

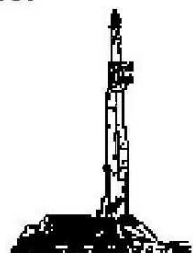
**GOOLSBY BROTHERS**  
and associates, inc.

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



Geological Wellsite  
Supervision

[www.goolsbybrothers.com](http://www.goolsbybrothers.com)



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

**Well Name:** Nichols 30C-5HZ (Horizontal Hole Section)

**Location:** Section 8, T2N, R65W, Weld County, CO.

**License Number:** API: 05-123-35919

**Spud Date:** February 7, 2013

**Surface Coordinates:** SWNW Sec 8 T2N R65W; 2399' FNL 250' FWL

Lat N 40.153914 Long W -104.696278

**Bottom Hole Coordinates:** NWNW Sec 5 T2N R65W; N-S: 602' FNL; E-W: 273' FWL

**Ground Elevation (ft):** 4946'

**Logged Interval (ft):** 6748'

**To:** 14348'

**Formation:** Pierre Shales/Sands, Codell Target

**Type of Drilling Fluid:** Water & Poly to 6748', LSND 6748'-14348'

**K.B. Elevation (ft):** 4971'

**Total Depth (ft):** 14348' DTMD 7076.95' VS

**Region:** Wattenberg

**Drilling Completed:** February 18, 2013

Printed by HORIZONTAL.LOG from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

**OPERATOR**

**Company:** Kerr-McGee Oil & Gas Onshore LP

**Address:** Granite Tower - 1099 18th St, Ste 1800

Denver, CO 80202

CO Geologist, Laurence Sones

**GEOLOGIST**

**Name:** Andrew Krueger & Larry Goolsby

**Company:** Goolsby Brothers & Assoc. (GBA), Inc. ([www.goolsbybrothers.com](http://www.goolsbybrothers.com))

**Address:** 575 Union Blvd.

Suite 208,

Lakewood CO. 80228

## E-logs

MWD GR 6748' - 14348'  
MWD Resistivity 7721'-14348'





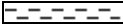
## Casing

9 5/8" Surface Casing set @ 741'  
7" Intermediate Casing set @ 7695' MD  
4 1/2" Production Liner hung 02/0x/2013, Landed @ 141xx'






## Comments






- 1) Drilling Contractor: Xtreme Drilling, Rig #20  
Toolpusher: Brad Henderson
- 2) Company Man: Marvin Hackworth & Ricky Carroll
- 3) Mud Company : Newpark Drilling Fluids  
Engineer: Scott Hight
- 4) Directional Drilling: Baker Hughes  
Pulse Tool  
Drillers: Barry Combs & Travis Wilcox  
MWD: Mark Dix & Adam Schlenz
- 5) Gas Equipment: Mudlogging Systems Inc.  
by Terra Services  
Redbox # ML-086 & Ratcliff Agitator
- 6) Wellsite Geologist: Larry Goolsby & Andrew Krueger

## ROCK TYPES

 Anhy  
 Bent  
 Brec  
 Cht  
 Clyst

 Coal  
 Oil sat.  
 Congl  
 Dol  
 Gyp

 Lmst  
 Mrlst  
 Salt  
 Shale  
 Shcol

 Shgy  
 Ss  
 Slst  
 Ss  
 Chalk

 Carb sh  
 Slty sh

## 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  
 Sltstgr  
 Ssstgr

### TEXTURE

Boundst  
 Chalky  
 Cryxln  
 Earthy  
 Finexln  
 Grainst  
 Lithogr  
 Microxln  
 Mudst  
 Packst  
 Wackst

## OTHER SYMBOLS

### OIL SHOWS

Even  
 Spotted  
 Ques  
 Dead  
 Vspotty

near even

### POROSITY TYPE

Earthy  
 Fenest  
 Fracture

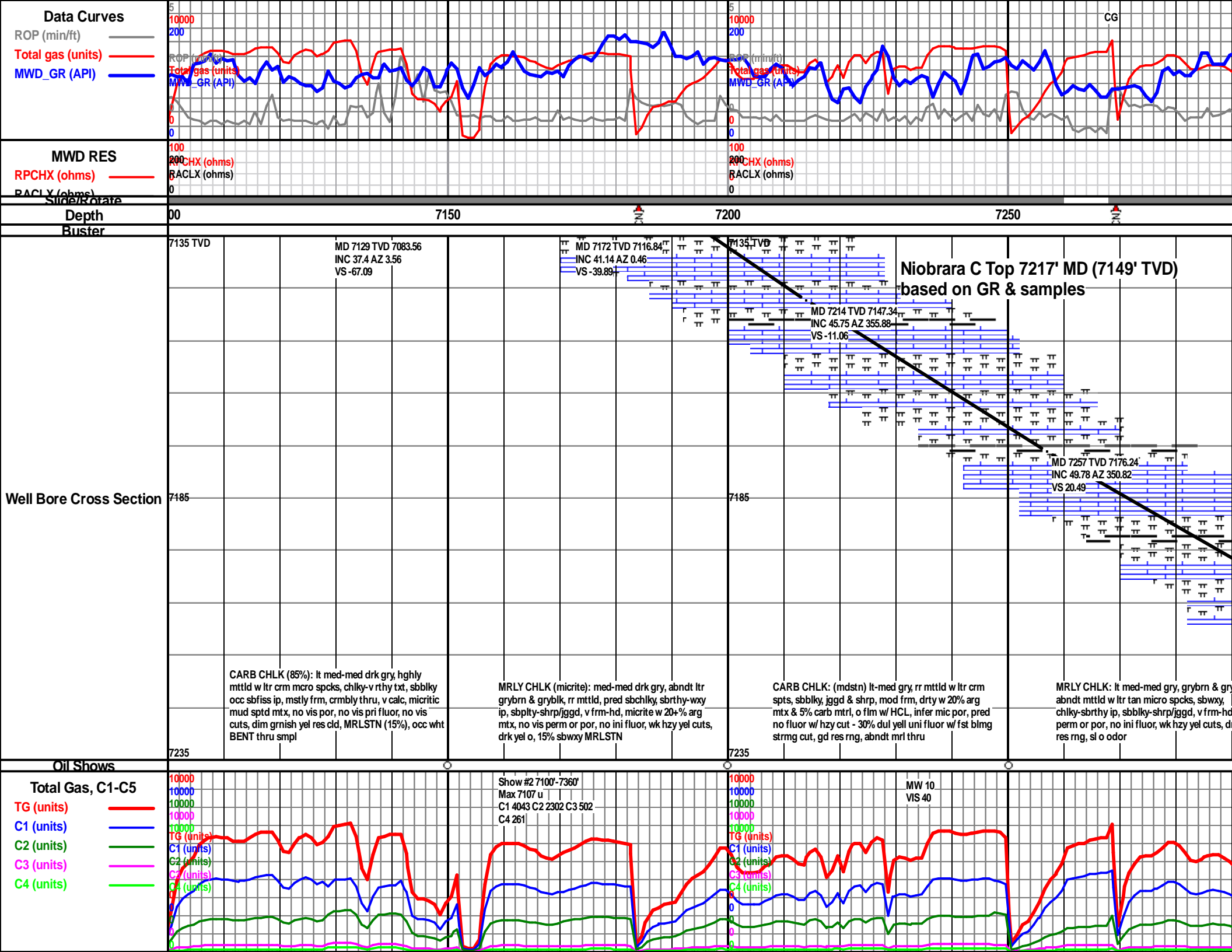
Inter  
 Moldic  
 Organic  
 Pinpoint  
 Vuggy

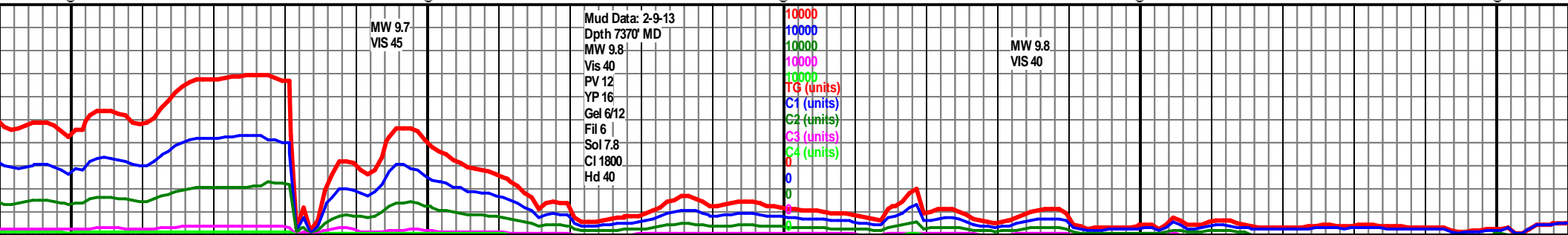
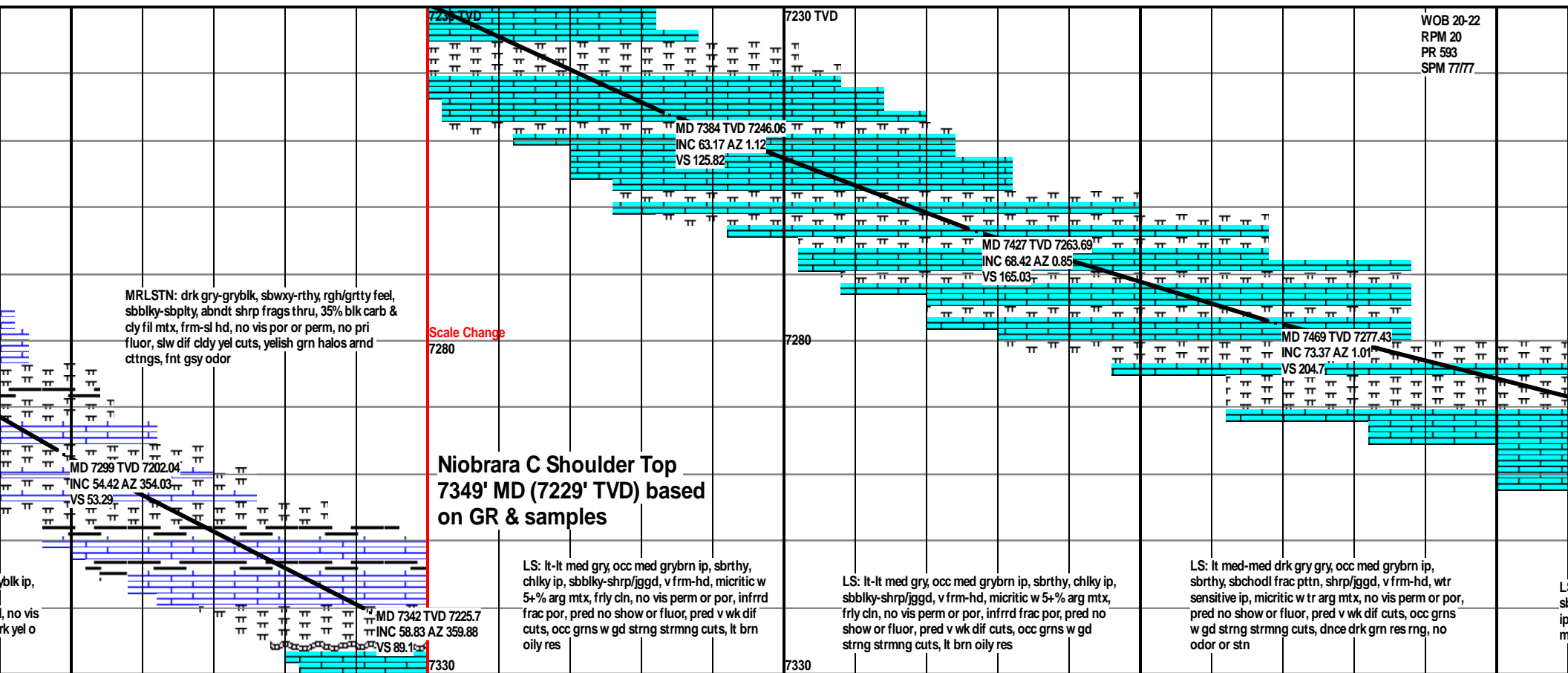
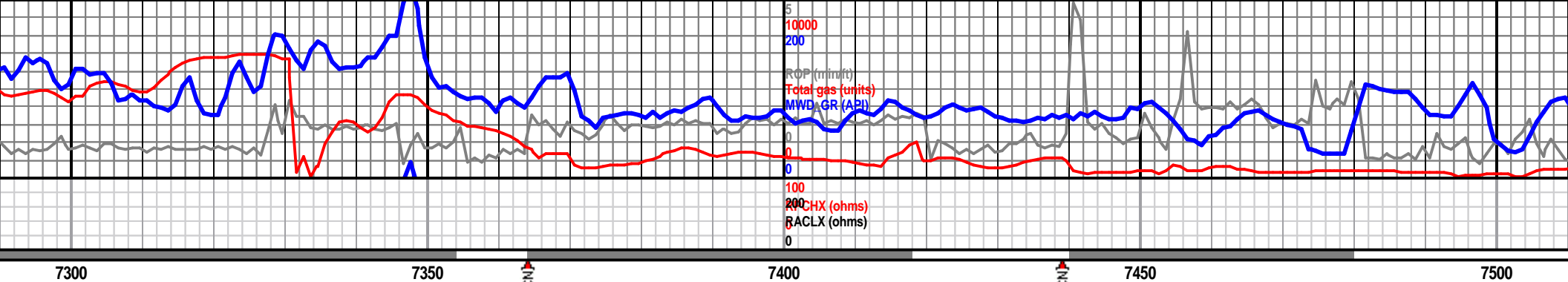
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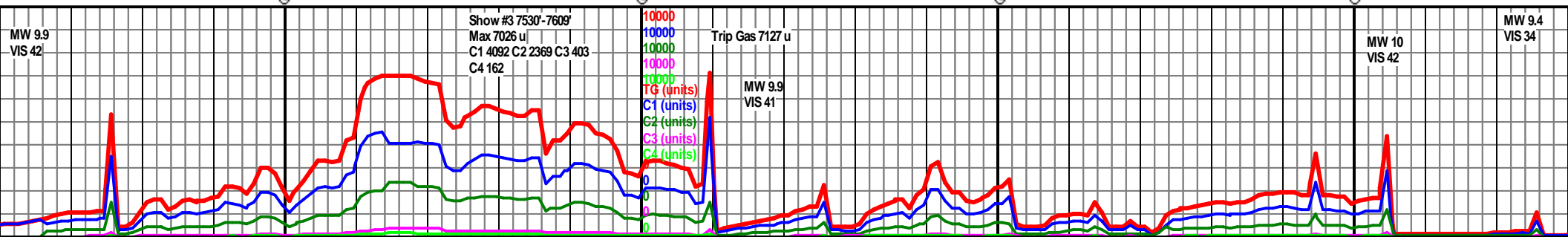
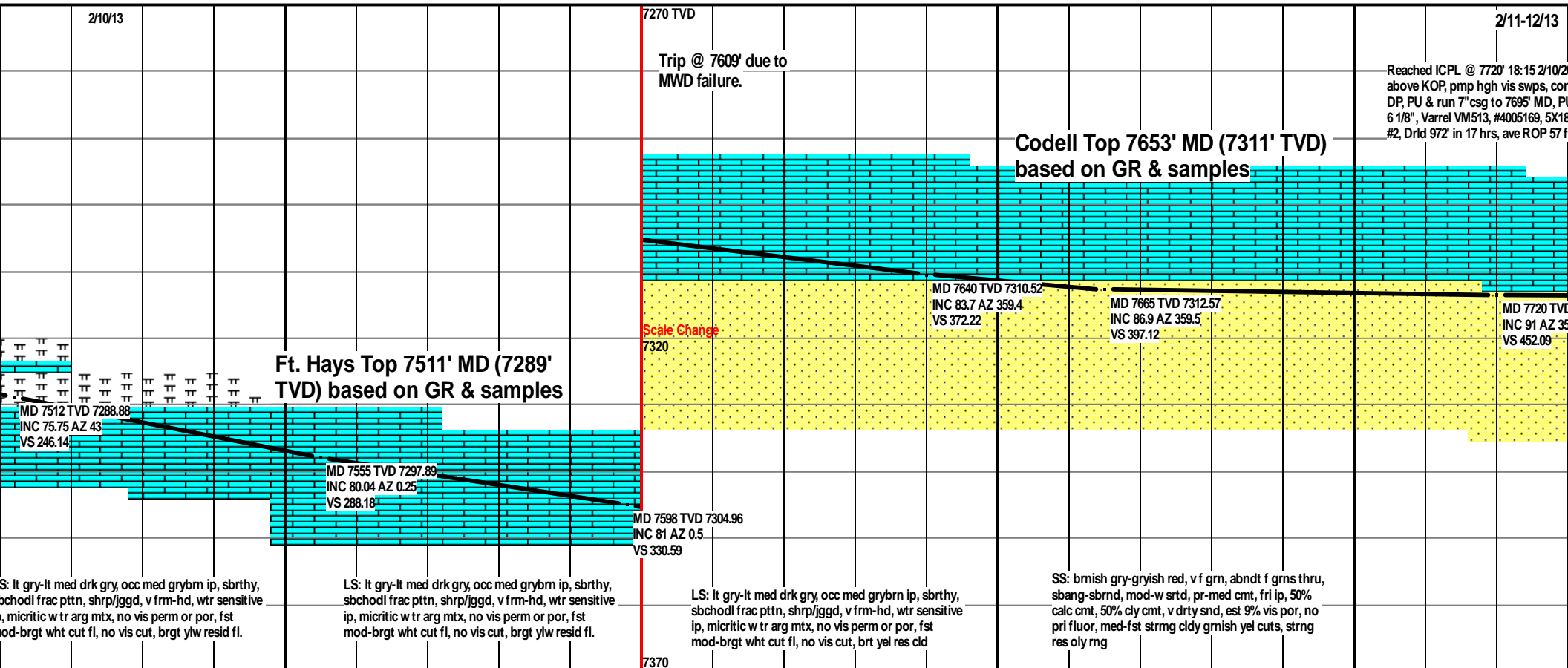
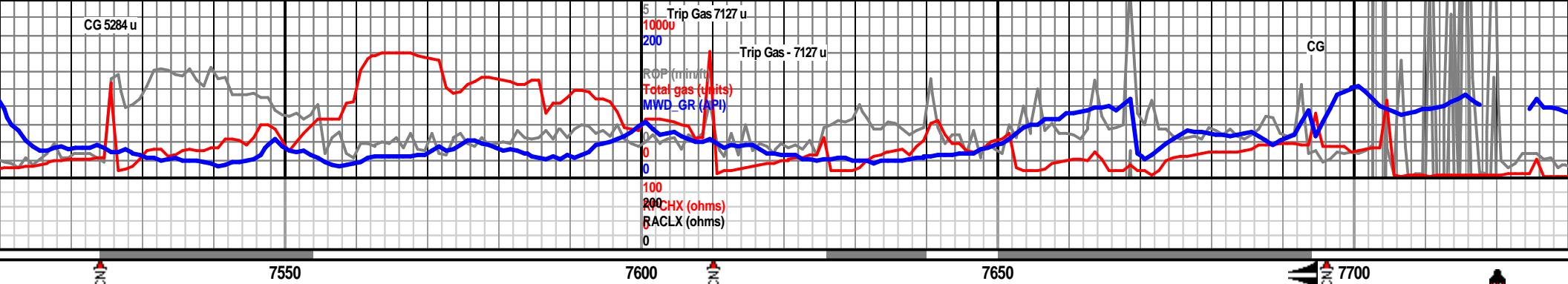
Rounded  
 Subrnd  
 Subang  
 Angular

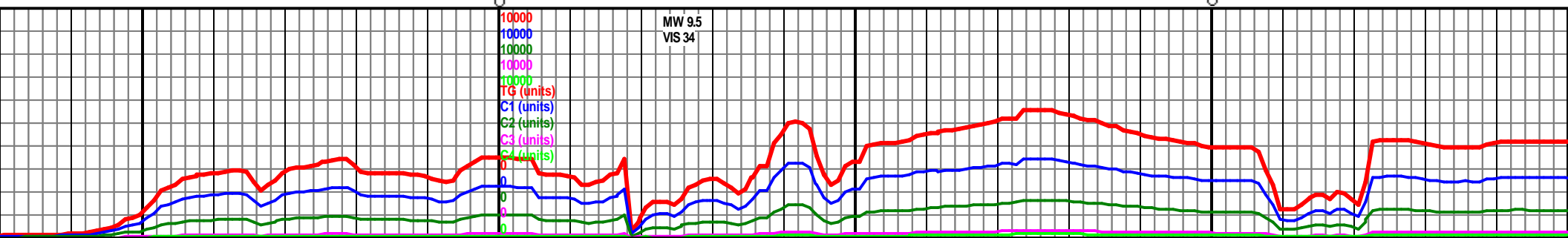
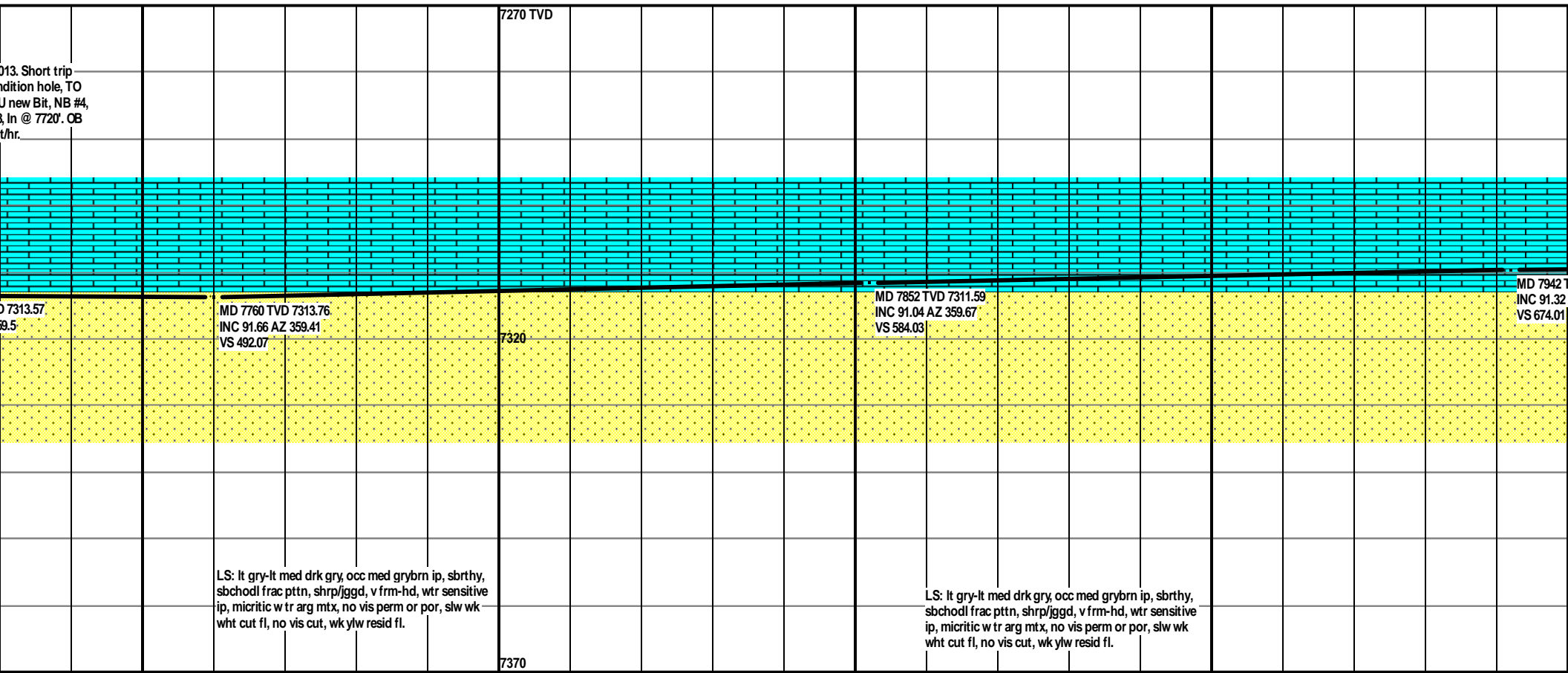
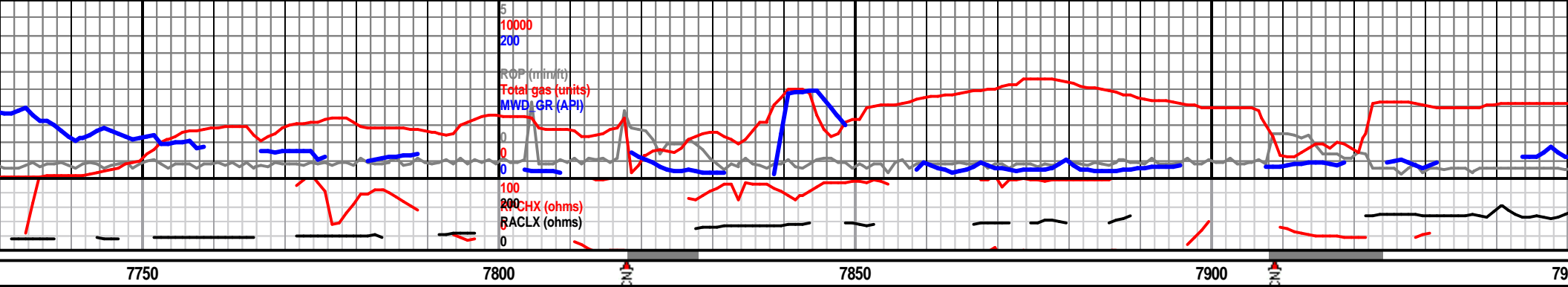
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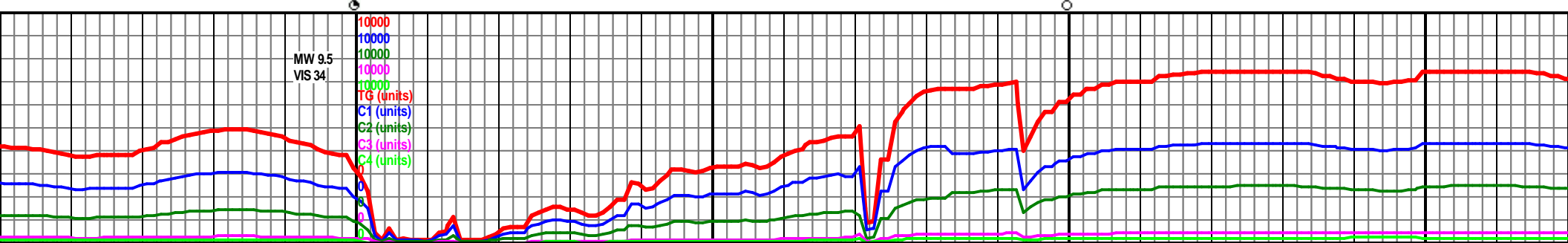
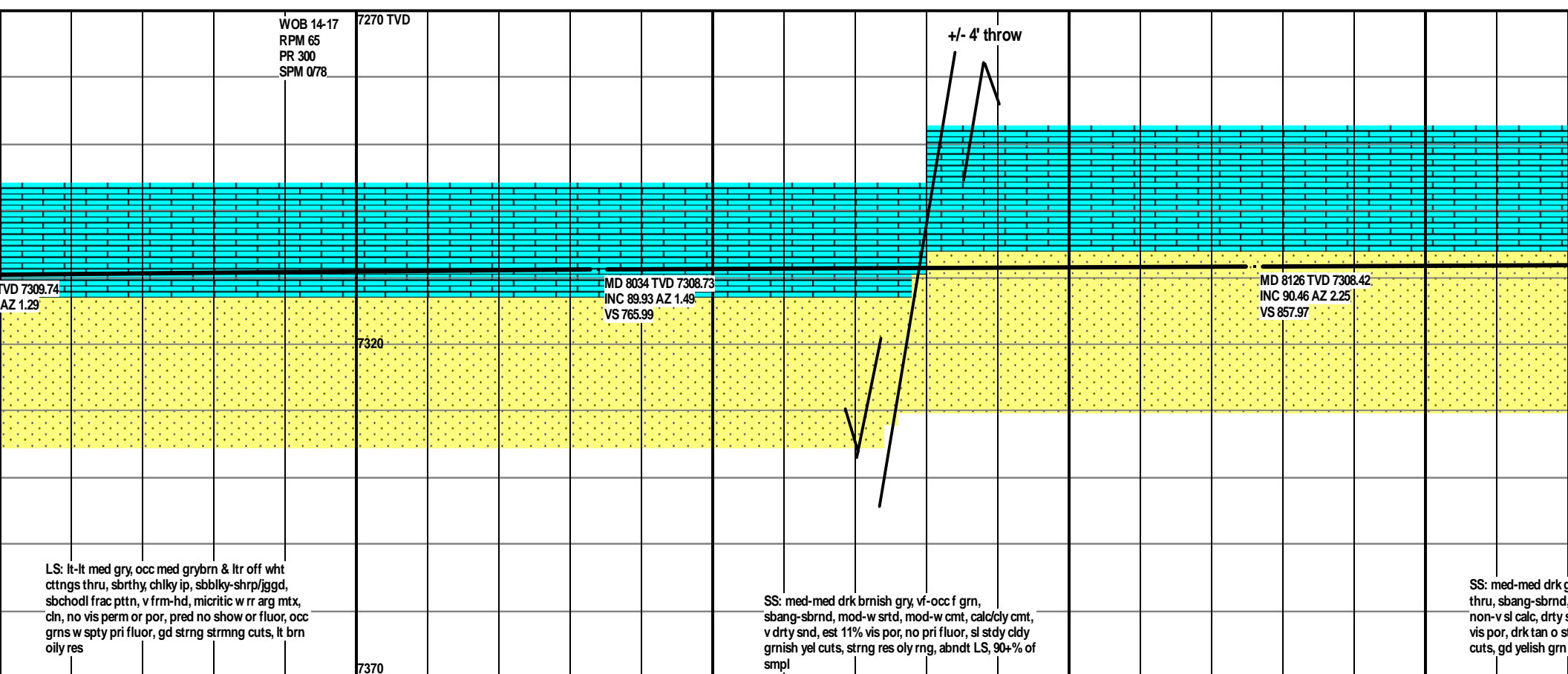
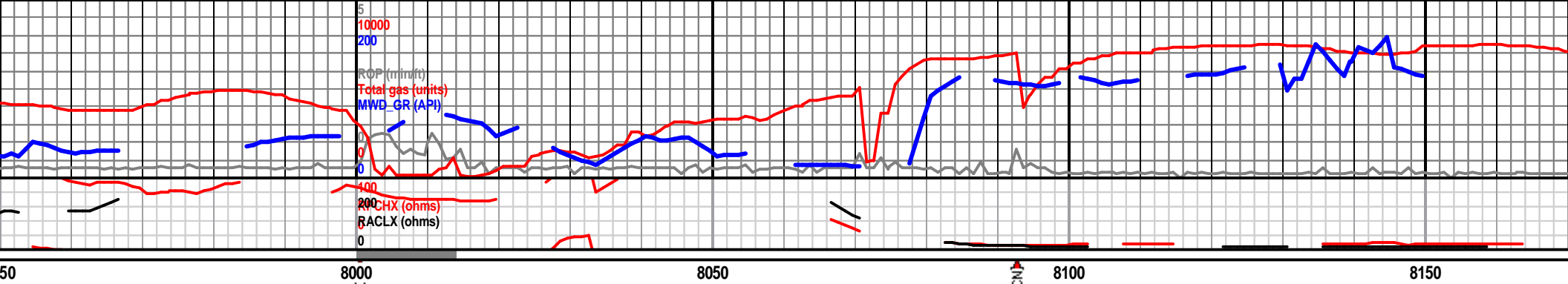
Well  
 Moderate  
 Poor



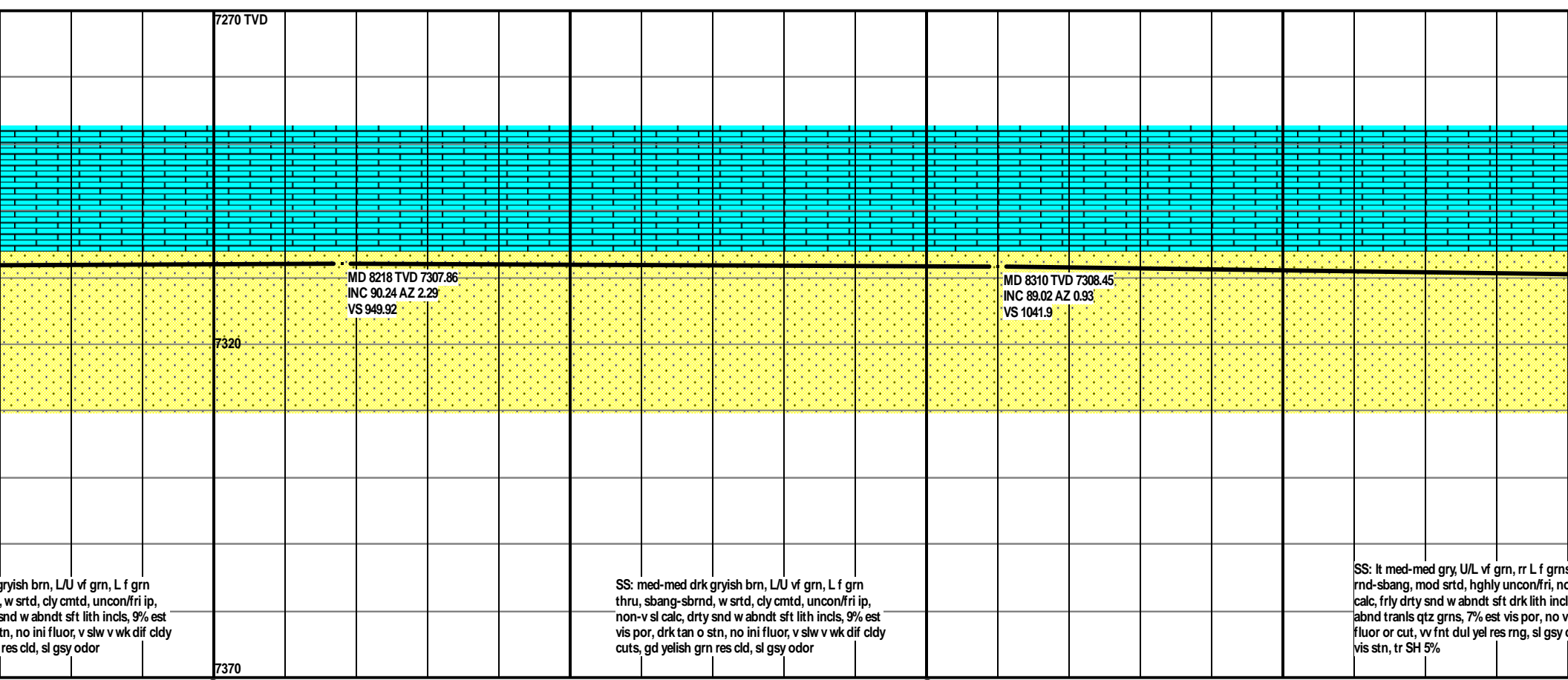
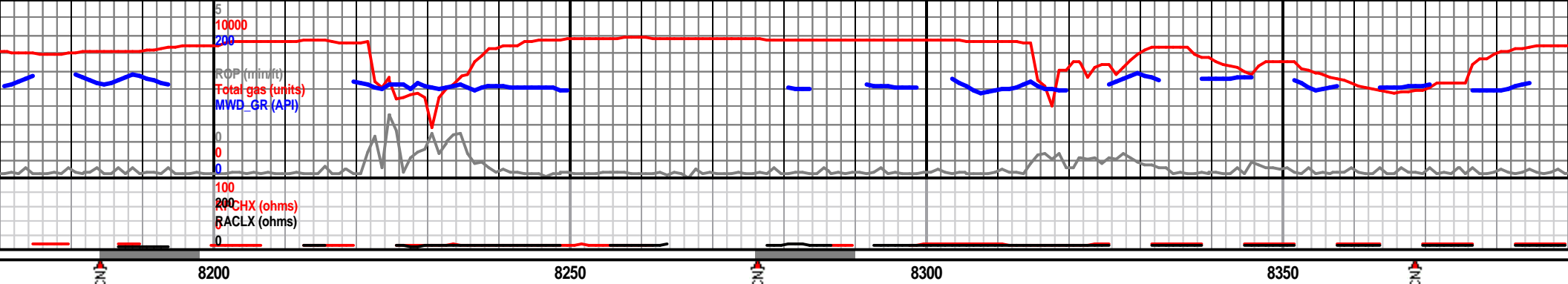








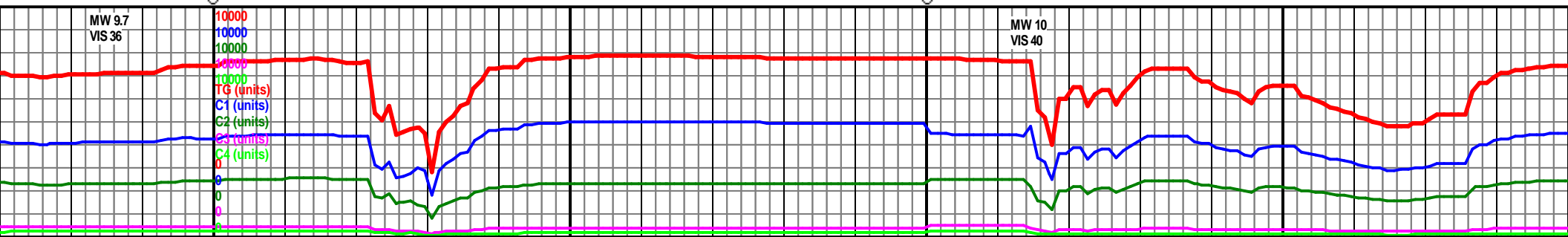


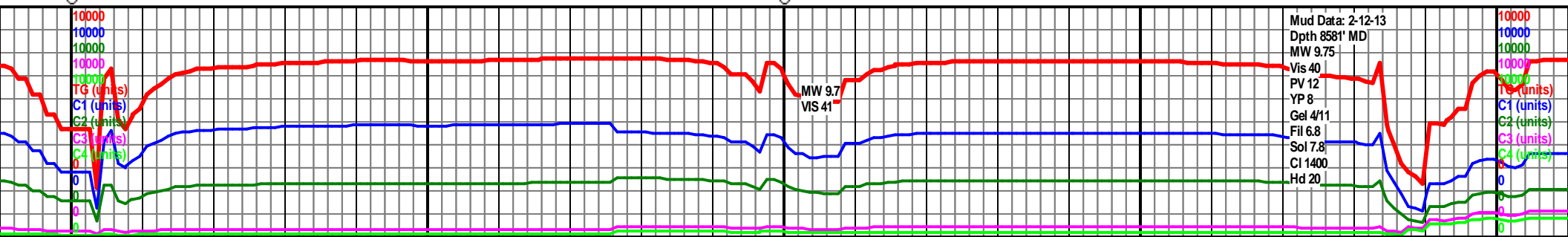
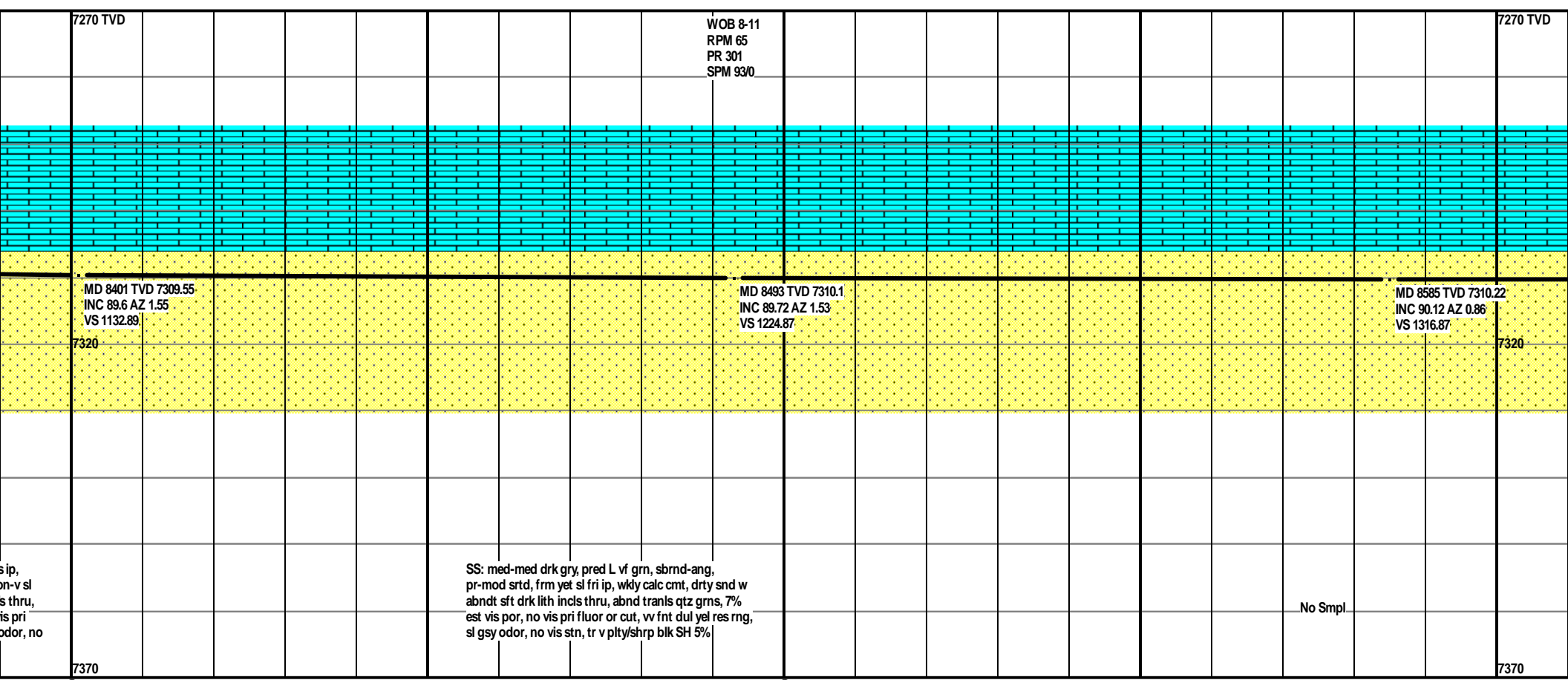
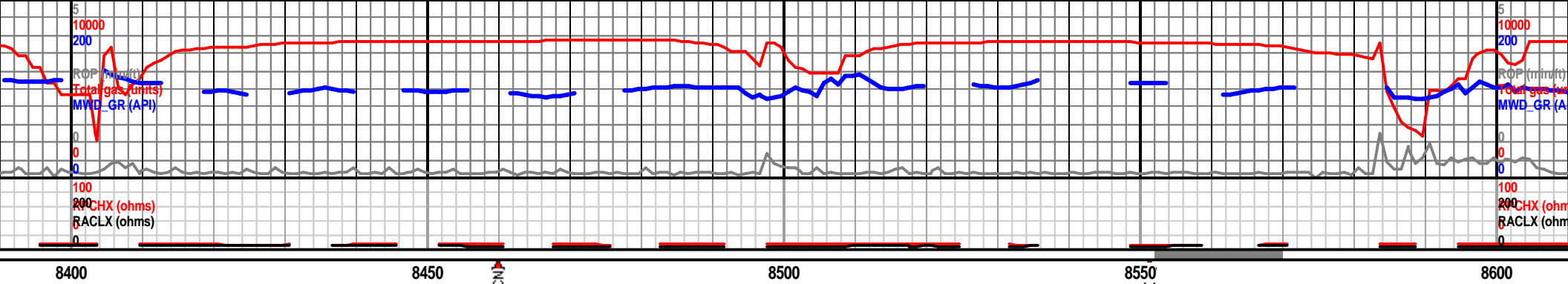


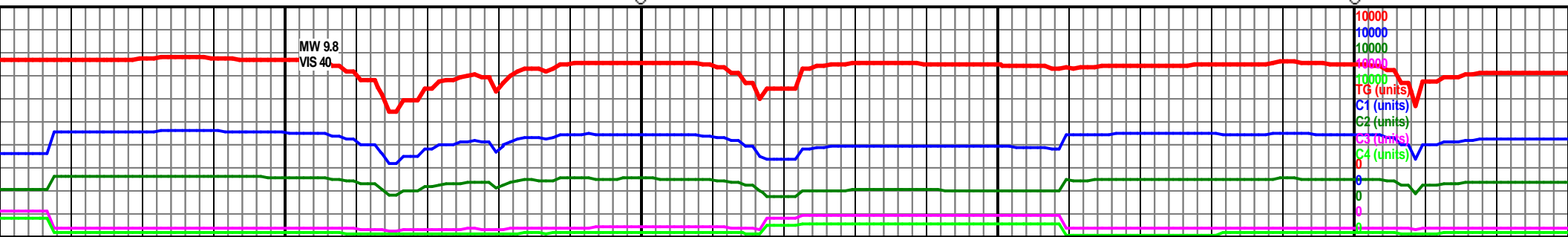
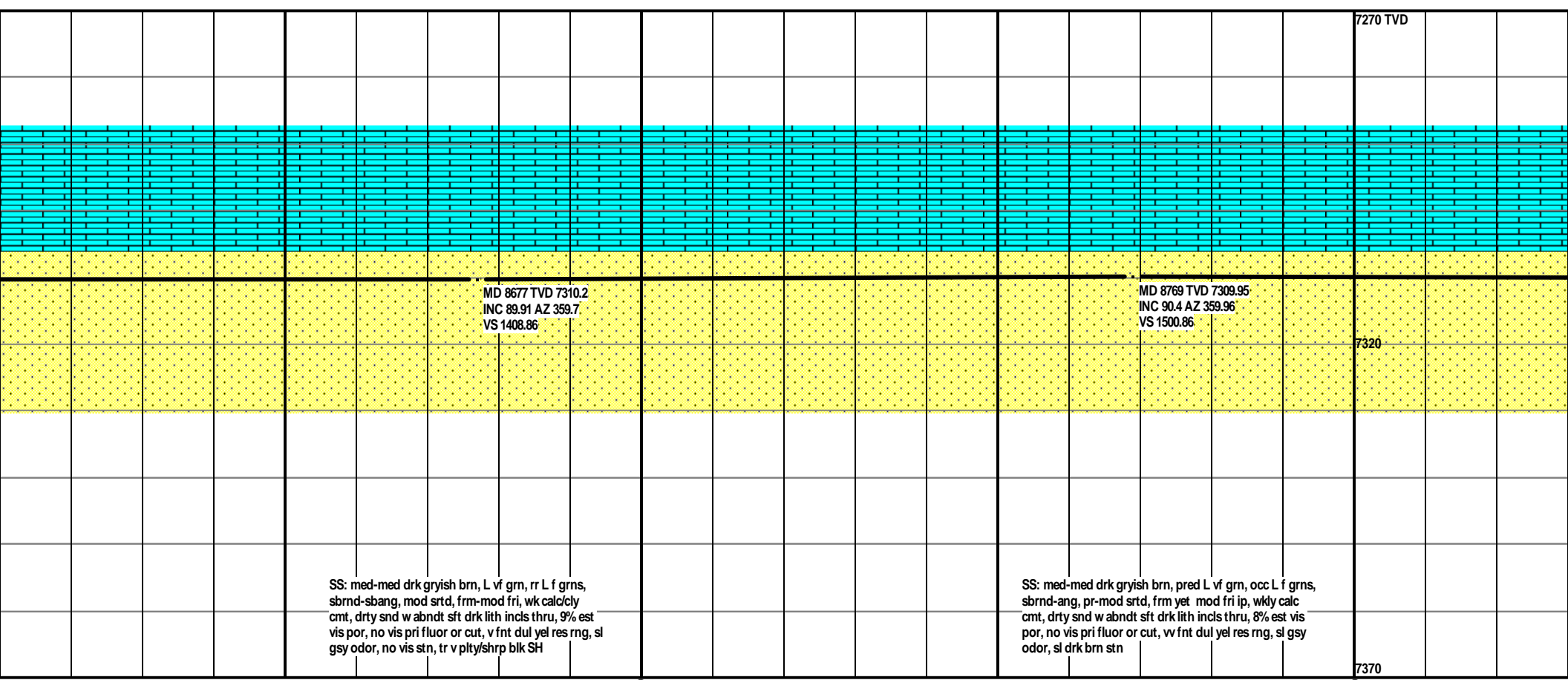
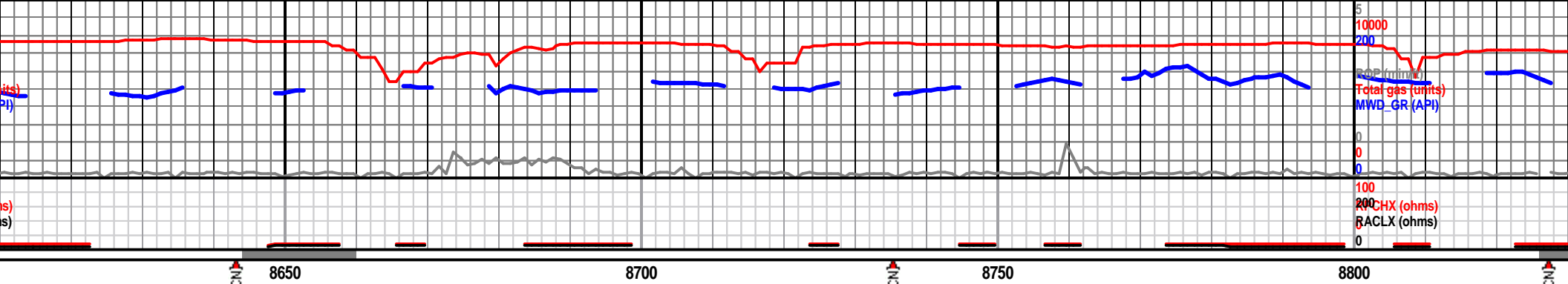
gryish brn, LU vf grn, L f grn  
 w srted, cly cmted, uncon/fri ip,  
 and w abndt sft lith incl, 9% est  
 tn, no ini fluor, v slw v wk dif cldy  
 res cld, sl gsy odor

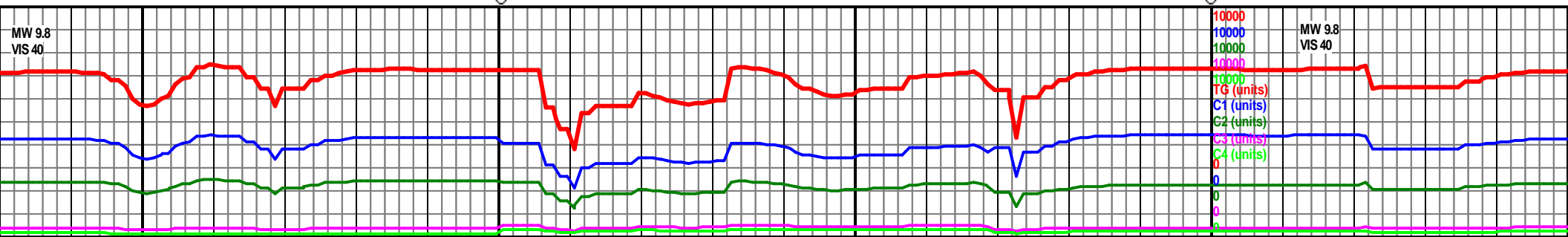
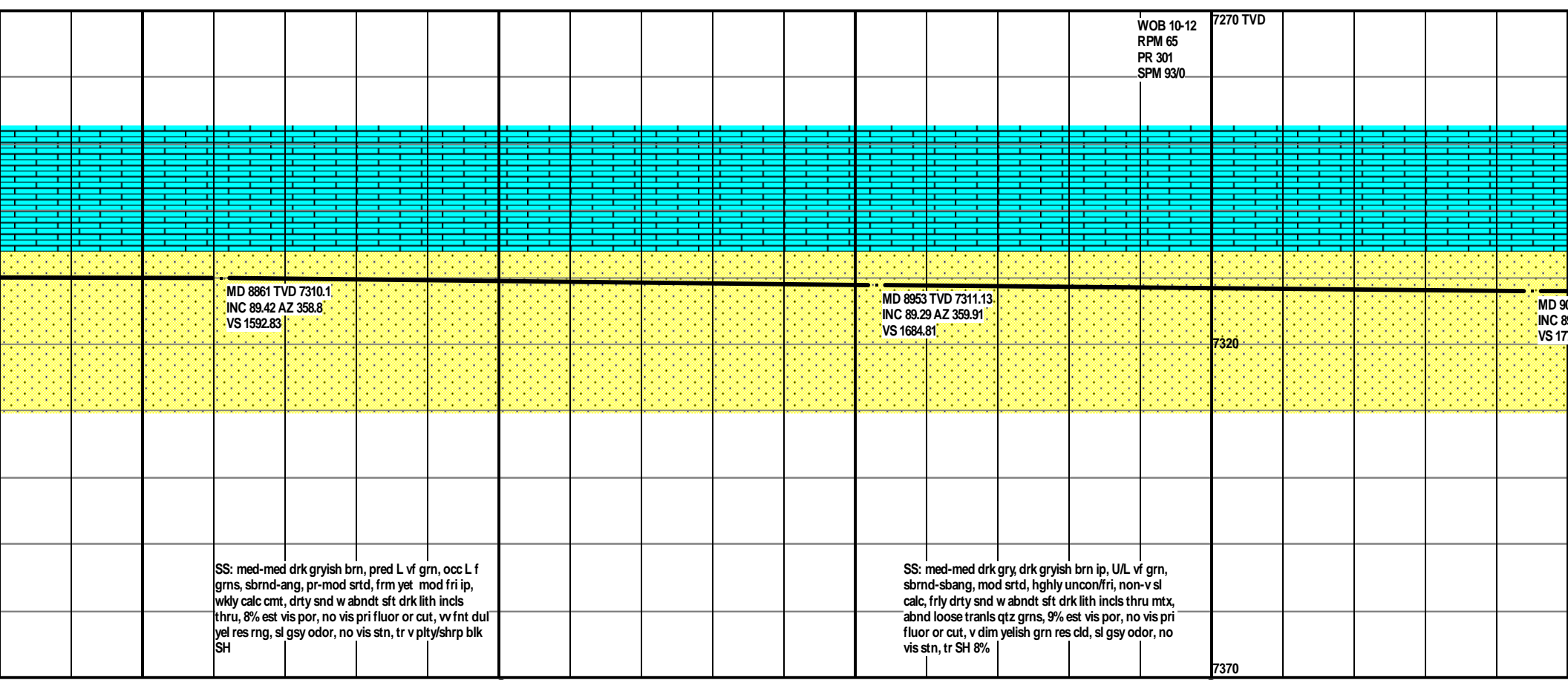
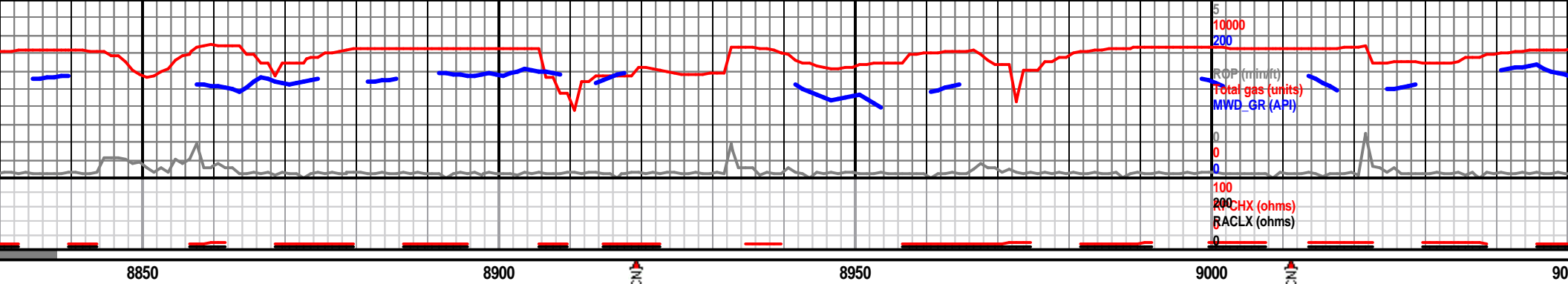
SS: med-med drk gryish brn, LU vf grn, L f grn  
 thru, sbang-sbrnd, w srted, cly cmted, uncon/fri ip,  
 non-v sl calc, drty snd w abndt sft lith incl, 9% est  
 vis por, drk tan o stn, no ini fluor, v slw v wk dif cldy  
 cuts, gd yelish grn res cld, sl gsy odor

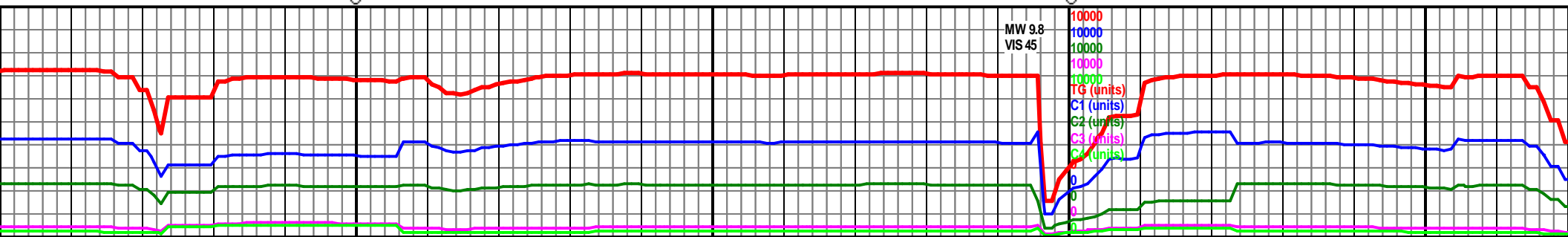
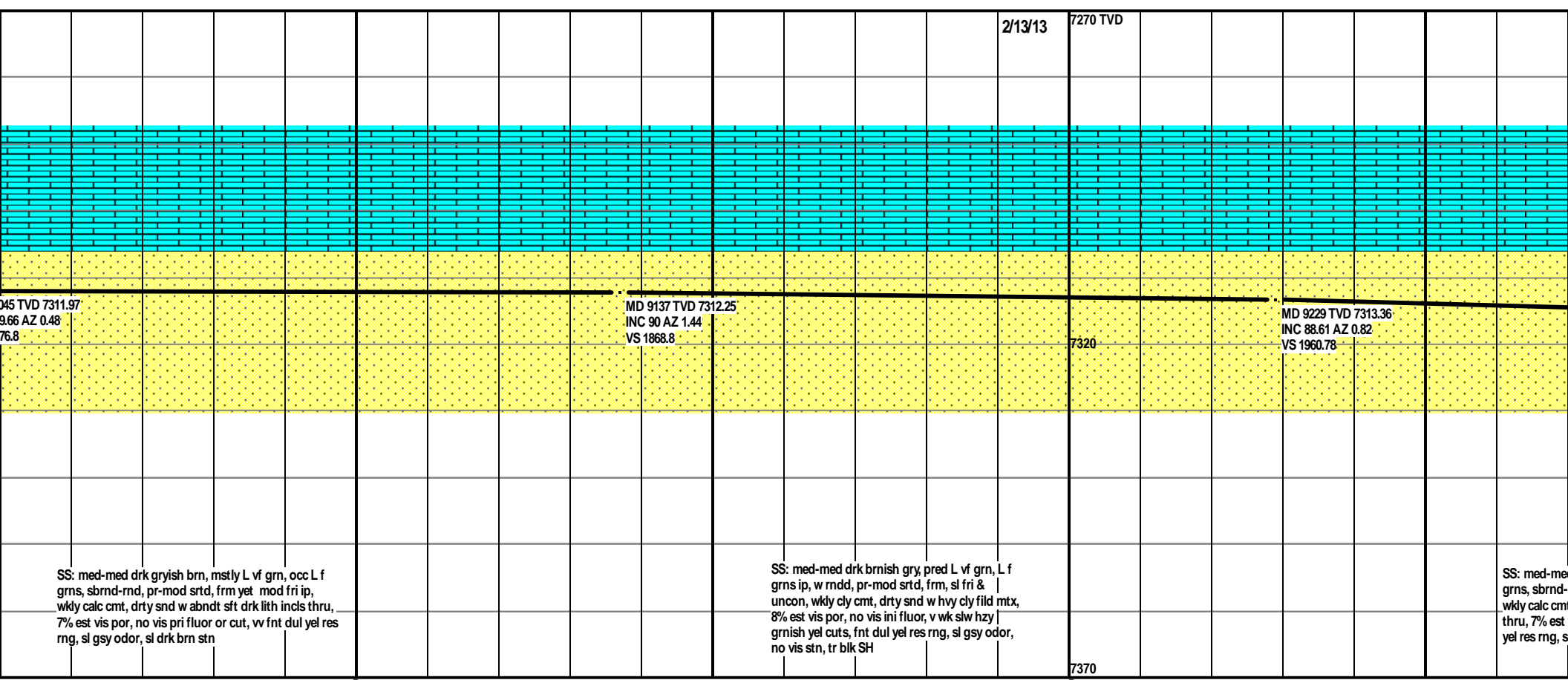
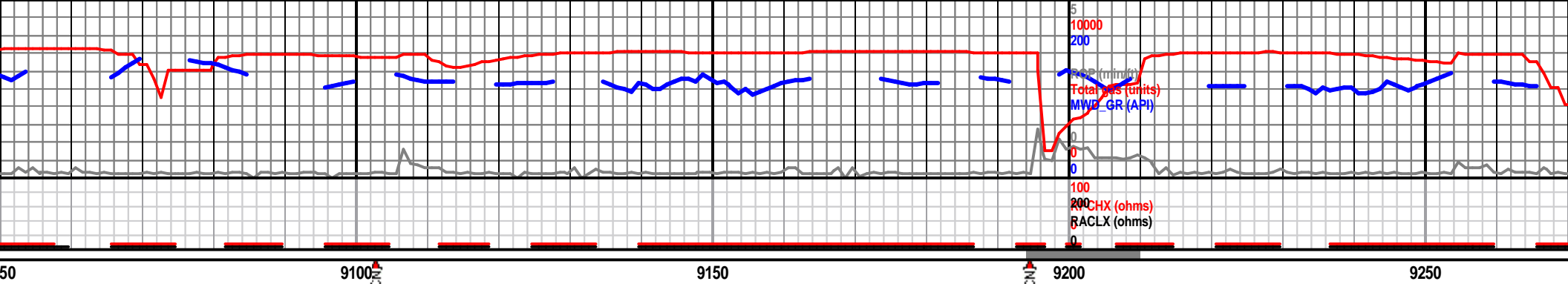
SS: lt med-med gry, U/L vf grn, rr L f grn  
 rnd-sbang, mod srted, highly uncon/fri, no  
 calc, frly drty snd w abndt sft drk lith incl  
 abndt trans qtz grns, 7% est vis por, no v  
 fluor or cut, vv fnt dul yel res rng, sl gsy  
 vis stn, tr SH 5%

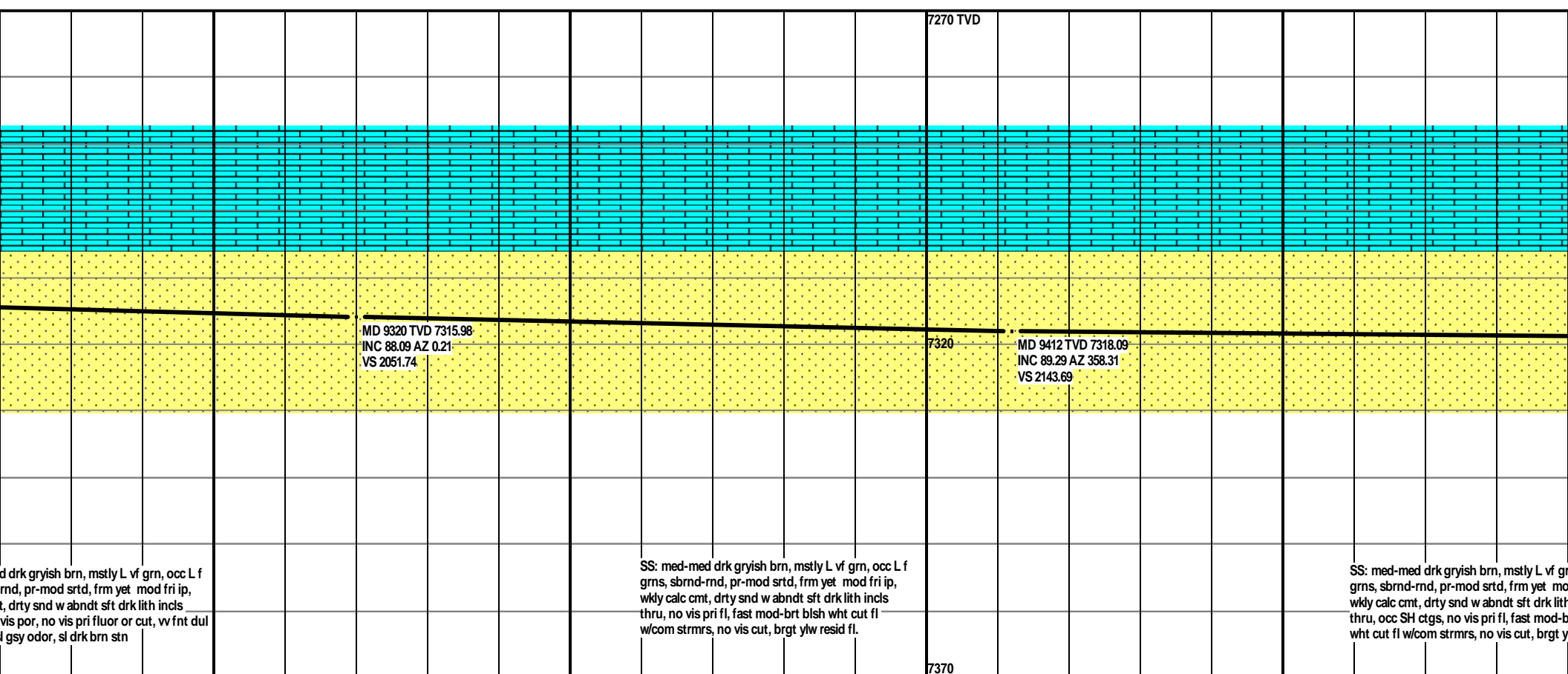
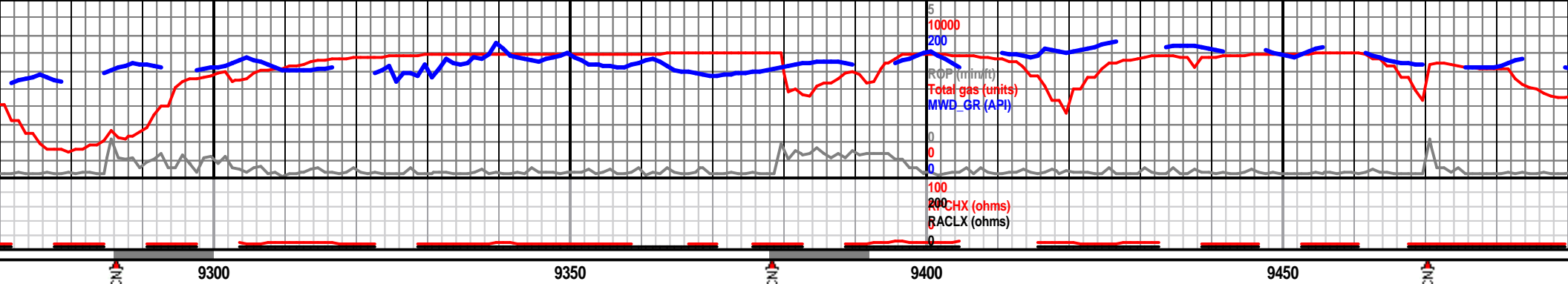








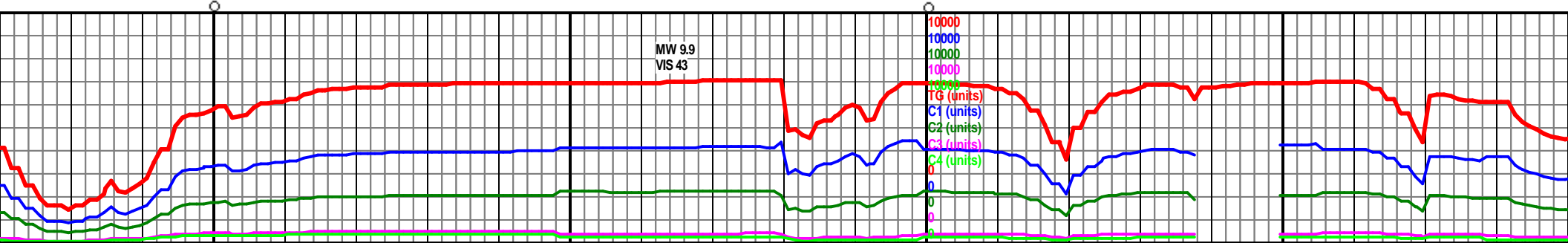




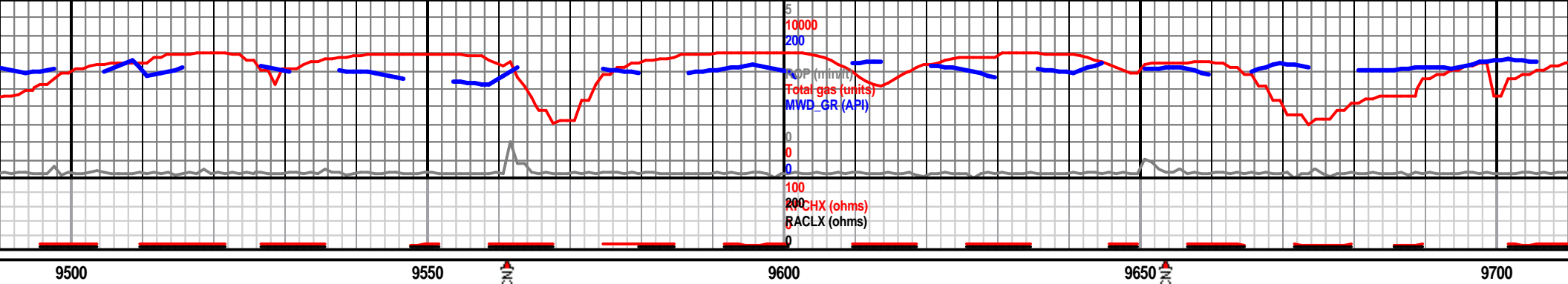
drk gryish brn, mstly L vf grn, occ L f  
rnd, pr-mod srted, frm yet mod fri ip,  
t, drty snd w abndt sft drk lith incl  
vis por, no vis pri fluor or cut, wv fnt dul  
l gsy odor, sl drk brn stn

SS: med-med drk gryish brn, mstly L vf grn, occ L f  
grns, sbnd-rnd, pr-mod srted, frm yet mod fri ip,  
wkly calc cmt, drty snd w abndt sft drk lith incl  
thru, no vis pri fl, fast mod-brt blsh wht cut fl  
w/com strmr, no vis cut, brgt ylw resid fl.

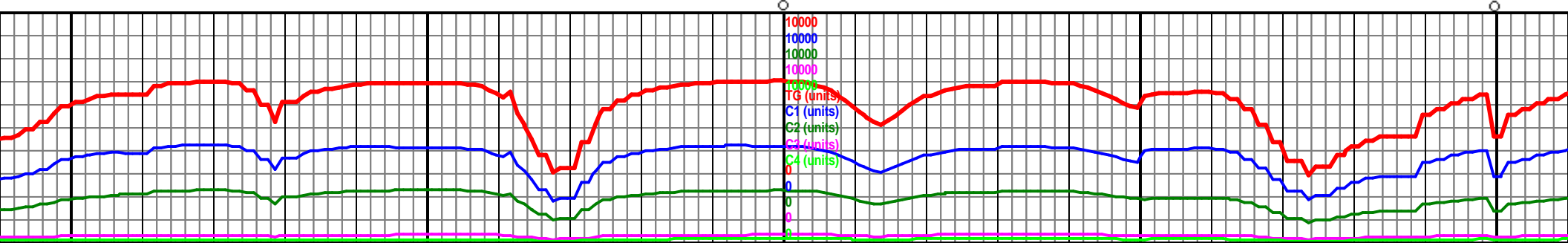
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thru, occ SH ctgs, no vis pri fl, fast mod-b  
wht cut fl w/com strmr, no vis cut, brgt y

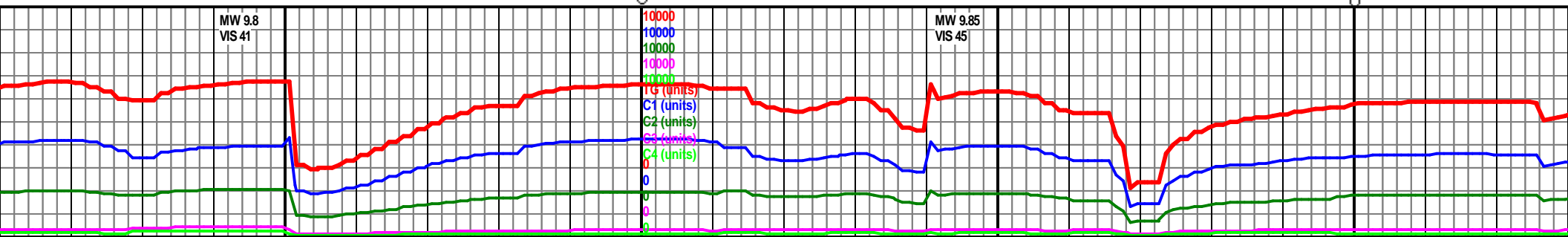
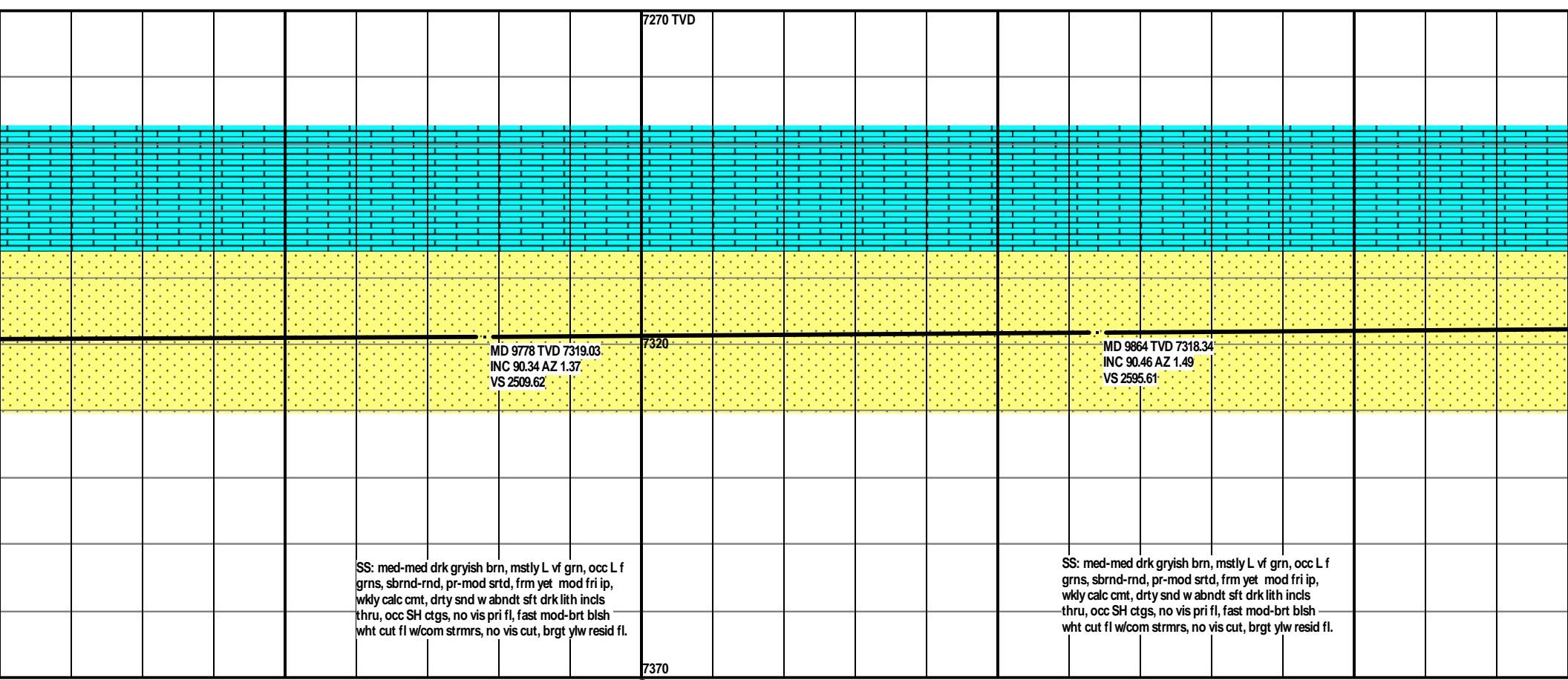
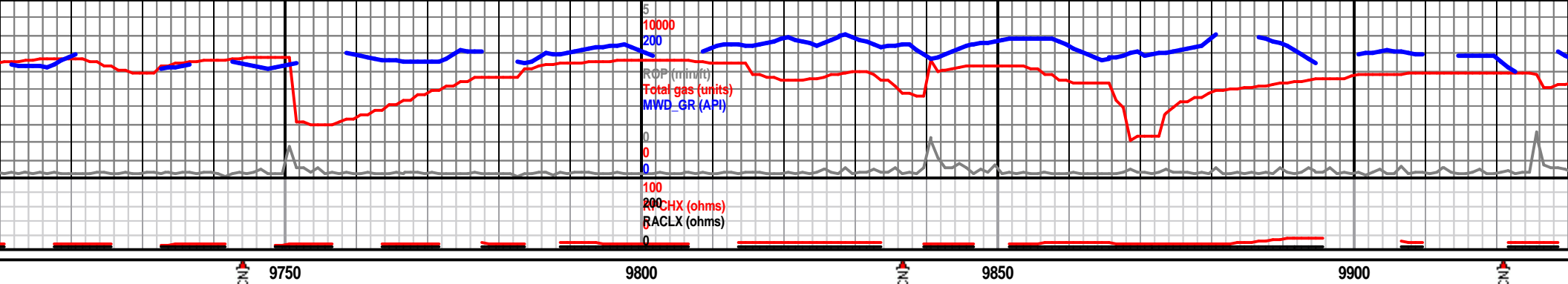


MW 9.9  
VIS 43

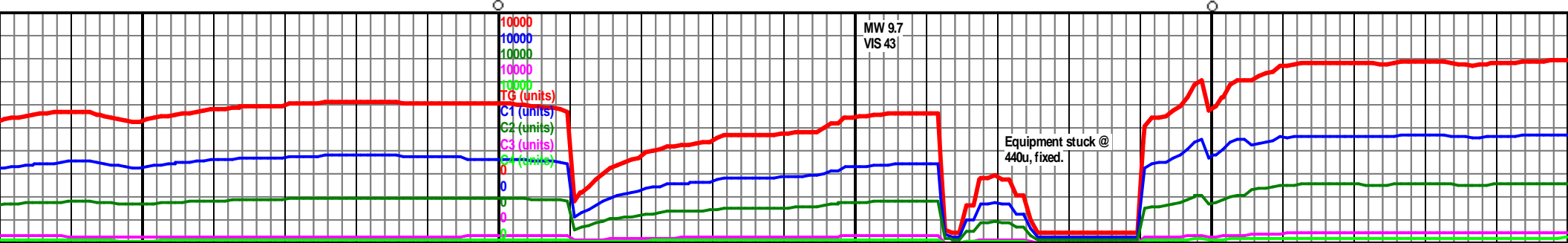
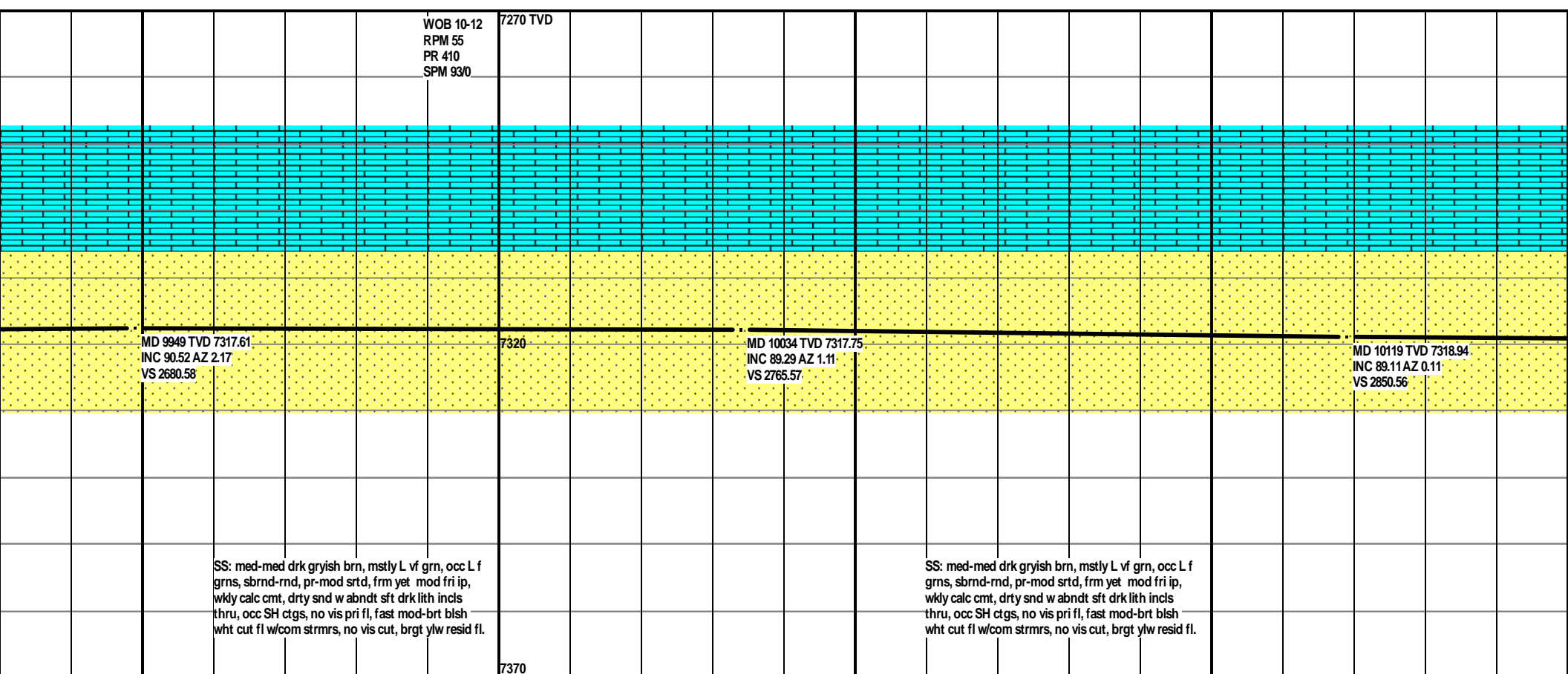
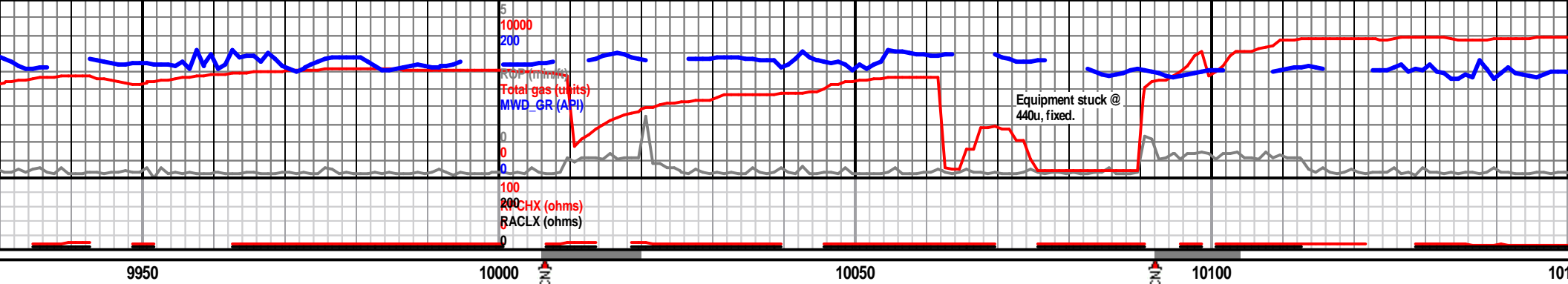


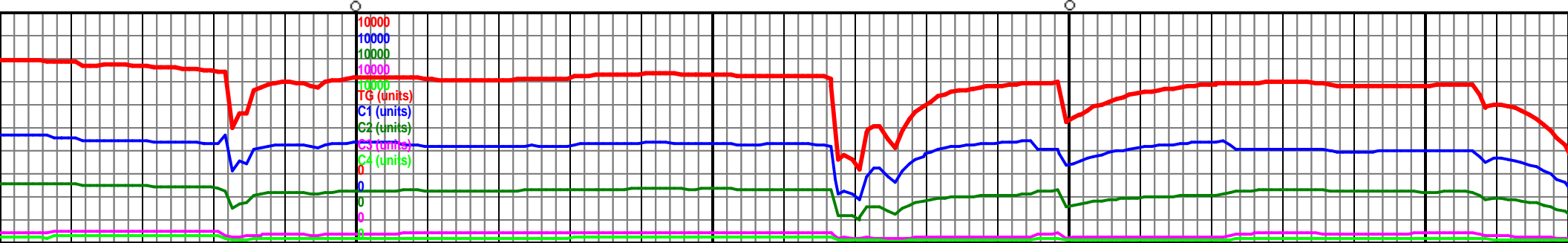
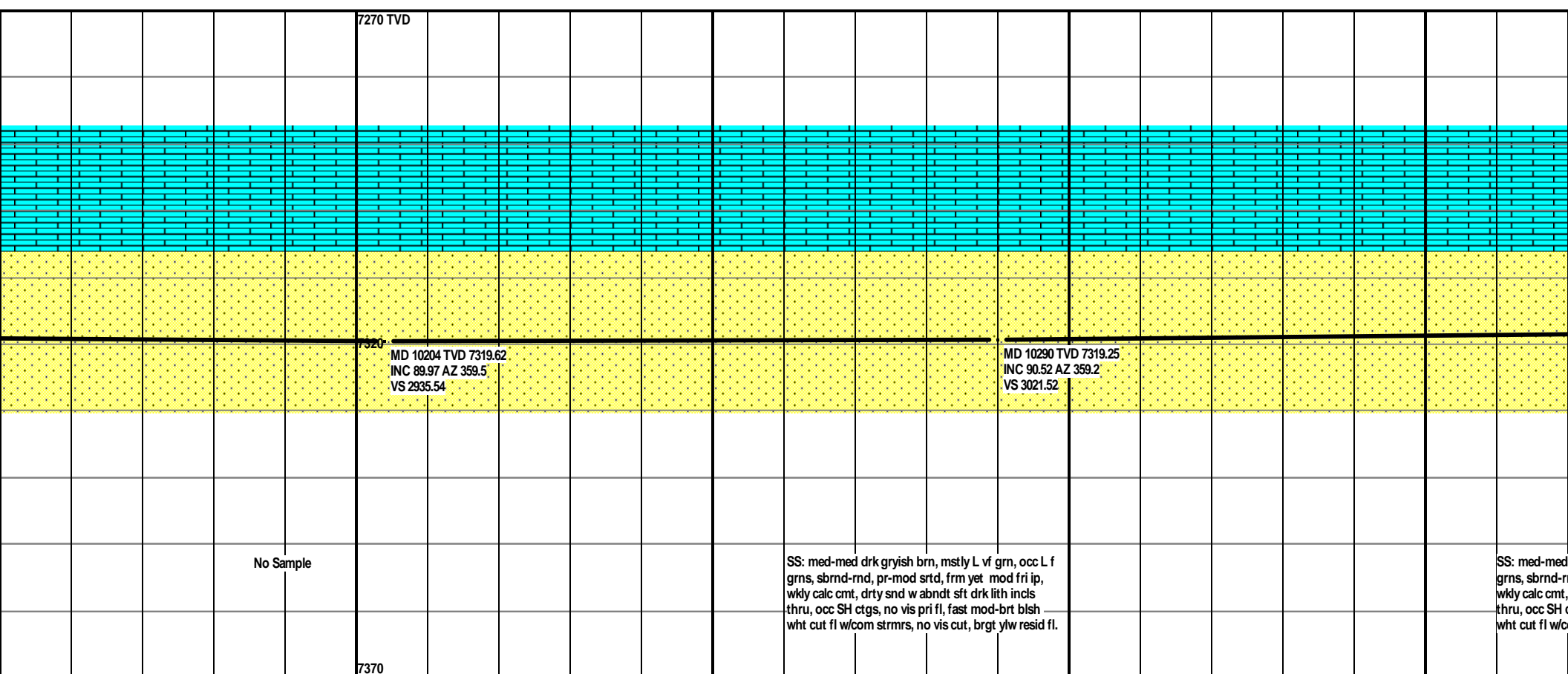
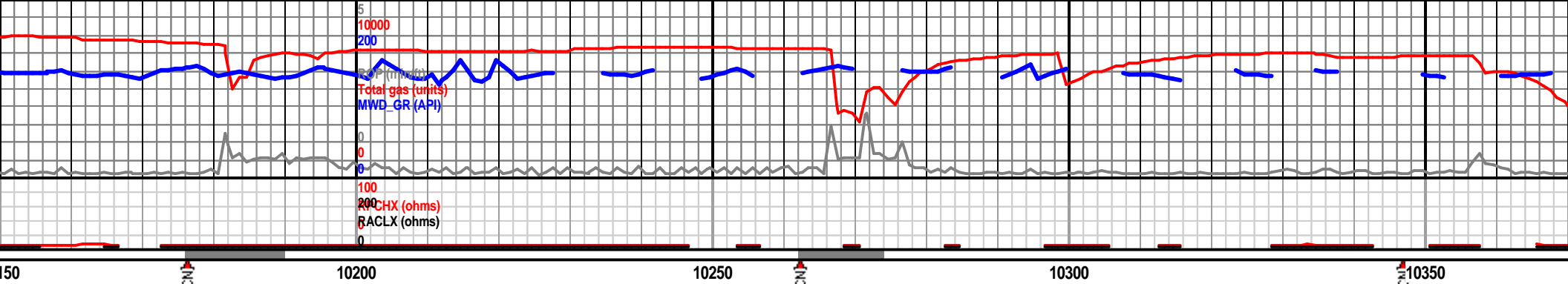
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	MD 9504 TVD 7319.03 INC 89.54 AZ 359.39 VS 2235.64	MD 9596 TVD 7319.47 INC 89.91 AZ 359.57 VS 2327.63	MD 9687 TVD 7319.42 INC 90.15 AZ 0.17 VS 2418.62	
n, occ L f d fri ip, n incl rt blsh w resid fl.	SS: med-med drk gryish brn, mstly L vf grn, occ L f grns, sbnd-rnd, pr-mod srted, frm yet mod fri ip, wkly calc cmt, drty snd w abndt sft drk lith incl thru, occ SH ctgs, no vis pri fl, fast mod-brt blsh wht cut fl w/com strrms, no vis cut, brgt ylw resid fl.	7370	SS: med-med drk gryish brn, mstly L vf grn, occ L f grns, sbnd-rnd, pr-mod srted, frm yet mod fri ip, wkly calc cmt, drty snd w abndt sft drk lith incl thru, no vis pri fl, fast mod-brt blsh wht cut fl w/com strrms, no vis cut, brgt ylw resid fl.	

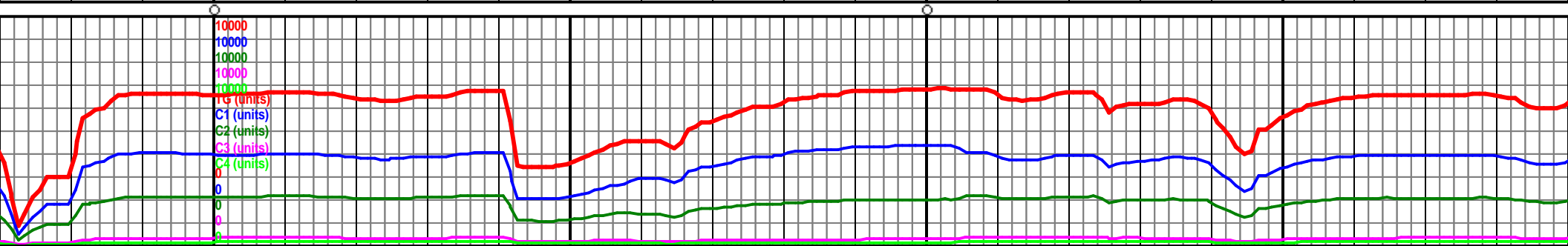
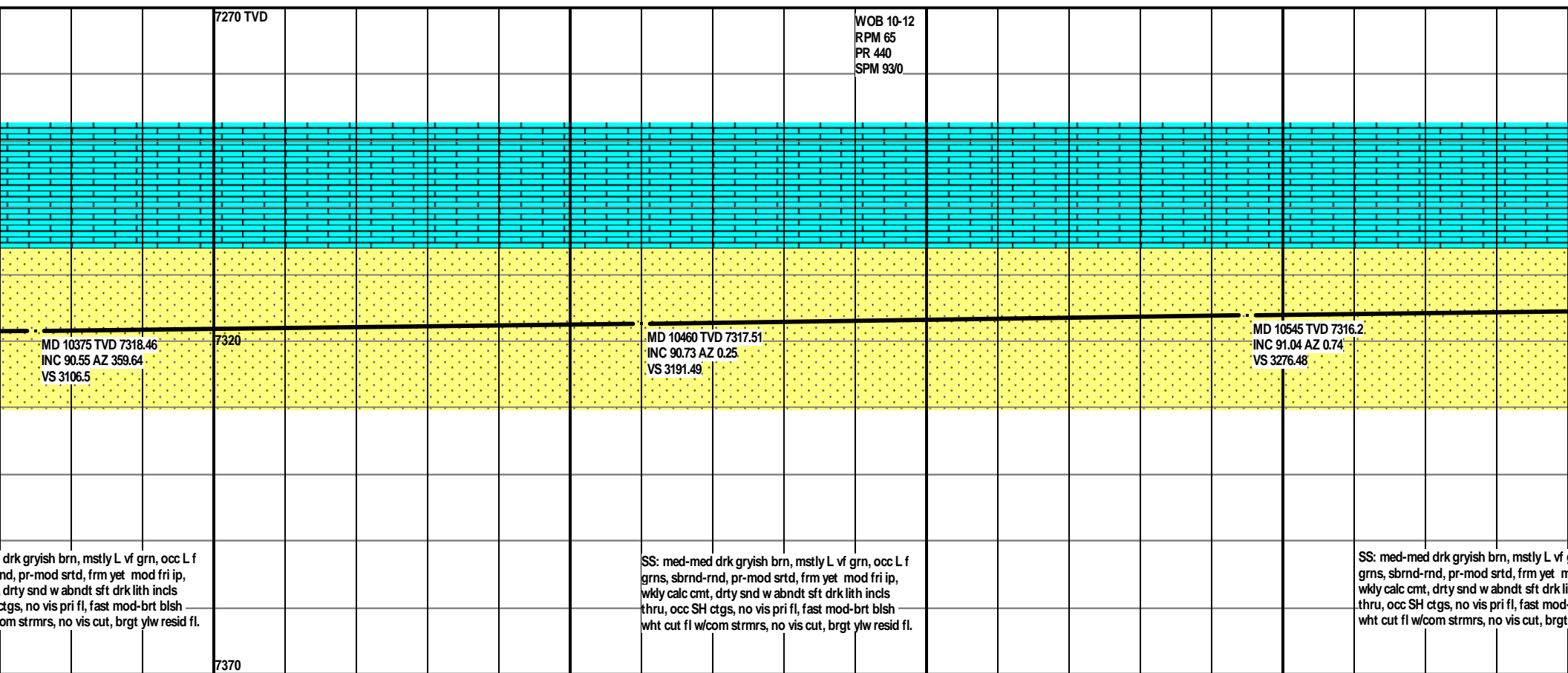
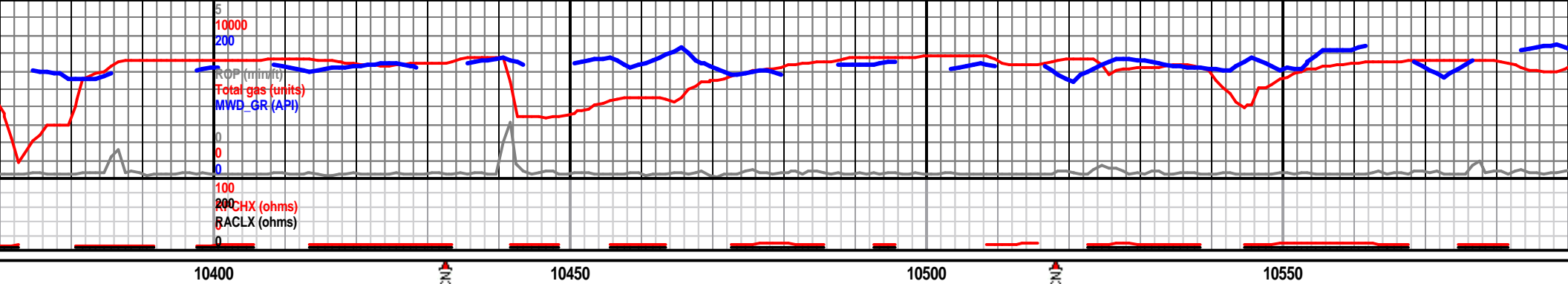


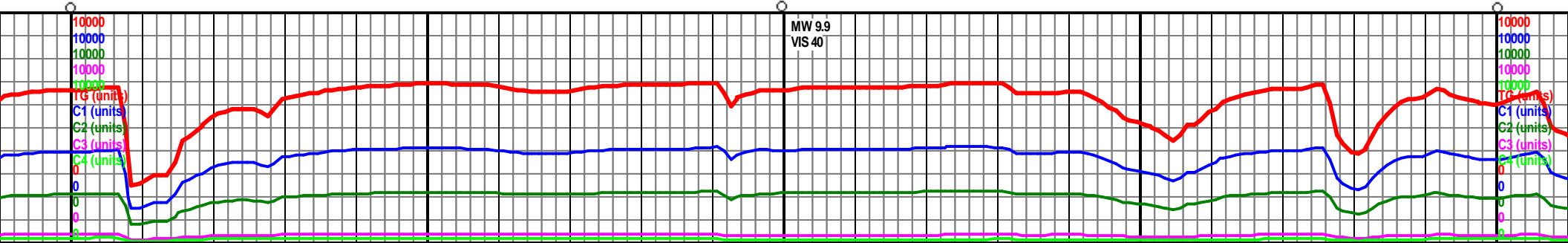
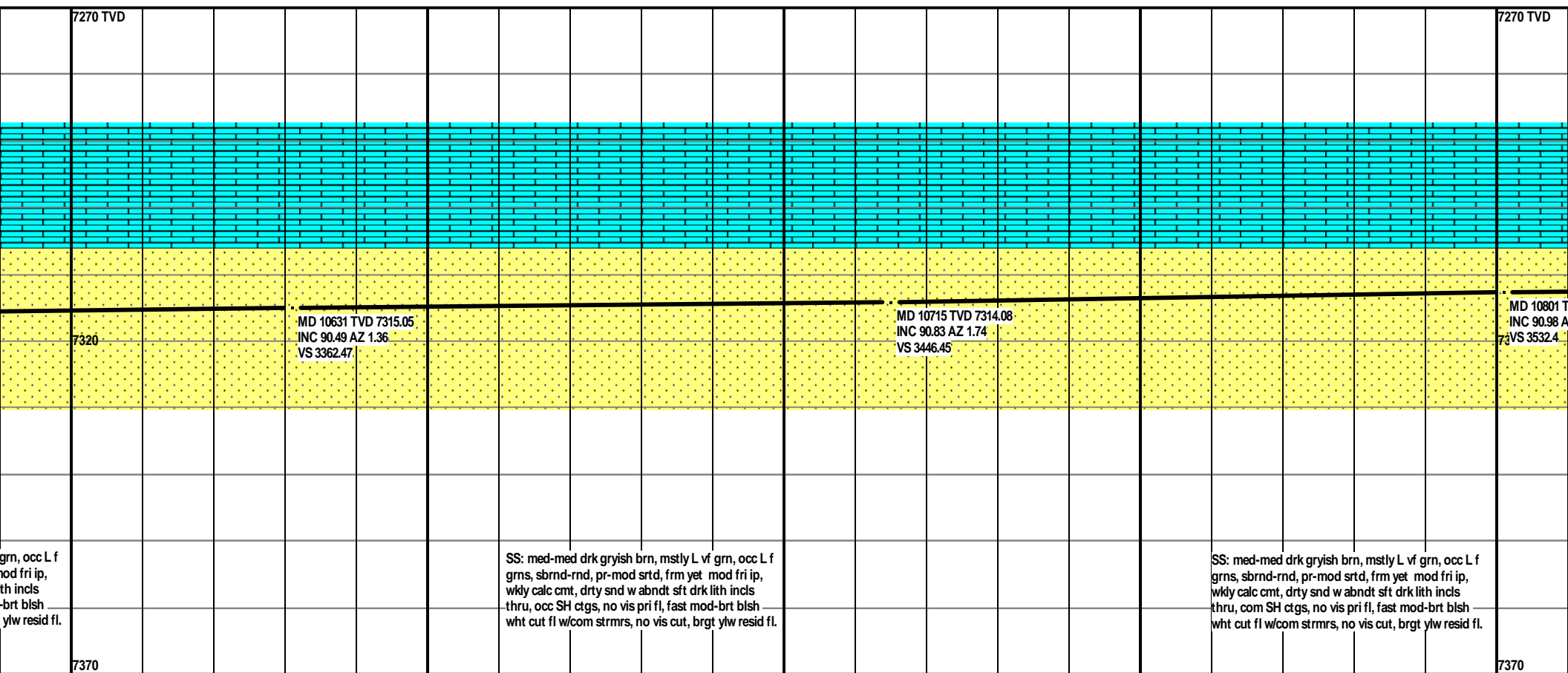
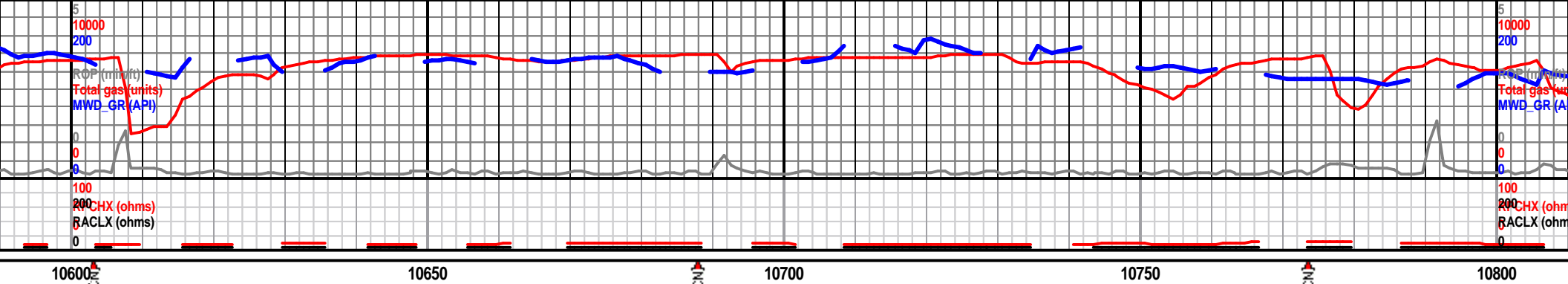


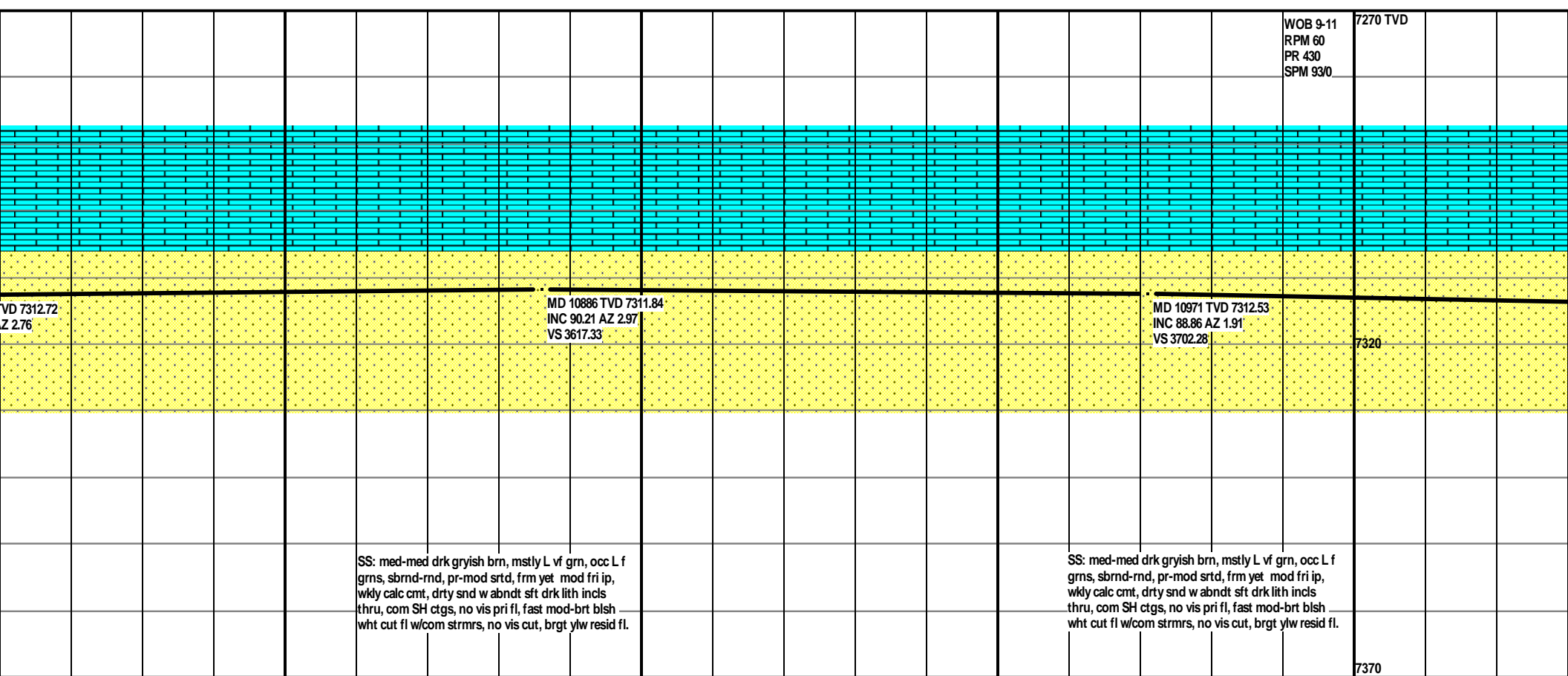


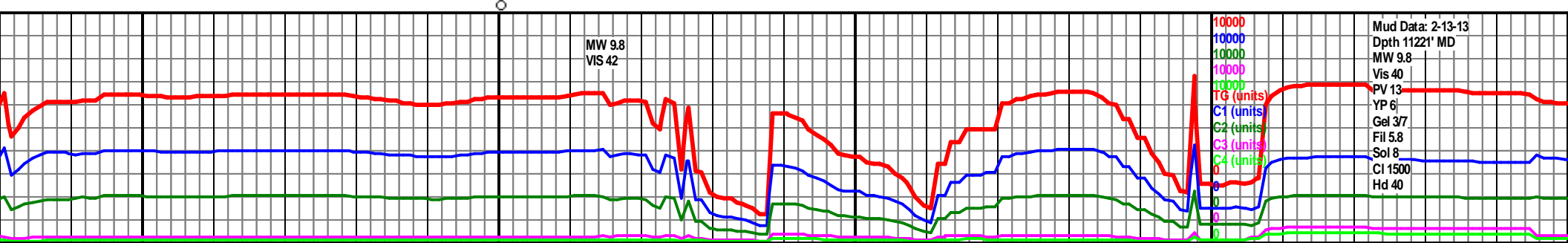
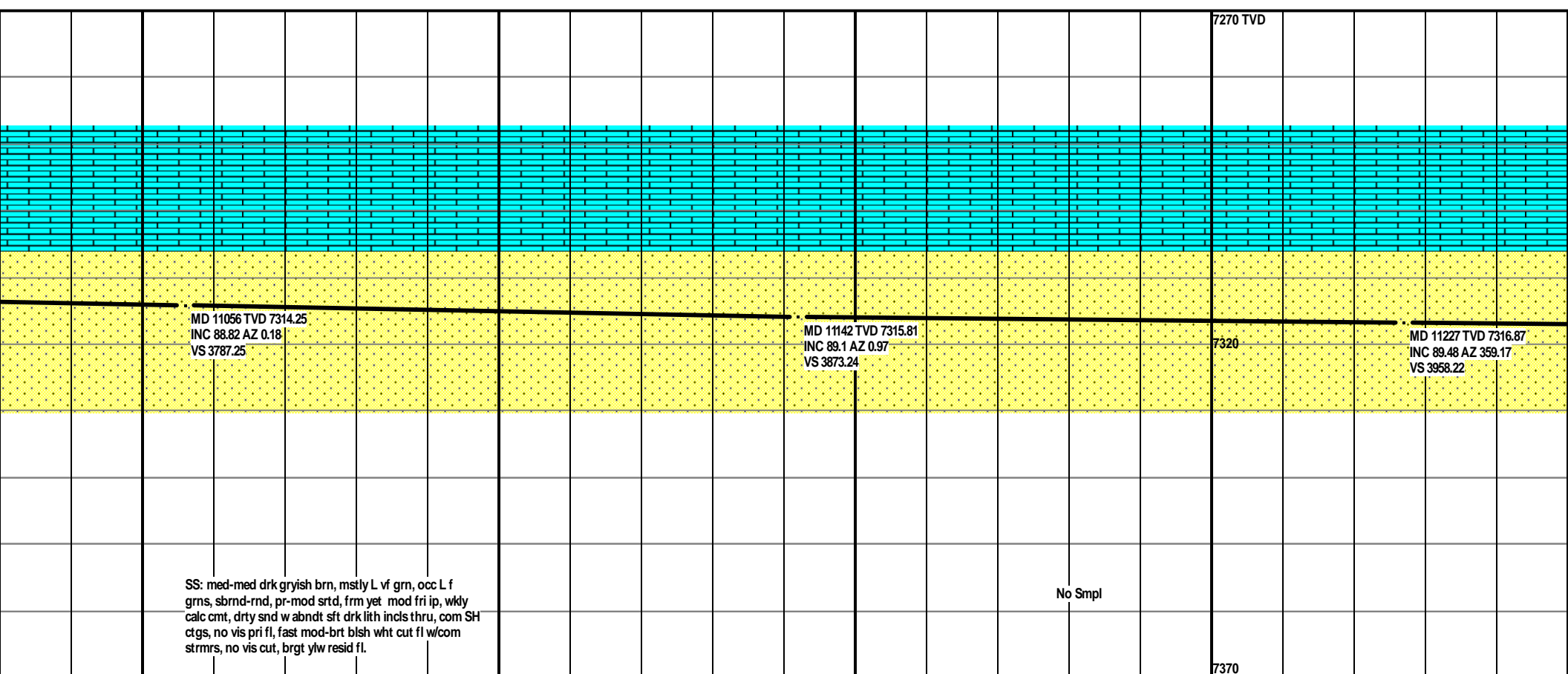
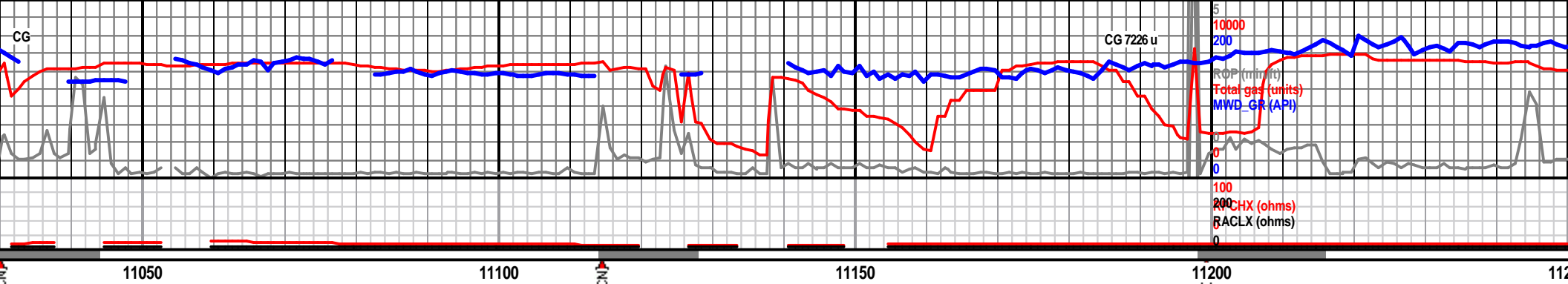


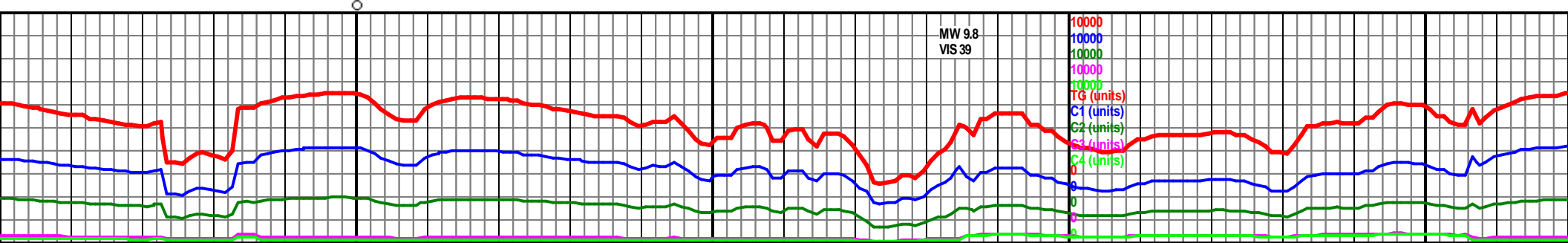
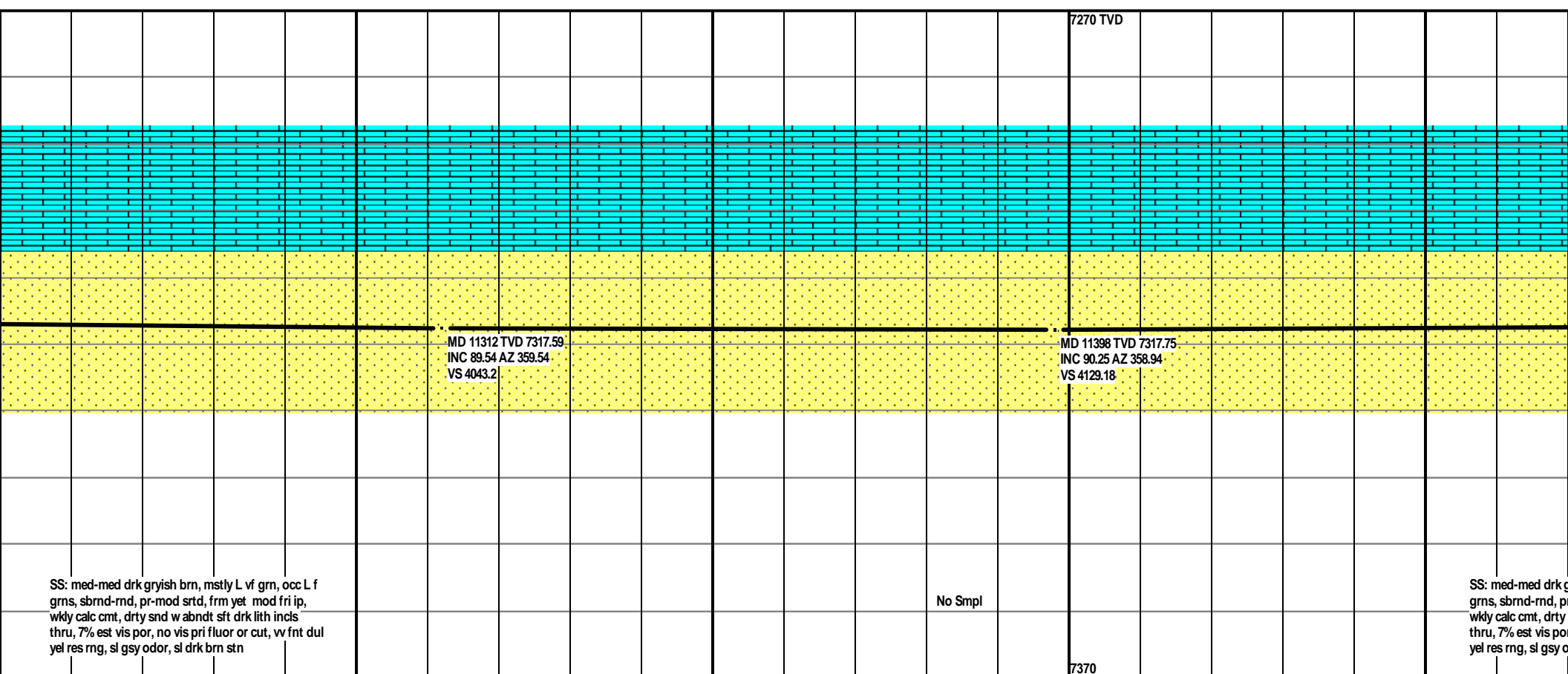
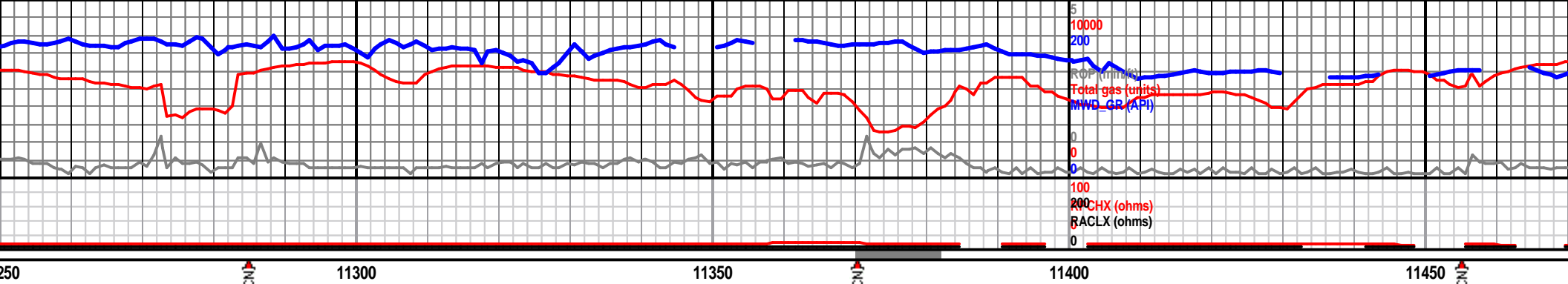


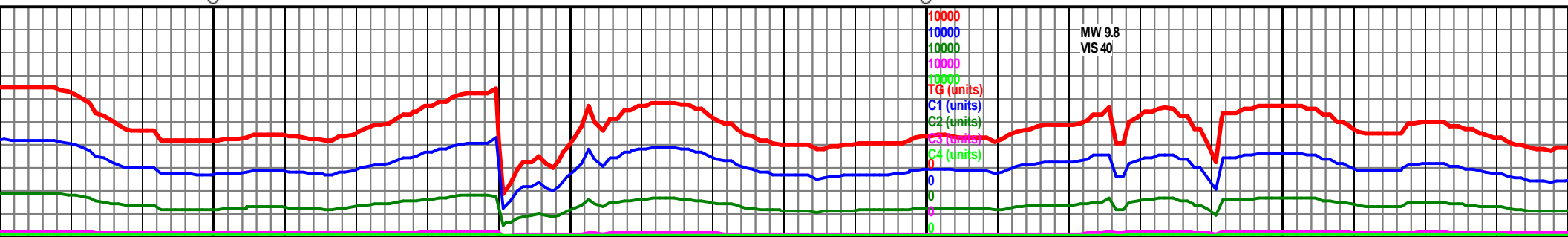
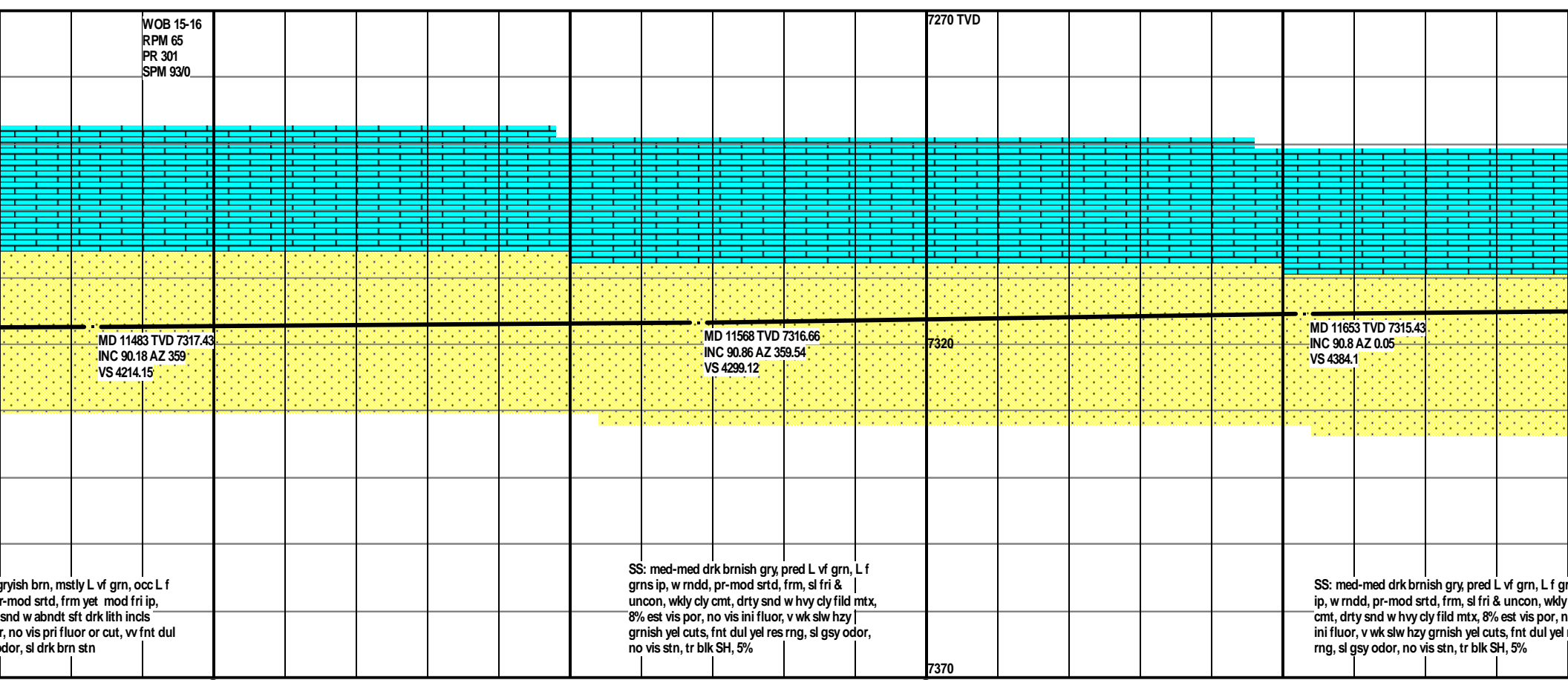
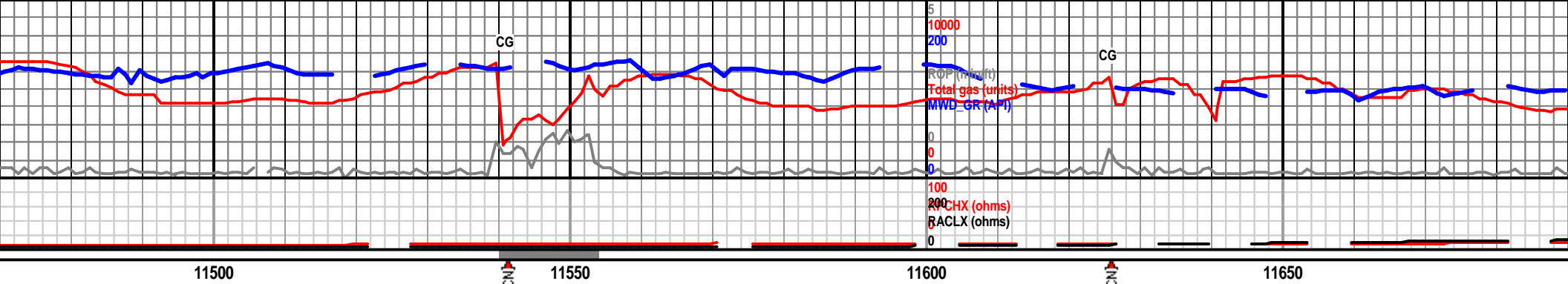




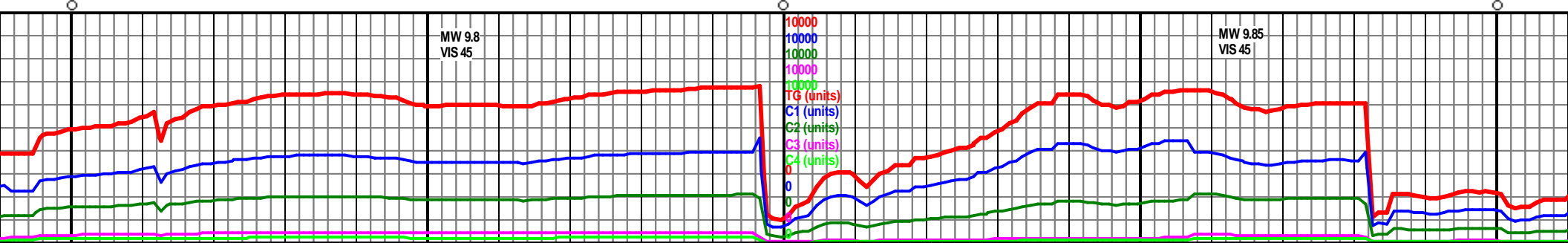
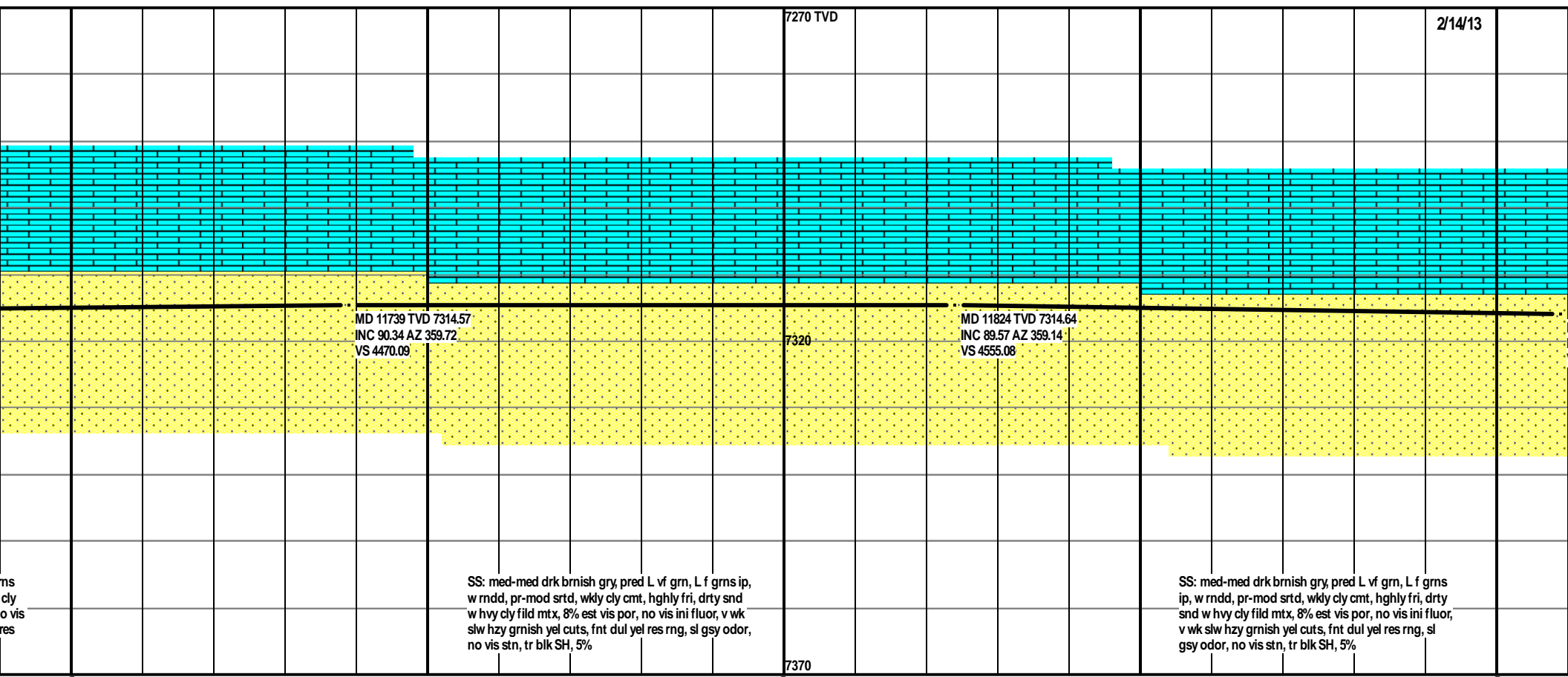
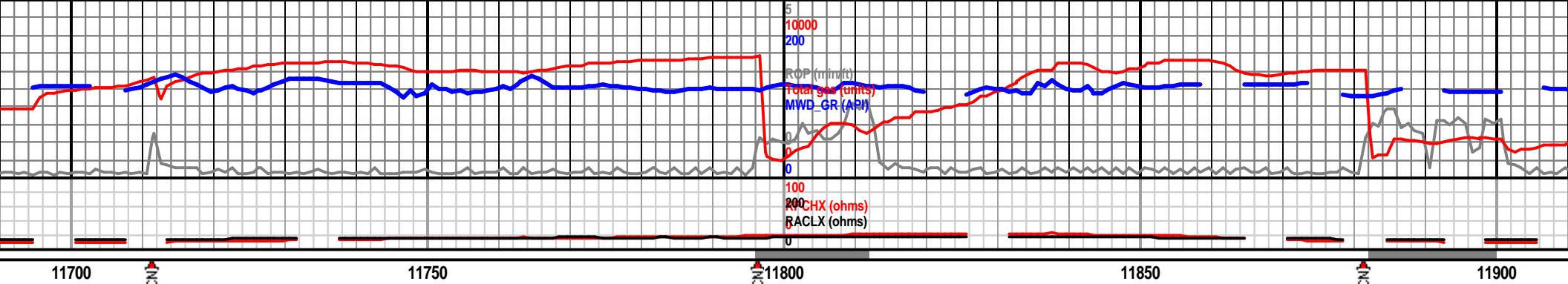


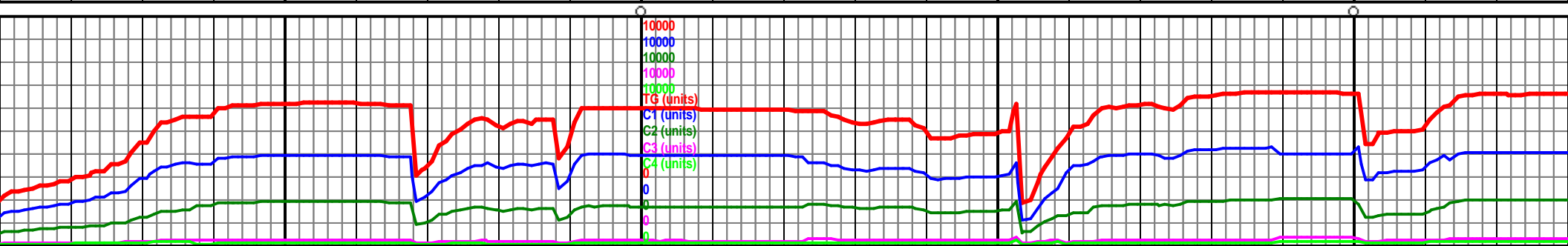
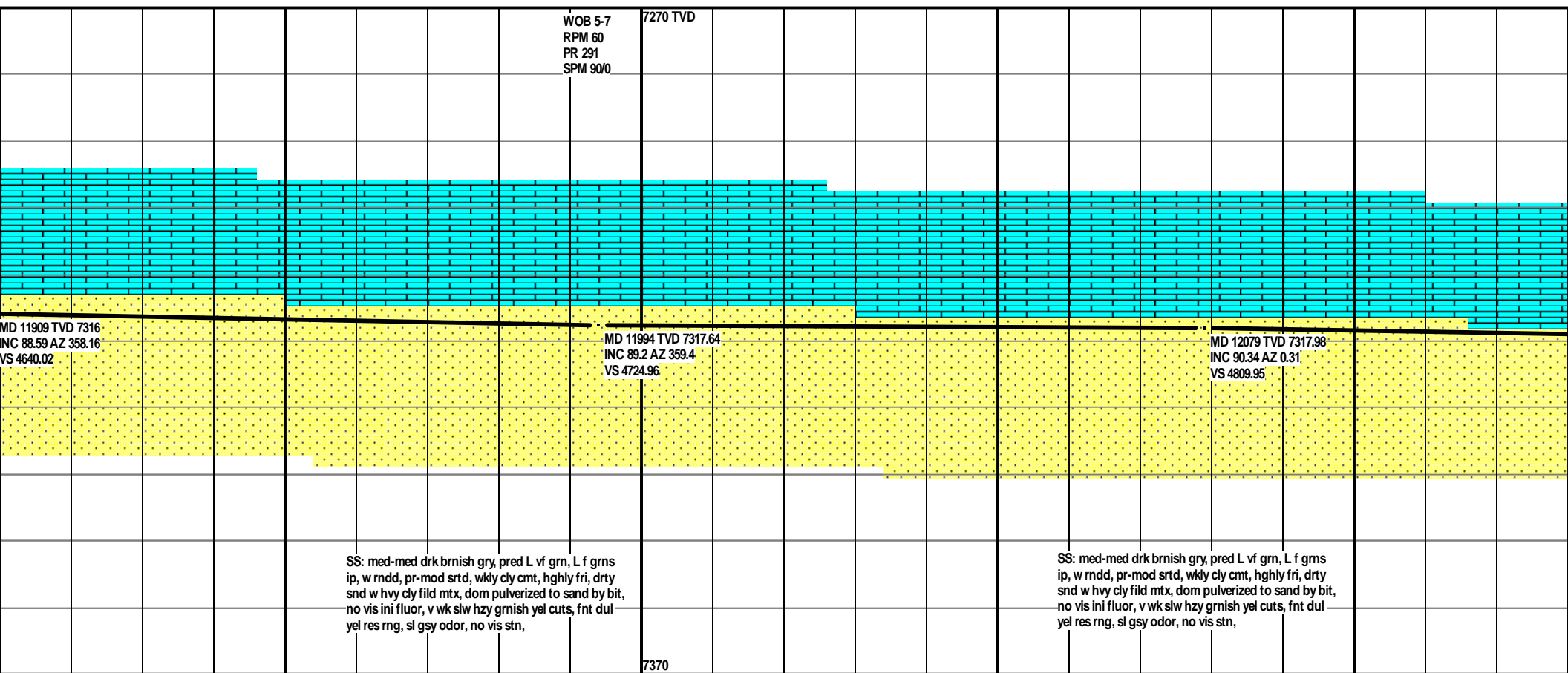
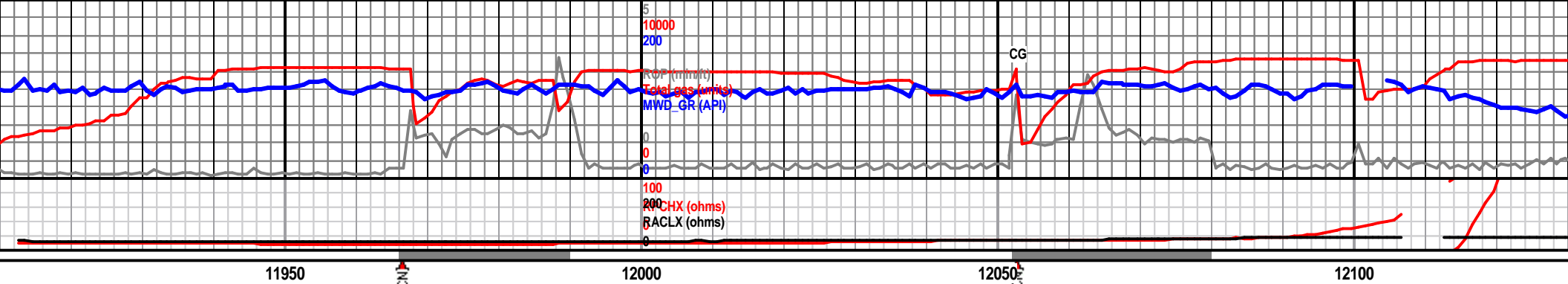


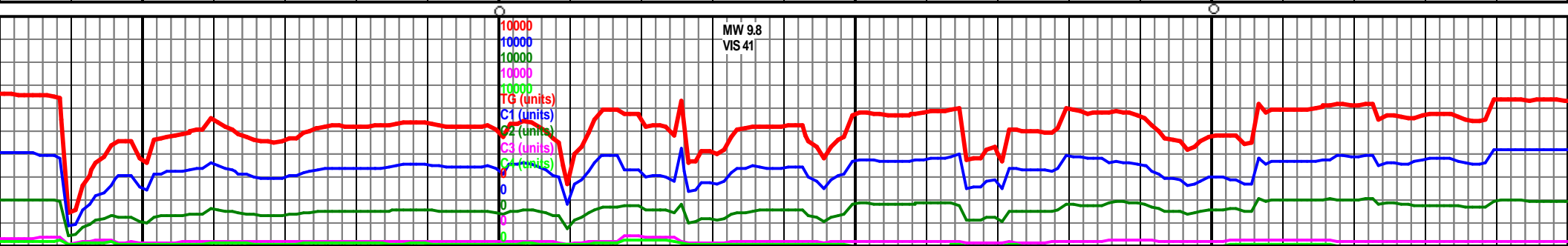
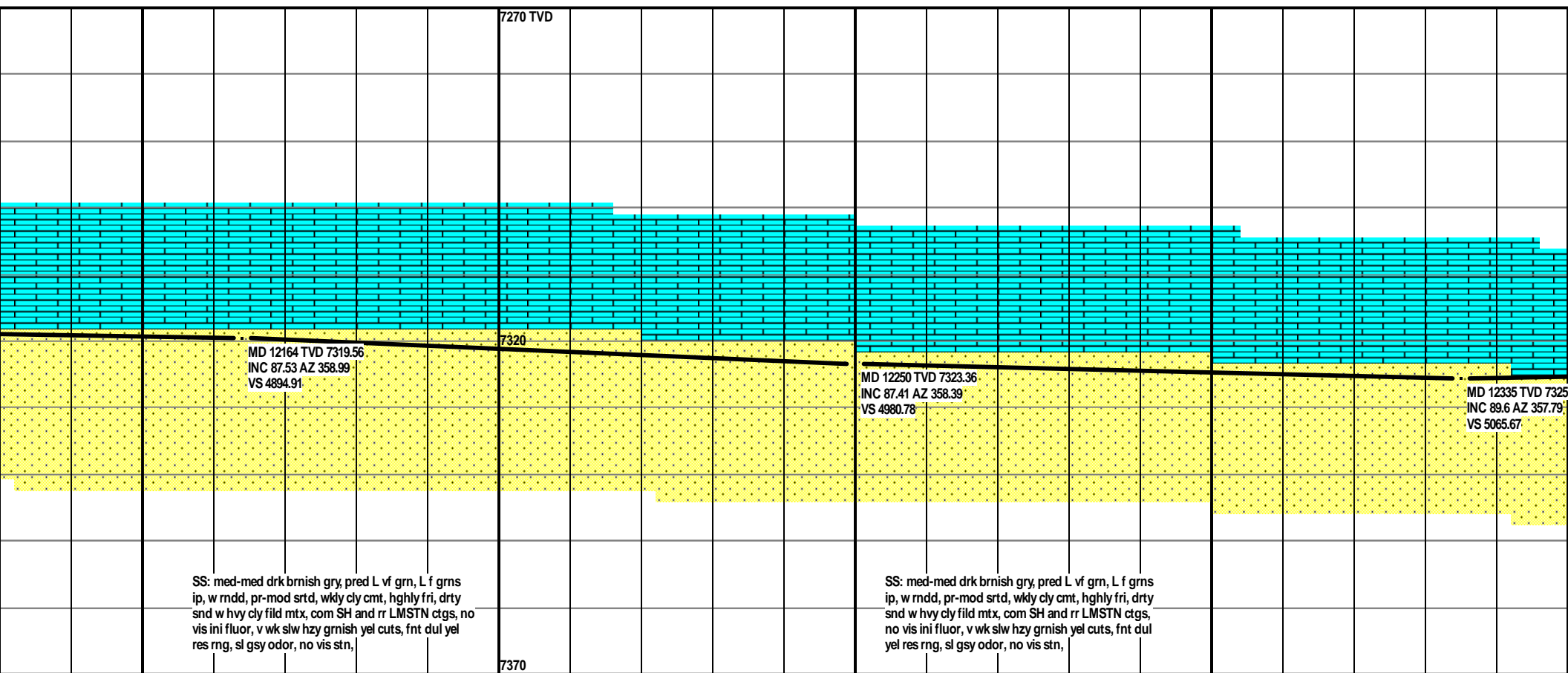
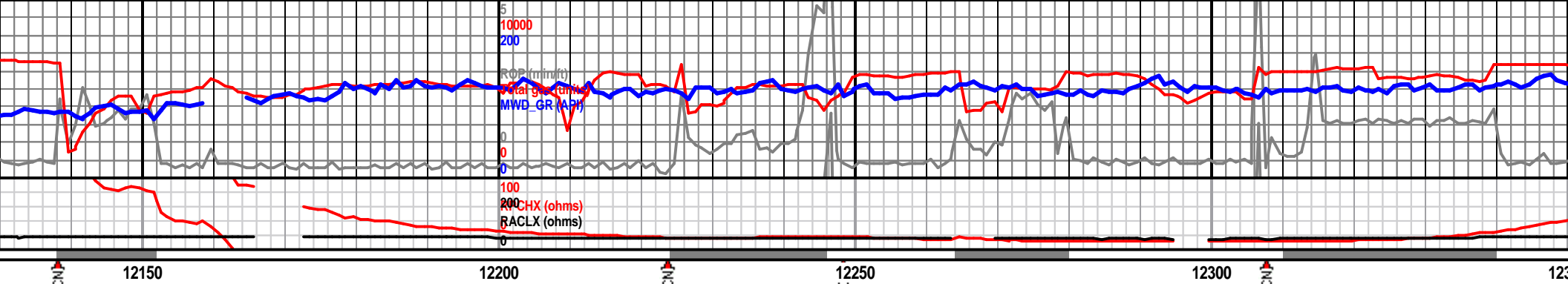


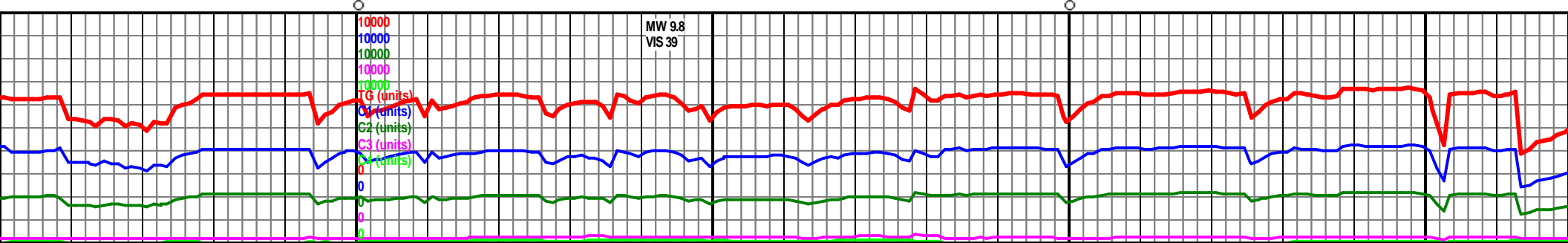
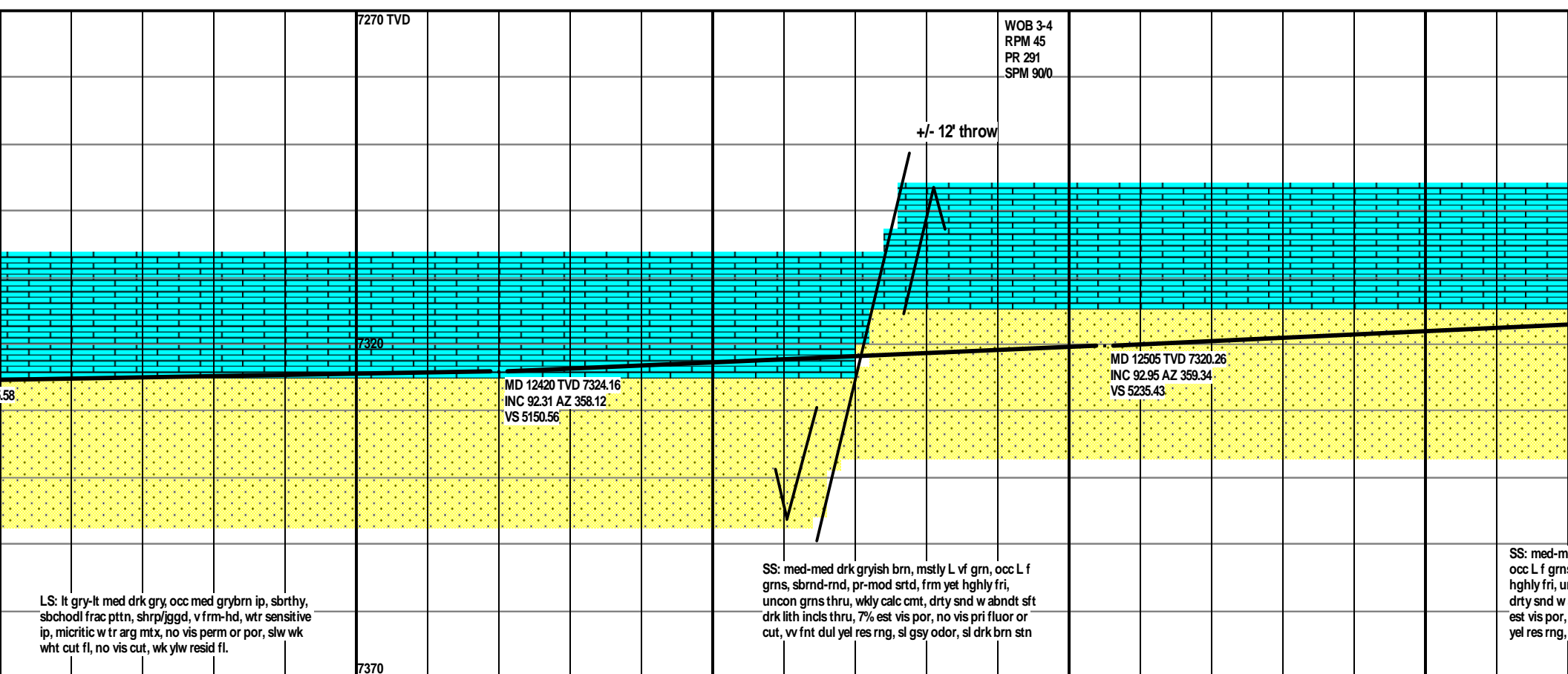
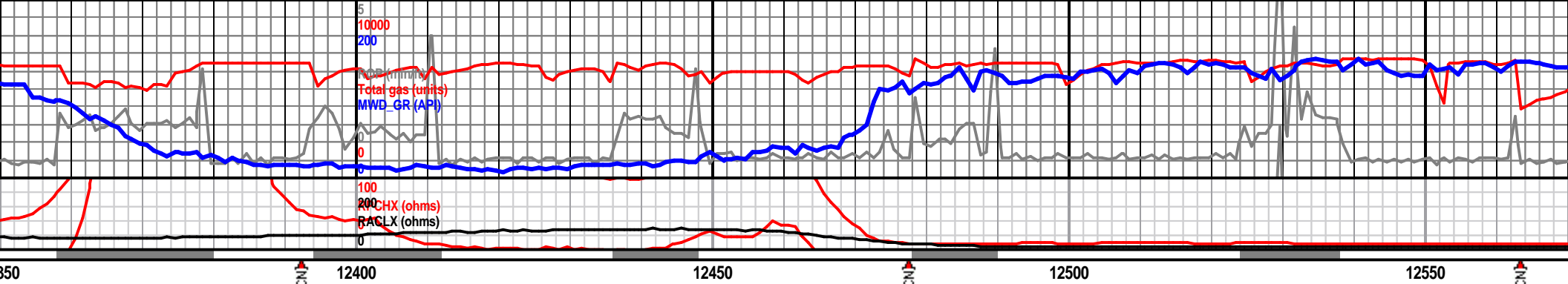




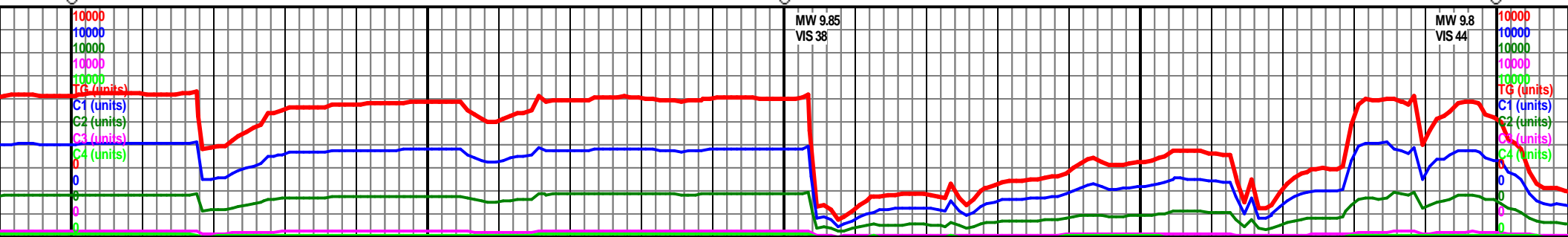
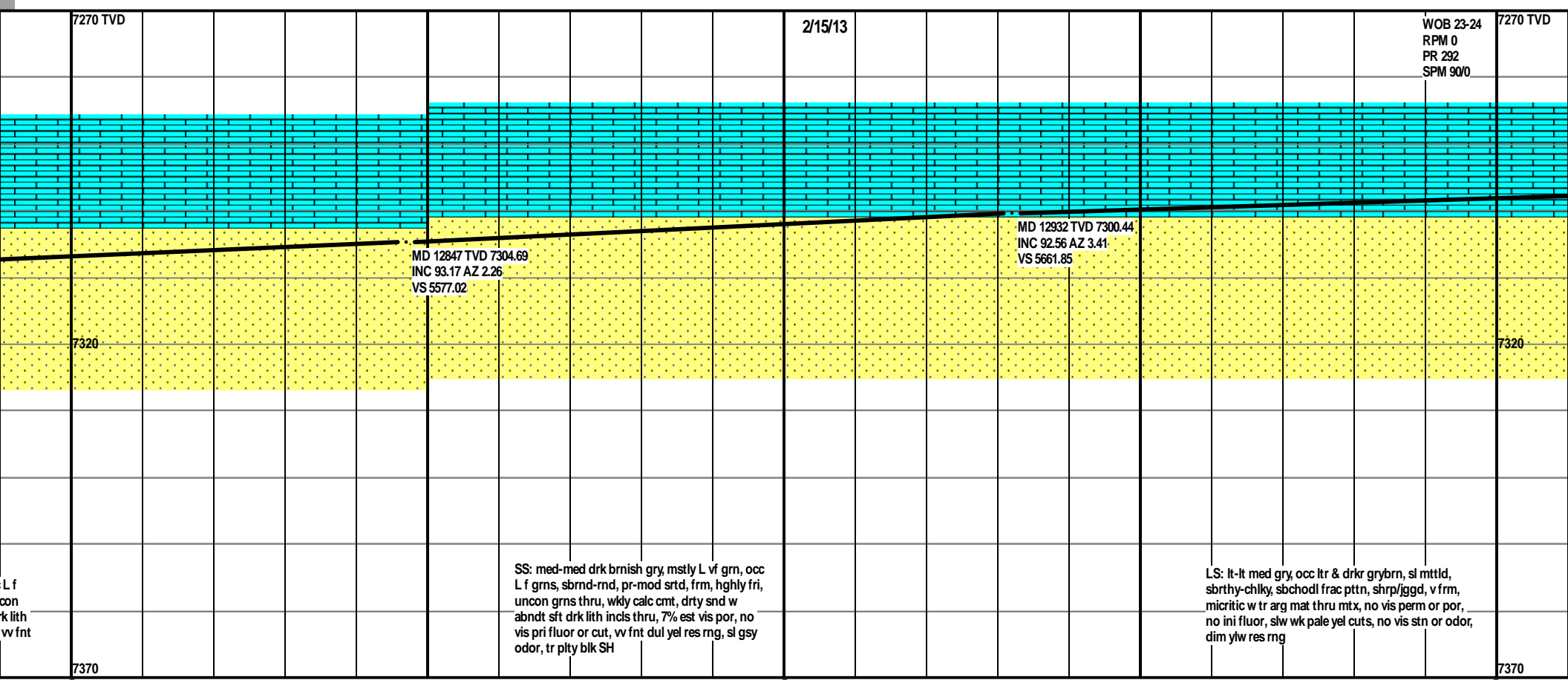
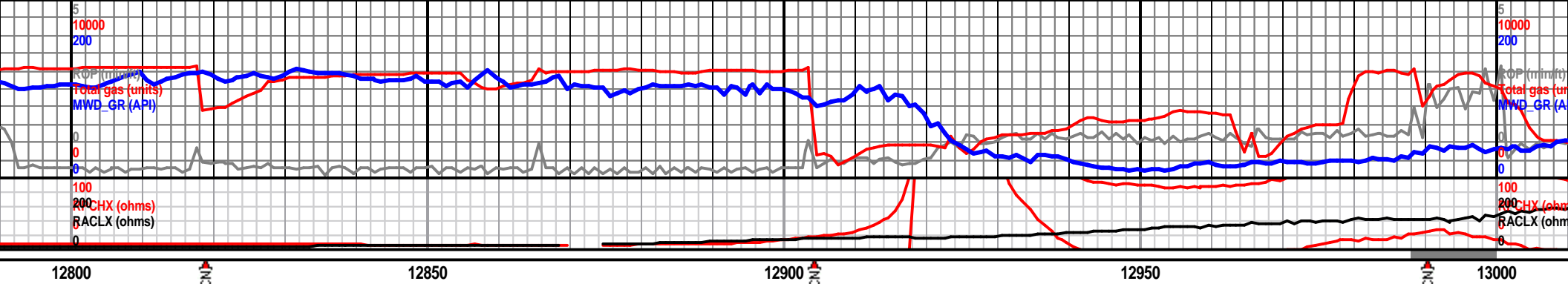


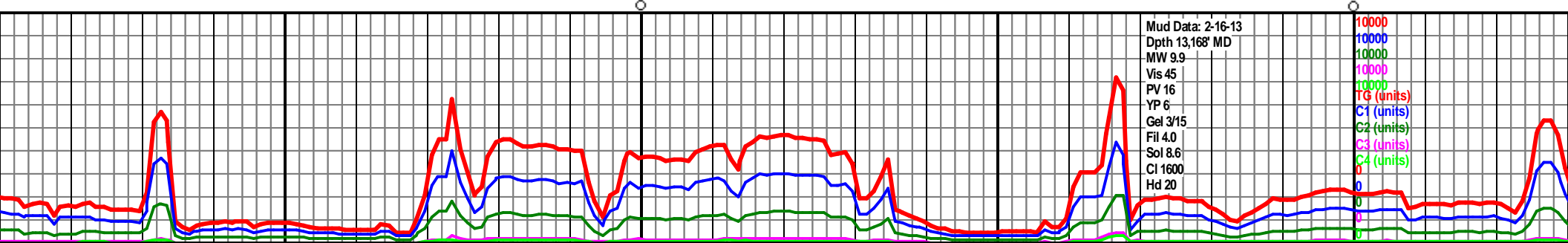
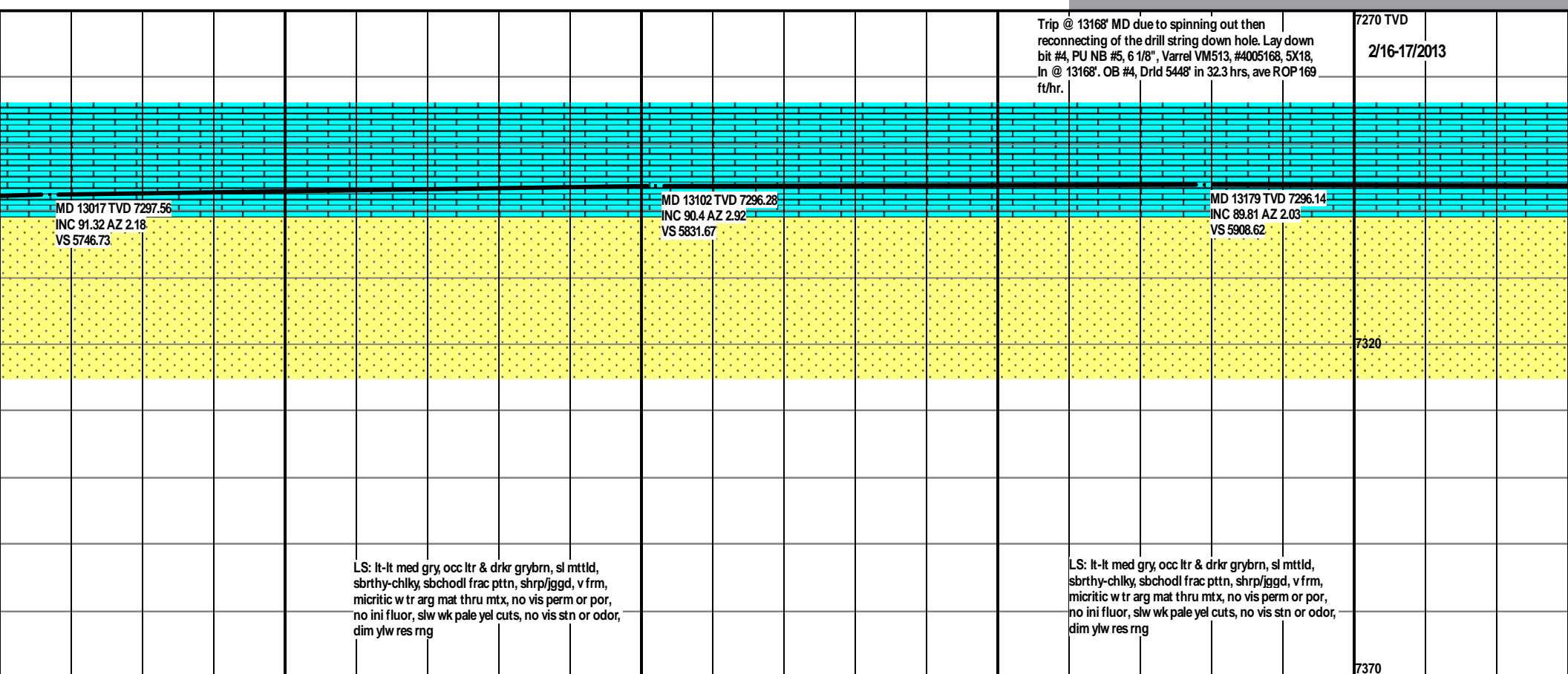
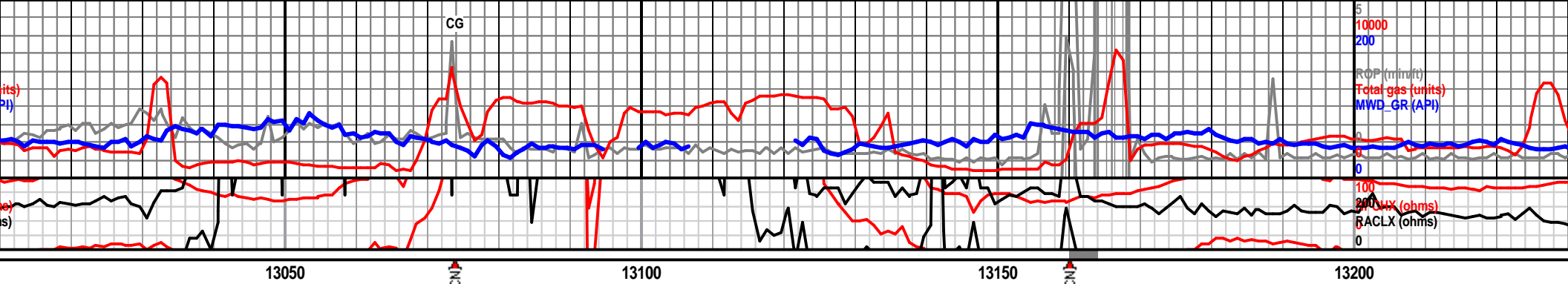


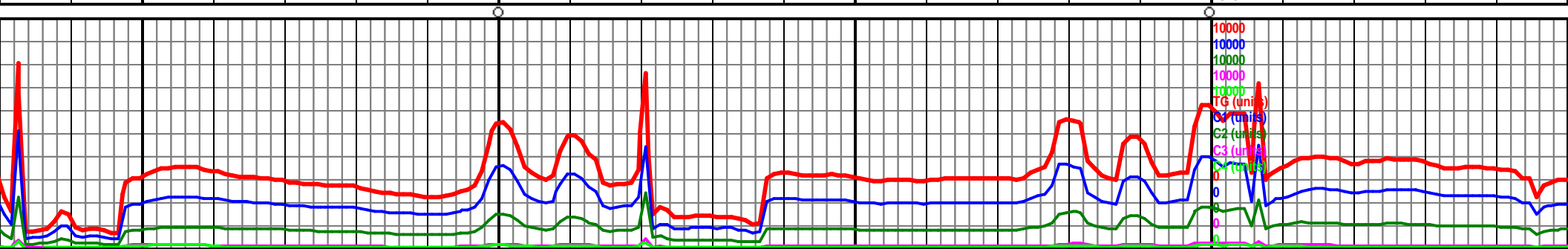
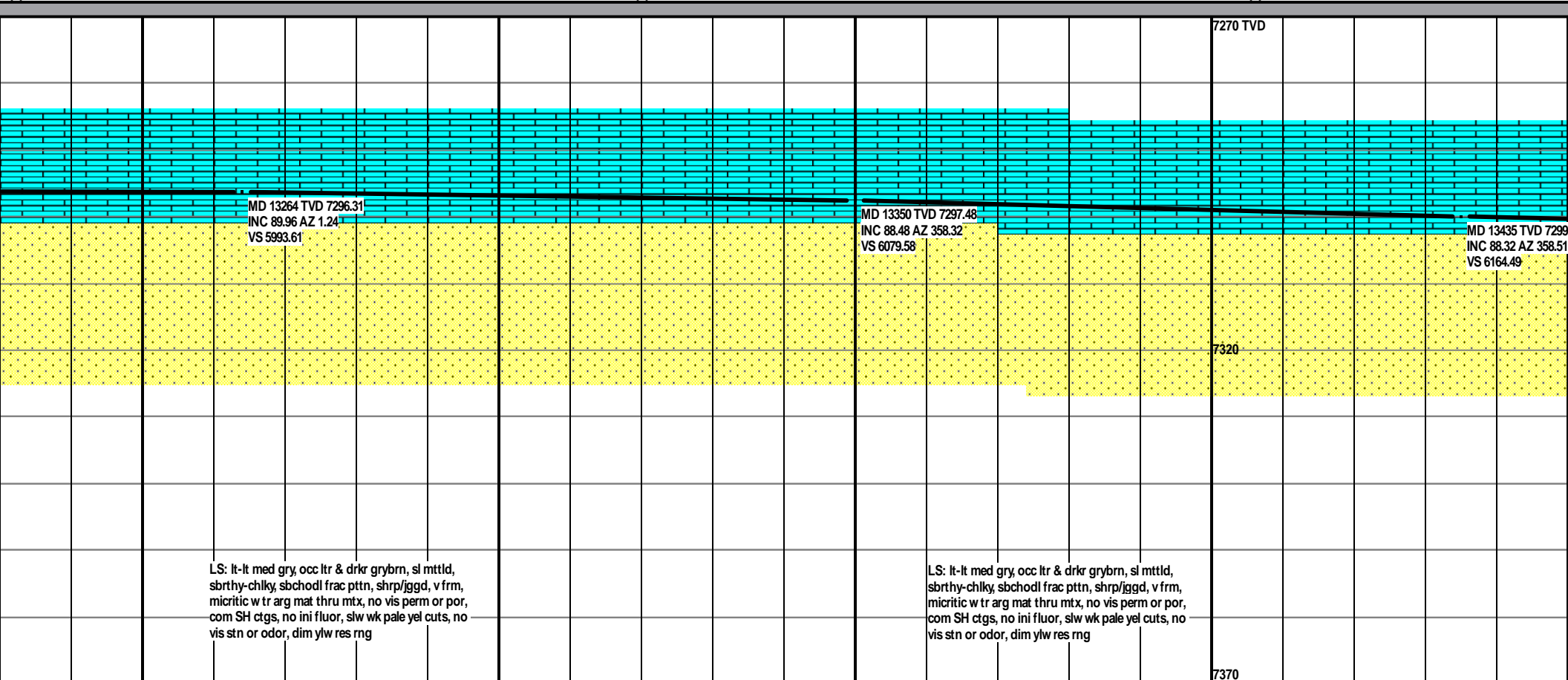
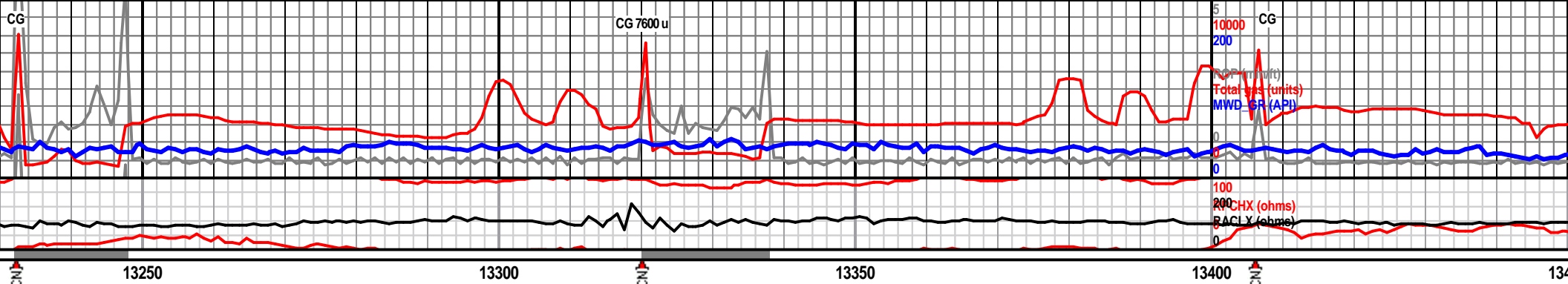




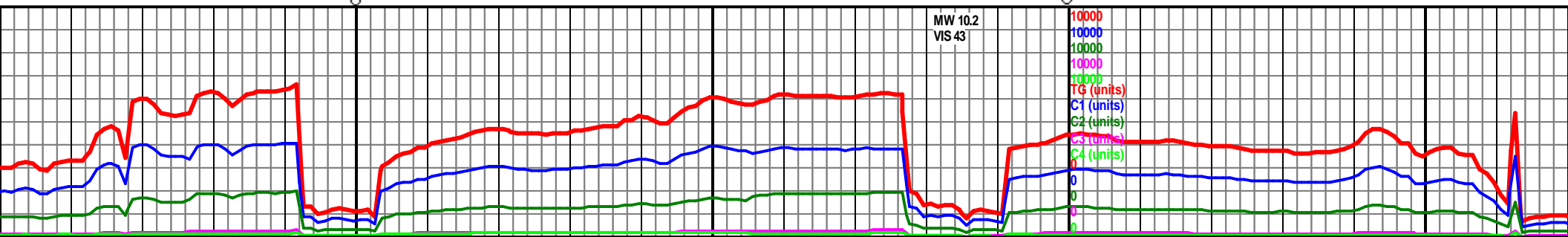
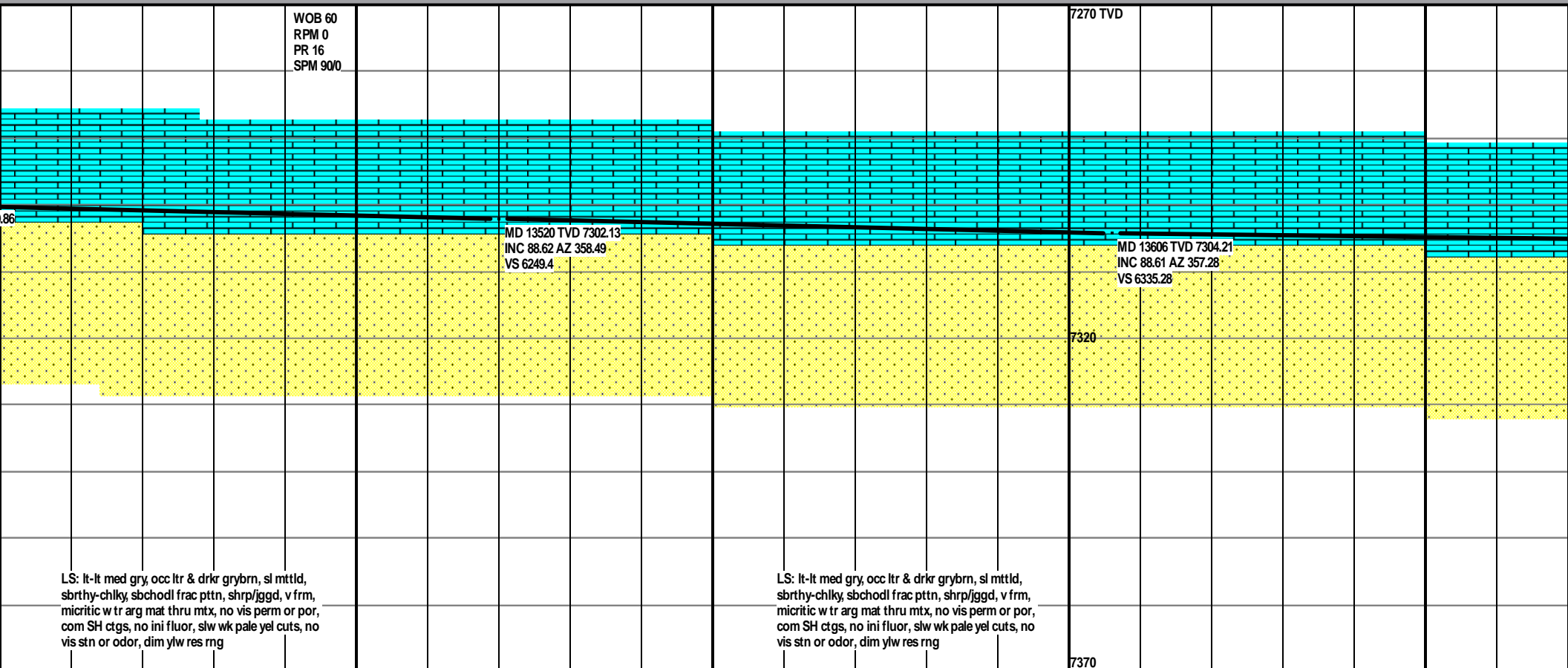
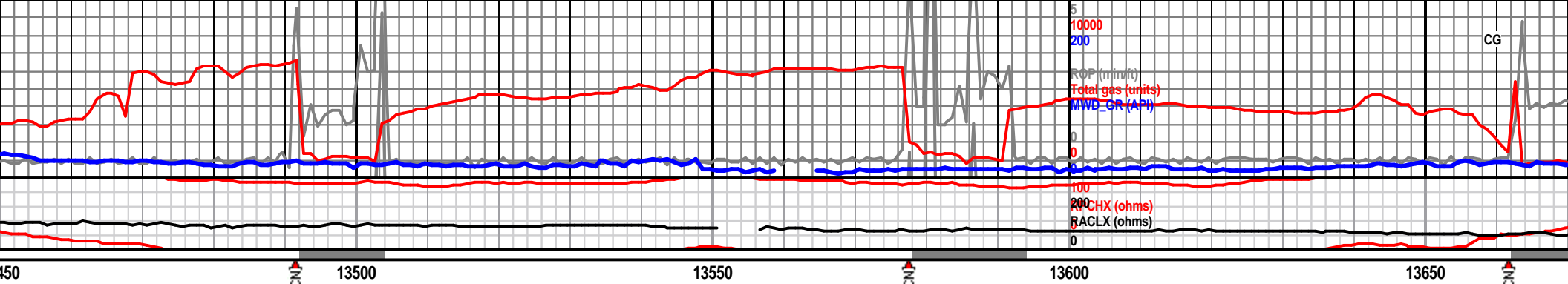


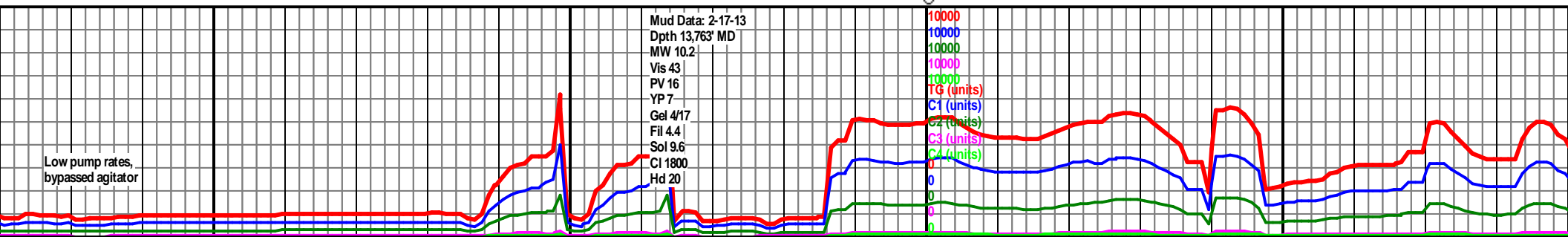
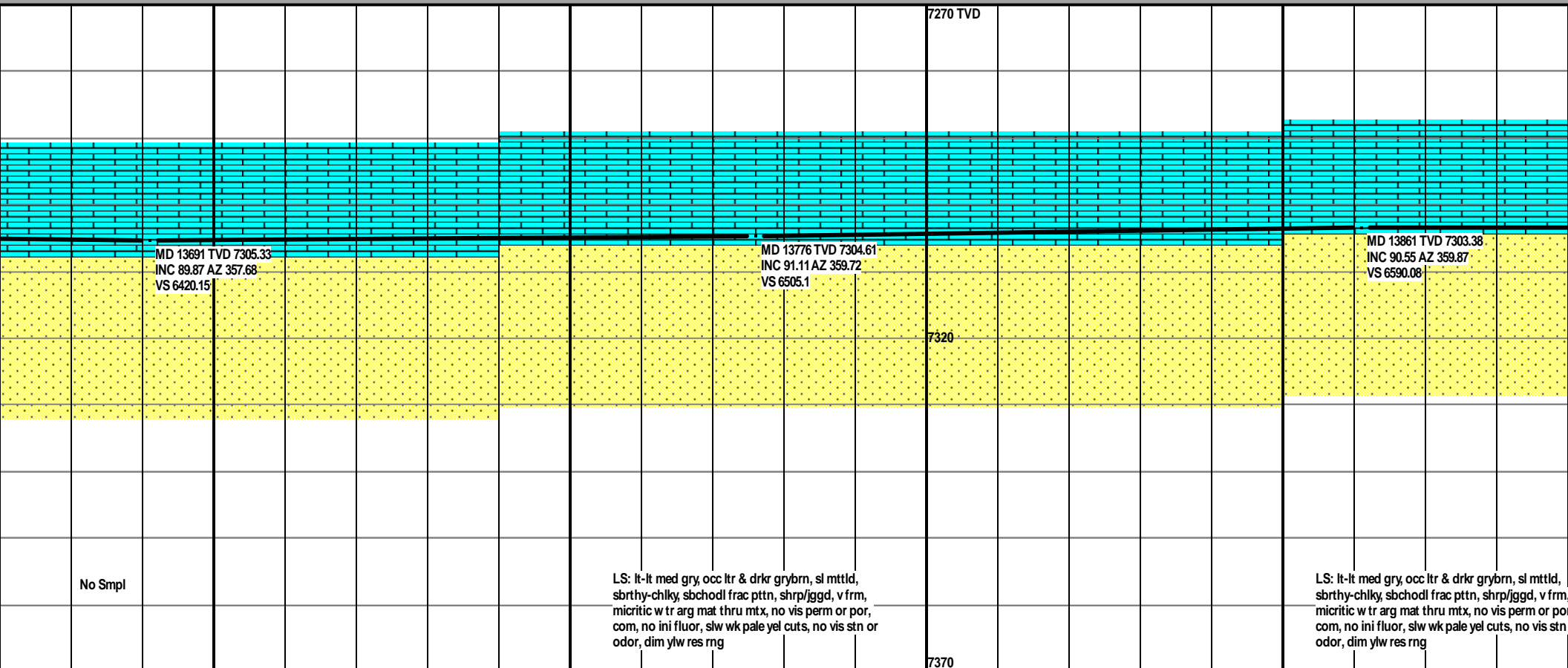
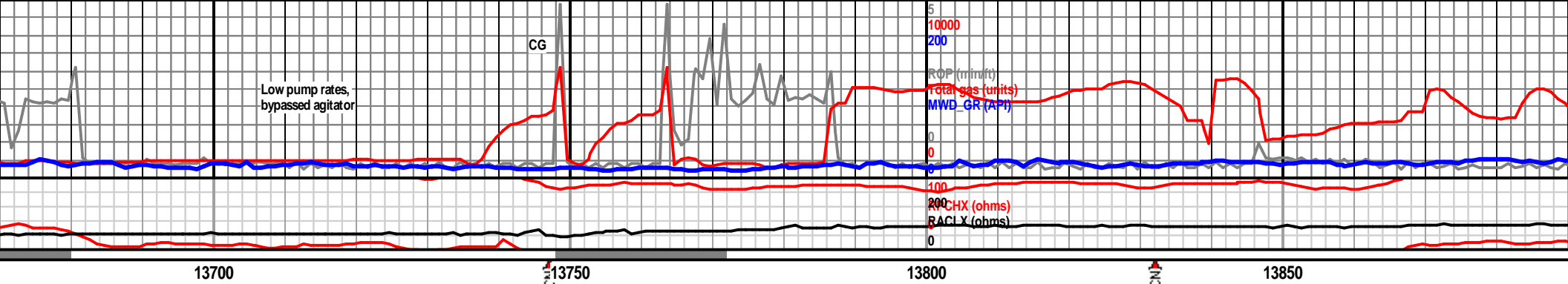


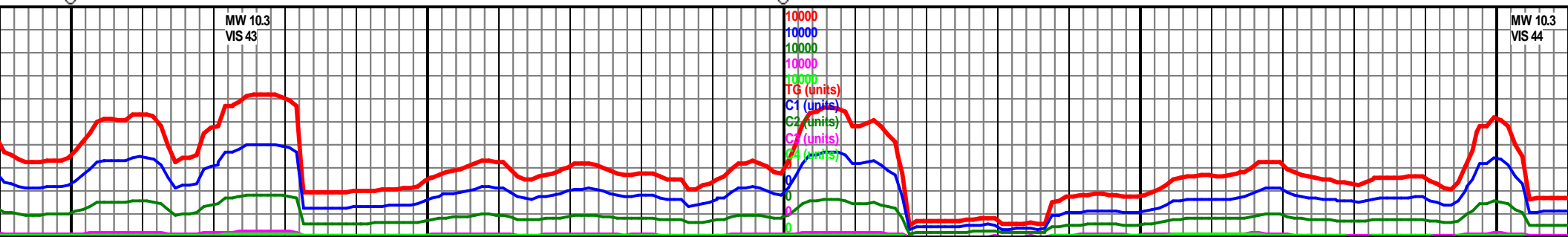
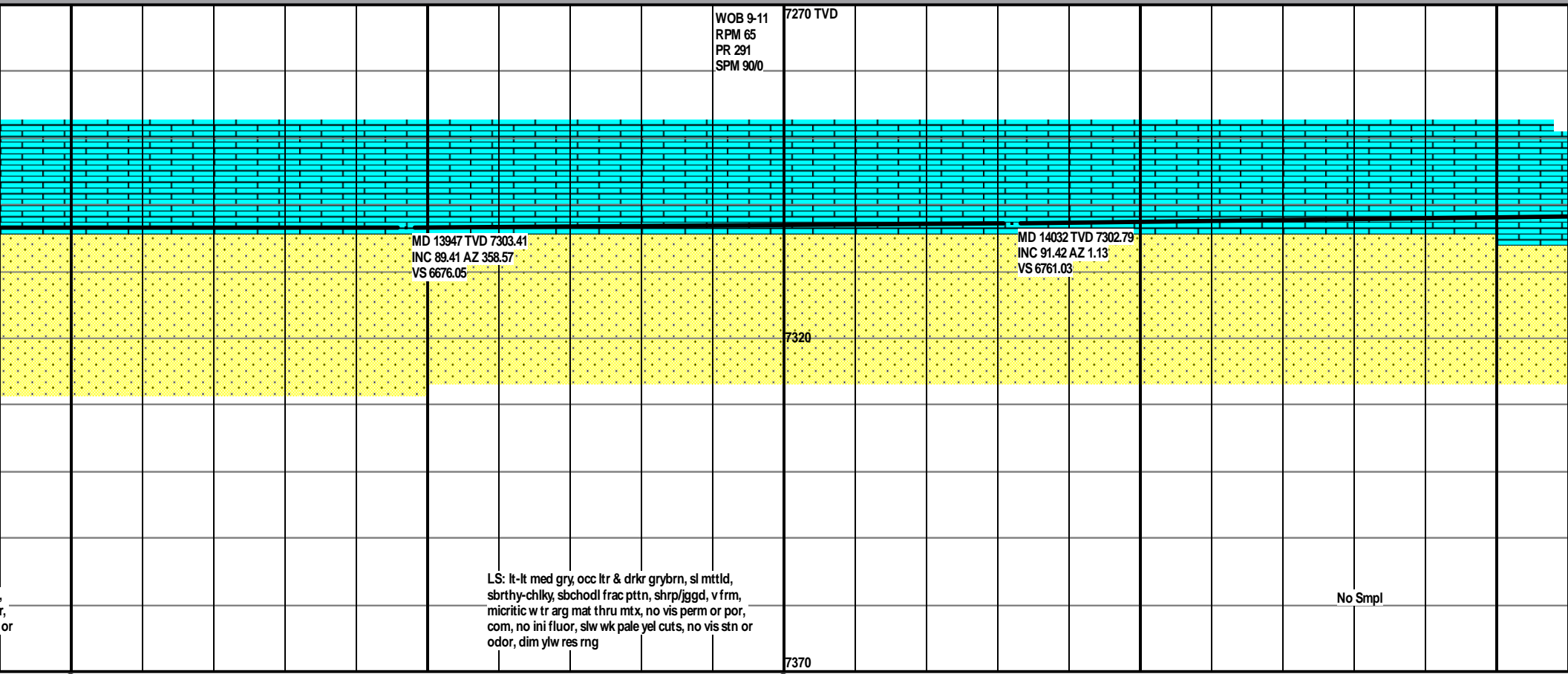
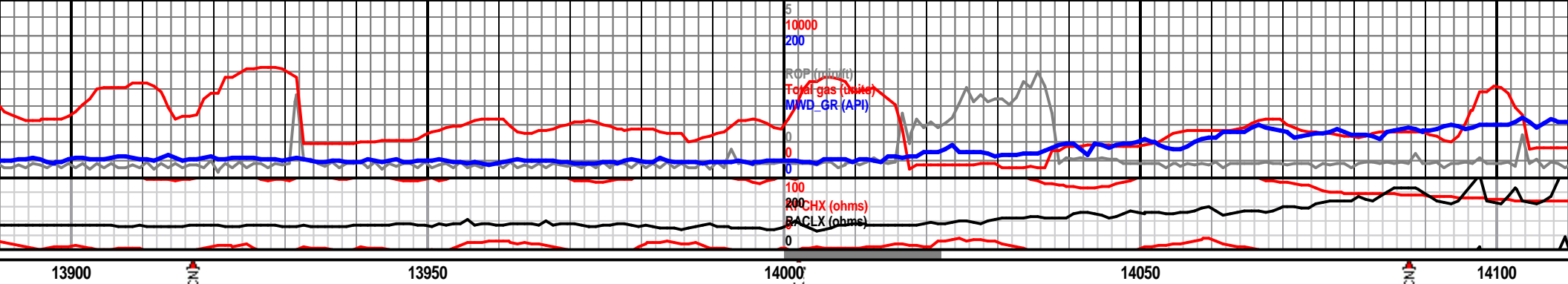


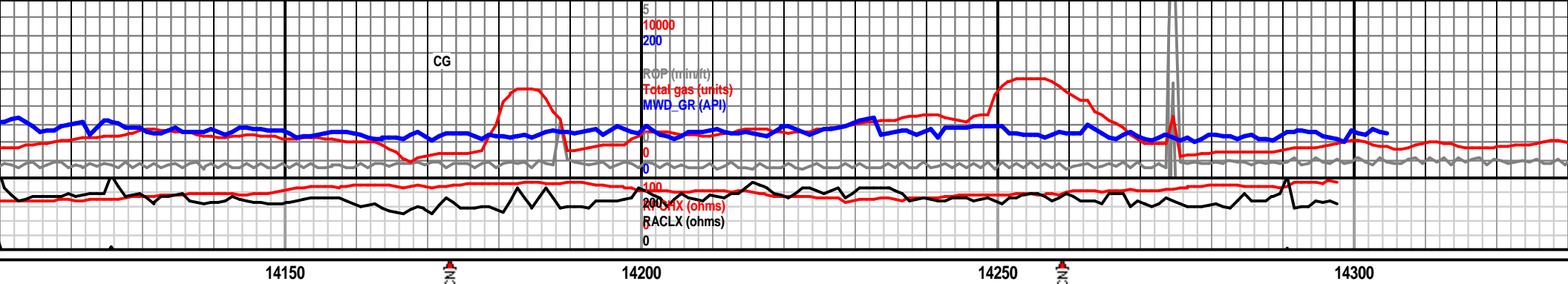




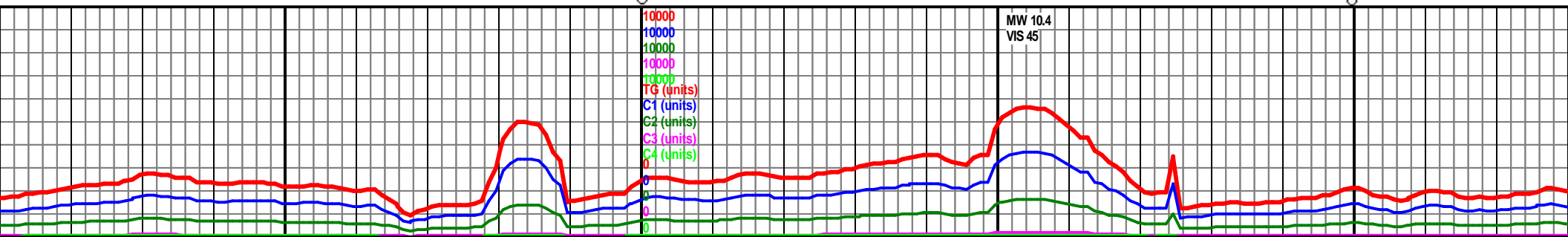


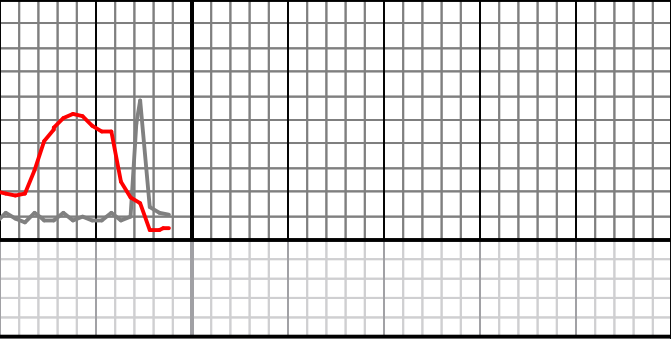






										7270 TVD										2/18/13																			

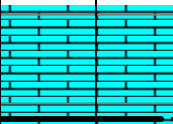




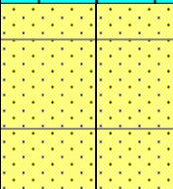
14350

144

Reach 14,348' TD @ 01:50 hrs on February 18, 2013.  
Short Trip, condition hole, trip out drill pipe, ream  
hole w/ reaming tool, hang 4 1/2" production liner @  
xx,xxx' on February xx, 2013. Bit 5, drilled 1,180' in  
12.7 hrs, ave ROP 92.9 ft/hr.



MD 14348 TVD 7301.71  
INC 89.94 AZ 358.81  
VS 7076.95



Projection to Bit

Formation Top Picks by Laurence Sonnes and  
Wellsite Geologists Andrew Krueger and Larry  
Goolsby

Sharon Springs	6,951' (-1,980')	Niobrara
7,024' (-2,053')	B Chalk	7,049'
(-2,078')	C Chalk	7,149' (-2,178')
Ft. Hays	7,289' (-2,318')	Codell
7,340' (-2,369')	DMTD	14,348
Production csg	xx,xxx	

