

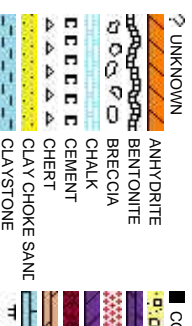
COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

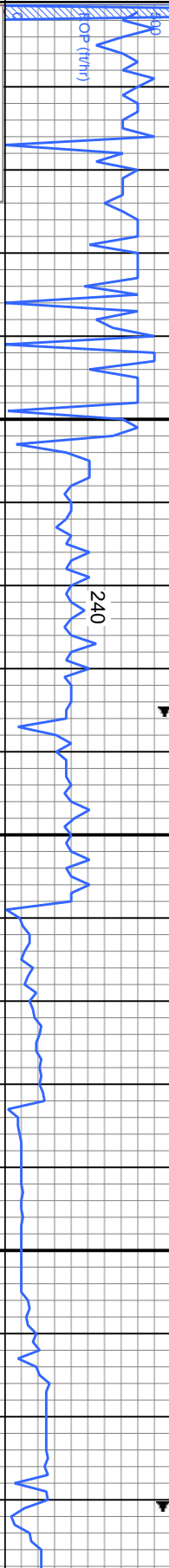
Well Name	Wells Ranch USX AA27-65-1HN (HORZ)		
Location	Sec 27, T6N, R63W		
State	COLORADO	County	WELD
Country	UNITED STATES	Rig Number	H&P 322
API Number	05-123--37140-0000	AFE #	140421
		Field	Wattenberg
Spud Date	8/27/2013	Drilling Completed	9/2/2013
Surface Coordinates	1539' FSL 221' FWL 40.454410 LAT -104.431780 LON		
Bottom Hole Coordinates	2310' FSL 150' FEL		
Ground Elevation	4795'	K.B. Elevation	4819'
Logged Interval	1000'	To	11462
		Total Depth	11462
Formation	TEEPEE BUTTES, NIOBRARA		
Type of Drilling Fluid	Water;Mud;Poly		

Company Noble Energy Inc
Address 1625 BROADWAY
DENVER, CO 8
(303) 228-4000

Name CHRISTIAN VE
Company COLUMBINE LOGGING
Address 2385 S. LIPAN
DENVER, COL
(303) 289-7764

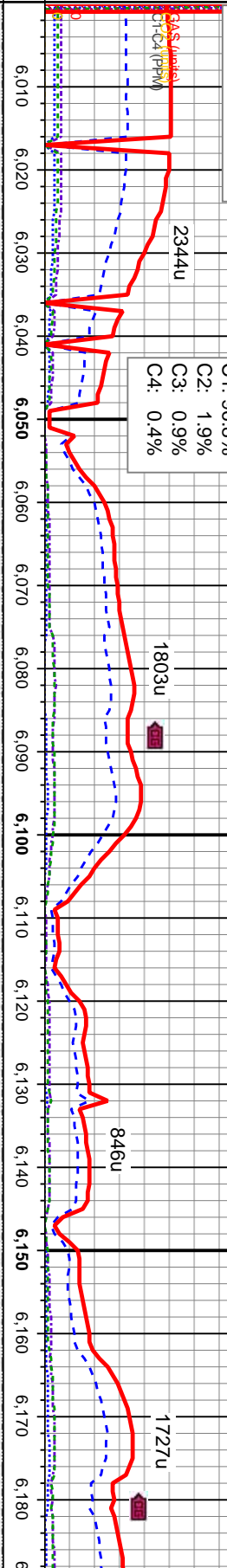


ROP
ROF



Total Gas & Chromatograph

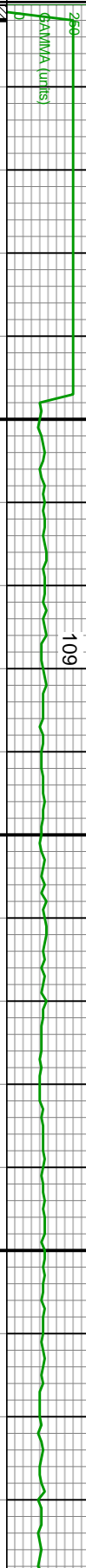
GAS
C1
C2
C3
C4
CO2



% Lith



Gamma
GAMMA



100% SILTY SH: med gy - gy, occ dk gy, mod sft - mod firm, sb ply - sb blkly, shy - silty tex, non calc, tr bent

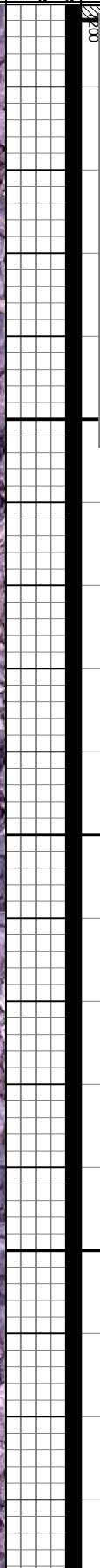
MD: 6,078'
TVD: 5,968.71'
Inclination: 1.21°
Azimuth: 110.93°
VS: 46.32'

Well Bore
TVD

COLUMBINE LOGGING INC.
RIGGED UP ON 08/27/2013
MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT #0315

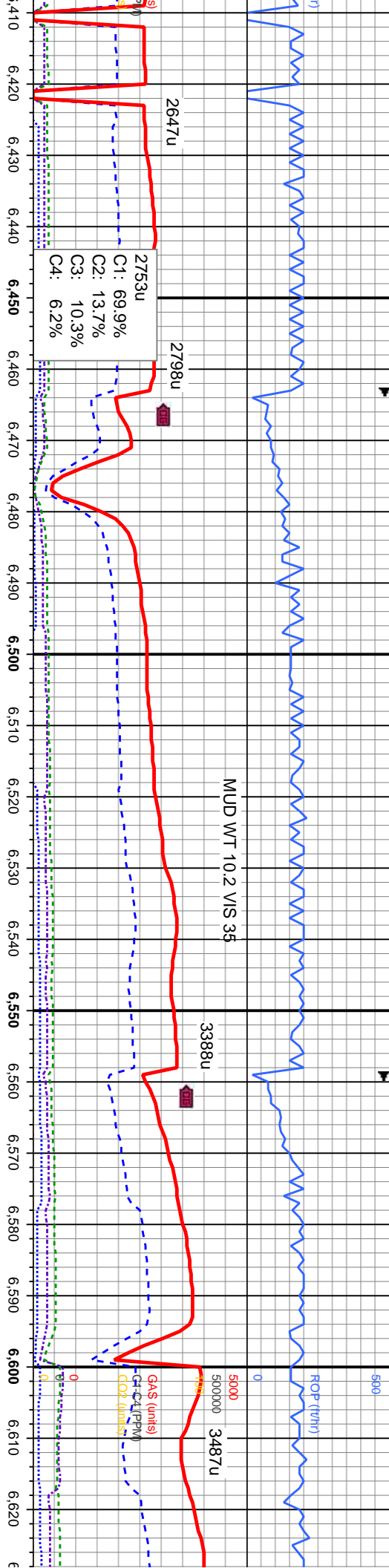
Log Continued From
Wells Ranch USX AA27-65-1HN (VERT).Mplot

Oil Show



Images





100% SILTY SH:med gy - gy, occ dk gy, mod sft - mod firm, sb ply - sb blkly, shy / tex, non calc, tr bent, tr ss

100% SILTY SH:med gy - gy, occ dk gy, mod sft - mod firm, sb ply - sb blkly, shy - silty tex, non calc, tr bent, tr ss

100% SILTY SH:med gy - gy, occ dk gy, mod sft - mod firm, sb ply - sb blkly, shy - silty tex, non calc, tr bent, tr ss

550 100% SILTY SH:med gy - gy, occ dk gy, mod sft - mod firm, sb ply - sb blkly, shy - silty tex, non calc, tr bent, tr ss

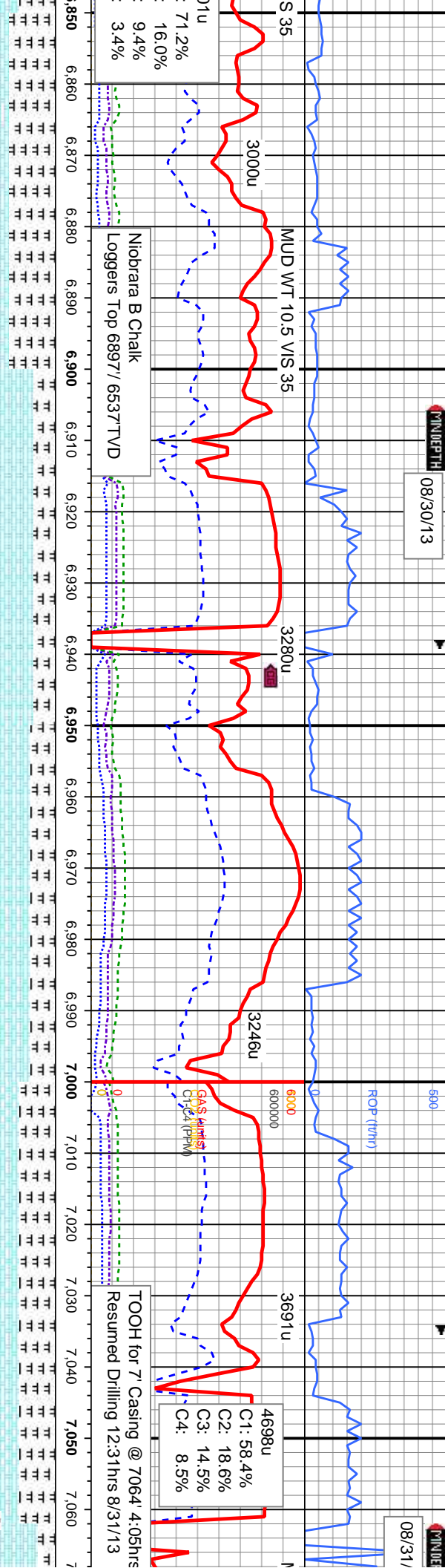
MD: 6,505
TVD: 6,375.19
Inclination: 33.61 °
Azimuth: 83.5 °
VS: 158.69 '

MD: 6,600
TVD: 6,447.83
Inclination: 46.4 °
Azimuth: 88.14 °
VS: 219.26 '



DATE: 08/30/13

TIME: 08/31/



65% MRL: m - dkgy, mod sft - sl firm, sbblky-tr sbply, rthy - slty tex, sl mot w/ cly, occ sl vit lstr, v calc	70% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc, tr dism pyr, tr bent	65% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc, tr dism pyr, tr bent	50% MRL: m - dkgy, mod sft - sl firm, sbblky-sbply, rthy-sltv tex, sl mot w/cly, occ sl vit lstr, v calc	75% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod wxy - rthy tex
35% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc, tr dism pyr, tr bent	30% MRL: m - dkgy, mod sft - sl firm, sbblky-sbply, rthy-sltv tex, sl mot w/cly, occ sl vit lstr, v calc	35% MRL: m - dkgy, mod sft - sl firm, sbblky-sbply, rthy-sltv tex, sl mot w/cly, occ sl vit lstr, v calc	50% MRL: m - dkgy, mod sft - sl firm, sbblky-sbply, rthy-sltv tex, sl mot w/cly, occ sl vit lstr, v calc	25% MRL: m - dkgy, mod sft - sl firm, sbblky-sbply, rthy-sltv tex, sl mot w/cly, occ sl vit lstr, v calc

MD: 6,885
TVD: 6,598.99
Inclination: 72.83 °
Azimuth: 90.7 °
VS: 454.85 '

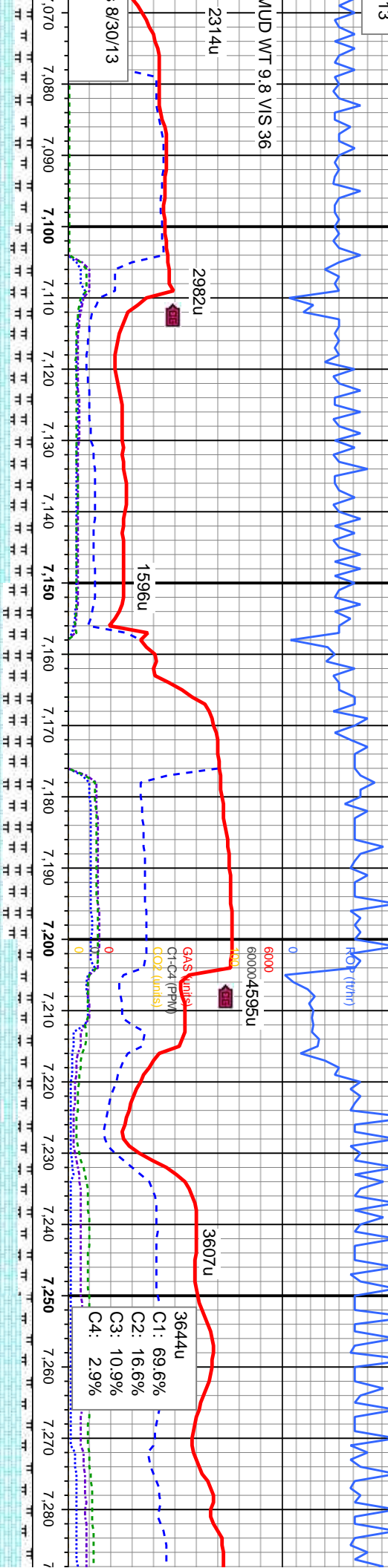
MD: 6,932
TVD: 6,611.21
Inclination: 77.02 °
Azimuth: 91.21 °
VS: 499.41 '

MD: 6,980
TVD: 6,620.67
Inclination: 80.21 °
Azimuth: 92.15 °
VS: 542.72 '

MD: 7,008
TVD: 6,624.94
Inclination: 82.26 °
Azimuth: 92.43 °
VS: 569.77 '

BHA # 3
Bit Size: 6.125
Manufacturer: Schlumberger/Smith
Model: MD1513
Serial Number: JH1859
Nozzles: 5x11

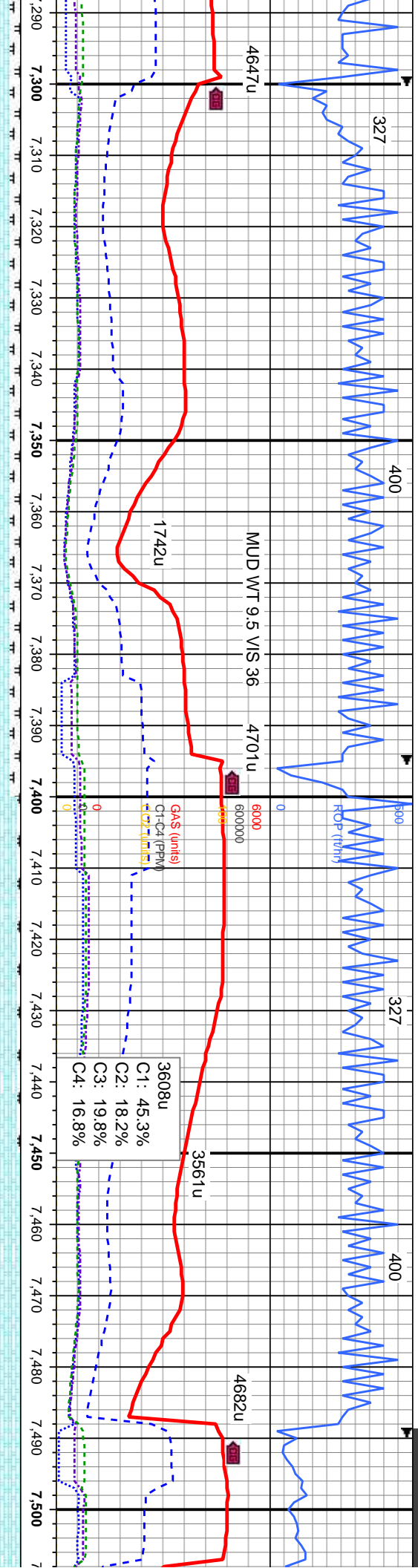




gy - gy, occ lt brn, mod sft firm, sb blk - sb pty, v calc, tr dism pyr, tr bent - dkgy, mod sft-sl firm, y, rthy-slty tex, sl mot, occ sl vit lstr, v calc	70% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blk - sb pty, wxy - rthy tex, v calc, tr dism pyr, tr bent 30% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	60% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blk - sb pty, wxy - rthy tex, v calc, tr dism pyr, tr bent 40% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	80% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blk - sb pty, wxy - rthy tex, v calc, tr dism pyr, tr bent 20% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	85% CHK: lt gy - gy, occ lt brn, r sft, occ mod firm, sb blk - sb pl rthy tex, v calc, tr dism pyr, tr be 15% MRL: m - dkgy, mod sft-sl f sbbkly-sbbply, rthy-slty tex, sl r sl vit lstr, v calc
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Motor Number: 3 Manufacturer: Sperry Drilling Serial Number: 475-243 d: 1.5	MD: 7,094 TVD: 6,635.04 Inclination: 84.26 ° Azimuth: 93.35 ° VS: 653.06'	MD: 7,141 TVD: 6,639.5 Inclination: 84.84 ° Azimuth: 93.38 ° VS: 698.6'	MD: 7,236 TVD: 6,646.22 Inclination: 87.04 ° Azimuth: 93.34 ° VS: 790.84'
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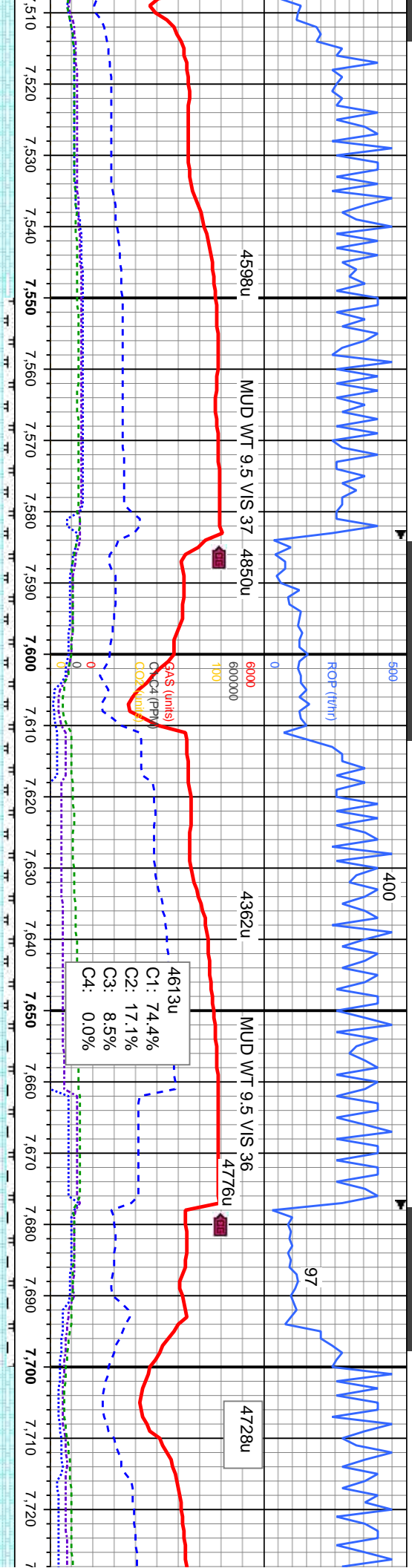




mod sft - y, wxy - nt	85% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc, tr dism pyr, tr bent	85% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc, tr dism pyr, tr bent	95% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc, tr dism pyr, tr bent	100% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc, tr dism pyr	100% occ mod v calc,
firm, mot, occ	15% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	15% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	5% MRL: m - dkgy, mod sft-sl firm, sbbkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc		

MD: 7,331 TVD: 6,649.68 Inclination: 88.8 ° Azimuth: 93.01 ° VS: 883.32 '	MD: 7,426 TVD: 6,649.73 Inclination: 91.14 ° Azimuth: 94.02 ° VS: 975.73 '
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CHK: It gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb pty, wxy - rthy tex, tr dism pyr

90% CHK: It gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb pty, wxy - rthy tex, v calc, tr dism pyr, tr bent

10% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc

85% CHK: It gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb pty, wxy - rthy tex, v calc, tr dism pyr, tr bent

15% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc

90% CHK: It gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb pty, wxy - rthy tex, v calc, tr dism pyr, tr bent

10% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc

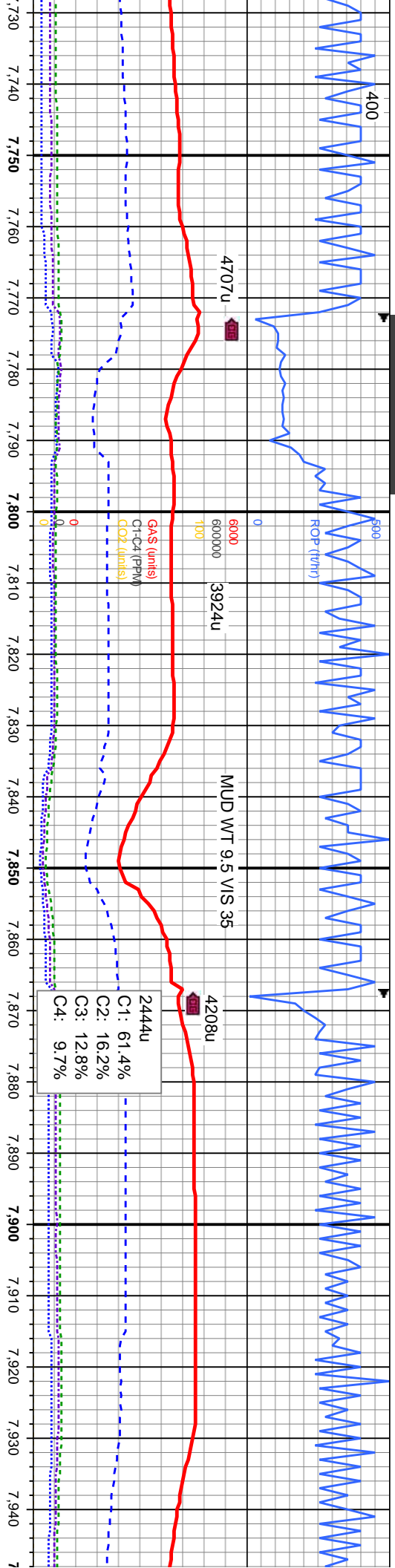
100% CHK: It gy - gy, occ mod firm, sb blkly - sb

MD: 7,520
TVD: 6,647.35
Inclination: 91.76
Azimuth: 93.61
VS: 1,067.03

MD: 7,614
TVD: 6,645.63
Inclination: 90.34
Azimuth: 91.56
VS: 1,158.79

MD: 7,709
TVD: 6,645.63
Inclination: 89.66
Azimuth: 91.3
VS: 1,251.94





lt brn, mod sft - sft, ply, wxy - rthy tex, 100% 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

101

250

GA (units)

0

100% 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

88

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

100% 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

MD: 7,804

TV D: 6,647.14

Inclination: 88.52 °

Azimuth: 89.02 °

VS: 1,345.47

MD: 7,899

TV D: 6,647.58

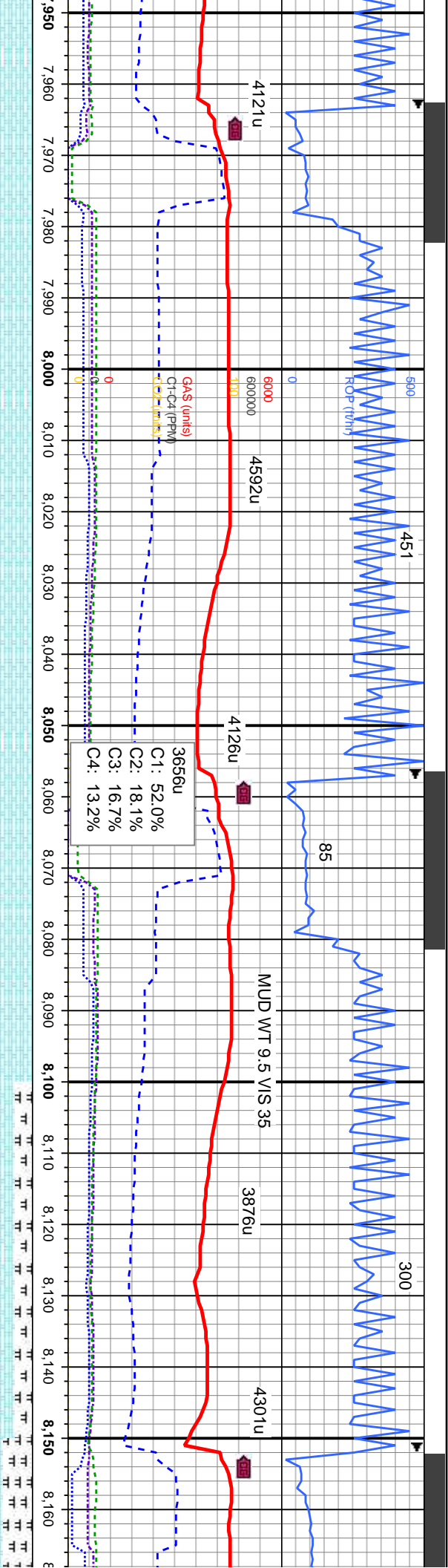
Inclination: 90.96 °

Azimuth: 89.82 °

VS: 1,439.21

7300





90% CHK: lt gy - gy, occ lt brn, mod sft - sft,
occ mod firm, sb blkly - sb plty, wxy - rthy tex,
v calc, tr dism pyr, tr bent
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, mod sft - sft,
occ mod firm, sb blkly - sb plty, wxy - rthy tex,
v calc, tr dism pyr

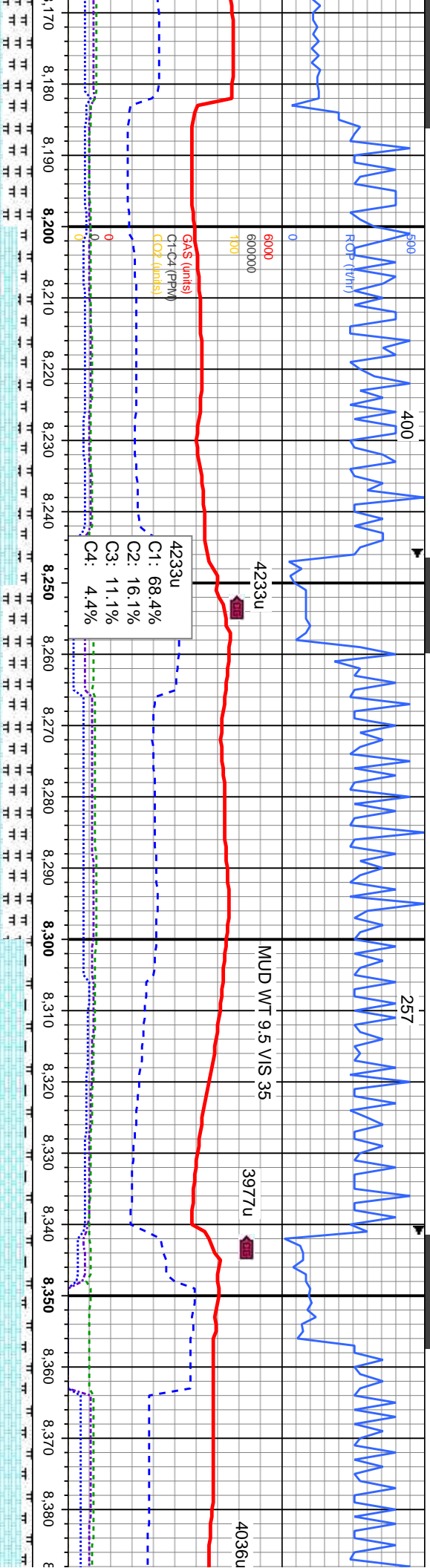
100% CHK: lt gy - gy, occ lt brn, mod sft - sft,
occ mod firm, sb blkly - sb plty, wxy - rthy tex,
v calc, tr dism pyr

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

60% CHK: lt gy
occ mod firm, sb
v calc, tr dism p
40% MRL: m - c
sbbkly-sbbply,
lstr, v calc

MD: 7,993	MD: 8,088
TVD: 6,645.32	TVD: 6,642.87
Inclination: 91.79 °	Inclination: 91.17 °
Azimuth: 88.35 °	Azimuth: 87.59 °
VS: 1,532.03	VS: 1,626.11
7300	





153	250	70% 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	60% 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	90% CHK: lt gy - gy, lt brn, mod sft - firm, sb blkly - sb ply, wxy - rthy tex, v calc 10% MRL: m - dkgy, mod hrd l firm, sbblkly-sbbply, rthy-slty tex, sl mot, occ sl vit lstr, v calc	85% CHK: lt gy - gy, occ lt brn, mod sft - firm, occ mod firm, sb blkly - sb ply, wxy v calc 15% MRL: m - dkgy, mod sft-sl firm sbblkly-sbbply, rthy-slty tex, sl mot lstr, v calc
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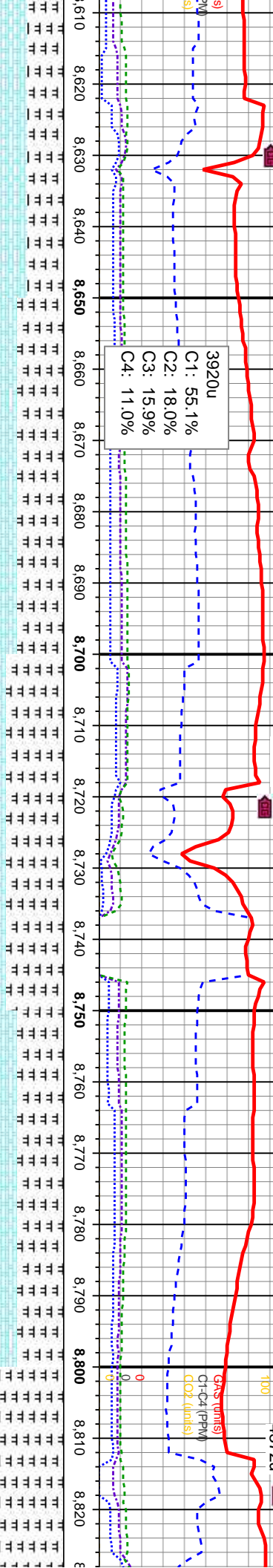
MD: 8,182'	MD: 8,277'	MD: 8,372'
TVD: 6,642.97'	TVD: 6,644.89'	TVD: 6,646.86'
Inclination: 88.71°	Inclination: 88.98°	Inclination: 88.64°
Azimuth: 87.08°	Azimuth: 87.51°	Azimuth: 88.49°
VS: 1,719.36'	VS: 1,813.59'	VS: 1,907.67'



4611u 4391u 4540u 4372u

3920u
C1: 55.1%
C2: 18.0%
C3: 15.9%
C4: 11.0%

Gas (units)
C1-C4 (ppm)
CO2 (units)



HK: lt gy - gy, occ lt brn, mod sft - sft, sbply, rthy - silty tex, occ sl vit lstr, v calc
RL: m - dkgy, mod sft-sil firm, sbply, rthy-silty tex, sl mot, occ sl vit calc
65% MRL: m - dkgy, mod sft - sil firm, sbply-sbply, rthy - silty tex, occ sl vit lstr, v calc
35% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbply, wxy - rthy tex, v calc
80% MRL: m - dkgy, mod sft - sil firm, sbply-sbply, rthy - silty tex, occ sl vit lstr, v calc
20% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbply, wxy - rthy tex, v calc
65% MRL: m - dkgy, mod sft - sil firm, sbply-sbply, rthy - silty tex, occ sl vit lstr, v calc
35% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbply, wxy - rthy tex, v calc
90% MRL: m - dkgy, mod sft-sil firm, sbply, rthy - silty tex, sl m lstr, v calc
10% CHK: lt gy - gy, occ lt brn, mod sft-sil firm, sbply, rthy-silty tex, sl mot, occ sl vit calc
dism pyr, tr bent

MD: 8.656

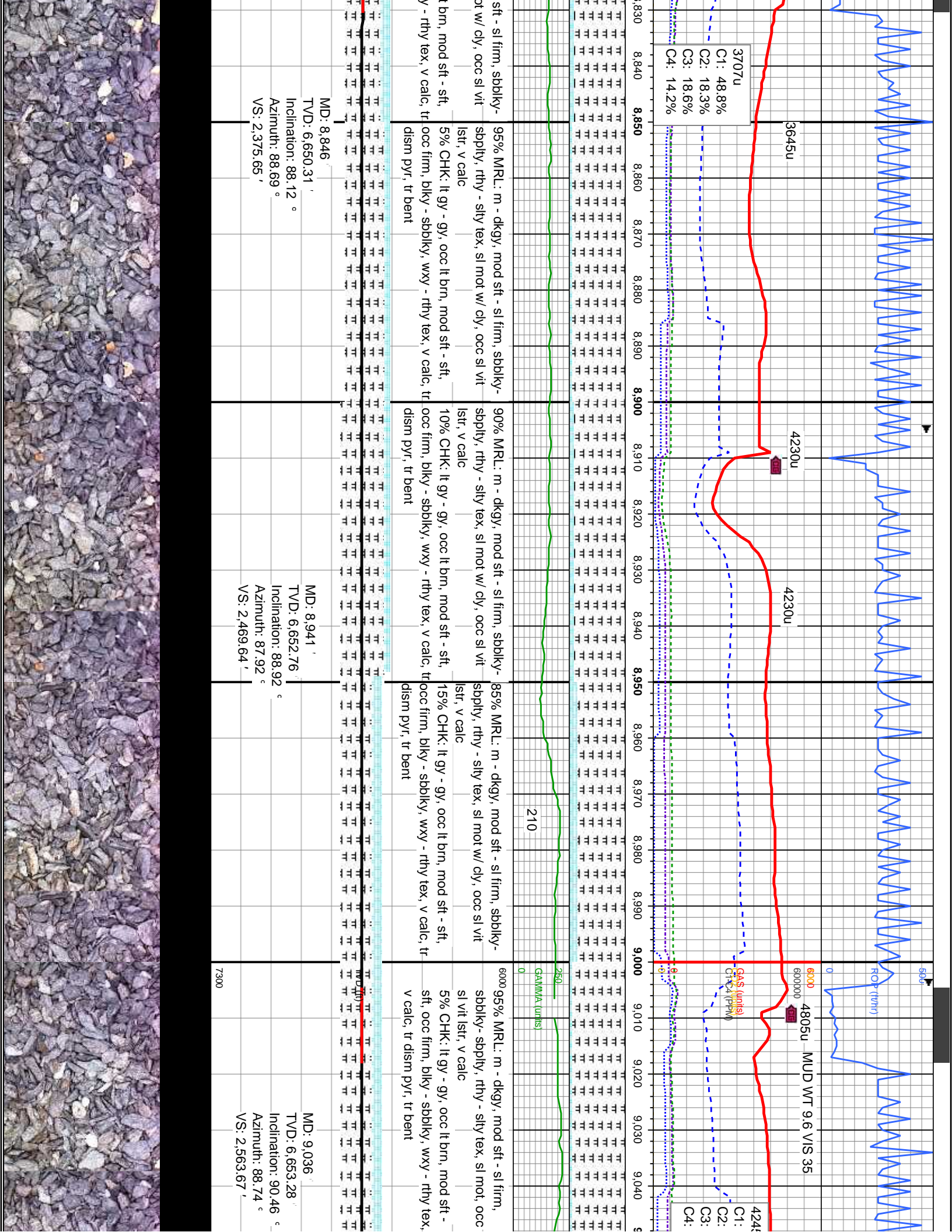
TVD: 6,648.19'
Inclination: 90.68°
Azimuth: 89.65°
VS: 2,188.01'

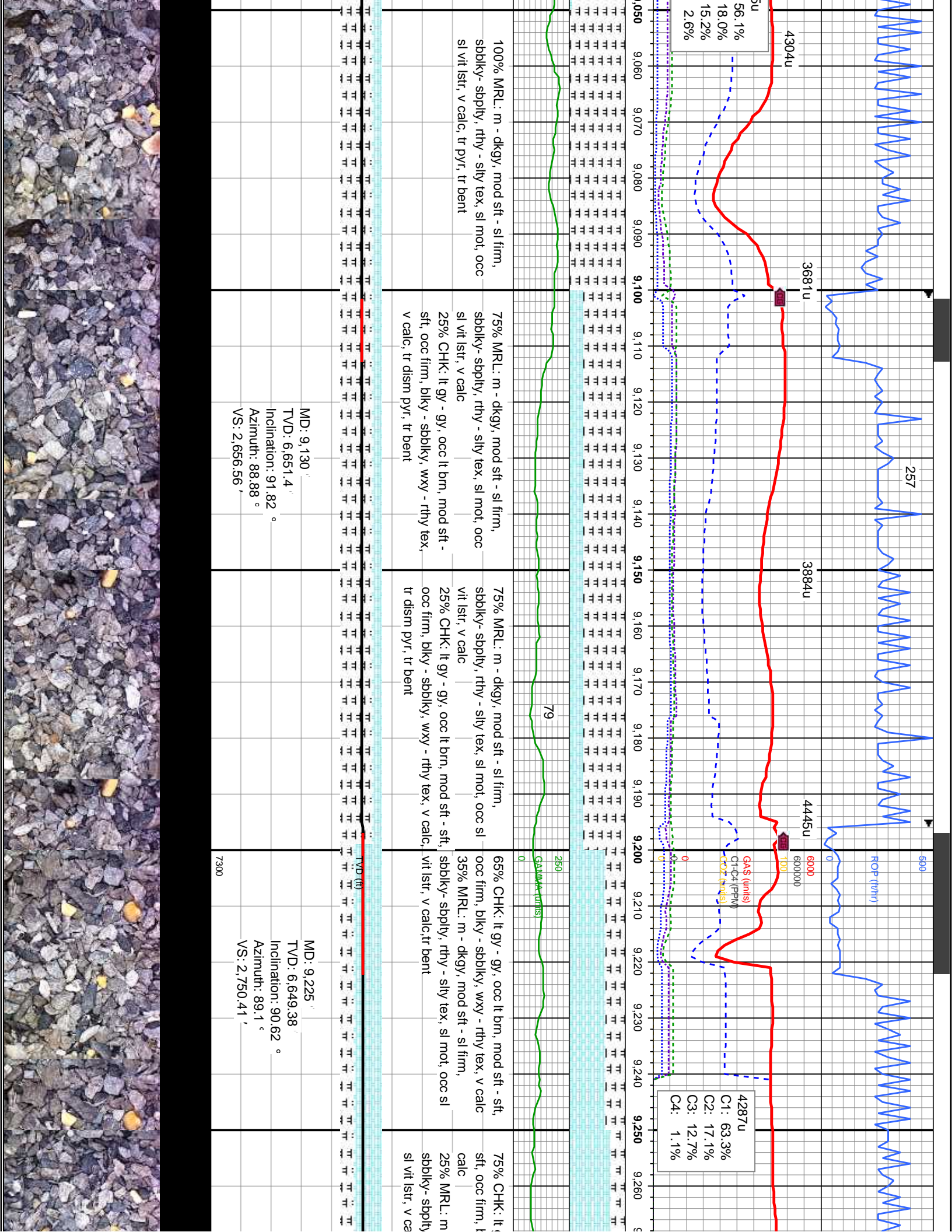
MD: 8.751

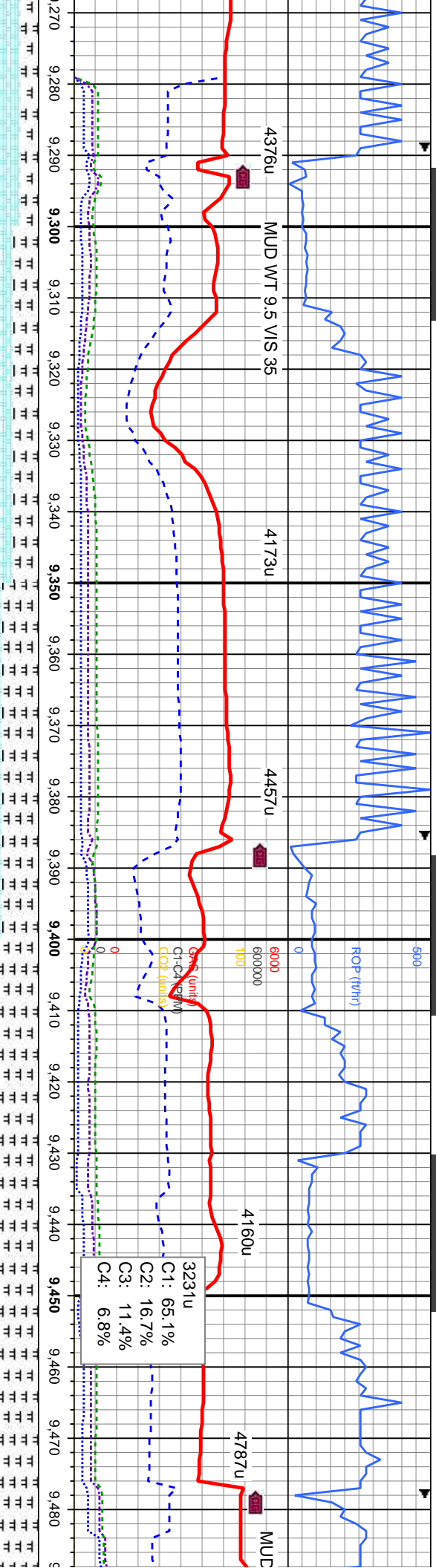
TVD: 6,648.19'
Inclination: 89.32°
Azimuth: 89.05°
VS: 2,281.78'

7300





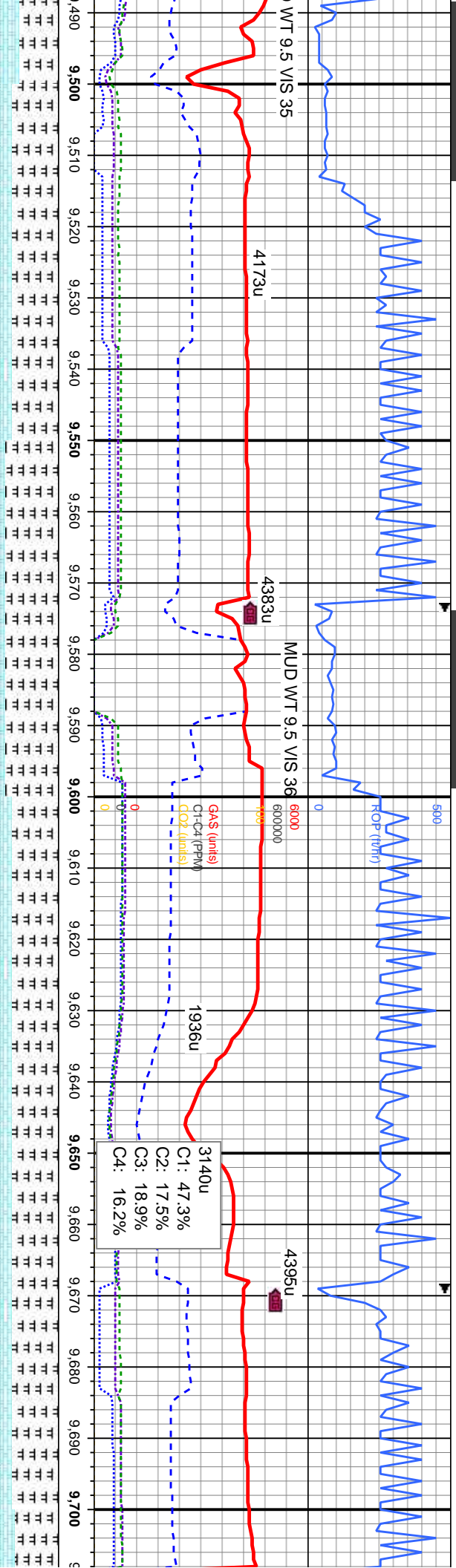




gy - gy, occ lt brn, mod sft - sbdky - sbdky, wxy - rthy tex, v	65% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blk - sbdky, wxy - rthy tex, v calc 35% MRL: m - dkgy, mod sft - sl firm, sbdky - sbdky, rthy - slty tex, sl mot, occ vit lstr, v calc, tr bent	50% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blk - sbdky, wxy - rthy tex, v calc 50% MRL: m - dkgy, mod sft - sl firm, sbdky - sbdky, rthy - slty tex, sl mot, occ vit lstr, v calc, tr bent	55% MRL: m - dkgy, mod sft - sl firm, sbdky - sbdky, rthy - slty tex, sl mot, occ vit lstr, v calc 45% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blk - sbdky, wxy - rthy tex, v calc, tr bent	55% MRL: m - dkgy, mod sft - sl firm, sbdky - sbdky, rthy - slty tex, sl mot, occ vit lstr, v calc 45% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blk - sbdky, wxy - rthy tex, v calc, tr bent
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MD: 9,320 TVD: 6,647.65 Inclination: 91.48 ° Azimuth: 90.7 ° VS: 2,844.01 '	MD: 9,415 TVD: 6,645.09 Inclination: 91.6 ° Azimuth: 90.07 ° VS: 2,937.45 '
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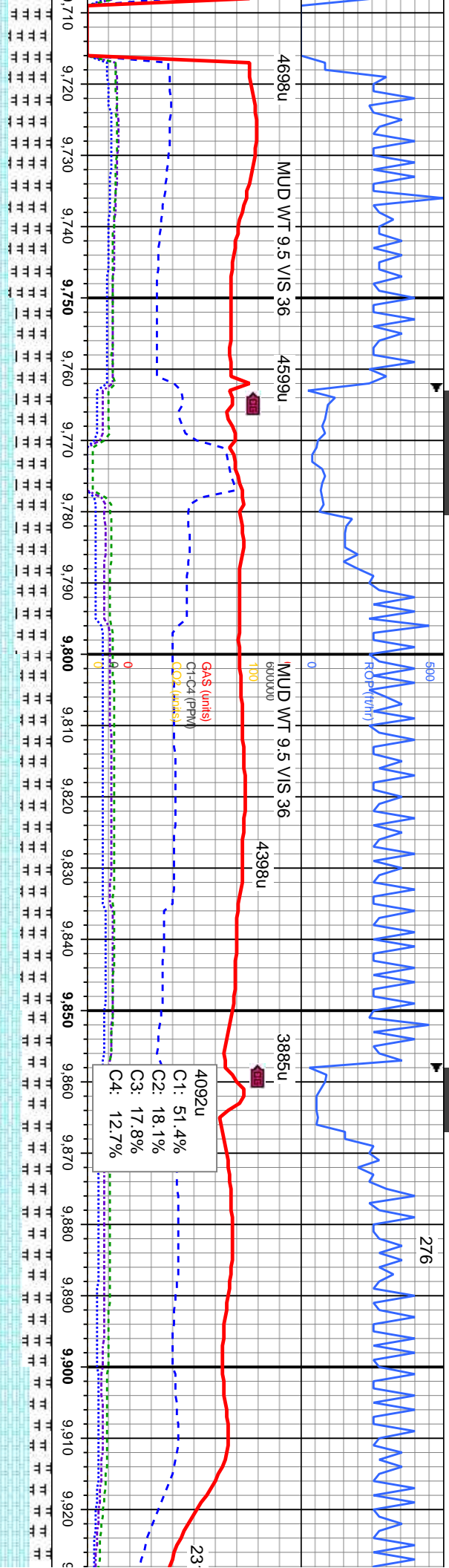




sl firm, mot, occ	65% MRL: m - dkgy, mod sft - sl firm, sbblky - sbply, rthy - sfty tex, sl mot, occ sl vit lstr, v calc	75% MRL: m - dkgy, mod sft - sl firm, sbblky - sbply, rthy - sfty tex, sl mot, occ sl vit lstr, v calc	60% 65% MRL: m - dkgy, mod sft - sl firm, sbblky - sbply, rthy - sfty tex, sl mot, occ sl vit lstr, v calc	65% MRL: m - dkgy, mod sft - sl firm, sbblky - sbply, rthy - sfty tex, sl mot, occ sl vit lstr, v calc	60% 65% MRL: m - dkgy, mod sft - sl firm, sbblky - sbply, rthy - sfty tex, sl mot, occ sl vit lstr, v calc
mod sft - rthy tex,	35% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc, tr bent	25% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc, tr bent	35% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc, tr bent	35% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc, tr bent	35% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc, tr bent

MD: 9.510	MD: 9.605	MD: 9.699
TVD: 6,643.94	TVD: 6,645.65	TVD: 6,647.67
Inclination: 89.78 °	Inclination: 88.15 °	Inclination: 89.38 °
Azimuth: 91.81 °	Azimuth: 91.42 °	Azimuth: 90.85 °
VS: 3,030.75 '	VS: 3,123.83 '	VS: 3,216.07 '

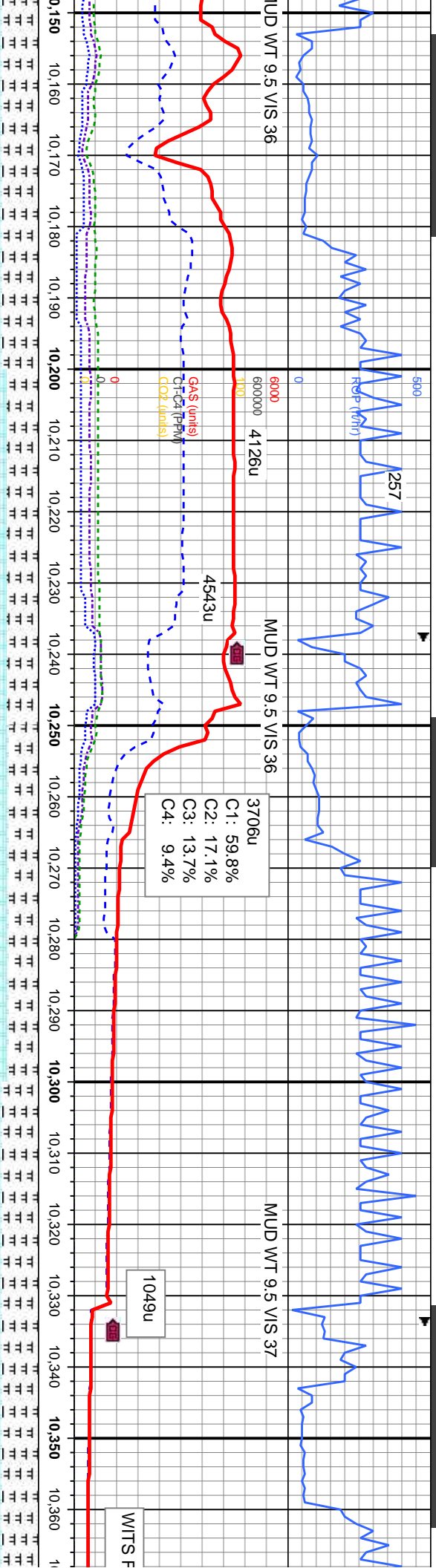




165	50% MRL: m - dkgy, mod sft - sl firm, sbblky-sbply, rthy - slty tex, sl mot, occ sl vit lstr, v calc	6000 55% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc	45% MRL: m - dkgy, mod sft - sl firm, sbblky-sbply, rthy - slty tex, sl mot, occ sl vit lstr, v calc, tr bent	60% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc	40% MRL: m - dkgy, mod sft - sl firm, sbblky-sbply, rthy - slty tex, sl mot, occ sl vit lstr, v calc, tr bent	70% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc
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MD: 9,795 TVD: 6,649.12 Inclination: 88.89 Azimuth: 90.53 VS: 3,310.43	MD: 9,889 TVD: 6,651.17 Inclination: 88.61 Azimuth: 90.02 VS: 3,402.93
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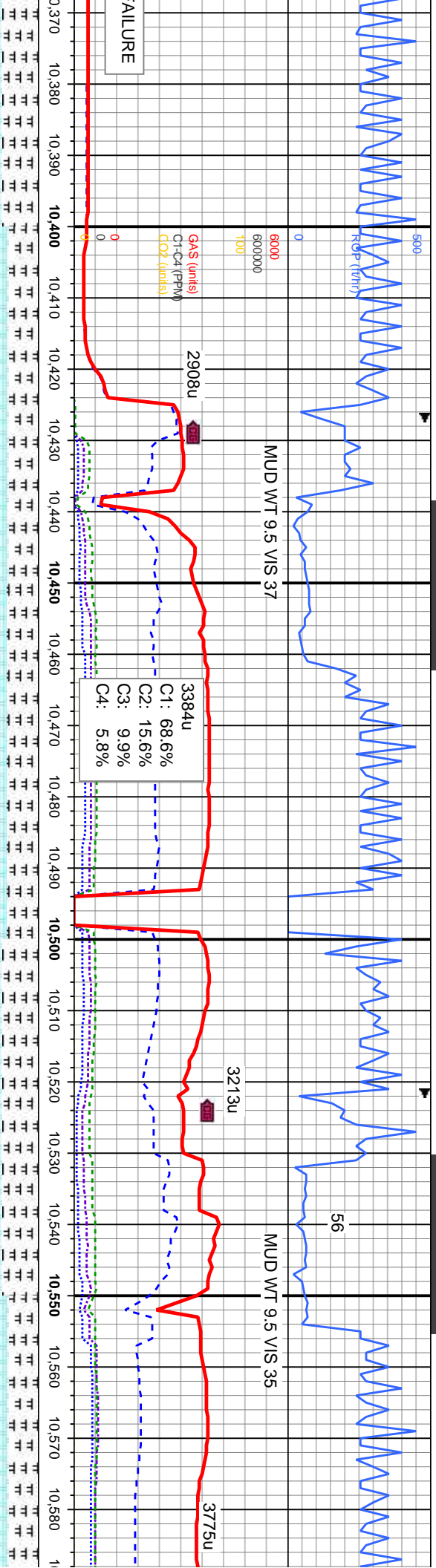




50% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc	55% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc	60% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc	50% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc	50% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, blkly - sbblky, wxy - rthy tex, v calc
50% MRL: m - dkgy, mod sft - sl firm, sbblky- sbply, rthy - silty tex, sl mot, occ sl vit lstr, v calc, tr bent	45% MRL: m - dkgy, mod sft - sl firm, sbblky- sbply, rthy - silty tex, sl mot, occ sl vit lstr, v calc, tr bent	40% MRL: m - dkgy, mod sft - sl firm, sbblky- sbply, rthy - silty tex, sl mot, occ sl vit lstr, v calc, tr bent	50% MRL: m - dkgy, mod sft - sl firm, sbblky- sbply, rthy - silty tex, sl mot, occ sl vit lstr, v calc, tr bent	50% MRL: m - dkgy, mod sft - sl firm, sbblky- sbply, rthy - silty tex, sl mot, occ sl vit lstr, v calc, tr bent

MD: 10,174 TVD: 6,650.94 Inclination: 89.69 ° Azimuth: 90.68 ° VS: 3,683.73 '	MD: 10,269 TVD: 6,651.48 Inclination: 89.66 ° Azimuth: 90.49 ° VS: 3,777.15 '	MD: 10,363 TVD: 6,652.34 Inclination: 89 Azimuth: 90.5 VS: 3,869.6 '
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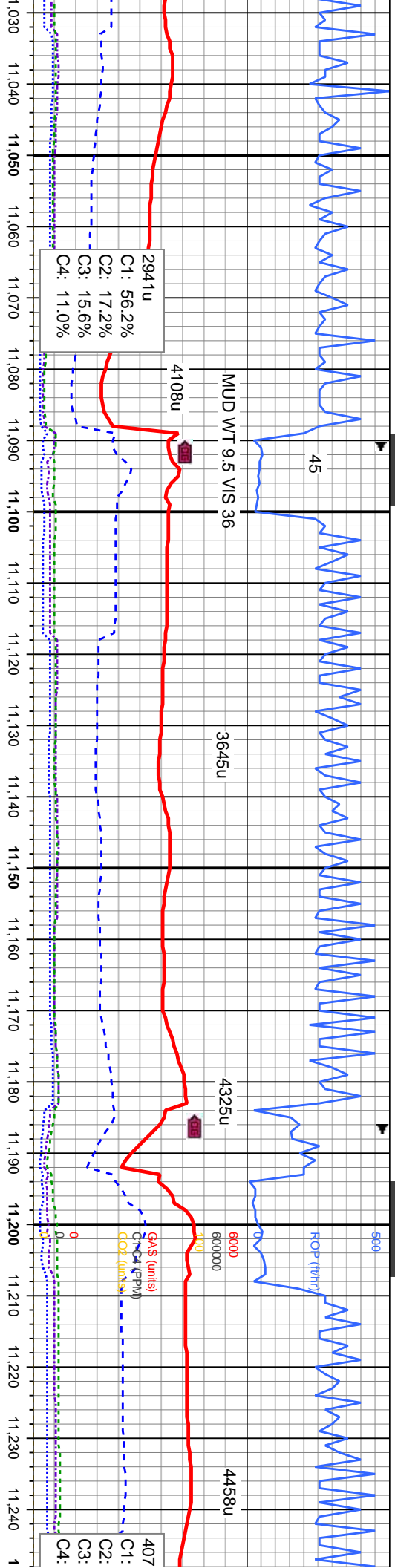




gy - gy, occ lt brn, mod sft biky - sbbiky, wxy - rthy	600% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, biky - sbbiky, wxy - rthy tex, v calc	55% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, biky - sbbiky, wxy - rthy tex, v calc	50% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, biky - sbbiky, wxy - rthy tex, v calc	60% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ firm, biky - sbbiky, wxy - rthy tex, v calc
- dkgy, mod sft - sl firm, rthy - slty tex, sl mot, occ sl vit lstr, v calc, tr bent	40% MRL: m - dkgy, mod sft - sl firm, sbbiky - sbply, rthy - slty tex, sl mot, occ sl vit lstr, v calc, tr bent	45% MRL: m - dkgy, mod sft - sl firm, sbbiky - sbply, rthy - slty tex, sl mot, occ sl vit lstr, v calc, tr bent	50% MRL: m - dkgy, mod sft - sl firm, sbbiky - sbply, rthy - slty tex, sl mot, occ sl vit lstr, v calc, tr bent	40% MRL: m - dkgy, mod sft - sl firm, sbbiky - sbply, rthy - slty tex, sl mot, occ sl vit lstr, v calc, tr bent

MD: 10,458 TVD: 6,652.8 Inclination: 90.15 ° Azimuth: 91.65 ° VS: 3,962.85 '	MD: 10,553 TVD: 6,654.23 Inclination: 88.12 ° Azimuth: 90.52 ° VS: 4,056.1 '
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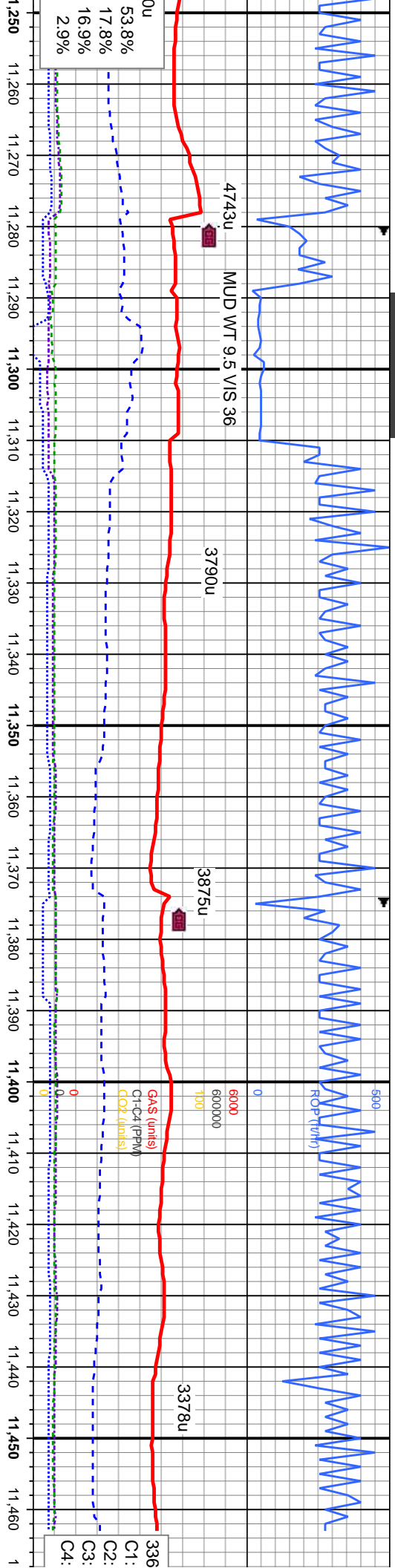




It brn, mod sft - sft, pty, wxy - rthy tex,	100% CHK: It gy - gy, occ It brn, mod sft - sft, occ mod firm, sb blkly - sb pty, wxy - rthy tex, v calc, tr dism pyr, tr bent	100% CHK: It gy - gy, occ It brn, mod sft - sft, occ mod firm, sb blkly - sb pty, wxy - rthy tex, v calc, tr dism pyr, tr bent	100% CHK: It gy - gy, occ It brn, mod sft - sft, occ mod firm, sb blkly - sb pty, wxy - rthy tex, v calc, tr dism pyr, tr bent	6000 95% CHK: It gy - gy, occ It brn, mod sft - sft, occ mod firm, sb blkly - sb pty, wxy - rthy tex, v calc	5% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbbpty, rthy-slty tex, sl mot, occ sl vit lstr, v calc, tr bent
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027'	MD: 11,122'	MD: 11,217'
655.46'	TVD: 6,654.08'	TVD: 6,652.77'
Inclination: 90.77°	Inclination: 90.89°	Inclination: 90.68°
Azimuth: 88.76°	Azimuth: 89.49°	Azimuth: 89.69°
VS: 4.617.72'	VS: 4.617.72'	VS: 4.711.42'

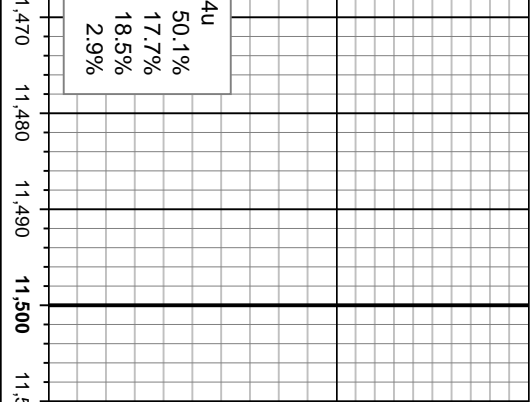




11,250	11,260	11,270	11,280	11,290	11,300	11,310	11,320	11,330	11,340	11,350	11,360	11,370	11,380	11,390	11,400	11,410	11,420	11,430	11,440	11,450	11,460
90% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc																					
100% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc, tr bent																					
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, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc, tr bent																					
90% CHK: lt gy - gy, occ lt brn, mod sft - sft, occ mod firm, sb blkly - sb plty, wxy - rthy tex, v calc																					
100% MRL: m - dkgy, mod sft-sl firm, sbblkly-sbplty, rthy-slty tex, sl mot, occ sl vit lstr, v calc, tr bent																					

MD: 11,312'																					
TVD: 6,653.59'																					
Inclination: 88.34°																					
Azimuth: 87.43°																					
VS: 4,805.37'																					
MD: 11,399'																					
TVD: 6,655.23'																					
Inclination: 89.51°																					
Azimuth: 87.79°																					
VS: 4,891.61'																					
7300																					





TD Well @ 11462' MD
05:02 hrs 9/02/2013

Thank You For Choosing
Columbine Logging Inc.

ROJECTION TO BIT

11,462
D: 6,655.77
ination: 89.51 °
muth: 87.79 °
4,954.05'

