






































































































Rock Types

	UNKNOWN		COAL		TR	TR	TR	MARLSTONE		SHALY SANDSTONE
	ANHYDRITE		CONGLOMERATE		TR	TR	TR	METAMORPHIC		SHALY SILTSTONE
	BENTONITE		DOLOMITE		X	X	X	NO SAMPLE		SILTY SHALE
	BRECCIA		DOLOMITIC LIMESTONE		X	X	X	SALT		SILTSTONE
	CHALK		GRANITE		X	X	X	SANDSTONE		TILL
	CEMENT		GYPSUM		X	X	X	SALT-PEPPER SAND		TUFF
	CHERT		IGNEOUS		X	X	X	SHALE		WELDED TUFF
	CLAY CHOKO SAND		SIDERITE or LIMONITE		X	X	X	SHALE COLORED		
	CLAYSTONE		LIMESTONE		X	X	X	SHALE GRAY		

Accessories

Fossils		Stringer	
 GASTROPOD	 ARGILLITE GRAIN	 HEAVY MINERAL	
 INOCERAMUS	 B BENTONITE	 K KAOLIN	
 ALGAE	 O OOLITE	 BITUMENOUS SUBSTANCE	 M MARCASITE
 AMPHIPORA	 O OSTRACOD	 BRECCIA FRAGMENTS	 T MARLSTONE
 BELEMNITE	 P PELECYP/POD	 C CALCAREOUS	 U MICACEOUS
 BIOCLASTIC	 P PELLET	 C CARBONACEOUS FLAKES	 K MINERAL CRYSTALS
 BRACHIOPOD	 P PISOLITE	 C HTDK	 N NODULES
 BRYOZOA	 P PLANT REMAINS	 C HILT	 P PHOSPHATE PELLETS
 CEPHALOPOD	 S PLANT SPORES	 C COAL - THIN BEDS	 P PYRITE
 CORAL	 S SCAPHOPOD	 D DOLOMITIC	 B SALT CAST
 CRINOID	 S STROMATOPOROID	 F FELDSPAR	 S SANDY
 ECHINOID		 F FERRUGINOUS PELLET	 S SIDERITE
 FISH		 F FERRUGINOUS	 S SILICEOUS
 FORAMINIFERA	 A ANHYDRITIC	 G GLAUCONITE	 S SILTY
 F FOSSIL	 A ARGILLACEOUS	 G GYPSIFEROUS	 T TUFFACEOUS
	Minerals		Stringer
			 A ANHYDRITE STRINGER
			 B BENTONITE STRINGER
			 C COAL STRINGER
			 D DOLOMITE STRINGER
			 G GYPSUM STRINGER
			 L LIMESTONE STRINGER
			 M MARLSTONE (CALC) STRG
			 M MARLSTONE (DOL) STRG
			 S SANDSTONE STRINGER
			 S SHALE STRINGER
			 S SILTSTONE STRINGER

Oil Show

P PINPOINT

Engineering


- DEAD
- EVEN
- QUESTIONABLE
- BIT
- SPOTTED STAINING
- CONNECTION (UP)

Porosity

Porosity

▼ CONNECTION (DOWN)	🏠 CONNECTION GAS
E EARTHY	🏠 CONNECTION GAS (LEFT)
🗑 FENESTRAL	🏠 TRIP GAS
F FRACTURE	🏠 TRIP GAS (LEFT)
✕ INTERCRYSTALLINE	🕒 DOWN TIME GAS
🕒 INTEROOLITIC	🕒 DOWN TIME GAS (LEFT)
👉 MOLDIC	⬇️ CORE - LOST
🗑 ORGANIC	🏠 CORE - RECOVERED

ther Symbols

 DST INTERVAL  WIRELINE TESTED - LEFT **E** EARTHY

 FAULT  WIRELINE TESTED - RT **FX** FINELYXLN

 FORMATION TOP  DRILL STEM TEST **GS** GRAINSTONE

 GAS SHOW  **MINDEPTH** MN DEPTH **L** LITHOGRAPHIC


 OIL SHOW **MX** MICROXLN

 **MNDEPTH** MN DEPTH UP **MS** MUDSTONE

Rounding

 **MNDEPTH** MN DEPTH (DOWN) **AS** PACKSTONE

 NORMAL FAULT **R** ROUNDED **WS** WACKESTONE

 OVERTURNED STRATA **B** SUBANG

 REVERSE FAULT **R** SUBRND

Sorting

 CASING **M** MODERATE

Textures

 SIDEWALL CORE (LEFT) **P** POOR

 SIDEWALL CORE (RIGHT) **BS** BOUNDSTONE **W** WELL

 SLIDE **C** CHALKY

 **BS** SURVEY **CX** CRYPTOXLN

Slide/Rotate

ROP
ROP
GAMMA

In/Out Mud Wt: 9.8+/9.8 Vis 45/45

104

ROP (ft/hr)
GAMMA (cp)

99

ROP (ft/hr)
GAMMA (cp)

100

Total Gas & Chromatograph

GAS
C1
C2
C3
C4

Columbine Logging 2-Manned
Geosteering Operational 8/27/2014
Bloodhound # 0052

439u 5000
C1 75.1%
C2 11.8%
C3 9.1%
C4 4.0% (units)
C1-C4 (PPM)

1161u

GAS (units)
C1-C4 (PPM)

TROUBLE SHOOTING GAS LINE

Depth Labels

% Lith

Well Bore
TVD

Oil Show

E
G
M
F
T
ST

Images

SHY SLTST: lt - med gy, gy brn, s&p, mod frm,
brn, sb-ply - sb blk, rthy tex, vif occ f-med gr, w srt,
non calc, SLTY SH: lt - dk gy, sft - frm, sb ply - sb
blk, rthy tex, non calc, tr SHY SS

MD: 5,867'
TVD: 5,846.4'
Inclination: 4.4°
Azimuth: 66.6°
VS: -362.73'

SHY SLTST: lt - med gy, gy brn, s&p, mod frm,
brn, sb-ply - sb blk, rthy tex, vif occ f-med gr, w srt,
non calc, SLTY SH: lt - dk gy, sft - frm, sb ply - sb
blk, rthy tex, non calc, tr SHY SS

MD: 5,914'
TVD: 5,892.9'
Inclination: 11.8°
Azimuth: 65.6°
VS: -356.62'

SHY SLTST: lt - med gy, gy brn, s&p, mod frm,
brn, sb-ply - sb blk, rthy tex, vif occ f-med gr, w srt,
non calc, SLTY SH: lt - dk gy, sft - frm, sb ply - sb
blk, rthy tex, non calc, tr SHY SS

MD: 5,961'
TVD: 5,938.34'
Inclination: 17.6°
Azimuth: 64.3°
VS: -345.71'

SHY SLTST: lt - med gy, gy brn, s&p, mod frm,
brn, sb-ply - sb blk, rthy tex, vif occ f-med gr, w srt,
non calc, SLTY SH: lt - dk gy, sft - frm, sb ply - sb
blk, rthy tex, non calc, tr SHY SS

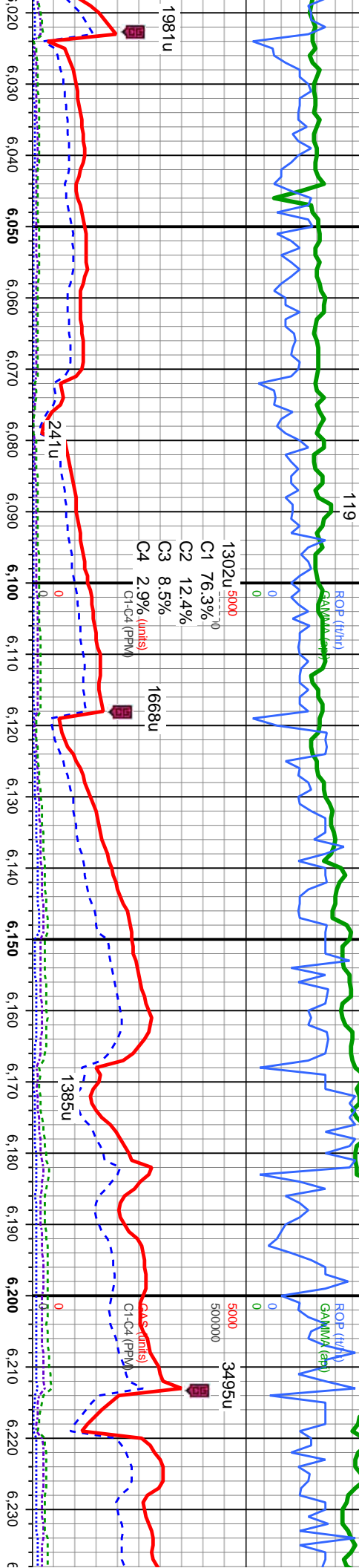
MD: 6,008'
TVD: 5,982.78'
Inclination: 20.4°
Azimuth: 71.1°
VS: -331.42'

5850

In/Out Mud Wt: 9.8/9.8+ Vis 38/40

In/Out Mud Wt: 9.8/9.8 Vis 34/38

In/Out Mud V



MD: 6,057'
TVD: 6,028.24'
Inclination: 23.4 °
Azimuth: 76.8 °
VS: -313.74'

MD: 6,104'
TVD: 6,070.57'
Inclination: 28.1 °
Azimuth: 83.5 °
VS: -293.56'

MD: 6,152'
TVD: 6,111.99'
Inclination: 32.6 °
Azimuth: 86.8 °
VS: -269.36'

MD: 6,199'
TVD: 6,151.13'
Inclination: 34.6 °
Azimuth: 86.9 °
VS: -243.37'

Logger Top Sharon Springs
6124' MD/ 6087.83' TVD

Logger Top Niobrara
6238' MD/ 6183' TVD

id gy, gy brn, s&p, mod frm,
rthy tex, v/ occ f-med gr, w srt,
it - dk gy, sft - frm, sb ply - sb
alc, tr SHY SS

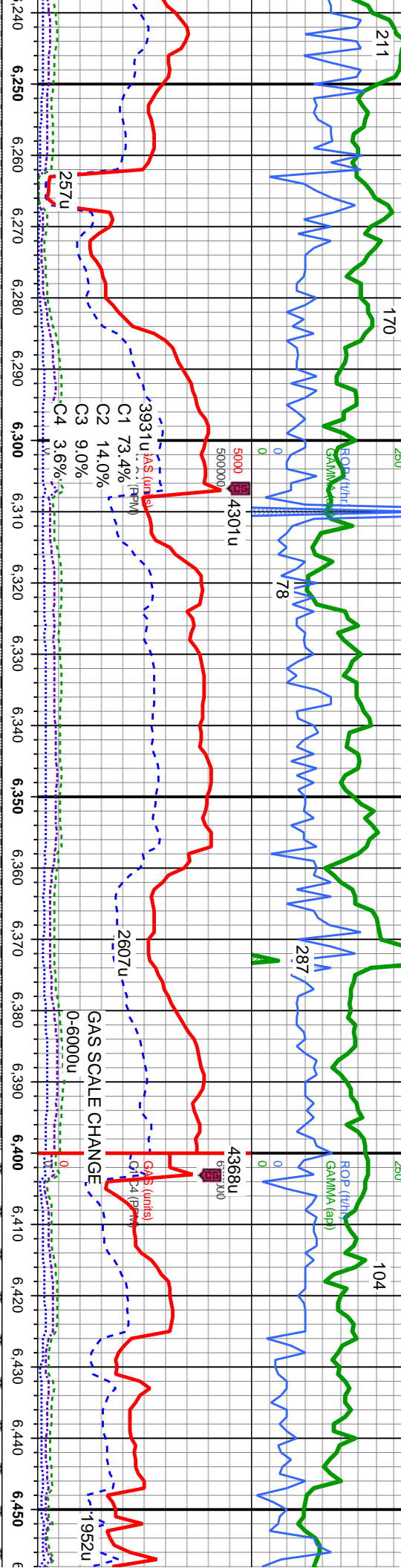
SHY SLTST: It - med gy, gy brn, s&p, mod frm,
brit/sb-ply - sb blk, rthy tex, v/ occ f-med gr, w srt,
non calc, SLTY SH: It - dk gy, sft - frm, sb ply - sb
blk, rthy tex, non calc, tr SHY SS

SHY SLTST: It - med gy, gy brn, s&p, mod frm,
brit/sb-ply - sb blk, rthy tex, v/ occ f-med gr, w srt,
non calc, SLTY SH: It - dk gy, sft - frm, sb ply - sb
blk, rthy tex, non calc, tr SHY SS

SHY SLTST: It - med gy, gy brn, s&p, mod frm,
brit/sb-ply - sb blk, rthy tex, v/ occ f-med gr, w srt,
non calc, SLTY SH: It - dk gy, sft - frm, sb ply - sb
blk, rthy tex, non calc

SHY SLTST: It - med gy, gy brn, s&p, mod frm,
brit/sb-ply - sb blk, rthy tex, v/ occ f-med gr, w srt,
non calc, SLTY SH: It - dk gy, sft - frm, sb ply - sb
blk, rthy tex, non calc, MRLST: med-dk c
sft, sb ply-sb blk, fir- brit, sil

W: 9.8/9.8 Vis 33/37 In/Out Mud Wt: 9.7+9.8+ Vis 34/36



SHY SLTST: lt - med gy, gy brn, s&g, mod frm, brit, sb-pty - sb blkly, rthy tex, v f occ f-med gr, w srl, non calc; MRLST: med -dk gy, stri, sft-v sft, sb pty-sb blkly, fri- brit, sil, tr bent

MRLST: med -dk gy, stri, sft-v sft, sb pty-sb blkly, fri- brit, sil, v calc; CHK: lt-med gy, gy brn, some wh, mot, lam, v sft-frm, sb pty-sb blkly, v calc, crpxl: tr pyrc bent

MRLST: med -dk gy, stri, sft-v sft, sb pty-sb blkly, fri- brit, sil, v calc; CHK: lt-med gy, gy brn, some wh, mot, lam, v sft-frm, sb pty-sb blkly, v calc, crpxl: tr pyrc bent

MRLST: med -dk gy, stri, sft-v sft, sb pty-sb blkly, fri- brit, sil, v calc; CHK: lt-med gy, gy brn, some wh, mot, lam, v sft-frm, sb pty-sb blkly, v calc, crpxl: tr pyrc bent

MD: 6,294'
TVD: 6,222.85'
Inclination: 47.7 °
Azimuth: 87.3°
VS: -181.4'

MD: 6,342'
TVD: 6,252.64'
Inclination: 55.5 °
Azimuth: 87.6°
VS: -143.82'

MD: 6,389'
TVD: 6,277.72'
Inclination: 60 °
Azimuth: 92°
VS: -104.11'

MD: 6,436'
TVD: 6,299.75'
Inclination: 64.1 °
Azimuth: 93.5°
VS: -62.7'

frn, gr, w srl, pty - sb y, stri, sft-v

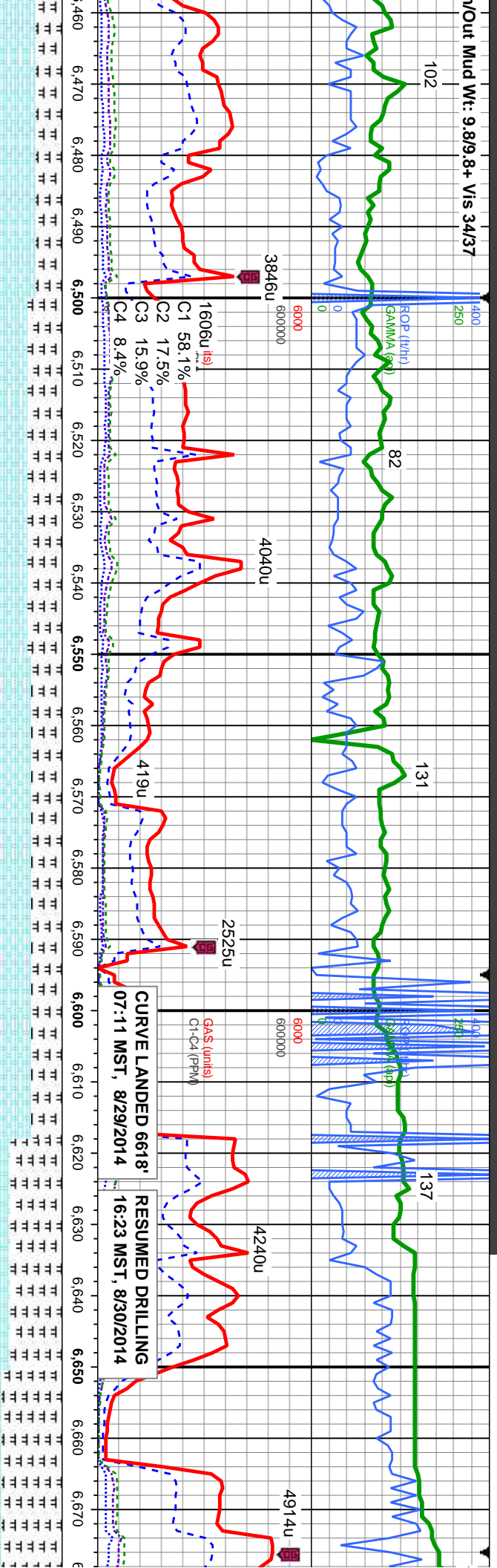
6350

6350

6350

Logger Top N
6444' MD/ 6350'

In/Out Mud Wt: 9.8/9.8+ Vis 34/37



med -dk gy, stri, sft-v sft, sb ply-sb blkly, fr-
- brt, sil, v calc: CHK: lt-med gy, gy brn, some wh,
mod, lam, v sft-frn, sb ply-sb blkly, v calc, crptxl: tr
pyrc bent

MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply
- sb blkly, frt- brt, sil, v calc: CHK: lt - med gy, bf -
brn, gy brn, mod, lam, v sft-frn, sb ply-sb blkly, v
calc, crptxl: tr bent, tr pyrc

MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply
- sb blkly, frt- brt, sil, v calc: CHK: lt - med gy, bf -
brn, gy brn, mod, lam, v sft-frn, sb ply-sb blkly, v
calc, crptxl: tr bent, tr pyrc

MD: 6,484'
TVD: 6,318.02'
Inclination: 71.1 °
Azimuth: 92.8 °
VS: -18.49'

MD: 6,532'
TVD: 6,331.21'
Inclination: 77 °
Azimuth: 89.6 °
VS: 27.59'

MD: 6,555'
TVD: 6,336.52'
Inclination: 81.4 °
Azimuth: 88.5 °
VS: 50.18'

MD: 6,615'
TVD: 6,339.65'
Inclination: 90.7 °
Azimuth: 84.5 °
VS: 109.92'

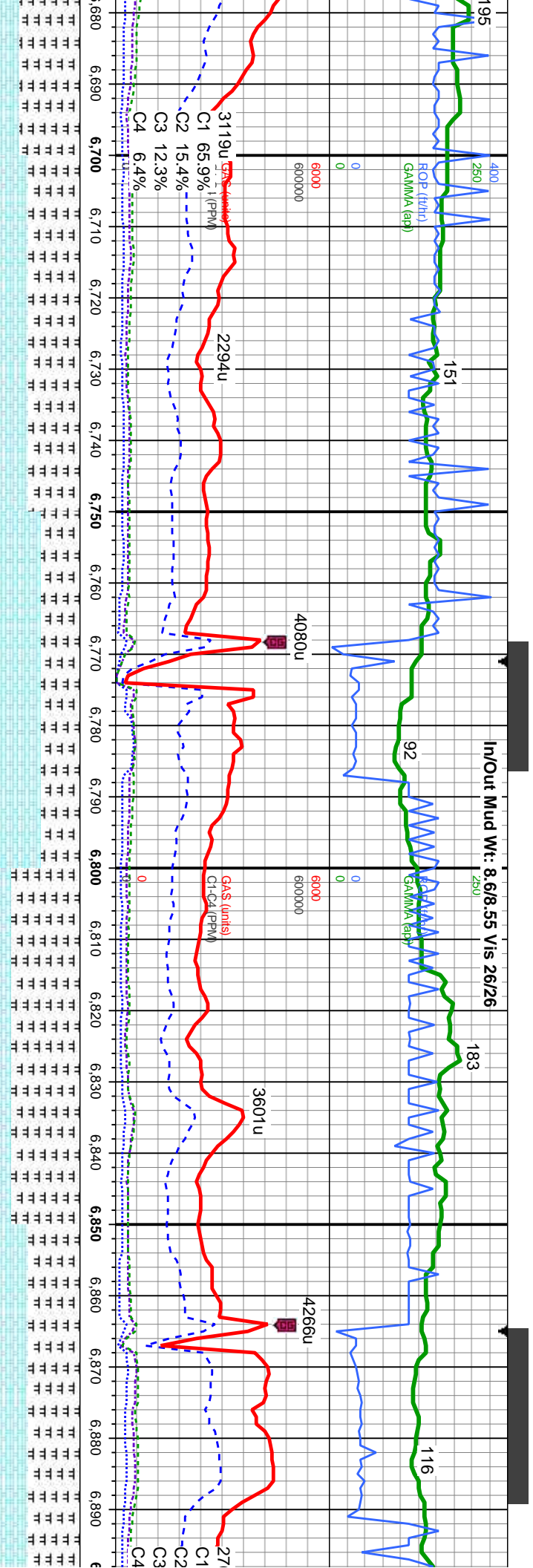
22.79' TVD

6399

6400

TVD Scale Change
6200' MD - 6400' MD
Each White Block is 20'

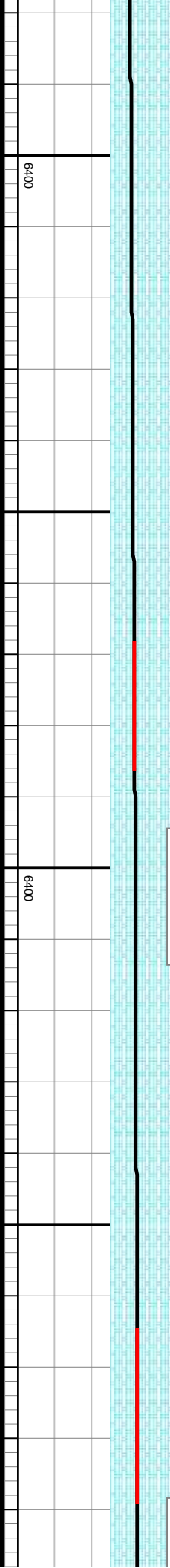
39' Target Area

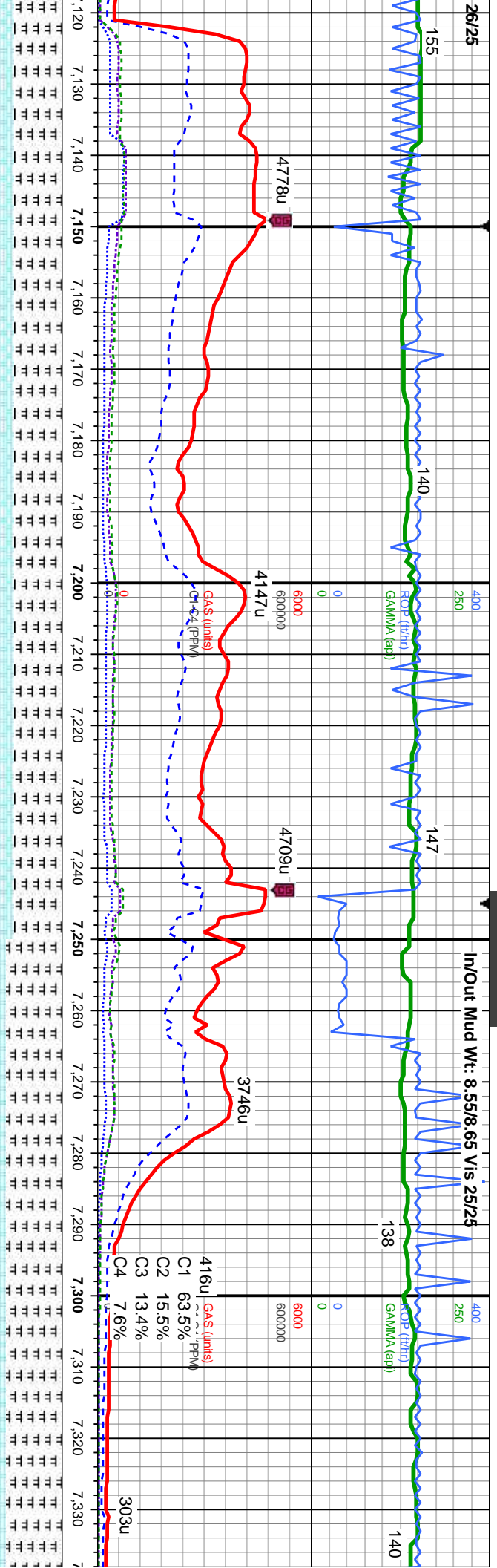


mod frm - hd, sb ply - sb blk, frt- brt, sil, v calc: CHK: It - med gy, bf - sb ply-sb blk, v	MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blk, frt- brt, sil, v calc: CHK: It - med gy, bf - brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v calc, crptx: tr bent, tr pyr	MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blk, frt- brt, sil, v calc: CHK: It - med gy, bf - brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v calc, crptx: tr bent, tr pyr	MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blk, frt- brt, sil, v calc: CHK: It - med gy, bf - brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v calc, crptx: tr bent, tr pyr
TVD (ft)			

MD: 6,804'
TVD: 6,335.2'
Inclination: 92 °
Azimuth: 87.7°
VS: 298.66'

MD: 6,86'
TVD: 6,3
Inclination:
Azimuth:
VS: 393.





Y, blk, sfti, mod frm - hd, sb ply
- sb blk, ftr- brt, sil, v calc: CHK: It - med gy, bf -
- m, v sft-frm, sb ply-sb blk, v
calc, crptxi: tr bent, tr pyr

MRST: med -dk gy, blk, sfti, mod frm - hd, sb ply
- sb blk, ftr- brt, sil, v calc: CHK: It - med gy, bf -
- brn, gy brn, mot, lam, v sft-frm, sb ply-sb blk, v
calc, crptxi: tr bent, tr pyr

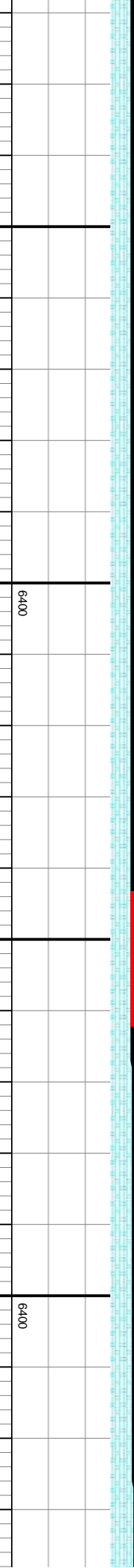
MRST: med -dk gy, blk, sfti, mod frm - hd, sb ply
- sb blk, ftr- brt, sil, v calc: CHK: It - med gy, bf -
- brn, gy brn, mot, lam, v sft-frm, sb ply-sb blk, v
calc, crptxi: tr bent, tr pyr

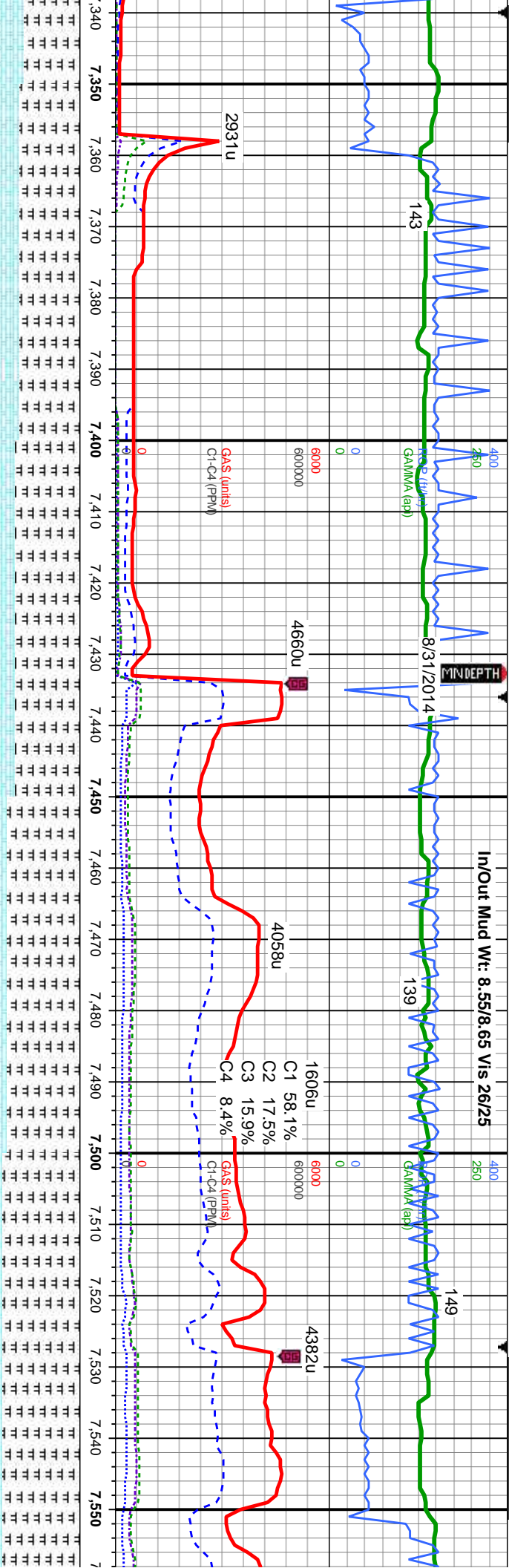
MRST: med -dk gy, blk, sfti, mod frm - hd, sb ply
- sb blk, ftr- brt, sil, v calc: CHK: It - med gy, bf -
- brn, gy brn, mot, lam, v sft-frm, sb ply-sb blk, v
calc, crptxi: tr bent, tr pyr

MRST: med -dk gy, blk, sfti, mod frm - hd, sb ply
- sb blk, ftr- brt, sil, v calc: CHK: It - med
- brn, gy brn, mot, lam, v sft-frm, sb ply-sb
calc, crptxi: tr bent, tr pyr

MD: 7,184'
TVD: 6,333.71'
Inclination: 90.2°
Azimuth: 87°
VS: 678.62'

MD: 7,279'
TVD: 6,333.13'
Inclination: 90.5°
Azimuth: 88.6°
VS: 773.6'





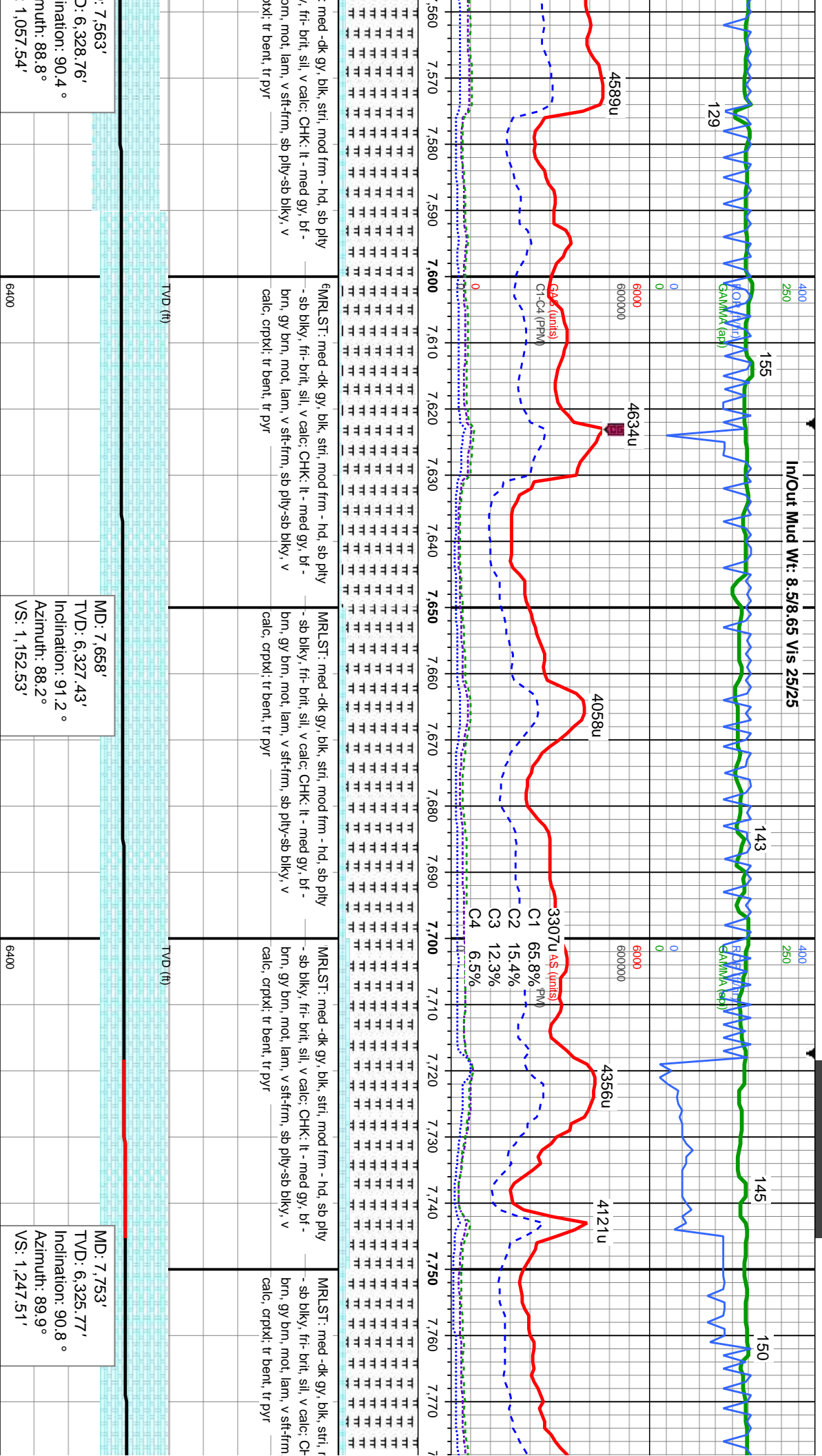
MR.LST: med -dk gy, blk, stri, mod frm - hd, sb ply
- sb blk, fri- brt, sil, v calc: CHK: It - med gy, bf -
brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v
calc, crpxl: tr bent, tr pyr

MR.LST: med -dk gy, blk, stri, mod frm - hd, sb ply
- sb blk, fri- brt, sil, v calc: CHK: It - med gy, bf -
brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v
calc, crpxl: tr bent, tr pyr

MR.LST: med -dk gy, blk, stri, mod frm - hd, sb ply
- sb blk, fri- brt, sil, v calc: CHK: It - med gy, bf -
brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v
calc, crpxl: tr bent, tr pyr

MR.LST: med -dk gy, blk, stri, mod frm - hd, sb ply
- sb blk, fri- brt, sil, v calc: CHK: It - med gy, bf -
brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v
calc, crpxl: tr bent, tr pyr

MD	MD: 7,375'	MD: 7,469'	MD: 7,469'	MD: 7,469'
TVI	TVI: 6,331.71'	TVI: 6,329.9'	TVI: 6,329.9'	TVI: 6,329.9'
Incl	Inclination: 91.2°	Inclination: 91°	Inclination: 91°	Inclination: 91°
Azi	Azimuth: 90.3°	Azimuth: 87.7°	Azimuth: 87.7°	Azimuth: 87.7°
VS	VS: 869.58'	VS: 963.55'	VS: 963.55'	VS: 963.55'



med -dk gy, blk, stri, mod frm - hd, sb ply
- sb blk, fri- brt, sil, v calc: CHK: lt - med gy, bf -
brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v
calc, crpxl: tr bent, tr pyr

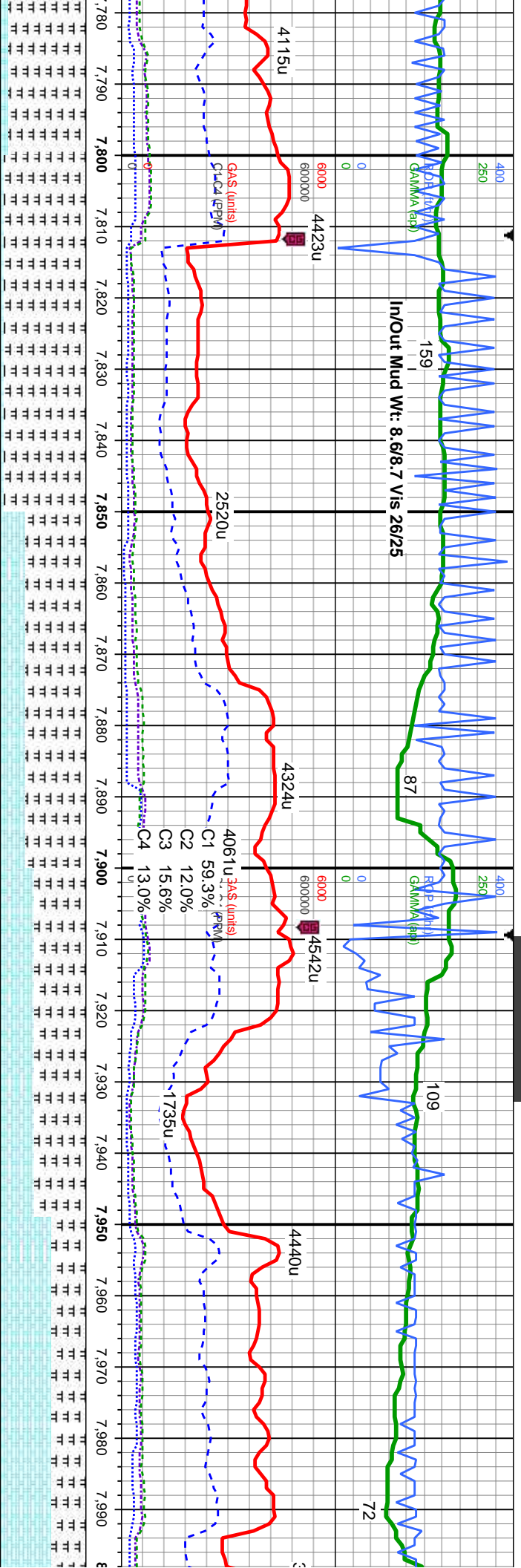
MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply
- sb blk, fri- brt, sil, v calc: CHK: lt - med gy, bf -
brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v
calc, crpxl: tr bent, tr pyr

MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply
- sb blk, fri- brt, sil, v calc: CHK: lt - med gy, bf -
brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v
calc, crpxl: tr bent, tr pyr

MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply
- sb blk, fri- brt, sil, v calc: CHK: lt - med gy, bf -
brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v
calc, crpxl: tr bent, tr pyr

TVD (ft)

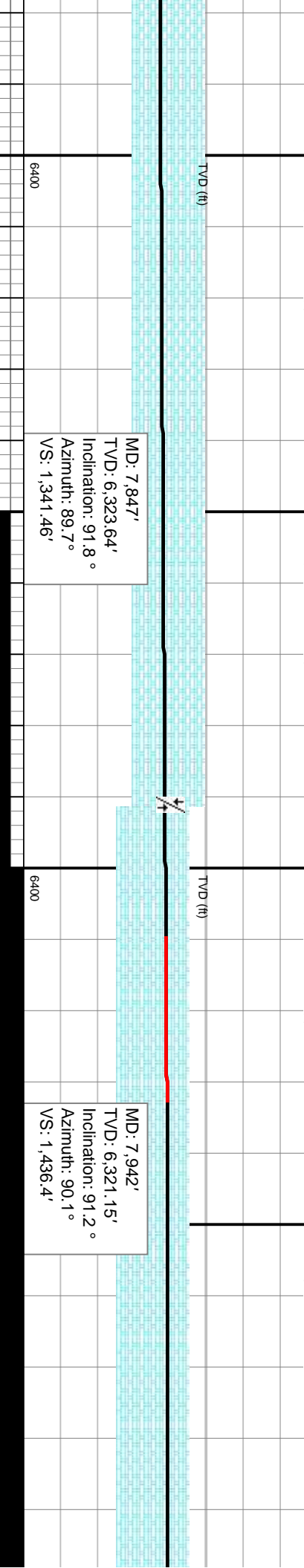
TVD (ft)

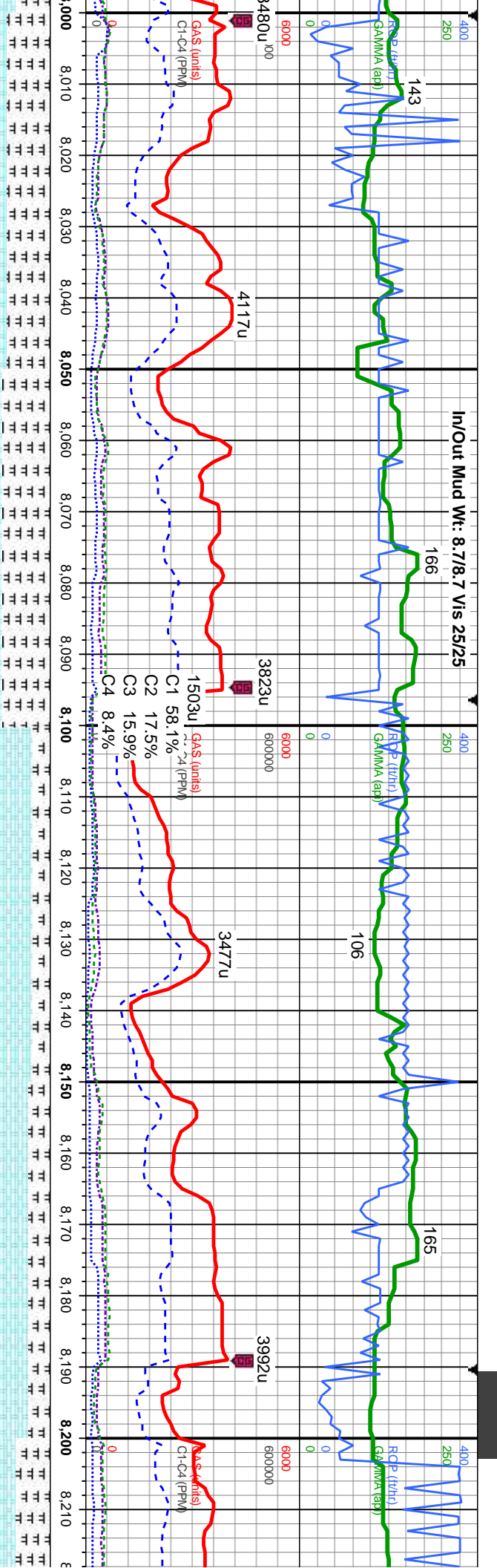


mod frm - hd, sb ply
- sb blk, fir- brt, sil, v calc: CHK: It - med gy, bf -
brn, gy brn, mot, lam, v sft-frm, sb ply-sb blk, v
calc, crptx: tr bent, tr pyr

mod frm - hd, sb ply
- sb blk, fir- brt, sil, v calc: CHK: It - med gy, bf -
brn, gy brn, mot, lam, v sft-frm, sb ply-sb blk, v
calc, crptx: tr bent, tr pyr

CHK: It - med gy, bf - brn, gy brn, mot, lam, v
sft-frm, sb ply-sb blk, v calc, crptx: tr bent, tr pyr;
MRSLST: med -dk gy, blk, str, mod frm - hd, sb ply
- sb blk, fir- brt, sil, v calc





CHK: lt - med gy, bf - brn, gy brn, mot, lam, v
sft frm, sb ply-sb blk, v calc, crpxl: tr bent, tr pyr;
MRLST: med-dk gy, blk, stri, mod frm - hd, sb ply
-sb blk, fri- brt, sil, v calc

MRLST: med-dk gy, blk, stri, mod frm - hd, sb ply
- sb blk, fri- brt, sil, v calc; CHK: lt - med gy, bf -
brn, gy brn, mot, lam, v sft frm, sb ply-sb blk, v
calc, crpxl: tr bent, tr pyr

CHK: lt - med gy, bf - brn, gy brn, mot, lam, v
sft frm, sb ply-sb blk, v calc, crpxl: tr bent, tr pyr;
MRLST: med-dk gy, blk, stri, mod frm - hd, sb ply
-sb blk, fri- brt, sil, v calc

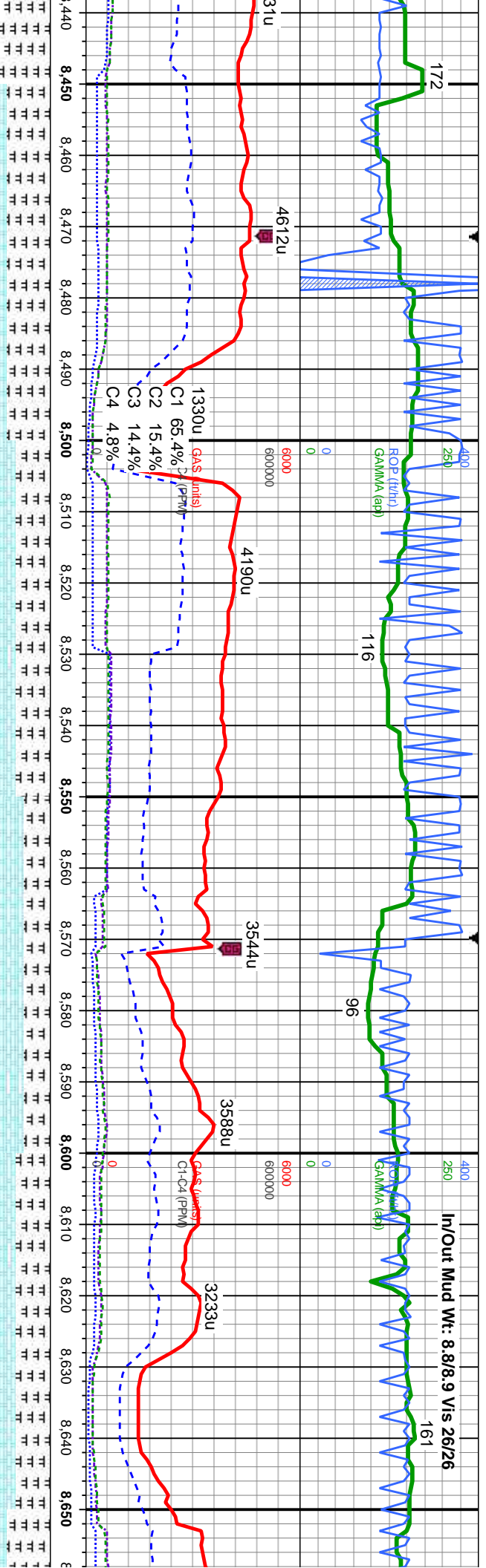
CHK: lt - med gy, bf - brn, gy brn, mot, lam, v
sft frm, sb ply-sb blk, v calc, crpxl: tr bent, tr pyr;
MRLST: med-dk gy, blk, stri, mod frm - hd, sb ply
-sb blk, fri- brt, sil, v calc

CHK: lt - med gy, bf - brn, gy brn, mot, lam, v
sft frm, sb ply-sb blk, v calc, crpxl: tr bent, tr pyr;
MRLST: med-dk gy, blk, stri, mod frm - hd, sb ply
-sb blk, fri- brt, sil, v calc

MD: 8.037'
TVD: 6,321.15'
Inclination: 88.8°
Azimuth: 90°
VS: 1.531.37'

MD: 8.132'
TVD: 6,323.22'
Inclination: 88.7°
Azimuth: 90.4°
VS: 1.626.31'





sd sb ply
gy, bf -
biky, v

CHK: It - med gy, bf - brn, gy brn, mot, lam, v
sft-frm, sb ply-sb biky, v calc, crptxl, tr bent, tr pyr,
MRLST: med -dk gy, blk, stri, mod frm - hd, sb ply
-sb biky, fir- brt, sil, v calc

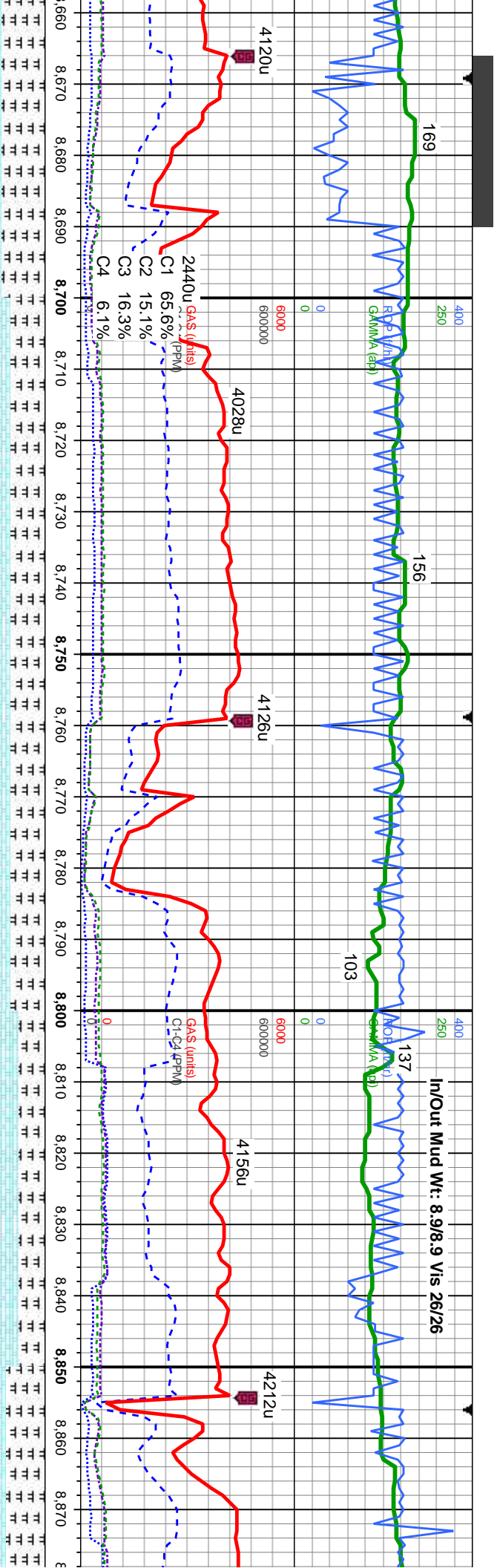
CHK: It - med gy, bf - brn, gy brn, mot, lam, v
sft-frm, sb ply-sb biky, v calc, crptxl, tr fos, tr bent,
tr pyr, MRLST: med -dk gy, blk, stri, mod frm - hd,
sb ply - sb biky, fir- brt, sil, v calc, tr fos

6CHK: It - med gy, bf - brn, gy brn, mot, lam, v
sft-frm, sb ply-sb biky, v calc, crptxl, tr fos, tr bent,
tr pyr, MRLST: med -dk gy, blk, stri, mod frm - hd,
sb ply - sb biky, fir- brt, sil, v calc, tr fos

CHK: It
sft-frm,
tr pyr, N
sb ply

MD: 8,511'
TVD: 6,320.92'
Inclination: 91.1°
Azimuth: 89.9°
VS: 2,005.17'

MD: 8,607'
TVD: 6,317.9'
Inclination: 92.5°
Azimuth: 90.3°
VS: 2,101.09'



- med gy, bf - brn, gy brn, mot, lam, v
- sb pily-sb blkly, v calc, crpxl, tr fos: tr bent,
MRSLT: med -dk gy, blk, sfri, mod frm - hd,
sb blkly, fir- brit, sil, v calc, tr fos

MRSLT: med -dk gy, blk, sfri, mod frm - hd, sb pily
- sb blkly, fir- brit, sil, v calc, tr fos: CHK: lt - med
gy, bf - brn, gy brn, mot, lam, v sft-frm, sb pily-sb
blkly, v calc, crpxl, tr fos: tr bent, tr pyr

CHK: lt - med gy, bf - brn, gy brn, mot, lam, v
sft-frm, sb pily-sb blkly, v calc, crpxl, tr fos: tr bent,
tr pyr: MRSLT: med -dk gy, blk, sfri, mod frm - hd,
sb pily - sb blkly, fir- brit, sil, v calc, tr fos

CHK: lt - med gy, bf - brn, gy brn, mot, lam, v
sft-frm, sb pily-sb blkly, v calc, crpxl, tr fos: tr bent,
tr pyr: MRSLT: med -dk gy, blk, sfri, mod frm - hd,
sb pily - sb blkly, fir- brit, sil, v calc, tr fos

CHK: lt - med gy, bf - brn, gy brn, mot, lam, v
sft-frm, sb pily-sb blkly, v calc, crpxl, tr fos: tr bent,
tr pyr: MRSLT: med -dk gy, blk, sfri, mod frm - hd,
sb pily - sb blkly, fir- brit, sil, v calc, tr fos

TVD (ft)

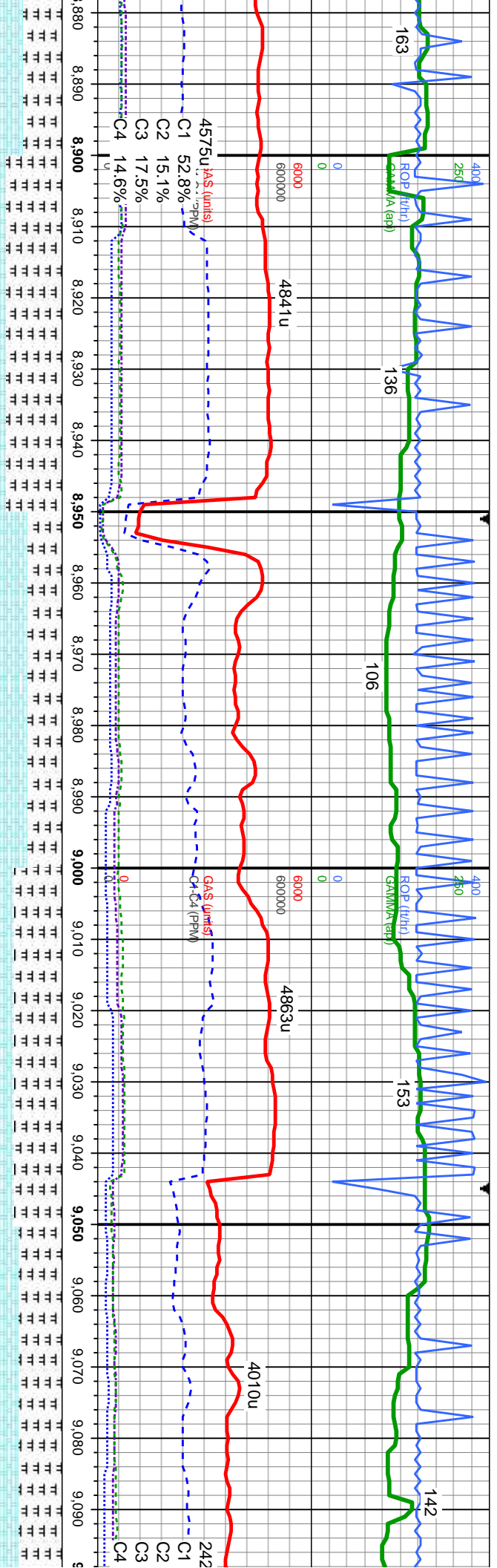
TVD (ft)

MD: 8,701'
TVD: 6,316.1'
Inclination: 89.7°
Azimuth: 90.2°
VS: 2,195.02'

MD: 8,796'
TVD: 6,316.51'
Inclination: 89.8°
Azimuth: 90.5°
VS: 2,289.98'

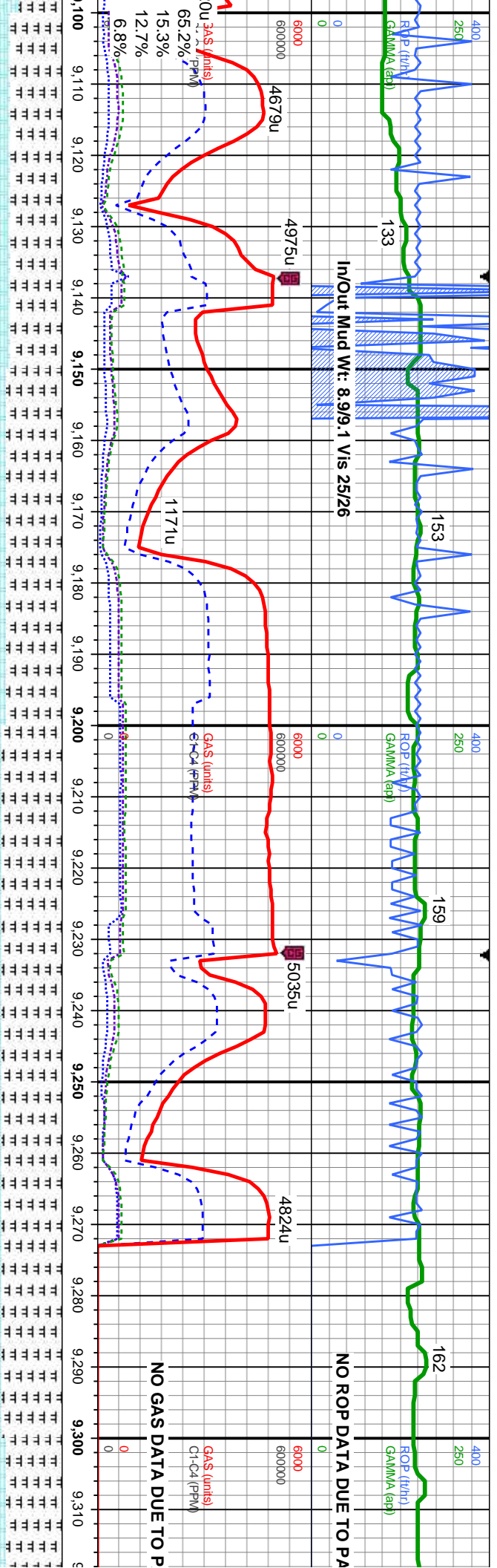
6400

09400



mod, lam, v	med -dk gy, blk, stri, mod frm - hd, sb ply	med -dk gy, blk, stri, mod frm - hd, sb ply	med -dk gy, blk, stri, mod frm - hd, sb ply
cpxl, tr fos, tr bent,	sb blk, fir- brit, sil, v calc, tr fos: CHK: lt - med	sb blk, fir- brit, sil, v calc, tr fos: CHK: lt - med	sb blk, fir- brit, sil, v calc, tr fos: CHK: lt - med
stri, mod frm - hd,	gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb	gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb	gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb
calc, tr fos	blk, v calc, cpxl, tr fos: tr bent, tr pyr	blk, v calc, cpxl, tr fos: tr bent, tr pyr	blk, v calc, cpxl, tr fos: tr bent, tr pyr

TVD (ft)			
6400			
MD: 8,890'			
TVD: 6,317.08'			
Inclination: 89.5°			
Azimuth: 90.1°			
VS: 2,383.93'			
6400			
MD: 8,984'			
TVD: 6,316.76'			
Inclination: 90.9°			
Azimuth: 90.8°			
VS: 2,477.88'			
6400			
MD: 9,078'			
TVD: 6,314.71'			
Inclination: 91.6°			
Azimuth: 90.9°			
VS: 2,571.78'			



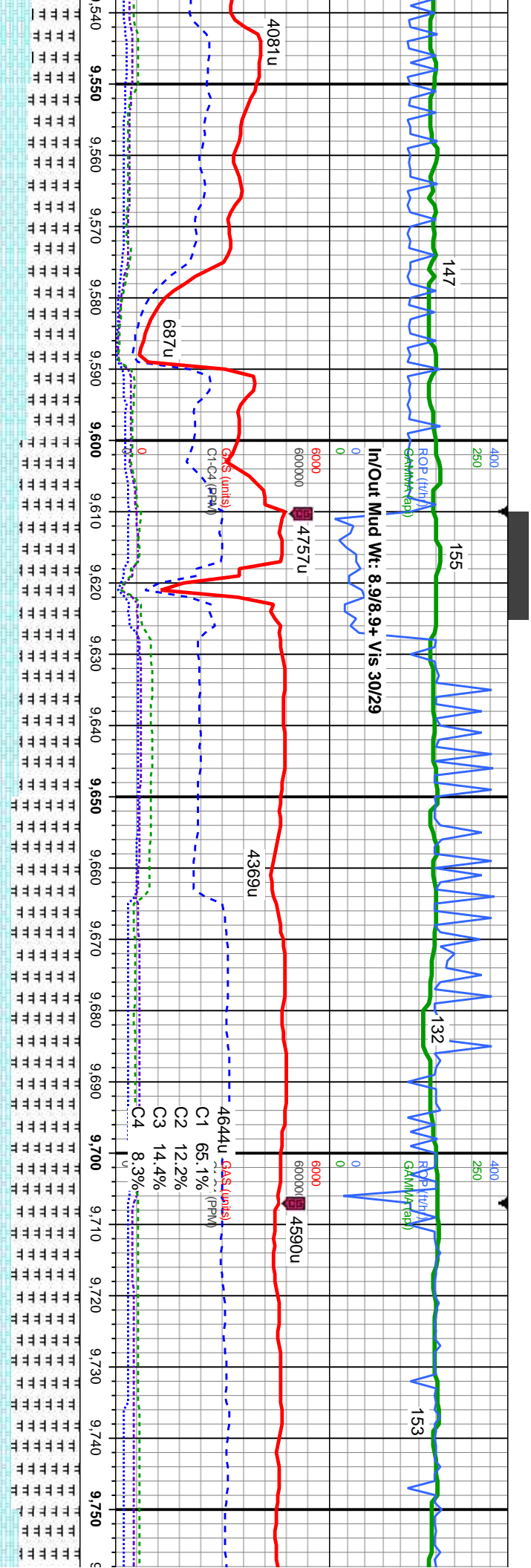
MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blkly, fri- brnt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb blkly, v calc, crptxl, tr fos: tr bent, tr pyr	MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blkly, fri- brnt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb blkly, v calc, crptxl, tr fos: tr bent, tr pyr	MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blkly, fri- brnt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb blkly, v calc, crptxl, tr fos: tr bent, tr pyr	MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blkly, fri- brnt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb blkly, v calc, crptxl, tr fos: tr bent, tr pyr

TVD (ft)	TVD (ft)	TVD (ft)
6400	6400	6400

MD: 9,173'
TVD: 6,313.46'
Inclination: 89.9 °
Azimuth: 90 °
VS: 2,666.72'

MD: 9,267'
TVD: 6,313.38'
Inclination: 90.2 °
Azimuth: 89.9 °
VS: 2,760.69'

TVD (ft)	TVD (ft)	TVD (ft)
6400	6400	6400

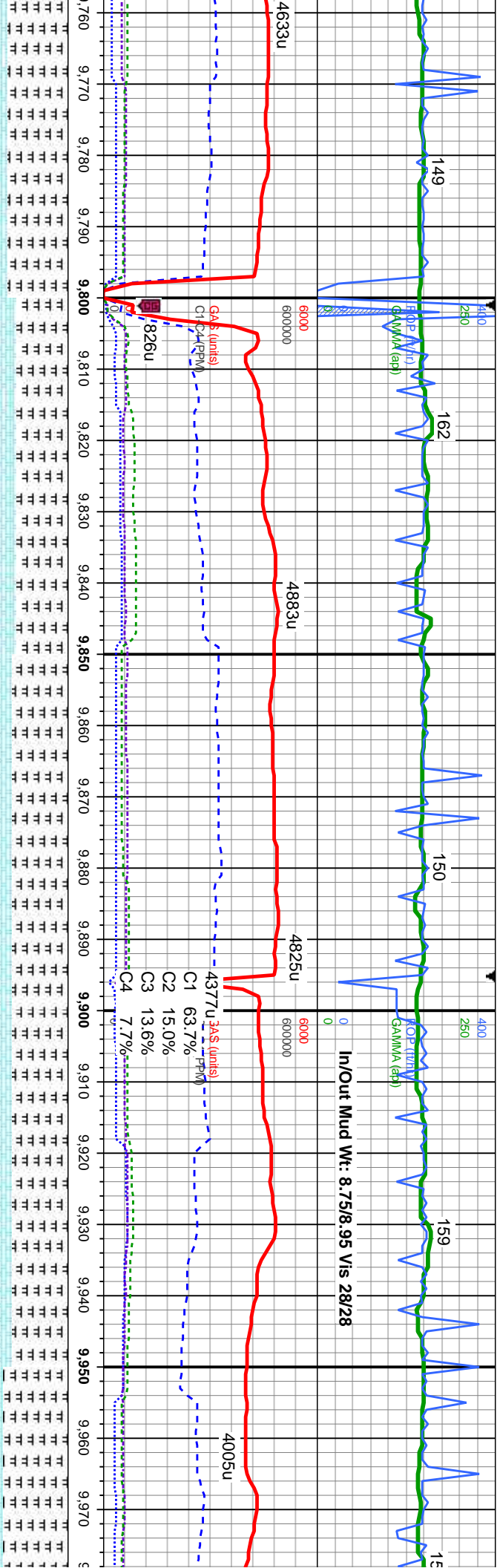


med	MR.LST: med -dk gy, blk, stri, mod frm - hd, sp ply	MR.LST: med -dk gy, blk, stri, mod frm - hd, sp ply	MR.LST: med -dk gy, blk, stri, mod frm - hd, sp ply	MR.LST: med -dk gy, blk, stri, mod frm - hd, sp ply
ply-sb	- sb blk, fri- brt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v calc, crpxl, tr fos: tr bent, tr pyr	- sb blk, fri- brt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v calc, crpxl, tr fos: tr bent, tr pyr	- sb blk, fri- brt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v calc, crpxl, tr fos: tr bent, tr pyr	- sb blk, fri- brt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v st-frm, sb ply-sb blk, v calc, crpxl, tr fos: tr bent, tr pyr

MD: 9,551'	MD: 9,645'	MD: 9,740'
TVD: 6,309.91'	TVD: 6,308.43'	TVD: 6,307.44'
Inclination: 91.2°	Inclination: 90.6°	Inclination: 90.6°
Azimuth: 89.2°	Azimuth: 88.8°	Azimuth: 88.4°
VS: 3,044.61'	VS: 3,138.59'	VS: 3,233.59'

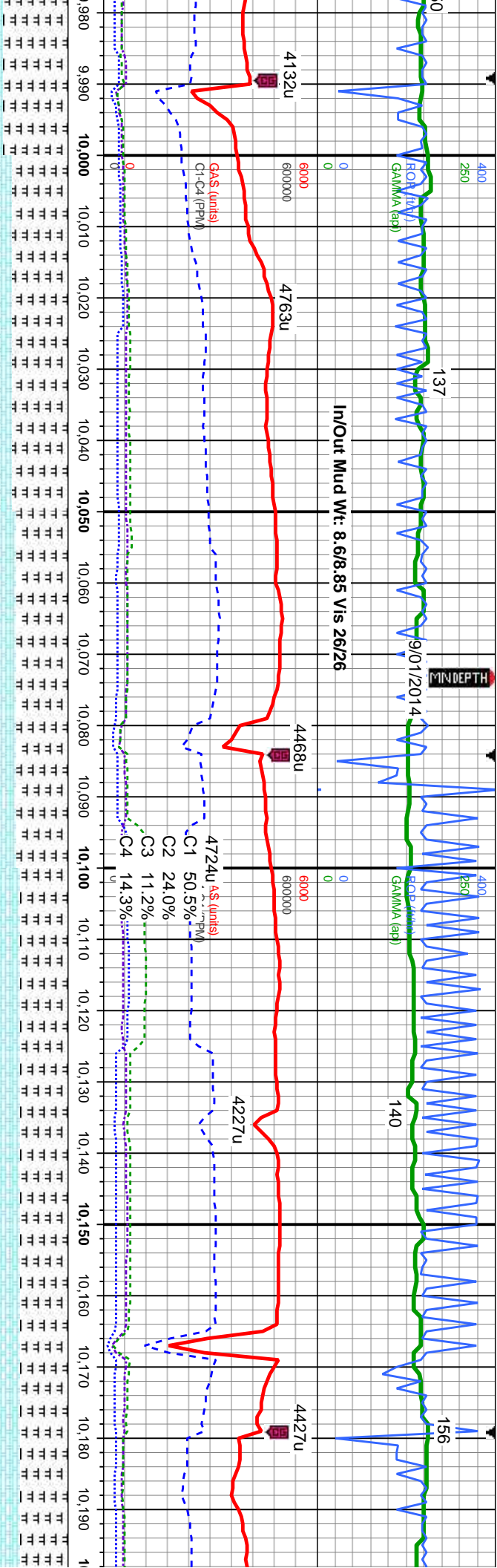
TVD (ft)

TVD (ft)



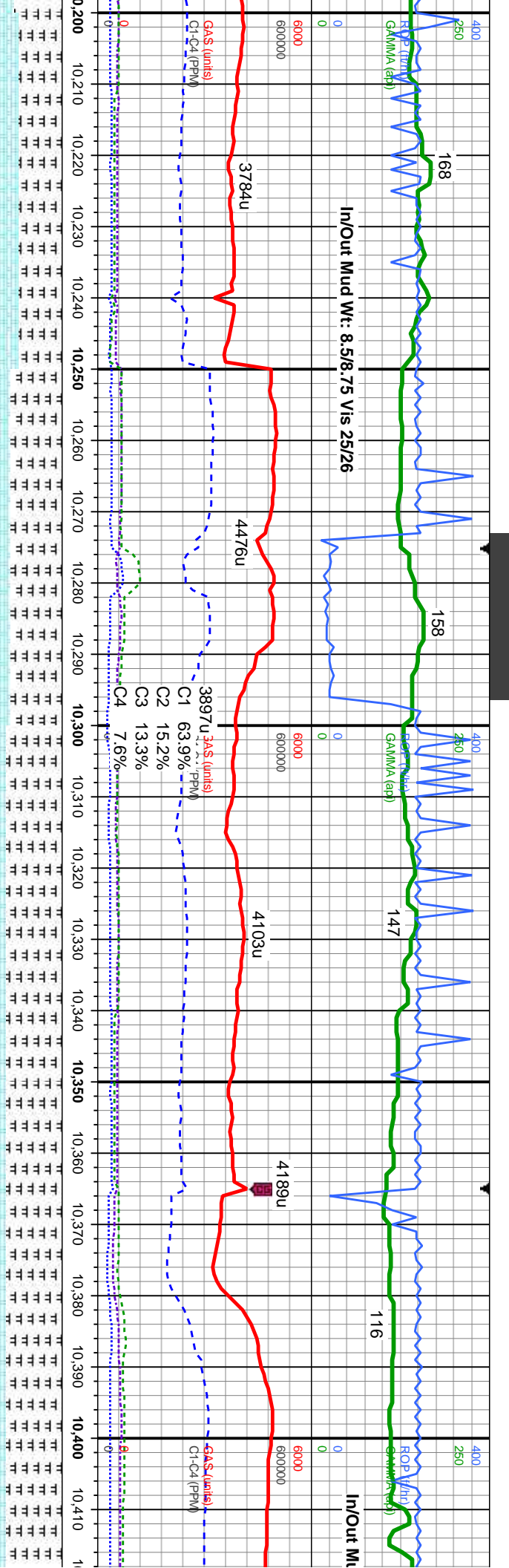
med -dk gy, blk, stri, mod frm - hd, sb ply - sb blkly, fri- brlt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb blkly, v calc, crptxl, tr fos: tr bent, tr pyr	MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blkly, fri- brlt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb blkly, v calc, crptxl, tr fos: tr bent, tr pyr	MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blkly, fri- brlt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb blkly, v calc, crptxl, tr fos: tr bent, tr pyr	MRSLT: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blkly, fri- brlt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb blkly, v calc, crptxl, tr fos: tr bent, tr pyr
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TVD (ft)	TVD (ft)
MD: 9,834' TVD: 6,306.21' Inclination: 90.9° Azimuth: 88.4° VS: 3.327.58'	MD: 9,928' TVD: 6,305.06' Inclination: 90.5° Azimuth: 88.4° VS: 3.421.57'



mod frm - hd, sb ply	mod frm - hd, sb ply	mod frm - hd, sb ply	mod frm - hd, sb ply
fos: CHK: lt - med	fos: CHK: lt - med	fos: CHK: lt - med	fos: CHK: lt - med
st-frm, sb ply-sb	st-frm, sb ply-sb	st-frm, sb ply-sb	st-frm, sb ply-sb
gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb	gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb	gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb	gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb
blky, v calc, crpxl, tr fos, tr bent, tr pyr	blky, v calc, crpxl, tr fos, tr bent, tr pyr	blky, v calc, crpxl, tr fos, tr bent, tr pyr	blky, v calc, crpxl, tr fos, tr bent, tr pyr

MD: 10.024'	MD: 10.119'
TVD: 6,304.89'	TVD: 6,304.81'
Inclination: 89.7°	Inclination: 90.4°
Azimuth: 87.5°	Azimuth: 87.1°
VS: 3,517.57'	VS: 3,612.54'

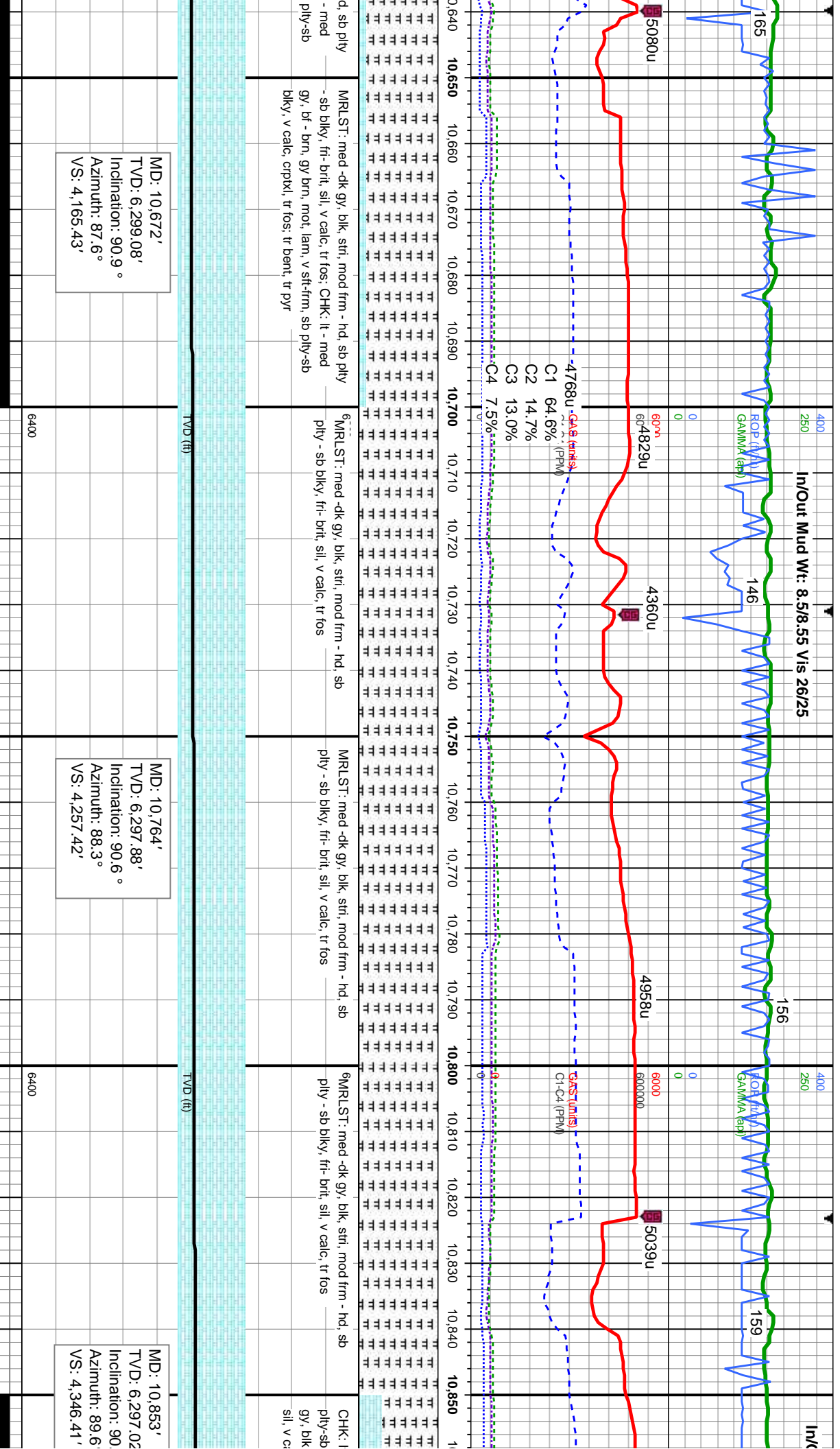


6MRLST: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blkgy, fit- brt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb blkgy, v calc, crptxl, tr fos, tr bent, tr pyr	MRLST: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blkgy, fit- brt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb blkgy, v calc, crptxl, tr fos, tr bent, tr pyr	6MRLST: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blkgy, fit- brt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb blkgy, v calc, crptxl, tr fos, tr bent, tr pyr	MRLST: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blkgy, fit- brt, sil, v calc, tr fos: CHK: lt - med gy, bf - brn, gy brn, mot, lam, v sft-frm, sb ply-sb blkgy, v calc, crptxl, tr fos, tr bent, tr pyr	MRLST: med -dk g - sb blkgy, fit- brt, sil gy, bf - brn, gy brn, blkgy, v calc, crptxl,
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MD: 10,214'
TVD: 6,303.48'
Inclination: 91.2 °
Azimuth: 86.7 °
VS: 3,707.49'

MD: 10,305'
TVD: 6,302.45'
Inclination: 90.1 °
Azimuth: 88.9 °
VS: 3,798.47'

MD: 10,396'
TVD: 6,302.29'
Inclination: 90.1 °
Azimuth: 88.7 °
VS: 3,889.47'

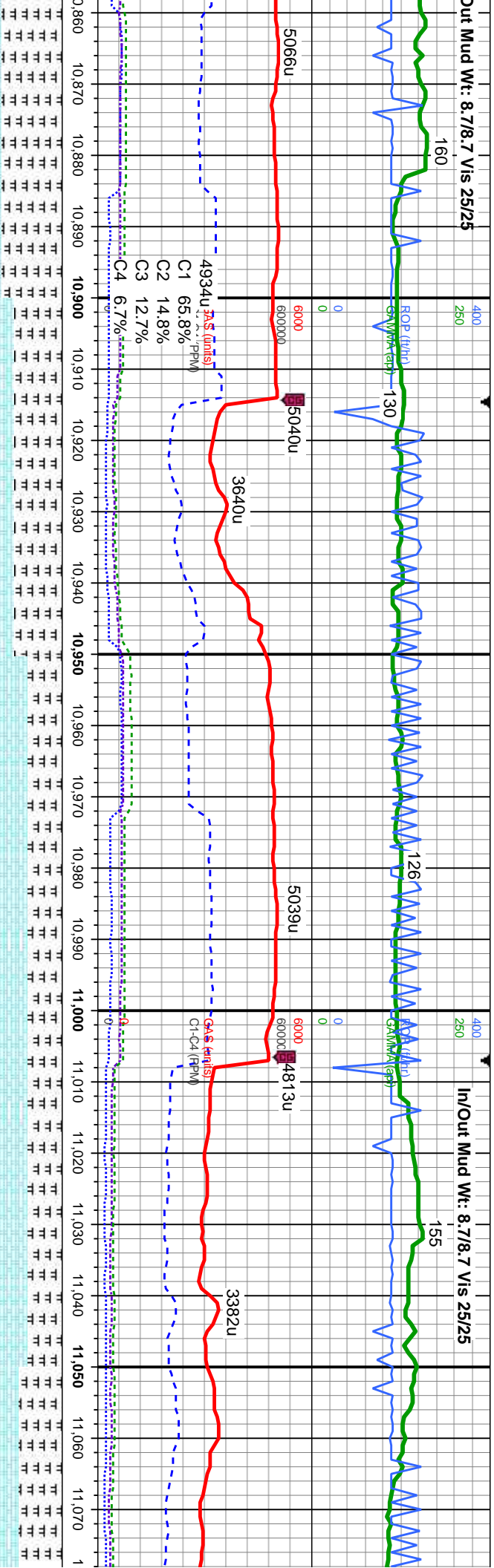


MD: 10,672'
TVD: 6,299.08'
Inclination: 90.9 °
Azimuth: 87.6 °
VS: 4,165.43'

MD: 10,764'
TVD: 6,297.88'
Inclination: 90.6°
Azimuth: 88.3°
VS: 4,257.42'

MD: 10,853'
TVD: 6,297.02
Inclination: 90.
Azimuth: 89.6
VS: 4,346.41'

Out Mud Wt: 8.7/8.7 Vis 25/25



t - med gy brn, gy brn, v mot, v sft-frm, sb
biky, v calc, crpxl, tr fos; MRLST: med -dk
stri, mod frm - hd, sb ply - sb biky, fri-
brit, alc, tr bent wi pyr

CHK: lt. -med gy, bt -bm, gy brm; mot, iam, v
stf-fm, sb ply-sb blyk, v calc, crptx, tr fos; tr bent,
tr pyr; MRLSt: med -dk gy, blk, stfi, mod fm -hd,
sb ply -sb blyk, fri -brit, sil, v calc, tr fos

CHK: it - med gy, br - brn, gy brn; mot, lam, v
st-frm, sb ply-sb blyk, v calc, crpxl, tr fos; tr bent
tr pyr; MRLST: med -dk gy, blk, stri, mod frm - hd,
sb ply - sb blyk, fr-i -bitt, sil, v calc, tr fos

Ĉ:ĤK: it - med gy, bf - bŕn, gy bŕn, mot, lam, v
 sft-fŕm, sb ply-sb blyk, v calc, crptxl, tr fos; tr bent
 tr pyr; MRLST: med -dk gy, blk, stŕi, mod fŕm - hd,
 sb ply - sb blyk, fŕi - bŕi, sil, v calc, tr fos

MRLT: med -dk gy, blk, stri, -sb blkly, fi- brit, sil, v calc, tr gy, bf - brn, gy brn, mot, lam, ' blkly, v calc, crptxl, tr fos; tr be

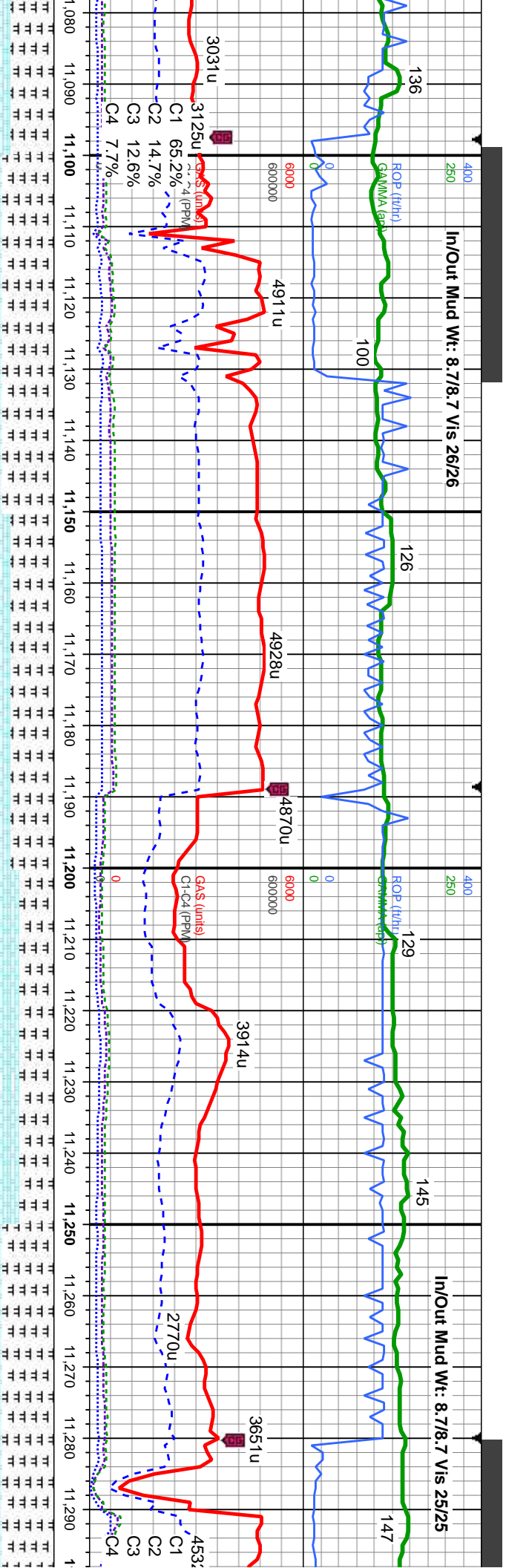


TV/D (ft)

TVDD (ft)

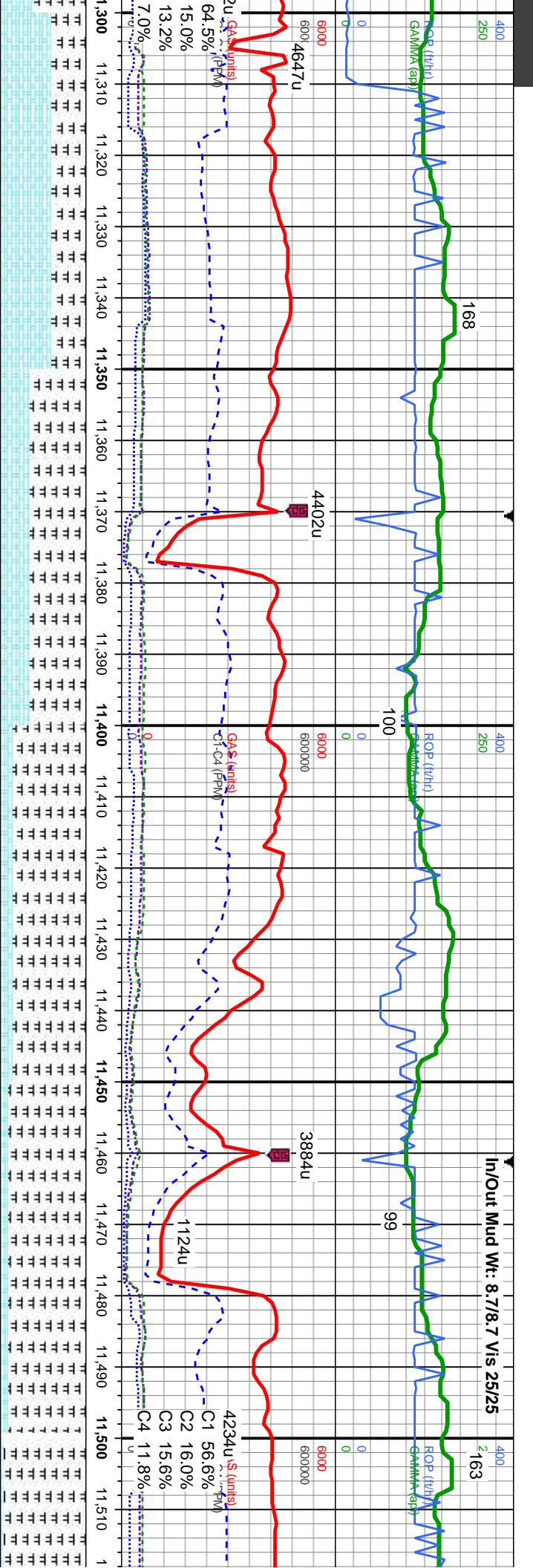
MD: 10,944'
TV D: 6,295.99'
Inclination: 90.8 °
Azimuth: 89.9 °
VS: 4,437.39'

MD: 11,036'
TVD: 6,293.5'
Inclination: 92.3°
Azimuth: 90.2°
VS: 4,529.32'



mod frm - hd, sb pily	MR.LST: med -dk gy, blk, stri, mod frm - hd, sb pily - sb blkly, ffr- brt, sil, v calc, tr fos; CHK: lt - med gy, bf - brn, gy brn, mot, lam, v stf-frm, sb pily-sb blkly, v calc, cprtxl, tr fos, tr bent, tr pyr
mod frm - hd, sb pily	MR.LST: med -dk gy, blk, stri, mod frm - hd, sb pily - sb blkly, ffr- brt, sil, v calc, tr fos; CHK: lt - med gy, bf - brn, gy brn, mot, lam, v stf-frm, sb pily-sb blkly, v calc, cprtxl, tr fos, tr bent, tr pyr
mod frm - hd, sb pily	CHK: lt - med gy, bf - brn, gy brn, mot, lam, v stf-frm, sb pily-sb blkly, v calc, cprtxl, tr fos; tr bent, tr pyr; MR.LST: med -dk gy, blk, stri, mod frm - hd, sb pily - sb blkly, ffr- brt, sil, v calc, tr fos
mod frm - hd, sb pily	MR.LST: med -dk gy, blk, stri, mod frm - hd, sb pily - sb blkly, ffr- brt, sil, v calc, tr fos; CHK: lt - med gy, bf - brn, gy brn, mot, lam, v stf-frm, sb pily-sb blkly, v calc, cprtxl, tr fos, tr bent, tr pyr

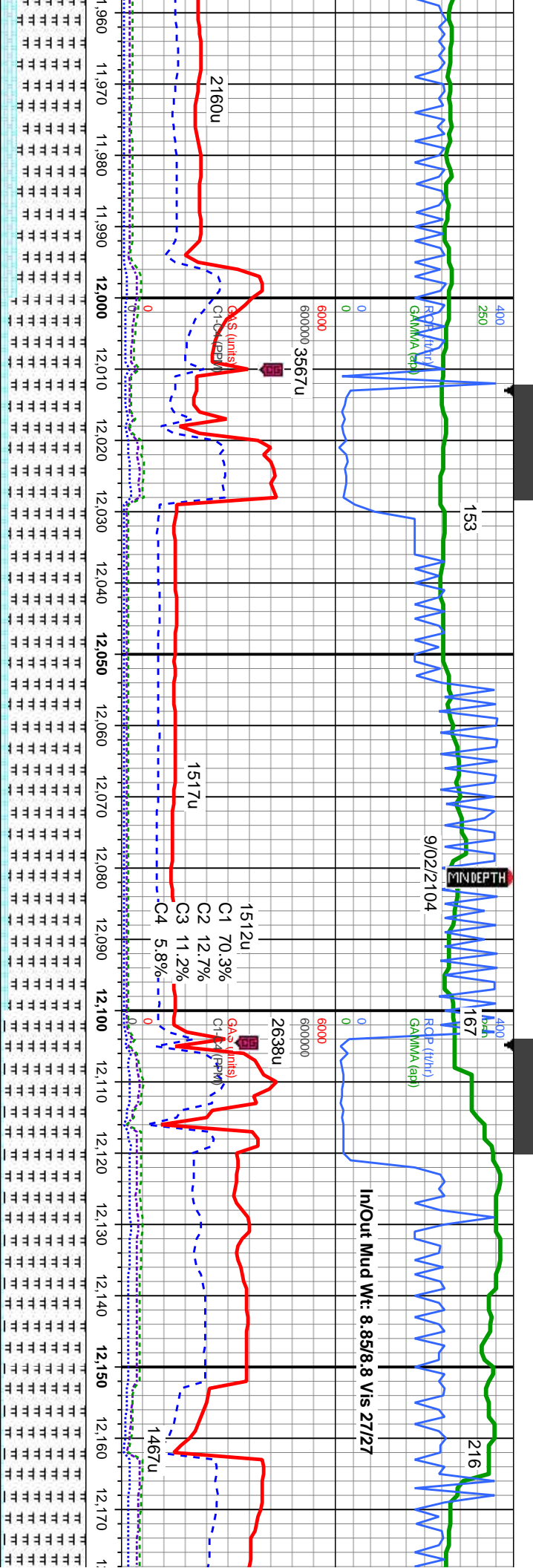
TVD (ft)		TVD (ft)	
6400		6400	
<div> MD: 11,128' TVD: 6,291.82' Inclination: 89.8 ° Azimuth: 89.7° VS: 4,621.27' </div>		<div> MD: 11,220' TVD: 6,291.74' Inclination: 90.3 ° Azimuth: 90° VS: 4,713.25' </div>	



CHK: It - med gy, bf - brn, gy brn, mot, lam, v stf frm, sb ply-sb blk, v calc, crptxl, tr fos, tr bent, tr pyr, MRLST: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blk, fri- brt, sil, v calc, tr fos	MRLST: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blk, fri- brt, sil, v calc, tr fos: CHK: It - med gy, bf - brn, gy brn, mot, lam, v stf frm, sb ply-sb blk, v calc, crptxl, tr fos, tr bent, tr pyr	MRLST: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blk, fri- brt, sil, v calc, tr fos: CHK: It - med gy, bf - brn, gy brn, mot, lam, v stf frm, sb ply-sb blk, v calc, crptxl, tr fos, tr bent, tr pyr	MRLST: med -dk gy, blk, stri, mod frm - hd, sb ply - sb blk, fri- brt, sil, v calc, tr fos: CHK: It - med gy, bf - brn, gy brn, mot, lam, v stf frm, sb ply-sb blk, v calc, crptxl, abnt fos, tr bent	MRLST: med -dk g - sb blk, fri- brt, si occ It gy, bf - brn, g ply-sb blk, v calc,
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TVD (ft)	TVD (ft)	TVD (ft)
MD: 11,311' TVD: 6,292.21' Inclination: 89.1° Azimuth: 88.4° VS: 4,804.24'	MD: 11,403' TVD: 6,293.66' Inclination: 89.1° Azimuth: 88.4° VS: 4,896.23'	MD: 11,494' TVD: 6,295.01' Inclination: 89.2° Azimuth: 88.7° VS: 4,987.22'

6400	6400	6400
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3°

MD: 12,042'
TVD: 6,289.95'
Inclination: 89.9°
Azimuth: 89.1°
VS: 5.535.09'

med -dk gy, blk, stri, mod frm - hd, sb pily	MRSLST: med -dk gy, blk, stri, mod frm - hd, sb pily
- sb blkly, fri- brt, sil, v calc, tr fos: CHK: med gy,	- sb blkly, fri- brt, sil, v calc, tr fos: CHK: med gy,
occ lt gy, bf - brn, gy brn, mot, lam, v sft-frm, sb	occ lt gy, bf - brn, gy brn, mot, lam, v sft-frm, sb
pily-sb blkly, v calc, crptxl, fos: abnt bent	pily-sb blkly, v calc, crptxl, fos: scatt bent
6400	6400
TVD (ft)	TVD (ft)

MD: 12,133'
TVD: 6,289.87'
Inclination: 90.2°
Azimuth: 88.4°
VS: 5.626.09'

MRSLST: med -dk gy, blk, stri, mod frm - hd, sb pily

- sb blkly, fri- brt, sil, v calc, tr fos: CHK: med gy,

occ lt gy, bf - brn, gy brn, mot, lam, v sft-frm, sb

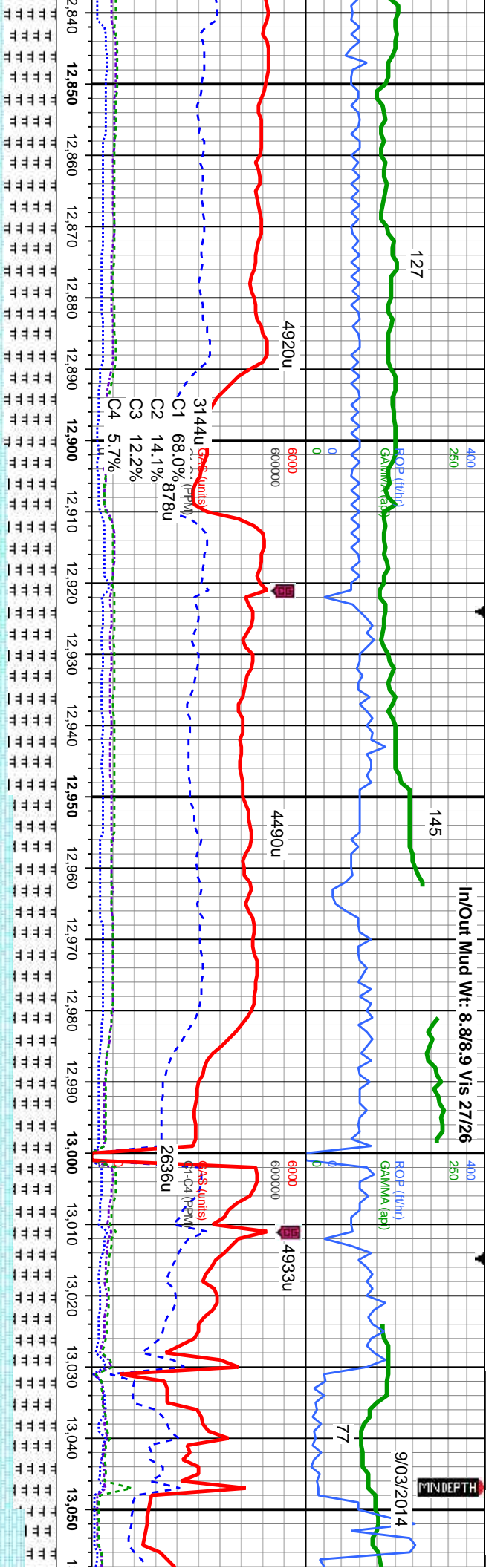
pily-sb blkly, v calc, crptxl, fos: scatt bent

MRSLST: med -dk gy, blk, stri, n

- sb blkly, fri- brt, sil, v calc, tr fc

occ lt gy, bf - brn, gy brn, mot, l

pily-sb blkly, v calc, crptxl, fos: s



MD: 12,864'
TVD: 6,284.68'
Inclination: 91.5 °
Azimuth: 87.4 °
VS: 6,356.5'

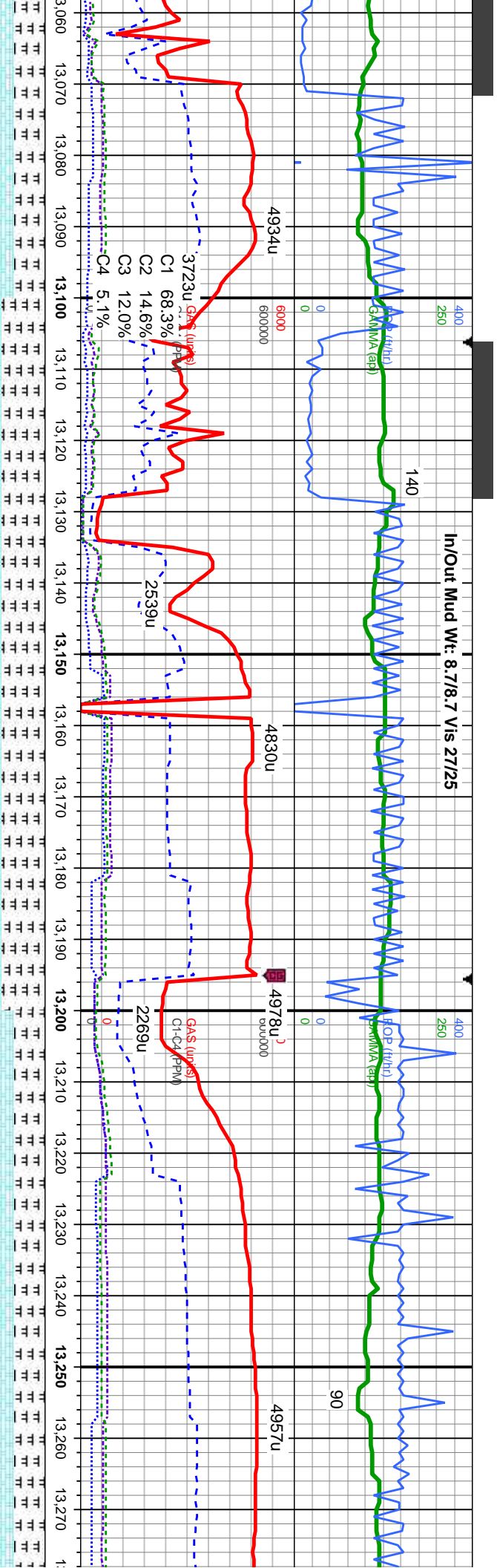
MD: 12,954'
TVD: 6,281.62'
Inclination: 92.4 °
Azimuth: 87.5 °
VS: 6,446.43'

MD: 13,045'
TVD: 6,277.97'
Inclination: 92.2 °
Azimuth: 88 °
VS: 6,537.35'

med -dk gy, blk, stri, mod frm - hd, sb ply	med -dk gy, blk, stri, mod frm - hd, sb ply	med -dk gy, blk, stri, mod frm - hd, sb ply	med -dk gy, blk, stri, mod frm - hd, sb ply	CHK: lt sb ply-sb blk, stri, calc, tr fr
- sb blk, tr: brit, sil, v calc, tr fos; CHK: med gy, occ lt gy, bf - brn, gy brn, mot, lam, v strfrm, sb ply-sb blk, v calc, crpxl, fos, scatt bent	- sb blk, tr: brit, sil, v calc, tr fos; CHK: med gy, occ lt gy, bf - brn, gy brn, mot, lam, v strfrm, sb ply-sb blk, v calc, crpxl, fos, scatt bent	- sb blk, tr: brit, sil, v calc, tr fos; CHK: med gy, occ lt gy, bf - brn, gy brn, mot, lam, v strfrm, sb ply-sb blk, v calc, crpxl, fos, scatt bent	- sb blk, tr: brit, sil, v calc, tr fos; CHK: med gy, occ lt gy, bf - brn, gy brn, mot, lam, v strfrm, sb ply-sb blk, v calc, crpxl, fos, scatt bent	

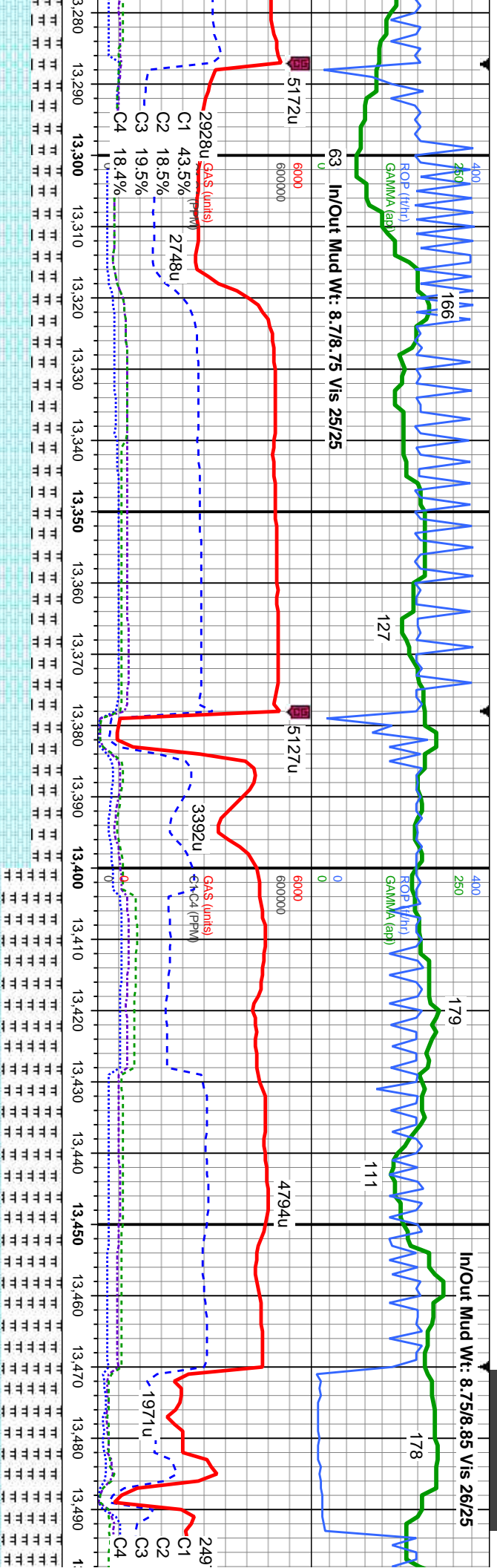
TVD (ft)

TVD (ft)



6200	MD: 13,136' TVD: 6,276.62' Inclination: 89.5 ° Azimuth: 88.1 ° VS: 6,628.32'	6200	MD: 13,228' TVD: 6,277.34' Inclination: 89.6 ° Azimuth: 88.4 ° VS: 6,720.32'
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TVD (ft)	CHK: med gy-dk gy, bf-brn, mot, lam, v sft-firm, sb ply-sb blk, v calc, crptxl; MRLST: med-dk gy, blk, sft, mod frm-hd, sb ply-sb blk, fr-brit, sil, v calc, tr fos; tr bent	TVD (ft)	CHK: med gy-dk gy, bf-brn, mot, lam, v sft-firm, sb ply-sb blk, v calc, crptxl; MRLST: med-dk gy, blk, sft, mod frm-hd, sb ply-sb blk, fr-brit, sil, v calc, tr fos; tr bent	TVD (ft)	CHK: med gy-dk gy, bf-brn, mot, lam, v sft-firm, sb ply-sb blk, v calc, crptxl; MRLST: med-dk gy, blk, sft, mod frm-hd, sb ply-sb blk, fr-brit, sil, v calc, tr fos; tr bent	TVD (ft)	CHK: med gy-dk gy, bf-brn, mot, lam, v sft-firm, sb ply-sb blk, v calc, crptxl; MRLST: med-dk gy, blk, sft, mod frm-hd, sb ply-sb blk, fr-brit, sil, v calc, tr fos; tr bent
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MD: 13,320'
TVD: 6,277.1'
Inclination: 90.7°
Azimuth: 88.4°
VS: 6,812.32'

CHK: med gy-dk gy, bf-brn, mot, lam, v sft-fm, sb
ply-sb blk, v calc, crpxl; MRLST: med-dk gy, blk,
stri, mod frm-hd, sb ply-sb blk, fr-brit, sil, v calc,
tr fos; tr bent

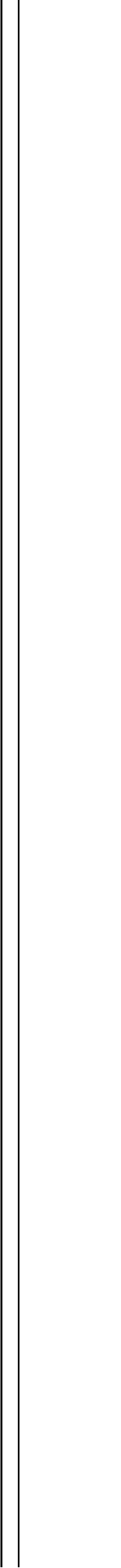
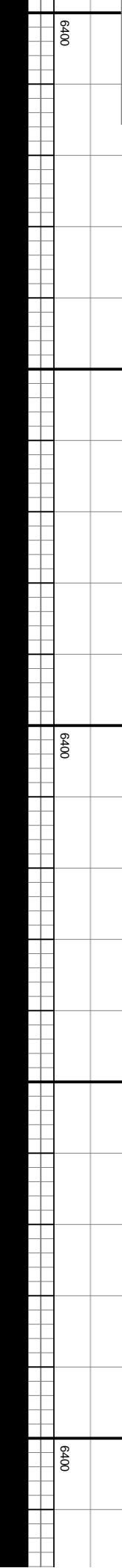
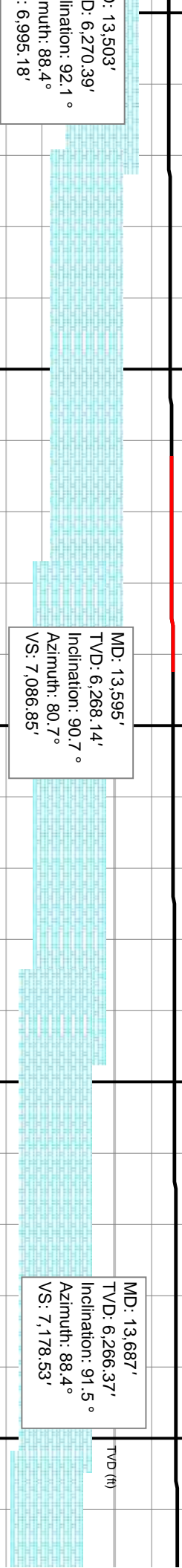
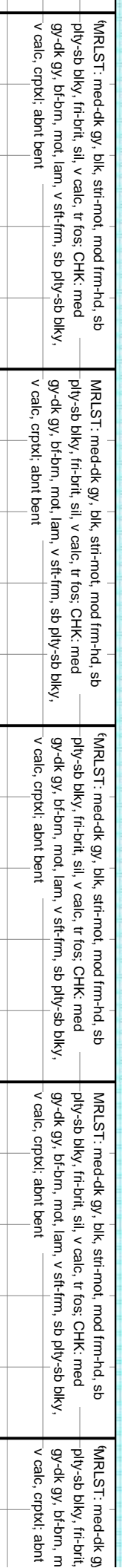
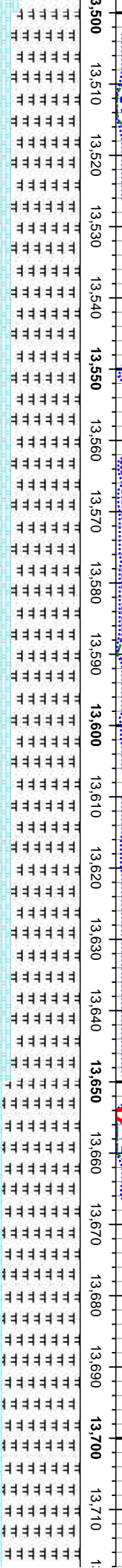
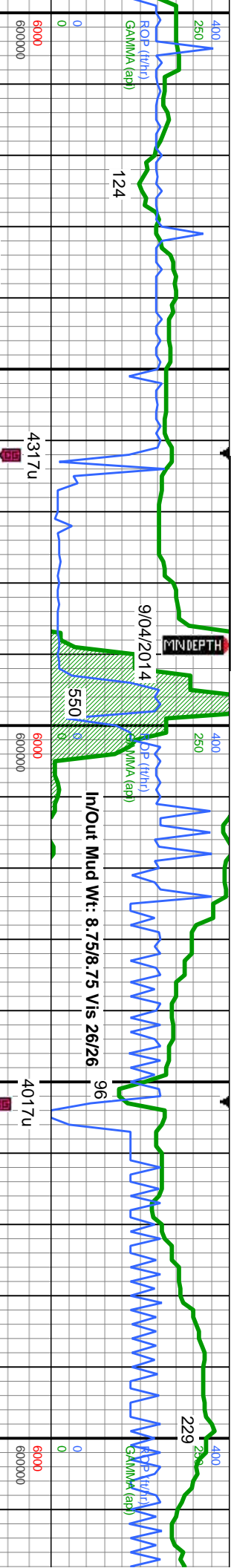
MD: 13,411'
TVD: 6,274.32'
Inclination: 92.8°
Azimuth: 87.7°
VS: 6,903.26'

MRLST: med-dk gy, blk, stri-mot, mod frm-hd, sb
ply-sb blk, fr-brit, sil, v calc, tr fos; CHK: med
gy-dk gy, bf-brn, mot, lam, v sft-fm, sb ply-sb blk,
v calc, crpxl; tr bent

MRLST: med-dk gy, blk, stri-mot, mod frm-hd, sb
ply-sb blk, fr-brit, sil, v calc, tr fos; CHK: med
gy-dk gy, bf-brn, mot, lam, v sft-fm, sb ply-sb blk,
v calc, crpxl; tr bent

CHK: med gy-dk gy, bf-brn, mot, lam, v sft-fm, sb
ply-sb blk, v calc, crpxl; MRLST: med-dk gy, blk,
stri, mod frm-hd, sb ply-sb blk, fr-brit, sil, v calc,
tr fos; tr bent

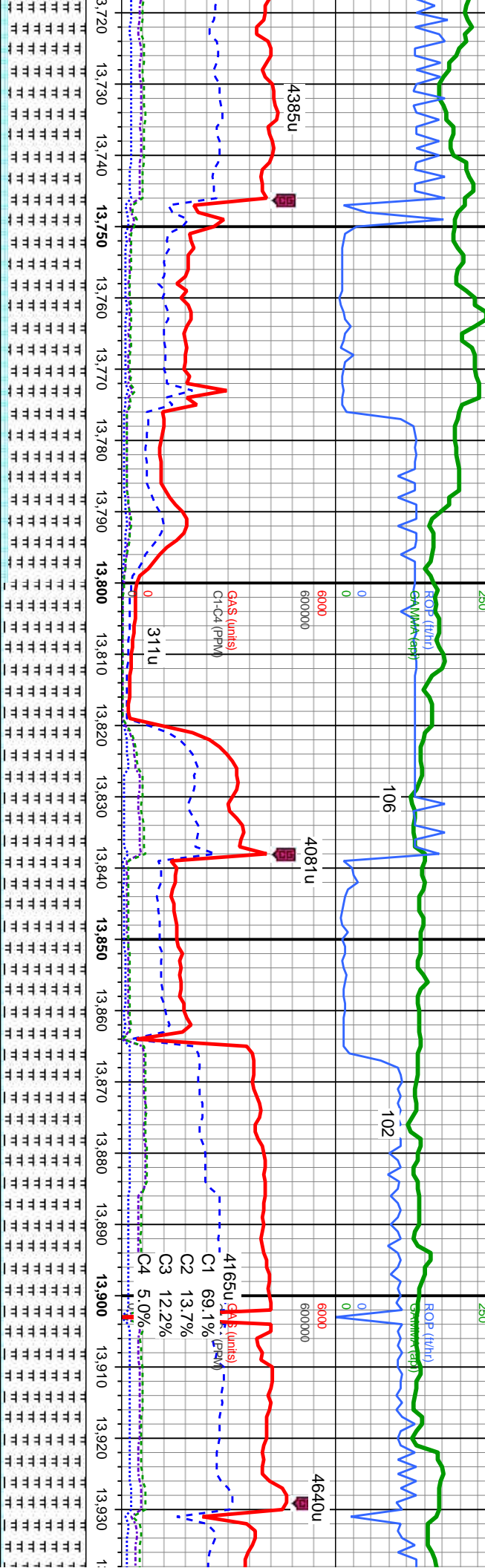
MC
TV
Inc
Azi
VS



212

In/Out Mud Wt: 8.8/8.8 Vis 26/26

In/Out Mud Wt: 8.8/8.85 Vis 26/27



blk, strf-mot, mod frm-hd, sb
sil, v calc, tr fos, CHK: med
ot, lam, v sft-frm, sb ply-sb blk, bent

MRSLT: med-dk gy, blk, strf-mot, mod frm-hd, sb
ply-sb blk, fri-brt, sil, v calc, tr fos, CHK: med
gy-dk gy, bf-brn, mot, lam, v sft-frm, sb ply-sb blk,
v calc, crpxl: abnt bent

6200

MD: 13,779'
TVD: 6,264.68'
Inclination: 90.6°
Azimuth: 88.9°
VS: 7,270.52'

MRSLT: med-dk gy, blk, strf-mot, mod frm-hd, sb
ply-sb blk, fri-brt, sil, v calc, tr fos, CHK: med
gy-dk gy, bf-brn, mot, lam, v sft-frm, sb ply-sb blk,
v calc, crpxl: abnt bent

TVD (ft)

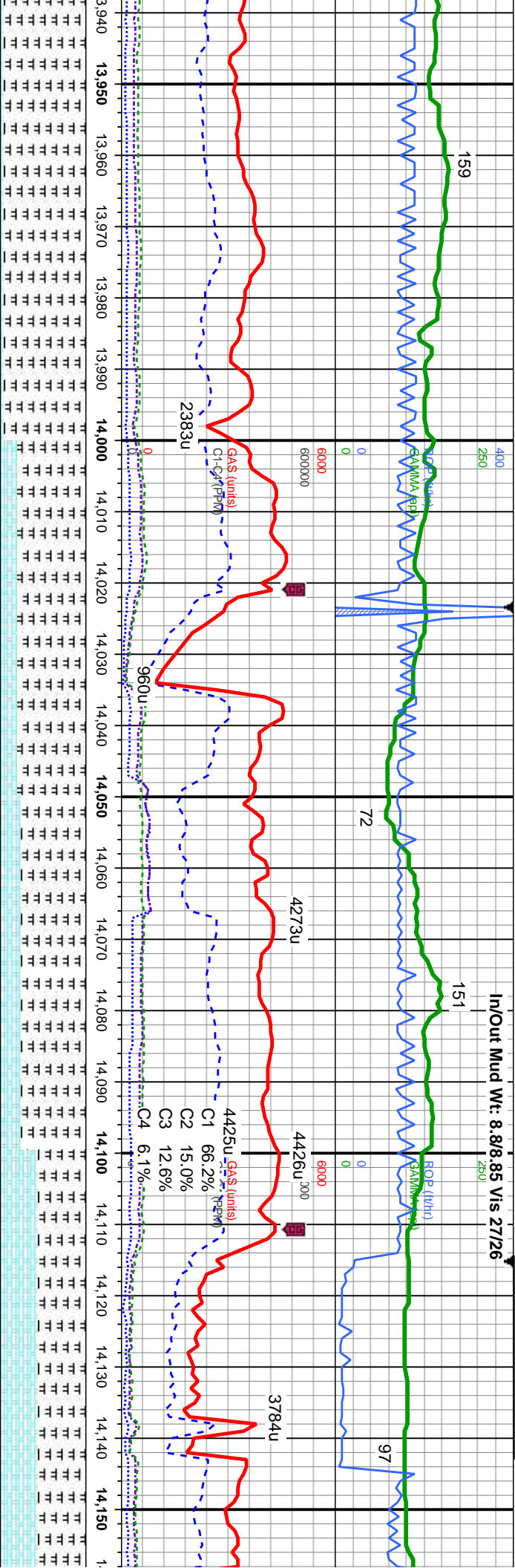
MD: 13,870'
TVD: 6,265'
Inclination: 89°
Azimuth: 89.2°
VS: 7,361.51'

MRSLT: med-dk gy, blk, strf-mot, mod frm-hd, sb
ply-sb blk, fri-brt, sil, v calc, tr fos, CHK: med
gy-dk gy, bf-brn, mot, lam, v sft-frm, sb ply-sb blk,
v calc, crpxl: abnt bent

TVD (ft)

MRSLT: med-dk gy, blk, strf-mot, mod frm-hd, sb
ply-sb blk, fri-brt, sil, v calc, tr fos, CHK: med
gy-dk gy, bf-brn, mot, lam, v sft-frm, sb ply-sb blk,
v calc, crpxl: abnt bent

TVD (ft)



MD: 13,963'
TVD: 6,265.89'
Inclination: 89.9 °
Azimuth: 89.2 °
VS: 7,454.5'

MRSLST: med-dk gy, blk, stri-mot, mod frm-hd, sb
ply-sb blk, fr-brit, sil, v calc, tr fos; CHK: med
gy-dk gy, bf-brn, mot, lam, v sft-frm, sb ply-sb blk,
v calc, crpxl; abnt bent

MD: 14,054'
TVD: 6,265.42'
Inclination: 90.7 °
Azimuth: 88.7 °
VS: 7,545.5'

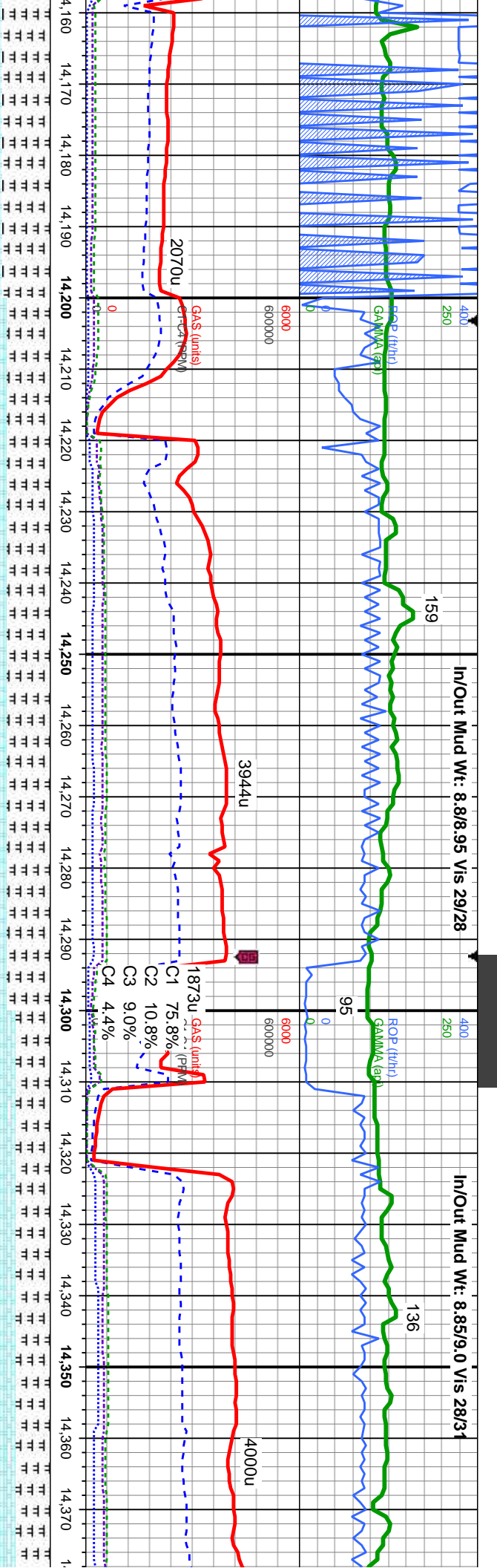
MRSLST: med-dk gy, blk, stri-mot, mod frm-hd, sb
ply-sb blk, fr-brit, sil, v calc, tr fos; CHK: med
gy-dk gy, bf-brn, mot, lam, v sft-frm, sb ply-sb blk,
v calc, crpxl; tr inoc fos, tr cal

MRSLST: med-dk gy, blk, stri-mot, mod frm-hd, sb
ply-sb blk, fr-brit, sil, v calc, tr fos; CHK: med
gy-dk gy, bf-brn, mot, lam, v sft-frm, sb ply-sb blk,
v calc, crpxl; tr inoc fos, tr cal

MD: 14,145'
TVD: 6,266.21'
Inclination: 88.3 °
Azimuth: 89.1 °
VS: 7,636.48'

MRSLST: med-dk gy, blk, stri-mot, mod frm-hd, sb
ply-sb blk, fr-brit, sil, v calc, tr fos; CHK: med
gy-dk gy, bf-brn, mot, lam, v sft-frm, sb ply-sb blk,
v calc, crpxl; tr inoc fos, tr cal

MRSLST: med-dk gy, blk, stri-mot, mod frm-hd, sb
ply-sb blk, fr-brit, sil, v calc, tr fos; CHK: med
gy-dk gy, bf-brn, mot, lam, v sft-frm, sb ply-sb blk,
v calc, crpxl; tr inoc fos, tr cal



6200		6200	
TVD (ft)		TVD (ft)	
MRLST: med-dk gy, blk, stri-mot, mod frm-hd, sb ply-sb blk, fri-brt, sil, v calc; CHK: med gy-dk gy, bf-brn, mot, lam, v sft-frm, sb ply-sb blk, v calc, cpixl; tr inoc fos, tr cal, com bent		MRLST: med-dk gy, blk, stri-mot, mod frm-hd, sb ply-sb blk, fri-brt, sil, v calc; CHK: med gy-dk gy, bf-brn, mot, lam, v sft-frm, sb ply-sb blk, v calc, cpixl; tr inoc fos, tr cal, com bent	
MD: 14,235' TVD: 6,267.39' Inclination: 90.2° Azimuth: 91.8° VS: 7,726.42'		MD: 14,326' TVD: 6,268.1' Inclination: 88.9° Azimuth: 89.7° VS: 7,817.34'	
med-dk gy, blk, stri-mot, mod frm-hd, sb ply-sb blk, fri-brt, sil, v calc; CHK: med gy-dk gy, bf-brn, mot, lam, v sft-frm, sb ply-sb blk, v calc, cpixl; tr inoc fos, tr cal		CHK: med gy-dk gy, bm, some sft-frm, sb ply-sb blk, v calc, c med-dk gy, blk, stri-mot, mod fr blk, fri-brt, sil, v calc; tr inoc to	

In/Out Mud Wt: 8.8/8.6 Vis 28/28

MINDEPTH

400
250

250

ROP (ft/hr)
GAMMA (api)

ROP (ft/hr)
GAMMA (api)

80

0

60000
600000

60000
600000

GAS (units)
Cl-C4 (PPM)

GAS (units)
Cl-C4 (PPM)

4824u

4684u

1606u

4309u

4411u

1107u
C1 68.1%
C2 14.1%
C3 12.1%
C4 5.7%



6200

6200

MD: 14,415'
TVD: 6,268.96'
Inclination: 90.0°
Azimuth: 90.4°
VS: 7,906.31'

MD: 14,507'
TVD: 6,268.56'
Inclination: 90.5°
Azimuth: 88.4°
VS: 7,998.29'

MD: 14,515'
TVD: 6,268.96'
Inclination: 90.0°
Azimuth: 90.4°
VS: 7,906.31'

CHK: It gy-dk gy, brn, some crm, mot, lam, v
sft-frm, sb ply-sb blk, v calc, cpbk; MRLST:
med-dk gy, blk, str-mot, mod frm-hd, sb ply-sb
bly, fr-brt, sil, v calc; tr inoc fos, tr cal, com bent

CHK: It gy-dk gy, brn, some crm, mot, lam, v
sft-frm, sb ply-sb blk, v calc, cpbk; MRLST:
med-dk gy, blk, str-mot, mod frm-hd, sb ply-sb
bly, fr-brt, sil, v calc; tr inoc fos, tr cal, com bent

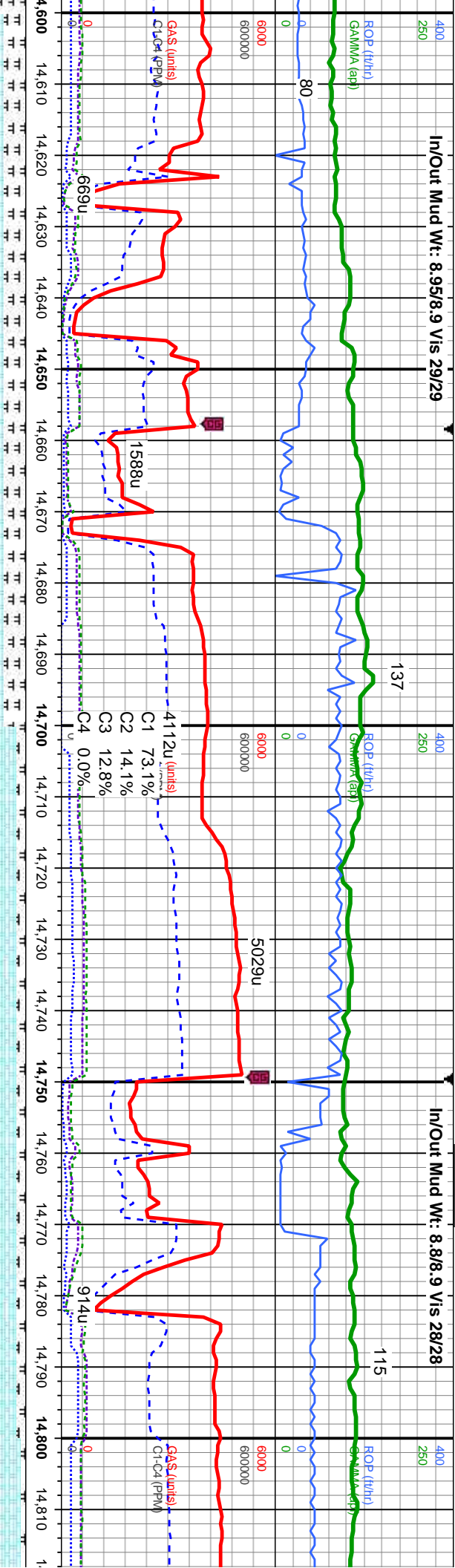
CHK: It gy-dk gy, brn, some crm, mot, lam, v sft-frm,
sb ply-sb blk, v calc, cpbk; MRLST: med-dk gy,
blk, str-mot, mod frm-hd, sb ply-sb blk, fr-brt, sil,
v calc; tr inoc fos, tr cal, com bent

CHK: It gy-dk gy, brn, some crm, mot, lam, v sft-frm,
sb ply-sb blk, v calc, cpbk; MRLST: med-dk gy,
blk, str-mot, mod frm-hd, sb ply-sb blk, fr-brt, sil,
v calc; tr inoc fos, tr cal, com bent

cm, mod, lam, v
ppxi; MRLST:
m-hd, sb ply-sb
s, tr cal, com bent

In/Out Mud Wt: 8.95/8.9 Vis 29/29

In/Out Mud Wt: 8.8/8.9 Vis 28/28



6200

6200

6200

98'
18,48'
i: 89.6 °
87.3°
.28'

MD: 14,690'
TVD: 6,267.59'
Inclination: 91.5 °
Azimuth: 88.3°
VS: 8,181.26'

MD: 14,782'
TVD: 6,265.99'
Inclination: 90.5 °
Azimuth: 88.4°
VS: 8,273.25'

CHK: It gy-dk gy, brn, some crm, mot, lam, v sft-frm,
sb pily-sb blk, v calc, crptxl: MRLST: med-dk gy,
blk, str-mot, mod frm-hd, sb pily-sb blk, fr-brt, sil,
v calc; tr inoc fos, tr cal, com bent

CHK: It gy-dk gy, brn, some crm, mot, lam, v sft-frm,
sb pily-sb blk, v calc, crptxl: MRLST: med-dk gy,
blk, str-mot, mod frm-hd, sb pily-sb blk, fr-brt, sil,
v calc; tr inoc fos, tr cal, com bent

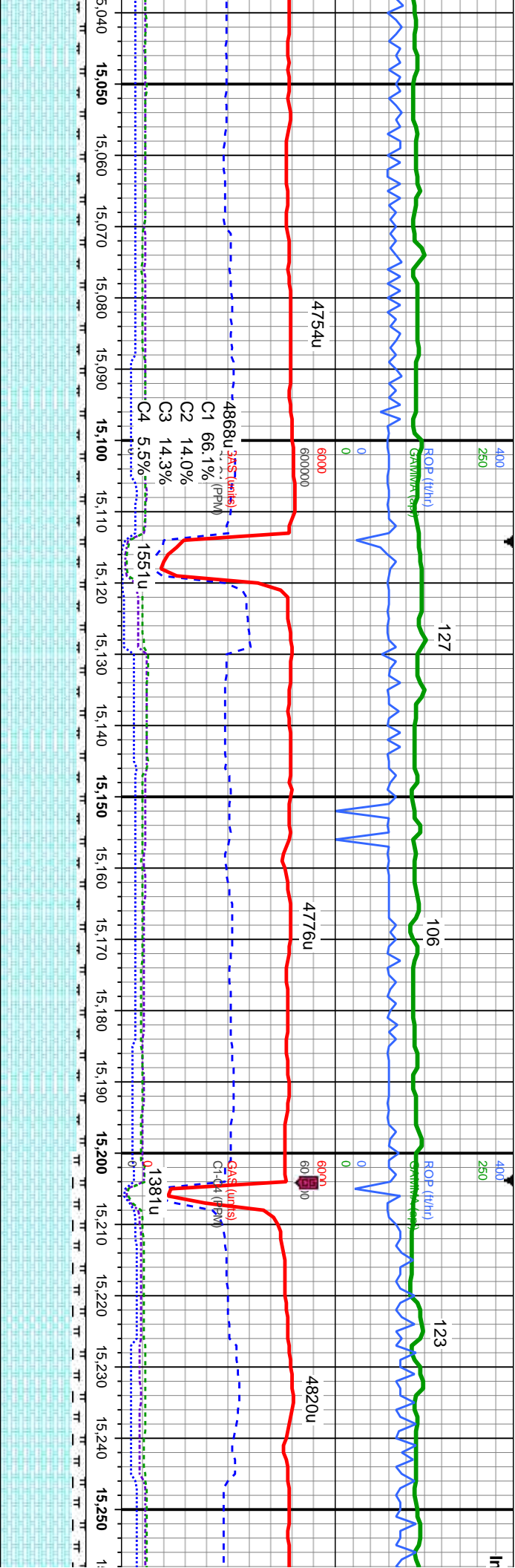
CHK: It gy-dk gy, brn, some crm, mot, lam, v sft-frm,
sb pily-sb blk, v calc, crptxl: MRLST: med-dk gy,
blk, str-mot, mod frm-hd, sb pily-sb blk, fr-brt, sil,
v calc; tr inoc fos, tr cal, com bent

CHK: It gy-dk gy, brn, some crm, mot, lam, v sft-frm,
sb pily-sb blk, v calc, crptxl: MRLST: med-dk gy,
blk, str-mot, mod frm-hd, sb pily-sb blk, fr-brt, sil,
v calc; tr inoc fos, tr cal, com bent

CHK: It gy-dk gy, brn, some crm, mot, lam, v sft-frm,
sb pily-sb blk, v calc, crptxl: MRLST: med-dk gy,
blk, str-mot, mod frm-hd, sb pily-sb blk, fr-brt, sil,
v calc; tr inoc fos, tr cal, com bent

/D (ft)

TVD (ft)



MD: 15,055'
TVD: 6,263.45'
Inclination: 90.5°
Azimuth: 87.7°
VS: 8,546.23'

CHK: lt gy-dk gy, brn, some crm, mot, lam, v sft-frm, sb ply-sb blk, v calc, crpxl: MRLST: med-dk gy, blk, str-mot, mod frm-hd, sb ply-sb blk, fr-brt, sil, v calc; tr inoc fos, tr cal, tr bent

MD: 15,145'
TVD: 6,263.45'
Inclination: 89.5°
Azimuth: 87°
VS: 8,636.21'

CHK: lt gy-dk gy, brn, some crm, mot, lam, v sft-frm, sb ply-sb blk, v calc, crpxl: MRLST: med-dk gy, blk, str-mot, mod frm-hd, sb ply-sb blk, fr-brt, sil, v calc; tr inoc fos, tr cal, tr bent

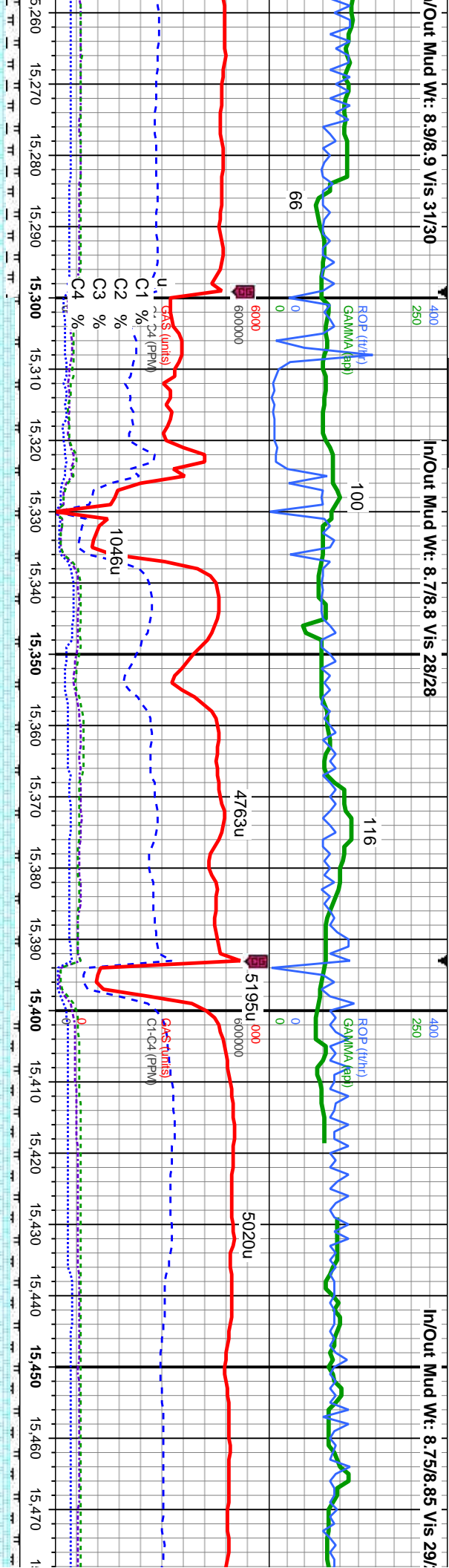
MD: 15,240'
TVD: 6,264.36'
Inclination: 89.4°
Azimuth: 86.9°
VS: 8,731.17'

CHK: lt gy-dk gy, brn, some crm, mot, lam, v sft-frm, sb ply-sb blk, v calc, crpxl: MRLST: med-dk gy, blk, str-mot, mod frm-hd, sb ply-sb blk, fr-brt, sil, v calc; tr inoc fos, tr cal, tr bent

In/Out Mud Wt: 8.9/8.9 Vis 31/30

In/Out Mud Wt: 8.7/8.8 Vis 28/28

In/Out Mud Wt: 8.75/8.85 Vis 29/



6200

6200

MD: 15,335'
TVD: 6,263.53'
Inclination: 91.6°
Azimuth: 87.7°
VS: 8,826.13'

MD: 15,429'
TVD: 6,260.58'
Inclination: 92°
Azimuth: 87.7°
VS: 8,920.07'

gy-dk gy, brn, some crn, mot, lam, v sft-frm, sb ply-sb biky, v calc, crptxt, MRLST: med-dk gy, biky, mod frm-hd, sb ply-sb biky, fr-brt, sil, inoc fos, tr cal, tr bent

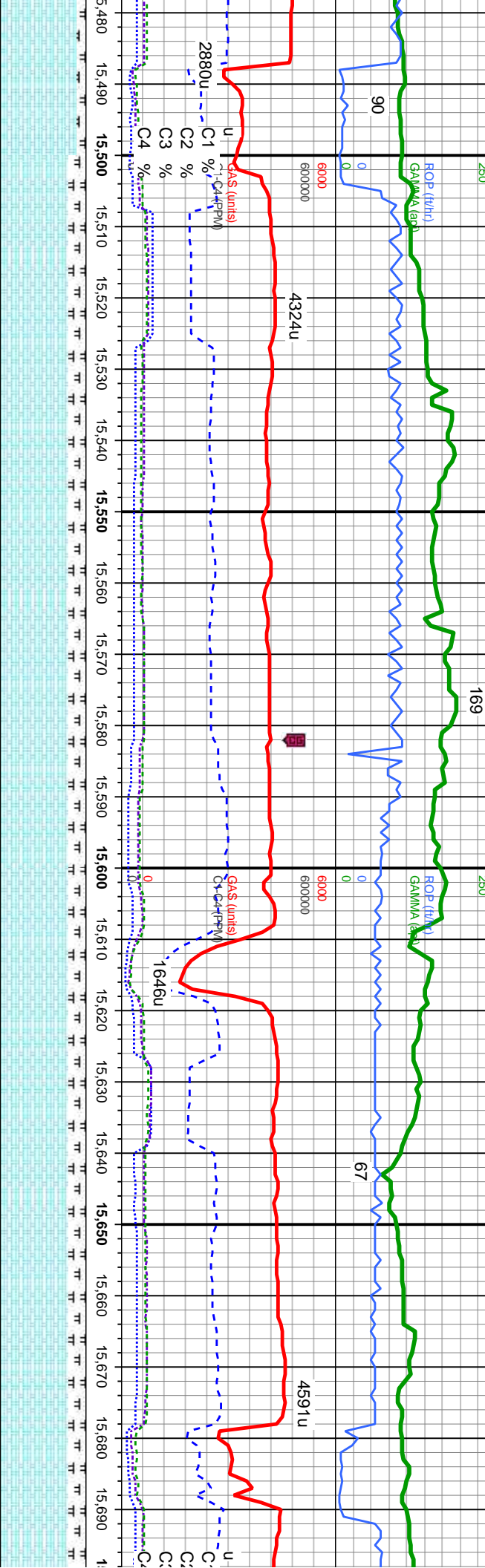
CHK: It gy-med gy, brn, crn, mot, lam, v sft-frm, sb ply-sb biky, v calc, crptxt, MRLST: med-dk gy, blk, str-mot, mod frm-hd, sb ply-sb biky, fr-brt, sil, v calc, tr inoc fos, tr cal, tr bent

CHK: It gy-med gy, brn, crn, mot, lam, v sft-frm, sb ply-sb biky, v calc, crptxt, MRLST: med-dk gy, blk, str-mot, mod frm-hd, sb ply-sb biky, fr-brt, sil, v calc, tr inoc fos, tr cal, tr bent

CHK: It gy-med gy, brn, crn, mot, lam, v sft-frm, sb ply-sb biky, v calc, crptxt, MRLST: med-dk gy, blk, str-mot, mod frm-hd, sb ply-sb biky, fr-brt, sil, v calc, tr inoc fos, tr cal, tr bent

TVD (ft)

TVD (ft)

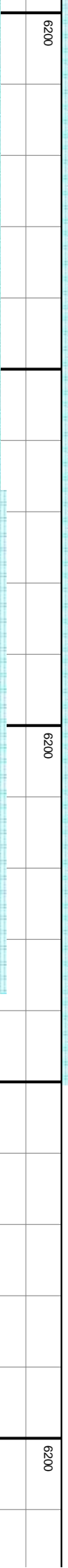
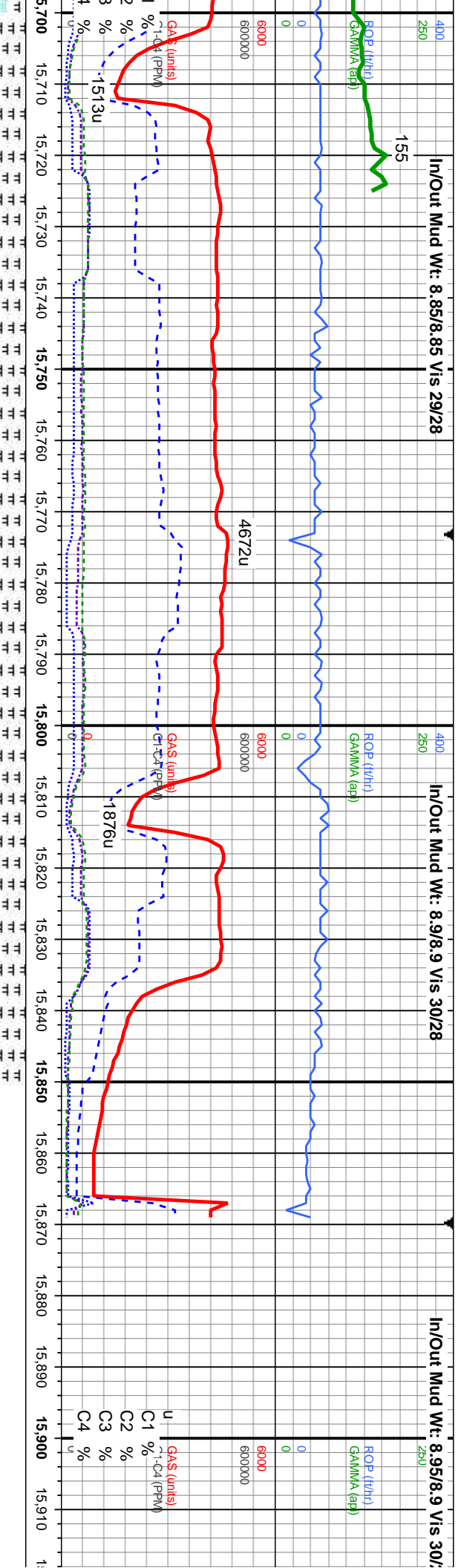


6200		6200	
MD: 15,524'		MD: 15,619'	
TVD: 6,257.93'		TVD: 6,255.44'	
Inclination: 91.2 °		Inclination: 91.8 °	
Azimuth: 88.5°		Azimuth: 88.7°	
VS: 9,015.03'		VS: 9,110'	
CHK: It gy-dk gy, brn, crm, mot, lam, v sft-frm, sb ply-sb blk, v calc, crptxt: MRLST: med-dk gy, blk, sft-mot, mod frm-hd, sb ply-sb blk, fr-brt, sil, v calc: tr inoc fos, tr cal, tr bent		CHK: It gy-dk gy, brn, crm, mot, lam, v sft-frm, sb ply-sb blk, v calc, crptxt: MRLST: med-dk gy, blk, sft-mot, mod frm-hd, sb ply-sb blk, fr-brt, sil, v calc: tr inoc fos, tr cal, tr bent	
CHK: It gy-dk gy, brn, crm, mot, lam, v sft-frm, sb ply-sb blk, v calc, crptxt: MRLST: med-dk gy, blk, sft-mot, mod frm-hd, sb ply-sb blk, fr-brt, sil, v calc: tr inoc fos, tr cal, tr bent		CHK: It gy-dk gy, brn, crm, mot, lam, v sft-frm, sb ply-sb blk, v calc, crptxt: MRLST: med-dk gy, blk, sft-mot, mod frm-hd, sb ply-sb blk, fr-brt, sil, v calc: tr inoc fos, tr cal, tr bent	

In/Out Mud Wt: 8.85/8.85 Vis 29/28

In/Out Mud Wt: 8.9/8.9 Vis 30/28

In/Out Mud Wt: 8.95/8.9 Vis 30/28



MD: 15,714'
TVD: 6,253.92'
Inclination: 90.03 °
Azimuth: 90.4°
VS: 9,204.96'

MD: 15,809'
TVD: 6,252.98'
Inclination: 91.1 °
Azimuth: 90.1°
VS: 9,299.92'

CHK: It gy-dk gy, brn, crm, mot, lam, v sft-frn, sb
ply-sb blk, v calc, crptxt: MRLST: med-dk gy, blk,
sft-mot, mod frm-hd, sb ply-sb blk, fr-brt, sil, v
calc: tr inoc fos, tr cal, tr bent

CHK: It gy-dk gy, brn, crm, mot, lam, v sft-frn, sb
ply-sb blk, v calc, crptxt: MRLST: med-dk gy, blk,
sft-mot, mod frm-hd, sb ply-sb blk, fr-brt, sil, v
calc: tr inoc fos, tr cal, tr bent

