

CO **COMBINE** **LOGGING**

Scale: 5" / 100'
Measured Depth Log

Well Name Barefoot State 40N-36HZ

Location Sec 35 T3N R68W

State Colorado

County Weld

Country USA

Rig Number H&P 307

API Number 05123386320000

AFE # 2089968.DRL

Region DJ Basin

Field DJ Basin

Spud Date 5/18/2014

Drilling Completed 5/26/2014

Surface Coordinates 1907' FSL & 373' FWL

Bottom Hole Coordinates Relative to Wellhead: 551.7' N & 9585.15' E

Ground Elevation 4861'

K.B. Elevation 4886'

Logged Interval 6541' MD To 16,499' MD

Total Depth 16,499' MD

Formation Niobrara

Type of Drilling Fluid Fresh Water for Curve

Company Anadarko

Address 1099 18th Street
Denver, CO 80202

Operator

Geologist


Name Jim Frank, Chris Johnson

Company Columbine Logging Inc.

Address 2385S. Lipan St.
Denver, Co. 80223

Zone Color Code

Oil	Note	Error



Condensate
Core
Water

Rock Types

	UNKNOWN		COAL
	ANHYDRITE		CONGLOMERATE
	BENTONITE		DOLOMITE
	BRECCIA		DOLOMITIC LIMESTONE
	CHALK		GRANITE
	CEMENT		GYPNUM
	CHERT		IGNEOUS
	CLAY CHOKE SAND		SIDERITE or LIMONITE
	CLAYSTONE		LIMESTONE

Accessories

GASTROPOD	ARGILLITE GRAIN	HEAVY MINERAL	ANHYDRITE STRINGER
INOCERAMUS	B BENTONITE	K KAOLIN	BENTONITE STRINGER
ALGAE	BITUMENOUS SUBSTANCE	M MARLSTONE	COAL STRINGER
AMPHIPORA	BRECCIA FRAGMENTS	MICACEOUS	DOLOMITE STRINGER
BELEMNITE	CALCAREOUS	MINERAL CRYSTALS	GYPSUM STRINGER
BIOCLASTIC	CARBONACEOUS FLAKES	NODULES	LIMESTONE STRINGER
BRACHIOPOD	CHITDK	PHOSPHATE PELLETS	MARLSTONE (CALC) STRG
BRYOZOA	CHLTD	P PYRITE	MARLSTONE (DOL) STRG
CEPHALOPOD	COAL - THIN BEDS	S SALT CAST	SANDSTONE STRINGER
CORAL	D DOLOMITIC	S SANDY	SHALE STRINGER
CRINOID	F FELDSPAR	S SILICEOUS	SILTSTONE STRINGER
ECHINOID	FERRUGINOUS PELLET	S SILTY	
FISH	F FERRUGINOUS	T TUFACEOUS	
FORAMINIFERA	G GLAUCONITE		
F FOSSIL	G GYPSIFEROUS	Stringer	

Other Symbols

Oil Show	P PINPOINT	DST INTERVAL	WIRELINE TESTED - LEFT	E EARTHY
	V VUGGY	FAULT	WIRELINE TESTED - RT	Fx FINELY XLN
Engineering	D DEAD	FORMATION TOP	DRILL STEM TEST	GS GRAINSTONE
	EVEN	GAS SHOW	MN DEPTH	L LITHOGRAPHIC
	Q QUESTIONABLE	OIL SHOW		Mx MICROXLN
	SPOTTED STAINING	MN DEPTH UP	Rounding	M MUDSTONE
	CONNECTION (UP)			
Porosity	CONNECTION (DOWN)	MN DEPTH (DOWN)	A ANGULAR	PS PACKSTONE
	CONNECTION GAS	NORMAL FAULT	R ROUNDED	WS WACKESTONE
Sorting	E EARTHY	OVERTURNED STRATA	S SUBANG	
	F FENESTRAL	REVERSE FAULT	S SUBRND	
	F FRACTURE	CASING	Textures	M MODERATE
	INTERCRYSTALLINE	SIDEWALL CORE (LEFT)		P POOR
	INTEROOLITIC	SIDEWALL CORE (RIGHT)		W WELL
	M MOLDIC	SLIDE		C CHALKY
	O ORGANIC	SURVEY		Cx CRYPTOXLN
		CORE - LOST		
		CORE - RECOVERED		

ding



MARLSTONE	SHALY SANDSTONE
METAMORPHIC	SHALY SILTSTONE
NO SAMPLE	SILTY SHALE
SALT	SILTSTONE
SANDSTONE	TILL
SALT-PEPPER SAND	TUFF
SHALE	WELDED TUFF
SHALE COLORED	
SHALE GRAY	

Slide/Rotate

ROP
ROF
GAMMA

COLUMBINE LOGGING ONE MAN
RIGGED UP ON 5/19/2014 @ 13:30 HRS
BEGIN LOGGING @ 16:20 HRS 5/19/14

Total Gas & Chromatograph

GAS
C1
C3

DRLG 8.75" HOLE W/ BIT #1
SMITH SD611MPX
IN @ 1003' MD

GAS DETECTION
PROVIDED BY TOTCO

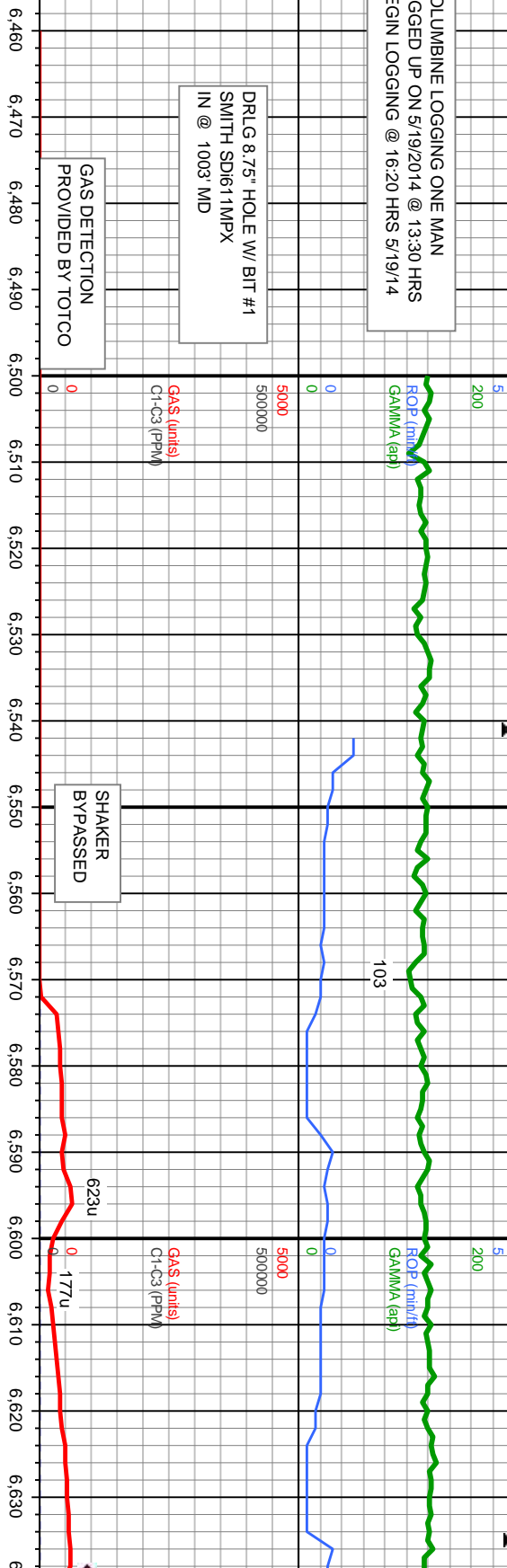
Depth Labels

% Lith

Well Bore
TVD

Oil Show

Images



MD: 6,477.
TVD: 6,431.39.
Inclination: 0.88 -
Azimuth: 23.88 -
VS: -31.86

WT IN: 10.1+ OUT: 10.0
VIS IN: 52 OUT: 64

KOP @ 6541' MD

DRILLING IN
SUSSEX FM.

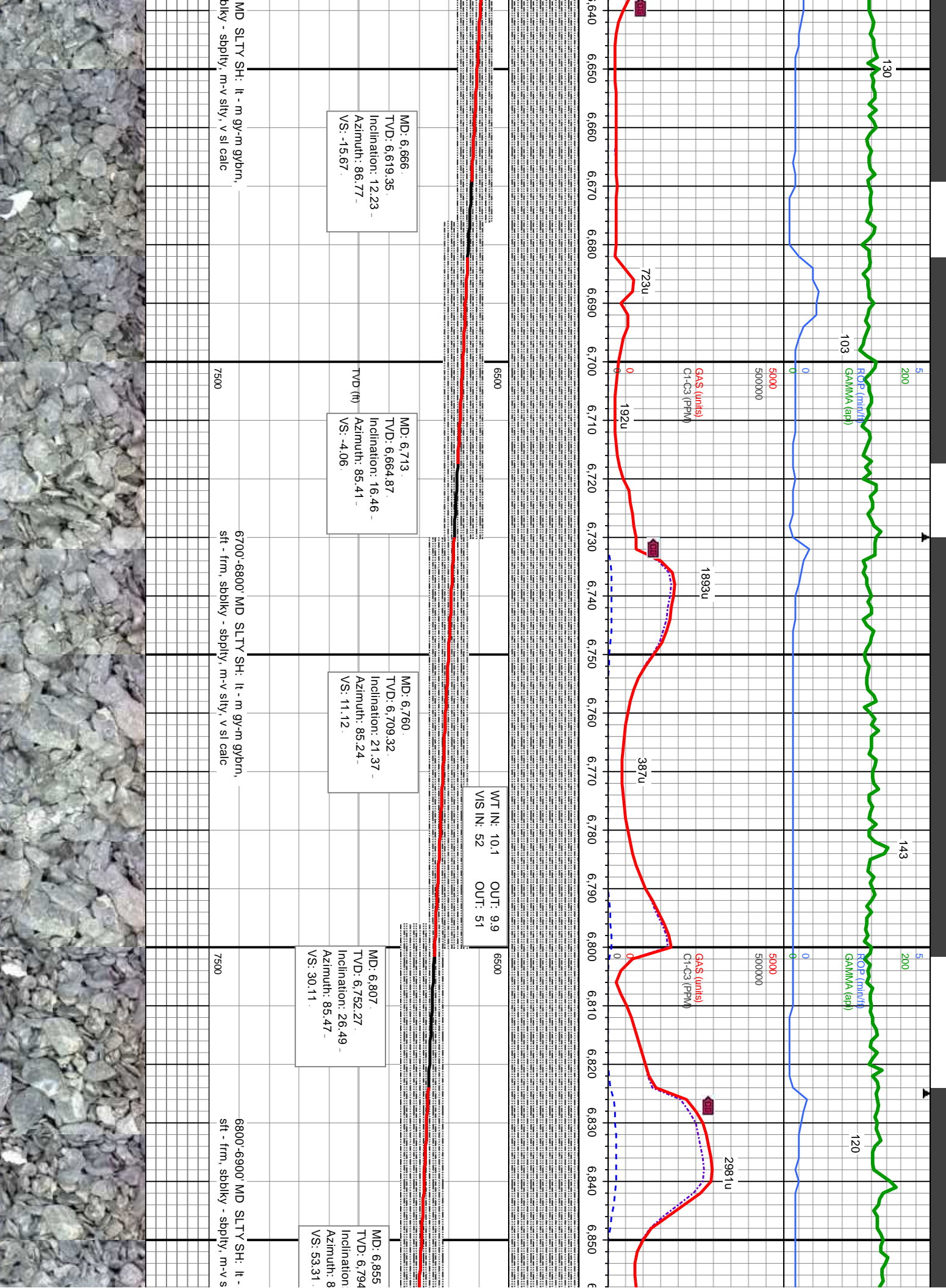
MD: 6,571.
TVD: 6,525.32.
Inclination: 3.71 -
Azimuth: 82.34 -
VS: -28.55

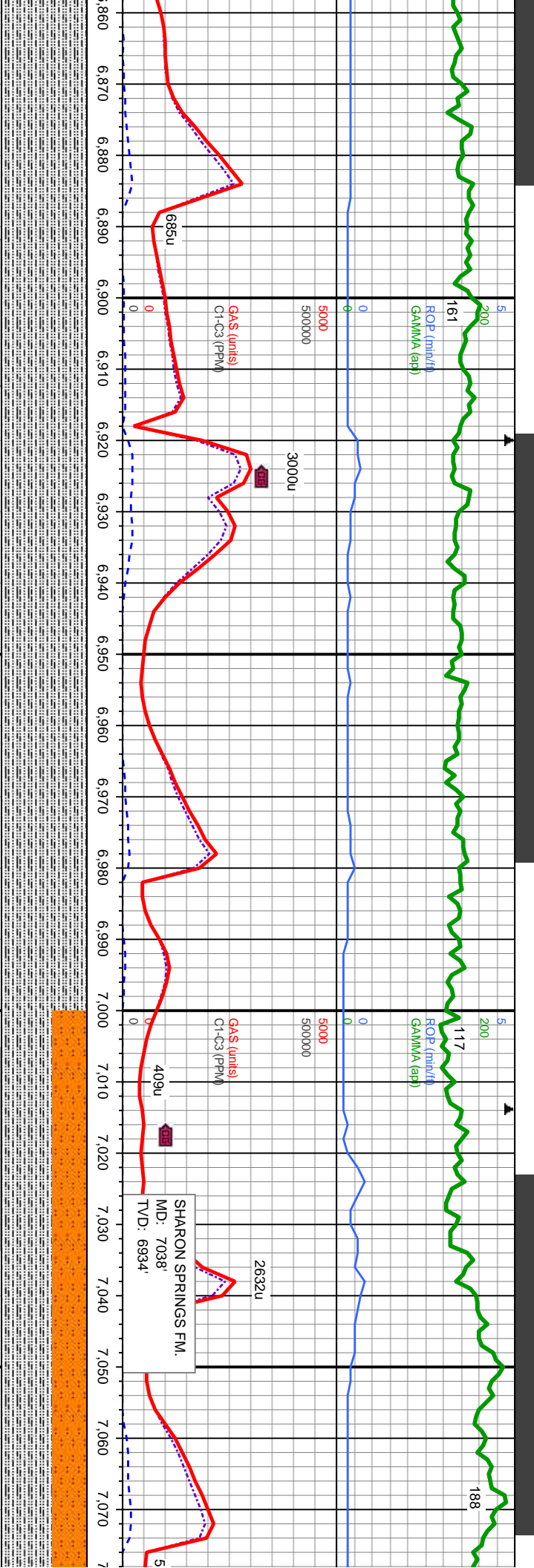
6541'-6600' MD SLTY SH: lt -
m gy-m gybrn, sft - frm, sbblky
- sbply, m-v slty, v sl calc

MD: 6,618.
TVD: 6,572.08.
Inclination: 7.62 -
Azimuth: 86.47 -
VS: -23.93

6600'-6700'
sft - frm, sb







MD: 6,902.
TVD: 6,833.46
Inclination: 35.37
Azimuth: 87.8
VS: 79.17

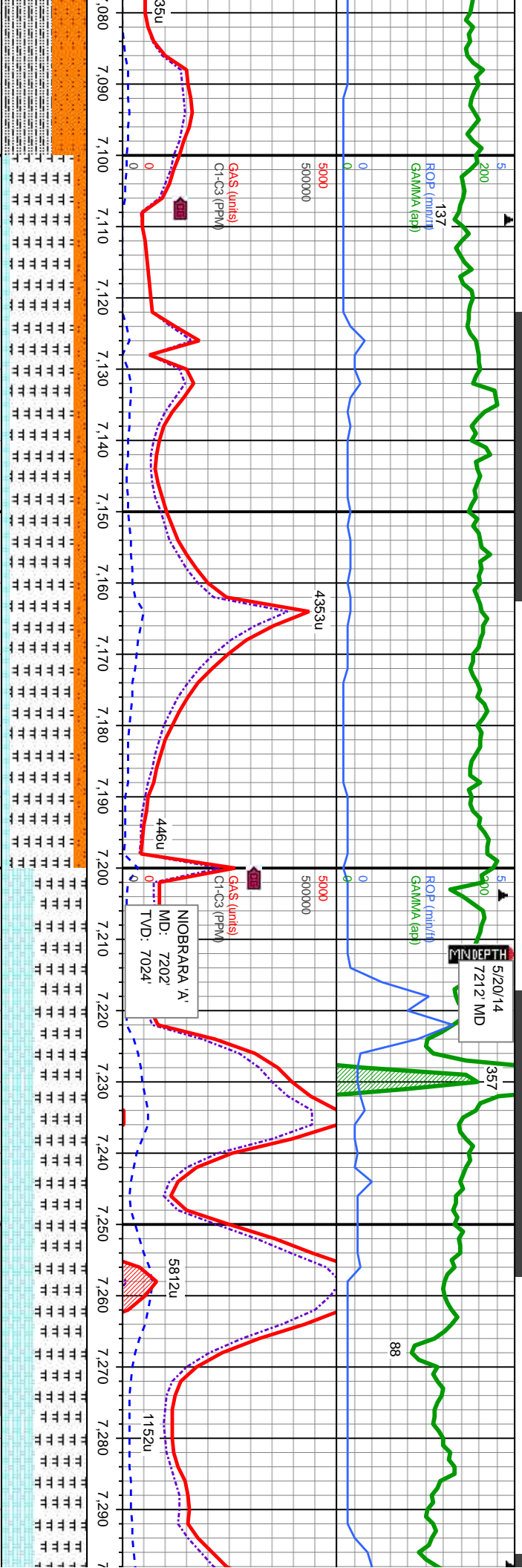
MD: 6,949.
TVD: 6,870.5
Inclination: 40.55
Azimuth: 88.3
VS: 108.05

MD: 6,996.
TVD: 6,905.12
Inclination: 44.54
Azimuth: 88.72
VS: 139.81

MD: 7,043.
TVD: 6,937.26
Inclination: 49.15
Azimuth: 88.84
VS: 174.08

24.
31.48
6.75
m gy-m gybrn,
ity, v sl calc
7500
6900'-7000' MD SLTY SH: lt - m gy-m gybrn,
sft - frm, sbblky - sbply, m-v slty, v sl calc
7500
7000'-7100' MD SLTY SH: lt - m gy-m gybrn, sft - frm,
sbblky - sbply, m-v slty, v sl calc, SLTST: lt gy-lt gy
brn, sb-blky-sb-pty, med-v frm, v sl calc, occ bent





MD: 7.090.
TVD: 6,966.76.
Inclination: 53.09 -
Azimuth: 89.59 -
VS: 210.66

MD: 7.138.
TVD: 6,994.36
Inclination: 56.7 -
Azimuth: 89.11 -
VS: 249.92

MD: 7.185.
TVD: 7,019.07.
Inclination: 59.85 -
Azimuth: 89.64 -
VS: 289.89

MD: 7.232.
TVD: 7,041.55
Inclination: 62.98 -
Azimuth: 89.33 -
VS: 331.15

MD: 7.279.
TVD: 7,061.66
Inclination: 66.36 -
Azimuth: 89.81 -
VS: 373.63

WT IN: 10.1 OUT: 9.9
VIS IN: 50 OUT: 49

7100'-7200' MD: MRLST: med-dk gy-gy brn, sb ply-sb blkly, mod sft-frm, sb arg-sily, calc, tr bent, SLTST: lt gy-lt gy brn, sb-bkly-sb-ply, med-v frm, v sl calc, occ bent, CHK: lt-med gy, mot, sb blkly-sb ply, sft-sl frm, fri, chky-sb wxy, v calc, slow-medium streaming cut, sl tr lt bl flr

7200'-7300' MD: MRLST: med-dk gy-gy brn, sb ply-sb blkly, mod sft-frm, sb arg-sily, calc, tr bent, CHK: lt-med gy, mot, sb blkly-sb ply, sft-sl frm, fri, chky-sb wxy, v calc, slow-medium streaming cut, sl tr lt bl flr



7" CSG PT
7538' MD
5/21+22/14
7538' MD
148

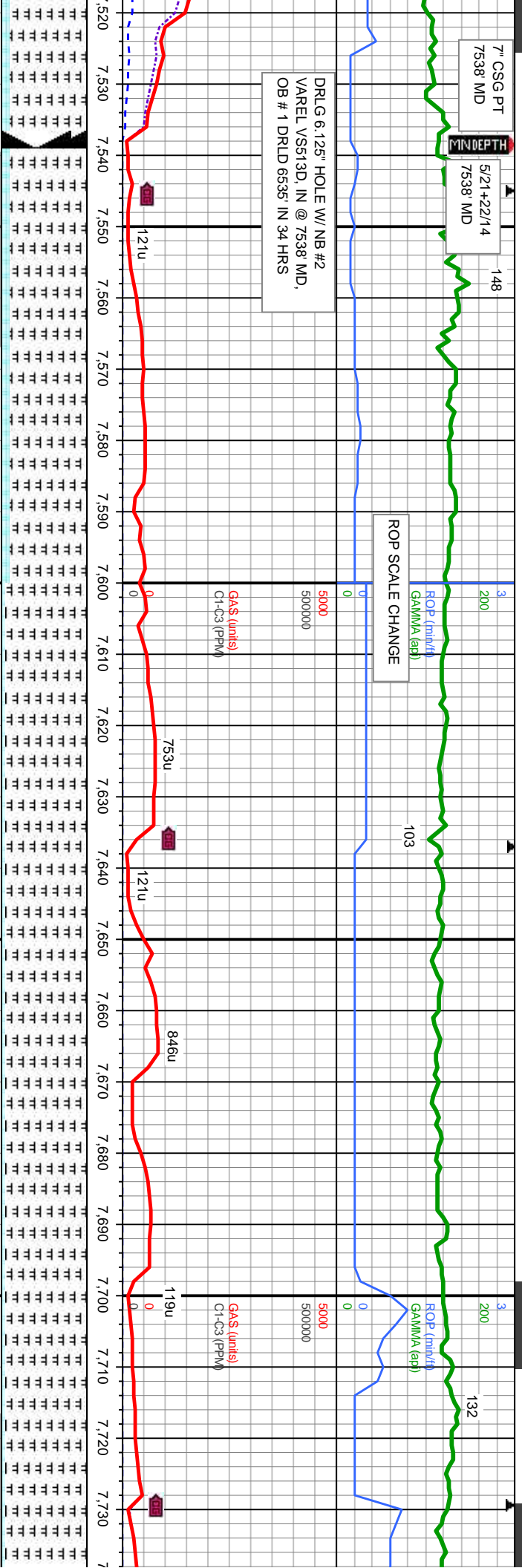
MINDEPTH

DRLG 6.125" HOLE W/ NB #2
VAREL VS613D, IN @ 7538' MD,
OB # 1 DRLD 6635' IN 34 HRS

ROP SCALE CHANGE

ROP (min/h)
GAMMA (api)

GAS (units)
Cl-C3 (PPM)



MD: 7,574.
TVD: 7,116.32
Inclination: 89.47 -
Azimuth: 85.83 -
VS: 661.45.

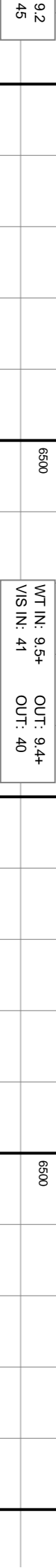
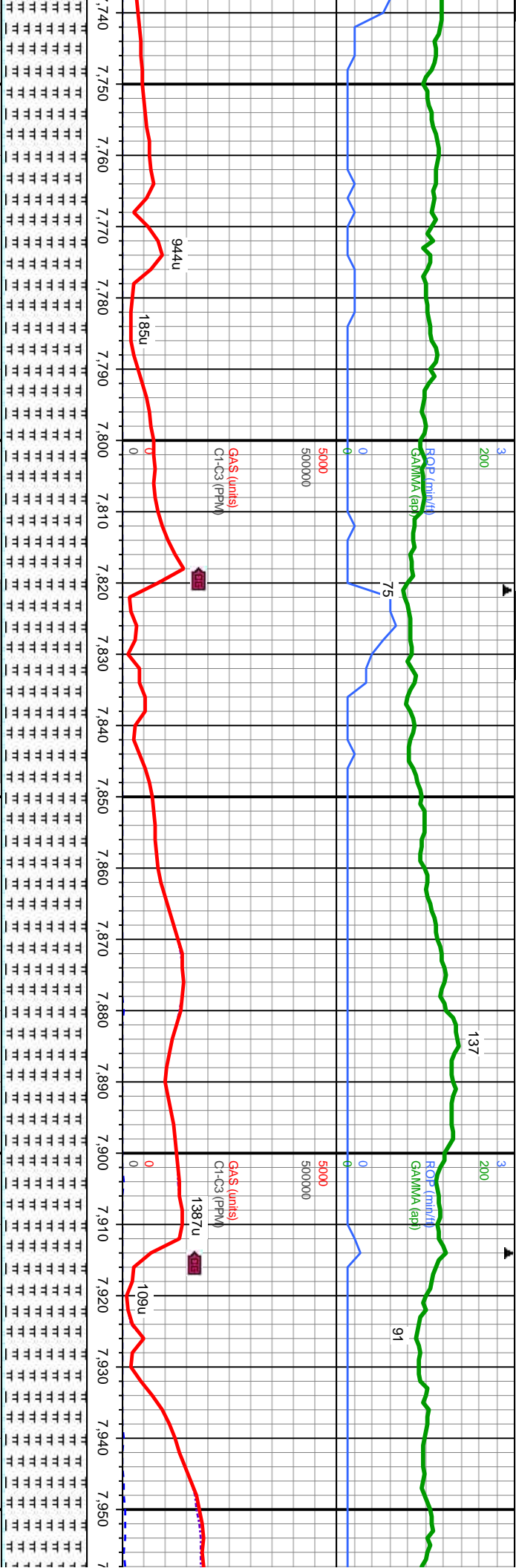
MD: 7,666.
TVD: 7,117.24
Inclination: 89.38 -
Azimuth: 86.76 -
VS: 753.25.

7500'-7600' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbbiky-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, tr lt bl flr w/ slw strng mlky cut

7600'-7700' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbbiky-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, tr lt bl flr w/ slw strng mlky cut

7700'-7800' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbbiky-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, tr lt bl flr w/ slw strng mlky cut





MD: 7,758.
TVD: 7,117.37.
Inclination: 90.46 -
Azimuth: 89.02 -
VS: 845.18.

MD: 7,850.
TVD: 7,116.66.
Inclination: 90.43 -
Azimuth: 90.2 -
VS: 937.17.

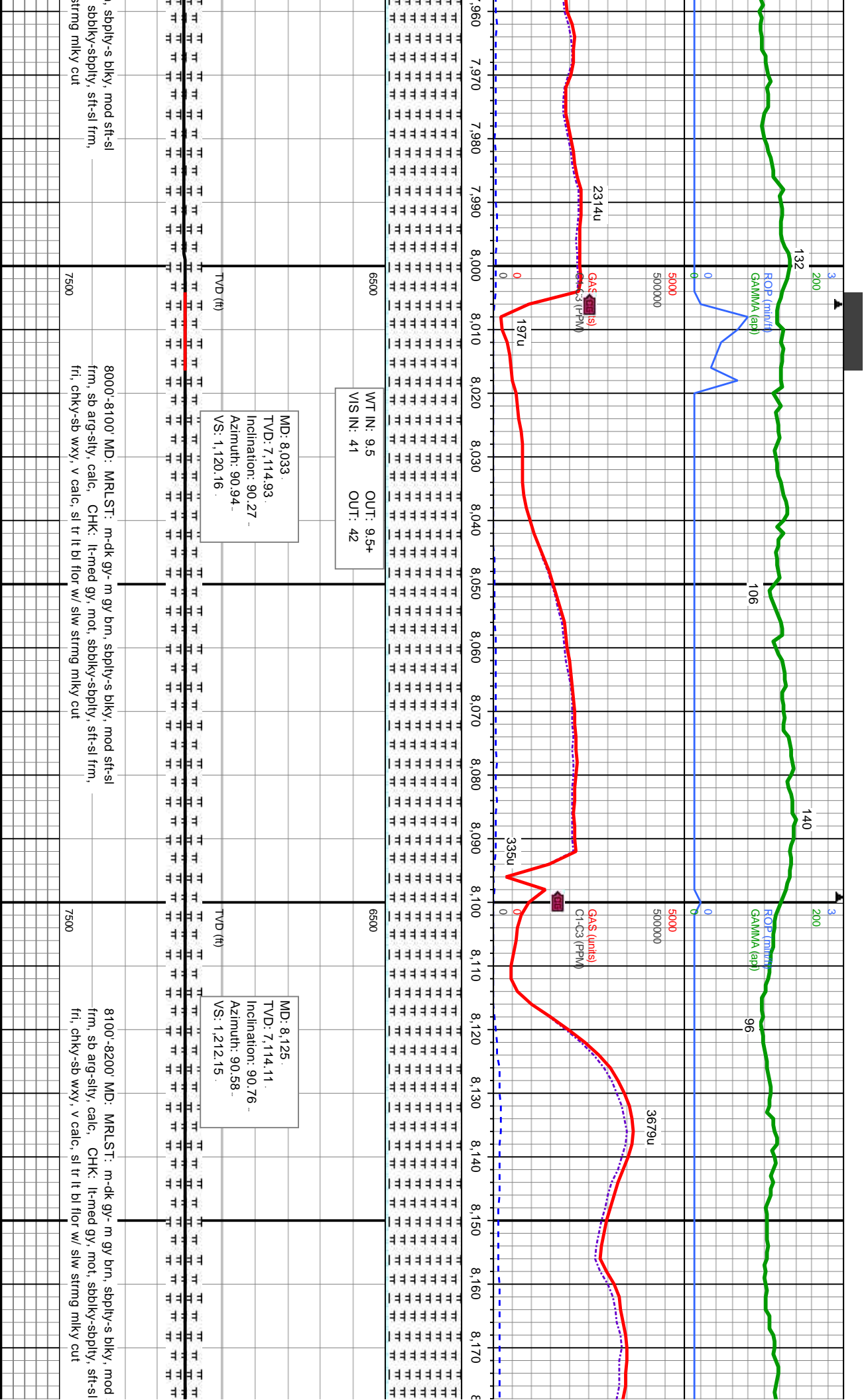
MD: 7,941.
TVD: 7,115.74.
Inclination: 90.73 -
Azimuth: 89.95 -
VS: 1,028.16.

ST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
CHK: lt-med gy, mot, sbply-sbply, sft-sl frm,
c, sl tr lt bl flr w/ slw strng mlky cut

7800'-7900' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sly, calc, CHK: lt-med gy, mot, sbply-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, sl tr lt bl flr w/ slw strng mlky cut

7900'-8000' MD: MRLST: m-dk gy- m gy brn
frm, sb arg-sly, calc, CHK: lt-med gy, mot,
fri, chky-sb wxy, v calc, sl tr lt bl flr w/ slw s





8000'-8100' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbblk-sbply, sft-sl
fri, chky-sb wxy, v calc, sl tr lt bl flr w/ slw string mlky cut

8100'-8200' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbblk-sbply, sft-sl
fri, chky-sb wxy, v calc, sl tr lt bl flr w/ slw string mlky cut

8200'-8200' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbblk-sbply, sft-sl
fri, chky-sb wxy, v calc, sl tr lt bl flr w/ slw string mlky cut

8200'-8200' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbblk-sbply, sft-sl
fri, chky-sb wxy, v calc, sl tr lt bl flr w/ slw string mlky cut

8200'-8200' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbblk-sbply, sft-sl
fri, chky-sb wxy, v calc, sl tr lt bl flr w/ slw string mlky cut

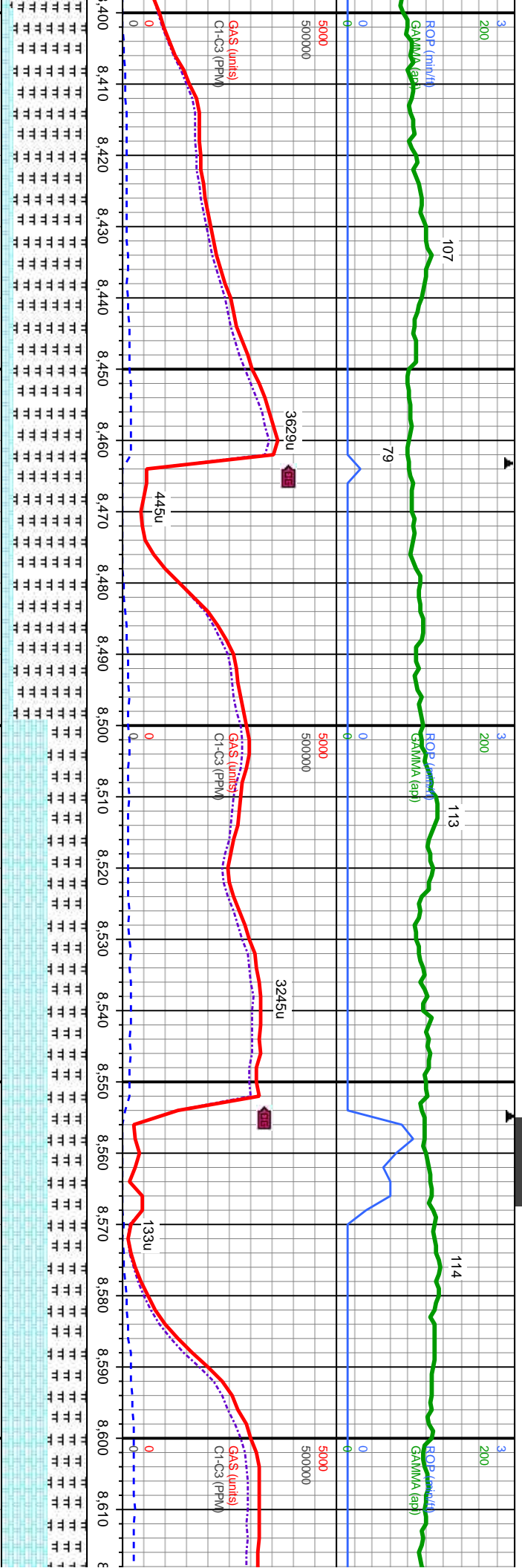
8200'-8200' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbblk-sbply, sft-sl
fri, chky-sb wxy, v calc, sl tr lt bl flr w/ slw string mlky cut

8200'-8200' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbblk-sbply, sft-sl
fri, chky-sb wxy, v calc, sl tr lt bl flr w/ slw string mlky cut

8200'-8200' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbblk-sbply, sft-sl
fri, chky-sb wxy, v calc, sl tr lt bl flr w/ slw string mlky cut

8200'-8200' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbblk-sbply, sft-sl
fri, chky-sb wxy, v calc, sl tr lt bl flr w/ slw string mlky cut

8200'-8200' MD: MRLST: m-dk gy- m gy brn, sbply-s blk, mod sft-sl
frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbblk-sbply, sft-sl
fri, chky-sb wxy, v calc, sl tr lt bl flr w/ slw string mlky cut



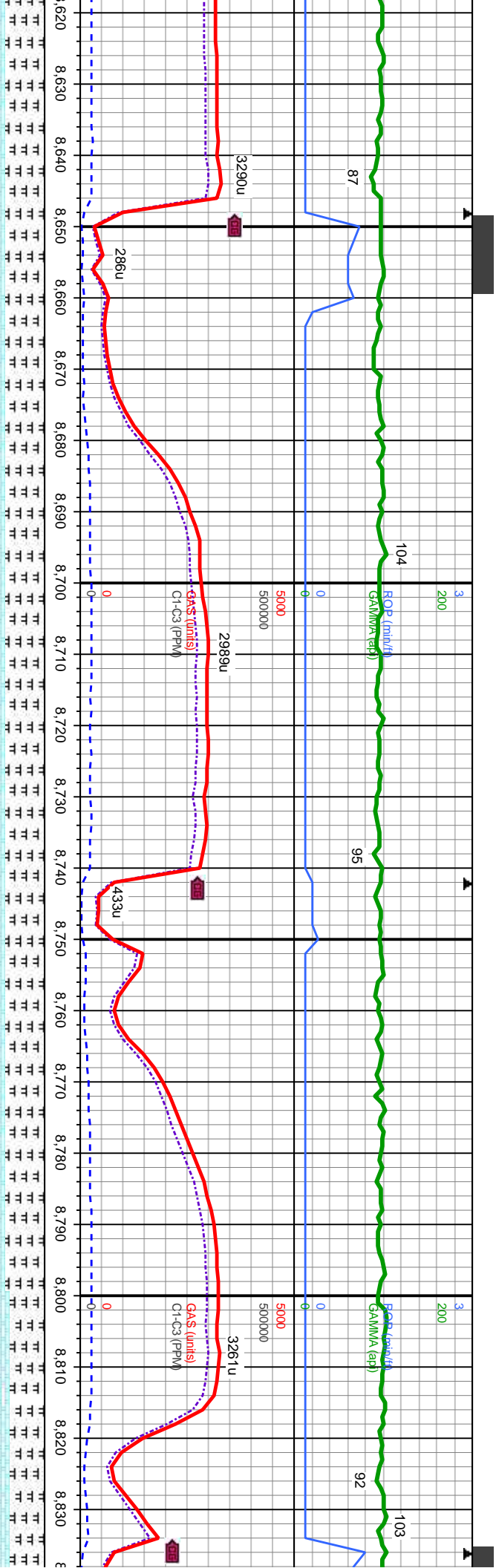
MD: 8,492.
TVD: 7,112.34
Inclination: 90.55
Azimuth: 91.34
VS: 1,579.02

MD: 8,492.
TVD: 7,112.34
Inclination: 90.55
Azimuth: 91.34
VS: 1,579.02

MD: 8,586.
TVD: 7,112.12
Inclination: 89.72
Azimuth: 91.36
VS: 1,672.99

8400'-8500' MD: MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-slty, calc, CHK: lt-med gy, mot, sbblkly-sbply, sft-sl frm, fti, chky-sb wxy, v calc, sl tr lt bl flwr w/ slw strng mlky cut	7500
8500'-8600' MD: CHK: lt-med gy, mot, sbblkly-sbply, sft-sl frm, fti, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-slty, calc, tr lt bl flwr w/ slw strng mlky cut	7500
8600'	7500





WT IN: 9.6 OUT: 9.6
VIS IN: 53 OUT: 49

MD: 8,679.
TVD: 7,113.1
Inclination: 89.07
Azimuth: 91.1
VS: 1,765.97

TVD (ft)

MD: 8,772.
TVD: 7,114.31
Inclination: 89.44
Azimuth: 90.78
VS: 1,858.95

TVD (ft)

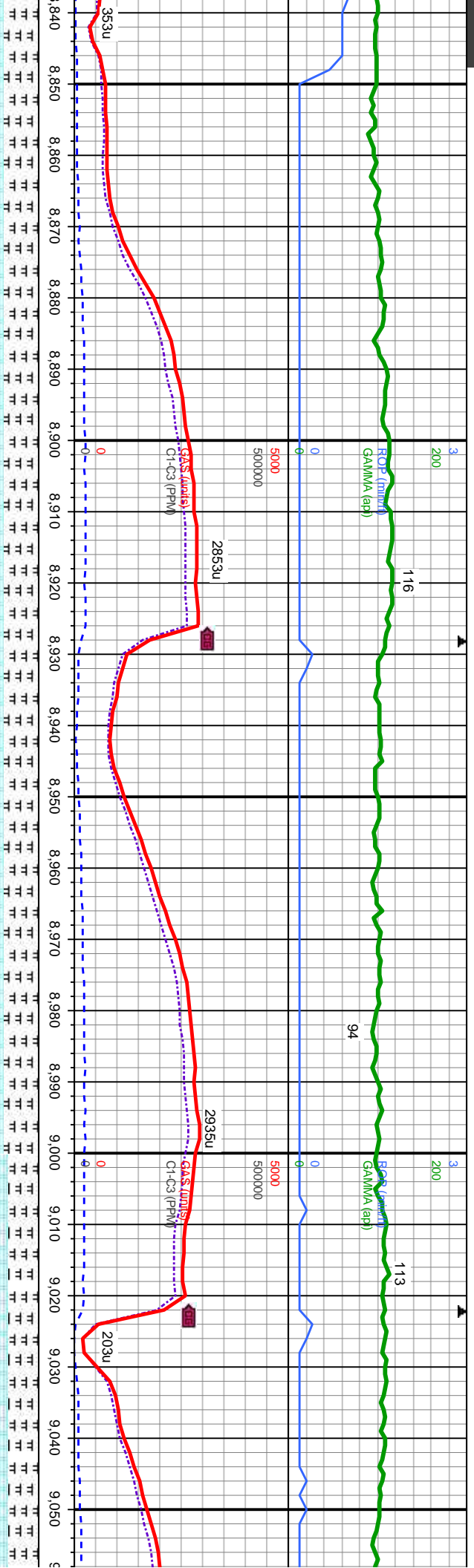
WT IN: 9.6 OUT: 9.6
VIS IN: 51 OUT: 49

8700'-8700' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strmg mlky cut

8700'-8800' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strmg mlky cut

8800'-8900' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strmg mlky cut





MD: 8,866
TVD: 7,115.68
Inclination: 88.89
Azimuth: 90.88
VS: 1,952.93

TVD (ft)

MD: 8,960
TVD: 7,117.18
Inclination: 89.29
Azimuth: 90.85
VS: 2,046.9

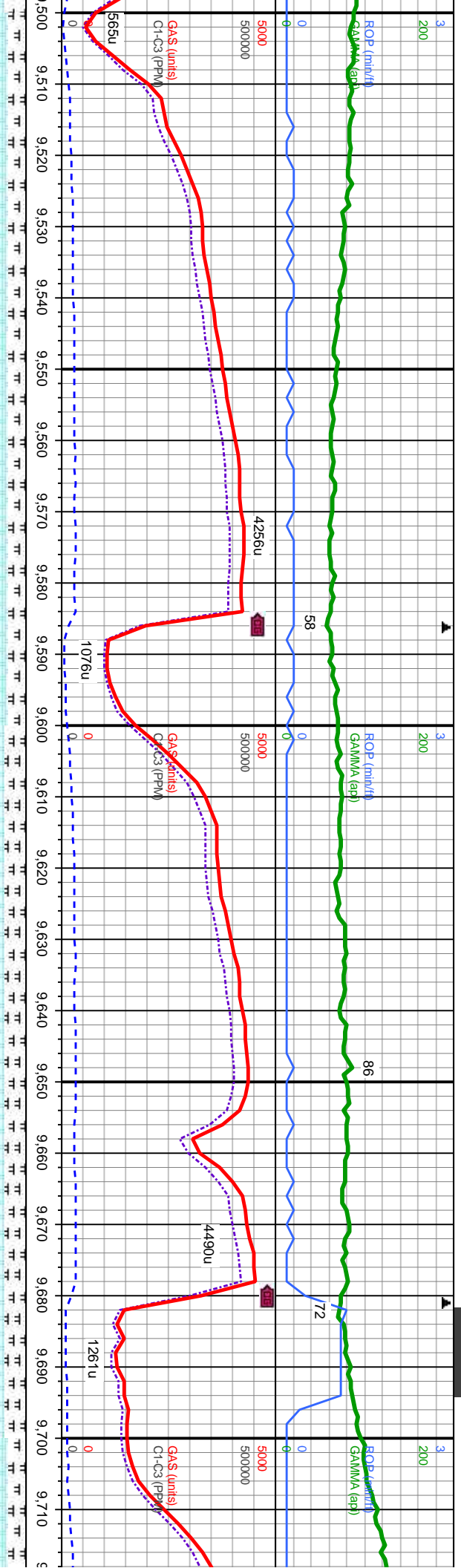
TVD (ft)

WT IN: 9.5
VIS IN: 55
OUT: 9.5
OUT: 51

MD: 9,053
TVD: 7,118.58
Inclination: 88.5
Azimuth: 90.31
VS: 2,139.89

med gy, mot, sbblky-sbply, sft-sl frm, fri	8900'-9000' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng milky cut	7500
ST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl bl flr w/ slw strng milky cut	9000'-9100' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng milky cut	7500





6500	WT IN: 9.6	OUT: 9.6	6500
	VIS IN: 60	OUT: 57	

MD: 9.525.
TVD: 7,123.76.
Inclination: 89.23 -
Azimuth: 90.27 -
VS: 2,611.73.

TVD (ft)

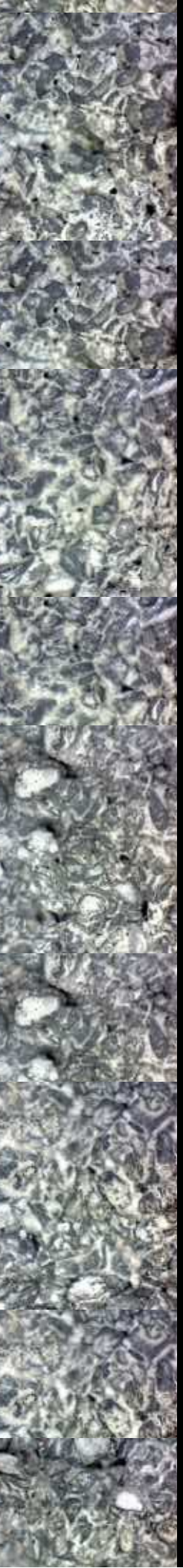
MD: 9.619.
TVD: 7,124.62.
Inclination: 89.72 -
Azimuth: 89.97 -
VS: 2,705.73.

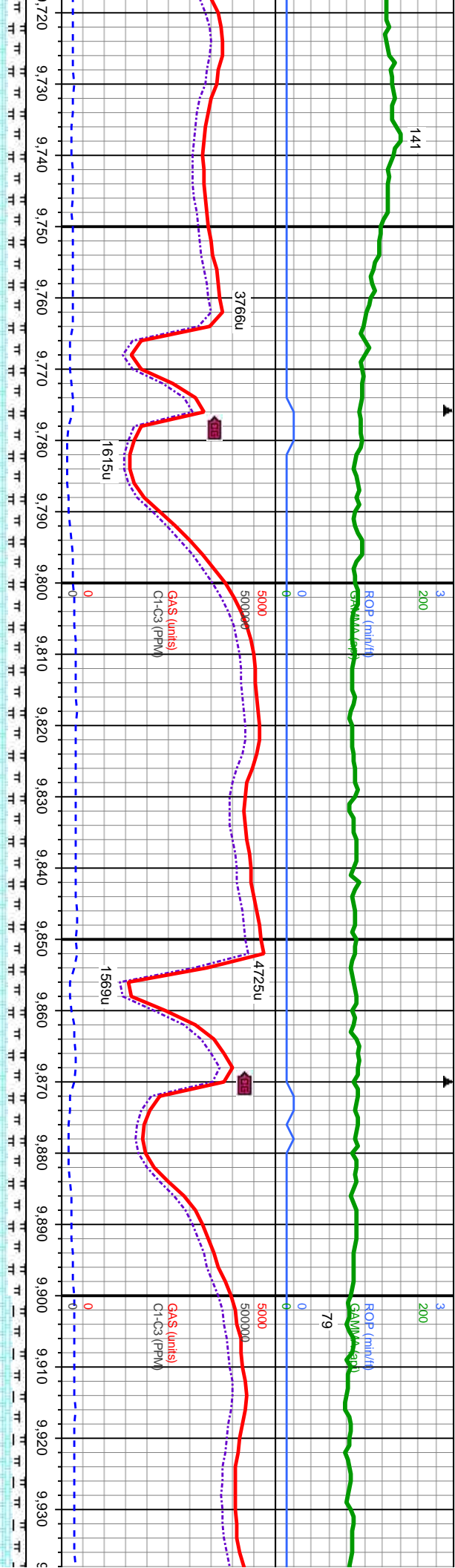
TVD (ft)

MD: 9.713.
TVD: 7,125.87.
Inclination: 88.7
Azimuth: 90.14
VS: 2,799.72.

TVD (ft)

9500'-9600' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fr, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-slty, calc, tr lt bl flwr w/ slw strmg mlky cut	9600'-9700' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fr, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-slty, calc, tr lt bl flwr w/ slw strmg mlky cut
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WT IN: 9.6
VIS IN: 60
OUT: 9.6
OUT: 57

MD: 9,808.
TVD: 7,127.72.
Inclination: 89.01 -
Azimuth: 90.11 -
VS: 2,894.7.

MD: 9,902.
TVD: 7,129.09.
Inclination: 89.32 -
Azimuth: 90.05 -
VS: 2,988.69.

7700'-9800' MD: CHK: lt-med gy, mot, sbbkly-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut

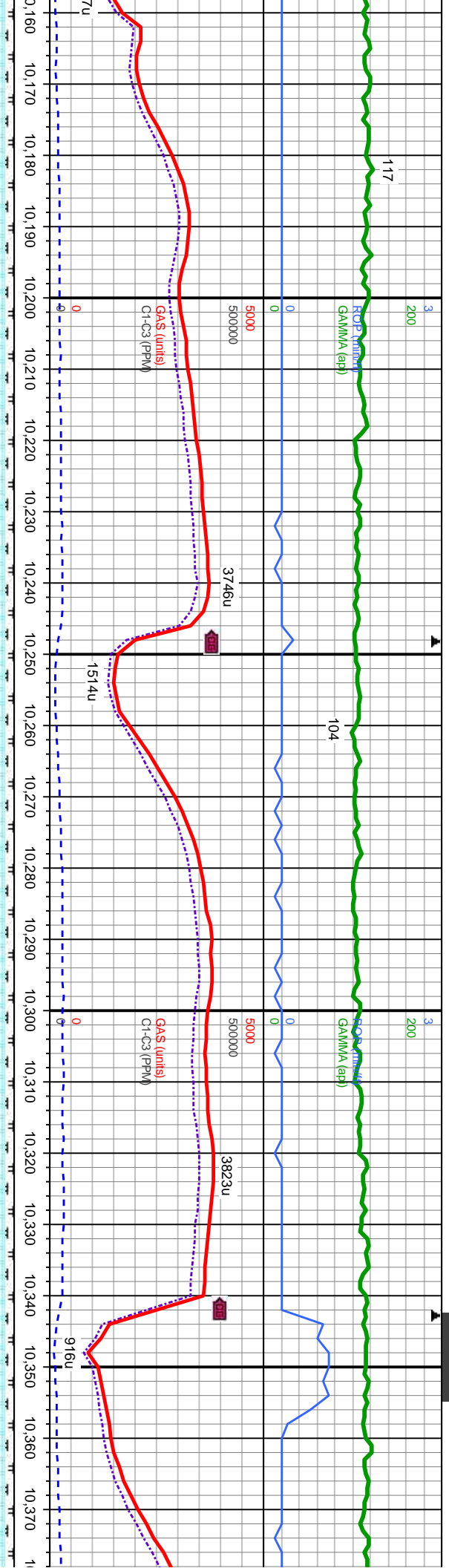
9800'-9900' MD: CHK: lt-med gy, mot, sbbkly-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut

9900'-10,000' MD: C: fri, chky-sb wxy, v ca mod sft-sl frm, sb arg

7500

7500





OUT: 9.6
OUT: 72

WT IN: 9.6+
VIS IN: 76

OUT: 9.6
OUT: 70

MD: 10,185.
TVD: 7,133.62.
Inclination: 89.32 -
Azimuth: 89.4 -
VS: 3,271.63

MD: 10,279.
TVD: 7,134.18.
Inclination: 89.87 -
Azimuth: 89.18 -
VS: 3,365.62

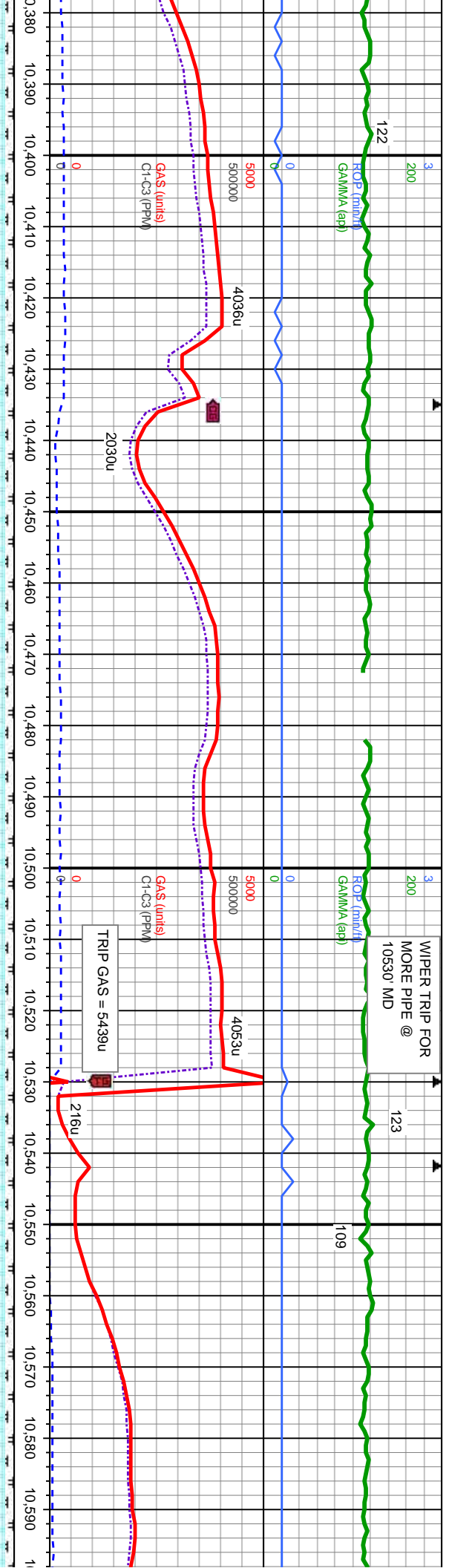
MD: 10,373.
TVD: 7,134.59.
Inclination: 89.6
Azimuth: 90.08
VS: 3,459.61

blky-sbply, sft-sl frm,
gy brn, sbply-s blky,
slw strng mlky cut

10,200'-10,300' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blky,
mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut

10,300'-10,400' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blky,
mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut

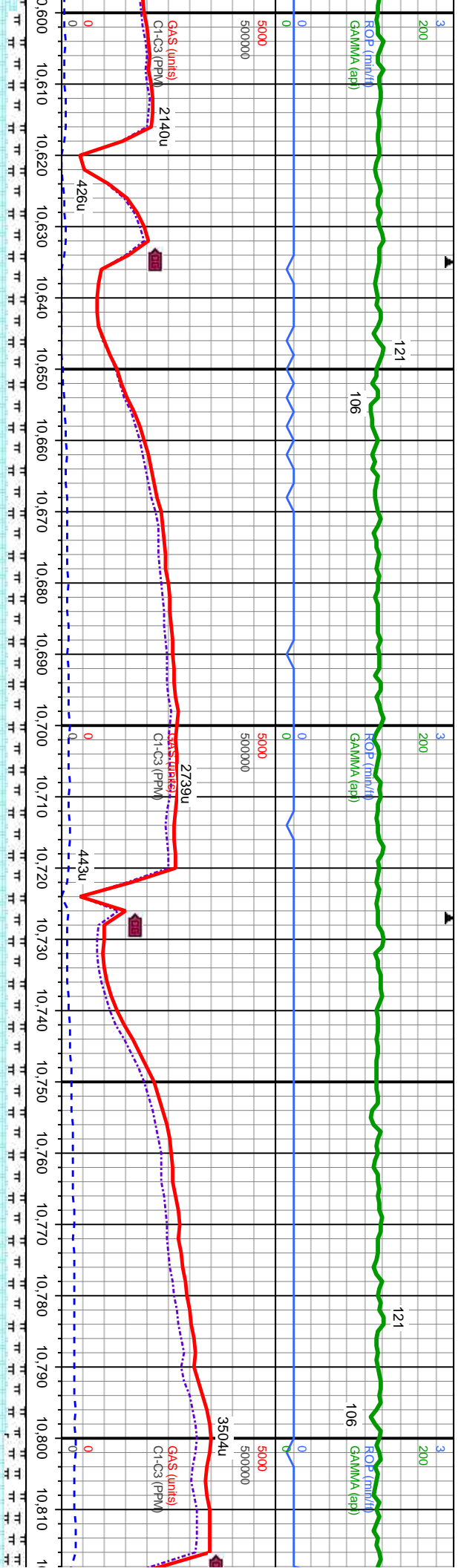




6500	MD: 10.467. TVD: 7,135.15 Inclination: 89.69 Azimuth: 90.09 VS: 3.553.61	6500	WT IN: 9.7 VIS IN: 70	OUT: 9.6+ OUT: 73	MD: 10.572. TVD: 7,135.89 Inclination: 89.5 Azimuth: 89.86 VS: 3.658.61
TVD (ft)		TVD (ft)			

10,400'-10,500' MD: CHK: lt-med gy, mot, sbdkly-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s-bkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flor w/ slw string mlky cut	7500
10,500'-10,600' MD: CHK: lt-med gy, mot, sbdkly-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s-bkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flor w/ slw string mlky cut	7500





WT IN: 9.7 OUT: 9.6
VIS IN: 83 OUT: 86

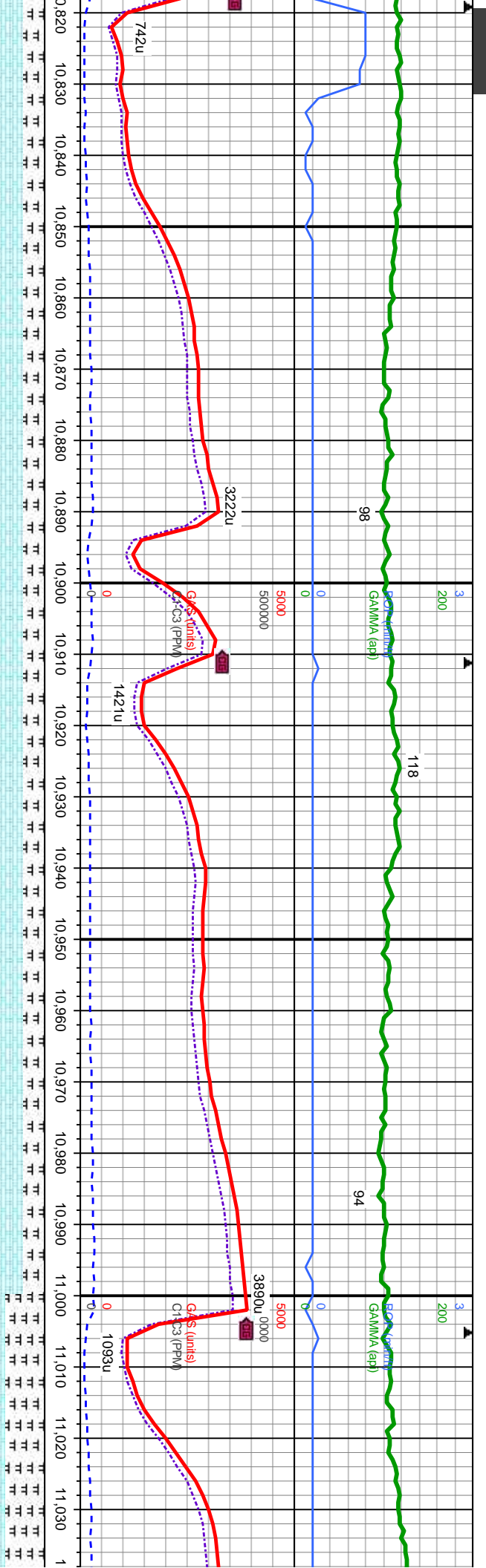
MD: 10,664
TVD: 7,136.49
Inclination: 89.75
Azimuth: 89.95
VS: 3,750.61

MD: 10,756
TVD: 7,136.82
Inclination: 89.84
Azimuth: 89.74
VS: 3,842.61

10,600'-10,700' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly,
mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut

10,700'-10,800' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly,
mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut





WT IN: 9.6 OUT: 9.6
VIS IN: 72 OUT: 70

MD: 10.849.
TVD: 7,138.13
Inclination: 88.55
Azimuth: 90.43
VS: 3.935.6.

TVD (ft)

MD: 10.943.
TVD: 7,140.18.
Inclination: 88.95
Azimuth: 89.96
VS: 4.029.57.

TVD (ft)

MD: 11.036.
TVD: 7,141.6
Inclination: 8
Azimuth: 89.
VS: 4.122.56

10.800'-10.900' MD: CHK: lt-med gy, mot, sbdky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s bdky, mod sft-sl frm, sb arg-sily, calc, tr lt bl flwr w/ slw strng mlky cut

10.900'-11.000' MD: CHK: lt-med gy, mot, sbdky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s bdky, mod sft-sl frm, sb arg-sily, calc, tr lt bl flwr w/ slw strng mlky cut

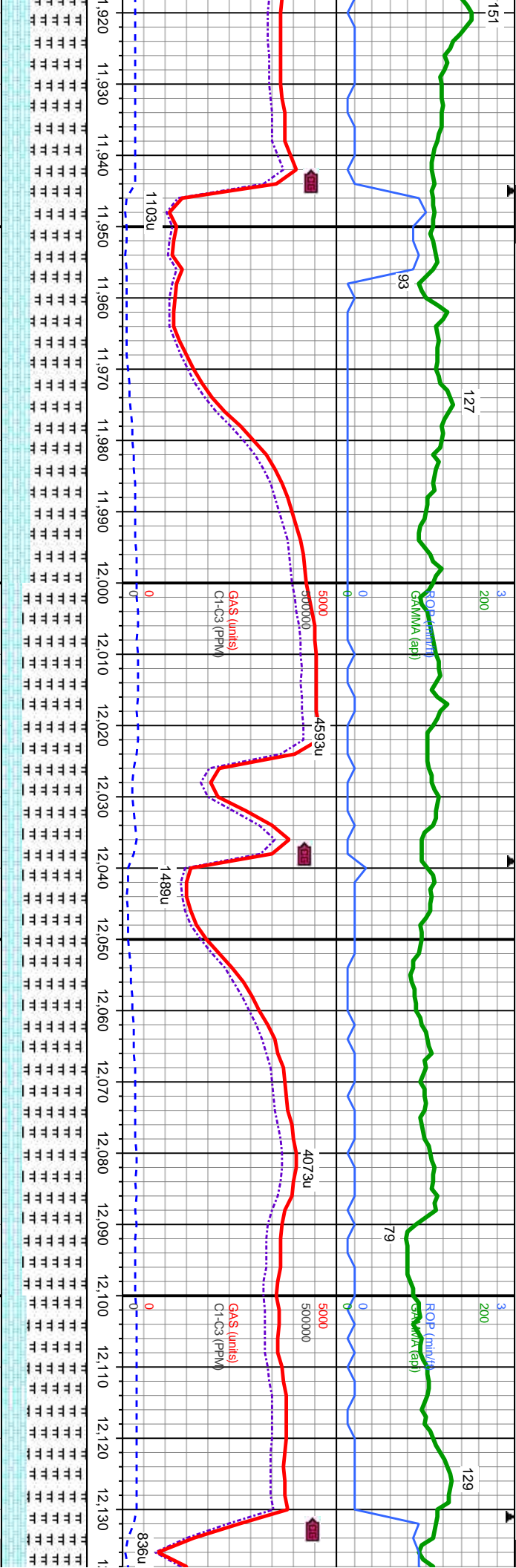
11.000'-11.100' MD: CHK: chky-sb wxy, v calc, MRLST: frm, sb arg-sily, calc, calc

7500

7500

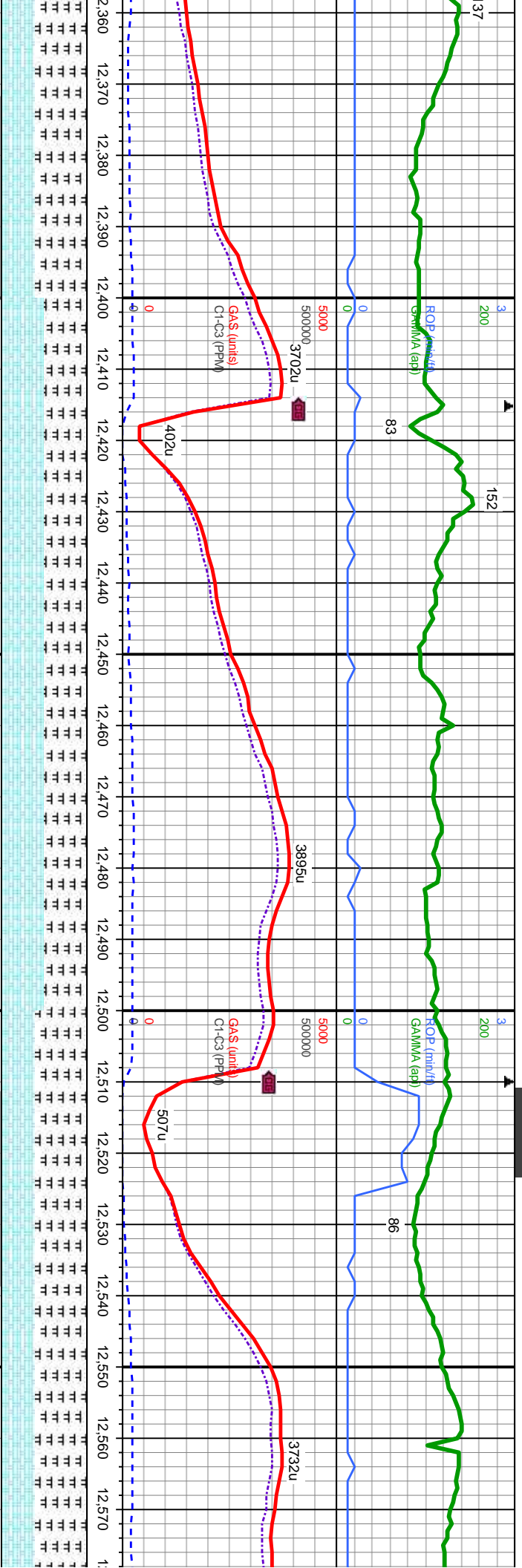
7500





900'-12,000' MD: MRLST: m-dk gy- m gy brn, sbply-sbblky, mod sft-sl frm, sb arg-sltly, calc, CHK: lt-med gy, mot, sbblky-sbply, sft-sl m, fri, chky-sb wxy, v calc, tr bent, tr lt bl flr w/ slw strmg milky cut	7500
12,000'-12,100' MD: MRLST: m-dk gy- m gy brn, sbply-sbblky, mod sft-sl frm, sb arg-sltly, calc, CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, tr bent, tr lt bl flr w/ slw strmg milky cut	7500
12,100'-12,200' MD: MRLST: m-dk gy- m gy brn, sbply-sbblky, mod sft-sl frm, sb arg-sltly, calc, CHK: lt-med gy, mot, sbblky-sbply, sft-sl m, fri, chky-sb wxy, v calc, tr bent, tr lt bl flr w/ slw strmg milky cut	7500





WT IN: 9.6
VIS IN: 57

OUT: 9.5+
OUT: 61

MD: 12,448
TVD: 7,146.42
Inclination: 90.03
Azimuth: 91.2
VS: 5,534.4

MD: 12,542
TVD: 7,147.28
Inclination: 88.92
Azimuth: 90.85
VS: 5,628.38

53 -

brn, sbply-sbblky, mod
mot, sbblky-sbply, sft-sl
w string mlky cut

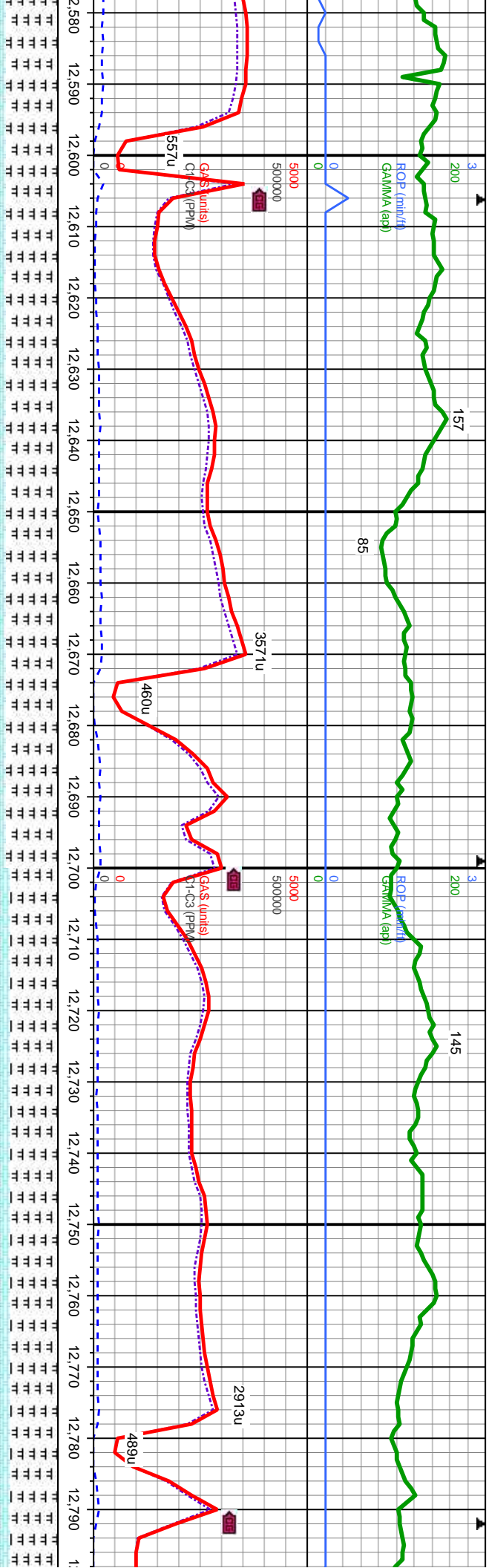
12,400'-12,500' MD: MRLST: m-dk gy- m gy brn, sbply-sbblky, mod
sft-sl frm, sb arg-slty, calc, CHK: lt-med gy, mot, sbblky-sbply, sft-sl
frm, fri, chky-sb wxy, v calc, tr lt bl flor w/ slw string mlky cut

7500

12,500'-12,600' MD: MRLST: m-dk gy- m gy brn, sbply-sbblky, mod
sft-sl frm, sb arg-slty, calc, CHK: lt-med gy, mot, sbblky-sbply, sft-
frm, fri, chky-sb wxy, v calc, tr lt bl flor w/ slw string mlky cut

7500

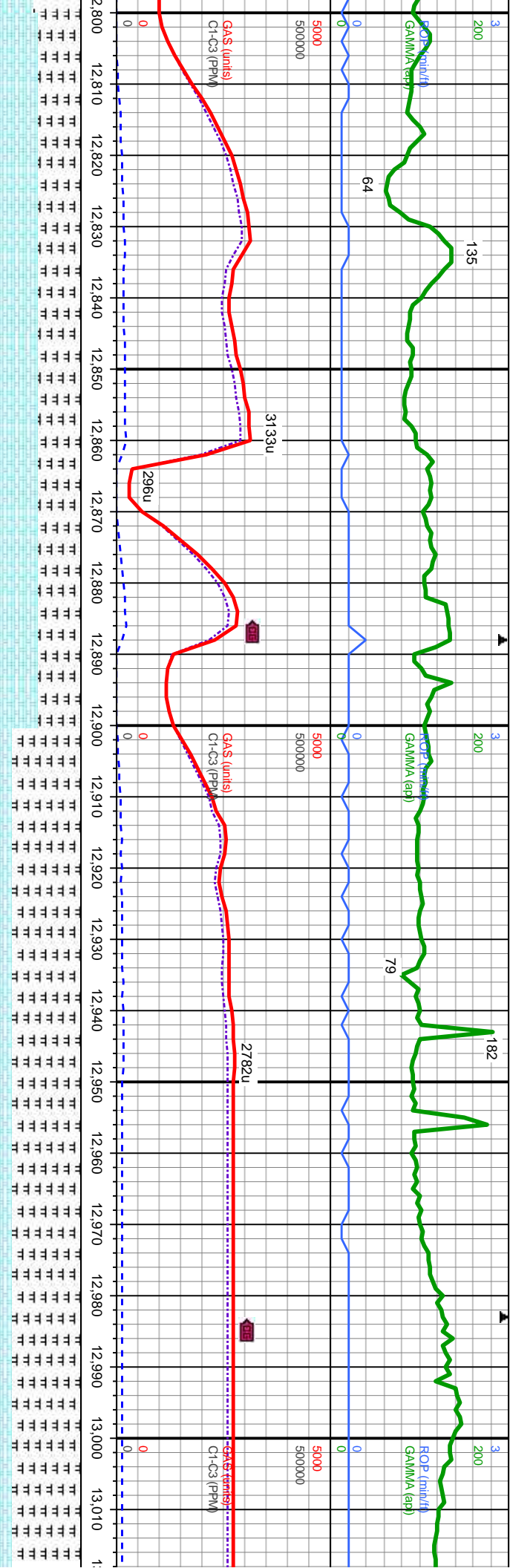




6500	WT IN: 9.6+ VIS IN: 58	OUT: 9.6 OUT: 56
MD: 12.637. TVD: 7,148.9 Inclination: 89.13 - Azimuth: 91.03 - VS: 5,723.35.		
TVD (ft)		

12,600'-12,700' MD: MRLST: m-dk gy- m gy brn, sbply-sbblky, mod sft-sl frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, tr lt bl flr w/ slw strng mlky cut	7500
12,700'-12,800' MD: MRLST: m-dk gy- m gy brn, sbply-sbblky, mod sft-sl frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, tr lt bl flr w/ slw strng mlky cut	7500





WT IN: 9.5+ OUT: 9.5+
VIS IN: 59 OUT: 60

MD: 12,826.
TVD: 7,151.56.
Inclination: 89.07 -
Azimuth: 90.7 -
VS: 5.912.31 .

MD: 12,920.
TVD: 7,152.9
Inclination: 89.29 -
Azimuth: 90.63 -
VS: 6.006.3 .

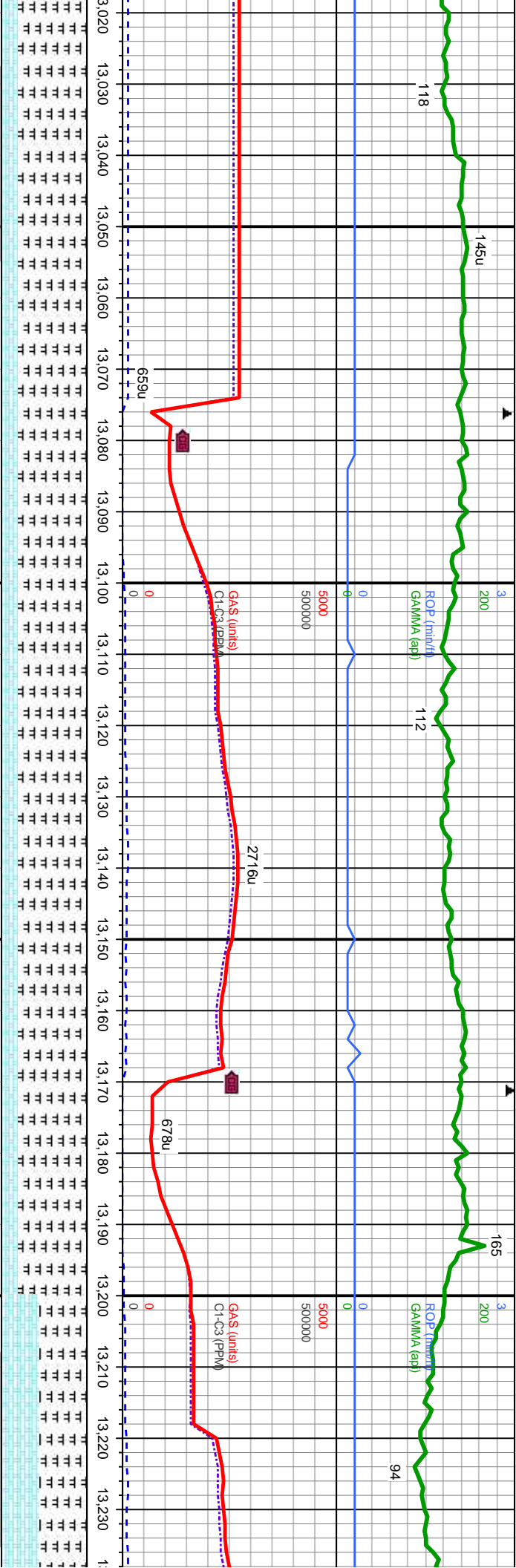
MD: 13,014.
TVD: 7,153.74
Inclination: 89.
Azimuth: 90.56
VS: 6.100.29 .

12,800'-12,900' MD: MRLST: m-dk gy- m gy brn, sbply-sbbiky, mod
sft-sl frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbbiky-sbply, sft-sl
frm, fri, chky-sb wxy, v calc, tr lt bl flwr w/ slw strng mlky cut

12,900'-13,000' MD: MRLST: m-dk gy- m gy brn, sbply-sbbiky, mod
sft-sl frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbbiky-sbply, sft-sl
frm, fri, chky-sb wxy, v calc, tr lt bl flwr w/ slw strng mlky cut

13
sft
frm





WT IN: 9.6+ OUT: 9.6
VIS IN: 59 OUT: 60

MD: 13,109
TVD: 7,154.2
Inclination: 89.75
Azimuth: 90.38
VS: 6,195.28

WT IN: 9.5+ OUT: 9.5
VIS IN: 56 OUT: 55

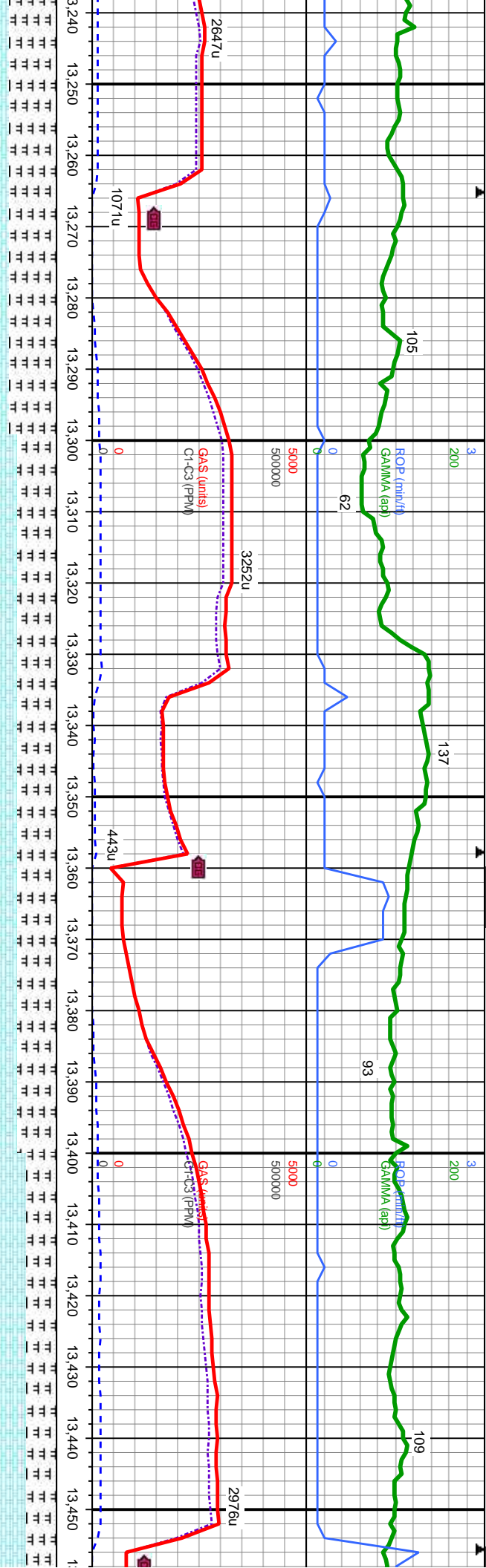
MD: 13,203
TVD: 7,154.54
Inclination: 89.84
Azimuth: 90.54
VS: 6,289.28

000'-13,100' MD: MRLST: m-dk gy- m gy brn, sbply-sbbky, mod
sft-sl frm, sb arg-slty, calc, CHK: lt-med gy, mot, sbbky-sbply, sft-sl
n, fri, chky-sb wxy, v calc, tr lt bl flr w/ slw strng mlky cut

13,100'-13,200' MD: MRLST: m-dk gy- m gy brn, sbply-sbbky, mod
sft-sl frm, sb arg-slty, calc, CHK: lt-med gy, mot, sbbky-sbply, sft-sl
frm, fri, chky-sb wxy, v calc, tr lt bl flr w/ slw strng mlky cut

13,200'-13,300' MD: MRLST: m-dk gy- m gy brn, sbply-sbbky, mod
sft-sl frm, sb arg-slty, calc, CHK: lt-med gy, mot, sbbky-sbply, sft-sl
frm, fri, chky-sb wxy, v calc, tr lt bl flr w/ slw strng mlky cut





MD: 13,297.
TVD: 7,154.62
Inclination: 90.06
Azimuth: 90.43
VS: 6,383.28

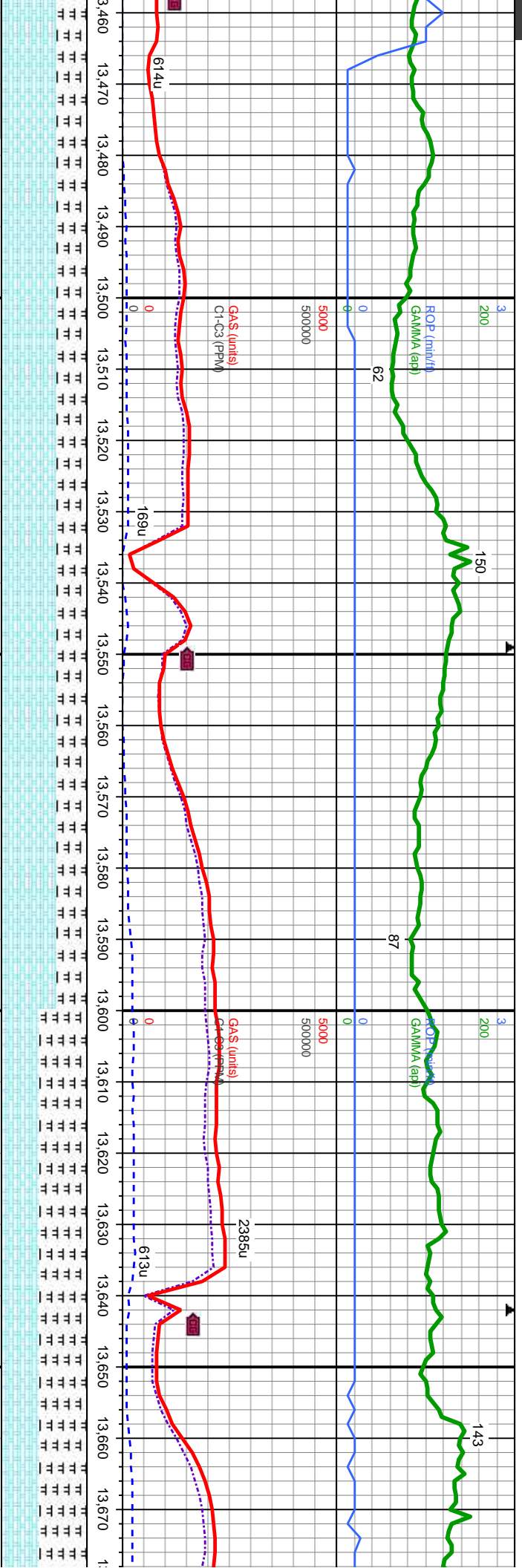
MD: 13,392.
TVD: 7,155.08
Inclination: 89.38
Azimuth: 90.46
VS: 6,478.27

ST: m-dk gy- m gy brn, sbply-sbply, mod
g, CHK: lt-med gy, mot, sbply-sbply, sft-sl
alc, tr lt bl flr w/ slw strmg milky cut

13,300'-13,400' MD: CHK: lt-med gy, mot, sbply-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s bky,
mod sft-sl frm, sb arg-sly, calc, tr lt bl flr w/ slw strmg milky cut

13,400'-13,500' MD: CHK: lt-med gy, mot, sb
fri, chky-sb wxy, v calc, MRLST: m-dk gy- m
mod sft-sl frm, sb arg-sly, calc, tr lt bl flr w/





9.6 OUT: 9.5
52 OUT: 50

MD: 13.486
TVD: 7,156.1
Inclination: 89.38
Azimuth: 89.74
VS: 6,572.27

TVD (ft)

MD: 13.580
TVD: 7,156.95
Inclination: 89.59
Azimuth: 89.59
VS: 6,666.26

TVD (ft)

MD: 13.674
TVD: 7,157.77
Inclination: 89
Azimuth: 89.4
VS: 6,760.25

blkly-sbply, sft-sl frm,
gy brn, sbply-s blkly,
slw strng mlky cut

13,500'-13,600' MD: CHK: lt-med gy, mot, sbply-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly,
mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut

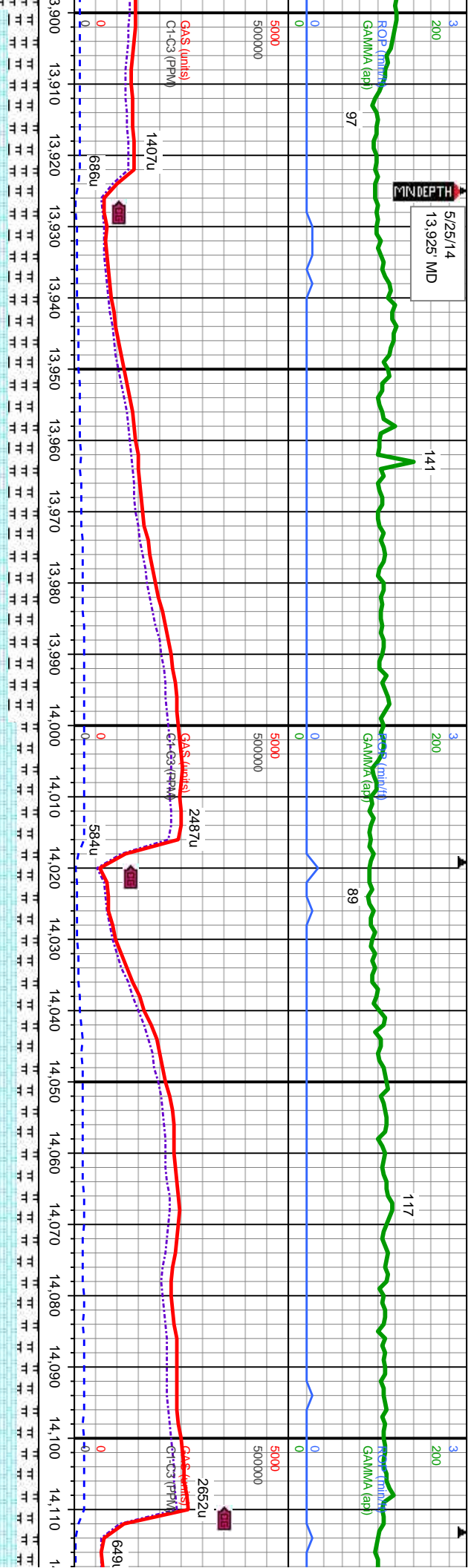
13,600'-13,700' MD: MRLST: m-dk gy- m gy brn, sbply-sbply, s
sft-sl frm, sb arg-sily, calc, CHK: lt-med gy, mot, sbply-sbply, s
frm, fri, chky-sb wxy, v calc, tr lt bl flr w/ slw strng mlky cut

7500

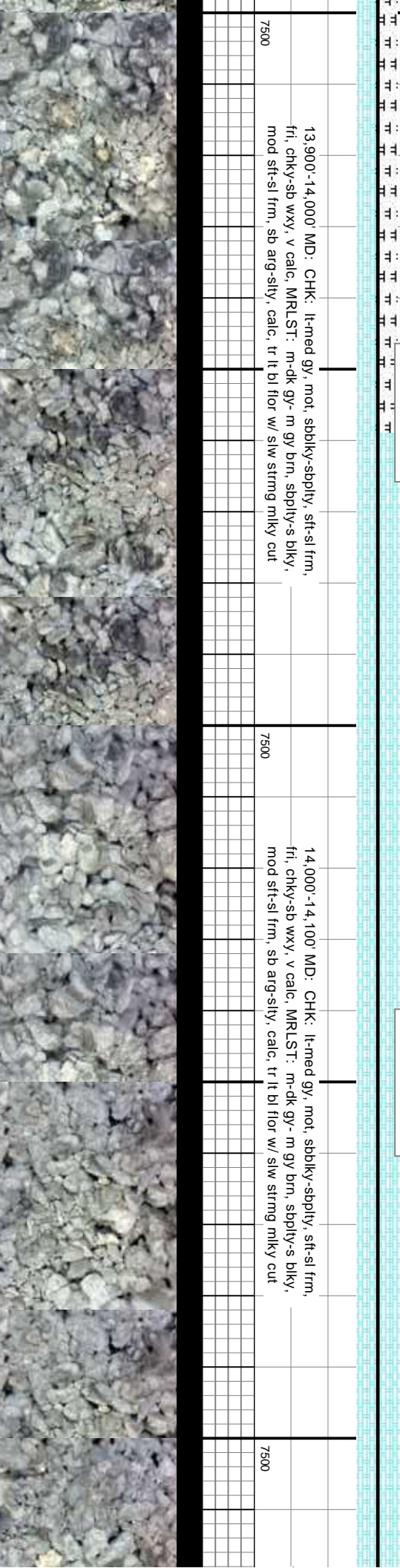
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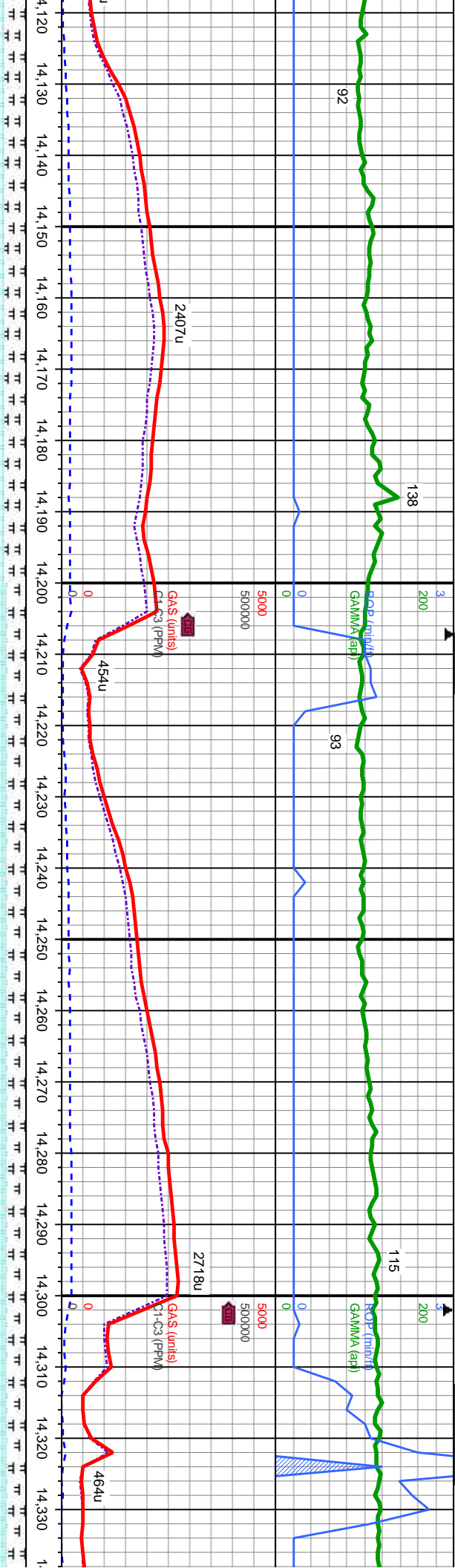
7500





5000	6500	6500	6500
			WT IN: 9.6 VIS IN: 58
TVD (ft)	TVD (ft)	TVD (ft)	TVD (ft)
MD: 13,956. TVD: 7,159.74. Inclination: 89.5- Azimuth: 89.11 - VS: 7,042.22.			
13,900'-14,000' MD: CHK: lt-med gy, mot, sbbkly-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flwr w/ slw strng mlky cut			
7500	7500	7500	7500





OUT: 9.6
OUT: 56

MD: 14,144.
TVD: 7,159.38
Inclination: 90.58 -
Azimuth: 89.2 -
VS: 7,230.19 .

TVD (ft)

MD: 14,239.
TVD: 7,158.24.
Inclination: 90.8 -
Azimuth: 89.66 -
VS: 7,325.18 .

TVD (ft)

MD: 14,333.
TVD: 7,157.11.
Inclination: 90.5
Azimuth: 89.67
VS: 7,419.17 .

WT IP
VIS IP

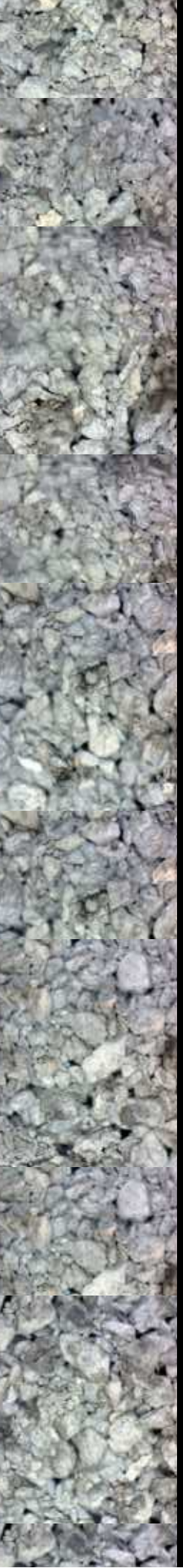
14,100'-14,200' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flwr w/ slw strmg mlky cut

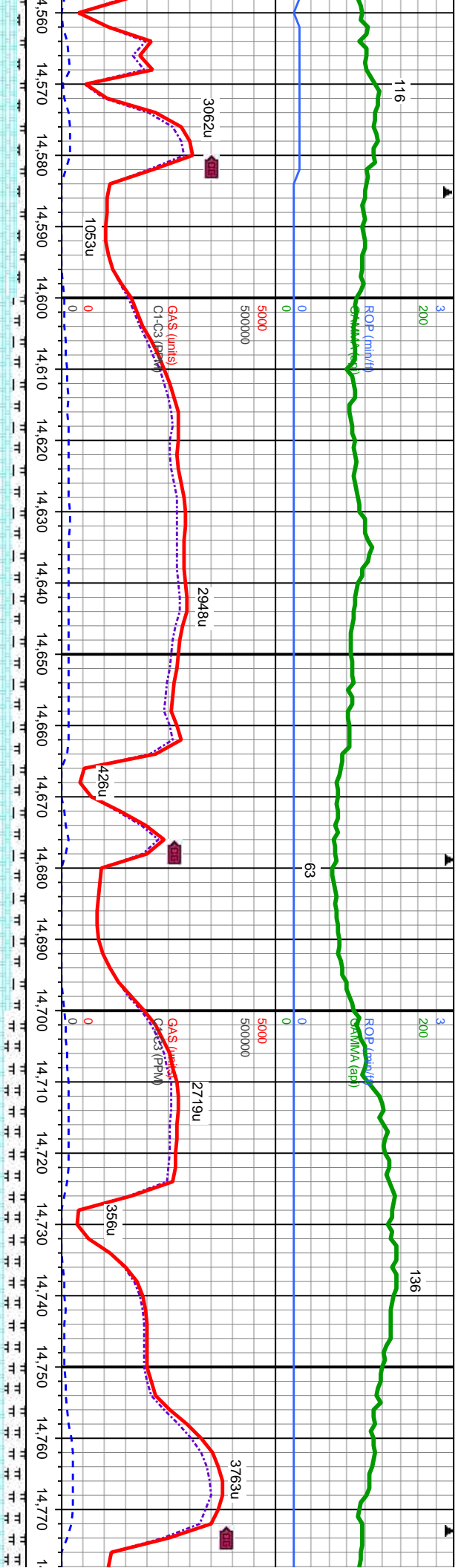
7500

14,200'-14,300' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flwr w/ slw strmg mlky cut

7500

14,300'-14,400' MD: C fri, chky-sb wxy, v calc mod sft-sl frm, sb arg-





WT IN: 9.6
VIS IN: 55

OUT: 9.5+
OUT: 54

MD: 14.617
TVD: 7,160.41
Inclination: 89.13
TVD (ft) Azimuth: 90.52
VS: 7,703.13

WT IN: 9.5+
VIS IN: 54

OUT: 9.6
OUT: 54

MD: 14.711
TVD: 7,161.76
Inclination: 89.23
Azimuth: 90.74
VS: 7,797.11

bbbkly-sbply, sft-sl frm,
n gy brn, sbply-s blkly,
w/ slw strng mlky cut

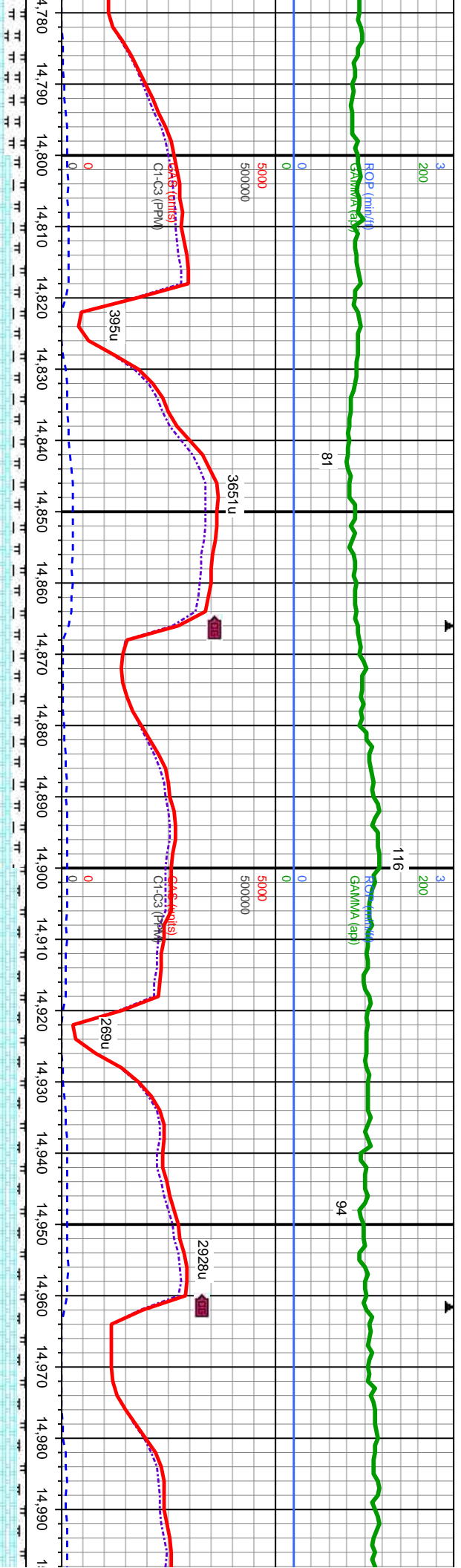
14,600'-14,700' MD: CHK: lt-med gy, mot, sbbkly-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly,
mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut

7500

14,700'-14,800' MD: CHK: lt-med gy, mot, sbbkly-sbply, sft-sl fr
fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blk
mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut

7500





MD: 14,805.
TVD: 7,162.9
Inclination: 89.38 -
Azimuth: 90.66 -
VS: 7,891.1.

MD: 14,899.
TVD: 7,163.87.
Inclination: 89.44 -
Azimuth: 90.62 -
VS: 7,985.09.

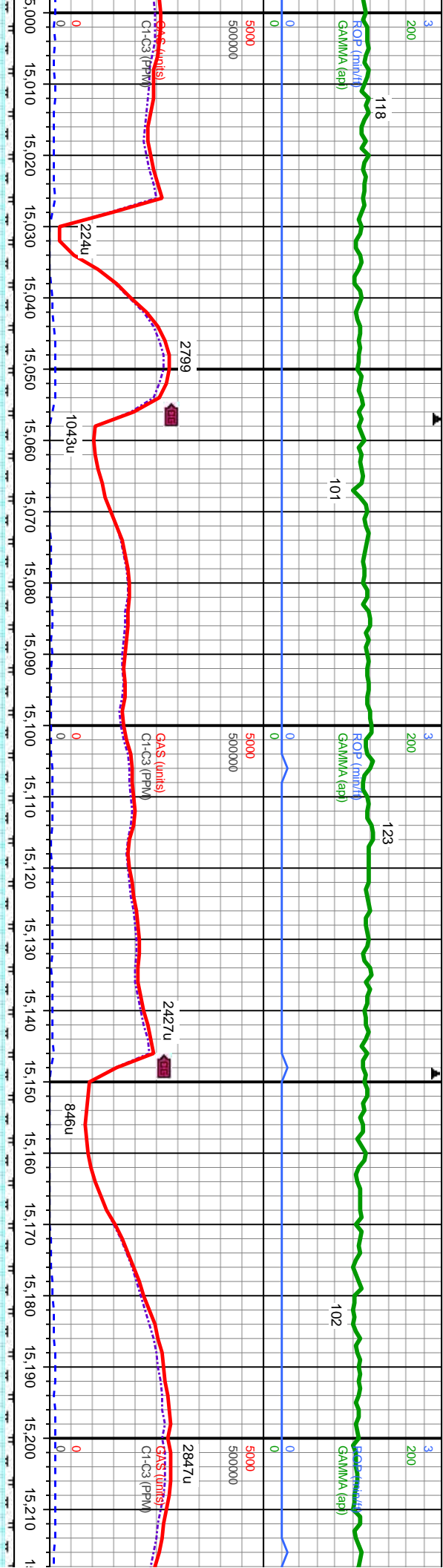
MD: 14,994.
TVD: 7,164.75
Inclination: 89
Azimuth: 90.5
VS: 8,080.08.

WT IN: 9.6+ OUT: 9.6
VIS IN: 55 OUT: 54

14,800'-14,900' MD: CHK: lt-med gy, mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flwr w/ slw strmg mlky cut

14,900'-15,000' MD: CHK: lt-m gy- mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flwr w/ slw strmg mlky cut

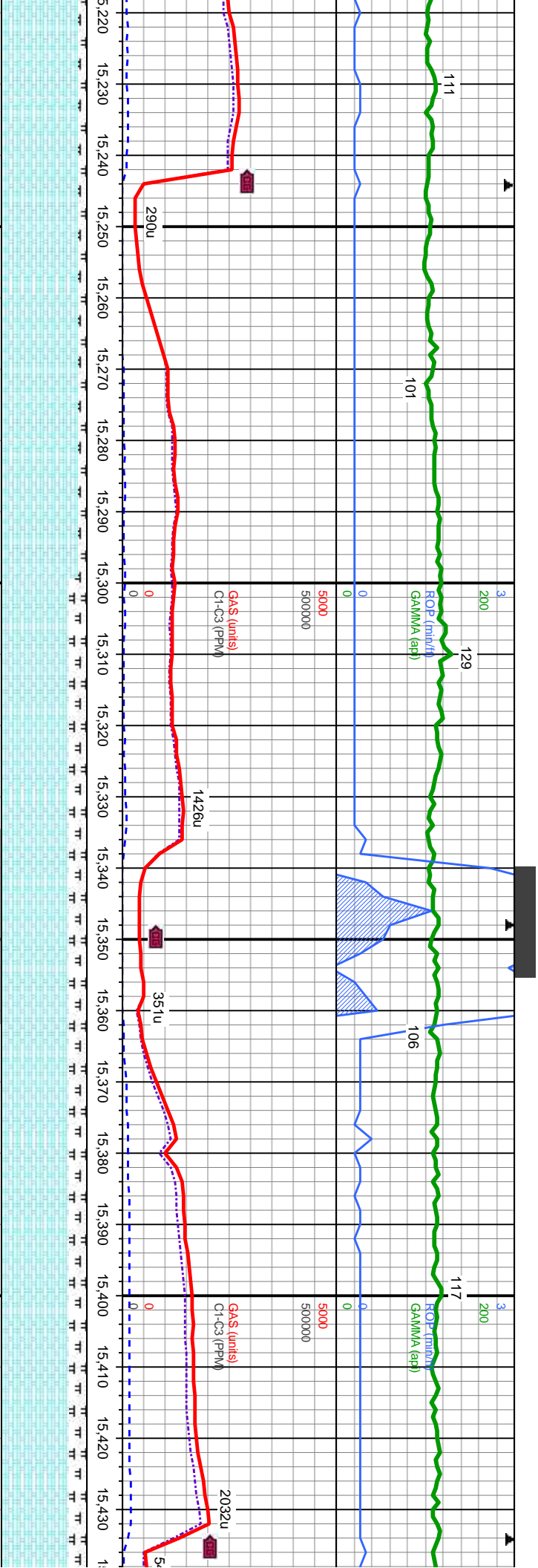




6500	WT IN: 9.5+ VIS IN: 54	OUT: 9.6 OUT: 54	6500	WT IN: 9.5+ VIS IN: 56	OUT: 9.6+ OUT: 54	6500
MD: 15,088. TVD: 7,165.36. Inclination: 89.75 - Azimuth: 90.42 - VS: 8,174.07 .						
TVD (ft)						

15,000'-15,100' MD: CHK: lt-m gy- mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut	7500
15,100'-15,200' MD: CHK: lt-m gy- mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut	7500





MD: 15,277.
TVD: 7,164.89
Inclination: 90.64
Azimuth: 90.
VS: 8,363.07

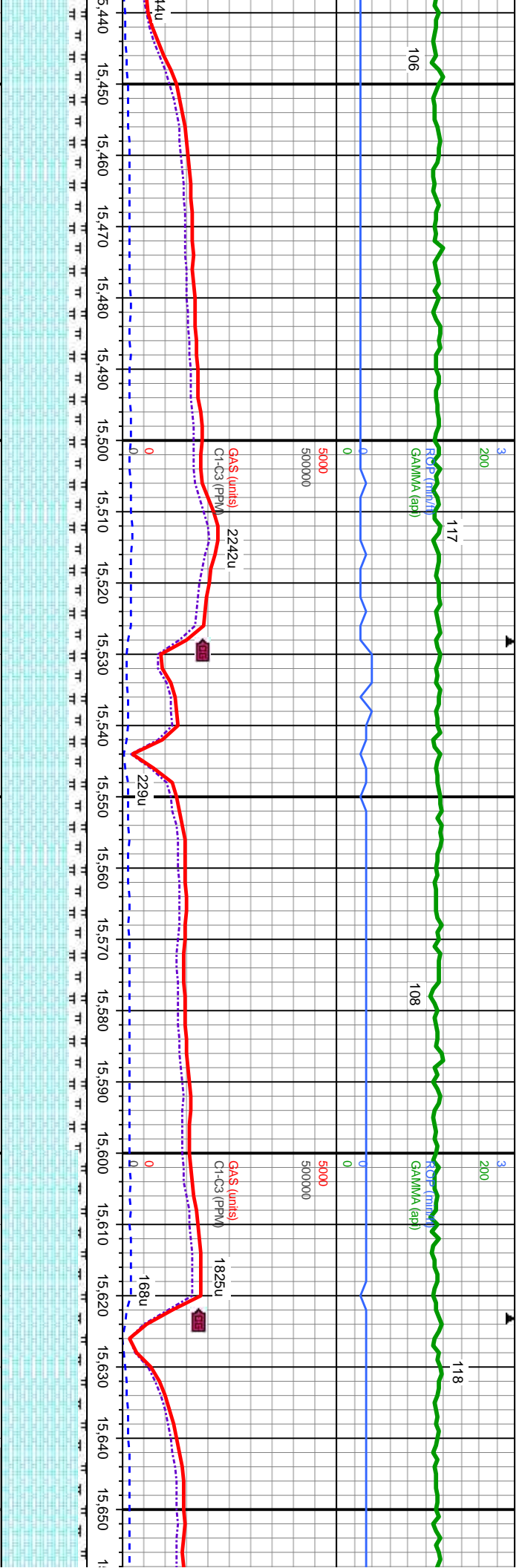
WT IN: 9.5 OUT: 9.5
VIS IN: 56 OUT: 56

MD: 15,371.
TVD: 7,164.7
Inclination: 89.59
Azimuth: 89.37
VS: 8,457.07

WT IN: 9.5 OUT: 9.5
VIS IN: 56 OUT: 56

15,200'-15,300' MD: CHK: lt-m gy- mot, sbblky-sbply, sft-sl frm, i, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strmg mlky cut	7500	15,300'-15,400' MD: CHK: lt-m gy- mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strmg mlky cut	7500
15,400'-15,500' MD: CHK: lt-m gy- mot, sbblky-sbply, sft-sl frm, i, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strmg mlky cut	7500	15,400'-15,500' MD: CHK: lt-m gy- mot, sbblky-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strmg mlky cut	7500





WT IN: 9.5
VIS IN: 56
OUT: 9.5
OUT: 55

MD: 15,466.
TVD: 7,164.94.
Inclination: 90.12 -
Azimuth: 89.28 -
VS: 8,552.06 .

6500
TVD (ft)

MD: 15,560.
TVD: 7,164.72.
Inclination: 90.15 -
Azimuth: 89.73 -
VS: 8,646.05

6500
TVD (ft)

WT IN: 9.5
VIS IN: 56
OUT: 9.5
OUT: 55

MD: 15,655.
TVD: 7,163.9.
Inclination: 9
Azimuth: 89.9
VS: 8,741.05

CHK: lt-m gy- mot, sbblky-sbply, sft-sl frm,
c, MRLST: m-dk gy- m gy brn, sbply-s blkly,
sily, calc, tr lt bl flr w/ slw strng mlky cut

7500

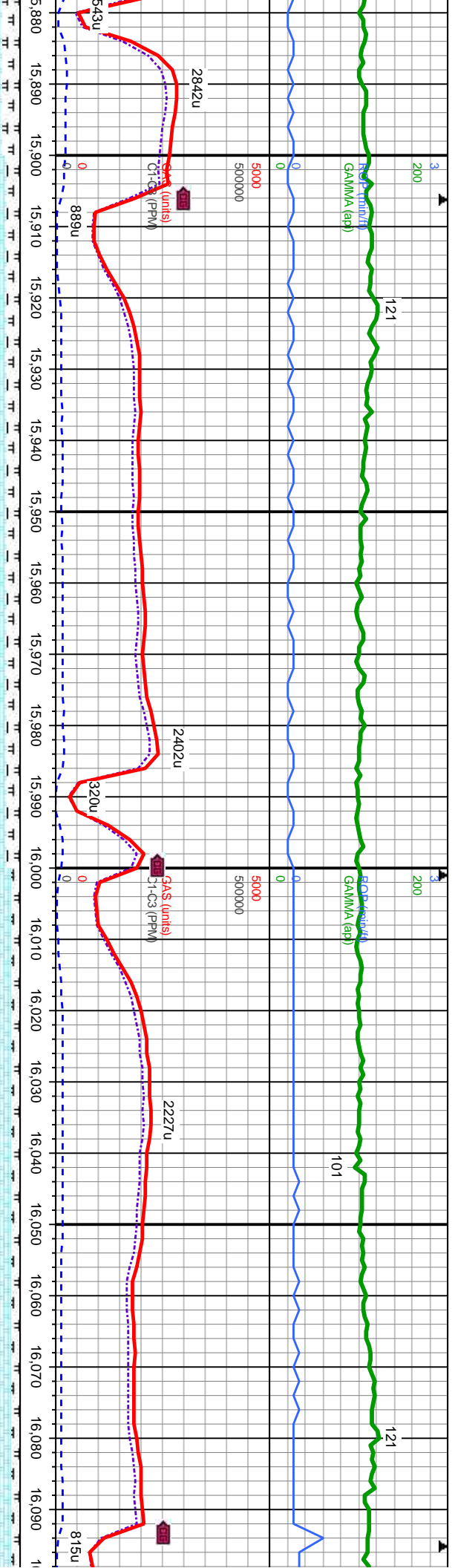
15,500'-15,600' MD: CHK: lt-m gy- mot, sbblky-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly,
mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut

7500

15,600'-15,700' MD: CHK: lt-m gy- mot, sbblky-sbply, sft-sl frm,
fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly,
mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strng mlky cut

7500





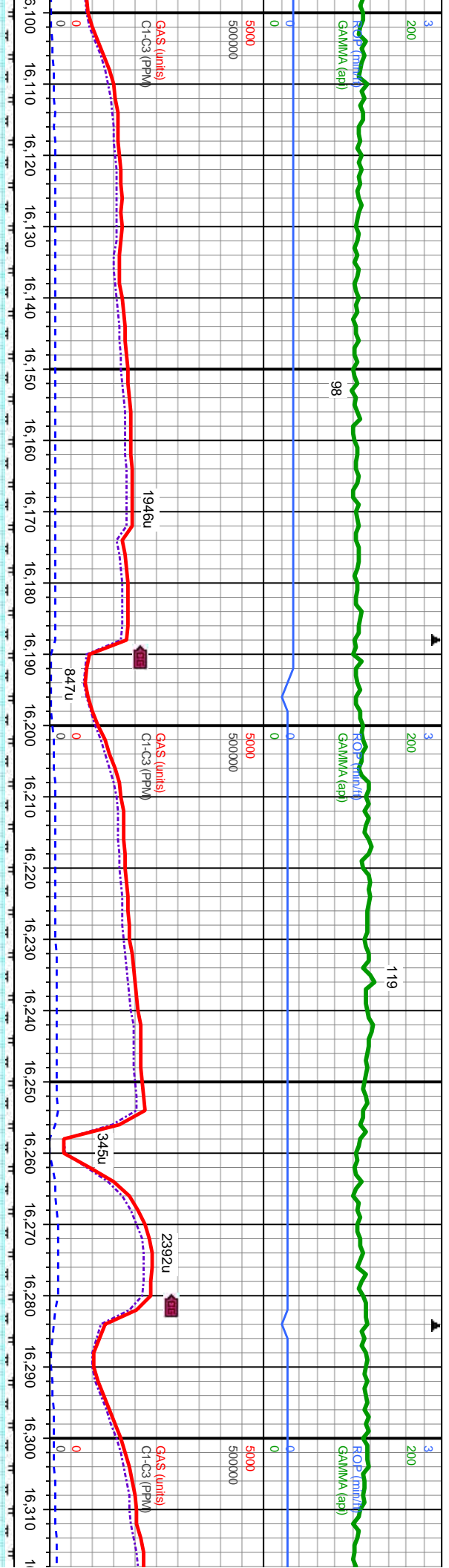
9.5	6500	WT IN: 9.6	OUT: 9.5
55		VIS IN: 56	OUT: 55
MD: 15,938. TVD: 7,165.88. Inclination: 89.56 - Azimuth: 90.07 - VS: 9,024.04 .			
TVD (ft)			

9.5	6500	WT IN: 9.6	OUT: 9.5
55		VIS IN: 56	OUT: 55
MD: 16,032. TVD: 7,165.94. Inclination: 90.36 - Azimuth: 89.98 - VS: 9,118.03 .			
TVD (ft)			

15,900'-16,000' MD: CHK: lt-m gy- mot, sbdky-sbply, sft-sl frm, fri,
chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s bkky, mod
sft-sl frm, sb arg-sily, calc, tr lt bl flwr w/ slw strmg mlky cut

16,000'-16,100' MD: CHK: lt-m gy- mot, sbdky-sbply, sft-sl frm, fri,
chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s bkky, mod
sft-sl frm, sb arg-sily, calc, tr lt bl flwr w/ slw strmg mlky cut

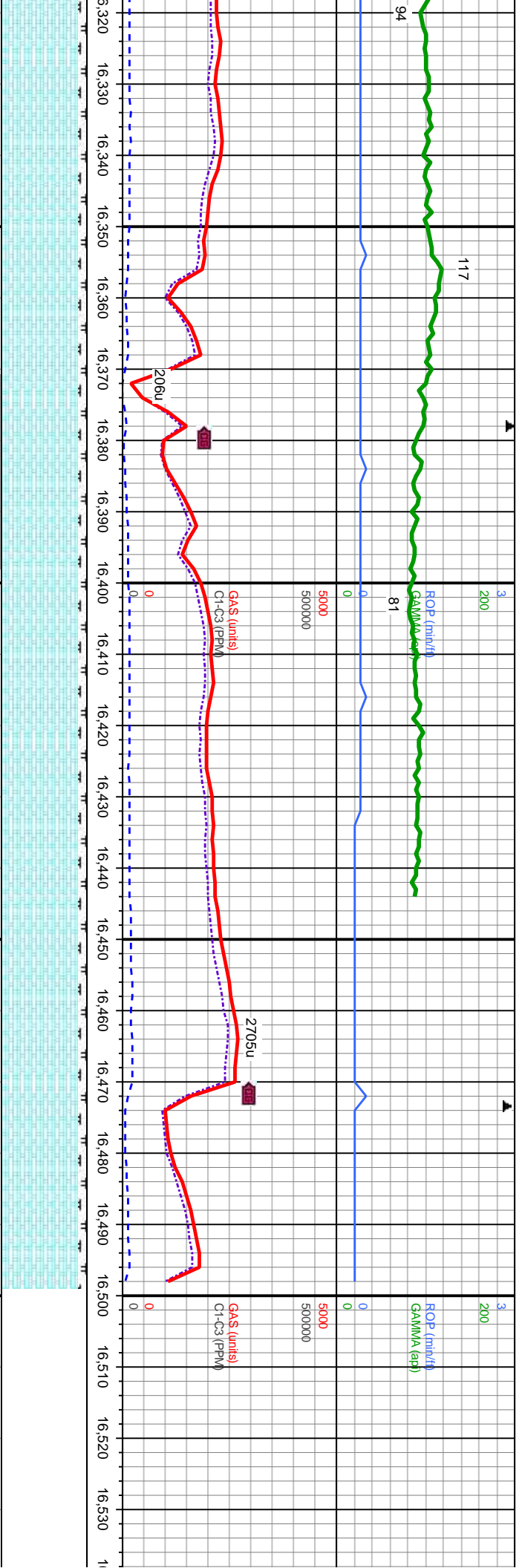




6500	6500	6500	6500
MD: 16,126. TVD: 7,165.24. Inclination: 90.49 - Azimuth: 90.24 - VS: 9,212.03 .			
TVD (ft)	TVD (ft)	TVD (ft)	TVD (ft)

16,100'-16,200' MD: CHK: lt-m gy- mot, sbblky-sbply, sft-sl frm, frt, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sfly, calc, tr lt bl flwr w/ slw strmg mlky cut	16,200'-16,300' MD: CHK: lt-m gy- mot, sbblky-sbply, sft-sl frm, frt, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sfly, calc, tr lt bl flwr w/ slw strmg mlky cut
7500	7500





WT IN: 9.6 OUT: 9.6
VIS IN: 54 OUT: 54

MD: 16,409
TVD: 7,160.56
Inclination: 91.47
Azimuth: 90.43
VS: 9,494.99

MD: 16,436
TVD: 7,159.85
Inclination: 91.53
Azimuth: 90.35
VS: 9,521.98

MD: 16,499
TVD: 7,158.17
Inclination: 91.53
Azimuth: 90.35
VS: 9,584.96

PROJ. TO BIT

WELL TD'D @ 16,499' N
ON 5/26/14 @ 07:10 HR

THANK YOU FOR USING
COLUMBINE LOGGING INC.

16,300'-16,400' MD: CHK: lt-m gy- mot, sbbkly-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strmg mlky cut

16,400'-16,499' MD: CHK: lt-m gy- mot, sbbkly-sbply, sft-sl frm, fri, chky-sb wxy, v calc, MRLST: m-dk gy- m gy brn, sbply-s blkly, mod sft-sl frm, sb arg-sily, calc, tr lt bl flr w/ slw strmg mlky cut



