

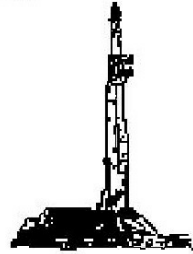
GOOLSBY BROTHERS
and associates, inc.

575 Union Blvd, Suite 208
Lakewood, CO 80228
303-945-2860 Office



Geological Wellsite
Supervision

www.goolsbybrothers.com



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

Well Name: BUFFALO 14C-15HZ
API: 05123364510000
Location: Section 15, T1N, R68W, Weld County, CO.
License Number: 05-123-36451-00
Spud Date: 14 March, 2015
Surface Coordinates: 388' FNL 1199' FWL Sec 15 T1N R68W;
Lat: 40.0573529° LONG: -104.9948470°

Region: Wattenberg
Drilling Completed:

Bottom Hole
Coordinates:
Ground Elevation (ft): 5132'
Logged Interval (ft): 7250' To: 12447'
Formation: Niobrara, Codell
Type of Drilling Fluid: Water & Poly-Plus
K.B. Elevation (ft): 5152'
Total Depth (ft): 12447'

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

OPERATOR

Company: Kerr-McGee Oil & Gas Onshore LP
Address: Granite Tower - 1099 18th St, Ste 1800
Denver, CO 80202
CO Geologist, Tom Birmingham

GEOLOGIST

Name: Shelton Davis & Alex Caruana
Company: Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)
Address: 575 Union Blvd.
Suite 208,
Lakewood CO. 80228

E-logs

MWD GR 1296' - 12362'

Casing

9 5/8" Surface Casing set @ 1296' MD

7" Intermediate Casing set @ 8336' MD

4 1/2" Production Liner hung, landed @ 12467'

Comments

1) Drilling Contractor: Precision Drilling, Rig #461

Toolpusher: Tyson Westgard

2) Company Man: Charlie Daigle/Wade Mullican,
Merle Lehmkuhl/Dalton King

3) Mud Company : Mi Swaco/John Long & Michael Raisig

4) Directional Drilling: Scientific Drilling

Drillers: Derek Daughtery & Arin Hatfield

MWD: Haley Orahood, Calvin Collins & Sam Nejad

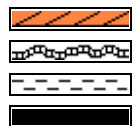
5) Gas Equipment: Pason

6) Goolsby Brothers and Associates

Alex Caruana

Shelton Davis

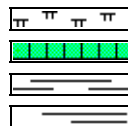
ROCK TYPES



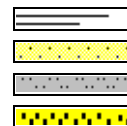
Anhy
Bent
Clyst
Coal



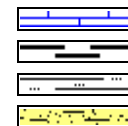
Oil sat.
Congl
Dol
Lmst



Mrlst
Salt
Shale
Shcol



Shgy
Ss
Sltst
Ss



Chalk
Carb sh
Sltty sh
Arg ss

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

Chlkstg
 Anhy
 Arg
 Bent
 Coal
 Dol
 Gyp
 Ls

Mrst
 Sltstrg
 Ssstrg

TEXTURE

Boundst
 Chalky
 Cryxln
 Earthy
 Finexln
 Grainst
 Lithogr
 Microxln
 Mudst
 Packst
 Wackest

OTHER SYMBOLS

OIL SHOWS

Even
 Spotted
 Ques
 Dead
 Vspotty

near even

POROSITY TYPE

Earthy
 Fenest
 Fracture

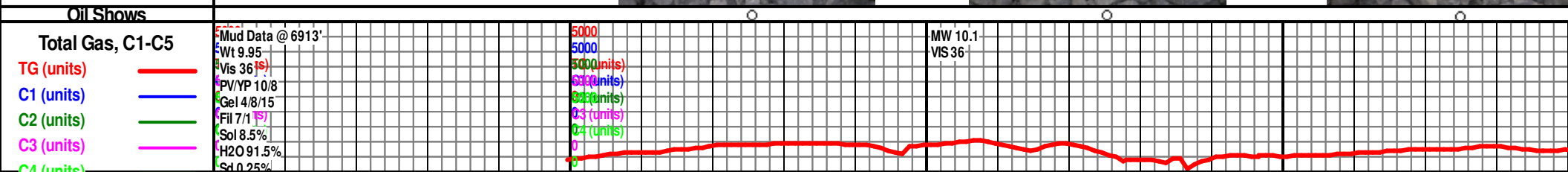
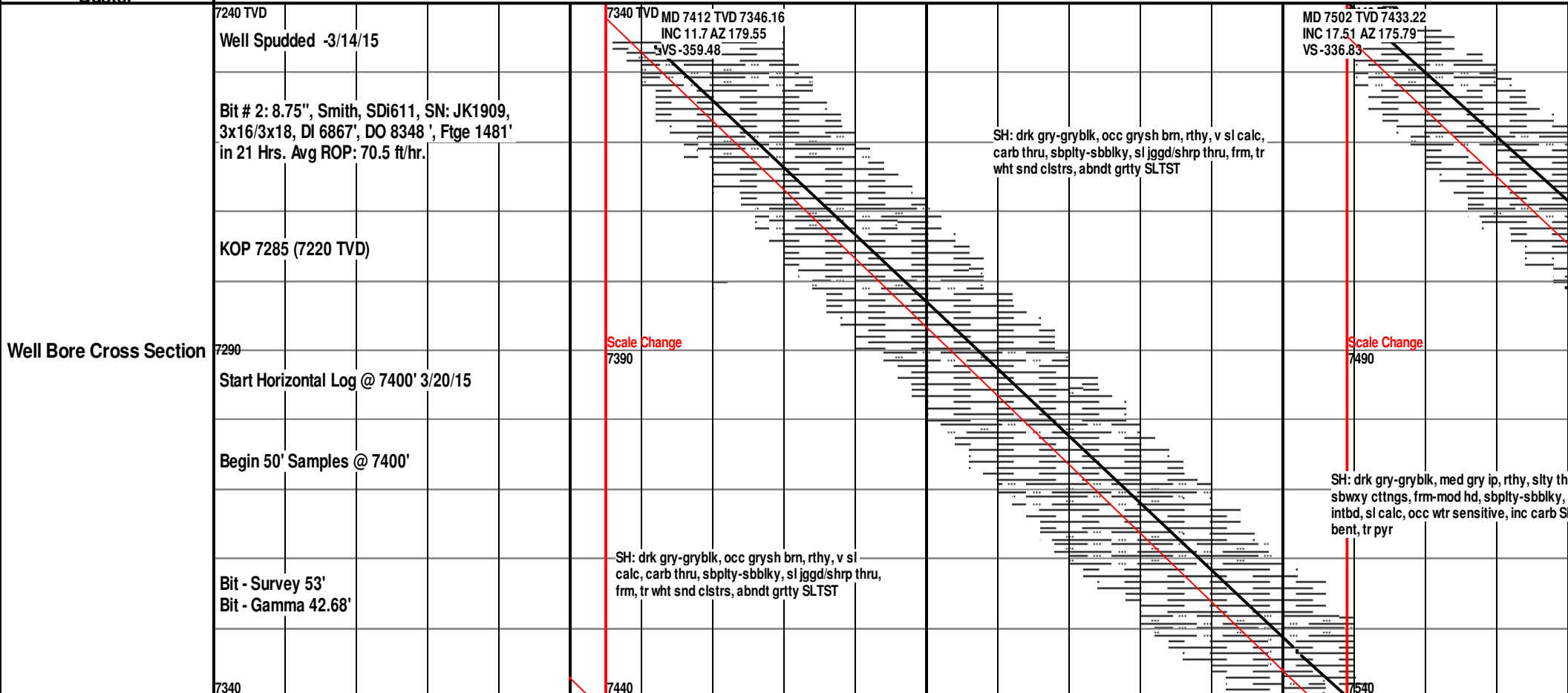
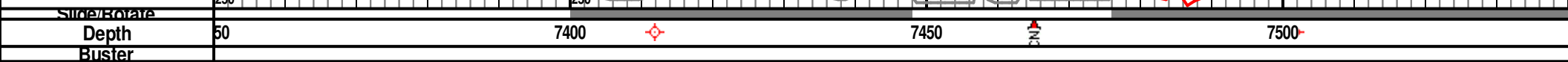
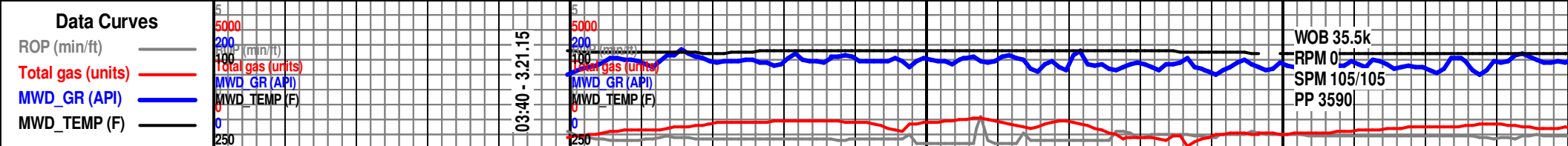
Inter
 Moldic
 Organic
 Pinpoint
 Vuggy

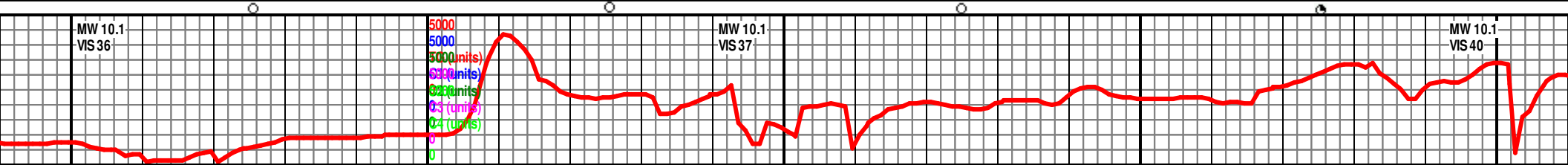
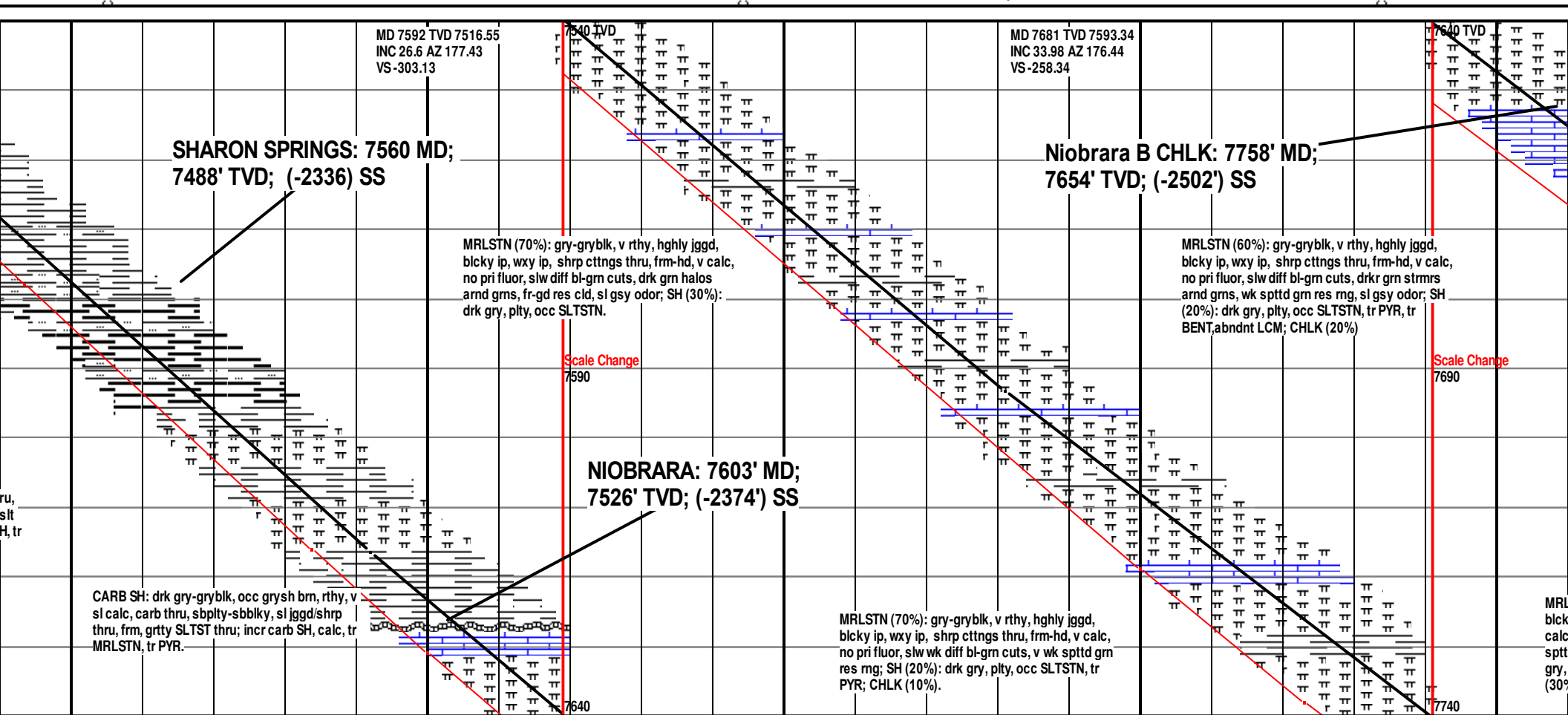
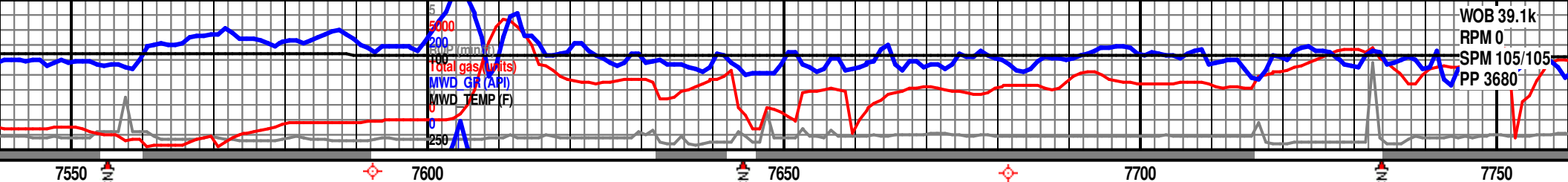
ROUNDING

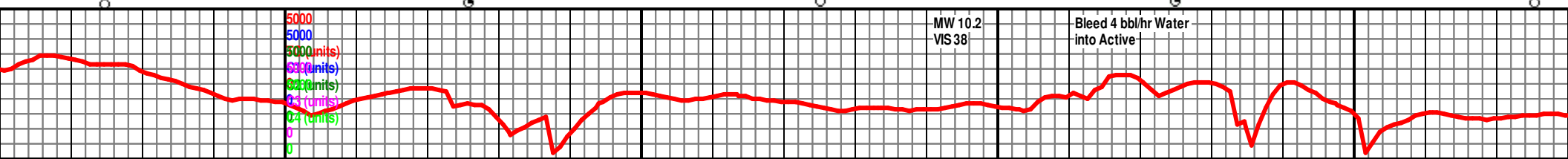
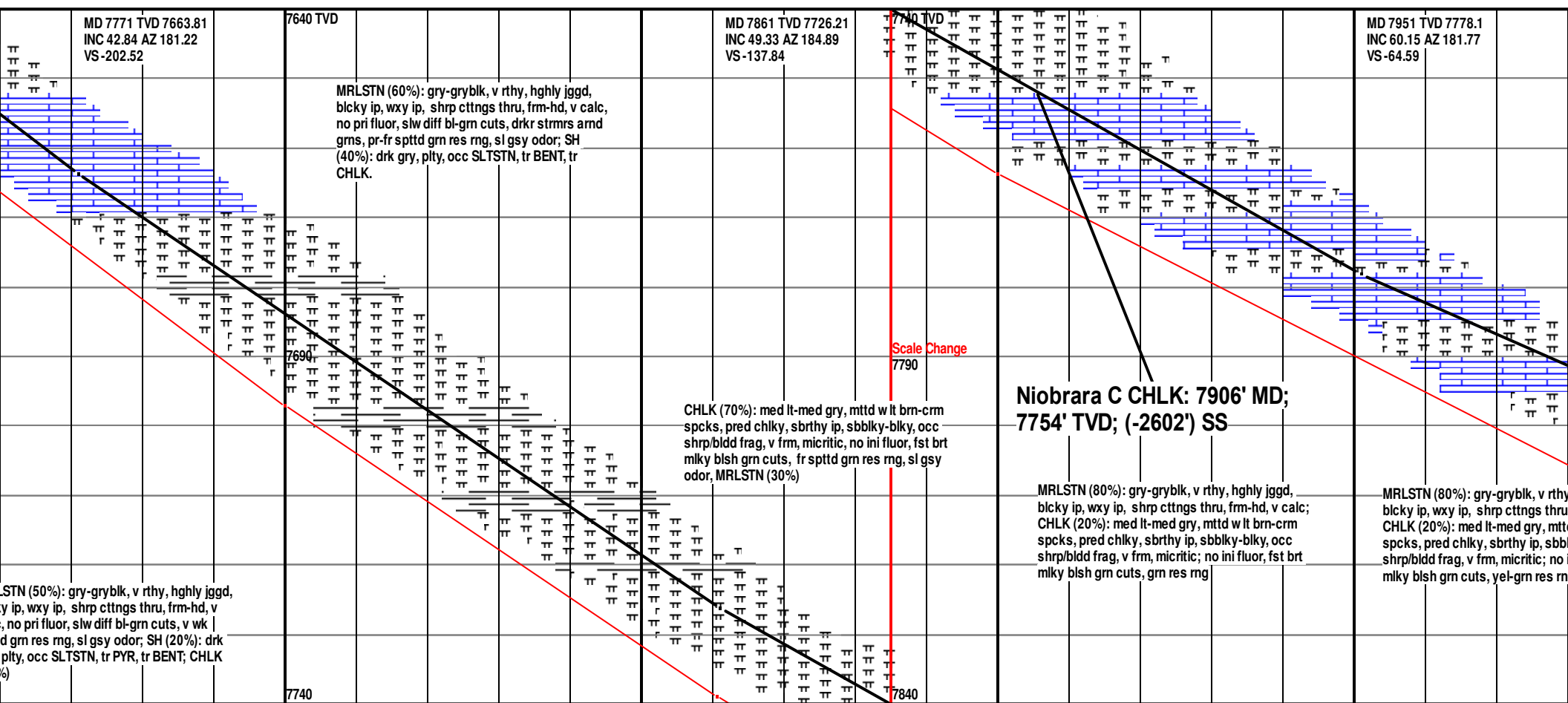
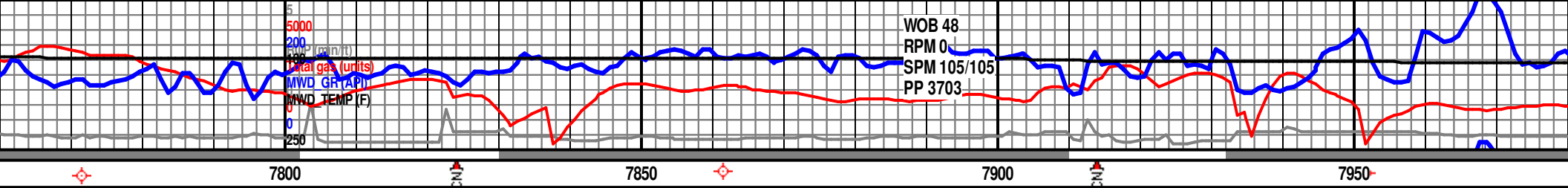
Rounded
 Subrnd
 Subang
 Angular

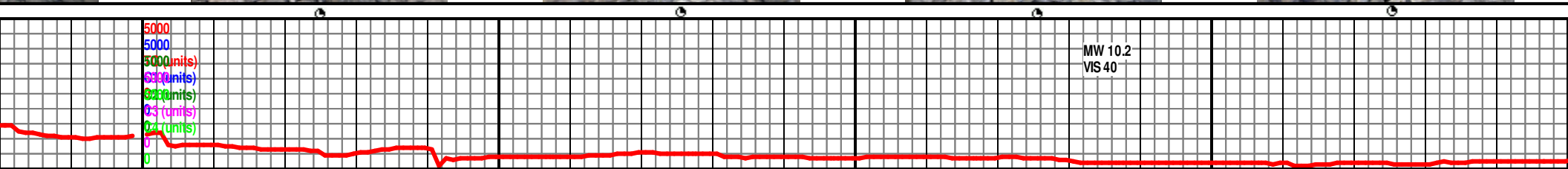
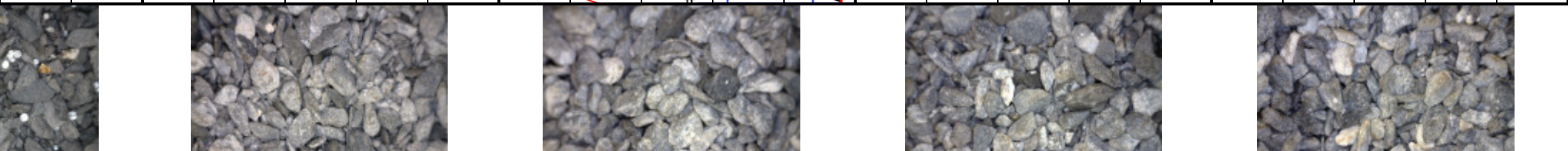
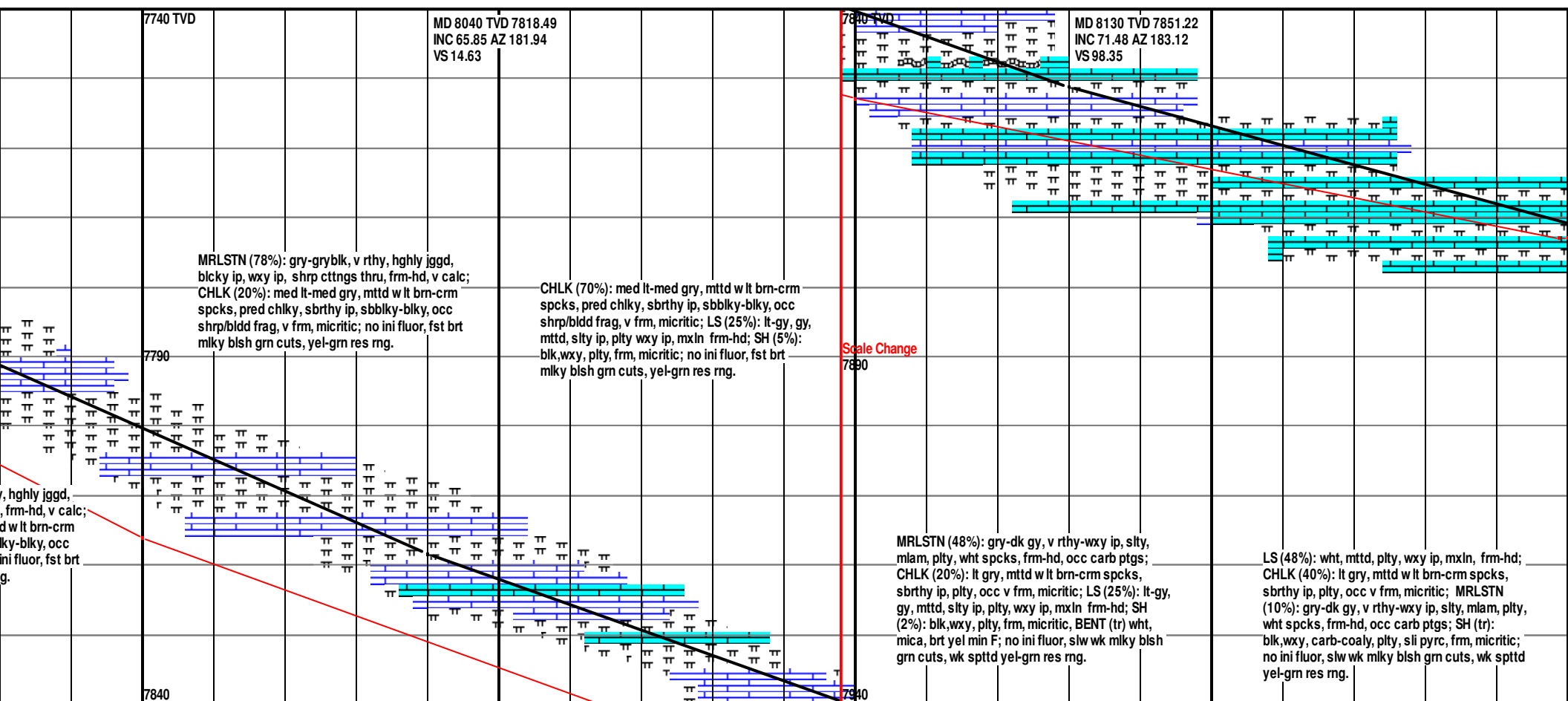
SORTING

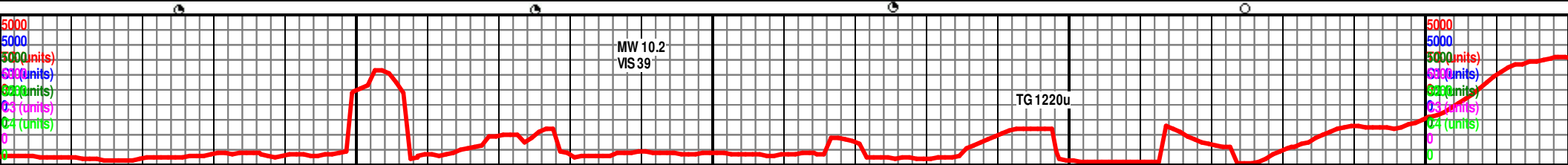
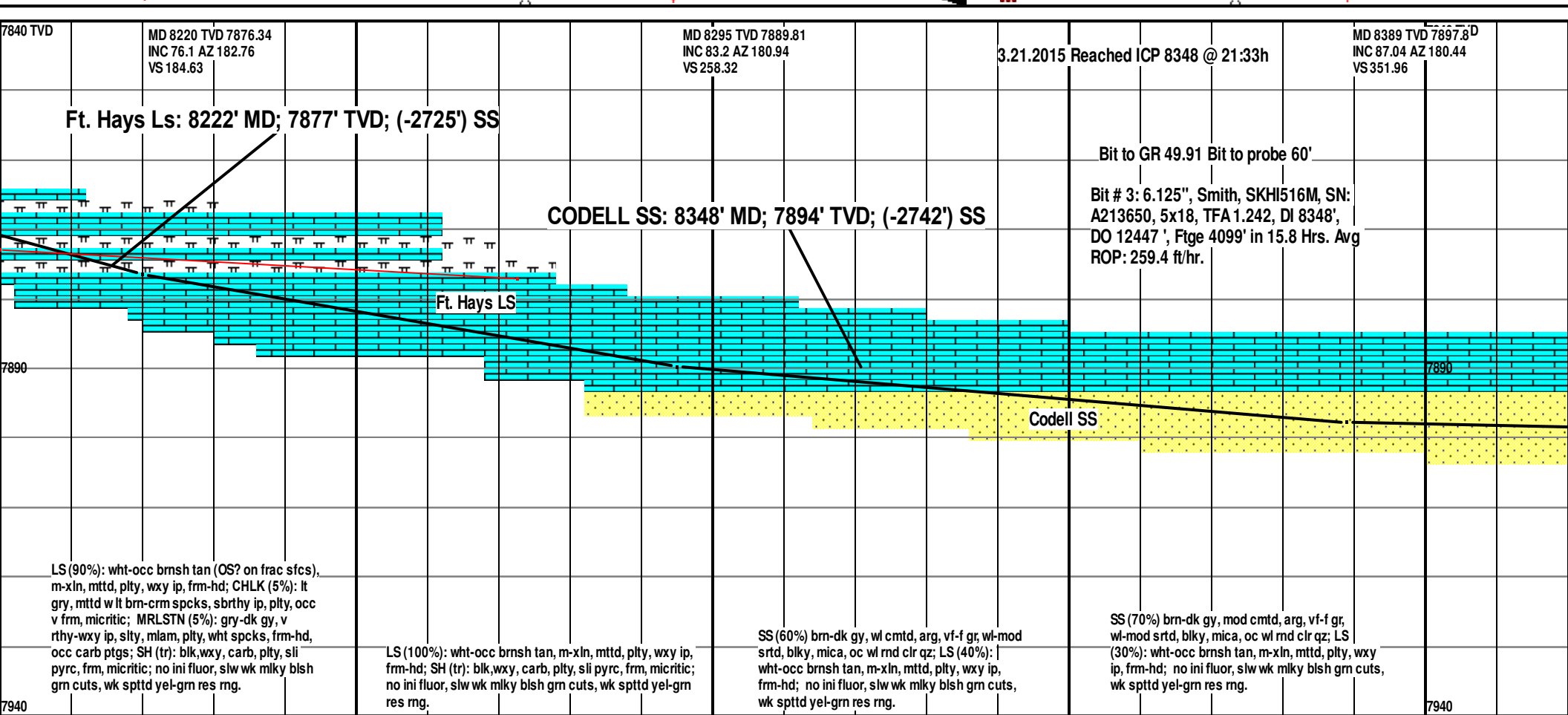
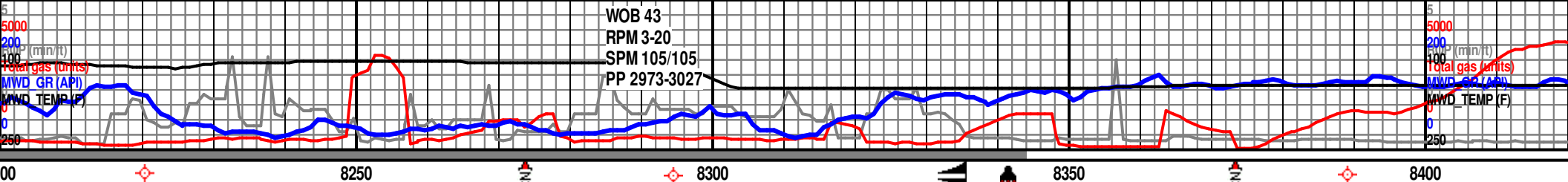
Well
 Moderate
 Poor

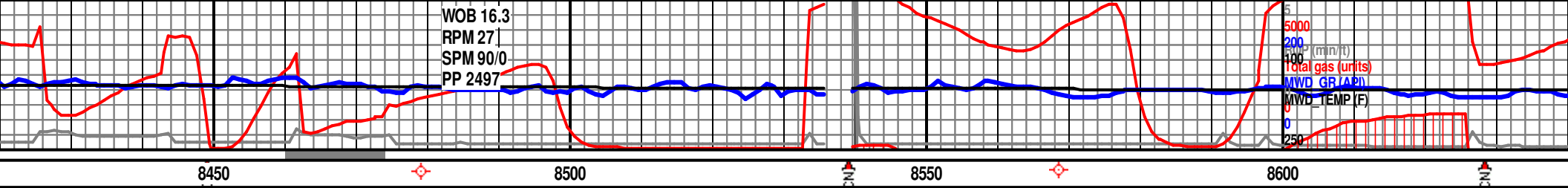




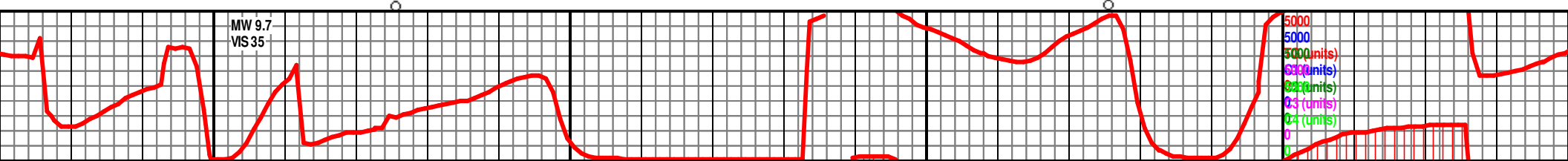


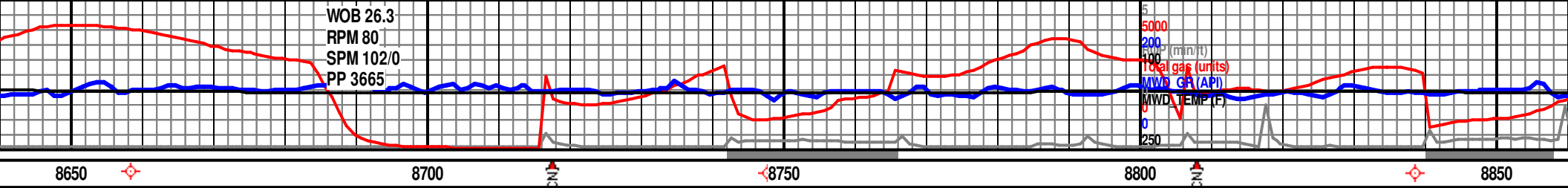




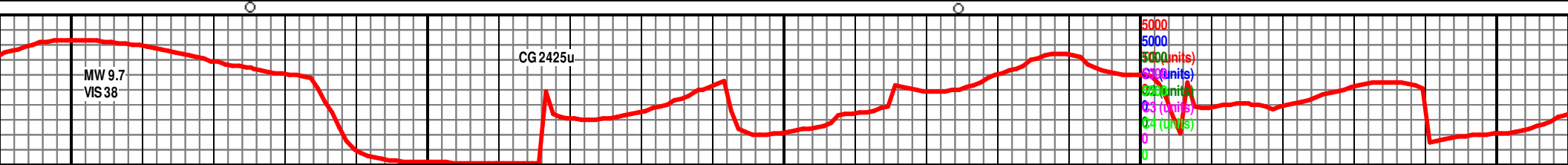


MD 8479 TVD 7899.65 INC 90.6 AZ 180.45 VS 441.92											
MD 8568 TVD 7898.45 INC 90.94 AZ 179.57 VS 530.91											
7840 TVD											
7890											
SS (90%) brn-dk gy, lt gy-crm, mod cmt, arg, vf-f gr, wl-mod srt, blk, mica, oc wl rnd clr qz grms, no ini fluor, slw diff mlky grn-yel cuts, wk spttd yel-grn res mg, tr LS.											
SS (100%) brn-dk gy, lt gy-crm, mod cmt, arg, vf-f gr, wl-mod srt, blk, mica, oc wl rnd clr qz grms, no ini fluor, slw wk mlky blsh grn cuts, wk spttd yel-grn res mg., tr LS, tr SH.											
7940											



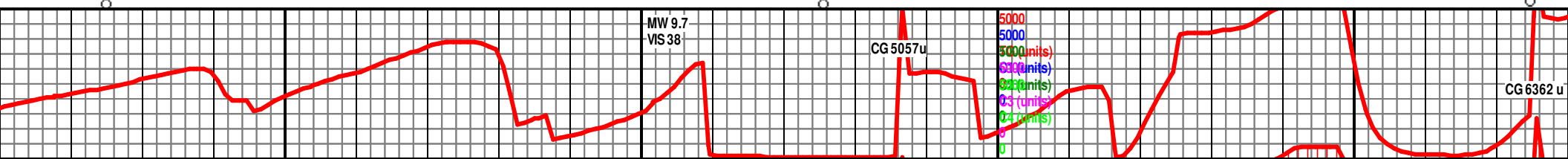


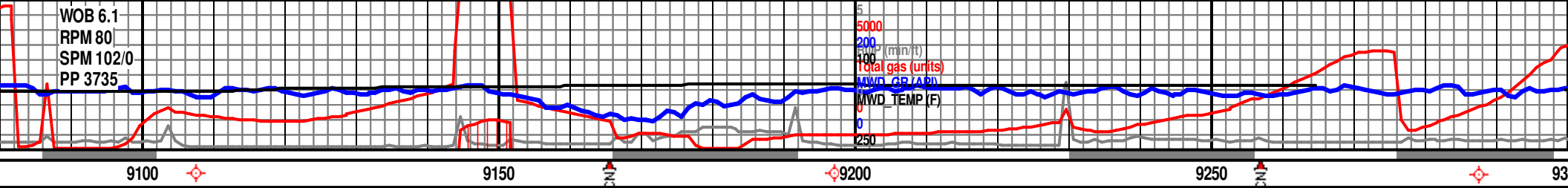
	MD 8658 TVD 7897.16 INC 90.7 AZ 178.4 VS 620.89		MD 8748 TVD 7897.26 INC 89.16 AZ 174.42 VS 710.69	7840 TVD	MD 8838 TVD 7897.53 INC 90.5 AZ 173.8 VS 800.21
	SS (100%) brn-dk gy, incrsng amt lt gy-crm, abndnt loose trnsclnt grms thru, vf gm, prly cmt'd, fri ip, arg, wl-mod srt'd, blk'y, mica, no ini fluor, slw wk mlky blsh grn cuts, wk spttd yel-grn res rng., tr SH.		SS (100%) brn-dk gy, incrsng amt lt gy-crm, abndnt loose trnsclnt grms thru, vf gm, prly cmt'd, fri ip, arg, wl-mod srt'd, blk'y, mica, no ini fluor, slw wk mlky blsh grn cuts, wk spttd yel-grn res rng., tr SH.	7890	SS (100%) brn-dk gy, incrsng amt lt gy-crm, abndnt loose trnsclnt grms thru, vf gm, prly cmt'd, fri ip, arg, wl-mod srt'd, blk'y, mica, no ini fluor, slw wk mlky blsh grn cuts, wk spttd yel-grn res rng., tr SH.
				7940	

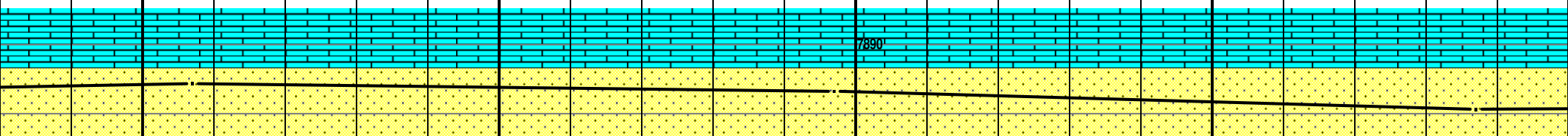


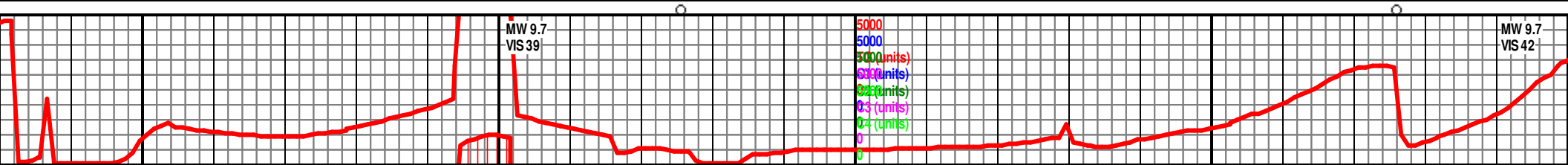


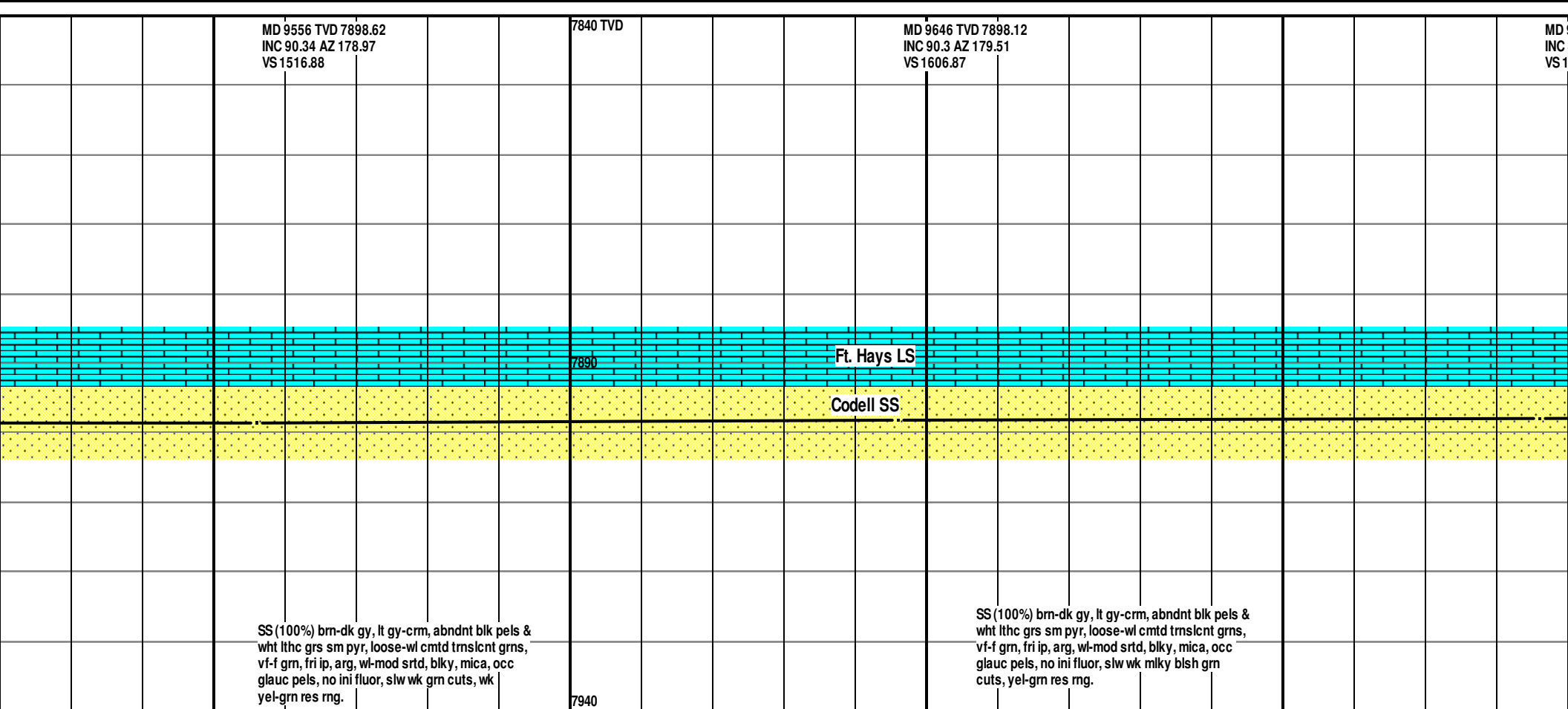
										MD 8928 TVD 7897.55 INC 89.46 AZ 173.44 VS 889.65																				7840 TVD										MD 9017 TVD 7897.24 INC 90.94 AZ 176.09 VS 978.27																			

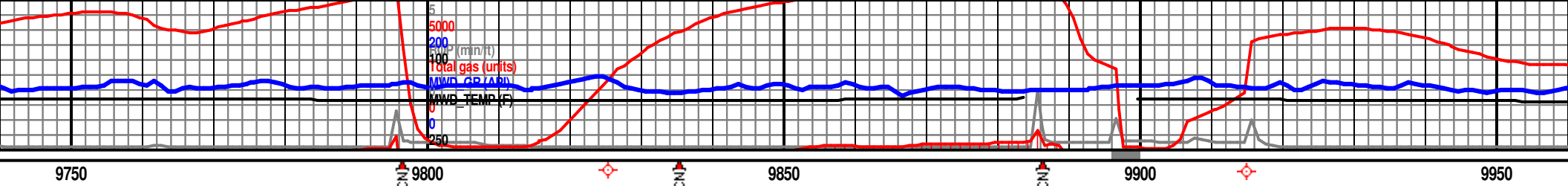
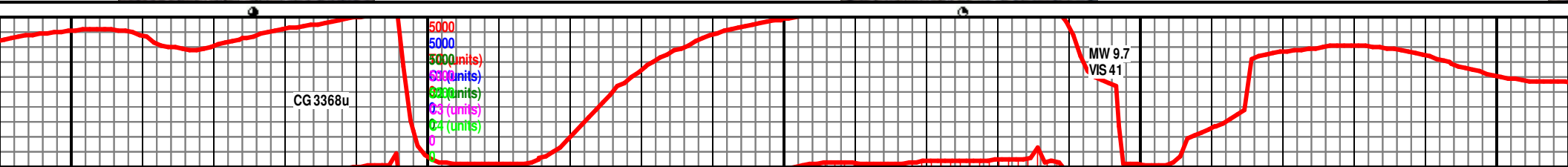


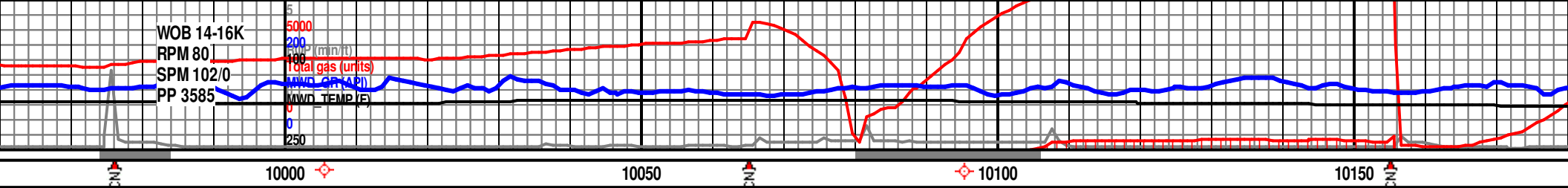


MD 9107 TVD 7895.56 INC 91.21 AZ 177.03 VS 1068.09										MD 9197 TVD 7896.74 INC 87.28 AZ 177.75 VS 1157.97										MD 9287 TVD 7897.81 INC 89.5 AZ 179.03 VS 1247.9									
																													
abndnt loose cmtd, fri ip, arg, fluor, slw wk mlky res rng., tr SH, tr										LS (60%): wht-occ brnsh tan, m-xln, mtttd, plty, wxy ip, frm-hd; SS (40%) brn-dk gy, wl cmtd, arg, vf-f gr, wl-mod srttd, blkly, mica, oc wl rnd clr qz, no ini fluor,slw wk mlky blsh grn cuts, wk spttd yel-grn res rng.										SS (90%) brn-dk gy, lt gy-crm, abndnt loose trnsclnt grns thru, vf grn, prly cmtd, fri ip, arg, wl-mod srttd, blkly, mica, no ini fluor, slw wk mlky blsh grn cuts, wk spttd yel-grn res rng., tr SH; LS (10%).									

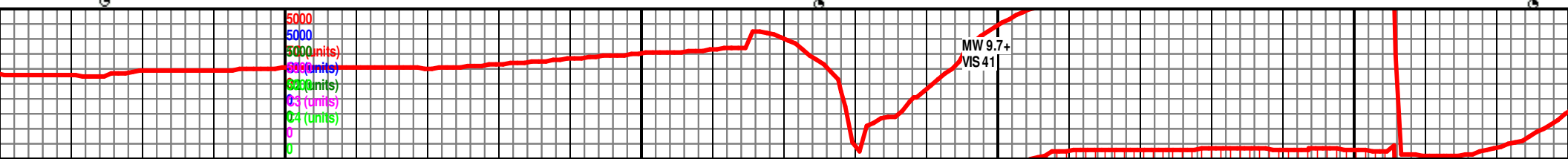
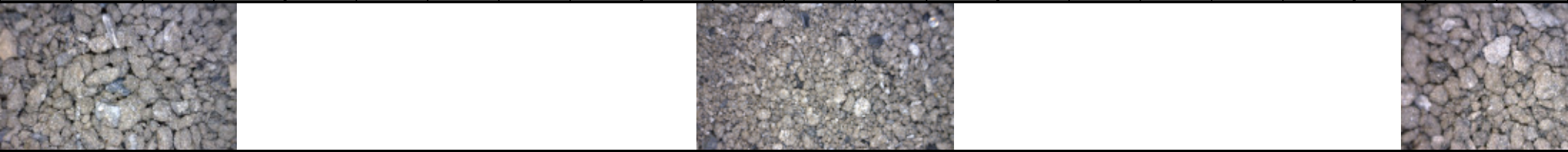


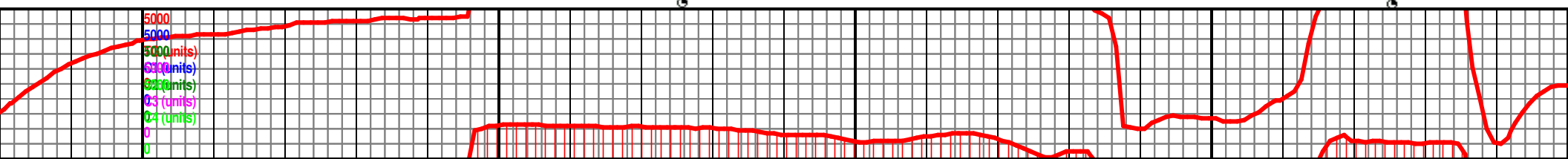
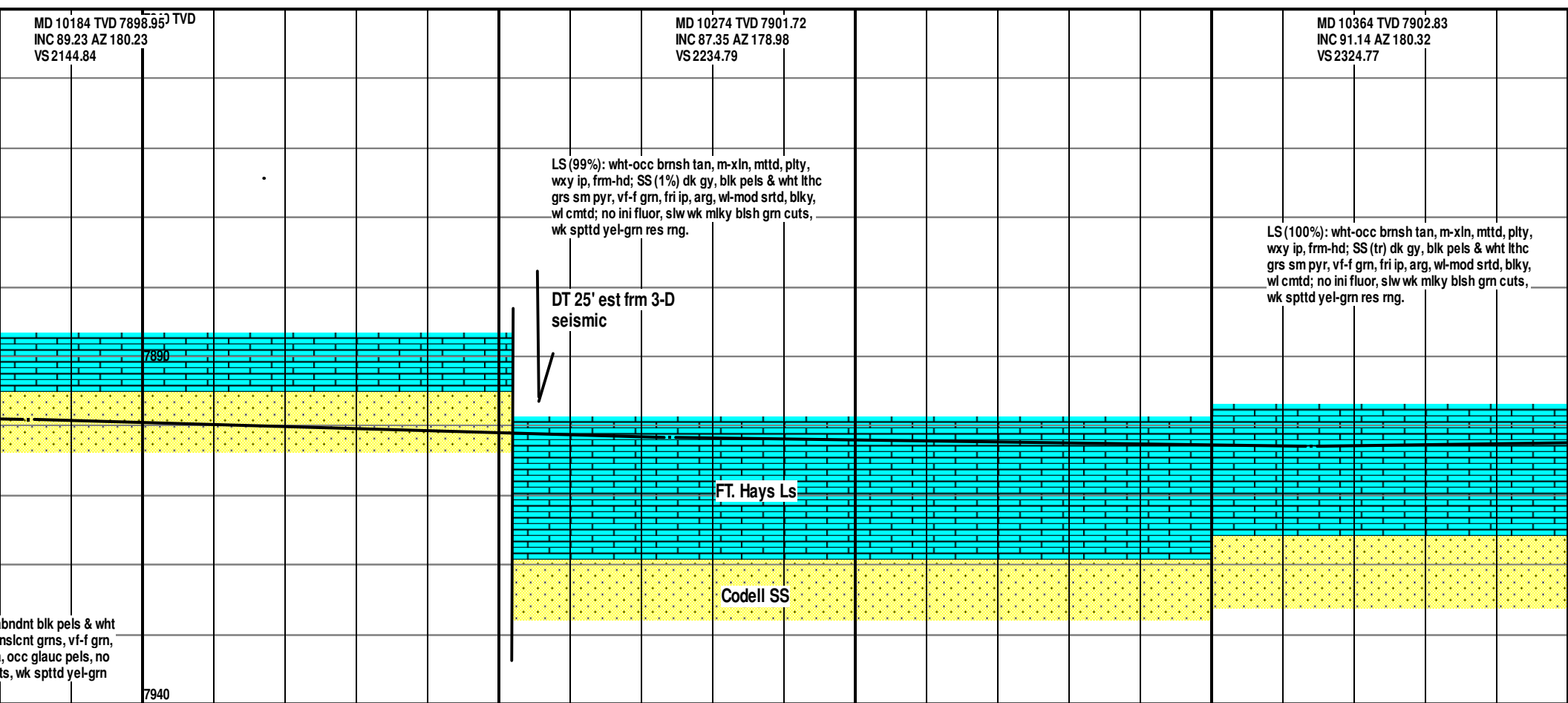
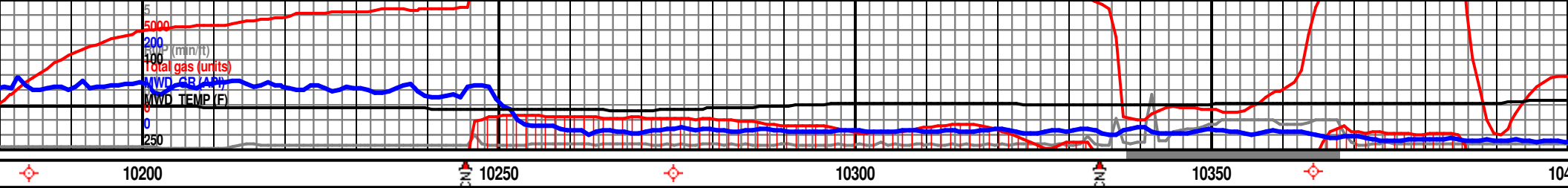


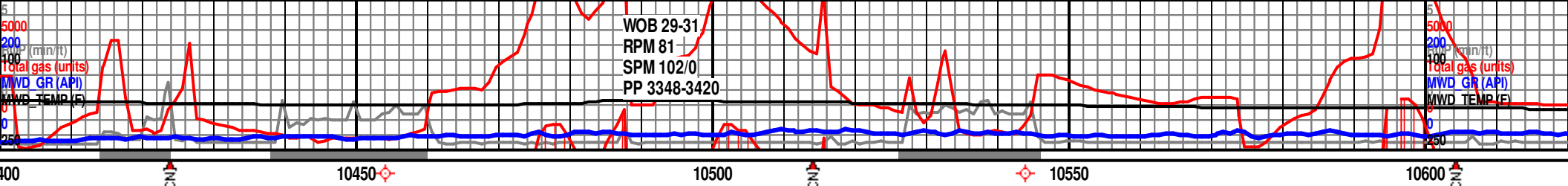
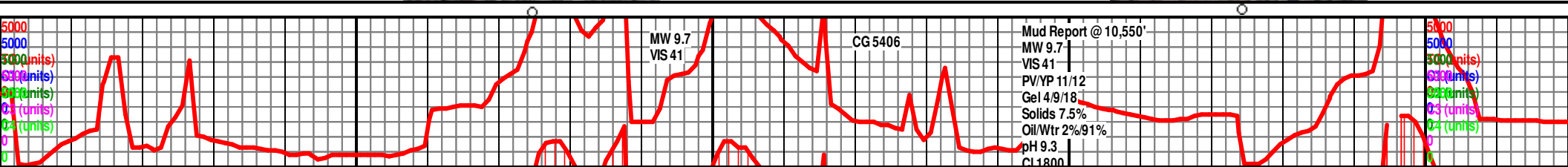
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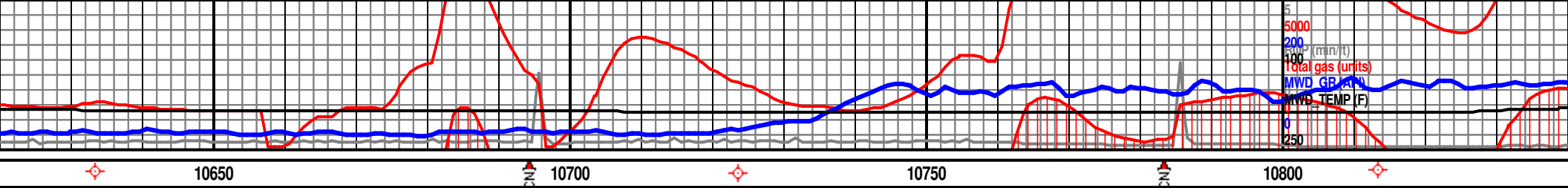


				7840 TVD MD 10005 TVD 7896.86 INC 90.5 AZ 179.55 VS 1965.87												MD 10095 TVD 7897.41 INC 88.79 AZ 179.68 VS 2055.86											
ys LS																											
7890																											
S																											
SS (100%) brn-dk gy, lt gy-crm, abndnt blk pels & wht lthc grs sm pyr, loose-wl cmtd trnslcnt grns, vf-f grn, fri ip, arg, wl-mod srttd, blk, mica, less-occ glauc pels, no ini fluor, slw wk mlky blsh grn cuts, wk spttd yel-grn res mg.																SS (100%) brn-dk gy, lt gy-crm, abndnt blk pels & wht lthc grs sm pyr, loose-wl cmtd trnslcnt grns, vf-f grn, fri ip, arg, wl-mod srttd, blk, mica, less-occ glauc pels, no ini fluor, slw wk mlky blsh grn cuts, wk spttd yel-grn res mg.											
				7940																							

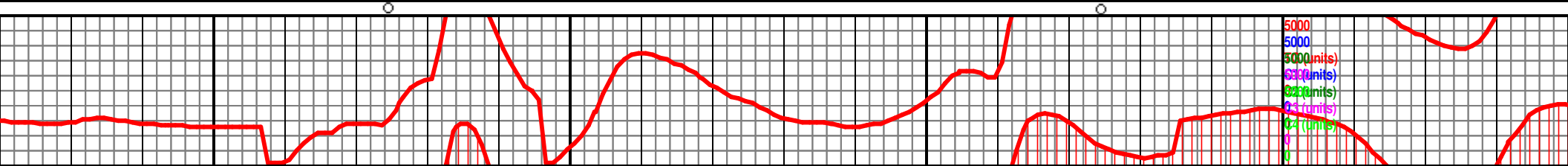


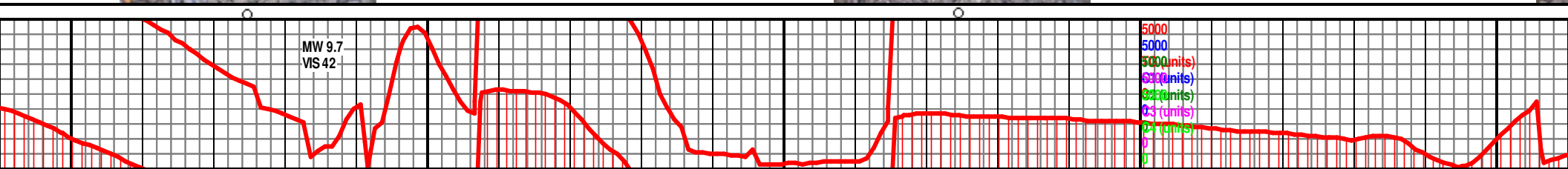
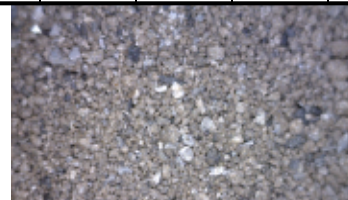
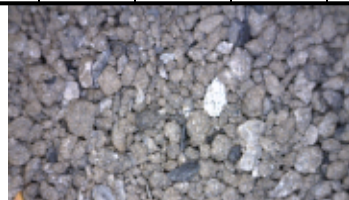
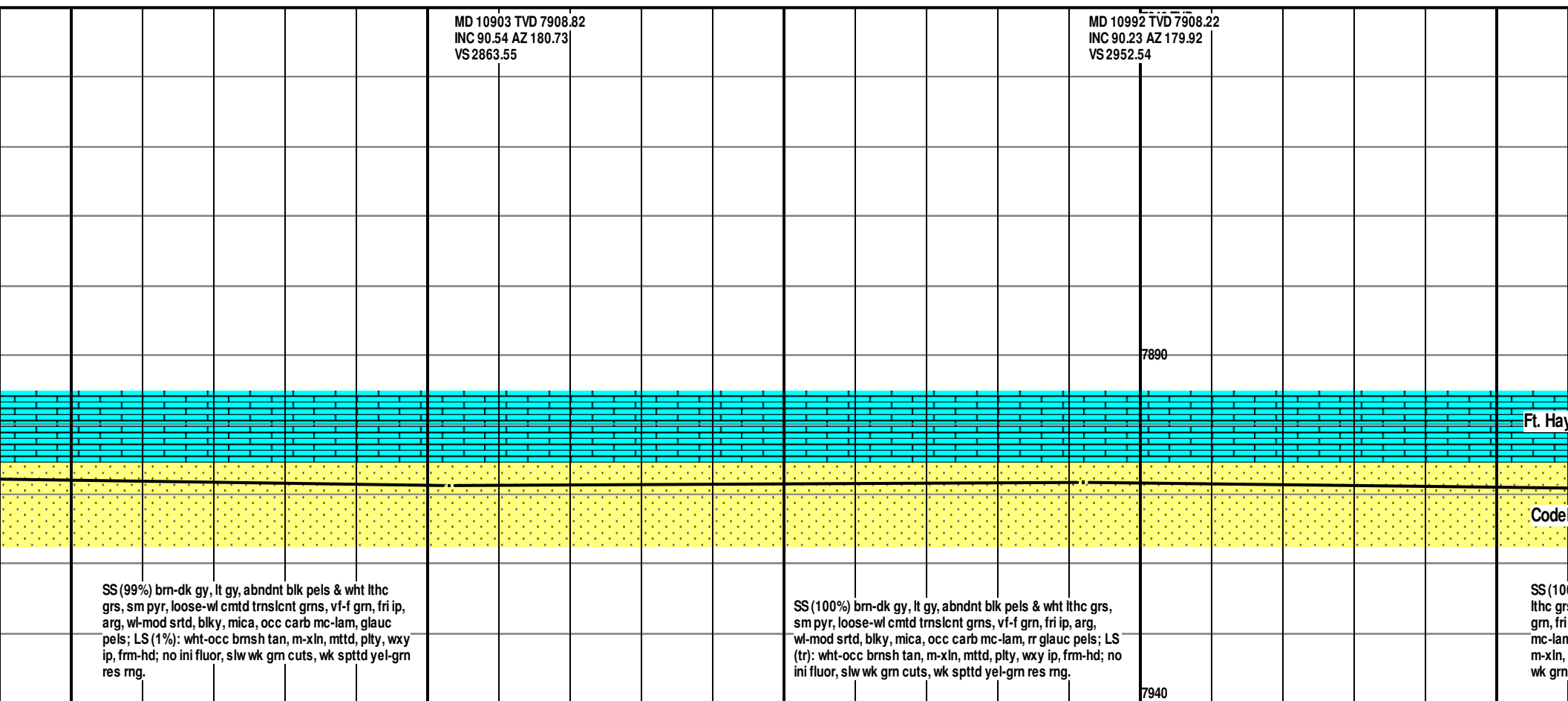


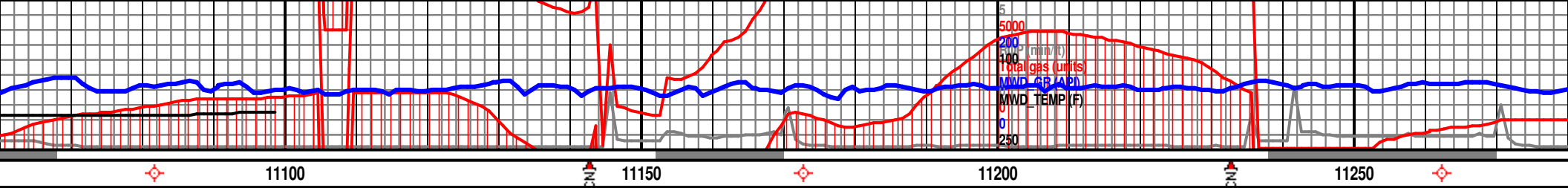
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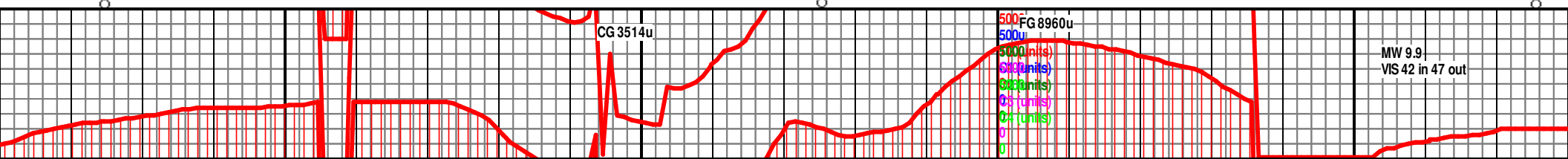
MD 10633 TVD 7904.44 INC 88.99 AZ 181.53 VS 2593.65				MD 10723 TVD 7905.47 INC 89.7 AZ 181.55 VS 2683.61				7840 TVD MD 10813 TVD 7907.47 INC 87.75 AZ 180.34 VS 2773.57			
LS (100%): wht-occ brnsh tan, m-xln, mtt, plty, wxy ip, frm-hd; no ini fluor, slw wk gm cuts, wk spttd yel-gm res mg.				SS (70%) brn-dk gy, lt gy-crm, abndnt blk pels & wht lithc grs sm pyr, loose-wl cmted trnsclnt grms, vf-f gm, fri ip, arg, wl-mod srted, blk, mica, occ glauc pels; LS (30%): wht-occ brnsh tan, m-xln, mtt, plty, wxy ip, frm-hd; no ini fluor, slw wk gm cuts, wk spttd yel-gm res mg.							
								7890			
								Ft. Hays Ls			
								Codell SS			
								7940			

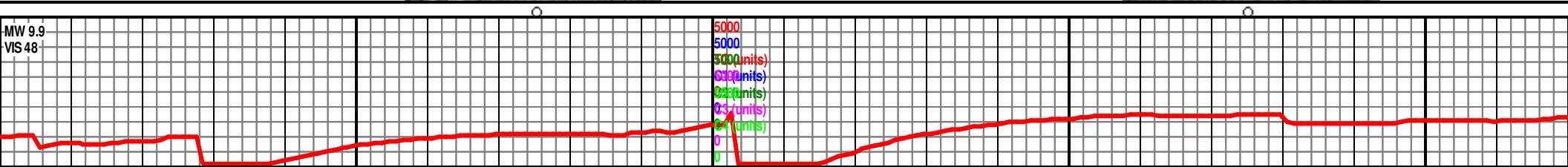
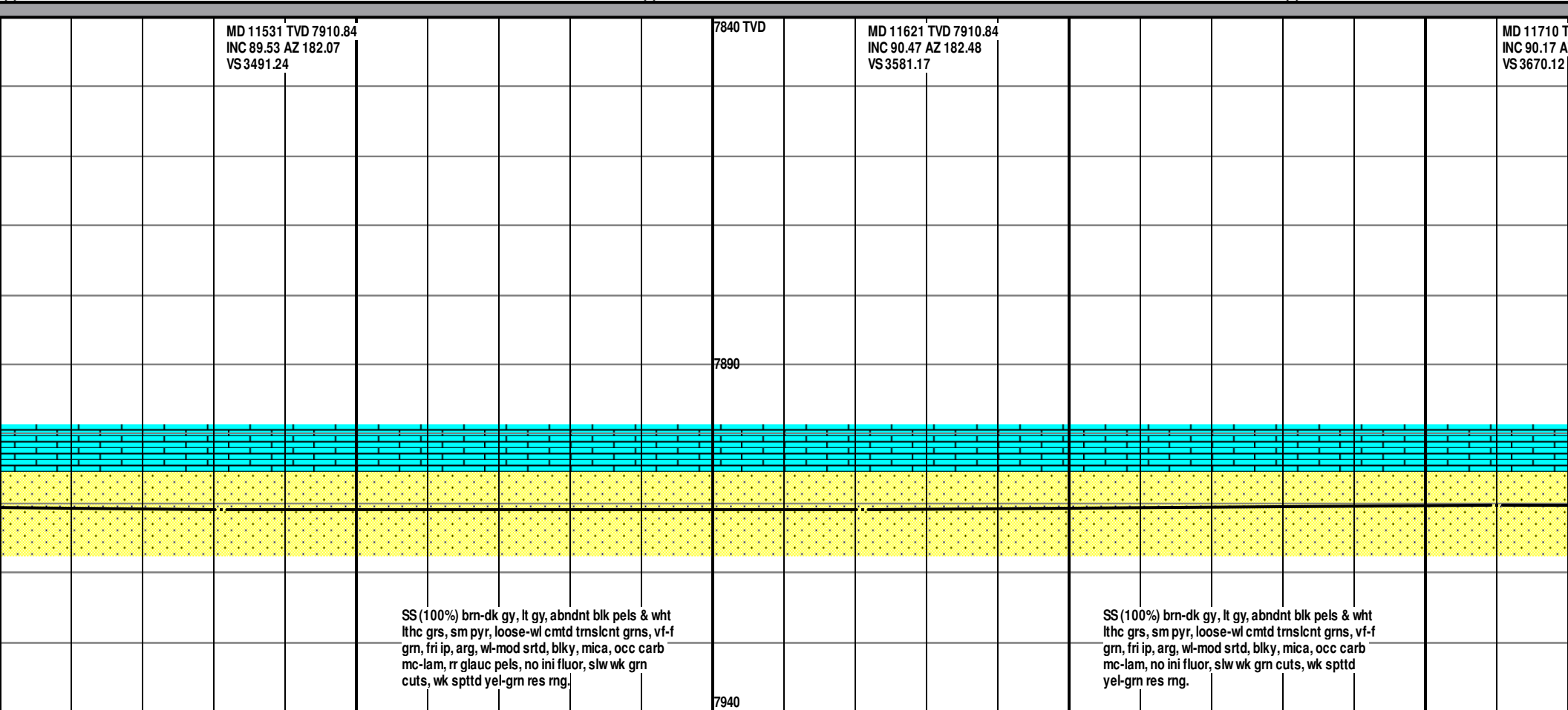


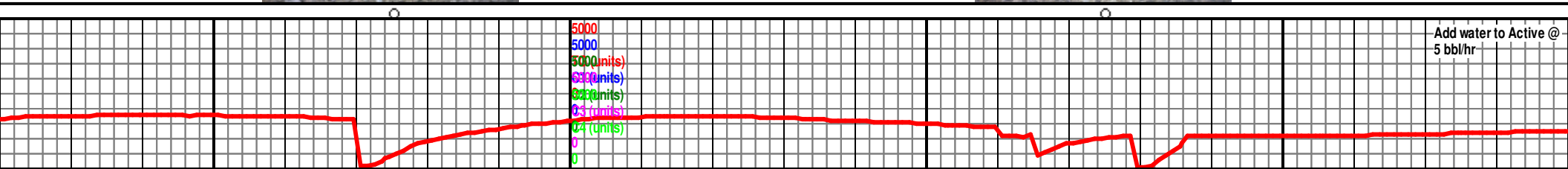
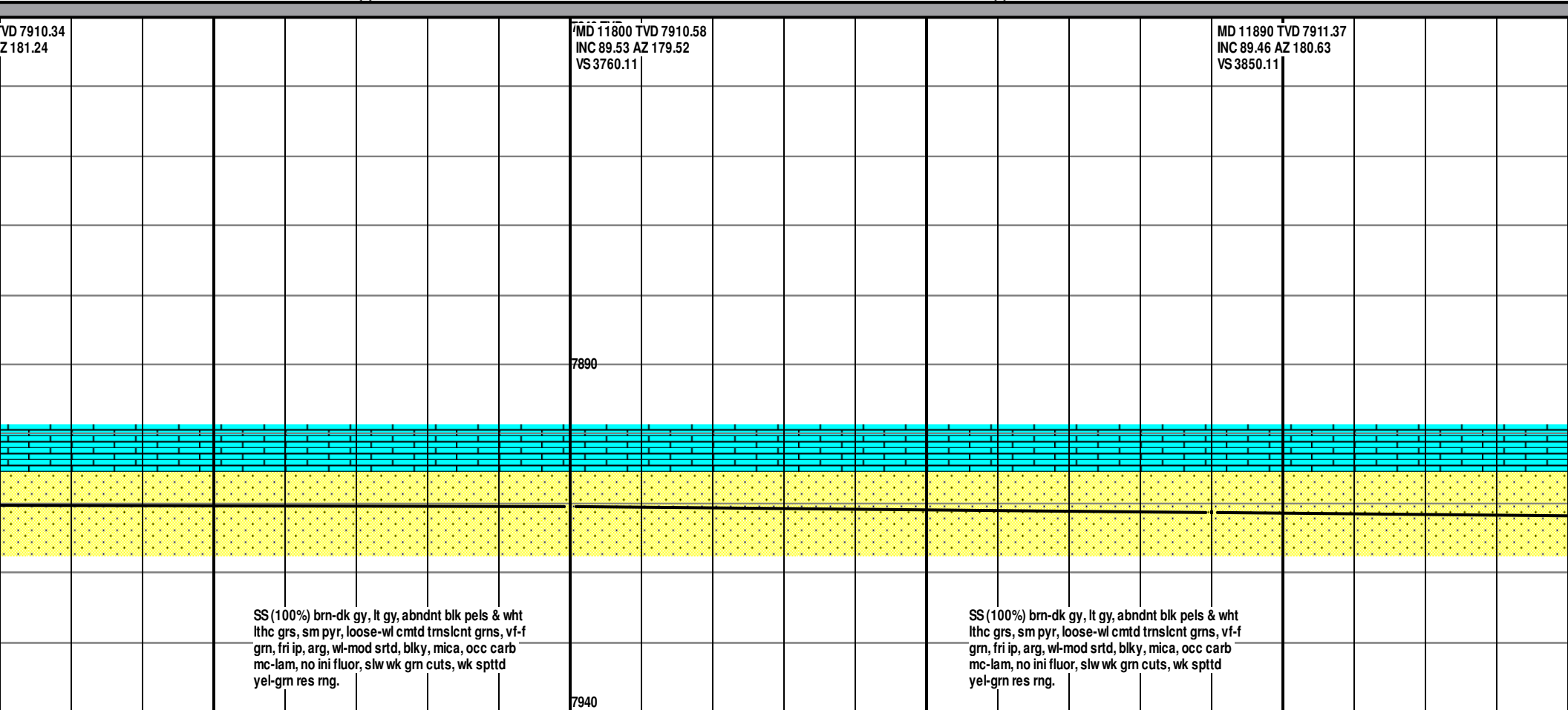


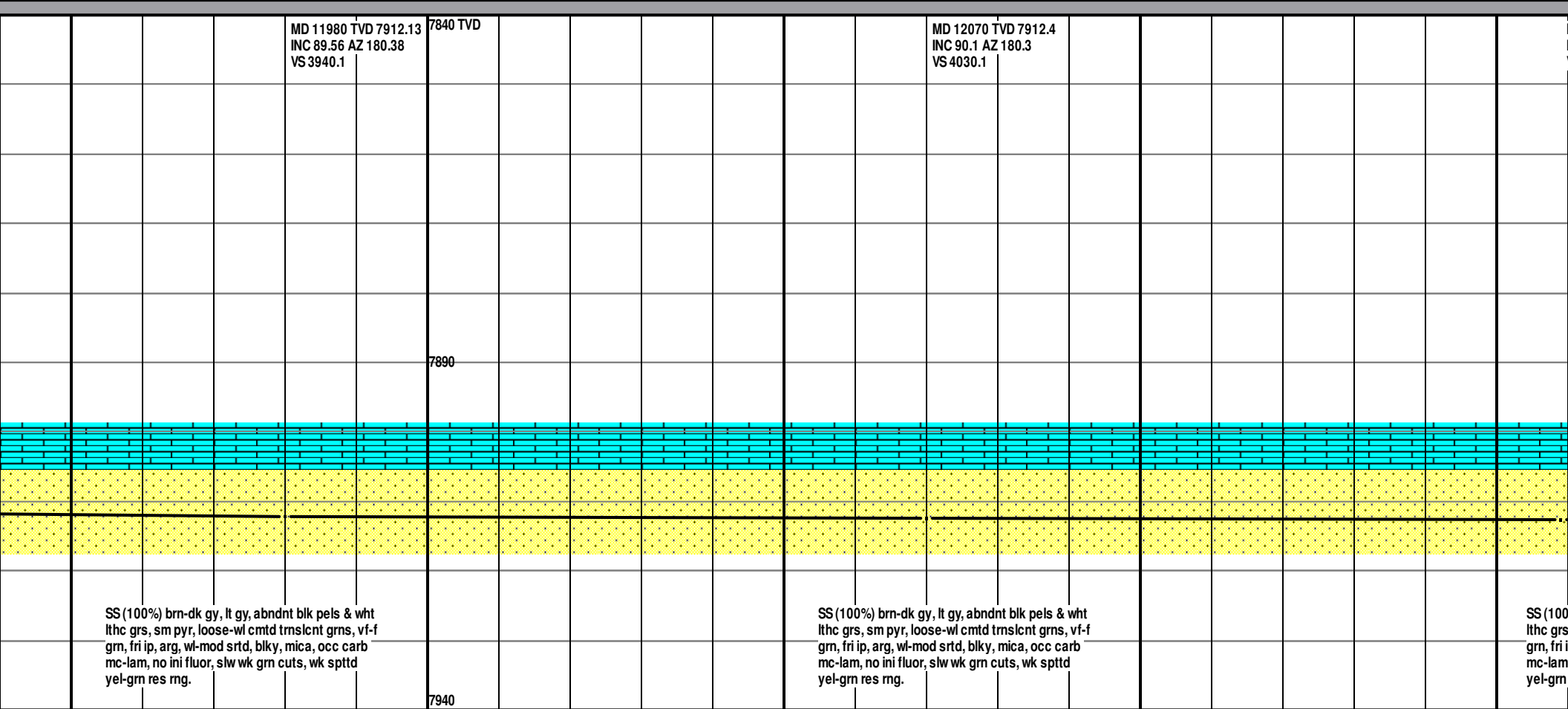
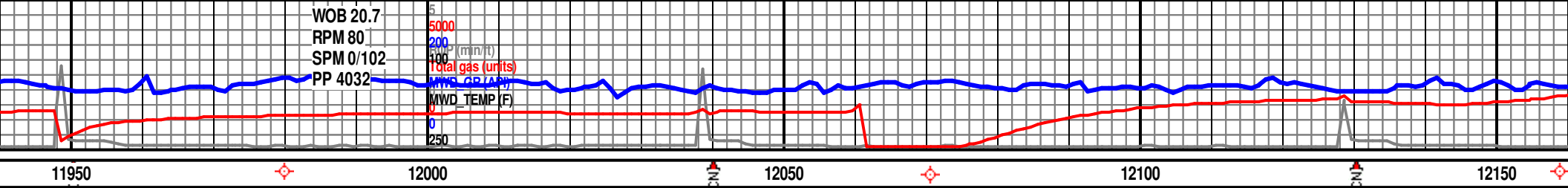


MD 11082 TVD 7909.3 INC 88.39 AZ 177.5 VS3042.5		MD 11172 TVD 7911.06 INC 89.36 AZ 176.56 VS3132.36	7840 TVD	MD 11262 TVD 7911.0 INC 90.7 AZ 178.76 VS3222.28
			7890	
vs Ls				
II SS				
0%) brn-dk gy, lt gy, abndnt blk pels & wht s, sm pyr, loose-wl cmtd trnslcnt grns, vf-f ip, arg, wl-mod srted, blk, mica, occ carb n, rr glauc pels; LS (tr): wht-occ brnsh tan, mttd, plty, wxy ip, frm-hd; no ini fluor, slw cuts, wk spttd yel-grn res rng.		SS (100%) brn-dk gy, lt gy, abndnt blk pels & wht lthc grs, sm pyr, loose-wl cmtd trnslcnt grns, vf-f gm, fri ip, arg, wl-mod srted, blk, mica, occ carb mc-lam, rr glauc pels; LS (tr): wht-occ brnsh tan, m-xln, mttd, plty, wxy ip, frm-hd; no ini fluor, slw wk gm cuts, wk spttd yel-grn res rng.	7940	SS (100%) brn-dk gy, lt gy, abndnt blk pels & wht lthc grs, sm pyr, loose-wl cmtd trnslcnt grns, vf-f gm, fri ip, arg, wl-mod srted, blk, mica, occ carb mc-lam, rr glauc pels; LS (tr): wht-occ brnsh tan, m-xln, mttd, plty, wxy ip, frm-hd; no ini fluor, slw wk gm cuts, wk spttd yel-grn res rng.





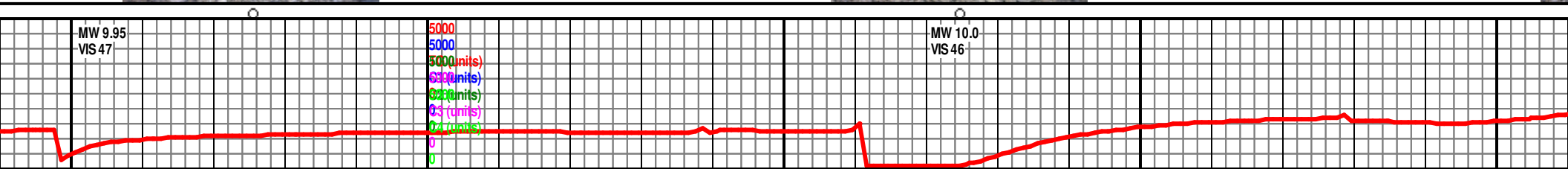
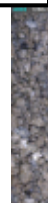
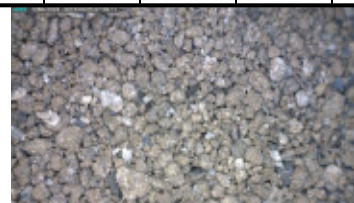


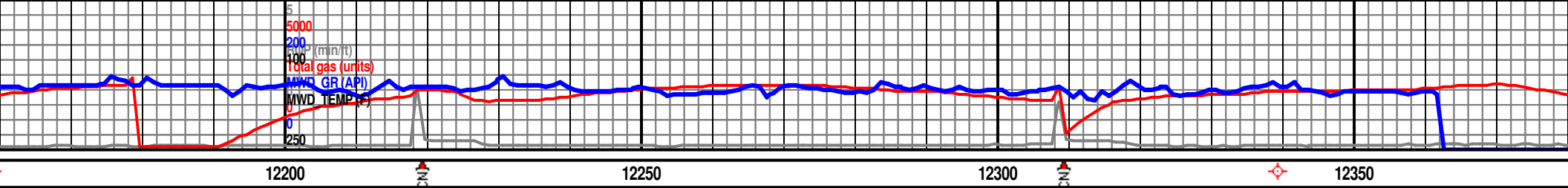


SS (100%) brn-dk gy, lt gy, abndnt blk pels & wht
lthc grs, sm pyr, loose-wl cmted tmslcnt grns, vf-f
gm, fri ip, arg, wl-mod srted, blk, mica, occ carb
mc-lam, no ini fluor, slw wk gm cuts, wk spttd
yel-grn res rng.

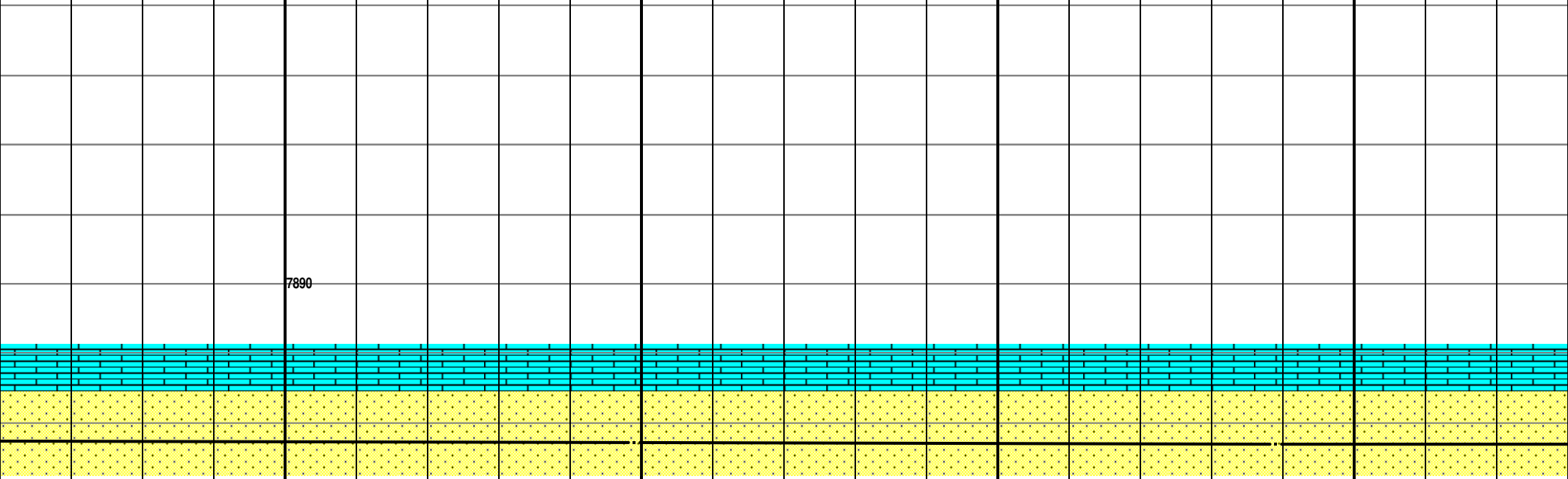
SS (100%) brn-dk gy, lt gy, abndnt blk pels & wht
lthc grs, sm pyr, loose-wl cmted tmslcnt grns, vf-f
gm, fri ip, arg, wl-mod srted, blk, mica, occ carb
mc-lam, no ini fluor, slw wk gm cuts, wk spttd
yel-grn res rng.

SS (100%)
lthc grs
gm, fri
mc-lam
yel-grn





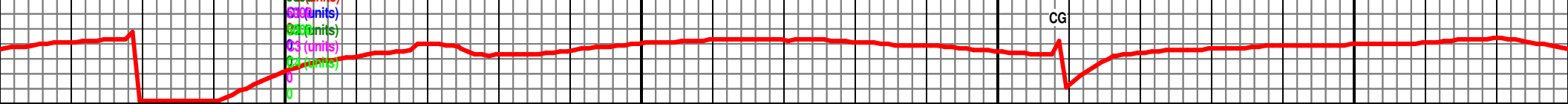
MD 12159	TVD 7912.53	INC 89.73	AZ 178.93	VS 4119.1
7840 TVD				
MD 12249				
TVD 7912.74				
INC 90				
AZ 177.88				
VS 4209.06				
MD 12339				
TVD 7913.11				
INC 89.53				
AZ 176.21				
VS 4298.94				

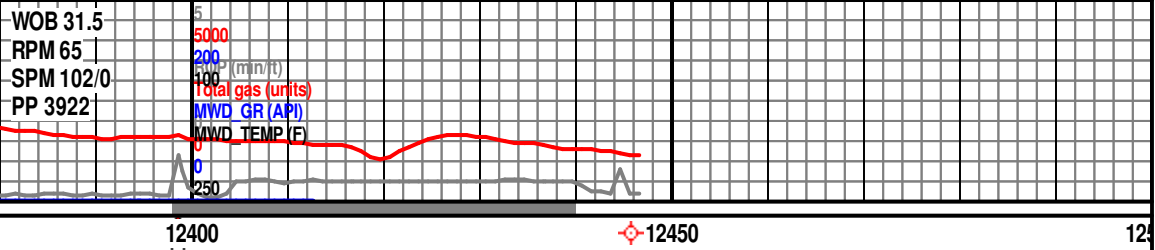



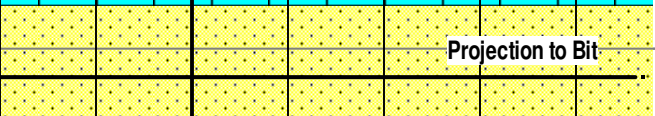
MD 12159	TVD 7912.53	INC 89.73	AZ 178.93	VS 4119.1
7840 TVD				
MD 12249				
TVD 7912.74				
INC 90				
AZ 177.88				
VS 4209.06				
MD 12339				
TVD 7913.11				
INC 89.53				
AZ 176.21				
VS 4298.94				

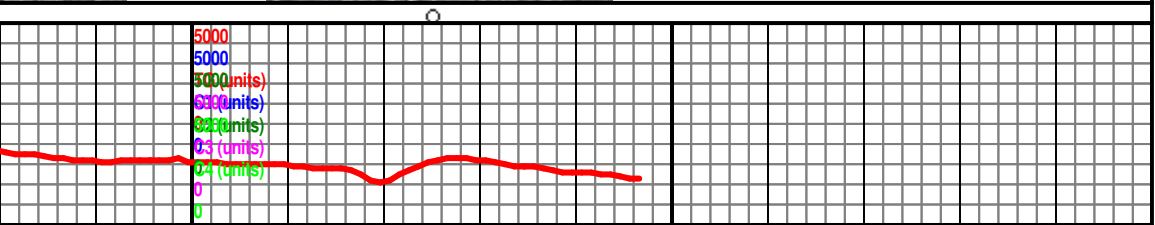
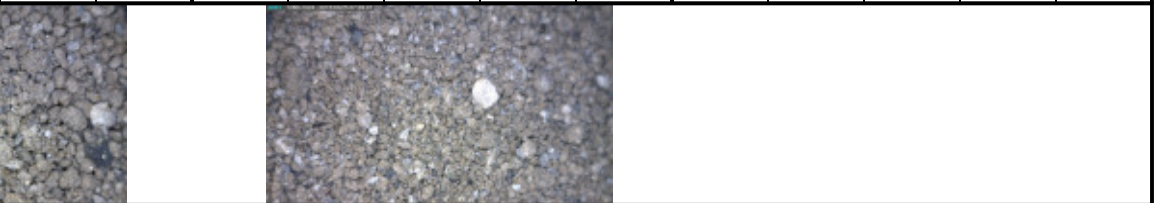


MD 12159	TVD 7912.53	INC 89.73	AZ 178.93	VS 4119.1
7840 TVD				
MD 12249				
TVD 7912.74				
INC 90				
AZ 177.88				
VS 4209.06				
MD 12339				
TVD 7913.11				
INC 89.53				
AZ 176.21				
VS 4298.94				





7840 TVD	MD 12447 TVD 7913.11 INC 89.53 AZ 176.21 VS 4298.94
7890	
	
	
Projection to Bit	
blk pels & wht slsclnt grms, vf-f mica, occ carb ts, wk spttd	SS (100%) brn-dk gy, lt gy, abndnt blk pels & wht lthc grs, sm pyr, loose-wl cmtd trnsclnt grms, vf-f grm, fri ip, arg, wl-mod strtd, blkyl, mica, occ carb mc-lam, no ini fluor, slw wk grm cuts, wk spttd yel-grm res rng.
7940	



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