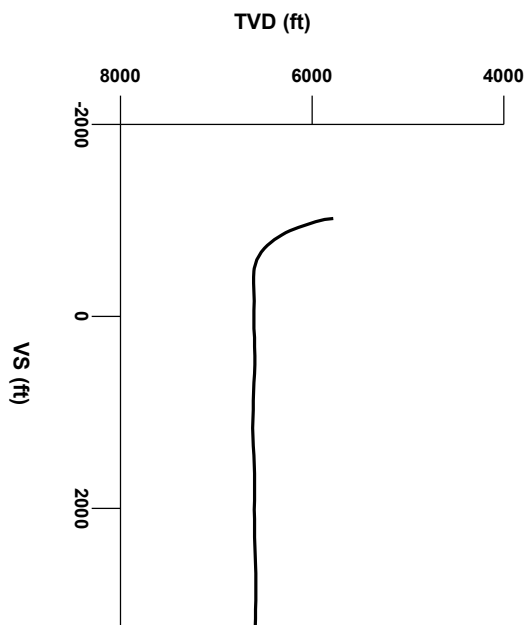


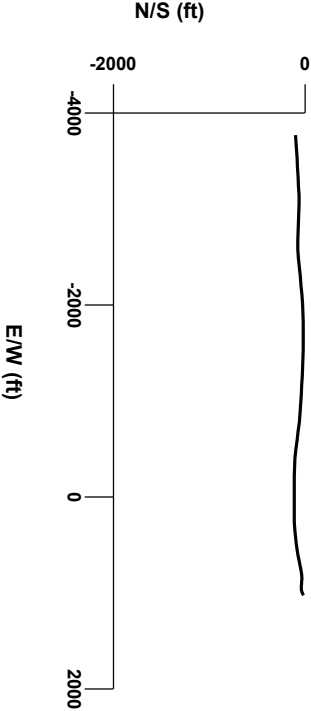
LOG created using LPLLOT VH Version 3.0, March 23, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: NOBLE ENERGY INC.
WELL: SLW RANCH B01-63-1HN
LOCATION: SESE SEC 1, T5N, R64W
COUNTY: WELD
STATE: COLORADO
SPOT: 1006' FSL, 1053' FEL
ELEVATION: GR 4,604' KB 4,634'
FIELD: WATTENBERG
SPUD DATE: 03/16/2013
TD DATE: 03/23/2013
DATES LOGGED: 03/17/2013 - 03/23/2013
DEPTHS LOGGED: 5877' MD - 11250' MD
LOGGERS: ANDREA ZUIDEMA, CHRIS VENTURINO
DRILLING FLUID: LSND
DRILLING RIG: H&P326
API: 05-123-36259
LOG TYPE: HORIZONTAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: WELLSITE GEOLOGICAL SERVICES
 PROVIDED BY COLUMBINE LOGGING INC.



Survey Elevation

Survey Plan



4000

Chalk

Marl

Silty Shale

ENGINEERING SYMBOLS

▲

Casing

▲

Casing

◻

Connection

⊗

Connection Gas

■

Midnight Depth

GAS

0 UNITS 4500

C1

0 PPM 450000

C2

0 PPM 450000

C3

0 PPM 450000

C4

0 PPM 450000

ROP

0 FT/HR 1000

BHA BIT:
SEC 8.75", FXD 55
Serial #: 12096104
Jets: 5x14

BEGAN DRILLING CURVE
@ 8:47 PM 03/18/2013

COLUMBINE LOGGING INC.
RIGGED UP ON 03/17/2013
MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT #0298
COLUMBINE BEGAN LOGGING
ON 03/17/2013

DEPTH (FEET)

5800 10 20 30 40 50 60 70 80 90 5900 10 20 30 40 50

TVD

8600 ft 5600

GAMMA RAY

30 API 200

93

MD 5923'
INC 4.3°
AZIM 193.1°
TVD 5778.15'

Acetone was used as the cutting agent with the dimple filled to the rim

The ratings are based on 7 descriptors: None, Slight trace, Trace, Fair, Moderate, Good, and Excellent. The descriptor used is based on the loggers observations and best judgment of brilliance, color and longevity of the cut.


SLTYSH: m gy - dk gy, mod sft - mod firm, sbblky - sbply, shly tex, noncalc, tr ss

SLTYSH: m gy - dk gy, mod sft - mod firm, sbblky - sbply, shly tex, noncalc, tr ss

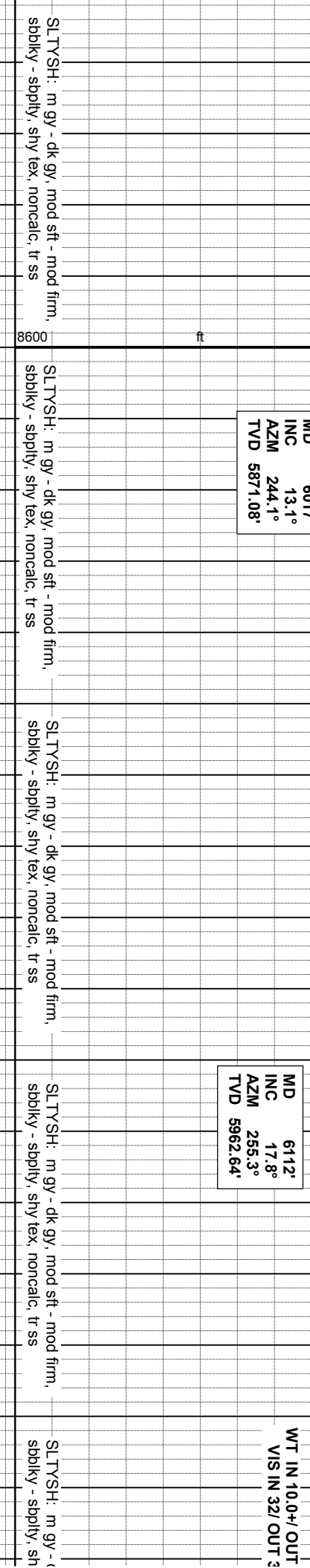
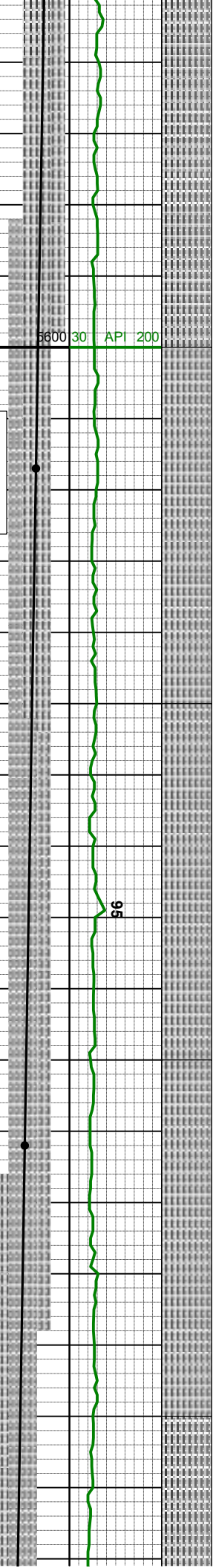
OIL SHOWS

TFG

CUTTINGS LITHOLOGY

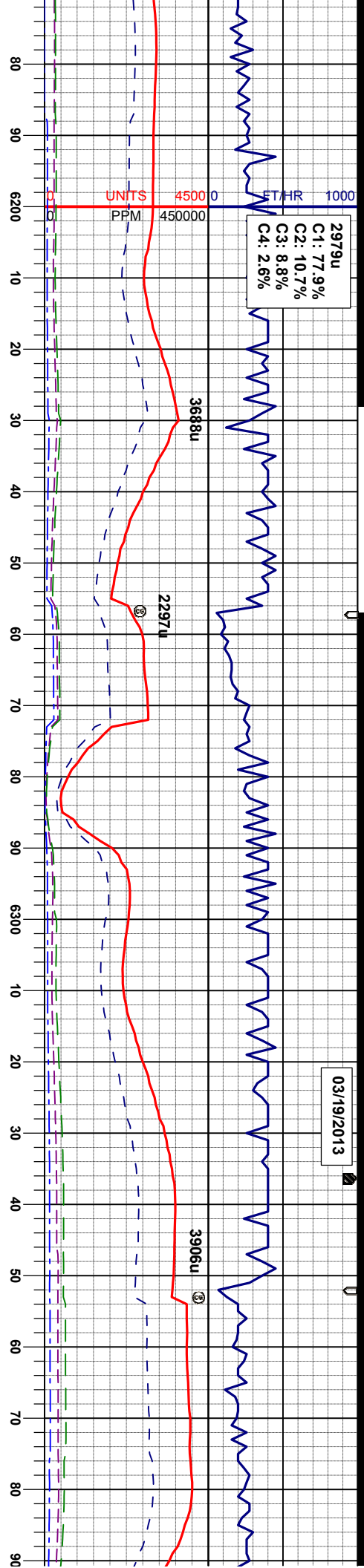


SAMPLE PHOTOS



03/19/2013

2979u
C1: 77.9%
C2: 10.7%
C3: 8.8%
C4: 2.6%



WT IN 10.3/OUT 1
VIS IN 32/OUT 3

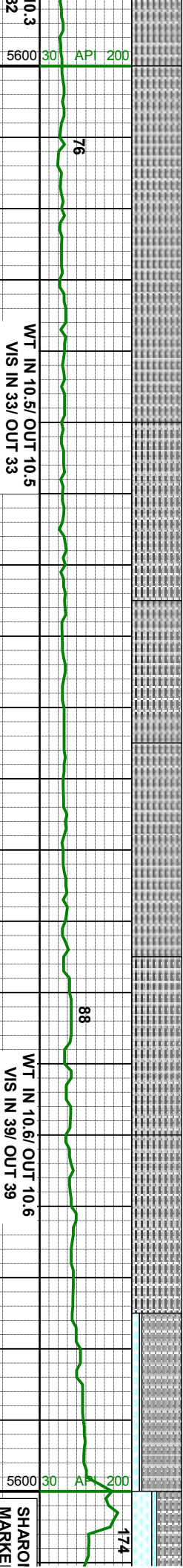
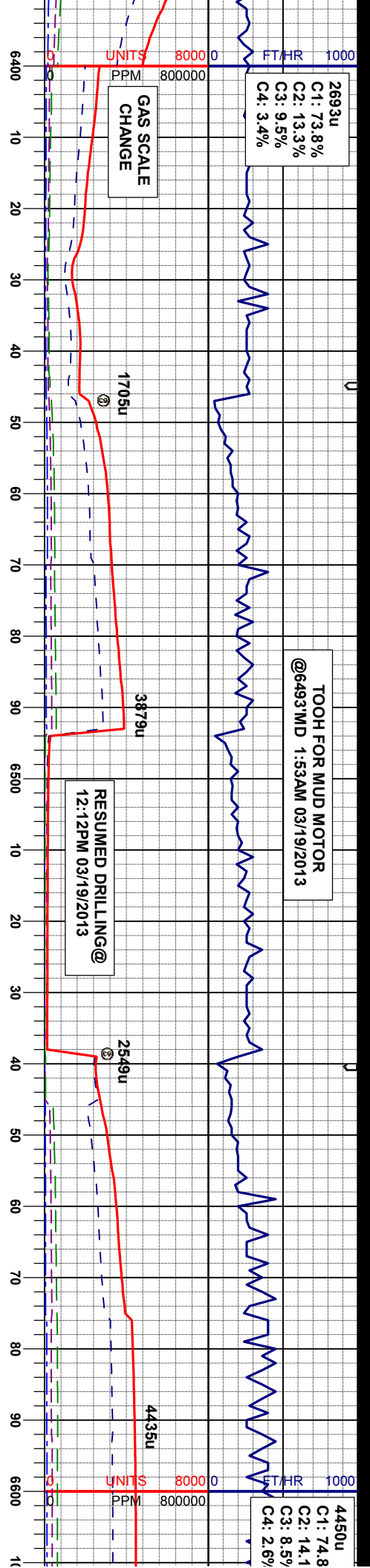
MD 6208'
INC 17.5°
AZM 263.1°
TVD 6054.13'

MD 6302'
INC 20.3°
AZM 270.8°
TVD 6143.07'

MI IN
IN IN
AZ IN
TV IN

SLT YSH: m gy - dk gy, mod sft - mod firm, sbbiky - sbply, shly tex, noncalc, tr ss
SLT YSH: m gy - dk gy, mod sft - mod firm, sbbiky - sbply, shly tex, noncalc, tr ss
SLT YSH: m gy - dk gy, mod sft - mod firm, sbbiky - sbply, shly tex, noncalc, tr ss
SLT YSH: m gy - dk gy, mod sft - mod firm, sbbiky - sbply, shly tex, noncalc, tr ss





D 6396'	INC 6444'	MD 6491'	MD 6585'
C 23.4°	INC 26.2°	INC 29.2°	INC 36.4°
M 277.6°	AZM 274.8°	AZM 272.4°	AZM 252.5°
D 6230.32'	TVD 6273.79'	TVD 6315.41'	TVD 6394.60'

firm,

SLTYSH: m gy - dk gy, mod sft - mod firm,
sblky - sblpy, shy tex, noncalc, tr ss

SLTYSH: m gy - dk gy, mod sft - mod firm,
sblky - sblpy, shy tex, noncalc, tr ss

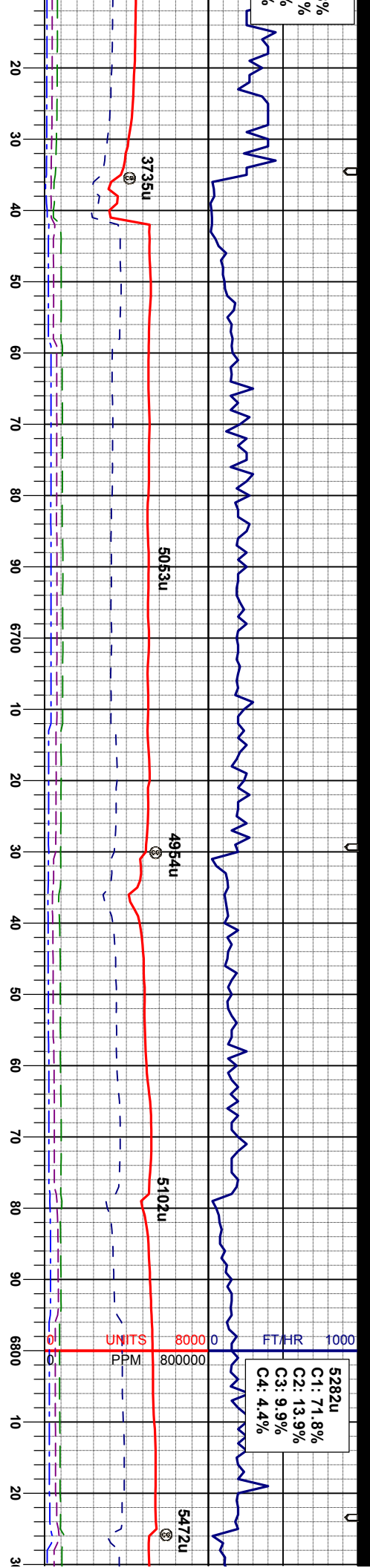
SLTYSH: m gy - dk gy, mod sft - mod firm,
sblky - sblpy, shy tex, noncalc, tr ss

SLTYSH: m gy - dk gy, mod sft - mod firm,
sblky - sblpy, occ, pty, shy tex, s/calc

SLTYSH: m gy - dk gy, mod sft - mod firm,
sblky - sblpy, occ, pty, shy tex, occ
bent, s/calc
MRL: mgy-gyblk, sblky-sblpy, smefls,
pty, sl firm, rthy-shy tex, v calc
CHK: lt-mgy, dkg, sme tan, sft-sl firm,
sblpy-sblky, mot-rthy, v calc

SLTYSH: m gy - dk gy, mod sft - mod firm,
sblky - sblpy, occ, pty, shy tex, occ
bent, s/calc
MRL: mgy-gyblk, sblky-sblpy, smefls,
pty, sl firm, rthy-shy tex, v calc
CHK: lt-mgy, dkg, sme tan, sft-sl firm,
sblpy-sblky, mot-rthy, v calc





N SPRINGS
R BED @
D/ 6407TVD

WT IN 10.6/ OUT 10.6
VIS IN 35/ OUT 35

NIO A CHALK @
6644TVD/ 6439TVD

NIO A MARL @
6672TVD/ 6461TVD

MD 6680'
INC 42.8°
AZM 258.3°
TVD 6467.59'

MD 6725'
INC 48.3°
AZM 257.3°
TVD 6499.10'

MD 6774'
INC 54.2°
AZM 258.3°
TVD 6529.75'

NIO B CHALK @
6789TVD/ 6537TVD

WT IN 10.6
VIS IN 39

H: m gy - dk gy, mod sft - mod firm,
sbply, occ, pty, shy tex, occ
alc
MRL: mgy-gyblk, sbblky-sbply, smeifs,
mod firm, rthy-shy tex, sl mot, v calc, tr fos
CHK: lt-mgy, dkgy, mod sft - mod firm,
sbply-sbblky, rthy tex, v calc

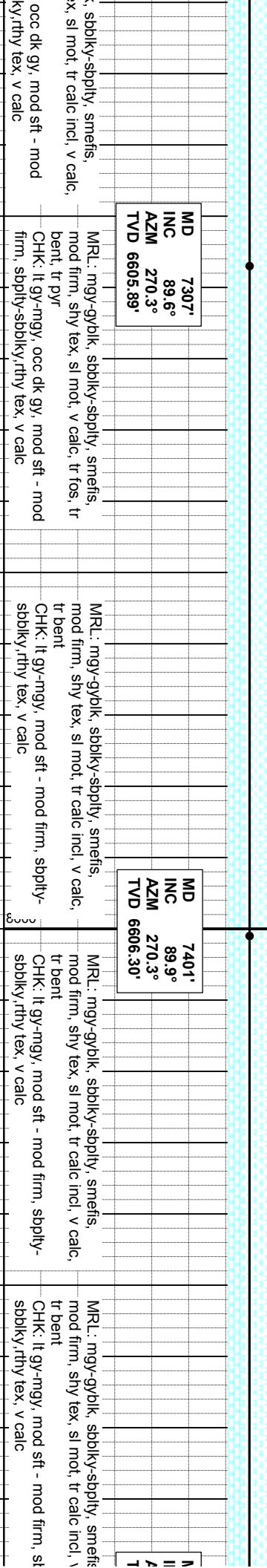
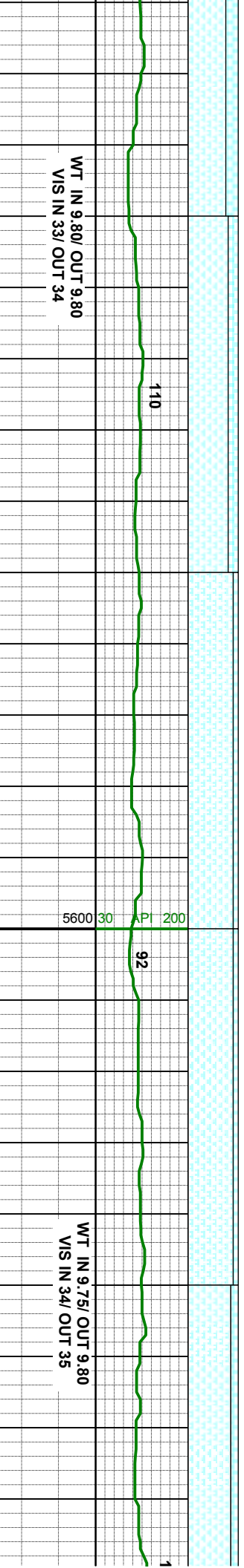
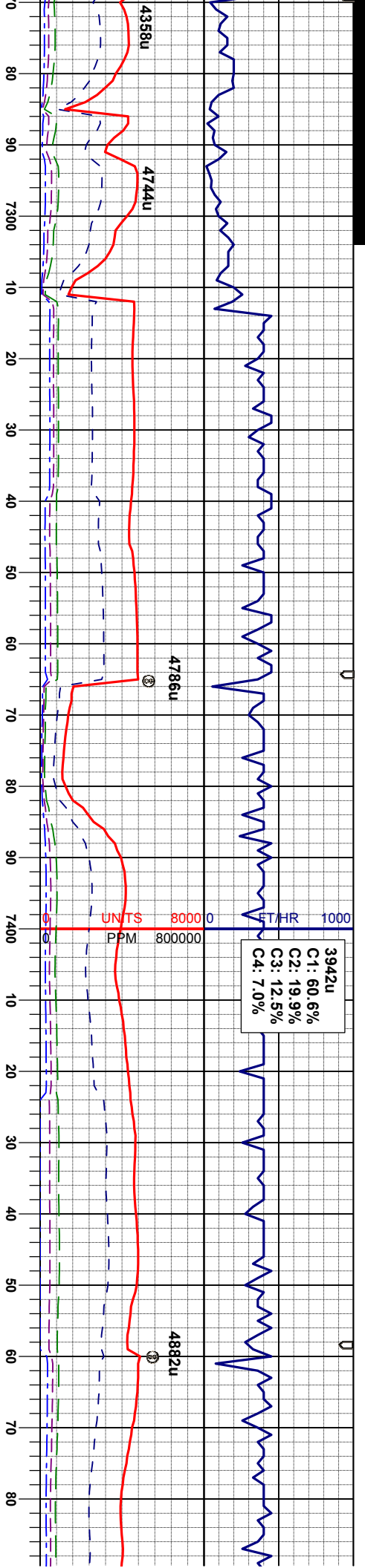
MRL: mgy-gyblk, sbblky-sbply, smeifs,
mod firm, rthy-shy tex, sl mot, v calc, tr fos
CHK: lt-mgy, dkgy, mod sft - mod firm,
sbply-sbblky, rthy tex, v calc

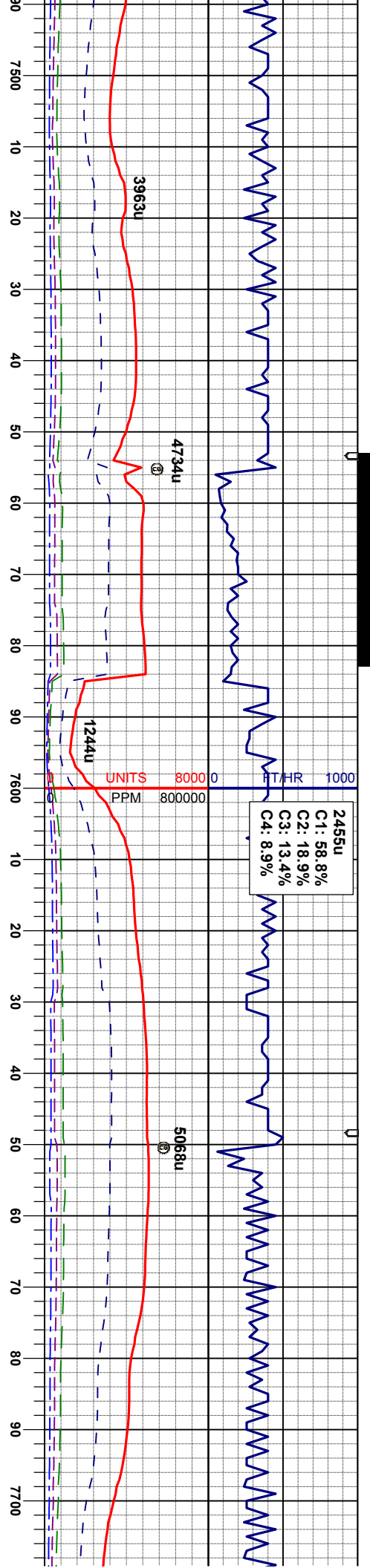
MRL: mgy-gyblk, sbblky-sbply, smeifs,
mod firm, rthy-shy tex, sl mot, v calc, tr fos
CHK: lt-mgy, dkgy, mod sft - mod firm,
sbply-sbblky, rthy tex, v calc

MRL: mgy-gyblk, sbblky-sbply, smeifs,
mod firm, shy tex, sl mot, v calc, tr fos, tr
bent
CHK: lt-mgy, mod sft - mod firm, sbply-
sbblky, rthy tex, v calc

MRL: mgy-gyblk, sbblky-s
mod firm, shy tex, sl mot,
bent
CHK: lt-mgy, mod sft - mc
sbblky, rthy tex, v calc







WT IN 9.60/ OUT 9.75
VIS IN 33/ OUT 33

MD 7496'
INC 88.8°
AZM 269.6°
TVD 6607.38'

MR.L: mgy-gyblk, sbblky-sbply, smefis,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr pyr
CHK: lt gy-mgy, mod sft - mod firm, sbply-
sbblky, rthy tex, v calc

MD 7591'
INC 92.4°
AZM 270.8°
TVD 6606.38'

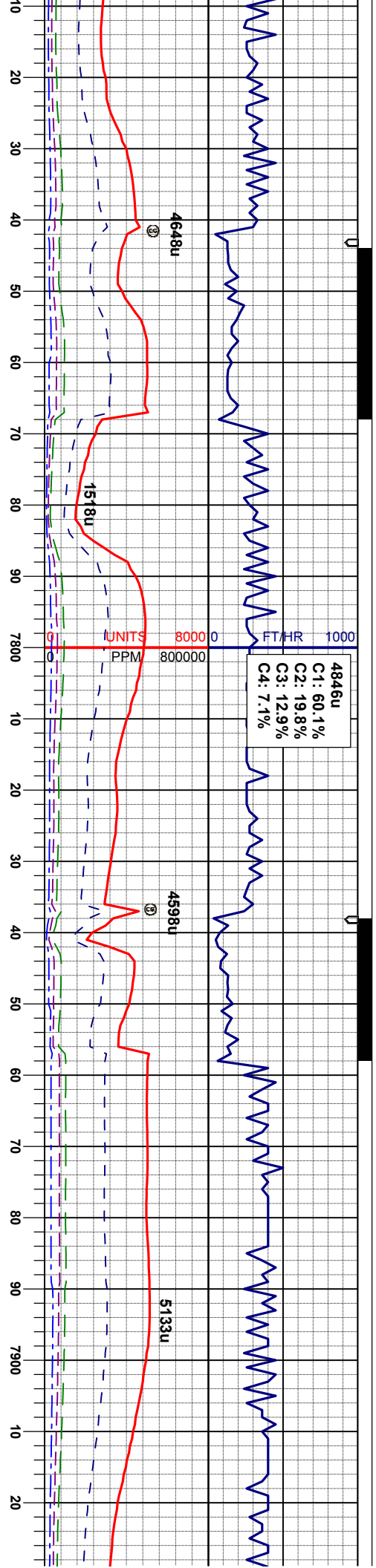
MR.L: mgy-gyblk, sbblky-sbply, smefis,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr pyr
CHK: lt gy-mgy, mod sft - mod firm, sbply-
sbblky, rthy tex, v calc

MD 7686'
INC 92.1°
AZM 270.3°
TVD 6602.65

MR.L: mgy-gyblk, sbblky-sbply, smefis,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr pyr
CHK: lt gy-mgy, mod sft - mod firm, sbply-
sbblky, rthy tex, v calc

MR.L: mgy-gyblk, sbblky-sbply, smefis,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr pyr
CHK: lt gy-mgy, mod sft - mod firm, sbply-
sbblky, rthy tex, v calc





4846u
C1: 60.1%
C2: 19.8%
C3: 12.9%
C4: 7.1%

WT IN 9.5/ OUT 9.6
VIS IN 34/ OUT 33

MD 7781'
INC 91.5°
AZM 272.4°
TVD 6599.67'

WT IN 9.50/ OUT 9.50
VIS IN 35/ OUT 33

MD 7876'
INC 90.5°
AZM 273.6°
TVD 6598.01'

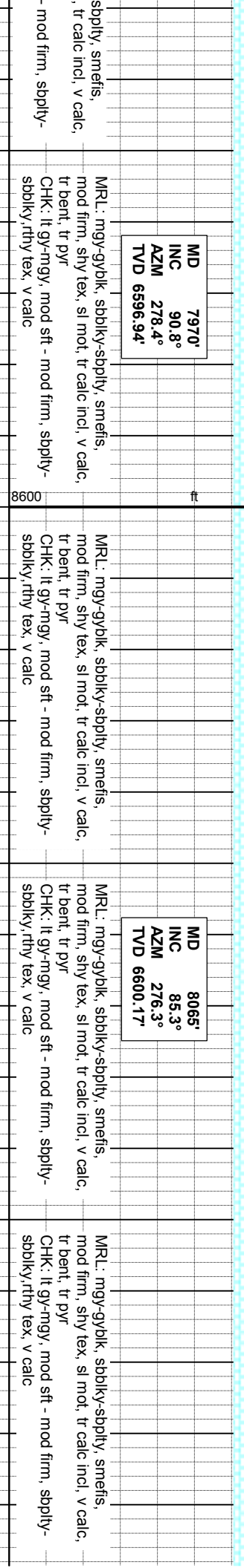
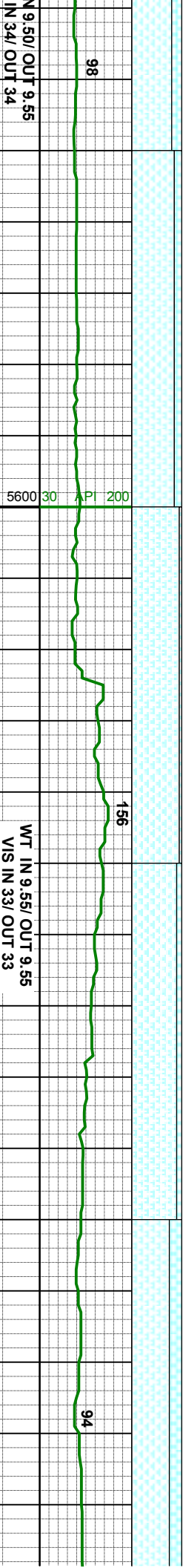
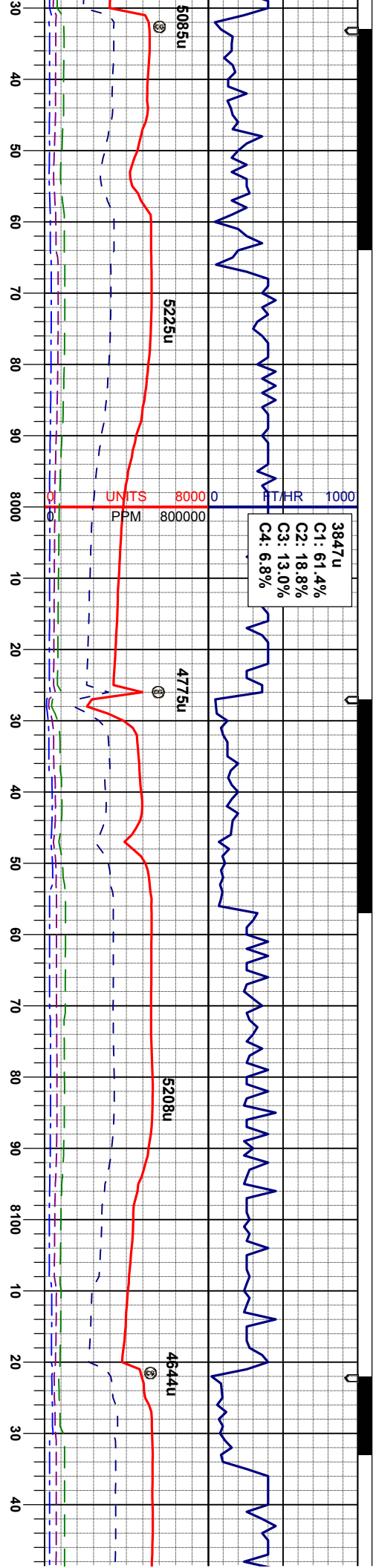
WT II
VIS

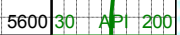
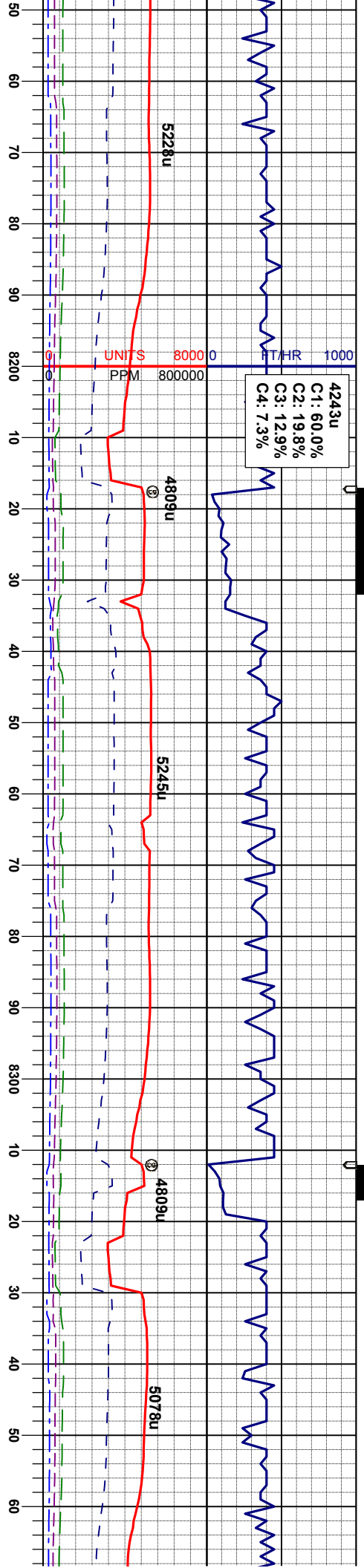
MR: mgy-gyblk, sbblky-sbply, smeifs, mod firm, shy tex, sl mot, tr calc incl, v calc, tr bent
CHK: lt gy-mgy, mod sft - mod firm, sbply-sbblky, rthy tex, v calc

MR: mgy-gyblk, sbblky-sbply, smeifs, mod firm, shy tex, sl mot, tr calc incl, v calc, tr bent
CHK: lt gy-mgy, mod sft - mod firm, sbply-sbblky, rthy tex, v calc

MR: mgy-gyblk, sbblky-sbply, smeifs, mod firm, shy tex, sl mot, tr calc incl, v calc, tr bent
CHK: lt gy-mgy, mod sft - mod firm, sbply-sbblky, rthy tex, v calc







WT IN 9.6/ OUT 9.6
VIS IN 35/ OUT 35

111

121

WT IN 9.6/ OUT 9.6
VIS IN 33/ OUT 33

MD	8160'
INC	86.7°
AZM	276.8°
TVD	6606.80'

MRJ: mgy-gyblk, sbbky-sbpty, smefis,
 -mod firm, sny tex, sl mot, tr calc incl, v calc,
 tr bent, tr pyr
 -CHK: It gy-mgy, mod sft - mod firm, sbpty-
 sbbky, rthy tex, v calc

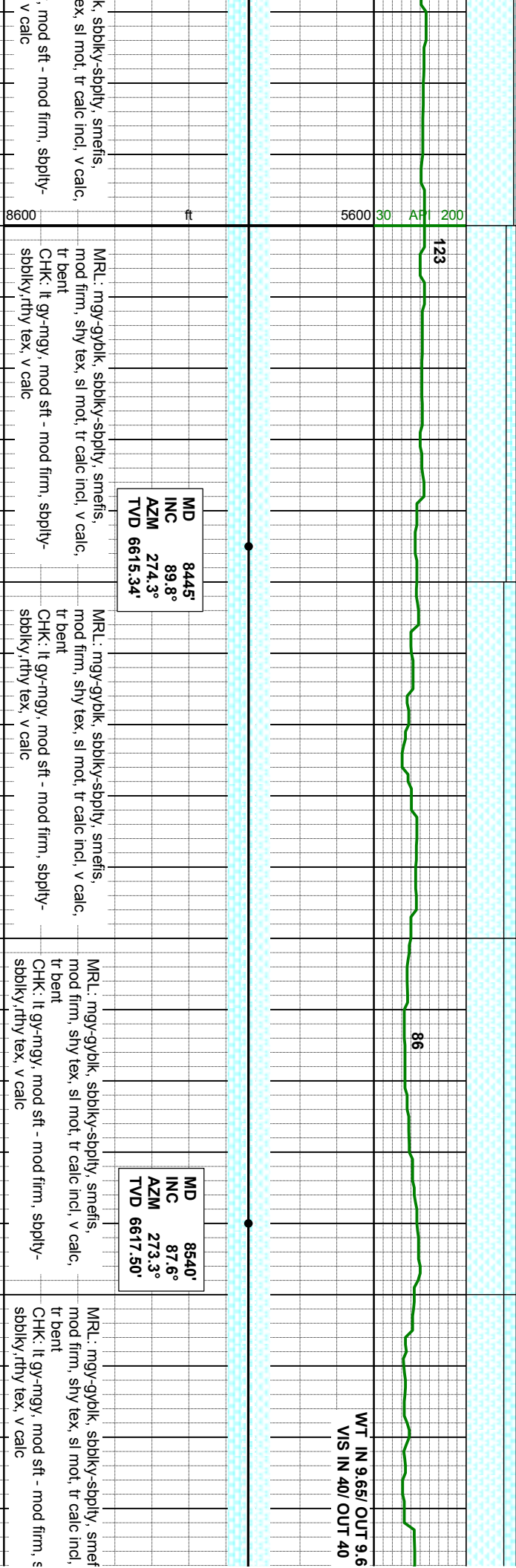
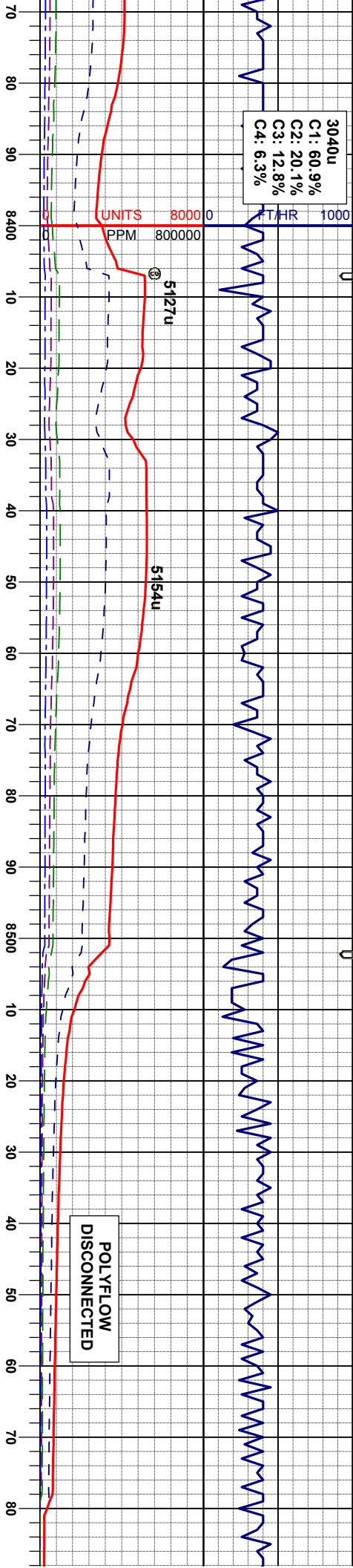
MD	8255'
INC	89°
AZM	277.6°
TVD	6610.37'

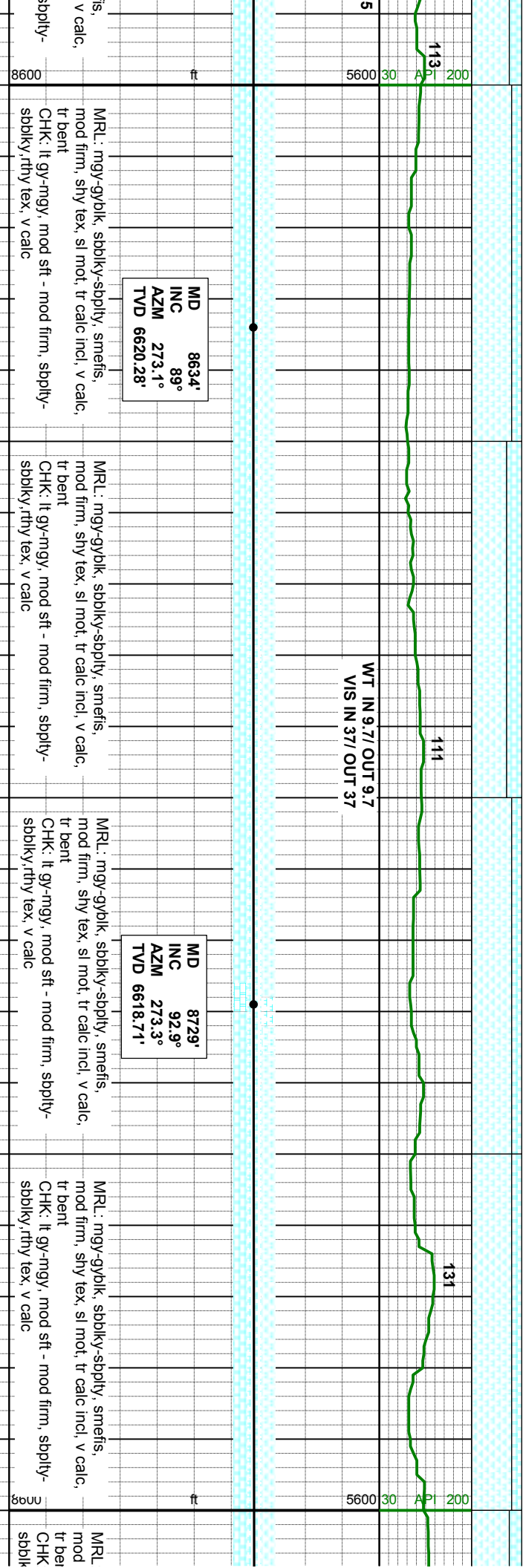
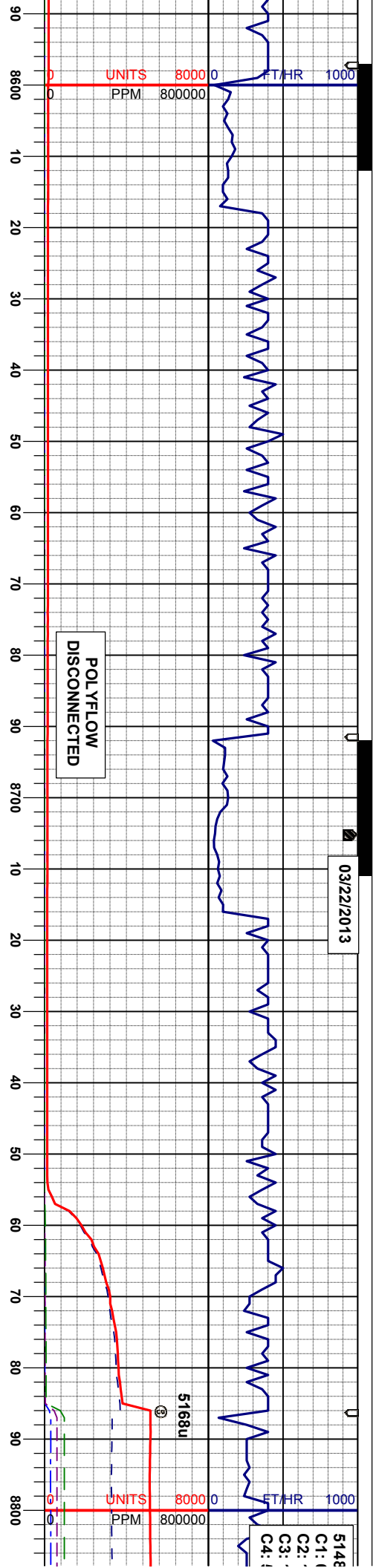
MRL: mgy-gyolk, sbolkly-sbply, smefis, mod firm, shy tex, sl mot, tr calc incl, v calc, tr bent, tr pyr	CHK: it gy-mgy, mod sft - mod firm, sbply-sbolkly, rthy tex, v calc
MRL: mgy-gyolk, sbolkly-sbply, smefis, mod firm, shy tex, sl mot, tr calc incl, v calc, tr bent, tr pyr	CHK: it gy-mgy, mod sft - mod firm, sbply-sbolkly, rthy tex, v calc

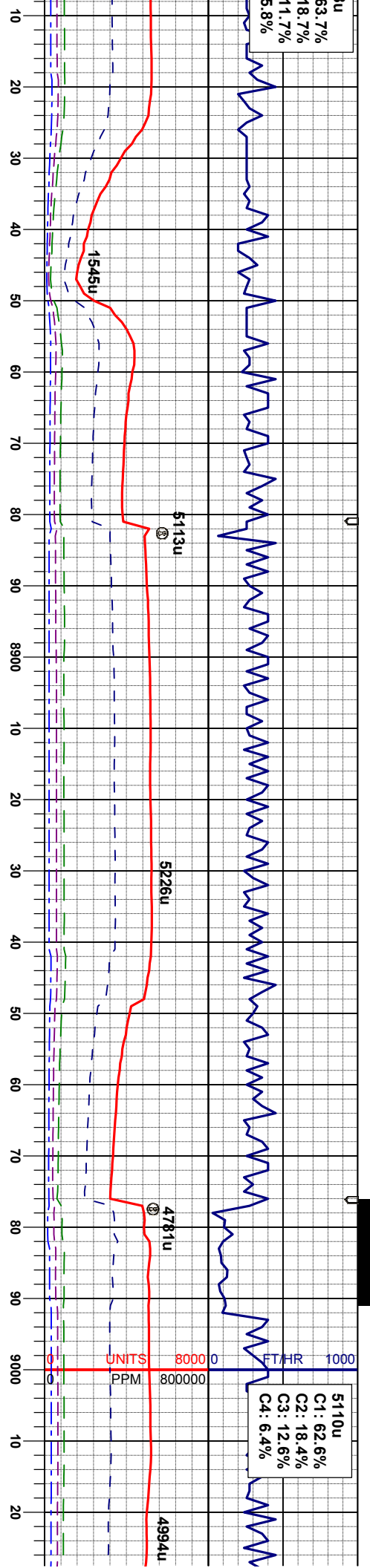
MD	8350'
INC	87.6°
AZM	271.9°
TVD	6613.19'

MRL: mgy-gyolk, sbdkly-spbly, smeefs, mod firm, shy tex, sl mot, tr calc incl, v calc, tr bent	MRL: mgy-gybl mod firm, shy t tr bent
CHK: lt-gy-mgy, mod stf - mod firm, sbply- sbdkly, rthy tex, v calc	CHK: lt-gy-mgy sbdkly, rthy tex,









WT IN 9.6/ OUT 9.6
VIS IN 35/ OUT 35

MD 8824'
INC 92.7°
AZM 272.4°
TVD 6614.07'

MRL: mgy-gyblk, sbblky-sbply, smefis,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent
CHK: lt gy-mgy, mod sft - mod firm, sbply-
sbblky,rthy tex, v calc

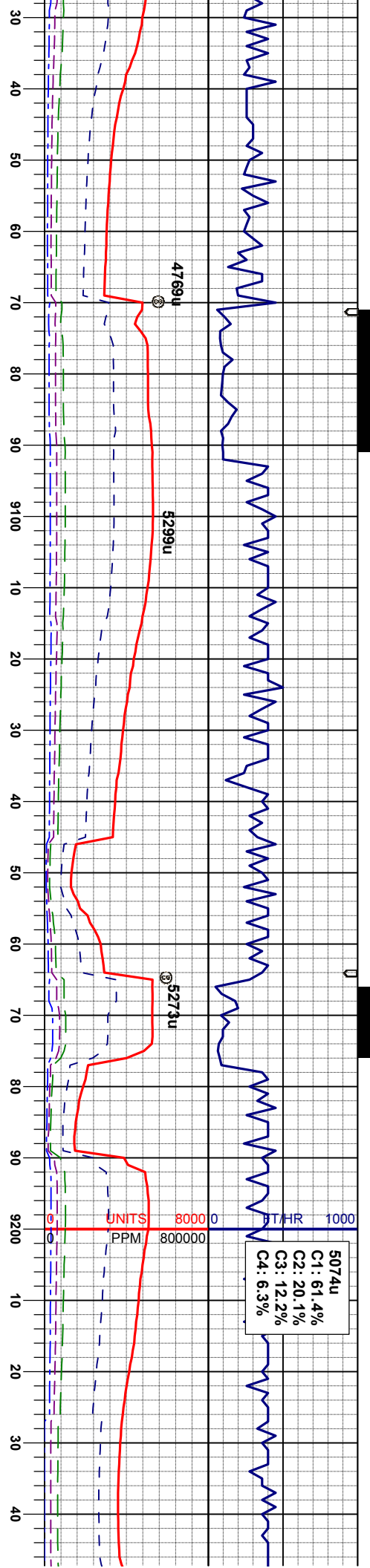
MD 8919'
INC 93.1°
AZM 271.7°
TVD 6609.26'

MRL: mgy-gyblk, sbblky-sbply, smefis,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent
CHK: mgy, mod sft - mod firm, sbply-
sbblky,rthy tex, v calc

MD 9014'
INC 92.5°
AZM 271.1°
TVD 6604.62'

MRL: mgy-gyblk, sbblky-sbply, smefis,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent
CHK: mgy, mod sft - mod firm, sbply-
sbblky,rthy tex, v calc





WT IN 9.45/ OUT 9.45
VIS IN 34/ OUT 34

MD 9109'
INC 90.8°
AZIM 269.9°
TVD 6601.10'

MRL: mgy-gy/bk, sbdky-sbpity, smeifs,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr dismpyr

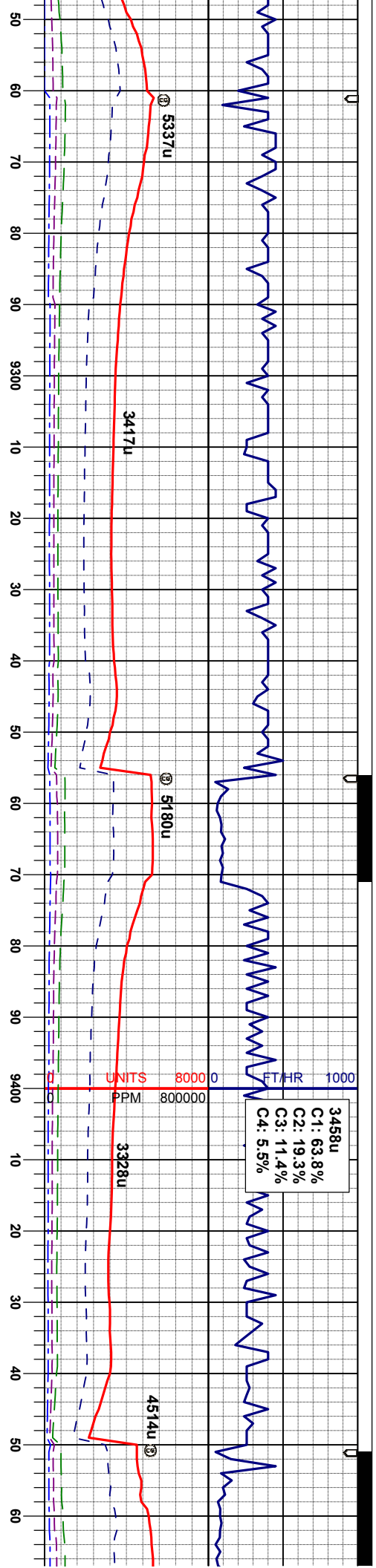
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mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr dismpyr

MRL: mgy-gy/bk, sbdky-sbpity, smeifs,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr dismpyr

MD 9204'
INC 89.9°
AZIM 269.4°
TVD 6601.31'

MRL: mgy-gy/bk, sbdky-sbpity, smeifs,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr dismpyr

WT IN 9.50/ OUT 9
VIS IN 34/ OUT 34



3458u
C1: 63.8%
C2: 19.3%
C3: 11.4%
C4: 5.5%

WT IN 9.45/ OUT 9.45
VIS IN 35/ OUT 35

WT IN 9.50/
VIS IN 34/

MD 9299'
INC 90.5°
AZM 269.9°
TVD 6600.98'

MD 9394'
INC 88.7°
AZM 267.6°
TVD 6601.64'

MR: mgy-gy/bk, sbdky-sbply, smeifs,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr dismpyr

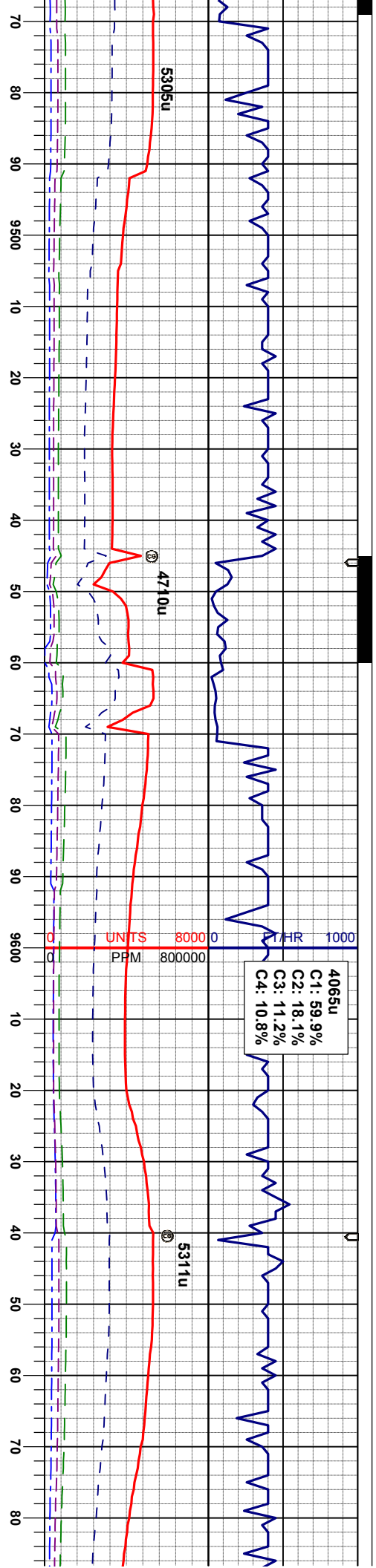
MR: mgy-gy/bk, sbdky-sbply, smeifs,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr dismpyr

MR: mgy-gy/bk, sbdky-sbply, smeifs,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr dismpyr

MR: mgy-gy/bk, sbdky-sbply, smeifs,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr dismpyr

MR: mgy-gy/bk, sbdky-sbply, smeifs,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr dismpyr





OUT 9.50
OUT 34

WT IN 9.60/ OUT 9.60
VIS IN 36/ OUT 34

MD 9488'
INC 89.5°
AZM 266.4°
TVD 6603.12'

MD 9583'
INC 91.0°
AZM 265.7°
TVD 6602.71'

MD 9678'
INC 90.5°
AZM 265.2°
TVD 6601.46'

gyblk, sbblky-sbply, smeifs,
shy tex, sl mot, tr calc incl, v calc,
s frag, tr dismpyr

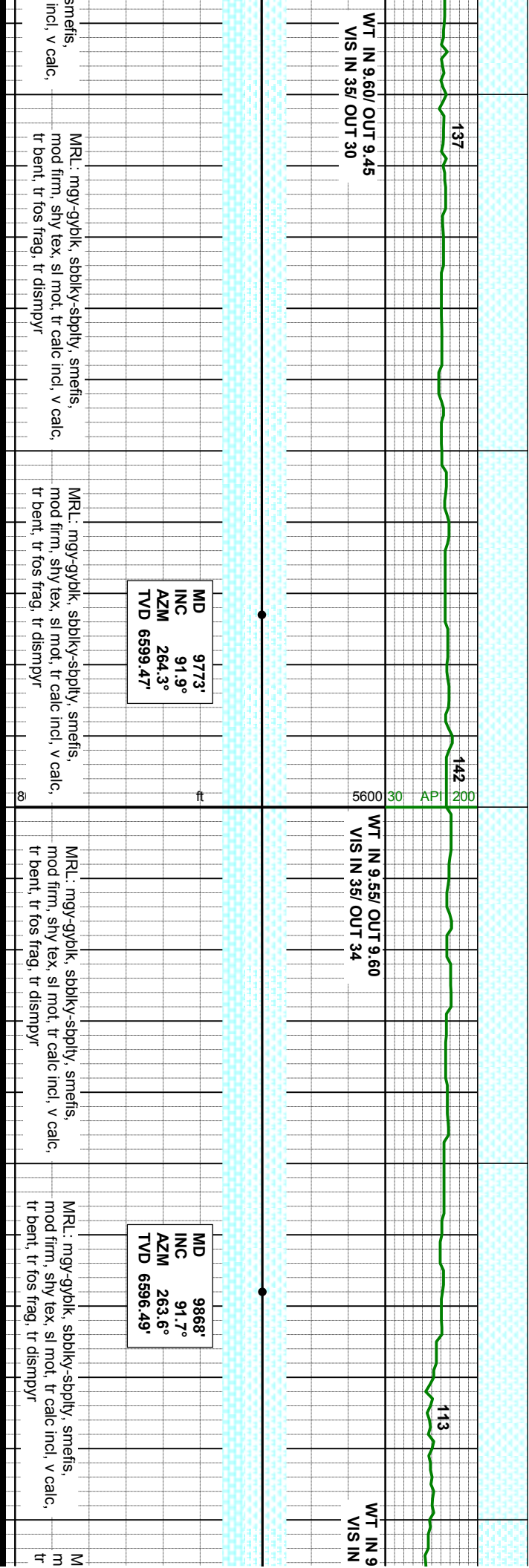
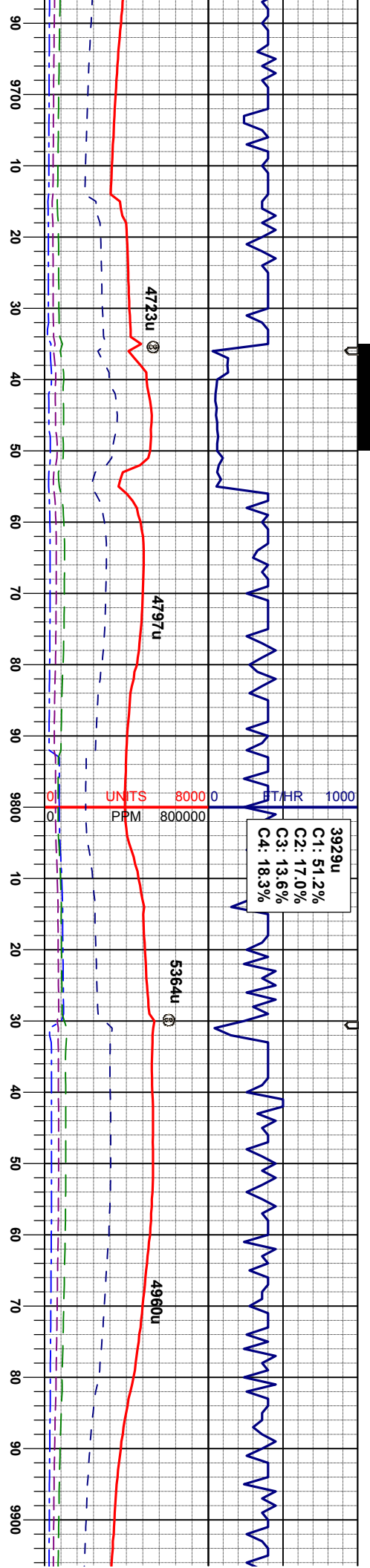
MRL: mgy-gyblk, sbblky-sbply, smeifs,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr dismpyr

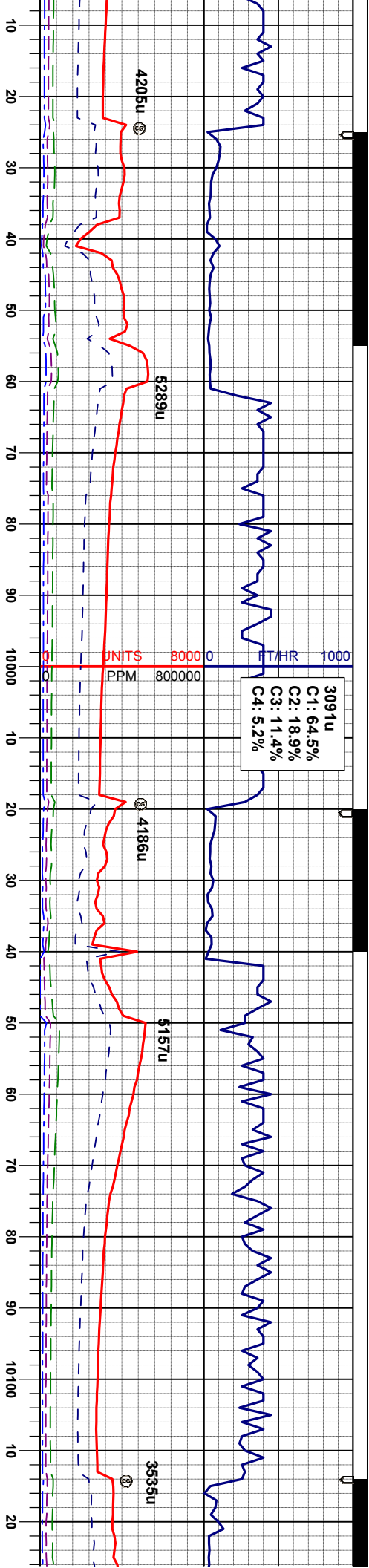
MRL: mgy-gyblk, sbblky-sbply, smeifs,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr dismpyr

MRL: mgy-gyblk, sbblky-sbply, smeifs,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr dismpyr

MRL: mgy-gyolk, sbblky-sbply, s,
mod firm, shy tex, sl mot, tr calc
tr bent, tr fos frag, tr dismpyr







60/ OUT 9.60
34/ OUT 32

WT IN 9.60/ OUT 9.60
VIS IN 38/ OUT 34

5600 30 API 200

WT IN 9.55/ OUT 9.60
VIS IN 35/ OUT 33

MD 9963'
INC 92.2°
AZM 265.4°
TVD 6593.26'

MD 10057'
INC 92.3°
AZM 267.1°
TVD 6589.56'

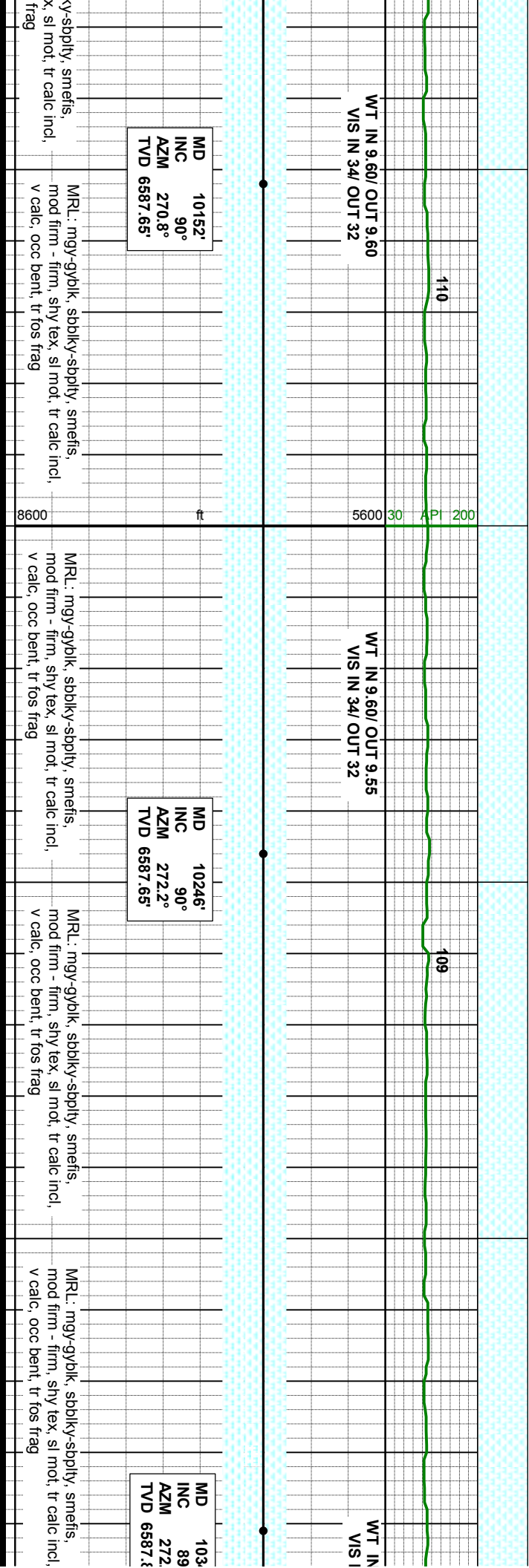
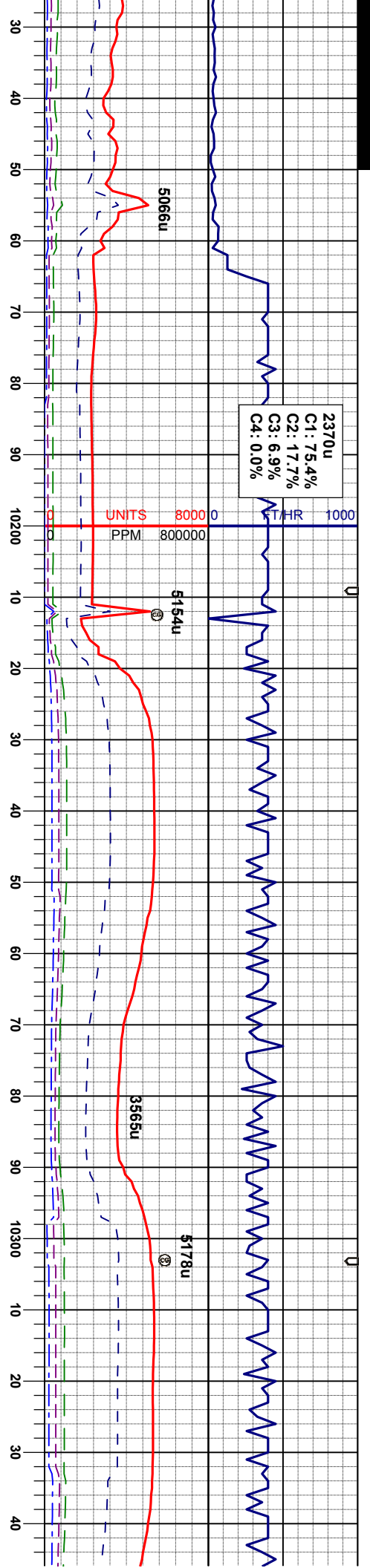
MR: .mgy-gyblk, sbblky-sbply, smefls,
od firm, shy tex, sl mot, tr calc incl, v calc,
bent, tr fos frag, tr dismpyr

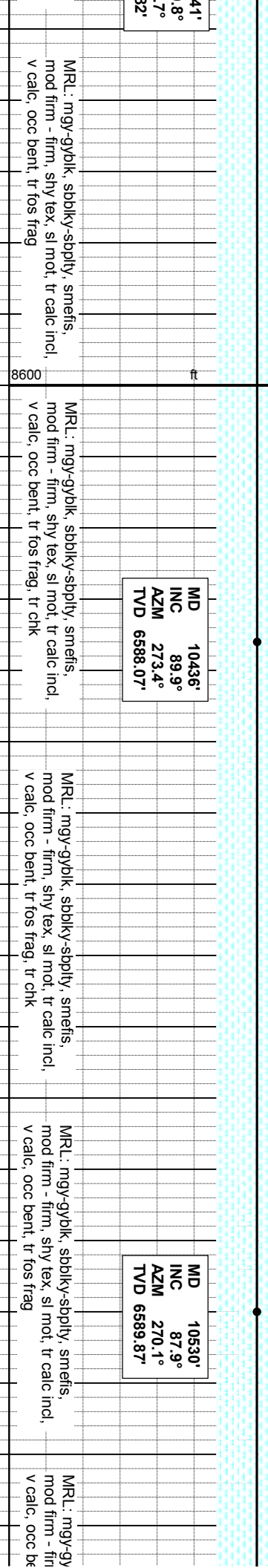
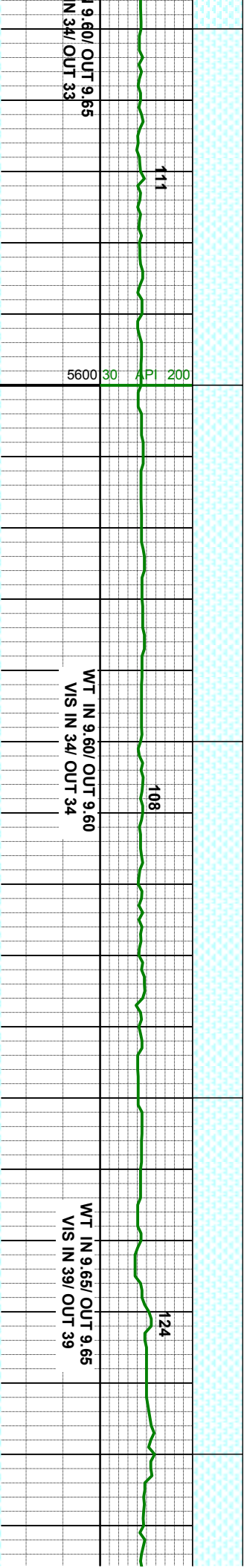
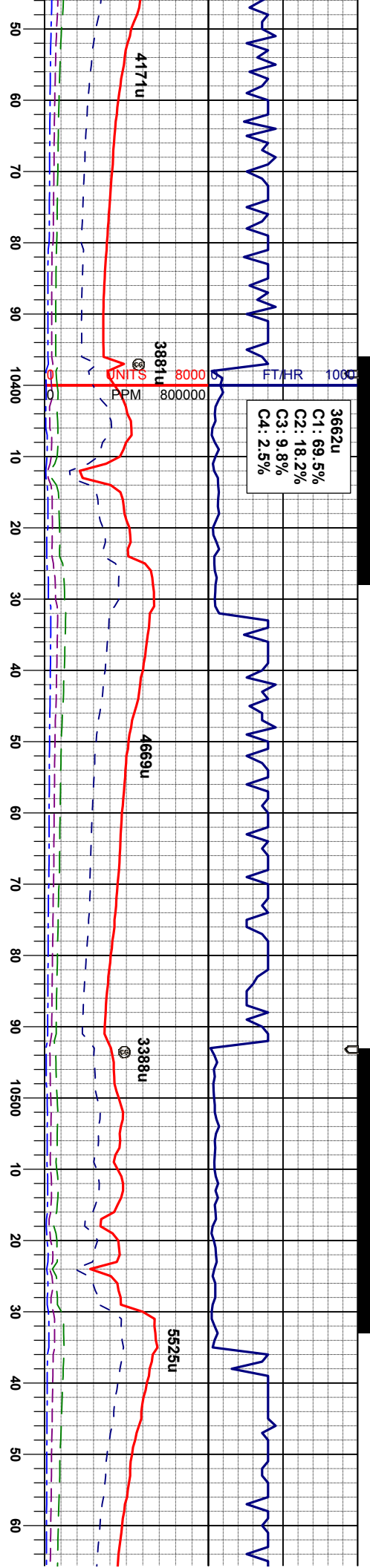
MR: .mgy-gyblk, sbblky-sbply, smefls,
mod firm, shy tex, sl mot, tr calc incl, v calc,
tr bent, tr fos frag, tr chk

MR: .mgy-gyblk, sbblky-sbply, smefls,
mod firm, shy tex, sl mot, tr calc incl, v calc,
occ bent, tr fos frag, occ chk

MR: .mgy-gyblk, sbblky-sbply, smefls,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag

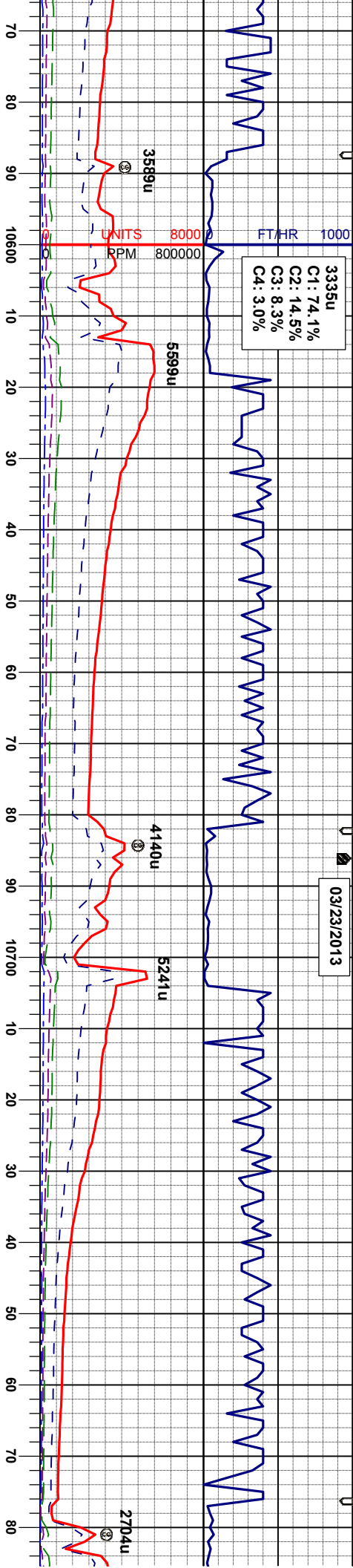
MR: .mgy-gyblk, sbblky-sbply, smefls,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag





03/23/2013

3335u
C1: 74.1%
C2: 14.5%
C3: 8.3%
C4: 3.0%



WT IN 9.65/ OUT 9.65
VIS IN 37/ OUT 37

MD 10625'
INC 88.7°
AZM 268.2°
TVD 6592.69'

MRL: mgy-gyblk, sbblky-sbply, smeifs,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag

WT IN 9.70/ OUT 9.70
VIS IN 38/ OUT 38

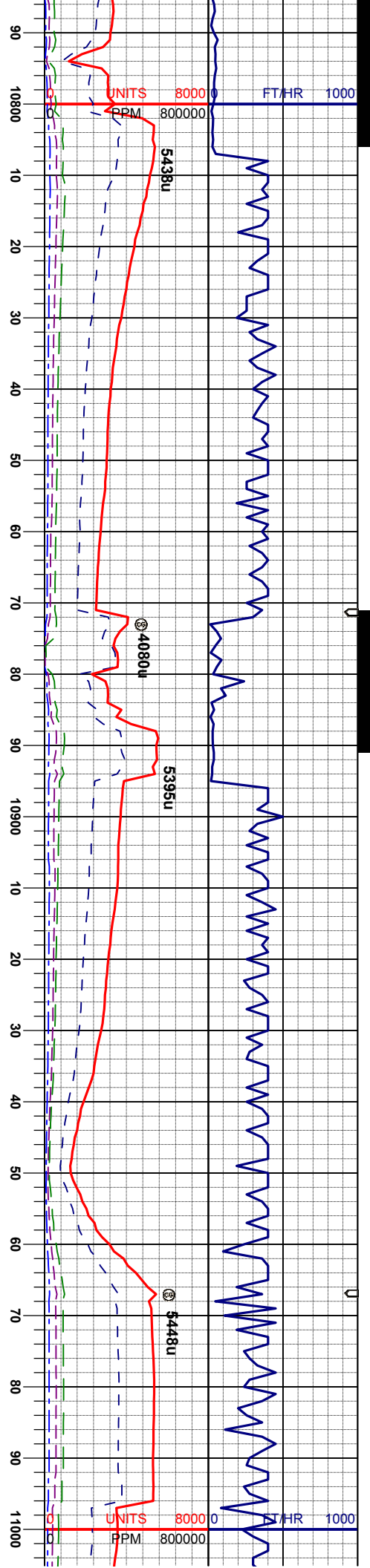
MD 10719'
INC 87.8°
AZM 266.9°
TVD 6595.56'

MRL: mgy-gyblk, sbblky-sbply, smeifs,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag, tr chk

WT IN 9.70/ OUT 9.70
VIS IN 35/ OUT 35

MRL: mgy-gyblk, sbblky-sbply, smeifs,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag, tr chk





WT IN 9.70/ OUT 9.70
VIS IN 41/ OUT 41

WT IN 9.75/ OUT 9.75
VIS IN 38/ OUT 38

WT IN 9.75/ OUT 9.75
VIS IN 37/ OUT 37

MD 10814'
INC 89.9°
AZM 266.9°
TVD 6597.47'

MD 10909'
INC 91.2°
AZM 267.1°
TVD 6596.56'

MRL: mgy-gyblk, sbblk-sbply, smefis,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag, tr chk

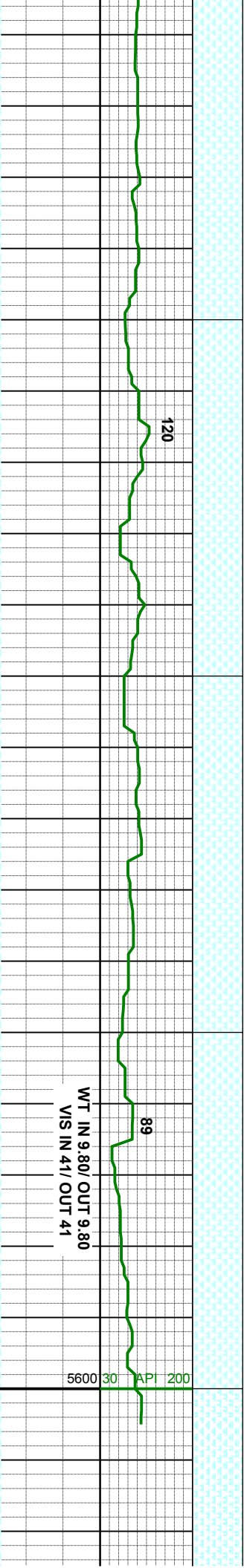
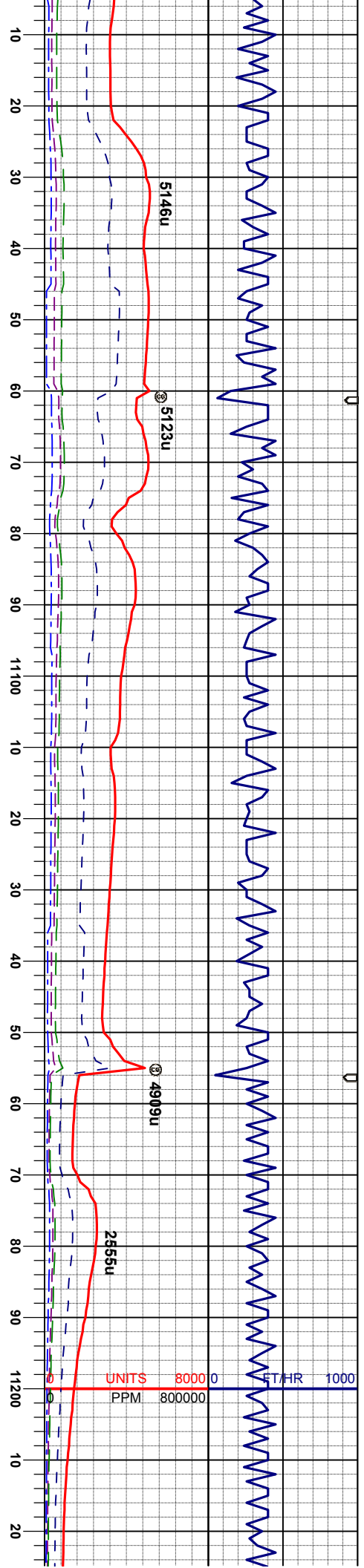
MRL: mgy-gyblk, sbblk-sbply, smefis,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag, tr chk

MRL: mgy-gyblk, sbblk-sbply, smefis,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag, tr chk

MRL: mgy-gyblk, sbblk-sbply, smefis,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag, tr chk

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ID 11004'
IC 91.2°
ZM 266.8°
VD 6594.49'

MR: mgy-gyblk, sbblk-y-sbply, smefis,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag, tr chk

MD 11099'
INC 90.9°
AZM 266.0°
TVD 6592.83'

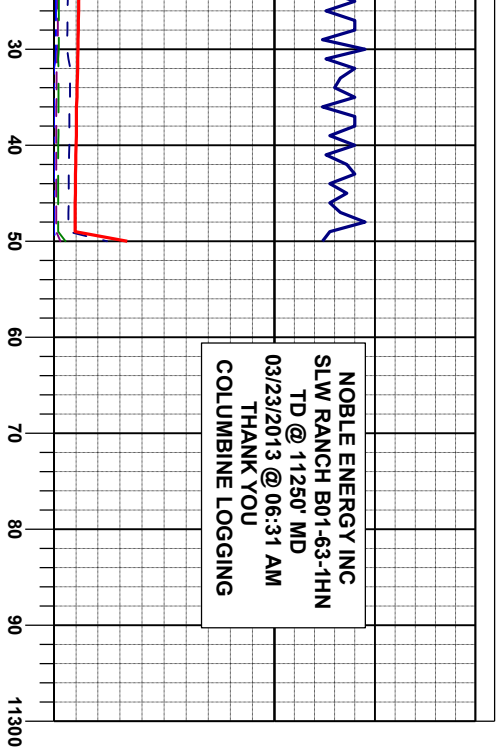
MR: mgy-gyblk, sbblk-y-sbply, smefis,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag, tr chk

MD 11193'
INC 92.0°
AZM 266.0°
TVD 6590.45'

MR: mgy-gyblk, sbblk-y-sbply, smefis,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag, occ chk

MR: mgy-gyblk, sbblk-y-sbply, smefis,
mod firm - firm, shy tex, sl mot, tr calc incl,
v calc, occ bent, tr fos frag, tr chk





NOBLE ENERGY INC
SLW RANCH B01-63-1HN
TD @ 11250' MD
03/23/2013 @ 06:31 AM

PROJECTED
MD 11250'
INC 92.0°
AZM 266.0°
TVD 6588.46'

y-sbply, smefls,
s, sl mot, tr calc incl,
ffrag, occ chk

