Scale 1:200 Imperial
Measured Depth Log

Well Name:	**Pettinger 4NE-18HZX**		
Location:	**Weld County, CO.**		
License Number:	**05123380210100**	**Region:**	**Weld County**
Spud Date:	**2/4/1014**	**Drilling Completed:**	**2/12/14**
Surface Coordinates:	**283'FSL & 1010'FWL, SEC 18, T1N-R65W**		
Bottom Hole Coordinates:	**1'FNL & 1100'FEL, SEC 18, T1N-R65W**		
Ground Elevation (ft):	**5007'**	**K.B. Elevation (ft):**	**5020'**
Logged Interval (ft):	**6616' To: 12164'**	**Total Depth (ft):**	**12164'**
Formation:	**Niobrara B**		
Type of Drilling Fluid:	**Water Based Mud**		

OPERATOR

Company: **Anadarko Petroleum Corporation**
Address: **Granite Tower**
1099 18th St., Suite 1800
Denver, CO 80202

GEOLOGIST

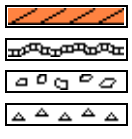
Name: Aaron Wiggins / Kyle Pickard
Company: Great Divide Consulting, Inc.
Address: P.O. Box 630263
Highlands Ranch, CO 80163

Cores

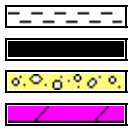
DSTs

Comments

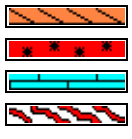
ROCK TYPES



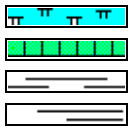
Anhy
Bent
Brec
Cht



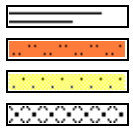
Clyst
Coal
Congl
Dol



Gyp
Igne
Lmst
Meta



Mrlst
Salt
Shale
Shcol



Shgy
Sltst
Ss
Till

ACCESSORIES

MINERAL

Anhy
Arggrn
Arg
Bent
Bit
Brecfrag
Calc
Carb
Chtdk
Chtlt
Dol
Feldspar
Ferrpel
Ferr
Glau

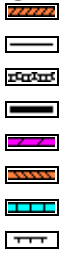
Gyp
Hvymin
Kaol
Marl
Minxl
Nodule
Phos
Pyr
Salt
Sandy
Silt
Sil
Sulphur
Tuff

FOSSIL

Algae
Amph
Belm
Bioclst
Brach
Bryozoa
Cephal
Coral
Crin
Echin
Fish
Foram
Fossil
Gastro
Oolite

Ostra
Pelec
Pellet
Pisolite
Plant
Strom

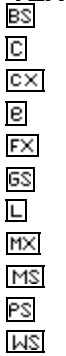
STRINGER



Anhy
Arg
Bent
Coal
Dol
Gyp
Ls
Mrst

Sltstrg
Ssstrg

TEXTURE



Boundst
Chalky
Cryxln
Earthy
Finexln
Grainst
Lithogr
Microxln
Mudst
Packst
Wackest

OTHER SYMBOLS

POROSITY
- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

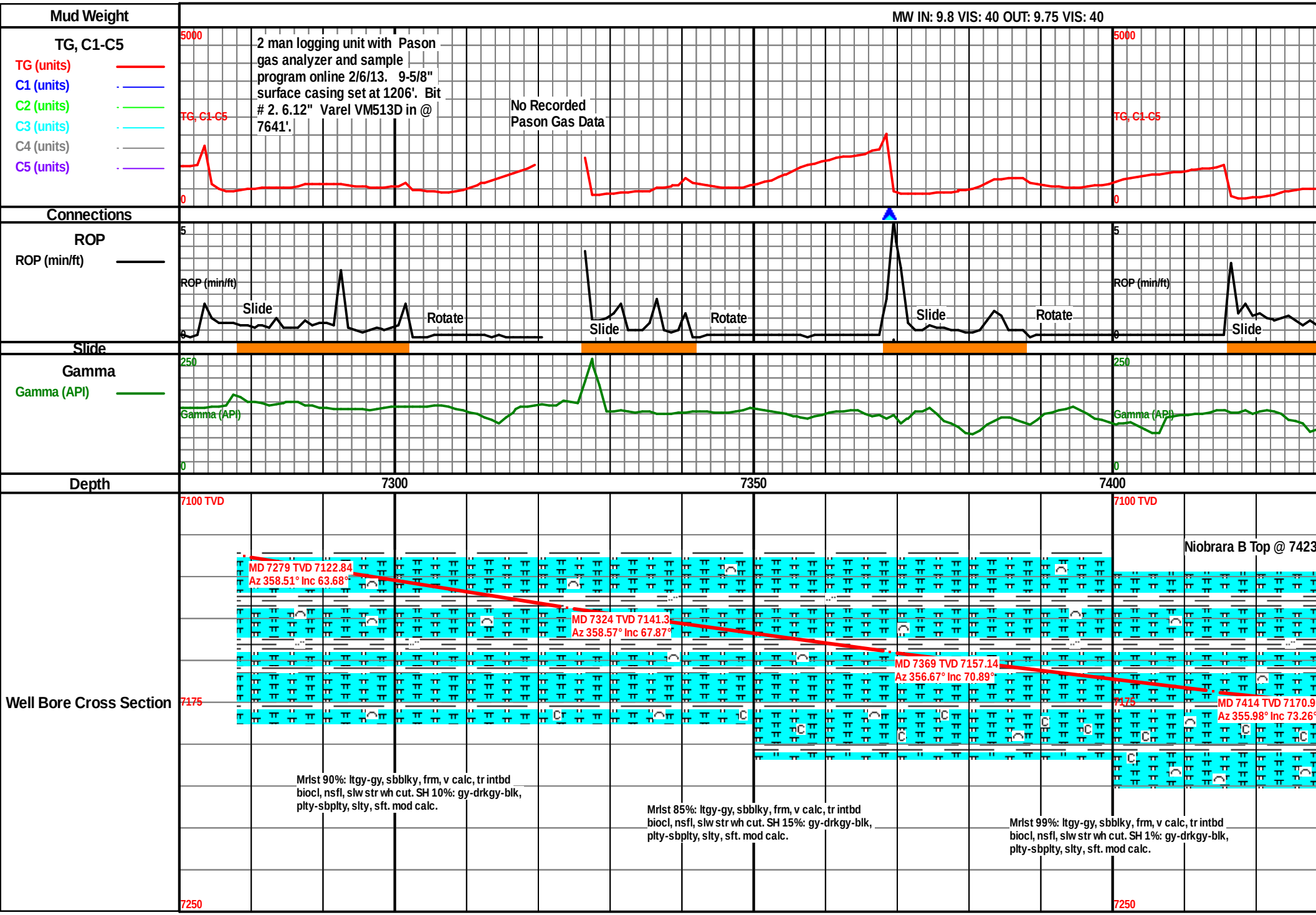
SORTING
- Well
- Moderate
- Poor

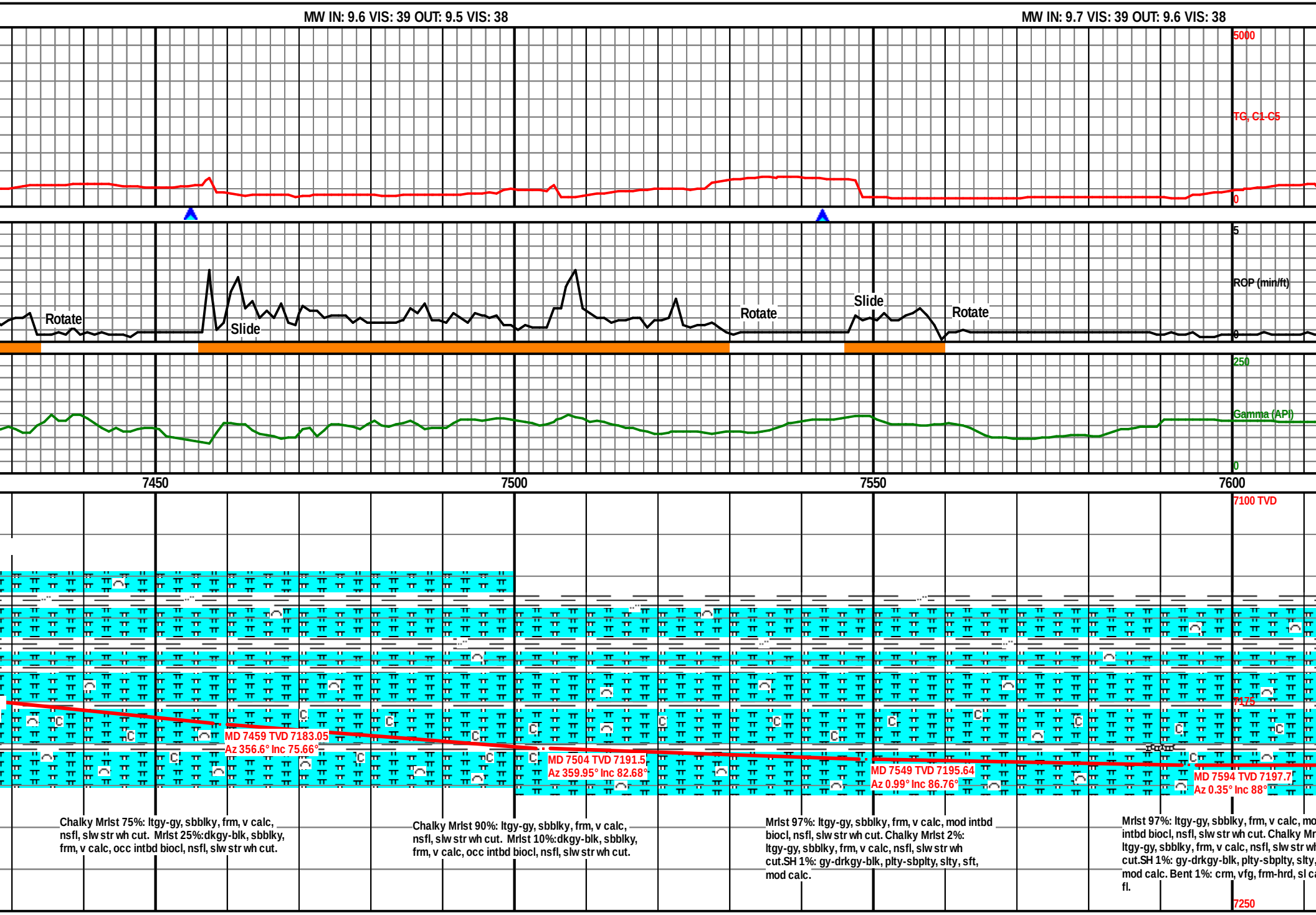
ROUNDING
- Rounded
- Subrnd
- Subang
- Angular

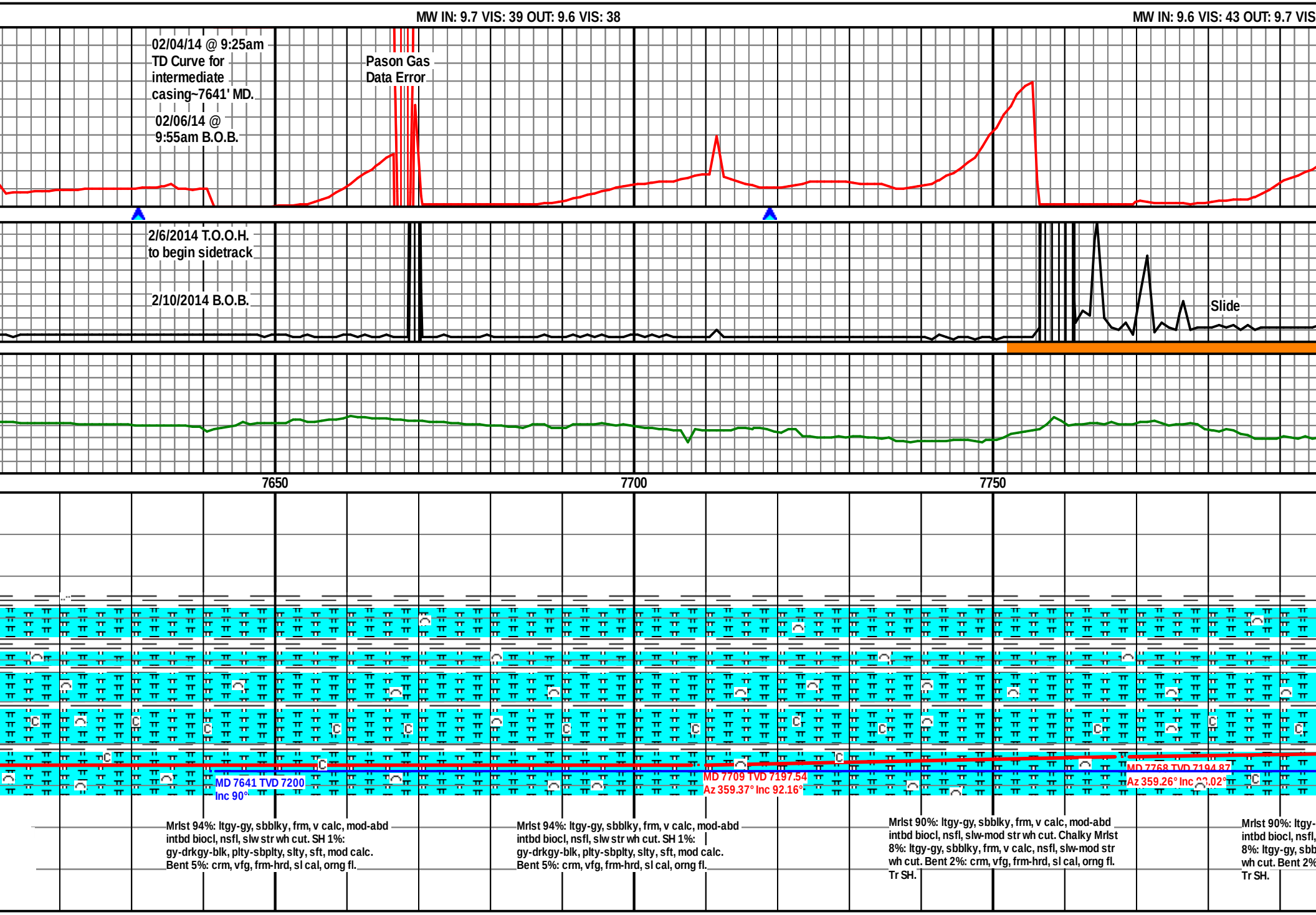
OIL SHOW
- Even
- Spotted
- Ques
- Dead

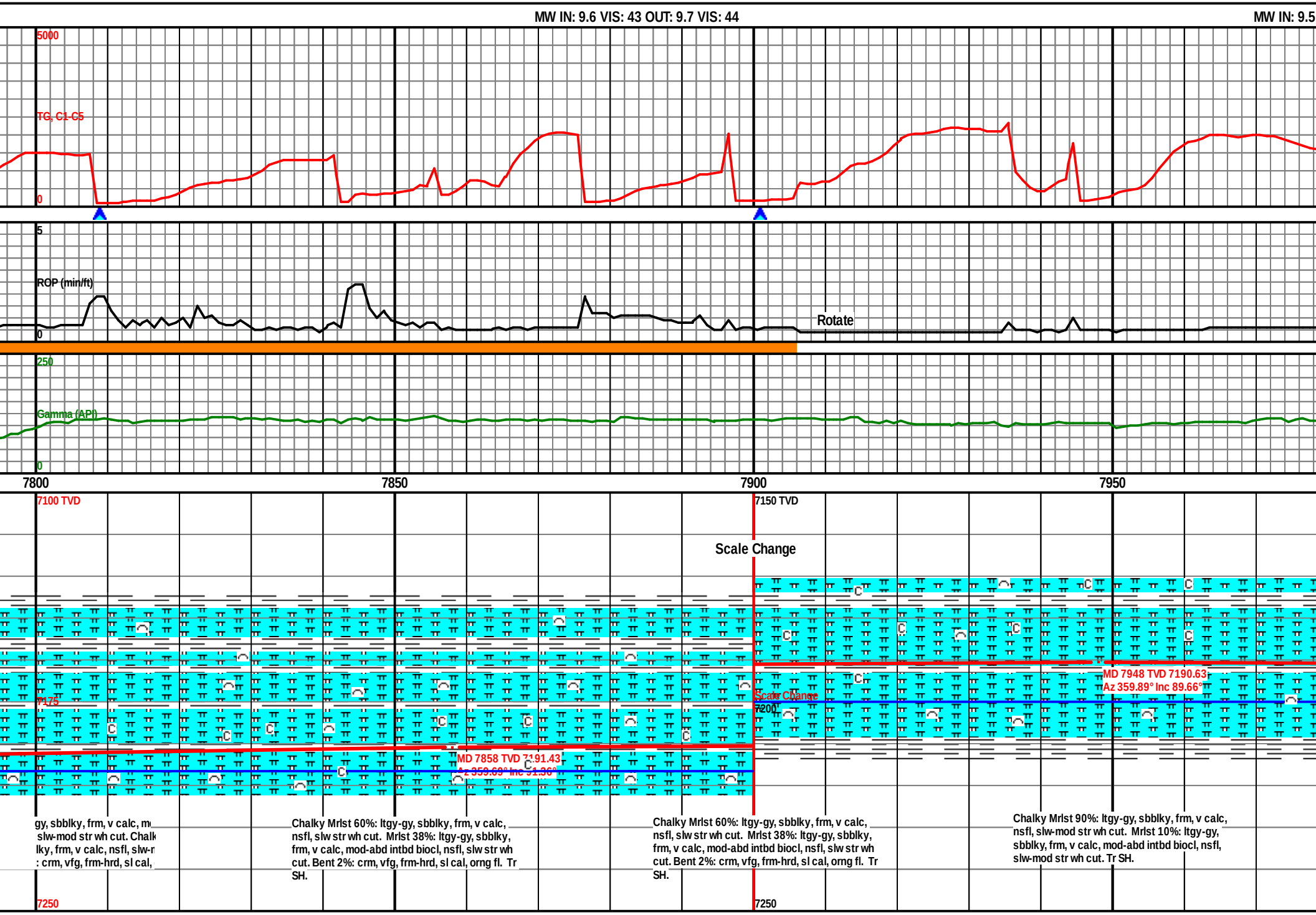
INTERVAL
- Core
- Dst

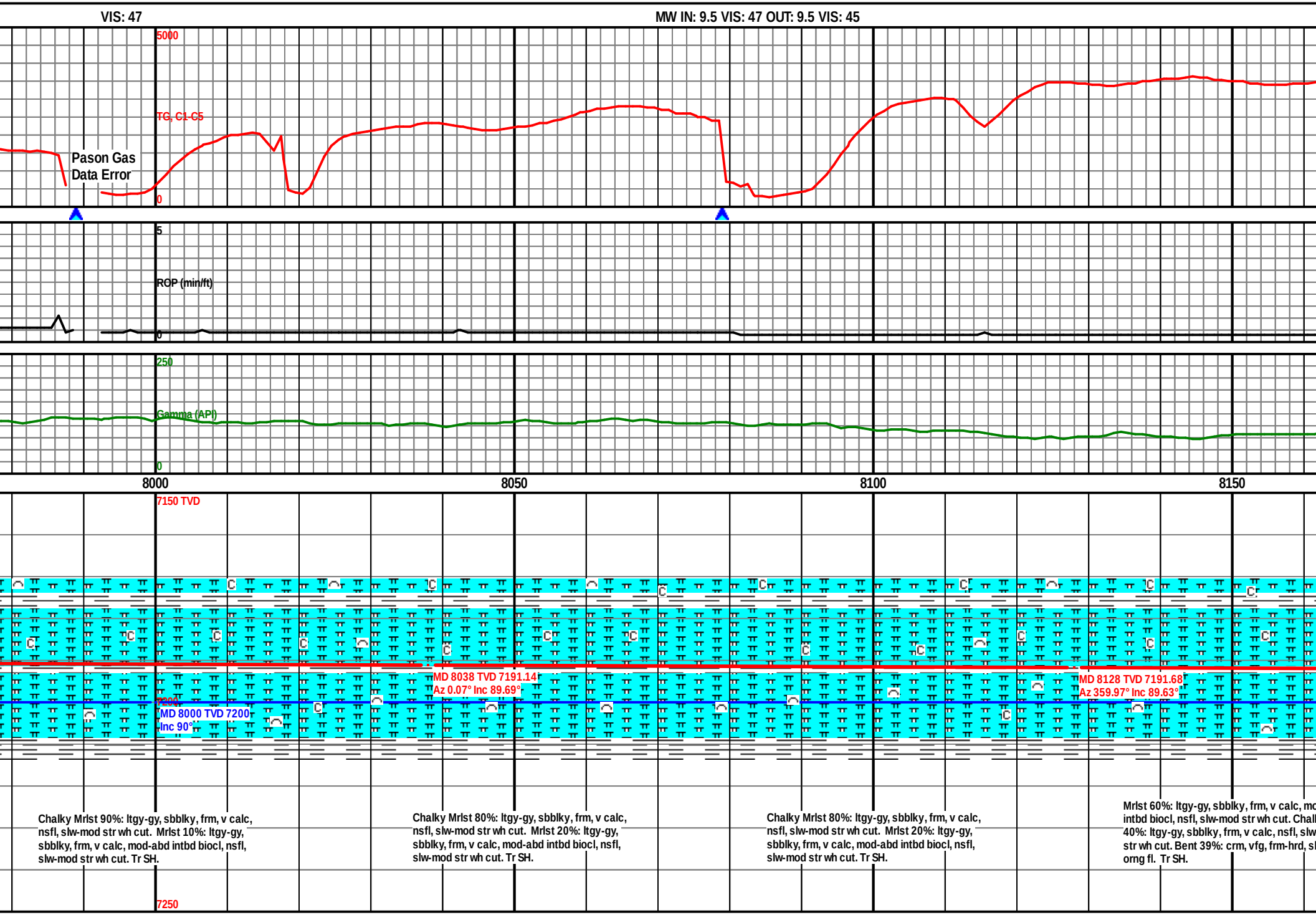
EVENT
- Rft
- Connection

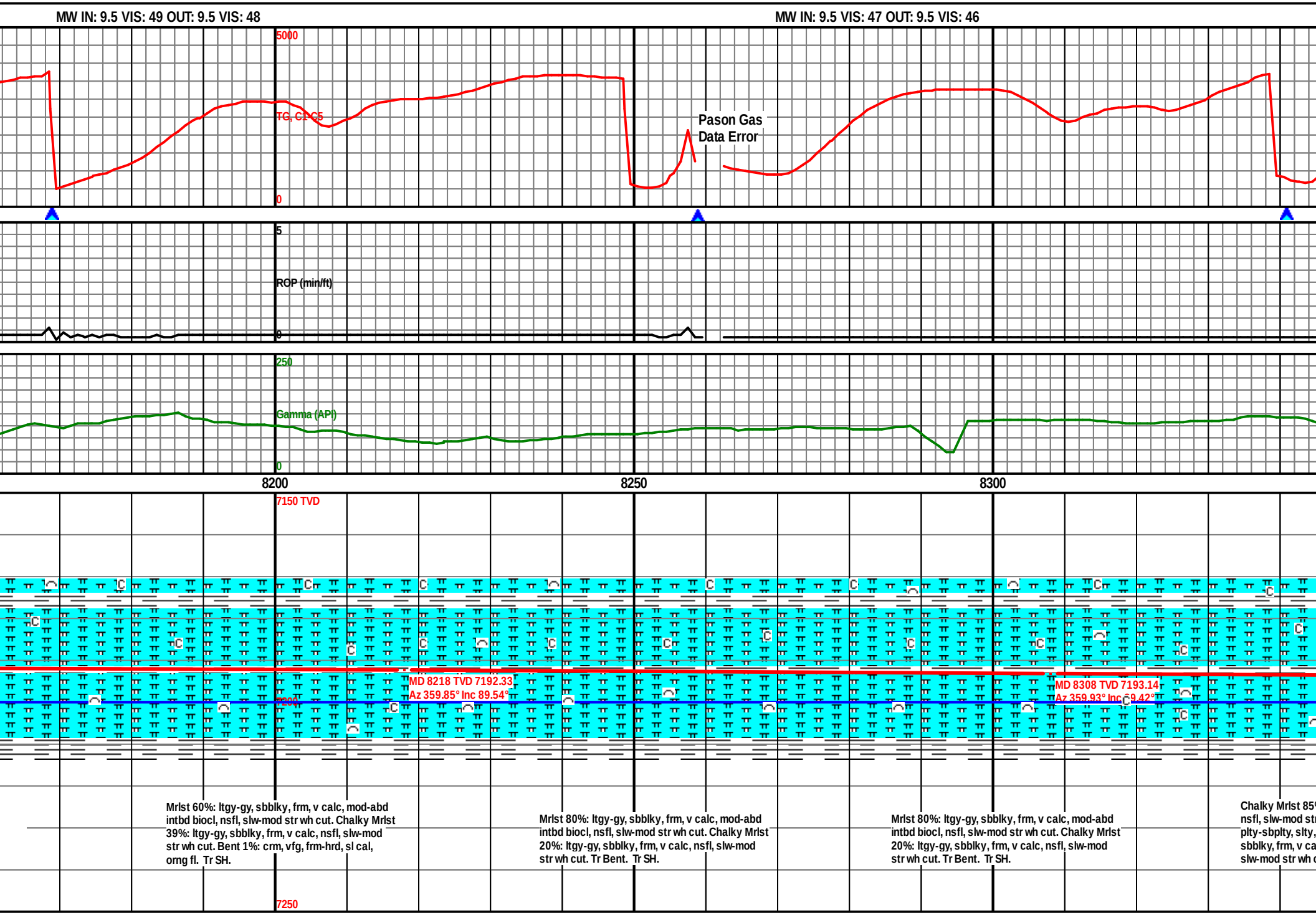

Mud Weight
MW IN: 9.8 VIS: 40 OUT: 9.75 VIS: 40
TG, C1-C5
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
C5 (units)
5000
TG, C1-C5
0
2 man logging unit with Pason gas analyzer and sample program online 2/6/13. 9-5/8" surface casing set at 1206'. Bit # 2. 6.12" Varel VM513D in @ 7641'.
No Recorded Pason Gas Data
Connections
ROP
ROP (min/ft)
5
Slide
Rotate
Slide
Rotate
Slide
Rotate
Slide
Gamma
Gamma (API)
250
0
Depth
7300
7350
7400
7100 TVD
7175
7250
MD 7279 TVD 7122.84
Az 358.51° Inc 63.68°
MD 7324 TVD 7141.3
Az 358.57° Inc 67.87°
MD 7369 TVD 7157.14
Az 356.67° Inc 70.89°
MD 7414 TVD 7170.9
Az 355.98° Inc 73.26°
Niobrara B Top @ 7423
Well Bore Cross Section
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, tr intbd biocl, nsfl, slw str wh cut. SH 10%: gy-drkgy-blk, plty-sbplty, slty, sft. mod calc.
Mrlst 85%: ltgy-gy, sbblky, frm, v calc, tr intbd biocl, nsfl, slw str wh cut. SH 15%: gy-drkgy-blk, plty-sbplty, slty, sft. mod calc.
Mrlst 99%: ltgy-gy, sbblky, frm, v calc, tr intbd biocl, nsfl, slw str wh cut. SH 1%: gy-drkgy-blk, plty-sbplty, slty, sft. mod calc.

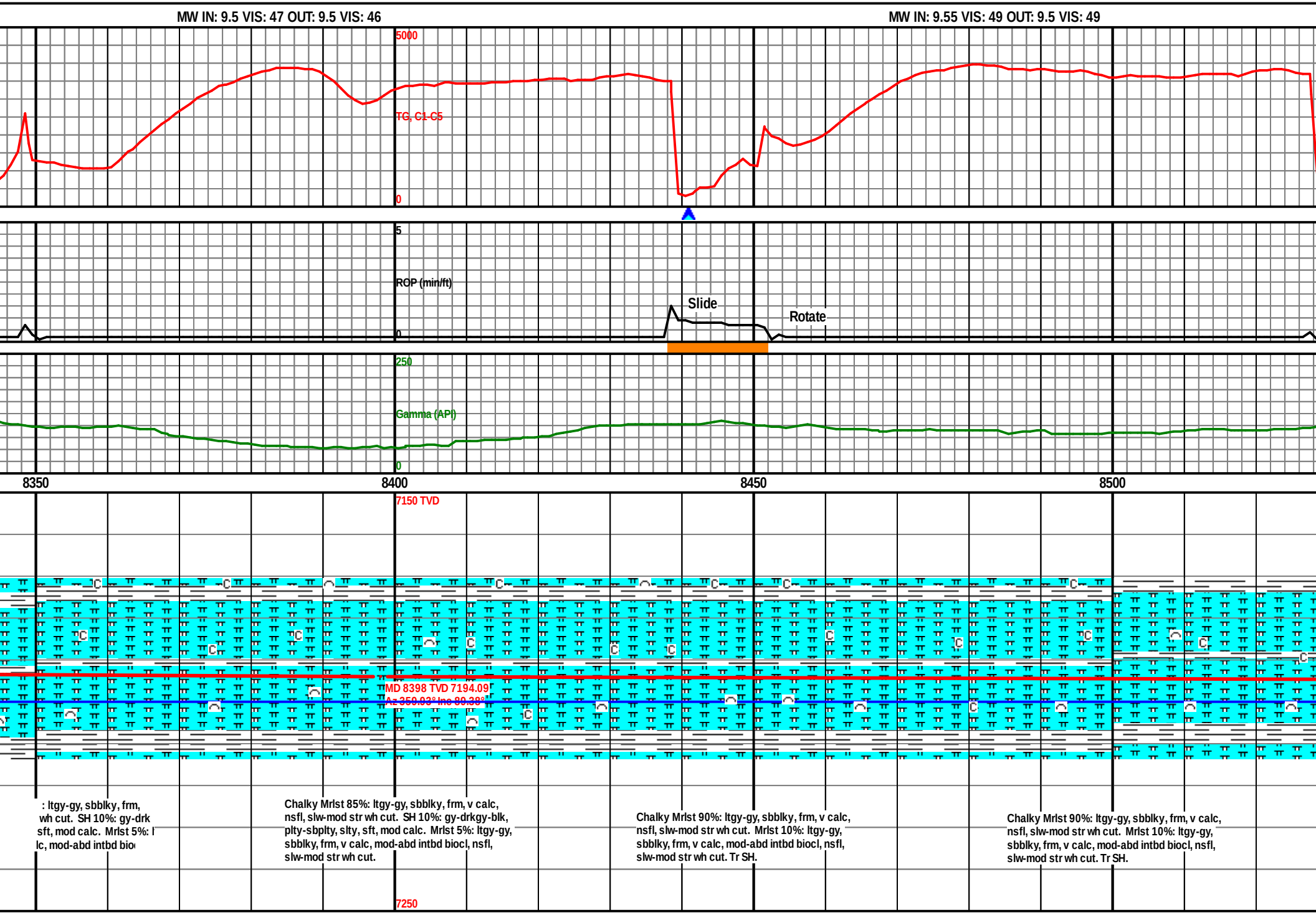

MW IN: 9.6 VIS: 39 OUT: 9.5 VIS: 38
MW IN: 9.7 VIS: 39 OUT: 9.6 VIS: 38
5000
TG, C1-C5
0
5
ROP (min/ft)
0
Rotate
Slide
Rotate
Slide
Rotate
250
Gamma (API)
0
7450
7500
7550
7600
7100 TVD
7175
7250
MD 7459 TVD 7183.05
Az 356.6° Inc 75.66°
MD 7504 TVD 7191.5
Az 359.95° Inc 82.68°
MD 7549 TVD 7195.64
Az 0.99° Inc 86.76°
MD 7594 TVD 7197.7
Az 0.35° Inc 88°
Chalky Mrlst 75%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Mrlst 25%:dkgy-blk, sbblky, frm, v calc, occ intbd biocl, nsfl, slw str wh cut.
Chalky Mrlst 90%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Mrlst 10%:dkgy-blk, sbblky, frm, v calc, occ intbd biocl, nsfl, slw str wh cut.
Mrlst 97%: ltgy-gy, sbblky, frm, v calc, mod intbd biocl, nsfl, slw str wh cut. Chalky Mrlst 2%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut.SH 1%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Mrlst 97%: ltgy-gy, sbblky, frm, v calc, mo intbd biocl, nsfl, slw str wh cut. Chalky Mr ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut.SH 1%: gy-drkgy-blk, plty-sbplty, slty, mod calc. Bent 1%: crm, vfg, frm-hrd, sl ca fl.

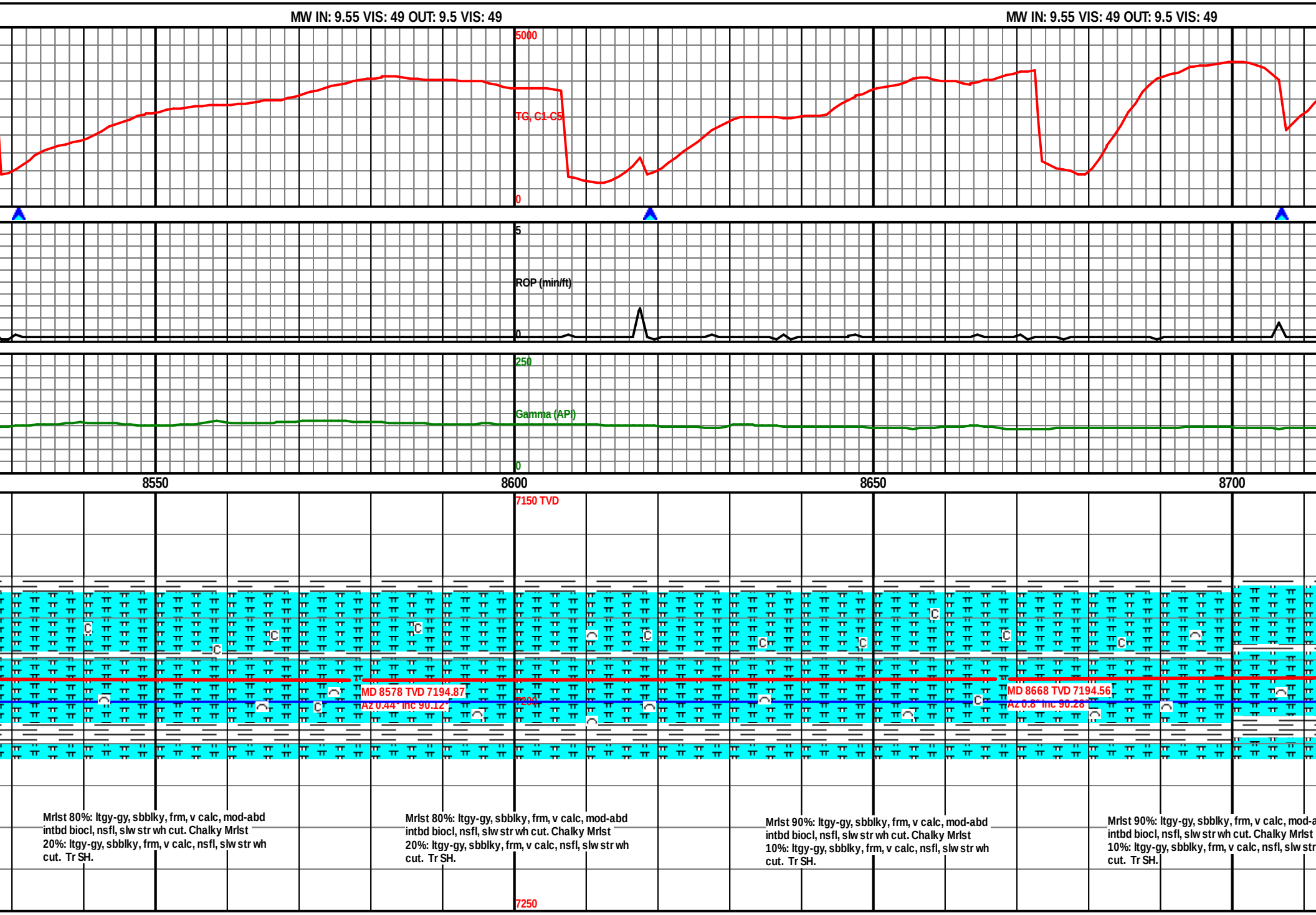

MW IN: 9.7 VIS: 39 OUT: 9.6 VIS: 38
MW IN: 9.6 VIS: 43 OUT: 9.7 VIS
02/04/14 @ 9:25am
TD Curve for
intermediate
casing~7641' MD.
02/06/14 @
9:55am B.O.B.
Pason Gas
Data Error
2/6/2014 T.O.O.H.
to begin sidetrack
2/10/2014 B.O.B.
Slide
7650
7700
7750
MD 7641 TVD 7200
Inc 90°
MD 7709 TVD 7197.54
Az 359.37° Inc 92.16°
MD 7768 TVD 7194.87
Az 359.26° Inc 91.02°
Mrlst 94%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. SH 1%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Bent 5%: crm, vfg, frm-hrd, sl cal, orng fl.
Mrlst 94%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. SH 1%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Bent 5%: crm, vfg, frm-hrd, sl cal, orng fl.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut. Chalky Mrlst 8%: ltgy-gy, sbblky, frm, v calc, nsfl, slw-mod str wh cut. Bent 2%: crm, vfg, frm-hrd, sl cal, orng fl. Tr SH.
Mrlst 90%: ltgy-
intbd biocl, nsfl,
8%: ltgy-gy, sbb
wh cut. Bent 2%
Tr SH.

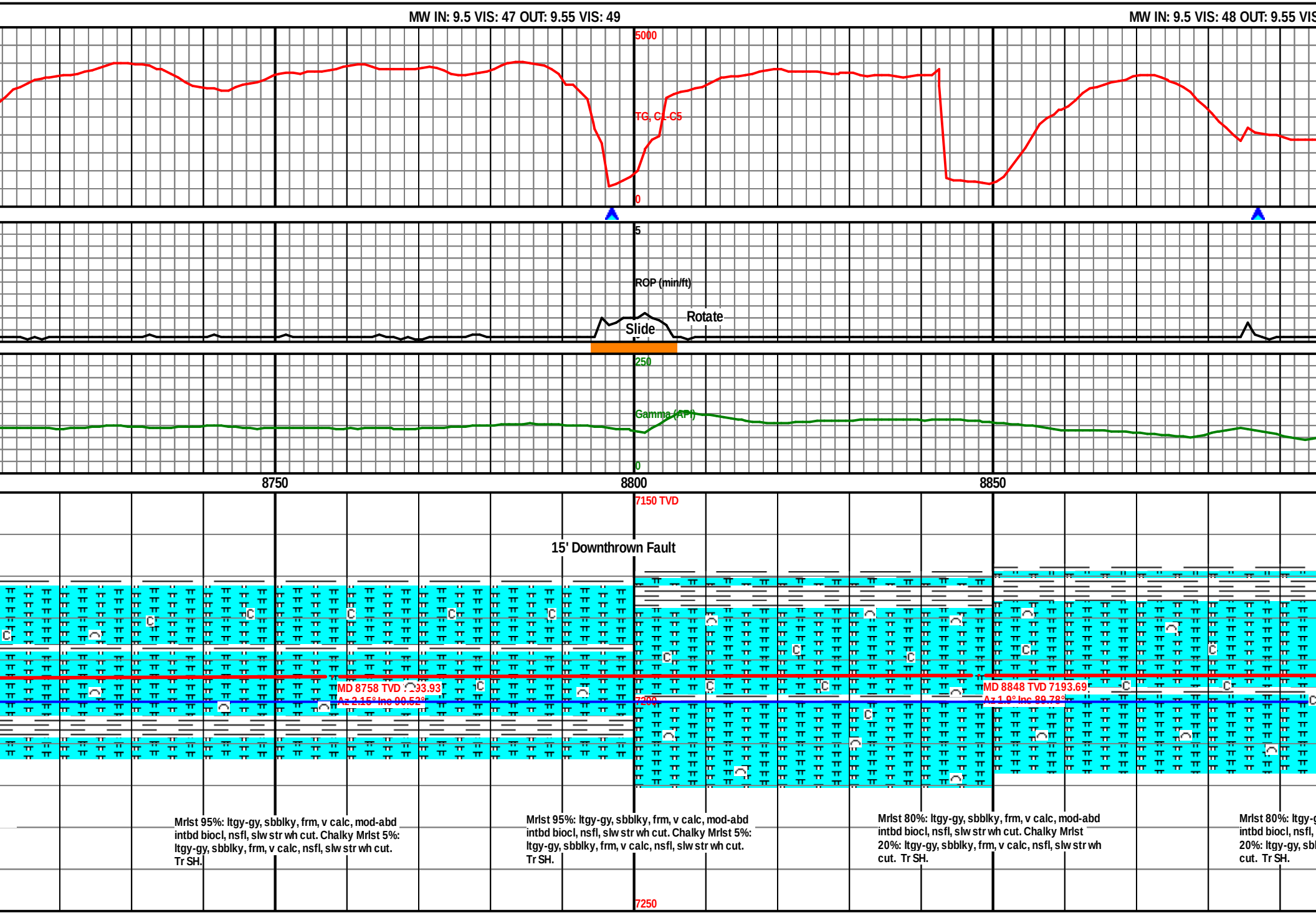

MW IN: 9.6 VIS: 43 OUT: 9.7 VIS: 44
MW IN: 9.5
5000
TG, C1-C5
0
5
ROP (min/ft)
0
Rotate
250
Gamma (API)
0
7800
7850
7900
7950
7100 TVD
7150 TVD
Scale Change
7175
Scale Change
7200
MD 7948 TVD 7190.63
Az 359.89° Inc 89.66°
MD 7858 TVD 7191.43
Az 359.69° Inc 91.36°
7250
7250
gy, sbblky, frm, v calc, m
slw-mod str wh cut. Chalk
lky, frm, v calc, nsfl, slw-r
: crm, vfg, frm-hrd, sl cal,
Chalky Mrlst 60%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Mrlst 38%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Bent 2%: crm, vfg, frm-hrd, sl cal, orng fl. Tr SH.
Chalky Mrlst 60%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Mrlst 38%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Bent 2%: crm, vfg, frm-hrd, sl cal, orng fl. Tr SH.
Chalky Mrlst 90%: ltgy-gy, sbblky, frm, v calc, nsfl, slw-mod str wh cut. Mrlst 10%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut. Tr SH.

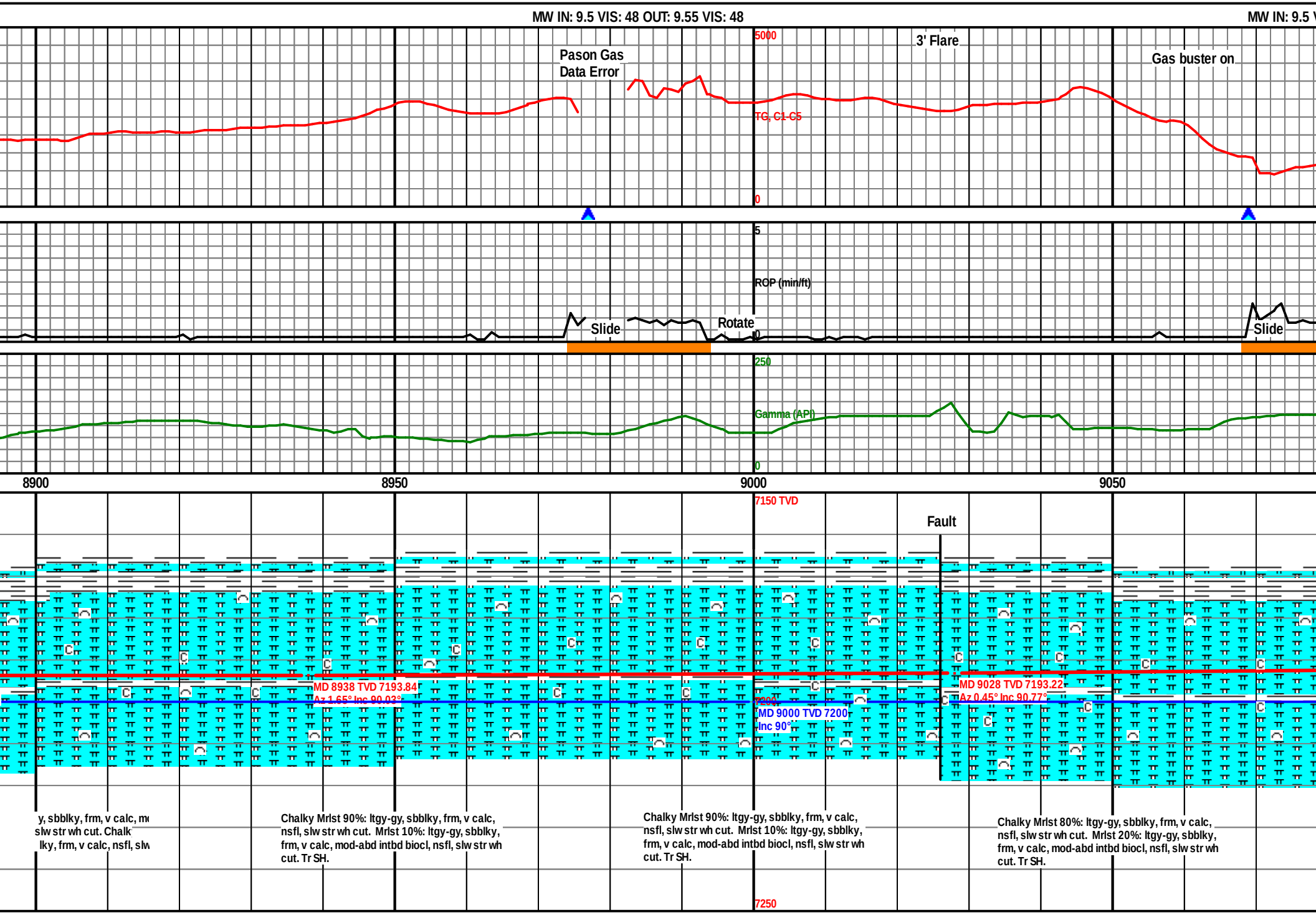

VIS: 47
MW IN: 9.5 VIS: 47 OUT: 9.5 VIS: 45
5000
TG, C1-C5
Pason Gas
Data Error
0
5
ROP (min/ft)
0
250
Gamma (API)
0
8000
8050
8100
8150
7150 TVD
MD 8038 TVD 7191.14
Az 0.07° Inc 89.69°
MD 8128 TVD 7191.68
Az 359.97° Inc 89.63°
7200
MD 8000 TVD 7200
Inc 90°
Chalky Mrlst 90%: ltgy-gy, sbblky, frm, v calc, nsfl, slw-mod str wh cut. Mrlst 10%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut. Tr SH.
Chalky Mrlst 80%: ltgy-gy, sbblky, frm, v calc, nsfl, slw-mod str wh cut. Mrlst 20%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut. Tr SH.
Chalky Mrlst 80%: ltgy-gy, sbblky, frm, v calc, nsfl, slw-mod str wh cut. Mrlst 20%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut. Tr SH.
Mrlst 60%: ltgy-gy, sbblky, frm, v calc, mo
intbd biocl, nsfl, slw-mod str wh cut. Chall
40%: ltgy-gy, sbblky, frm, v calc, nsfl, slw
str wh cut. Bent 39%: crm, vfg, frm-hrd, sl
orng fl. Tr SH.
7250

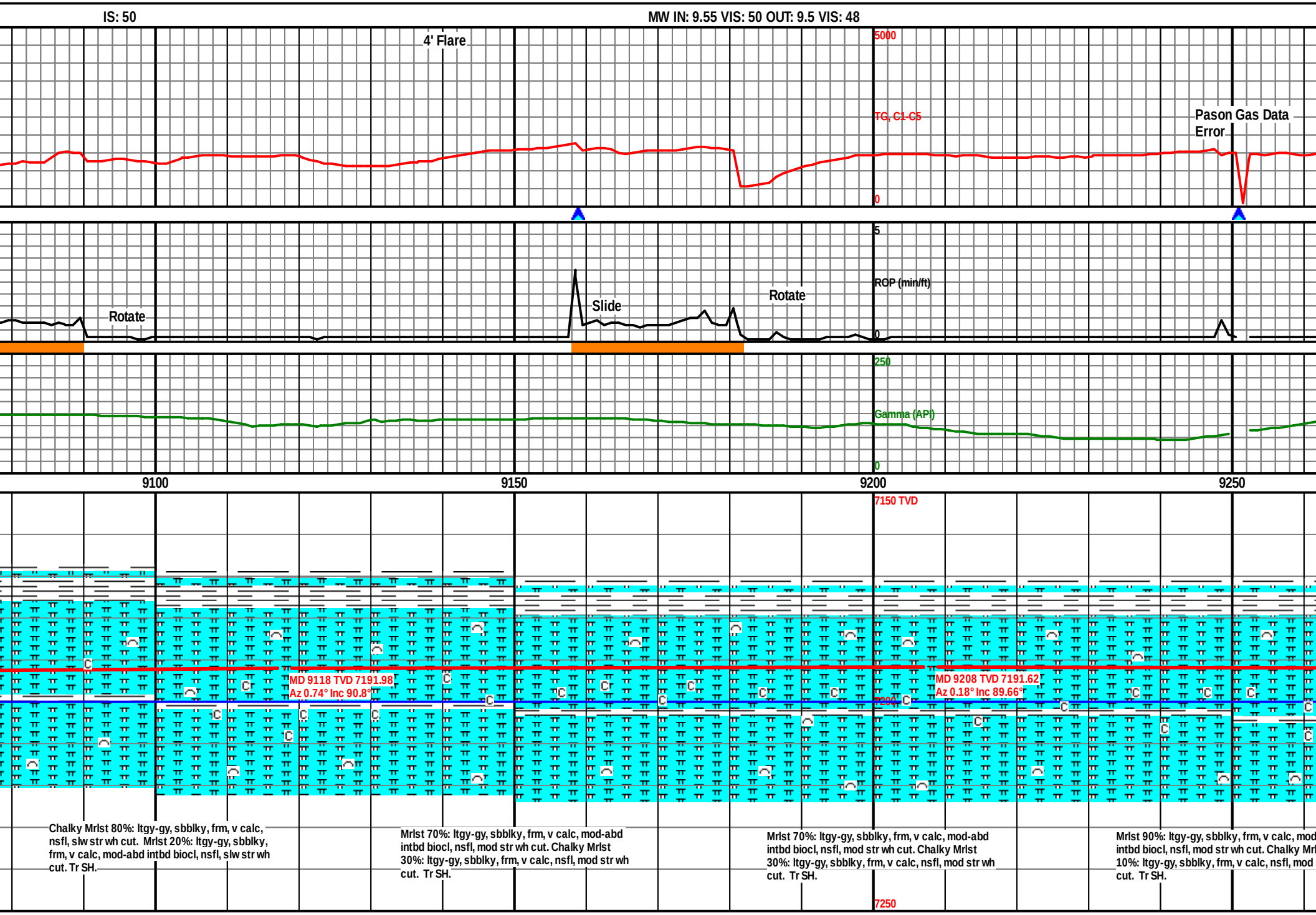

MW IN: 9.5 VIS: 49 OUT: 9.5 VIS: 48
MW IN: 9.5 VIS: 47 OUT: 9.5 VIS: 46
5000
TG, C1-C5
0
Pason Gas
Data Error
5
ROP (min/ft)
0
250
Gamma (API)
0
8200
8250
8300
7150 TVD
MD 8218 TVD 7192.33
Az 359.85° Inc 89.54°
MD 8308 TVD 7193.14
Az 359.93° Inc 89.42°
7250
Mrlst 60%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut. Chalky Mrlst 39%: ltgy-gy, sbblky, frm, v calc, nsfl, slw-mod str wh cut. Bent 1%: crm, vfg, frm-hrd, sl cal, orng fl. Tr SH.
Mrlst 80%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut. Chalky Mrlst 20%: ltgy-gy, sbblky, frm, v calc, nsfl, slw-mod str wh cut. Tr Bent. Tr SH.
Mrlst 80%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut. Chalky Mrlst 20%: ltgy-gy, sbblky, frm, v calc, nsfl, slw-mod str wh cut. Tr Bent. Tr SH.

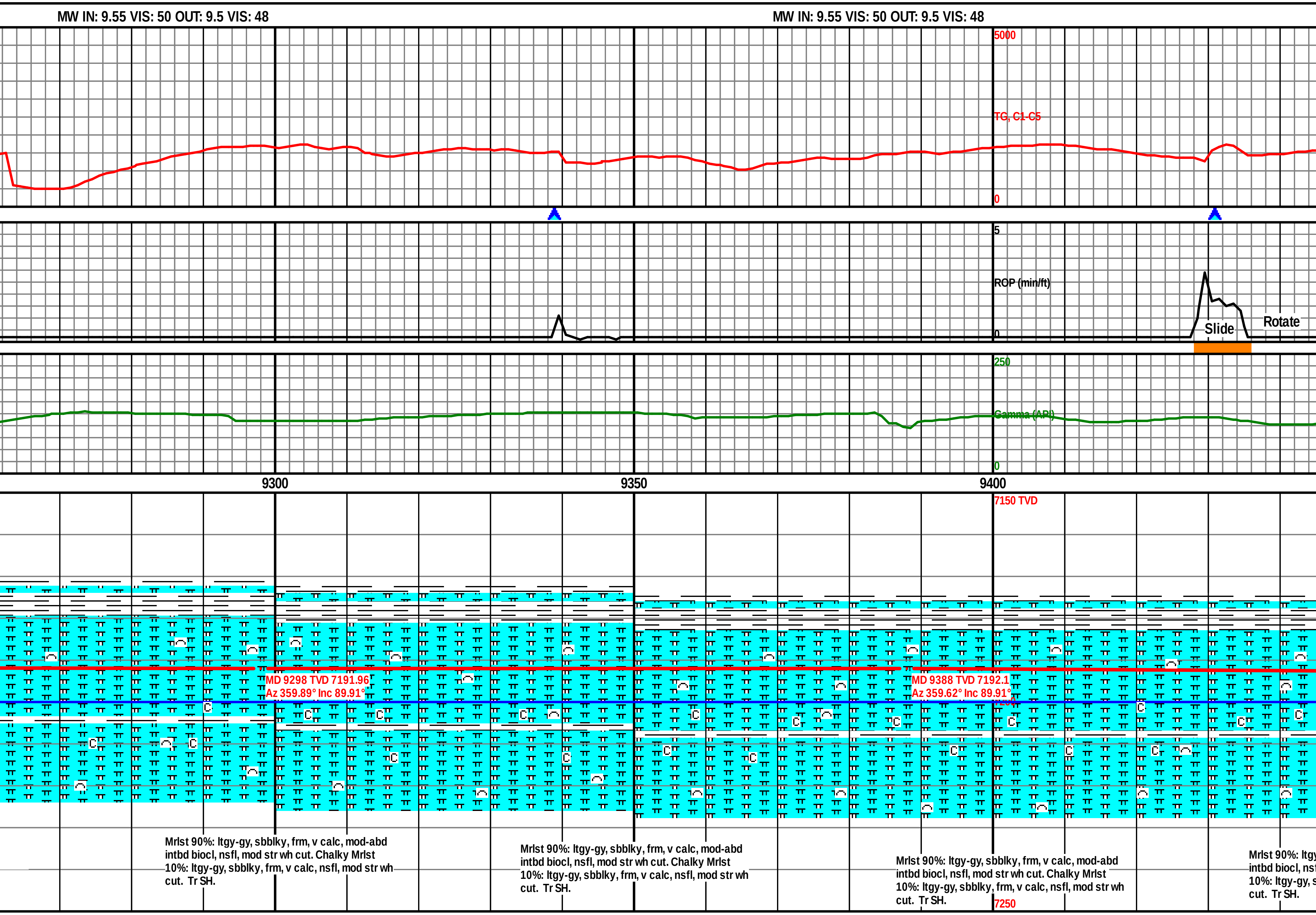

MW IN: 9.5 VIS: 47 OUT: 9.5 VIS: 46
MW IN: 9.55 VIS: 49 OUT: 9.5 VIS: 49
5000
TG, C1 C5
0
5
ROP (min/ft)
0
Slide
Rotate
250
Gamma (API)
0
8350
8400
8450
8500
7150 TVD
MD 8398 TVD 7194.09
Az 350.03° Inc 89.39°
7250
: ltgy-gy, sbblky, frm, wh cut. SH 10%: gy-drk sft, mod calc. Mrlst 5%: l lc, mod-abd intbd bio
Chalky Mrlst 85%: ltgy-gy, sbblky, frm, v calc, nsfl, slw-mod str wh cut. SH 10%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Mrlst 5%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut.
Chalky Mrlst 90%: ltgy-gy, sbblky, frm, v calc, nsfl, slw-mod str wh cut. Mrlst 10%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut. Tr SH.
Chalky Mrlst 90%: ltgy-gy, sbblky, frm, v calc, nsfl, slw-mod str wh cut. Mrlst 10%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut. Tr SH.

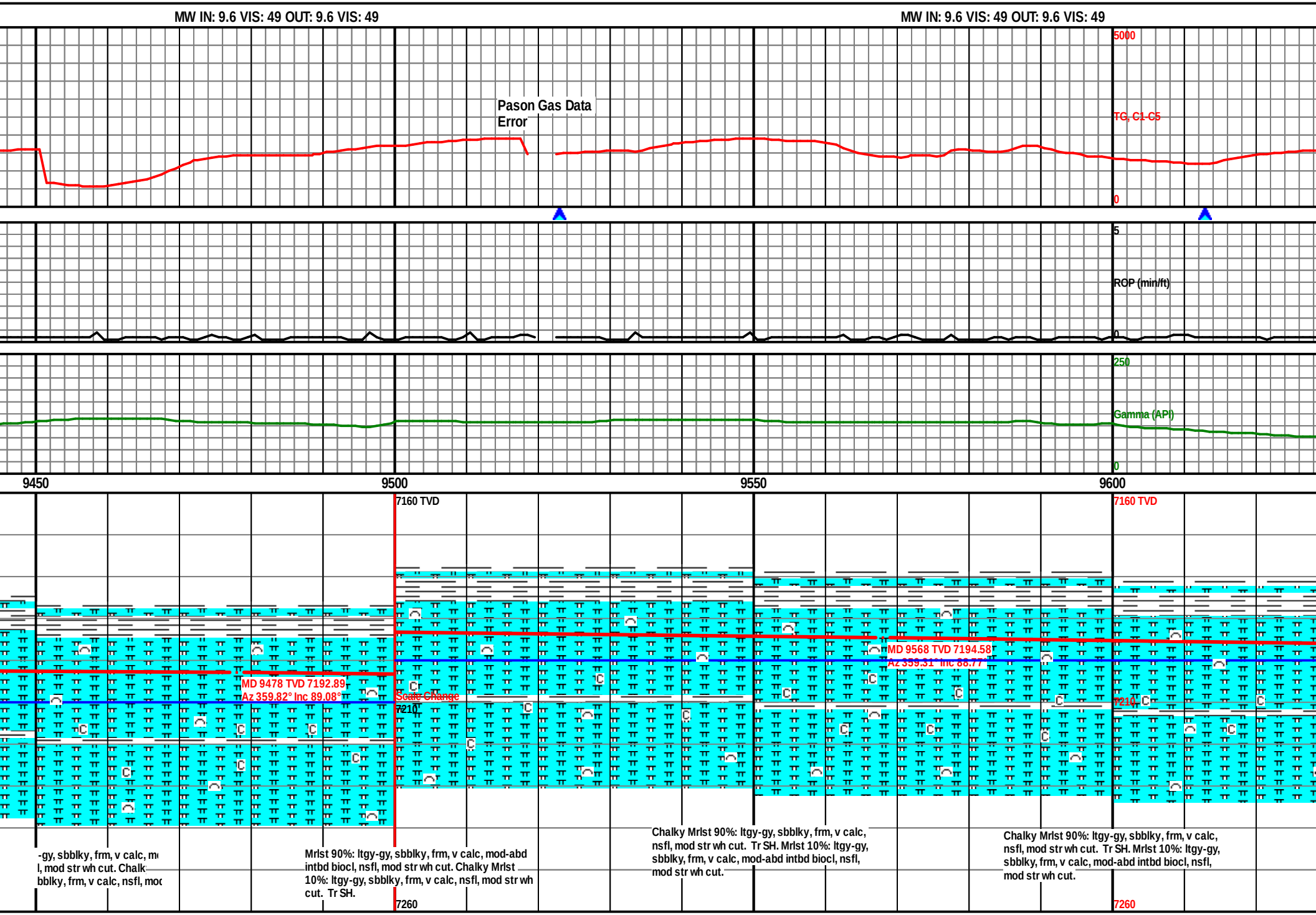

MW IN: 9.55 VIS: 49 OUT: 9.5 VIS: 49
MW IN: 9.55 VIS: 49 OUT: 9.5 VIS: 49
5000
TG, C1-C5
0
5
ROP (min/ft)
0
250
Gamma (API)
0
8550
8600
8650
8700
7150 TVD
MD 8578 TVD 7194.87
AZ 0.44° Inc 90.12°
MD 8668 TVD 7194.56
AZ 0.8° Inc 90.28°
7250
Mrlst 80%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Chalky Mrlst 20%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Tr SH.
Mrlst 80%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Chalky Mrlst 20%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Tr SH.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Chalky Mrlst 10%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Tr SH.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-a intbd biocl, nsfl, slw str wh cut. Chalky Mrlst 10%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str cut. Tr SH.

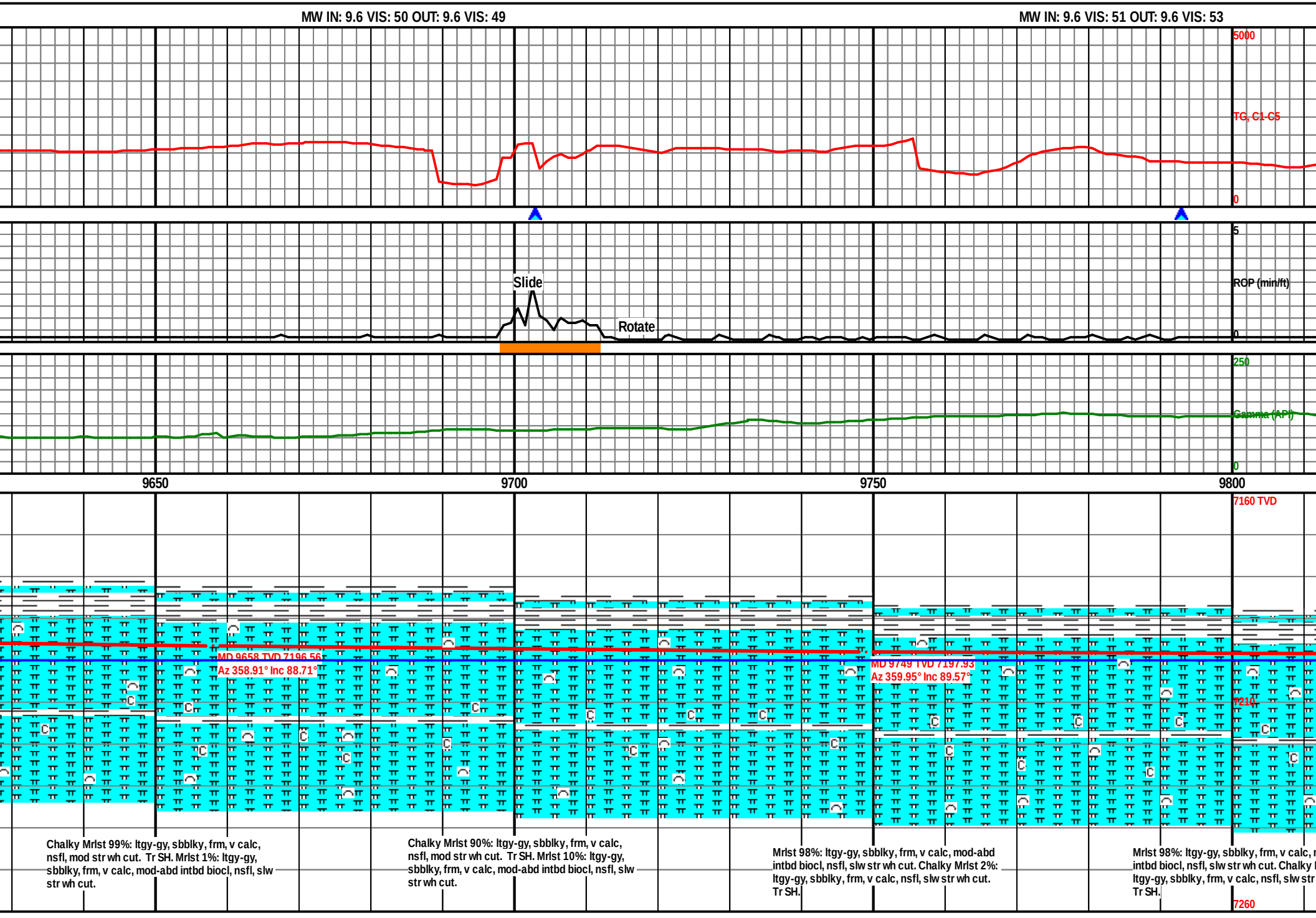

MW IN: 9.5 VIS: 47 OUT: 9.55 VIS: 49
MW IN: 9.5 VIS: 48 OUT: 9.55 VIS
5000
TG, C1-C5
0
5
ROP (min/ft)
Rotate
Slide
250
Gamma (API)
0
8750
8800
8850
7150 TVD
15' Downthrown Fault
MD 8758 TVD 33.93
MD 8848 TVD 7193.69
7250
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Chalky Mrlst 5%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Tr SH.
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Chalky Mrlst 5%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Tr SH.
Mrlst 80%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Chalky Mrlst 20%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Tr SH.
Mrlst 80%: ltgy-g
intbd biocl, nsfl,
20%: ltgy-gy, sb
cut. Tr SH.

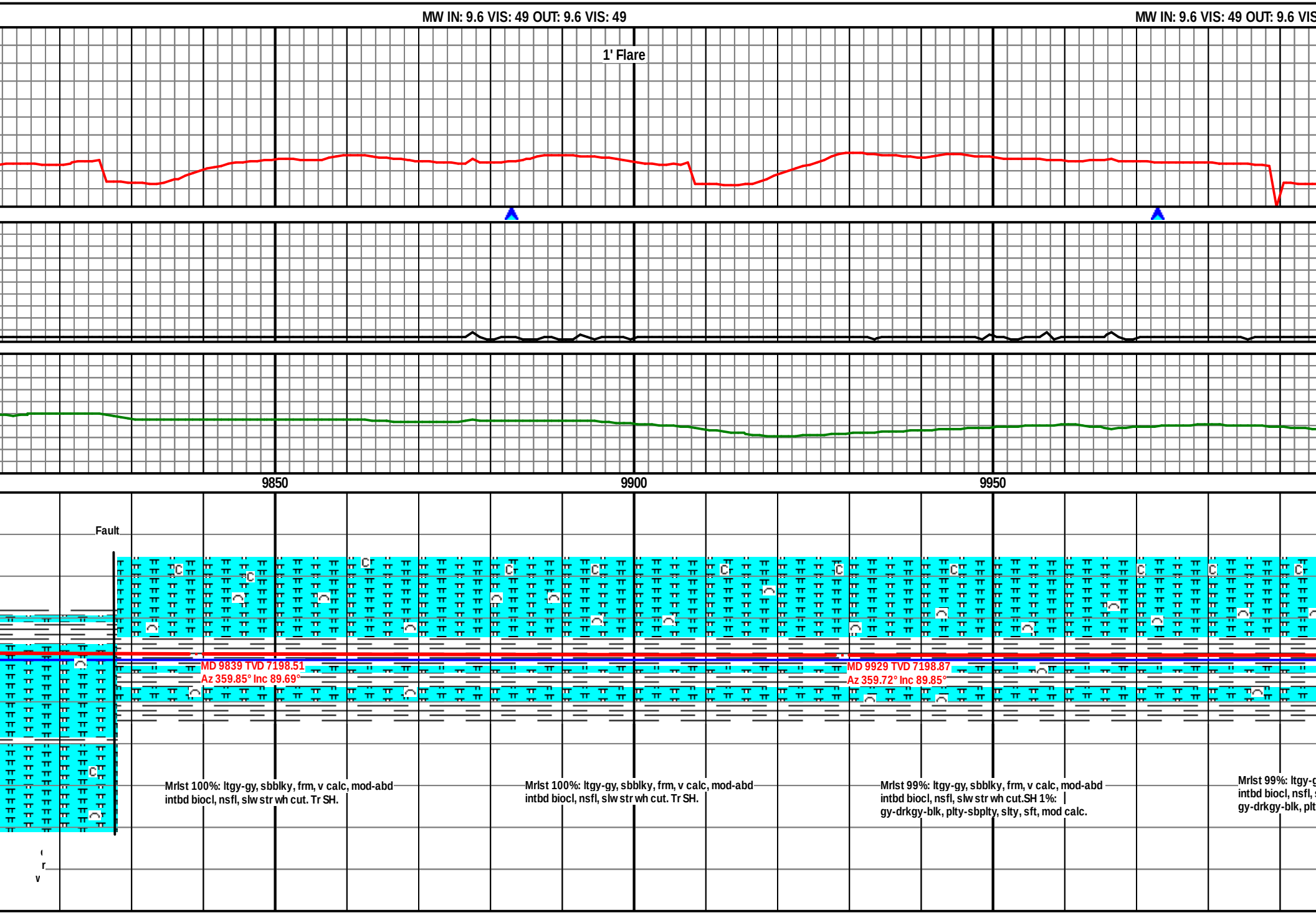

MW IN: 9.5 VIS: 48 OUT: 9.55 VIS: 48
MW IN: 9.5
Pason Gas
Data Error
5000
3' Flare
Gas buster on
TG, C1 C5
0
5
ROP (min/ft)
Slide
Rotate
0
Slide
250
Gamma (API)
0
8900
8950
9000
9050
7150 TVD
Fault
MD 8938 TVD 7193.84
Az 1.65° Inc 90.03°
MD 9028 TVD 7193.22
Az 0.45° Inc 90.77°
7200
MD 9000 TVD 7200
Inc 90°
y, sbblky, frm, v calc, m
slw str wh cut. Chalk
lky, frm, v calc, nsfl, slw
Chalky Mrlst 90%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Mrlst 10%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Tr SH.
Chalky Mrlst 90%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Mrlst 10%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Tr SH.
Chalky Mrlst 80%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Mrlst 20%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Tr SH.
7250

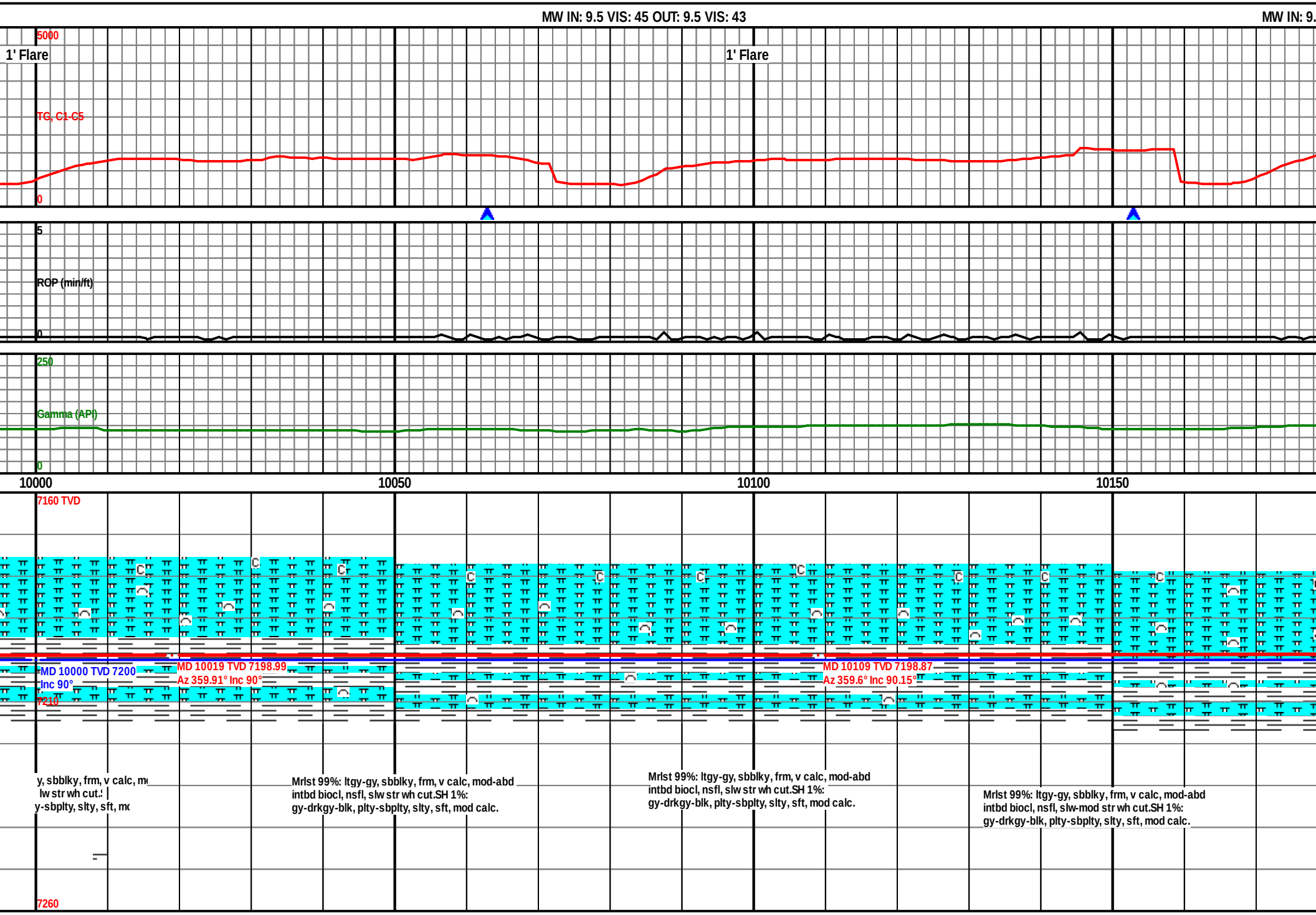

IS: 50
MW IN: 9.55 VIS: 50 OUT: 9.5 VIS: 48
4' Flare
5000
TG, C1-C5
0
Pason Gas Data Error
5
ROP (min/ft)
0
Rotate
Slide
Rotate
250
Gamma (API)
0
9100
9150
9200
9250
7150 TVD
MD 9118 TVD 7191.98
Az 0.74° Inc 90.8°
MD 9208 TVD 7191.62
Az 0.18° Inc 89.66°
7200
Chalky Mrlst 80%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Mrlst 20%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Tr SH.
Mrlst 70%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, mod str wh cut. Chalky Mrlst 30%: ltgy-gy, sbblky, frm, v calc, nsfl, mod str wh cut. Tr SH.
Mrlst 70%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, mod str wh cut. Chalky Mrlst 30%: ltgy-gy, sbblky, frm, v calc, nsfl, mod str wh cut. Tr SH.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod
intbd biocl, nsfl, mod str wh cut. Chalky Mrl
10%: ltgy-gy, sbblky, frm, v calc, nsfl, mod
cut. Tr SH.
7250

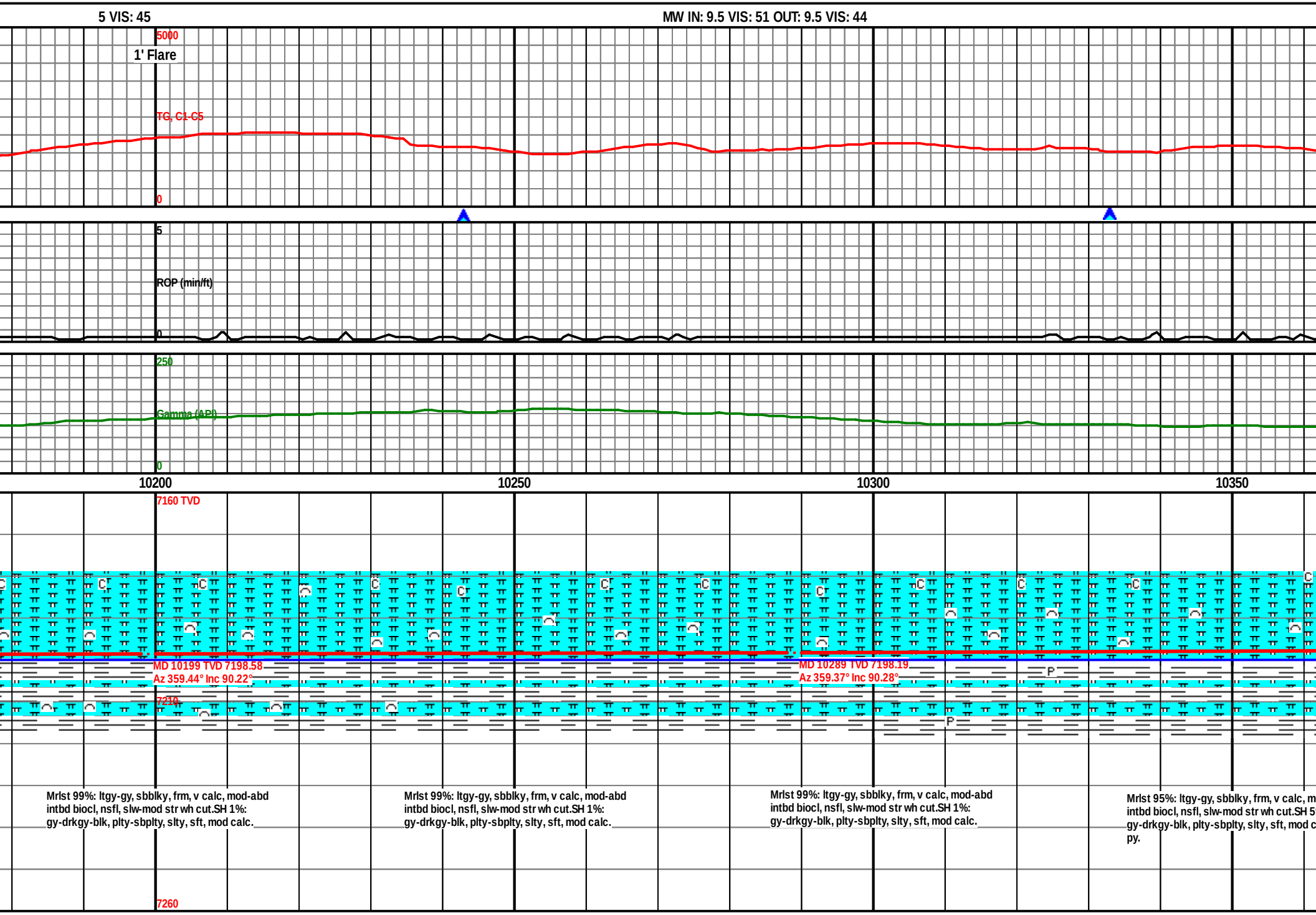

MW IN: 9.55 VIS: 50 OUT: 9.5 VIS: 48
MW IN: 9.55 VIS: 50 OUT: 9.5 VIS: 48
5000
TG, C1-C5
0
5
ROP (min/ft)
0
Slide
Rotate
250
Gamma (API)
0
9300
9350
9400
7150 TVD
MD 9298 TVD 7191.96
Az 359.89° Inc 89.91°
MD 9388 TVD 7192.1
Az 359.62° Inc 89.91°
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, mod str wh cut. Chalky Mrlst 10%: ltgy-gy, sbblky, frm, v calc, nsfl, mod str wh cut. Tr SH.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, mod str wh cut. Chalky Mrlst 10%: ltgy-gy, sbblky, frm, v calc, nsfl, mod str wh cut. Tr SH.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, mod str wh cut. Chalky Mrlst 10%: ltgy-gy, sbblky, frm, v calc, nsfl, mod str wh cut. Tr SH.
7250
Mrlst 90%: ltgy
intbd biocl, nsf
10%: ltgy-gy, s
cut. Tr SH.

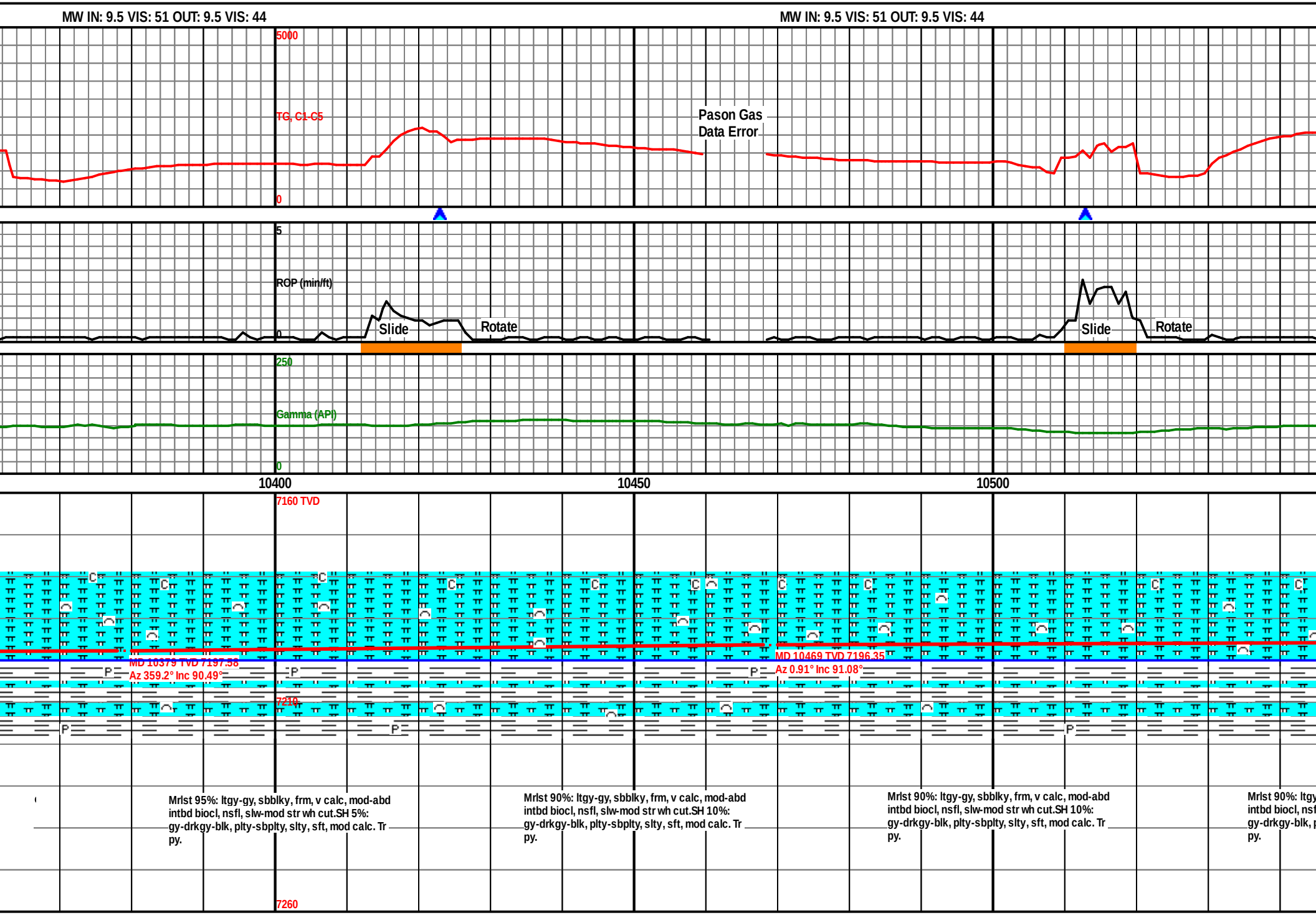

MW IN: 9.6 VIS: 49 OUT: 9.6 VIS: 49
MW IN: 9.6 VIS: 49 OUT: 9.6 VIS: 49
Pason Gas Data Error
5000
TG, C1-C5
0
5
ROP (min/ft)
0
250
Gamma (API)
0
9450
9500
9550
9600
7160 TVD
7160 TVD
MD 9478 TVD 7192.89
Az 359.82° Inc 89.08°
Scale Change
7210
MD 9568 TVD 7194.58
Az 359.31° Inc 88.77°
7210
-gy, sbblky, frm, v calc, m
l, mod str wh cut. Chalk
bblky, frm, v calc, nsfl, mod
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, mod str wh cut. Chalky Mrlst 10%: ltgy-gy, sbblky, frm, v calc, nsfl, mod str wh cut. Tr SH.
Chalky Mrlst 90%: ltgy-gy, sbblky, frm, v calc, nsfl, mod str wh cut. Tr SH. Mrlst 10%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, mod str wh cut.
Chalky Mrlst 90%: ltgy-gy, sbblky, frm, v calc, nsfl, mod str wh cut. Tr SH. Mrlst 10%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, mod str wh cut.
7260
7260

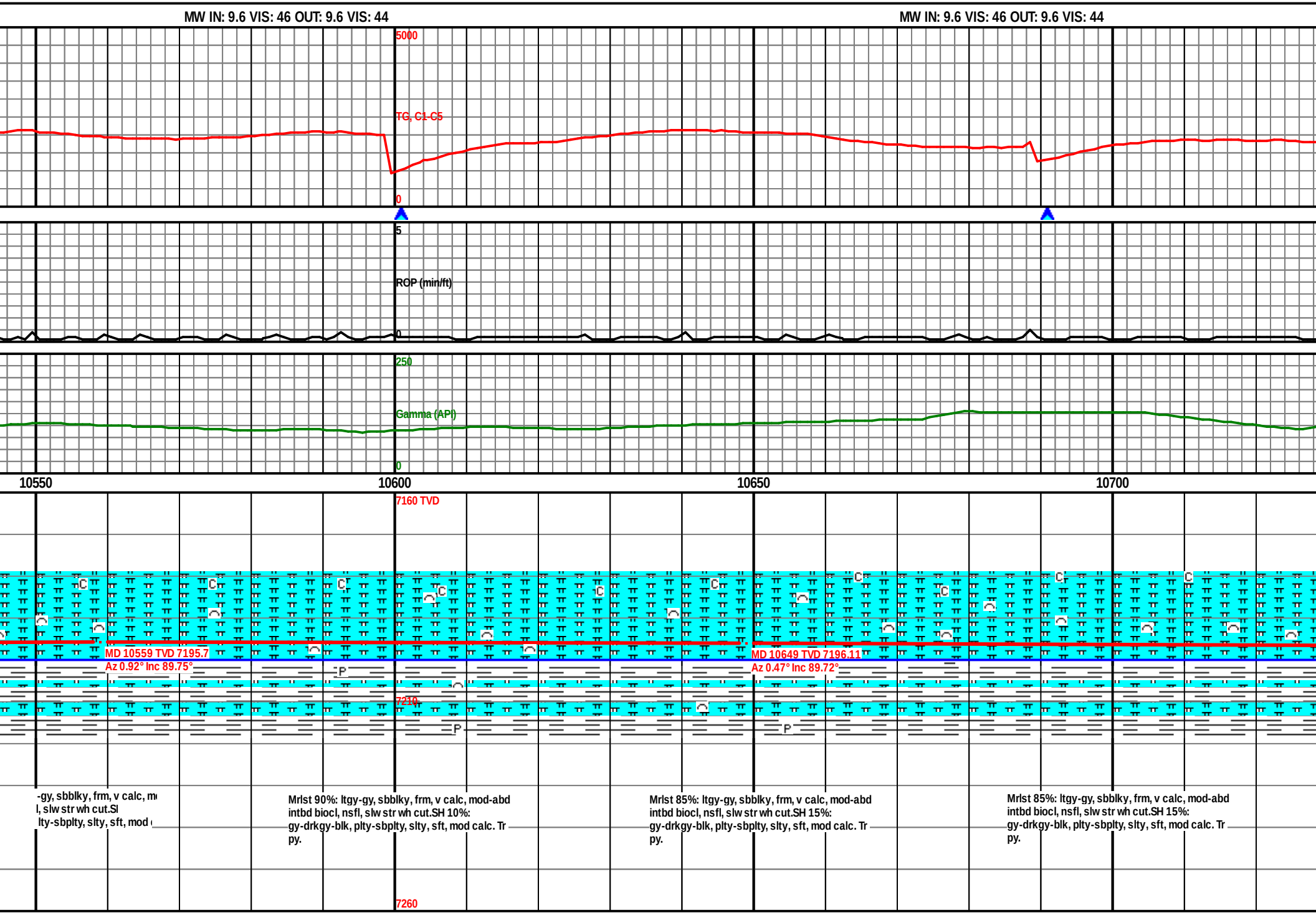

MW IN: 9.6 VIS: 50 OUT: 9.6 VIS: 49
MW IN: 9.6 VIS: 51 OUT: 9.6 VIS: 53
5000
TG, C1-C5
0
Slide
Rotate
5
ROP (min/ft)
0
250
Gamma (API)
0
9650
9700
9750
9800
7160 TVD
MD 9658 TVD 7196.56
Az 358.91° Inc 88.71°
MD 9749 TVD 7197.93
Az 359.95° Inc 89.57°
7210
7260
Chalky Mrlst 99%: ltgy-gy, sbblky, frm, v calc, nsfl, mod str wh cut. Tr SH. Mrlst 1%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.
Chalky Mrlst 90%: ltgy-gy, sbblky, frm, v calc, nsfl, mod str wh cut. Tr SH. Mrlst 10%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.
Mrlst 98%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Chalky Mrlst 2%: ltgy-gy, sbblky, frm, v calc, nsfl, slw str wh cut. Tr SH.
Mrlst 98%: ltgy-gy, sbblky, frm, v calc, intbd biocl, nsfl, slw str wh cut. Chalky
ltgy-gy, sbblky, frm, v calc, nsfl, slw str
Tr SH.

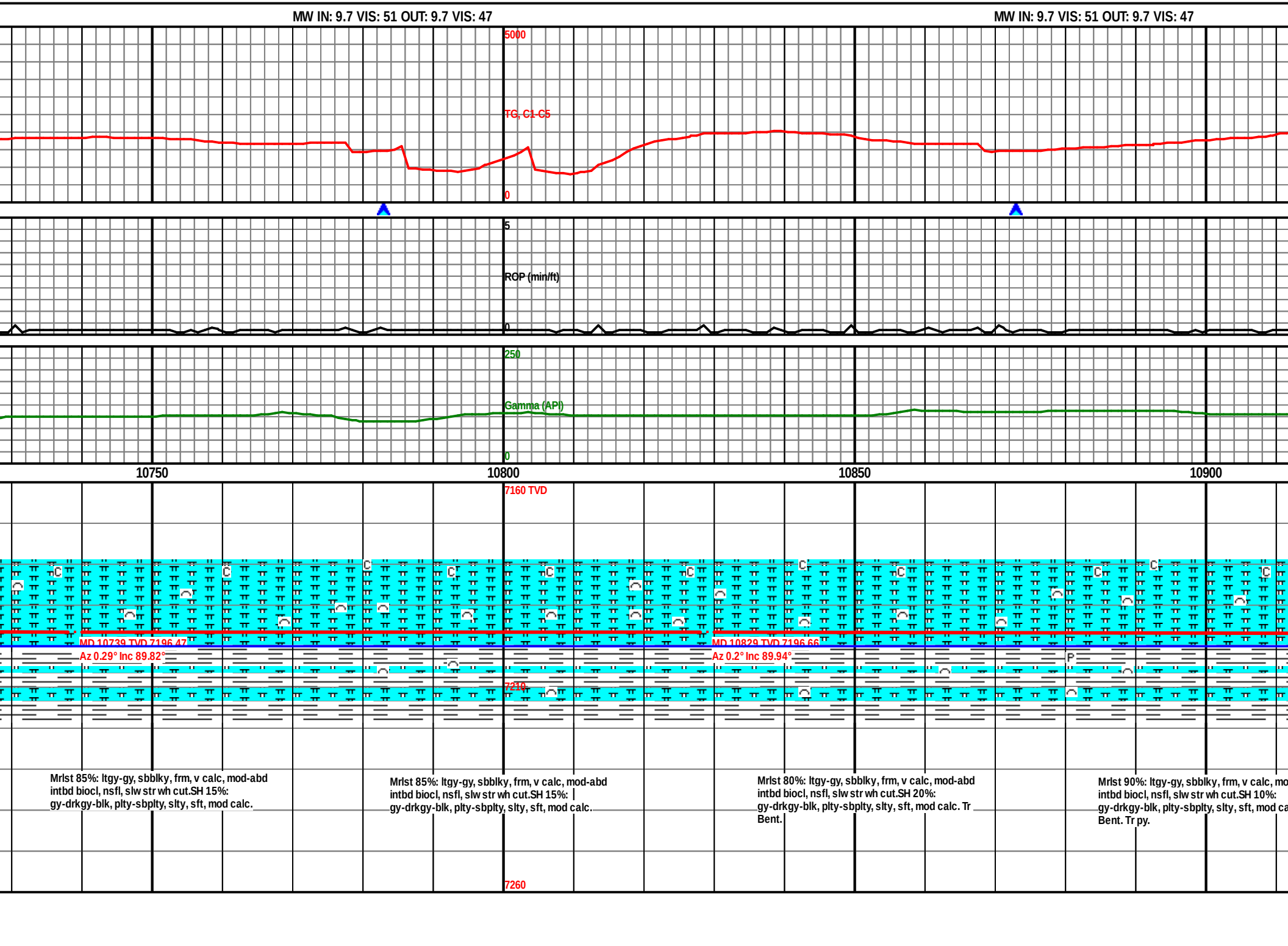

MW IN: 9.6 VIS: 49 OUT: 9.6 VIS: 49
MW IN: 9.6 VIS: 49 OUT: 9.6 VIS
1' Flare
9850
9900
9950
Fault
MD 9839 TVD 7198.51
Az 359.85° Inc 89.69°
MD 9929 TVD 7198.87
Az 359.72° Inc 89.85°
Mrlst 100%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Tr SH.
Mrlst 100%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut. Tr SH.
Mrlst 99%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.SH 1%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Mrlst 99%: ltgy-g
intbd biocl, nsfl,
gy-drkgy-blk, plt

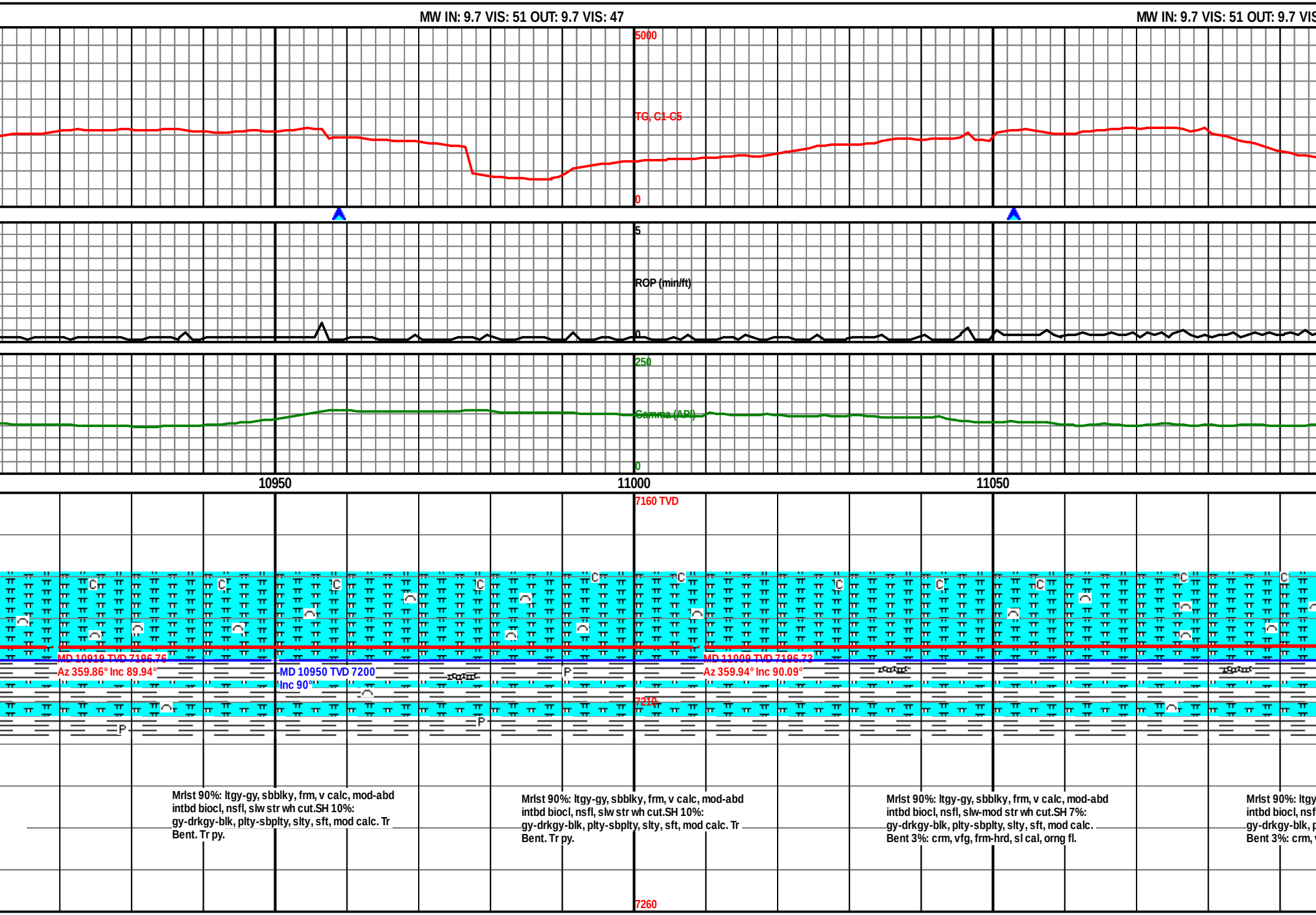

MW IN: 9.5 VIS: 45 OUT: 9.5 VIS: 43
MW IN: 9.
1' Flare
1' Flare
5000
TG, C1-C5
0
5
ROP (min/ft)
0
250
Gamma (API)
0
10000
10050
10100
10150
7160 TVD
MD 10000 TVD 7200
Inc 90°
7210
MD 10019 TVD 7198.99
Az 359.91° Inc 90°
MD 10109 TVD 7198.87
Az 359.6° Inc 90.15°
y, sbblky, frm, v calc, m
lw str wh cut.
y-sbplty, slty, sft, m
Mrlst 99%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 1%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Mrlst 99%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 1%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Mrlst 99%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw-mod str wh cut.SH 1%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
7260

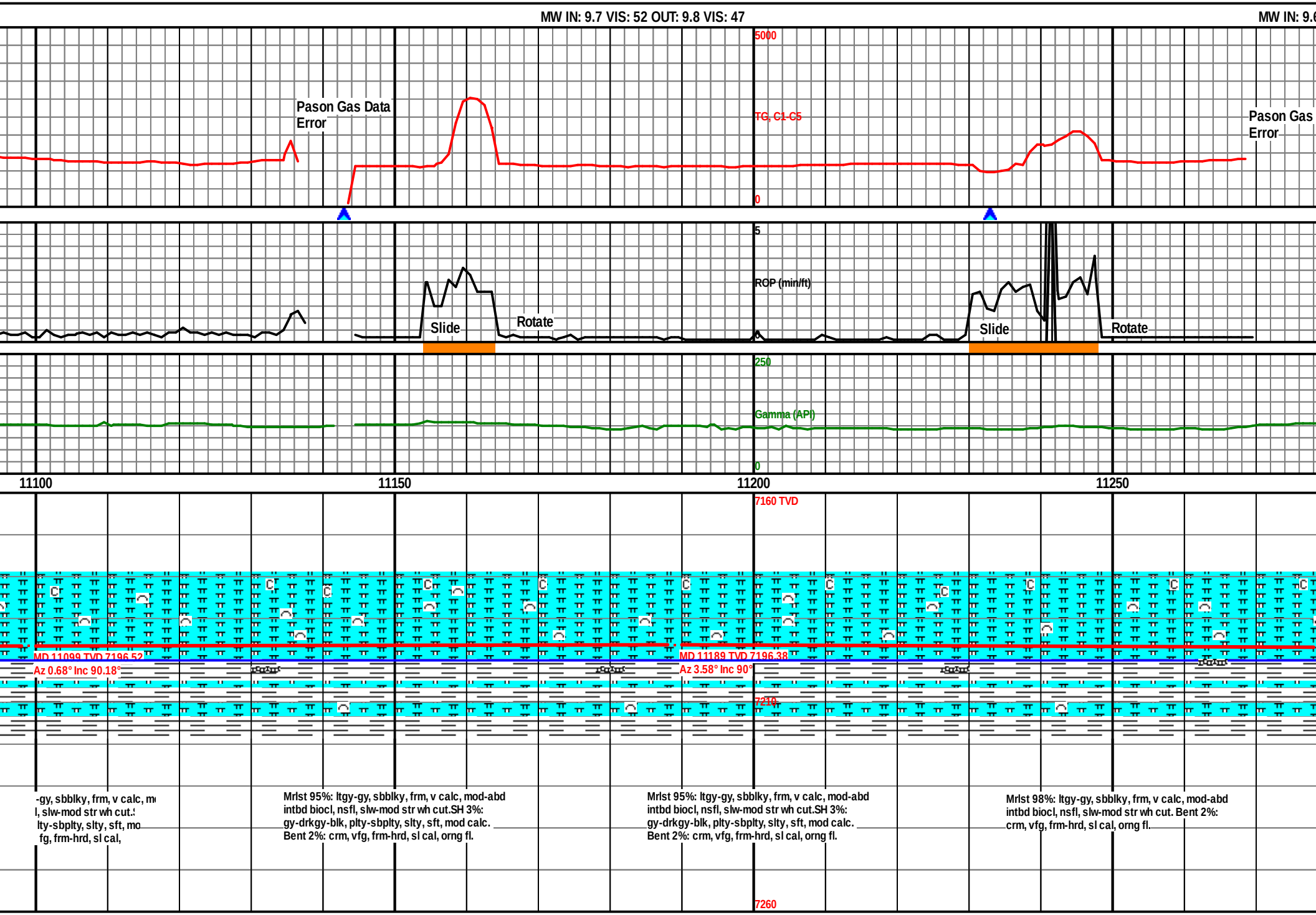

5 VIS: 45
MW IN: 9.5 VIS: 51 OUT: 9.5 VIS: 44
5000
1' Flare
TG, C1-C5
0
5
ROP (min/ft)
0
250
Gamma (API)
0
10200
10250
10300
10350
7160 TVD
MD 10199 TVD 7198.58
Az 359.44° Inc 90.22°
7210
MD 10289 TVD 7198.19
Az 359.37° Inc 90.28°
7260
Mrlst 99%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut.SH 1%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Mrlst 99%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut.SH 1%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Mrlst 99%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut.SH 1%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, m
intbd biocl, nsfl, slw-mod str wh cut.SH 5
gy-drkgy-blk, plty-sbplty, slty, sft, mod c
py.

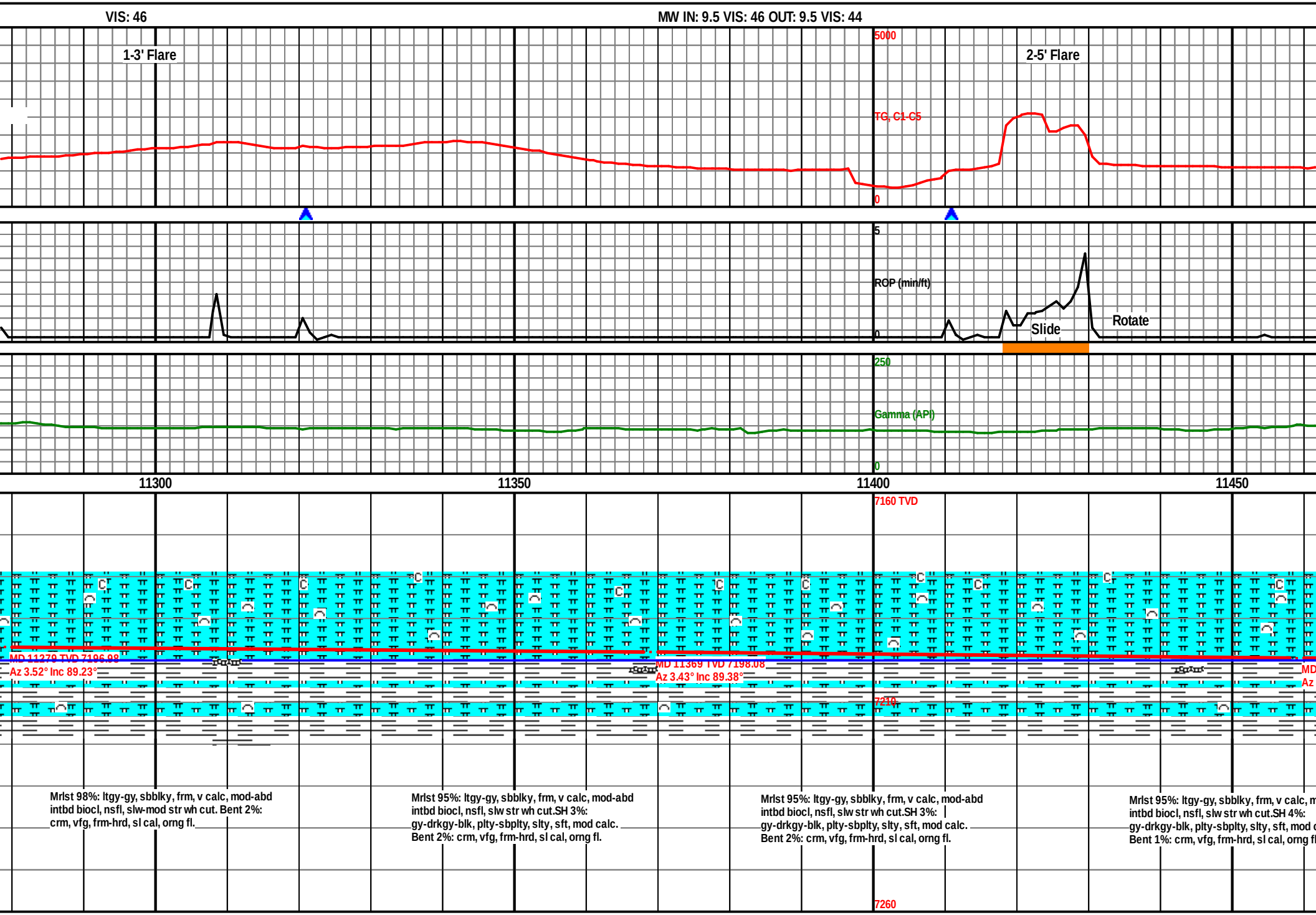

MW IN: 9.5 VIS: 51 OUT: 9.5 VIS: 44
MW IN: 9.5 VIS: 51 OUT: 9.5 VIS: 44
5000
TG, C1-C5
0
Pason Gas
Data Error
5
ROP (min/ft)
0
Slide
Rotate
Slide
Rotate
250
Gamma (API)
0
10400
10450
10500
7160 TVD
MD 10379 TVD 7197.38
Az 359.2° Inc 90.49°
MD 10469 TVD 7196.35
Az 0.91° Inc 91.08°
7240
7260
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut.SH 5%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr py.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut.SH 10%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr py.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut.SH 10%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr py.

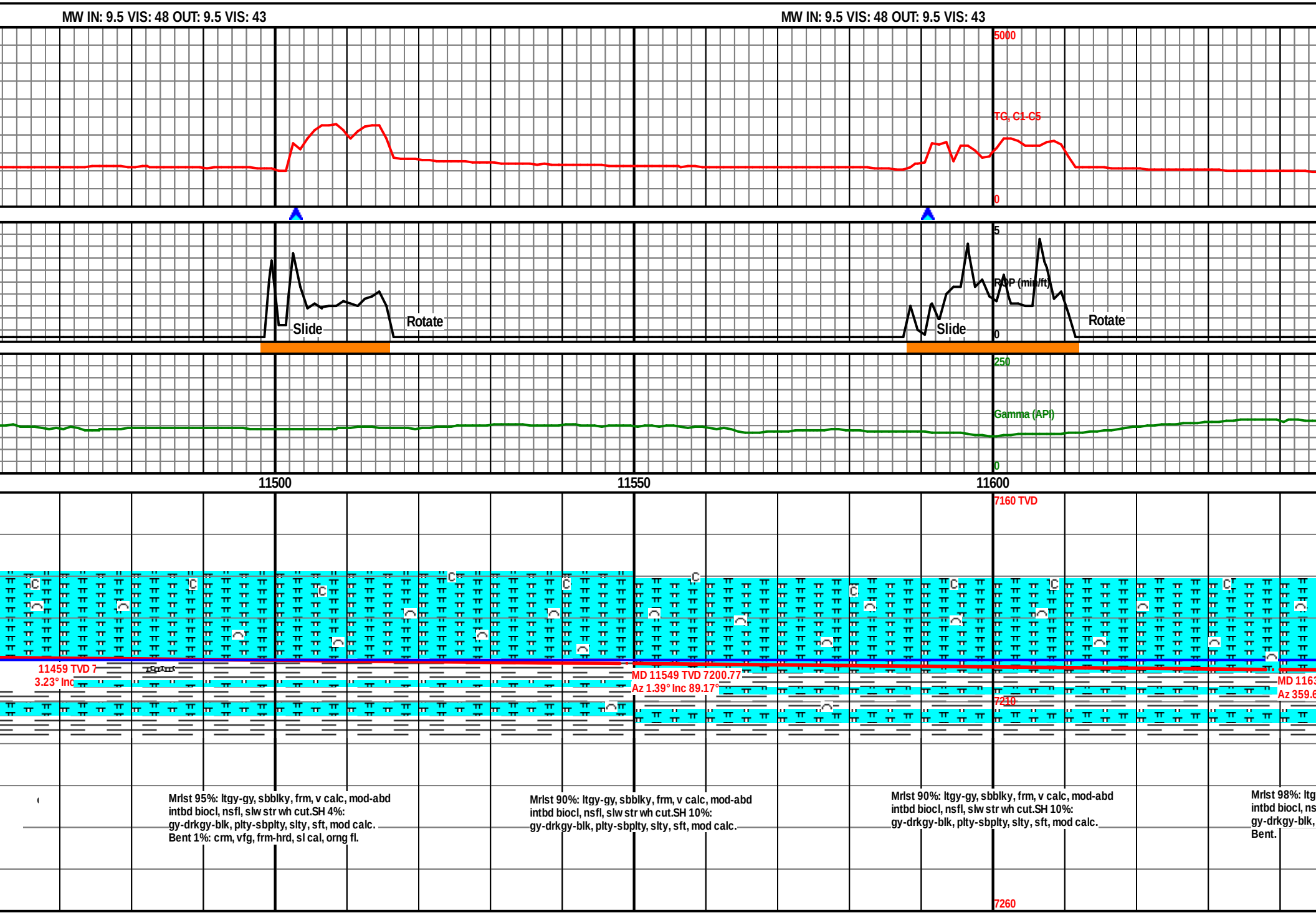

MW IN: 9.6 VIS: 46 OUT: 9.6 VIS: 44
MW IN: 9.6 VIS: 46 OUT: 9.6 VIS: 44
5000
TG, C1 C5
0
5
ROP (min/ft)
0
250
Gamma (API)
0
10550
10600
10650
10700
7160 TVD
MD 10559 TVD 7195.7
Az 0.92° Inc 89.75°
MD 10649 TVD 7196.11
Az 0.47° Inc 89.72°
7210
7260
-gy, sbblky, frm, v calc, m
l, slw str wh cut.Sl
lty-sbplty, slty, sft, mod
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 10%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr
py.
Mrlst 85%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 15%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr
py.
Mrlst 85%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 15%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr
py.

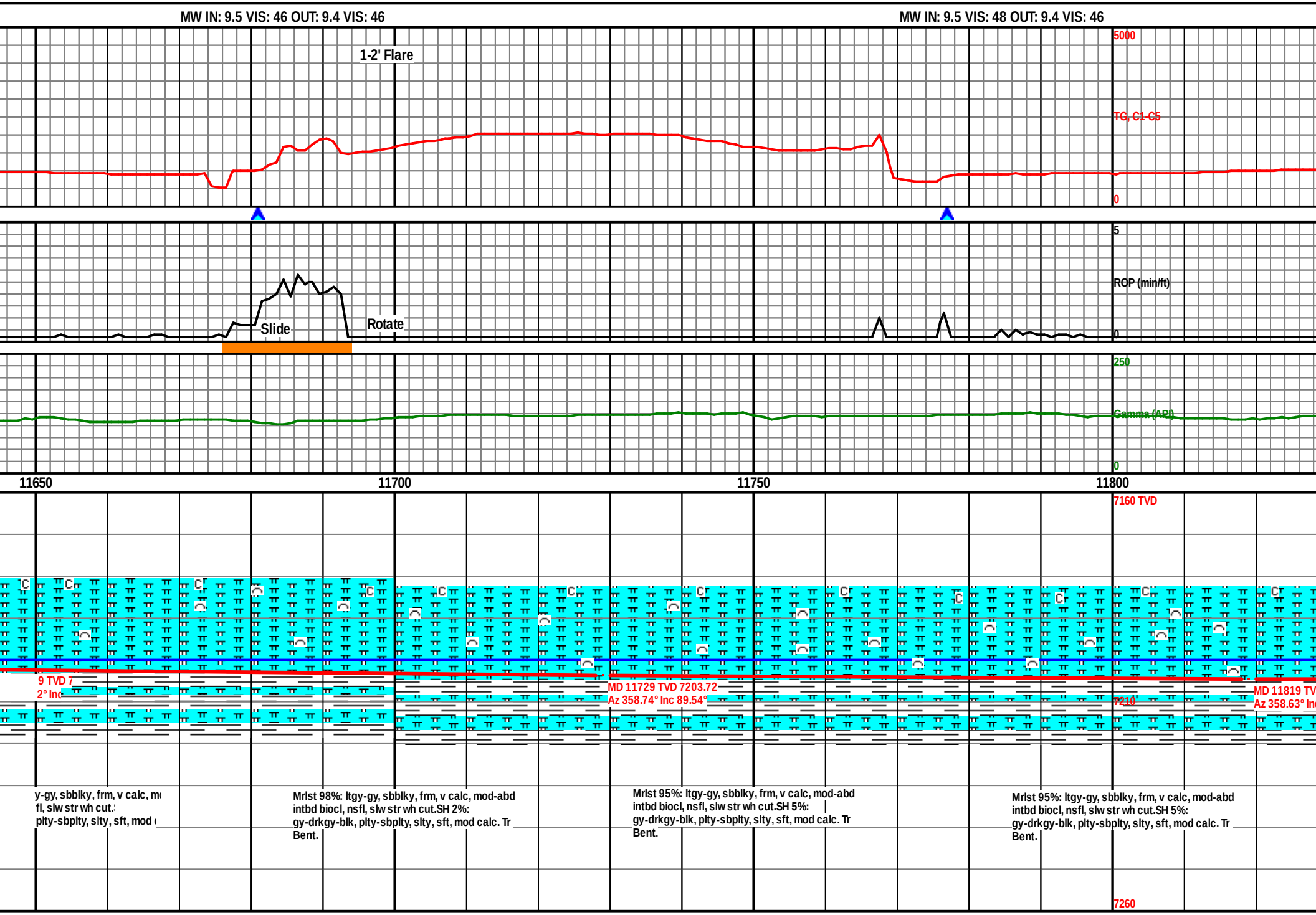

MW IN: 9.7 VIS: 51 OUT: 9.7 VIS: 47
MW IN: 9.7 VIS: 51 OUT: 9.7 VIS: 47
5000
TG, C1-C5
0
5
ROP (min/ft)
0
250
Gamma (API)
0
10750
10800
10850
10900
7160 TVD
MD 10739 TVD 7196.47
Az 0.29° Inc 89.82°
MD 10829 TVD 7196.66
Az 0.2° Inc 89.94°
7210
7260
Mrlst 85%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.SH 15%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Mrlst 85%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.SH 15%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Mrlst 80%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.SH 20%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr Bent.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mo intbd biocl, nsfl, slw str wh cut.SH 10%: gy-drkgy-blk, plty-sbplty, slty, sft, mod ca Bent. Tr py.

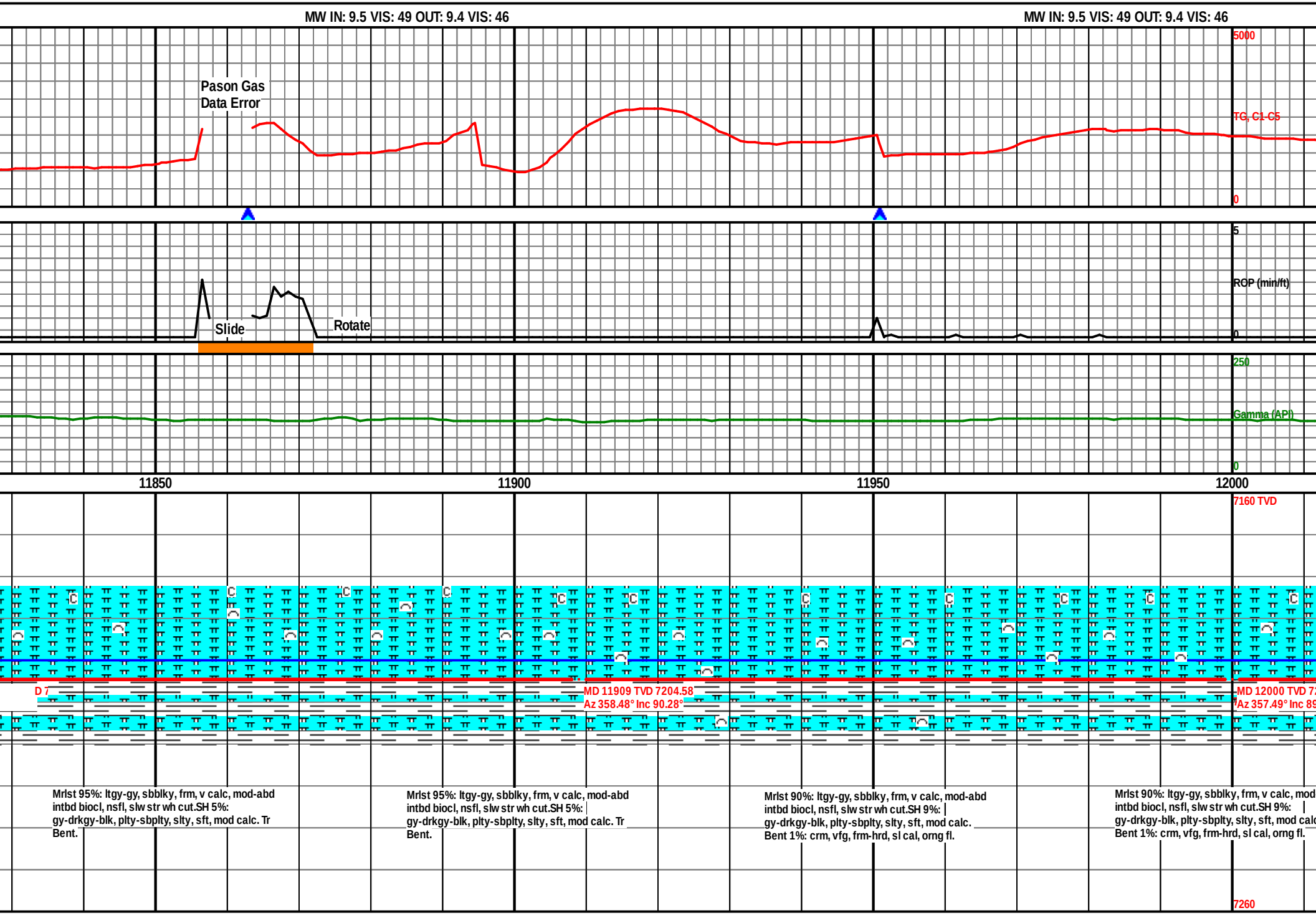

MW IN: 9.7 VIS: 51 OUT: 9.7 VIS: 47
MW IN: 9.7 VIS: 51 OUT: 9.7 VIS
5000
TG, C1-C5
0
5
ROP (min/ft)
0
250
Gamma (API)
0
10950
11000
11050
7160 TVD
MD 10919 TVD 7196.76
Az 359.86° Inc 89.94°
MD 10950 TVD 7200
Inc 90°
MD 11009 TVD 7196.73
Az 359.94° Inc 90.09°
7240
7260
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.SH 10%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr Bent. Tr py.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.SH 10%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr Bent. Tr py.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut.SH 7%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Bent 3%: crm, vfg, frm-hrd, sl cal, orng fl.

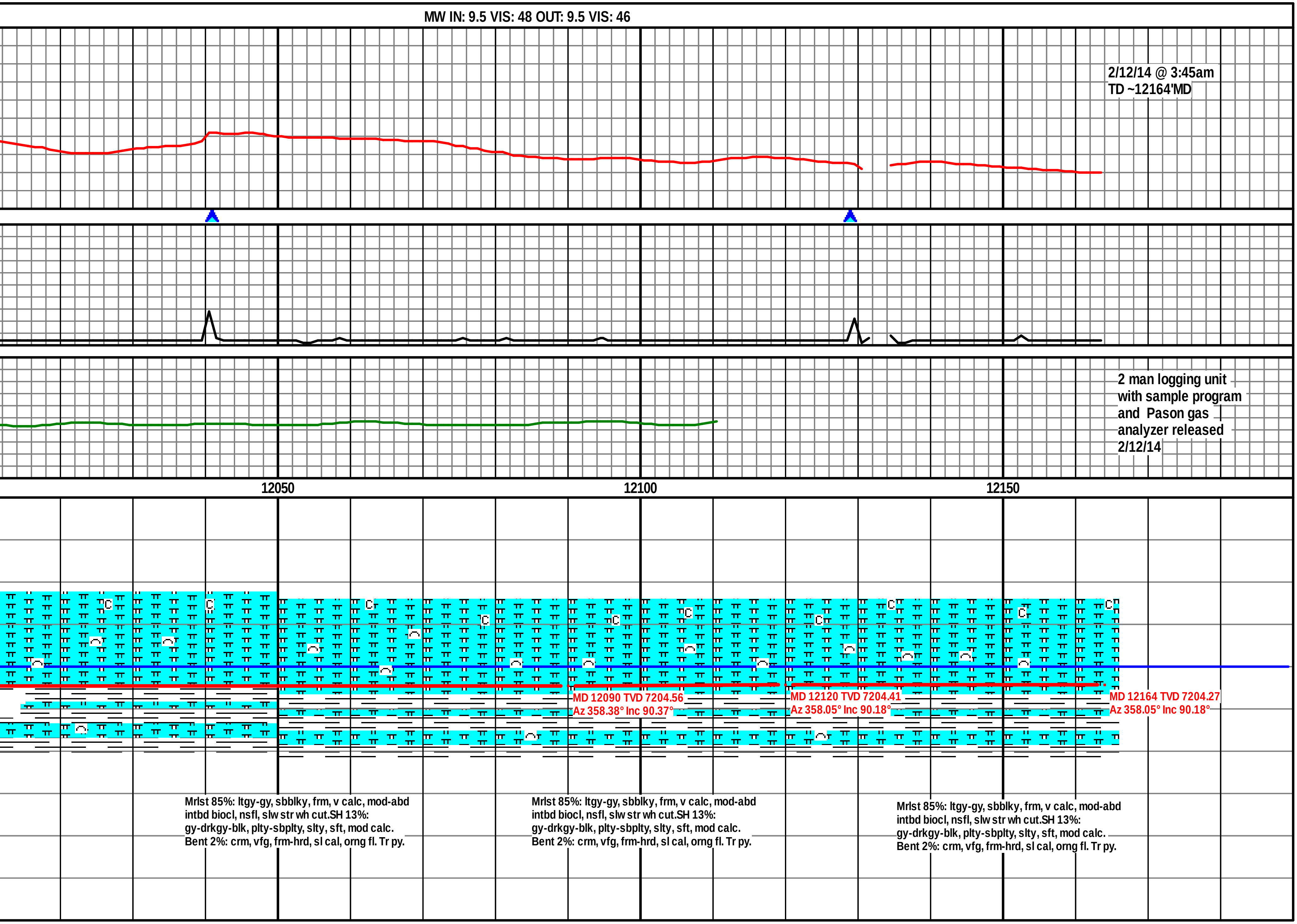

MW IN: 9.7 VIS: 52 OUT: 9.8 VIS: 47
MW IN: 9.6
5000
TG, C1-C5
0
Pason Gas Data Error
Pason Gas Error
5
ROP (min/ft)
0
Slide
Rotate
Slide
Rotate
250
Gamma (API)
0
11100
11150
11200
11250
7160 TVD
MD 11099 TVD 7196.52
Az 0.68° Inc 90.18°
MD 11189 TVD 7196.38
Az 3.58° Inc 90°
7240
7260
-gy, sbblky, frm, v calc, m
l, slw-mod str wh cut.
lty-sbplty, slty, sft, mo
fg, frm-hrd, sl cal,
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut.SH 3%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Bent 2%: crm, vfg, frm-hrd, sl cal, orng fl.
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut.SH 3%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Bent 2%: crm, vfg, frm-hrd, sl cal, orng fl.
Mrlst 98%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut. Bent 2%: crm, vfg, frm-hrd, sl cal, orng fl.


VIS: 46
MW IN: 9.5 VIS: 46 OUT: 9.5 VIS: 44
1-3' Flare
2-5' Flare
5000
TG, C1-C5
0
5
ROP (min/ft)
0
Slide
Rotate
250
Gamma (API)
0
11300
11350
11400
11450
7160 TVD
MD 11279 TVD 7196.98
Az 3.52° Inc 89.23°
MD 11369 TVD 7198.08
Az 3.43° Inc 89.38°
7210
7260
Mrlst 98%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw-mod str wh cut. Bent 2%: crm, vfg, frm-hrd, sl cal, orng fl.
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.SH 3%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Bent 2%: crm, vfg, frm-hrd, sl cal, orng fl.
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.SH 3%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Bent 2%: crm, vfg, frm-hrd, sl cal, orng fl.
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, m intbd biocl, nsfl, slw str wh cut.SH 4%: gy-drkgy-blk, plty-sbplty, slty, sft, mod c Bent 1%: crm, vfg, frm-hrd, sl cal, orng fl


MW IN: 9.5 VIS: 48 OUT: 9.5 VIS: 43
MW IN: 9.5 VIS: 48 OUT: 9.5 VIS: 43
5000
TG, C1-C5
0
5
ROP (min/ft)
0
Slide
Rotate
Slide
Rotate
250
Gamma (API)
0
11500
11550
11600
7160 TVD
11459 TVD 7
3.23° Inc
MD 11549 TVD 7200.77
Az 1.39° Inc 89.17°
MD 1163
Az 359.6
7210
7260
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 4%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Bent 1%: crm, vfg, frm-hrd, sl cal, orng fl.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 10%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 10%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Mrlst 98%: ltg
intbd biocl, ns
gy-drkgy-blk,
Bent.


MW IN: 9.5 VIS: 46 OUT: 9.4 VIS: 46
MW IN: 9.5 VIS: 48 OUT: 9.4 VIS: 46
1-2' Flare
5000
TG, C1-C5
0
5
ROP (min/ft)
0
Slide
Rotate
250
Gamma (API)
0
11650
11700
11750
11800
7160 TVD
9 TVD 7
2° Inc
MD 11729 TVD 7203.72
Az 358.74° Inc 89.54°
MD 11819 TV
Az 358.63° Inc
7210
y-gy, sbblky, frm, v calc, m
fl, slw str wh cut.
plty-sbplty, slty, sft, mod
Mrlst 98%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 2%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr
Bent.
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 5%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr
Bent.
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 5%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr
Bent.
7260


MW IN: 9.5 VIS: 49 OUT: 9.4 VIS: 46
MW IN: 9.5 VIS: 49 OUT: 9.4 VIS: 46
5000
Pason Gas
Data Error
TG, C1-C5
0
5
ROP (min/ft)
Slide
Rotate
0
250
Gamma (API)
0
11850
11900
11950
12000
7160 TVD
MD 11909 TVD 7204.58
Az 358.48° Inc 90.28°
MD 12000 TVD 72
Az 357.49° Inc 89
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.SH 5%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr Bent.
Mrlst 95%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.SH 5%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Tr Bent.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod-abd intbd biocl, nsfl, slw str wh cut.SH 9%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc. Bent 1%: crm, vfg, frm-hrd, sl cal, orng fl.
Mrlst 90%: ltgy-gy, sbblky, frm, v calc, mod intbd biocl, nsfl, slw str wh cut.SH 9%: gy-drkgy-blk, plty-sbplty, slty, sft, mod calc Bent 1%: crm, vfg, frm-hrd, sl cal, orng fl.
7260


MW IN: 9.5 VIS: 48 OUT: 9.5 VIS: 46
2/12/14 @ 3:45am
TD ~12164'MD
2 man logging unit
with sample program
and Pason gas
analyzer released
2/12/14
12050
12100
12150
MD 12090 TVD 7204.56
Az 358.38° Inc 90.37°
MD 12120 TVD 7204.41
Az 358.05° Inc 90.18°
MD 12164 TVD 7204.27
Az 358.05° Inc 90.18°
Mrlst 85%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 13%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Bent 2%: crm, vfg, frm-hrd, sl cal, orng fl. Tr py.
Mrlst 85%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 13%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Bent 2%: crm, vfg, frm-hrd, sl cal, orng fl. Tr py.
Mrlst 85%: ltgy-gy, sbblky, frm, v calc, mod-abd
intbd biocl, nsfl, slw str wh cut.SH 13%:
gy-drkgy-blk, plty-sbplty, slty, sft, mod calc.
Bent 2%: crm, vfg, frm-hrd, sl cal, orng fl. Tr py.