

LOG created using Lplot VH Version 3.0, November 30, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

**OPERATOR:** NOBLE ENERGY INC  
**WELL:** TIMBRO STATE LD16-67HN  
**LOCATION:** NENE SEC 16 T9N R58W  
**COUNTY:** WELD  
**STATE:** COLORADO  
**SPOT:** 720' FNL; 290' FEL  
**ELEVATION:** 4725' GR; 4749' KB  
**FIELD:** WILDCAT  
**SPUD DATE:** 11/25/2013  
**TD DATE:** 11/26/2013  
**DATES LOGGED:** 11/26/2013  
**DEPTHS LOGGED:** 1223' - 4932' MD  
**LOGGERS:** LAURA KELLOGG; CONOR PESICKA  
**DRILLING FLUID:** LSND  
**DRILLING RIG:** H&P 273  
**API:** 05-123-37490  
**LOG TYPE:** VERTICAL  
**SCALE:** 1:240 (5 inches per 100 feet)  
**REMARKS:** WELLSITE GEOLOGIC SERVICES  
 PROVIDED BY COLUMBINE LOGGING INC.

**LITHOLOGIES**



Sandstone



Shaly Sandstone



Silty Shale

**ENGINEERING SYMBOLS**



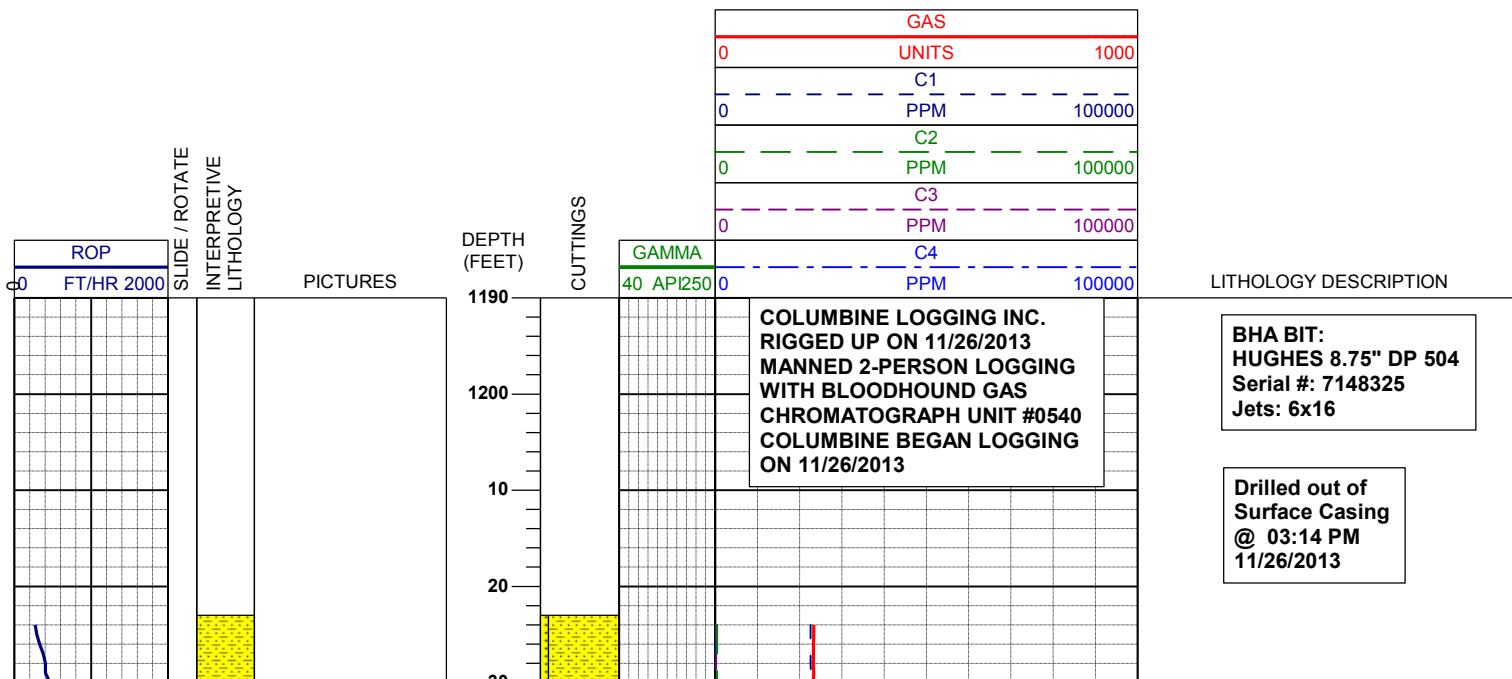
Connection

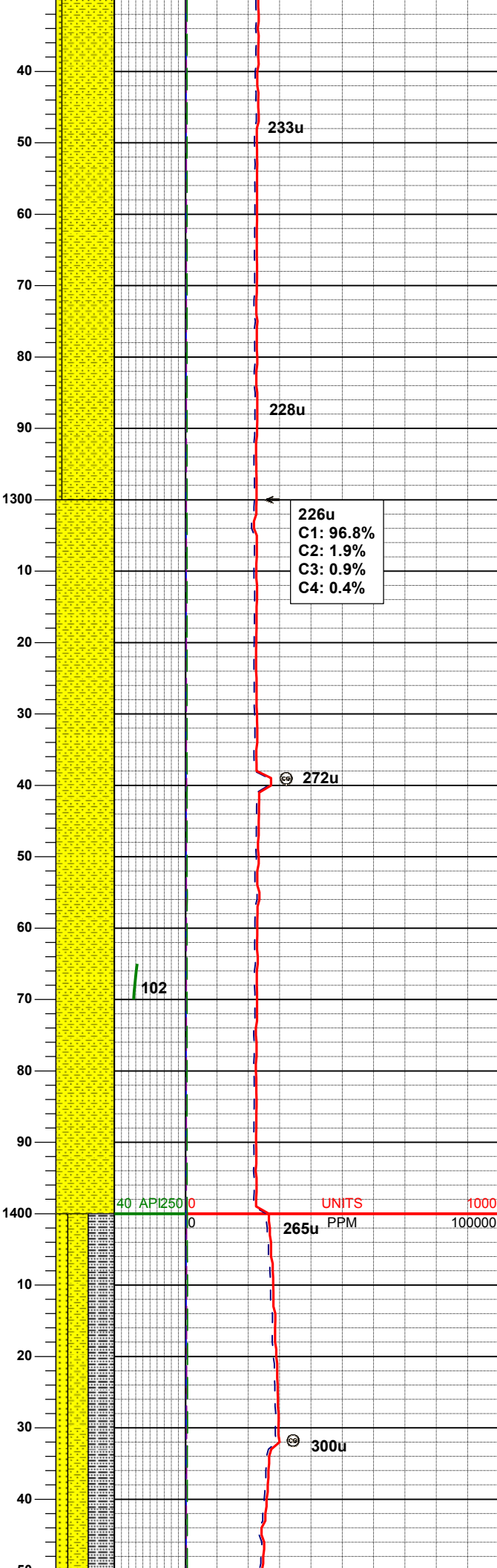
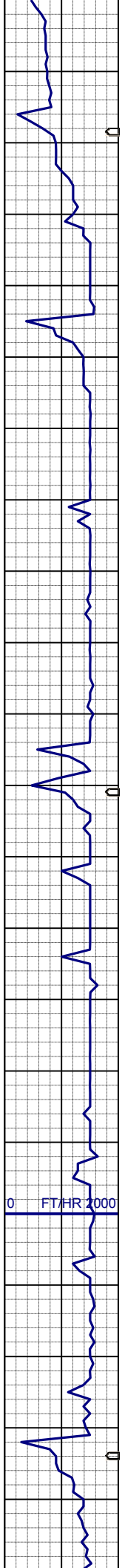


Connection Gas



Arrow





SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, smwtrnodd, mod srt, p por, arg cmt, tr lt lit frag  
SS: ltgy-wh-op, sbang-ang, v fri, fgr, rr mgr, p rddd, psrt, p por, arg cmt, tr lit frag

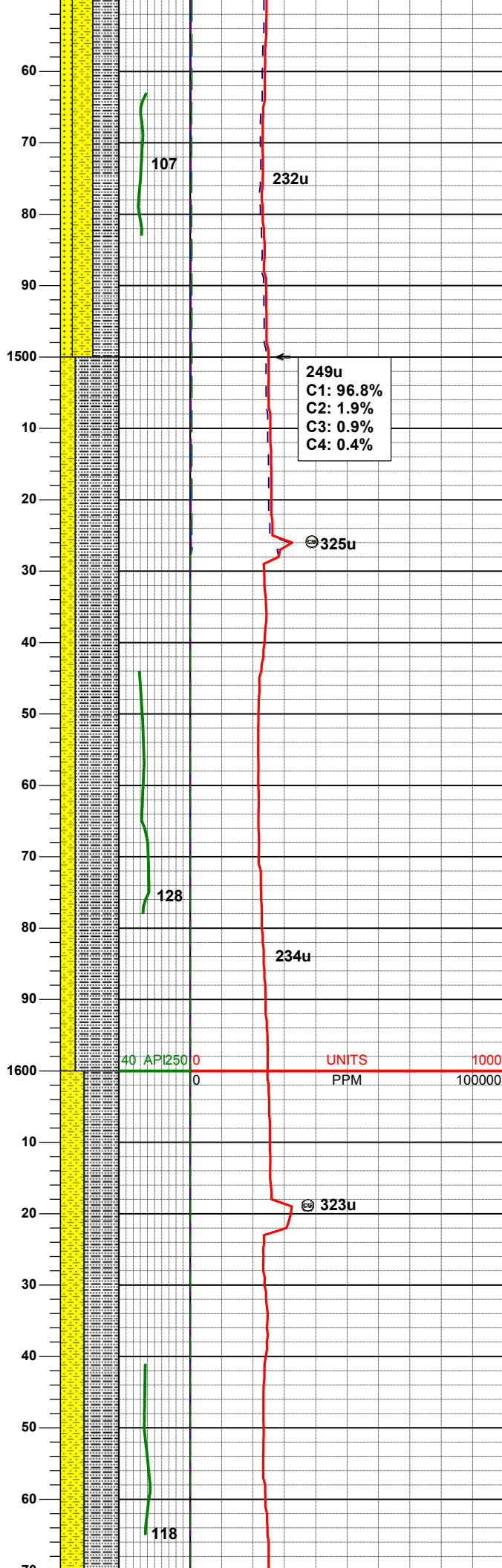
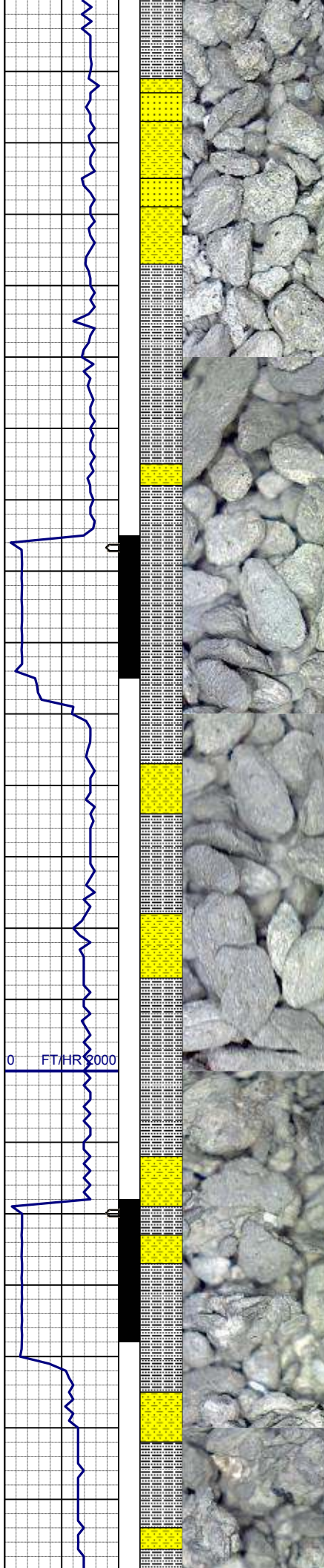
MD	1280'
INC	0.4°
AZM	205.7°
TVD	1279.97'

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, smwtrnodd, mod srt, p por, arg cmt, tr lt lit frag

WT IN 8.60/ OUT 8.60  
VIS IN 27/ OUT 27

SLTYSH: ltgy-gy, sbblky-sbplty, v sft, gt-sdy tex, arg cmt  
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, smwtrnodd, mod srt, p por, arg





ltgy-wh-op, sbang-ang, v fri, fgr, smwtrnnd, p srt, p por, arg cmt, tr lt lit frag

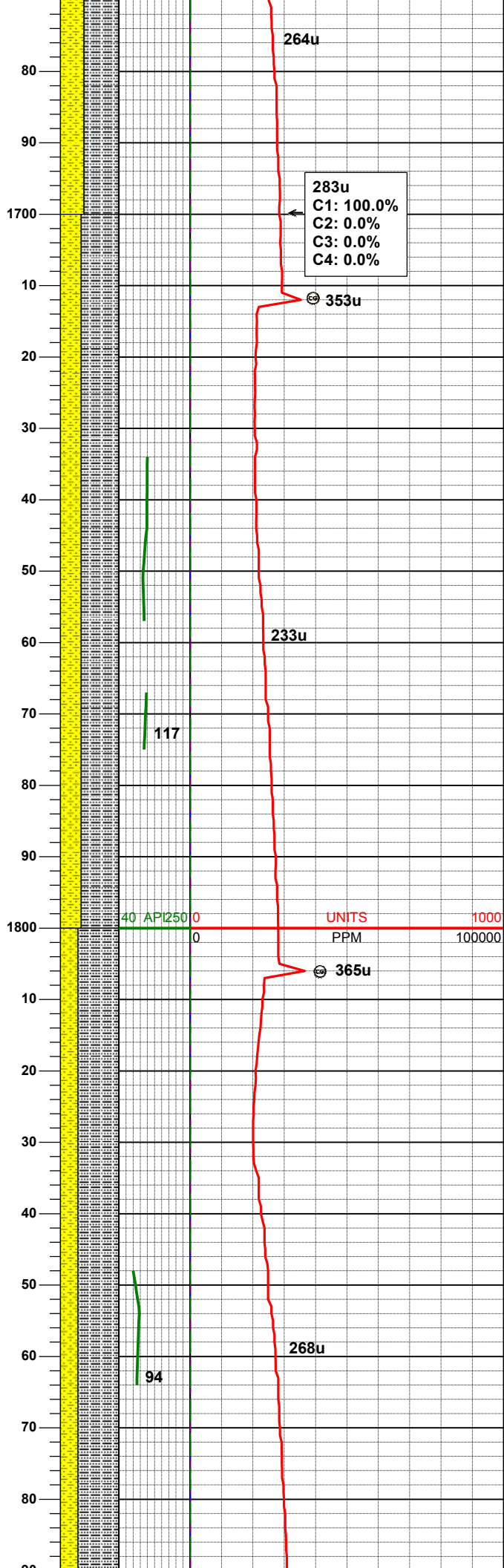
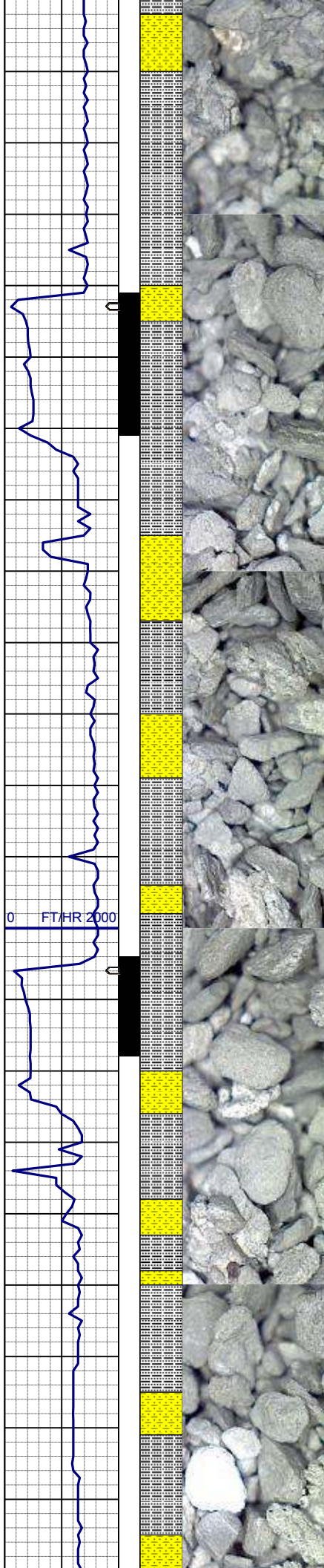
MD	1465'
INC	0.3°
AZM	187.9°
TVD	1464.97'

SLTYSH: ltgy-gy, sbblky-sbplty, v sft, gt-sdy tex, arg cmt  
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, smwtrnnd, mod srt, p por, arg cmt, tr lt lit frag

MD	1558'
INC	1.8°
AZM	181.4°
TVD	1557.95'

SLTYSH: ltgy-gy, occ dkgy, sbblky-sbplty, v sft, gt-sdy tex, arg cmt  
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, wrnnd, mod srt, p por, arg cmt, tr lt lit frag

MD	1651'
INC	3.1°
AZM	155.6°
TVD	1650.87'



MD	1744'
INC	4.9°
AZM	160.5°
TVD	1743.64'

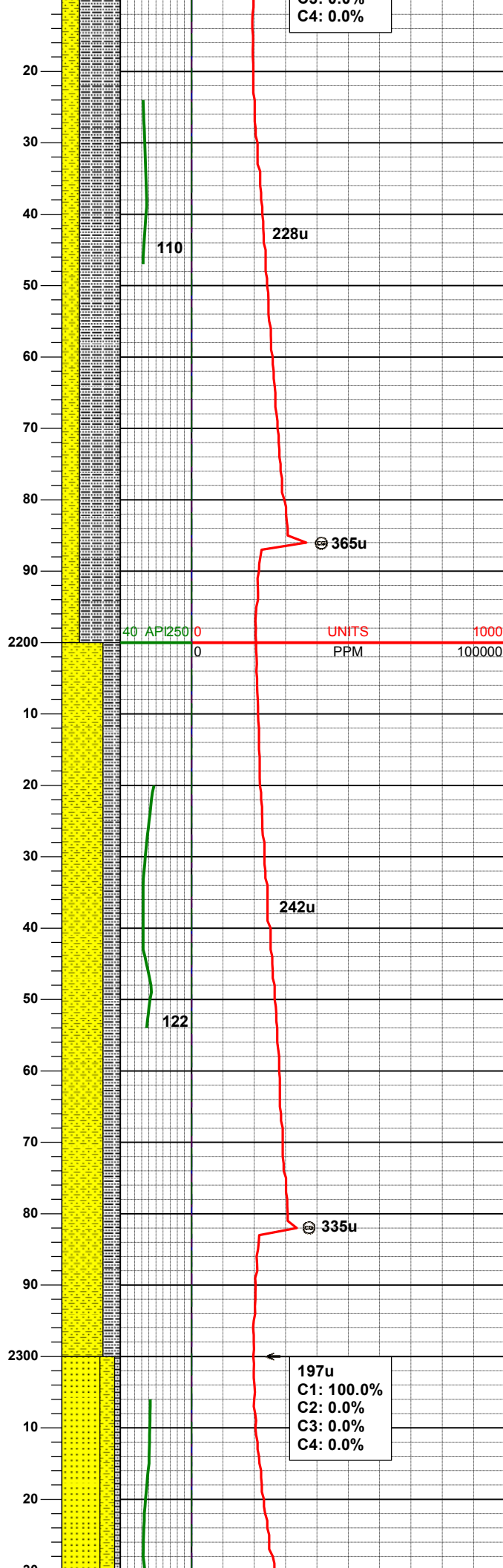
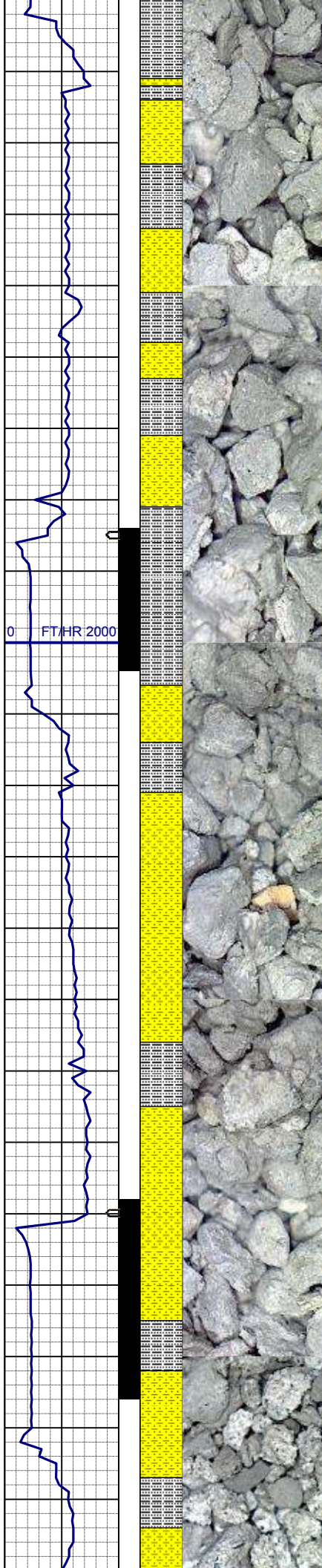
SLTYSH: ltgy-gy, occ dkgy, sbblky-sbplty, v sft, gt-sdy tex, arg cmt  
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, wrndd, mod srt, p por, arg cmt, tr lt lit frag

MD	1839'
INC	5.9°
AZM	161.4°
TVD	1838.22'

SLTYSH: ltgy-gy, rr dkgy, sbblky-sbplty, v sft, gt-sdy tex, arg cmt  
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, wrndd, mod srt, p por, arg cmt, tr lt lit frag







MD 2124'  
INC 9.5°  
AZM 158.5°  
TVD 2120.64'

SLTYSH: ltgy-gy, rr dkgy, sbblky-sbply, v sft, gt-sdy tex, arg cmt  
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, wrndd, wsrt, p por, arg cmt, tr lit frag, grdg to ss

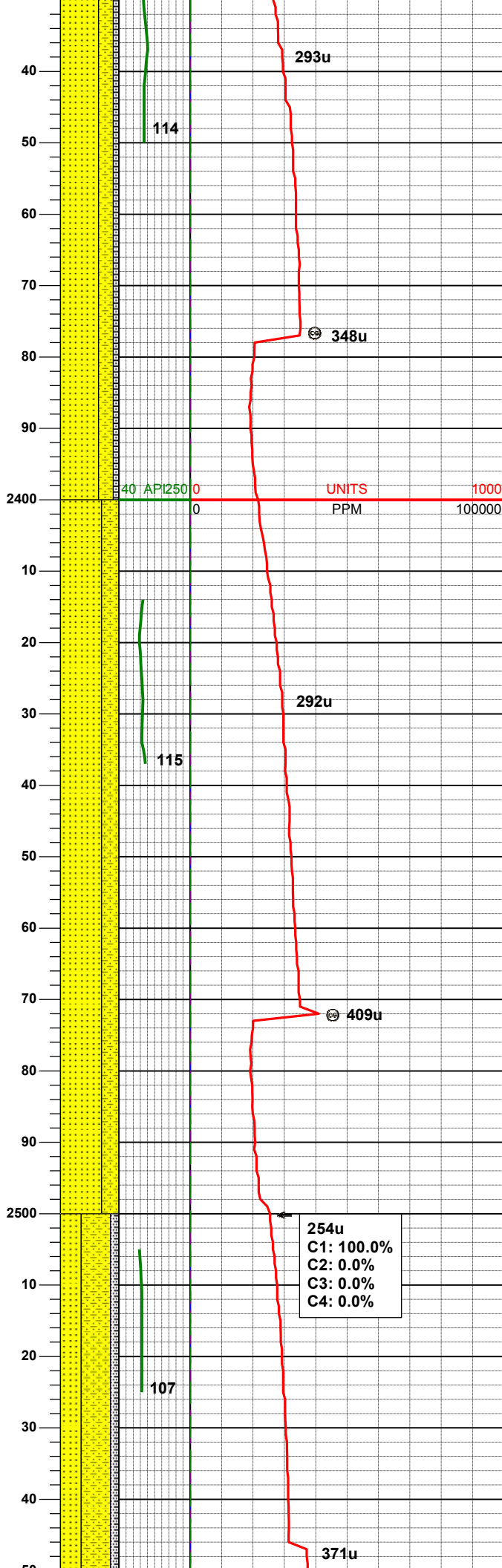
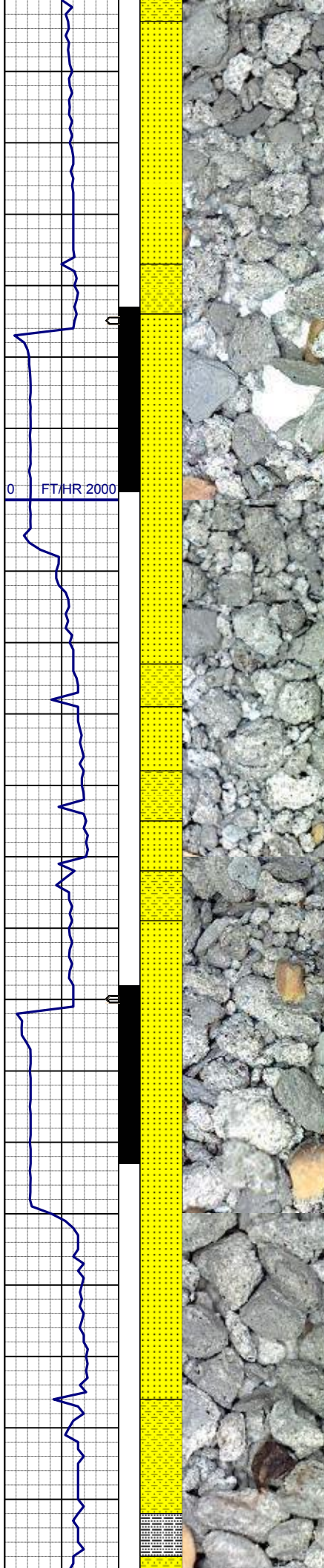
MD 2218'  
INC 10.0°  
AZM 159.9°  
TVD 2213.28'

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, wrndd, wsrt, p por, arg cmt, tr lit frag  
SLTYSH: ltgy-gy, rr dkgy, sbblky-sbply, v sft, gt-sdy tex, arg cmt

MD 2313'  
INC 11.9°  
AZM 161.2°  
TVD 2306.55'

197u  
C1: 100.0%  
C2: 0.0%  
C3: 0.0%  
C4: 0.0%





SS: wh-op-ltgy, sbang-ang, v fri, fgr, modrnd, modsrt, p por, arg cmt, tr lit frag, sme glau, sme shyss intbd  
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, wrndd, wsrt, p por, arg cmt, tr lit frag  
SLTYSH: ltgy-gy, rr dkgy, sbblky-sbply, v sft, gt-sdy tex, arg cmt

MD	2408'
INC	13.7°
AZM	161.7°
TVD	2399.19'

SS: wh-op-ltgy, sbang-ang, v fri, fgr, modrnd, modsrt, p por, arg cmt, tr lit frag, sme glau  
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, wrndd, wsrt, p por, arg cmt, tr lit frag

MD	2503'
INC	15.6°
AZM	161.2°
TVD	2491.09'

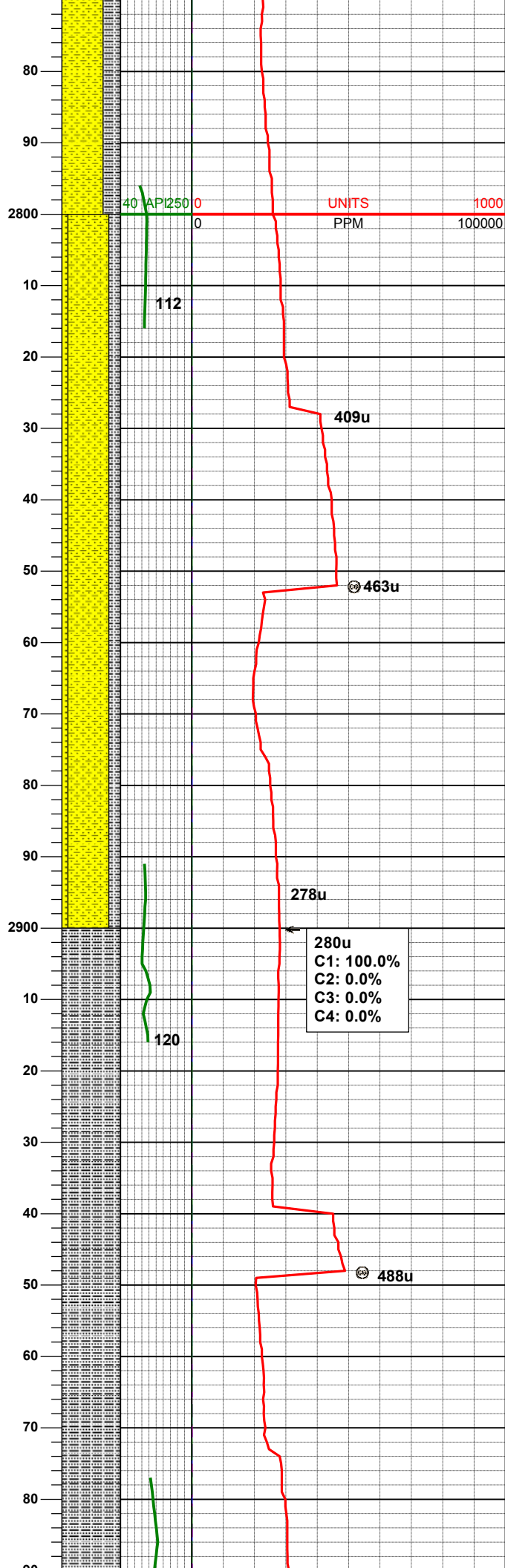
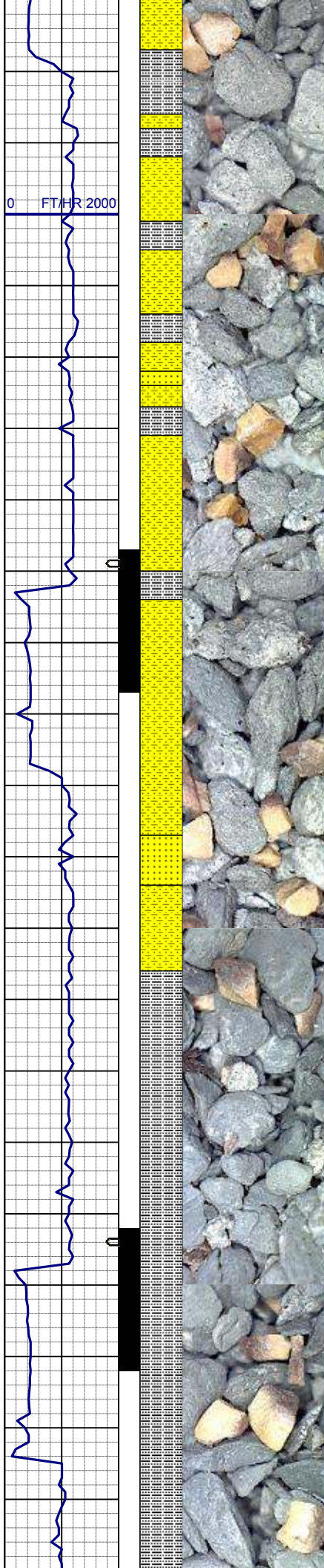
SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, wrndd, modsrt, p por, arg cmt, tr lit frag  
SS: wh-op-ltgy, sbang-ang, v fri, fgr, p

SHYSS: ltgy-gy, s&p ip, sbang, v fri,  
vfgr, wrndd, wsrt, p por, arg cmt, tr lit  
frag  
SS: wh-op-ltgy, sbang-ang, v fri, fgr,  
modrnd, modsrt, p por, arg cmt, tr lit  
frag, tr glau, sme intbd shyss

SHYSS: ltgy-gy, s&p ip, sbang, v fri,  
vfgr, wrdd, wsr, p por, arg cmt, tr lit  
frag  
SLTYSH: ltgy-gy, sme dkgy, sbblky-  
sbply, v sft, qt-sdy tex, arg cmt

WT IN 8.65/ OUT 8.65  
VIS IN 30/ OUT 30





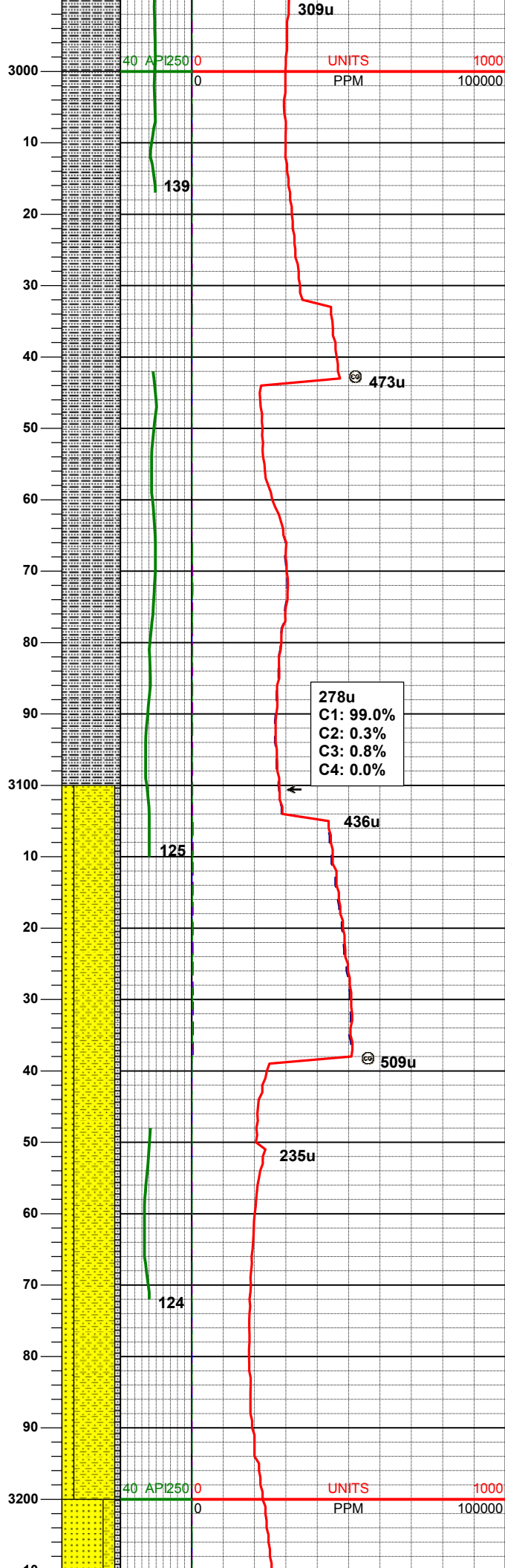
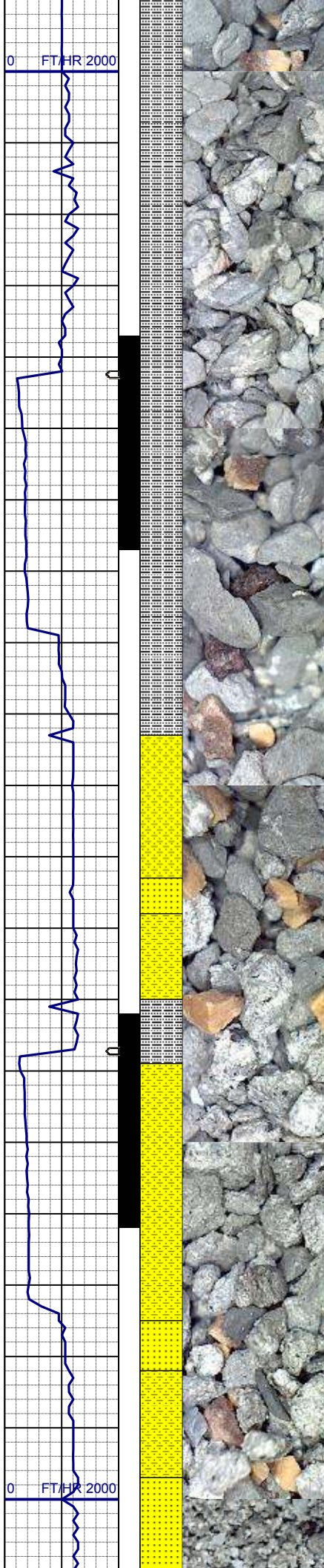
MD 2787'  
INC 16.0°  
AZM 157.5°  
TVD 2764.04'

SHYSS: ltgy-gy, s&p ip, sbang, v fri, vfgr, wrndd, wsrt, p por, arg cmt, tr lit frag  
SLTYSH: ltgy-gy, sme dkgy, sbblky-sbply, v sft, gt-sdy tex, arg cmt  
SS: ltgy-wh, sbang-ang, v fri, fgr, wrndd, wsrt, p por, arg cmt, rr intbd shyss

MD 2882'  
INC 15.5°  
AZM 161.4°  
TVD 2855.48'

SLTYSH: gy-dkgy, sbblky-sbply, sft-sl firm, gt-slty tex, arg cmt, tr shyss

MD 2977'  
INC 14.8°  
AZM 161.9°  
TVD 2947.18'



SLTYSH: gy-dkgy, sbblky-sbply, sft-sl firm, gt-silty tex, arg cmt, tr shyss

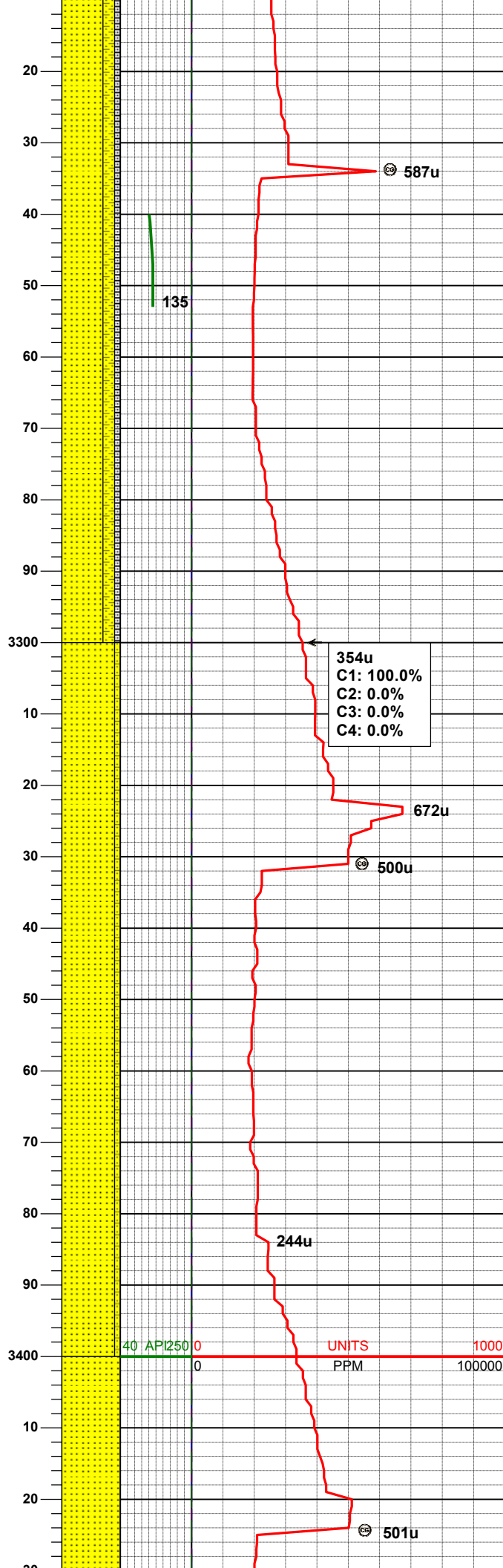
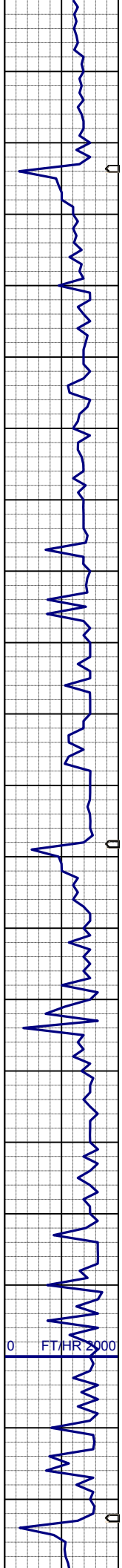
MD 3072'  
INC 15.4°  
AZM 164.3°  
TVD 3038.90'

WT IN 8.75/ OUT 8.75  
VIS IN 29/ OUT 29

SHYSS: ltgy-gy, sbang, fri-smwt ind, modrndd, psrt, p por, arg cmt, tr lit frag, tr glau  
SS: ltgy-wh, sbang-ang, p ind, modrndd, psrt, p por, arg cmt, tr lit frag, sme glau  
SLTYSH: gy-dkgy, sbblky-sbply, sft-sl firm, gt-silty tex, arg cmt

MD 3167'  
INC 17.2°  
AZM 161.2°  
TVD 3130.08'



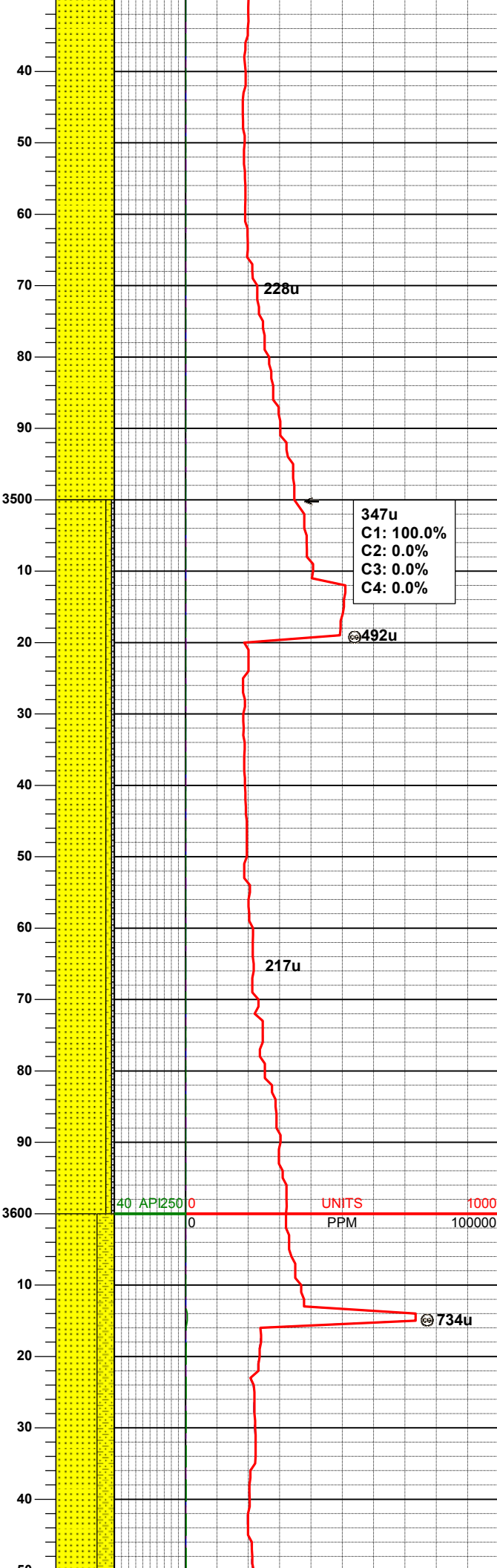
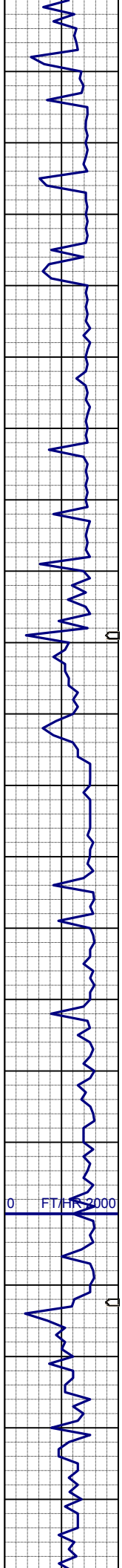


SS: ltgy-wh-trnsl, sbang-ang, p ind,  
pconsol-uncons, prnnd, psrt, modpor,  
arg cmt, tr lit frag, sme glau  
SHYSS: gy, sbang, fri-smwt ind,  
modrnnd, psrt, p por, arg cmt, tr lit  
frag  
SLTYSH: gy-dkgy, sbbkly-sbply, sft-  
sl firm, gt-silty tex, arg cmt

MD	3262'
INC	17.4°
AZM	160.1°
TVD	3220.78'

SS: ltgy-wh-trnsl, sbang-ang, p ind,  
uncons, prnnd, psrt, modpor, arg cmt,  
tr lit frag, sme glau  
SHYSS: gy, sbang, fri-smwt ind,  
modrnnd, psrt, p por, arg cmt, tr lit  
frag, tr sltysh

MD	3356'
INC	17.2°
AZM	159.6°
TVD	3310.53'



SS: ltgy-wh-trnsl, sbang-ang, p ind, uncon, prnnd, psrt, modpor, arg cmt, tr lit frag, sme glau, tr shyss

MD	3451'
INC	17.2°
AZM	158.9°
TVD	3401.28'

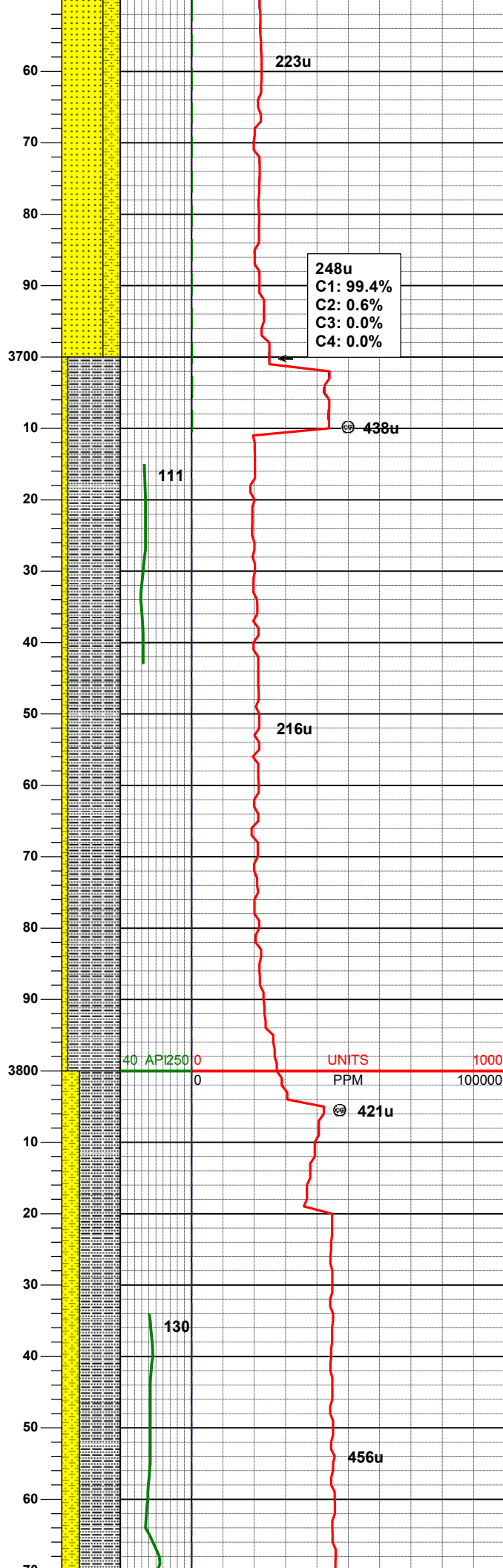
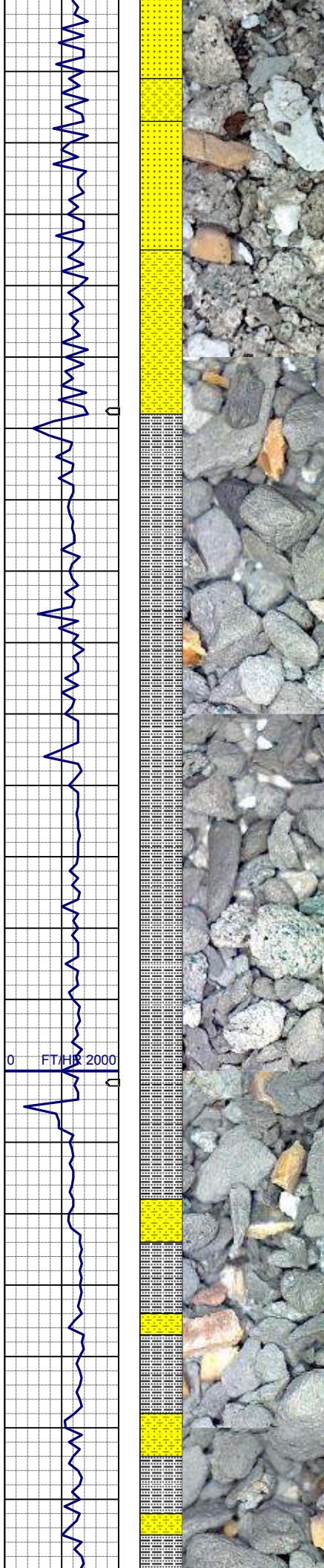
SS: ltgy-wh-trnsl, sbang-ang, p ind, uncon, prnnd, psrt, modpor, arg cmt, tr lit frag, sme glau  
SHYSS: gy-brn, s&p ip, sbang, p ind, wrnnd, psrt, p por, arg cmt, tr lit frag  
SLTYSH: gy-dkgy, sbblky-sbply, sft-firm, gt-slty tex, arg cmt

MD	3546'
INC	17.5°
AZM	158.2°
TVD	3491.46'

MD	3641'
INC	17.1°
AZM	157.3°
TVD	3582.66'

SS: ltgy-wh-trnsl, sbang-ang, p ind, uncon, prnnd, psrt, modpor, arg cmt, tr lit frag, sme glau, tr shyss





tr lit frag, silt glau  
SHYSS: gy-brn, s&p ip, sbang, p ind,  
wrndd, psrt, p por, arg cmt, tr lit frag

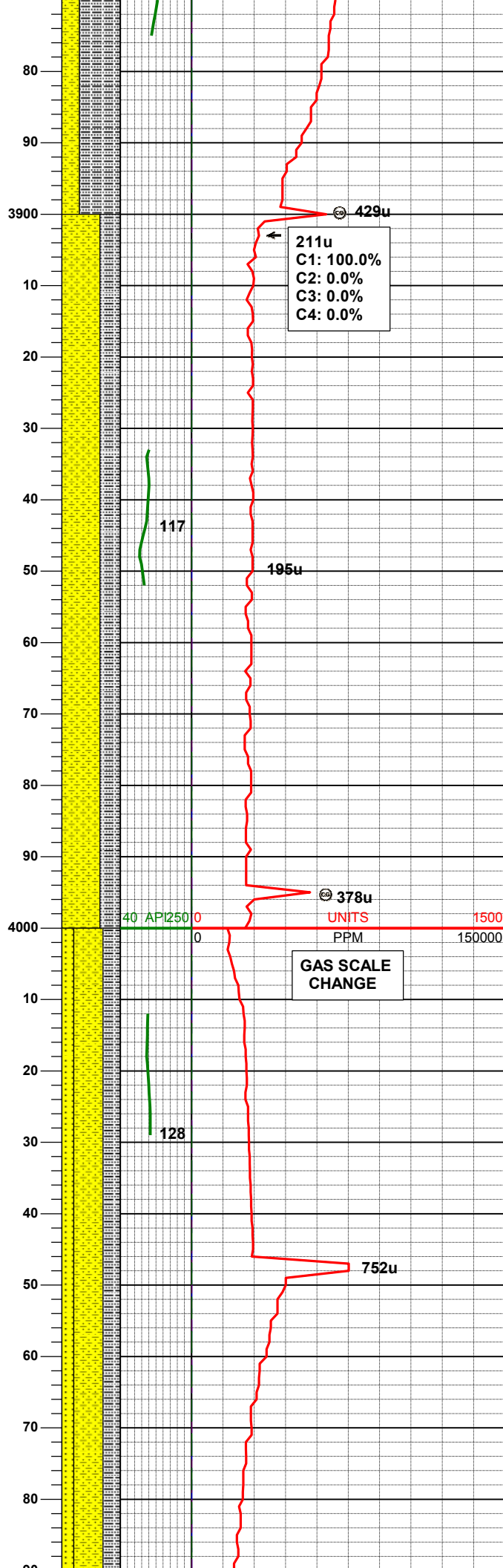
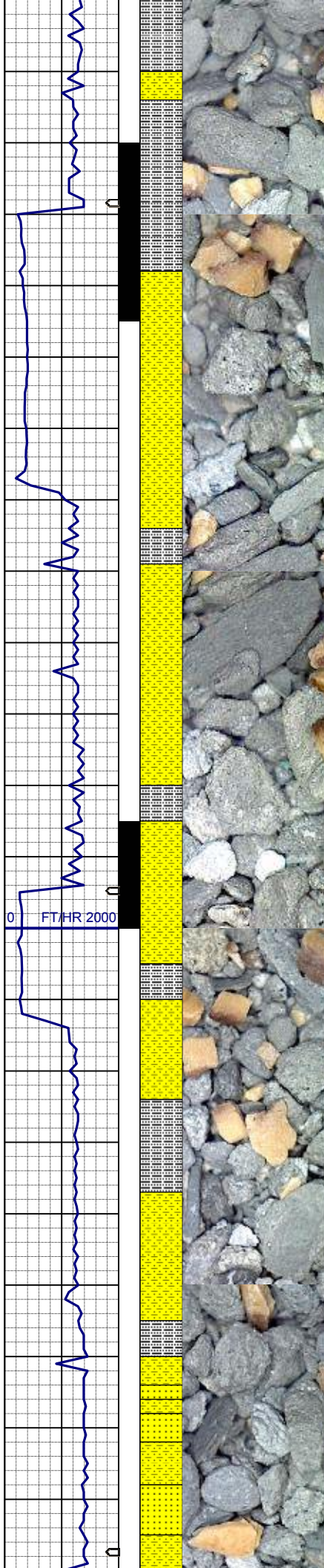
MD 3735'  
INC 15.8°  
AZM 156.6°  
TVD 3672.81'

SLTYSH: gy-dkgy, sbbiky-sbplty, sft-  
firm, gt-slty tex, arg cmt  
SHYSS: gy-brn, s&p ip, sbang, p ind,  
wrndd, psrt, p por, arg cmt, abnt glau,  
grdg to ss

WT IN 8.80/ OUT 8.80  
VIS IN 29/ OUT 29

MD 3830'  
INC 13.4°  
AZM 156.4°  
TVD 3764.73'

SLTYSH: gy-dkgy, sbbiky-sbplty, sft-  
firm, gt-slty tex, arg cmt  
SHYSS: gy-brn, s&p ip, sbang, p ind,  
wrndd, psrt, p por, arg cmt, abnt glau,  
grdg to ss



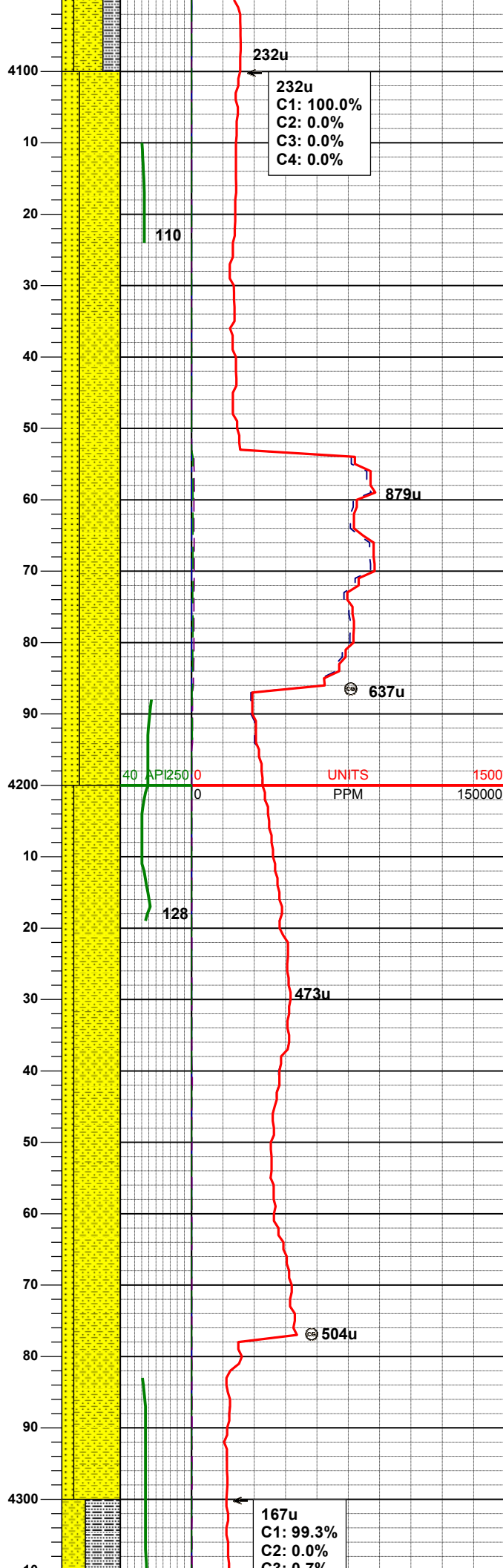
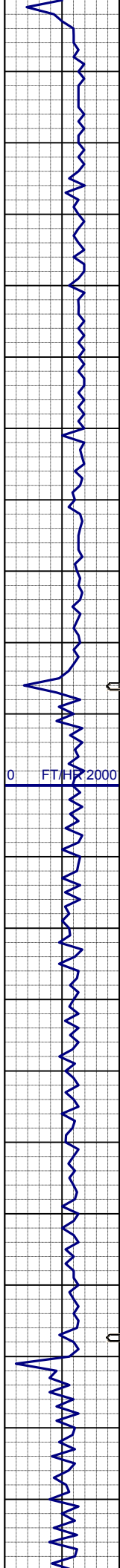
MD 3925'  
INC 12.8°  
AZM 161.5°  
TVD 3857.26'

SHYSS: gy-brn, s&p ip, sbang, p ind, wrnnd, psrt, p por, arg cmt, abnt glau, grdg to ss  
SLTYSH: gy-dkgy, sbblky-sbply, sft-firm, gt-slty tex, arg cmt

MD 4020'  
INC 12.9°  
AZM 163.3°  
TVD 3949.89'

SHYSS: gy-brn, s&p ip, sbang, p ind, wrnnd, modsrt, p por, arg cmt  
SLTYSH: gy-dkgy, sbblky-sbply, sft-firm, gt-slty tex, arg cmt  
SS: wh-op, sbang-ang, smwt ind, modrnnd, modsrt, p por, arg cmt, tr lit frag, tr glau





MD 4115'  
INC 11.8°  
AZM 162.9°  
TVD 4042.69'

SHYSS: gy-brn, s&p ip, sbang, p ind,  
wrndd, modsrt, p por, arg cmt  
SS: wh-op, sbang-ang, smwt ind,  
modrddd, modsrt, p por, arg cmt, tr lit  
frag, tr glau, sme intbd shyss

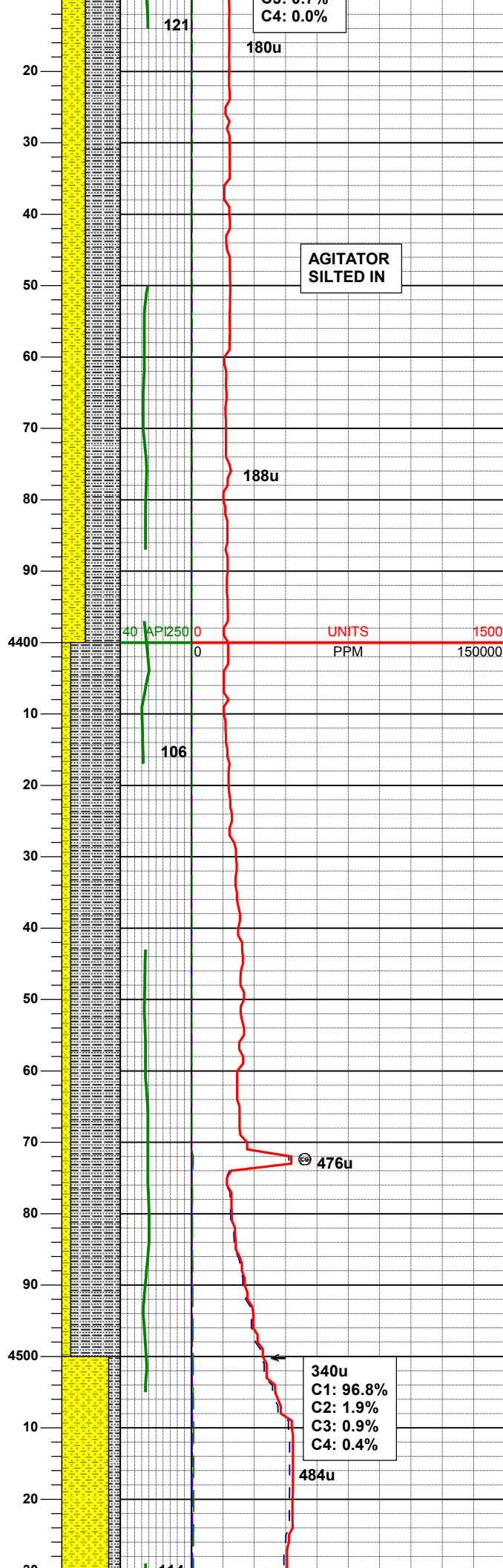
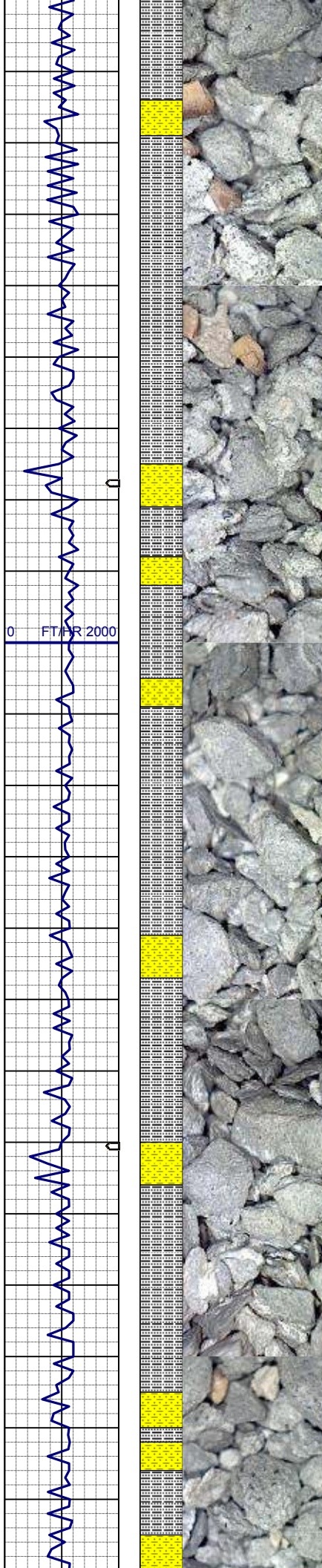
MD 4210'  
INC 10.0°  
AZM 162.8°  
TVD 4135.97'

SHYSS: gy-brn, s&p ip, sbang, p ind,  
wrndd, modsrt, p por, arg cmt  
SS: wh-op, sbang-ang, smwt ind,  
modrddd, modsrt, p por, arg cmt, tr lit  
frag, tr glau, sme intbd shyss

WT IN 8.95/ OUT 8.95  
VIS IN 34/ OUT 34

MD 4304'  
INC 7.7°  
AZM 160.5°  
TVD 4228.84'

167u  
C1: 99.3%  
C2: 0.0%  
C3: 0.7%



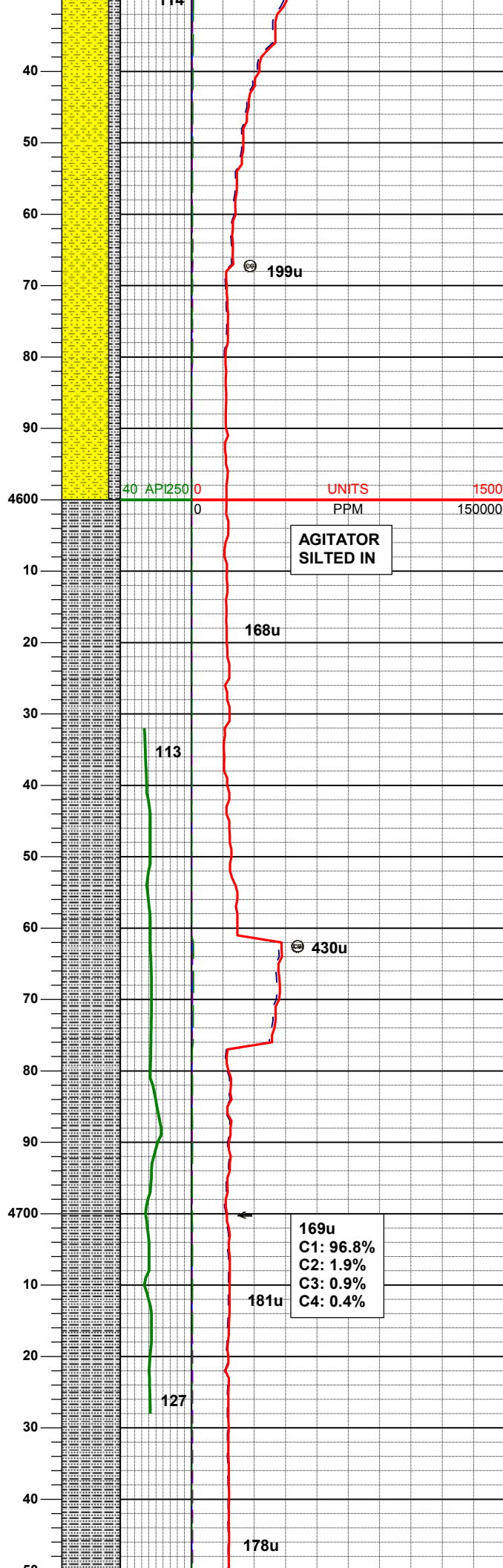
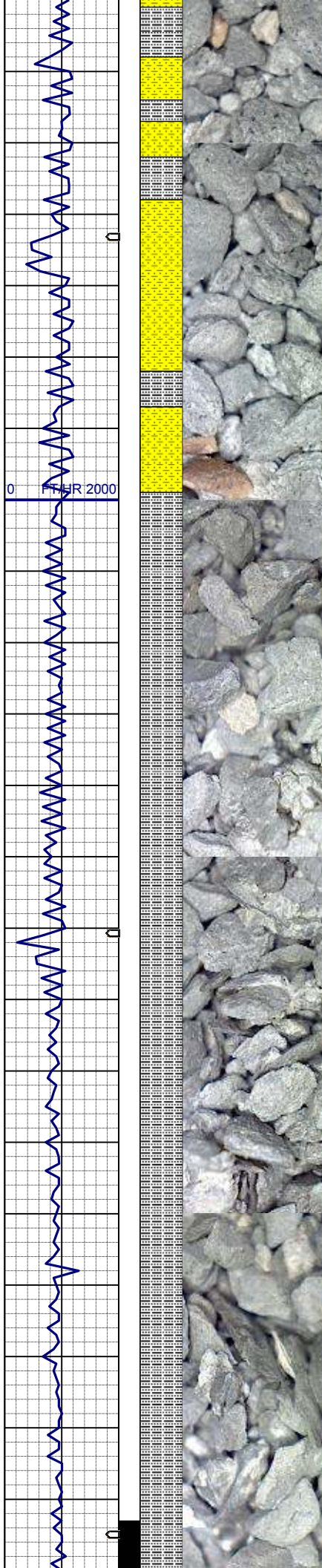
SLTYSH: gy-dkgy, sbblky-sbplty, sft-firm, gt-sdy tex, arg cmt  
SHYSS: gy-brn, s&p ip, sbang, p ind, wrnnd, modsrt, p por, arg cmt

MD 4399'  
INC 5.9°  
AZM 160.8°  
TVD 4323.17'

SLTYSH: gy-dkgy, sbblky-sbplty, sft-firm, gt-sdy tex, arg cmt  
SHYSS: gy-brn, s&p ip, sbang, p ind, wrnnd, modsrt, p por, arg cmt

MD 4494'  
INC 4.8°  
AZM 160.3°  
TVD 4417.76'





SHYSS: gy-brn, s&p ip, sbang, p ind, wrndd, modsrt, p por, arg cmt  
SLTYSH: gy-dkggy, sbblky-sbplty, sft-firm, gt-sdy tex, arg cmt

MD 4589'  
INC 3.3°  
AZM 165.6°  
TVD 4512.52'

AGITATOR  
SILTED IN

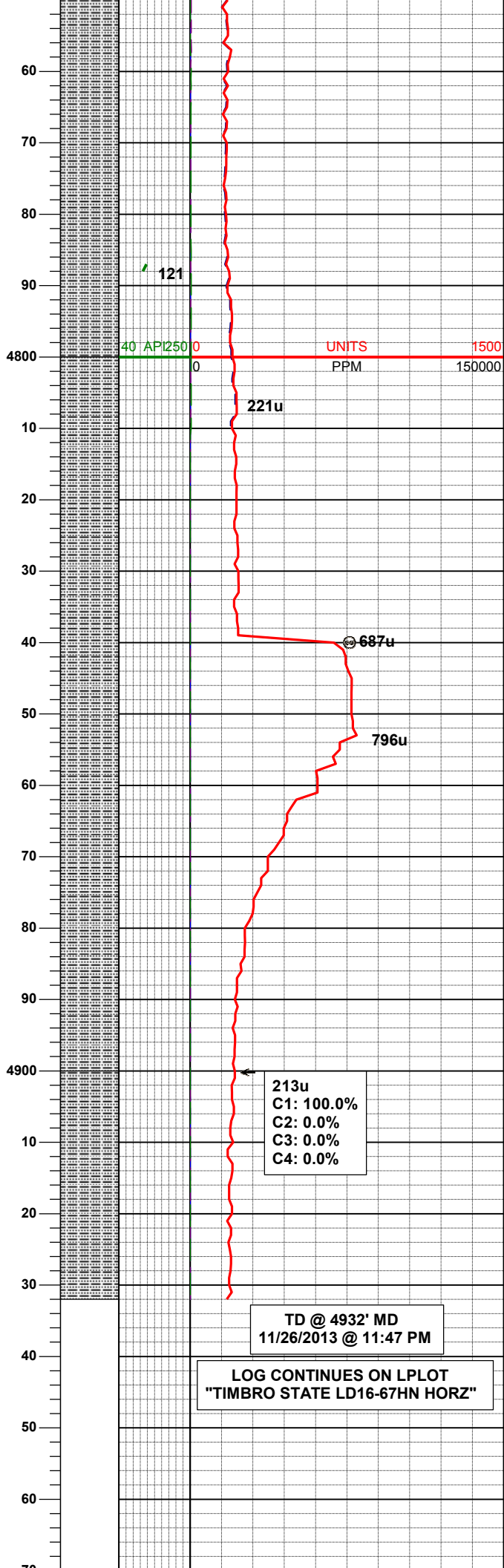
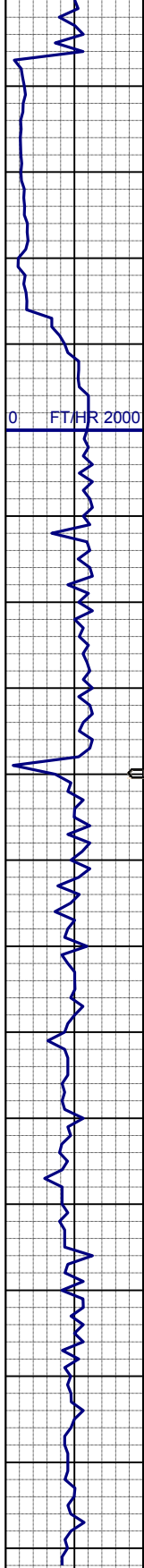
SLTYSH: gy-dkggy, sbblky-sbplty, sft-firm, gt-sdy tex, arg cmt

WT IN 9.50/ OUT 9.50  
VIS IN 35/ OUT 35

MD 4683'  
INC 2.2°  
AZM 168.2°  
TVD 4606.41'

169u  
C1: 96.8%  
C2: 1.9%  
C3: 0.9%  
C4: 0.4%

SI TYSH: gy-dkggy, sbblky-sbplty, sft-firm, gt-sdy tex, arg cmt



firm, gt-sdy tex, arg cmt

MD 4778'  
INC 0.4°  
AZM 334.0°  
TVD 4701.39'

SLTYSH: gy-dkgy, sbblky-sbplty, sft-  
firm, gt-sdy tex, arg cmt

MD 4873'  
INC 0.3°  
AZM 297.2°  
TVD 4796.39'

SLTYSH: gy-dkgy, sbblky-sbplty, sft-  
firm, gt-sdy tex, arg cmt



