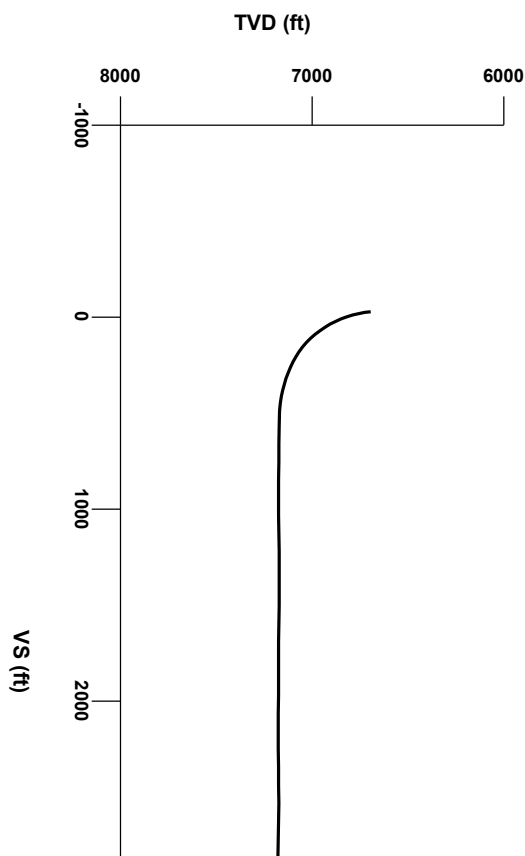


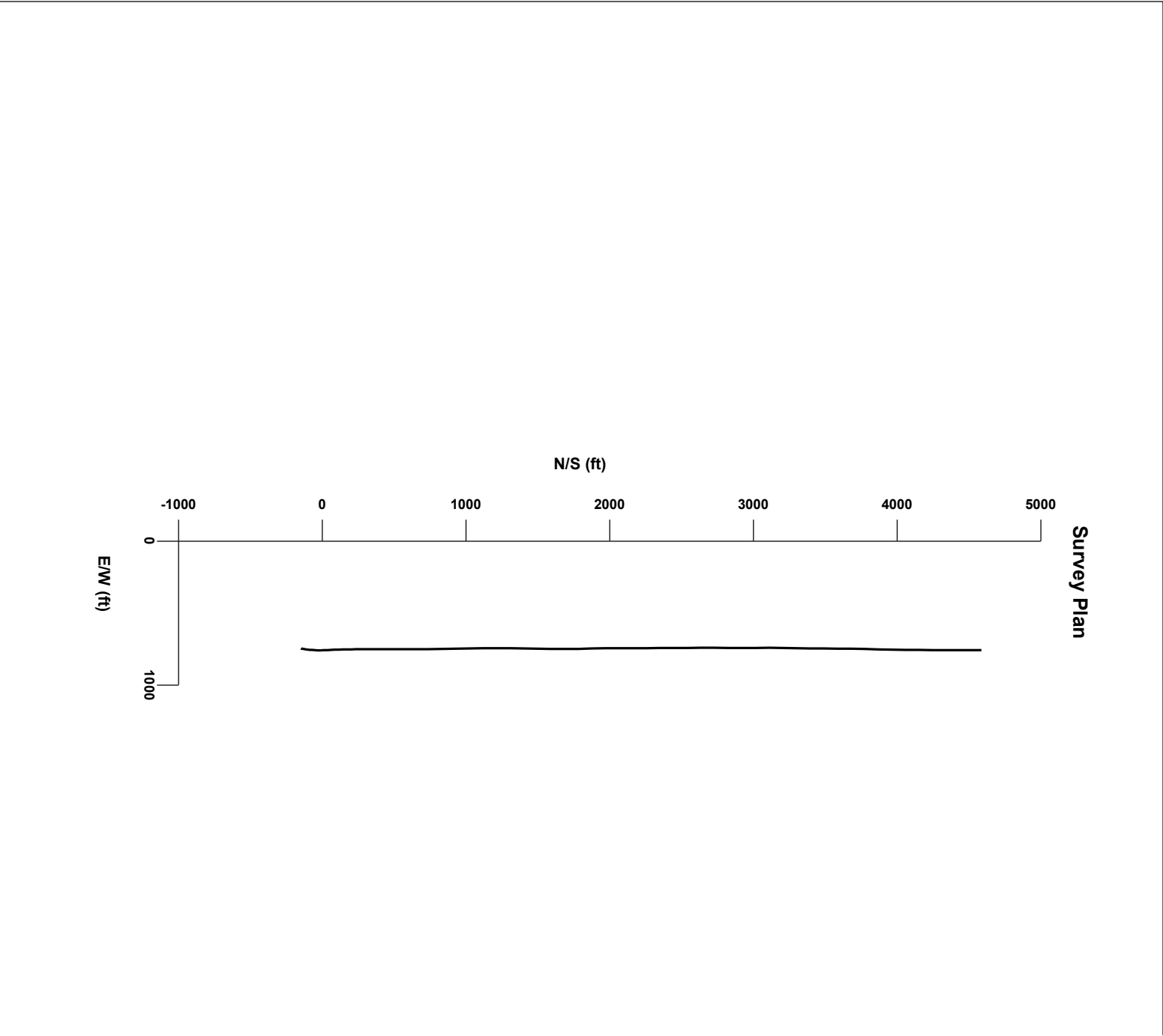
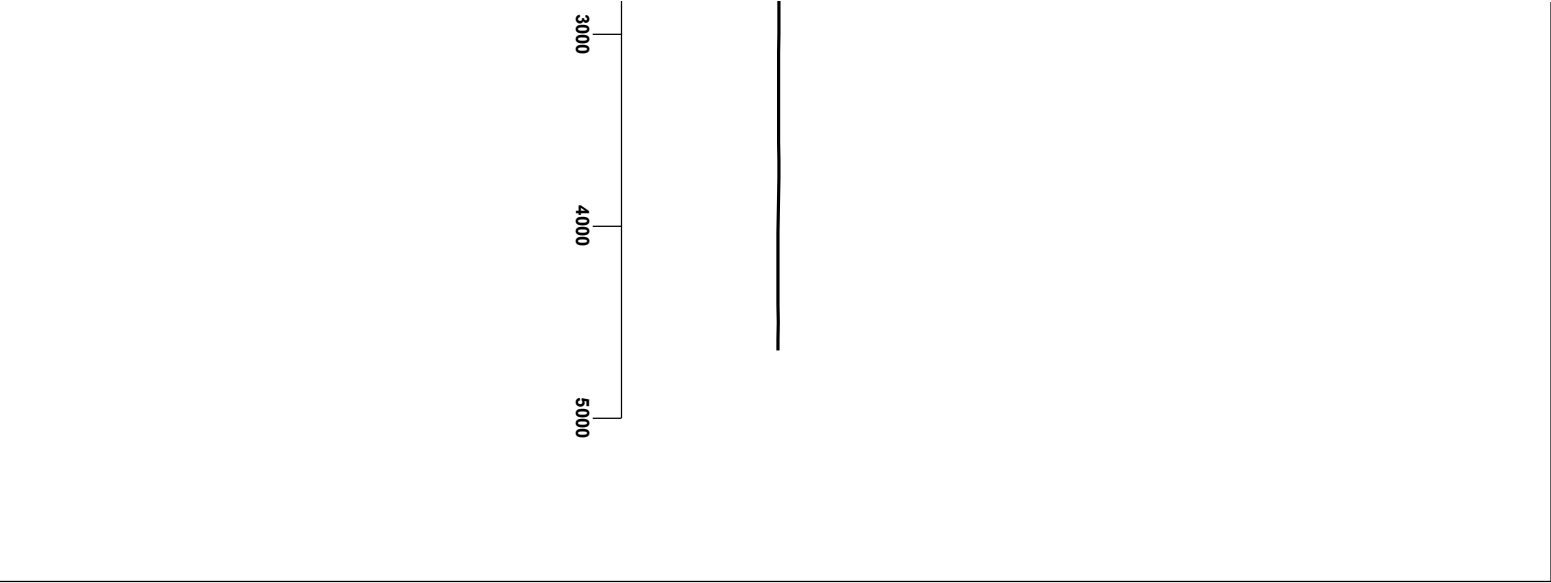


LOG created using LPLOT VH Version 3.0, January 17, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: ANADARKO PETROLEUM CORPORATION
WELL: NILES 29N-28HZ
LOCATION: SEC 28, T3N, R66W
COUNTY: WELD
STATE: COLORADO
SPOT: 210' FSL, 427' FWL
ELEVATION: GR 4,947', KB 4,960'
FIELD: WATTENBERG
SPUD DATE: 01/07/2013
TD DATE: 01/17/2013
DATES LOGGED: 01/09/2013 - 01/17/2013
DEPTHS LOGGED: 6,740' - 11,746'
LOGGERS: LACEY LITTLE, ELIZABETH ERICKSON
DRILLING FLUID: FW LSND
DRILLING RIG: ENSIGN 145
API: 05-123-35494-00
LOG TYPE: HORIZONTAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: Wellsite Geological Services Provided By Columbine Logging Inc.

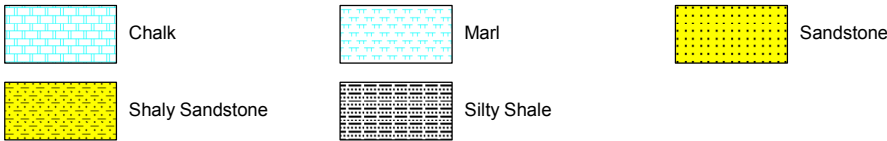


Survey Elevation

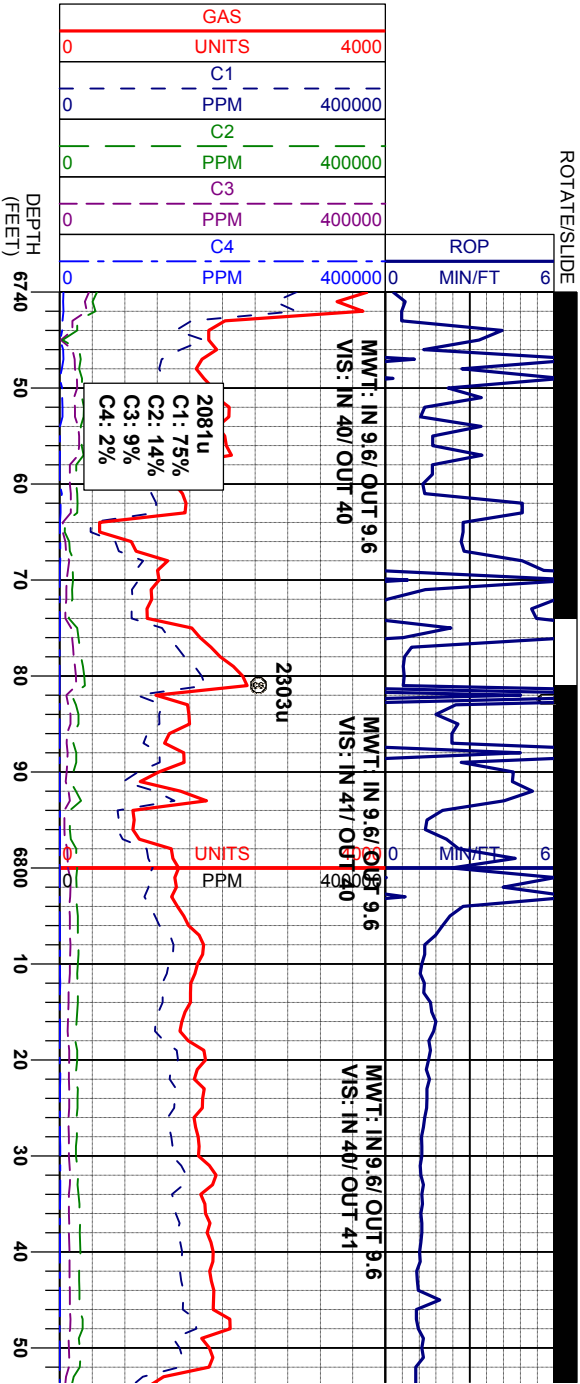
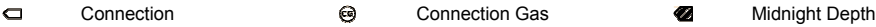




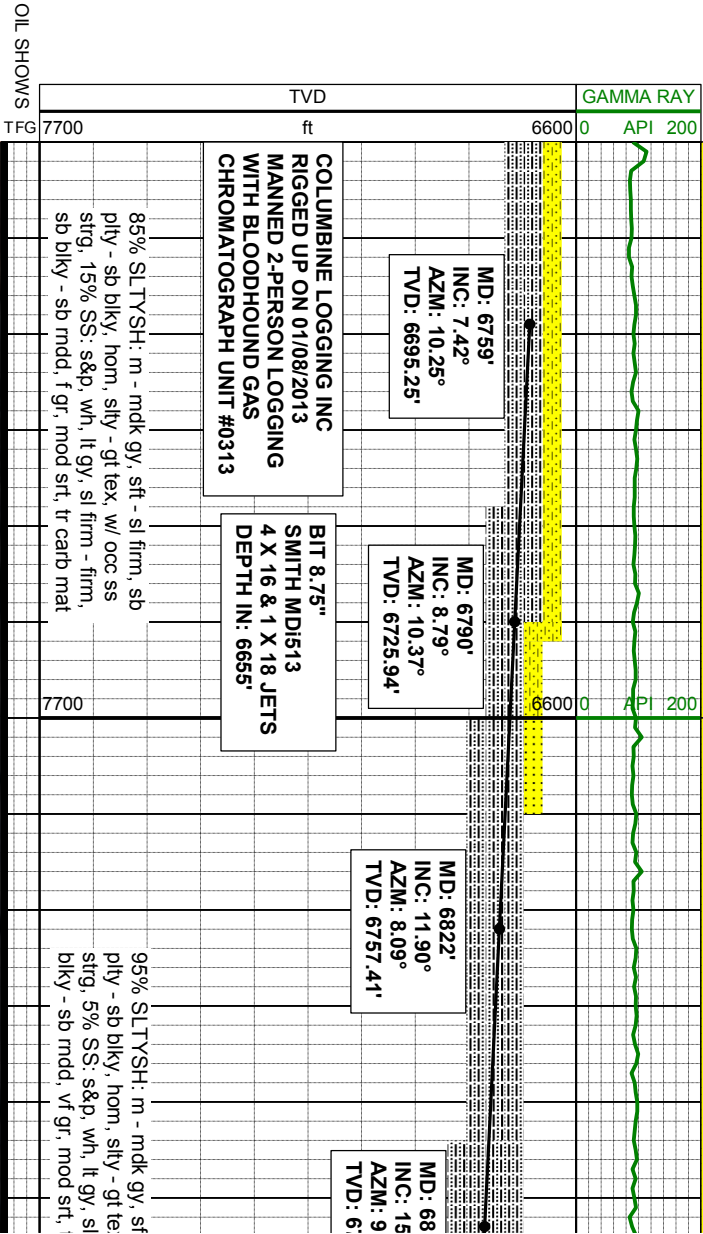
LITHOLOGIES



ENGINEERING SYMBOLS

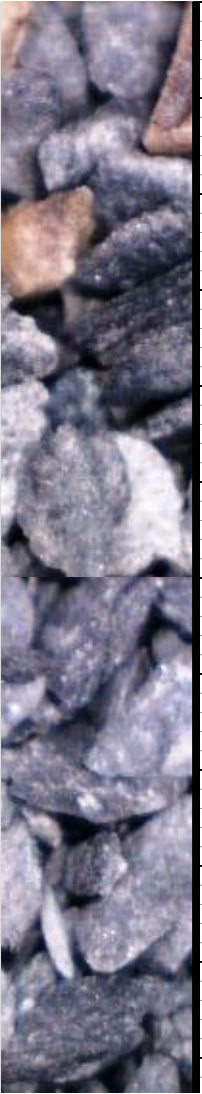


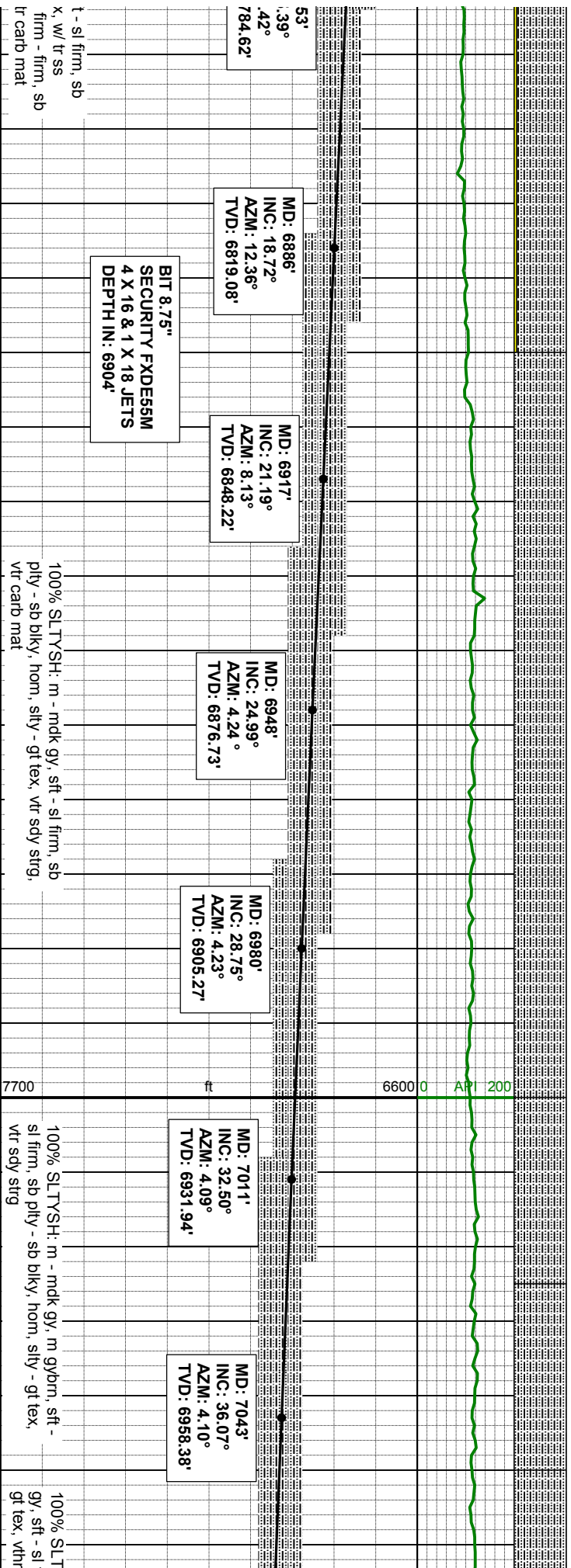
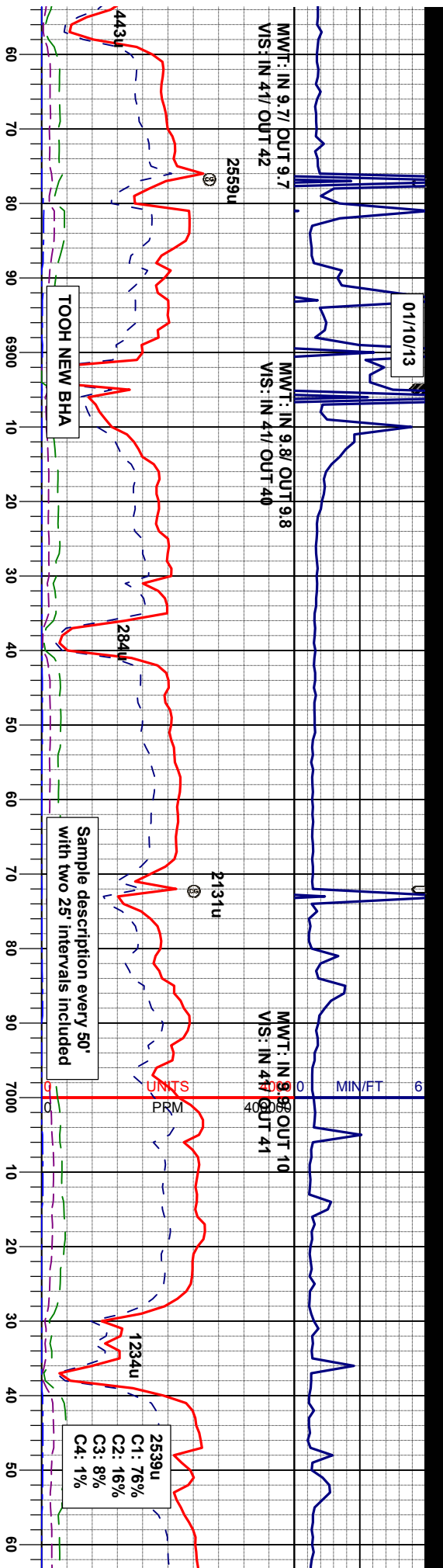
CUTTINGS LITHOLOGY

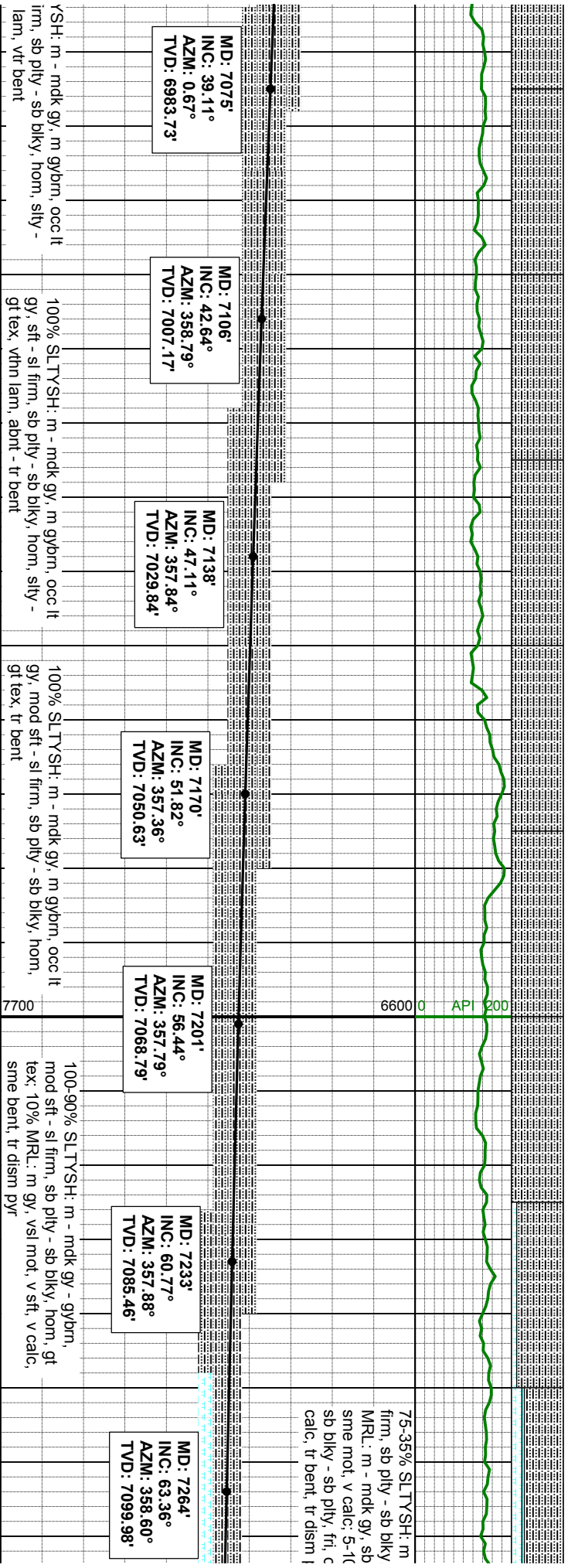
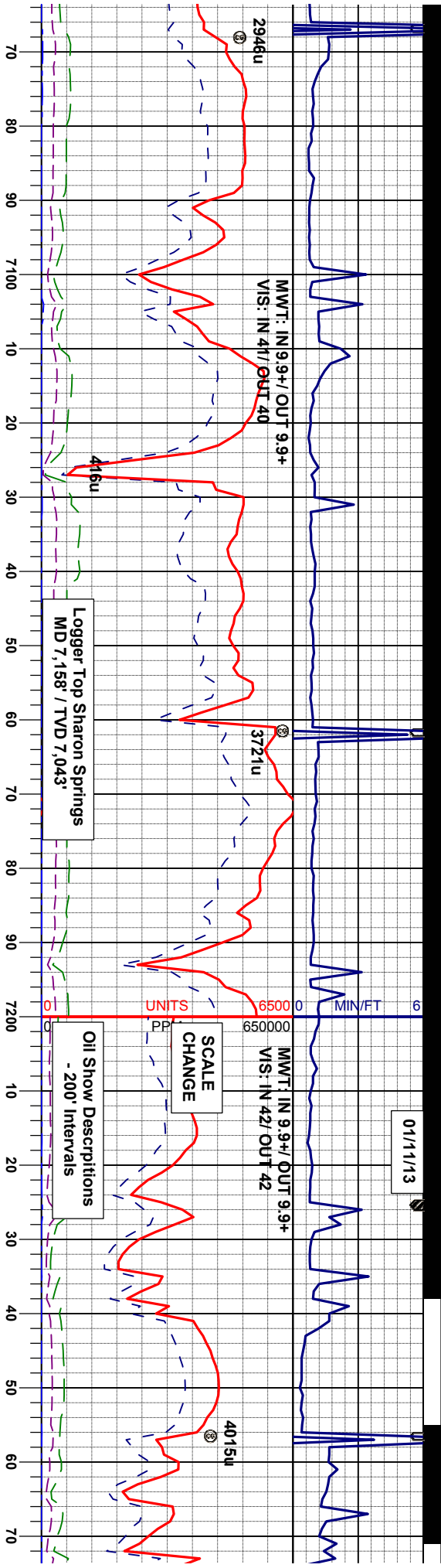


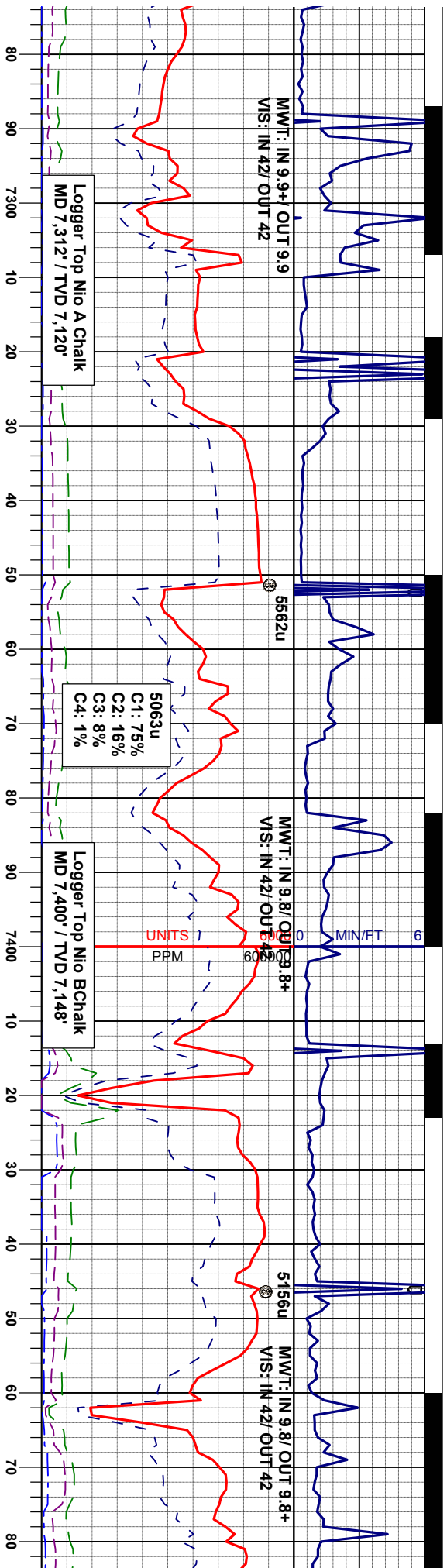
OIL SHOWS

SAMPLE PHOTOS









mdk gy - gybm, sb
hom, gt tex: 20-55%
sft - sb firm, sl brit,
% CHK: lt - m gy, vsft,
occ sb wxy tex, mot, v
yr

15-0% SLTYSH: m - mdk gy - gybm, sb
firm, sb ply - sb biky, hom, gt tex: 45-25%
MRL: m - mdk gy - sb sft - sb firm, sl brit,
sme mot, v calc: 40-75% CHK: lt - m gy,
vsft, sb biky - sb ply, fri, occ sb wxy tex,
mot, v calc

15-30% MRL: m - mdk gy - sb sft - sb firm,
sl brit, sme mot, v calc: 85-70% CHK: lt - m
gy, vsft, sb biky - sb ply, fri, occ sb wxy tex,
mot, v calc: OIL SHW: bri ong flor, fast
stimg, sl tr shn, sl tr o

65-60% MRL: m - mdk gy - sb sft - sb firm,
sl brit, sme mot, v calc: 35-40% CHK: lt - m
gy, vsft, sb biky - sb ply, fri, occ sb wxy tex,
mot, v calc

35-30% MRL: m - mdk gy - sb s
sl brit, sme mot, v calc: 65-70%
gy, vsft, sb biky - sb ply, fri, oc
mot, v calc: OIL SHW: bri gr /
stimg, sl tr shn, tr o

MD: 7296'
INC: 66.20°
AZM: 358.72°
TVD: 7113.61'

MD: 7328'
INC: 69.00°
AZM: 358.82°
TVD: 7125.81'

MD: 7359'
INC: 71.80°
AZM: 358.82°
TVD: 7136.20'

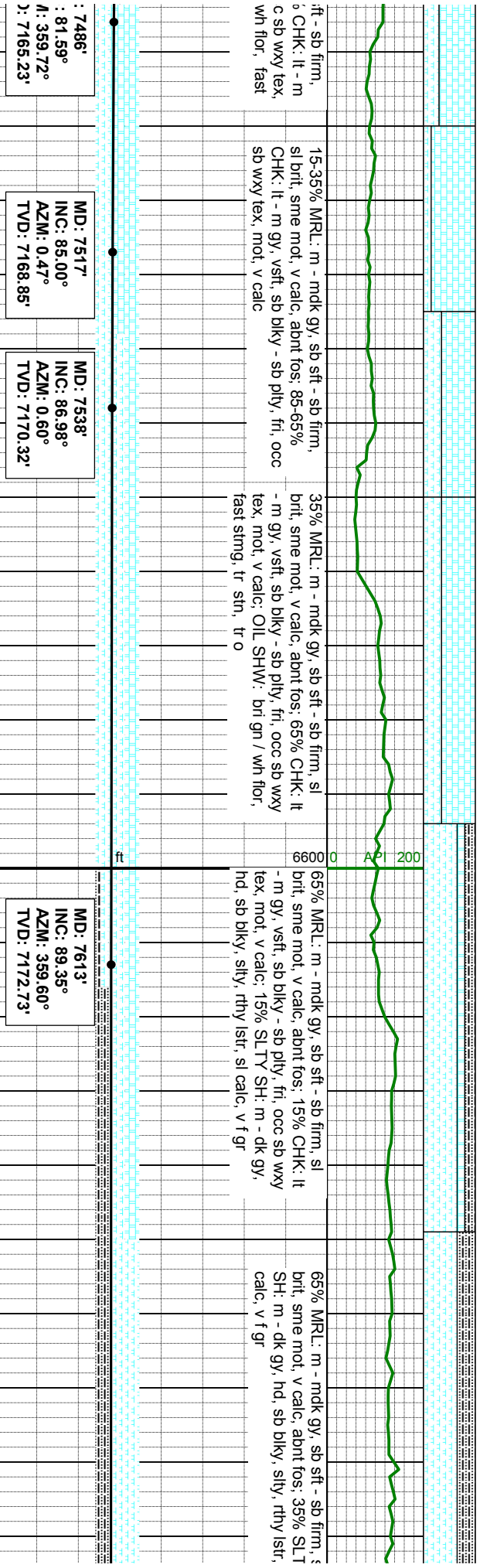
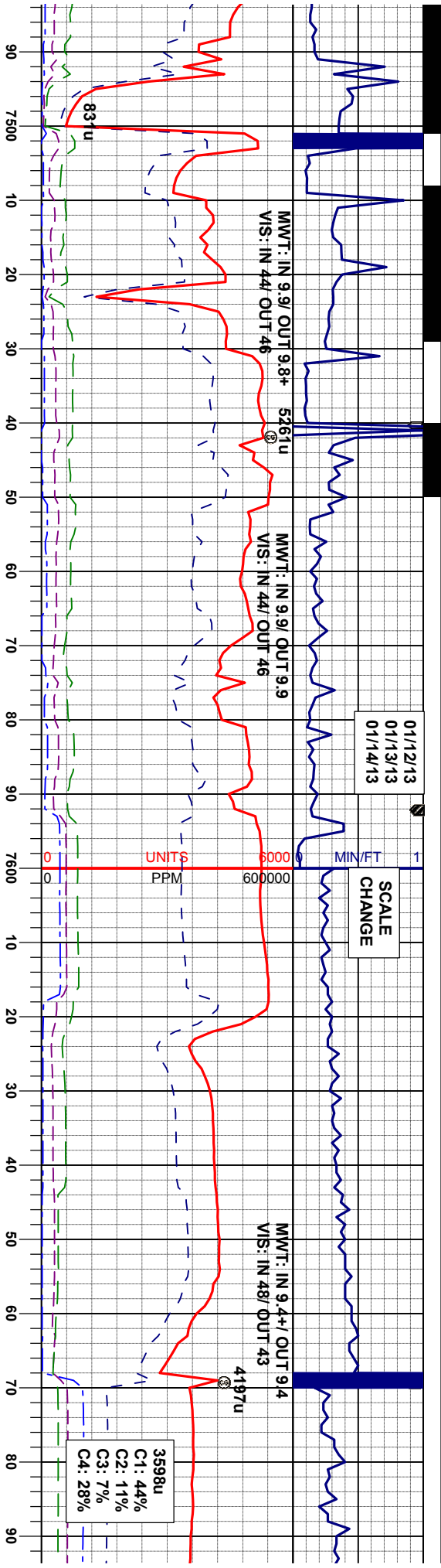
MD: 7391'
INC: 75.04°
AZM: 358.97°
TVD: 7145.33'

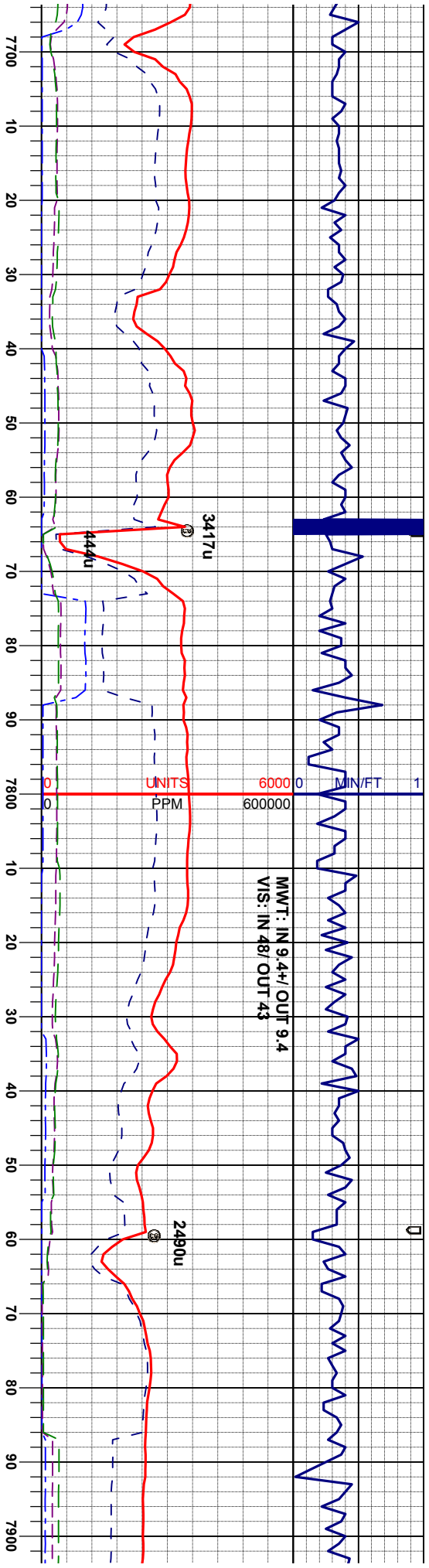
MD: 7423'
INC: 77.12°
AZM: 359.48°
TVD: 7153.03'

MD: 7454'
INC: 78.27°
AZM: 359.29°
TVD: 7159.64'

MD
INC
AZM
TVD







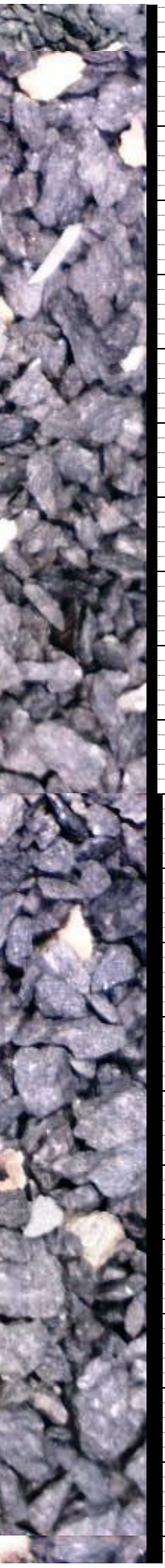
65% MRL: m - mdk gy, sb sft - sb firm, sl
brt, sme mot, v calc, abnt fos: 35% SLTY
SH: m - dk gy, hd, sb blkly, silty, rthy lstr, sl
calc, v f gr. OIL SHW: brt yel / wh flor, fast
stimg, tr sin, tr o

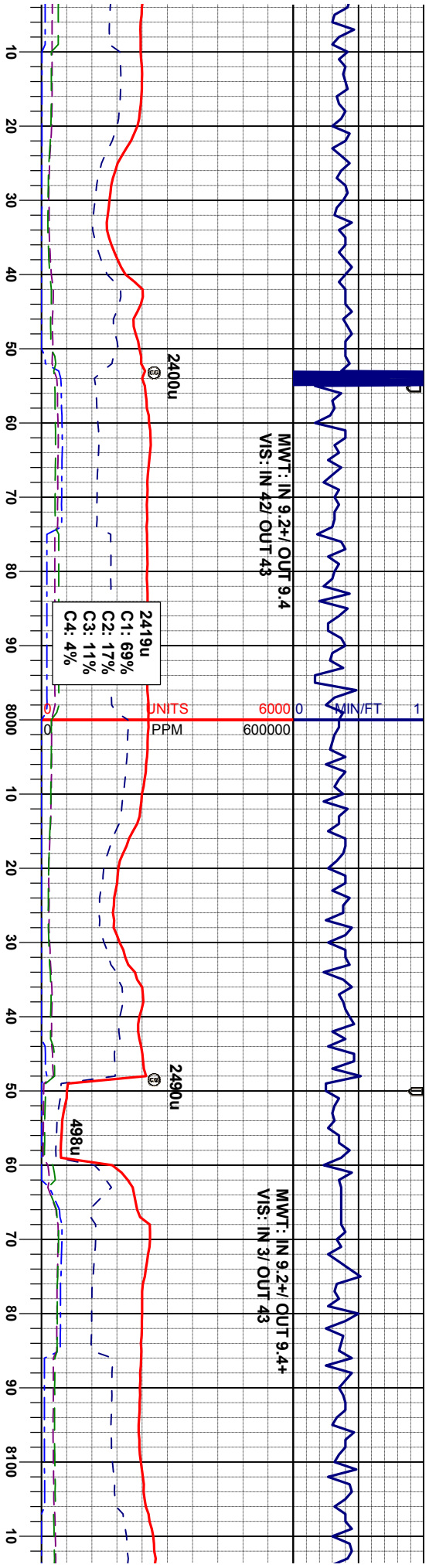
40% MRL: m - mdk gy, sb sft - sb firm, sl
brt, sme mot, v calc, abnt fos: 60% SLTY
SH: m - dk gy, hd, sb blkly, silty, rthy lstr, sl
calc, v f gr

MD: 7706'
INC: 89.53°
AZM: 0.27°
TVD: 7173.66'

MD: 7803'
INC: 89.53°
AZM: 0.30°
TVD: 7174.44'

MD: 7897'
INC: 89.63°
AZM: 359.55°
TVD: 7175.12'



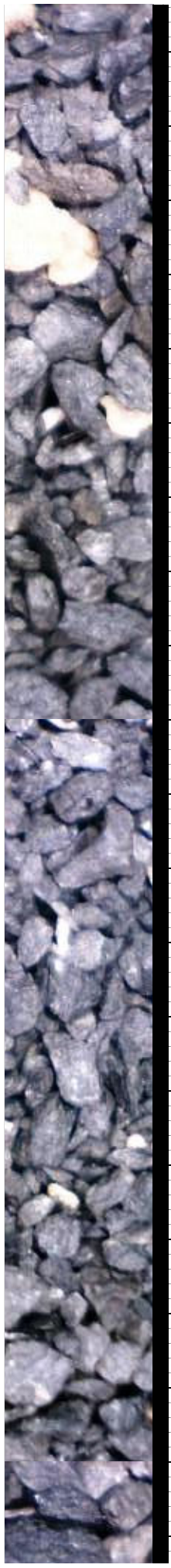


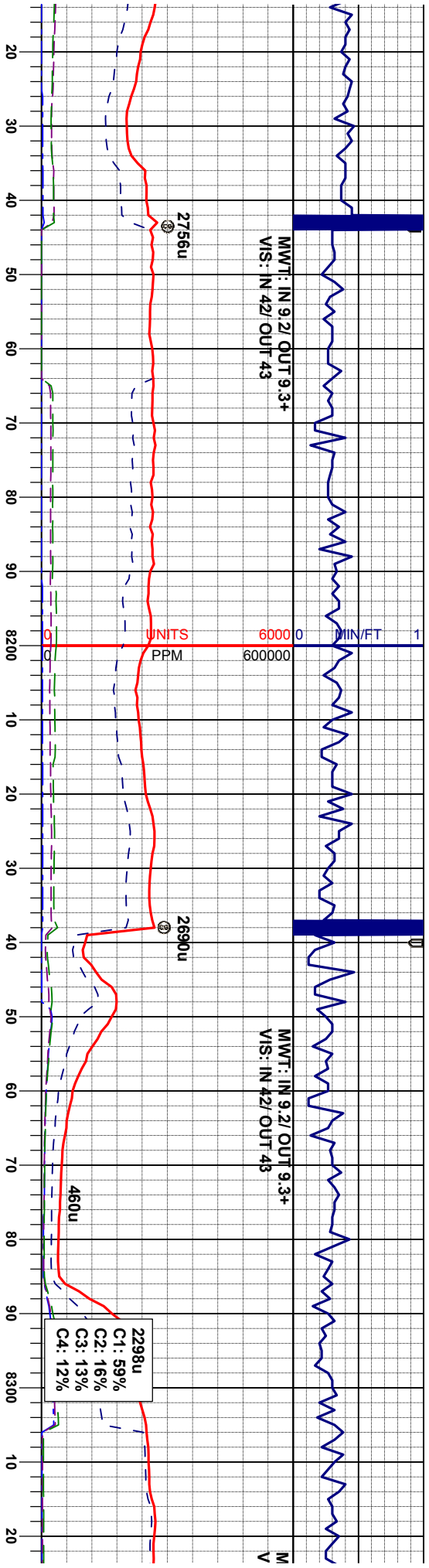
30% MRL: m - mdk gy, sb sft - sb firm, sl
brt, sme mot, v calc, abnt fos: 70% SLTY
SH: m - dk gy, hd, sb blk, silty, rthy lstr, sl
calc, v f gr: OIL SHW: brt yel / wh flor, fast
stmg, fr str, fr o

25% MRL: m - mdk gy, sb sft - sb firm, sl
brt, sme mot, v calc, abnt fos: 75% SLTY
SH: m - dk gy, hd, sb blk, silty, rthy lstr, sl
calc, v f gr

MD: 7992'
INC: 90.12°
AZM: 358.40°
TVD: 7175.33'

MD: 8087'
INC: 90.21°
AZM: 358.96°
TVD: 7175.06'





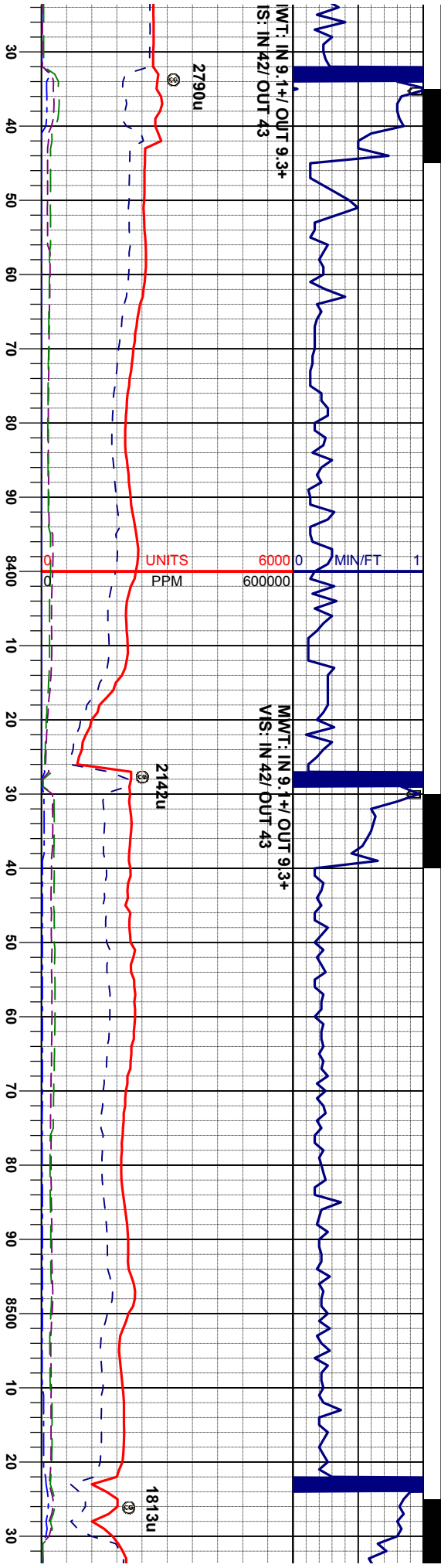
60% MRL: m - mdk gy, sb sft - sb firm, sl
brit, sme mot, v calc, abnt fos, 20% CHK: lt
- m gy, vsft, sb blkv - sb plty, fri, occ sb wxy
tex, mot, v calc: 20% SLTY SH: m - dk gy,
hd, sb blkv, slty, rthy lstr, sl calc, v f gr, OIL
SHW: brt yel / wh flor, fast slmg, fr sln, fr
0

MD: 8182'
INC: 90.70°
AZM: 358.55°
TVD: 7174.30'

40% MRL: m - mdk gy, sb sft - sb firm, sl
brit, sme mot, v calc, abnt fos, 60% CHK: lt
- m gy, vsft, sb blkv - sb plty, fri, occ sb wxy
tex, mot, v calc, tr sh

MD: 8277'
INC: 91.11°
AZM: 0.16°
TVD: 7172.80'





20% MRL: m - mdk gy, sb sft - sb firm, sl
brt, sme mot, v calc, abnt fos: 80% CHK: lt
- m gy, vsft, sb blkly - sb ply, fri, occ sb wxy
tex, mot, v calc, tr sh; OIL SHW: brt yel/
wh flr, fast slmg, fr sh, fr o

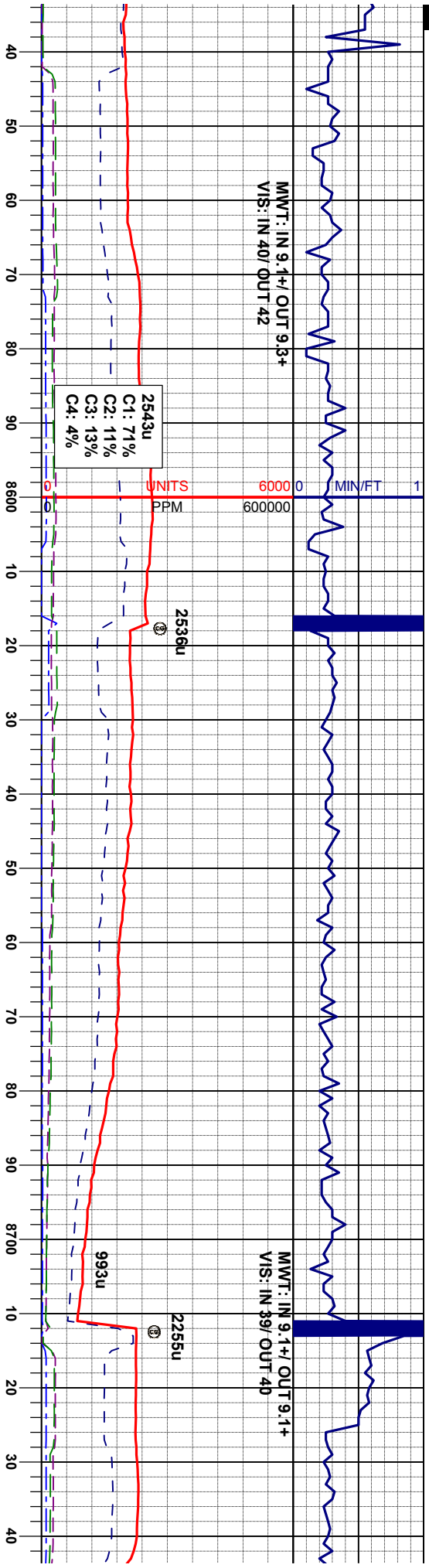
35% MRL: m - mdk gy, sb sft - sb firm, sl
brt, sme mot, v calc, abnt fos: 65% CHK: lt
- m gy, vsft, sb blkly - sb ply, fri, occ sb wxy
tex, mot, v calc, tr sh

15% I
firm, i
intgra
- sbpl
SHW
fr o

MD: 8372'
INC: 90.27°
AZM: 359.17°
TVD: 7171.66'

MD: 8467'
INC: 90.09°
AZM: 0.90°
TVD: 7171.36'





MRL: m - mdk gy, m gybm, sb sft - sb
sbbky, sl brt, sme mot, v calc, sme
n fos, 85% CHK: lt - m gy, vsft, sbbky
ly, fti, sb wxy tex, mot, v calc; OIL
: bri ong / wth flbr, fast string, fr stn,

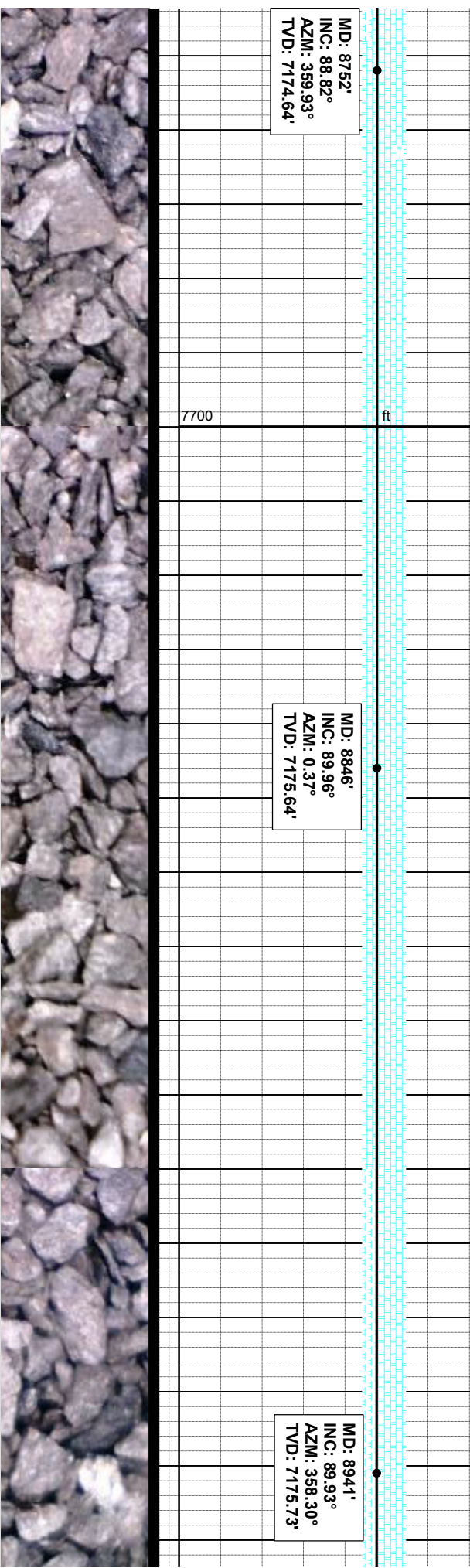
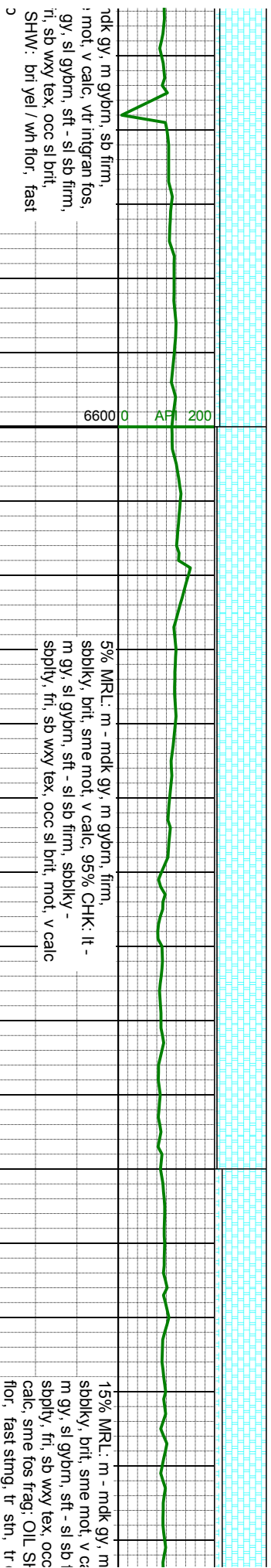
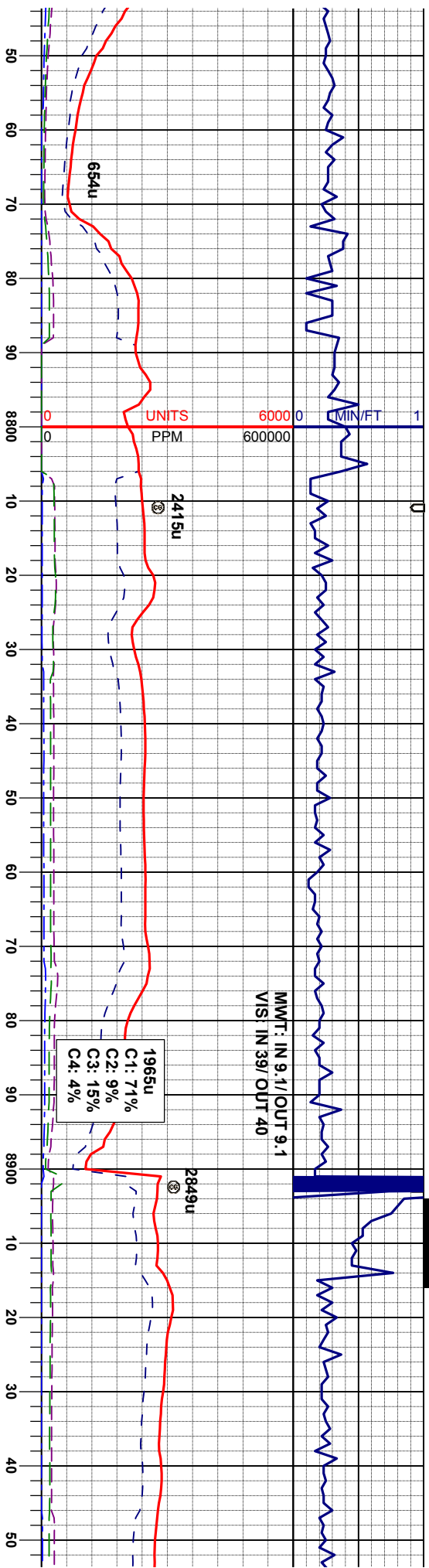
15% MRL: m - mdk gy, m gybm, sb sft - sb
firm, sbbky, sl brt, sme mot, v calc, sme
intran fos, 85% CHK: lt - m gy, sl gybm,
sft - sl firm, sbbky - sbply, fti, sb wxy tex,
occ sb brt, mot, v calc

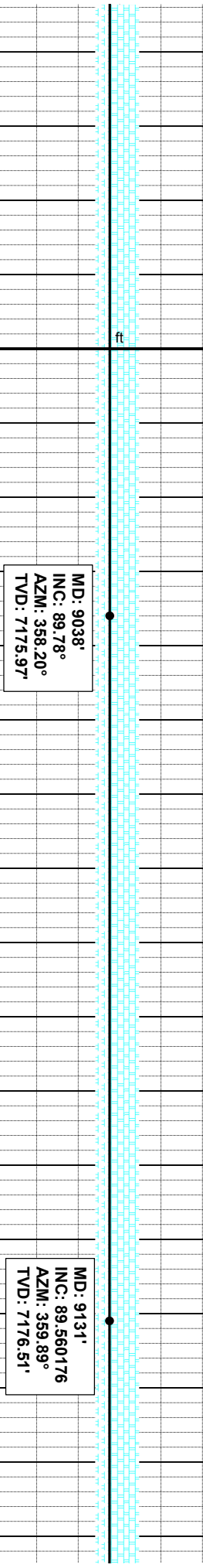
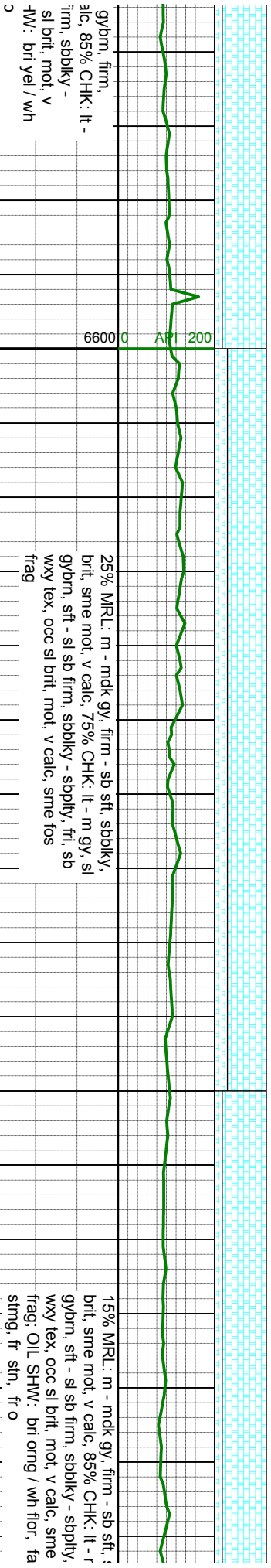
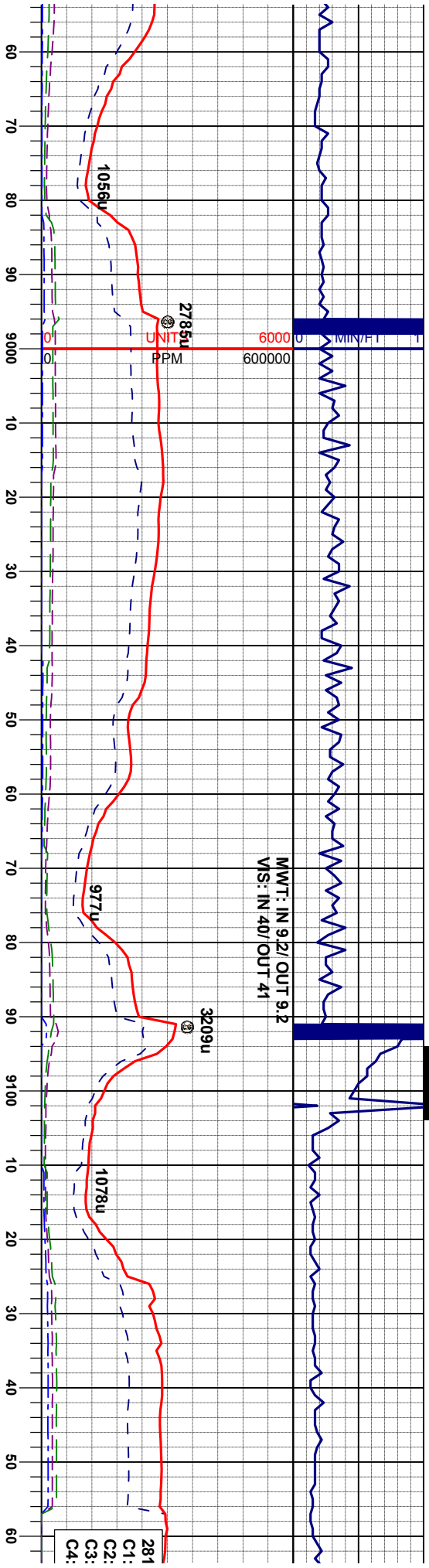
10% MRL: m - n
sbbky, brt, sme
90% CHK: lt - m
sbbky - sbply, f
mot, v calc; OIL
string, tr stn, tr

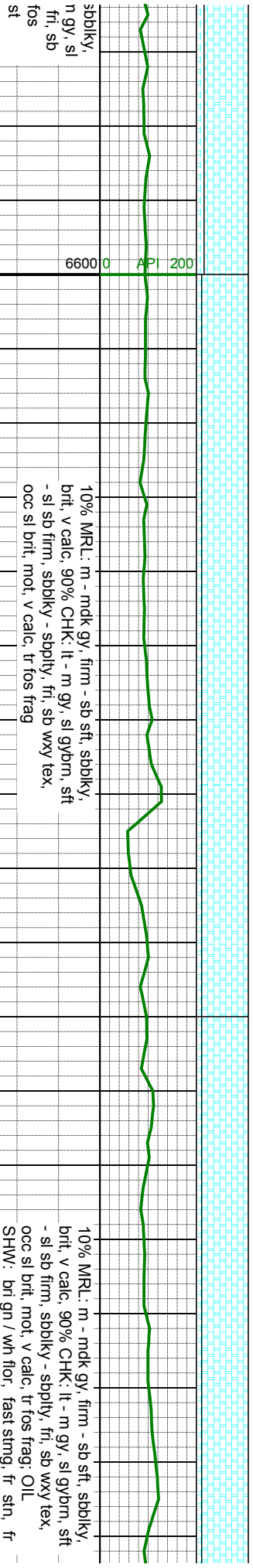
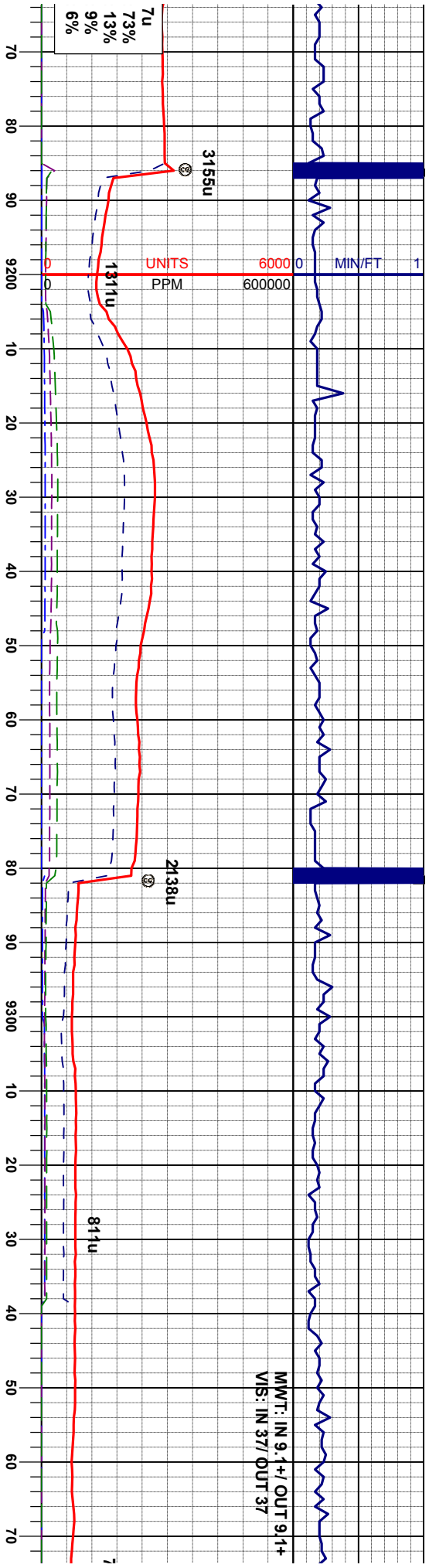
MD: 8562'
INC: 88.92°
AZM: 1.27°
TVD: 7172.18'

MD: 8657'
INC: 89.65°
AZM: 1.81°
TVD: 7173.37'





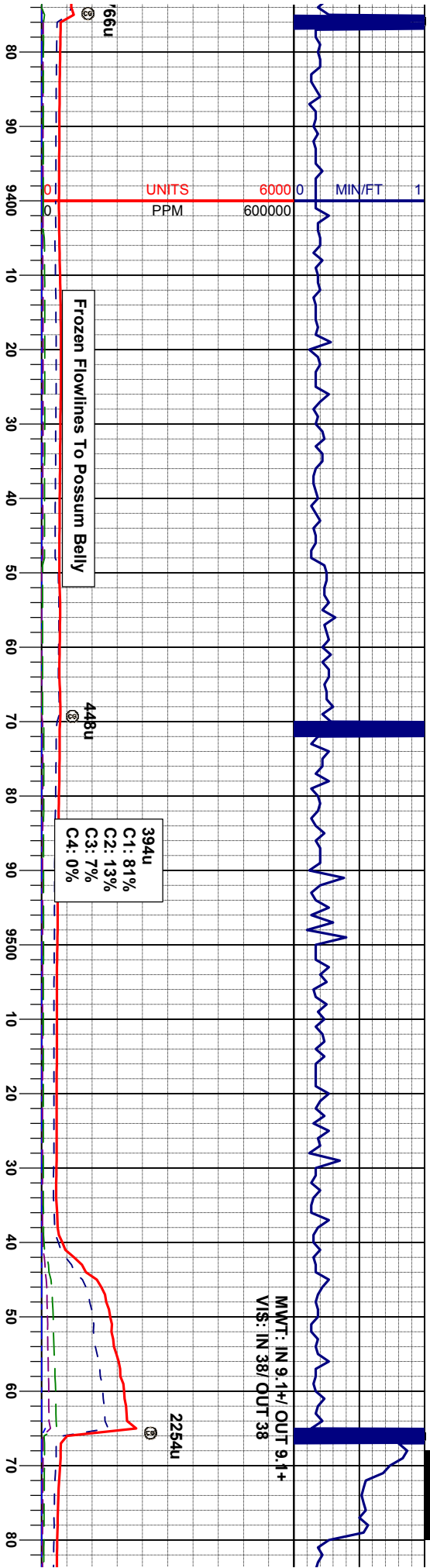




MD: 9226'
INC: 89.87°
AZM: 0.06°
TVD: 7176.99'

MD: 9320'
INC: 90.30°
AZM: 0.35°
TVD: 7176.85'





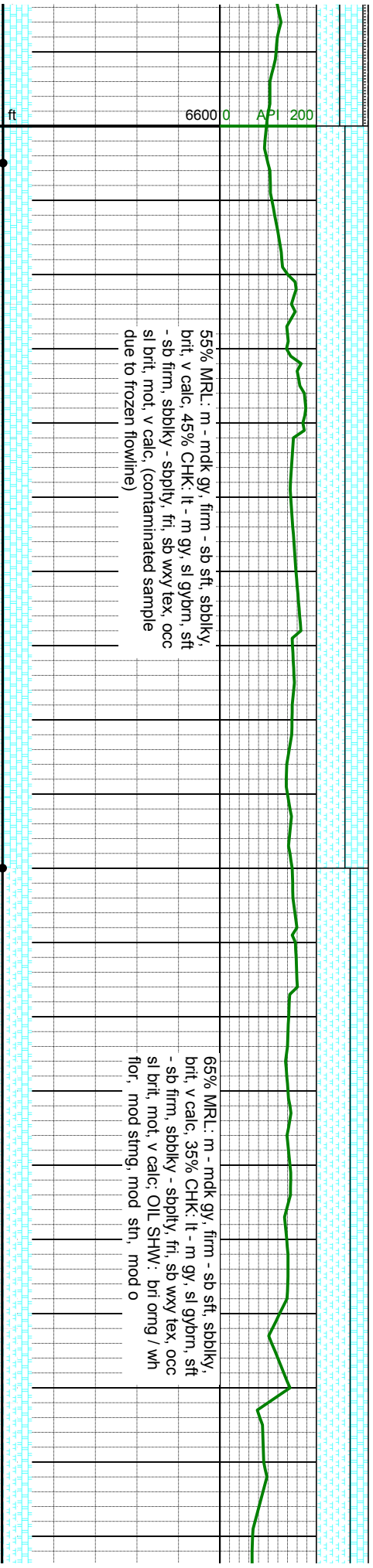
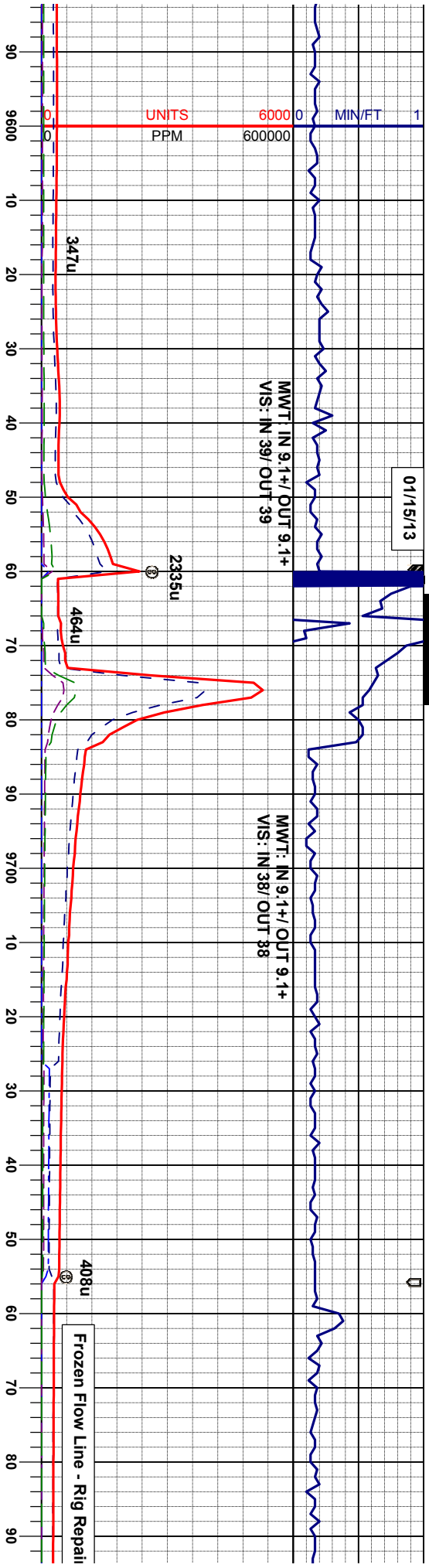
MD: 9415'
INC: 90.54°
AZM: 358.74°
TVD: 7175.15'

MD: 9510'
INC: 903798°
AZM: 0.29°
TVD: 7175.05'

20% MRL: m - mdk gy, firm - sb sft, sbdkly,
brt, v calc, 70% CHK: lt - m gy, sl gybrn, sft
- sl sb firm, sbdkly - sbply, fri, sb wxy tex,
occ sl brt, mot, v calc, 10% SLTYSH: dk gy
- blk, hd, sbdkly, brt

45% MRL: m - mdk gy, firm - sb sft, sbdkly,
brt, v calc, 45% CHK: lt - m gy, sl gybrn, sft
- sl sb firm, sbdkly - sbply, fri, sb wxy tex,
occ sl brt, mot, v calc, 10% SLTYSH: dk gy
- blk, hd, sbdkly, brt: OIL SHW: bri gn / wh
flr, fast sting, mod stn, mod o



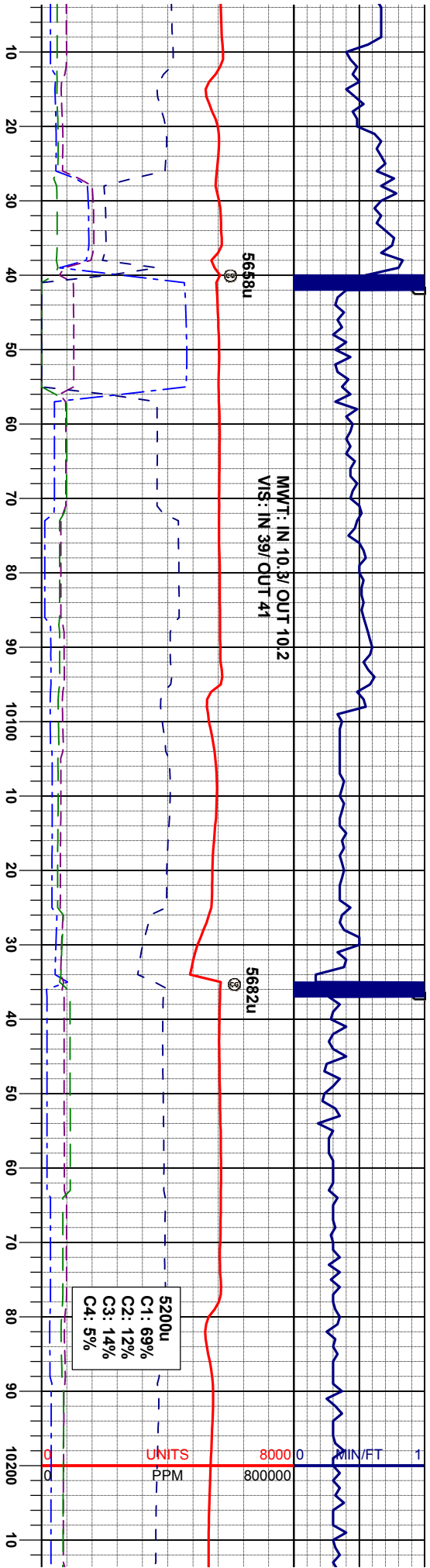


MD: 9605'
INC: 89.93°
AZM: 0.05°
TVD: 7174.45'

MD: 9700'
INC: 88.51°
AZM: 359.52°
TVD: 7175.75'

MD: 9
INC: 8
AZM:
TVD: .





60% MRL: m - mdk gy, sb sft - firm, sbblky, brt, v calc, sme intgran fos, 40% CHK: lt - m gy, sl gybrn, sft - sl sb firm, sbblky - sbply, fri, sb wxy tex, occ sl brt, mod, v calc, sme fos frag, tr dism pyr

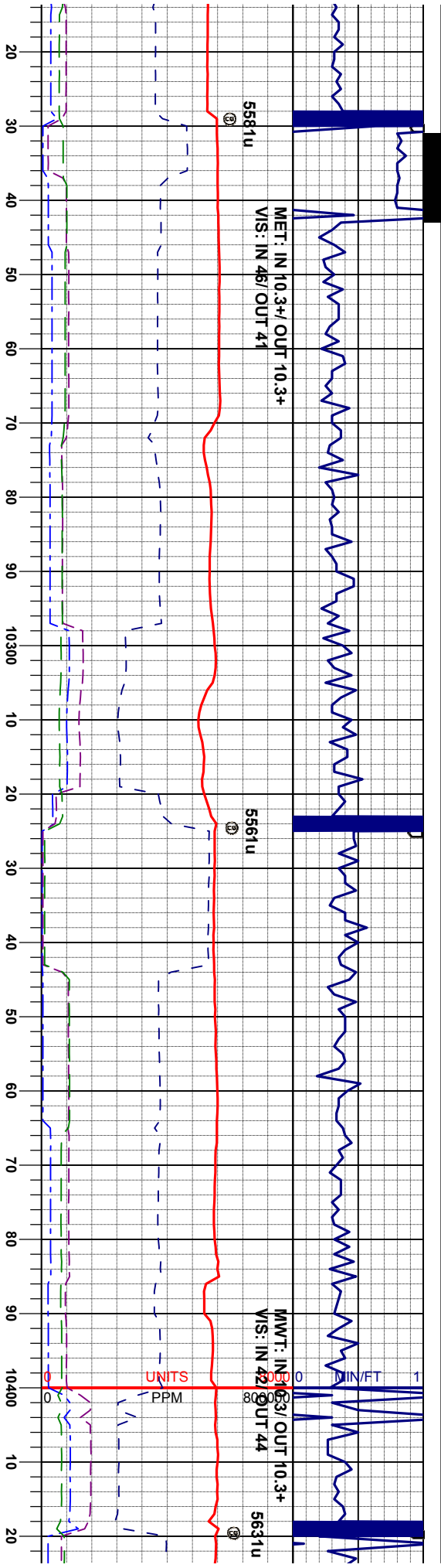
80% MRL: m - mdk gy, sb sft - firm, sbblky, brt, v calc, sme intgran fos, 20% CHK: lt - m gy, sl gybrn, sft - sl sb firm, sbblky - sbply, fri, sb wxy tex, occ sl brt, mod, v calc, tr fos frag, OIL SHW: bri wh flor, fast stng, mod stn, mod o

MD: 10079°
INC: 89.66°
AZM: 359.93°
TVD: 7179.05'

MD: 10174°
INC: 89.72°
AZM: 358.90°
TVD: 7179.56'

7700 ft 6600 0 API 200





75% MRL: m - mdk gy, sb sft - firm, sbdky, brt, v calc, sme intgran fos, 25% CHK: lt - m gy, sl gybm, sft - sl sb firm, sbdky - sbply, fit, sb wxy tex, occ sl brt, mot, v calc, tr fos frag, tr dism pyr

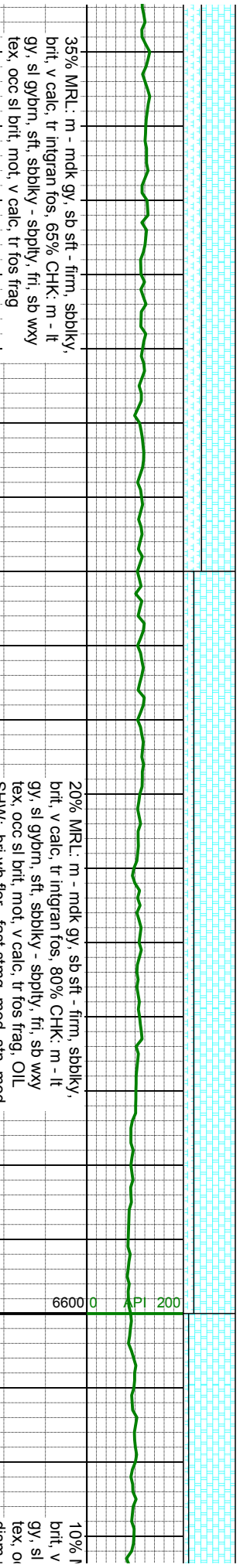
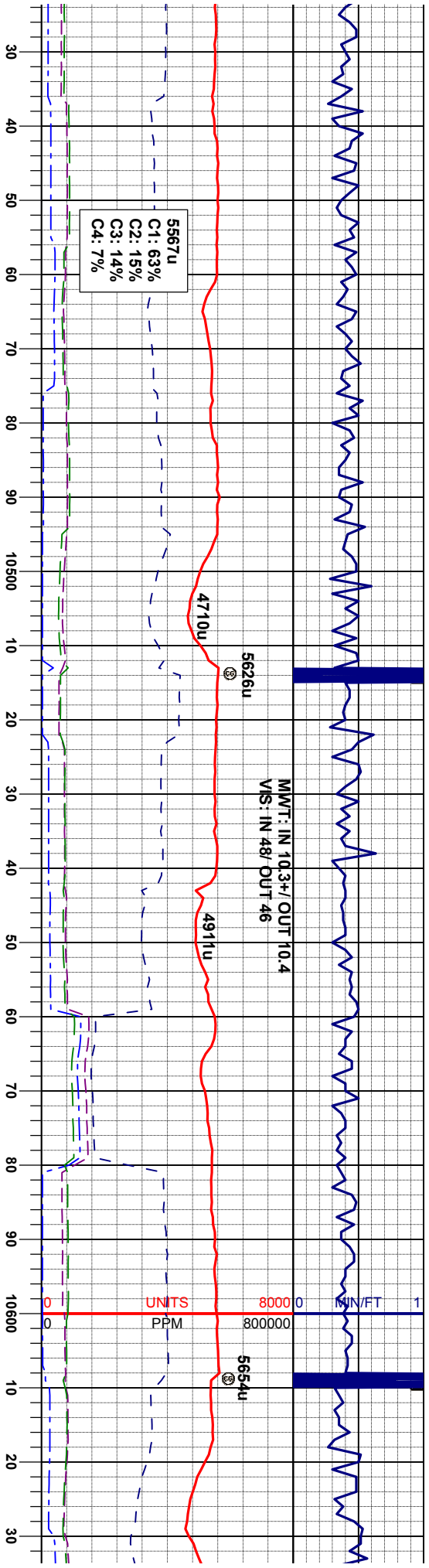
60% MRL: m - mdk gy, sb sft - firm, sbdky, brt, v calc, tr intgran fos, 40% CHK: lt - m gy, sl gybm, sft - sl sb firm, sbdky - sbply, fit, sb wxy tex, occ sl brt, mot, v calc, tr fos frag, vtr dism pyr, OIL SHW: bri wh flor, fast sling, mod shn, mod o

MD: 10271'
INC: 89.90°
AZM: 0.64°
TVD: 7179.88'

MD: 10363'
INC: 89.96°
AZM: 0.77°
TVD: 7179.99'

7700 ft 6600 0 AP 200

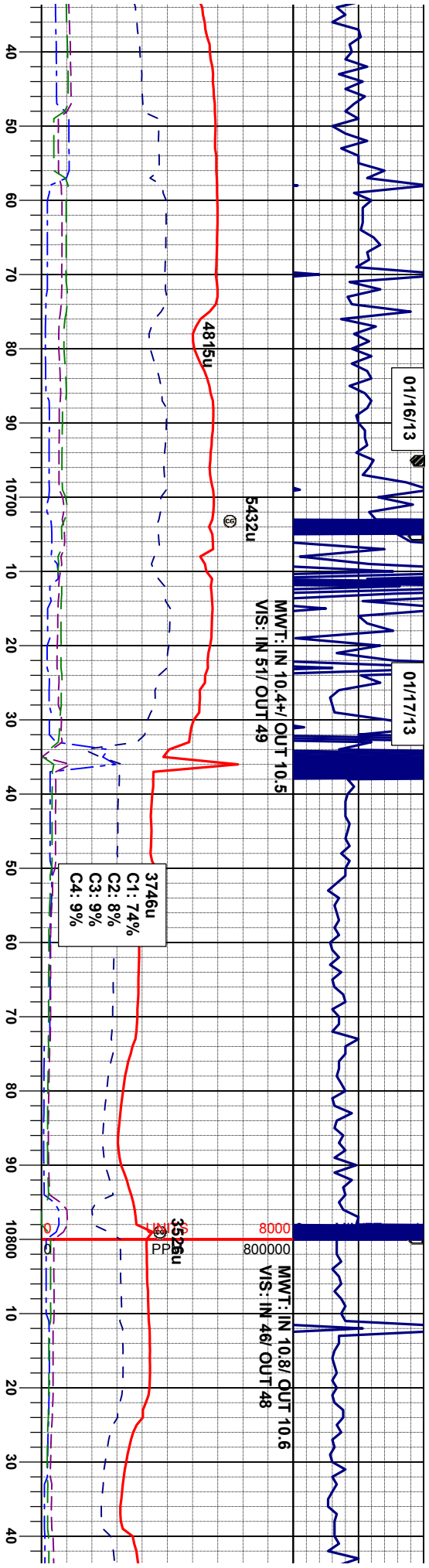




MD: 10458'
INC: 90.09°
AZM: 1.28°
TVD: 7179.95'

MD: 10563'
INC: 90.03°
AZM: 0.39°
TVD: 7179.85'





MRL: m - mdk gy, sb sft - firm, sbblky, calc, vrr intgran fos, 90% CHK: lt - m gybrn, sft, sbblky - sbply, fri, sb wxy cc sl brlt, mot, v calc, tr fos frag, rr gyr

30% MRL: m - mdk gy, sb sft - firm, sbblky, brlt, v calc, abnt fos: 70% CHK: lt - m gy, sl gybrn, sft, sbblky - sbply, fri, sb wxy tex, mot, v calc, OIL SHW: bri wh flor, fast string, frnt stn, frnt o

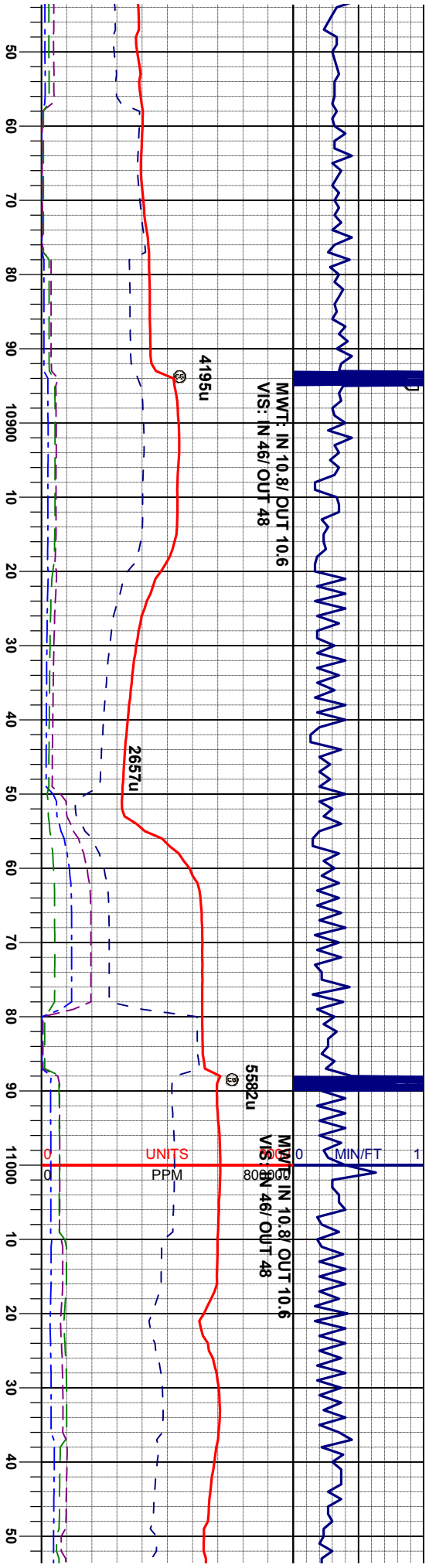
15% MRL: m - mdk gy, sb sft - firm, sbblky, brlt, v calc, abnt fc gybrn, sft, sbblky - mot, v calc

MD: 10648'
INC: 90.18°
AZM: 0.57°
TVD: 7179.68'

MD: 10743'
INC: 90.21°
AZM: 0.51°
TVD: 7179.36'

MD: 10838'
INC: 89.66°
AZM: 0.53°
TVD: 7179.





lk gy, sb sft - firm, sbbkly,
s, 85% CHK: lt - m gy, sl
- sbply, fri, sb wxy tex,

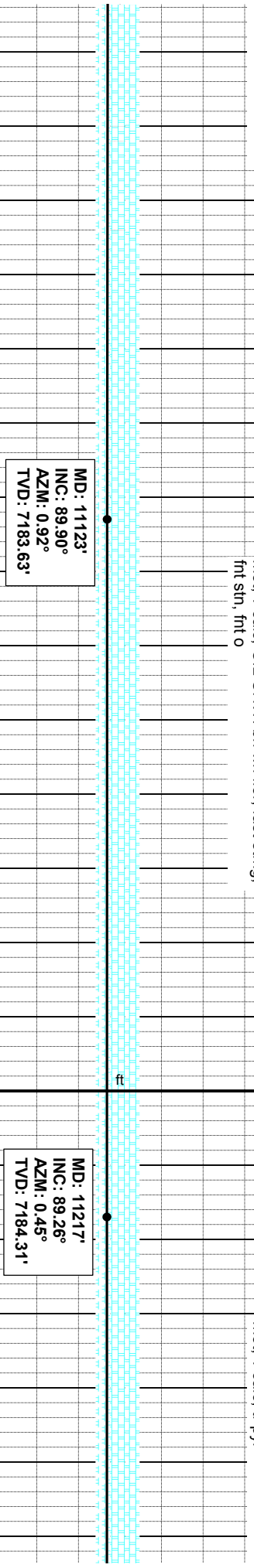
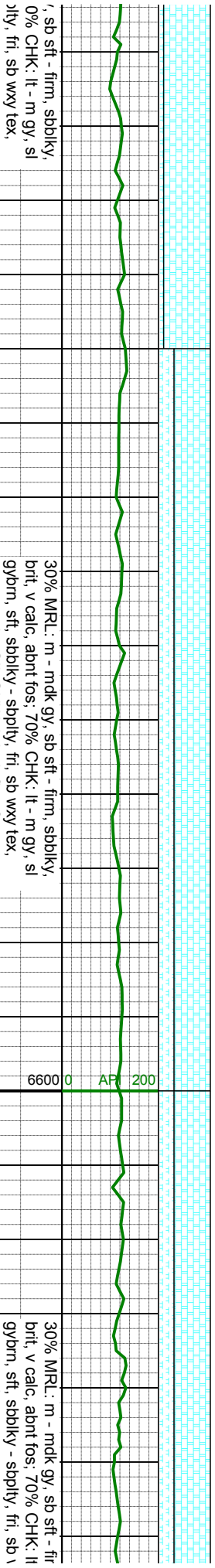
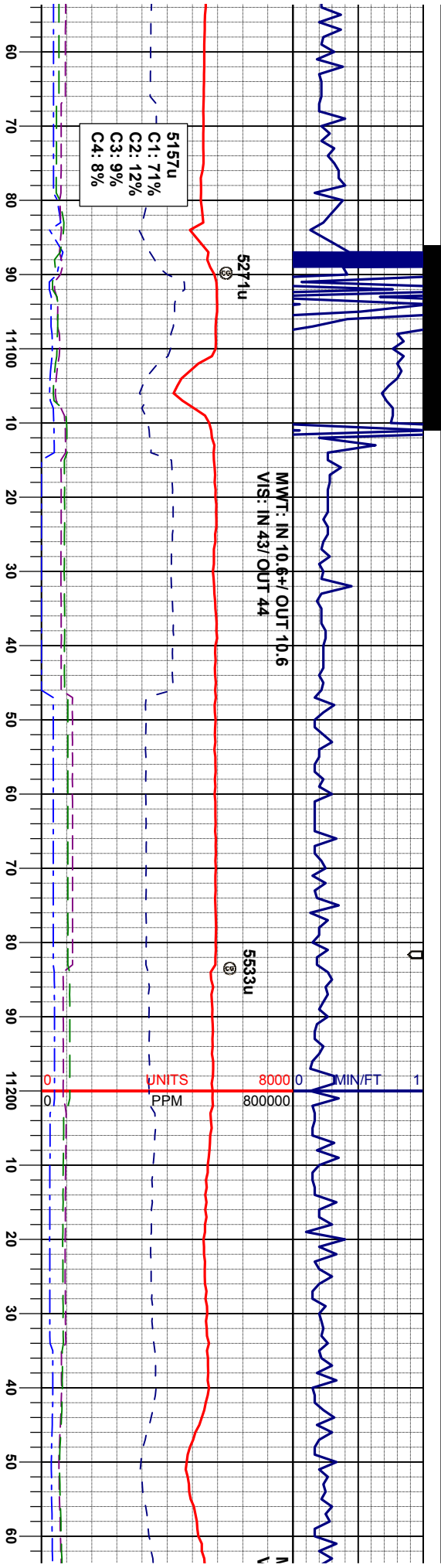
15% MRL: m - mdk gy, sb sft - firm, sbbkly,
bri, v calc, abnt fos, 85% CHK: lt - m gy, sl
gybrn, sft, sbbkly - sbply, fri, sb wxy tex,
mot, v calc, OIL SHW: bri wn flr, fast string,
fnt sin, fnt o

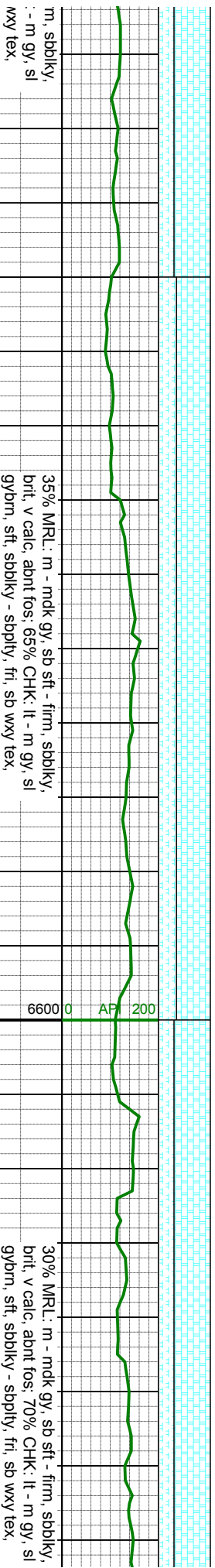
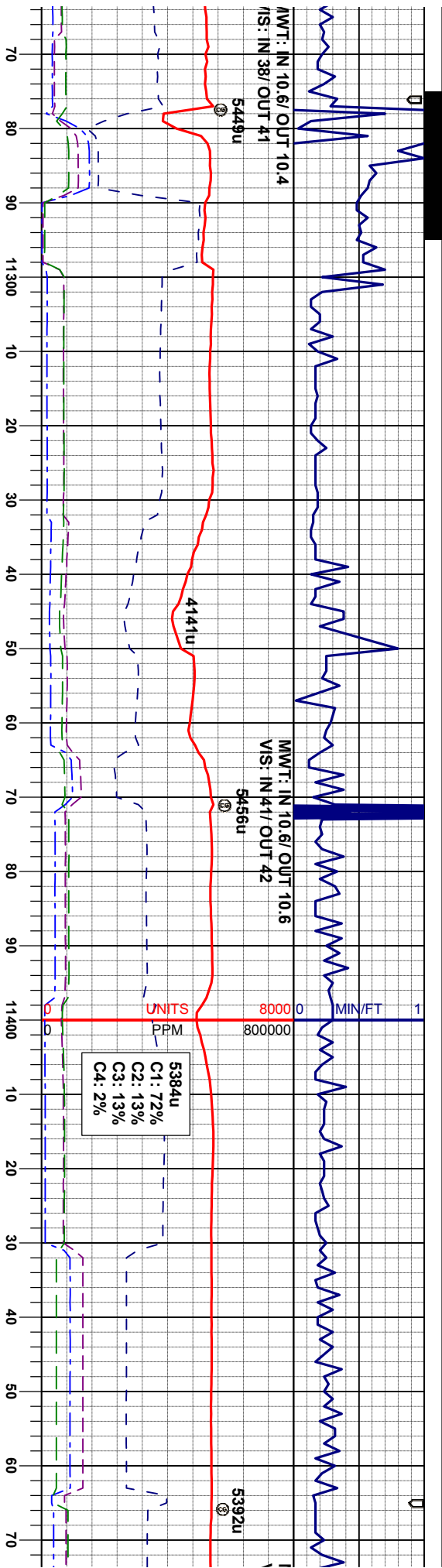
10% MRL: m - mdk gy
bri, v calc, abnt fos, 9
gybrn, sft, sbbkly - sbp
mot, v calc

MD: 10933'
INC: 89.29°
AZM: 1.51°
TVD: 7180.33'

MD: 11028'
INC: 88.42°
AZM: 1.50°
TVD: 7182.23'





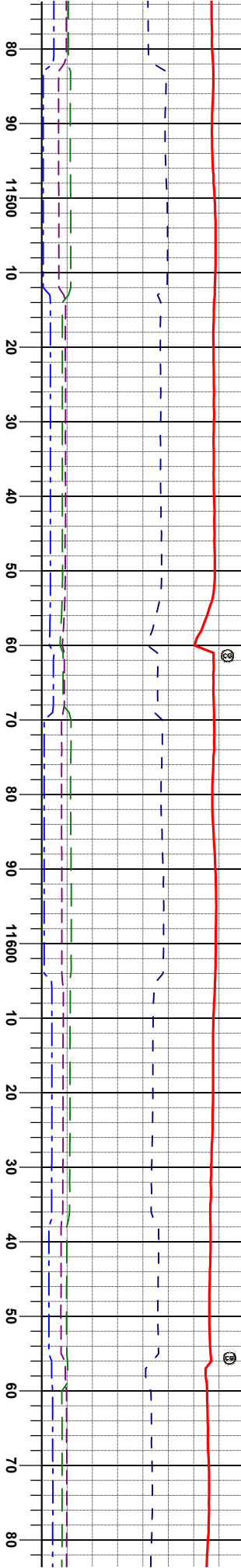


MWT: IN 10.6/ OUT 10.6
VIS: IN 43/ OUT 45

5431u

MWT: IN 10.6/ OUT 10.6
VIS: IN 45/ OUT 44

5362u



30% MRL: m - mdk gy, sb sft - firm, sbdkly, brit, v calc, abnt fos, 70% CHK: lt - m gy, sl gybrn, sft, sbdkly - sbply, fri, sb wxy tex, mot, v calc, OIL SHW: bri wh flr, mod stng, fnt stn, fnt o

30% MRL: m - mdk gy, sb sft - fi brit, v calc, abnt fos, 70% CHK: l gybrn, sft, sbdkly - sbply, fri, sb mot, v calc

MD: 11502'
INC: 90.27°
AZM: 0.08°
TVD: 7182.88'

MD: 11597'
INC: 89.87°
AZM: 0.71°
TVD: 7182.76'

MT
INI
AZ
TV



