



Scale: 5" / 100'
Measured Depth Log

Well Name Steward 13C-6HZ

Location SEC7 T1N R65W

State COLORADO

County WELD

Country USA

Rig Number XTREME 8

API Number 05123395960000

AFE # 2080657

Region DJ BASIN

Field WATTENBERG

Spud Date 11/22/2014

Drilling Completed 12/1/2014

Surface Coordinates 442' FSL 1449' FWL

LAT/LONG 40.05986920/-104.71028860

Bottom Hole Coordinates 410' FSL 327' FWL

LAT/LONG 40.074349/-104.714960

Ground Elevation 5,004'

K.B. Elevation 5,021'

Logged Interval 6,800' To 12,832'

Total Depth 12,832

Formation CODELL

Type of Drilling Fluid LSND

Operator

Company ANADARKO PETROLEUM INC

Address 1099 18th St, Suite 1800
Denver , CO 80202

Geologist

Name MICHAEL CHISAM

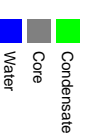
Company ANADARKO PETROLEUM INC

Address 1099 18th St, Suite 1800
Denver , CO 80202



































Other

WELLSITE GEOLOGISTS JASON BEACH, JOHN

























































Zone Color Coding



Rock Types

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

Accessories

 GASTROPOD	 ARGILLITE GRAIN	 HEAVY MINERAL	
 INOCERAMUS	 B BENTONITE	 K KAOLIN	
 ALGAE	 BITUMENOUS SUBSTANCE	 M MARCASITE	 ANHYDRITE STRINGER
 AMPHIPORA	 BRECCIA FRAGMENTS	 M MARLSTONE	 BENTONITE STRINGER
 BELEMNITE	 CALCAREOUS	 MICACEOUS	 COAL STRINGER
 BIOCLASTIC	 PELLET	 MINERAL CRYSTALS	 DOLOMITE STRINGER
 BRACHIOPOD	 PISOLITE	 NODULES	 GYPSUM STRINGER
 BRYOZOA	 PLANT REMAINS	 PHOSPHATE PELLETS	 LIMESTONE STRINGER
 CEPHALOPOD	 PLANT SPORES	 P PYRITE	 MARLSTONE (CALC) STRG
 CORAL	 SCAPHOPOD	 SALT CAST	 MARLSTONE (DOL) STRG
 CRINOID	 STROMATOPOROID	 SANDY	 SANDSTONE STRINGER
 ECHINOID	 FERRUGINOUS PELLET	 S SIDERITE	 SHALE STRINGER
 FISH	 FERRUGINOUS	 SILICEOUS	 SILTSTONE STRINGER
 FORAMINIFERA	 ANHYDRITIC	 SILTY	
 FOSSIL	 ARGILLACEOUS	 TUFFACEOUS	
	Minerals		

Oil Show

P PINPOINT
V VUGGY

Engine

D DEAD
EVEN
QUESTIONABLE
BIT

SPOTTED STAINING
CONNECTED

Porosity

CONNECTED

CONNE
CONN
TRIP GA
TRIP

F FRACTURE

INTERCRYSTALLINE
DOWN

INTEROOLITIC

MOLDIC

ORGANIC






































CORE - L

CORE - F

SABROSKE, TRACY LAWSON

Gas
Pressure
Seal

Other Symbols

TEST		DST INTERVAL		WIRELINE TESTED - LEFT		E EARTHY
		FAULT		WIRELINE TESTED - RT		FX FINELYXLN
Logging		FORMATION TOP		DRILL STEM TEST		GS GRAINSTONE
		GAS SHOW		MINDEPTH MN DEPTH		L LITHOGRAPHIC
		OIL SHOW				MX MICROXLN
		MNDEPTH MN DEPTH UP	Rounding			MS MUDSTONE
CTION (UP)						
CTION (DOWN)		MNDEPTH MN DEPTH (DOWN)		ANGULAR		PS PACKSTONE
CTION GAS		NORMAL FAULT		ROUNDED		WS WACKESTONE
LECTION GAS (LEFT)		OVERTURNED STRATA		SUBANG		
AS		REVERSE FAULT		SUBRND	Sorting	
GAS (LEFT)		CASING				M MODERATE
			Textures			
TIME GAS		SIDEWALL CORE (LEFT)				P POOR
N TIME GAS (LEFT)		SIDEWALL CORE (RIGHT)		BOUNDSTONE		W WELL
OST		SLIDE		CHALKY		
RECOVERED		SURVEY		CRYPTOXLN		

Slide/Rotate

ROP
ROP
GAMMA

COLUMBINE LOGGING 2 MAN RIGGED
UP @ 12:00 HRS 11/24/2014 BEGAN
LOGGING @ 06:44 HRS 11/25/2014
ROP & GAS DATA PROVIDED BY PASON
GAMMA & SURVEY DATA PROVIDED BY
BAKER HUGHES

Bit Data
Bit #: 1
Type: SD611
Size: 8.75
Depth In: 1,624
Jets: 6X18
S/N: JK0684

Total Gas & Chromatograph

GAS
C1
C2
C3
C4

Depth Labels

% Lith

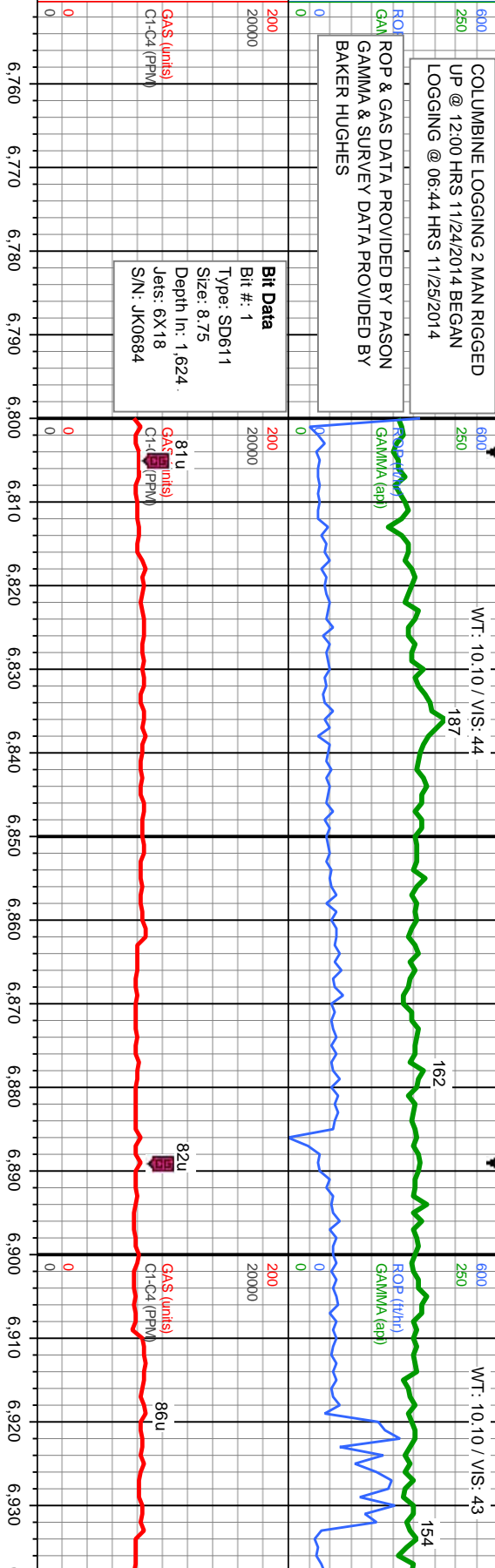
BEGAN DRILLING IN
PIERRE SHALE
50' SAMPLES

Well Bore
TVD

Oil Show

Images

E
G
M
F
T
S



Acetone was used
as the cutting agent
with the dimple filled
to the rim.
The ratings are based
on 7 descriptors:
None, Slight trace, Trace,
Fair, Moderate, Good, and
Excellent. The descriptor
used is based on the loggers
observations and best
judgment of brilliance,
color and longevity of the cut.

MD: 6,830
TVD: 6,722.1
Inclination: 11.23
Azimuth: 272.06
VS: -322.4

MD: 6,873
TVD: 6,764.14
Inclination: 13.26
Azimuth: 292.3
VS: -320.31

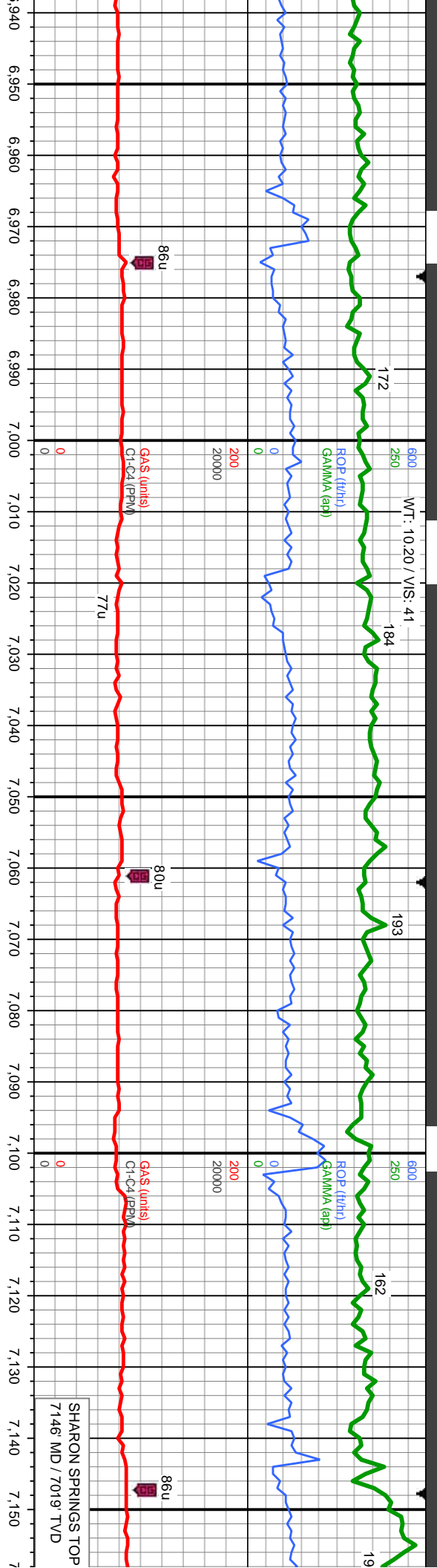
MD: 6,917
TVD: 6,806.77
Inclination: 15.41
Azimuth: 300.55
VS: -315.35

SLTY SH: med-dk gy, tr lt gy, sft-fm, sb blk-y-sb
plty, tr plty, med-v silty, tr sl sdy ip, v sl calc: v
slow string, pabl cut, thin dul bl/yel ring

SLTY SH: med-dk gy, tr lt gy, sft-fm, sb blk-y-sb
plty, tr plty, med-v silty, tr sl sdy ip, v sl calc: v
slow string, pabl cut, thin dul bl/yel ring

SLTY SH: med-dk gy, tr lt gy, sft-fm, s
plty, tr plty, med-v silty, tr sl sdy ip, v s s
slow string, pabl cut, thin dul bl/yel ring





MD: 6.960.
TVD: 6.848.02
Inclination: 17.43 -
Azimuth: 306.49 -
VS: -308.54.

MD: 7.002.
TVD: 6.887.85.
Inclination: 19.6 -
Azimuth: 316.8 -
VS: -299.59.

MD: 7.045.
TVD: 6.928.07.
Inclination: 21.9 -
Azimuth: 326.22 -
VS: -287.58.

MD: 7.088.
TVD: 6.967.57.
Inclination: 24.64 -
Azimuth: 331.5 -
VS: -272.95.

MD: 7.130.
TVD: 7.005.33.
Inclination: 27.27 -
Azimuth: 334.88 -
VS: -256.48.

SLTY SH: med-dk gy, tr lt gy, sft-frm, sb blk-y-sb
ply, tr ply, med-v silty, tr sl sdy ip, v sl calc:
slow mky string, pabl cut, dul bl/yel ring

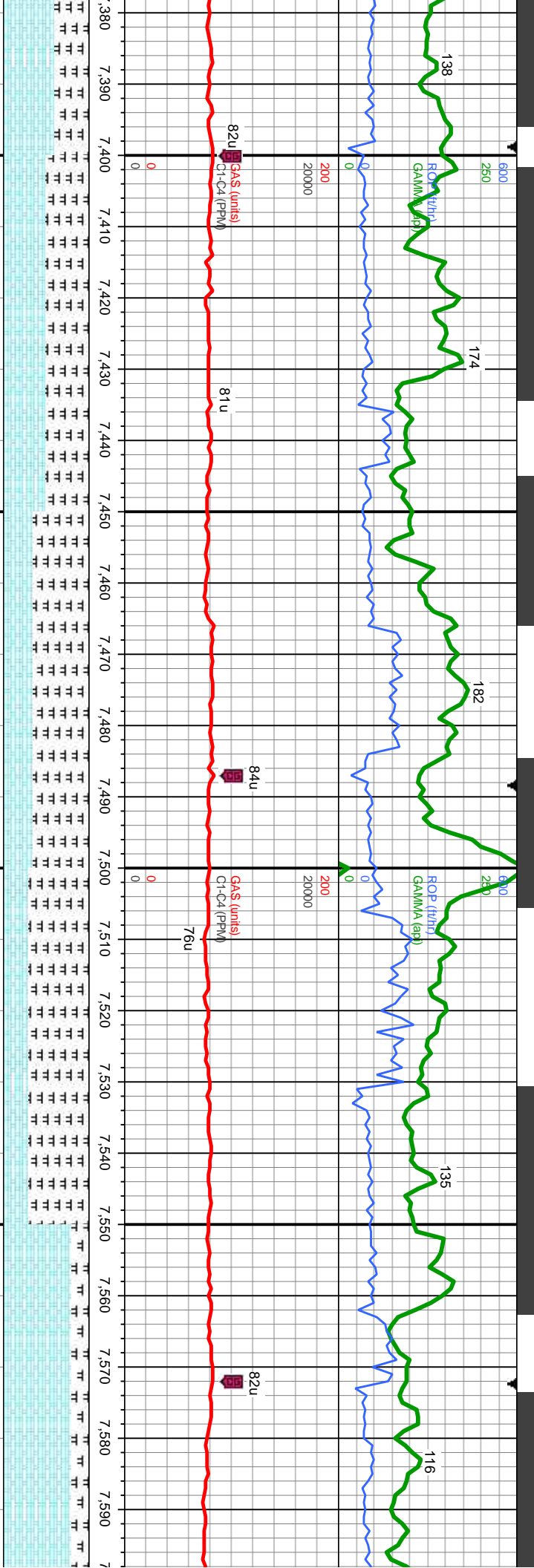
SLTY SH: med-dk gy, tr lt gy, sft-frm, sb blk-y-sb
ply, tr ply, med-v silty, tr sl sdy ip, v sl calc:
slow mky string, pabl cut, dul bl/yel ring

SLTY SH: med-dk gy, tr lt gy, sft-frm, sb blk-y-sb
ply, tr ply, med-v silty, tr sl sdy ip, v sl calc:
slow mky string, pabl cut, dul yel ring

SLTY SH: med-dk gy, tr lt gy, sft-frm, sb
blk-y-sb ply, tr ply, med-v silty, tr sl sdy ip, v
sl calc: abnt bent; slow mky string,
pabl cut, dul bl/yel ring

SLTY S
blk-y-sb
sl calc:
cut, dul





ID: 7.386.
VD: 7.208.17.
Inclination: 49.45 -
Azimuth: 347.69 -
VS: -109.23.

MD: 7.429.
TVD: 7.234.84.
Inclination: 53.88 -
Azimuth: 349.66 -
VS: -76.12.

MD: 7.473.
TVD: 7.259.89.
Inclination: 56.69 -
Azimuth: 350.83 -
VS: -40.43.

MD: 7.518.
TVD: 7.283.98.
Inclination: 58.58 -
Azimuth: 351.83 -
VS: -2.81.

MD: 7.562.
TVD: 7.305.77.
Inclination: 62.04 -
Azimuth: 352.86 -
VS: 35.1.

sb blkly-sb pily, sft-sl
med-dk gy-blk, sb
sily, v calc, tr cal
gy-bl cut, thn blgn

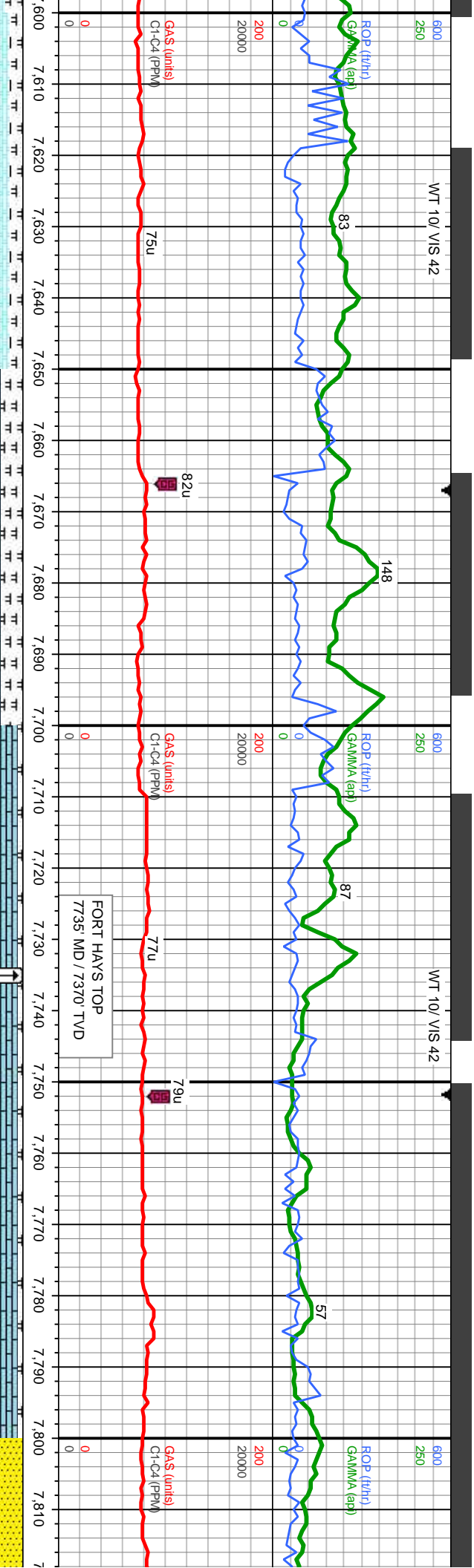
CHK: lt-gy-med gy, rthy tex, sb blkly-sb pily,
sft-sl frm, sl arg, v calc; MRLST: med-dk
gy-blk, sb blkly-sb pily, frm, mod arg, sl sily, v
calc, tr cal frags, tr bent; mod stmg, milky bl
cut, thn modblgn ring

MRLST: med-dk gy-blk, sb blkly-sb pily, frm, arg,
sl sily, mot, v calc, tr cal frags, rr bent; CHK:
med gy-lt gy, rthy tex, sb blkly-sb pily, sft-sl frm,
sl arg, v calc; mod fast stmg milky bl cut, bri
bl/wh ring

MRLST: med-dk gy-blk, sb blkly-sb pily, frm, arg, sl
sily, mot, v calc, tr cal frags, rr bent; CHK: med
gy-lt gy, rthy tex, sb blkly-sb pily, sft-sl frm, sl arg,
v calc; mod fast stmg milky bl cut, bri bl/wh ring

CHK: lt-gy-med gy, rthy tex, sb blkly-sb pily, sft-sl
frm, sl arg, v calc; MRLST: med-dk gy-blk, sb
blkly-sb pily, frm, mod arg, sl sily, v calc, tr cal
frags, tr bent; mod fast stmg milky bl cut, bri
bl/wh ring





MD: 7.607. TVD: 7.325.72 Inclination: 65.32 - Azimuth: 353.83 - VS: 75.19	MD: 7.650. TVD: 7.342.68 Inclination: 68.23 - Azimuth: 354.06 - VS: 114.51	MD: 7.692. TVD: 7.357.42 Inclination: 70.67 - Azimuth: 355.43 - VS: 153.7	MD: 7.736. TVD: 7.370.72 Inclination: 74.14 - Azimuth: 356.22 - VS: 195.55	MD: 7.779. TVD: 7.381.01 Inclination: 78.17 - Azimuth: 357.21 - VS: 237.24	MD TV Incl Azi VS
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CHK: lt-gy-med gy, rthy tex, sb blk-y-sb pily, sft-sl frm, sl arg, v calc; MRLST: med-dk gy-blk, sb blk-y-sb pily, frm, mod arg, sl sily, v calc, tr cal frags, tr bent; mod strng, milky bl cut, thn modbl/wt ring	CHK: lt-gy-med gy, rthy tex, sb blk-y-sb pily, sft-sl frm, sl arg, v calc; MRLST: med-dk gy-blk, sb blk-y-sb pily, frm, mod arg, sl sily, v calc, tr cal frags, tr bent; LS: crm-lt gy-lt brn, sub pily-pily, tr sb blk-y, frm-brit,v calc; CHK: lt-gy-med gy, rthy tex, sb blk-y-sb pily, sft-sl frm, sl arg, v calc; MRLST: med-dk gy-blk, sb blk-y-sb pily, frm, mod arg, sl sily, v calc, tr cal frags, tr bent; fast stmg milky bl cut, thk bl ring	LS: crm-lt gy-lt brn, sub pily-pily, tr sb blk-y, frm-brit,v calc; CHK: lt-gy-med gy, rthy tex, sb blk-y-sb pily, sft-sl frm, sl arg, v calc; MRLST: med-dk gy-blk, sb blk-y-sb pily, frm, mod arg, sl sily, v calc, tr cal frags, tr bent; fast stmg milky bl cut, thk bl ring	SS: gy brn - dk gy calc; LS: crm-lt gy frm-brit,v calc; MRLST: med-dk gy-blk, sb blk-y-sb pily, frm, mod arg, bent; fast stmg milky
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MINDEPTH
11/26/14

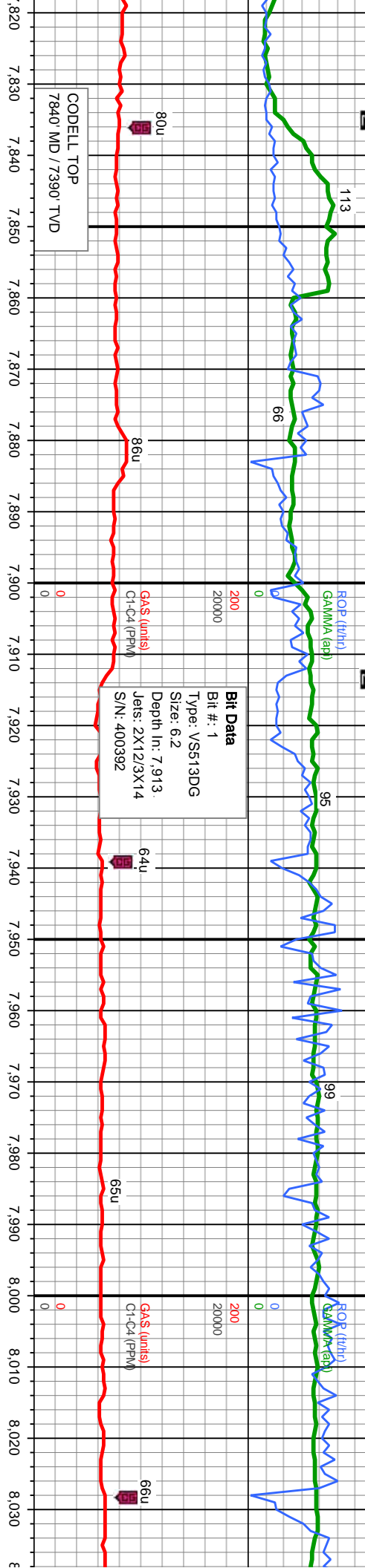
TD CURVE @ 7913 MD
01:06 HRS 11/26/2014

MINDEPTH
11/27-30/14

DRILLED OUT OF INTERMEDIATE CASING
@ 02:37 HRS 11/30/2014

WT 9.8/ VIS 46

600
250



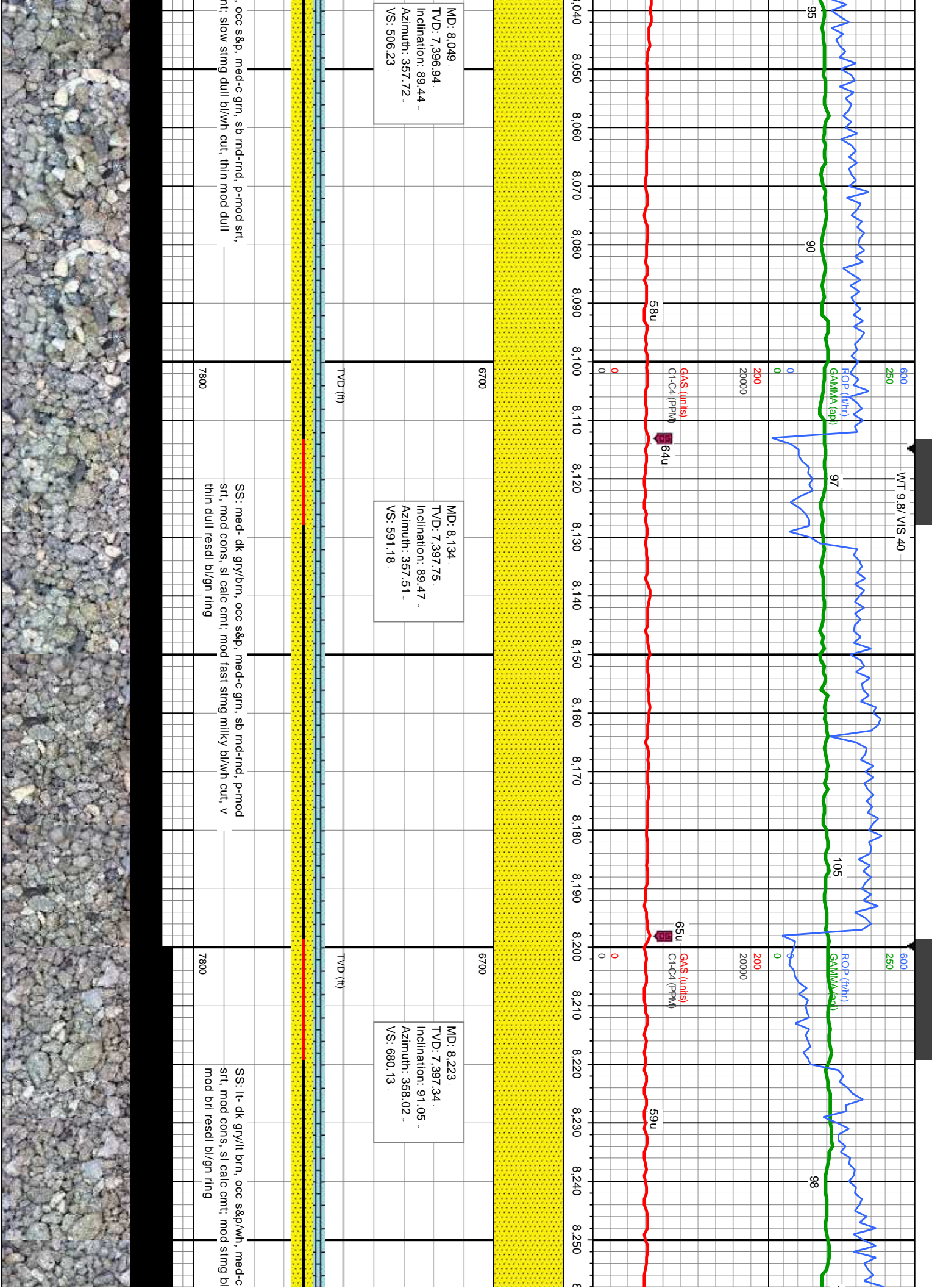
CODELL TOP
7840' MD / 7390' TVD

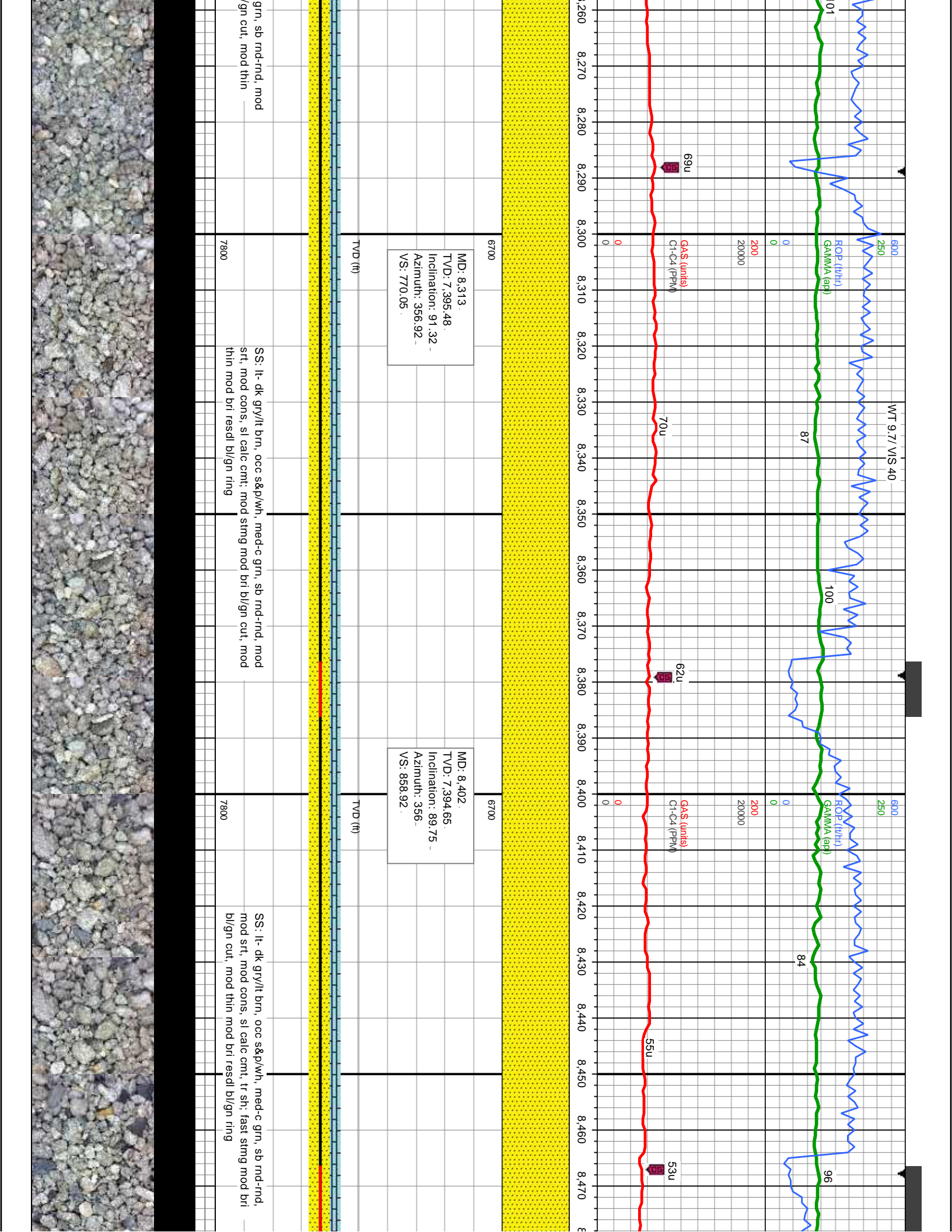
Bit Data
Bit #: 1
Type: VS513DG
Size: 6.2
Depth In: 7,913.
Jets: 2X12/3X14
S/N: 400392

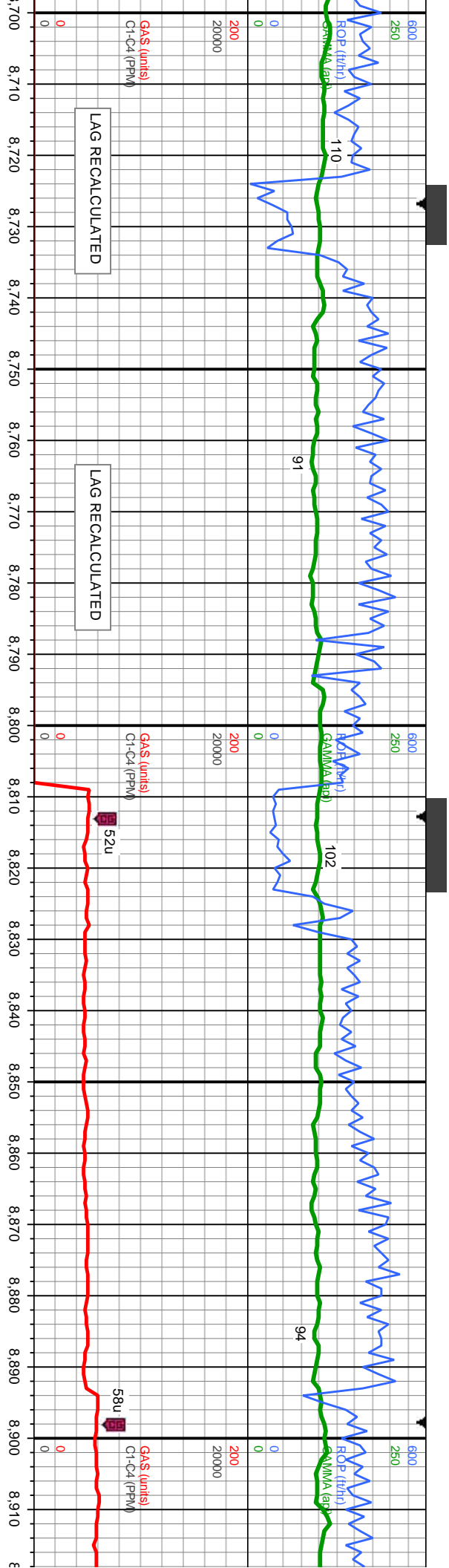
MD: 7.823. TVD: 7.388.35. Inclination: 82.6 Azimuth: 358.41 VS: 280.59.	MD: 7.853. TVD: 7.391.41. Inclination: 85.71 Azimuth: 358.09 VS: 310.42.	MD: 7.913. TVD: 7.393.71. Inclination: 89.9 Azimuth: 358.83 VS: 0.	MD: 7.964. TVD: 7.396.11. Inclination: 89.44 Azimuth: 358.3 VS: 421.27.
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sb ang, p srt, sl fri, arg cmt, sl lt brn, sub ply-pty, tr sb blkly, RLST: med-dk gy-blk, sb blkly-sb sl sily, v calc, tr cal frags, tr kly bl cut, thk bl ring	SS: gy brn - dk gy, sb ang, p srt, sl fri, arg cmt, sl calc; LS: cmt-it gy-lt brn, sub ply-pty, tr sb blkly, frm-brlt, v calc; MRLST: med-dk gy-blk, sb blkly-sb ply, frm, mod arg, sl sily, v calc, tr cal frags, tr bent, fast smng milky bl cut, thk bl ring	SS: med- dk gry/brn, med-c grn, sb rnd-rnd, p-mod srt, mod cons, sl calc cmt; fast smng milky bl cut, thk bl ring	SS: med- dk gry/brn mod cons, sl calc cr resd bl/gn ring
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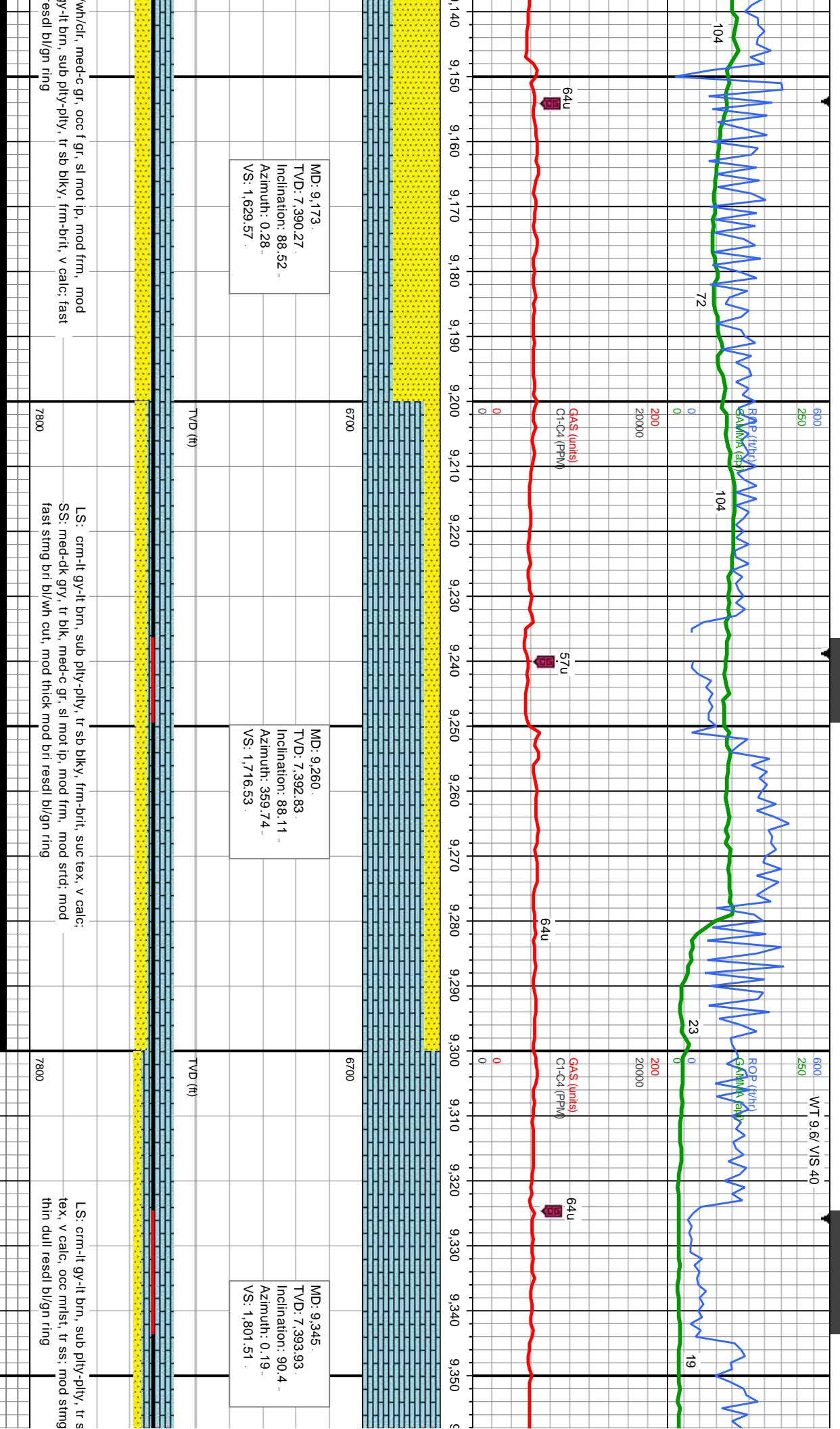
MD: 8,747.
TVD: 7,394.38
Inclination: 90.83
Azimuth: 359.44
VS: 1,203.72

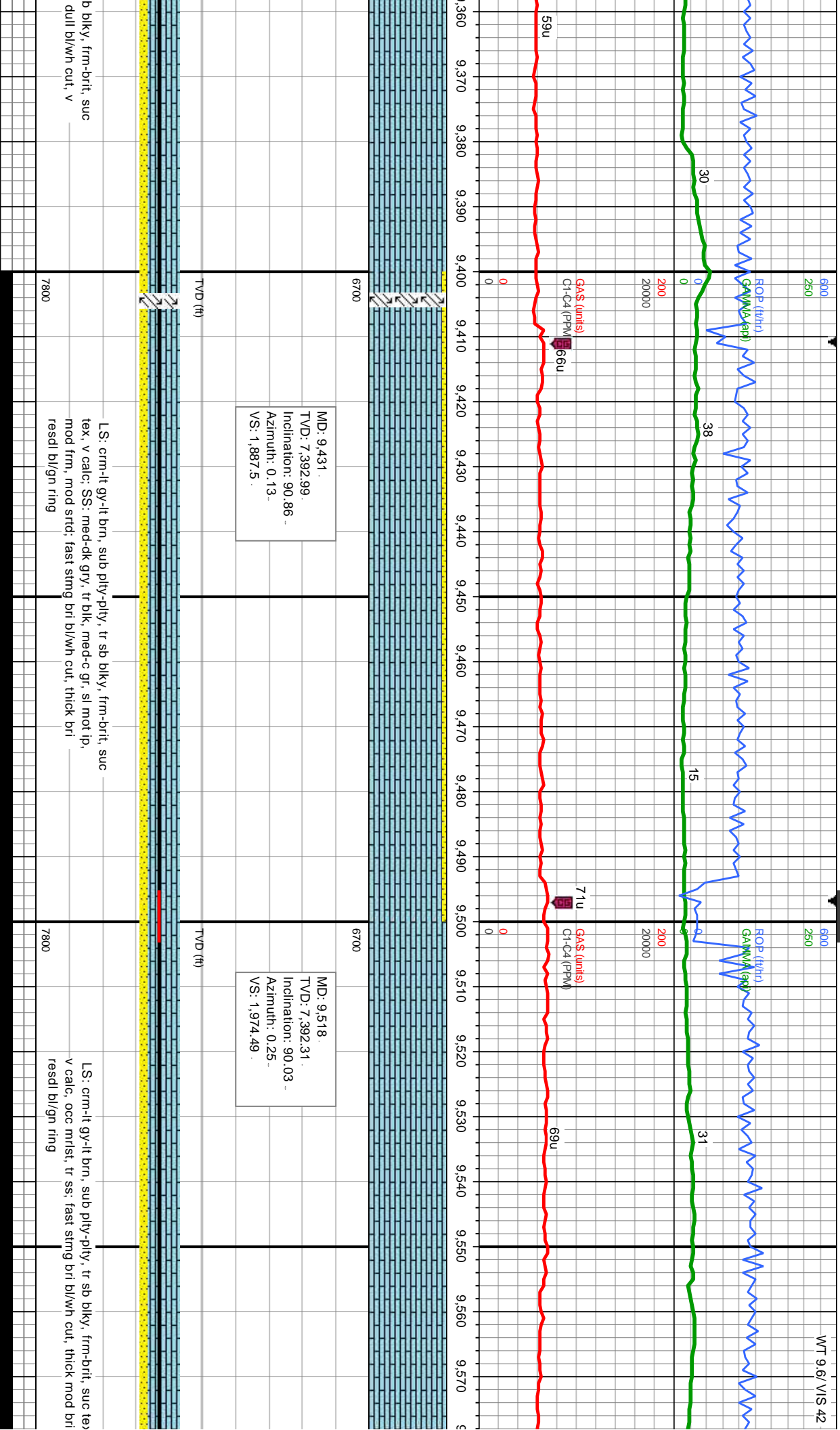
MD: 8,832.
TVD: 7,393.06
Inclination: 90.95
Azimuth: 0.61
VS: 1,288.71

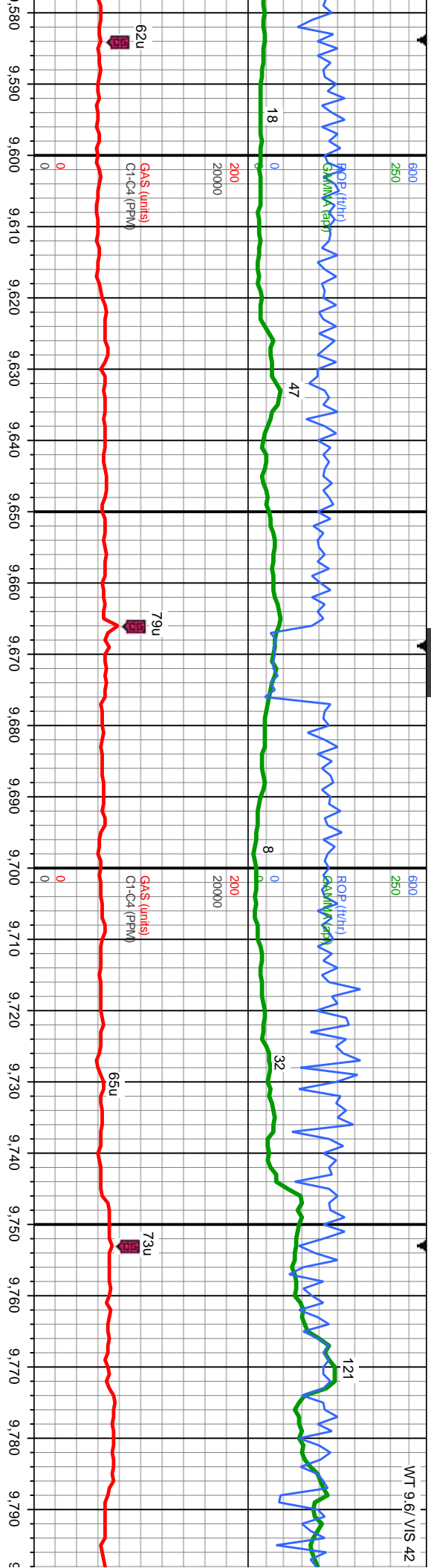
MD: 8,917.
TVD: 7,391.
Inclination:
Azimuth: 0
VS: 1,373.6

SS: lt- dk gry/lt brn, occ s&p/wh/clr, med-c grn, sb rnd-rnd, mod srt, mod cons, sl calc cnt, occ sh; mod milky mod bri bl/wh cut, v thin faint resd bl/gn ring

SS: lt- dk gry/lt brn, occ s&p/wh/clr, med-c grn, sb rnd-rnd, mod srt, mod cons, sl calc cnt, occ sh; fast stmg bri bl/wh cut, mod thick bri resd bl/gn ring







MD: 9.603.
TVD: 7,391.88.
Inclination: 90.55 -
Azimuth: 0.01 -
VS: 2,059.49 .

MD: 9.689.
TVD: 7,392.1
Inclination: 89.16 -
Azimuth: 359.48 -
VS: 2,145.49 .

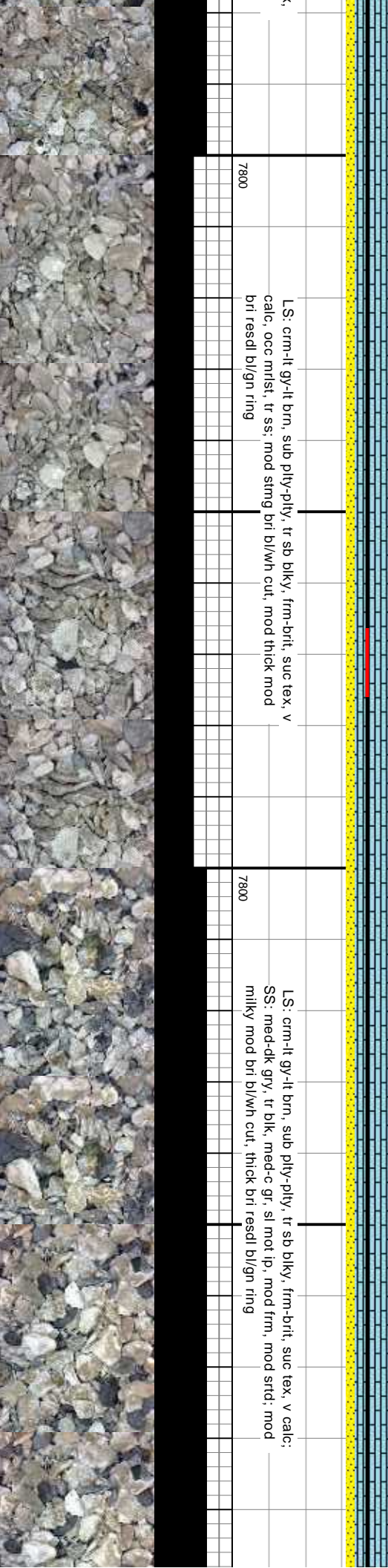
MD: 9.776.
TVD: 7,392.69
Inclination: 90.06 -
Azimuth: 359.27 -
VS: 2,232.48 .

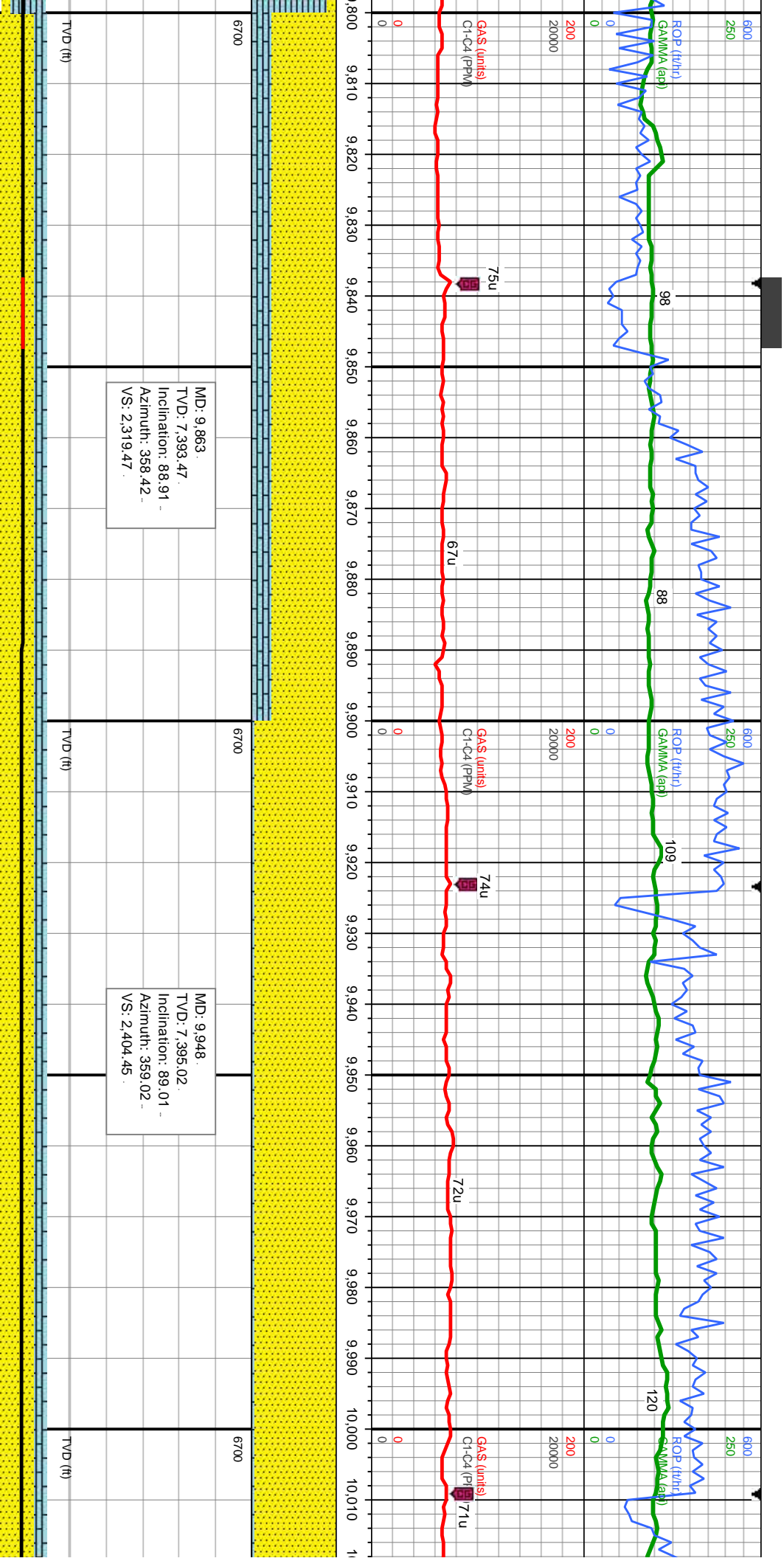
TVD (ft)

TVD (ft)

L.S: crm-lt gy-lt brn, sub plty-plty, tr sb blkly, frm-brit, suc tex, v calc, occ mlst, tr ss: mod stmg bri bl/wh cut, mod thick mod bri resd bl/gn ring

L.S: crm-lt gy-lt brn, sub plty-plty, tr sb blkly, frm-brit, suc tex, v calc; SS: med-dk gry, tr blk, med-c gr, sl mot ip, mod frm, mod strd; mod milky mod bri bl/wh cut, thick bri resd bl/gn ring

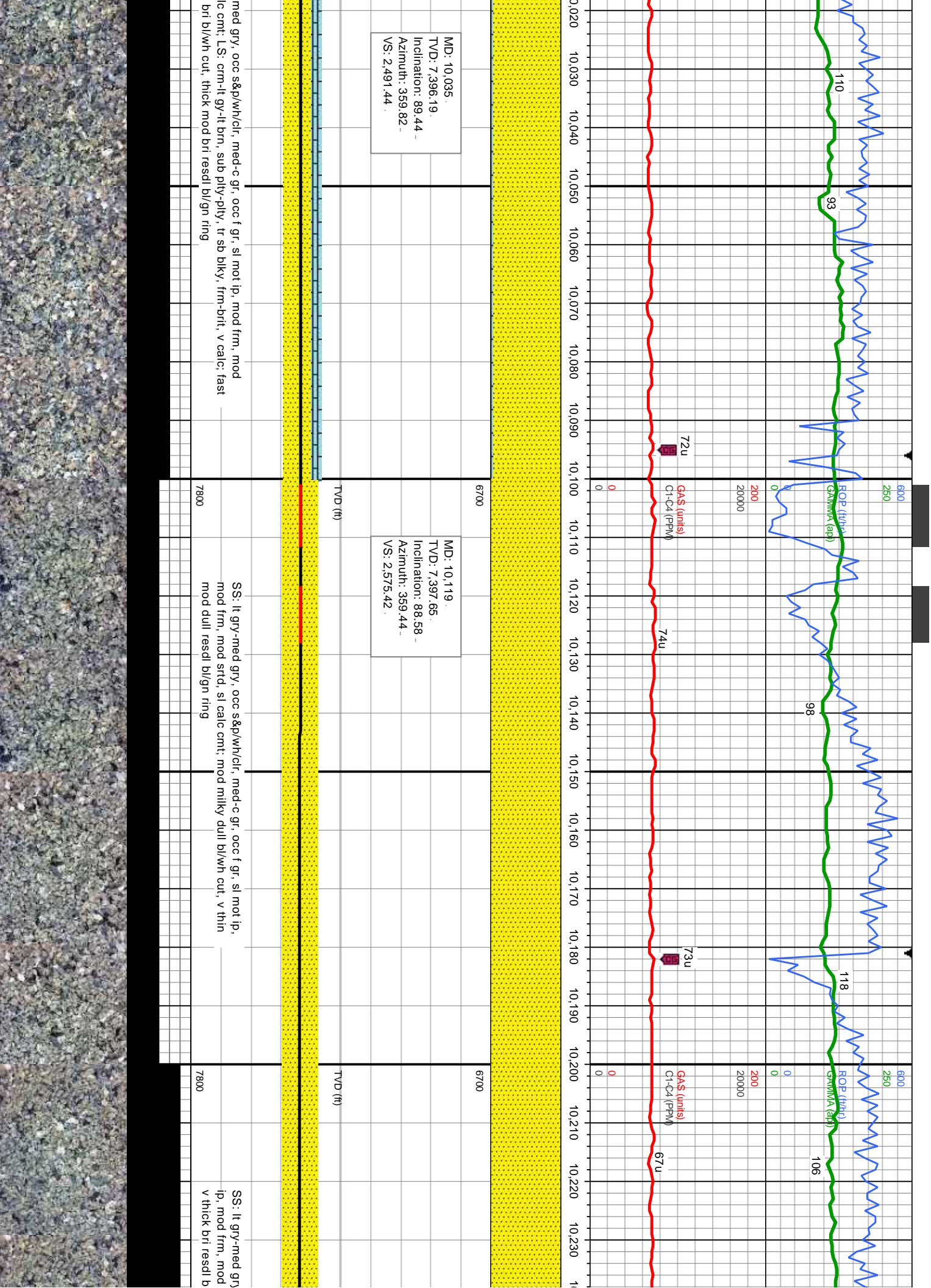


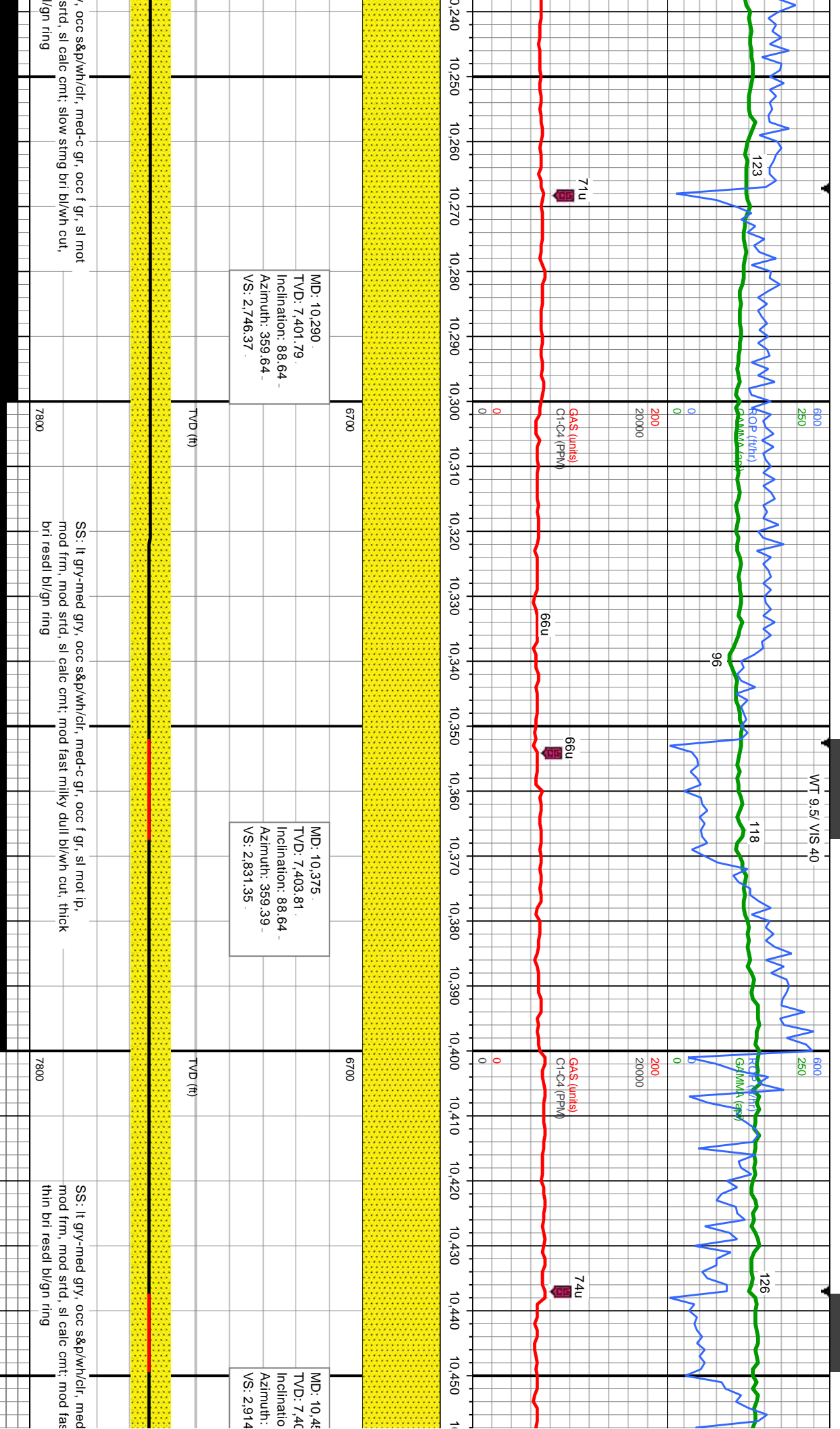


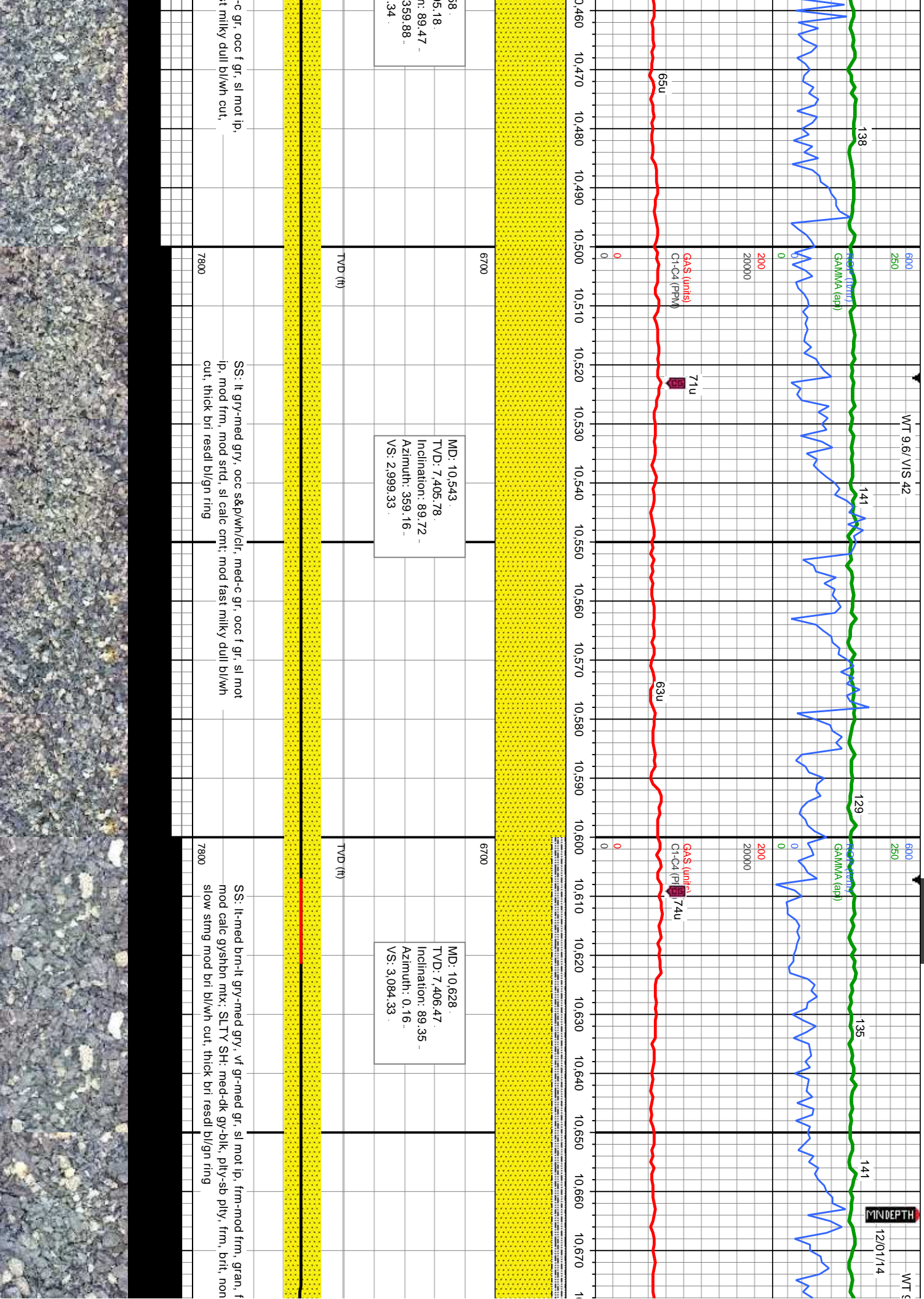
SS: lt gry-med gry, occ s&p/wh/clr, med-c gr, occ f gr, sl mot ip, mod frm, mod
strd, sl calc cnt; LS: crm-lt gy-it brn, sub ply-pty, tr sb blkly, frm-brit, v calc; mod
milky mod bri bl/wh cut, mod thick mod bri resd bl/gn ring

SS: lt gry-med gry, occ s&p/wh/clr, med-c gr, occ f gr, sl mot ip, mod frm, mod
strd, sl calc cnt; LS: crm-lt gy-it brn, sub ply-pty, tr sb blkly, frm-brit, v calc; mod
milky mod bri bl/wh cut, thin mod bri resd bl/gn ring

SS: lt gry-
strd, sl ca
slimg mod

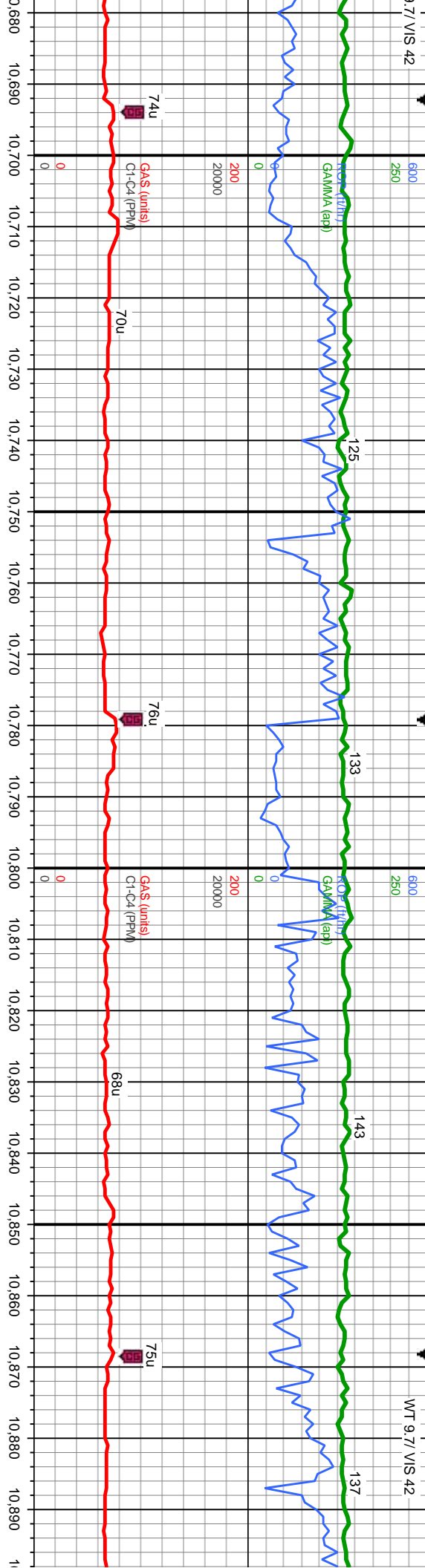






7/ VIS 42

WT 9/7 VIS 42



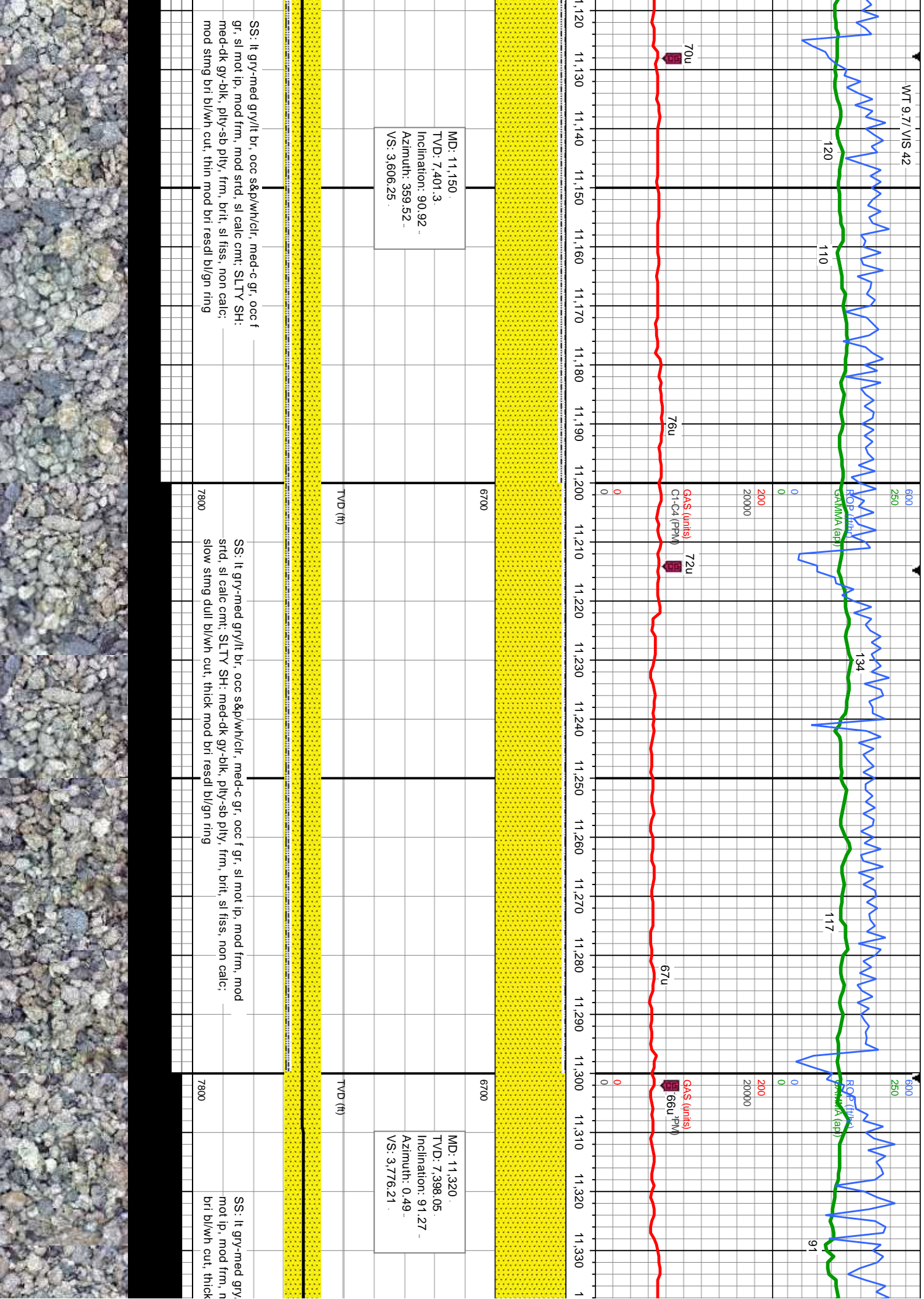
MD: 10,716.
TVD: 7,407.14.
Inclination: 89.78 -
Azimuth: 0.11 -
VS: 3,172.32.

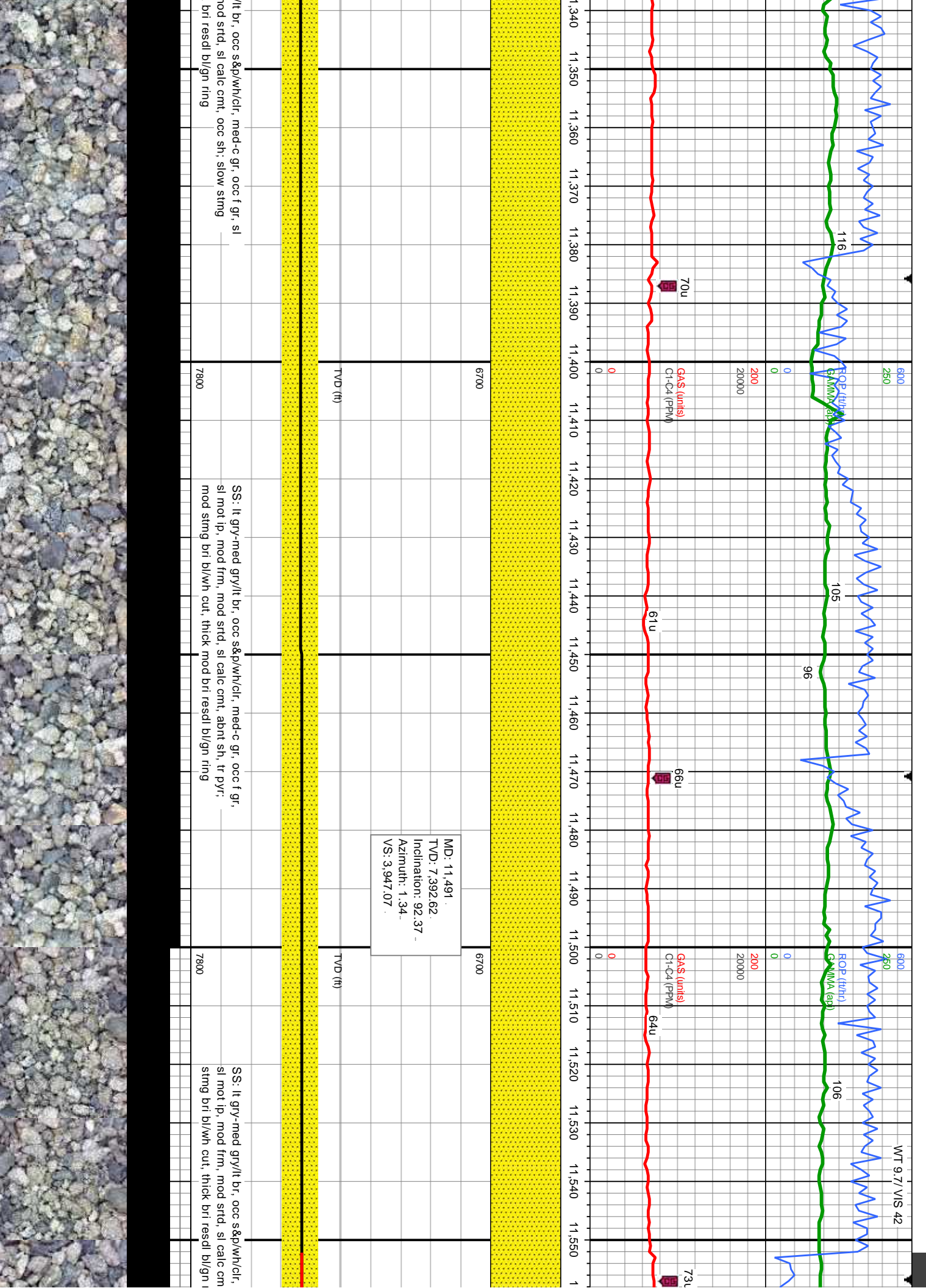
MD: 10,805.
TVD: 7,406.62.
Inclination: 90.89 -
Azimuth: 0.07 -
VS: 3,261.32.

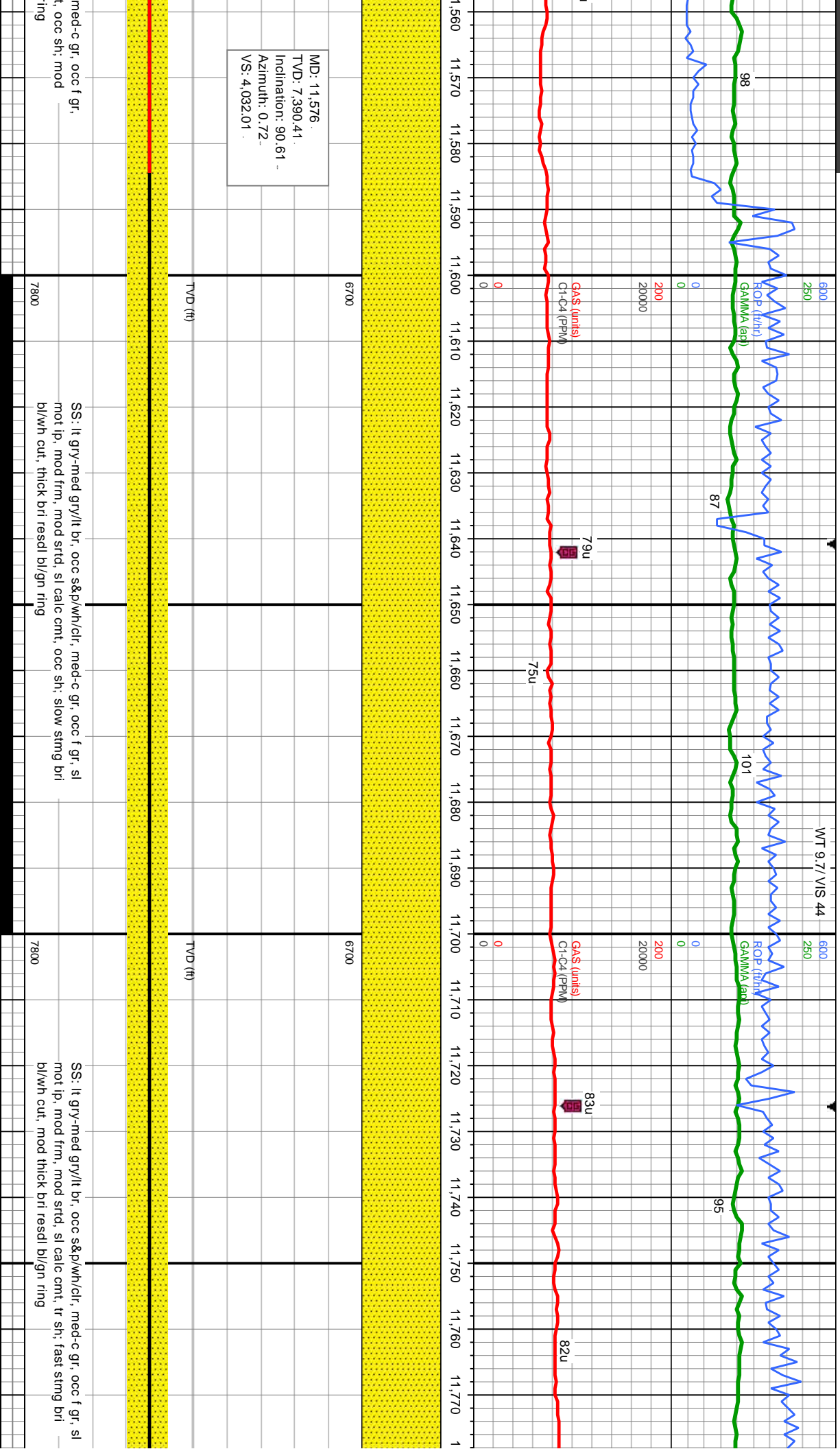
MD: 10,892.
TVD: 7,405.74.
Inclination: 90.27 -
Azimuth: 0.65 -
VS: 3,348.3.

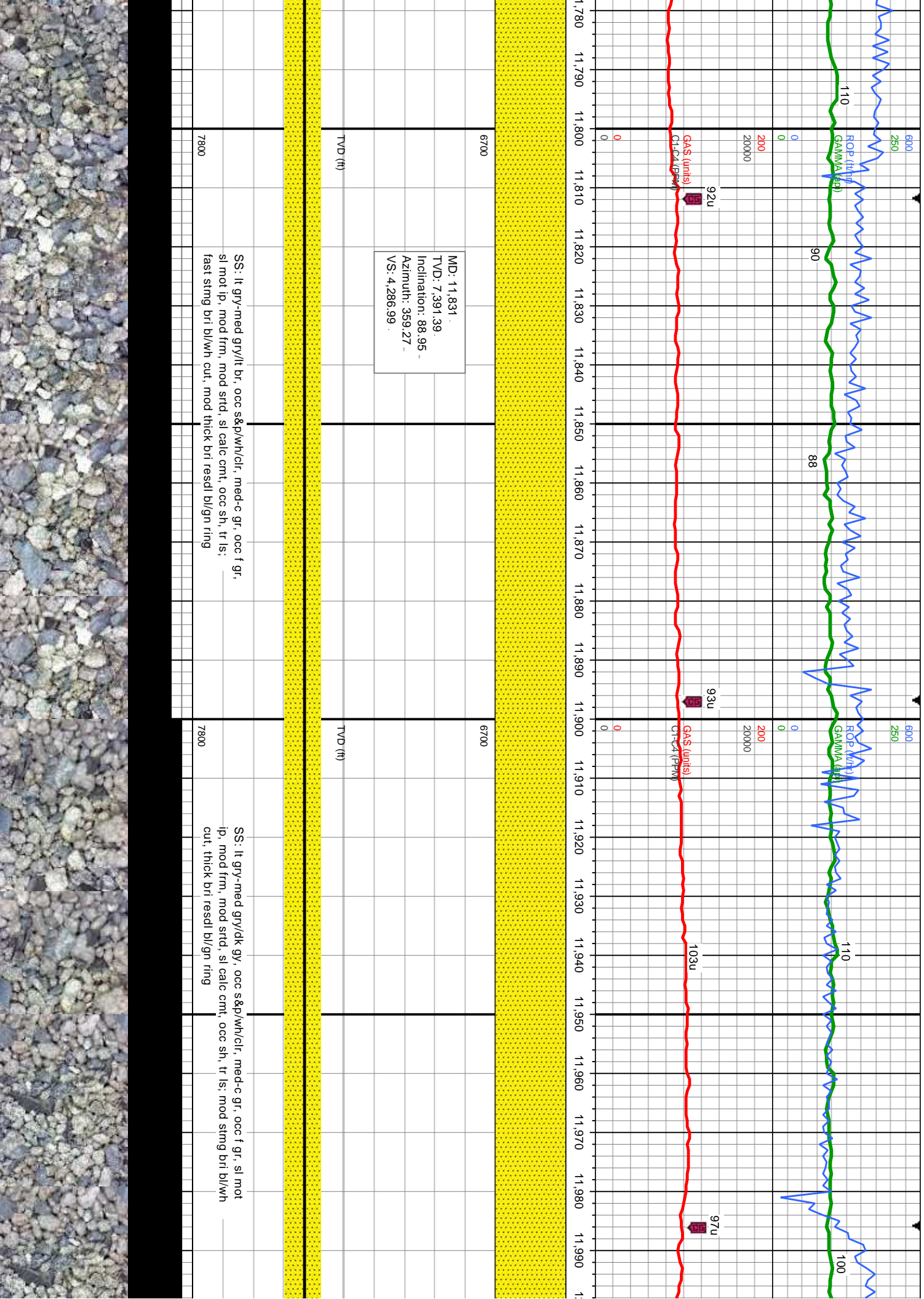
TVD (ft)	
6700	
SS: lt-med brn-lt gry-med gry, v/ gr-med gr, sl mot ip, frm-mod frm, gran, fr strt, brit, mod calc gysbn mtx; SLTY SH: med-dk gy-blk, pty-sb pty, frm, brit, non calc; mod slow sting mod bri bl/wh cut, thick bri resdl bl/gn ring	
7800	
TVD (ft)	
6700	
SS: lt-med brn-lt gry-med gry, v/ gr-med gr, sl mot ip, frm-mod frm, gran, fr strt, brit, mod calc gysbn mtx; SLTY SH: med-dk gy-blk, pty-sb pty, frm, brit, non calc; mod slow sting mod bri bl/wh cut, thick bri resdl bl/gn ring	
7800	







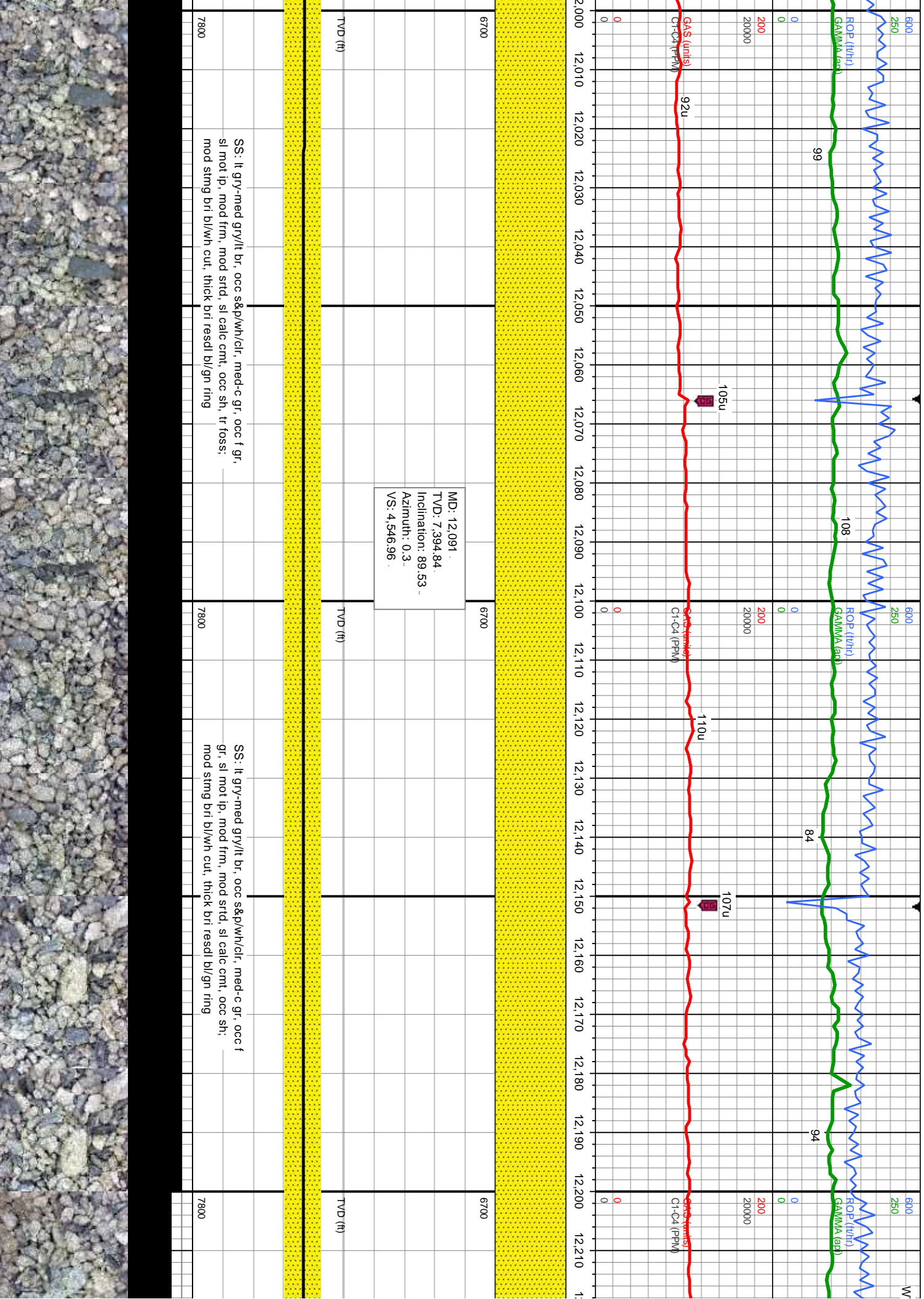




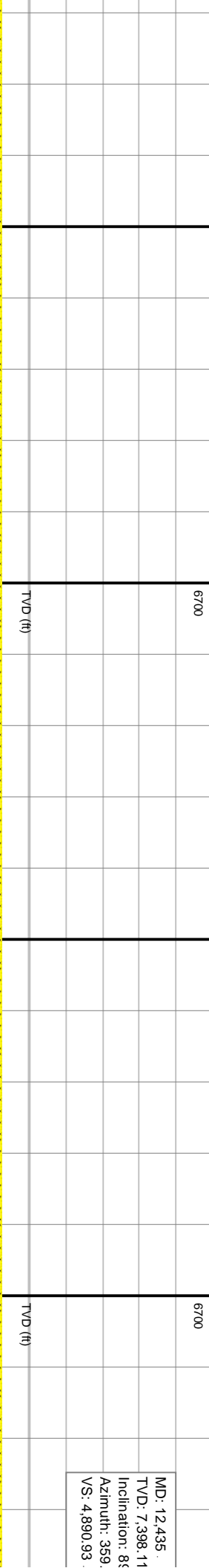
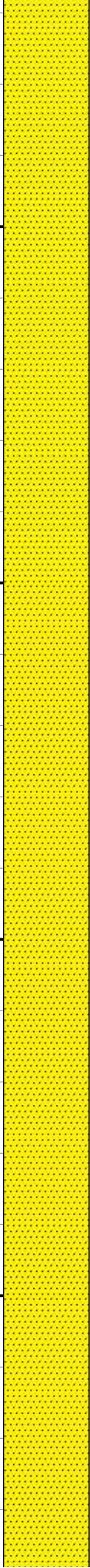
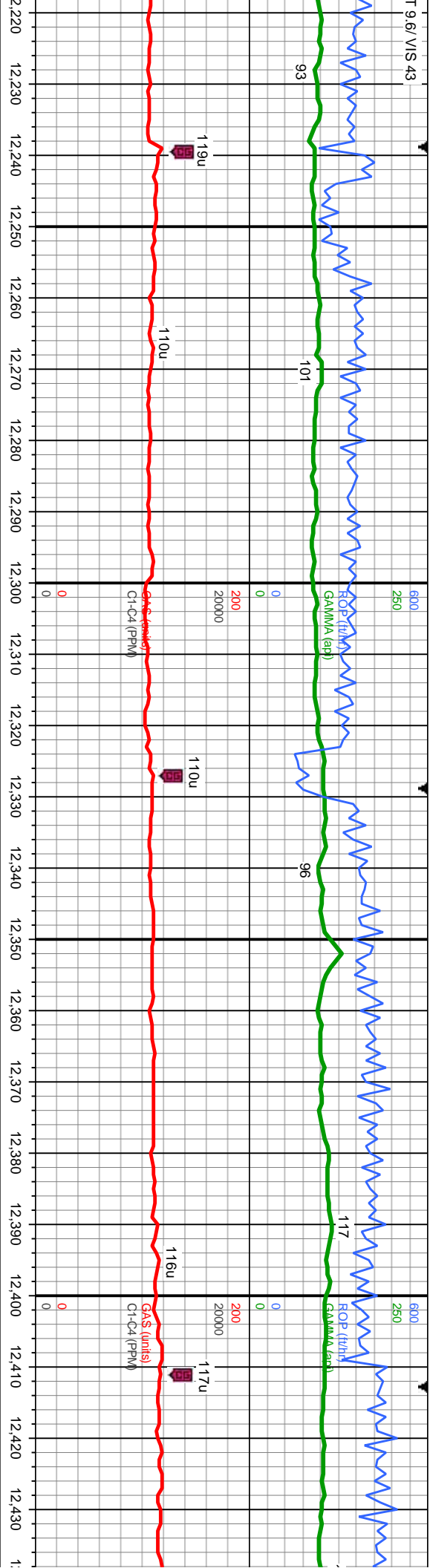
MD: 11,831
TVD: 7,391.39
Inclination: 88.95
Azimuth: 359.27
VS: 4,286.99

SS: lt gry-med gry/lt br, occ s&p/wh/clr, med-c gr, occ f gr, sl mot ip, mod frm, mod srtf, sl calc cnt, occ sh, tr ls; fast string bri bl/wh cut, mod thick bri resdl bl/gn ring

SS: lt gry-med gry/dk gy, occ s&p/wh/clr, med-c gr, occ f gr, sl mot ip, mod frm, mod srtf, sl calc cnt, occ sh, tr ls; mod string bri bl/wh cut, thick bri resdl bl/gn ring



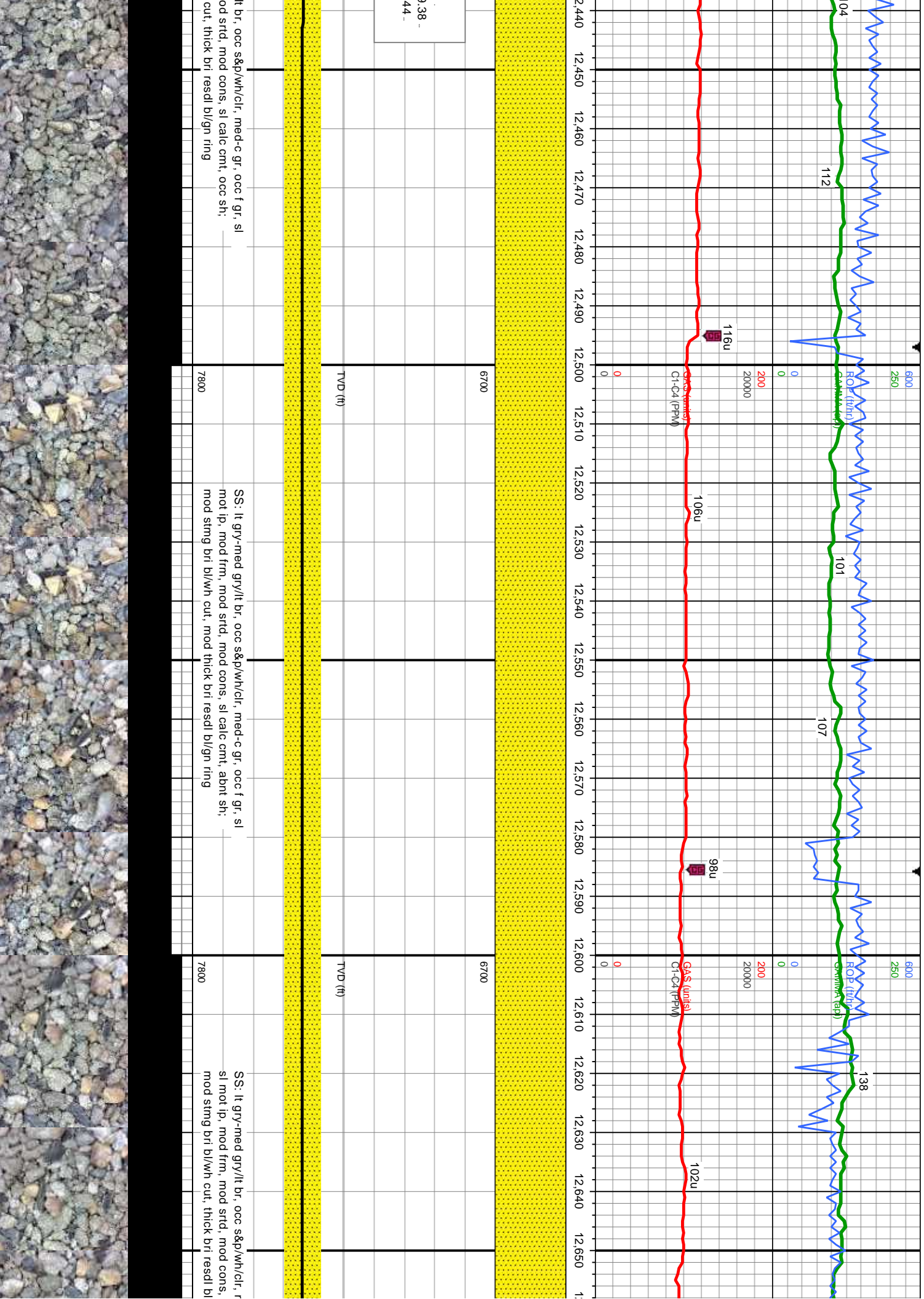
T 9.6/ VIS 43



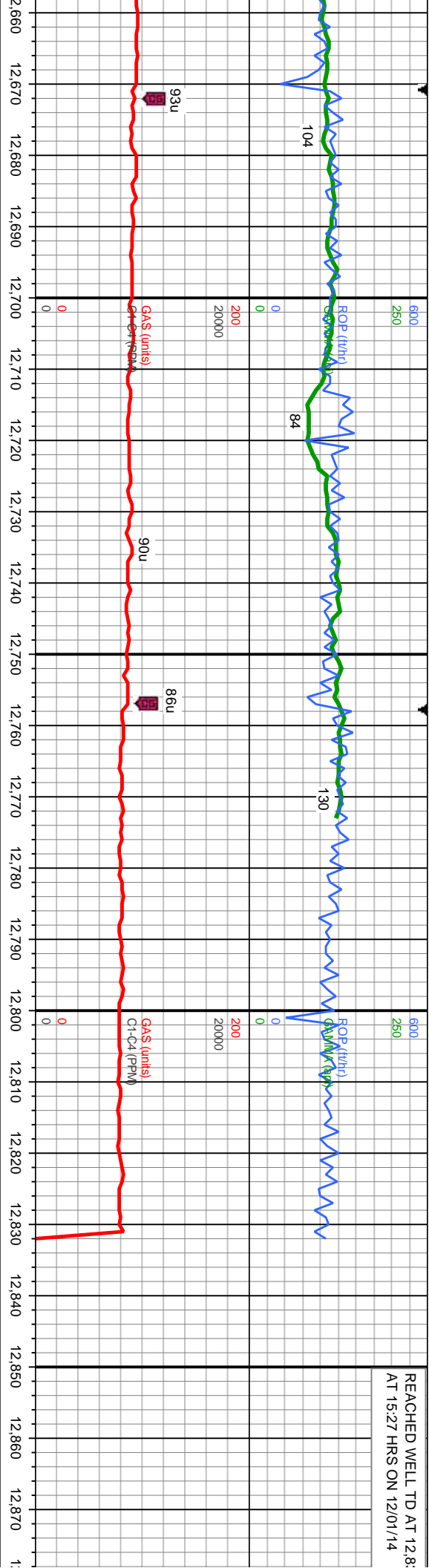
SS: lt gry-med gry/lt br, occ s&p/wh/clr, med-c gr, occ f gr, sl mot ip, mod frm, mod strd, sl calc cnt, tr sh, tr foss; mod stmg dull bl/wh cut, mod thick bri resed bl/gn ring		6700	7800
SS: lt gry-med gry/lt br, occ s&p/wh/clr, med-c gr, occ f gr, sl mot ip, mod frm, mod strd, sl calc cnt, occ sh; mod stmg bri bl/wh cut, thick bri resed bl/gn ring		6700	7800
SS: lt gry-med gry/lt br, occ s&p/wh/clr, med-c gr, occ f gr, sl mot ip, mod frm, mod strd, sl calc cnt, occ sh; mod stmg dull bl/wh cut, mod thick bri resed bl/gn ring		6700	7800



MD: 12.435
TVD: 7,398.11
Inclination: 88
Azimuth: 359
VS: 4,890.93



REACHED WELL TD AT 12:83:
AT 15:27 HRS ON 12/01/14



MD: 12,766.
TVD: 7,404.
Inclination: 88.58 -
Azimuth: 359.4 -
VS: 5.221.88.

MD: 12,832.
TVD: 7,405.64.
Inclination: 88.58 -
Azimuth: 359.4 -
VS: 5.287.88.

THANK YOU FOR USING
COLUMBINE LOGGING, INC.

6700	TVD (ft)	med-c gr, occ f gr, sl calc cnt, occ sh; gn ring
6700	TVD (ft)	SS: lt gry-med gry/lt br, occ s&p/wh/clr, med-c gr, occ f gr, sl mot lp, mod frm, mod srt'd, mod cons, sl calc cnt, occ sh; mod stmg bri bl/wh cut, thick bri resd bl/gn ring
7800	TVD (ft)	



32' MD

