



Scale: 5" / 100'
Measured Depth Log

Well Name Oscar Y10-75-1HC HORZ

Location SEC 10 T2N R64W

State COLORADO

County WELD

Country USA

Rig Number H&P 315

API Number 05-123-38202

AFE # 200202

Region DJ BASIN

Field WATTENBERG

Spud Date 10/11/2014

Drilling Completed 10/19/2014

Surface Coordinates NWSE SEC 10 T2N R64W
2,380' FSL; 2,098' FEL

LAT/LON: 40.15223/-104.53561

Bottom Hole Coordinates NWNE SEC 3 T2N R64W
75' FNL; 2,475' FEL

Ground Elevation 4,924'

K.B. Elevation 4,948'

Logged Interval 6,215' To 14,440'

Total Depth 14,440'

Formation NIOBRARA B CHALK

Type of Drilling Fluid LSND

Operator

Company Noble Energy Inc

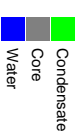
Address 1625 BROADWAY SUITE 2200
DENVER, CO 80202

Geologist

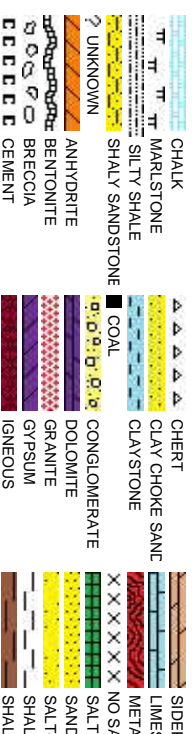
Name MARK COLE; ZACH UBER

Company COLUMBINE LOGGING, INC
Address 2385 S LIPAN ST
DENVER, CO 80223

Zone Color Coding



Rock Types



Accessories

Fossils

F FOSSIL	- ARGILLACEOUS	✓ GLAUCONITE	✓ TUFFACEOUS
GASTROPOD	/ ARGILLITE GRAIN	GYPSIFEROUS	
ALGAE	Ø OOOLITE	B BENTONITE	✓ HEAVY MINERAL
AMPHIPORA	O OSTRACOD	BITUMENOUS SUBSTANCE	INOCERAMUS
BELEMNITE	P PELECYPOD	BRECCIA FRAGMENTS	K KAOLIN
BIOCLASTIC	P PELLET	■ CALCAREOUS	■ MARLSTONE
BRACHIOPOD	P PISOLITE	■ CARBONACEOUS FLAKES	✓ MINERAL CRYSTALS
BRYOZOA	P PLANT REMAINS	▲ CHTDK	■ NODULES
CERHALOPOD	P PLANT SPORES	▲ CHTLT	PHOSPHATE PELLETS
CORAL	P SCAPHOPOD	- COAL - THIN BEDS	P PYRITE
CRINOID	STROMATOPOROID	✓ DOLOMITIC	■ SALT CAST
ECHINOID	+ FELDSPAR	: SANDY	✓ SANDSTONE STRINGER
FISH	● FERRUGINOUS PELLET	✓ SILICEOUS	— SHALE STRINGER
FORAMINIFERA	ANHYDRITIC	✓ SILTY	■ SILTSTONE STRINGER

Stringer

ANHYDRITE STRINGER
BENTONITE STRINGER
COAL STRINGER
DOLOMITE STRINGER
GYPSUM STRINGER
LIMESTONE STRINGER
MARLSTONE (CALC) STRG
MARLSTONE (DOL) STRG
SANDSTONE STRINGER
SHALE STRINGER
SILTSTONE STRINGER

Other Symbols

Oil Show

Ø ORGANIC
P PINPOINT
DEAD
✓ VUGGY
● EVEN
QUESTIONABLE

Engineering

SPOTTED STAINING
BIT

Porosity

CONNECTION (DOWN)
CONNECTION (LEFT)
CONNECTION (RIGHT)
CONNECTION GAS
FENESTRAL
F FRACTURE
INTERCRYSTALLINE
INTEROOLITIC
MOLDIC
CONNECTION GAS DOWN...
CORE - LOST

Rounding

■ CORE - RECOVERED	TRIP GAS	E EARTHY
DST INTERVAL	WIRELINE TESTED - LEFT	FX FINELYXLN
FAULT	WIRELINE TESTED - RT	BS GRAINSTONE
FORMATION TOP	LITHOGRAPHIC	MX MICROXLN
GAS SHOW		

ANGULAR

MUDSTONE

NORMAL FAULT

R ROUNDED

PS PACKSTONE

OIL SHOW

B SUBANG

WS WACKESTONE

OVERTURNED STRATA

R SUBRND

REVERSE FAULT

Textures

SIDEMALL CORE (LEFT)

SIDEMALL CORE (RIGHT)

BS BOUNDSTONE

SLIDE

C CHALKY

W WELL

SURVEY

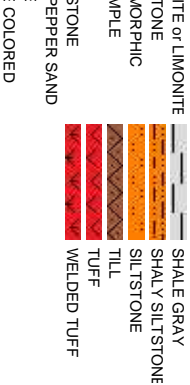
CX CRYPTOXLN

Sorting

M MODERATE

P POOR

W WELL



Slide/Rotate

ROP

ROP

Curves

GAMMA

Total Gas & Chromatograph

GAS

C1

C2

C3

C4

Depth Labels

% Lith

Well Bore
TVD

Oil Show

Images

ROP Data from IBall

Gamma Data from Sperry - Halliburton

Gas Data from IBall

GAS (units)
C1-C4 (PPM)

2872u

3288u

C1: 63.1%
C2: 12.7%
C3: 14.5%
C4: 9.8%

3643u

PM Mud Rpt 10/13/2014 - Mud Wt: 9.25, FV/s: 33
PV/s: 7, YP: 5, GELS: 4/11/16, API Filtr: 11.8
CAKE: 20, pH: 9.9, Cl: 1,400, Ca: 40

MUD WT: 9.65/9.55
VIS: 38/34 IN/OUT

Columbine Logging began logging with
BloodHound unit 0687 on 10/13/2014

Bit Data
Bit #: 1
Type: SECURITY
Model: MMD55
Size: 8.75 "
Depth In: 1,193 '
Depth Out: 6,527 '
Jets: 7X12

TVD (ft)

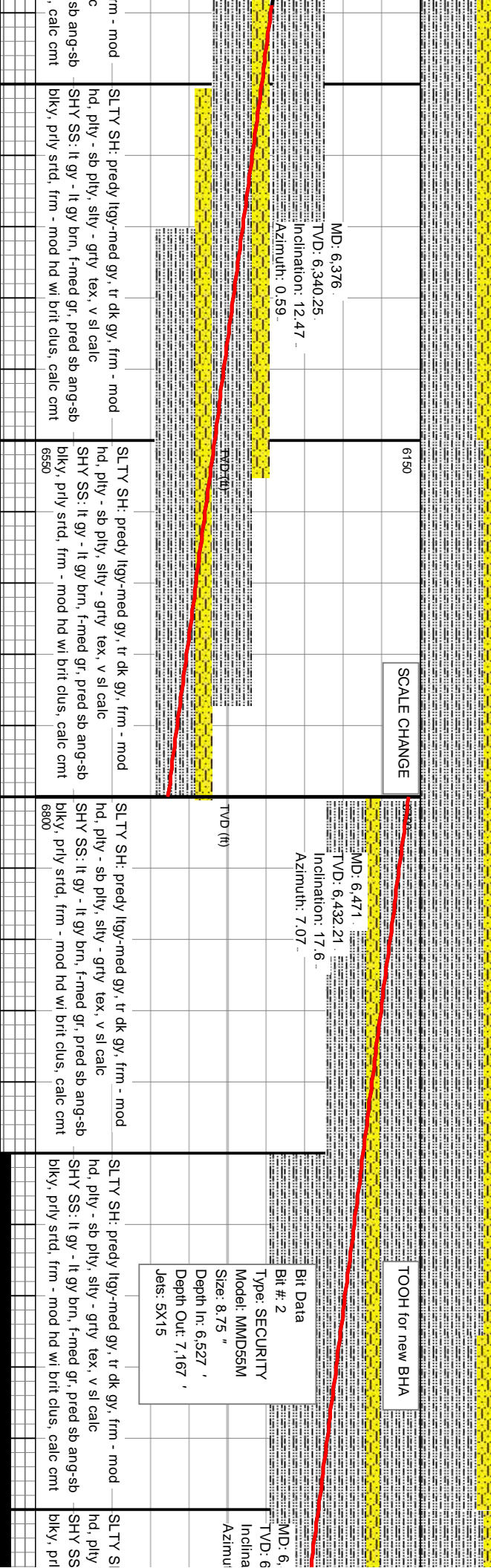
SLTY SH: predy llyg, rr med gy, frm - mod hd, pily -
sb pily, occ sb blkly, silty - grty tex, v sl calc
SHY SS: lt gy - lt gy brn, f gr, pred sb ang, occ sb
blkly, prly strd, frm - mod hd wi brit clus, calc cmt
6550

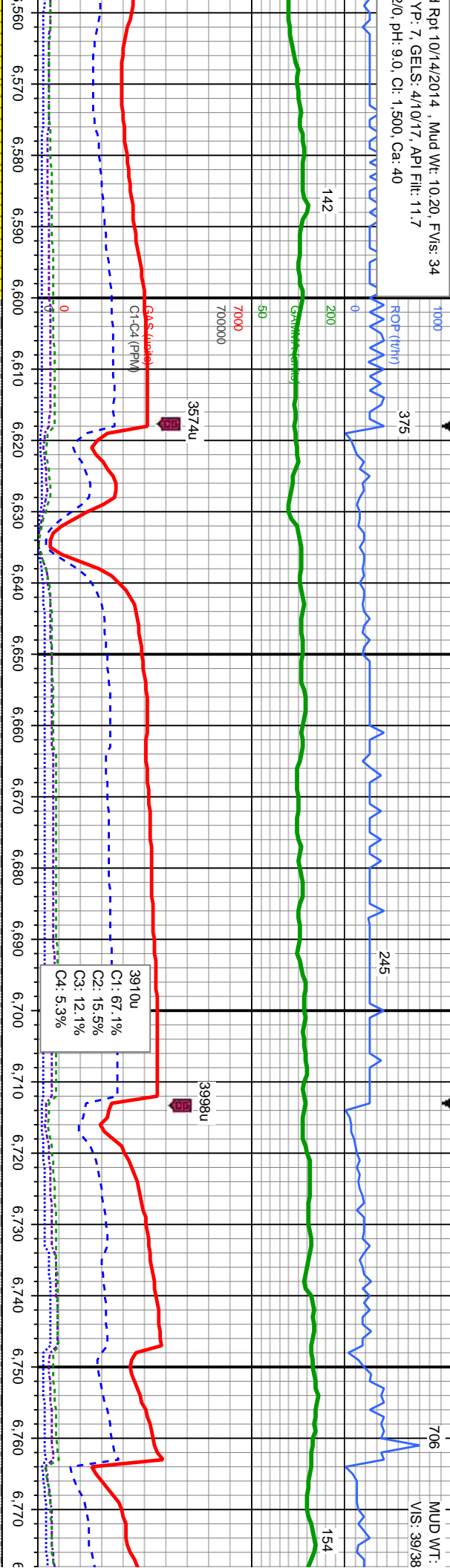
SLTY SH: predy llyg, rr med gy, frm - mod hd, pily -
sb pily, occ sb blkly, silty - grty tex, v sl calc
SHY SS: lt gy - lt gy brn, f gr, pred sb ang, occ sb
blkly, prly strd, frm - mod hd wi brit clus, calc cmt

SLTY SH: predy llyg-med gy, tr dk gy, fr
hd, pily - sb pily, silty - grty tex, v sl cal
SHY SS: lt gy - lt gy brn, f-med gr, pred
blkly, prly strd, frm - mod hd wi brit clus

50' Sample Interval @ 6,250' MD

MD: 6,281
TVD: 6,246.83
Inclination: 8.35
Azimuth: 353.91





tion: 25.08 -
th: 9.24 -

MD: 6,661 .
TVD: 6,601.61 .
Inclination: 37.6 .
Azimuth: 7.15 .

MD: 6,709 .
TVD: 6,637.18 .
Inclination: 46.62 -
Azimuth: 5.21 -

MD: 6,755 .
TVD: 6,666.81 .
Inclination: 53.15
Azimuth: 3.92

H: predy ltyg-med gy, tr dk gy, frm - mod - sb ply, sily - grty tex, v sl calc, tr bent - It gy brn, f-med gr, pred sb ang-sb y sryd, frm - mod hd wi brit clus, calc cmt

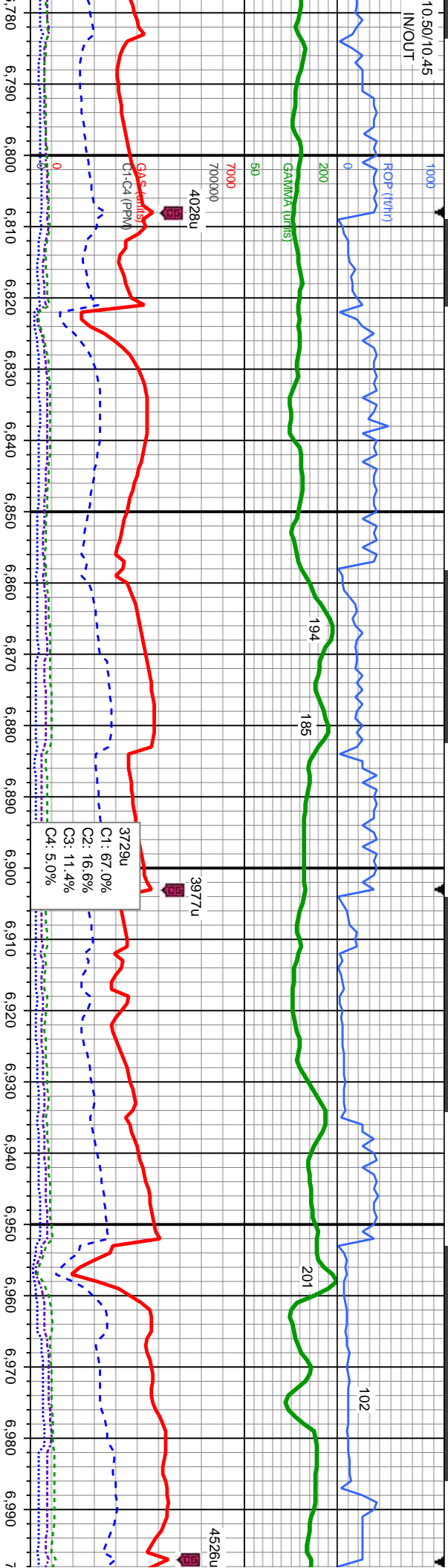
SLTY SH: predy lt - med gy, tr dk gy, frm - mod hcd,	
pred ply - sb ply, occ sb biky, slty - grty tex, v sl	
calc, tr bent	
6800	

SLTY SH: predy lt - med gy, tr dk gy, frm - mod hd,
pred ply - sb ply, occ sb blkly, slty - grty tex, v sl
calc, tr bent

SLTY SH: predy lt - med gy, tr dk gy, frm - mod hd, pred ply - sb ply, occ sb blkly, slty - grty tex, v sl calc, tr bent

SLTY SH: predy lt - med gy, t
pred plty - sb plty, occ sb blk
calc, tr bent

10.50/10.45	IN/OUT
-------------	--------



SCALE CHANGE

MD: 6,803
TVD: 6,694.53
Inclination: 56.28
Azimuth: 2.05

MD: 6,850
TVD: 6,720.1
Inclination: 57
Azimuth: 2.75

MD: 6,898
TVD: 6,744.71
Inclination: 60
Azimuth: 0.8

Niobrara Top @
6,932' MD; 6,761' TVD

Nio A Marl Top @
6,960' MD; 6,773' TVD

Nio B Chalk Top @
7,013' MD; 6,792' TVD

TV_D (ft)

SLTY SH: predy lt - med gy, tr dk gy, frm - mod hd,	
pred ply - sb ply, occ sb blkly, slty - grtly tex, v sl	
calc, tr bent	
7050	

SLTY SH: predy lt - med gy, tr dk gy, frm - mod hd
pred ply - sb ply, occ sb blkly, slty - grty tex, v sl
calc, tr bent

SLTY SH: p'redy It - med gy, tr dk gy, frm - mod
hd, p'ed ply - sb ply, occ sb b'ky, s'ty - g'ry
tex, v s'l calc, sme bent

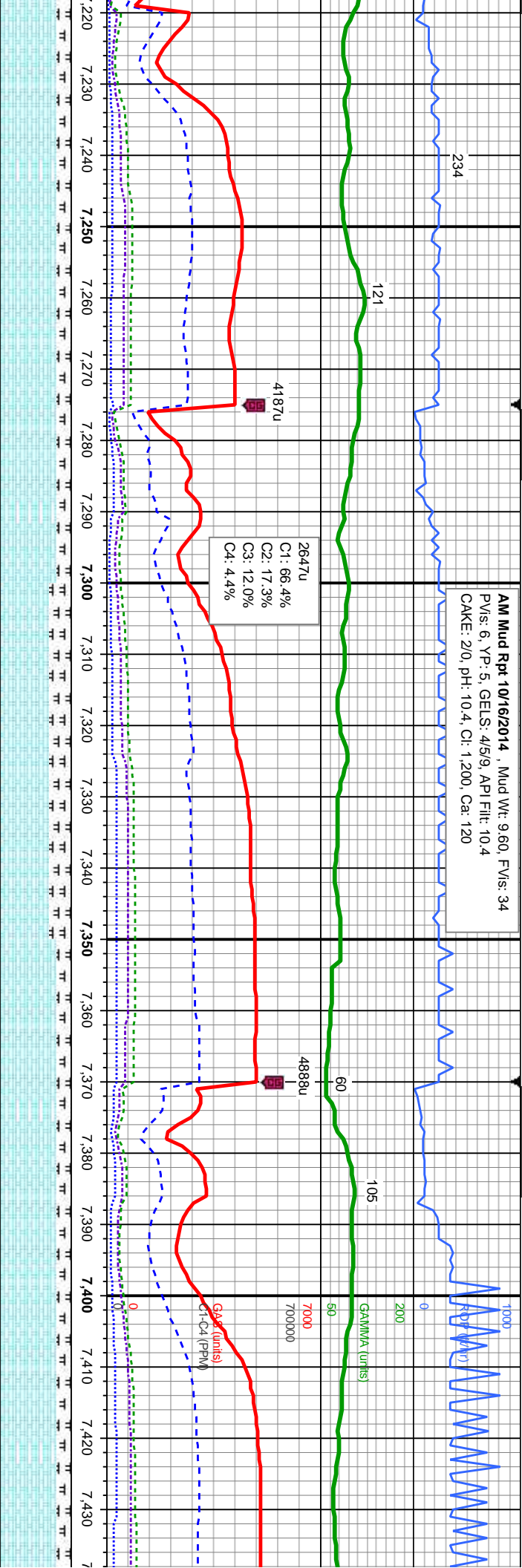
MR.L: It - med gy, occ blk, frm - mod hd, sb ply -
sb b'ky, s'ty - g'ry tex

CHK: tan - l'gy, mot w' wh, lam, v sft - frm, sb
ply - sb b'ky, t'ty tex, v calc, tr bent, tr fos frag

MRL: lt - med gy, occ blk, frm - mod hd, sb ply - sb blkly, slty - grty tex
CHK: tan - ltyg, mot wi wh, lam, v sft - frm, sb ply - sb blkly, rthy tex, v calc, tr bent, tr fos frag



AM Mud Rpt 10/16/2014 , Mud Wt: 9.60, FVis: 34
PVIS: 6, YP: 5, GELS: 4/5/9, API Fil: 10.4
CAKE: 2/0, pH: 10.4, CI: 1.200, Ca: 120



Interval @ 7,200' MD

5.52.

n: 85.77

356.86

MD: 7,314.
TVD: 6,831.48.

Inclination: 87.04
Azimuth: 356.7

MD: 7,408.
TVD: 6,834.89.

Inclination: 88.8
Azimuth: 357.52

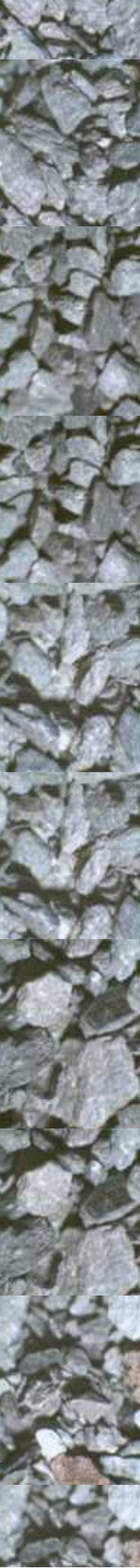
y, mot wl wh, lam, v sft - frm,
hy tex, v calc, tr bent, tr inoc
gy, occ blk, frm - mod hd, sb
- grty tex

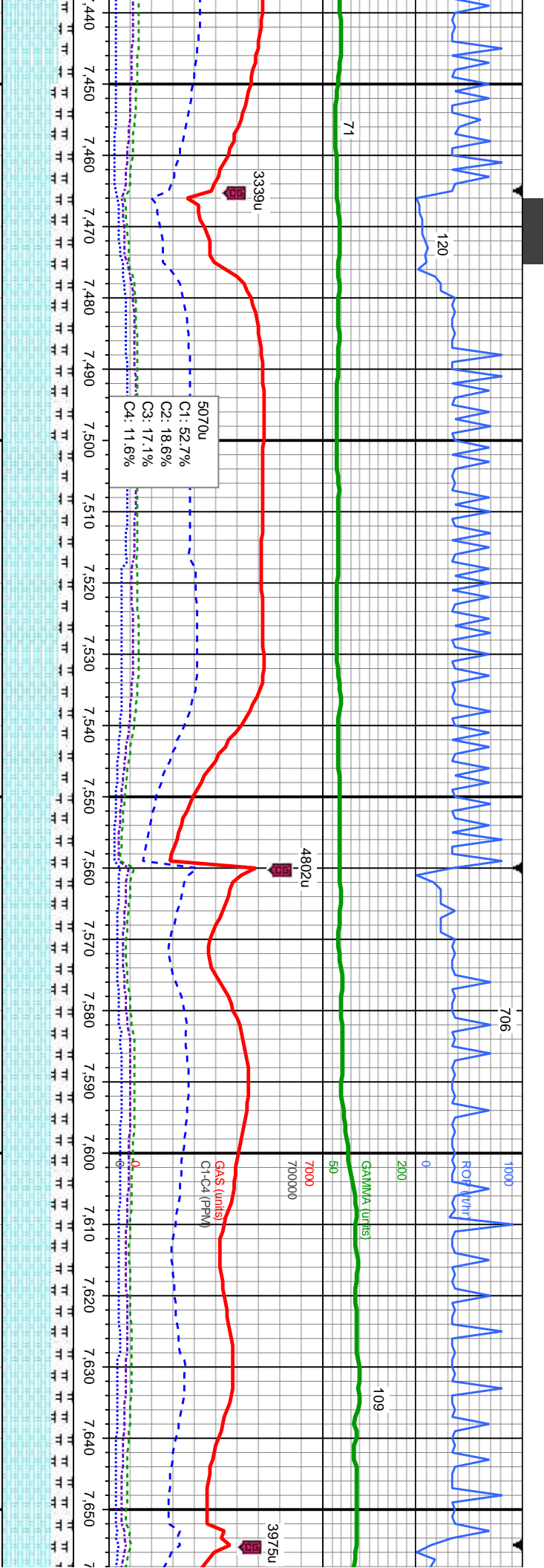
80% CHK: tan - llyg, mot wl wh, lam, v sft - frm,
sb pily - sb blk, rthy tex, v calc, tr bent, tr inoc
foss
20% MRL: lt - med gy, occ blk, frm - mod hd, sb
pily - sb blk, sily - grty tex

70% CHK: tan - llyg, mot wl wh, lam, v sft - frm,
sb pily - sb blk, rthy tex, v calc, tr bent, sme
inoc
30% MRL: lt - med gy, occ blk, frm - mod hd, sb
pily - sb blk, sily - grty tex

80% CHK: tan - llyg, mot wl wh, lam, v sft - frm,
sb pily - sb blk, rthy tex, v calc, tr bent, sme
inoc
20% MRL: lt - med gy, occ blk, frm - mod hd, sb
pily - sb blk, sily - grty tex

80% CHK: tan - llyg, mot wl wh, lam, v sft - frm,
sb pily - sb blk, rthy tex, v calc, tr bent
inoc
20% MRL: lt - med gy, occ blk, frm - mod
pily - sb blk, sily - grty tex
7050

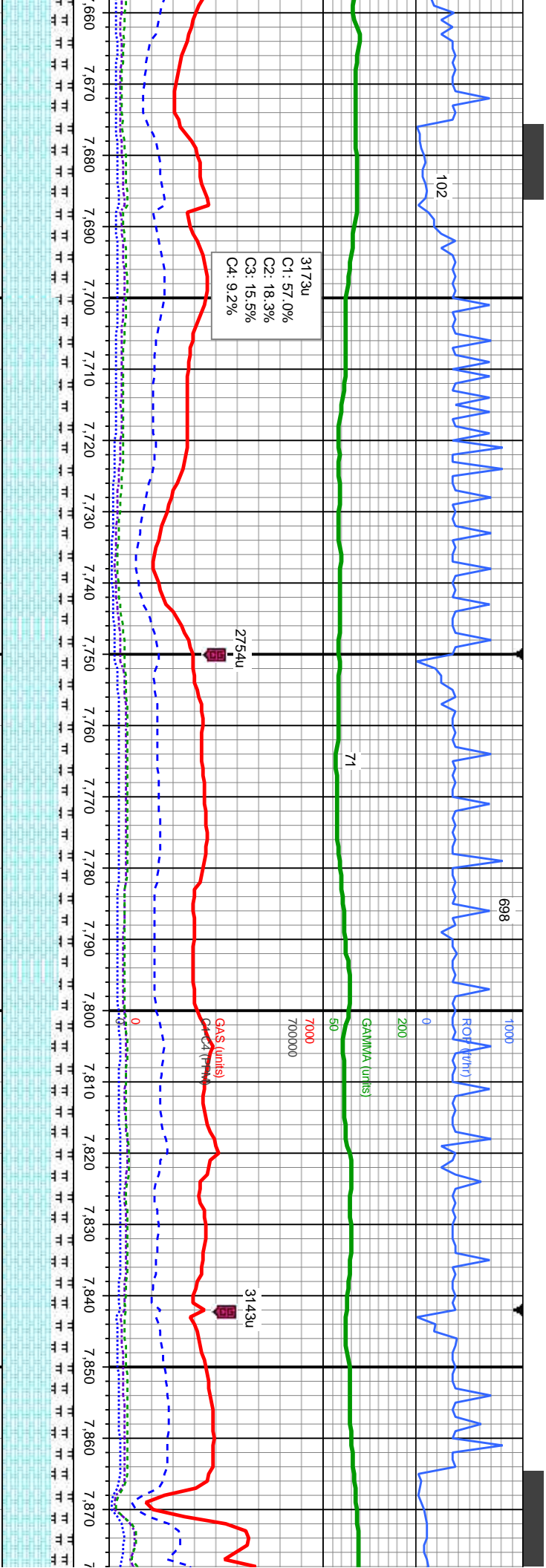




MD: 7,503.		MD: 7,598.	
TVD: 6,835.17.		TVD: 6,833.18.	
Inclination: 90.86		Inclination: 91.54	
Azimuth: 358.59.		Azimuth: 358.41	
		6650	

ft - frm,	70% CHK: tan - lly, mot wi wh, lam, v sft - frm,	80% CHK: tan - lly, mot wi wh, lam, v sft - frm,	70% CHK: tan - lly, mot wi wh, lam, v sft - frm,	70% CHK: tan - lly, mot wi wh, lam, v sft - frm,
, sme	sb pty - sb blk, rthy tex, v calc, tr bent, sme	sb pty - sb blk, rthy tex, v calc, no bent, abnt	sb pty - sb blk, rthy tex, v calc, no bent, abnt	sb pty - sb blk, rthy tex, v calc, no bent, abnt
d hd, sb	Inoc	Inoc	Inoc	Inoc
	30% MRL: lt - med gy, occ blk, frm - mod hd, sb	20% MRL: lt - med gy, occ blk, frm - mod hd, sb	30% MRL: lt - med gy, occ blk, frm - mod hd, sb	30% MRL: lt - med gy, occ blk, frm - mod hd, sb
	pty - sb blk, slty - grty tex	pty - sb blk, slty - grty tex	pty - sb blk, slty - grty tex	pty - sb blk, slty - grty tex





MD: 7,693.
TVD: 6,832.72.
Inclination: 89.01
Azimuth: 358.02

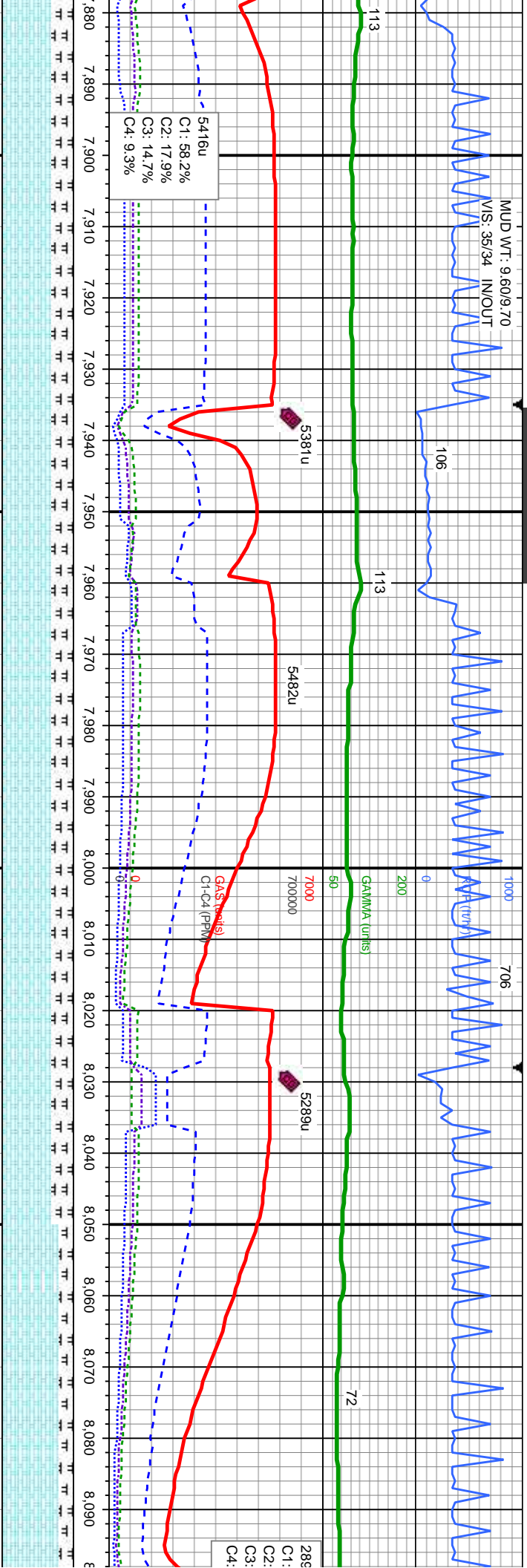
MD: 7,786
TVD: 6,834.28.
Inclination: 89.07
Azimuth: 357.25

MD: 7,86
TVD: 6.8
Inclination: 89.07
Azimuth: 357.25

tan - llyg, mot wi wh, lam, v sft - frm,	80% CHK: tan - llyg, mot wi wh, lam, v sft - frm,	70% CHK: tan - llyg, mot wi wh, lam, v sft - frm,	70% CHK: tan - llyg, mot wi wh, lam, v sft - frm,
sb blkly, rthy tex, v calc, no bent, abnt	sb plty - sb blkly, rthy tex, v calc, no bent, abnt	sb plty - sb blkly, rthy tex, v calc, no bent, abnt	sb plty - sb blkly, rthy tex, v calc, no bent, abnt
It - med gy, occ blk, frm - mod hd, sb	20% MRL: It - med gy, occ blk, frm - mod hd, sb	30% MRL: It - med gy, occ blk, frm - mod hd, sb	30% MRL: It - med gy, occ blk, frm - mod hd, sb
blkly, silty - grty tex	plty - sb blkly, silty - grty tex	plty - sb blkly, silty - grty tex	plty - sb blkly, silty - grty tex



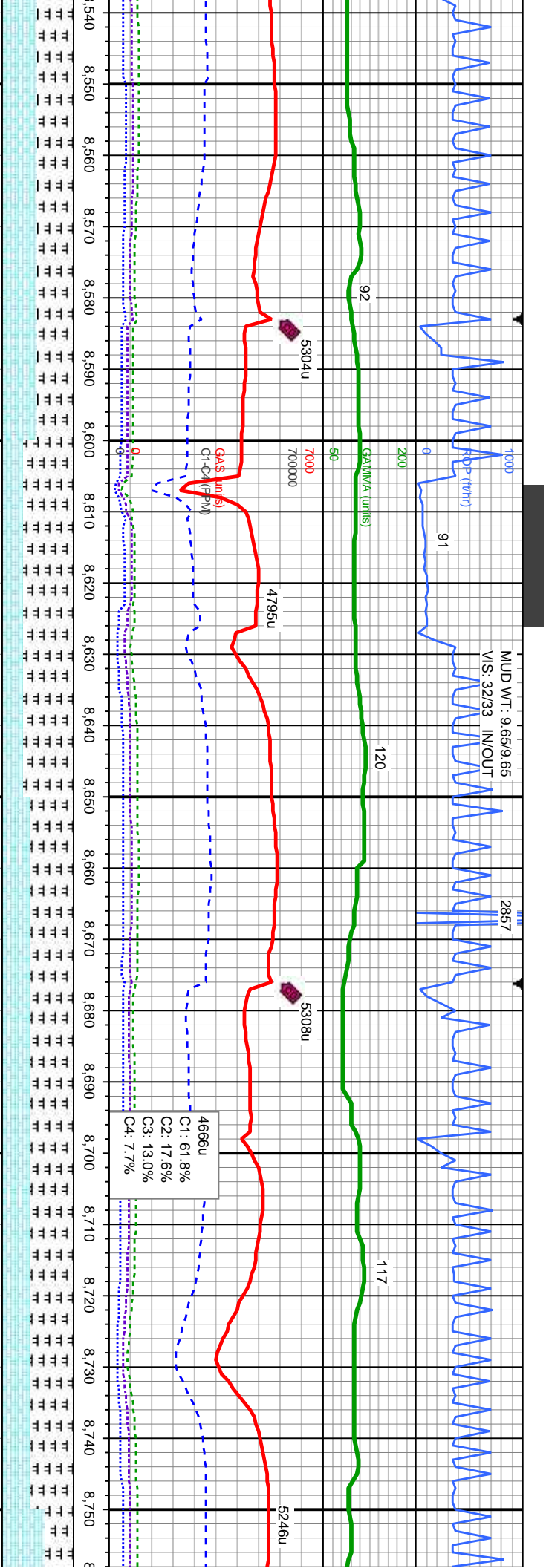
MUD WT: 9.60/9.70
VIS: 35/34 IN/OUT



MD: 7.974	MD: 8.066
TVD: 6.835.68	TVD: 6.834.34
Inclination: 90.77	Inclination: 90.89
Azimuth: 358.94	Azimuth: 359.25

70% CHK: tan - lly, mot wi wh, lam, v sft - mod	70% CHK: tan - lly, mot wi wh, lam, v sft - mod	70% CHK: tan - lly, mot wi wh, lam, v sft - mod	80% CHK: tan - lly, mot wi wh, lam, v sft - mod
hd, sb ply - sb blk, rthy tex, v calc, no bent, sme	hd, sb ply - sb blk, rthy tex, v calc, no bent, sme	hd, sb ply - sb blk, rthy tex, v calc, no bent, sme	hd, sb ply - sb blk, rthy tex, v calc, no bent, sme
30% MRL: lt - med gy, occ blk, frm - hd, sb ply -	30% MRL: lt - med gy, occ blk, frm - hd, sb ply -	30% MRL: lt - med gy, occ blk, frm - hd, sb ply -	20% MRL: lt - med gy, occ blk, frm - hd, sb ply -
sb blk, silty - grty tex	sb blk, silty - grty tex	sb blk, silty - grty tex	sb blk, silty - grty tex





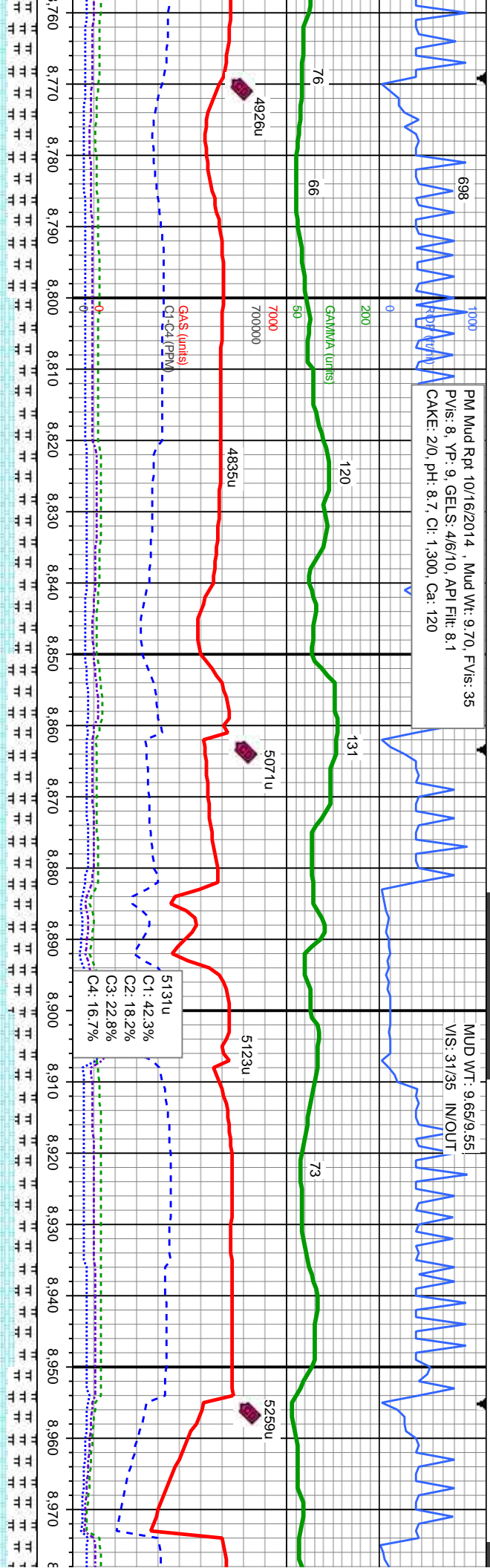
MD: 8.619
 TVD: 6.845.45
 Inclination: 89.17
 Azimuth: 0.94

MD: 8.712
 TVD: 6.842.27
 Inclination: 91.45
 Azimuth: 0.77



PM Mud Rpt 10/16/2014 , Mud Wt: 9.70, FV/s: 35
PV/s: 8, YP: 9, GELS: 4/6/10, API Filtr: 8.1
CAKE: 2/0, pH: 8.7, CI: 1,300, Ca: 120

MUD WT: 9.65/9.55
VS: 31/35 IN/OUT

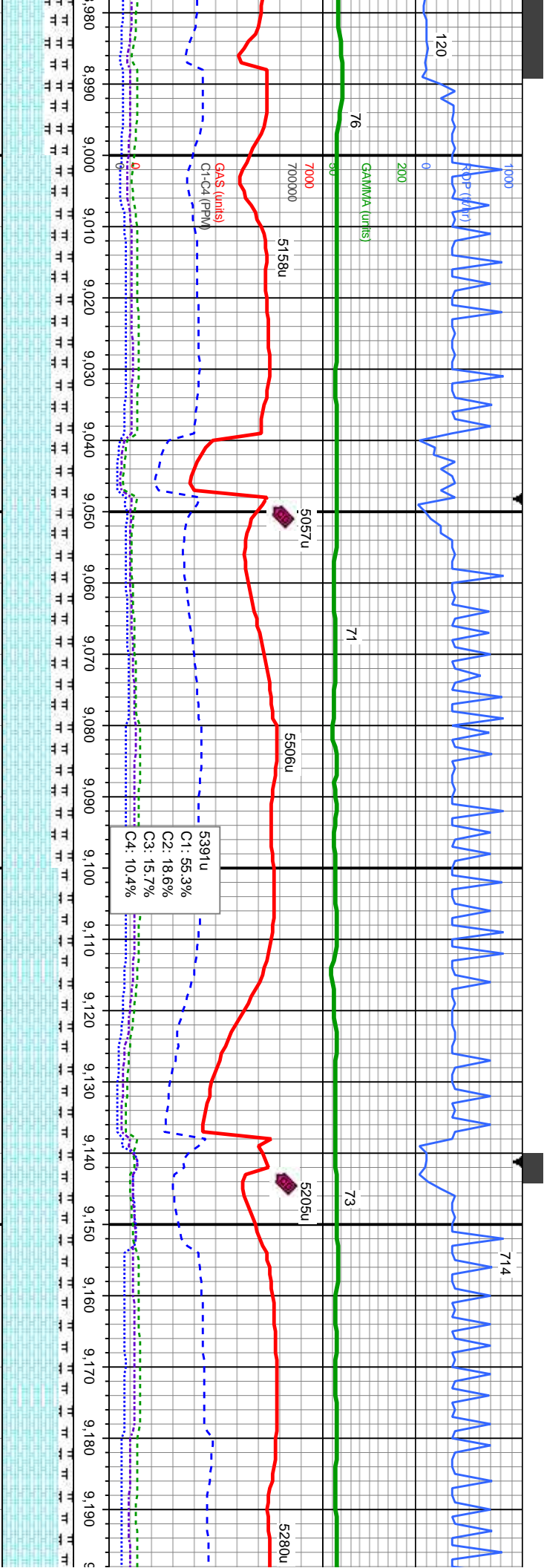


MD: 8,804
TVD: 6,838.8
Inclination: 92.87
Azimuth: 0.68

MD: 8,897
TVD: 6,835.59
Inclination: 91.08
Azimuth: 359.88

70% CHK: tan - lgy, mot wi wh, lam, v sft - mod hd, sb pily - sb blk, rthy tex, v calc, tr bent, sme Inoc	60% CHK: tan - lgy, mot wi wh, lam, v sft - mod hd, sb pily - sb blk, rthy tex, v calc, tr bent, sme Inoc	70% CHK: tan - lgy, mot wi wh, lam, v sft - mod hd, sb pily - sb blk, rthy tex, v calc, tr bent, sme Inoc	60% CHK: tan - lgy, mot wi wh, lam, v sft - mod hd, sb pily - sb blk, rthy tex, v calc, tr bent, sme Inoc
30% MRL: lt - med gy, occ blk, frm - hd, sb pily - sb blk, silty - grty tex	40% MRL: lt - med gy, occ blk, frm - hd, sb pily - sb blk, silty - grty tex	30% MRL: lt - med gy, occ blk, frm - hd, sb pily - sb blk, silty - grty tex	40% MRL: lt - med gy, occ blk, frm - hd, sb pily - sb blk, silty - grty tex

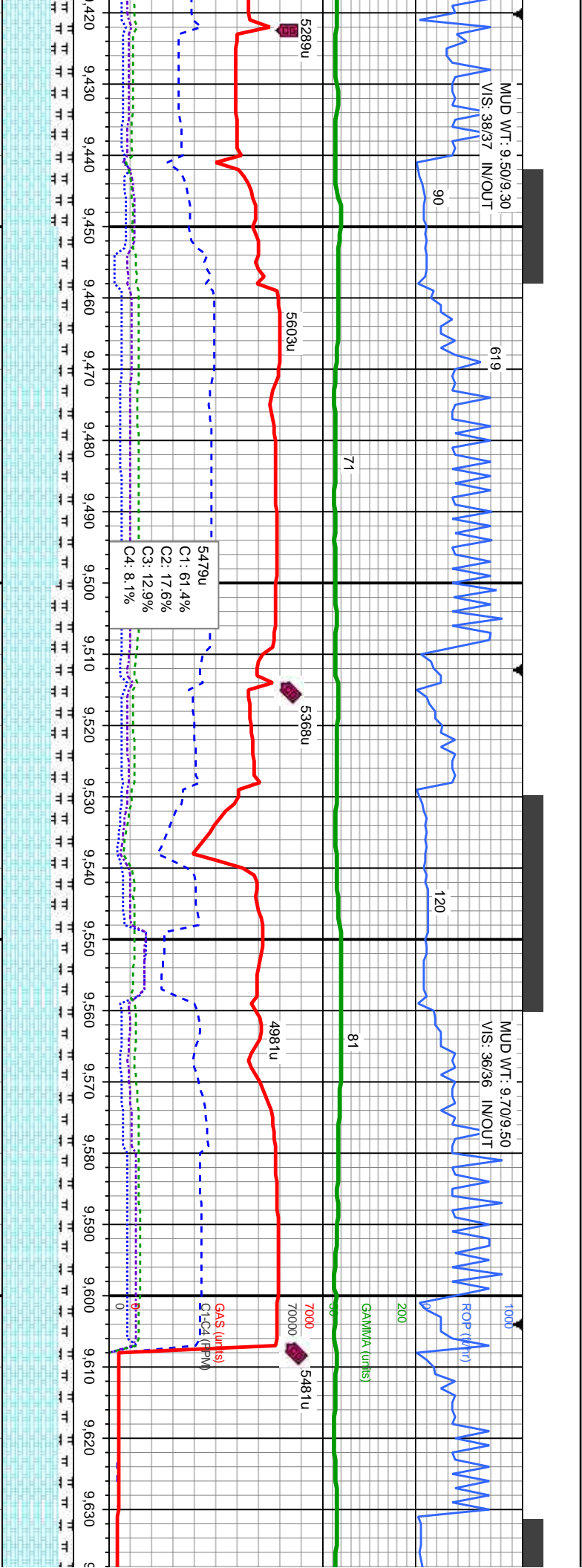




6650	MD: 8.990 TVD: 6.835.54 Inclination: 88.98 Azimuth: 0.26	MD: 9.083 TVD: 6.837.3 Inclination: 88.86 Azimuth: 359.18	MD: 9.176 TVD: 6.839.5 Inclination: 88.43 Azimuth: 358.39
------	---	--	--

h, lam, v sft - mod v calc, tr bent, sme	70% CHK: tan - ltgy, mot wi wh, lam, v sft - mod hd, sb pty - sb blk, rthy tex, v calc, tr bent, sme inoc	70% CHK: tan - ltgy, mot wi wh, lam, v sft - mod hd, sb pty - sb blk, rthy tex, v calc, sme inoc	80% CHK: tan - ltgy, mot wi wh, lam, v sft - mod hd, sb pty - sb blk, rthy tex, v calc, tr inoc	80% CHK: tan - ltgy, mot wi wh, lam, v sft - mod hd, sb pty - sb blk, rthy tex, v calc, tr inoc
30% MRL: lt - med gy, occ blk, frm - hd, sb pty - sb blk, silty - grty tex	30% MRL: lt - med gy, occ blk, frm - hd, sb pty - sb blk, silty - grty tex	30% MRL: lt - med gy, occ blk, frm - hd, sb pty - sb blk, silty - grty tex	20% MRL: lt - med gy, occ blk, frm - hd, sb pty - sb blk, silty - grty tex	20% MRL: lt - med gy, occ blk, frm - hd, sb pty - sb blk, silty - grty tex



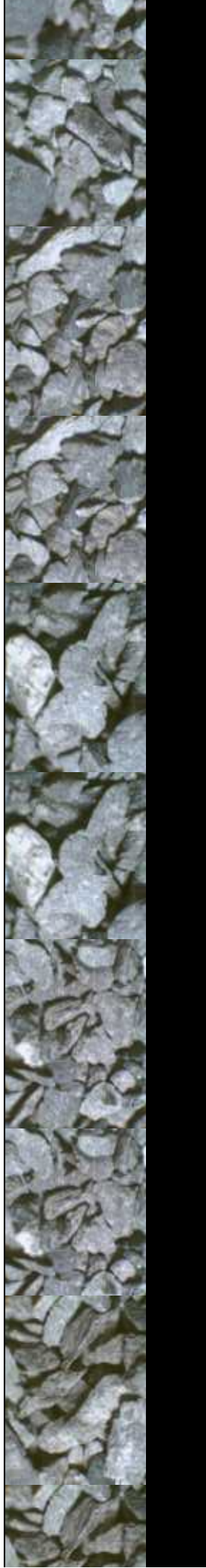


MD: 9.454
TVD: 6,843.26
Inclination: 89.82
Azimuth: 355.53

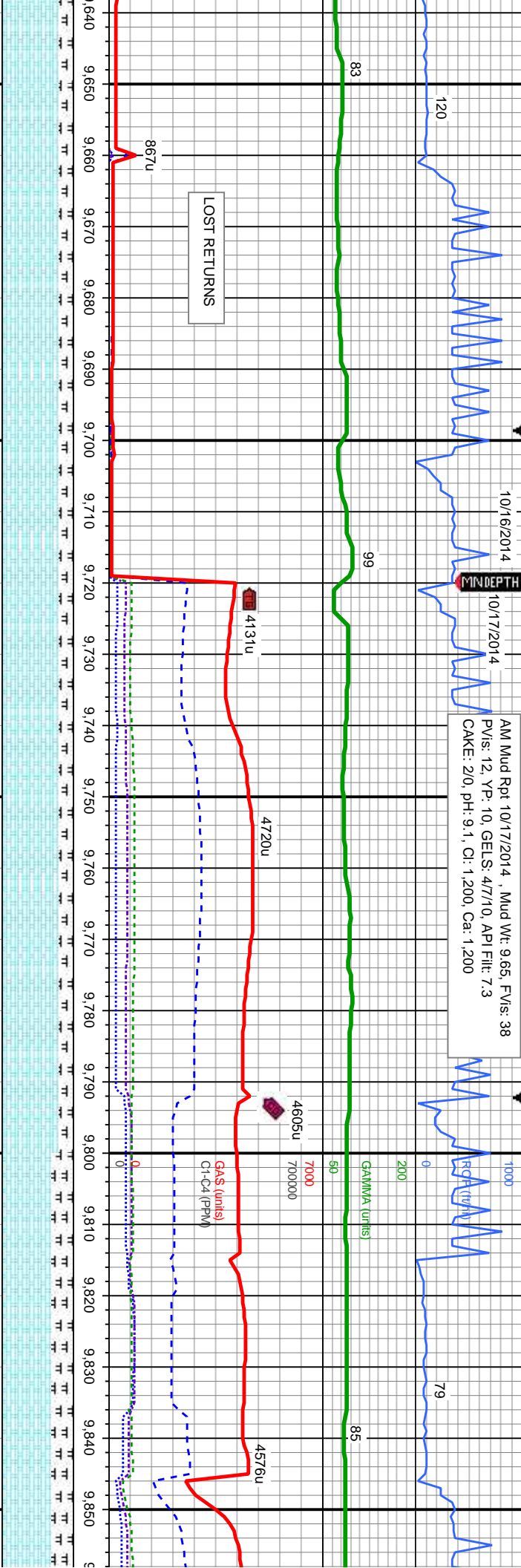
MD: 9.546
TVD: 6,843.7
Inclination: 89.63
Azimuth: 357.76

B CHALK

80% CHK: tan - lly, mot wi wh, lam, v sft - hd, sb ply - sb blk, rthy tex, v calc, tr Inoc	70% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb ply - sb blk, rthy tex, v calc, sme inoc, tr calcite	80% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb ply - sb blk, rthy tex, v calc, sme inoc, tr calcite	80% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb ply - sb blk, rthy tex, v calc, sme inoc, tr calcite	80% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb ply - sb blk, rthy tex, v calc, sme inoc, tr calcite
20% MRL: lt - med gy, occ blk, frm - hd, sb ply - sb blk, silty - grty tex	30% MRL: lt - med gy, tr dk gy-blk, frm - hd, sb ply - sb blk, silty - grty tex	20% MRL: lt - med gy, occ blk, frm - hd, sb ply - sb blk, silty - grty tex	20% MRL: lt - med gy, occ blk, frm - hd, sb ply - sb blk, silty - grty tex	20% MRL: lt - med gy, occ blk, frm - hd, sb ply - sb blk, silty - grty tex



10/16/2014 10/17/2014
AM Mud Rpt 10/17/2014 , Mud Wt: 9.65, FV/s: 38
P/vis: 12, YP: 10, GELS: 477/10, API Filtr: 7.3
CAKE: 2/0, pH: 9.1, Cl: 1,200, Ca: 1,200



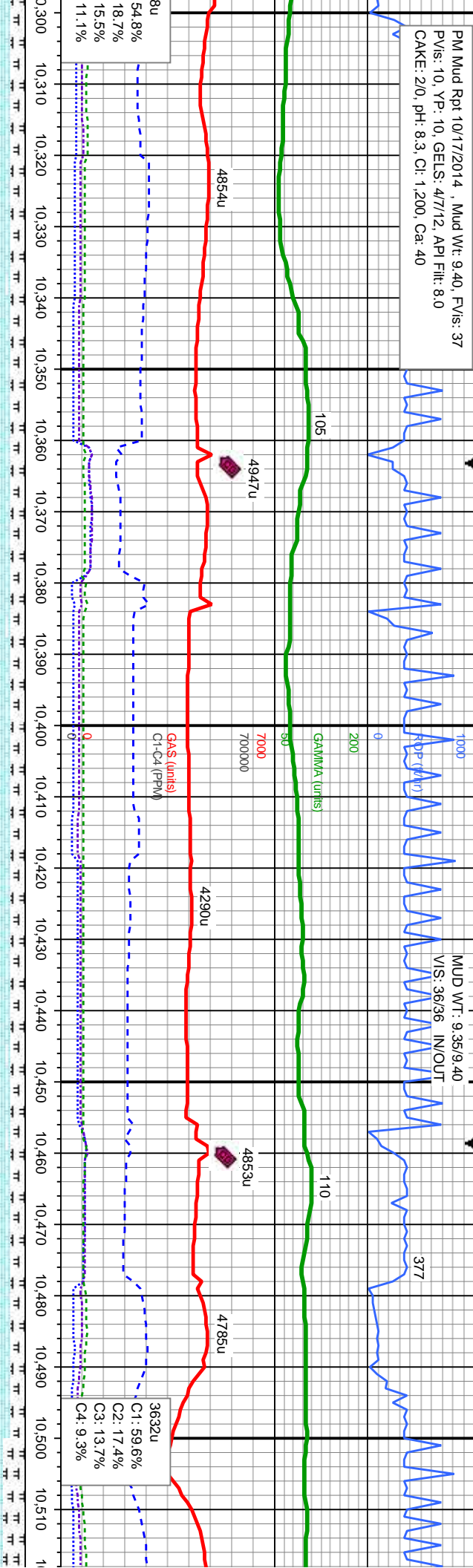
MD: 9.736 TVD: 6,843.17 Inclination: 90.89 Azimuth: 358.48	MD: 9.831 TVD: 6,842.1 Inclination: 90.4 Azimuth: 359.96
---	---

lam, v sft ex, v ion: 90.06 358.97	80% CHK: ian - ilgy, mot wi wh, lam, v sft - mod hd, sb pily - sb blk, rthy tex, v calc, sme inoc, tr calcite 20% MRL: lt - med gy, occ dk gy-blk, frm - hd, sb pily - sb blk, sily - grty tex	80% CHK: ian - ilgy, mot wi wh, lam, v sft - mod hd, sb pily - sb blk, rthy tex, v calc 20% MRL: lt - med gy, occ dk gy-blk, frm - hd, sb pily - sb blk, sily - grty tex, sme inoc, no bent	70% CHK: ian - ilgy, mot wi wh, lam, v sft - mod hd, sb pily - sb blk, rthy tex, v calc 30% MRL: lt - med gy, occ dk gy-blk, frm - hd, sb pily - sb blk, sily - grty tex, sme inoc, tr bent	70% Ch hd, sb p 30% MRL pily - sft
---	--	--	--	---



PM Mud Rpt 10/17/2014 , Mud Wt: 9.40, FV/s: 37
PV/s: 10, YP: 10, GEIS: 4/7/12, API Filtr: 8.0
CAKE: 2/0, pH: 8.3, Cl: 1.200, Ca: 40

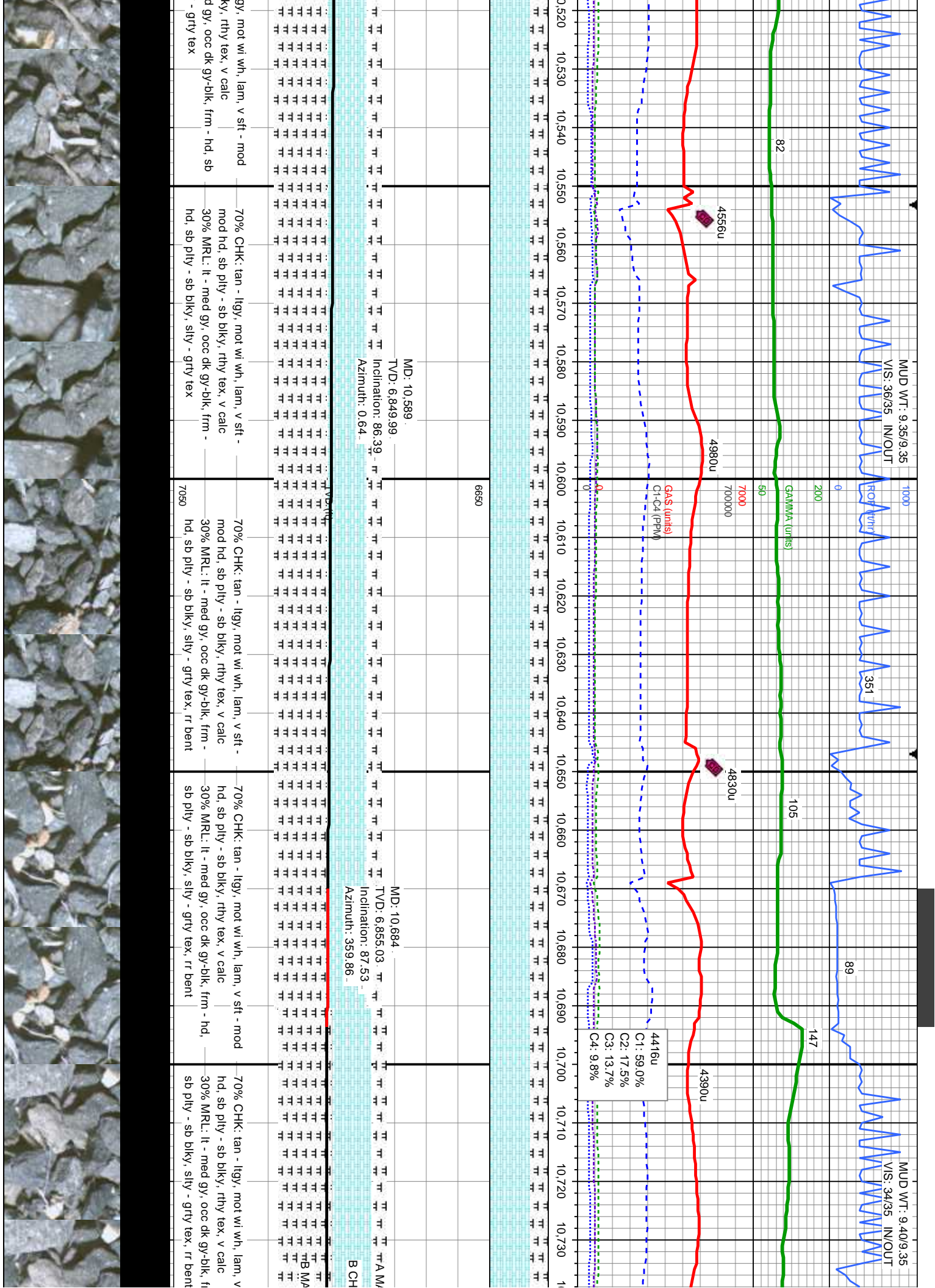
MUD WT: 9.35/9.40
VIS: 36/36 IN/OUT

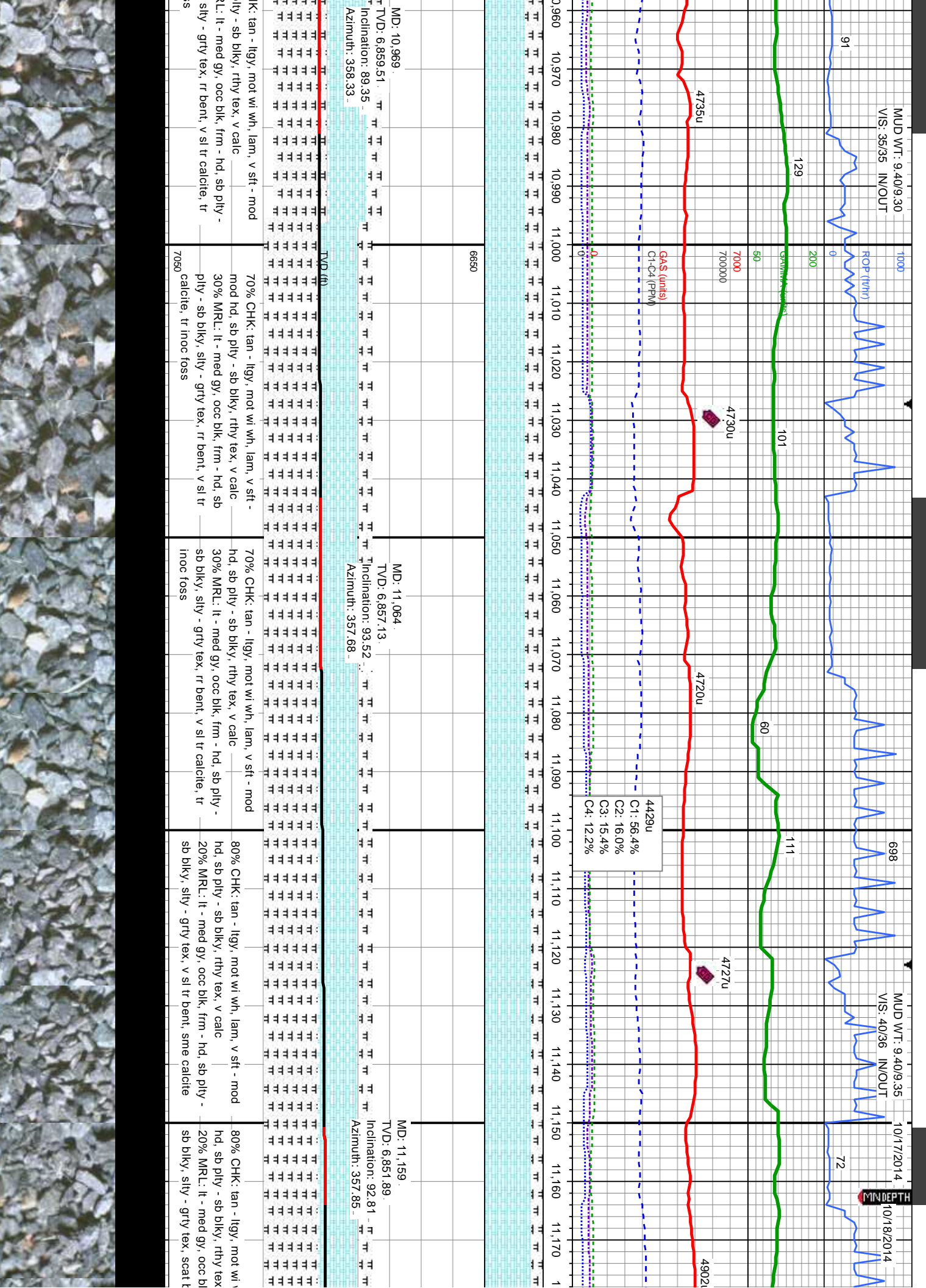


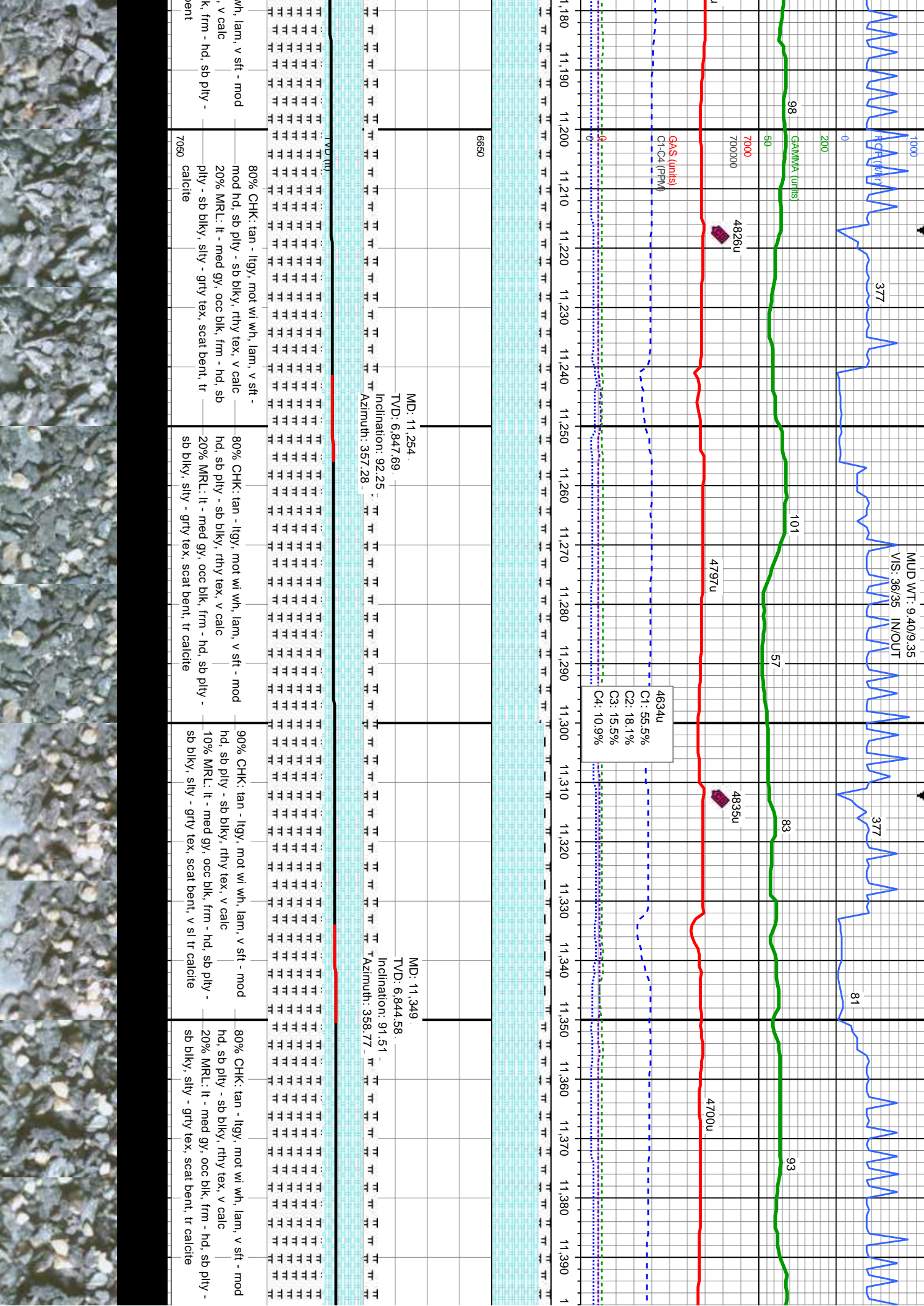
10,305.	MD: 10.400.	MD: 10.494.
D: 6,839.65.	TVD: 6,843.43.	TVD: 6,846.18.
Inclination: 87.81	Inclination: 87.63	Inclination: 89.01
mutth: 2.4	Azimuth: 1.86	Azimuth: 1.58

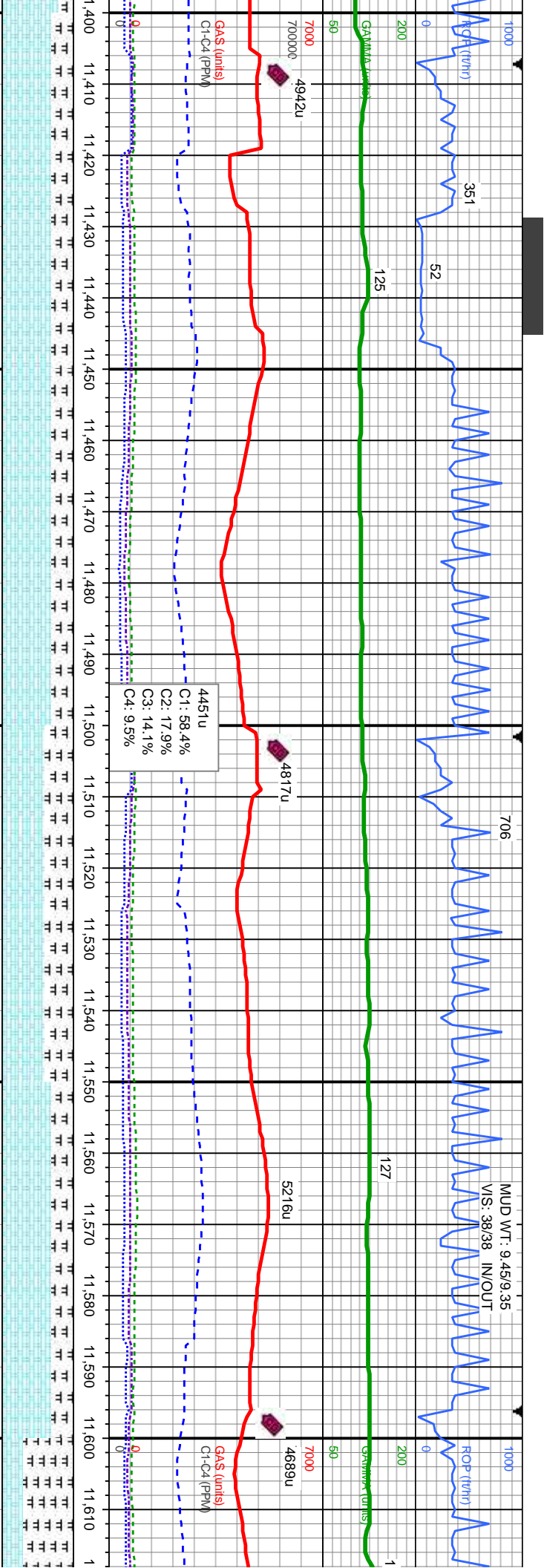
80% CHK: tan - llyg, mot wi wh, lam, v sft - mod	80% CHK: tan - llyg, mot wi wh, lam, v sft - mod	80% CHK: tan - llyg, mot wi wh, lam, v sft - mod	80% CHK: tan - llyg, mot wi wh, lam, v sft - mod	70% CHK: tan - lt
hd, sb pily - sb blkly, rthy tex, v calc	hd, sb pily - sb blkly, rthy tex, v calc	mod hd, sb pily - sb blkly, rthy tex, v calc	mod hd, sb pily - sb blkly, rthy tex, v calc	hd, sb pily - sb bl
20% MRL: lt - med gy, occ dk gy-blk, frm - hd, sb	20% MRL: lt - med gy, occ dk gy-blk, frm - hd, sb	20% MRL: lt - med gy, occ dk gy-blk, frm -	20% MRL: lt - med gy, occ dk gy-blk, frm -	30% MRL: lt - me
pily - sb blkly, silty - grty tex, sme inoc, rr bent	pily - sb blkly, silty - grty tex, sme inoc, rr bent	7050 hd, sb pily - sb blkly, silty - grty tex	sb pily - sb blkly, silty - grty tex	pily - sb blkly, silty











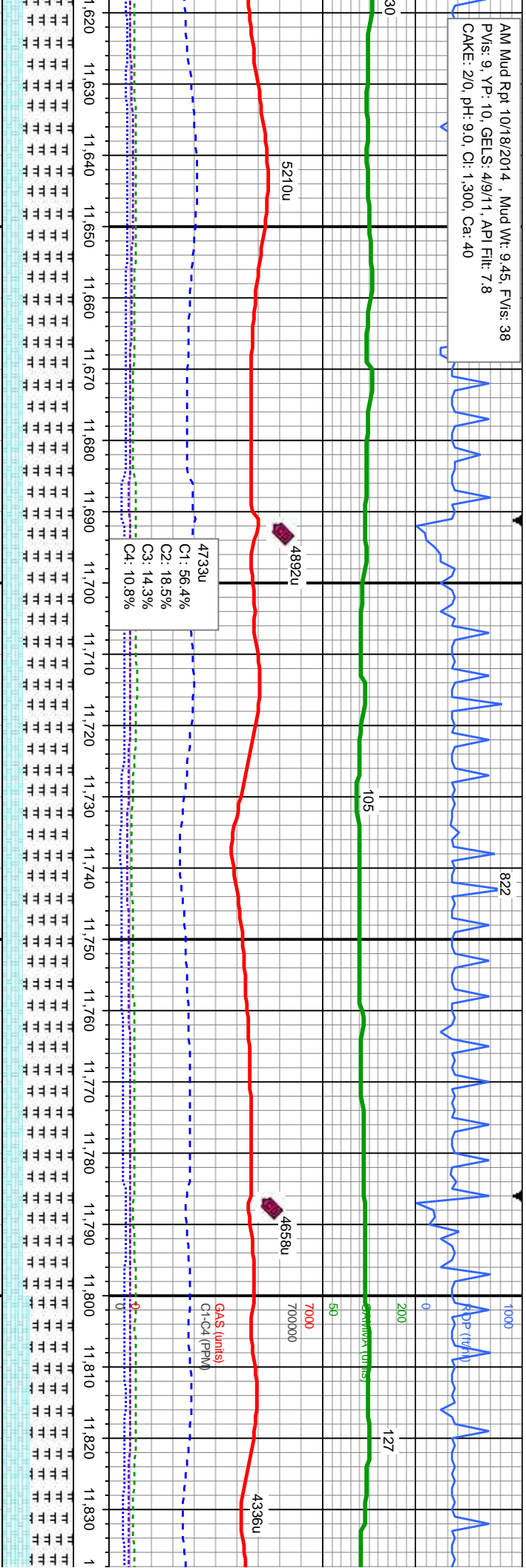
MD: 11,443
TVD: 6,843.59
Inclination: 89.69
Azimuth: 358.91

MD: 11,538
TVD: 6,844.46
Inclination: 89.26
Azimuth: 358.58

70% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb ply - sb blk, rthy tex, v calc 30% MRL: lt - med gy, occ blk, frm - hd, sb ply - sb blk, sily - grty tex, scat bent, tr	70% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb ply - sb blk, rthy tex, v calc 30% MRL: lt - med gy, occ blk, frm - hd, sb ply - sb blk, sily - grty tex, scat bent, tr calcite	60% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb ply - sb blk, rthy tex, v calc 40% MRL: lt - med gy, occ blk, frm - hd, sb ply - sb blk, sily - grty tex, sme fos frag, rr bent	70% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb ply - sb blk, rthy tex, v calc 30% MRL: lt - med gy, occ blk, frm - hd, sb ply - sb blk, sily - grty tex, sme fos frag, rr bent	30% CHK: tan - lt - mod hd, sb ply - sb blk, rthy tex, v calc 70% MRL: lt - med gy, occ blk, frm - hd, sb ply - sb blk, sily - grty
7050	7050	7050	7050	7050



AM Mud Rpt 10/18/2014 , Mud Wt: 9.45, FVis: 38
PVs: 9, YP: 10, GELS: 4/9/11, API Fil: 7.8
CAKE: 2/0, pH: 9.0, Cl: 1,300, Ca: 40

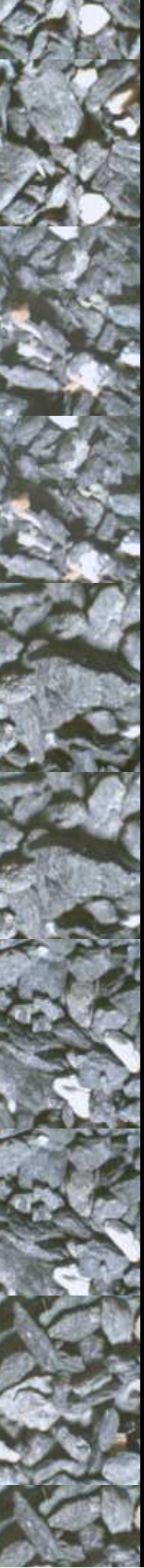


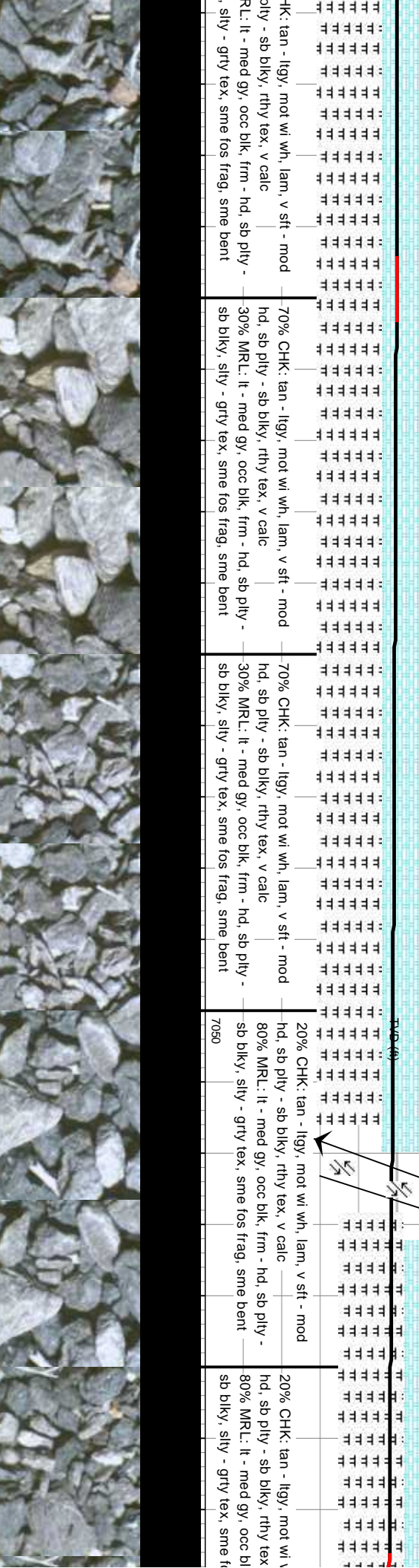
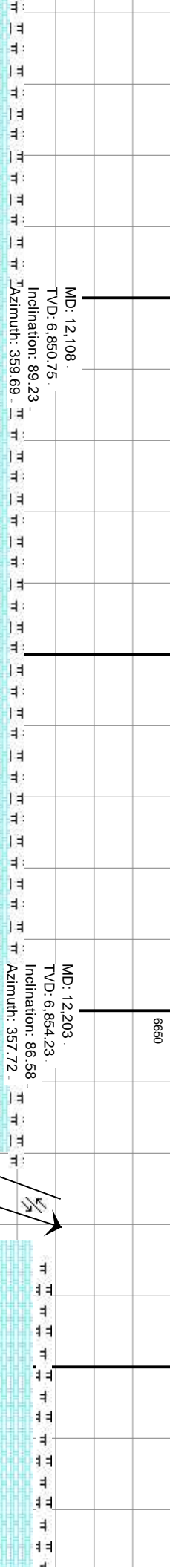
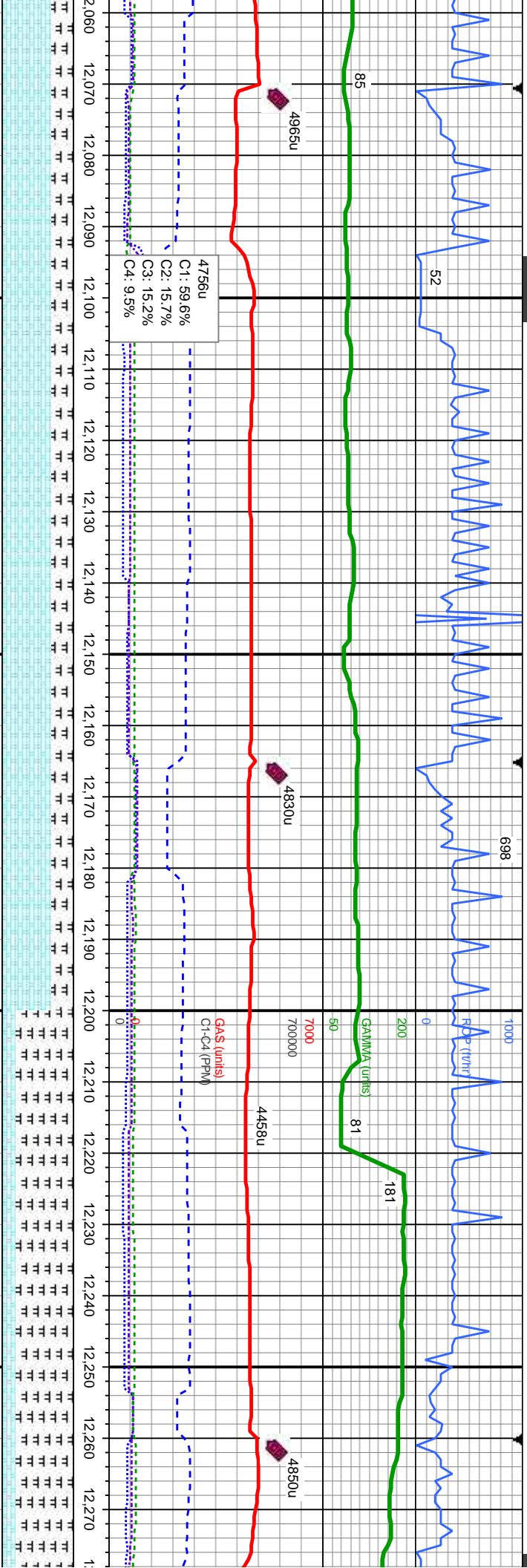
MD: 11,633
TVD: 6,845.61
Inclination: 89.35
Azimuth: 359.16

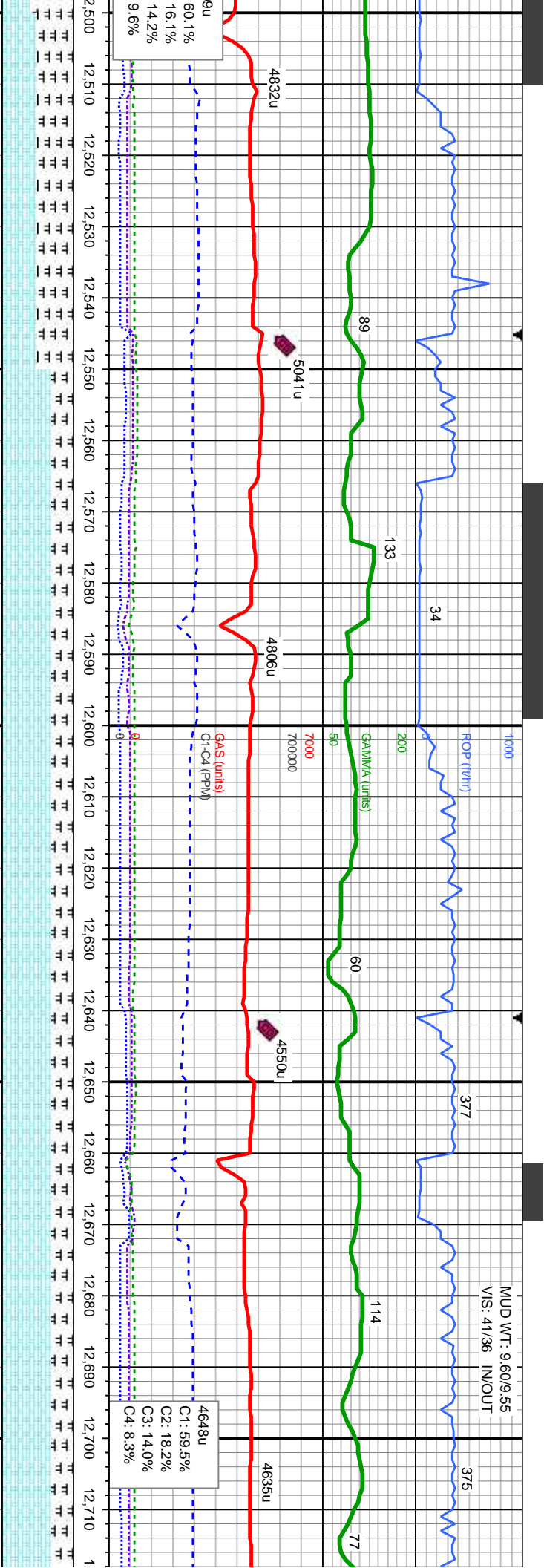
MD: 11,728
TVD: 6,846.56
Inclination: 89.51
Azimuth: 359.78

MD: 11,823
TVD: 6,847.63
Inclination: 89.2
Azimuth: 359.8

gy, mot wi wh, lam, v sft - mod ky, rthy tex, v calc	30% CHK: tan - ltgy, mot wi wh, lam, v sft - mod hd, sb pty - sb blk, rthy tex, v calc 70% MRL: lt - med gy, occ blk, frm - hd, sb pty - sb blk, silty - grty tex, abnt fos frag, rr bent	30% CHK: tan - ltgy, mot wi wh, lam, v sft - mod hd, sb pty - sb blk, rthy tex, v calc 70% MRL: lt - med gy, occ blk, frm - hd, sb pty - sb blk, silty - grty tex, abnt fos frag, rr bent	30% CHK: tan - ltgy, mot wi wh, lam, v sft - mod hd, sb pty - sb blk, rthy tex, v calc 70% MRL: lt - med gy, occ blk, frm - hd, sb pty - sb blk, silty - grty tex, abnt fos frag, rr bent	40% CHK: tan - ltgy, mot wi wh, lam, v sft - mod hd, sb pty - sb blk, rthy tex, v calc 60% MRL: lt - med gy, occ blk, frm - hd, sb blk, silty - grty tex, abnt fos frag, rr bent
---	--	--	--	--



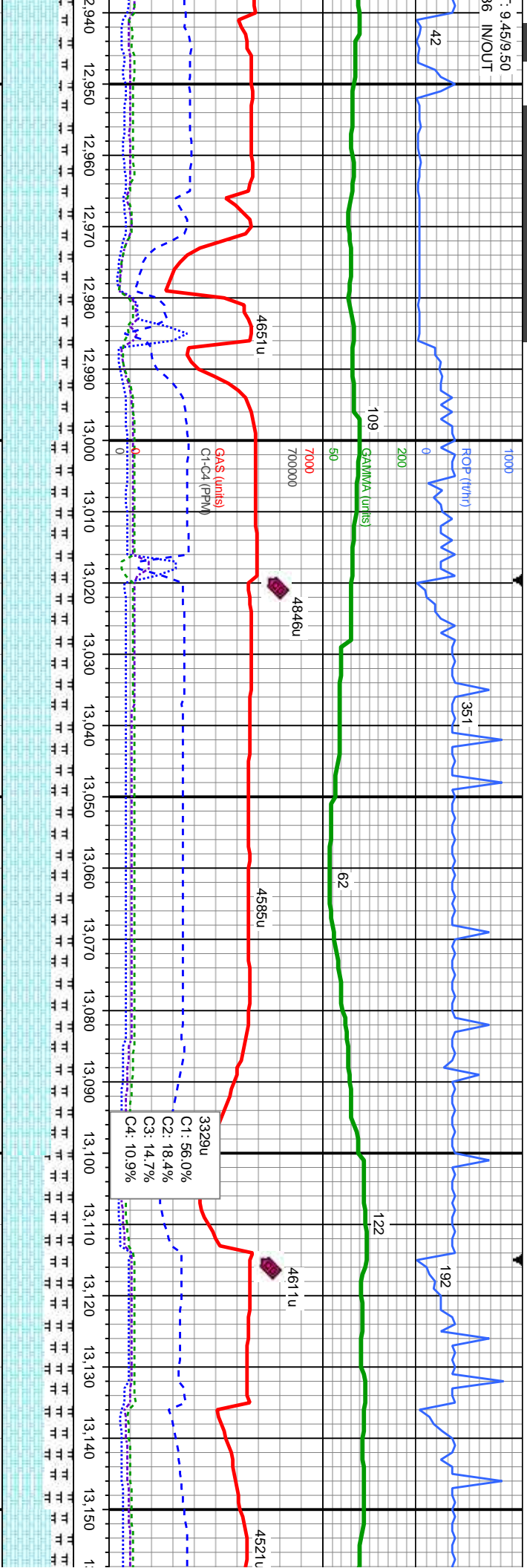




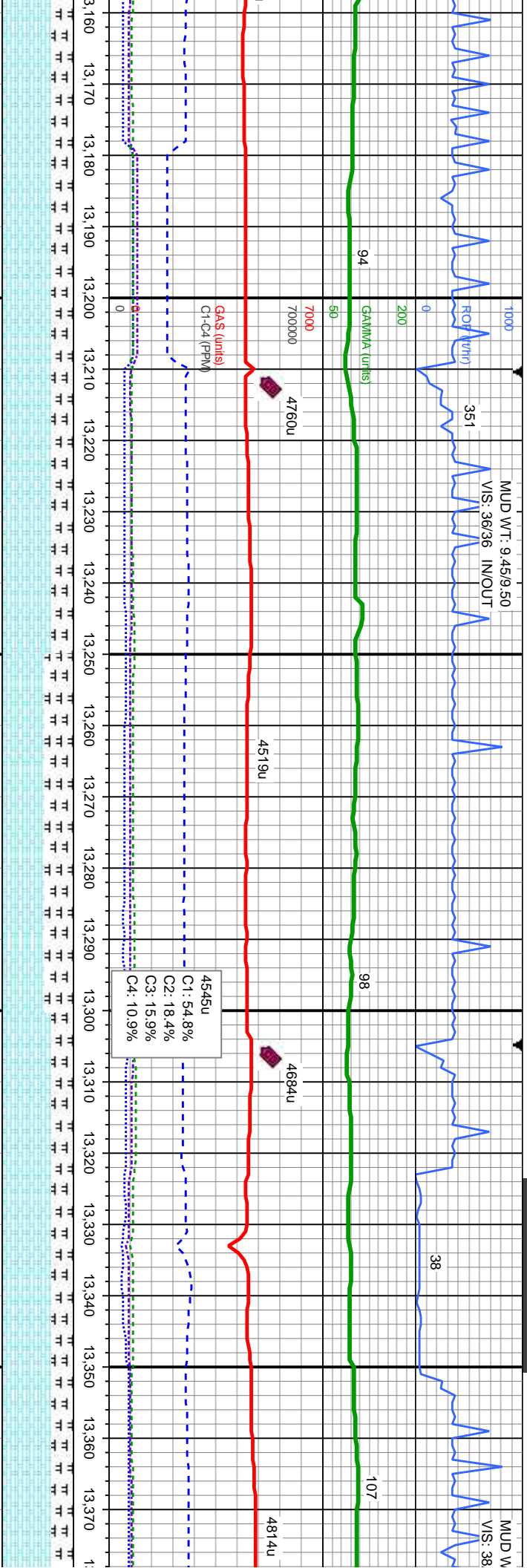
MD: 12.582 TVD: 6,868.28 Inclination: 90.22 Azimuth: 0.53		MD: 12.677 TVD: 6,869.85 Inclination: 90.09 Azimuth: 0.66	
50% CHK: tan - ltgy, mot w/ wh, lam, v sft - mod	hd, sb pily - sb blk, rthy tex, v calc	70% CHK: tan - ltgy, mot w/ wh, lam, v sft - mod	hd, sb pily - sb blk, rthy tex, v calc
50% MRL: lt - med gy, occ blk, frm - hd, sb pily - sb blk, silty - grty tex, sme fos frag, tr bent	30% MRL: lt - med gy, occ blk, frm - hd, sb pily - sb blk, silty - grty tex, sme fos frag, tr bent	30% MRL: lt - med gy, occ blk, frm - hd, sb pily - sb blk, silty - grty tex, sme fos frag, sme bent	30% MRL: lt - med gy, occ blk, frm - hd, sb pily - sb blk, silty - grty tex, sme fos frag, sme bent
TVD (ft)		TVD (ft)	
6650		7050	



9.45/9.50
INOUT

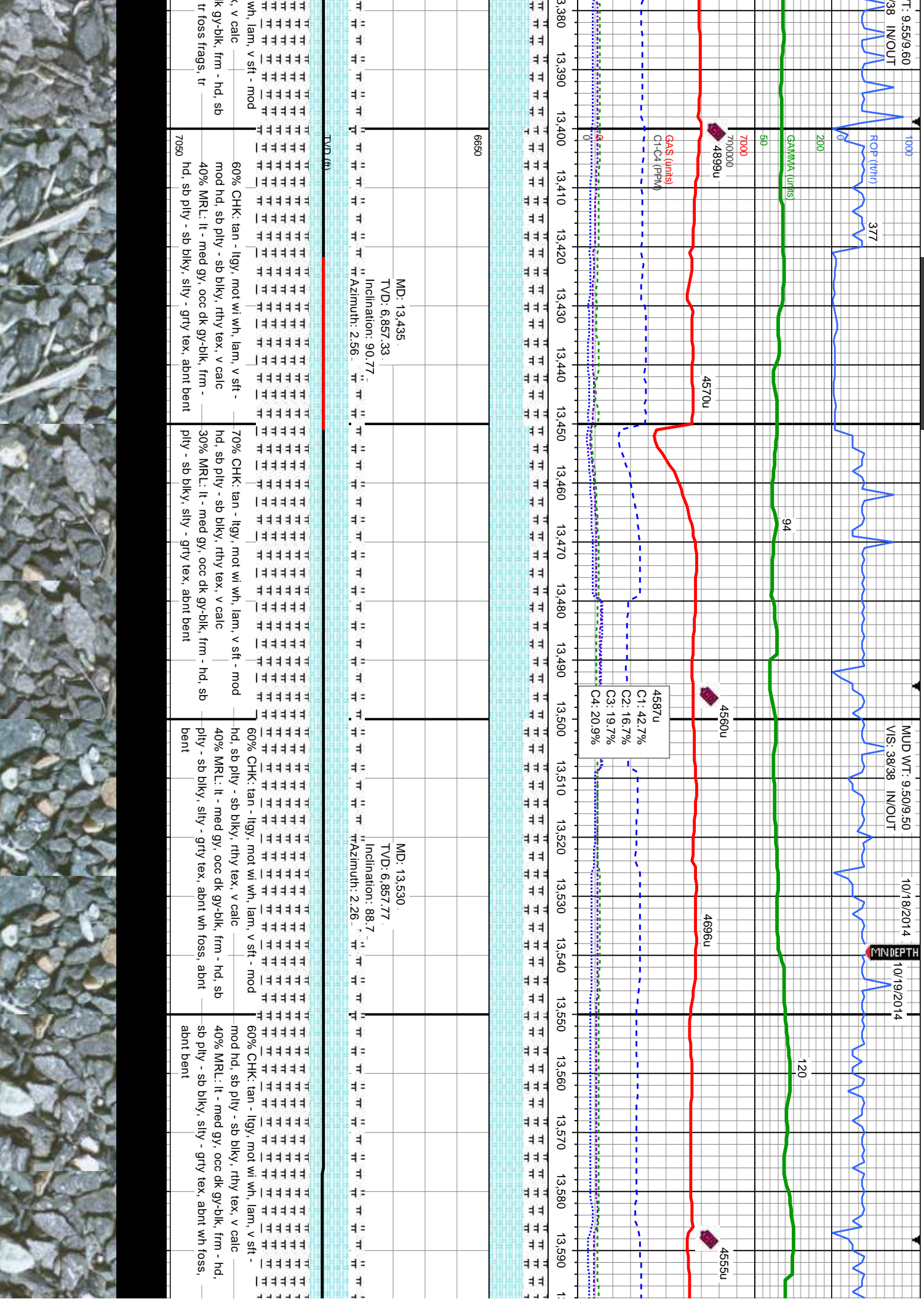


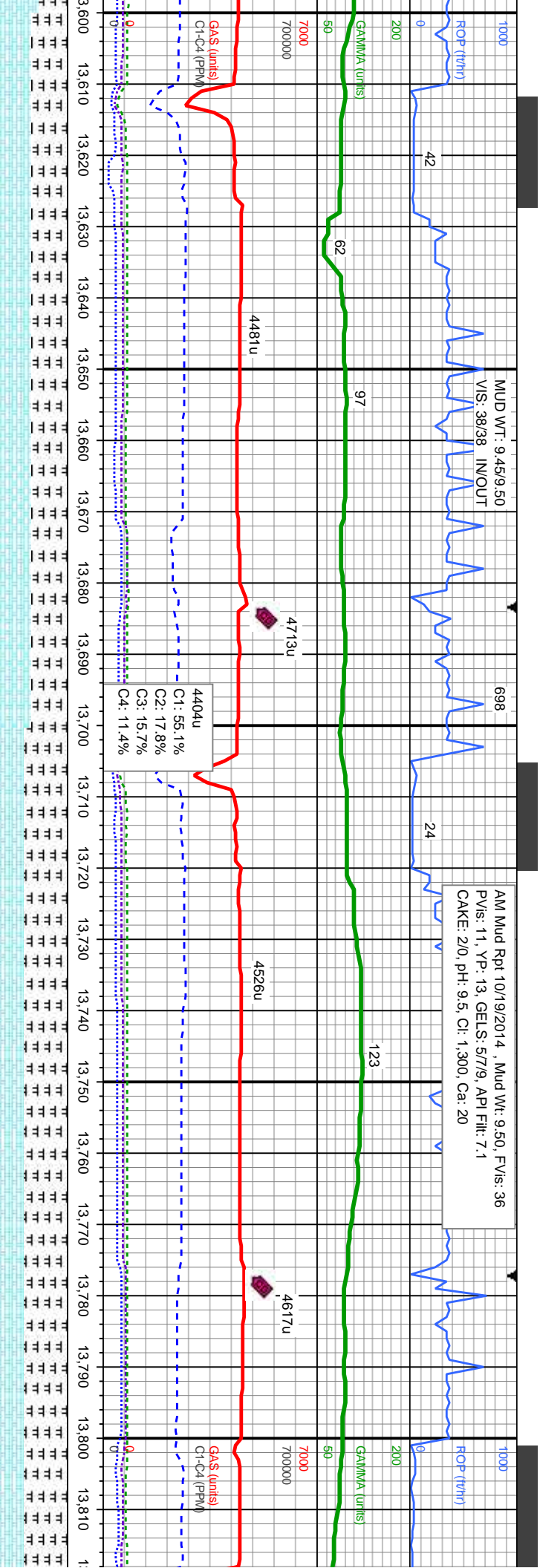
MD: 12.961 TVD: 6.864.17 Inclination: 91.23 Azimuth: 358.49		6650	MD: 13.056 TVD: 6.861.85 Inclination: 91.57 Azimuth: 358.69		MD: 13.151 TVD: 6.859.35 Inclination: 91.45 Azimuth: 358.13	
TVD (ft)			B CHALK			



6650	MD: 13,245 TVD: 6,857.88 Inclination: 90.34 Azimuth: 357.29	MD: 13,340 TVD: 6,857.78 Inclination: 89.78 Azimuth: 357.4	MD: 13,340 TVD: 6,857.78 Inclination: 89.78 Azimuth: 357.4
CHK: tan - lly, sme med gy, mot wi wh, sft - mod hd, sb ply - sb blk, rthy tex, v	70% CHK: tan - lly, sme med gy, mot wi wh, lam, v sft - mod hd, sb ply - sb blk, rthy tex, v calc	60% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb ply - sb blk, rthy tex, v calc	70% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb ply - sb blk, rthy tex, v calc
MR.L: lt - med gy, occ blk, frm - hd, sb ply - y, sily - grty tex, sme fos frag, abnt bent	30% MR.L: lt - med gy, occ blk, frm - hd, sb ply - sb blk, sily - grty tex, tr fos frag, sme calcite, abnt bent	40% MR.L: lt - med gy, occ dk gy-blk, frm - hd, sb ply - sb blk, sily - grty tex, sme calcite, sme abnt bent	30% MR.L: lt - med gy, occ dk gy-blk, frm - hd, sb ply - sb blk, sily - grty tex, sme inoc, tr calcite, calcite, abnt bent







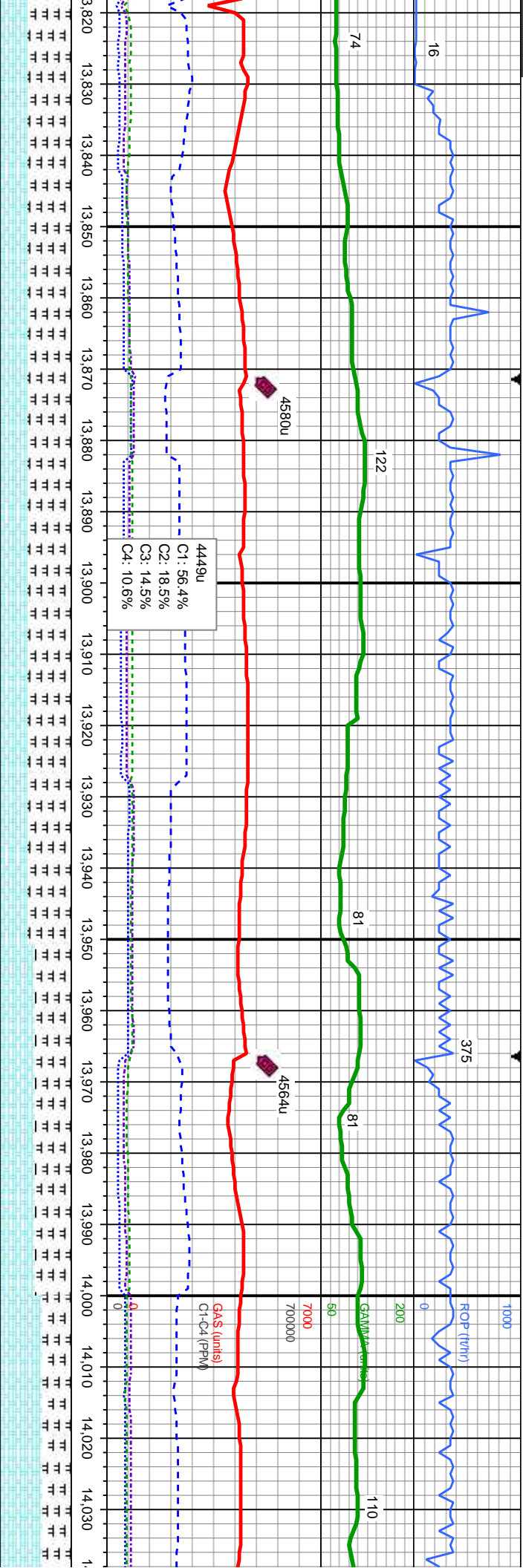
MD: 13.625
TVD: 6,858.54
Inclination: 90.37
Azimuth: 2.75

MD: 13.719
TVD: 6,857.88
Inclination: 90.43
Azimuth: 2.95

MD: 13.815
TVD: 6,856.42
Inclination: 89.7
Azimuth: 359

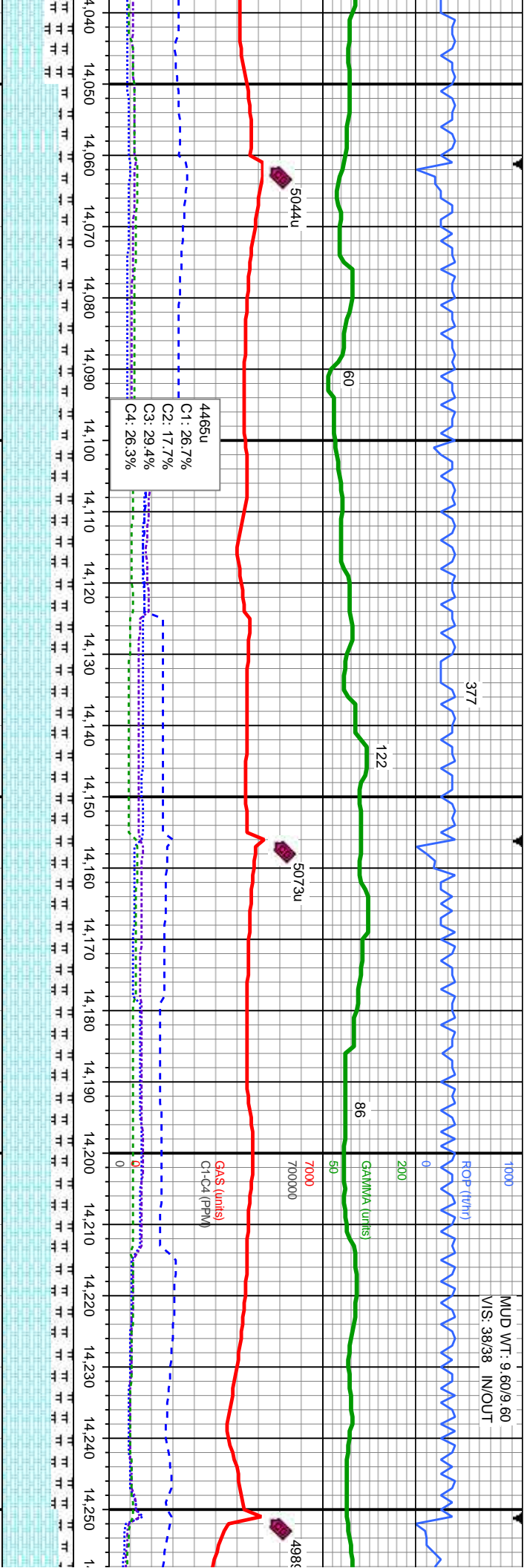
TVD (ft)	6650	6650	7050
50% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb pily - sb blk, rthy tex, v calc	50% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb pily - sb blk, rthy tex, v calc	40% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb pily - sb blk, rthy tex, v calc	40% CHK: tan - lly, mot wi wh, lam, v sft - mod hd, sb pily - sb blk, rthy tex, v calc
50% MRL: lt - med gy, occ dk gy-blk, frm - hd, sb pily - sb blk, sily - grty tex, abnt wh foss, tr calcite, abnt bent	50% MRL: lt - med gy, occ dk gy-blk, frm - hd, sb pily - sb blk, sily - grty tex, abnt wh foss, abnt bent	60% MRL: lt - med gy, occ dk gy-blk, frm - hd, sb pily - sb blk, sily - grty tex, abnt wh foss, abnt bent	60% MRL: lt - med gy, occ dk gy-blk, frm - hd, sb pily - sb blk, sily - grty tex, abnt wh foss, v sl tr calcite, abnt bent





MD: 13,910		MD: 14,005	
TVD: 6,857.25		TVD: 6,857.25	
Inclination: 89.85		Inclination: 90.15	
Azimuth: 358.78		Azimuth: 358.42	
TVD (ft)		TVD (ft)	
13,820	13,830	13,840	13,850
13,860	13,870	13,880	13,890
13,900	13,910	13,920	13,930
13,940	13,950	13,960	13,970
13,980	13,990	14,000	14,010
14,020	14,030	1-	

gy, rthy tex, v calc	40% CHK: tan - llyg, mot w/ wh, lam, v sft - mod	40% CHK: tan - llyg, mot w/ wh, lam, v sft - mod	50% CHK: tan - llyg, mot w/ wh, lam, v sft - mod	60% CHK: tan - llyg, mot w/ wh, lam, v
hd, sb pily - sb blkly, rthy tex, v calc	hd, sb pily - sb blkly, rthy tex, v calc	hd, sb pily - sb blkly, rthy tex, v calc	hd, sb pily - sb blkly, rthy tex, v calc	hd, sb pily - sb blkly, rthy tex, v calc
60% MRL: lt - med gy, occ dk gy-blk, frm - hd,	60% MRL: lt - med gy, occ dk gy-blk, frm - hd,	60% MRL: lt - med gy, occ dk gy-blk, frm - hd,	50% MRL: lt - med gy, occ dk gy-blk, frm - hd,	40% MRL: lt - med gy, occ dk gy-blk, fr
sb pily - sb blkly, sily - grty tex, abnt wh foss,	sb pily - sb blkly, sily - grty tex, abnt wh foss,	sb pily - sb blkly, sily - grty tex, abnt wh foss,	sb pily - sb blkly, sily - grty tex, abnt wh foss,	sb pily - sb blkly, sily - grty tex, abnt wh
abnt bent	sme bent	sme bent	sme bent	sme bent
7050				
TVD (ft)				
6650				
13,820	13,830	13,840	13,850	13,860
13,870	13,880	13,890	13,900	13,910
13,920	13,930	13,940	13,950	13,960
13,970	13,980	13,990	14,000	14,010
14,020	14,030	1-		

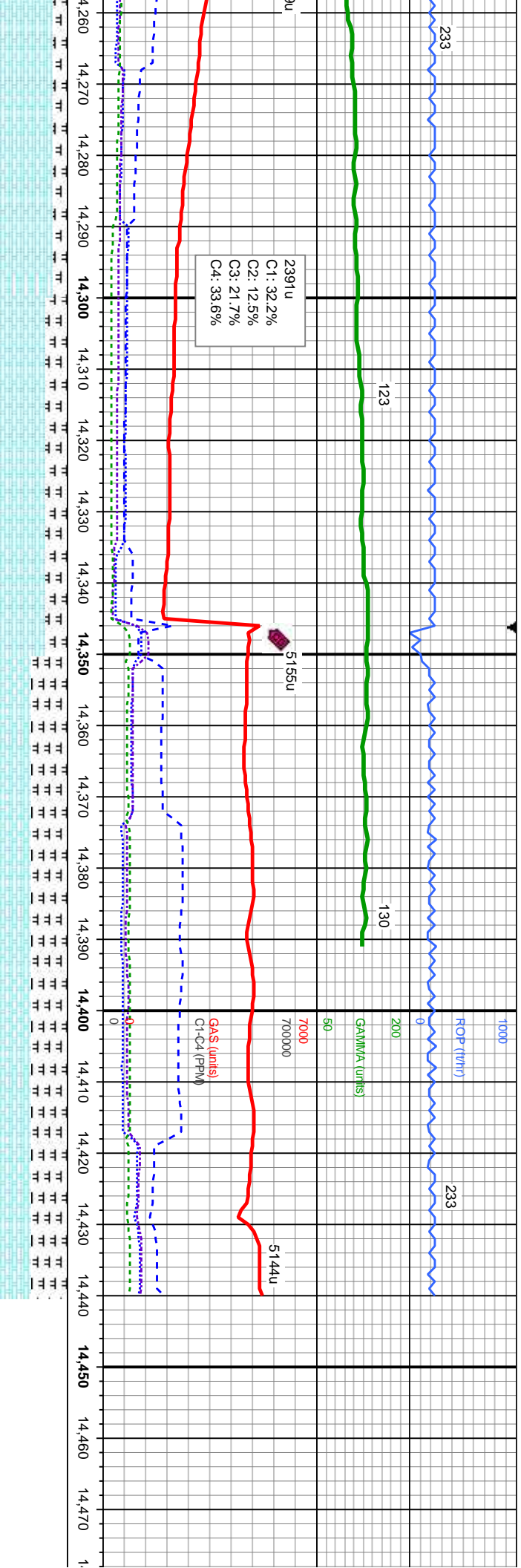


MD: 14,099
TVD: 6,855.92
Inclination: 91.48
Azimuth: 357.46

MD: 14,194
TVD: 6,852.91
Inclination: 92.15
Azimuth: 357.35

sft - mod	80% CHK: tan - lly, mot wi wh, lam, v sft - mod	70% CHK: tan - lly, mot wi wh, lam, v sft - mod	70% CHK: tan - lly, mot wi wh, lam, v sft - mod	70% CHK: tan - lly, mot wi wh, lam, v sft - mod
m - hd,	hd, sb pty - sb blk, rthy tex, v calc	hd, sb pty - sb blk, rthy tex, v calc	hd, sb pty - sb blk, rthy tex, v calc	hd, sb pty - sb blk, rthy tex, v calc
n foss,	20% MRL: lt - med gy, occ dk gy-blk, frm - hd,	30% MRL: lt - med gy, occ dk gy-blk, frm - hd,	30% MRL: lt - med gy, occ dk gy-blk, frm - hd,	30% MRL: lt - med gy, occ dk gy-blk, frm - hd,
	sb pty - sb blk, sily - grty tex, sme wh foss, tr	sb pty - sb blk, sily - grty tex, sme wh foss, tr	sb pty - sb blk, sily - grty tex, sme wh foss, tr	sb pty - sb blk, sily - grty tex, sme wh foss, tr
	bent	bent	bent	bent





MD: 14,289
TVD: 6,848.65
Inclination: 92.99
Azimuth: 357.23

MD: 14,382
TVD: 6,844.35
Inclination: 92.31
Azimuth: 356.17

PROJECTION TO BIT:
MD: 14,440
TVD: 6,842
Inclination: 92.31
Azimuth: 356.17

B CHALK

HK: tan - lly, mot wi wh, lam, v sft - mod	70% CHK: tan - lly, mot wi wh, lam, v sft - mod	50% CHK: tan - lly, mot wi wh, lam, v sft - mod	50% CHK: tan - lly, mot wi wh, lam, v sft - mod
ply - sb blk, rthy tex, v calc	hd, sb ply - sb blk, rthy tex, v calc	hd, sb ply - sb blk, rthy tex, v calc	hd, sb ply - sb blk, rthy tex, v calc
RL: lt - med gy, occ dk gy-blk, frm - hd,	30% MRL: lt - med gy, occ dk gy-blk, frm - hd,	50% MRL: lt - med gy, occ dk gy-blk, frm - hd,	50% MRL: lt - med gy, occ dk gy-blk, frm - hd,
- sb blk, sily - grty tex, sme wh foss, tr	sme bent	sme bent	sme bent



TD @ 14,440' MD @ 0
on 10/19/2014

See Corresponding Vel
Oscar Y10-75-1HC VER

Wellsite Geological Se
Provided By Columbin

