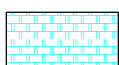


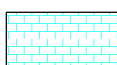
LOG created using L PLOT VH Version 3.0. September 15, 2014. Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR:	CARRIZO OIL & GAS, INC.
WELL:	BARRACUDA 20-14-7-60
LOCATION:	SW1/4, SW1/4, SEC 20, T7N, R60W
COUNTY:	WELD
STATE:	COLORADO
SPOT:	400' FSL, 600' FWL
ELEVATION:	4972.3' GL
FIELD:	WILDCAT
SPUD DATE:	11/15/11
TD DATE:	11/21/11
DATES LOGGED:	11/18/11-11/21/11
DEPTHS LOGGED:	2000'-7047'
GEOLOGISTS:	GARY MYERS, TREVOR DONER
DRILLING FLUID:	LSND
DRILLING RIG:	XTREME 19
API:	05-123-34387
LOG TYPE:	Vertical
SCALE:	1:240 (5 inches per 100 feet)
REMARKS:	

LITHOLOGIES



Chalk



Limestone



Marl



Sandstone



Shaly Sandstone



Silty Shale

ENGINEERING SYMBOLS



Connection



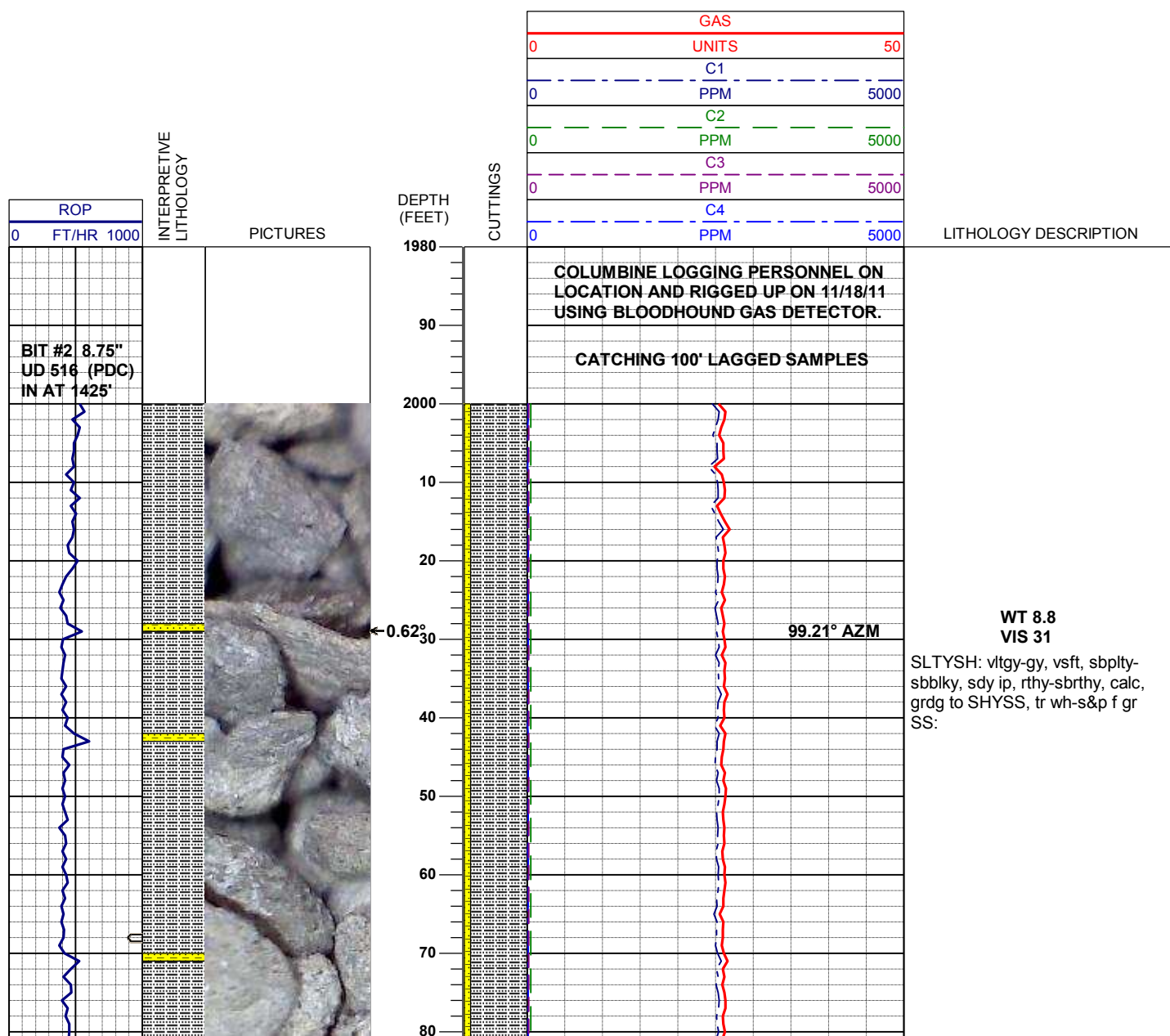
Connection Gas

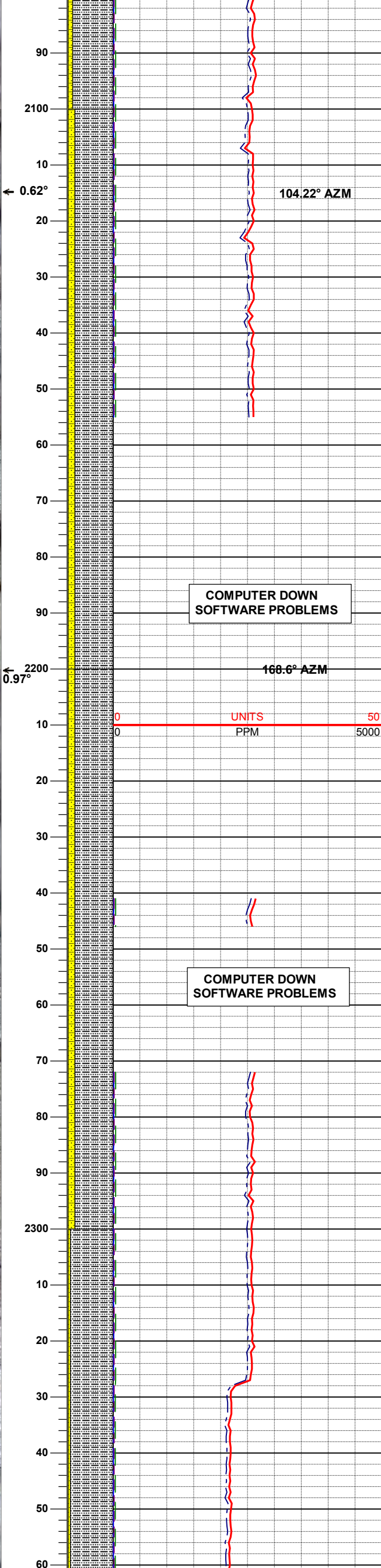
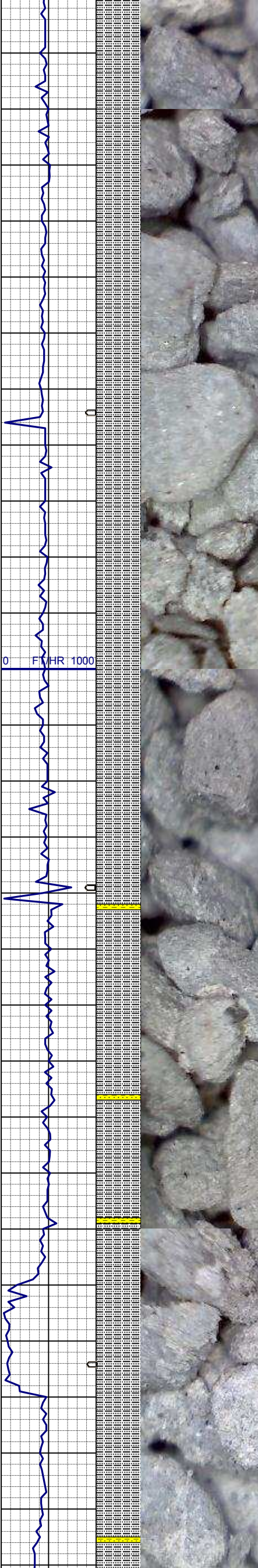


Arrow



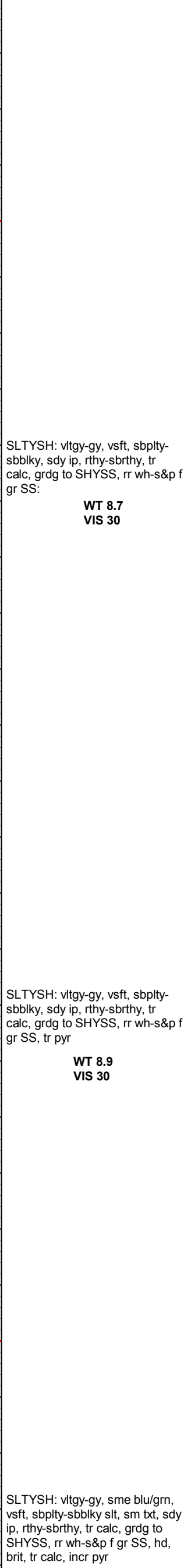
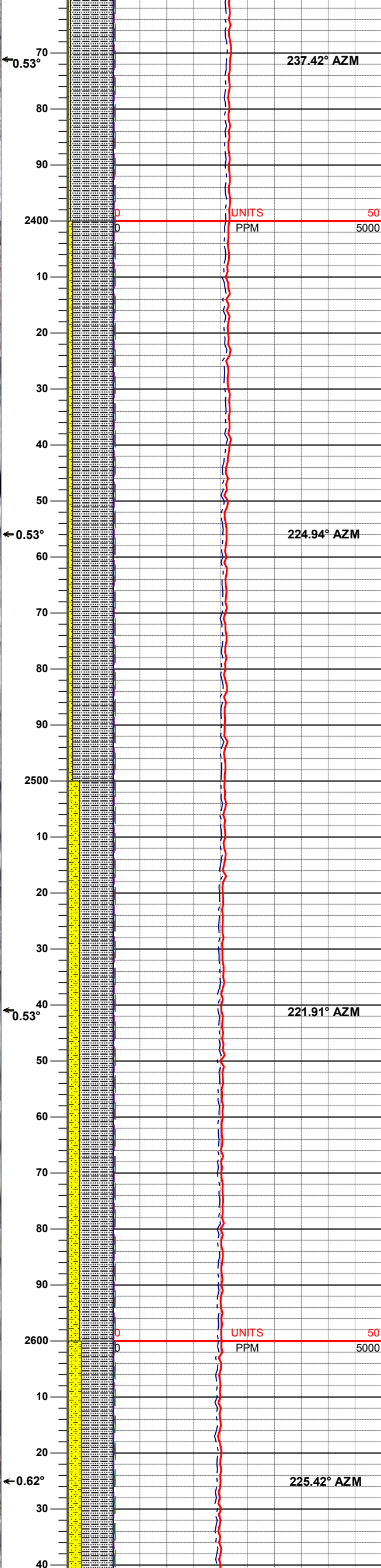
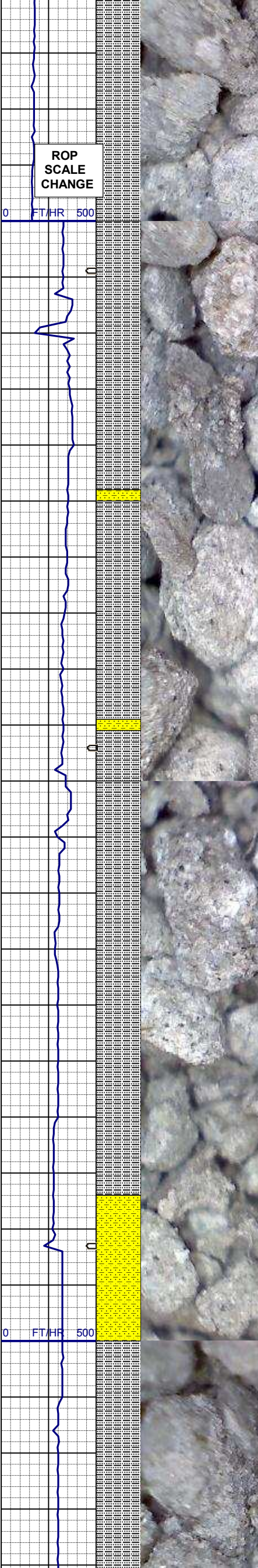
Midnight Depth





SLTYSH: vitgy-gy, vsft, sbplty-sbblky, sdy ip, rthy-sbrthy, calc, grdg to SHYSS, tr wh-s&p f gr SS:; tr xl calcite

SLTYSH: vitgy-gy, vsft, sbplty-sbblky, sdy ip, rthy-sbrthy, tr calc, grdg to SHYSS, rr wh-s&p f gr SS:



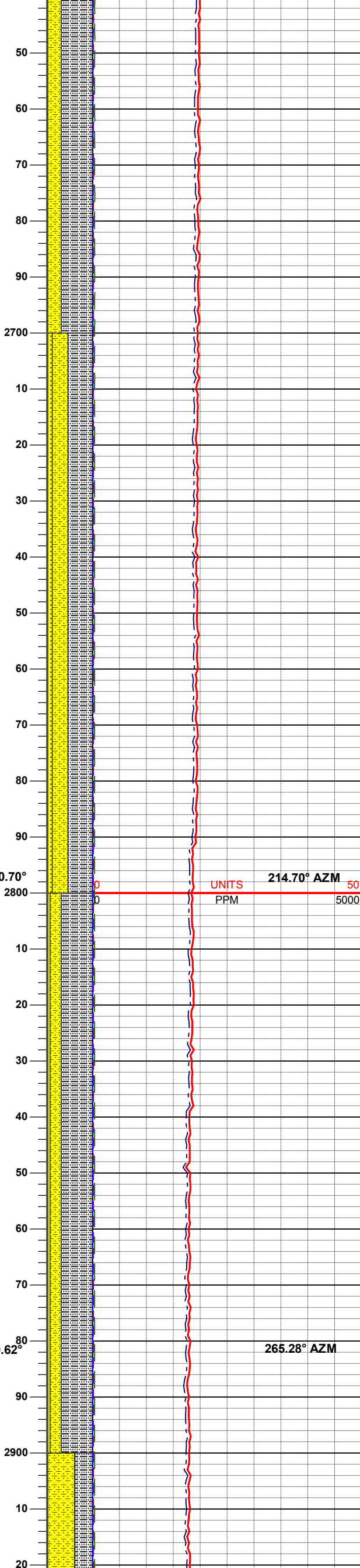
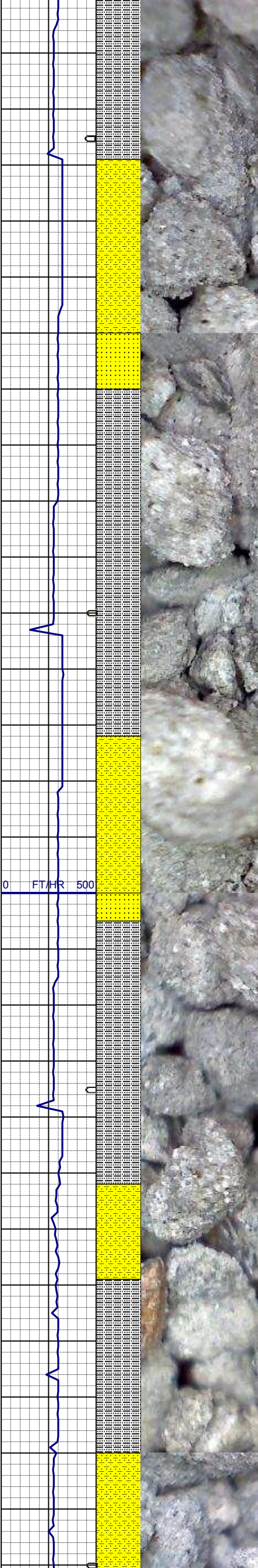
SLTYSH: vitgy-gy, vsft, sbplty-sbblky, sdy ip, rthy-sbrthy, tr calc, grdg to SHYSS, rr wh-s&p f gr SS:

WT 8.7
VIS 30

SLTYSH: vitgy-gy, vsft, sbplty-sbblky, sdy ip, rthy-sbrthy, tr calc, grdg to SHYSS, rr wh-s&p f gr SS, tr pyr

WT 8.9
VIS 30

SLTYSH: vitgy-gy, sme blu/grn, vsft, sbplty-sbblky slt, sm txt, sdy ip, rthy-sbrthy, tr calc, grdg to SHYSS, rr wh-s&p f gr SS, hd, brit, tr calc, incr pyr



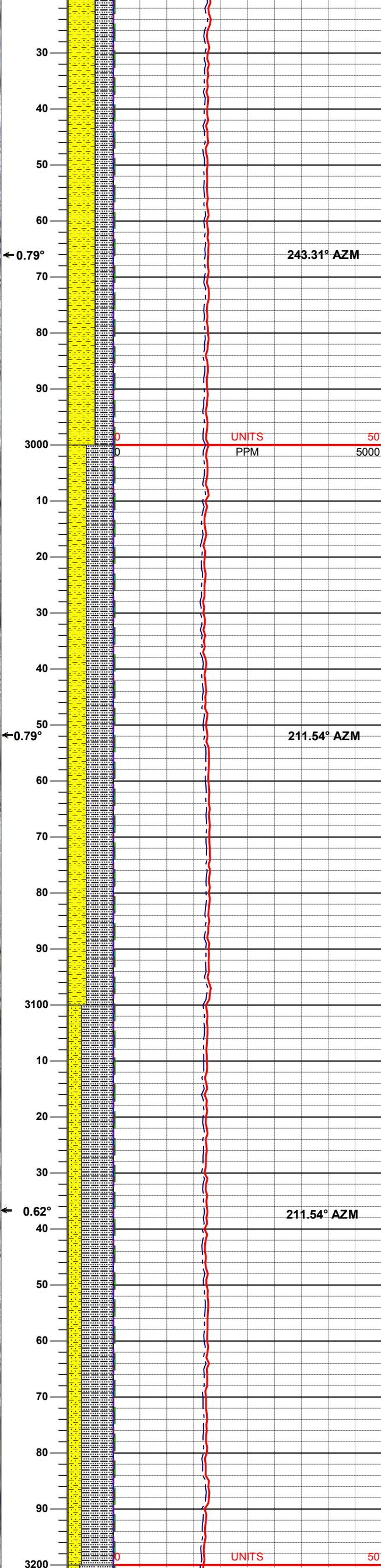
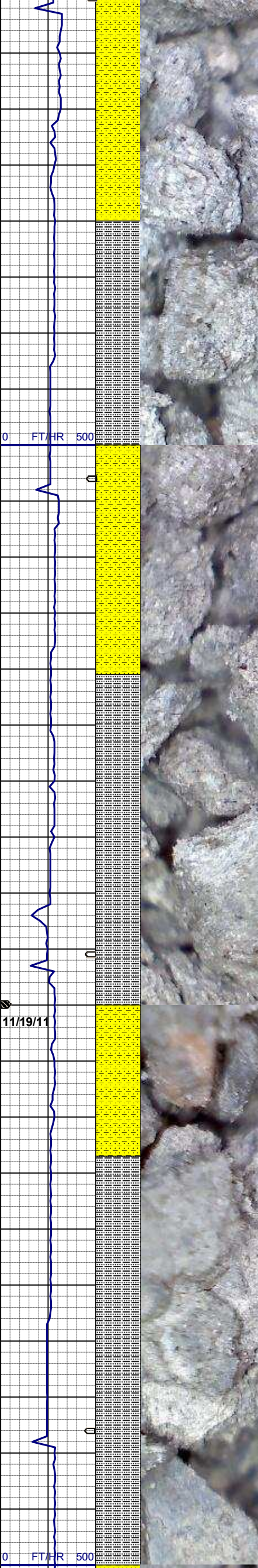
SLTYSH: vitgy-gy, sme blu/grn, vsft, sbplty-sbblky slt, sm txt, sdy ip, rthy-sbrthy, tr calc, grdg to SHYSS, rr wh-s&p f gr SS, hd, brit, tr calc, incr pyr

WT 8.8
VIS 29

0.70° 214.70° AZM 50
UNITS PPM 5000

SLTYSH: vitgy-gy, sme blu/grn, vsft, sbplty-sbblky slt, sm txt, sdy ip, rthy-sbrthy, tr calc, grdg to SHYSS, rr wh-s&p f gr SS, hd, brit, tr calc, tr pyr, tr red bent

0.62° 265.28° AZM

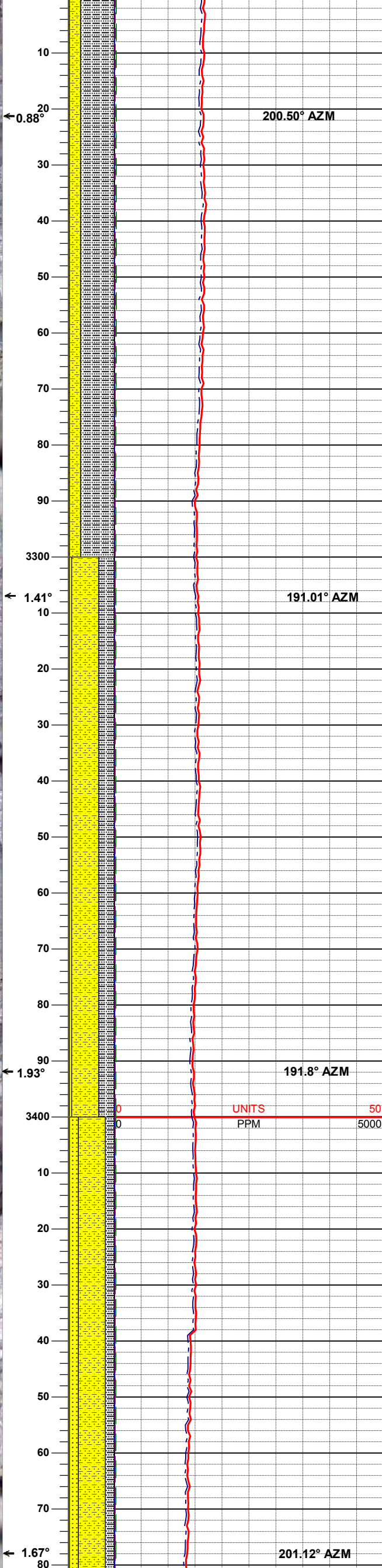
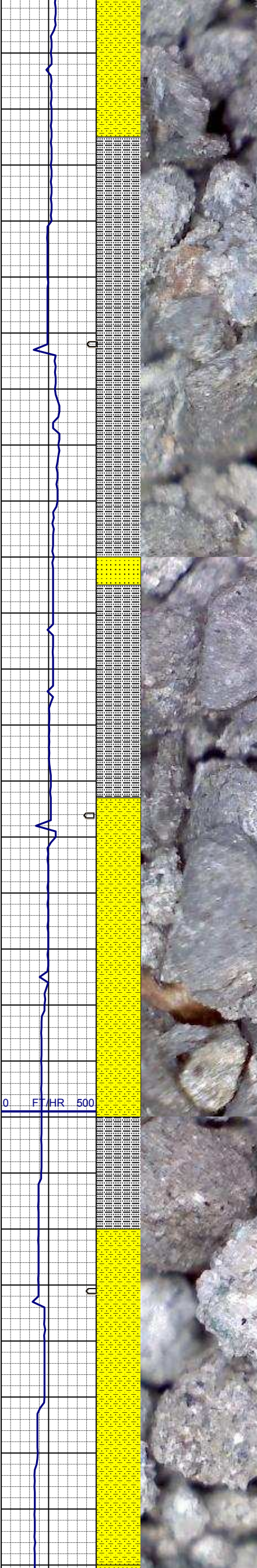


SHYSS, rr wh-s&p f gr SS, hd, brit, tr calc, gr SLTYSH: vltgy-gy, sme blu/grn, vsft, sbplty-sbblky slt, sm txt, sdy ip, rthy-sbrthy, tr calc, tr pyr, tr red bent

SLTYSH: vltgy-gy, sme blu/grn, vsft, sbplty-sbblky slt, sm txt, sdy ip, rthy-sbrthy, tr calc, grdg to SHYSS, rr wh-s&p f gr SS, hd, brit, tr calc, tr pyr, tr red bent

SLTYSH: vltgy-gy, sme blu/grn, vsft, sbplty-sbblky slt, sm txt, sdy ip, rthy-sbrthy, tr calc, grdg to SHYSS, rr wh-s&p f gr SS, hd, brit, tr calc, incr red bent

WT 8.8
VIS 30

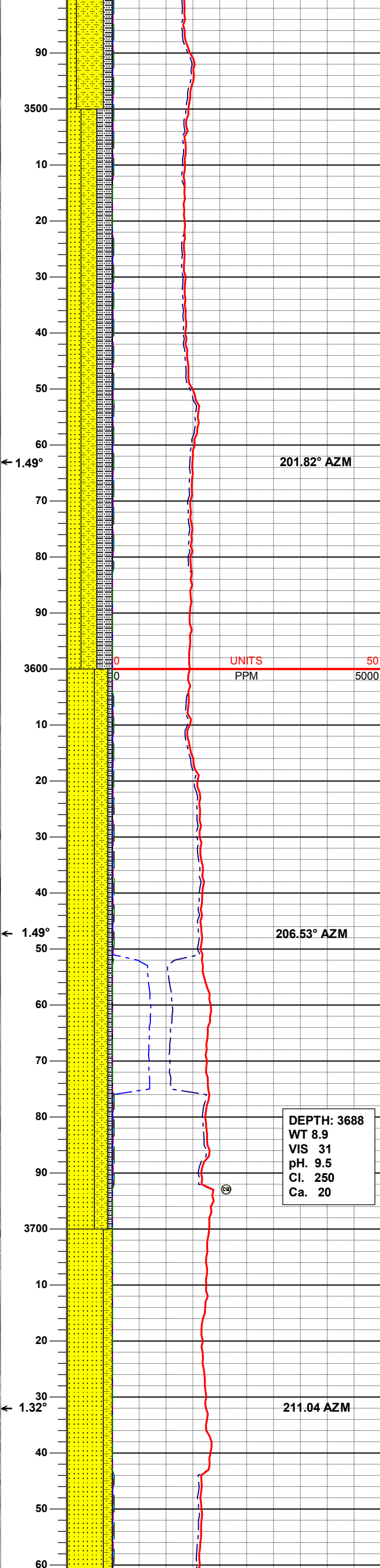
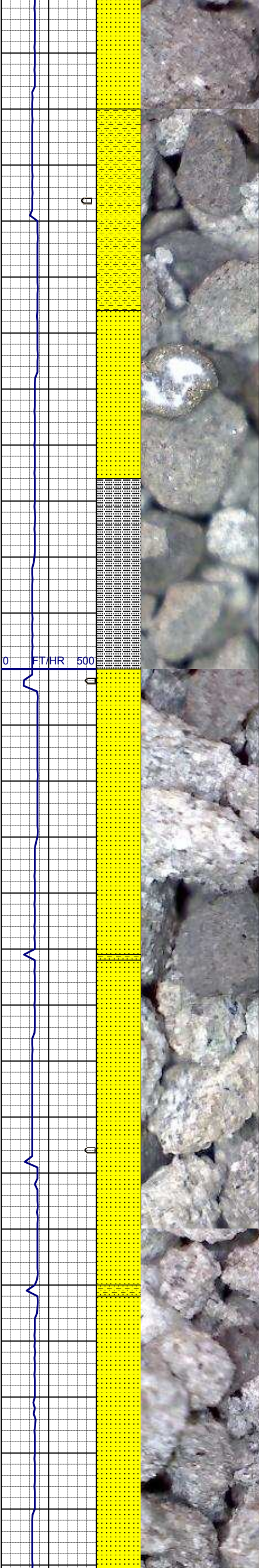


SLTYSH: vltgy-gy, sme blu/grn, vsft, sbplty-sbblky slt, sm txt, sdy ip, rthy-sbrthy, tr calc, grdg to SHYSS, rr wh-s&p f gr SS, hd, brit, tr calc, tr pyr, tr red bent

SHYSS, rr wh-s&p f gr SS, hd-brit, tr calc, gr SLTYSH: vltgy-gy, sme blu/grn, vsft, sbplty-sbblky slt, sm txt, sdy ip, rthy-sbrthy, tr calc, grdg to , tr pyr, tr red bent

SHYSS, rr wh-s&p f gr SS, sbblky-sbang, brit, tr calc, tr grn glau, grd to SLTYSH: vltgy-gy, sme blu/grn, vsft, sbplty-sbblky slt, sm txt, sdy ip, rthy-sbrthy, tr calc, grdg to , tr pyr, tr red bent

WT 9.0
VIS 31



SHYSS, rr wh-s&p f gr SS,
sbbiky-sbang, brit, tr calc, tr grn
glau, grd to SLTYSH: vltgy-gy,
sme blu/grn, vsft, sbply-sbbiky
slt, sm txt, sdy ip, rthy-sbrthy, tr
calc, grdg to , incr pyr, tr red
bent, shy sltst, tr pyr

201.82° AZM

206.53° AZM

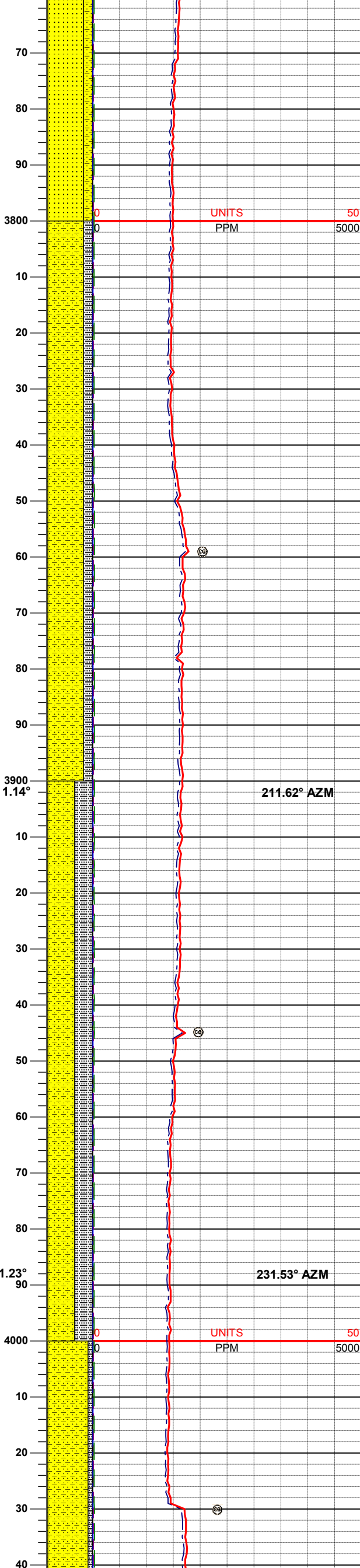
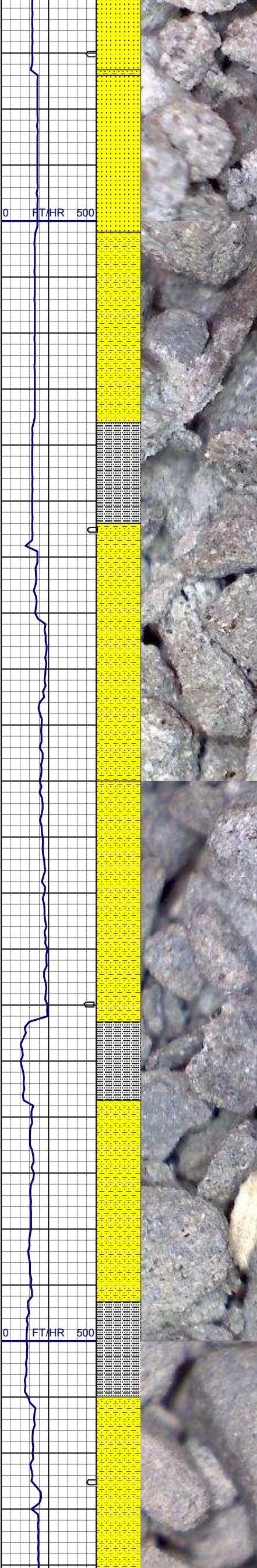
SS: wh-ltgy, s&p, trns-op, f-cgr,
m-wsrt, sbang-sbbiky, brit, slty-
shy ip, calc-arg cmt, tr glau
SHYSS, mgy, sbbiky-sbang, brit,
tr calc, grd to SLTYSH: NFSOC

DEPTH: 3688
WT 8.9
VIS 31
pH. 9.5
Cl. 250
Ca. 20

WT 9.2
VIS 32

211.04 AZM

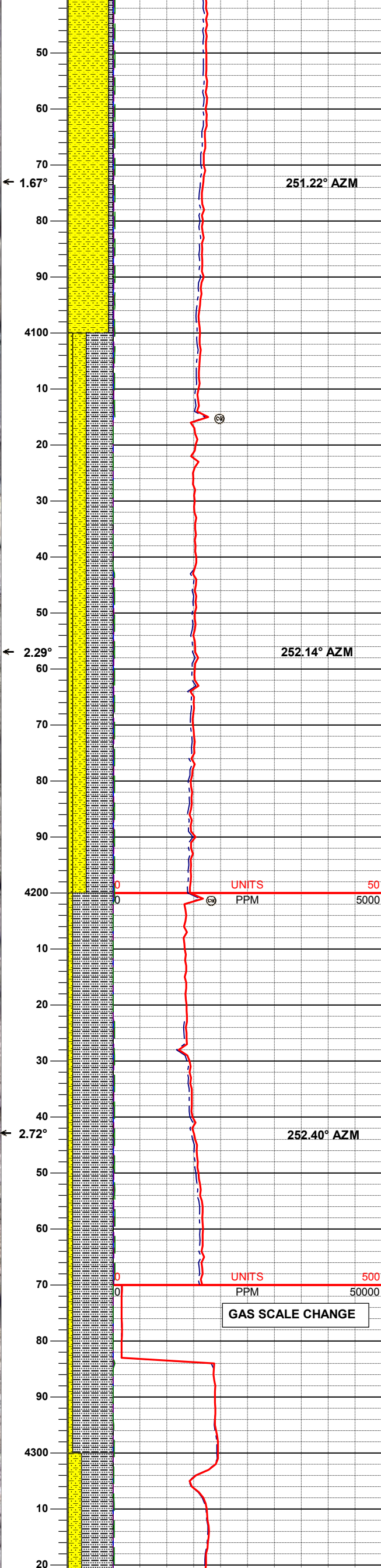
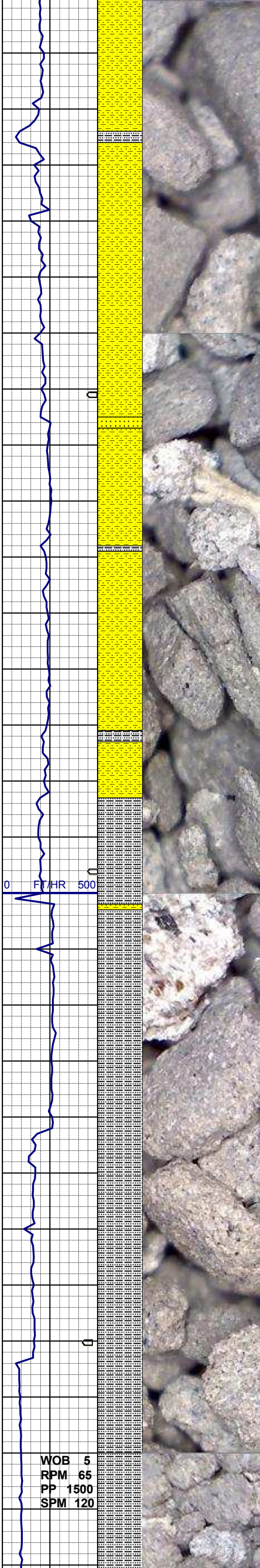
SS: wh-ltgy, s&p, trns-op, f-cgr,
m-wsrt, sbang-sbbiky, brit, slty-
shy ip, calc-arg cmt, grdg- mgy
SHYSS: NFSOC



SHYSS, mgry, S&P ip, vf-f gr, sbang-sbblky, modfri, msrt, calc-arg cmt, grdg- SLTYSH, rr fos frag, occ carb frag

WT 9.0+
VIS 31

SHYSS, mgry, vf-f gr, trnsi-op, sbang-sbblky, modfri, msrt, calc-arg cmt, grdg- SLTYSH
SLTYSH: mgy-gy, sft-mfir, sbply-sbblky, rthy tex, sdy ip, mod calc



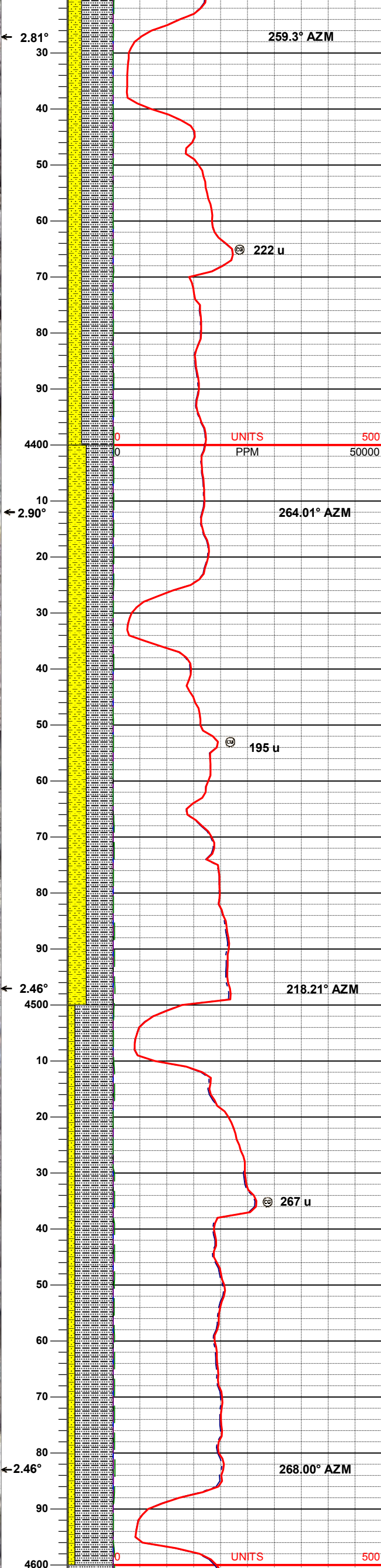
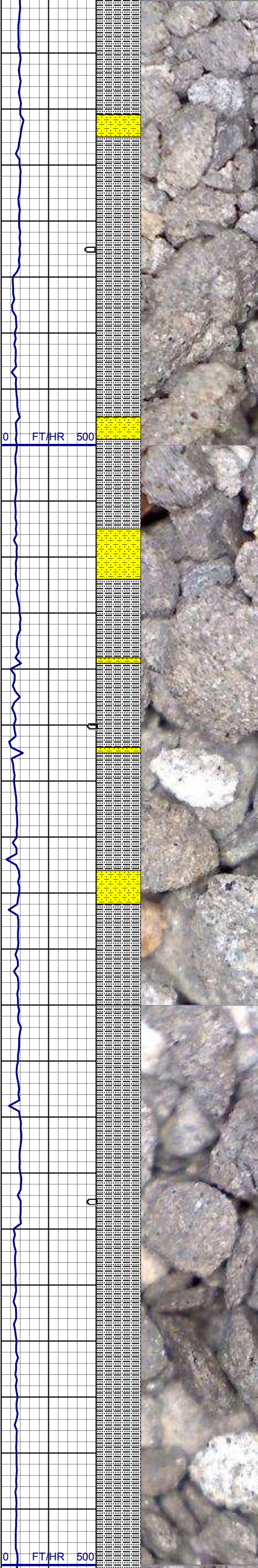
SHYSS, ltgy-mgry, trnsl-op, vf-f gr, sbang-sbblky, modfri, msrt, calc-arg cmt, occ glau, grdg-SLTYSH

WT 9.1
VIS 30

SLTYSH: mgy-gy, sft-mfir, sbplty-sbblky, rthy tex, sdy ip, mod calc, grdg- gy SHYSS, abnt fos frag
SS: wh- ltgy, occ s&p, clr-trnsl, f-mgr, m-wsrt, sbang-sbblky, m fri-brit, slty-shy ip, calc-arg cmt, abnt glau

SLTYSH: mgy-gy, sft-mfir, sbplty-sbblky, rthy tex, sdy, mod calc, grdg- gy SHYSS

WT 9.0+
VIS 32

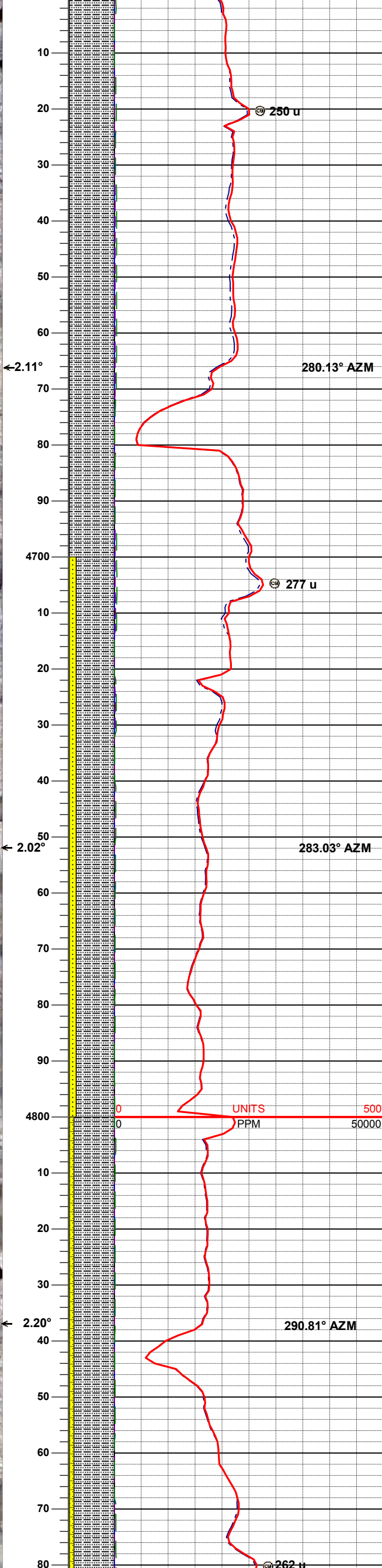
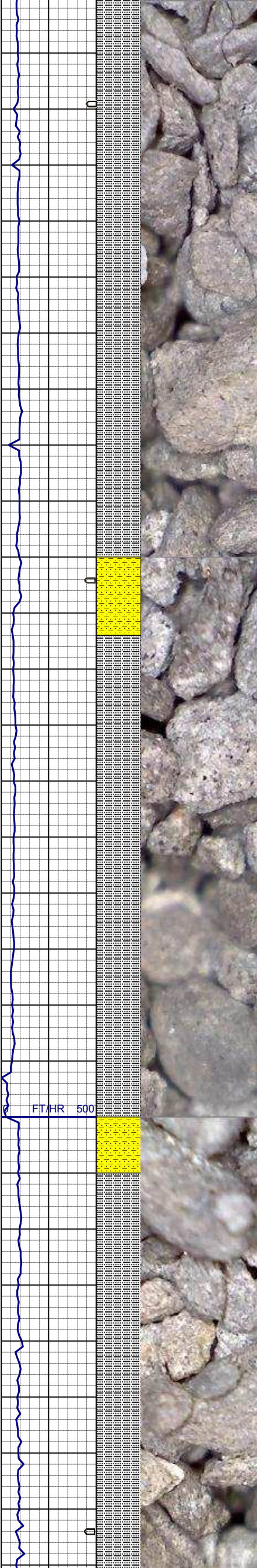


SLTYSH: mgy-gy, sft-mfirm,
sbplty-sbblky, rthy tex, sdy, mod
calc, grdg- gy SHYSS

WT 9.0+
VIS 30

SLTYSH: mgy-gy, sft-mfirm,
sbplty-sbblky, rthy tex, sdy, mod
calc, grdg- gy SHYSS

WT 8.8
VIS 28



SLTYSH: mgy-gy, sft-mfirm,
sbplty-sbblky, rthy tex, sdy, mod
calc, grdg- gy SHYSS

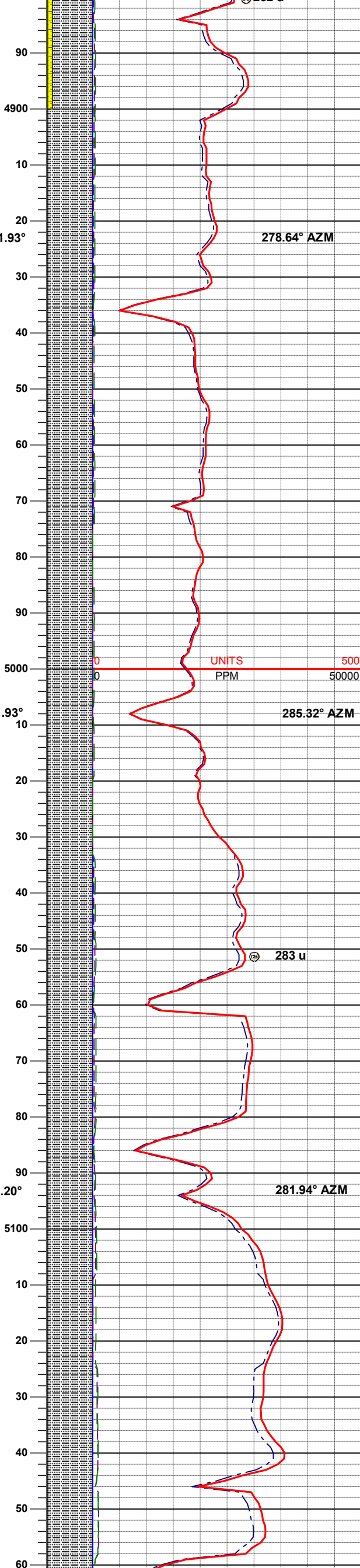
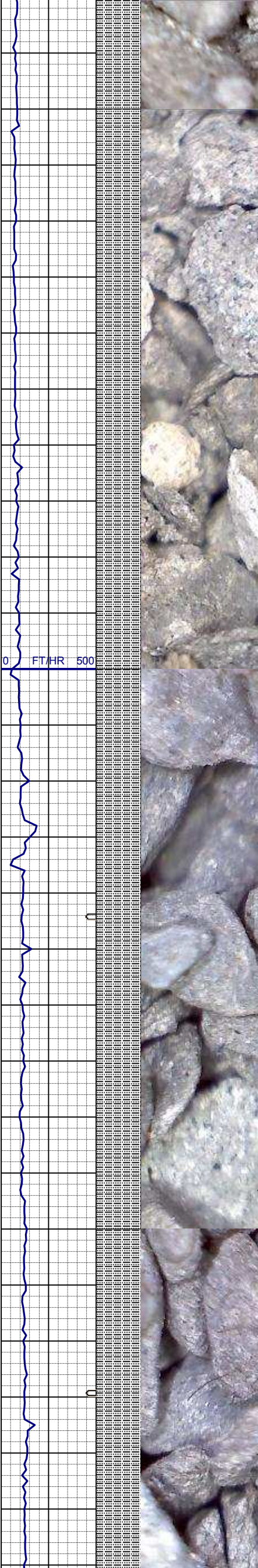
WT 8.9
VIS 29

SLTYSH: mgy-gy, sft-mfirm,
sbplty-sbblky, rthy tex, sdy, mod
calc, grdg- gy SHYSS

WT 8.9
VIS 30

WT 8.9
VIS 30

SLTYSH: mgy-gy, sft-mfirm,
sbplty-sbblky, rthy tex, sdy, mod
calc, grdg- gy SHYSS



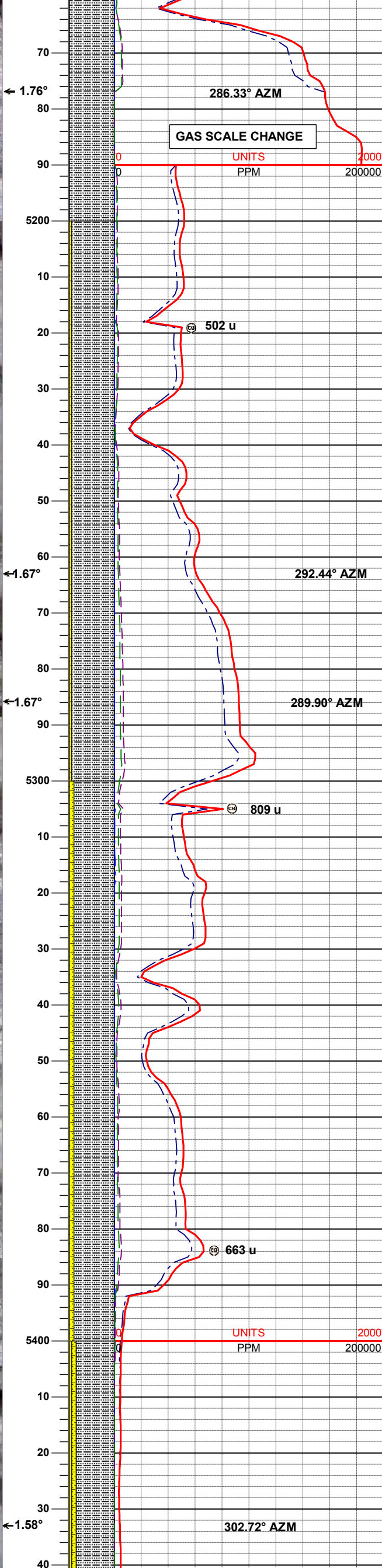
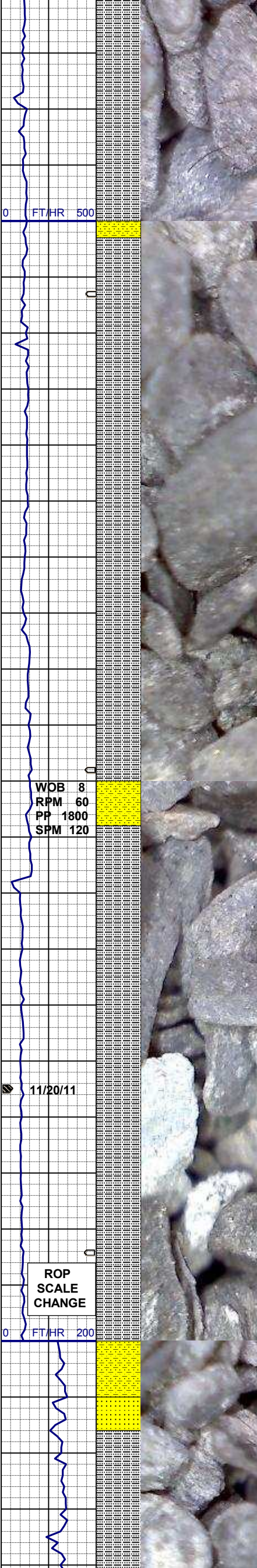
SLTYSH: mgy-gy, sft-mfirm,
sbply-sbblky, rthy tex, sdy, mod
calc, grdg- gy SHYSS, tr red
bent

WT 8.9
VIS 30

SLTYSH: mgy-gy, sft-mfirm,
sbply-sbblky, rthy tex, sdy, mod
calc, grdg- gy SHYSS

WT 8.8
VIS 28

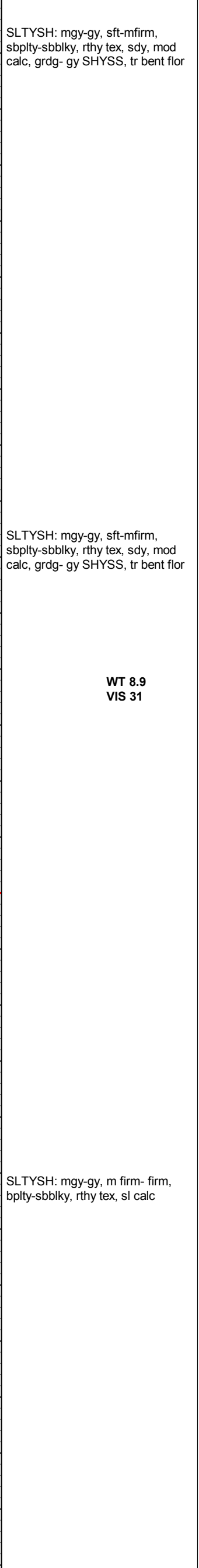
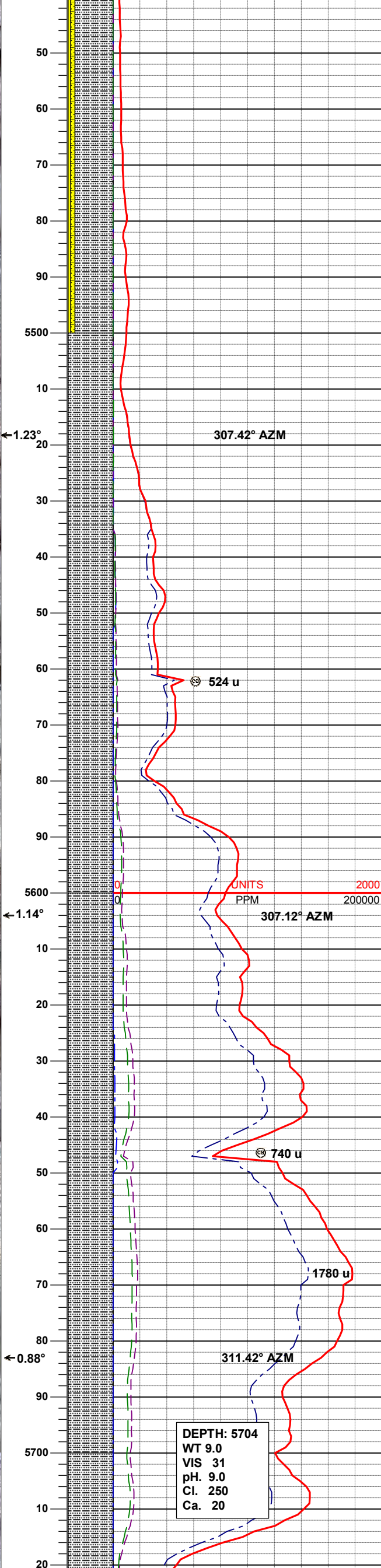
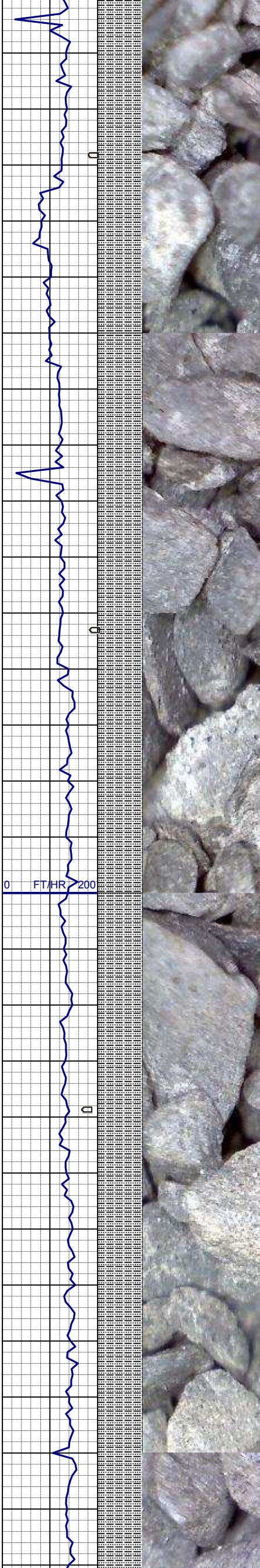
SLTYSH: mgy-gy, sft-mfirm,
sbply-sbblky, rthy tex, sdy, mod
calc, grdg- gy SHYSS, tr red
bent



WT 8.8
VIS 29

SLTYSH: mgy-gy, sft-mfirm, sbplty-sbblky, rthy tex, sdy, mod calc, grdg- gy SHYSS

WT 8.9
VIS 30



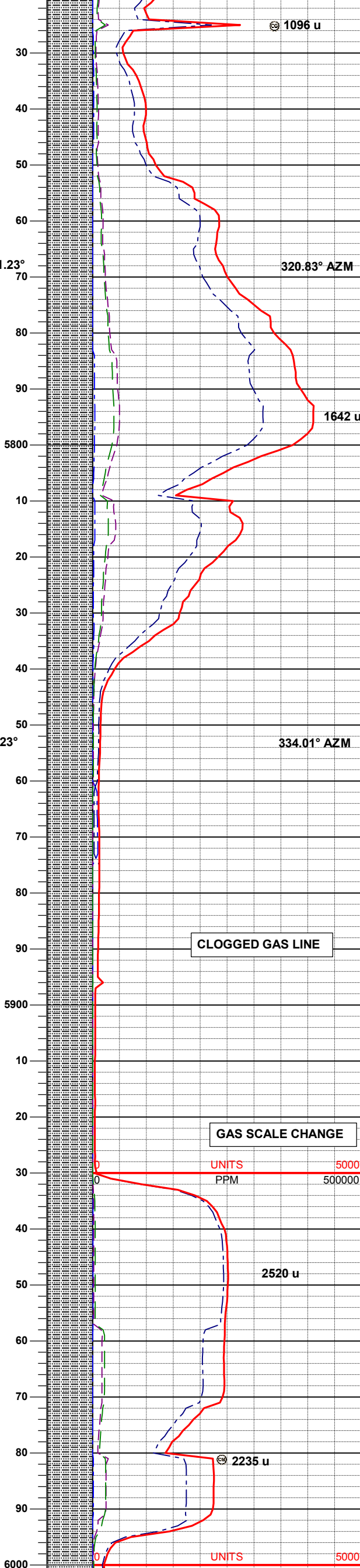
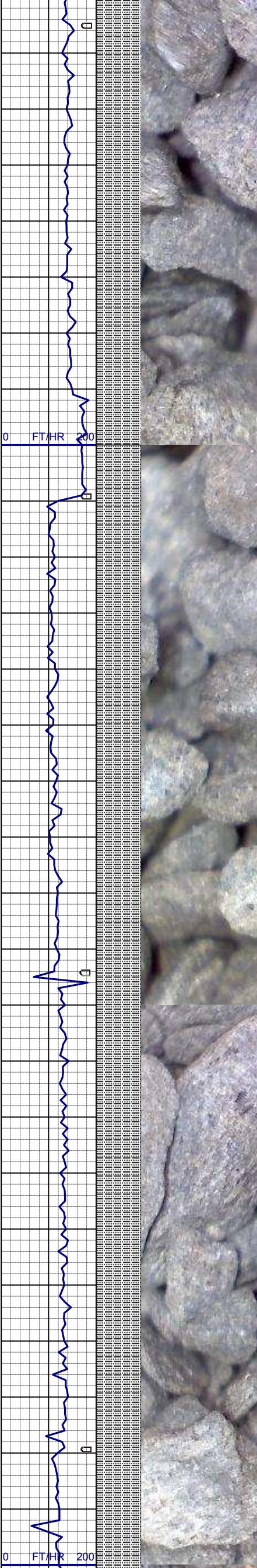
SLTYSH: mgy-gy, sft-mfirm, sbplty-sbblky, rthy tex, sdy, mod calc, grdg- gy SHYSS, tr bent flor

SLTYSH: mgy-gy, sft-mfirm, sbplty-sbblky, rthy tex, sdy, mod calc, grdg- gy SHYSS, tr bent flor

WT 8.9
VIS 31

SLTYSH: mgy-gy, m firm- firm, bplty-sbblky, rthy tex, sl calc

DEPTH: 5704
WT 9.0
VIS 31
pH. 9.0
Cl. 250
Ca. 20

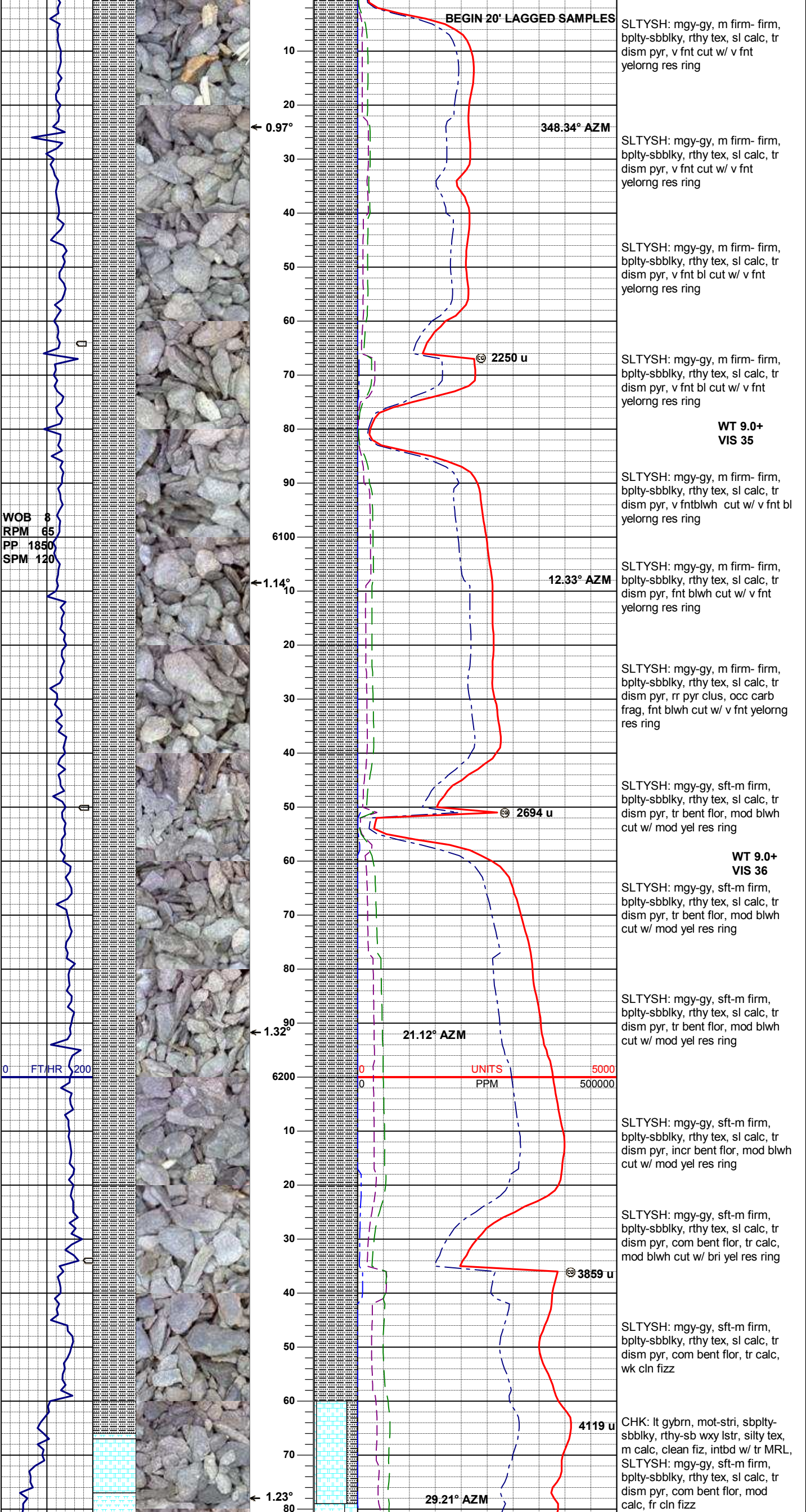


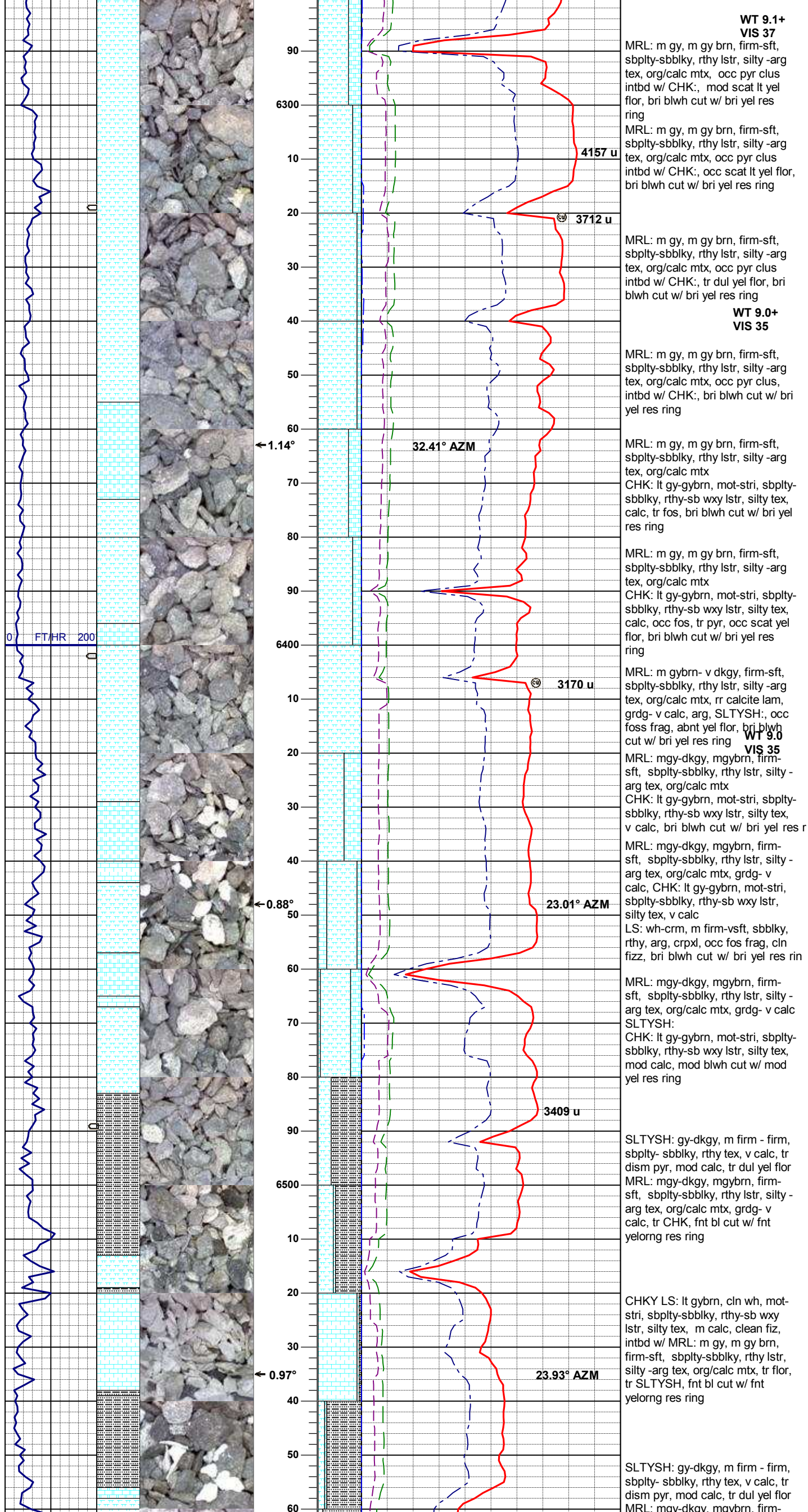
SLTYSH: mgy-gy, m firm- firm,
bplty-sbbiky, rthy tex, sl calc, tr
dism pyr

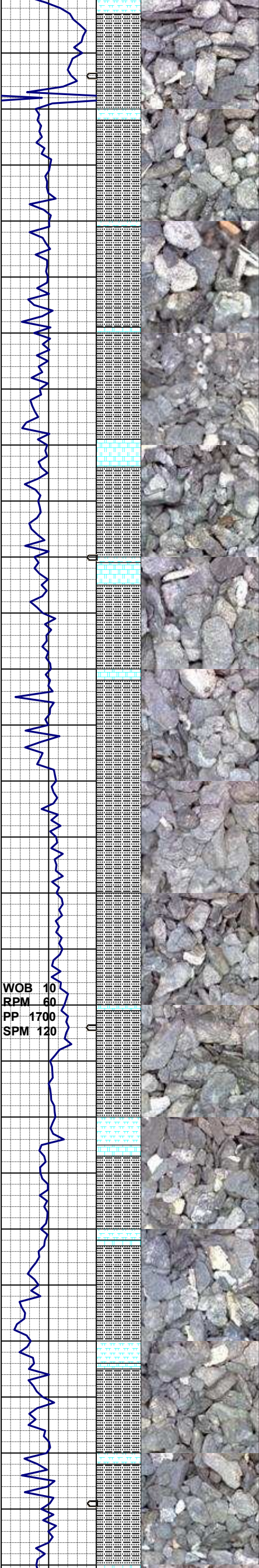
SLTYSH: mgy-gy, m firm- firm,
bplty-sbbiky, rthy tex, sl calc, tr
dism pyr

SLTYSH: mgy-gy, m firm- firm,
bplty-sbbiky, rthy tex, sl calc, tr
dism pyr

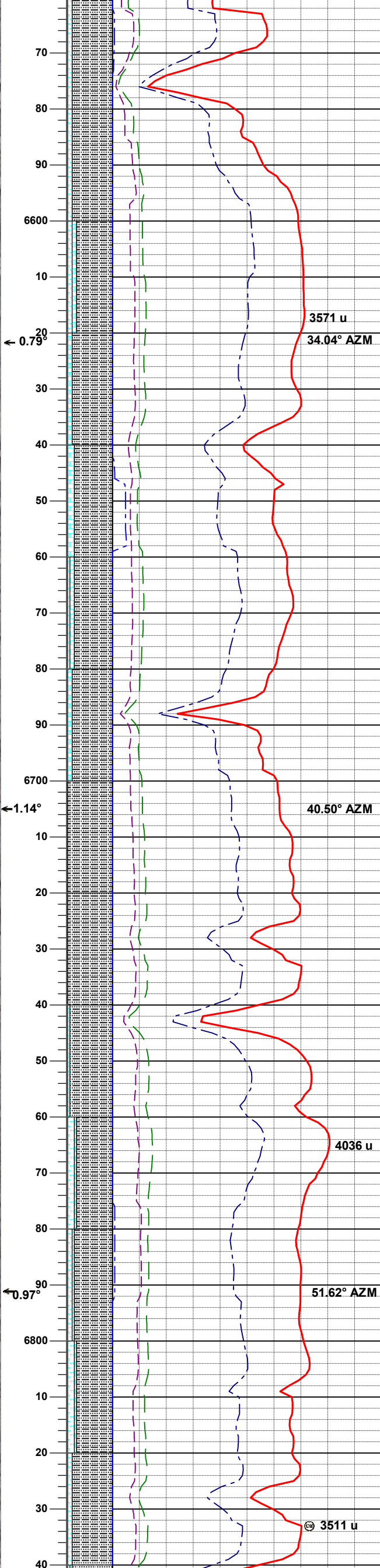
WT 9.1
VIS 31







WOB 10
RPM 60
PP 1700
SPM 120



sft, sbply-sbply, rthy lstr, silty - arg tex, org/calc mtx, grd- v calc, tr CHK, fnt bl cut w/ fnt yelorg res ring

**WT 8.6
VIS 32**

SLTYSH: gy-dkgy, m firm - firm, sbply- sbply, rthy tex, v calc, tr dism pyr, mod calc, tr dul yel flor MRL: mgy-dkgy, mgybrn, firm-sft, sbply-sbply, rthy lstr, silty - arg tex, org/calc mtx, grd- v calc, tr CHK, fnt bl cut w/ fnt yelorg res ring

3571 u
34.04° AZM

SLTYSH: gy-dkgy, m firm - firm, sbply- sbply, rthy tex, v calc, tr dism pyr, mod calc, tr dul yel flor, tr CHK, v calc, fnt bl cut w/ fnt yelorg res ring

SLTYSH: gy-dkgy, m firm - firm, sbply- sbply, rthy tex, v calc, tr dism pyr, mod calc, tr dul yel flor CHK: lt gy-gybrn, mot-stri, sbply-sbply, rthy-sb wxy lstr, silty tex, v calc, incr red BENT flor, fnt bl cut w/ fnt yelorg res ring

**WT 9.0
VIS 34**

SLTYSH: gy-dkgy, m firm - firm, sbply- sbply, rthy tex, v calc, tr dism pyr, mod calc, tr dul yel flor, tr CHK, v calc, fnt bl cut w/ fnt yelorg res ring

SLTYSH: gy-dkgy, m firm - firm, sbply- sbply, rthy tex, v calc, tr dism pyr, mod calc, tr dul yel flor, tr CHK, v calc, tr red bent, tr pyr, fnt bl cut w/ fnt yelorg res ring

4036 u

SLTYSH: gy-dkgy, m firm - firm, sbply- sbply, rthy tex, v calc, tr dism pyr, mod calc, tr dul yel flor MRL: mgy-dkgy, mgybrn, firm-sft, sbply-sbply, rthy lstr, silty - arg tex, org/calc mtx, grd- v calc, tr CHK, fnt bl cut w/ fnt yelorg res ring

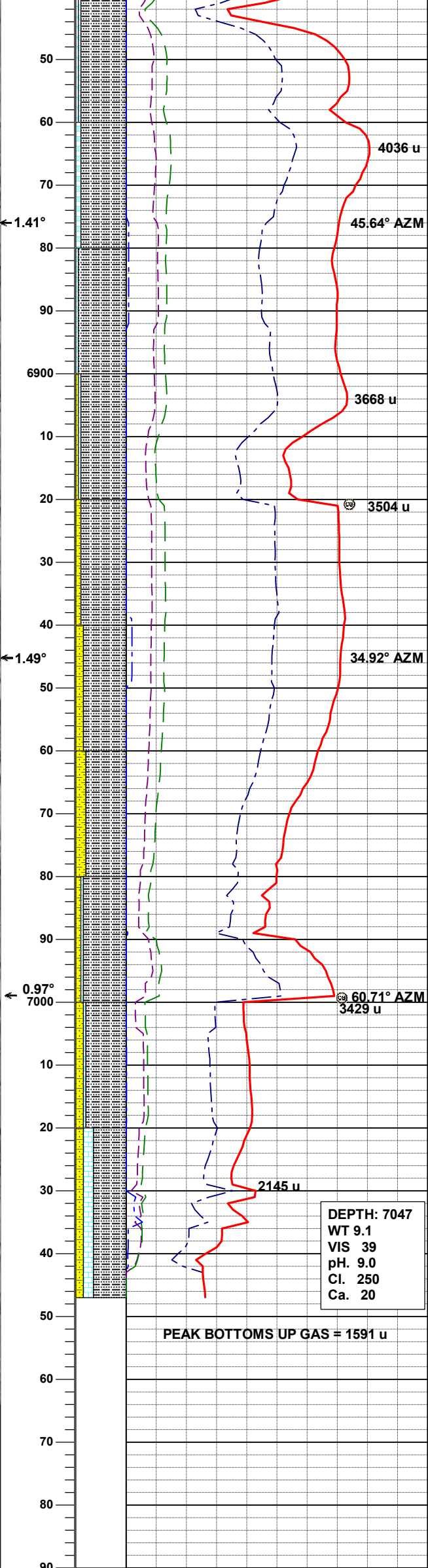
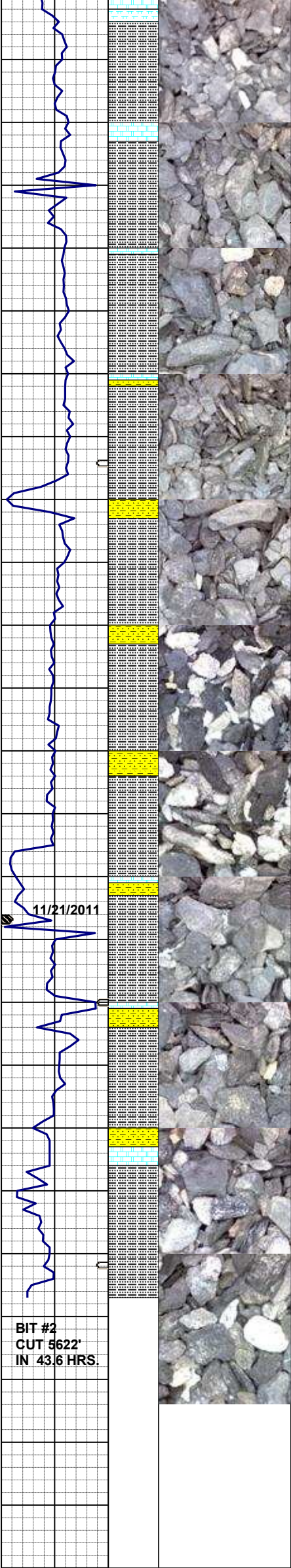
51.62° AZM

SLTYSH: gy-dkgy, m firm - firm, sbply- sbply, rthy tex, v calc, tr dism pyr, mod calc, tr dul yel flor MRL: mgy-dkgy, mgybrn, firm-sft, sbply-sbply, rthy lstr, silty - arg tex, org/calc mtx, grd- v calc, tr CHK, mod bent flor, fnt bl cut w/ fnt yelorg res ring

3511 u

**WT 9.0
VIS 35**

SLTYSH: gy-dkgy, m firm - firm,



sblpty- sbbly, rthy tex, v calc, tr
dism pyr, mod calc, tr dul yel flor,
tr CHK, mod calc, mod red bent,
tr pyr, fnt bl cut w/ mod yel res
ring

SLTYSH: gy-dkgy, m firm - firm,
sblpty- sbbly, rthy tex, v calc, tr
dism pyr, mod calc, tr dul yel flor,
tr CHK, mod calc, mod red bent
flor, incr pyr, fnt bl cut w/ mod yel
res ring

WT 9.0
VIS 35

SLTYSH: vitgy-gy, vsft, sblpty-
sbbly, sdy ip, rthy-sbrthy, tr
CHK, tr calc, tr grdg to SHYSS, tr
bent flor, fnt bl cut w/ fnt yelorn
res ring

SLTYSH: vitgy-gy, vsft, sblpty-
sbbly, sdy ip, rthy-sbrthy, tr
CHK, tr calc, incr grdg to
SHYSS: lt - m gy, clr, trns, pred f
gr, occ vf gr, sbang - sbrndd,
mod - w srt, fri - brit, mod - g
consol, non - v sl calc, tr glau
frag, tr bent flor, fnt bl cut w/ fnt
yelorn res ring

WT 9.1
VIS 36

SLTYSH: vitgy-gy, vsft, sblpty-
sbbly, sdy ip, rthy-sbrthy, incr
CHK: lt gy-gybrn, mot-stri, sblpty-
sbbly, rthy-sb wxy lstr, silty tex,
mod calc, tr calc, grdg to
SHYSS: lt - m gy, clr, trns, pred f
gr, occ vf gr, sbang - sbrndd,
mod - w srt, fri - brit, mod - g
consol, non - v sl calc, tr bent
flor, fnt bl cut w/ fnt yelorn res
ring

T.D. @ 7047'
01:30 MST 11/21/2011

THANK YOU FOR CHOOSING
COLUMBINE LOGGING, INC