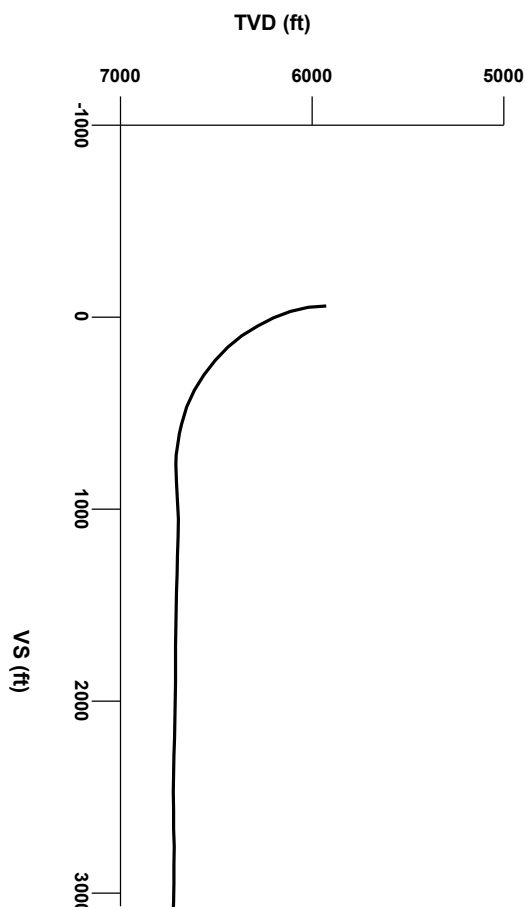




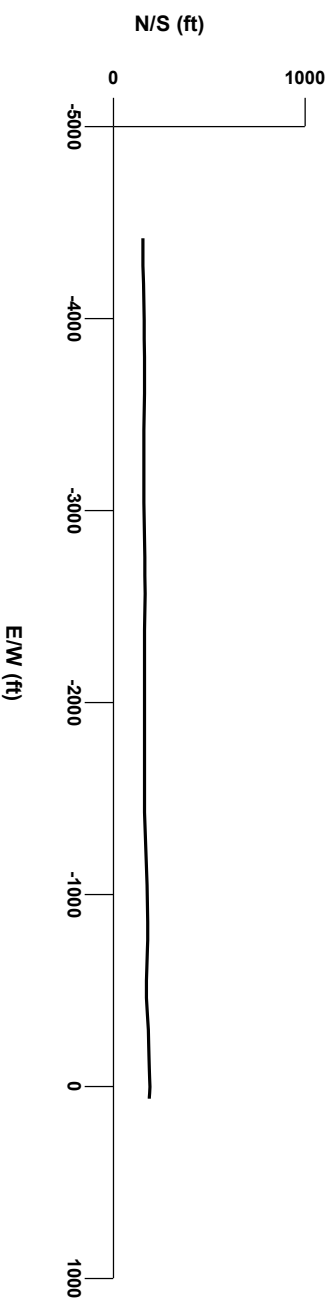
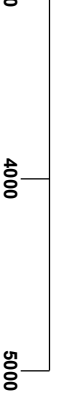
LOG created using LPLOT VH Version 3.0, August 31, 2012, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: NOBLE ENERGY INC
WELL: BOOTH STATE C36-69HN
LOCATION: NENE SEC 36 T4N R64W
COUNTY: WELD
STATE: COLORADO
SPOT: 250' FNL, 253' FEL
ELEVATION: 4758' GL, 4771' KB
FIELD: WATTENBERG
SPUD DATE: 08/21/2012
TD DATE: 08/31/2012
DATES LOGGED: 08/23/2012 - 08/31/2012
DEPTHS LOGGED: 660'-10910' MD
LOGGERS: KYLE KNIGHT, RYAN SHILLING
DRILLING FLUID: FW, LSND
DRILLING RIG: ENSIGN 121
API: 05-123-35796
LOG TYPE: HORIZONTAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: LAT, LONG: 40.27601, -104.50676



Survey Elevation

Survey Plan



Chalk

Shaly Siltstone

Marl

Silty Shale

Shaly Sandstone

ENGINEERING SYMBOLS

Bit Change

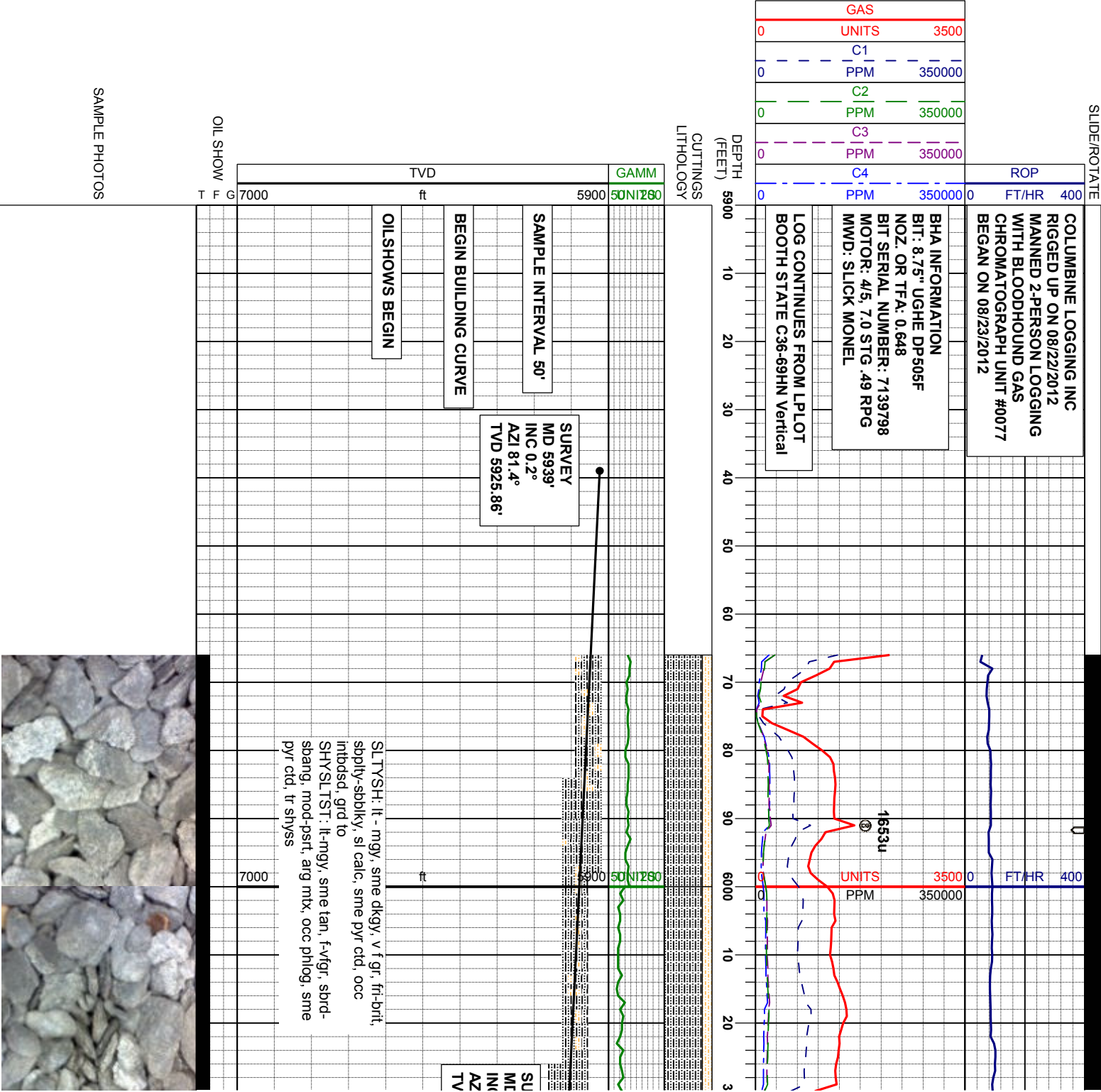
Connection

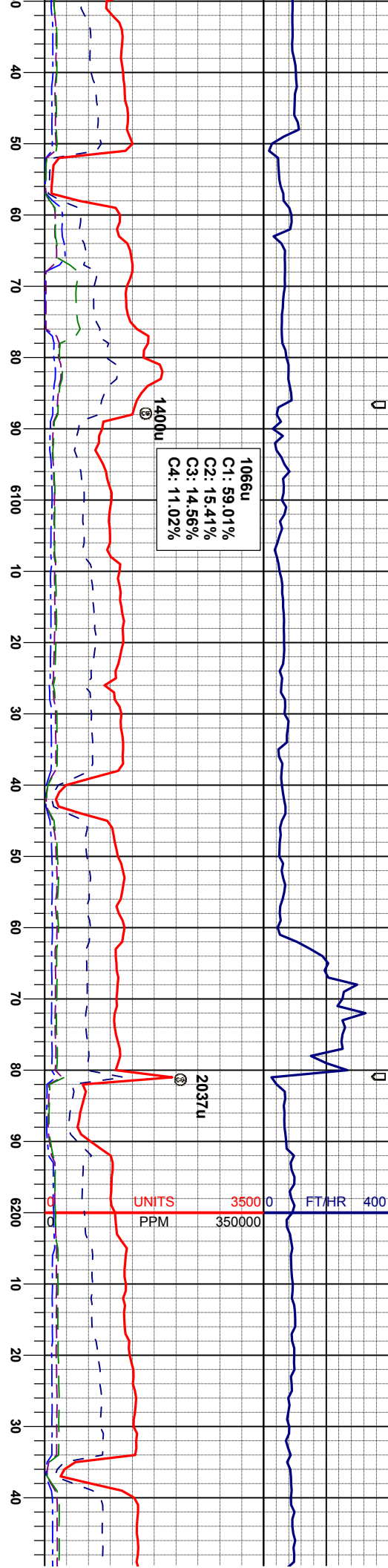
Casing

Connection Gas

Casing

Midnight Depth





SURVEY
D 6034'
C 8.4°
I 275.4°
D 6020.53'

MUD WT: 9.7 VIS: 55 IN
MUD WT: 10.0 VIS: 40 OUT

SURVEY
MD 6129'
INC 17.4°
AZI 274.0°
TVD 6113.03'

MUD WT: 9.6 VIS: 40 IN
MUD WT: 9.6+ VIS: 40 OUT

SURVEY
MD 6224'
INC 24.1°
AZI 268.8°
TVD 6201.83'

SL.TYSH: It - mgy, sme dkg, v f gr, fr-brit,
sbply-sbdky, sl calc, sme pyr ctd, occ
inbdsd, tr shylst, tr shys

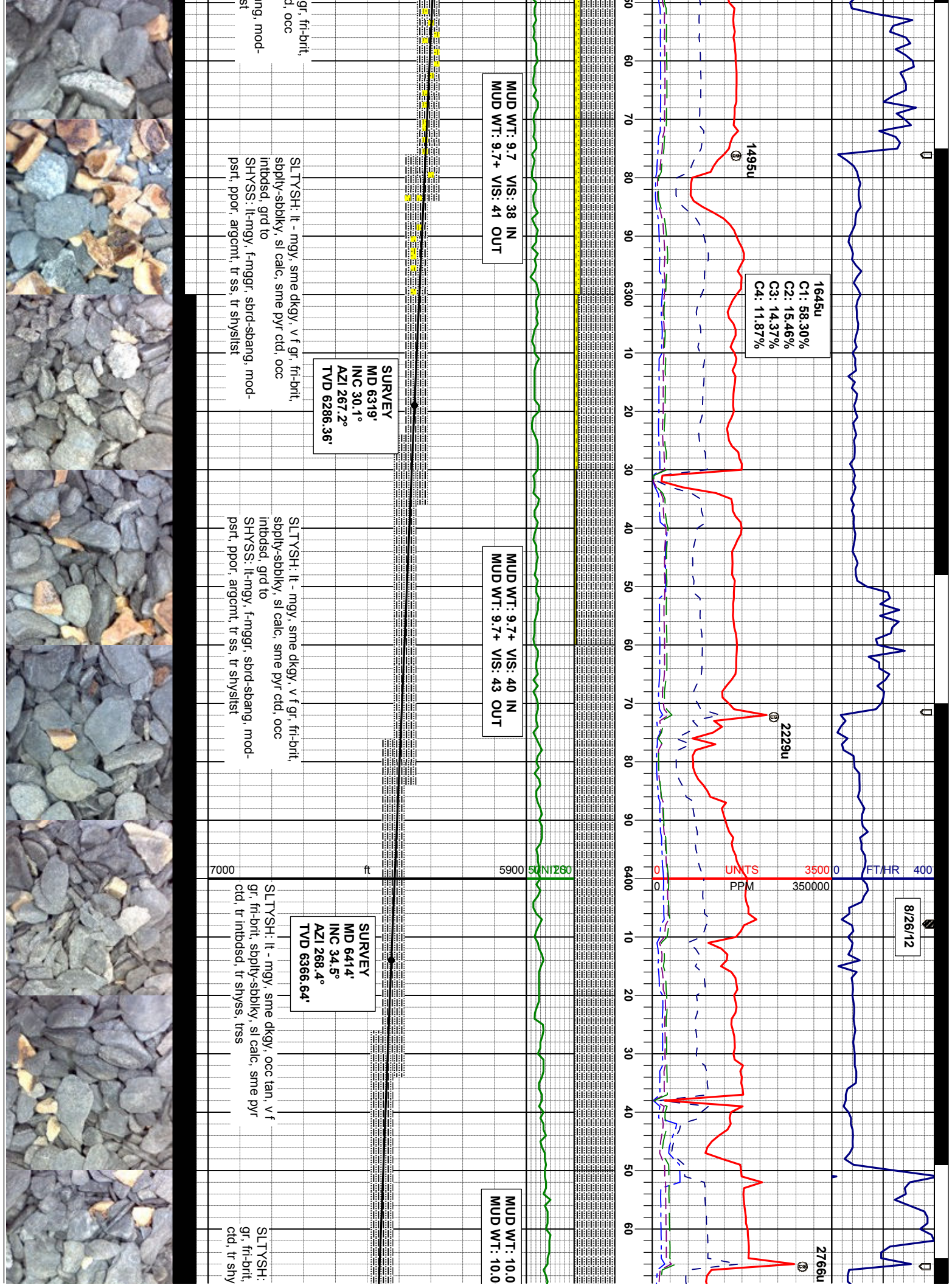
SL.TYSH: It - mgy, sme dkg, v f gr, fr-brit,
sbply-sbdky, sl calc, sme pyr ctd, occ
inbdsd, grd to
SHYSS: It-mgy, f-mgr, sbpd-sbang, mod-
pst, ppor, argcm, tr ss, tr shylst

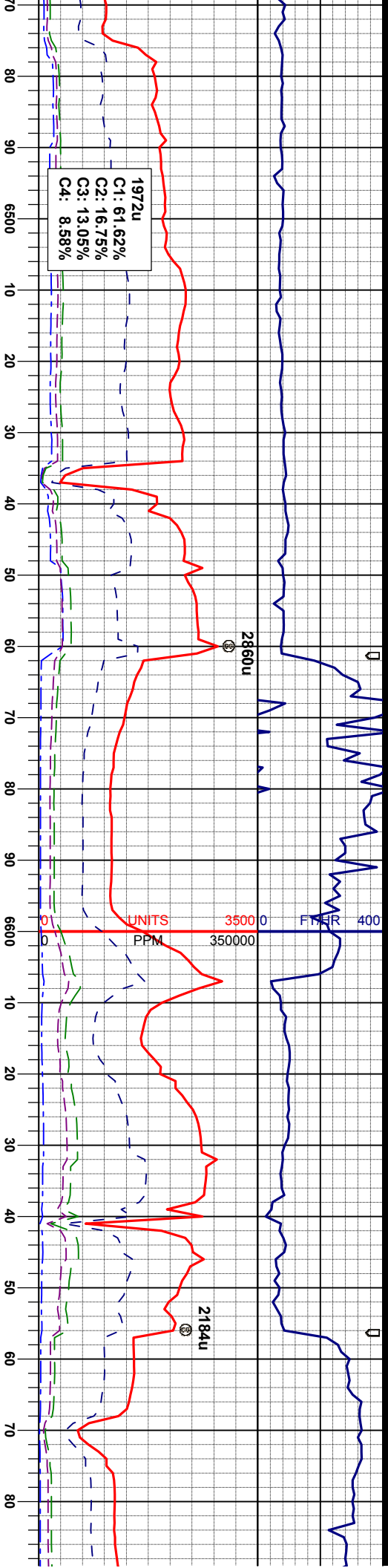
SL.TYSH: It - mgy, sme dkg, v f gr, fr-brit,
sbply-sbdky, sl calc, sme pyr ctd, occ
inbdsd, grd to
SHYSS: It-mgy, f-mgr, sbpd-sbang, mod-
pst, ppor, argcm, tr ss, tr shylst

SL.TYSH: It - mgy, sme dkg, v f
sbply-sbdky, sl calc, sme pyr ctd
inbdsd, grd to
SHYSS: It-mgy, f-mgr, sbpd-sbang
pst, ppor, argcm, tr ss, tr shylst

7000







1972u
C1: 61.62%
C2: 16.75%
C3: 13.05%
C4: 8.58%

VIS: 40 IN
+ VIS: 40 OUT

SURVEY
MD 6509'
INC 43.6°
AZI 286.6°
TVD 6440.34'

MUD WT: 10.0 VIS: 35 IN
MUD WT: 10.0 VIS: 38 OUT

SURVEY
MD 6604'
INC 49.2°
AZI 269.3°
TVD 6505.83'

SHARON SPRINGS MARKER
@ 6613' MD / 6510' TVD

MUD WT: 10.1 VIS: 37 IN
MUD WT: 10.1 VIS: 38 OUT

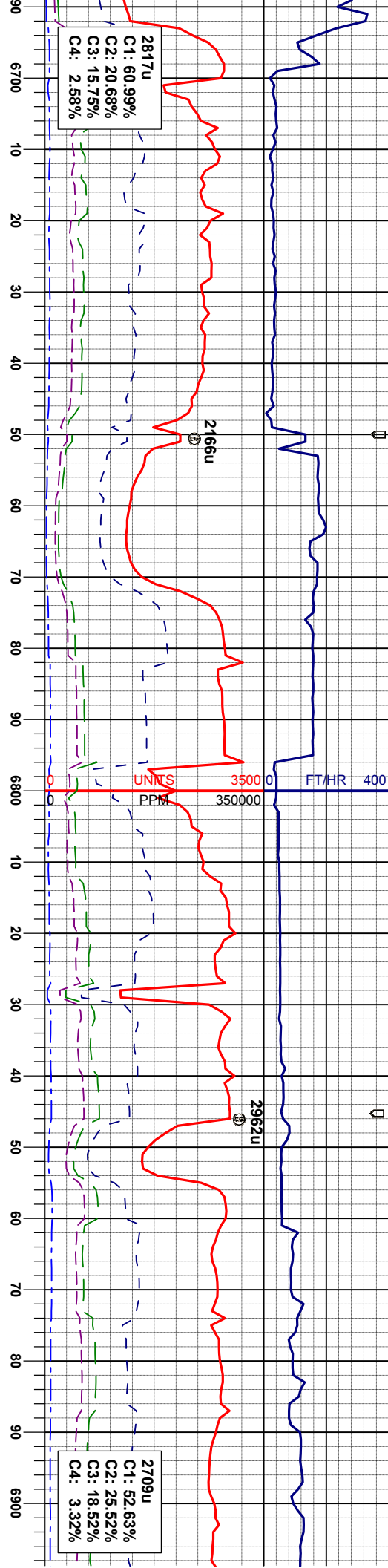
lt - mgy, sme dkgy, occ tan, v f
sppty-sbbky, sl calc, sme pyr
ss, trss

SLTYSH: lt - mgy, sme dkgy, occ tan, v f
gr, fri-brt, sppty-sbbky, sl calc, sme pyr
ctd, tr shys

SLTYSH: dkgy-blk, sme ltgy, occ tan, v f gr,
fri-brt, sppty-pty, sl calc, sme pyr ctd, tr
bent

SLTYSH: dkgy-blk, sme ltgy, occ tan, v f gr,
fri-brt, sppty-pty, sl calc
CHK: lt-m gy, dkgy, sme tan, stf-sl firm,
sppty-sbbky, mot-rthy, vcalc;
MRL: lt-m gy, gyblk, sbbky - sppty, smefis,
sl firm - modstf, slt-slmot, calc, tr bent w/
dism pyr





2817u
C1: 60.99%
C2: 20.68%
C3: 15.75%
C4: 2.58%

2709u
C1: 52.63%
C2: 25.52%
C3: 18.52%
C4: 3.32%

LOGGER'S TOP NIOBRARA A
@ 6,705' MD / 6,568' TVD

MUD WT: 10.3 VIS: 35 IN
MUD WT: 10.2 VIS: 36 OUT

LOGGER'S TOP NIOBRARA B
@ 6,794' MD / 6,615' TVD

MUD WT: 10.55 VIS: 35 IN
MUD WT: 10.40 VIS: 36 OUT

SL: TYSH: dkgy-blk, sme ltgy, occ tan, v f gr,
fr-bnt, sbply-pily, sl calc
CHK: lt-m gy, dkgy, sme tan, sft-sl firm,
sbply-sbply, mot-rthy, vcalc;
MRL: lt-m gy, gyblk, sbply - sbply, smeifs,
sl firm - modstf, slt-slmot, calc, tr bent w/
dism pyr

CHK: lt-m gy, dkgy, sme tan, sft-sl firm,
sbply-sbply, mot-rthy, vcalc;
MRL: lt-m gy, gyblk, sbply - sbply, smeifs,
sl firm - modstf, slt-slmot, calc, tr bent w/
dism pyr

CHK: lt-m gy, dkgy, sme tan, sft-sl firm,
sbply-sbply, mot-rthy, vcalc;
MRL: lt-m gy, gyblk, sbply - sbply, smeifs,
sl firm - modstf, slt-slmot, calc, tr bent w/
dism pyr, tr inoc, tr calcite

CHK: lt-m gy, dkgy, sme tan, sft-sl firm,
sbply-sbply, mot-rthy, vcalc;
MRL: lt-m gy, gyblk, sbply - sbply, smeifs,
sl firm - modstf, slt-slmot, calc, tr bent w/
dism pyr, tr inoc, tr calcite

SURVEY
MD 6699'
INC 54.7°
AZI 267.2°
TVD 6564.36'

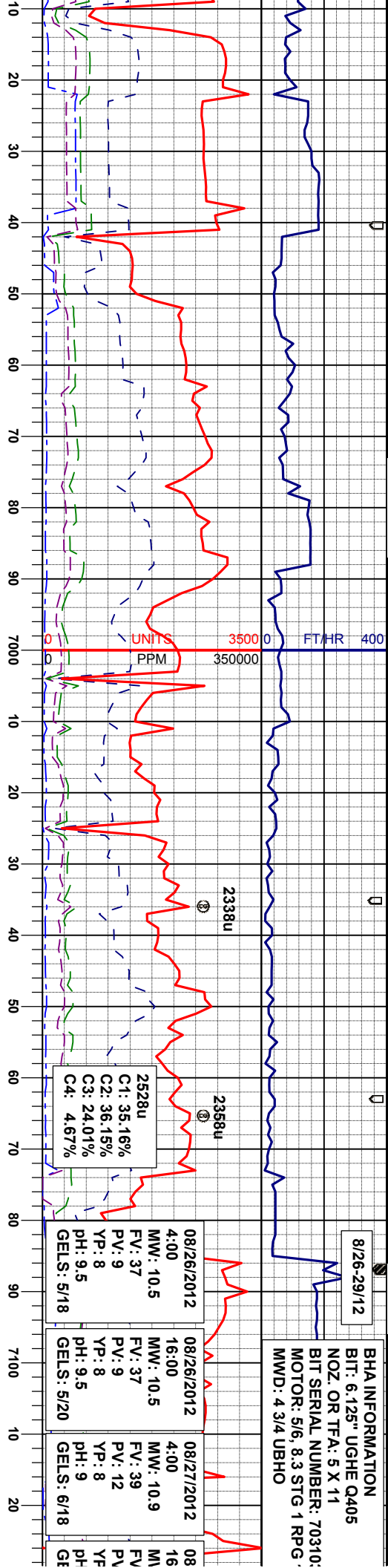
SURVEY
MD 6794'
INC 60.6°
AZI 266.3°
TVD 6615.18'

SURVEY
MD 6889'
INC 70.7°
AZI 268.4°
TVD 6654.3'



8/26-29/12

BHA INFORMATION
BIT: 6.125" UGHE Q405
NOZ. OR TFA: 5 X 11
BIT SERIAL NUMBER: 70310:
MOTOR: 5/6, 8.3 STG 1 RPG
MWD: 4 3/4 UBHO



MUD WT: 10.55 VIS: 35 IN
MUD WT: 10.50 VIS: 37 OUT

LOGGERS TOP NIOBRARA C
@ 7,025' MD / 6,691' TVD

CURVE LANDED
@ 7,086' MD / 6,700' TVD
16:05 08/26/2012

3:35 IN
3:36 OUT

CHK: lt-m gy, dkgy, sme tan, sft-sl firm,
sbply-sbbkly, mot-rthy, vcalc;
MRL: lt-m gy, gyblk, sbbkly - sbply, smefls,
sl firm - modstf, silt-slmot, calc, tr bent w/
dism pyr, tr inoc, tr calcite

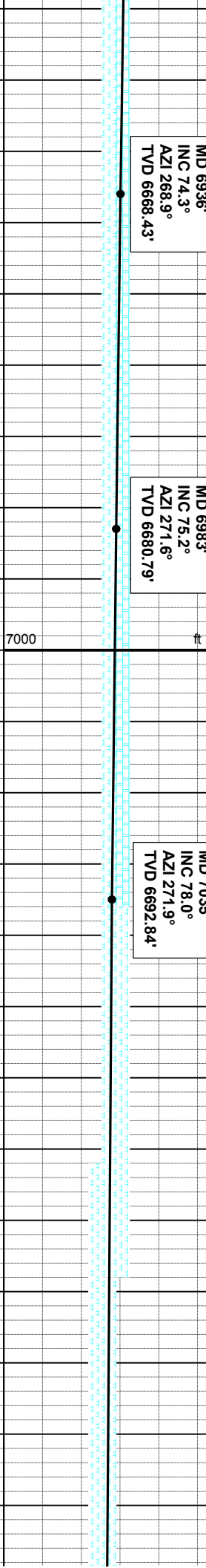
CHK: lt-m gy, dkgy, sme tan, sft-sl firm,
sbply-sbbkly, mot-rthy, vcalc;
MRL: lt-m gy, gyblk, sbbkly - sbply, smefls,
sl firm - modstf, silt-slmot, calc, tr bent w/
dism pyr, tr inoc, tr calcite

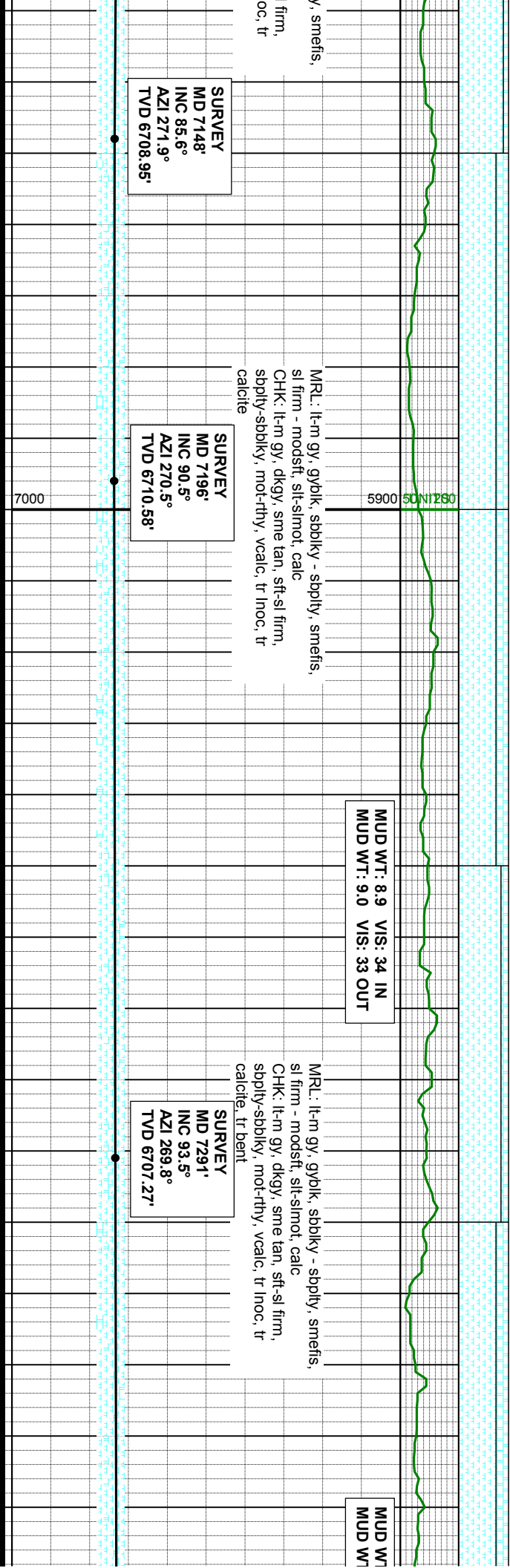
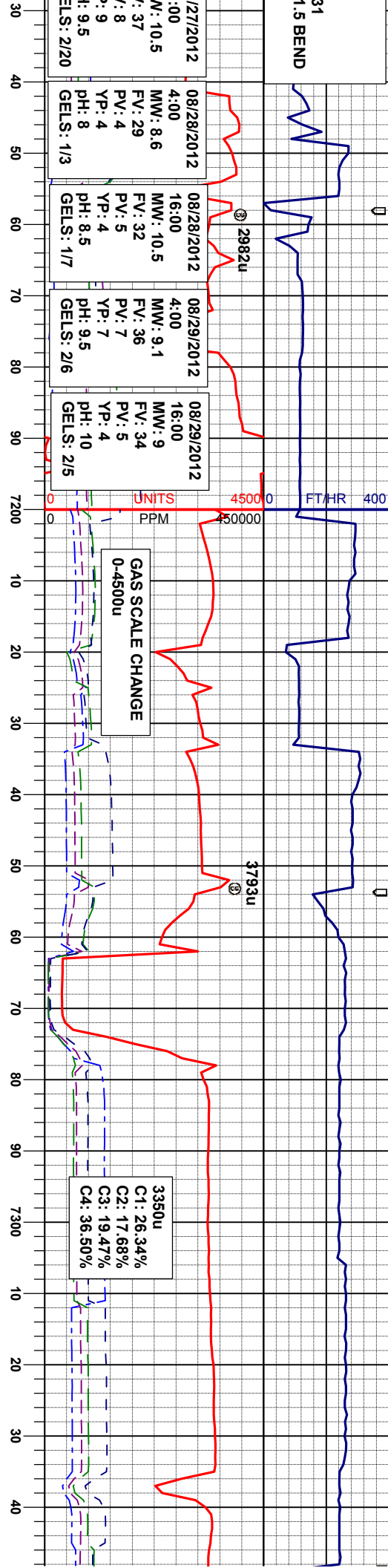
MRL: lt-m gy, gyblk, sbbkly - sbply,
sl firm - modstf, silt-slmot, calc
CHK: lt-m gy, dkgy, sme tan, sft-sl
sbply-sbbkly, mot-rthy, vcalc, tr in
calcite

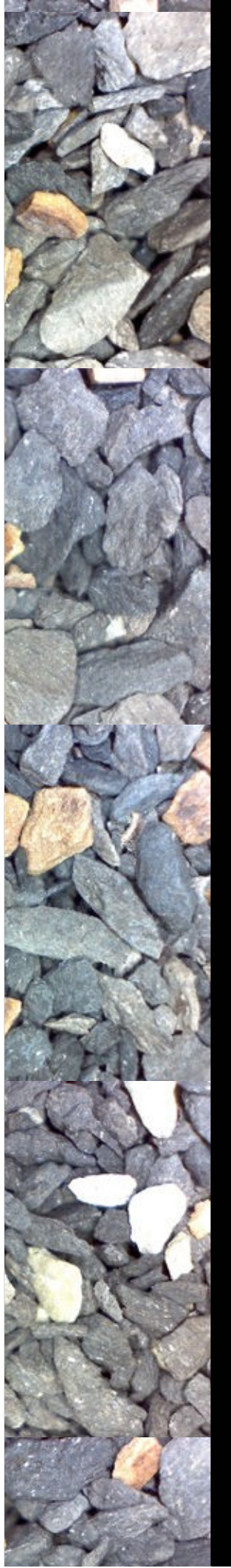
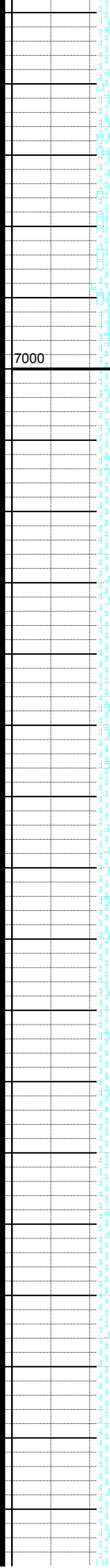
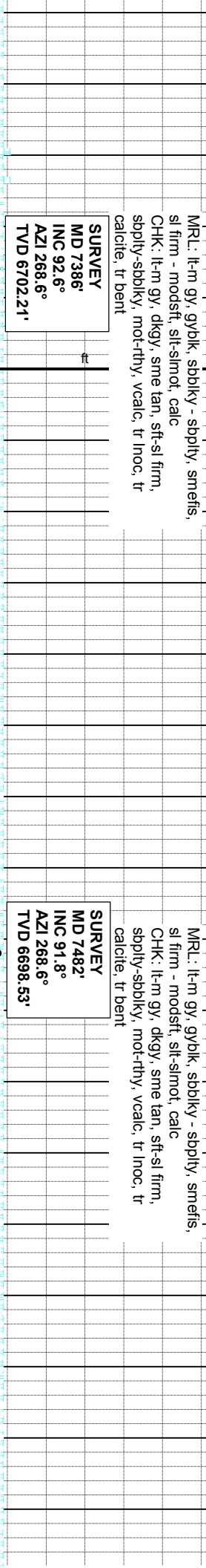
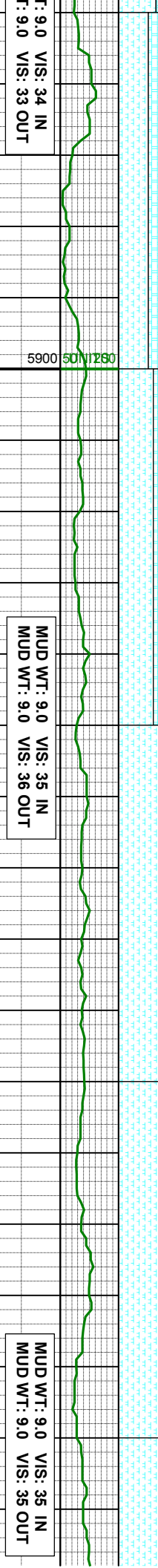
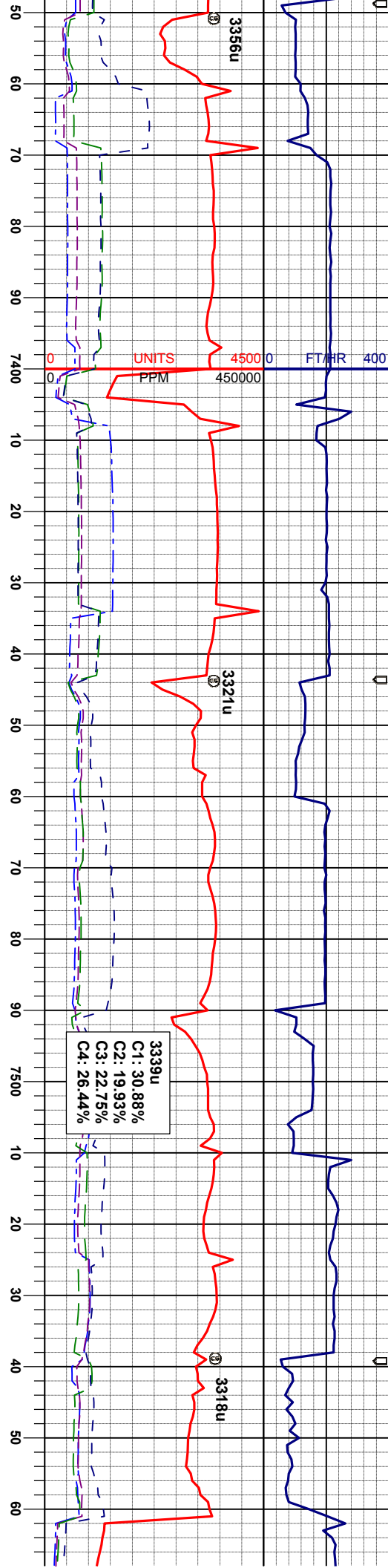
SURVEY
MD 6936'
INC 74.3°
AZI 268.9°
TVD 6668.43'

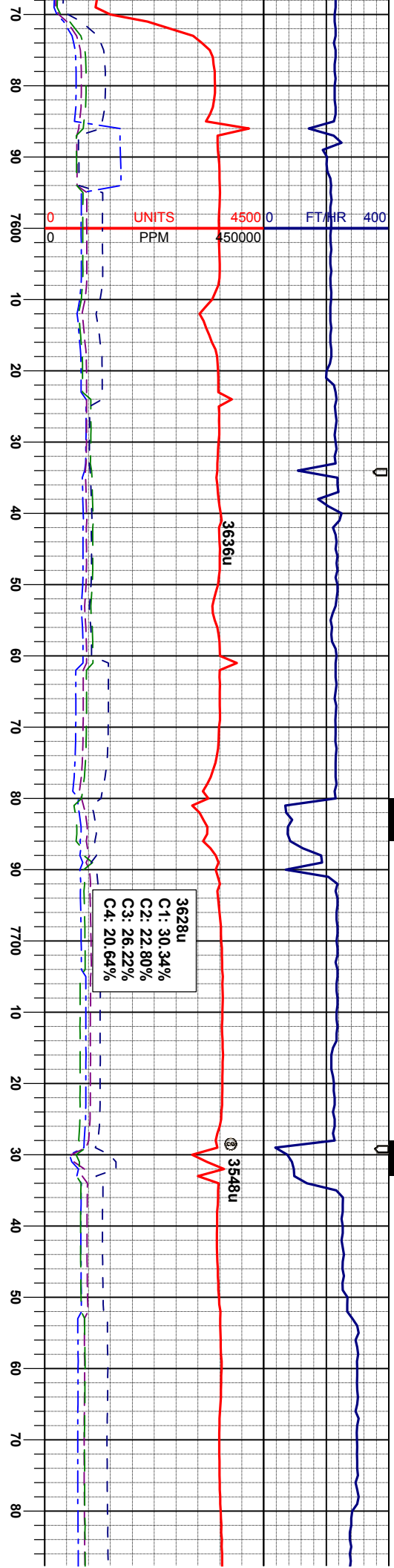
SURVEY
MD 6983'
INC 75.2°
AZI 271.6°
TVD 6680.79'

SURVEY
MD 7035'
INC 78.0°
AZI 271.9°
TVD 6692.84'









MRL: lt-m gy, gyblk, sbblky - sbply, smeifs,
sl firm - modstf, slt-slmot, calc
CHK: lt-m gy, dkgy, sme tan, sft-sl firm,
sbply-sbblky, mot-rthy, vcalc, tr inoc, tr
calcite, tr bent

SURVEY
MD 7577'
INC 87.9°
AZI 268.6°
TVD 6698.77'

MRL: lt-m gy, gyblk, sbblky - sbply, smeifs,
sl firm - modstf, slt-slmot, calc
CHK: lt-m gy, dkgy, sme tan, sft-sl firm,
sbply-sbblky, mot-rthy, vcalc, tr inoc, tr
calcite, tr bent

SURVEY
MD 7672'
INC 88.3°
AZI 267.2°
TVD 6702.82'

MUD WT: 9.1 VS: 36 IN
MUD WT: 9.0 VS: 37 OUT

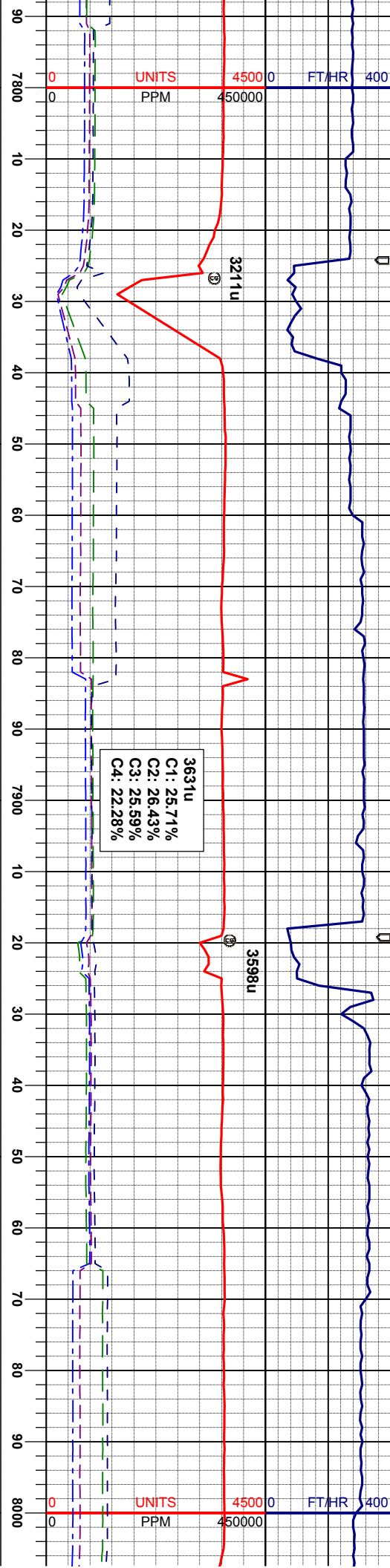
MRL: lt-m
sl firm - m
CHK: lt-m
sbply-sbblky
calcite, tr

SURVEY
MD 7767'
INC 87.7°
AZI 267.9°
TVD 6705.24'

7000

5900





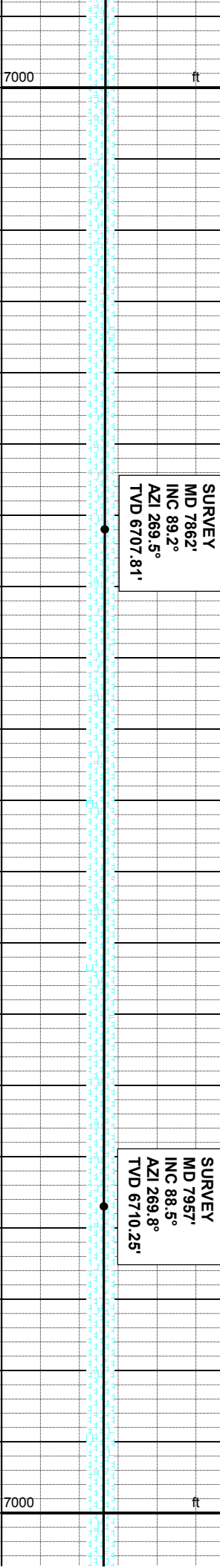
gy, gyblk, sbblky - sbply, smeifs,
modstf, slt-slmot, calc
gy, dky, sme tan, slt-sl firm,
blky, mot-rthy, vcalc, tr inoc, tr
bent

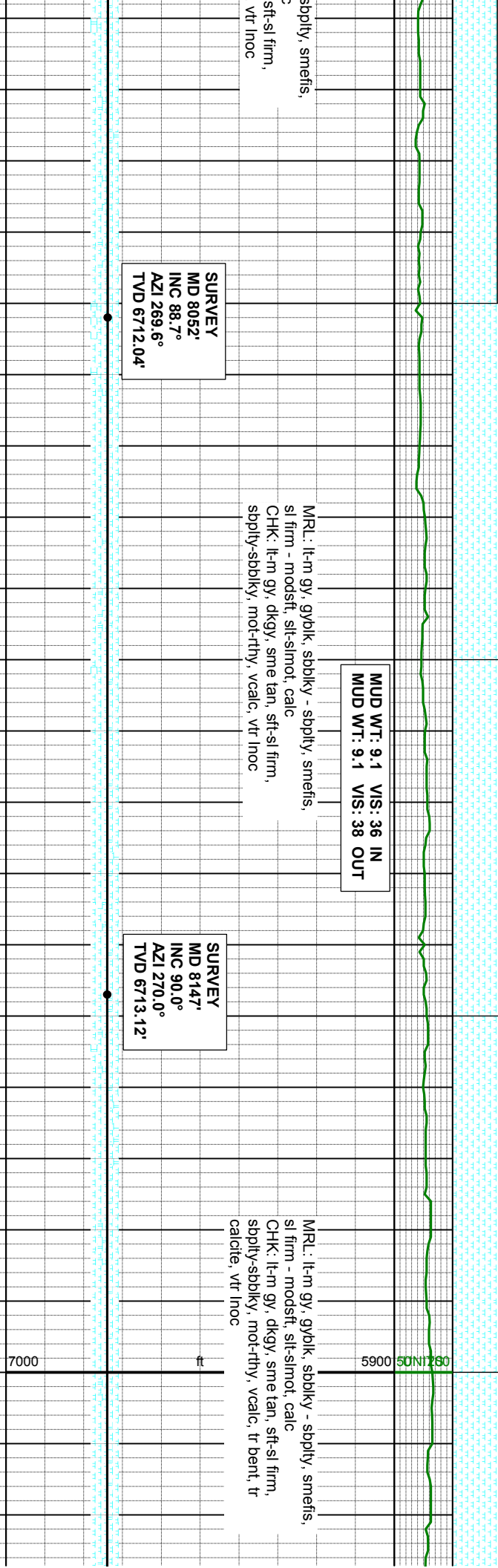
MRU: lt-m gy, gyblk, sbblky - sbply, smeifs,
sl firm - modstf, slt-slmot, calc
CHK: lt-m gy, dky, sme tan, slt-sl firm,
sbply-sbblky, mot-rthy, vcalc, tr inoc, tr
calcite, tr bent

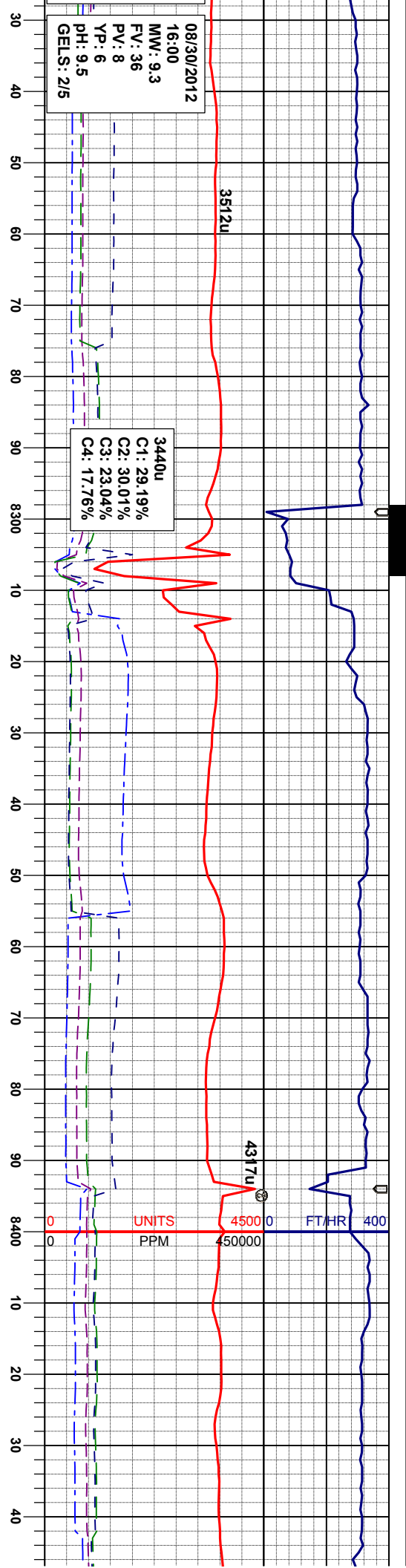
MRU: lt-m gy, gyblk, sbblky - s
sl firm - modstf, slt-slmot, calc
CHK: lt-m gy, dky, sme tan,
sbply-sbblky, mot-rthy, vcalc,

SURVEY
MD 7862'
INC 89.2°
AZI 269.5°
TVD 6707.81'

SURVEY
MD 7957'
INC 88.5°
AZI 269.8°
TVD 6710.25'







08/30/2012
16:00
MW: 9.3
FV: 36
PV: 8
YP: 6
pH: 9.5
GELS: 2/5

3440u
C1: 29.19%
C2: 30.01%
C3: 23.04%
C4: 17.76%

SURVEY
MD 8242'
INC 90.0°
AZI 270.0°
TVD 6713.12'

SURVEY
MD 8337'
INC 89.3°
AZI 270.7°
TVD 6713.70'

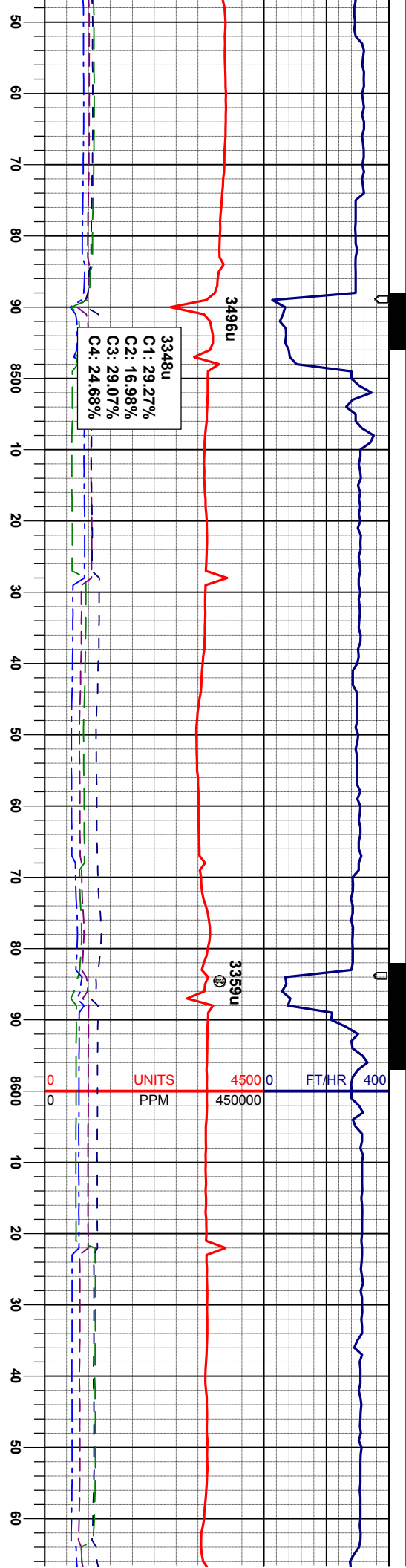
SURVEY
MD 8432'
INC 89.1°
AZI 269.8°
TVD 6715.02'

MRI: lt-m gy, gy/bk, sbblky - sbply, smefis,
sl firm - modstf, silt-slmot, calc
CHK: lt-m gy, dkgy, sme tan, sft-sl firm,
sbply-sbblky, mot-rthy, vcalc, tr calcite, vtr
Inoc

MRI: lt-m gy, gy/bk, sbblky - sbply, smefis,
sl firm - modstf, silt-slmot, calc
CHK: lt-m gy, dkgy, sme tan, sft-sl firm,
sbply-sbblky, mot-rthy, vcalc, tr calcite, vtr
Inoc

MUD WT: 9.1 VIS: 35 IN
MUD WT: 9.1 VIS: 37 OUT





3348u
C1: 29.27%
C2: 16.98%
C3: 29.07%
C4: 24.68%

3496u

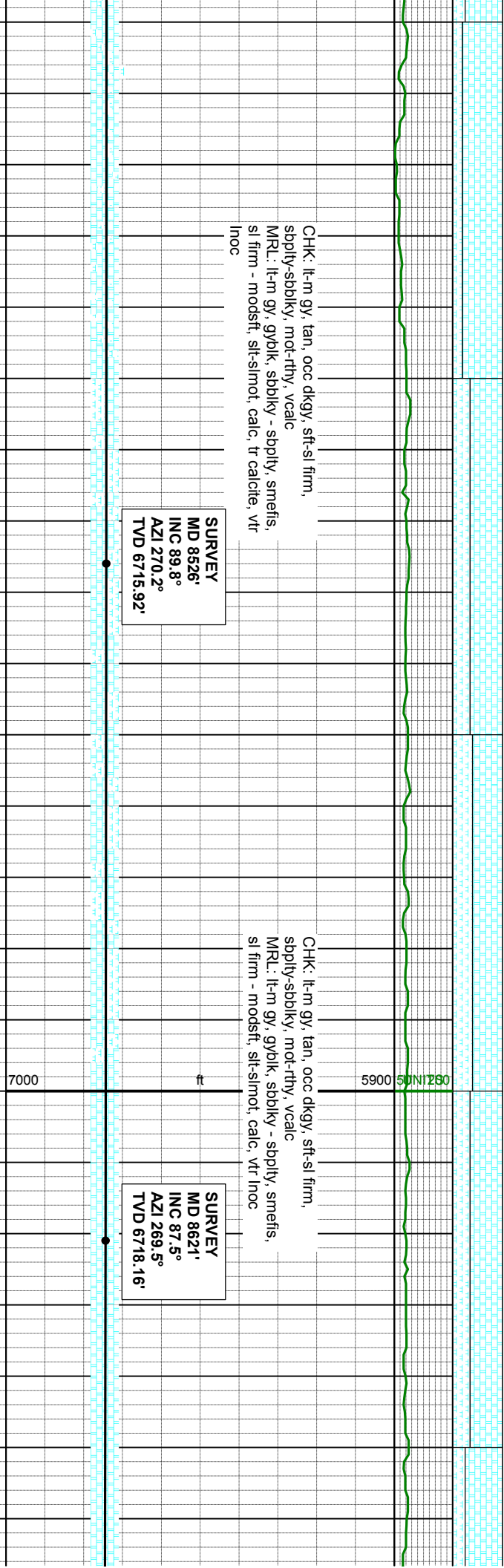
3359u

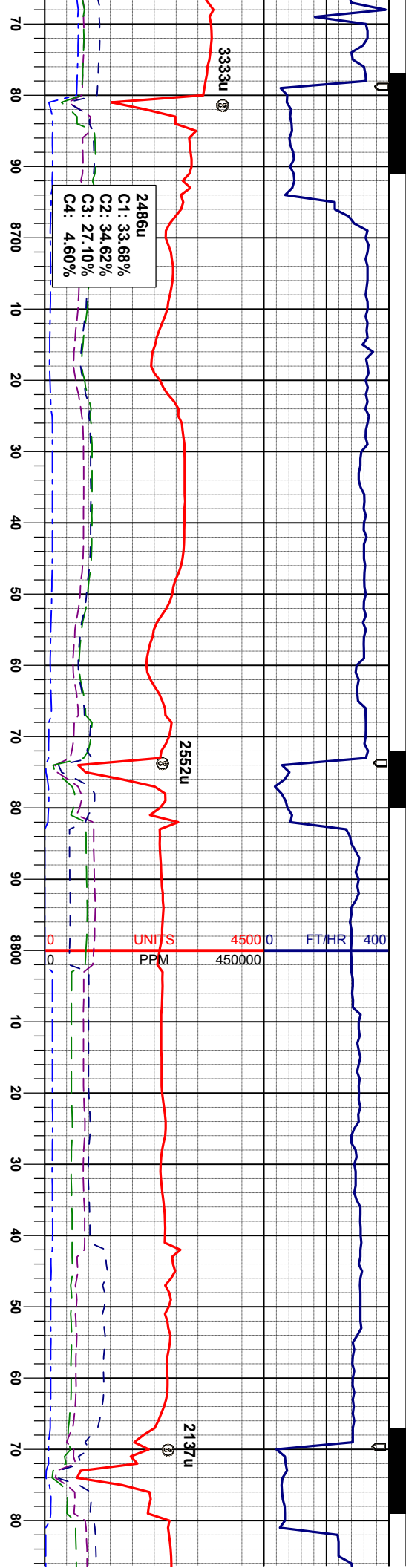
CHK: lt-m gy, tan, occ dkgy, sft-sl firm,
sbdly-sbdly, mod-rthy, vcalc
MRL: lt-m gy, gyblk, sbdly - sbdly, smeifs,
sl firm - modstf, slt-slmot, calc, tr calcite, vtr
Inoc

CHK: lt-m gy, tan, occ dkgy, sft-sl firm,
sbdly-sbdly, mod-rthy, vcalc
MRL: lt-m gy, gyblk, sbdly - sbdly, smeifs,
sl firm - modstf, slt-slmot, calc, vtr Inoc

SURVEY
MD 8626'
INC 89.8°
AZI 270.2°
TVD 6715.92'

SURVEY
MD 8621'
INC 87.5°
AZI 269.5°
TVD 6718.16'





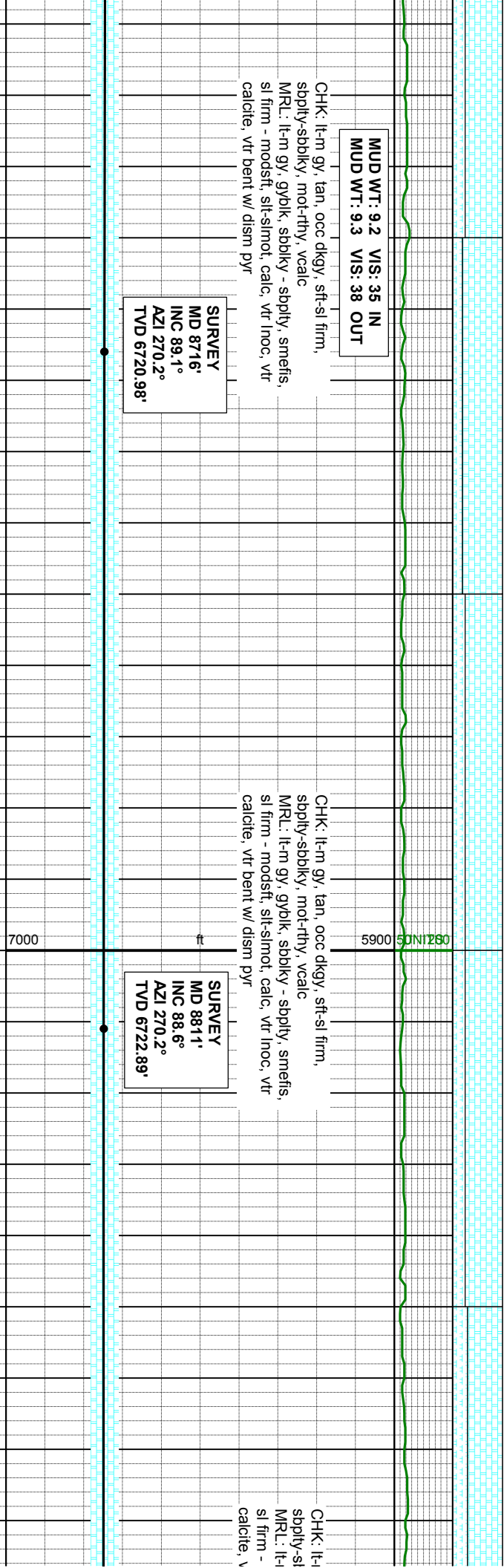
MUD WT: 9.2 VIS: 35 IN
MUD WT: 9.3 VIS: 38 OUT

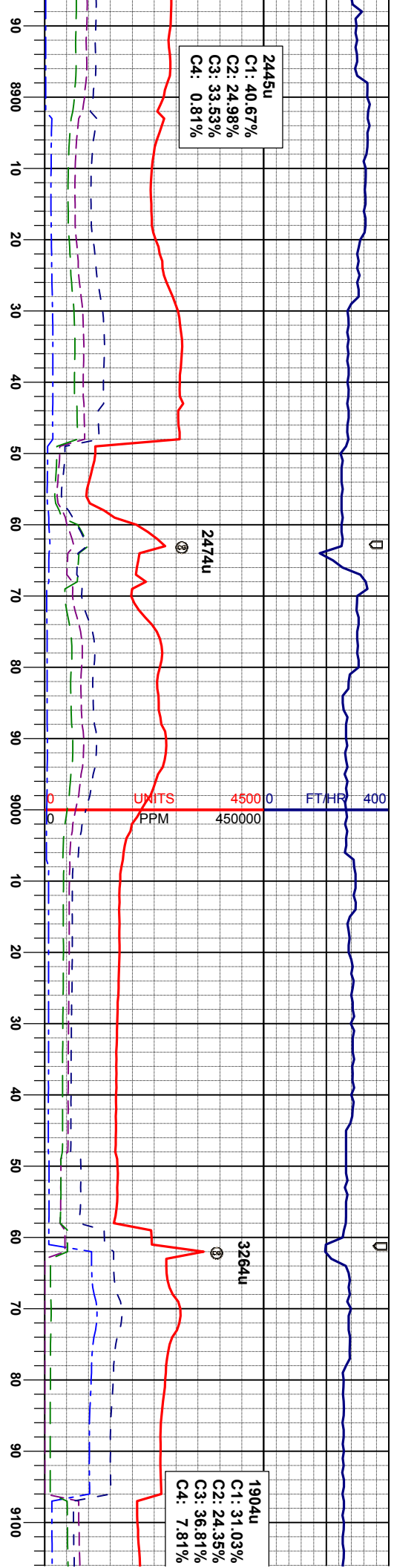
CHK: lt-m gy, tan, occ dkgy, sft-sl firm,
soply-sbbkly, mot-rthy, vcalic
MRL: lt-m gy, gybik, sbbkly - soply, smefis,
sl firm - modstf, slt-slmot, calc, vtr lnoc, vtr
calcite, vtr bent w/ dism pyr

SURVEY
MD 8716'
INC 89.1°
AZI 270.2°
TVD 6720.98'

CHK: lt-m gy, tan, occ dkgy, sft-sl firm,
soply-sbbkly, mot-rthy, vcalic
MRL: lt-m gy, gybik, sbbkly - soply, smefis,
sl firm - modstf, slt-slmot, calc, vtr lnoc, vtr
calcite, vtr bent w/ dism pyr

SURVEY
MD 8811'
INC 88.6°
AZI 270.2°
TVD 6722.89'





2445u
C1: 40.67%
C2: 24.98%
C3: 33.53%
C4: 0.81%

1904u
C1: 31.03%
C2: 24.35%
C3: 36.81%
C4: 7.81%

MUD WT: 9.2 VIS: 37 IN
MUD WT: 9.3 VIS: 39 OUT

MUD WT: 9.2 VIS: 38 IN
MUD WT: 9.2 VIS: 39 OUT

SURVEY
MD 8906°
INC 90.0°
AZI 271.2°
TVD 6724.05'

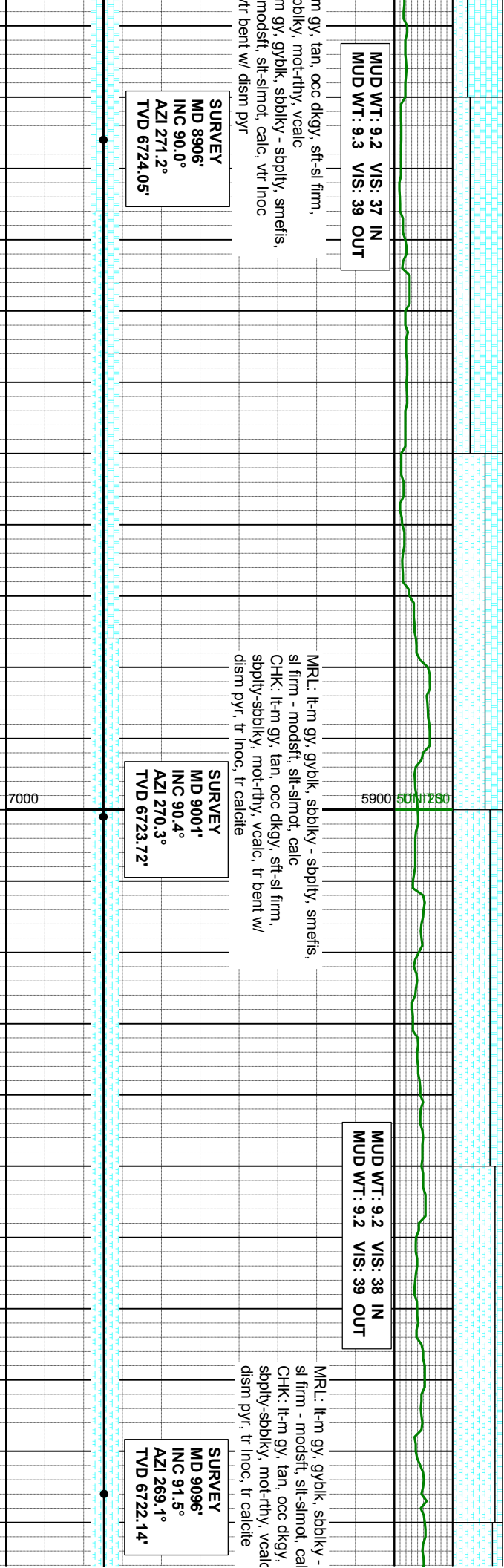
SURVEY
MD 9001°
INC 90.4°
AZI 270.3°
TVD 6723.72'

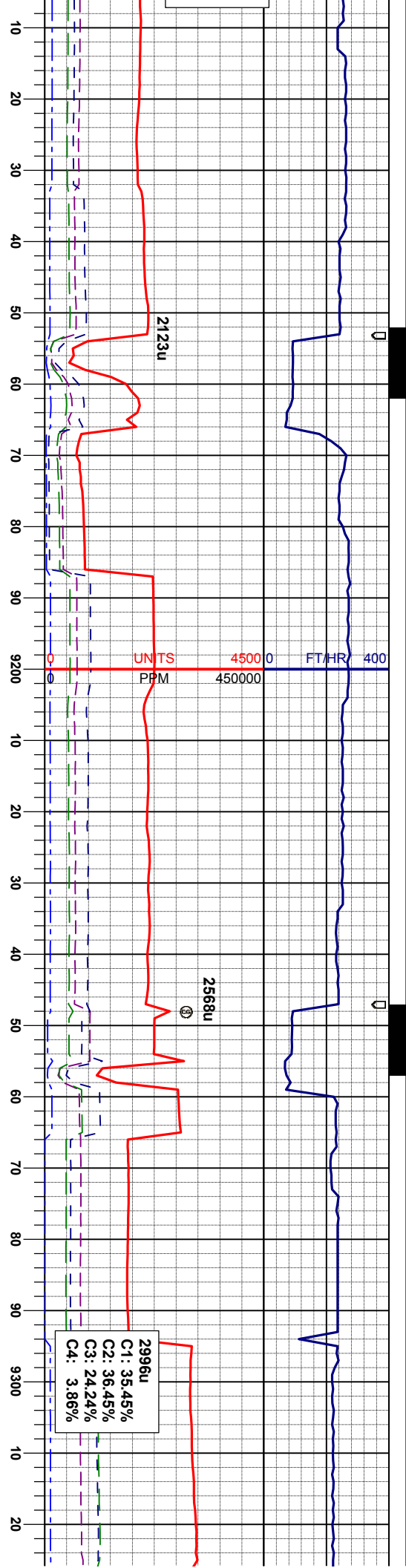
SURVEY
MD 9096°
INC 91.5°
AZI 269.1°
TVD 6722.14'

m gy, tan, occ dkgy, sft-si firm,
sbbky, mot-rthy, vcalc
m gy, gyblk, sbbky - sbply, smeifs,
modstf, sft-simot, calc, vtr inoc
tr bent w/ dism pyr

MR.L: lt-m gy, gyblk, sbbky - sbply, smeifs,
si firm - modstf, sft-simot, calc
CHK: lt-m gy, tan, occ dkgy, sft-si firm,
sbply-sbbky, mot-rthy, vcalc, tr bent w/
dism pyr, tr inoc, tr calcite

MR.L: lt-m gy, gyblk, sbbky -
si firm - modstf, sft-simot, cal
CHK: lt-m gy, tan, occ dkgy,
sbply-sbbky, mot-rthy, vcalc
dism pyr, tr inoc, tr calcite





MUD WT: 9.2 VIS: 39 IN
MUD WT: 9.2 VIS: 39 OUT

MR: lt-m gy, gyblk, sbblky - sbply, smefts,
sl firm - modstf, sft-slmot, calc
CHK: lt-m gy, tan, occ dkg, sft-sl firm,
sbply-sbblky, mot-rthy, vcalc, tr bent w/
dism pyr, tr inoc, tr calcite

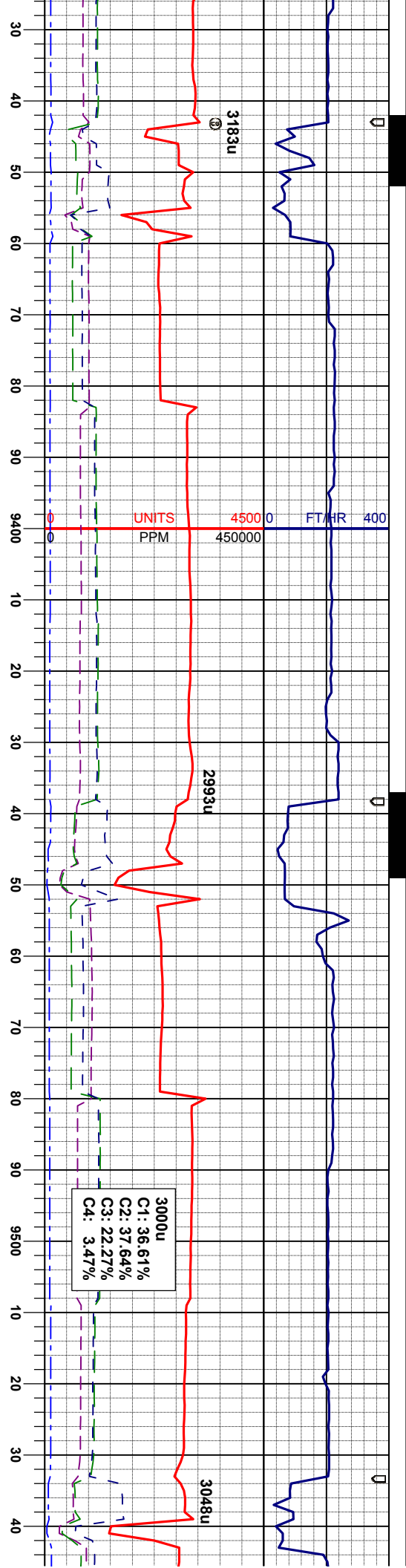
SURVEY
MD 9191'
INC 90.8°
AZI 269.5°
TVD 6720.23'

MUD WT:
MUD WT:

MR: lt-m gy, gyblk, sbblky - sbply, smefts,
sl firm - modstf, sft-slmot, calc
CHK: lt-m gy, tan, occ dkg, sft-sl firm,
sbply-sbblky, mot-rthy, vcalc, tr bent w/
dism pyr, tr inoc, tr calcite

SURVEY
MD 9286'
INC 88.5°
AZI 269.1°
TVD 6720.82'





9.3 VIS: 39 IN
9.2 VIS: 39 OUT

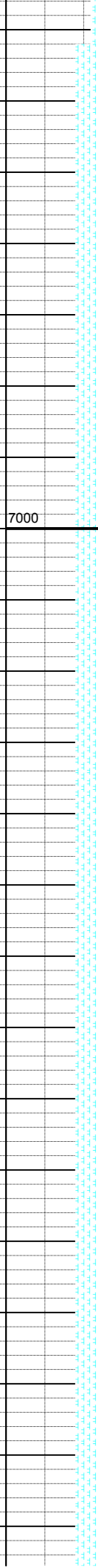
SURVEY
MD 9381'
INC 90.7°
AZI 269.1°
TVD 6721.48'

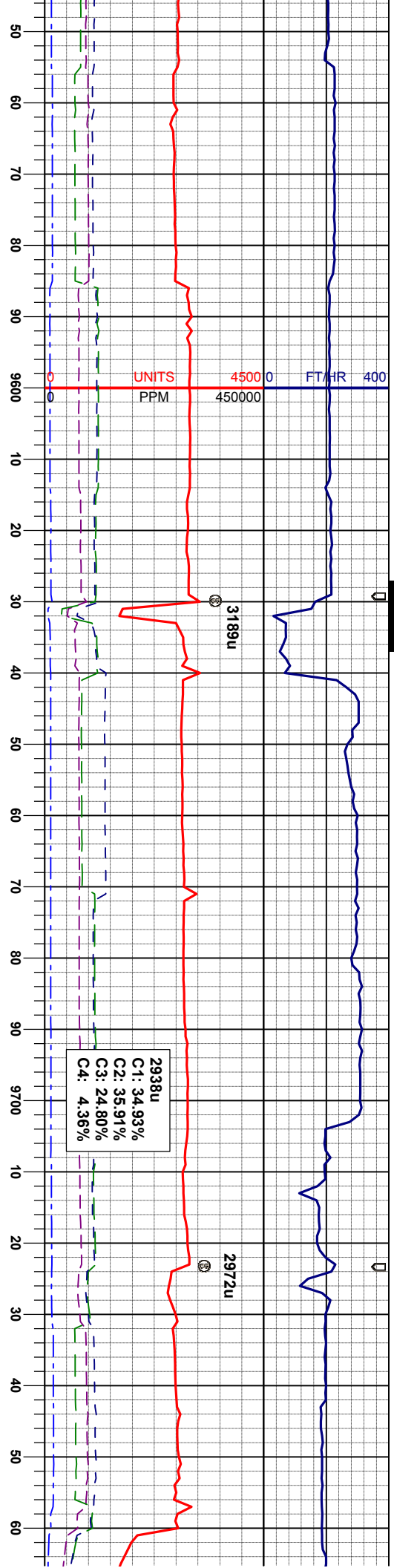
MRL: lt-m gy, gyblk, sbblky - sbply, smeefs,
sl firm - modstf, sft-slmot, calc
CHK: lt-m gy, tan, occ dkgy, sft-sl firm,
sbply-sbblky, mot-rthy, vcalc, tr bent w/
dism pyr, tr inoc, tr calcite

MUD WT: 10.3 VIS: 35 IN
MUD WT: 10.1 VIS: 36 OUT

MRL: lt-m gy, gyblk, sbblky - sbply, smeefs,
sl firm - modstf, sft-slmot, calc
CHK: lt-m gy, tan, occ dkgy, sft-sl firm,
sbply-sbblky, mot-rthy, vcalc, tr bent w/
dism pyr, tr inoc, tr calcite

SURVEY
MD 9476'
INC 87.5°
AZI 269.3°
TVD 6722.97'





2938u
C1: 34.93%
C2: 35.91%
C3: 24.80%
C4: 4.36%

MUD WT: 9.4 VIS: 36 IN
MUD WT: 9.3 VIS: 36 OUT

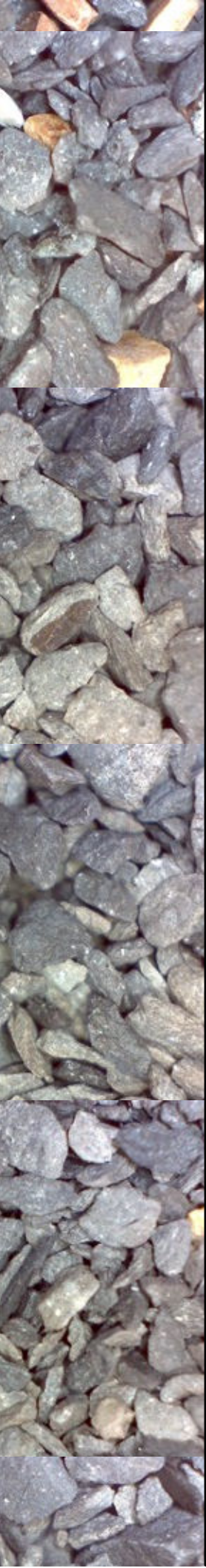
MRL: lt-m gy, gyblk, sbbky - sbply, smefis,
sl firm - modstf, sft-slmot, calc
CHK: lt-m gy, tan, occ dkgy, sft-sl firm,
sbply-sbbky, mot-rthy, vcalc, tr bent w/
dism pyr, tr inoc, tr calcite

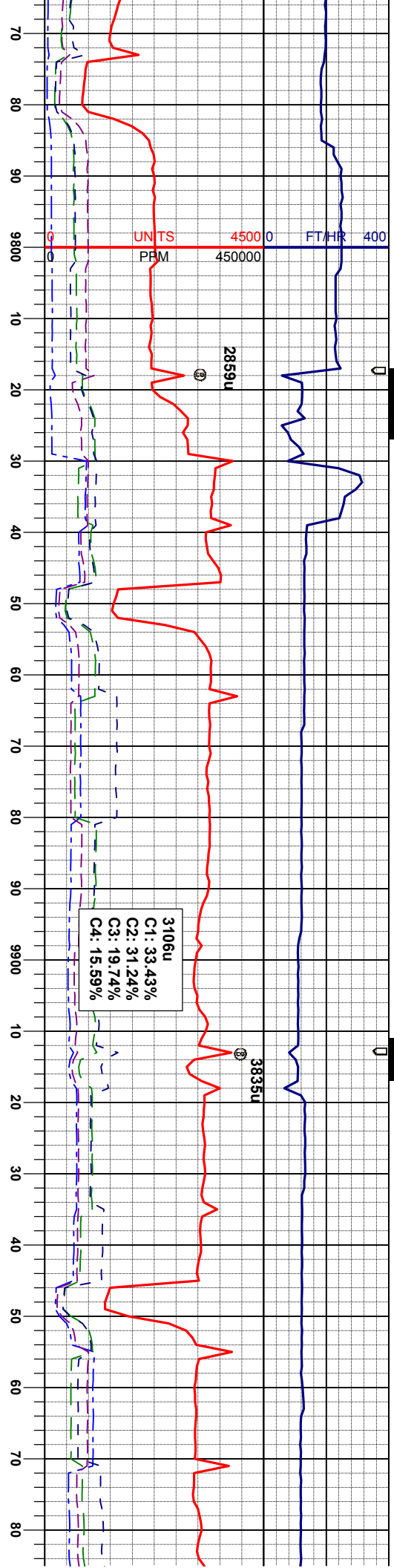
SURVEY
MD 9571'
INC 87.6°
AZI 269.8°
TVD 6727.03'

SURVEY
MD 9666'
INC 88.3°
AZI 270.5°
TVD 6730.43'

CHK: lt-m gy, tan, occ dkgy, sft-sl firm,
sbply-sbbky, mot-rthy, vcalc
MRL: lt-m gy, gyblk, sbbky - sbply, smefis,
sl firm - modstf, sft-slmot, calc, tr bent w/
dism pyr, tr inoc, tr calcite

SURVEY
MD 9761'
INC 88.3°
AZI 269.8°
TVD 6733.





MUD WT: 9.4 VIS: 36 IN
MUD WT: 9.4 VIS: 38 OUT

CHK: lt-m gy, tan, occ dkgy, sft-si firm,
sbply-sbbky, mot-rthy, vcalc
MRL: lt-m gy, gyblk, sbply - sbply, smefis,
si firm - modstf, slt-slmot, calc, tr bent w/
dism pyr, tr inoc, tr calcite

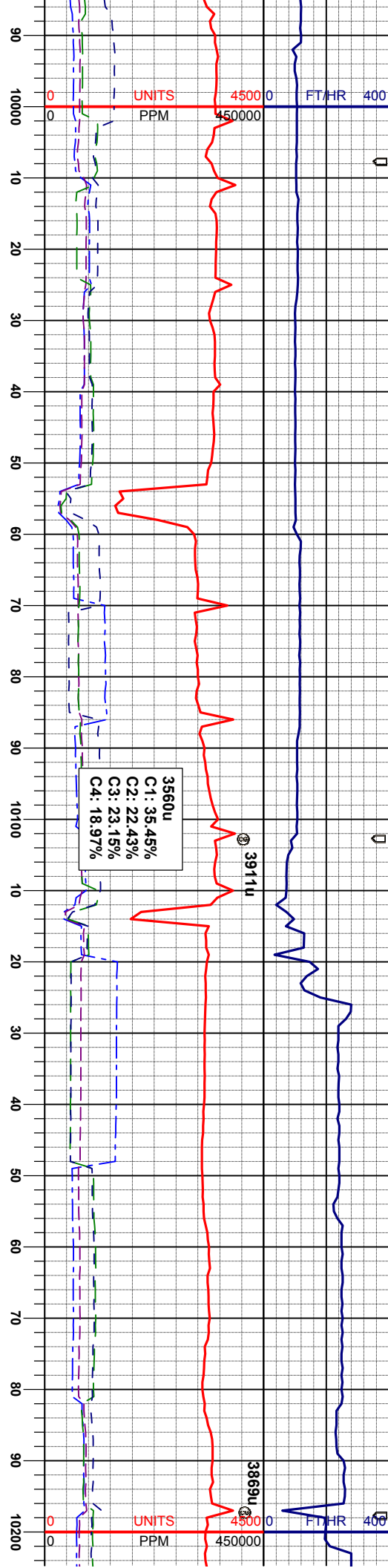
SURVEY
MD 9855'
INC 89.1°
AZI 270.5°
TVD 6735.38'

CHK: lt-m gy, tan, occ dkgy, sft-si firm,
sbply-sbbky, mot-rthy, vcalc
MRL: lt-m gy, gyblk, sbply - sbply, smefis,
si firm - modstf, slt-slmot, calc, tr bent w/
dism pyr, tr inoc, tr calcite

SURVEY
MD 9950'
INC 90.3°
AZI 271.4°
TVD 6735.88'

MRL: l
si firm
CHK: l
sbply-
calcite





MUD WT: 9.4 VIS: 36 IN
MUD WT: 9.3 VIS: 37 OUT

SURVEY
MD 10,045'
INC 90.7°
AZI 271.2°
TVD 6735.05'

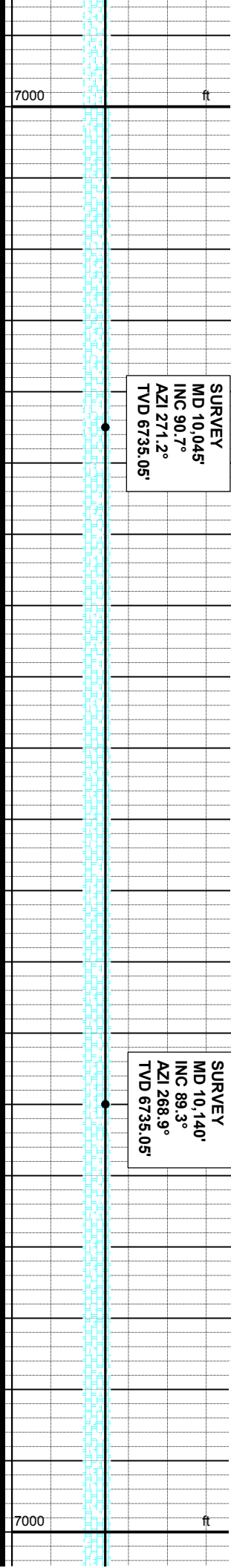
MUD WT: 9.4 VIS: 35 IN
MUD WT: 9.4 VIS: 36 OUT

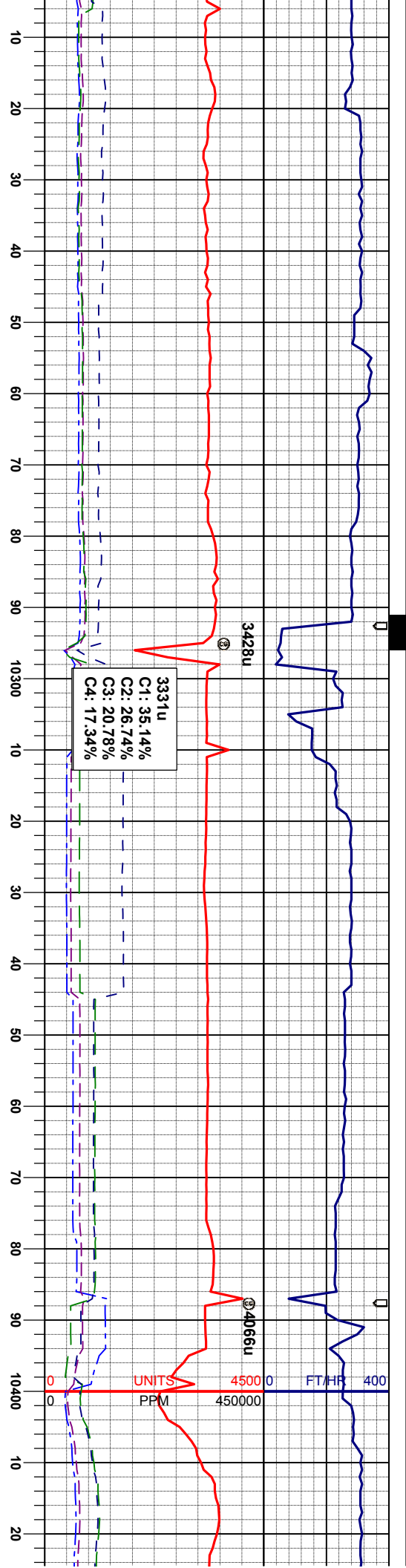
SURVEY
MD 10,140'
INC 89.3°
AZI 268.9°
TVD 6735.05'

lt-m gy, gyblk, sbblky - sbply, smeifs,
- modstf, slt-slmot, calc,
lt-m gy, tan, occ dky, sft-sl firm,
sbblky, mot-rthy, vcalc, tr inoc, tr

CHK: lt-m gy, tan, dkybrn, sft-sl firm,
sbply-sbblky, mot-rthy, vcalc,
MR: lt-m gy, gyblk, sbblky - sbply, smeifs,
sl firm - modstf, slt-slmot, calc, tr inoc, tr
calcite

CHK: lt-m gy, tan, dkybrn, s
sbply-sbblky, mot-rthy, vcalc
MR: lt-m gy, gyblk, sbblky -
sl firm - modstf, slt-slmot, cal
calcite





ft-si firm,
sbdly, smefts,
c, tr inoc, tr

CHK: lt-m gy, tan, dkgybrn, sft-si firm,
sbdly-sbdly, mot-rthy, vcalc,
MRL: lt-m gy, gyblk, sbdky - sbdky, smefts,
si firm - modst, sft-smot, calc, tr inoc

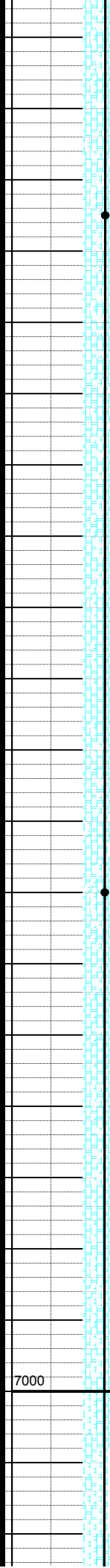
SURVEY
MD 10,235'
INC 89.8°
AZI 269.8°
TVD 6735.80'

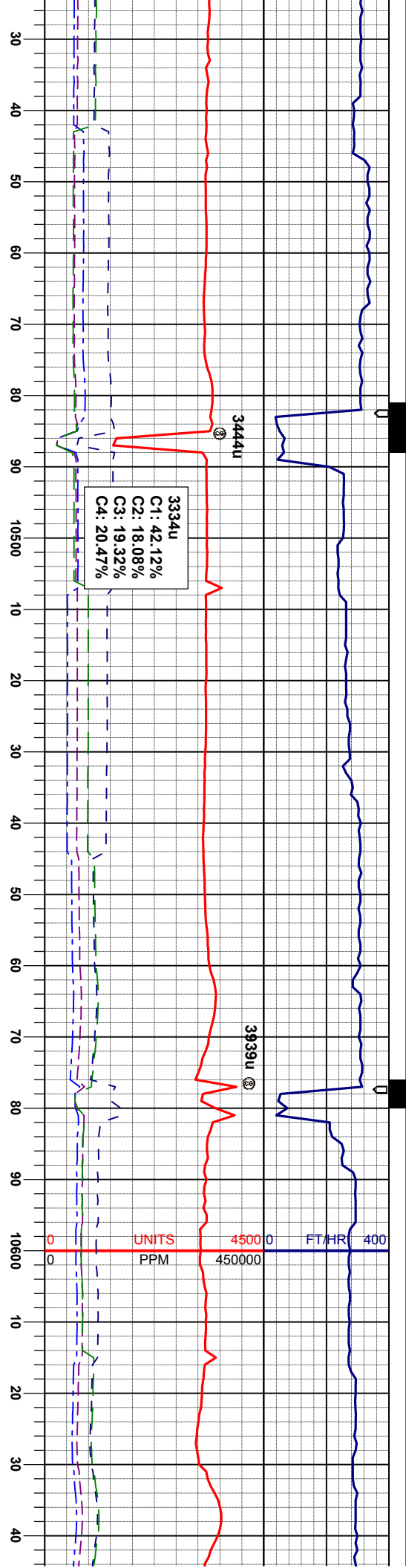
SURVEY
MD 10,330'
INC 88.5°
AZI 269.3°
TVD 6737.20'

MUD WT: 9.4 VIS: 35 IN
MUD WT: 9.4 VIS: 37 OUT

CHK: lt-m gy, tan, dkgybrn, sft-si firm,
sbdly-sbdly, mot-rthy, vcalc,
MRL: lt-m gy, gyblk, sbdky - sbdky, smefts,
si firm - modst, sft-smot, calc, tr inoc

SURVEY
MD 10
INC 90
AZI 26
TVD 6





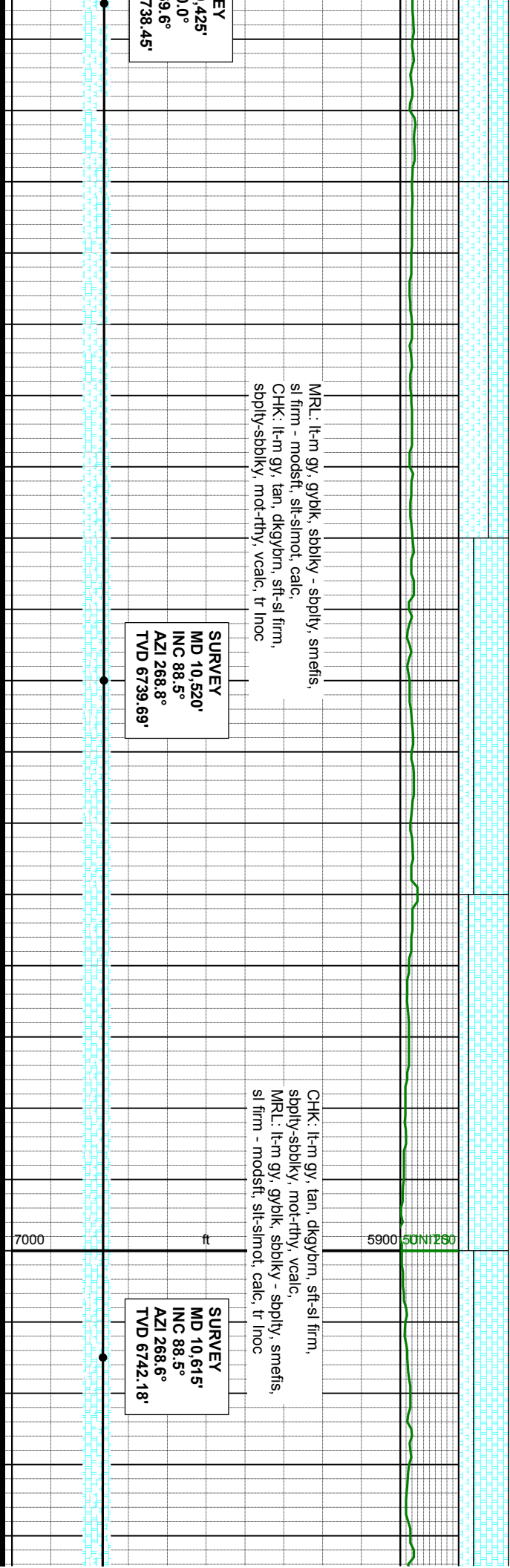
MRL: lt-m gy, gyblk, sbblky - sbply, smeifs,
sl firm - modstf, slt-slmot, calc,
CHK: lt-m gy, tan, dkgybrn, sft-sl firm,
sbply-sbblky, mot-rthy, vcalc, tr inoc

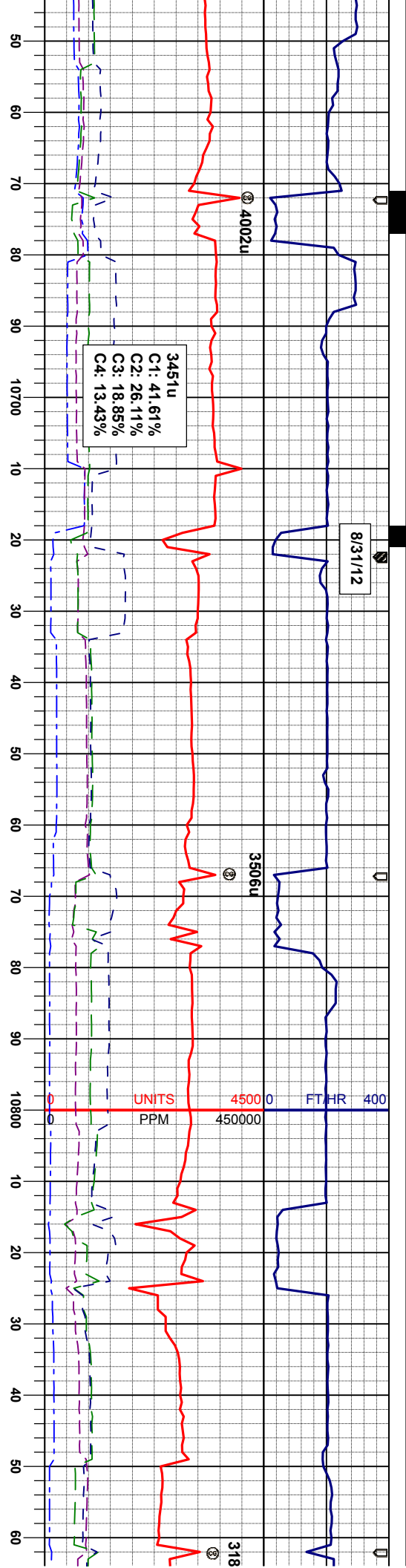
KEY
425'
0.0°
9.6°
738.45'

SURVEY
MD 10,520'
INC 88.5°
AZI 268.8°
TVD 6739.69'

CHK: lt-m gy, tan, dkgybrn, sft-sl firm,
sbply-sbblky, mot-rthy, vcalc,
MRL: lt-m gy, gyblk, sbblky - sbply, smeifs,
sl firm - modstf, slt-slmot, calc, tr inoc

SURVEY
MD 10,615'
INC 88.5°
AZI 268.6°
TVD 6742.18'





MUD WT: 9.4 VIS: 36 IN
MUD WT: 9.5 VIS: 38 OUT

CHK: lt-m gy, tan, dkgybrn, sft-sl firm,
sbply-sbdkly, mot-rthy, vcalc,
MRL: lt-m gy, gyblk, sbdkly - sbply, smefts,
sl firm - modstf, slt-slmot, calc, tr inoc

SURVEY
MD 10,710'
INC 88.3°
AZI 268.9°
TVD 6744.83'

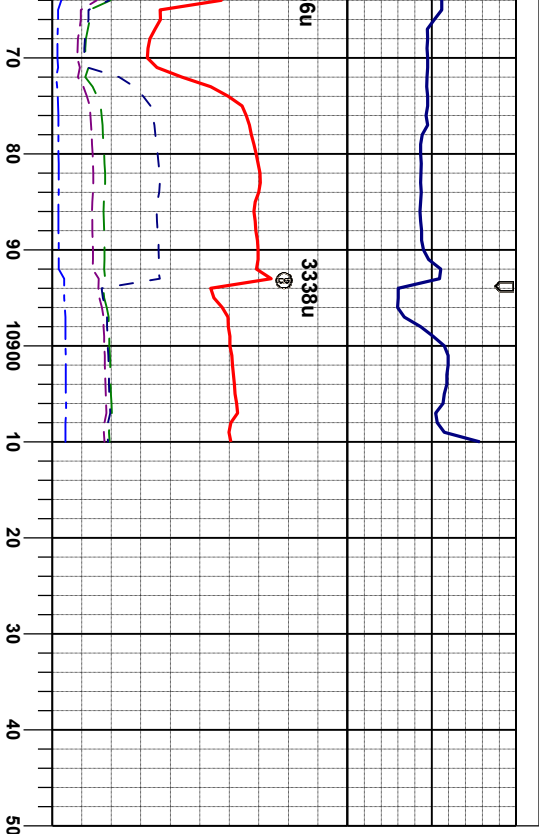
CHK: lt-m gy, tan, dkgybrn, sft-sl firm,
sbply-sbdkly, mot-rthy, vcalc,
MRL: lt-m gy, gyblk, sbdkly - sbply, smefts,
sl firm - modstf, slt-slmot, calc, tr bent w/
dism pyr, tr calcite

SURVEY
MD 10,805'
INC 87.7°
AZI 269.3°
TVD 6748.15'

SURVEY
MD 10,854'
INC 87.5°
AZI 270.5°
TVD 6750.20'

CHK
sbply
MRL
sl fir





MUD WT: 9.4 V/S: 37 IN
MUD WT: 9.5 V/S: 39 OUT

It-m gy, tan, dkybvm, sft-sl firm,
ly-sbblky, mot-rthy, vcalc,
It-m gy, gybklk, sbblky - sbply, smetis,
m - modstf, sft-slmot, calc, tr bent w/
pyr, tr calcite

TD REACHED 10,910' MD
@ 03:21 08/31/2012

THANK YOU FOR USING
COLUMBINE LOGGING INC.

