

LOG created using LPLOT VH Version 3.0, April 24, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: NOBLE ENERGY INC.
WELL: SLW RANCH B12-79HN
LOCATION: SESE SEC 12, T5N, R64W
COUNTY: WELD
STATE: COLORADO
SPOT: 603' FSL, 246' FWL
ELEVATION: GR 4,595', KB 4,625'
FIELD: WATTENBERG
SPUD DATE: 04/15/2013
TD DATE: 04/18/2013
DATES LOGGED: 04/17/2013 - 04/18/2013
DEPTHS LOGGED: 645' MD - 5816' MD
LOGGERS: JOHN READY, SHANA SWIRIN
DRILLING FLUID: LSND
DRILLING RIG: H&P 326
API: 05-123-36505
LOG TYPE: VERTICAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: WELLSITE GEOLOGICAL SERVICES
 PROVIDED BY COLUMBINE LOGGING INC.

LITHOLOGIES



Sandstone



Shaly Sandstone



Silty Shale

ENGINEERING SYMBOLS



Connection



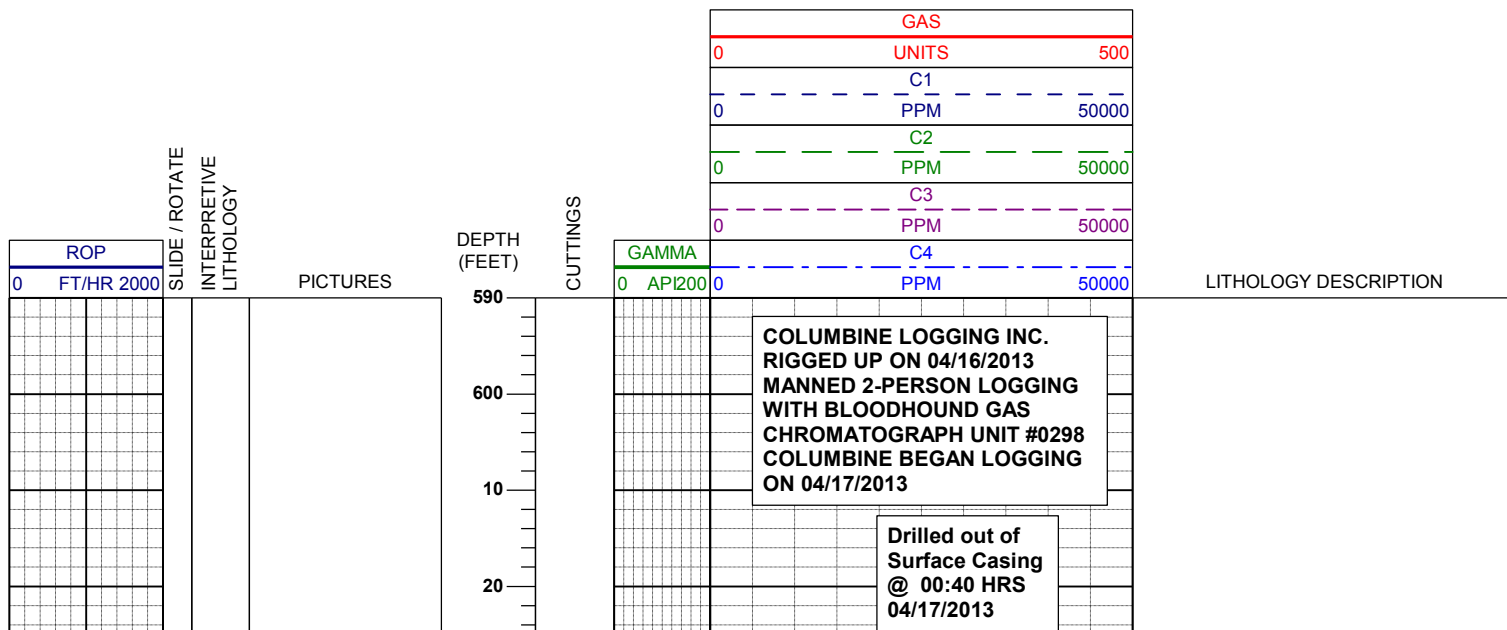
Connection Gas

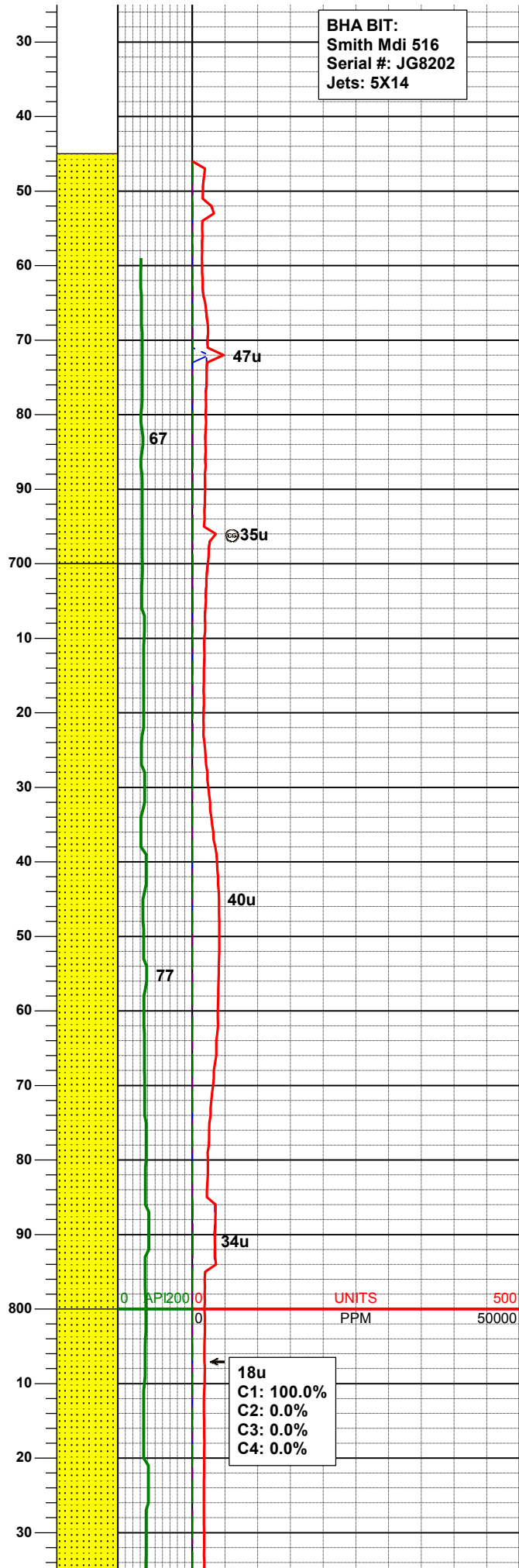
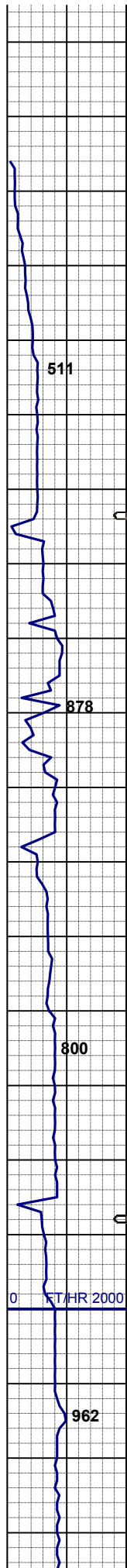


Arrow



Midnight Depth





BHA BIT:
Smith Mdi 516
Serial #: JG8202
Jets: 5X14

SS: wh - lt gy, mod firm, sbbly - sb
mdd, arg cmt

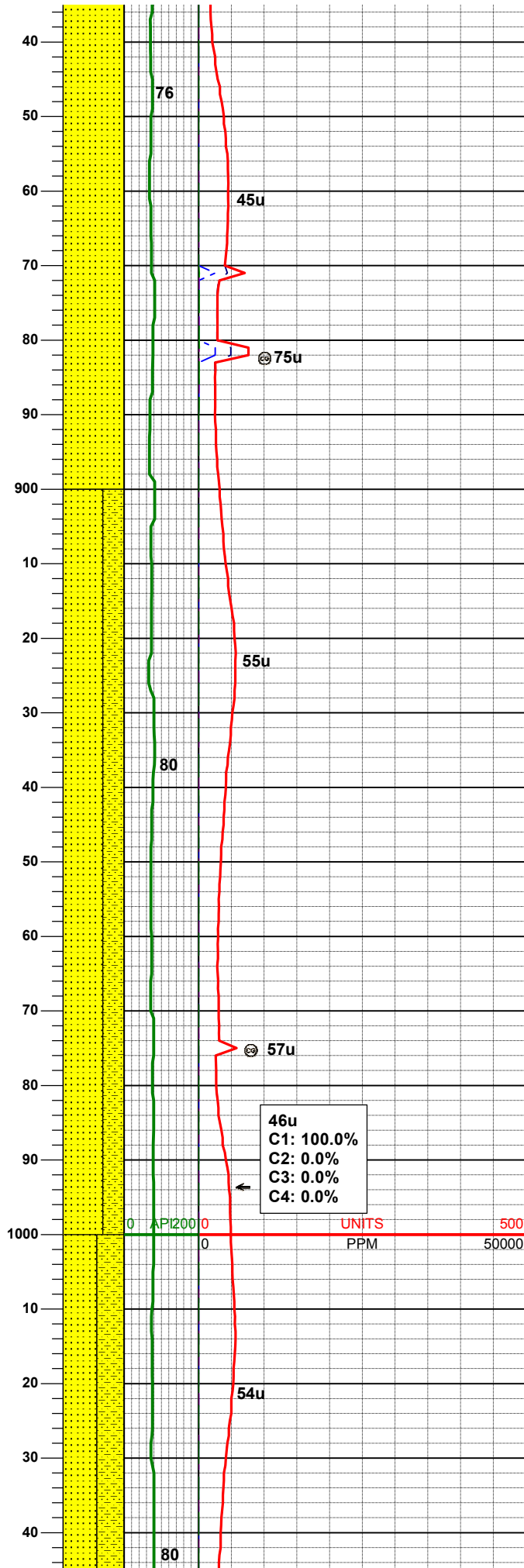
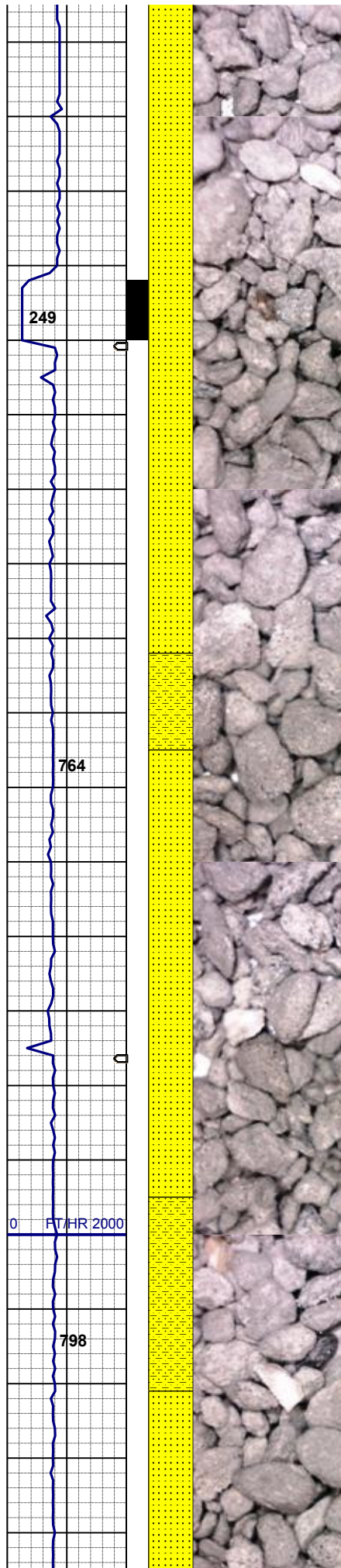
MD 739'
INC 0.3°
AZM 47.9°
TVD 739.00'

SS: wh - lt gy, mod firm, sbbly - sb
mdd, arg cmt

WT 8.6 VIS 27

18u
C1: 100.0%
C2: 0.0%
C3: 0.0%
C4: 0.0%

MD 833'



MD 928'
INC 0.3°
AZM 832.98°
TVD 927.98'

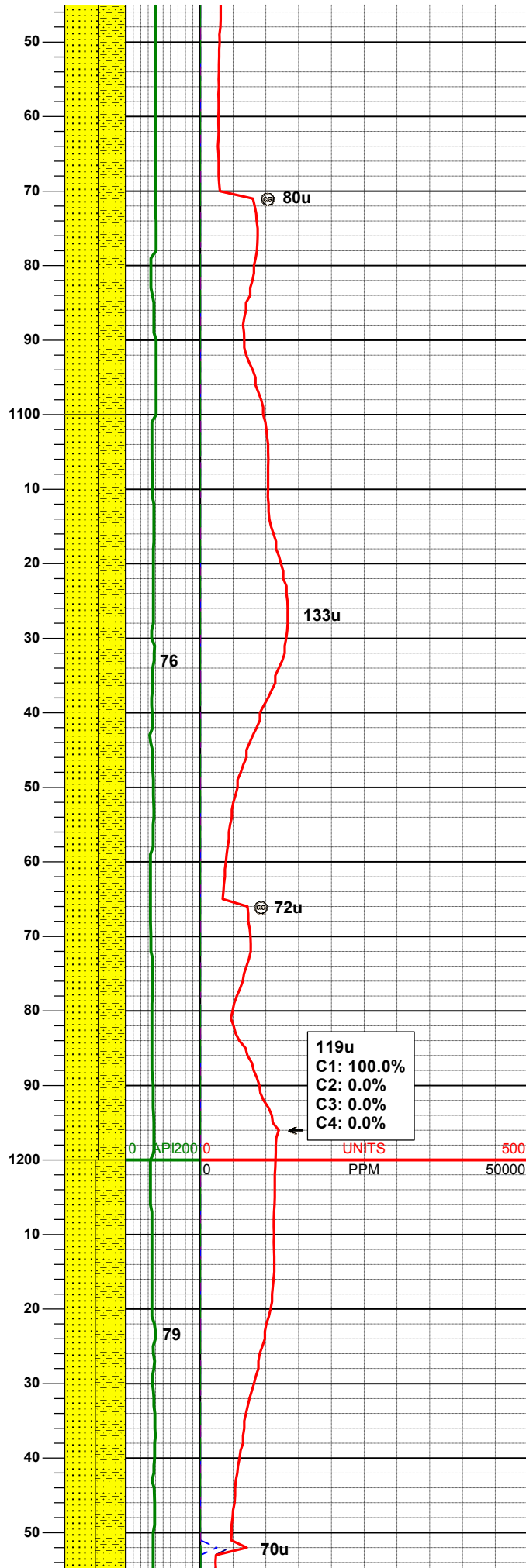
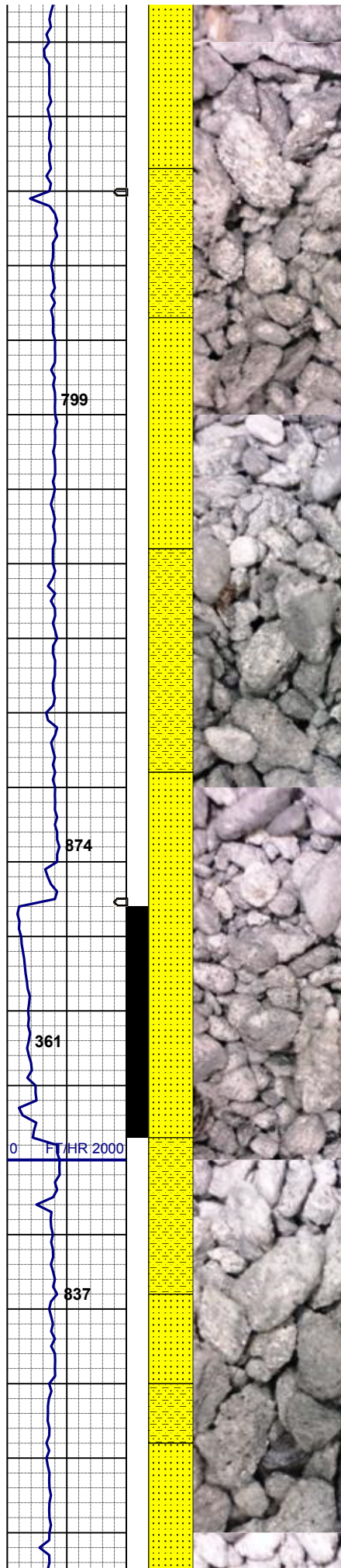
SS: wh - lt gy, mod firm, sbbly - sb
rdd, arg cmt

MD 928'
INC 0.3°
AZM 307.2°
TVD 927.98'

SS: wh - lt gy, mod firm, sbbly - sb
rdd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrdd, mod srt, mod sft - frm, arg
cmt

MD 1022'
INC 0.3°
AZM 109.8°
TVD 1021.98'

SS: wh - lt gy, mod firm, sbbly - sb



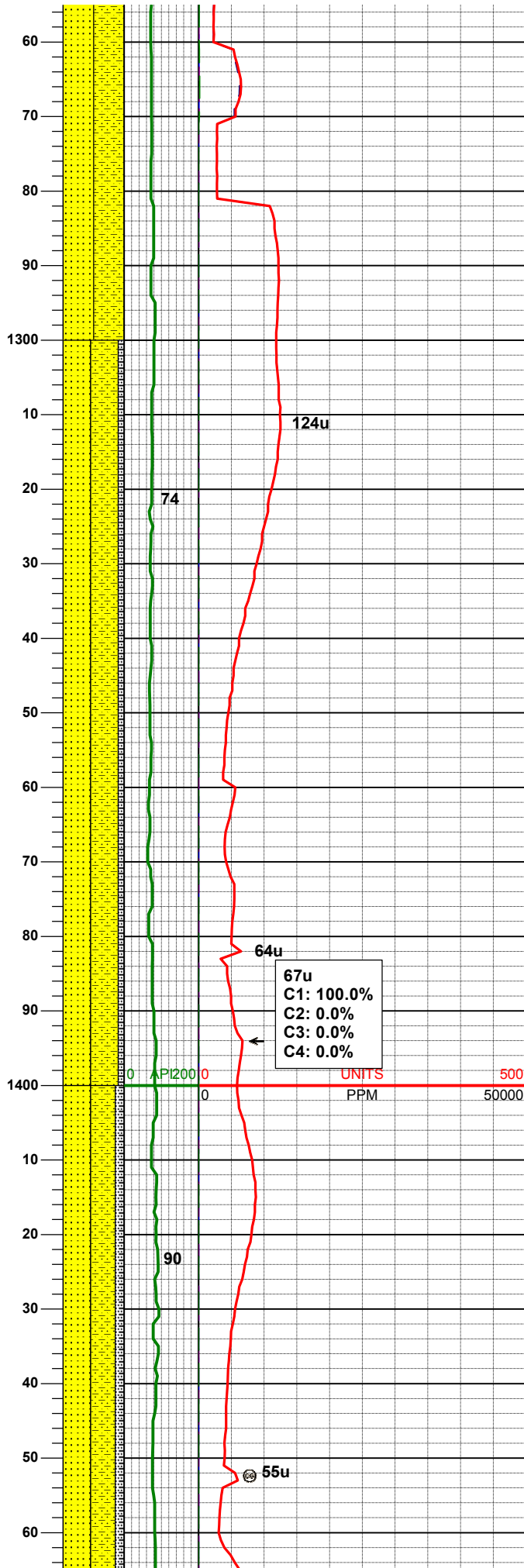
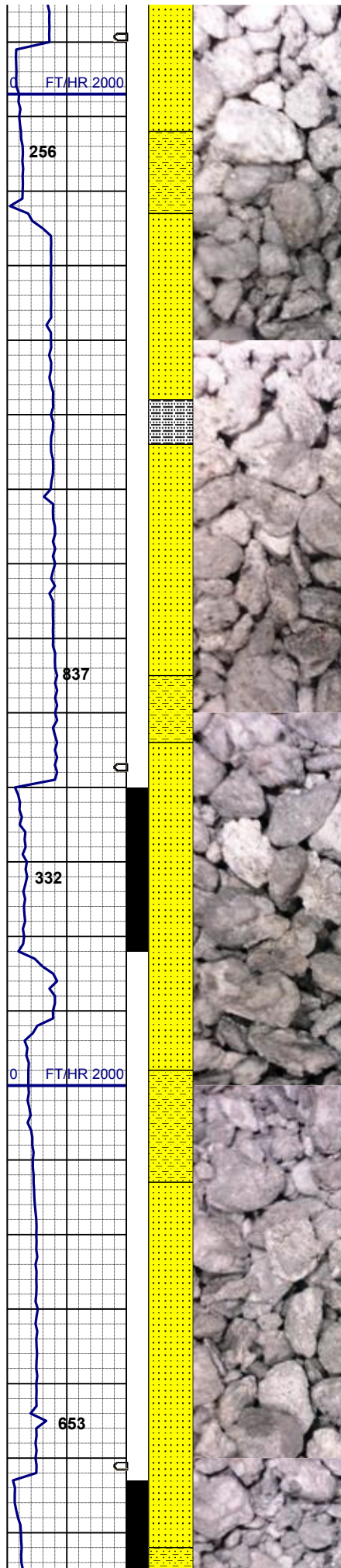
SS: wh - lt gy, mod firm, sbblky - sb
mdd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt, sme biot

MD 1117'
INC 0.2°
AZM 204.7°
TVD 1116.98'

SS: wh - lt gy, mod firm, sbblky - sb
mdd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt, sme biot

MD 1211'
INC 3.6°
AZM 234.4°
TVD 1210.91'

SS: wh - lt gy, mod firm, sbblky - sb
mdd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt, sme biot



CMT, SMT, BLOT

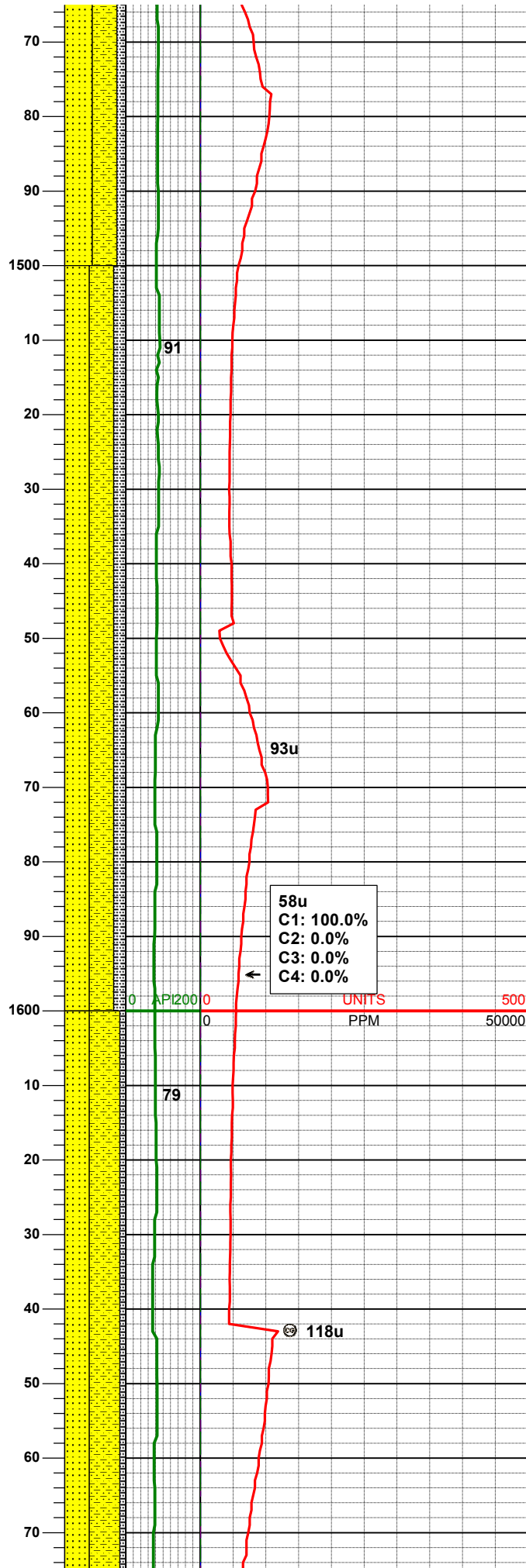
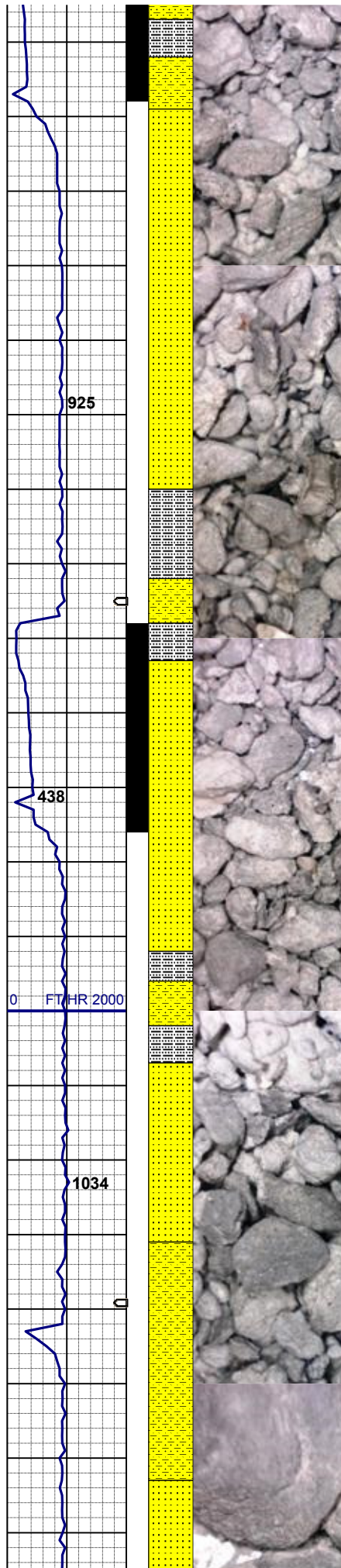
WT 8.6+ VIS 28

MD 1309'
INC 6.5°
AZM 232.5°
TVD 1308.52'

SS: wh - lt gy, mod firm, sbblky - sb
rddd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrddd, mod srt, mod sft - frm, arg
cmt, sme biot
SLTYSH: m - lt gy-crmbn, occ dk gy,
sft - mod firm, sbblky - sbplty, noncalc

MD 1403'
INC 9.1°
AZM 222.1°
TVD 1401.65'

SS: wh - lt gy, mod firm, sbblky - sb
rddd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrddd, mod srt, mod sft - frm, arg
cmt, sme biot
SLTYSH: m - lt gy-crmbn, occ dk gy,
sft - mod firm, sbblky - sbplty, noncalc

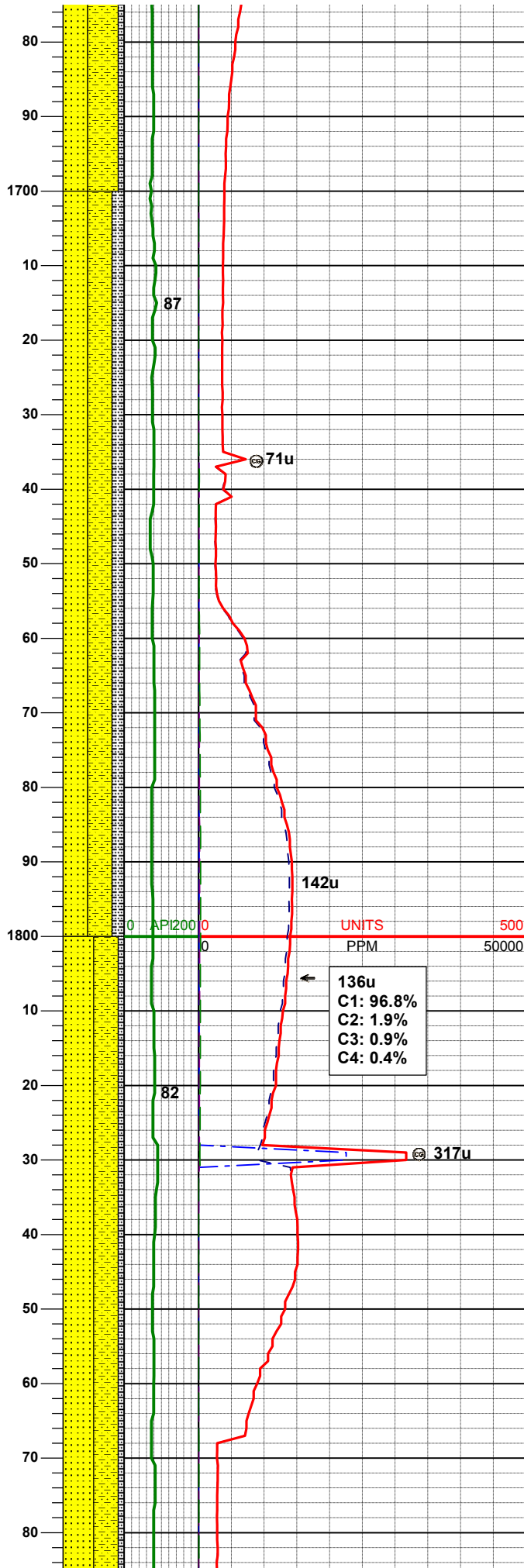
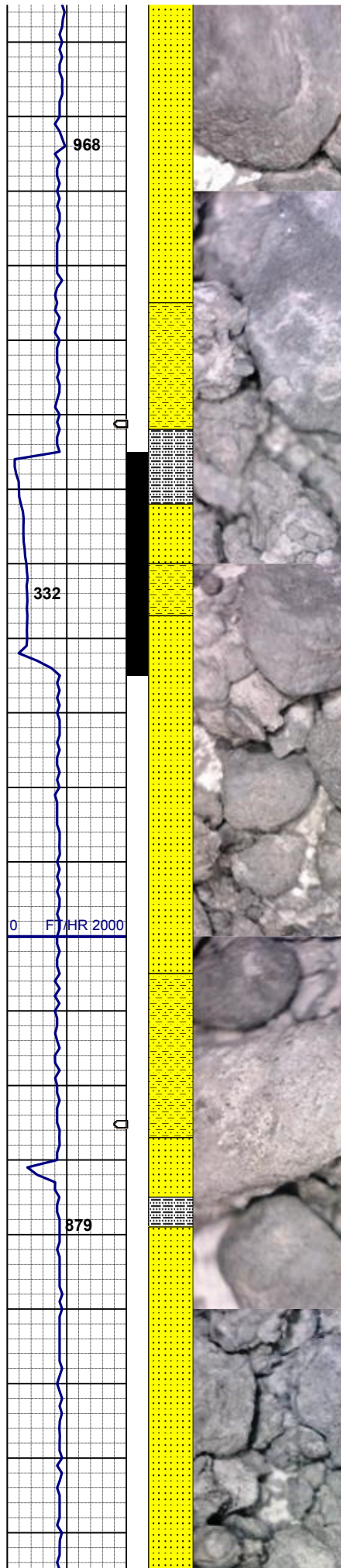


MD 1497'
INC 11.3°
AZM 214.4°
TVD 1494.16'

SHYSS: lt gy - gy, f gr, sbang -
sbrnrd, mod srt, mod sft - frm, arg
cmt, sme biot
SS: wh - lt gy, mod firm, sbblky - sb
rmd, arg cmt
SLTYSH: m - lt gy-crmbn, occ dk gy,
sft - mod firm, sbblky - sbply, noncalc

MD 1591'
INC 13.3°
AZM 202.6°
TVD 1586.01'

SHYSS: lt gy - gy, f gr, sbang -
sbrnrd, mod srt, mod sft - frm, arg
cmt, sme biot
SS: wh - lt gy, mod firm, sbblky - sb
rmd, arg cmt
SLTYSH: m - lt gy-crmbn, occ dk gy,
sft - mod firm, sbblky - sbply, noncalc



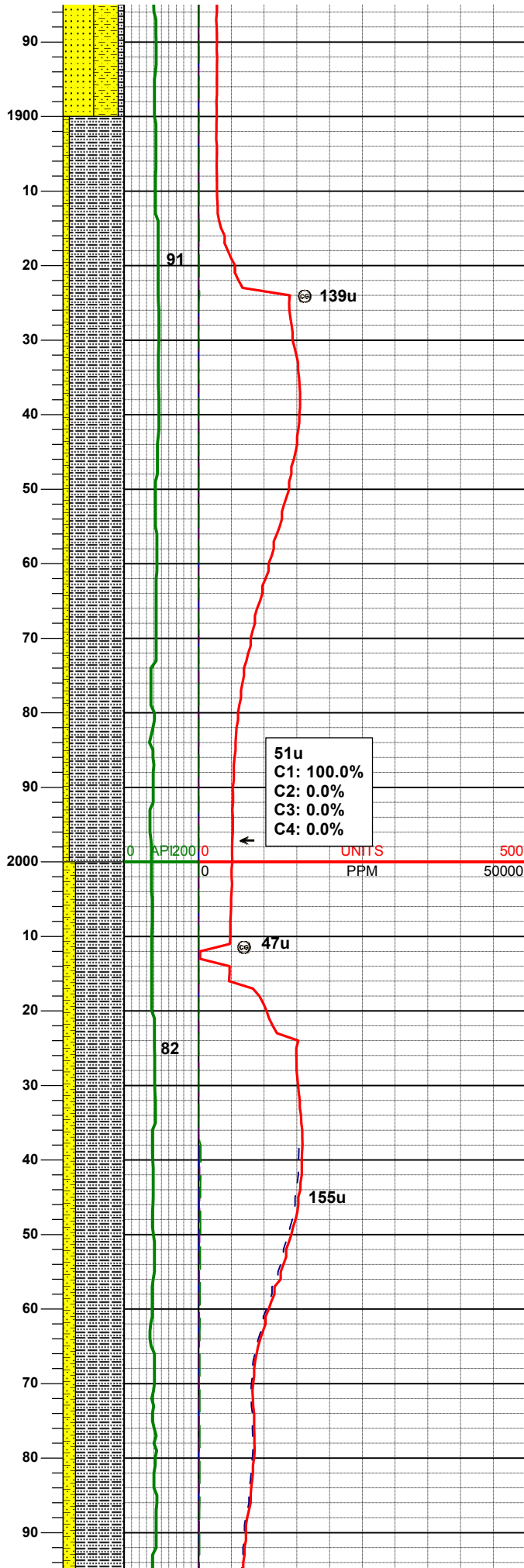
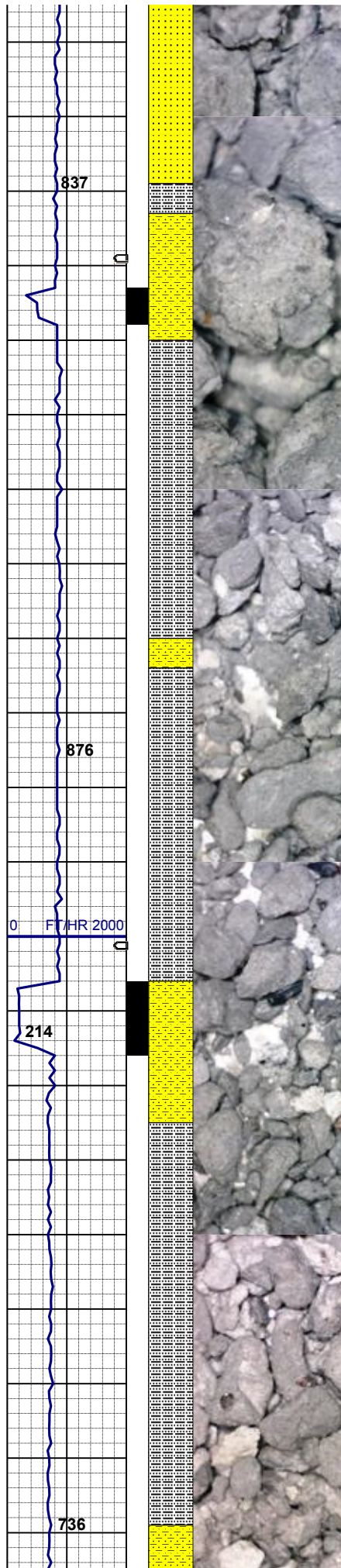
MD 1683'
INC 13.2°
AZM 200.7°
TVD 1675.56'

SHYSS: lt gy - gy, f gr, sbang -
sbrnrd, mod srt, mod sft - frm, arg
cmt, sme biot
SS: wh - lt gy, mod firm, sbblky - sb
mdd, arg cmt
SLTYSH: m - lt gy-crmbn, occ dk gy,
sft - mod firm, sbblky - sbply, noncalc

MD 1777'
INC 15.7°
AZM 208.1°
TVD 1766.59'

SS: wh - lt gy, mod firm, sbblky - sb
mdd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrnrd, mod srt, mod sft - frm, arg
cmt, sme biot
SLTYSH: m - lt gy-crmbn, occ dk gy,
sft - mod firm, sbblky - sbply, noncalc

MD 1870'
INC 15.6°
AZM 205.8°
TVD 1856.14'



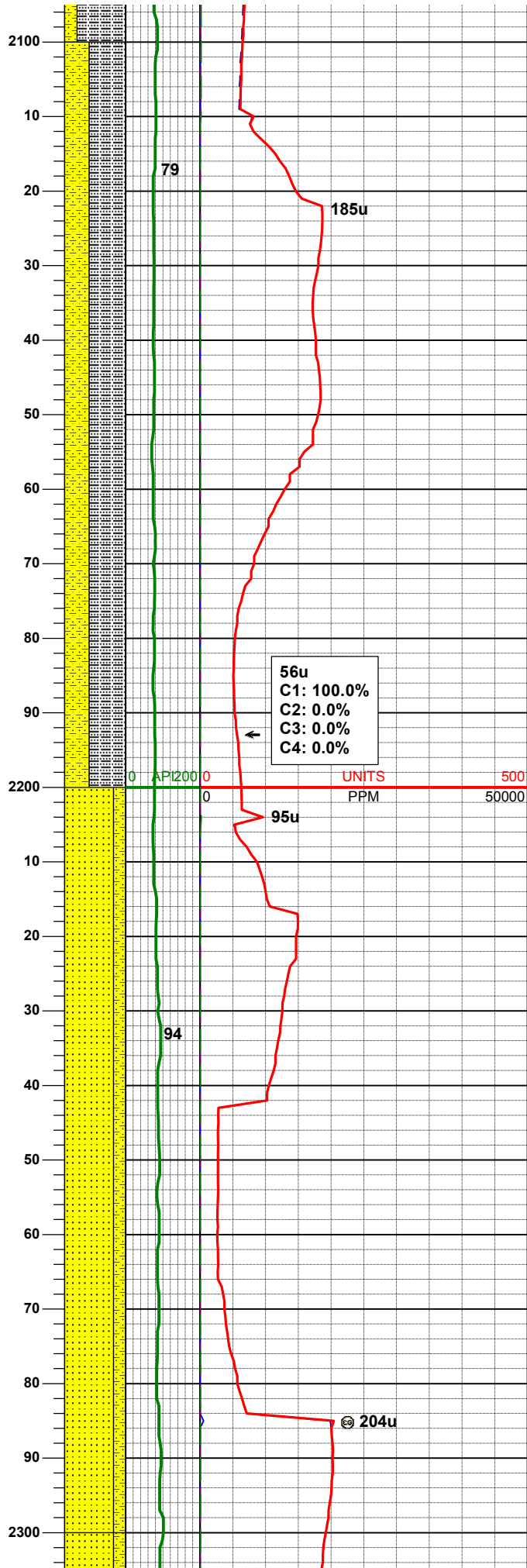
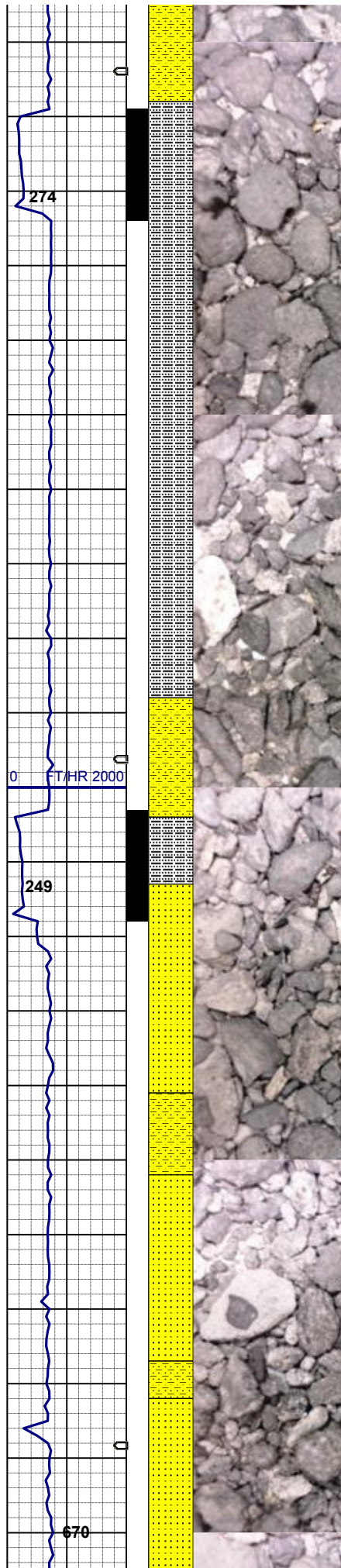
WT 8.6 VIS 27

SLTYSH: m - lt gy-crmbn, occ dk gy,
sft - mod firm, sbblky - sbply, noncalc
SHYSS: lt gy - gy, f gr, sbang -
sbrnrd, mod srt, mod sft - frm, arg
cmt, sme biot

MD 1962'
INC 14.9°
AZM 203.0°
TVD 1944.90'

SLTYSH: m - lt gy-crmbn, occ dk gy,
sft - mod firm, sbblky - sbply, noncalc
SHYSS: lt gy - gy, f gr, sbang -
sbrnrd, mod srt, mod sft - frm, arg
cmt, sme biot

MD 2055'
INC 14.8°
AZM 205.4°
TVD 2034.80'

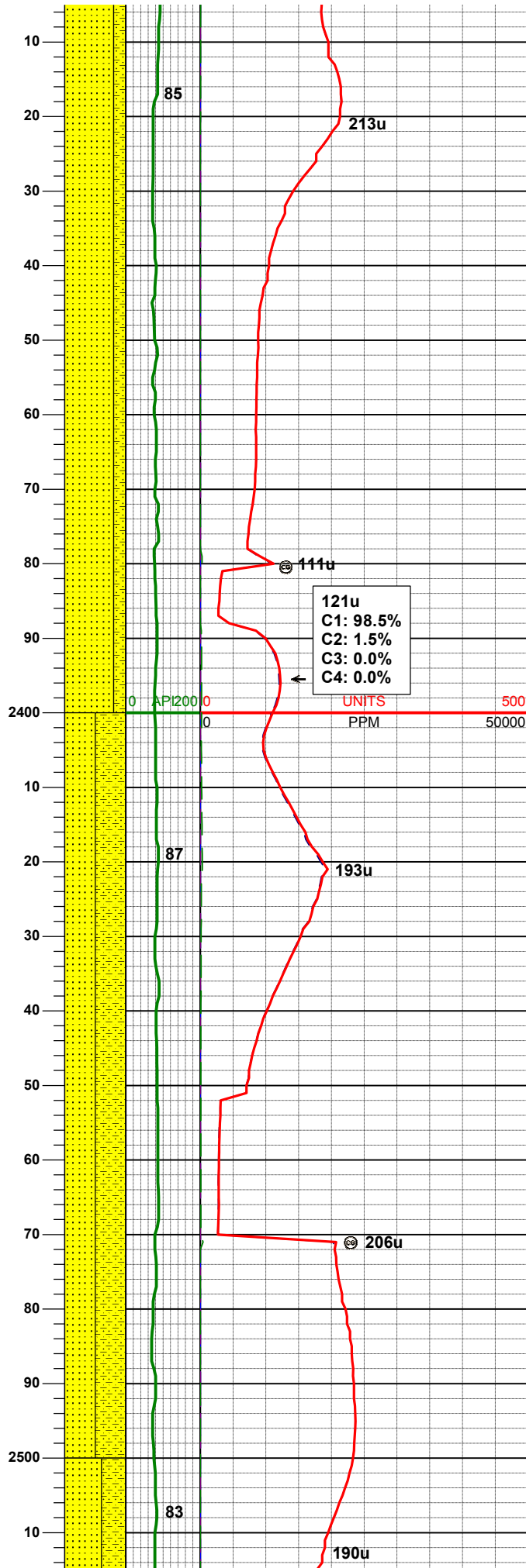
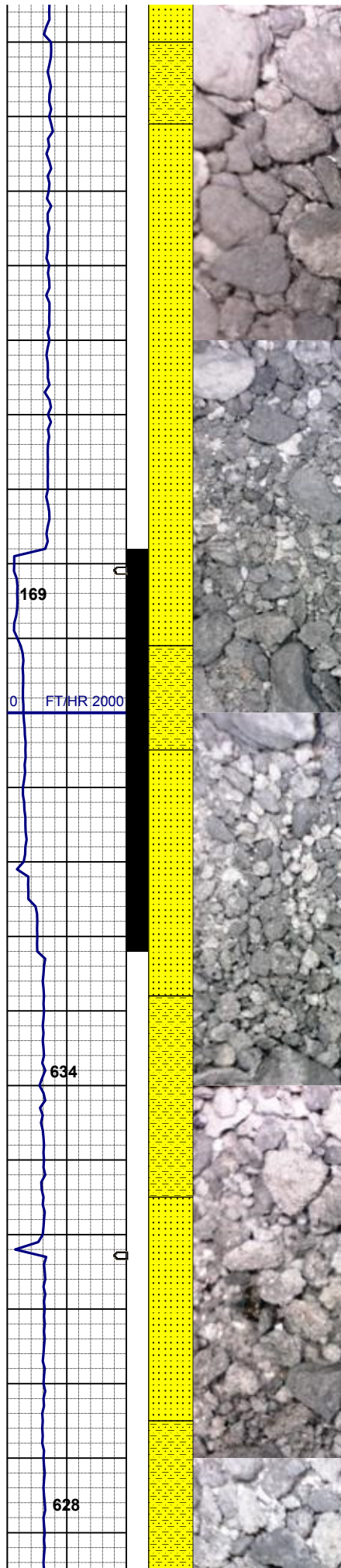


MD 2147'
INC 14.4°
AZM 211.4°
TVD 2123.83'

SLTYSH: m - lt gy-crmbn, occ dk gy,
sft - mod firm, sbblky - sbply, noncalc
SHYSS: lt gy - gy, f gr, sbang -
sbrnrd, mod srt, mod sft - frm, arg
cmt, sme biot

MD 2239'
INC 14.9°
AZM 210.0°
TVD 2212.84'

SS: wh - lt gy, mod firm, sbblky - sb
mdd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrnrd, mod srt, mod sft - frm, arg
cmt, sme biot



MD 2332'
INC 13.7°
AZM 211.4°
TVD 2302.96'

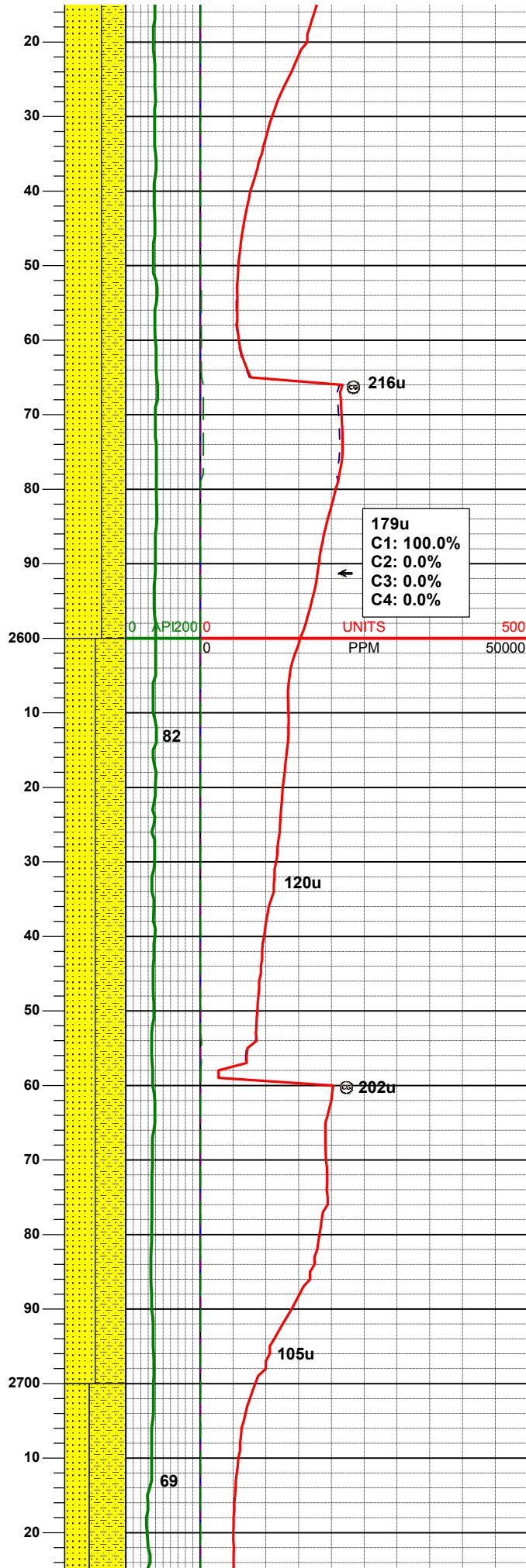
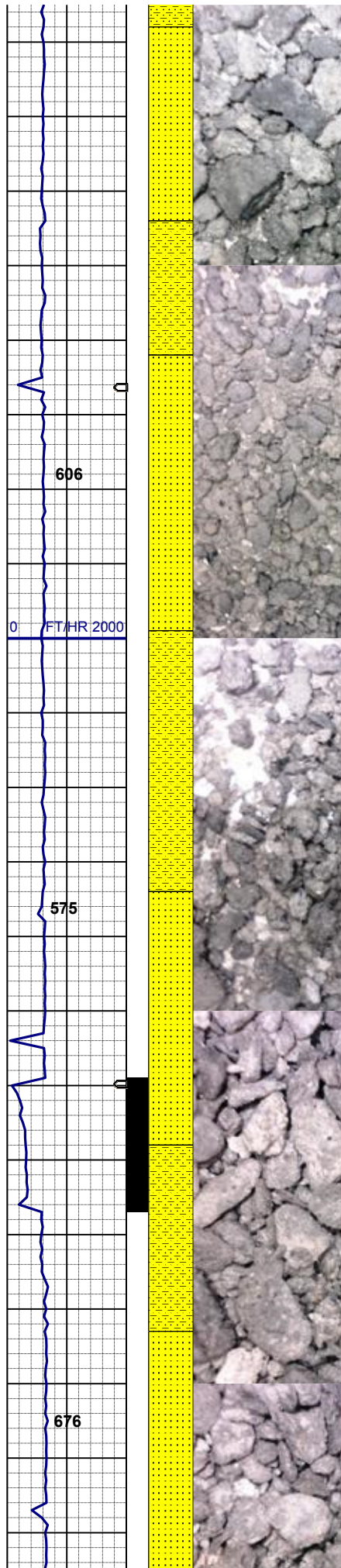
SS: wh - lt gy, mod firm, sbblky - sb
rddd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrddd, mod srt, mod sft - frm, arg
cmt, sme biot

121u
C1: 98.5%
C2: 1.5%
C3: 0.0%
C4: 0.0%

MD 2423'
INC 17.6°
AZM 217.2°
TVD 2390.57'

SS: wh - lt gy, mod firm, sbblky - sb
rddd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrddd, mod srt, mod sft - frm, arg
cmt, sme biot

MD 2517'
INC 17.1°
AZM 212.5°
TVD 2478.00'



AZM 216.7°
TVD 2480.30'

SS: wh - lt gy, mod firm, sbbly - sb
mdd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt, sme biot

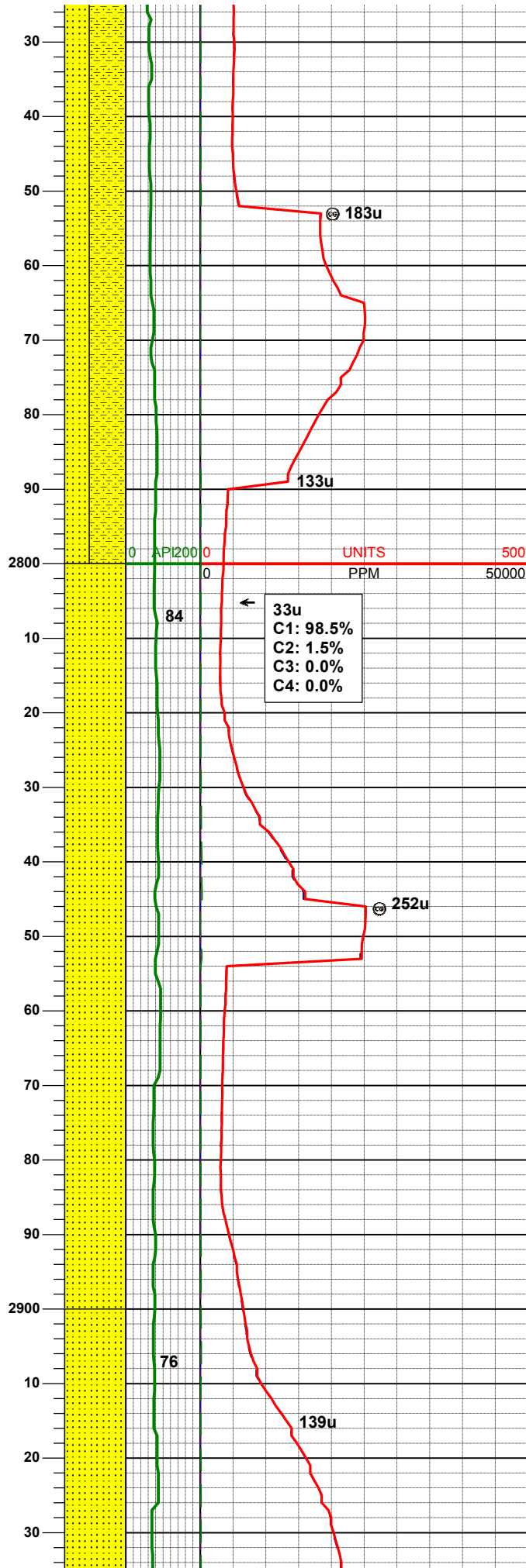
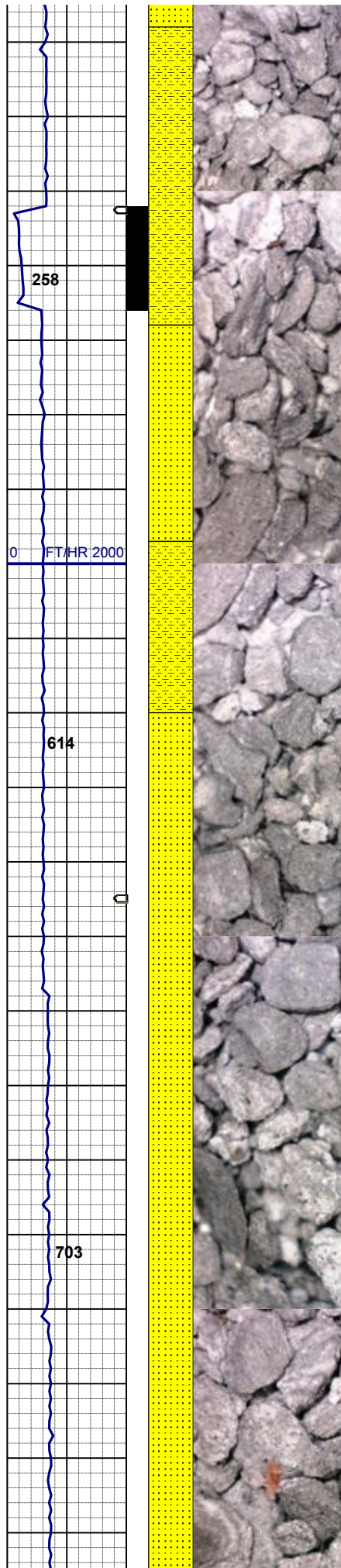
IN/OUT WT 8.7+/8.9+
IN/OUT VIS 26/28

MD 2610'
INC 16.4°
AZM 217.0°
TVD 2569.35'

SS: wh - lt gy, mod firm, sbbly - sb
mdd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt, sme biot

MD 2703'
INC 18.2°
AZM 214.4°
TVD 2658.14'

IN/OUT WT 8.8/9.0+
IN/OUT VIS 26/29



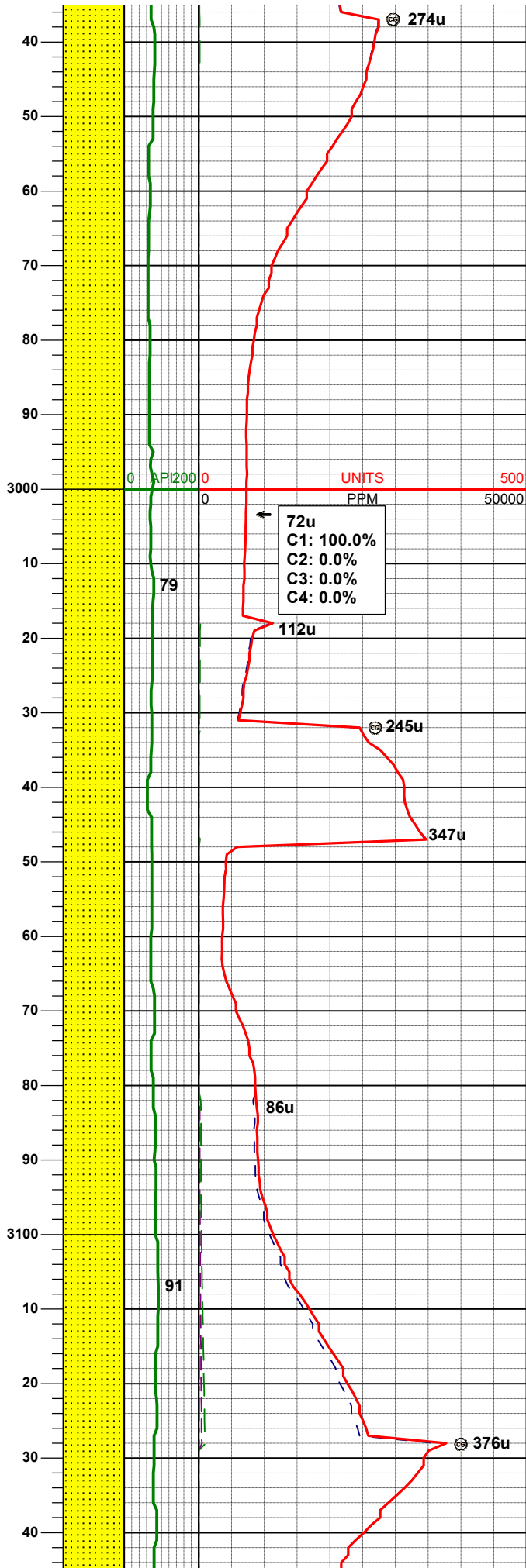
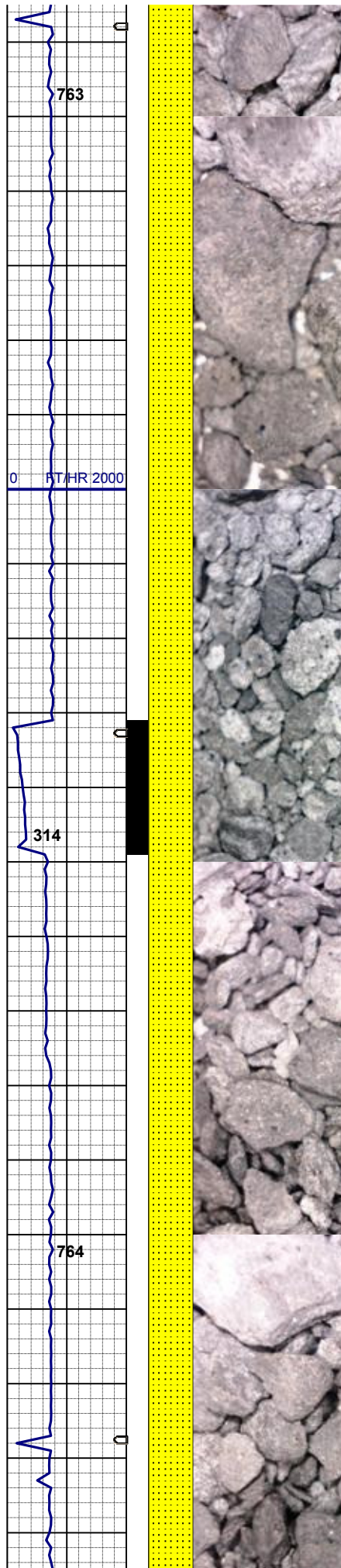
SHYSS: lt gy - gy, f gr, sbang -
sbrnnd, mod srt, mod sft - frm, arg
cmt, sme biot
SS: wh - lt gy, mod firm,sbblky - sb
mdd, arg cmt

MD 2795'
INC 18.7°
AZM 212.6°
TVD 2745.41'

IN/OUT WT 8.7+/9.0+
IN/OUT VIS 27/28

SS: wh - lt gy, mod firm,sbblky - sb
mdd, arg cmt, tr shyss

MD 2889'
INC 17.8°
AZM 212.1°
TVD 2834.68'

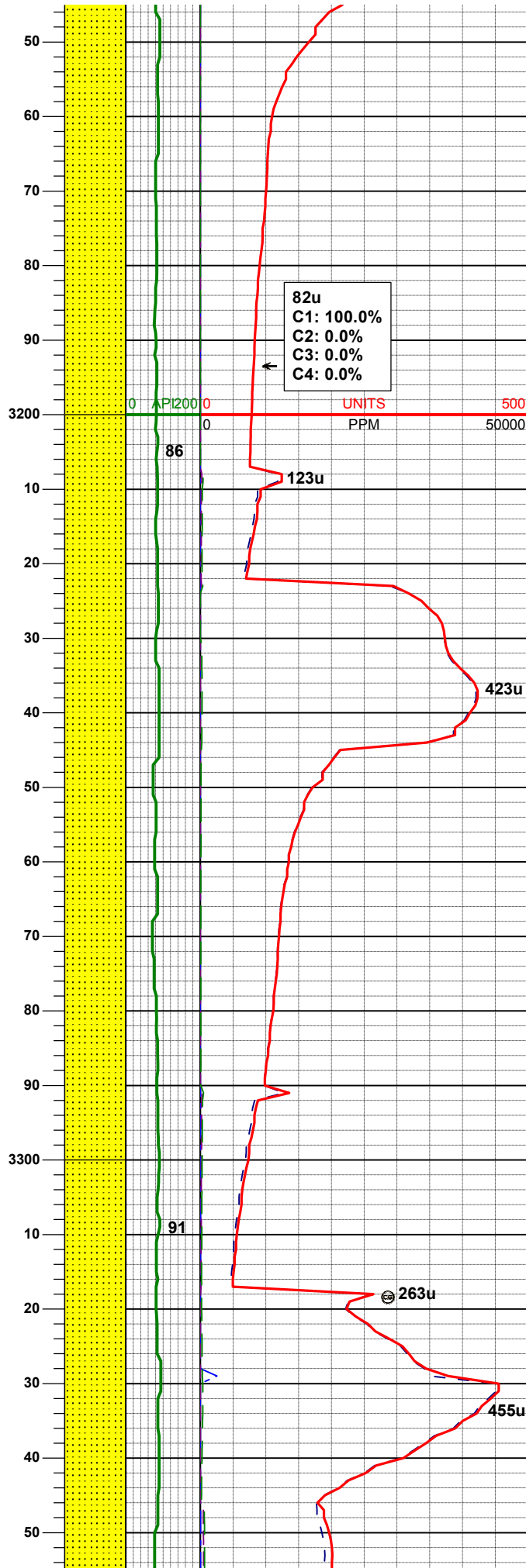
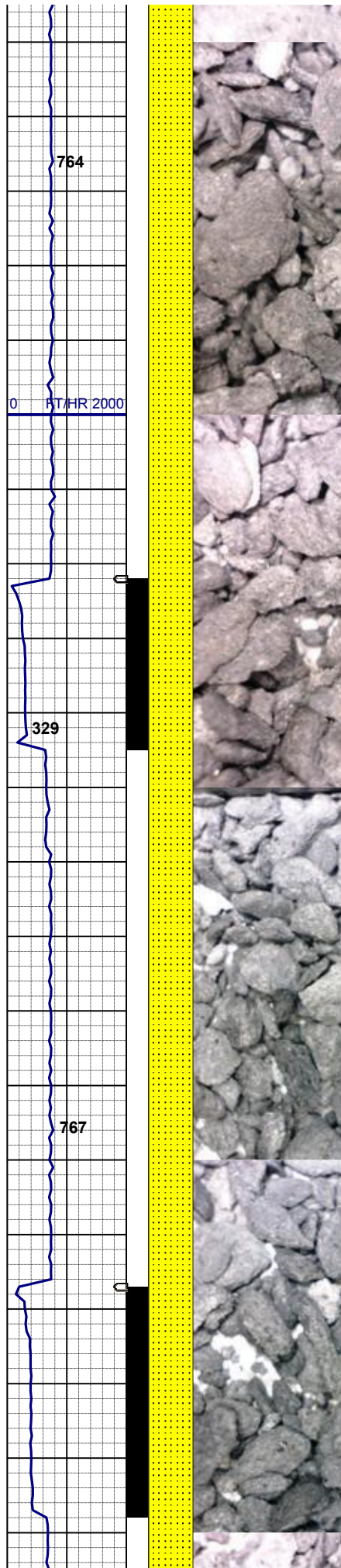


SS: wh - lt gy, mod firm, sbblky - sb
mdd, arg cmt, tr shyss

MD 2983'
INC 17.6°
AZM 213.1°
TVD 2924.23'

SS: wh - lt gy, mod firm, sbblky - sb
mdd, arg cmt

MD 3078'
INC 16.4°
AZM 206.1°
TVD 3015.09'



SS: wh - lt gy, mod firm,sbblky - sb
rdd, arg cmt

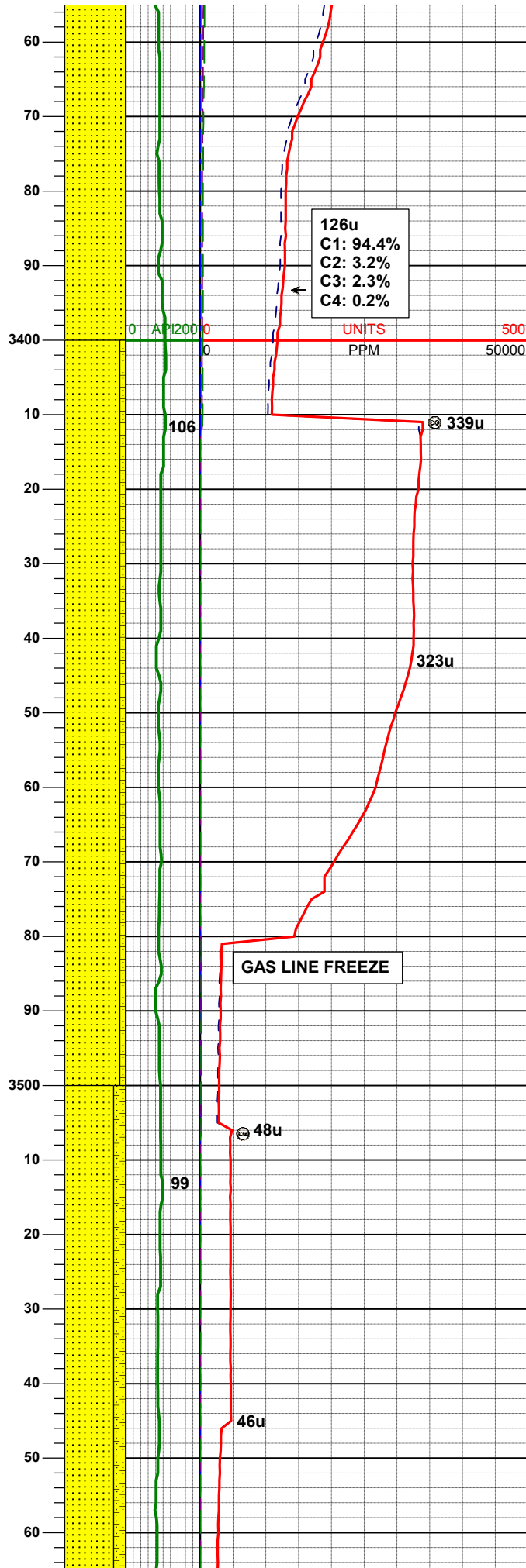
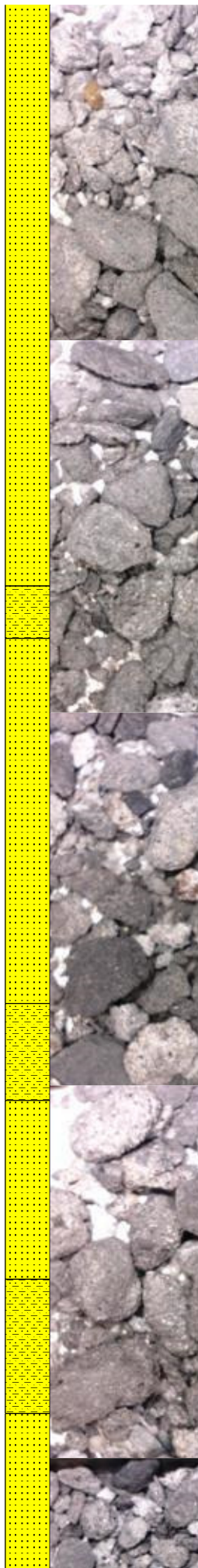
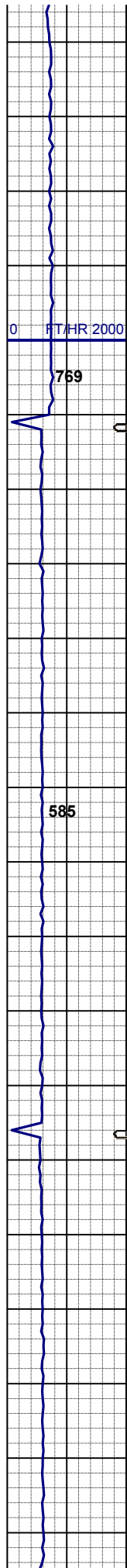
MD 3173'
INC 14.1°
AZM 202.4°
TVD 3106.74'

IN/OUT WT 8.7+/-9.0
IN/OUT VIS 26/26

SS: wh - lt gy, mod firm,sbblky - sb
rdd, arg cmt

MD 3268'
INC 13.5°
AZM 207.2°
TVD 3199.00'

SS: wh - lt gy, mod firm,sbblky - sb
rdd, arg cmt



MD 3362'
INC 14.7°
AZM 213.5°
TVD 3290.17'

126u
C1: 94.4%
C2: 3.2%
C3: 2.3%
C4: 0.2%

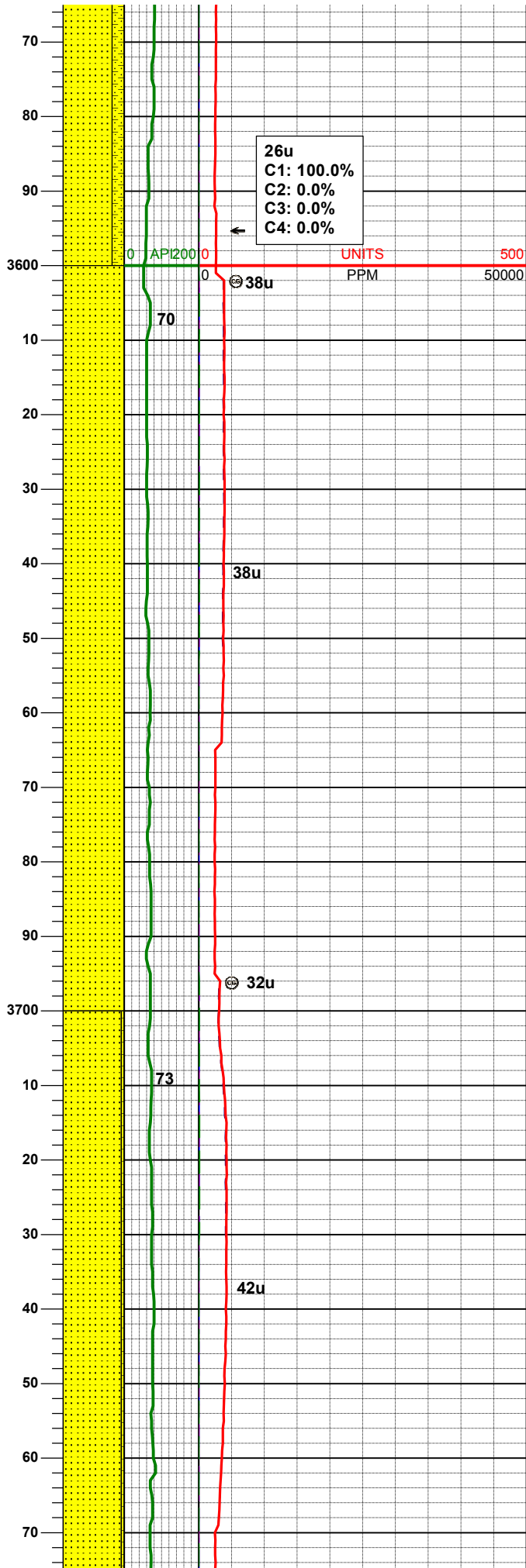
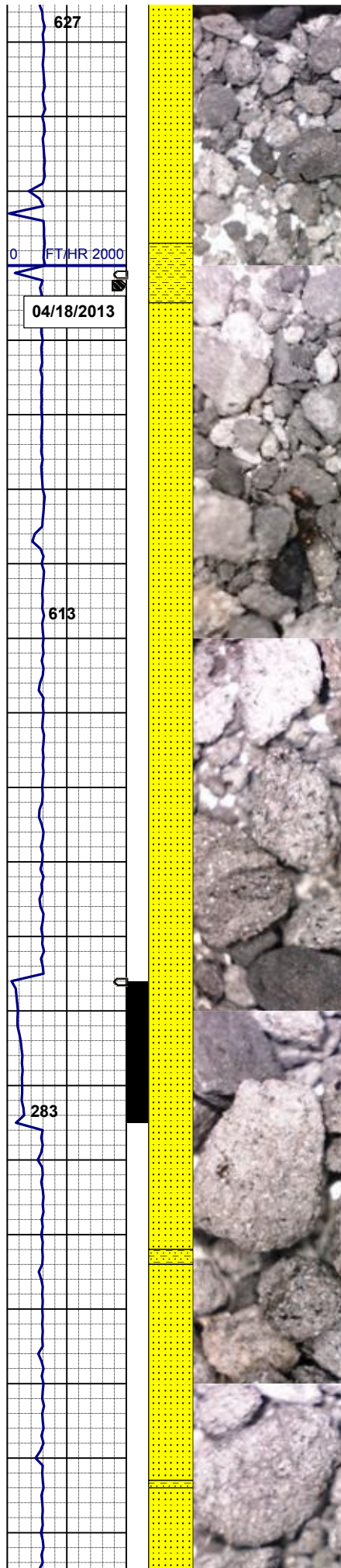
SS: wh - lt gy, mod firm, sbbly - sb
mdd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt, sme biot

MD 3457'
INC 12.3°
AZM 209.3°
TVD 3382.54'

IN/OUT WT 8.8/9.0
IN/OUT VIS 25/28

SS: wh - lt gy, mod firm, sbbly - sb
mdd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt, sme biot

MD 3552'
INC 10.9°
AZM 211.4°
TVD 3475.60'

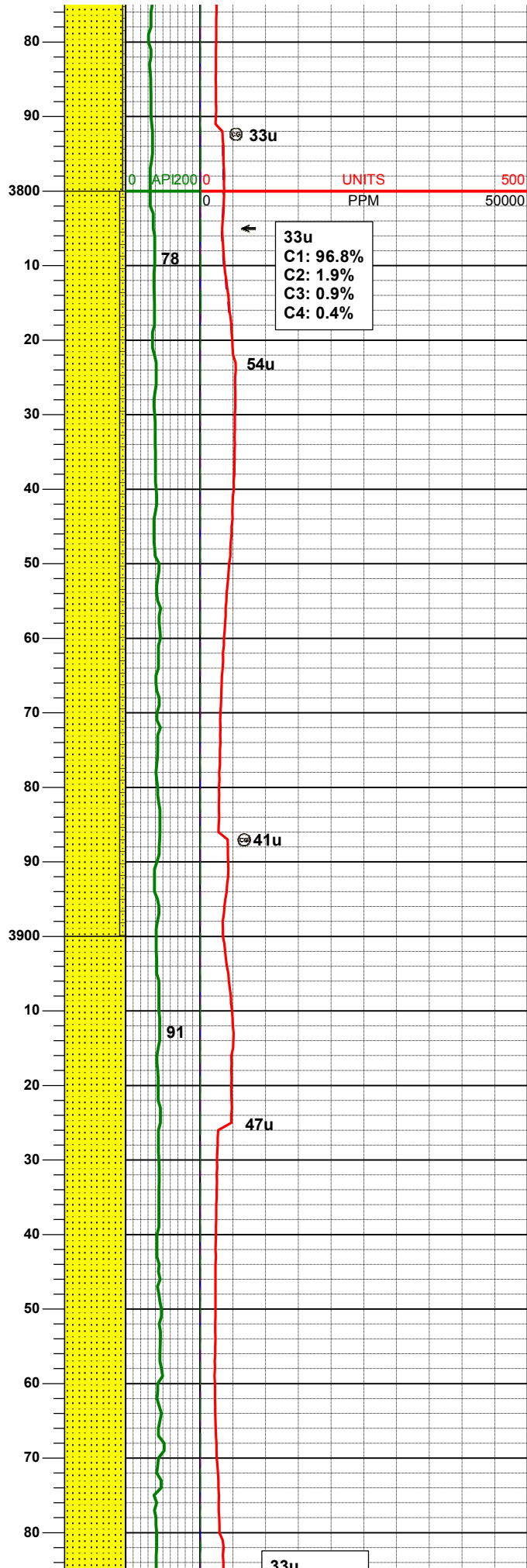
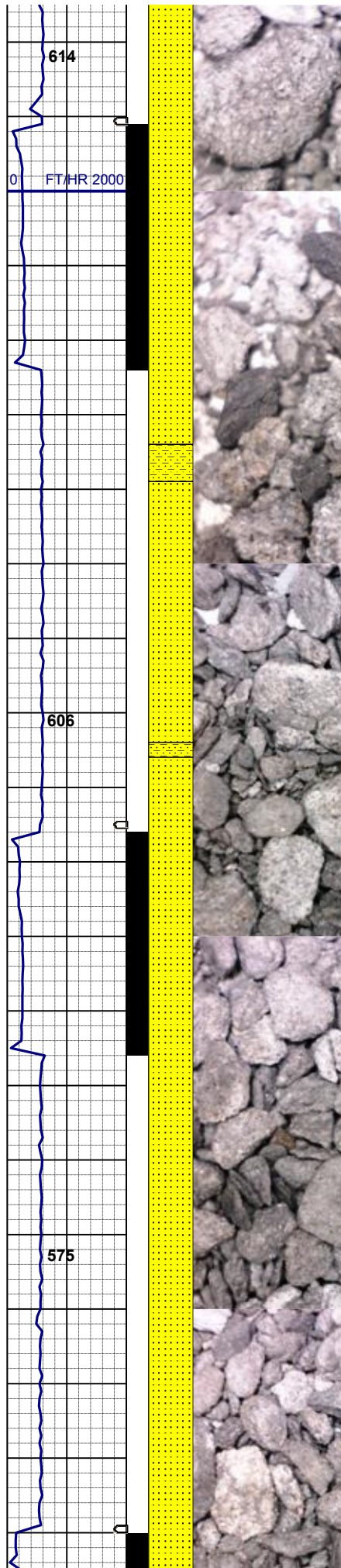


MD 3646'
INC 11.1°
AZM 210.0°
TVD 3567.88'

SS: wh - lt gy, mod firm, sbbly - sb
mdd, arg cmt, tr shss

MD 3741'
INC 10.0°
AZM 205.6°
TVD 3661.27'

SS: wh - lt gy, mod firm, sbbly - sb
mdd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt, sme biot



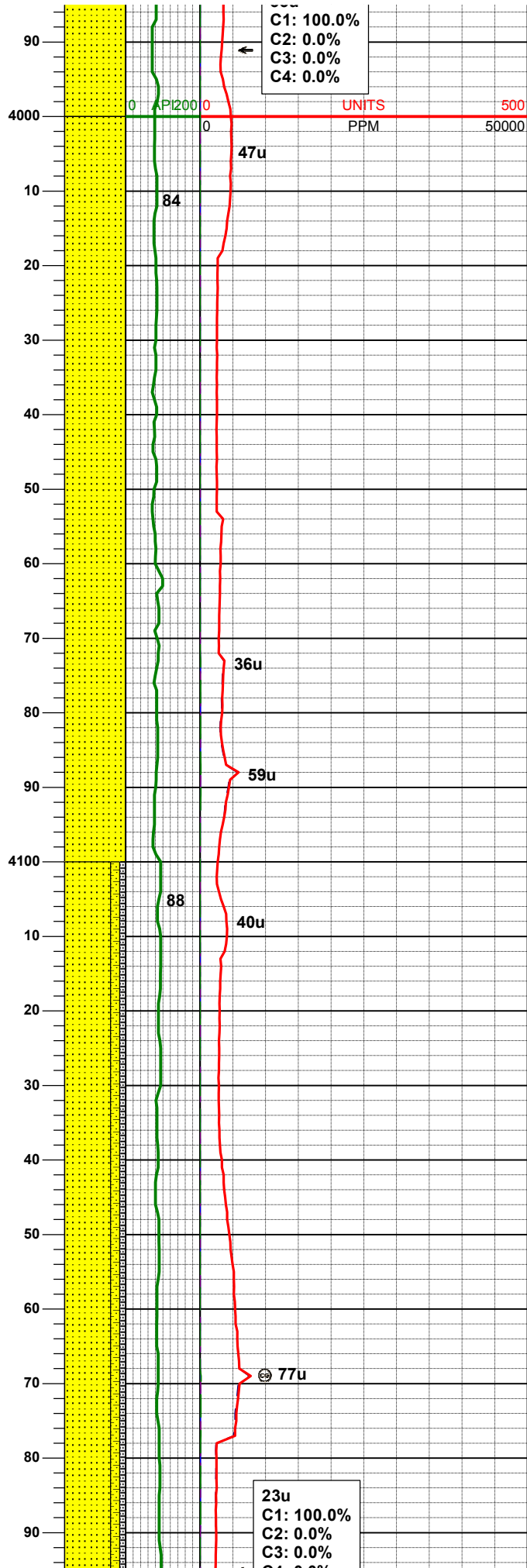
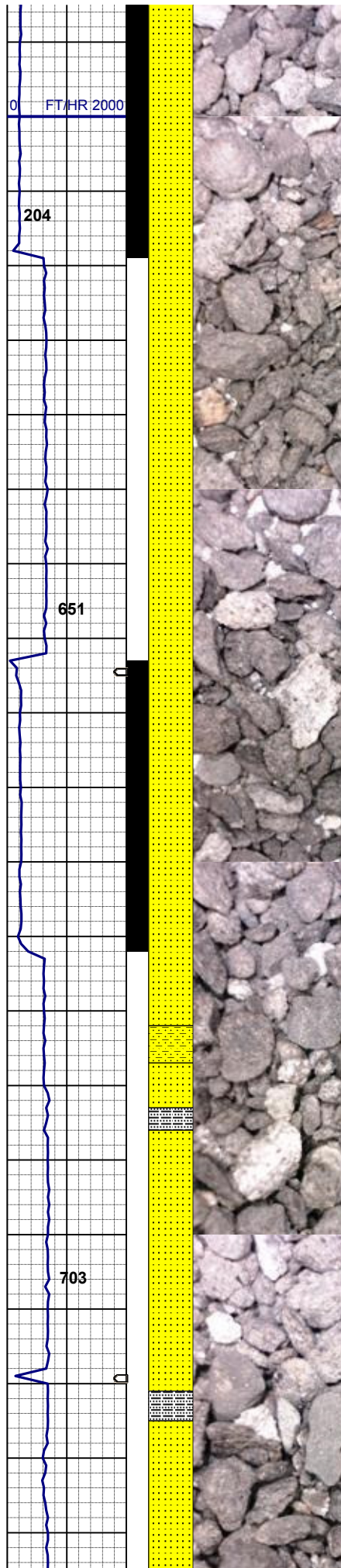
MD 3836'
INC 7.6°
AZM 193.5°
TVD 3755.15'

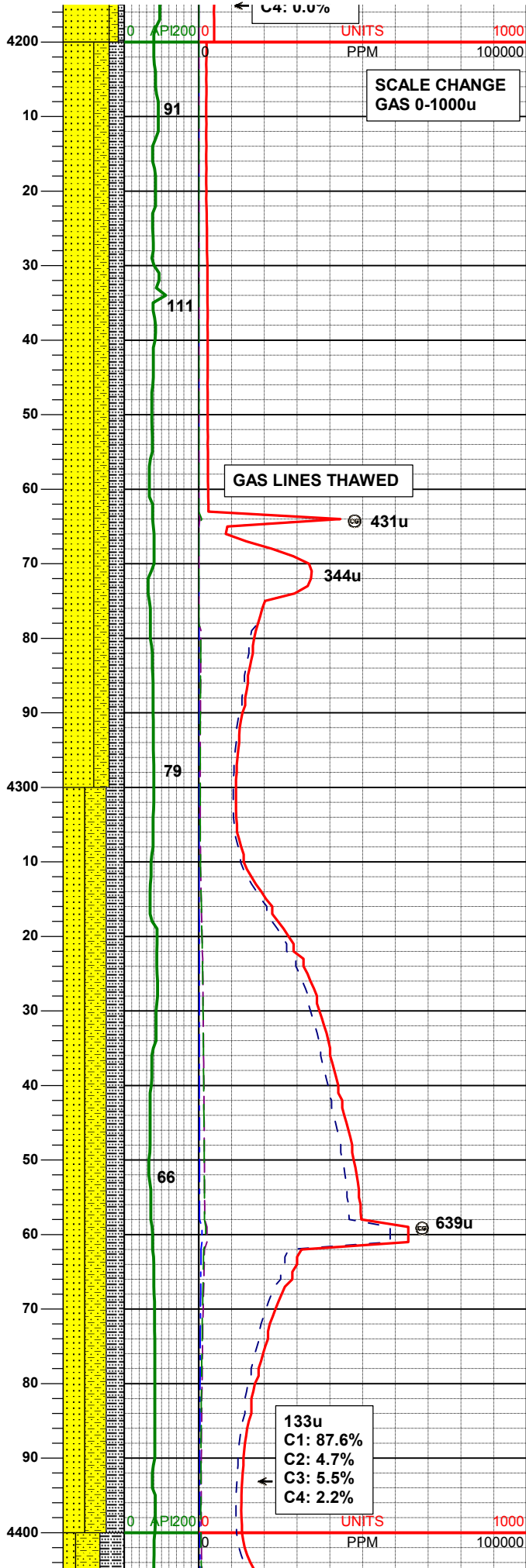
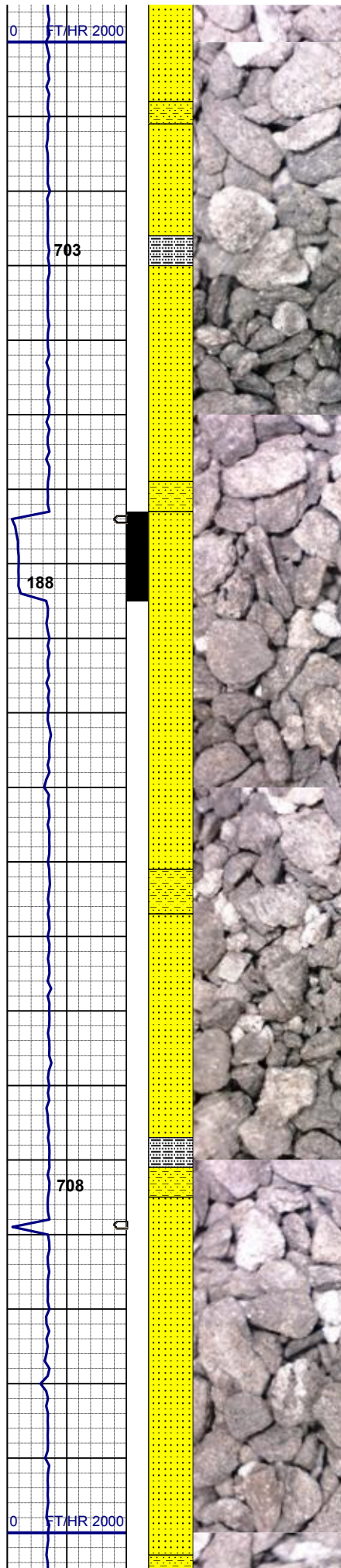
SS: wh - lt gy, mod firm, sbbly - sb
mdd, arg cmt
SHYSS: lt gy - gy, f gr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt, sme biot

MD 3930'
INC 5.1°
AZM 187.3°
TVD 3848.57'

IN/OUT WT 9.0/9.1+
IN/OUT VIS 28/27

SS: wh - lt gy, mod firm, sbbly - sb
mdd, arg cmt, tr shyss





MD 4215'
INC 1.3°
AZM 40.4°
TVD 4133.29'

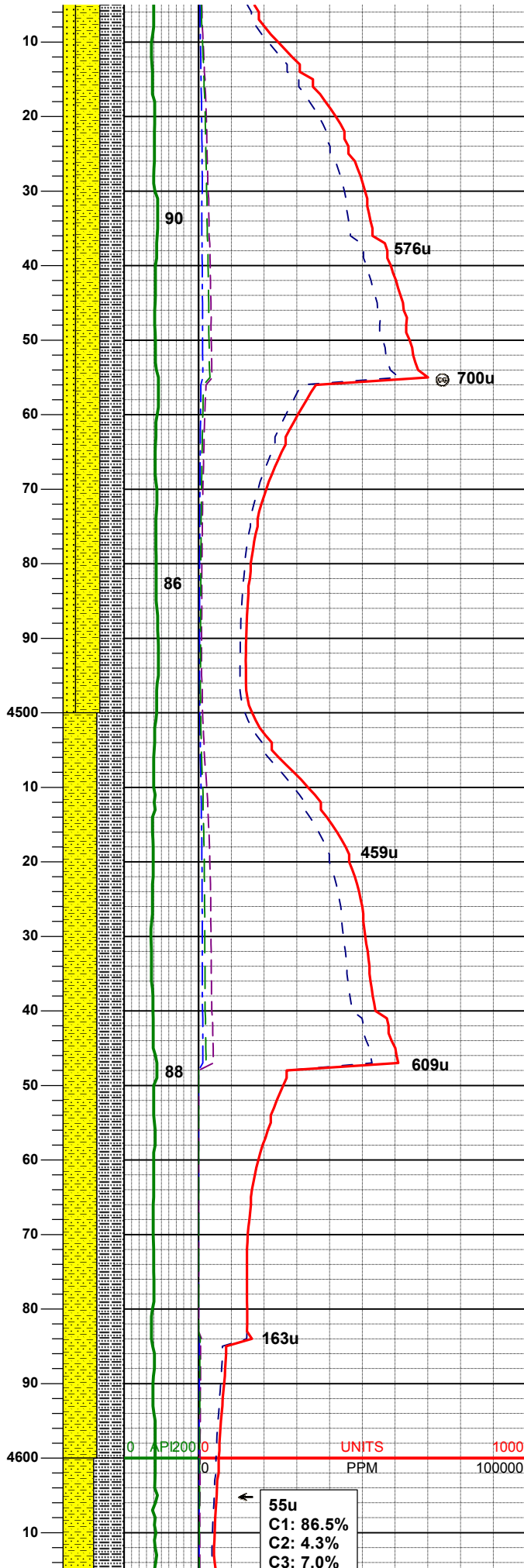
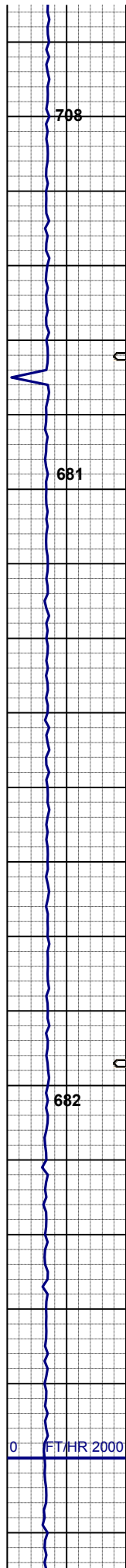
SS: wh - lt gy, brn - tan, mod
firm, sbbly - sb rndd, mod-p srt, tr
glau, arg cmt
SHYSS: lt gy - gy, f-mcgr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt
SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbbly - sbply, arg-rthy
mtx, noncalc

MD 4309'
INC 1.6°
AZM 342.7°
TVD 4227.27'

SS: wh - lt gy, brn - tan, mod
firm, sbbly - sb rndd, mod-p srt, tr
glau, arg cmt
SHYSS: lt gy - gy, f-mcgr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt
SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbbly - sbply, arg-rthy
mtx, noncalc

IN/OUT WT 8.9/9.0
IN/OUT VIS 27/28

MD 4404'



INC 1.1°
AZM 320.5°
TVD 4322.24'

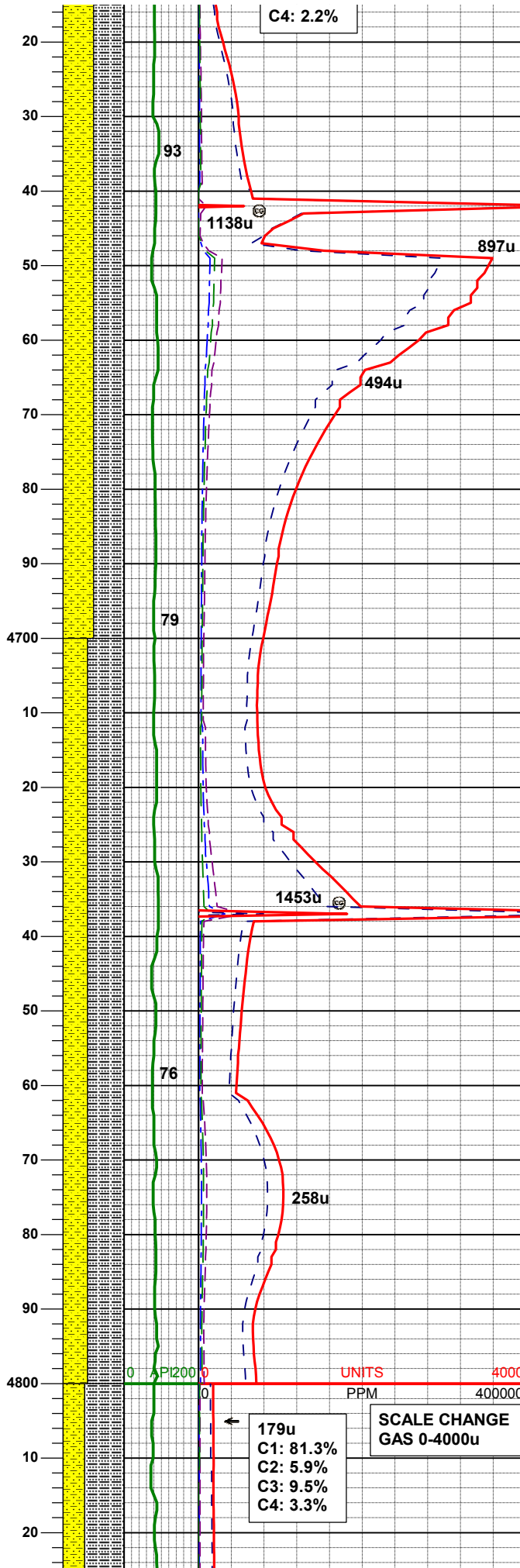
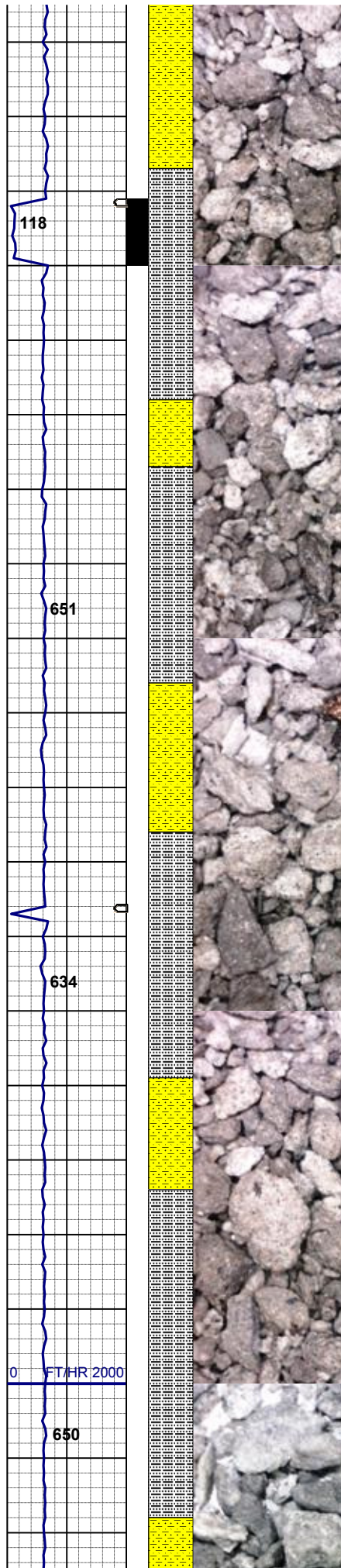
SHYSS: lt gy - gy, f -mcgr, sbang -
sbrnnd, mod srt, mod sft - frm, arg
cmt
SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbblky - sbply, arg-rthy
mtx, noncalc
SS: wh - lt gy, brn - tan, mod
firm, sbblky - sb rndd, mod-p srt, tr
glau, arg cmt

MD 4499'
INC 1.1°
AZM 314.8°
TVD 4417.22'

SHYSS: lt gy - gy, f -mcgr, sbang -
sbrnnd, mod srt, mod sft - frm, arg
cmt
SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbblky - sbply, arg-rthy
mtx, noncalc

MD 4593'
INC 1.1°
AZM 286.8°
TVD 4511.21'

55u
C1: 86.5%
C2: 4.3%
C3: 7.0%



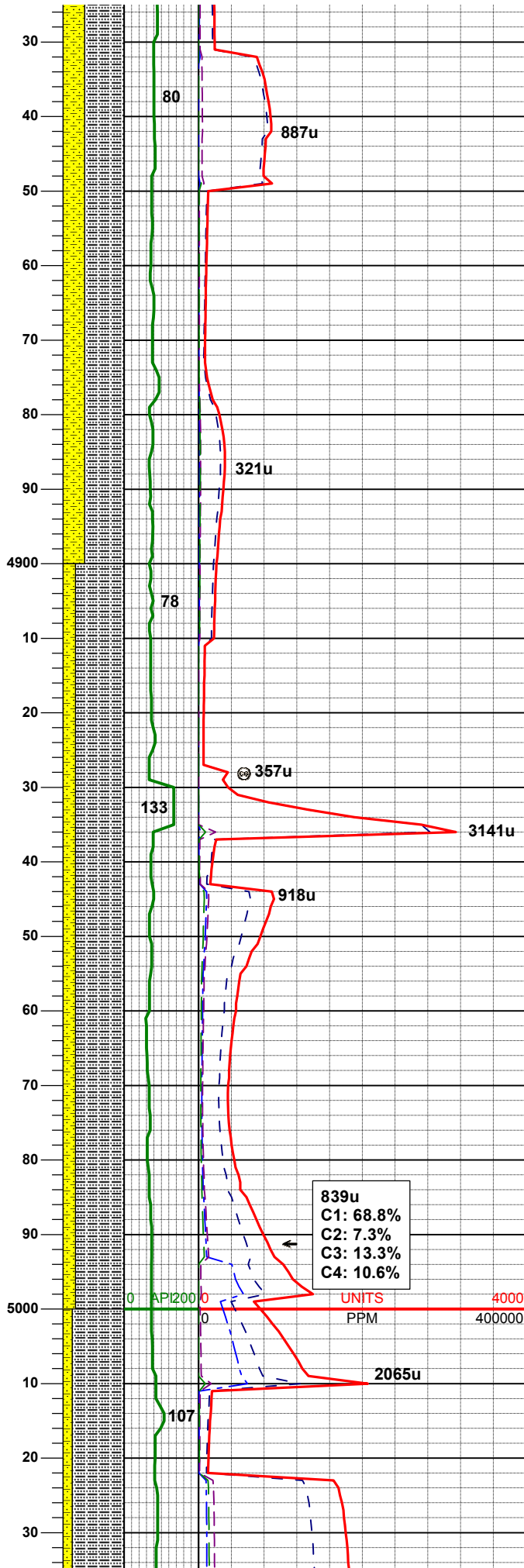
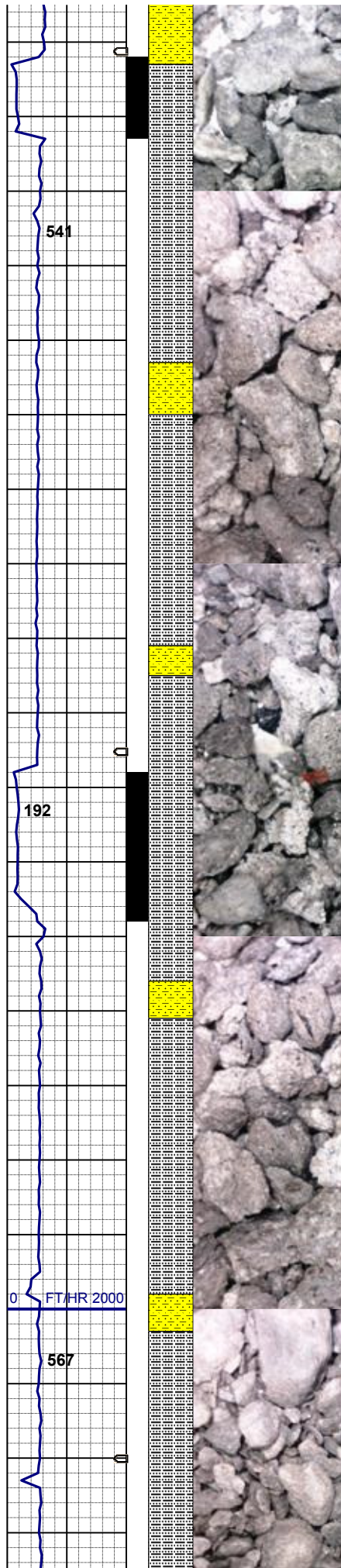
IN/OUT WT 9.0+/9.1+
IN/OUT VIS 28/29

SHYSS: lt gy - gy, f-mcgr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt
SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbbiky - sbply, arg-rthy
mtx, noncalc

MD 4688'
INC 0.2°
AZM 184.3°
TVD 4606.20'

SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbbiky - sbply, arg-rthy
mtx, noncalc
SHYSS: lt gy - gy, f-mcgr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt

MD 4783'
INC 0.6°
AZM 87.1°
TVD 4701.20'



SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbblky - sbply, arg-rthy
mtx, noncalc
SHYSS: lt gy - gy, f -mcgr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt

MD 4877'
INC 0.8°
AZM 99.9°
TVD 4795.19'

WT 9.0 VIS 27

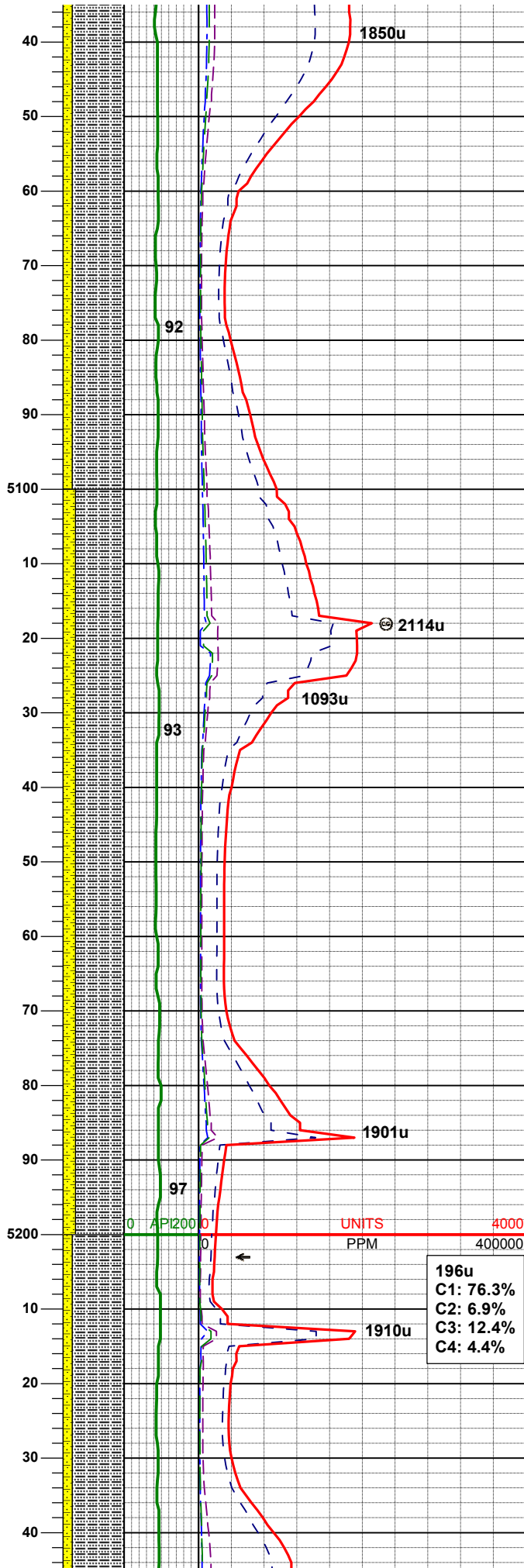
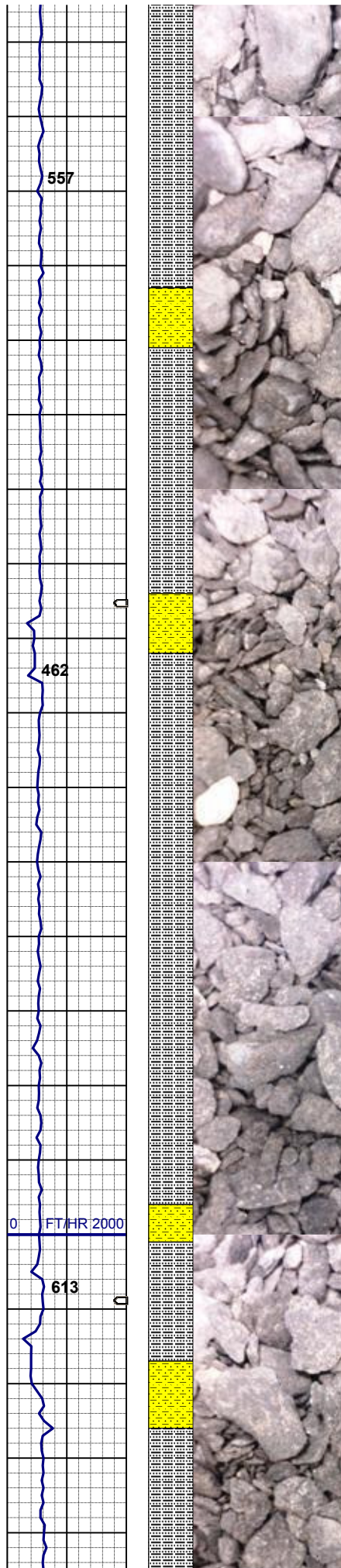
SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbblky - sbply, arg-rthy
mtx, noncalc
SHYSS: lt gy - gy, f -mcgr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt

MD 4972'
INC 1.3°
AZM 162.4°
TVD 4890.18'

839u
C1: 68.8%
C2: 7.3%
C3: 13.3%
C4: 10.6%

UNITS
PPM

2065u



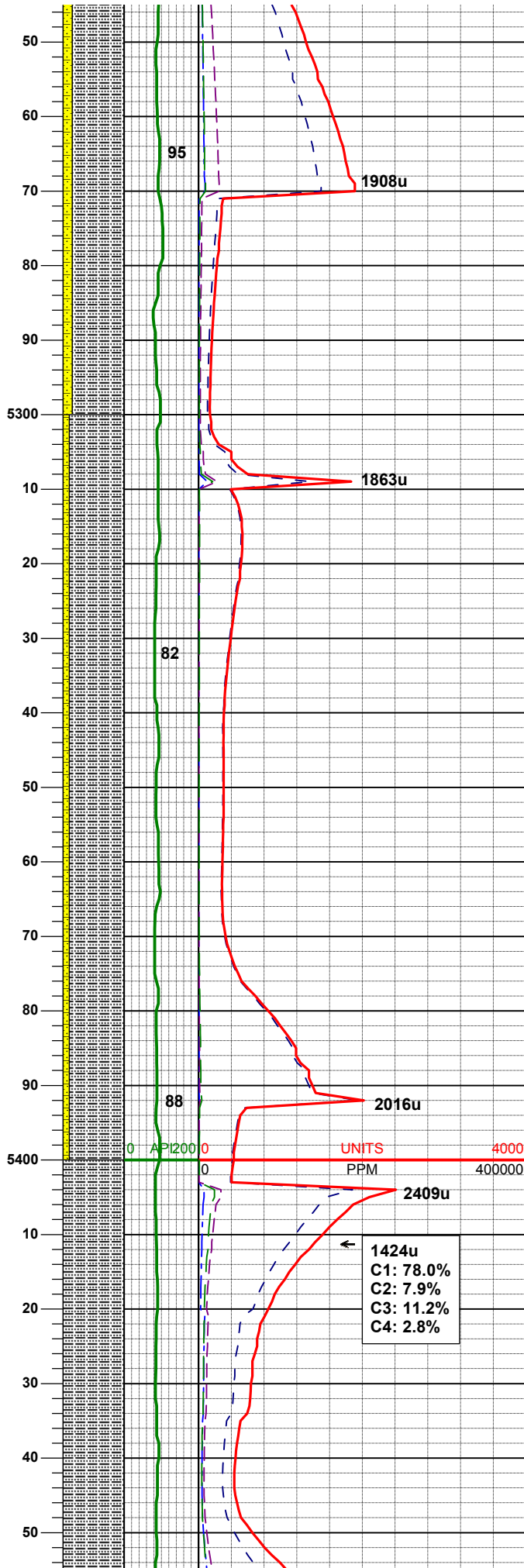
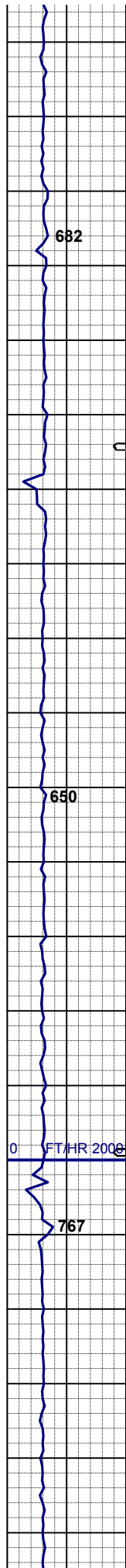
SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbblky - sbply, arg-rthy
mtx, noncalc
SHYSS: lt gy - gy, f-mcgr, sbang -
sbrnnd, mod srt, mod sft - frm, arg
cmt

MD 5067'
INC 0.9°
AZM 164.1°
TVD 4985.16'

SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbblky - sbply, arg-rthy
mtx, noncalc
SHYSS: lt gy - gy, f-mcgr, sbang -
sbrnnd, mod srt, mod sft - frm, arg
cmt

MD 5161'
INC 1.0°
AZM 203.1°
TVD 5079.15'

SLTYSH: m - lt gy, occ dk gy, sft -



mod firm, sbbiky - sbpity, arg-rthy
mtx, noncalc
SHYSS: lt gy - gy, f-mcgr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt

MD 5256'
INC 0.3°
AZM 236.9°
TVD 5174.14'

WT 9.0 VIS 27

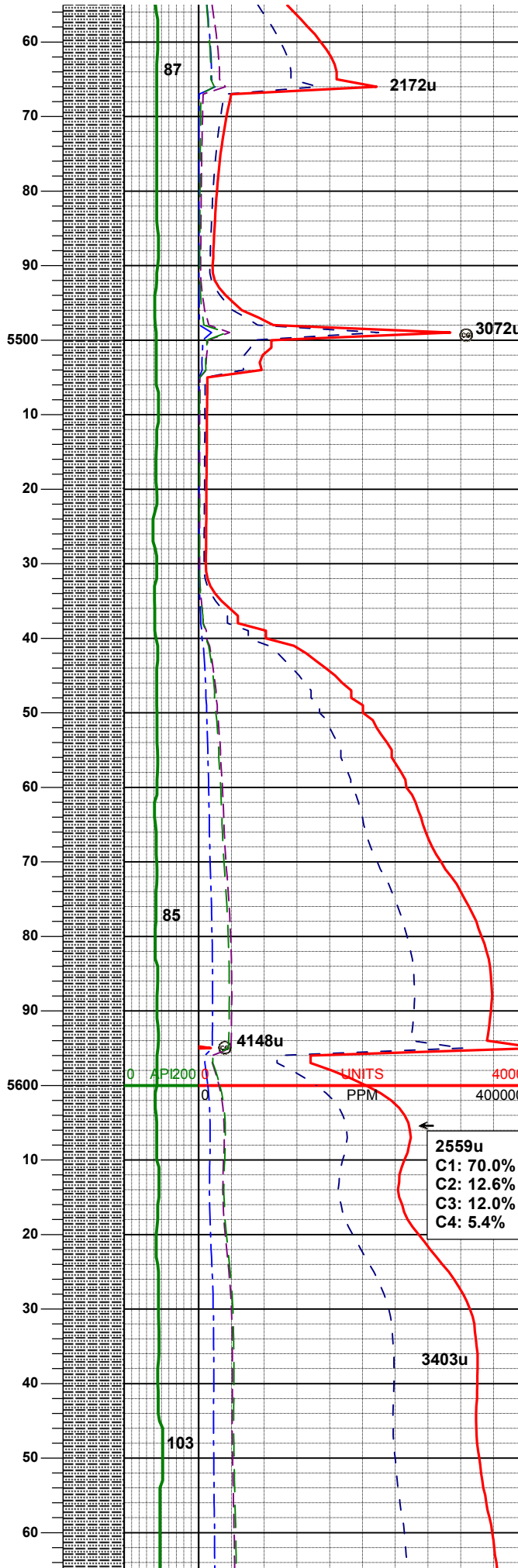
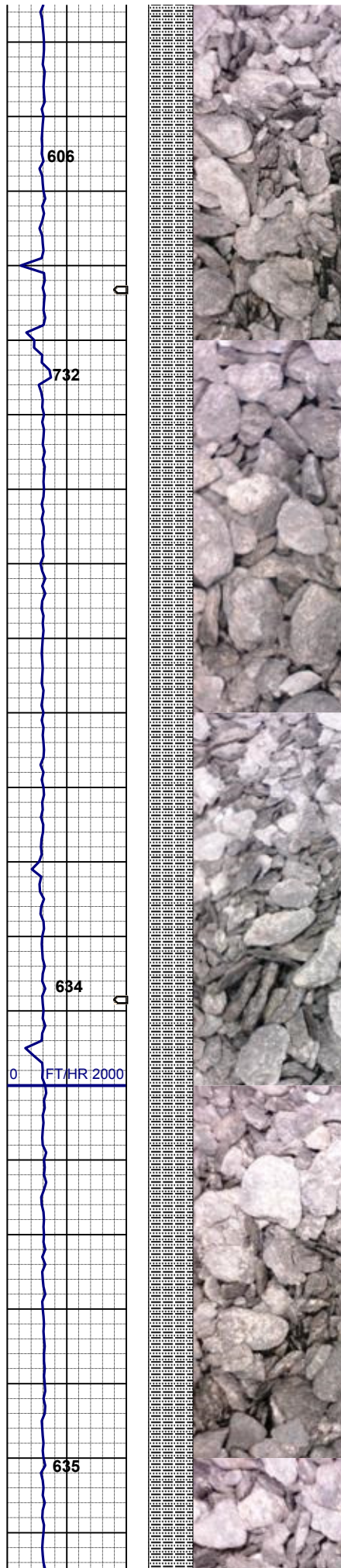
SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbbiky - sbpity, arg-rthy
mtx, noncalc
SHYSS: lt gy - gy, f-mcgr, sbang -
sbrndd, mod srt, mod sft - frm, arg
cmt

MD 5351'
INC 0.5°
AZM 288.0°
TVD 5269.14'

1424u
C1: 78.0%
C2: 7.9%
C3: 11.2%
C4: 2.8%

MD 5445'
INC 0.4°
AZM 269.2°
TVD 5363.14'

SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbbiky - sbpity, arg-rthy
mtx, noncalc

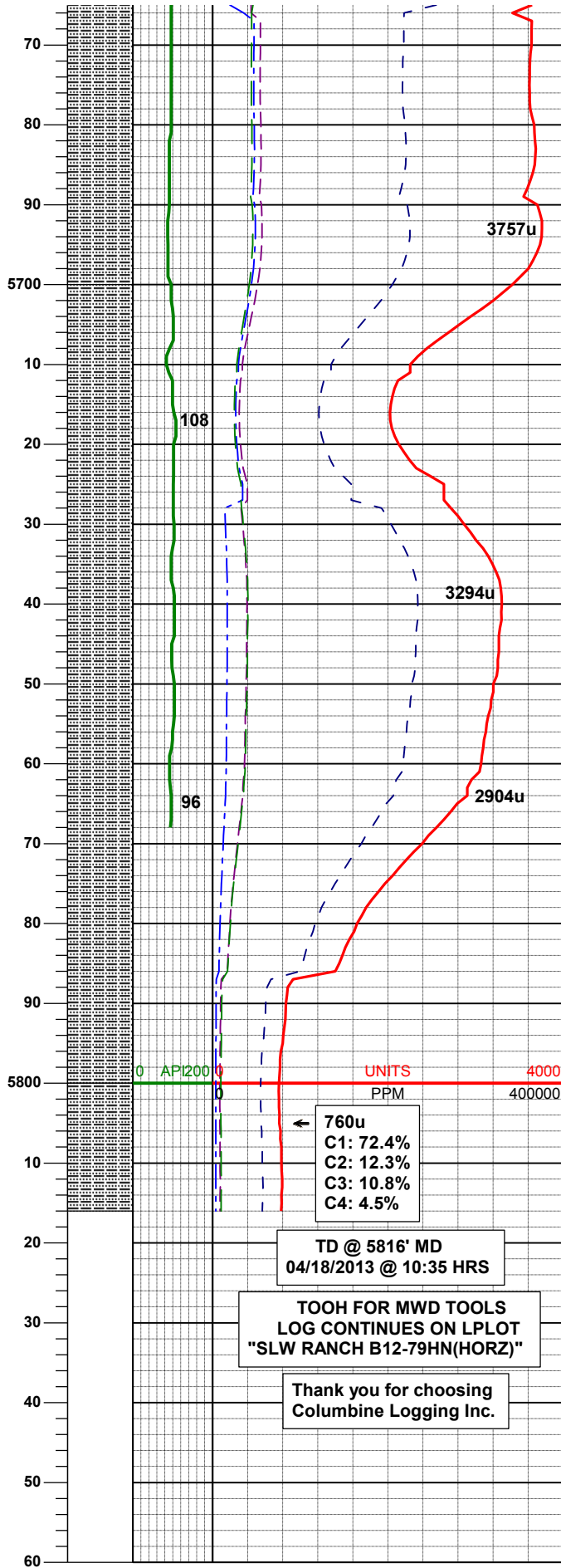
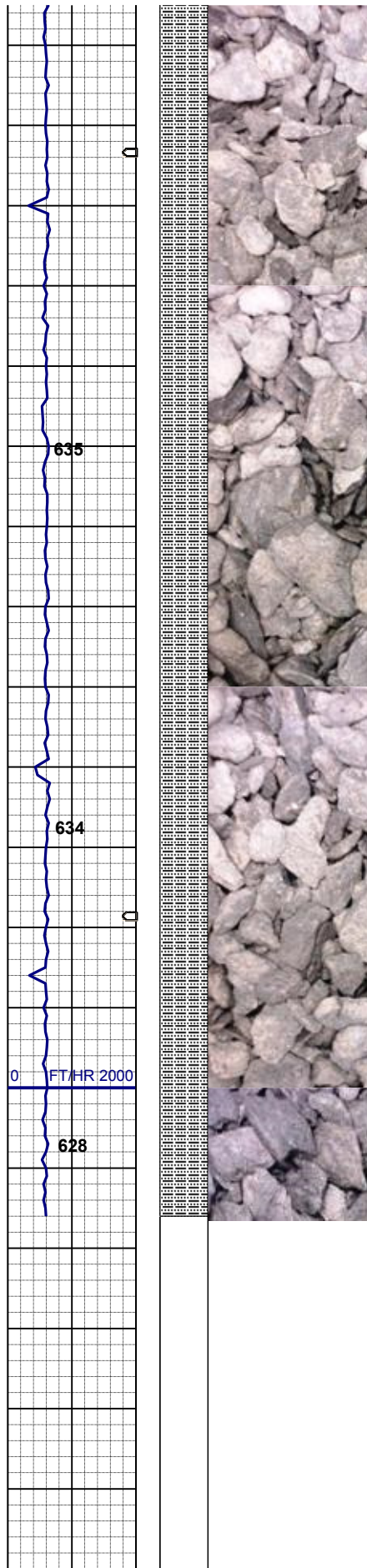


MD 5540'
INC 0.4°
AZM 271.0°
TVD 5458.13'

SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbblky - sbply, arg-rthy
mtx, noncalc

WT 9.1 VIS 30

SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbblky - sbply, arg-rthy
mtx, noncalc



WT 9.1+ VIS 37

SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbbky - sbpty, arg-rthy
mtx, noncalc

MD 5768'
INC 0.2°
AZM 220.2°
TVD 5686.13'

0 API200 0 UNITS 4000
PPM 400000

760u
C1: 72.4%
C2: 12.3%
C3: 10.8%
C4: 4.5%

TD @ 5816' MD
04/18/2013 @ 10:35 HRS

TOOH FOR MWD TOOLS
LOG CONTINUES ON L PLOT
"SLW RANCH B12-79HN(HORZ)"

Thank you for choosing
Columbine Logging Inc.