

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name Thornton I-29-30HN

Location S28 R7N T66W

State Colorado

Country U.S.A.

County Weld

Rig Number Xtreme 18

API Number 05-123-43609

Field Wattenberg

Geographic Region DJ Basin

Drilling Completed 11/24/2016

Spud Date 11/2/2016

Surface Coordinates S28 R7N T66W

40.548542/-104.791533
1674 FNL 355 FWL

Bottom Hole Coordinates S30 T7N R66W
1810 FFNLL 470 FFWLL

Ground Elevation 4906'

K.B. Elevation 4924'

Logged Interval 6000' To 17539'

Total Depth 17539'

Formation Niobrara B Chalk

Type of Drilling Fluid WBM

Operator

Company Bayswater Exploration & Production, LLC.

Address 730 17th St.
Denver, CO 80202



Geologist

Name Mark E. Brown

Company Bayswater Exploration & Production, LLC.

Address 730 17th St.
Denver, CO 80202

Other

Robert Davis Lead Wellsite Geologist

Andrew Martens Wellsite Geologist

Columbine Logging Computer 4-A

Bloodhound Unit 331

Zone Color Coding

Oil

Note

Error

Condensate

Core

Water

Gas

Pressure

Seal

Rock Types

UNKNOWN

ANHYDRITE

BENTONITE

BRECCIA

CHALK

CEMENT

CHERT

CLAY CHOKE SANC

CLAYSTONE

COAL

CONGLOMERATE

DOLOMITE

DOLOMITIC LIMESTONE

GRANITE

GYPSUM

IGNEOUS

SIDERITE or LIMONITE

LIMESTONE

MARLSTONE

METAMORPHIC

NO SAMPLE

SALT

SANDSTONE

SALT-PEPPER SANC

SHALE

SHALE COLORED

SHALE GRAY

SHALY SANDSTONE

SHALY SILTSTONE

SILTY SHALE

SILTSTONE

TILL

TUFF

WELDED TUFF

Accessories

GASTROPOD

INOCERAMUS

OOLITE

OSTRACOD

PELECYPOD

PELLET

PISOLITE

PLANT REMAINS

PLANT SPORES

SCAPHOPOD

STROMATOPOROID

CORAL

CRINOID

ECHINOID

FISH

FORAMINIFERA

FOSSIL

ARGILLITE GRAIN

B BENTONITE

BITUMENOUS SUBSTANCE

BRECCIA FRAGMENTS

CALCAREOUS

CARBONACEOUS FLAKES

CHTDK

CHTLT

COAL - THIN BEDS

DOLOMITIC

FELDSPAR

FERRUGINOUS PELLET

FERRUGINOUS

GLAUCONITE

GYPSIFEROUS

HEAVY MINERAL

K KAOLIN

M MARCASITE

TT MARLSTONE

MICACEOUS

MINERAL CRYSTALS

NODULES

PHOSPHATE PELLETS

P PYRITE

B SALT CAST

S SANDY

S SIDERITE

SILTACEOUS

SILTY

TUFFACEOUS

ANHYDRITE STRINGER

BENTONITE STRINGER

COAL STRINGER

DOLOMITE STRINGER

GYPSUM STRINGER

LIMESTONE STRINGER

MARLSTONE (CALO) STRG

MARLSTONE STRINGER

SHALE STRINGER

SILTSTONE STRINGER

Oil Show

P PINPOINT

V VUGGY

Engineering

DEAD

EVEN

QUESTIONABLE

BIT

SPOTTED STAINING

CONNECTION (UP)

CONNECTION (DOWN)

CONNECTION GAS

TRIP GAS

F FRACTURE

INTERCRYSTALLINE

DOWN TIME GAS (L)

INTEROOLITIC

MOLDIC

O ORGANIC

Porosity

CONNECTION (DOWN)

CONNECTION GAS

TRIP GAS

F FRACTURE

INTERCRYSTALLINE

DOWN TIME GAS (L)

INTEROOLITIC

MOLDIC

O ORGANIC

CONNECTION (DOWN)

CONNECTION GAS

TRIP GAS

F FRACTURE

INTERCRYSTALLINE

DOWN TIME GAS (L)

INTEROOLITIC

MOLDIC

O ORGANIC


Other Symbols

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

 FAULT  WIRELINE TESTED - RT **FX** FINELYXLN

 FORMATION TOP  DRILL STEM TEST **GS** GRAINSTONE

 GAS SHOW  MIN DEPTH **L** LITHOGRAPHIC


 OIL SHOW **MX** MICROXLN


 MIN DEPTH UP **MS** MUDSTONE

Rounding

 MIN DEPTH (DOWN) **A** ANGULAR **PS** 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

 SURVEY **CX** CRYPTOXLN

ROP
11/21/2016

COLUMBINE LOGGING RIGGED UP ON
11/21/2016 MANNED 2-PERSON LOGGING.
STARTED LOGGING AT 6000' @ 11:11 MDT
11/21/2016

Total Gas & Chromatograph

- GAS
- C1
- C2
- C3
- C4

GAS DATA FROM BLOODHOUND
CHROMATOGRAPH UNIT #331 JOB
NUMBER 83 via IBALL GAS CHART
DATA BASE "Thorton I 29 30 HN. mdb"

Depth Labels

% Lith

Gamma
GAMMA

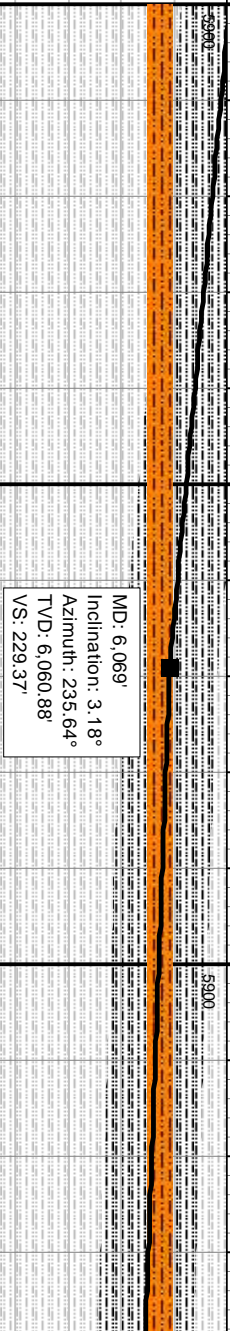
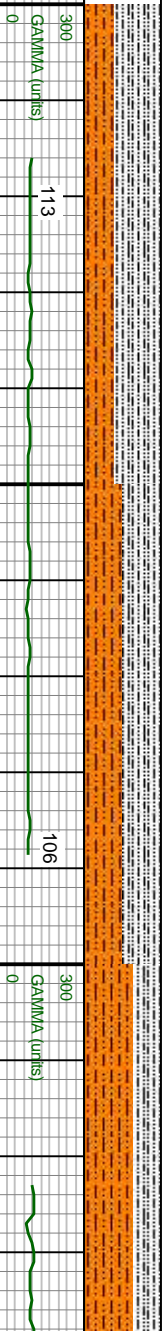
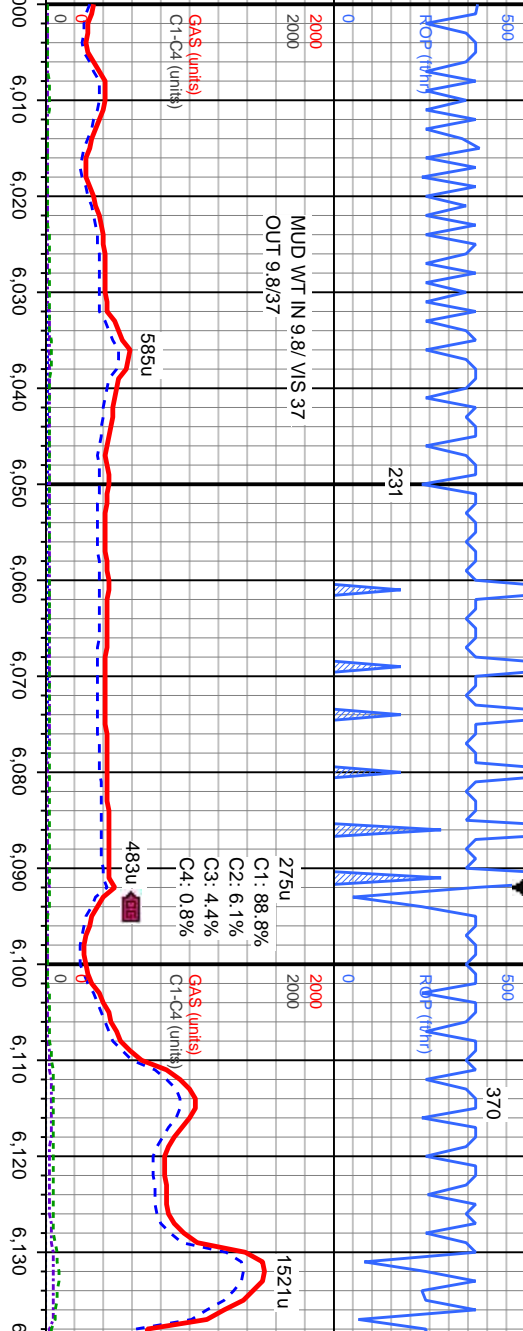
SURVEY, GAMMA, and ROP DATA
PROVIDED BY BAKER HUGHES

Well Bore
TVD

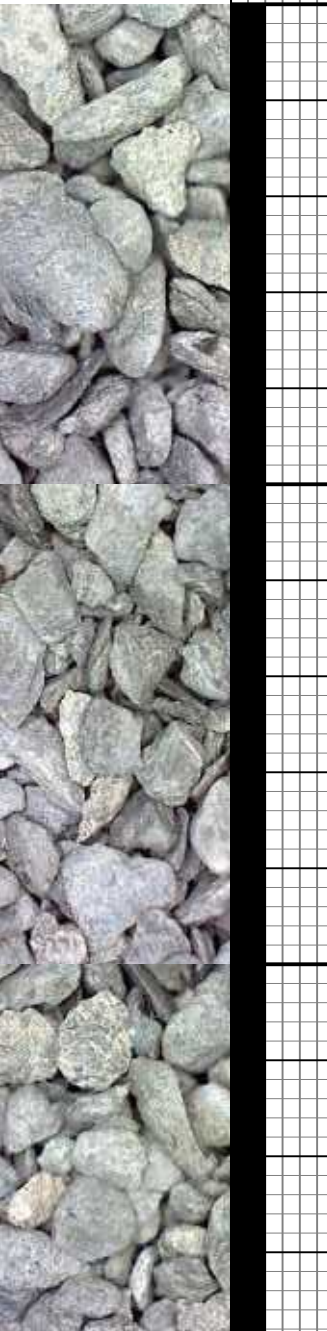
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Type: AT505F
Size: 8 1/2
Depth In: 1,555'
Jets: 5x15
S/N: 7160994

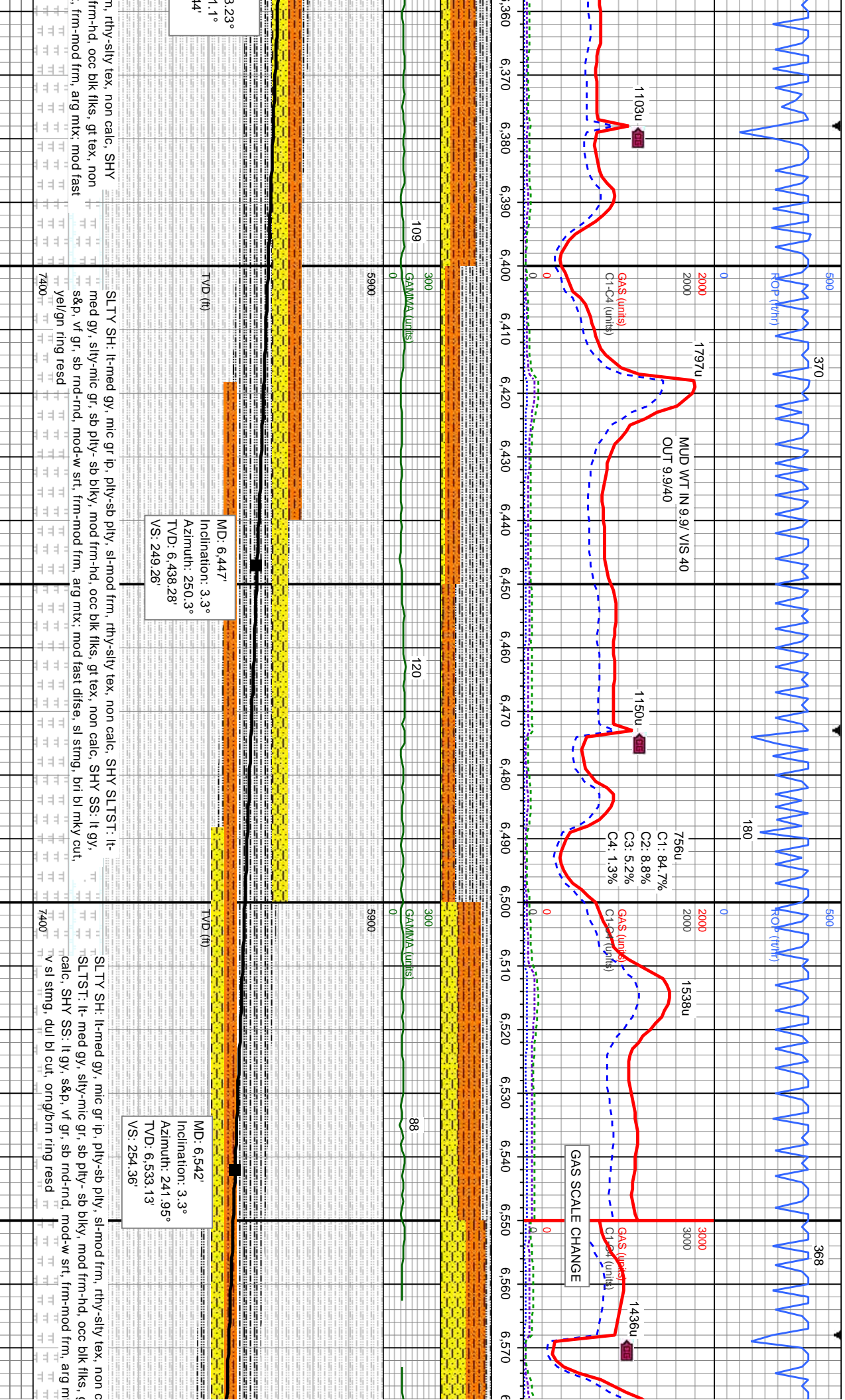
Oil Show

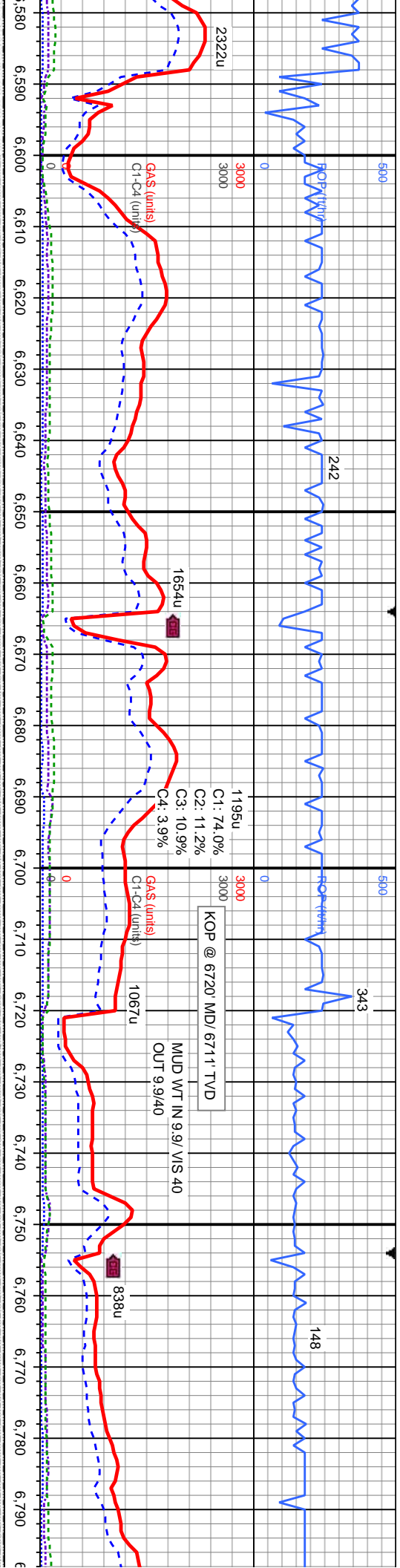
Images



TVD (ft)	SLTY SH: lt-med gy, mic gr ip, pily-sb pily, mod frm, rthy-sily tex, non calc, SHY SLTST.
5900	lt-med gy, sily-mic gr ip, sb pily-sb blkyy, mod frm, occ blk flks, gt tex, non calc; mod
6000	diffse, v sl stmg, dul bl cut, orngbrn ring test
6100	
6200	
6300	
6400	
6500	
6600	
6700	
6800	
6900	
7000	
7100	
7200	
7300	
7400	







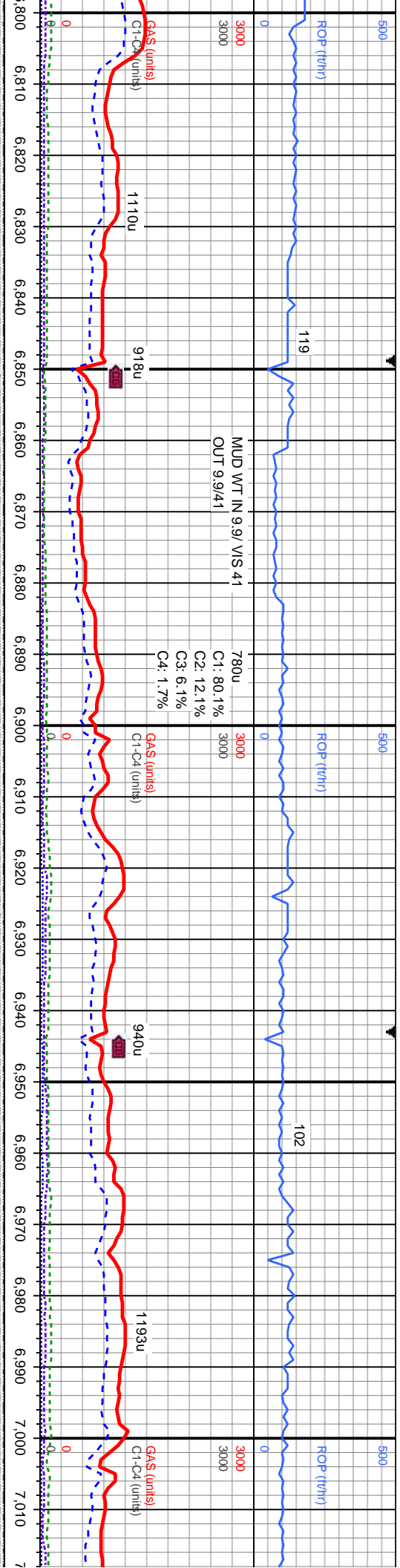
MD: 6.636'
Inclination: 3.36°
Azimuth: 240.53°
TVD: 6.626.97'
VS: 259.23'

MD: 6.732'
Inclination: 4.47°
Azimuth: 250.49°
TVD: 6.722.74'
VS: 265.29'

al. SHY
gt tex. non
x: mod difse,
SLTY SH: lt-med gy, mic gr ip, pily-sb pily, sl-mod frm, rthy-sily tex, non calc, SHY SLTST:
lt-med gy, sily-mic gr, sb pily-sb blkly, mod frm-hd, occ blk flks, gt tex, non calc, SHY SS:
lt gy, s&p, vif gr, sb rnd-rnd, mod-w-st, frm-mod frm, arg mtk: mod difse, v sl stimg, dul bl
cut, omg/blm ring read

SLTY SH: lt-med gy, mic gr ip, pily-sb pily, sl-mod frm, rthy-sily tex, non calc, SHY SS: lt
gy, s&p, vif gr, sb rnd-rnd, mod-w-st, frm-mod frm, arg mtk: tr SHY SLTST: mod fast difse,
sl stimg, bri bl mky cut, yel/gn ring read





MD: 6,826'
Inclination: 12.48°
Azimuth: 254.4°
TVD: 6,815.64'
VS: 278.67'

MD: 6,921'
Inclination: 22.53°
Azimuth: 263.82°
TVD: 6,906.14'
VS: 306.86'

SLTY SH: lt-med gy, mic gr ip, pty-sb pty, sl-mod frm, rthy-sly tex, non calc, SHY SLTST: lt-med gy, sly-mic gr, sb pty-sb blk, mod frm-hd, occ blk flks, gt tex, non calc, SHY SS: lt gy, s&p, vt gr, sb rnd-rnd, mod-w srl, frm-mod frm, arg mix; mod fast dlse, sl sting, bri bl mky cut, yellgn ring resd

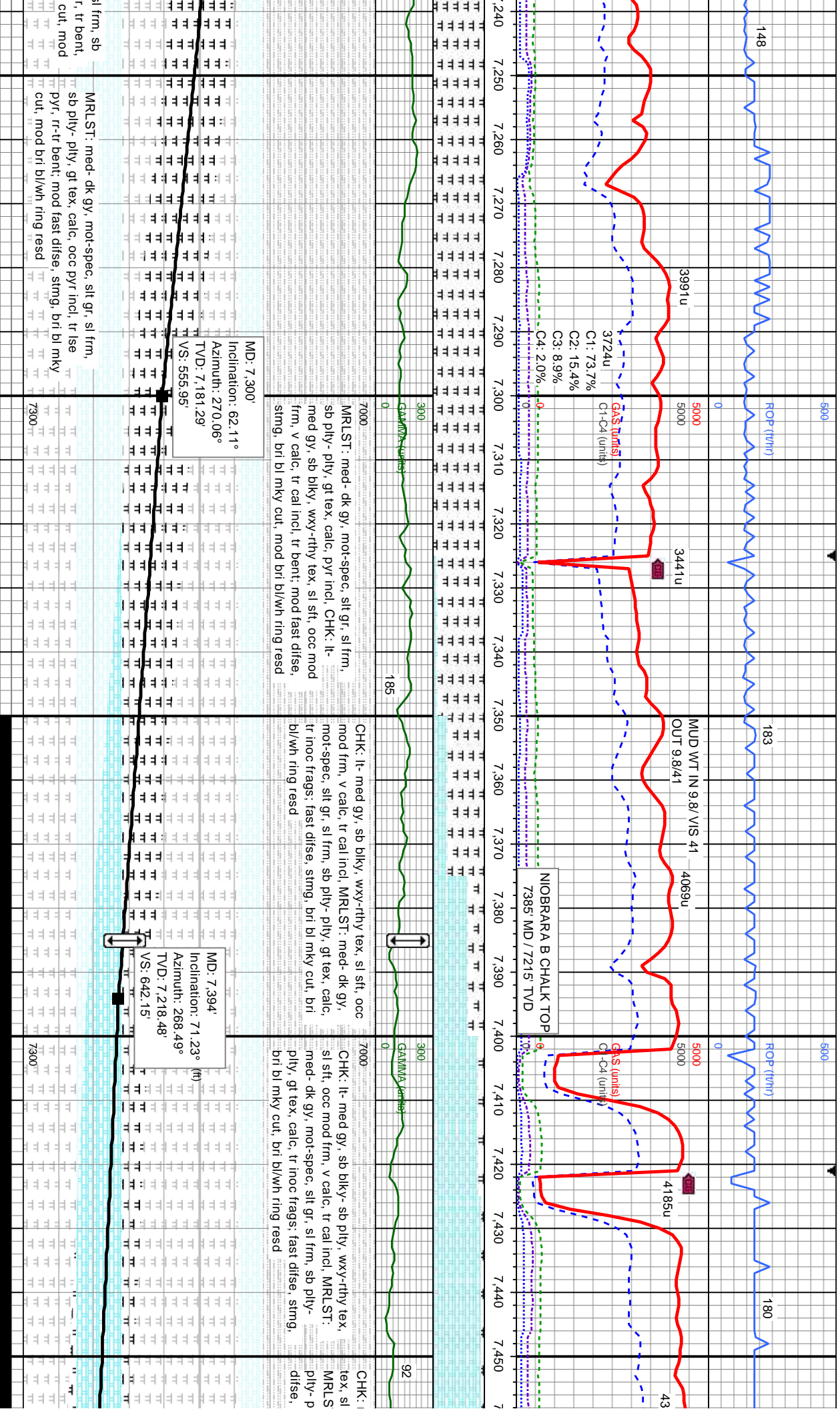
SLTY SH: lt-med gy, mic gr ip, pty-sb pty, sl-mod frm, rthy-sly tex, non calc, SHY SLTST: lt-med gy, sly-mic gr, sb pty-sb blk, mod frm-hd, occ blk flks, gt tex, non calc, tr shy ss, mod fast dlse, sl sting, bri bl mky cut, yellgn ring resd

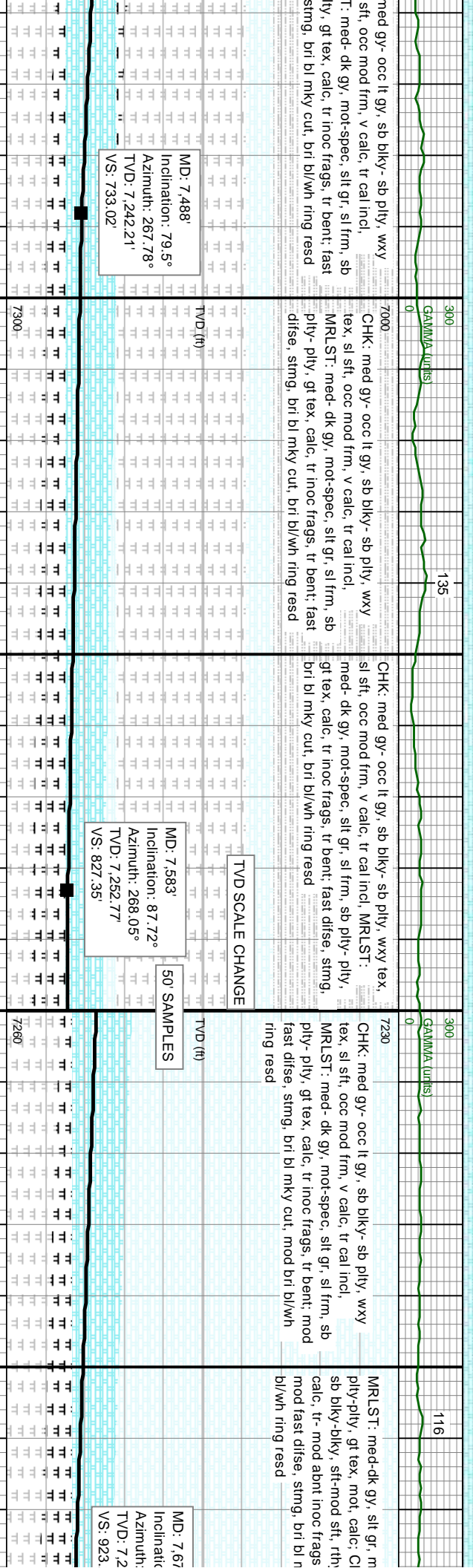
25 SAMPLES

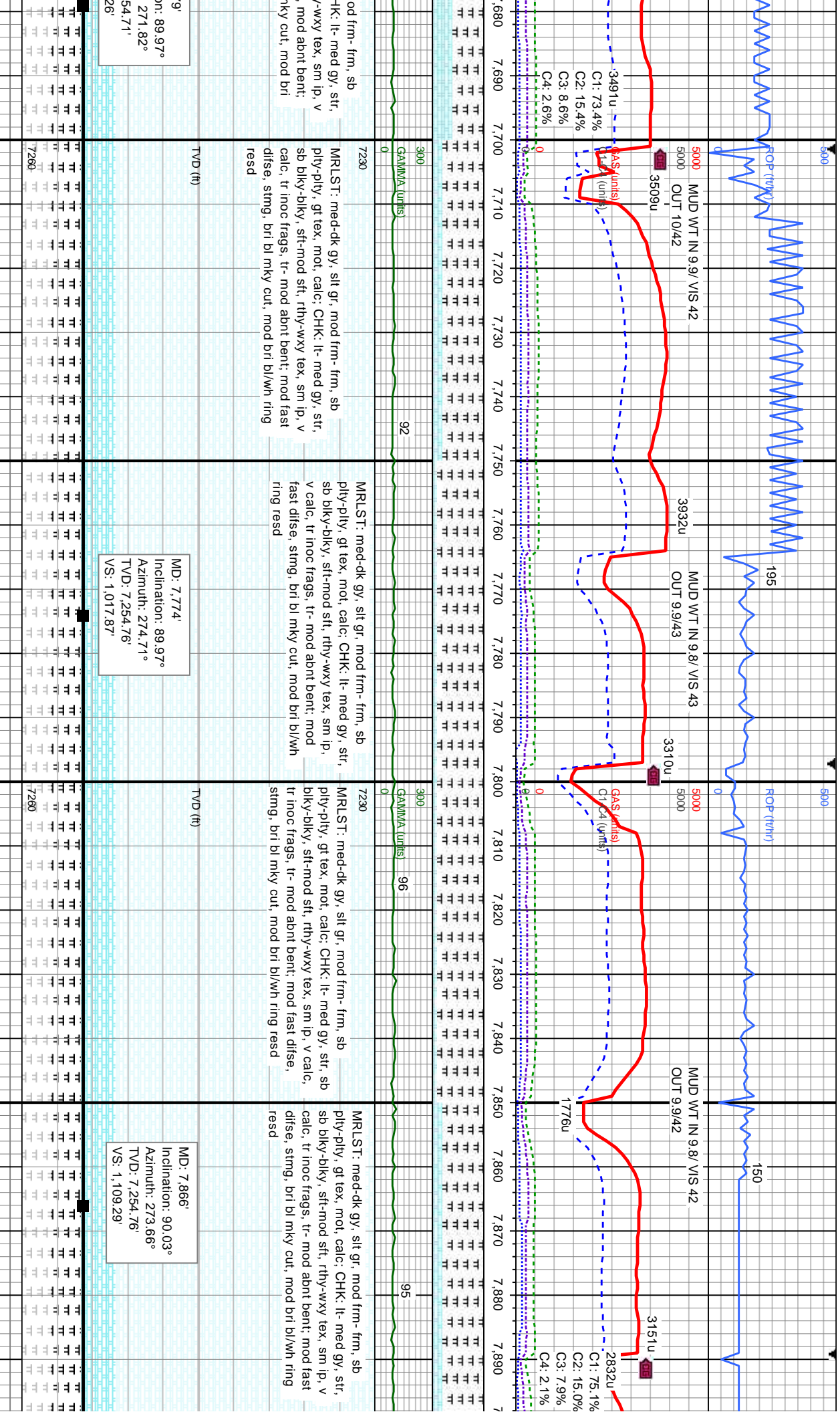
MD: 7,016'
Inclination: 26°
Azimuth: 26°
TVD: 6,990'
VS: 350.14'

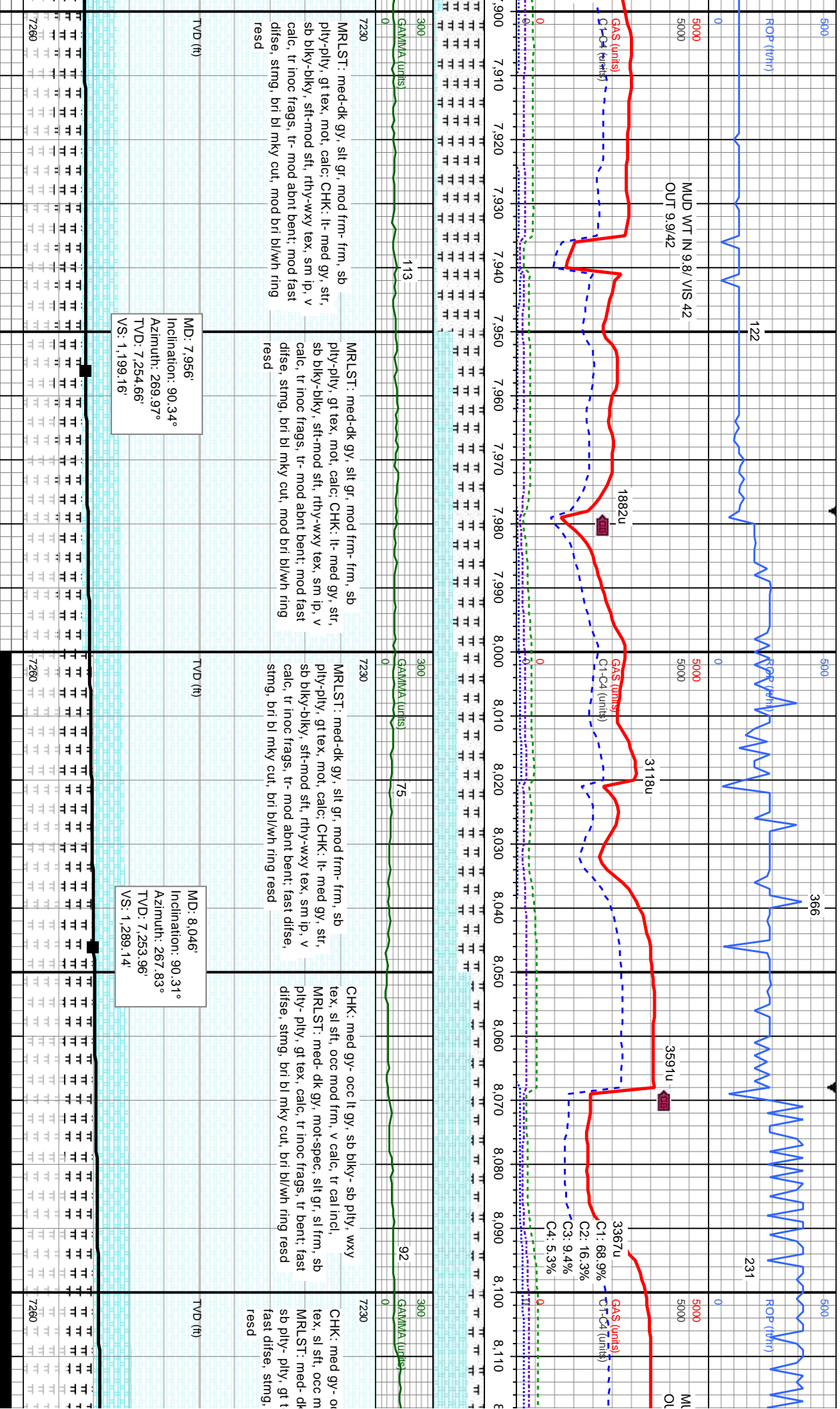
SLTY SH: lt-med g
pty-sb pty, sl-moc
SHY SLTST: lt-m
blk, mod frm-hd,
tr shy ss, mod fas
cut, yellgn ring res

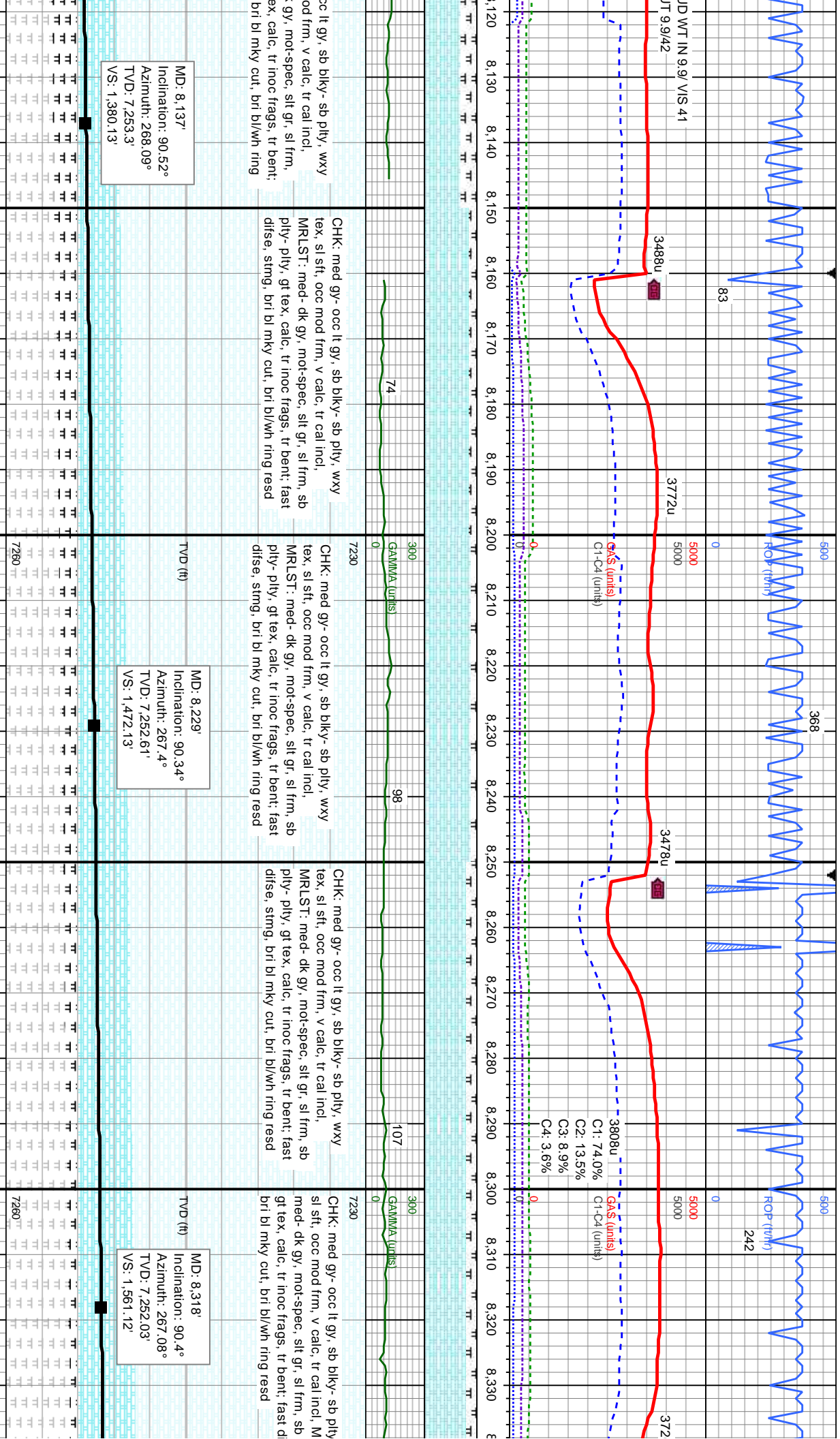


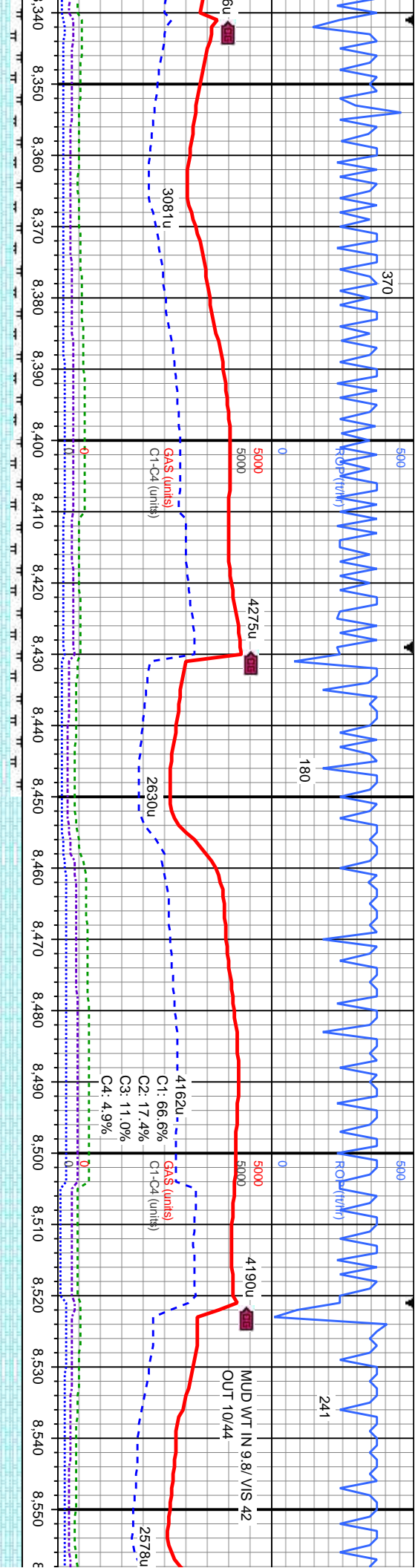












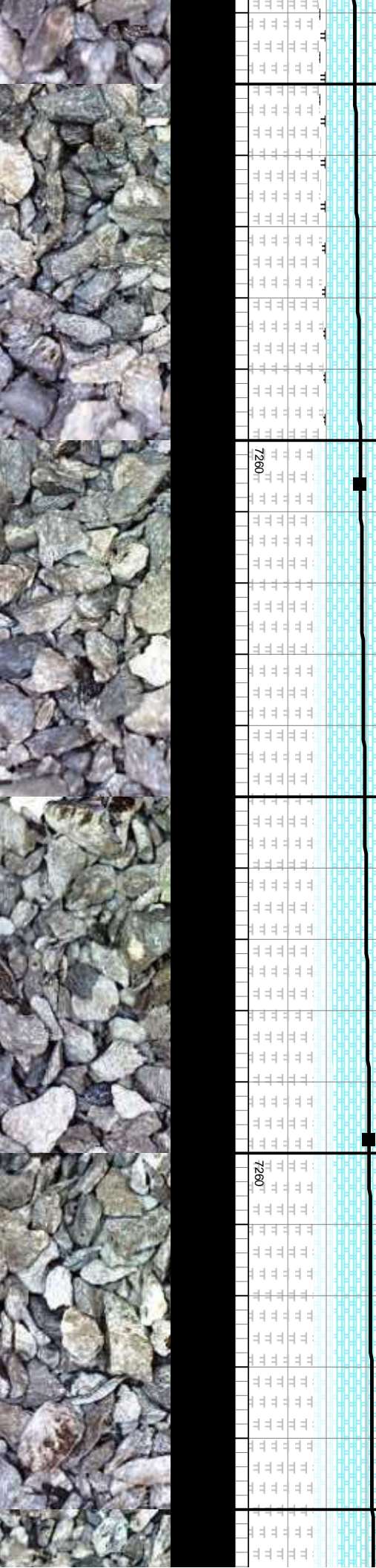
CHK: med gy- occ lt gy, sb blk- sb ply, wxy
tex, sl sft, occ mod frm, v calc, tr cal incl, MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb ply- ply, gt tex, calc, tr inoc frags, tr bent; fast difse, stmg, bri bl mky cut, bri bl/wh ring resd

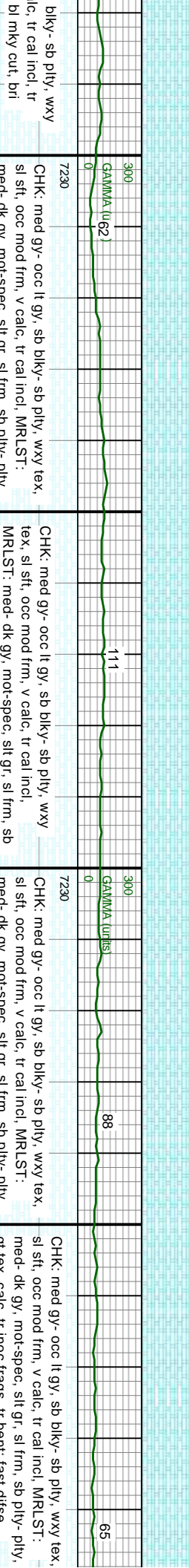
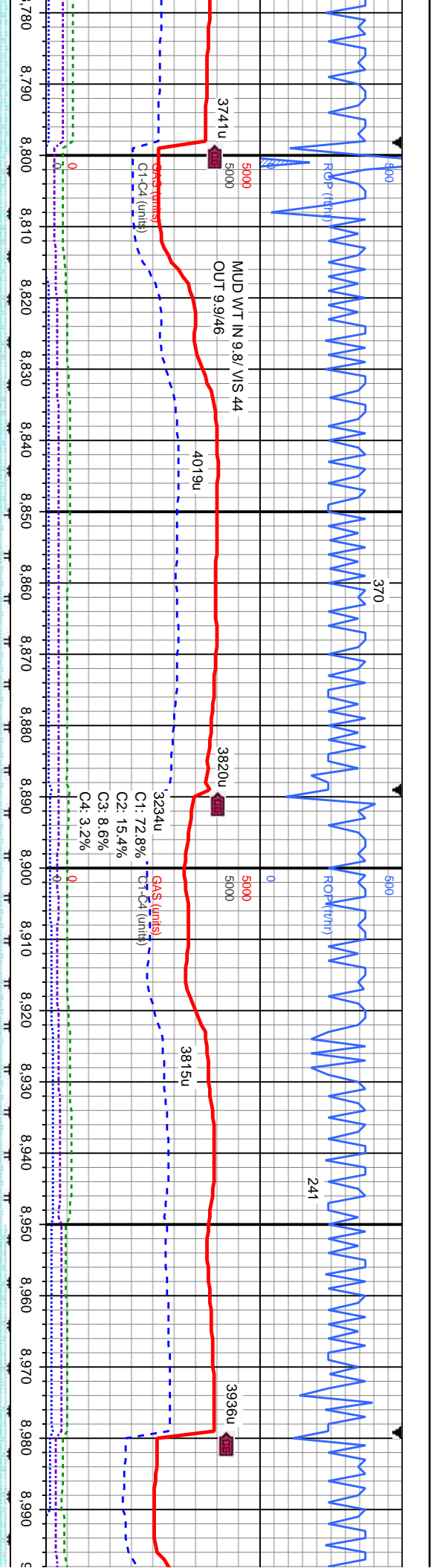
CHK: It-med gy, occ crm, sb blk- sb ply, wxy
tex, sl sft, occ mod frm, v calc, tr cal incl, MRLST: fast difse, stmg, bri bl mky cut, bri bl/wh ring resd

CHK: It-med gy, occ crm, sb blk- sb ply, wxy
tex, sl sft, occ mod frm, v calc, tr cal incl, MRLST: fast difse, stmg, bri bl mky cut, bri bl/wh ring resd

MD: 8.406'
Inclination: 90.46°
Azimuth: 266.75°
TVD: 7.251.37'
VS: 1.649.09'

MD: 8.498'
Inclination: 90.37°
Azimuth: 267.31°
TVD: 7.250.71'
VS: 1.741.07'





CHK: med gy- occ lt gy, sb blkly- sb pily, wxy tex, sl sft, occ mod frm, v calc, tr cal incl, MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb pily- pily, gt tex, calc, tr inoc frags, tr bent; fast dfise, stmg, bri bl mky cut, bri bl/wh ring resd

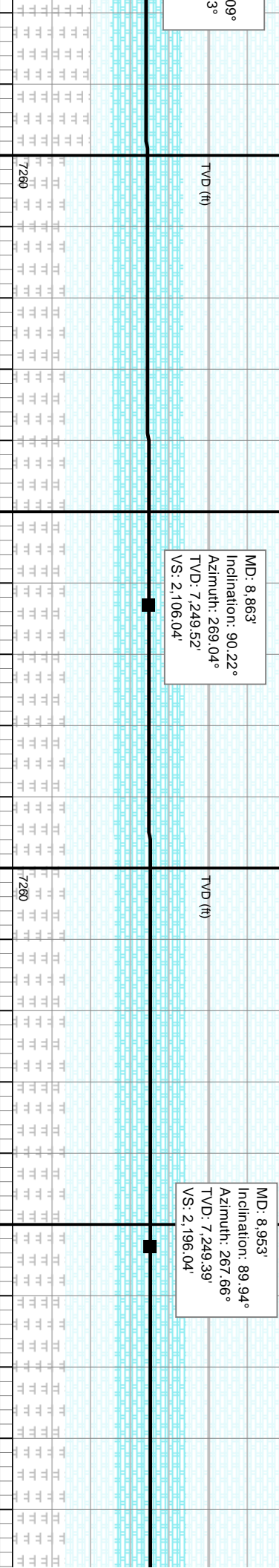
CHK: med gy- occ lt gy, sb blkly- sb pily, wxy tex, sl sft, occ mod frm, v calc, tr cal incl, MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb pily- pily, gt tex, calc, tr inoc frags, tr bent; fast dfise, stmg, bri bl mky cut, bri bl/wh ring resd

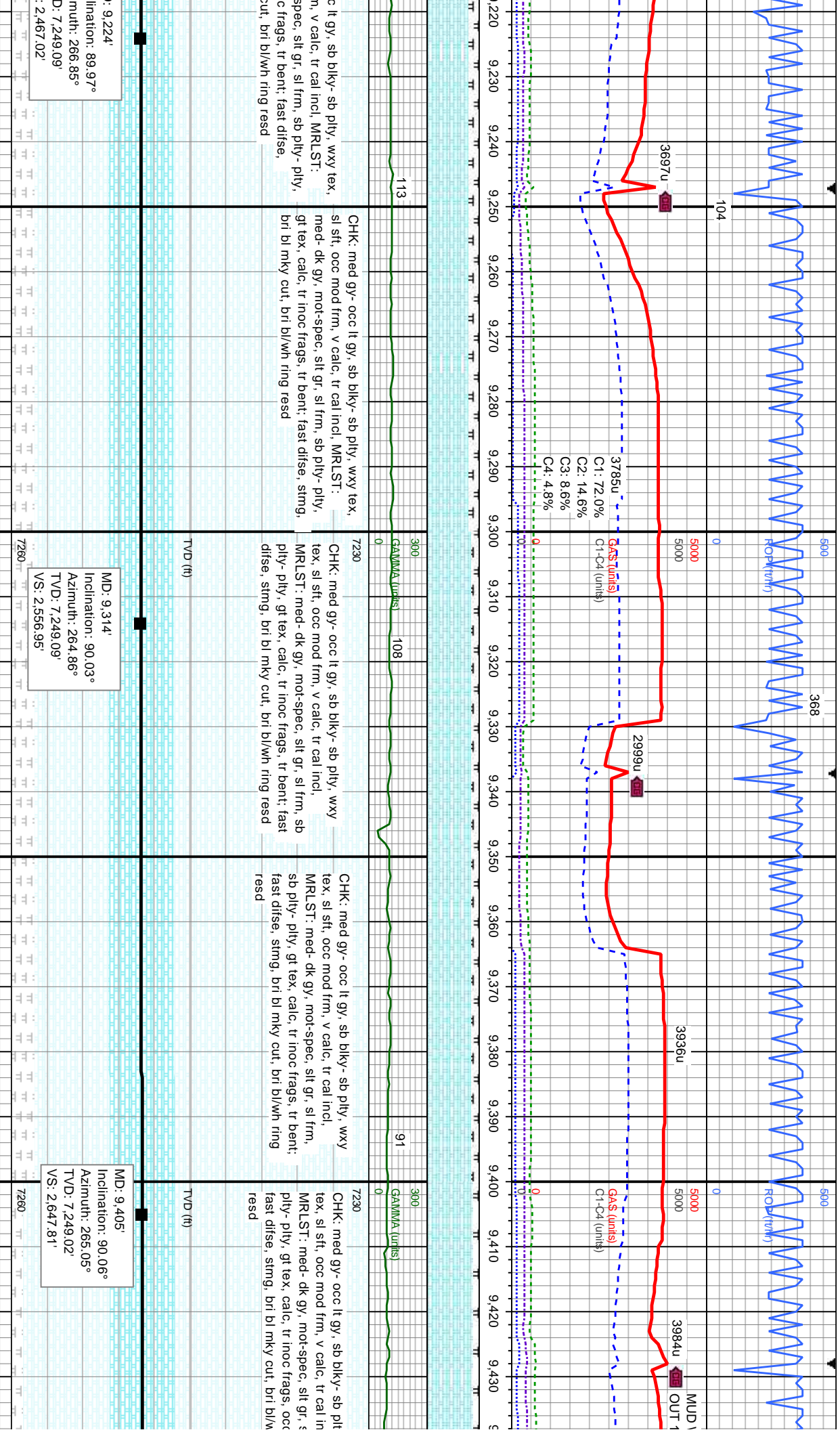
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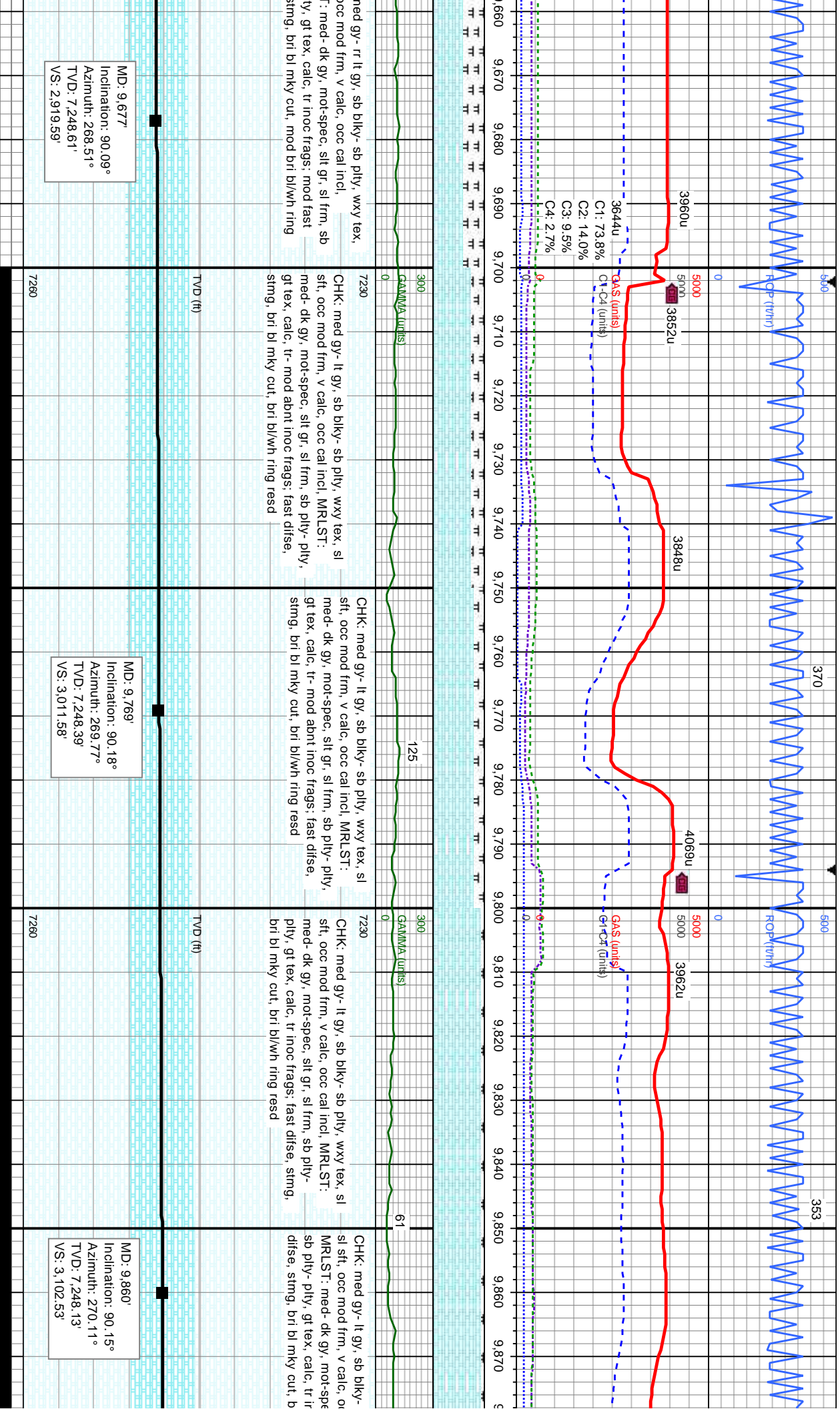
CHK: med gy- occ lt gy, sb blkly- sb pily, wxy tex, sl sft, occ mod frm, v calc, tr cal incl, MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb pily- pily, gt tex, calc, tr inoc frags, tr bent; fast dfise, stmg, bri bl mky cut, bri bl/wh ring resd

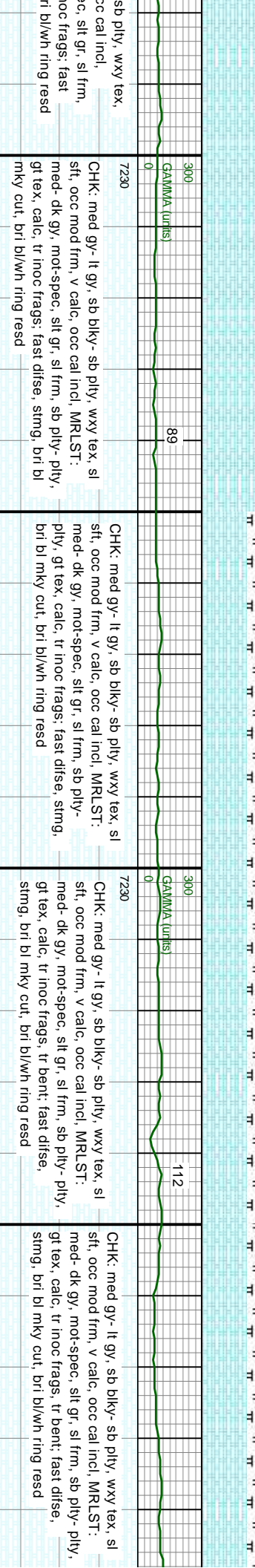
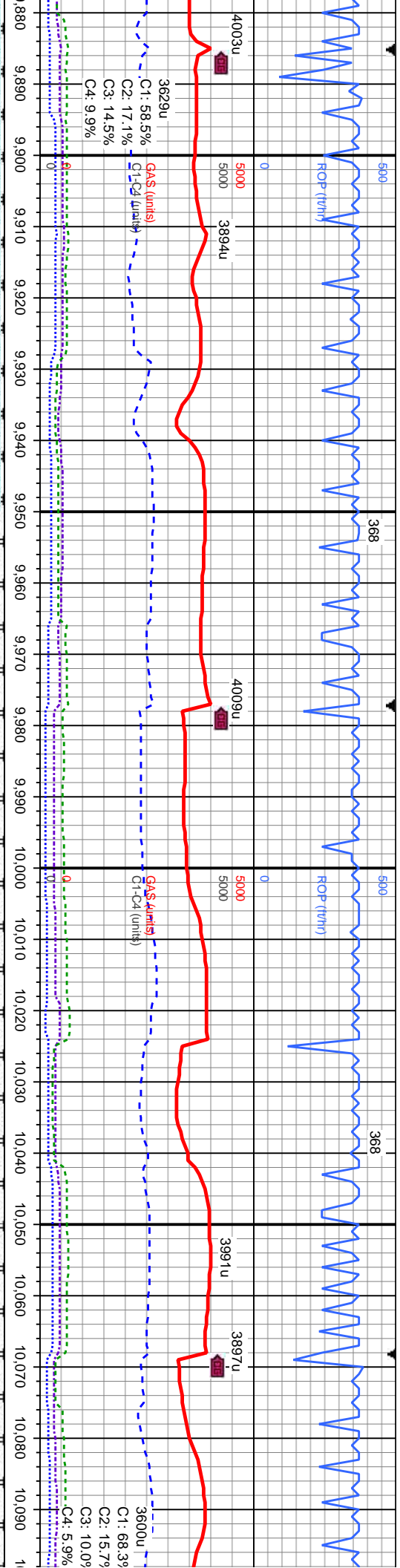
MD: 8.863'
Inclination: 90.22°
Azimuth: 269.04°
TVD: 7,249.52'
VS: 2,106.04'

MD: 8.953'
Inclination: 89.94°
Azimuth: 267.66°
TVD: 7,249.39'
VS: 2,196.04'





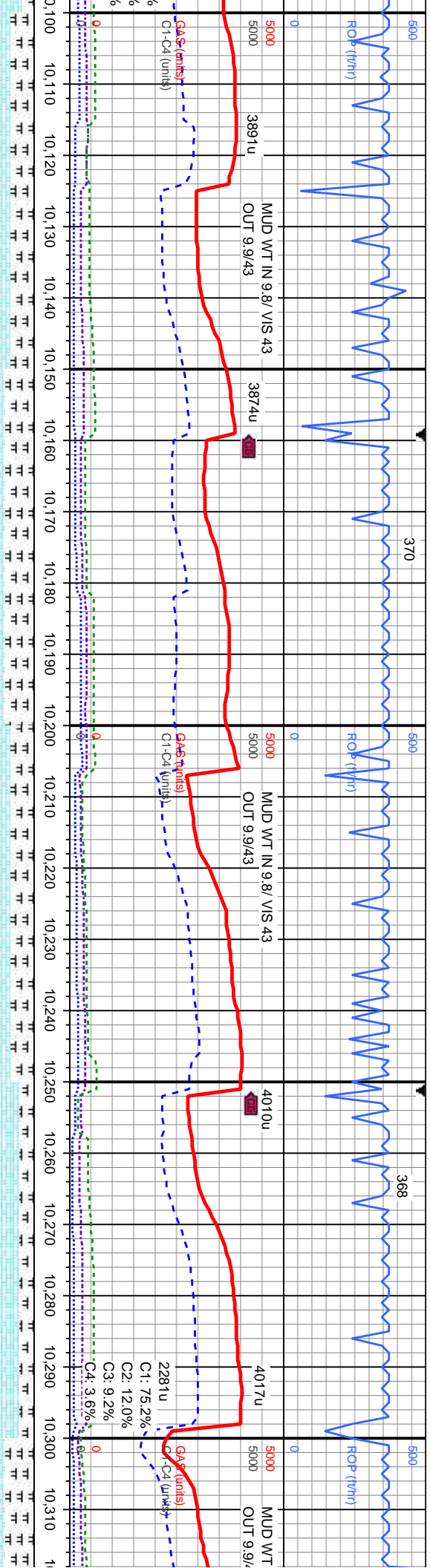




MD: 9,951'
Inclination: 90.18°
Azimuth: 271.14°
TVD: 7,247.87'
VS: 3,193.44'

MD: 10,041'
Inclination: 90.22°
Azimuth: 271.85°
TVD: 7,247.56'
VS: 3,283.29'





7230
CHK: med gy- lt gy, sb blk- sb ply, wxy tex, sl
sft, occ mod frm, v calc, occ cal incl, MRLST:
med- dk gy, mot-spec, slt gr, sl frm, sb ply- ply,
gt tex, calc, tr inoc frags, tr bent; mod fast difse,
stmg, bri bl mky cut, mod bri bl/wh ring resd

MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb
ply- ply, gt tex, calc, CHK: med gy- lt gy, sb
blk- sb ply, wxy tex, sl sft, occ mod frm, v
calc, occ cal incl, , tr inoc frags, tr bent; mod
fast difse, stmg, bri bl mky cut, mod bri bl/wh
ring resd

MD: 10,131'
Inclination: 90.12°
Azimuth: 271.81°
TVD: 7,247.29'
VS: 3,373.1'

CHK: med gy- lt gy, sb blk- sb ply, wxy tex, sl
sft, occ mod frm, v calc, occ cal incl, MRLST:
med- dk gy, mot-spec, slt gr, sl frm, sb ply-
ply, gt tex, calc, tr inoc frags, tr bent; fast
difse, stmg, bri bl mky cut, bri bl/wh ring resd

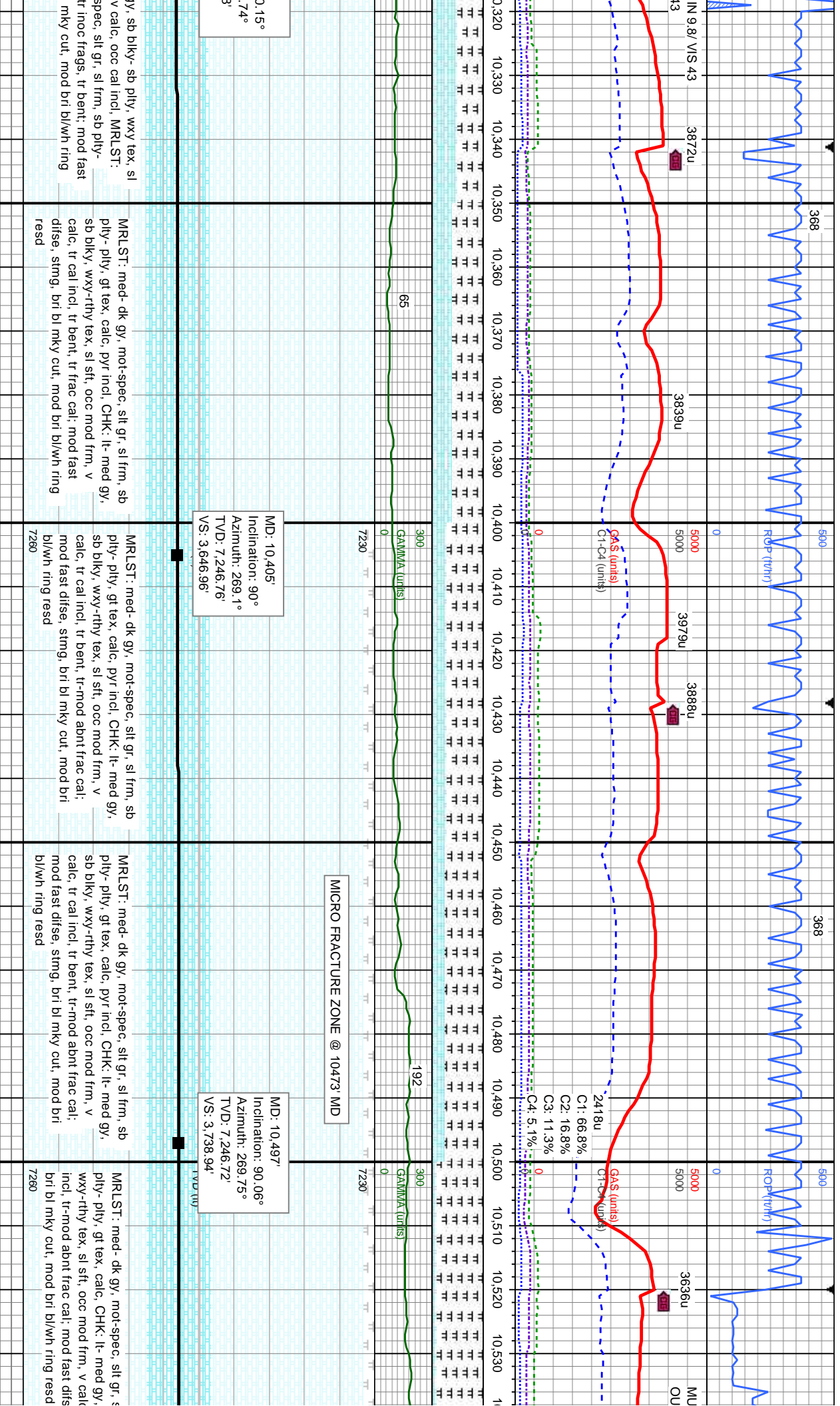
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sft, occ mod frm, v calc, occ cal incl, MRLST:
med- dk gy, mot-spec, slt gr, sl frm, sb ply-
ply, gt tex, calc, tr inoc frags, tr bent; fast
difse, stmg, bri bl mky cut, bri bl/wh ring resd

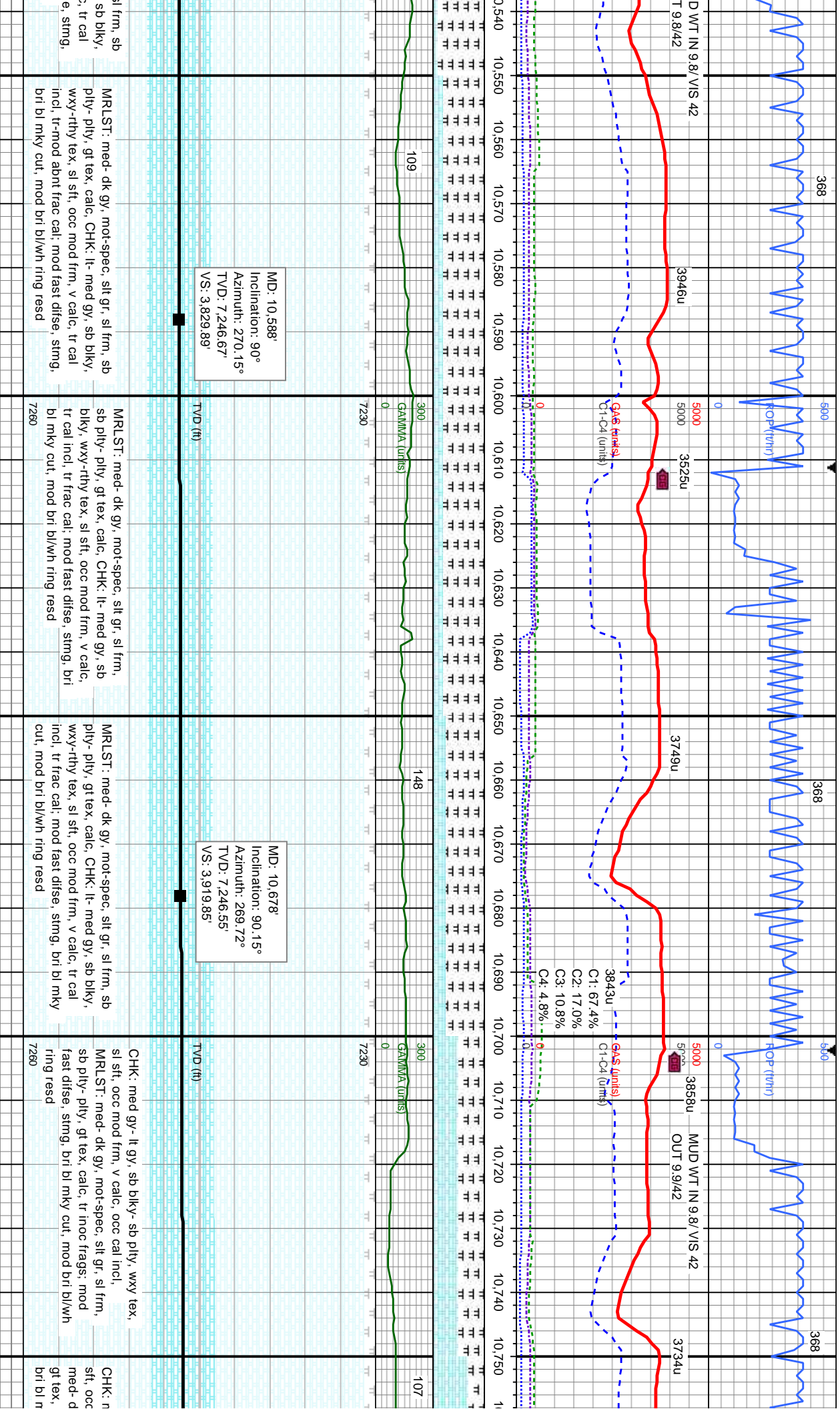
MD: 10,223'
Inclination: 90.12°
Azimuth: 269.87°
TVD: 7,247.1'
VS: 3,464.99'

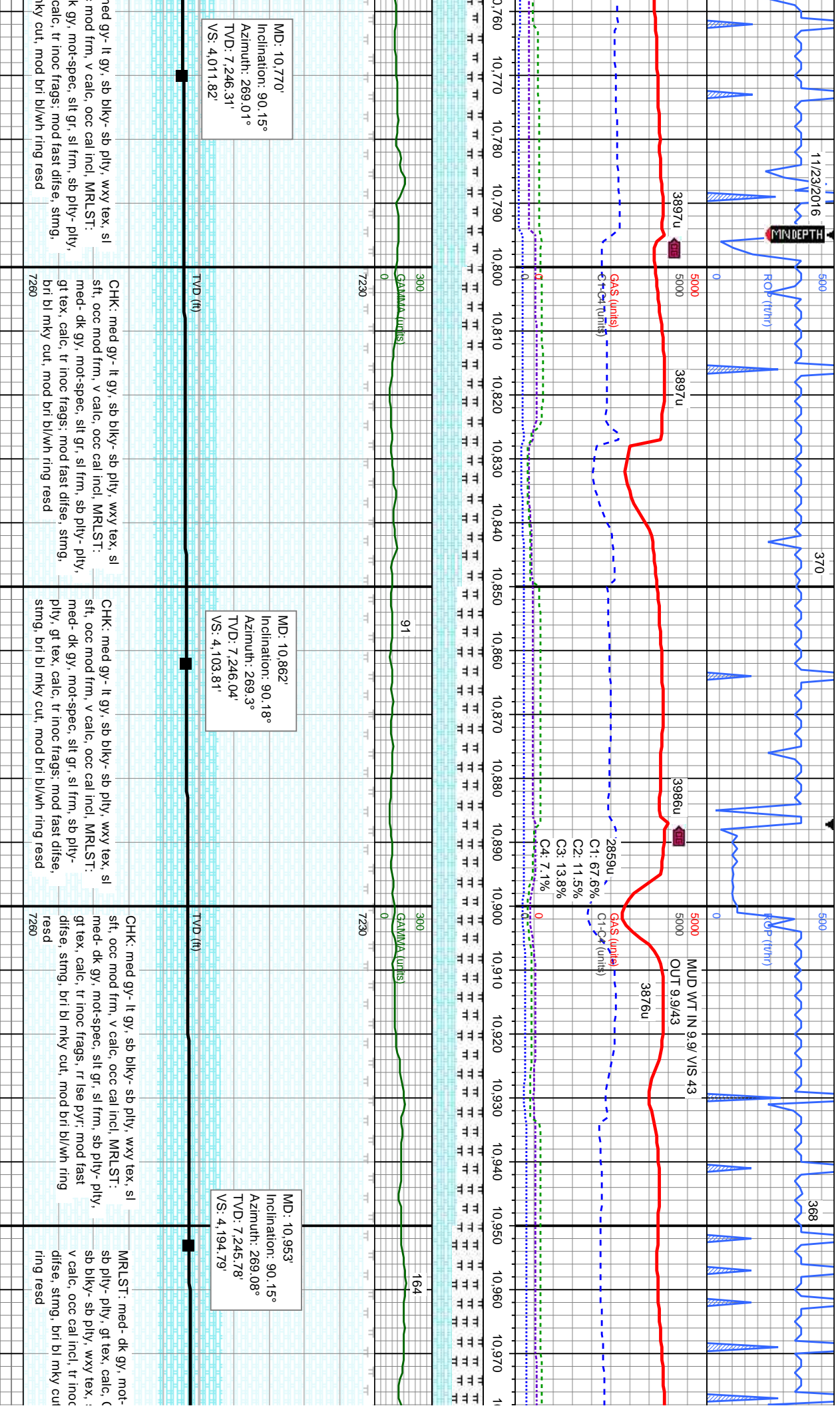
MD: 10,313'
Inclination: 90.12°
Azimuth: 268.81°
TVD: 7,246.81'
VS: 3,554.97'

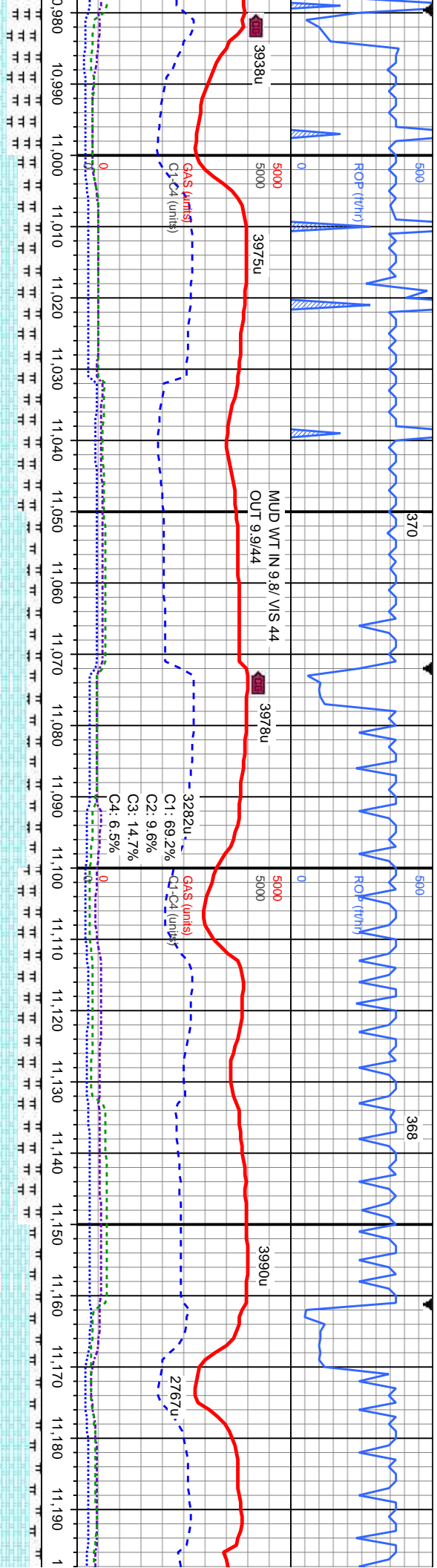
CHK: med gy- lt gy, sb blk- sb ply, wxy tex, sl
sft, occ mod frm, v calc, occ cal incl, MRLST:
med- dk gy, mot-spec, slt gr, sl frm, sb ply-
ply, gt tex, calc, tr inoc frags, tr bent; fast
difse, stmg, bri bl mky cut, bri bl/wh ring resd









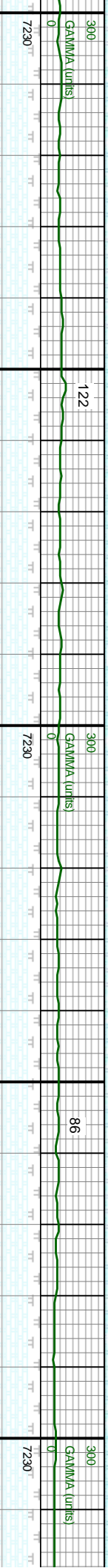
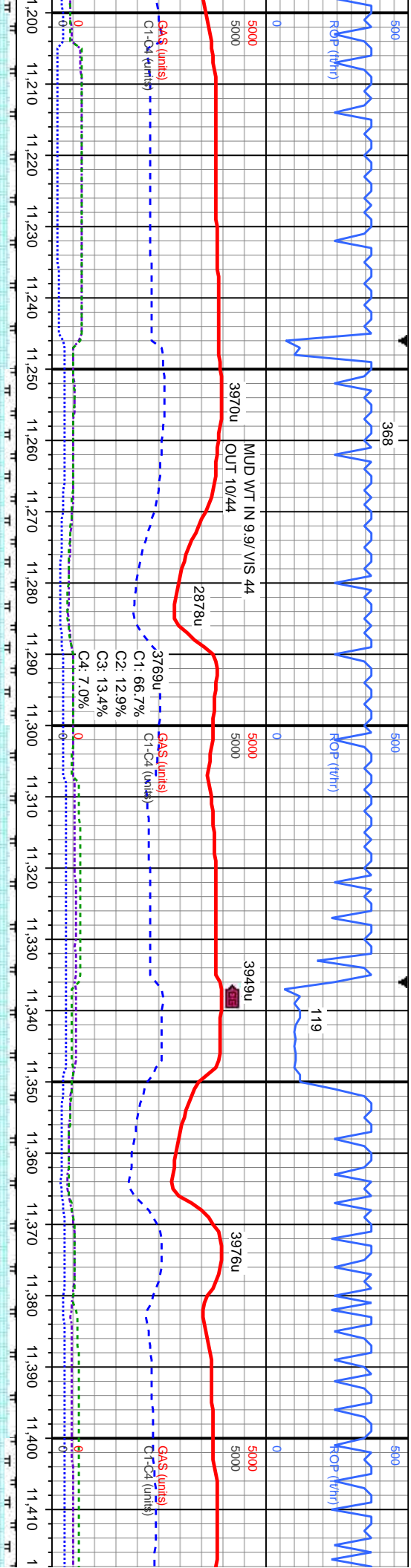


MD: 11,045'
Inclination: 90.15°
Azimuth: 269.11°
TVD: 7,245.54'
VS: 4,286.78'

MD: 11,134'
Inclination: 90.22°
Azimuth: 268.74°
TVD: 7,245.25'
VS: 4,375.77'

spec, silt gr, sl frm, blk: med gy- lt gy, silt, occ mod frm, v calc, occ cal incl, MRLST: med- dk gy, mot-spec, silt gr, sl frm, sb ply- ply, gt tex, calc, tr inoc frags, fast difse, stmg, bri bl mky cut, bri bl/wh ring resd	CHK: med gy- lt gy, sb blk- sb ply, wxy tex, silt, occ mod frm, v calc, occ cal incl, MRLST: med- dk gy, mot-spec, silt gr, sl frm, sb ply- ply, gt tex, calc, tr inoc frags, fast difse, stmg, bri bl mky cut, bri bl/wh ring resd	CHK: med gy- lt gy, sb blk- sb ply, wxy tex, silt, occ mod frm, v calc, occ cal incl, MRLST: med- dk gy, mot-spec, silt gr, sl frm, sb ply- ply, gt tex, calc, tr inoc frags, fast difse, stmg, bri bl mky cut, bri bl/wh ring resd	CHK: med gy- lt gy, sb blk- sb ply, wxy tex, silt, occ mod frm, v calc, occ cal incl, MRLST: med- dk gy, mot-spec, silt gr, sl frm, sb ply- ply, gt tex, calc, tr inoc frags, fast difse, stmg, bri bl mky cut, bri bl/wh ring resd
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MD: 11,223'
Inclination: 90.06°
Azimuth: 268.46°
TVD: 7,245.04'
VS: 4,464.77'

CHK: med gy- lt gy, sb blk- sb ply, wxy tex, sl sft, occ mod frm, v calc, occ cal incl, MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb ply- ply, gt tex, calc, tr inoc frags, fast difse, stmg, bri bl mky cut, bri bl/wh ring read

CHK: med gy- lt gy, sb blk- sb ply, wxy tex, sl sft, occ mod frm, v calc, occ cal incl, MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb ply- ply, gt tex, calc, tr inoc frags, fast difse, stmg, bri bl mky cut, bri bl/wh ring read

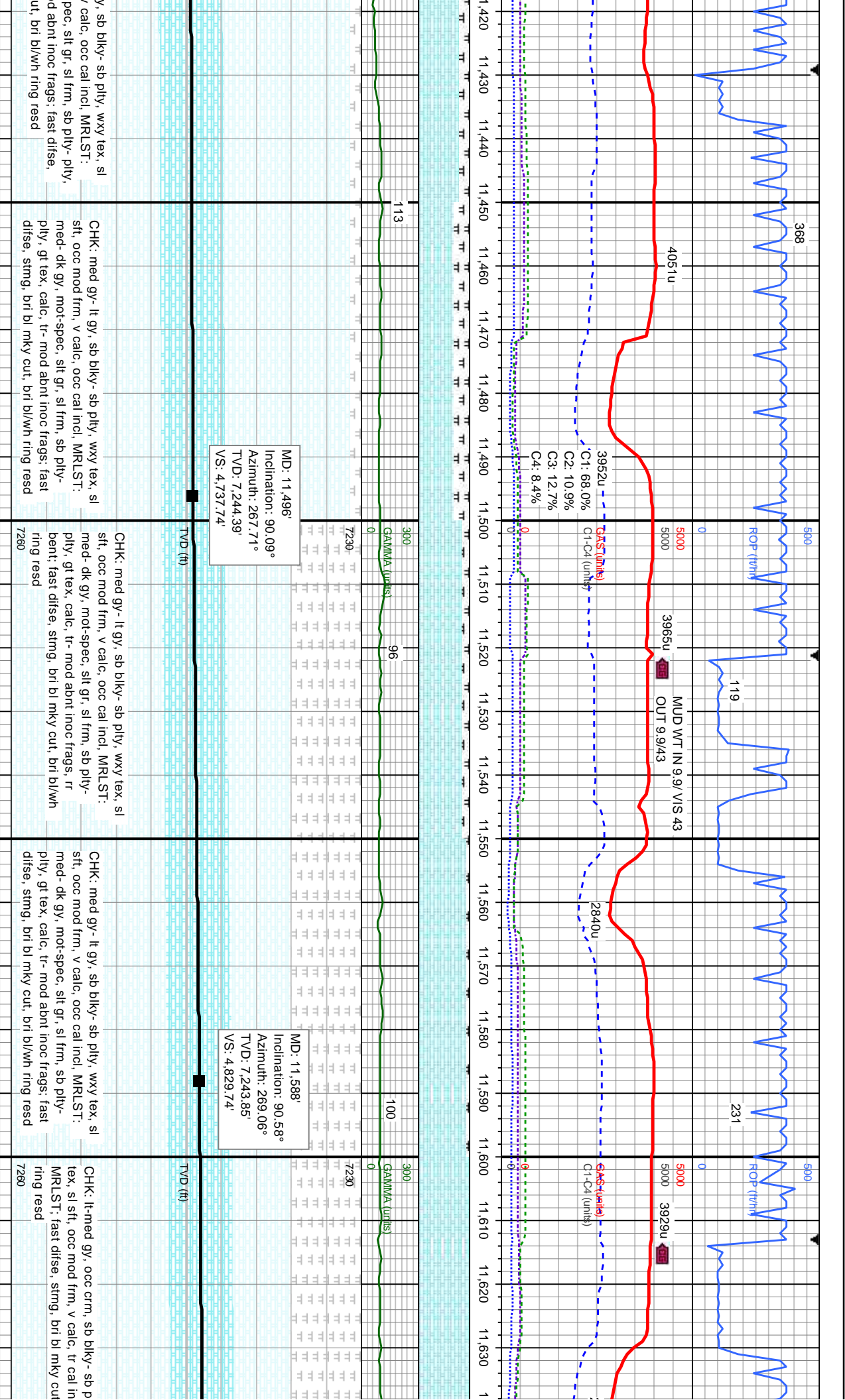
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CHK: med gy- lt gy, sb blk- sb ply, wxy tex, sl sft, occ mod frm, v calc, occ cal incl, MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb ply- ply, gt tex, calc, tr- mod abnt inoc frags, fast difse, stmg, bri bl mky cut, bri bl/wh ring read

MD: 11,313'
Inclination: 90.15°
Azimuth: 269°
TVD: 7,244.87'
VS: 4,554.76'

MD: 11,404'
Inclination: 90.18°
Azimuth: 269.24°
TVD: 7,244.61'
VS: 4,645.75'





Y, sb blkly- sb ply, wxy tex, sl
calc, occ cal incl, MRLST:
pec, slt gr, sl frm, sb ply- ply,
d abnt inoc frags: fast difse,
ut, bri bl/wh ring resd

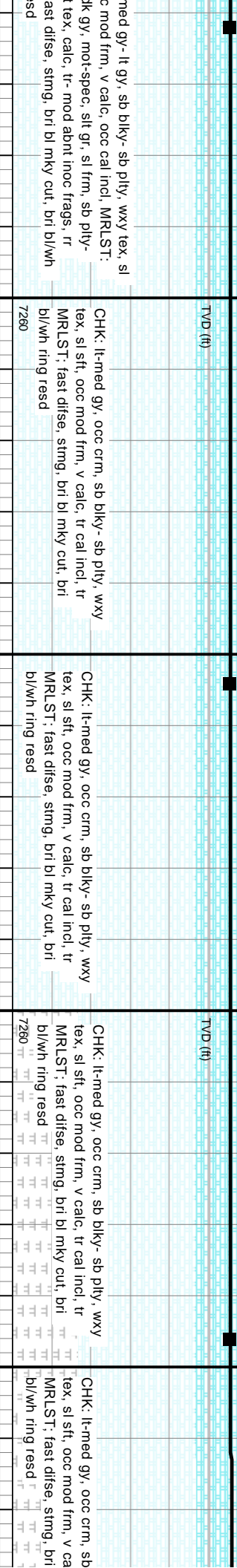
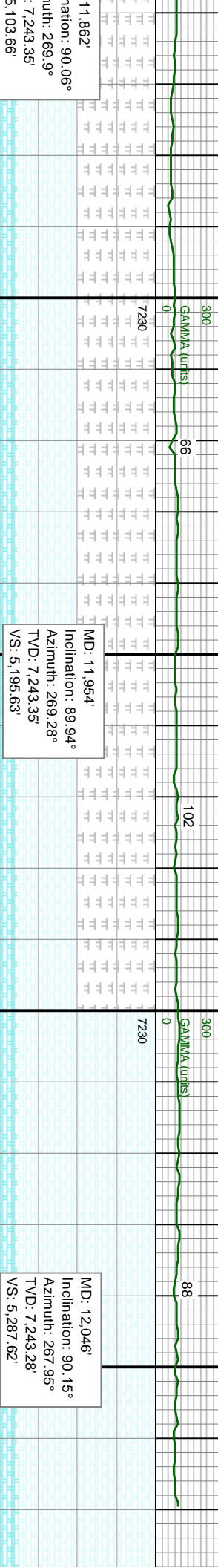
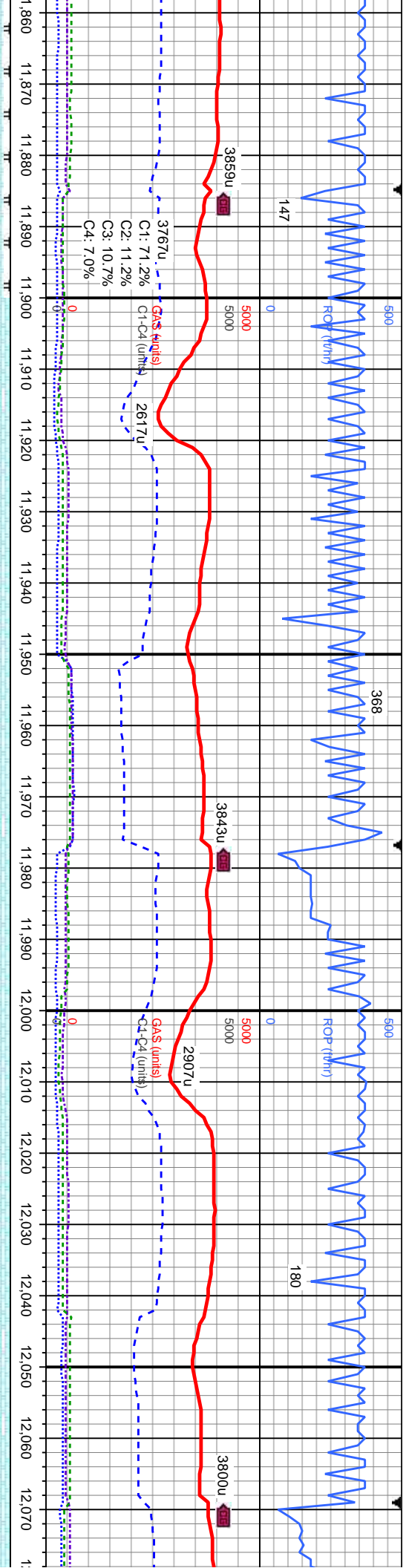
CHK: med gy- lt gy, sb blkly- sb ply, wxy tex, sl
sft, occ mod frm, v calc, occ cal incl, MRLST:
med- dk gy, mot-spec, slt gr, sl frm, sb ply-
ply, gt tex, calc, tr- mod abnt inoc frags: fast
difse, sting, bri bl mky cut, bri bl/wh ring resd

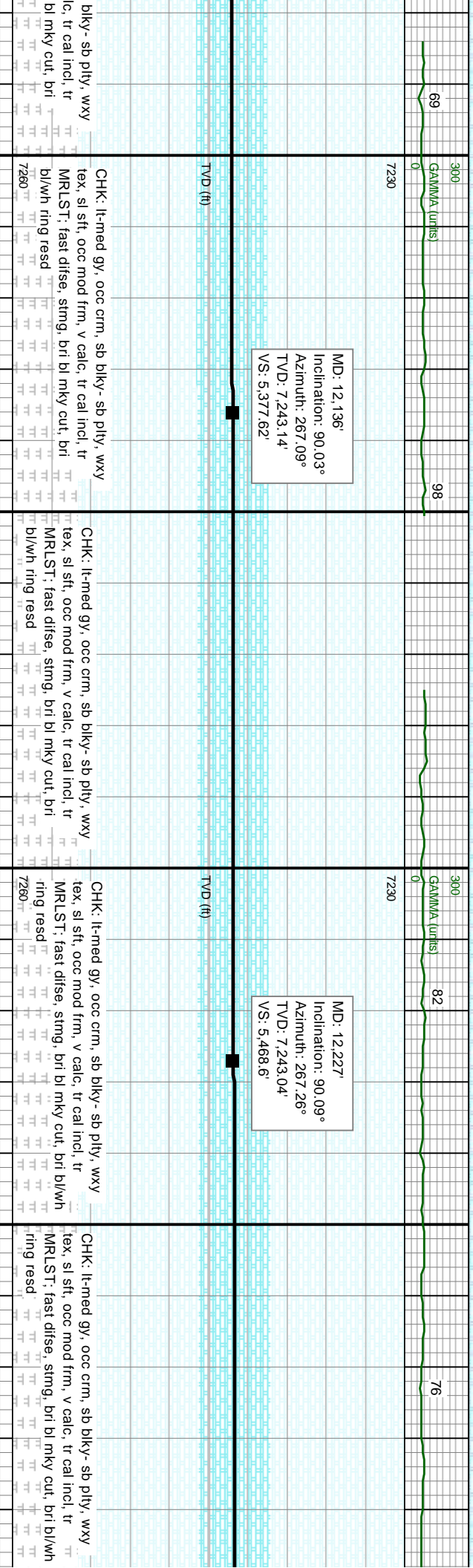
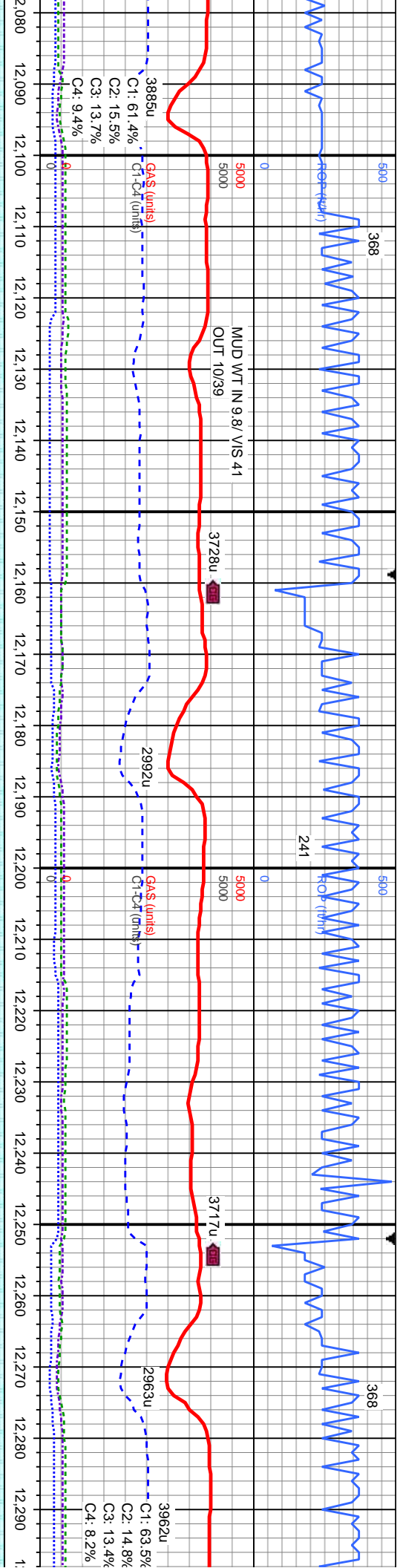
CHK: med gy- lt gy, sb blkly- sb ply, wxy tex, sl
sft, occ mod frm, v calc, occ cal incl, MRLST:
med- dk gy, mot-spec, slt gr, sl frm, sb ply-
ply, gt tex, calc, tr- mod abnt inoc frags: r
bent; fast difse, sting, bri bl mky cut, bri bl/wh
ring resd

CHK: med gy- lt gy, sb blkly- sb ply, wxy tex, sl
sft, occ mod frm, v calc, occ cal incl, MRLST:
med- dk gy, mot-spec, slt gr, sl frm, sb ply-
ply, gt tex, calc, tr- mod abnt inoc frags: fast
difse, sting, bri bl mky cut, bri bl/wh ring resd

CHK: lt-med gy, occ crm, sb blkly- sb p
tex, sl sft, occ mod frm, v calc, tr cal in
MRLST: fast difse, sting, bri bl mky cut
ring resd







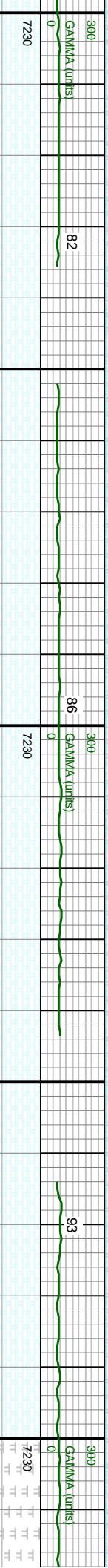
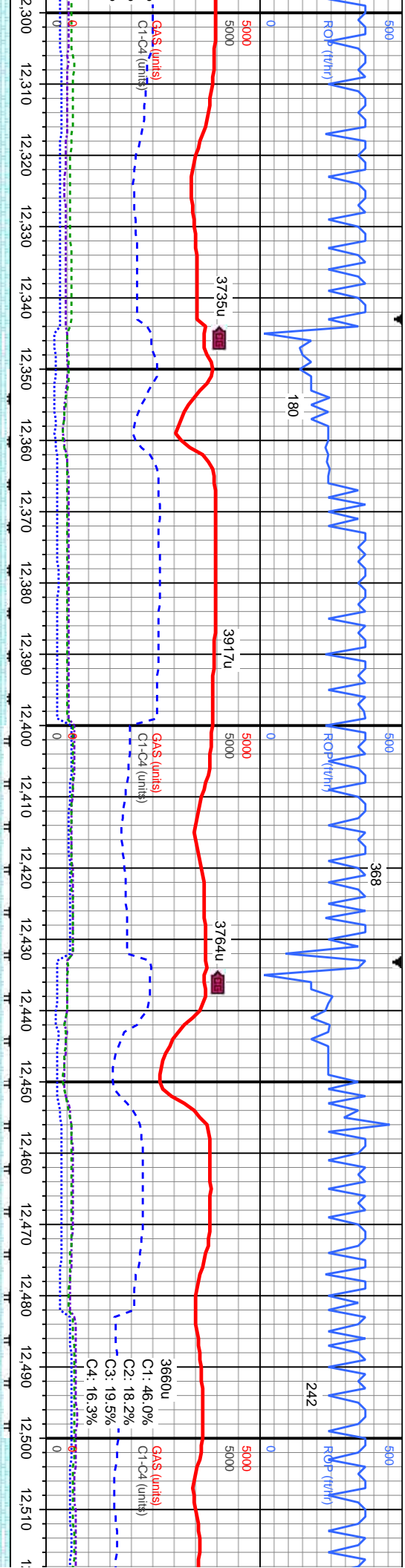
CHK: lt-med gy, occ crm, sb blk- sb ply, wxy
tex, sl sft, occ mod frm, v calc, tr cal incl, tr
MRLST: fast difse, stmg, bri bl mky cut, bri
bl/wh ring reed

CHK: lt-med gy, occ crm, sb blk- sb ply, wxy
tex, sl sft, occ mod frm, v calc, tr cal incl, tr
MRLST: fast difse, stmg, bri bl mky cut, bri
bl/wh ring reed

CHK: lt-med gy, occ crm, sb blk- sb ply, wxy
tex, sl sft, occ mod frm, v calc, tr cal incl, tr
MRLST: fast difse, stmg, bri bl mky cut, bri
bl/wh ring reed

CHK: lt-med gy, occ crm, sb blk- sb ply, wxy
tex, sl sft, occ mod frm, v calc, tr cal incl, tr
MRLST: fast difse, stmg, bri bl mky cut, bri
bl/wh ring reed





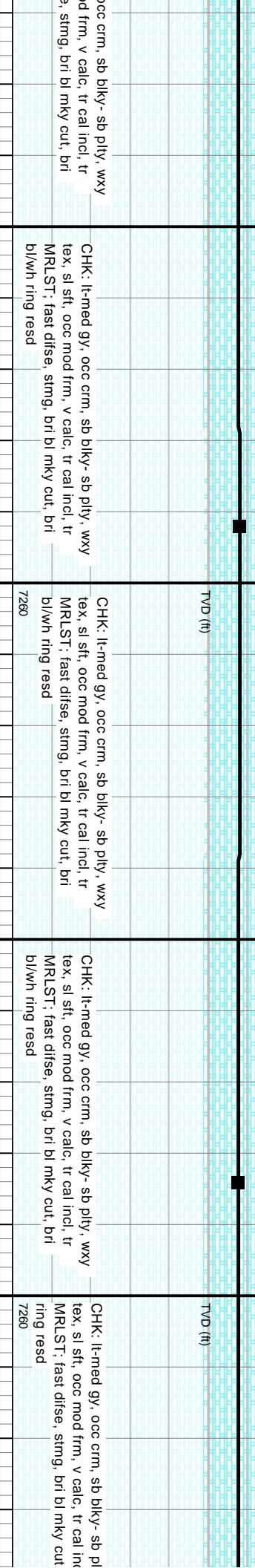
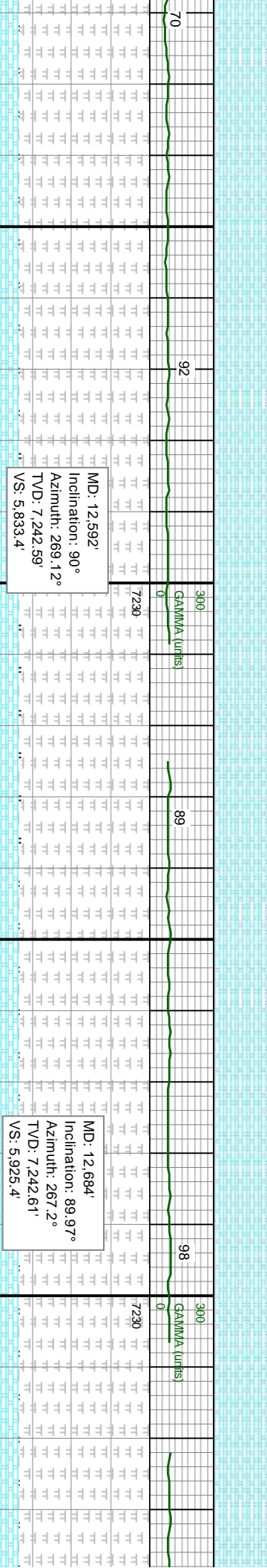
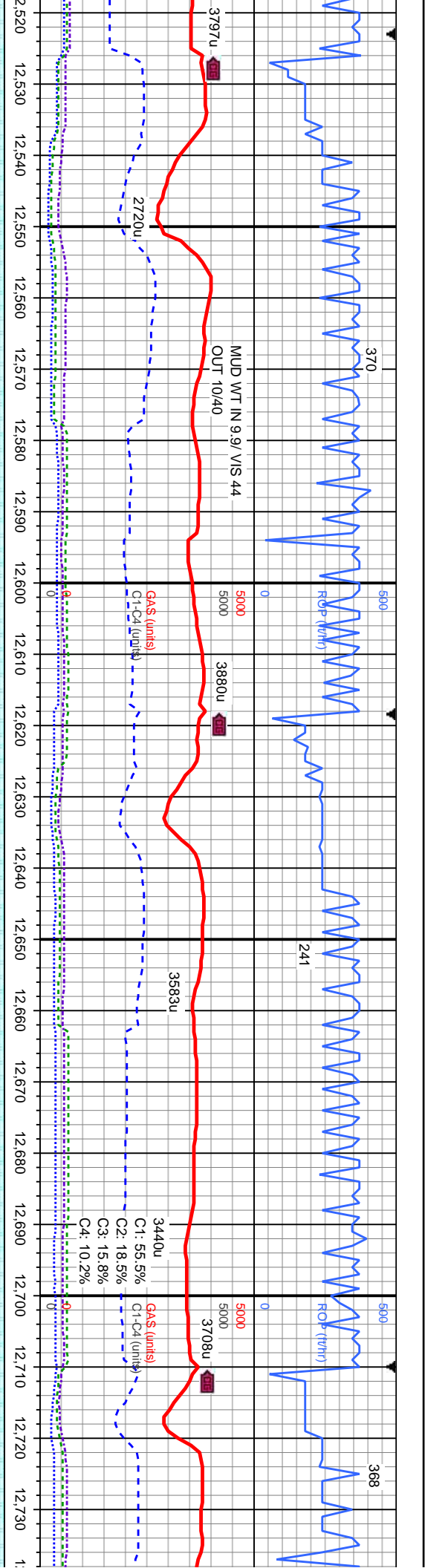
MD: 12,319'
Inclination: 90.06°
Azimuth: 269.51°
TVD: 7,242.92'
VS: 5,560.6'

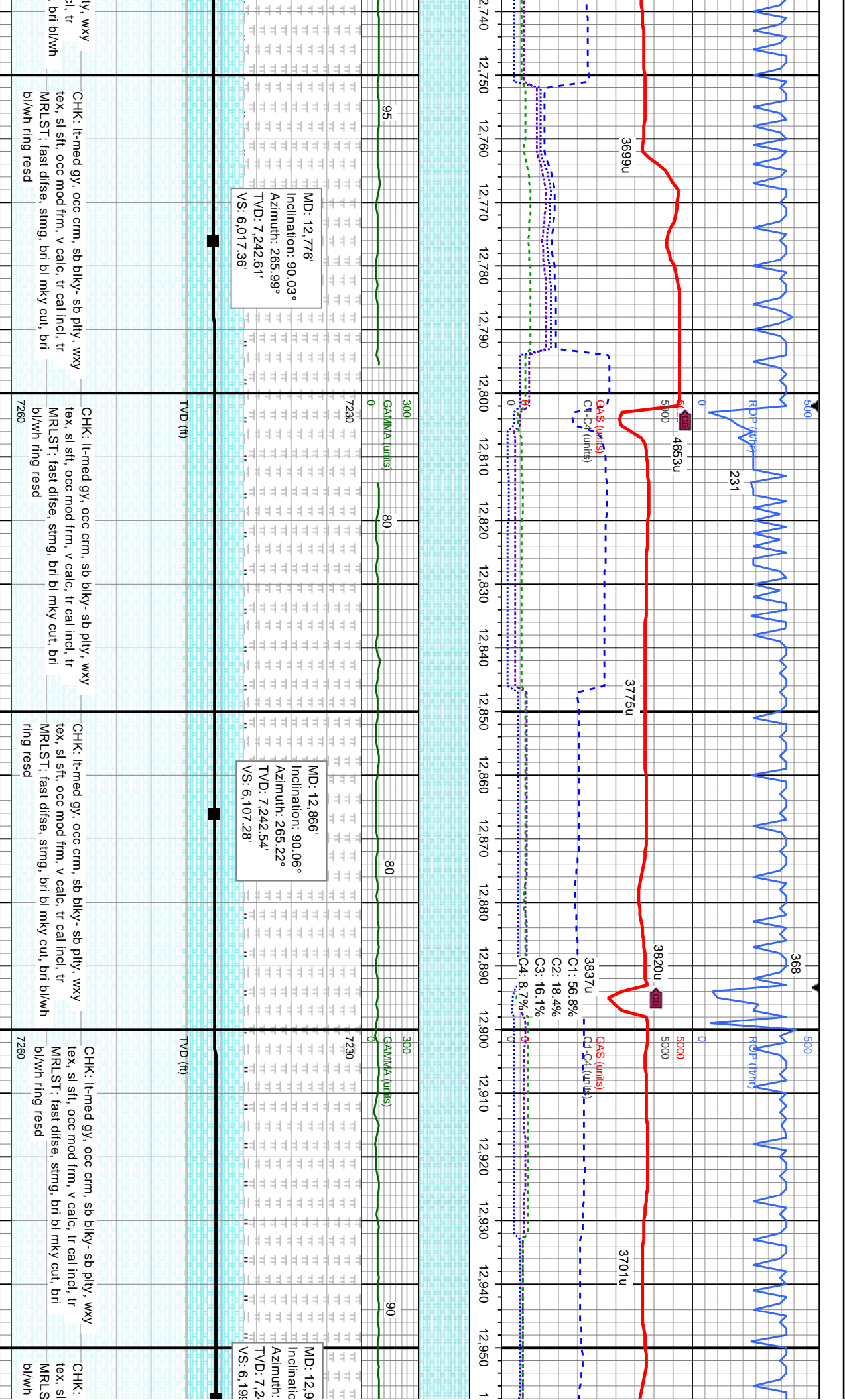
MD: 12,410'
Inclination: 90.09°
Azimuth: 271.19°
TVD: 7,242.8'
VS: 5,651.52'

MD: 12,500'
Inclination: 90.09°
Azimuth: 270.15°
TVD: 7,242.66'
VS: 5,741.44'

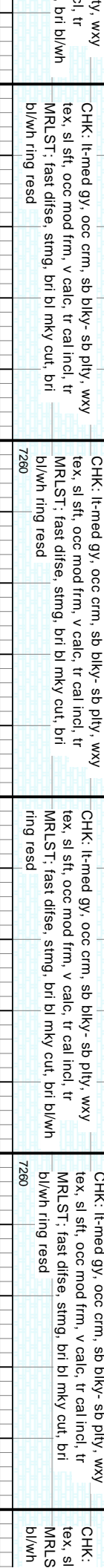
TVD (ft)		TVD (ft)		TVD (ft)	
7230	7260	7230	7260	7230	7260
CHK: lt-med gy, occ crm, sb blk- sb pily, wxy	CHK: lt-med gy, occ crm, sb blk- sb pily, wxy	CHK: lt-med gy, occ crm, sb blk- sb pily, wxy	CHK: lt-med gy, occ crm, sb blk- sb pily, wxy	CHK: lt-med gy, occ crm, sb blk- sb pily, wxy	CHK: lt-med gy, occ crm, sb blk- sb pily, wxy
tex, sl sft, occ mod frm, v calc, tr cal incl, tr	tex, sl sft, occ mod frm, v calc, tr cal incl, tr	tex, sl sft, occ mod frm, v calc, tr cal incl, tr	tex, sl sft, occ mod frm, v calc, tr cal incl, tr	tex, sl sft, occ mod frm, v calc, tr cal incl, tr	tex, sl sft, occ mod frm, v calc, tr cal incl, tr
MRLST: fast disce, stimg, bri bl mky cut, bri	MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb	MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb	MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb	MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb	MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb
ply- pily, gt tex, calc, tr- mod abnt inoc frags,	ply- pily, gt tex, calc, tr- mod abnt inoc frags,	ply- pily, gt tex, calc, tr- mod abnt inoc frags,	ply- pily, gt tex, calc, tr- mod abnt inoc frags,	ply- pily, gt tex, calc, tr- mod abnt inoc frags,	ply- pily, gt tex, calc, tr- mod abnt inoc frags,
fast difse, stimg, bri bl mky cut, bri bl/wh ring	fast difse, stimg, bri bl mky cut, bri bl/wh ring	fast difse, stimg, bri bl mky cut, bri bl/wh ring	fast difse, stimg, bri bl mky cut, bri bl/wh ring	fast difse, stimg, bri bl mky cut, bri bl/wh ring	fast difse, stimg, bri bl mky cut, bri bl/wh ring
resd	resd	resd	resd	resd	resd

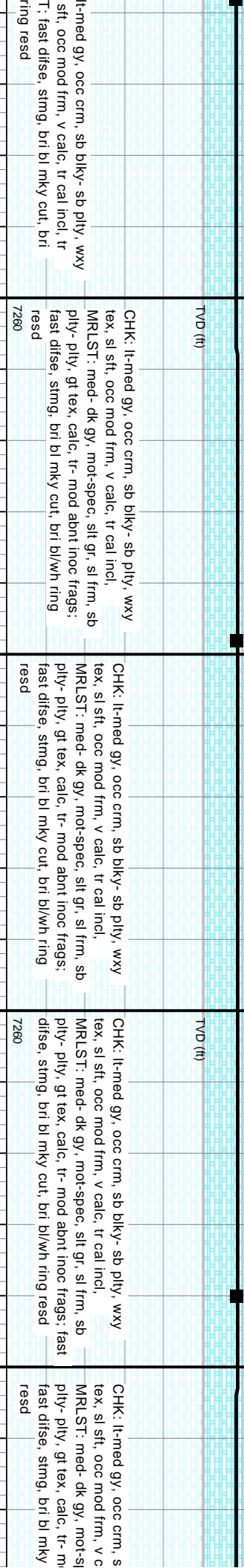
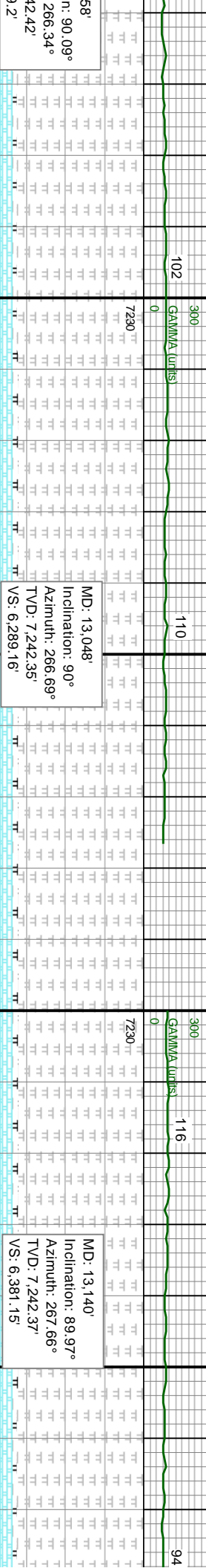
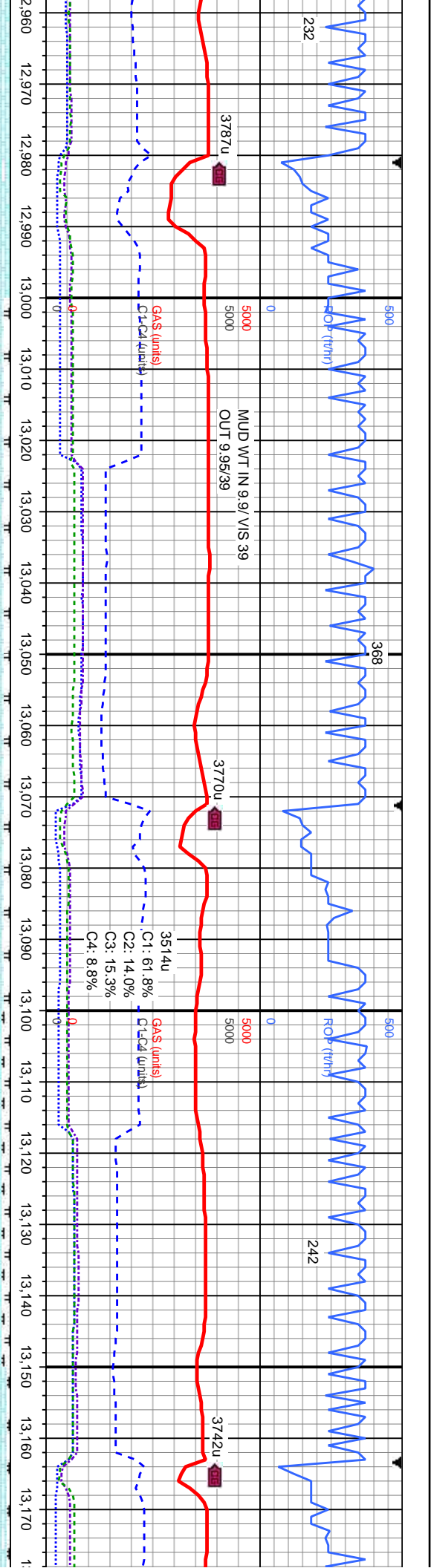


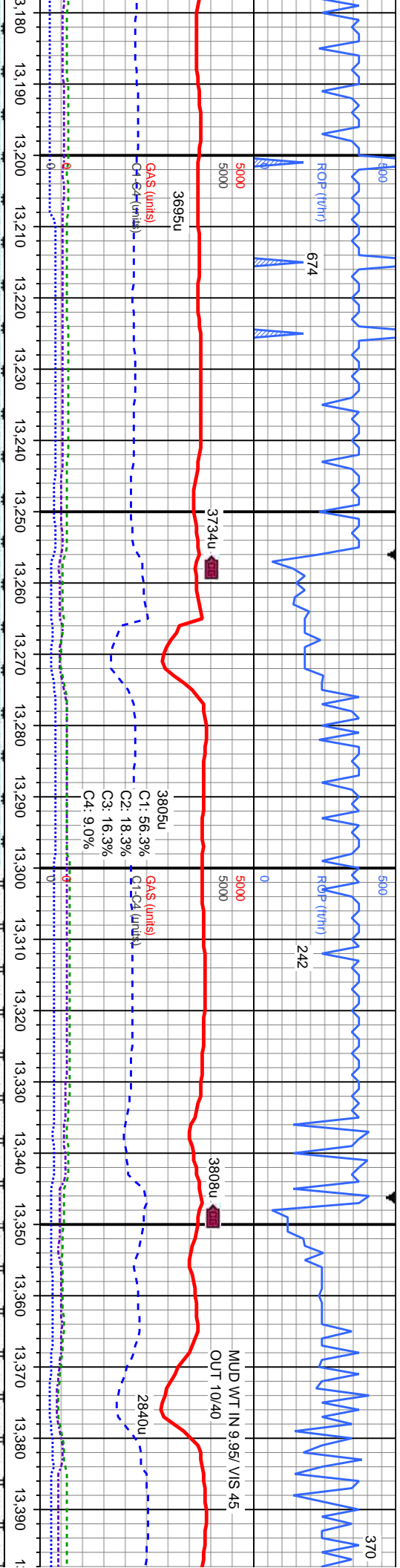




ly, wxy	CHK: lt-med gy, occ crm, sb blk- sb ply, wxy	CHK: lt-med gy, occ crm, sb blk- sb ply, wxy	CHK: lt-med gy, occ crm, sb blk- sb ply, wxy
bl, tr	tex, sl sft, occ mod frm, v calc, tr cal incl, tr	tex, sl sft, occ mod frm, v calc, tr cal incl, tr	tex, sl sft, occ mod frm, v calc, tr cal incl, tr
bri bl/wh	MRLST: fast difse, sting, bri bl mky cut, bri	MRLST: fast difse, sting, bri bl mky cut, bri	MRLST: fast difse, sting, bri bl mky cut, bri
	b/wh ring resd	b/wh ring resd	b/wh ring resd

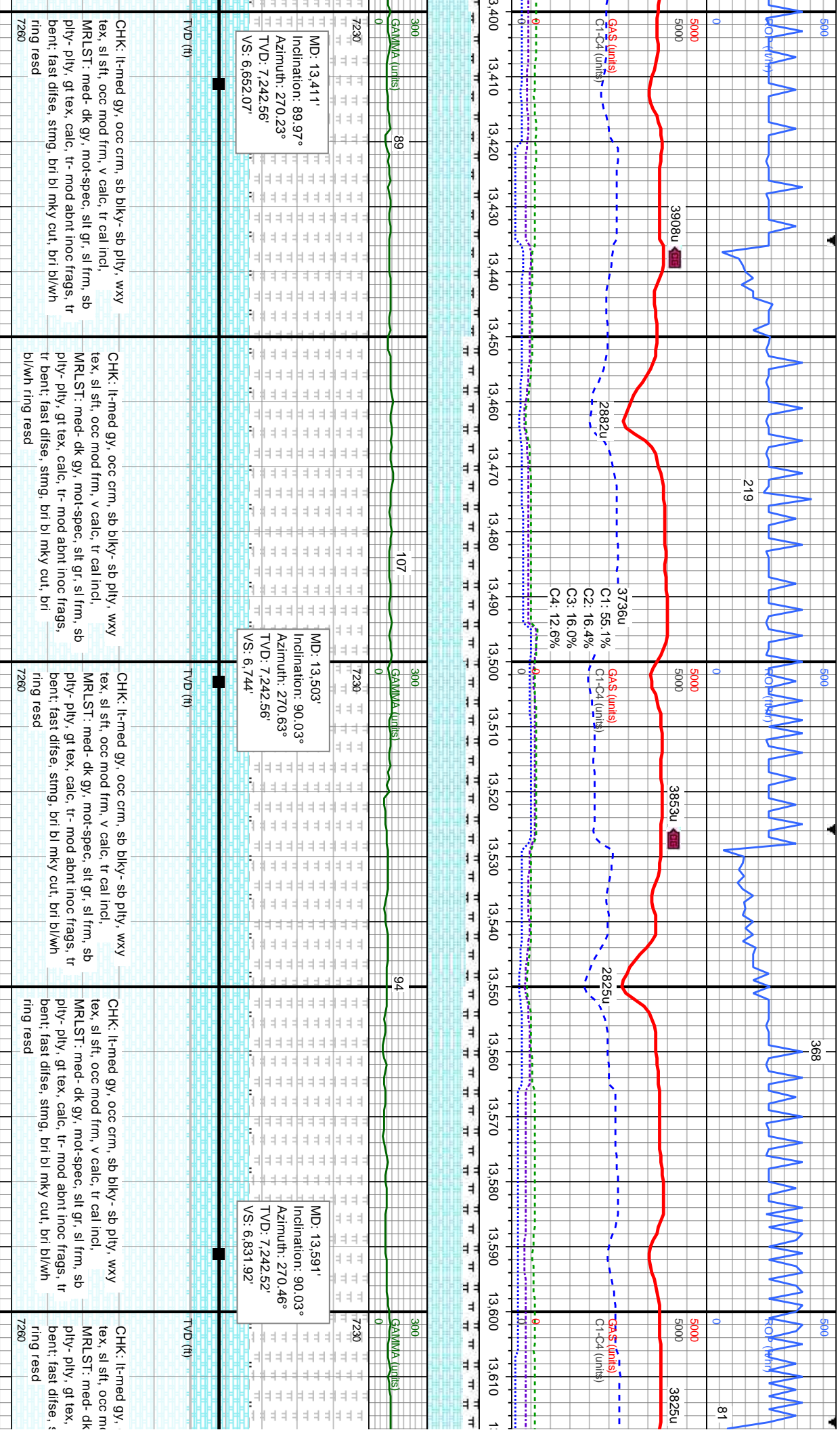


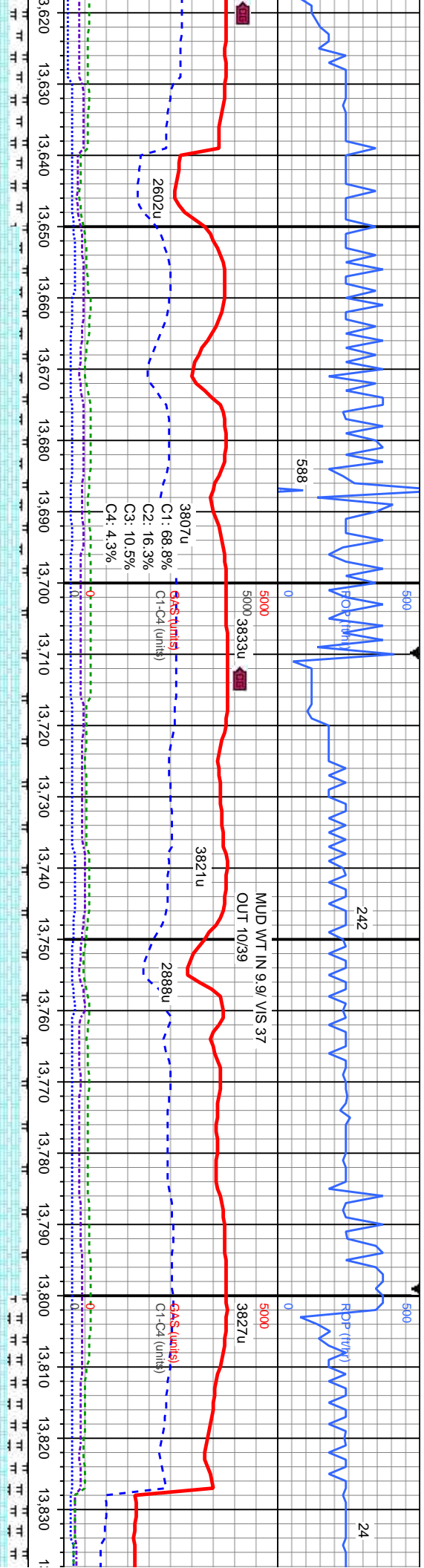




300	300	300	300
GAMMA (units)	GAMMA (units)	GAMMA (units)	GAMMA (units)
0	0	0	0
7230	7230	7230	7230
106	115	118	
MD: 13,232'	MD: 13,322'	MD: 13,322'	
Inclination: 89.94°	Inclination: 89.97°	Inclination: 89.97°	
Azimuth: 268.9°	Azimuth: 269.84°	Azimuth: 269.84°	
TVD: 7,242.45'	TVD: 7,242.52'	TVD: 7,242.52'	
VS: 6.473.14'	VS: 6.563.12'	VS: 6.563.12'	
CHK: lt-med gy, occ crm, sb blk- sb pily, wxy	CHK: lt-med gy, occ crm, sb blk- sb pily, wxy	CHK: lt-med gy, occ crm, sb blk- sb pily, wxy	
tex, sl sft, occ mod frm, v calc, tr cal incl,	tex, sl sft, occ mod frm, v calc, tr cal incl,	tex, sl sft, occ mod frm, v calc, tr cal incl,	
MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb	MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb	MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb	
pily- pily, gt tex, calc, tr- mod abnt inoc frags,	pily- pily, gt tex, calc, tr- mod abnt inoc frags, r	pily- pily, gt tex, calc, tr- mod abnt inoc frags, r	
fast dfise, sting, bri bl mky cut, bri bl/wh ring	bent; fast dfise, sting, bri bl mky cut, bri bl/wh	bent; fast dfise, sting, bri bl mky cut, bri bl/wh	
ring resd	ring resd	ring resd	
7260	7260	7260	





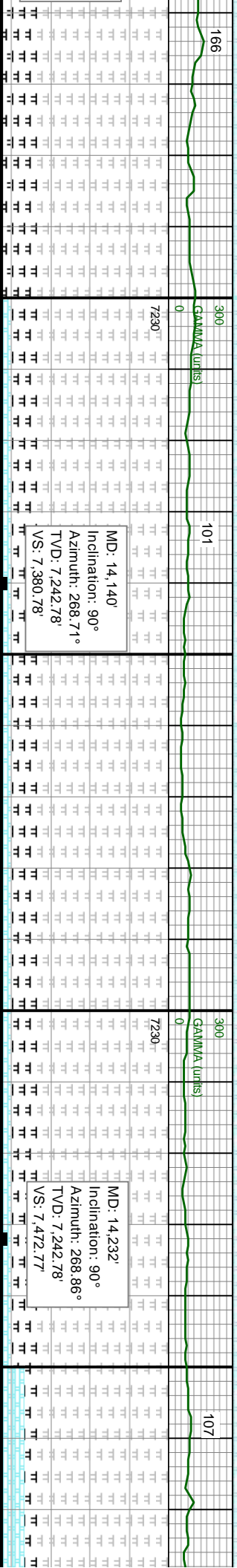
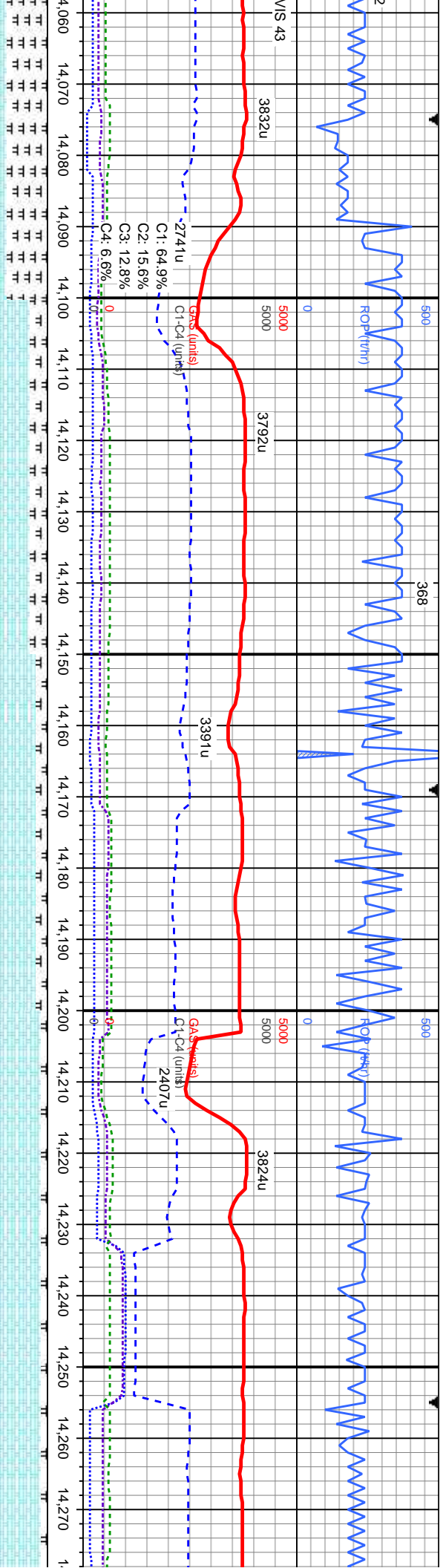


MD: 13,683'
Inclination: 89.94°
Azimuth: 270.17°
TVD: 7,242.54'
VS: 6,923.85'

MD: 13,775'
Inclination: 90°
Azimuth: 269.66°
TVD: 7,242.59'
VS: 7,015.81'

occ crm, sb blk- sb ply, wxy	CHK: lt-med gy, occ crm, sb blk- sb ply, wxy	CHK: lt-med gy, occ crm, sb blk- sb ply, wxy	CHK: lt-med gy, occ crm, sb blk- sb ply, wxy
od frm, v calc, tr cal incl,	tex, sl sft, occ mod frm, v calc, tr cal incl,	tex, sl sft, occ mod frm, v calc, tr cal incl,	tex, sl sft, occ mod frm, v calc, tr cal incl,
gy, mot-spec, slt gr, sl frm, sb	MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb	MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb	MRLST: med- dk gy, mot-spec, slt gr, sl frm, sb
calc, tr- mod abnt inoc frags, tr	ply- ply, gt tex, calc, tr- mod abnt inoc frags, rr	ply- ply, gt tex, calc, tr- mod abnt inoc frags, rr	ply- ply, gt tex, calc, tr- mod abnt inoc frags, rr
batng, bri bl mky cut, bri bl/w	bent; fast difse, sting, bri bl mky cut, bri	bent; fast difse, sting, bri bl mky cut, bri	bent; fast difse, sting, bri bl mky cut, bri
	ring resd	ring resd	ring resd
	7260	7260	7260





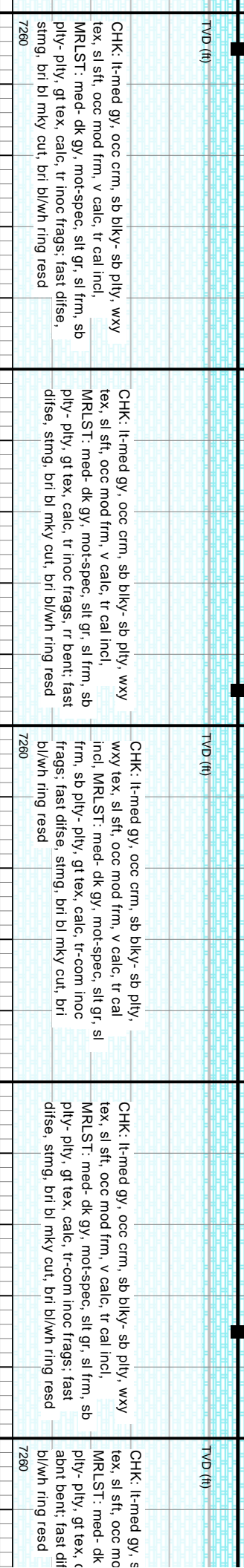
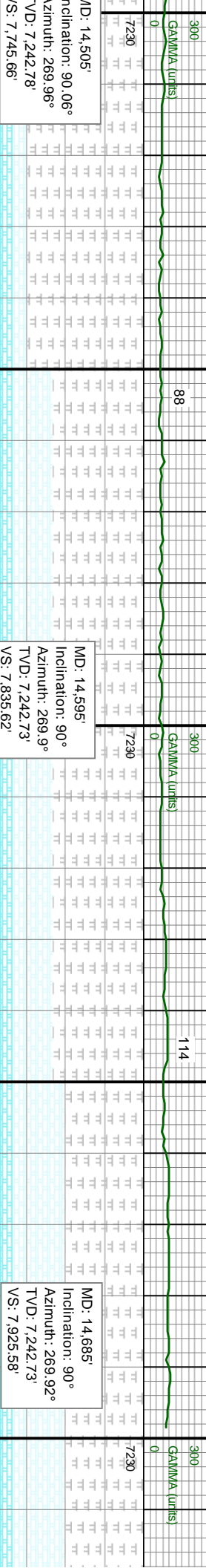
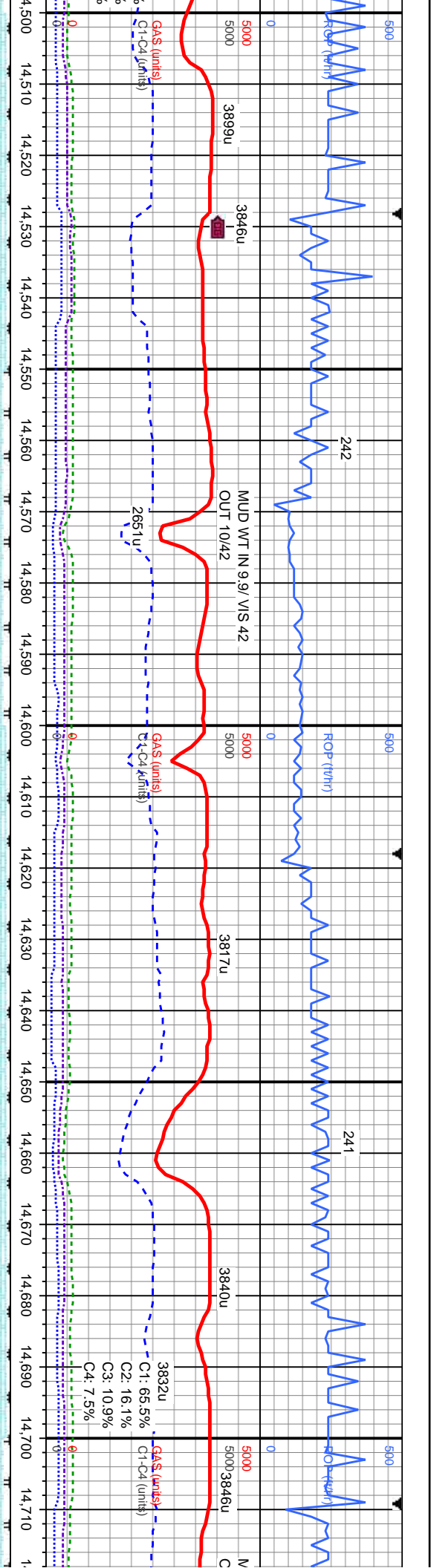
med-dk gy, mot-spec, slt gr, sl frm, sb
 gy, gt tex, calc, CHK: lt-med gy, sb blk, y
 tex, sl sft, occ mod frm, v calc, tr cal
 frags, mod fast dise, strng, bri bl
 t, mod bri bl/wth ring resd

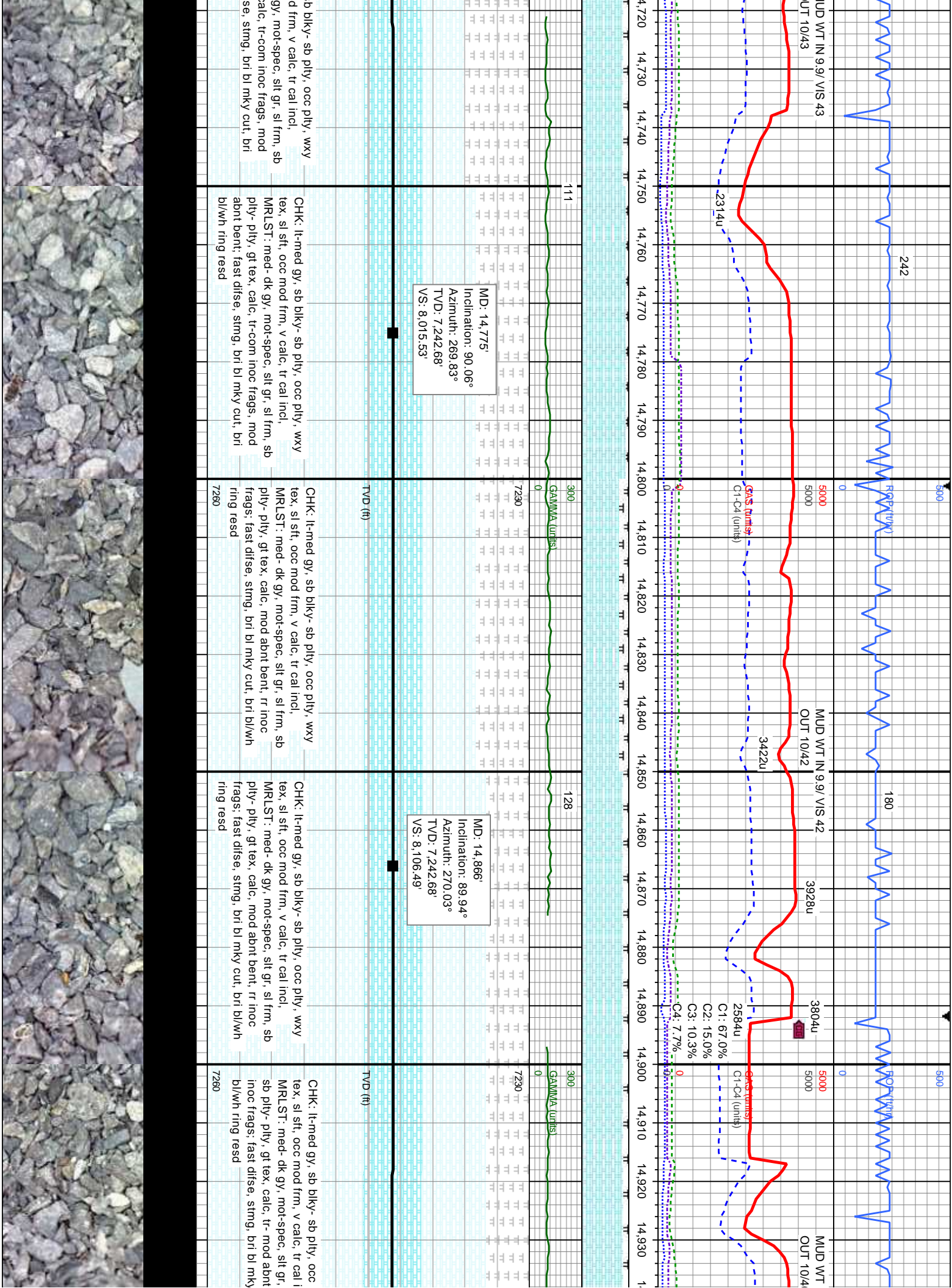
CHK: lt-med gy, occ cm, sb biky- sb ply, wxy
tex, sl sft, occ mod frm, v calc, tr cal incl,
MRLST: med- cd gy, mot-spec, sit gr, sl frm, sb
ply- ply, gt tex, calc, tr- mod abnt inoc frags,
rr bent, fast dlse, stmg, bri bl mky cut, bri
bl/wb ring read

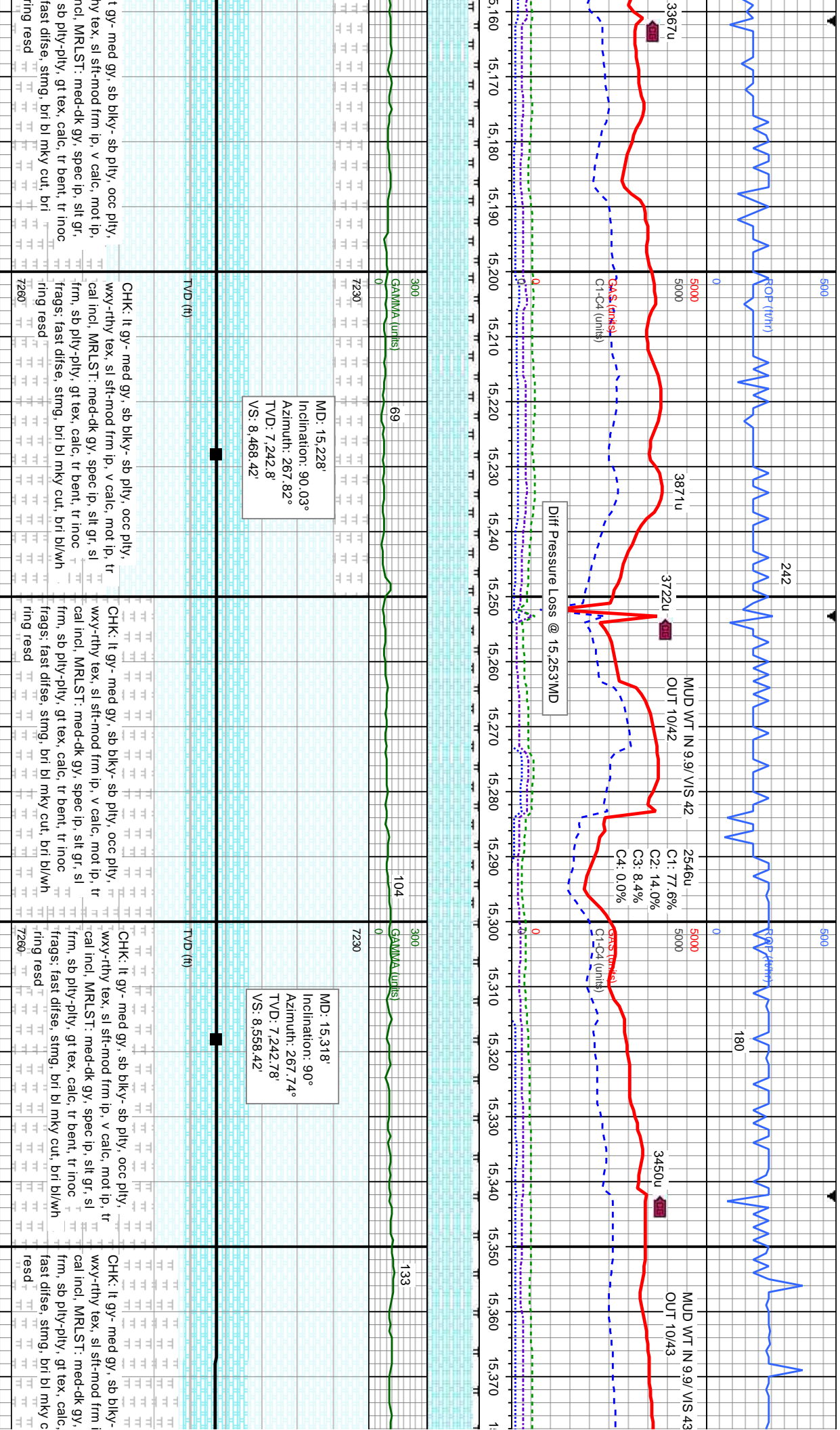
CHK: It-med gy, ooc crm, sb biky- sb ply, wxy
tex, sl sft, ooc mod frm, v calc, 'r cal incl,
MR1ST: med- dk gy, mod-spec, slt grt sl frm, sl
ply- ply, qf tex, calc, tr- mod abnt inoc frags,
r bent; fast difse, stimg, bri bl mky cut, bri
bl/wth ring read

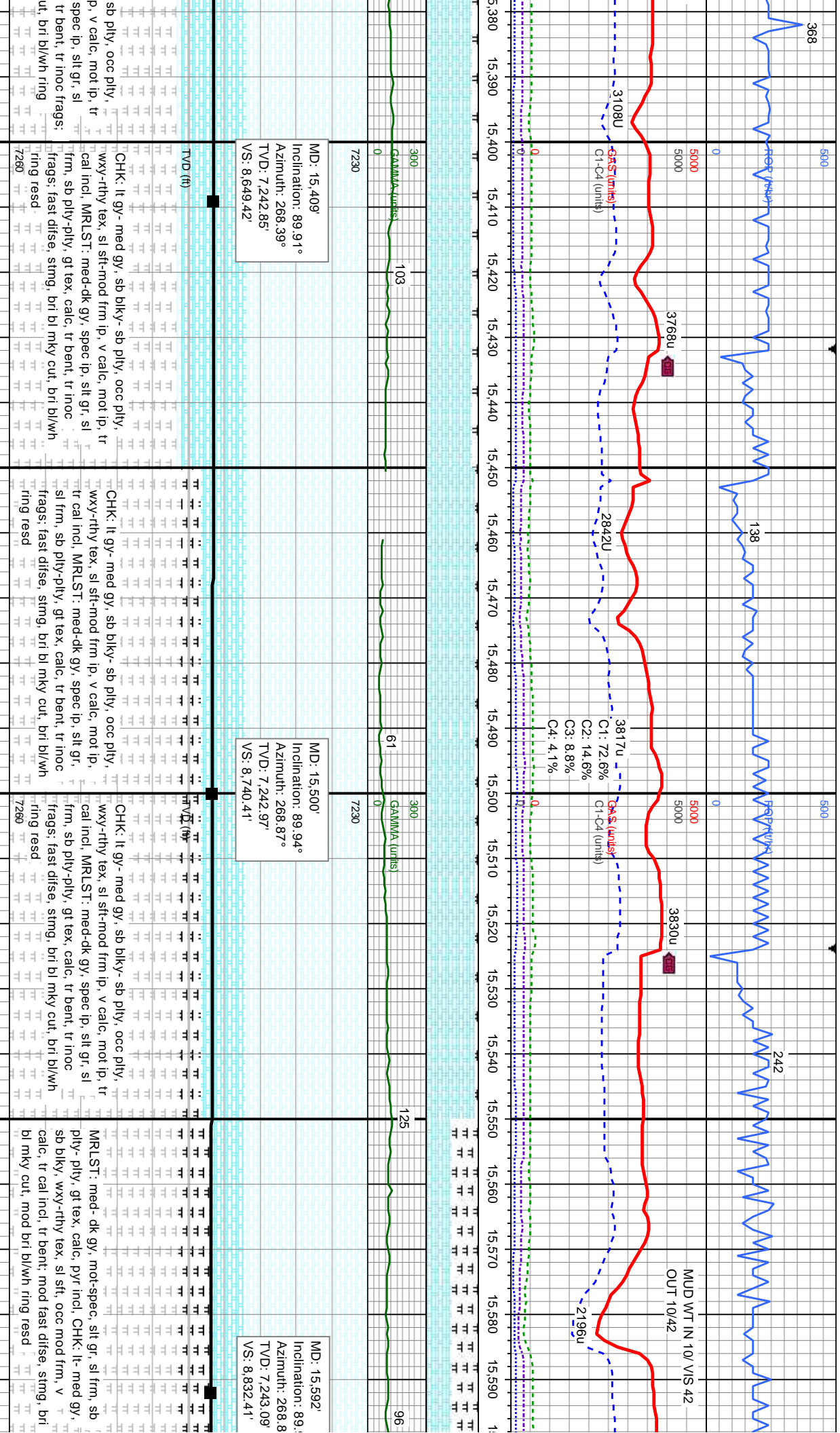
CHK: lt-med gy, occ crm, sb blk/- sb ply, wxy
tex, sl sft, occ mod frm, v calc, tr cal incl,
MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb
ply- ply, gt tex, calc, tr inoc frags, rr bent; fast
dise, stmg, bri bl mky cut, bri bl/wh ring resd

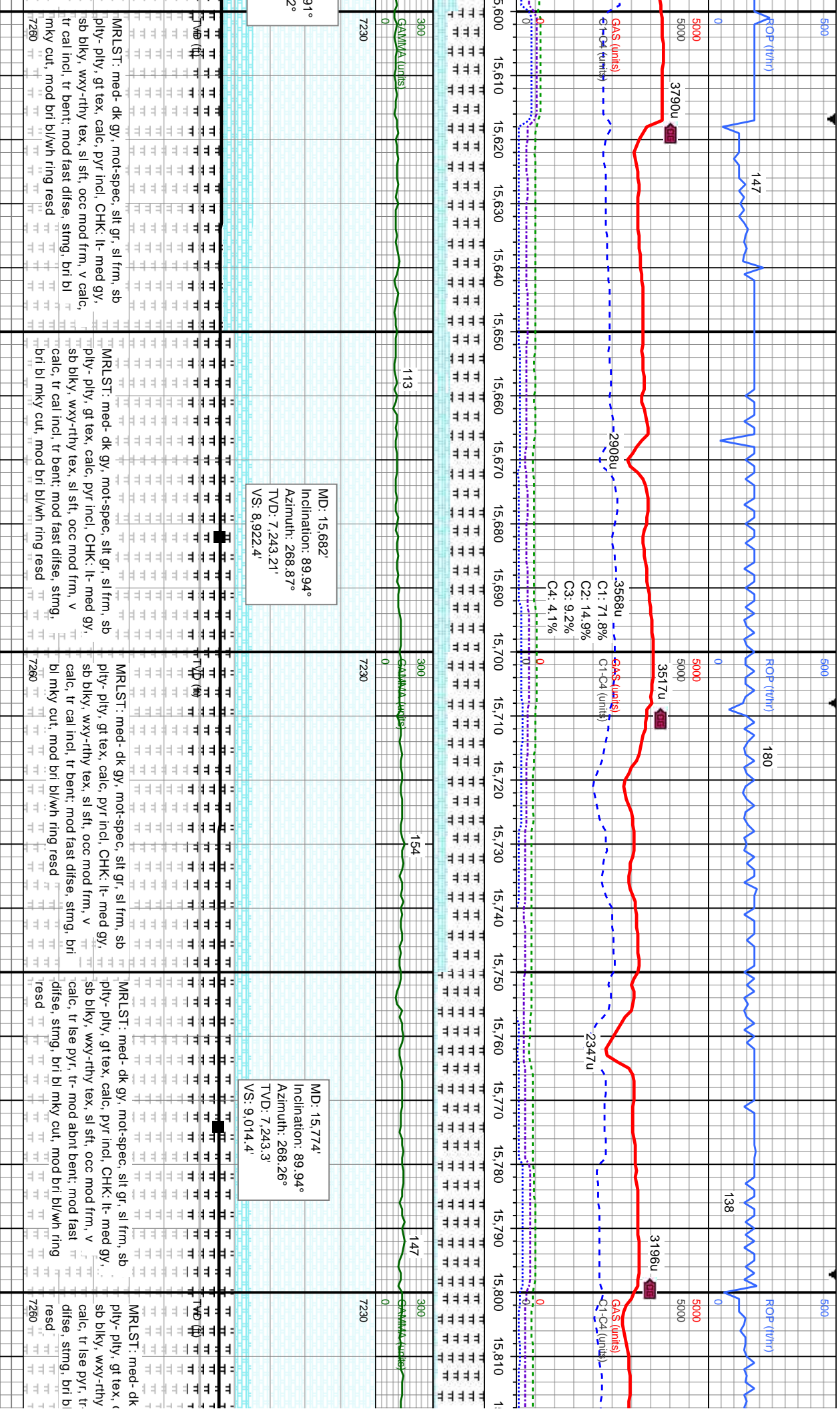


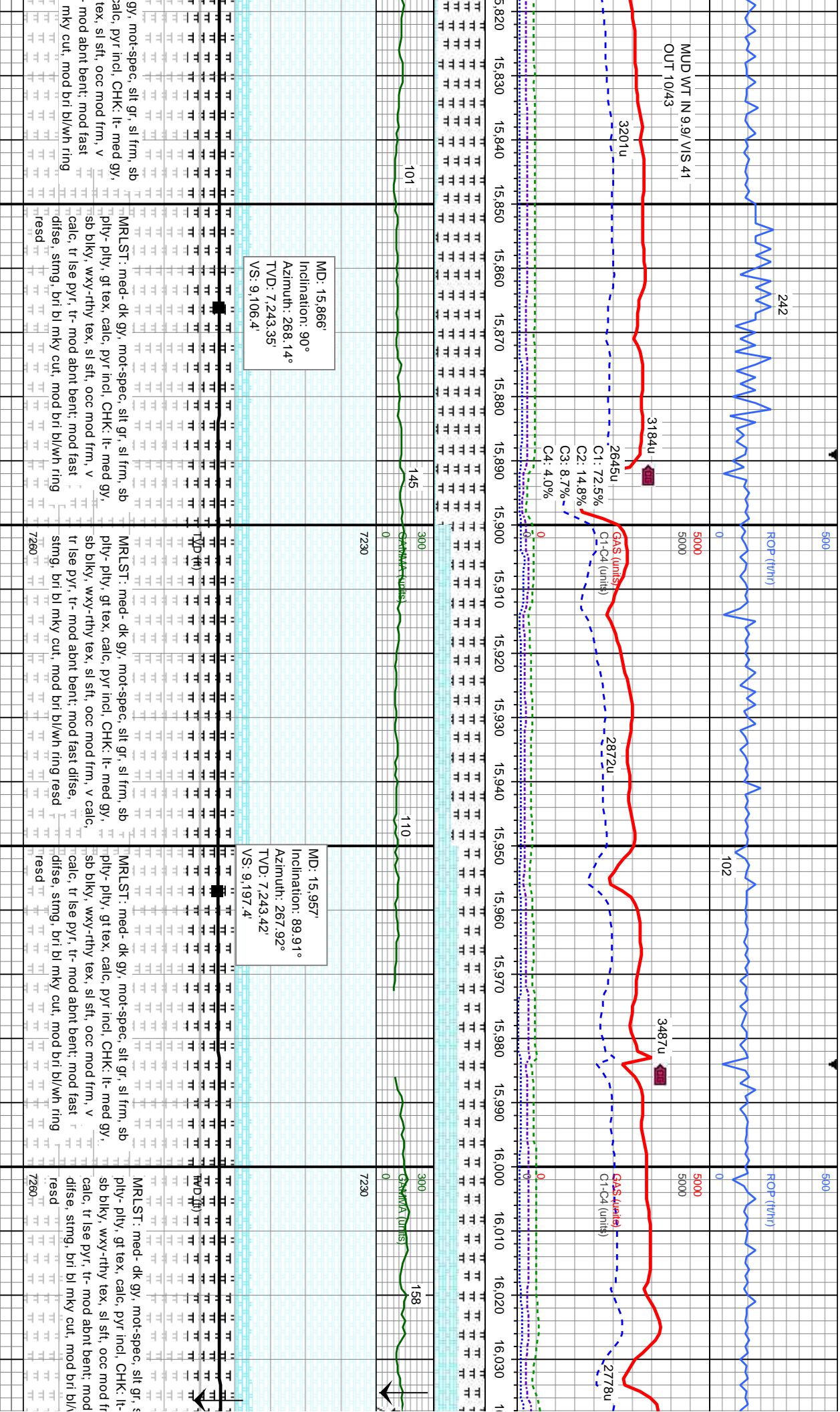


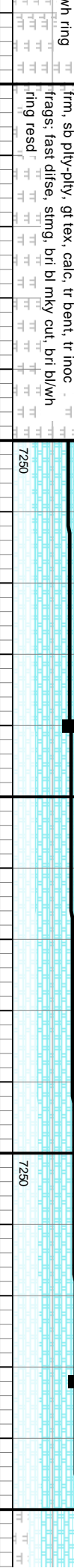
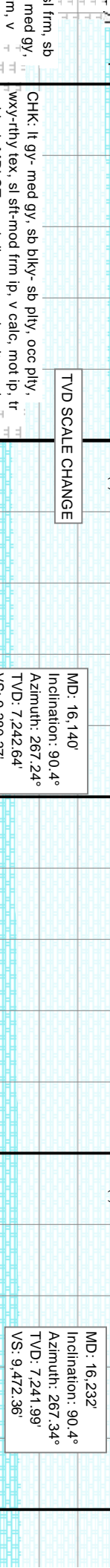
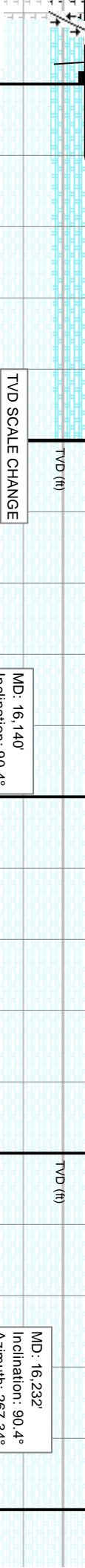
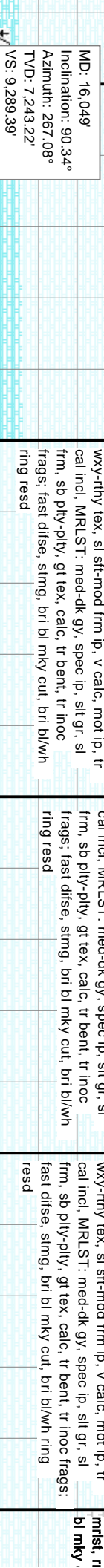
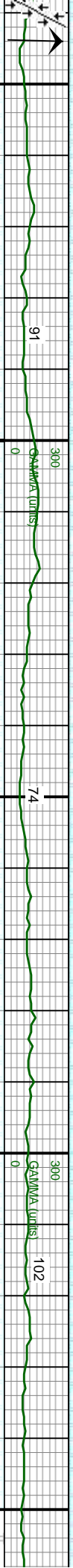
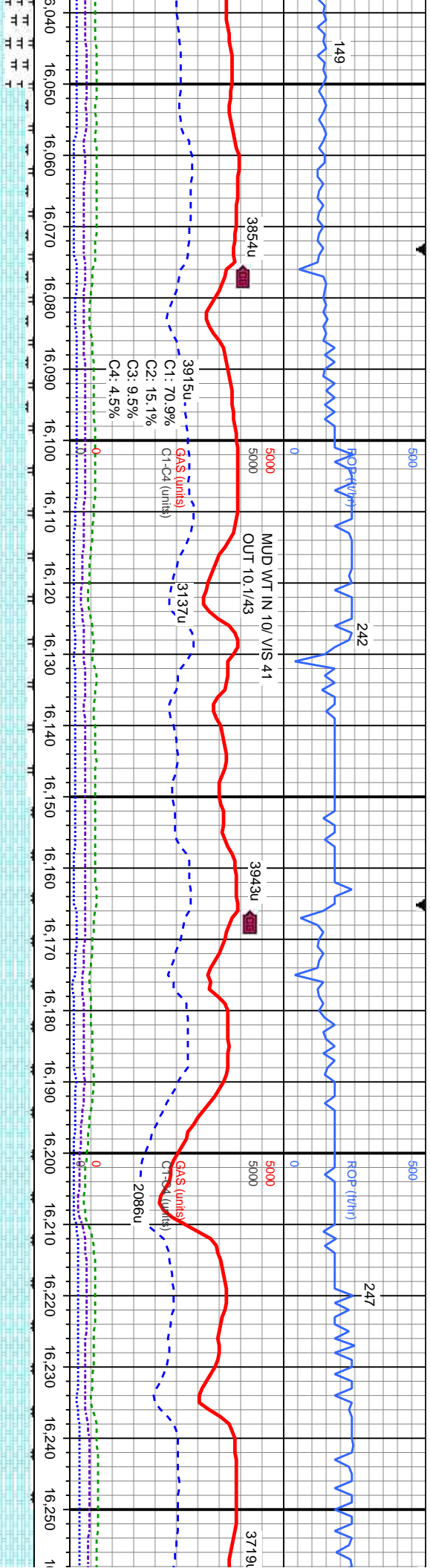


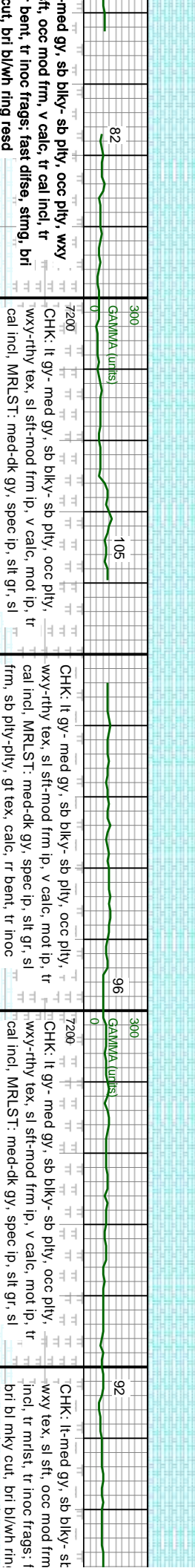
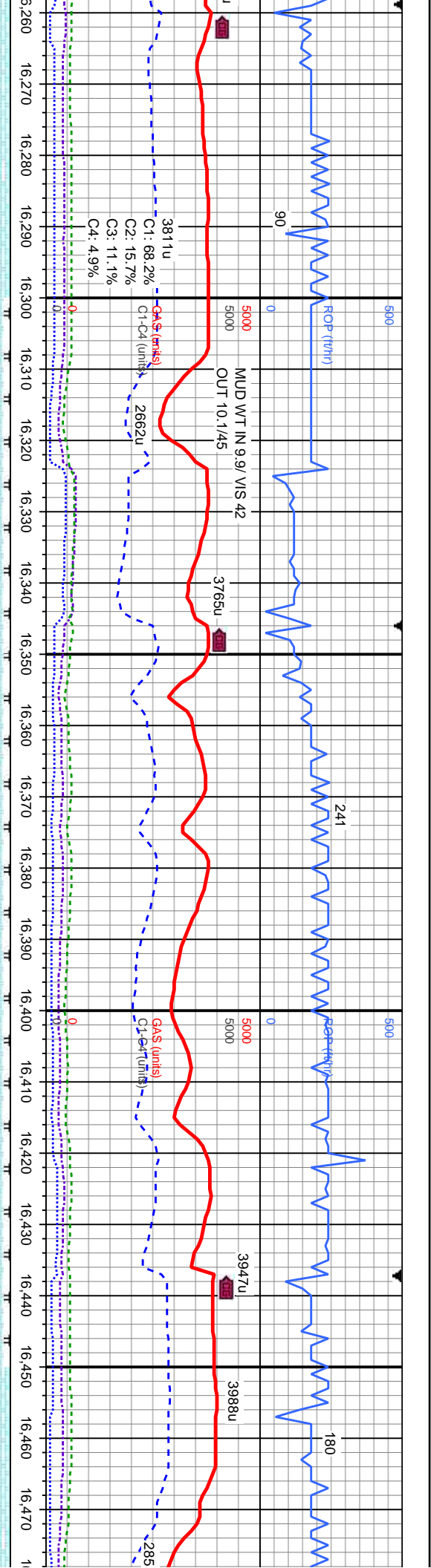






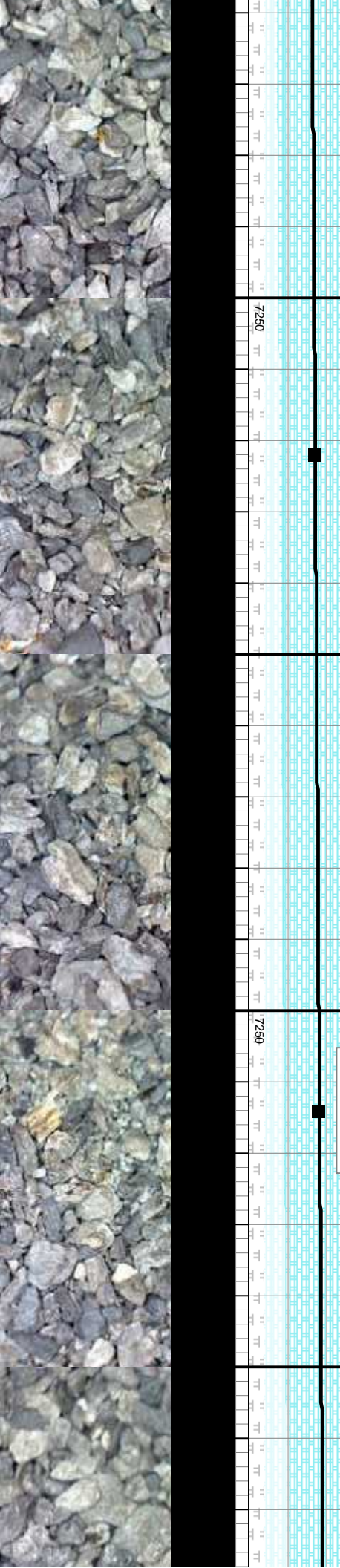


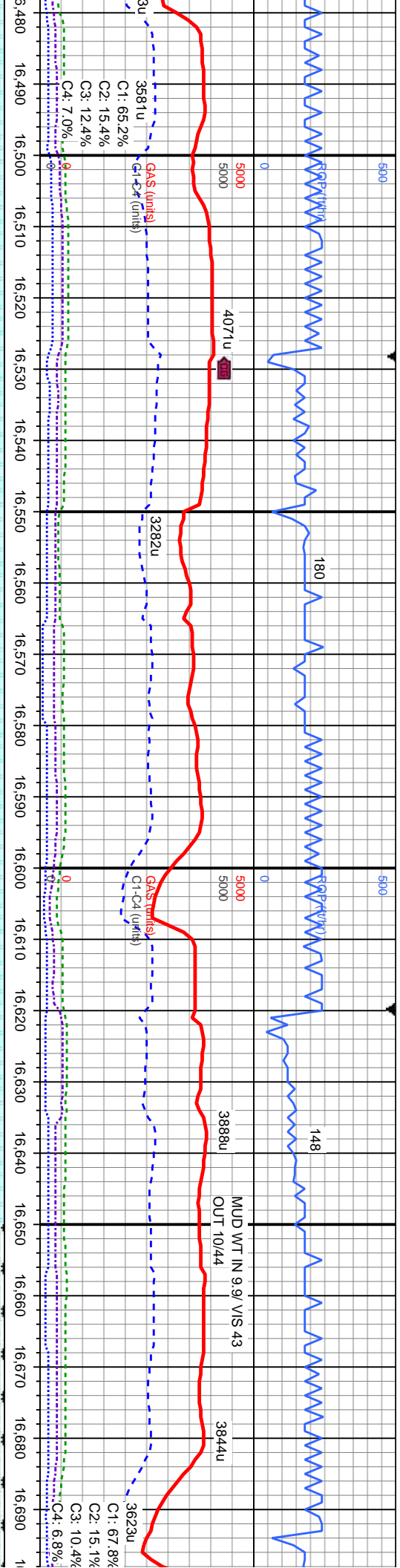




MD: 16,322'
Inclination: 90.28°
Azimuth: 267.22°
TVD: 7,241.46'
VS: 9,562.35'

MD: 16,414'
Inclination: 90.4°
Azimuth: 267.72°
TVD: 7,240.91'
VS: 9,654.34'





ply, occ ply,
v calc, tr cal
ast difse, stmg,
gr resd

CHK: lt-med gy, sb blk- sb ply, occ ply, wxy
tex, sl sft, occ mod frm, v calc, tr cal incl, tr
mrlst, tr- mod abnt inoc frags: fast difse, stmg,
bri bl mky cut, bri bl/wh ring resd

CHK: lt-med gy, sb blk- sb ply, occ ply, wxy
tex, sl sft, occ mod frm, v calc, tr cal incl, tr
mrlst, tr- mod abnt inoc frags: fast difse, stmg,
bri bl mky cut, bri bl/wh ring resd

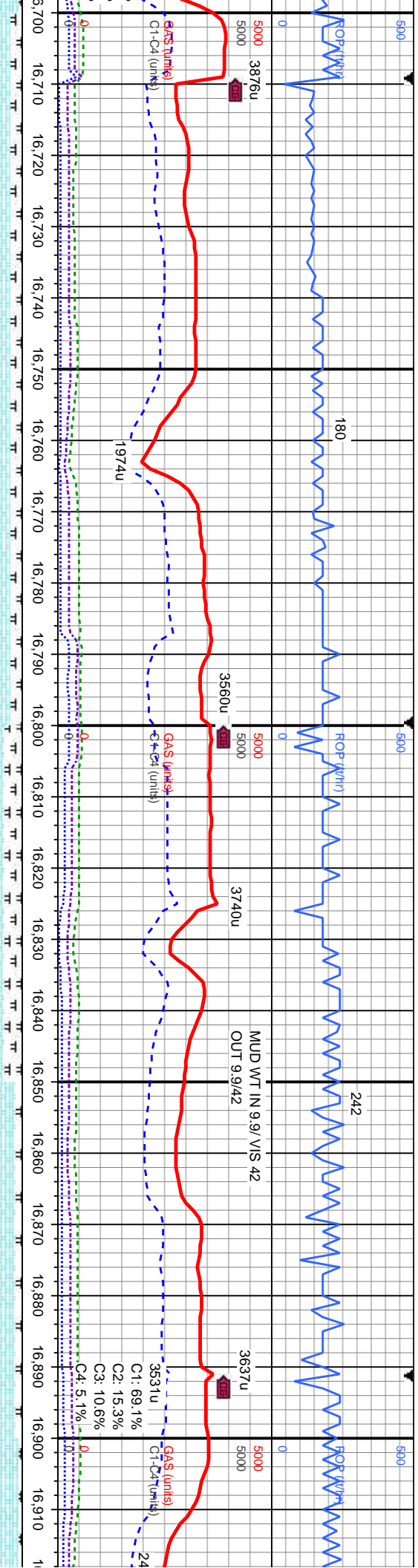
CHK: lt gy- med gy, sb blk- sb ply, occ ply,
wxy-rthy tex, sl sft-mod frm lp, v calc, mot
lp, tr cal incl, MRLST: med-dk gy, spec lp,
slt gr, sl frm, sb ply-ply, gt tex, calc, rr
bent, tr inoc frags: fast difse, stmg, bri bl
mky cut, bri bl/wh ring resd

MD: 16,506'
Inclination: 90.37°
Azimuth: 268.7°
TVD: 7,240.3'
VS: 9,746.34'

MD: 16,598'
Inclination: 90.31°
Azimuth: 269.92°
TVD: 7,239.75'
VS: 9,838.32'

MD: 16,687'
Inclination: 90.31°
Azimuth: 269.35°
TVD: 7,239.27'
VS: 9,927.28'





Depth (ft)	ROP (ft/hr)	G4S (units)	C1-C4 (units)	GAMMA (units)	Notes
16,700	~100	~100	~100	~100	
16,710	~100	~100	~100	~100	
16,720	~100	~100	~100	~100	
16,730	~100	~100	~100	~100	
16,740	~100	~100	~100	~100	
16,750	~100	~100	~100	~100	
16,760	~100	~100	~100	~100	
16,770	~100	~100	~100	~100	
16,780	~100	~100	~100	~100	
16,790	~100	~100	~100	~100	
16,800	~100	~100	~100	~100	
16,810	~100	~100	~100	~100	
16,820	~100	~100	~100	~100	
16,830	~100	~100	~100	~100	
16,840	~100	~100	~100	~100	
16,850	~100	~100	~100	~100	
16,860	~100	~100	~100	~100	
16,870	~100	~100	~100	~100	
16,880	~100	~100	~100	~100	
16,890	~100	~100	~100	~100	
16,900	~100	~100	~100	~100	
16,910	~100	~100	~100	~100	

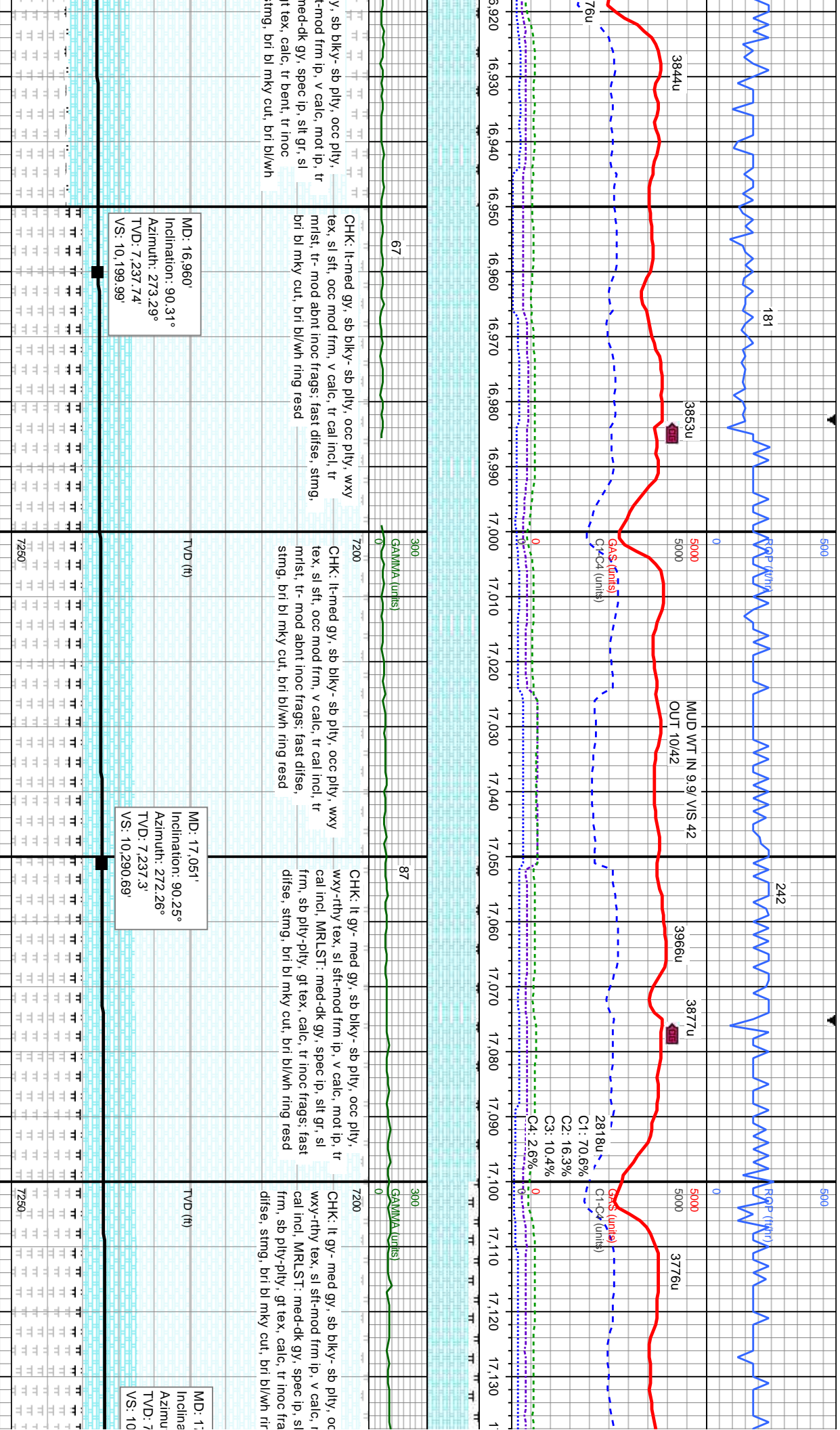
CHK: It gy- med gy, sb blkly- sb ply, occ ply, wxy-rthy tex, sl sft-mod frm ip, v calc, mot ip, tr cal incl, MRLST: med-dk gy, spec ip, slt gr, sl frm, sb ply-ply, gt tex, calc, tr bent, tr inoc frags: fast difse, stimg, bri bl mky cut, bri bl/wh ring resd

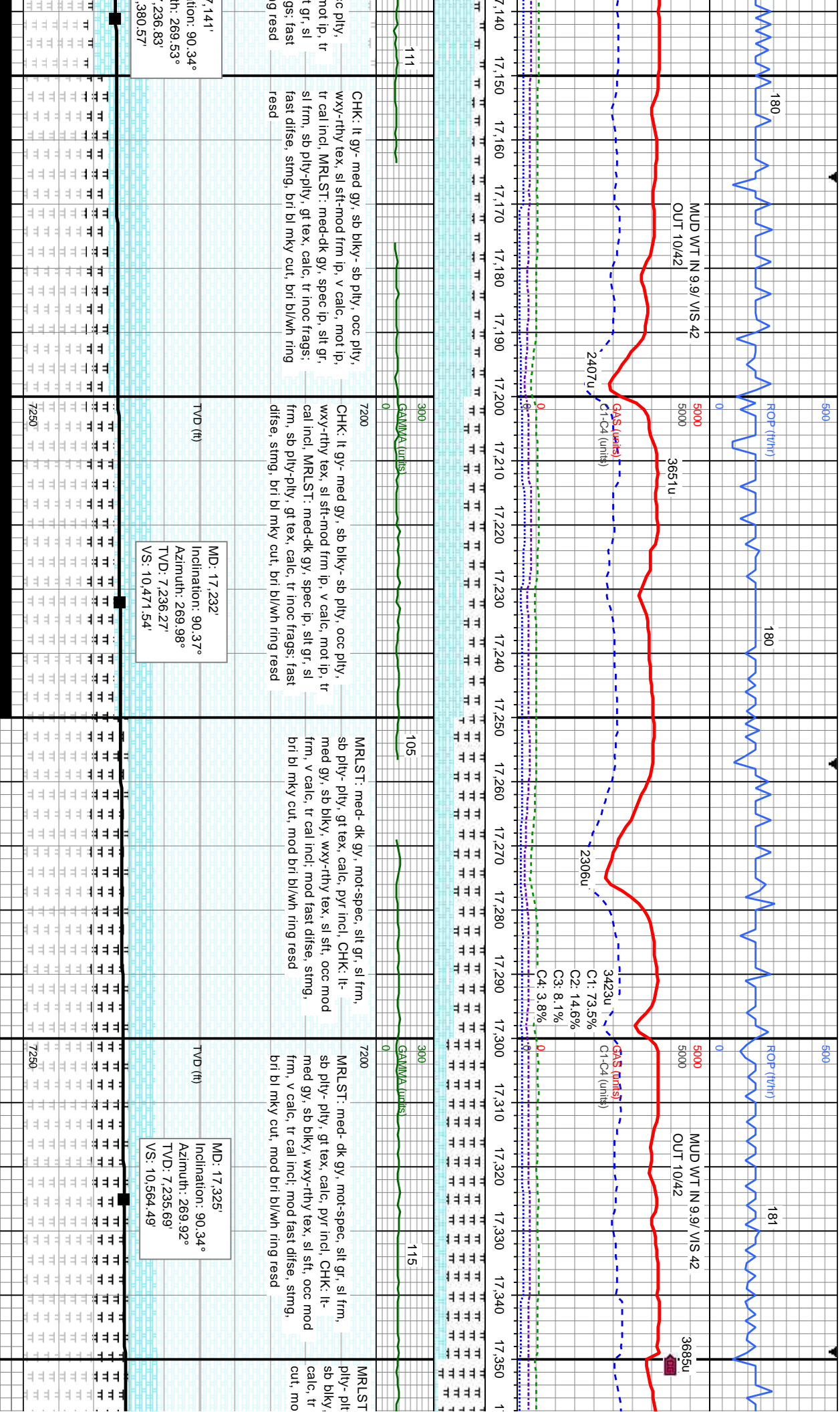
MD: 16,777'
Inclination: 90.31°
Azimuth: 268.96°
TVD: 7,238.78'
VS: 10,017.27'

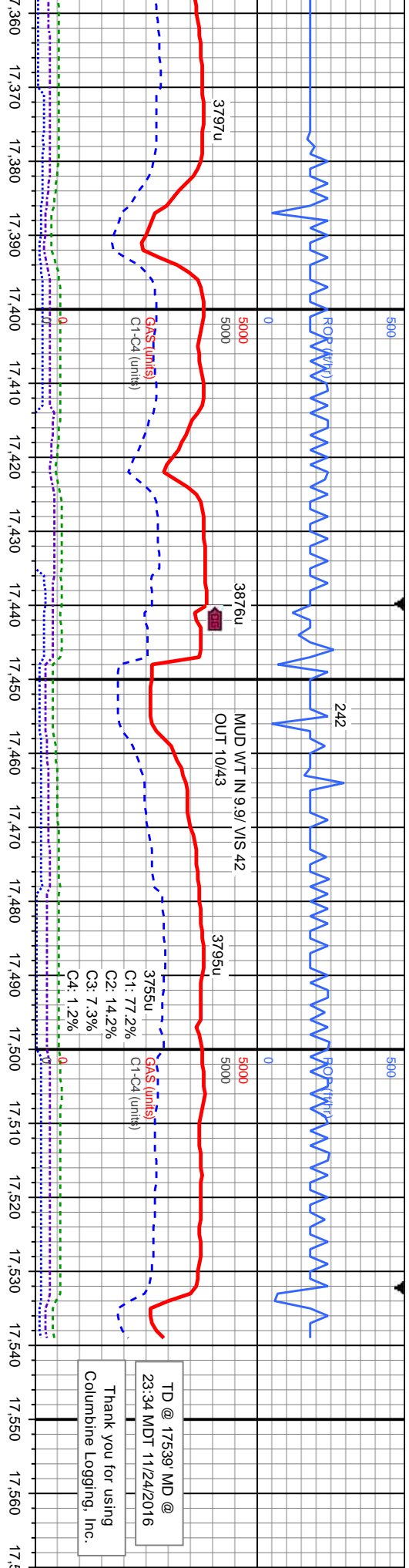
MD: 16,868'
Inclination: 90.34°
Azimuth: 270.89°
TVD: 7,238.27'
VS: 10,108.22'

Depth (ft)	ROP (ft/hr)	G4S (units)	C1-C4 (units)	GAMMA (units)	Notes
7200	~100	~100	~100	~100	
7210	~100	~100	~100	~100	
7220	~100	~100	~100	~100	
7230	~100	~100	~100	~100	
7240	~100	~100	~100	~100	
7250	~100	~100	~100	~100	

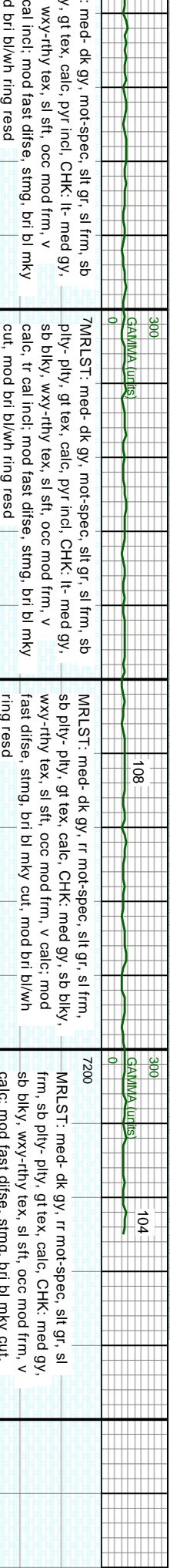








TD @ 17539 MD @
23:34 MDT 11/24/2016
Thank you for using
Columbine Logging, Inc.



MD: 17.515'
Inclination: 90.34°
Azimuth: 269.18°
TVD: 7.234.44'
VS: 10.754.45'

MD: 17.539'
Inclination: 90.34°
Azimuth: 269.18°
TVD: 7.234.3'
VS: 10.778.44'

MD: 17.414'
Inclination: 90.37°
Azimuth: 265.98°
TVD: 7.235.14'
VS: 10.653.47'

