

# COLUMBINE LOGGING

Scale: 5" / 100'  
Measured Depth Log

Well Name Wells Ranch State AA21-69-1HN(HORZ)

Location SEC 21-T6N-R63W

State COLORADO

Country USA

API Number 05-123-37598-0000

Region DJ BASIN

Spud Date 1/6/2014

Surface Coordinates

LAT: 40.46748°N  
LONG: 104.43414°W

951' FSL  
528' FEL

Bottom Hole Coordinates

LAT: 40.46573°N  
LONG: 104.44889°W

1' FSL  
535' FWL

Ground Elevation 4731'

K.B. Elevation 4755'

Logged Interval 6050' To 11049'

Total Depth 11049'

Formation NIOBRARA "C" CHALK

Type of Drilling Fluid MUD;WATER;POLY

Rig Number H&P 322

County WELD

Field WATENBERG

Drilling Completed 1/13/2014

Company Noble Energy Inc

Address 1625 BROADWAY  
DENVER, CO 8  
(303) 228-4000

Name MIKE GREENE

Company COLUMBINE LOGGING  
Address 2385 S. LIPAN  
DENVER, COLORADO  
(303) 289-7764



# Operator





























































































MAY  
2022

OGGING, INC.

CRADO 80223

# Geologist
























































## Rock Types

Symbol	Rock Type	Symbol	Rock Type
	SHALY SILTSTONE		METAMORPHIC
	SILTY SHALE		NO SAMPLE
	SILTSTONE		SALT
	TILL		SANDSTONE
	TUFF		SALT-PEPPER SAND
	WEDDED TUFF		SHALE
			SHALE COLORED
			SHALE GRAY
			SHALY SANDSTONE
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			

## Accessories

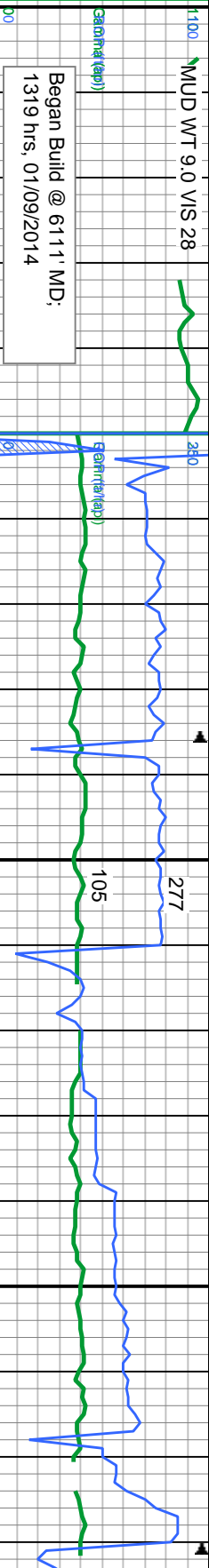
[illegible]

## Other Symbols

	<b>Oil Show</b>		MOLDIC		FAULT		WIRELINE TESTED - LEFT		E EARTHLY
	DEAD		ORGANIC		FORMATION TOP		WIRELINE TESTED - RT		FX FINELY LXLN
	EVEN		P PINPOINT		GAS SHOW		BS GRAINSTONE		L LITHO LXLN
	QUESTIONABLE		V VUGGY		MINDEPTH MN DEPTH		<b>Rounding</b>		MX MICRO LXLN
	SPOTTED STAINING		NORMAL FAULT		OIL SHOW		A ANGULAR		MS MUDSTONE
	<b>Porosity</b>		OVERTURNED STRATA		REVERSE FAULT		B SUBANG		PS PACKSTONE
	E EARTHY		BIT		SIDEWALL CORE (LEFT)		R SUBRAND		WS WACKESTONE
	F FENESTRAL		CONNECTION (LEFT)		CONNECTION (RIGHT)		S SLIDE		<b>Textures</b>
	F FRACTURE		CONNECTION (RIGHT)		SIDEWALL CORE (RIGHT)		BS BOUNDSTONE		<b>Sorting</b>
	X INTERCRYSTALLINE		CORE - LOST		CORE - RECOVERED		C CHALHY		M MODERATE
	DST INTERVAL		TRIP GAS		CX CRYPTOXLN		P POOR		W WELL

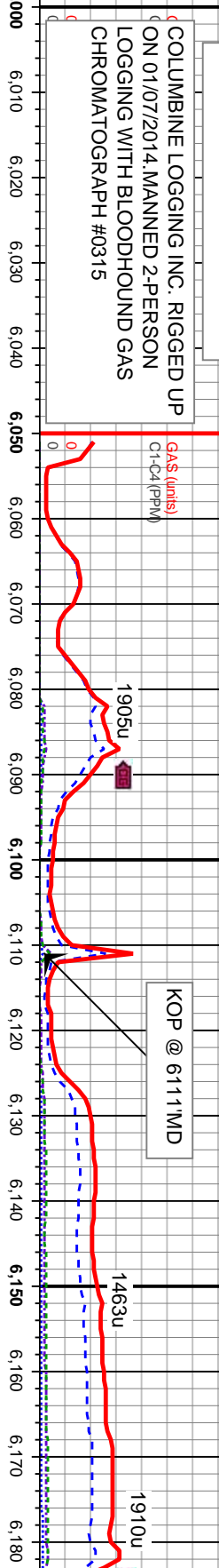
Slide/Rotate

ROP  
ROF  
Gamma



Total Gas & Chromatograph

GAS  
C1  
C2  
C3  
C4

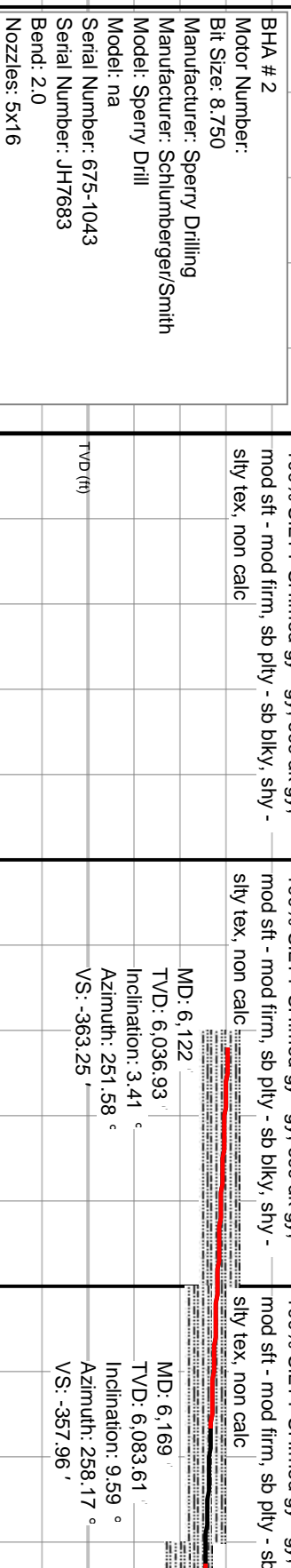


Depth Labels

% Lith

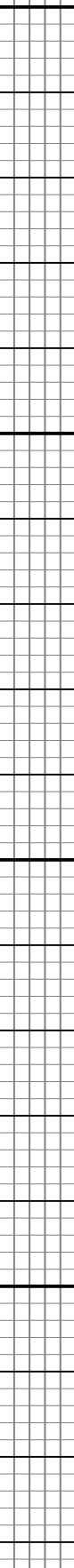


Well Bore  
TVD



Oil Show

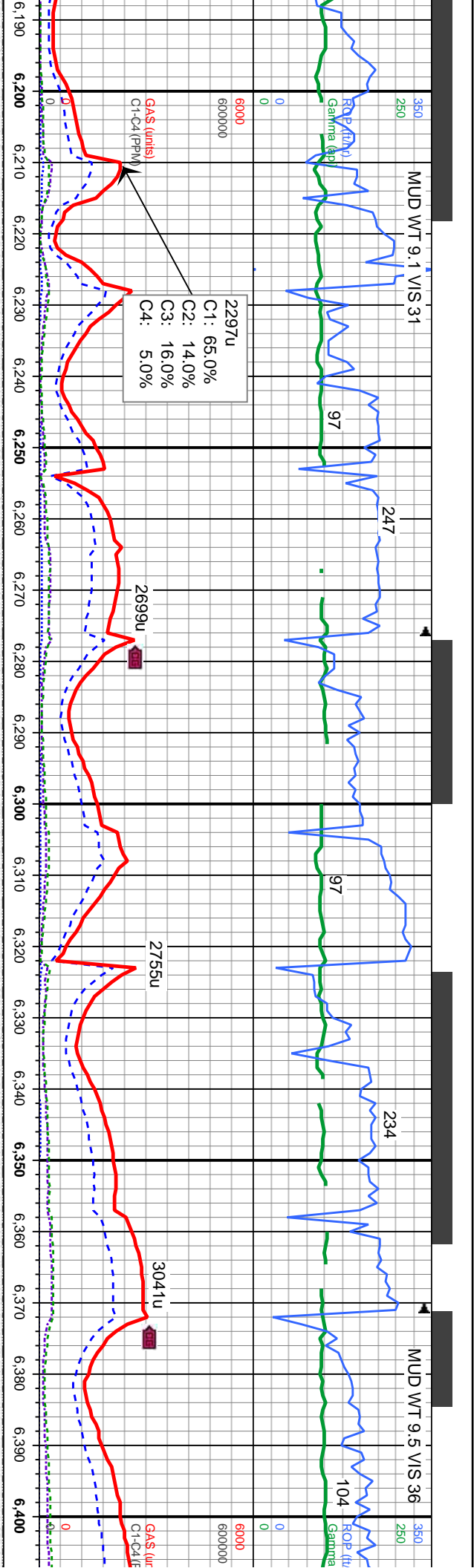
TR  
FM  
GE



Images

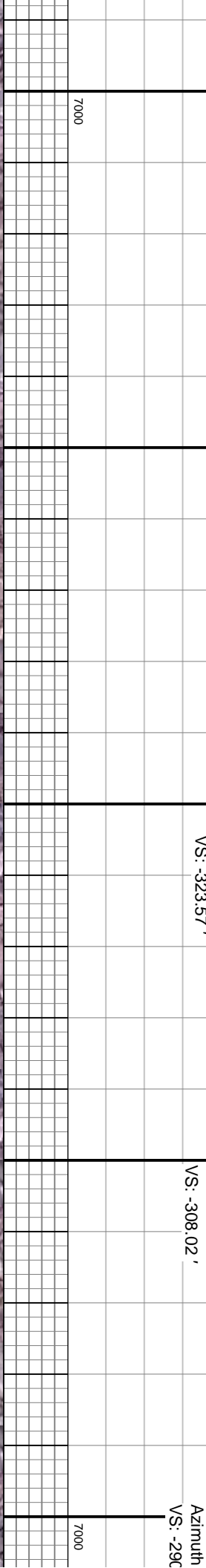




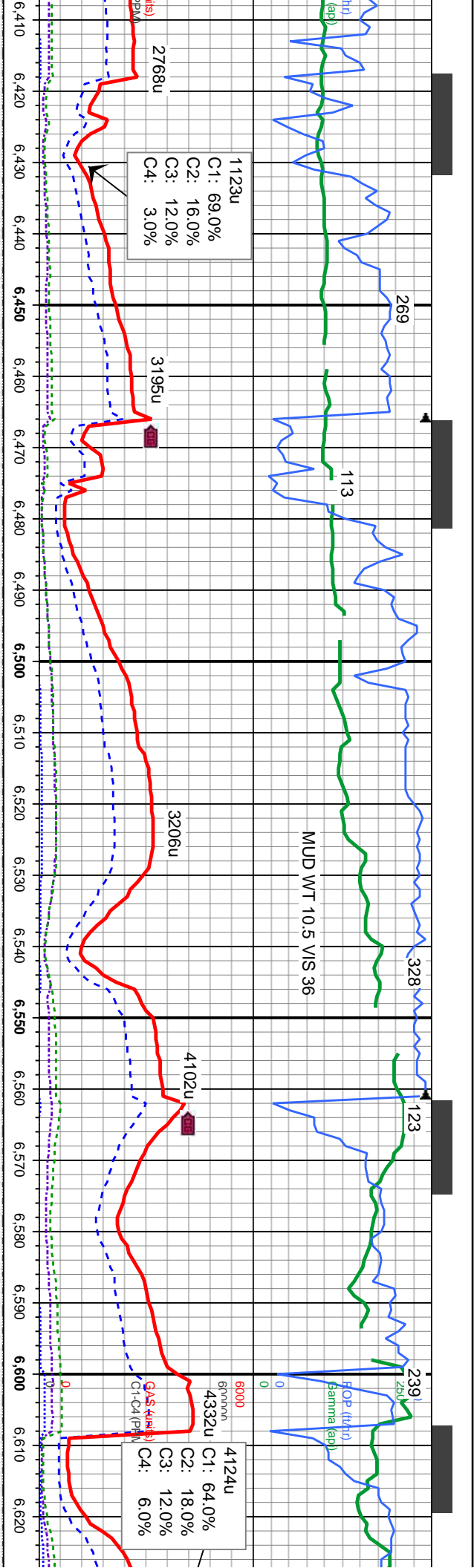


dk gy, y. shy -	95% SILTY SH: m-dk gy occ gy brn, firm-slt sft, rthy-sl silty rr	90% SILTY SH: m-dk gy occ gy brn, firm-slt sft, rthy-sl silty rr	100% SILTY SH: med gy - gy, occ dk gy, mod sft - mod firm, sb pily - sb blk, shy - silty tex, non calc	100% SILTY SH: med gy - gy, occ dk gy, mod sft - mod firm, sb pily - sb blk, shy - silty tex, non calc, tr ss	100% mod s silty te
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MD: 6,217' TVD: 6,130.68' Inclination: 12.92° Azimuth: 251.85° VS: -348.65'	MD: 6,264' TVD: 6,176.26' Inclination: 15.27° Azimuth: 253.42° VS: -337.31'	MD: 6,312' TVD: 6,222.23' Inclination: 18.15° Azimuth: 258° VS: -323.57'	MD: 6,359' TVD: 6,266.57' Inclination: 20.61° Azimuth: 266.11° VS: -308.02'	MD: 6,400' TVD: 6,300.00' Inclination: 22.00° Azimuth: 270.00° VS: -290.00'
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7000					7000
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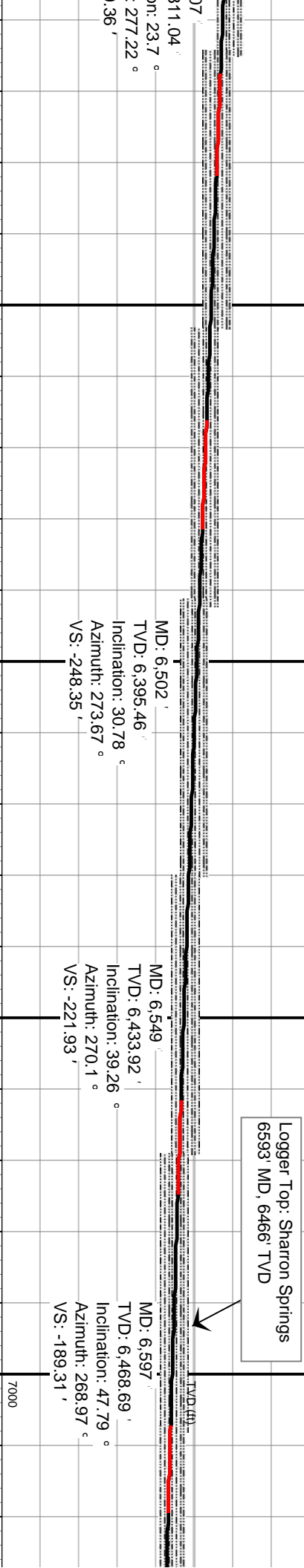
SILTY SH: med gy - gy, occ dk gy, mod sft - mod firm, sb pty - sb blk, shy - x, non calc, tr ss

100% SILTY SH: med gy - gy, occ dk gy, mod sft - mod firm, sb pty - sb blk, shy - stly tex, non calc,

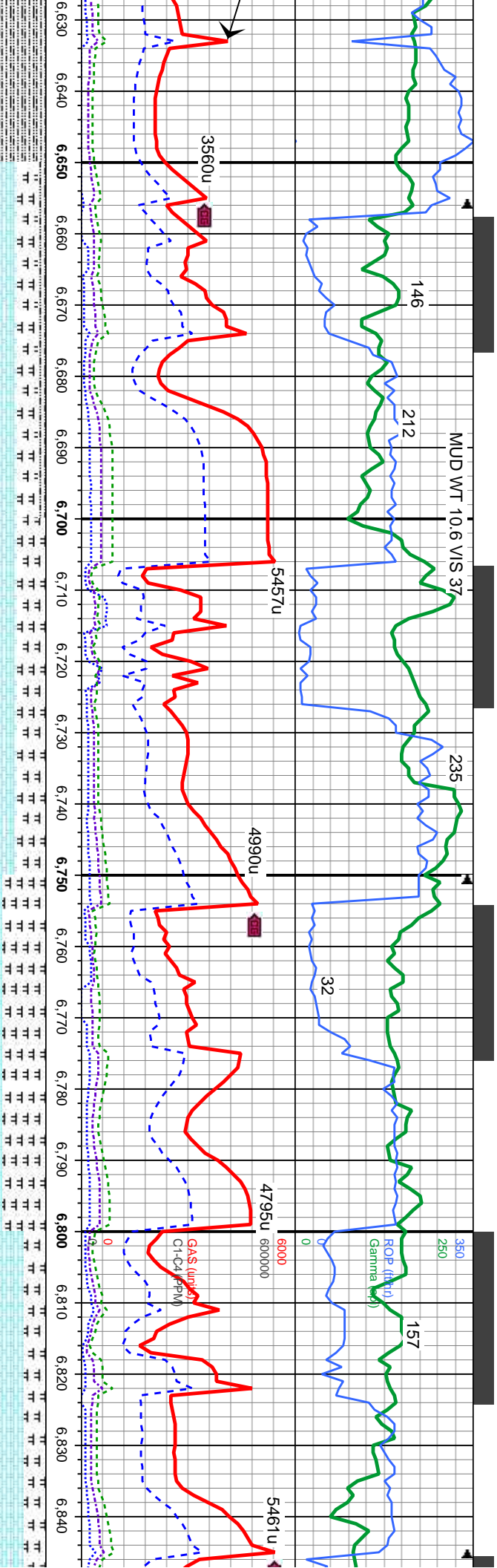
100% SILTY SH: gy - dk gy, occ dk gy, mod sft - mod firm, sb pty - sb blk, shy - stly tex, non calc,

100% SILTY SH: gy - dk gy, occ dk gy, mod sft - mod firm, sb pty - sb blk, shy - stly tex, non calc,

100% SILTY SH: gy - dk gy, occ dk gy, mod sft - mod firm, sb pty - sb blk, shy - stly tex, non calc, tr bent







60% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblkly, wxy - rthy tex, v calc, tr	60% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblkly, wxy - rthy tex, v calc, tr	60% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbply, rthy-slty tex, sl mot, occ sl vit	60% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbply, rthy-slty tex, sl mot, occ sl vit	60% CHK: lt gy - gy, occ lt brn, sme crm, sft, occ mod firm, sb blkly - sb ply, wxy - rthy tex
dispm pyr, tr bent	dispm pyr, tr bent	60% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbply, rthy-slty tex, sl mot, occ sl vit	40% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb ply, wxy - rthy tex, v calc	40% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbply, rthy-slty tex, sl mot, occ sl vit
10% SILTY SH: med gy - gy, occ dk gy, mod sft - mod firm, sb ply - sb blkly, tex, non calc	10% SILTY SH: med gy - gy, occ dk gy, mod sft - mod firm, sb ply - sb blkly, tex, non calc	6700' MD, 6531' TVD		6808' MD, 6589' TVD

MD: 6,644 TVD: 6,498.93 Inclination: 52.08 ° Azimuth: 267.99 ° VS: -153.7'	MD: 6,692 TVD: 6,527.81 Inclination: 53.96 ° Azimuth: 267.7 ° VS: -115.67'	MD: 6,739 TVD: 6,554.58 Inclination: 56.6 ° Azimuth: 269.04 ° VS: -77.41'	MD: 6,787 TVD: 6,579.9 Inclination: 59.71 ° Azimuth: 269.22 ° VS: -37.1'	MD: 6,834 TVD: 6,602.2 Inclination: 63.63 ° Azimuth: 269.74 ° VS: 3.75'
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MUD WT 10.7 VIS 37

1/10/14

1/11/14

113

MUD WT 10.8 VIS 37

BHA # 3

Bit Size: 6.125

Manufacturer: Schlumberger/Smith

Model: SD513

Serial Number: JH6870

Nozzles: 5x15

200

96

1/11/14

113

MUD WT 10.8 VIS 37

BHA # 3

Bit Size: 6.125

Manufacturer: Schlumberger/Smith

Model: SD513

Serial Number: JH6870

Nozzles: 5x15

ROP (ft/hr)

Gamma (api)

TOOH 1

Resum

5377u

C1: 66.0%

C2: 17.0%

C3: 11.0%

C4: 6.0%

5267u

3845u

3925u

5267u

TOOH 1

Resum

5267u

3845u

3925u

5267u

TOOH 1

Resum

5267u

3845u

3925u

5267u

TOOH 1

Resum

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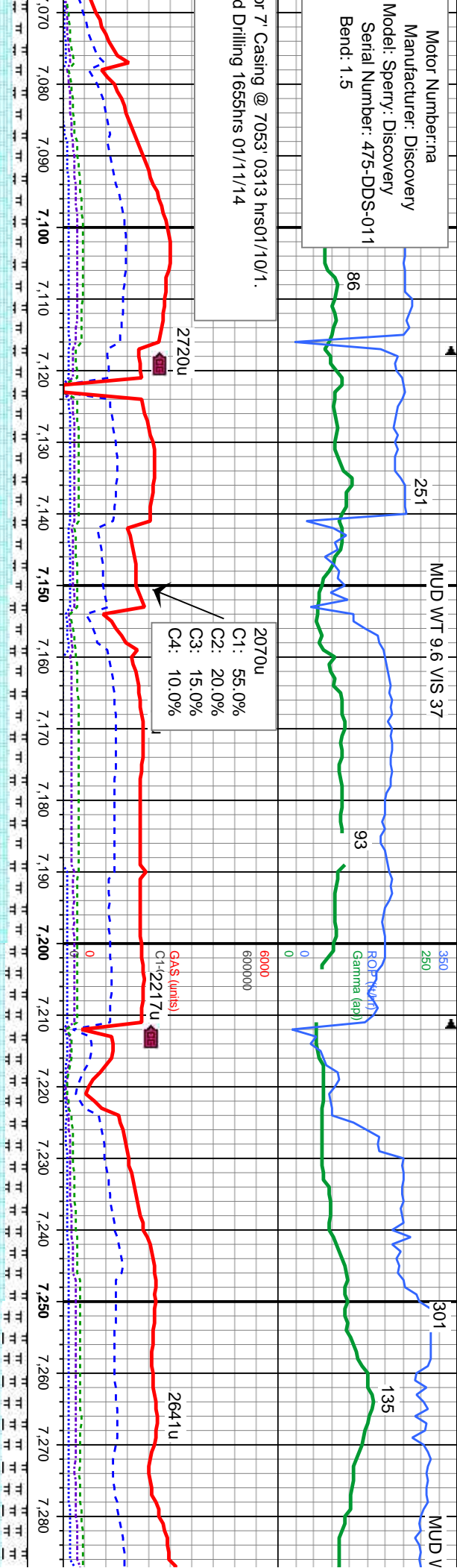
Resum

5267u



Motor Number: na  
Manufacturer: Discovery  
Model: Sperry: Discovery  
Serial Number: 475-DDS-011  
Bend: 1.5

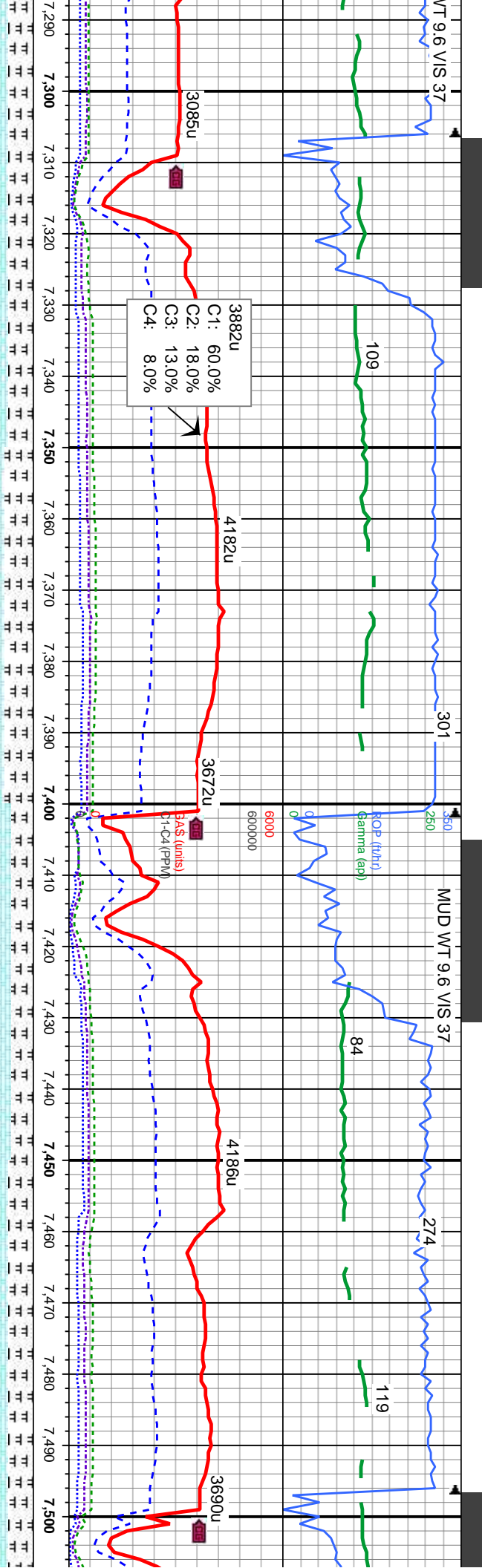
for 7" Casing @ 7063' 0313 hrs01/10/1.  
ed Drilling 1655hrs 01/11/14



- gy, occ lt brn, sft, occ mod o pily, wxy - rthy tex, v calc dkgy, mod sft-sl firm, rthy-sily tex, sl mot, occ sl vit	80% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb biky - sb pily, wxy - rthy tex, v calc 20% MRL: m - dkgy, mod sft-sl firm, sbbiky-sbopily, rthy-sily tex, sl mot, occ sl vit lstr, v calc	MD: 7,082 ' TVD: 6,669.1 ' Inclination: 84.29 ° Azimuth: 273.21 ° VS: 234.01 '	MD: 7,145 ' TVD: 6,674.91 ' Inclination: 85.13 ° Azimuth: 273.9 ° VS: 294.86 '	MD: 7,240 ' TVD: 6,680.76 ' Inclination: 87.81 ° Azimuth: 273.51 ° VS: 387.16 '
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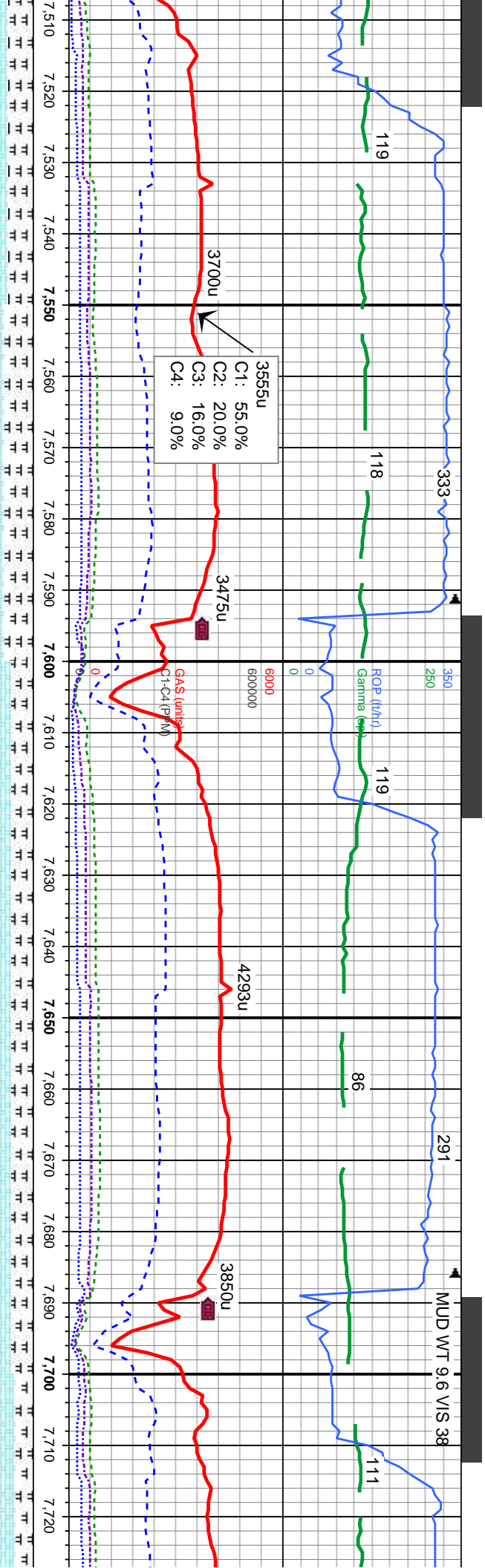
occ mod	65% CHK: lt gy - gy, occ lt brn, sft, occ mod	60% CHK: lt gy - gy, occ lt brn, sft, occ mod	70% CHK: lt gy - gy, occ lt brn, sft, occ mod	65% MRL: m - dkgy, mod sft-sl firm, sbblky-sbply, rthy-slty tex, sl mot, occ sl vit	65% MRL: m - dkgy, mod sft-sl firm, sbblky-sbply, rthy-slty tex, sl mot, occ sl vit
firm, sb blky - sb ply, wxy - rthy tex, v calc	firm, sb blky - sb ply, wxy - rthy tex, v calc	firm, sb blky - sb ply, wxy - rthy tex, v calc	firm, sb blky - sb ply, wxy - rthy tex, v calc	sbblky-sbply, rthy-slty tex, sl mot, occ sl vit	sbblky-sbply, rthy-slty tex, sl mot, occ sl vit
35% MRL: m - dkgy, mod sft-sl firm, sbblky-sbply, rthy-slty tex, sl mot, occ sl vit	40% MRL: m - dkgy, mod sft-sl firm, sbblky-sbply, rthy-slty tex, sl mot, occ sl vit	30% MRL: m - dkgy, mod sft-sl firm, sbblky-sbply, rthy-slty tex, sl mot, occ sl vit	30% MRL: m - dkgy, mod sft-sl firm, sbblky-sbply, rthy-slty tex, sl mot, occ sl vit	35% CHK: lt gy - gy, occ lt brn, sme crm, sft, occ mod firm, sb blky - sb ply, wxy - rthy tex, calc ; sme scat bent	35% CHK: lt gy - gy, occ lt brn, sme crm, sft, occ mod firm, sb blky - sb ply, wxy - rthy tex, calc ; sme scat bent
lstr, v calc	lstr, v calc	lstr, v calc	lstr, v calc	lstr, v calc	lstr, v calc

MD: 7.335  
TVD: 6.682.63  
Inclination: 89.94 °  
Azimuth: 272.25 °  
VS: 479.92 '

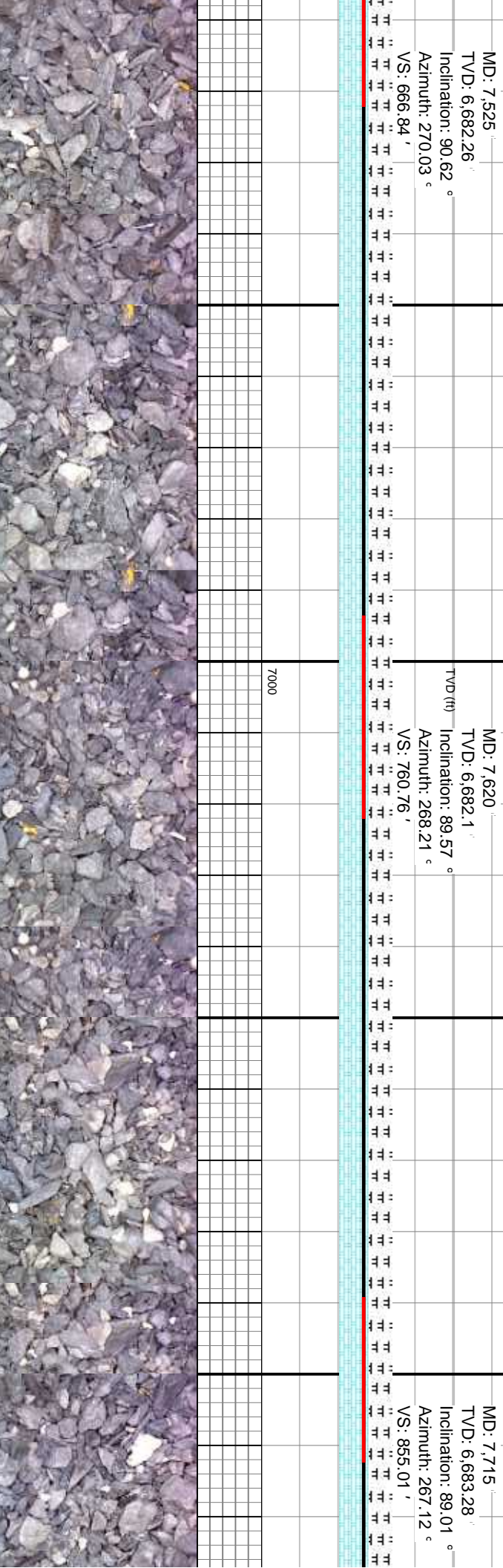
MD: 7.430  
TVD: 6.682.73  
Inclination: 89.94 °  
Azimuth: 270.43 °  
VS: 573.22 '

7000

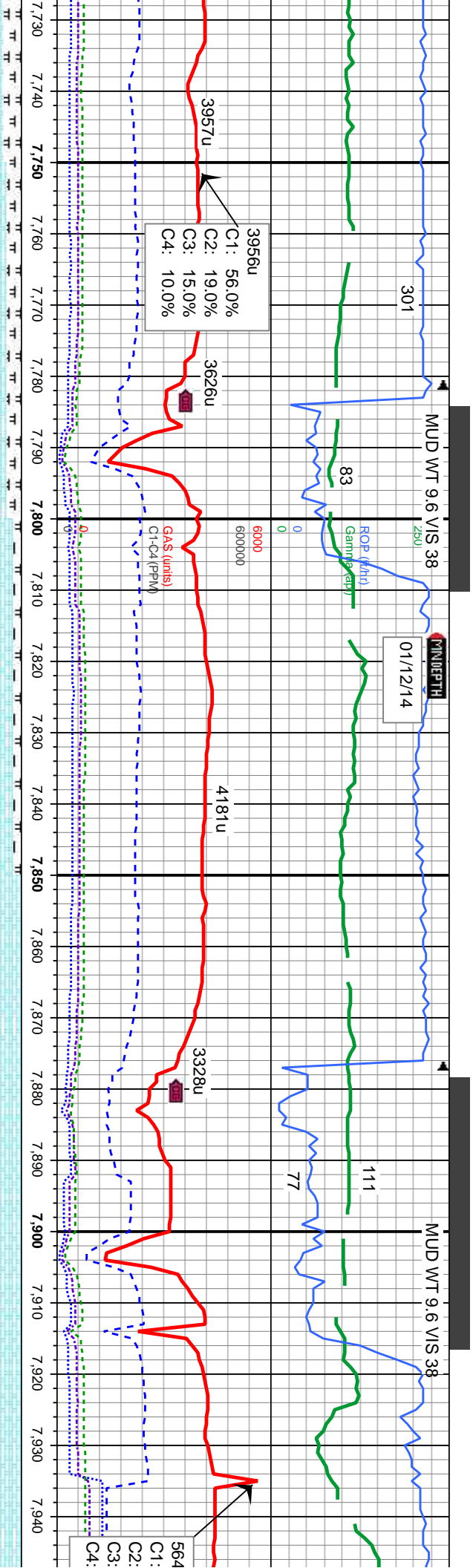




MD: 7,525 TVD: 6,682.26 Inclination: 90.62 ° Azimuth: 270.03 ° VS: 666.84 '	60% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 40% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit	70% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 30% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit	70% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 30% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit	75% CHK: lt gy - gy, occ firm, sb blkly - sb plty, wx sbblkly-sbplty, rthy-slty t
MD: 7,525 TVD: 6,682.26 Inclination: 90.62 ° Azimuth: 270.03 ° VS: 666.84 '	60% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 40% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit	70% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 30% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit	70% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 30% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit	75% CHK: lt gy - gy, occ firm, sb blkly - sb plty, wx sbblkly-sbplty, rthy-slty t







lt brn, sft, occ mod d sft-sl firm, ex, sl mot, occ sl vit	80% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 20% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	90% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 10% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	100% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc	100% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc
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MD: 7,809  
TVD: 6,683.84  
Inclination: 90.31 °  
Azimuth: 268.72 °  
VS: 948.21'

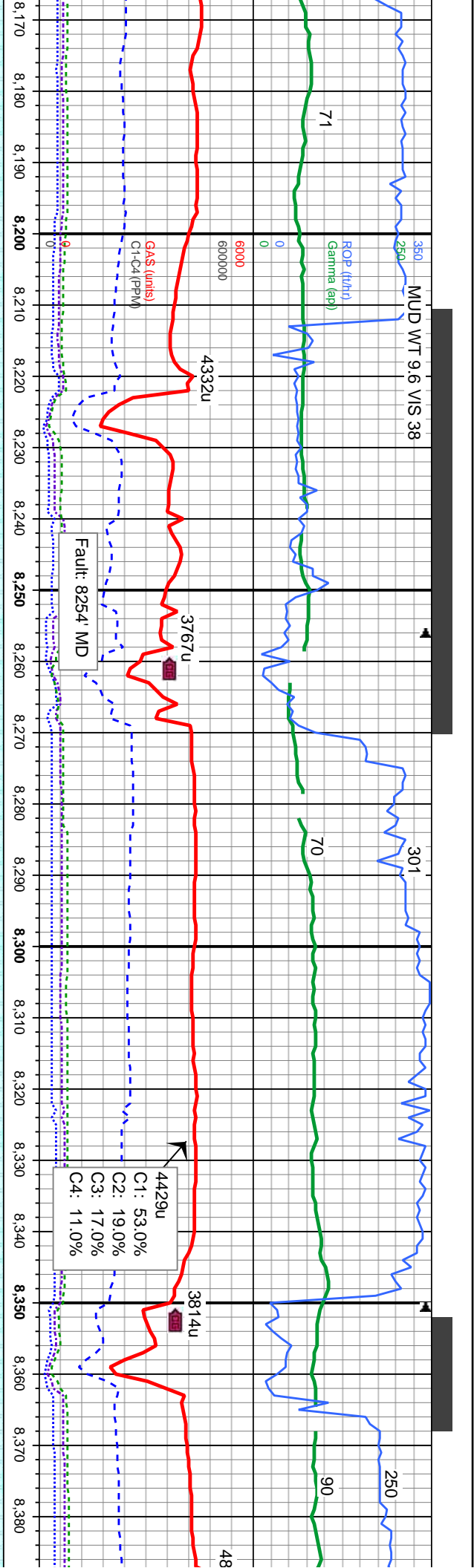
MD: 7,904  
TVD: 6,684.2  
Inclination: 89.26 °  
Azimuth: 268.63 °  
VS: 1,042.25'

7000



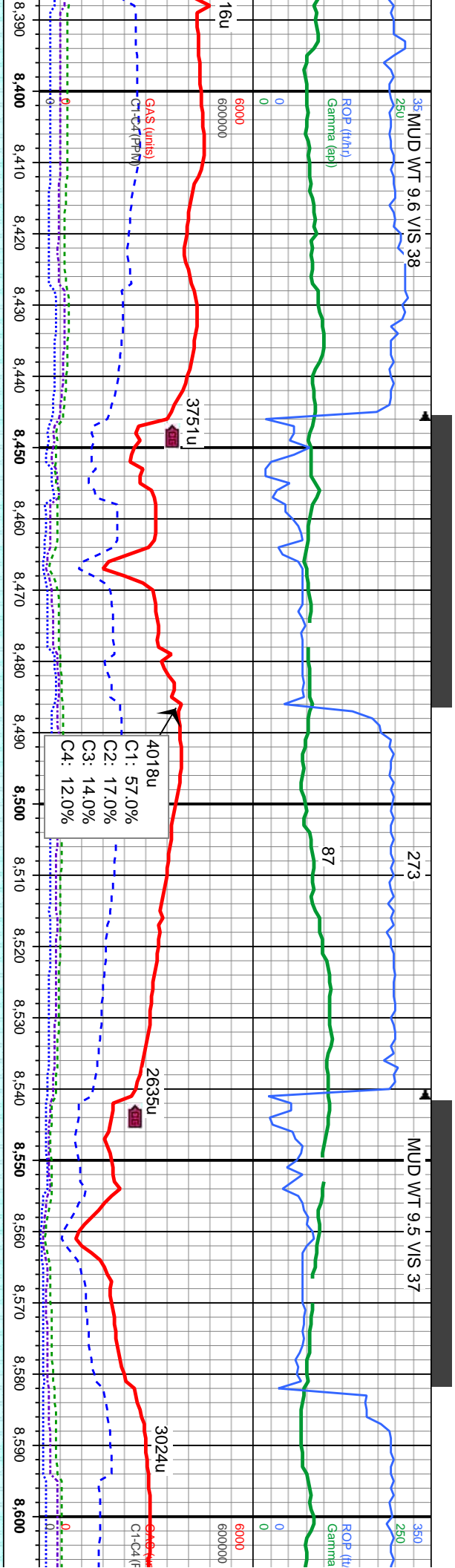






gy, occ lt brn, sft, occ mod ply, wxy - rthy tex, v calc	100% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb ply, wxy - rthy tex, v calc	100% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb ply, wxy - rthy tex, v calc	100% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb ply, wxy - rthy tex, v calc	100% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb ply, wxy - rthy tex, v calc
MD: 8,189 TVD: 6,696.92 Inclination: 86.94 ° Azimuth: 267.01 ° VS: 1,324.27 '			MD: 8,284 TVD: 6,699.61 Inclination: 89.82 ° Azimuth: 266.69 ° VS: 1,418.64 '	



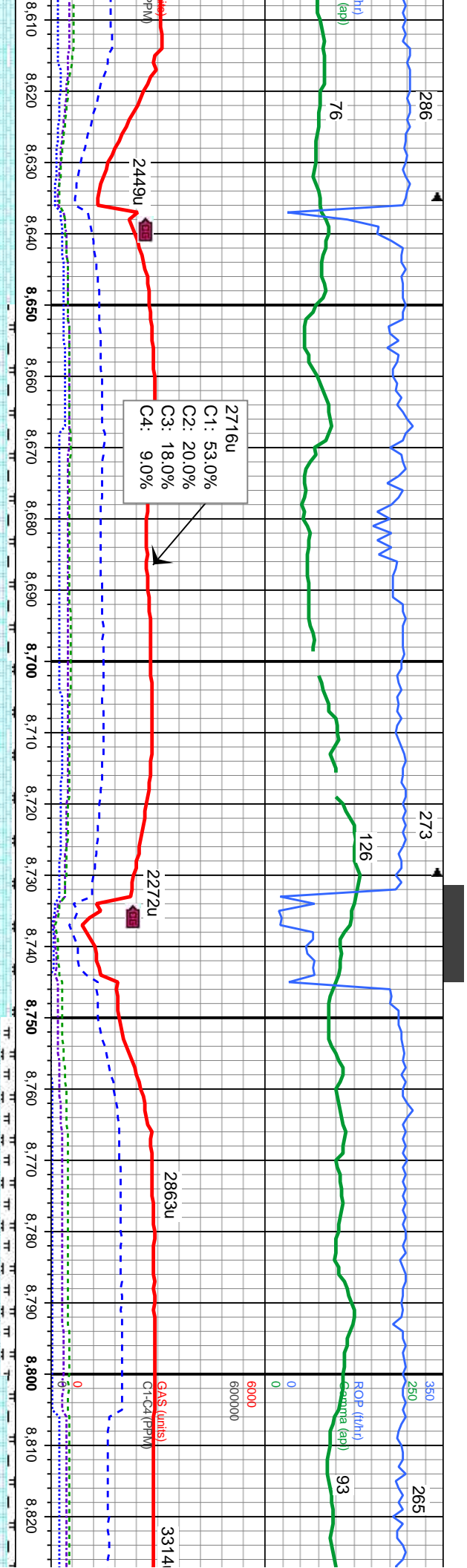


ft. occ mod	It gy - gy, occ It brn, sft, occ	100% CHK: It gy - gy, occ It brn, sft, occ mod	100% CHK: It gy - gy, occ It brn, sft, occ mod	100% CHK: It gy - gy, occ It brn, sft, occ mod	ft. occ mod
x, v calc	mod firm, sb blkly - sb plty, wxy - rthy tex, v	firm, sb blkly - sb plty, wxy - rthy tex, v calc	firm, sb blkly - sb plty, wxy - rthy tex, v calc	firm, sb blkly - sb plty, wxy - rthy tex, v calc	x, v calc
16 °	TVD (m)	MD: 8,474 ' TVD: 6,695.02 ' Inclination: 91.39 ° Azimuth: 271.86 ° VS: 1,606.06 '	MD: 8,568 ' TVD: 6,695.33 ' Inclination: 88.24 ° Azimuth: 271.6 ° VS: 1,698.24 '	TVD (m)	16 °
3 °					3 °

7000					7000
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CHK: lt gy - gy, occ lt brn, sft, occ mod  
sb blkly - sb plty, wxy - rthy tex, v calc

90% CHK: lt gy - gy, occ lt brn, sft, occ mod  
firm, sb blkly - sb plty, wxy - rthy tex, v calc  
10% MRL: m - dkgy, mod sft-sl firm,  
sbbkly-sbplty, rthy-slty tex, sl mot, occ sl vit  
lsfr, v calc

95% CHK: lt gy - gy, occ lt brn, sft, occ mod  
firm, sb blkly - sb plty, wxy - rthy tex, v calc  
5% MRL: m - dkgy, mod sft-sl firm,  
sbbkly-sbplty, rthy-slty tex, sl mot, occ sl vit  
lsfr, v calc

80% CHK: lt gy - gy, occ lt brn, sft, occ mod  
firm, sb blkly - sb plty, wxy - rthy tex, v calc  
20% MRL: m - dkgy, mod sft-sl firm,  
sbbkly-sbplty, rthy-slty tex, sl mot, occ sl vit  
lsfr, v calc

90% CHK: lt gy - gy, occ  
firm, sb blkly - sb plty, wx  
10% MRL: m - dkgy, mod  
sbbkly-sbplty, rthy-slty t  
lsfr, v calc

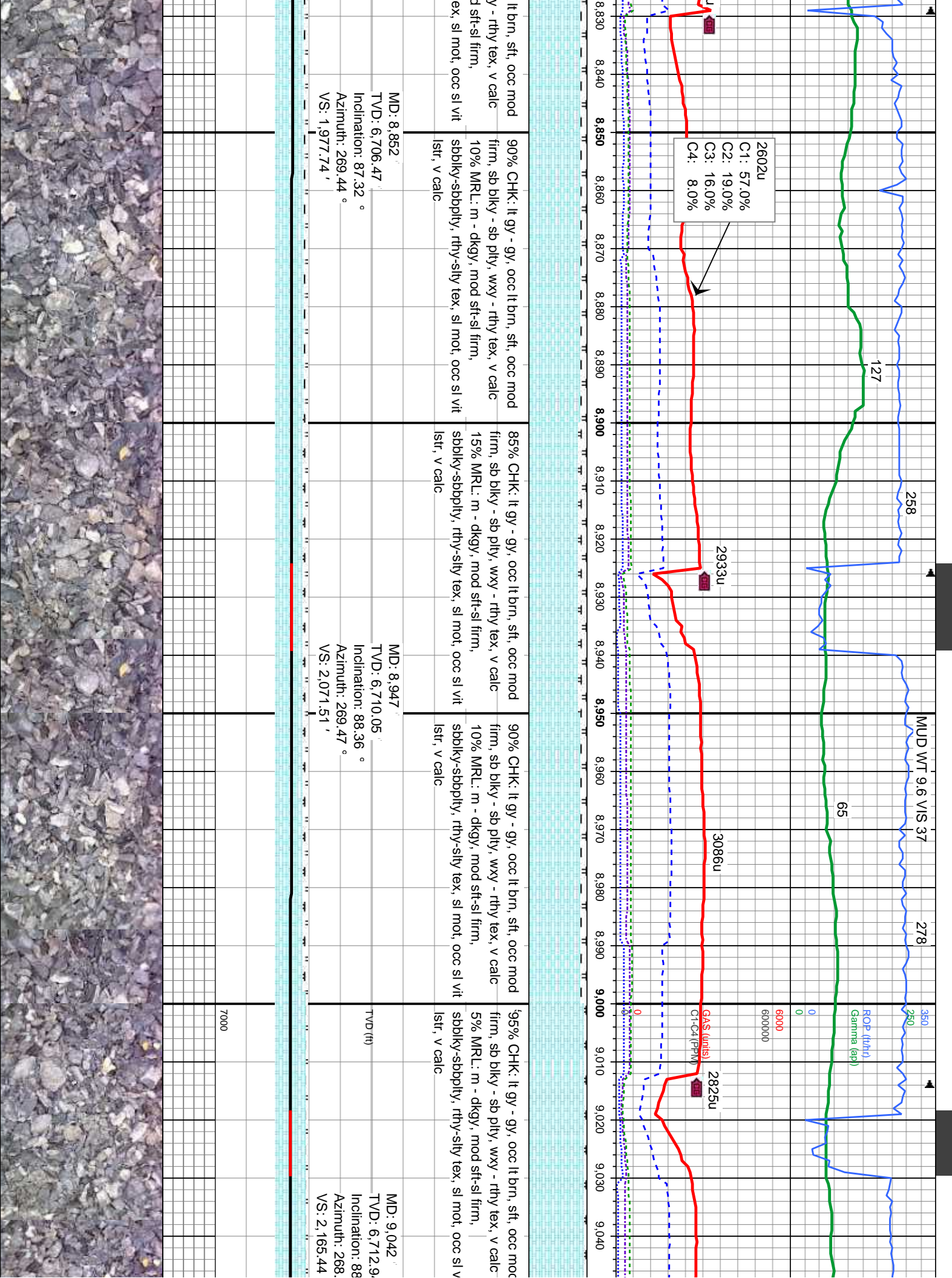
MD: 8,663  
TVD: 6,698.11  
Inclination: 88.4 °  
Azimuth: 271.34 °  
VS: 1,791.46 '

MD: 8,758  
TVD: 6,701.87  
Inclination: 87.07 °  
Azimuth: 269.35 °  
VS: 1,884.98 '

TVD (m)

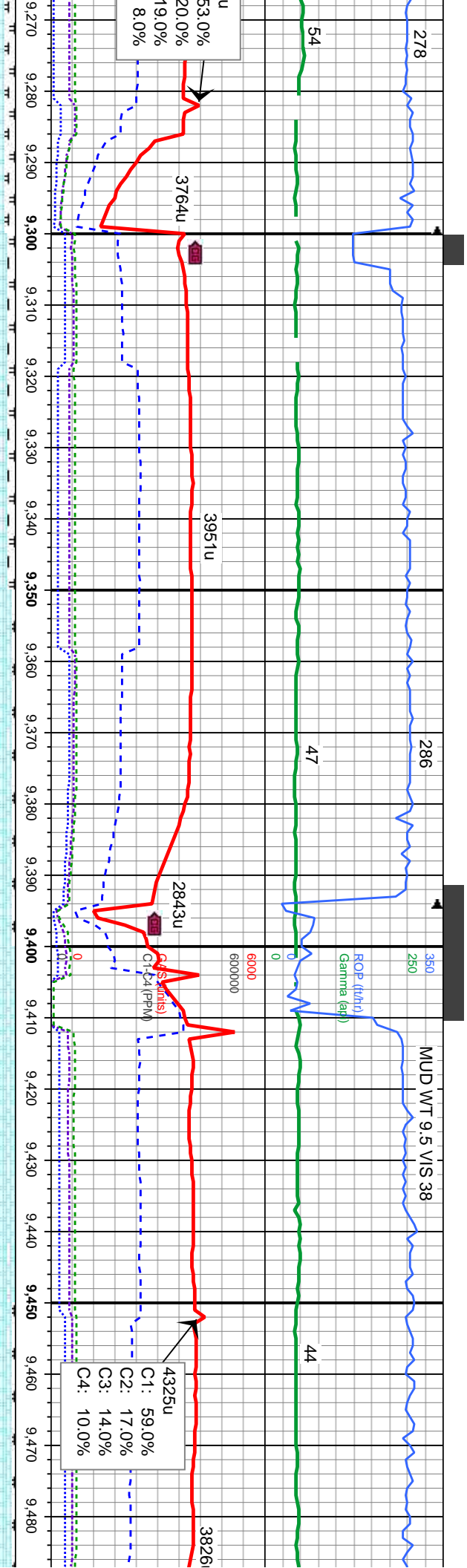
7000











- gy, occ lt brn, sft, occ mod o pty, wxy - rthy tex, v calc dkgy, mod sft-sl firm, rthy-sily tex, sl mot, occ sl vit	90% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb pty, wxy - rthy tex, v calc 10% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbpty, rthy-sily tex, sl mot, occ sl vit lstr, v calc	95% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb pty, wxy - rthy tex, v calc 5% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbpty, rthy-sily tex, sl mot, occ sl vit lstr, v calc	5100% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb pty, wxy - rthy tex, v calc	95% CHK: lt gy - gy, occ lt brn, sft, occ firm, sb blkly - sb pty, wxy - rthy te 5% MRL: m - dkgy, mod sft-sl firm sbbkly-sbpty, rthy-sily tex, sl mot lstr, v calc
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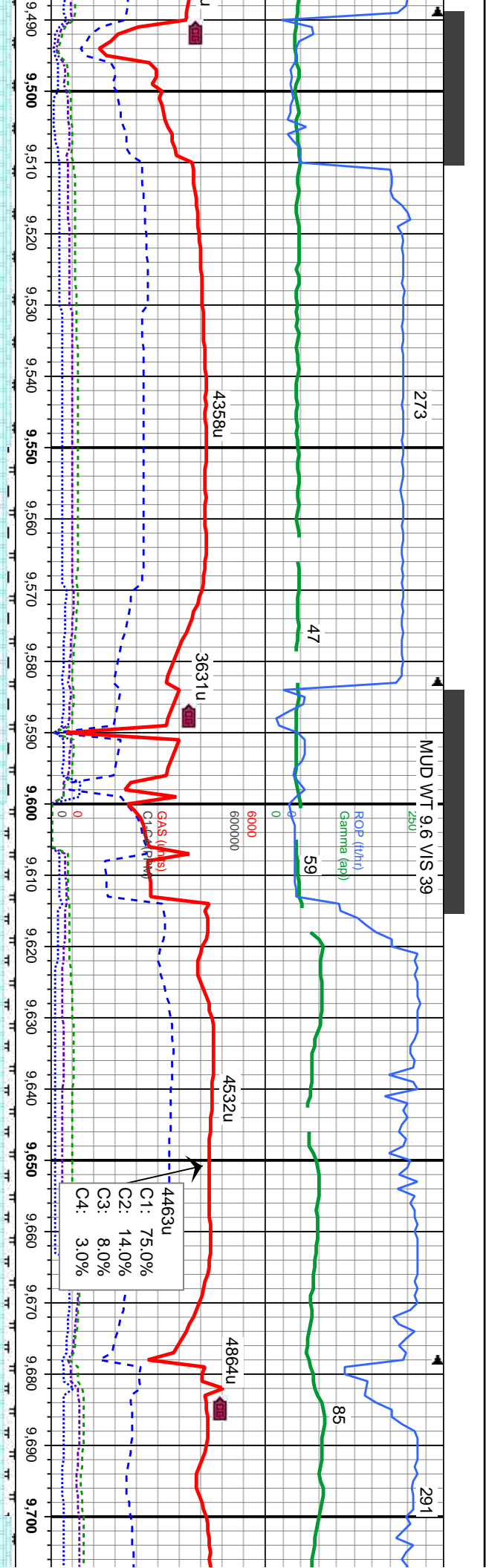
MD: 9,327 '  
TVD: 6,715.59 '  
Inclination: 90.55 °  
Azimuth: 270.4 °  
VS: 2,447.21 '

MD: 9,422 '  
TVD: 6,714.71 '  
Inclination: 90.52 °  
Azimuth: 270.09 °  
VS: 2,540.83 '

7000

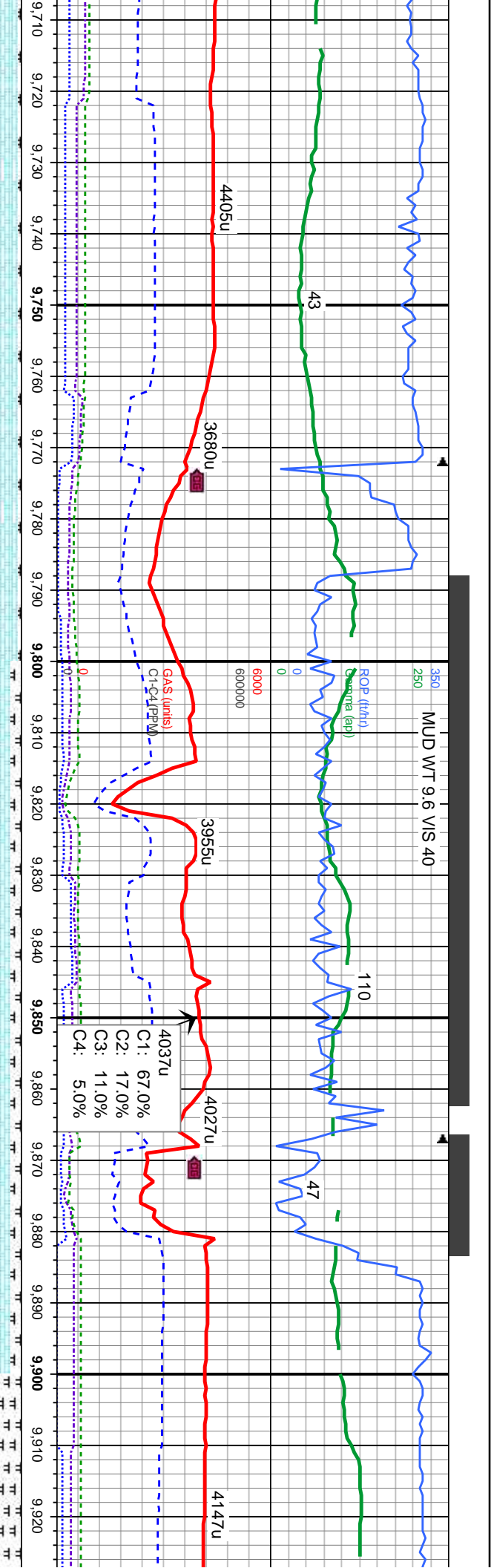






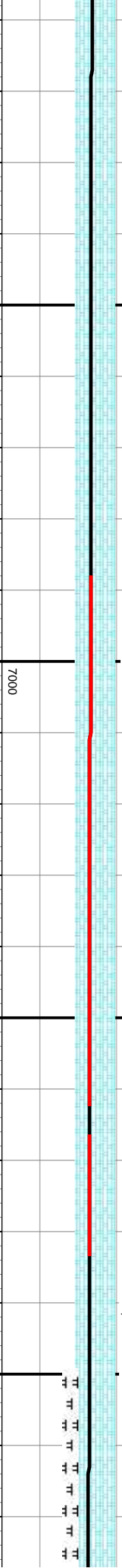
occ mod x, v calc	95% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 5% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbopity, rthy-sily tex, sl mot, occ sl vit lstr, v calc	90% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 10% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbopity, rthy-sily tex, sl mot, occ sl vit lstr, v calc	85% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 15% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbopity, rthy-sily tex, sl mot, occ sl vit lstr, v calc	85% C firm, s 15% M sbbkly
occ sl vit	MD: 9,517 ' TVD: 6,713.76 ' Inclination: 90.62 ° Azimuth: 270.66 ° VS: 2,634.42 '		MD: 9,612 ' TVD: 6,715.27 ' Inclination: 87.56 ° Azimuth: 267.6 ° VS: 2,728.31 '	MD: 9,706 ' TVD: 6,715 ' Inclination: 21 Azimuth: 21 VS: 2,821.4



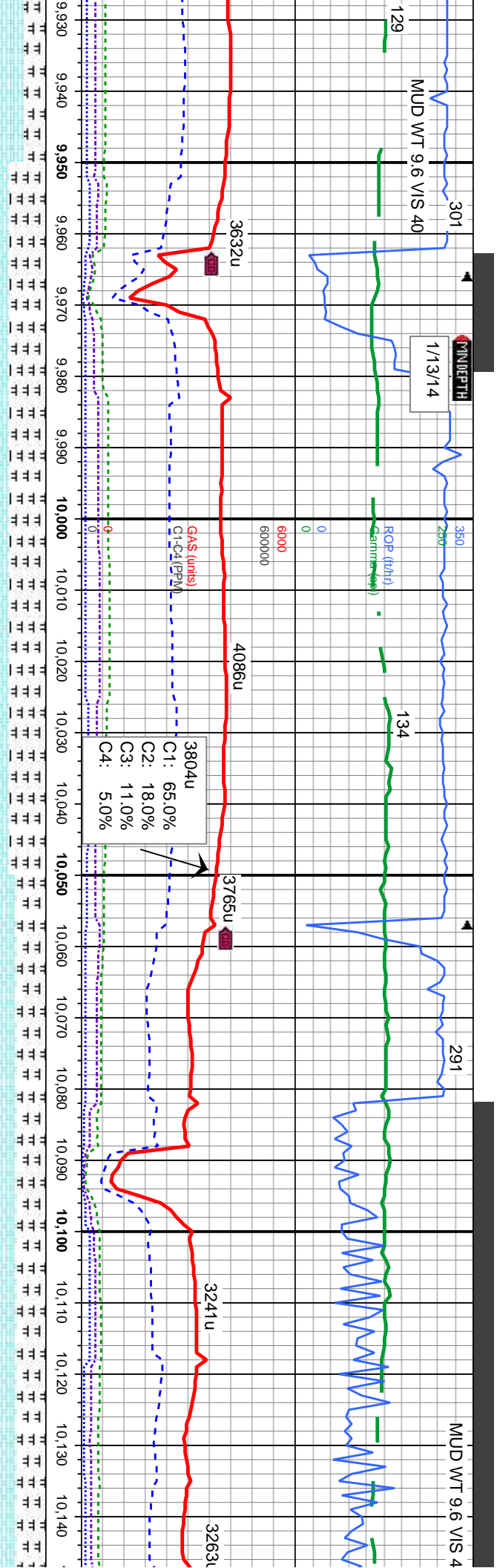


CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb pily, wxy - rthy tex, v calc 15% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbopily, rthy-sily tex, sl mot, occ sl vit calc	85% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb pily, wxy - rthy tex, v calc 15% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbopily, rthy-sily tex, sl mot, occ sl vit lstr, v calc	85% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb pily, wxy - rthy tex, v calc 15% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbopily, rthy-sily tex, sl mot, occ sl vit lstr, v calc	85% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb pily, wxy - rthy tex, v calc 15% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbopily, rthy-sily tex, sl mot, occ sl vit lstr, v calc	70% CHK: lt gy - gy, occ sb blkly - sb pily, wxy - rth 30% MRL: m - dkgy, moc sbbkly-sbopily, rthy-sily t lstr, v calc
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MD: 9,801 TVD: 6,724.02 Inclination: 87.07 ° Azimuth: 266.55 ° VS: 2,915.9'	MD: 9,896 TVD: 6,728.29 Inclination: 87.78 ° Azimuth: 266.63 ° VS: 3,010.27'
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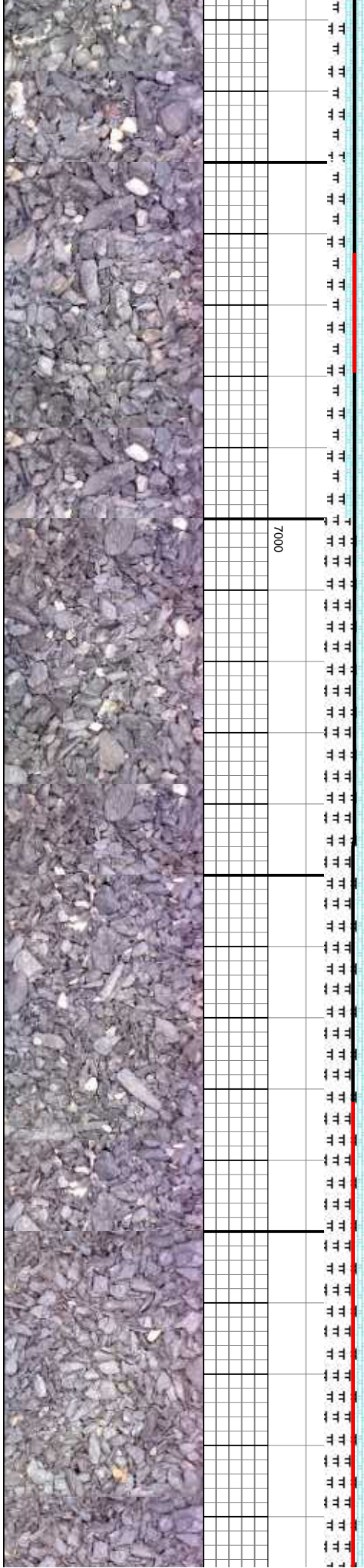


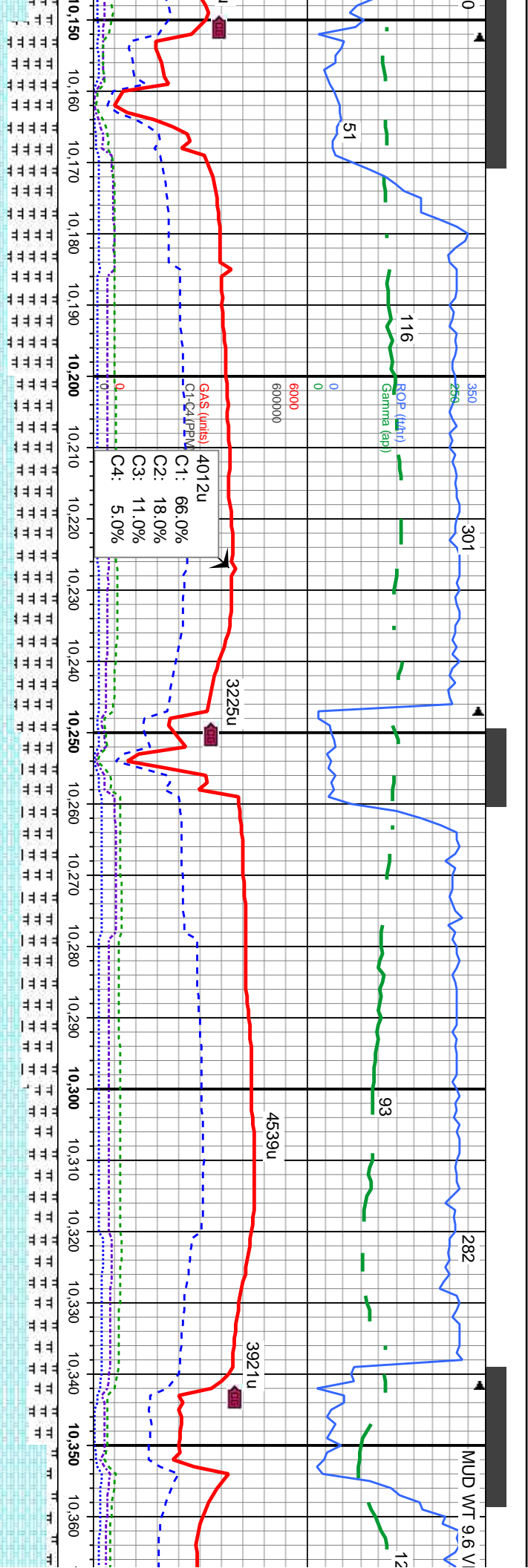
lt brn, mod firm-firm, sb blkly - sb pily, wxy - rthy tex, v calc	50% CHK: lt gy - gy, occ lt brn, mod firm-firm, sb blkly - sb pily, wxy - rthy tex, v calc	50% MR.L: m - dkgy, mod sft-sl firm, lst, v calc	60% CHK: lt gy - gy, occ lt brn, mod firm-firm, sb blkly - sb pily, wxy - rthy tex, v calc	60% CHK: lt gy - gy, occ lt brn, mod firm-firm, sb blkly - sb pily, wxy - rthy tex, v calc
d sft-sl firm, ex, sl mot, occ sl vit	50% MR.L: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-sily tex, sl mot, occ sl vit	50% CHK: lt gy - gy, occ lt brn, mod firm-firm, sbbkly-sbbply, rthy-sily tex, sl mot, occ sl vit	40% MR.L: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-sily tex, sl mot, occ sl vit	40% MR.L: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-sily tex, sl mot, occ sl vit

MD: 9,991'  
TVD: 6,731.5'  
Inclination: 88.34°  
Azimuth: 267.36°  
VS: 3,104.6'

MD: 10,086'  
TVD: 6,734.67'  
Inclination: 87.84°  
Azimuth: 266.15°  
VS: 3,198.98'

7000



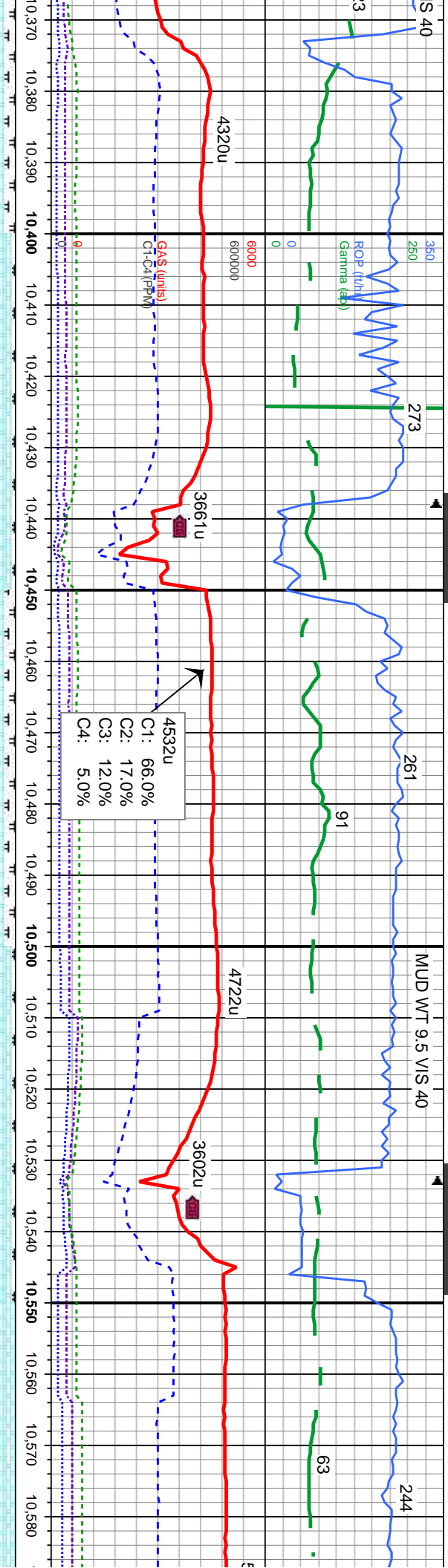


70% MRL: m - dkgy, mod sft-sl firm, sbblky-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	60% MRL: m - dkgy, mod sft-sl firm, sbblky-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	50% MRL: m - dkgy, mod sft-sl firm, sbblky-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	60% CHK: lt gy - gy, occ lt brn, mod firm-firm, sb blky - sb ply, wxy - rthy tex, v calc	85% CHK: lt gy - sb blky - sb ply, sbblky-sbbply, lstr, v calc
30% CHK: lt gy - gy, occ lt brn, mod firm-firm, sb blky - sb ply, wxy - rthy tex, v calc	40% CHK: lt gy - gy, occ lt brn, mod firm-firm, sb blky - sb ply, wxy - rthy tex, v calc	50% CHK: lt gy - gy, occ lt brn, mod firm-firm, sb blky - sb ply, wxy - rthy tex, v calc	40% MRL: m - dkgy, mod sft-sl firm, sbblky-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	15% MRL: m - sbblky-sbbply, lstr, v calc
MD: 10,180 TVD: 6,737.2 Inclination: 89.08 ° Azimuth: 266.12 ° VS: 3,292.49 '	TVD (m)	MD: 10,275 TVD: 6,738.24 Inclination: 89.66 ° Azimuth: 267.2 ° VS: 3,386.93 '		MD: 1 TVD: Inclin: Azim: VS: 3

7000







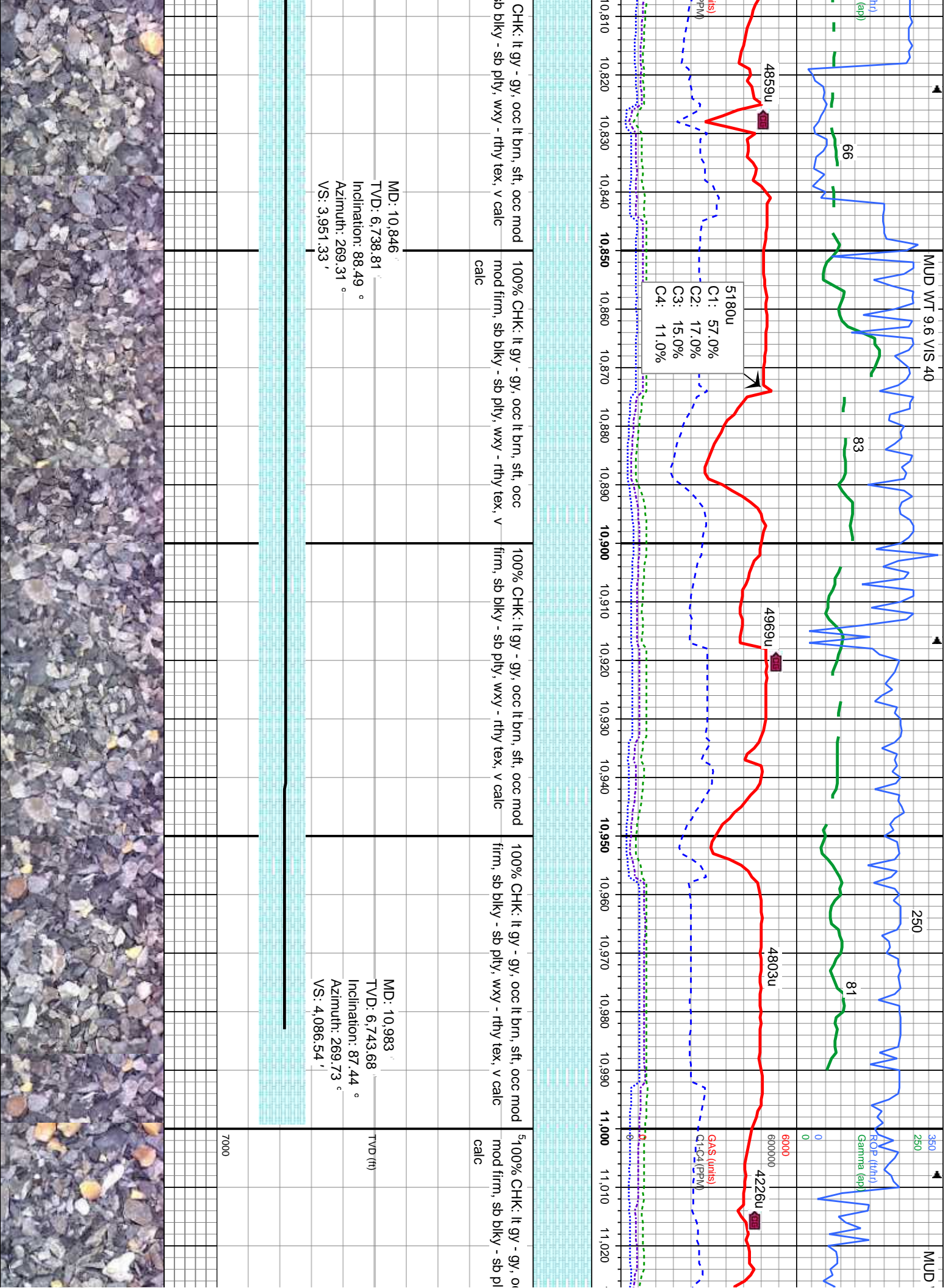
- gy, occ lt brn, mod firm-firm, wxy - rthy tex, v calc	95% CHK: lt gy - gy, occ lt brn, mod firm-firm, sb blkly - sb ply, wxy - rthy tex, v calc	85% CHK: lt gy - gy, occ lt brn, mod firm-firm, sb blkly - sb ply, wxy - rthy tex, v calc	95% CHK: lt gy - gy, occ lt brn, mod firm-firm, sb blkly - sb ply, wxy - rthy tex, v calc	100% CHK: lt gy - gy, occ lt brn, mod firm, sb blkly - sb ply, wxy - r
dkgy, mod sft-sl firm, rthy-slty tex, sl mot, occ sl vit	5% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbply, rthy-slty tex, sl mot, occ sl vit	15% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbply, rthy-slty tex, sl mot, occ sl vit	5% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbply, rthy-slty tex, sl mot, occ sl vit	calc
0.371 °		MD: 10.466 °		MD: 10.561 °
6.738.24 °	TVD (m)	TVD: 6.737.84 °		TVD: 6.738.07 °
ation: 90.34 °		Inclination: 90.15 °		Inclination: 89.57 °
rth: 267.81 °		Azimuth: 268.47 °		Azimuth: 269.52 °
482.21 °		VS: 3.576.36 °		VS: 3.670.32 °

7000

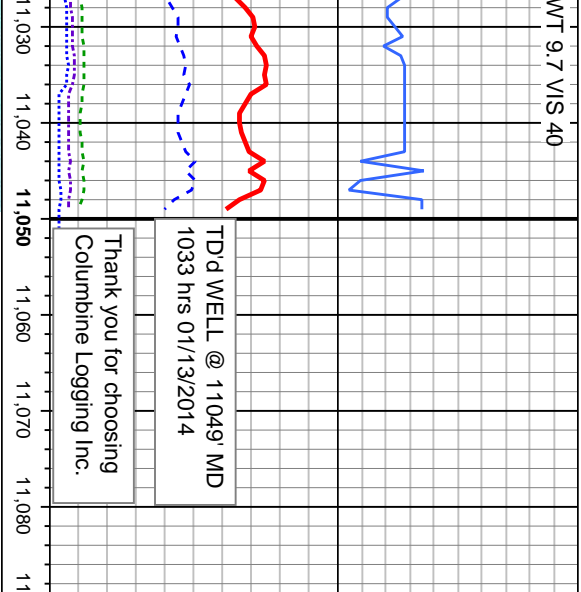








WT 9.7 VIS 40



cc It brn, sft, occ  
ty, wxy - rthy tex, v

