



GEOSEARCH LOGGING INC.

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: MARTIN 2210H

Location: HARRISON COUNTY, WV

License Number: 47-033-05407

Spud Date: 10/30/10

Surface Coordinates: Lat: 39.41503

Long: -80.32081

Bottom Hole Coordinates: Lat: 39.4223

Long: -80.3239

Ground Elevation (ft): 935'

Logged Interval (ft): 2,550

Formation: MARCELLUS

Type of Drilling Fluid: OIL BASED MUD

To: 11,158

K.B. Elevation (ft): 951'

Total Depth (ft): 11,158

Region: APPALACHIA

Drilling Completed: 11/13/2010

Printed by HORIZONTAL.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: XTO ENERGY

Address: 600 E. Exchange Avenue
Fort Worth, TX 76164

GEOLOGIST

Name: Kelley Hartley, Daniel Blake, Noah Sluiter

Company: Geosearch Logging, Inc.

Address: P.O. Box 6005
Edmond, OK 73083-6005
(405) 340-5545

Comments

2 Manned Logging Service
Start Logging Date: 11/03/2010
Released Logging Date: 11/14/2010
OBM Date: 11/8/2010
Drilling: UDI#209
PC 149, ML#126, HASP: V: V42, H:33

ROCK TYPES








	Anhy		Congl		Mrlst		Ss		Granite
	Bent		Dol		Salt		Till		Cement
	Brec		Gyp		Shale		Sandstn		Hotshale
	Cht		Igne		Shcol		Siltstn		
	Clyst		Lmst		Shgy		Granwash		
	Coal		Meta		Sltst		Dolowash		

ACCESSORIES

MINERAL		FOSSIL			
	Anhy		Algae		Ostra
	Arggrn		Amph		Pelec
	Arg		Belm		Pellet
	Bent		Bioclst		Pisolite
	Bit		Brach		Plant
	Brecfrag		Bryozoa		Strom
	Calc		Cephal		
	Carb		Coral	STRINGER	
	Chtdk		Crin		Anhy
	Chtlt		Echin		Arg
	Dol		Fish		Bent
	Feldspar		Foram		Coal
	Ferrpel		Fossil		Dol
	Ferr		Gastro		Gyp
	Glau		Oolite		Ls
					Mrst
					Sltstrg
					Ssstrg
				TEXTURE	
					Boundst
					Chalky
					Cryxln
					Earthy
					Finexln
					Grainst
					Lithogr
					Microxln
					Mudst
					Packst
					Wackest

OTHER SYMBOLS

POROSITY TYPE





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

 Vuggy

SORTING

-  Well
-  Moderate
-  Poor

ROUNDING

-  Rounded
-  Subrnd
-  Subang
-  Angular

OIL SHOWS

-  Even

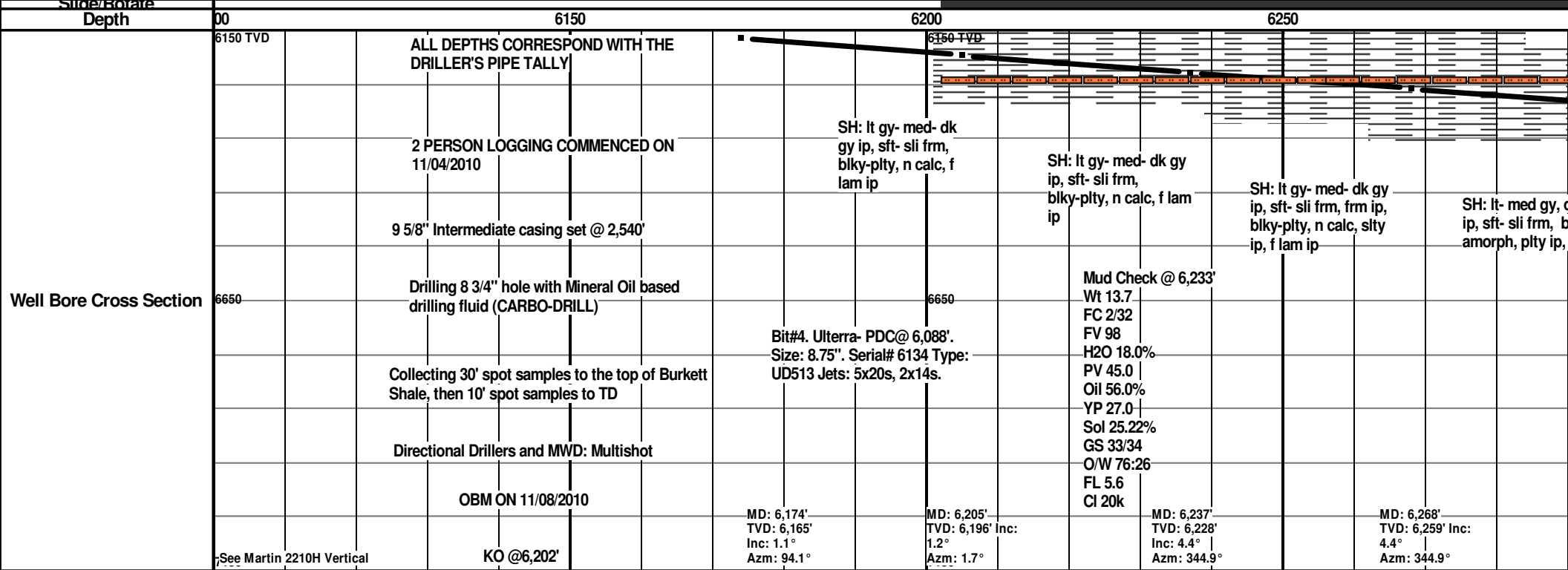
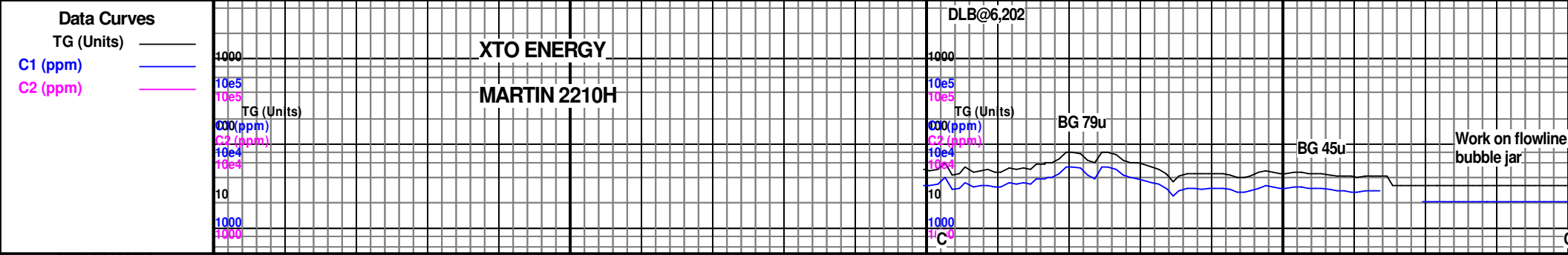
-  Spotted
-  Ques
-  Dead
-  poor
-  fair
-  good
-  excelent

INTERVALS

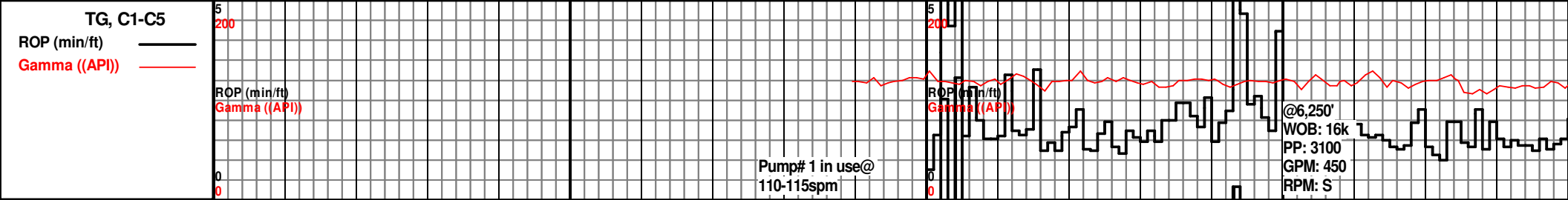
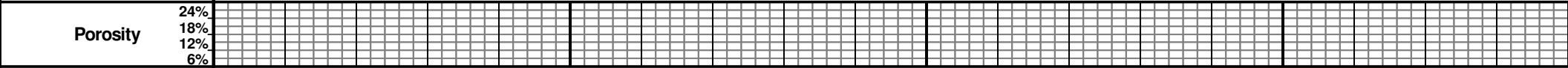
-  Core
-  Dst

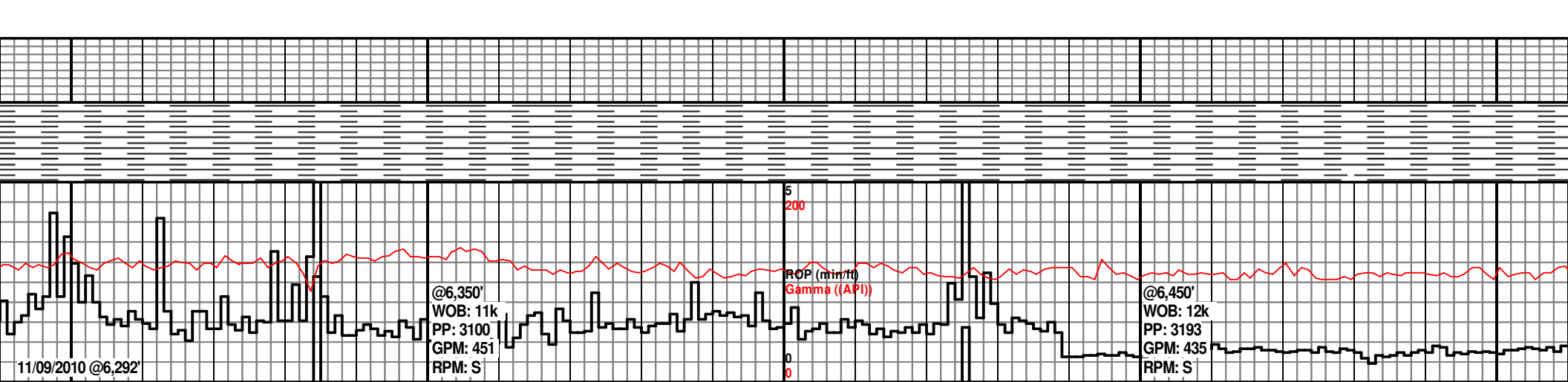
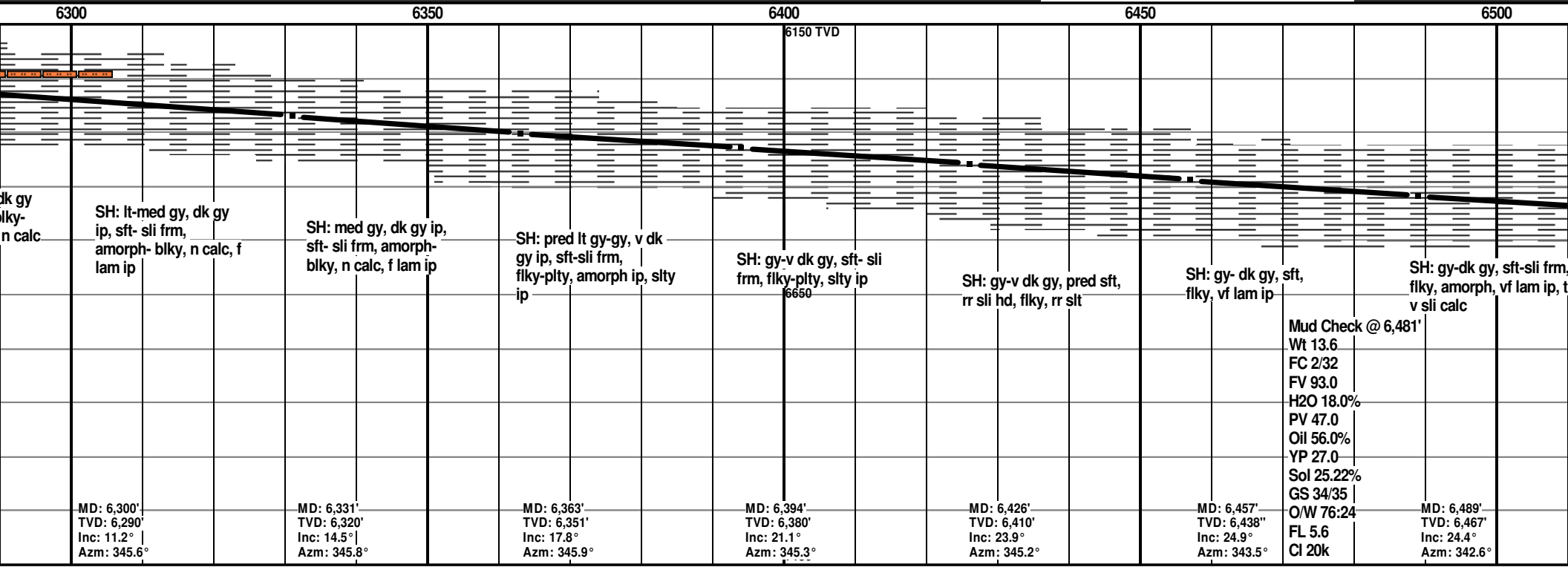
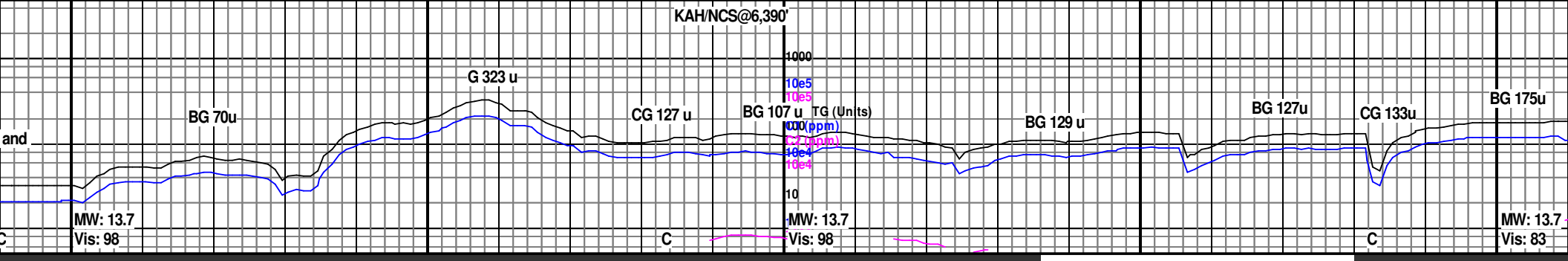
EVENTS

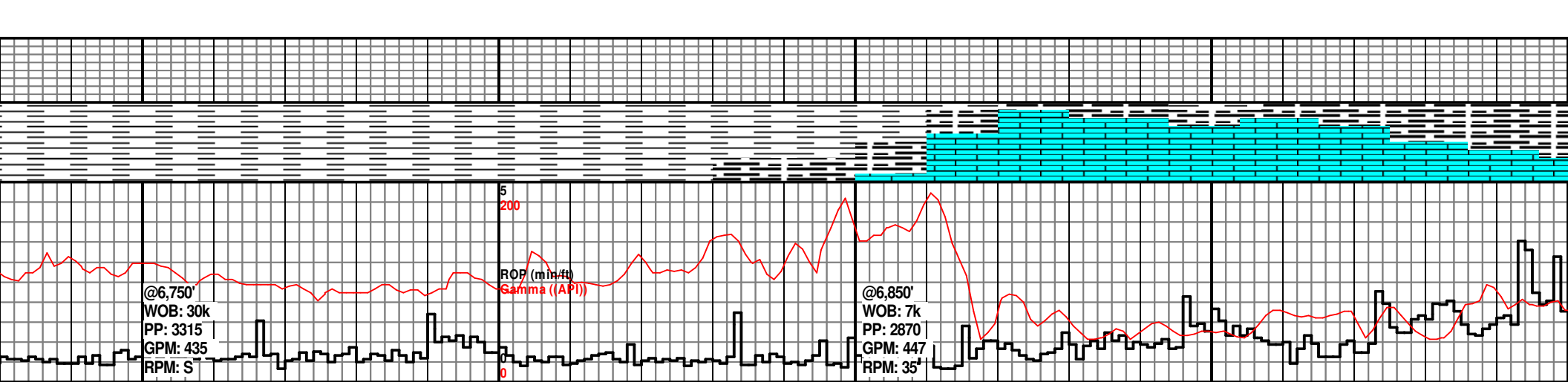
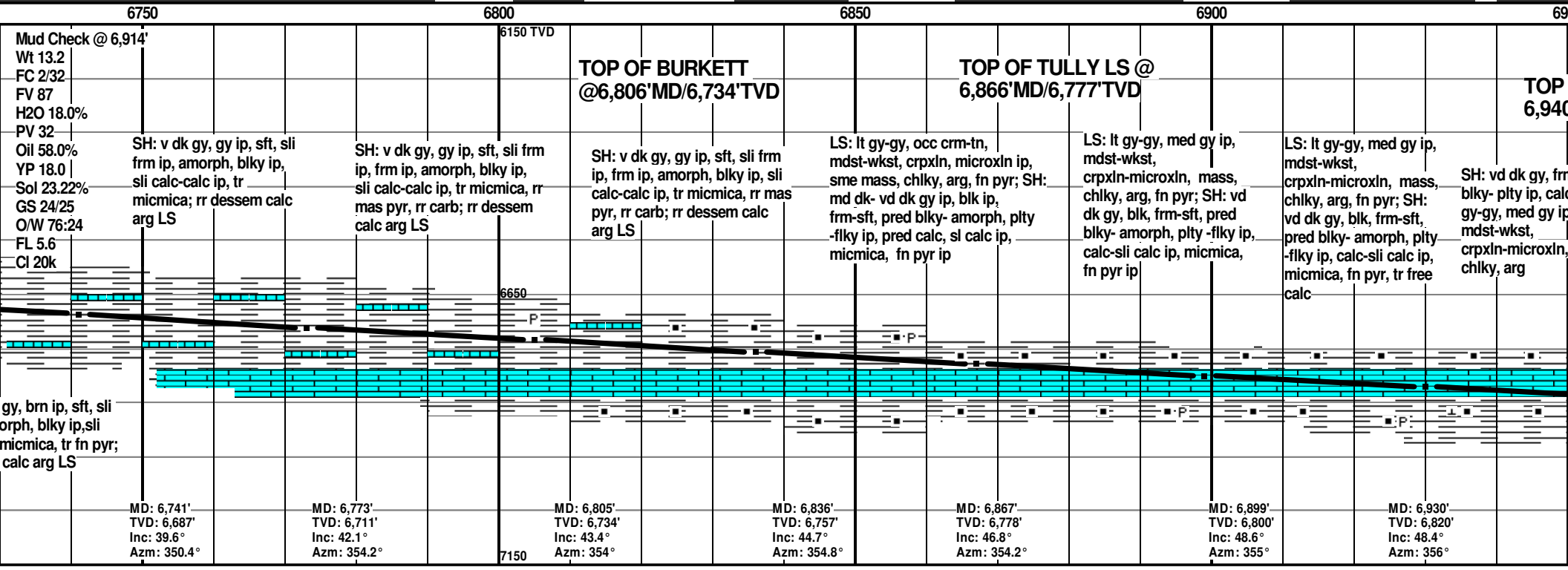
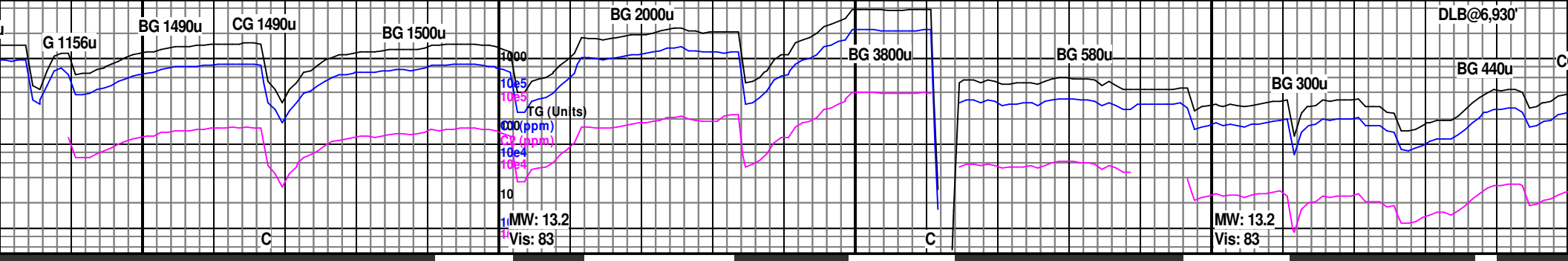
-  Rft
-  Sidewall

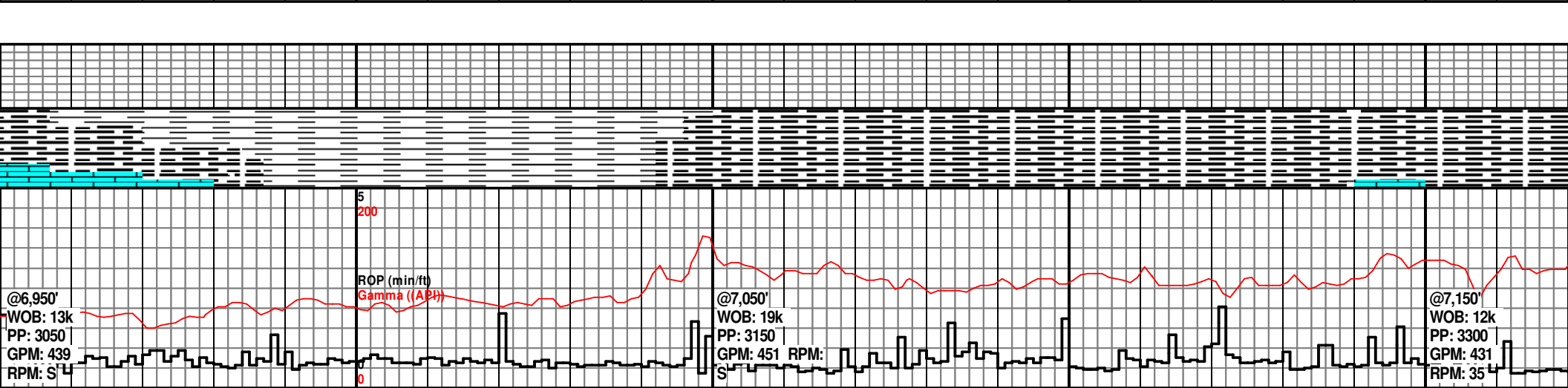
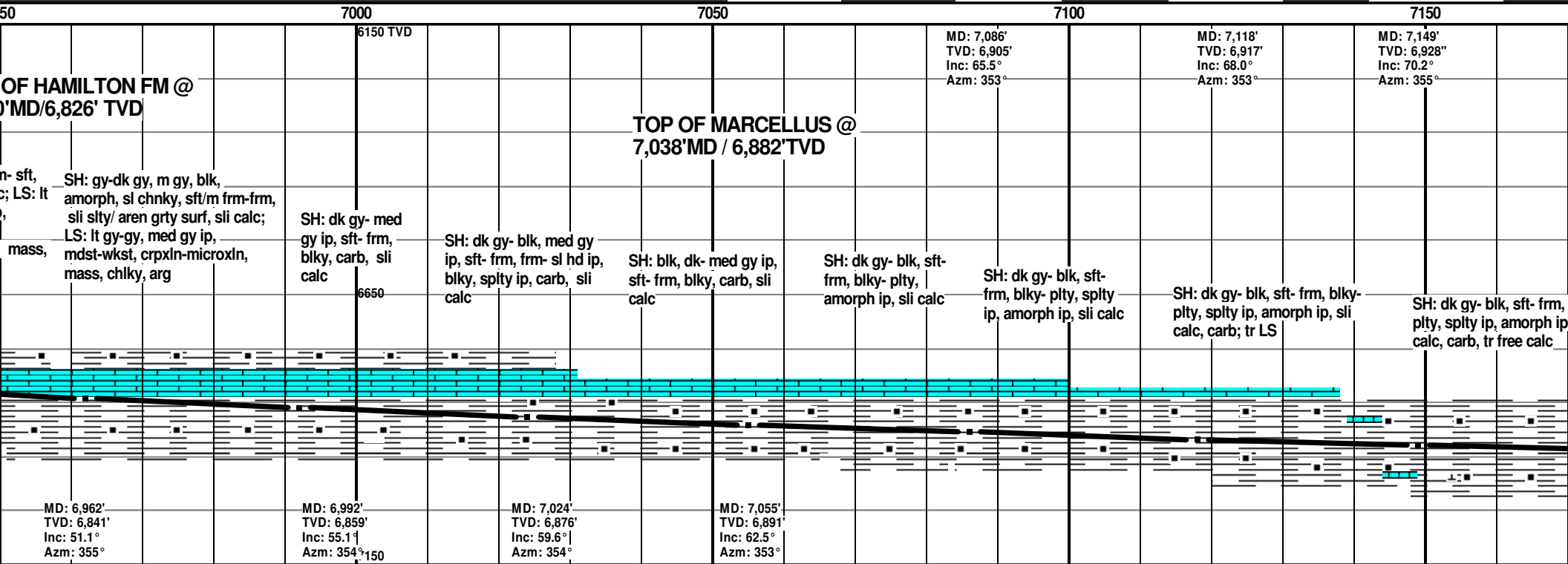
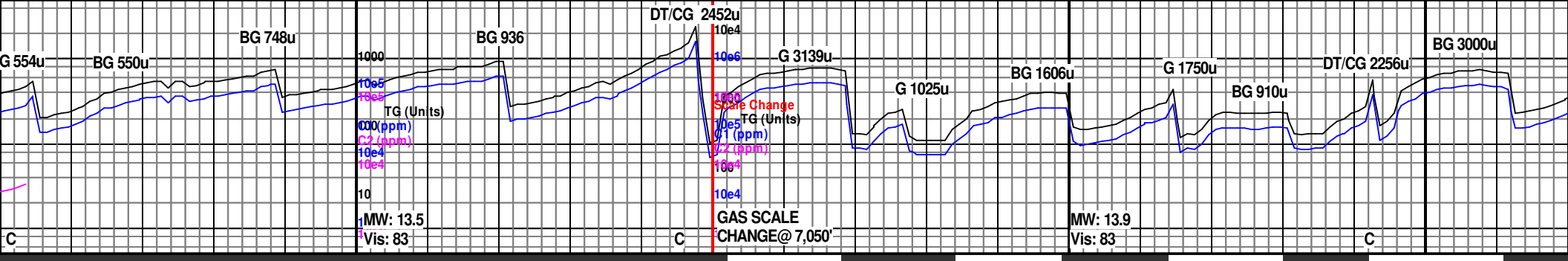


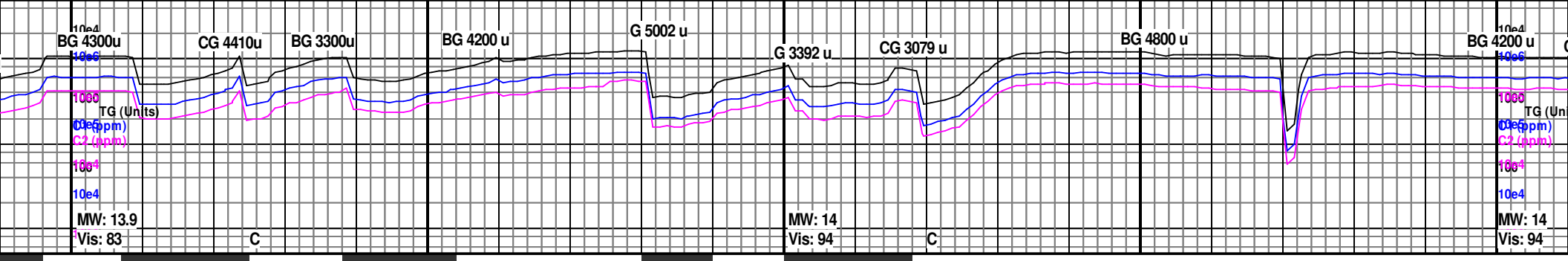
Oil Shows



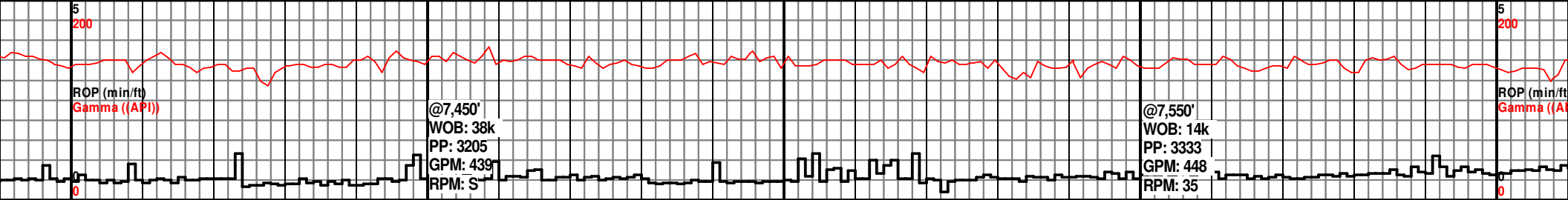
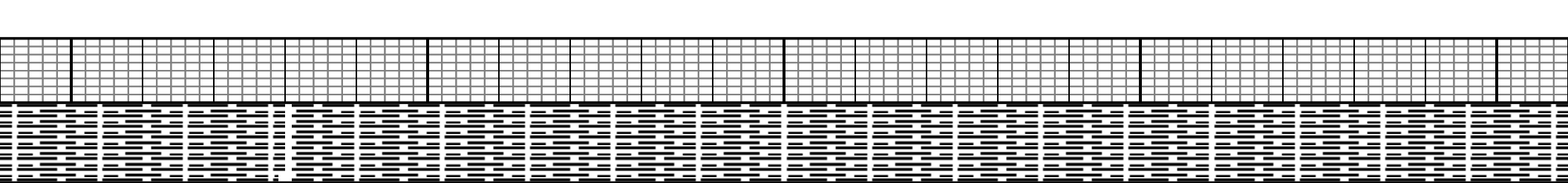


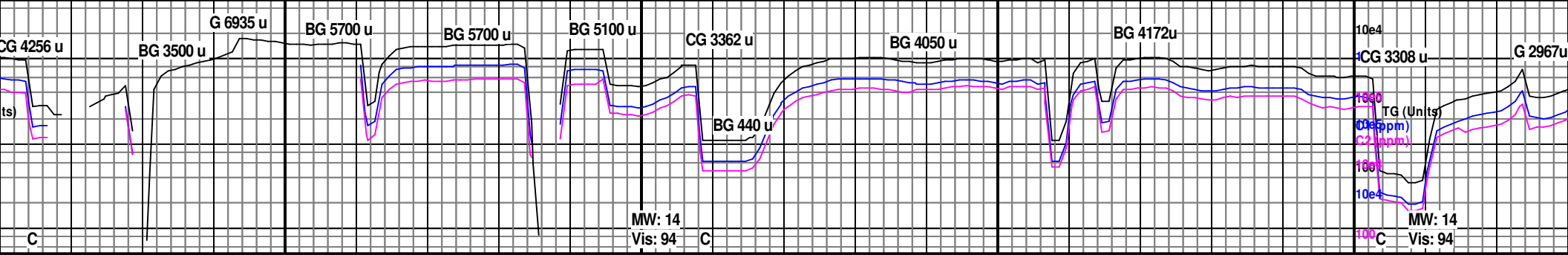




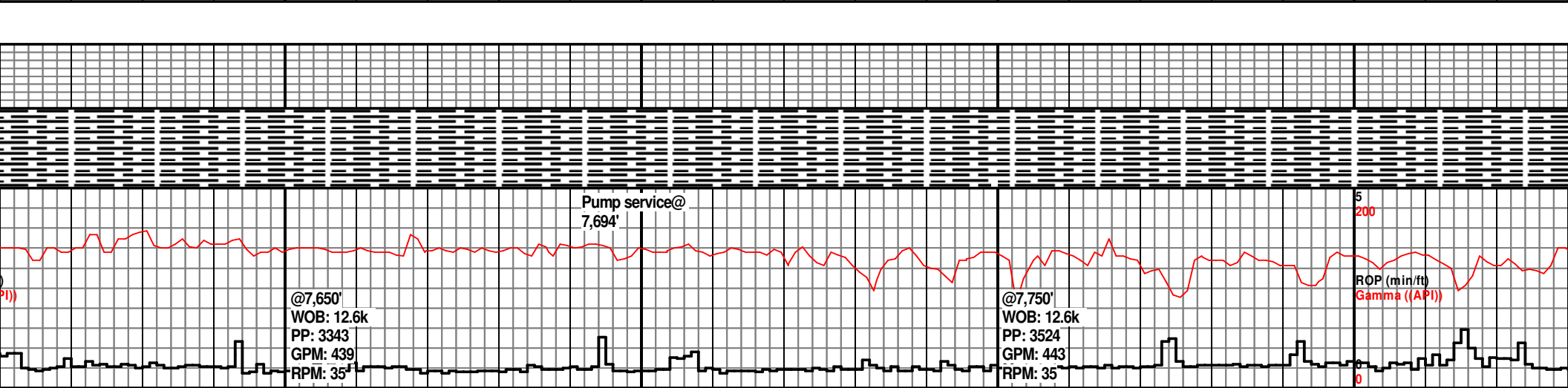


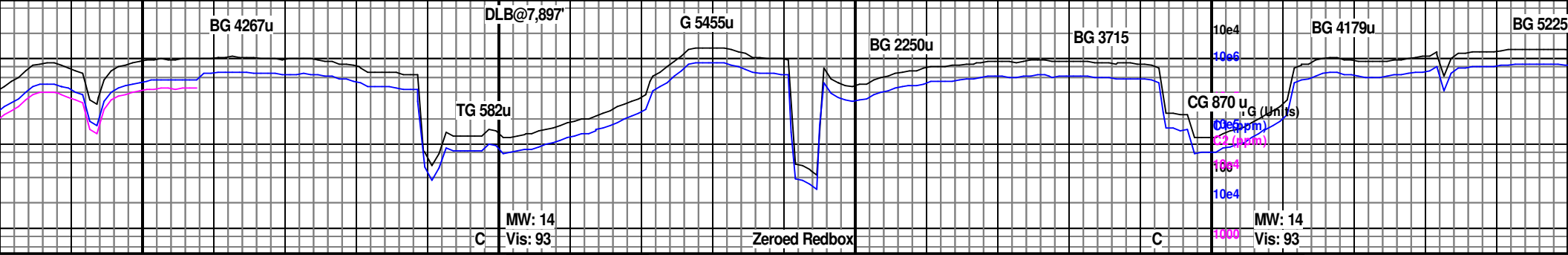
MD: 7,401' TVD: 6,969' Inc: 88.6° Azm: 349.2°	MD: 7,432' TVD: 6,969' Inc: 90.4° Azm: 346.3°	MD: 7,463' TVD: 6,969' Inc: 90.8° Azm: 344.0°	Mud Check @ 7,490' Wt 14.0 FC 2/32 FV 94 H2O 18.0% PV 48 Oil 55.0% YP 27 Sol 26.22% GS 34/36 O/W 75:25 FL 4.0 CI 20k	MD: 7,558' TVD: 6,968' Inc: 90.0° Azm: 341.4°	6150 TVD
SH: v dk gy, sft-sli frm, frm ip, pred amorph, blkly ip carb, n calc	SH: v dk gy, sft-sli frm, pred amorph, blkly ip, carb, n calc	SH: v dk gy, sft, sli frm ip, amorph, carb, n calc	SH: v dk gy, sft-sli frm, amorph, carb, stly ip, n calc	SH: v dk gy, dk brn ip, sft-sli frm, amorph, plty ip, carb, stly ip, rr micmica, n calc	SH: v dk gy, dk brn ip, sft-sli frm, frm ip, amorph, plty-blky ip, carb, stly ip, rr micmica, sli calc ip
6650					6650
7150					7150



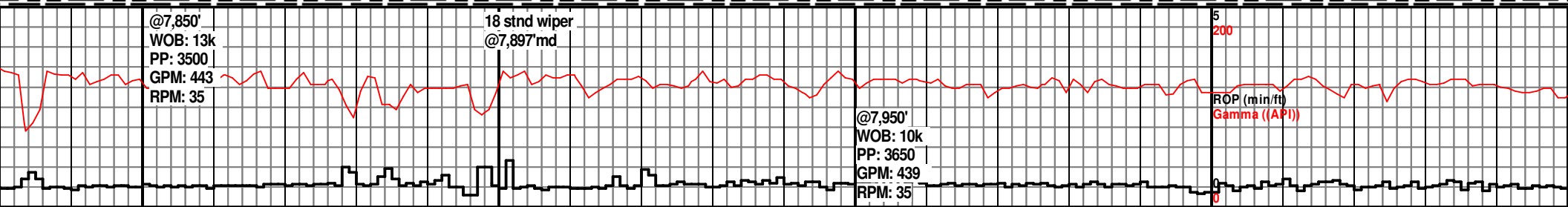
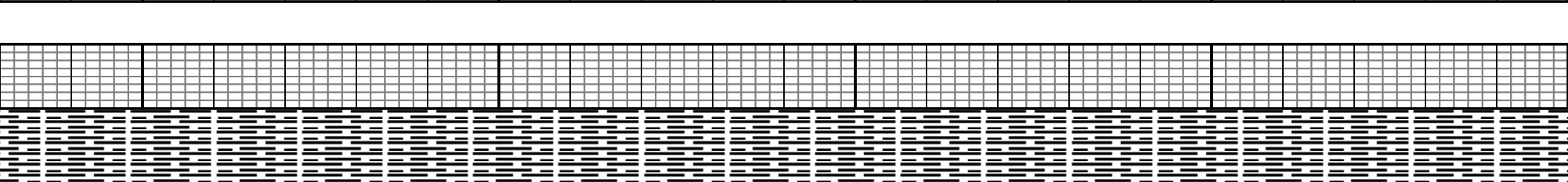


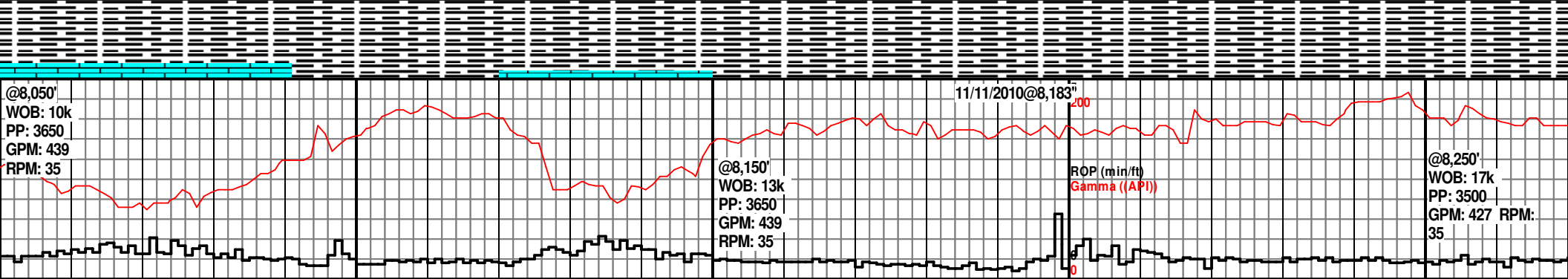
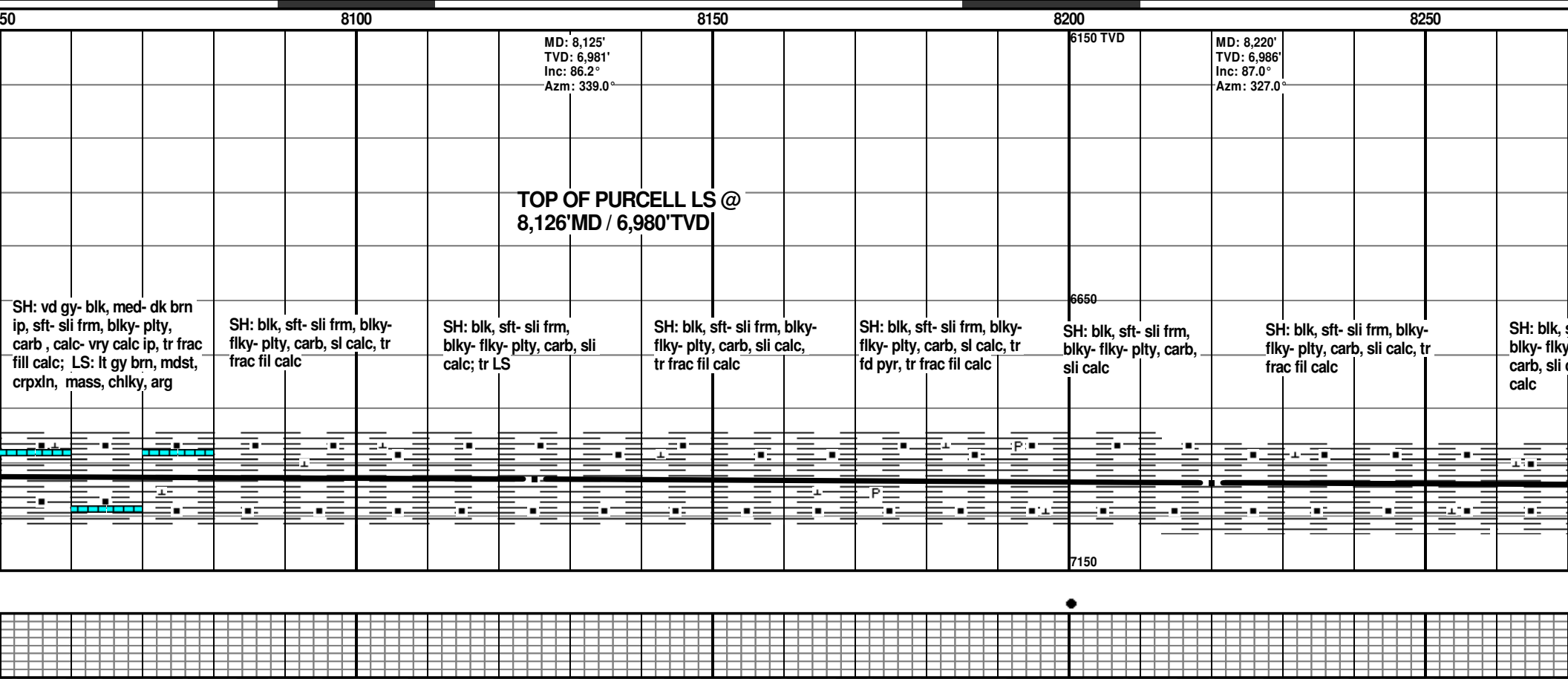
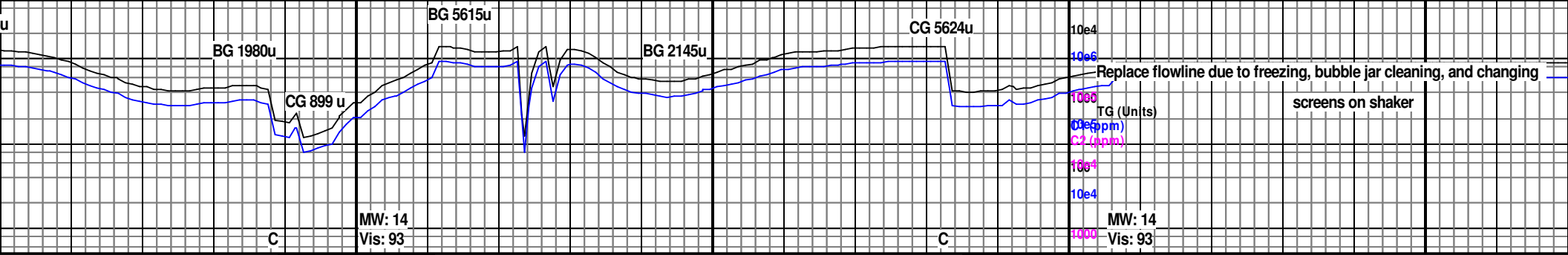
7650		7700		7750		7800	
MD: 7,652' TVD: 6,969' Inc: 89.4° Azm: 336.2°				MD: 7,746' TVD: 6,970' Inc: 89.5° Azm: 337.3°		6150 TVD	
v dk gy, dk brn ip, sli frm, frm ip, amorph, blkly ip, carb, v calc ip	SH: v dk gy, dk brn ip, sft-sli frm, amorph, blkly ip, carb, pp pyr ip, micmica ip, frac fil calc ip	SH: dk gy-v dk gy, dk brn ip, sft-sli frm, frm ip, amorph, plty-blky ip, carb, micmica ip, pp pyr ip	SH: v dk gy, v dk brn, sft-sli frm, frm ip, amorph, blkly ip, carb, rr frac fil calc	SH: v dk gy, v dk brn, sli frm-frm, sft ip, amorph, plty-blky ip, carb, rr frac fil calc	SH: v dk gy, v dk brn, sli frm-frm, sft ip, amorph, carb, blkly ip, micmica ip, n calc	SH: v dk gy, v dk brn, pred sli frm, sft ip, amorph, blkly ip, carb, micmica ip, rr pp pyr ip, n calc	SH: v dk gy, v pred sli frm, sft amorph, carb, ip, n calc
6650						7150	

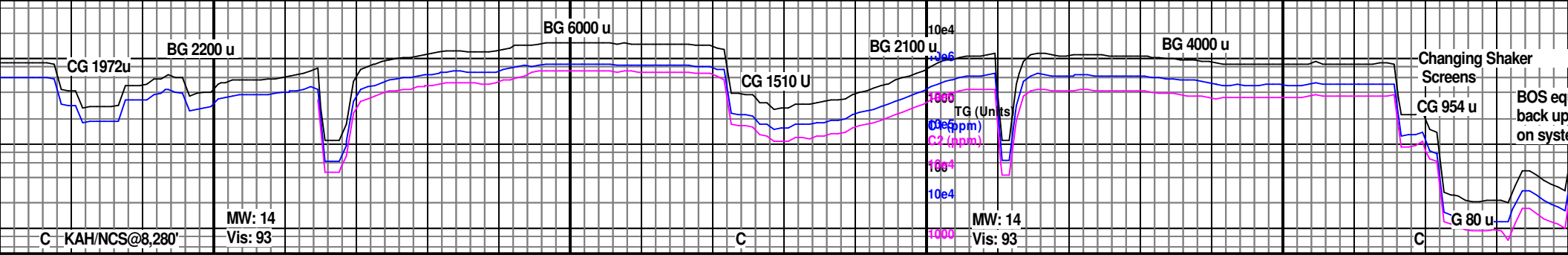




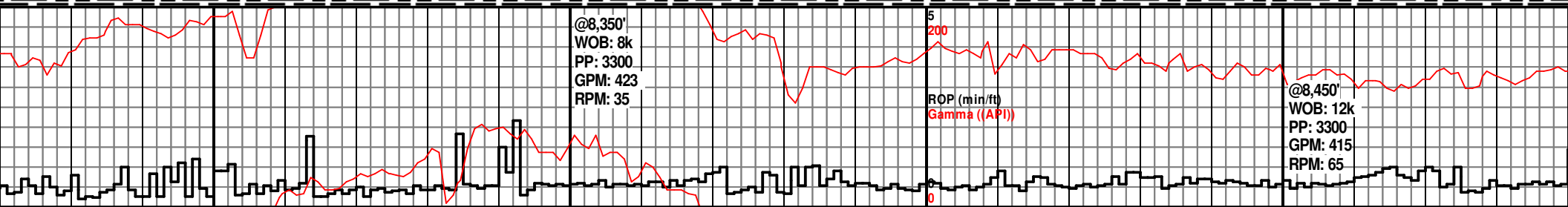
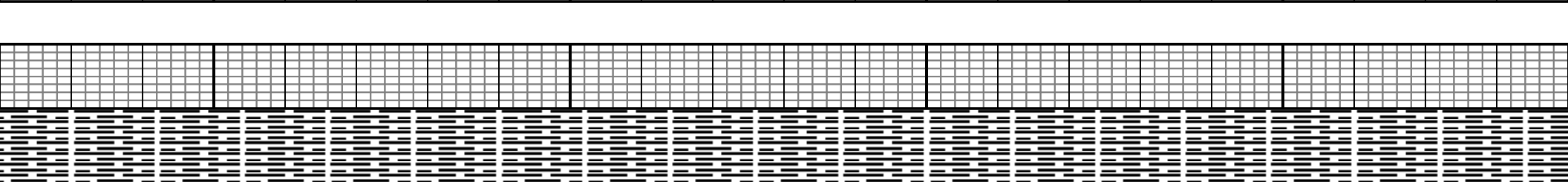
7850	7900	7950	8000	8050
MD: 7,841' TVD: 6,970' Inc: 89.6° Azm: 336.0°	Mud Check @ 7,897' Wt 14.0 FC 2/32 FV 93 H2O 18.0% PV 48 Oil 55% YP 27 Sol 26.22% GS 34/36 O/W 75:25 FL 4.0 CI 20k	ST/Wiper @7,897'	MD: 7,935' TVD: 6,972' Inc: 88.5° Azm: 333.6°	MD: 8,031' TVD: 6,975' Inc: 87.3° Azm: 332.0°
SH: v dk gy- blk, sft- sli frm- sli hd ip, blk- pty, carb, sli calc, carb, tr free calc	SH: v dk gy- blk, sft- sli frm, blk- pty, carb, sli calc, tr free calc, tr fd pyr	SH: v dk gy- blk, sft- sli frm, blk- pty, carb, sli calc, tr dru pyr, tr frac fil calc	SH: v dk gy- blk, sft- sli frm, sli hd ip, blk- pty, carb, sli calc, tr frac fil calc	SH: v dk gy- blk, sft- sli frm, sli hd ip, blk- pty, carb, sli calc, tr frac fil calc
6150 TVD			6650	
				7150

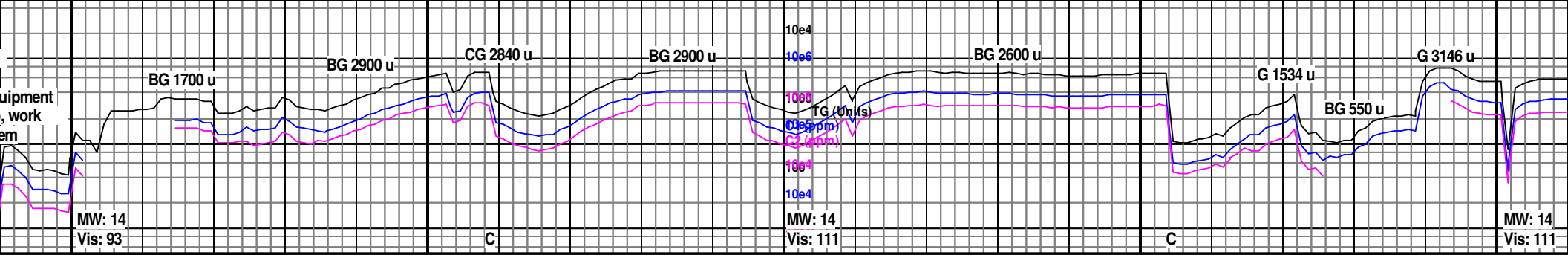




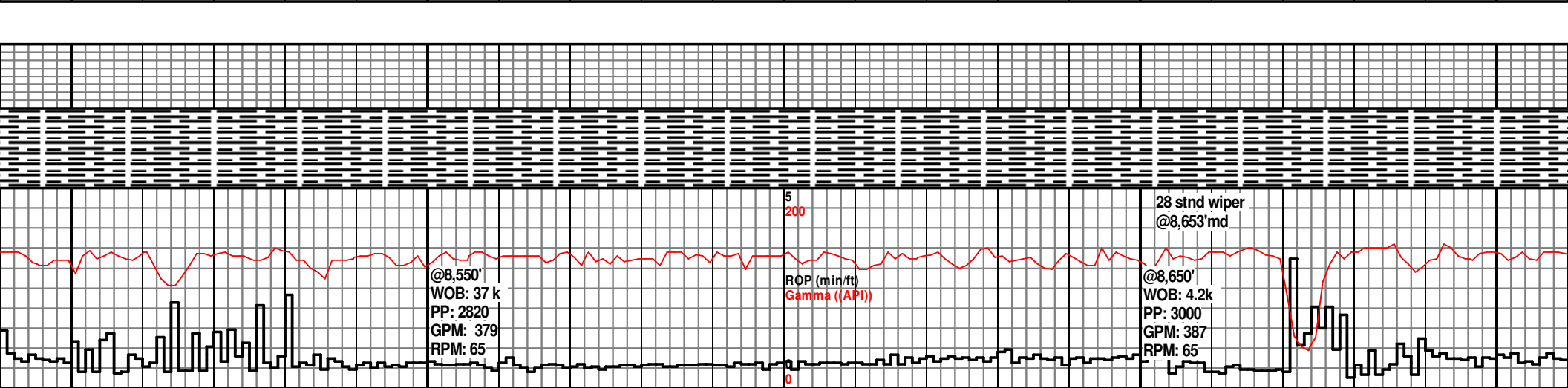


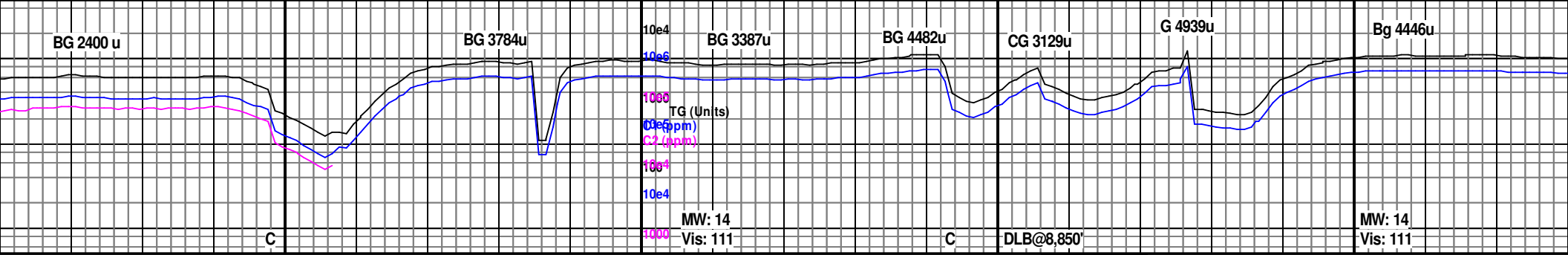
8300		8350		8400		8450	
MD: 8,315' TVD: 6,992' Inc: 86.2° Azm: 324.8°				6150 TVD MD: 8,409' TVD: 6,998' Inc: 86.4° Azm: 323.4°			
sft- sli frm, - plty, tr splty, calc, tr frac fil	SH: blk, v dk brn, sft- sli frm, amorph, blk, y, carb, tr frac fil calc	SH: blk, v dk brn, sft- sli frm, frm ip, amorph, blk, y ip, carb, slty ip, n calc	SH: blk, v dk brn, brn gy ip, sft- sli frm, amorph, flky ip, carb, slty ip, frac fil calc ip	SH: blk, v dk brn, v dk gy ip, pred sft, sli frm ip, flky, amorph, carb, n calc	SH: blk, v dk brn, brn gy ip, pred sft, sli frm ip, flky-plty, amorph ip, carb, n calc, pp pyr ip, rr micmica, rr slt	SH: blk, v dk brn, rr brn gy, sft-sli frm, frm ip, amorph, blk, y ip, carb, rr pp pyr, rr frac fil calc	SH: blk, v dk brn brn ip, sft-sli frm amorph, slty ip, carb calc



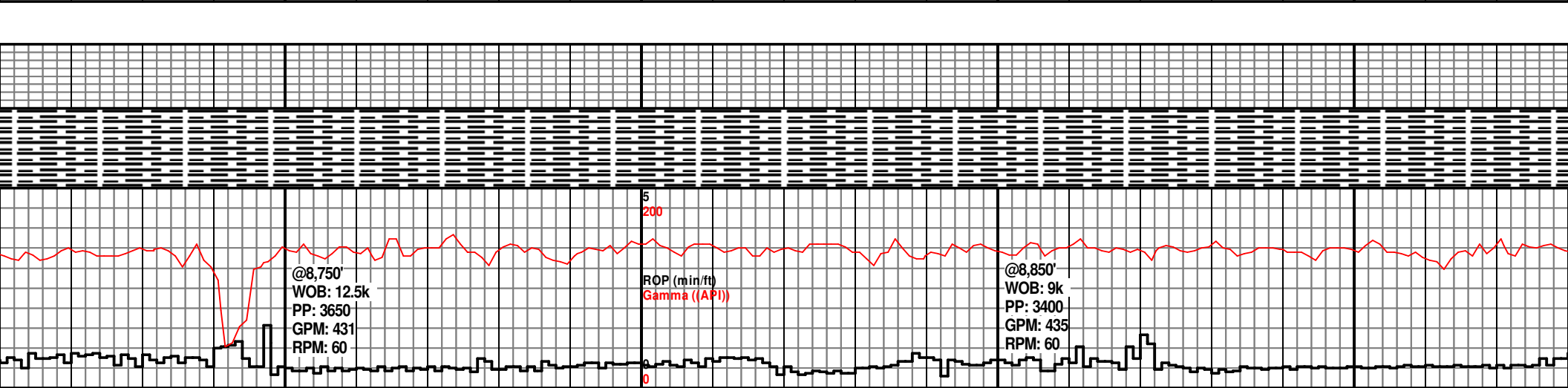


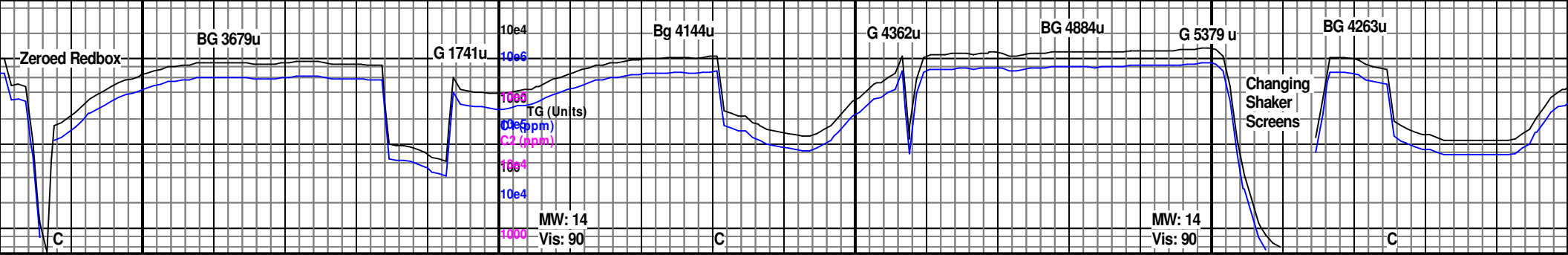
8500	8550	8600	8650	8700			
MD: 8,502' TVD: 7,002' Inc: 89.1° Azm: 322.4°		Mud Check @ 8,750' Wt 14.2 FC 2/32 FV 111 H2O 18% PV 69 Oil 52% YP 31 Sol 29.22% GS 35/37 O/W 74:26 FL 4.0 CI 20k	MD: 8,597' ^{V/D} TVD: 7,002' Inc: 90.1° Azm: 322.4°	ST/Wiper @8,653'	MD: 8,691' TVD: 7002' Azm: 321.3° Inc: 90.4°		
dk gy, flky, carb, n	SH: blk, v dk brn, pred sft, sli frm ip, amorph, flky ip, tr slit, carb n calc	SH: blk, v dk brn ip, sli frm, frm ip, amorph, plty-flky ip, carb, n calc, tr slit, rr pp pyr	SH: blk, v drk brn ip, sli frm, frm ip, amorph, plty- flky ip, carb, n calc, micmica ip	SH: v dk gy- blk, v dk brn, brn gy ip, sli frm, frm ip, rr sft, blk- amorph, carb, n calc, micmica, rr dessem arg w vf lam	SH: v dk gy-blk, v dk brn ip, brn gy ip, sli frm, frm ip, tr sft, pred amorph, blk ip, carb, v sli calc ip, micmica, rr arg dessem w vf lam	SH: v dk gy-blk, v dk brn ip, sft-sli frm, frm ip, pred amorph, plty-blky ip, carb, micmica	SH: v dk gy- blk, v dk brn ip, sft-sli frm, frm ip, pred amorph, plty- blk ip, micmica, carb, frac fil calc ip
			6650				
			7150				



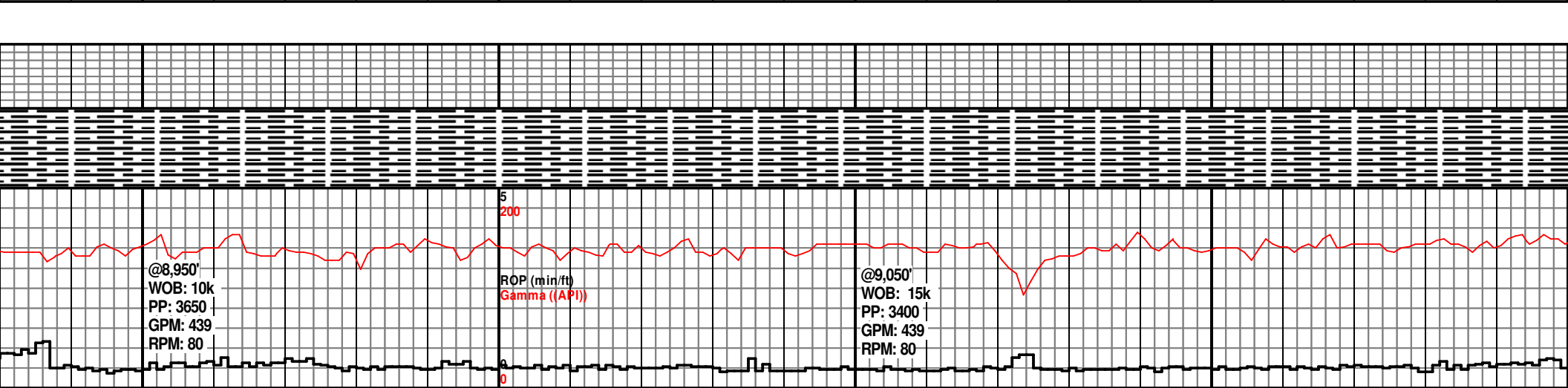


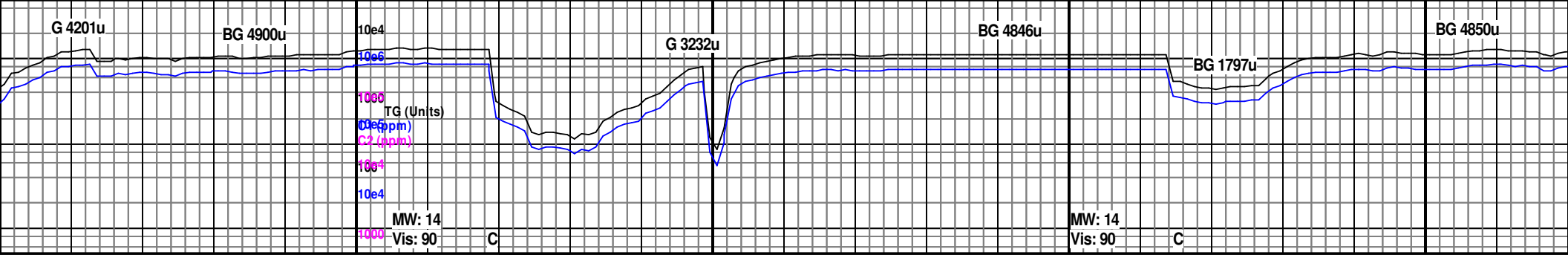
8750		8800		8850		8900	
		MD: 8,786' TVD: 7002' Az: 320.5° Inc: 89.6°		6150 TVD		MD: 8,881' TVD: 7001' Az: 320.1° Inc: 91.1°	
		6650					
SH: v dk gy-blk, v dk brn ip, pred sli frm, sft ip, amorph, plty ip, micmica, carb, v sli calc, frac fil clac ip	SH: v dk gy-blk, v drk brn ip, sft, sli frm ip, amorph, plty- blk ip, carb, micmica ip	SH: blk, v dk gy brn ip, sli frm- frm, blk- plty, carb, v sli calc, tr frac fil calc, tr fd pyr	SH: blk, v dk gy brn ip, sli frm-frm, blk- plty, carb, v sli calc, tr frac fil calc, tr fd pyr	SH: blk, sli frm- frm, frm ip, blk- plty, carb, n calc, tr frac fil calc, tr dru pyr	SH: blk, sli frm- frm, sli hd ip, blk- plty, carb, n calc, tr fd pyr	SH: blk, sli frm- frm, frm ip, blk- plty, carb, n calc, tr calc frac fil	SH: blk, sli frm- frm, frm ip, blk- plty, carb, n calc, tr calc frac fil
		7150					



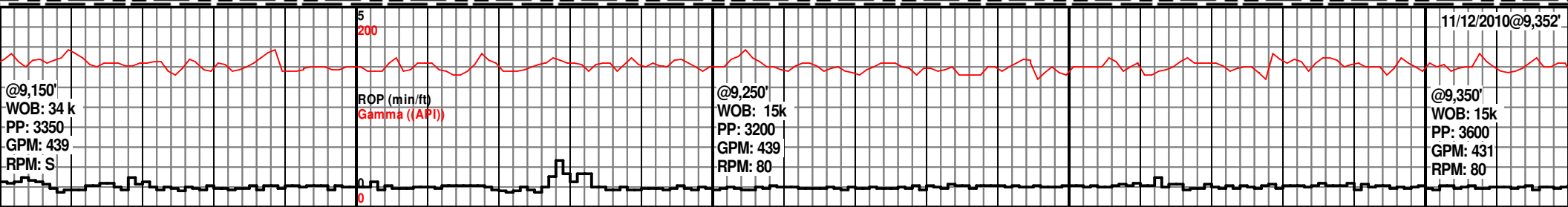
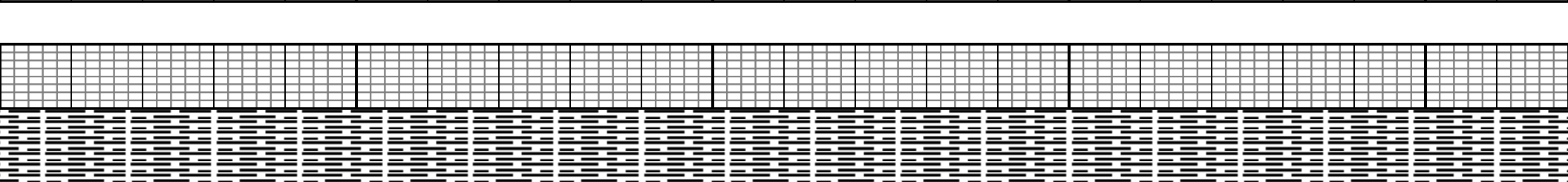


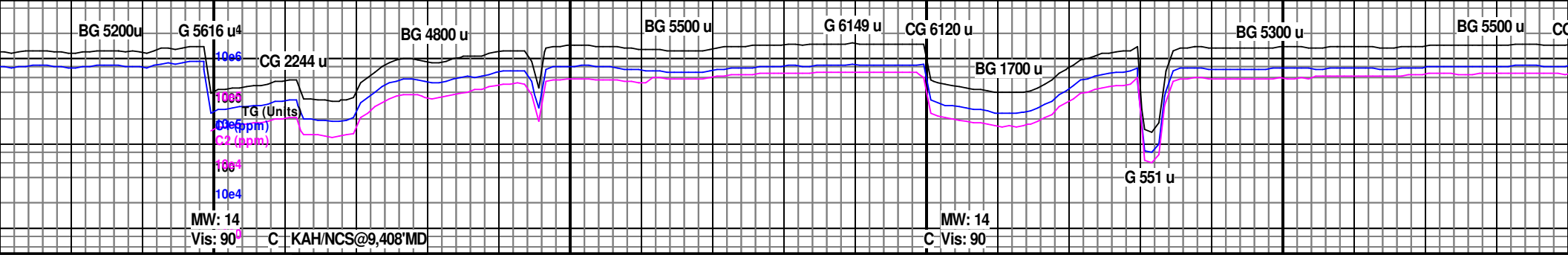
8950		9000		9050		9100		9150	
MD: 8,974' TVD: 7000' Azm: 321.0° Inc: 90.4°		6150 TVD Mud Check @ 8,993 Wt 14.0 FC 2/32 FV 90.0 H2O 18.0% PV 61.0 Oil 57.0% YP 31.0 Sol 28.0% GS 34:37 O/W 75:25 FL 4.0 CI 20k		MD: 9,068' TVD: 7000' Azm: 319.7° Inc: 89.3°					
blk, v dk gy brn ip, sli frm, sli hd ip, blk- carb, n calc, tr calc fil	SH: blk, v dk gy brn ip, sli frm- frm, sli hd ip, blk- pty, carb, v sl calc, tr calc frac fil	SH: blk, v dk gy brn ip, sft- sli frm, frm ip, blk- pty, carb, v sl calc, tr free calc, tr fd pyr	SH: blk, v dk gy brn ip, sli frm- frm, blk- pty, carb, n calc, tr fd pyr	SH: blk, sli frm- frm, blk- pty, carb, sl calc, conspic calc frac fil, tr nod pyr	SH: blk, sli frm- frm, sli hd ip, blk- pty, carb, sl calc, tr calc frac fil, tr pyr frac fil	SH: blk, v dk gy brn ip, sli frm- frm, sli hd ip, blk- pty, carb, sl calc, tr calc frac fil	SH: blk, v dk gy brn ip, sli frm- frm, blk- pty, carb, tr calc frac fil	SH: blk, v dk gy brn ip, sli frm- frm, blk- pty, carb, tr calc frac fil	SH: blk, v dk gy brn ip, sli frm- frm, blk- pty, carb, tr calc frac fil
6650		7150							



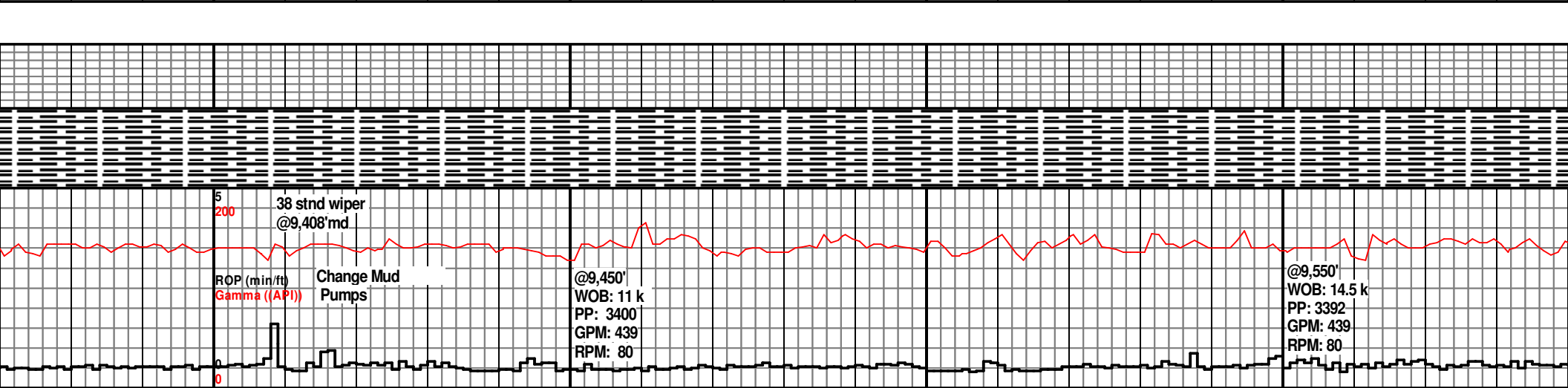


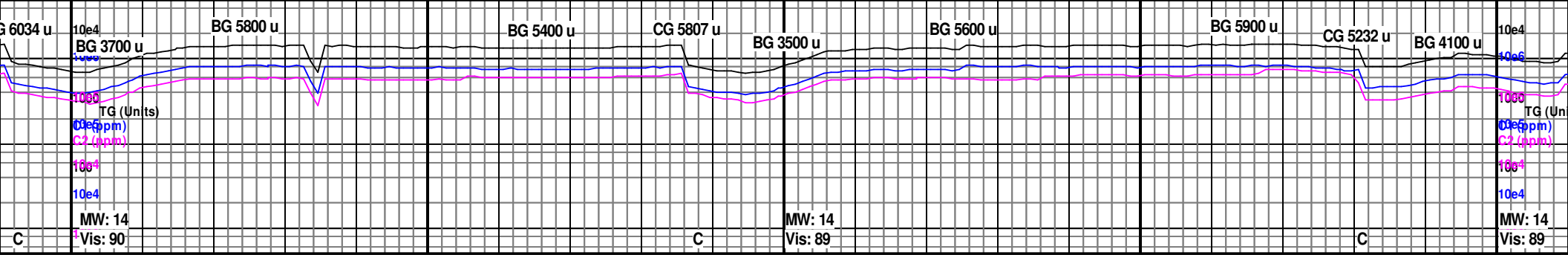
50	9200	9250	9300	9350
MD: 9,162' TVD: 7000' Az: 322.1° Inc: 90.9°	6150 TVD	MD: 9,256' TVD: 6,999' Az: 320.7° Inc: 90.8°		MD: 9,351' TVD: 6,998' Inc: 89.8° Az: 320.2°
SH: blk, v dk gy brn ip, sli frm-frm, sli hd ip, blk-pty, carb, v sli calc, tr calc frac fil, tr fd pyr	SH: blk, v dk gy brn ip, sli frm-frm, sli hd ip, blk-pty, carb, v sli calc, tr calc frac fil	SH: blk, v dk gy brn ip, sli frm-frm, sli hd ip, blk-pty, carb, v sli calc, tr calc frac fil, tr dru pyr	SH: blk, v dk gy brn ip, sli frm-frm, sli hd ip, blk-pty, carb, sli calc, tr calc frac fil	SH: blk, v dk gy brn ip, sli frm-frm, blk-pty, carb, v sli calc, tr calc frac fil
	6650			
	7150			



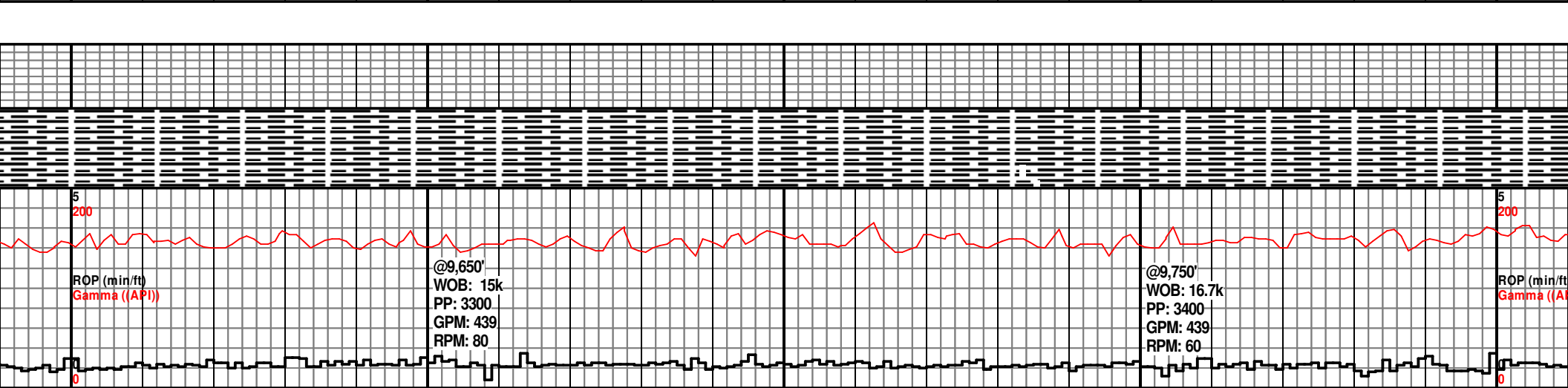


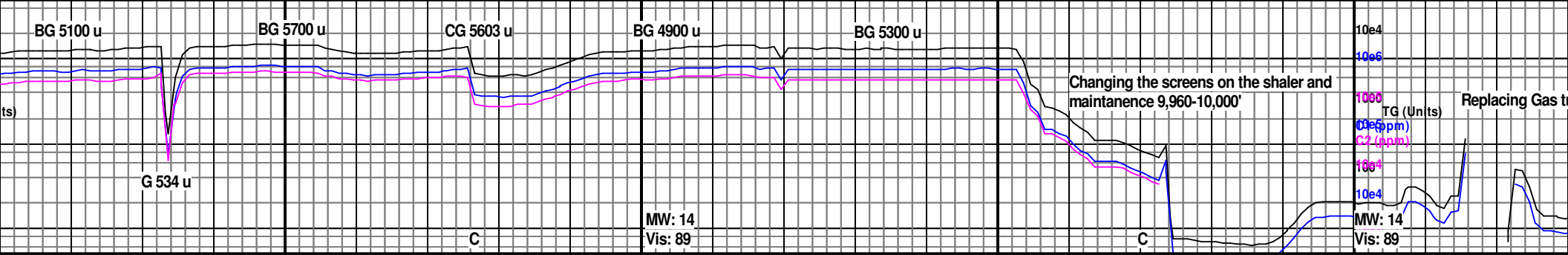
9400		9450		9500		9550	
6150 TVD		MD: 9,443'		MD: 9,535'		MD: 9,535'	
ST/Wiper @9,408'		TVD: 6,998'		TVD: 6,997'		TVD: 6,997'	
		Inc: 90.6°		Inc: 90.2°		Inc: 90.2°	
		Azm: 320.8°		Azm: 321.2°		Azm: 321.2°	
6650							
SH: blk, v dk gy brn ip, sli frn- frn, blk- plty, carb, n calc, tr calc frac fil		SH: blk, v dk brn, predy sft, sli frn ip, amorph, plty-blky ip, carb, silty ip, rr frac fil calc		SH: blk, v dk brn, sft-sli frn, amorph, plty-blky ip, carb, silty ip, n calc		SH: blk, v dk brn, sft- sli frn, frn ip, amorph, plty blky ip, carb, silty ip, micmica ip, n calc	
		SH: blk, v dk brn, sli frn, frn ip, amorph, blky ip, carb, micmica ip, silty ip, frac fil calc ip		SH: pred blk, v dk brn ip, v dk gy ip, sft-sli frn, amorph, blky ip, carb, silty ip, vf lam ip, n calc		SH: pred blk, v dk brn ip, sft-sli frn, amorph, blky ip, carb, micmica ip, silty ip, n calc	
						SH: blk, frn, am carb, sli free pyr	
7150							



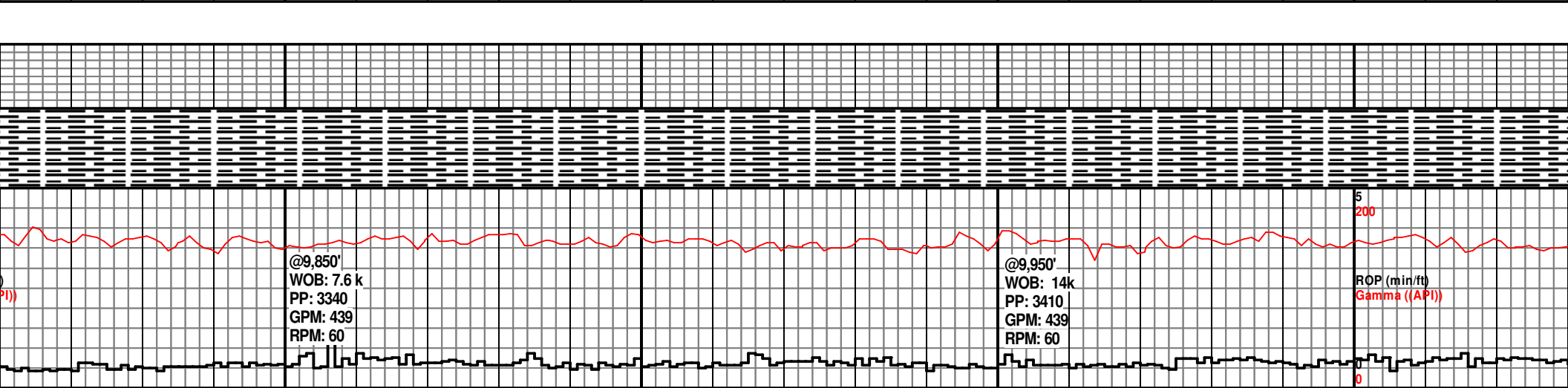


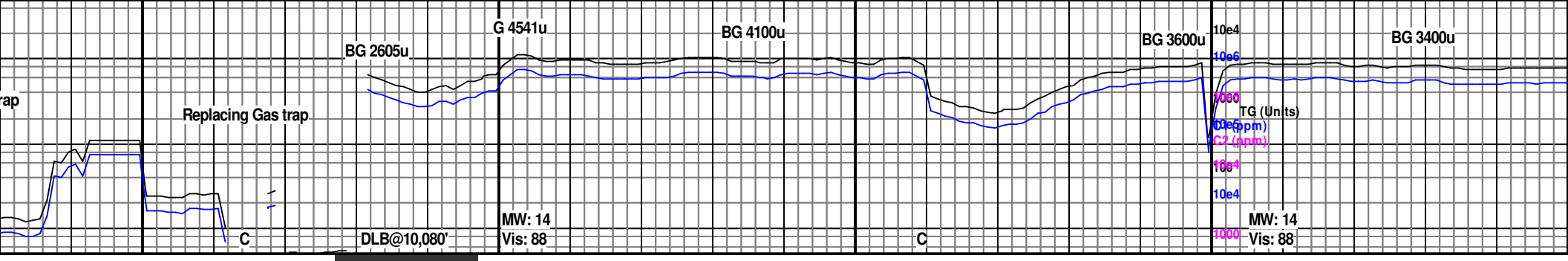
9600	9650	9700	9750	9800			
6150 TVD				6150 TVD			
	MD: 9,630' TVD: 6,997' Inc: 89.7° Azm: 321.2°		Mud Check @ 9,703' Wt 14.2 FC 2/32 H2O 16.0% PV 55.0 Oil 55.0% YP 29.0 Sol 29.0% GS 36:38 O/W 77:23 FL 4.0 CI 23k	MD: 9,724' TVD: 6,998' Inc: 89.5° Azm: 322.0°	6150 TVD		
6650				6650			
v dk brn, sft-sli orph, plty- blk ip, y ip, rr pp pyr, rr gr, n calc	SH: v dk gy-blk, v dk brn ip, sli frm, sft ip, amorph, plty-blky ip, carb, micmica, pp pyr ip, tr free pyr gr, n calc	SH: v dk gy-blk, v dk brn ip, sli frm, sft ip, amorph, plty-blky ip, carb, micmica ip, rr pp pyr, n calc	SH: v dk gy- blk, v dk brn ip, sft-sli frm, frm ip, amorph, blk ip, carb, micmica, tr f pyr gr, tr vf lam, sli sity, n calc	SH: v dk gy- blk, v dk brn ip, sli frm, sli hd ip, amorph, flky ip, carb, micmica, tr f pyr gr, tr vf lam, sli sity, n calc	SH: v dk gy- blk, sft-sli frm, amorph, blk ip, carb, micmica ip, n calc	SH: v dk gy- blk, vdk brn ip, sft, sli frm ip, amorph, blk ip, carb, micmica ip, rr vf lam, n calc	SH: v dk gy-blk, sft-sli frm, amorph ip, carb, mimica lam, n calc
7150				7150			





9850			9900			9950			10000		
MD: 9,819' TVD: 6,998' Inc: 90.2° Azm: 321.8°						MD: 9,913' TVD: 6,998' Inc: 89.9° Azm: 323.1°			6150 TVD MD: 10,007' TVD: 6,998' Inc: 89.9° Azm: 324.0°		
dk brn ip, sh, blk, ip, rr vf	SH: v dk gy- blk, v dk brn ip, sft-sli frm, amorph, blk, ip, carb, micmica ip, pp pyr ip, rr vf lam ip, n calc	SH: v dk gy- blk, v dk brn ip, sft-sli frm, amorph, blk, ip, carb, sli slty, pp pyr ip, n calc	SH: v dk gy- blk, v dk brn ip, sft-sli frm, sli hd ip, amorph, blk, ip, carb, pp pyr ip, rr gy slty arg dessem, n calc	SH: v dk gy- blk, v dk brn ip, sft-sli frm, frm- sli hd ip, amorph, blk, ip, carb, tr pp pyr, rr gy slty arg dessem, rr vf lam, n calc	SH: v dk gy- blk, v dk brn ip, sft- sli frm, rr frm, amorph, blk, ip, carb rr gy slty arg dessem, n calc	SH: v dk gy- blk, v dk brn ip, sft- sli frm, rr frm, amorph, blk, ip, carb, rr arg dessem, n calc	SH: v dk gy- blk, v dk brn ip, sft- sli frm, rr frm, amorph, blk, ip, carb, n calc	SH: v dk gy- blk, v dk brn ip, sft- sli frm, rr frm, amorph, blk, ip, carb, n calc	SH: v dk gy- blk, v dk brn ip, sft- sli frm, rr frm, amorph, blk, ip, carb, n calc	SH: v dk gy- blk, v dk brn ip, sft- sli frm, rr frm, amorph, blk, ip, carb, n calc	SH: v dk gy- blk, v dk brn ip, sft- sli frm, rr frm, amorph, blk, ip, carb, n calc
6650									7150		



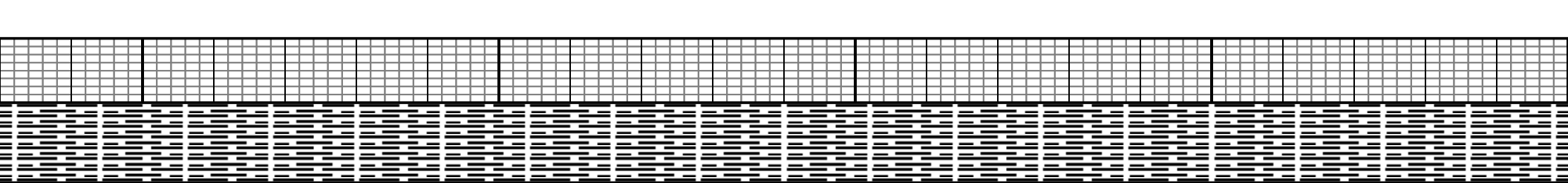
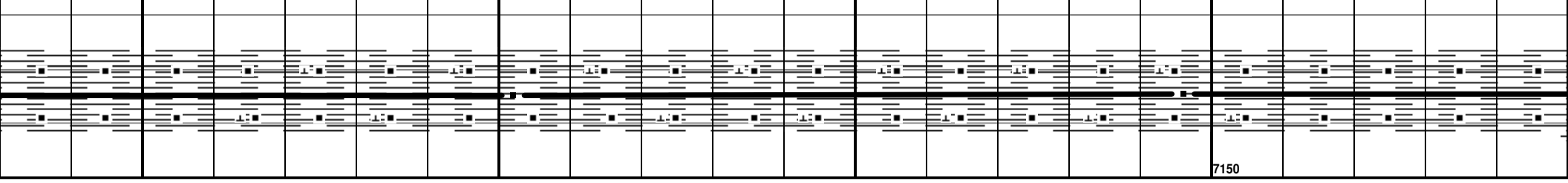


10050 10100 10150 10200 10250

Mud Check @ 10,107'
 MD: 10,102' TVD: 6,997' Inc: 91.2° Azm: 320.6°
 Wt 14.0
 FC 2/32
 FV 88.0
 H2O 16.0%
 PV 51.0
 Oil 57.0%
 YP 29.0
 Sol 26.1%
 GS 36:38
 O/W 78:22
 FL 4.0
 CI 23k

Mud Check @ 10,196'
 MD: 10,196' TVD: 6,996' Inc: 90.7° Azm: 320.7°

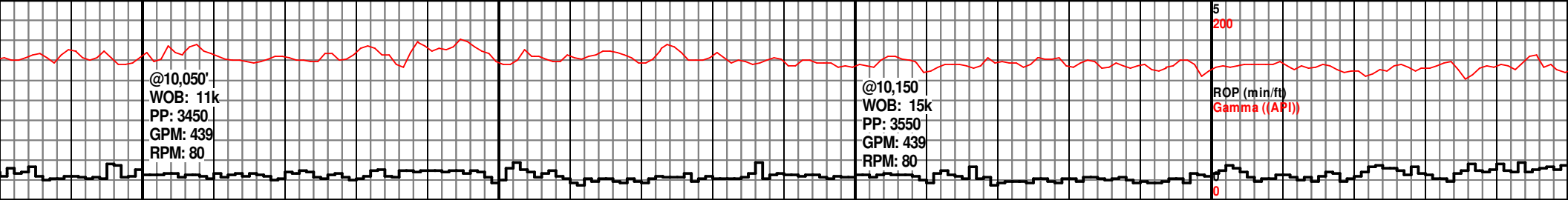
SH: v dk gy- blk, v dk brn ip, sft- sli frm, rr frm, amorph, blkyp ip, carb, n calc
 SH: blk, v dkgy brn ip, sft- sli frm, frm ip, blkyp-pty, carb, v sli calc, tr calc frac fil
 SH: blk, v dkgy brn ip, sft- sli frm, frm ip, blkyp-pty, carb, v sli calc, tr calc frac fil
 SH: blk, sft- sli frm, frm ip, blkyp-pty, carb, v sli calc, tr calc frac fil
 SH: blk, sft- sli frm, frm ip, blkyp-pty, carb, v sli calc, tr calc frac fil
 SH: blk, v dk gy brn ip, sft- sli frm, frm ip, blkyp-pty, carb, v sli calc
 SH: blk, v dk gy brn ip, sft- sli frm, frm ip, blkyp-pty, carb, n calc
 SH: blk, v dk gy brn ip, sft- sli frm, frm ip, blkyp-pty, carb, n calc

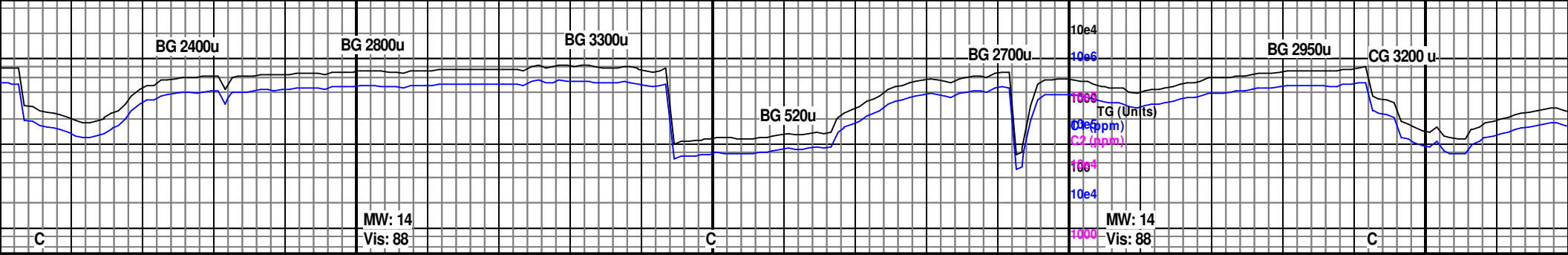


@10,050'
 WOB: 11k
 PP: 3450
 GPM: 439
 RPM: 80

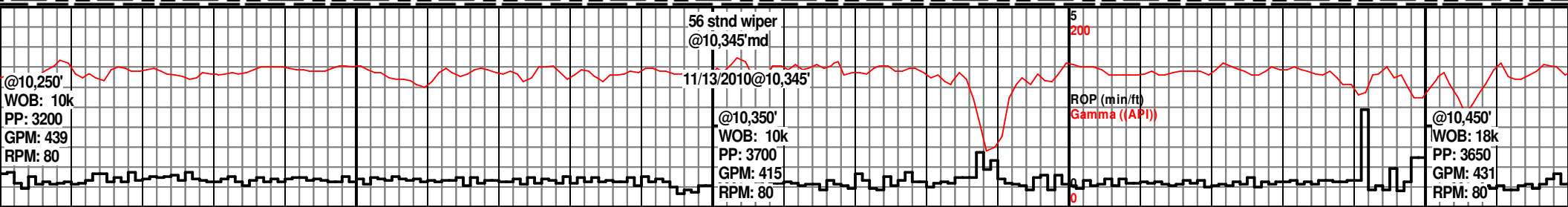
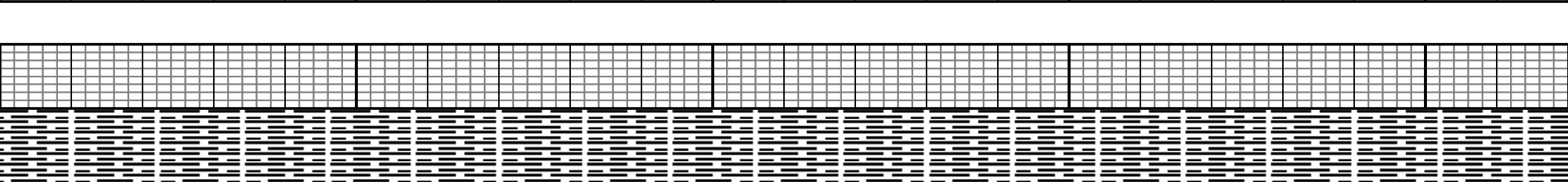
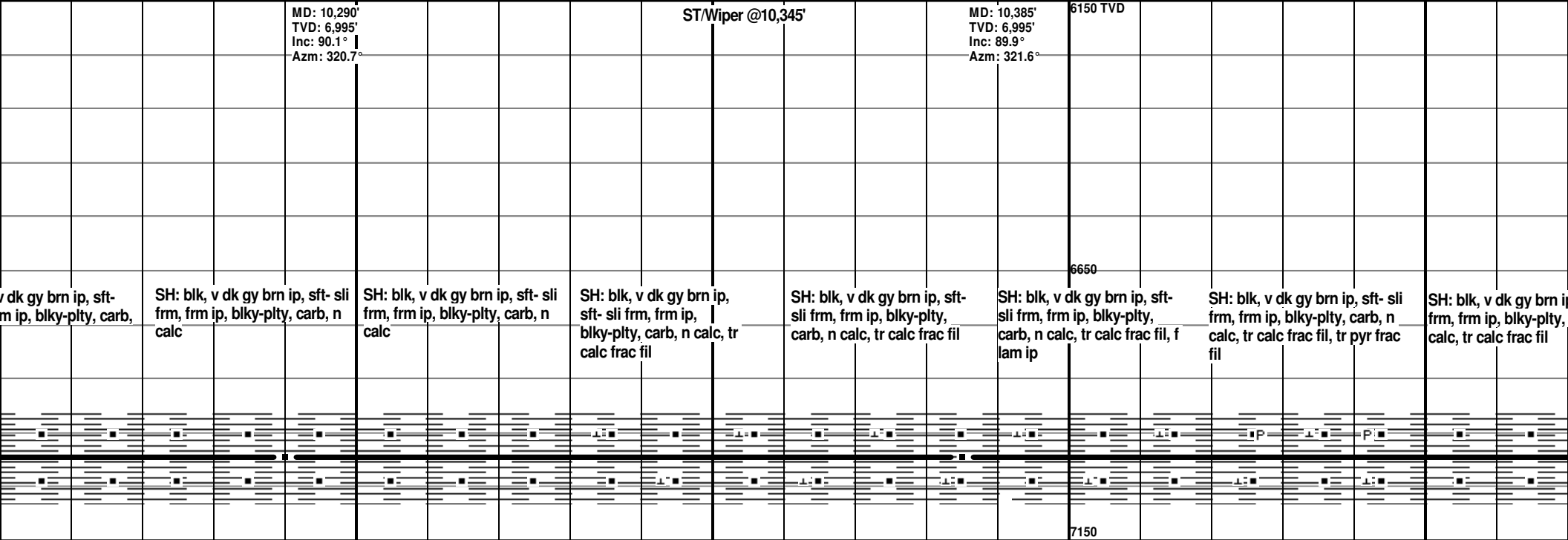
@10,150
 WOB: 15k
 PP: 3550
 GPM: 439
 RPM: 80

ROP (min/ft)
 Gamma ((API))





10300 10350 10400 10450



KAH/NCS@10,480'MD

CG 3519 u

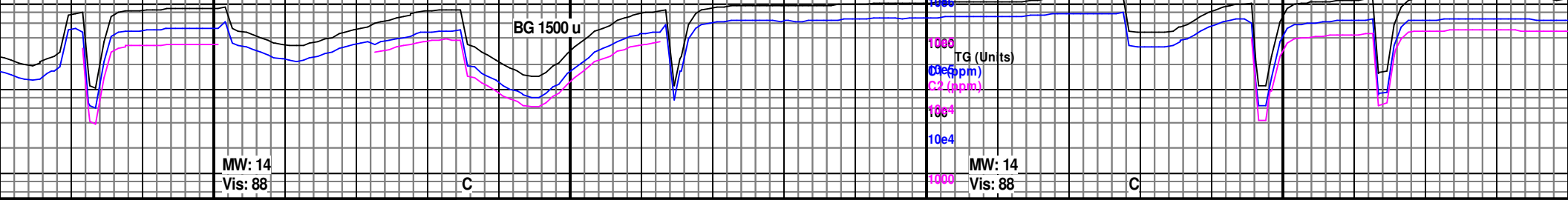
BG 3800 u

BG 4400 u

CG 4786 u

BG 3700 u

BG 4700 u
G 4811 u



MW: 14
Vis: 88

MW: 14
Vis: 88

10500

10550

10600

10650

MD: 10,478'
TVD: 6,995'
Inc: 90.2°
Azm: 321.0°

MD: 10,572'
TVD: 6,995'
Inc: 90.0°
Azm: 321.3°

6150 TVD

MD: 10666'
TVD: 6995'
Inc: 89.9°
Azm: 321.8°

o, sft- sli carb, n

SH: v dk gy-blk, v dk brn ip, sft-sli frm, amorph, plty-blky ip, micmica ip, pp pyr ip, carb, n calc

SH: v dk gy-blk, v dk brn ip, sft-sli frm, amorph, filky-plty ip, carb, n calc, micmica ip, tr pp pyr

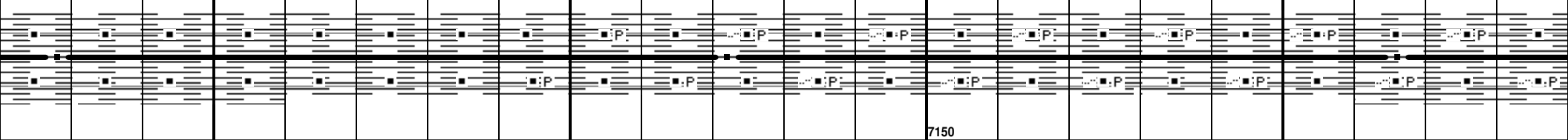
SH: v dk gy-blk, v dk brn ip, sft-sli frm, amorph, plty ip, carb, n calc, micmica ip, pp pyr ip

SH: v dk gy- blk, v dk brn ip, sft-sli frm, amorph, blkly ip, carb, n calc, micmica, pp pyr ip, slty ip

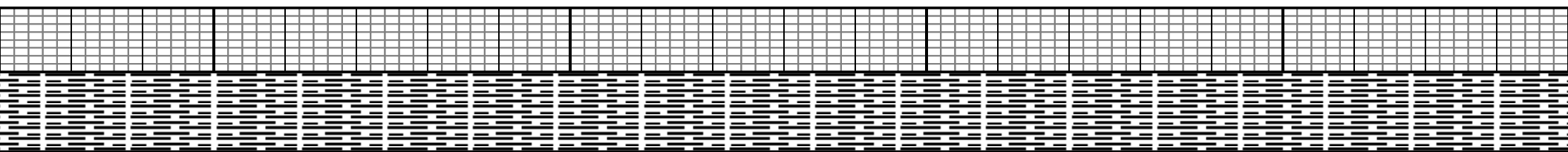
SH: v dk gy-blk, v dk brn ip, sft- sli frm, amorph, blkly ip, carb, pp pyr ip, micmica ip, slty ip, n calc

SH: v dk gy-blk, v dk brn ip, predy sft-sli frm, frm- hd ip, amorph, blkly ip, carb, tr pp pyr, micmica ip, slty ip, n calc

SH: v dk gy-blk, v dk brn ip, predy sft -sli frm, frm ip, amorph, blkly ip, carb, tr pp pyr, micmica ip, slty ip, n calc



7150



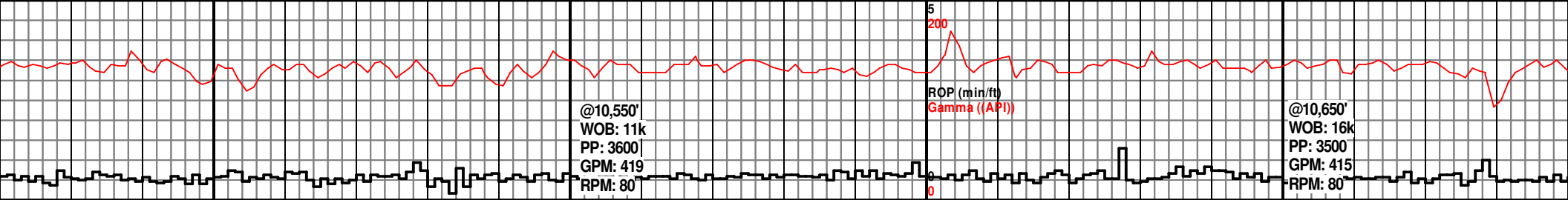
@10,550'
WOB: 11k
PP: 3600
GPM: 419
RPM: 80

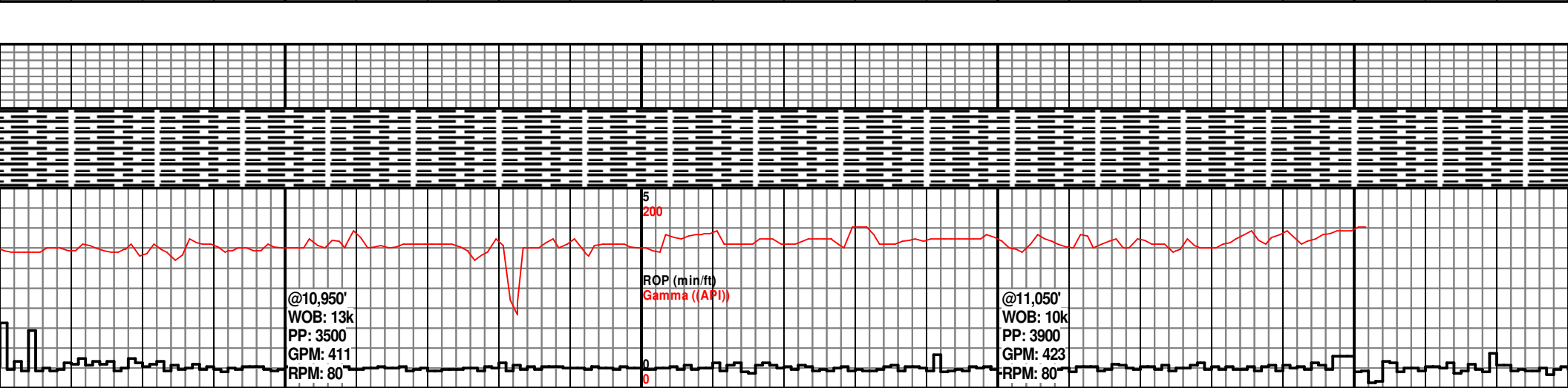
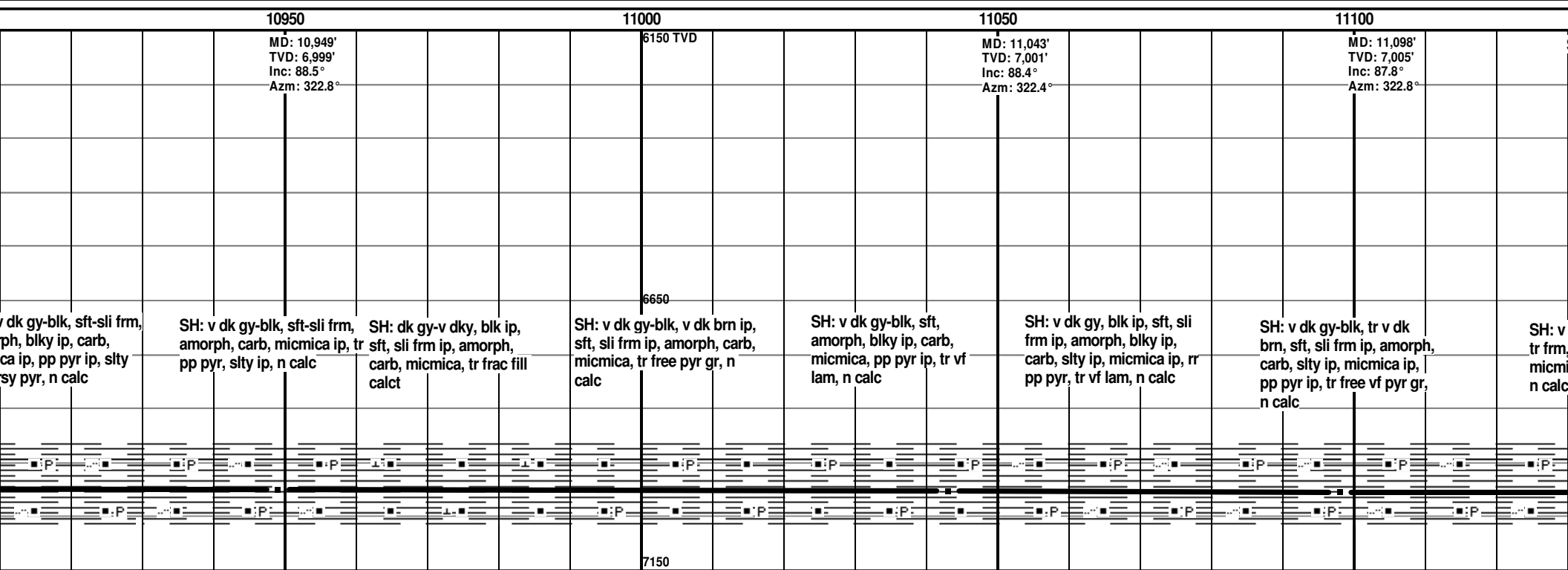
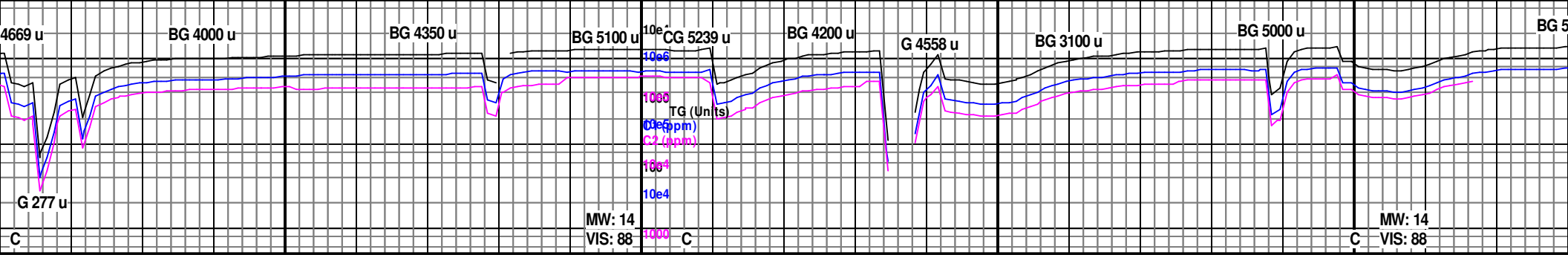
5

200

ROP (min/ft)
Gamma (API)

@10,650'
WOB: 16k
PP: 3500
GPM: 415
RPM: 80





700 u

TD @ MD: 11,158'
TVD: 7005.75'

C

11150

111

ST/ WIPER @11,158'MD

MD: 11,158'
TVD: 7,005'
Inc: 87.8°
Azm: 322.8°

Loggers released from duty
@5:02AM on 11/14/2010

TD@ MD: 11,158'
TVD: 7,005.75'

dk gy-blk, sft, sli fm ip,
amorph, blkyp ip, carb,
ca ip, slty ip, pp pyr ip,



@11,150'
WOB: 10k
PP: 3200
GPM: 423
RPM: 80

43 stnd wiper
@11,158'md