

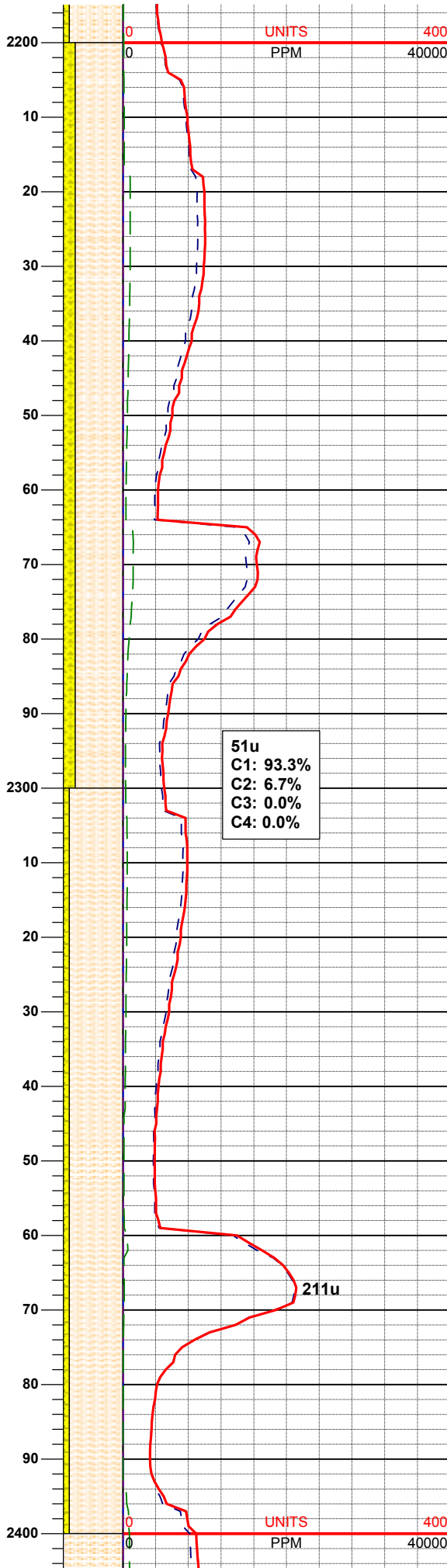
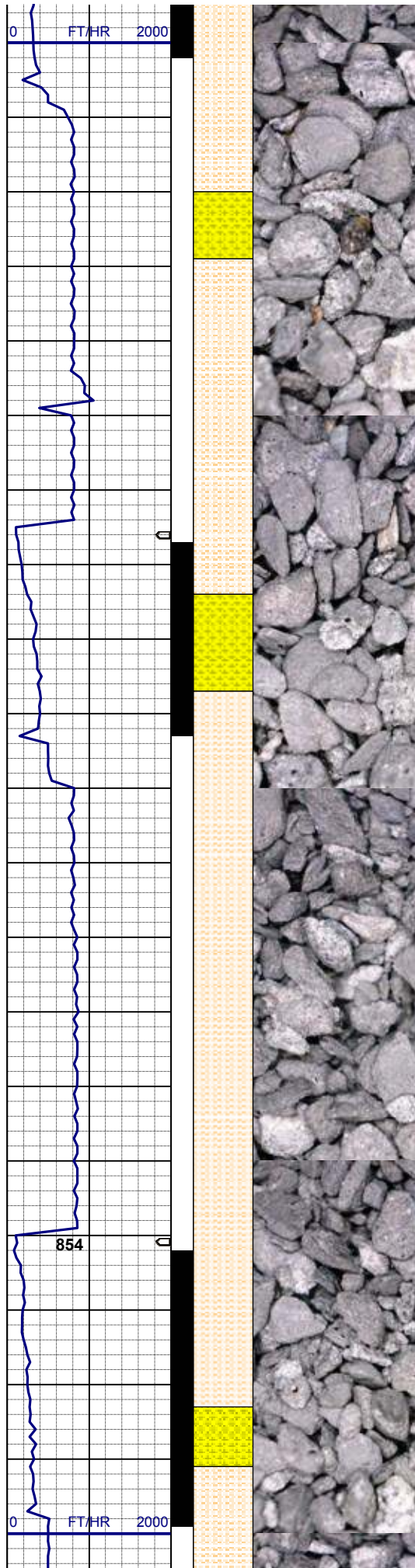
08/15/2012  
 Mud Wt: 8.60  
 FVis: 29  
 PVis: 4  
 YP: 4  
 GELS: -/-  
 API Filt: N/A  
 CAKE: 1/0  
 pH: 10.4  
 Cl: 1,800  
 Ca: 160

MD 2,020'  
 TVD 2,019.47'  
 INC 6.17°  
 AZM 9.96°

SHYSLTST: ltgy - mgy, sbpty-sbrd,  
 slty - gt tex, p por, arg cmt  
 SHYSS: lt gy, wh, sme s&p, slty, sbrd  
 - sbang, tt clus, brit-fri, v calc cmt

MD 2,115'  
 TVD 2,113.90'  
 INC 6.42°  
 AZM 19.36°

SHYSLTST: ltgy - mgy, sbpty-sbrd,  
 slty - gt tex, p por, arg cmt  
 SHYSS: lt gy, wh, sme s&p, slty, sbrd



SHYSS: lt gy, wh, sme s&p, slty, sbrd  
 - sbang, tt clus, brit-fri, v calc cmt

**MD 2,210'**  
**TVD 2,208.09'**  
**INC 8.52°**  
**AZM 26.27°**

SHYSLTST: ltgy - mgy, gybrn, sbply-  
 sbrd, slty - gt tex, p por, arg cmt  
 SHYSS: lt gy, wh, sme s&p, slty, sbrd  
 - sbang, tt clus, brit-fri, v calc cmt

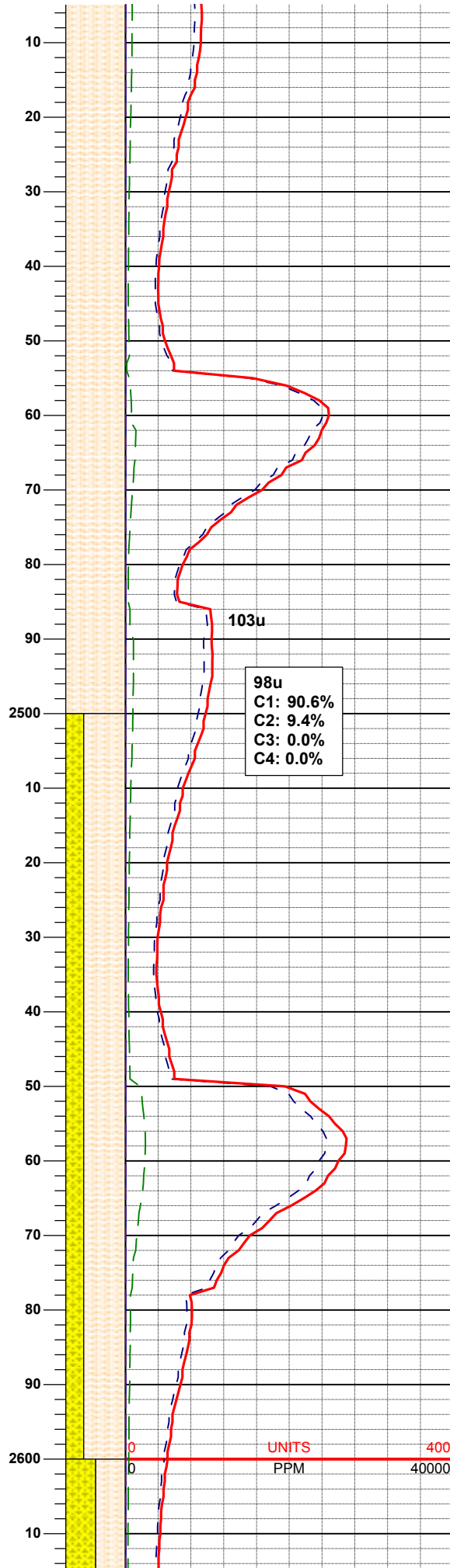
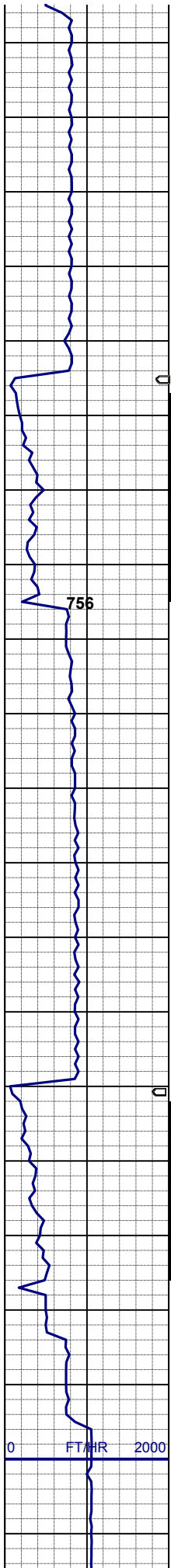
**MD 2,305'**  
**TVD 2,301.85'**  
**INC 9.99°**  
**AZM 19.41°**

**MUD WT 8.60/8.75**  
**VIS 29/29 IN/OUT**

SHYSLTST: ltgy - mgy, gybrn, sbply-  
 sbrd, slty - gt tex, p por, arg cmt  
 SHYSS: lt gy, wh, sme s&p, slty, sbrd  
 - sbang, tt clus, brit-fri, v calc cmt

**MD 2,400'**  
**TVD 2,395.14'**  
**INC 11.80°**

AZM 15.25°



SHYSLTST: ltgy - mgy, gybrn, sbply-sbrd, slty - gt tex, p por, calc cmt

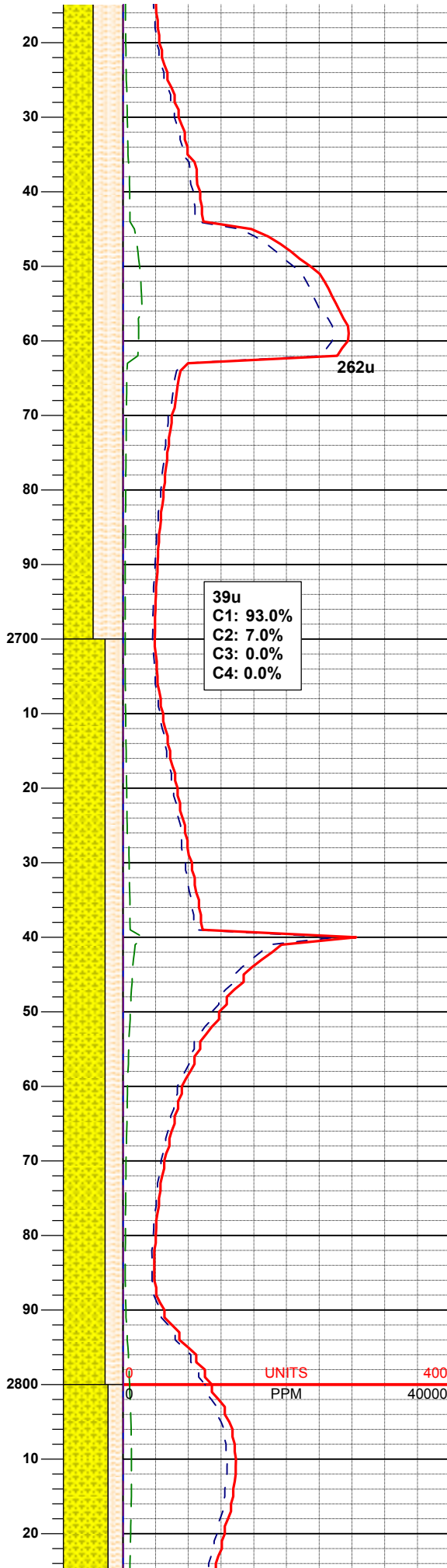
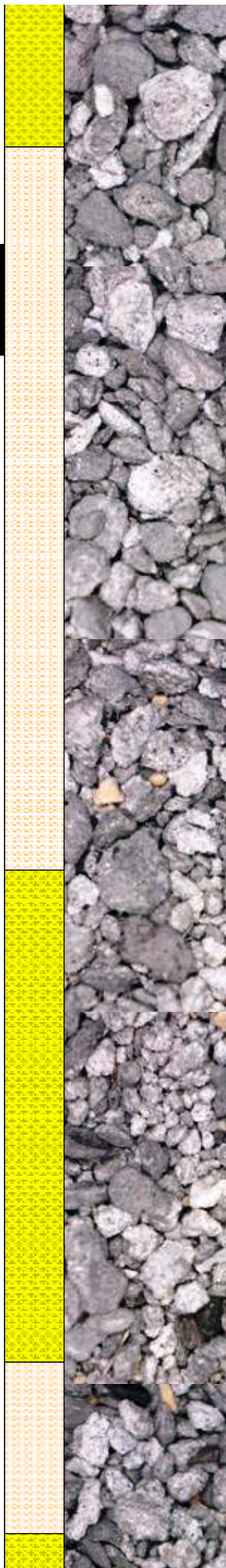
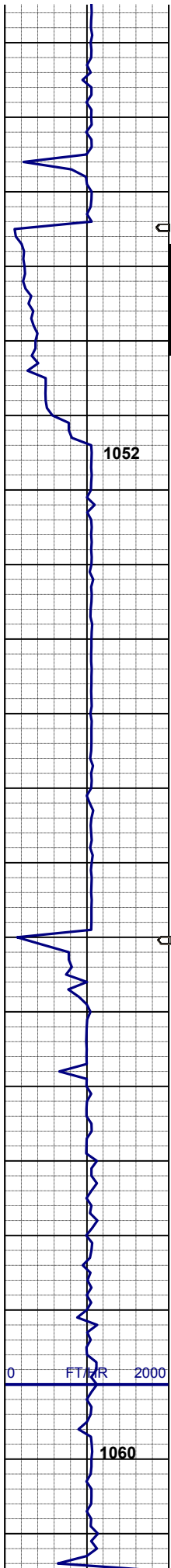
MD 2,495'  
TVD 2,487.89'  
INC 13.20°  
AZM 7.92°

98u  
C1: 90.6%  
C2: 9.4%  
C3: 0.0%  
C4: 0.0%

SHYSLTST: ltgy - mgy, gybrn, sbply-sbrd, slty - gt tex, p por, arg cmt  
SHYSS: lt gy, wh, sme s&p, slty, sbrd - sbang, tt clus, brit-fri, v calc cmt

MD 2,590'  
TVD 2,580.26'  
INC 13.82°  
AZM 7.17°

UNITS  
PPM

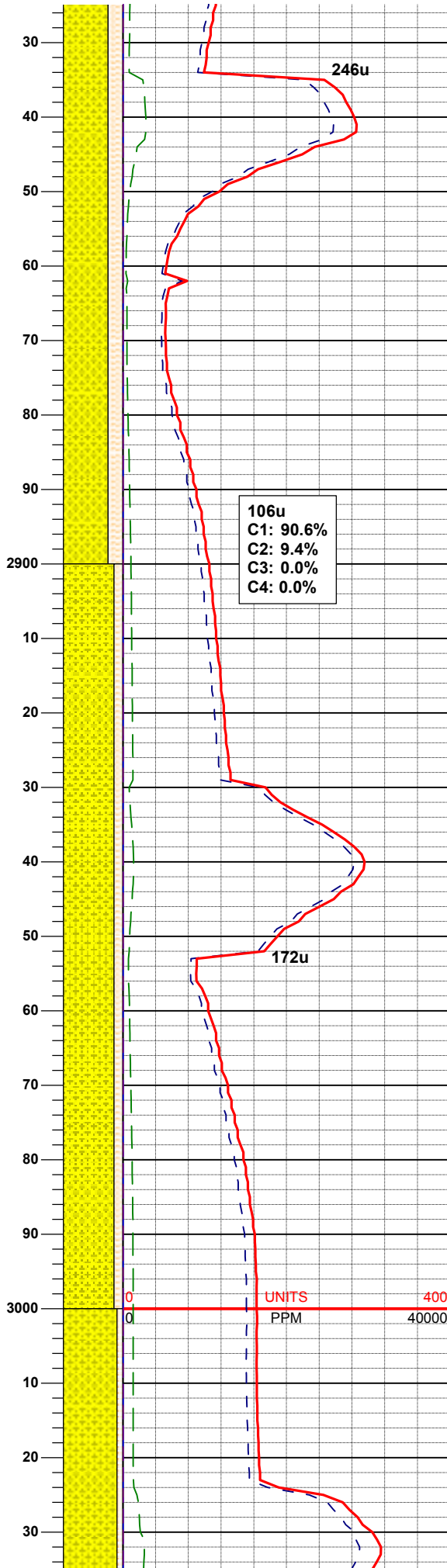
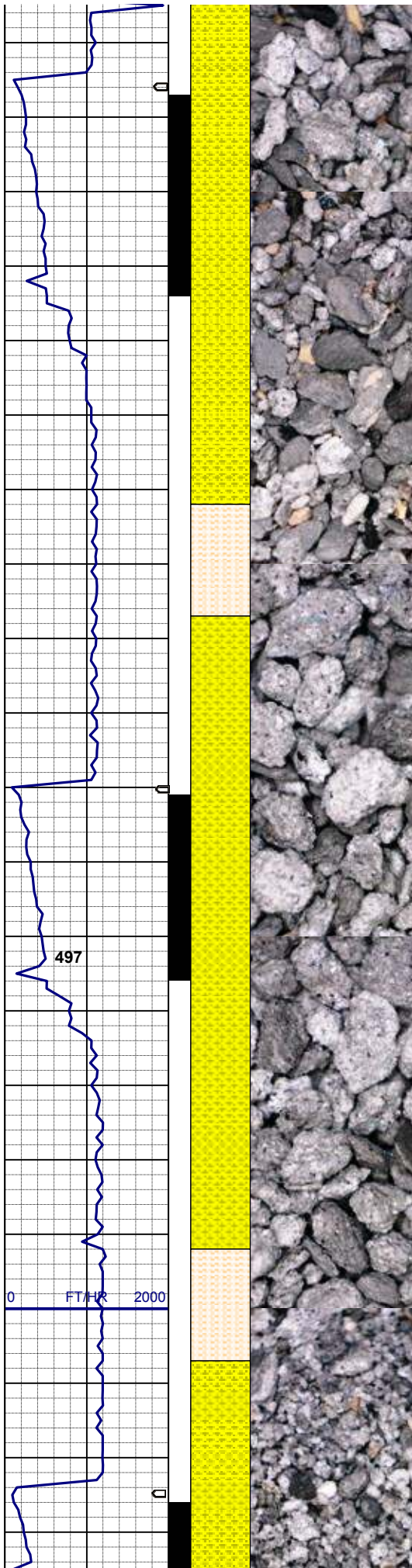


**MD 2,685'**  
**TVD 2,672.37'**  
**INC 14.50°**  
**AZM 5.38°**

SHYSLTST: ltgy - mgy, gybrn, sbply-  
 sbrd, slty - gt tex, p por, arg cmt  
 SHYSS: wh, lt gy, fros, spec w/ mica,  
 slty, sbrd - sbang, tt clus, brit-fri, v  
 calc cmt

**MD 2,780'**  
**TVD 2,764.65'**  
**INC 12.96°**  
**AZM 5.26°**

SHYSS: wh, lt gy, fros, spec w/ mica,  
 slty, sbrd - sbang, tt clus, brit-fri, v  
 calc cmt  
 SHYSLTST: ltgy - mgy, gybrn, sbply-  
 sbrd, slty - gt tex, p por, arg cmt

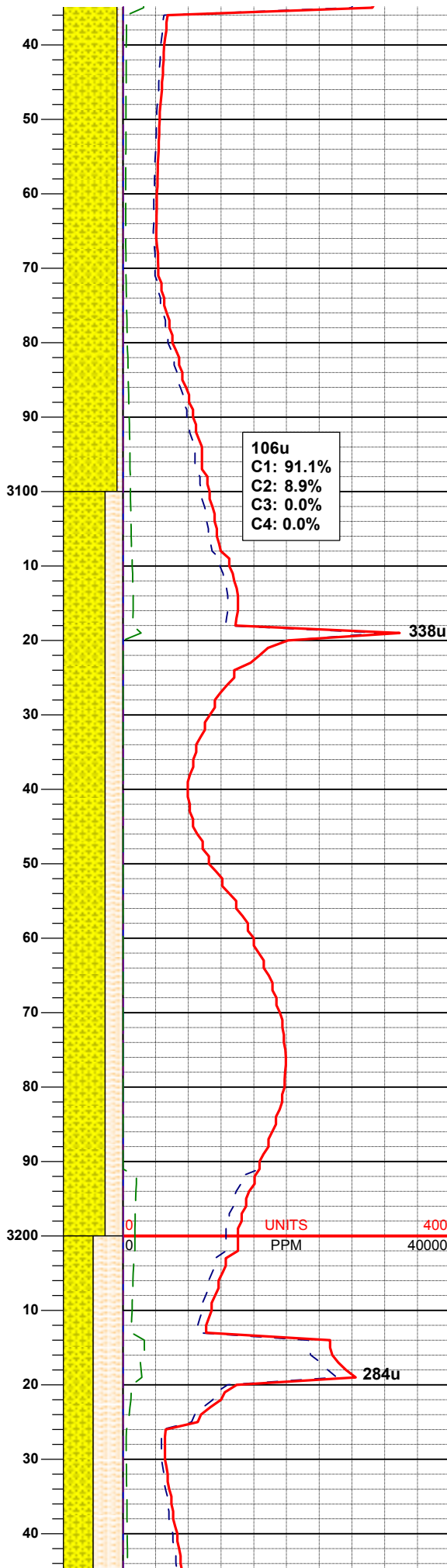
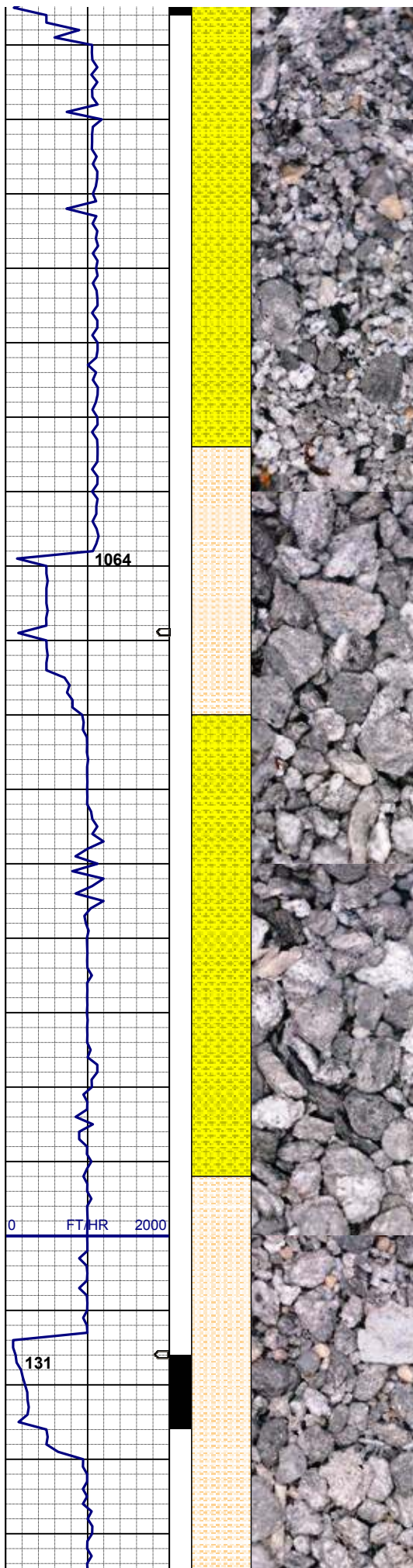


**MD 2,874'**  
**TVD 2,856.17'**  
**INC 13.45°**  
**AZM 7.60°**

SHYSS: wh, lt gy, clr - fros, s&p, slty,  
sbrd - sbang, tt clus, brit-fri, v calc cmt  
SHYSLTST: ltgy - mgy, gybrn, sbply-  
sbrd, slty - gt tex, p por, arg cmt

**MD 2,969'**  
**TVD 2,948.41'**  
**INC 14.21°**  
**AZM 11.40°**

SHYSS: wh, lt gy, clr - fros, s&p, slty,  
sbrd - sbang, tt clus, brit-fri, v calc cmt  
dk gn glau, spec w/ mica  
SHYSLTST: ltgy - mgy, gybrn, sbply-  
sbrd, slty - gt tex, p por, arg cmt



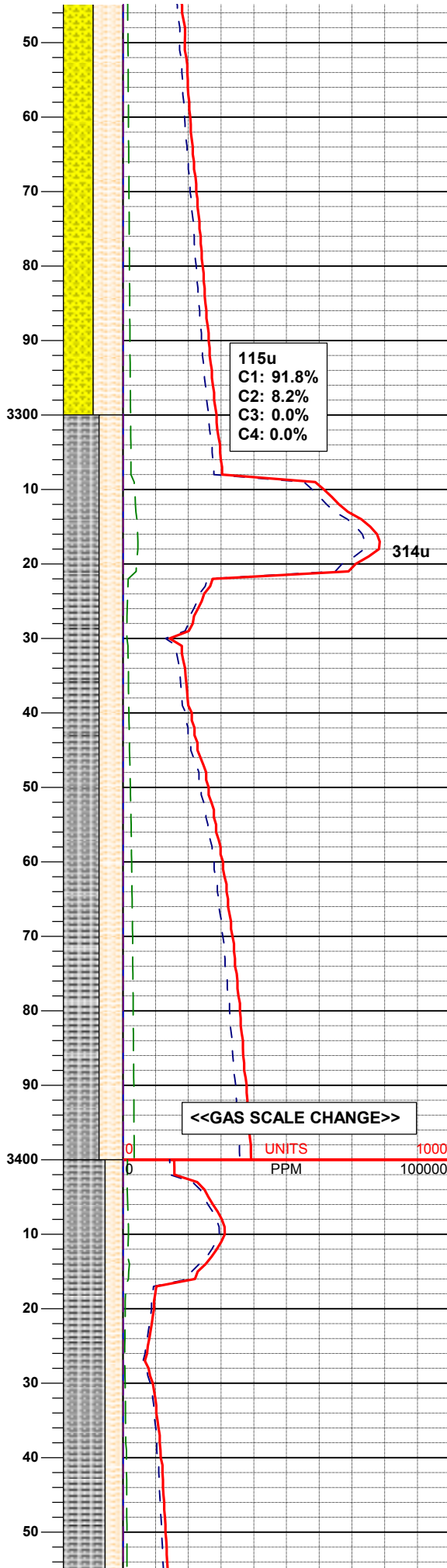
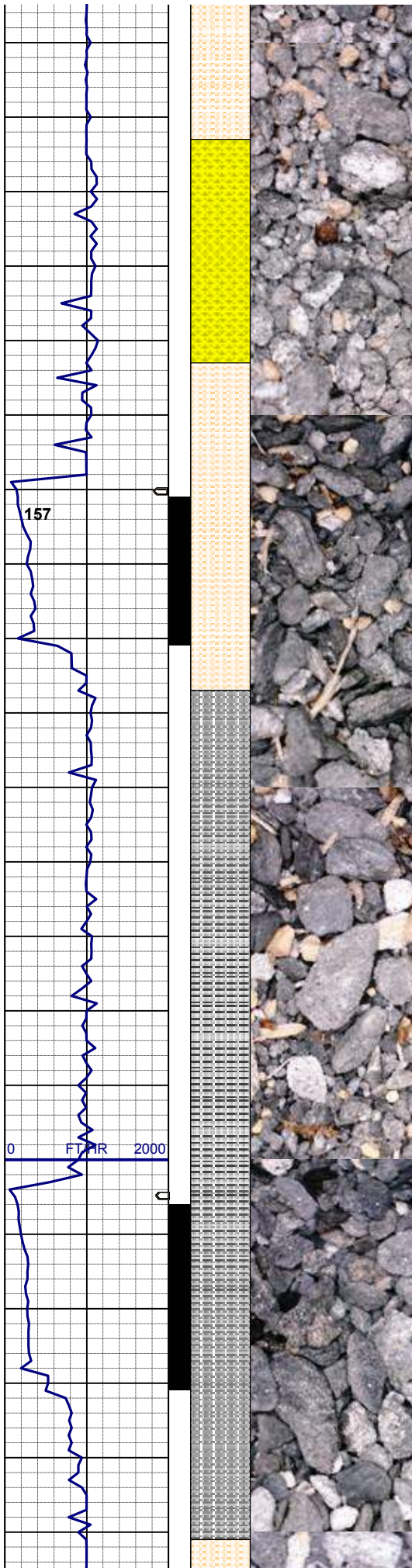
MD 3,064'  
 TVD 3,040.43'  
 INC 14.61°  
 AZM 10.25°

MUD WT 8.90/8.85  
 VIS 31/31 IN/OUT

SHYSS: wh, lt gy, clr - fros, s&p, slty, sbrd - sbang, tt clus, brit-fri, v calc cmt dk gn glau, spec w/ mica  
 SHYSLTST: ltgy - mgy, gybrn, sbply-sbrd, slty - gt tex, p por, arg cmt

MD 3,159'  
 TVD 3,132.47'  
 INC 14.05°  
 AZM 9.73°

SHYSS: wh, lt gy, clr - fros, s&p, slty, sbrd - sbang, tt clus, brit-fri, v calc cmt dk gn glau, spec w/ mica  
 SHYSLTST: ltgybrn - mgybrn, sbply-sbrd, slty - gt tex, p por, arg cmt



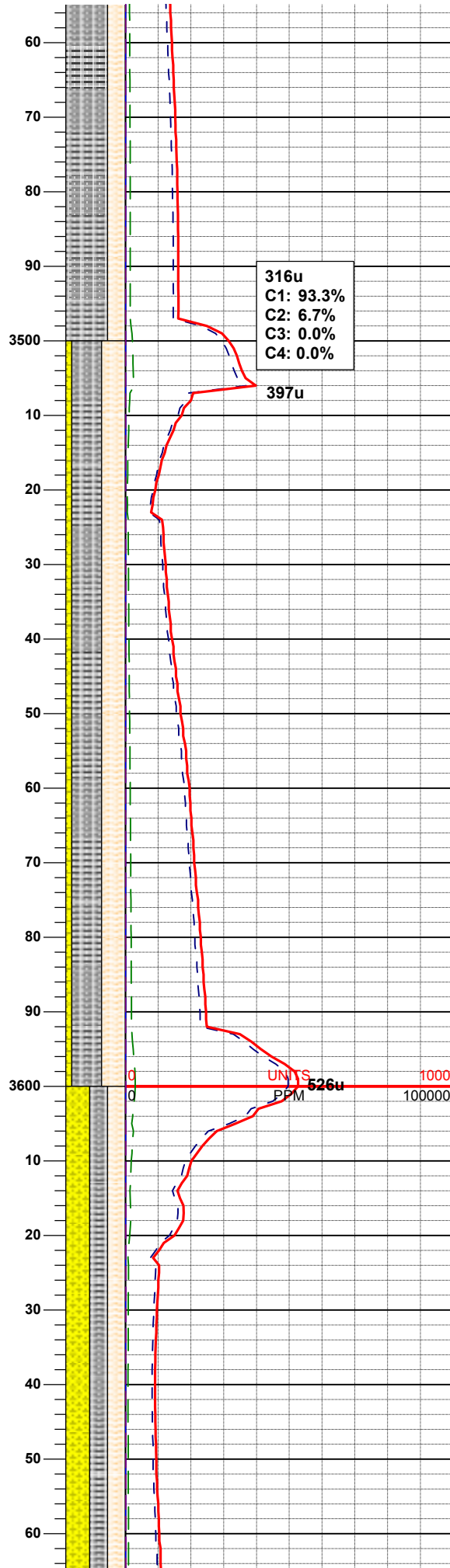
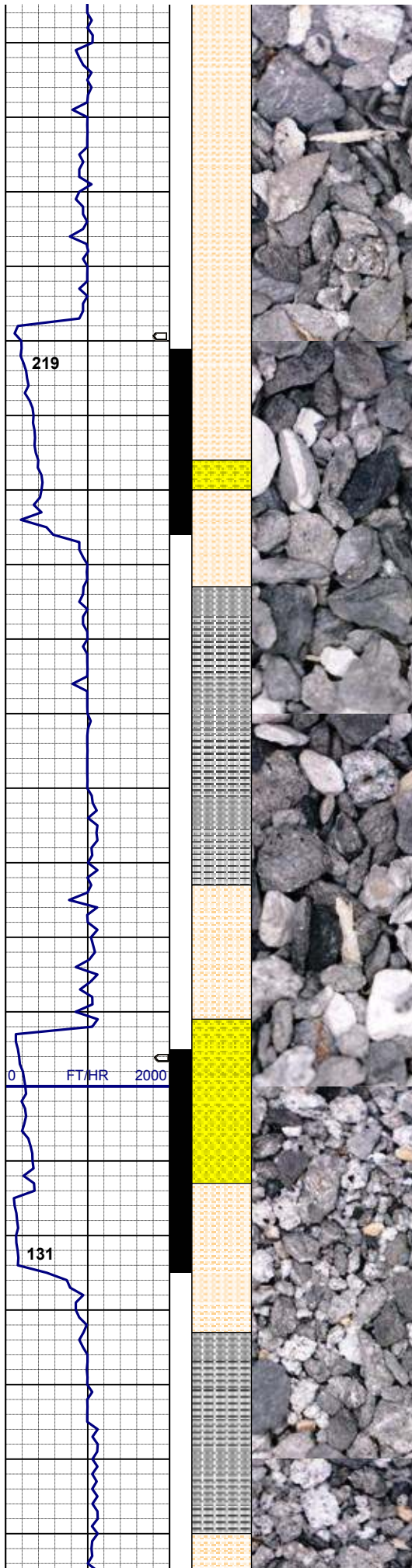
MD 3,254'  
 TVD 3,224.78'  
 INC 13.26°  
 AZM 10.17°

SHYSS: wh, lt gy, clr - fros, s&p, slty,  
 sbrd - sbang, tt clus, brit-fri, v calc cmt  
 dk gn glau, spec w/ mica  
 SHYSLTST: ltgybrn - mgybrn, sbply-  
 sbrd, slty - gt tex, p por, arg cmt

MD 3,349'  
 TVD 3,317.23'  
 INC 13.39°  
 AZM 12.36°

SLTYSH: mgy - dkgy, firm - hd, sbply  
 - pty, sme thn lam, v sl calc ip  
 SHYSLTST: wh, ltgy - mgy, mod hd,  
 sbrd -w rd, gt tex, brit, calc cmt

MD 3,444'  
 TVD 3,409.69'  
 INC 13.15°  
 AZM 12.78°

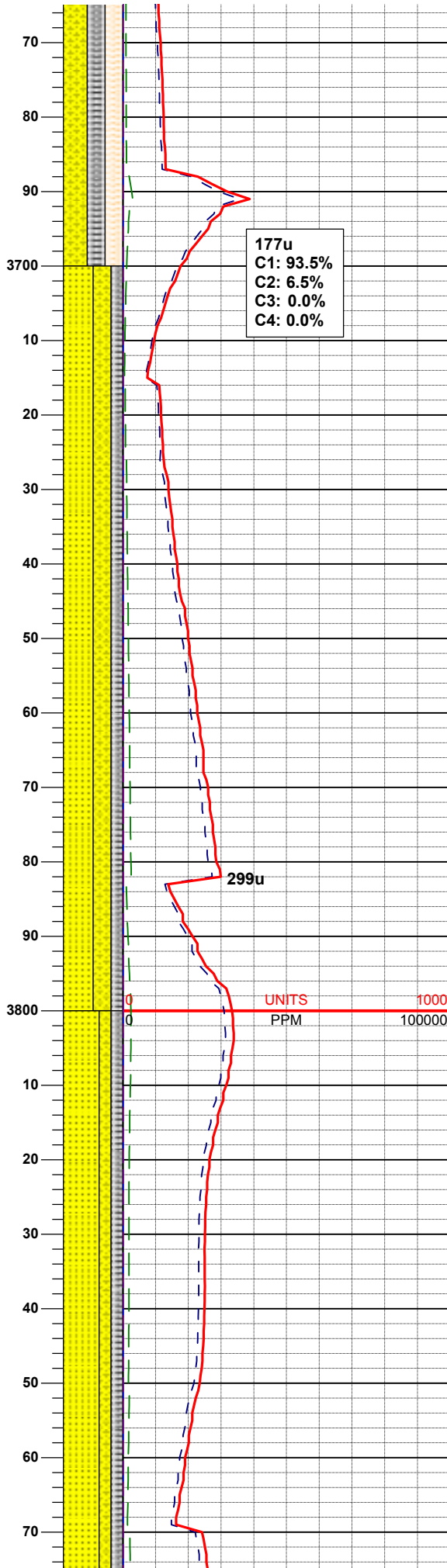
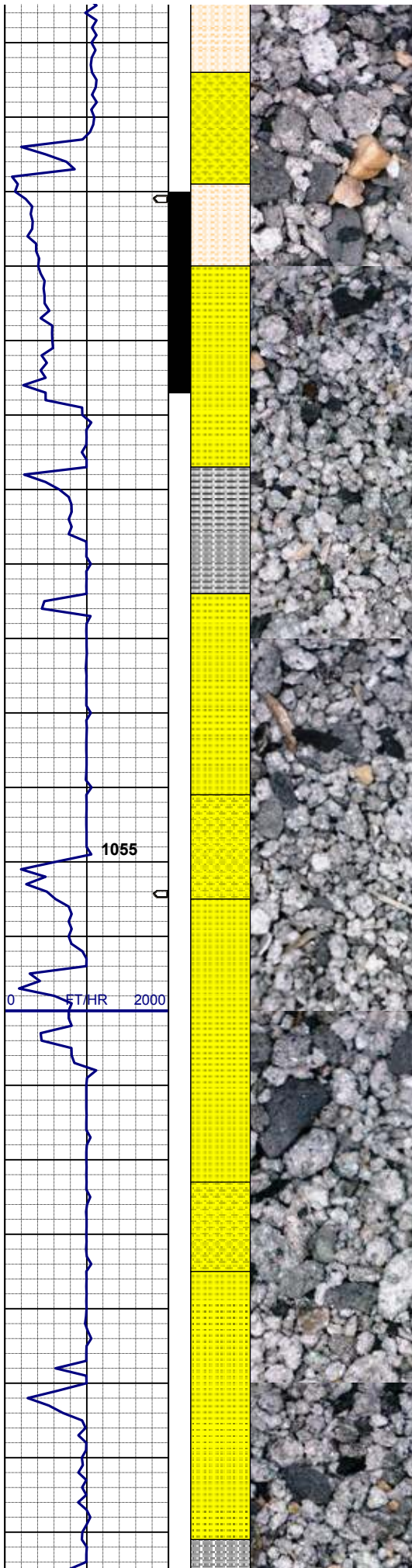


SLTYSH: mgy - dkgy, firm - hd, sbply  
 - pty, sme thn lam, v sl calc ip  
 SHYSLTST: wh, ltgy - mgy, mod hd,  
 sbrd -w rd, gt tex, brit, calc cmt

MD 3,538'  
 TVD 3,501.33'  
 INC 12.57°  
 AZM 10.93°

SLTYSH: mgy - dkgy, firm - hd, sbply  
 - pty, sme thn lam, v sl calc ip  
 SHYSLTST: wh, ltgy, mod hd, sbang -  
 sbrd, gt tex, brit, calc cmt  
 SHYSS: wh, lt gy, clr - fros, s&p, slty,  
 sbang - ang, tt clus, brit-fri, v calc cmt

MD 3,633'  
 TVD 3,594.02'  
 INC 12.76°  
 AZM 8.97°



SHYSS: wh, lt gy, clr - fros, s&p, sity, sbang - ang, brit-fri clus, v calc cmt  
 SLTYSH: mgy - dkg, firm - hd, sbplty - pty, sme thn lam, v sl calc ip  
 SHYSLTST: wh, ltgy, mod hd, sbang - sbrd, gt tex, brit, calc cmt

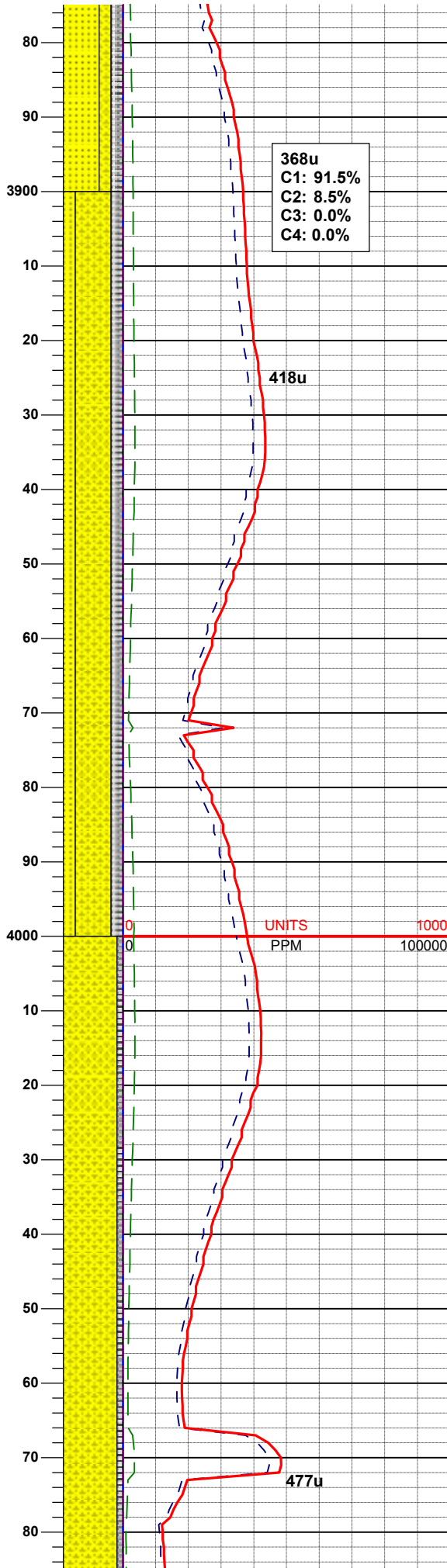
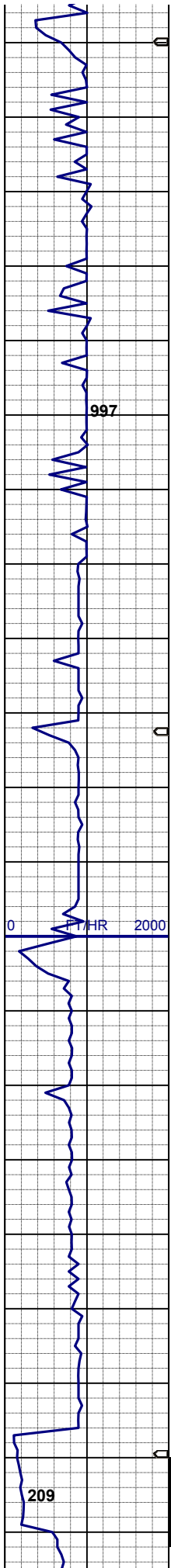
**TOP OF PARKMAN  
 @ 3,700' MD 3,655' TVD**

**MD 3,728'  
 TVD 3,686.42'  
 INC 14.09°  
 AZM 9.36°**

SS: wh, clr - trnsl, spec w/ mica, ang - sbang, p srt, p consol, f-vf gr, v calc cmt  
 SHYSS: wh, ltgy - mgy, sbang - ang, mod srt, mod consol, smwt calc cmt  
 SLTYSH: mgy - dkg, firm - hd, sbplty - pty, sme thn lam,

**MD 3,823'  
 TVD 3,778.43'  
 INC 14.73°  
 AZM 9.71°**

UNITS 1000  
 PPM 100000



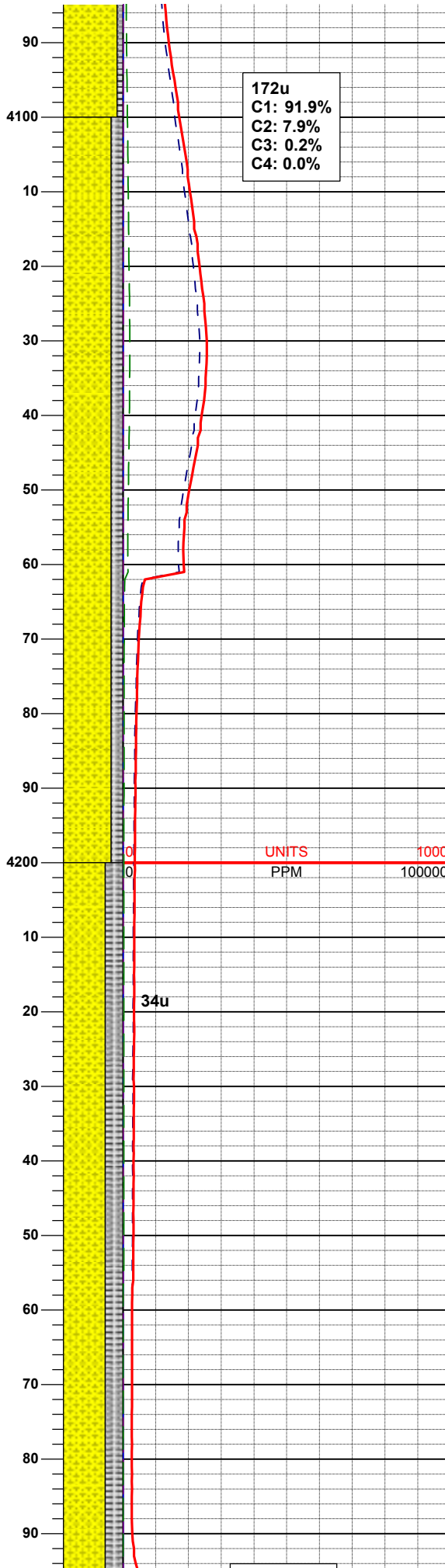
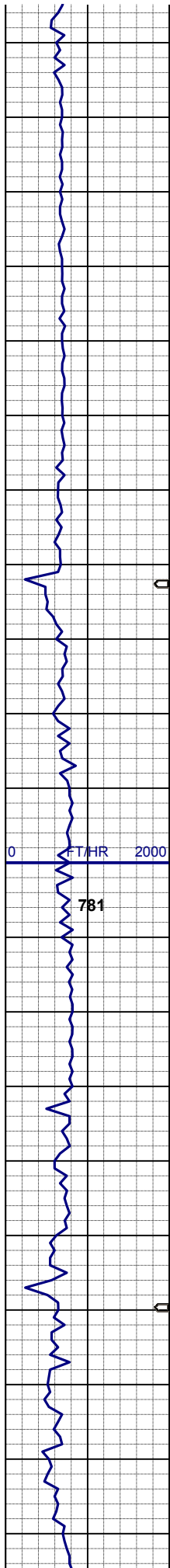
SS: wh, clr - trnsl, spec w/ mica, ang - sbang, p srt, p consol, f-vf gr, v calc cmt  
 SHYSS: wh, ltgy - mgy, sbang - ang, mod srt, mod consol, smwt calc cmt  
 SLTYSH: mgy - dkgy, firm - hd, sbply - pty, sme thn lam,

**MD 3,918'**  
**TVD 3,870.13'**  
**INC 15.57°**  
**AZM 9.95°**

SHYSS: wh, ltgy - mgy, gybrn, sbang - sbrd, mod srt, mod consol, v f gr, smwt calc cmt  
 SS: wh, clr - trnsl, spec w/ mica, ang - sbang, p srt, p consol, f-vf gr, v calc cmt  
 SLTYSH: mgy - dkgy, firm - hd, sbply - pty, sme thn lam,

**MD 4,013'**  
**TVD 3,961.48'**  
**INC 16.30°**  
**AZM 9.78°**

SHYSS: wh ltav - mav avbrn sme



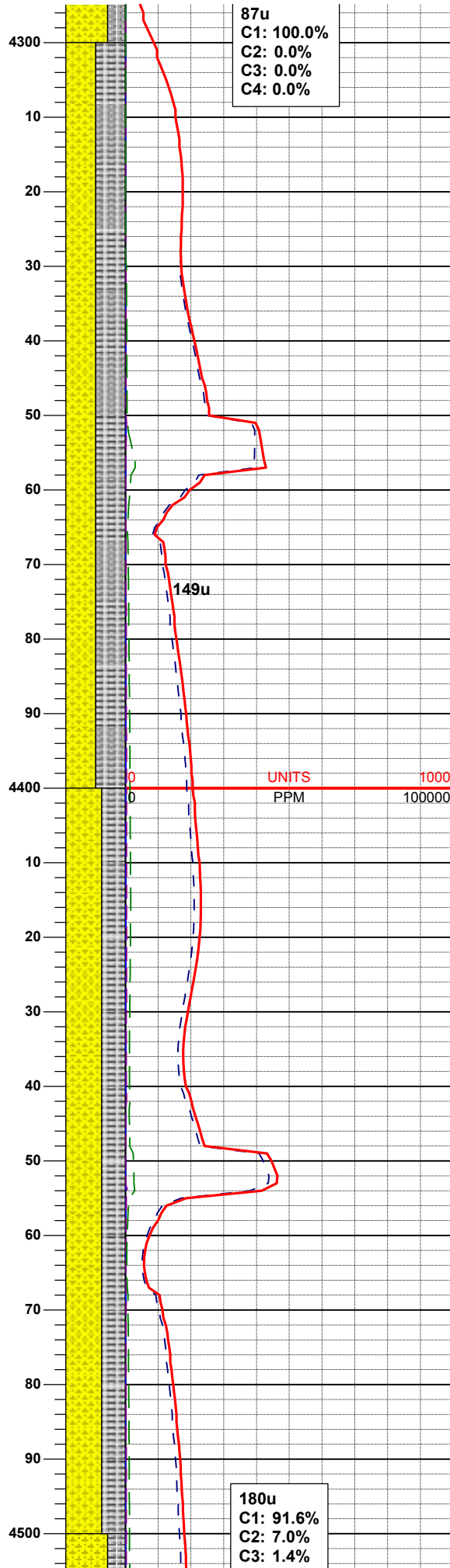
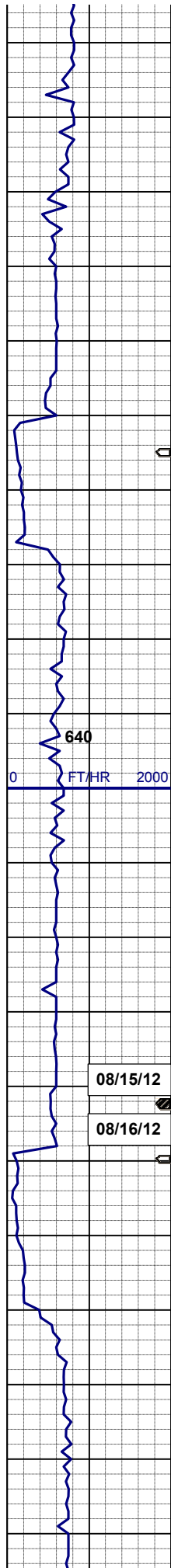
SHYSS: wh, ltgy - mgy, gybrn, sme trnsl, sbang - sbrd, p srt, mod consol, f - v f gr, calc cmt  
 SLTYSH: mgy - dkgy, firm - hd, sbply - pty, sme thn lam,

**MD 4,108'**  
**TVD 4,052.91'**  
**INC 15.23°**  
**AZM 8.52°**

SHYSS: wh, ltgy - mgy, gybrn, sme trnsl, sbang - sbrd, p srt, mod consol, f - v f gr, calc cmt, v freq dk gn xl glau, SLTYSH: mgy - dkgy, firm - hd, sbply - pty, sme thn lam,

**MD 4,203'**  
**TVD 4,144.72'**  
**INC 14.52°**  
**AZM 7.56°**

SHYSS: wh, ltgy - mgy, gybrn, sme trnsl, sbang - sbrd, p srt, mod consol, f - v f gr, calc cmt, v freq dk gn xl glau, SLTYSH: mgy - dkgy, firm - hd, sbply - pty, sme thn lam,



87u  
 C1: 100.0%  
 C2: 0.0%  
 C3: 0.0%  
 C4: 0.0%

MD 4,298'  
 TVD 4,236.92'  
 INC 13.36°  
 AZM 6.72°

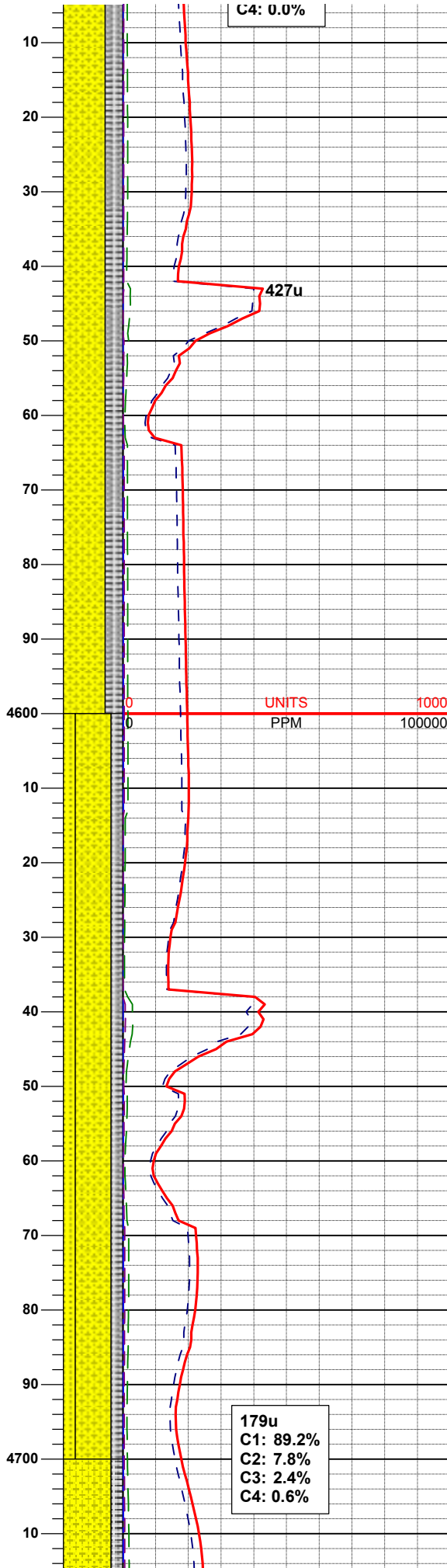
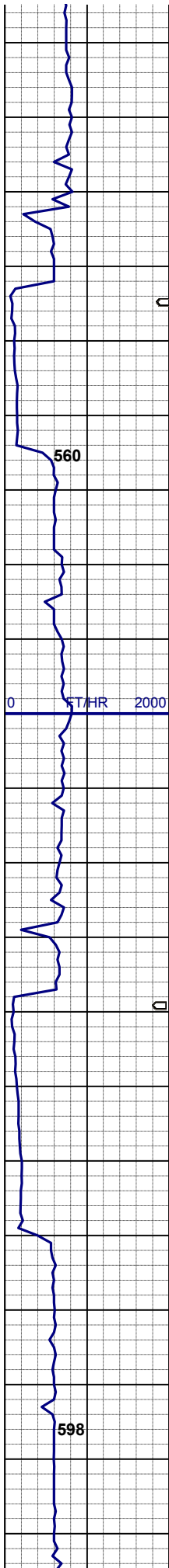
SHYSS: wh, ltgy - mgy, gybrn, sme trnsl, sbang - sbrd, p srt, mod consol, f - v f gr, calc cmt, v freq dk gn xl glau, SLTYSH: mgy - dkgy, firm - hd, sbplty - pty, sme thn lam,

MD 4,392'  
 TVD 4,328.38'  
 INC 13.35°  
 AZM 4.63°

180u  
 C1: 91.6%  
 C2: 7.0%  
 C3: 1.4%

SHYSS: wh, ltgy - mgy, gybrn, sme trnsl, sbang - sbrd, p srt, mod consol, f - v f gr, calc cmt, v freq dk gn xl glau, SLTYSH: mgy - dkgy, firm - hd, sbplty - pty, sme thn lam,

MD 4,487'  
 TVD 4,420.83'  
 INC 13.26°  
 AZM 2.58°



MUD WT 8.75/8.85  
VIS 33/31 IN/OUT

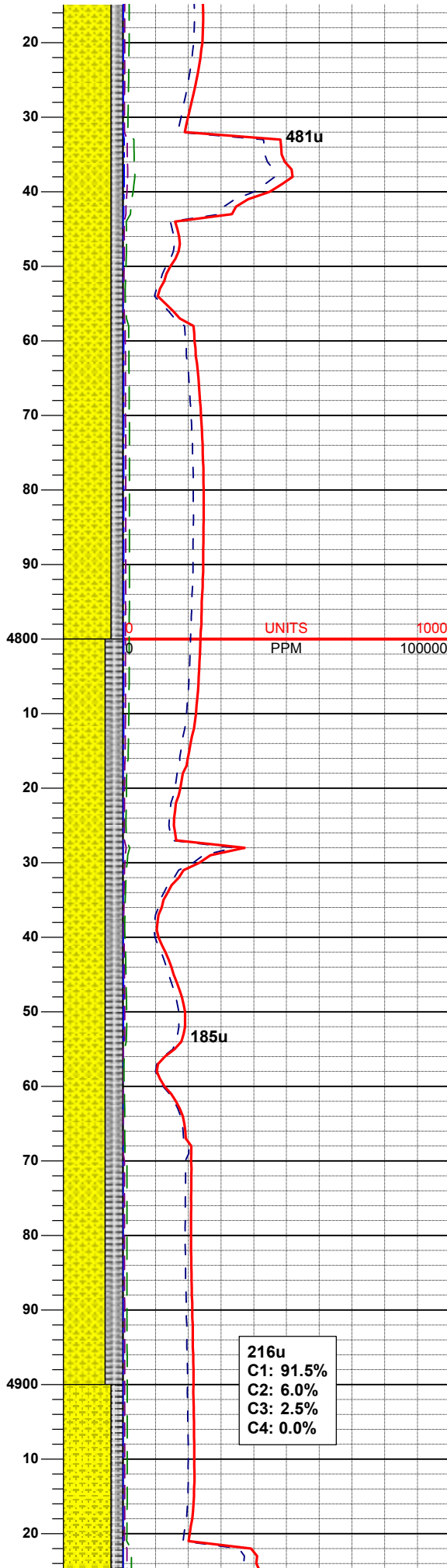
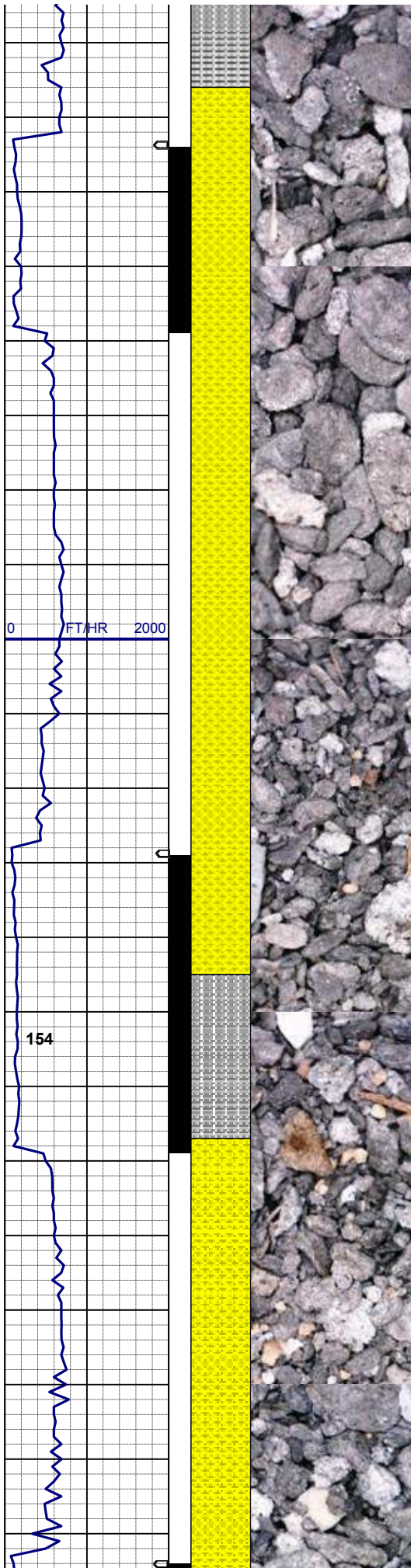
TOP OF SUSSEX  
@ 4,543' MD 4,475' TVD

MD 4,582'  
TVD 4,513.33'  
INC 13.11°  
AZM 1.70°

SHYSS: wh, ltgy - mgy, gybrn, sme trnsl, sbang - sbrd, p srt, mod consol, f - v f gr, calc cmt, v freq dk gn xl glau, SLTYSH: mgy - dkg, firm - hd, sbplty - pty, sme thn lam,

MD 4,677'  
TVD 4,605.93'  
INC 12.68°  
AZM 4.39°

SHYSS: ltgy - mgy, gybrn, sme trnsl, sbang - sbrd, p srt, mod consol, f - v f gr, calc cmt, v freq dk gn xl glau, SLTYSH: mgy - dkg, firm - hd, sbplty - pty, sme thn lam, SS: wh, ltgy, clr - trnsl, spec w/ mica, ang - sbang, p srt, p consol, f-vf gr, v calc cmt



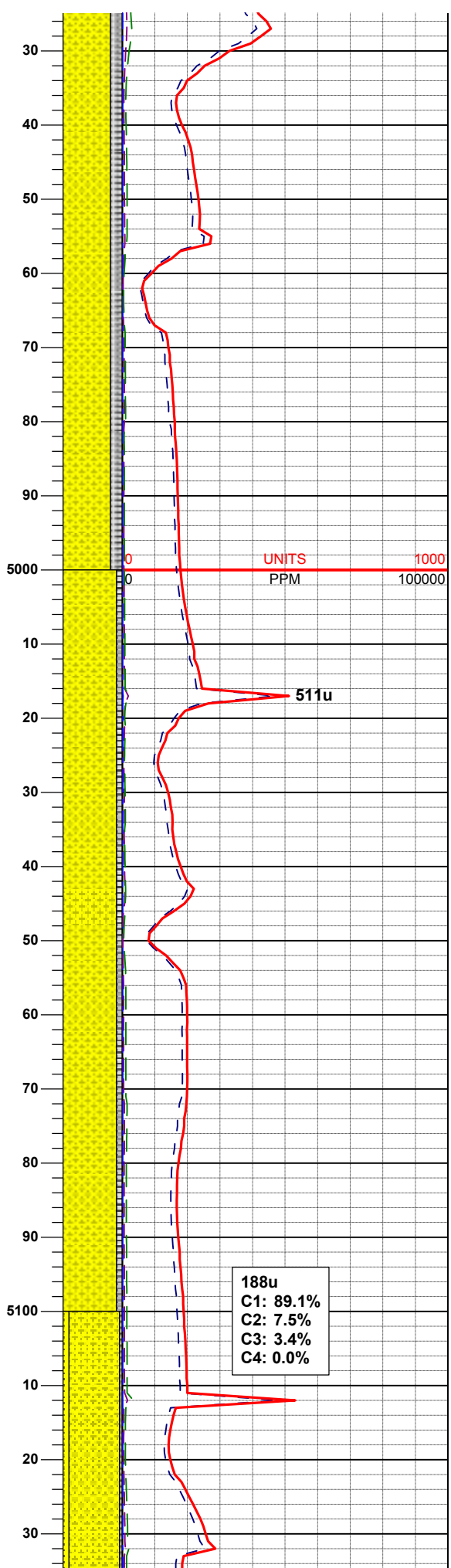
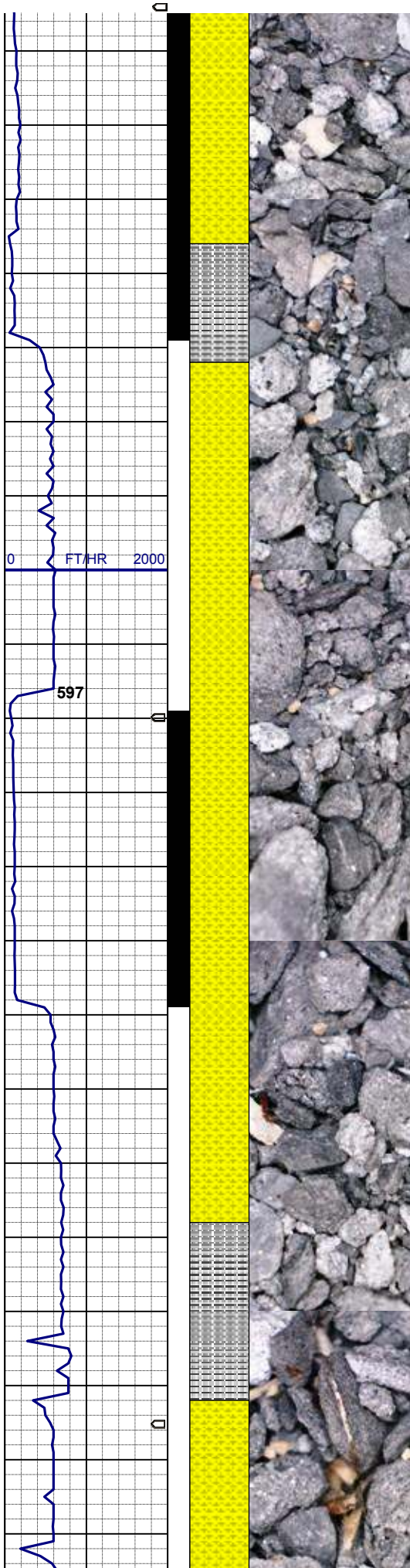
**MD 4,772'**  
**TVD 4,698.70'**  
**INC 12.23°**  
**AZM 6.58°**

SHYSS: wh, ltgy - mgy, gybrn, sme  
 trnsl, sbang - sbrd, p srt, mod consol,  
 f - v f gr, calc cmt, v freq dk gn xl glau,  
 SLTYSH: mgy - dkgy, firm - hd, sbply  
 - plty, gt tex, sme thn lam,

**MD 4,867'**  
**TVD 4,791.43'**  
**INC 12.84°**  
**AZM 5.66°**

SHYSS: wh, ltgy - mgy, gybrn, sme  
 trnsl, sbang - sbrd, p srt, mod consol,  
 f - v f gr, calc cmt, freq dk gn xl glau,  
 SLTYSH: mgy - dkgy, firm - hd, sbply  
 - plty, gt tex, sme thn lam,

**216u**  
**C1: 91.5%**  
**C2: 6.0%**  
**C3: 2.5%**  
**C4: 0.0%**



MD 4,962'  
 TVD 4,883.86'  
 INC 13.91°  
 AZM 3.82°

SHYSS: wh, ltgy - mgy, gybrn, sme trnsl, sbang - sbrd, p srt, mod consol, f - v f gr, calc cmt, freq dk gn xl glau, SLTYSH: mgy - dkggy, firm - hd, sbply - plty, gt tex, sme thn lam,

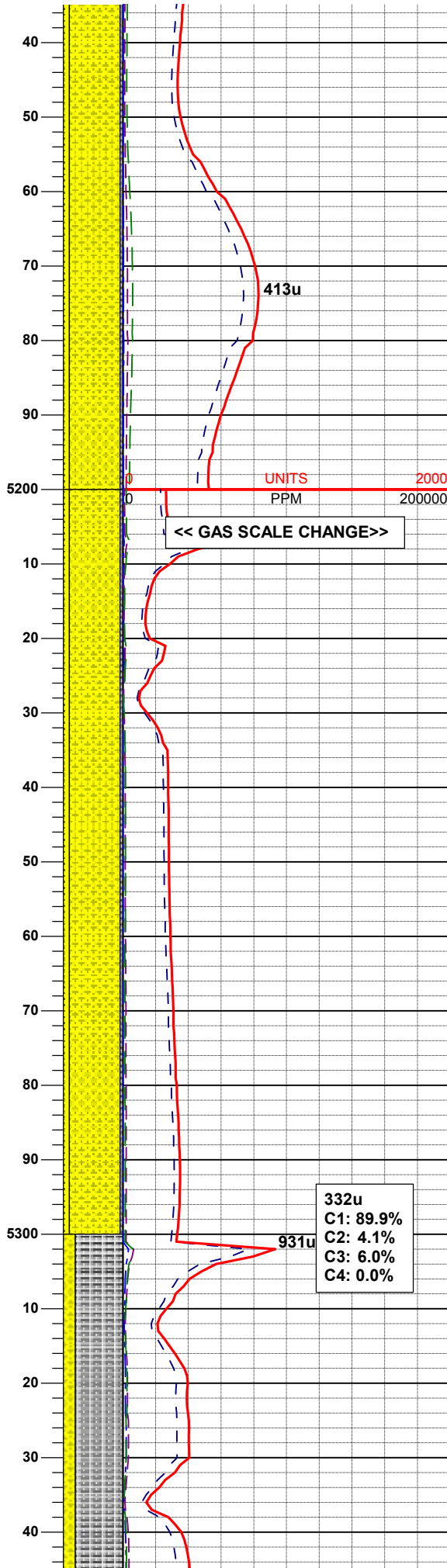
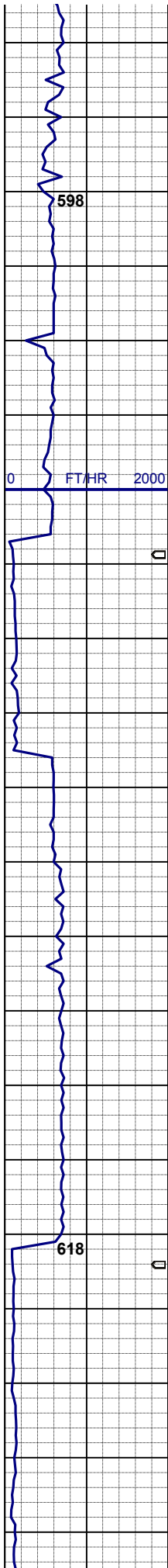
MUD WT 8.70/8.75  
 VIS 30/30 IN/OUT

MD 5,057'  
 TVD 4,975.62'  
 INC 14.65°  
 AZM 9.33°

SHYSS: wh, ltgy - mgy, gybrn, sme trnsl, sbang - sbrd, p srt, mod consol, f - v f gr, calc cmt, freq dk gn xl glau, SLTYSH: mgy - dkggy, firm - hd, sbply - plty, gt tex, sme thn lam,

**TOP OF SHANNON  
 @ 5,112' MD 5,030' TVD**

08/16/2012  
 Mud Wt: 8.70  
 FVis: 29  
 PVis: 2  
 YP: 3  
 GFI S: -J-L-



API Filt: N/A  
 CAKE: 1/0  
 pH: 9.1  
 Cl: 1,500  
 Ca: 120

MD 5,151'  
 TVD 5,064.07'  
 INC 13.66°  
 AZM 8.94°

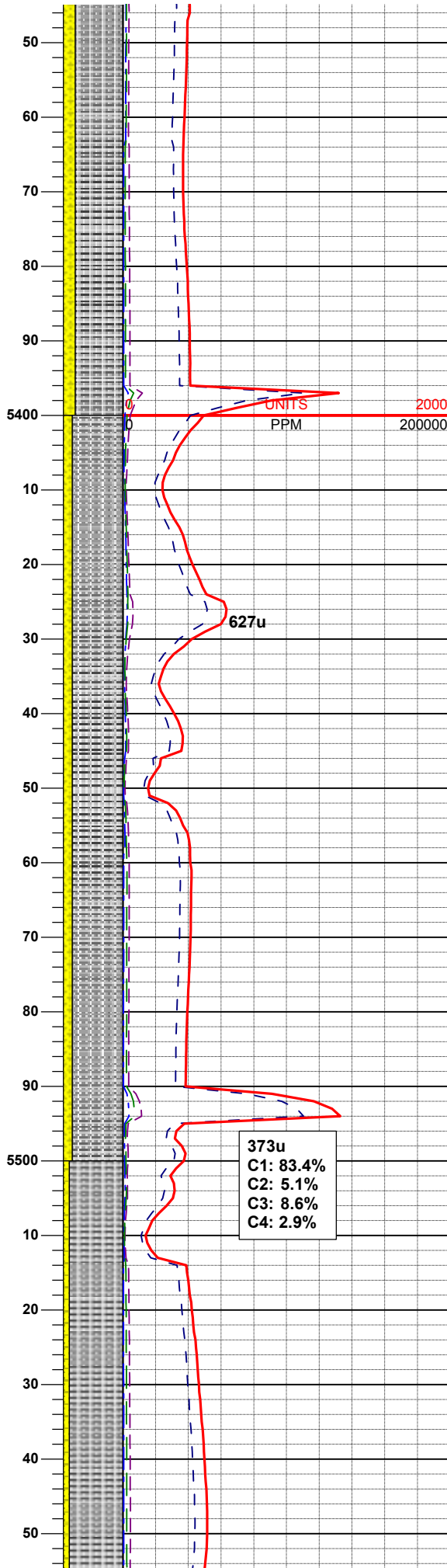
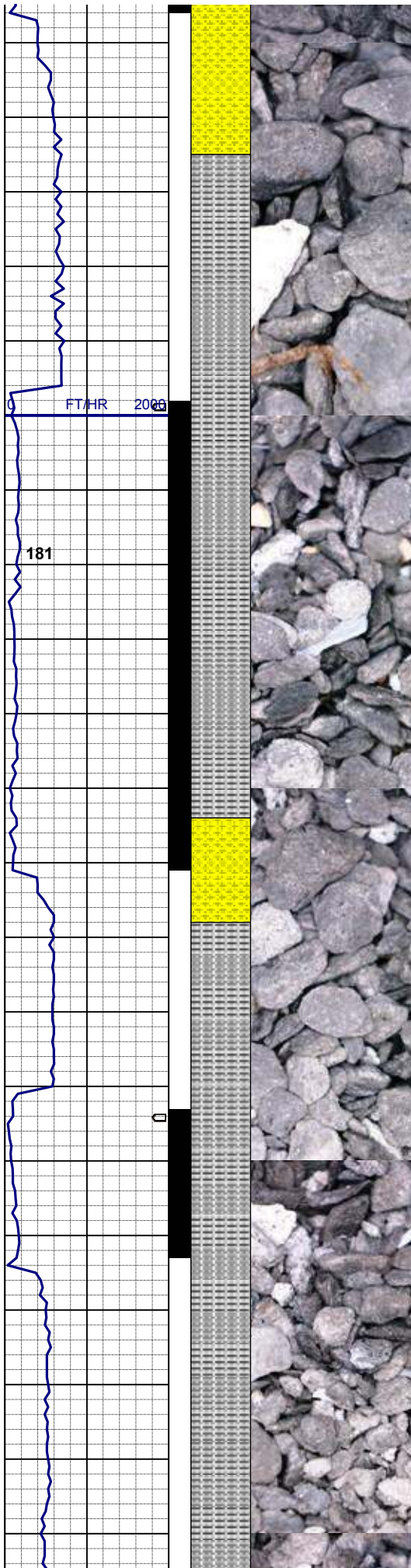
SHYSS: ltgy - mgy, gybrn, sme trnsl, sbang - sbrd, p srt, mod consol, f - v f gr, calc cmt, v freq dk gn xl glau, SLTYSH: mgy - dkgy, firm - hd, sbply - pty, sme thn lam, SS: wh, ltgy, clr - trnsl, spec w/ mica, ang - sbang, p srt, p consol, f-vf gr, v calc cmt

MD 5,246'  
 TVD 5,159.48'  
 INC 13.17°  
 AZM 12.97°

SHYSS: ltgy - mgy, gybrn, sme trnsl, sbang - sbrd, p srt, mod consol, f - v f gr, calc cmt, v freq dk gn xl glau, SLTYSH: mgy - dkgy, firm - hd, sbply - pty, sme thn lam, SS: wh, ltgy, clr - trnsl, spec w/ mica, ang - sbang, p srt, p consol, f-vf gr, v calc cmt

332u  
 C1: 89.9%  
 C2: 4.1%  
 C3: 6.0%  
 C4: 0.0%

MD 5,341'  
 TVD 5,252.08'



TVD 5,252.00  
 INC 12.61°  
 AZM 12.70°

SLTYSH: mgy - dkgy, firm - hd, sbply  
 - pty, gt tex, sme thn lam,  
 SHYSS: wh, ltgy - mgy, gybrn, sme  
 trnsl, sbang - sbrd, p srt, mod consol,  
 f - v f gr, calc cmt, freq dk gn xl glau,

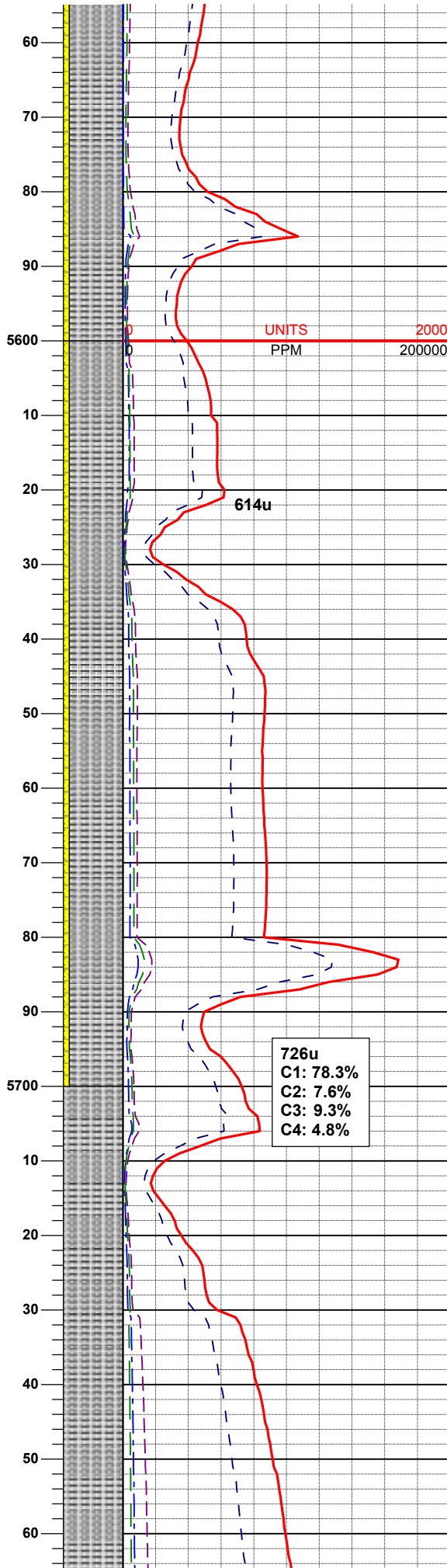
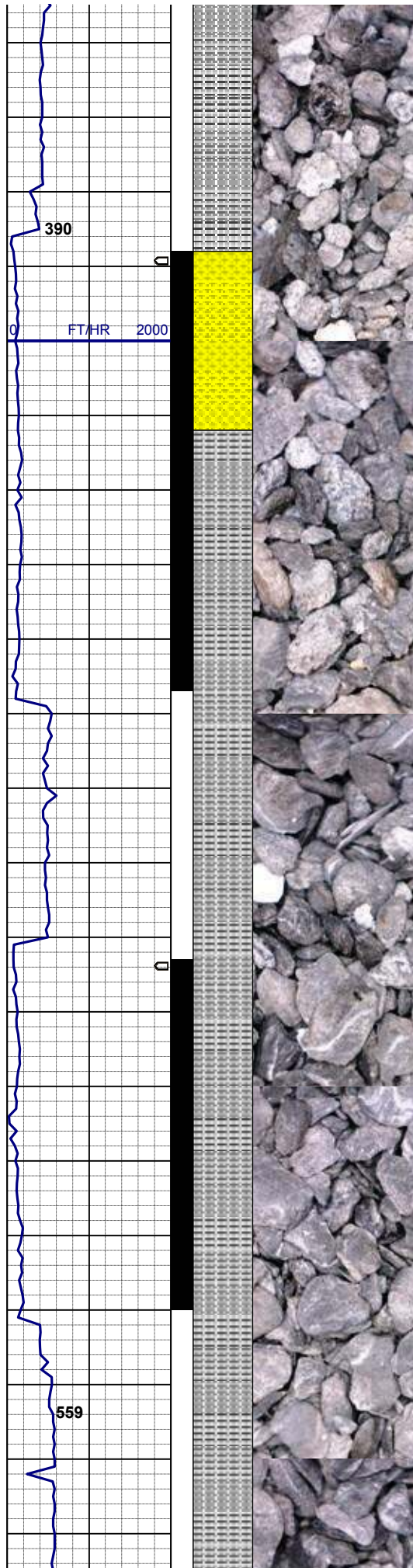
MUD WT 8.60/8.70  
 VIS 29/29 IN/OUT

MD 5,436'  
 TVD 5,344.66'  
 INC 13.33°  
 AZM 10.95°

SLTYSH: mgy - dkgy, firm - hd, sbply  
 - pty, gt tex, sme thn lam,  
 SHYSS: wh, ltgy - mgy, gybrn, sme  
 trnsl, sbang - sbrd, p srt, mod consol,  
 f - v f gr, calc cmt, freq dk gn xl glau,

MUD WT 8.75/8.80  
 VIS 31/31 IN/OUT

MD 5,531'  
 TVD 5,437.18'  
 INC 12.94°  
 AZM 6.58°



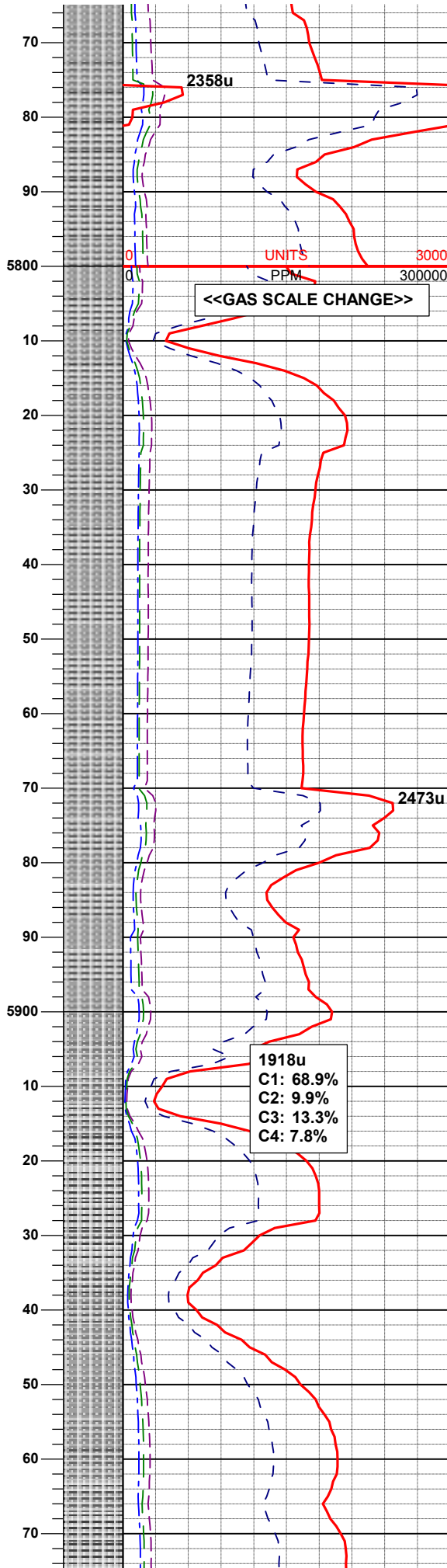
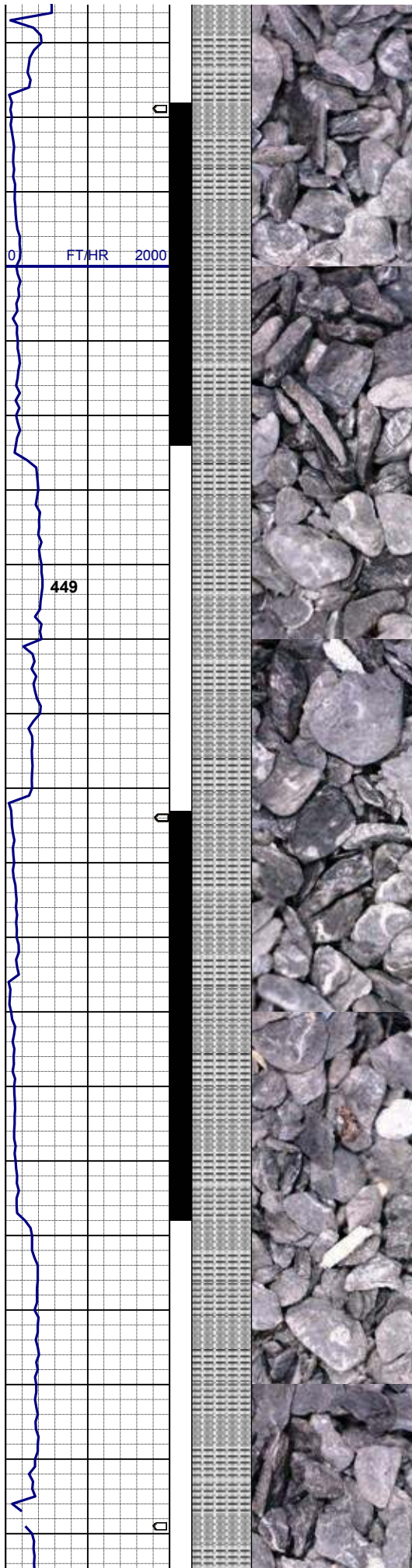
SLTYSH: mgy - dkgy, firm - hd, sbply  
 - pty, gt tex, sme thn lam,  
 SHYSS: wh, ltgy - mgy, gybrn, sme  
 trnsl, sbang - sbrd, p srt, mod consol,  
 f - v f gr, calc cmt, freq dk gn xl glau,

**MD 5,626'**  
**TVD 5,529.58'**  
**INC 13.89°**  
**AZM 5.94°**

SLTYSH: mgy - dkgy, firm - hd, sbply  
 - pty, gt tex, sme thn lam,  
 SHYSS: wh, ltgy - mgy, gybrn, sme  
 trnsl, sbang - sbrd, p srt, mod consol,  
 f - v f gr, calc cmt, freq dk gn xl glau,

**MUD WT 8.70/8.85**  
**VIS 31/31 IN/OUT**

**MD 5,721'**  
**TVD 5,621.59'**  
**INC 14.94°**  
**AZM 7.60°**



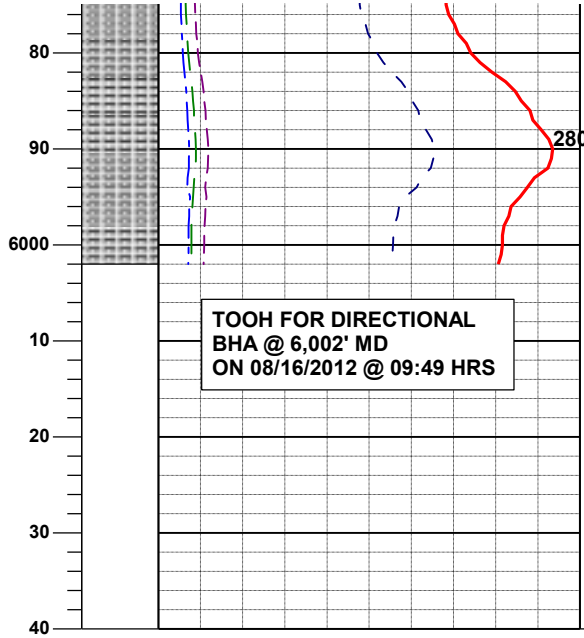
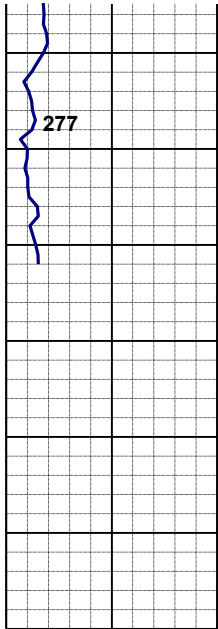
SLTYSH: mgy - dkgy, firm - hd, sbply  
- pty, gt tex, sme thn lam,

**MD 5,816'**  
**TVD 5,713.28'**  
**INC 15.44°**  
**AZM 5.77°**

**MUD WT 9.25/9.05**  
**VIS 33/33 IN/OUT**

SLTYSH: mgy - dkgy, firm - hd, sbply  
- pty, gt tex, sme thn lam,

**MD 5,945'**  
**TVD 5,837.84'**  
**INC 14.71°**  
**AZM 359.77°**



TOOH FOR DIRECTIONAL  
BHA @ 6,002' MD  
ON 08/16/2012 @ 09:49 HRS

SLTYSH: mgy - dkg, firm - hd, sbply  
- ply, gt tex, sme thn lam,

LOG CONTINUES ON  
HORIZONTAL L PLOT LOG  
WELLS RANCH  
AA12-65-1HN  
HORIZONTAL

Thank You for Using  
Columbine Logging Inc.