

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name Pronghorn 14-44-28HNC

Location SWSW SEC. 28 T5N R61W

State COLORADO

County WELD

Country USA

Rig Number XTREME 20

API Number 05-123-41215-00

AFE # 15190

Region DJ BASIN

Field WATTENBERG

Spud Date 7/29/2015

Drilling Completed 9/1/2015

Surface Coordinates 1250' FSL x 349' FWL (LAT: 40.36801, -104.22234)

Bottom Hole Coordinates 660' FSL x 470' FEL (LAT: 40.36645, -104.20620) PROJECTED

Ground Elevation 4595'

K.B. Elevation 4612'

Logged Interval 5900' To 10640'

Total Depth 10640'

Formation NIOBRARA C-CHALK

Type of Drilling Fluid H2O, LSND

Operator

Company Bonanza Creek Energy Inc.

Address 410 17th Street, Suite 1500 Denver, CO 80202

Geologist

Name Paul McKay

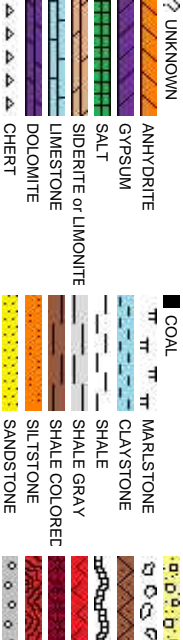
Company Bonanza Creek

Address 410 17TH STREET, SUITE 1500 DENVER, CO 80202






















































Zone Color Cod



Rock Types



Fossils

Fossils		Minerals	
 FOSSIL	 ARGILLACEOUS	 GLAUCONITE	
 GASTROPOD	 ARGILLITE GRAIN	 GYPSIFEROUS	
 ALGAE	 BENTONITE	 HEAVY MINERAL	 ANHYDRITE STRINGER
 AMPHIPORA	 BITUMENOUS SUBSTANCE	 KAOLIN	 BENTONITE STRINGER
 BELEMNITE	 BRECCIA FRAGMENTS	 MARLSTONE	 COAL STRINGER
 BIOCLASTIC	 CALCAREOUS	 MINERAL CRYSTALS	 DOLOMITE STRINGER
 BRACHIOPOD	 CARBONACEOUS FLAKES	 NODULES	 GYPSUM STRINGER
 BRYOZOA	 CHTOK	 PHOSPHATE PELLETS	 LIMESTONE STRINGER
 CEPHALOPOD	 CHTLT	 PYRITE	 MARLSTONE (CALC) STR
 CORAL	 COAL - THIN BEDS	 SALT CAST	 MARLSTONE (DOL) STR
 CRINOID	 DOLOMITIC	 SANDY	 SANDSTONE STRINGER
 ECHINOID	 FELDSPAR	 SILICEOUS	 SHALE STRINGER
 FISH		 SILTY	
 FORAMINIFERA	 FERRUGINOUS PELLET	 TUFFACEOUS	 SILTSTONE STRINGER
	 FERRUGINOUS		

Other Symbols

Oil Show

- DEAD
- VUGGY
- ORGANIC
- PINPOINT
- FORMATION TOP
- GAS SHOW
- MINDEPTH MN DEPTH
- CASING
- CONNECTION DOWN
- CRYPTOXLN
- E EARTHY
- FINELYXLN

Engineering

- EVEN
- QUESTIONABLE
- SPOTTED STAINING
- BIT































Engineering

- ↘ NORMAL FAULT
- OIL SHOW
- ↕ OVERTURNED STRATA

Rounding














- ↔ FORMATION TOP
- ▬ GRAINSTONE
- └ LITHOGRAPHIC
- ✕ MICROXIN

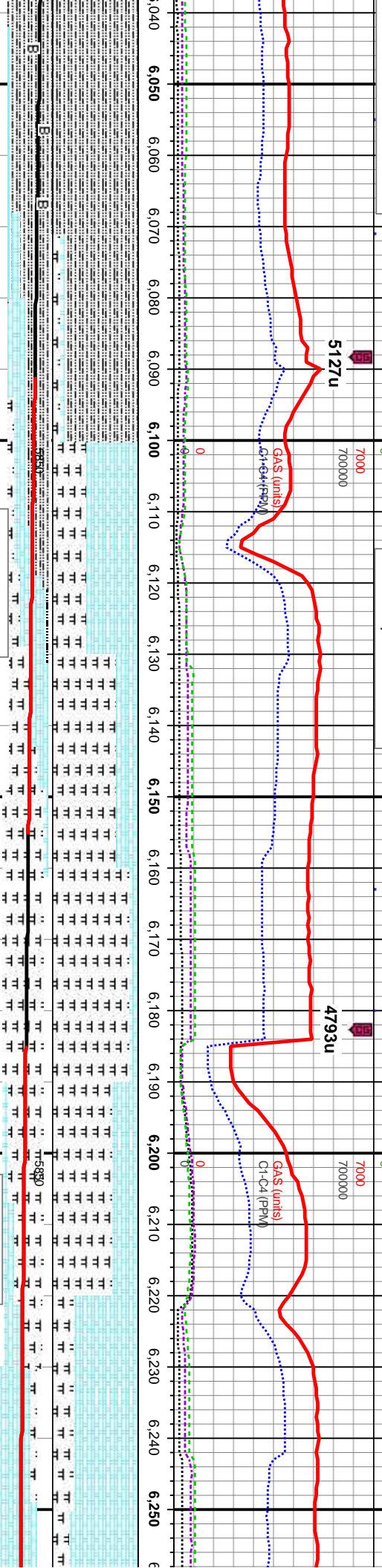
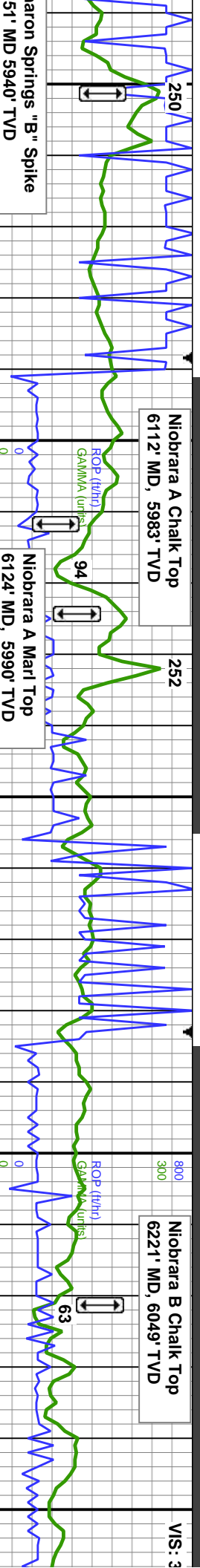
Porosity

Porosity	
	CASING
	CONNECTION (LEFT)
	CONNECTION (RIGHT)
	E EARTHY
	F FENESTRAL
	F FRACTURE
	X INTERCRYSTALLINE
	Q INTERCRYSTALLINE
	M MOLDIC
	REVERSE FAULT
	SIDEWALL CORE (LEFT)
	SIDEWALL CORE (RIGHT)
	SLIDE
	S SURVEY
	T TRIP GAS
	W WIRELINE TESTED - LEFT
	W WIRELINE TESTED - RT
	F FAULT
	W WIRELINE TESTED - RT
	C CHALKY
Textures	
	A ANGULAR
	R ROUNDED
	S SUBANG
	P SUBRAND
Sorting	
	M MUDSTONE
	P PACKSTONE
	W WACKESTONE
	M MODERATE
	P POOR
	W WELL

ing

Gas	Pressure	Seal
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	CONGLOMERATE		CHALK
	BRECCIA		SILTY SHALE
	TILL		NO SAMPLE
	BENTONITE		SHALY SANDSTONE
	TUFF		SHALY SILTSTONE
	IGNEOUS		
	METAMORPHIC		
	CEMENT		

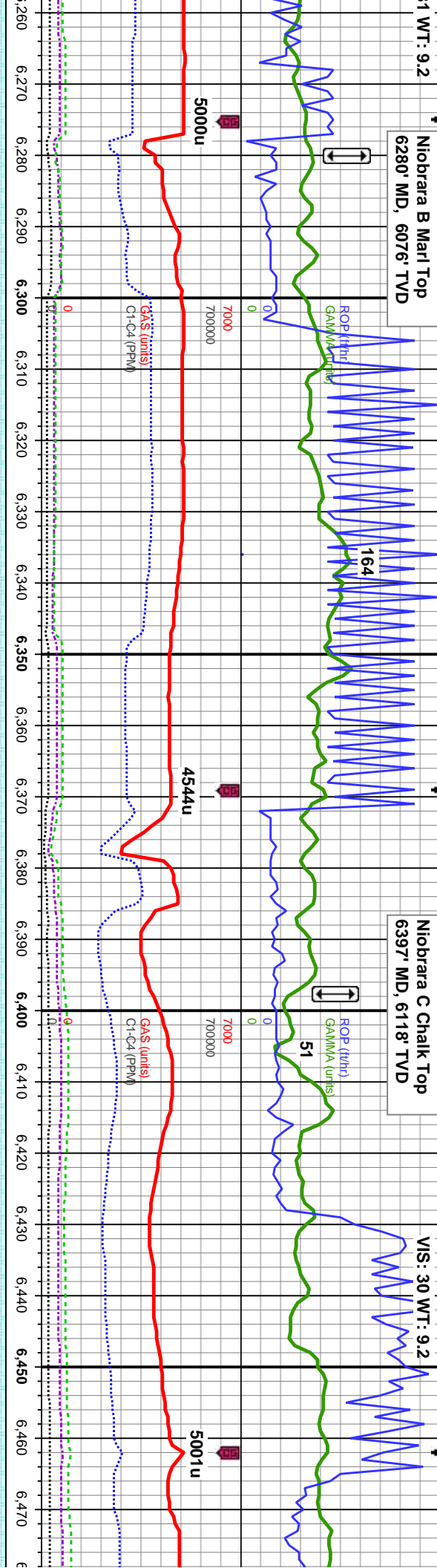


	T/V (°F)	T/V (°F)	
100-85% SLTY SH: med-dk gy, lt gy, sft-sl firm, some sft, blk-y-sb blk-y, sb pty, occ pty, rthy, mtx; arg-sily, sl calc, 0-10% MRLST: med-dk gy, sb pty-blky, firm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, 0-5% CHK: med gy-brn, occ dk gy, mot, sb pty-blky, sft-sl firm, rthy-sb wxy, scat bent, slow-mod string mod wh bl, even mod dull yel amb ring, mod sin	8500	75-90% MRLST: med-dk gy, sb pty-blky, firm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, 25-10% CHK: lt-med gy, occ dk gy, mot, sb pty-blky, sft-sl firm, rthy-sb wxy, imbd cal, mod chk flr, tr bent, slow-mod string mod wh bl, even thin yel amb ring, tr sin	80-45 pty-bl 20-55 hd, br cal fra mod-t
80-45 pty-bl 20-55 hd, br cal fra mod-t		70-25% MRLST: med-dk gy, sb pty-blky, firm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, 30-75% CHK: lt-med gy, occ dk gy, mot, sb pty-blky, sft-sl firm, rthy-sb wxy, imbd cal, tr bent, slow-mod string mod wh bl, even mod-thin yel amb ring, fr sin	

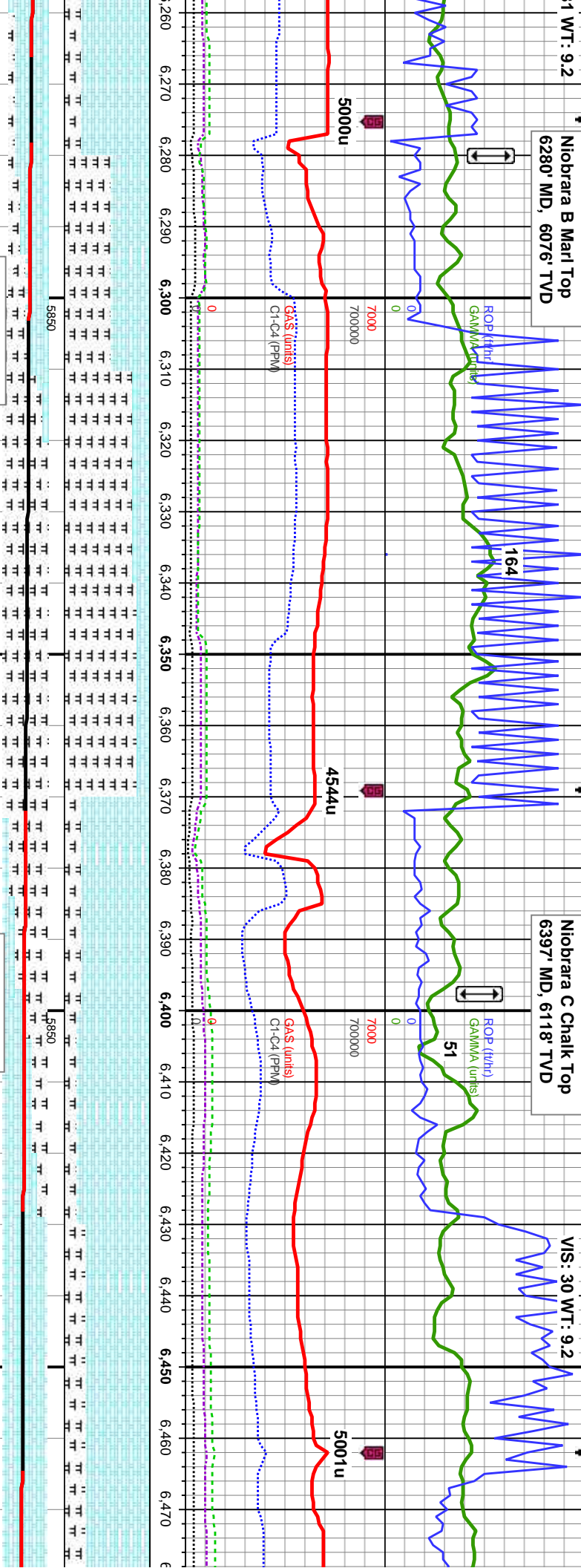


1 WT: 9.2

Niobrara B Marl Top
6280' MD, 6076' TVD

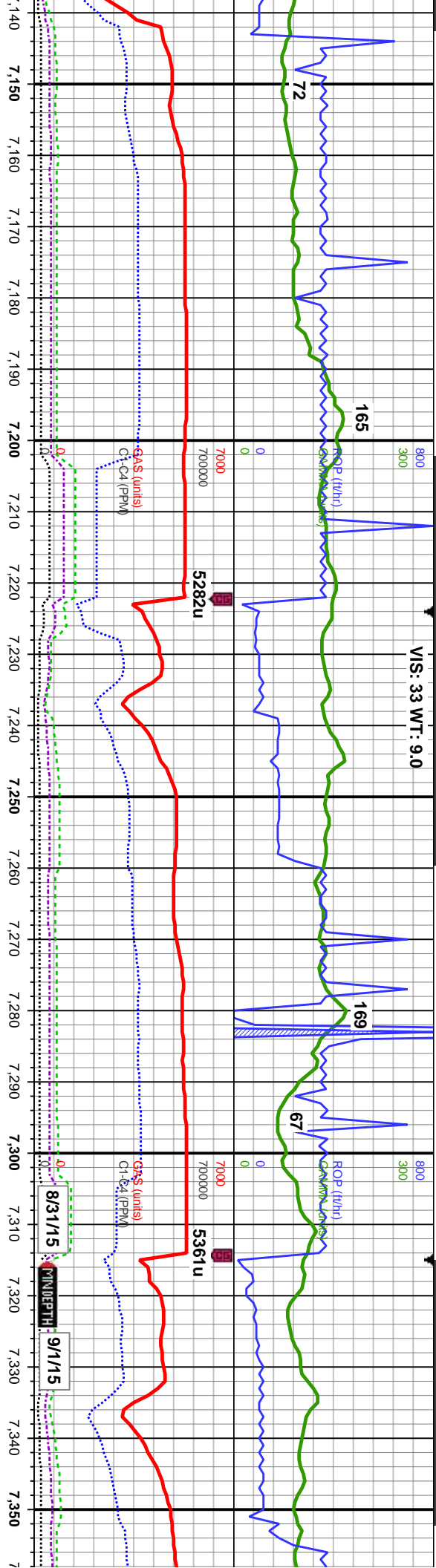


Niobrara C Chalk Top
6397' MD, 6118' TVD



80-85% CHK: lt-med gy, occ dk gry-brn, mot, sb ky, sft-sl frm, rthy-sb wxy, occ imbd cal		80-85% MRLST: med-dk gy, sb ply-biky, frm-mod hd, brit, silty tex, arg, mot, rthy lstr, calc mtx, 20-15% CHK: med gy, dk brn, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, imbd cal, some bent, fos and cal frags, slow stmg mod wh bl, even thn yel amb ring, tr sin		80-85% CHK: wht-crm, occ med gy-dk gry-brn, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, occ imbd cal, 20-15% MRLST: med-dk gy, sb ply-biky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, occ fos and cal frags, fast stmg bri wh bl, even thk yel gn ring, mod sin		75% CHK: wht-crm, occ med gy-dk gry-brn, ply-biky, sft-sl frm, rthy-sb wxy, occ imbd cal MRLST: med-dk gy, sb ply-biky, frm-mod h silty tex, mot, rthy lstr, calc mtx, fos and cal f stmg bri wh bl, even thk yel gn ring, mod str	
8500		8500		8500		8500	





MD: 7,164'
Inclination: 93.07°
Azimuth: 90.33°
TVD: 6,139.96'
VS: 1,017.19'

60% CHK: lt-med gy, tan, mot, sb ply-blky, sft-sl frm, rthy-sb wxy 40% MRLST: med-dk gy, some blk, sb ply-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mix, tr cal and fos frags: slow-mod stmg bri bishwh, mod yel gm ring, thn str

TVD (ft)

MD: 7,256'
Inclination: 92.62°
Azimuth: 90.02°
TVD: 6,135.39'
VS: 1,109.08'

65% CHK: lt-med gy, tan, mot, sb ply-blky, sft-sl frm, rthy-sb wxy 35% MRLST: med-dk gy, some blk, sb ply-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mix, tr cal and fos frags: fast stmg bri bishwh, mod yel gm ring, mod str

TVD (ft)

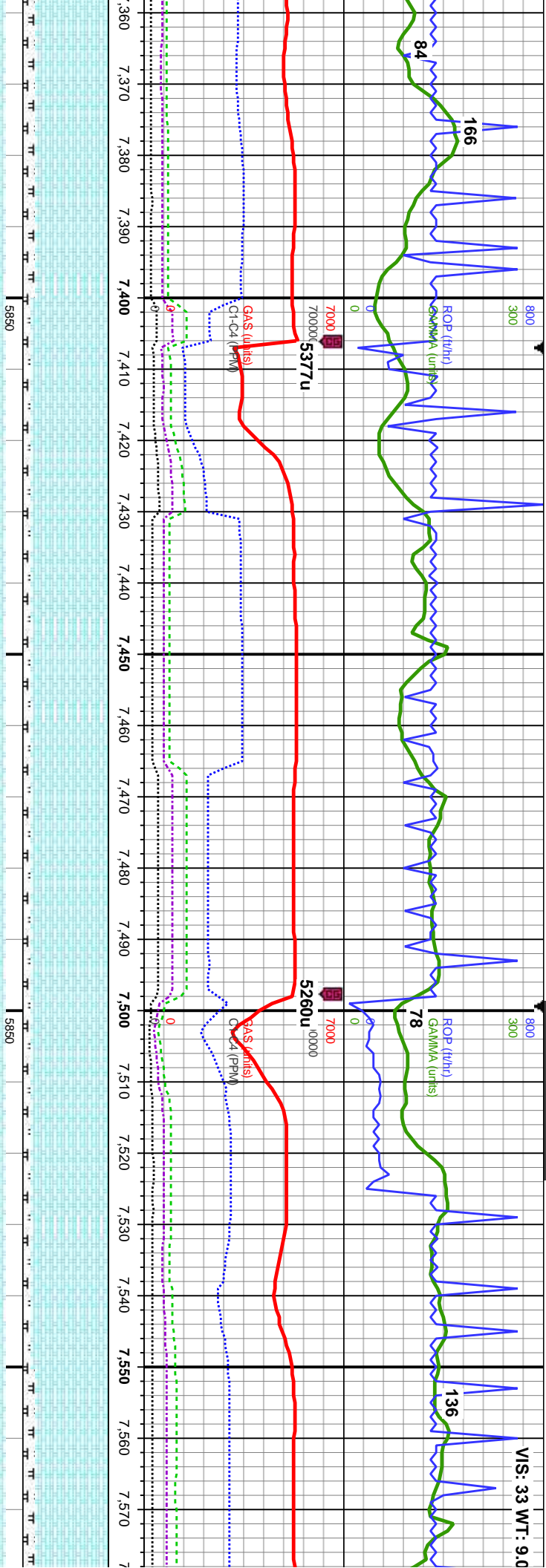
MD: 7,348'
Inclination: 90.71°
Azimuth: 90.12°
TVD: 6,132.72'
VS: 1,201.04'

65% CHK: lt-med gy, tan, mot, sb ply-blky, sft-sl frm, rthy-sb wxy 35% MRLST: med-dk gy, some blk, sb ply-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mix, tr cal and fos frags: fast stmg bri bishwh, mod yel gm ring, mod str

75% CHK: lt-med gy, tan, mot, sb ply-blky, sft-sl frm, rthy-sb wxy 25% MRLST: med-dk gy, some blk, sb ply-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mix, tr cal and fos frags: fast stmg bri bishwh, fast bri wh gm ring, mod str

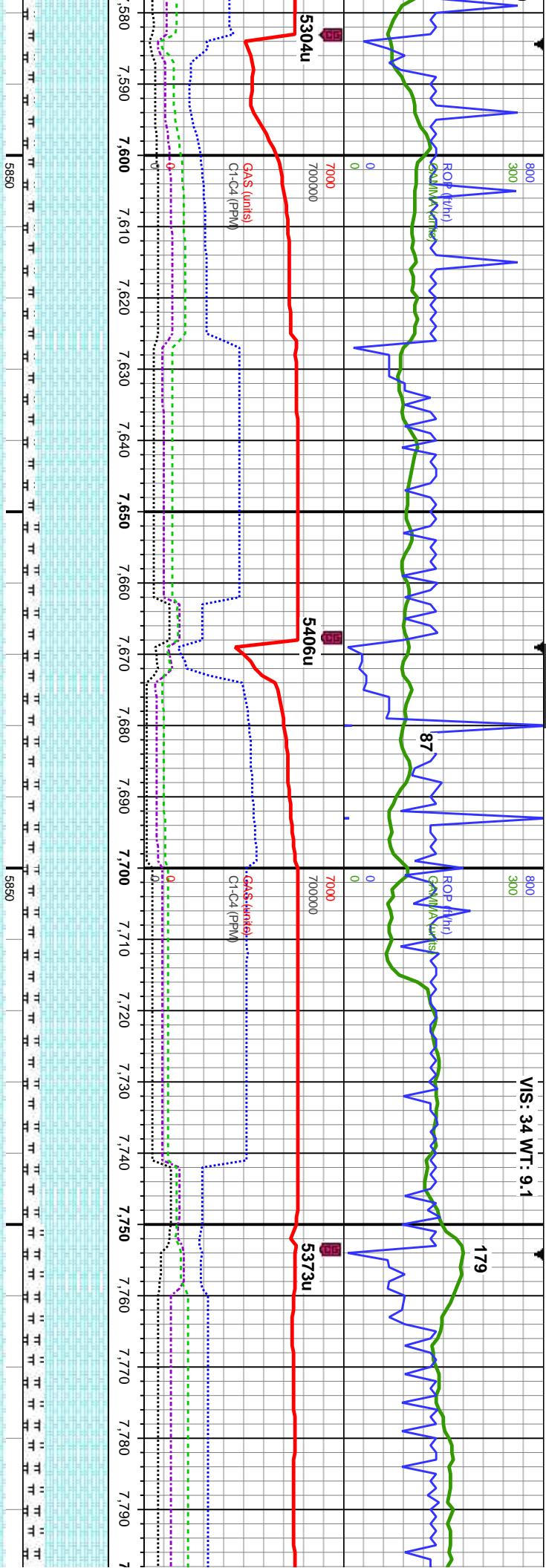
85% C sft-sl fr gy, some silty tex fos fra gm rin





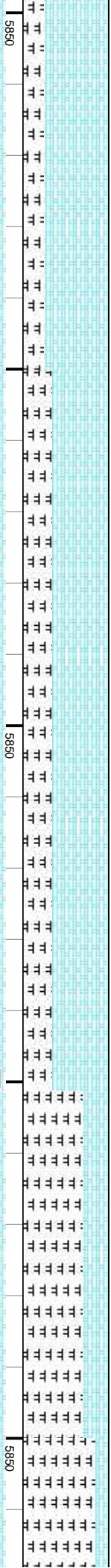
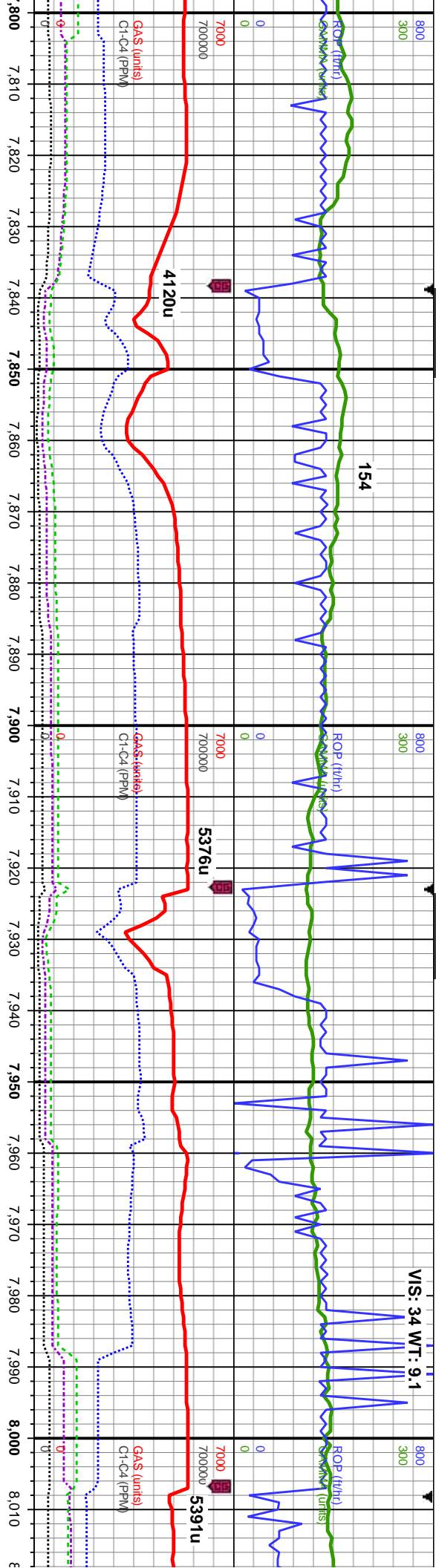
°		MD: 7.440' Inclination: 91.23° Azimuth: 90.23° TVD: 6,131.16' VS: 1,293.02'		MD: 7.525' Inclination: 89.35° Azimuth: 90.1° TVD: 6,130.73' VS: 1,378.02'	
CHK: lt-med gy, tan, mot, sb pty-blky, rthy-sb wxy 15% MRLST: med-dk blk, sb pty-blky, frm-mod hd, brit, mot, rthy lst, calc mtx, tr cal and fast stmg bri blshwh, fast bri wh g, mod stn		90% CHK: lt-med gy, tan, mot, sb pty-blky, sft-sl frm, rthy-sb wxy 10% MRLST: med-dk gy, some blk, sb pty-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mtx, tr cal and fos frags: fast stmg bri blshwh, mod yel amb ring, mod stn		90% CHK: lt-med gy, tan, mot, sb pty-blky, sft-sl frm, rthy-sb wxy 10% MRLST: med-dk gy, some blk, sb pty-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mtx, tr cal and fos frags: fast stmg bri blshwh, mod yel ring, mod stn	
TVD (ft)		TVD (ft)		TVD (ft)	





MD: 7,609' Inclination: 90.12° Azimuth: 90.07° TVD: 6,131.12' VS: 1,462.01'		MD: 7,694' Inclination: 89.94° Azimuth: 90.02° TVD: 6,131.07' VS: 1,547.01'		MD: 7,779' Inclination: 90.46° Azimuth: 90.3° TVD: 6,130.78' VS: 1,632.01'	
85% CHK: lt-med gy, tan, mot, sb pily-blky, sft-sl frm, rthy-sb wxy 15% MRLST: med-dk gy, some blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, tr cal incl; fast string bri blshwh, mod amb ring, mod stn		80% CHK: lt-med gy, tan, mot, sb pily-blky, sft-sl frm, rthy-sb wxy 20% MRLST: med-dk gy, some blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, tr cal incl; fast string bri blshwh, mod amb ring, mod stn		75% CHK: lt-med gy, tan, mot, sb pily-blky, sft-sl frm, rthy-sb wxy 25% MRLST: med-dk gy, some blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, tr cal frags; slow string bri blshwh, bri wh gm ring, thn stn	
TVD (ft)		TVD (ft)		TVD (ft)	

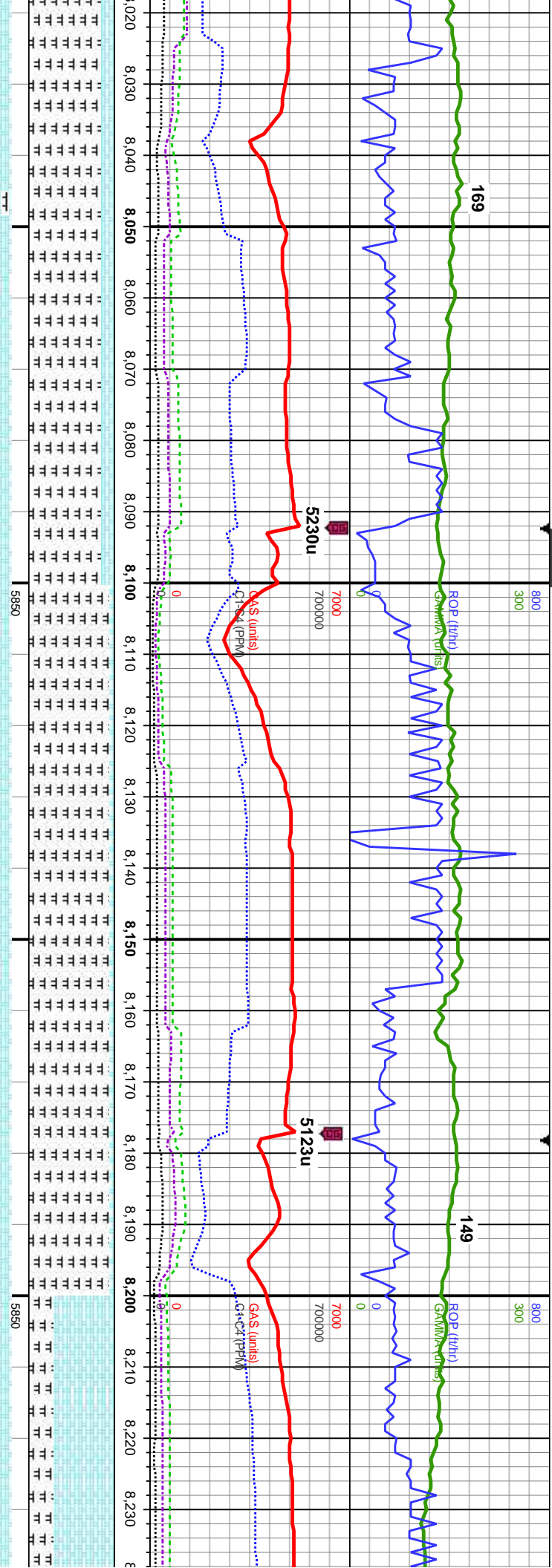




MD: 7,863'
Inclination: 90.19°
Azimuth: 89.94°
TVD: 6,130.3'
VS: 1,716.01'

TVD (ft)	75% CHK: lt-med gy, tan, mot, sb ply-blky, sft-sl frm, rthy-sb wxy 25% MRLST: med-dk gy, some blk, sb ply-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mix, tr cal frags; slow stmg bri blshwh, bri wh grn ring, thn sin	65% CHK: lt-med gy, tan, mot, sb ply-blky, sft-sl frm, rthy-sb wxy 35% MRLST: med-dk gy, some blk, sb ply-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mix, tr cal frags; slow stmg bri blshwh, bri wh grn ring, thn sin	65% CHK: lt-med gy, tan, mot, sb ply-blky, sft-sl frm, rthy-sb wxy 35% MRLST: med-dk gy, some blk, sb ply-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mix, tr cal frags; mod-fast stmg bri blshwh, mod yel grn ring, mod sin	70% MRLST: med-dk gy, some blk, sb ply-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mix 30% CHK: med gy brn, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, tr cal and foss frags; mod-fast stmg bri blshwh, mod yel grn ring, mod sin	85% MRLST: n ply-blky, frm-m lst, calc mix 15% sb ply-blky, sft- and foss frags; bri wh grn ring,
	8.25	8.25	8.25	8.25	8.25





MD: 8,033'
Inclination: 89.17°
Azimuth: 89.94°
TVD: 6,131.92'
VS: 1,886'

med-dk gy, some blk, sb
mod hd, brit, silty tex, mot, rthy
% CHK: med gy brn, mot,
sl frm, rthy-sb wxy, tr cal
mod-fast stimg bri blshwh,
thin str

85% MRLST: med-dk gy, some blk, sb
pty-blky, frm-mod hd, brit, silty tex, mot, rthy
lstr, calc mtx 15% CHK: med gy brn, mot,
sb pty-blky, sft-sl frm, rthy-sb wxy, tr cal
and foss frags: mod-fast stimg bri blshwh,
bri wh grn ring, thin str

MD: 8,119'
Inclination: 90.55°
Azimuth: 89.77°
TVD: 6,132.13'
VS: 1,972'

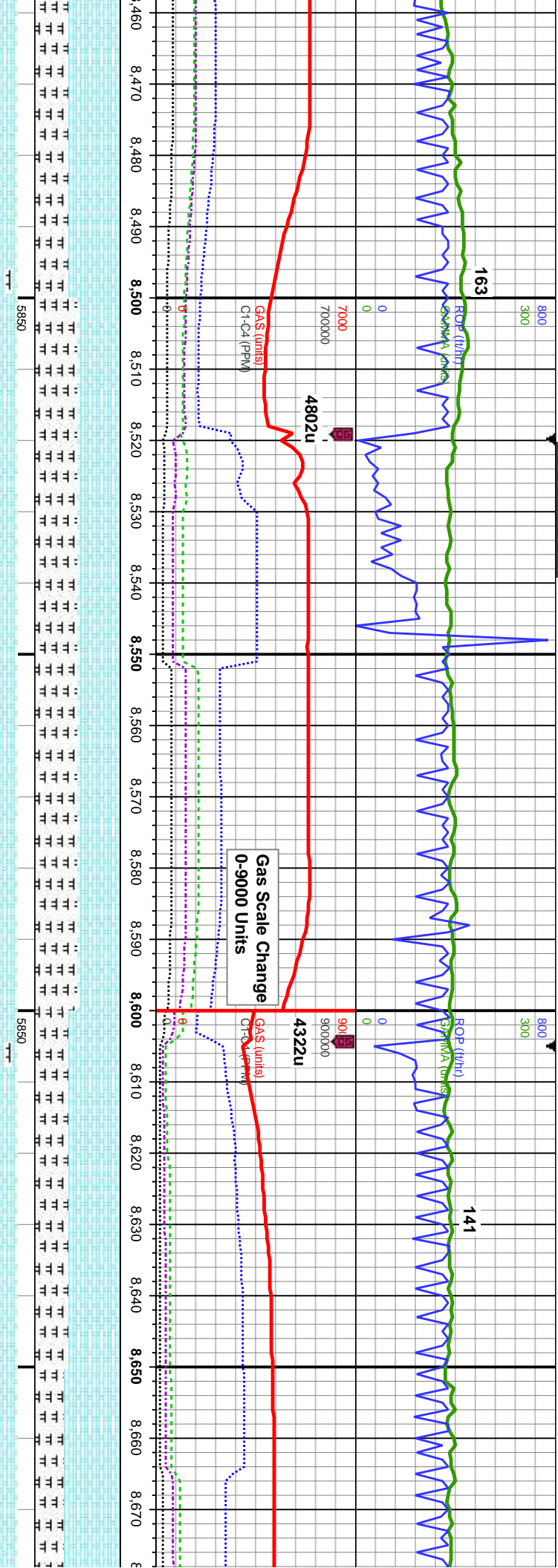
95% MRLST: med-dk gy, some blk, sb
pty-blky, frm-mod hd, brit, silty tex, mot, rthy
lstr, calc mtx 5% CHK: med gy brn, mot, sb
pty-blky, sft-sl frm, rthy-sb wxy, slow stimg
bri blshwh, fnt yel grn ring, mod str

95% MRLST: med-dk gy, some blk, sb
pty-blky, frm-mod hd, brit, silty tex, mot, rthy
lstr, calc mtx 5% CHK: med gy brn, mot, sb
pty-blky, sft-sl frm, rthy-sb wxy, slow stimg
bri blshwh, fnt yel grn ring, mod str

MD: 8,203'
Inclination: 90.77°
Azimuth: 89.5°
TVD: 6,131.16'
VS: 2,055.99'

70% CHK: lt-med gy brn, crm, mo
pty-blky, sft-sl frm, rthy-sb wxy 3C
MRLST: med-dk gy, some blk, sb
frm-mod hd, brit, silty tex, mot, rthy
mtx, tr cal & foss frags: slow stimg
blshwh, fnt yel grn ring, thk str

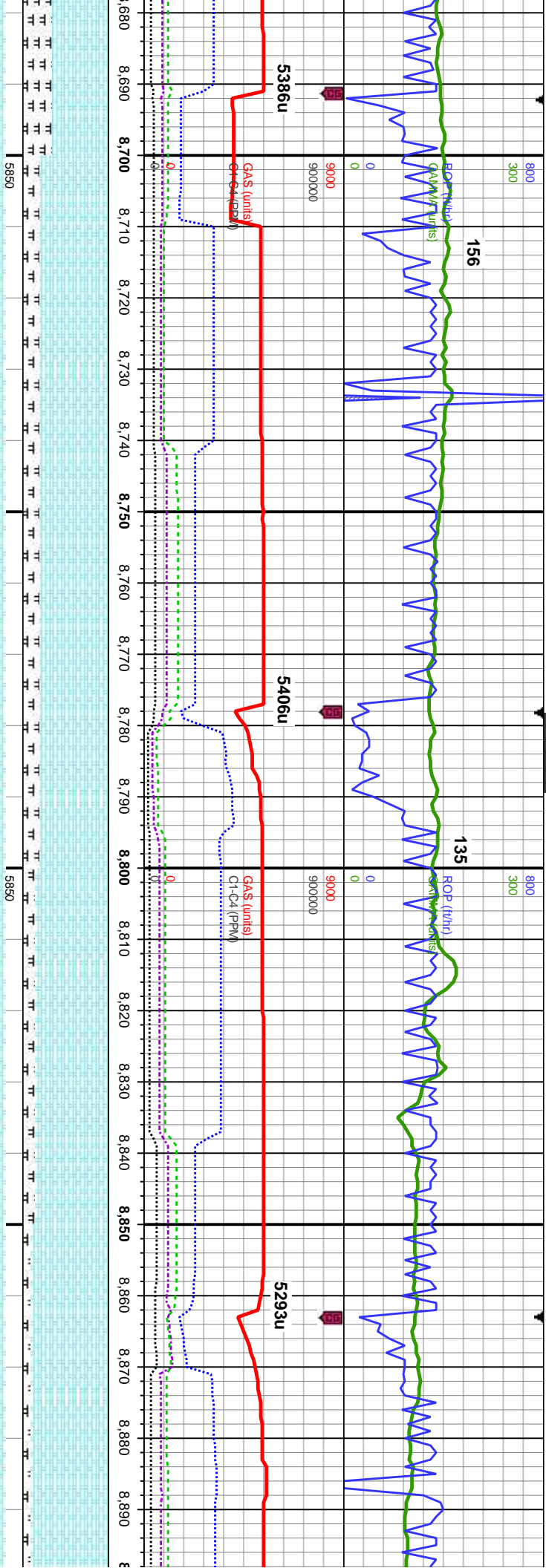




459'	MD: 8,544' Inclination: 89.84° Azimuth: 90.4° TVD: 6,126.57' VS: 2,396.93'	MD: 8,631' Inclination: 90.09° Azimuth: 90.99° TVD: 6,126.62' VS: 2,483.93'
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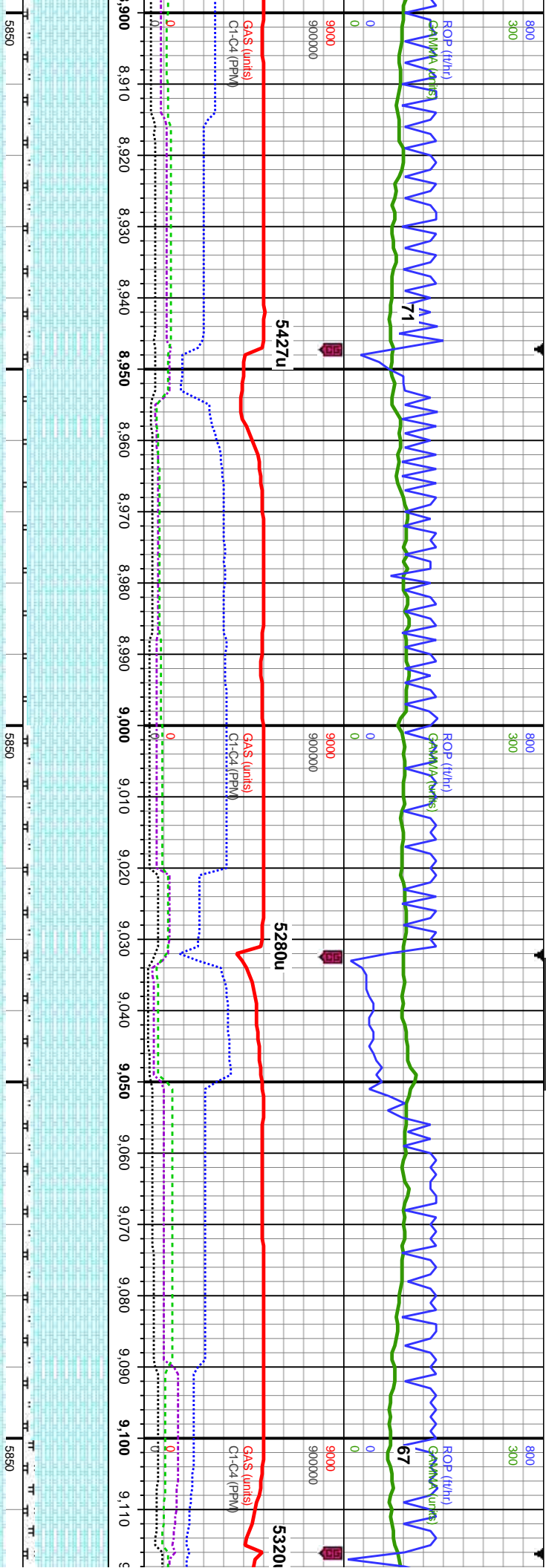
CHK: med gy brn, mot, sb pily-blky, rthy-sb wxy 40% MRLST: dk gy, blk, sb pily-blky, frm-mod hd, brit, mot, rthy lst, calc mtx, tr cal & foss slow strng mod blshwh, thin dull ng, fr stn	50% CHK: med gy brn, mot, sb pily-blky, sft-sl frm, rthy-sb wxy 50% MRLST: dk gy, some blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mtx, tr cal & foss frags, slow strng mod blshwh, thin dull amb ring, fr stn	50% CHK: med gy brn, mot, sb pily-blky, sft-sl frm, rthy-sb wxy 50% MRLST: dk gy, some blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mtx, tr cal & foss frags, slow strng mod blshwh, thin dull amb ring, fr stn	60% CHK: med gy brn, mot, sb pily-blky, sft-sl frm, rthy-sb wxy 40% MRLST: dk gy, some blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mtx, tr cal & foss frags, mod strng bri blshwh, mod yel grm ring, fr stn	65% CHK: med gy brn, mot, sb pily-blky, sft-sl frm, rthy-sb wxy 35% MRLST: dk gy, some blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mtx, tr cal & foss frags, mod strng bri blshwh, mod yel grm ring, fr stn
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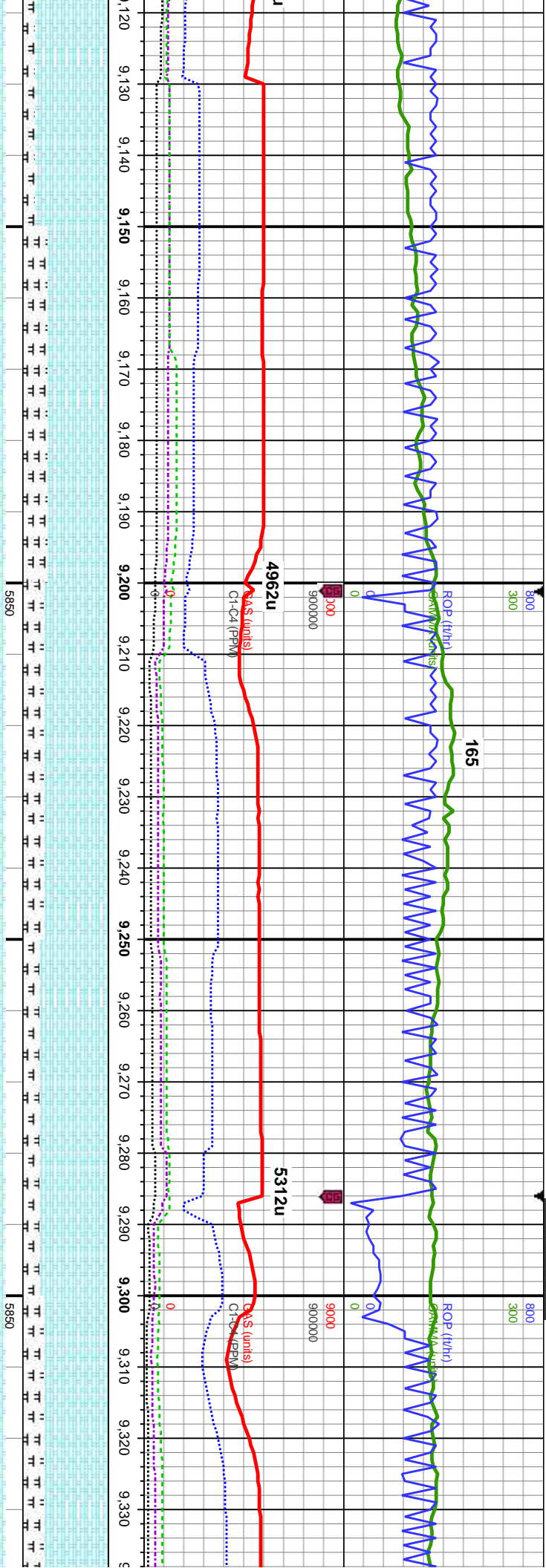
80% CHK: med gy brn, mot, sb pily-blky, sft-sl frm, rthy-sb wxy 20% MRLST: dk gy, some blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, occ cal incl, mod stmg bri blshwh, mod yel grn ring, fr stn	TVD (ft)	MD: 8,716' Inclination: 90.09° Azimuth: 91.06° TVD: 6,126.49' VS: 2,568.91'
80% CHK: med gy brn, mot, sb pily-blky, sft-sl frm, rthy-sb wxy 20% MRLST: dk gy, some blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, occ cal incl, mod stmg bri blshwh, mod yel grn ring, fr stn	TVD (ft)	MD: 8,801' Inclination: 90.06° Azimuth: 90.18° TVD: 6,126.38' VS: 2,653.91'
85% CHK: lt-med gy brn, mot, sb pily-blky, sft-sl frm, rthy-sb wxy, 15% MRLST: dk gy, blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, occ cal frags, fast stmg bri blshwh, thk yel grn ring, mod stn	TVD (ft)	
90% CHK: lt-med gy brn, mot, sb pily-blky, sft-sl frm, rthy-sb wxy, 10% MRLST: dk gy, blk, sb pily-blky, frm-mod hd, brit, silty tex, mot, rthy lstr, calc mtx, occ cal frags, fast stmg bri blshwh, thk yel grn ring, mod stn	TVD (ft)	MD: 8,885' Inclination: 90.15° Azimuth: 90.06° TVD: 6,126.22' VS: 2,737.91'





MD: 8,970' Inclination: 90.37° Azimuth: 89.99° TVD: 6,125.84' VS: 2,822.9'		MD: 9,054' Inclination: 88.7° Azimuth: 89.55° TVD: 6,126.52' VS: 2,906.9'	
90% CHK: lt-med gy brn, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, 10% MRLST: dk gy, blk, sb ply-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mtx, occ cal frags, ast sting bri bishwh, thk yel gm ring, mod str	95% CHK: lt-med gy brn, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, 5% MRLST: dk gy, blk, sb ply-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mtx, occ cal frags, fast sting bri bishwh, thk yel gm ring, mod str	90% CHK: lt-med gy brn, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, 10% MRLST: dk gy, blk, sb ply-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mtx, occ cal frags, fast sting bri bishwh, thk yel gm ring, mod str	90% CHK: lt-med gy brn, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, 10% MRLST: dk gy, blk, sb ply-blky, frm-mod hd, brit, silty tex, mot, rthy lst, calc mtx, tr cal and fos frags, fast sting bri bishwh, thk yel gm ring, mod str
TVD (ft)	TVD (ft)	TVD (ft)	TVD (ft)





MD: 9,139'
Inclination: 88.92°
Azimuth: 89.05°
TVD: 6,128.28'
VS: 2,991.87'

dk gy brn, occ dk gy, mot, sb
frn, rthy-sb wxy, 15%
plk, sb ply-blky, frm-mod hd,
t, rthy lstr, calc mtx, tr cal,
blshwh, thk yel grn ring, mod

70% CHK: med gy brn, dk gy, mot, sb
ply-blky, sft-sl frm, rthy-sb wxy, tr imbd cal,
30% MRLST: dk gy, blk, sb ply-blky,
frm-mod hd, brit, silty tex, mot, rthy lstr, calc
mtx, tr cal and fos frags, fast string bri
blshwh, thk yel grn ring, mod str

MD: 9,224'
Inclination: 88.79°
Azimuth: 89.18°
TVD: 6,129.98'
VS: 3,076.85'

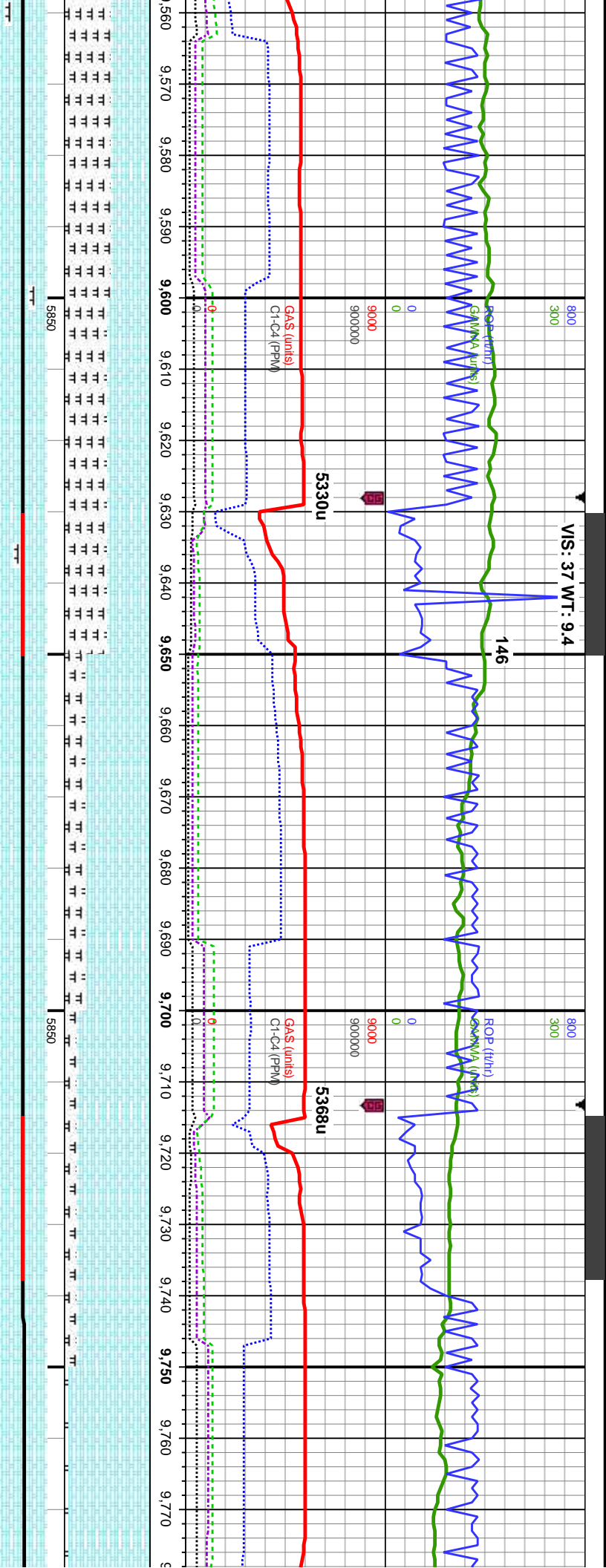
75% CHK: med gy brn, dk gy, mot, sb
ply-blky, sft-sl frm, rthy-sb wxy, tr imbd cal,
25% MRLST: dk gy, blk, sb ply-blky,
frm-mod hd, brit, silty tex, mot, rthy lstr, calc
mtx, tr cal and fos frags, fast string bri
blshwh, thk yel grn ring, mod str

80% CHK: med gy brn, dk gy, mot, sb
ply-blky, sft-sl frm, rthy-sb wxy, tr imbd cal,
20% MRLST: dk gy, blk, sb ply-blky,
frm-mod hd, brit, silty tex, mot, rthy lstr, calc
mtx, tr cal and fos frags, fast string bri
blshwh, thk yel grn ring, mod str

MD: 9,310'
Inclination: 90.74°
Azimuth: 88.71°
TVD: 6,130.33'
VS: 3,162.83'

75% CHK: med-dk gy, mot, sb ply-
sft-sl frm, rthy-sb wxy, occ imbd ca
MRLST: dk gy, blk, sb ply-blky, frm
brit, silty tex, mot, rthy lstr, calc mtx
frags, mod string bri blshwh, mod yel
ring, fr str





MD: 9,566'
Inclination: 89.88°
Azimuth: 86.47°
VTD: 6,127.38'
VS: 3,418.68'

50% MRLST: dk gy, blk, sb pty-blky,
frm-mod hd, brit, silty tex, mot, rthy lstr, calc
mtx, 50% CHK: med gy brn, dk gy, mot, sb
pty-blky, sft-sl frm, rthy-sb wxy, tr imbd cal, tr
cal and fos frags, mod stmg bri blshwh, fr
ring, fr str

TVD (ft)

MD: 9,651'
Inclination: 91.26°
Azimuth: 88.05°
TVD: 6,126.54'
VS: 3,503.57'

50% MRLST: dk gy, blk, sb pty-blky,
frm-mod hd, brit, silty tex, mot, rthy lstr, calc
mtx, 50% CHK: med gy brn, dk gy, mot, sb
pty-blky, sft-sl frm, rthy-sb wxy, tr imbd cal, tr
cal and fos frags, mod stmg bri blshwh, fr
ring, fr str

TVD (ft)

MD: 9,738'
Inclination: 91.08°
Azimuth: 88.8°
TVD: 6,124.76'
VS: 3,590.52'

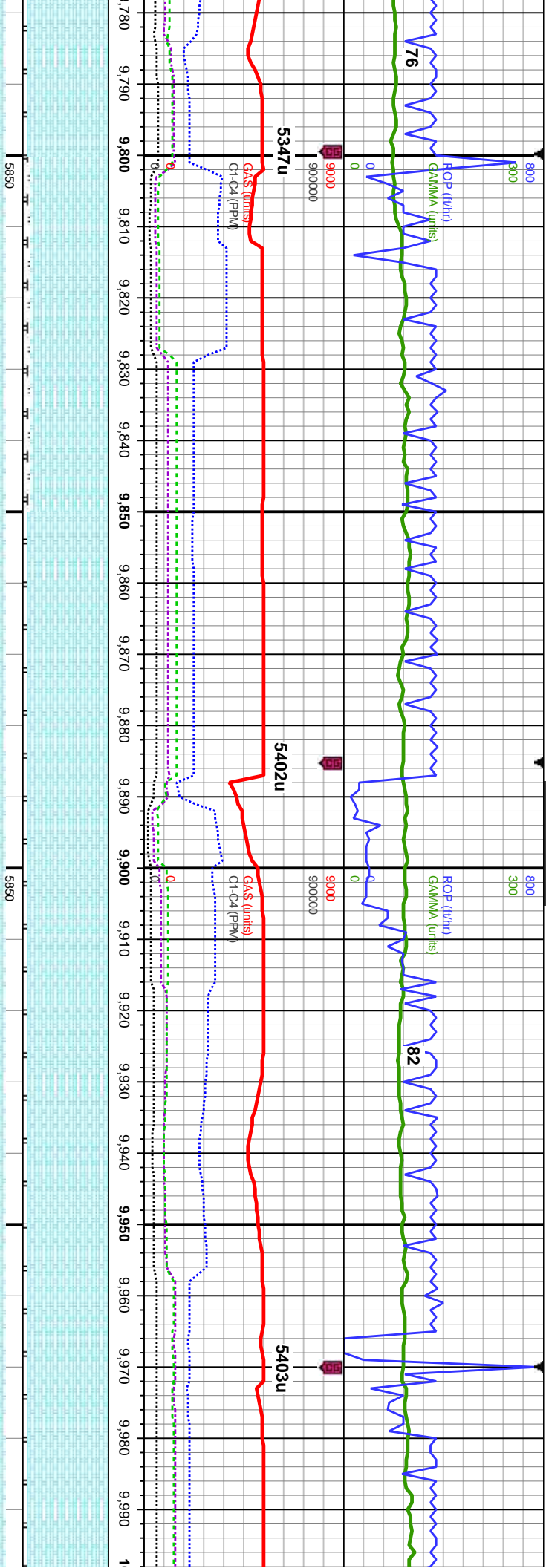
75% CHK: lt-med gy brn, occ dk gy, mot, sb
pty-blky, sft-sl frm, rthy-sb wxy, imbd cal,
25% MRLST: dk gy, blk, sb pty-blky,
frm-mod hd, brit, silty tex, mot, rthy lstr, calc
mtx, scat cal and fos frags, mod stmg bri
blshwh, mod yel grn ring, fr str

TVD (ft)

85% CHK: lt-med gy brn, occ dk gy, mot, sb
pty-blky, sft-sl frm, rthy-sb wxy, imbd cal,
15% MRLST: dk gy, blk, sb pty-blky,
frm-mod hd, brit, silty tex, mot, rthy lstr, calc
mtx, scat cal and fos frags, fast stmg bri
blshwh, thk yel grn ring, mod str

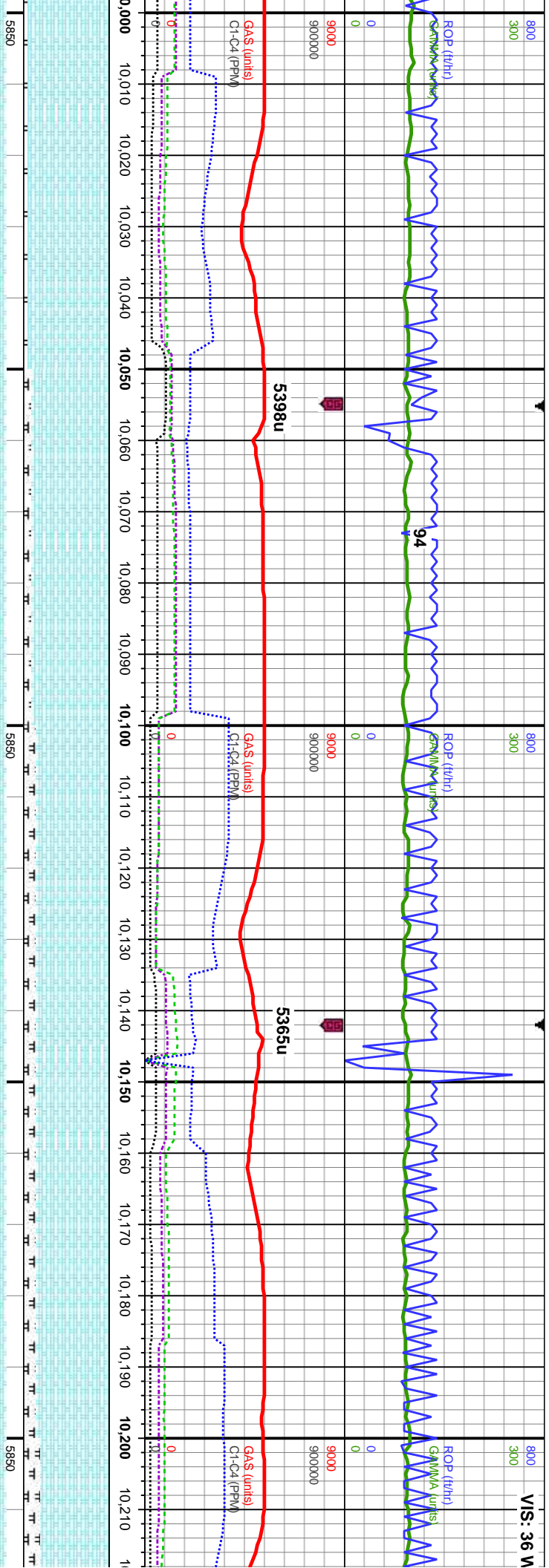
TVD (ft)

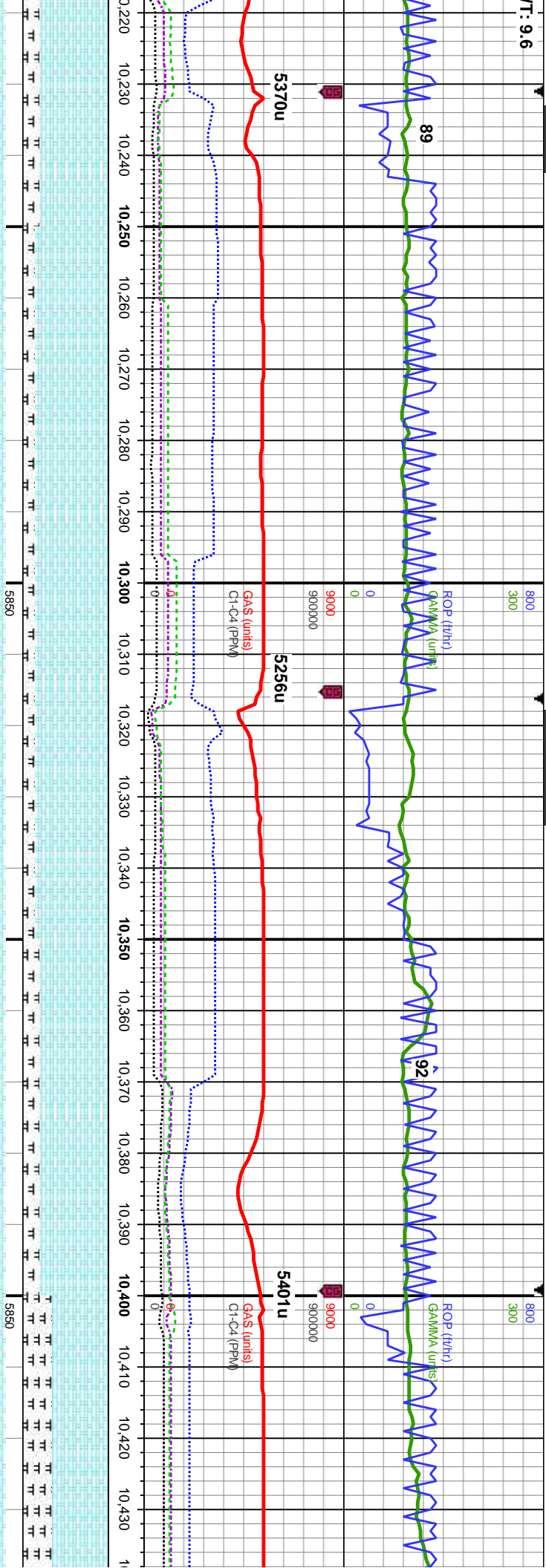
95% CHK: lt-med gy brn,
sft-sl frm, rthy-sb wxy, imbd cal,
dk gy, blk, sb pty-blky, frm
tex, mot, rthy lstr, calc mb
stmg bri blshwh, thk yel grn



MD: 9,823' Inclination: 91.42° Azimuth: 88.47° TVD: 6,122.91' VS: 3,675.48'		90% CHK: lt-med gy brn, mot, sb pty-blky, sft-sl frm, rthy-sb wxy, imbd cal, 10% MRLST: dk gy, blk, sb pty-blky, frm-mod hd, brit, stly tex, mot, rthy lstr, calc mtx, mod chk flor, tr bent, fast stmg bri blshwh, thk yel grn ring, mod sin	95% CHK: lt-med gy brn, mot, sb pty-blky, sft-sl frm, rthy-sb wxy, imbd cal, 5% MRLST: dk gy, blk, sb pty-blky, frm-mod hd, brit, stly tex, mot, rthy lstr, calc mtx, mod chk flor, fast stmg bri blshwh, thk yel grn ring, mod sin	95% CHK: lt-med gy brn, mot, sb pty-blky, sft-sl frm, rthy-sb wxy, imbd cal, 5% MRLST: dk gy, blk, sb pty-blky, frm-mod hd, brit, stly tex, mot, rthy lstr, calc mtx, mod chk flor, tr bent, v fast stmg bri blshwh, thk yel grn ring, mod sin	95% CHK: lt-med gy brn, mot, sb pty-blky, sft-sl frm, rthy-sb wxy, imbd cal, 5% MRLST: dk gy, blk, sb pty-blky, frm-mod hd, brit, stly tex, mot, rthy lstr, calc mtx, mod chk flor, tr bent, v fast stmg bri blshwh, thk yel grn ring, mod sin
TVD (ft)					

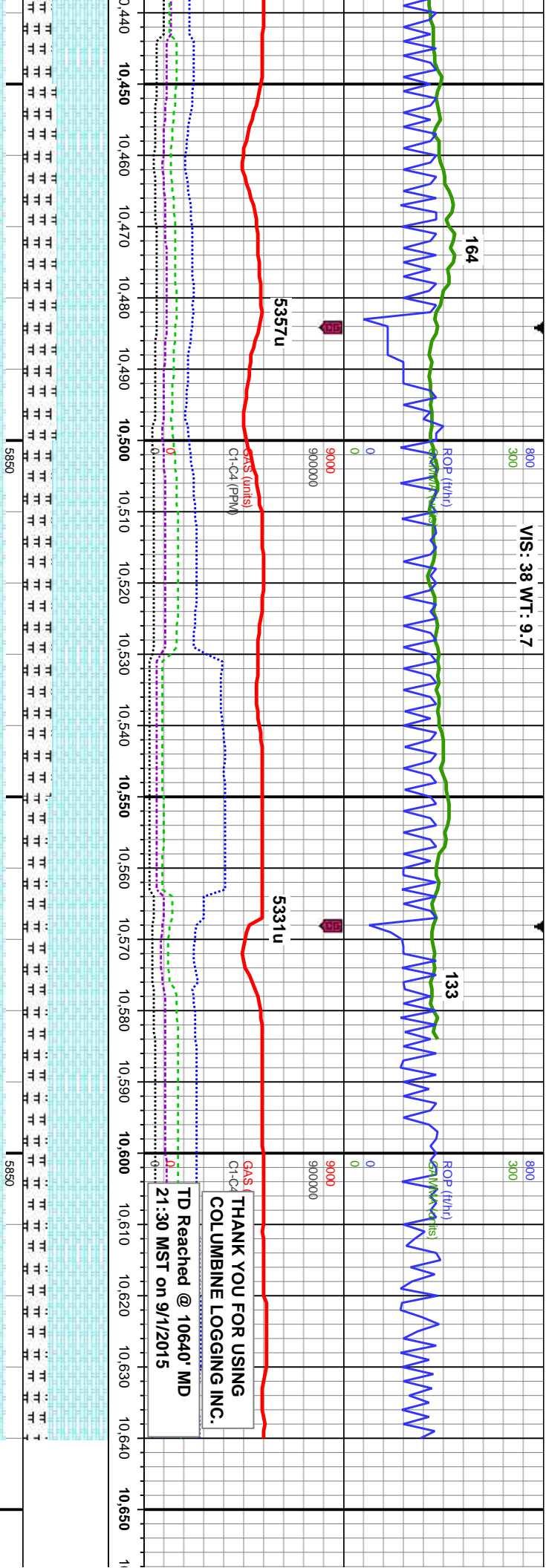


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MD: 10,252' Inclination: 89.54° Azimuth: 88.18° TVD: 6,122.75' VS: 4,104.4'		MD: 10,337' Inclination: 90.16° Azimuth: 88.59° TVD: 6,122.98' VS: 4,189.37'		MD: 10,422' Inclination: 90.15° Azimuth: 89.08° TVD: 6,122.75' VS: 4,274.35'	
sd gy brn, occ dk gy, mot, sb frm, rthy-sb wxy, imbd cal, k gy, blk, sb ply-blky, t, sily tex, mot, rthy lstr, calc mod chk flor, fast stmg bri ggn ring, mod sin	85% CHK: lt-med gy brn, occ dk gy, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, imbd cal, 15% MRLST: dk gy, blk, sb ply-blky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, tr cal frags, mod chk flor, fast stmg bri blshwh, thk yel gm ring, mod sin	85% CHK: lt-med gy brn, occ dk gy, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, imbd cal, 15% MRLST: dk gy, blk, sb ply-blky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, tr cal and frags, tr bent, g chk flor, fast stmg bri blshwh, thk yel gm ring, mod sin	80% CHK: lt-med gy brn, occ dk gy, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, imbd cal, 20% MRLST: dk gy, blk, sb ply-blky, frm-mod hd, brit, sily tex, mot, rthy lstr, calc mtx, tr cal and frags, tr bent, g chk flor, fast stmg bri blshwh, thk yel gm ring, mod sin	65% CHK: med gy brn-dk gy, mot, ply-blky, sft-sl frm, rthy-sb wxy, abi incl, 35% MRLST: dk gy, blk, sb ply-blky, frm-mod hd, brit, sily tex, mot, rthy mtx, tr cal and frags, mod stmg bri mod yel gm ring, fr sin	
TVD (ft)		TVD (ft)		TVD (ft)	





MD: 10,507'
Inclination: 90.37°
Azimuth: 89.16°
TVD: 6,122.36'
VS: 4,359.34'

MD: 10,578'
Inclination: 91.02°
Azimuth: 89.29°
TVD: 6,121.5'
VS: 4,430.33'

Depth (ft)	60% CHK: med gy brn-dk gy, mot, sb	65% CHK: med gy brn-dk gy, mot, sb	70% CHK: med gy brn-dk gy, mot, sb	70% CHK: med gy brn-dk gy, mot, sb
10,440	ply-blky, sft-sl frm, rthy-sb wxy, abnt cal	ply-blky, sft-sl frm, rthy-sb wxy, abnt cal	ply-blky, sft-sl frm, rthy-sb wxy, abnt cal	sb ply-blky, sft-sl frm, rthy-sb wxy, abnt cal
10,450	incl, 40% MRLST: dk gy, blk, sb ply-blky,	incl, 35% MRLST: dk gy, blk, sb ply-blky,	incl, 30% MRLST: dk gy, blk, sb ply-blky,	blk, sb ply-blky, frm-mod hd, brit,
10,460	frm-mod hd, brit, silty tex, mot, rthy lstr, calc	frm-mod hd, brit, silty tex, mot, rthy lstr, calc	frm-mod hd, brit, silty tex, mot, rthy lstr, calc	silty tex, mot, rthy lstr, calc
10,470	mtx, tr cal and frags, mod stmg bri blshwh,	mtx, some cal and frags, mod stmg bri	calc mtx, tr cal frags, mod stmg bri	cal frags, mod stmg bri blshwh,
10,480	mod yel grn ring, fr stn	blshwh, mod yel grn ring, fr stn	blshwh, mod yel gm ring, fr stn	mod yel gm ring, fr stn

