



Scale: 5" / 100'  
Measured Depth Log

Well Name 05123377620000\_Harris\_Federal\_36N-E18HZ

Location SWSE SEC19 T3N R66W

State COLORADO

Country USA

API Number 05123377620000

Region DJ BASIN

Spud Date 8/2/2013

Surface Coordinates 249' FSL x 1271' FEL

Bottom Hole Coordinates RELATIVE TO WELLHEAD  
N 9385' & W 521

Ground Elevation 4832'

Logged Interval 7514' To 16067'

Formation NIOBRARA

Type of Drilling Fluid OBM

County WELD

Rig Number H&P 307

AFE # 2072619.DRL

Field WATTENBERG

Drilling Completed 11/11/2013

K.B. Elevation 4857'

Total Depth 16067'

Company Anadarko

Address 1099 18t St.  
Suite 1800  
Denver, CO 80202

Name Rhead Cannon

Company Anadarko

Address 1099 18t St.  
Suite 15029  
Denver, CO 80202

Jim Frank, Chris Johnson

Operator

202

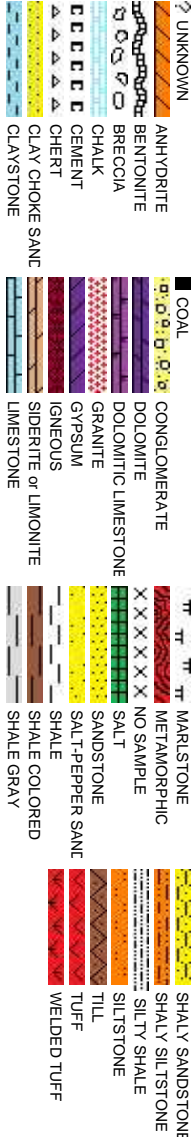
Geologist

202

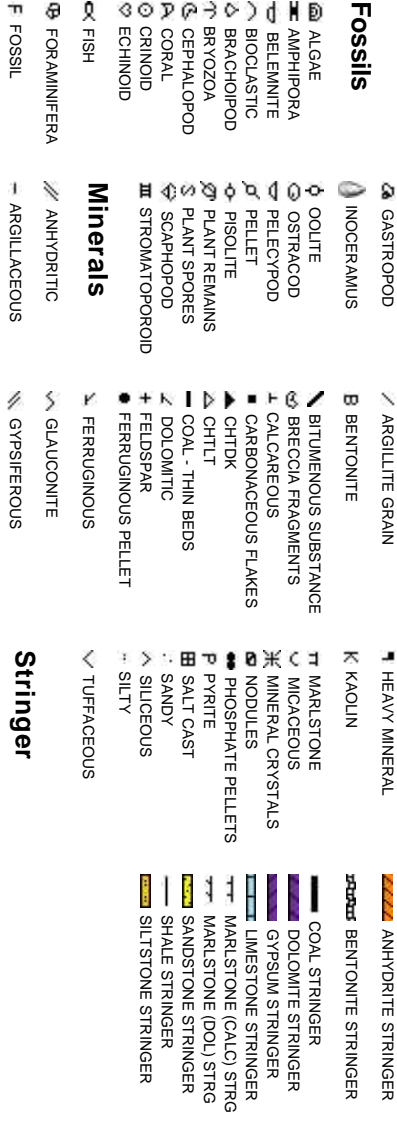
Other

Columbine Logging  
2385 S. Lipan St.  
Denver, CO 80223

Rock Types



Accessories



# Other Symbols

<b>Oil Show</b>	P PINPOINT	⋮ DST INTERVAL	▽ WIRELINE TESTED - LEFT	E EARTHY
	∨ VUGGY	⚡ FAULT	△ WIRELINE TESTED - RT	FX FINELYXLN

D DEAD	<b>Engineering</b>	⏮ FORMATION TOP	📄 DST DRILL STEM TEST	GS GRAINSTONE
● EVEN		❄ GAS SHOW	MINDEPTH MN DEPTH	L LITHOGRAPHIC
○ QUESTIONABLE	▲ BIT	● OIL SHOW		MX MICROXLN
● SPOTTED STAINING	▲ CONNECTION (UP)	MINDEPTH MN DEPTH UP	<b>Rounding</b>	MS MUDSTONE

<b>Porosity</b>	▼ CONNECTION (DOWN)	MINDEPTH MN DEPTH (DOWN)	▲ ANGULAR	PS PACKSTONE
	📄 CONNECTION GAS	↕ NORMAL FAULT	R ROUNDED	WS WACKSTONE
E EARTHY	📄 CONNECTION GAS (LEFT)	↕ OVERTURNED STRATA	B SUBANG	
▢ FENESTRAL	📄 TRIP GAS	↕ REVERSE FAULT	n SUBRND	

F FRACTURE	📄 TRIP GAS (LEFT)	⚡ CASING	<b>Textures</b>	M MODERATE
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✕ INTERCRYSTALLINE	📄 DOWN TIME GAS	⚡ SIDEWALL CORE (LEFT)		P POOR
⊖ INTERPOULTIC	📄 DOWN TIME GAS (LEFT)	⚡ SIDEWALL CORE (RIGHT)	BS BOUNDSTONE	W WELL
⚡ MOLDIC	⚡ CORE - LOST	📄 SLIDE	C CHALKY	
⊖ ORGANIC	⬛ CORE - RECOVERED	📄 SURVEY	CX CRYPTOXLN	

Slide/Rotate

ROP  
ROF  
GAMMA

Bit Data  
Bit #: 1  
Type: PLS513S5  
Size: 6.12  
Depth In: 7,514 '  
Depth Out: 16,067 '  
Hours: 119.5 hrs

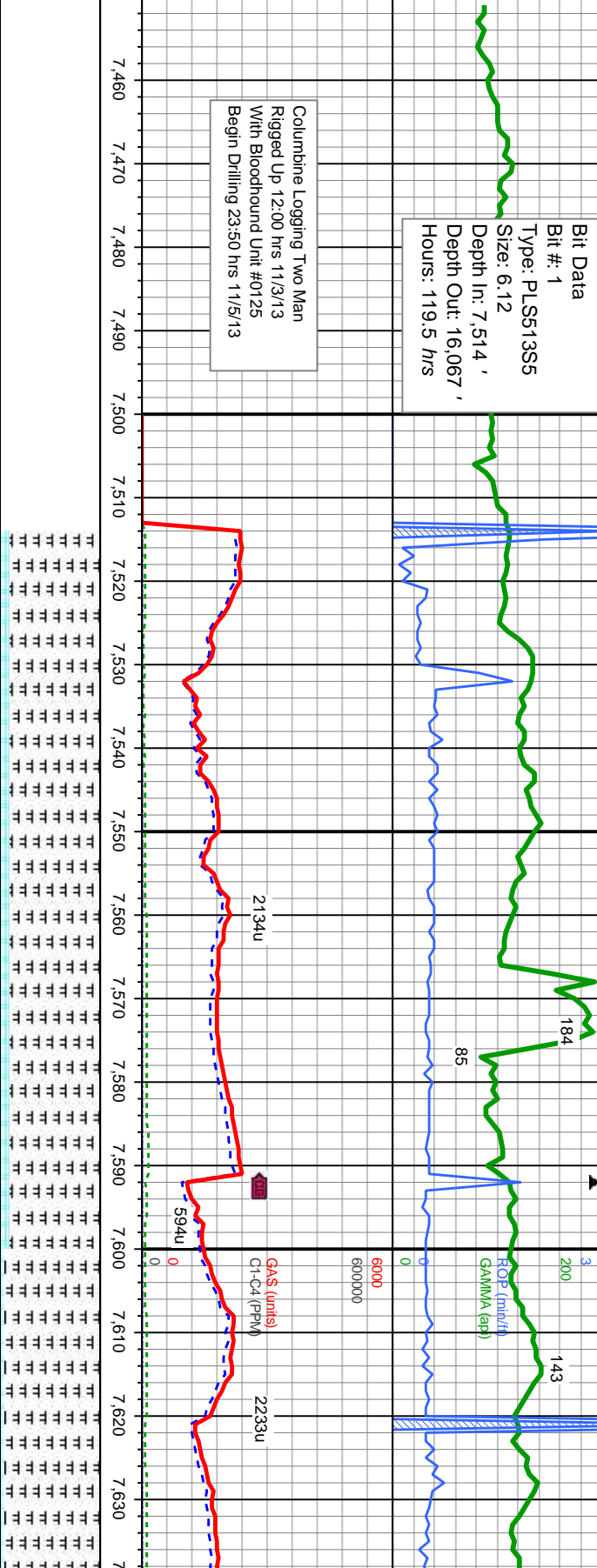
Total Gas & Chromatograph

GAS  
C1  
C2  
C3  
C4

Columbine Logging Two Man  
Rigged Up 12:00 hrs 11/3/13  
With Bloodhound Unit #0125  
Begin Drilling 23:50 hrs 11/5/13

Depth Labels

% Lith



Well Bore  
TVD

MD: 7,469  
TVD: 7,124.29  
Inclination: 86.05  
Azimuth: 358.95  
VS: 849.8

MD: 7,543  
TVD: 7,126.84  
Inclination: 90  
Azimuth: 358.66  
VS: 923.69

MD: 7,637  
TVD: 7,126  
Inclination:  
Azimuth: 35  
VS: 1,017.6

Oil Show

E  
G  
M  
F  
T  
S

7514'-7600' MD: MRLST- med-dk gy-gy brn, sb pily-blky, sft-frn, mod arg-sily, sl calc, tr cal, tr inoc CHK-dk-med gy, dk-med gy brn, mod stri, sb blky-sb pily, sft-sl frm, fri, chky-sb wxy, v sl tr dull yel flr flr w/ slw milky halo cut

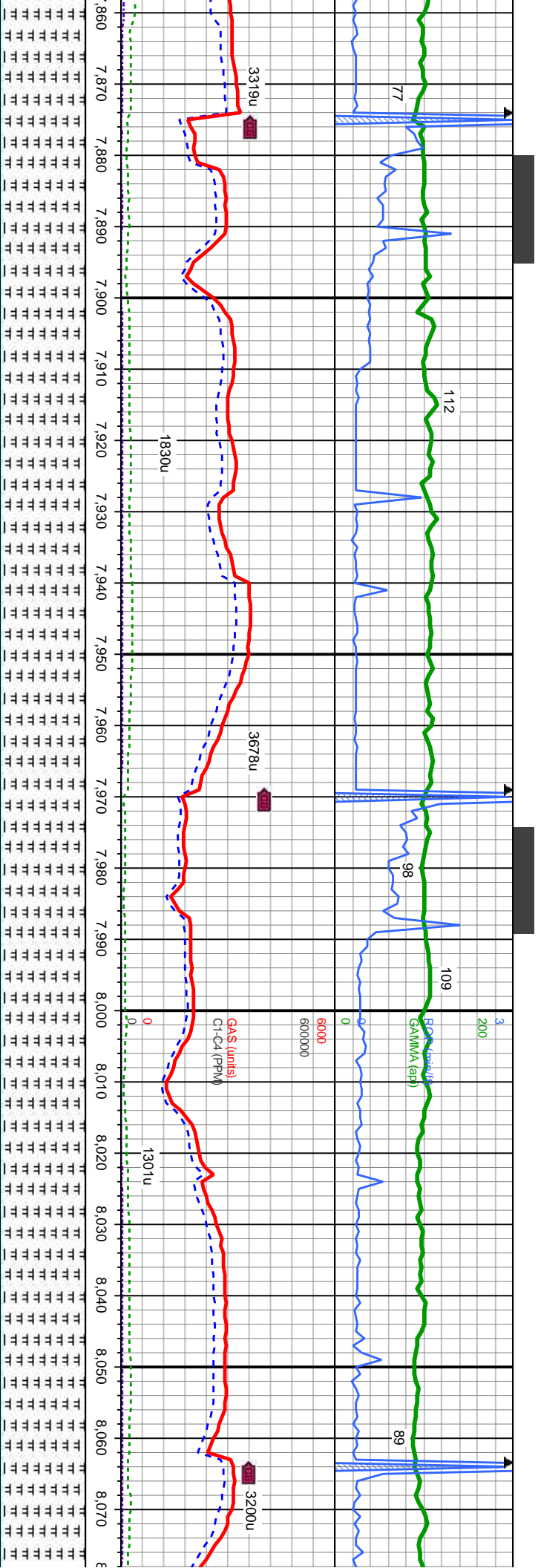
7600'-7700' MD: MRLST- r  
sl calc, tr cal, tr inoc CHK  
pily, sft-sl frm, fri, chky-sb

Images









MD: 7.920  
TVD: 7,123.93  
Inclination: 90.3  
Azimuth: 0.13  
VS: 1,300.64

WT IN 9.0 OUT 9.0  
VIS IN 66 OUT 53

MD: 8.015  
TVD: 7,124.33  
Inclination: 89.22  
Azimuth: 0.47  
VS: 1,395.63

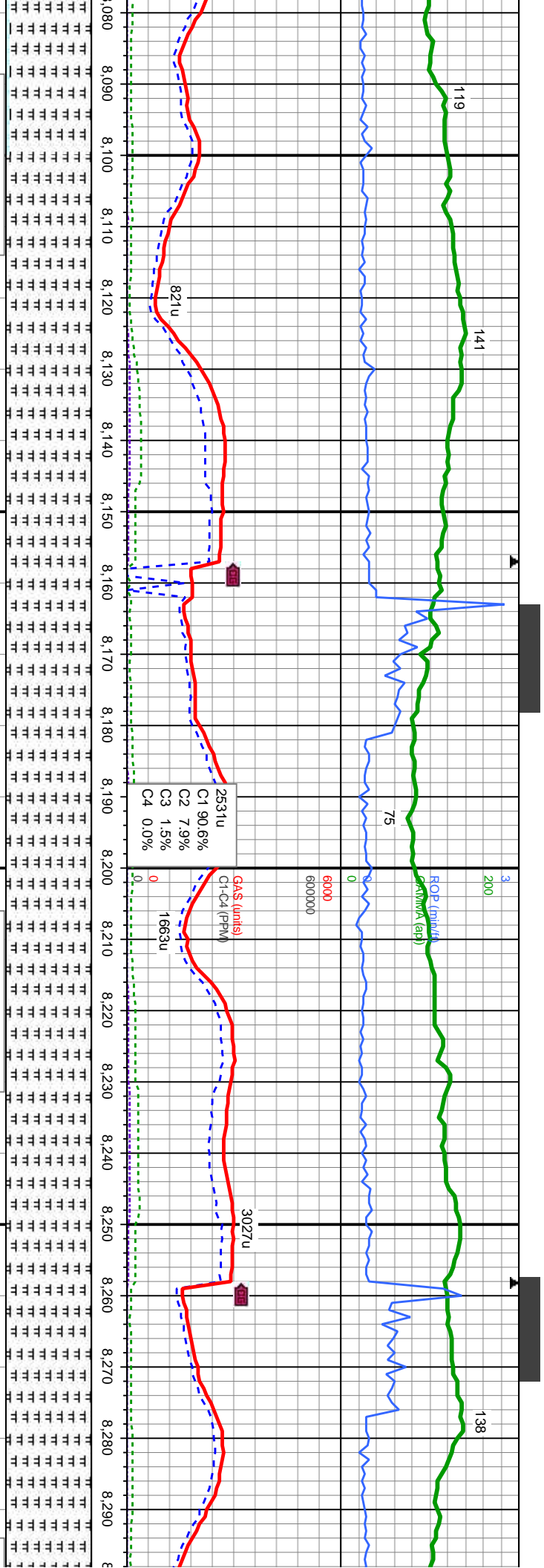
y-biky, sft-frm, mod arg-sily,  
brn, mot stri, sb biky-sb  
w/ slw milky halo cut

7900'-8000' MD: MRLST- med-dk gy-gy brn, sb pily-biky, sft-frm, mod arg-sily,  
sl calc, tr cal, tr inoc CHK-dk-med gy, dk-med gy brn, mot, stri, sb biky-sb  
pily, sft-sl frm, fri, chky-sb wxy, v sl tr dull yel flr w/ slw milky halo cut

8000'-8100' MD: MRLST- med-dk gy-gy brn, sb pily-biky, sft-frm, mod  
sl calc, tr cal, tr inoc CHK-dk-med gy, dk-med gy brn, mot, stri, sb bi  
pily, sft-sl frm, fri, chky-sb wxy, v sl tr dull yel flr w/ slw milky halo c

7600





WT IN 9.0 OUT 9.0  
VIS IN 55 OUT 54

MD: 8,109  
TVD: 7,125.1  
Inclination: 89.84  
Azimuth: 1.02  
VS: 1,489.62

WT IN 9.0 OUT 9.0  
VIS IN 56 OUT 54

MD: 8,203  
TVD: 7,125.74  
Inclination: 89.38  
Azimuth: 0.9  
VS: 1,583.6

WT  
VIS

MD: 8,297  
TVD: 7,126  
Inclination:  
Azimuth: 35  
VS: 1,677.5

arg-sily,  
ky-sb  
ut

8100'-8200' MD: MRLST- med-dk gy-gy brn, sb ply-bkly, sft-fm, mod arg-sily,  
sl calc, tr cal, tr inoc, v sl tr dull yel flr w/ slw mlky halo cut

8200'-8300' MD: MRLST- med-dk gy-gy brn, sb ply-bkly, sft-fm, mod arg-sily,  
sl calc, tr cal, tr inoc, v sl tr dull yel flr w/ slw mlky halo cut

arg-sily,  
ky-sb  
ut









11/6/13

MINDEPTH

98

ROP (min/ft)  
GAMMA (api)

200

156

60000

60000

GA\$ (units)  
Ct-C4 (PPM)

2545u

826u

0

471u

1557u

1

WT IN 9.0  
VIS IN 59

OUT 9.0  
OUT 57

MD: 8.580  
TVD: 7,128.2  
Inclination: 90.37  
Azimuth: 359.71  
VS: 1,960.58

WT IN 9.1  
VIS IN 60

O

MD: 8.674  
TVD: 7,128.31  
Inclination: 89.5  
Azimuth: 359.96  
VS: 2,054.58

6600' MD: MRLST - med-dk gy-gy brn, sb ply-blky, sft-frm, mod arg-sily, tr cal, tr inoc, v sl tr dull yel flr w/ slw mlky halo cut

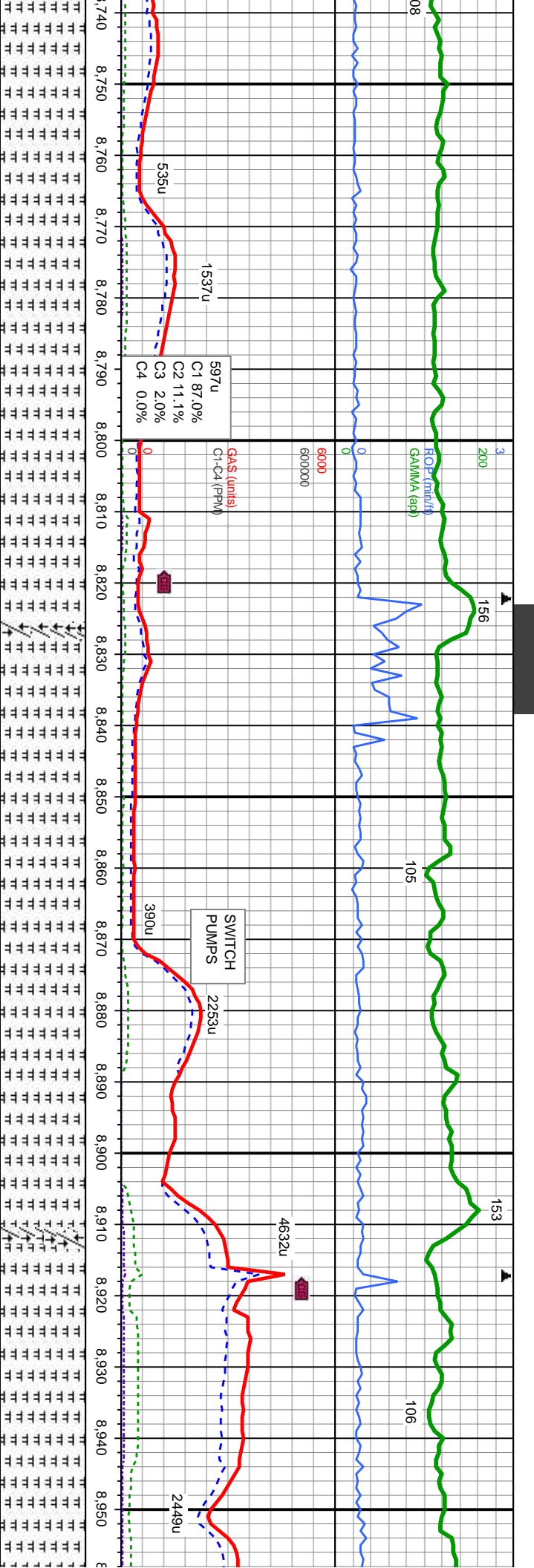
7600

8600'-8700' MD: MRLST - med-dk gy-gy brn, sb ply-blky, sft-frm, mod arg-sily, sl calc, tr cal, tr inoc, tr bent, v sl tr dull yel flr w/ slw mlky halo cut

8700'-8800' MD: MRLST -

sl calc, tr cal, tr inoc, tr br





UT 9.1  
UT 58

MD: 8.769  
TVD: 7,128.67  
Inclination: 90.06  
Azimuth: 359.61  
VS: 2,149.58

MD: 8.863  
TVD: 7,129.06  
Inclination: 89.47  
Azimuth: 359.61  
VS: 2,243.58

MD: 8.958  
TVD: 7,129.06  
Inclination: 89.47  
Azimuth: 359.61  
VS: 2,338.58

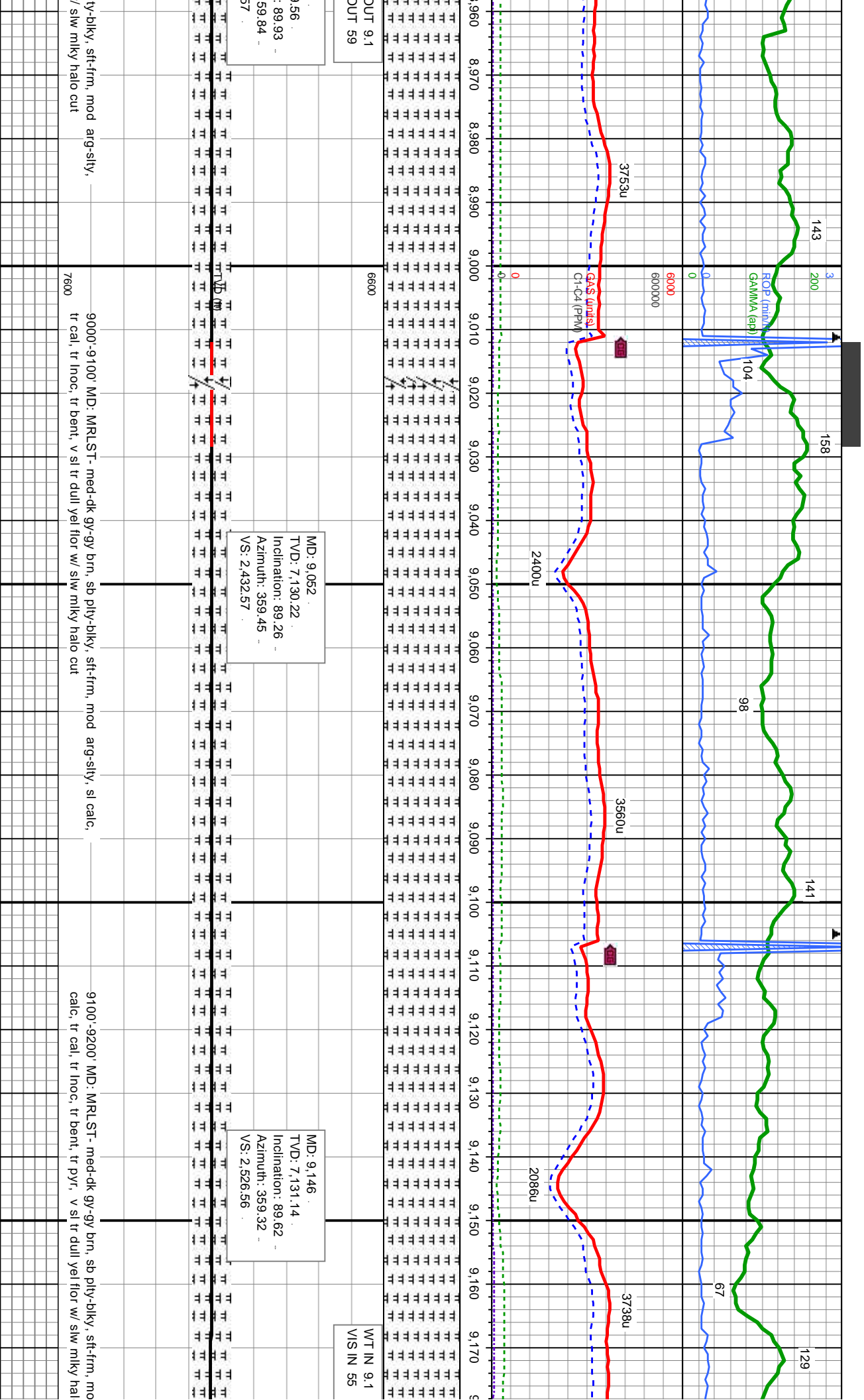
med-dk gy-gy brn, sb pty-blky, stf-firm, mod arg-sily,  
ent, v sl tr dull yel flr w/ slw mlky halo cut

8800'-8900' MD: MRLST - med-dk gy-gy brn, sb pty-blky, stf-firm, mod arg-sily,  
sl calc, tr cal, tr inoc, tr bent, v sl tr dull yel flr w/ slw mlky halo cut

8900'-9000' MD: MRLST - med-dk gy-gy brn, sb pty-blky, stf-firm, mod arg-sily,  
sl calc, tr cal, tr inoc, tr bent, v sl tr dull yel flr w/ slw mlky halo cut

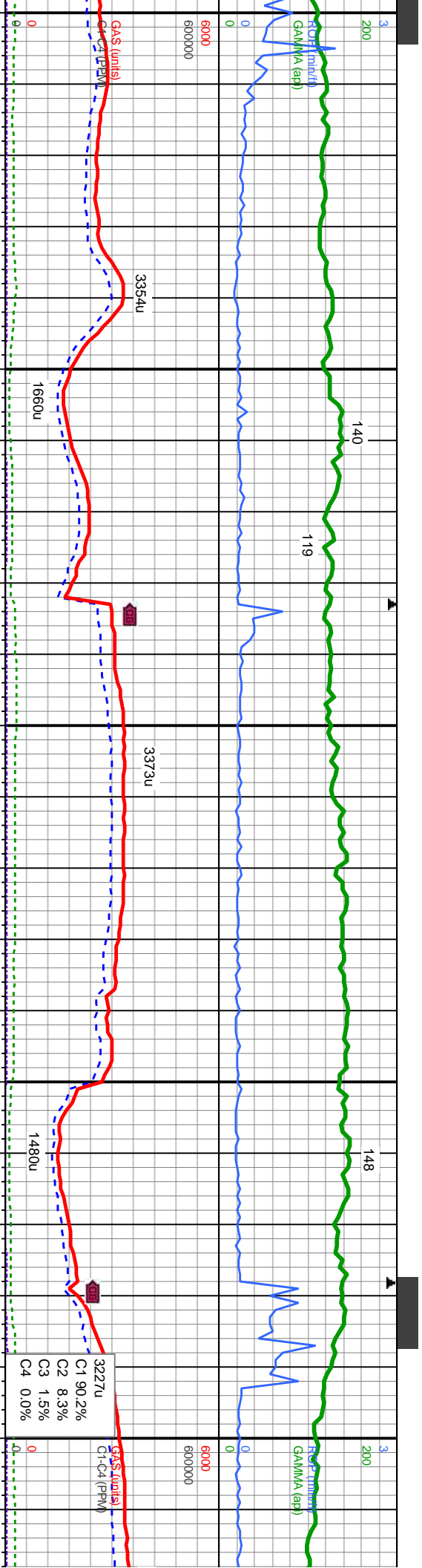












MD: 9,429  
TVD: 7,131.59  
Inclination: 89.56  
Azimuth: 0.06  
VS: 2,809.55

MD: 9,523  
TVD: 7,131.83  
Inclination: 90.15  
Azimuth: 359.89  
VS: 2,903.55

3227u  
C1 90.2%  
C2 8.3%  
C3 1.5%  
C4 0.0%

WT IN 9.0 OUT 9.0  
VIS IN 54 OUT 49

MD: 9,618  
TVD: 7,131  
Inclination  
Azimuth: 3  
VS: 2,998.8

9400'-9500' MD: MRLST- med-dk gy-gy brn, sb pty-blky, sft-firm, mod arg-sily, sl-m calc, tr cal, tr inoc, tr bent, tr pyr, v sl tr dull yel flor w/ slw milky halo cut

9500'-9600' MD: MRLST- med-dk gy-gy brn, sb pty-blky, sft-firm, mod arg-sily, sl-m calc, tr cal, tr inoc, tr bent, tr pyr, v sl tr dull yel flor w/ slw milky halo cut

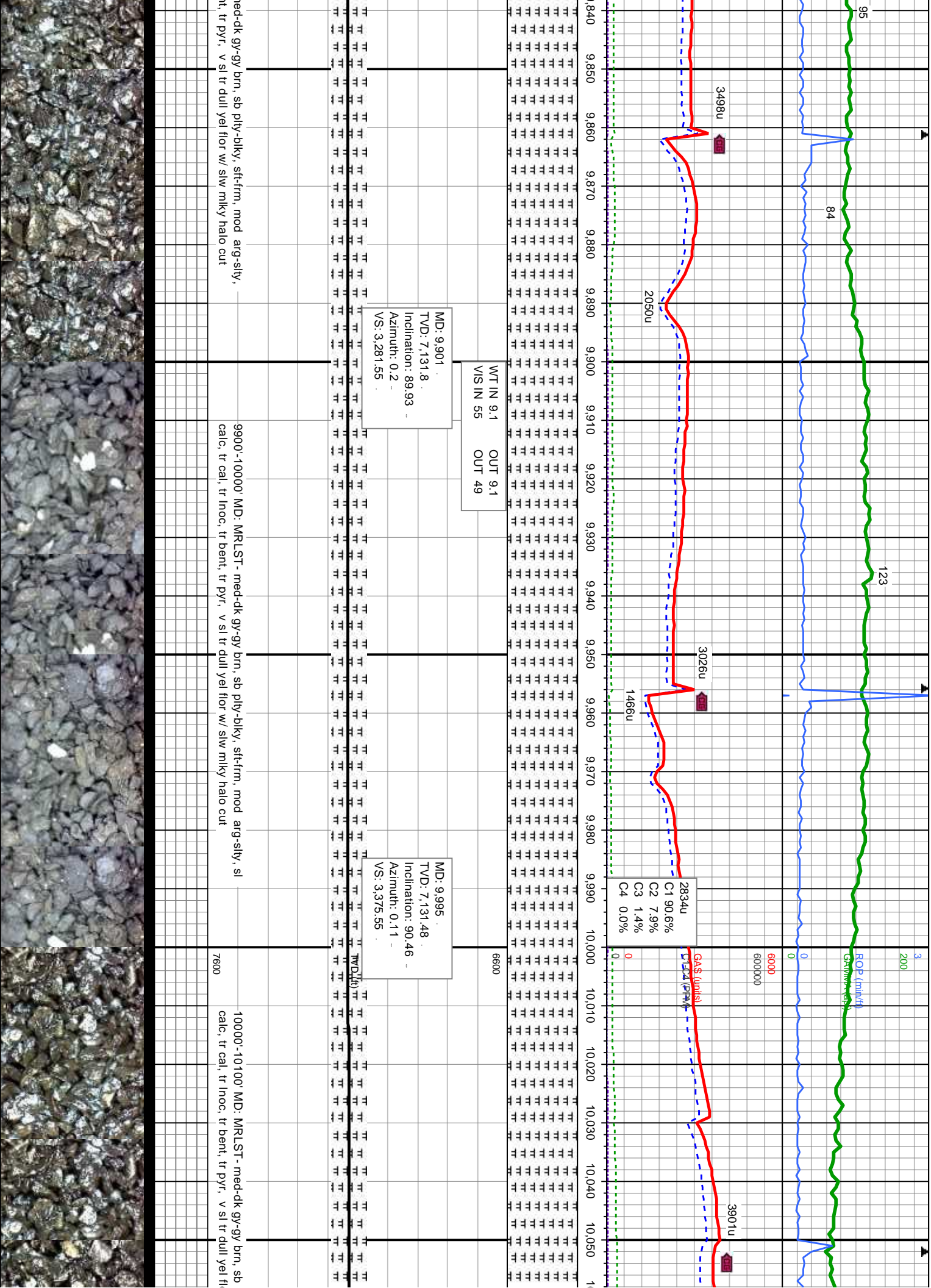
9600' sl cal

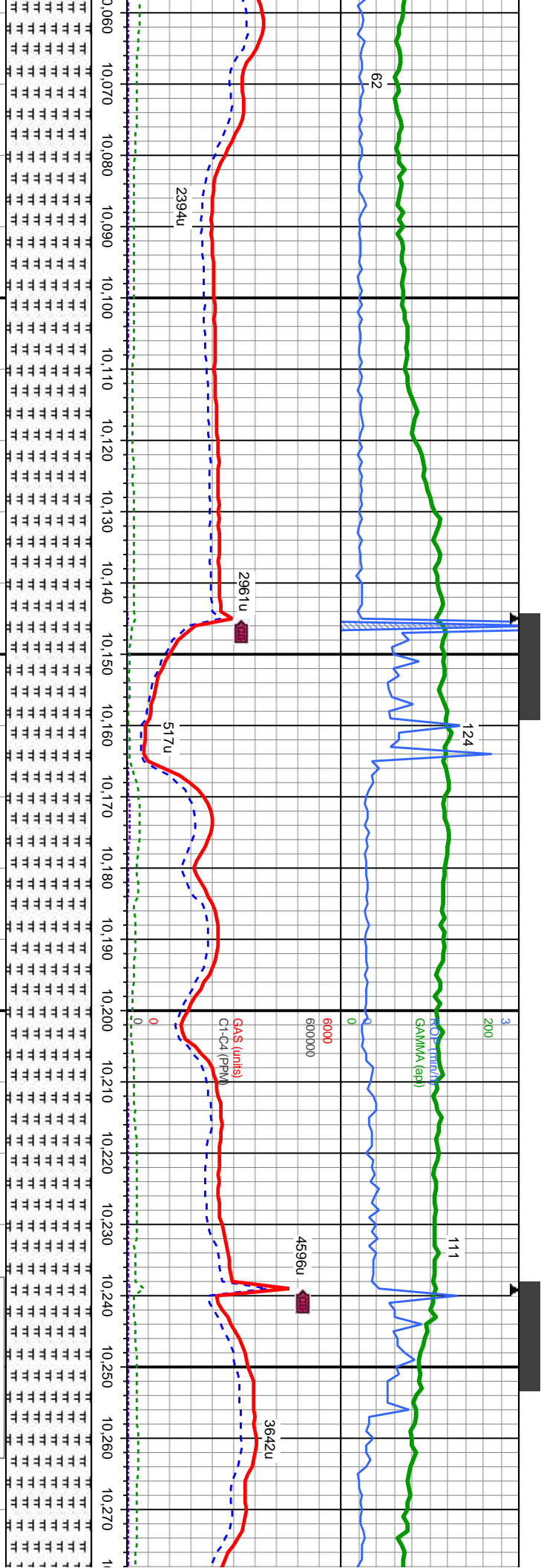












MD: 10,090  
TVD: 7,130.31  
Inclination: 90.95  
Azimuth: 0.33  
VS: 3,470.54

MD: 10,184  
TVD: 7,129.2  
Inclination: 90.4  
Azimuth: 359.1  
VS: 3,564.53

WT IN 9.0 OUT 9.0  
VIS IN 56 OUT 54

MD: 10,270  
TVD: 7,129.2  
Inclination: 90.4  
Azimuth: 359.1  
VS: 3,659

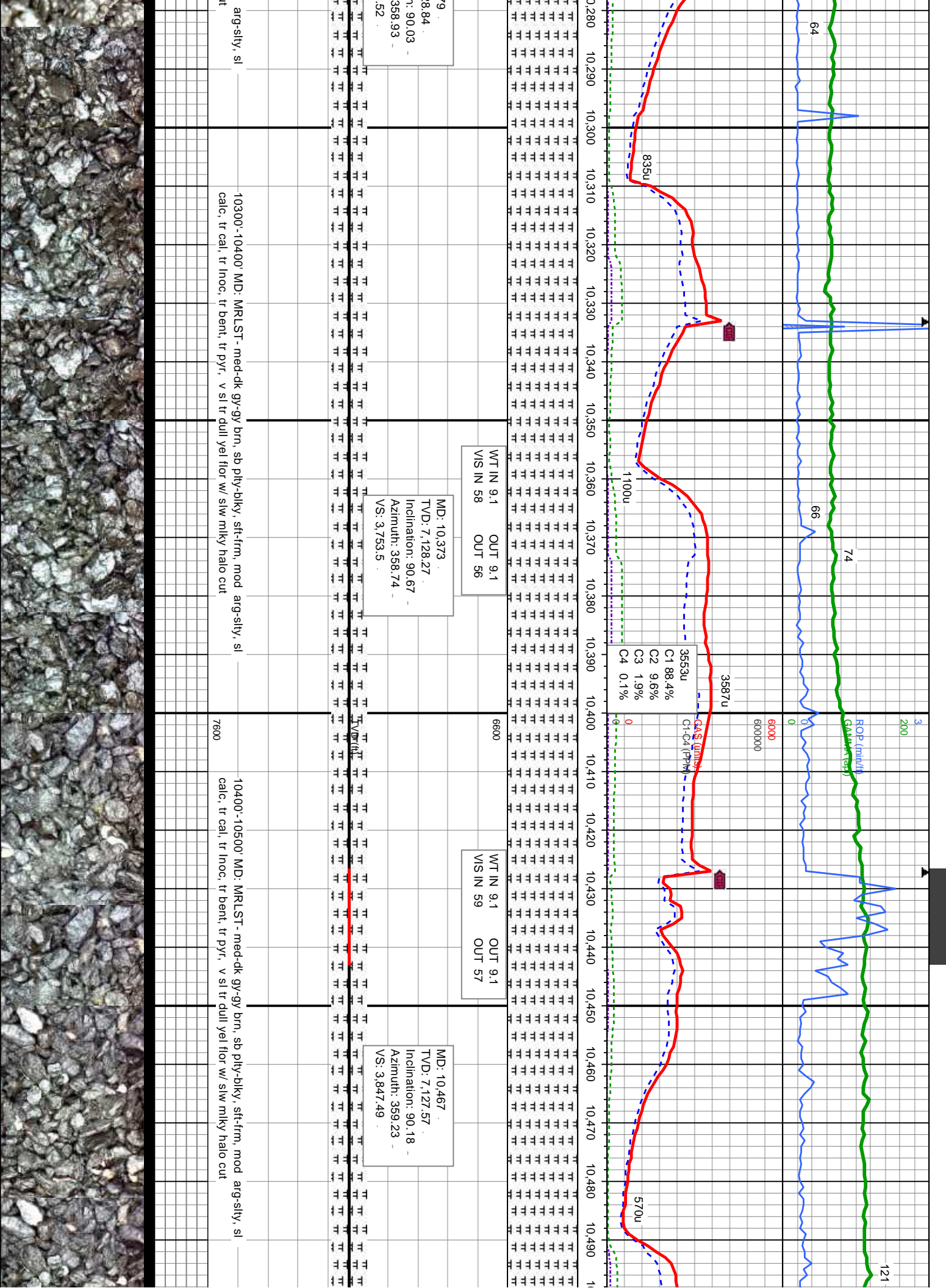
ply-bky, sft-frn, mod arg-sly, sl

10100-10200' MD: MRLST - med-dk gy-gy brn, sb ply-bky, sft-frn, mod arg-sly, sl  
calc, tr cal, tr Inoc, tr bent, tr pyr, v sl tr dull yel flr w/ slw mlky halo cut

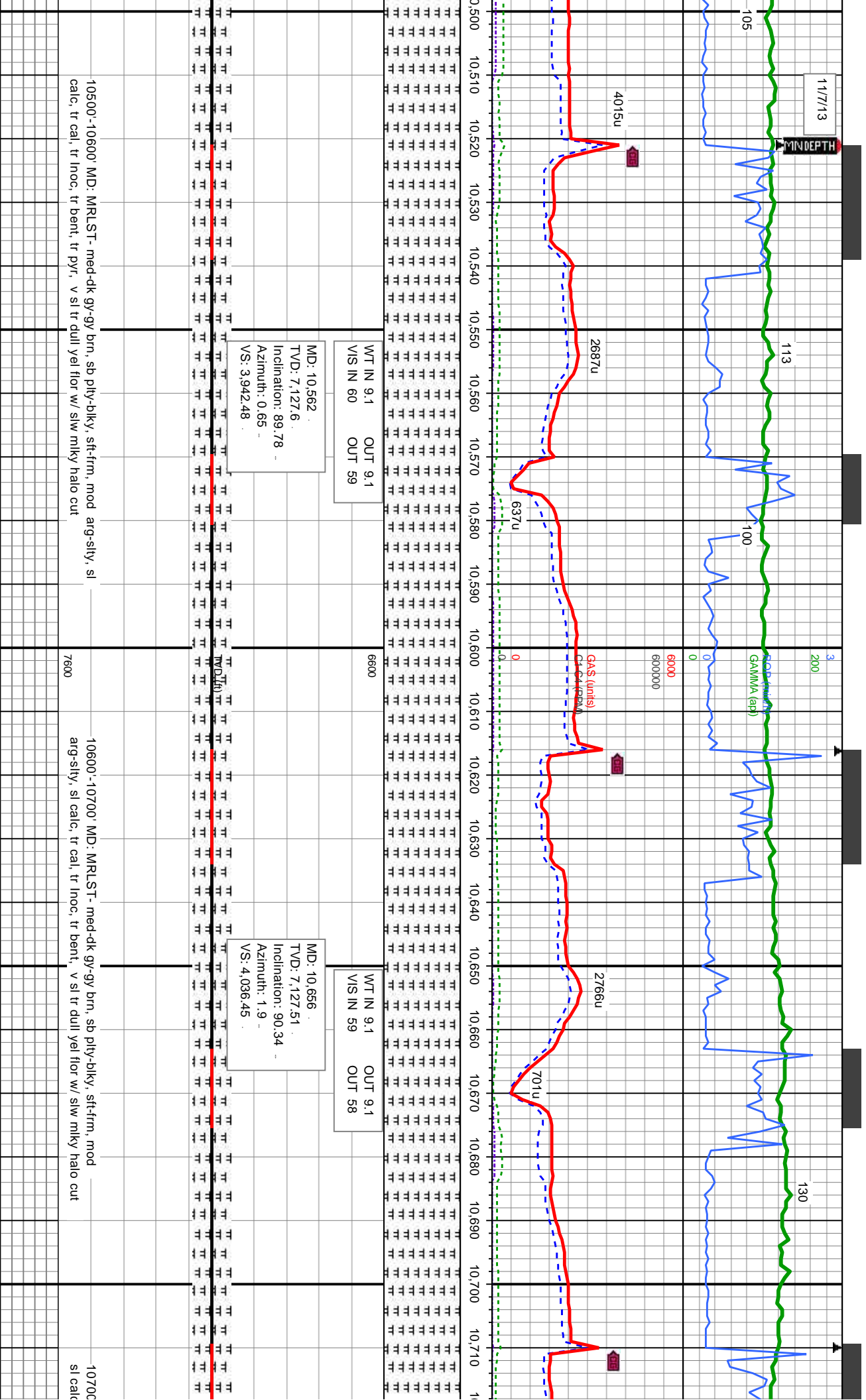
10200-10300' MD: MRLST - med-dk gy-gy brn, sb ply-bky, sft-frn, mod arg-sly, sl  
calc, tr cal, tr Inoc, tr bent, tr pyr, v sl tr dull yel flr w/ slw mlky halo cut

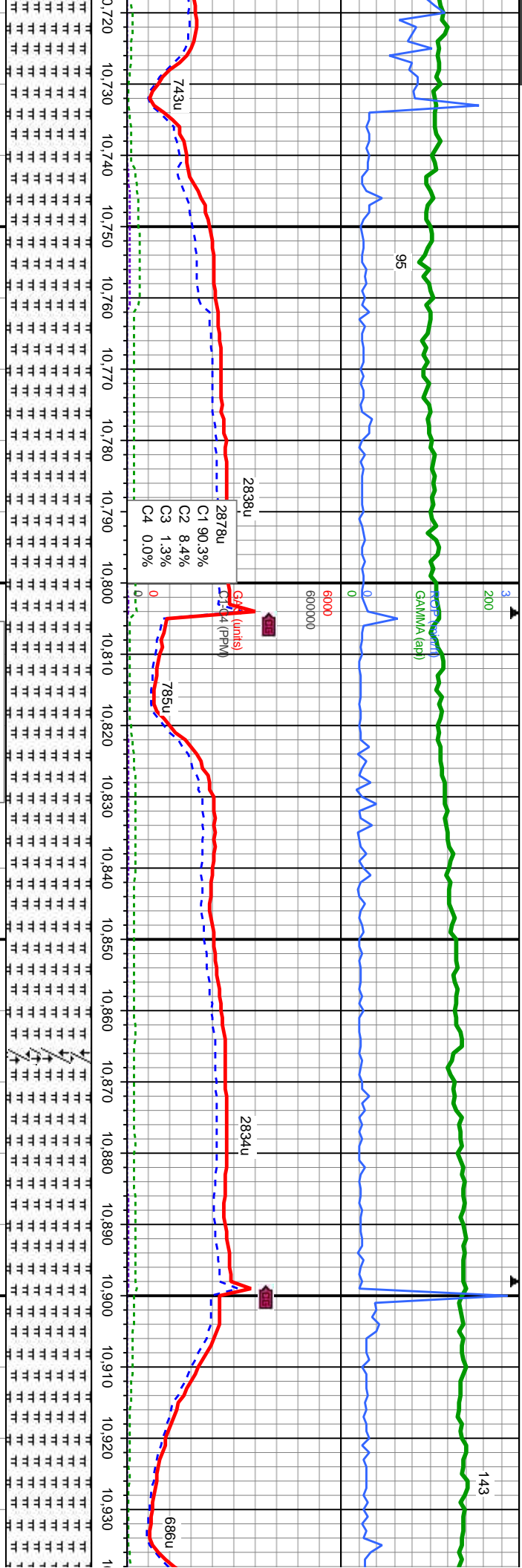












MD: 10,751  
TVD: 7,127.48  
Inclination: 89.69  
Azimuth: 3.84  
VS: 4,131.32

WT IN 9.1 OUT 9.1  
VIS IN 60 OUT 57

MD: 10,845  
TVD: 7,127.54  
Inclination: 90.24  
Azimuth: 3.86  
VS: 4,225.1

MD: 10,930  
TVD: 7,127.54  
Inclination: 90.24  
Azimuth: 3.86  
VS: 4,318

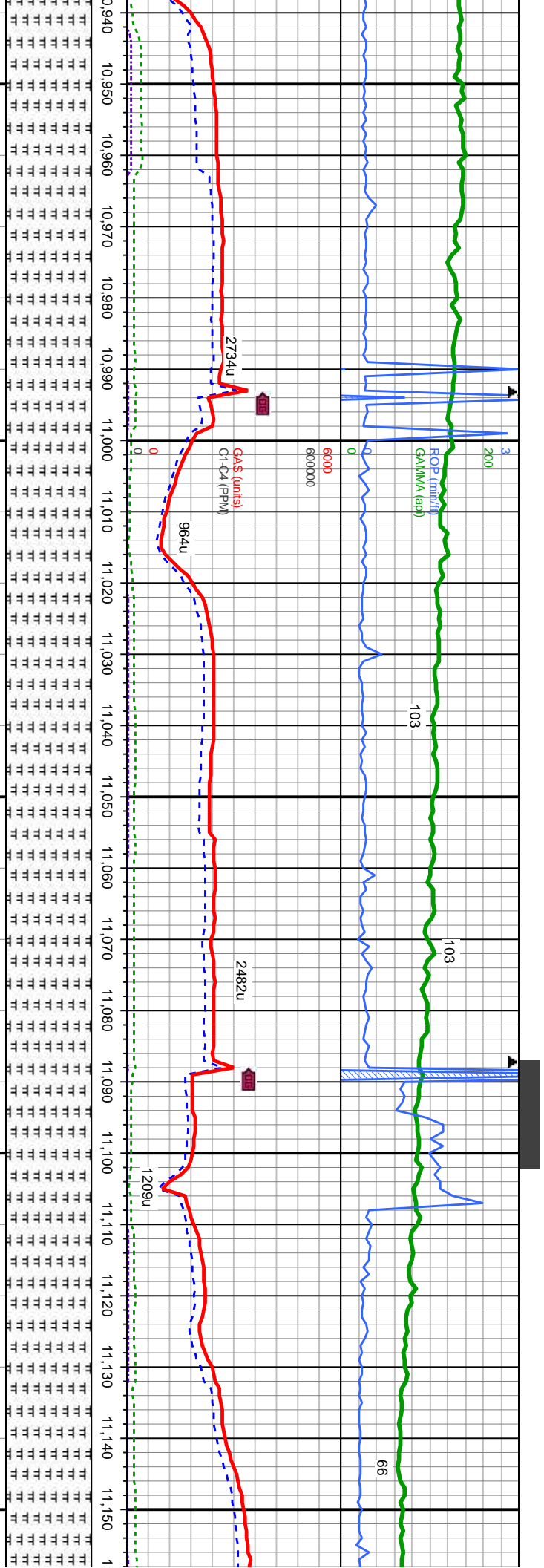
10800' MD: MRLST - med-dk gy-gy brn, sb ply-blky, sft-fm, mod arg-sily, tr cal, tr inoc, tr bent, v sl tr dull yel flr w/ slw milky halo cut

10800'-10900' MD: MRLST - med-dk gy-gy brn, sb ply-blky, sft-fm, mod arg-sily, sl calc, tr cal, tr inoc, tr bent, v sl tr dull yel flr w/ slw milky halo cut

10900'-11000' MD: MRLST - sl calc, tr cal, tr inoc, tr bent







MD: 11,033  
TVD: 7,127.77  
Inclination: 89.93  
Azimuth: 4.01  
VS: 4,412.87

MD: 11,033  
TVD: 7,127.77  
Inclination: 89.62  
Azimuth: 3.84  
VS: 4,412.64

MD: 11,127  
TVD: 7,126.95  
Inclination: 91.38  
Azimuth: 5.04  
VS: 4,506.33

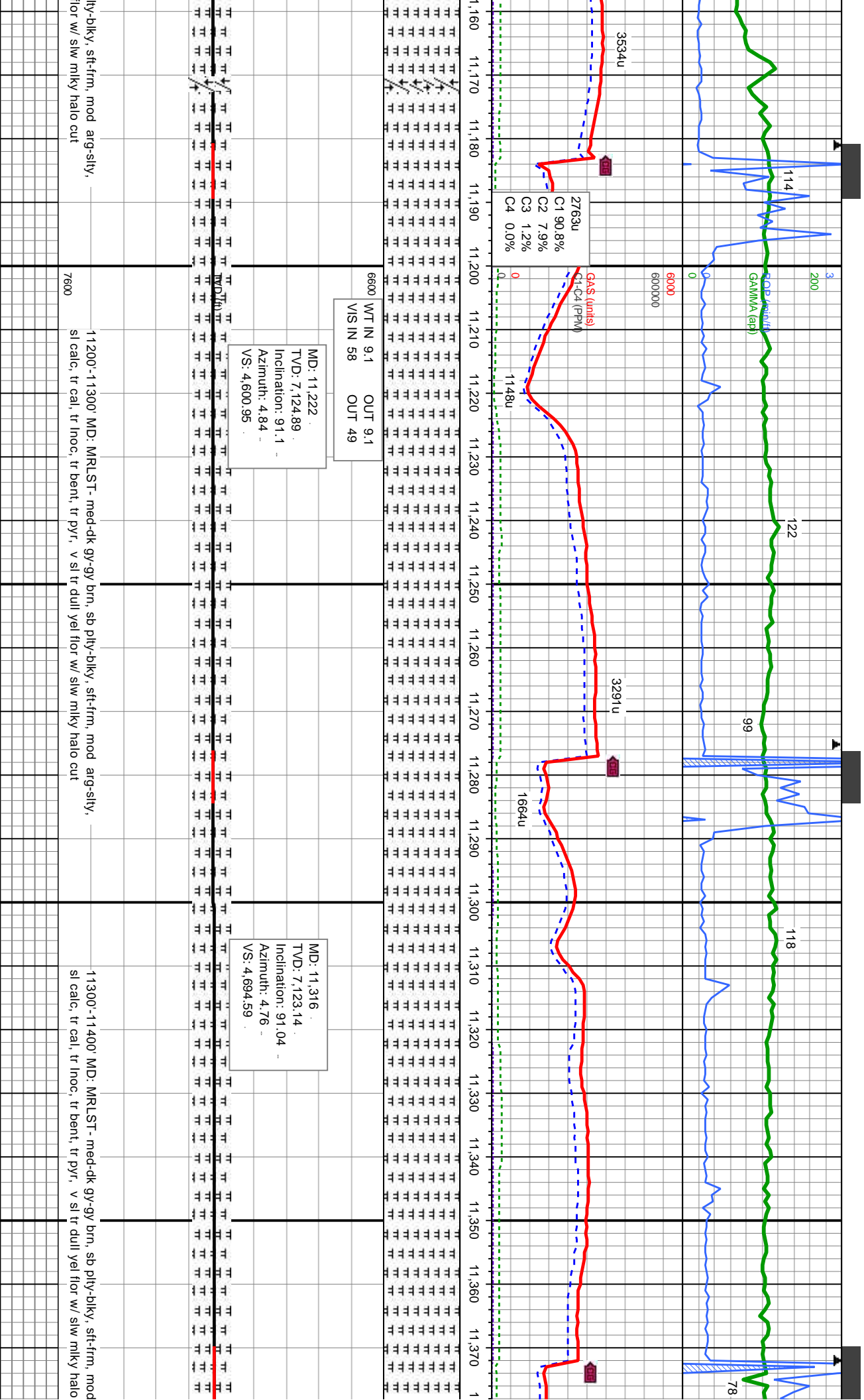
med-dk gy-gy brn, sb ply-blky, sft-firm, mod arg-sily, v sl tr dull yel flr w/ slw mlky halo cut  
11000'-11100' MD: MR/ST - med-dk gy-gy brn, sb ply-blky, sft-firm, mod arg-sily, sl calc, tr cal, tr inoc, tr bent, tr pyr, v sl tr dull yel flr w/ slw mlky halo cut  
11100'-11200' MD: MR/ST - med-dk gy-gy brn, sb p

7600

11100'

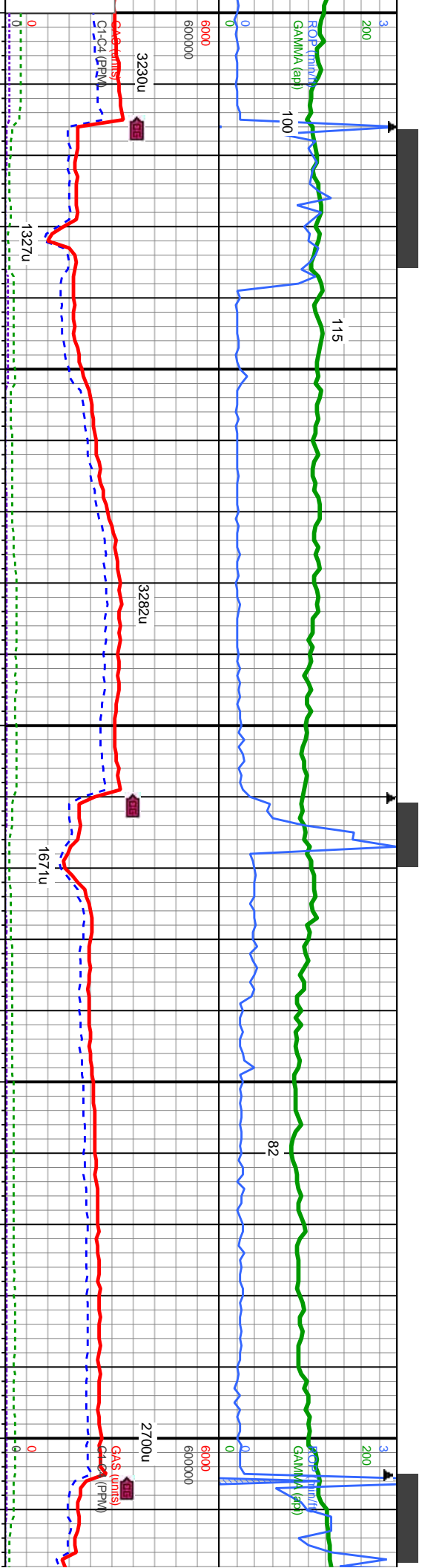
1











MD: 11,657  
TVD: 7,117.43  
Inclination: 90.55  
Azimuth: 4  
VS: 5,034.31

MD: 11,751  
TVD: 7,116.22  
Inclination: 90.92  
Azimuth: 3.69  
VS: 5,128.08

WT IN 9.2 OUT 9.2  
VIS IN 61 OUT 54

11600'-11700' MD: MRLST - med-dk gy-gy brn, sb ply-blky, sft-firm, mod arg-slty, sl calc, tr cal, tr inoc, tr bent, tr pyr, v sl tr dull yel flr w/ slw mlky halo cut

11700'-11800' MD: MRLST - med-dk gy-gy brn, sb ply-blky, sft-firm, mod arg-slty, sl calc, tr cal, tr inoc, tr bent, tr pyr, v sl tr dull yel flr w/ slw mlky halo cut

11800'-  
sl calc,

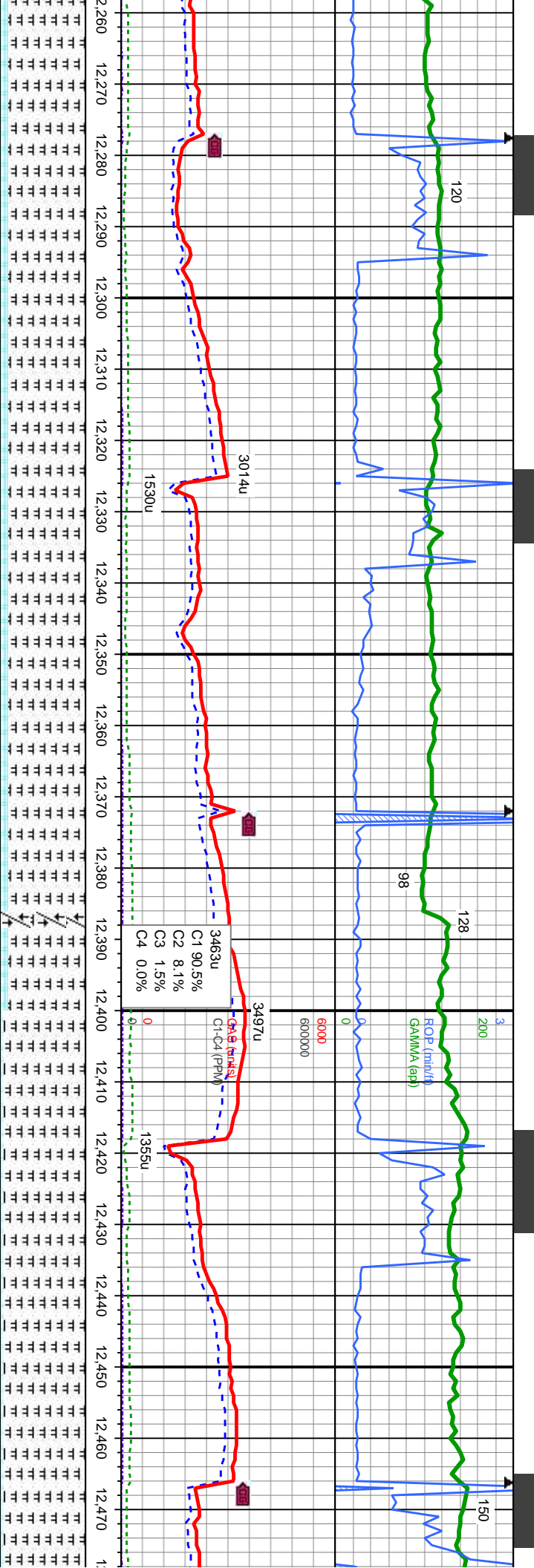












WT IN 9.2	OUT 9.2	WT IN 55	OUT 51
9.2	51	55	51

MD: 12,317  
TVD: 7,116.63  
Inclination: 90.12  
Azimuth: 2.59  
VS: 5,692.65

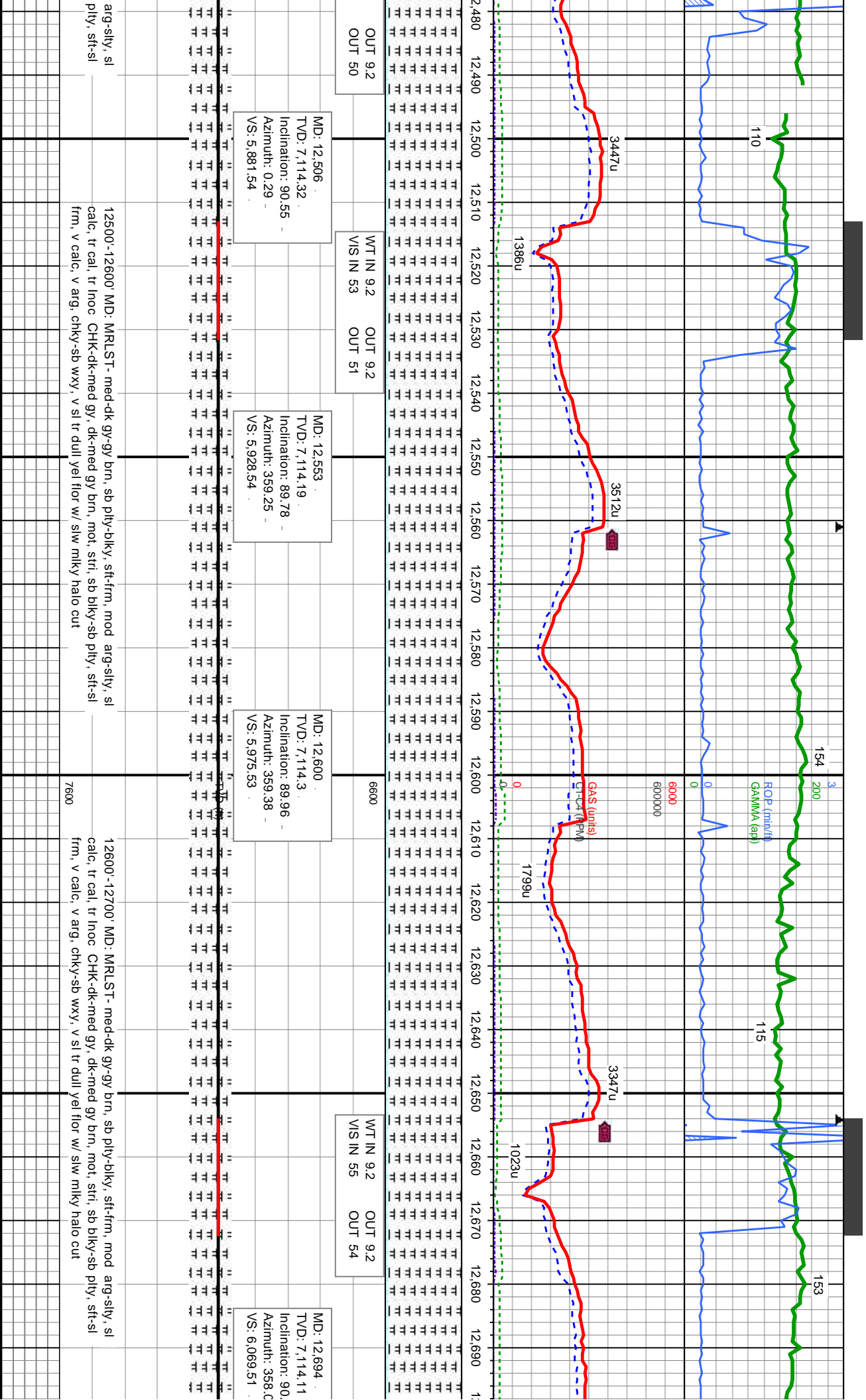
MD: 12,364  
TVD: 7,116.4  
Inclination: 90.43  
Azimuth: 2.24  
VS: 5,739.6

MD: 12,411  
TVD: 7,115.85  
Inclination: 90.92  
Azimuth: 1.74  
VS: 5,786.57

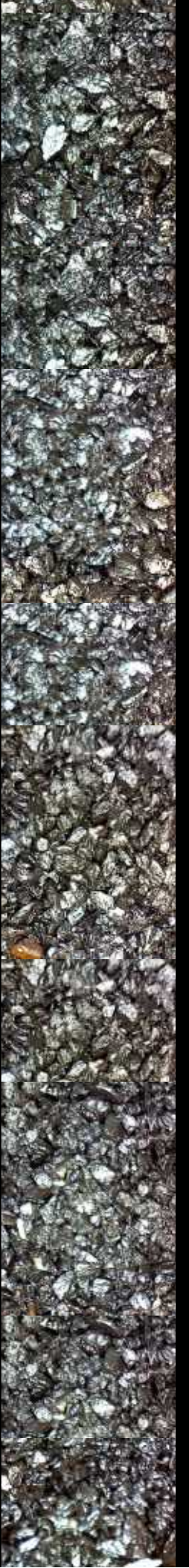
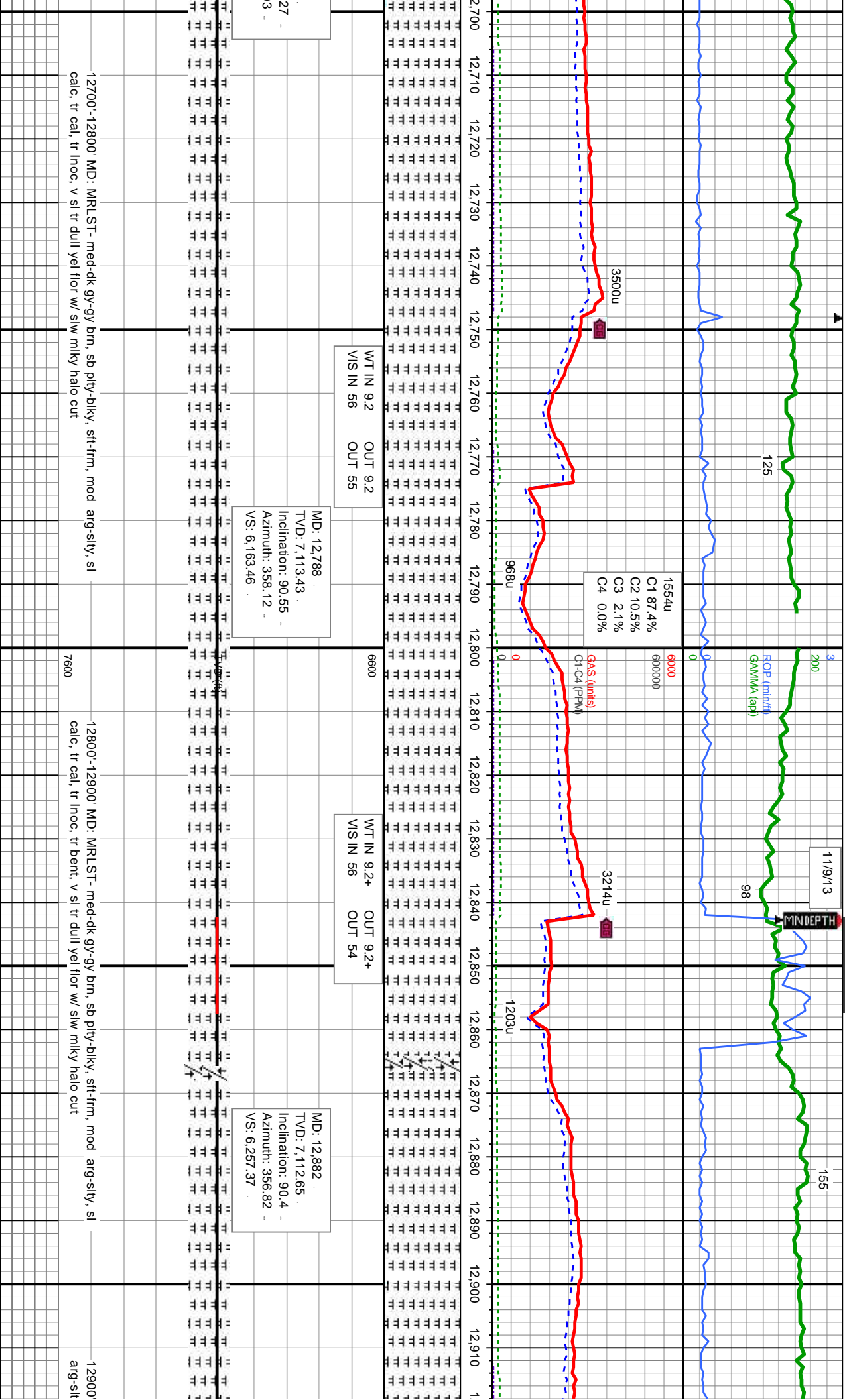
MD: 12,459  
TVD: 7,115  
Inclination: 91.1  
Azimuth: 1  
VS: 5,834.55

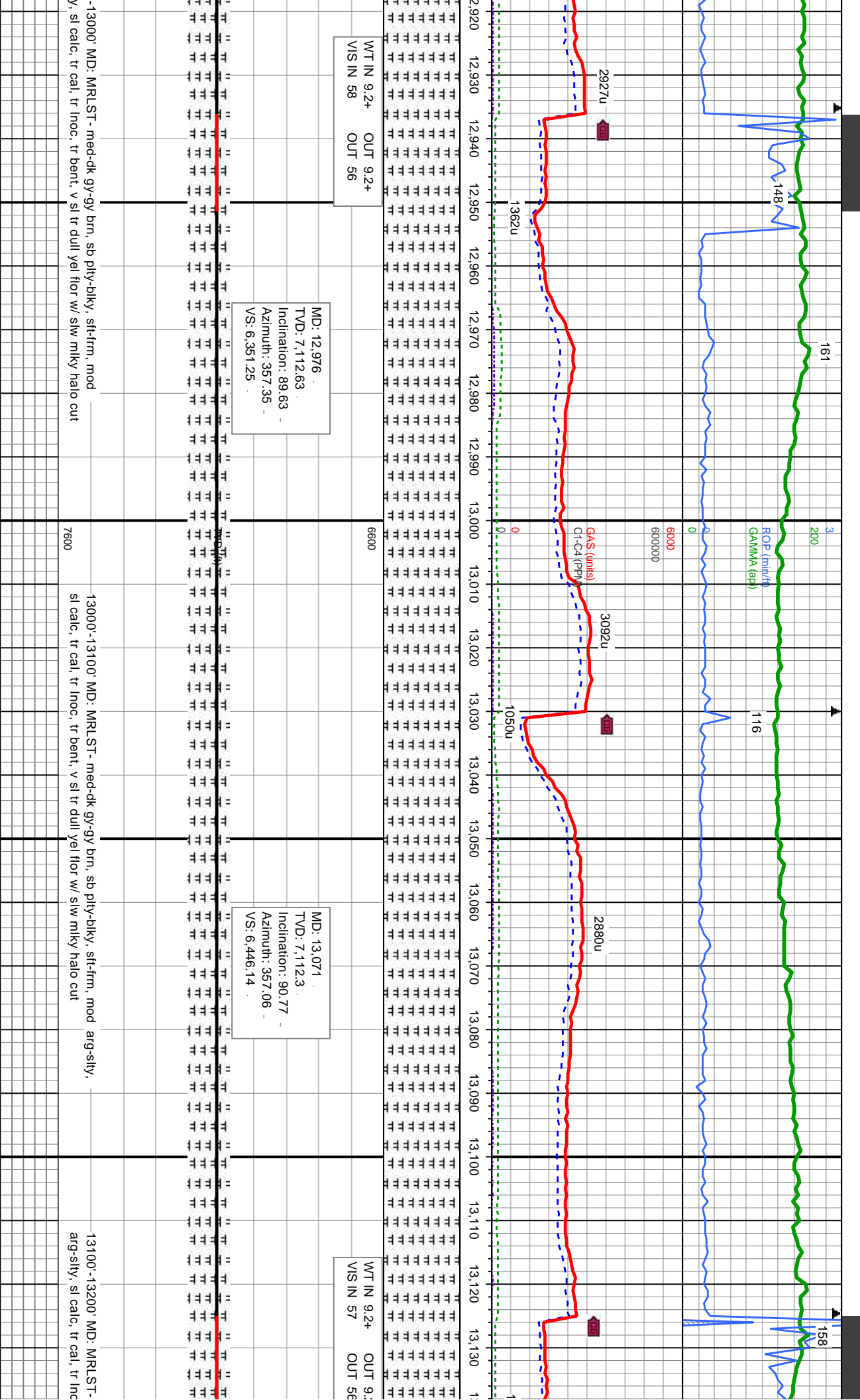
ity-biky, sft-firm, mod arg-sily, sl gy brn, mot, stri, sb bkly-sb yel flor w/ slw mlky halo cut	12300'-12400' MD: MRLST- med-dk gy-gy brn, sb ply-biky, sft-firm, mod arg-sily, sl calc, tr cal, tr inoc, tr bent CHK-dk-med gy, dk-med gy brn, mot, stri, sb bkly-sb ply, sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flor w/ slw mlky halo cut	12400'-12500' MD: MRLST- med-dk gy-gy brn, sb ply-biky, sft-firm, mod calc, tr cal, tr inoc CHK-dk-med gy, dk-med gy brn, mot, stri, sb bkly-sb frm, v calc, v arg, chky-sb wxy, v sl tr dull yel flor w/ slw mlky halo cut
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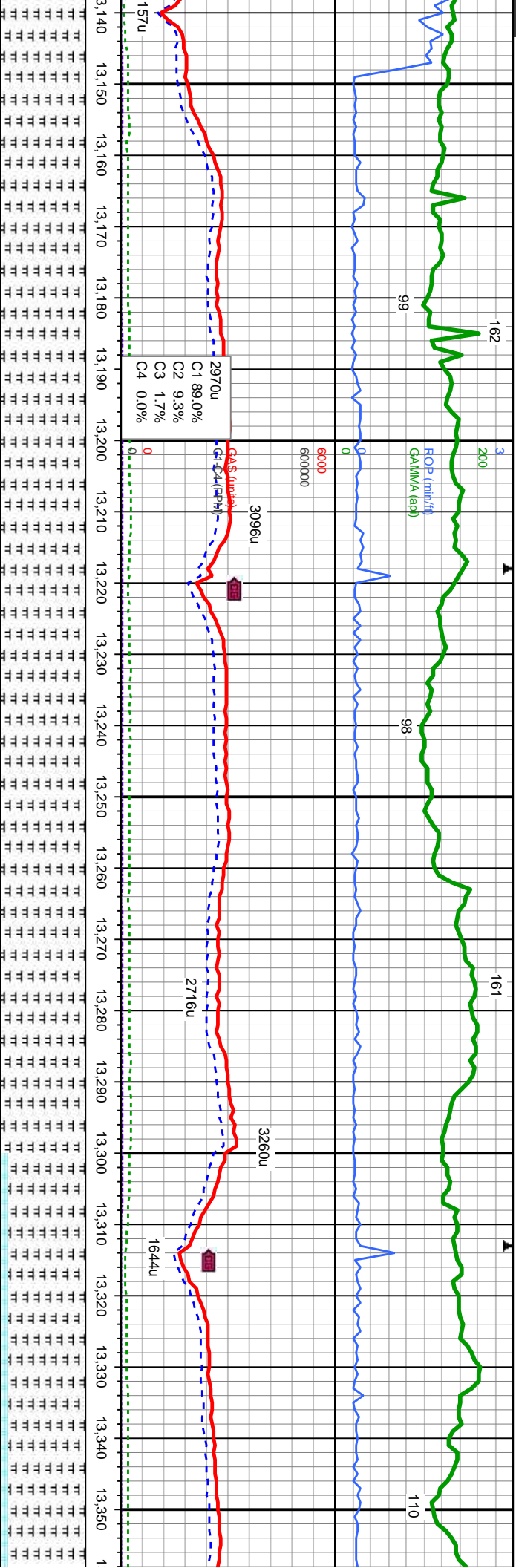












MD: 13,165  
TVD: 7,112.1  
Inclination: 89.47  
Azimuth: 357.09  
VS: 6,540.03

WT IN 9.3 OUT 9.2+  
VIS IN 58 OUT 55

6600

MD: 13,259  
TVD: 7,112.74  
Inclination: 89.75  
Azimuth: 357.18  
VS: 6,633.91

3260u

1644u

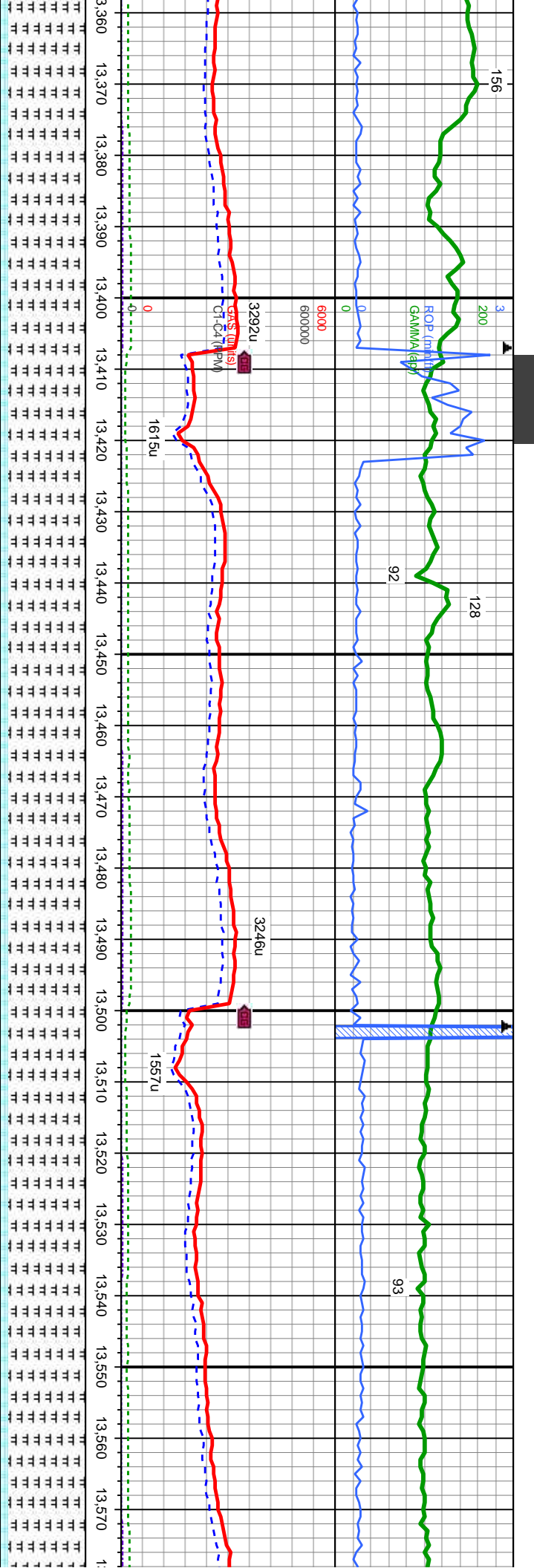
MD: 13,354  
TVD: 7,112.92  
Inclination: 90  
Azimuth: 356.8  
VS: 6,728.8

med-dk gy-gy brn, sb pily-blky, sft-firm, mod  
calc, tr bent, v sl tr dull yel flr w/ slw mlky halo cut

13200'-13300' MD: MRLST - med-dk gy-gy brn, sb pily-blky, sft-firm, mod  
arg-sily, sl calc, tr cal, tr inoc, tr bent, v sl tr dull yel flr w/ slw mlky halo cut

13300'-13400' MD: MRLST - med-dk gy-gy brn, sb pily-blky, sft-firm, mod  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med  
sft-sl frm, v calc, v arg, chky-sb wxy, v sl tr dull yel flr w/ slw mlky halo cut





03  
9

MD: 13,448  
TVD: 7,113.26  
Inclination: 89.56  
Azimuth: 357.4  
VS: 6,822.69

MD: 13,543  
TVD: 7,113.62  
Inclination: 90  
Azimuth: 357.55  
VS: 6,917.61

WT IN 9.3 OUT 9.3  
VIS IN 60 OUT 54

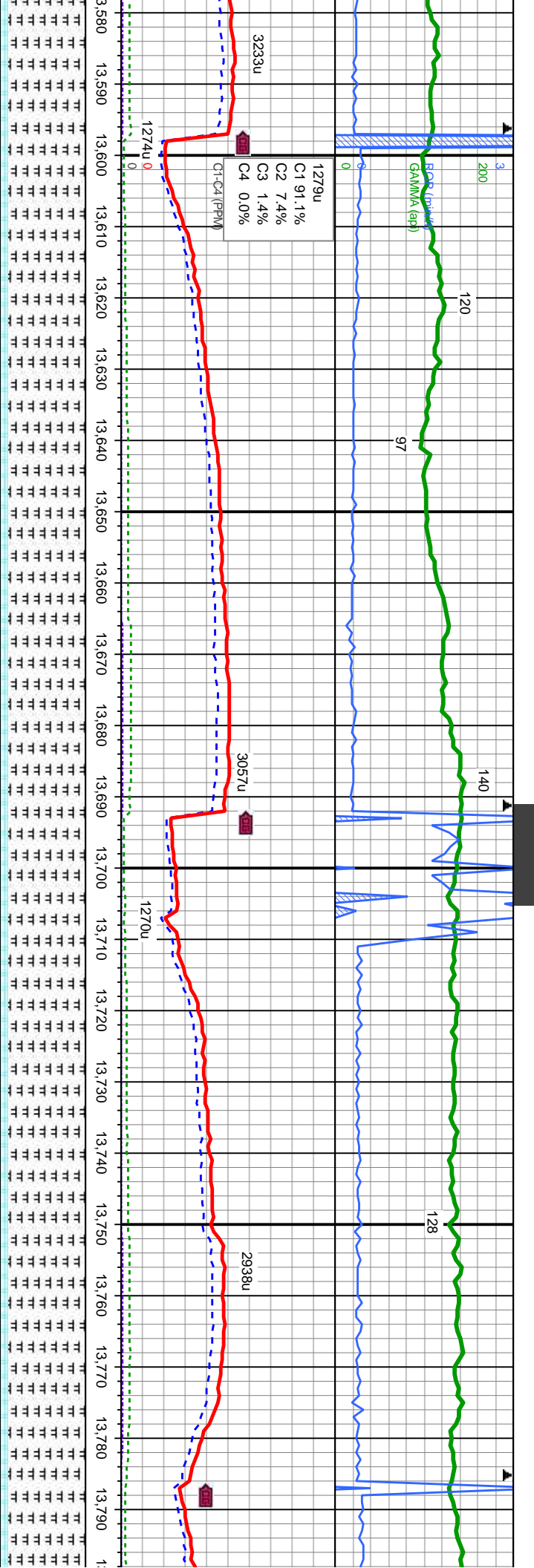
ly-biky, sft-frn, mod arg-sily, sl  
gy brn, mot, stri, sb biky-sb pity,  
lor w/ slw mlky halo cut

13400'-13500' MD: MRLST- med-dk gy-gy brn, sb pity-biky, sft-frn, mod arg-sily, sl  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb biky-sb pity,  
sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flr w/ slw mlky halo cut

13500'-13600' MD: MRLST- med-dk gy-gy brn, sb pity-biky, sft-frn, mod arg-sily, sl  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb biky-sb pity,  
sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flr w/ slw mlky halo cu







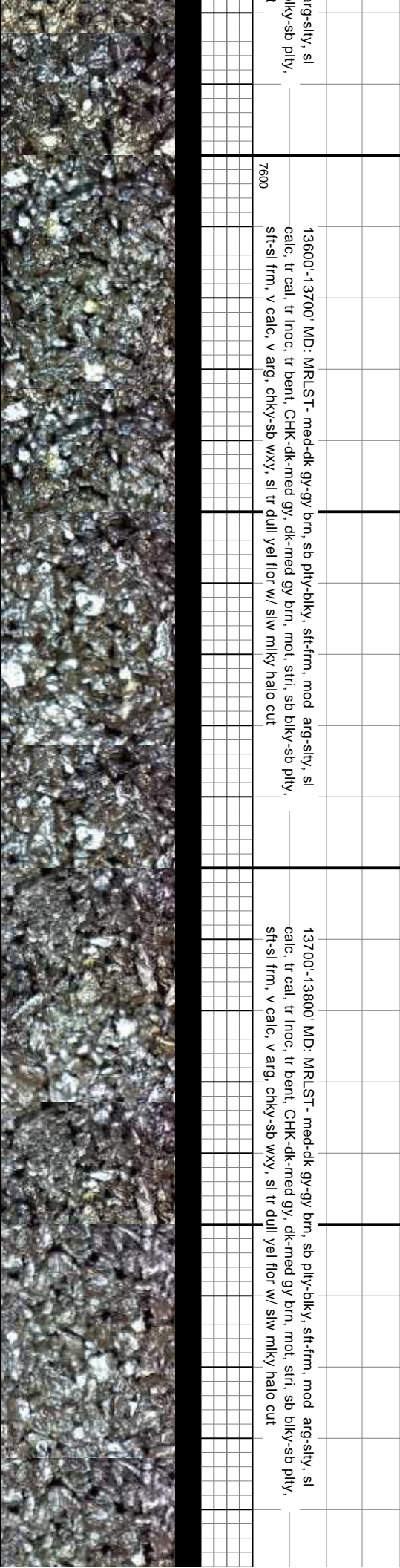
WT IN 9.3 OUT 9.3  
VIS IN 60 OUT 54

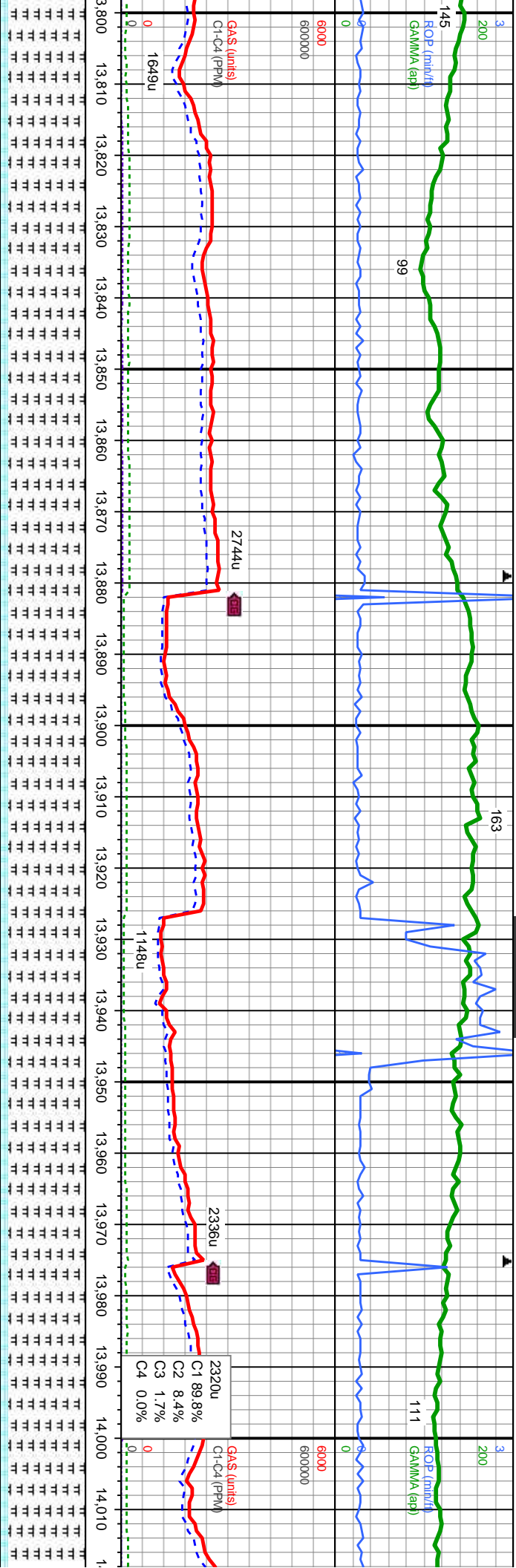
MD: 13.637  
TVD: 7,113.25  
Inclination: 90.46  
Azimuth: 357.39  
VS: 7,011.52

MD: 13.732  
TVD: 7,113.15  
Inclination: 89.66  
Azimuth: 358.34  
VS: 7,106.46

13600'-13700' MD: MRLST- med-dk gy-gy brn, sb pily-biky, sft-firm, mod arg-sily, sl calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb biky-sb pily, sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flor w/ slw mlky halo cut

13700'-13800' MD: MRLST- med-dk gy-gy brn, sb pily-biky, sft-firm, mod arg-sily, sl calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb biky-sb pily, sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flor w/ slw mlky halo cut





MD: 13,826  
TVD: 7,113.28  
Inclination: 90.18  
Azimuth: 358.67  
VS: 7,200.43

WT IN 9.3 OUT 9.4  
VIS IN 59 OUT 53

MD: 13,920  
TVD: 7,112.68  
Inclination: 90.55  
Azimuth: 358.29  
VS: 7,294.4

2320u  
C1 89.8%  
C2 8.4%  
C3 1.7%  
C4 0.0%

MD: 14,014  
TVD: 7,112.34  
Inclination: 89.  
Azimuth: 358.4  
VS: 7,388.36

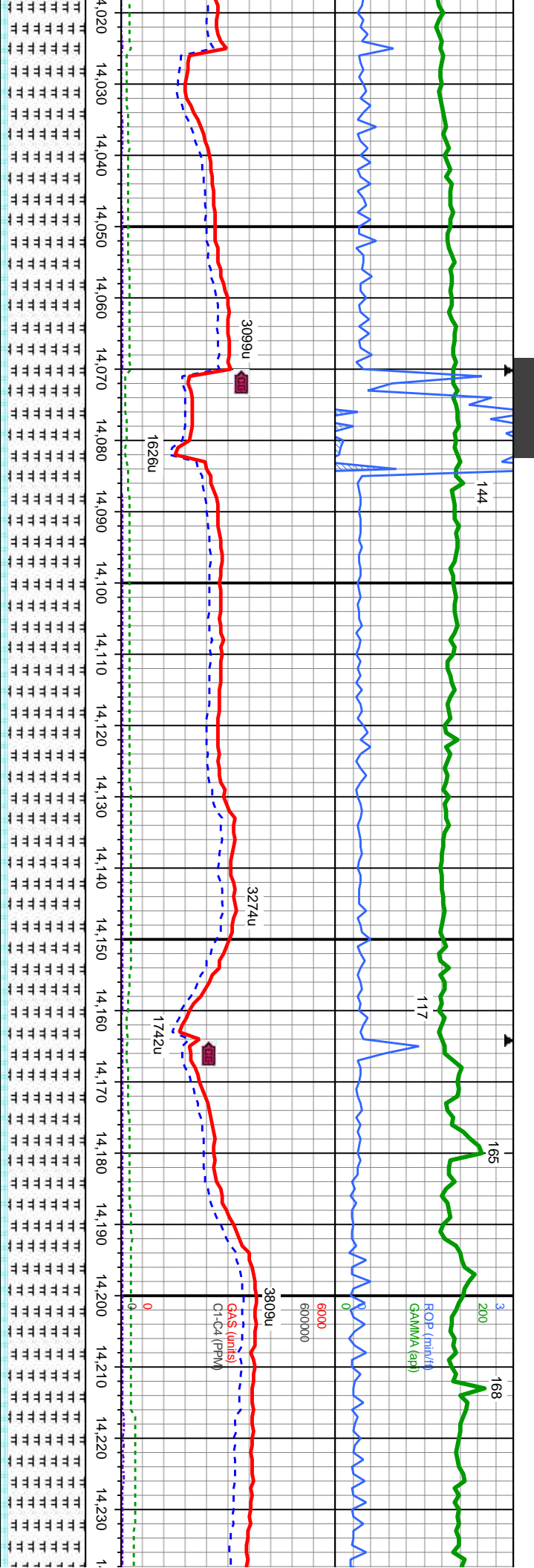
13800'-13900' MD: MRLST- med-dk gy-gy brn, sb pily-blky, sft-frn, mod arg-sily, sl  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb bkly-sb  
pily, sft-sl frn, v calc, v arg, chky-sb wxy, sl tr dull yel flr w/ slw mlky halo cut

13900'-14000' MD: MRLST- med-dk gy-gy brn, sb pily-blky, sft-frn, mod arg-sily, sl  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb bkly-sb  
pily, sft-sl frn, v calc, v arg, chky-sb wxy, sl tr dull yel flr w/ slw mlky halo cut

14000'-  
calc, tr  
pily, sft







MD: 14,109  
TVD: 7,113.03  
Inclination: 89.29  
Azimuth: 357.79  
VS: 7,483.31

WT IN 9.3+ OUT 9.3+  
VIS IN 58 OUT 57

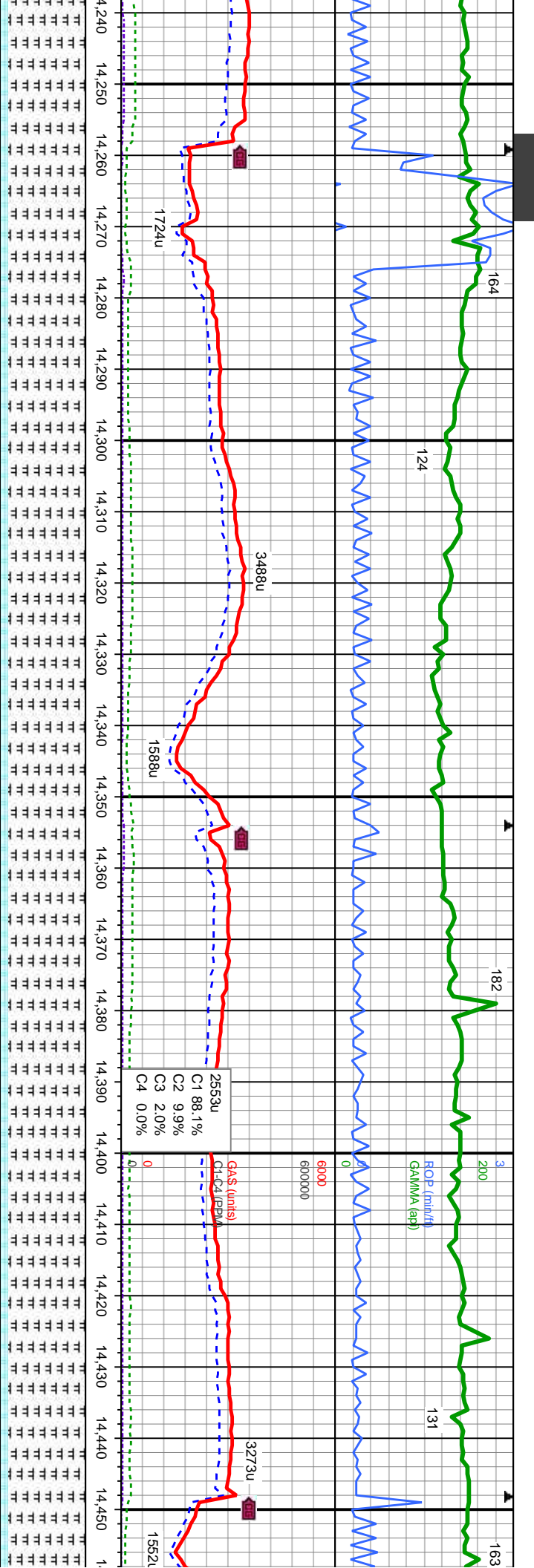
MD: 14,203  
TVD: 7,113.65  
Inclination: 89.96  
Azimuth: 357.52  
VS: 7,577.24

14100'-14200' MD: MRLST- med-dk gy-gy brn, sb pily-blky, sft-fm, mod arg-sily, sl  
calc, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb blky-sb  
sft-fm, v calc, v arg, chky-sb wxy, sl tr dull yel flr w/ slw mlky halo cut

14100'-14200' MD: MRLST- med-dk gy-gy brn, sb pily-blky, sft-fm, mod arg-sily, sl  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb blky-sb  
pily, sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flr w/ slw mlky halo cut

14200'-14300' MD: MRLST- m  
calc, tr cal, tr inoc, tr bent, CH  
pily, sft-sl frm, v calc, v arg, c





WT IN 9.3+ OUT 9.3+ VIS IN 58 OUT 58

MD: 14,298  
TVD: 7,114.35  
Inclination: 89.19  
Azimuth: 357.23  
VS: 7,672.14

WT IN 9.3+ OUT 9.3+ VIS IN 60 OUT 59

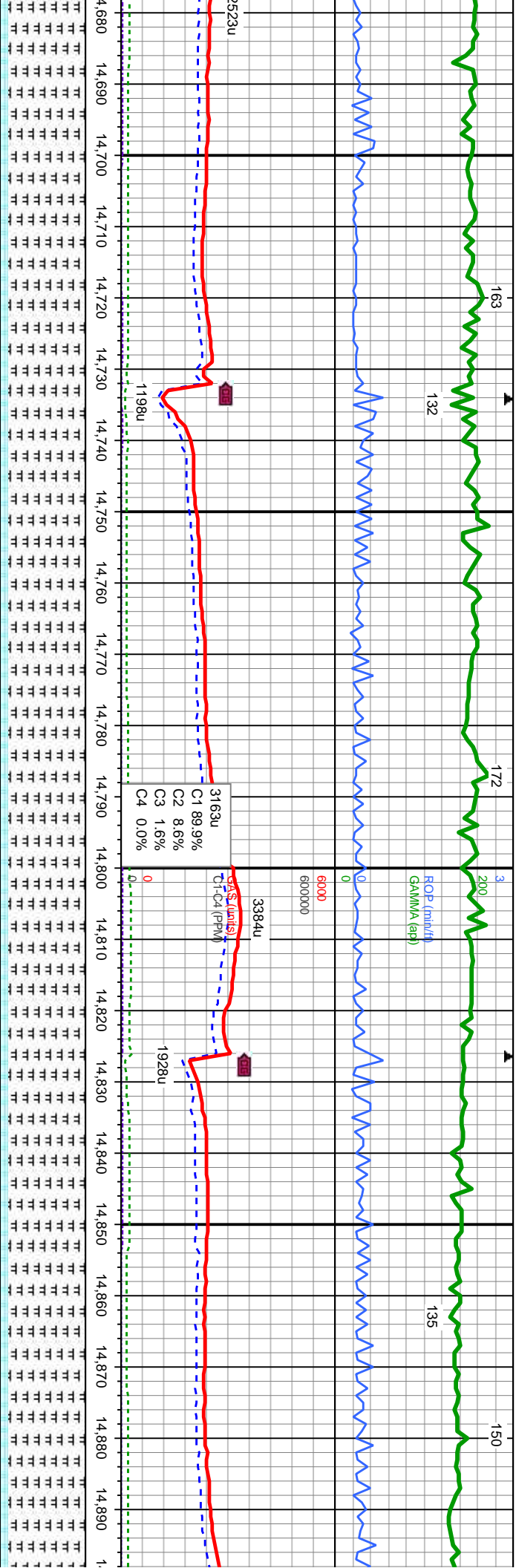
MD: 14,392  
TVD: 7,115.38  
Inclination: 89.56  
Azimuth: 367.3  
VS: 7,766.03

med-dk gy-gy brn, sb pily-blky, sft-firm, mod arg-sily, sl	14300'-14400' MD: MRLST- med-dk gy-gy brn, sb pily-blky, sft-firm, mod arg-sily, sl	14400'-14500' MD: MRLST- med-dk gy-gy brn, sb p
K-dk-med gy, dk-med gy brn, mot, stri, sb blky-sb	calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb blky-sb	calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-me
blky-sb wxy, sl tr dull yel flr w/ slw mlky halo cut	pily, sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flr w/ slw mlky halo cut	pily, sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull









WT IN 9.4  
VIS IN 59  
OUT 9.4  
OUT 60

WT IN 9.4+  
VIS IN 59  
OUT 9.4+  
OUT 58

WT IN 9.4+  
VIS IN 60  
OUT 9.4+  
OUT 60

MD: 14,769  
TVD: 7,116.88  
Inclination: 90.24  
Azimuth: 357.88  
VS: 8,142.63

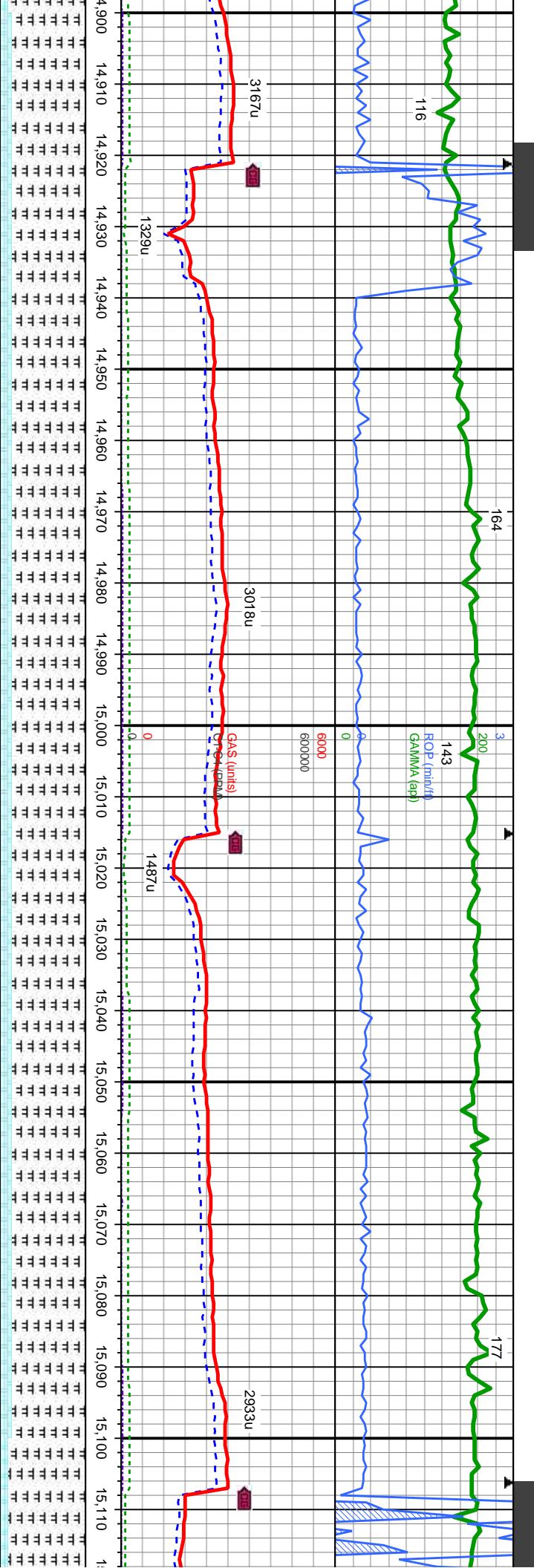
MD: 14,864  
TVD: 7,116.2  
Inclination: 90.58  
Azimuth: 357.73  
VS: 8,237.57

14700-14800 MD: MRLST- med-dk gy-gy brn, sb pily-biky, sft-fm, mod arg-sily, sl  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb biky-sb pily,  
sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flr w/ slw mlky halo cut

14800-14900 MD: MRLST- med-dk gy-gy brn, sb pily-biky, sft-fm, mod arg-sily, sl  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb biky-sb pily,  
sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flr w/ slw mlky halo cut







UT 9.4  
JT 58

6600

WT IN 9.4  
WIS IN 58

OUT  
OUT

MD: 14,958  
TVD: 7,116.42  
Inclination: 89.16  
Azimuth: 357.72  
VS: 8,331.5

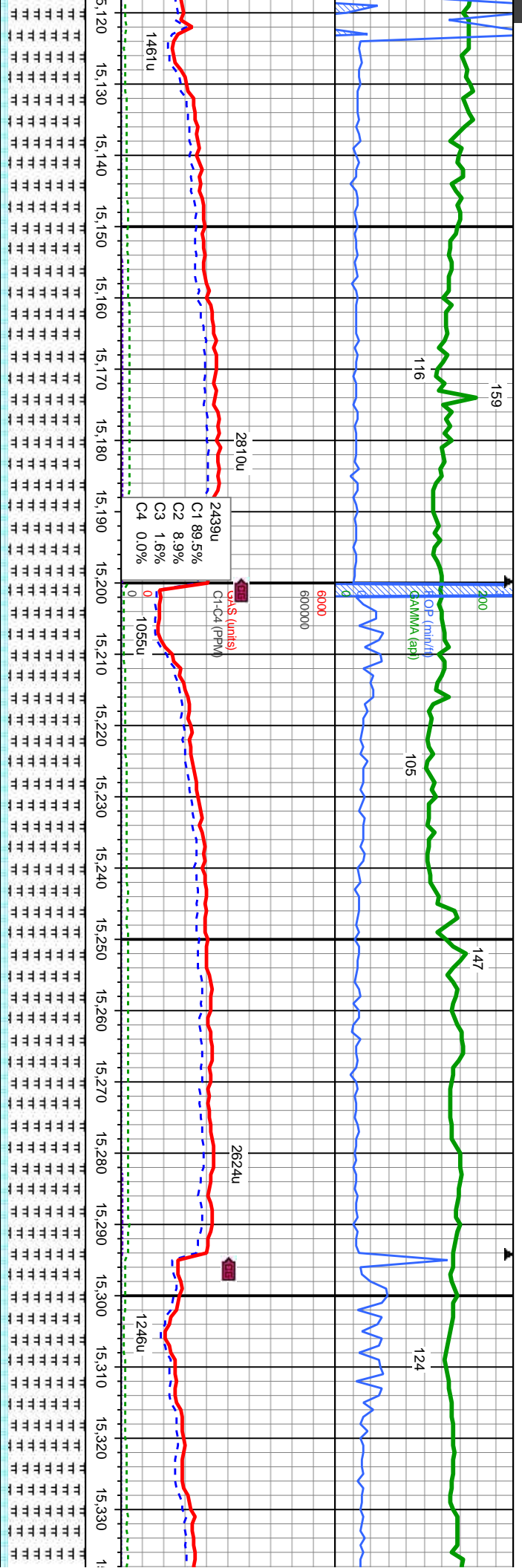
MD: 15,052  
TVD: 7,117.26  
Inclination: 89.81  
Azimuth: 357.84  
VS: 8,425.43

14900'-15000' MD: MRLST- med-dk gy-gy brn, sb pily-blky, sft-frm, mod arg-sily, sl  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb blky-sb  
pily, sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flor w/ slw mlky halo cut

15000'-15100' MD: MRLST- med-dk gy-gy brn, sb pily-blky, sft-frm, mod arg-sily, sl  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb blky-sb pily,  
sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flor w/ slw mlky halo cut

15100'-15110' MD: MRLST- med-dk gy-gy brn, sb pily-blky, sft-frm, mod arg-sily, sl  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb blky-sb pily,  
sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flor w/ slw mlky halo cut





9.4	56	6600	WT IN 9.5	OUT 9.5
MD: 15,147	TVD: 7,118.31	Inclination: 88.92	Azimuth: 357.81	VS: 8,520.36
MD: 15,241	TVD: 7,119.58	Inclination: 89.53	Azimuth: 357.57	VS: 8,614.28
MD: 15,336	TVD: 7,120.0	Inclination: 89.53	Azimuth: 356.57	VS: 8,709.22

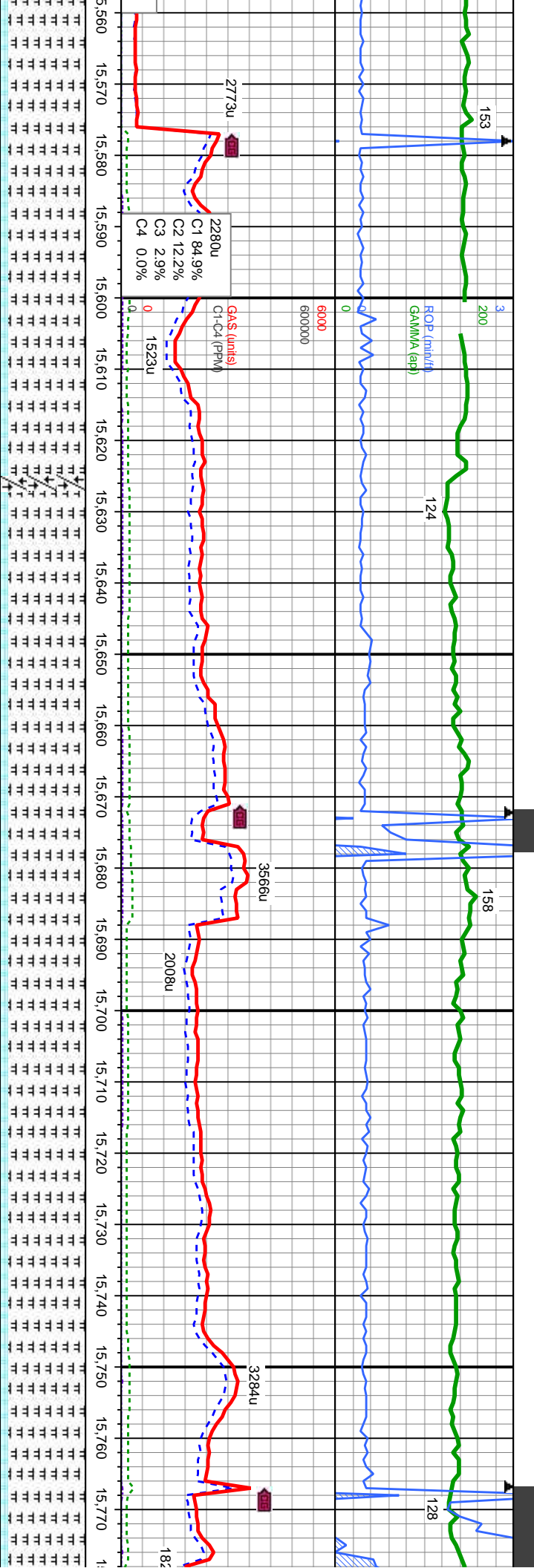
15200'-15300' MD: MRLST- med-dk gy-gy brn, sb pily-biky, sft-frn, mod arg-sily, sl  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb biky-sb  
pily, sft-sl frn, v calc, v arg, chky-sb wxy, sl tr dull yel flr w/ slw milky halo cut

15300'-15400' MD: MRLST- r  
calc, tr cal, tr inoc, tr bent, Ch  
sft-sl frn, v calc, v arg, chky-









WT IN 9.5 OUT 9.5  
VIS IN 56 OUT 52

MD: 15,618  
TVD: 7,119.75  
Inclination: 90.49  
Azimuth: 359.01  
VS: 8,991.14

MD: 15,713  
TVD: 7,118.45  
Inclination: 91.08  
Azimuth: 358.71  
VS: 9,086.11

WT IN 9.3  
VIS IN 58

bky, sft-frm, mod arg-sltv, sl  
v brn, mot, stri, sb bky-sb ply,  
w/ slw mlky halo cut

15600'-15700' MD: MRLST- med-dk gy-gy brn, sb ply-bky, sft-frm, mod arg-sltv, sl  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb bky-sb ply,  
sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flr w/ slw mlky halo cut

15700'-15800' MD: MRLST- med-dk gy-gy brn, sb ply-bky, sft-frm, mod  
calc, tr cal, tr inoc, tr bent, CHK-dk-med gy, dk-med gy brn, mot, stri, sb b  
sft-sl frm, v calc, v arg, chky-sb wxy, sl tr dull yel flr w/ slw mlky halo cu

