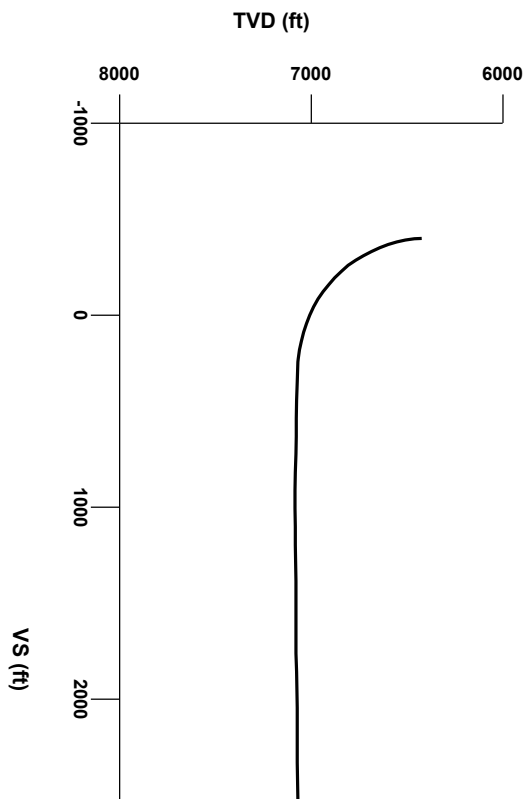




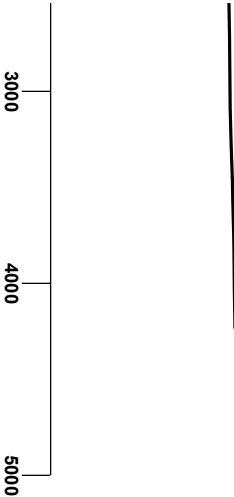
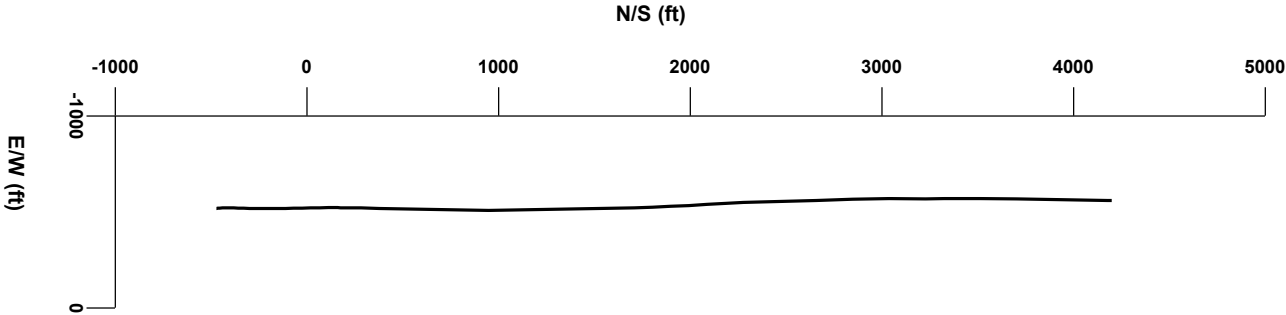
LOG created using LPLLOT VH Version 3.0, January 21, 2013, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: ANADARKO PETROLEUM CORPORATION
WELL: POWERS 30N-27HZ
LOCATION: SWSW SEC 27, T2N, R65W
COUNTY: WELD
STATE: COLORADO
SPOT: 510' FSL x 540' FWL
ELEVATION: 4934' GL - 4947' KB
FIELD: WATTENBERG
SPUD DATE: 1/15/13
TD DATE: 1/21/13
DATES LOGGED: 1/16/13 - 1/21/13
DEPTHS LOGGED: 6500' - 11592'
LOGGERS: ZACH UBER & MICHAEL ROOKS
DRILLING FLUID: LSND
DRILLING RIG: ENSIGN 138
API: 05-123-36364
LOG TYPE: HORIZONTAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: Wellsite Geological Services Provided By Columbine Logging Inc.



Survey Elevation

Survey Plan



Chalk

Marl

Shale

Silty Shale

LITHOLOGIES

B

Bentonite

MODIFIERS

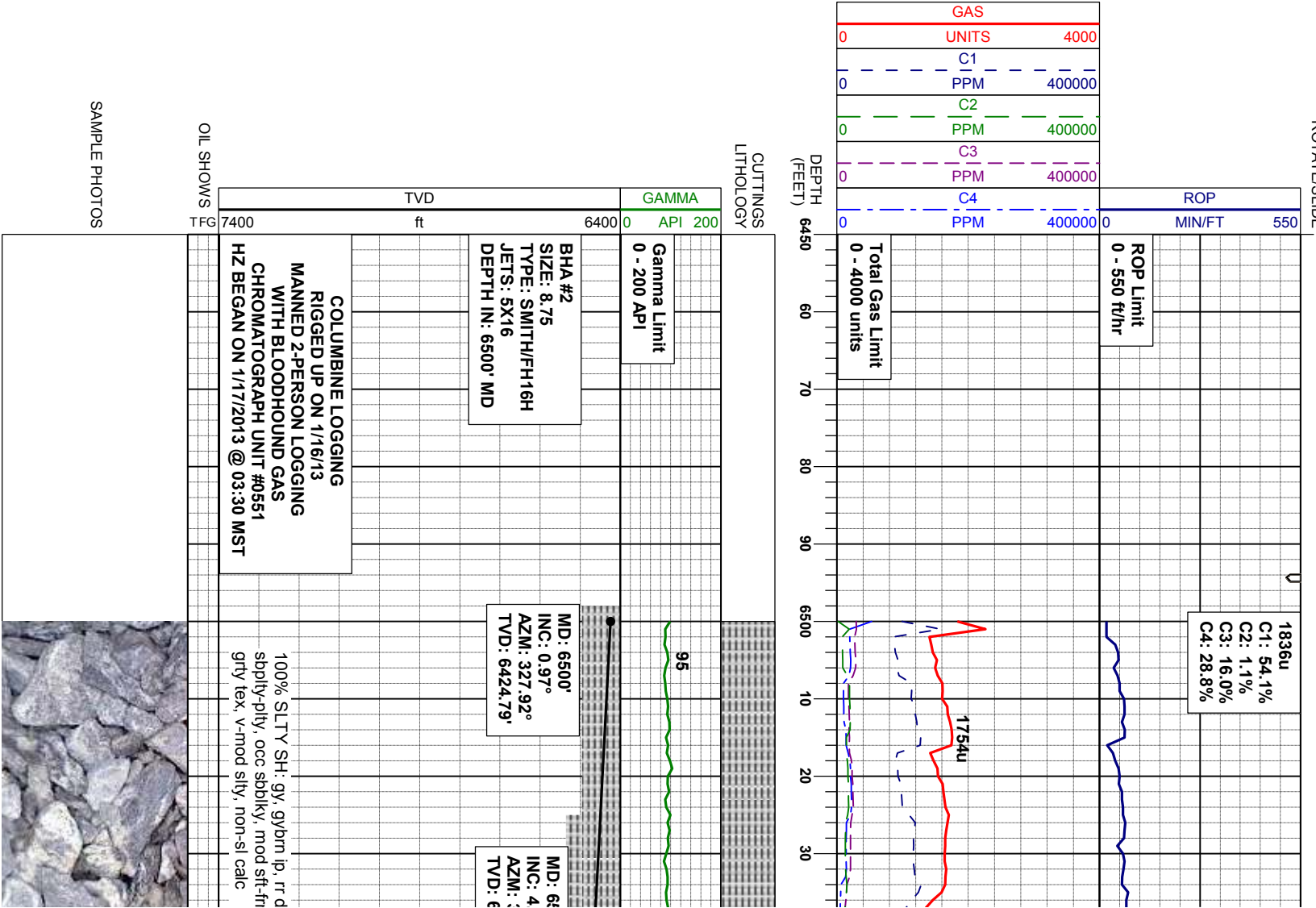
Connection

Connection Gas

Midnight Depth

Arrow

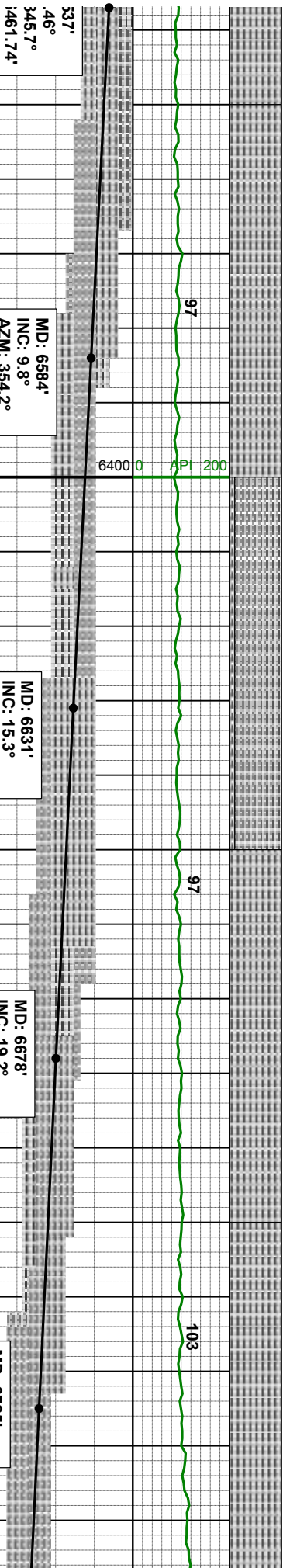
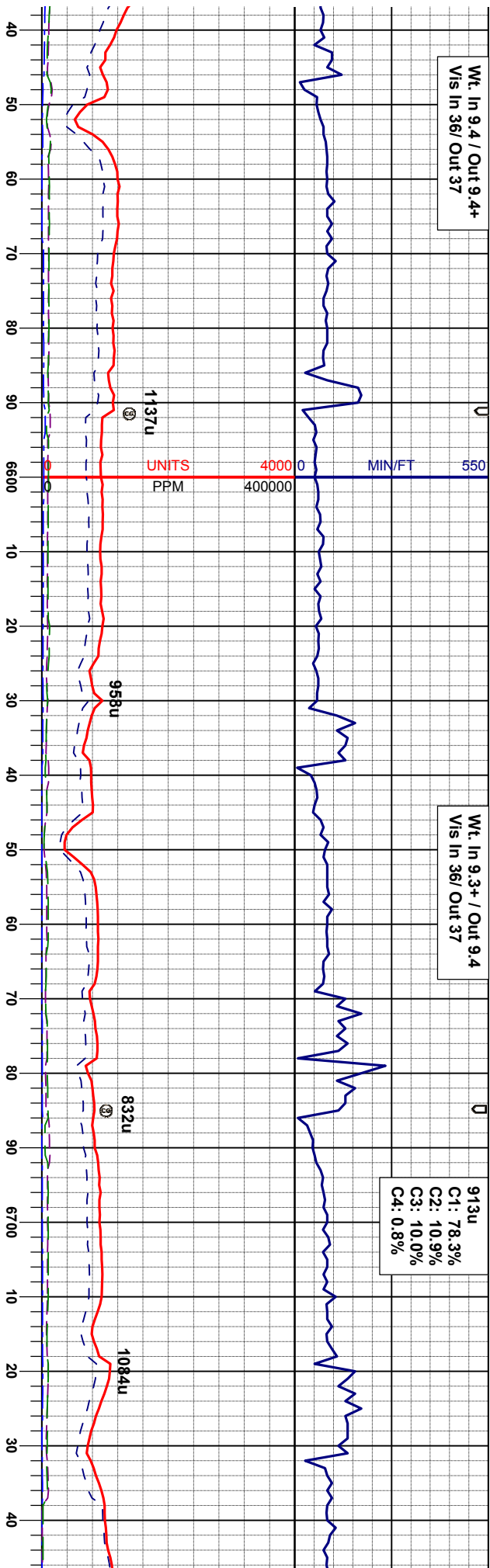
ENGINEERING SYMBOLS



Wt. In 9.4 / Out 9.4+
Vis In 36/ Out 37

Wt. In 9.3+ / Out 9.4
Vis In 36/ Out 37

913u
C1: 78.3%
C2: 10.9%
C3: 10.0%
C4: 0.8%



537'
46°
345.7°
461.74'

MD: 6584'
INC: 9.8°
AZM: 354.2°
TVD: 6508.36'

MD: 6631'
INC: 15.3°
AZM: 357.6°
TVD: 6554.22'

MD: 6678'
INC: 19.2°
AZM: 358.6°
TVD: 6599.10'

MD: 6725'
INC: 22.9°
AZM: 359.3°
TVD: 6642.96'

kgv ,
n, cly rich-

100% SLTY SH: gy, gybm ip, r dkgy ,
sbply-pty, occ sbblky, mod sft-frm, cly rich-
grty tex, v-mod slty, non-sl calc

90% SLTY SH: gy, gybm ip, r dkgy , sbply
-pty, occ sbblky, mod sft-frm, cly rich-grty
tex, v-mod slty, non-sl calc
10% SH: dk gy, m - dk bm, occ blk, vfg,
pty - sbflky, mod hd - mod sft, occ sft, sm
tex

100% SLTY SH: gy, gybm ip, r dkgy ,
sbply-pty, occ sbblky, mod sft-frm, cly rich-
grty tex, v-mod slty, non-sl calc

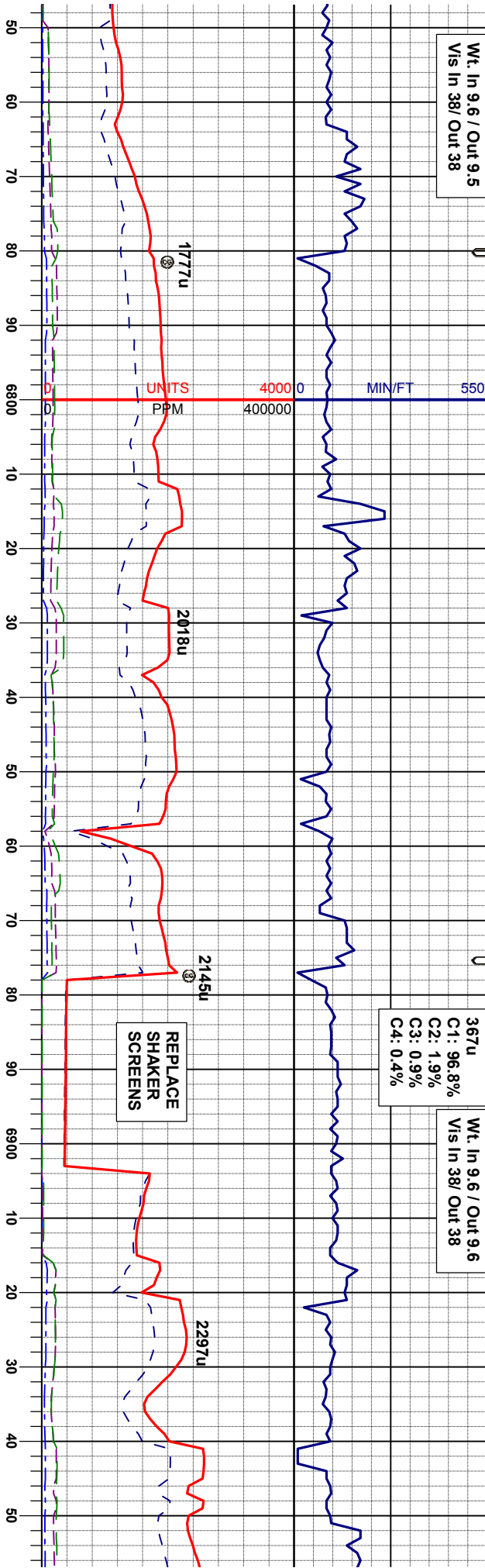
100% SLTY SH: gy, gybm ip, r dkgy ,
sbply-pty, occ sbblky, mod sft-frm, cly rich-
grty tex, v-mod slty, non-sl calc



Wt. In 9.6 / Out 9.5
Vis In 38/ Out 38

367u
C1: 96.8%
C2: 1.9%
C3: 0.9%
C4: 0.4%

Wt. In 9.6 / Out 9.6
Vis In 38/ Out 38



MD: 6772'
INC: 25.8°
AZM: 359.2°
TVD: 6685.77'

MD: 6820'
INC: 28.9°
AZM: 0.8°
TVD: 6728.4'

MD: 6867'
INC: 33.0°
AZM: 2.3°
TVD: 6768.7'

MD: 6915'
INC: 38.3°
AZM: 2.6°
TVD: 6807.69'

MD: 65
INC: 4;
AZM: 1
TVD: 6

100% SLTY SH: gy, gybm ip, rr dkgy,
sbply-ply, occ sbblky, mod sft-fm, cly rich-
grty tex, v-mod silty, non-sl calc

100% SLTY SH: gy, gybm ip, rr dkgy,
sbply-ply, occ sbblky, mod sft-fm, cly rich-
grty tex, v-mod silty, non-sl calc

100% SLTY SH: gy, gybm ip, rr dkgy,
sbply-ply, occ sbblky, mod sft-fm, cly rich-
grty tex, v-mod silty, non-sl calc

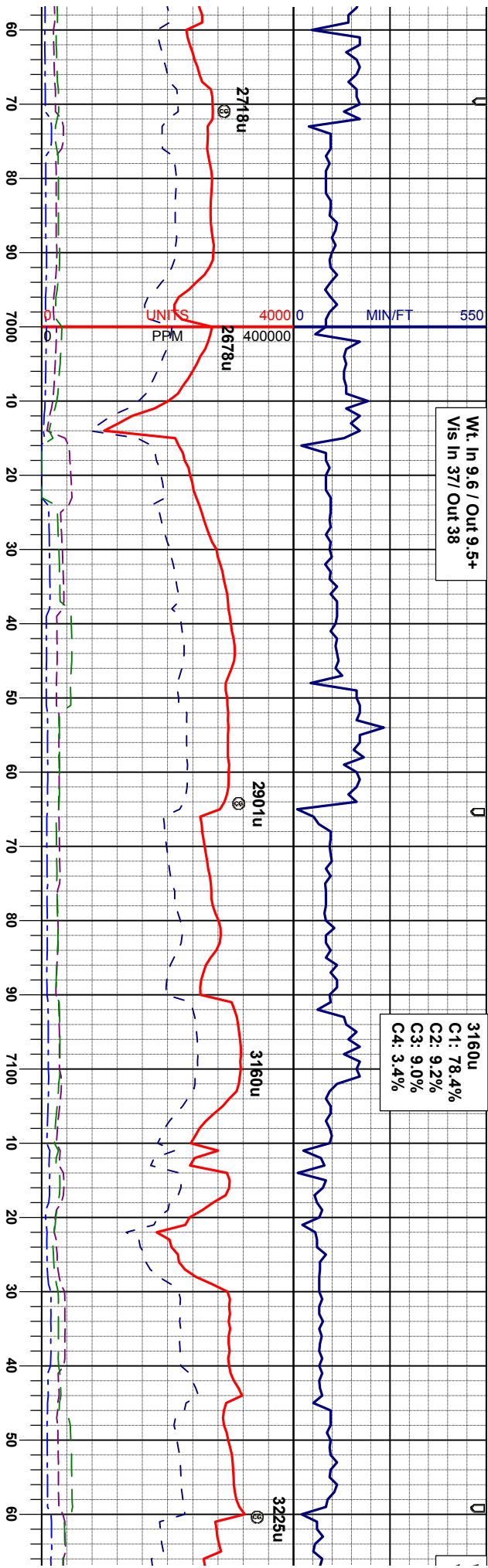
100% SLTY SH: gy, gybm ip, rr dkgy,
sbply-ply, occ sbblky, mod sft-fm, cly rich-
grty tex, v-mod silty, non-sl calc

100%
sbply
grty te



Wt. In 9.6 / Out 9.5+
Vis In 37/ Out 38

3160u
C1: 78.4%
C2: 9.2%
C3: 9.0%
C4: 3.4%



Sharon Springs Top
7074' MD, 6889' TVD

Nio A Top
7120' MD, 6950' TVD

MD: 7010'
INC: 47.0°
AZM: 0.5°
TVD: 6877.39'

MD: 7057'
INC: 50.5°
AZM: 359.8°
TVD: 6908.37'

MD: 7105'
INC: 53.9°
AZM: 359.7°
TVD: 6937.79'

MD: 7152'
INC: 57.8°
AZM: 359.8°
TVD: 6964.17'

<<TVD SCALE CHANGE>>

SLTY SH: gy, gybm ip, rr dkgy, sbply-pty, occ sbdky, mod sft-fm, cly rich-grty tex, v-mod silty, sl calc; ft gn-bl string, vsi tr stain, v sl tr residual ring

100% SLTY SH: gy, gybm ip, rr dkgy, sbply-pty, occ sbdky, mod sft-fm, cly rich-grty tex, v-mod silty, abnt bent, sl calc; ft gn-bl string, vsi tr stain, vsi tr residual ring

85% SLTY SH: gy, gybm ip, rr dkgy, sbply-pty, occ sbdky, mod sft-fm, cly rich-grty tex, v-mod silty, sl calc; 15%CHK: dk-n gybm-bm, sbmot gy, bky-sbdky, mod firm -fri, chky-sbwxxy, mtx, v calc; slow, diffuse, sl string, semi bri blwn mky cut, n flor sin or od

SLTYSH: dk gy-n calc, m-v silty, CHK: dk-m gybr sbdky, mod firm calc MRL: dk gybm, silty, mod cin fiz; bri blwn mky cut

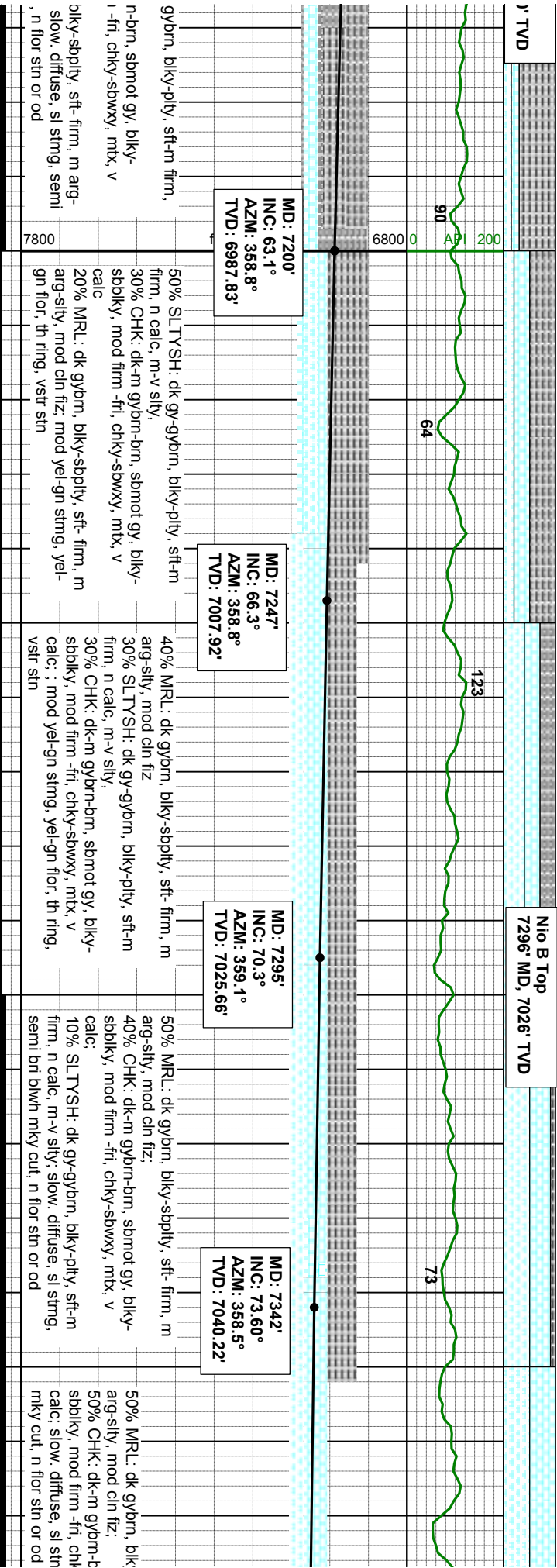
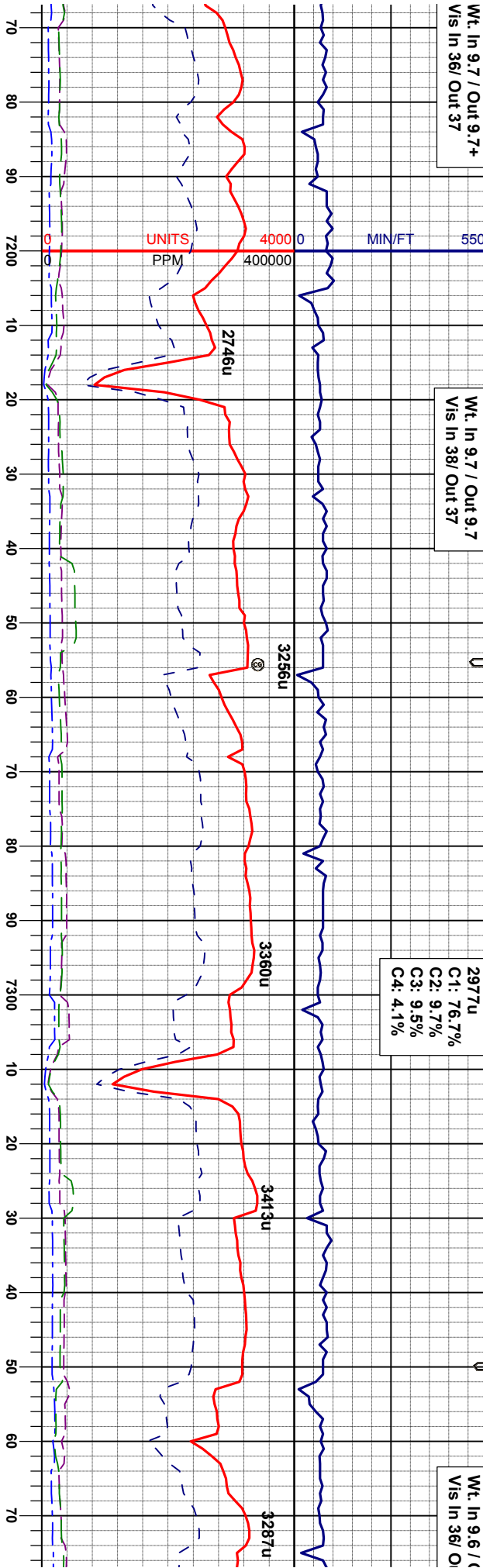


Wt. In 9.7 / Out 9.7+
Vis In 36/ Out 37

Wt. In 9.7 / Out 9.7
Vis In 38/ Out 37

2977u
C1: 76.7%
C2: 9.7%
C3: 9.5%
C4: 4.1%

Wt. In 9.6 /
Vis In 36/ O



MD: 7200'
INC: 63.1°
AZM: 358.8°
TVD: 6987.83'

MD: 7247'
INC: 66.3°
AZM: 358.8°
TVD: 7007.92'

MD: 7295'
INC: 70.3°
AZM: 359.1°
TVD: 7025.66'

MD: 7342'
INC: 73.60°
AZM: 358.5°
TVD: 7040.22'

gyb/m, blk-y-ply, sft-m firm,
n-b/m, sbmot gy, blk-y-
-fri, chky-sbwy, mtx, v
calc
20% MRL: dk gyb/m, blk-y-sbply, sft- firm, m
arg-sily, mod cin fiz, mod yel-gn stmg, yel-
gn flor, th ring, vstr stn

50% SLTYSH: dk gyb/m, blk-y-ply, sft-m
firm, n calc, m-v sily,
30% CHK: dk-m gyb/m-bm, sbmot gy, blk-y-
sbply, mod firm -fri, chky-sbwy, mtx, v
calc
40% MRL: dk gyb/m, blk-y-sbply, sft- firm, m
arg-sily, mod cin fiz
30% SLTYSH: dk gy-gybm, blk-y-ply, sft-m
firm, n calc, m-v sily,
30% CHK: dk-m gyb/m-bm, sbmot gy, blk-y-
sbply, mod firm -fri, chky-sbwy, mtx, v
calc; : mod yel-gn stmg, yel-gn flor, th ring,
vstr stn

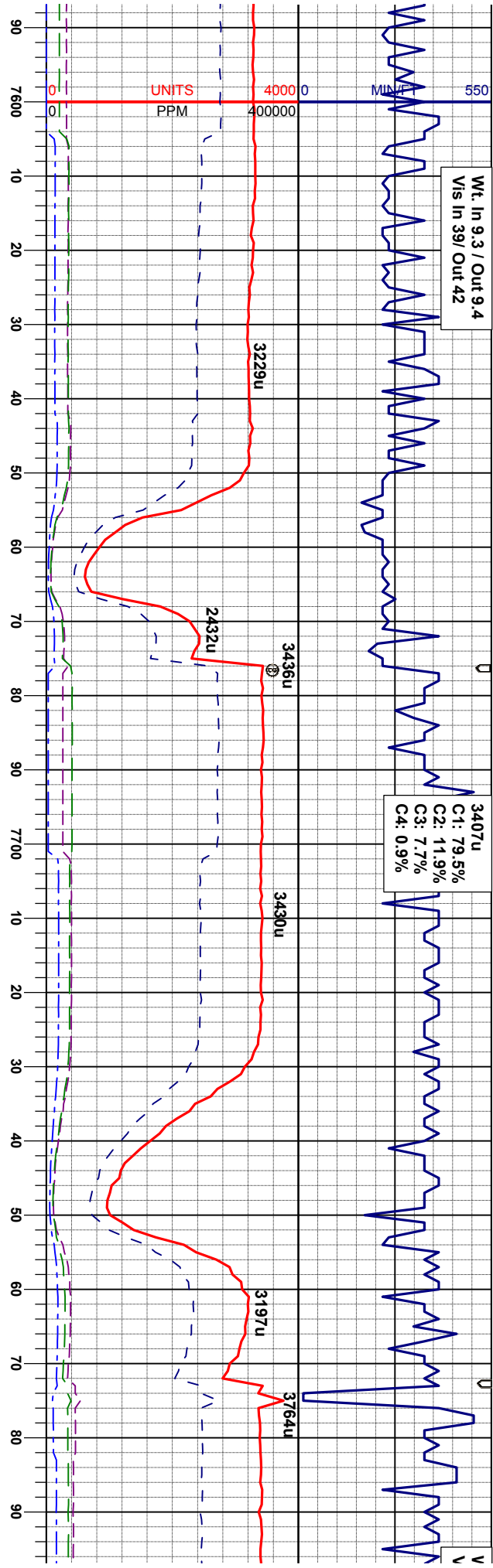
50% MRL: dk gyb/m, blk-y-sbply, sft- firm, m
arg-sily, mod cin fiz;
40% CHK: dk-m gyb/m-bm, sbmot gy, blk-y-
sbply, mod firm -fri, chky-sbwy, mtx, v
calc;
10% SLTYSH: dk gy-gybm, blk-y-ply, sft-m
firm, n calc, m-v sily; slow, diffuse, sl stmg,
semi bri blwh mky cut, n flor stn or od

50% MRL: dk gyb/m, blk
arg-sily, mod cin fiz;
50% CHK: dk-m gyb/m-t
sbply, mod firm -fri, ch
calc; slow, diffuse, sl stn
mky cut, n flor stn or od



Wt. In 9.3 / Out 9.4
Vis In 39/ Out 42

C1: 79.5%
C2: 11.9%
C3: 7.7%
C4: 0.9%



GAMMA SCALE CHANGE>>

MD: 7608'
INC: 88.9°
AZM: 1.0°
TVD: 7074.08'

MD: 7704'
INC: 88.9°
AZM: 1.2°
TVD: 7075.93'

MD:
INC
AZM
TVD

85% MRL: dk gybrn, blkly-sbply, sft- firm, m
arg-sily, mod cin fiz;
15% CHK: dk-m gybrn-brn, sbmot gy, blkly-
sbblkly, mod firm -fri, chky-sbwxy, mtx, v
calc: slow, diffuse, sl stmg, semi bri blwh
mky cut, n flor stn or od

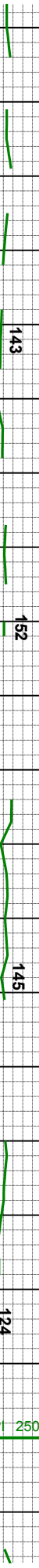
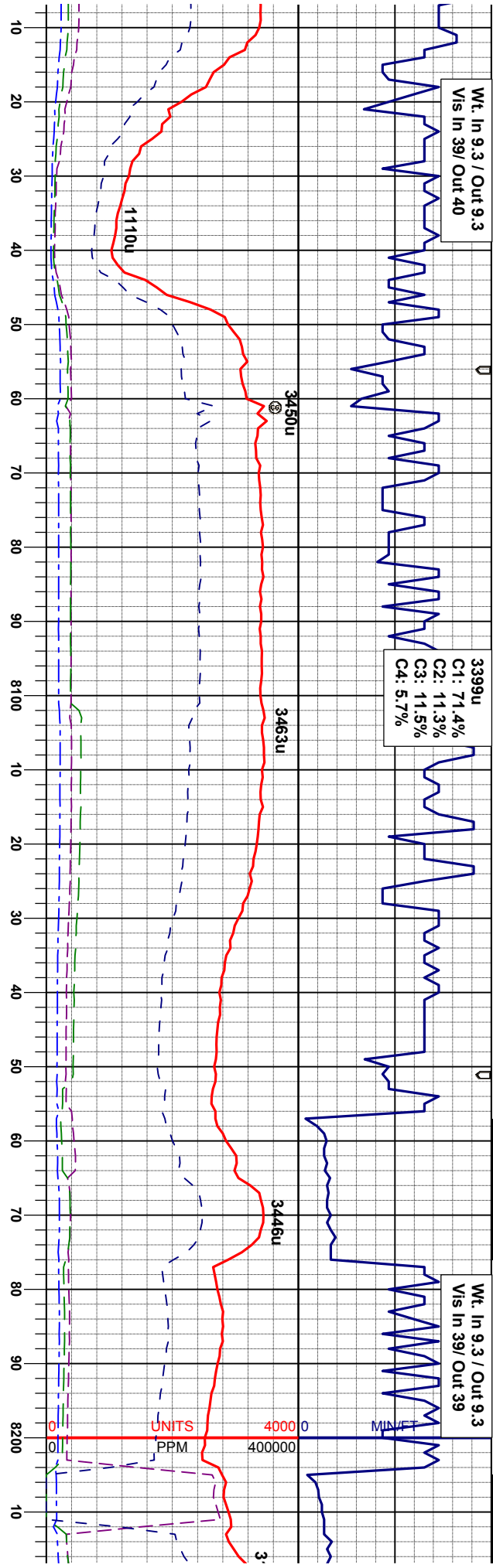
85% MRL: dk gybrn, blkly-sbply, sft- firm, m
arg-sily, mod cin fiz;
15% CHK: dk-m gybrn-brn, sbmot gy, blkly-
sbblkly, mod firm -fri, chky-sbwxy, mtx, v
calc: slow, diffuse, sl stmg, semi bri blwh
mky cut, n flor stn or od



Wt. In 9.3 / Out 9.3
Vis In 39/ Out 40

3399u
C1: 71.4%
C2: 11.3%
C3: 11.5%
C4: 5.7%

Wt. In 9.3 / Out 9.3
Vis In 39/ Out 39



MD: 8083'
INC: 87.9°
AZM: 0.6°
TVD: 7083.37'

MD: 8178'
INC: 89.1°
AZM: 1.4°
TVD: 7085.86'

85% MRL: dk gybrn, bkly-sbply, sft- firm, m
arg-sily, mod cln fiz;
15% CHK: dk-m gybrn-brn, sbmot gy, bkly-
sbply, mod firm -fri, chky-sbwy, mtx, v
calc; fast diffuse, sting, bri blwh mky cut, sl
residual sin n od

80% MRL: dk gybrn, bkly-sbply, sft- firm, m
arg-sily, mod cln fiz;
20% CHK: dk-m gybrn-brn, sbmot gy, bkly-
sbply, mod firm -fri, chky-sbwy, mtx, v
calc; fast diffuse, sting, bri blwh mky cut, n
flor stn or od

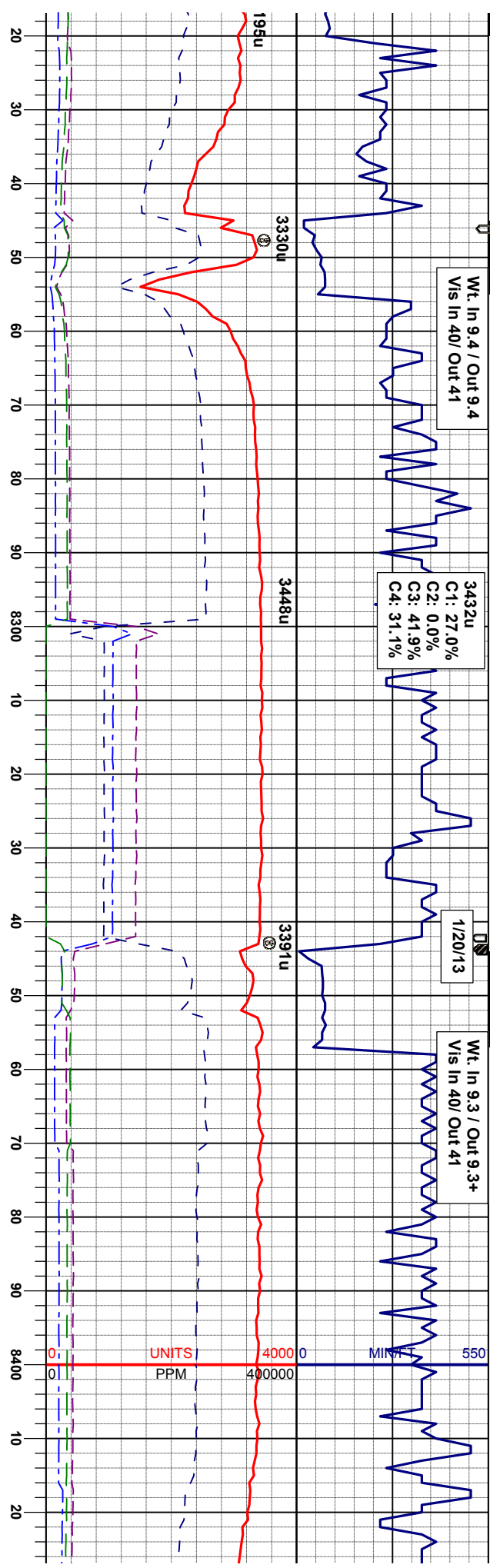


Wt. In 9.4 / Out 9.4
Vis In 40 / Out 41

3432u
C1: 27.0%
C2: 0.0%
C3: 41.9%
C4: 31.1%

1/20/13

Wt. In 9.3 / Out 9.3+
Vis In 40 / Out 41



MD: 8274'
INC: 91.1°
AZM: 0.0°
TVD: 7085.69'

MD: 8369'
INC: 90.7°
AZM: 359.1°
TVD: 7084.20'

70% CHK: dk-m gybrn-brn, sbmot gy, biky-sbbiky, mod firm -fri, chky-sbwwy, mtb, v
calc:
30% MRL: dk gybrn, biky-sbbiky, sft-firm, m arg-sily, mod ch fiz: slow, diffuse, sl stmg, semi bri blwh mky cut, sl residual sin n od

75% CHK: dk-m gybrn-brn, sbmot gy, biky-sbbiky, mod firm -fri, chky-sbwwy, mtb, v
calc:
25% MRL: dk gybrn, biky-sbbiky, sft-firm, m arg-sily, mod ch fiz: slow, diffuse, sl stmg, semi bri blwh mky cut, sl residual sin n od

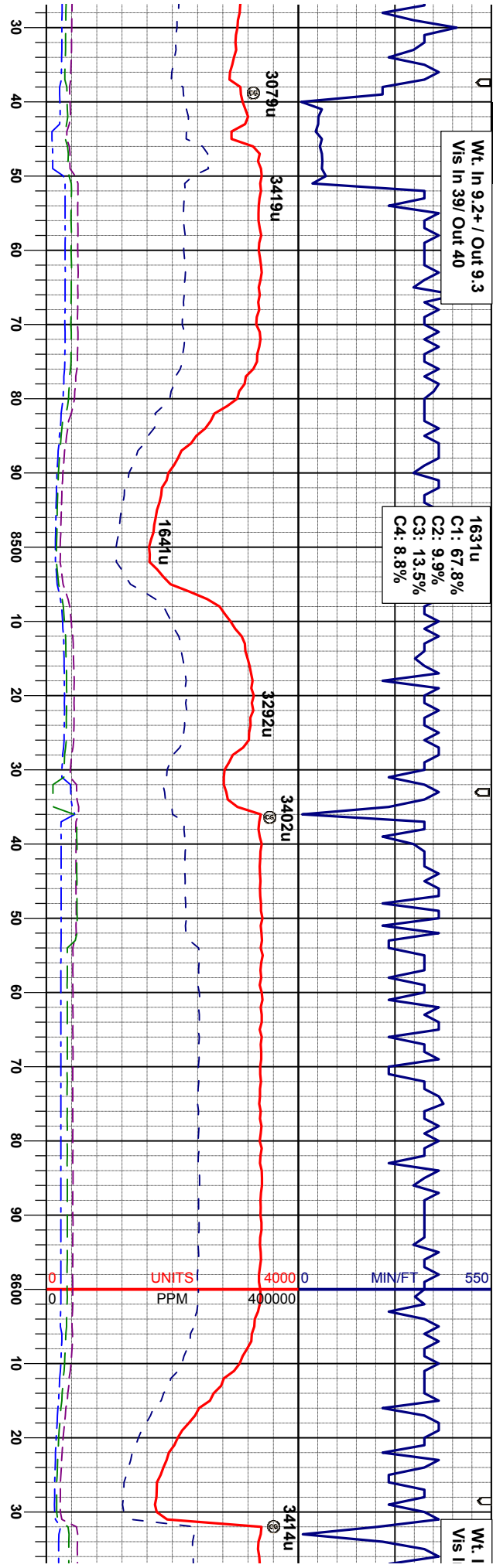
7800 ft 6800 0 API 250



Wt. In 9.2+ / Out 9.3
Vis In 39/ Out 40

1631u
C1: 67.8%
C2: 9.9%
C3: 13.5%
C4: 8.8%

Wt. I
Vis I



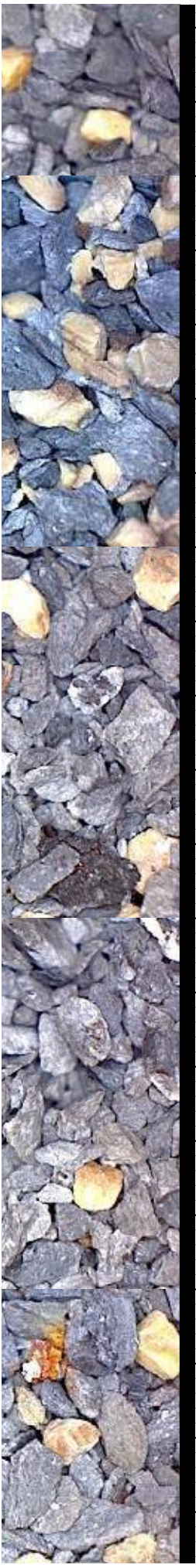
MD: 8465'
INC: 91.0°
AZM: 359.1°
TVD: 7082.78'

MD: 8560'
INC: 90.5°
AZM: 359.3°
TVD: 7081.53'

80% CHK: dk-m gybm-brn, sbmot gy, biky-sbbiky, mod firm -fri, chky-sbwwy, mtx, v calc;
20% MRL: dk gybm, biky-sbply, sft- firm, m arg-sily, mod cin fiz: slow, diffuse, sl sting, semi bri blwh mky cut, sl residual stn n od

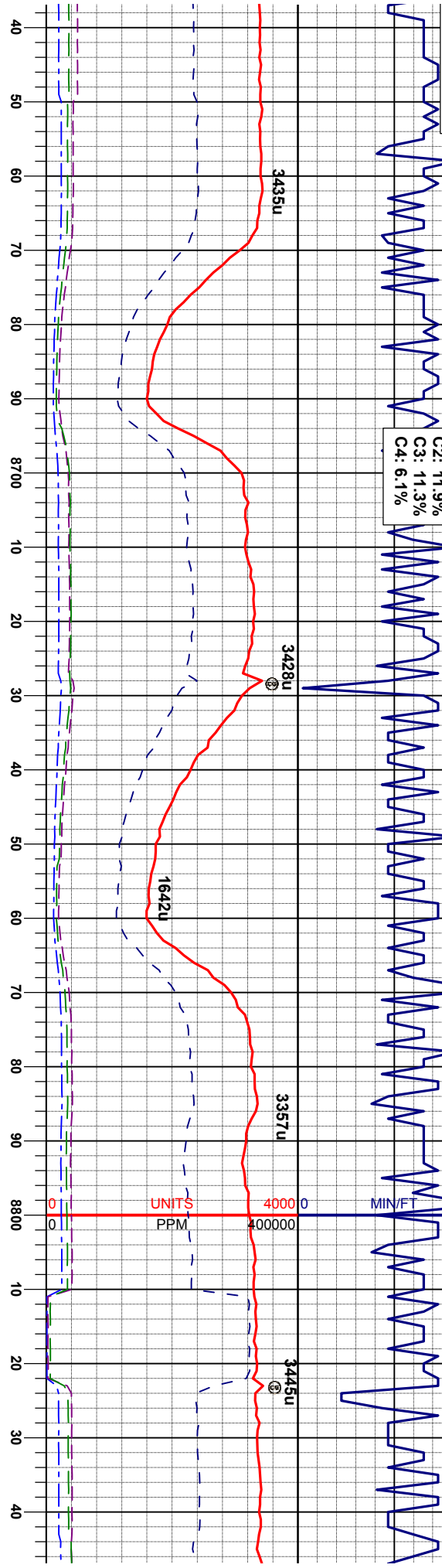
95% CHK: dk-m gybm-brn, sbmot gy, biky-sbbiky, mod firm -fri, chky-sbwwy, mtx, v calc; fos frag;
5% MRL: dk gybm, biky-sbply, sft- firm, m arg-sily, mod cin fiz: slow, diffuse, sl sting, semi bri blwh mky cut, sl residual stn n od

95% CHI
sbbiky, n calc;
5% MRL
arg-sily,
semi bri



n 9.2+ / Out 9.3
n 40/ Out 39

3101u
C1: 70.7%
C2: 11.9%
C3: 11.3%
C4: 6.1%



MD: 8655'
INC: 90.3°
AZM: 358.9°
TVD: 7080.87'

MD: 8749'
INC: 90.3°
AZM: 358.7°
TVD: 7080.38'

MD: 884'
INC: 90.
AZM: 35
TVD: 70'

< dk-m gybm-brn, sbmot gy, biky-
tod firm -fri, chky-sbwwy, mtv, v

80% CHK: dk-m gybm-brn, sbmot gy, biky-
sbbiky, mod firm -fri, chky-sbwwy, mtv, v
calc, fos frag;
20% MRL: dk gybm, biky-sbply, sft-firm, m
arg-sltly, mod cin fiz, slow, diffuse, sl sting,
semi bri blwh mky cut, sl residual stn n od

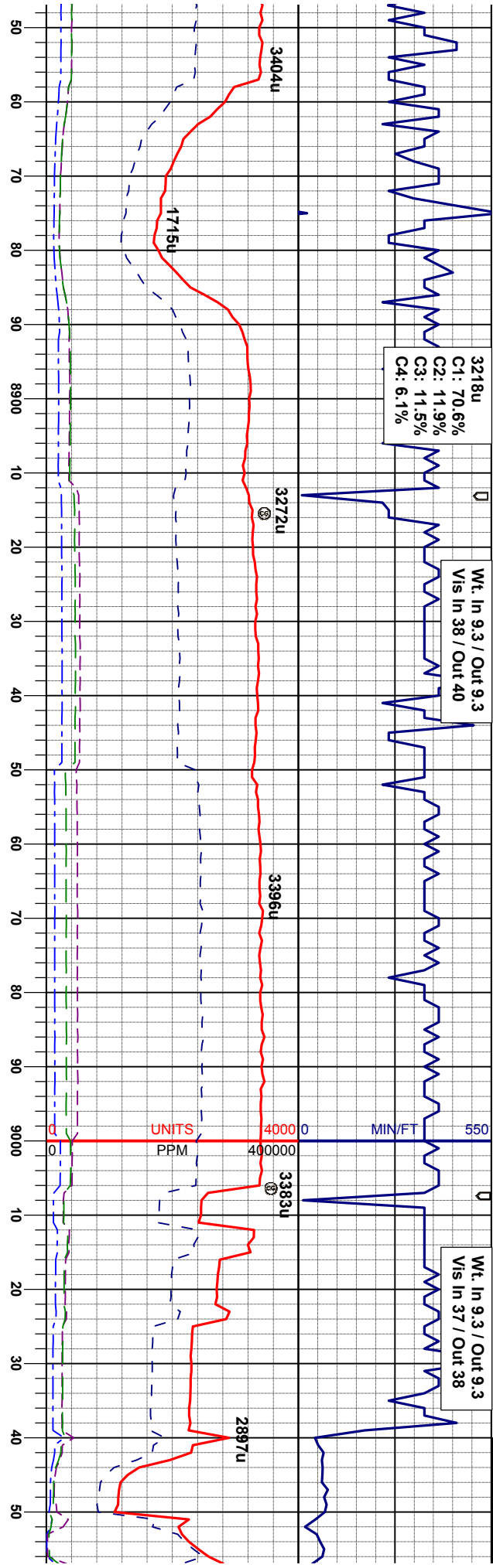
50% CHK: dk-m gyt
sbbiky, mod firm -fri
calc, fos frag;
50% MRL: dk gybm
arg-sltly, mod cin fiz,
gn flor, th ring, vstr



3218u
C1: 70.6%
C2: 11.9%
C3: 11.5%
C4: 6.1%

Wt. In 9.3 / Out 9.3
Vis In 38 / Out 40

Wt. In 9.3 / Out 9.3
Vis In 37 / Out 38



5'
2°
8.8°
79.96'

MD: 8933°
INC: 89.9°
AZM: 358.8°
TVD: 7079.88'

MD: 9034°
INC: 90.3°
AZM: 359.2°
TVD: 7079.71'

75% MRL: m gy, firm, gt tex, microxln, sbply-sbbiky, v calc thru, tr fos frag inoc, rr bent
25% CHK: lt gy - m gy, spec tan - brn, vfgf - fgr, m sft - sft, sbbiky - blk, fri, rthy tex, v calc; ; mod yel-gn stng, yel-gn flor, th ring, vstr stn

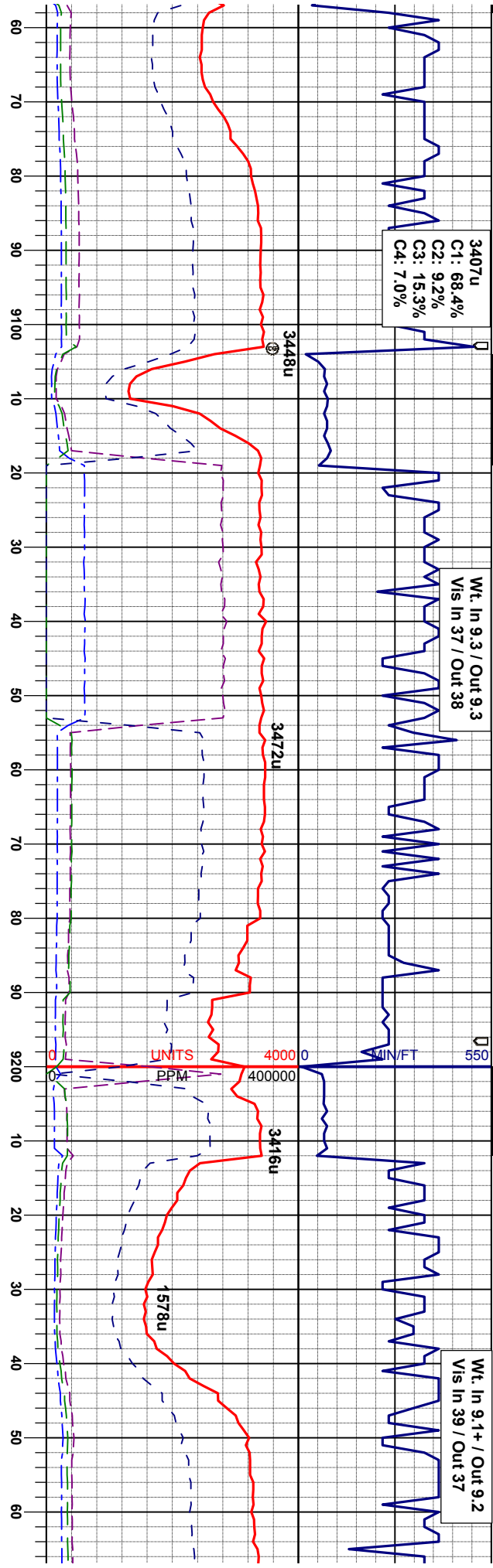
90% MRL: m gy, firm, gt tex sbply-sbbiky, v calc thru, tr f bent
10% CHK: lt gy - m gy, spec fgr, m sft - sft, sbbiky - blk, f calc; ; mod yel-gn stng, yel-g vstr stn



C1: 68.4%
C2: 9.2%
C3: 15.3%
C4: 7.0%

Wt. In 9.3 / Out 9.3
Vis In 37 / Out 38

Wt. In 9.1+ / Out 9.2
Vis In 39 / Out 37



181

198

165

134

161

MD: 9129'
INC: 92.43°
AZM: 357.0°
TVD: 7077.47'

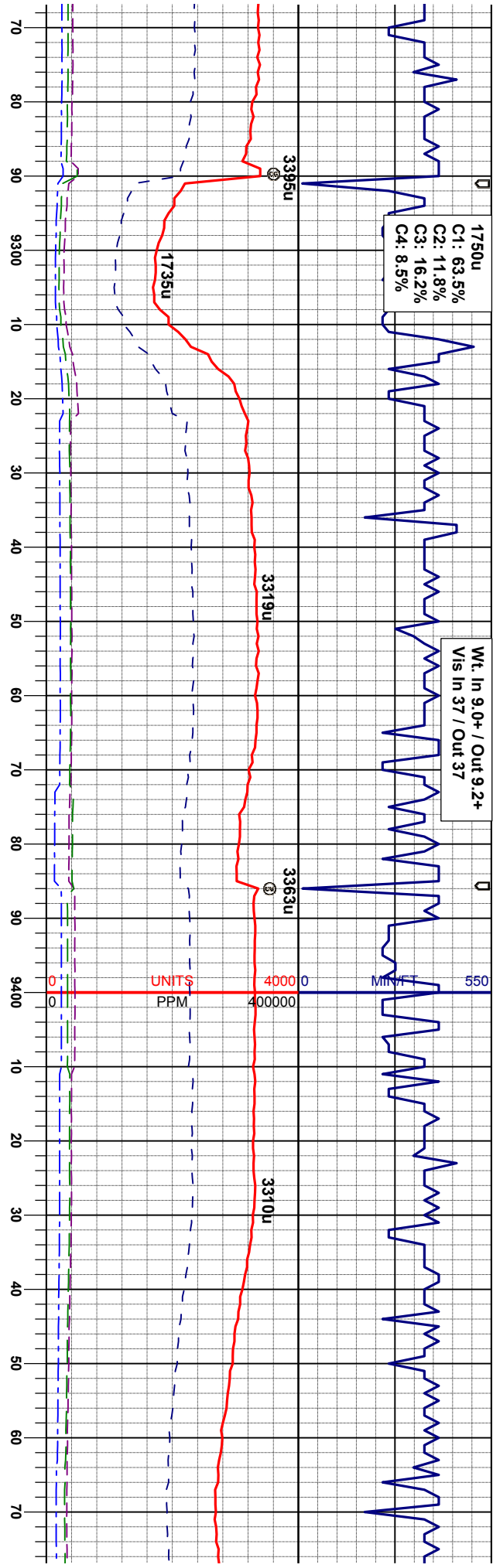
MD: 9224'
INC: 90.6°
AZM: 357.5°
TVD: 7074.99'

microxln, os frag inoc, rr
tan - brn, vfg - rty tex, vjn flor, th ring
90% MRL: m gy, firm, gt tex, microxln, sbply-sbdky, v calc thru, tr fos frag inoc, rr bent
10% CHK: lt gy - m gy, spec tan - brn, vfg - fgr, m sft - sft, sbdky - bkly, fri, rthy tex, v calc; mod yel-gn stmg, yel-gn flor, th ring, vsfr stn
85% MRL: m gy, firm, gt tex, microxln, sbply-sbdky, v calc thru, tr fos frag l bent
15% CHK: lt gy - m gy, spec tan - br fgr, m sft - sft, sbdky - bkly, fri, rthy t calc; fast diffuse, stmg, brl blwn mky flor stn or od



1750u
C1: 63.5%
C2: 11.8%
C3: 16.2%
C4: 8.5%

Wt. In 9.0+ / Out 9.2+
Vis In 37 / Out 37



MD: 9319'
INC: 90.5°
AZM: 357.1°
TVD: 7074.07'

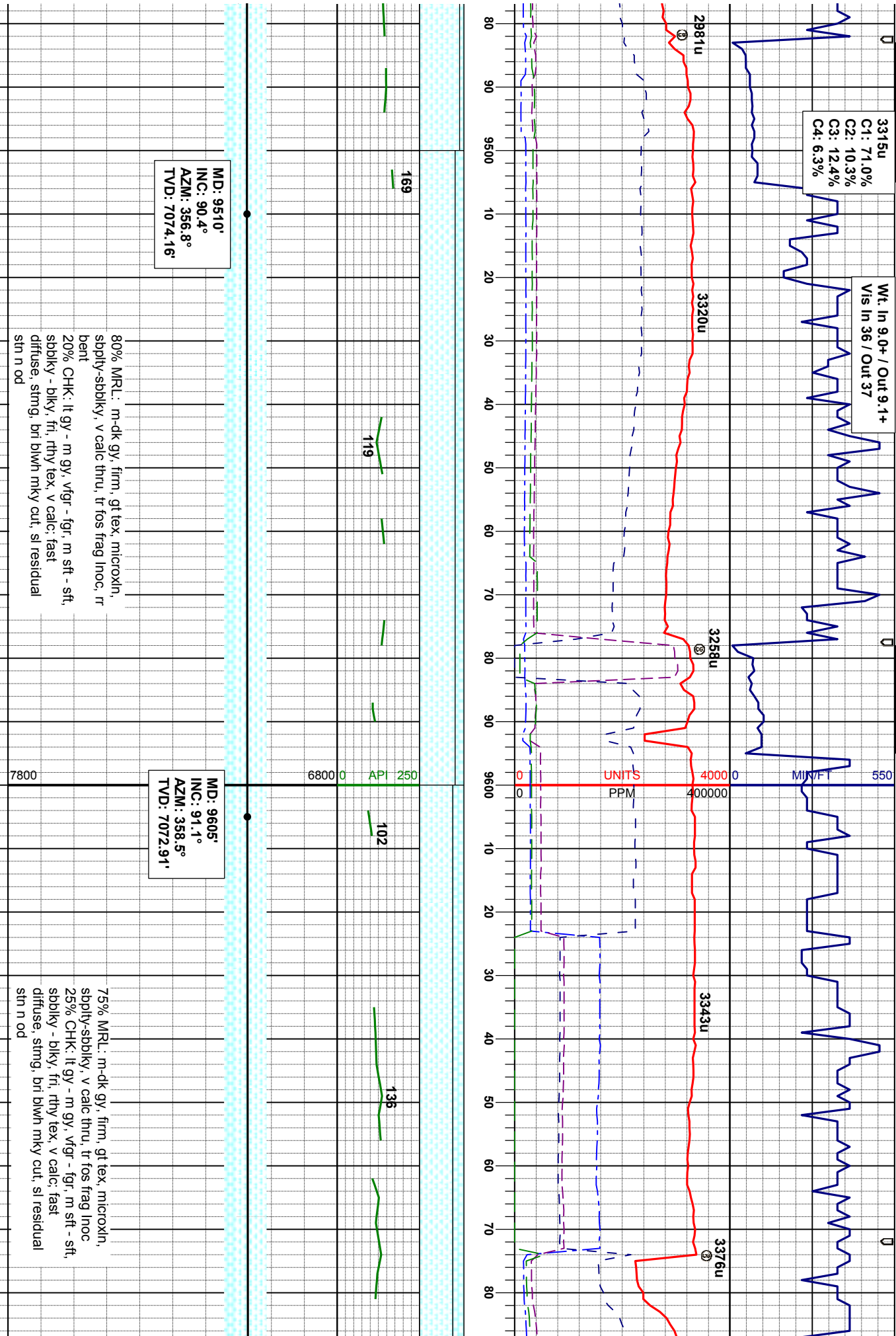
MD: 9415'
INC: 89.5°
AZM: 356.2°
TVD: 7074.07'

n.
noc, π
l, v fgr -
ex, v
cut, n

80% MRL: m gy, firm, gt tex, microxin,
sbply-sbply, v calc thru, tr fos frag inoc,
sme bent
20% CHK: lt gy - m gy, spec tan - brn, v fgr -
fgr, m sft - sft, sbply - blk, fri, rthy tex, v
calc, fast diffuse, sting, bri blwn mky cut, sl
residual stn n od

90% MRL: dk gy, sme blk, wxy - sl gt tex, m
sft - fm, sbply - sbply, tr intbd pyr
10% CHK: lt gy - m gy, v fgr - fgr, m sft - sft,
sbply - blk, fri, rthy tex, v calc, fast
diffuse, sting, bri blwn mky cut, sl residual
stn n od

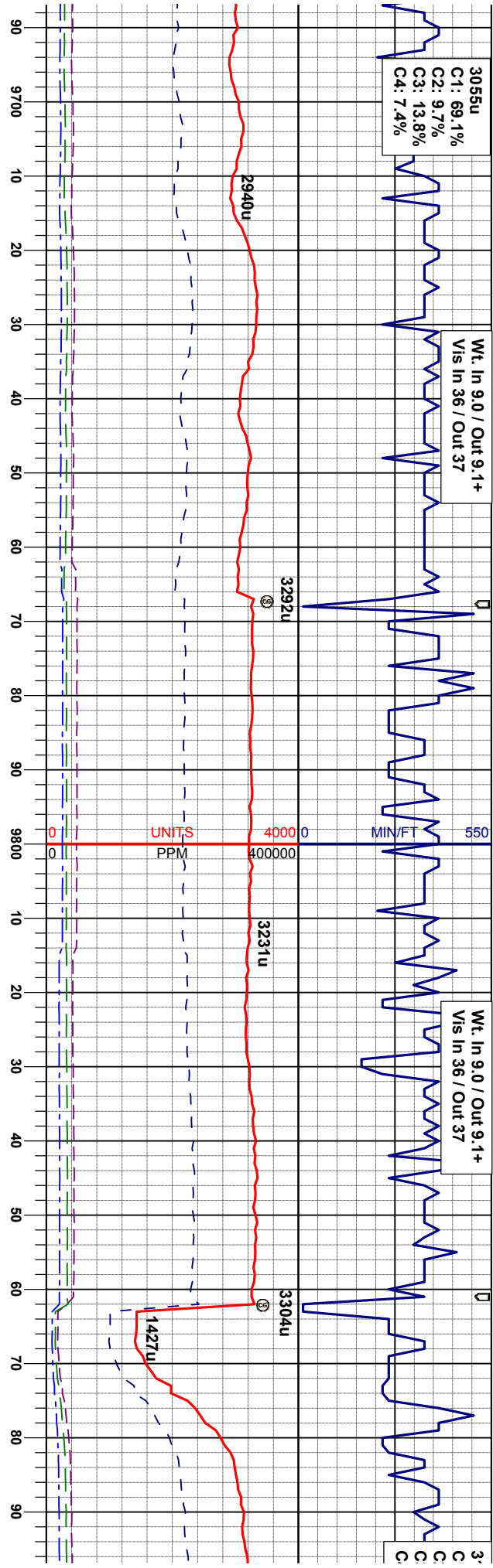




3055u
C1: 69.1%
C2: 9.7%
C3: 13.8%
C4: 7.4%

Wt. In 9.0 / Out 9.1+
Vis In 36 / Out 37

Wt. In 9.0 / Out 9.1+
Vis In 36 / Out 37



106

94

128

API 250

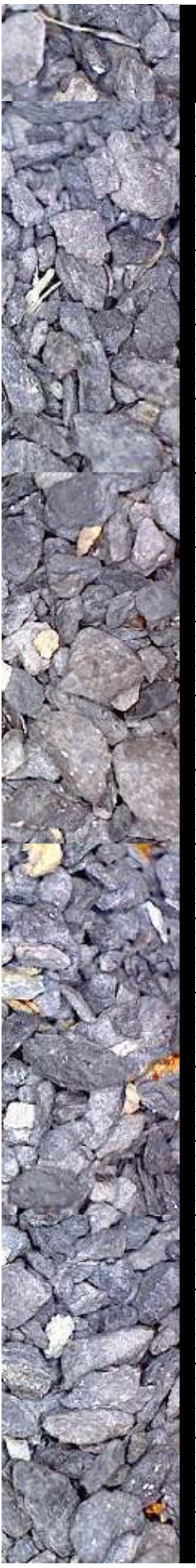
109

106

MD: 9795'
INC: 90.9°
AZM: 358.1°
TVD: 7069.60'

70% MRL: m-dk gy, firm, gt tex, microxn,
spbly-sbdky, v calc thru, tr fos frag Inoc
30% CHK: lt gy - m gy, vfg - fgr, m sft - sft,
sbdky - bkly, fri, rthy tex, v calc, slow,
diffuse, sl sting, semi bri blwh mky cut, sl
residual sin n od

80% MRL: m-dk gy, firm, gt tex, microxn,
spbly-sbdky, v calc thru
20% CHK: lt gy - m gy, vfg - fgr, m sft - sft,
sbdky - bkly, fri, rthy tex, v calc, slow,
diffuse, sl sting, semi bri blwh mky cut, sl
residual sin n od



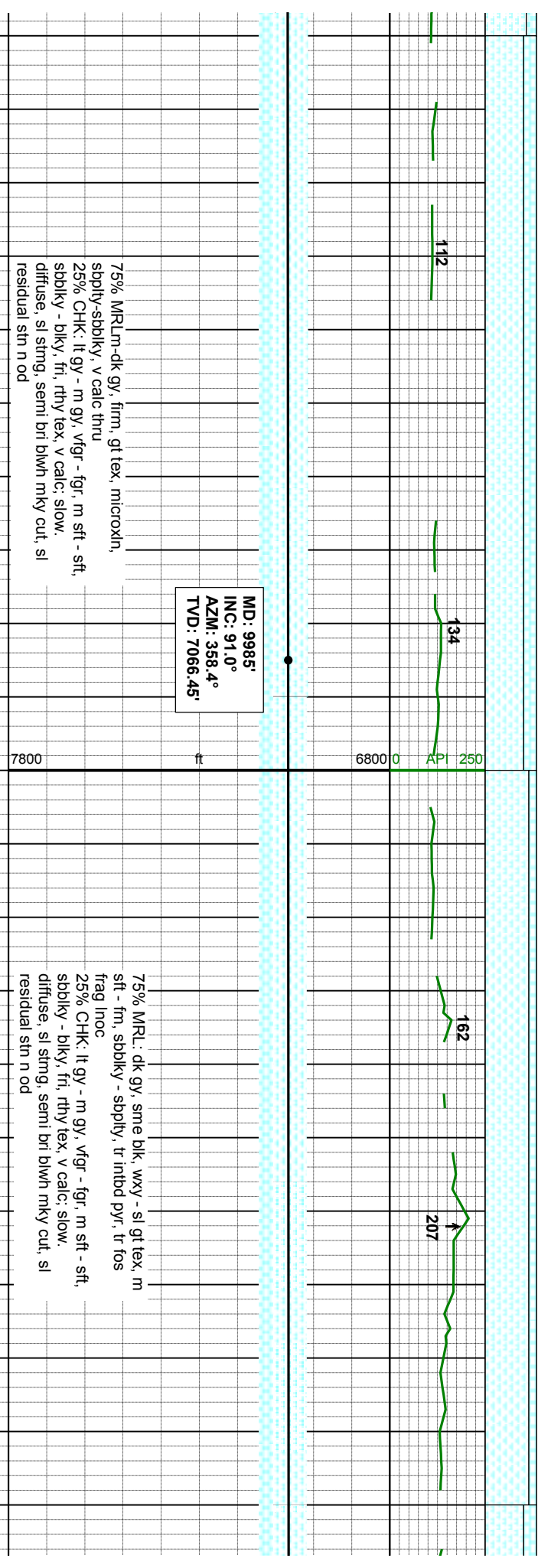
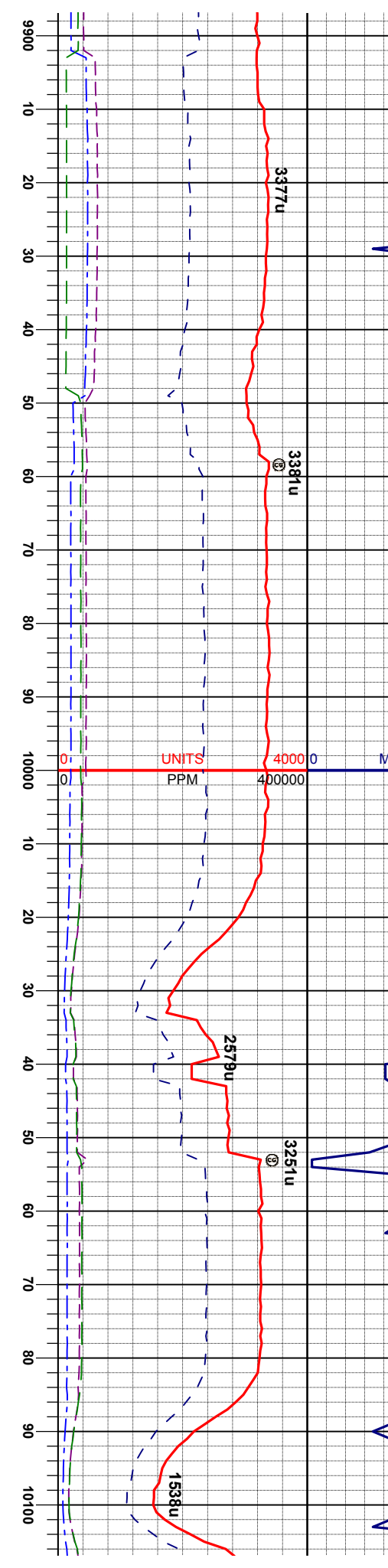
198u

Wt. In 9.1 / Out 9.0+
Vis In 36 / Out 37

1: 70.5%
2: 10.1%
3: 12.9%
4: 6.5%

1526u

C1: 72.1%
C2: 11.5%
C3: 11.3%
C4: 5.2%



75% MRLm-dk gy, firm, gt tex, microxn,
sblply-sblply, v calc thru
25% CHK: lt gy - m gy, vfg - fgr, m sft - sft,
sblply - blk, fri, rthy tex, v calc, slow,
diffuse, sl stmg, semi bri blwn mky cut, sl
residual stn n od

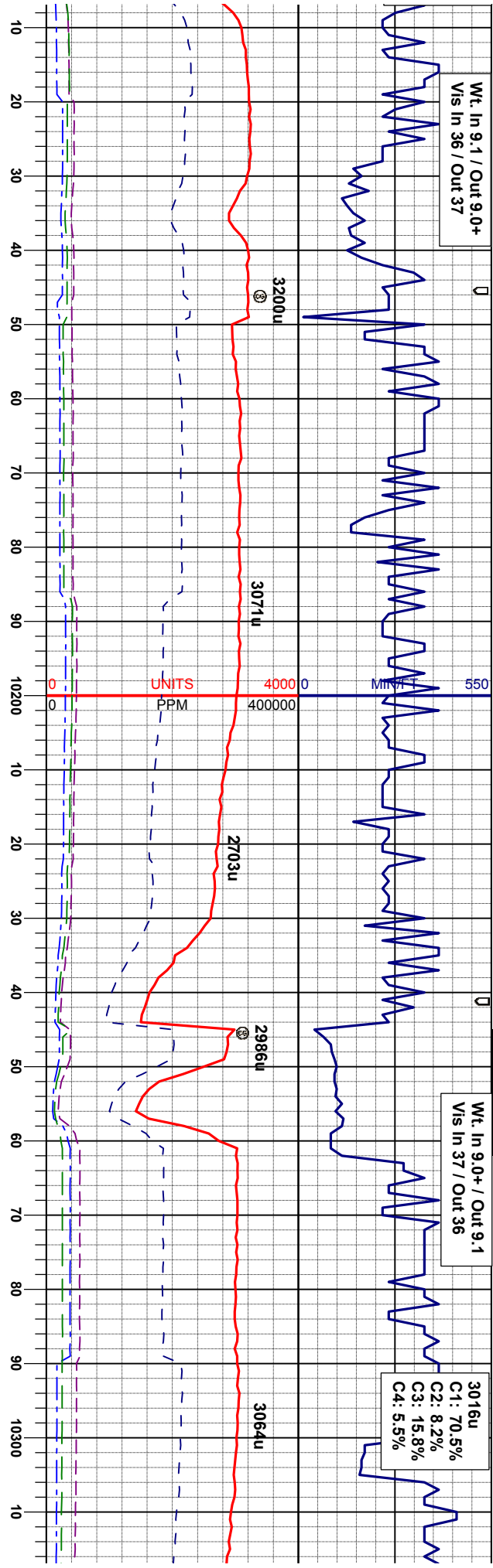
75% MRL: dk gy, sme blk, wxy - sl gt tex, m
sft - fm, sblply - sblply, tr inbd pyr, tr fos
frag inoc
25% CHK: lt gy - m gy, vfg - fgr, m sft - sft,
sblply - blk, fri, rthy tex, v calc, slow,
diffuse, sl stmg, semi bri blwn mky cut, sl
residual stn n od



Wt. In 9.1 / Out 9.0+
Vis In 36 / Out 37

Wt. In 9.0+ / Out 9.1
Vis In 37 / Out 36

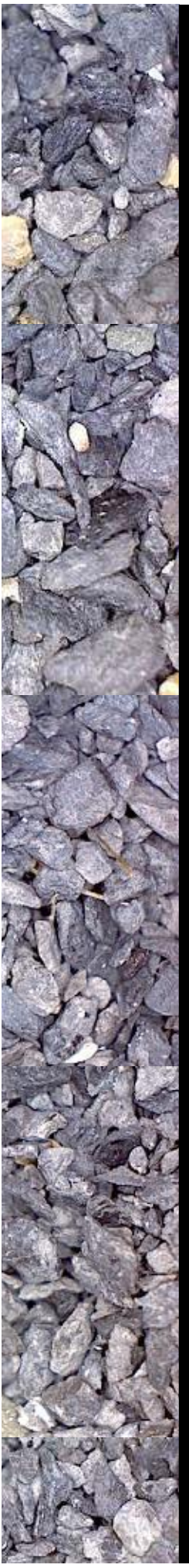
3016u
C1: 70.5%
C2: 8.2%
C3: 15.8%
C4: 5.5%

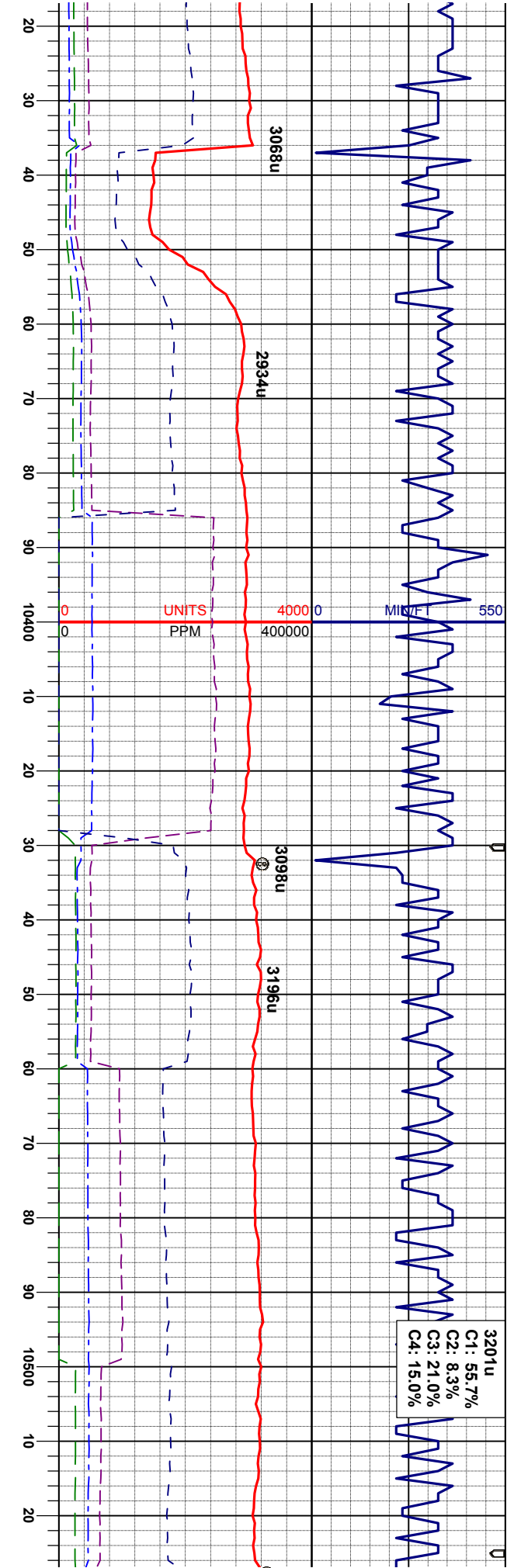
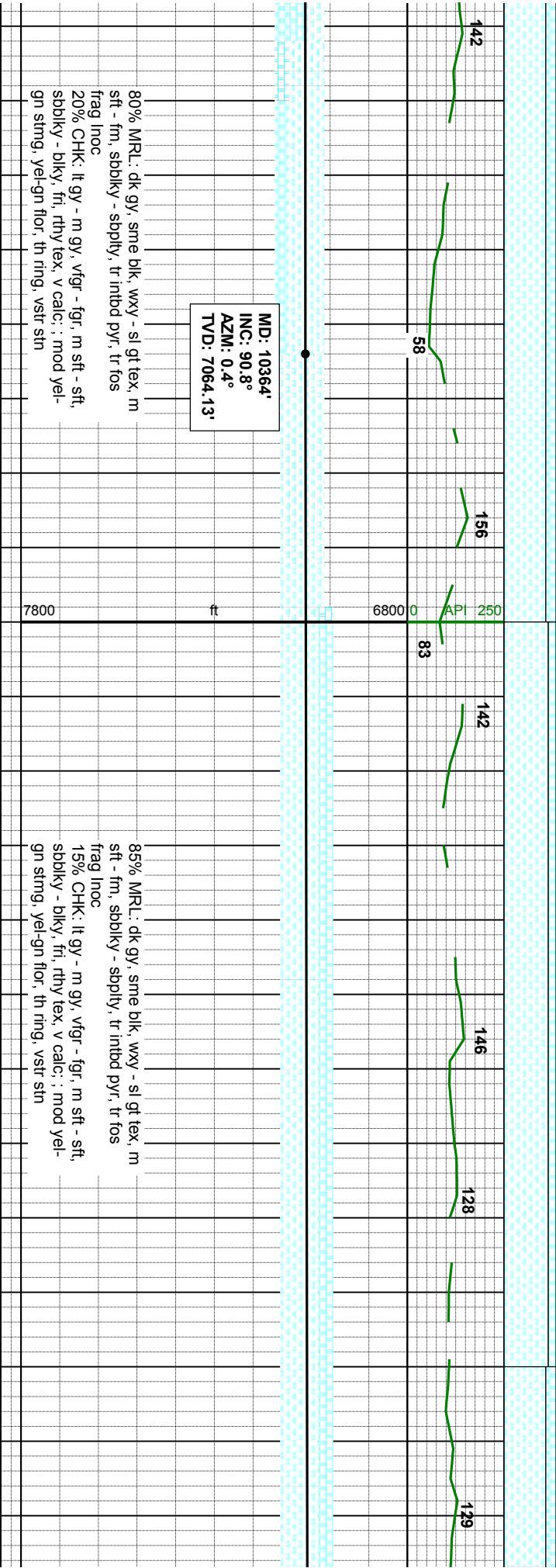


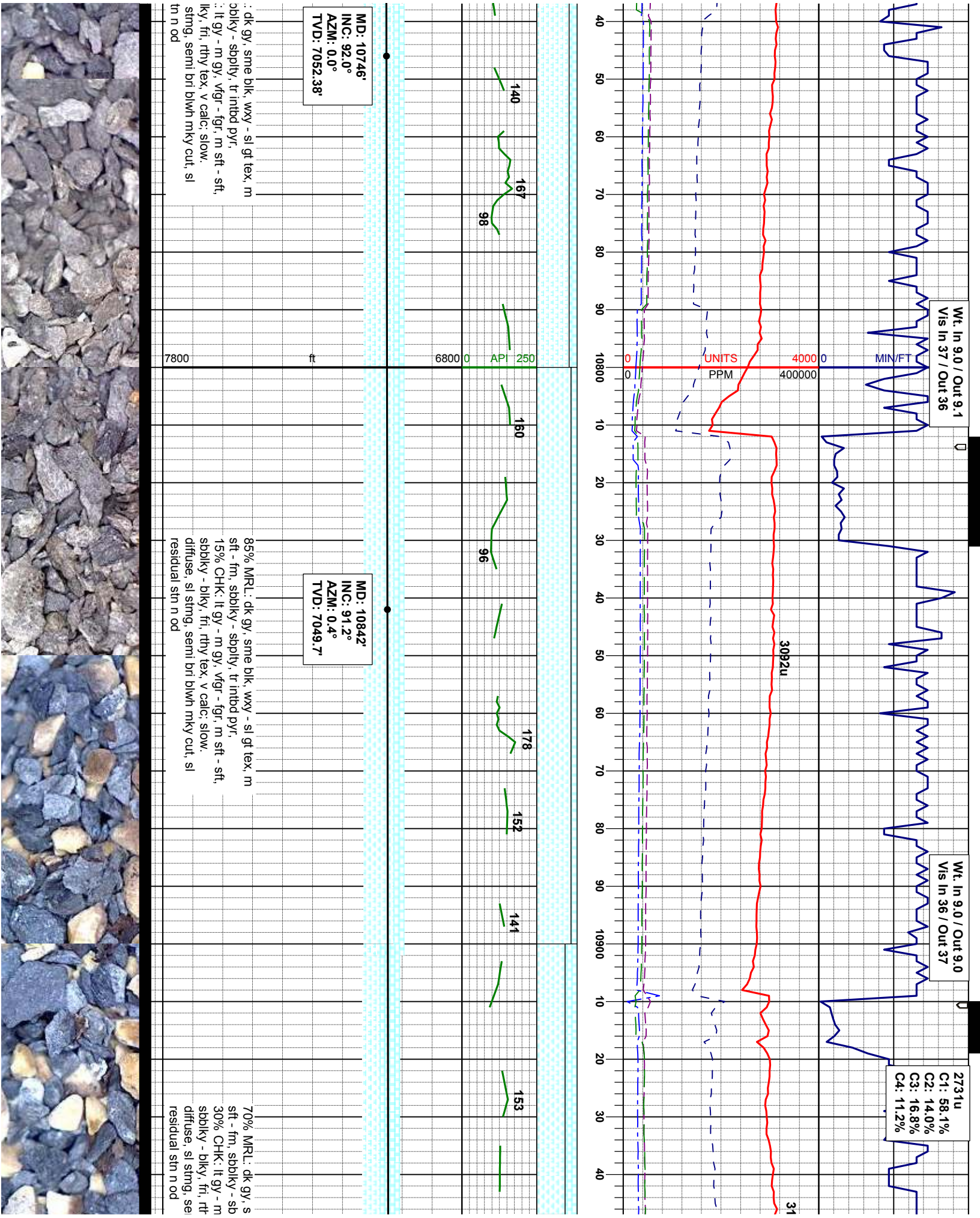
MD: 10174'
INC: 89.8°
AZM: 357.9°
TVD: 7065.13'

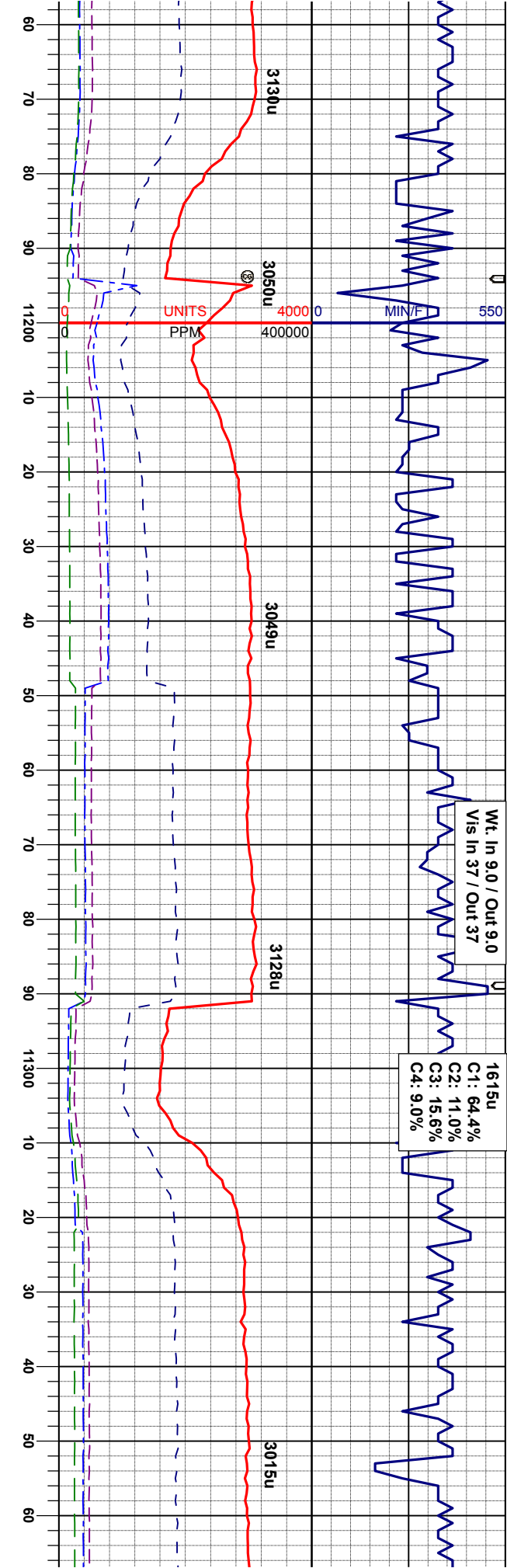
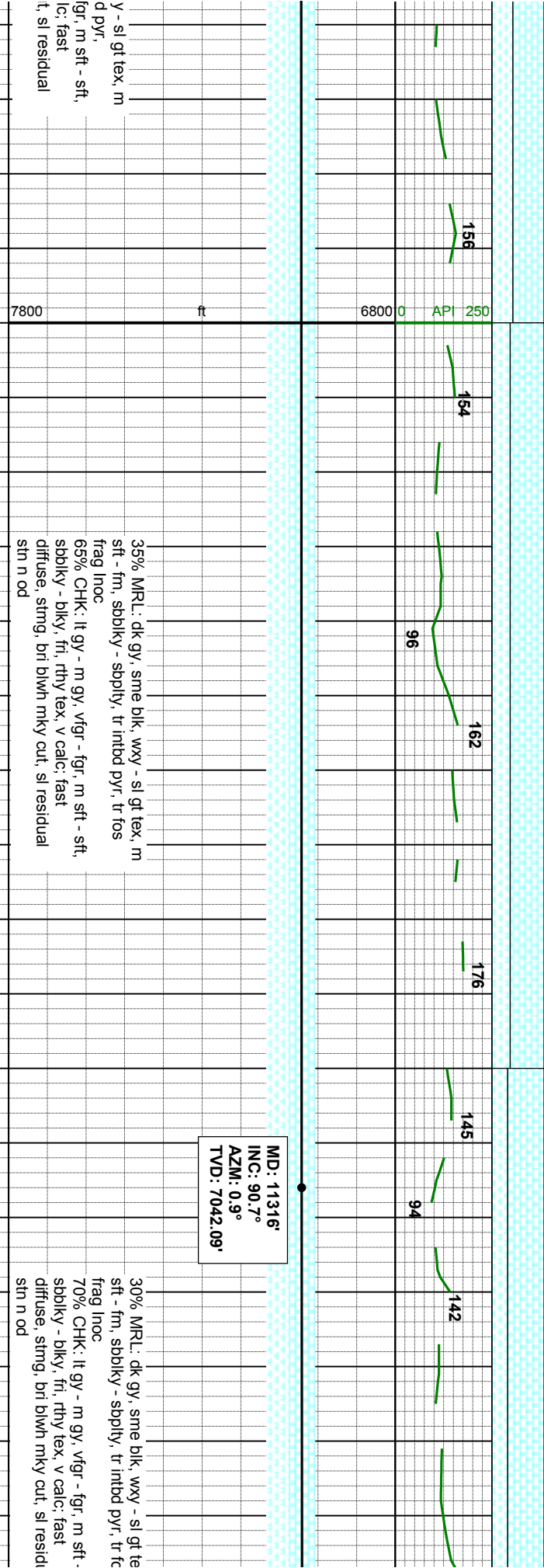
75% MRL: dk gy, sme blk, wxy - sl gt tex, m
sft - fm, sbblky - sbply, tr intbd pyr, tr fos
frag inoc
25% CHK: lt gy - m gy, vfgr - fgr, m sft - sft,
sbblky - blk, fti, rthy tex, v calc, slow,
diffuse, sl string, semi bri blwh mky cut, sl
residual sin n od

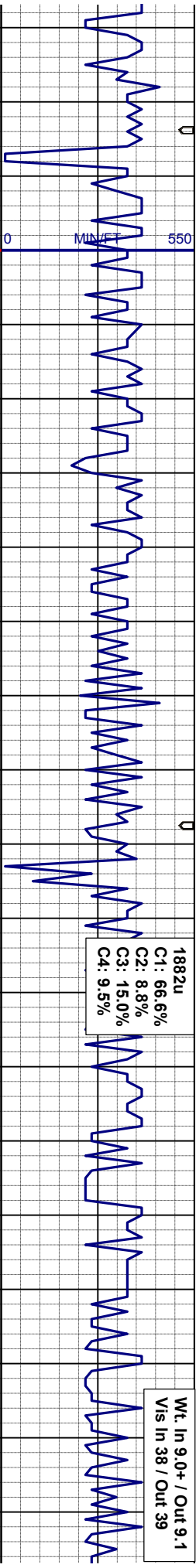
70% MRL: dk gy, sme blk, wxy - sl gt tex, m
sft - fm, sbblky - sbply, tr intbd pyr, tr fos
frag inoc
30% CHK: lt gy - m gy, vfgr - fgr, m sft - sft,
sbblky - blk, fti, rthy tex, v calc, mod yel-
gn string, yel-gn flr, th ring, vstr sin





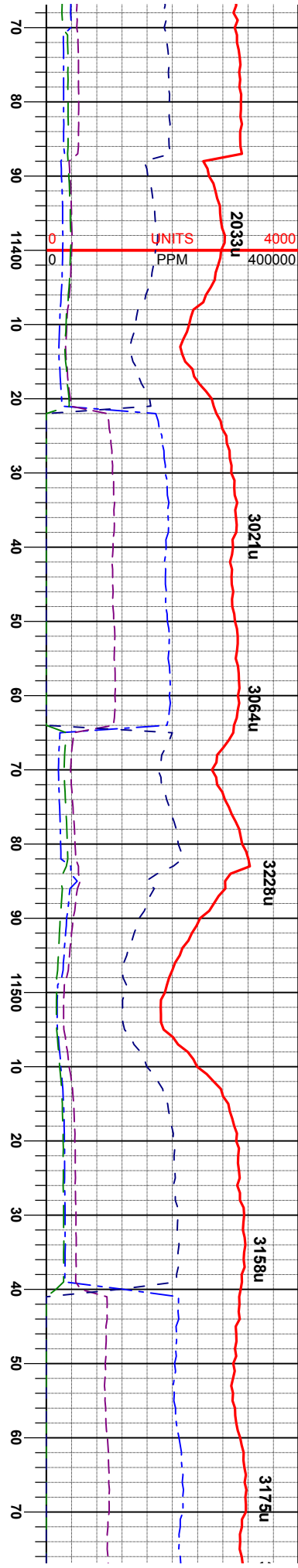






1882u
C1: 66.6%
C2: 8.8%
C3: 15.0%
C4: 9.5%

Wt. In 9.0+ / Out 9.1
Vis In 38 / Out 39

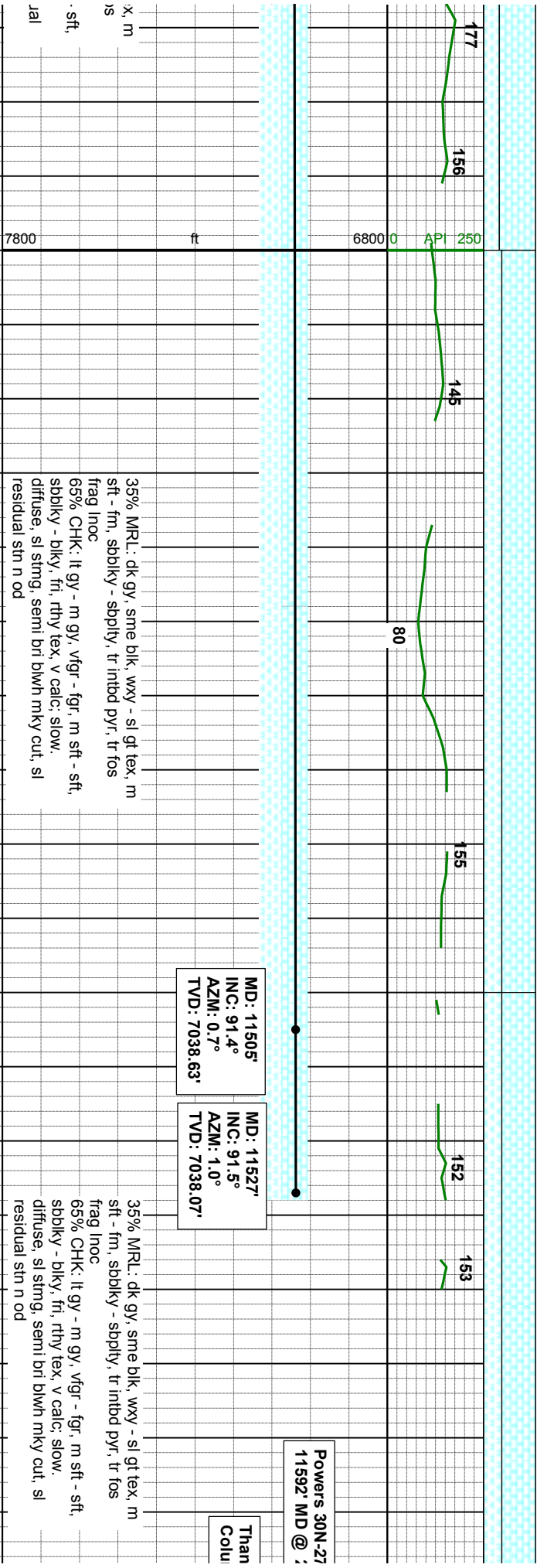


MD: 11505'
INC: 91.4°
AZM: 0.7°
TVD: 7038.63'

MD: 11527'
INC: 91.5°
AZM: 1.0°
TVD: 7038.07'

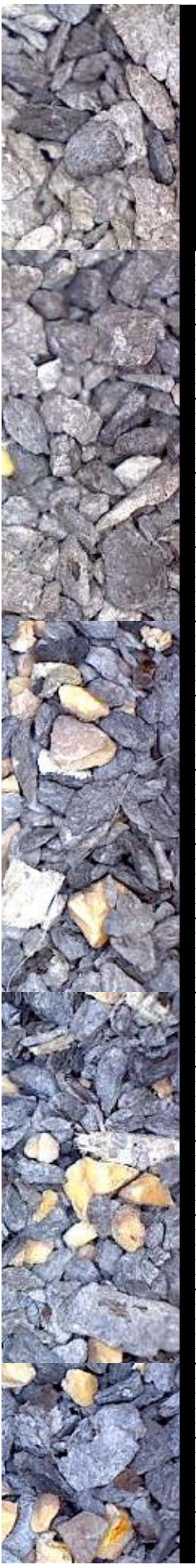
Powers 30N-27
11592' MD @ ;

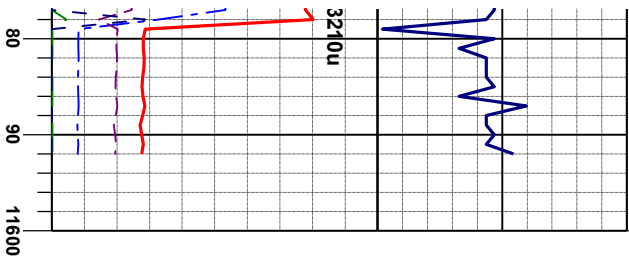
Than
Colu



35% MRL: dk gy, sme blk, wxy - sl gt tex, m
sft - fm, sbbky - soplty, tr intbd pyr, tr fos
frag Inoc
65% CHK: lt gy - m gy, vfg - fgr, m sft - sft,
sbbky - blk, fri, rthy tex, v calc, slow,
diffuse, sl stmg, semi bri blwn mky cut, sl
residual stn n od

35% MRL: dk gy, sme blk, wxy - sl gt tex, m
sft - fm, sbbky - soplty, tr intbd pyr, tr fos
frag Inoc
65% CHK: lt gy - m gy, vfg - fgr, m sft - sft,
sbbky - blk, fri, rthy tex, v calc, slow,
diffuse, sl stmg, semi bri blwn mky cut, sl
residual stn n od





7HZ Wellbore TD @
23:10 hrs on 1/20/13

k You for Using
mbine Logging, Inc.

