

LOG created using LPLOT VH Version 3.0, August 31, 2012, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: NOBLE ENERGY INC
WELL: BOOTH STATE C36-69HN
LOCATION: NENE SEC 36 T4N R64W
COUNTY: WELD
STATE: COLORADO
SPOT: 250' FNL, 253' FEL
ELEVATION: 4758' GL, 4771' KB
FIELD: WATTENBERG
SPUD DATE: 08/21/2012
TD DATE: 08/31/2012
DATES LOGGED: 08/23/2012 - 08/31/2012
DEPTHS LOGGED: 660'-10910' MD
LOGGERS: KYLE KNIGHT, RYAN SHILLING
DRILLING FLUID: FW, LSND
DRILLING RIG: ENSIGN 121
API: 05-123-35796
LOG TYPE: VERTICAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: LAT, LONG: 40.27601, -104.50676

LITHOLOGIES



No Sample



Sandstone



Shaly Sandstone



Shaly Siltstone



Silty Shale

ENGINEERING SYMBOLS



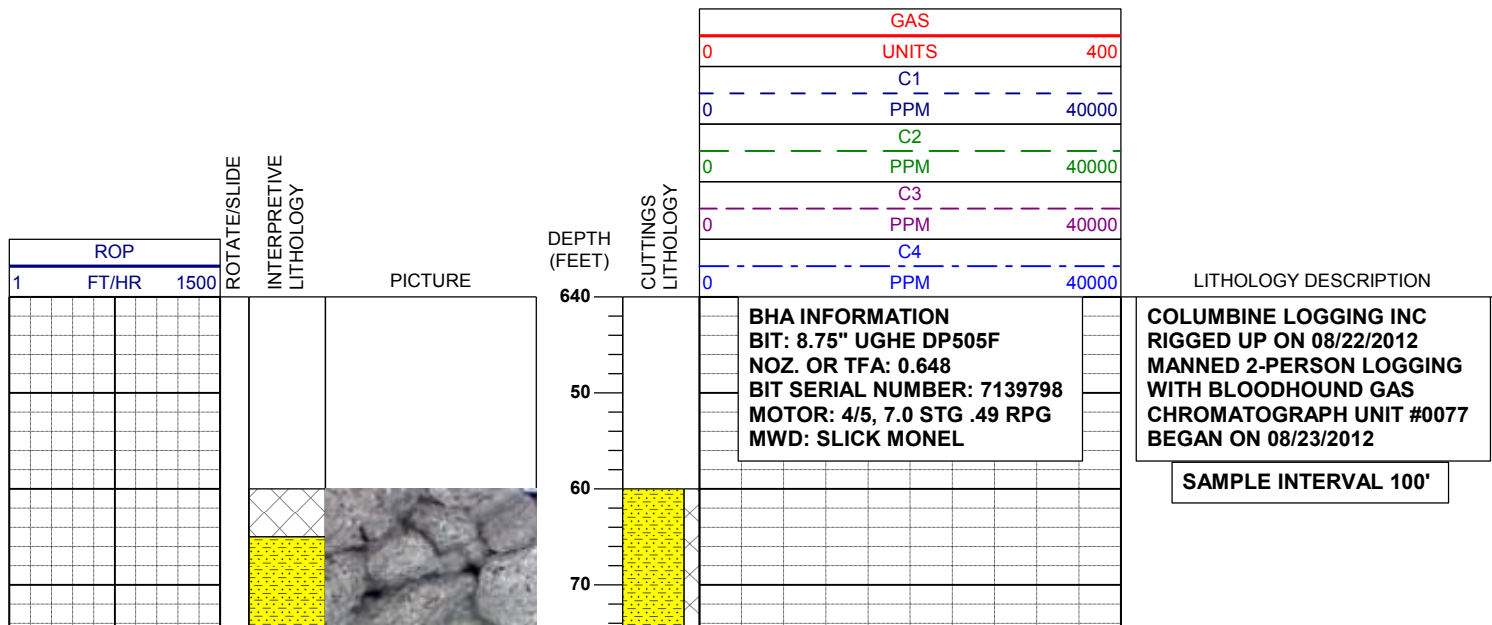
Connection

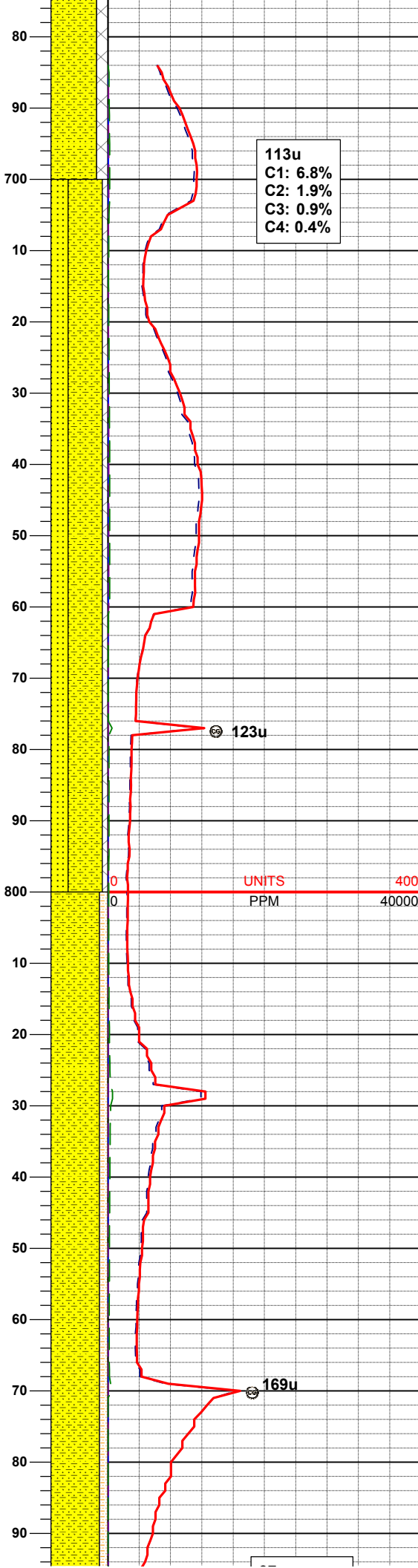
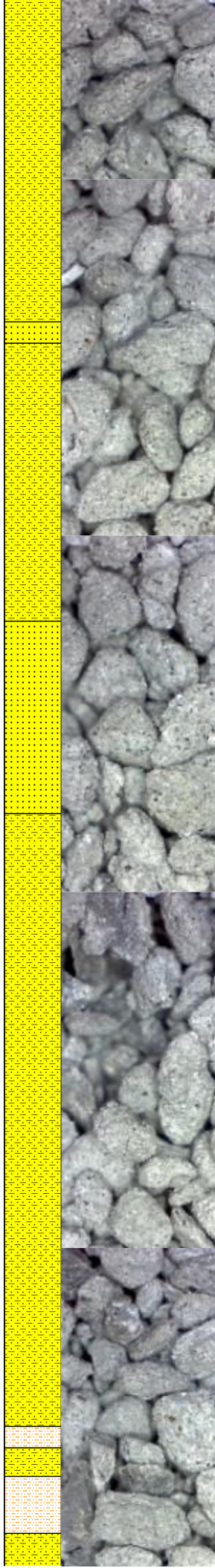
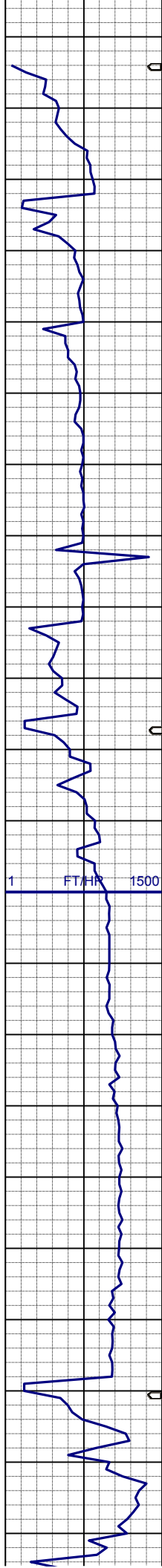


Connection Gas



Midnight Depth





80% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog
20% CMT:

113u
C1: 6.8%
C2: 1.9%
C3: 0.9%
C4: 0.4%

SURVEY
MD 725'
INC 0.4°
AZI 16.7°
TVD 725.00'

60% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog, grd to
30% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, slcalc, phlog, tr glau
10% CMT:

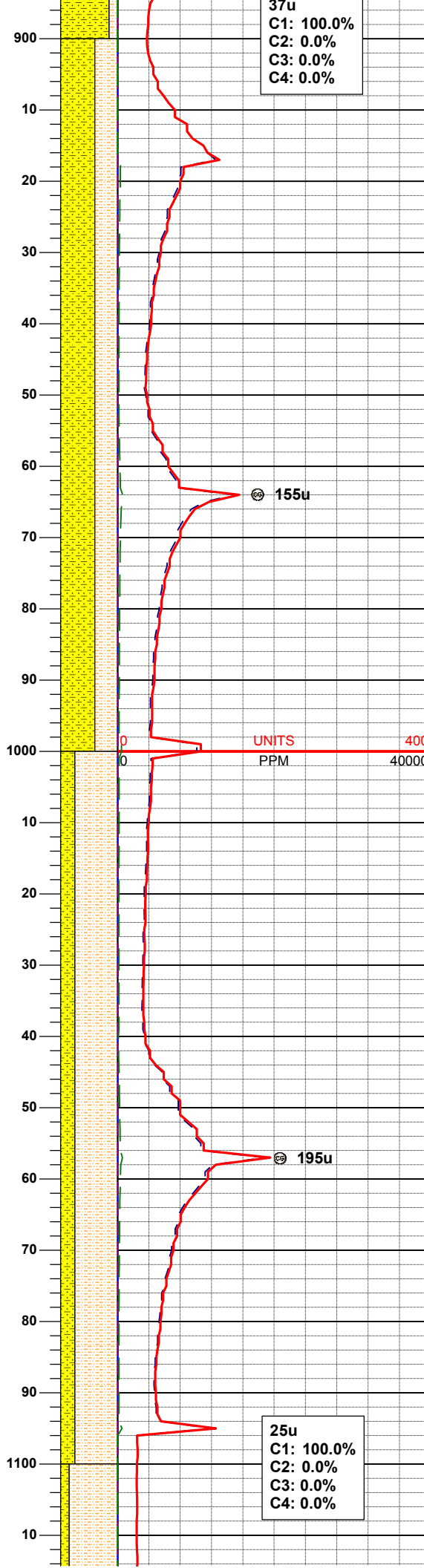
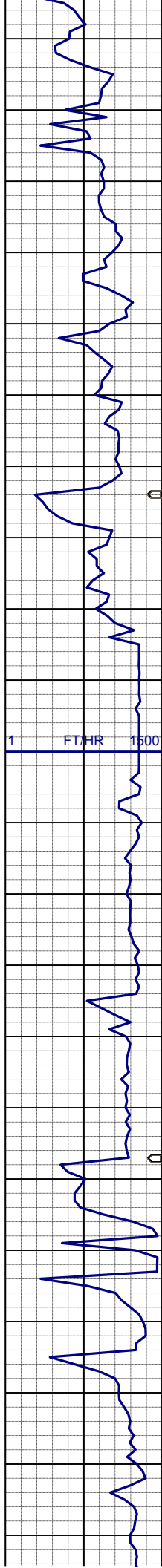
MUD WT: 8.4+ VIS: 27 IN
MUD WT: 8.4+ VIS: 27 OUT

SURVEY
MD 818'
INC 0.1°
AZI 26.7°
TVD 818.00'

80% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog, grd to
15% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, tr cmt

UNITS
PPM
40000

169u



37u
C1: 100.0%
C2: 0.0%
C3: 0.0%
C4: 0.0%

UNITS
PPM

25u
C1: 100.0%
C2: 0.0%
C3: 0.0%
C4: 0.0%

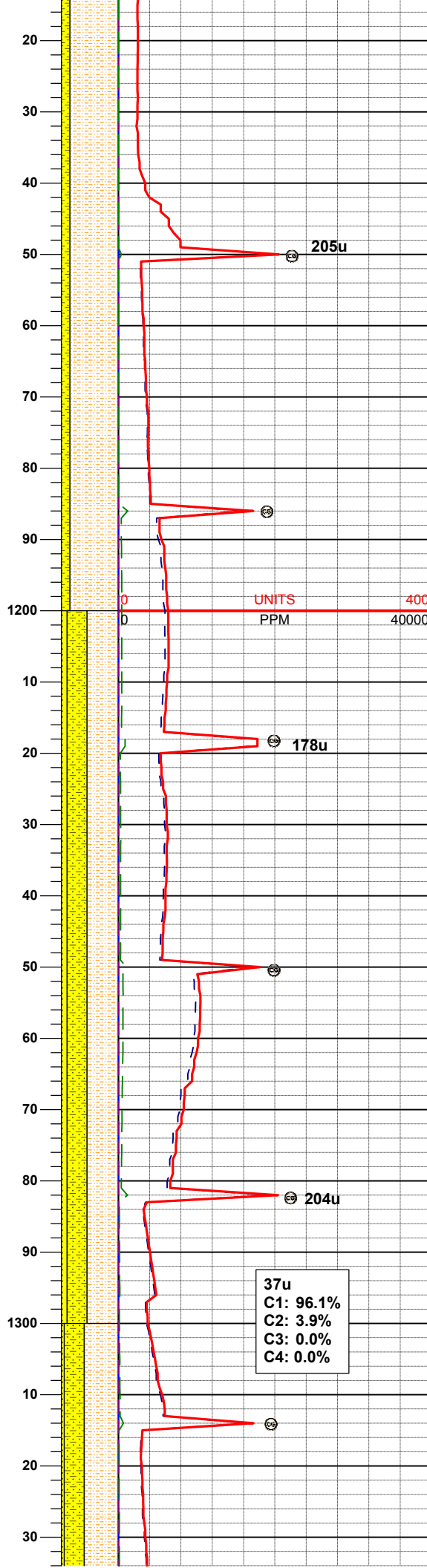
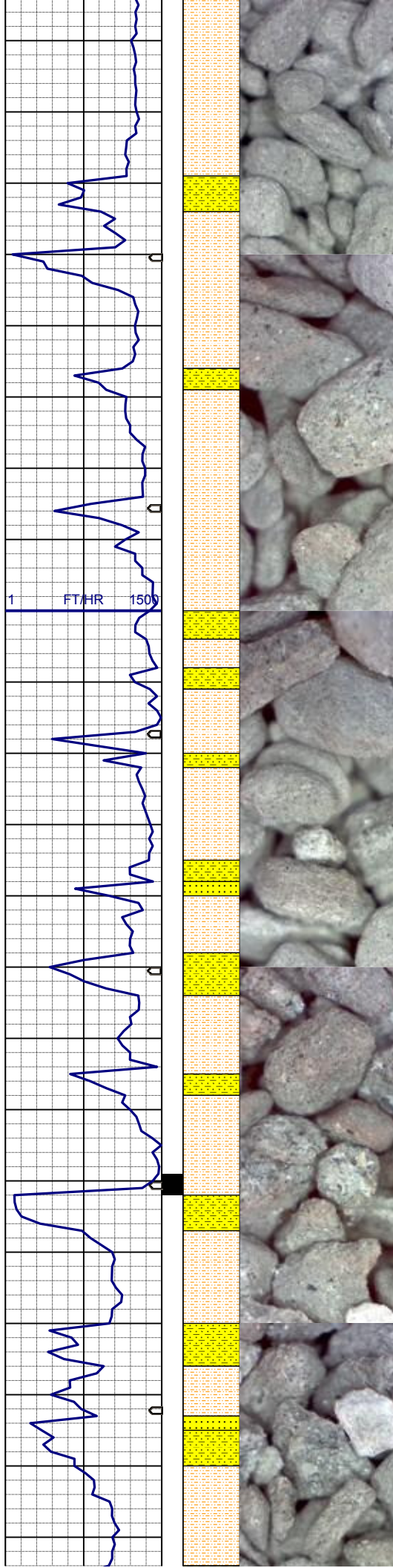
SURVEY
MD 912'
INC 0.3°
AZI 1.6°
TVD 912.00'

60% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog, grd to
40% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, tr ss

SURVEY
MD 1005'
INC 0.3°
AZI 357.2°
TVD 1005.00'

75% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to
25% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog, tr ss

SURVEY
MD 1098'
INC 0.4°
AZI 3.3°
TVD 1097.99'



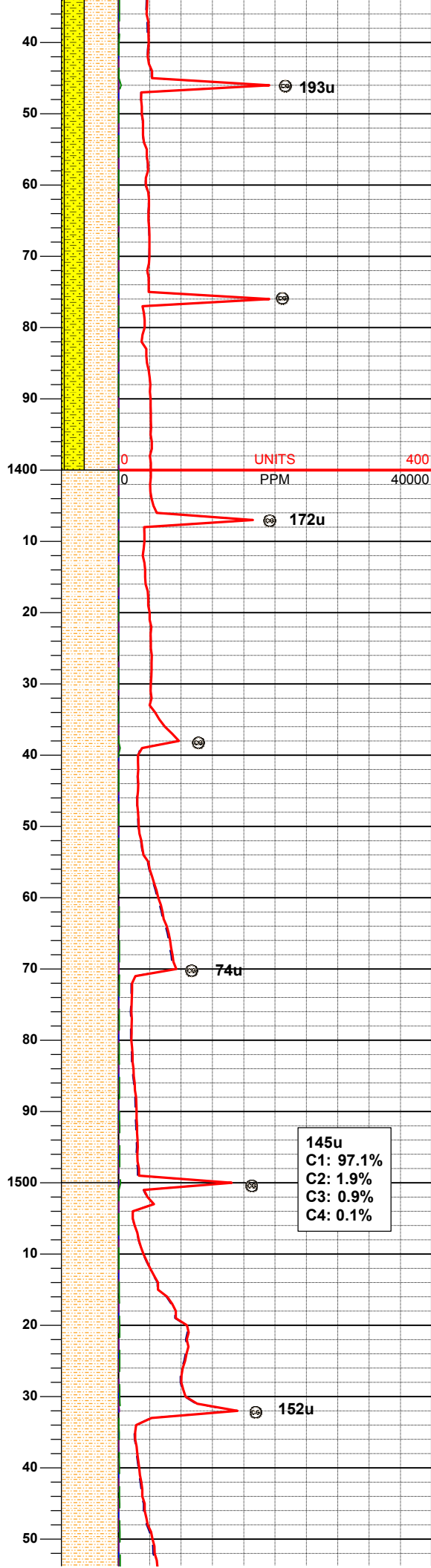
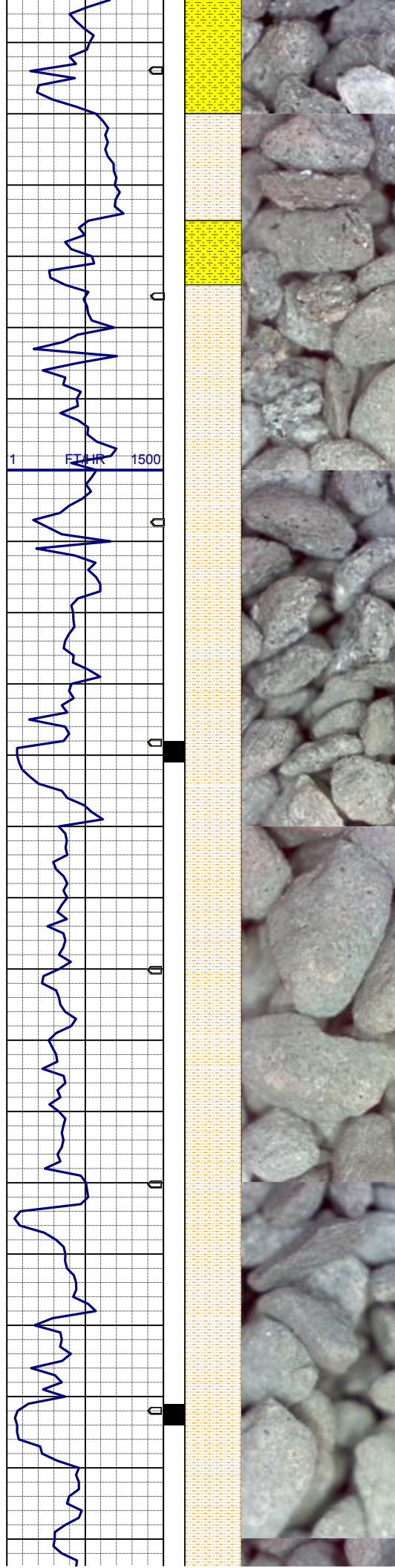
85% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 15% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog, tr ss

SURVEY
MD 1197'
INC 0.4°
AZI 4.7°
TVD 1196.99'

55% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 35% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog 10% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, calc, phlog, tr glau

SURVEY
MD 1292'
INC 0.4°
AZI 254.0°
TVD 1291.99'

37u
C1: 96.1%
C2: 3.9%
C3: 0.0%
C4: 0.0%



MUD WT: 8.5 VIS: 29 IN
MUD WT: 8.5+ VIS: 29 OUT

60% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 35% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog
5% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, calc, phlog, tr glau

SURVEY
MD 1387'
INC 0.7°
AZI 262.6°
TVD 1386.99'

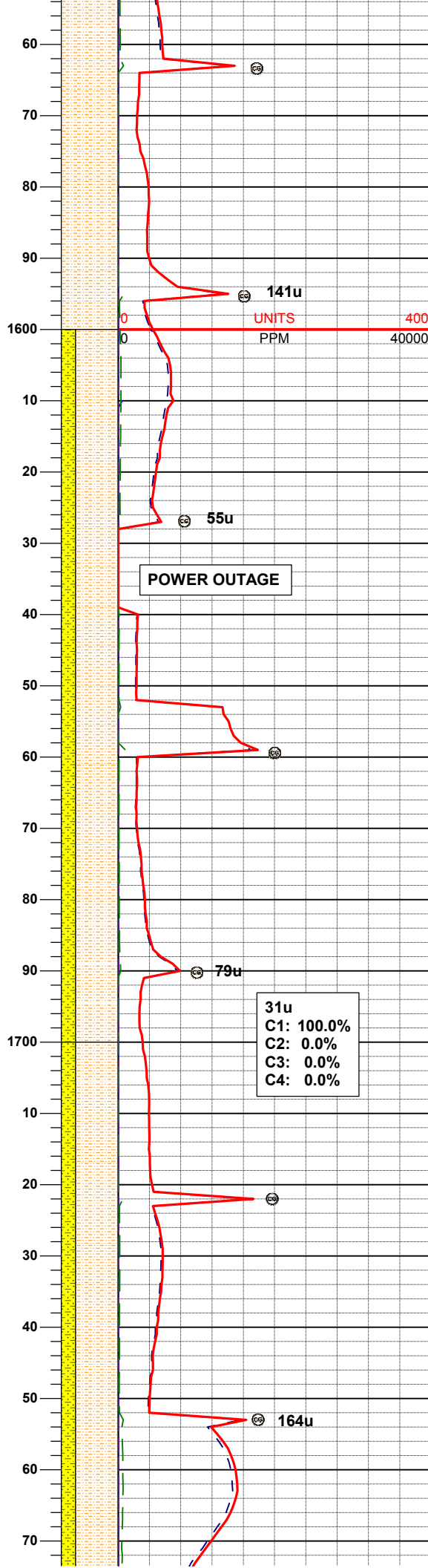
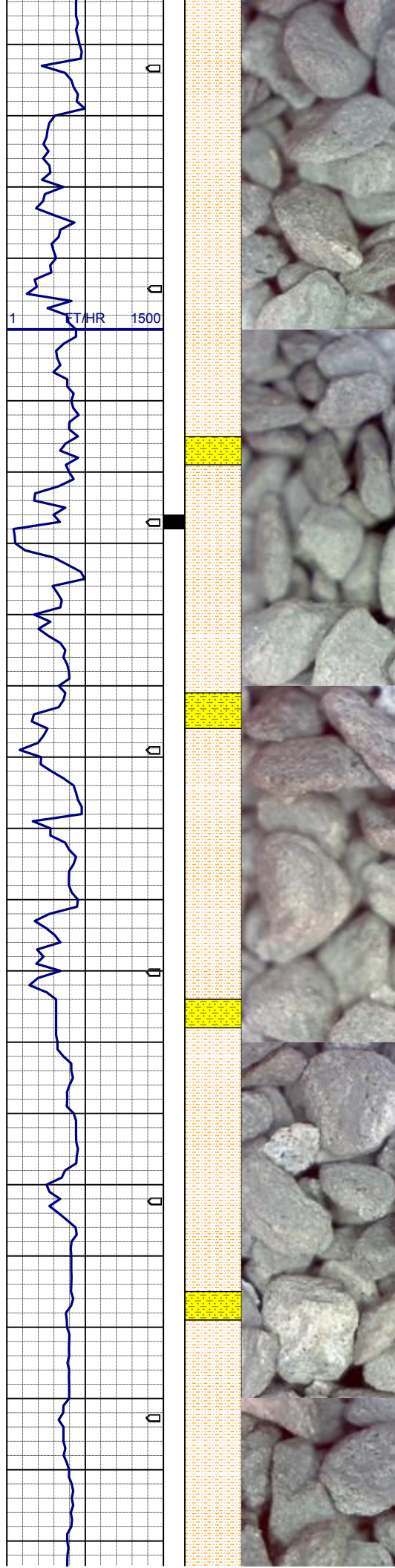
MUD WT: 8.5 VIS: 29 IN
MUD WT: 8.5+ VIS: 29 OUT

100% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd

SURVEY
MD 1480'
INC 0.5°
AZI 27.6°
TVD 1479.98'

MUD WT: 8.4 VIS: 28 IN
MUD WT: 8.5+ VIS: 29 OUT

100% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme ovr ctd



SURVEY
MD 1575'
INC 1.0°
AZI 157.0°
TVD 1574.98'

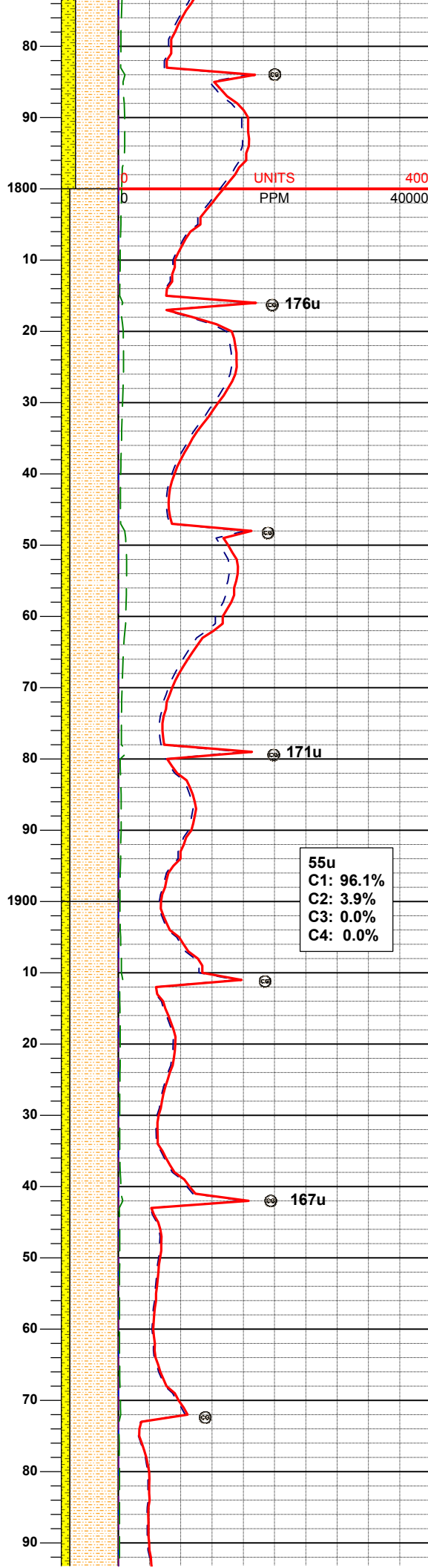
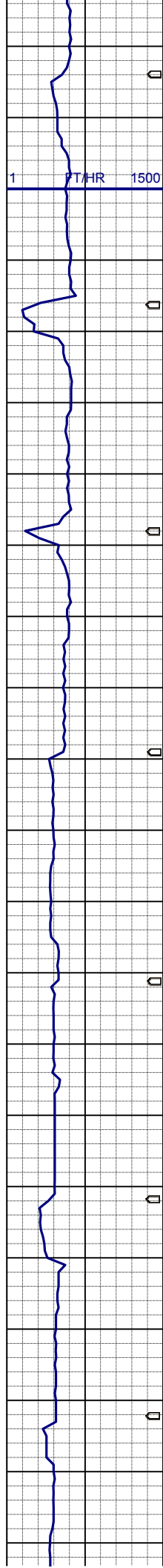
75% SHYSLTST: lt-mgy, sme tan, f-
vfgr, sbrd-sbang, mod-psrt, arg mtx,
occ phlog, sme pyr ctd, grd to
25% SHYSS: lt-mgy, f-mfgr, sbrd-
sbang, mod-psrt, sft, ppor, argcmt,
salc, phlog

SURVEY
MD 1670'
INC 0.5°
AZI 126.6°
TVD 1669.97'

MUD WT: 8.4 VIS: 27 IN
MUD WT: 8.4+ VIS: 28 OUT

75% SHYSLTST: lt-mgy, sme tan, f-
vfgr, sbrd-sbang, mod-psrt, arg mtx,
occ phlog, sme pyr ctd, grd to
25% SHYSS: lt-mgy, f-mfgr, sbrd-
sbang, mod-psrt, sft, ppor, argcmt,
salc, phlog

SURVEY
MD 1764'
INC 0.8°
AZI 162.2°
TVD 1763.97'

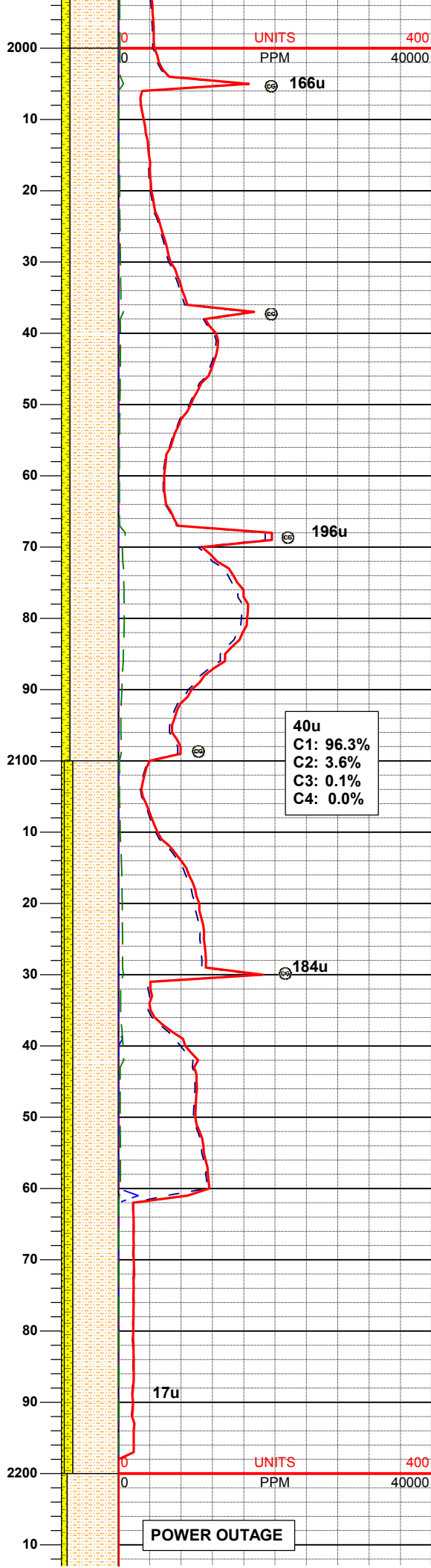
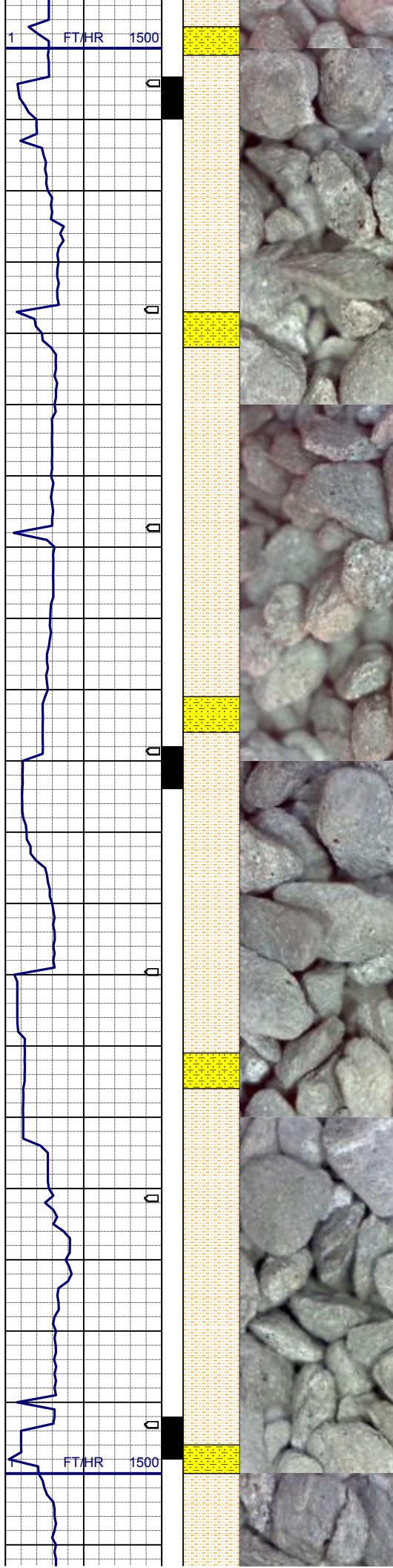


85% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbdr-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 15% SHYSS: lt-mgy, f-mfgr, sbdr-sbang, mod-psrt, sft, ppor, argcmt, sicalc, phlog

SURVEY
MD 1859'
INC 0.9°
AZI 160.3°
TVD 1858.96'

85% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbdr-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 15% SHYSS: lt-mgy, f-mfgr, sbdr-sbang, mod-psrt, sft, ppor, argcmt, sicalc, phlog

SURVEY
MD 1953'
INC 1.3°
AZI 160.8°
TVD 1952.94'

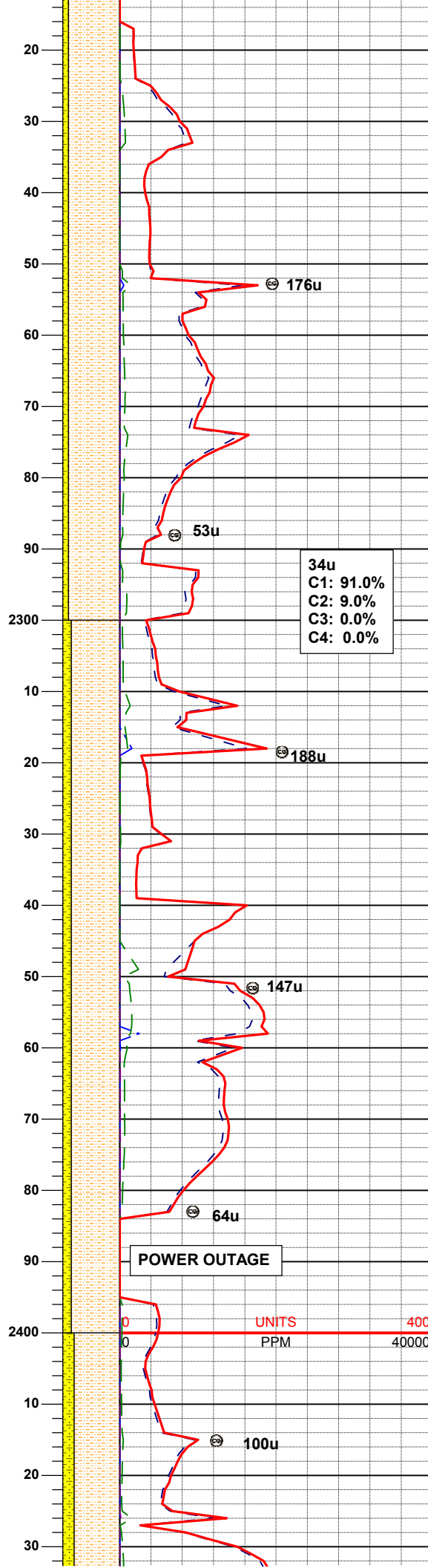
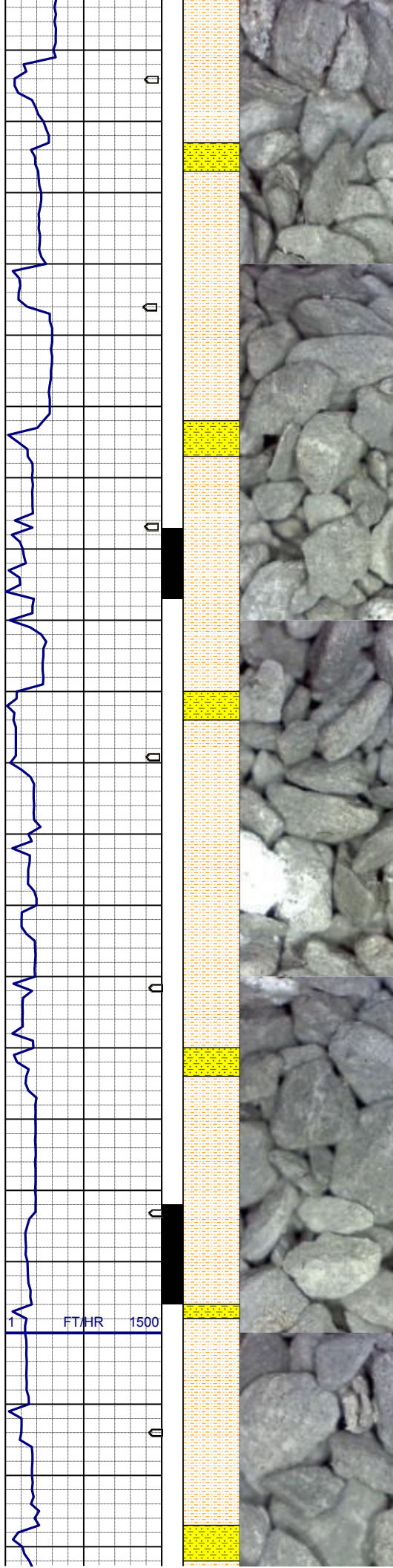


SURVEY
MD 2047'
INC 2.0°
AZI 100.2°
TVD 2046.90'

85% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 15% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, sicalc, phlog

SURVEY
MD 2141'
INC 2.6°
AZI 45.2°
TVD 2140.84'

80% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 15% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, sicalc, phlog
5% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, calc, phlog, tr glau



SURVEY
MD 2236'
INC 3.5°
AZI 38.7°
TVD 2235.00'

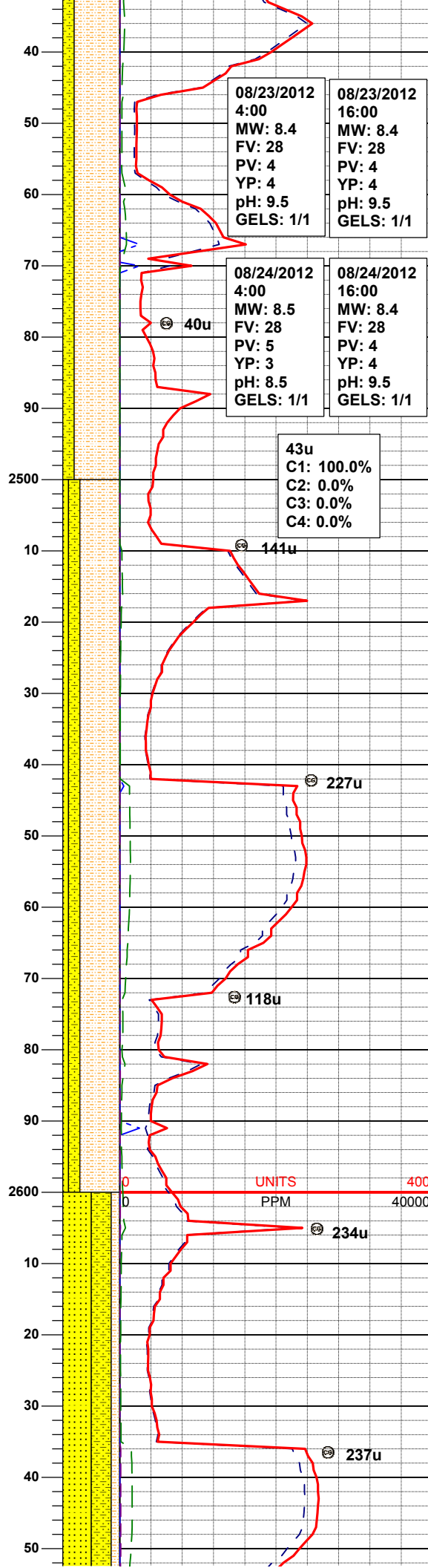
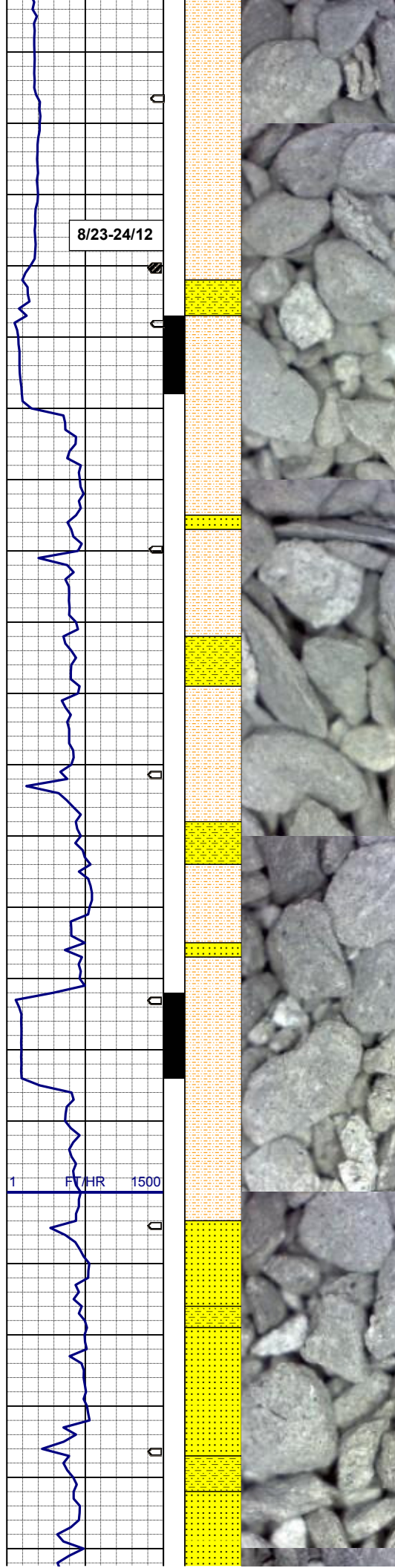
90% SHYSLTST: lt-mgy, tr tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 10% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, sicalc, phlog, tr ss

SURVEY
MD 2331'
INC 3.7°
AZI 42.2°
TVD 2330.52'

85% SHYSLTST: lt-mgy, tr tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 15% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, sicalc, phlog, tr ss

MUD WT: 8.4 VIS: 27 IN
MUD WT: 8.4 VIS: 27 OUT

SURVEY
MD 2426'
INC 5.5°
AZI 34.3°
TVD 2425.34'



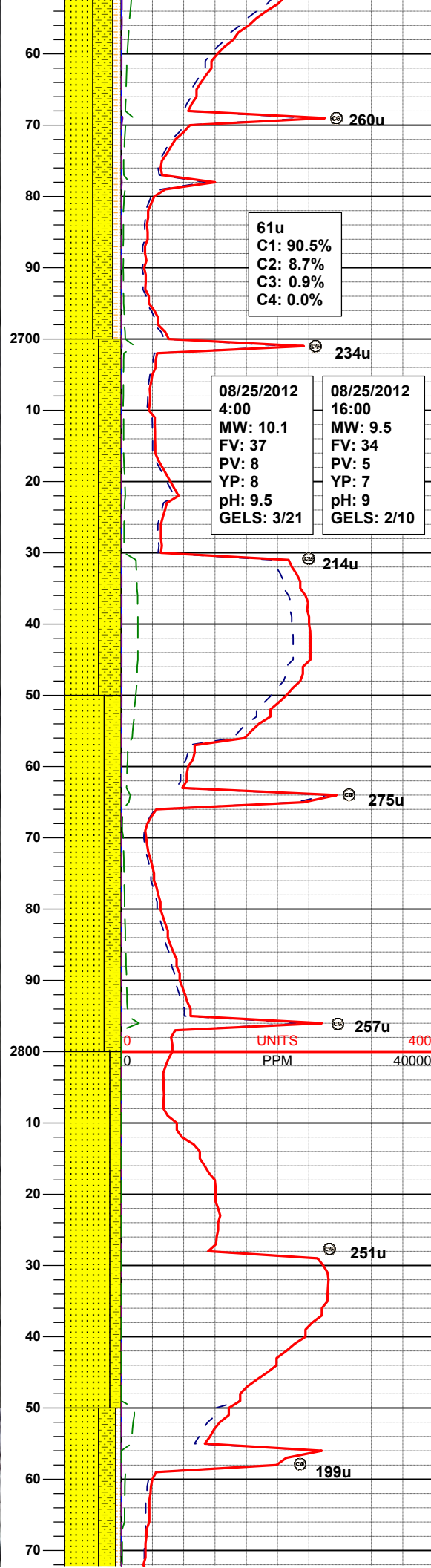
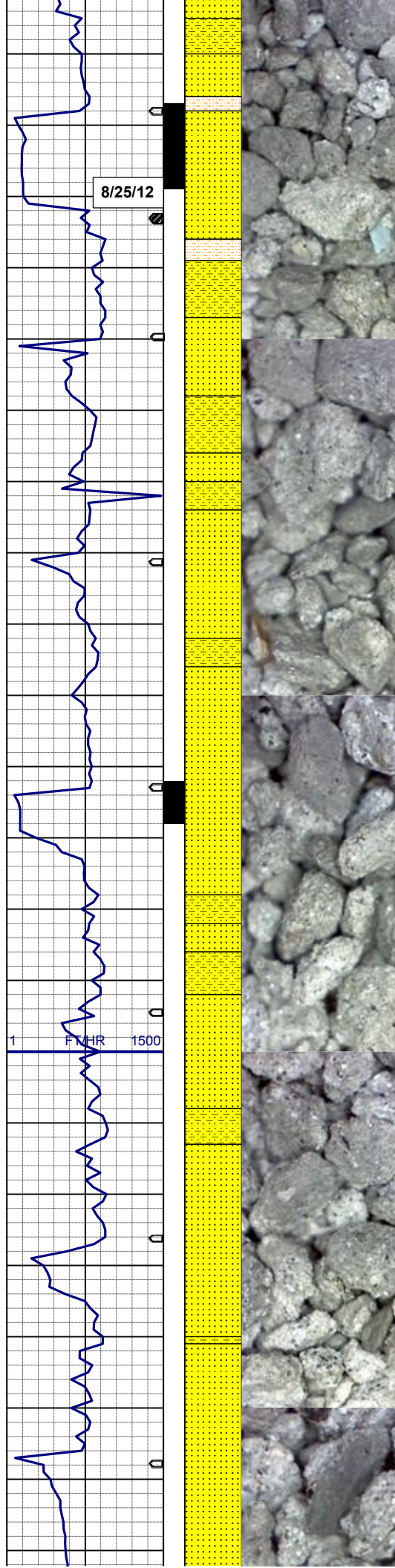
80% SHYSLTST: lt-mgy, tr tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 20% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, sicalc, phlog, tr ss, tr cmt, tr sh

SURVEY
MD 2521'
INC 6.8°
AZI 24.3°
TVD 2519.66'

70% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 20% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, sicalc, phlog 10% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, calc, phlog, tr glau

SURVEY
MD 2616'
INC 8.4°
AZI 17.2°
TVD 2613.83'

50% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, calc, phlog, tr glau, grd to 35% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, sicalc, phlog



sicalc, phlog
15% SHYSLTST: lt-mgy, sme tan, f-
vfgr, sbrd-sbang, mod-psrt, arg mtx,
occ phlog, sme pyr ctd

MUD WT: 8.4+ VIS: 28 IN
MUD WT: 8.5 VIS: 27 OUT

SURVEY
MD 2711'
INC 10.8°
AZI 12.8°
TVD 2707.49'

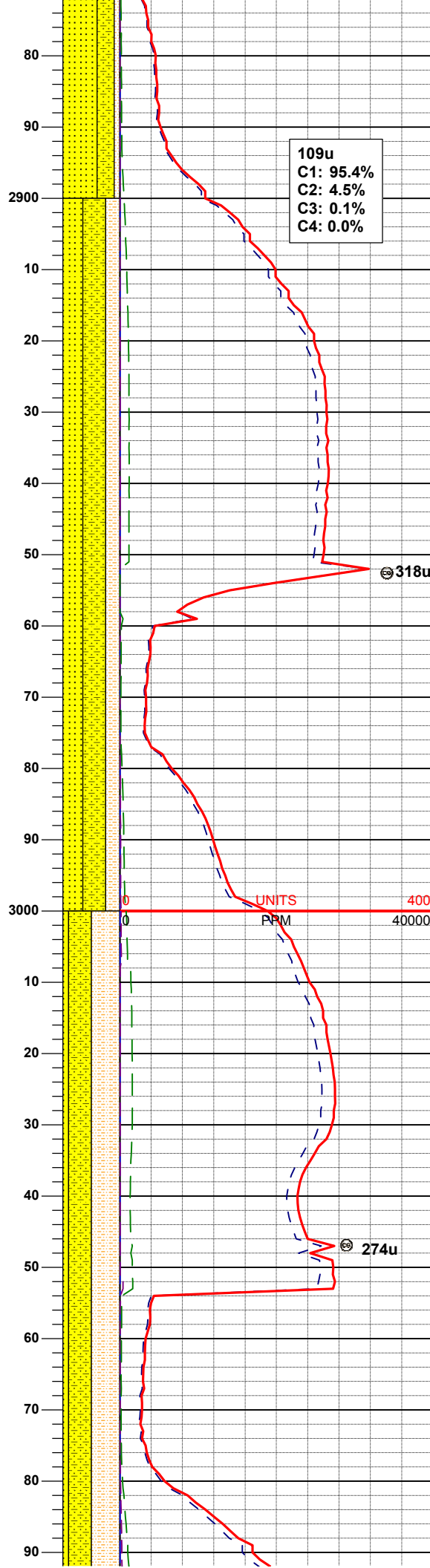
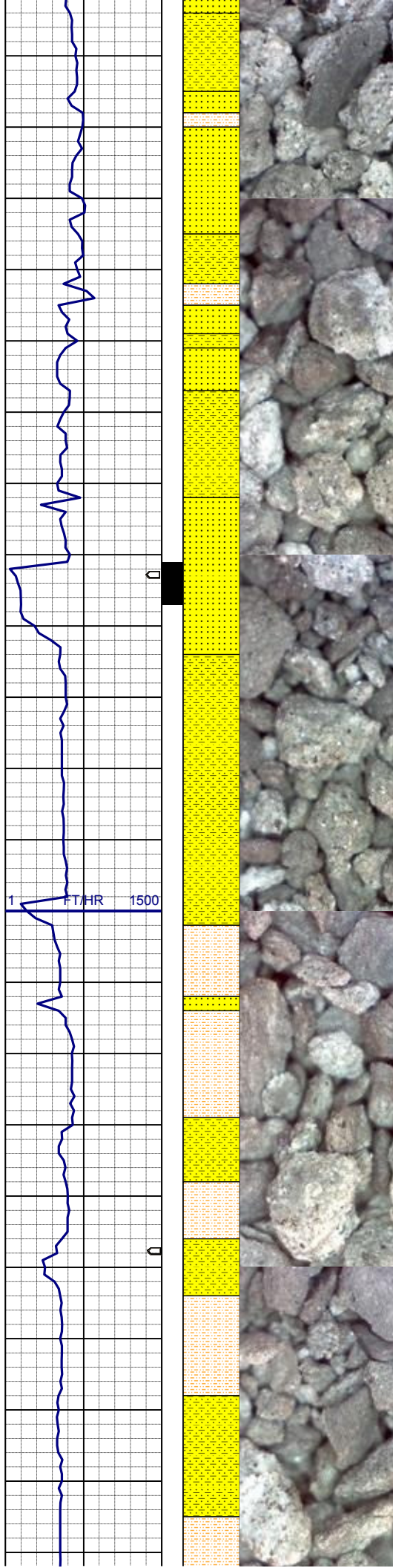
60% SS: w-ltgy, s&p, mf-c gr, sbrd,
mod-wsrt, ppor, argcmt, calc, phlog, tr
glau, grd to
40% SHYSS: lt-mgy, f-mfgr, sbrd-
sbang, mod-psrt, sft, ppor, argcmt,
sicalc, phlog, tr shysltst

70% SS: w-ltgy, s&p, mf-c gr, sbrd,
mod-wsrt, ppor, argcmt, calc, phlog, tr
glau, grd to
30% SHYSS: lt-mgy, f-mfgr, sbrd-
sbang, mod-psrt, sft, ppor, argcmt,
sicalc, phlog, tr shysltst

SURVEY
MD 2805'
INC 12.3°
AZI 13.7°
TVD 2799.58'

80% SS: w-ltgy, s&p, mf-c gr, sbrd,
mod-wsrt, ppor, argcmt, calc, phlog, tr
glau, grd to
20% SHYSS: lt-mgy, f-mfgr, sbrd-
sbang, mod-psrt, sft, ppor, argcmt,
sicalc, phlog, tr shysltst

60% SS: w-ltgy, s&p, mf-c gr, sbrd,
mod-wsrt, ppor, argcmt, calc, phlog, tr
glau, grd to



109u
C1: 95.4%
C2: 4.5%
C3: 0.1%
C4: 0.0%

SURVEY
MD 2900'
INC 11.7°
AZI 11.1°
TVD 2892.51'

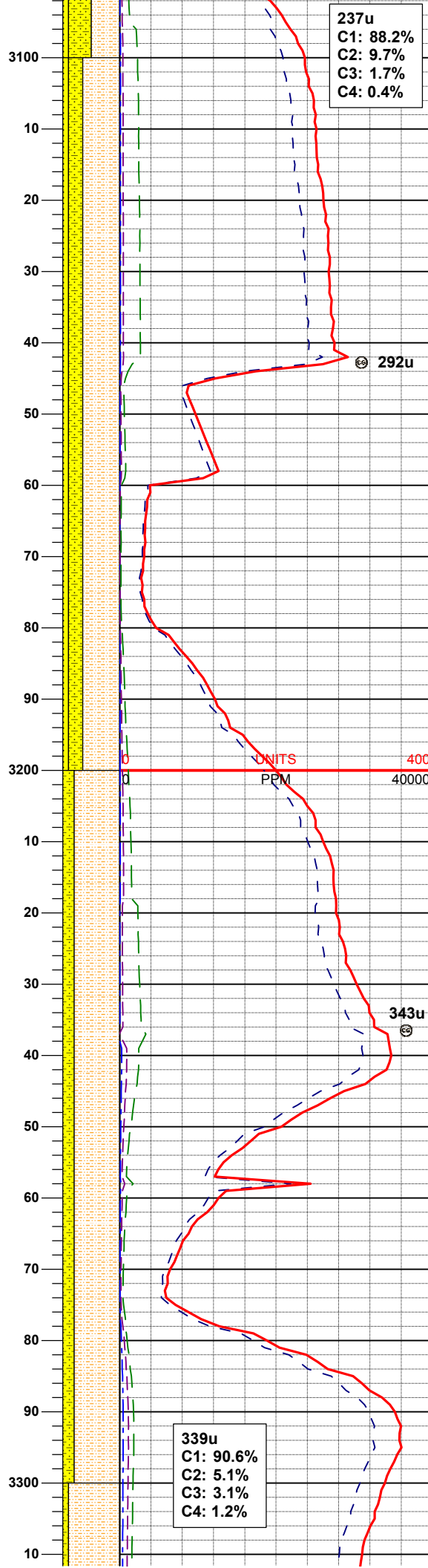
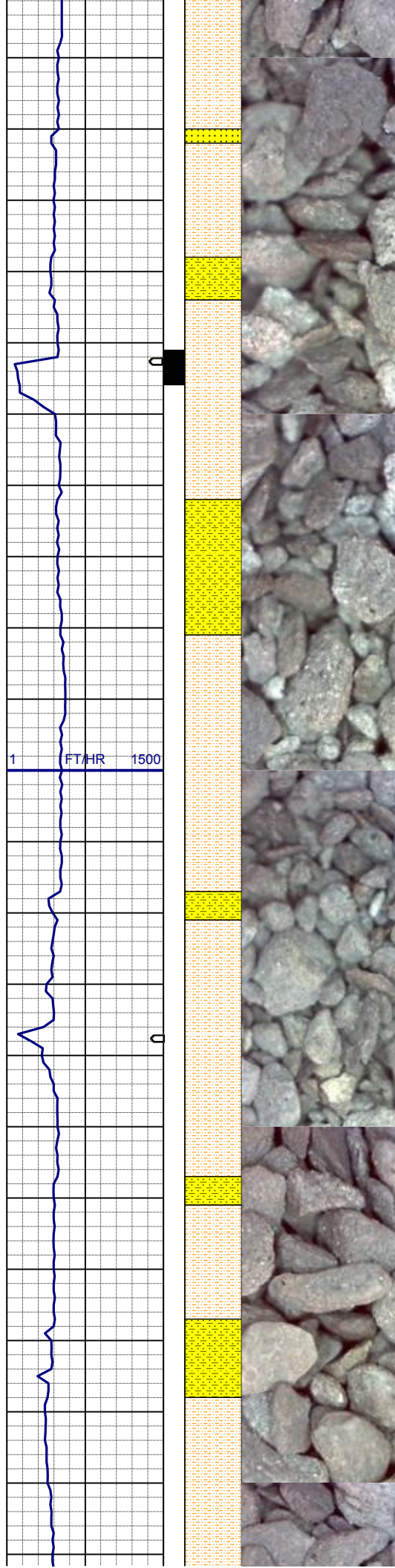
30% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog
10% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd

40% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog, grd to
35% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, calc, phlog, tr glau
25% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd

SURVEY
MD 2995'
INC 9.8°
AZI 9.7°
TVD 2985.84'

50% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to
40% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog
10% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, calc, phlog, tr glau

SURVEY
MD 2995'



237u
C1: 88.2%
C2: 9.7%
C3: 1.7%
C4: 0.4%

MD 3090
INC 9.6°
AZI 9.7°
TVD 3079.48'

65% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 25% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog
10% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, calc, phlog, tr glau

SURVEY
MD 3185'
INC 6.6°
AZI 11.1°
TVD 3173.52'

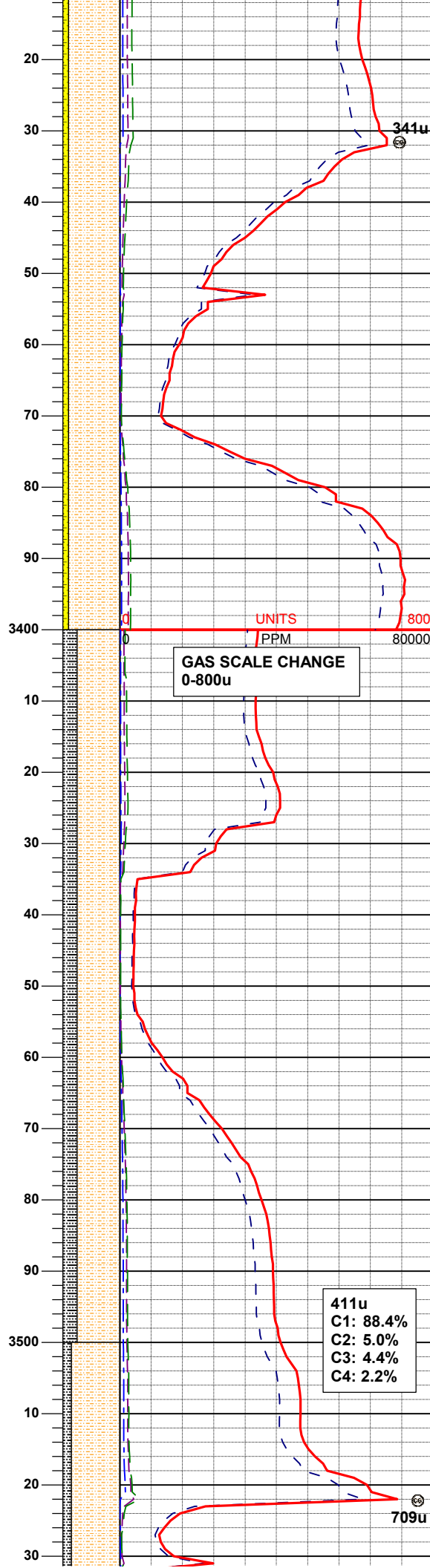
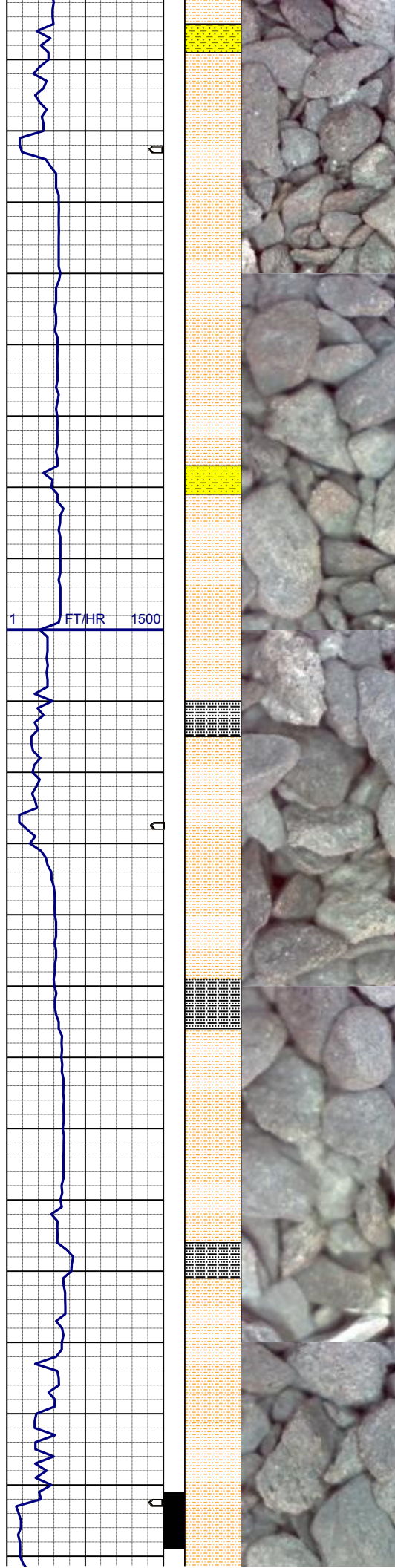
UNITS
PPM

343u

80% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 20% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcmt, slcalc, phlog, sme ss, tr sltysh

SURVEY
MD 3280'
INC 5.5°
AZI 6.3°
TVD 3267.99'

339u
C1: 90.6%
C2: 5.1%
C3: 3.1%
C4: 1.2%



90% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd; grd to 10% SHYSS: lt-mgy, f-mfgr, sbrd-sbang, mod-psrt, sft, ppor, argcm, slcalc, phlog, tr ss, tr sltysh

SURVEY
MD 3375'
INC 4.3°
AZI 4.6°
TVD 3362.64'

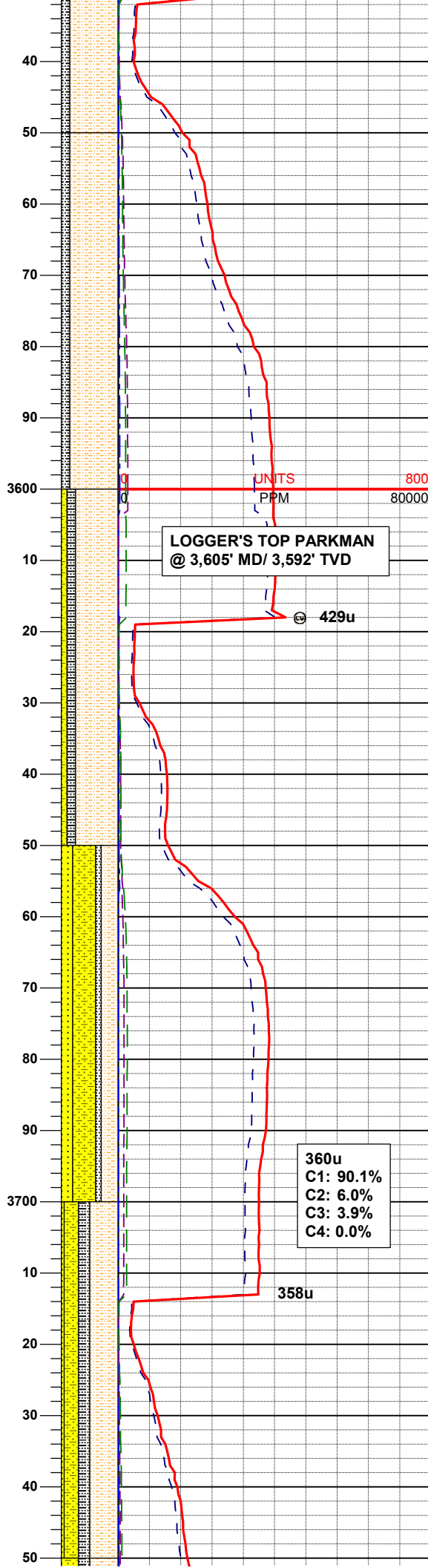
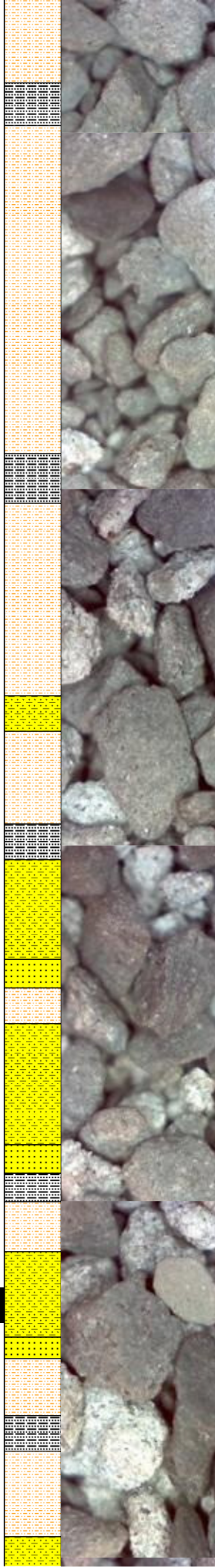
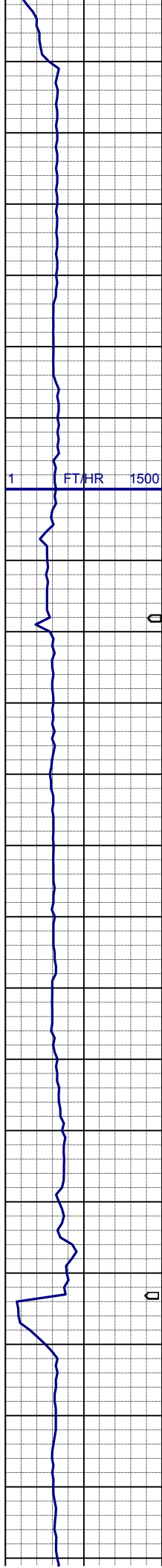
MUD WT: 8.6 VIS: 28 IN
MUD WT: 8.6 VIS: 28 OUT

75% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd; grd to 25% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, sme shyss, tr ss

SURVEY
MD 3470'
INC 4.3°
AZI 2.5°
TVD 3457.37'

411u
C1: 88.4%
C2: 5.0%
C3: 4.4%
C4: 2.2%

85% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd; grd to 15% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, sme shyss, tr ss



SURVEY
MD 3566'
INC 2.6°
AZI 11.8°
TVD 3553.20'

85% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd; grd to 15% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, sme shyss, tr ss

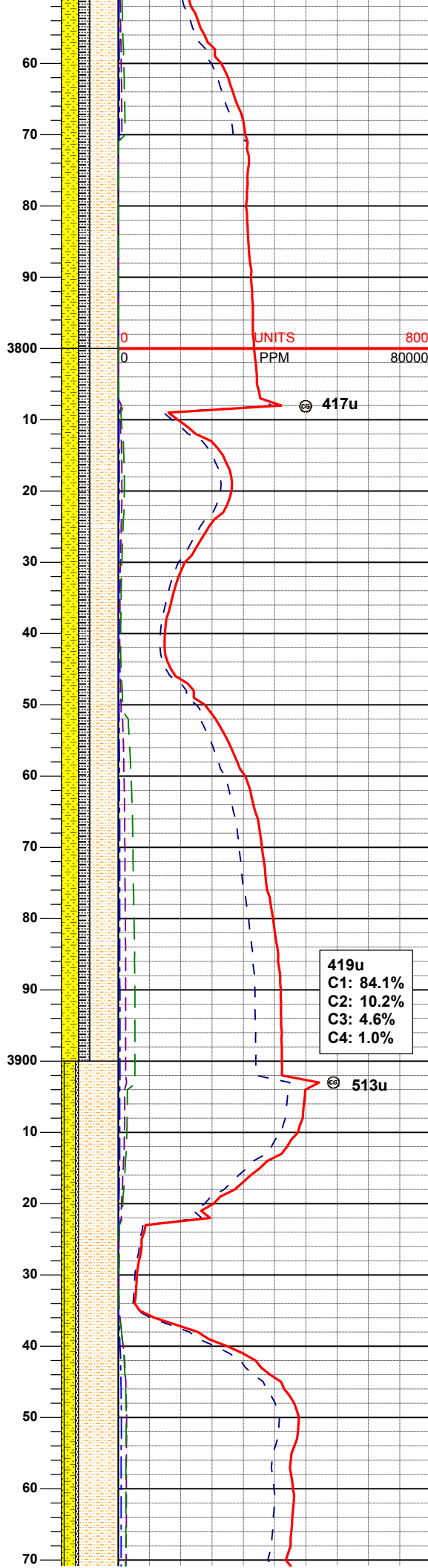
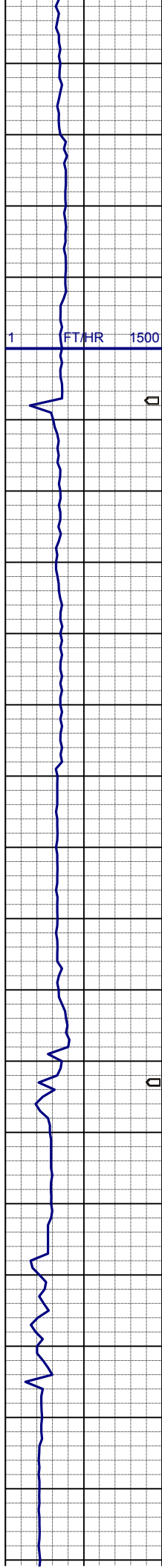
75% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd; grd to 15% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, sme shyss 10% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt, tr s&p ss

SURVEY
MD 3661'
INC 2.1°
AZI 27.4°
TVD 3648.12'

40% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt 30% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd 20% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau 10% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, sme shyss

50% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 25% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt 20% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, sme shyss 5% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau

MUD WT: 8.6 VIS: 28 IN
MUD WT: 8.7 VIS: 28 OUT



SURVEY
MD 3756'
INC 0.4°
AZI 25.3°
TVD 3743.09'

50% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 30% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt 20% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, sme shyss, abnt calcite

50% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 30% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt 20% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, sme shyss, abnt calcite

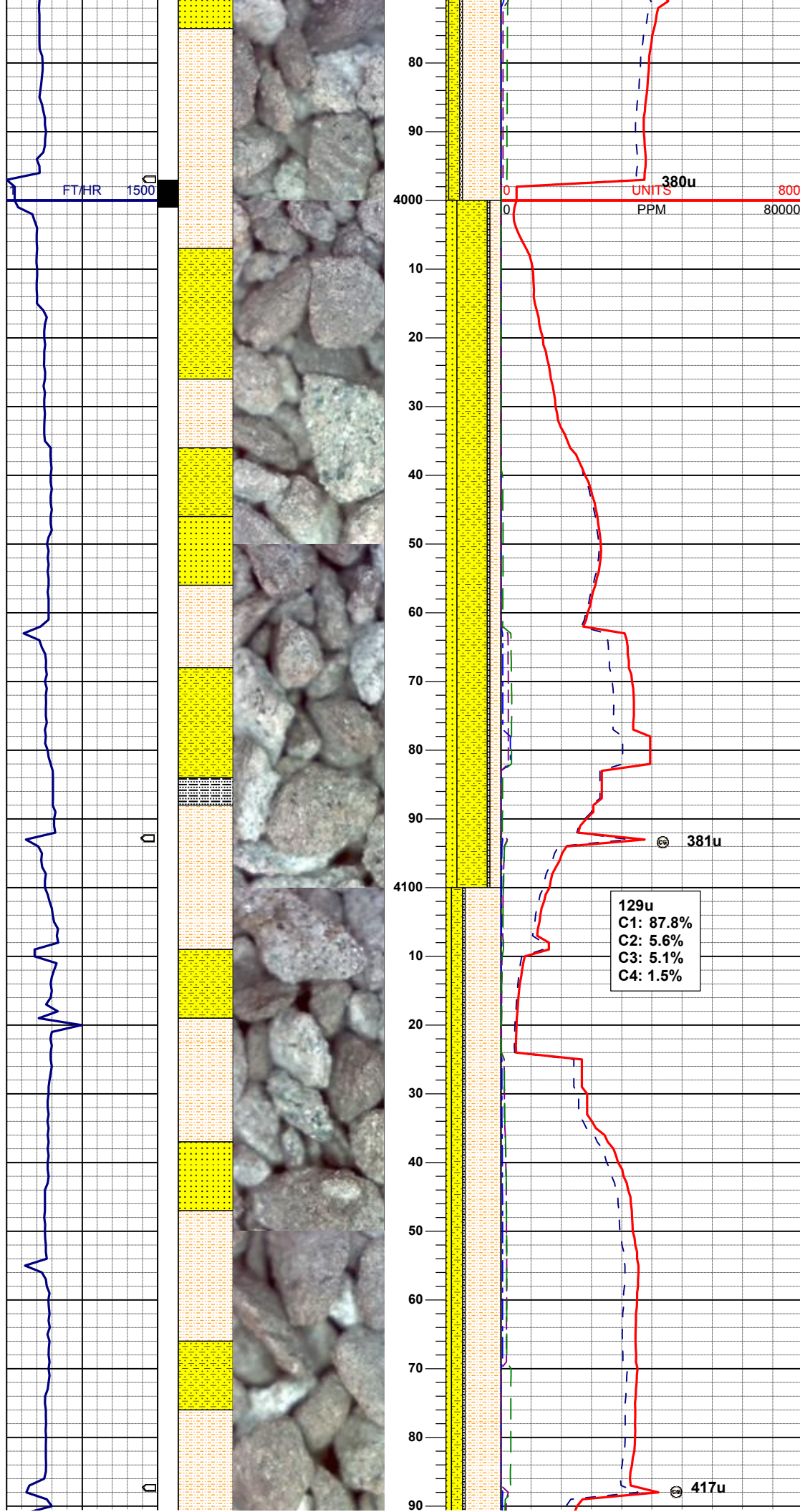
SURVEY
MD 3851'
INC 0.5°
AZI 81.0°
TVD 3838.09'

419u
C1: 84.1%
C2: 10.2%
C3: 4.6%
C4: 1.0%

513u

SURVEY
MD 3946'
INC 0.7°
AZI 121.1°
TVD 3933.08'

70% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to 20% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt 5% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau 5% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, tr calcite



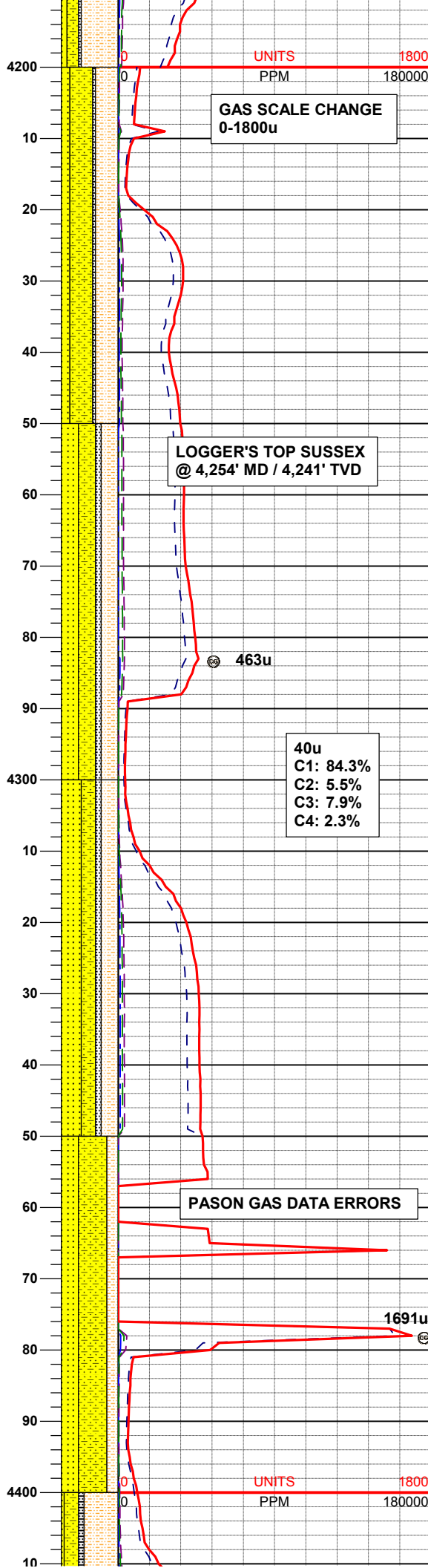
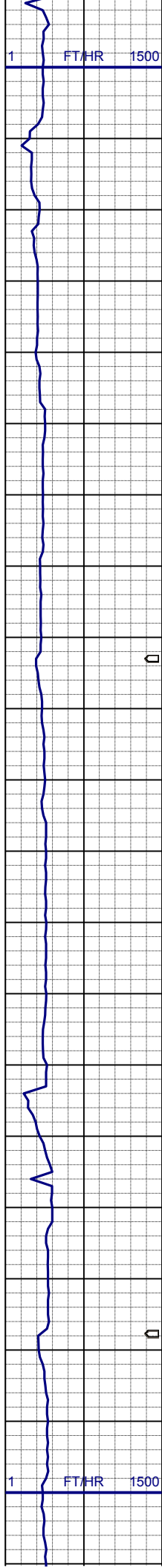
SURVEY
MD 4041'
INC 0.7°
AZI 39.7°
TVD 4028.08'

55% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt
20% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to
20% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau
5% SLTYSH: m- dkgy, stly, pty-sbply, sft-brit, sl calc, tr calcite

SURVEY
MD 4136'
INC 0.7°
AZI 5.4°
TVD 4123.07'

65% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt
20% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd, grd to
10% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau
5% SLTYSH: m- dkgy, stly, pty-sbply, sft-brit, sl calc

MUD WT: 8.4 VIS: 27 IN
MUD WT: 8.5 VIS: 27 OUT



SURVEY
MD 4230'
INC 0.9°
AZI 40.4°
TVD 4217.16'

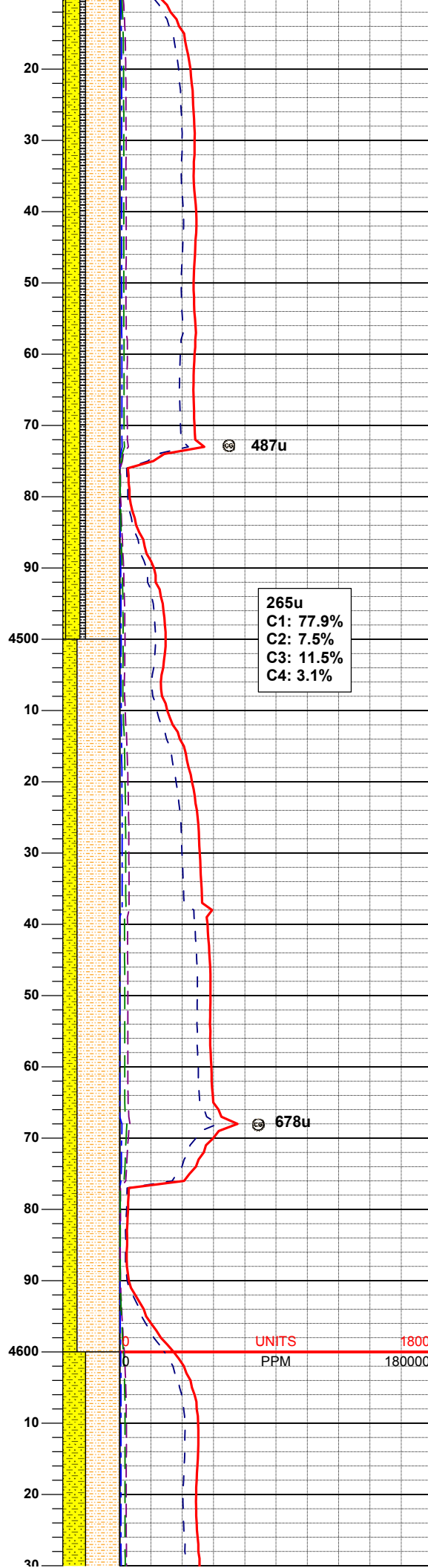
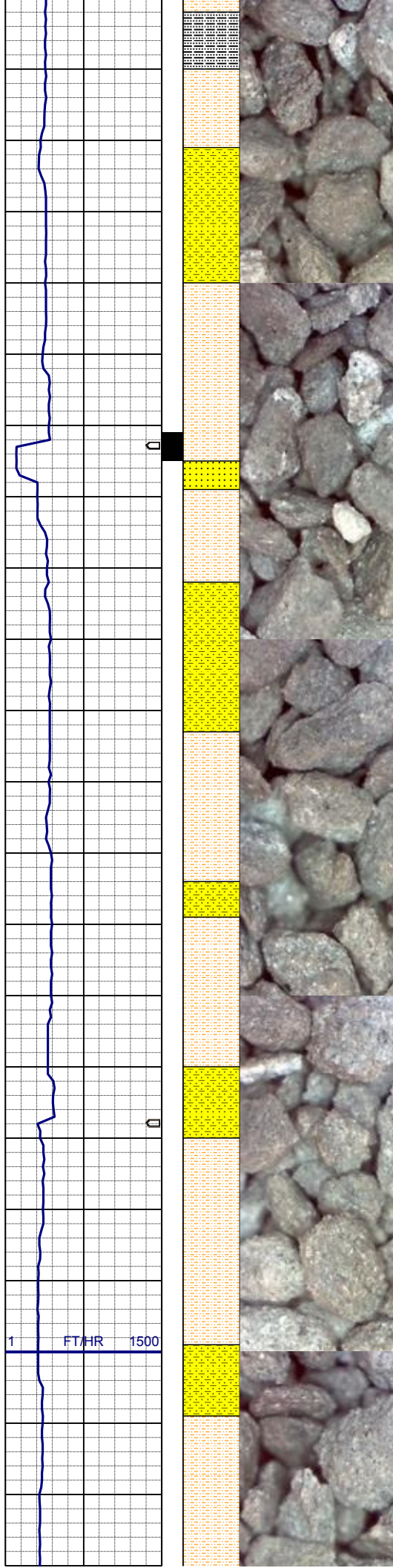
40% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt
40% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mt, occ phlog, sme pyr ctd, grd to
15% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau
5% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, tr calcite

30% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt
30% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mt, occ phlog, sme pyr ctd, grd to
30% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau
10% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, tr calcite

SURVEY
MD 4325'
INC 1.1°
AZI 25.3°
TVD 4312.05'

35% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau
25% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt
30% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mt, occ phlog, sme pyr ctd, grd to
10% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, tr calcite

50% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt
30% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau
20% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mt, occ phlog, sme pyr ctd



SURVEY
MD 4420'
INC 1.1°
AZI 26.2°
TVD 4407.03'

60% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd
25% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt
10% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, tr calcite
5% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau

487u

265u
C1: 77.9%
C2: 7.5%
C3: 11.5%
C4: 3.1%

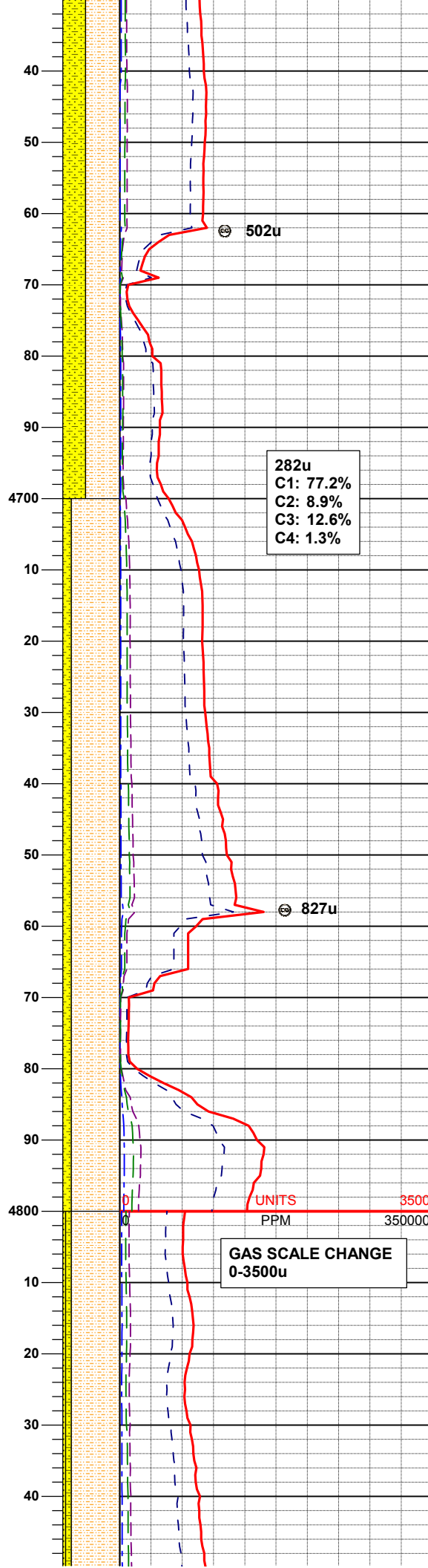
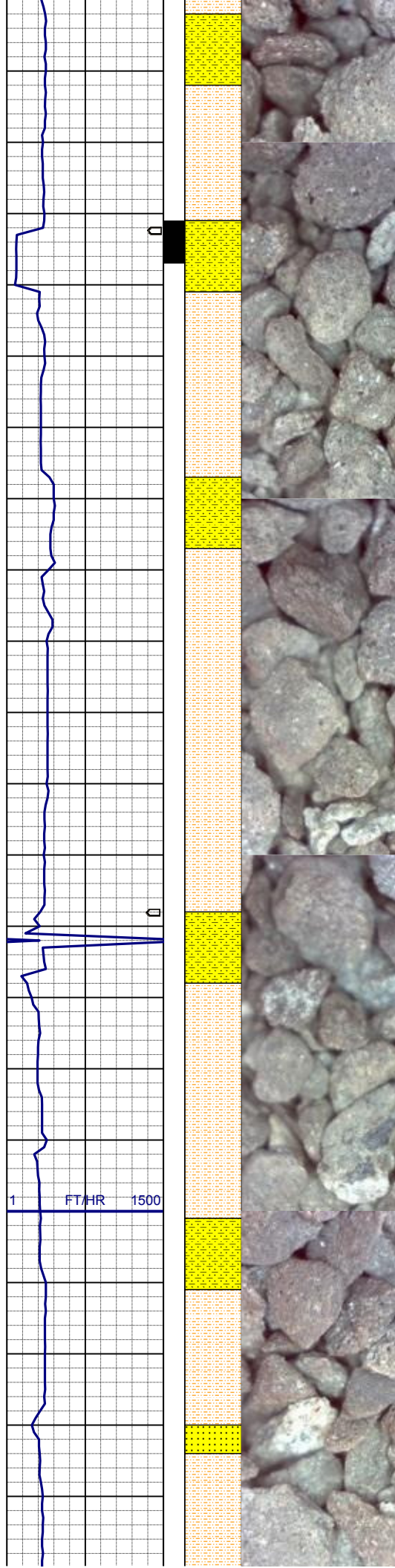
SURVEY
MD 4515'
INC 0.7°
AZI 59.1°
TVD 4502.02'

75% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd
25% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt

678u

UNITS
PPM

SURVEY
MD 4610'
INC 1.5°
AZI 72.1°
TVD 4597.00'



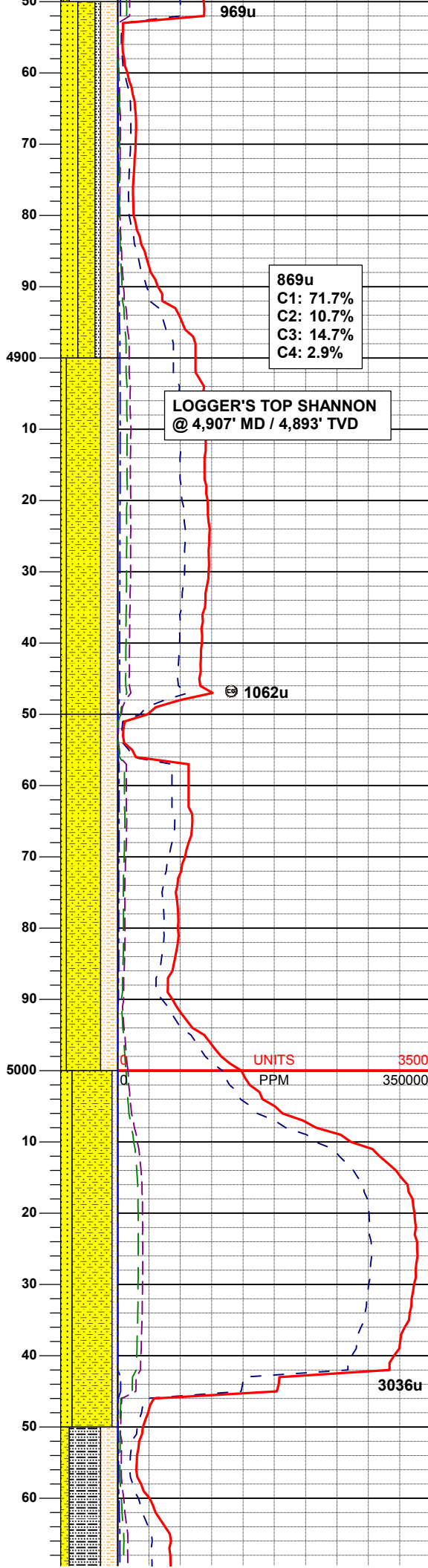
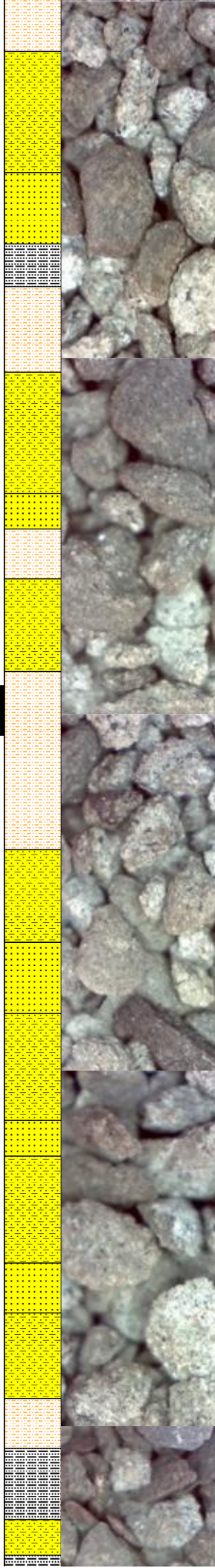
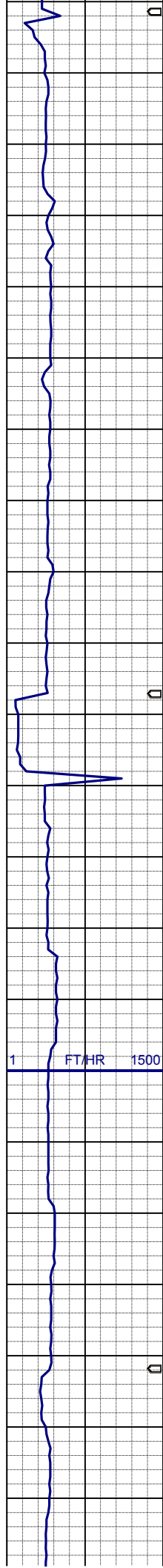
60% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd
40% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt

SURVEY
MD 4705'
INC 0.6°
AZI 53.3°
TVD 4691.99'

85% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd
15% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt

SURVEY
MD 4800'
INC 0.6°
AZI 43.8°
TVD 4786.98'

85% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd
10% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt
5% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau



30% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd
30% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt
30% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau
10% SLTYSH: m- dkgy, slty, plty-sbplty, sft-brit, sl calc, tr calcite

SURVEY
MD 4895'
INC 0.9°
AZI 43.9°
TVD 4881.97'

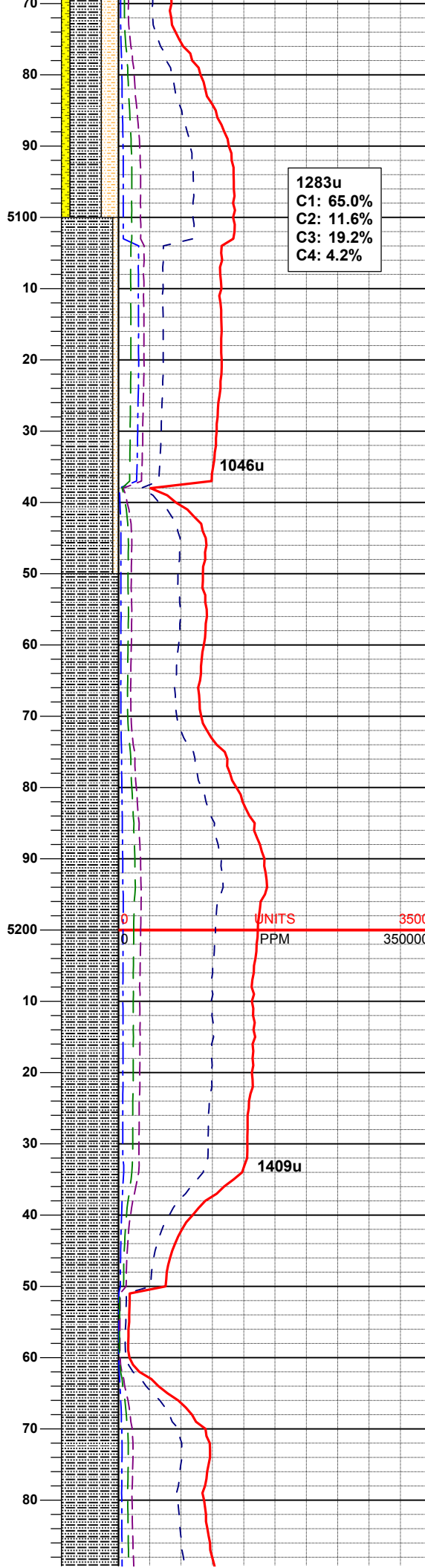
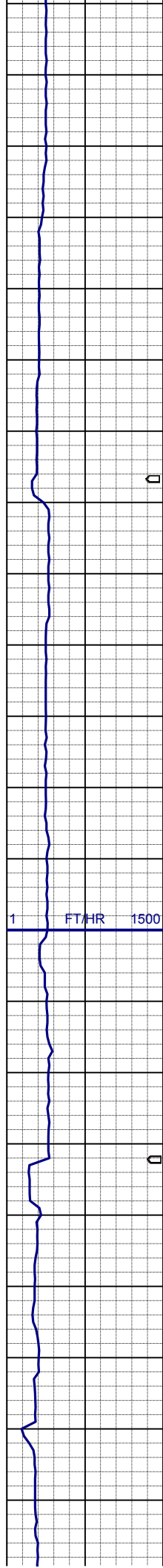
60% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt
30% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd
10% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau

60% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt
30% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd
10% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau

SURVEY
MD 4990'
INC 1.1°
AZI 253.5°
TVD 4976.97'

70% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt
20% SS: w-ltgy, s&p, mf-c gr, sbrd, mod-wsrt, ppor, argcmt, sl calc, tr glau
10% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd

55% SLTYSH: m- dkgy, slty, plty-shnlty, sft-brit, sl calc, tr calcite



sbply, sft-brit, sl calc, tr calcite
15% SHYSS: lt-mgy, f-mggr, sbrd-sbang, mod-psrt, ppor, argcmt

SURVEY
MD 5085'
INC 0.5°
AZI 248.4°
TVD 5071.96'

90% SLTYSH: m- dkgy, slty, plty-sbply, sft-brit, sl calc, tr calcite
10% SHYSLTST: lt-mgy, sme tan, f-vfgr, sbrd-sbang, mod-psrt, arg mtx, occ phlog, sme pyr ctd

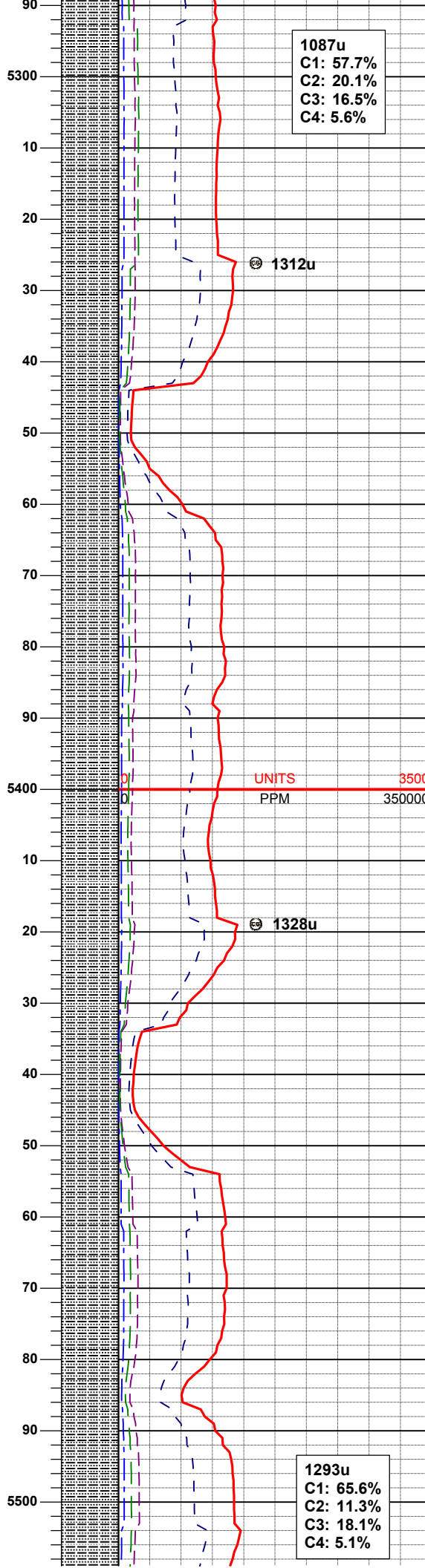
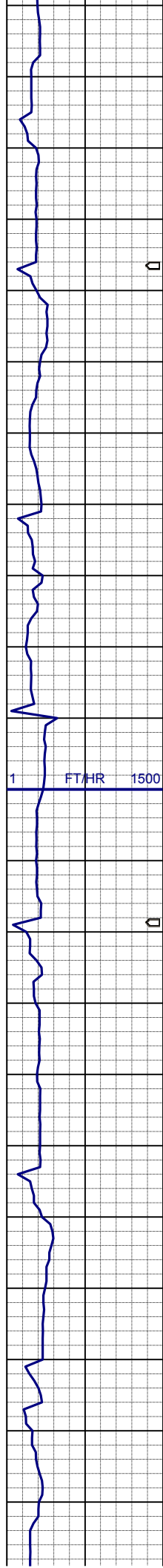
MUD WT: 8.7 VIS: 30 IN
MUD WT: 8.7 VIS: 30 OUT

100% SLTYSH: lt - mgy, sme tan, v f gr, fri-brit, sbply-sbblky, sl calc, sme pyr ctd

SURVEY
MD 5180'
INC 0.6°
AZI 234.1°
TVD 5166.95'

100% SLTYSH: lt - mgy, sme tan, v f gr, fri-brit, sbply-sbblky, sl calc, sme pyr ctd, sme shylistst

SURVEY
MD 5275'
INC 0.9°
AZI 354.5°
TVD 5261.95'



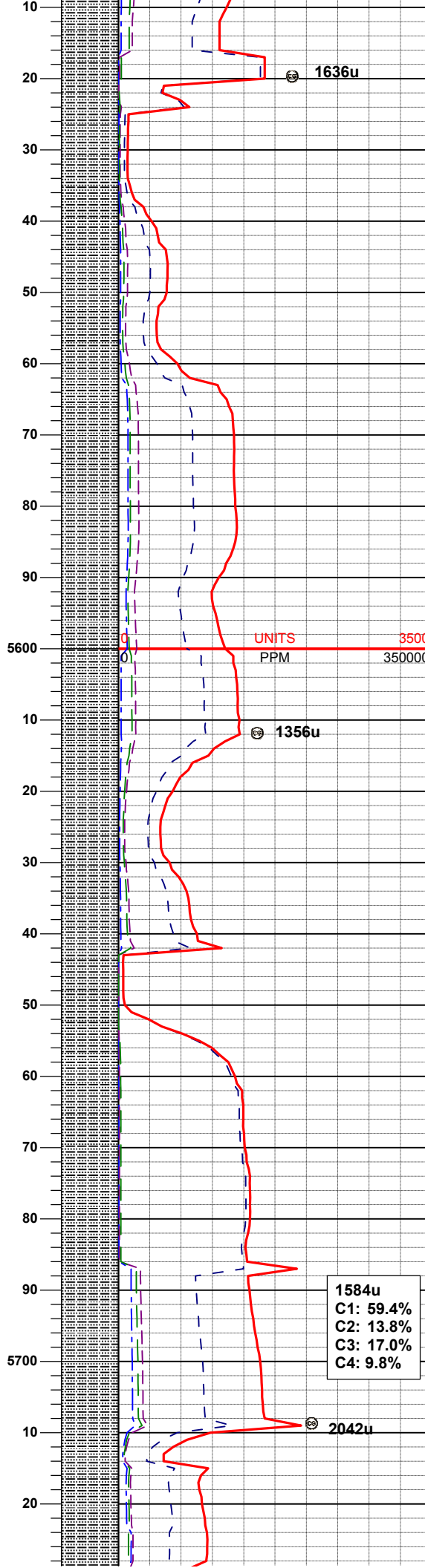
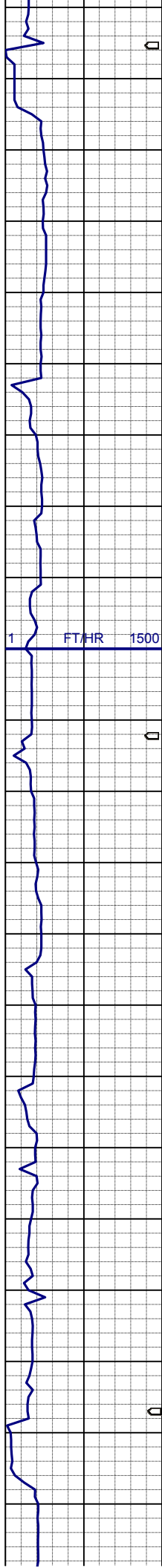
MUD WT: 9.1 VIS: 31 IN
MUD WT: 9.0 VIS: 30 OUT

100% SLTYSH: lt - mgy, sme tan, v f
gr, fri-brit, sbply-sbblky, sl calc, sme
pyr ctd, sme shysltst

SURVEY
MD 5370'
INC 0.9°
AZI 7.2°
TVD 5356.94'

100% SLTYSH: lt - mgy, sme tan, v f
gr, fri-brit, sbply-sbblky, sl calc, sme
pyr ctd

SURVEY
MD 5465'
INC 1.1°
AZI 15.6°
TVD 5451.92'



MUD WT: 9.3 VIS: 33 IN
MUD WT: 9.4 VIS: 33 OUT

100% SLTYSH: lt - mgy, sme tan, v f
gr, fri-brit, sbply-sbbiky, sl calc, sme
pyr ctd

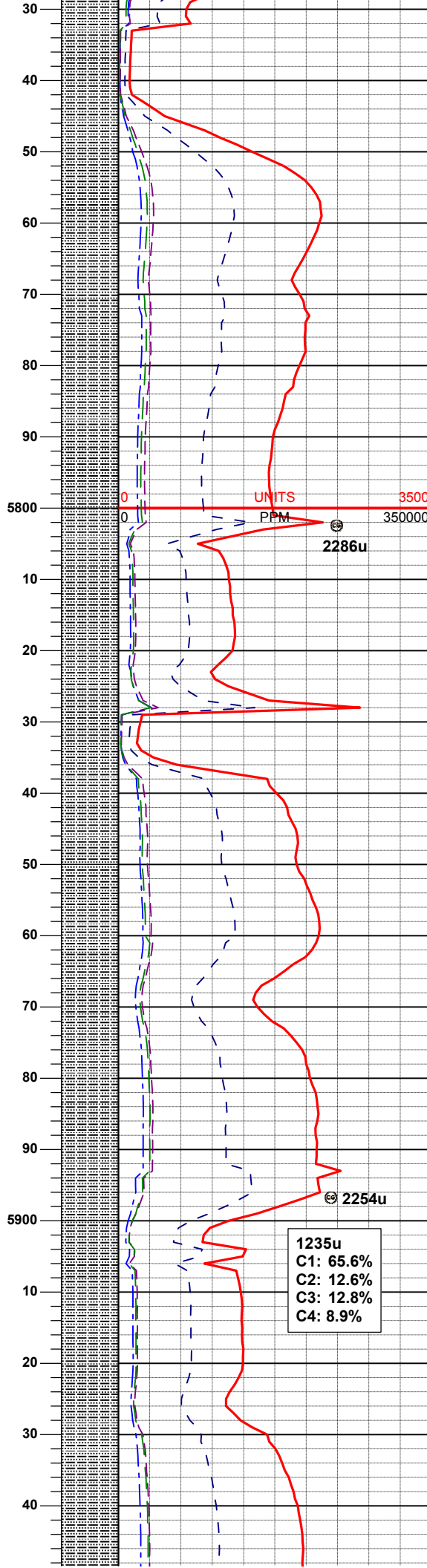
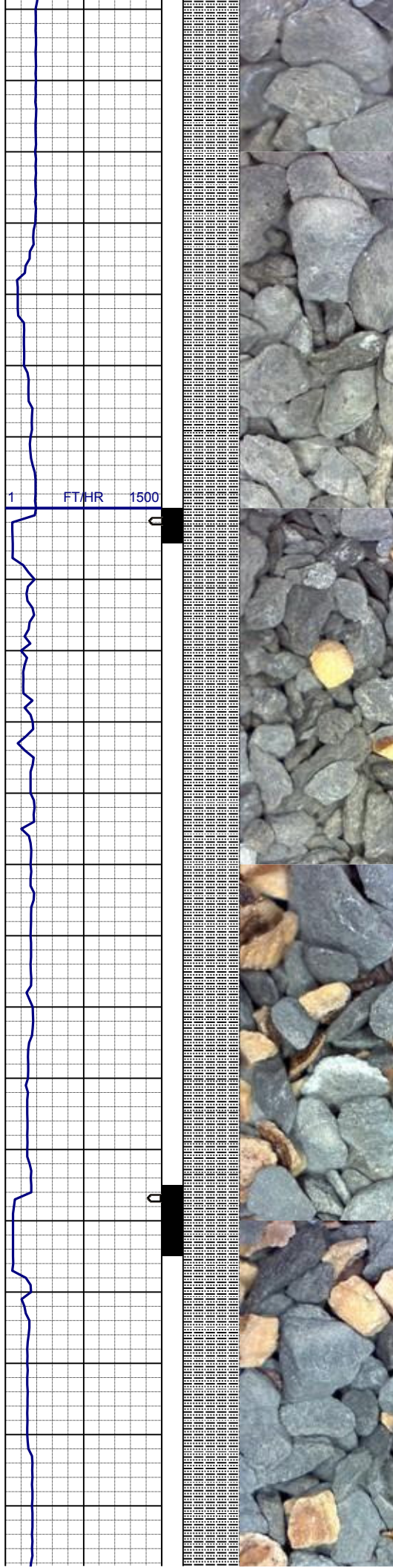
SURVEY
MD 5560'
INC 0.4°
AZI 34.1°
TVD 5546.91'

UNITS 3500
PPM 350000

100% SLTYSH: lt - mgy, sme tan, v f
gr, fri-brit, sbply-sbbiky, sl calc, sme
pyr ctd

SURVEY
MD 5655'
INC 1.1°
AZI 25.1°
TVD 5641.90'

1584u
C1: 59.4%
C2: 13.8%
C3: 17.0%
C4: 9.8%



SURVEY
MD 5749'
INC 0.9°
AZI 351.6°
TVD 5735.89'

100% SLTYSH: lt - mgy, sme dkgy, v f gr, fri-brit, sbply-sbblky, sl calc, sme pyr ctd, tr shysltst

MUD WT: 9.4 VIS: 34 IN
MUD WT: 9.5 VIS: 34 OUT

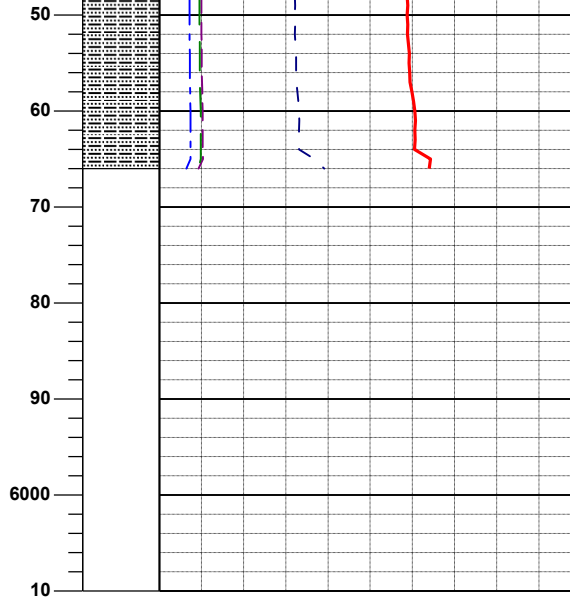
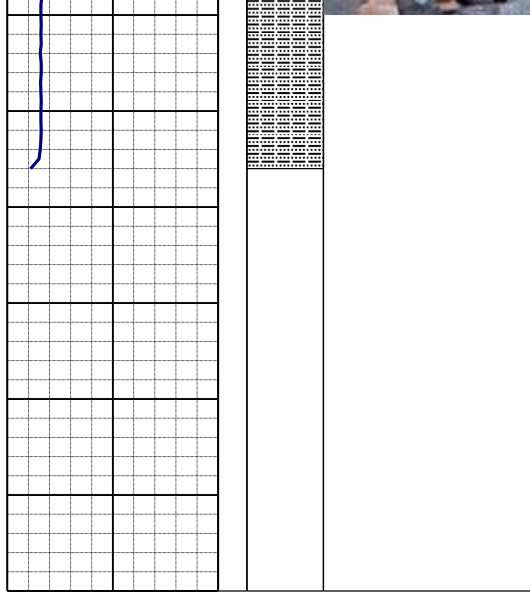
100% SLTYSH: lt - mgy, sme dkgy, v f gr, fri-brit, sbply-sbblky, sl calc, sme pyr ctd, tr shysltst, tr ss

SURVEY
MD 5844'
INC 1.5°
AZI 5.6°
TVD 5830.87'

100% SLTYSH: lt - mgy, sme dkgy, v f gr, fri-brit, sbply-sbblky, sl calc, sme pyr ctd, tr shysltst

MUD WT: 9.5+ VIS: 35 IN
MUD WT: 9.6+ VIS: 36 OUT

SURVEY
MD 5934'
INC 0.2°
AZI 81.4°
TVD 5925.86'



TD VERTICAL @ 5,966' MD
7/25/2012 16:38 MST

LOG CONTINUES ON
LPLOT BOOTH STATE
C36-69HN HORIZONTAL

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