



Scale: 5.41" / 100'
Measured Depth Log

Well Name Wells Ranch AA26-65-1HN

Location Sec25 T6N R63W

State Colorado

Country USA

API Number 05-123-37569

Region DJ BASIN

Spud Date 9/26/2013

Surface Coordinates 1787' FSL

153' FWL

LAT: 40.45505°N

LONG: 104.39410°W

Bottom Hole Coordinates

2310' FSL
150' FWL

LAT: 40.45658°N

LONG: 104.41312°W

Ground Elevation 4791'

K.B. Elevation 4815'

Logged Interval 1000' To 11204'

Total Depth 11204'

Formation Pierre, Niobrara

Type of Drilling Fluid Water:Mud;Poly

County WELD

Rig Number H&P 322

Field WATTENBERG

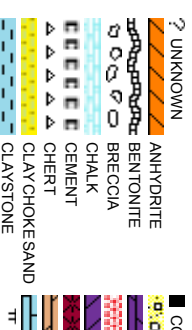
Drilling Completed 10/4/2013

Company Noble Energy Inc

Address 1625 BROADWAY
DENVER, CO 80202
(303) 228-4000

Name John Ready,Mike

Company Columbine Logging
Address 2385 S. LIPAN
DENVER, CO 80202
(303) 289-7764









Operator

NC.

MAY
2022

Accessories

Fossils

Fossils	
 F FOSSIL	 ARGILLACEOUS
 GASTROPOD	 ARGILLITE GRAIN
 OOLITE	 B BENTONITE
OSTRACOD	BITUMINOUS SUBSTANCE
PELLET	BRECCIA FRAGMENTS
BRACHIOPOD	CALCAREOUS
BRYOZOA	CARBONACEOUS FLAKES
CEPHALOPOD	CHERT
CORAL	CHERT
CRINOID	COAL, THIN BEDS
ECHINOID	DOLOMITIC
FISH	FELDSPAR
FORAMINIFERA	FERRUGINOUS PELLET
AMPHIPORA	FERRUGINOUS
BELEMNITE	SILTY
BIOECITE	SILTY
BRACHIOPOD	GYPSIFEROUS
BRYOZOA	HEAVY MINERAL
CEPHALOPOD	INOCERAMUS
CORAL	KAOLIN
CRINOID	MARLS
ECHINOID	MINERAL CRYSTALS
FORAMINIFERA	NODULES
AMPHIPORA	PHOSPHATE PELLETS
BELEMNITE	PYRITE
BIOECITE	SALT CAST
BRACHIOPOD	SANDY
BRYOZOA	SILTY
CEPHALOPOD	SILTY
CORAL	SILTY
CRINOID	SILTY
ECHINOID	SILTY
FORAMINIFERA	SILTY
AMPHIPORA	SILTY
BELEMNITE	SILTY
BIOECITE	SILTY
BRACHIOPOD	SILTY
BRYOZOA	SILTY
CEPHALOPOD	SILTY
CORAL	SILTY
CRINOID	SILTY
ECHINOID	SILTY
FORAMINIFERA	SILTY

Minerals

Geologist

ke Greene

ging Inc.

CRADO 80223

Other Symbols

Oil Show

Oil Show

☒ MOLDIC
☐ ORGANIC
☐ PINPOINT
☒ DEAD
☐ EVEN
☒ VUGGY














☒ FAULT
☒ FORMATION TOP
☒ GAS SHOW
☒ MN DEPTH

☒ WIRELINE TESTED - LEFT
☒ WIRELINE TESTED - RT
☒ E EARTH
☒ FINELY X LN
☒ GRAINSTONE
☒ L LITHOGRAPHIC

Rounding

Rounding

Engineering

	QUESTIONABLE		ANGULAR		MICROCLIN
	SPOTTED STAINING		ROUNDED		MUDSTONE
	POROSITY		SUBANG		PACKSTONE
	BIT		SUBSIDENCE		WACKESTONE
	NORMAL FAULT		REVERSED FAULT		WAKESTONE
	OIL SHOW		OVERTURNED STRATA		MICROCLIN
	CONNECTION (LEFT)		SUBSIDENCE		WACKESTONE
	REVERSE FAULT		SUBSIDENCE		WACKESTONE

Porosity

-  E EARTHY
-  F FENESTRAL
-  F FRACTURE
-  X INTERCRYSTALLINE
-  I INTEROOOLITIC
-  ➡ CONNECTION (RIGHT)
-  ➡ CORE -LOST
-  ■ CORE - -RECOVERED
-  ⋮ DST INTERVAL
-  ⬅️ SIDEWALL CORE (LEFT)
-  ➡ SIDEWALL CORE (RIGHT)
-  📄 SLIDE
-  🗺️ SURVEY
-  🚗 TRIP GAS
-  🪨 BOUNDSTONE
-  ☁️ CHALKY
-  ☄️ CRYPTOXLN
-  📊 MODERATE
-  📉 POOR
-  🏠 WELL

Textures

Sorting

Rock Types

Symbol	Rock Type	Symbol	Rock Type	Symbol	Rock Type
	DAL		METAMORPHIC		SHAL YSILTSTONE
	CONGLOMERATE		NOSAMPLE		SILTY SHALE
	DOLomite		SALT		SILTSTONE
	GRANITE		SANDSTONE		TUFF
	GYPSUM		SALT-PEPPER SAND		WELDED TUFF
	IGNEOUS		SHALE		
	SIDERITE or LIMONITE		SHALE COLORED		
	LIMESTONE		SHALE GRAY		
	MARLSTONE		SHALY SANDSTONE		

Slide/Rotate

ROP
ROF
GAMMA

Began Build @ 5997' MD
@ 22:32 hrs, 09/29/2013

Total Gas & Chromatograph

GAS
C1
C2
C3
C4

COLUMBINE LOGGING INC. RIGGED UP ON
09/27/2013 MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS CHROMATOGRAPH
UNIT #0315

Depth Labels

% Lith

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

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

95% SLTY SH: med gy - gy, occ dk gy, mod sft -
mod firm, sb pty - sb blk, shy - stly tex, non calc
5% SHY SS: wh - lt gy sme s&p, f gr, sb rd - sb
ang, fr srt, fri, mod por, arg cnt, occ biot

80% SLTY SH: med gy
mod firm, sb pty - sb bl
calc
20% SHY SS: wh - lt gy
ang, fr srt, fri, mod por,

Well Bore
TVD

MD: 6,026
TVD: 5,956.45'
Inclination: 0.77 °
Azimuth: 104.6 °
VS: 577.28'

MD: 6,073
TVD: 6,003.44'
Inclination: 0.46 °
Azimuth: 96.77 °
VS: 576.78'

MD: 6,121
TVD: 6,051.42'
Inclination: 3.31 °
Azimuth: 277.75 °
VS: 577.98'

MD: 6,168
TVD: 6,098.22'
Inclination: 7.0 °
Azimuth: 274.4 °
VS: 582.21'

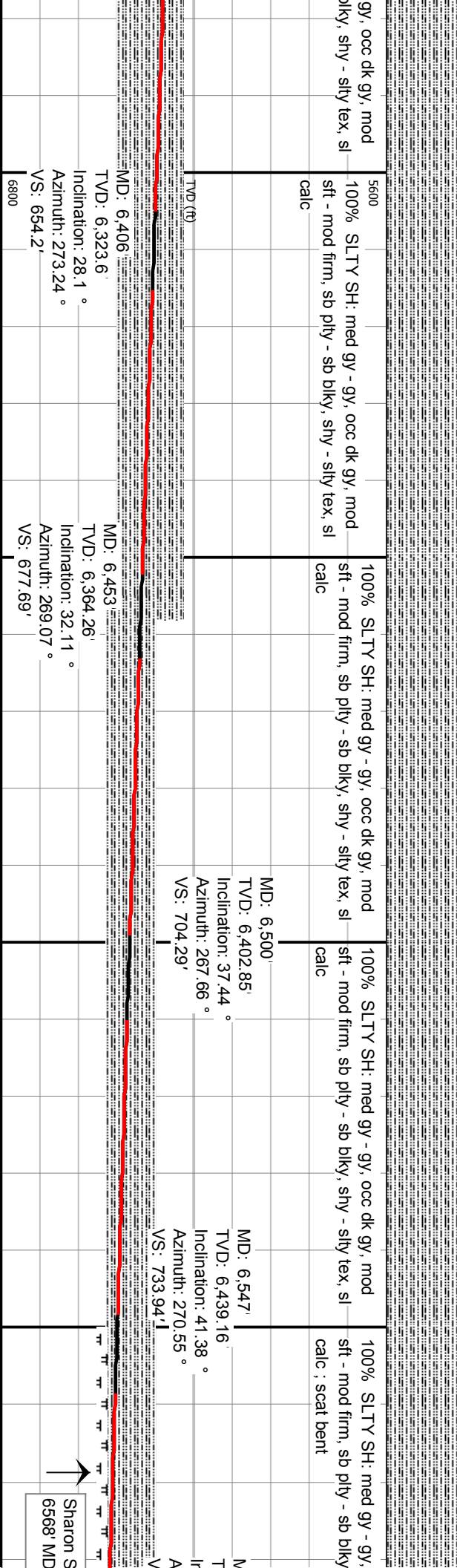
BHA #2
Bit Size: 8.750
Manufacturer: Schlumberger/Smith
Model: SDI611
Serial Number: JH0455
Nozzles: 6x14

Motor Number: 2
Manufacturer: Sperry Drilling
Model: Sperry Drill
Serial Number: 675-0199
Bend: 2.0

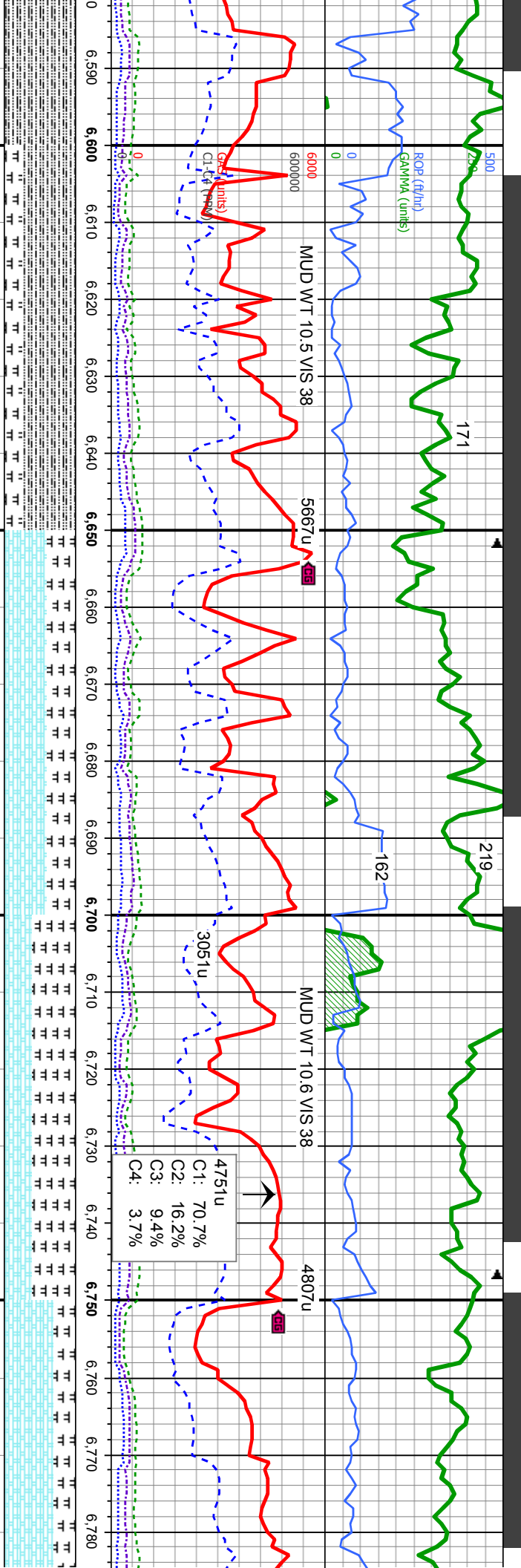
Oil Show

Images



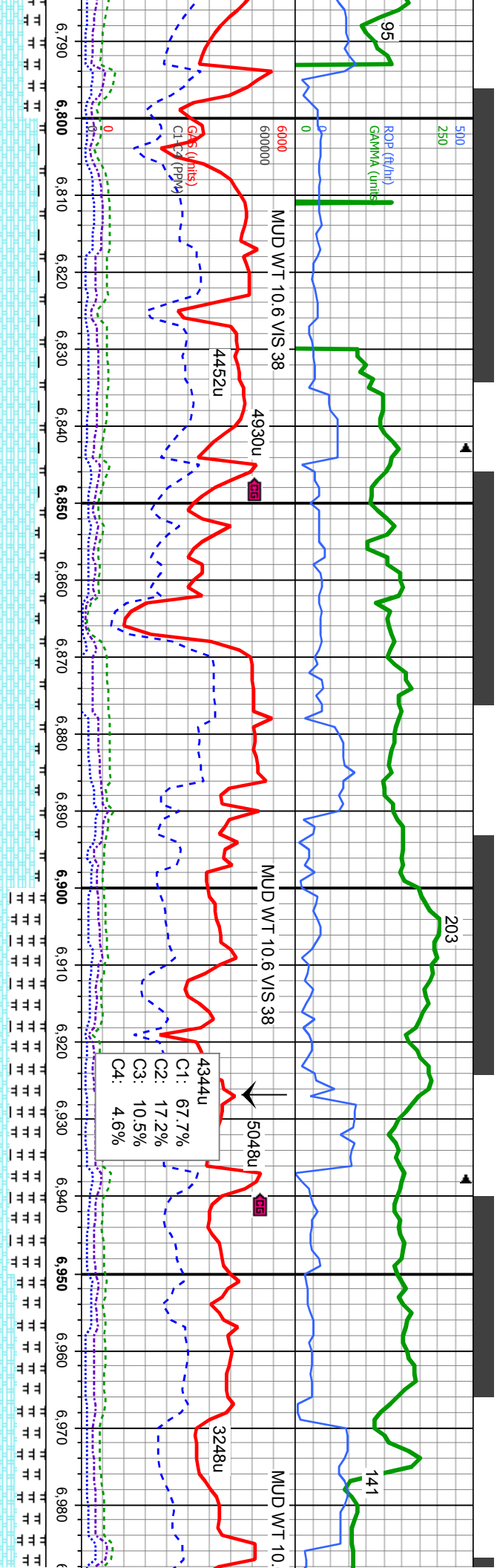


MD: 6,547' |
TVD: 6,439.16'
Inclination: 41.38°
Azimuth: 270.55°
VS: 733.94' |



<p>occ dk gy, mod shy - silty tex, sl</p> <p>5600</p> <p>75% SLTY SH: med gy - gy, occ dk gy, mod sft - mod firm, sb pty - sb blkgy, shy - silty tex, sl calc 25% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbpty, rthy-silty tex, sl mot, occ sl vit lstr, v calc: abnt bent</p> <p>ID: 6,595' VD: 6,474, 19' Inclination: 44.89 ° Azimuth: 273.39 ° S.S: 766.69'</p>	<p>60% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkgy - sb pty, wxy - rthy tex, v calc 40% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbpty, rthy-silty tex, sl mot, occ sl vit lstr, v calc: r bent</p> <p>A Marl 6658 MD, 6517' TVD</p> <p>MD: 6,642' TVD: 6,506.5' Inclination: 48.24 ° Azimuth: 272.8 ° VS: 800.79'</p>	<p>60% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbpty, rthy-silty tex, sl mot, occ sl vit lstr, v calc 40% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkgy - sb pty, wxy - rthy tex, v calc</p> <p>MD: 6,690' TVD: 6,536.82' Inclination: 53.38 ° Azimuth: 274.89 ° VS: 837.96'</p>	<p>70% CHK: lt gy - gy, occ lt brn, sft firm, sb blkgy - sb pty, wxy - rthy tex 30% MRL: m - dkgy, mod sft-sl fi sbbkly-sbbpty, rthy-silty tex, sl mot lstr, v calc</p> <p>B CHAL 6786 MD</p> <p>MD: 6,785' TVD: 6,587.41' Inclination: 62.48 ° Azimuth: 274.59 ° VS: 918.26'</p>
<p>occ dk gy, mod shy - silty tex, sl</p> <p>5600</p> <p>75% SLTY SH: med gy - gy, occ dk gy, mod sft - mod firm, sb pty - sb blkgy, shy - silty tex, sl calc 25% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbpty, rthy-silty tex, sl mot, occ sl vit lstr, v calc: abnt bent</p> <p>ID: 6,595' VD: 6,474, 19' Inclination: 44.89 ° Azimuth: 273.39 ° S.S: 766.69'</p>	<p>60% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkgy - sb pty, wxy - rthy tex, v calc 40% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbpty, rthy-silty tex, sl mot, occ sl vit lstr, v calc: r bent</p> <p>A Marl 6658 MD, 6517' TVD</p> <p>MD: 6,642' TVD: 6,506.5' Inclination: 48.24 ° Azimuth: 272.8 ° VS: 800.79'</p>	<p>60% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbpty, rthy-silty tex, sl mot, occ sl vit lstr, v calc 40% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkgy - sb pty, wxy - rthy tex, v calc</p> <p>MD: 6,690' TVD: 6,536.82' Inclination: 53.38 ° Azimuth: 274.89 ° VS: 837.96'</p>	<p>70% CHK: lt gy - gy, occ lt brn, sft firm, sb blkgy - sb pty, wxy - rthy tex 30% MRL: m - dkgy, mod sft-sl fi sbbkly-sbbpty, rthy-silty tex, sl mot lstr, v calc</p> <p>B CHAL 6786 MD</p> <p>MD: 6,785' TVD: 6,587.41' Inclination: 62.48 ° Azimuth: 274.59 ° VS: 918.26'</p>
<p>occ dk gy, mod shy - silty tex, sl</p> <p>5600</p> <p>75% SLTY SH: med gy - gy, occ dk gy, mod sft - mod firm, sb pty - sb blkgy, shy - silty tex, sl calc 25% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbpty, rthy-silty tex, sl mot, occ sl vit lstr, v calc: abnt bent</p> <p>ID: 6,595' VD: 6,474, 19' Inclination: 44.89 ° Azimuth: 273.39 ° S.S: 766.69'</p>	<p>60% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkgy - sb pty, wxy - rthy tex, v calc 40% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbpty, rthy-silty tex, sl mot, occ sl vit lstr, v calc: r bent</p> <p>A Marl 6658 MD, 6517' TVD</p> <p>MD: 6,642' TVD: 6,506.5' Inclination: 48.24 ° Azimuth: 272.8 ° VS: 800.79'</p>	<p>60% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbpty, rthy-silty tex, sl mot, occ sl vit lstr, v calc 40% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkgy - sb pty, wxy - rthy tex, v calc</p> <p>MD: 6,690' TVD: 6,536.82' Inclination: 53.38 ° Azimuth: 274.89 ° VS: 837.96'</p>	<p>70% CHK: lt gy - gy, occ lt brn, sft firm, sb blkgy - sb pty, wxy - rthy tex 30% MRL: m - dkgy, mod sft-sl fi sbbkly-sbbpty, rthy-silty tex, sl mot lstr, v calc</p> <p>B CHAL 6786 MD</p> <p>MD: 6,785' TVD: 6,587.41' Inclination: 62.48 ° Azimuth: 274.59 ° VS: 918.26'</p>





5600	90% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb ply, wxy - rthy tex, v calc, tr dism pyr, tr bent	10% MRL: m - dkgy, mod sft-sl firm
5600	85% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb ply, wxy - rthy tex, v calc, tr dism pyr, tr bent	15% MRL: m - dkgy, mod sft-sl firm
5600	50% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	50% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb ply, wxy - rthy tex, v calc
5600	60% 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 lstr, v calc	

MD: 6,832 TVD: 6,607.28 Inclination: 67.49 ° Azimuth: 272.51 ° VS: 960.81'	MD: 6,880 TVD: 6,624.11 Inclination: 71.46 ° Azimuth: 270.6 ° VS: 1,005.66'	MD: 6,927 TVD: 6,637.83 Inclination: 74.58 ° Azimuth: 270.34 ° VS: 1,050.44'	MD: 6,970 TVD: 6,647.82 Inclination: 78.54 ° Azimuth: 270.25 ° VS: 1,092.1'
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DATE/TIME

10/01/2013

10/02/2013

ROF (ft/hr)
GAMMA (units)

10/02/2013

261

272

85

6 VIS 38

TOOH for 7' Casing @ 7030' 22:40 hrs 9/30/13.

MUD WT 9.6 VIS 36

Resumed Drilling 03:50hrs 10/02/13

BHA # 3

Bit Size: 6.125

Manufacturer: Schlumberger/Smith

Model: MD513

Serial Number: JH1862

Nozzles: 5x15

Motor Number:3

Manufacturer: DDS

Model: Sperry Drill

Serial Number: 475-DDS-013

Bend: 1.5

3235u

3791u

C1: 61.6%

C2: 18.5%

C3: 13.7%

C4: 6.2%

7.000 7.010 7.020 7.030 7.040 7.050 7.060 7.070 7.080 7.090 7.100 7.110 7.120 7.130 7.140 7.150 7.160 7.170 7.180 7.190

cc mod
calc
oc sl vit
CHANGE
5' - 6715'

6615

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-sbplty, 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-sbplty, rthy-slty tex, sl mot, occ sl vit
lstr, v calc

85% CHK: lt gy - gy, occ lt brn, sft, occ n
firm, sb blkly - sb plty, wxy - rthy tex, v calc
15% MRL: m - dkgy, mod sft-sl firm,
sbbkly-sbplty, rthy-slty tex, sl mot, occ s
lstr, v calc

TVD (ft)

MD: 7,094'

TVD: 6,665.83'

Inclination: 84.75 °

Azimuth: 270.42 °

VS: 1,214.26'

MD: 7,142'

TVD: 6,669.64'

Inclination: 86.15 °

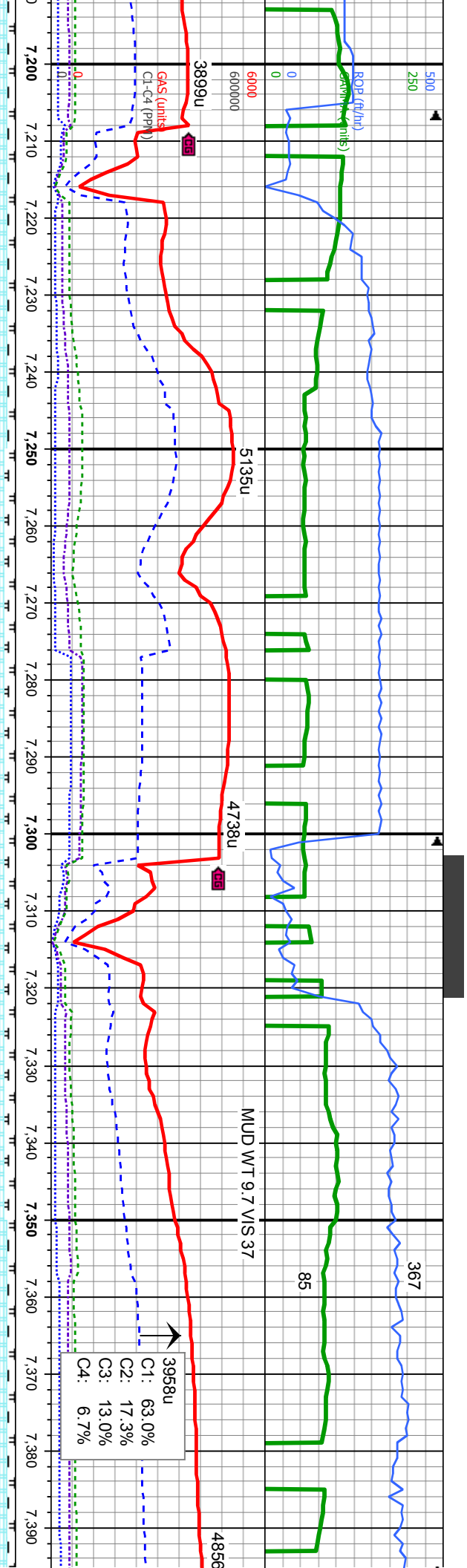
Azimuth: 269.3 °

VS: 1,261.89'

75% CHK: lt gy - gy, occ lt brn, sft, occ mod
firm, sb blkly - sb plty, wxy - rthy tex, v calc
25% MRL: m - dkgy, mod sft-sl firm,
sbbkly-sbplty, rthy-slty tex, sl mot, occ sl vit
lstr, v calc

6715

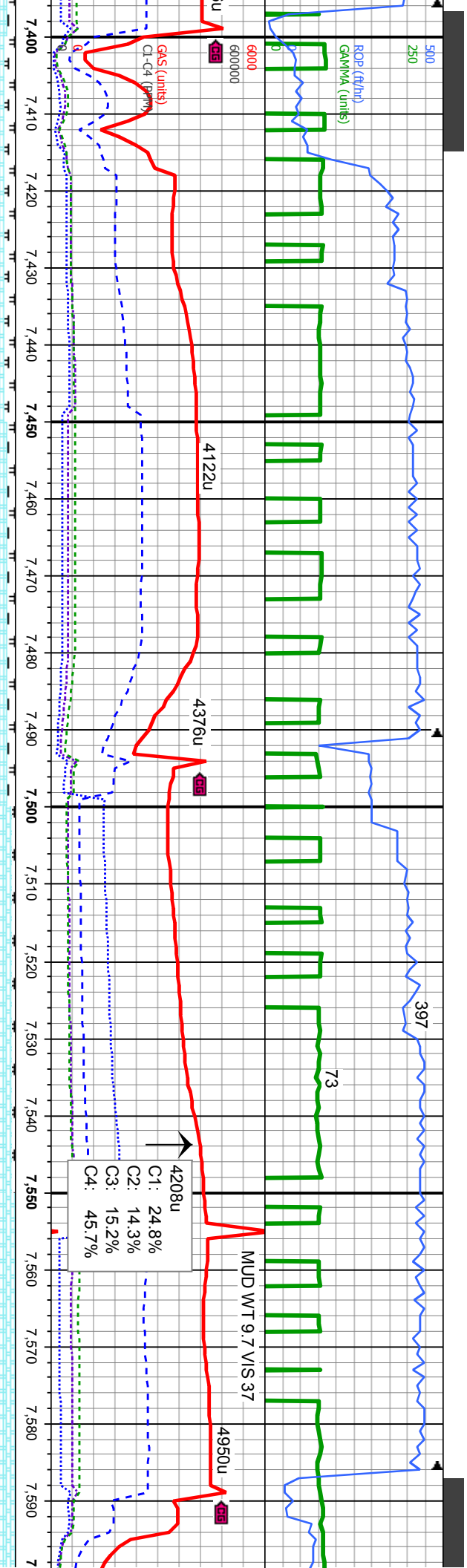




6615	90% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 10% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc	85% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 15% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty 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, sbblkly-sbplty, 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, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc
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TVD (ft)	MD: 7,237' TVD: 6,673.98' Inclination: 88.61 ° Azimuth: 269.31 ° VS: 1,356.27'	MD: 7,332' TVD: 6,674.77' Inclination: 90.43 ° Azimuth: 270.39 ° VS: 1,450.83'
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6615
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-sbbply, rthy-slty tex, sl mot, occ sl vit
lsfr, 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
lsfr, v calc

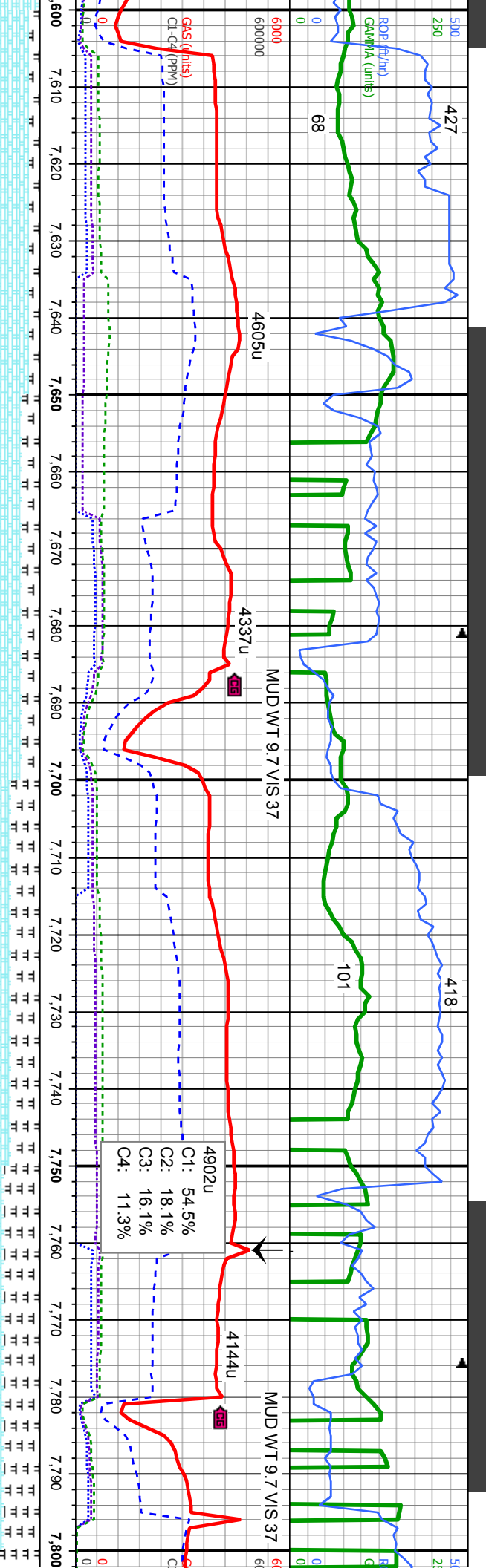
95% CHK: lt gy - gy, occ lt brn, sft, occ mod
firm, sb blkly - sb plty, wxy - rthy tex, v calc
5% MRL: m - dkgy, mod sft-sl firm,
sbbkly-sbbply, rthy-slty tex, sl mot, occ sl vit
lsfr, v calc

100% CHK: lt gy - gy, occ lt brn, sft, occ mod
firm, sb blkly - sb plty, wxy - rthy tex, v calc

MD: 7,427'
TVD: 6,675.46'
Inclination: 88.74 °
Azimuth: 271.49 °
VS: 1,545.55'

MD: 7,522'
TVD: 6,678.33'
Inclination: 87.81 °
Azimuth: 269.91 °
VS: 1,640.19'

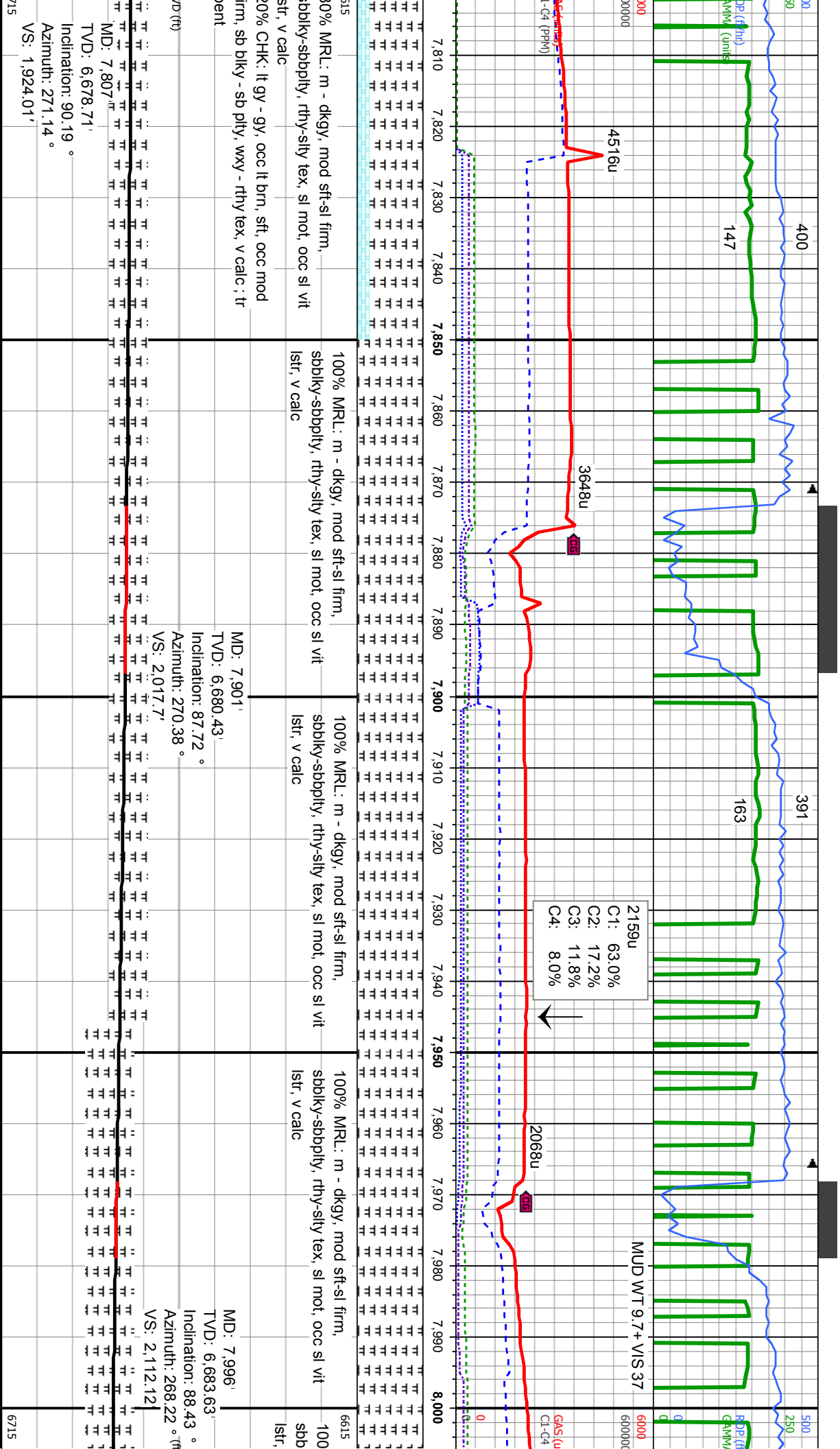


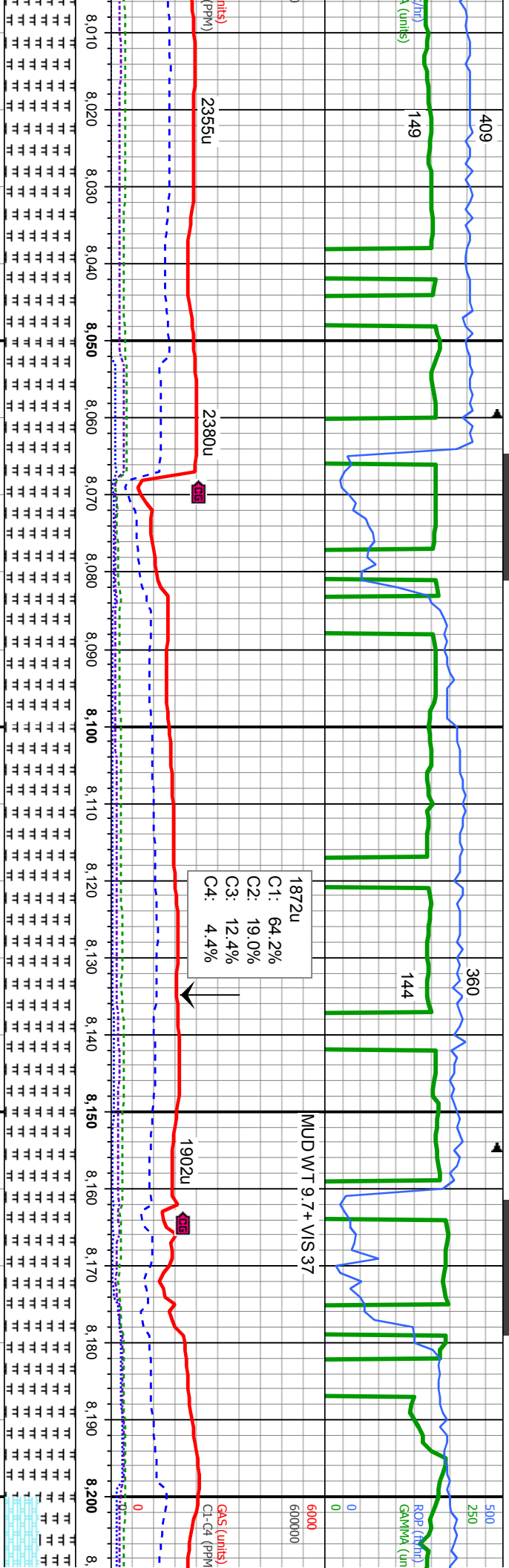


6615	85% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 15% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc	75% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 25% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc	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 lstr, v calc	50% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 50% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc ; tr bent
TVD (ft)				

MD: 7,617'	MD: 7,711'
TVD: 6,680.14'	TVD: 6,679.51'
Inclination: 90 °	Inclination: 90.77 °
Azimuth: 269.6 °	Azimuth: 270.39 °
VS: 1,734.72'	VS: 1,828.32'







% MRL: m - dkgy, mod sft-sl firm,
sbblky-sbblpty, rthy-slty tex, sl mot, occ sl vit
v calc

100% MRL: m - dkgy, mod sft-sl firm,
sbblky-sbblpty, rthy-slty tex, sl mot, occ sl vit
lstr, v calc

100% MRL: m - dkgy, mod sft-sl firm,
sbblky-sbblpty, rthy-slty tex, sl mot, occ sl vit
lstr, v calc

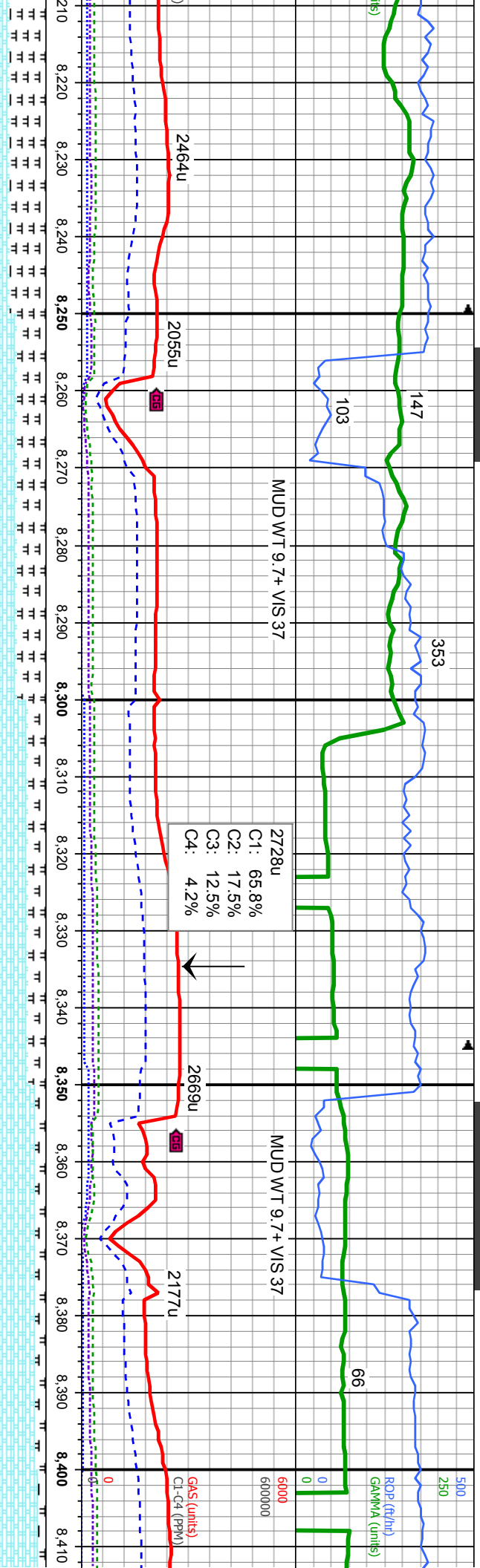
100% MRL: m - dkgy, mod sft-sl firm,
sbblky-sbblpty, rthy-slty tex, sl mot, occ sl vit
lstr, v calc

MD: 8,091'
TVD: 6,684.98'
Inclination: 89.94 °
Azimuth: 268.36 °
VS: 2,206.39'

MD: 8,186'
TVD: 6,684.96'
Inclination: 90.09 °
Azimuth: 269.47 °
VS: 2,300.8'

6715





HK: lt gy - gy, occ lt brn, sft, occ mod
blky - sb plty, wxy - rthy tex, v calc
RL: m - dkgy, mod sft-sl firm,
sbbply, rthy-slty tex, sl mot, occ sl vit
alc

60% CHK: lt gy - gy, occ lt brn, sft, occ mod
firm, sb blky - sb plty, wxy - rthy tex, v calc
40% MRL: m - dkgy, mod sft-sl firm,
sbbply-sbbply, rthy-slty tex, sl mot, occ sl vit
lstr, v calc

75% CHK: lt gy - gy, occ lt brn, sft, occ mod
firm, sb blky - sb plty, wxy - rthy tex, v calc
25% MRL: m - dkgy, mod sft-sl firm,
sbbply-sbbply, rthy-slty tex, sl mot, occ sl vit
lstr, v calc

85% CHK: lt gy - gy, occ lt brn, sft, occ mod
firm, sb blky - sb plty, wxy - rthy tex, v calc
15% MRL: m - dkgy, mod sft-sl firm,
sbbply-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 blky - sb plty, wxy - rthy tex, v calc
10% MRL: m - dkgy, mod sft-sl firm,
sbbply-sbbply, rthy-slty tex, sl mot, occ sl vit
lstr, v calc

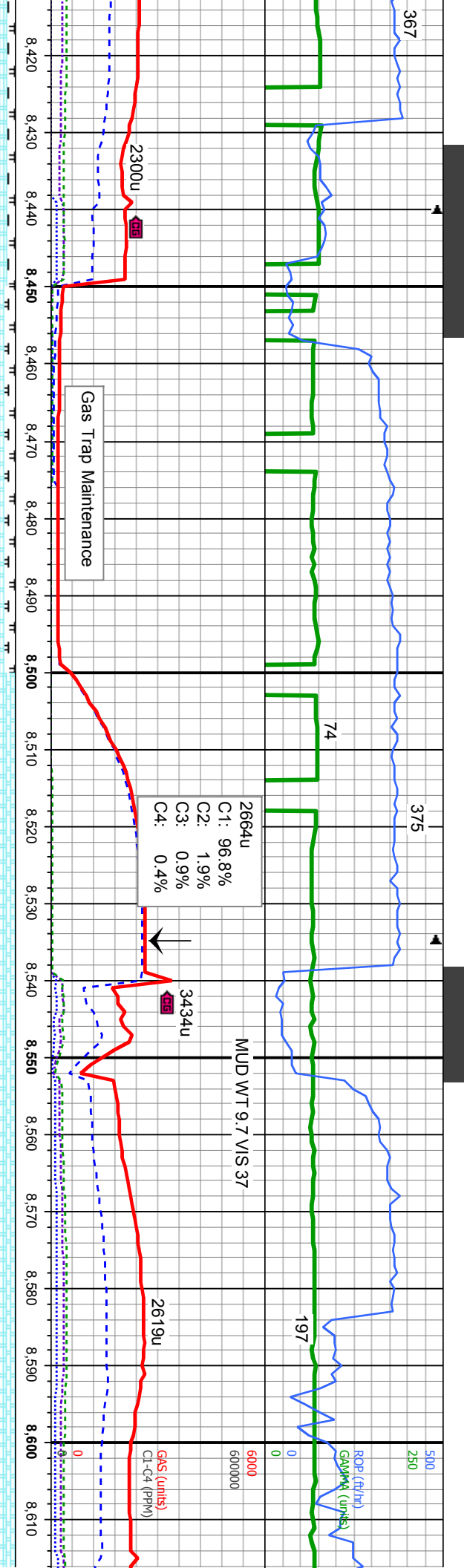
MD: 8,281'
TVD: 6,684.96'
Inclination: 89.91 °
Azimuth: 269.7 °
VS: 2,395.33'

MD: 8,375'
TVD: 6,685.06'
Inclination: 89.97 °
Azimuth: 271.5 °
VS: 2,489.01'

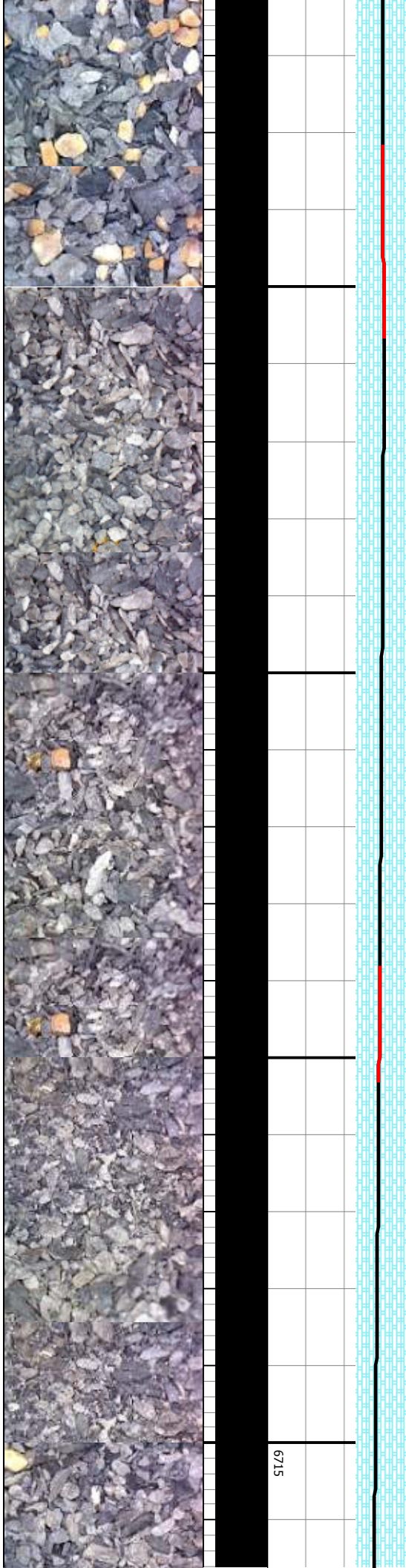
TVD (ft)

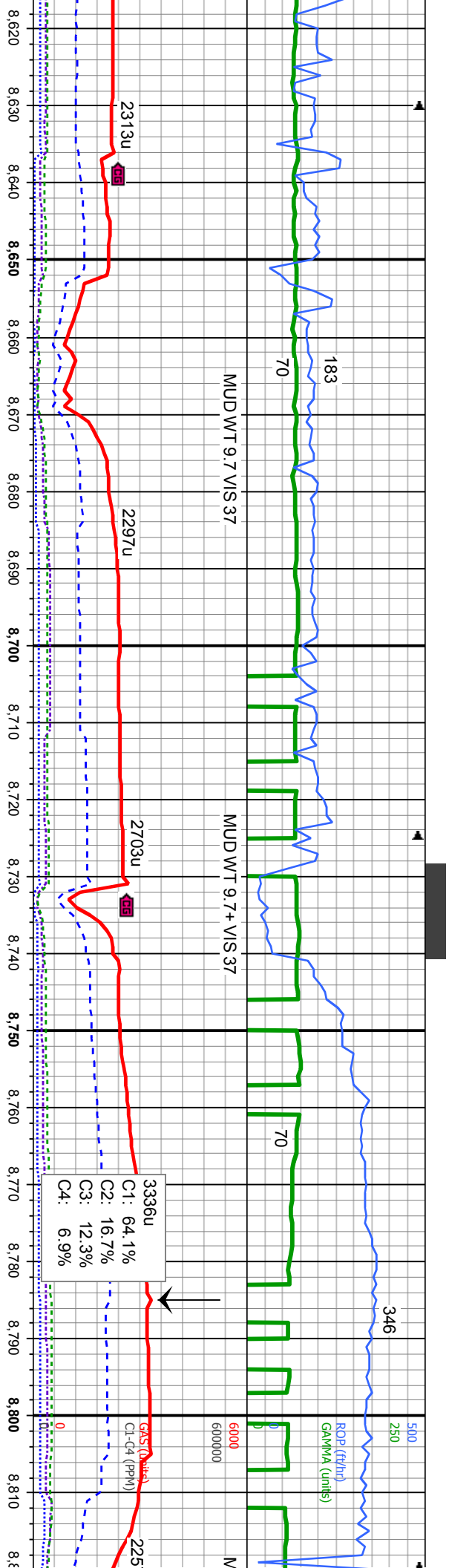
6715



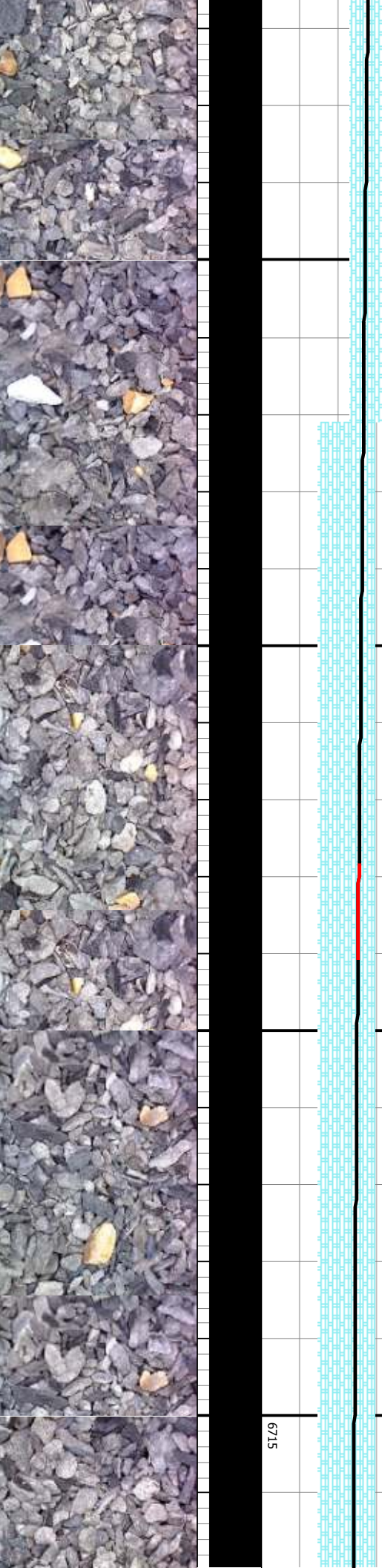


gy - gy, occ lt brn, sft, occ mod firm, sb bky - sb pty, wxy - rthy tex, v calc	85% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb bky - sb pty, wxy - rthy tex, v calc	100% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb bky - sb pty, wxy - rthy tex, v calc	100% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb bky - sb pty, wxy - rthy tex, v calc	64100% CHK: lt
n - dkgy, mod sft-sl firm, lthy, rthy-sltly tex, sl mot, occ sl vit	MD: 8,470' TVD: 6,684.98' Inclination: 90.12 ° Azimuth: 272.53 ° VS: 2,583.85'		MD: 8,565' TVD: 6,686.31' Inclination: 88.27 ° Azimuth: 273.45 ° VS: 2,678.76'	v calc



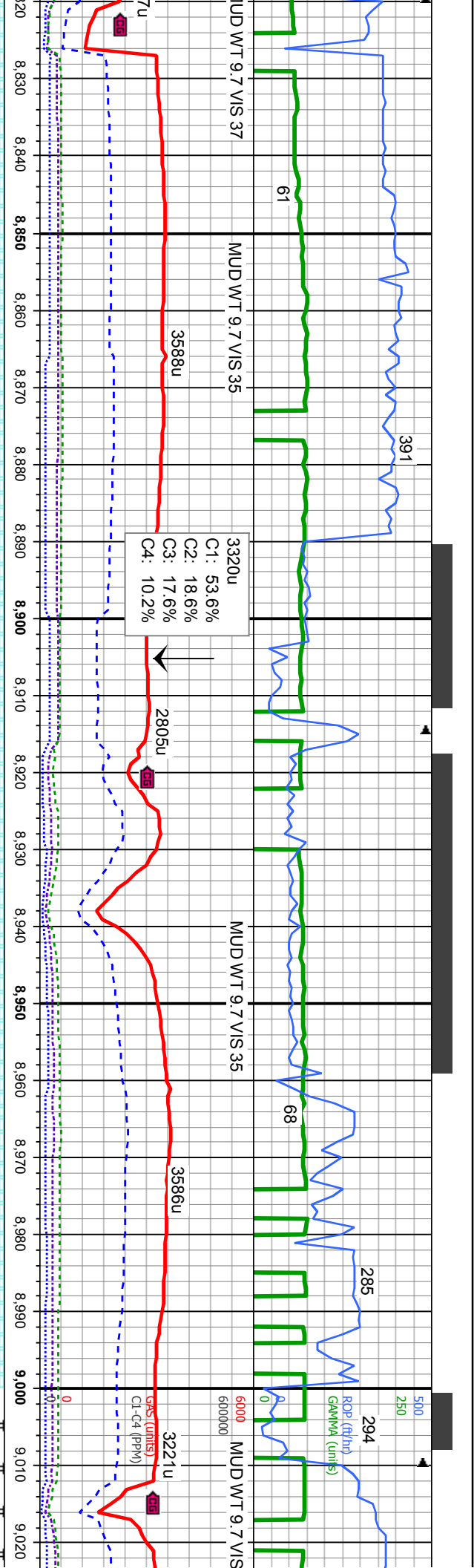


100% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc	100% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc	100% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc
MD: 8,660' TVD: 6,688.38' Inclination: 89.23 ° Azimuth: 274.13 ° VS: 2,773.7'	MD: 8,755' TVD: 6,690.32' Inclination: 88.43 ° Azimuth: 273.47 ° VS: 2,868.65'	6615'



6715

TVD (ft)



Y - gy, occ lt brn, mod sft
rm, sb blkly - sb plty, wxy

100% CHK: lt gy - gy, occ lt brn, mod sft -
sft, occ mod firm, sb blkly - sb plty, wxy -
rthy tex, v calc

MD: 8,850'
TVD: 6,691.58'
Inclination: 90.06 °
Azimuth: 273.9 °
VS: 2,963.6'

100% CHK: lt gy - gy, occ lt brn, mod sft - sft,
occ mod firm, sb blkly - sb plty, wxy - rthy tex, v
calc

MD: 8,945'
TVD: 6,692.75'
Inclination: 88.52 °
Azimuth: 271.88 °
VS: 3,058.5'

100% CHK: lt gy - gy, occ lt brn, mod sft - sft,
occ mod firm, sb blkly - sb plty, wxy - rthy tex, v
calc

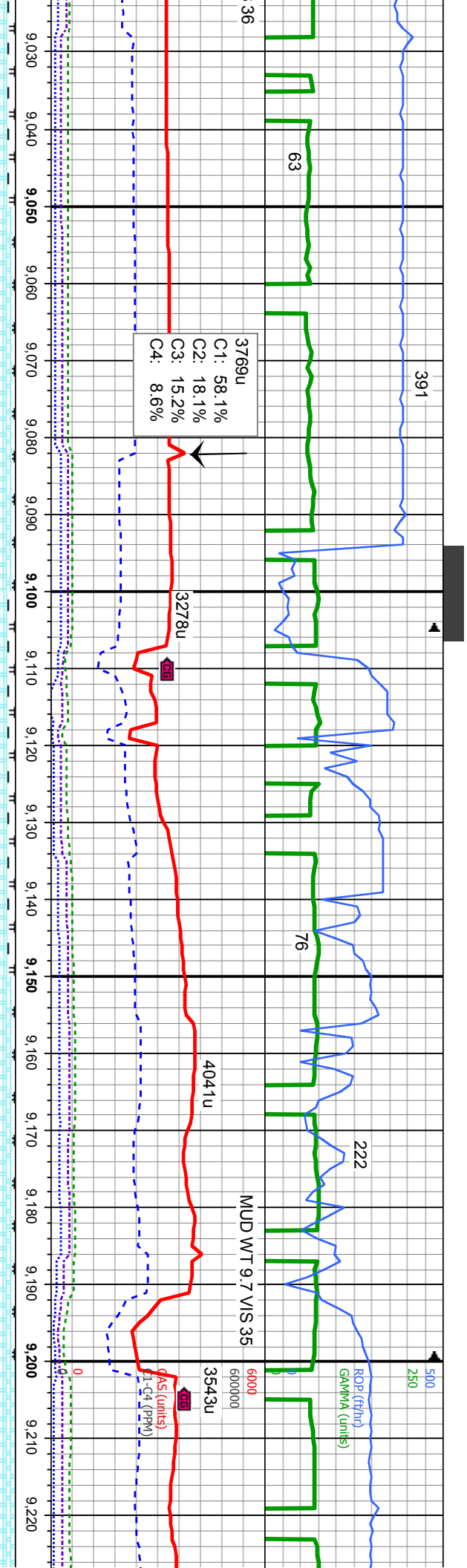
6615

90% CHK: lt gy - gy, occ
mod firm, sb blkly - sb p
10% MRL: m - dkgy, n
sblkly-sbplty, rthy-slt
lstr, v calc

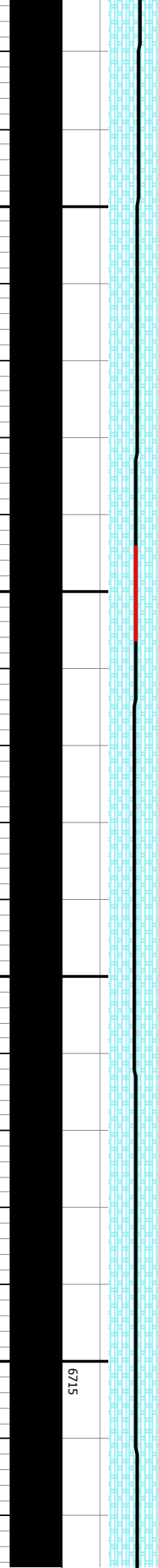
TVD (ft)

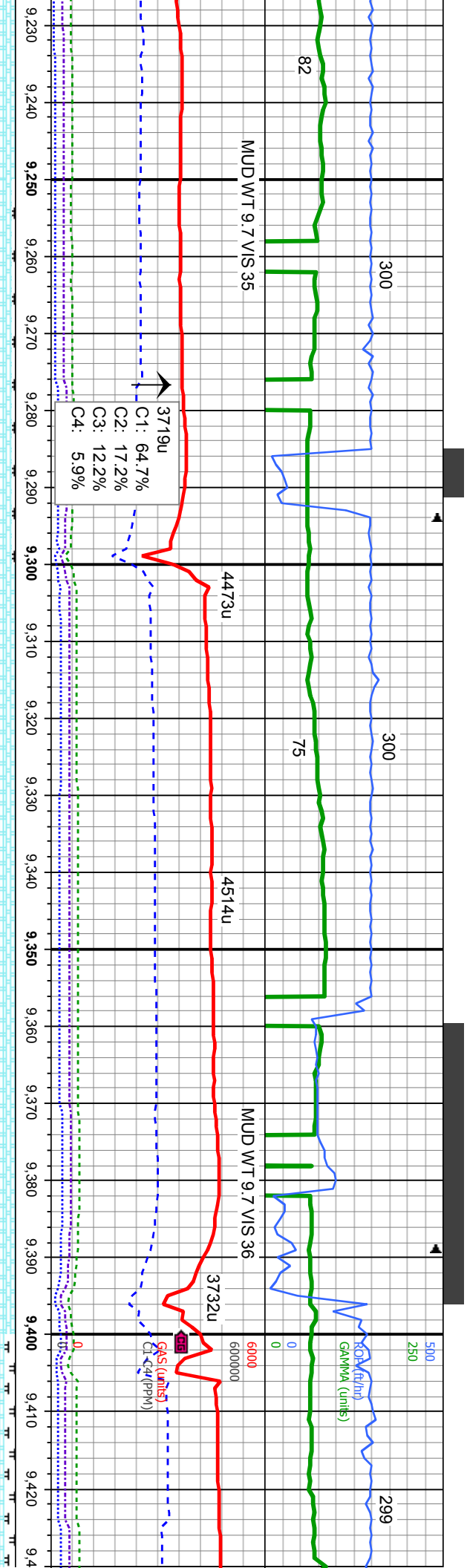
6715





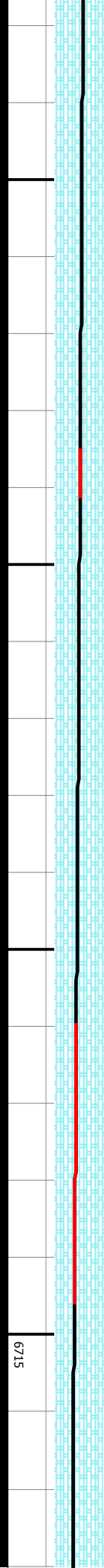
occ lt brn, mod sft - sft, occ lly, wxy - rthy tex, v calc mod sft-sl firm, / tex, sl mot, occ sl vit	95% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 5% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	90% CHK: lt gy - gy, occ lt brn, mod sft - 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	95% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 5% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	6615 100% CHK: lt gy - gy, occ occ mod firm, sb blkly - sb calc
MD: 9,039' TVD: 6,695.25' Inclination: 88.43 ° Azimuth: 271.41 ° VS: 3,152.28'			MD: 9,134' TVD: 6,696.33' Inclination: 90.28 ° Azimuth: 270.13 ° VS: 3,246.97'	MD: 9,215' TVD: 6,697.33' Inclination: 90.28 ° Azimuth: 270.13 ° VS: 3,246.97'





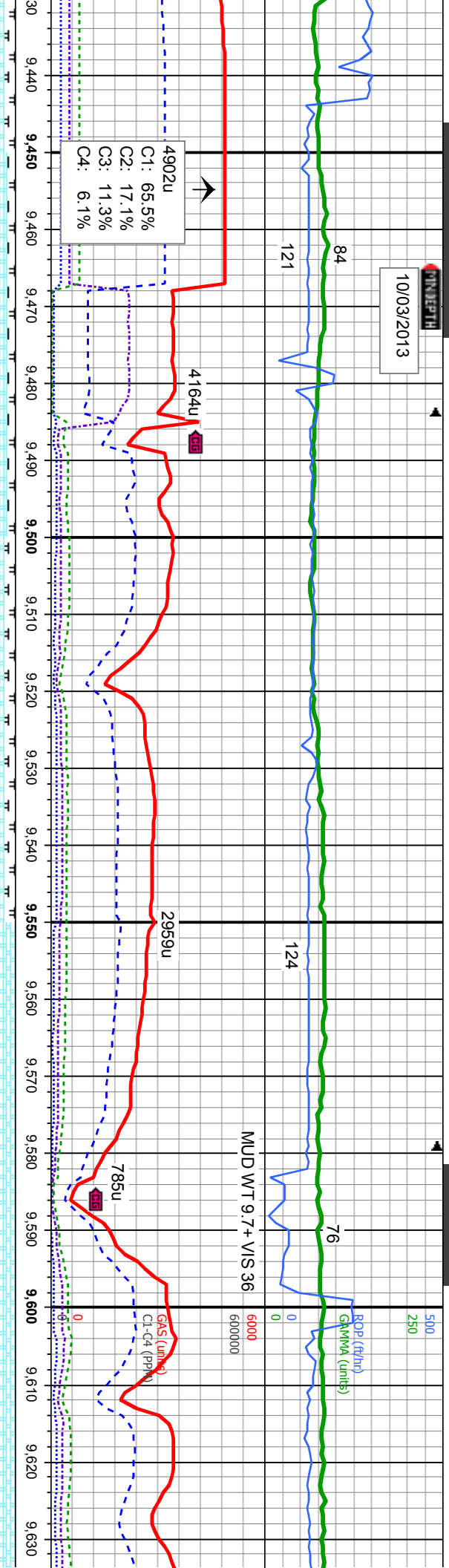
95% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc	100% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc	100% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc	6615 85% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc
5% MRL: m - dkgy, mod sft-si firm, sbblkly-sbplty, rthy-sily tex, sl mot, occ sl vit lstr, v calc			sb blkly - sb plty, wxy - rthy tex, 15% MRL: m - dkgy, mod sft-sbblkly-sbplty, rthy-sily tex, sl v calc

229'	MD: 9.324'	MD: 9.419'
695.61'	TVD: 6,696.79'	TVD: 6,698.17'
on: 90.59 °	Inclination: 88 °	Inclination: 90.34 °
i: 268.83 °	Azimuth: 268.82 °	Azimuth: 268.1 °
41.47'	VS: 3,435.85'	VS: 3,530.16'



DATE

10/03/2013



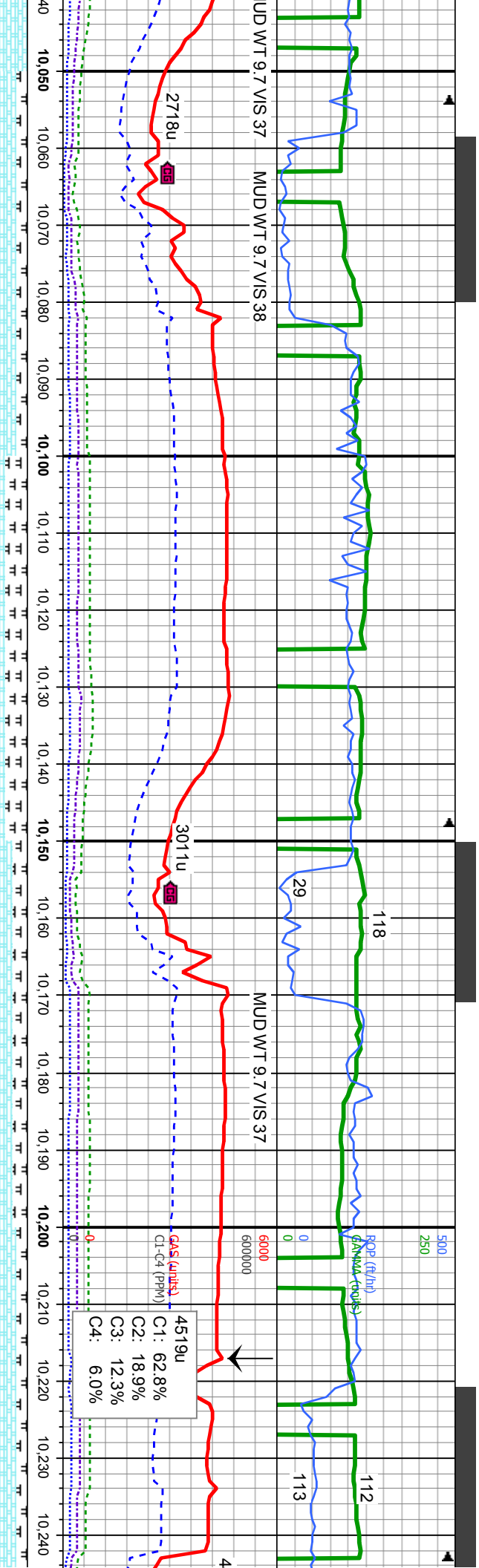
90% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 10% MRL: m - dkgy, mod sft-sl firm, sbblkly-sboply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	85% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 15% MRL: m - dkgy, mod sft-sl firm, sbblkly-sboply, 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	6615 100% CHK: lt gy - gy, occ lt brn, firm, sb blkly - sb plty, wxy - rthy te
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MD: 9.514'
TVD: 6,698.71'
Inclination: 89.01 °
Azimuth: 266.78 °
VS: 3,624.26'

MD: 9.609'
TVD: 6,699.55'
Inclination: 89.97 °
Azimuth: 266.98 °
VS: 3,718.23'

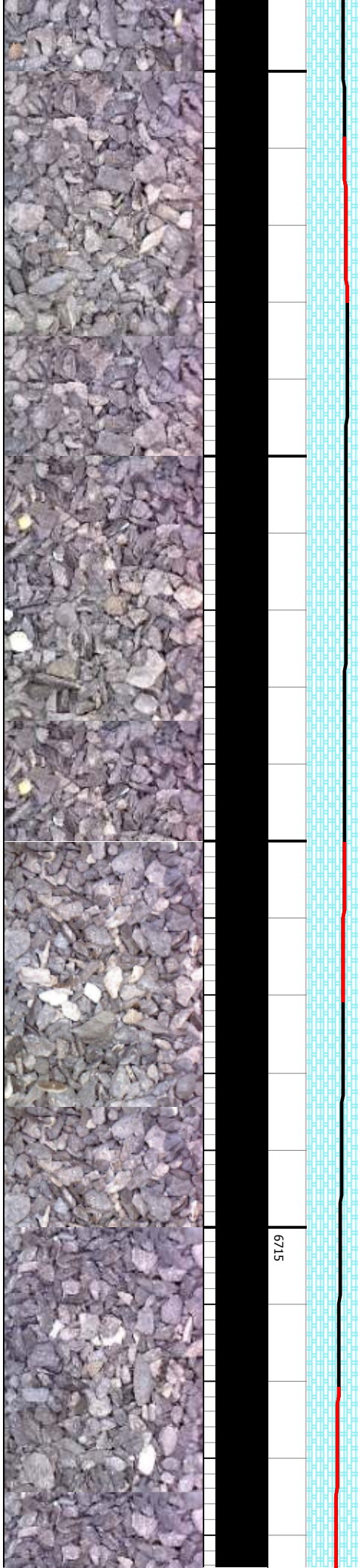
6715

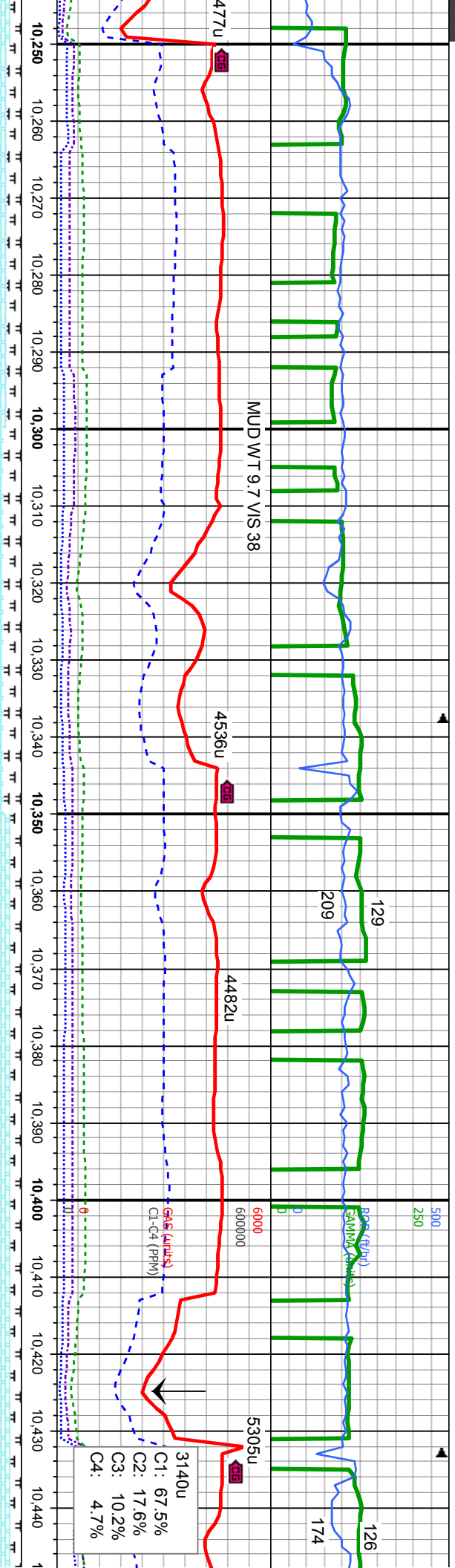




mod	85% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc	70% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc	80% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc	6615
	15% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc	30% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc	20% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty 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, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc
FAULT?				lstr, v calc
	MD: 10,083' TVD: 6,694.48' Inclination: 90.77 ° Azimuth: 273.46 ° VS: 4,189.4'		MD: 10,178' TVD: 6,695.58' Inclination: 87.9 ° Azimuth: 272.33 ° VS: 4,284.3'	TVD (ft)

6715





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, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc

75% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 25% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty 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, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc

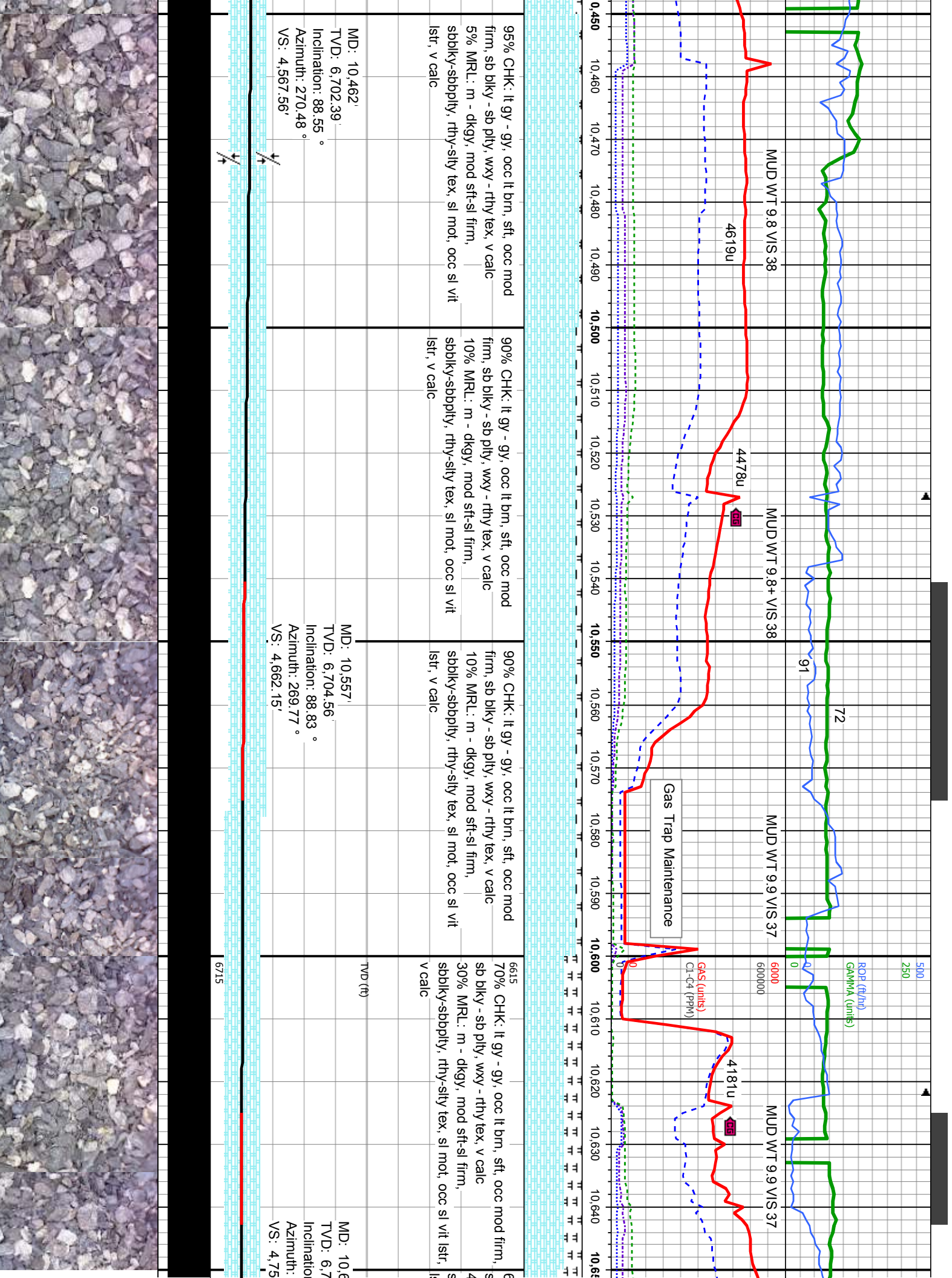
85% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc 15% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc

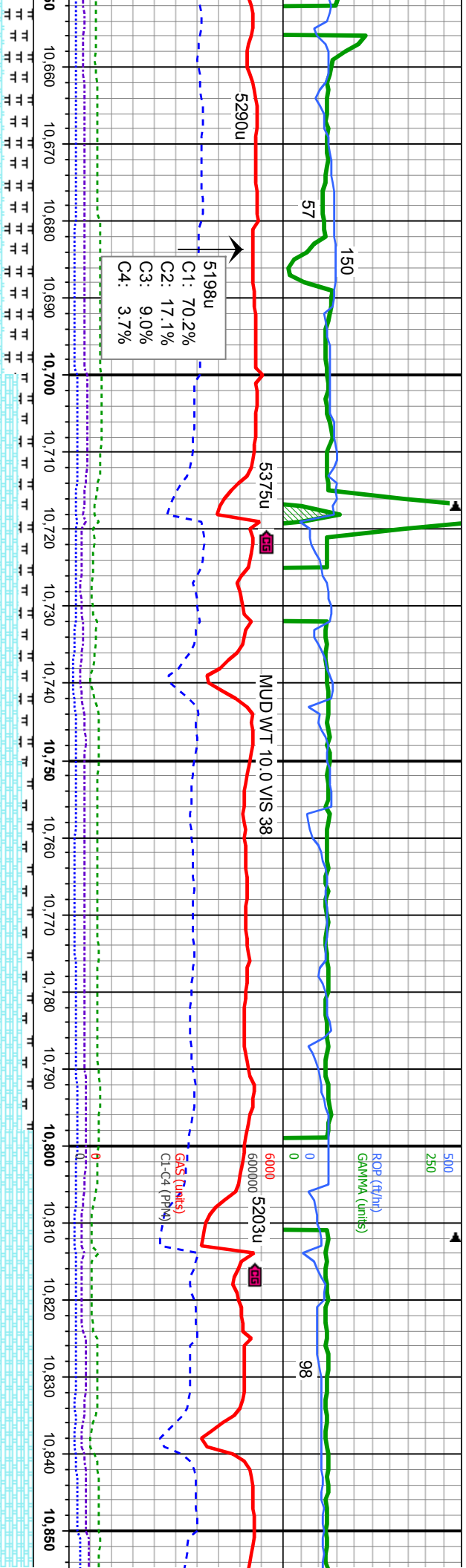
MD: 10,273'
TVD: 6,698.32'
Inclination: 88.8 °
Azimuth: 271.77 °
VS: 4,379.11'

MD: 10,368'
TVD: 6,700.26'
Inclination: 88.86 °
Azimuth: 271.19 °
VS: 4,473.88'

6715







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
sfr, 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 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-sbplty, rthy-slty tex, sl mot, occ sl vit lstr,
v calc

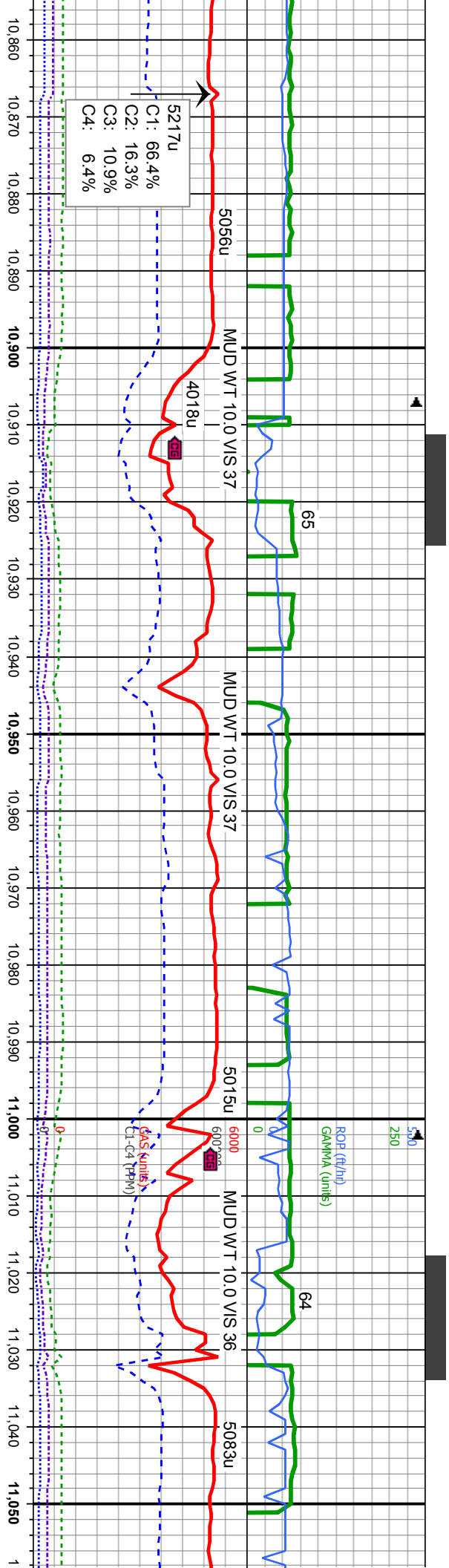
6615
100% CHK: lt gy - gy, occ lt brn, sft, occ mod
firm, sb blkly - sb plty, wxy - rthy tex, v calc

MD: 10,747
TVD: 6,705.94'
Inclination: 88.83 °
Azimuth: 271.3 °
VS: 4,851.63'

MD: 10,842
TVD: 6,707.17'
Inclination: 89.69 °
Azimuth: 273.48 °
VS: 4,946.49'

6715





0% CHK: lt gy - gy, occ lt brn, sft, occ mod n, 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	100% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc	6615 100% CHK: lt gy - gy, occ lt brn, sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc	100% C firm, sb
			MD: 10.937' TVD: 6,707.94' Inclination: 89.38 ° Azimuth: 272.9 ° VS: 5,041.43'	
			MD: 11.032' TVD: 6,708.27' Inclination: 90.22 ° Azimuth: 271.35 ° VS: 5,136.27'	

