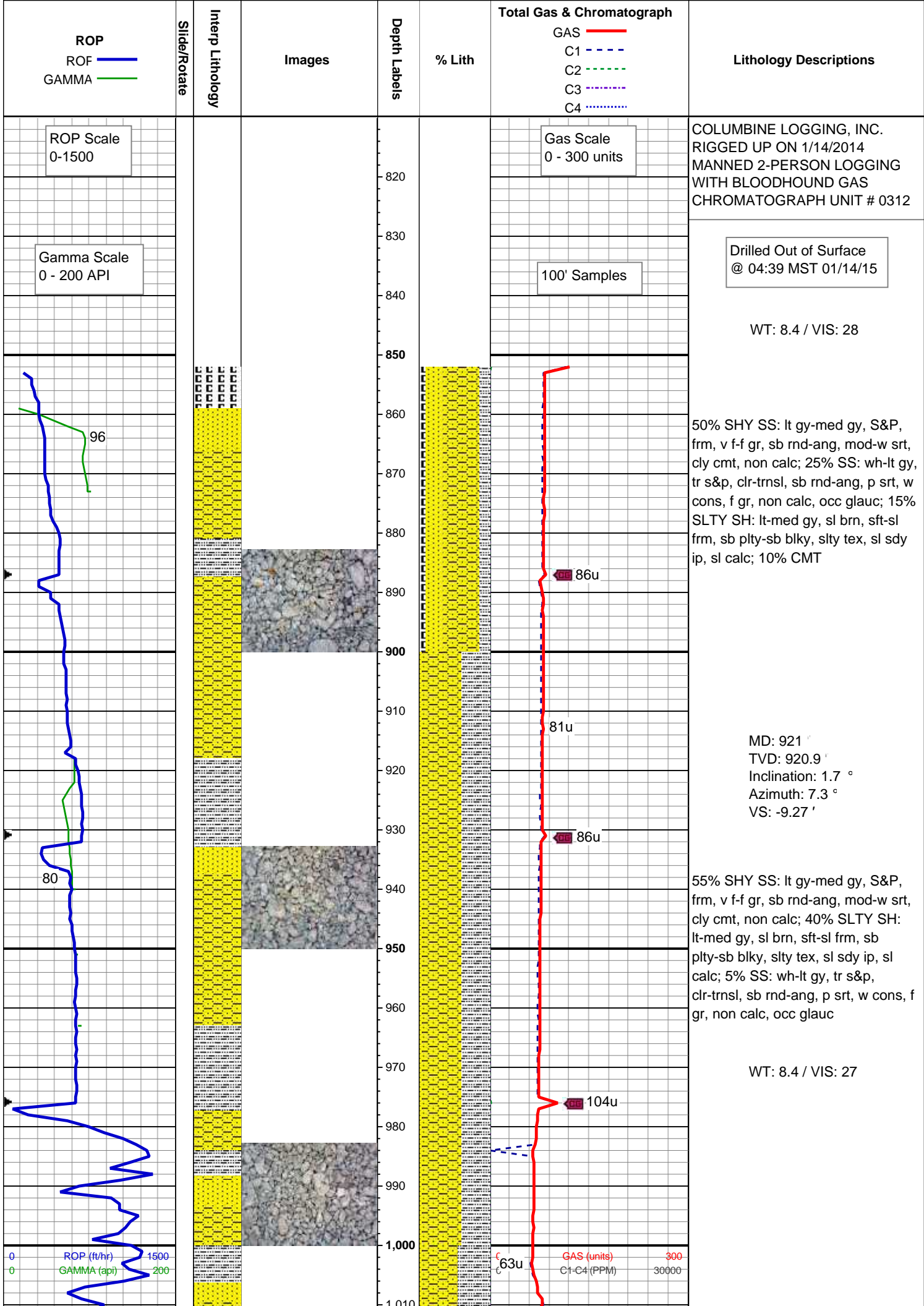


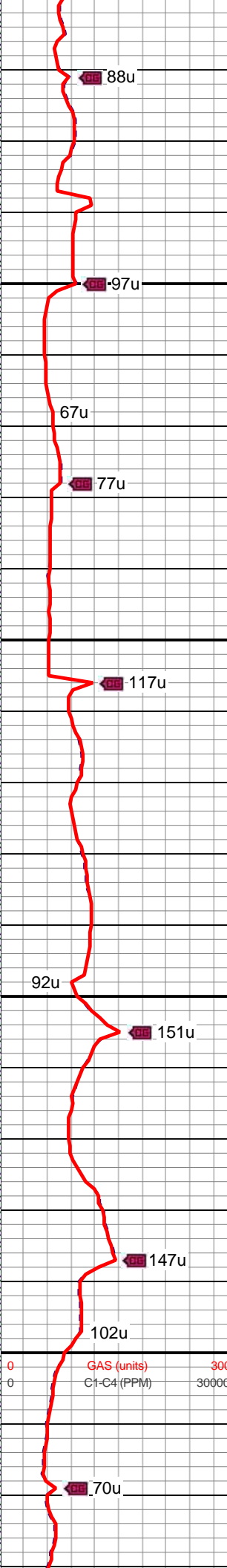
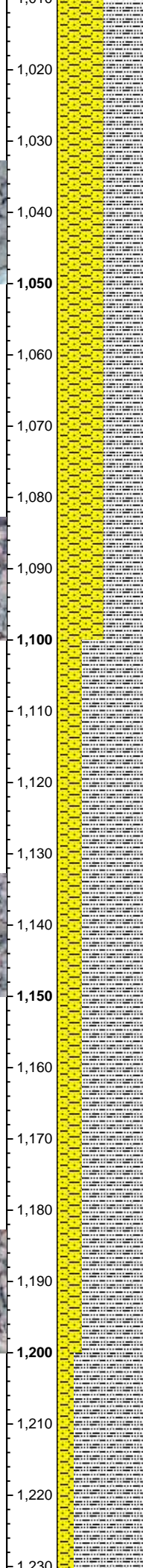
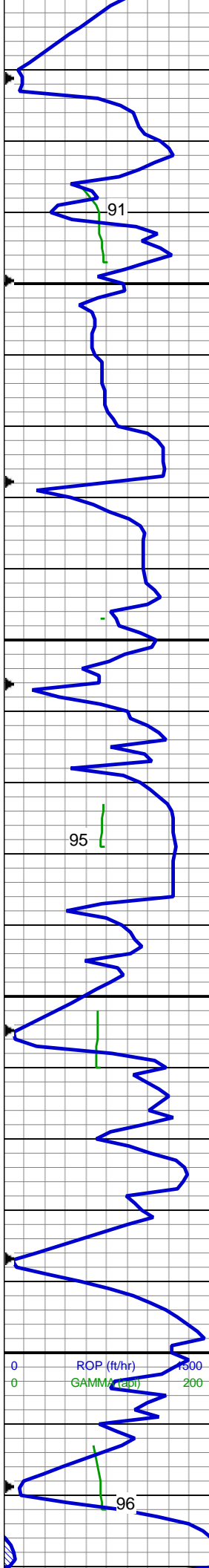
### Textures



### Sorting







50% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 45% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blkly, slty tex, sl sdy ip, sl calc; 5% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc, occ glauc

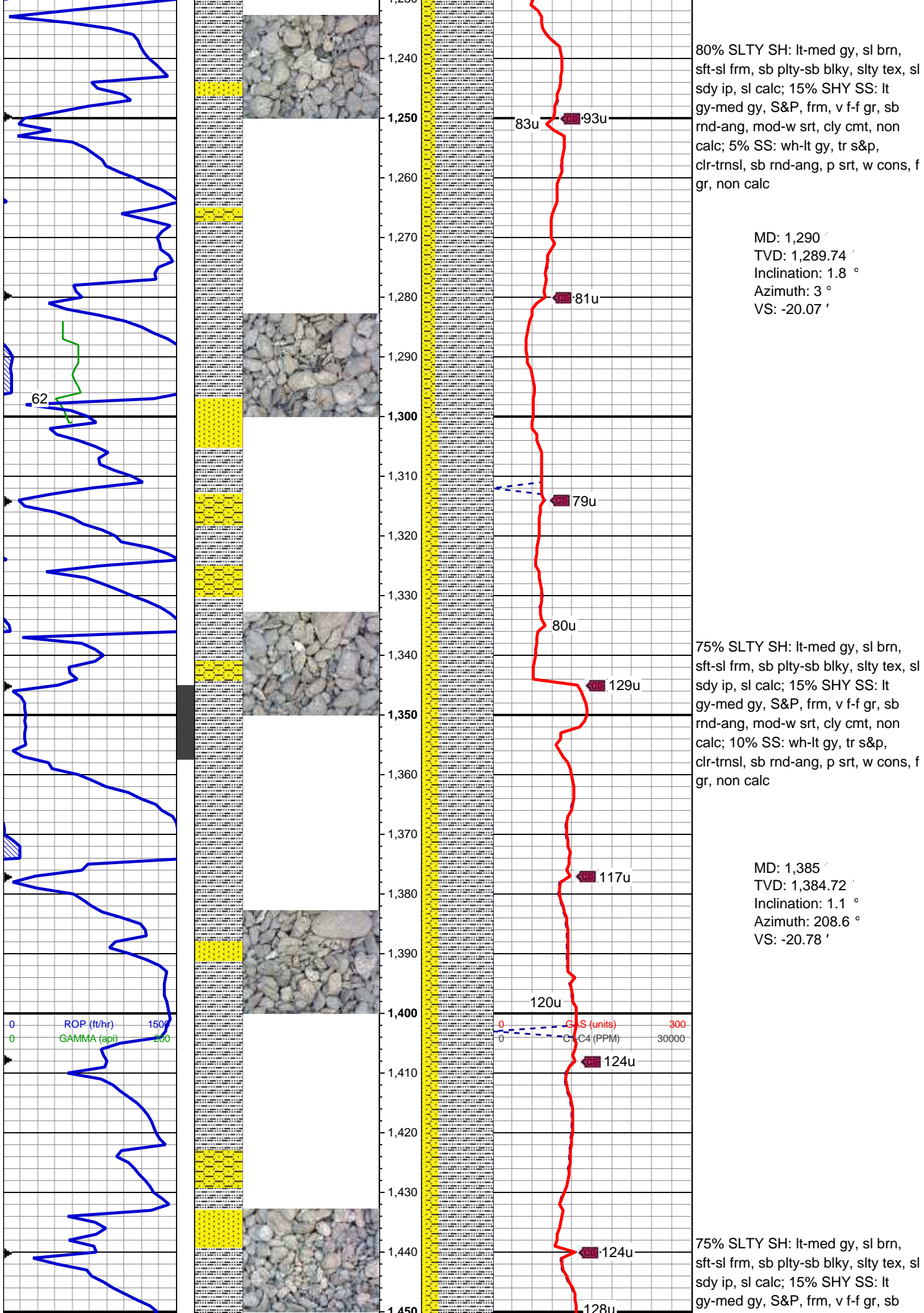
MD: 1,100 '  
TVD: 1,099.82 '  
Inclination: 1.6 °  
Azimuth: 4.8 °  
VS: -14.33 '

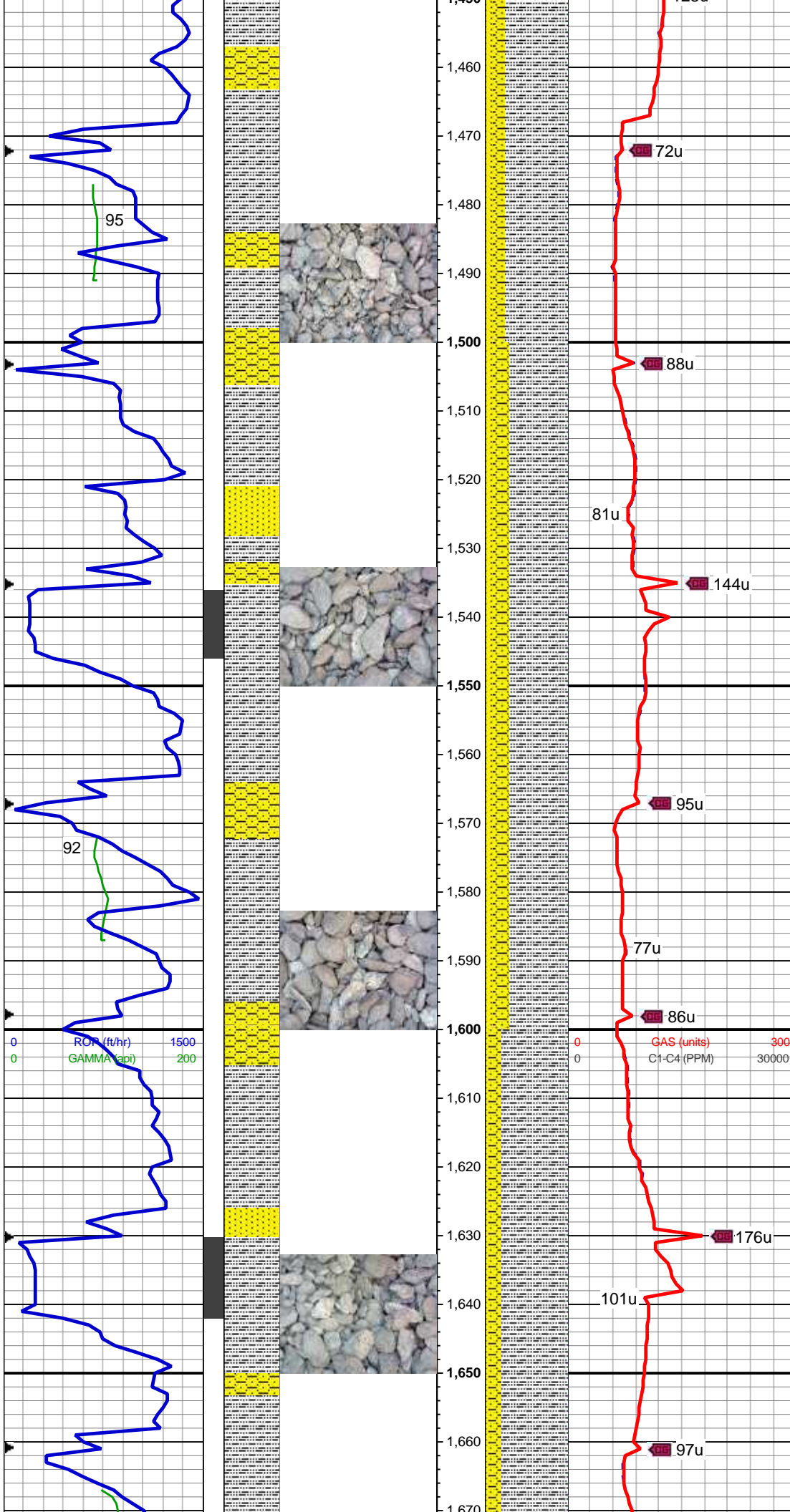
70% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blkly, slty tex, sl sdy ip, sl calc; 25% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 5% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc

MD: 1,195 '  
TVD: 1,194.78 '  
Inclination: 1.8 °  
Azimuth: 4 °  
VS: -17.11 '

WT: 8.4 / VIS: 27







rnd-ang, mod-w srt, cly cmt, non  
calc; 10% SS: wh-lt gy, tr s&p,  
clr-trnsl, sb rnd-ang, p srt, w cons, f  
gr, non calc

MD: 1,480 '  
TVD: 1,479.71 '  
Inclination: 0.8 °  
Azimuth: 216.9 °  
VS: -19.52 '

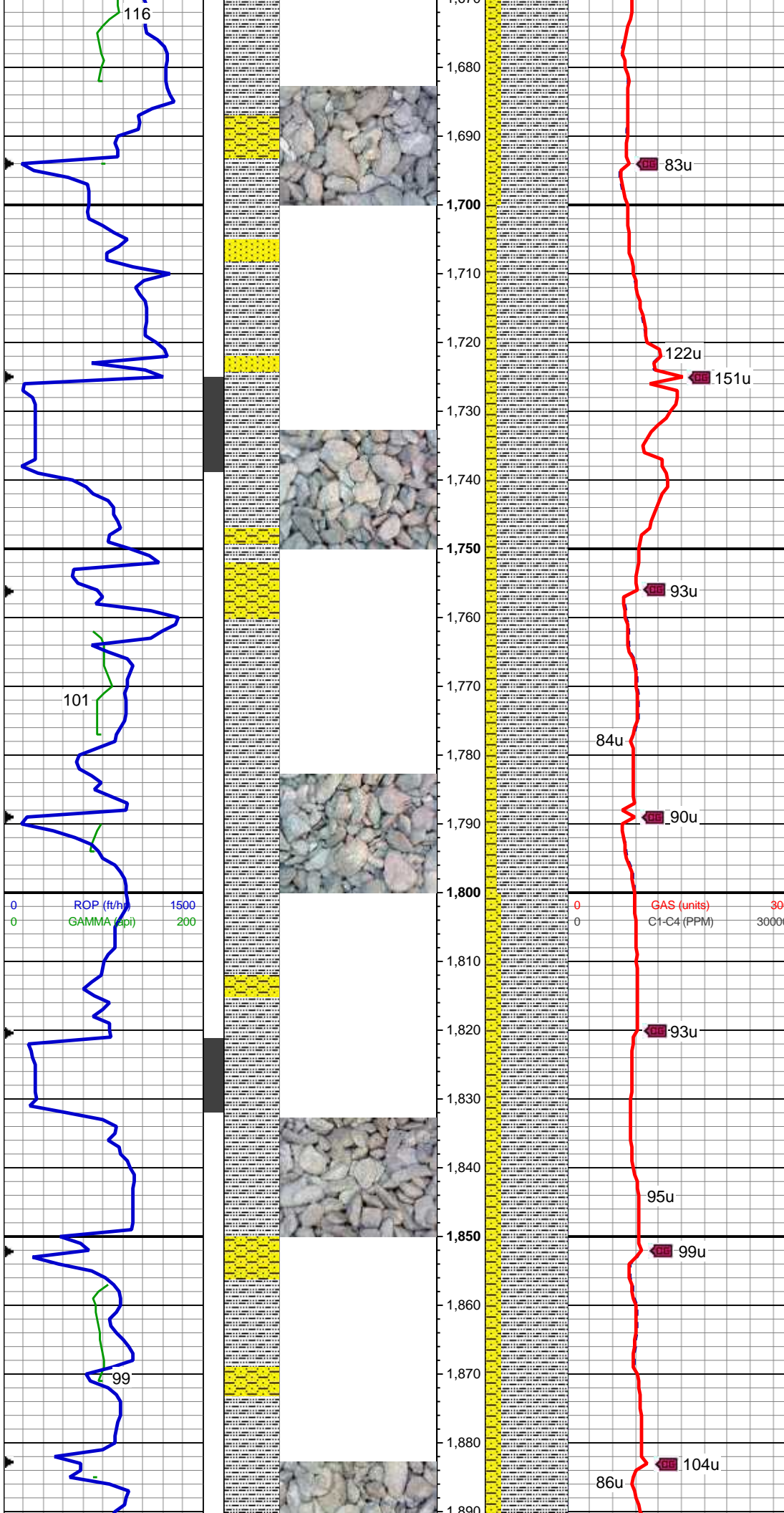
WT: 8.4 / VIS: 27

70% SLTY SH: lt-med gy, sl brn,  
sft-sl frm, sb plty-sb blk, slty tex, sl  
sdy ip, sl calc; 20% SHY SS: lt  
gy-med gy, S&P, frm, v f-f gr, sb  
rnd-ang, mod-w srt, cly cmt, non  
calc; 10% SS: wh-lt gy, tr s&p,  
clr-trnsl, sb rnd-ang, p srt, w cons, f  
gr, non calc

MD: 1,575 '  
TVD: 1,574.68 '  
Inclination: 2 °  
Azimuth: 149.4 °  
VS: -17.54 '

80% SLTY SH: lt-med gy, sl brn,  
sft-sl frm, sb plty-sb blk, slty tex, sl  
sdy ip, sl calc; 15% SHY SS: lt  
gy-med gy, S&P, frm, v f-f gr, sb  
rnd-ang, mod-w srt, cly cmt, non  
calc; 5% SS: wh-lt gy, tr s&p,  
clr-trnsl, sb rnd-ang, p srt, w cons, f  
gr, non calc





MD: 1,670 '  
TVD: 1,669.6 '  
Inclination: 2.9 °  
Azimuth: 121.1 °  
VS: -14.65 '

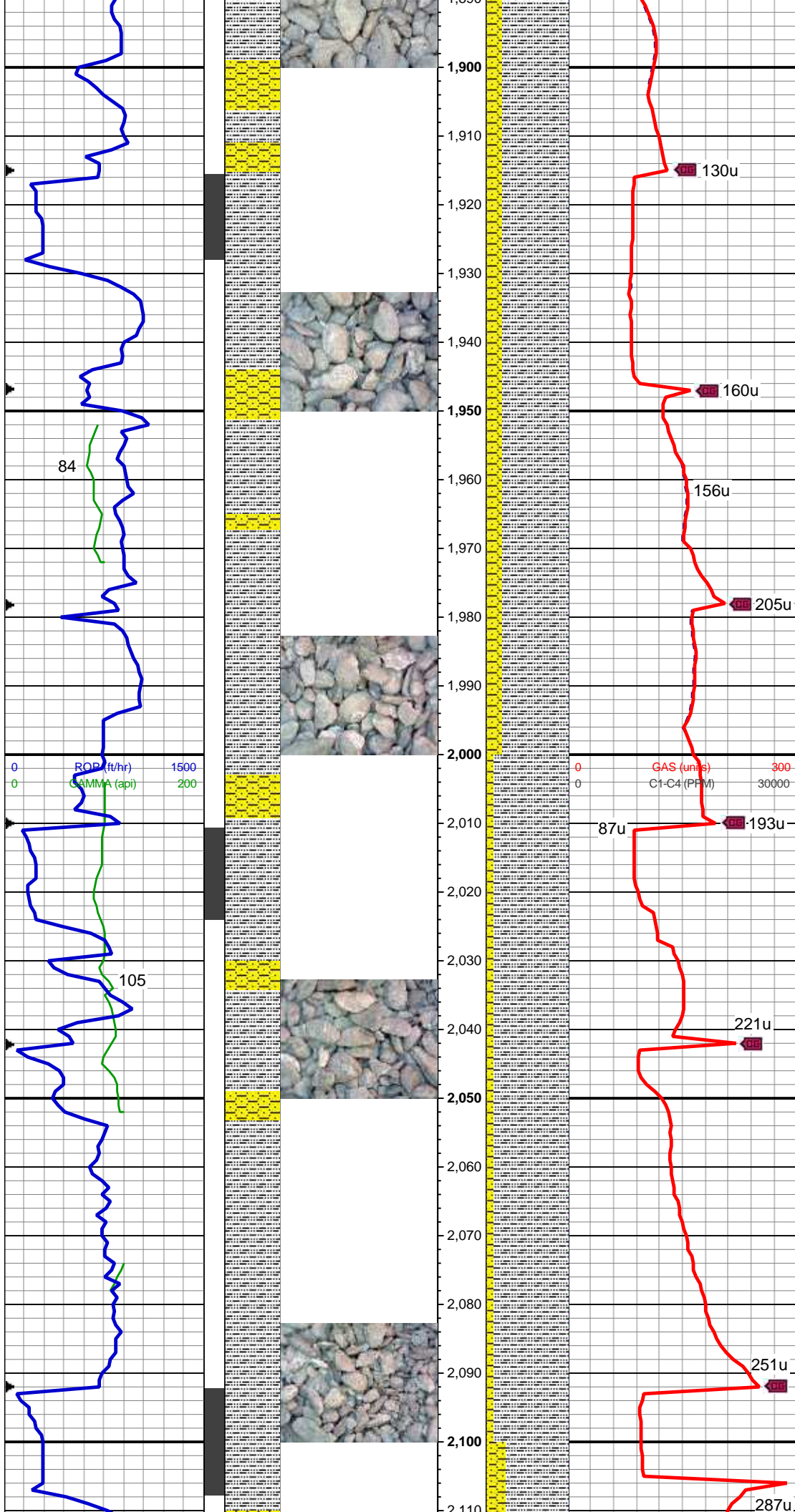
85% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 15% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc, occ ss

MD: 1,765 '  
TVD: 1,764.38 '  
Inclination: 4.9 °  
Azimuth: 120.5 °  
VS: -11.53 '

WT: 8.4 / VIS: 27

80% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 20% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc, tr ss

MD: 1,860 '  
TVD: 1,858.99 '  
Inclination: 5.5 °  
Azimuth: 113.5 °  
VS: -7.67 '



MD: 1,955 '  
TVD: 1,953.5 '  
Inclination: 6.1 °  
Azimuth: 126.5 °  
VS: -2.22 '

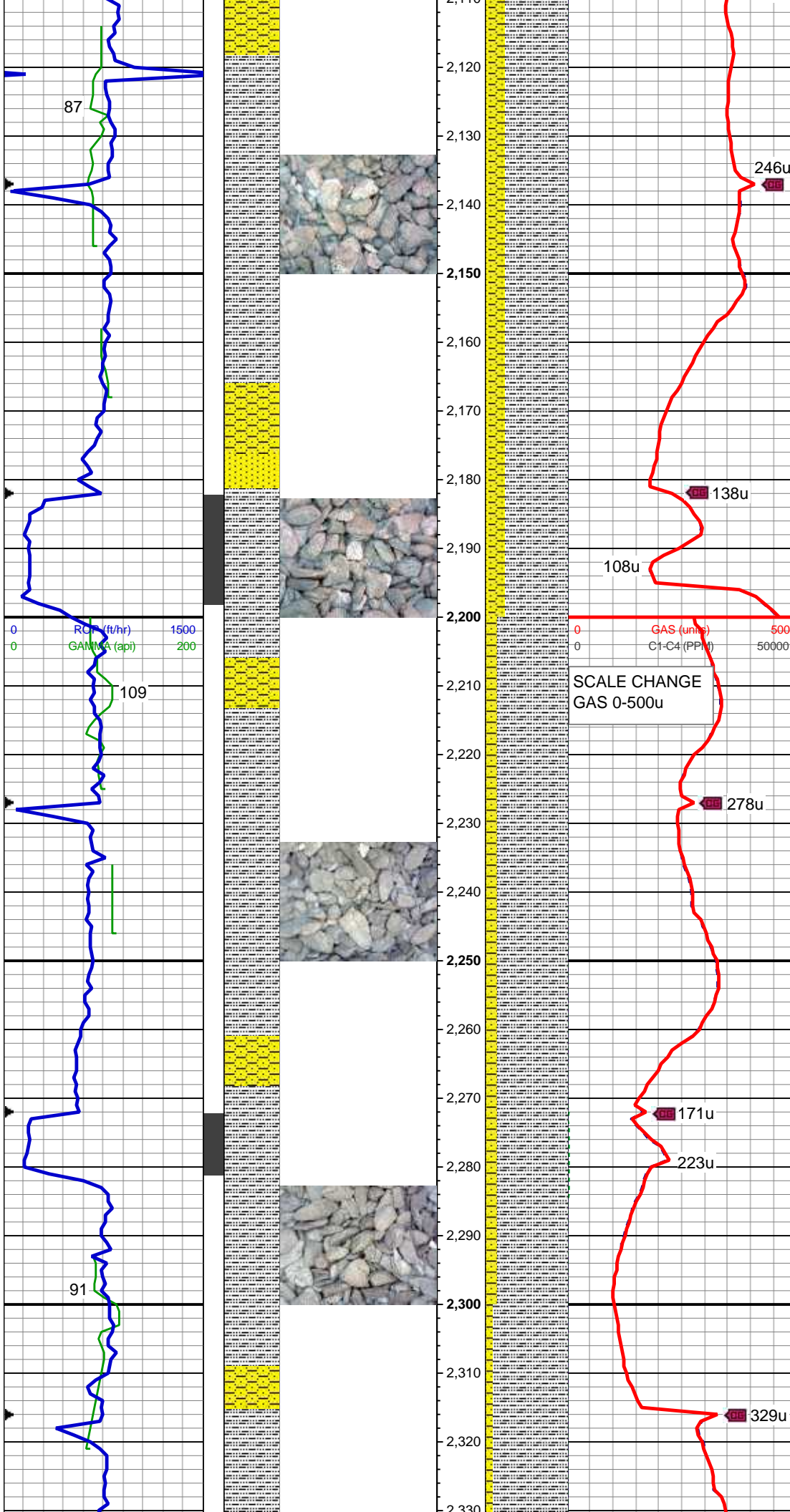
80% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 20% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc, tr ss

WT: 8.4 / VIS: 27

MD: 2,037 '  
TVD: 2,034.89 '  
Inclination: 7.9 °  
Azimuth: 122 °  
VS: 4 '

90% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 10% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc, tr ss





MD: 2,127 '  
TVD: 2,123.95 '  
Inclination: 8.7 °  
Azimuth: 128.7 °  
VS: 12.34 '

246u  
75% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 20% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 5% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc

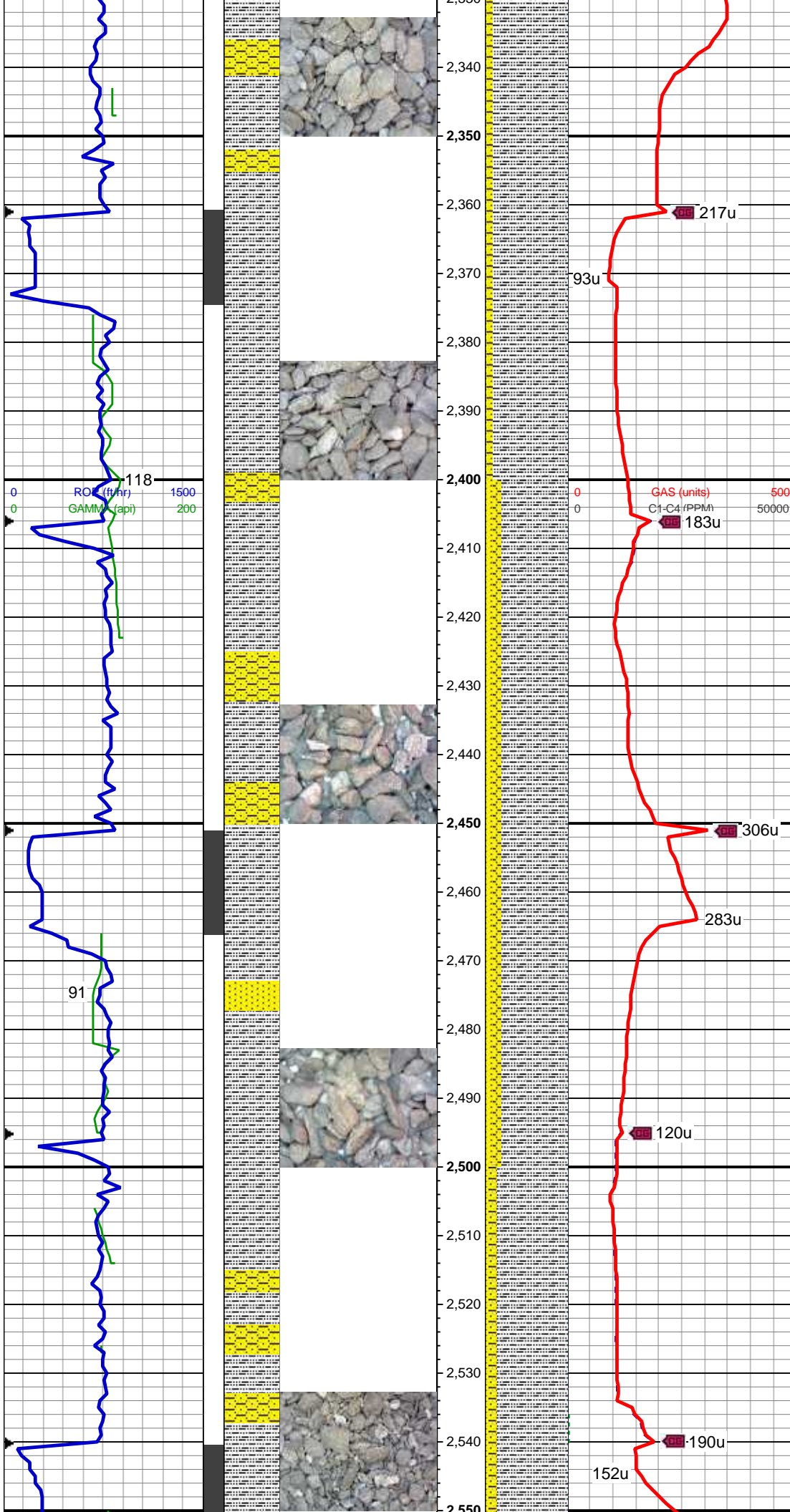
MD: 2,216 '  
TVD: 2,211.74 '  
Inclination: 10.2 °  
Azimuth: 120.2 °  
VS: 21.45 '

278u  
85% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 15% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc, tr ss

WT: 8.4 / VIS: 27

MD: 2,306 '  
TVD: 2,300.36 '  
Inclination: 9.9 °  
Azimuth: 120 °  
VS: 30.37 '

329u



90% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 10% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc

MD: 2,396 '  
TVD: 2,389.09 '  
Inclination: 9.4 °  
Azimuth: 129.2 °  
VS: 39.84 '

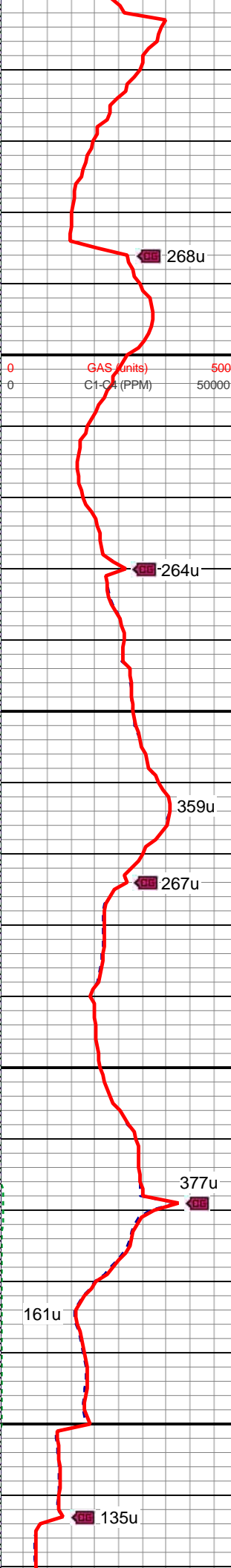
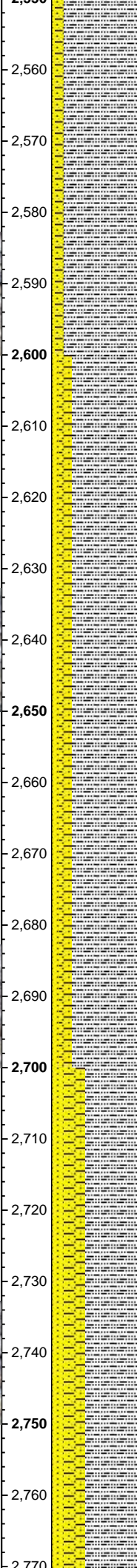
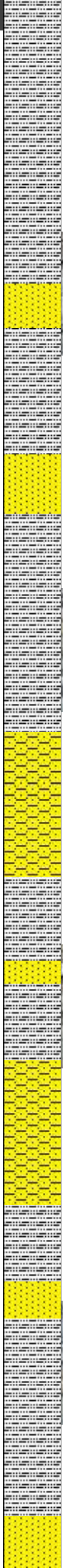
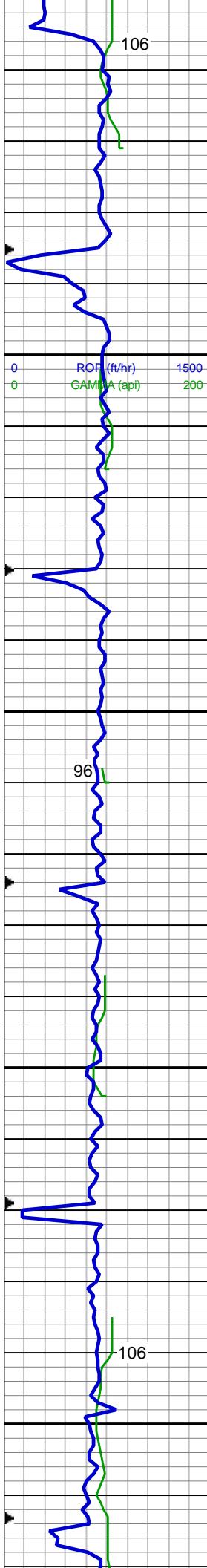
80% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 10% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 10% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc

MD: 2,485 '  
TVD: 2,476.7 '  
Inclination: 10.9 °  
Azimuth: 129.6 °  
VS: 50.73 '

WT: 8.4 / VIS: 27

85% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 10% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb





rnd-ang, mod-w srt, cly cmt, non calc; 5% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc

MD: 2,575 '  
TVD: 2,564.94 '  
Inclination: 11.8 °  
Azimuth: 125 °  
VS: 62.51 '

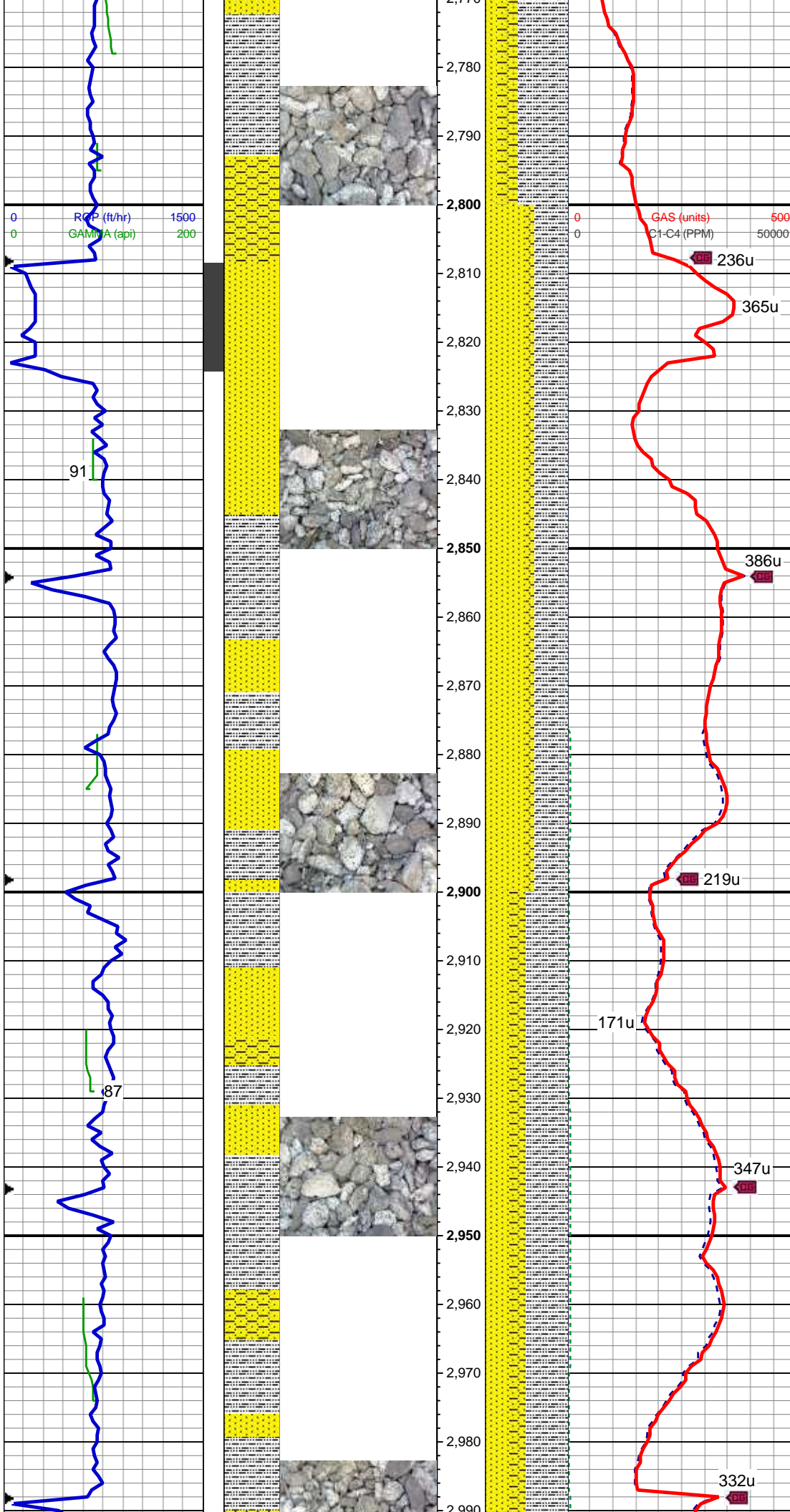
75% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 15% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 10% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc

MD: 2,664 '  
TVD: 2,652.23 '  
Inclination: 10.7 °  
Azimuth: 124.2 °  
VS: 73.48 '

MD: 2,754 '  
TVD: 2,740.78 '  
Inclination: 9.9 °  
Azimuth: 125 °  
VS: 83.63 '

60% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 25% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 15% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc





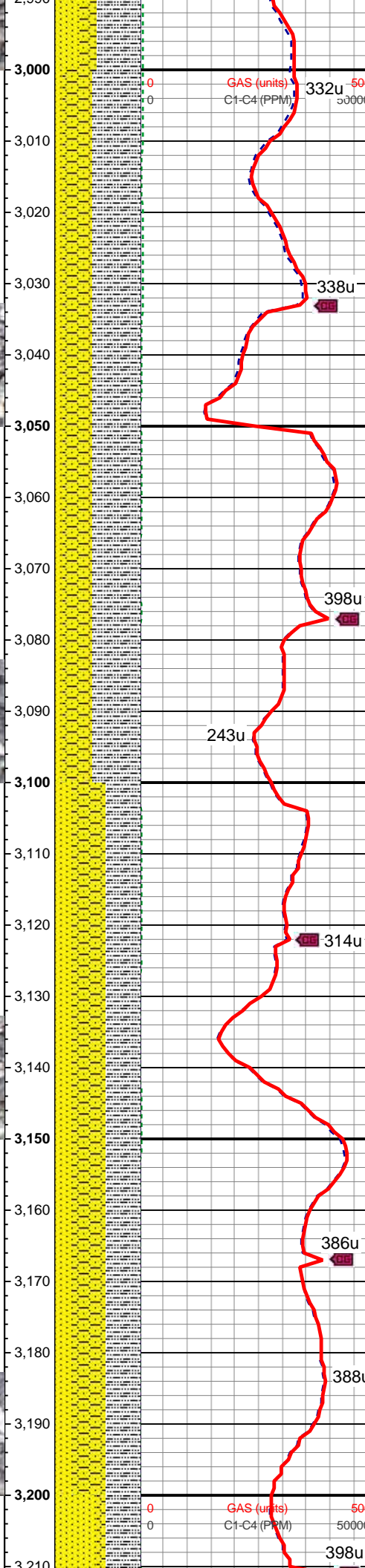
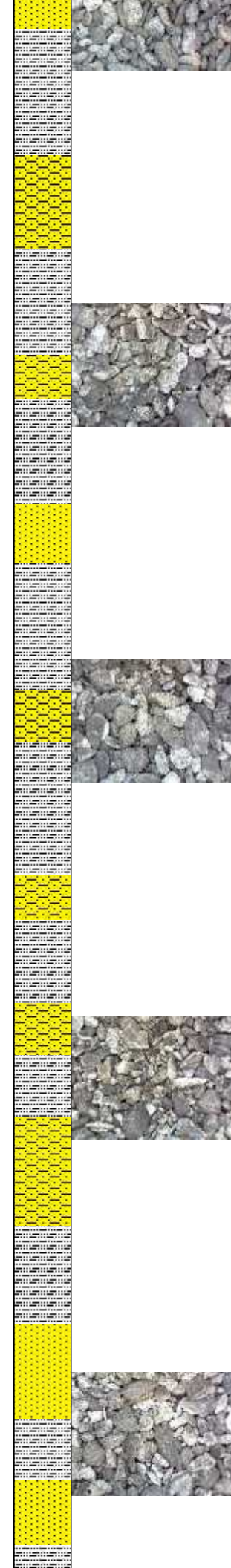
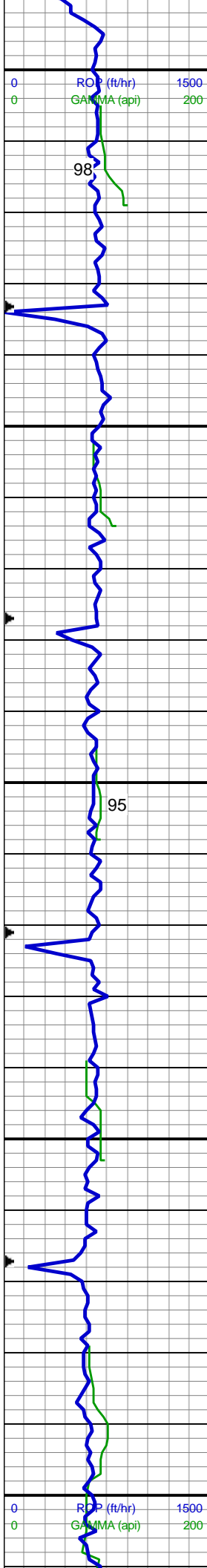
WT: 8.4 / VIS: 27

MD: 2,843 '  
TVD: 11.4 '  
Inclination: 121.3 °  
Azimuth: 2,828.24 °  
VS: 93.68 '

50% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc; 40% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blkly, slty tex, sl sdy ip, sl calc; 10% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc

MD: 2,933 '  
TVD: 11.4 '  
Inclination: 120.5 °  
Azimuth: 2,916.47 °  
VS: 103.99 '

50% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blkly, slty tex, sl sdy ip, sl calc; 30% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc; 20% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc



MD: 3,023 '  
TVD: 10.5 '  
Inclination: 118.6 °  
Azimuth: 3,004.83 °  
VS: 113.58 '

55% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 35% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 10% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc

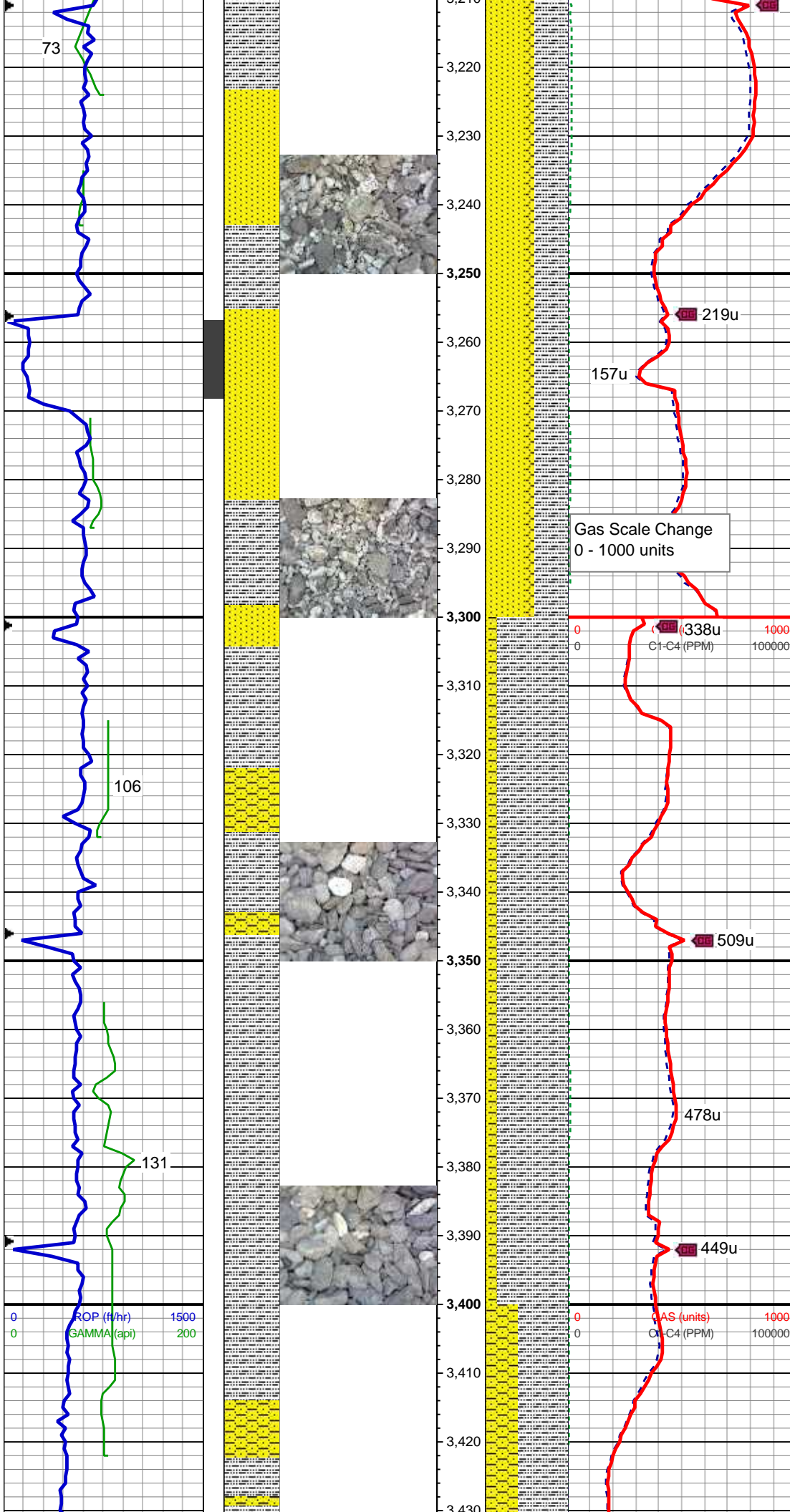
MD: 3,112 '  
TVD: 3,092.43 '  
Inclination: 9.8 °  
Azimuth: 119.5 °  
VS: 122.25 '

WT: 8.4 / VIS: 27

40% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 40% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 20% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc

MD: 3,201 '  
TVD: 3,180.21 '  
Inclination: 9.2 °  
Azimuth: 120.2 °  
VS: 130.55 '





50% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc; 40% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 10% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc

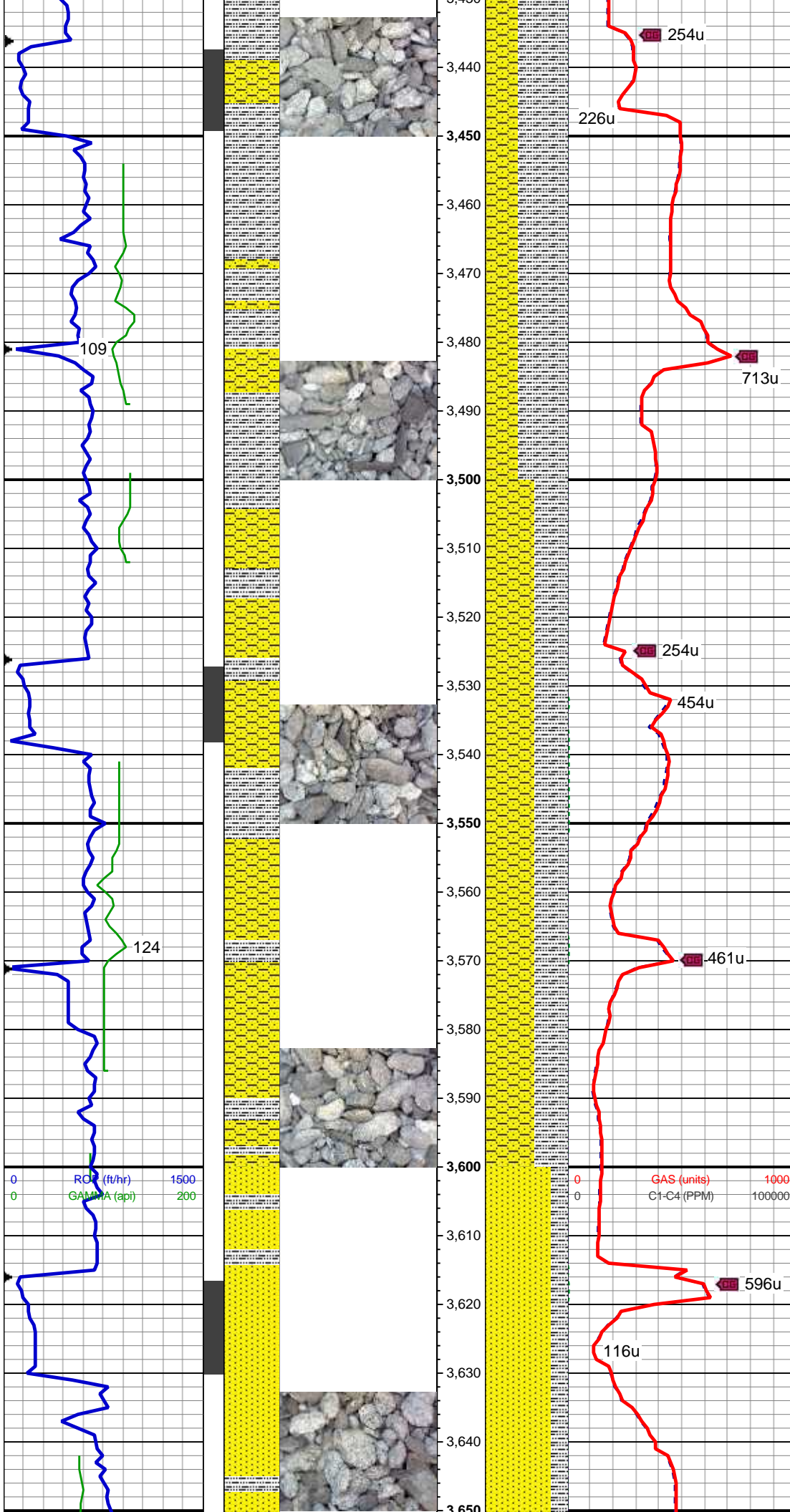
MD: 3,291 '  
TVD: 3,269.02 '  
Inclination: 9.5 °  
Azimuth: 118.1 °  
VS: 138.65 '

85% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 10% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 5% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc

MD: 3,381 '  
TVD: 3,357.91 '  
Inclination: 8.5 °  
Azimuth: 112.6 °  
VS: 145.7 '

WT: 8.4 / VIS: 27





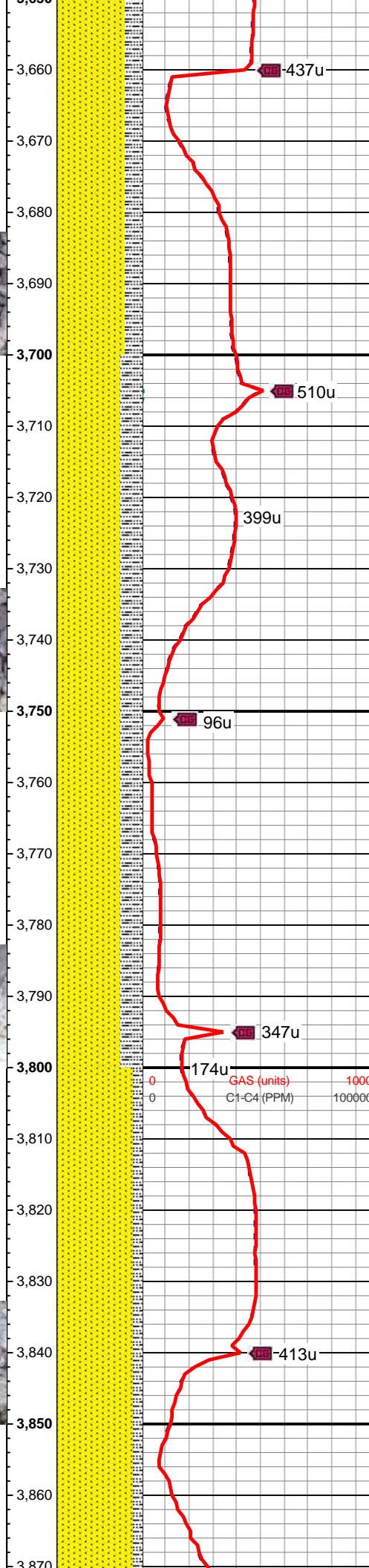
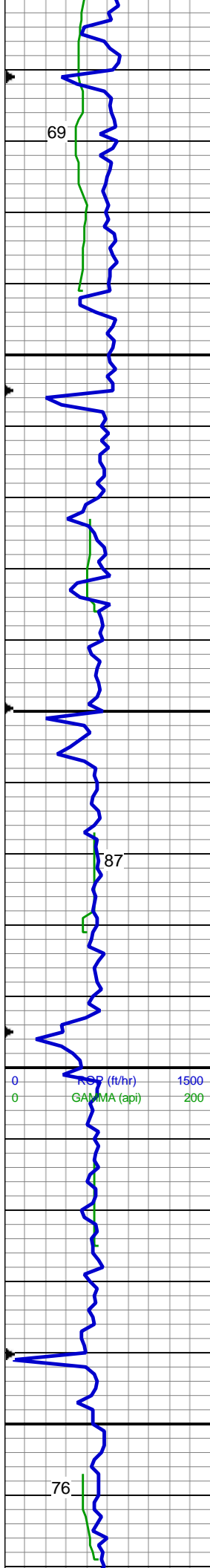
60% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 40% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc, tr ss

MD: 3,471 '  
TVD: 3,446.96 '  
Inclination: 8.2 °  
Azimuth: 116.5 °  
VS: 152.04 '

60% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 40% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc, tr ss

MD: 3,560 '  
TVD: 3,534.99 '  
Inclination: 8.7 °  
Azimuth: 120.7 °  
VS: 159.2 '

MD: 3,650 '  
TVD: 3,623.61 '  
Inclination: 11.3 °  
Azimuth: 122.4 °  
VS: 168.42 '



80% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc; 20% SLTY SH: med-dk gy, tr sl brn, sft-sl frm, sb plty-sb blkly, slty tex, sl sdy ip, sl calc

WT: 8.5 / VIS: 27

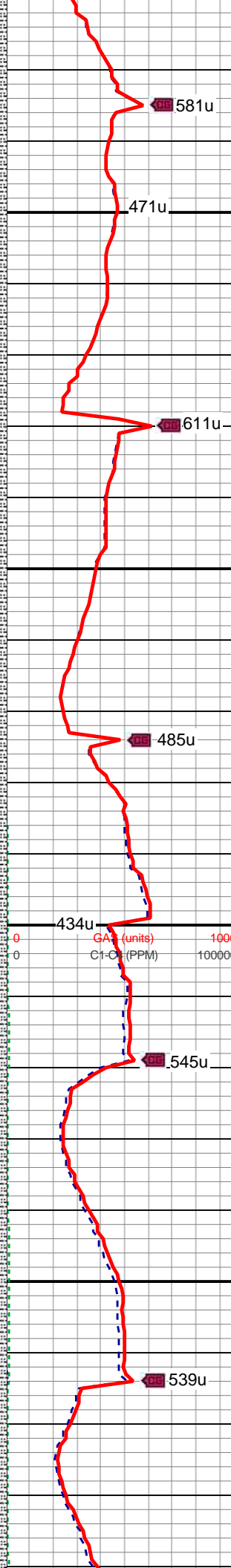
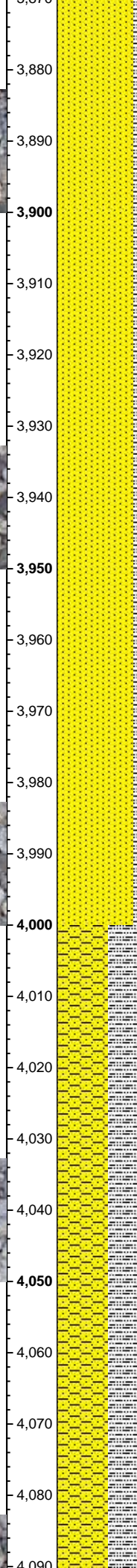
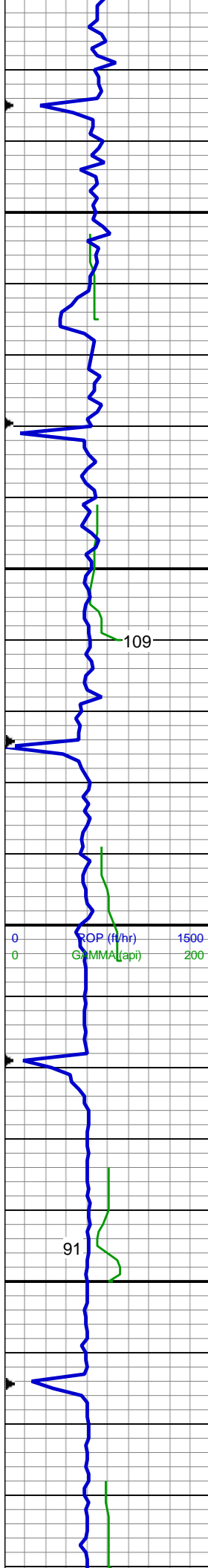
MD: 3,740 '  
TVD: 3,711.78 '  
Inclination: 11.9 °  
Azimuth: 121.4 °  
VS: 179.17 '

75% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc; 25% SLTY SH: med-dk gy, tr sl brn, sft-sl frm, sb plty-sb blkly, slty tex, sl sdy ip, sl calc

MD: 3,829 '  
TVD: 3,798.83 '  
Inclination: 12.1 °  
Azimuth: 120.6 °  
VS: 189.92 '

90% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc; 10% SLTY SH: med-dk gy, tr sl brn, sft-sl frm, sb plty-sb blkly, slty tex, sl sdy ip, sl calc





MD: 3,918 '  
TVD: 3,885.82 '  
Inclination: 12.3 °  
Azimuth: 120.3 °  
VS: 200.71 '

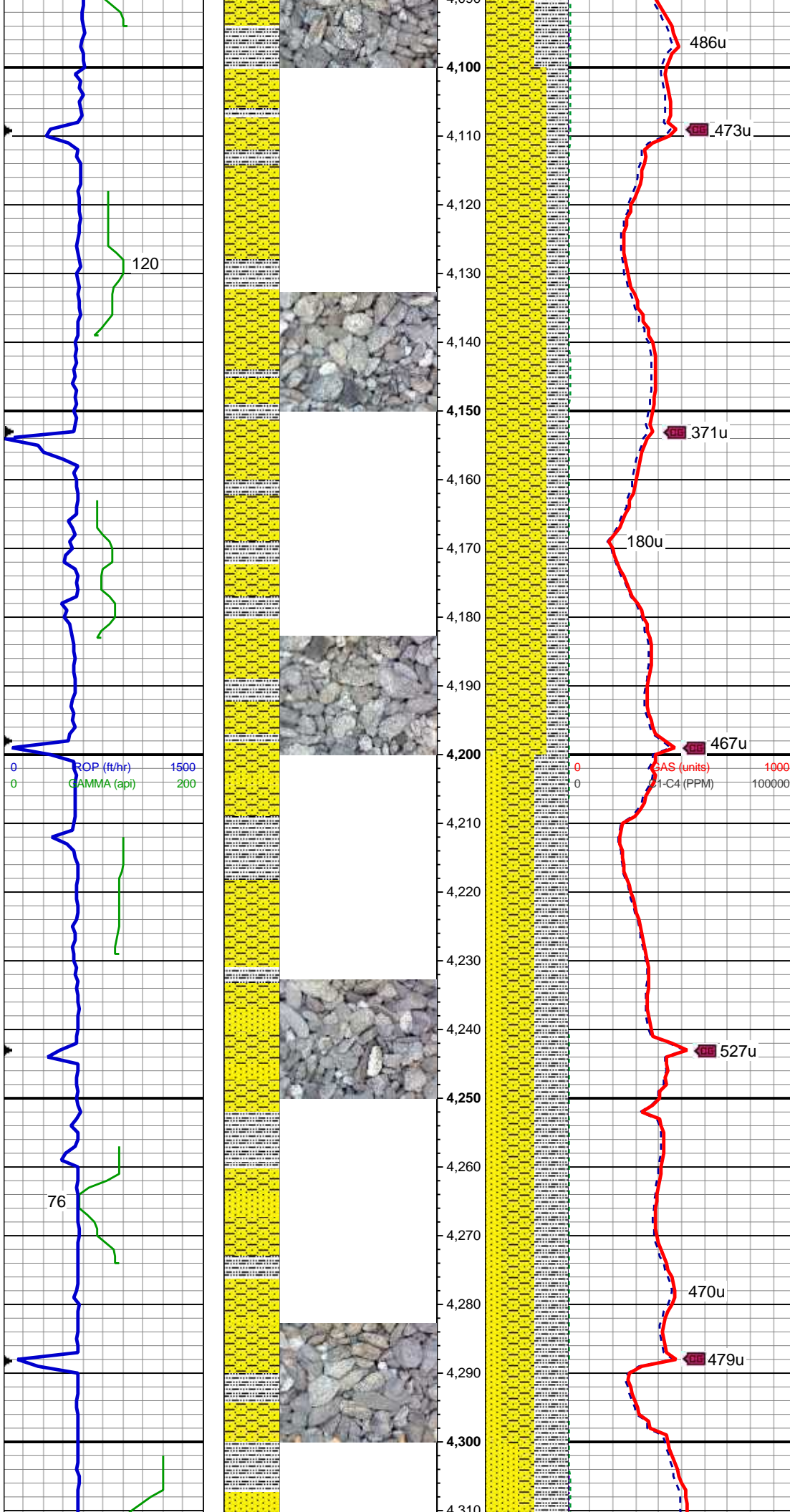
90% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc; 10% SLTY SH: med-dk gy, tr sl brn, sft-sl frm, sb plty-sb blkly, slty tex, sl sdy ip, sl calc

MD: 4,008 '  
TVD: 3,973.87 '  
Inclination: 11.6 °  
Azimuth: 118.7 °  
VS: 211.15 '

60% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 40% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blkly, slty tex, sl sdy ip, sl calc, tr ss

MD: 4,008 '





MD: 4,098 '  
TVD: 4,062.08 '  
Inclination: 11.3 °  
Azimuth: 117.2 °  
VS: 220.74 '

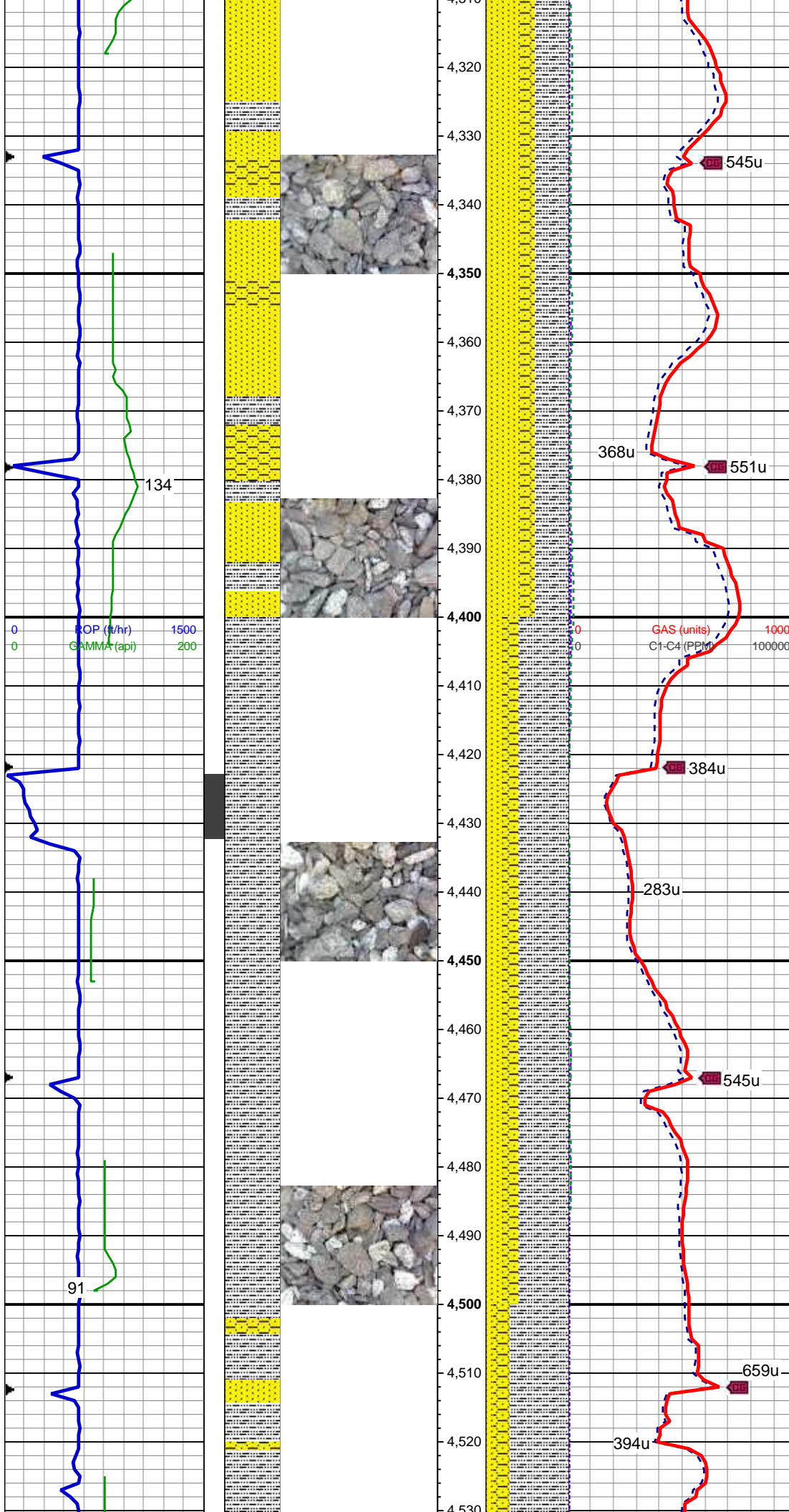
WT: 8.8 / VIS: 27

75% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 25% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc, tr ss

MD: 4,188 '  
TVD: 4,150.44 '  
Inclination: 10.6 °  
Azimuth: 116.3 °  
VS: 229.63 '

40% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 40% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 20% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc, occ glauc

MD: 4,277 '  
TVD: 4,237.96 '  
Inclination: 10.3 °  
Azimuth: 116.1 °  
VS: 237.88 '



40% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 40% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc, occ glauc; 20% SHY SS: lt gy-med gy, S&P, frm, v f-gr, sb rnd-ang, mod-w srt, cly cmt, non calc

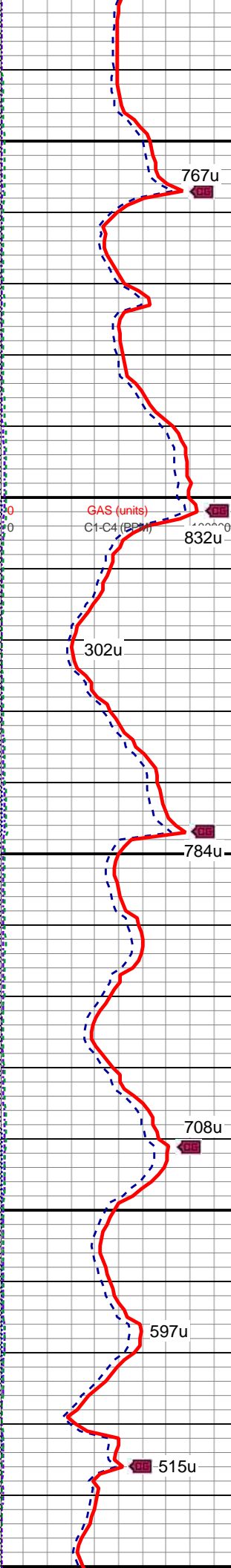
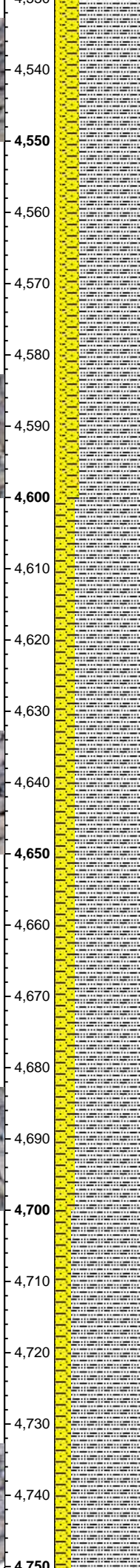
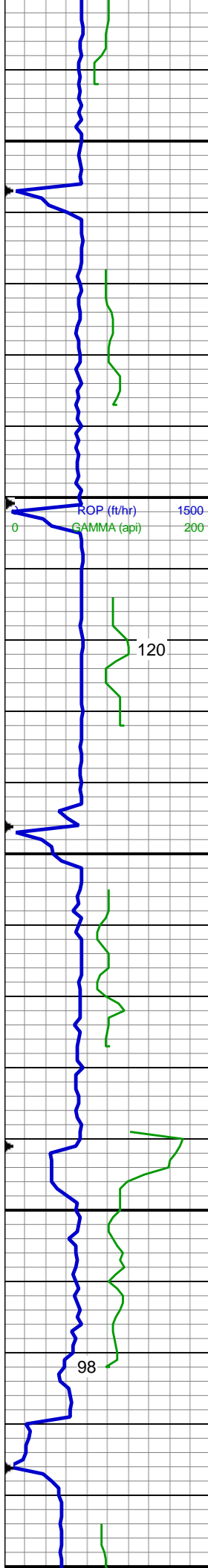
MD: 4,367 '  
TVD: 4,326.64 '  
Inclination: 9.4 °  
Azimuth: 114.9 °  
VS: 245.59 '

60% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blk, slty tex, sl sdy ip, sl calc; 20% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc, occ glauc; 20% SHY SS: lt gy-med gy, S&P, frm, v f-gr, sb rnd-ang, mod-w srt, cly cmt, non calc

MD: 4,456 '  
TVD: 4,414.32 '  
Inclination: 10.3 °  
Azimuth: 111.1 °  
VS: 252.61 '

MD: 4,546 '  
TVD: 4,504.32 '  
Inclination: 10.3 °  
Azimuth: 111.1 °  
VS: 252.61 '





TVD: 4,503  
Inclination: 9.4 °  
Azimuth: 109.4 °  
VS: 259.07 '

70% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blkly, slty tex, sl sdy ip, sl calc; 20% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc; 10% SS: wh-lt gy, tr s&p, clr-trnsl, sb rnd-ang, p srt, w cons, f gr, non calc, occ glauc

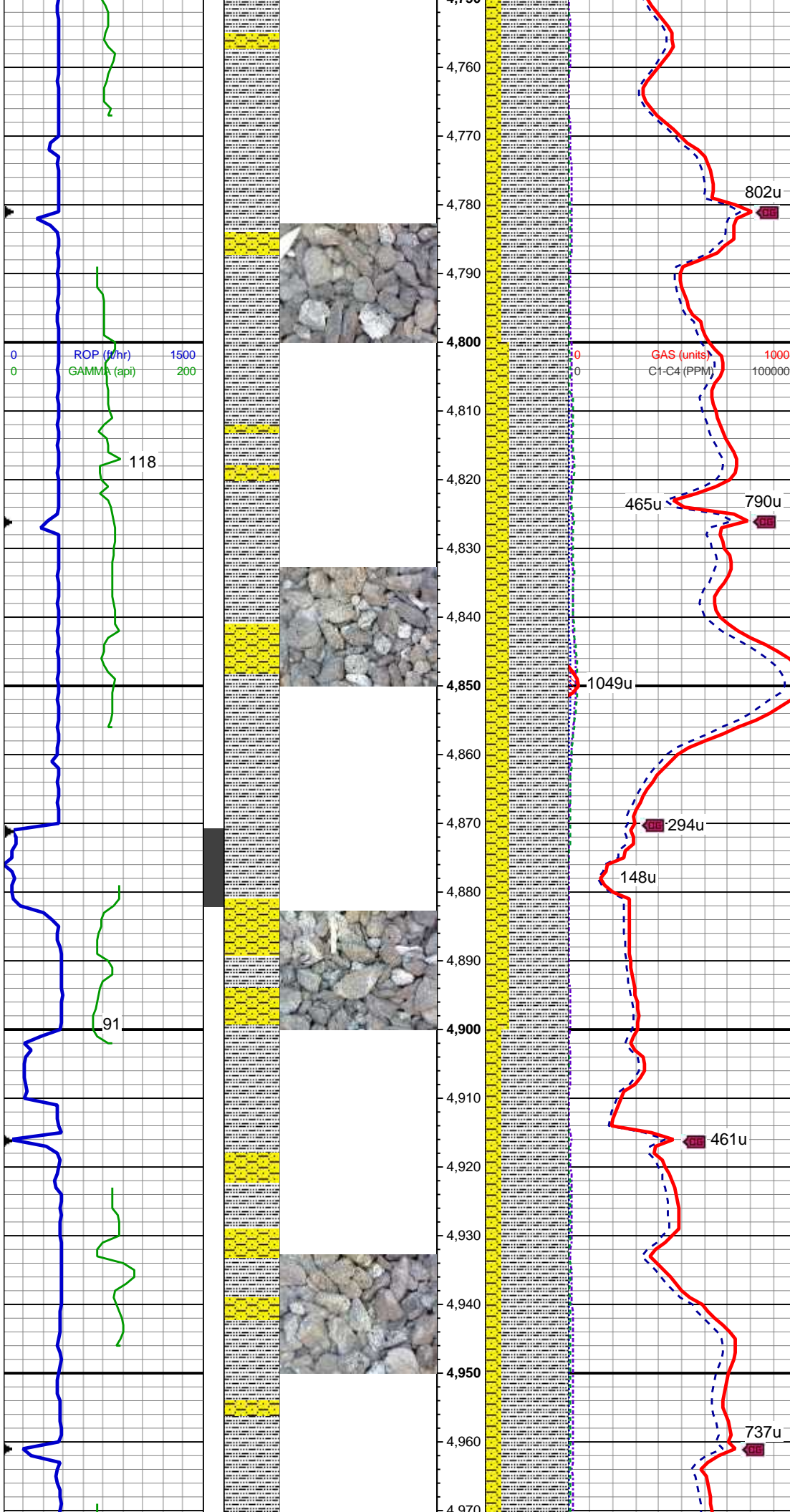
MD: 4,636 '  
TVD: 4,592.01 '  
Inclination: 7.6 °  
Azimuth: 107.9 °  
VS: 264.33 '

75% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blkly, slty tex, sl sdy ip, sl calc; 25% SHY SS: lt gy-med gy, S&P, frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc

MD: 4,726 '  
TVD: 4,681.32 '  
Inclination: 6.5 °  
Azimuth: 109.4 °  
VS: 268.66 '

80% SLTY SH: lt-med gy, sl brn, sft-sl frm, sb plty-sb blkly, slty tex, sl sdy ip, sl calc; 20% SHY SS: lt





gy-med gy, S&P, frm, v f-f gr, sb  
rnd-ang, mod-w srt, cly cmt, non  
calc

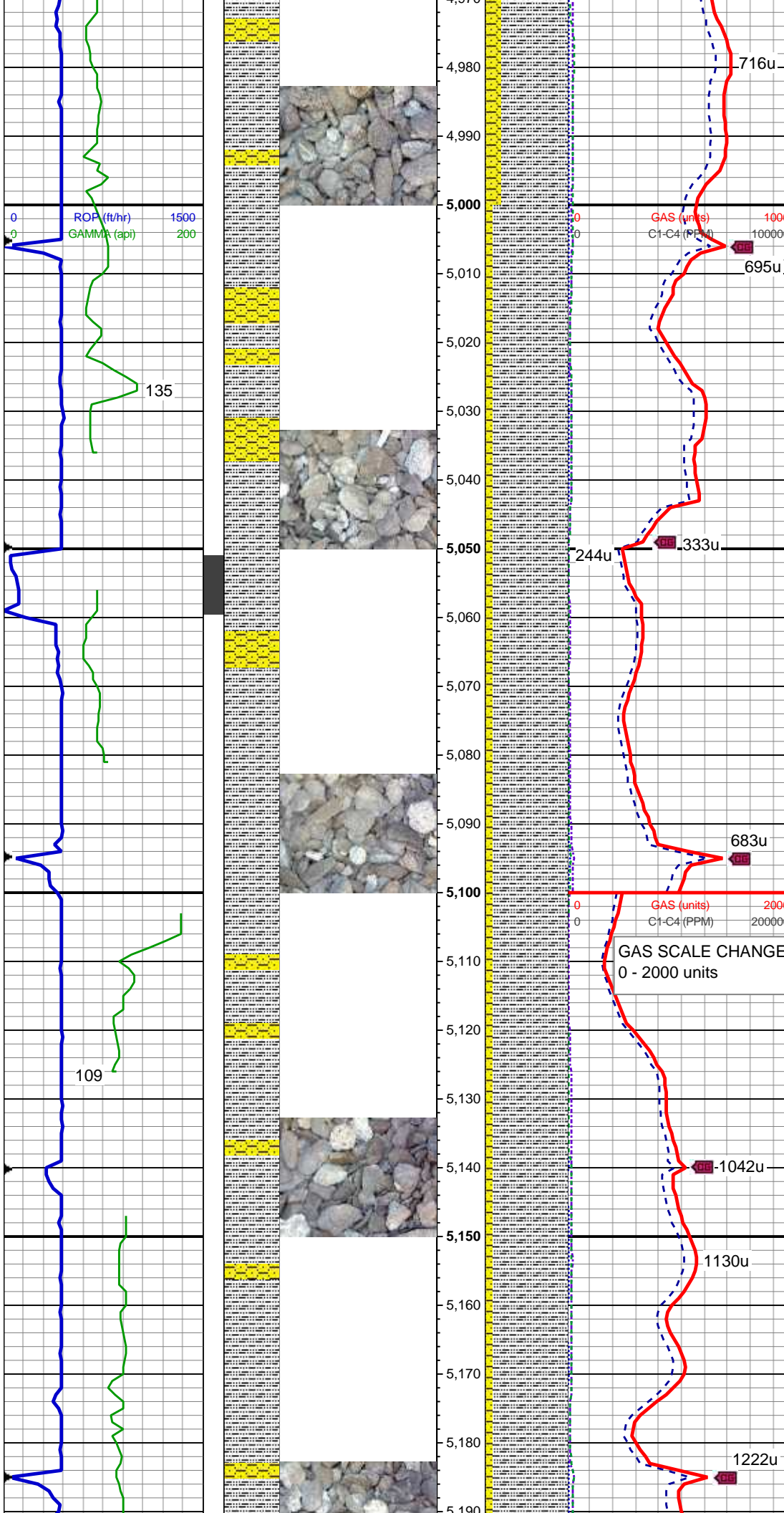
MD: 4,815 '  
TVD: 4,769.79 '  
Inclination: 6.1 °  
Azimuth: 113.2 °  
VS: 272.91 '

70% SLTY SH: lt-med gy, sl brn,  
sft-sl frm, sb plty-sb blk, slty tex, sl  
sdy ip, sl calc; 30% SHY SS: lt  
gy-med gy, S&P, frm, v f-f gr, sb  
rnd-ang, mod-w srt, cly cmt, non  
calc

WT: 9.1 / VIS: 27

MD: 4,905 '  
TVD: 4,859.32 '  
Inclination: 5.6 °  
Azimuth: 111.9 °  
VS: 277.09 '

80% SLTY SH: lt-med gy, sl brn,  
sft-sl frm, sb plty-sb blk, slty tex, sl  
sdy ip, sl calc; 20% SHY SS: lt  
gy-med gy, S&P, frm, v f-f gr, sb  
rnd-ang, mod-w srt, cly cmt, non  
calc



MD: 4,995 '  
TVD: 4,948.92 '  
Inclination: 5.1 °  
Azimuth: 111.4 °  
VS: 280.8 '

90% SLTY SH: med-dk gy, sft-frn,  
sb plty-sb blkly, slty tex, tr sl sdy ip,  
sl calc; 10% SHY SS: lt gy-med gy,  
S&P, frm, v f-f gr, sb rnd-ang,  
mod-w srt, cly cmt, non calc

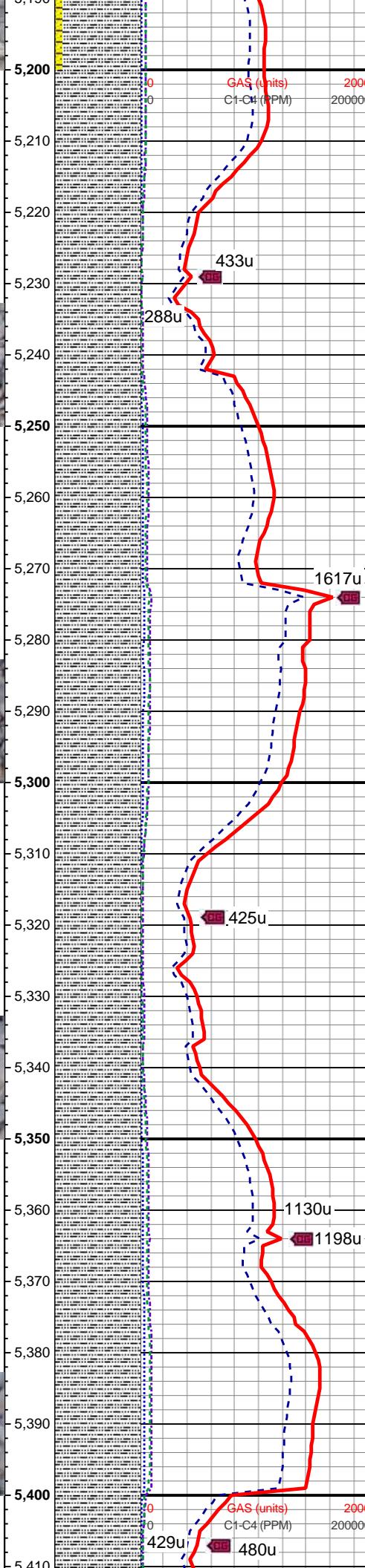
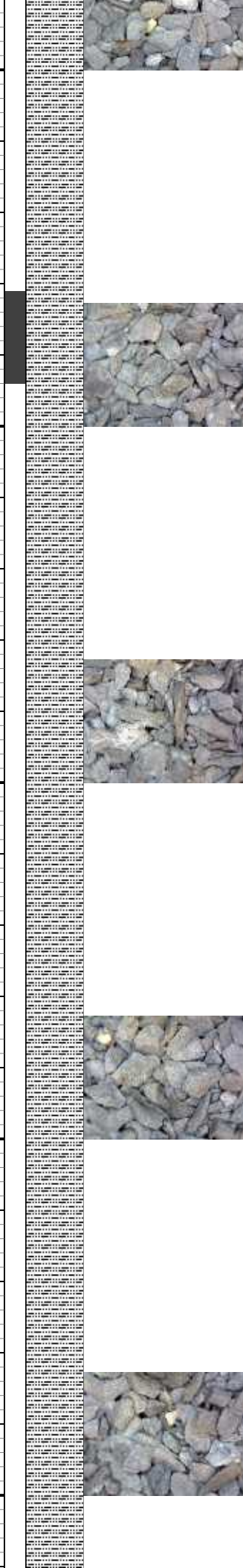
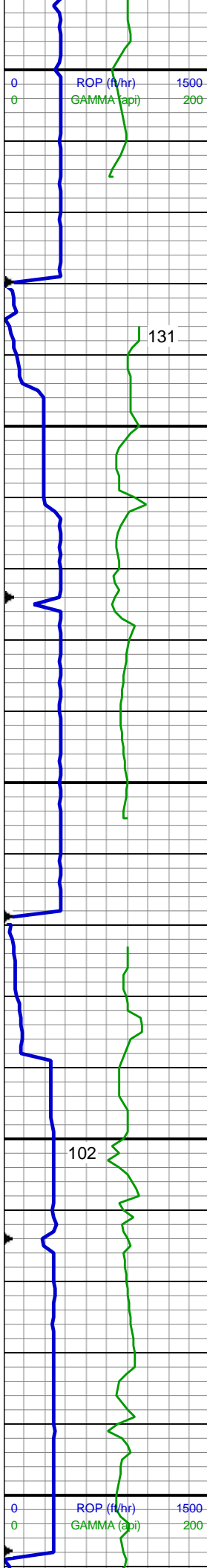
MD: 5,084 '  
TVD: 5,037.56 '  
Inclination: 5.4 °  
Azimuth: 97.3 °  
VS: 283.39 '

WT: 9.4 / VIS: 35

90% SLTY SH: med-dk gy, sft-frn,  
sb plty-sb blkly, slty tex, tr sl sdy ip,  
sl calc; 10% SHY SS: lt gy-med gy,  
S&P, frm, v f-f gr, sb rnd-ang,  
mod-w srt, cly cmt, non calc

MD: 5,174 '  
TVD: 5,127.2 '  
Inclination: 4.8 °  
Azimuth: 94 °  
VS: 284.81 '





100% SLTY SH: med-dk gy, sft-frm,  
sb plty-sb blkly, tr plty, slty tex, tr sl  
sdy ip, sl calc, tr shy ss

MD: 5,264 '  
TVD: 5,216.96 '  
Inclination: 3.6 °  
Azimuth: 80.1 °  
VS: 285.11 '

WT: 9.45 / VIS: 42

100% SLTY SH: med-dk gy, sft-frm,  
sb plty-sb blkly, tr plty, slty tex, tr sl  
sdy ip, sl calc, tr shy ss

MD: 5,353  
TVD: 5,305.81 '  
Inclination: 3.1 °  
Azimuth: 45.5 °  
VS: 283.3 '

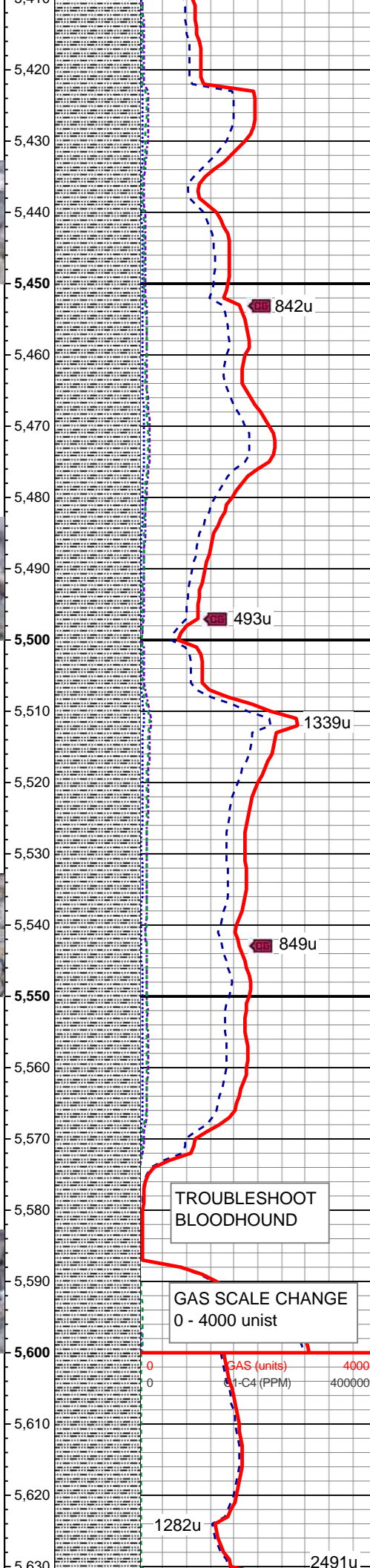
MINDEPTH

1/16/2015

124

93

ROP (ft/hr) 1500  
GAMMA (api) 200



WT: 9.5 / VIS: 44

MD: 5,443 '  
TVD: 5,395.74 '  
Inclination: 1.3 °  
Azimuth: 31.1 °  
VS: 280.91 '

100% SLTY SH: med-dk gy, sft frm, sb pty-sb blk, tr pty, slty tex, tr sl sdy ip, sl calc, tr shy ss

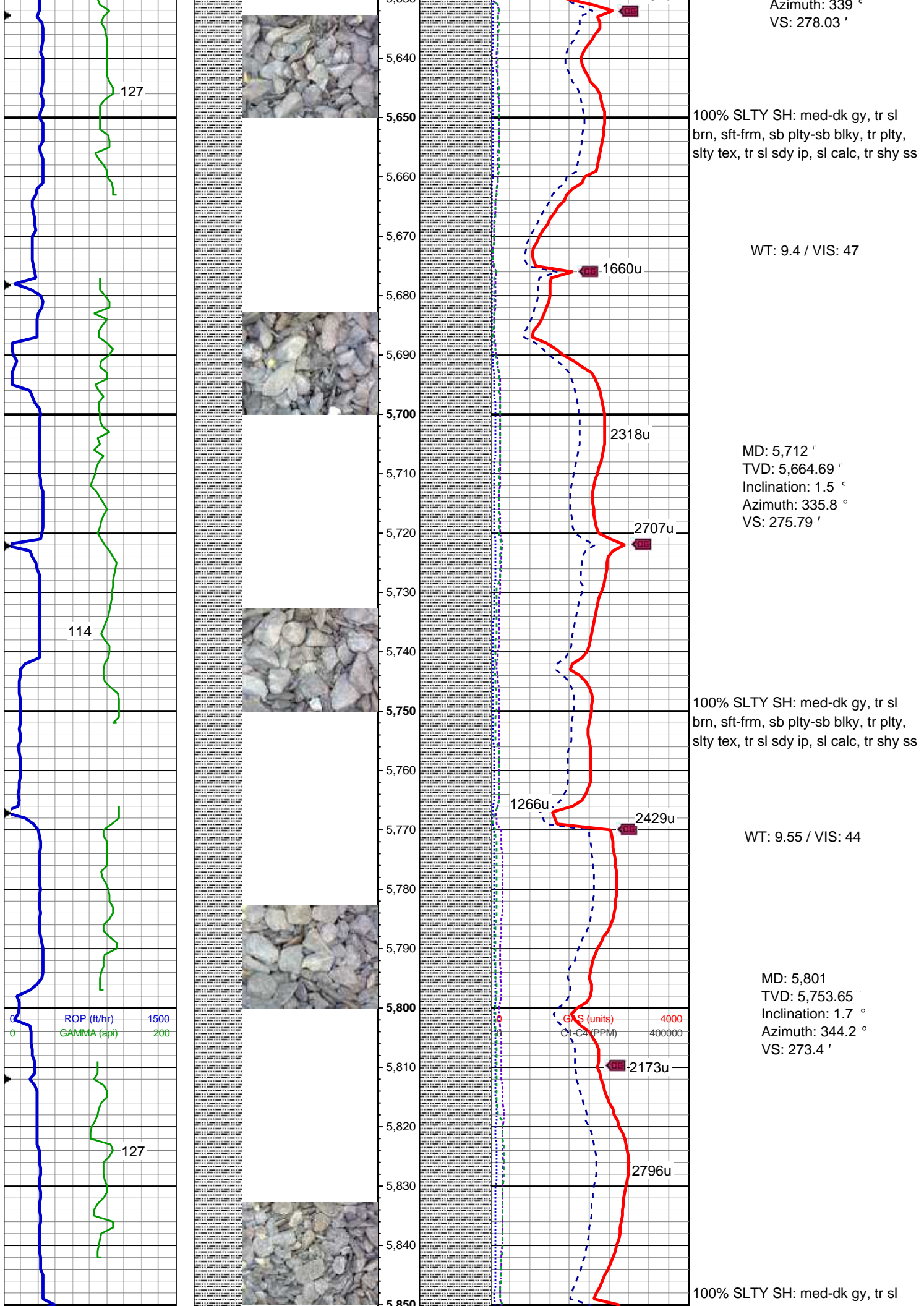
MD: 5,532 '  
TVD: 5,484.73 '  
Inclination: 0.6 °  
Azimuth: 346.8 °  
VS: 279.63 '

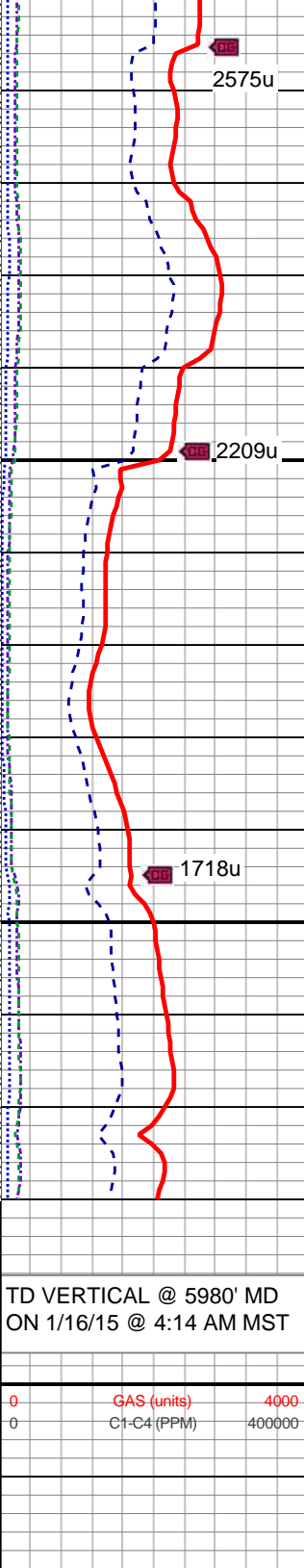
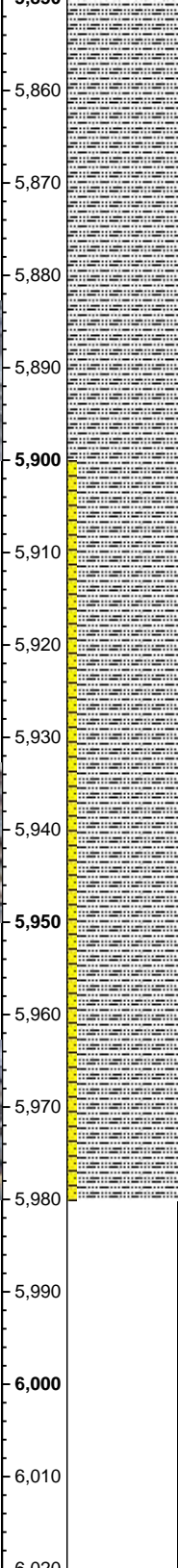
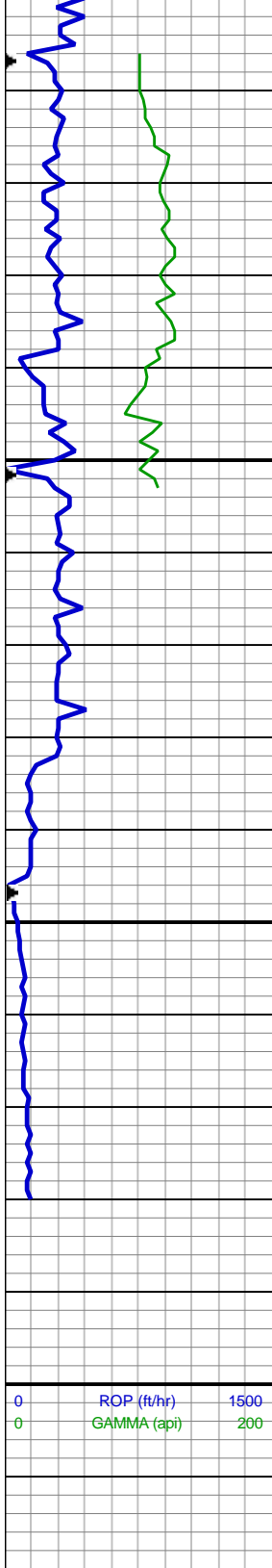
100% SLTY SH: med-dk gy, sft frm, sb pty-sb blk, tr pty, slty tex, tr sl sdy ip, sl calc, tr shy ss

WT: 9.5 / VIS: 50

MD: 5,622 '  
TVD: 5,574.72 '  
Inclination: 1.5 °







brn, sft frm, sb plty-sb blk, tr plty, slty tex, tr sl sdy ip, sl calc, tr shy ss

MD: 5,891 '  
TVD: 5,843.62 '  
Inclination: 1.4 °  
Azimuth: 347.1 °  
VS: 271 '

90% SLTY SH: med-dk gy, sft frm, sb plty-sb blk, slty tex, tr sl sdy ip, sl calc; 10% SHY SS: lt gy-med gy, S&P, sl frm frm, v f-f gr, sb rnd-ang, mod-w srt, cly cmt, non calc

Log Continues on Mahalo State AA09-74-1AHNC\_Horz

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