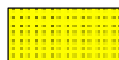


LOG created using L PLOT VH Version 3.0, August 04, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR:	NOBLE ENERGY INC.
WELL:	WELLS RANCH USX AA27-63-1HN
LOCATION:	SEC 27, T6N, R63W
COUNTY:	WELD
STATE:	COLORADO
SPOT:	1164' FSL, 221 FWL
ELEVATION:	GL 4794' , KB 4818'
FIELD:	WATTENBURG
SPUD DATE:	07/28/2013
TD DATE:	08/04/2013
DATES LOGGED:	07/30/2013 - 08/04/2013
DEPTHS LOGGED:	1,000' - 11406'
LOGGERS:	JOHN READY, MIKE GREENE
DRILLING FLUID:	WATER, MUD, POLY
DRILLING RIG:	H&P 322
API:	05-123-37136
LOG TYPE:	VERTICAL
SCALE:	1:240 (5 inches per 100 feet)
REMARKS:	WELLSITE GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING IN

LITHOLOGIES



Sandstone



Shaly Sandstone



Shaly Siltstone



Silty Shale

ENGINEERING SYMBOLS



Connection



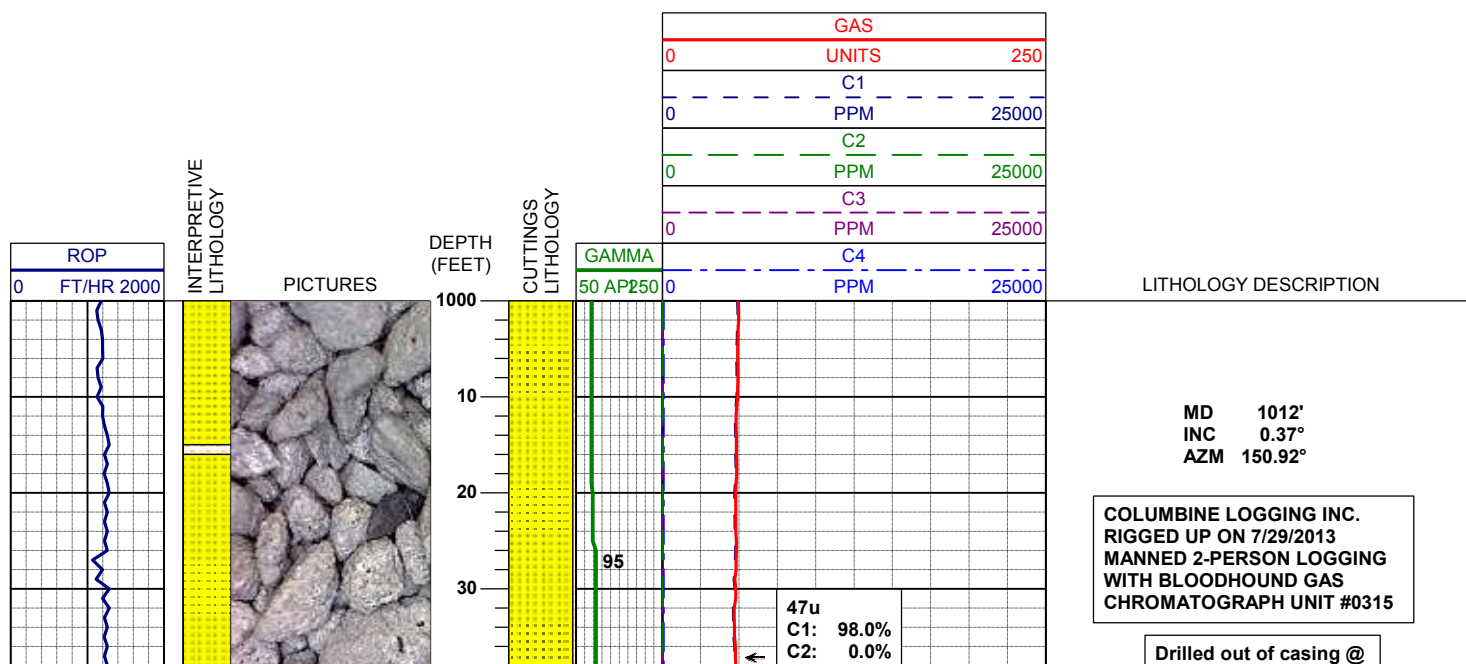
Connection Gas



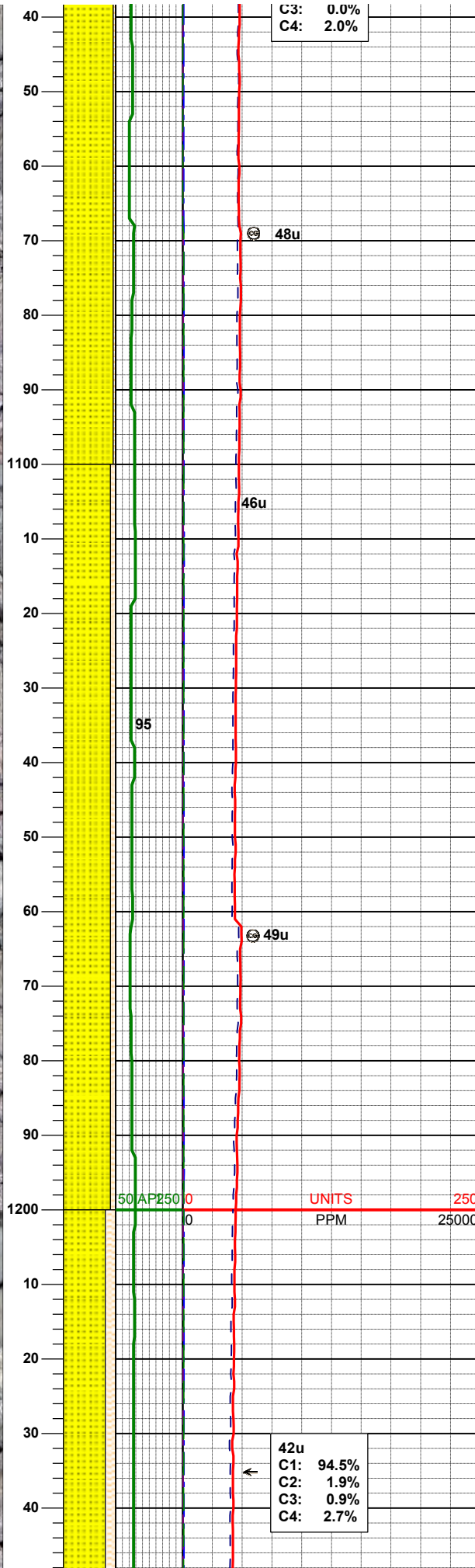
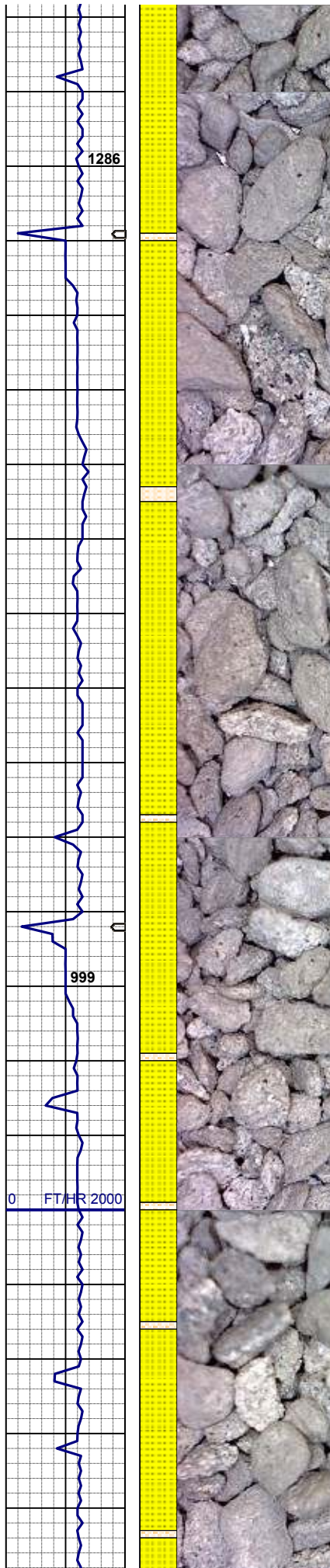
Arrow



Midnight Depth



16:00 07/29/2013



95% SS: lt gy - wh, sme s&p, f gr, sbrd - sbang,
mod srt, fri, p por, arg cmt, rr biot, sme glau
5% SHSLTST: lt gy, sft- fri, sbblky- sl sbply,
aren- slty tex

BHA #1
Bit: 8.75"
Manufacturer: Baker/Hughes Christensen
Model: DP504X
Serial Number: 7145677
Nozzles: 6x13

Motor: Sperry Drill
Manufacturer: Wenzel
Model: Sperry Drill
Serial Number: 650-10-221
Bend: 1.50

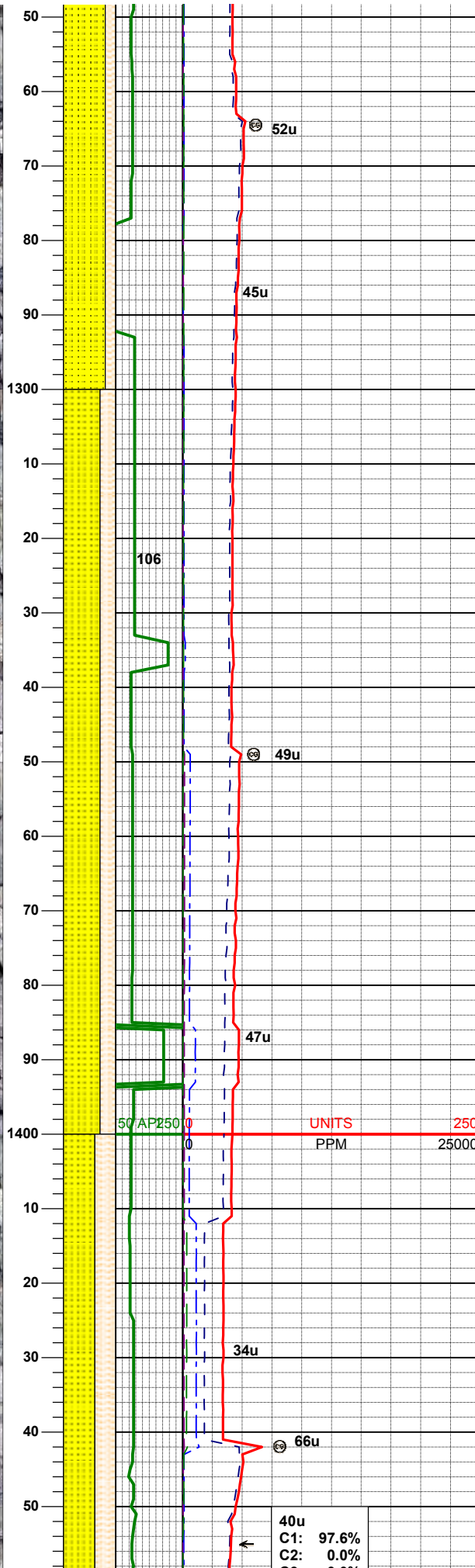
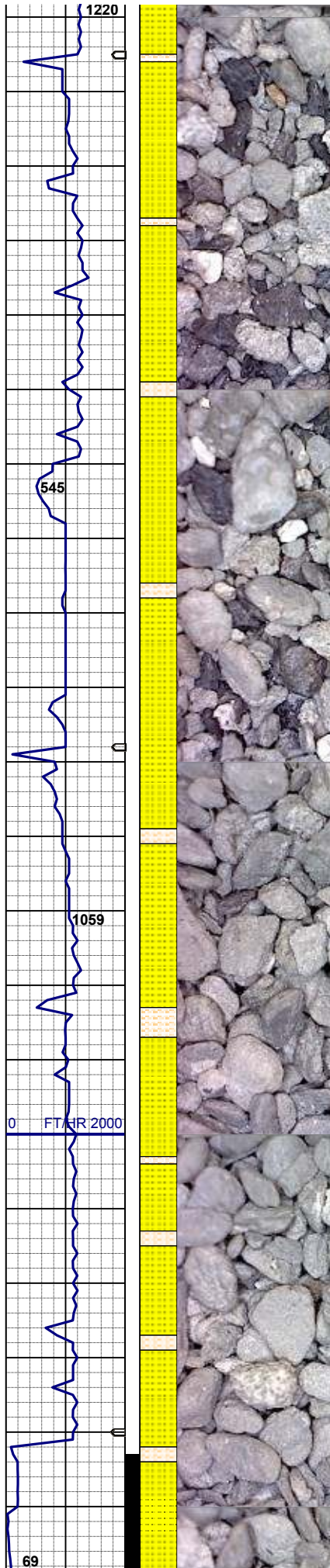
MD 1105'
INC 0.31°
AZM 271.60°

90% SS: lt gy - wh, sme s&p, f gr, sbrd - sbang,
mod srt, fri, p por, arg cmt, rr biot, sme glau
10% SHSLTST: lt gy, sft- fri, sbblky- sl sbply,
aren- slty tex

MD 1198'
INC 0.28°
AZM 226.11°

MUD WT 8.50 VIS 28

42u
C1: 94.5%
C2: 1.9%
C3: 0.9%
C4: 2.7%



80% SS: lt gy - wh, sme s&p, f gr, sbrd - sbang,
mod srt, fri, p por, arg cmt, rr biot, sme glau
20% SHSLTST: lt gy, sft- fri, sbbky- sl sbply,
aren- slty tex

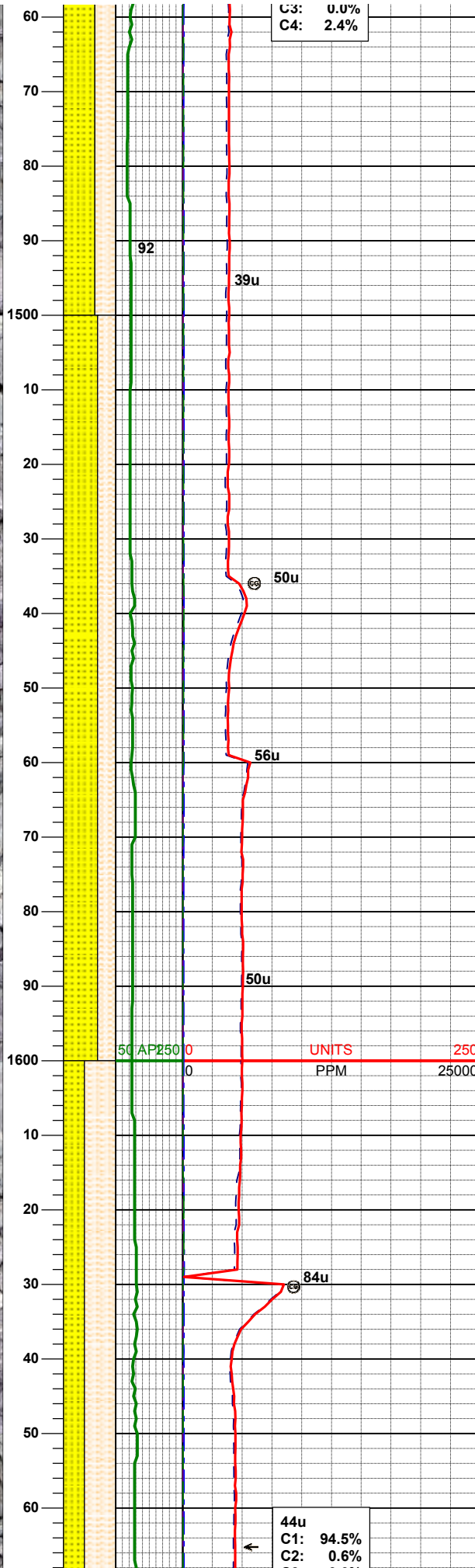
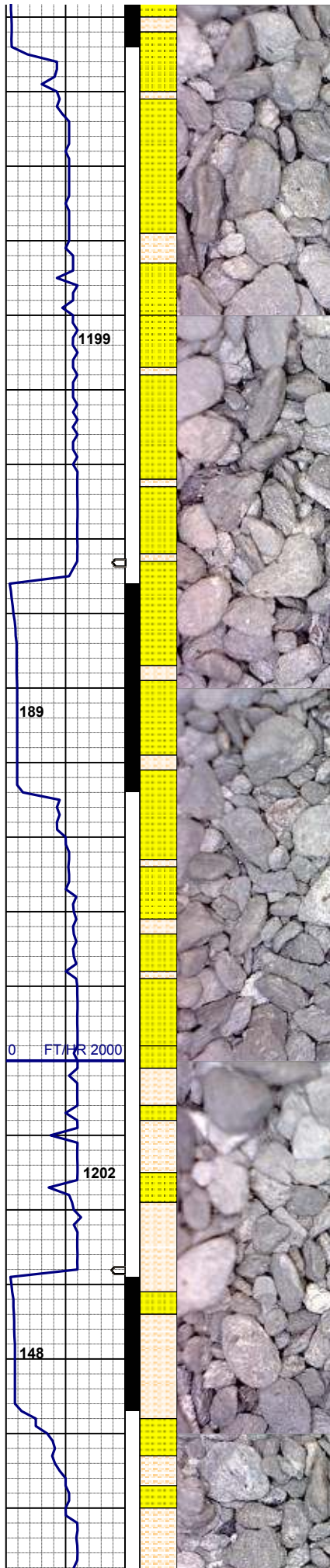
MD 1291'
INC 0.42°
AZM 111.02°

70% SS: lt gy - wh, sme s&p, f gr, sbrd - sbang,
mod srt, fri, p por, arg cmt, rr biot
30% SHSLTST: lt gy, sft- fri, sbbky- sl sbply,
aren- slty tex

MD 1383'
INC 0.65°
AZM 51.60°

60% SS: lt gy - wh, sme s&p, f gr, sbrd - sbang,
mod srt, fri, p por, arg cmt, rr biot
40% SHSLTST: lt gy, sft- fri, sbbky- sl sbply,
aren- slty tex

40u
C1: 97.6%
C2: 0.0%



MD 1476'
INC 1.45°
AZM 257.19°

MUD WT 8.50 VIS 28

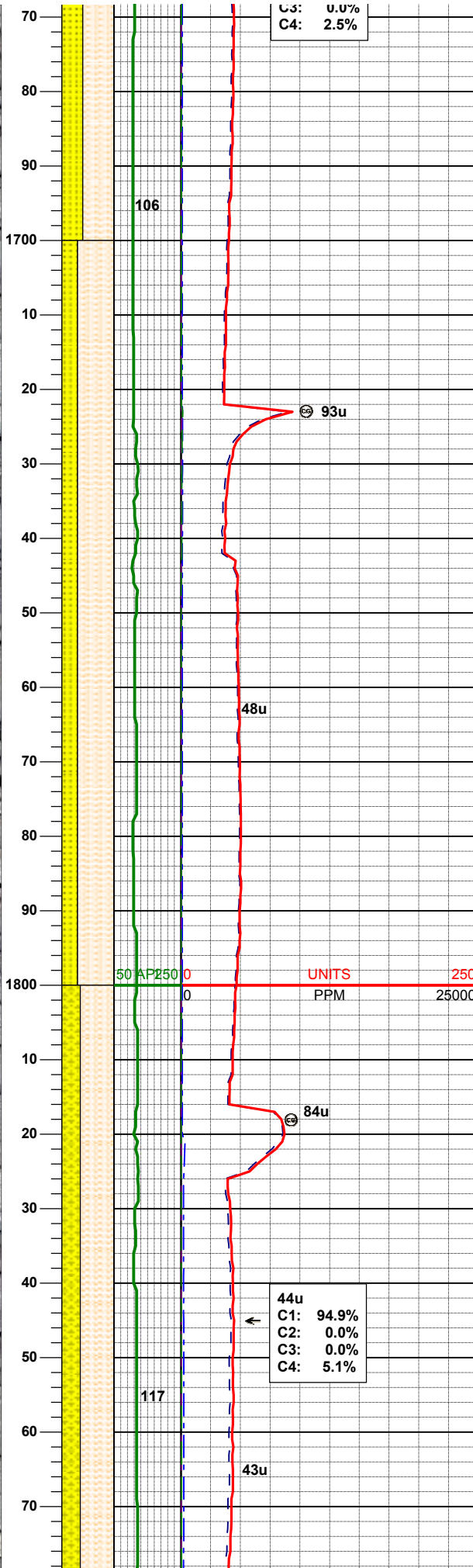
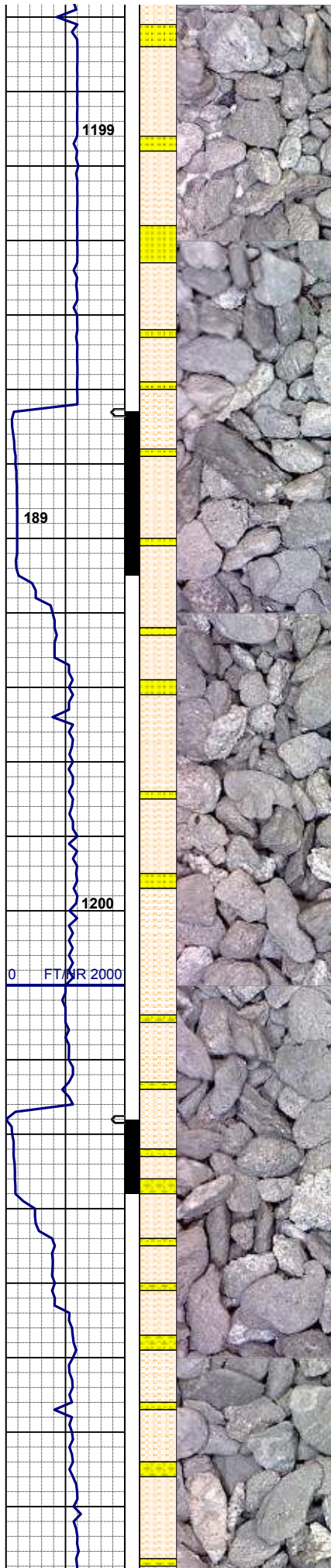
65% SS: lt gy - wh, sme s&p, f gr, sbrd - sbang,
mod srt, fri, p por, arg cmt, rr biot, sme glau
35% SHSLTST: lt gy, sft- fri, sbblky- sl sbplty,
aren- slty tex

MD 1571'
INC 4.15°
AZM 246.44°

UNITS 250
PPM 25000

60% SHSLTST: lt gy, sft- fri, sbblky- sl sbplty,
aren- slty tex
40% SS: lt gy - wh, sme s&p, f gr, sbrd - sbang,
mod srt, fri, p por, arg cmt, rr biot

MUD WT 8.60 VIS 28



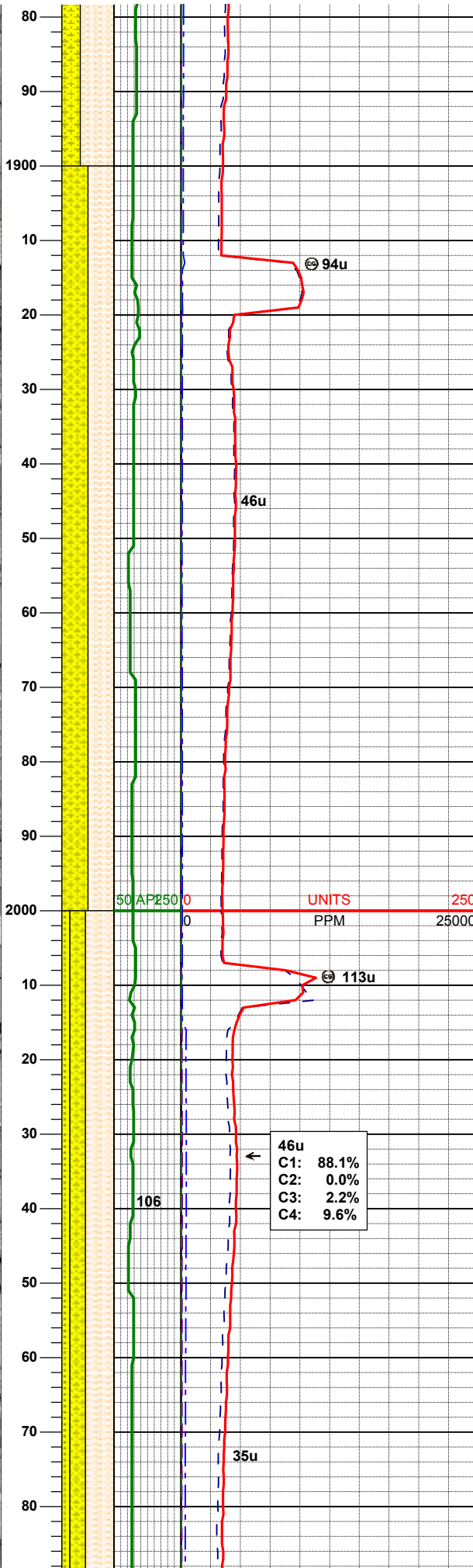
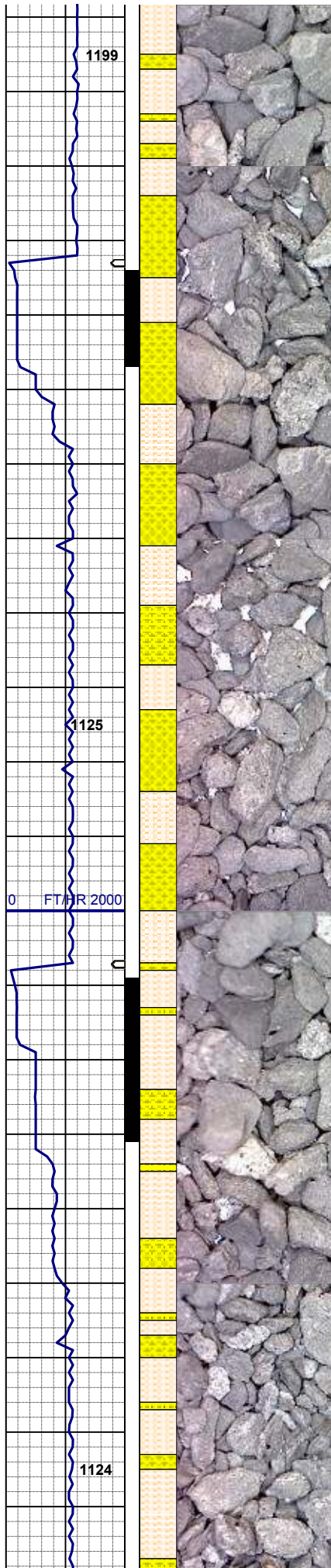
MD 1666'
INC 5.79°
AZM 244.24°

70% SHSLTST: lt gy, sft- fri, sbbly- sl sbply,
aren- slty tex
30% SS: lt gy - wh, sme s&p, f gr, sbrd - sbang,
mod srt, fri, p por, arg cmt, rr biot

MD 1761'
INC 7.16°
AZM 231.26°

65% SHYSLTST: lt gy, sft- fri, sbbly- sl sbply,
aren- slty tex, tr biot incl
35% SHYSS: lt gy - gy, sme s&p, f gr, sbrd -
sbang, mod srt, fri, p por, arg cmt, rr biot, tr bent
frag

MD 1856'
INC 7.13°
AZM 229.12°



MUD WT 8.60 VIS 28

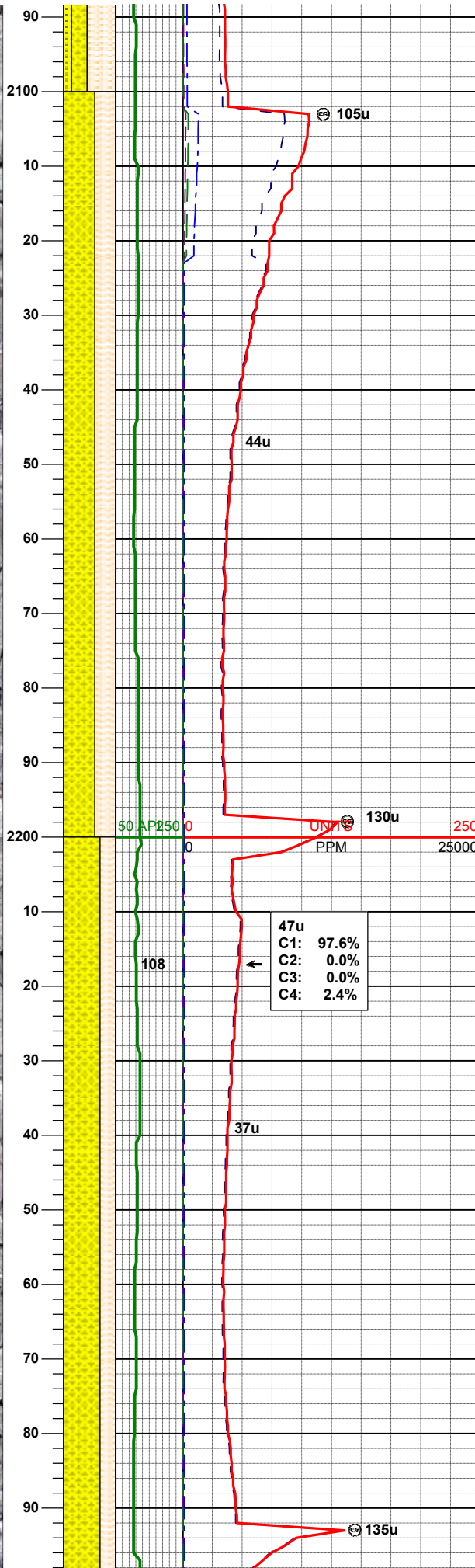
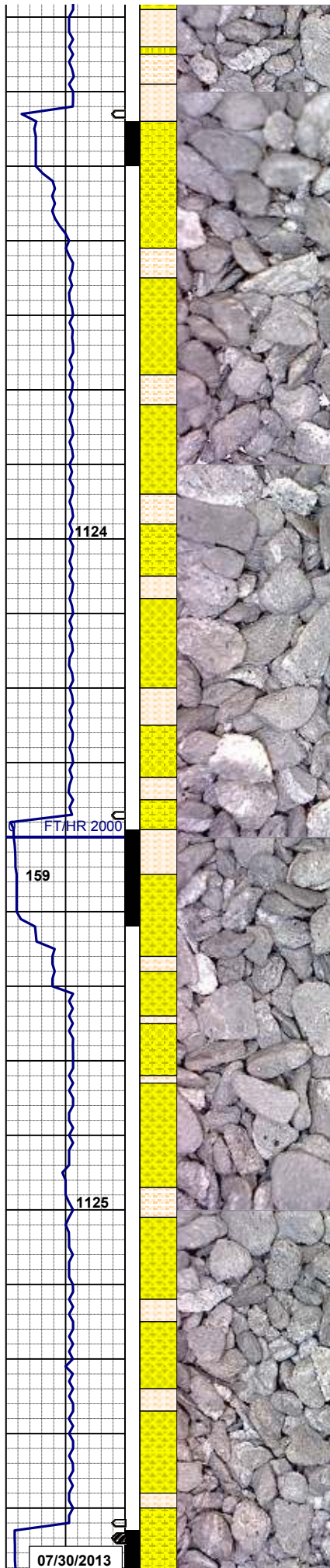
50% SHYSLTST: lt gy, sft- fri, sbblky- sl sbplty, aren- slty tex, tr biot incl
50% SHYSS: lt gy - gy, sme s&p, f gr, sbdr - sbang, mod srt, fri, p por, arg cmt, rr biot, tr bent frag

MD 1950'
INC 7.84°
AZM 228.74°

46u
C1: 88.1%
C2: 0.0%
C3: 2.2%
C4: 9.6%

MD 2045'
INC 8.34°
AZM 224.69°

55% SHYSLTST: lt gy, sft- fri, sbblky- sbplty, aren-sltly tex
30% SHYSS: lt gy-dk gy, firm- hd, sbblky- sbplty, aren-sltly tex
15% SS: wh-lt gy sme s&p, f gr, sbdr-ang, mod srt, fri, mod por, arg cmt, occ biot



MUD WT 8.65 VIS 28

MD 2140'
INC 6.86°
AZM 220.18°

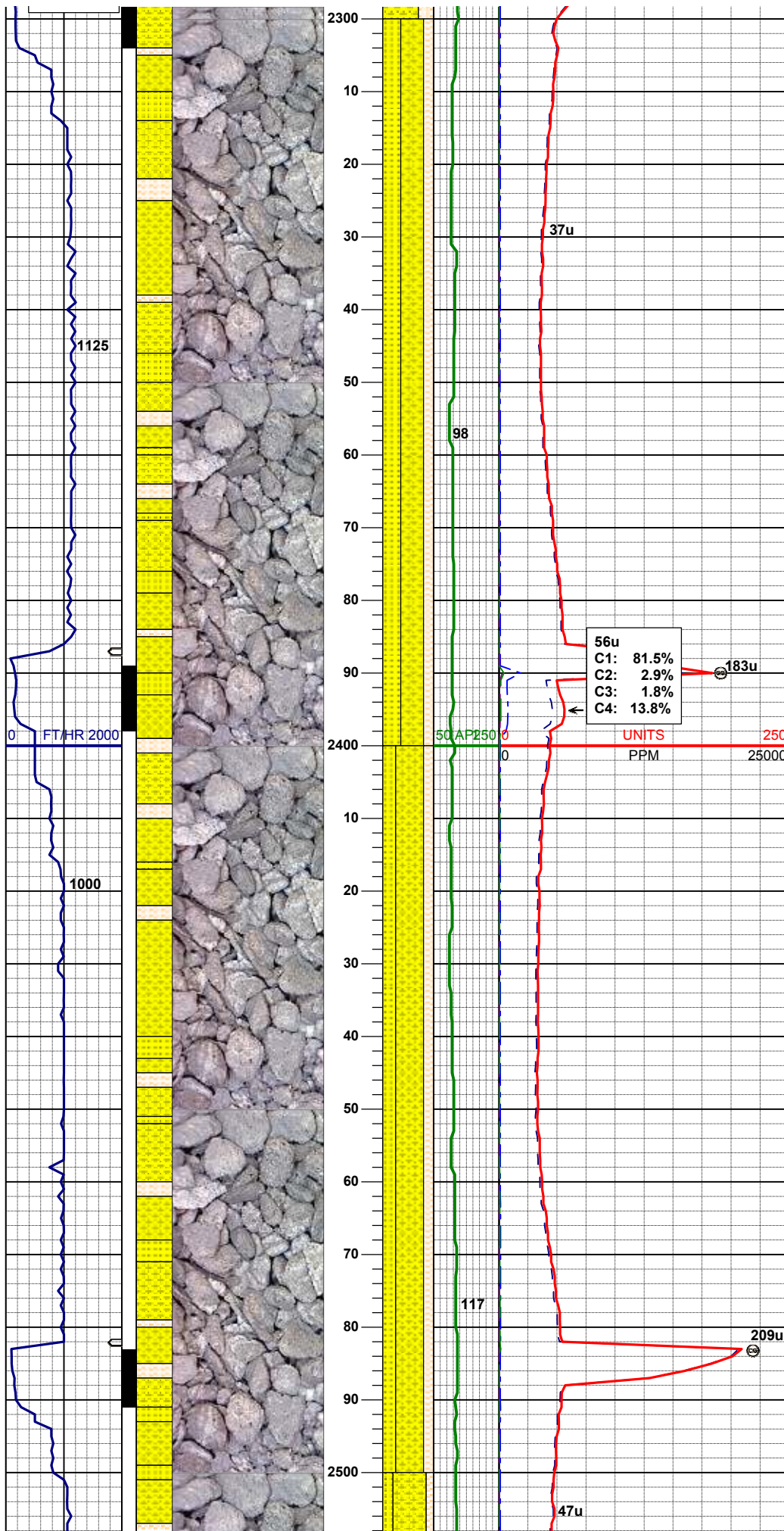
60% SHYSS: wh-lt gy sme s&p, f gr, sbrd-ang,
fr srt, fri, mod por, arg cmt, occ biot, pyr, glau, rr
40% SHYSLTST: lt gy, sft- fri, sbbiky- sbply,
sity tex

47u
C1: 97.6%
C2: 0.0%
C3: 0.0%
C4: 2.4%

MD 2235'
INC 7.07°
AZM 221.49°

70% SHYSS: wh-lt gy sme s&p, f gr, sbrd-ang,
fr srt, fri, mod por, arg cmt, occ biot, pyr, glau, rr
30% SHYSLTST: lt gy, sft- fri, sbbiky- sbply,
sity tex

07/30/2013



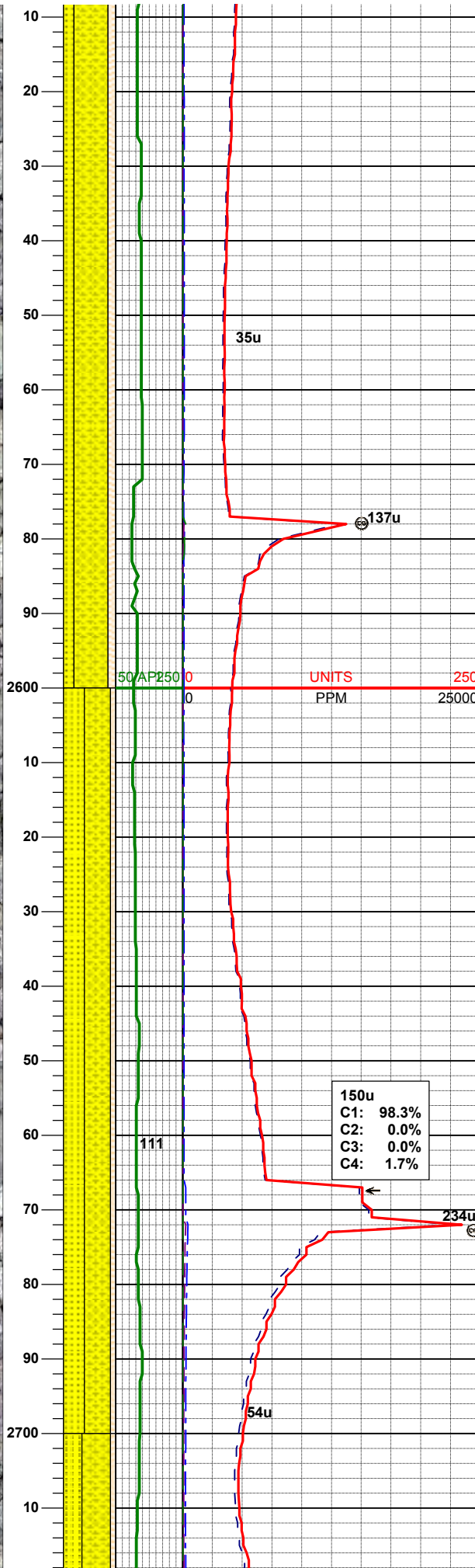
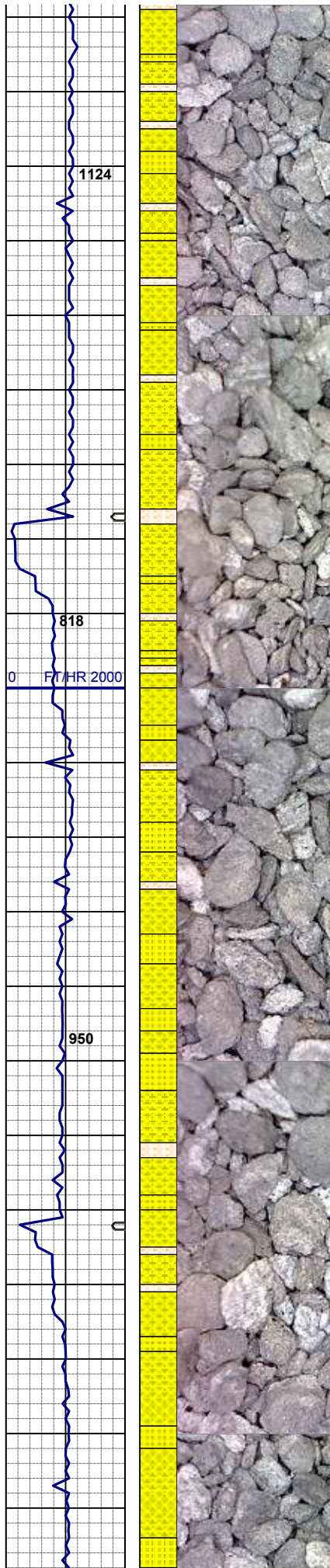
MD 2330'
INC 7.32°
AZM 228.03°

45% SHYSS: lt gy-dk gy, firm- hd, sbbiky-sbply
sly tex
35% SS: wh-lt gy sme s&p, f gr, sbrd-ang, mod
srt, fri, mod por, arg cmt, occ biot, rr pyr
20% SHYSLTST: lt gy, sft- fri, sbbiky- sbply,
aren- sly tex

MD 2425'
INC 7.42°
AZM 234.90°

55% SHYSS: lt gy-dk gy, firm- hd, sbbiky-sbply
sly tex
25% SS: wh-lt gy sme s&p, f gr, sbrd-ang, mod
srt, fri, mod por, arg cmt, occ biot, rr pyr
20% SHYSLTST: lt gy, sft- fri, sbbiky- sbply,
aren- sly tex

MUD WT 8.70 VIS 28



MD 2520'
INC 7.45°
AZM 227.74°

65% SHYSS: lt gy-dk gy, firm- hd, sbbiky-sbply
silty tex
20% SS: wh-lt gy sme s&p, f gr, sbrd-ang, mod
srt, fri, mod por, arg cmt, occ biot, rr pyr
15% SHYSLTST: lt gy, sft- fri, sbbiky- sbply,
aren- silty tex

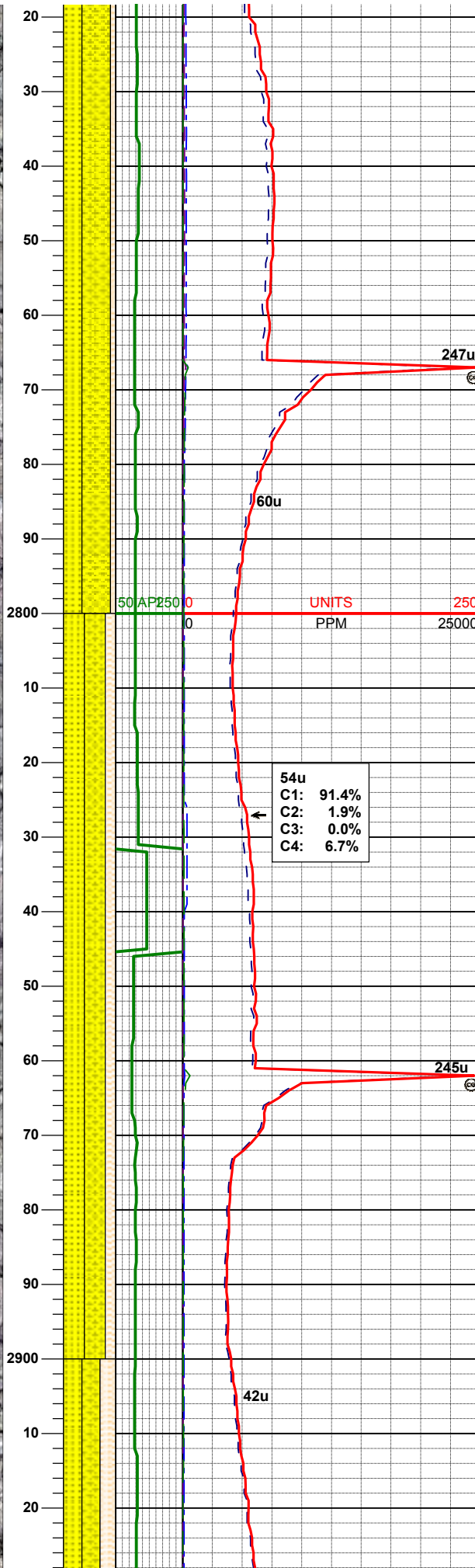
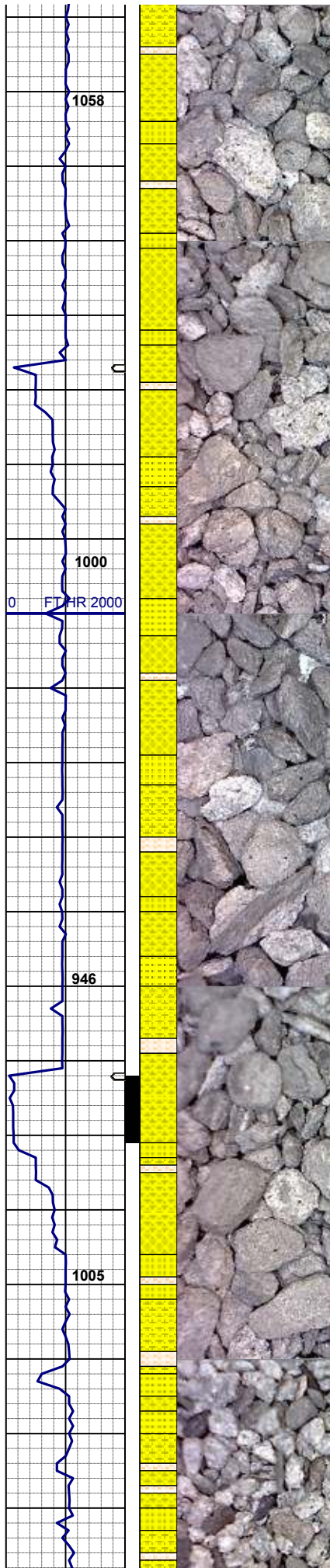
MD 2615'
INC 8.28°
AZM 227.72°

50% SHYSS: lt gy-dk gy, firm- hd, sbbiky-
sbply, v silty tex
40% SS: wh-lt gy sme s&p, f gr, sbrd-ang, mod
srt, fri, mod por, arg cmt, occ biot, rr pyr
10% SHYSLTST: lt gy, sft- fri, sbbiky- sbply,
silty tex

150u
C1: 98.3%
C2: 0.0%
C3: 0.0%
C4: 1.7%

MUD WT 8.70 VIS 28

MD 2710'
INC 8.28°
AZM 227.88°



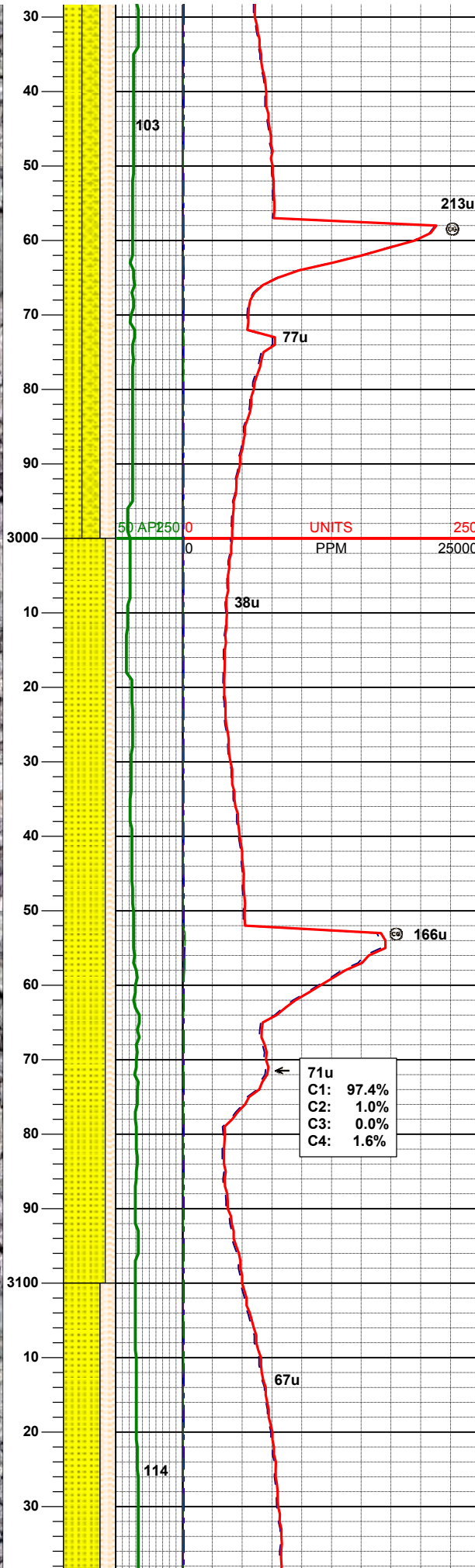
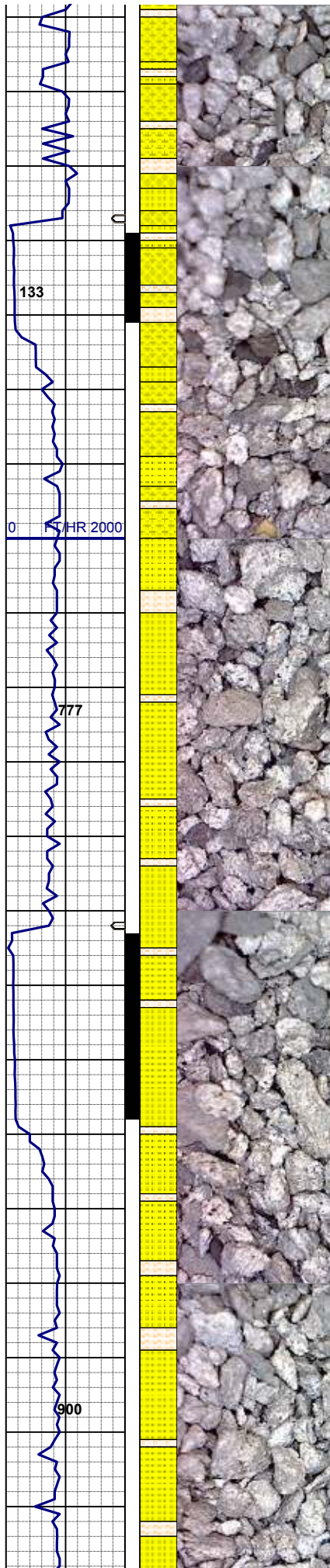
55% SHYSS: lt gy-dk gy, firm- hd, sbblky-
sbplty, slty tex
35% SS: wh-lt gy sme s&p, f gr, sbrd-ang, mod
srt, fri, mod por, arg cmt, occ biot, rr pyr, sme
glau
10% SHYSLTST: lt gy, sft- fri, sbblky- sbplty,
slty tex

MD 2805'
INC 7.49°
AZM 226.43°

40% SHYSS: lt gy-dk gy, firm- hd, sbblky-
sbplty, slty tex
40% SS: wh-lt gy sme s&p, f gr, sbrd-ang, mod
srt, fri, mod por, arg cmt, occ biot, rr pyr
20% SHYSLTST: lt gy, sft- fri, sbblky- sbplty,
slty tex

MD 2900'
INC 7.48°
AZM 237.88°

MUD WT 8.80 VIS 28



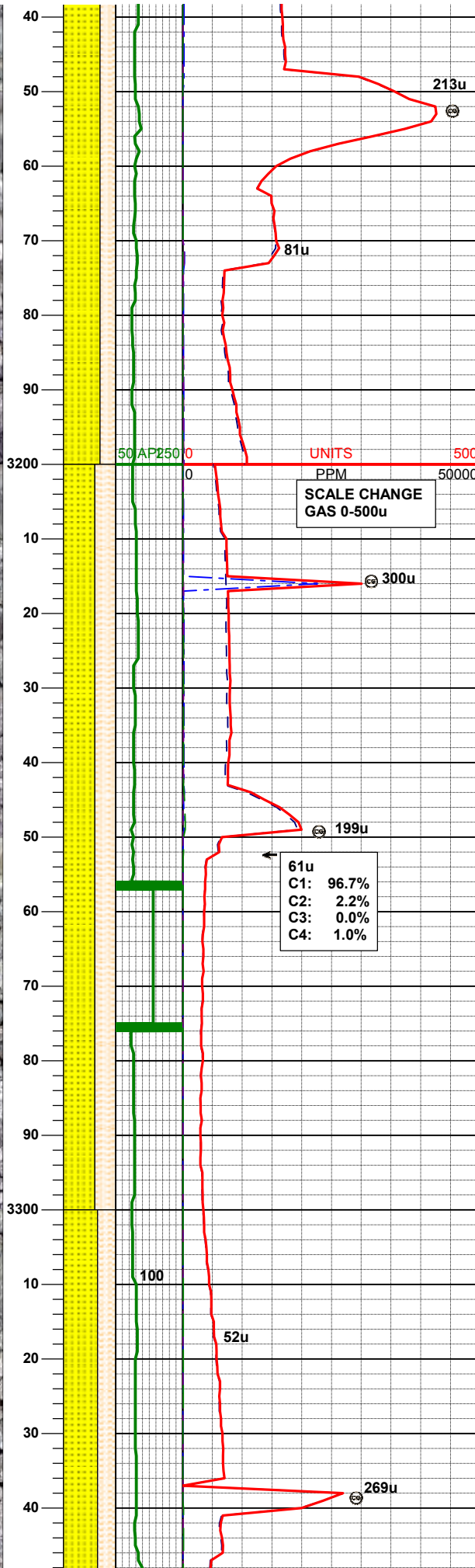
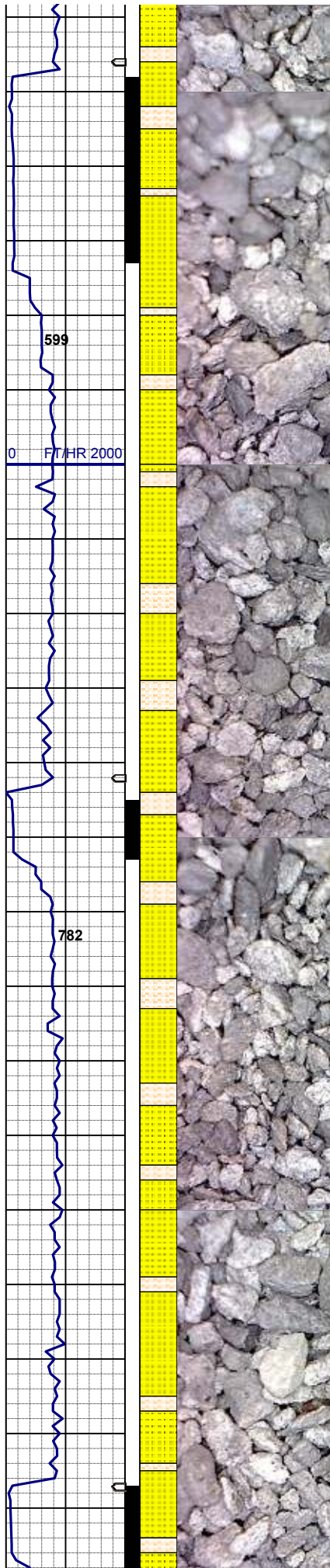
35% SHYSS: lt gy-dk gy, firm- hd, sbblky-
sbplty, slty tex
35% SS: wh-lt gy sme s&p, f gr, sbrd-ang, mod
srt, fri, mod por, arg cmt, occ biot, rr pyr
30% SHYSLTST: lt gy, sft- fri, sbblky- sbplty,
slty tex

MD 2995'
INC 5.79°
AZM 228.96°

80% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt,
fri, mod por, arg cmt, occ biot, pyr
20% SHYSLTST: lt gy-dk gy, firm- hd, sbblky-
sbplty slty tex

MD 3089'
INC 3.87°
AZM 220.89°

MUD WT 8.85 VIS 29



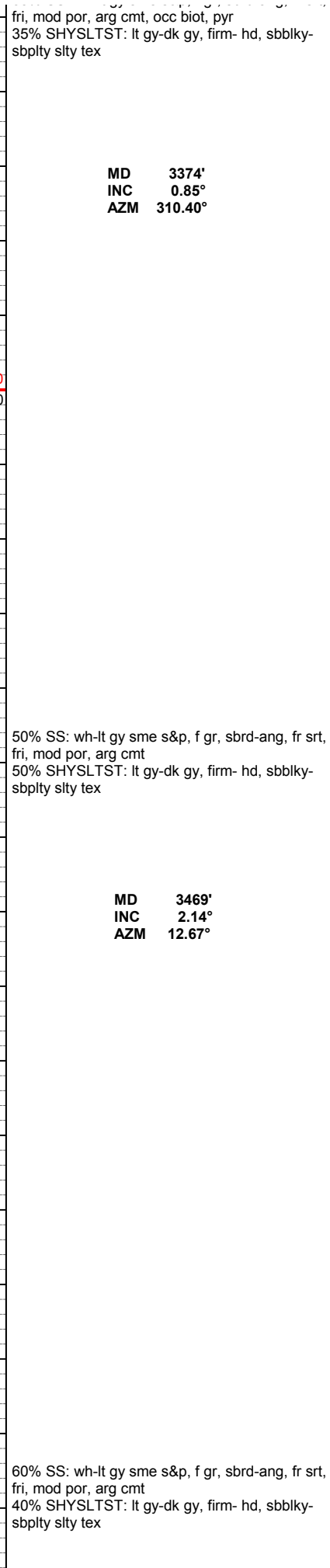
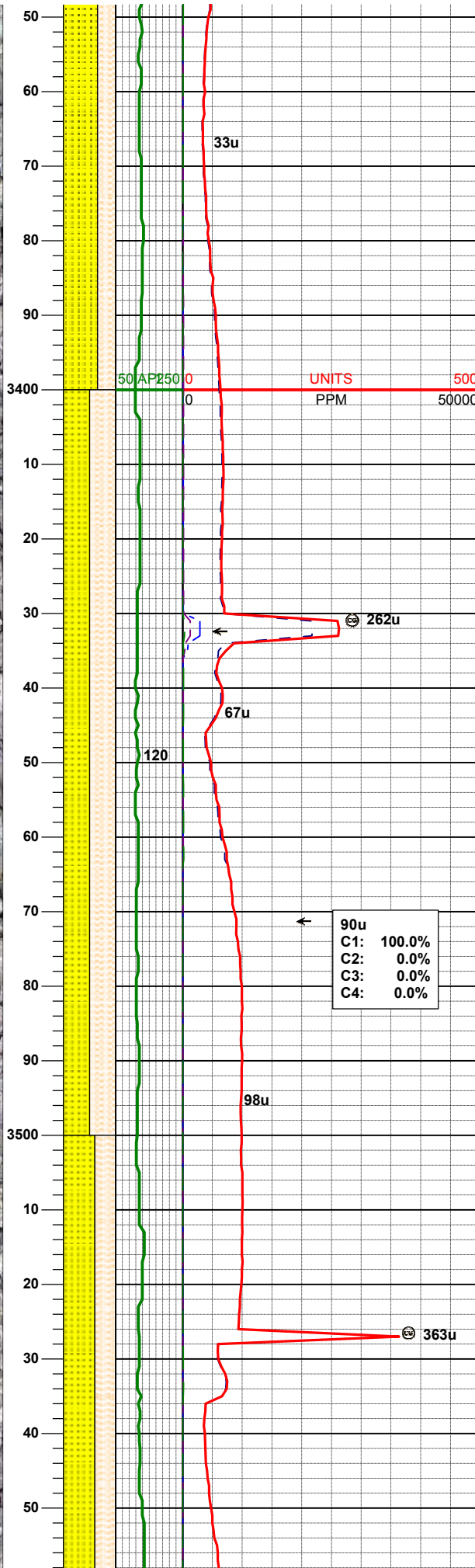
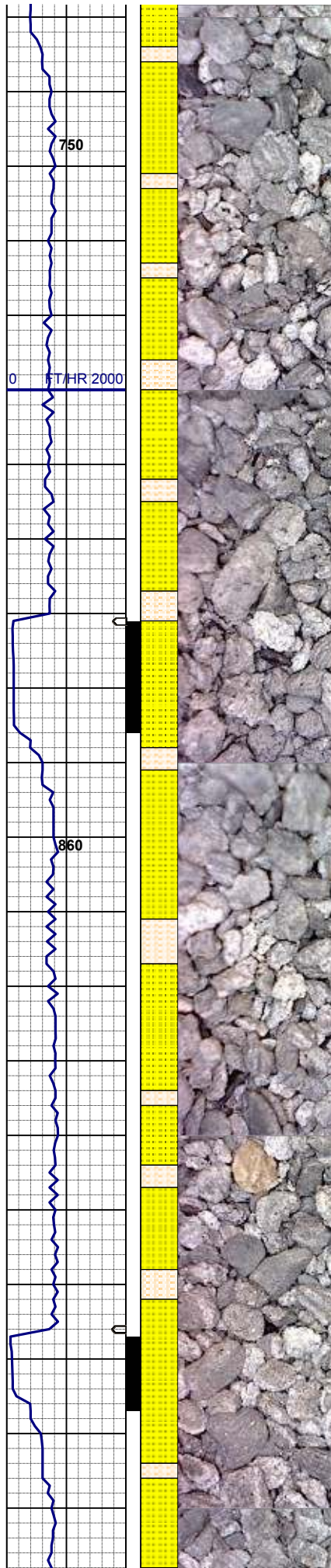
70% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt,
fri, mod por, arg cmt, occ biot, pyr
30% SHYSLTST: lt gy-dk gy, firm- hd, sbblky-
sbply slty tex

MD 3184'
INC 1.86°
AZM 233.81°

60% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt,
fri, mod por, arg cmt, occ biot, pyr
40% SHYSLTST: lt gy-dk gy, firm- hd, sbblky-
sbply slty tex

MD 3279'
INC 0.70°
AZM 218.93°

65% SS: wh-lt av sme s&p, f ar, sbrd-ana, fr srt.

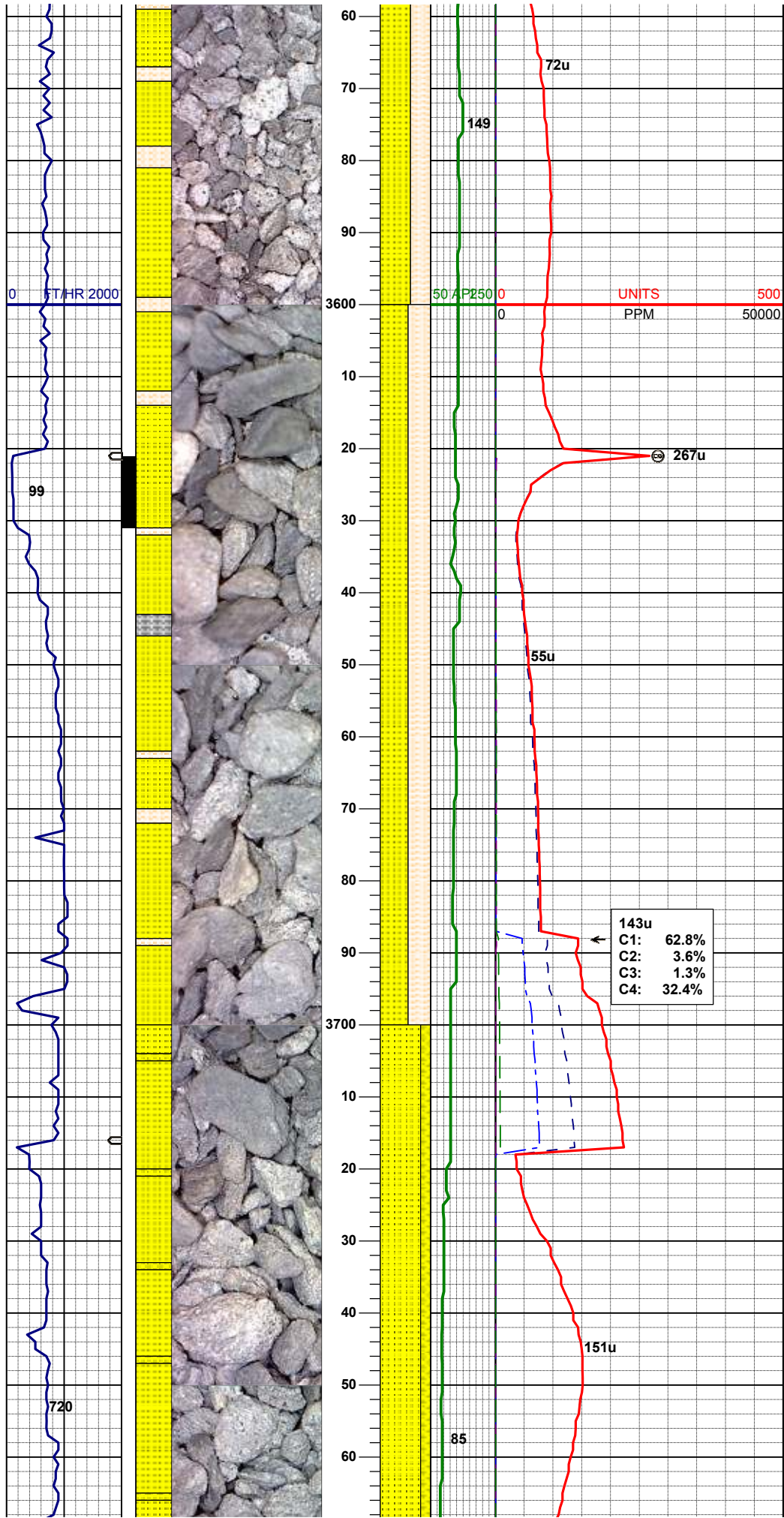


MD 3374'
INC 0.85°
AZM 310.40°

50% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt, fri, mod por, arg cmt
50% SHYSLTST: lt gy-dk gy, firm- hd, sbblky-sbplty slty tex

MD 3469'
INC 2.14°
AZM 12.67°

60% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt, fri, mod por, arg cmt
40% SHYSLTST: lt gy-dk gy, firm- hd, sbblky-sbplty slty tex

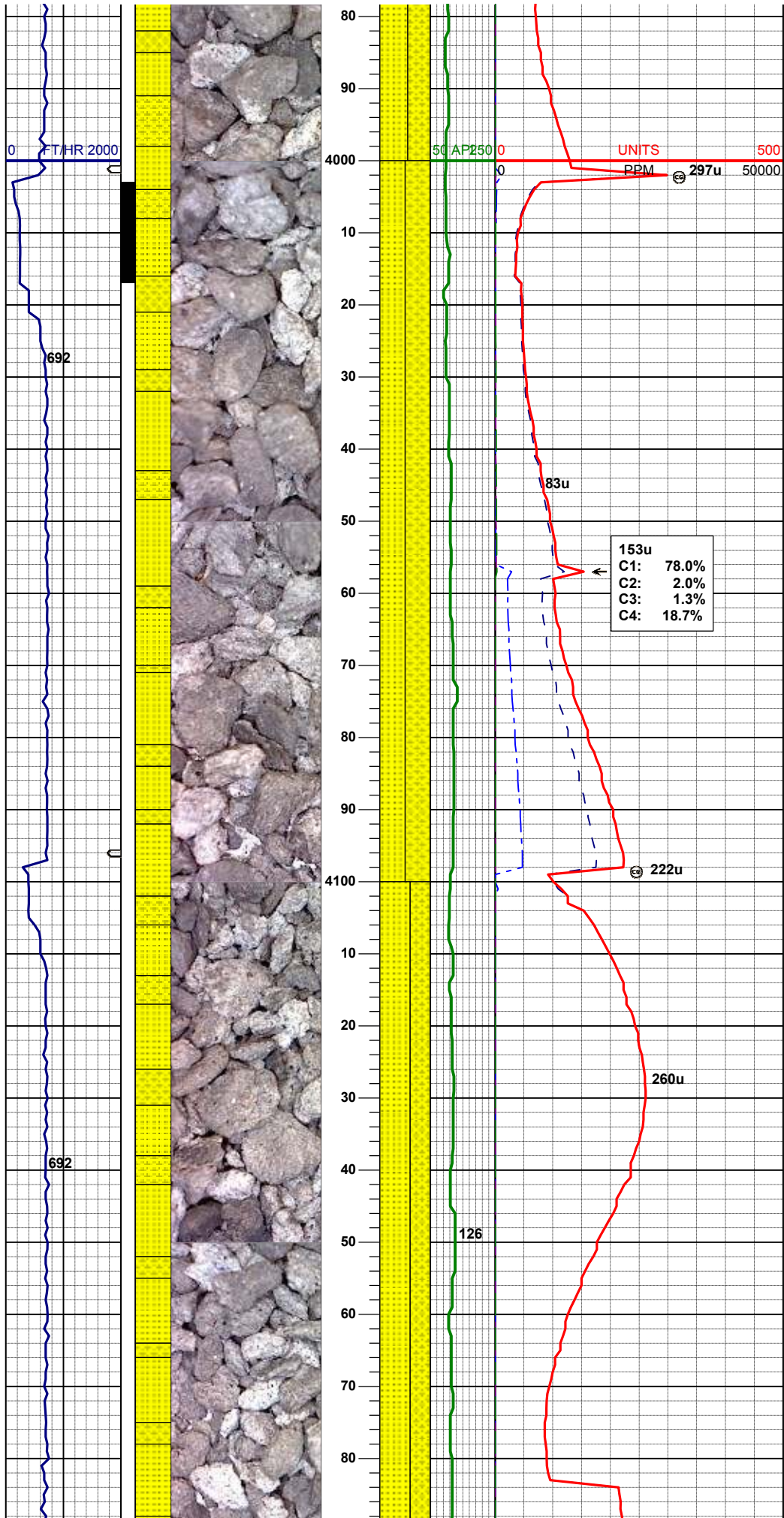


MD 3564'
INC 1.94°
AZM 12.49°

50% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt, fri, mod por, arg cmt
50% SHYSLTST: lt gy-dk gy, firm- hd, sbblky-sbplty slty tex

80% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt, fri, mod por, arg cmt
20% SHYSS: lt gy-dk gy, sft-firm, sbblky-blky, tex f-sdy, mod calc

MD 3754'
INC 0.22°
AZM 205.80°



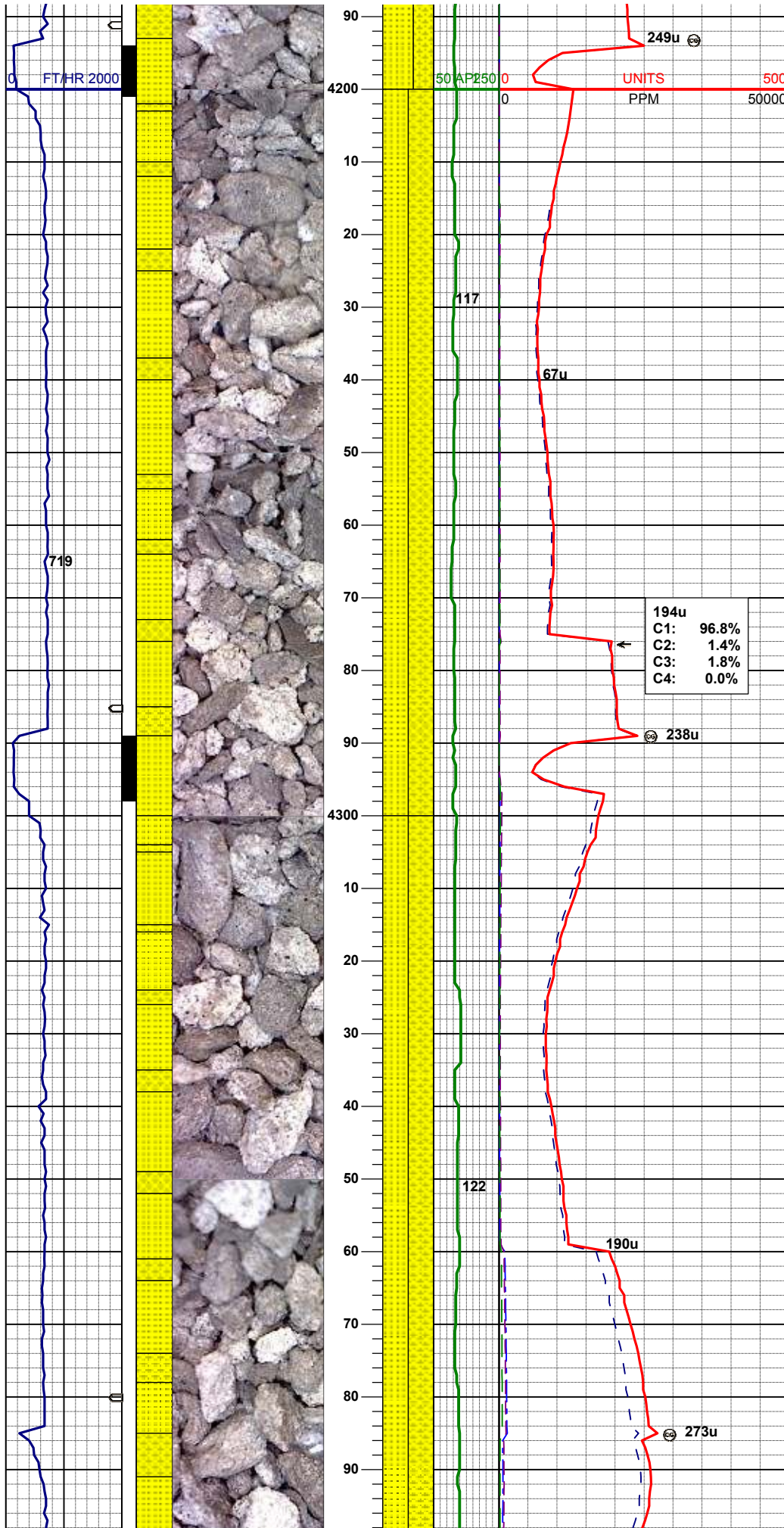
MD 4039'
INC 0.84°
AZM 135.34°

50% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt, fri, mod por, arg cmt
50% SHYSS: lt gy-dk gy, sft-firm, sblky-blky, tex f-sdy, mod calc

153u
C1: 78.0%
C2: 2.0%
C3: 1.3%
C4: 18.7%

MD 4135'
INC 1.02°
AZM 110.78°

60% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt, fri, mod por, arg cmt
40% SHYSS: lt gy-dk gy, sft-firm, sblky-blky, tex f-sdy, mod calc

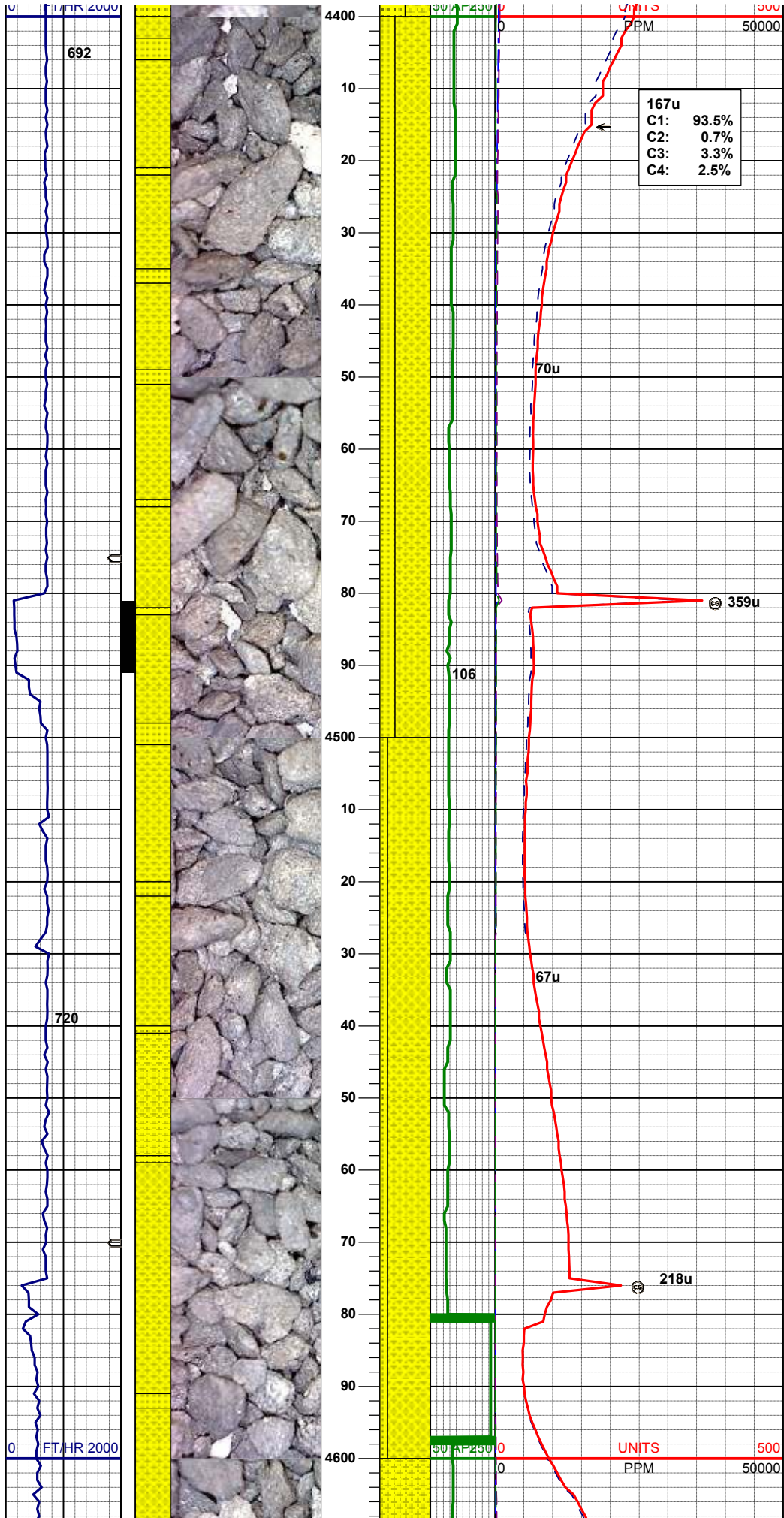


MD 4228'
INC 0.82°
AZM 101.83°

50% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt,
fri, mod por, arg cmt, sme biot
50% SHYSS: lt gy-dk gy, sft-firm, sblky-blky,
tex f-sdy, mod calc

MD 4323'
INC 0.14°
AZM 250.02°

50% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt,
fri, mod por, arg cmt, sme biot
50% SHYSS: lt gy-dk gy, sft-firm, sblky-blky,
tex f-sdy, mod calc



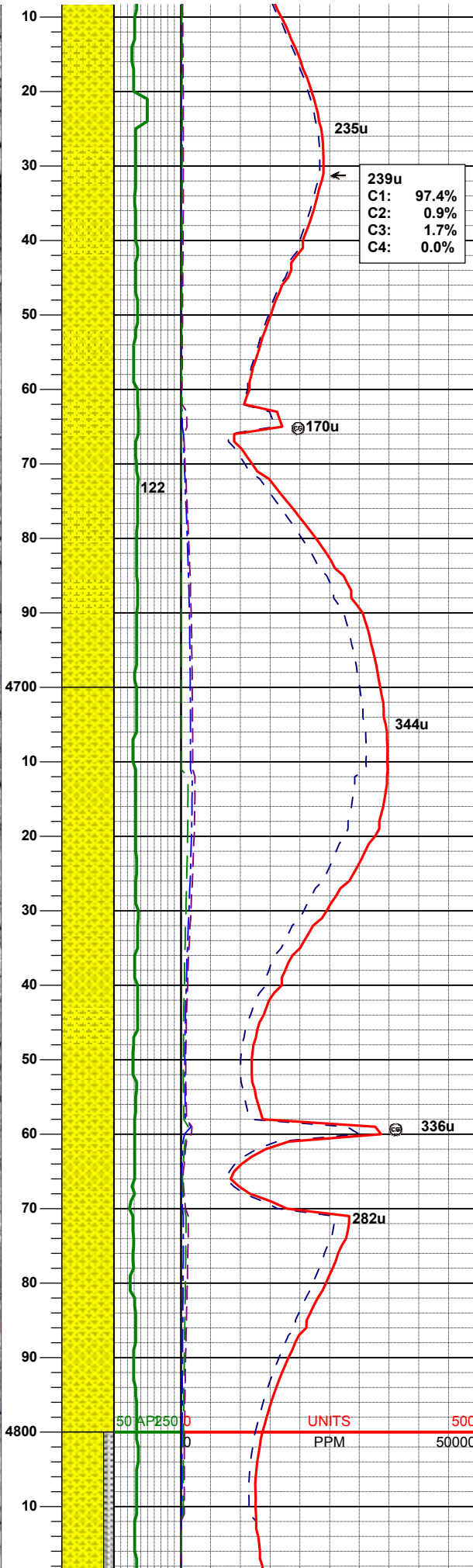
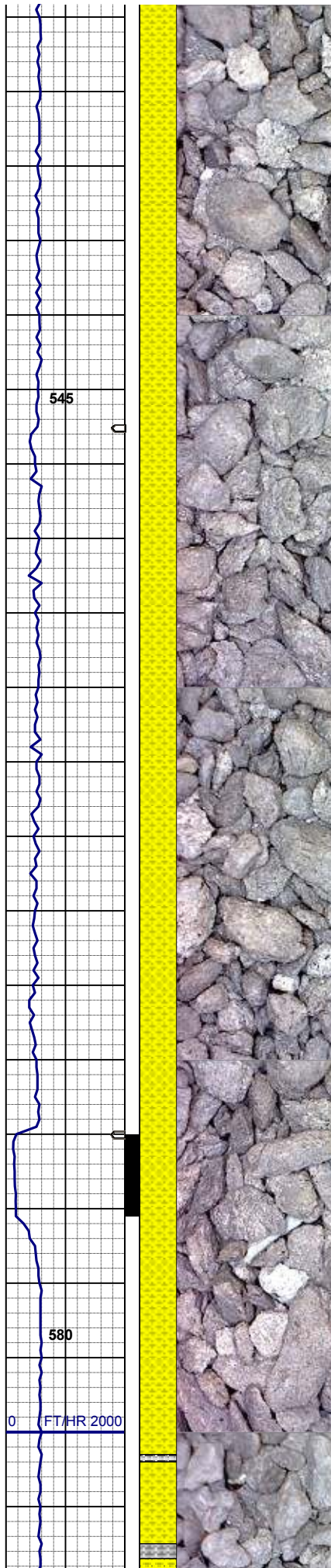
MD 4418'
INC 1.17°
AZM 292.14°

70% SHYSS: lt gy-dk gy, sft-firm, sbbly-blky, tex f-sdy, mod calc
30% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt, fri, mod por, arg cmt, sme biot

MD 4513'
INC 0.72°
AZM 336.43°

85% SHYSS: lt gy-dk gy, sft-firm, sbbly-blky, tex f-sdy, mod calc
15% SS: wh-lt gy sme s&p, f gr, sbrd-ang, fr srt, fri, mod por, arg cmt, sme biot

MD 4608'



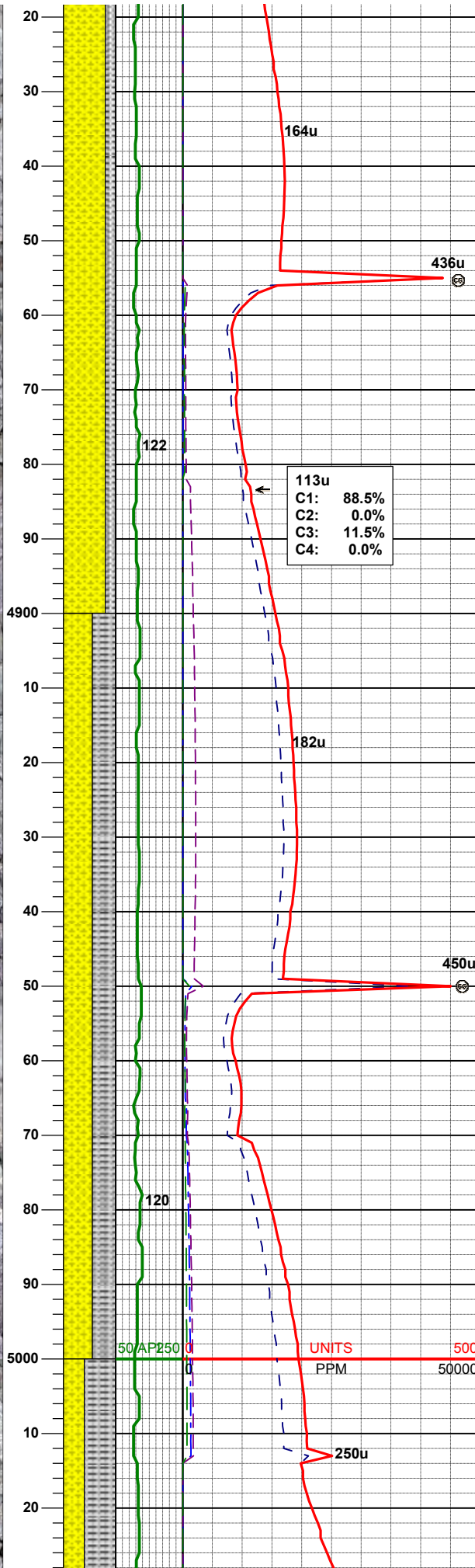
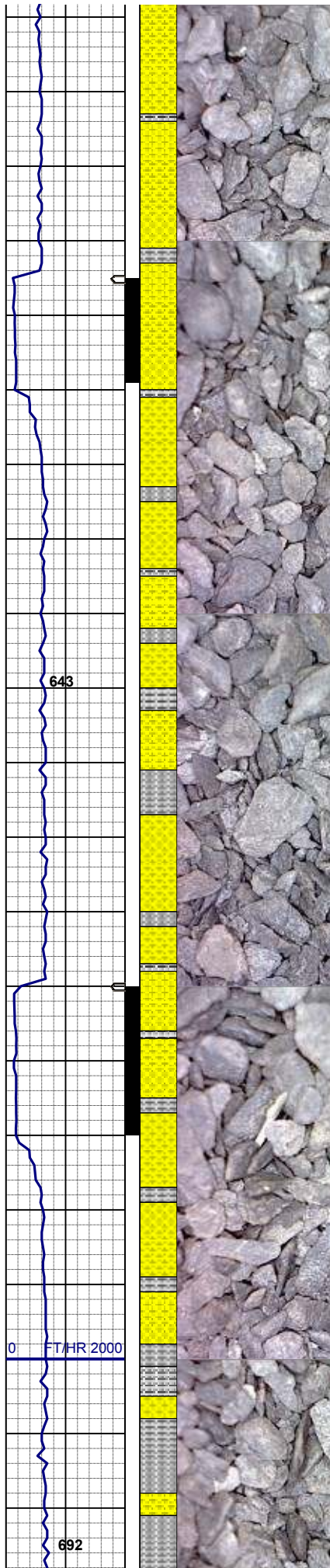
INC 0.80°
AZM 356.75°

100% SHYSS: lt gy-dk gy, sft-firm, sbblky-blky,
tex f-sdy, mod calc, rr biot

MD 4703'
INC 1.59°
AZM 58.98°

100% SHYSS: lt gy-dk gy, sft-firm, sbblky-blky,
tex f-sdy, mod calc, rr biot

MD 4798'
INC 1.76°
AZM 83.60°



80% SHYSS: lt gy-dk gy, sft-firm, sbbly-blky,
tex f-sdy, mod calc, rr biot
20% SILTY SH: m-dk gy occ gybrn, firm - sl sft ,
rthy - sl slty tex

MD 4893'
INC 2.25°
AZM 66.18°

55% SHYSS: lt gy-dk gy, sft-firm, sbbly-blky,
tex f-sdy, mod calc, rr biot
45% SILTY SH: m-dk gy occ gybrn, firm - sl sft ,
rthy - sl slty tex

MD 4988'
INC 0.92°
AZM 29.88°

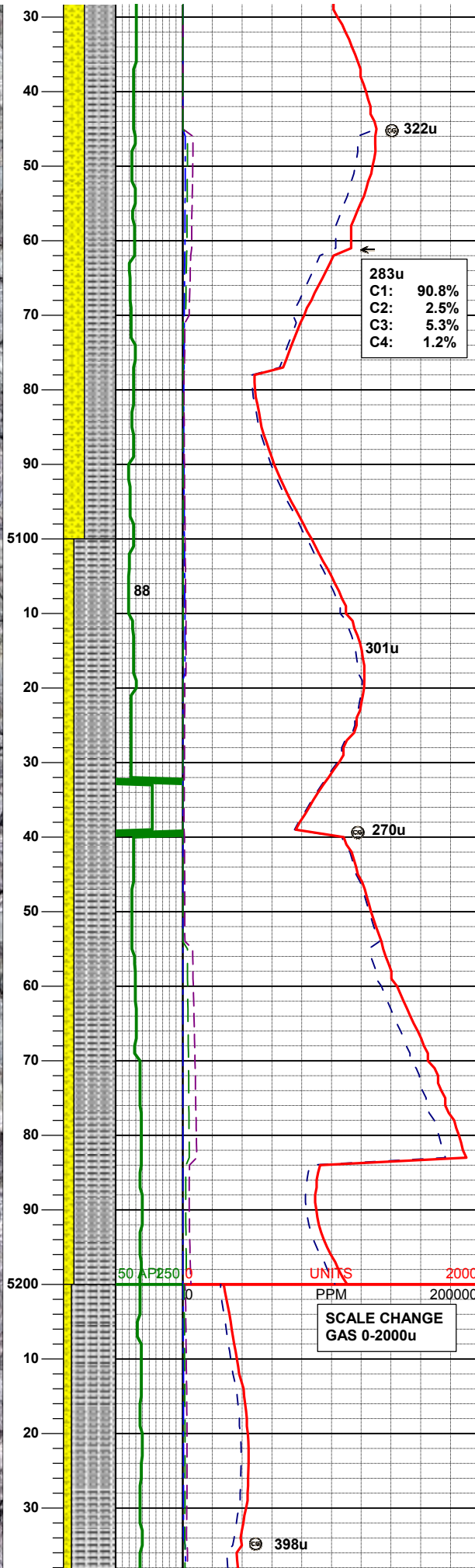
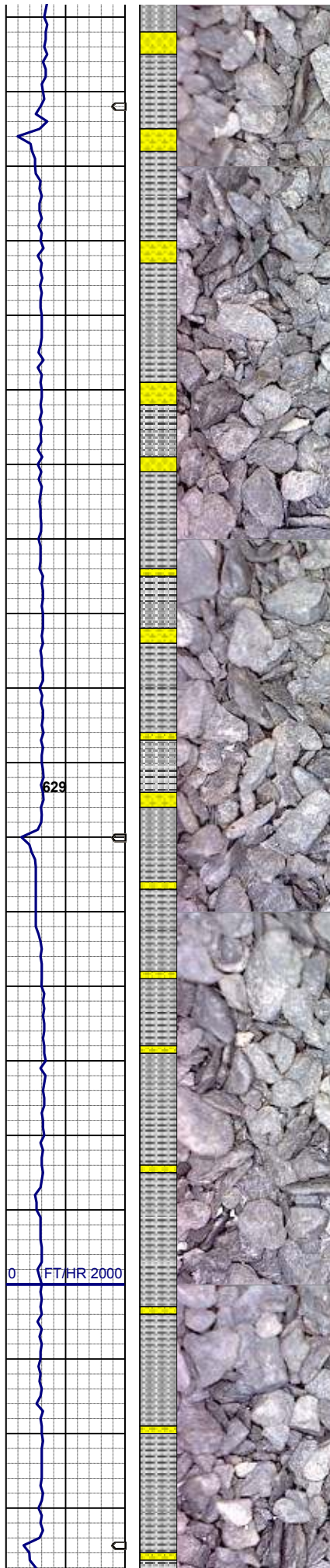
0 FT/HR 2000

692

5000 50 AP250 UNITS 500
PPM 50000

113u
C1: 88.5%
C2: 0.0%
C3: 11.5%
C4: 0.0%

250u

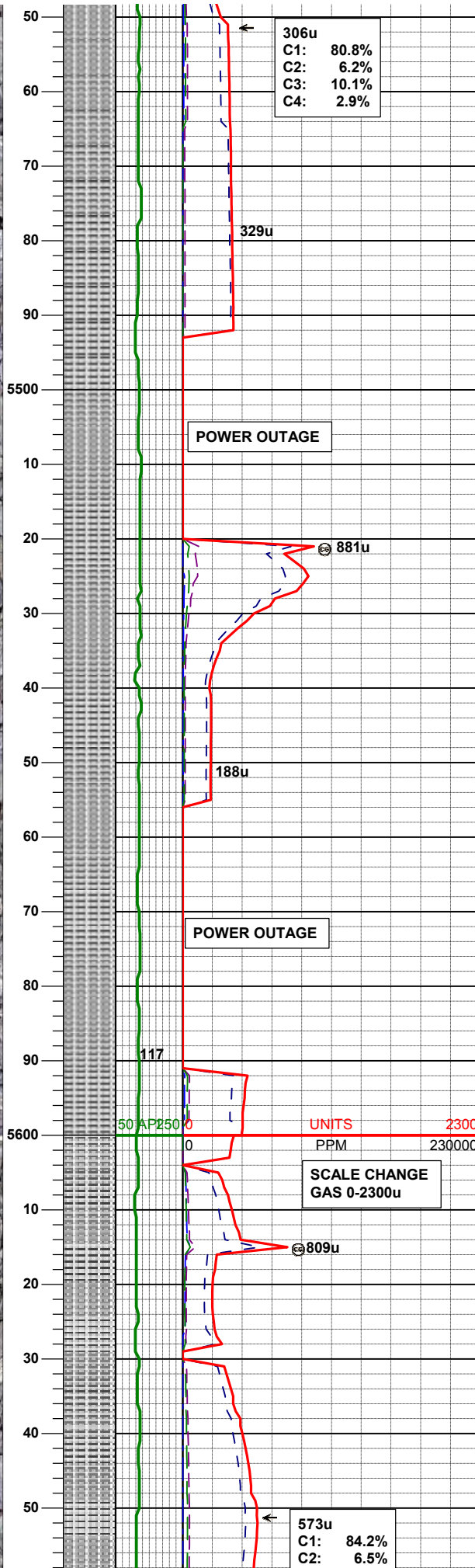
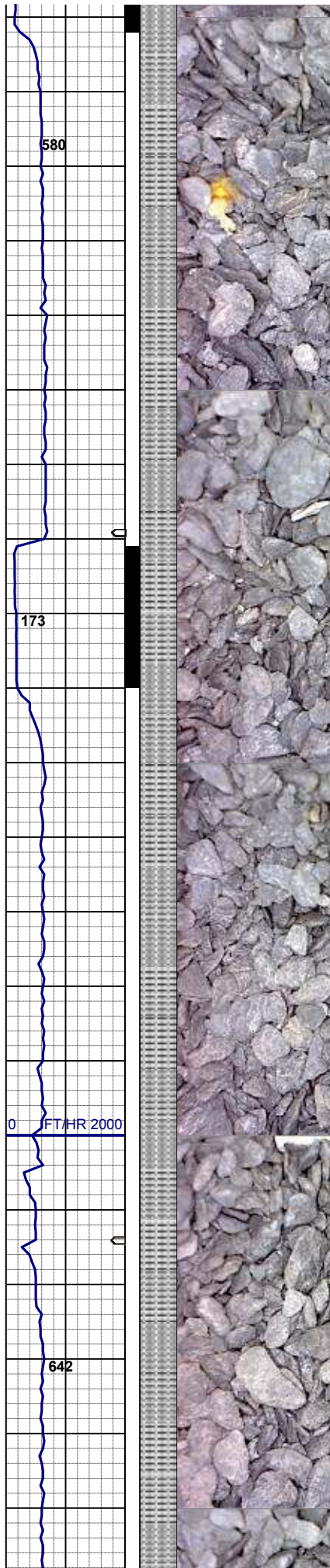


60% SILTY SH: m-dk gy occ gybrn, firm - sl sft ,
rthy - sl slty tex
40% SHYSS: lt gy-dk gy, sft-firm, sbbiky-blky,
tex f-sdy, mod calc

MD 5083'
INC 0.52°
AZM 34.62°

80% SILTY SH: m-dk gy occ gybrn, firm - sl sft ,
rthy - sl slty tex
20% SHYSS: lt gy-dk gy, sft-firm, sbbiky-blky,
tex f-sdy, mod calc

MD 5178'
INC 1.15°
AZM 338.62°



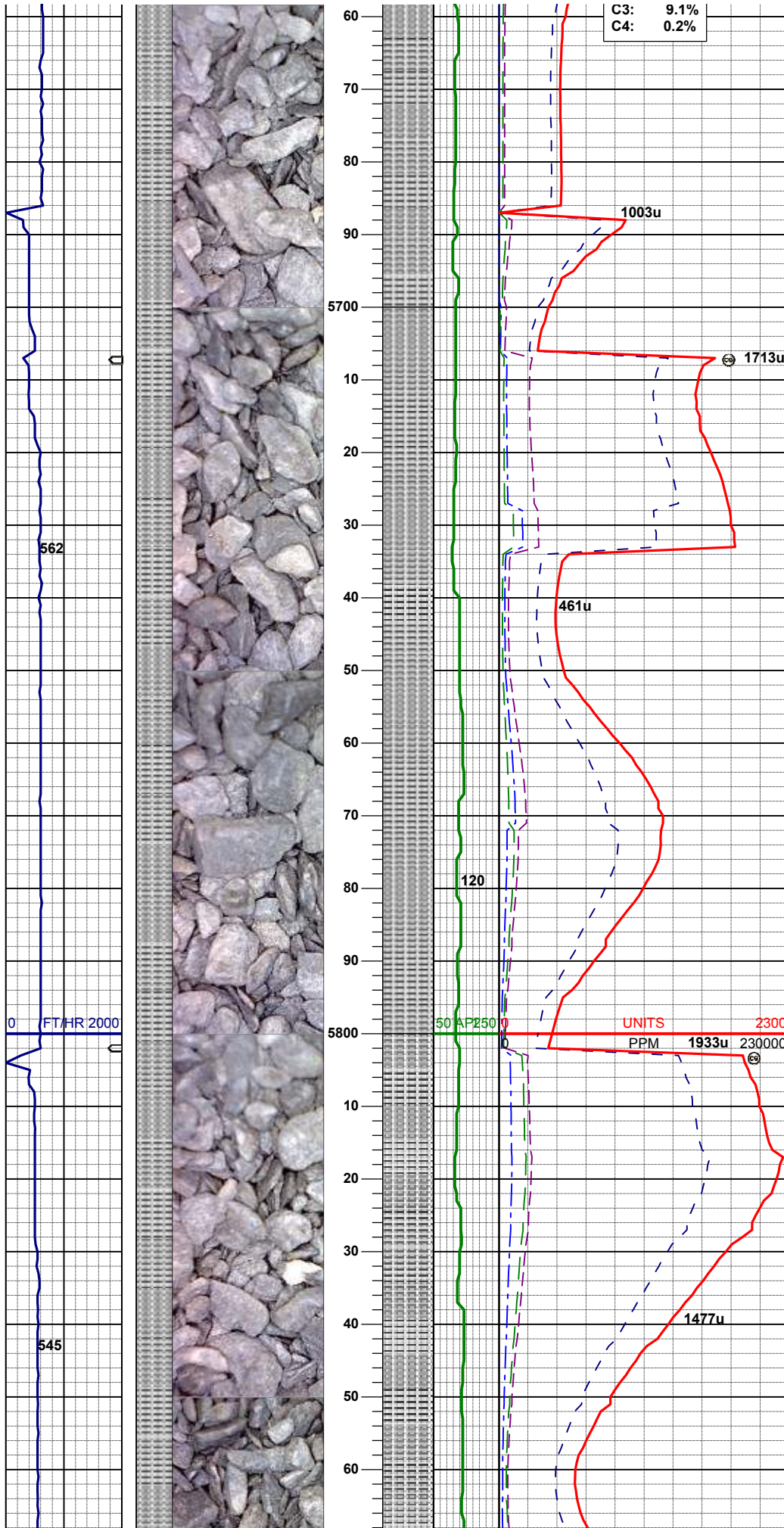
100% SILTY SH: m-dk gy occ gybrn, firm - sl
sft , rthy - sl slty tex

MD 5462'
INC 0.89°
AZM 127.44°

100% SILTY SH: m-dk gy occ gybrn, firm - sl
sft , rthy - sl slty tex

MD 5557'
INC 0.22°
AZM 257.97°

100% SILTY SH: m-dk gy occ gybrn, firm - sl
sft , rthy - sl slty tex

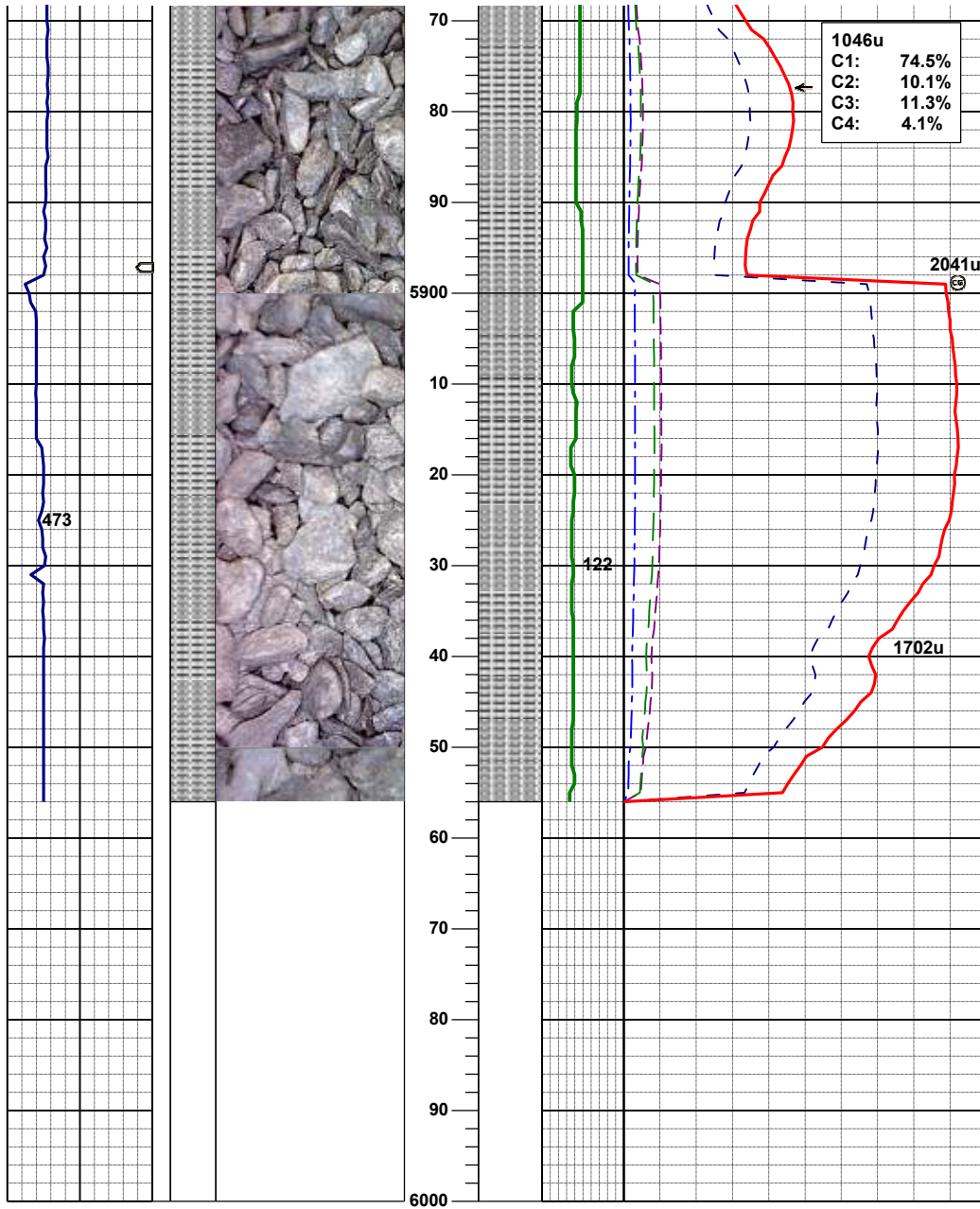


MD 5747'
INC 0.56°
AZM 83.97°

100% SILTY SH: m-dk gy occ gybrn, firm - sl
sft, rthy - sl silty tex

MD 5842'
INC 0.87°
AZM 95.89°

100% SILTY SH: m-dk gy occ gybrn, firm - sl
sft, rthy - sl silty tex



MD 5899'
INC 1.06°
AZM 110.14°

100% SILTY SH: m-dk gy occ gybrn, firm - sl
sft, rthy - sl silty tex

BEGAN BUILD @
00:04hrs 07/31/2013

Log Continued On:
WELLS RANCH USX
AA27-63-1HN(HORZ).lplot

Thank you for choosing
Columbine Logging Inc.