



Scale: 5" / 100'
Measured Depth Log

Well Name Mecklenburg State LD01-72-1AHN

Location SESE SEC1, R9N, T58W, 6 PM

State COLORADO **County** WELD

Country USA **Rig Number** H&P 326

API Number 05-123-39695 **Field** WILDCAT

Region DJ BASIN **Drilling Completed** 11/1/2014

Spud Date 10/22/2014

Surface Coordinates 400 FSL, 1190 FEL
40.77427/-103.80663

Bottom Hole Coordinates (PROJ)
810 FFNLL, 360 FFELL

Ground Elevation 4652' **K.B. Elevation** 4682'

Logged Interval 4850' To 14,824 **Total Depth** 14,824

Formation NIOBRARA B CHALK

Type of Drilling Fluid LSND

Operator

Company Noble Energy Inc

Address 1625 Broadway Suite 2200
Denver, CO 80202

Geologist

Name JAMES TAYLOR

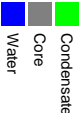
Company NOBLE ENERGY INC.

Address 1625 Broadway Suite 2200
Denver, CO 80202

Other

COLUMBINE LOGGING MATT HOPKINS
MIKE KERSCHEN

Zone Color Coding



Rock Types

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

Accessories

GASTROPOD	ARGILLITE GRAIN	HEAVY MINERAL	ANHYDRITE STRINGER
INOCERAMUS	BENTONITE	KAOLIN	BENTONITE STRINGER
OOLITE	BITUMENOUS SUBSTANCE	MARLSTONE	COAL STRINGER
OSTRACOD	BRECCIA FRAGMENTS	MICACEOUS	DOLOMITE STRINGER
PELECPOD	CALCAREOUS	MINERAL CRYSTALS	GYPSUM STRINGER
PELLET	CARBONACEOUS FLAKES	NODULES	LIMESTONE STRINGER
PISOLITE	CHTDK	PHOSPHATE PELLETS	MARLSTONE (CALC) STRG
PLANT REMAINS	CHTLT	PYRITE	MARLSTONE (DOL) STRG
PLANT SPORES	COAL - THIN BEDS	SALT CAST	SANDSTONE STRINGER
SCAPHOPOD	DOLOMITIC	SANDY	SHALE STRINGER
STROMATOPOROID	FELDSPAR	SILICEOUS	SILTSTONE STRINGER
ECHINOID	FERRUGINOUS PELLETT	SILTY	
FISH	FERRUGINOUS	TUFFACEOUS	
FORAMINIFERA	ANHYDRITIC	GLAUCONITE	
F FOSSIL	ARGILLACEOUS	GYPSIFEROUS	

Minerals

Stringer

Oil Show

P PINPOINT
V VUGGY







































Engineering

D DEAD
EVEN
QUESTIONABLE
BIT
SPOTTED STAINING
CONNECTION (UP)

Porosity

CONNECTION (DOV)
CONNECTION GAS
CONNECTION GA
TRIP GAS
TRIP GAS (LEFT)
FRACTURE
INTERCRYSTALLINE
INTEROOLITIC
MOLDIC
ORGANIC
CORE - LOST
CORE - RECOVERED

Other 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		MINDEPTH MN DEPTH		MX MICROXLN
Rounding					
	MINDEPTH MN DEPTH UP				MS MUDSTONE
	MINDEPTH MN DEPTH (DOWN)		ANGULAR		PS PACKSTONE
	NORMAL FAULT		ROUNDED		WS WACKESTONE
	OVERTURNED STRATA		SUBANG		
	REVERSE FAULT		SUBRND		
Sorting					
	CASING				M MODERATE
Textures					
	SIDEWALL CORE (LEFT)				P POOR
	SIDEWALL CORE (RIGHT)		BOUNDSTONE		W WELL
	SLIDE		CHALKY		
	SURVEY		CRYPTOXLN		

Slide/Rotate

ROP

ROP

Total Gas & Chromatograph

GAS

C1

C2

C3

C4

Depth Labels

% Lith

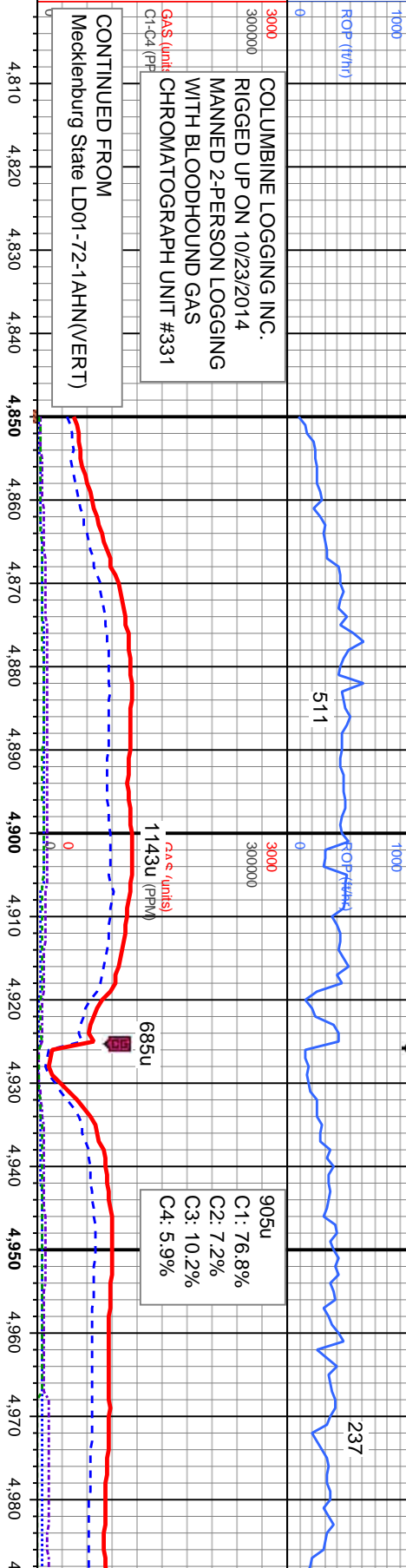
GAMMA

GR

Well Bore
TVD

Oil Show

Images



50' Sample Intervals

MD: 4,869'
Inclination: 4.13°
Azimuth: 53.93°
TVD: 4,794.21'
VS: 8.43'

MD: 4,964'
Inclination: 10.11°
Azimuth: 353.64°
TVD: 4,888.53'
VS: 18.83'

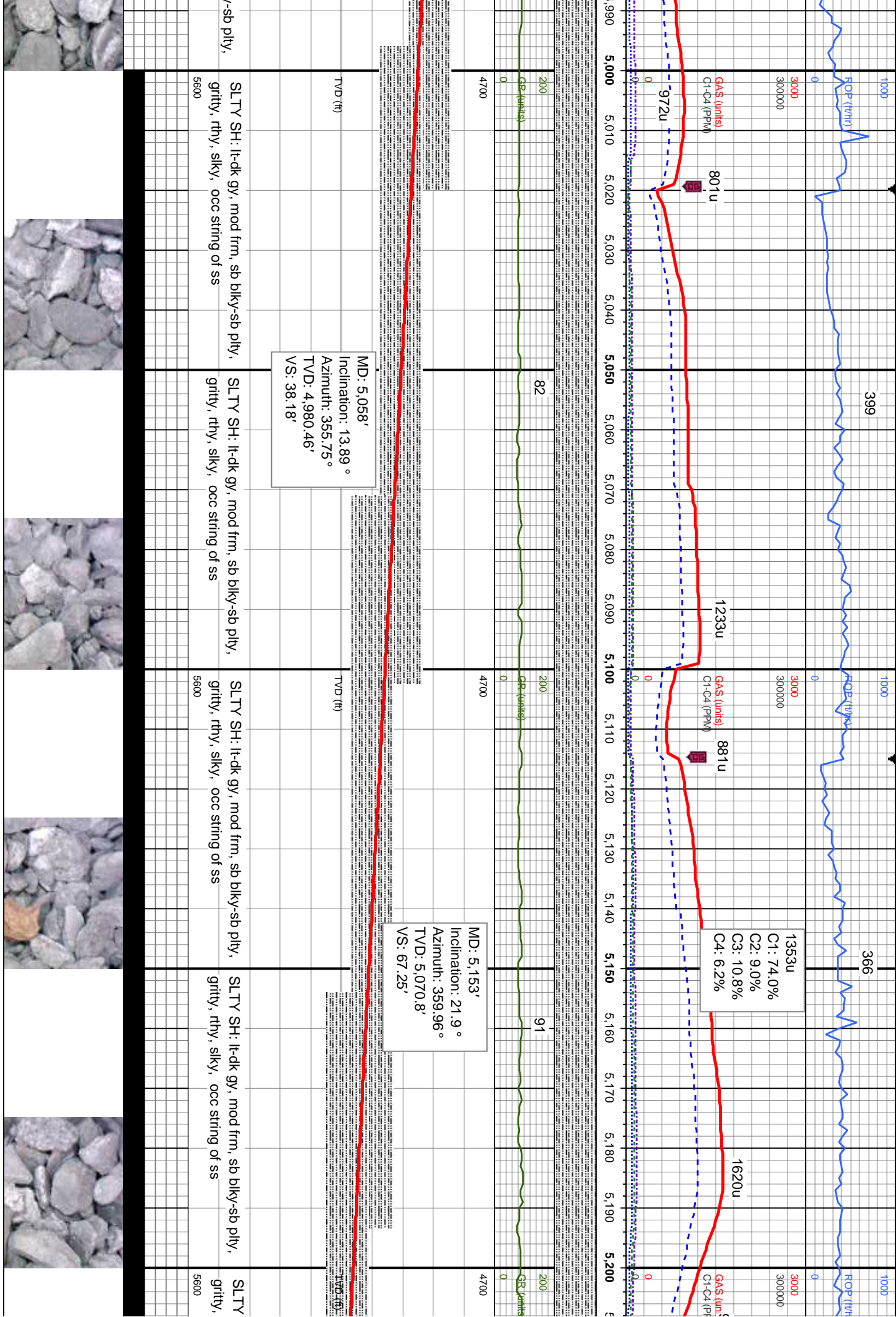
SLTY SH: lt-dk gy, mod frm, sb blkly-sb pily,
gritty, rthy, silky, occ string of ss

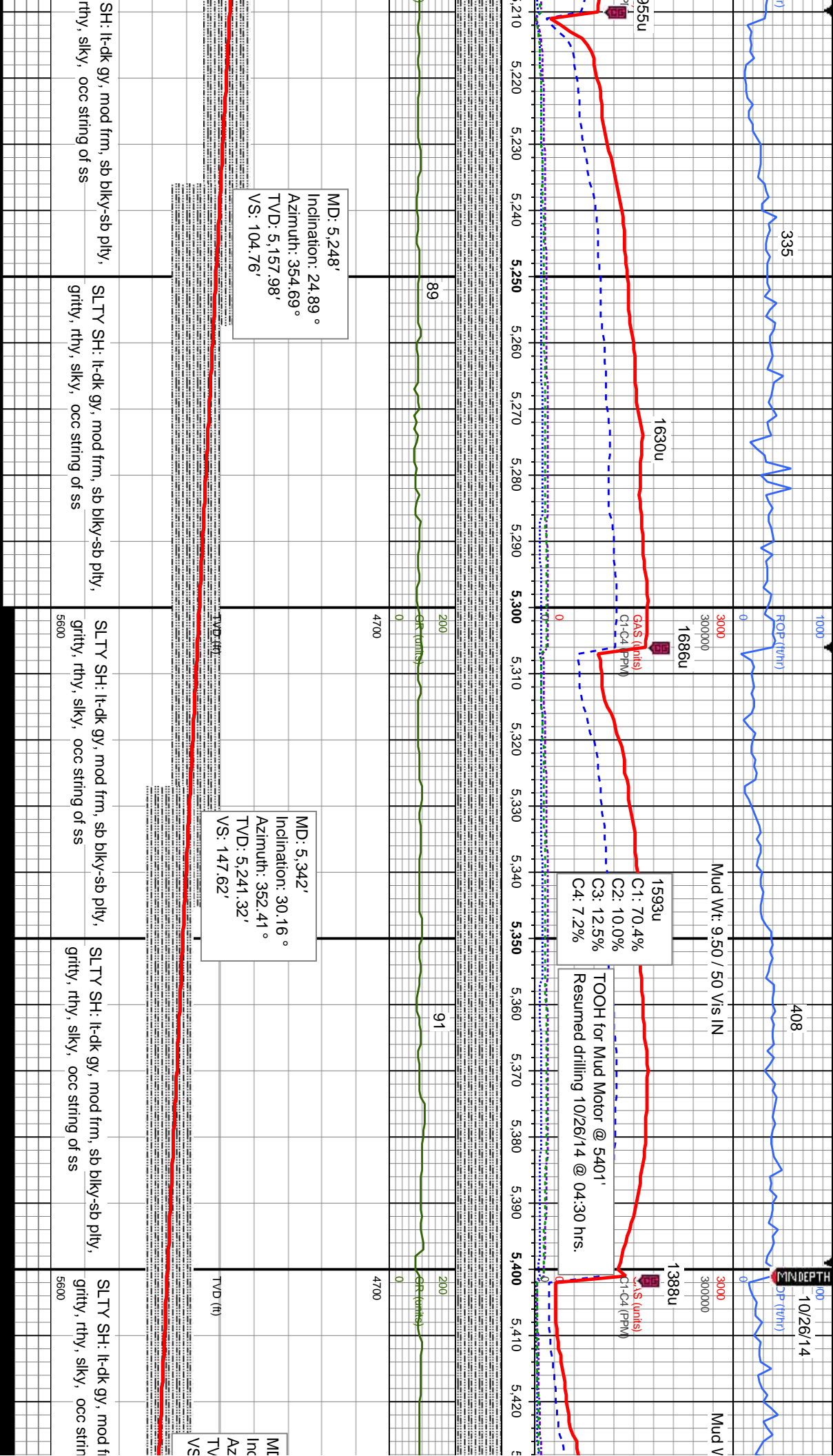
SLTY SH: lt-dk gy, mod frm, sb blkly-sb pily,
gritty, rthy, silky, occ string of ss

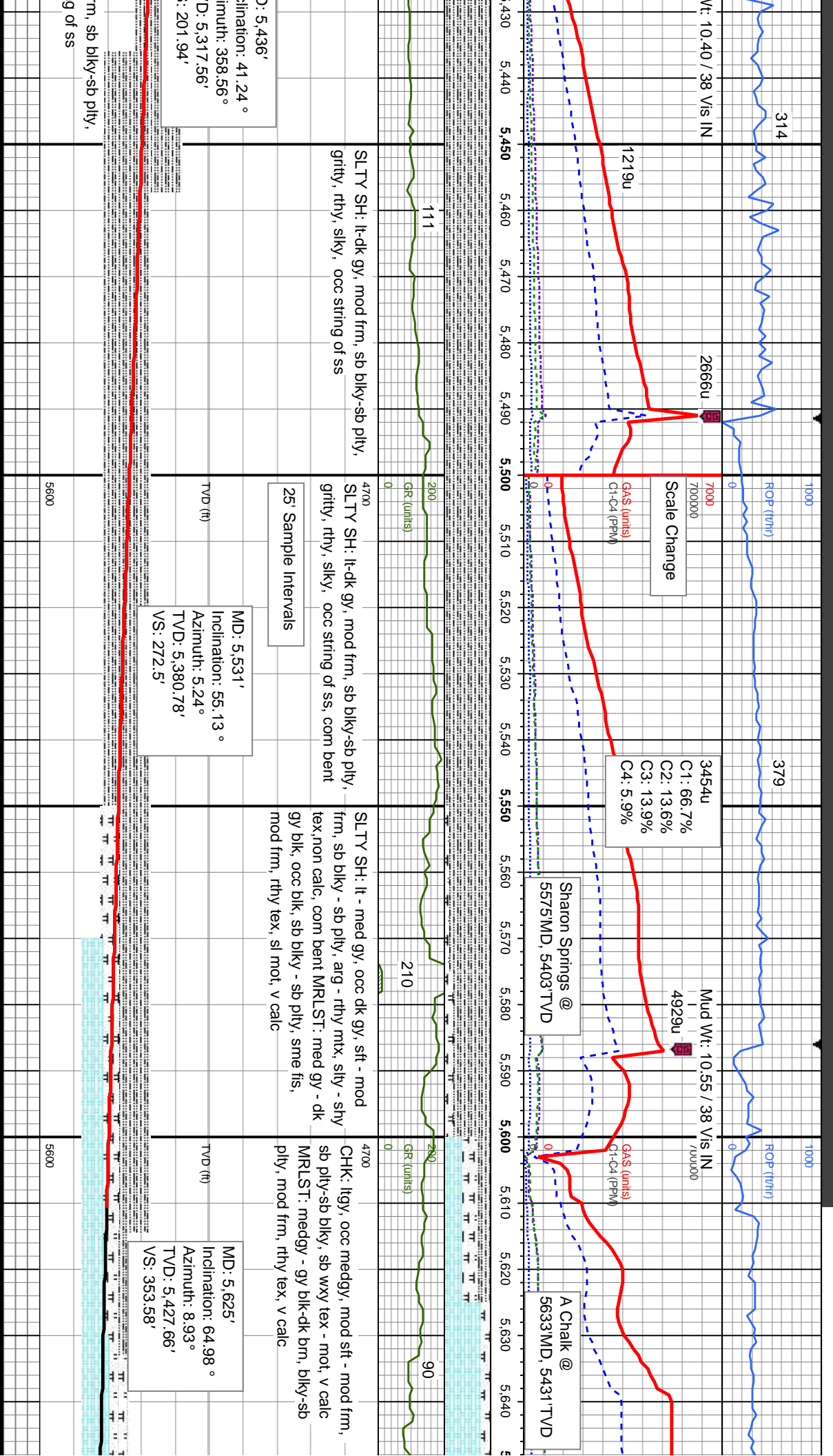
SLTY SH: lt-dk gy, mod frm, sb blkly
gritty, rthy, silky, occ string of ss

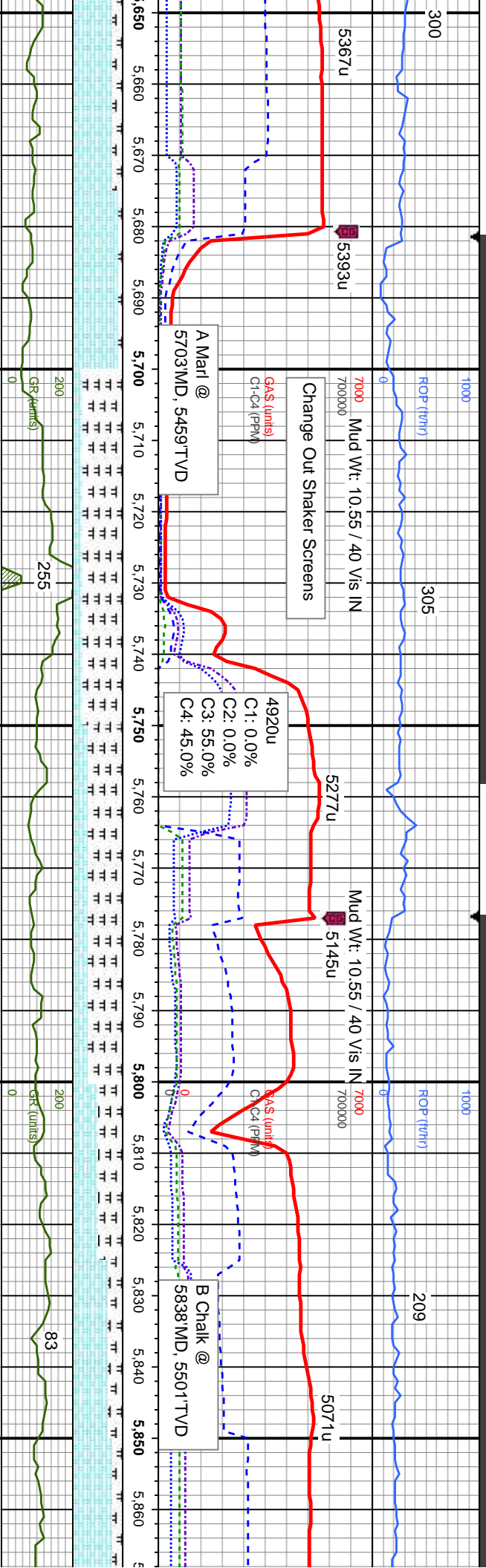
E
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M
F
T
S











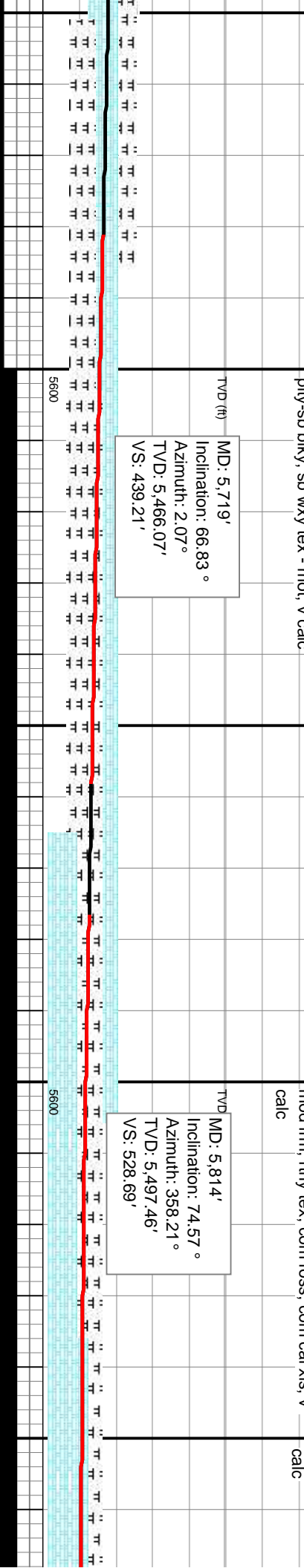
CHK: ltgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc
MRLST: medgy - gy blk-dk brn, blk-sb pty, mod frm, rthy tex, v calc

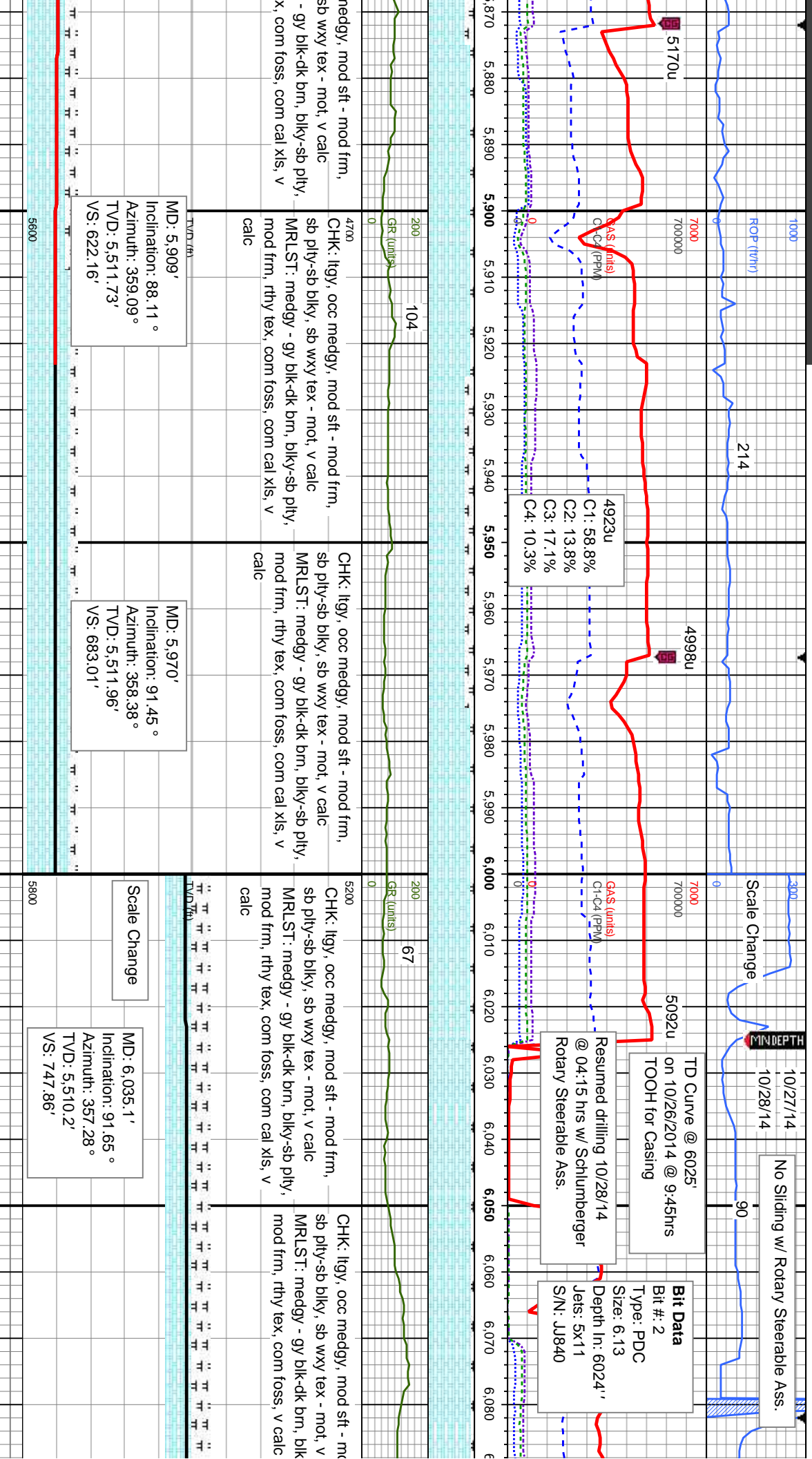
MD: 5,719'
Inclination: 66.83 °
Azimuth: 2.07 °
TVD: 5,466.07'
VS: 439.21'

MRLST: medgy - gy blk-dk brn, blk-sb pty, mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc

MD: 5,814'
Inclination: 74.57 °
Azimuth: 358.21 °
TVD: 5,497.46'
VS: 528.69'

CHK: ltgy, occ r sb pty-sb blk, , MRLST: medgy mod frm, rthy te





No Sliding w/ Rotary Steerable Ass.

10/27/14
10/28/14

TID Curve @ 6025'
on 10/26/2014 @ 9:45hrs
TOOH for Casing

Resumed drilling 10/28/14
@ 04:15 hrs w/ Schlumberger
Rotary Steerable Ass.

Bit Data
Bit #: 2
Type: PDC
Size: 6.13
Depth In: 6024'
Jets: 5x11
S/N: JJ840

Scale Change

MD: 6,035.1'
Inclination: 91.65 °
Azimuth: 357.28 °
TVD: 5,510.2'
VS: 747.86'

MD: 5,909'
Inclination: 88.11 °
Azimuth: 359.09 °
TVD: 5,511.73'
VS: 622.16'

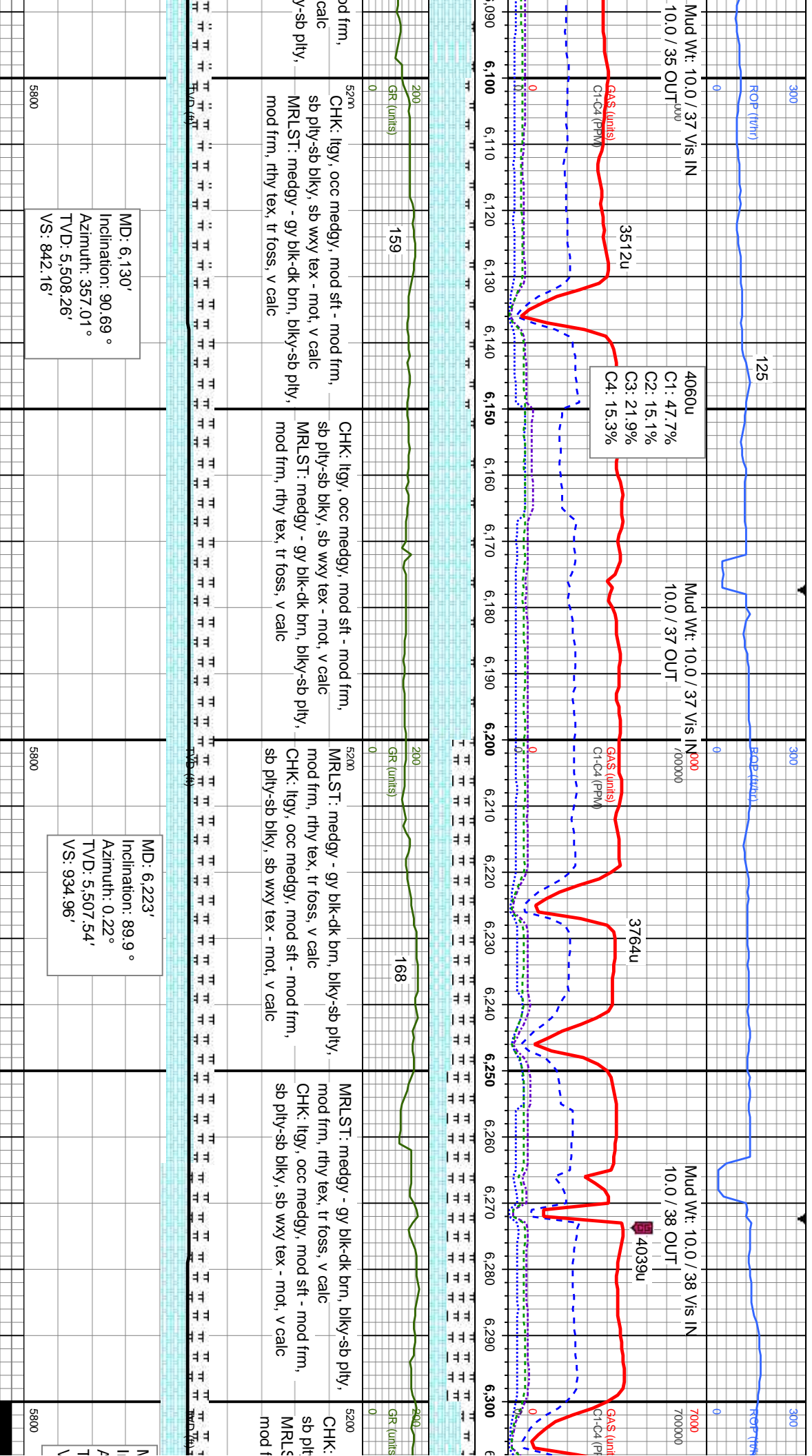
MD: 5,970'
Inclination: 91.45 °
Azimuth: 358.38 °
TVD: 5,511.96'
VS: 683.01'

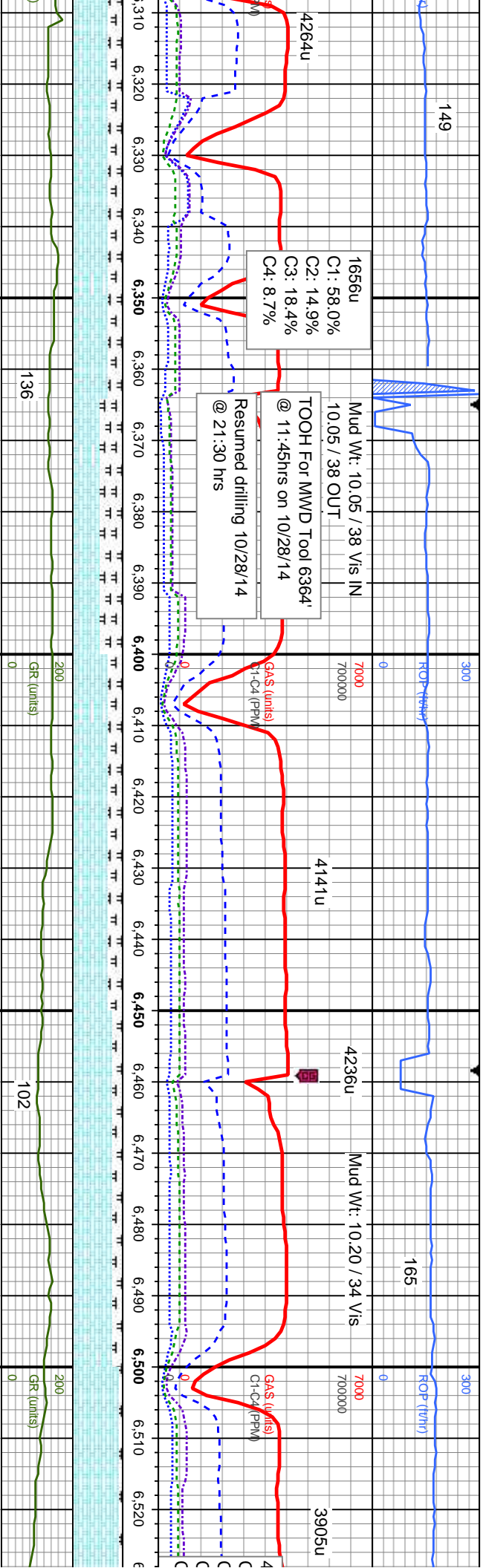
CHK: ltgy, occ medgy, mod sft - mod frm,
sb pty-sb blk, sb wxy tex - mot, v calc
MRLST: medgy - gy blk-dk brn, blkly-sb pty,
mod frm, rthy tex, com foss, com cal xls, v
calc

CHK: ltgy, occ medgy, mod sft - mod frm,
sb pty-sb blk, sb wxy tex - mot, v calc
MRLST: medgy - gy blk-dk brn, blkly-sb pty,
mod frm, rthy tex, com foss, com cal xls, v
calc

CHK: ltgy, occ medgy, mod sft - mod frm,
sb pty-sb blk, sb wxy tex - mot, v calc
MRLST: medgy - gy blk-dk brn, blkly-sb pty,
mod frm, rthy tex, com foss, com cal xls, v
calc

CHK: ltgy, occ medgy, mod sft - mod frm,
sb pty-sb blk, sb wxy tex - mot, v calc
MRLST: medgy - gy blk-dk brn, blkly-sb pty,
mod frm, rthy tex, com foss, com cal xls, v
calc





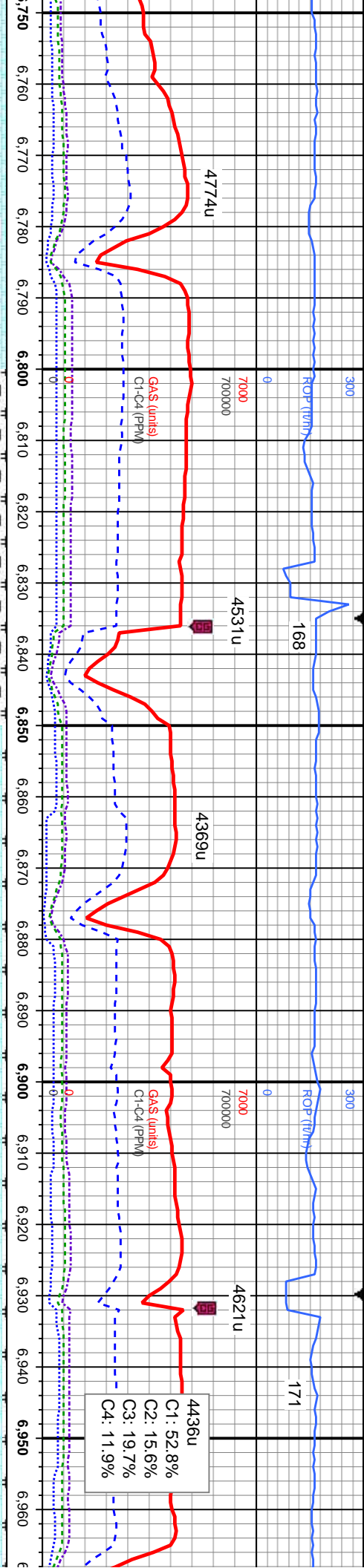
ltgy, occ medgy, mod sft - mod frm, - -sb blkly, sb wxy tex - mot, v calc sft: medgy - gy blk-dk brn, blkly-sb ply, frm, rthy tex, tr foss, v calc	CHK: ltgy, occ medgy, mod sft - mod frm, sb ply-sb blkly, sb wxy tex - mot, v calc MRLST: medgy - gy blk-dk brn, blkly-sb ply, mod frm, rthy tex, tr foss, v calc	CHK: ltgy, occ medgy, mod sft - mod frm, sb ply-sb blkly, sb wxy tex - mot, v calc MRLST: medgy - gy blk-dk brn, blkly-sb ply, mod frm, rthy tex, v calc	CHK: ltgy, occ medgy, mod sft - mod frm, sb ply-sb blkly, sb wxy tex - mot, v calc MRLST: medgy - gy blk-dk brn, blkly-sb ply, mod frm, rthy tex, v calc	CHK: ltgy, occ medgy, mod sft - mod frm, r sb ply-sb blkly, sb wxy tex MRLST: medgy - gy blk- mod frm, rthy tex, v calc
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MD: 6,317'
Inclination: 88.73 °
Azimuth: 2.45 °
VD: 5,508.66'
SI: 1,028.92'

MD: 6,411'
Inclination: 89.21 °
Azimuth: 359.11 °
TVD: 5,510.35'
VS: 1,122.84'

MD: 6,506'
Inclination: 88.18 °
Azimuth: 359.22 °
TVD: 5,512.52'
VS: 1,217.63'





CHK: lgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc, tr marl

5200

CHK: lgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc

MRLST: medgy - gy blk-dk brn, blk-pty, pty, mod frm, rthy tex, v calc

5200

CHK: lgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc

MRLST: medgy - gy blk-dk brn, blk-pty, pty, mod frm, rthy tex, v calc

5200

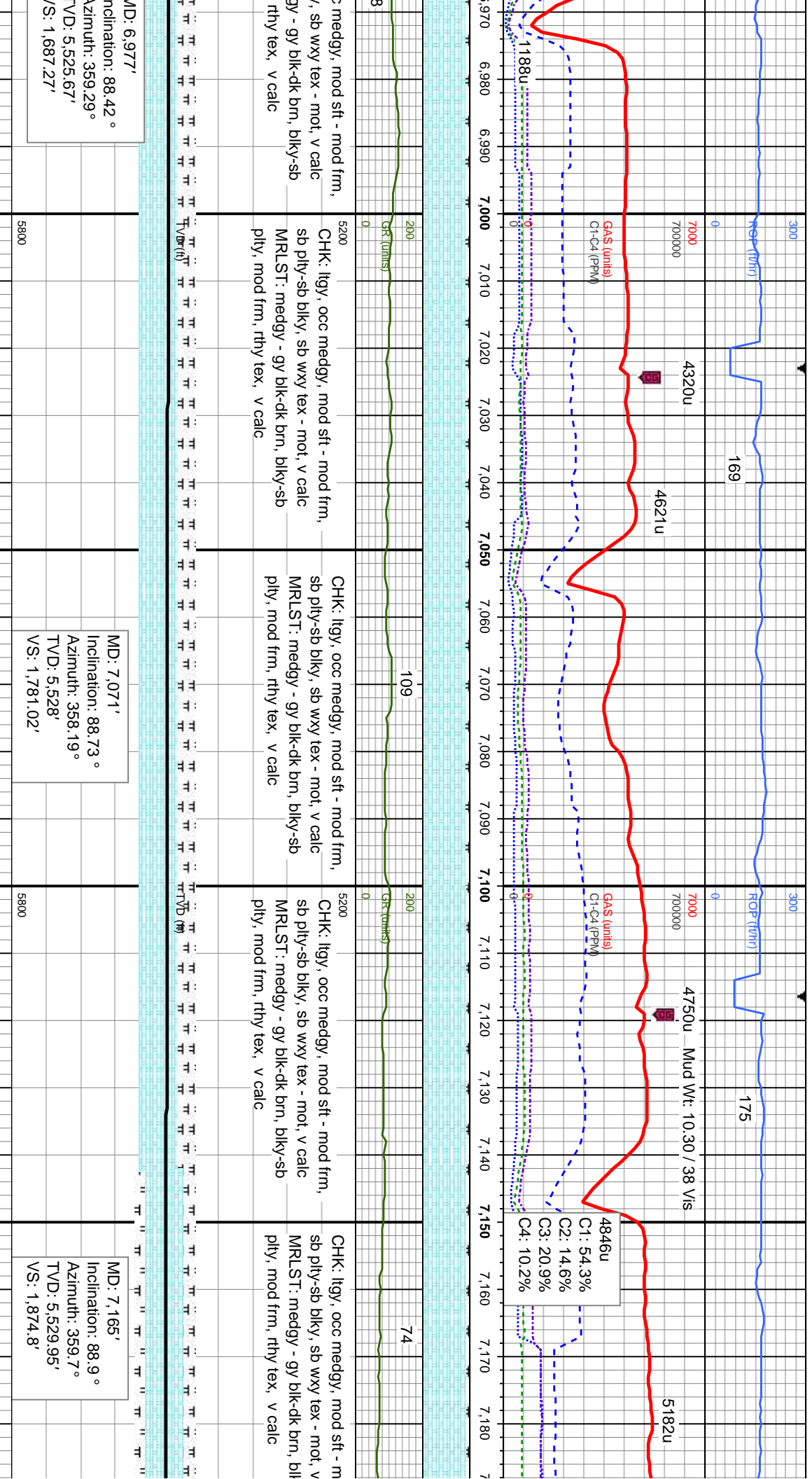
CHK: lgy, occ medgy, mod sft - mod frm, sb pty-sb blk

MRLST: medgy - gy blk-dk brn, blk-pty, pty, mod frm, rthy tex, v calc

MD: 6,787'
Inclination: 88.45°
Azimuth: 357.71°
TVD: 5,520.57'
VS: 1,497.79'

MD: 6,881'
Inclination: 88.49°
Azimuth: 359°
TVD: 5,523.08'
VS: 1,591.49'



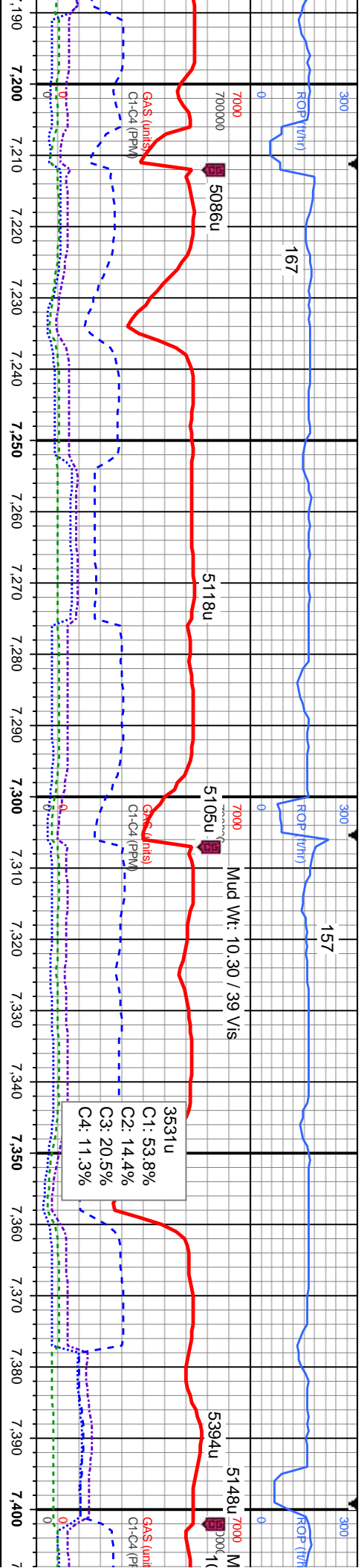


MD: 6,977'
Inclination: 88.42°
Azimuth: 359.29°
VD: 5,525.67'
VS: 1,687.27'

MD: 7,071'
Inclination: 88.73°
Azimuth: 358.19°
VD: 5,528'
VS: 1,781.02'

MD: 7,165'
Inclination: 88.9°
Azimuth: 359.7°
VD: 5,529.95'
VS: 1,874.8'





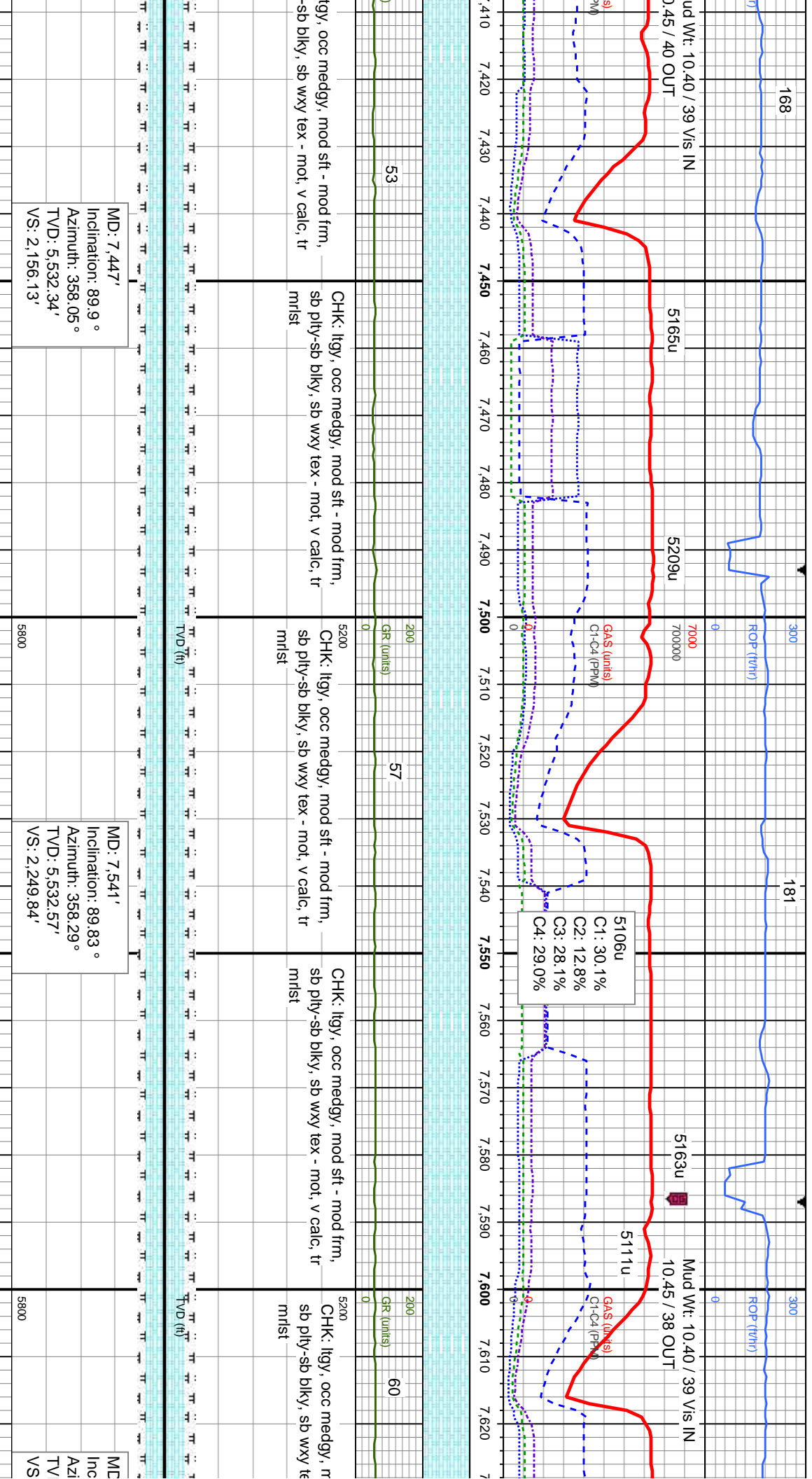
od frm, calc y-sb	5200	200	GR (units)	56	5200	200	GR (units)	59	5200	200	GR (units)
CHK: ltgy, occ medgy, mod sft - mod frm, sb pfty-sb blkly, sb wxy tex - mot, v calc, tr mrst					CHK: ltgy, occ medgy, mod sft - mod frm, sb pfty-sb blkly, sb wxy tex - mot, v calc, tr mrst				CHK: ltgy, occ medgy, mod sft - mod frm, sb pfty-sb blkly, sb wxy tex - mot, v calc, tr mrst		

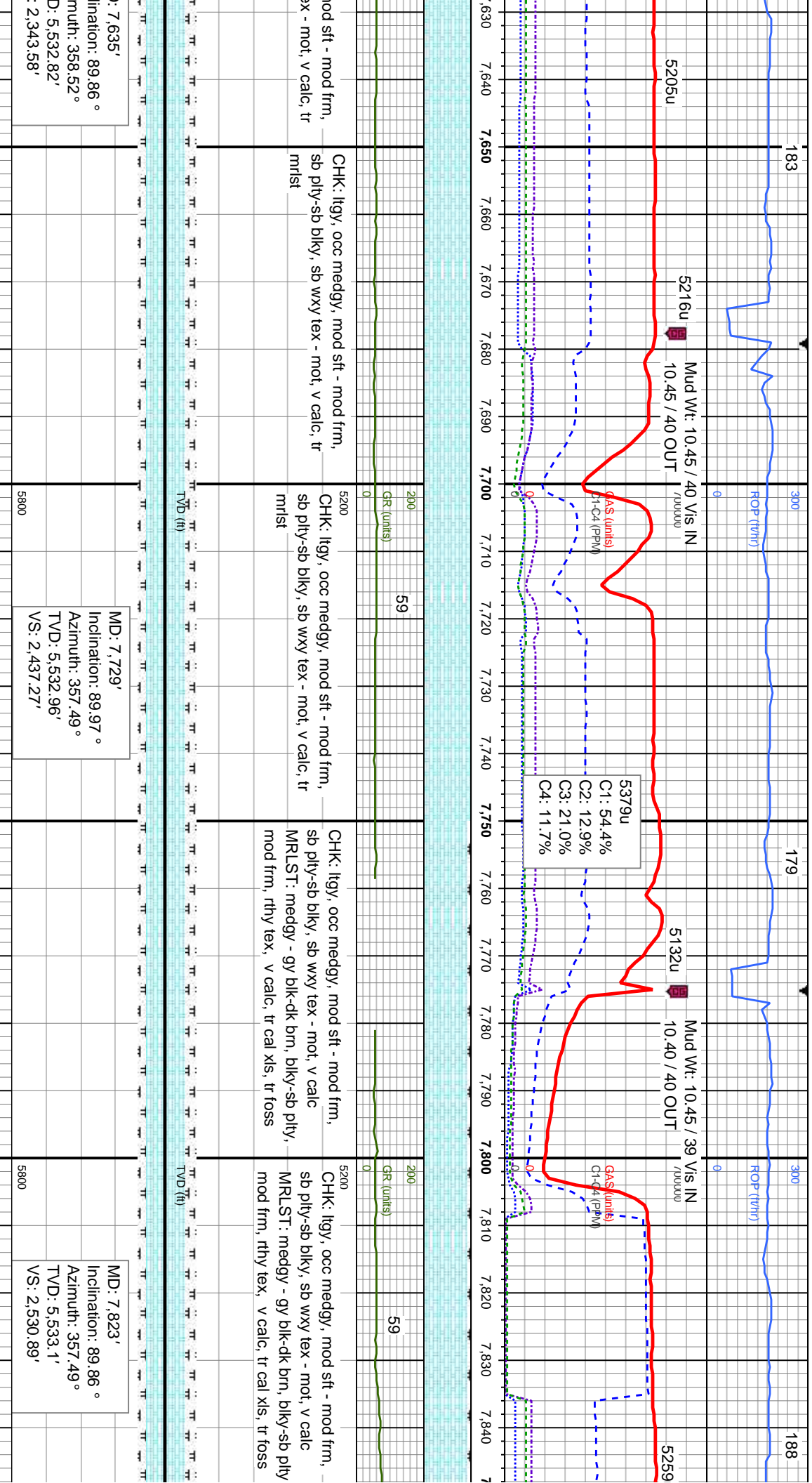
TVD (ft)					TVD (ft)					TVD (ft)	
5800					5800					5800	

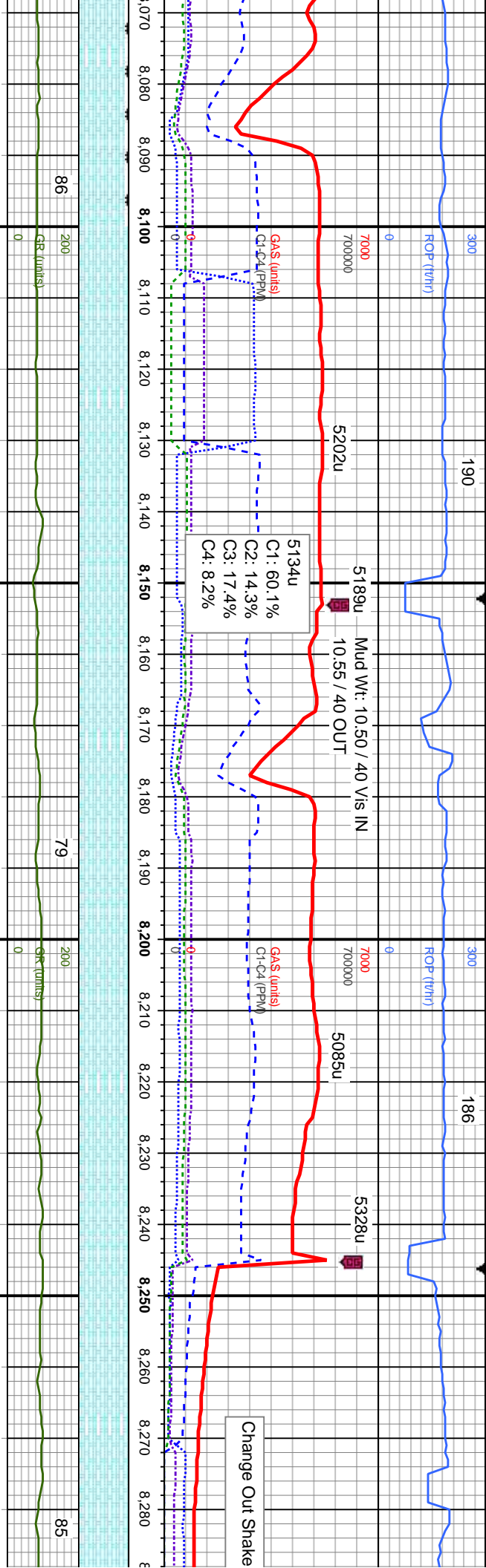
MD: 7,259'
Inclination: 89.45 °
Azimuth: 358.72°
TVD: 5,531.3'
VS: 1,968.62'

MD: 7,353'
Inclination: 89.69 °
Azimuth: 358.73°
TVD: 5,532.01'
VS: 2,062.39'









medgy, mod sft - mod frm, sb wxy tex - mot, v calc - gy blk-dk brn, blk/sb pty, x, v calc, tr cal xls, tr foss

5200
CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blkgy, sb wxy tex - mot, v calc, tr mlst

5200
CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blkgy, sb wxy tex - mot, v calc, tr mlst

5200
CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blkgy, sb wxy tex - mot, v calc, tr mlst

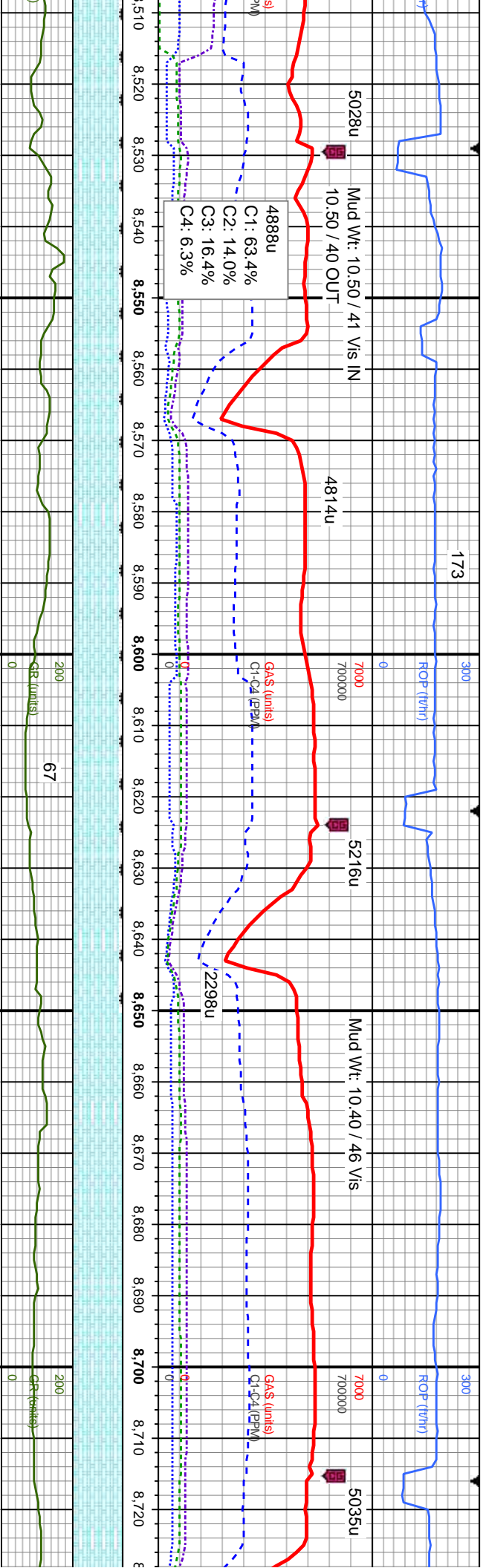
5200
CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blkgy, sb wxy tex - mot, v calc, tr mlst

MD: 8,105'
Inclination: 89.93°
Azimuth: 357.82°
TVD: 5,532.71'
VS: 2,812.22'

MD: 8,199'
Inclination: 89.9°
Azimuth: 358.73°
TVD: 5,532.85'
VS: 2,905.94'

MD: 8
Inclina
Azimu
TVD:
VS: 2,





lgy, occ medgy, mod sft - mod frm,
sb pty-sb blkly, sb wxy tex - mot, v calc
ST: medgy - gy blk-dk brn, blkly-sb
mod frm, rthy tex, v calc, tr cal xls, tr

CHK: lgy, occ medgy, mod sft - mod frm,
sb pty-sb blkly, sb wxy tex - mot, v calc
MRLST: medgy - gy blk-dk brn, blkly-sb
pty, mod frm, rthy tex, v calc, tr cal xls, tr
foss

CHK: lgy, occ medgy, mod sft - mod frm,
sb pty-sb blkly, sb wxy tex - mot, v calc
MRLST: medgy - gy blk-dk brn, blkly-sb
pty, mod frm, rthy tex, v calc, tr cal xls, tr
foss

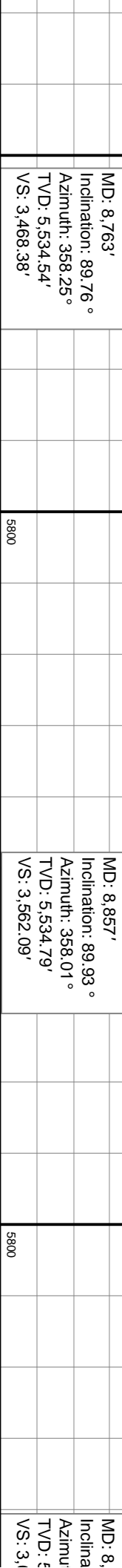
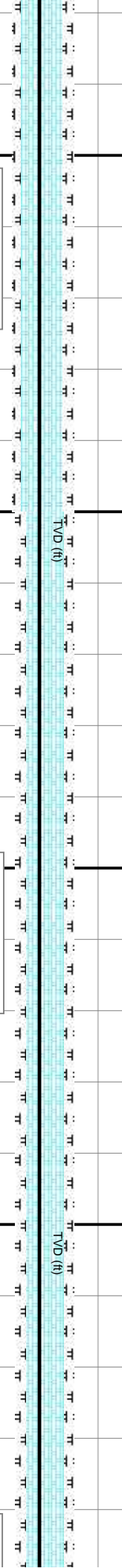
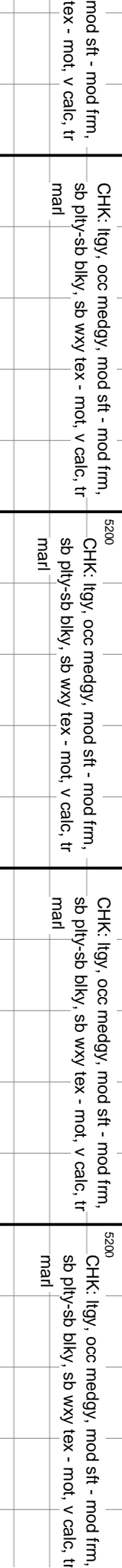
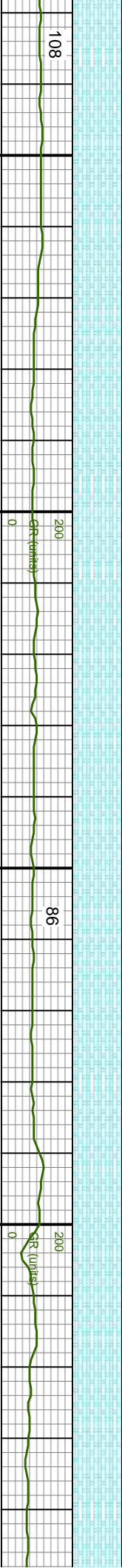
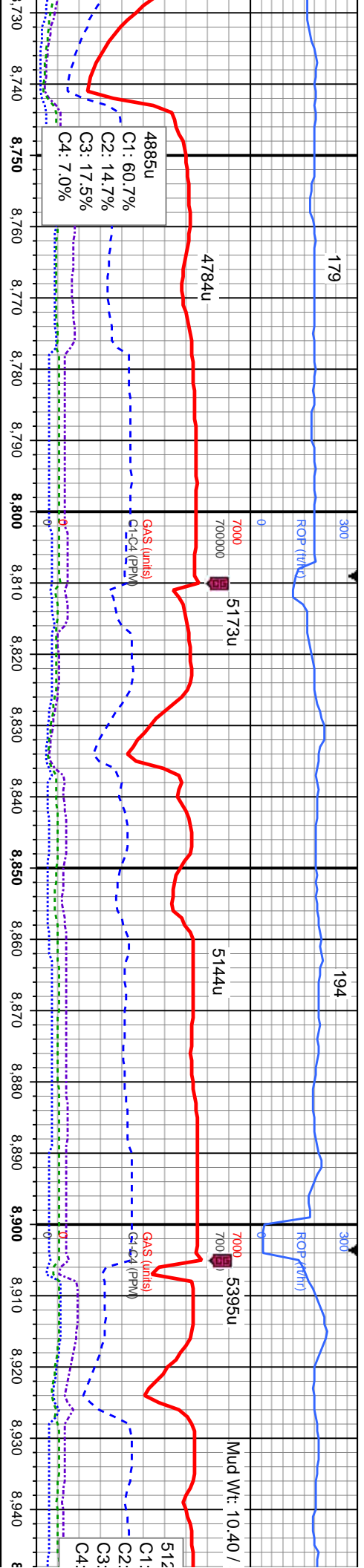
CHK: lgy, occ medgy, mod sft - mod frm,
sb pty-sb blkly, sb wxy tex - mot, v calc,
marl

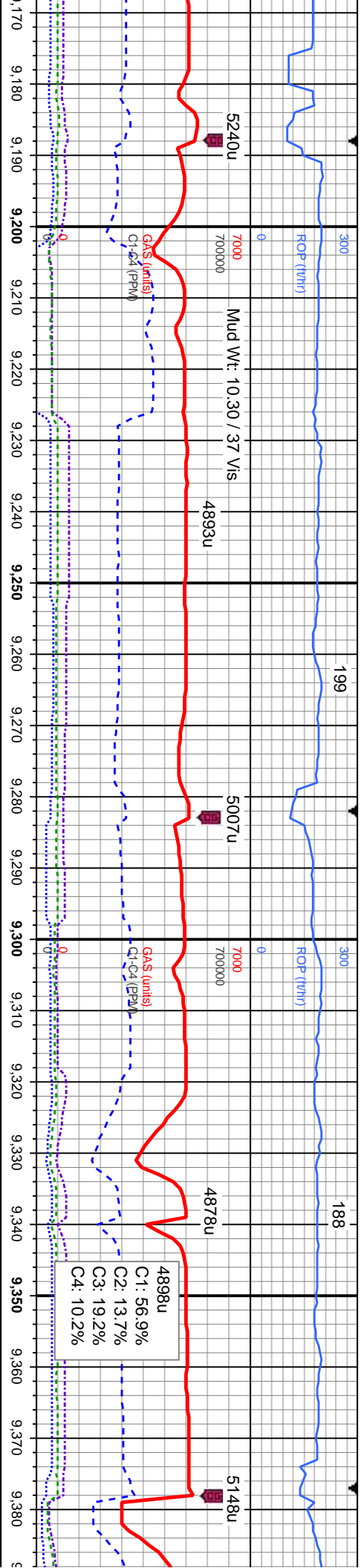
CHK: lgy, occ medgy,
sb pty-sb blkly, sb wxy
marl

MD: 8,576'
Inclination: 89.76 °
Azimuth: 358.87 °
TVD: 5,533.92'
VS: 3,281.79'

MD: 8,670'
Inclination: 89.86 °
Azimuth: 359.24 °
TVD: 5,534.23'
VS: 3,375.6'







medgy, mod sft - mod frm,
sb wxy tex - mot, v calc, tr

5200

CHK: Itgy, occ medgy, mod sft - mod frm,
sb pty-sb blk, sb wxy tex - mot, v calc, tr
marl

5200

CHK: Itgy, occ medgy, mod sft - mod frm,
sb pty-sb blk, sb wxy tex - mot, v calc, tr
marl, tr bent, pyr

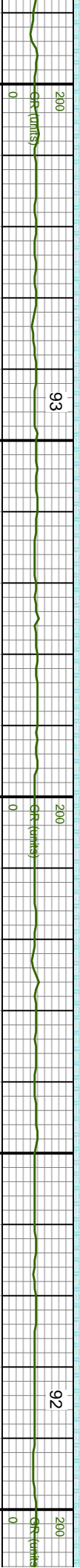
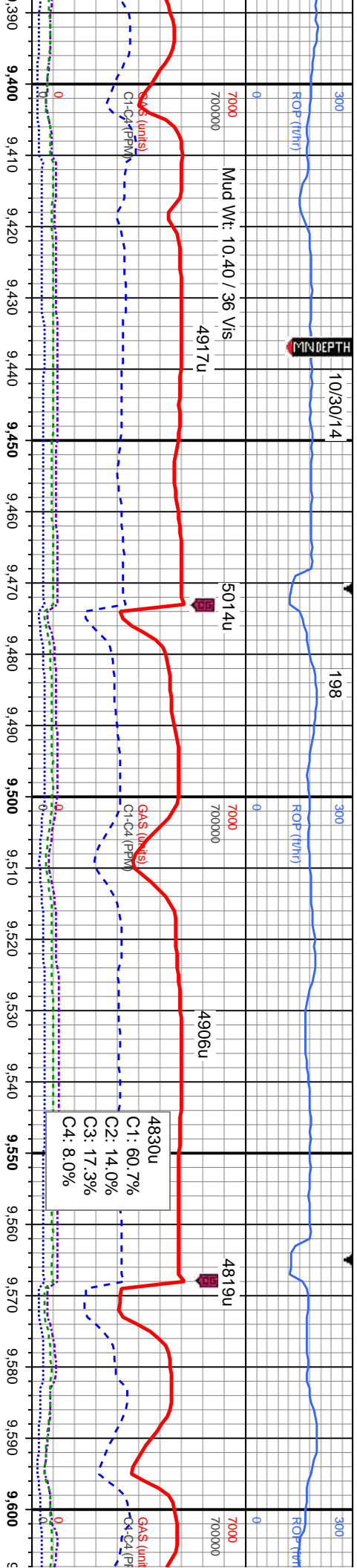
5200

CHK: Itgy, occ medgy, mod sft - mod frm,
sb pty-sb blk, sb wxy tex - mot, v calc, tr
marl, tr bent, pyr

MD: 9,236'
Inclination: 89.62 °
Azimuth: 358.3 °
TVD: 5,535.75'
VS: 3,939.99'

MD: 9,330'
Inclination: 89.83 °
Azimuth: 358.93 °
TVD: 5,536.2'
VS: 4,033.76'





mod frm, v calc, tr

CHK: ltgy, occ medgy, mod sft - mod frm, sb pty-sb blkly, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

CHK: ltgy, occ medgy, mod sft - mod frm, sb pty-sb blkly, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

CHK: ltgy, occ medgy, mod sft - mod frm, sb pty-sb blkly, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

CHK: ltgy, occ medgy, mod sft - mod frm, sb pty-sb blkly, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

TVD (ft)

TVD (ft)

TVD (ft)

TVD (ft)

MD: 9,425'

Inclination: 89.83°

Azimuth: 358.46°

TVD: 5,536.48'

VS: 4,128.53'

MD: 9,519'

Inclination: 89.97°

Azimuth: 0.33°

TVD: 5,536.64'

VS: 4,222.37'

MD: 9,519'

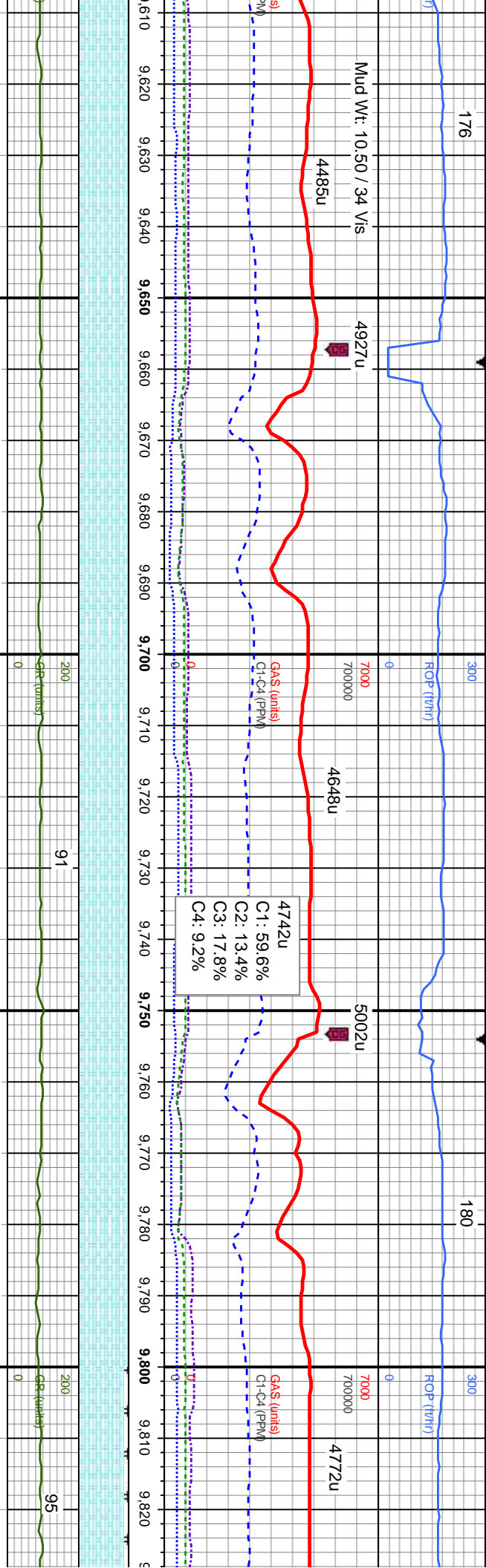
Inclination: 89.97°

Azimuth: 0.33°

TVD: 5,536.64'

VS: 4,222.37'





CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

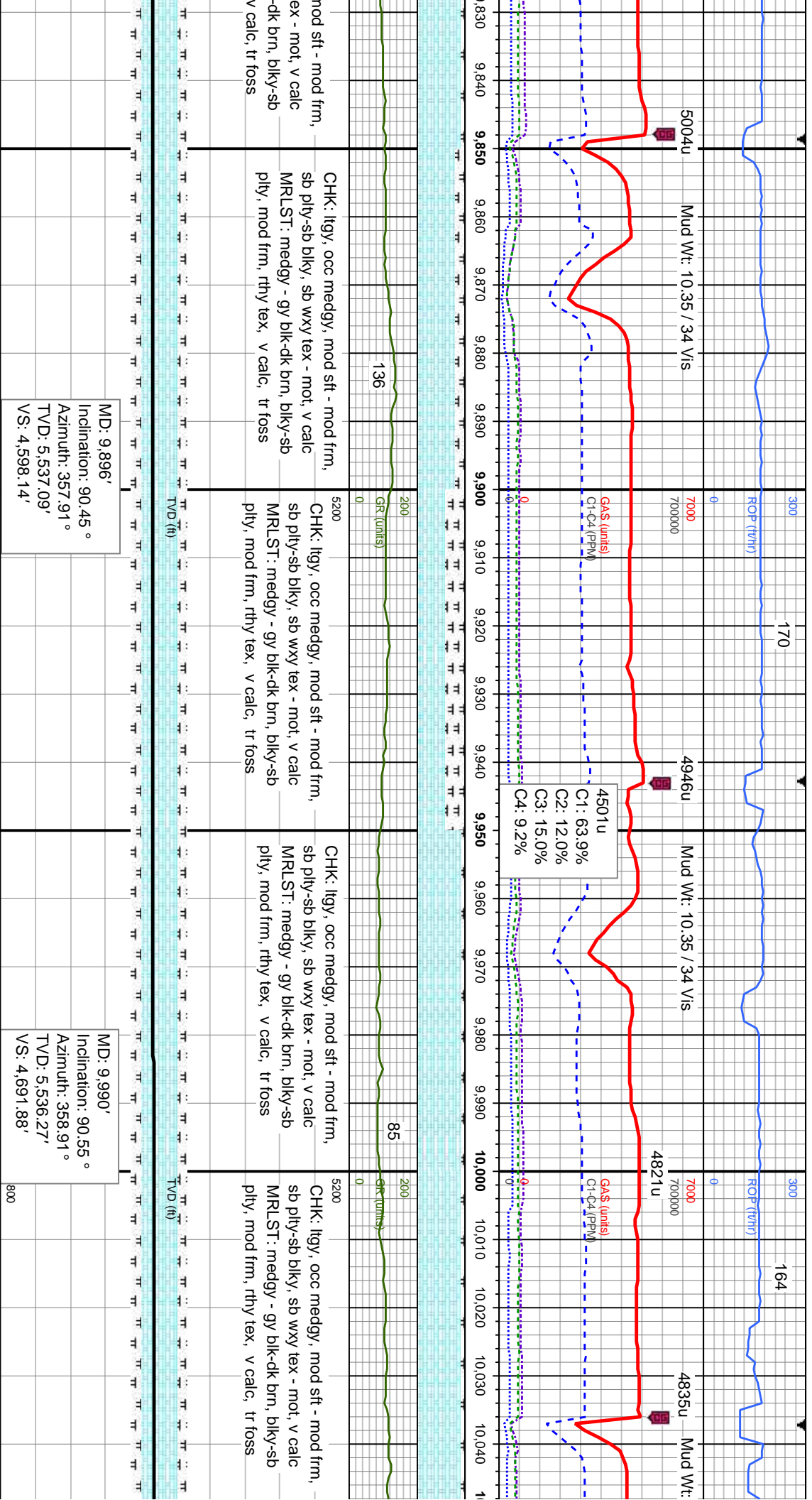
CHK: Itgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc, tr marl, tr bent, pyr

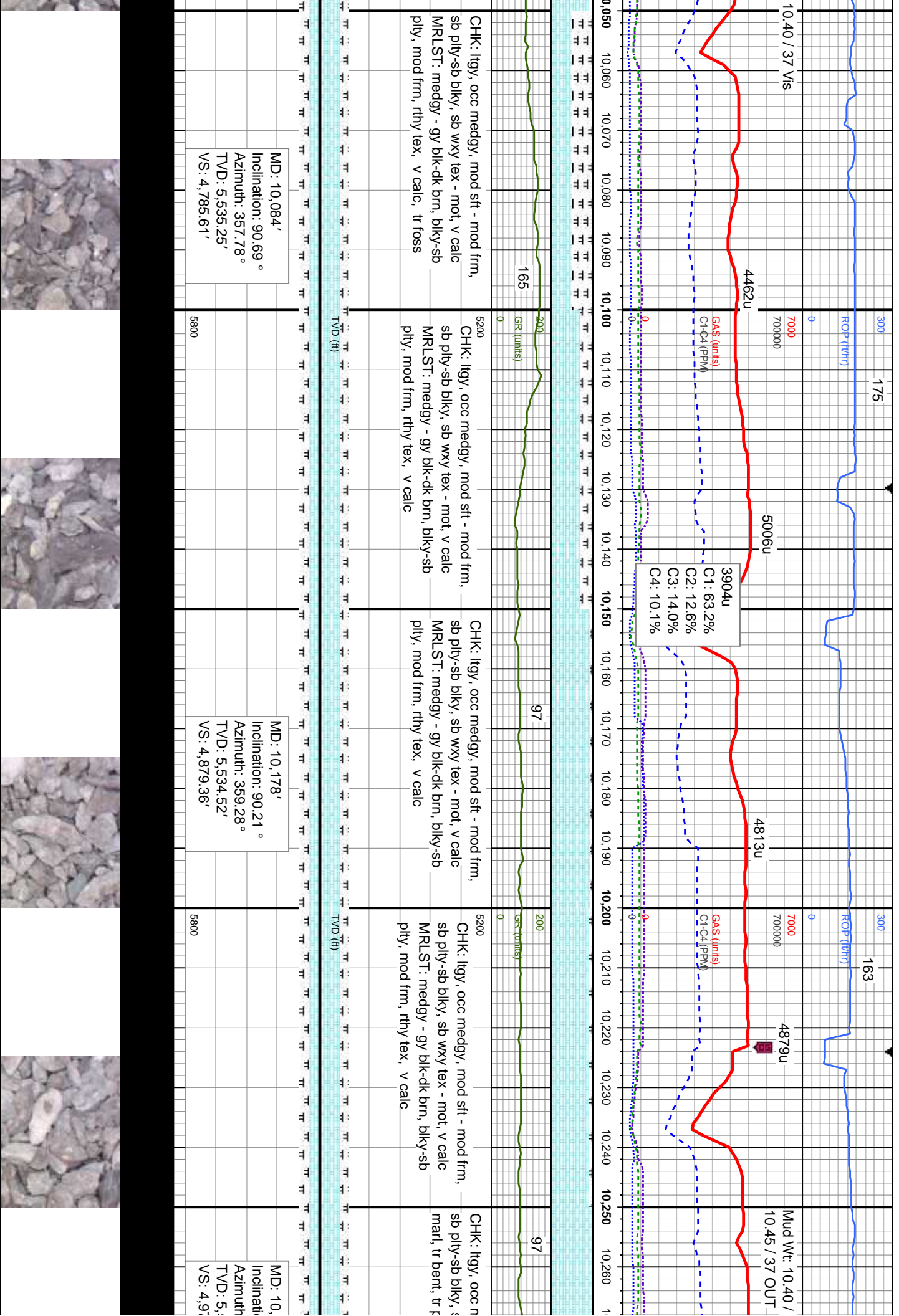
MD: 9,613'
Inclination: 89.76 °
Azimuth: 358.57 °
TVD: 5,536.87'
VS: 316.22'

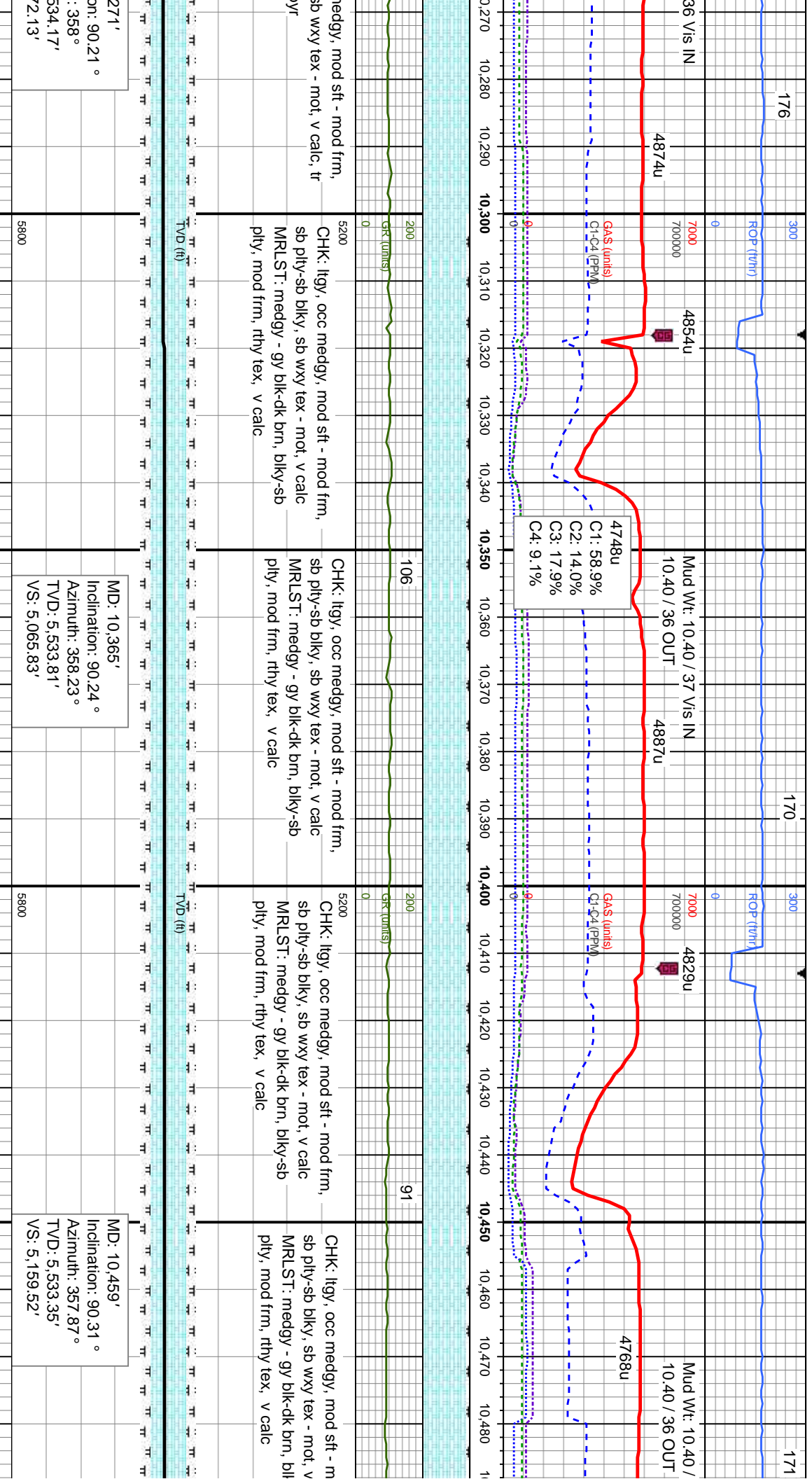
MD: 9,708'
Inclination: 89.79 °
Azimuth: 356.82 °
TVD: 5,537.24'
VS: 4,410.86'

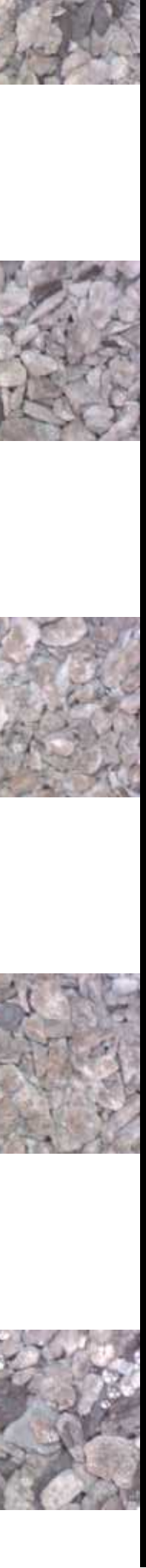
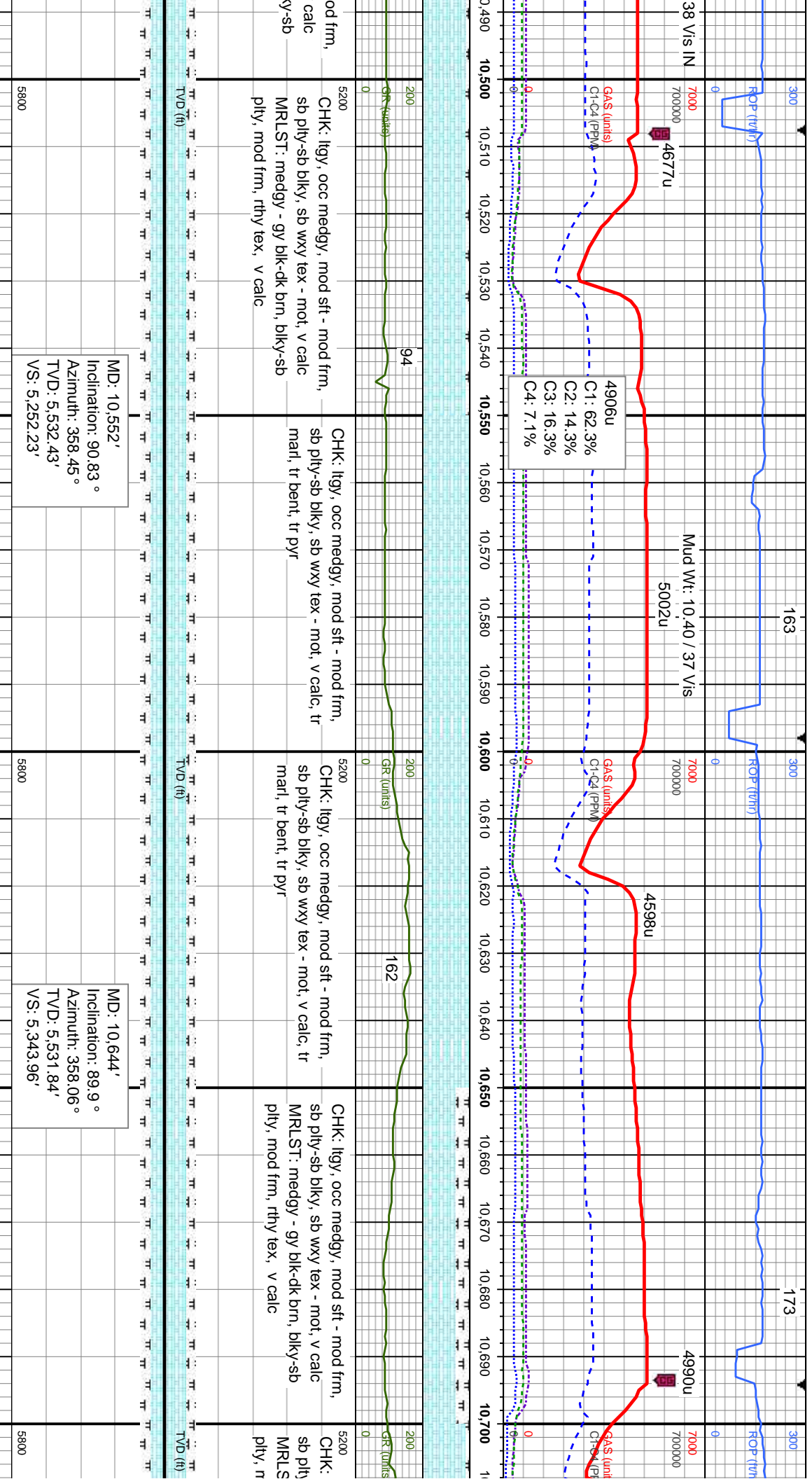
MD: 9,802'
Inclination: 89.97 °
Azimuth: 358 °
TVD: 5,537.44'
VS: 4,504.46'

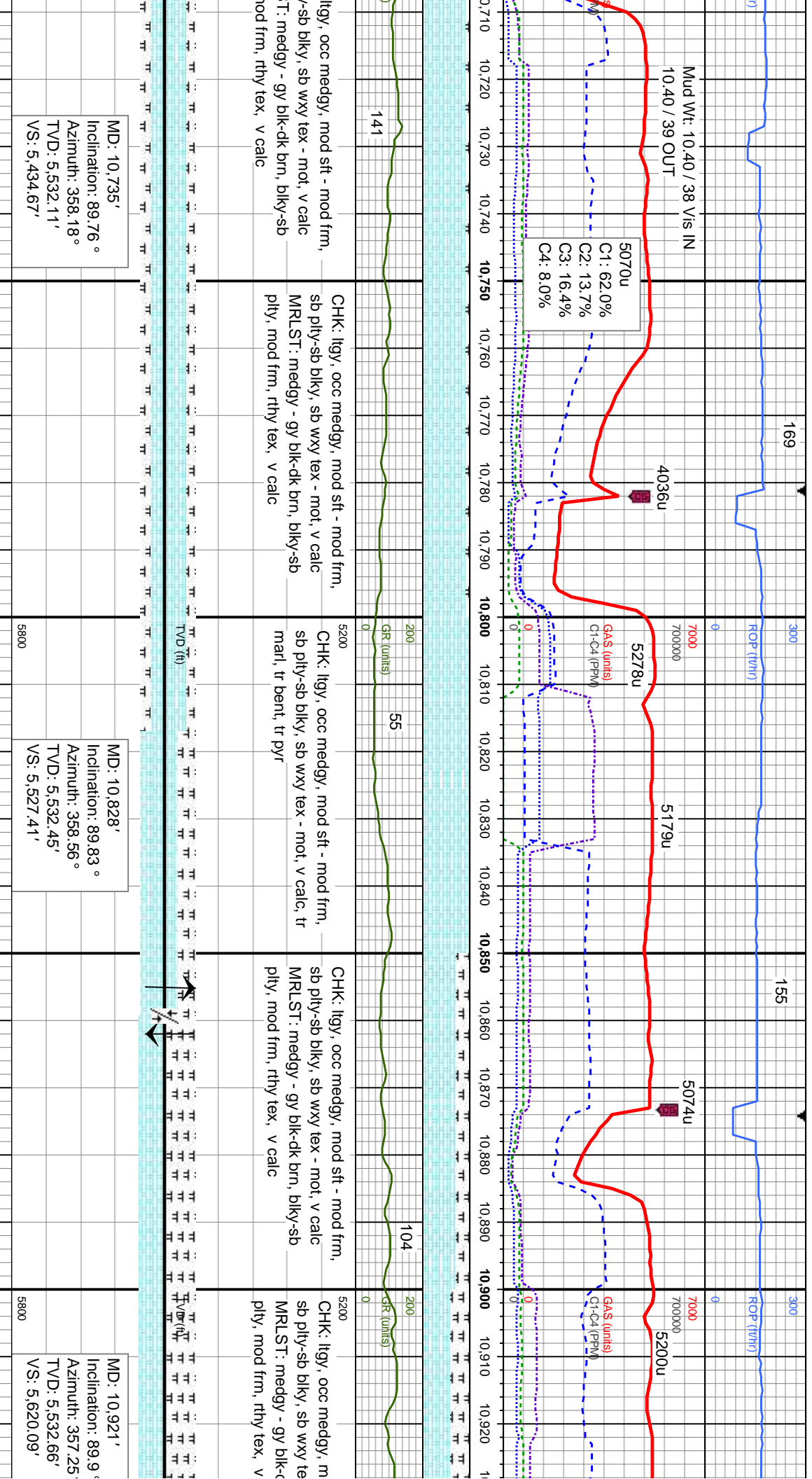


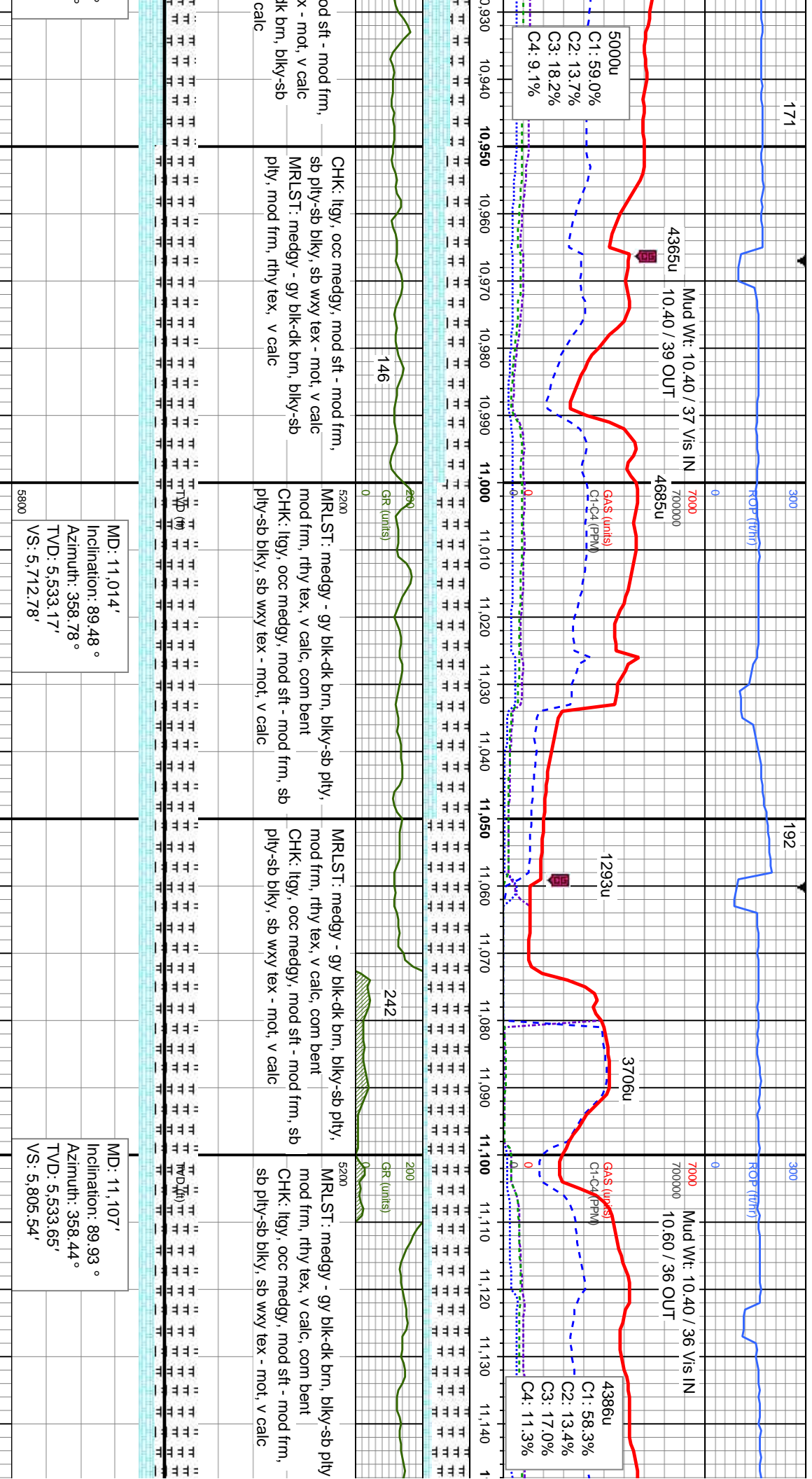


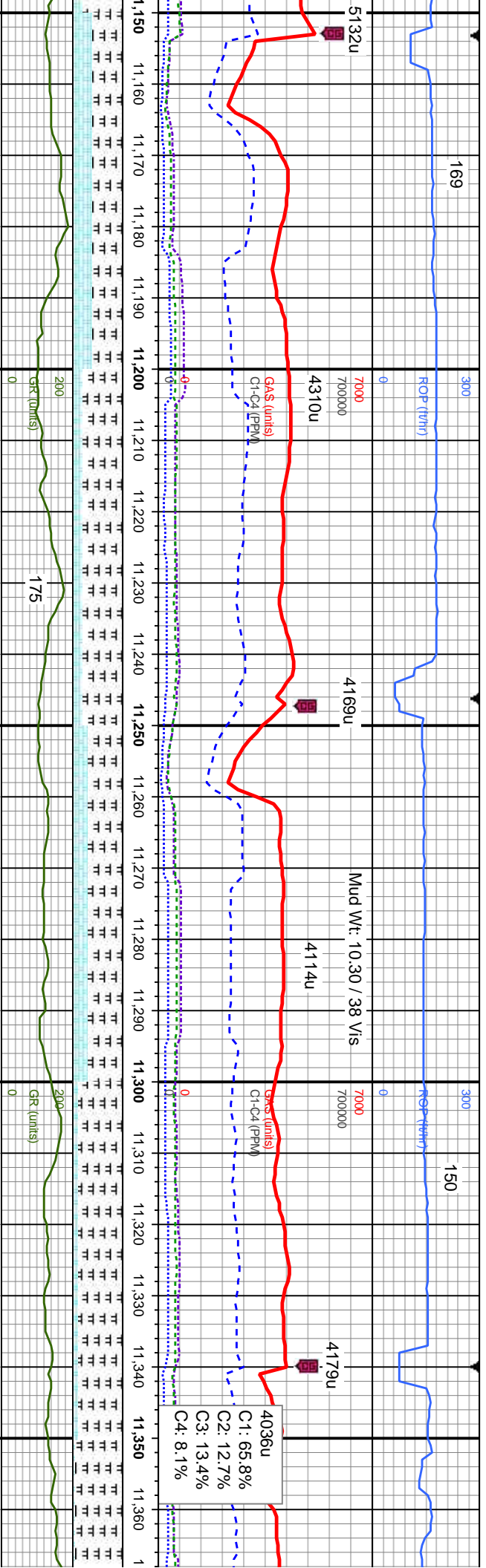






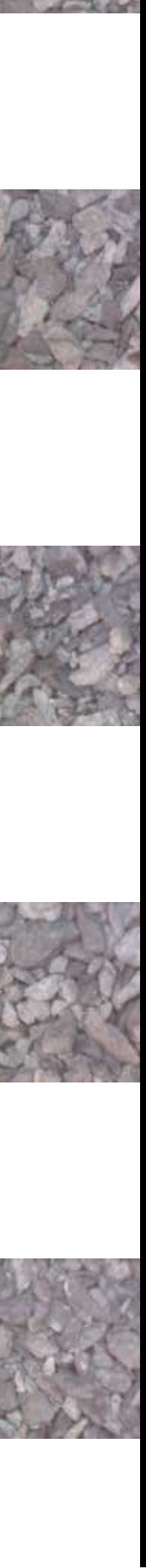


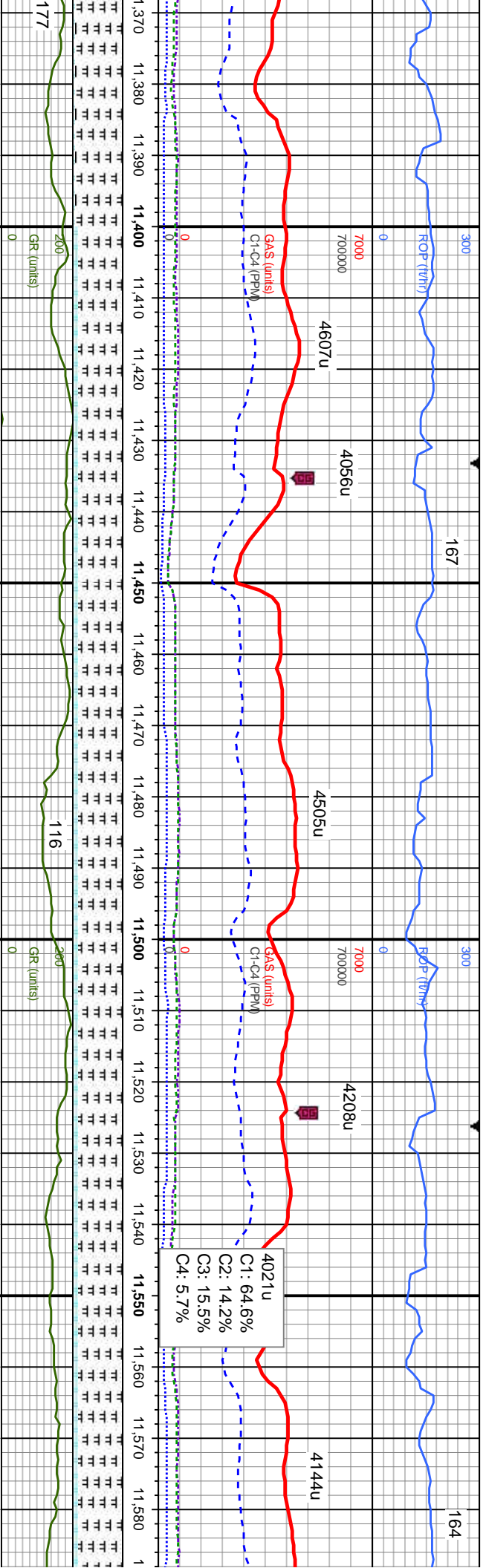




MD: 11,200'
Inclination: 89.86°
Azimuth: 357.43°
TVD: 5,533.82'
VS: 5,898.22'

MD: 11,293'
Inclination: 89.83°
Azimuth: 358.72°
TVD: 5,534.07'
VS: 5,990.92'





gy blk-dk brn, blk-y-sb plty, ex, v calc, com bent
mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb plty-sb blk-y, sb wxy tex - mot, v calc

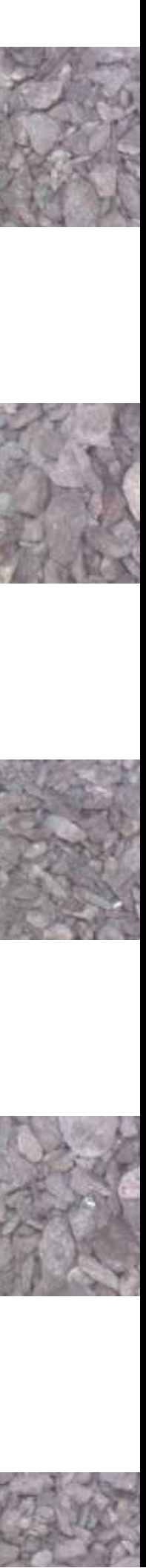
MR LST: medgy - gy blk-dk brn, blk-y-sb plty, mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb plty-sb blk-y, sb wxy tex - mot, v calc

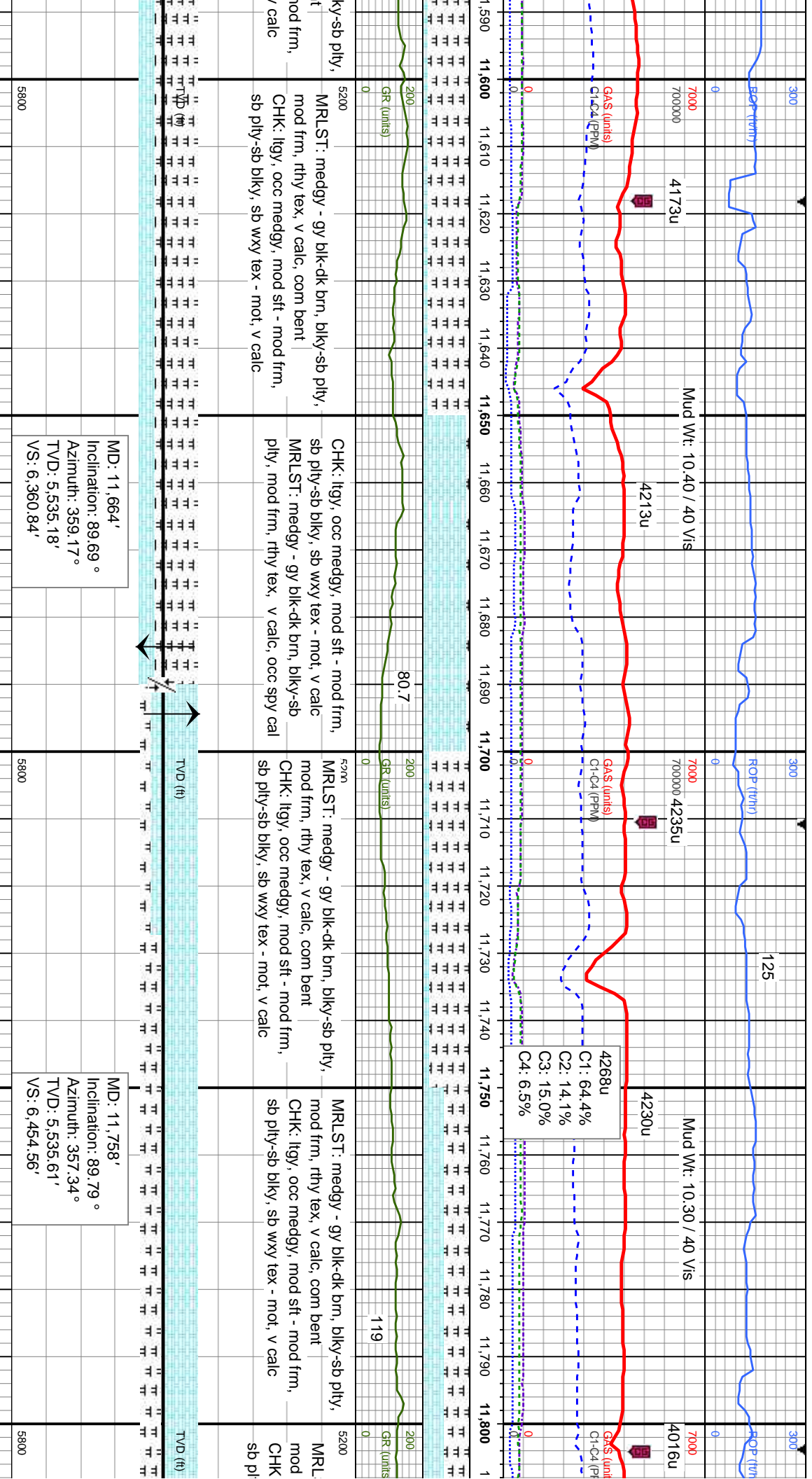
MR LST: medgy - gy blk-dk brn, blk-y-sb plty, mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb plty-sb blk-y, sb wxy tex - mot, v calc

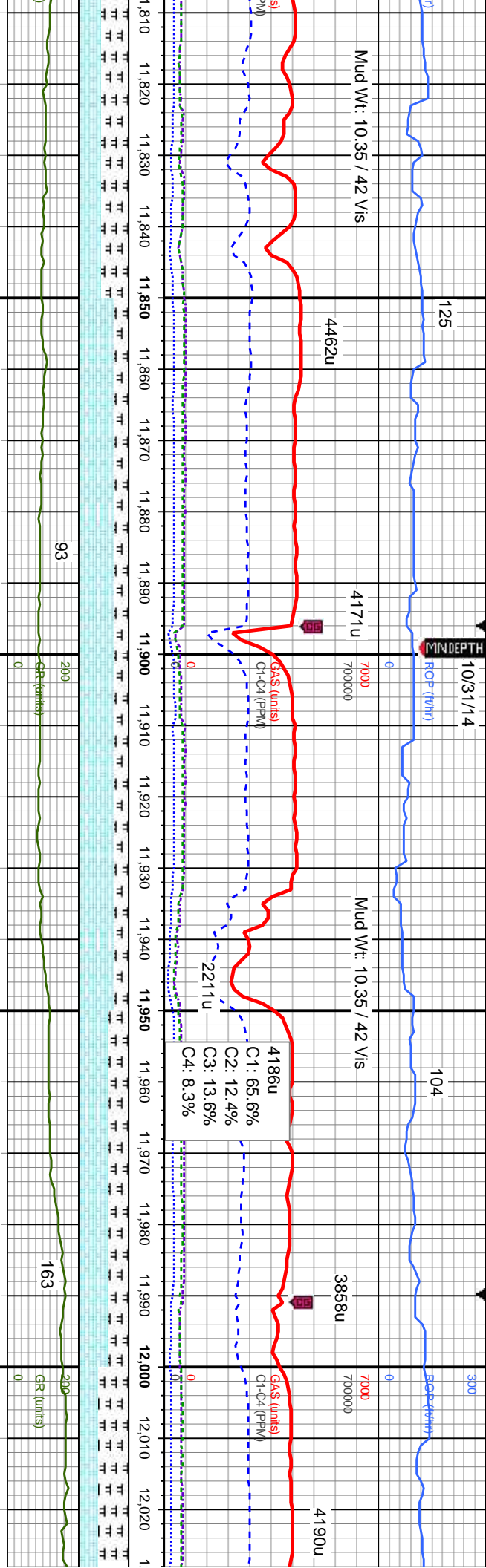
MD: 11,386'
Inclination: 89.93 °
Azimuth: 357.6 °
TVD: 5,534.26'
VS: 6,083.64'

MD: 11,480'
Inclination: 89.83 °
Azimuth: 359.24 °
TVD: 5,534.46'
VS: 6,177.38'

MD: 11,572'
Inclination: 89.79 °
Azimuth: 357.47 °
TVD: 5,534.77'
VS: 6,269.11'



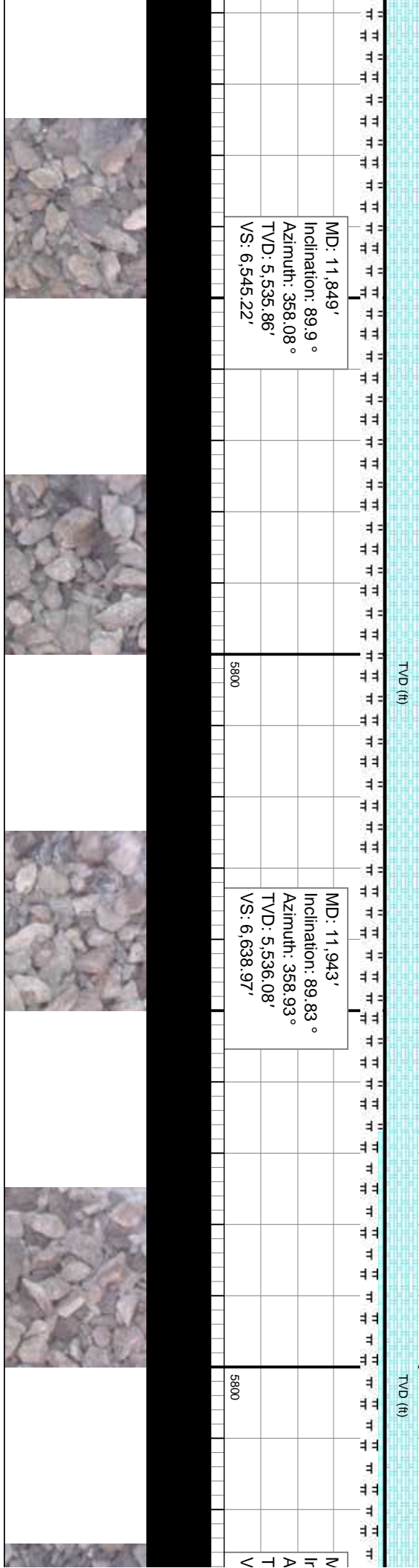


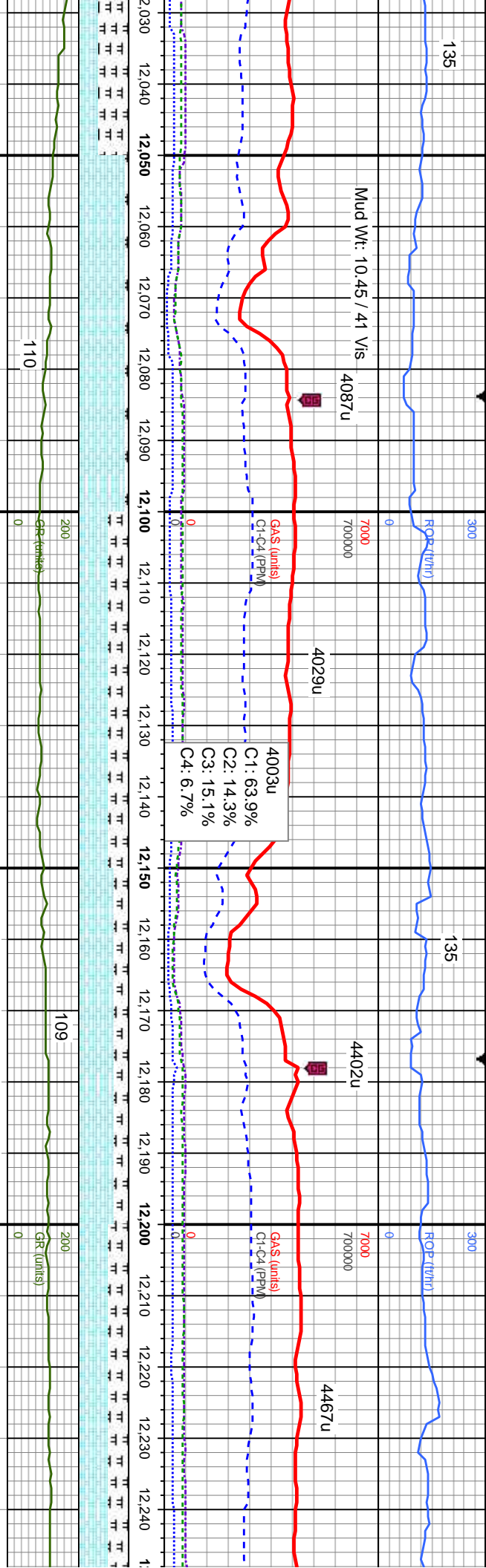


ST: medgy - gy blk-dk brn, blkly-sb pily, frm, rthy tex, v calc, com bent lly, occ medgy, mod sft - mod frm, y-sb blkly, sb wxy tex - mot, v calc	CHK: lly, occ medgy, mod sft - mod frm, sb pily-sb blkly, sb wxy tex - mot, v calc MRLST: medgy - gy blk-dk brn, blkly-sb pily, rthy tex, v calc, tr bent	CHK: lly, occ medgy, mod sft - mod frm, sb pily-sb blkly, sb wxy tex - mot, v calc MRLST: medgy - gy blk-dk brn, blkly-sb pily, mod frm, rthy tex, v calc, tr bent	CHK: lly, occ medgy, mod sft - mod frm, sb pily-sb blkly, sb wxy tex - mot, v calc MRLST: medgy - gy blk-dk brn, blkly-sb pily, mod frm, rthy tex, v calc, tr bent	CHK: lly, occ medgy, mod sft - mod frm, sb pily-sb blkly, sb wxy tex - mot, v calc MRLST: medgy - gy blk-dk brn, blkly-sb pily, mod frm, rthy tex, v calc, tr bent
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MD: 11,849'
Inclination: 89.9°
Azimuth: 358.08°
TVD: 5,535.86'
VS: 6,545.22'

MD: 11,943'
Inclination: 89.83°
Azimuth: 358.93°
TVD: 5,536.08'
VS: 6,638.97'

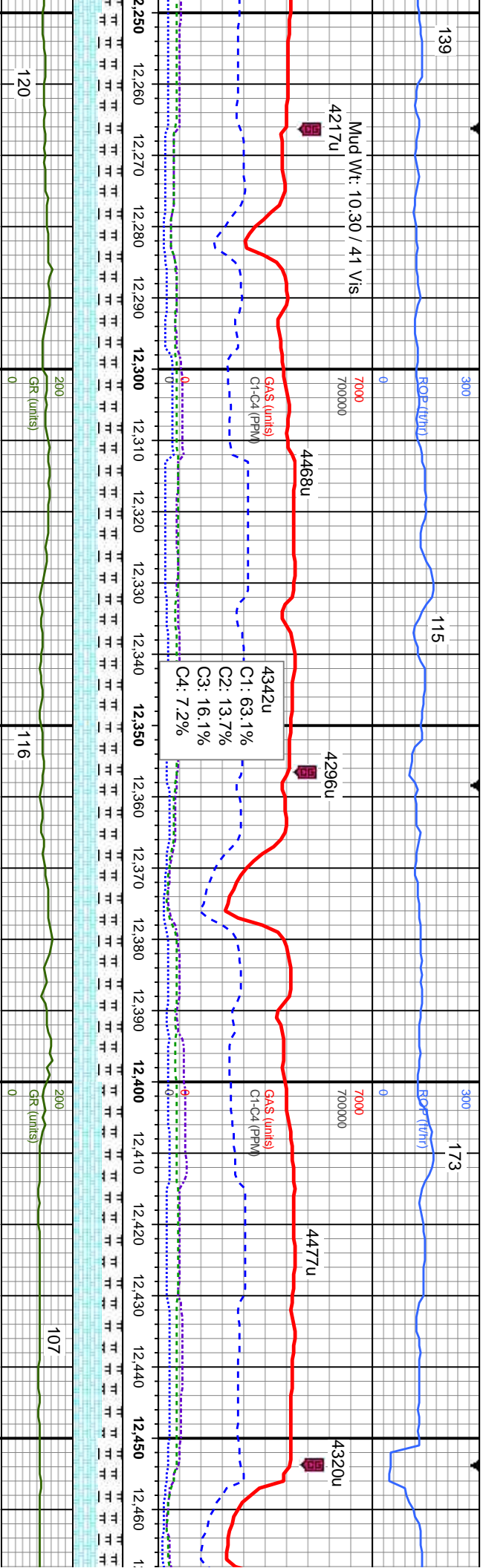




Depth (ft)	Log Description
12,030 - 12,050	k brn, blk-y-sb pily, CHK: ltgy, occ
12,050 - 12,060	sb pily-sb blk-y, sb wxy tex - mot, v calc
12,060 - 12,070	MRLST: medgy - gy blk-dk brn, blk-y-sb pily,
12,070 - 12,080	mod frm, rthy tex, v calc, tr bent
12,080 - 12,090	
12,090 - 12,100	
12,100 - 12,110	CHK: ltgy, occ medgy, mod sft - mod frm,
12,110 - 12,120	sb pily-sb blk-y, sb wxy tex - mot, v calc
12,120 - 12,130	MRLST: medgy - gy blk-dk brn, blk-y-sb
12,130 - 12,140	pily, mod frm, rthy tex, v calc, tr bent
12,140 - 12,150	
12,150 - 12,160	CHK: ltgy, occ medgy, mod sft - mod frm,
12,160 - 12,170	sb pily-sb blk-y, sb wxy tex - mot, v calc
12,170 - 12,180	MRLST: medgy - gy blk-dk brn, blk-y-sb pily,
12,180 - 12,190	mod frm, rthy tex, v calc, tr bent
12,190 - 12,200	
12,200 - 12,210	CHK: ltgy, occ medgy, mod sft - mod frm,
12,210 - 12,220	sb pily-sb blk-y, sb wxy tex - mot, v calc
12,220 - 12,230	MRLST: medgy - gy blk-dk brn, blk-y-sb pily,
12,230 - 12,240	mod frm, rthy tex, v calc, tr bent

ID: 12,036'		MD: 12,129'	
Inclination: 89.97°		Inclination: 89.86°	
Azimuth: 358.27°		Azimuth: 358.71°	
VD: 5,536.24'		TVD: 5,536.38'	
S: 6,731.74'		VS: 6,824.49'	





Depth (ft)	GR (units)	Cl-C4 (ppm)	Gas (units)	ROP (ft/hr)
12,250	120	0	0	0
12,260	120	0	0	0
12,270	120	0	0	0
12,280	120	0	0	0
12,290	120	0	0	0
12,300	120	0	0	0
12,310	120	0	0	0
12,320	120	0	0	0
12,330	120	0	0	0
12,340	120	0	0	0
12,350	120	0	0	0
12,360	120	0	0	0
12,370	120	0	0	0
12,380	120	0	0	0
12,390	120	0	0	0
12,400	120	0	0	0
12,410	120	0	0	0
12,420	120	0	0	0
12,430	120	0	0	0
12,440	120	0	0	0
12,450	120	0	0	0

MRLST: medgy - gy blk-dk brn, blkly-sb plty, mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb plty-sb blkly, sb wxy tex - mot, v calc

MRLST: medgy - gy blk-dk brn, blkly-sb plty, mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb plty-sb blkly, sb wxy tex - mot, v calc

MRLST: medgy - gy blk-dk brn, blkly-sb plty, mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb plty-sb blkly, sb wxy tex - mot, v calc

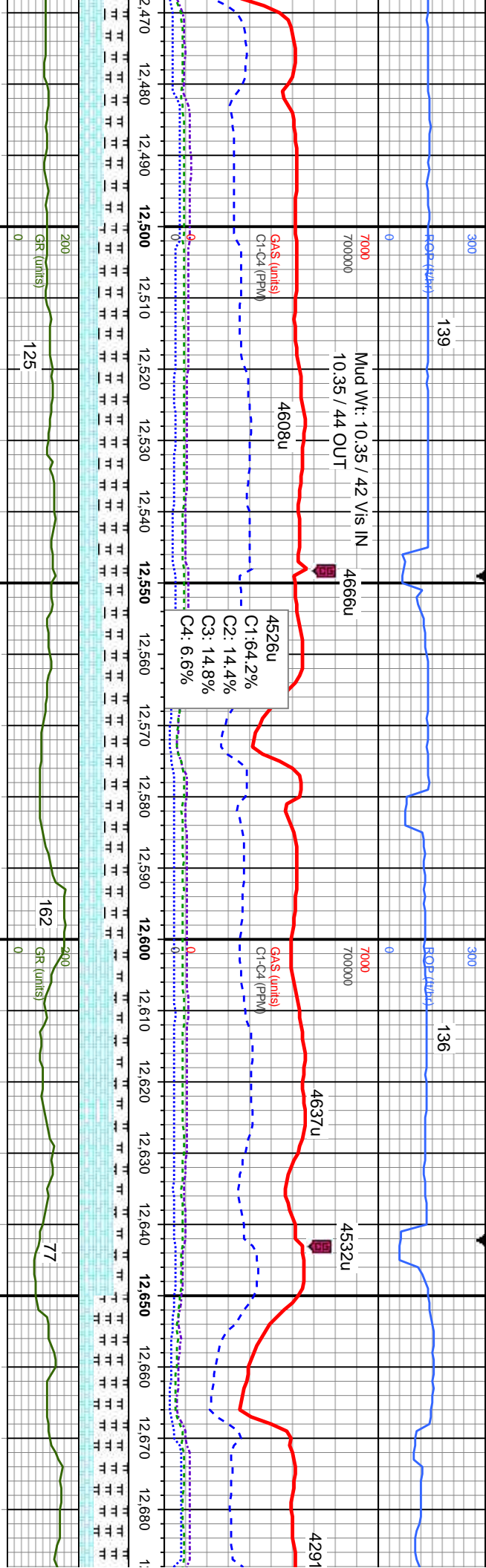
Depth (ft)	GR (units)	Cl-C4 (ppm)	Gas (units)	ROP (ft/hr)
12,450	107	0	0	0
12,460	107	0	0	0
12,470	107	0	0	0
12,480	107	0	0	0
12,490	107	0	0	0
12,500	107	0	0	0

MRLST: medgy - gy blk-dk brn, blkly-sb plty, mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb plty-sb blkly, sb wxy tex - mot, v calc

MRLST: medgy - gy blk-dk brn, blkly-sb plty, mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb plty-sb blkly, sb wxy tex - mot, v calc

MRLST: medgy - gy blk-dk brn, blkly-sb plty, mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb plty-sb blkly, sb wxy tex - mot, v calc





- gy blk-dk brn, blkly-sb pty, x, v calc, com bent
medgy, mod sft - mod frm, sb wxy tex - mot, v calc

5200 MRLST: medgy - gy blk-dk brn, blkly-sb pty, mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb pty-sb blkly, sb wxy tex - mot, v calc

5200 MRLST: medgy - gy blk-dk brn, blkly-sb pty, mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb pty-sb blkly, sb wxy tex - mot, v calc

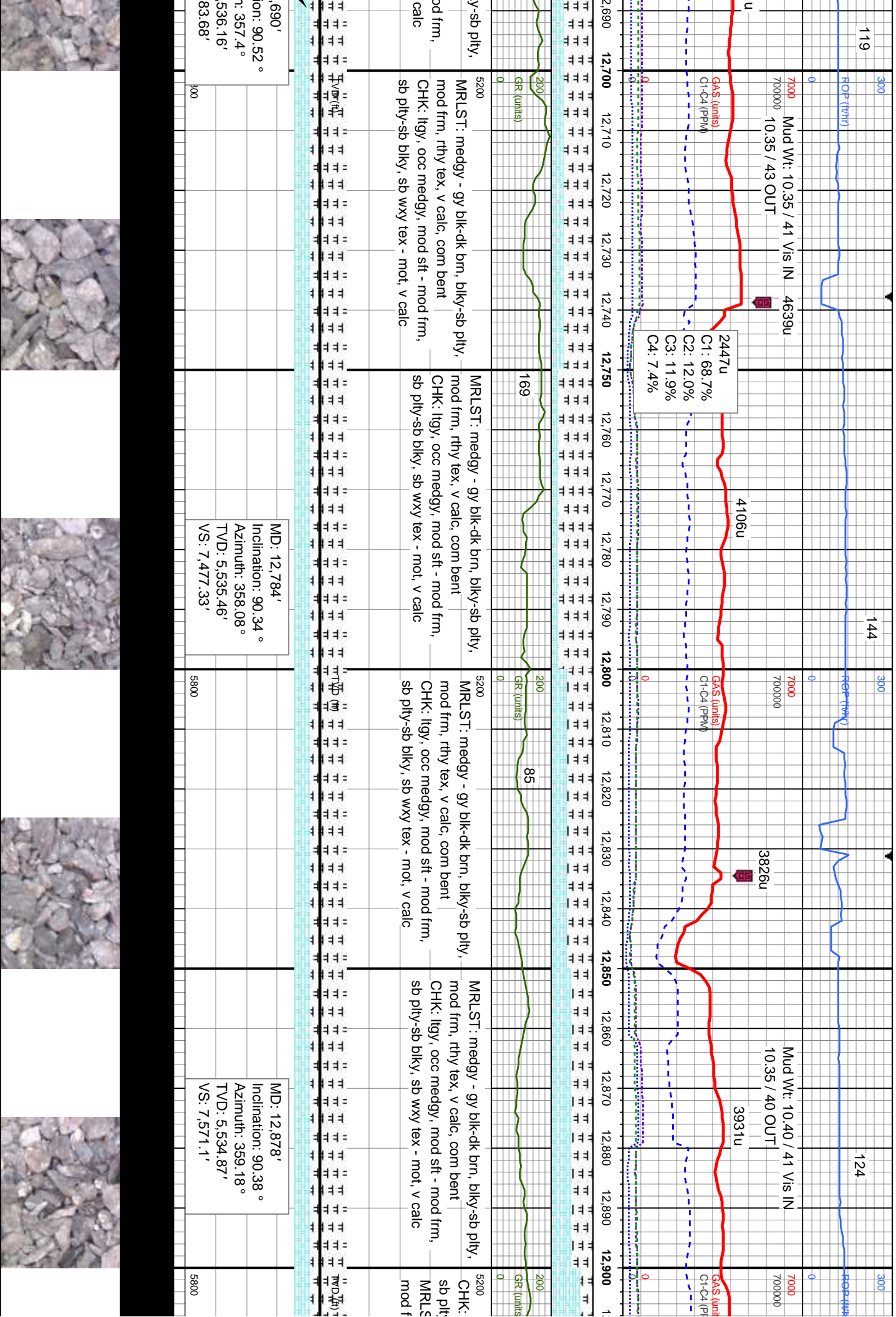
5200 MRLST: medgy - gy blk-dk brn, blkly-sb pty, mod frm, rthy tex, v calc, com bent
CHK: ltgy, occ medgy, mod sft - mod frm, sb pty-sb blkly, sb wxy tex - mot, v calc

MD: 12,502'
Inclination: 89.9 °
Azimuth: 357.04 °
TVD: 5,536.85'
VS: 7,196.33'

MD: 12,596'
Inclination: 90.21 °
Azimuth: 358.6 °
TVD: 5,536.76'
VS: 7,290'

MD: 12
Inclinat
Azimut
TVD: 5
VS: 7.3





119

ROP (ft/hr)

7000

Mud Wt: 10.35 / 41 Vis IN
10.35 / 43 OUT

G4S (units)
Cl-C4 (ppm)

2447u
C1: 68.7%
C2: 12.0%
C3: 11.9%
C4: 7.4%

4106u

144

ROP (ft/hr)

7000

Mud Wt: 10.40 / 41 Vis IN
10.35 / 40 OUT

G4S (units)
Cl-C4 (ppm)

3826u

3931u

124

ROP (ft/hr)

7000

Mud Wt: 10.40 / 41 Vis IN
10.35 / 40 OUT

G4S (units)
Cl-C4 (ppm)

mod frm, calc
sb pty-sb blk, sb wxy tex - mot, v calc

mod frm, rthy tex, v calc, com bent
CHK: lthy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc

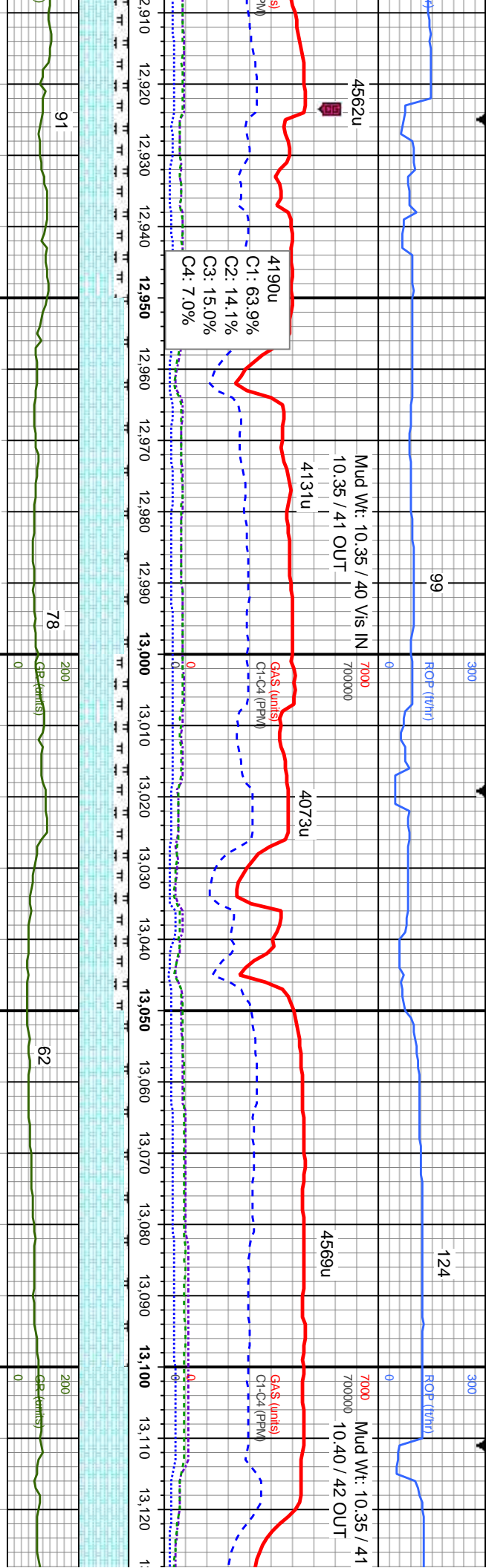
mod frm, rthy tex, v calc, com bent
CHK: lthy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc

mod frm, rthy tex, v calc, com bent
CHK: lthy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc

690'
Inclination: 90.52°
Azimuth: 357.4°
TVD: 5,536.16'
VS: 83.68'

MD: 12,784'
Inclination: 90.34°
Azimuth: 358.08°
TVD: 5,535.46'
VS: 7,477.33'

MD: 12,878'
Inclination: 90.38°
Azimuth: 359.18°
TVD: 5,534.87'
VS: 7,571.1'



lgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc
MRLST: medgy - gy blk-dk brn, blk-ty-sb pty, mod frm, rthy tex, v calc, tr bent

CHK: lgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc
MRLST: medgy - gy blk-dk brn, blk-ty-sb pty, mod frm, rthy tex, v calc, tr bent

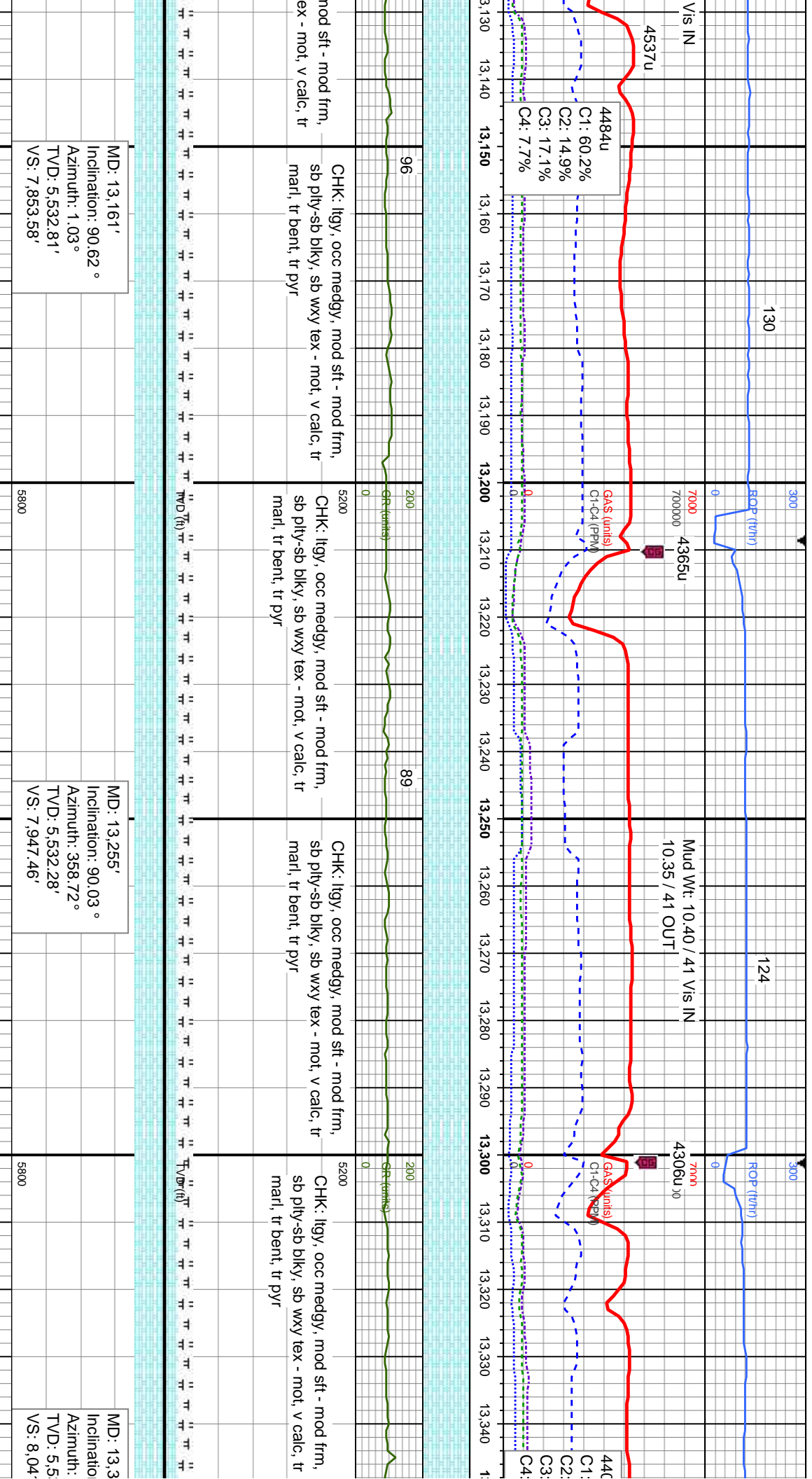
CHK: lgy, occ medgy, mod sft - mod frm, sb pty-sb blk, sb wxy tex - mot, v calc
MRLST: medgy - gy blk-dk brn, blk-ty-sb pty, mod frm, rthy tex, v calc, tr bent

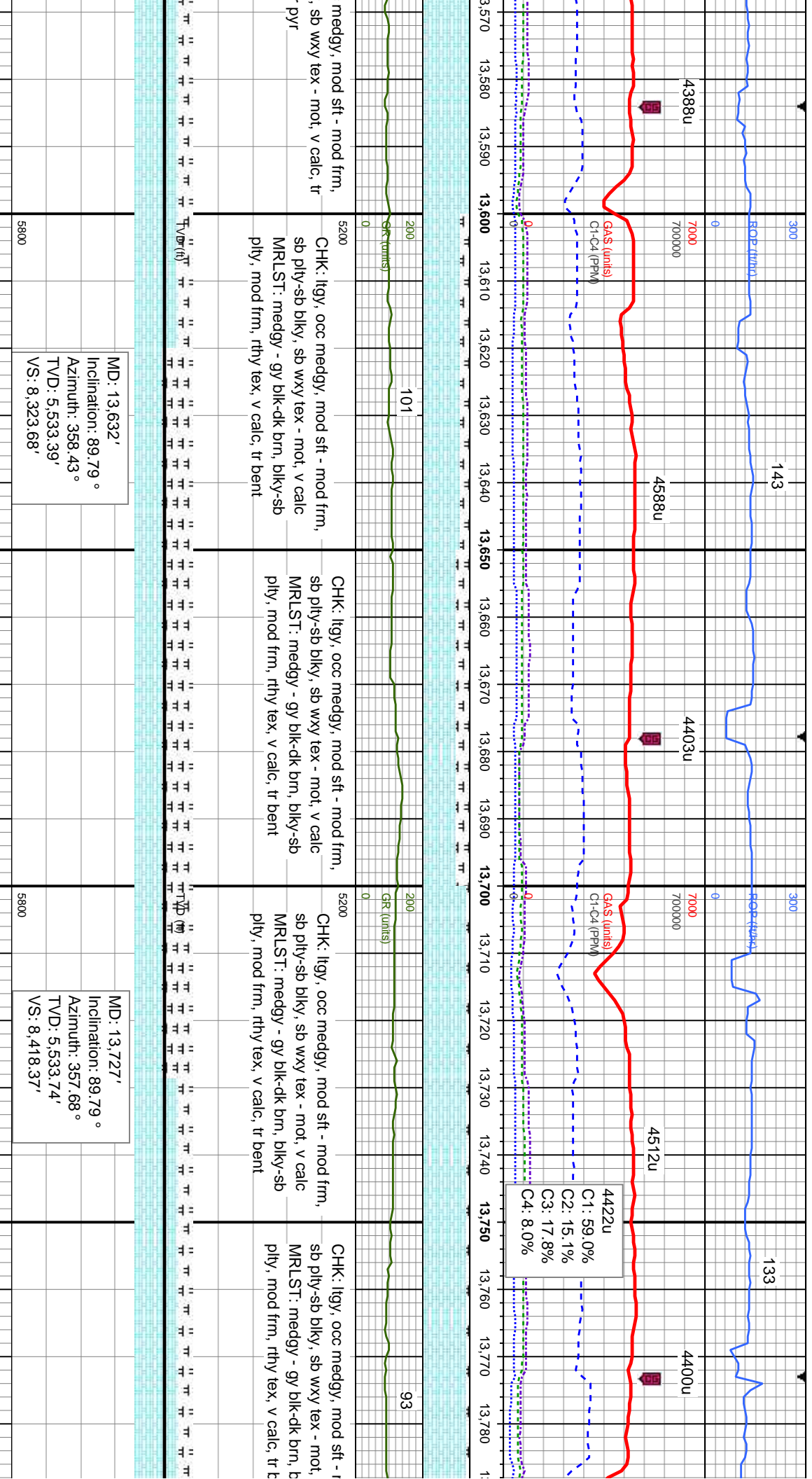
CHK: lgy, occ medgy, r sb pty-sb blk, sb wxy t marl, tr bent, tr pyr

MD: 12,973'
Inclination: 90.34 °
Azimuth: 358.61 °
TVD: 5,534.27'
VS: 7,665.89'

MD: 13,067'
Inclination: 90.41 °
Azimuth: 359.16 °
TVD: 5,533.65'
VS: 7,759.68'



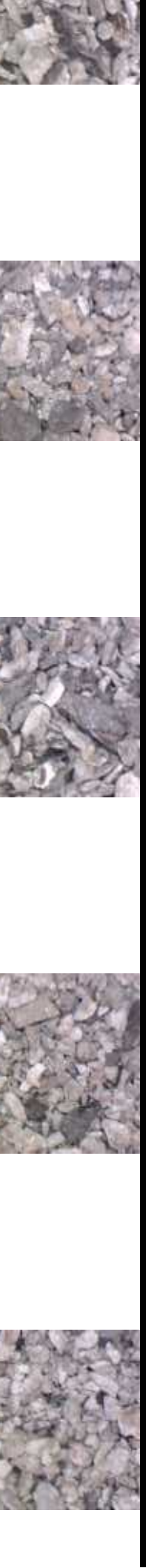
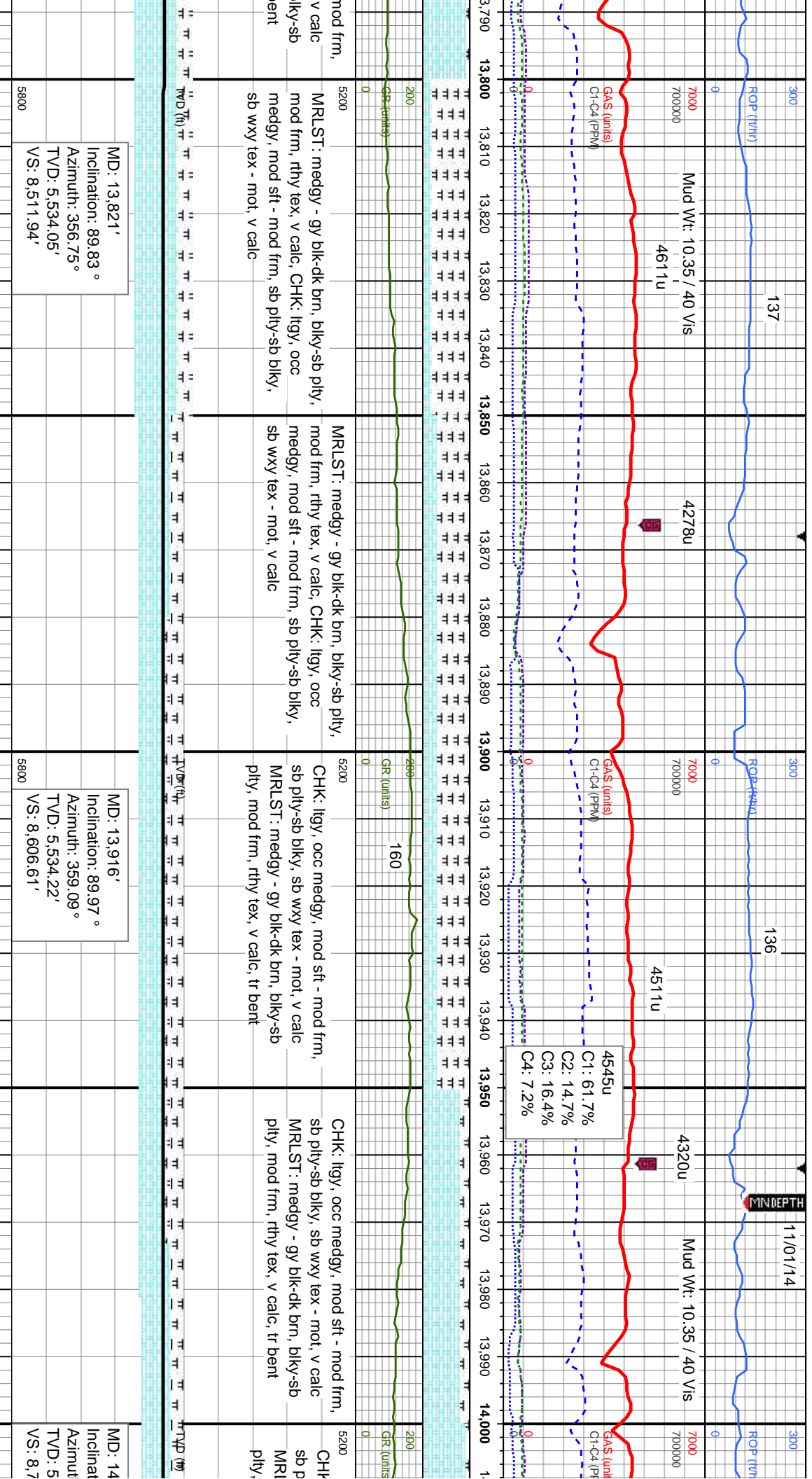


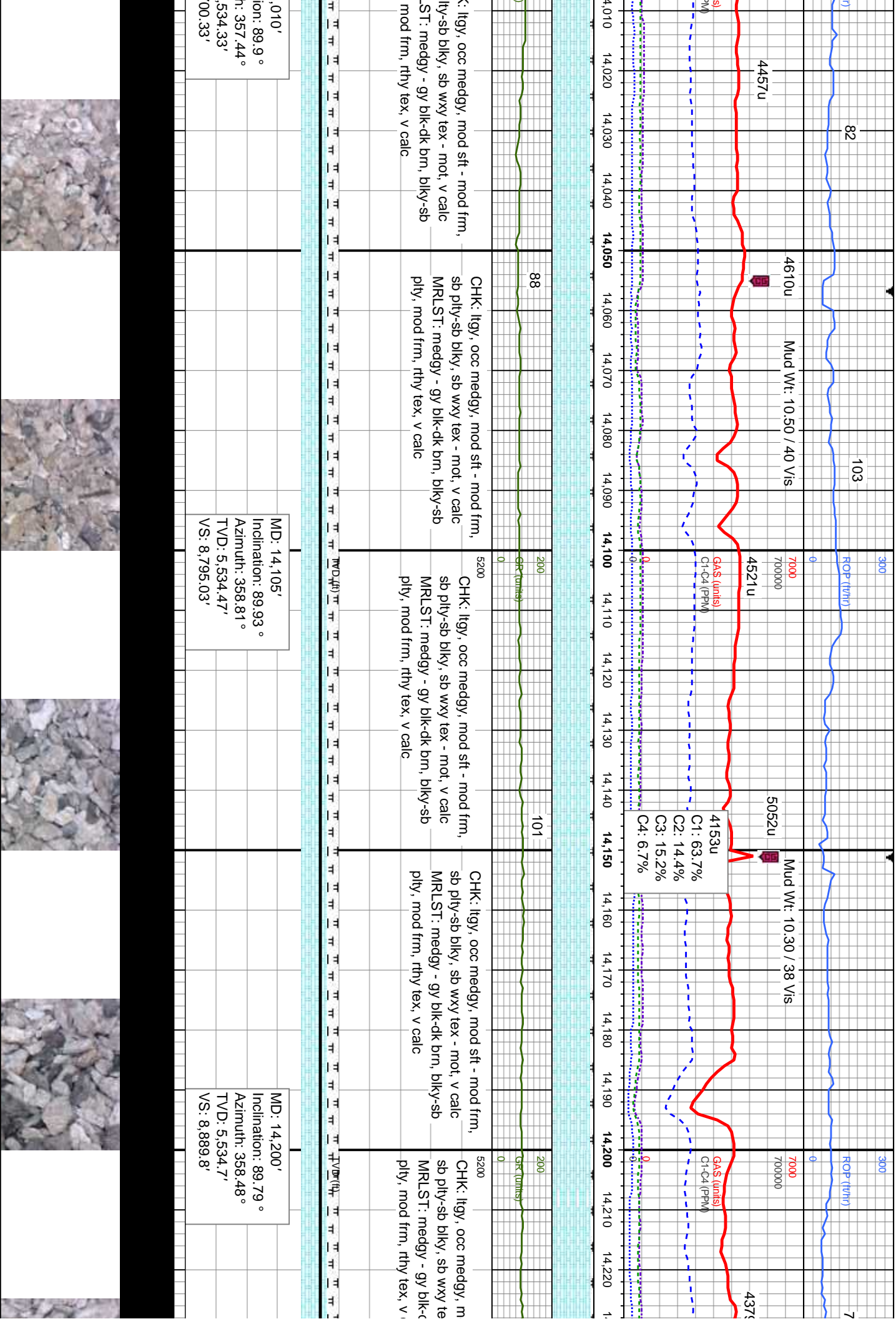


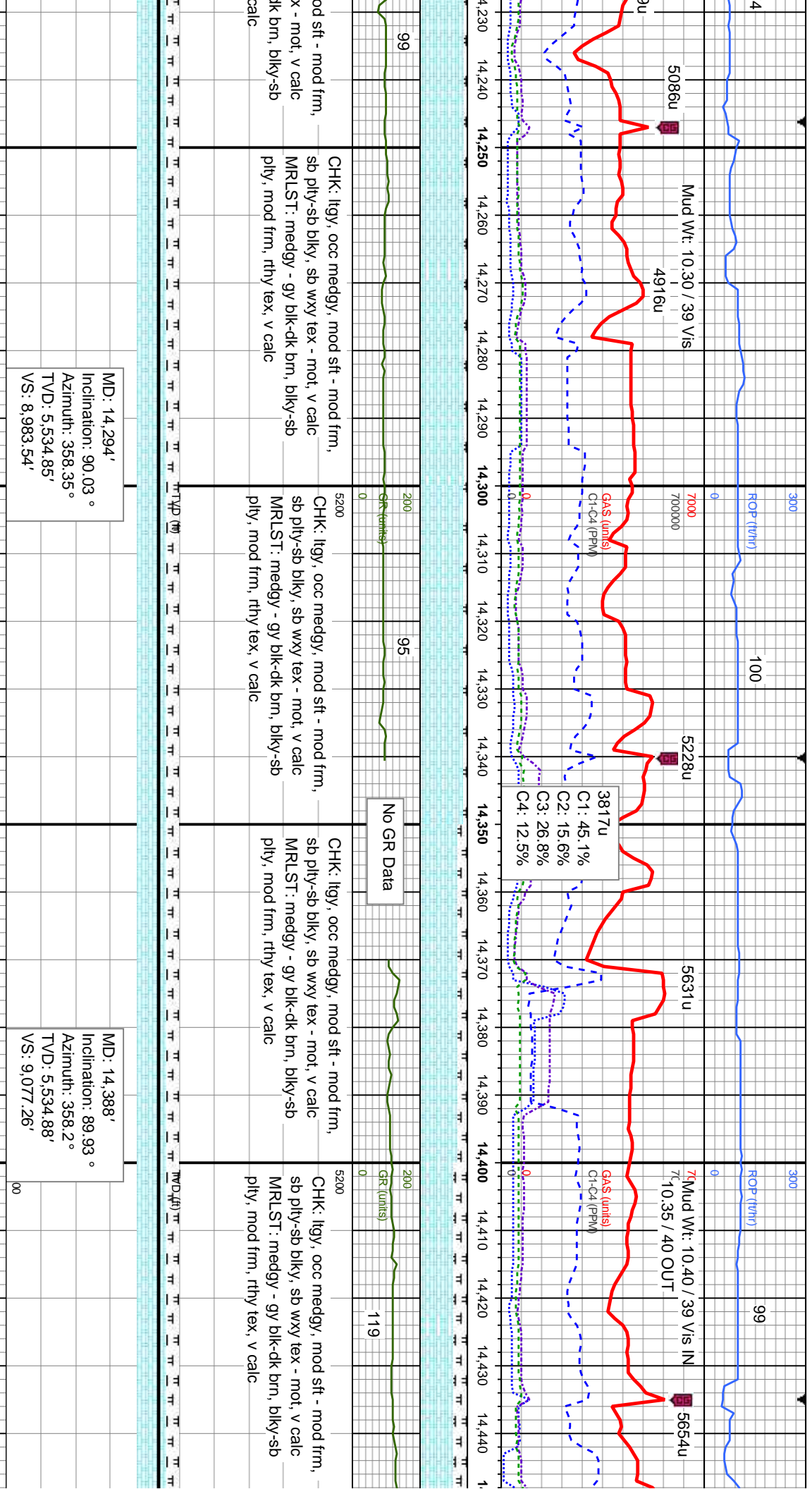
MD: 13,632'
Inclination: 89.79 °
Azimuth: 358.43 °
TVD: 5,533.39'
VS: 8,323.68'

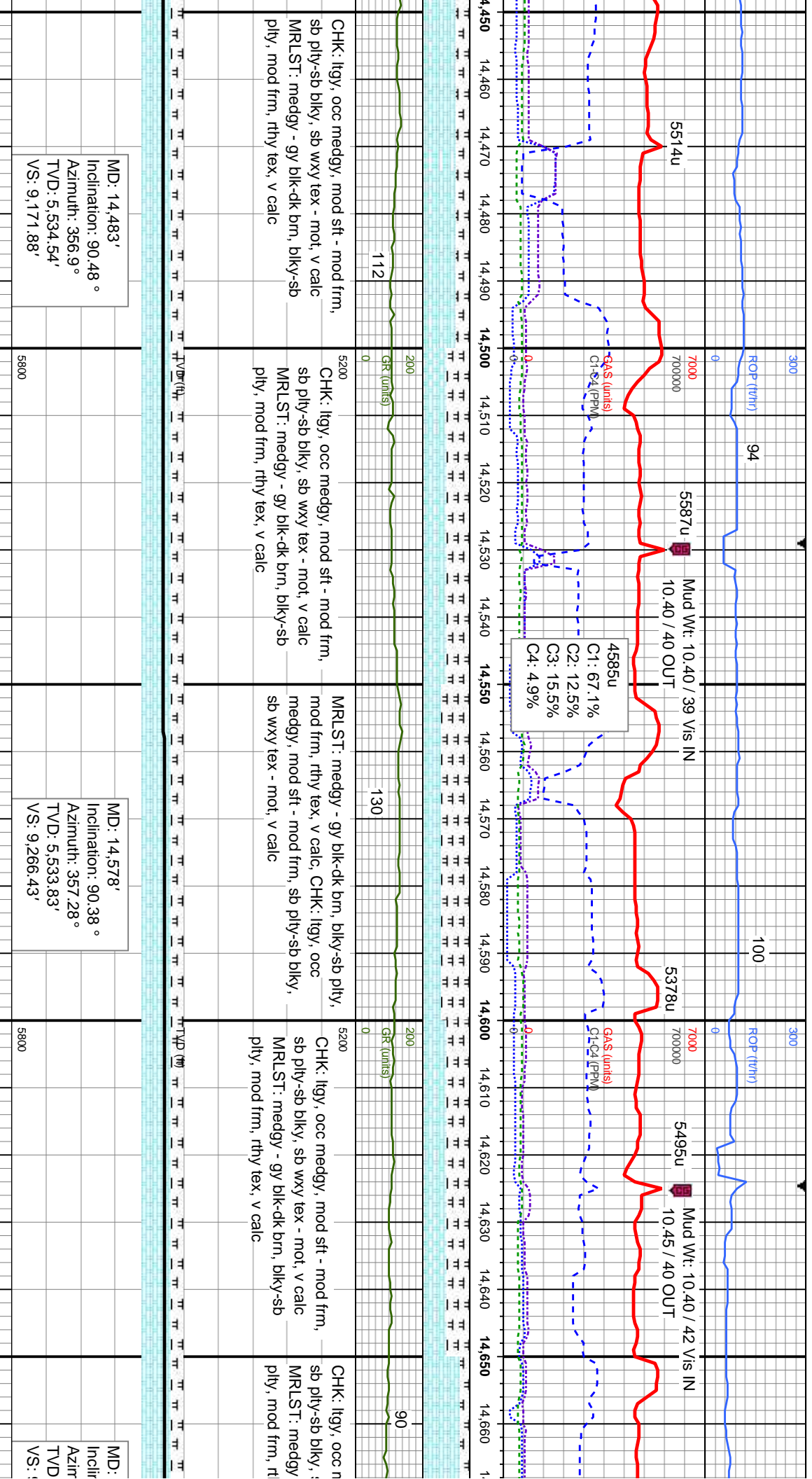
MD: 13,727'
Inclination: 89.79 °
Azimuth: 357.68 °
TVD: 5,533.74'
VS: 8,418.37'











MD: 14,483'
Inclination: 90.48 °
Azimuth: 356.9 °
TVD: 5,534.54'
VS: 9,171.88'

MD: 14,578'
Inclination: 90.38 °
Azimuth: 357.28 °
TVD: 5,533.83'
VS: 9,266.43'

MD: 14,578'
Inclination: 90.38 °
Azimuth: 357.28 °
TVD: 5,533.83'
VS: 9,266.43'

TD @ 14,824' MD
@ 15:15hrs MDT
on 11/01/2014

Wellsite Geological Services
Provided By Columbine
Logging, Thank You!

