

LOG created using LPLOT VH Version 3.0, May 01, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: NOBLE ENERGY INC.
WELL: SLW RANCH STATE B13-69HN
LOCATION: SWSW SEC 12, T5N, R64W
COUNTY: WELD
STATE: COLORADO
SPOT: 625' FSL, 246' FWL
ELEVATION: GR 4,595', KB 4,625'
FIELD: WILDCAT
SPUD DATE: 04/24/2013
TD DATE: 04/26/2013
DATES LOGGED: 04/25/2013 - 04/26/2013
DEPTHS LOGGED: 700' MD - 5835' MD
LOGGERS: ANDREA ZUIDEMA, SHANA SWIRIN
DRILLING FLUID: LSND
DRILLING RIG: H&P 326
API: 05-123-36496
LOG TYPE: VERTICAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: WELLSITE GEOLOGICAL SERVICES
 PROVIDED BY COLUMBINE LOGGING INC.

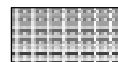
LITHOLOGIES



Sandstone



Shaly Sandstone



Silty Shale

ENGINEERING SYMBOLS



Connection



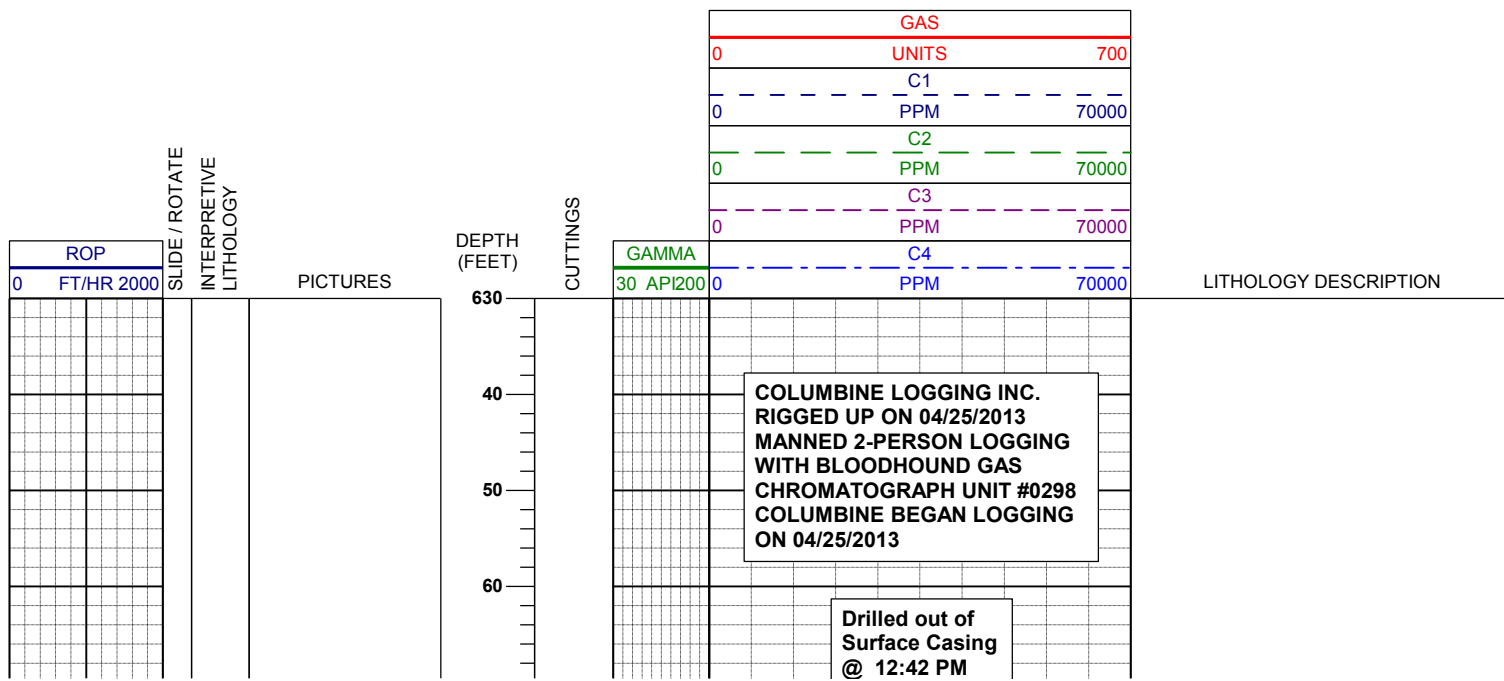
Connection Gas



Arrow



Midnight Depth



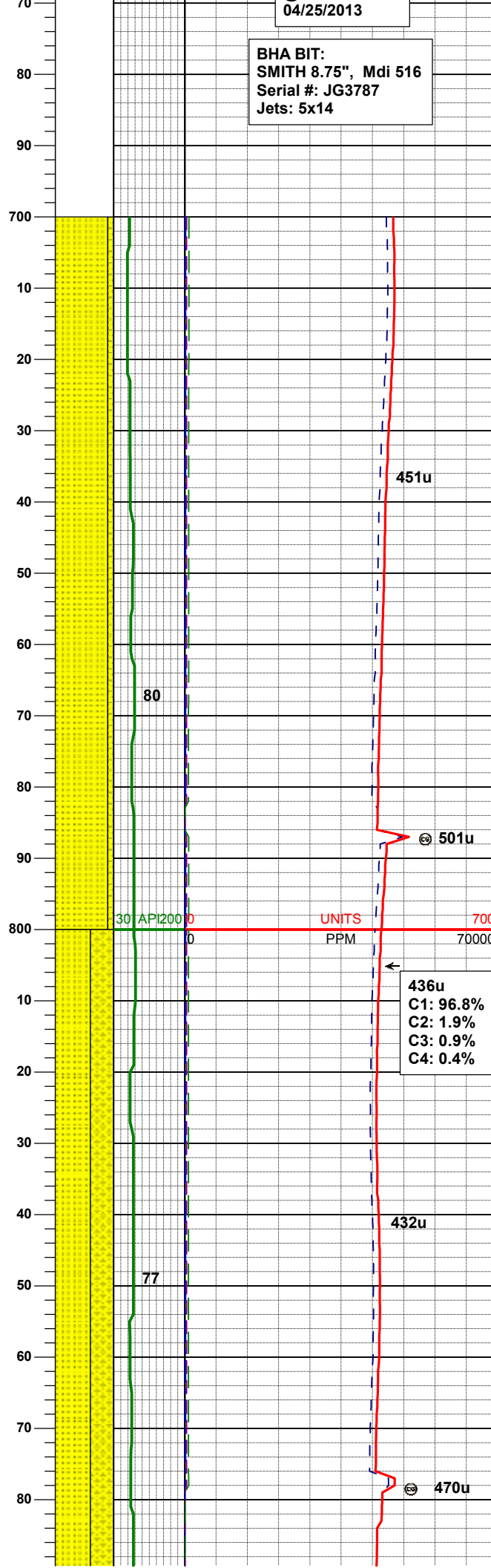
04/25/2013

BHA BIT:
SMITH 8.75", Mdi 516
Serial #: JG3787
Jets: 5x14

WT IN 8.60/ OUT 8.60
VIS IN 28/ OUT 28

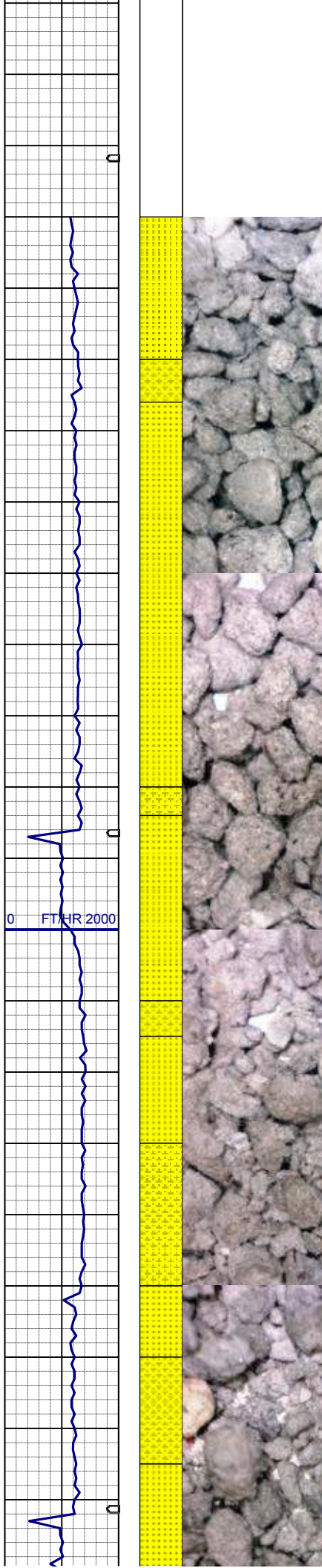
MD 738'
INC 0.4°
AZM 31.2°
TVD 737.99'

SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnidd, mod srt, arg cmt, tr
phlog,
SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnidd, mod-p srt, occ
phlog, tr fld incl, arg cmt



MD 833'
INC 0.5°
AZM 18.9°
TVD 832.99'

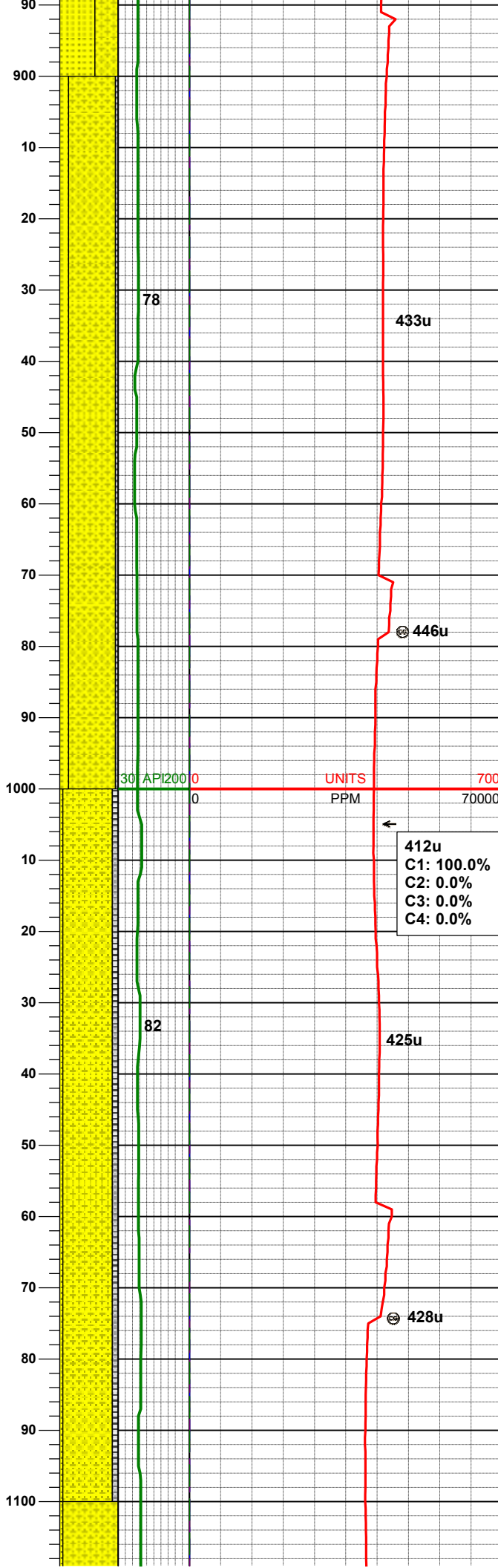
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnidd, mod srt, arg cmt, tr
phlog,
SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnidd, mod-p srt, occ
phlog, tr fld incl, arg cmt

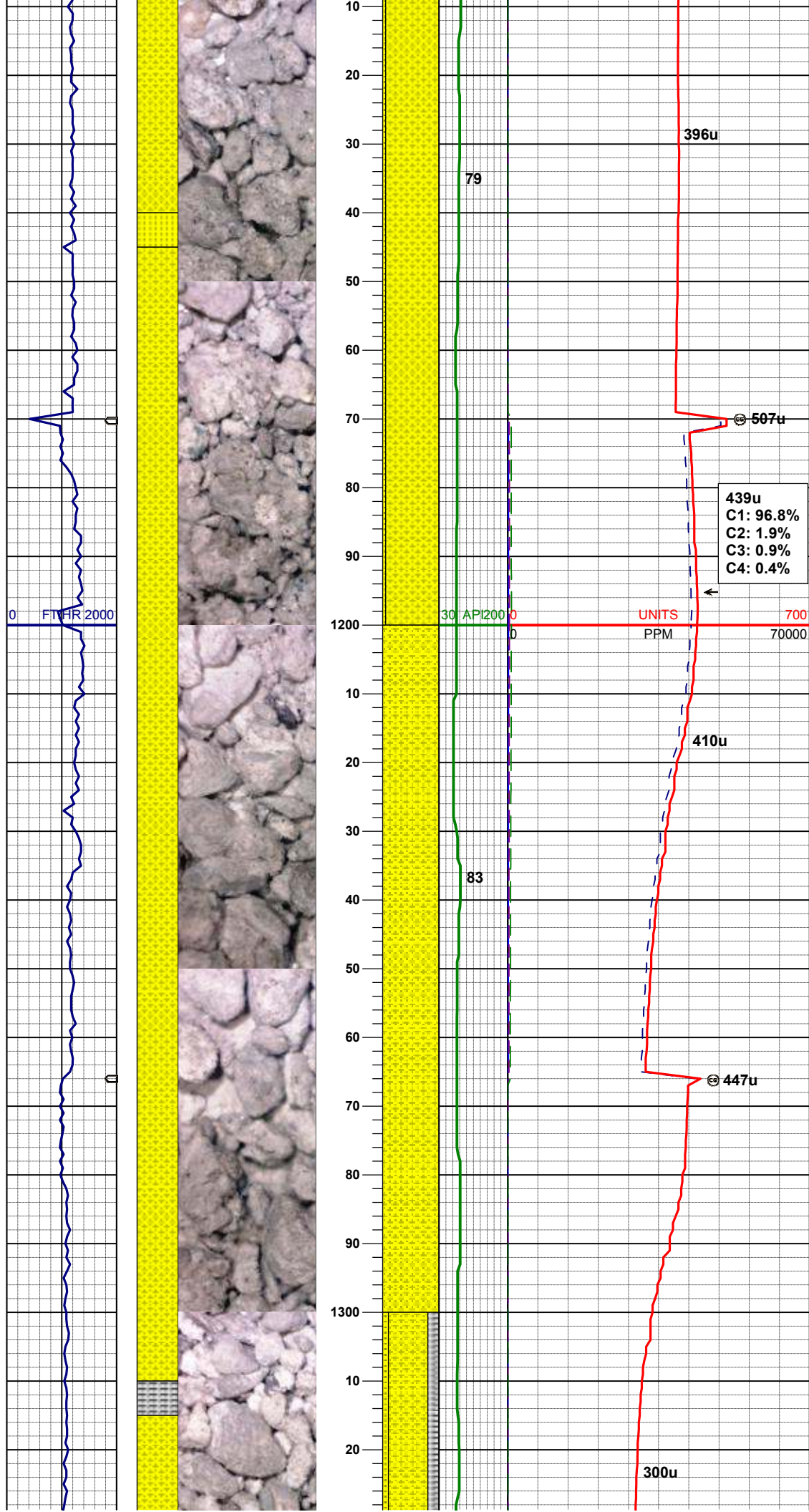


WT IN 8.65/ OUT 8.65
VIS IN 28/ OUT 28

MD 927'
INC 0.6°
AZM 14.9°
TVD 926.98'

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnrd, mod-p srt, occ
phlog, tr fld incl, arg cmt
SLTYSH: m - lt gy, sft - mod firm,
sbbiky, arg-rthy mtx, occ phlog,
noncalc
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnrd, mod srt, arg cmt, tr
phlog





MD	1116'
INC	0.9°
AZM	12.1°
TVD	1115.97'

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrndd, mod-p srt, occ
phlog, tr fld incl, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrndd, mod srt, arg cmt

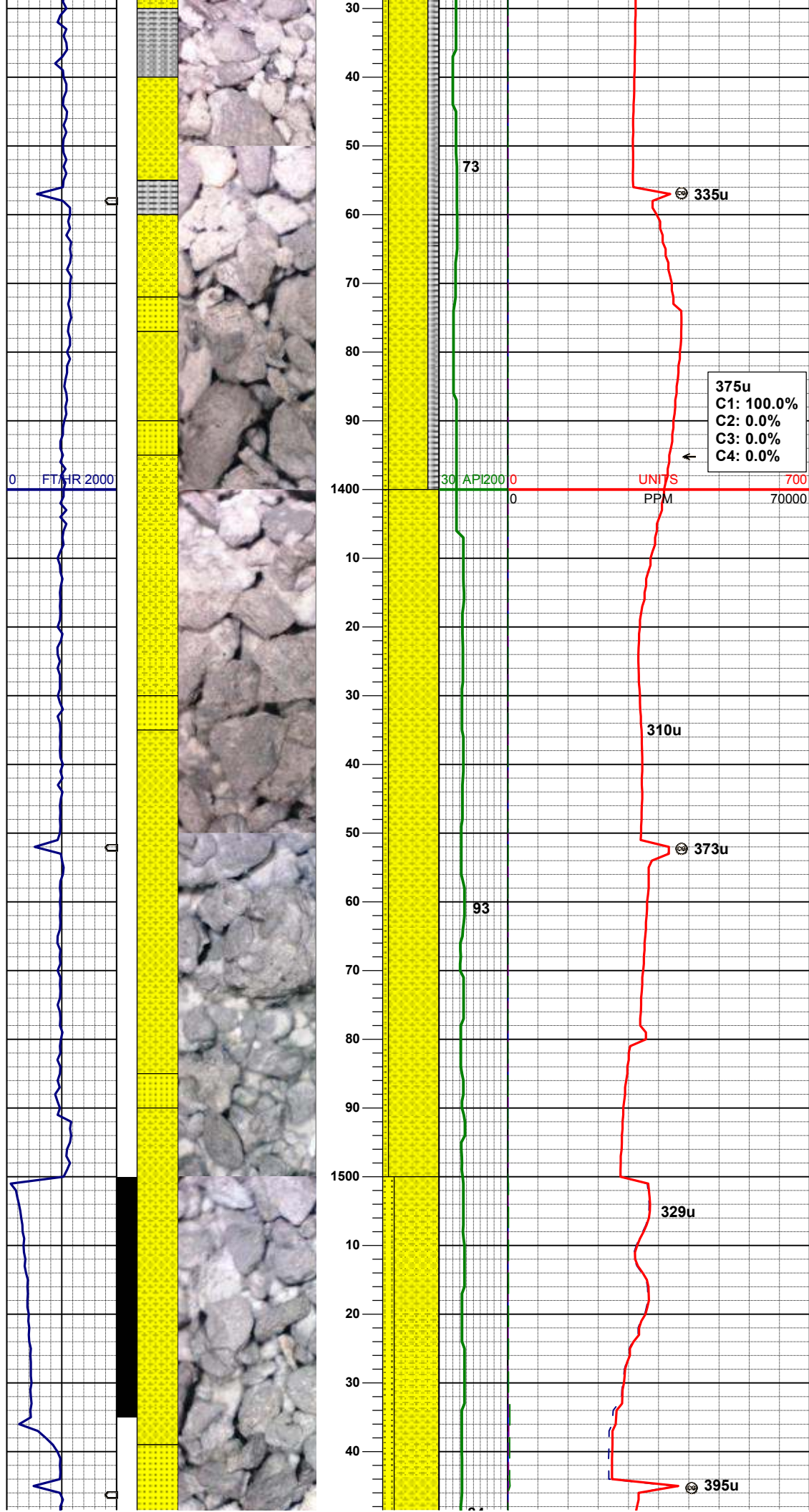
439u
C1: 96.8%
C2: 1.9%
C3: 0.9%
C4: 0.4%

MD	1211'
INC	0.7°
AZM	23.6°
TVD	1210.96'

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrndd, mod-p srt, arg
cmt, tr sltysh

WT IN 8.70/ OUT 8.70
VIS IN 29/ OUT 29

MD	1309'
INC	0.7°
AZM	19.7°
TVD	1308.95'



SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrndd, mod-p srt, arg cmt
SLTYSH: m - lt gy, sft - mod firm,
sbbkly, arg-rthy mtx, noncalc
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrndd, mod srt, arg cmt

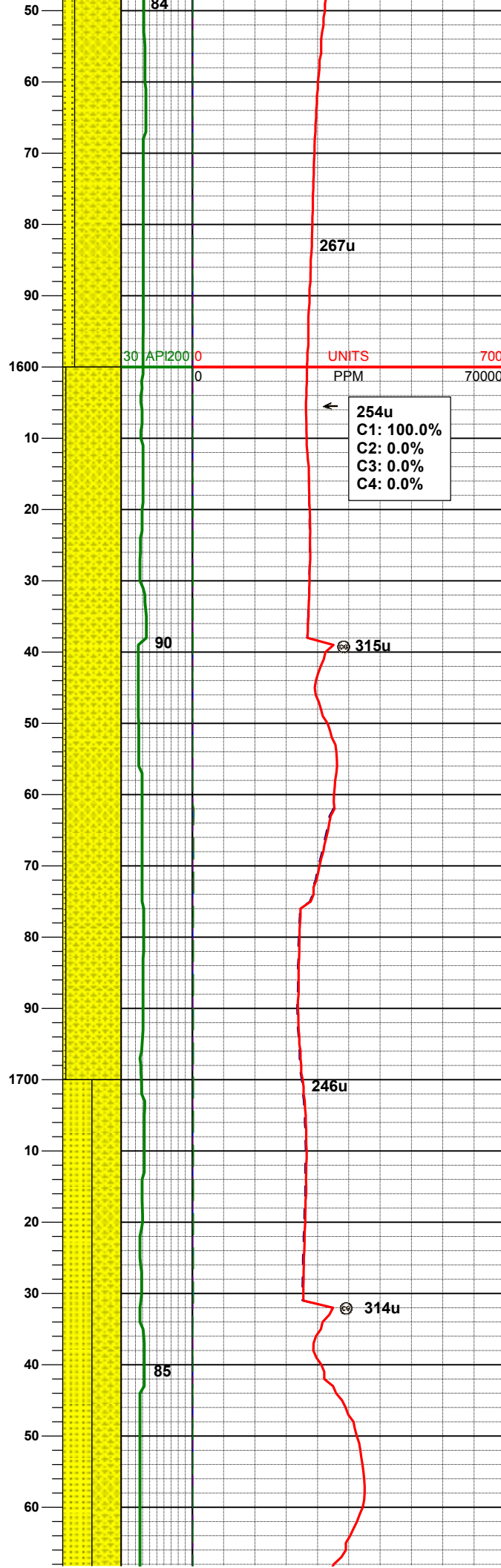
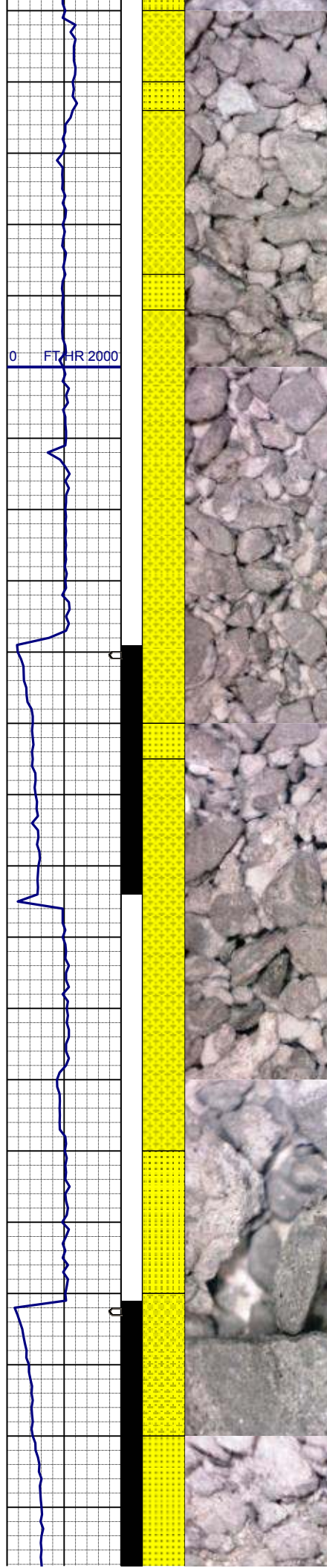
MD 1403'
INC 0.6°
AZM 20.8°
TVD 1402.95'

WT IN 8.75/ OUT 8.75
VIS IN 28/ OUT 28

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrndd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrndd, mod srt, arg cmt

MD 1497'
INC 0.4°
AZM 196.0°
TVD 1496.94'

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrndd, mod-p srt, arg cmt



gr, sbang - sbrnnd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnnd, mod srt, arg cmt

MD	1591'
INC	2.2°
AZM	182.6°
TVD	1590.92'

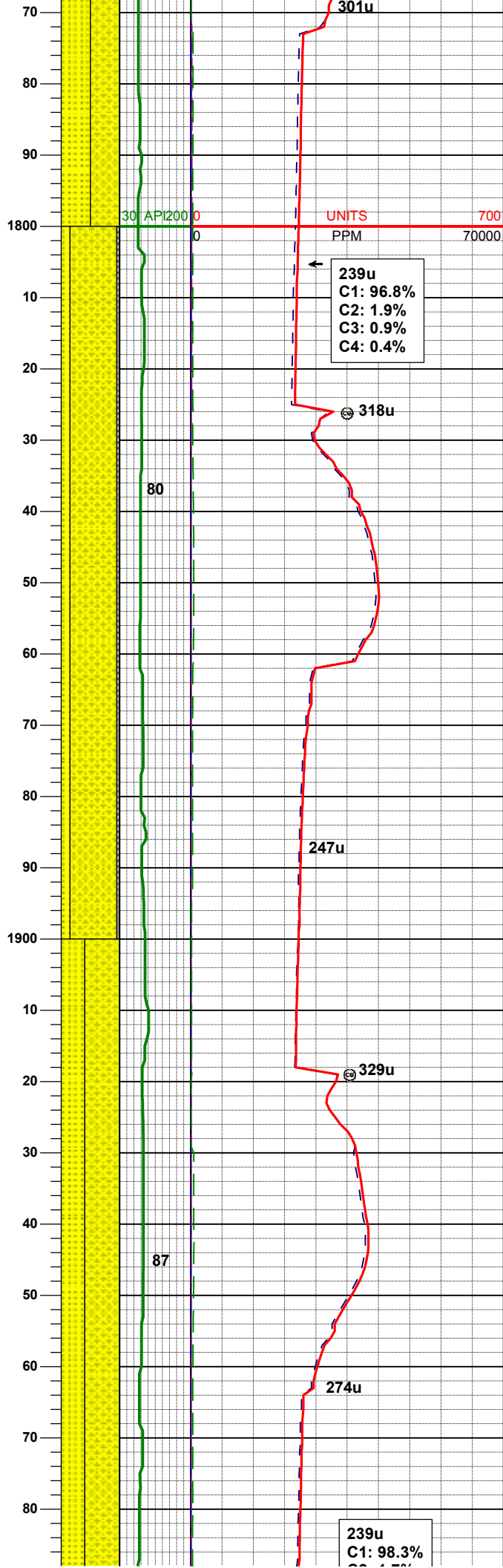
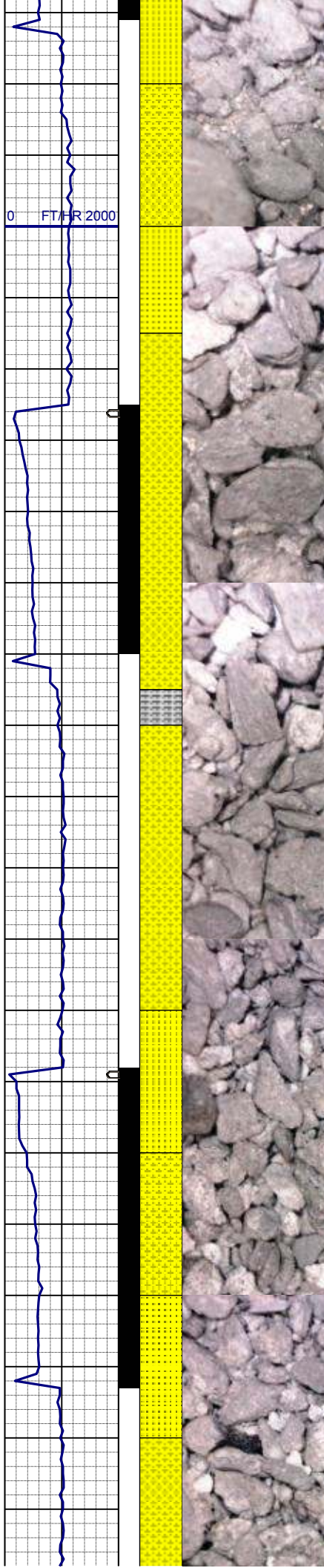
WT IN 8.75/ OUT 8.75
VIS IN 27/ OUT 27

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnnd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnnd, mod srt, arg cmt

MD	1683'
INC	4.6°
AZM	181.6°
TVD	1682.75'

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnnd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnnd, mod srt, arg cmt

WT IN 8.80/ OUT 8.80
VIS IN 27/ OUT 27



MD 1777'
INC 7.2°
AZM 182.7°
TVD 1776.24'

239u
C1: 96.8%
C2: 1.9%
C3: 0.9%
C4: 0.4%

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnnd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnnd, mod srt, arg cmt
SLTYSH: m - lt gy, sft - mod firm,
sbbkly, arg-rthy mtx, noncalc

MD 1870'
INC 8.6°
AZM 181.2°
TVD 1868.36'

247u

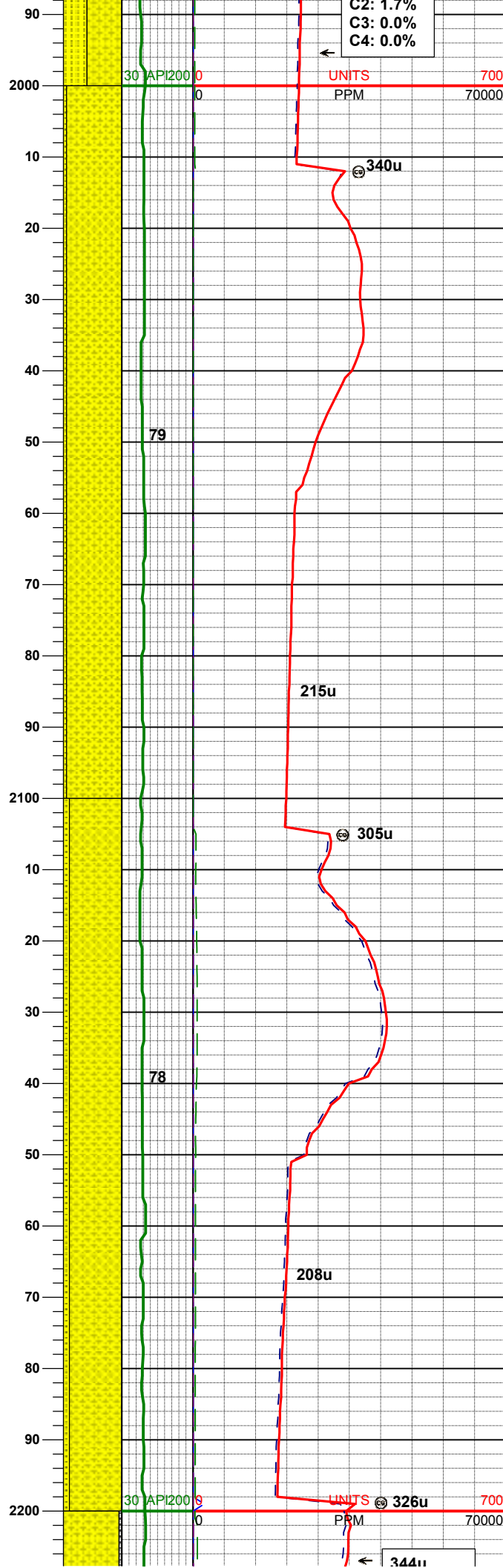
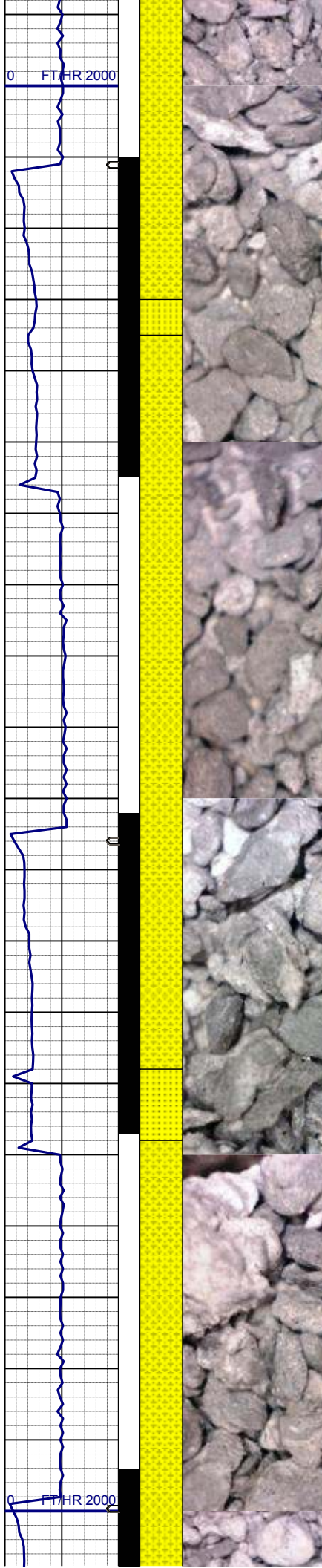
329u

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnnd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnnd, mod srt, arg cmt

MD 1962'
INC 10.9°
AZM 184.1°
TVD 1959.02'

239u
C1: 98.3%
C2: 1.5%

274u



C2: 1.7%
C3: 0.0%
C4: 0.0%

UNITS
PPM

WT IN 8.80/ OUT 8.80
VIS IN 30/ OUT 29

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrndd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrndd, mod srt, arg cmt, tr
slytsh

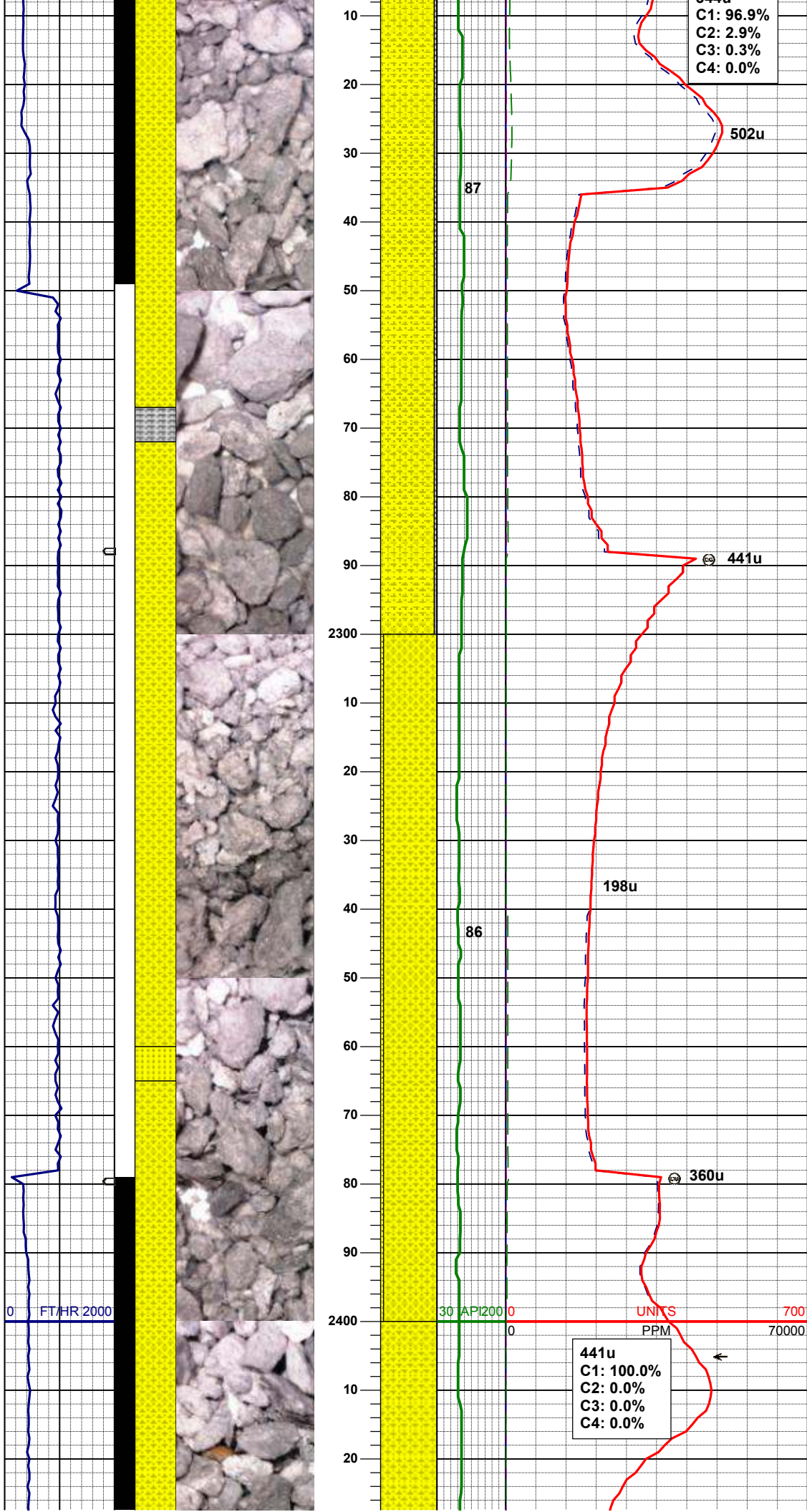
MD 2054'
INC 12.5°
AZM 180.6°
TVD 2049.11'

MD 2146'
INC 13.9°
AZM 182.1°
TVD 2138.68'

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrndd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrndd, mod srt, arg cmt

UNITS
PPM

344u



MD 2239'
INC 15.1°
AZM 184.0°
TVD 2228.71'

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnrd, mod-p srt, arg cmt
SLTYSH: m - lt gy, sft - mod firm,
sbbkly, arg-rthy mtx, noncalc, tr ss

WT IN 8.85/ OUT 8.85
VIS IN 28/ OUT 30

MD 2331'
INC 13.7°
AZM 181.9°
TVD 2317.82'

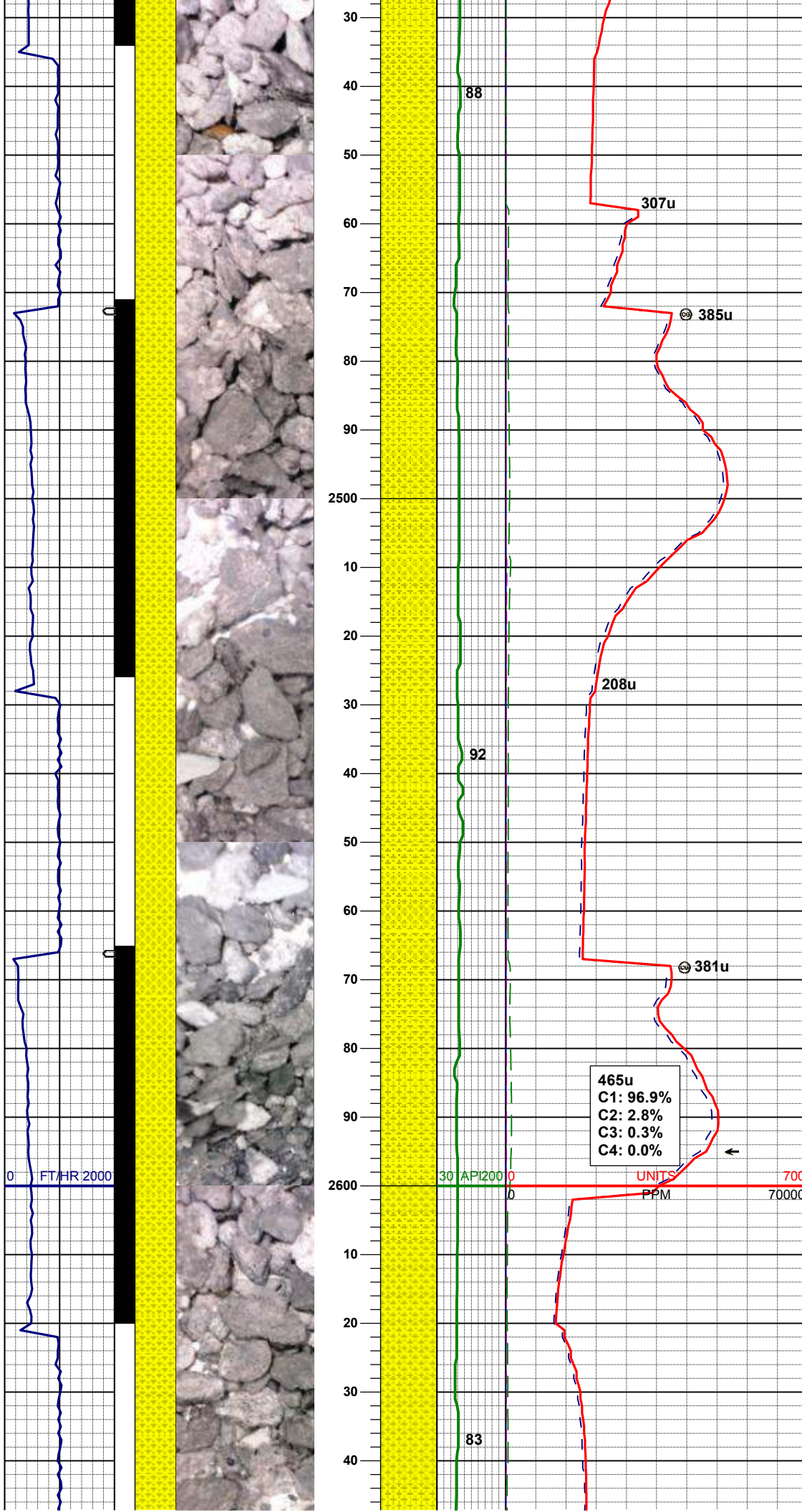
SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnrd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnrd, mod srt, arg cmt

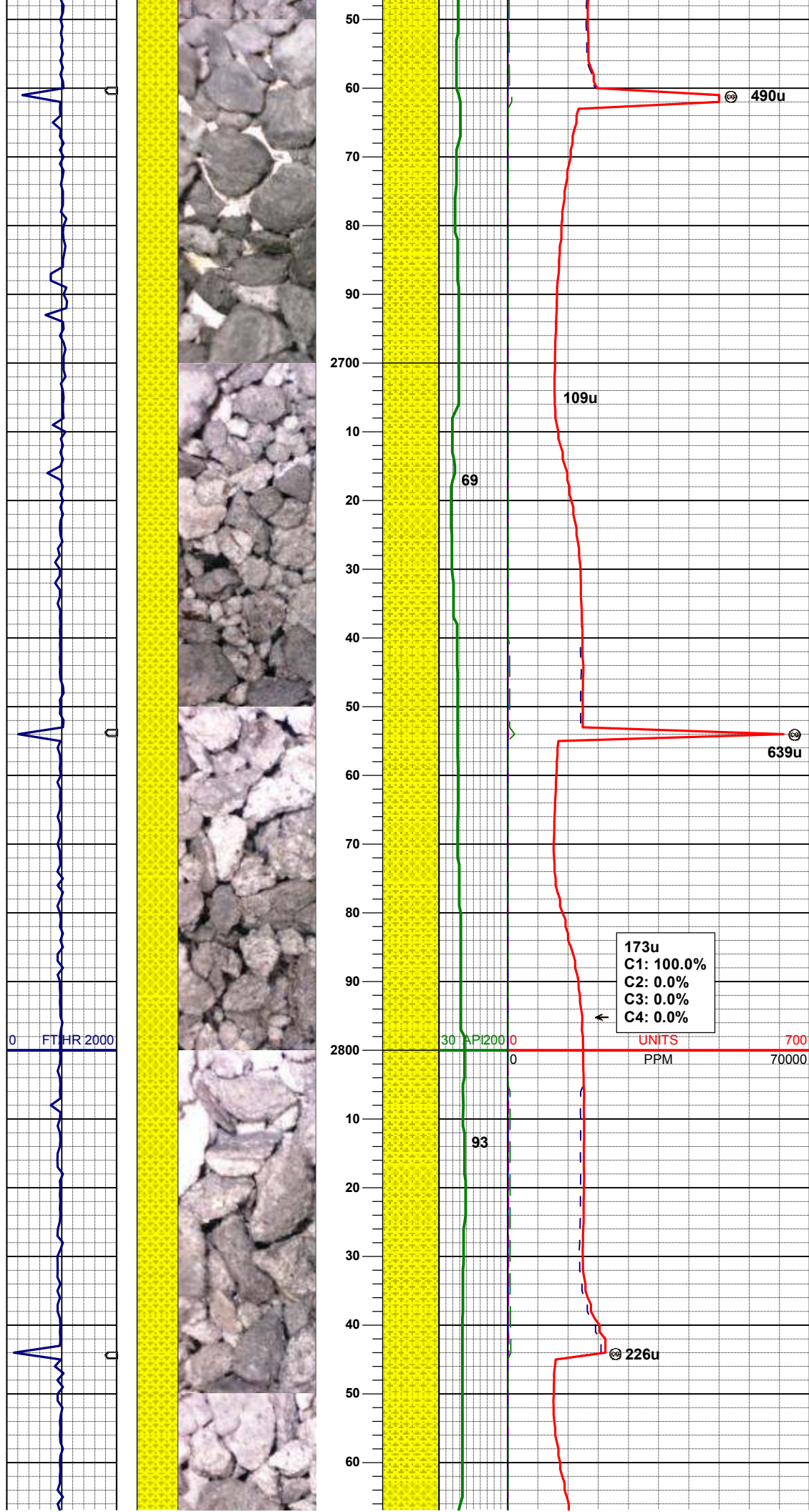
MD 2423'

MD	2517'
INC	16.8°
AZM	181.2°
TVD	2497.26'

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrndd, mod-p srt, arg cmt

MD	2610'
INC	18.5°
AZM	180.8°
TVD	2585.88'





SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnnd, mod-p srt, arg cmt

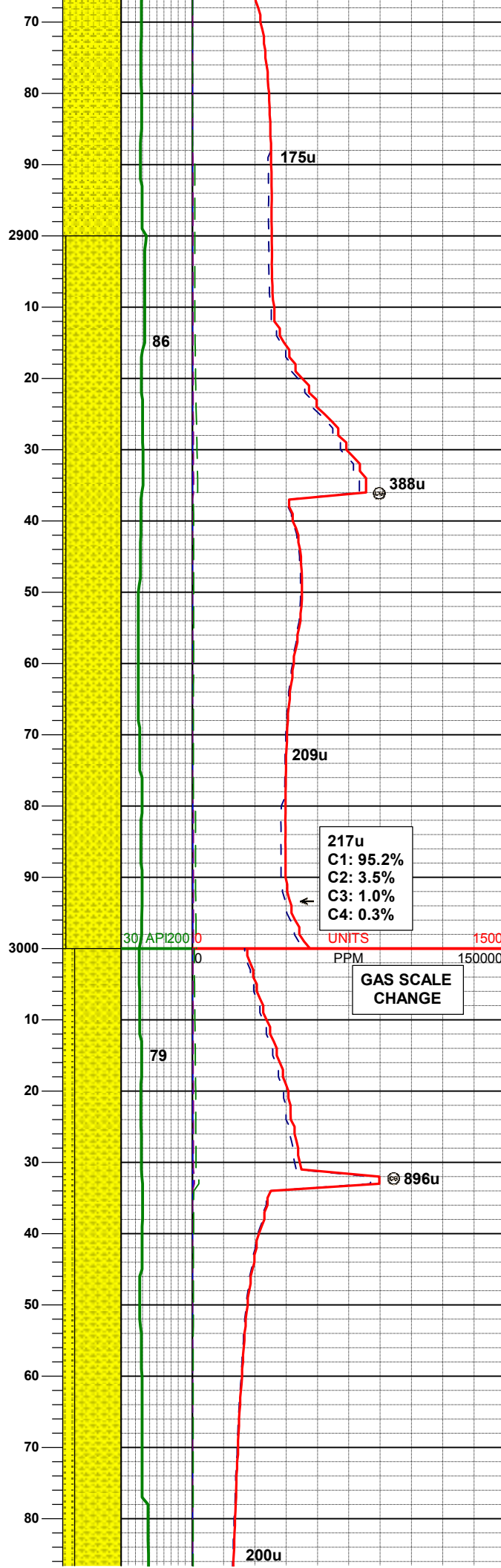
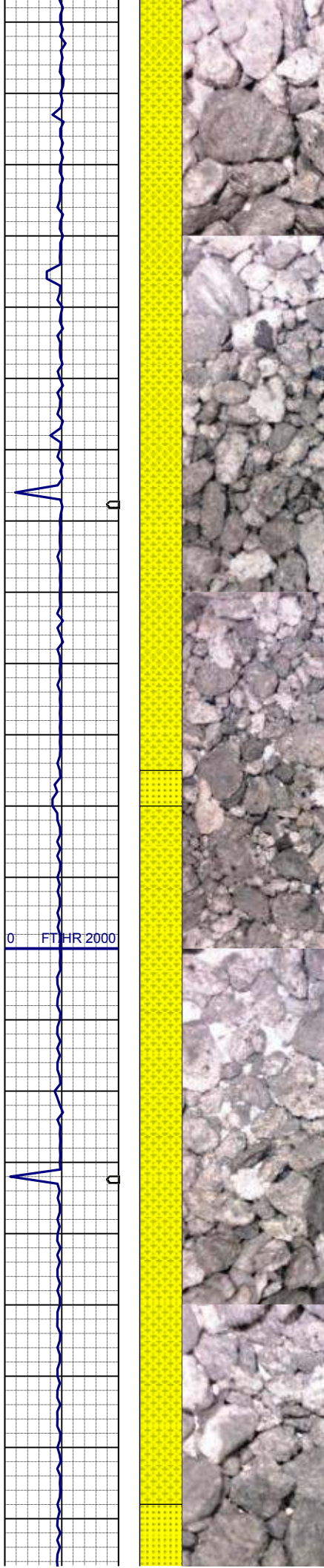
MD	2703'
INC	20.1°
AZM	179.9°
TVD	2673.65'

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnnd, mod-p srt, arg
cmt, tr ss

MD	2795'
INC	19.4°
AZM	180.5°
TVD	2760.24'

WT IN 9.00/ OUT 9.05
VIS IN 30/ OUT 29

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnnd, mod-p srt, arg
cmt, tr ss



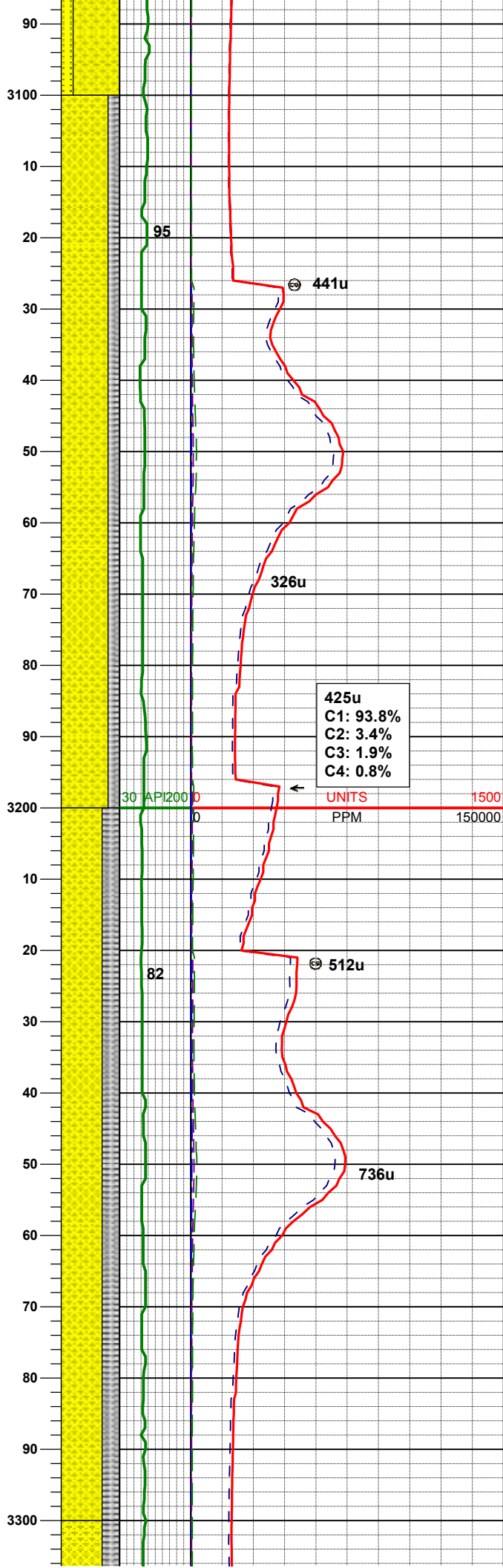
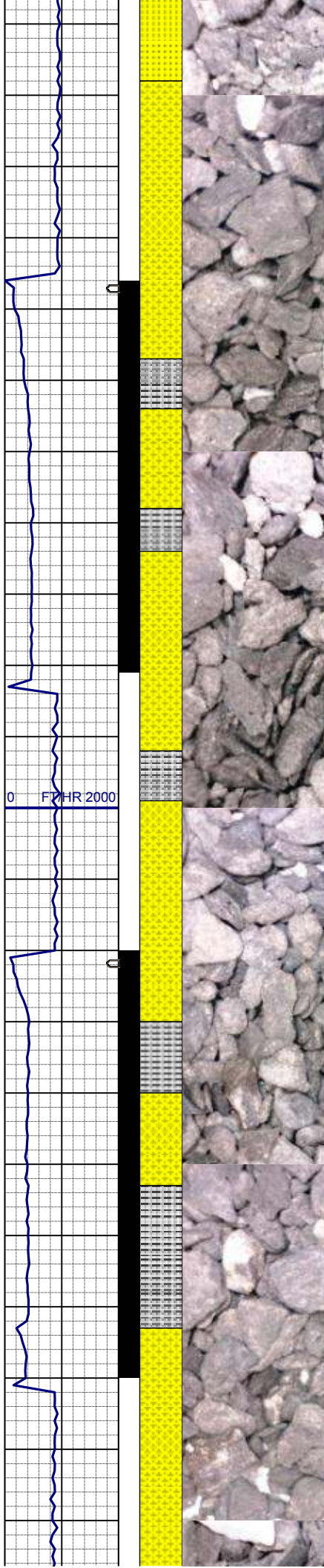
MD 2888'
INC 17.9°
AZM 180.7°
TVD 2848.36'

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnnd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnnd, mod srt, arg cmt, tr slty
sh

MD 2983'
INC 16.9°
AZM 181.5°
TVD 2939.01'

SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrnnd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnnd, mod srt, arg cmt

MD 3078'
INC 13.9°
AZM 181.1°
TVD 3030.50'



WT IN 8.90/ OUT 9.05
VIS IN 30/ OUT 29

SHYSS: lt gy - gybrn, s&p, f gr, sbang
- sbrndd, mod-p srt, arg cmt
SLTYSH: m - lt gy, sft - mod firm,
sbbky, arg-rthy mtx, noncalc

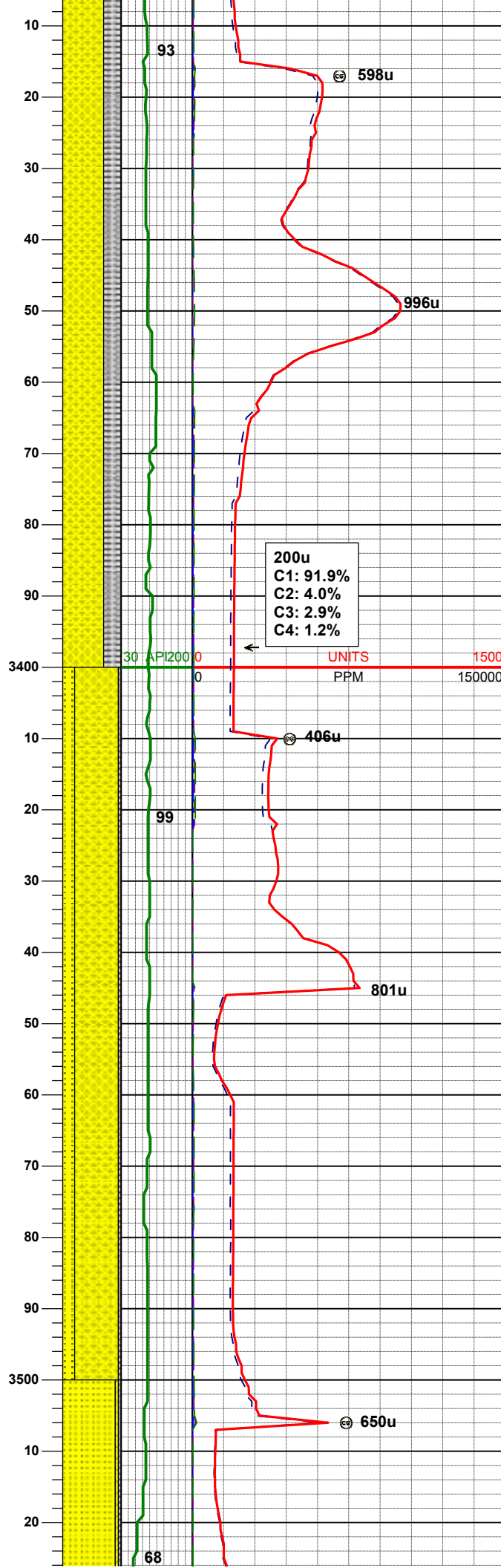
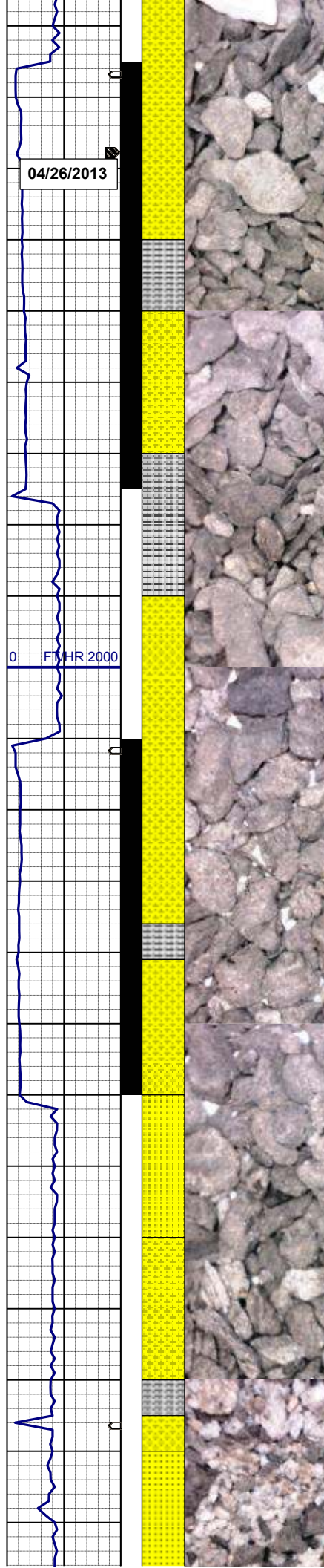
MD 3172'
INC 14.4°
AZM 180.4°
TVD 3121.73'

425u
C1: 93.8%
C2: 3.4%
C3: 1.9%
C4: 0.8%

UNITS
PPM

SHYSS: lt gy - gybrn, s&p, f gr, sbang
- sbrndd, mod-p srt, arg cmt
SLTYSH: m - lt gy, sft - mod firm,
sbbky, arg-rthy mtx, noncalc, tr ss

MD 3267'
INC 15.1°
AZM 179.5°
TVD 3213.60'



WT IN 8.90/ OUT 9.10
VIS IN 28/ OUT 30

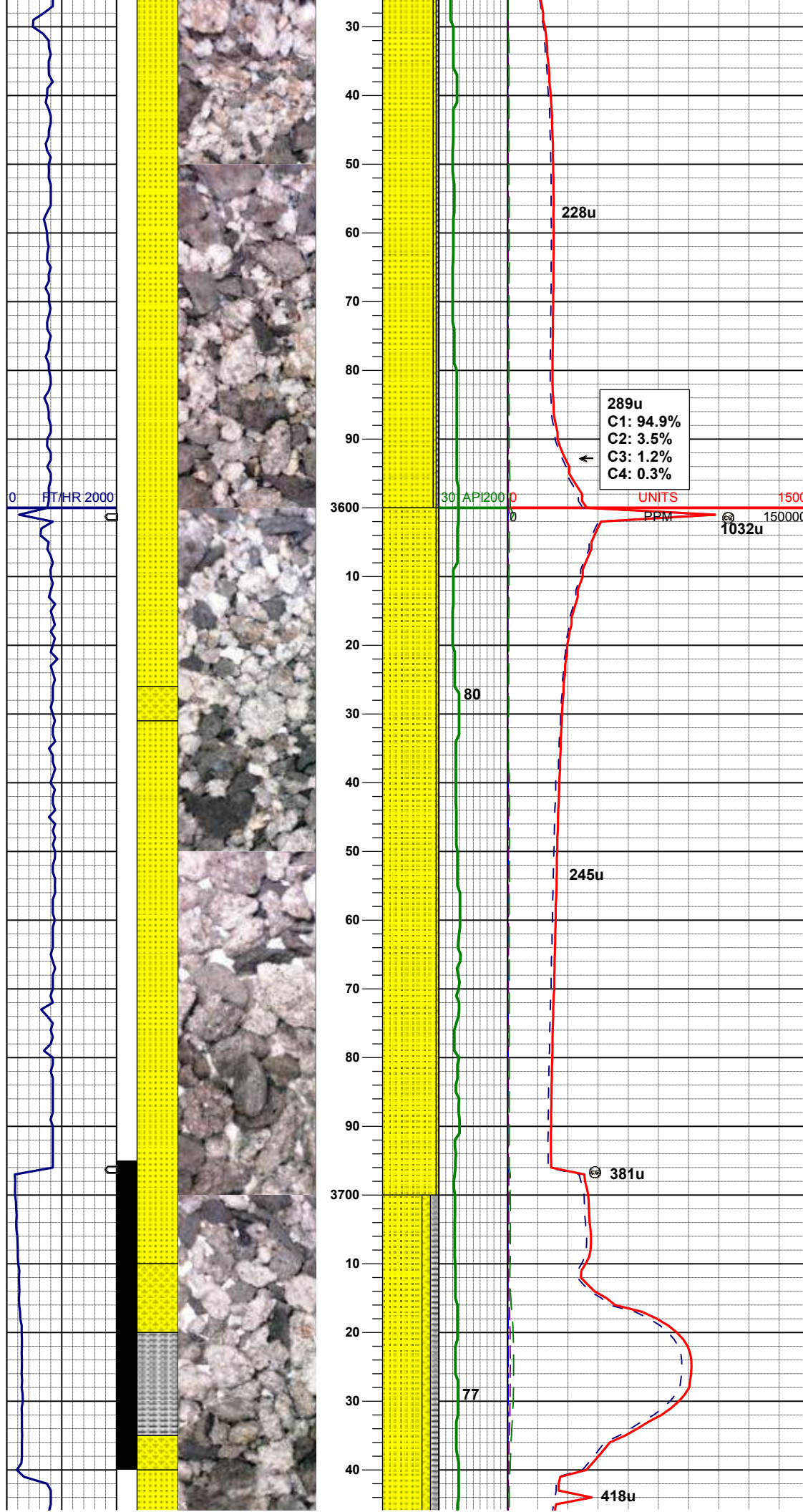
SHYSS: lt gy - gybrn, s&p, f gr, sbang
- sbrnnd, mod-p srt, arg cmt
SLTYSH: m - lt gy, sft - mod firm,
sbbiky, arg-rthy mtx, noncalc, tr ss

MD 3362'
INC 15.4°
AZM 186.0°
TVD 3305.26'

SHYSS: lt gy - gybrn, s&p, f gr, sbang
- sbrnnd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnnd, mod srt, arg cmt
SLTYSH: m - lt gy, sft - mod firm,
sbbiky, arg-rthy mtx, noncalc

MD 3457'
INC 15.8°
AZM 190.5°
TVD 3396.77'

WT IN 8.80/ OUT 8.85
VIS IN 28/ OUT 29



SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrndd, mod srt, arg cmt, tr
phlog
SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrndd, mod-p srt, arg cmt
SLTYSH: m - lt gy, sft - mod firm,
sbbkly, arg-rthy mtz, noncalc

MD	3552'
INC	15.4°
AZM	189.5°
TVD	3488.27'

289u
C1: 94.9%
C2: 3.5%
C3: 1.2%
C4: 0.3%

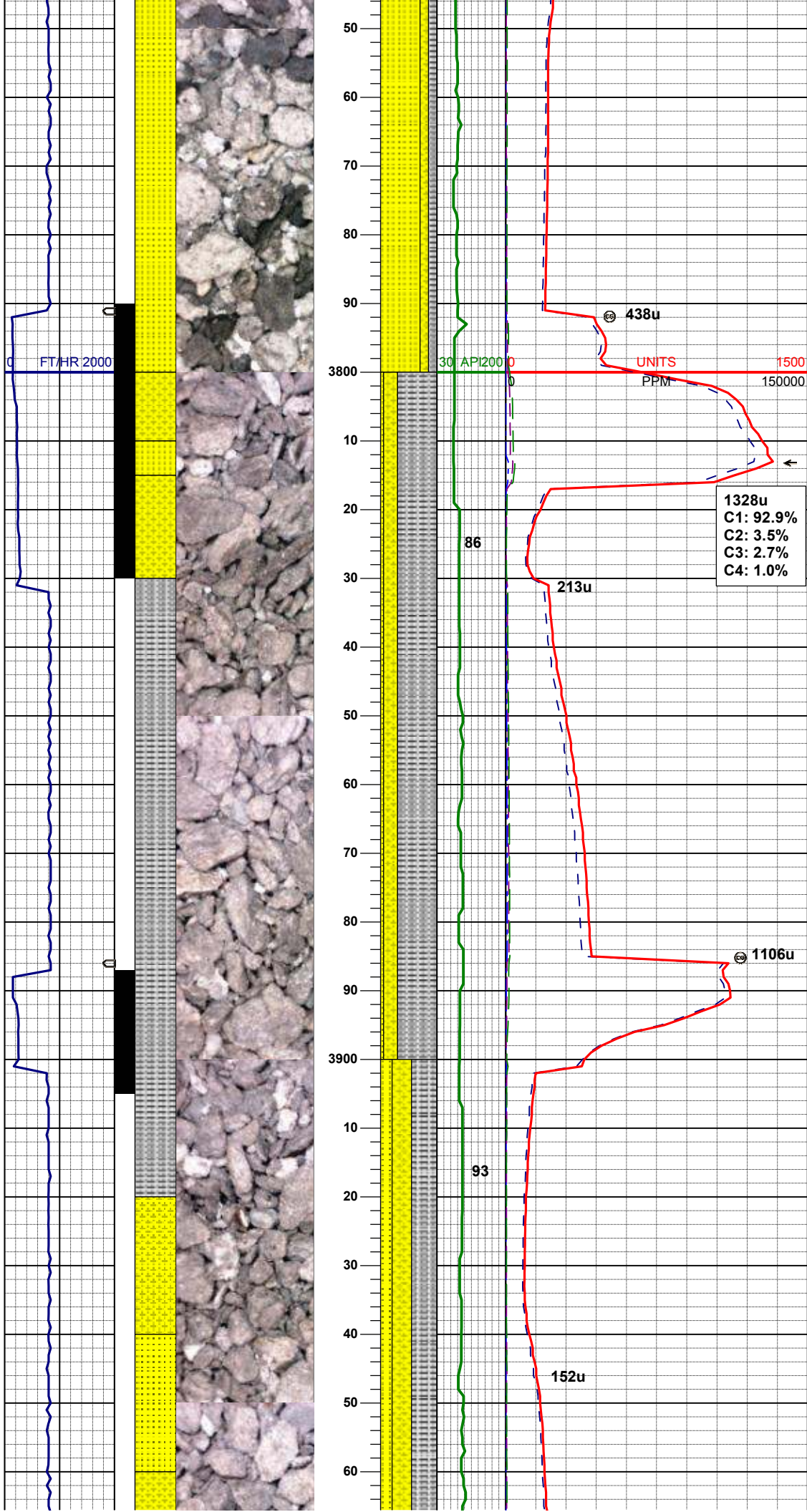
MD	3647'
INC	16.8°
AZM	187.3°
TVD	3579.54'

SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrndd, mod srt, arg cmt, tr
phlog
SHYSS: lt gy - wh, occ gybrn, s&p, f
gr, sbang - sbrndd, mod-p srt, arg
cmt, tr slty sh

MD	3742'
INC	15.4°
AZM	187.1°
TVD	3670.81'

WT IN 8.85/ OUT 9.10

VIS IN 28/ OUT 29



SS: wh-trnsl, occ lt gy, s&p, f gr, sbang-sbrndd, mod srt, arg cmt, tr phlog, tr glau
 SHYSS: lt gy - wh, occ gybrn, s&p, f gr, sbang - sbrndd, mod-p srt, arg cmt
 SLTYSH: m - lt gy, occ dk gy, sft - mod firm, sbblky, arg-rthy mtx, noncalc

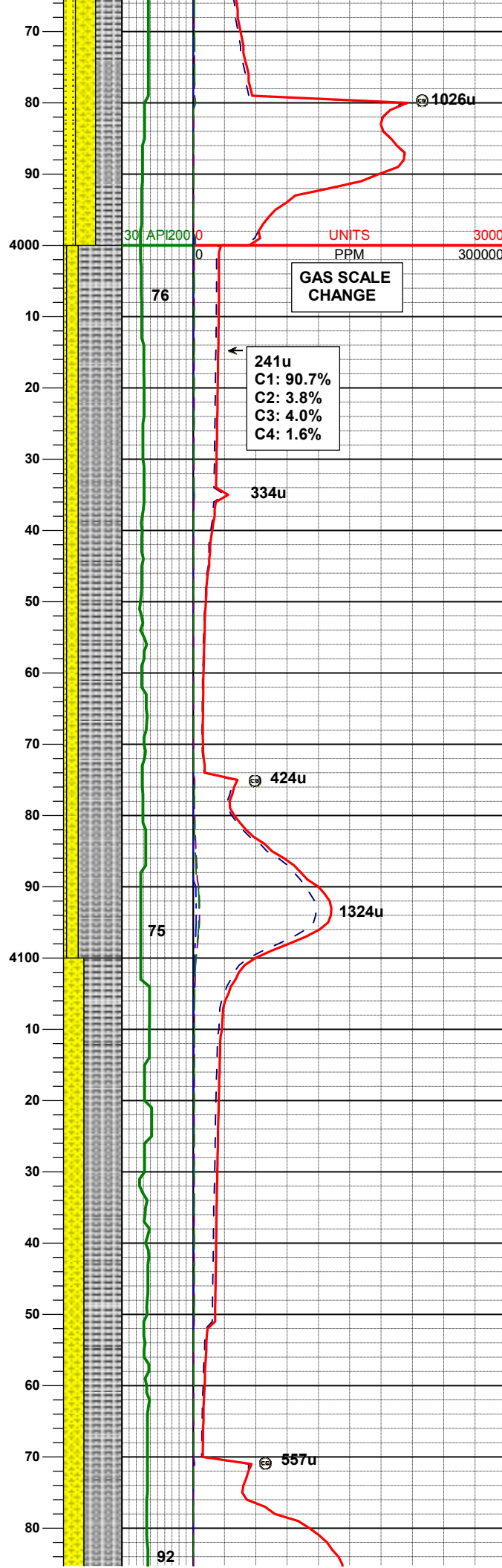
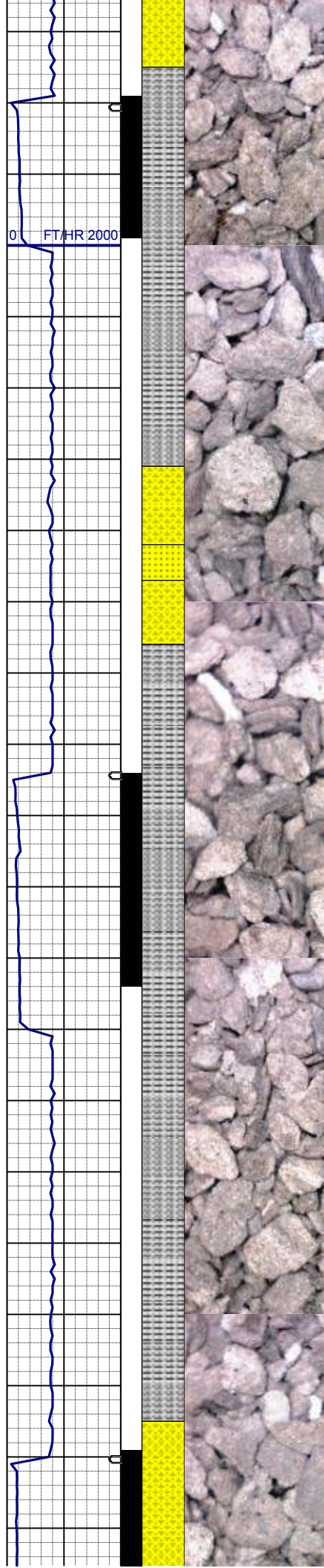
MD 3837'
 INC 12.6°
 AZM 185.7°
 TVD 3762.98'

SLTYSH: m - lt gy, occ dk gy, sft - mod firm, sbblky, arg-rthy mtx, noncalc
 SHYSS: lt gy - wh, occ gybrn, s&p, f gr, sbang - sbrndd, mod-p srt, arg cmt
 SS: wh-trnsl, occ lt gy, s&p, f gr, sbang-sbrndd, mod srt, arg cmt, tr phlog, tr glau

WT IN 8.80/ OUT 8.90
 VIS IN 27/ OUT 29

MD 3931'
 INC 9.4°
 AZM 184.1°
 TVD 3855.24'

SLTYSH: m - lt gy, occ dk gy, sft - mod firm, sbblky, arg-rthy mtx, noncalc
 SHYSS: lt gy - wh, occ gybrn, s&p, f gr, sbang - sbrndd, mod-p srt, arg cmt
 SS: wh-trnsl, occ lt gy, s&p, f gr, sbang-sbrndd, mod srt, arg cmt, tr phlog, tr glau



SLTYSH: m - lt gy, occ dk gy, sft - mod firm, sbbiky, arg-rthy mtx, noncalc
SHYSS: lt gy - wh, occ gybrn, s&p, f gr, sbang - sbrndd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr, sbang-sbrndd, mod srt, arg cmt, tr phlog, occ glau

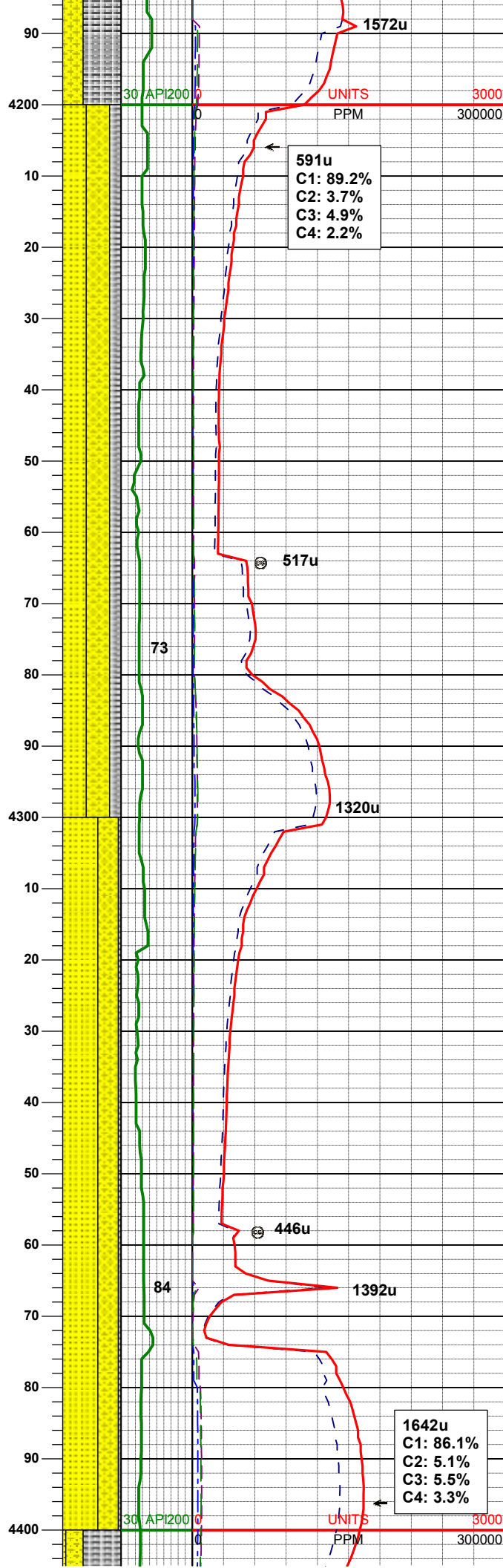
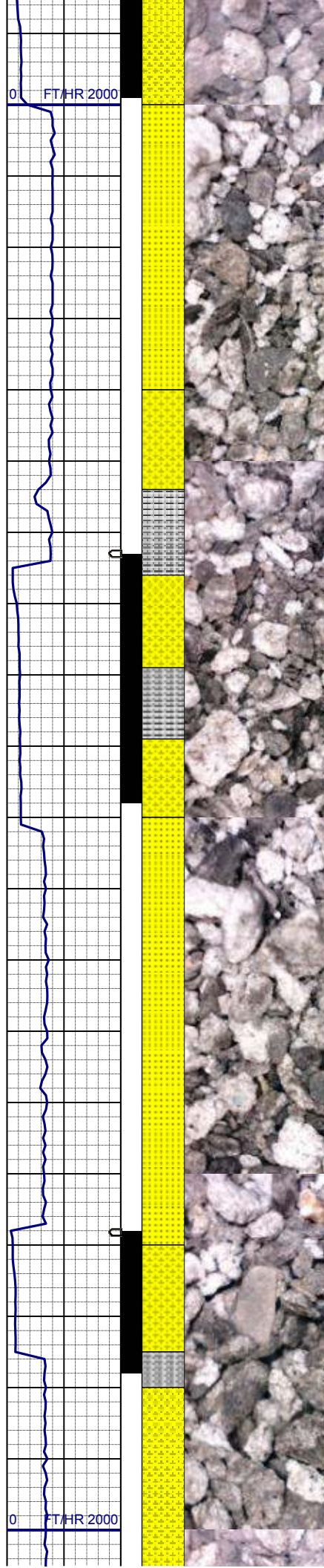
MD 4026'
INC 6.7°
AZM 186.3°
TVD 3949.30'

SLTYSH: m - lt gy, occ dk gy, sft - mod firm, sbbiky, arg-rthy mtx, noncalc
SHYSS: lt gy - wh, occ gybrn, s&p, f gr, sbang - sbrndd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr, sbang-sbrndd, mod srt, arg cmt, tr phlog, occ glau

MD 4121'
INC 3.8°
AZM 191.3°
TVD 4043.89'

WT IN 8.85/ OUT 8.90
VIS IN 28/ OUT 28

SLTYSH: m - lt gy, occ dk gy, sft - mod firm, sbbiky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - gy, occ gybrn, s&p, f gr, sbang - sbrndd, mod-p srt, arg cmt



MD 4215'
INC 1.9°
AZM 214.9°
TVD 4137.77'

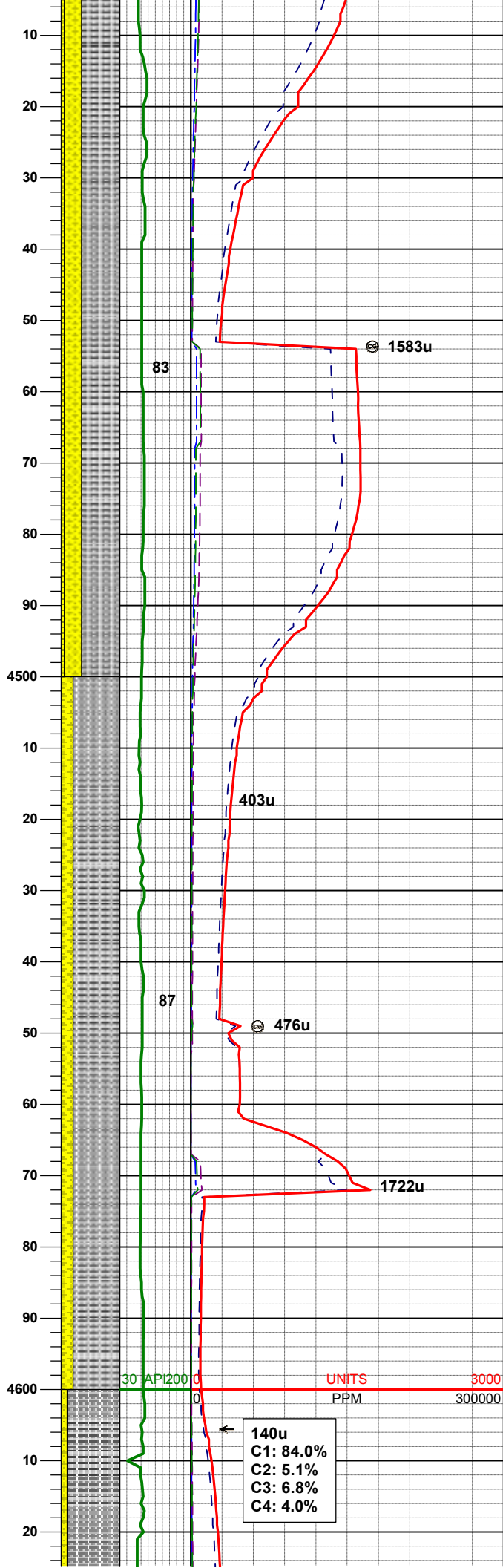
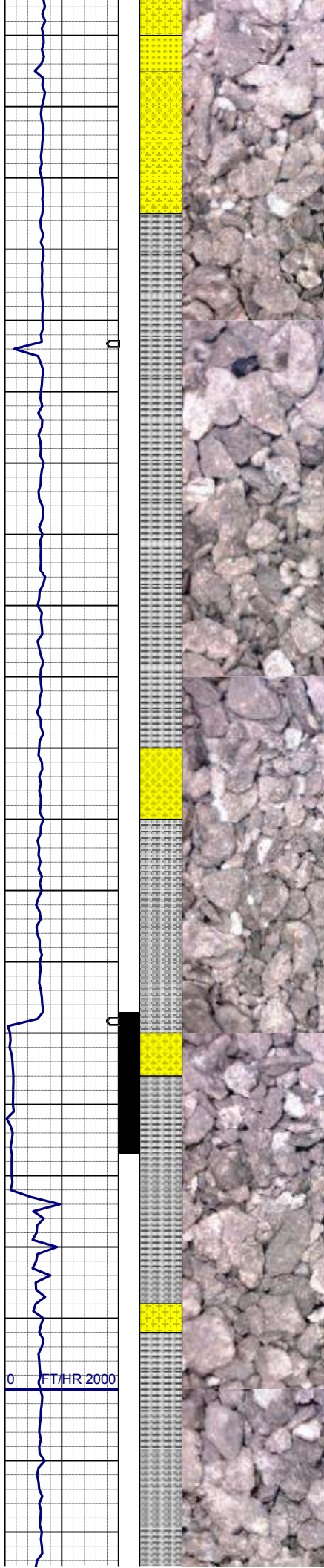
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrndd, mod srt, arg cmt, tr
phlog, tr glau
SHYSS: lt gy - gy, occ gybrn, s&p, f
gr, sbang - sbrndd, mod-p srt, arg cmt
SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbbiky, occ plty, arg-rthy
mtx, noncalc

MD 4310'
INC 1.3°
AZM 307.7°
TVD 4232.75'

WT IN 8.80/ OUT 8.90
VIS IN 27/ OUT 29

SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrndd, mod srt, arg cmt, tr
phlog, tr glau
SHYSS: lt gy - gy, occ gybrn, s&p, f
gr, sbang - sbrndd, mod-p srt, arg cmt
SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbbiky, occ plty, arg-rthy
mtx, noncalc

MD 4405'
INC 1.9°
AZM 307.7°
TVD 4232.75'



AZM 346.3°
TVD 4327.71'

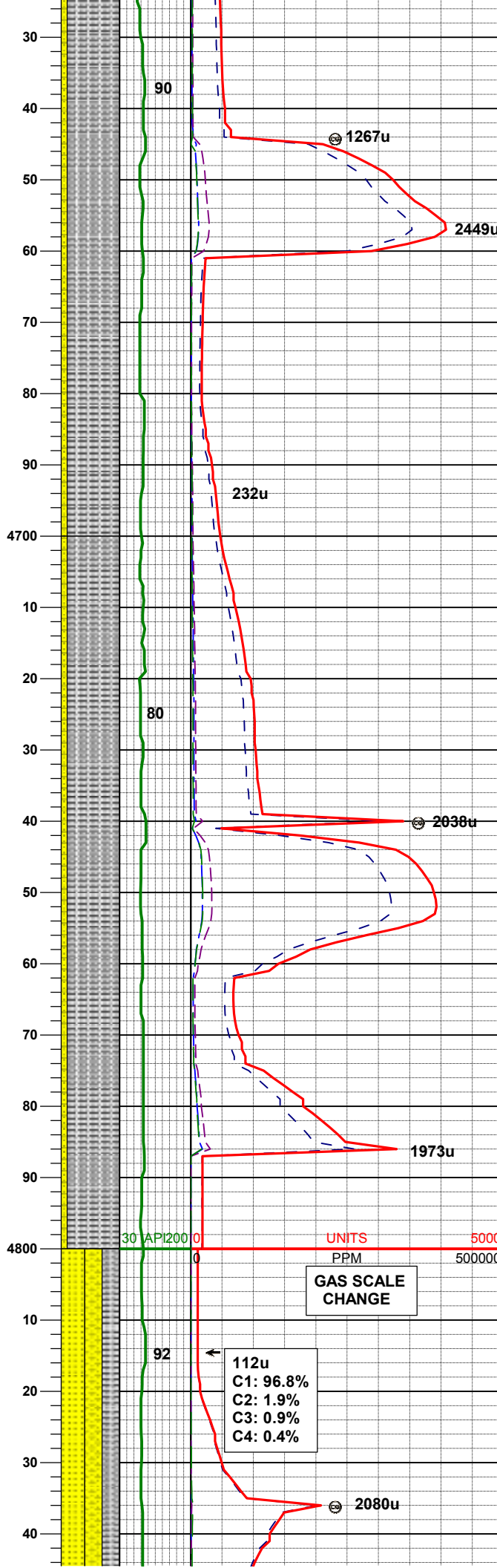
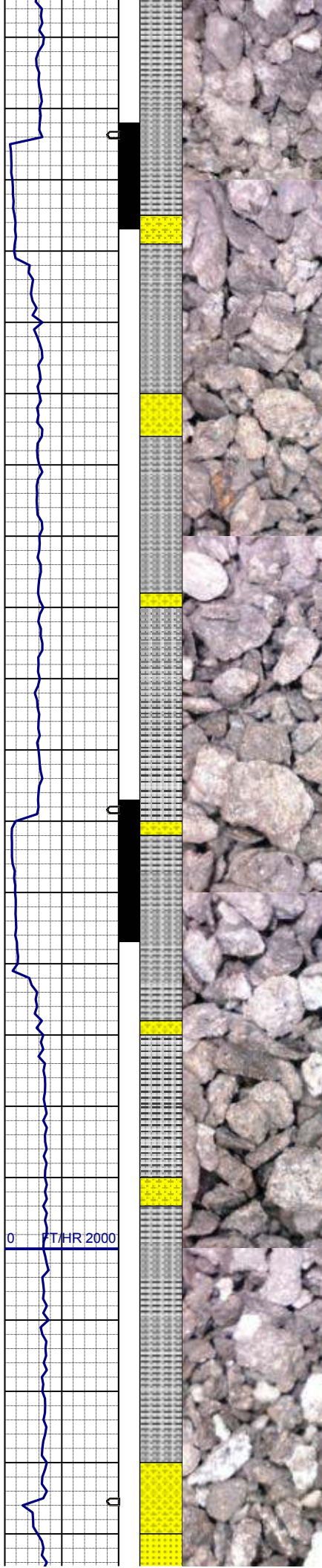
SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbbky, occ plty, arg-rthy
mtx, noncalc
SHYSS: lt gy - gy, occ gybrn, s&p, f
gr, sbang - sbrnrd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr,
sbang-sbrnrd, mod srt, arg cmt, tr
phlog

MD 4499'
INC 0.9°
AZM 340.8°
TVD 4421.68'

SLTYSH: m-dk gy, sft - mod firm,
sbbky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - gy, occ gybrn, s&p, f
gr, sbang - sbrnrd, mod-p srt, arg cmt

MD 4594'
INC 1.1°
AZM 311.6°
TVD 4516.67'

140u
C1: 84.0%
C2: 5.1%
C3: 6.8%
C4: 4.0%



SLTYSH: m-dk gy, sft - mod firm,
sbbiky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - gy, occ gybrn, s&p, f
gr, sbang - sbrnidd, mod-p srt, arg cmt

MD	4689'
INC	1.2°
AZM	310.9°
TVD	4611.65'

WT IN 8.75/ OUT 8.75
VIS IN 27/ OUT 27

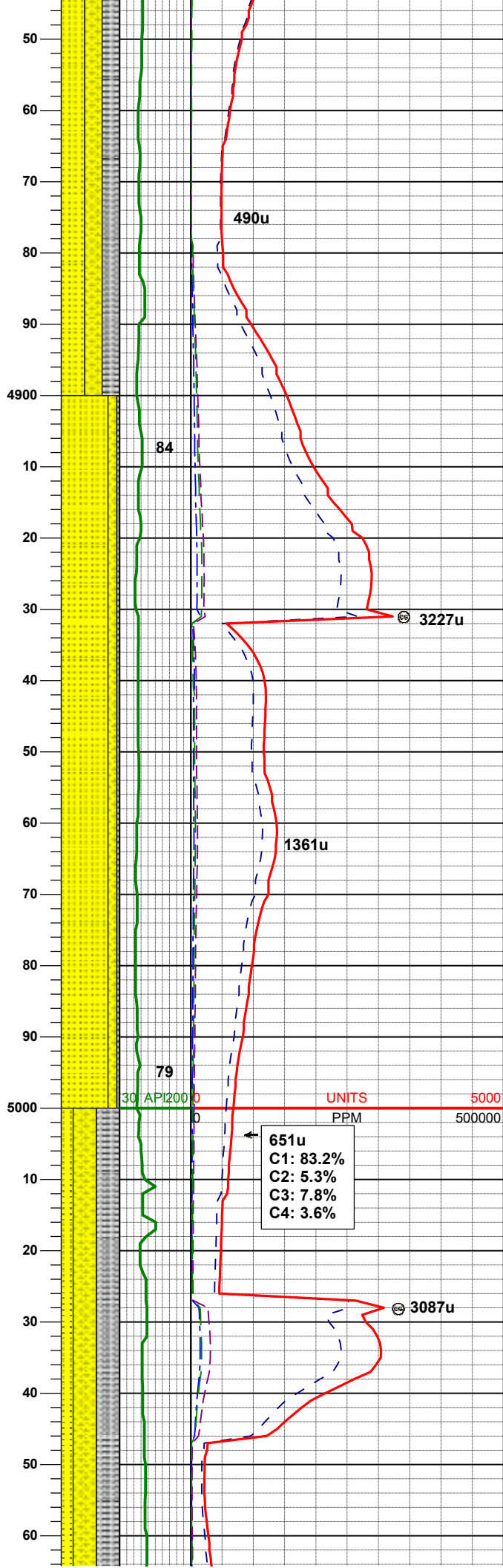
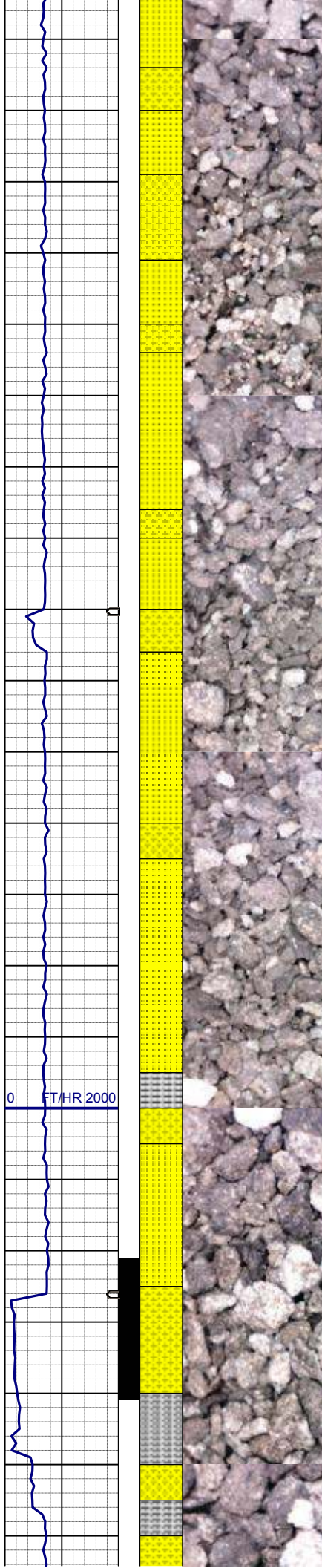
SLTYSH: m-dk gy, sft - mod firm,
sbbiky, occ plty, arg-rthy mtx, noncalc
SHYSS: lt gy - gy, occ gybrn, s&p, f
gr, sbang - sbrnidd, mod-p srt, arg cmt

MD	4783'
INC	1.6°
AZM	331.2°
TVD	4705.62'

UNITS
PPM 0 5000

GAS SCALE
CHANGE

112u
C1: 96.8%
C2: 1.9%
C3: 0.9%
C4: 0.4%



SS: wh-trnsl, occ lt gy, s&p, f gr, sbang-sbrnodd, mod srt, arg cmt, tr phlog
SHYSS: lt gy - gy, occ gybrn, s&p, f gr, sbang - sbrnodd, mod-p srt, arg cmt
SLTYSH: m - lt gy, occ dk gy, sft - mod firm, sbbiky, occ plty, arg-rthy mt, noncalc

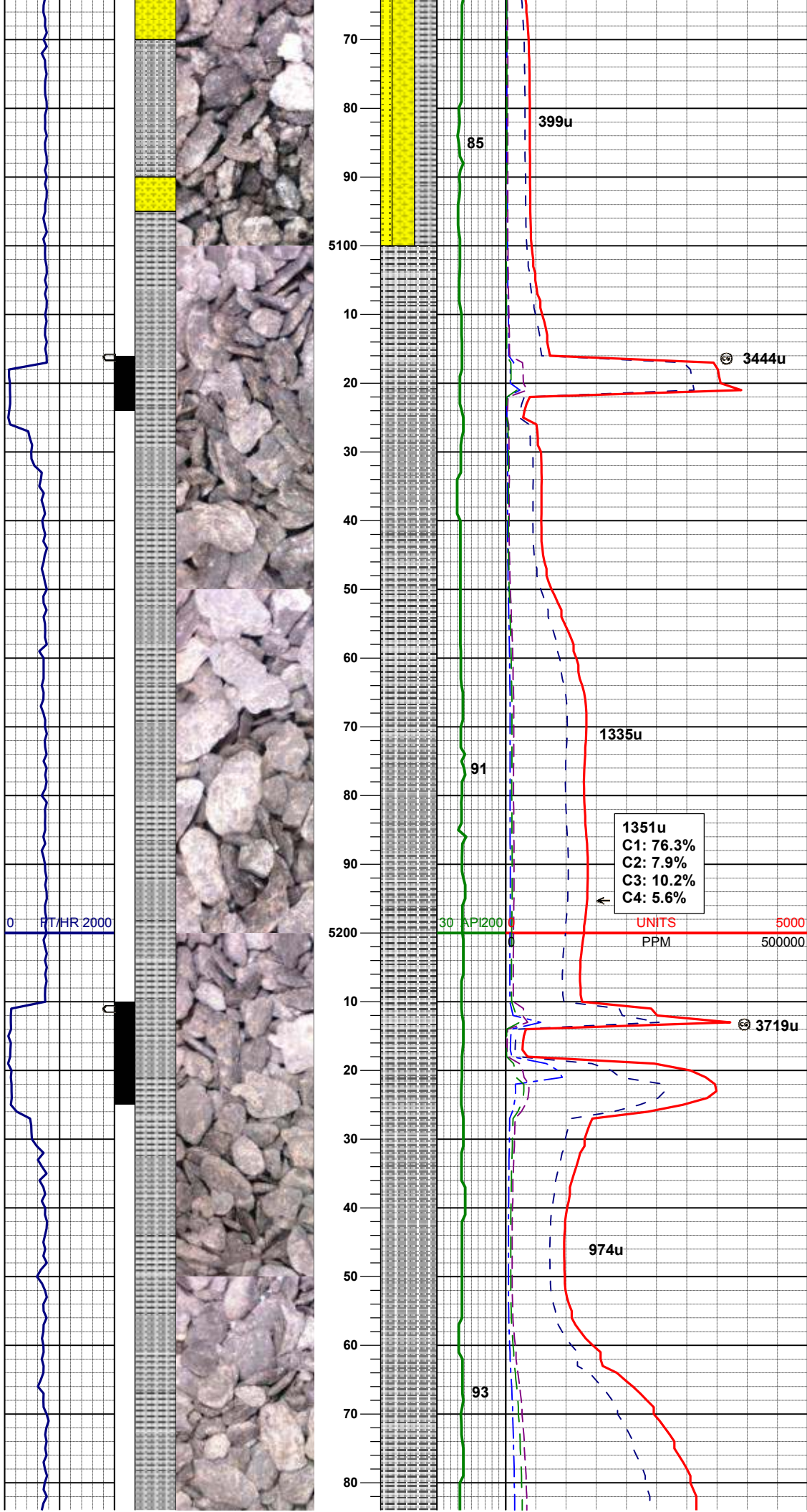
MD 4878'
INC 1.5°
AZM 323.4°
TVD 4800.59'

SS: wh-trnsl, occ lt gy, s&p, f gr, sbang-sbrnodd, mod srt, arg cmt, tr phlog
SHYSS: lt gy - gy, occ gybrn, s&p, f gr, sbang - sbrnodd, mod-p srt, arg cmt
SLTYSH: m - lt gy, occ dk gy, sft - mod firm, sbbiky, occ plty, arg-rthy mt, noncalc

MD 4973'
INC 1.5°
AZM 308.5°
TVD 4895.56'

WT IN 8.80/ OUT 8.80
VIS IN 27/ OUT 27

SLTYSH: m - lt gy, occ dk gy, sft - mod firm, sbbiky, occ plty, arg-rthy mt, noncalc
SHYSS: lt gy - gy, occ gybrn, s&p, f gr, sbang - sbrnodd, mod-p srt, arg cmt
SS: wh-trnsl, occ lt gy, s&p, f gr, sbang-sbrnodd, mod srt, arg cmt, tr



ooling contact, mod silt, arg silt, a
phlog

MD	5068'
INC	2.6°
AZM	309.2°
TVD	4990.49'

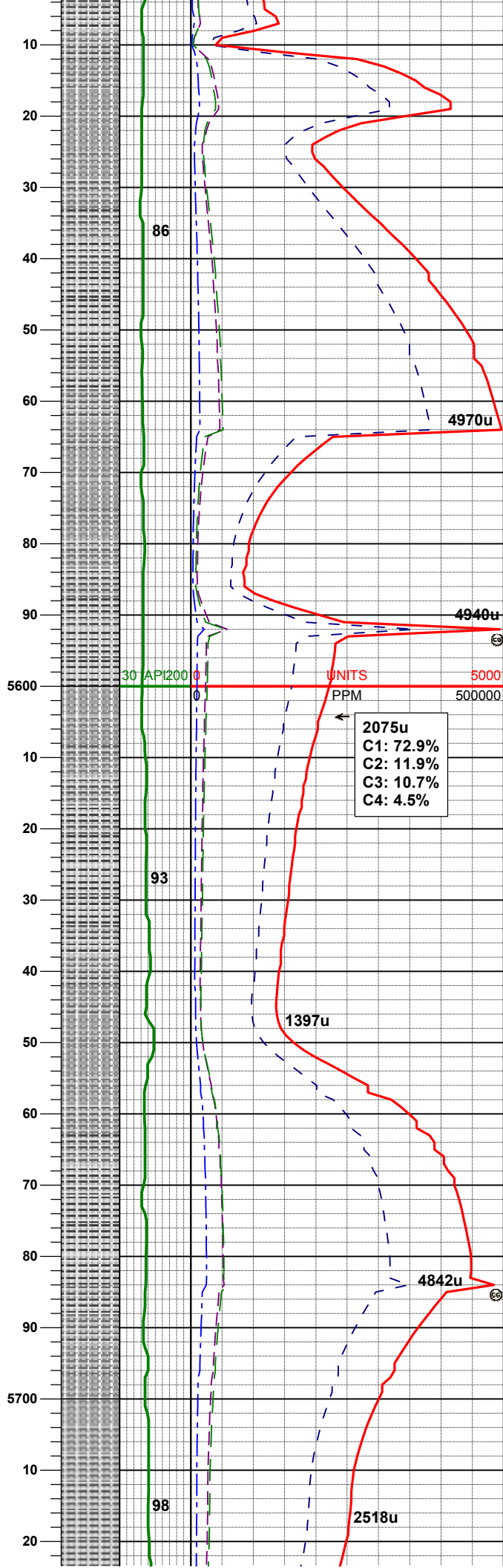
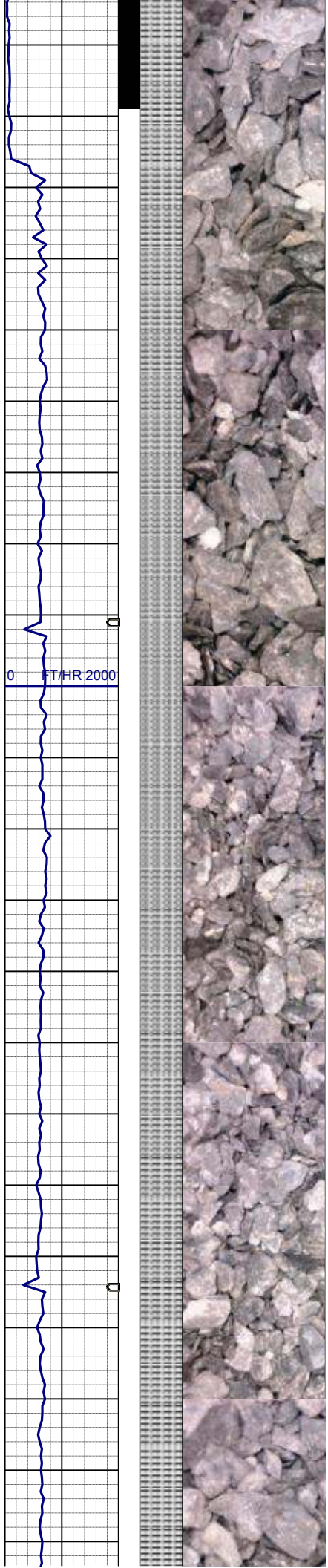
SLTYSH: m - lt gy, occ dk gy, sft -
mod firm, sbbiky, occ plty, arg-rthy
mtx, noncalc, tr shyss

MD	5162'
INC	2.0°
AZM	311.5°
TVD	5084.42'

WT IN 8.80/ OUT 8.80
VIS IN 27/ OUT 27

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

MD	5257'
INC	1.1°
AZM	309.4°
TVD	5179.38'



MD	5541'
INC	1.2°
AZM	24.2°
TVD	5463.34'

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

MD	5636'
INC	0.9°
AZM	34.6°
TVD	5558.33'

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

WT IN 8.90/ OUT 8.90
VIS IN 30/ OUT 30

MD	5787'
INC	0.6°
AZM	27.4°
TVD	5709.32'

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

TOOH FOR MWD TOOLS
LOG CONTINUES ON L PLOT
"SLW RANCH STATE B13-69HN(HORZ)"

**Thank you for choosing
Columbine Logging Inc.**