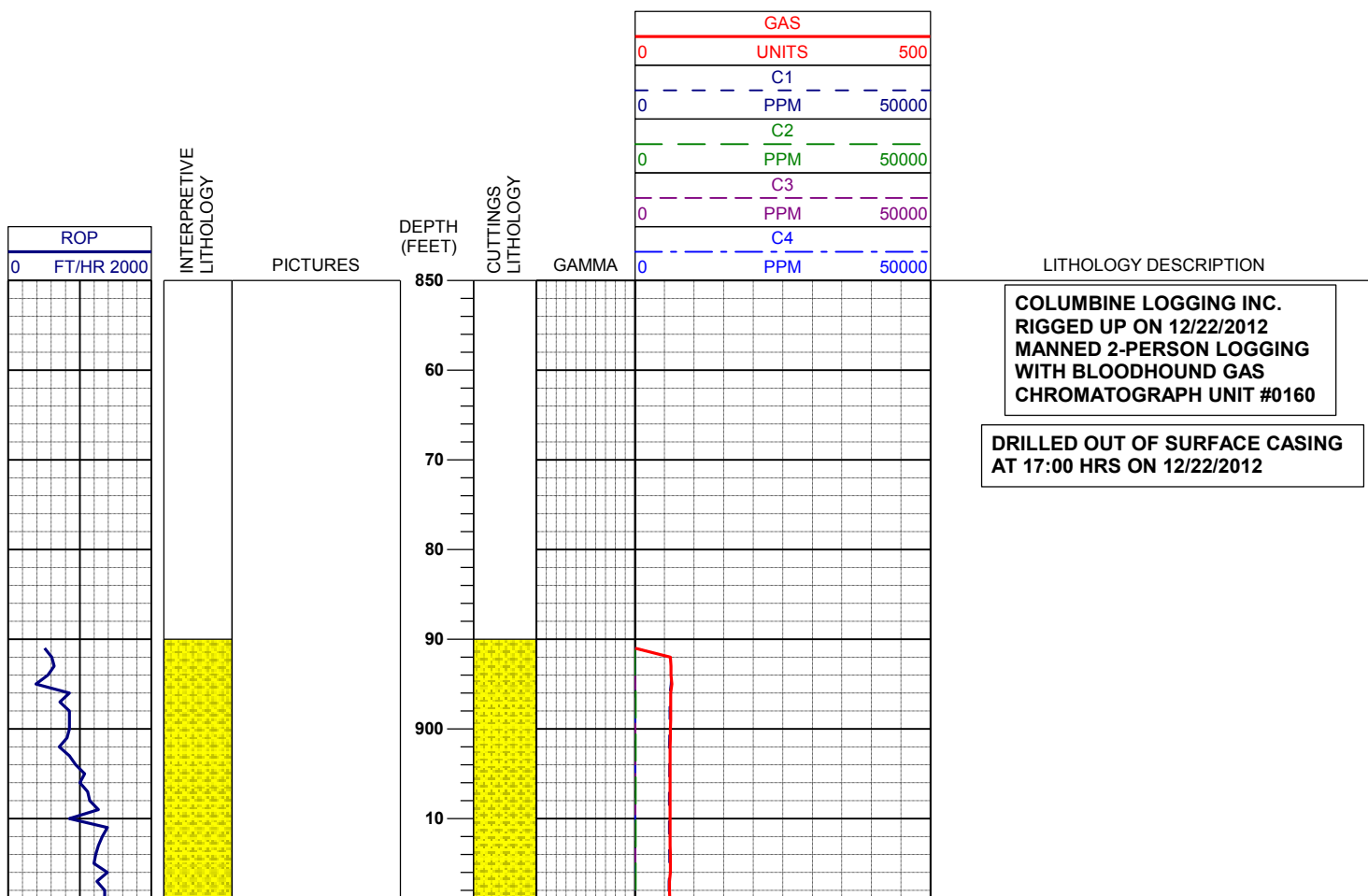
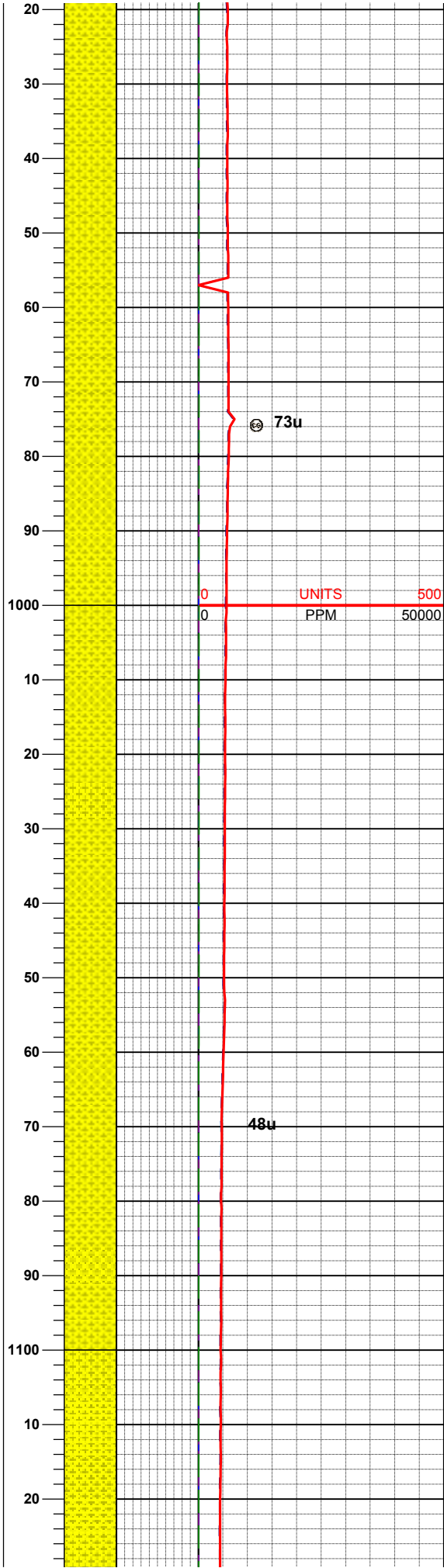
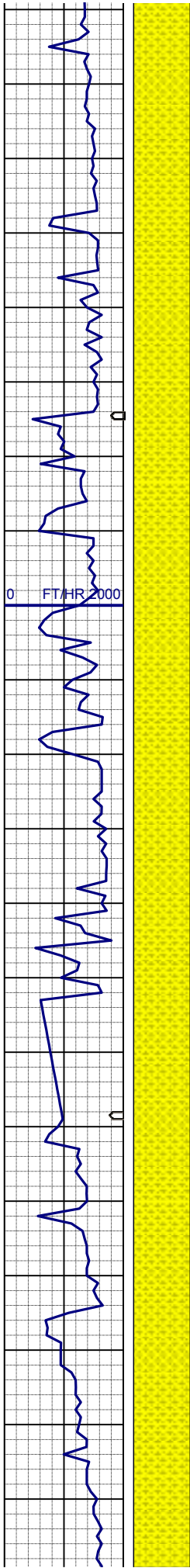


LOG created using L PLOT VH Version 3.0, December 23, 2012, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: NOBLE ENERGY INC
WELL: CASTOR FEDERAL LG17-62HN
LOCATION: SWSW SEC 17, T8N, R59W
COUNTY: WELD
STATE: COLORADO
SPOT: 660' FSL, 250' FWL
ELEVATION: GE 4845', KB 4869'
FIELD: WATTENBERG
SPUD DATE: 12/21/12
TD DATE:
DATES LOGGED: 12/22/12 -
DEPTHS LOGGED: 890' -
LOGGERS: PASQUALE DEL VECCHIO; ELIZABETH STOREY
DRILLING FLUID: WATER, MUD, POLY
DRILLING RIG: H&P 322
API: 05-123-34418
LOG TYPE: VERTICAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: WELLSITE GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING INC.

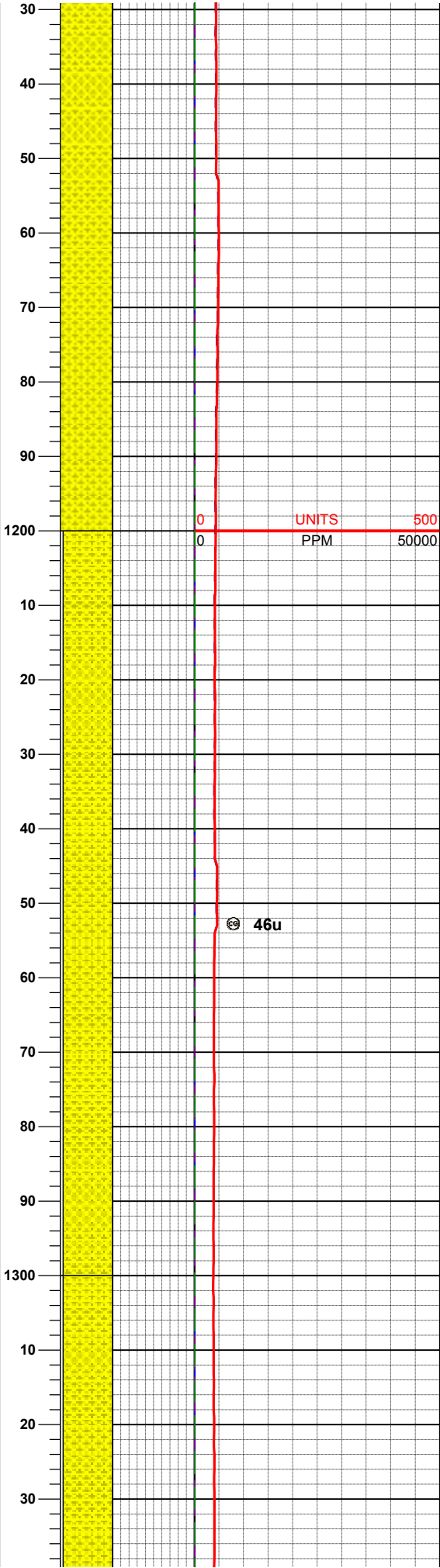
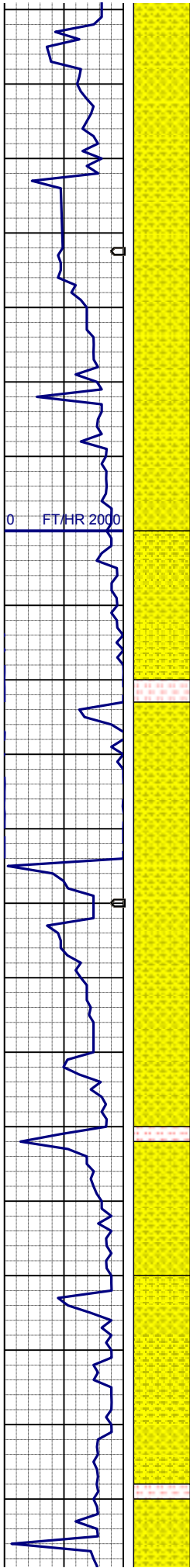




100% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod
srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy
cly

MD 1011'
INC 0.40
AZM 214.04

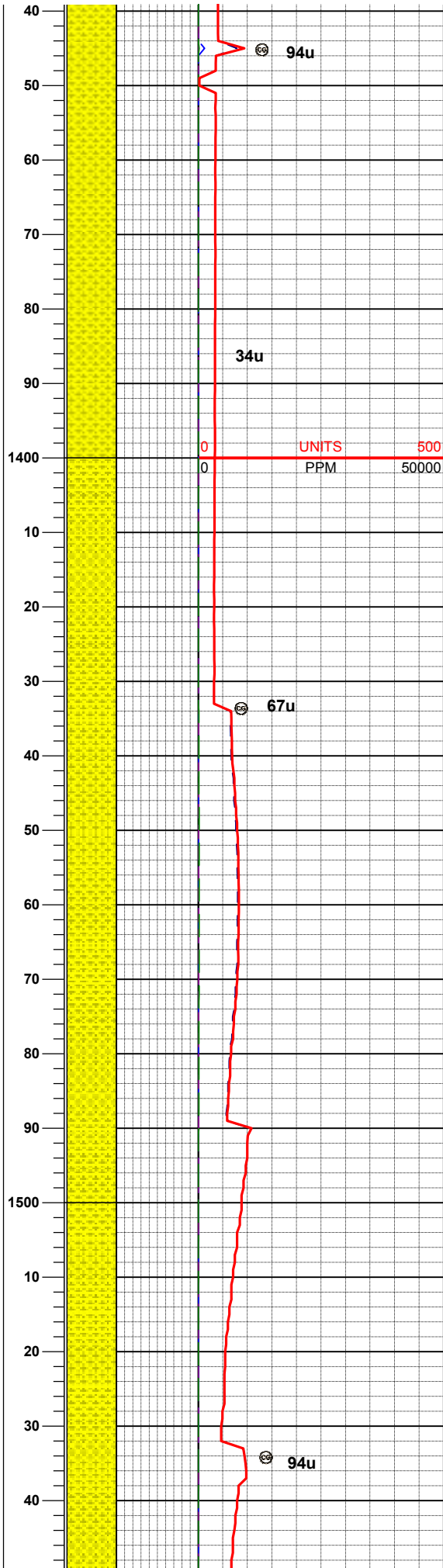
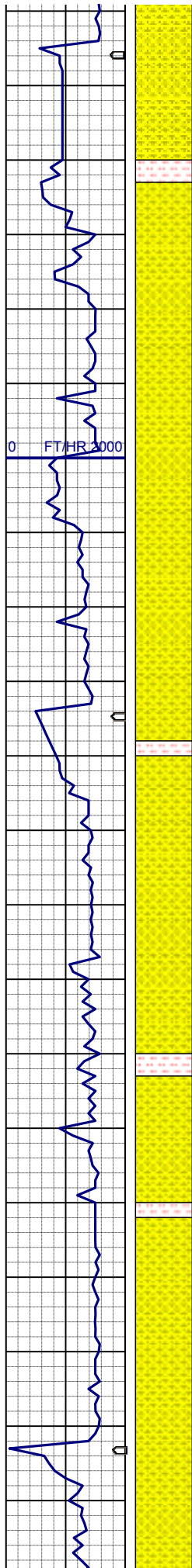
100% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod
srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy
cly



100% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod
srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy
cly

95% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt,
firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly;
5% SLTST: ltgy, sft-fri, sbbkly, aren-sltly tex,
occ biot incl, v sl calc

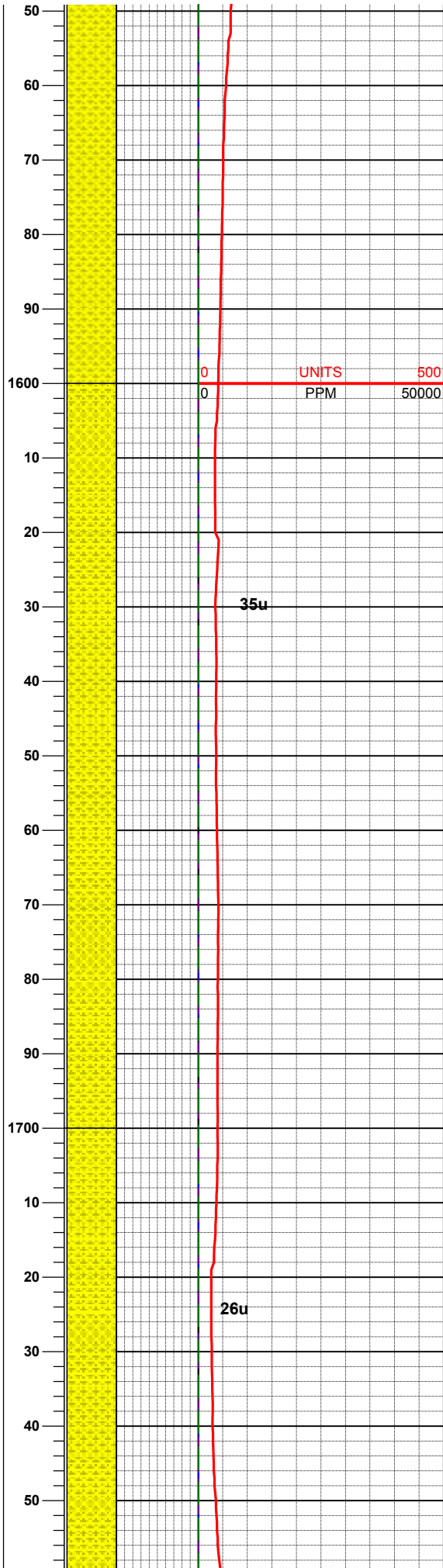
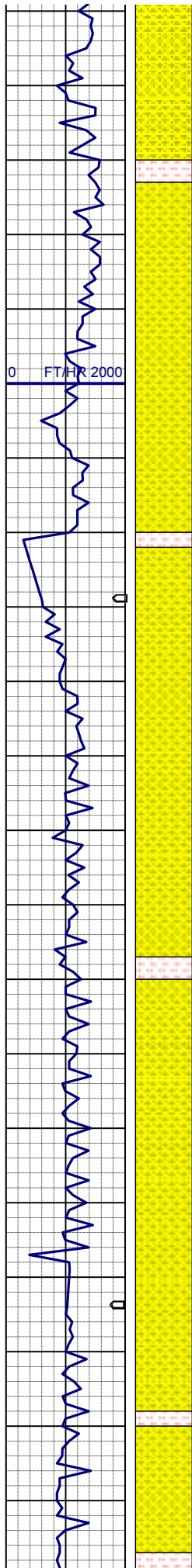
MD 1290'
INC 0.44
AZM 153.96



95% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly;
5% SLTST: ltgy, sft- fri, sbblky, aren-slty tex, occ biot incl, v sl calc

95% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly;
5% SLTST: ltgy, sft- fri, sbblky, aren-slty tex, occ biot incl, v sl calc

95% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly;



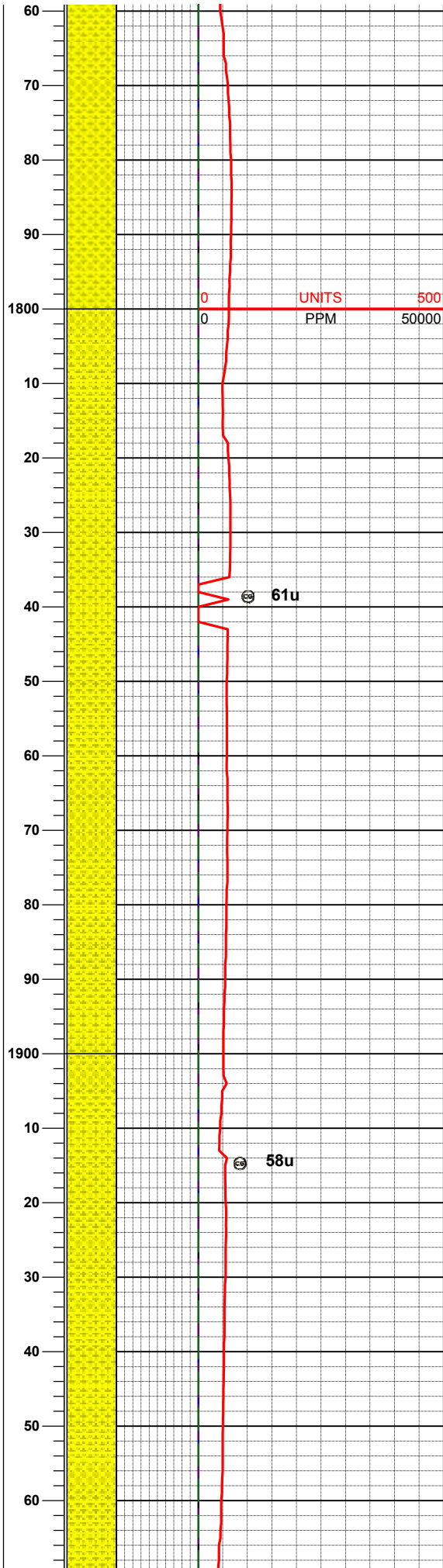
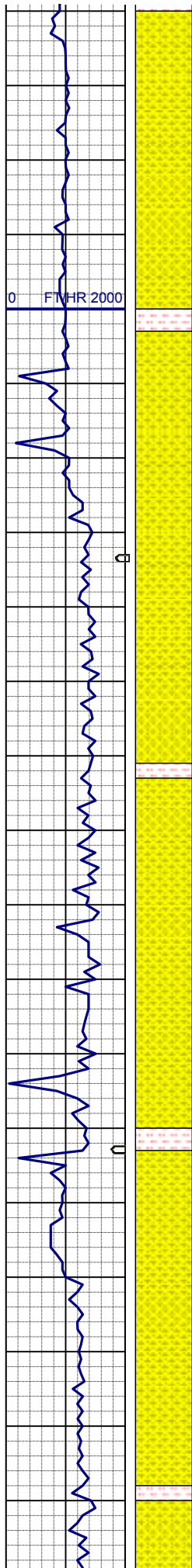
100% SLTST: ltgy, sft- fri, sbbly, aren-sltly tex, occ biot incl, v sl calc

MD 1573'
INC 0.53
AZM 149.27

MUD WT 8.40 VIS 28

95% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly;
5% SLTST: ltgy, sft- fri, sbbly, aren-sltly tex, occ biot incl, v sl calc

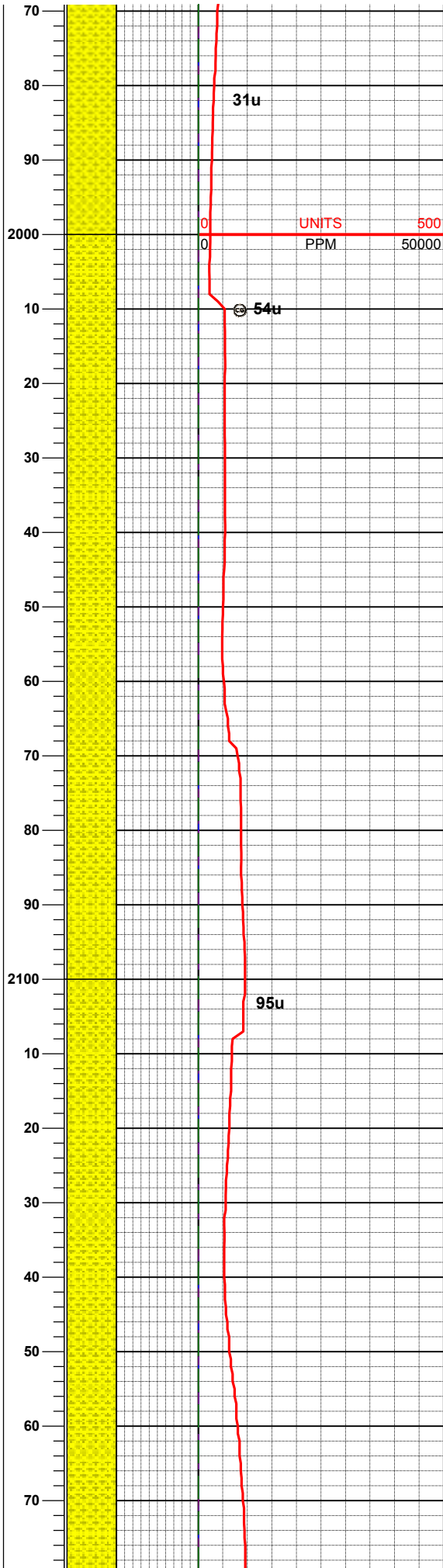
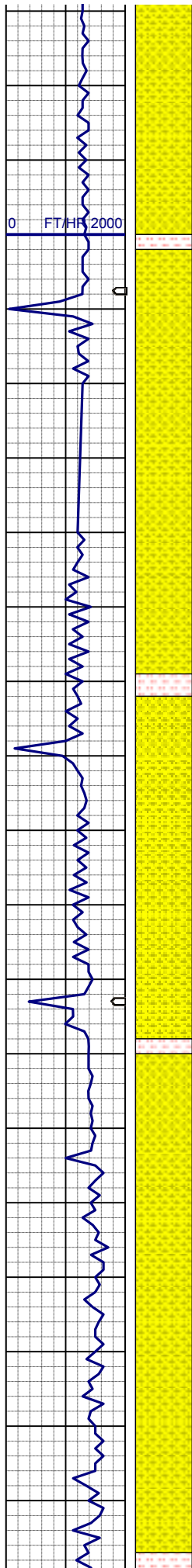
95% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly;
5% SLTST: ltgy, sft- fri, sbbly, aren-sltly tex, occ biot incl, v sl calc



MD 1855'
INC 0.35
AZM 158.80

95% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly;
5% SLTST: ltgy, sft- fri, sbbkly, aren-slty tex, occ biot incl, v sl calc

95% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly;
5% SLTST: ltgy, sft- fri, sbbkly, aren-slty tex, occ biot incl, v sl calc

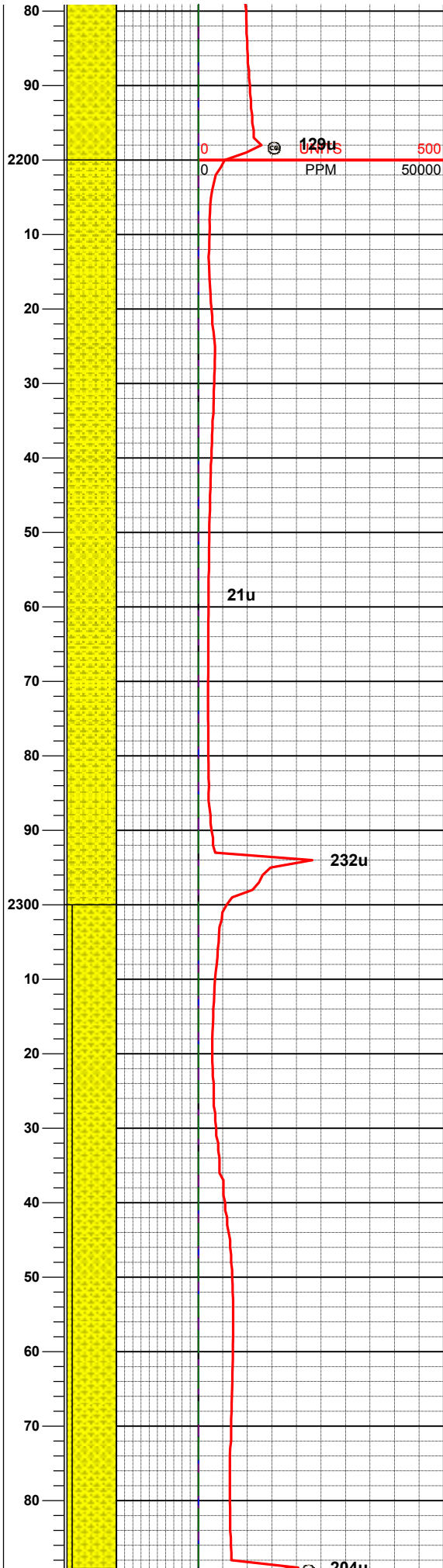
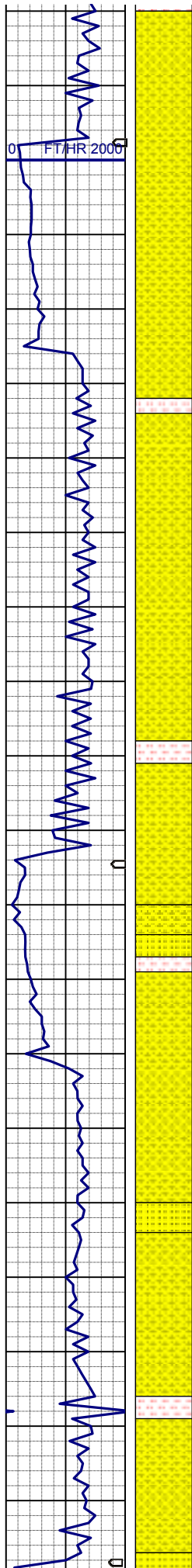


95% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly;
5% SLTST: ltgy, sft- fri, sbblky, aren-sltly tex, occ biot incl, v sl calc

MD 2140'
INC 0.43
AZM 347.88

95% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly;
5% SLTST: ltgy, sft- fri, sbblky, aren-sltly tex, occ biot incl, v sl calc

MUD WT 8.40 VIS 28

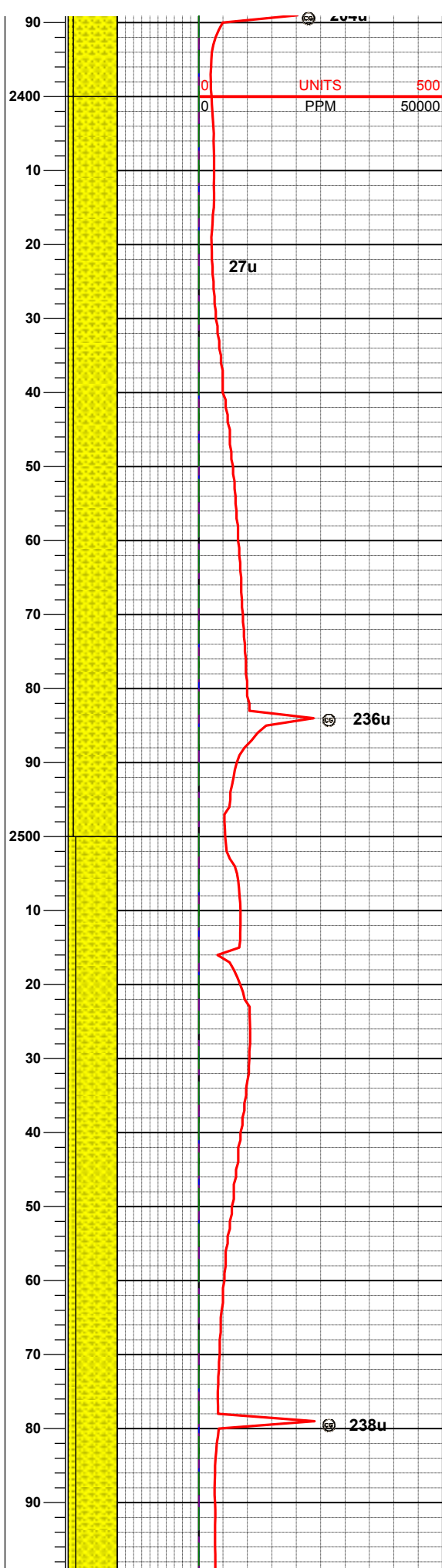
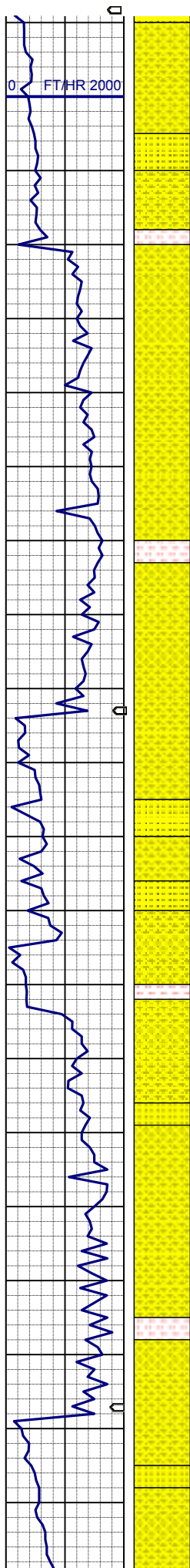


MD 2235'
INC 2.10
AZM 267.08

95% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt,
firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly;
5% SLTST: ltgy, sft-fri, sbbkly, aren-slty tex,
occ biot incl, v sl calc

MD 2330'
INC 4.22
AZM 268.26

85% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt,
firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly;
10% SS: wh - off wh, s&p, fgr, sbrd mod w srt,
firm, brit; 5% SLTST: ltgy, sft-fri, sbbkly, aren-
slty tex, occ biot incl, v sl calc



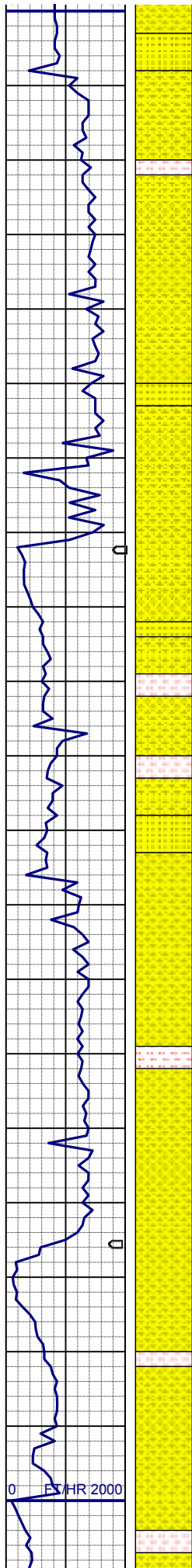
MD 2425'
INC 6.01
AZM 277.61

85% SHYSS: ltgy-wh, s&p, vf-fgr, sbrd, mod srt, firm-sft, p por, arg cmt, rr biot; abnt m-dkgy cly; 10% SS: wh - off wh, s&p, fgr, sbrd mod w srt, firm, brit; 5% SLTST: ltgy, sft- fri, sbblky, aren-sly tex, occ biot incl, v sl calc

MD 2520'
INC 7.48
AZM 269.55

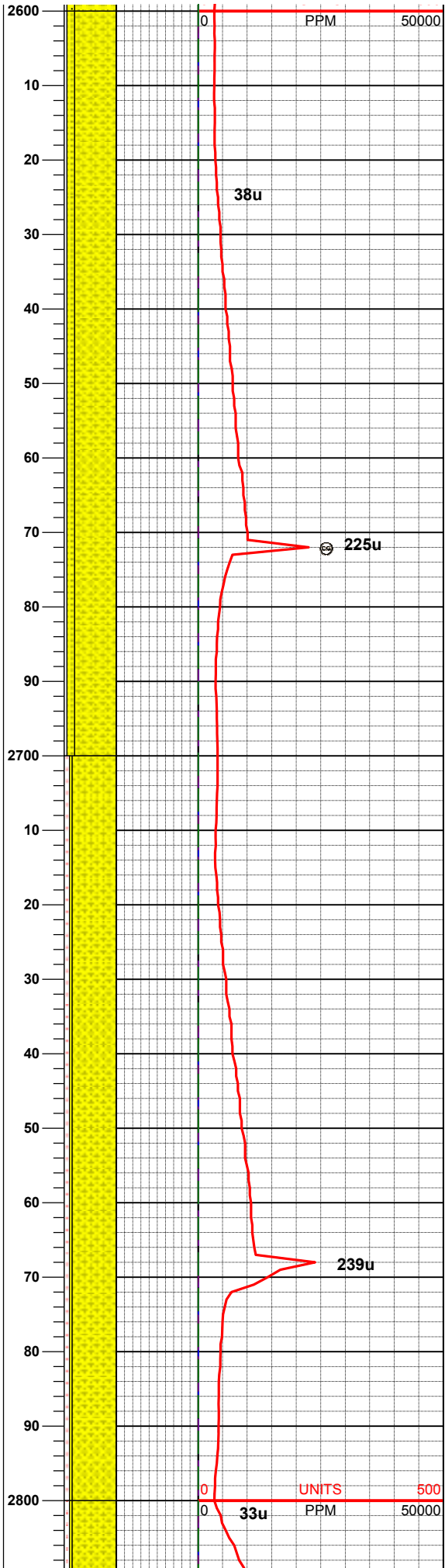
80% SHYSS: lt gy - m gy, lt brn, sl s&p, vf-fgr, sbrd, mod - w srt, firm-sft, arg cmt; 15% SS: wh - off wh, s&p, fgr, sbrd, mod w srt, firm, brit; 5% SLTST: ltgy, sft- fri, sbblky, sly tex, occ biot incl, v sl calc

MUD WT 8.45 VIS 29



MD 2615'
INC 8.89
AZM 269.68

80% SHYSS: lt gy - m gy, lt brn, sl s&p, vf-fgr, sbrd, mod - w srt, firm-sft, arg cmt; 15% SS: wh - off wh, s&p, fgr, sbrd, mod w srt, firm, brit; 5% SLTST: ltgy, sft- fri, sbbiky, slty tex, occ biot incl, v sl calc



MD 2710'
INC 10.72
AZM 271.75

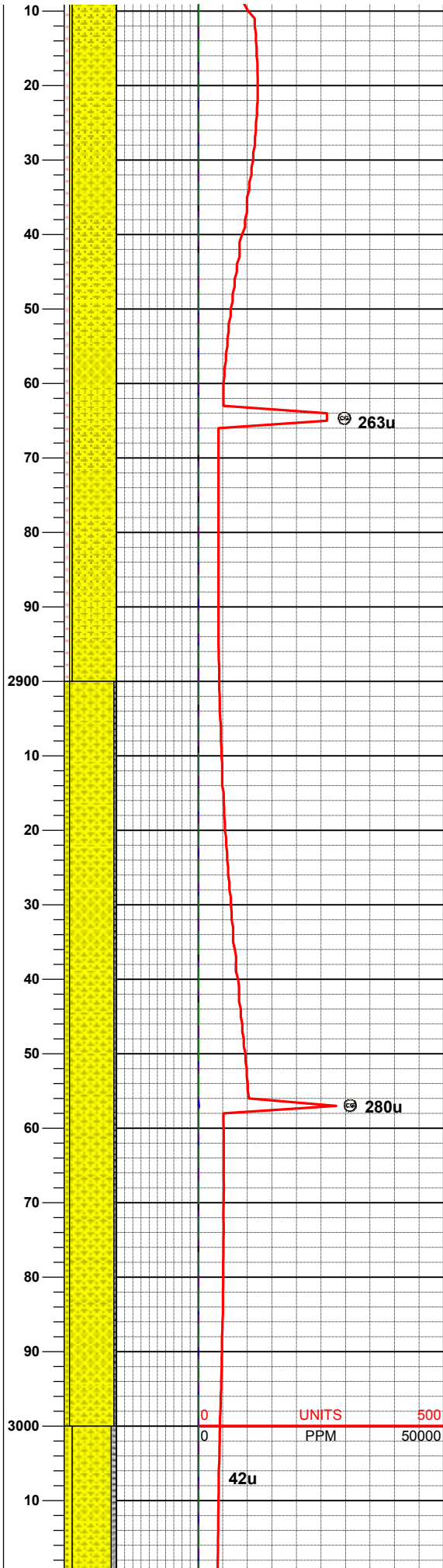
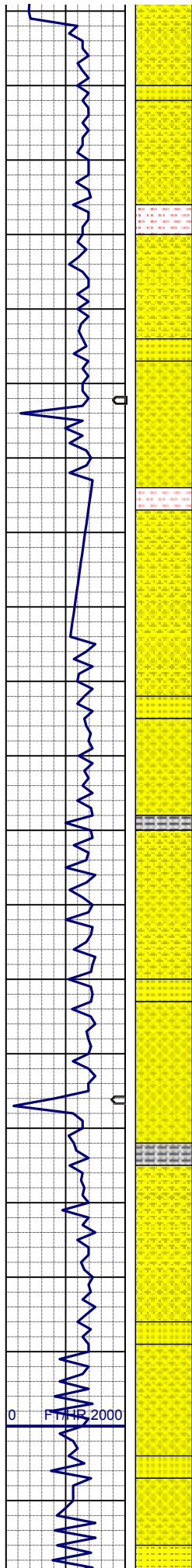
85% SHYSS: lt gy - m gy, lt brn, sl s&p, vf-fgr, sbrd, mod - w srt, firm-sft, arg cmt; 10% SLTST: ltgy, sft- fri, sbbiky, slty tex, occ biot incl, v sl calc; 5% SS: wh - off wh, s&p, fgr, sbrd, mod w srt, firm, brit

0 EX HR 2000

MD 2804'
INC 12.30
AZM 270.55

0 EX HR 2000

0 EX HR 2000



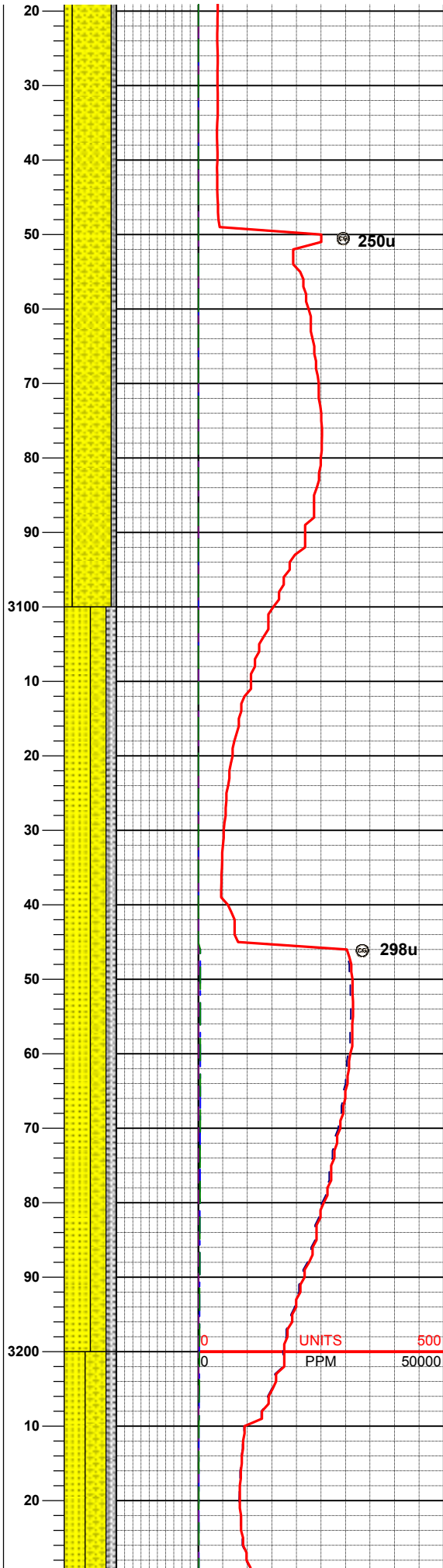
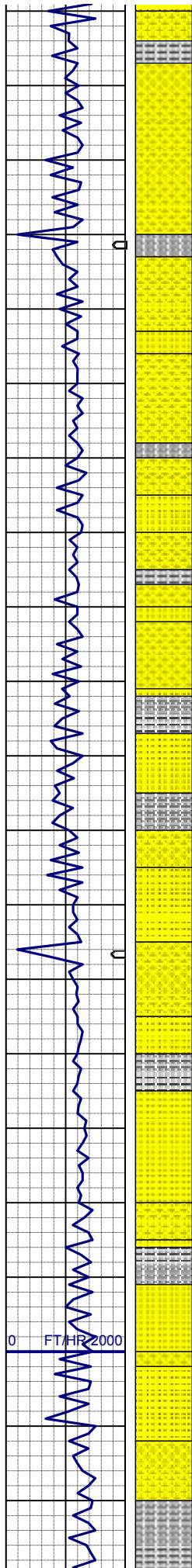
85% SHYSS: lt gy - m gy, lt brn, sl s&p, vf-fgr, sbrd, mod - w srt, firm-sft, arg cmt; 10% SLTST: ltgy, sft- fri, sbbiky, slty tex, occ biot incl, v sl calc; 5% SS: wh - off wh, s&p, fgr, sbrd, mod w srt, firm, brit

MD 2899'
INC 13.64
AZM 271.91

MUD WT 8.55 VIS 29

85% SHYSS: lt gy - m gy, lt brn, sl s&p, vf-fgr, sbrd, mod - w srt, firm-sft, arg cmt; 10% SS: wh - off wh, s&p, fgr, sbrd, mod w srt, firm, brit; 5% SLTYSH: mgy - lt gy, sblky-sbbply, firm-m hd, rthy - sl slty tex, arg mtx

MD 2994'
INC 12.51
AZM 270.15

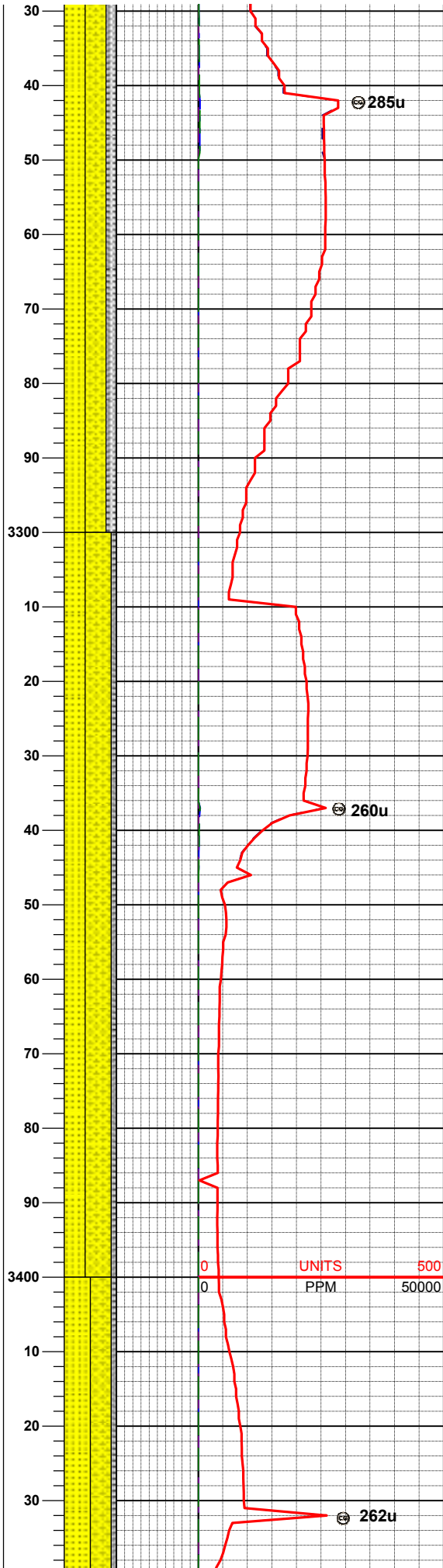
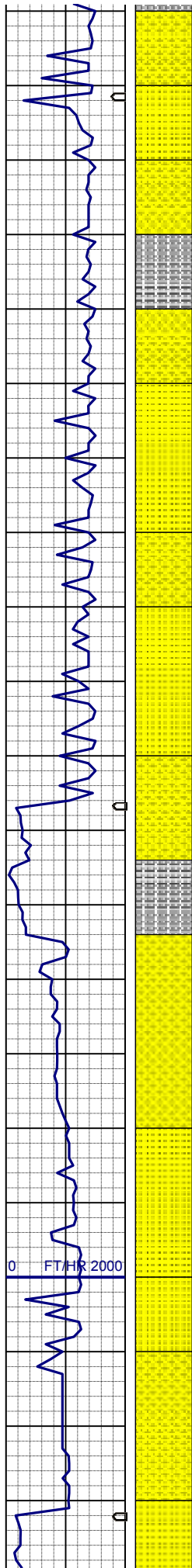


75% SHYSS: lt gy - m gy, lt brn, sl s&p, vf-fgr, sbrd, mod - w srt, firm-sft, arg cmt; 15% SS: wh - off wh, s&p, fgr, sbrd, mod w srt, firm, brit; 10% SLTYSH: mgy - lt gy, sblky-sbbppty, firm-m hd, rthy - sl slty tex, arg mtx

MD 3089'
INC 10.06
AZM 270.00

50% SS: wh - off wh, s&p, fgr, sbrd - sbang, mod w srt, firm, brit, biot, sme glau; 30% SHYSS: lt gy - m gy, lt brn, sl s&p, vf-fgr, sbrd, mod - w srt, firm-sft, arg cmt; 20% SLTYSH: mgy - lt gy, sblky-sbbppty, firm-m hd, rthy - sl slty tex, arg mtx

MD 3184'
INC 7.86
AZM 267.61

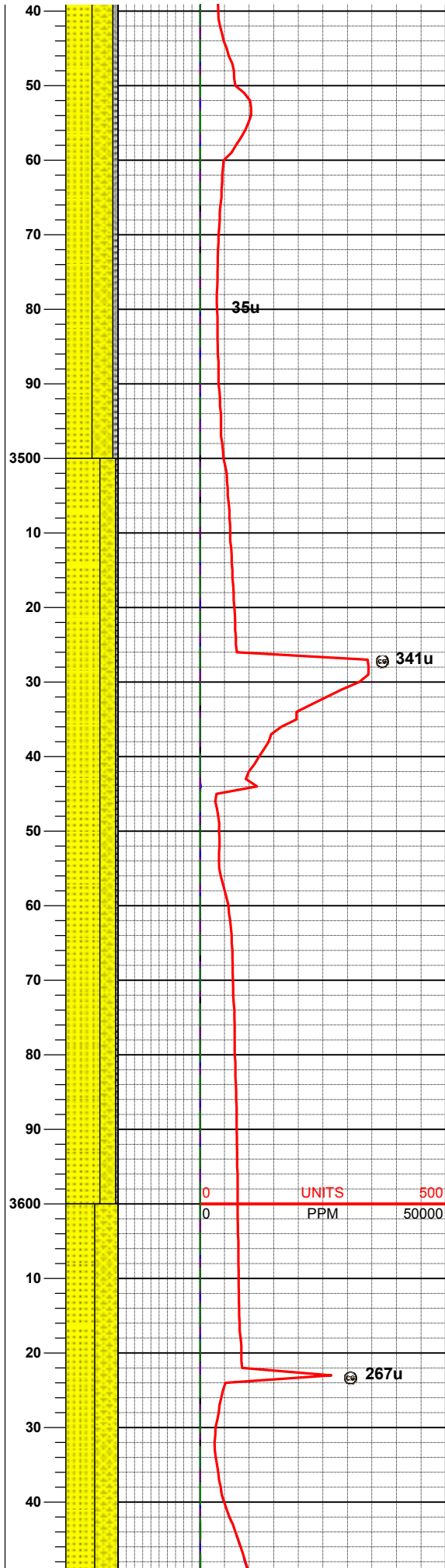
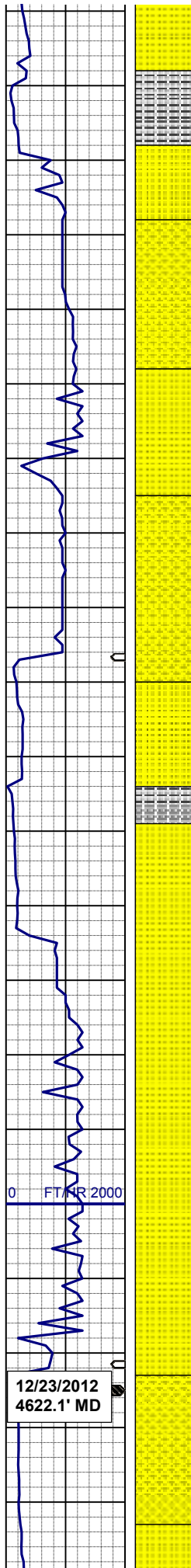


40% SS: wh - off wh, s&p, fgr, sbrd - sbang,
mod w srt, firm, brit, biot, sme glau; 40%
SHYSS: lt gy - m gy, lt brn, sl s&p, vf-fgr, sbrd,
mod - w srt, firm-sft, arg cmt; 20% SLTYSH:
mgy - lt gy, sblky-sbbply, firm-m hd, rthy - sl
sly tex, arg mtx

MD 3279'
INC 7.66
AZM 269.44

50% SHYSS: m gy, lt brn, sl s&p, vf-fgr, sbrd,
mod - w srt, firm-sft, arg cmt; 40% SS: wh - off
wh, s&p, fgr, sbrd - sbang, mod w srt, firm, brit,
biot; 10% SLTYSH: mgy - dk gy, sblky-sbbply,
firm-m hd, sl sly tex, arg mtx

MD 3374'
INC 6.79
AZM 268.23



50% SS: wh - off wh, sl trns, s&p, fgr, sbrd - sbang, mod w srt, firm, brit, biot; 40% SHYSS: m gy, lt brn, sl s&p, vf-fgr, sbrd, mod - w srt, firm -sft, arg cmt, 10% SLTYSH: mgy - dk gy, sblky-sbbply, firm-m hd, sl slty tex, arg mtx

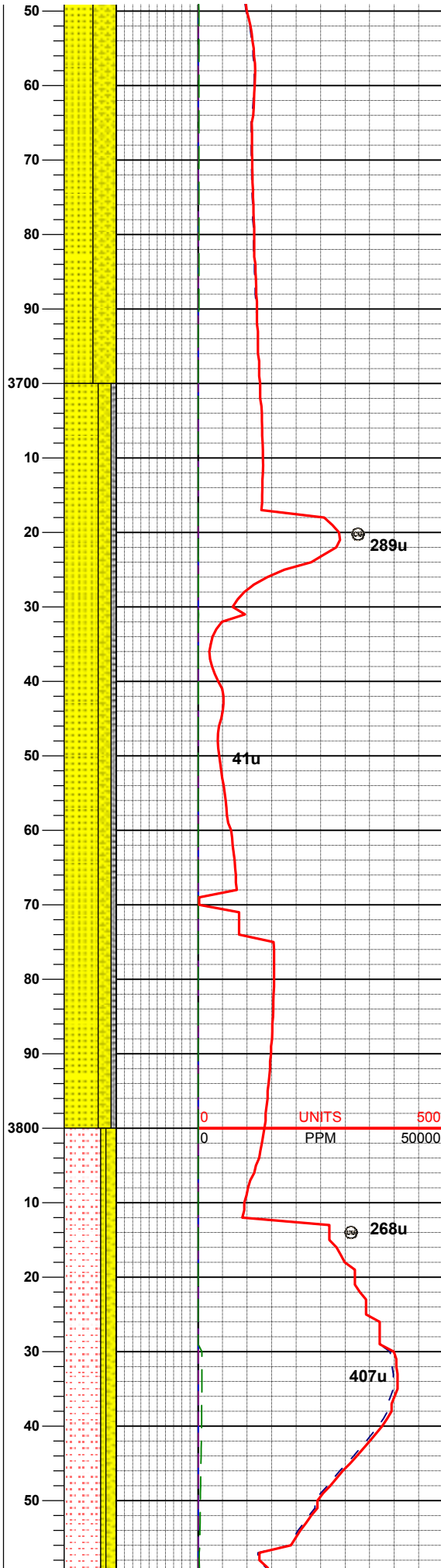
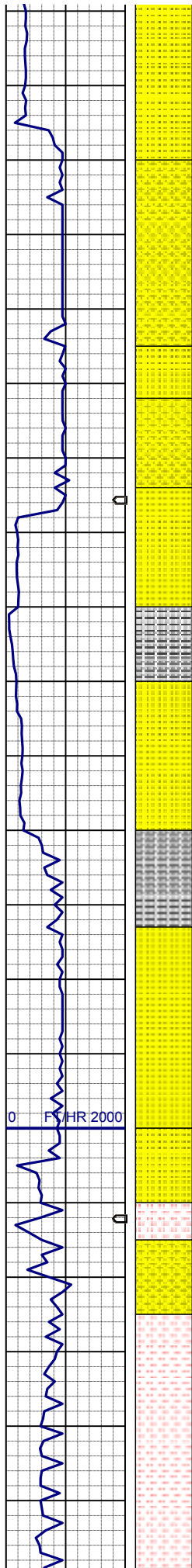
MD 3469'
INC 5.16
AZM 277.40

65% SS: wh - off wh, sl trns, s&p, fgr, sbrd - sbang, mod w srt, firm, brit, biot, tr glau ; 30% SHYSS: m gy, lt brn, sl s&p, vf-fgr, sbrd, mod - w srt, firm-sft, arg cmt; 5% SLTYSH: mgy - dk gy, sblky-sbbply, firm-m hd, sl slty tex, arg mtx

MD 3564'
INC 4.23
AZM 271.11

MUD WT 8.65 VIS 28

55% SS: wh - off wh, sl trns, s&p, fgr, sbrd - sbang, mod w srt, firm, brit, biot, tr glau ; 45%



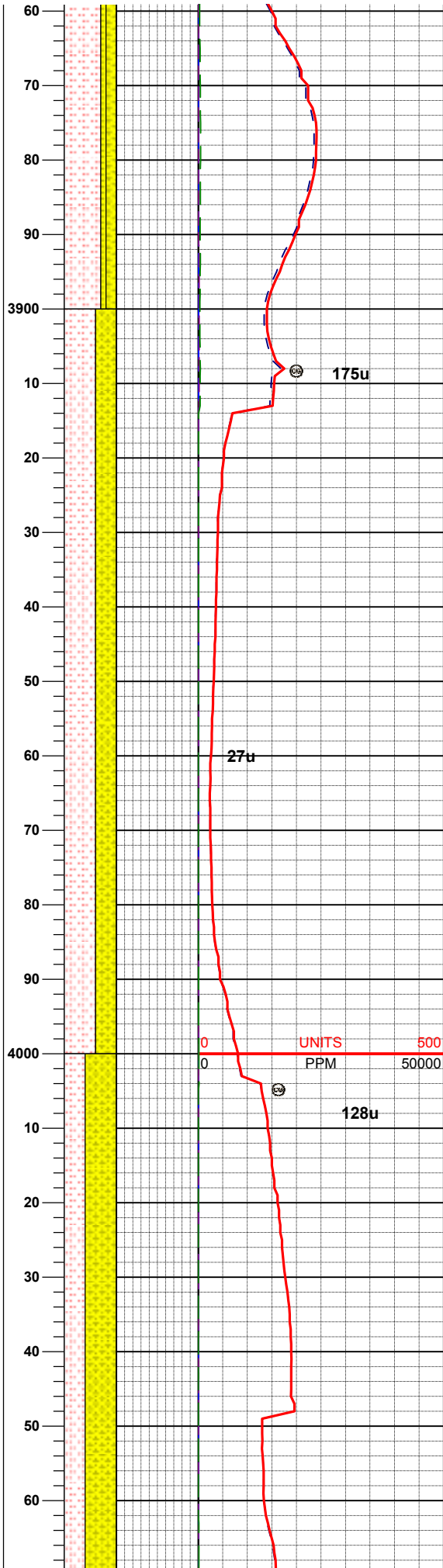
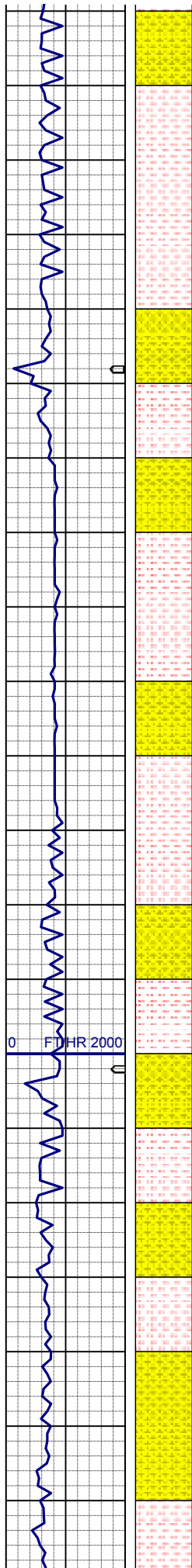
sbang, mod w srt, firm, brit, biot, tr glau ; 45%
SHYSS: m gy, lt - m brn, sl s&p, vf-fgr, sbrd,
mod srt, firm-sft, arg cmt

MD 3659'
INC 1.57
AZM 270.59

65% SS: wh - off wh, sl trns, s&p, fgr, sbrd -
sbang, mod w srt, firm, brit, biot, tr glau ; 25%
SHYSS: m gy, lt - m brn, sl s&p, vf-fgr, sbrd,
mod srt, firm-sft, arg cmt, 10% SLTY SH; mgy -
dk gy, sblky-sbbply, firm-m hd, sl slty tex, arg
mtx

MD 3754'
INC 1.15
AZM 87.40

MD 3849'
INC 0.89
AZM 90.01
70% SLTST: lt gy - mgy, sft - sl firm, sbbply -
sbbply, vfgr, hom, sme vf sd, wxy - slty, non
calc, tr pyr; 20% SHYSS: m gy, m brn, sl s&p, vf



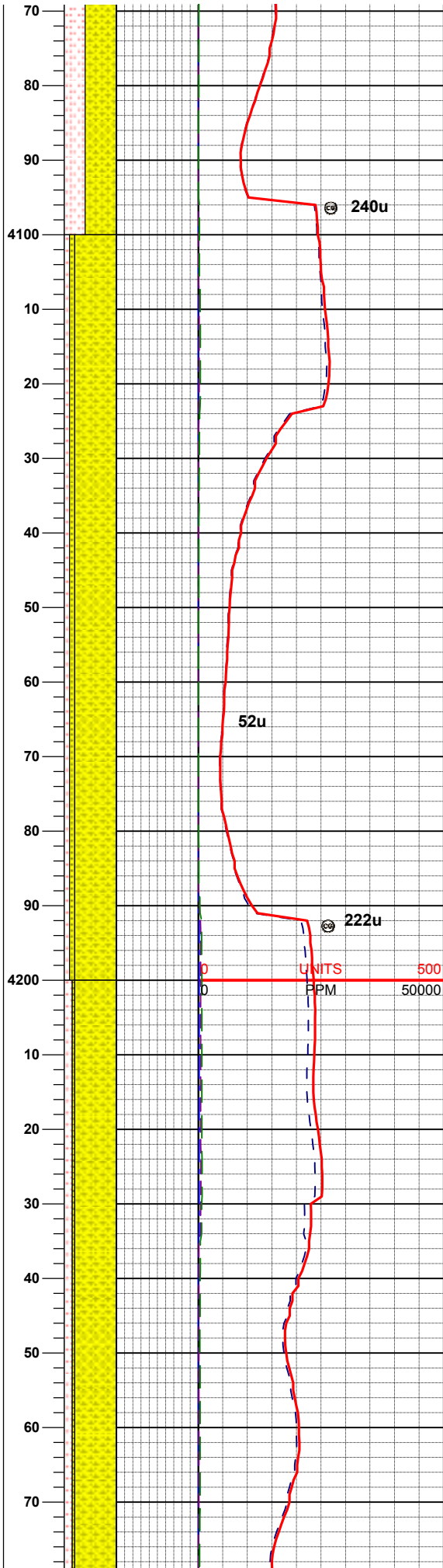
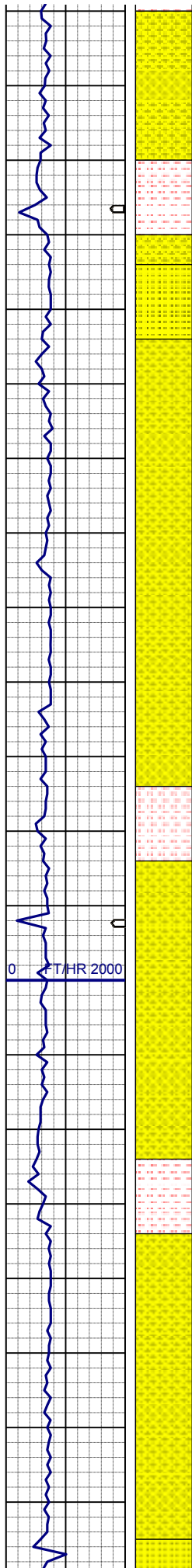
-fgr, sbrd, mod srt, firm-sft, arg cmt; 10% SS: lt gy, sme wh, sl trns, s&p, fgr, sbrd - sbang, mod w srt, firm, brit, biot, abu glau, sl calc

60% SLTST: lt gy - mgy, sft - sl firm, sbbkly - sbbply, vfgr, hom, sme vf sd, wxy - slty, non calc, tr pyr; 40% SHYSS: m gy, m brn, sl s&p, vf -fgr, sbrd, mod srt, firm-sft, arg cmt, tr ss

MUD WT 8.75 VIS 28

MD 4039'
INC 0.85
AZM 62.38

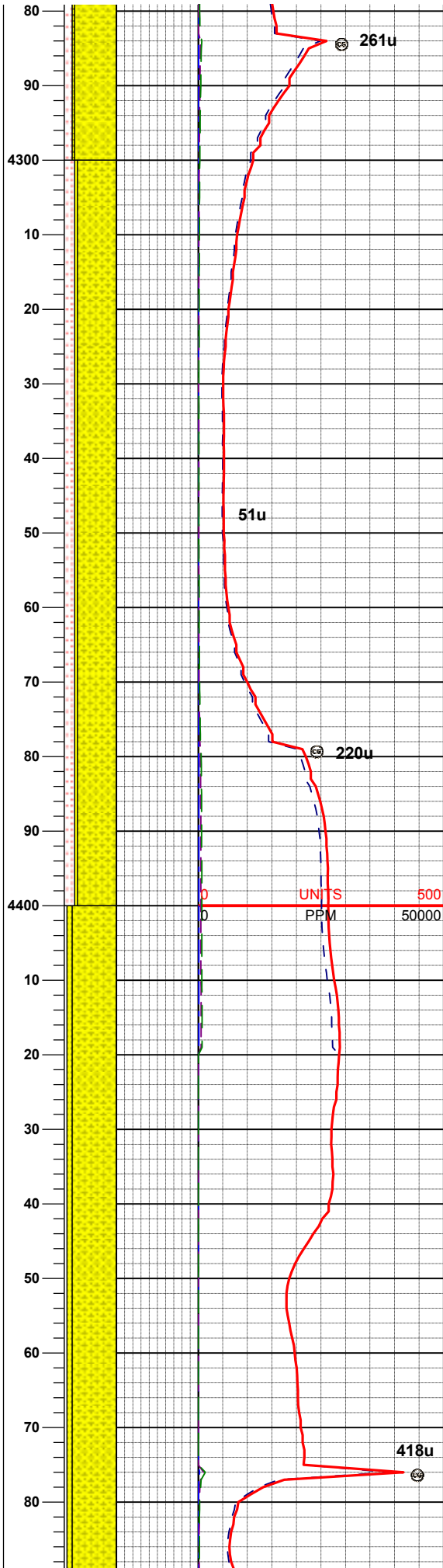
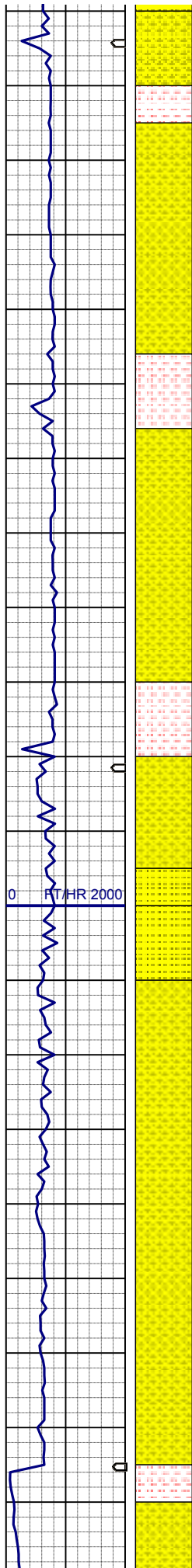
60% SHYSS: m gy, m brn, sl s&p, vf-fgr, sbrd, mod srt, firm-sft, arg cmt; 40% SLTST: lt gy - mgy, sft - sl firm, sbbkly - sbbply, vfgr, hom, sme vf sd, wxy - slty, non calc, tr pyr;



80% SHYSS: m gy, m brn, sl s&p, vf-fgr, sbrd, mod srt, firm-sft, arg cmt; 10% SLTST: lt gy - mgy, sft - sl firm, sbbkly - sbbply, vfgr, hom, sme vf sd, wxy - slty, non calc, tr pyr; 10% SS: off wh - lt gy, sme wh, sl trns, s&p, fgr, sbrd - sbang, mod w srt, firm, brit, biot, sme glau, sl calc

MD 4229'
INC 1.00
AZM 171.48

80% SHYSS: m gy, m brn, sl s&p, vf-fgr, sbrd, mod srt, firm-sft, arg cmt; 15% SLTST: lt gy - mgy, sft - sl firm, sbbkly - sbbply, vfgr, hom, sme vf sd, wxy - slty, non calc, tr pyr; 5% SS: off wh - lt gy, sme wh, sl trns, s&p, fgr, sbrd - sbang, mod w srt, firm, brit, biot, sme glau, sl calc

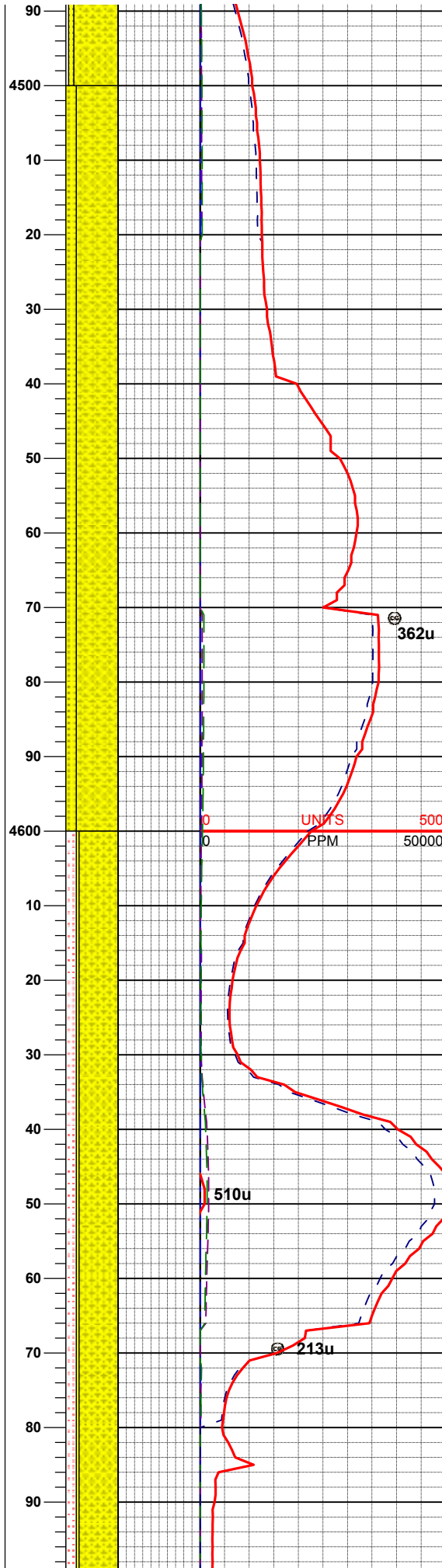
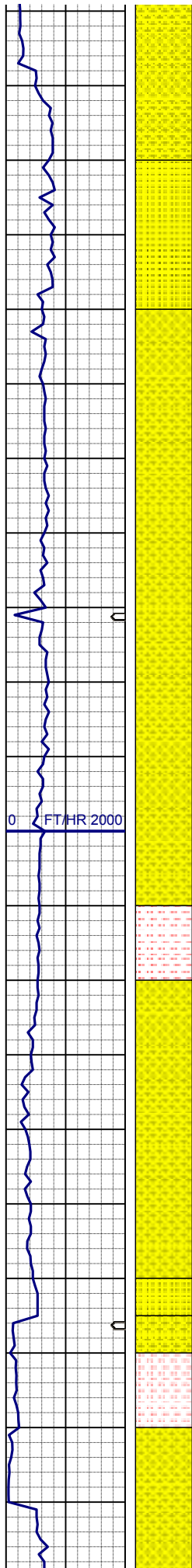


75% SHYSS: m gy, m brn, sl s&p, vf-fgr, sbrd, mod srt, firm-sft, arg cmt; 20% SLTST: lt gy - mgy, sft - sl firm, sbbiky - sbbply, vfgr, hom, wxy - slty, non calc, tr pyr; 5% SS: off wh - lt gy, sme wh, sl trns, s&p, fgr, sbrd - sbang, mod w srt, firm, brit, biot, sme glau, sl calc

MD 4419'
INC 2.09
AZM 149.84

85% SHYSS: m gy, m brn, sl s&p, vf-fgr, sbrd, mod srt, firm-sft, arg cmt; 10% SS: off wh - lt gy, sme wh, sl trns, s&p, fgr, sbrd - sbang, mod w srt, firm, brit, biot, sme glau, sl calc, 5% SLTST: lt gy - mgy, sft - sl firm, sbbiky - sbbply, vfgr, hom, sme vf sd, wxy - slty, non calc, tr pyr

MUD WT 8.80 VIS 29



MD 4514'
INC 1.51
AZM 112.01

80% SHYSS: m gy, m brn, sl s&p, vf-fgr, sbrd, mod srt, firm-sft, arg cmt; 20% SS: off wh - lt gy, sme wh, sl trns, s&p, fgr, sbrd - sbang, mod w srt, firm, brit, biot, sme glau, sl calc

362u

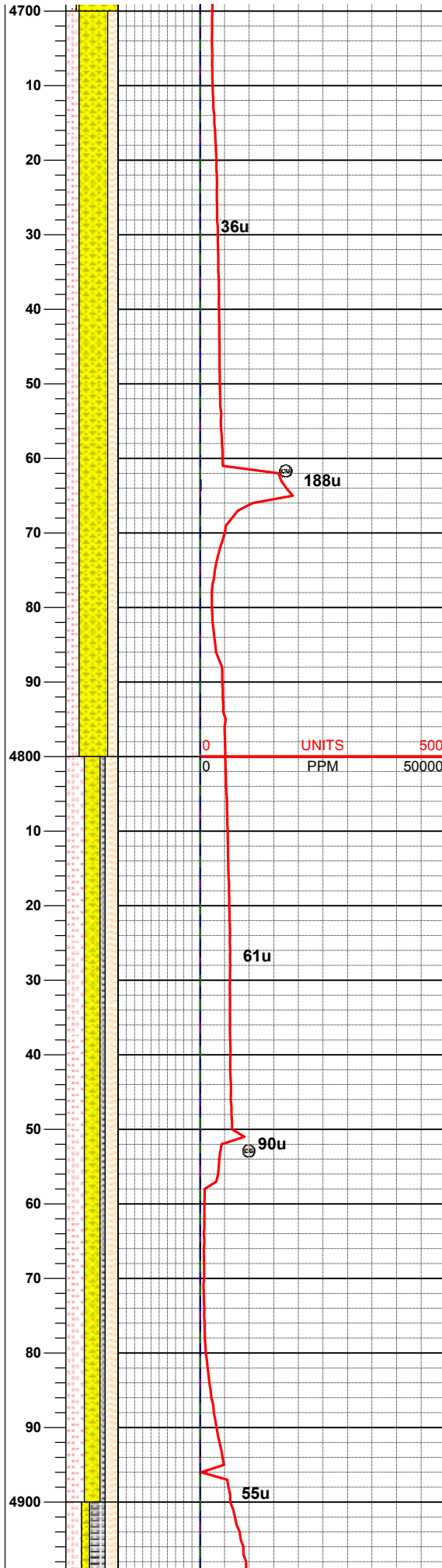
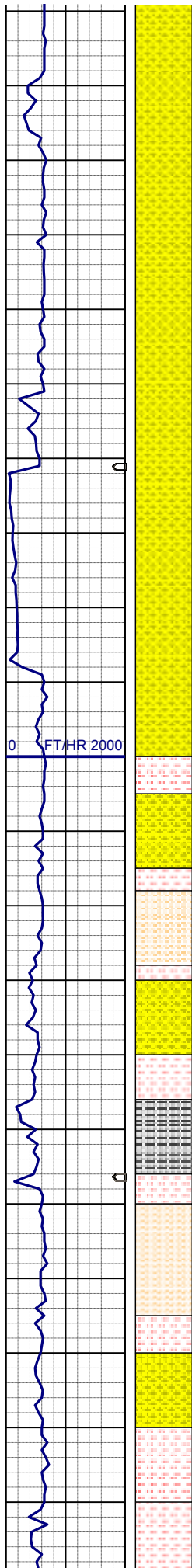
MD 4609'
INC 1.77
AZM 130.11

80% SHYSS: m gy, m brn, sl s&p, vf-fgr, sbrd, mod srt, firm-sft, arg cmt; 20% SLTST: mgy, sme dkgy, vfgr, wsrt, sft, arg, rthy lstr 5% SS: off wh - lt gy, sme wh, sl trns, s&p, fgr, sbrd - sbang, mod w srt, firm, brit, biot, sme glau, sl calc

510u

213u

80% SHYSS: m gy, m brn, sl s&p, vf-fgr, sbrd, mod srt, firm-sft, arg cmt; 20% SLTST: mgy, sme dkgy, vfgr, wsrt, sft, arg, rthy lstr 5% SHYSLTST: m-dkgy, sme bnd, vvf-sbvis gr, wsrt, vsft, sme fis, tr fgr dism pyr



MD 4704'
INC 2.3
AZM 119.42

55% SHYSS: m gy, m brn, sl s&p, vf-fgr, sbrd, mod srt, firm-sft, arg cmt; 25% SLTST: mgy, sme dkgy, vfgr, wsrt, sft, arg, rthy lstr; 20% SHYSLTST: m-dkgy, sme bnd, vvf-sbvis gr, wsrt, vsft, sme fis, tr fgr dism pyr

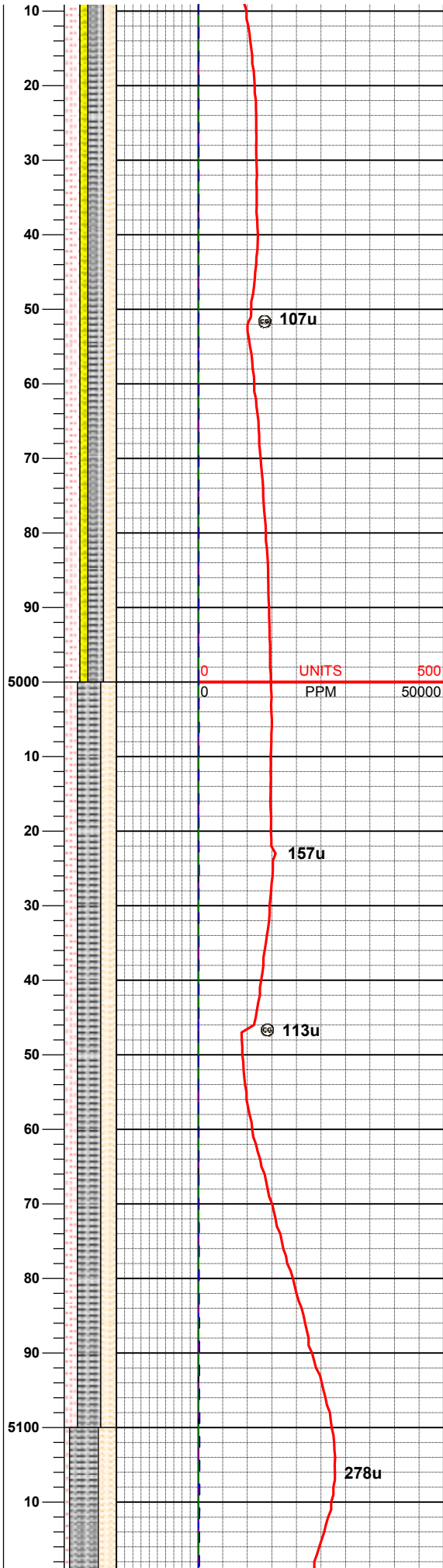
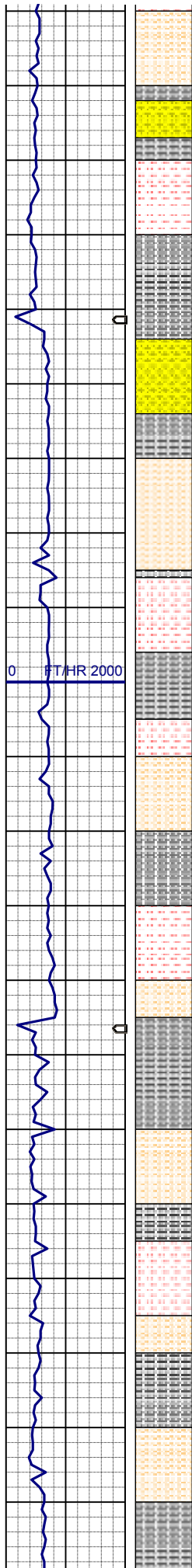
MUD WT 9.05 VIS 30

NO MUD INFORMATION POSTED
TO PASON 4,750' - 5,330'

MD 4799'
INC 1.46
AZM 74.09

35% SHYSLTST: m-dkgy, sme bnd, vvf-sbvis gr, wsrt, vsft, sme fis, tr fgr dism pyr; 30% SHYSS: m gy, m brn, sl s&p, vf-fgr, sbrd, mod srt, firm-sft, arg cmt; 25% SLTST: mgy, sme dkgy, vfgr, wsrt, sft, arg, rthy lstr; 10% SLTY: SH: mdgy-dkgy, sbply, firm, gt-slt tex, sl calc, grd to shy sltst,

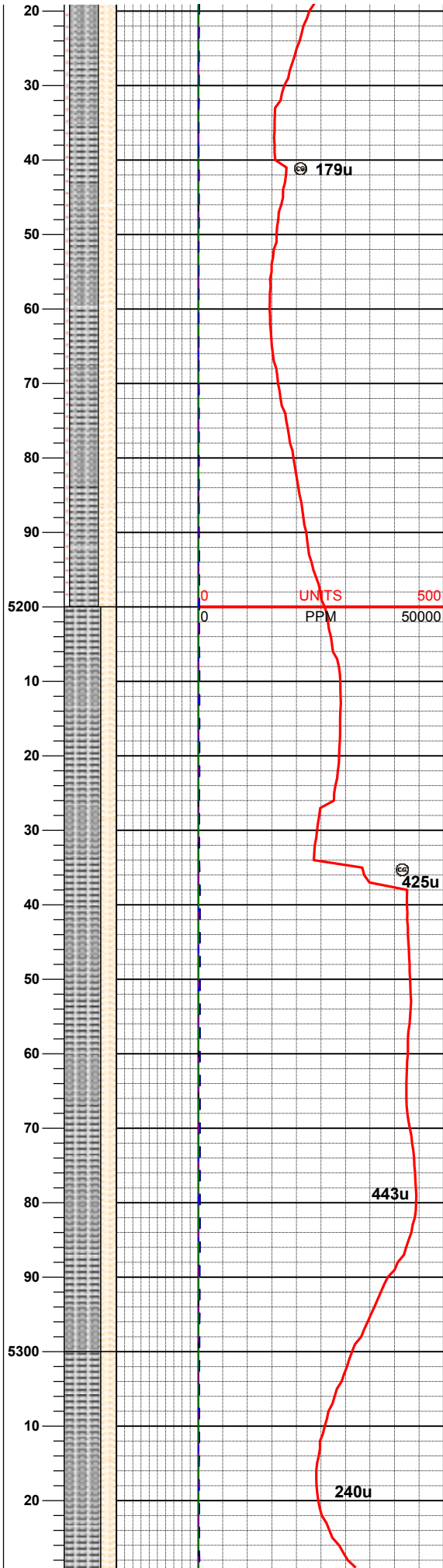
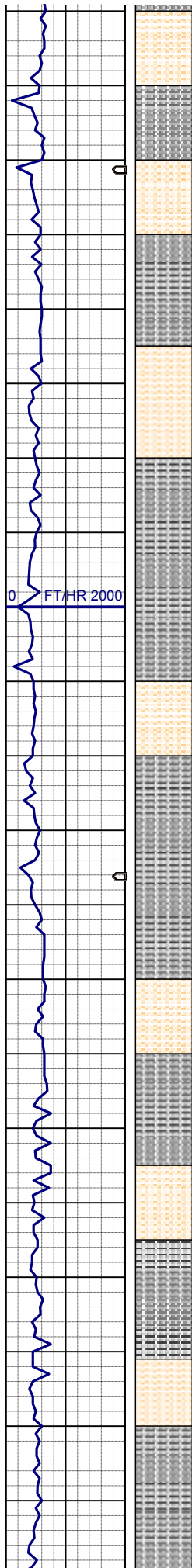
MD 4894'
INC 1.03
AZM 96.45



35% SLTY: SH: mdgy-dkgy, sbply, firm, gt-slty
tex, sl calc, grdg to shy sltst; 30% SHYSLTST:
m-dkgy, sme bnd, vvf-sbvis gr, wsrt, vsft, sme
fis, tr fgr dism pyr; 25% SLTST: mgy, sme dkgy,
vfgr, wsrt, sft, arg, rthy lstr; 15% SHYSS: m gy,
m brn, sl s&p, vf-fgr, sbrd, mod srt, firm-sft, arg
cmt;

MD 4984'
INC 1.03
AZM 72.70

45% SLTY: SH: mdgy-dkgy, sbply, firm, gt-slty
tex, sl calc, grdg to shy sltst; 30% SHYSLTST:
m-dkgy, sme bnd, vvf-sbvis gr, wsrt, vsft, sme
fis, tr fgr dism pyr; 25% SLTST: mgy, sme dkgy,
vfgr, wsrt, sft, arg, rthy lstr



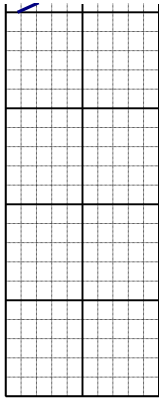
55% SLTY: SH: mdgy-dkgy, sbplty, firm, gt-slty
tex, sl calc, grdg to shy sltst; 35% SHYSLTST:
m-dkgy, sme bnd, vvf-sbvis gr, wsrt, vsft, sme
fis, tr fgr dism pyr; 10% SLTST: mgy, sme dkgy,
vfgr, wsrt, sft, arg, rthy lstr

MD 5178'
INC 1.20
AZM 49.66

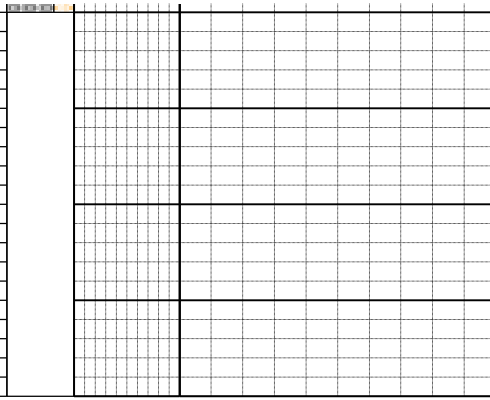
75% SLTY: SH: mdgy-dkgy, sbplty, firm, gt-slty
tex, sl calc, grdg to shy sltst; 25% SHYSLTST:
m-dkgy, sme bnd, vvf-sbvis gr, wsrt, vsft, sme
fis, tr fgr dism pyr

MD 5273'
INC 0.92
AZM 42.54

75% SLTY: SH: mdgy-dkgy, sbplty, firm, gt-slty
tex, sl calc, grdg to shy sltst; 25% SHYSLTST:
m-dkgy, sme bnd, vvf-sbvis gr, wsrt, vsft, sme
fis, tr fgr dism pyr



30
40
50
60
70



WELL @ KOP 5,330' MD
06:01; 12/23/2012

LOG CONTINUED ON CASTOR
FEDERAL LG17-62HN LATERAL

THANK YOU FOR CHOOSING
COLUMBINE LOGGING, INC.