

LOG created using L PLOT VH Version 3.0, June 28, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR:	NOBLE ENERGY INC.
WELL:	WELLS RANCH USX AE07-63HN
LOCATION:	SEC12 T6N R63W
COUNTY:	WELD
STATE:	COLORADO
SPOT:	1077' FSL; 65' FEL
ELEVATION:	GE: 4,856' KB: 4,880'
FIELD:	WATTENBERG
SPUD DATE:	06/21/2013
TD DATE:	06/28/2013
DATES LOGGED:	06/22/2013 - 06/28/2013
DEPTHS LOGGED:	1,000' - 11,1187'
LOGGERS:	BRAD WILSON, MIKE GREENE, TOM WRIGHT
DRILLING FLUID:	WATER, MUD, POLY
DRILLING RIG:	H&P 322
API:	# 05-123-37082
LOG TYPE:	VERTICAL
SCALE:	1:240 (5 inches per 100 feet)
REMARKS:	WELLSITE GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING INC.

LITHOLOGIES



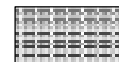
Sandstone



Shaly Sandstone



Shaly Siltstone



Silty Shale

ENGINEERING SYMBOLS



Bit Change



Connection



Connection Gas



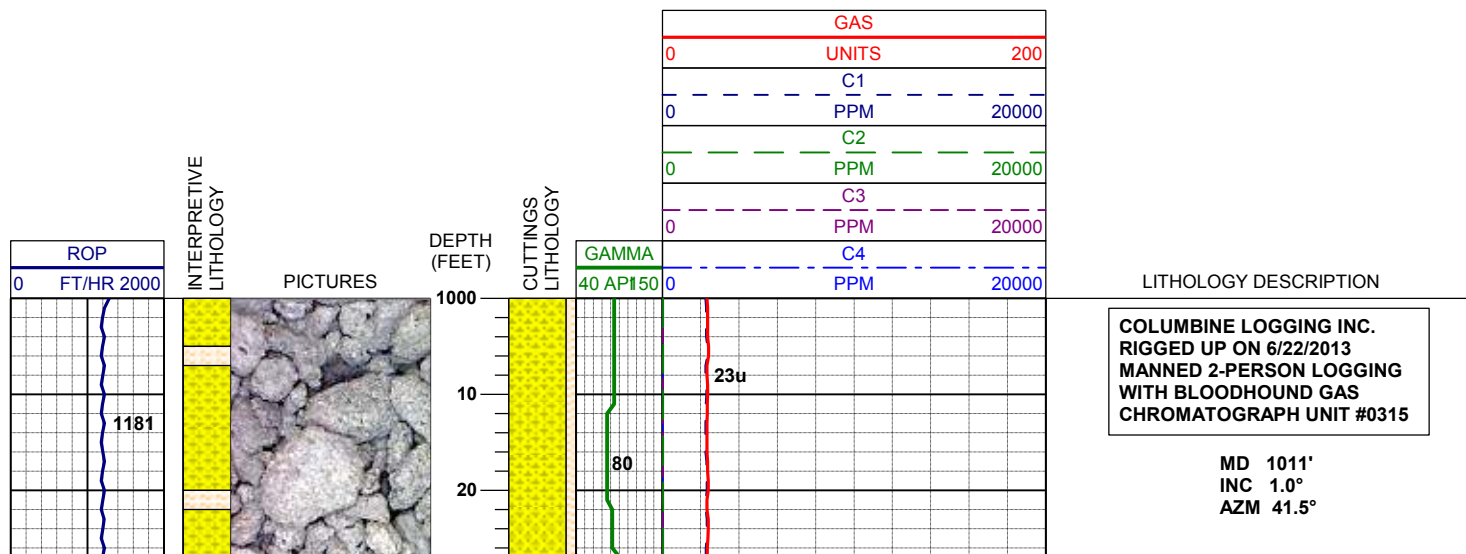
Arrow

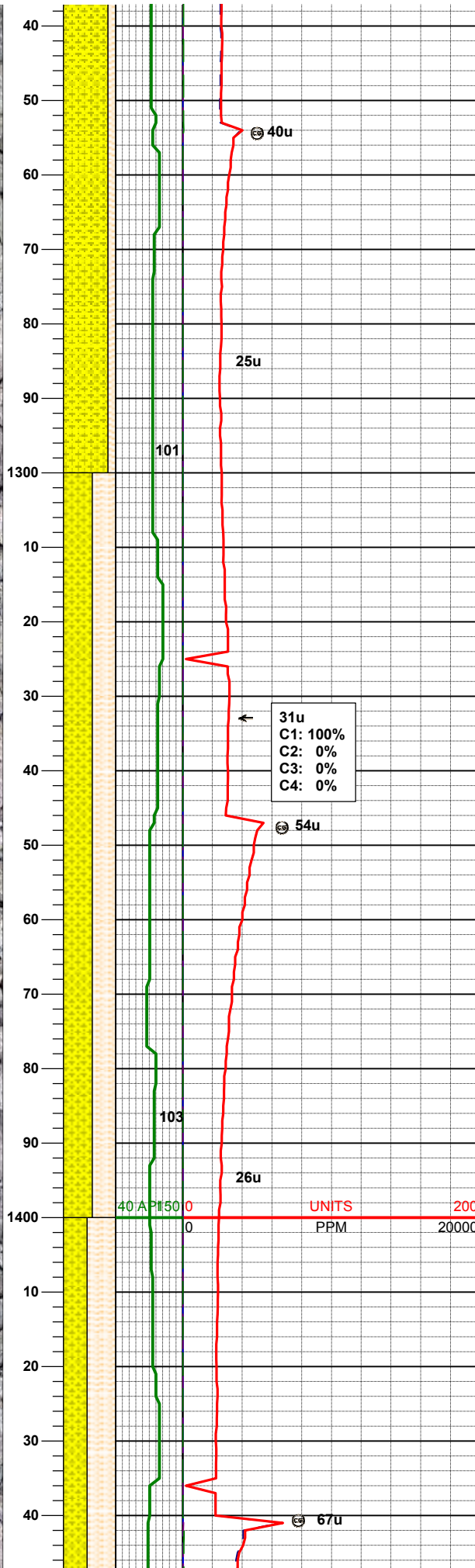
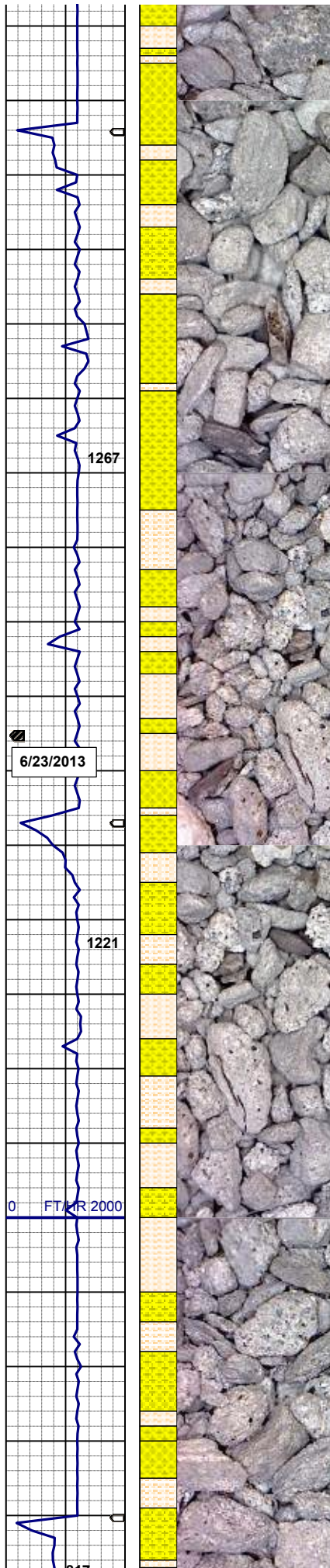


Midnight Depth



Trip Gas





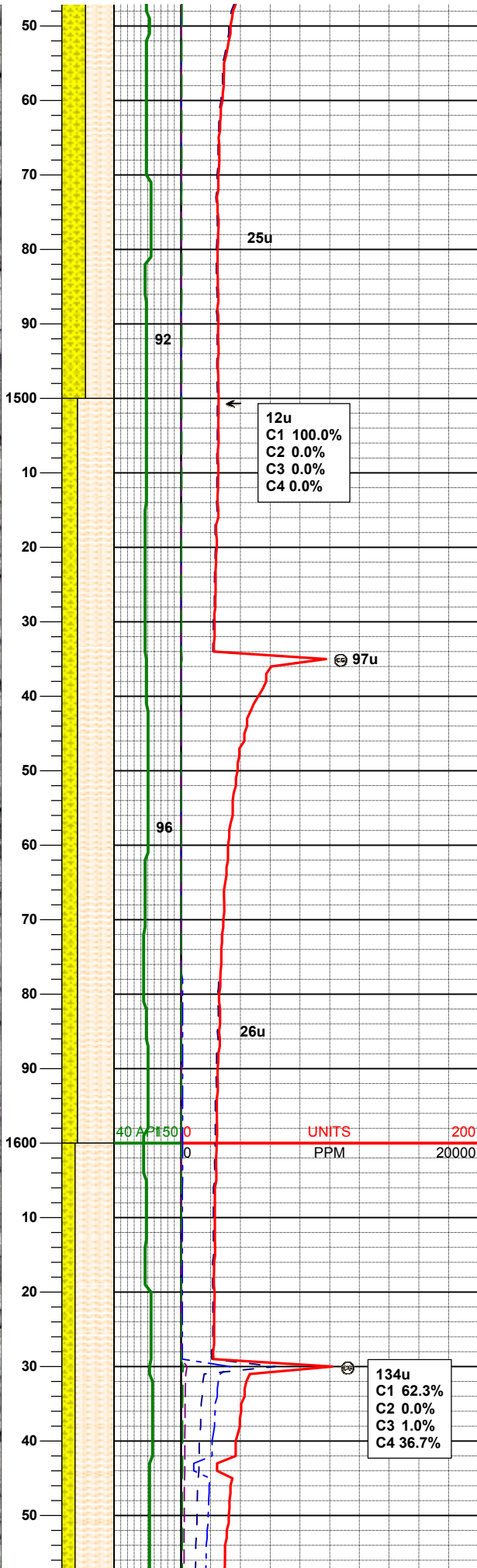
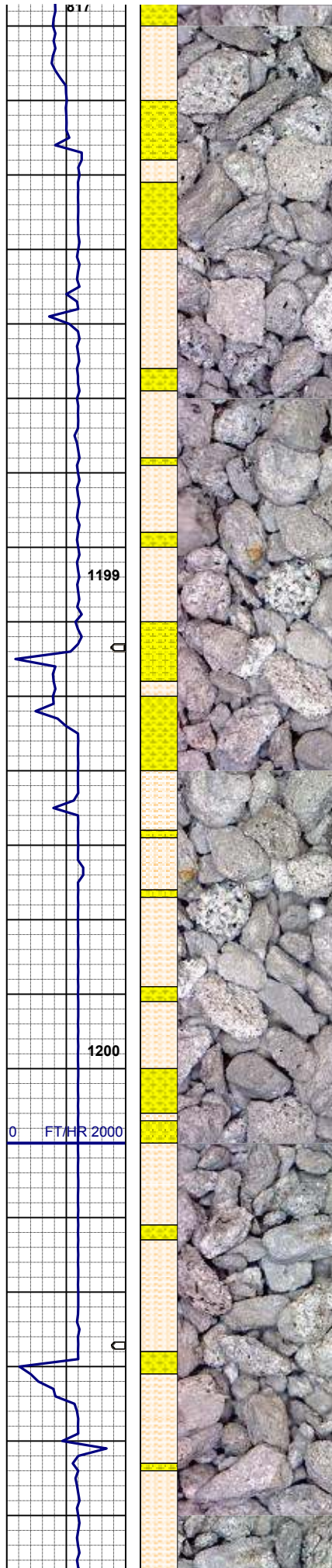
85% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, rr biot, tr
glau ; abnt dk gy cly
15% SHYSLTST: lt gy, sft- fri, sbblky- sl sbply,
aren- slty tex, tr biot incl

MD 1291'
INC 0.97°
AZM 72.34°

55% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, rr biot, tr
glau ; abnt dk gy cly
45% SHYSLTST: lt gy, sft- fri, sbblky- sl sbply,
aren- slty tex, tr biot incl

MD 1384'
INC 0.99°
AZM 81.31°

55% SHYSLTST: lt gy, sft- fri, sbblky- sl sbply,
aren- slty tex, tr biot incl



aren- slty tex, tr biot incl
45% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, v rr biot, tr
glau; abnt dk gy cly

MD 1477'
INC 0.80°
AZM 93.9°

25u

92

12u
C1 100.0%
C2 0.0%
C3 0.0%
C4 0.0%

97u

70% SHYSLTST: lt gy, sft- fri, sbbiky- sl sbplty,
aren- slty tex, tr biot incl
30% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, v tr glau ;
abnt dk gy cly

MD 1571'
INC 0.97°
AZM 76.34°

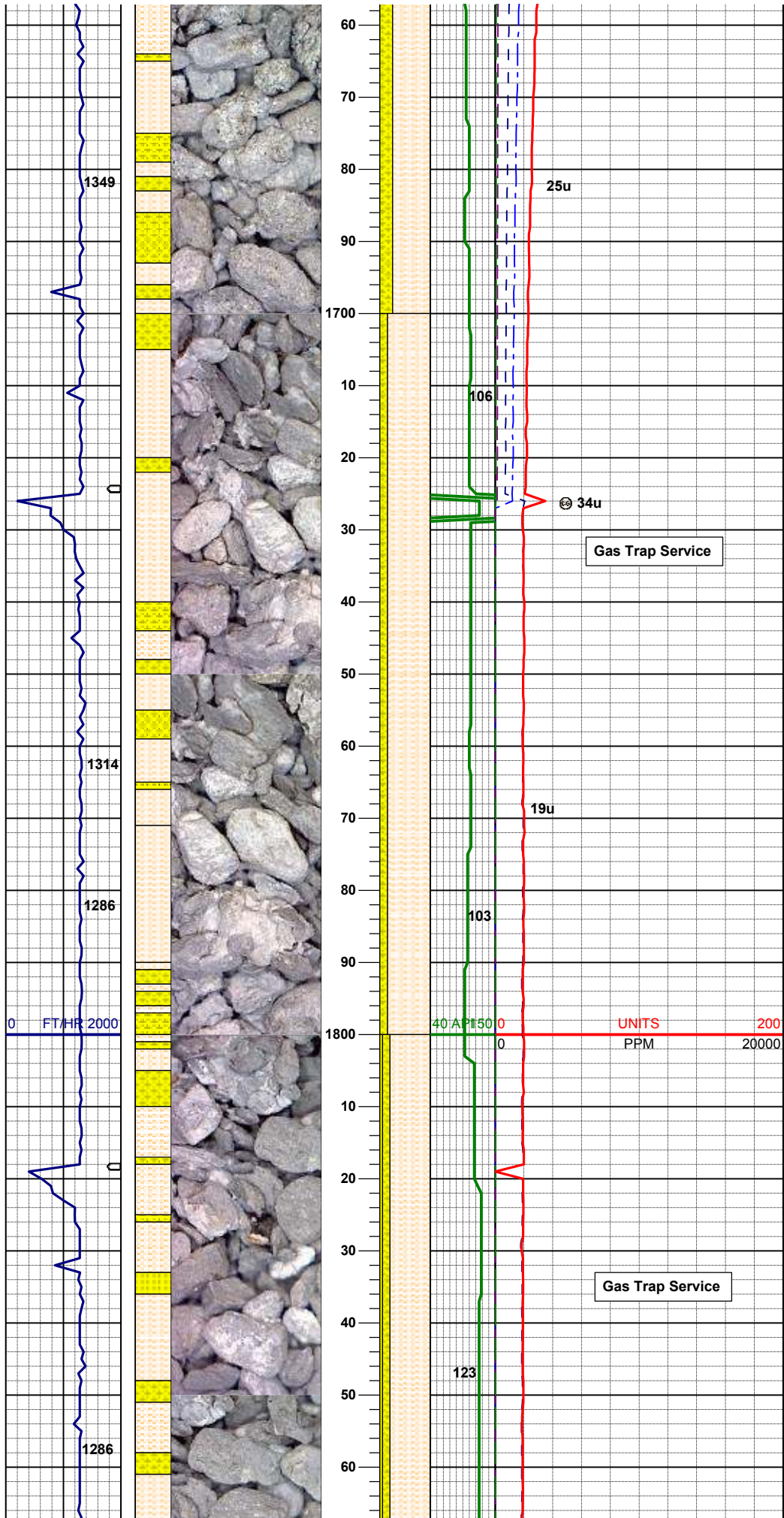
96

26u

40 AP 150 0 UNITS 200
PPM 20000

134u
C1 62.3%
C2 0.0%
C3 1.0%
C4 36.7%

75% SHYSLTST: lt gy-occ crm, sft- fri, sbbiky-
sl sbplty, aren- slty tex, tr biot incl
25% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, v rr biot, v tr
glau ; abnt dk gy cly



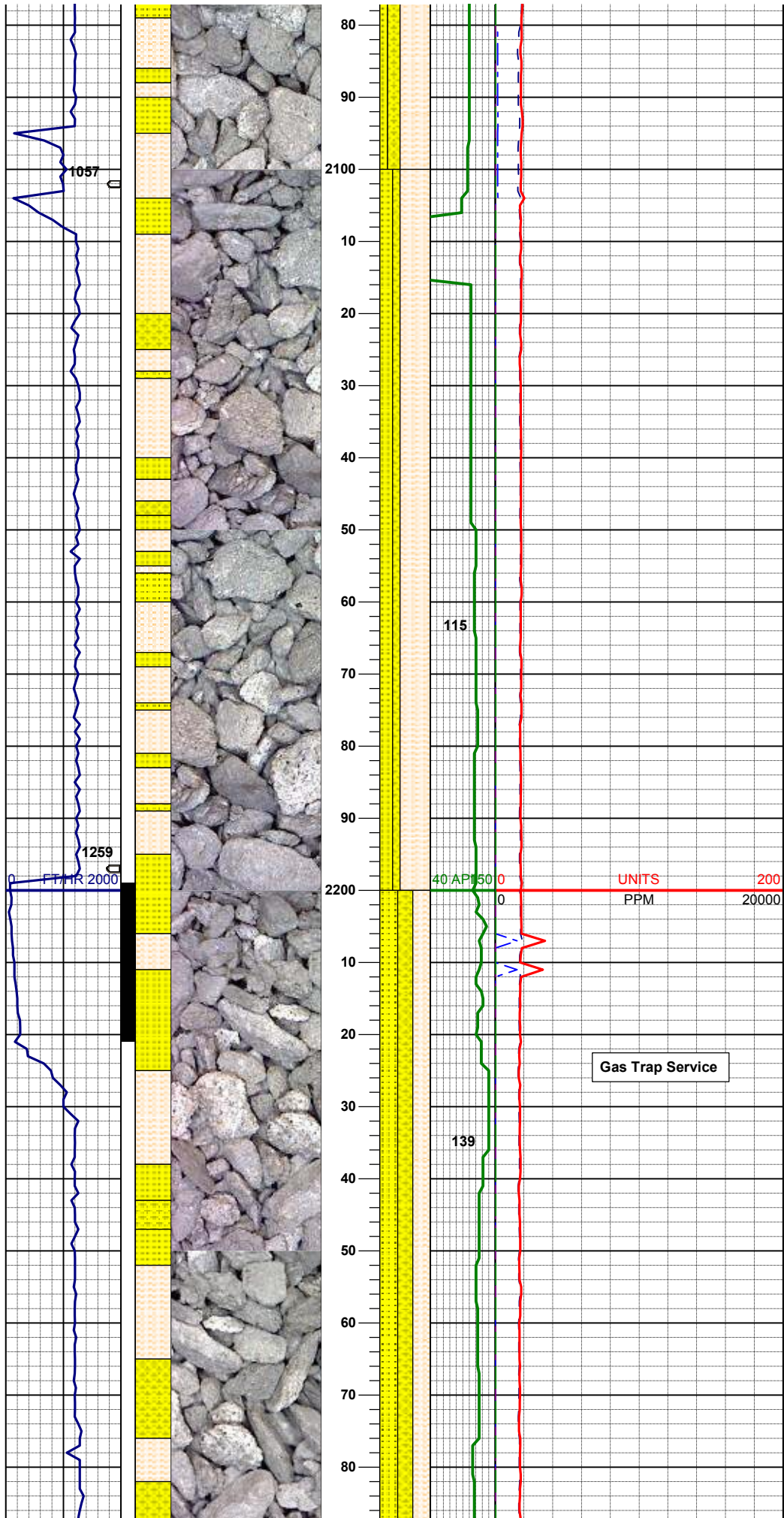
MD 1667'
INC 1.20°
AZM 89.96°

85% SHYSLTST: lt gy-occ crm, sft- fri, sbbiky-
sl sbplty, aren- slty tex, tr biot incl
15% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, v rr biot, v tr
glau ; abnt dk gy cly

MD 1762'
INC 1.05°
AZM 94.92°

80% SHYSLTST: lt gy-occ crm, sft- fri, sbbiky-
sl sbplty, aren- slty tex, tr biot incl
15% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, v rr biot, v tr
glau ; abnt dk gy cly , rr medgy cly
5% SS: gy - lt gy, vf-fgr, sbrd-sbang, p srt, firm-
mod fri, g por, rr biot, sme glau incl

MD 1856'
INC 1.09°
AZM 93.25°

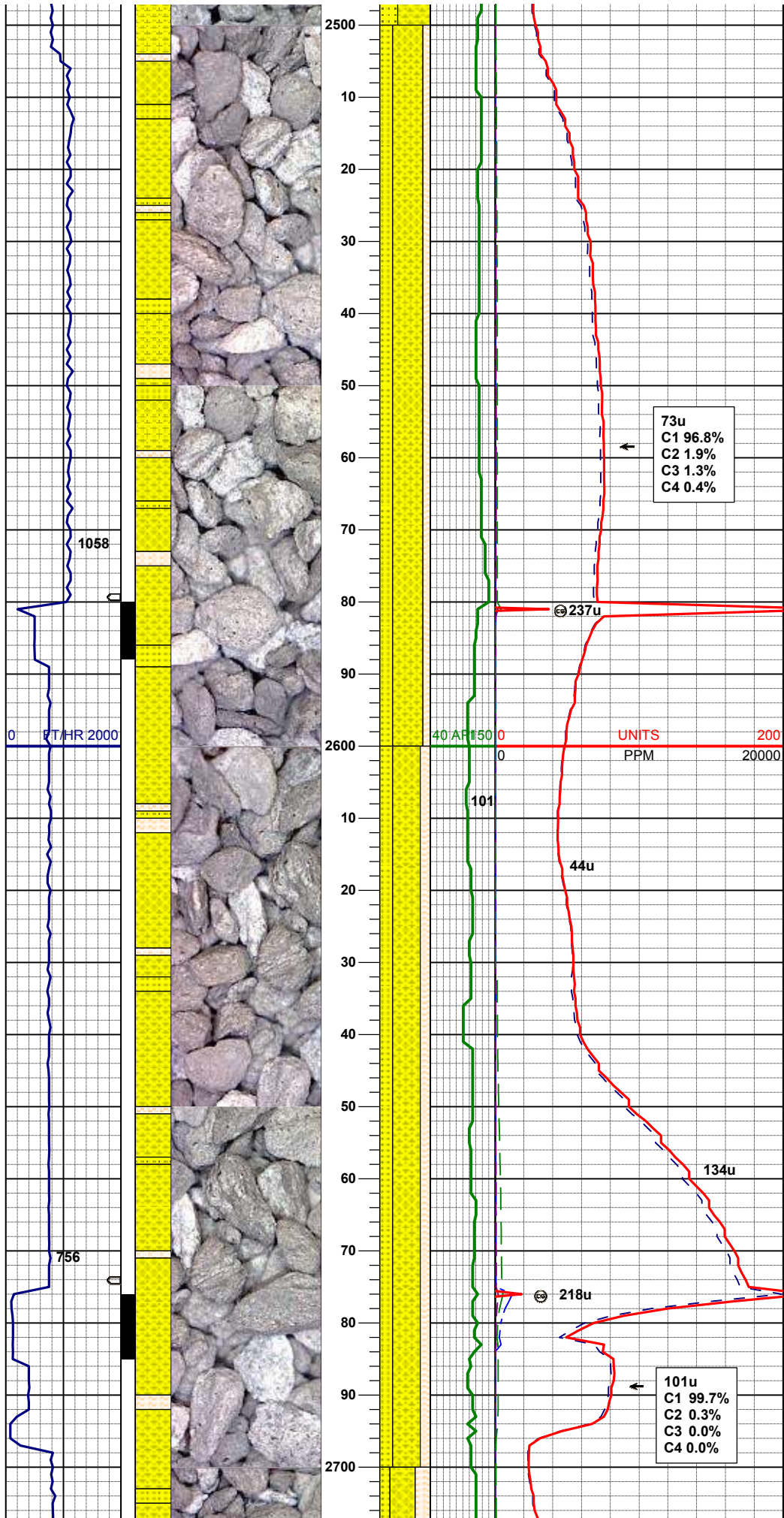


MD 2141'
INC 1.04°
AZM 87.65°

60% SHYSLTST: lt gy-occ crm, sft- fri, sbbly-
sl sbply, aren- slty tex, tr biot incl cly
25% SS: gy - lt gy, vf-fgr, sbrd-sbang, p srt, firm
-mod fri, g por, rr biot, sme glau incl
15% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, v rr biot, v tr
glau ; abnt dk gy cly , rr medgy cly

MD 2236'
INC 2.74°
AZM 58.74°

35% SHYSLTST: lt gy-occ crm, sft- fri, sbbly-
sl sbply, aren- slty tex, tr biot incl cly
35% SS: gy - lt gy, vf-fgr, sbrd-sbang, p srt, firm
-mod fri, g por, rr biot, sme glau incl
30% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, v rr biot, v tr
glau ; abnt dk gy cly , rr medgy cly



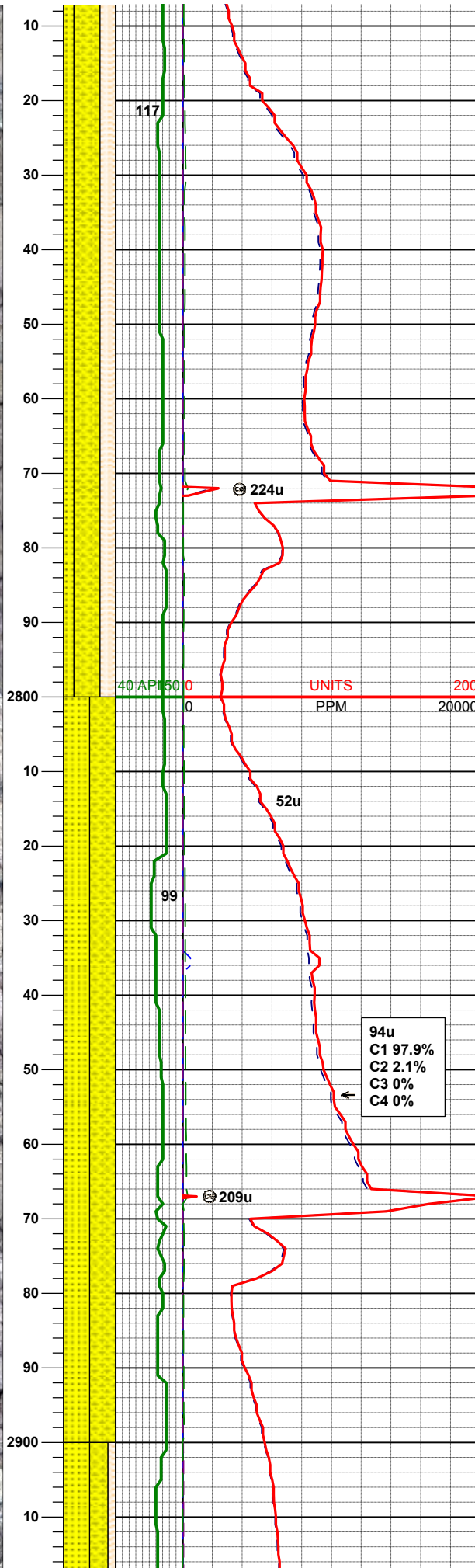
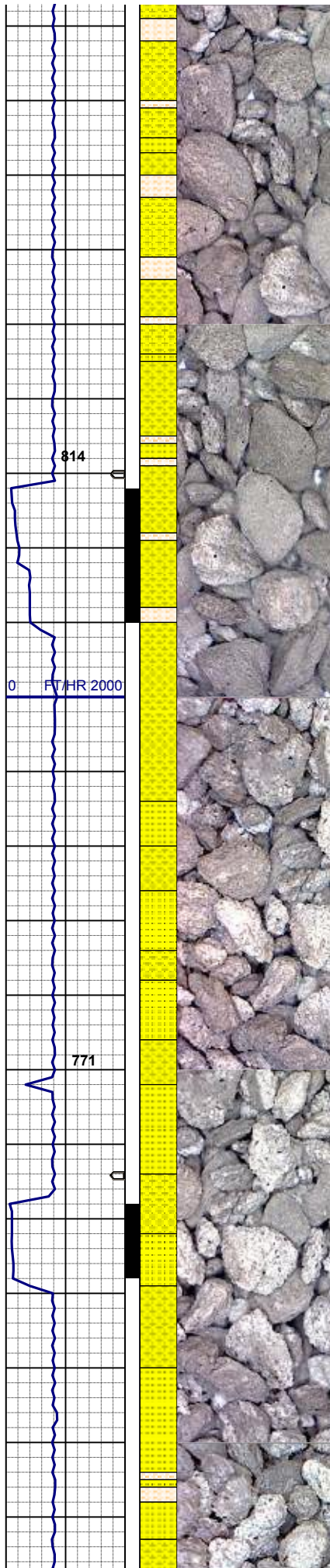
MD 2521'
INC 9.43°
AZM 33.71°

60% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt
25% SS: lt gy - wh, vf-fgr, sbrd, g srt, frm-fri, g
por
15% SHYSLTST: lt gy, sft- fri, sbblky- sl sbplty,
aren- slty tex

MD 2616'
INC 9.81°
AZM 31.86°

55% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, occ biot
25% SS: lt gy - wh, vf-fgr, sbrd, g srt, frm-fri, g
por
20% SHYSLTST: lt gy, sft- fri, sbblky- sl sbplty,
aren- slty tex

MD 2744'



MD 2711'
INC 10.32°
AZM 28.47°

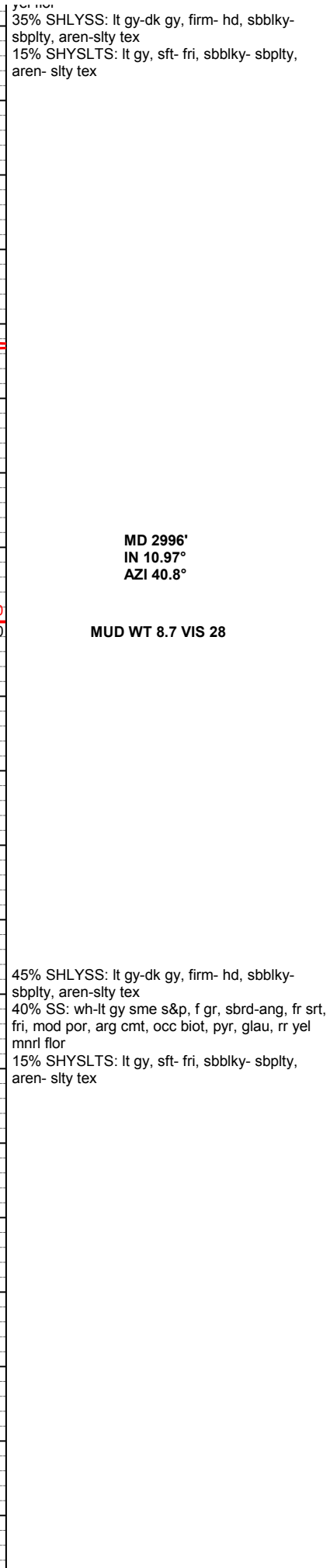
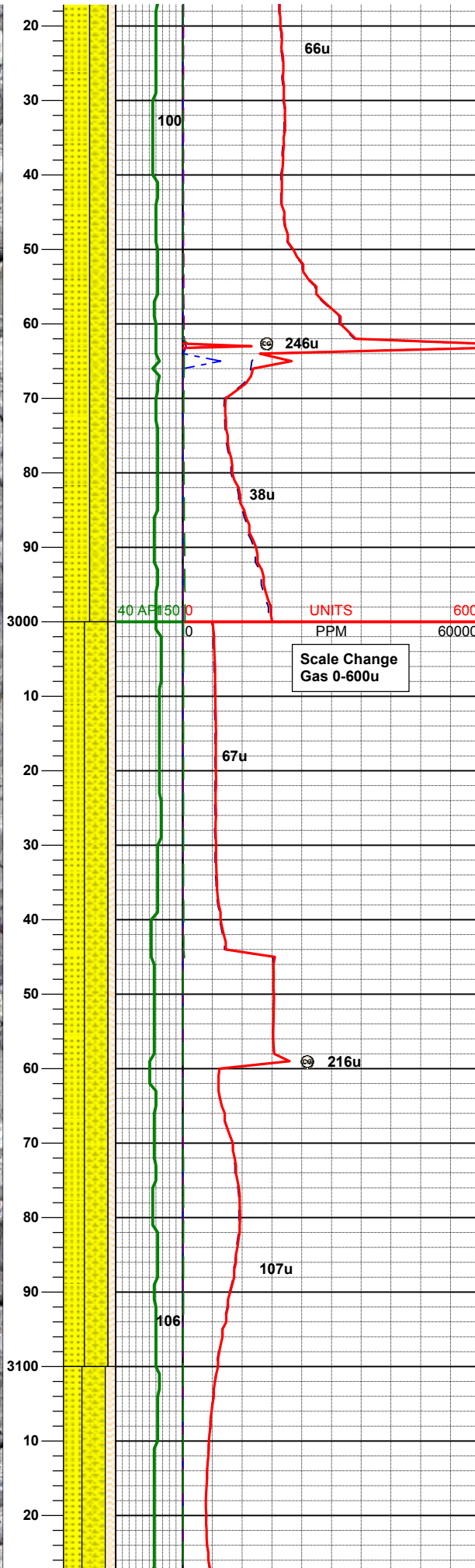
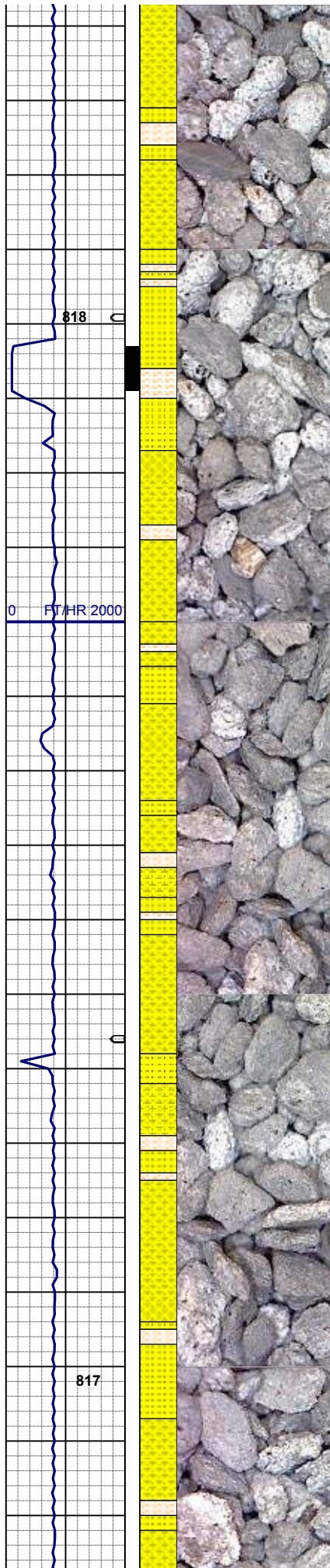
50% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, occ biot
30% SHYSLTST: lt gy, sft- fri, sbbiky- sl sbply,
aren- slty tex
20% SS: lt gy - wh, vf-fgr, sbrd, g srt, frm-fri, g
por

MD 2806'
INC 11.29°
AZM 31.02°

50% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt,
fri, mod por, arg cmt, occ biot, pyr, glau
50% SHLYSS: lt gy-dk gy, firm- hd, sbbiky-
sbply, aren-sity tex

MD 2901'
INC 10.97°
AZI 35.32°

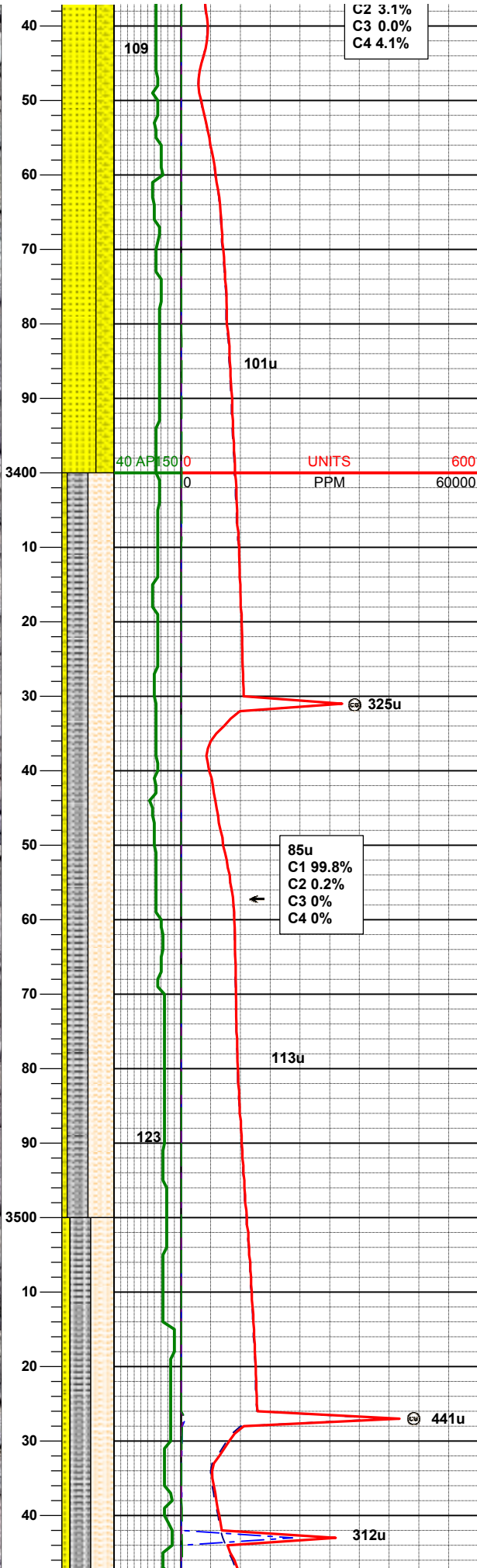
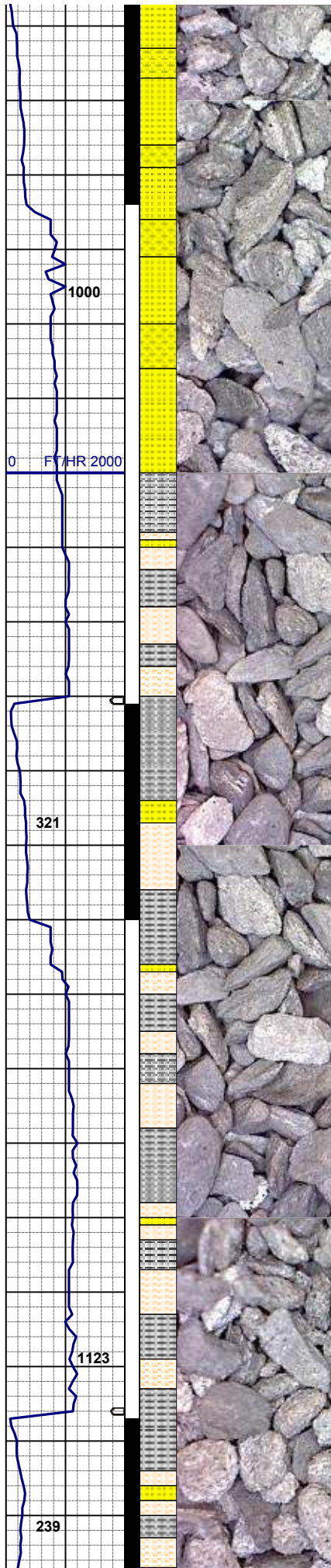
50% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt,
fri, mod por, arg cmt, occ biot, pyr, glau, tr dim
vel flr



MD 2996'
IN 10.97°
AZI 40.8°

MUD WT 8.7 VIS 28

45% SHLYSS: lt gy-dk gy, firm- hd, sbblky-
sbplty, aren-slty tex
40% SS: wh-lt gy sme s&p, f gr, sbdr-ang, fr srt,
fri, mod por, arg cmt, occ biot, pyr, glau, rr yel
mnrl flr
15% SHYSLTS: lt gy, sft- fri, sbblky- sbplty,
aren- slty tex



65% SS: wh-med gy, med-f, sme s&p, ang-sbang, w sort, fri-firm, g por, arg cmt, occ glau, occ pyr, sme yel mnrl flor, com banding
35% SHYSS: lt gy-dk gy, sft-firm, sbblky-blky, tex f-sdy, mod calc

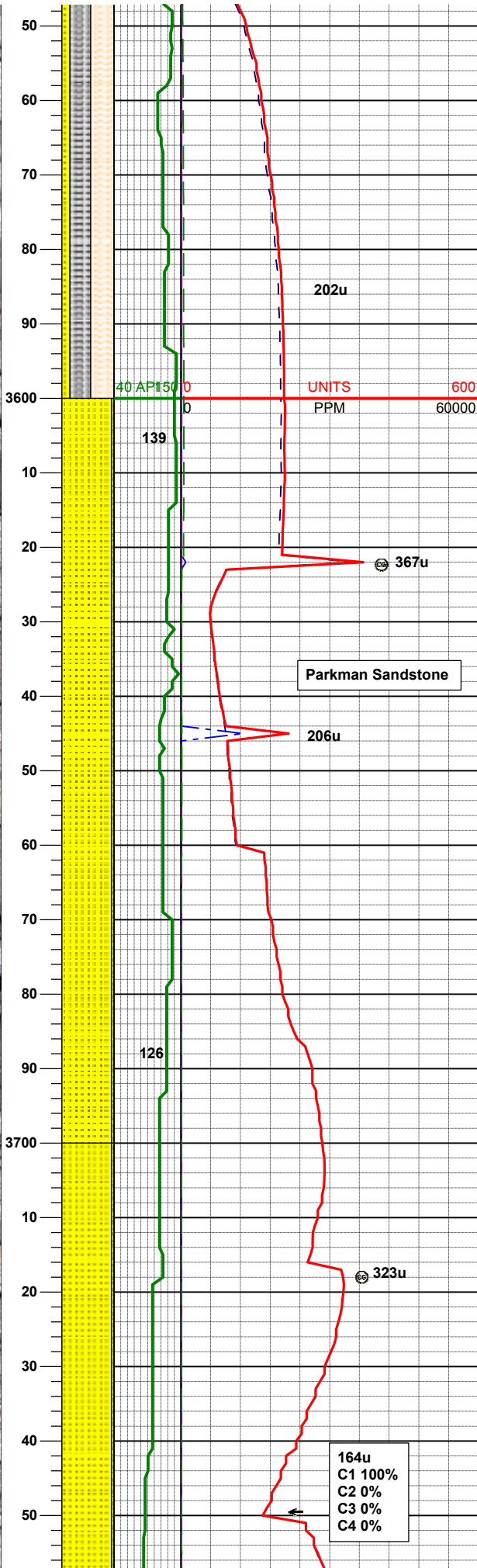
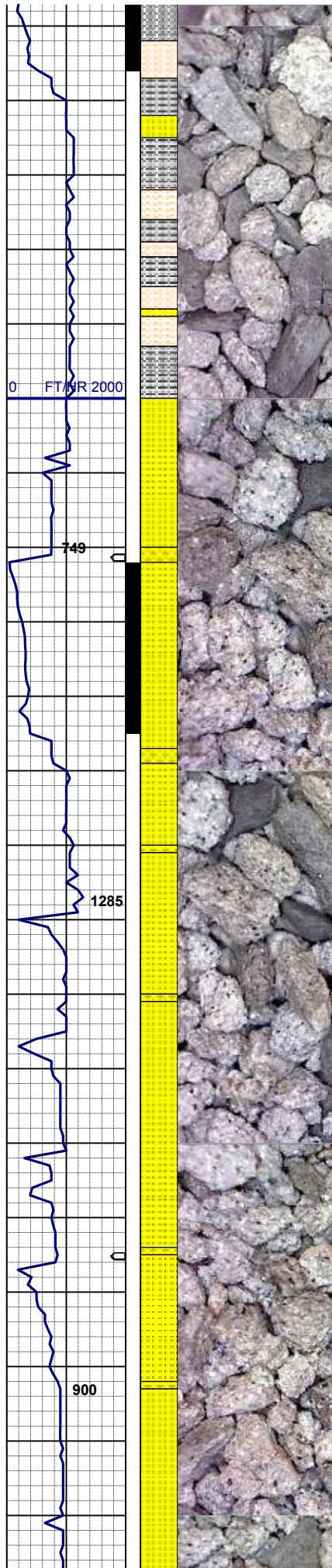
MD 3375'
INC 5.3°
AZM 11.98°

50% SHY: SLTST: med-dk gy, sft, flaky-plty, gt-silty tex
40% SLTY: SH: dk gy, sft, flaky-sbplty, gt-silty tex, sl calc, no flor
10% SS: med-dk gy, f-vf, sbang-sbrd, w srt, fri-firm, no flor

MD 3470'
INC 2.53°
AZM .5°

MUD WT 8.9 VIS 29

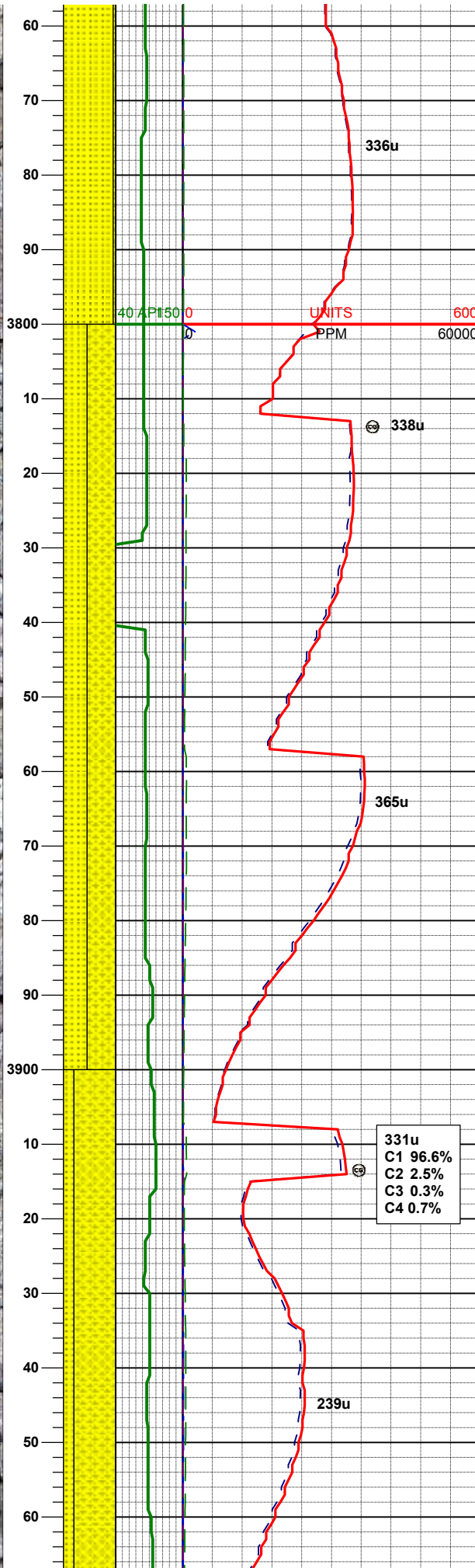
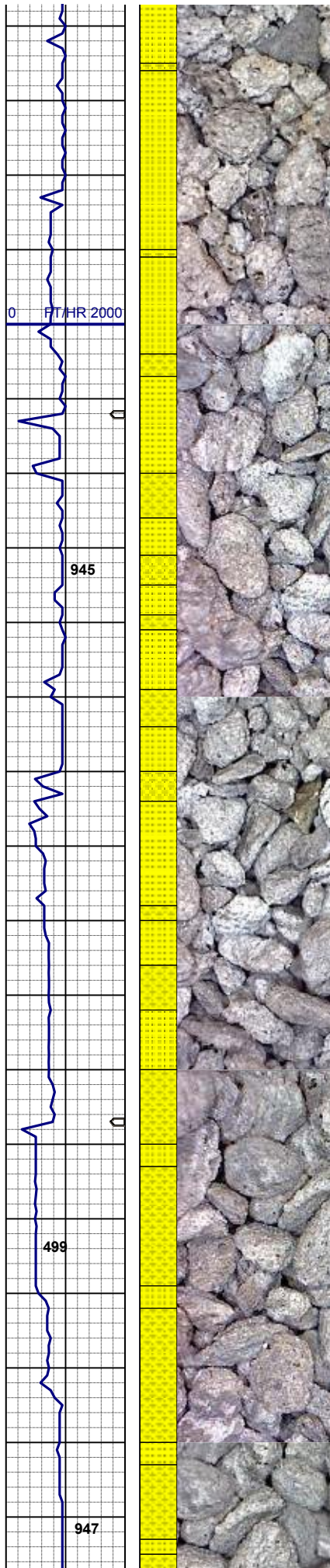
45% SHY: SLT: med-dk gy, sft, flaky-plty, gt-silty tex
40% SLTY: SH: dk gy, sft, flaky-sbplty, gt-silty tex, sl calc, no flor
15% SS: med-dk gy, f-vf, sbang-sbrd, w srt, fri-firm, abnt pyr, no flor



MD 3565'
INC 1.04°
AZM 112.59°

95% SS: trnsl-wh, sme crm, m-f, sme s&p, sbrd
-rd, firm-hd, fr por, mod calc, occ glau, occ flor
mnrl
5% SHY: SS: med-dk gy, sft, flaky-plty, gt-silty
tex, occ glau

95% SS: trnsl-wh, sme crm, m-f, sme s&p, sbrd
-rd, firm-hd, fr por, cmt abnt calc, occ glau, pyr,
mica, occ flor mnrl
5% SHY: SS: med-dk gy, sft, flaky-plty-fis, gt-
silty tex, occ glau



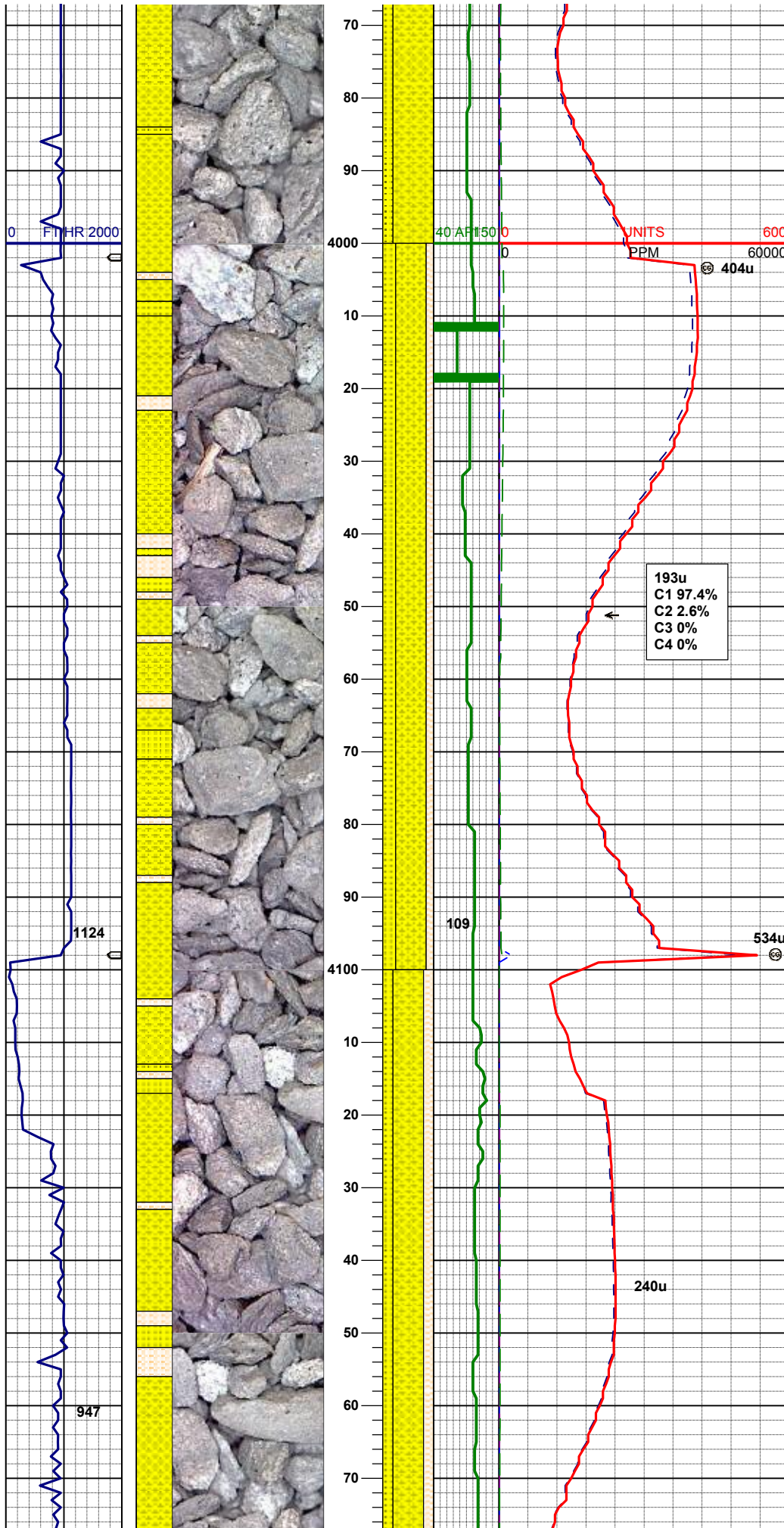
MD 3755'
INC 1.92°
AZM 281.95°

55% SHY: SS: lt-med gy, sft-frm, sbbkly, slty
sdy tex, mod calc, occ fos, occ flr mnrl
45% SS: wh-med gy, f-vf, sbang-rnd, w srt, firm,
g por, mod calc cmt, occ pyr, occ fos

MD 3850'
INC 2.12°
AZM 285.42°

80% SS: wh-med gy, f-vf, sbang-rnd, w srt, firm,
g por, mod calc cmt, occ pyr, occ fos
20% SHY: SS: lt-med gy, sft-frm, sbbkly, slty
sdy tex, mod calc, occ fos, occ mnrl flr

MD 3945'
INC 2.12°
AZM 286.35°



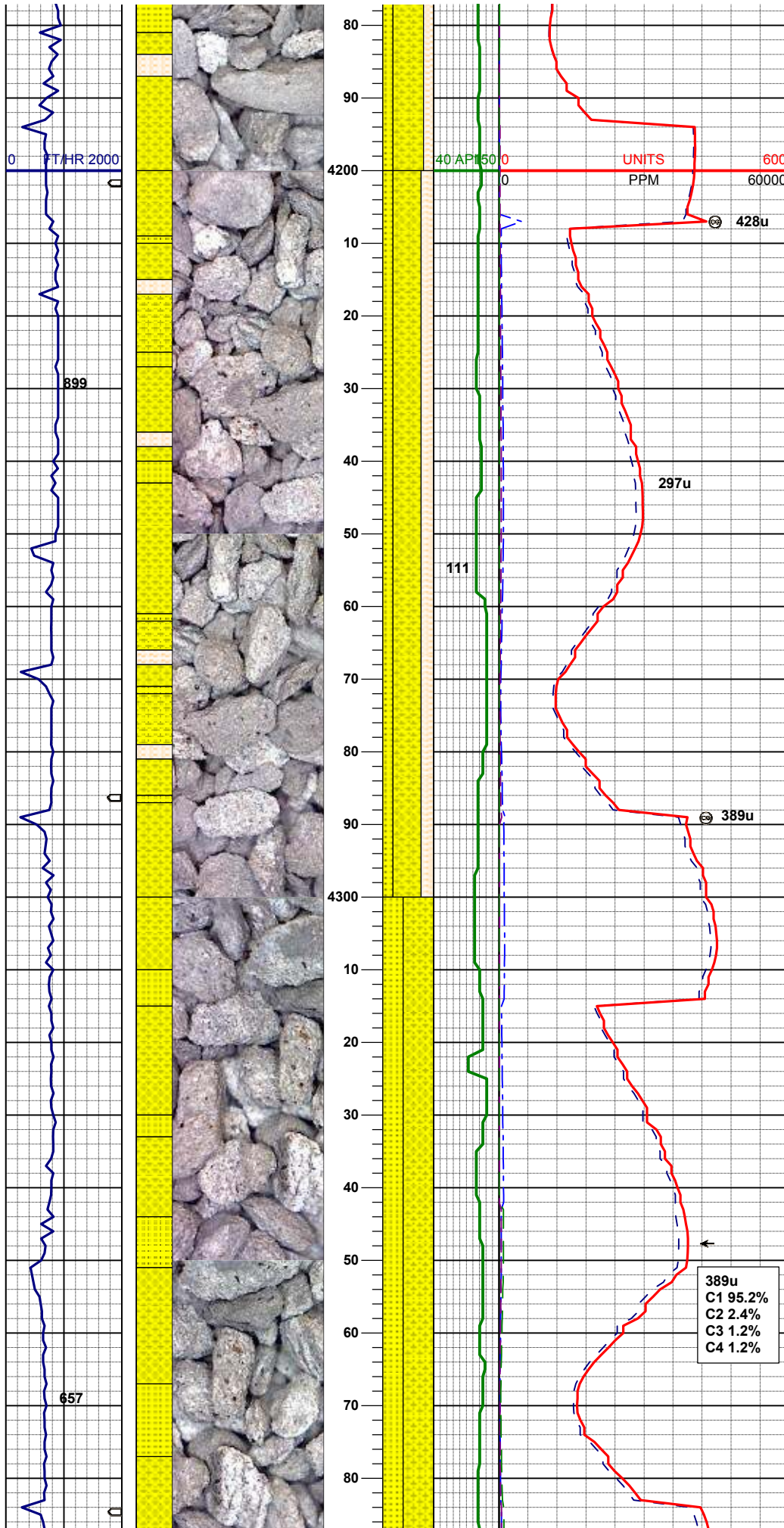
MD 4040'
INC 2.43°
AZM 286.35°

60% SHY: SS: lt gy, sbplty, gt, sl calc, occ fos
25% SS: trnsi-wh sme s&p, f-vf, mod-w srt, firm,
fr por, sl calc, occ fos
15% SHY: SLTST: dk gy, firm, flaky, fine tex, sl
calc, rr pyr

MUD WT 8.9 VIS 29

MD 4135'
INC .58°
AZM 312.25°

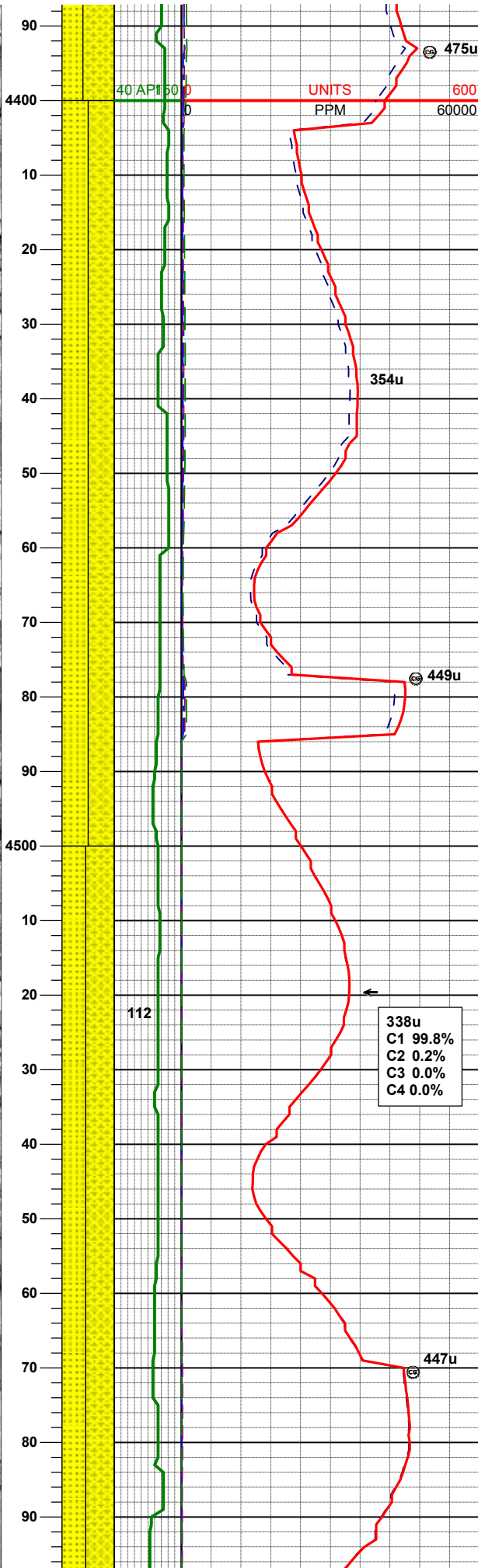
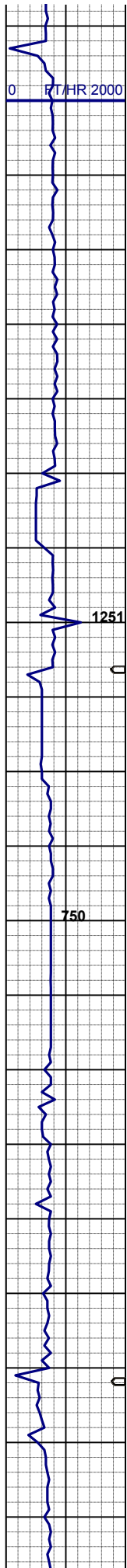
60% SHY: SS: lt gy, sbplty, gt, sl calc, occ fos
20% SS: trnsi-wh sme s&p, f-vf, f-vf, mod-w srt,
firm, fr por, sl calc, occ fos
20% SHY: SLTST: dk gy, firm, flaky, fine tex, sl
calc, rr pyr



MD 4230'
INC .56°
AZM 327.87°

55% SHY: SS: lt-m gy, firm, fgr sub rd- sbang,
sl calc mtx, occ fos
25% SHY: SLT: dk gy, firm, flaky- sbplty, fine
tex, sl calc, rr pyr
20% SS: trnsl-wh sme s&p, f-vf, f-vf, mod-w srt,
firm, fr por, sl calc, occ fos

60% SHY: SS: lt-m gy, firm, fgr sub rd- sbang,
sl calc mtx, sme pyr
40% SS: trnsl-wh-lt gy, sme s&p, f-vf, sbnd-rd,
firm, fr por, sl calc, occ pyr, glau



50% SS: trns-l-wh-lt gy, sme s&p, f-vf, sbdrd-rd, firm, fr por, sl calc, occ pyr, glau
50% SHY: SS: lt-m gy, firm, fgr sub rd- sbang, sl calc mtx, sme pyr

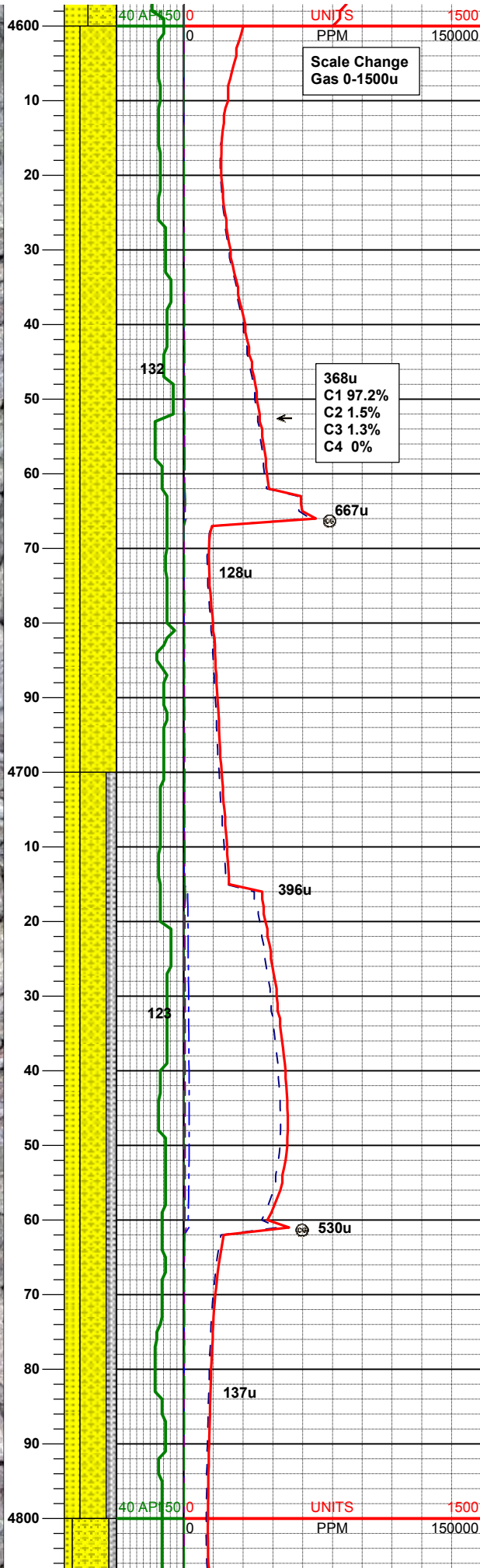
55% SHY: SS: lt-m gy, firm, fgr sub rd- sbang, sl calc mtx, sme pyr
45% SS: trns-l-wh-lt gy, sme s&p, f-vf, sbdrd-rd, firm, fr por, sl calc, occ pyr, glau

0 FT/HR 2000

750

0 FT/HR 2000

857



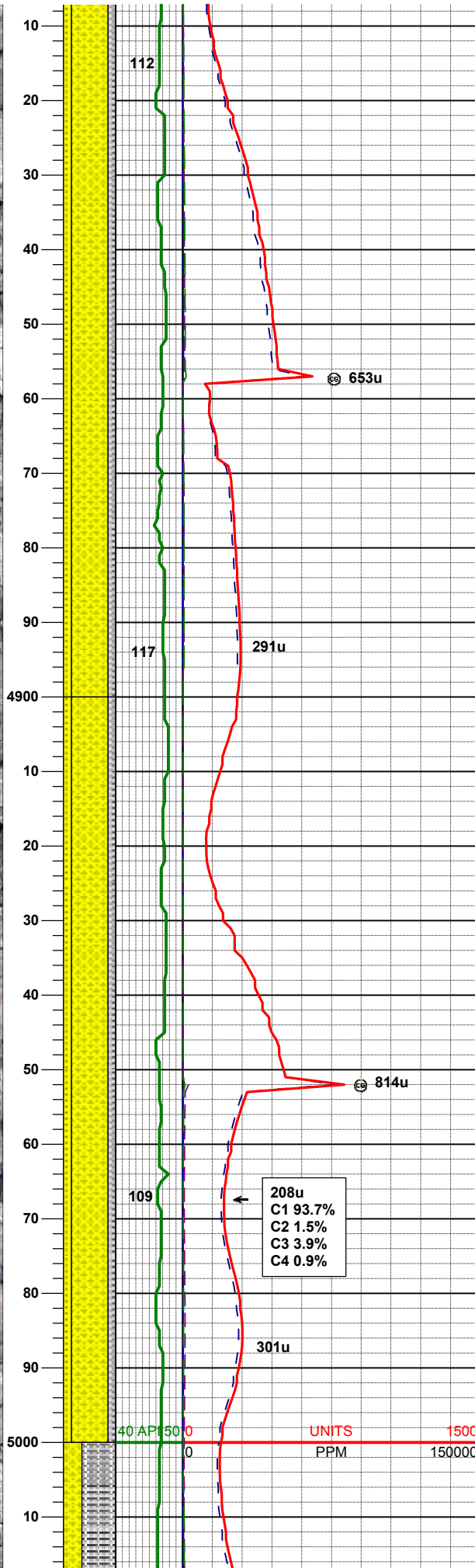
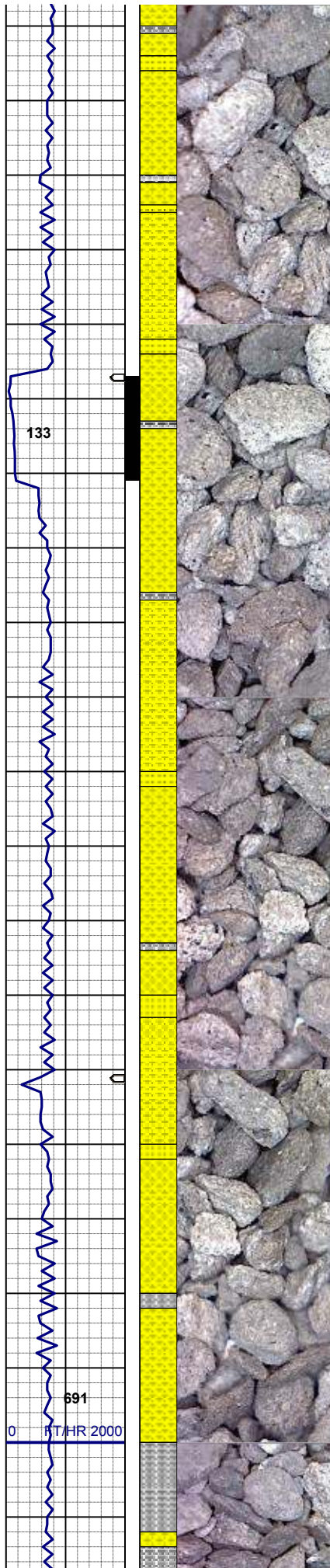
MD 4610'
INC 1.09°
AZM 305.25°

70% SHY: SS: m gy, firm, sbbly, slty tex, sl calc, sme pyr
30% SS: wh-lt gy, sme s&p, f-vf, sbdrd-rd, firm, fr por, sl calc, occ pyr, glau

MD 4704'
INC .43°
AZM 337.59°

50% SHY: SS: m gy, firm, sbbly, slty tex, sl calc, occ pyr
30% SS: wh-lt gy, sme s&p, f-vf, sbdrd-rd, firm, fr por, sl calc, occ pyr, glau, sme wh c ang c gr
20% SLTY: SH: dkgy, firm, sbply-pty, gt tex, rthy

MUS WT 9.05 VIS 28



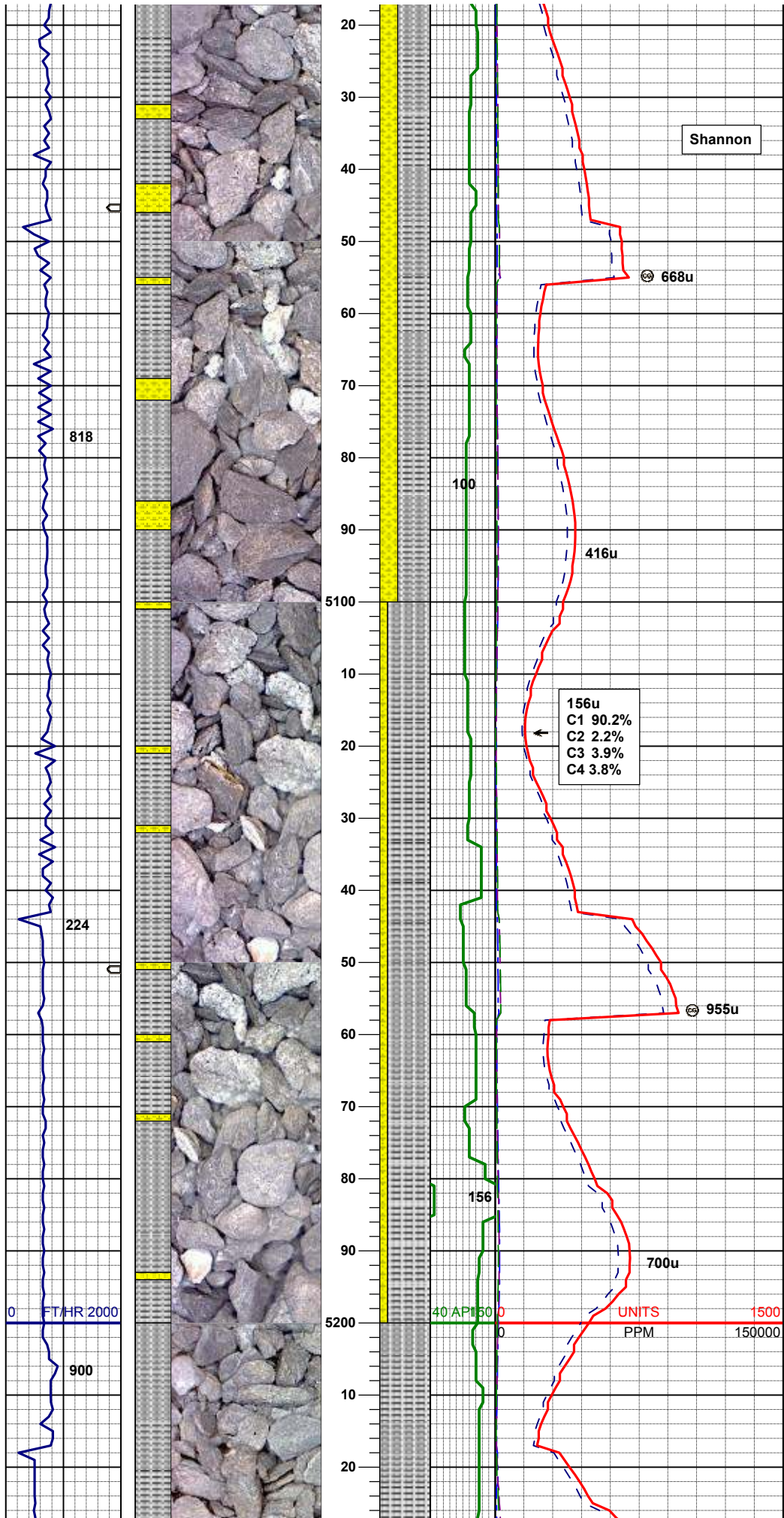
70% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, rr biot, rr glau
15% SS: lt gy - wh, vf-fgr, sbrd, g srt, frm-fri, g
por, sme glau, rr biot
15% SILTY SH: dk gy, firm -sft , rthy sl slty tex,
rr cly

MD 4894'
INC 1.09°
AZM 142.3°

70% SHYSS: lt gy- sme s&p, vf-fgr, sbrd -
sbang, mod srt, fri, p por, arg cmt, rr biot, rr glau
15% SS: lt gy - wh, vf-fgr, sbrd, g srt, frm-fri, g
por, occ glau v rr biot
15% SILTY SH: dk gy, firm -sft , blkly-subblky,
rthy sl slty tex, rr cly

208u
C1 93.7%
C2 1.5%
C3 3.9%
C4 0.9%

UNITS
PPM
150000



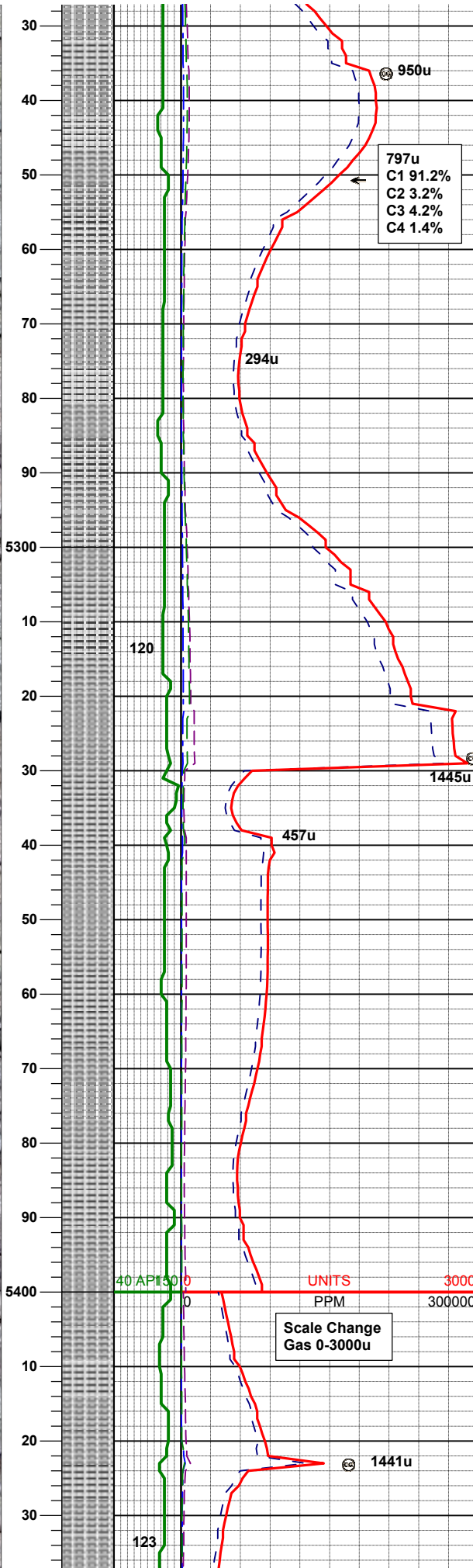
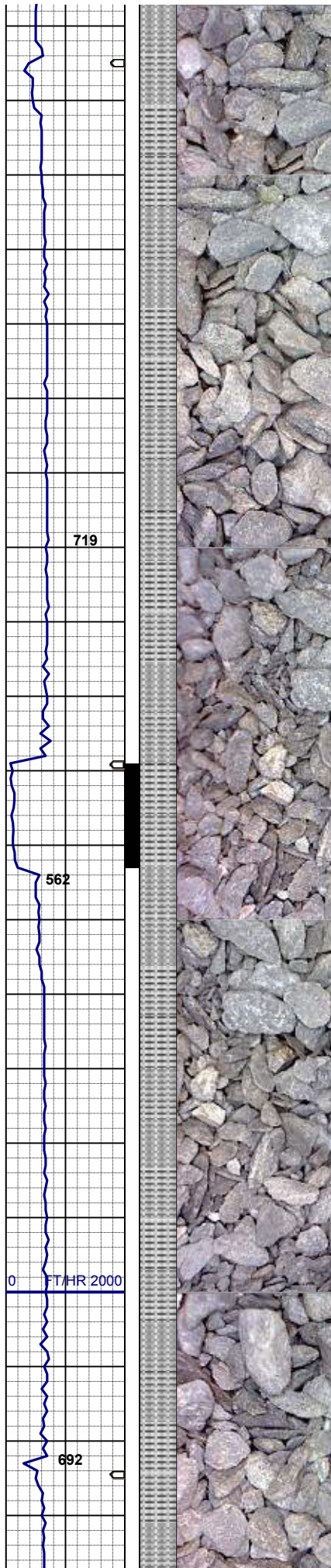
65% SILTY SH: m-dk gy occ gybrn, firm - sl sft ,
rthy - sl slty tex rr lse pyr
35% SHYSS: lt-m gy - sme s&p, vf-fgr, sbdr -
sbang, mod srt, firm-fri, p por, arg cmt, rr biot, tr
glau

MD 5084'
INC 1.42°
AZM 146.01°

MUD WT 9.1 VIS 29

85% SILTY SH: m-dk gy occ gybrn, firm - sl sft ,
rthy - sl slty tex rr lse pyr
15% SHYSS: lt-m gy - sme s&p, vf-fgr, sbdr -
sbang, mod srt, firm-fri, p por, arg sl calc cmt

MD 5178'
INC 1.47°
AZM 134.44°

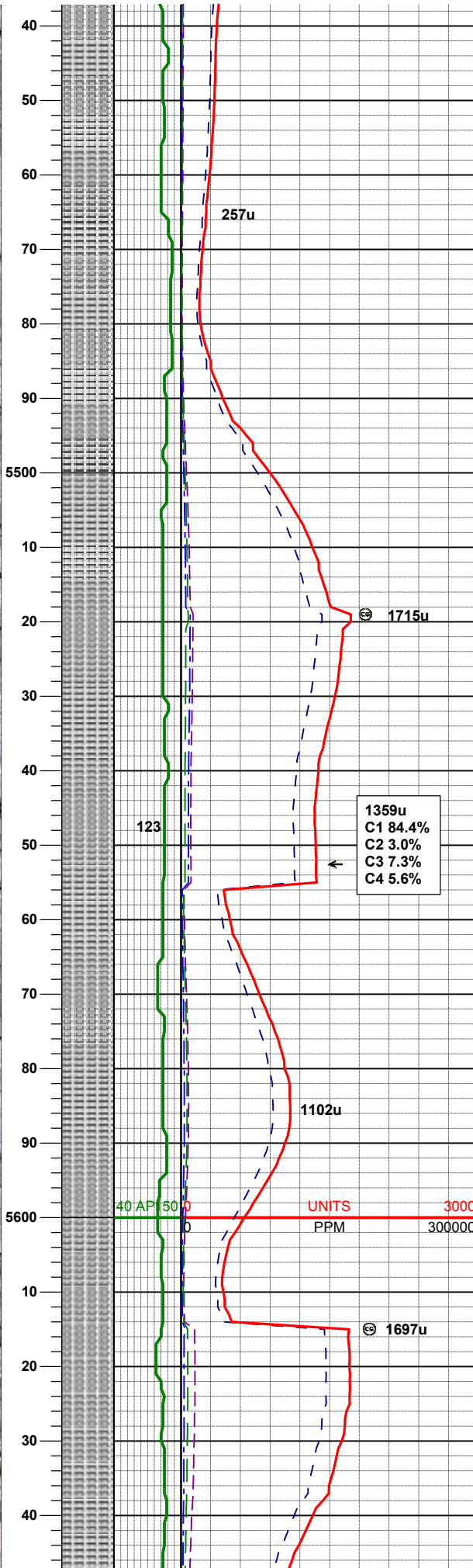
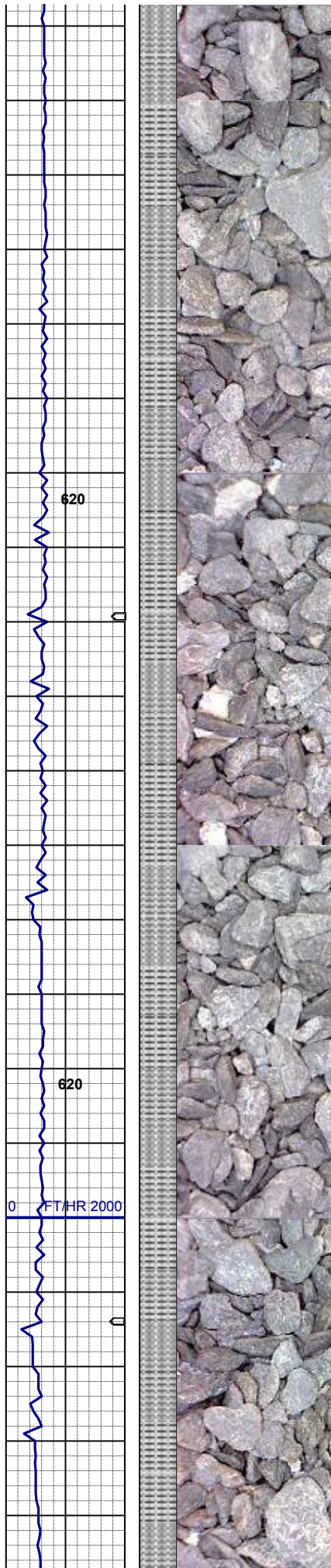


100% SILTY SH: m-dk gy occ mbrn-tan, firm -
sl sft , rthy - sl slty tex, tr ss, rr lse pyr

MD 5273'
INC 1.27°
AZM 137.73°

100% SILTY SH: m-dk gy occ m brn -tan, firm -
sl sft , rthy - sl slty tex, tr ss, rr lse pyr

MD 5368'
INC 0.28°
AZM 167.21°



100% SILTY SH: m-dk gy occ m brn -tan, firm -
sl sft , rthy - sl slty tex, tr ss, rr lse pyr, sl grdg -
sh

257u

1715u

123

1359u
C1 84.4%
C2 3.0%
C3 7.3%
C4 5.6%

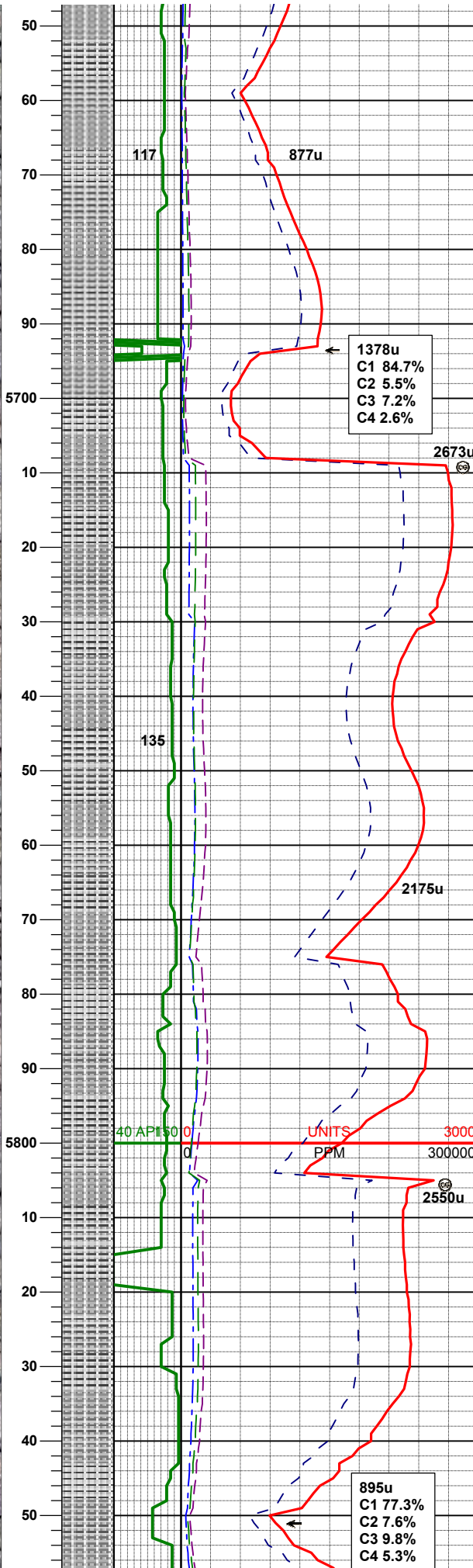
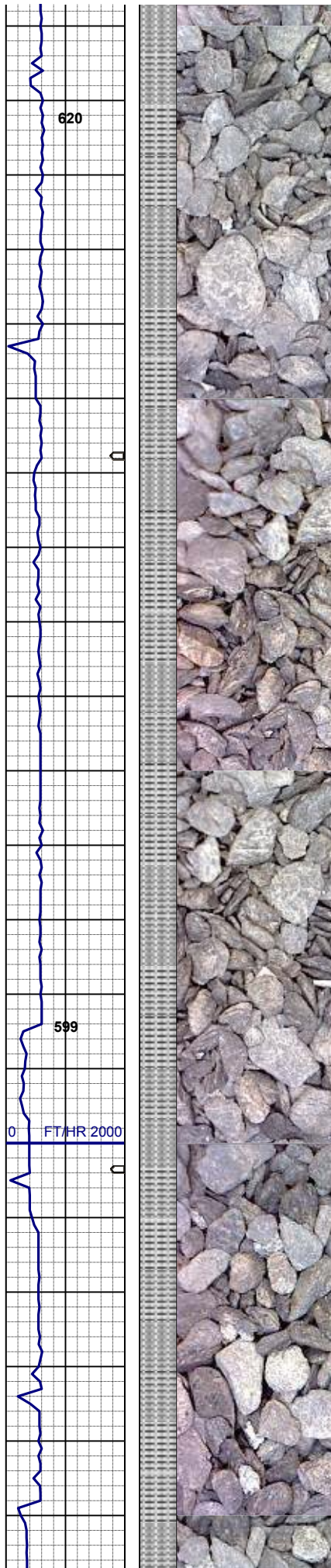
100% SILTY SH: m-dk gy occ m brn -tan, firm -
sl sft , rthy - sl slty tex, tr ss

MD 5558'
INC 0.18°
AZM 293.86°

1102u

1697u

100% SILTY SH: m-dk gy occ m brn -tan, firm -
sl sft , rthy - sl slty tex, tr ss



MD 5652'
INC 0.38°
AZM 343.01°

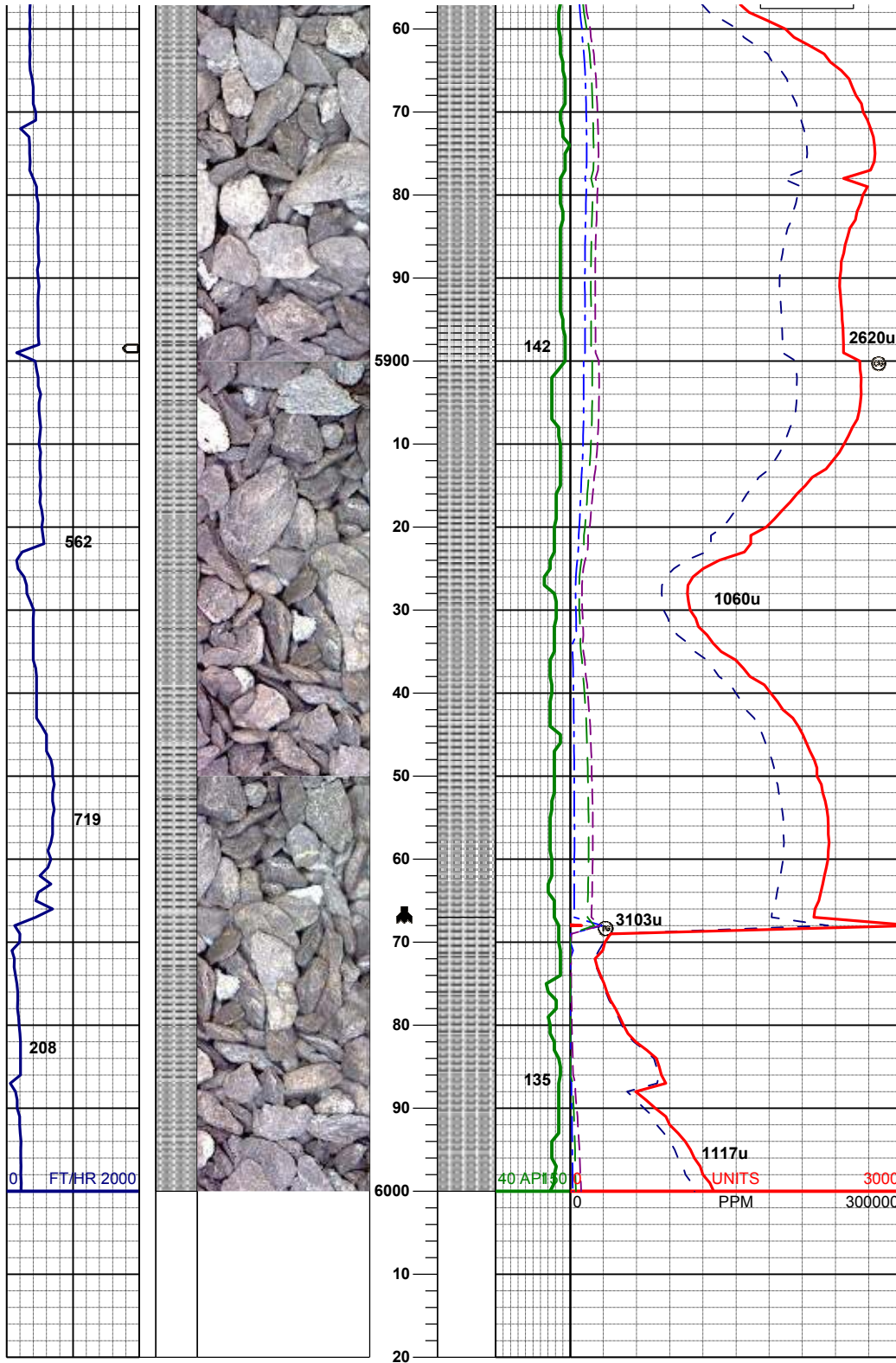
MD 5747'
INC 0.57°
AZM 324.65°

100% SILTY SH: m-dk gy occ m brn -tan, firm -
sl sft, rthy - sl slty tex, tr ss

MUD WT 9.2 VIS 30

MD 5842'
INC 0.76°
AZM 355.65°

100% SILTY SH: m-dk gy occ m brn -tan, firm -
sl sft, rthy - sl slty tex, tr ss



MD 5911'
INC 0.71°
AZM 341.49°

100% SILTY SH: m-dk gy occ m brn -tan, firm -
sl sft, rthy - sl silty tex, tr ss

TOOH for Curve BHA
5967' MD 15:00hrs 6/23/13
Resumed Drilling 23:50hrs 6/23/13

Log Continued On:
WELLS RANCH USX
AE07-63HN HORZ.lplot

Thank you for choosing
Columbine Logging Inc.