

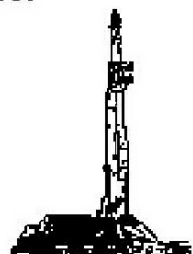
**GOOLSBY BROTHERS**  
and associates, inc.

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: Sparboe 26C-26HZ

Location: Section 35, T2N, R65W, Weld County, CO.

License Number: API: 05-123-36248, AFE: 2069365.DRL

Spud Date: February 19, 2013

Surface Coordinates: 399' FSL & 859' FEL Sec 35, T2N, R65W

Lat: 40.088610 N Long: 104.624546 W

Bottom Hole Coordinates: 1050.17' FNL & 391.91' FEL Sec 26, T2N, R65W

Ground Elevation (ft): 4946

Logged Interval (ft): 6,823'

To: 16,270'

K.B. Elevation (ft): 4971

Total Depth (ft): 16,270'

Formation: Pierre shales / sands, Niobrara, Codell Target.

Type of Drilling Fluid: LSND (Polymer-Water) to Landing Pt.; Synthetic Mineral Oil Based Mud 7456' to TD.

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

**OPERATOR**

Company: Anadarko/Kerr-McGee Oil & Gas Onshore LP

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

Denver, CO 80202

CO Geologist: Tom Birmingham.

**GEOLOGIST**

Name: Mike Dodge/Steven Schindler/Alan Seeling

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 GAMMA RAY: Surface Casing to TD.  
MWD RESISTIVITY: Intermediate Casing to TD.

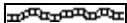
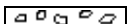
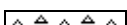
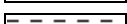
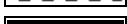
## Casing

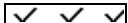



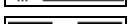
9 5/8" Surface Casing (IPSCO 36# J55) set @ 1852'  
7" Intermediate Casing (IPSCO 26# P110) set @ 7441'.  
4 1/2" Production Liner set @ 16,254'


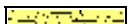


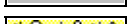
## Comments

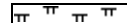
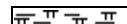

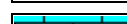
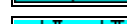
- 1) Drilling Contractor: H&P 311  
Rig Manager: James Baggett, Jack Truett  
Drillers: Michael Munroe, Christopher Moore, Kenneth Jones, Christopher Beckstead.
- 2) Company Man: Scott Allred, Jerry Barnes, Doug Blair, Kaleb Ford, Rick Oman, David Wells
- 3) Mud Company: Water Base- Halliburton, Chance Galey, Zen Allred, Justin Hessenthaler, .  
Oil Base: AES Drilling Fluids, Eric Deshotel, Todd Lewis, Harrell Wilson,
- 4) Directional Drilling: Scientific Drilling  
Drillers: John Noakes, Steve Schlamp  
MWD: Josh Denning, Shane Park, Jeff Smith, Mark Smith, James Whitley.
- 5) Gas Equipment: Mudlogging Systems Inc.  
by Terra Services  
Redbox # ML-419

## ROCK TYPES

 Bent  
 Brec  
 Cht  
 Clyst  
 Coal

 Anhydrite  
 Shale  
 Sh (col)  
 Sltly sh  
 Carb sh

 Ss  
 Arg ss  
 Ss (f gr+)  
 Sltst  
 Congl

 Mrlst  
 Mrlst/sh (intbdd)  
 Dol  
 Lmst  
 Marly limestone

 Arg limestone  
 Chalk  
 Arg chalk

## 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  
 Ssstrg  
 Sltst strg

### TEXTURE

Boundst  
 Chalky  
 Cryxln  
 Earthy  
 Finexln  
 Grainst  
 Lithogr  
 Microxln  
 Mudst  
 Packst  
 Wackest

## OTHER SYMBOLS

### SAMPLE SHOWS

Even  
 Spotted  
 Ques  
 Dead  
 Vspotty

near even

### POROSITY TYPE

Earthy  
 Fenest  
 Fracture

Inter  
 Moldic  
 Organic  
 Pinpoint  
 Vuggy

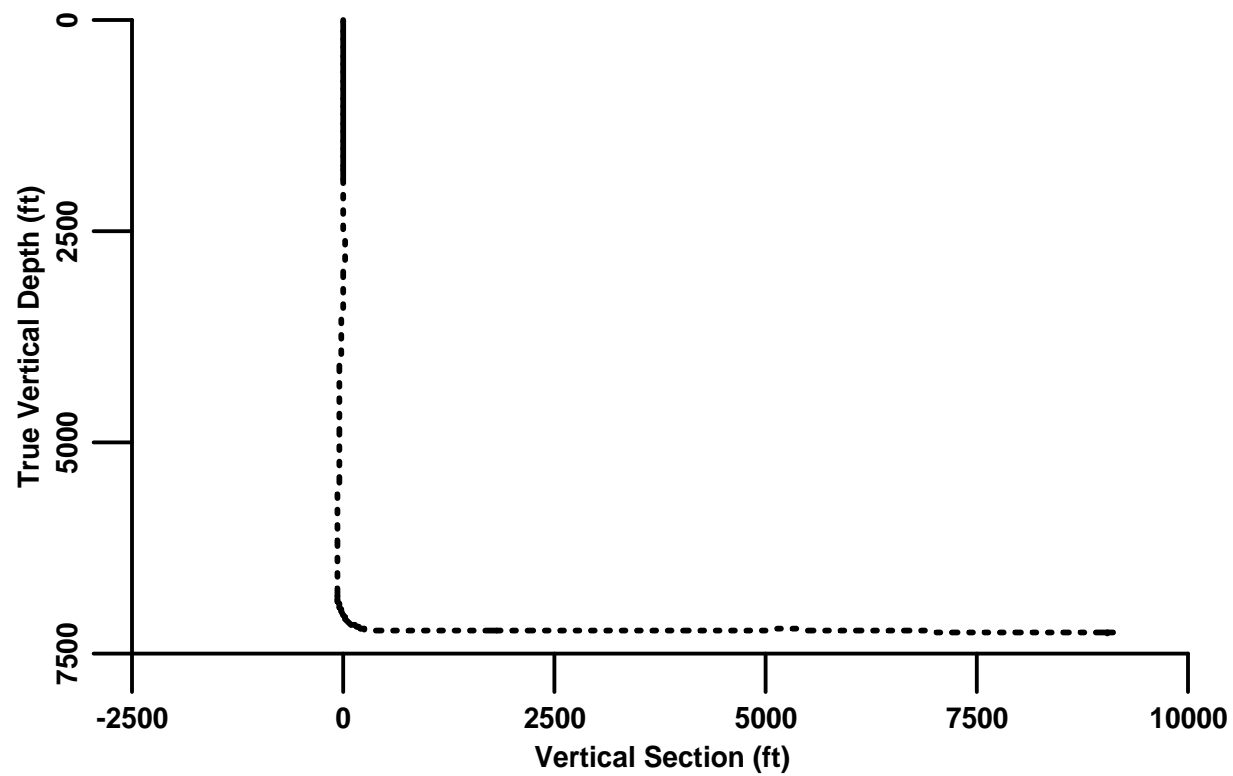
### ROUNDING

Rounded  
 Subrnd  
 Subang  
 Angular

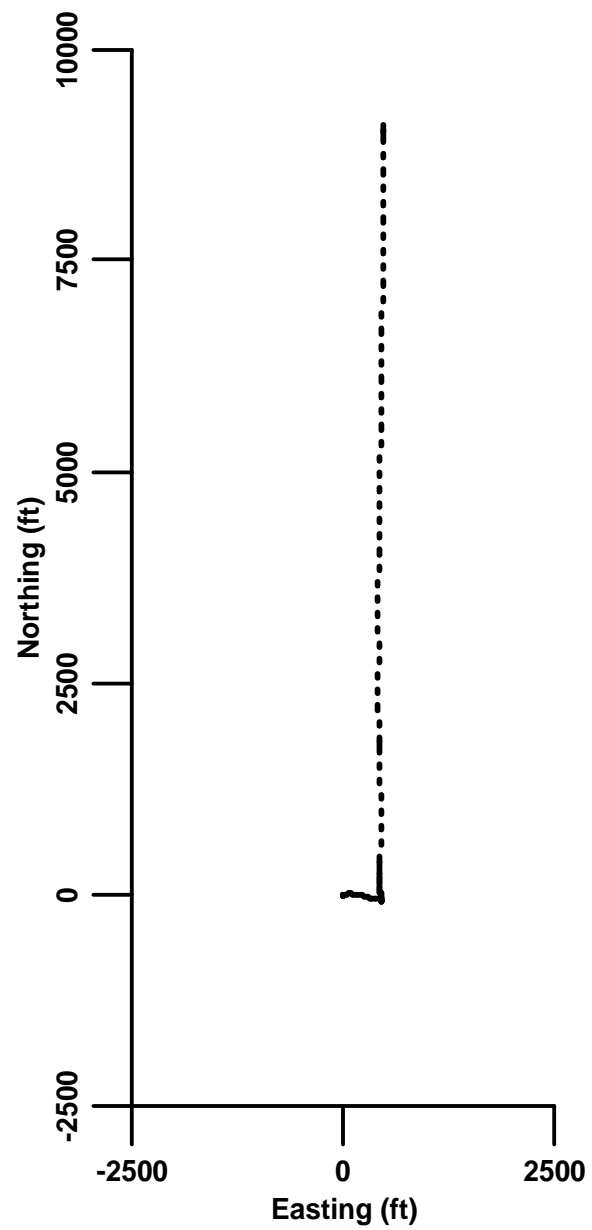
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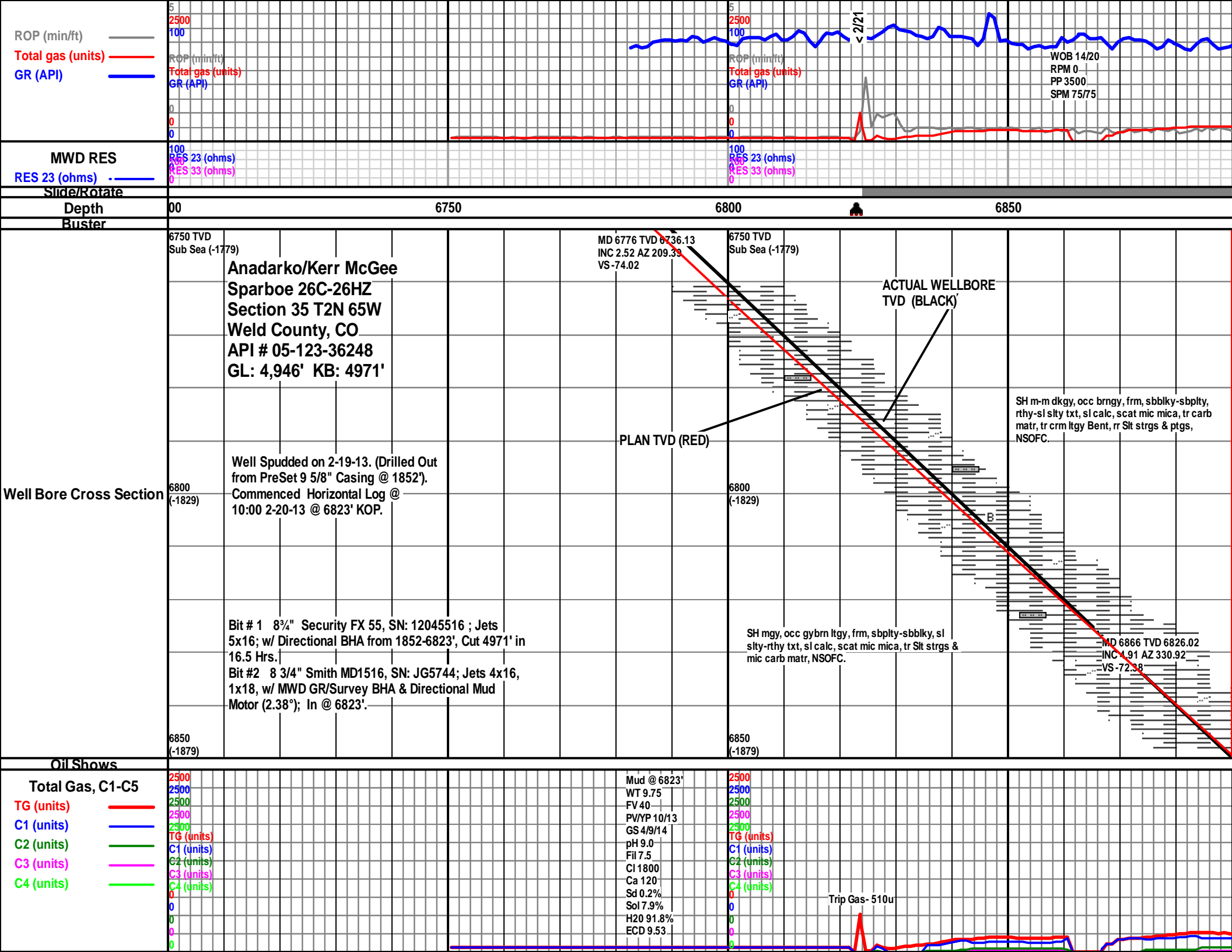
Well  
 Moderate  
 Poor

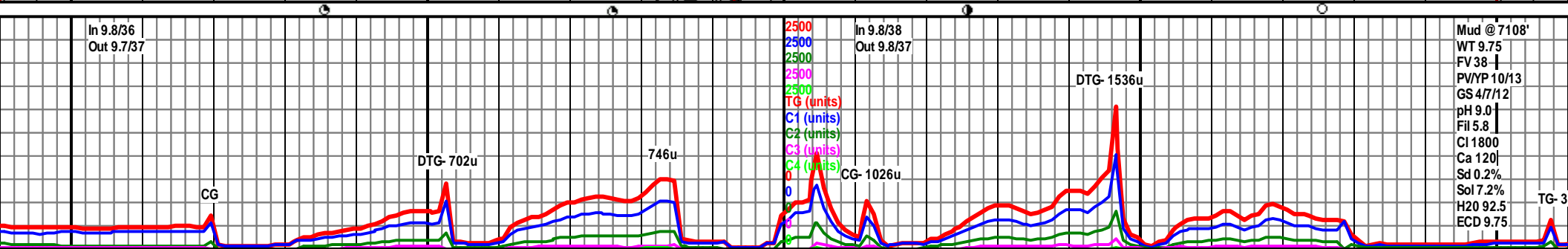
## Elevation



# Plan













WOB 12/20  
RPM 50/0  
SPM 60/72  
PP 2700/3400

2500  
1000  
ROP (min/ft)  
Total gas (units)  
GR (API)  
100  
RES 23 (ohms)  
RES 33 (ohms)  
0

50 7600 7650 7700 7750

7175 TVD  
Sub Sea (-2204)

SH (70%) gybrn, m-dkgy, frm-sft, sbplty-sbplty, rthy-slty txt, sl-mod calc, v  
slty ip / Sl strgs & ptgs, tr Fos frags & dism Pyr, no vis stn/flor, wk mlky cuts,  
fnt resd ring.  
SLTST (30%) brn, sft-frm, sl-mod calc, sl sdy ip, no vis por, slow strmg blu wh  
cuts, mod resd ring.

SH (60%) gybrn, m-dkgy, frm-sft, sbplty-sbbiky, rthy-sl  
strgs & ptgs, tr Fos frags & dism Pyr, no vis stn/flor, wk  
SLTST (30%) brn, gybrn, sft-frm, sl-mod calc, sl sdy ip, r  
cuts, mod resd ring. occ vsdy grd-  
SS (10%) gybrn, frm, slty arg vf gr, sl-mod calc, mod-p s  
por, no vis flor, fst mlky cut, mod yelwh resd ring.

n, m-dkgy, sft-frm, bkly-sbplty, rthy-sl slty  
l calc, marly ip, sl carb ip, sl-v slty ip w/ Sl  
gs & dism Pyr, wk-fr mlky cuts w/ fnt resd

o) as before.  
e.

Scale Change  
7225  
(-2254)

CARLILE SHALE/SILTSTONE

MD 7549 TVD 7221.29  
INC 87.41 AZ 1.43  
VS 392.18

MD 7738 TVD 7223.95  
INC 90.98 AZ 1.58  
VS 581.06

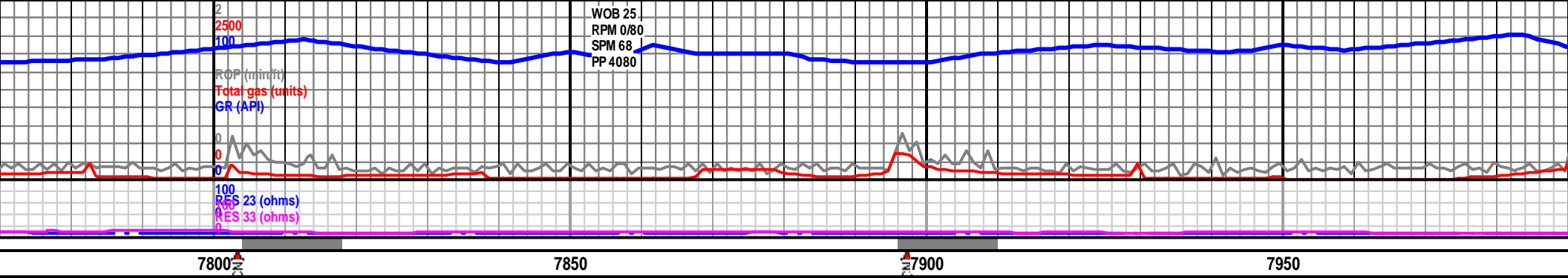
7275  
(-2304)

2500  
2500  
2500  
2500  
2500  
TG (units)  
C1 (units)  
C2 (units)  
C3 (units)  
C4 (units)  
0  
0  
0  
0

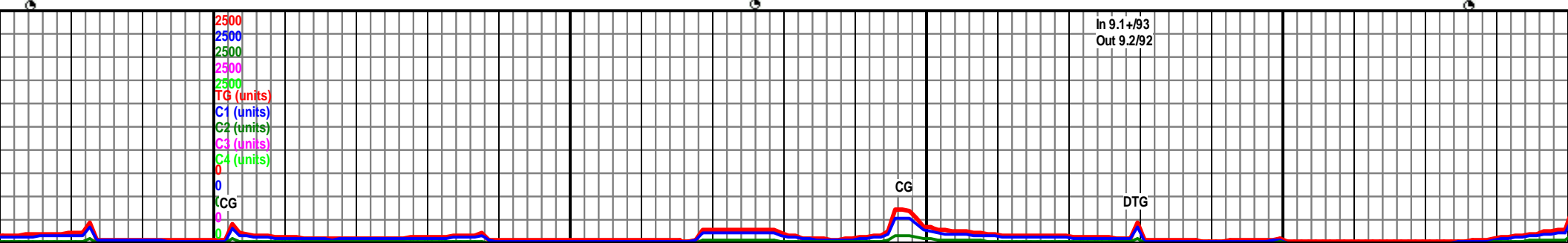
CG

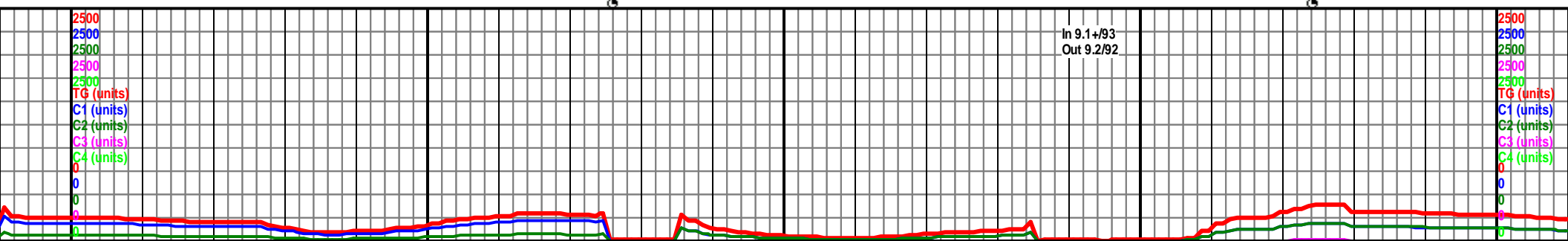
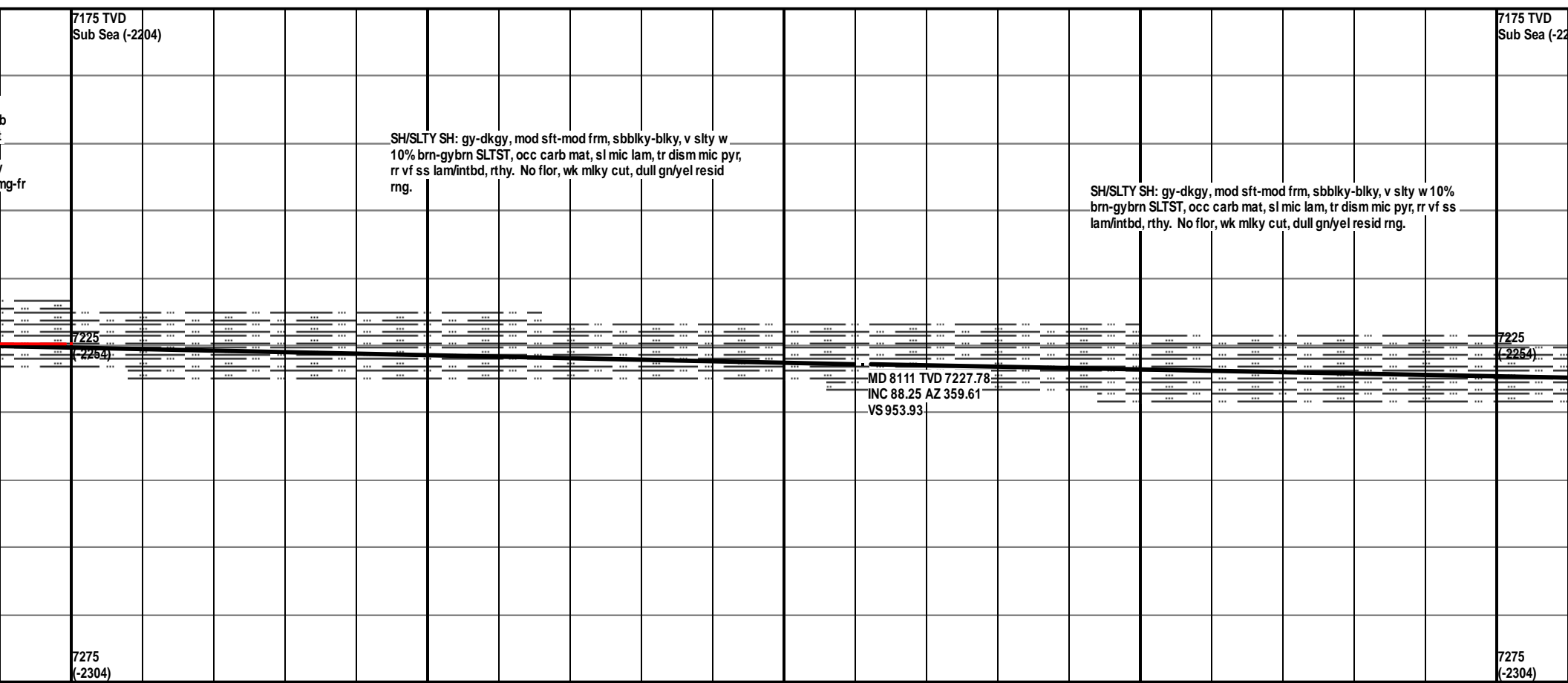
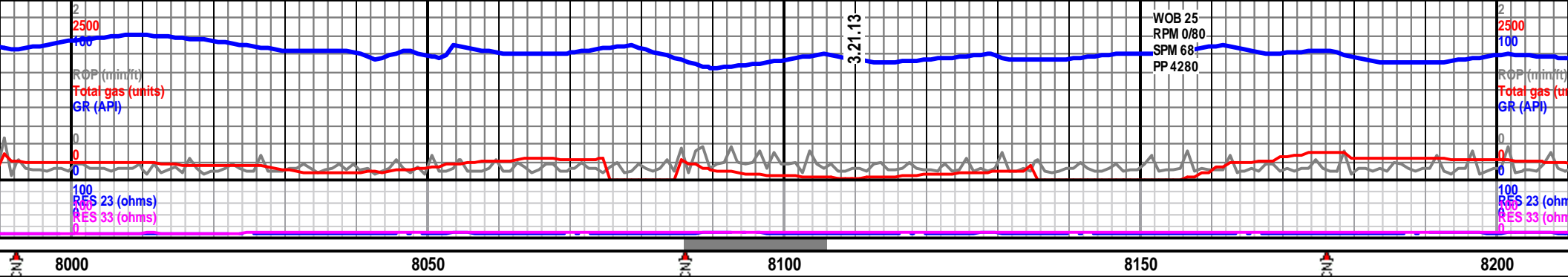
CG

In 9.3/106  
Out 9.3/104

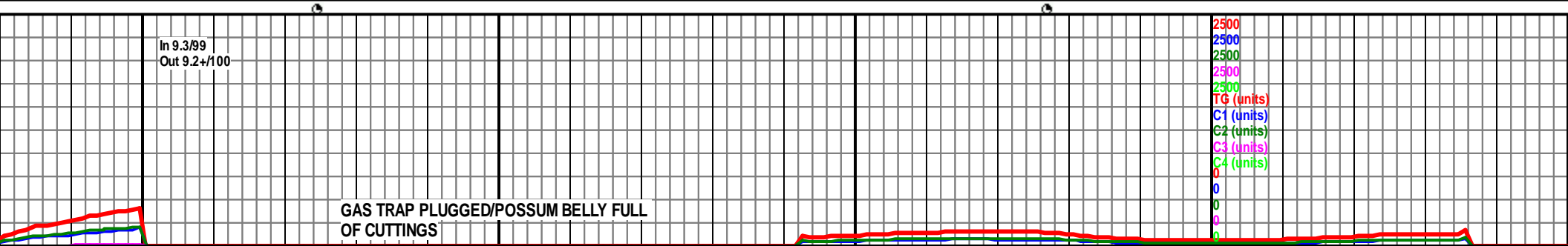
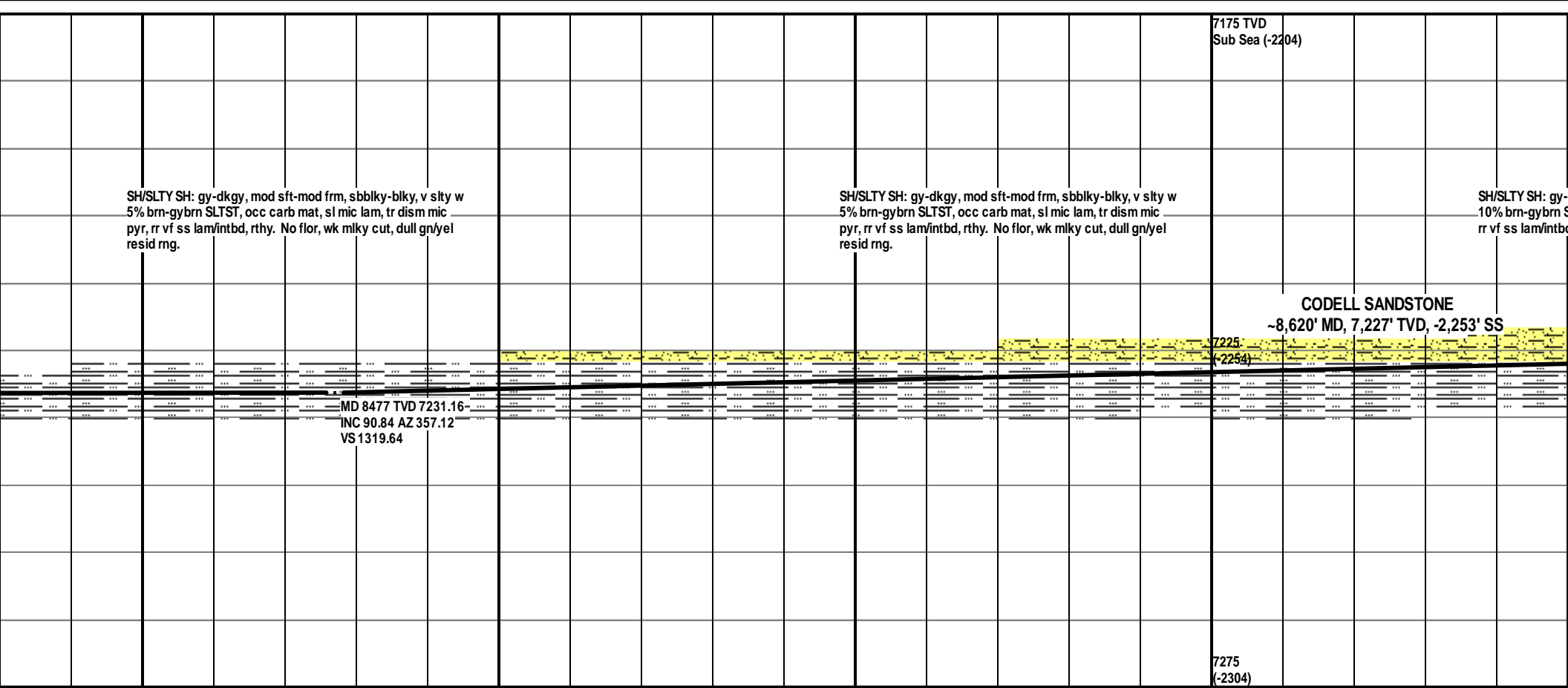
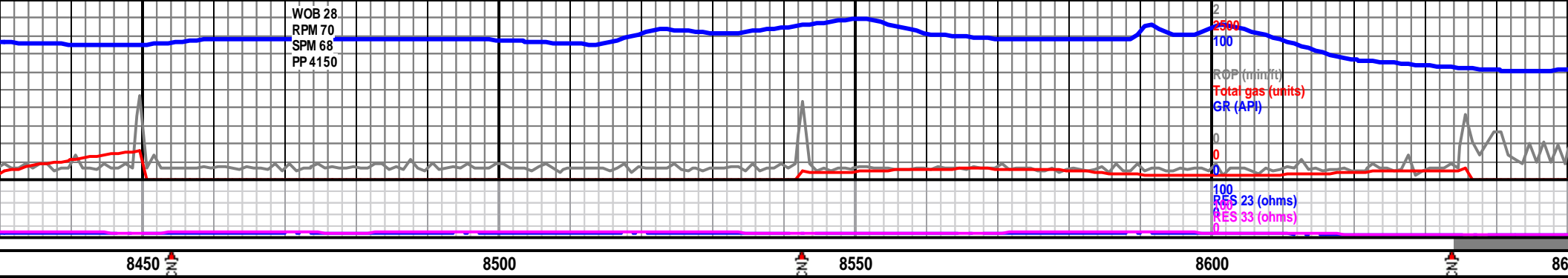


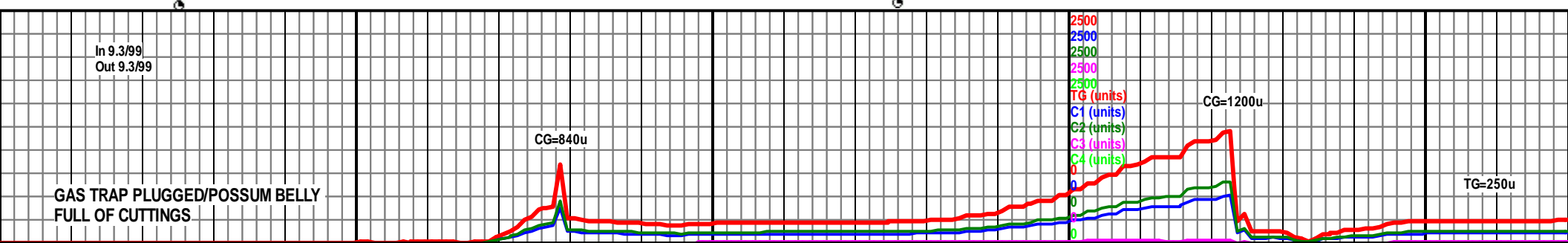
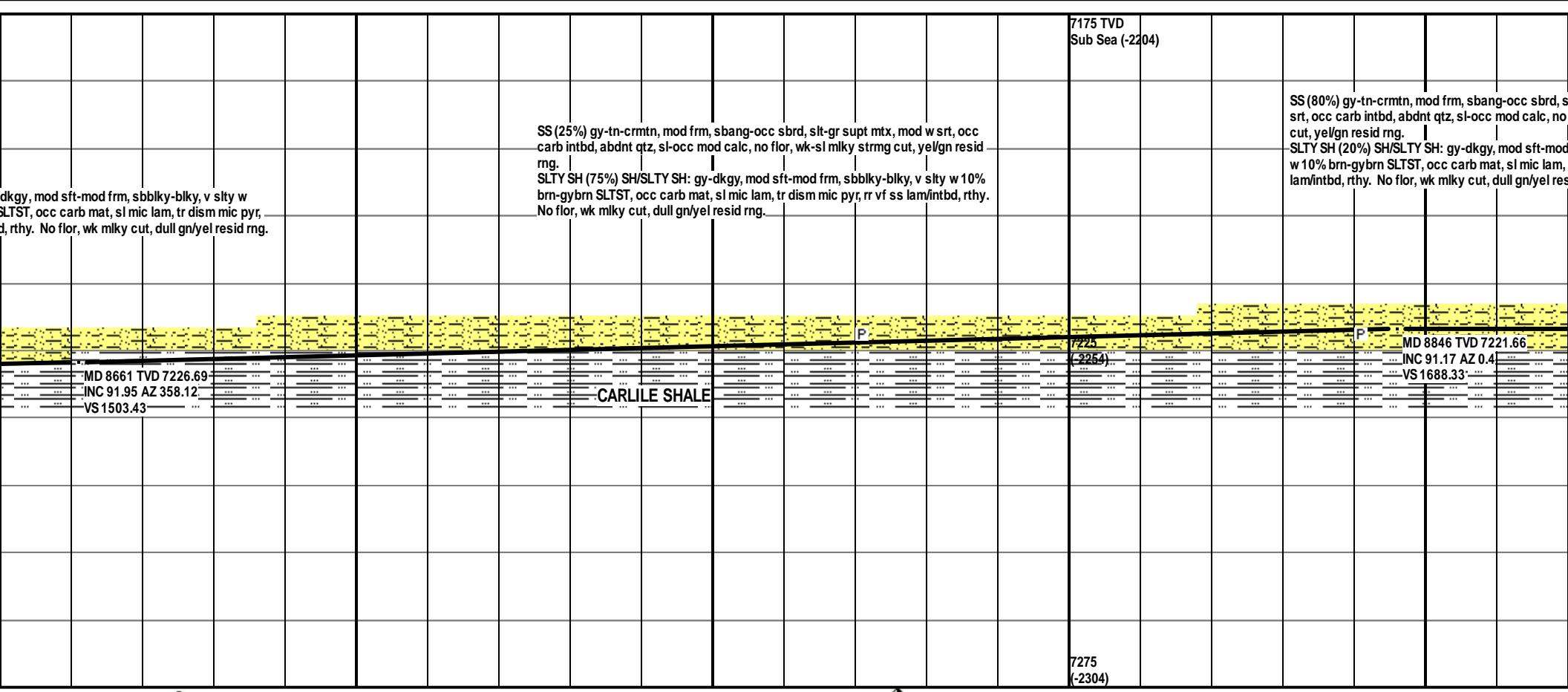
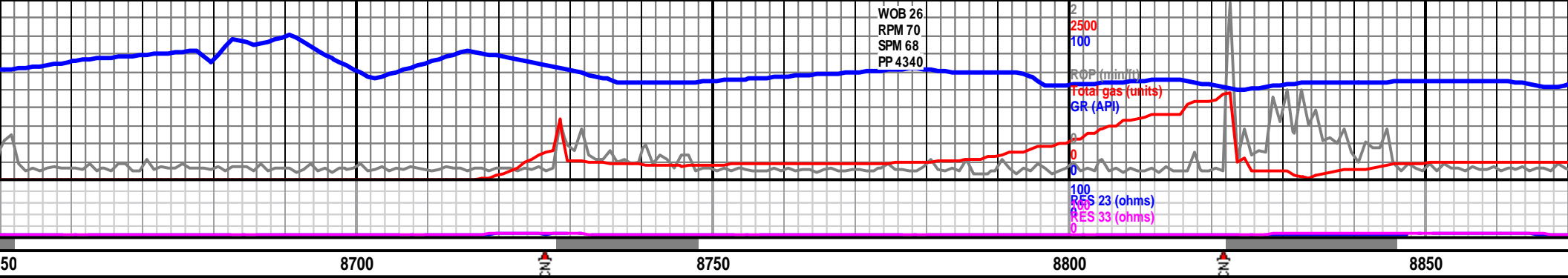
ty txt, sl-mod calc, v slty ip / Slit mlky cuts, fnt resd ring. no vis por, slow strmg blu wh rt, mic mica & mic Pyr, no vis	7175 TVD Sub Sea (-2204)																	

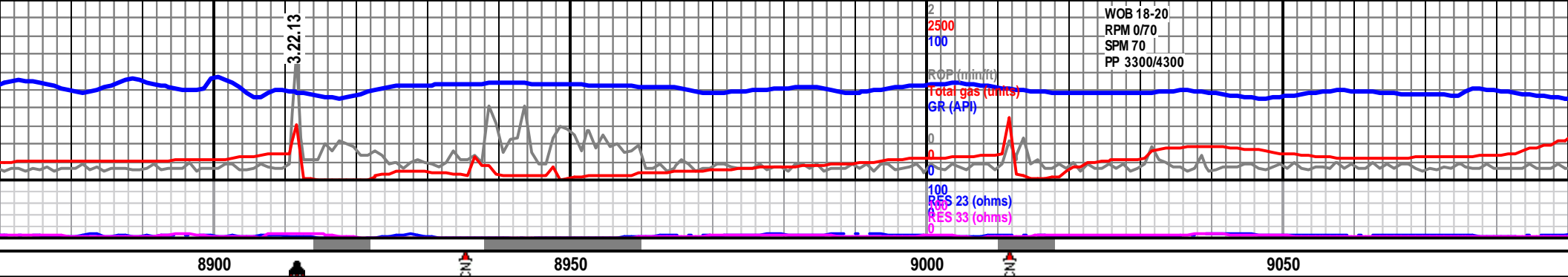






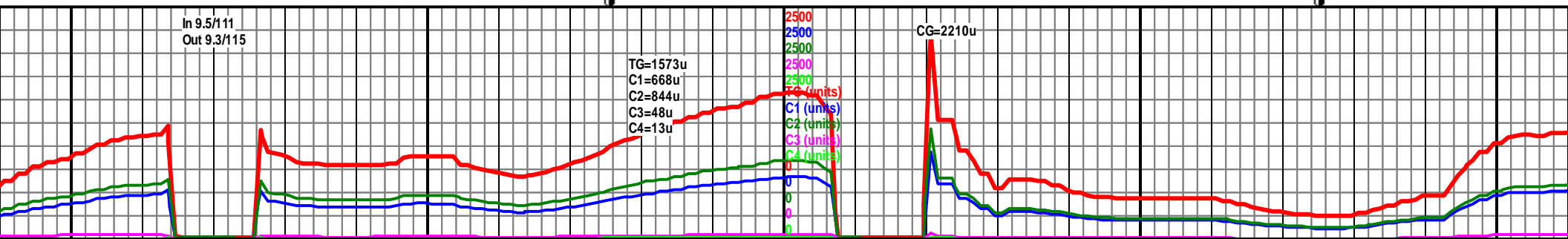
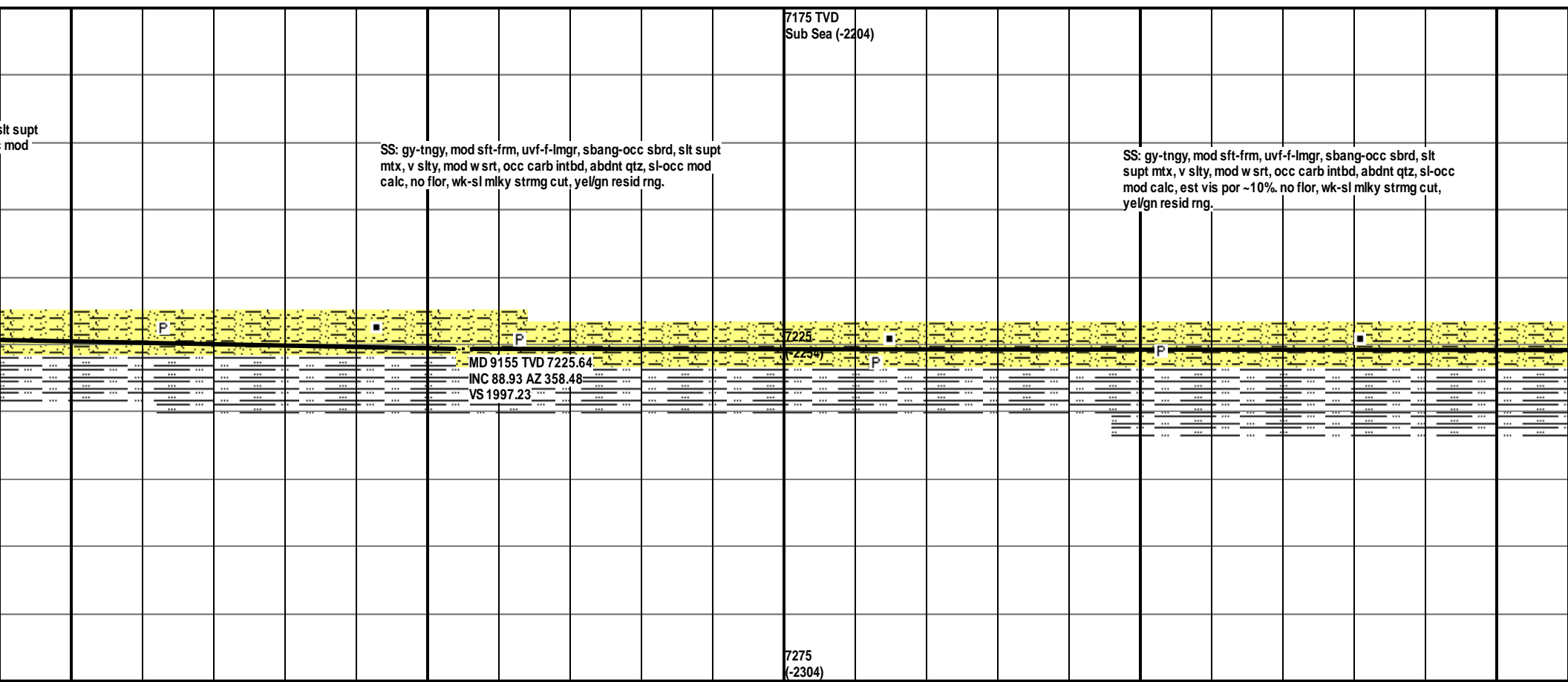
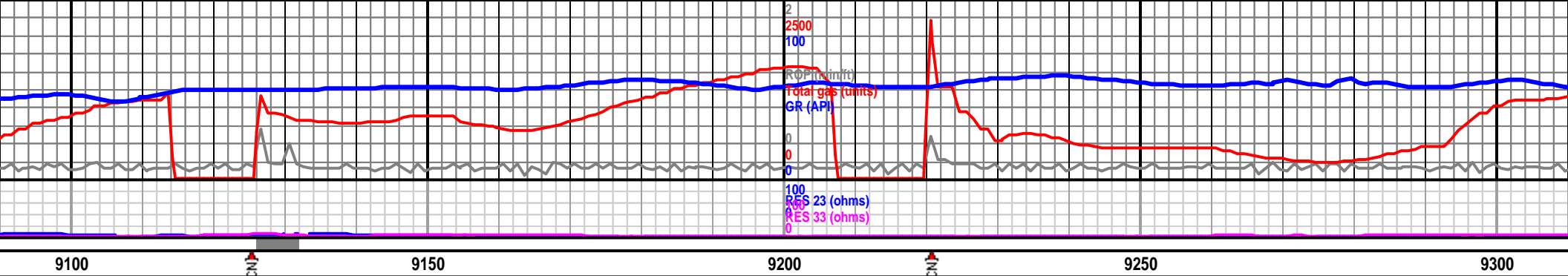


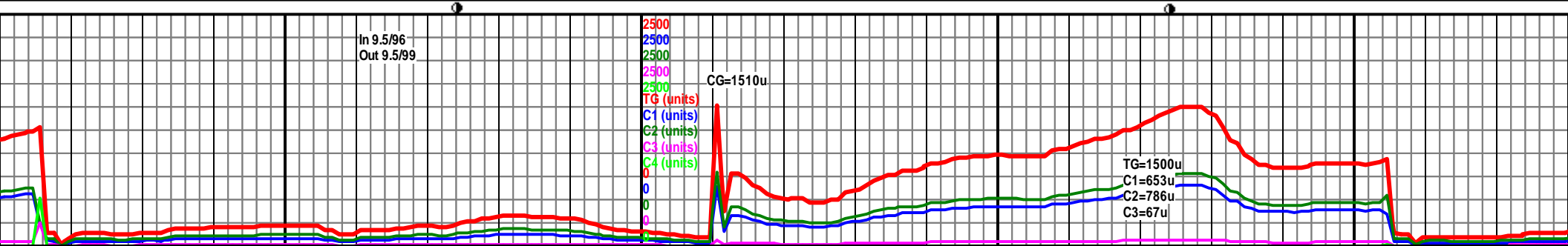
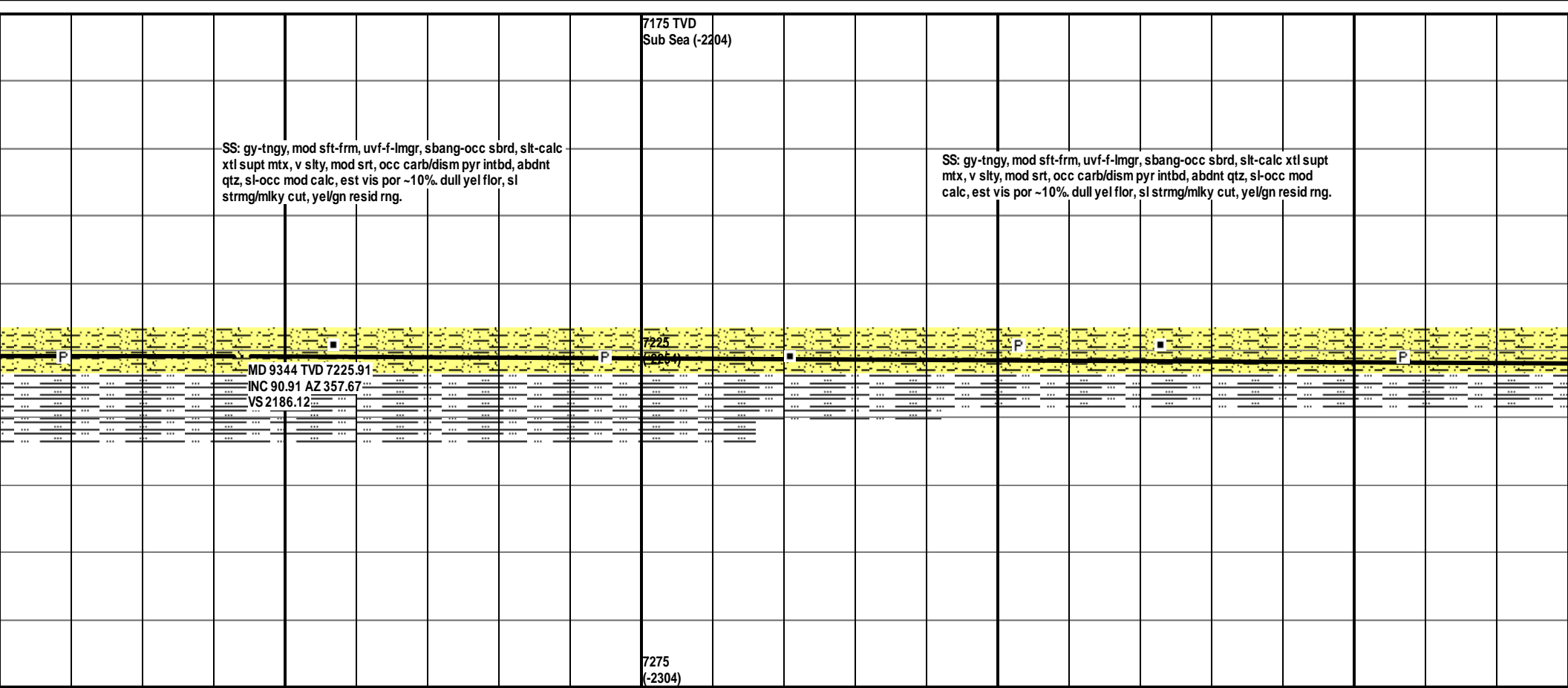
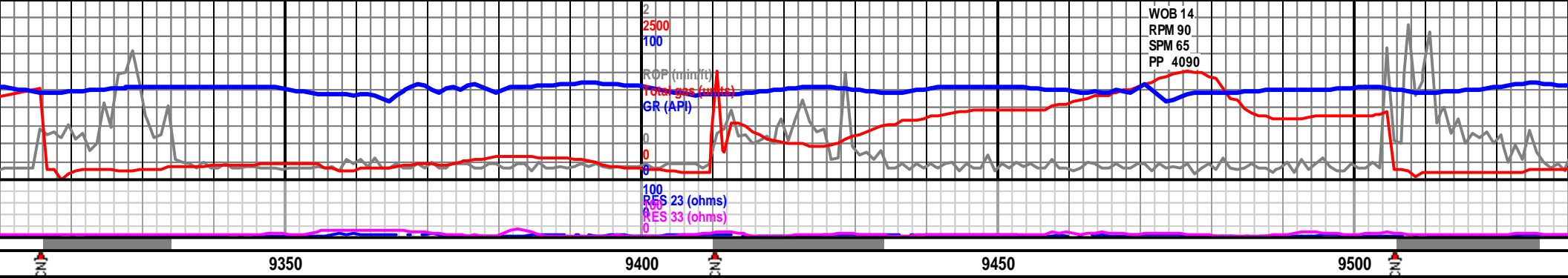


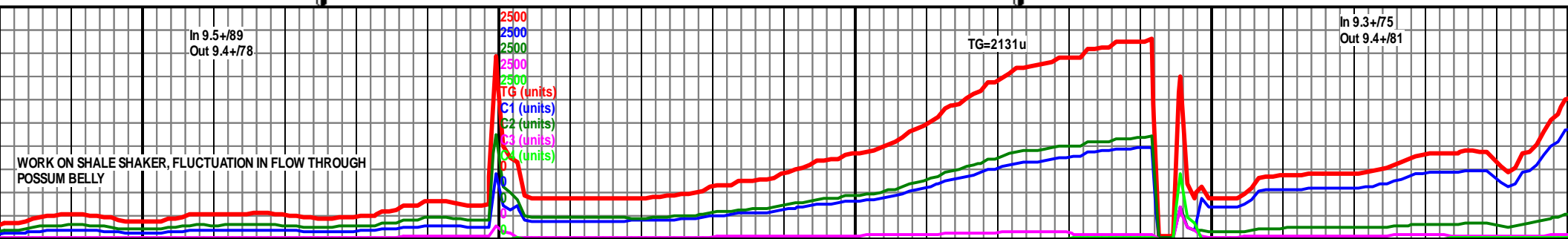
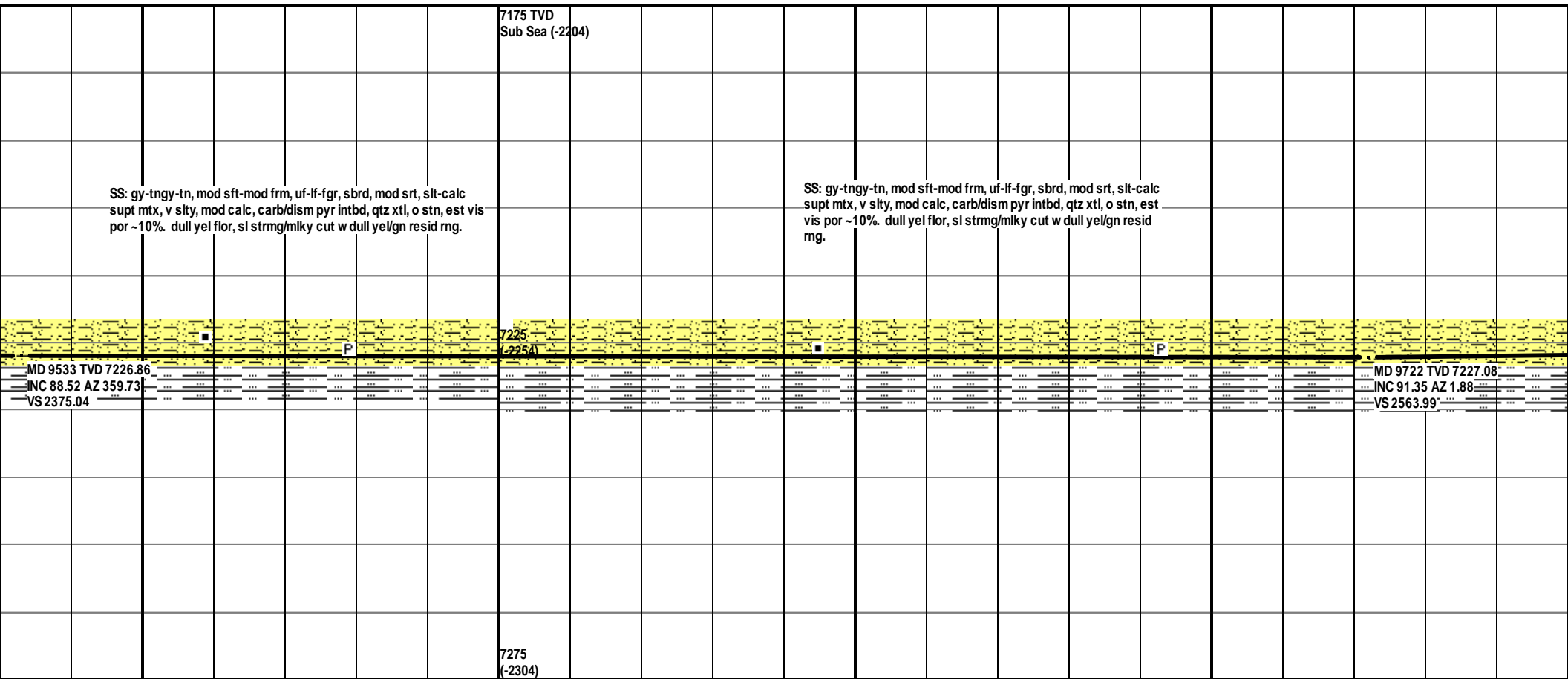
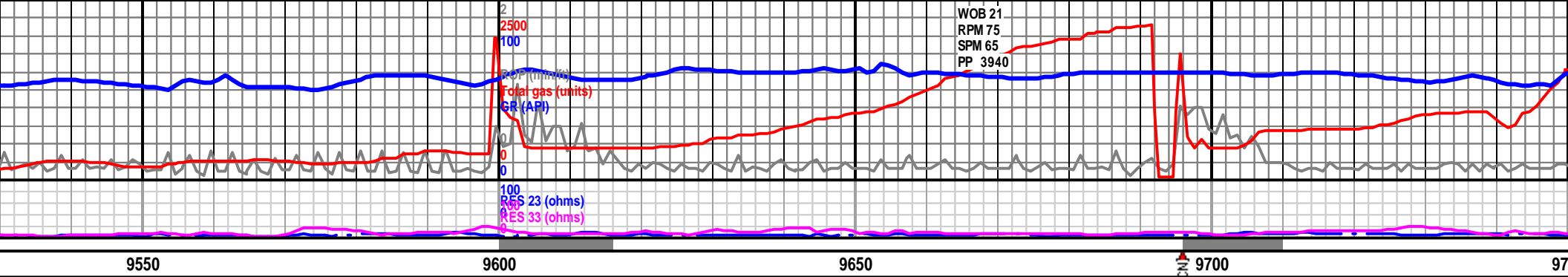


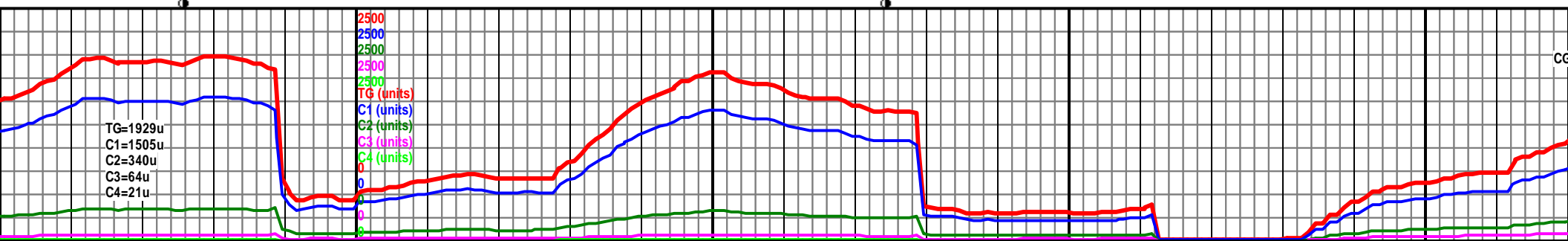
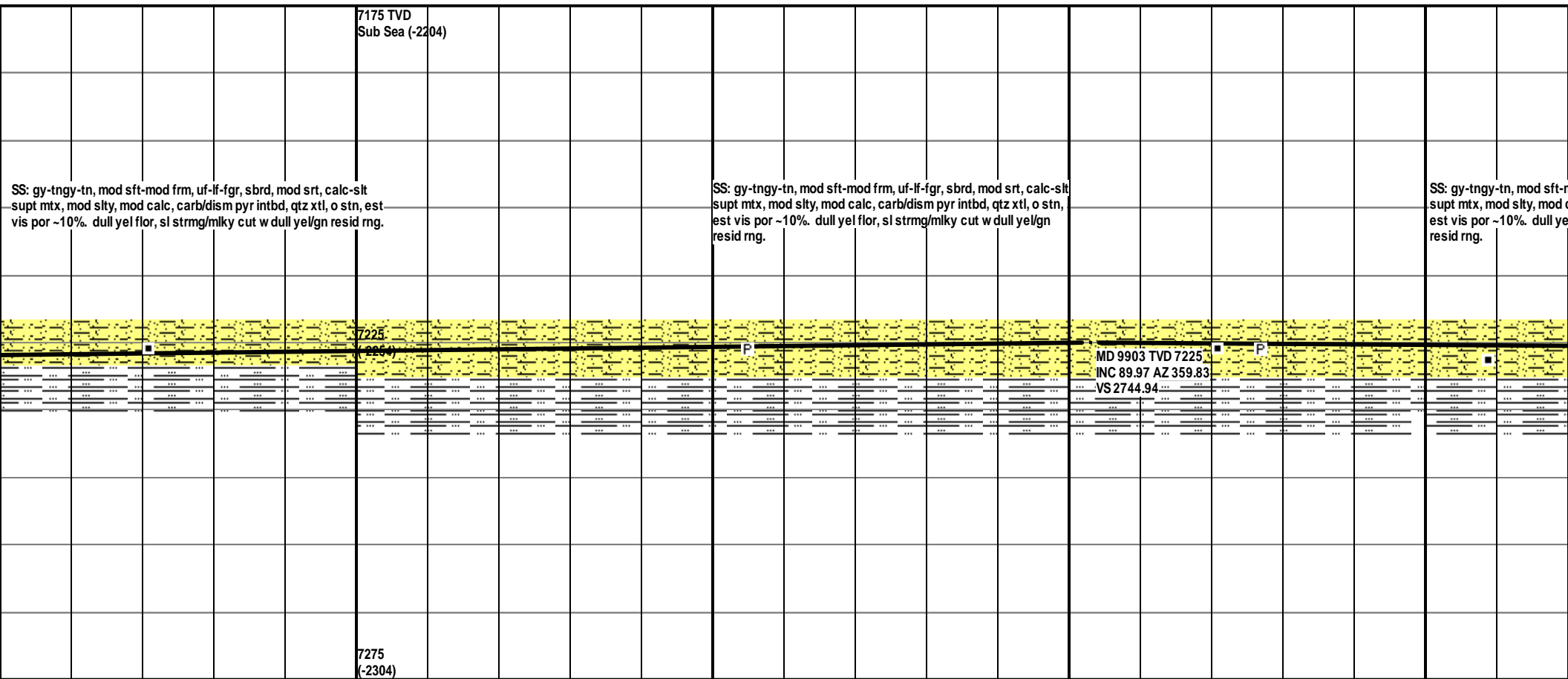
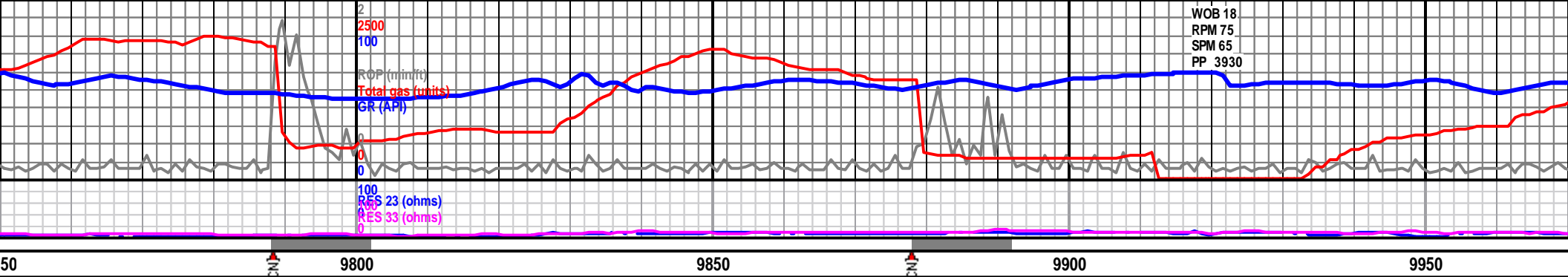
06:00, 8911' TOH, failed MWD tool. LD Bit/motor/MWD tool/PRT Collar. Bit #4 DRLD 1,455' in 10 hrs. Bit #5 6 1/8" SEC PDC, FXD54, SN: 1209610. Jets 5x16 w/ MWD GR/PRT/Survey BHA & Directional Mud Motor (1.50°), Agitator set back 2,980' f/bit; In @ 8911'										7175 TVD Sub Sea (-2204)																			
lt-gr supt mta, mod w flor, wk-sl mlky strmg										SS (75%) gy-tn-crmtn, mod frm, uvf-f-lmgr, sbang-occ sbrd, slt supt mtx, v slty, mod w srt, occ carb intbd, abdnt qtz, sl-occ mod calc, no flor, wk-sl mlky strmg cut, yel/gn resid rng.										SS: gy-tngy, mod sft-frm, uvf-f-lmgr, sbang-occ sbrd, s mtx, v slty, mod w srt, occ carb intbd, abdnt qtz, sl-occ calc, no flor, wk-sl mlky strmg cut, yel/gn resid rng.									
frm, sbbkly-blky, v slty tr dism mic pyr, rr vf ss sid rng.										SLTY SH (25%) SH/SLTY SH: gy-dkgy, mod sft-mod frm, sbbkly-blky, v slty w 10% brn-gybrn SLTST, occ carb mat, sl mic lam, tr dism mic pyr, rr vf ss lam/intbd, rthy. No flor, wk mlky cut, dull gn/yel resid rng.																			
P										P										P									
MD 8966 TVD 7221.76 INC 88.72 AZ 358.88 VS 1808.32										7225 (-2254)																			
																				</									

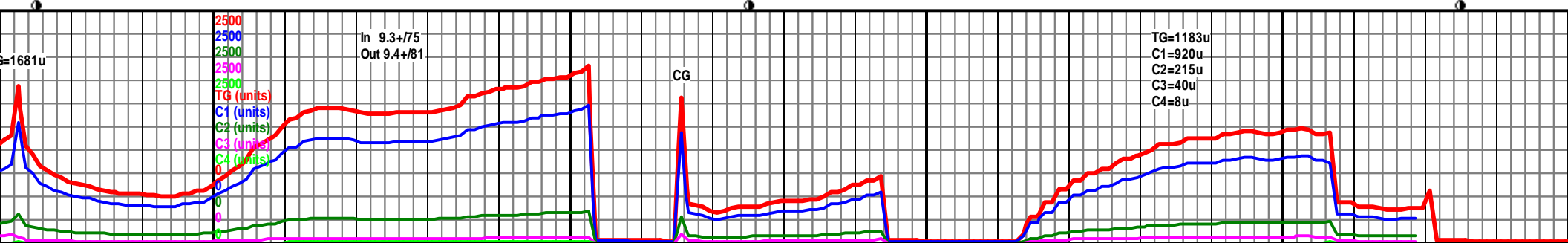
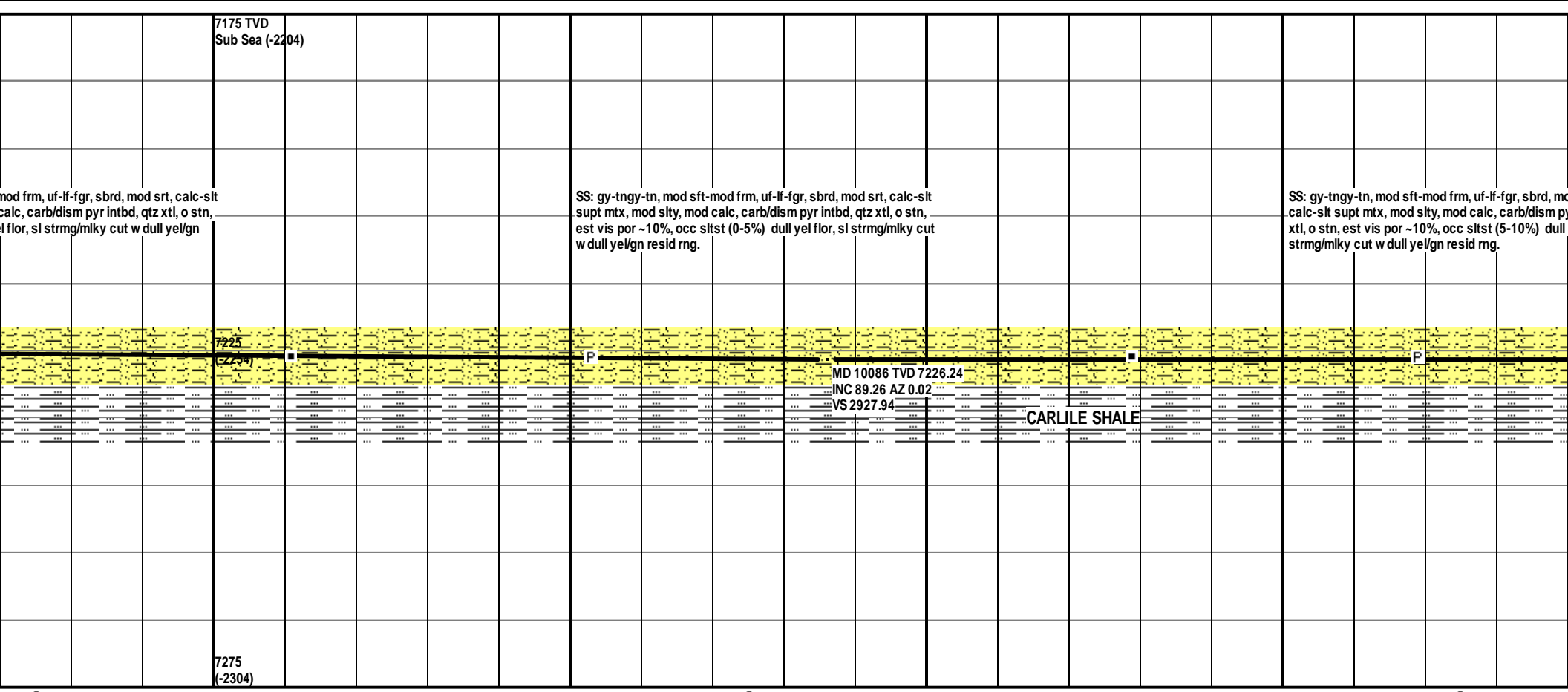
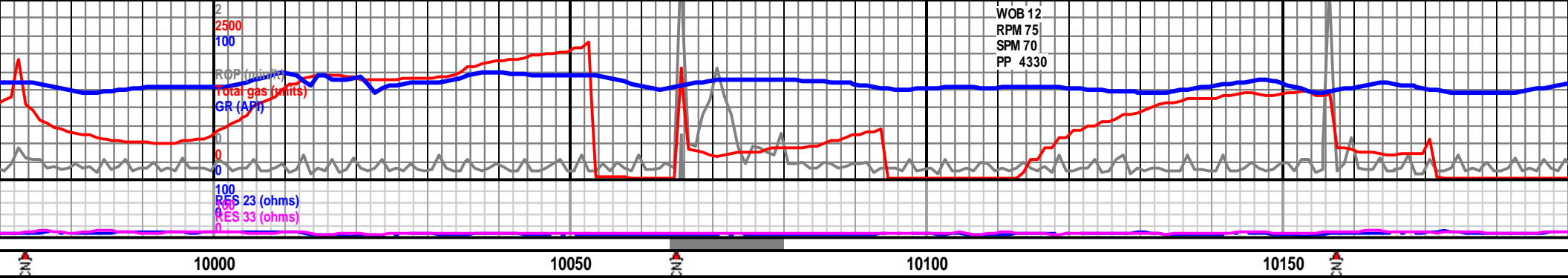


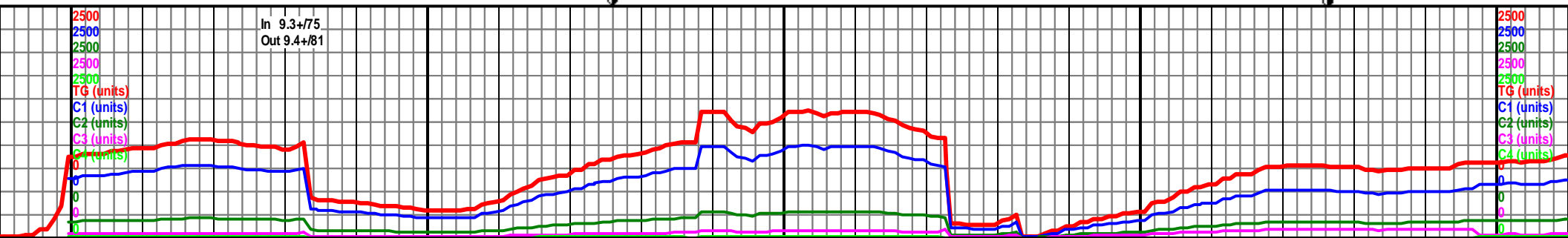
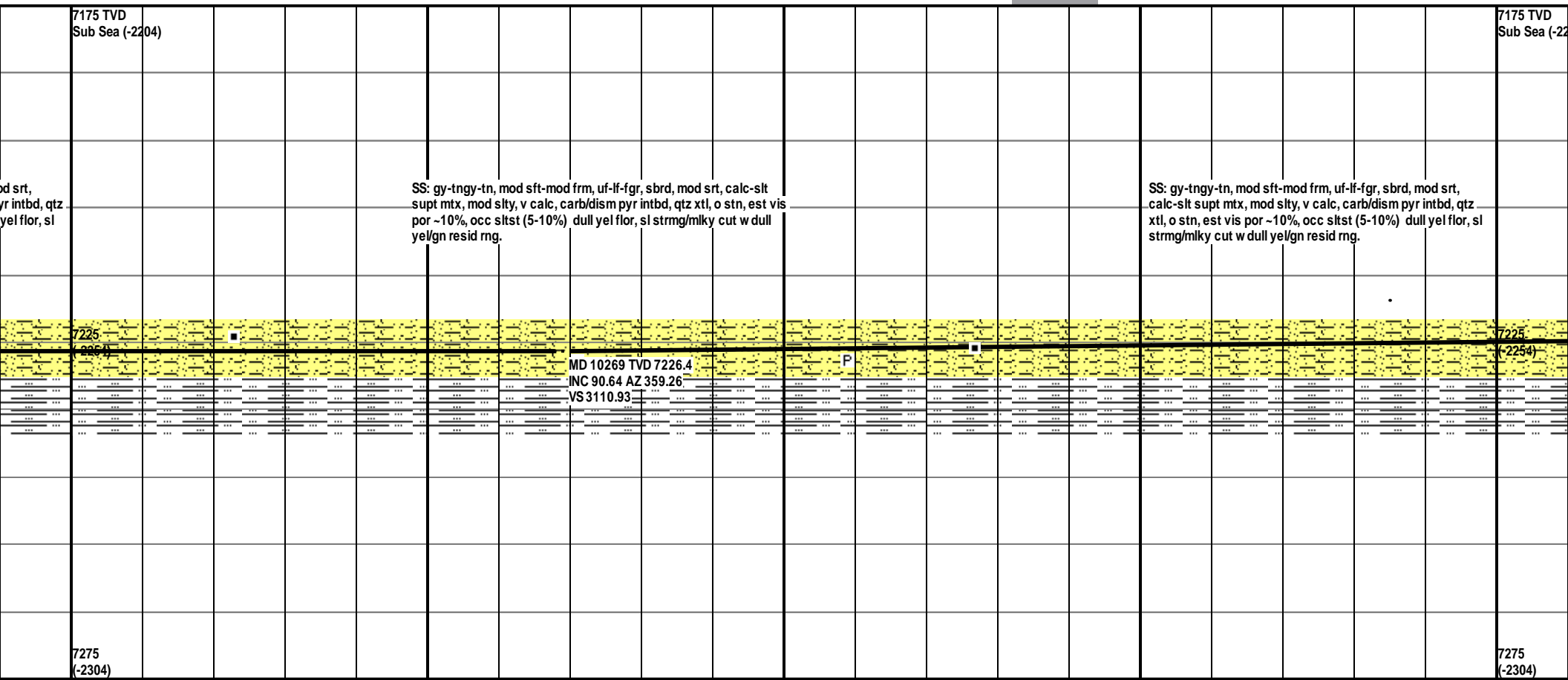
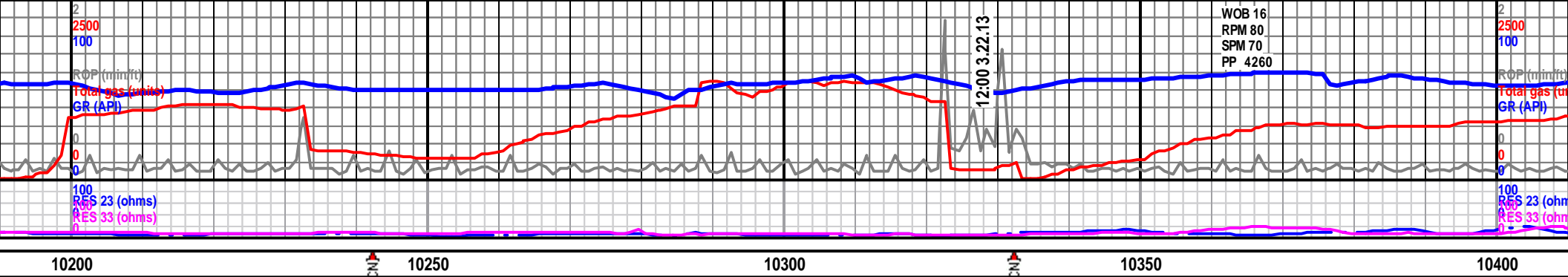


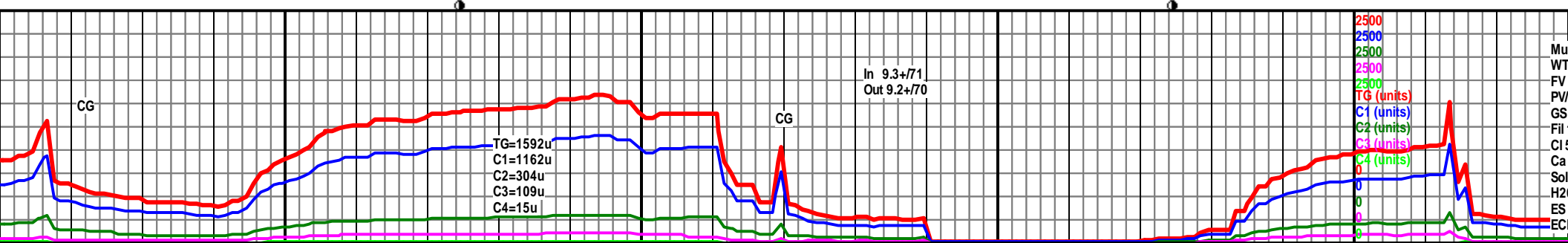
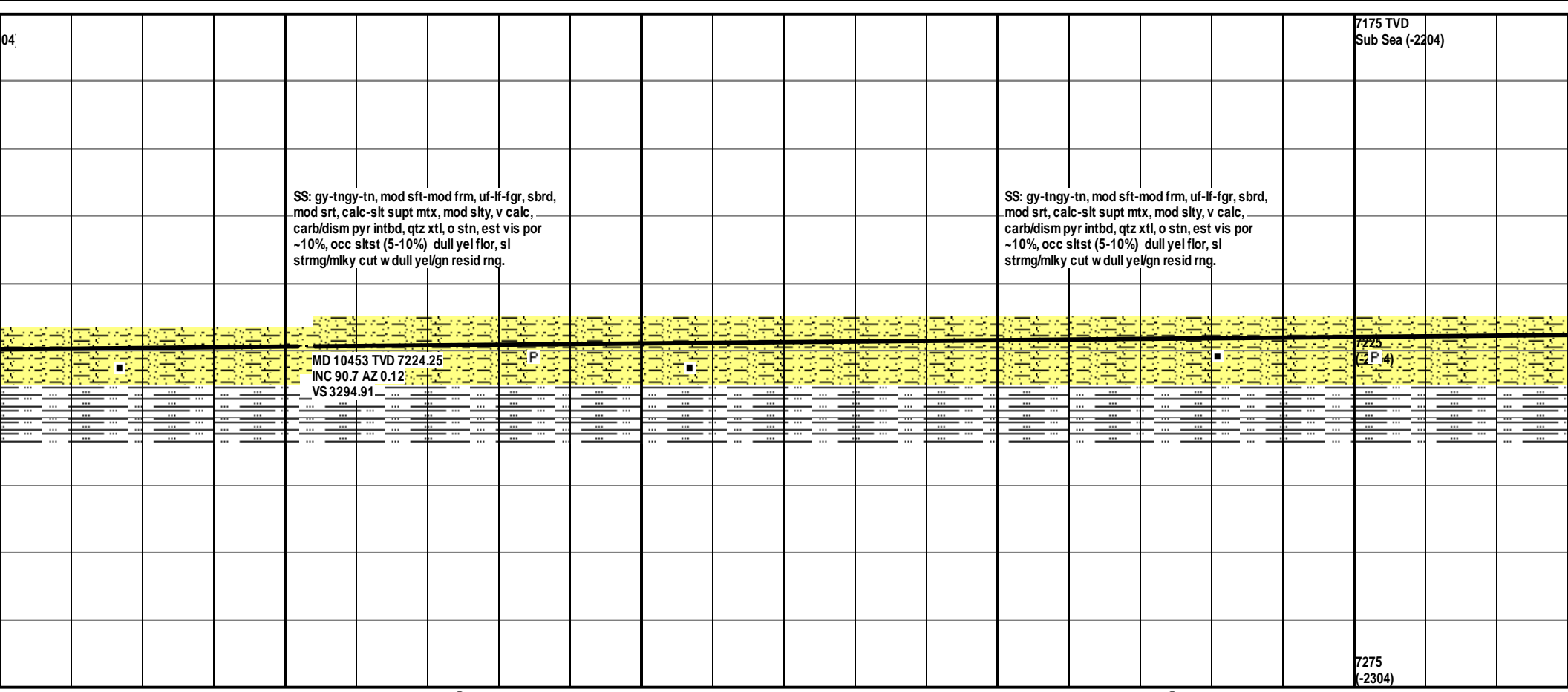
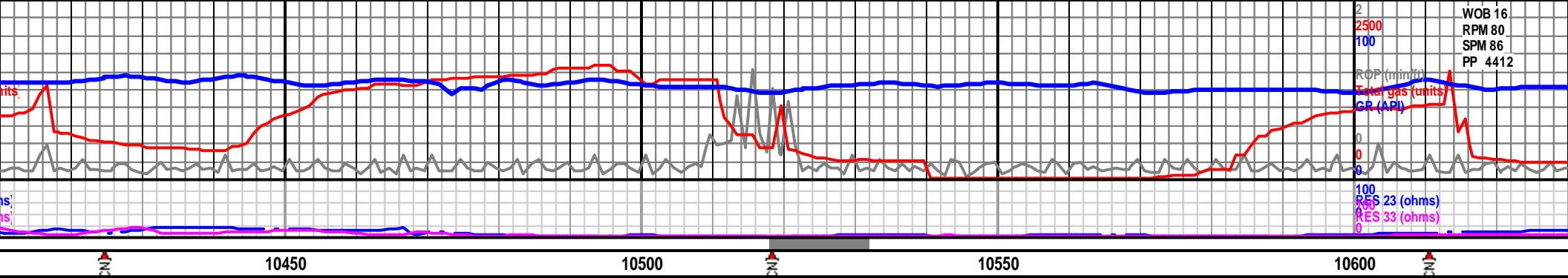


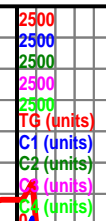
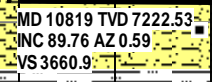
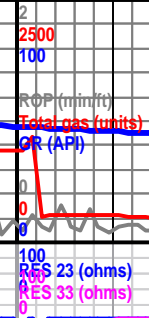










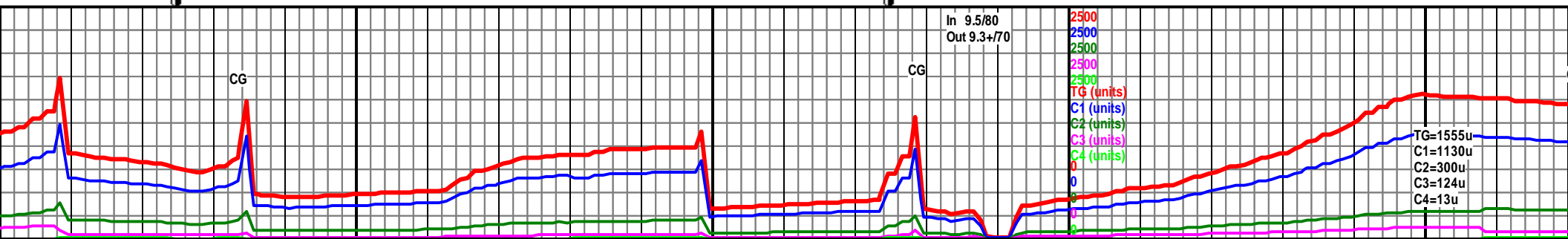
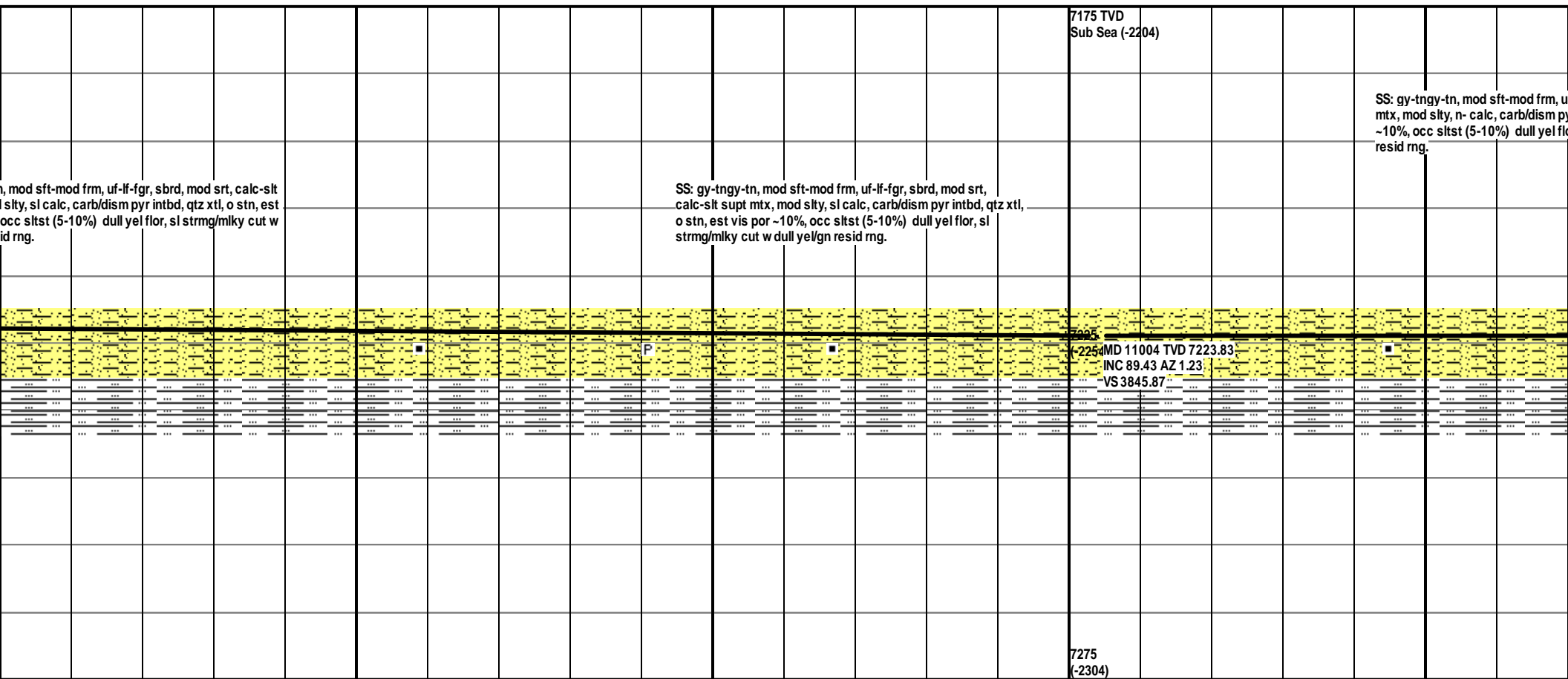
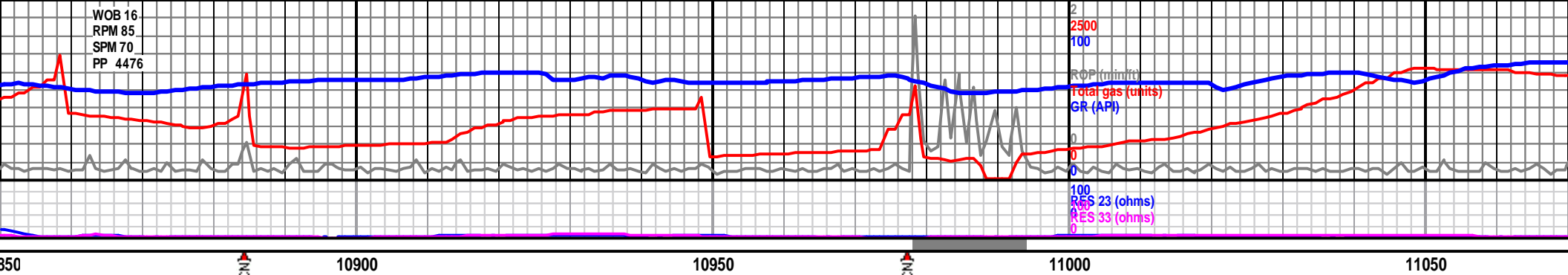


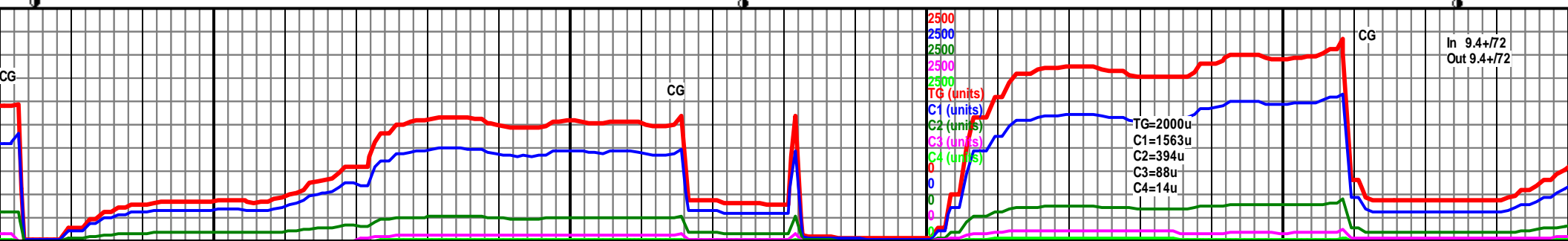
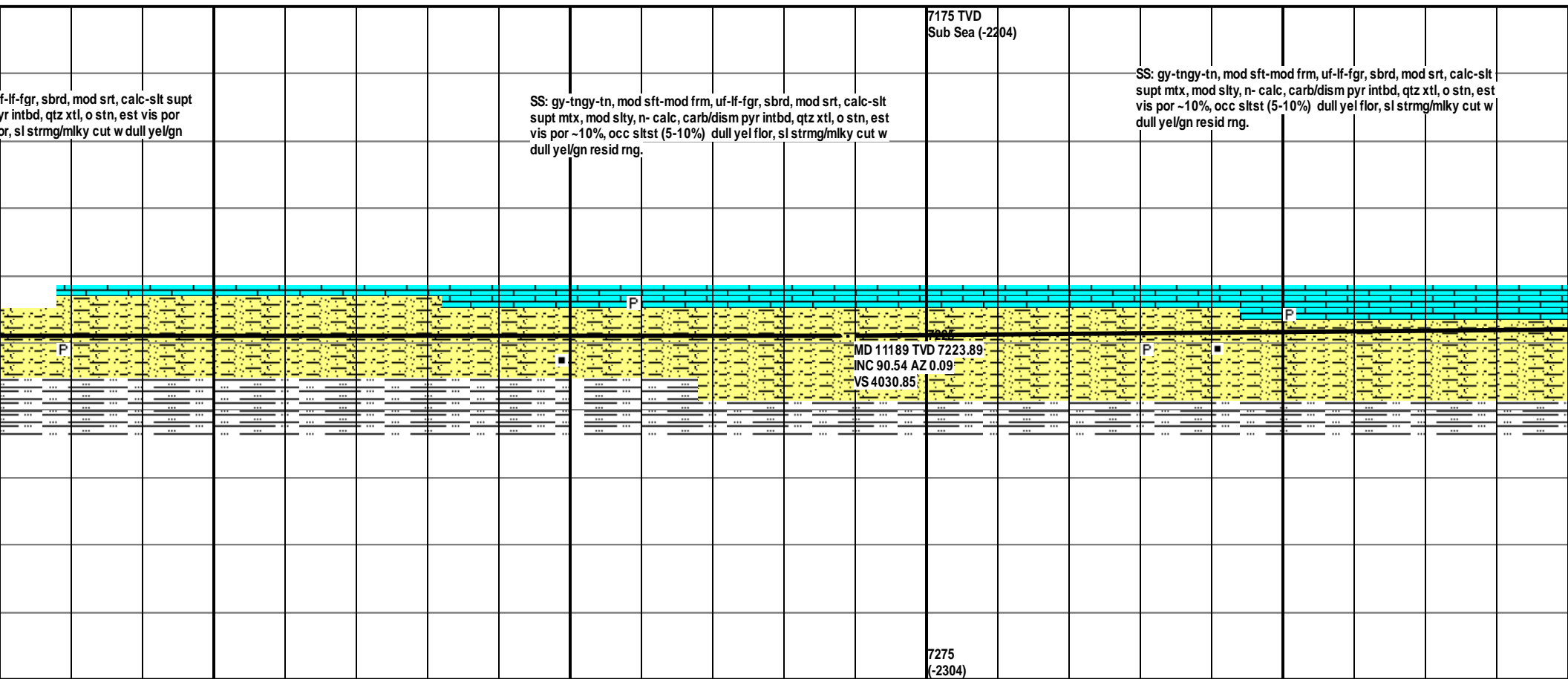
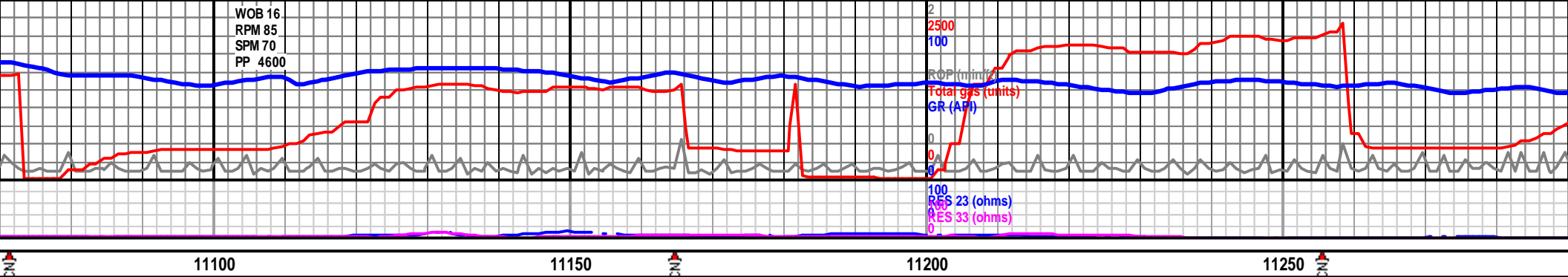
d @ 10,612'  
 9.4  
 67  
 YP 16/11  
 8/11/13  
 18.6  
 50000  
 3.3  
 9.1%  
 0/Oil 69/31  
 286  
 D 11.08

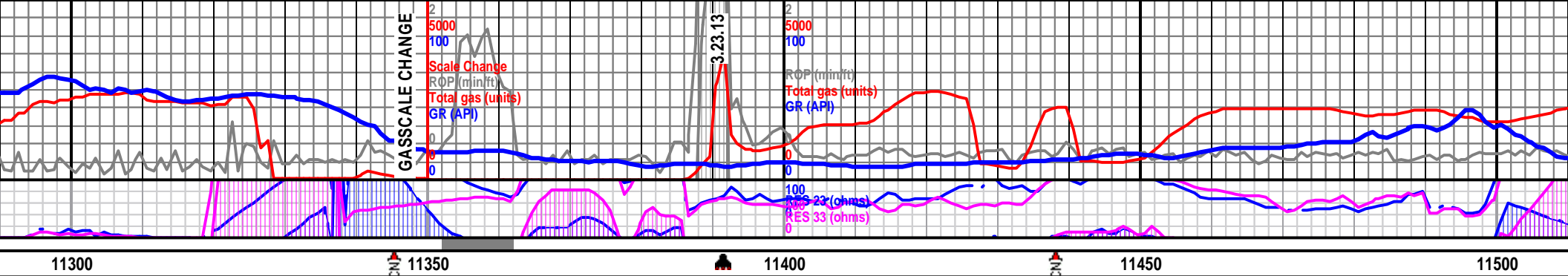
In 9.5/75
Out 9.5/80



WOB 16  
RPM 85  
SPM 70  
PP 4476







SS: gy-tngy-tn, mod sft-mod frm, uf-lf-gr, sbrd, mod srt, calc-slt supt mntx, mod slty, n- calc, carb/dism pyr intbd, qtz xtl, o stn, est vis por ~10%, occ sltst (5-10%) dull yel flor, sl strmg/mlky cut w dull yel/gn resid rng.

11,391' MD TOH DUE TO LOSS IN PUMP PRESSURE. BIT #5 DRLD 2,480' IN 17.5 HRS. LD BIT, MOTOR, CLEATED P.R.T. COLLAR. TBIH, Bit #6 6 1/8" SMITH PDC, MDI513, SN: JG5926. Jets 5x16 w/ MWD GR/PRT/Survey BHA & Directional Mud Motor (1.50°), Agitator set back 2980' f/bit; In @ 11,391'

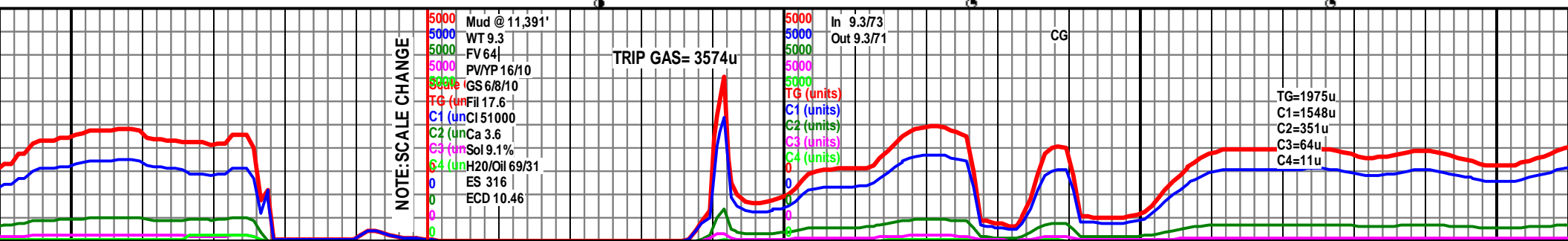
LS: crmy tan -wh, m frm- frm, c/n, microxln, pty-blky, Fnt strmg cut, dull yel/bl resid rng.

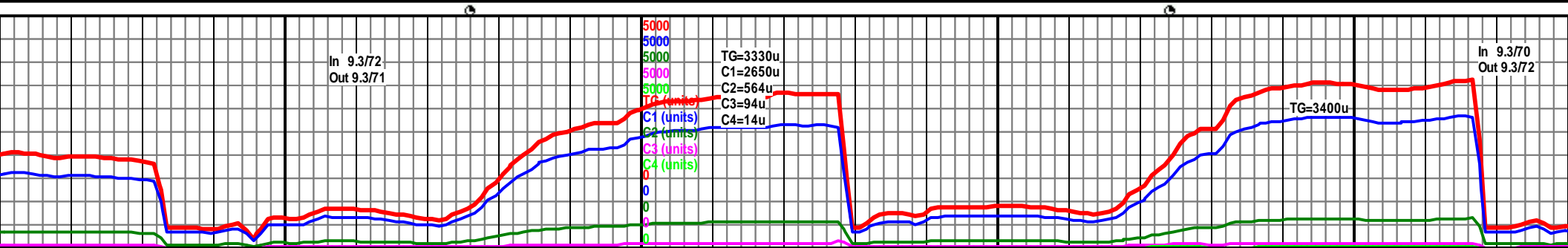
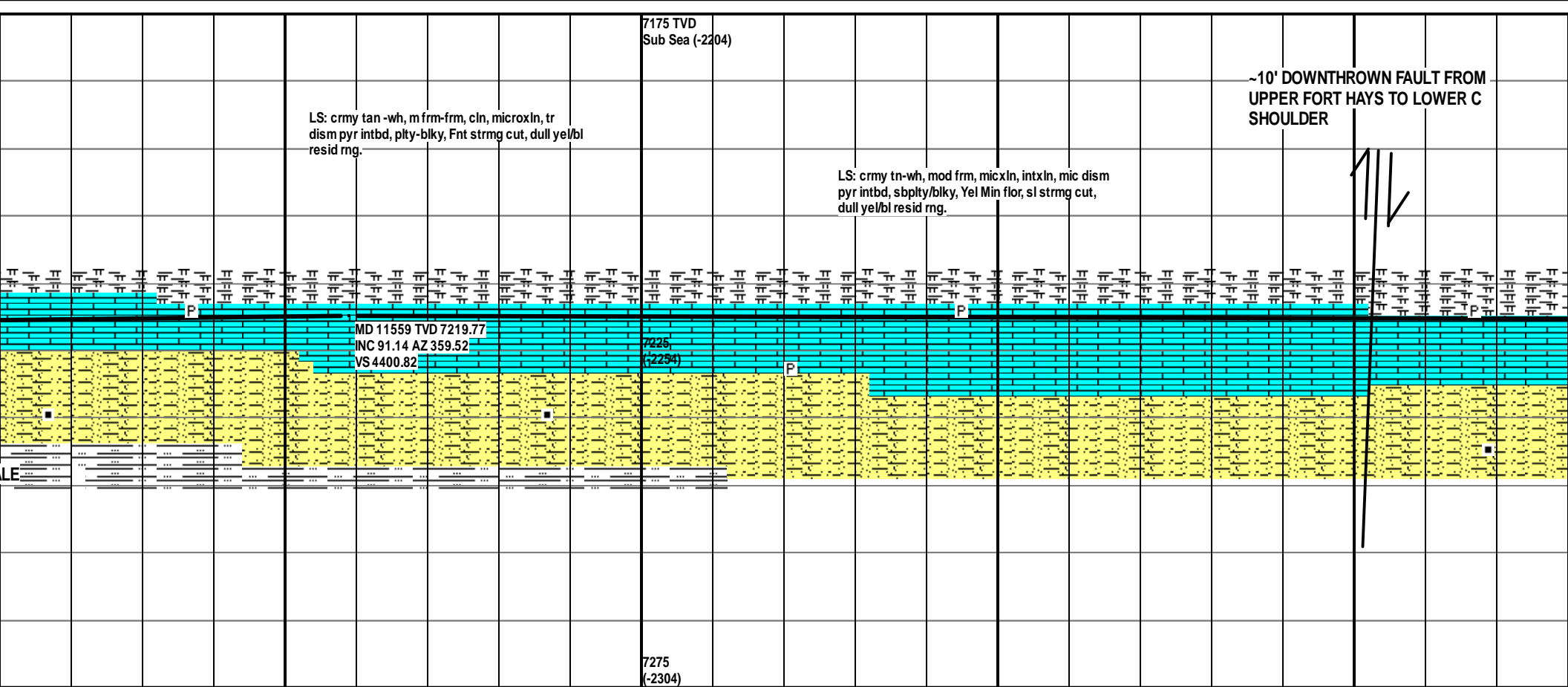
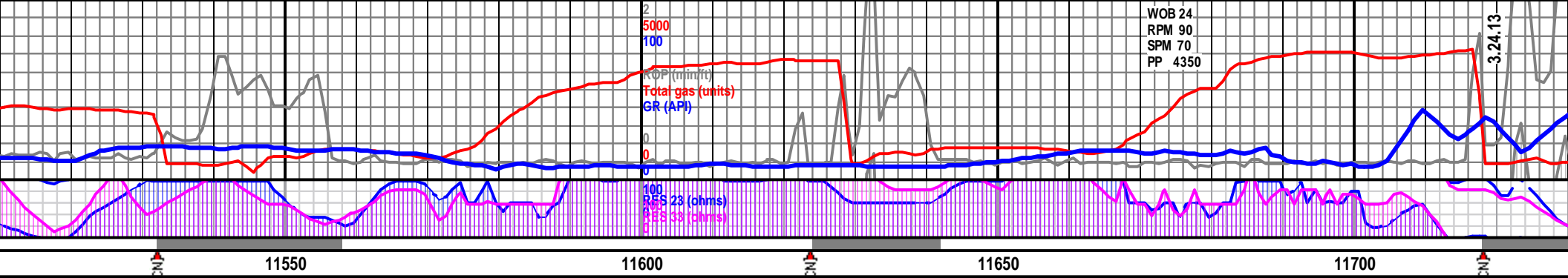
**FORT HAYS**  
MD: 11,344' TVD: 7221' SS: -2,250'

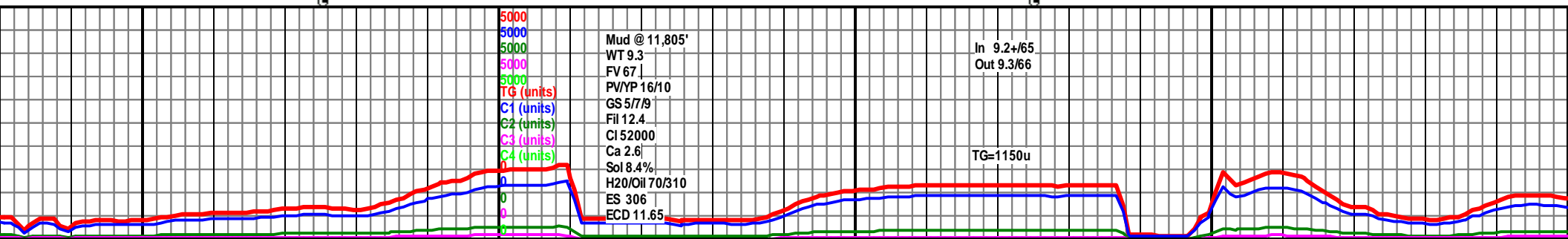
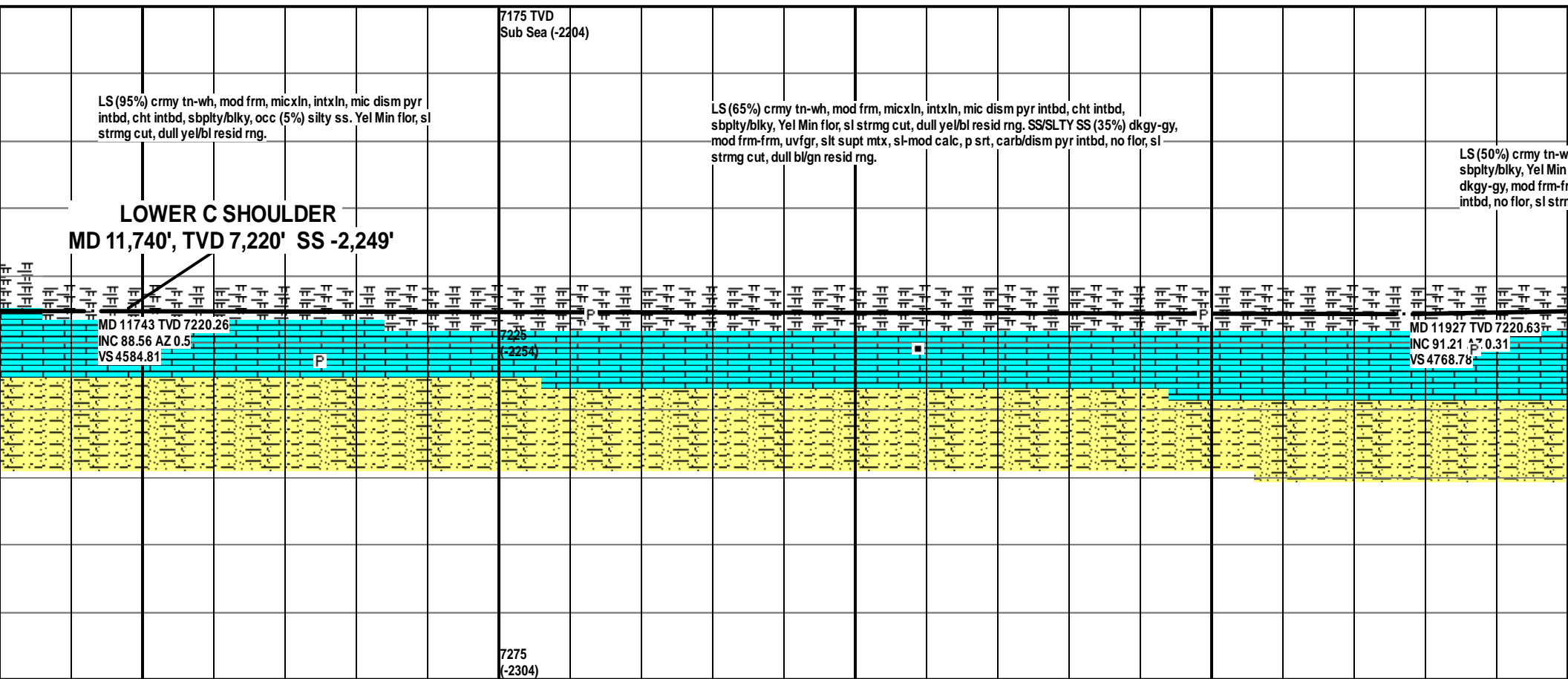
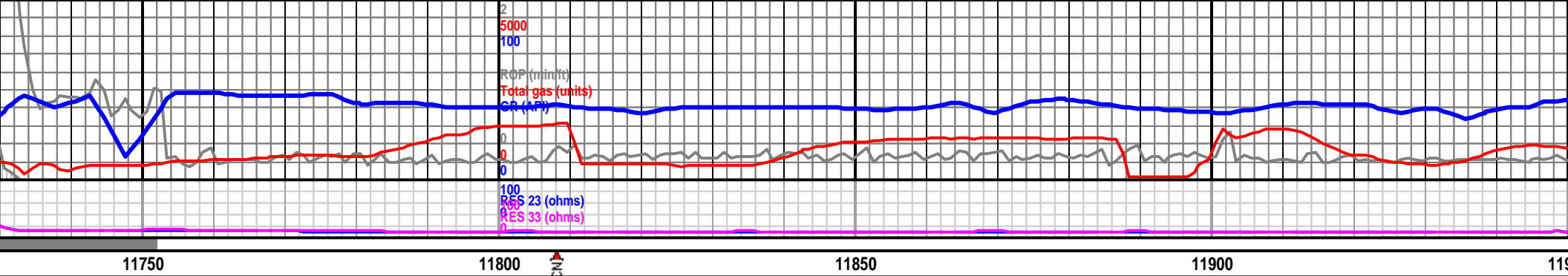
MD 11375 TVD 7222.3  
INC 90.44 AZ 0.21  
VS 4216.84

**CODELL SANDSTONE**

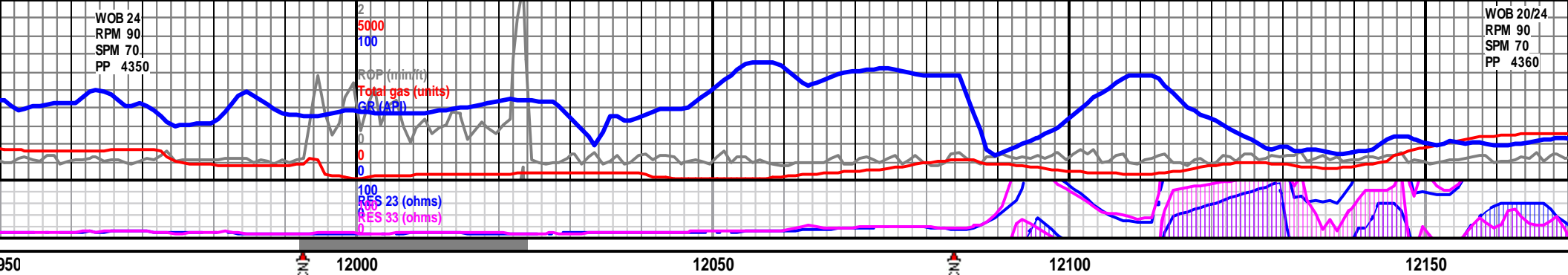
CARLILE SHA







WOB	20/24
RPM	90
SPM	70
PP	4360

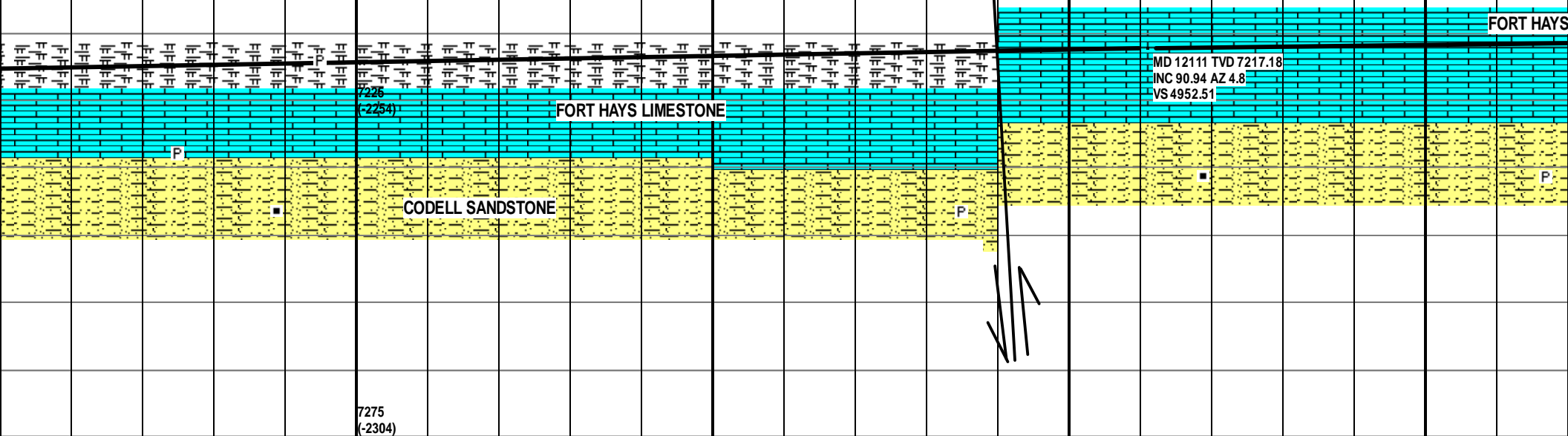


h, mod frm, micxln, intxln, mic dism pyr intbd, cht intbd,  
flor, sl strmg cut, dull yel/bl resid rng. SLTST/SH (50%)  
rm, uvfgr, slit supt mtz, sl-mod calc, p srt, carb/dism pyr  
ng cut, dull bl/gn resid rng.

LS (40%) crmy tn-wh, mod frm, micxn, intxn, mic dism pyr intbd, cht  
intbd, sbpty/blky, Yel Min flor, sl strmg cut, dull yel/bl resid rng.  
SLTST/SH (60%) dkgy-gy, mod frm-frm, uvfgr, slt supt mttx, sl-mod calc, p  
srt, carb/dism pyr intbd, no flor, sl strmg cut, dull bl/gn resid rng.

~40 UPTHROWN FAULT FROM  
LOWER C SHOULDER TO FORT  
HAYS LIMESTONE

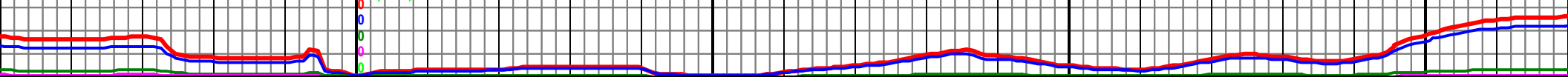
LS (80%) crmy tn-wh, mod frm, micxln, intxln, mic  
sbply/bky, Yel Min flor, sl strmg cut, dull yel/bl res  
mod frm-frn, uvf-lfgr, slt supt mtz, mod calc, p srt  
strmg cut, dull bl/gn resid rng.



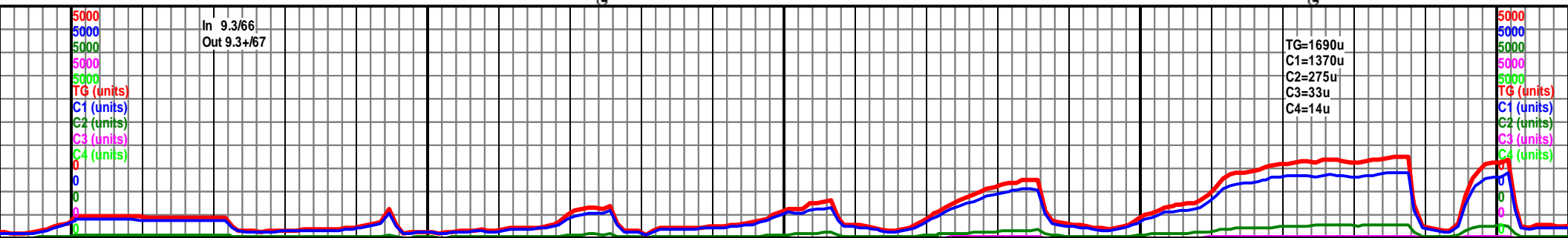
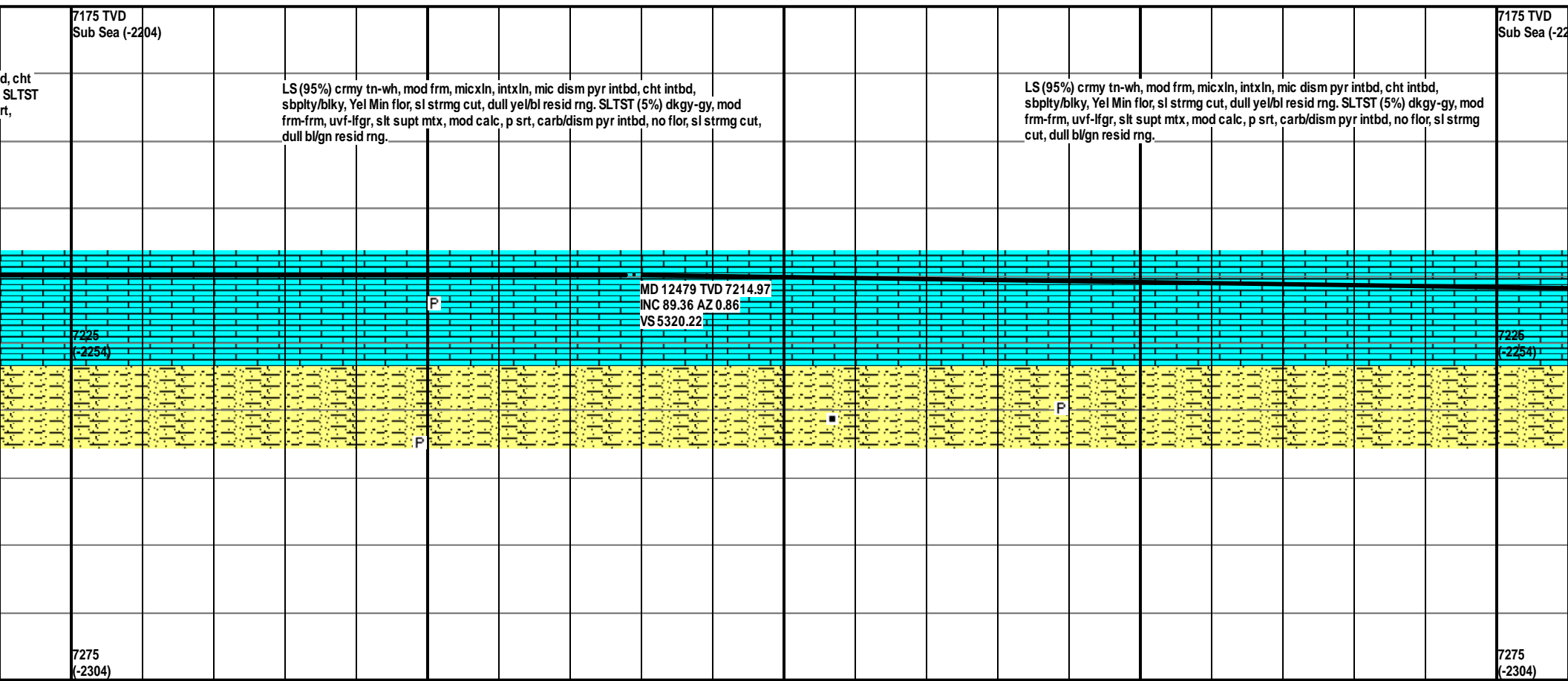
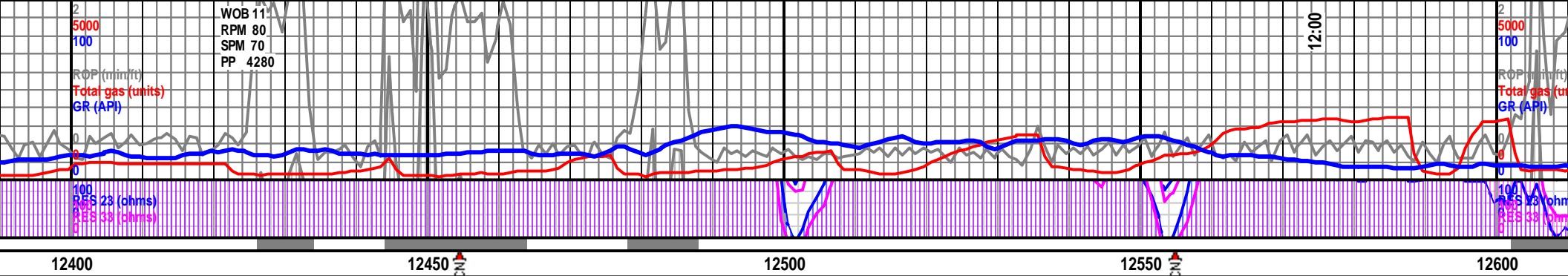
5000				In 9.3/66
5000				Out 9.3/65
5000				
5000				
5000				
TG (units)				
C1 (units)				
C2 (units)				
C3 (units)				
C4 (units)				

In 9.3/66
Out 9.3/67

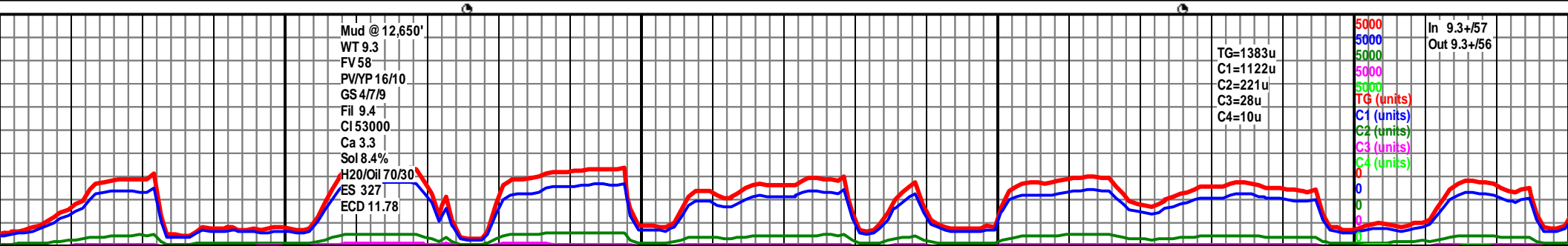
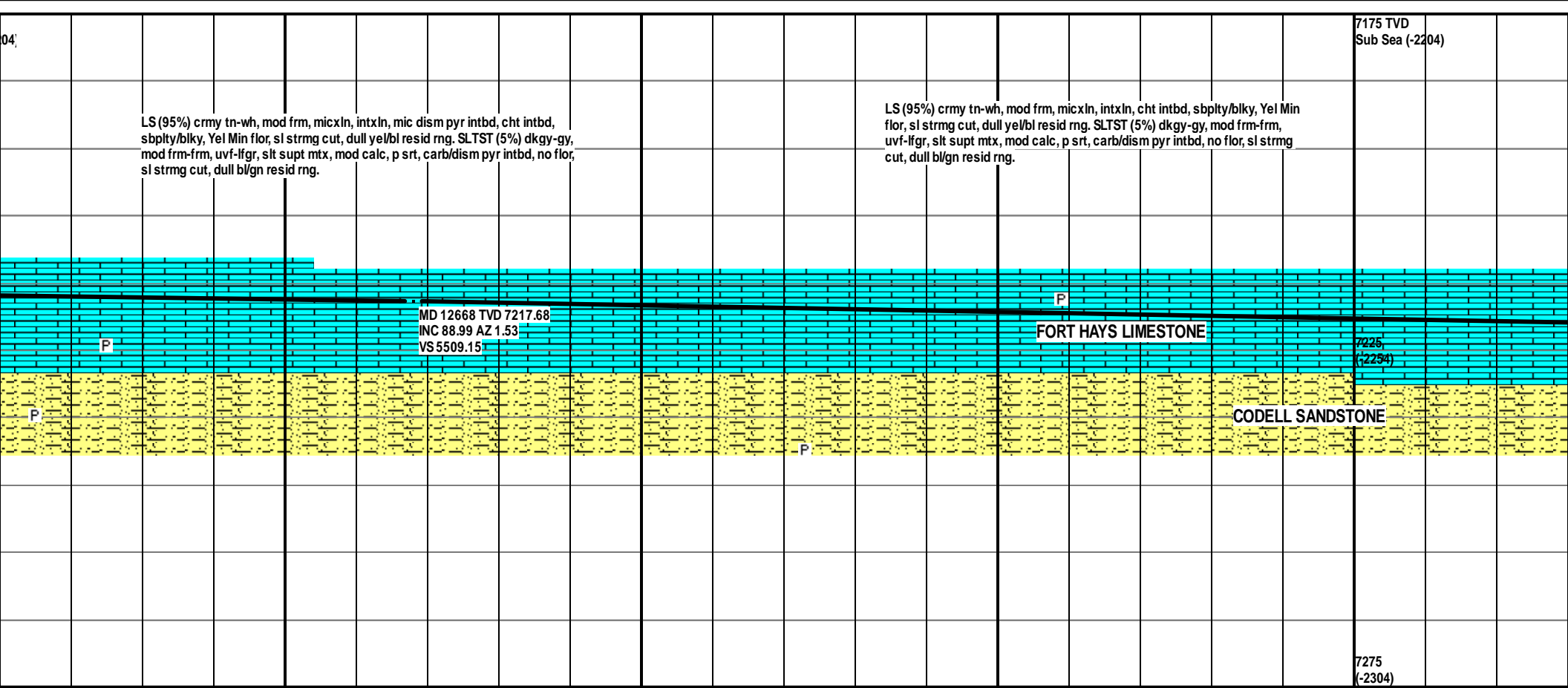
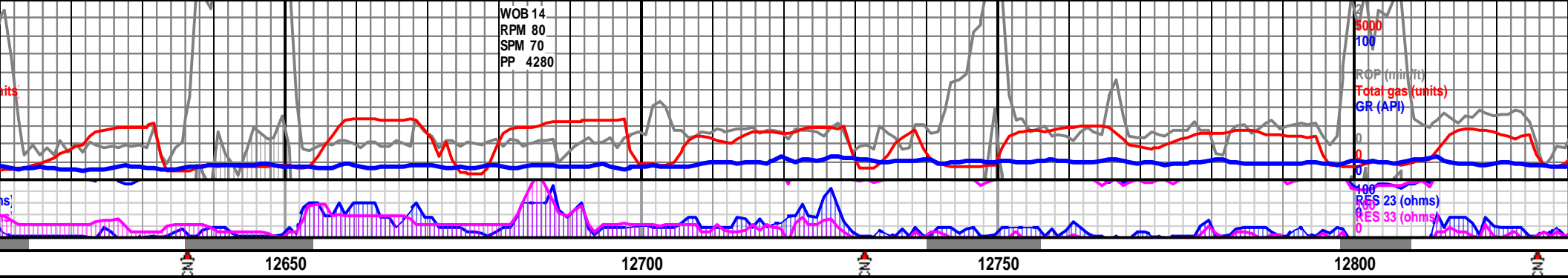
TG=1315u

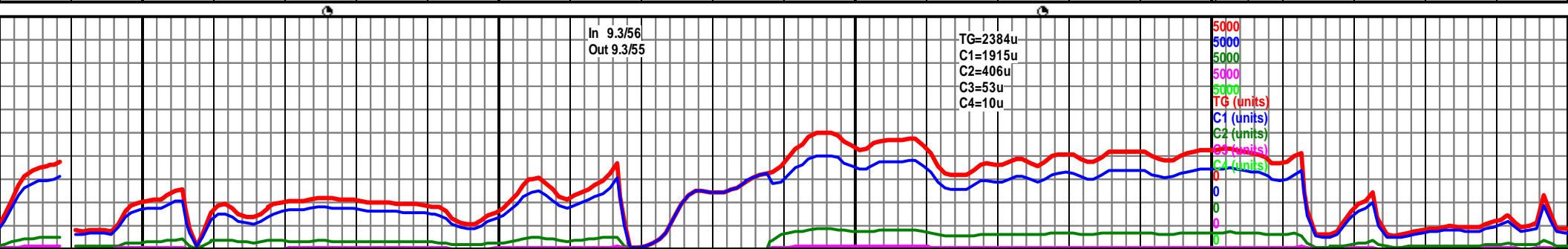
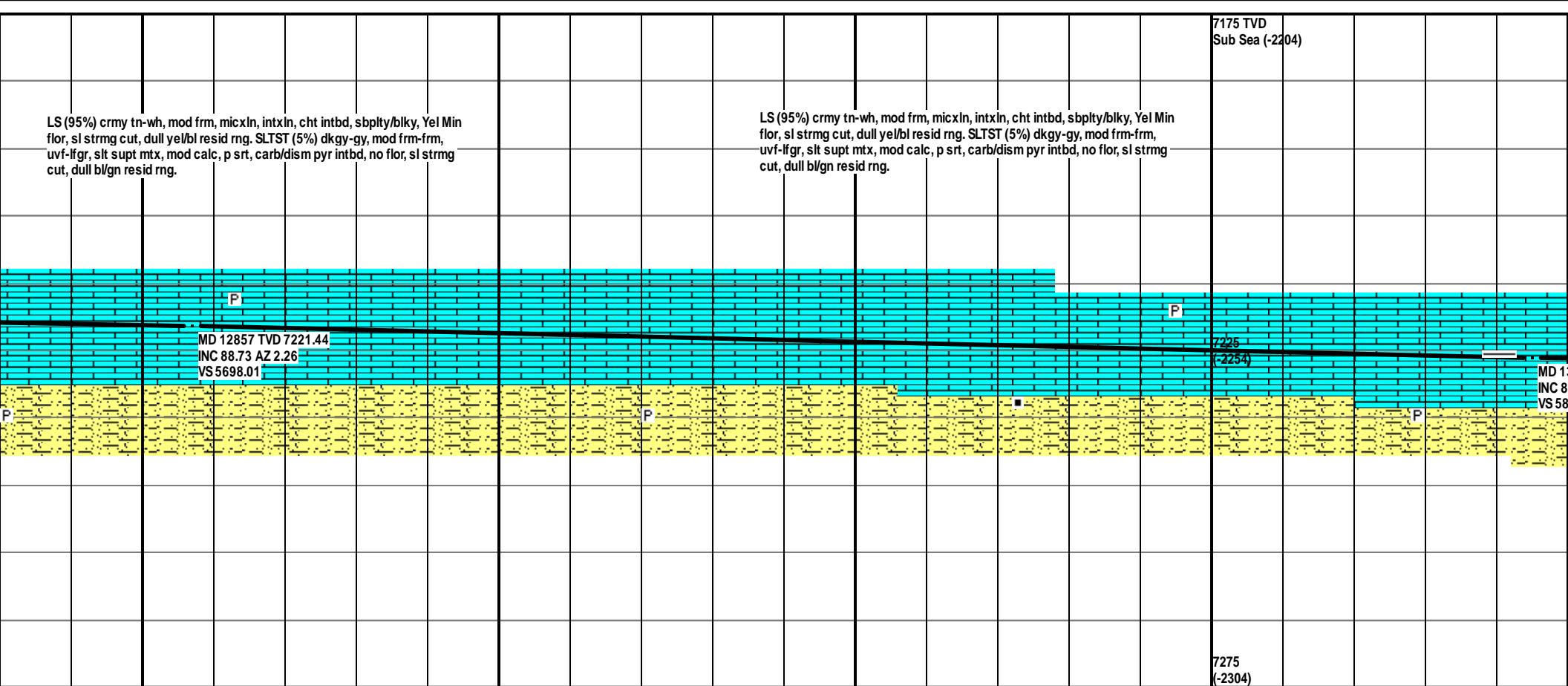
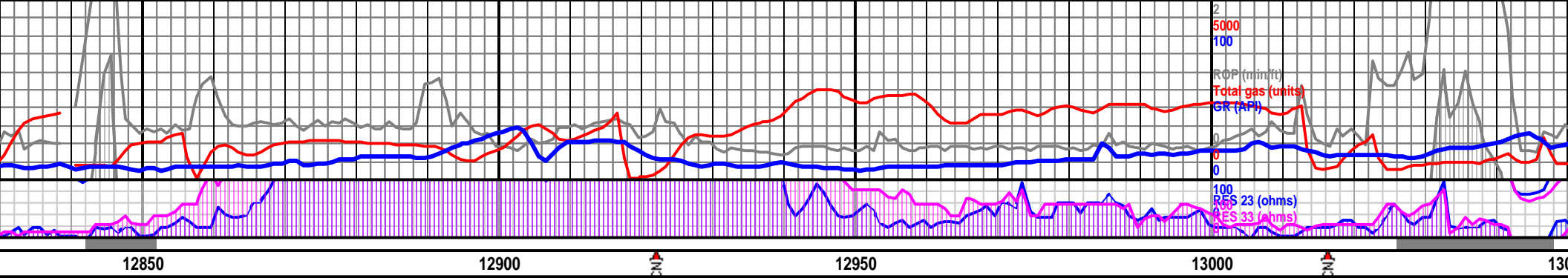


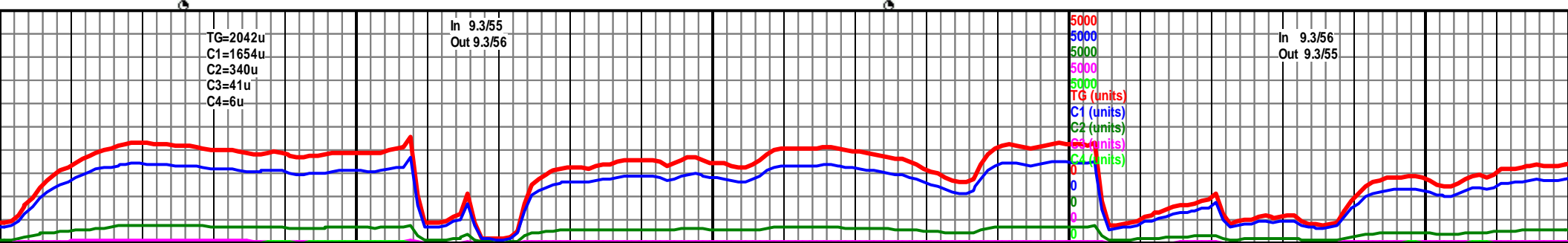
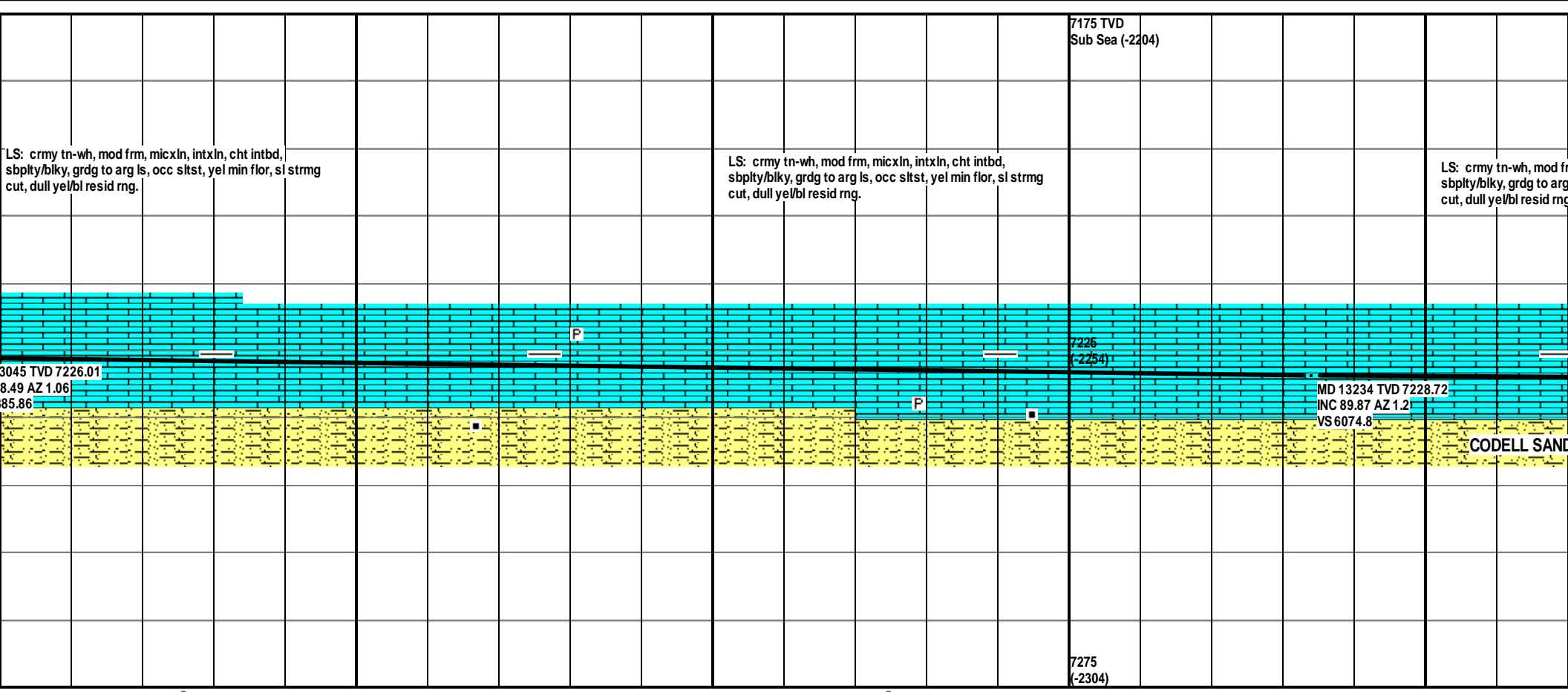
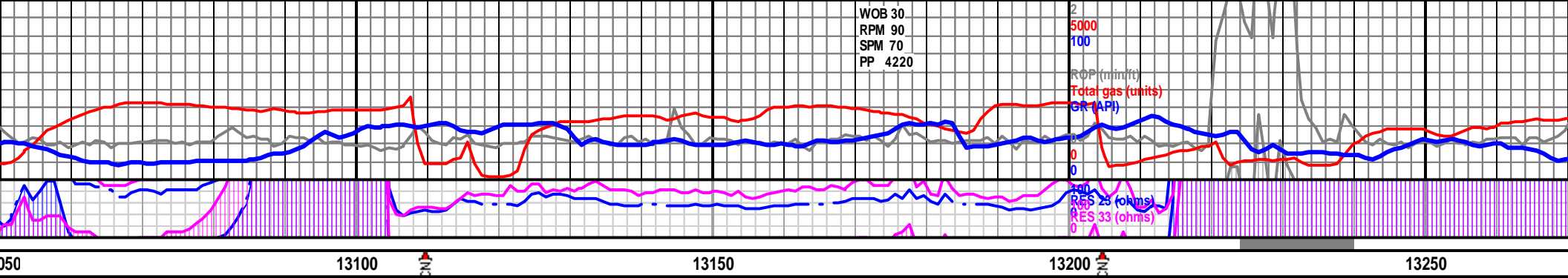


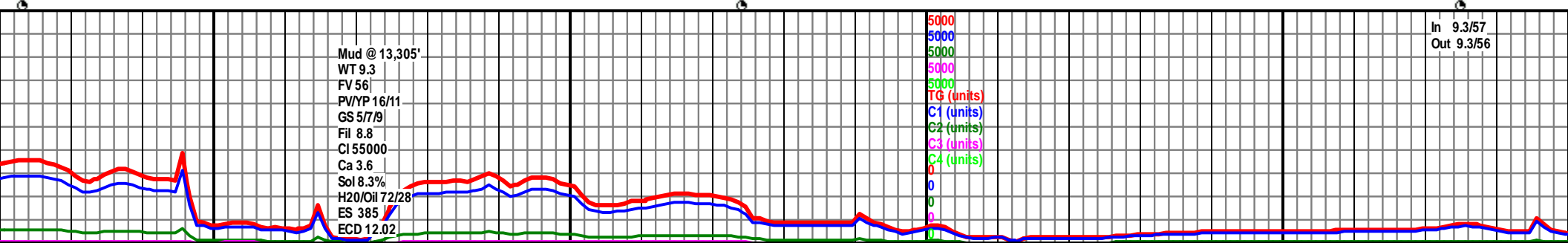
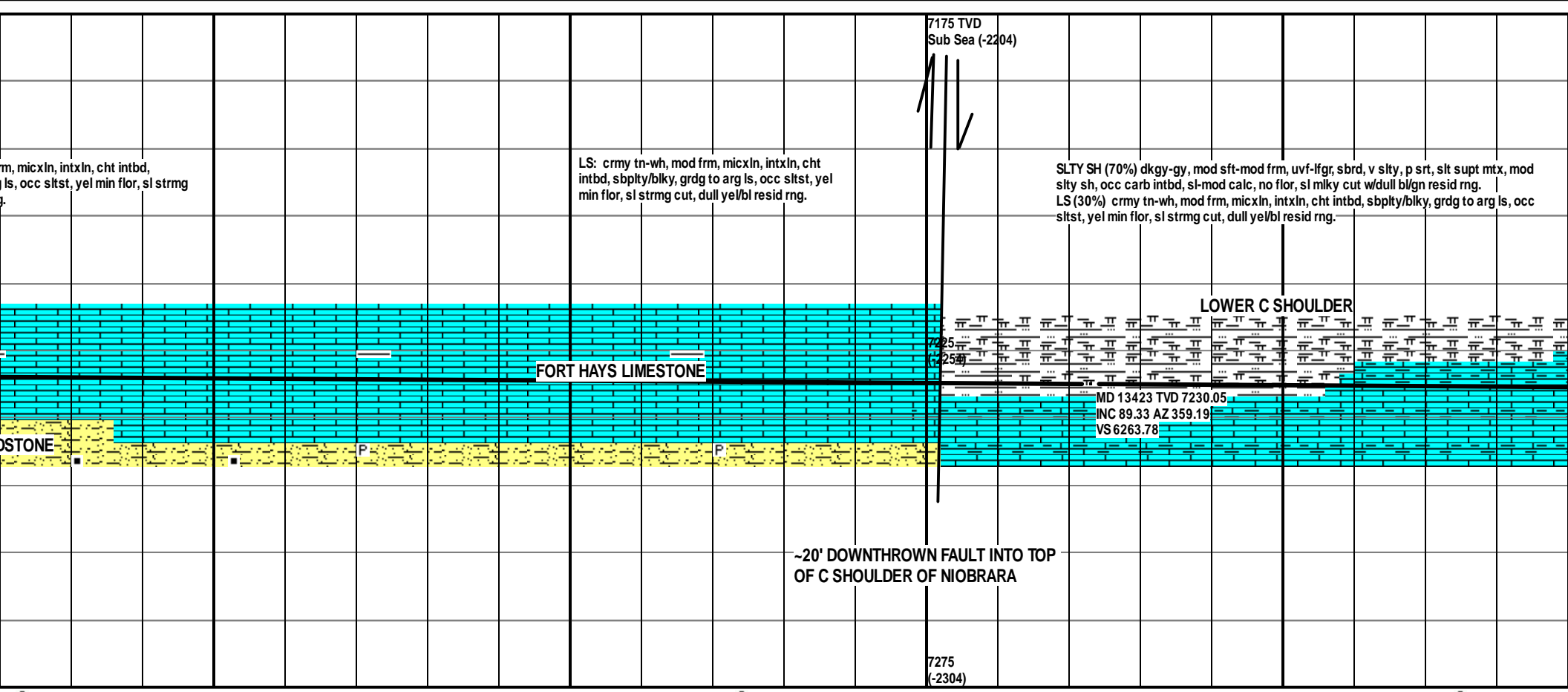
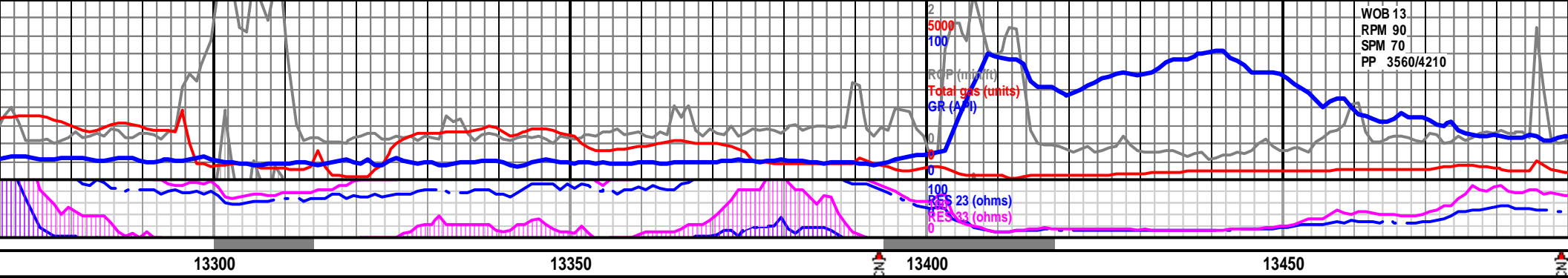


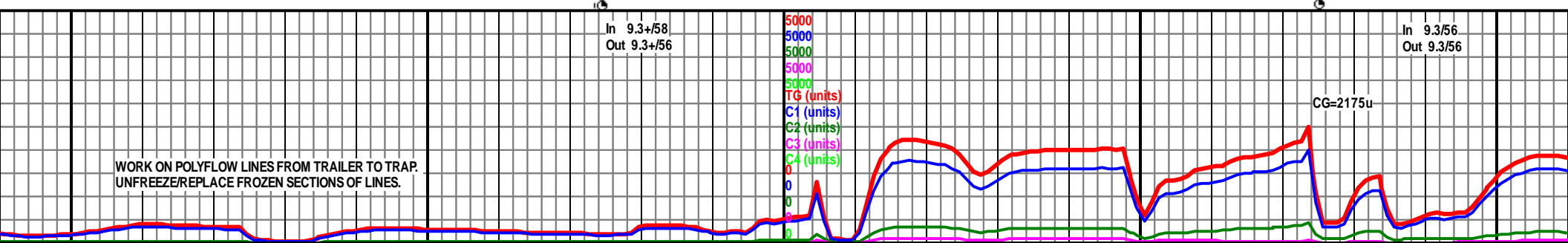
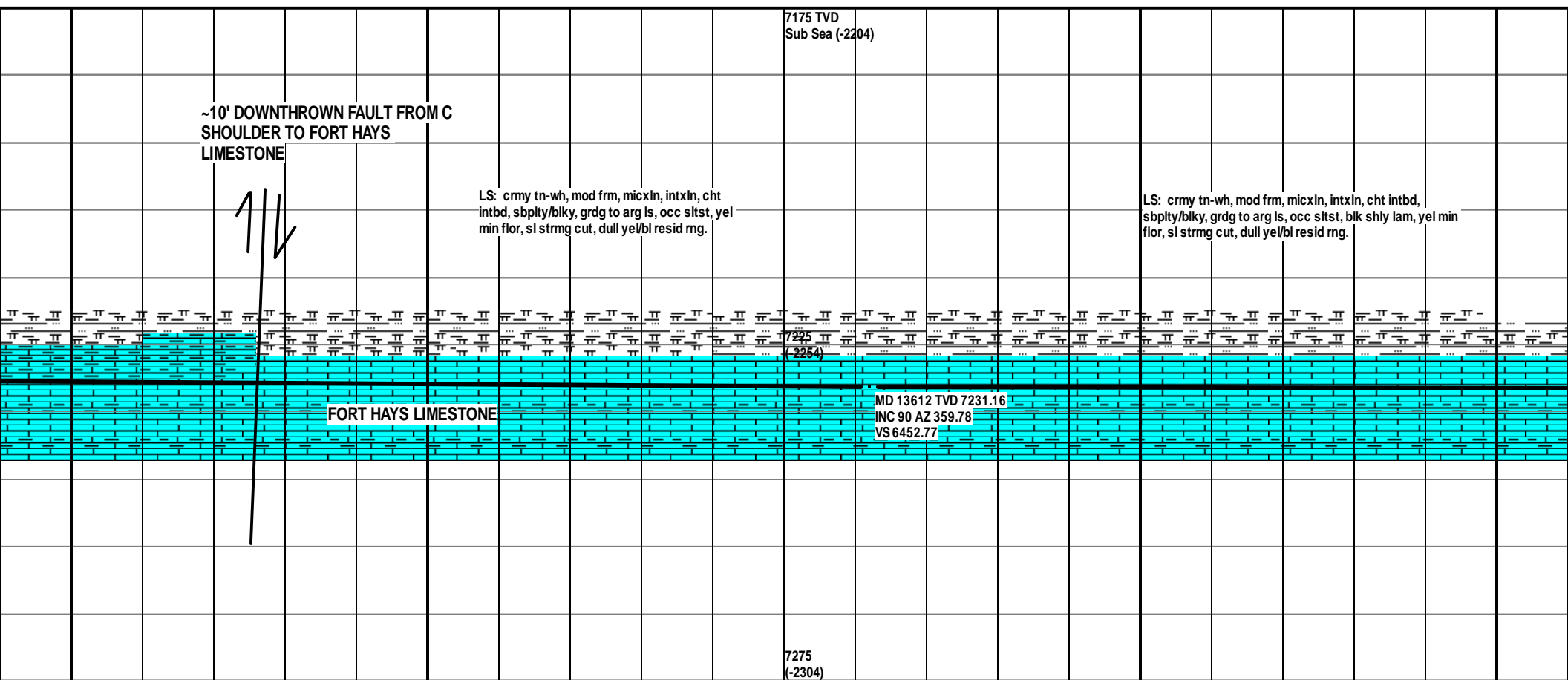
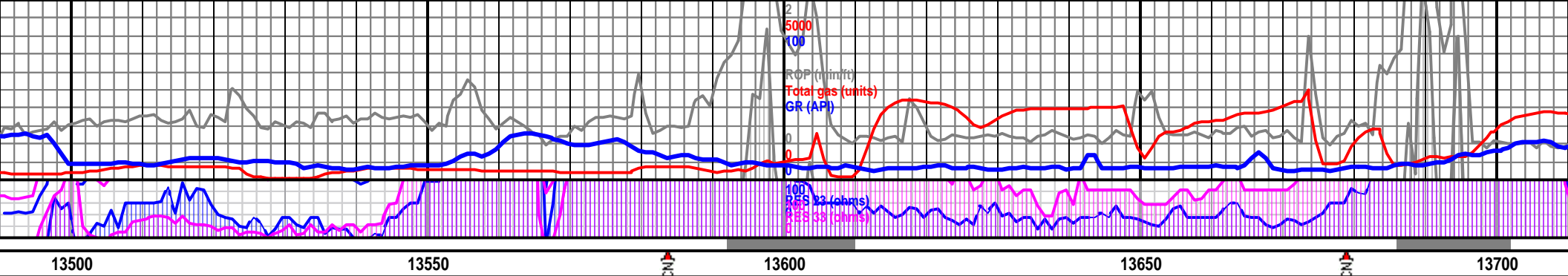




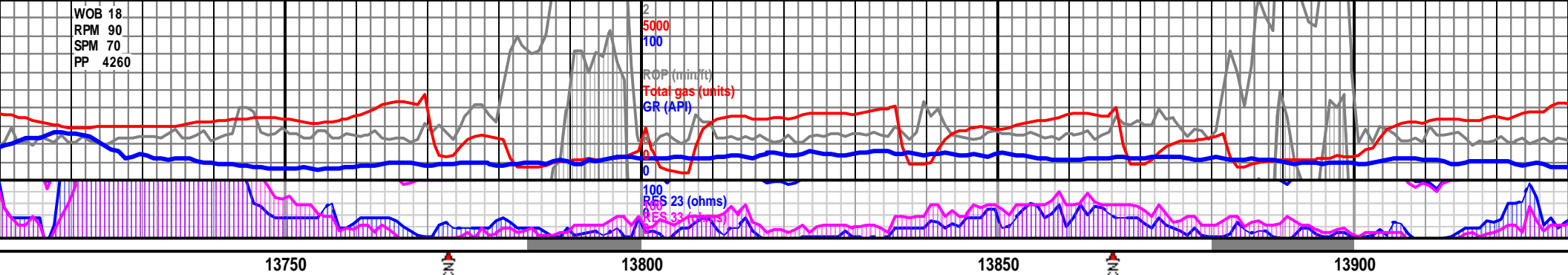








WOB 18  
RPM 90  
SPM 70  
PP 4260



LS: crmy tn-wh, mod frm, micxn, intxn, cht intbd, sbply/blk, grdg to arg ls, occ sltst, blk shly lam, yel min flor, sl strmg cut, dull yel/bl resid rng.

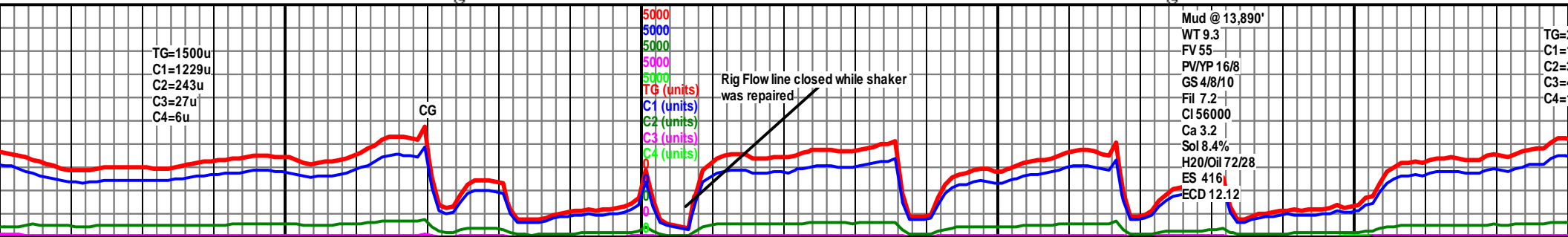
LS: crmy tn-wh, mod frm, micxn, intxn, cht intbd, sbply/blk, grdg to arg ls, occ sltst, blk shly lam, yel min flor, sl strmg cut, dull yel/bl resid rng.

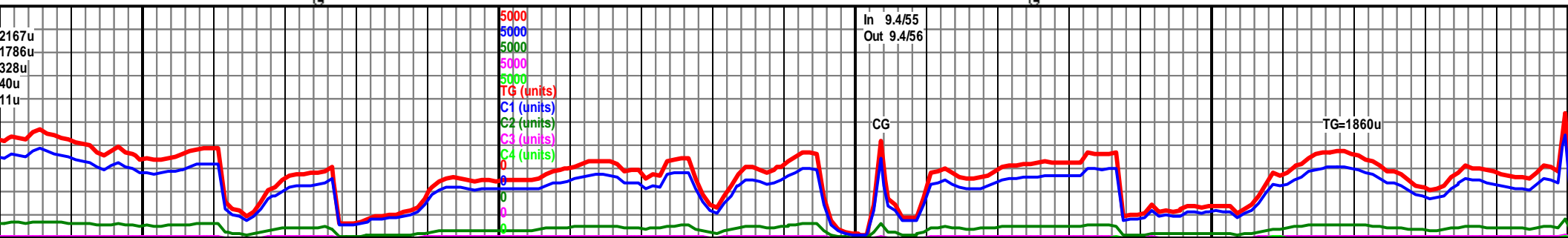
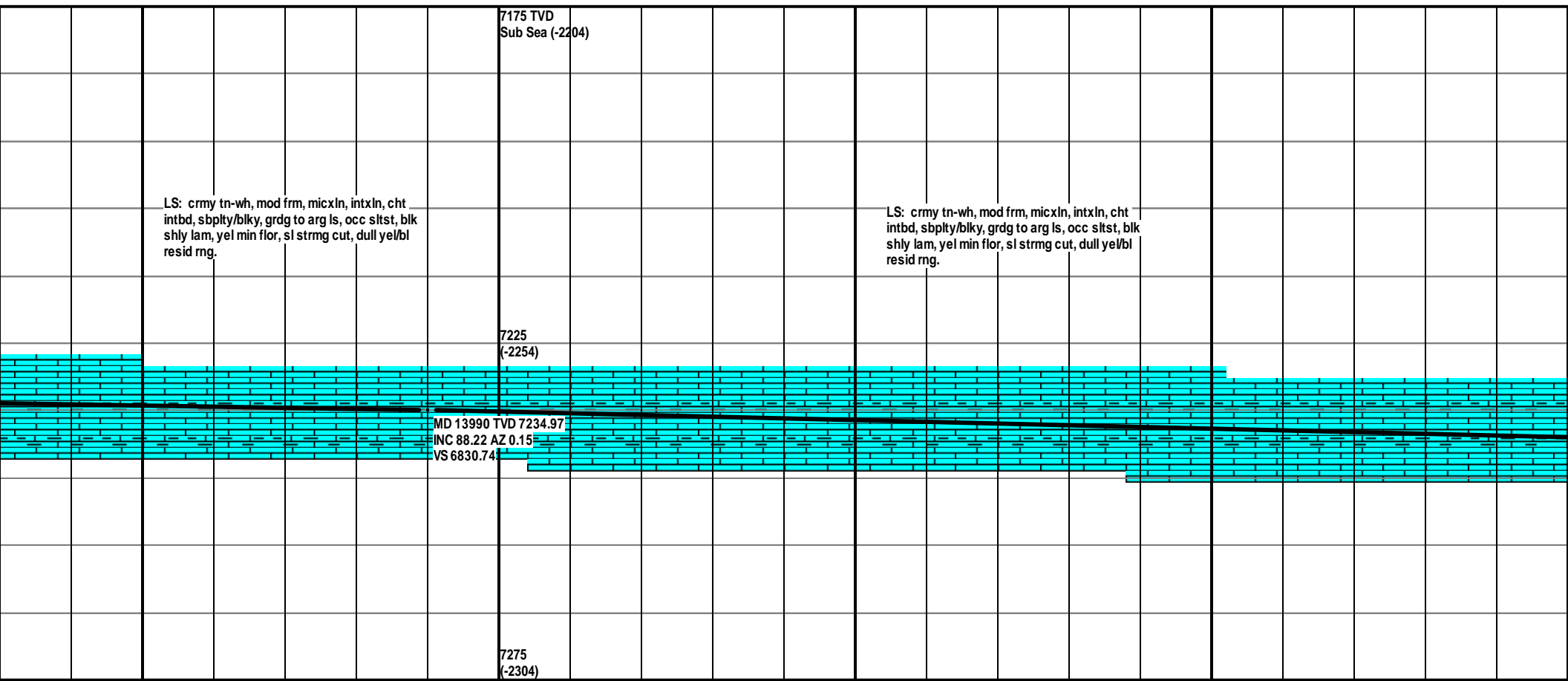
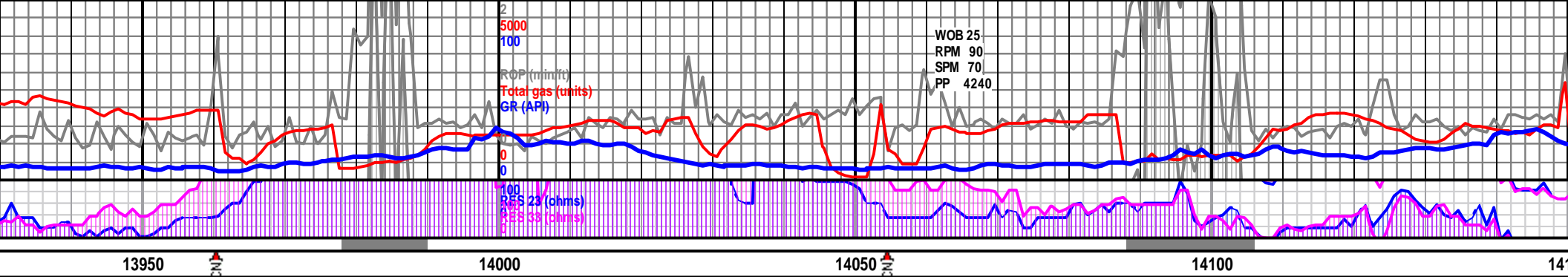
7175 TVD  
Sub Sea (-2204)

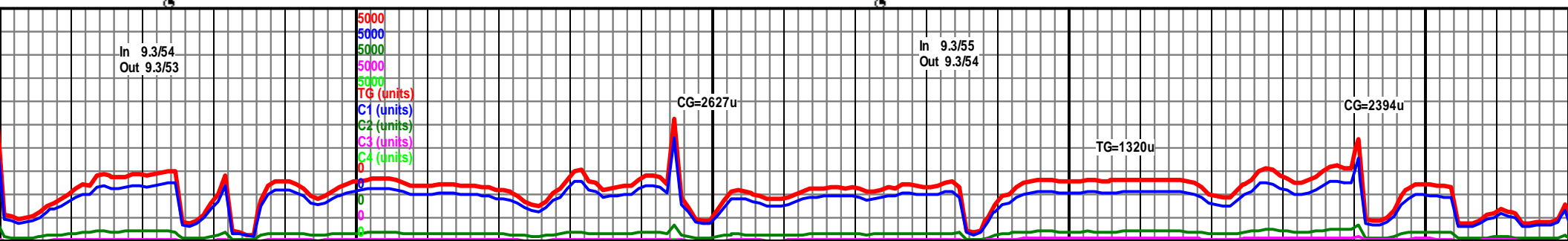
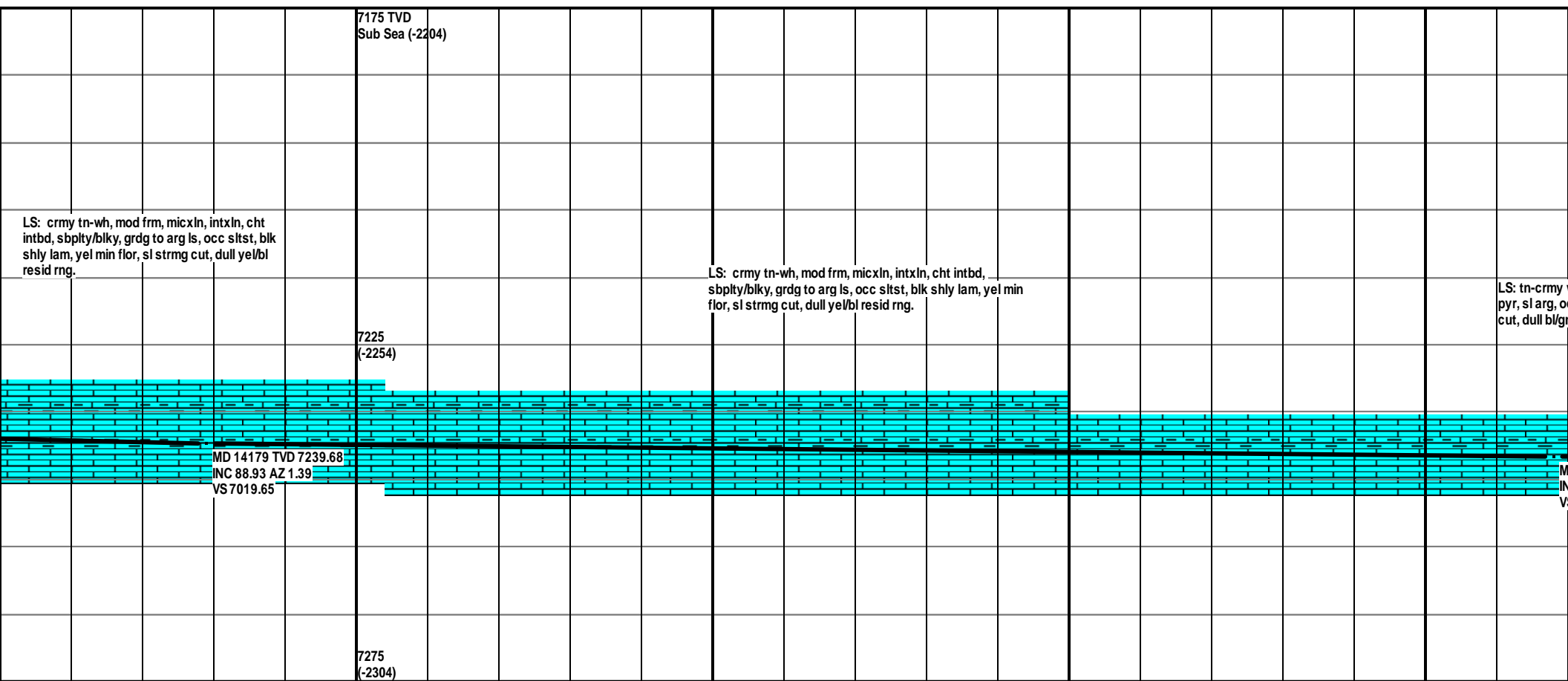
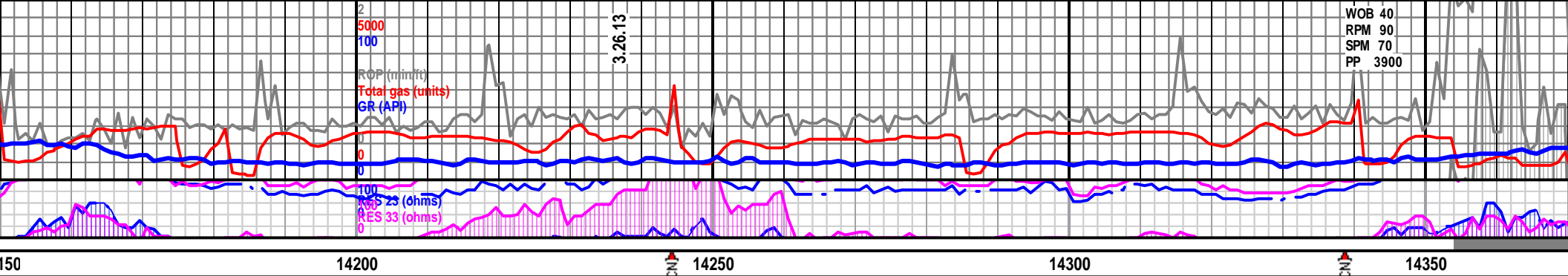
7225  
(-2254)  
MD 13801 TVD 7231.6  
INC 89.73 AZ 0.19  
VS 6641.77

7275  
(-2304)

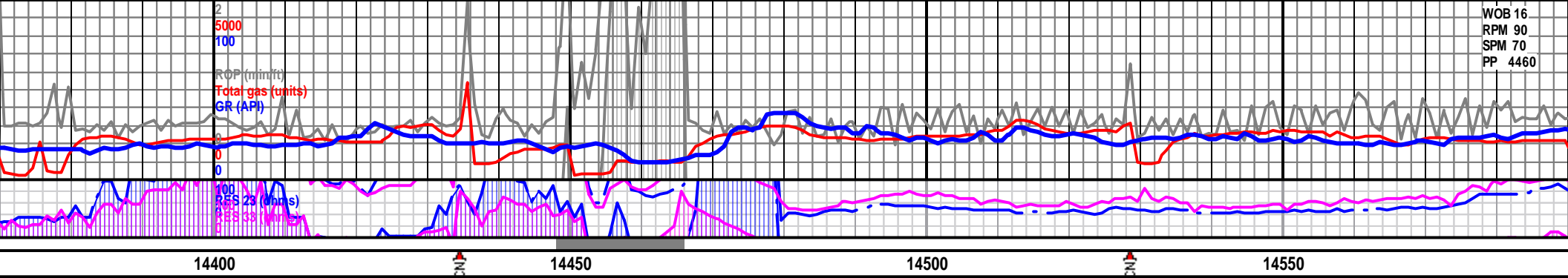
TG=1500u  
C1=1229u  
C2=243u  
C3=27u  
C4=6u



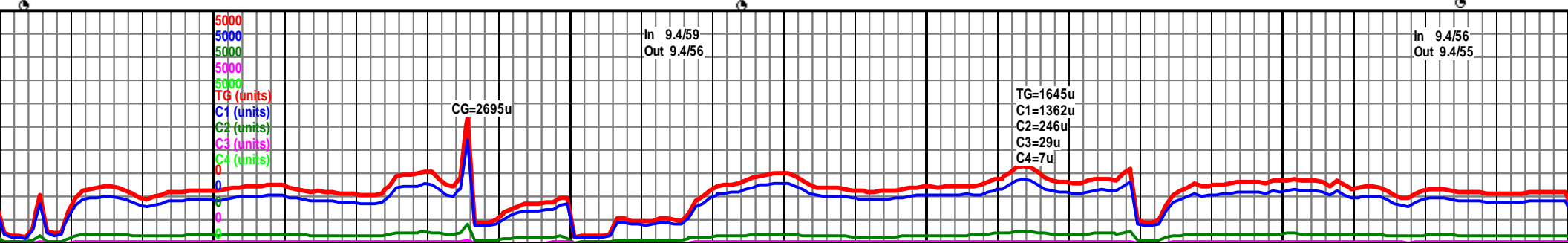


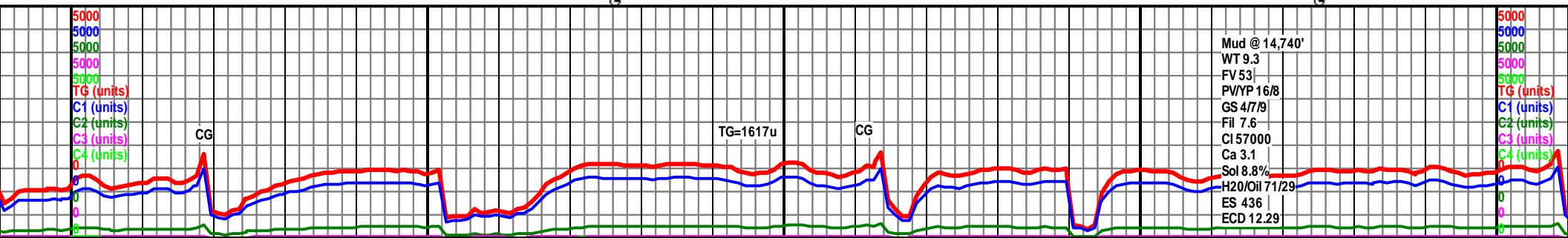
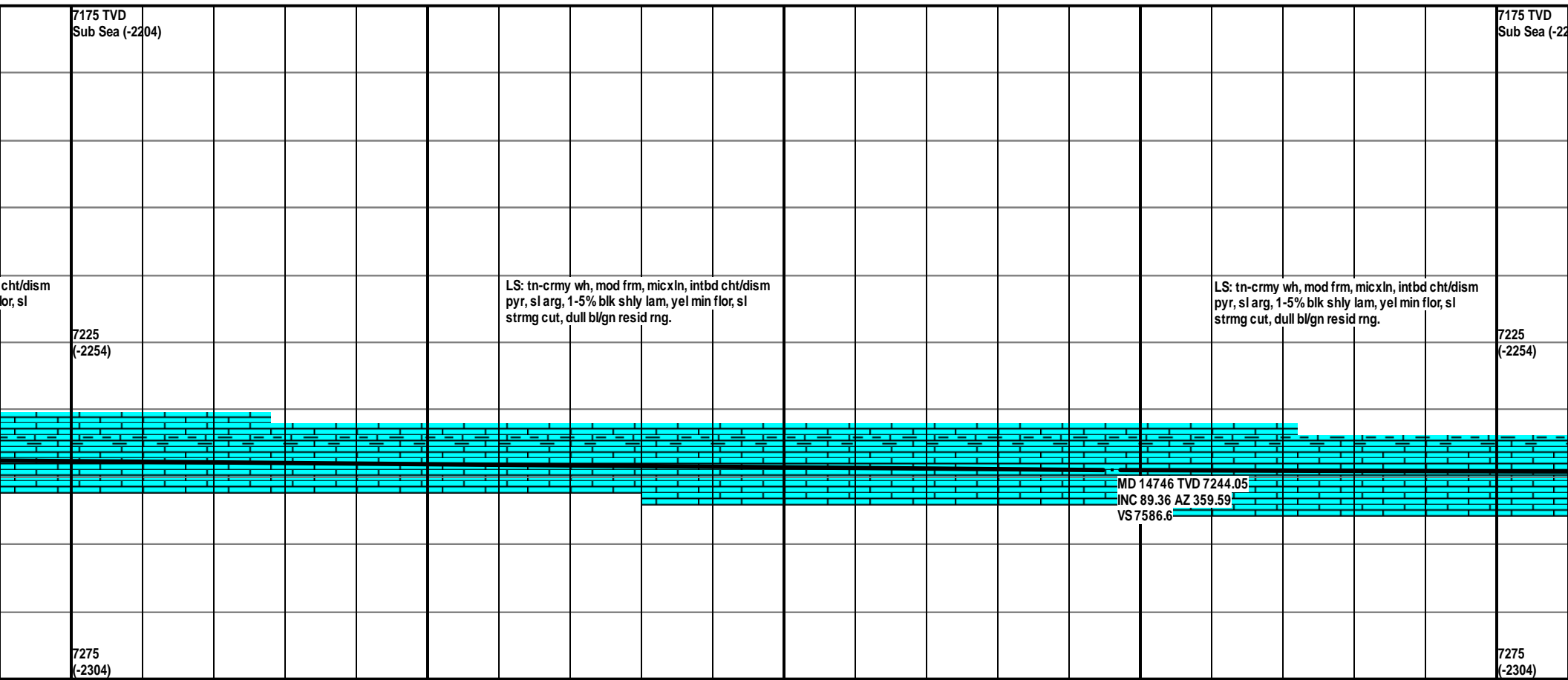
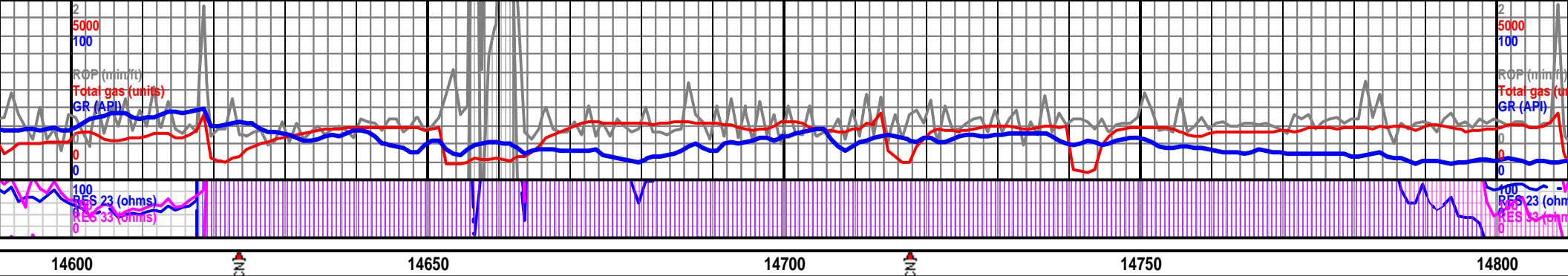


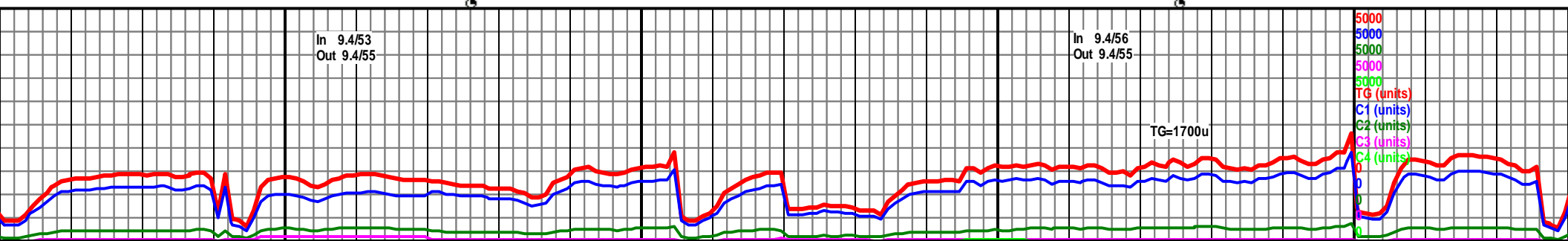
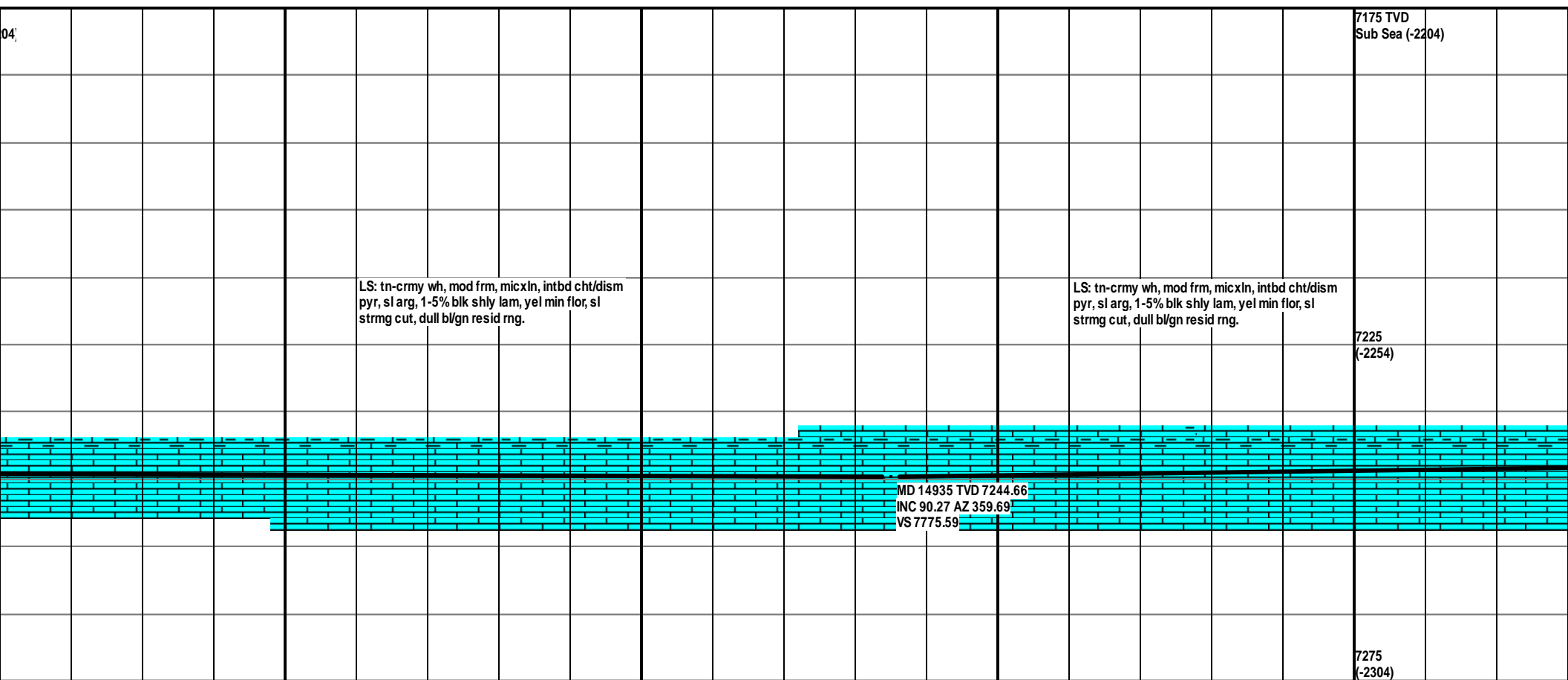
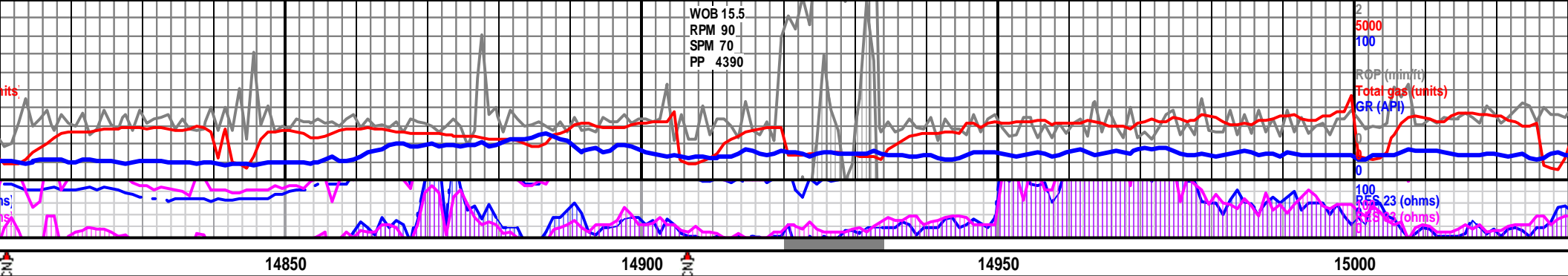




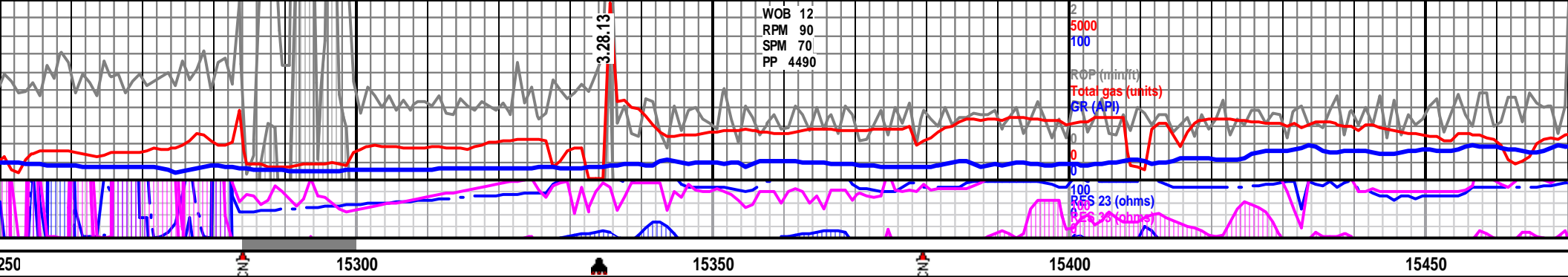
7175 TVD Sub Sea (-2204)											
wh, mod frm, micxln, intbd cht/dism cc blk shly lam, yel min flor, sl strmg n resid rng.											
7225 (-2254)											
LS: tn-crmy wh, mod frm, micxln, intbd cht/dism pyr, sl arg, 5% blk shly lam, yel min flor, sl strmg cut, dull bl/gn resid rng.											
D 14368 TVD 7241.51 INC 89.97 AZ 0.29 S7208.62											
MD 14557 TVD 7242.28 INC 89.56 AZ 0.4 VS 7397.61											
7275 (-2304)											











~15' UPTHROWN FAULT WITHIN FORT  
HAYS LIMESTONE



15,335' MD TOH BIT #6 DRDL 3,944' IN 83 HRS. LD BIT, MOTOR, MWD, TBIH, Bit  
#7 6 1/8" SECURITY PDC, MMD54, SN: 12186530. Jets 5x16 w/ MWD  
GR/PRT/Survey BHA & Directional Mud Motor (1.50°), Agitator set back 2,980' f/bit;  
In @ 15,335'

LS: tn-crmy wh, mod frm, micxln, intbd cht/dism  
pyr, occ blk shly lam, yel min flor, sl strmg cut,  
dull bl/gn resid rng.

LS: tn-crmy wh, m  
pyr, occ blk shly l  
dull bl/gn resid rng

MD 15313 TVD 7241.18  
INC 89.29 AZ 0.94  
VS 8153.55

7175 TVD  
Sub Sea (-2204)

7225  
(-2254)

7275  
(-2304)

cht/dism  
mg cut,

Mud @ 15,335'  
WT 9.3  
FV 53  
PV/YP 16/8  
GS 477/9  
Fil 7.6  
Cl 57000  
Ca 3.1  
Sol 8.8%  
H2O/Oil 71/29  
ES 436  
ECD 12.29

TRIP GAS= 4902u

CG

In 9.4/67  
Out 9.5/72

TG=1534u

5000  
5000  
5000  
5000  
5000  
TG (units)  
C1 (units)  
C2 (units)  
C3 (units)  
C4 (units)

