

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name Cecil Farms PC I06-68-1HN

Location SEC 6, T6N, R66W

State COLORADO

County WELD

Country USA

Rig Number H&P 326

API Number 05-123-35998

Region DJ BASIN

Field WATTENBERG

Spud Date 2/19/2014

Drilling Completed 3/4/2014

Surface Coordinates SEC 6, T6N, R66W
255' FNL, 259' FEL

Bottom Hole Coordinates SEC 6, T6N, R66W
990'FNL, 535' FWL

Ground Elevation 4870'

K.B. Elevation 4900'

Logged Interval 1100' **To** 11923'

Total Depth 11923'

Formation NIOBRARA, C CHALK

Type of Drilling Fluid LSND

Operator

Company NOBLE ENERGY INC.

Address 1625 Broadway Suite 2200
Denver, CO 80202

Geologist

Name EVAN HOWELL

Company NOBLE ENERGY INC.

Address 1625 Broadway Suite 2200
Denver, CO 80202

Rock Types

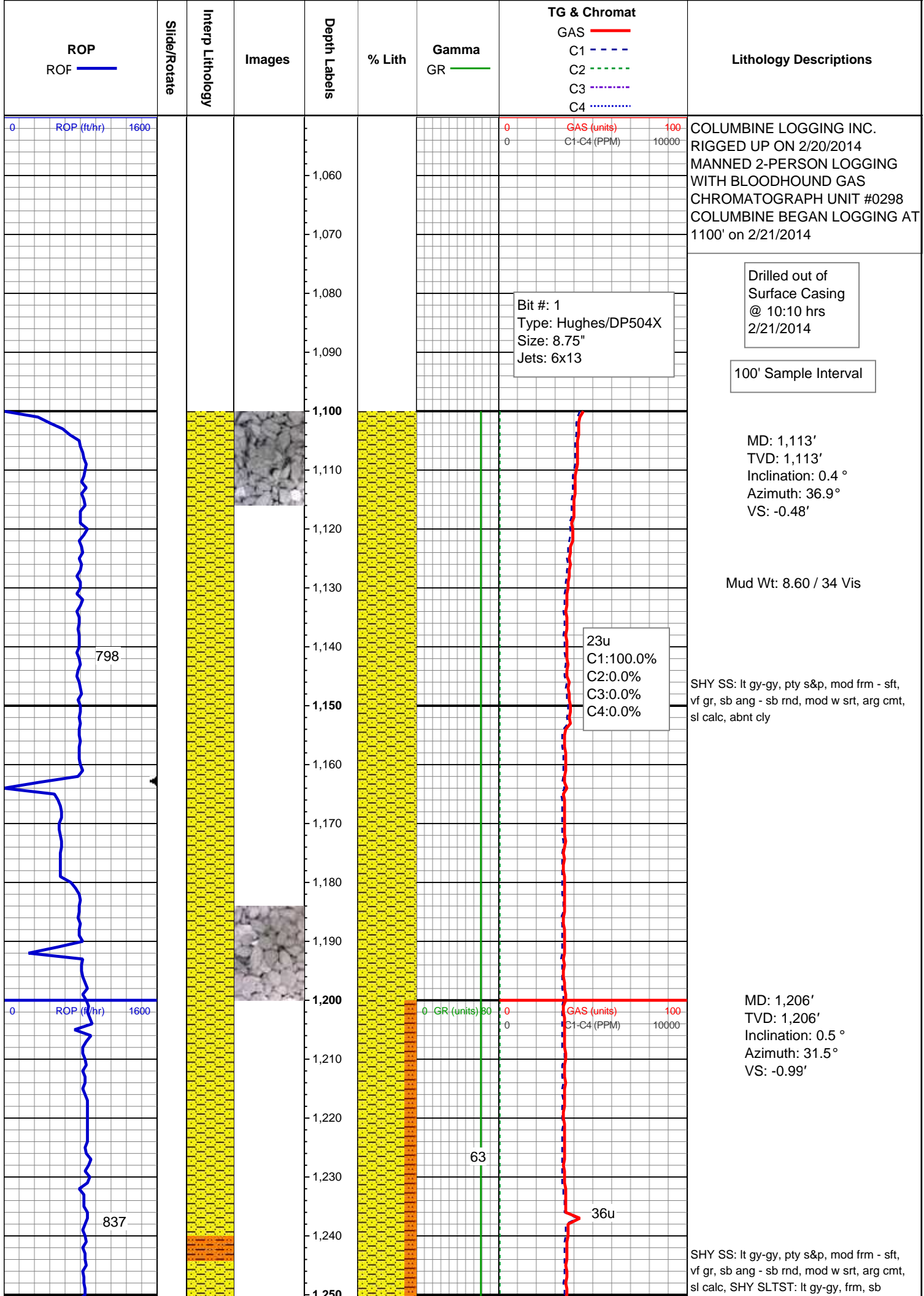
| | | | |
|-----------------|----------------------|-------------------|-----------------|
| UNKNOWN | COAL | METAMORPHIC | SHALY SILTSTONE |
| ANHYDRITE | CONGLOMERATE | NO SAMPLE | SILTSTONE |
| BENTONITE | DOLOMITE | SALT | SILTY SHALE |
| BRECCIA | GRANITE | SALT- PEPPER SAND | TILL |
| CEMENT | 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

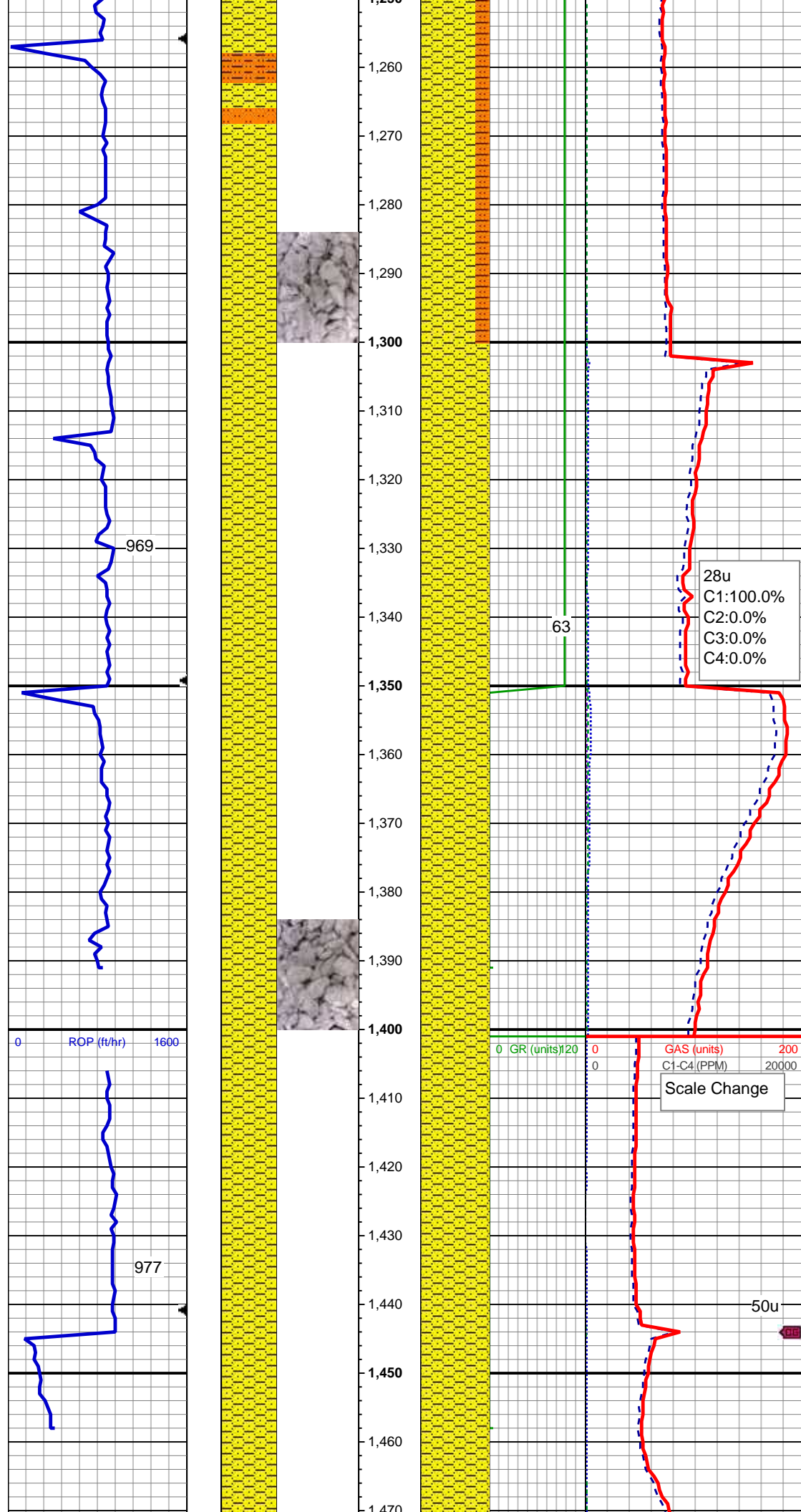
| | | | | |
|----------------|---------------------|----------------------|-------------------|-----------------------|
| Fossils | F FOSSIL | ANHYDRITIC | FERRUGINOUS | Stringer |
| ALGAE | GASTROPOD | ARGILLACEOUS | GLAUCONITE | ANHYDRITE STRINGER |
| AMPHIPORA | INOCERAMUS | ARGILLITE GRAIN | GYPSIFEROUS | BENTONITE STRINGER |
| BELEMNITE | OOLITE | BENTONITE | KAOLIN | COAL STRINGER |
| BIOCLASTIC | OSTRACOD | BITUMENOUS SUBSTANCE | MARLSTONE | DOLOMITE STRINGER |
| BRACHIOPOD | PELECYPOD | BRECCIA FRAGMENTS | MINERAL CRYSTALS | GYPSUM STRINGER |
| BRYOZOA | PELLET | CALCAREOUS | NODULES | LIMESTONE STRINGER |
| CEPHALOPOD | PISOLITE | CARBONACEOUS FLAKES | PHOSPHATE PELLETS | MARLSTONE (CALC) STRG |
| CORAL | PLANT REMAINS | CHTDK | PYRITE | MARLSTONE (DOL) STRG |
| CRINOID | PLANT SPORES | CHTLT | SALT CAST | SANDSTONE STRINGER |
| ECHINOID | SCAPHOPOD | COAL - THIN BEDS | SANDY | SHALE STRINGER |
| FISH | STROMATOPOROID | DOLOMITIC | SILICEOUS | SILTSTONE STRINGER |
| FORAMINIFERA | Minerals | FELDSPAR | SILTY | |
| | FERRUGINOUS PELLETT | | | |

Other Symbols

| | | | | |
|------------------|--------------------|-----------------------|------------------------|-----------------|
| Oil Show | MOLDIC | FAULT | WIRELINE TESTED - LEFT | E EARTHY |
| DEAD | ORGANIC | FORMATION TOP | WIRELINE TESTED - RT | FINELYXLN |
| EVEN | PINPOINT | GAS SHOW | | GRAINSTONE |
| QUESTIONABLE | VUGGY | MN DEPTH | Rounding | LITHOGRAPHIC |
| SPOTTED STAINING | Engineering | NORMAL FAULT | ANGULAR | MICROXLN |
| Porosity | BIT | OIL SHOW | ROUNDED | MUDSTONE |
| EARTHY | CONNECTION (LEFT) | OVERTURNED STRATA | SUBANG | PACKSTONE |
| FENESTRAL | CONNECTION (RIGHT) | REVERSE FAULT | SUBRND | WACKESTONE |
| FRACTURE | CONNECTION GAS | SIDEWALL CORE (LEFT) | Textures | Sorting |
| INTERCRYSTALLINE | CORE - LOST | SIDEWALL CORE (RIGHT) | BOUNDSTONE | MODERATE |
| INTEROOLITIC | CORE - RECOVERED | SLIDE | CHALKY | POOR |
| | DST INTERVAL | SURVEY | CRYPTOXLN | WELL |
| | | TRIP GAS | | |



blky-blky, gritty, sdy, sl calc, abnt cly, tr ss



MD: 1,300'
 TVD: 1,299.99'
 Inclination: 0.6 °
 Azimuth: 28.3 °
 VS: -1.57'

28u
 C1:100.0%
 C2:0.0%
 C3:0.0%
 C4:0.0%

SHY SS: lt gy-gy, pty s&p, mod frm - sft,
 vf gr, sb ang - sb rnd, mod w srt, arg cmt,
 sl calc, abnt cly

MD: 1,392'
 TVD: 1,391.99'
 Inclination: 0.6 °
 Azimuth: 15.1 °
 VS: -2.08'

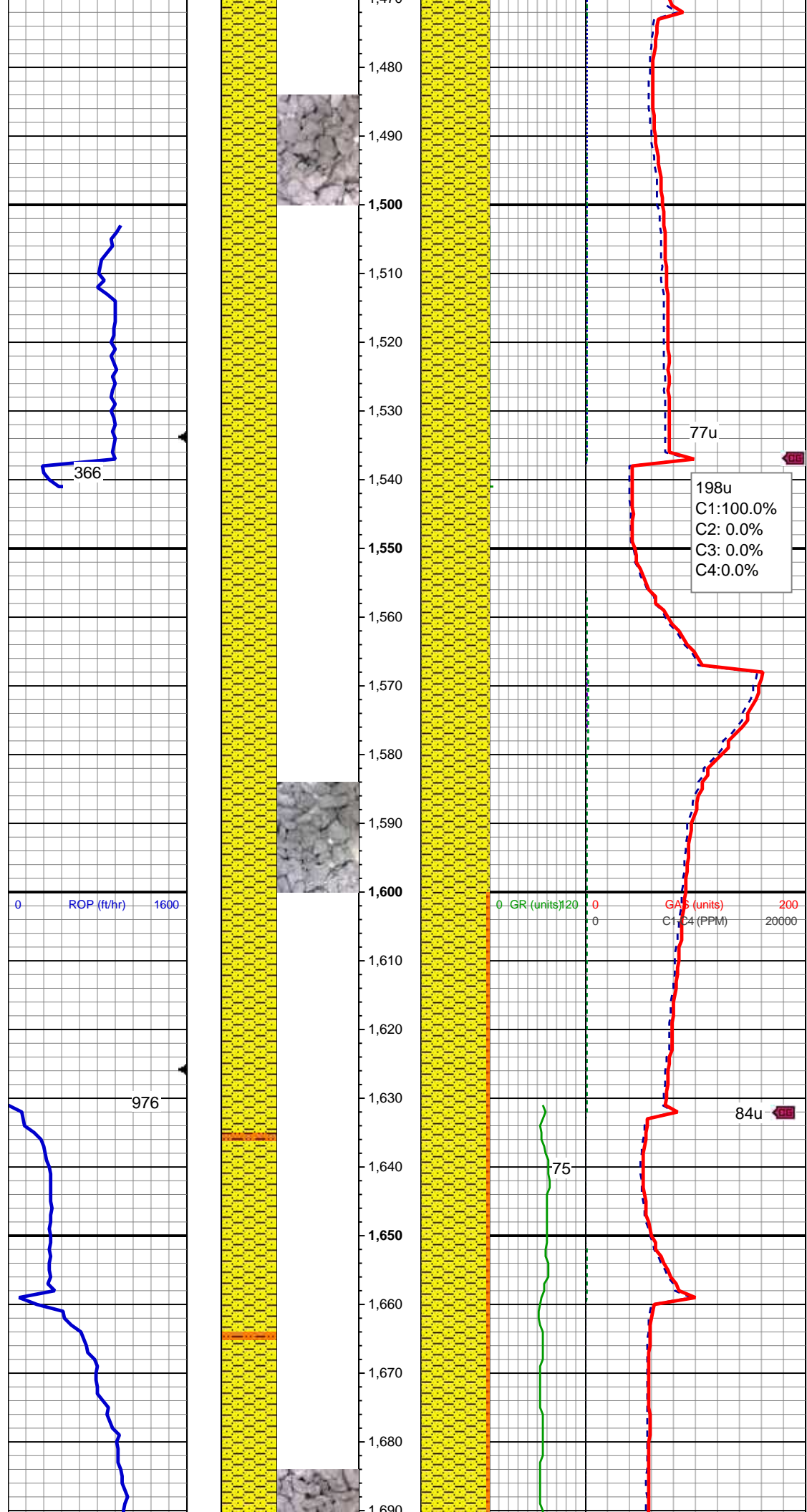
0 ROP (ft/hr) 1600

0 GR (units) 120 0 GAS (units) 200
 0 C1-C4 (PPM) 20000

Scale Change

50u

SHY SS: lt gy-gy, pty s&p, mod frm - frm,
 vf - f gr, sb ang - sb rnd, mod w srt, arg
 cmt, sl calc, abnt cly



MD: 1,485'
 TVD: 1,484.95'
 Inclination: 2.6 °
 Azimuth: 78.1 °
 VS: -4.4'

SHY SS: lt gy-gy, pty s&p, mod frm - frm, vf - f gr, sb ang - sb rnd, w srt, arg cmt, sl calc, abnt cly

198u
 C1:100.0%
 C2:0.0%
 C3:0.0%
 C4:0.0%

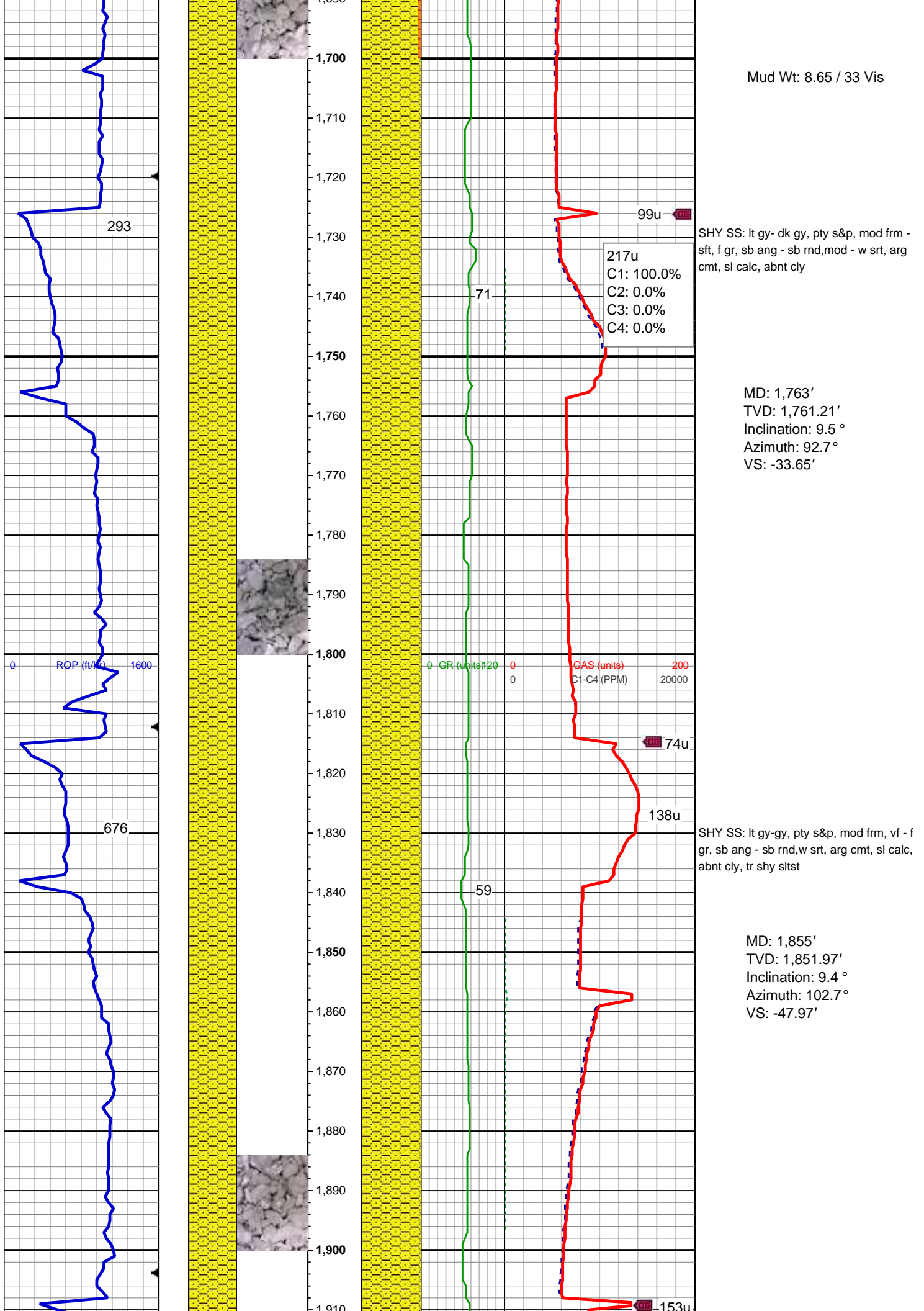
MD: 1,578'
 TVD: 1,577.73'
 Inclination: 5.1 °
 Azimuth: 83.7 °
 VS: -10.63'

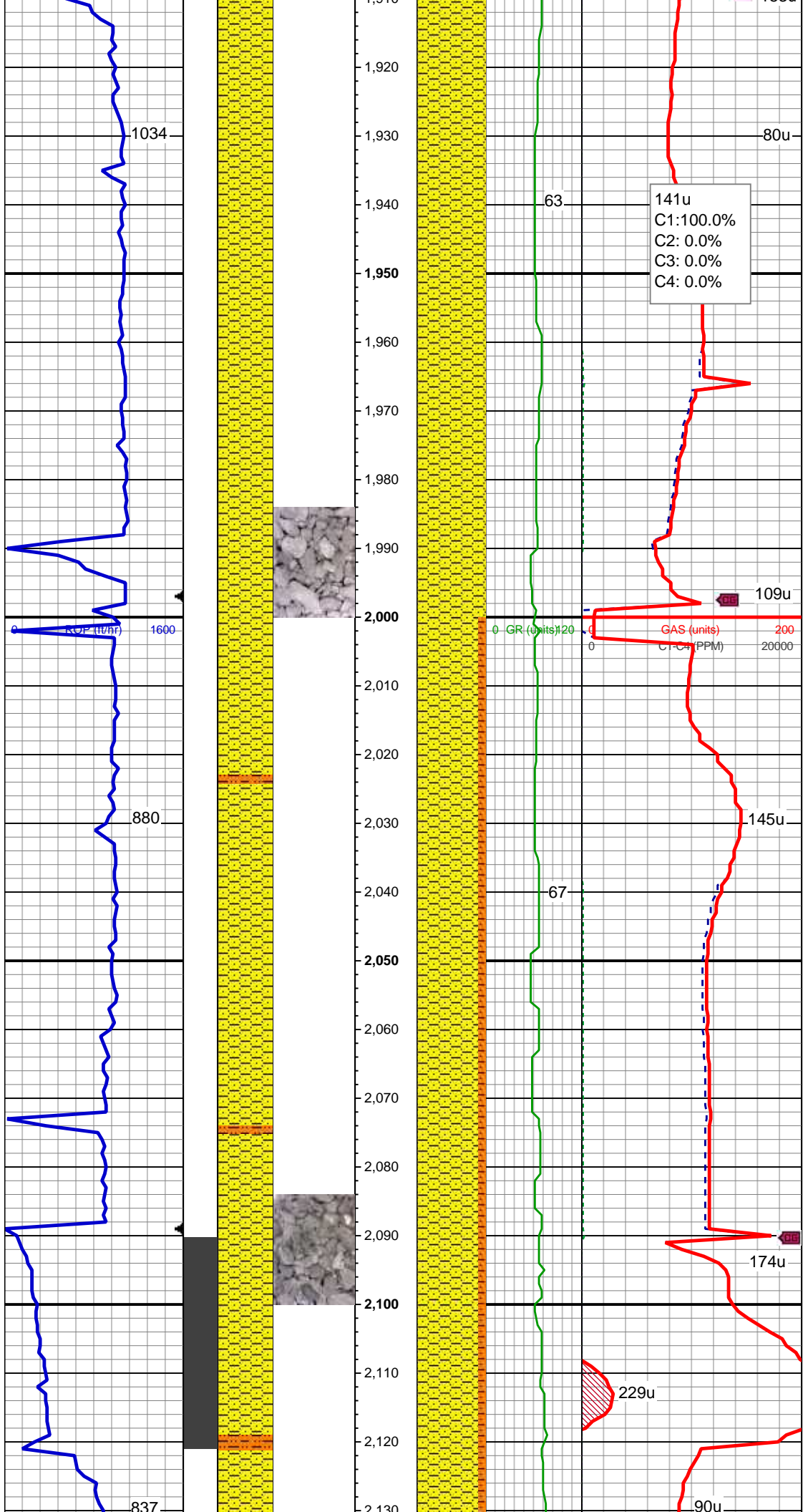
0 ROP (ft/hr) 1600

0 GR (units) 200
 0 GAS (units) 200
 0 C1-C4 (PPM) 20000

SHY SS: lt gy-gy, pty s&p, mod frm - sft, vf - f gr, sb ang - sb rnd, w srt, arg cmt, sl calc, tr -mod cly

MD: 1,671'
 TVD: 1,670.19'
 Inclination: 7.2 °
 Azimuth: 87.2 °
 VS: -20.53'





SHY SS: lt gy-gy, pty s&p, mod frm - sft, f
gr, sb ang - sb rnd,w srt, arg cmt, sl calc,
tr - abnt cly,tr shy sltst

MD: 1,948'
TVD: 1,943.76'
Inclination: 9.1 °
Azimuth: 102.1 °
VS: -61.76'

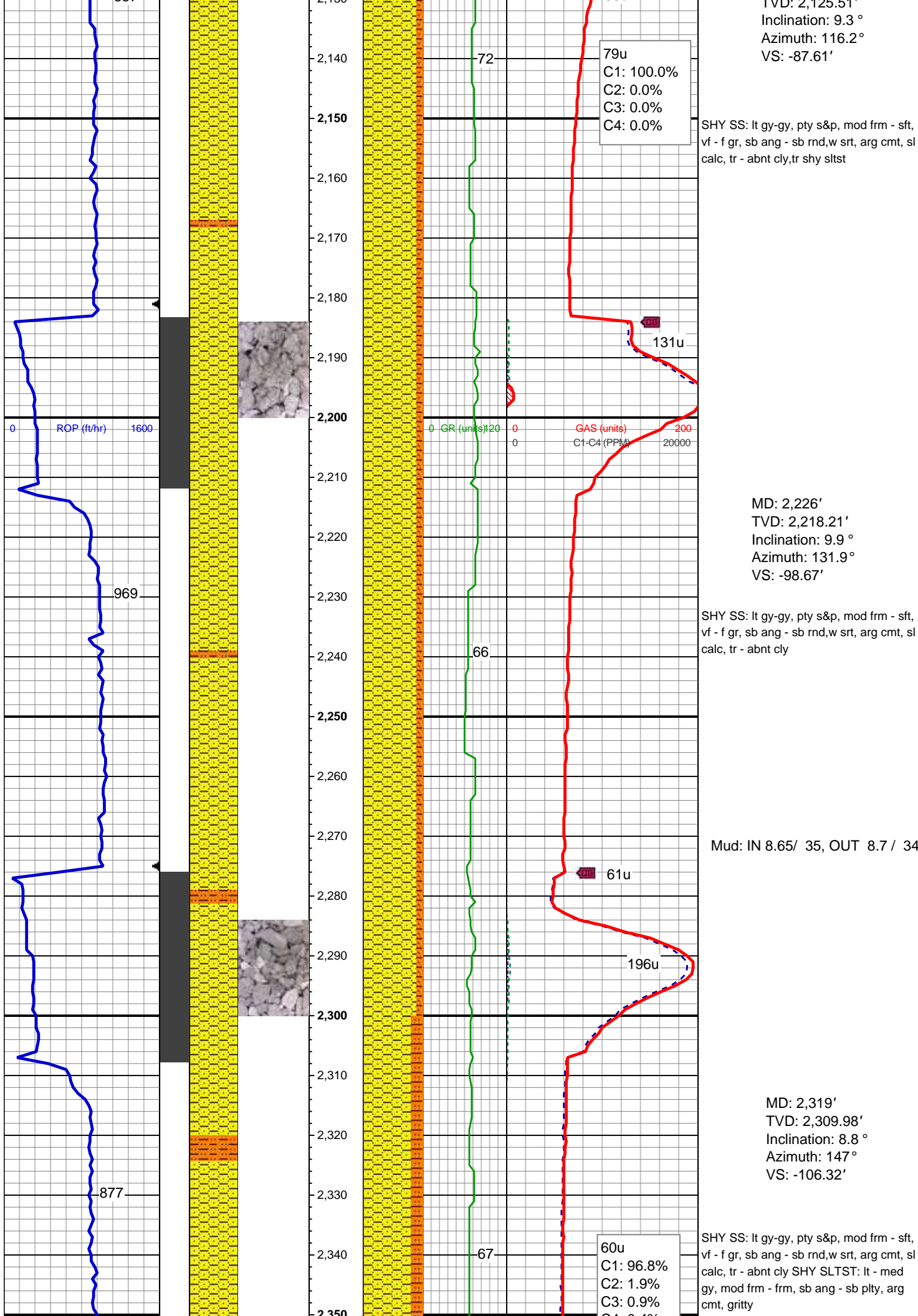
Mud Wt: 8.60 / 33 Vis

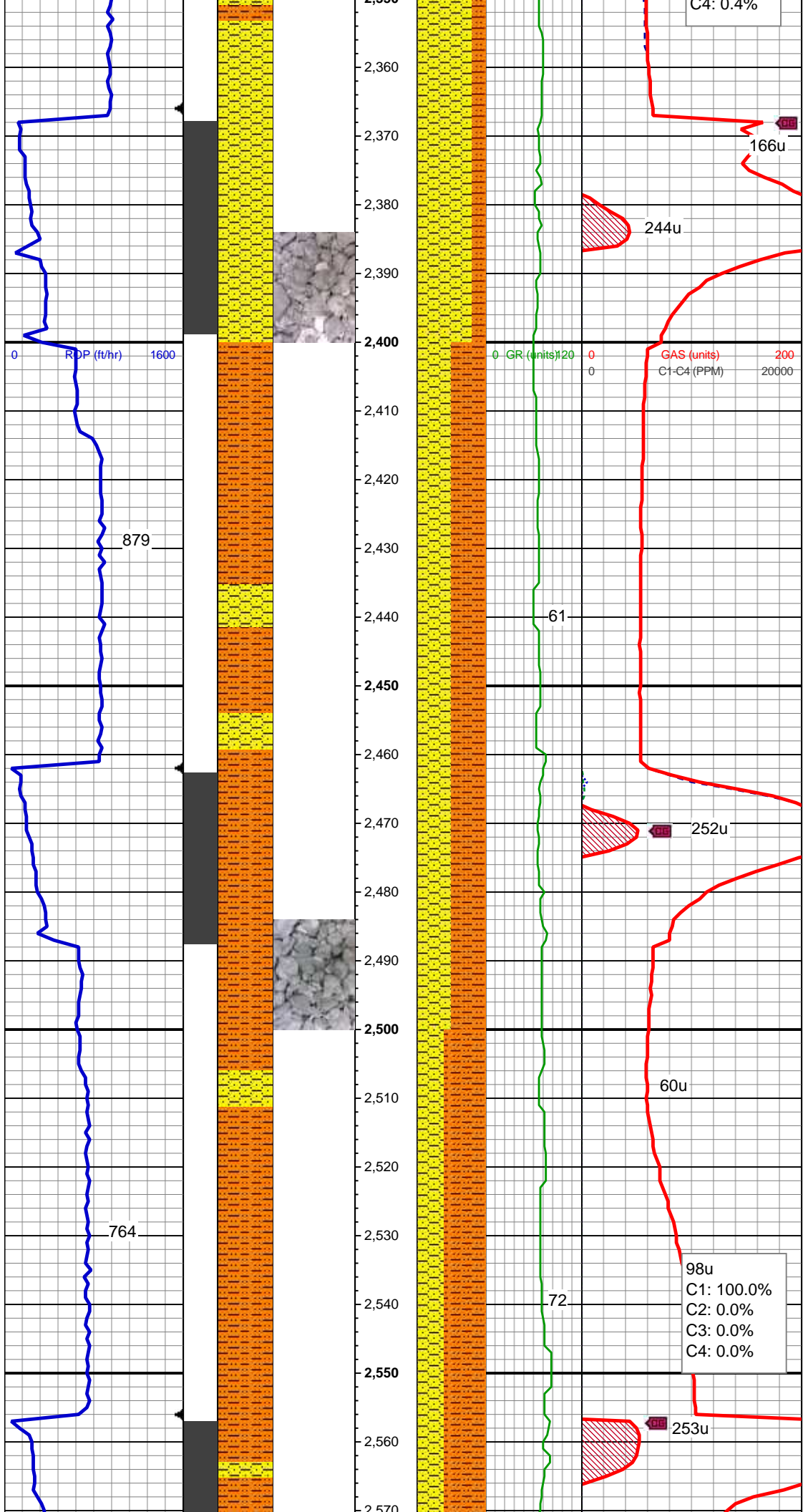
MD: 2,040'
TVD: 2,034.64'
Inclination: 8.8 °
Azimuth: 100.7 °
VS: -75.06'

SHY SS: lt gy- dk gy, pty s&p, mod frm -
frm, f gr, sb ang - sb rnd,w - mod srt, arg
cmt, sl calc, tr - abnt cly,tr shy sltst

Mud Wt: 8.60 / 33 Vis

MD: 2,132'
TVD: 2,125.51'





C4: 0.4%

MD: 2,412'
 TVD: 2,401.77'
 Inclination: 9.8 °
 Azimuth: 158.9 °
 VS: -110.56'

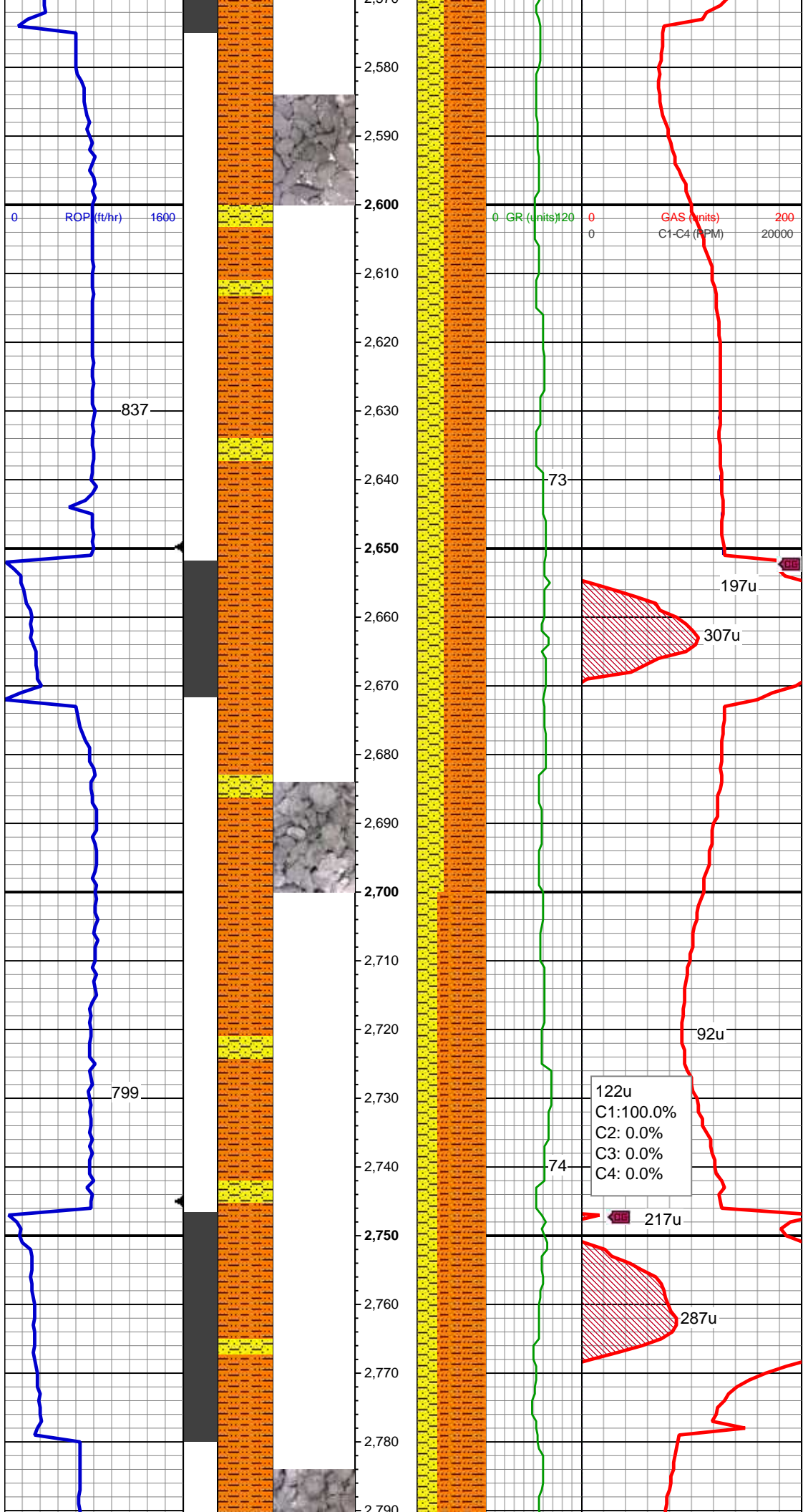
SHY SS: lt gy-gy, pty s&p, mod frm - sft, f gr, sb ang - sb rnd, mod - w srt, arg cmt, sl calc, abnt cly
 SHY SLTST: lt - med gy, dk gy, mod frm - frm, sb ang - sb pty, arg cmt, gritty - slty

Mud: IN 8.7/ 35, OUT 8.75/ 33

MD: 2,507'
 TVD: 2,495.32'
 Inclination: 10.3 °
 Azimuth: 170.5 °
 VS: -111.96'

SHY SLTST: lt - med gy, dk gy, mod frm - frm, sb ang - sb rnd, arg cmt, gritty - slty
 SHY SS: lt gy-gy, pty s&p, mod frm - sft, vf - f gr, sb ang - sb rnd, mod - w srt, arg cmt, sl calc, abnt cly

98u
 C1: 100.0%
 C2: 0.0%
 C3: 0.0%
 C4: 0.0%



MD: 2,601'
 TVD: 2,587.67'
 Inclination: 11.2 °
 Azimuth: 166.8 °
 VS: -112.31'

SHY SLTST: lt - med gy, dk gy, mod frm
 - frm, sb ang - sb plty, arg cmt, gritty - slty
 SHY SS: lt gy-gy, pty s&p, mod frm - sft, f
 gr, sb rnd, mod - w srt, arg cmt, sl calc

Mud: IN 8.75/ 36, OUT 8.75/ 35

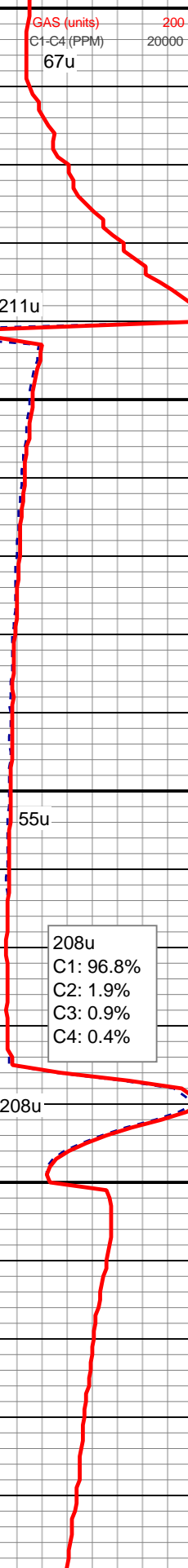
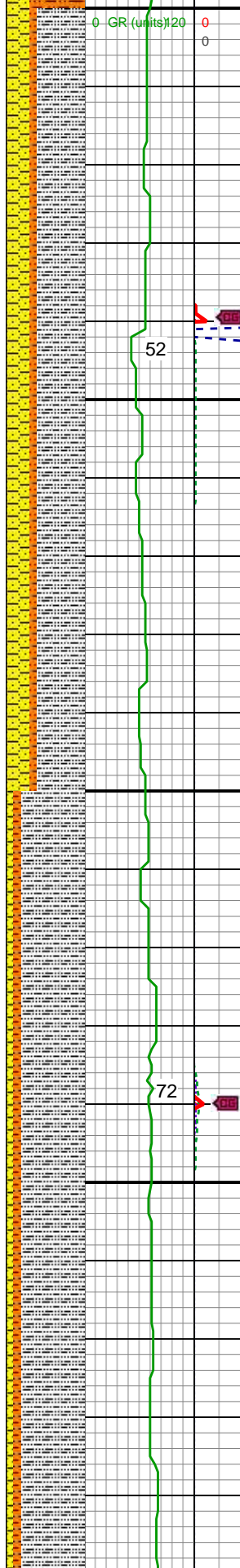
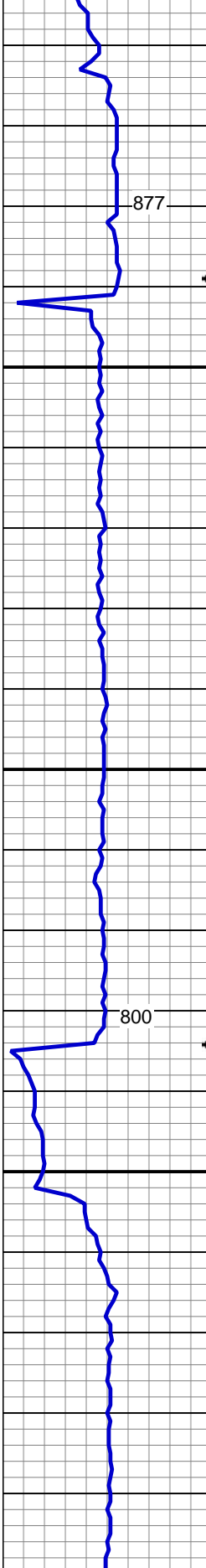
MD: 2,696'
 TVD: 2,680.71'
 Inclination: 12.1 °
 Azimuth: 169.5 °
 VS: -112.82'

SHY SLTST: lt - med gy, dk gy, mod frm
 - frm, sb ang - sb rnd, arg cmt, gritty - slty
 SHY SS: lt gy-gy, pty s&p, sft, vf - f gr, sb
 ang - sb rnd, mod - w srt, arg cmt, sl calc,

MD: 2,790'
 TVD: 2,772.29'

Inclination: 14.0°
Azimuth: 163.5°
VS: -114.09'

ROP (ft/hr) 1600



SLTY SH: lt - med gy, sme dk gy, mod frm, sft, sb blkly - sb plty, arg cmt, sl calc
SHY SLTST: lt - med gy, mod frm, sft, sb ang - sb plty, arg cmt,gritty SHY SS: lt gy, tr s&p, mod frm - frm, brit, vf gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc

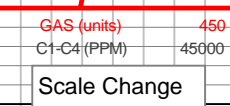
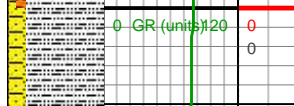
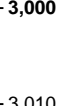
MD: 2,885'
TVD: 2,864.28'
Inclination: 14.9°
Azimuth: 163.5°
VS: -116.65'

Mud: IN 8.75/ 37, OUT 8.8/ 38

SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt, sl calc
SHY SLTST: lt - med gy, mod frm, sft, sb ang - sb plty, arg cmt,gritty - stly SHY SS: lt gy, tr s&p, mod frm - frm, brit, vf - f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc

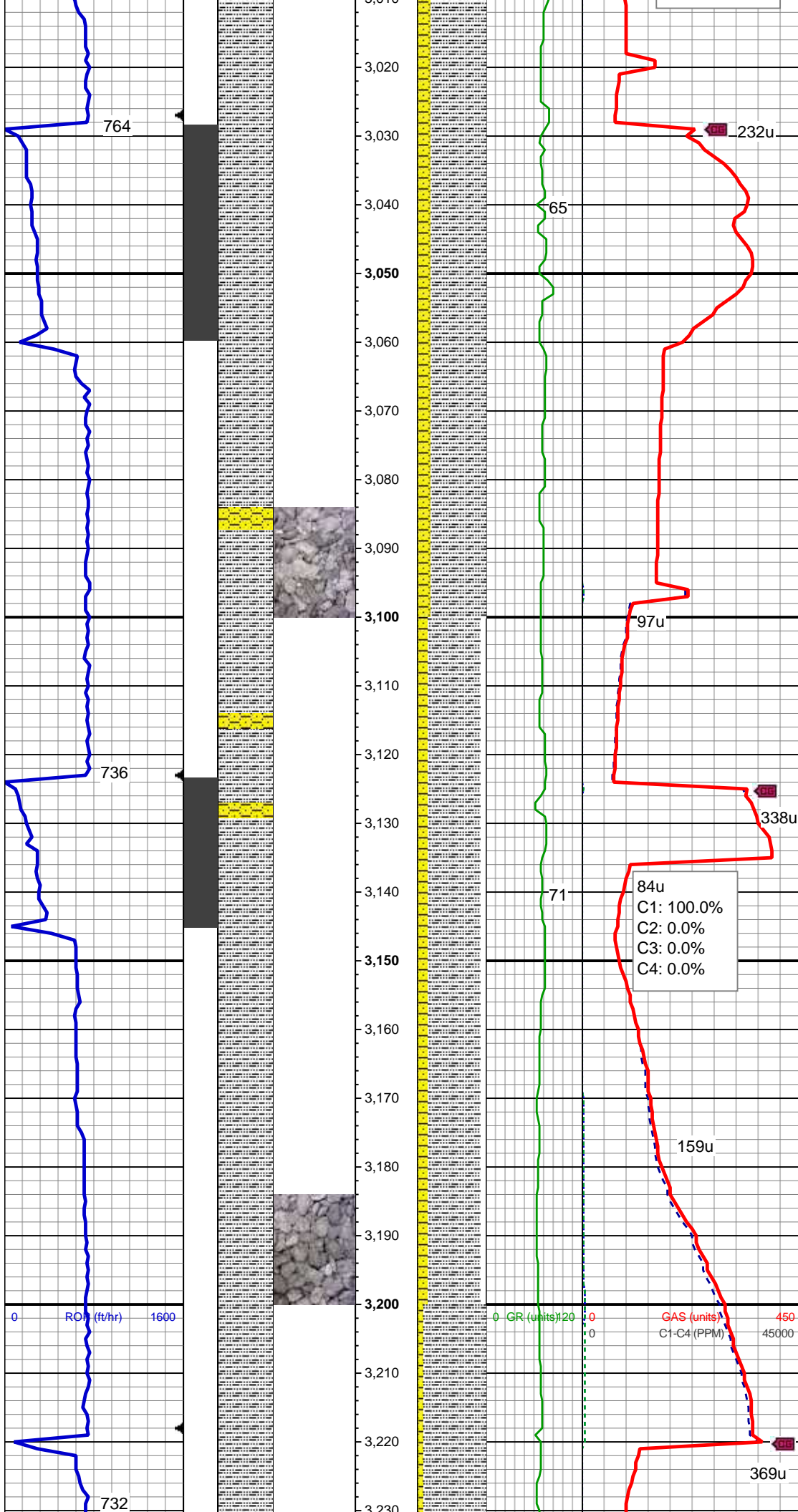
MD: 2,979'
TVD: 2,955.66'
Inclination: 12.2°
Azimuth: 167.4°
VS: -118.37'

ROP (ft/hr) 1600



GAS (units) 450
C1-C4 (PPM) 45000

Scale Change



SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - plty, arg cmt, sl calc, gritty - sly tex SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc

Mud: IN 8.55/ 38, OUT 8.95/ 38

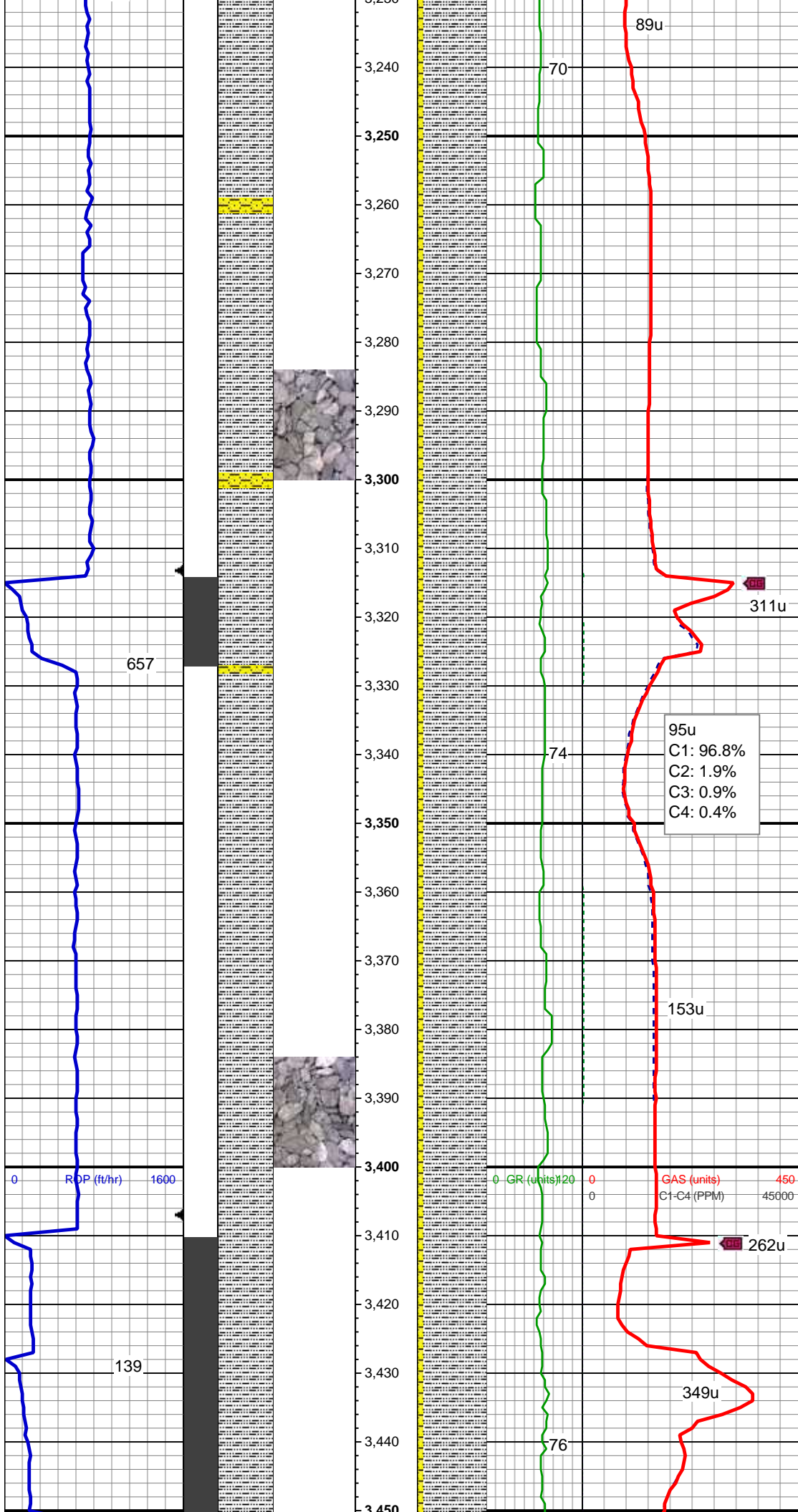
MD: 3,074'
 TVD: 3,048.31'
 Inclination: 13.3 °
 Azimuth: 166.6 °
 VS: -119.37'

Mud: IN 8.85/ 38, OUT 8.95/ 38

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

MD: 3,169'
 TVD: 3,140.51'
 Inclination: 14.6 °
 Azimuth: 167.4 °
 VS: -120.45'

84u
 C1: 100.0%
 C2: 0.0%
 C3: 0.0%
 C4: 0.0%



SLTY SH: lt gy - med gy, some dk gy, mod frm, sb blkly - sb plty, arg cmt, sl calc
 SHY SS: lt gy - gy, tr s&p, frm, vf - f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc

MD: 3,264'
 TVD: 3,232.63'
 Inclination: 13.7 °
 Azimuth: 167.4 °
 VS: -121.39'

SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt, sl calc, tr slty ss

MD: 3,358'
 TVD: 3,324.07'
 Inclination: 13.1 °
 Azimuth: 166.5 °
 VS: -122.44'

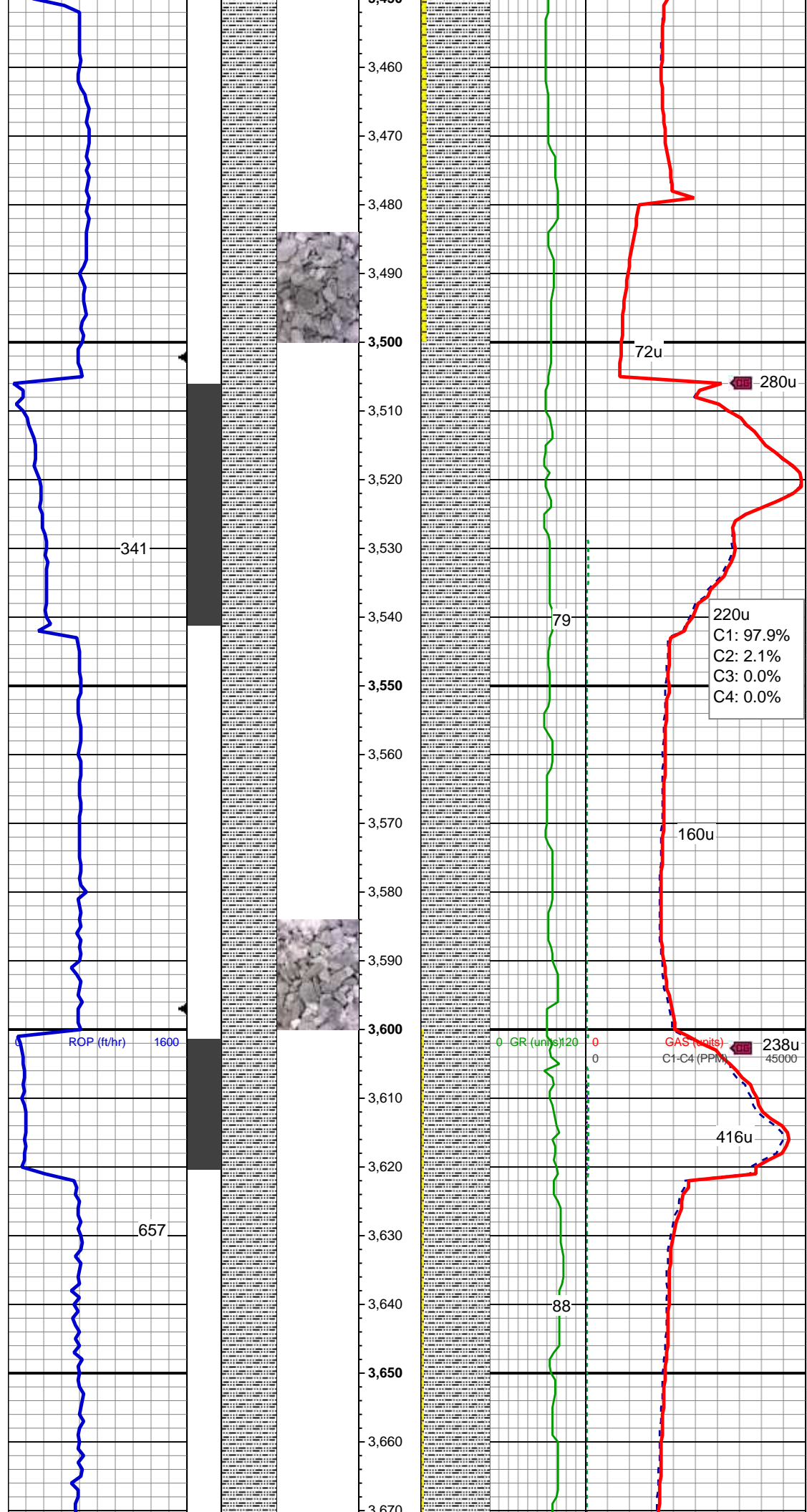
SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt, gritty - slty tex, tr slty ss

MD: 3,453'
 TVD: 3,416.49'

95u
 C1: 96.8%
 C2: 1.9%
 C3: 0.9%
 C4: 0.4%

0 GR (units) 120
 0 GAS (units) 450
 0 C1-C4 (PPM) 45000

TVD: 3,410.46'
Inclination: 13.7°
Azimuth: 166.6°
VS: -123.65'

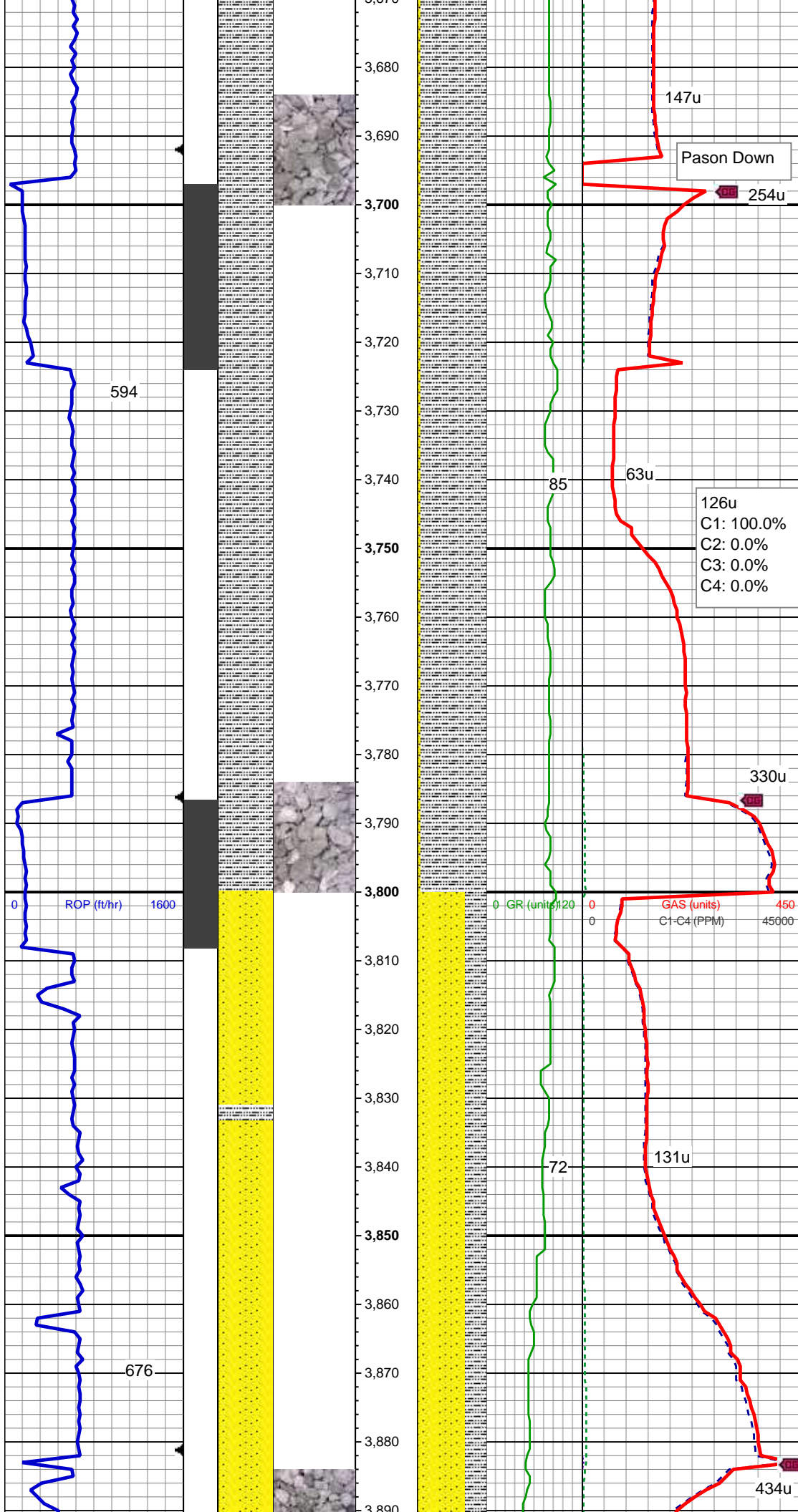


SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt, slty tex, tr slty ss

MD: 3,548'
TVD: 3,508.66'
Inclination: 14.3°
Azimuth: 164°
VS: -125.44'

SLTY SH: med gy - dk gy, mod frm - frm, sb blkly - sb plty, arg cmt, gritty - slty tex, tr slty ss

MD: 3,643'
TVD: 3,600.9'
Inclination: 13.4°
Azimuth: 163.5°
VS: -127.8'



594

147u

Pason Down

254u

Mud: IN 8.85/ 36, OUT 8.95/ 38

SLTY SH: lt - med gy, dk gy, frm, sb blkly - sb plty, arg cmt, gritty - slty tex, tr slty ss

126u
 C1: 100.0%
 C2: 0.0%
 C3: 0.0%
 C4: 0.0%

MD: 3,737'
 TVD: 3,692.26'
 Inclination: 13.8 °
 Azimuth: 165.4 °
 VS: -129.82'

330u

ROP (ft/hr) 0 1600

GR (units) 0 120

GAS (units) 0 450
 C1-C4 (PPM) 0 45000

MD: 3,832'
 TVD: 3,784.42'
 Inclination: 14.3 °
 Azimuth: 167.9 °
 VS: -131.05'

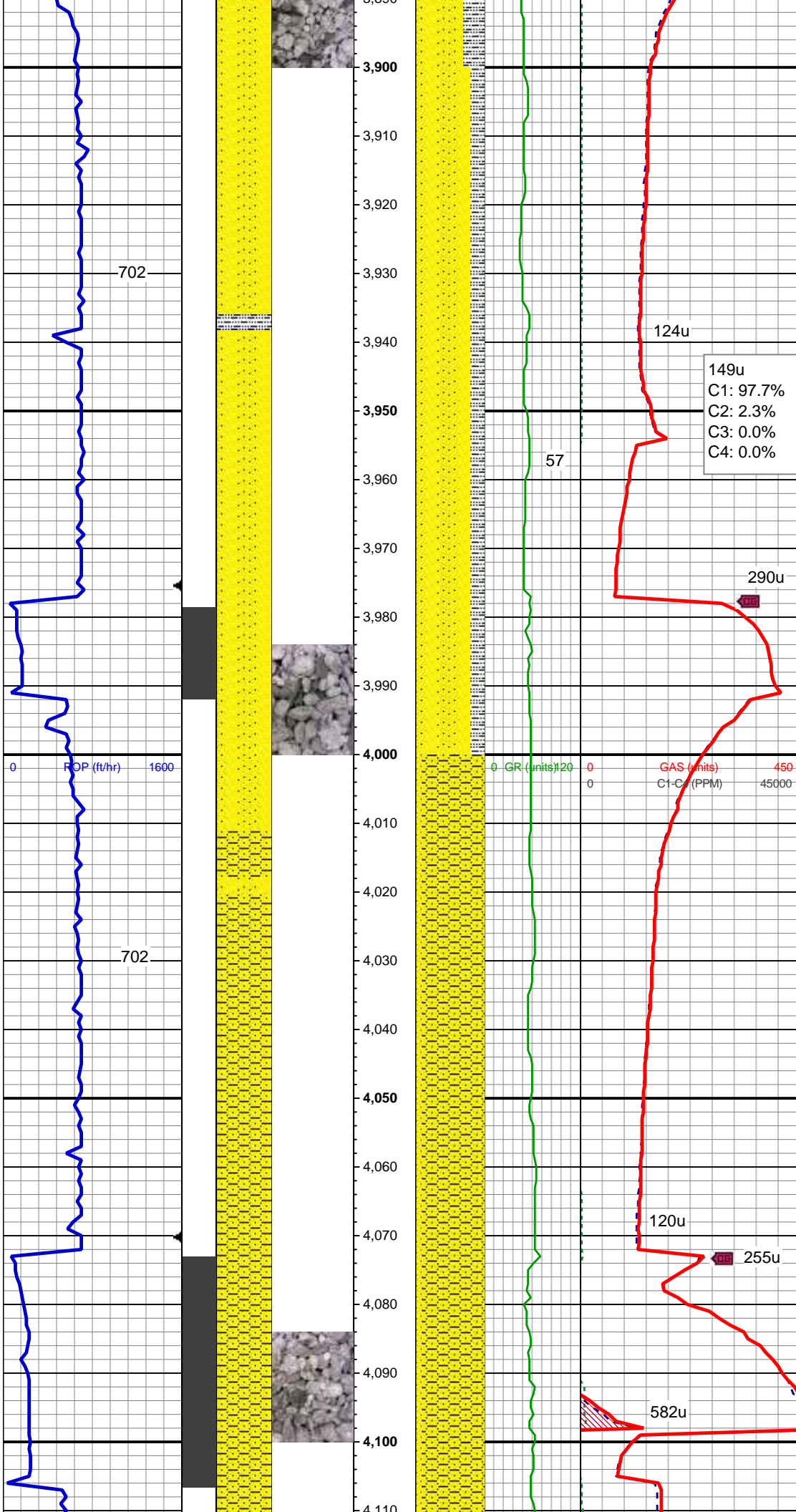
S&P SS: lt gy-wh, wh-op-trnsl grns, g s&p, med-f gr, sub ang - sub rd, mod p srt, fr-p cons, g por, mod calc cmt, SLTY SH: lt - med gy, sme dk gy, sl frm - sft, sb blkly - sb plty, arg cmt, sl calc

676

72

131u

434u



MD: 3,926'
 TVD: 3,875.17'
 Inclination: 15.9 °
 Azimuth: 167.9 °
 VS: -131.83'

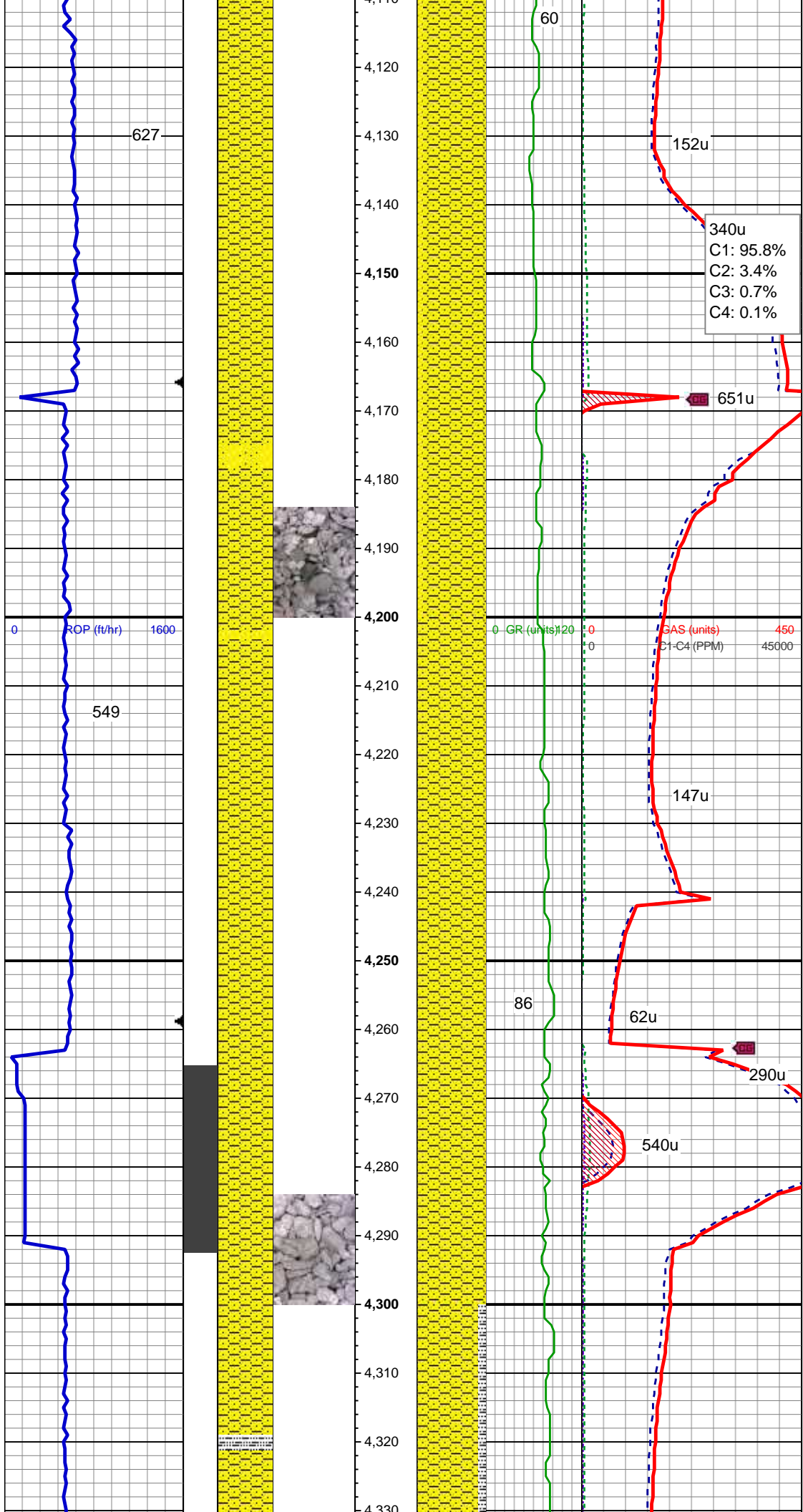
S&P SS: lt gy-wh, wh-trnsl grns, g s&p, med-f gr, sub ang - sub rd, mod p srt, fr-p cons, g por, mod calc cmt, SLTY SH: med gy - dk gy, sl frm - frm, sb blkly - sb ppty, arg cmt, sl calc

Mud: IN 8.75/ 35, OUT 8.8/ 34

MD: 4,021'
 TVD: 3,966.45'
 Inclination: 16.3 °
 Azimuth: 171.6 °
 VS: -131.8'

SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc S&P SS: lt gy-wh, wh-trnsl grns, g s&p, med-f gr, sub ang - sub rd, mod p srt, fr-p cons, g por, mod calc cmt,

MD: 4,110'



MD: 4,116'
 TVD: 4,057.97'
 Inclination: 14.8 °
 Azimuth: 172.5 °
 VS: -130.78'

SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc S&P SS: lt gy-wh, wh-trnsl grns, g s&p, med-f gr, sub ang - sub rd, mod p srt, fr-p cons, g por, mod calc cmt,

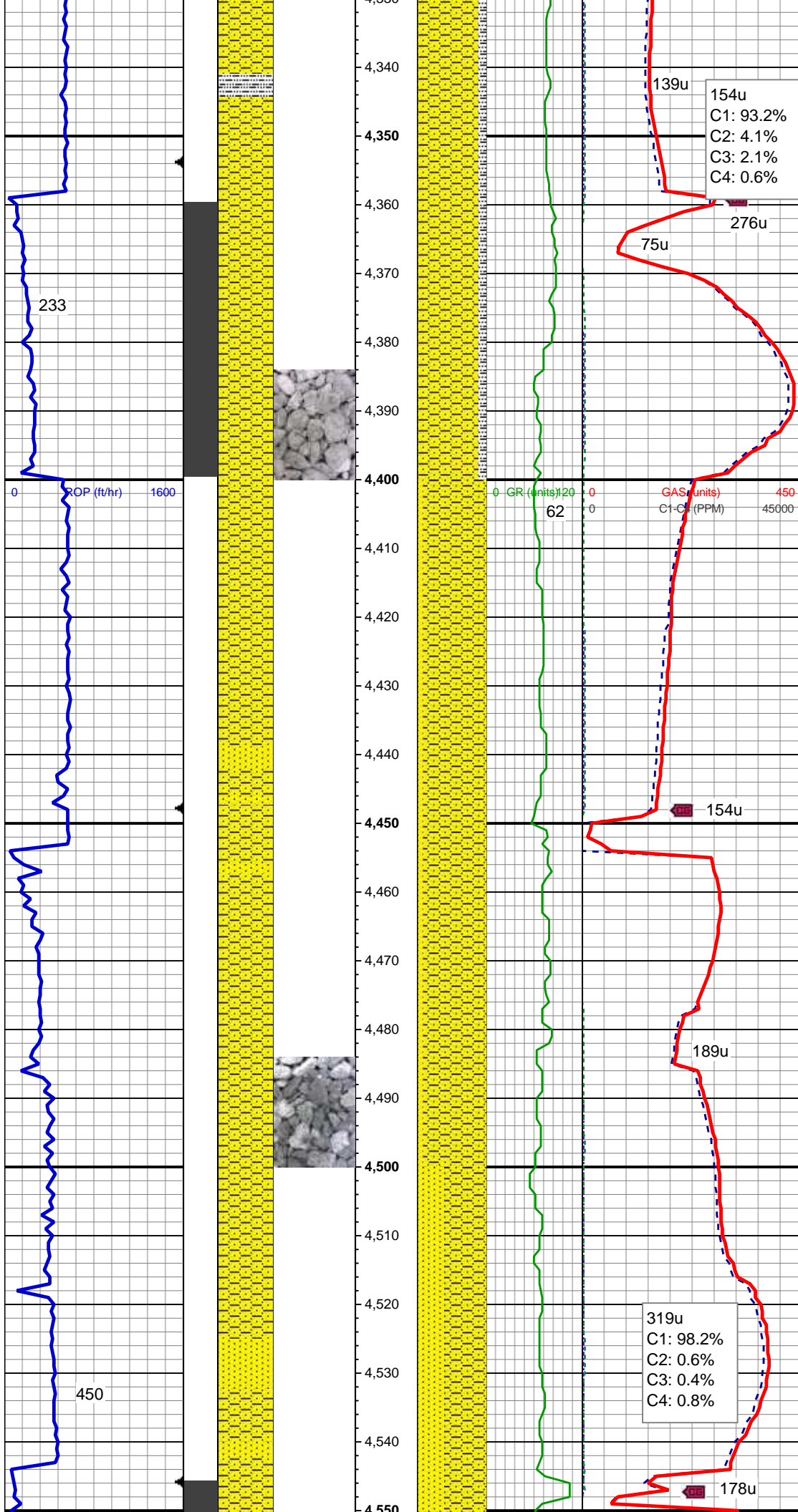
340u
 C1: 95.8%
 C2: 3.4%
 C3: 0.7%
 C4: 0.1%

MD: 4,210'
 TVD: 4,149.13'
 Inclination: 13.4 °
 Azimuth: 172.1 °
 VS: -129.74'

SHY SS: lt gy-gy, sl s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc, tr ss

MD: 4,305'
 TVD: 4,241.85'
 Inclination: 11.8 °
 Azimuth: 161.6 °
 VS: -130.66'

ROP (ft/hr) 0 1600 1600
 GR (units) 0 120 0
 SAS (units) 0 450
 C1-C4 (PPM) 0 45000



SHY SS: lt gy-gy, sl s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc, SLTY SH: med gy - dk gy, sl frm - frm, sb blkly - sb plty, arg cmt, sl calc, tr ss

MD: 4,399'
 TVD: 4,333.64'
 Inclination: 13.1 °
 Azimuth: 162.6 °
 VS: -133.33'

SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc SS: lt gy-wh, wh-trnsl grns, g s&p, med-f gr, sub ang - sub rd, mod p srt, fr-p cons, g por, glau, mod calc cmt,

Mud Wt: 9.0 / 30 Vis

MD: 4,494'
 TVD: 4,426.32'
 Inclination: 12.3 °
 Azimuth: 160.9 °
 VS: -136.22'

SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc SS: lt gy-wh, wh-trnsl grns, g s&p,

139u
 154u
 C1: 93.2%
 C2: 4.1%
 C3: 2.1%
 C4: 0.6%

75u
 276u

GR (units) 62
 GAS (units) 450
 C1-C4 (PPM) 45000

154u

189u

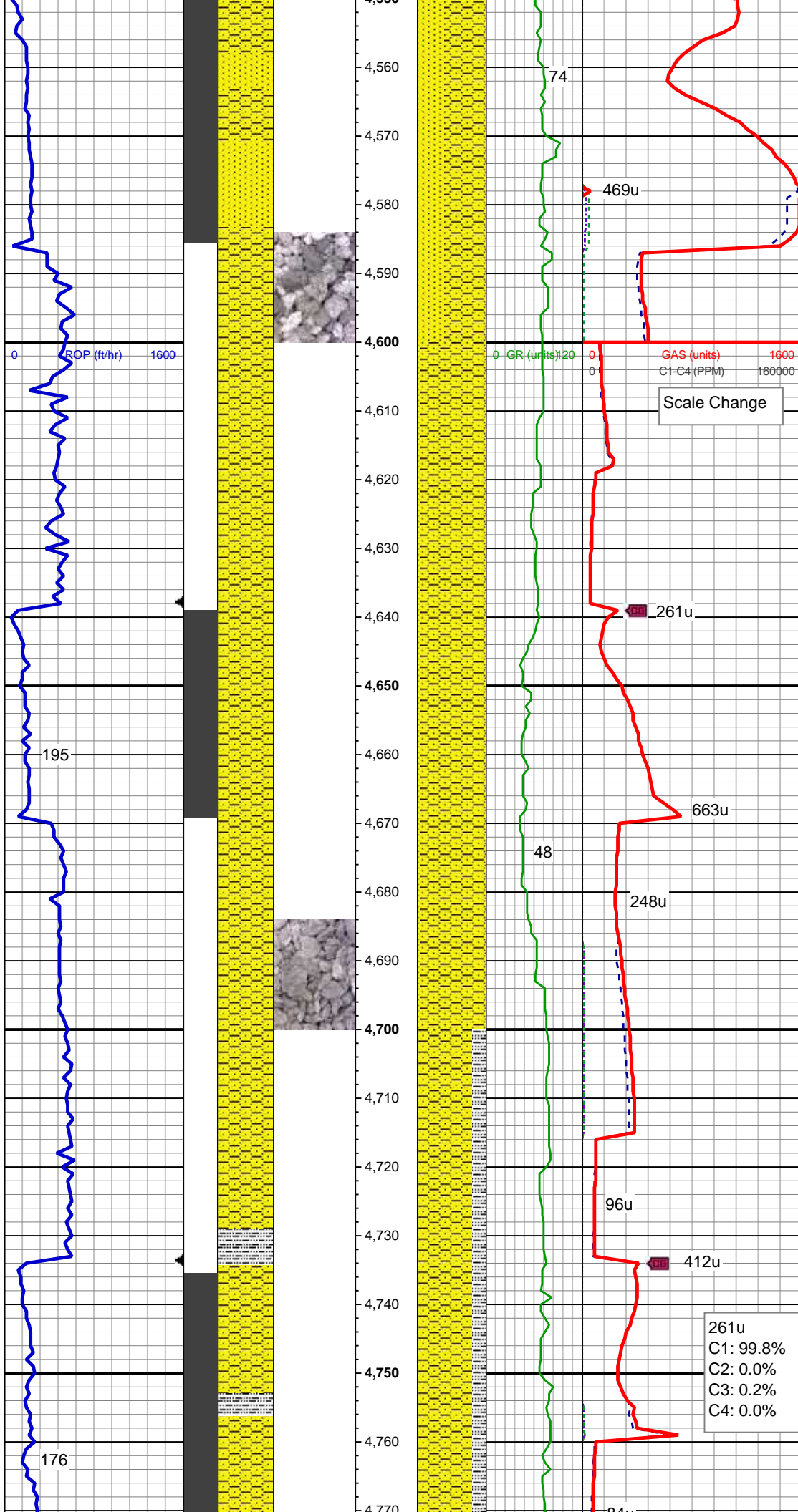
319u
 C1: 98.2%
 C2: 0.6%
 C3: 0.4%
 C4: 0.8%

178u

233

ROP (ft/hr) 0 1600

450



med-f gr, sub ang - sub rd, mod p srt, fr-p cons, g por, glau, mod calc cmt,

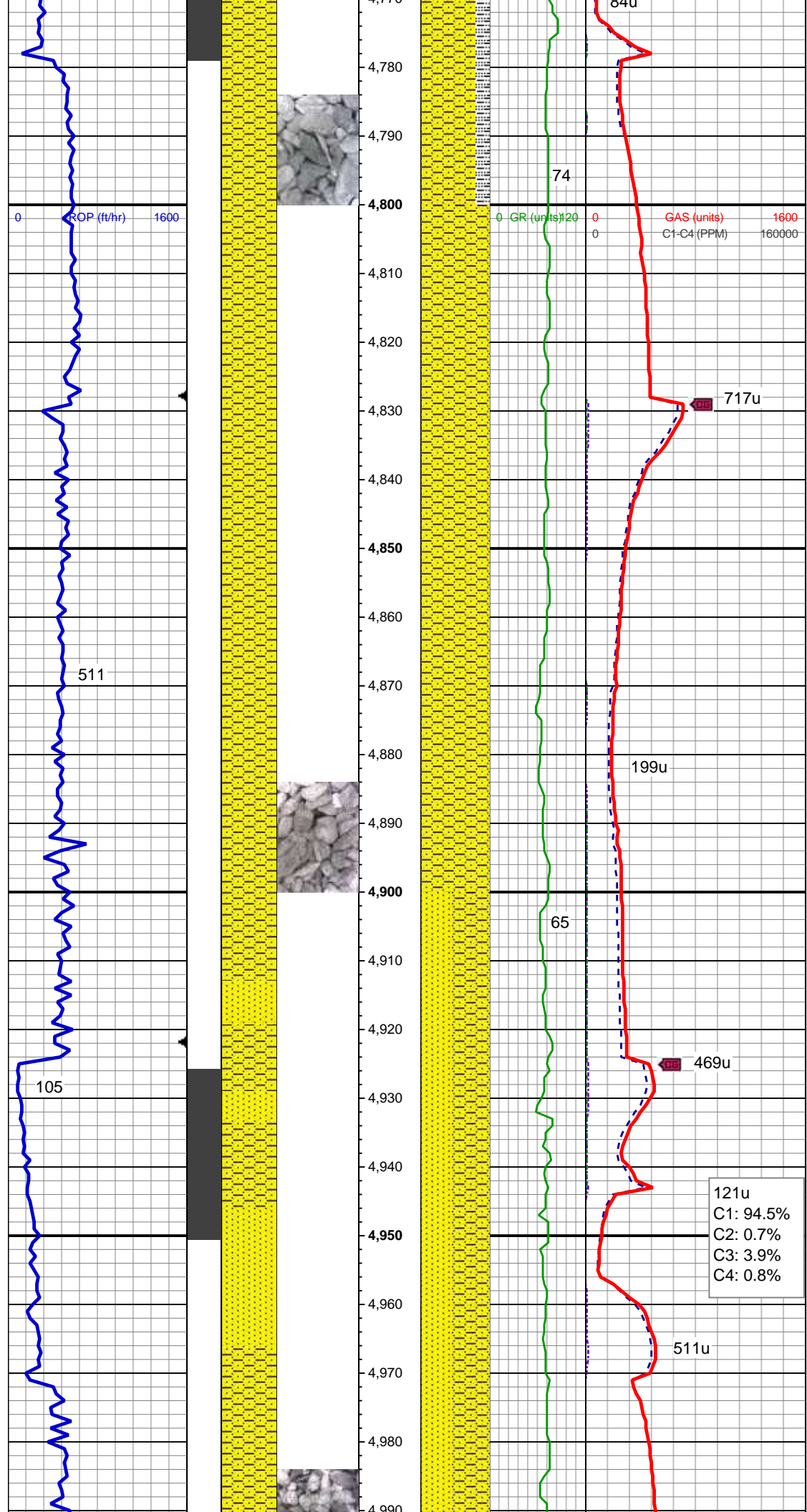
MD: 4,589'
 TVD: 4,518.94'
 Inclination: 13.4 °
 Azimuth: 161.2 °
 VS: -139.4'

SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc SS: lt gy-wh, wh-trnsl grns, g s&p, med-f gr, sub ang - sub rd, mod p srt, fr-p cons, g por, glau, mod calc cmt,

MD: 4,684'
 TVD: 4,611.03'
 Inclination: 15 °
 Azimuth: 164.2 °
 VS: -142.22'

SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt,gritty - slty tex,

261u
 C1: 99.8%
 C2: 0.0%
 C3: 0.2%
 C4: 0.0%



MD: 4,778'
 TVD: 4,702.07'
 Inclination: 13.9 °
 Azimuth: 174.2 °
 VS: -142.5'

ROP (ft/hr) 1600

GR (units) 20
 GAS (units) 1600
 C1-C4 (PPM) 160000

SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc, tr ss

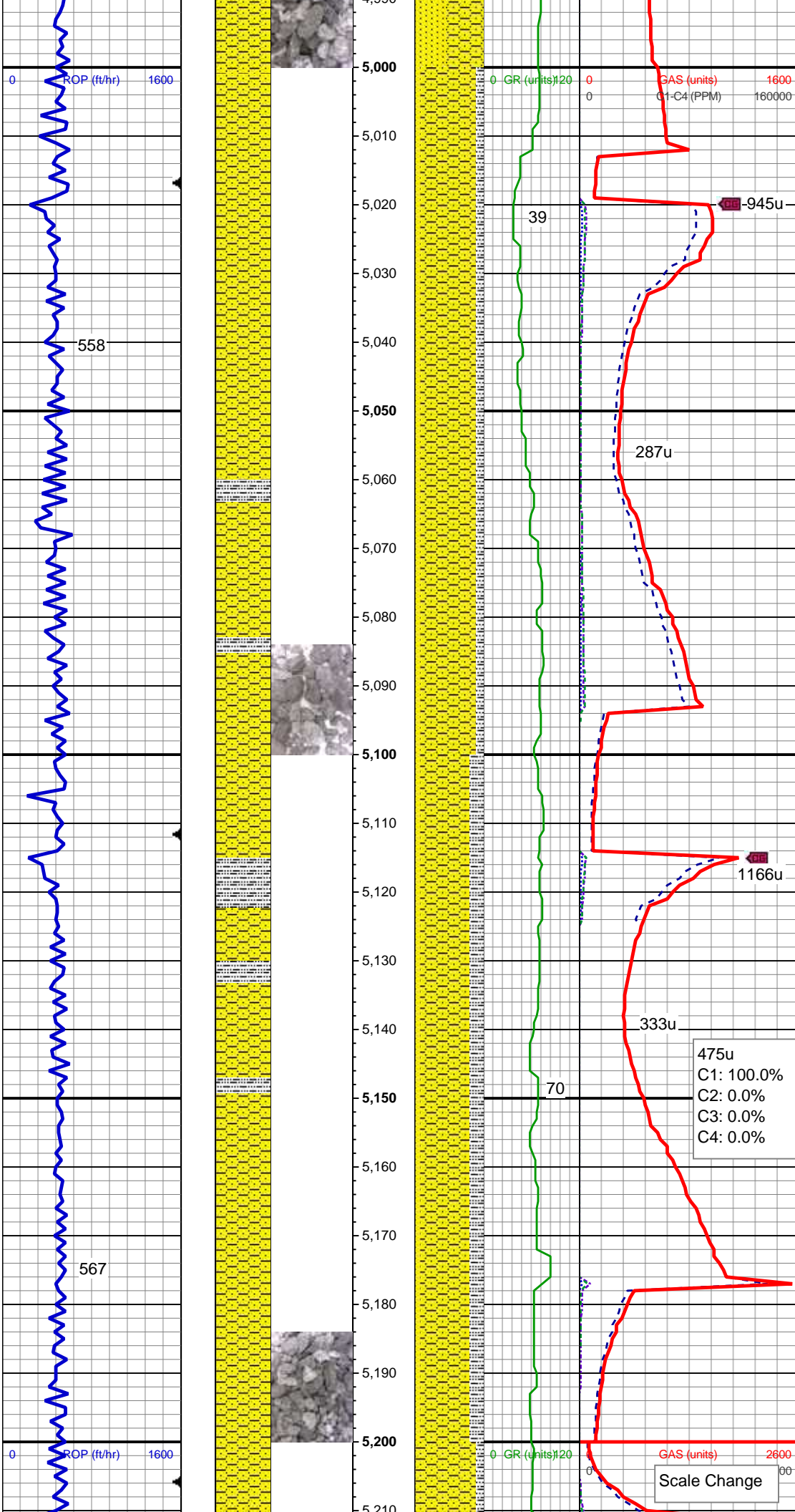
MD: 4,873'
 TVD: 4,794.81'
 Inclination: 11.1 °
 Azimuth: 180.4 °
 VS: -139.92'

Mud Wt: 9.0 / 30 Vis

121u
 C1: 94.5%
 C2: 0.7%
 C3: 3.9%
 C4: 0.8%

SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc SS: lt gy-wh, wh-trnsl grns, g s&p, f gr, sub ang - sub rd, mod w srt, fr-p cons, g por, glau, mod calc cmt,

MD: 4,968'
 TVD: 4,888.13'
 Inclination: 10.5 °
 Azimuth: 174.9 °
 VS: -137.44'



SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc SS: lt gy-wh, wh-trnsl grns, g s&p, f gr, sub ang - sub rd, mod w srt, fr-p cons, g por, glau, mod calc cmt, SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb pty, arg cmt,gritty - slty tex,

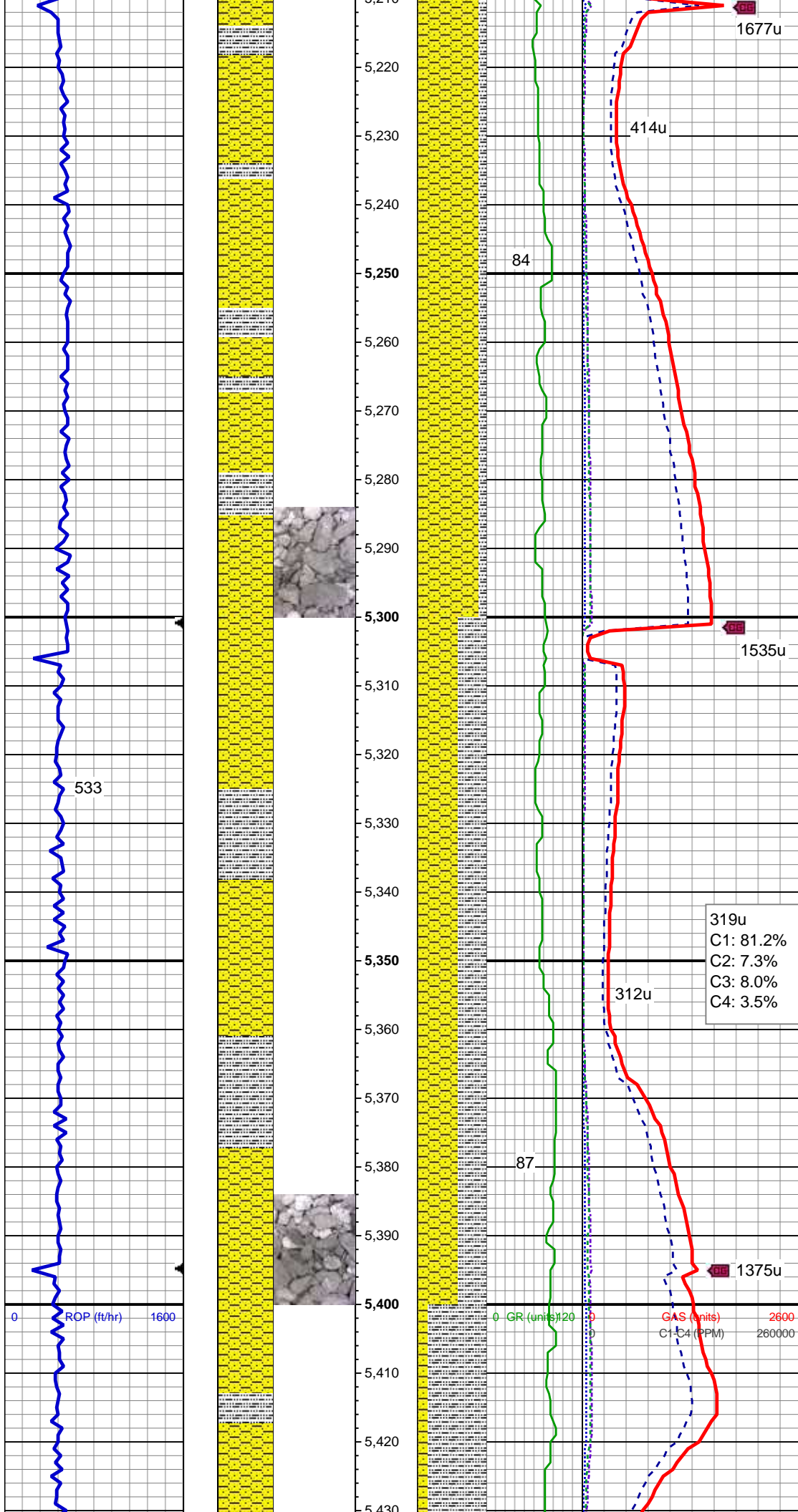
MD: 5,062'
 TVD: 4,980.66'
 Inclination: 9.8 °
 Azimuth: 171.4 °
 VS: -136.43'

SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc SS: lt gy-wh, wh-trnsl grns, g s&p, f gr, sub ang - sub rd, mod w srt, fr-p cons, g por, glau, mod calc cmt, SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb pty, arg cmt,gritty - slty tex,

MD: 5,157'
 TVD: 5,074.36'
 Inclination: 9.2 °
 Azimuth: 171.6 °
 VS: -135.95'

475u
 C1: 100.0%
 C2: 0.0%
 C3: 0.0%
 C4: 0.0%

Scale Change



SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt,gritty - sly tex,

MD: 5,252'
 TVD: 5,168.37'
 Inclination: 7.3 °
 Azimuth: 171.2 °
 VS: -135.54'

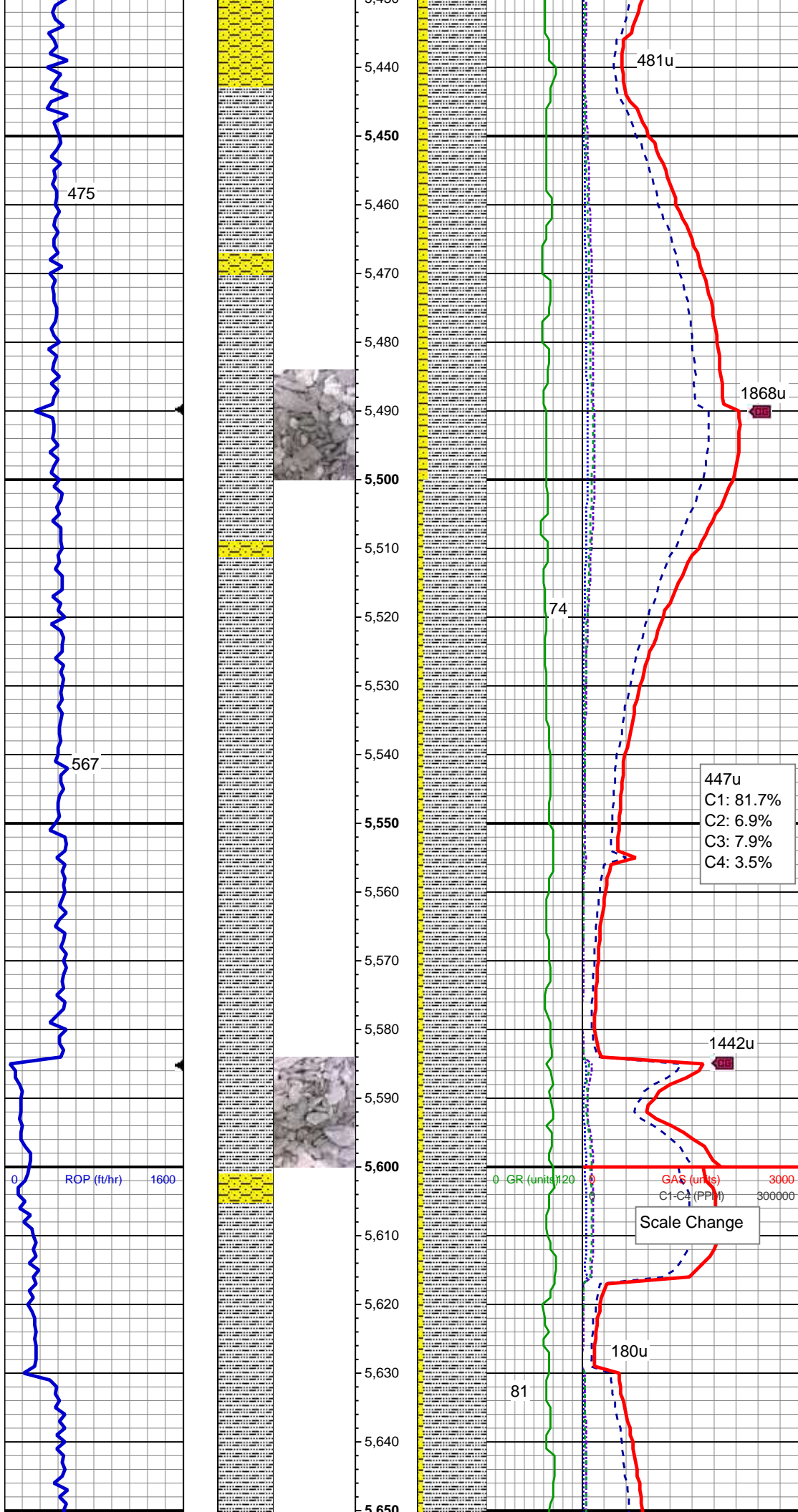
MD: 5,346'
 TVD: 5,261.79'
 Inclination: 5.4 °
 Azimuth: 170.2 °
 VS: -135.35'

SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt,gritty - sly tex,

319u
 C1: 81.2%
 C2: 7.3%
 C3: 8.0%
 C4: 3.5%

Mud Wt: 9.10 / 30 Vis

MD: 5,440'
 TVD: 5,355.48'



Inclination: 3.9°
 Azimuth: 168.4°
 VS: -135.39'

SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt,gritty - slty tex, SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc

MD: 5,535'
 TVD: 5,450.32'
 Inclination: 2.8°
 Azimuth: 172.8°
 VS: -135.34'

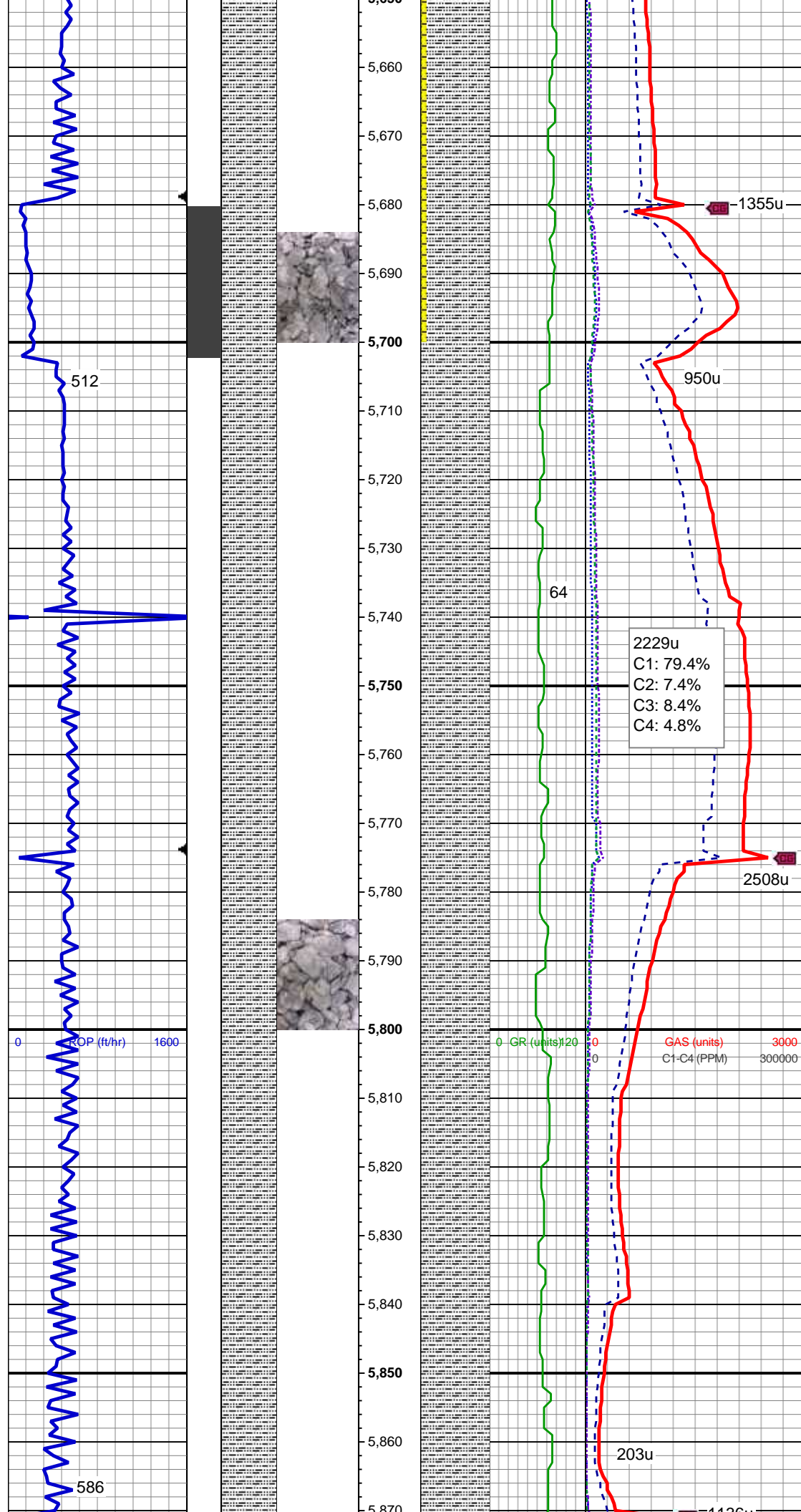
SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt,gritty - slty tex, SHY SS: lt gy, tr s&p, mod frm - frm, brit, f gr, sb ang - sb rnd, mod w srt, arg cmt, sl calc

Mud Wt: 9.20 / 30 Vis

MD: 5,629'
 TVD: 5,544.19'
 Inclination: 3.1°
 Azimuth: 159.3°
 VS: -135.67'

SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt,gritty - slty tex, SHY SS: lt gy, tr s&p, mod frm - frm,

brit, f gr, sb ang - sb rnd, mod w srt, arg
cmt, sl calc



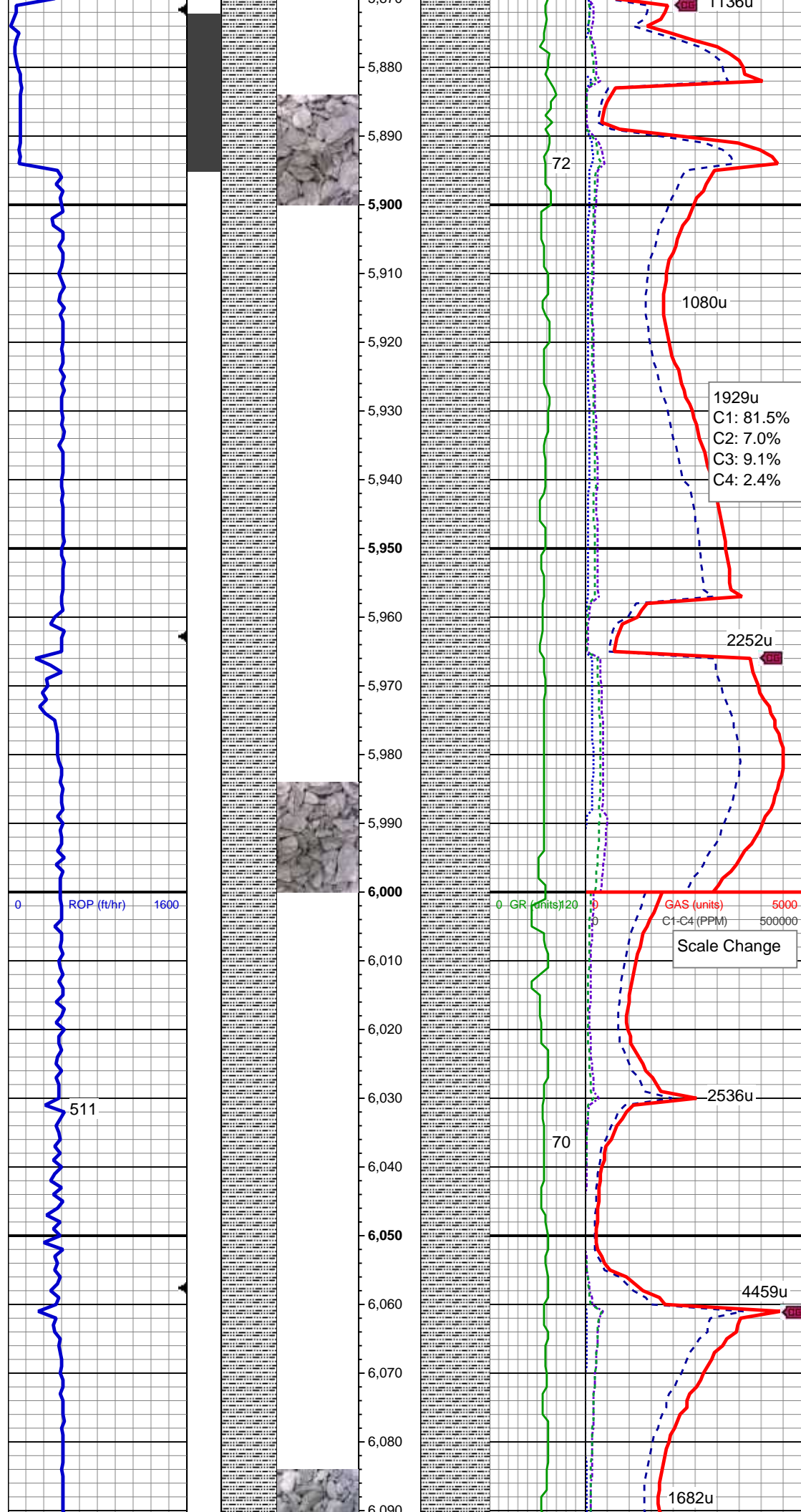
MD: 5,724'
TVD: 5,639.01'
Inclination: 4 °
Azimuth: 148.2 °
VS: -137.35'

SLTY SH: lt - med gy, dk gy, mod frm -
frm, sb blkly - sb plty, arg cmt,gritty - slty
tex, tr shy ss

Mud Wt: 9.50 / 30 Vis

MD: 5,819'
TVD: 5,733.81'
Inclination: 3.4 °
Azimuth: 136.2 °
VS: -140.12'

SLTY SH: lt - med gy, dk gy, mod frm -
frm, sb blkly - sb plty, arg cmt,gritty - slty
tex, tr shy ss



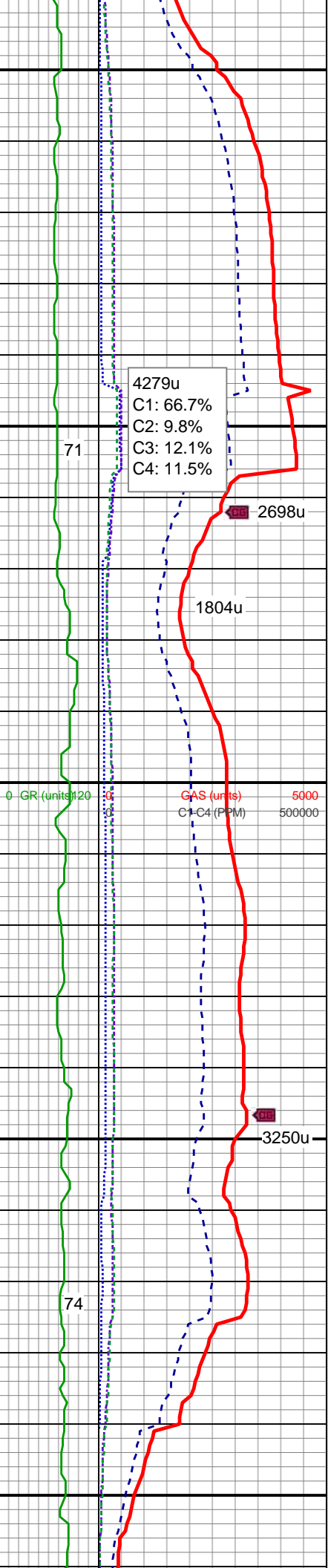
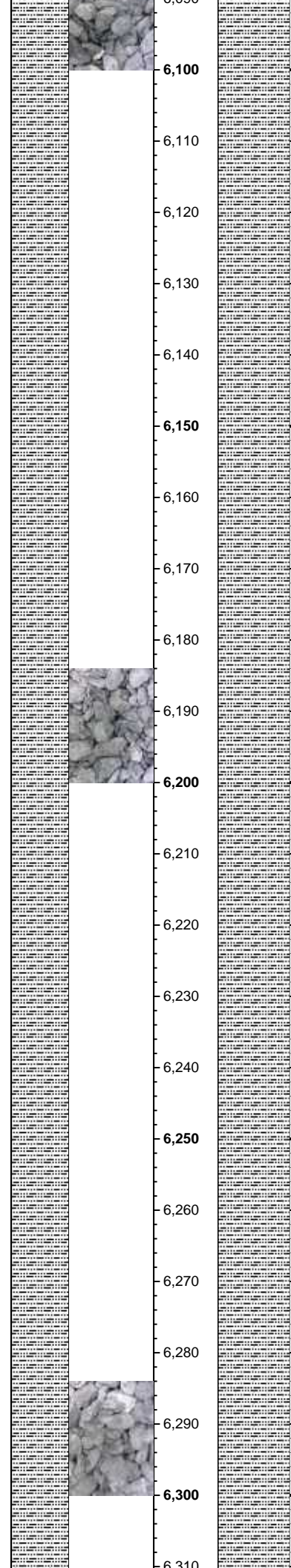
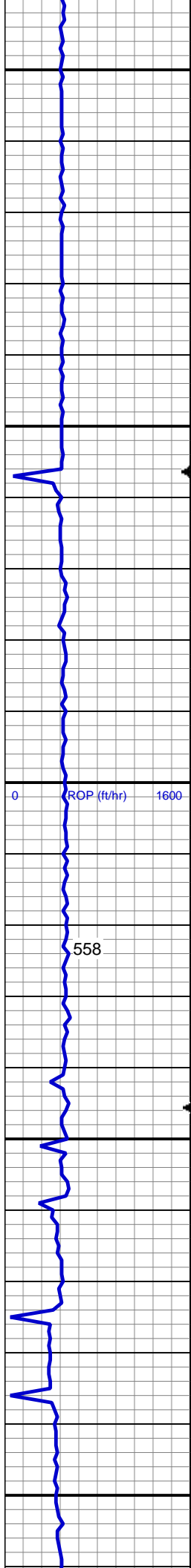
MD: 5,914'
 TVD: 5,828.69'
 Inclination: 2.5 °
 Azimuth: 154.9 °
 VS: -142.21'

SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt,gritty - slty tex, tr shy ss

Mud Wt: 9.85 / 34 Vis

MD: 6,008'
 TVD: 5,922.63'
 Inclination: 1.4 °
 Azimuth: 160.1 °
 VS: -142.93'

SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt,gritty - slty tex, tr shy ss



4279u
 C1: 66.7%
 C2: 9.8%
 C3: 12.1%
 C4: 11.5%

MD: 6,102'
 TVD: 6,016.62'
 Inclination: 0.5 °
 Azimuth: 132.6°
 VS: -143.37'

SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt,gritty - slty tex, tr shy ss
 Mud Wt: 9.85 / 34 Vis

MD: 6,196'
 TVD: 6,110.62'
 Inclination: 0.3 °
 Azimuth: 77.9°
 VS: -143.86'

SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt,gritty - slty tex, tr shy ss

MD: 6,290'
 TVD: 6,204.62'
 Inclination: 0.3 °
 Azimuth: 39°
 VS: -144.29'



ROP (ft/hr) 0 1600

GR (units) 0 120
 GAS (units) 0 5000
 C1-C4 (PPM) 0 500000

558

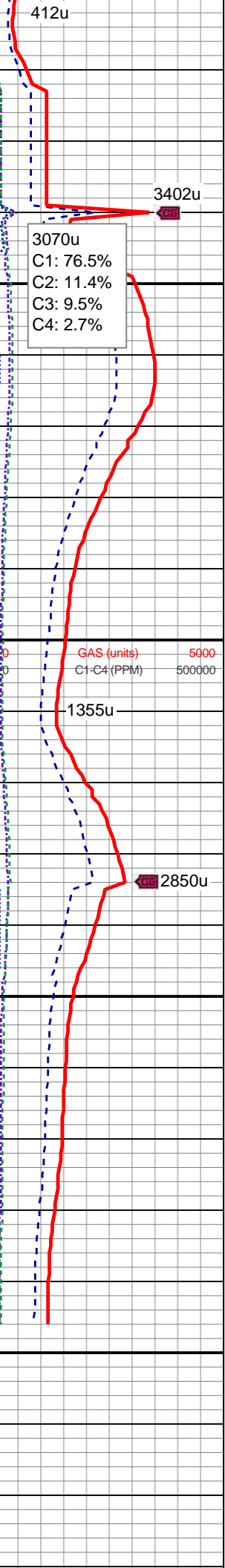
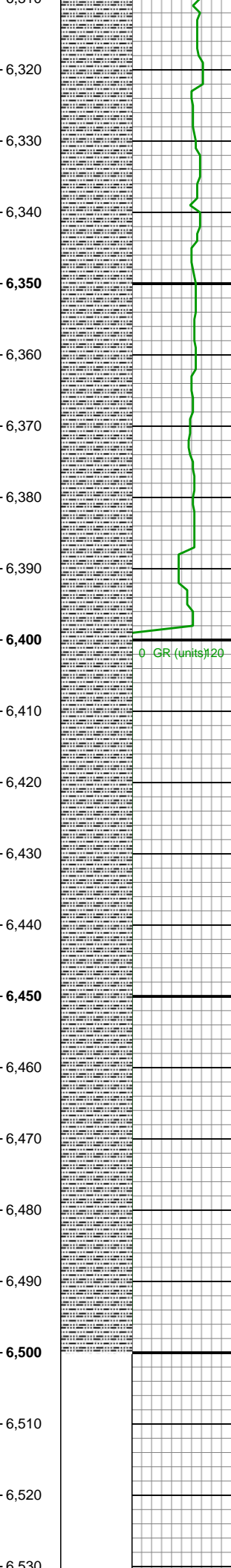
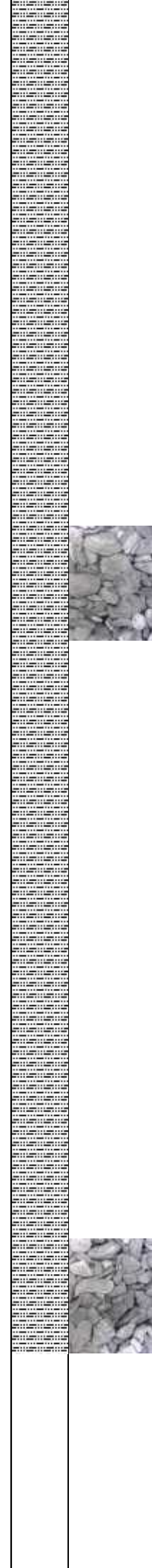
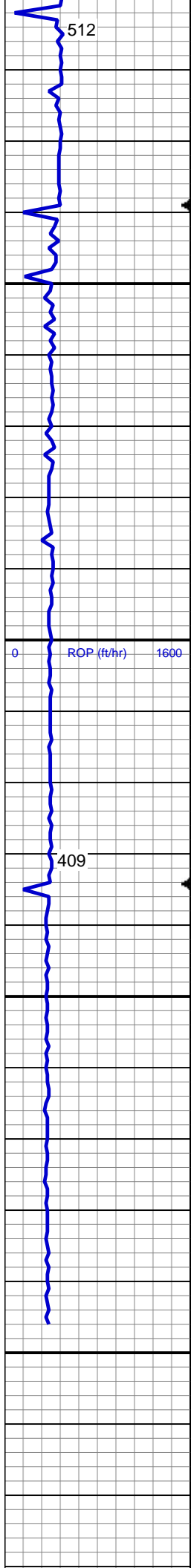
71

1804u

2698u

3250u

74



SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt,gritty - slty tex, tr shy ss

MD: 6,385'
 TVD: 6,299.61'
 Inclination: 0.6 °
 Azimuth: 67.2 °
 VS: -144.97'

SLTY SH: lt - med gy, dk gy, mod frm - frm, sb blkly - sb plty, arg cmt,gritty - slty tex, tr shy ss

TD @ 6496' MD
 02/22/2014 @ 17:19 hrs

TOOH FOR BHA #2
 LOG CONTINUES ON MPLOT
 "Cecil Farms PC
 IO6-68-1HN(Horz)"

Thank you for choosing
 Columbine Logging Inc.

