

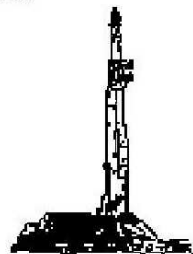
GOOLSBY BROTHERS
and associates, inc.

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: Grenemeyer 13N-3HZ

Location: Section 34, T1N, R67W, Weld County, CO.

License Number: API# 05-123-383420000

Spud Date: 10 January 2014

Surface Coordinates: 445' FNL & 1555' FWL NE NW Sec 34 T1N R67W

Lat: 40° 00' 49.01" N; Long: -104° 52' 49.74" W

Bottom Hole Coordinates: 300' FSL & 756' FWL SE SW SW Sec 3 T1S R67W

Ground Elevation (ft): 5047'

Logged Interval (ft): 7000'

To: 16,708'

Formation: Lower Pierre Shale, Niobrara B Chalk.

Type of Drilling Fluid: Water Base Mud to ICP; Oil Base Mud f/ ICP to TD

K.B. Elevation (ft): 5063'

Total Depth (ft): 16,708'

Region: Wattenberg

Drilling Completed: 19 January 2014

Printed by HORIZONTAL.LOG from WellSight Systems 1-800-447-1534 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: Robert Nordeck, Alex Caruana

Company: Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)

Address: 575 Union Blvd.

Suite 208,

Lakewood CO. 80228

E-logs

MWD GR: 7000' - 16,659'
MWD Resistivity: None





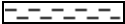
Casing






9 5/8" Surface Casing set @ 1088'
7" Intermediate Casing set @7954'
4 1/2" Production Liner set to 16,687'






Comments






- 1) Drilling Contractor: Xtreme Drilling, Rig # 22
Rig Manager: Mike Headley / Tyler Humphrey
- 2) Company Man: Jack Sanders / Cody Sanders
Butch Beddingfield / Scott Hancock
- 3) Well Site Geologists: Goolsby Brothers & Assoc. :
Robert Nordeck / Alex Caruana
- 4) Mud Company : AES Drilling Fluids,
Mud Engineer: Michael Cook / Sam Evans
- 5) Directional Drilling: Sperry / Halliburton
Drillers: Bogdan Cristian,
MWD: Clay Wass / Kelda Hankins / Caleb Jones
- 6) Gas Equipment: Mudlogging Systems Inc.
by Terra Services
Redbox # ML-333 & ML-075 w/ Ratcliff Agitator

ROCK TYPES

	Anhy
	Bent
	Brec
	Cht
	Clyst

	Coal
	Oil sat.
	Congl
	Dol
	Gyp

	Lmst
	Mrlst
	Salt
	Shale
	Shcol

	Shgy
	Ss
	Sltst
	Ss
	Chalk

	Carb sh
	Sltty 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
 Wackest

OTHER SYMBOLS

OIL SHOWS

Even
 Spotted
 Ques
 Dead
 Vspotty

near even

POROSITY TYPE

Earthy
 Fenest
 Fracture

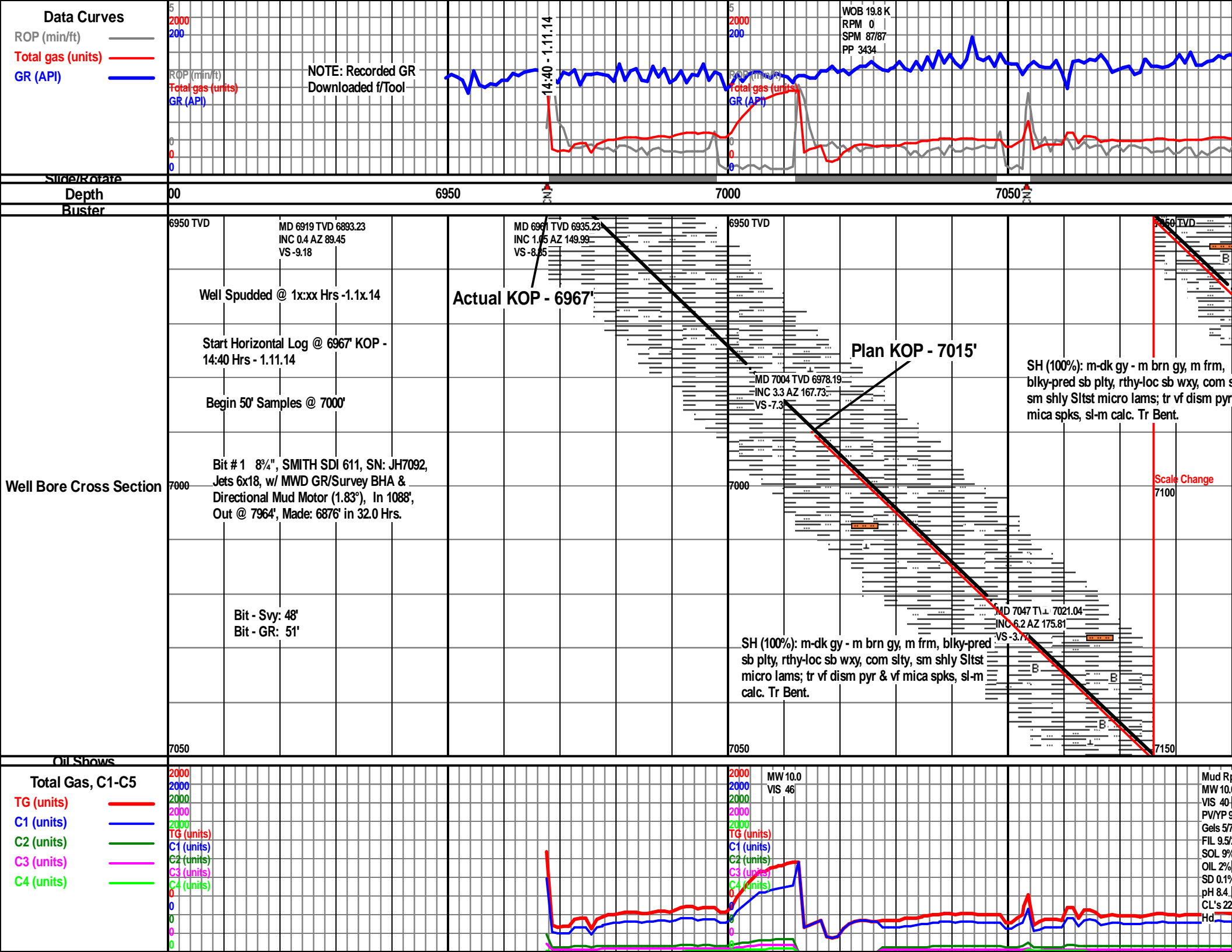
Inter
 Moldic
 Organic
 Pinpoint
 Vuggy

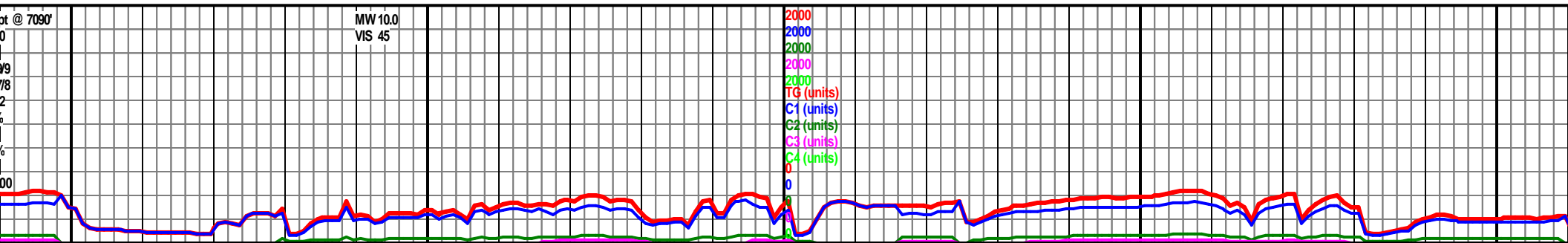
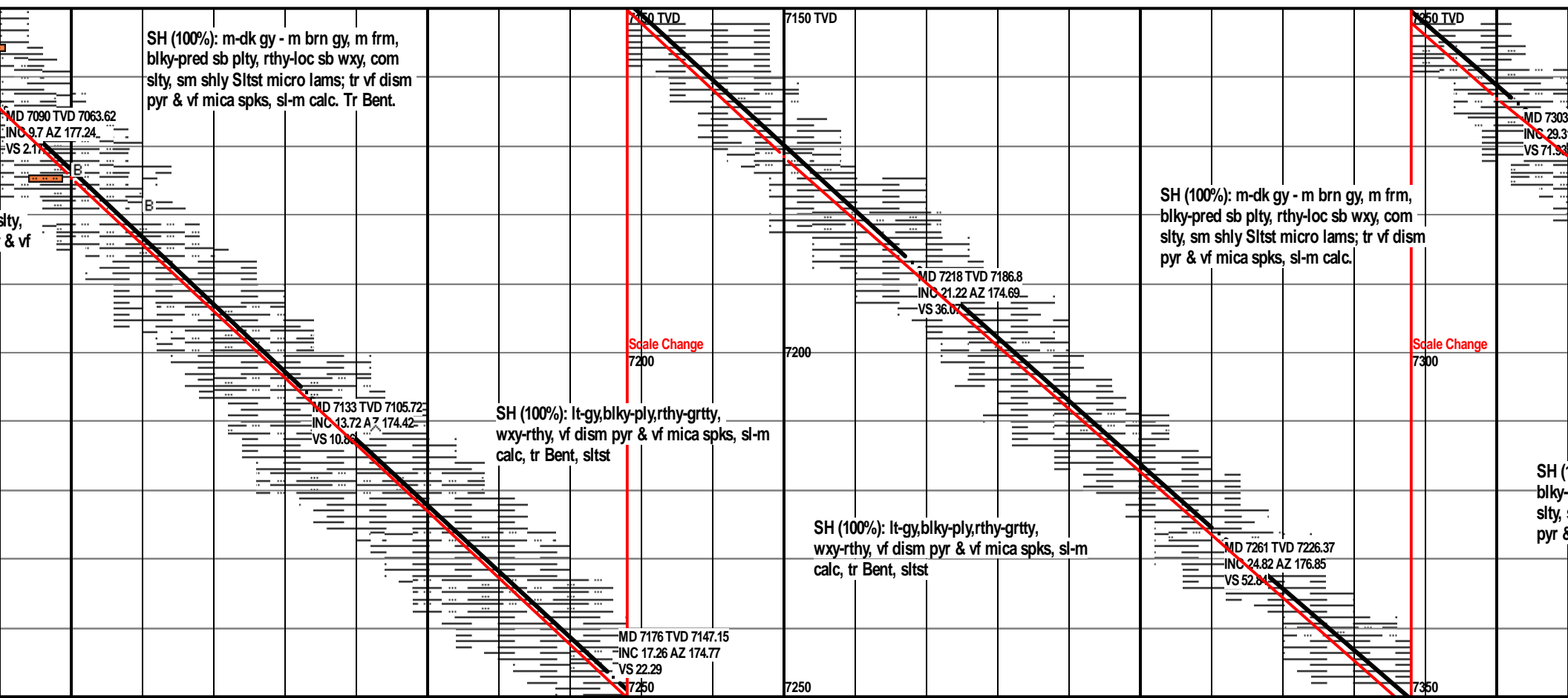
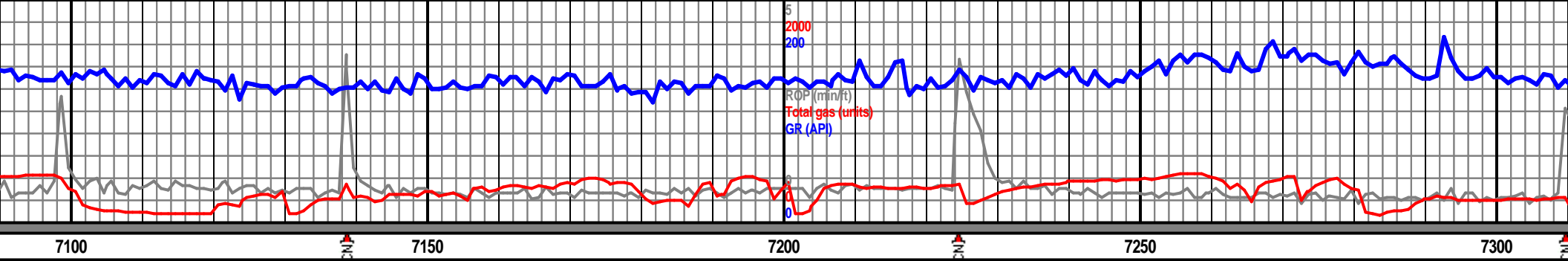
ROUNDING

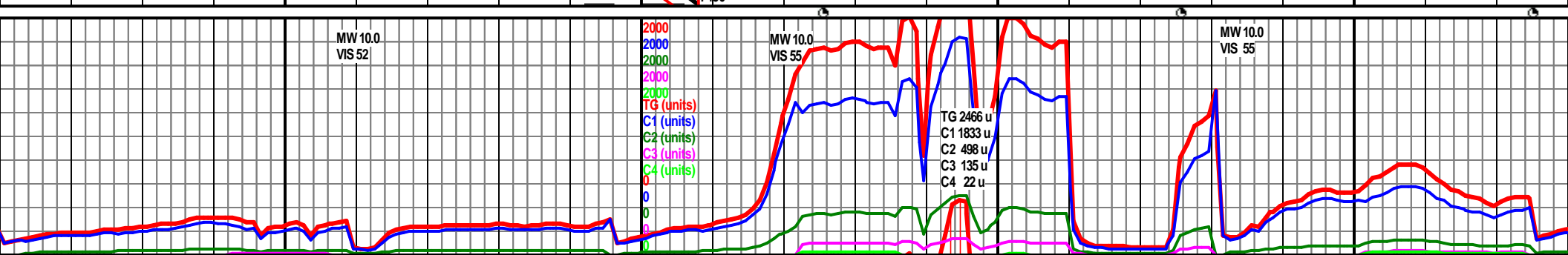
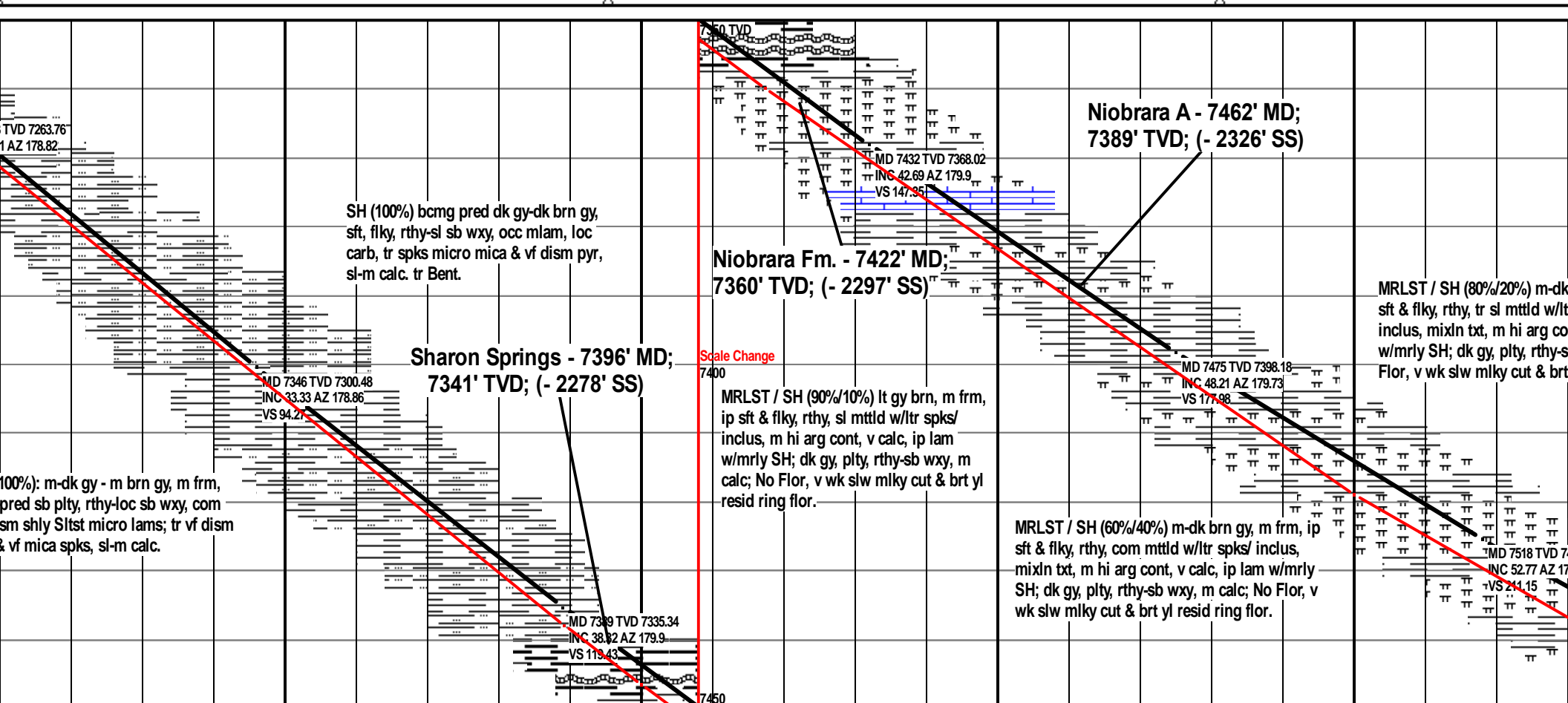
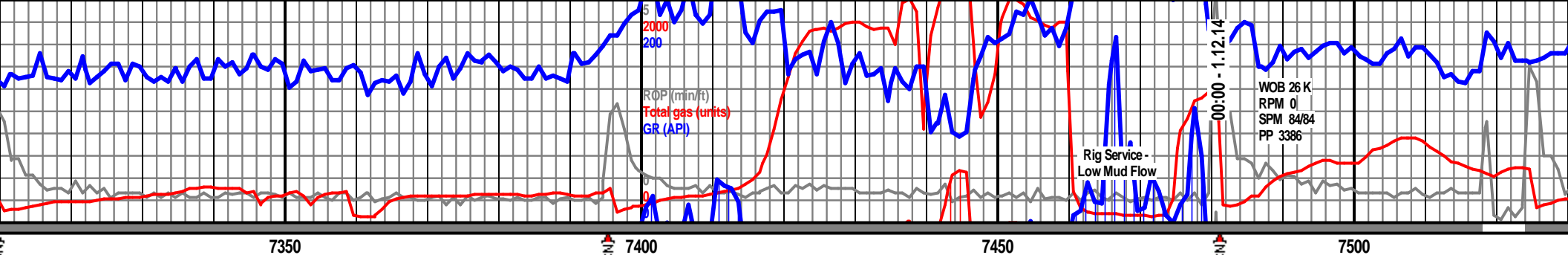
Rounded
 Subrnd
 Subang
 Angular

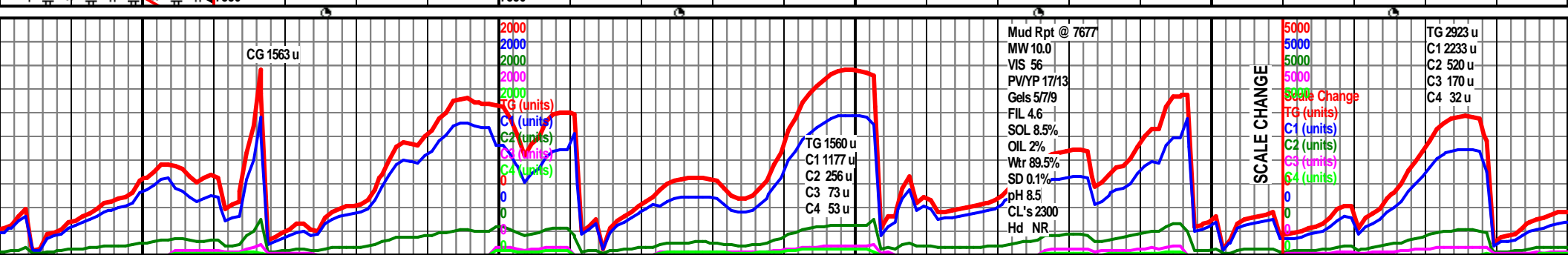
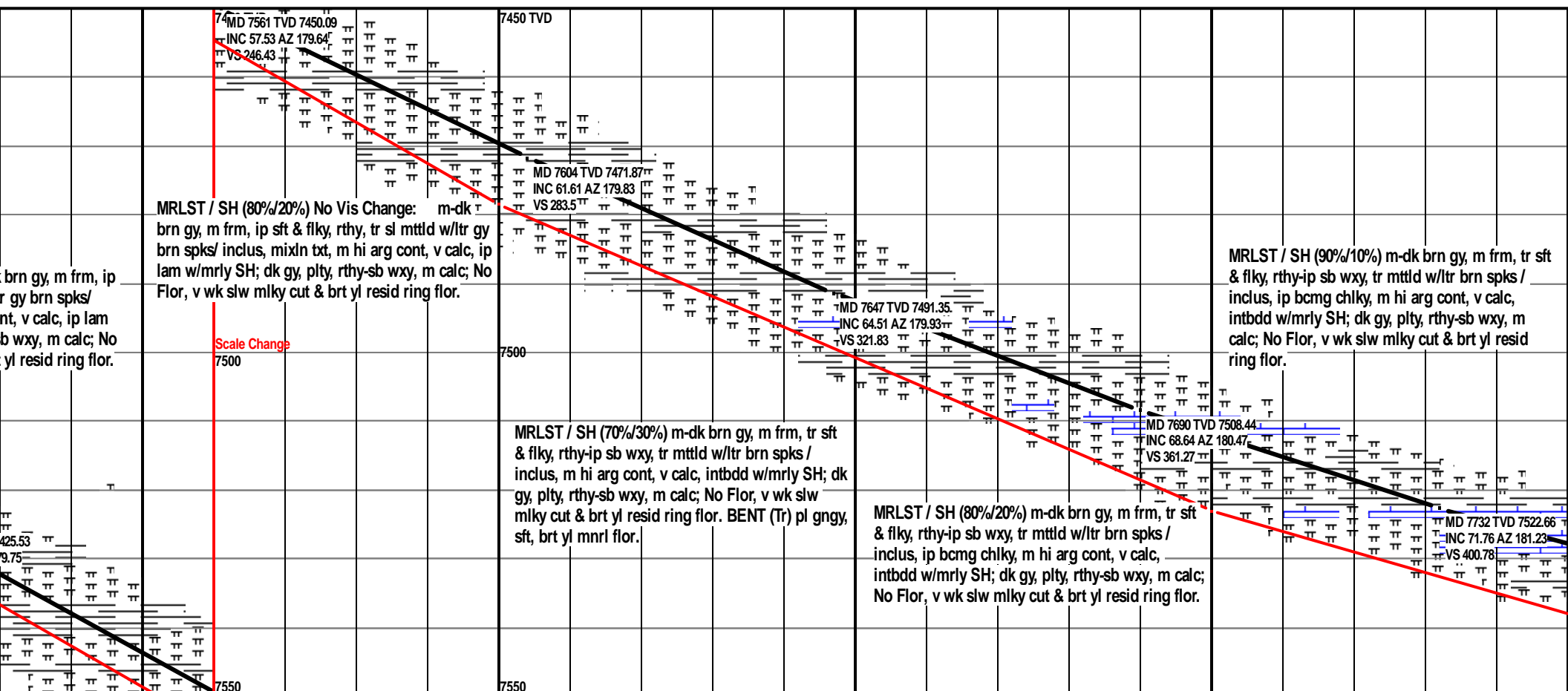
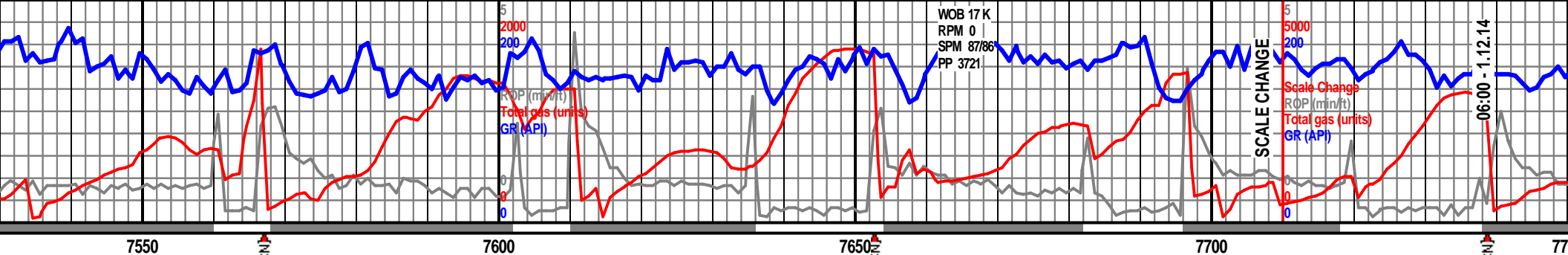
SORTING

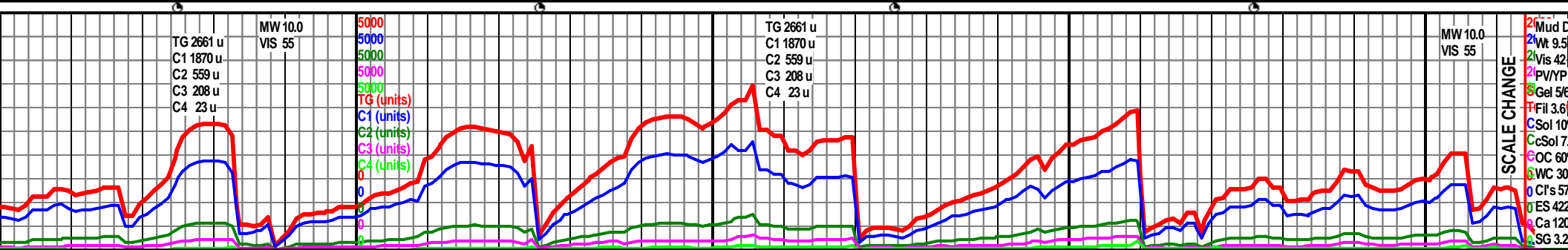
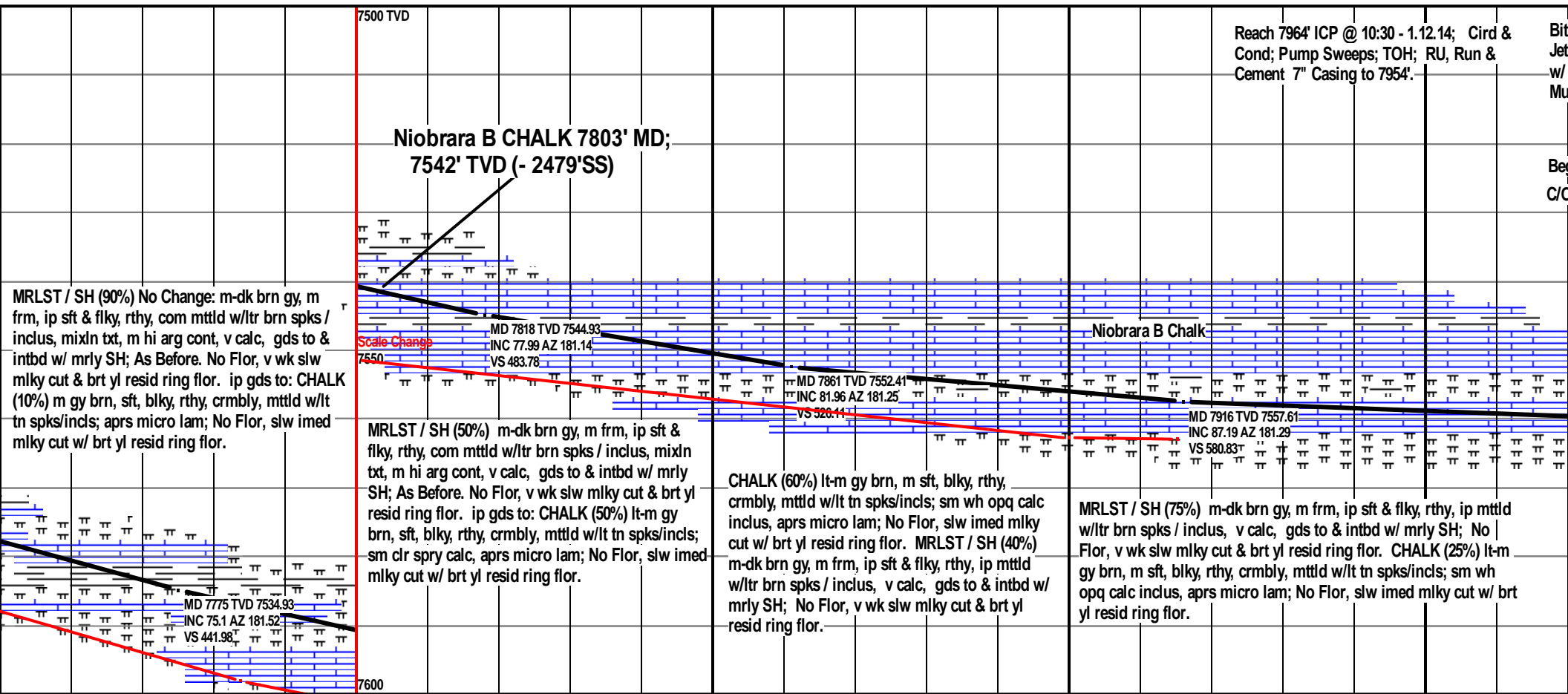
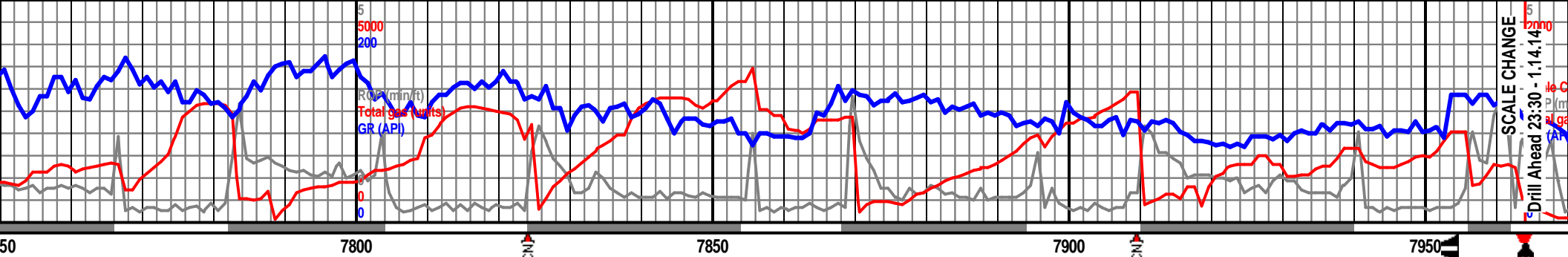
Well
 Moderate
 Poor

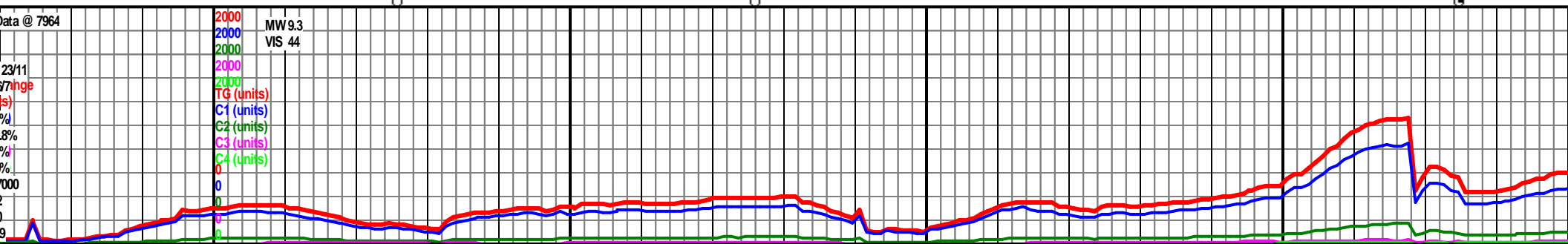
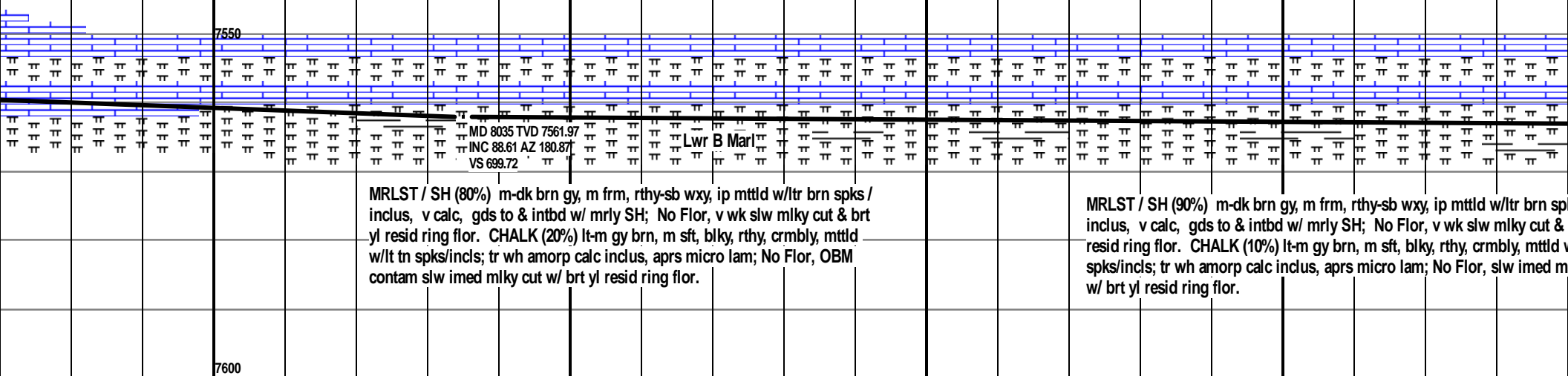
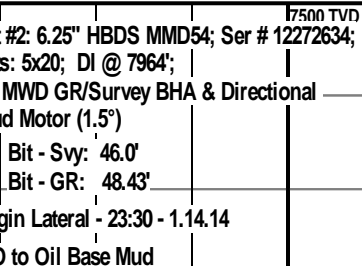


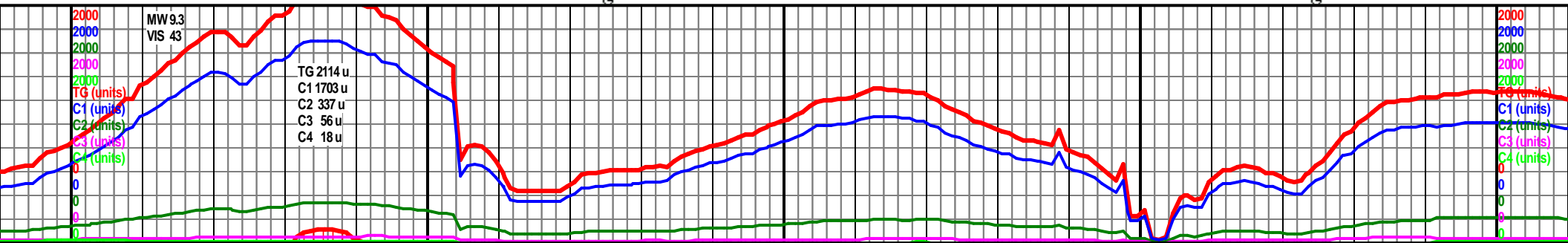
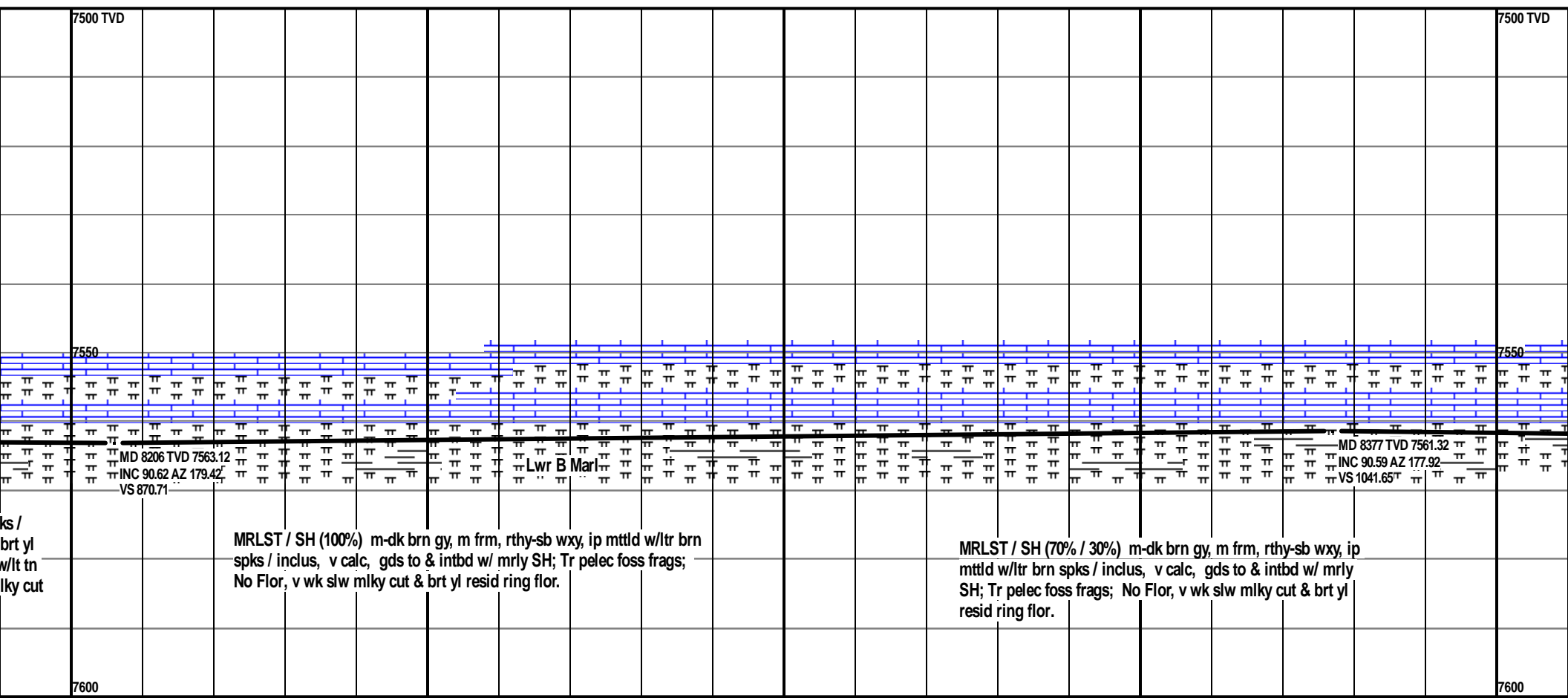
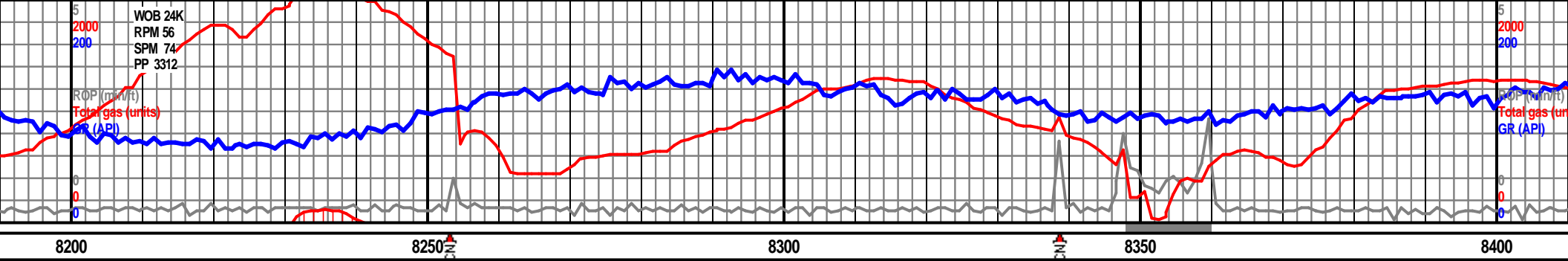


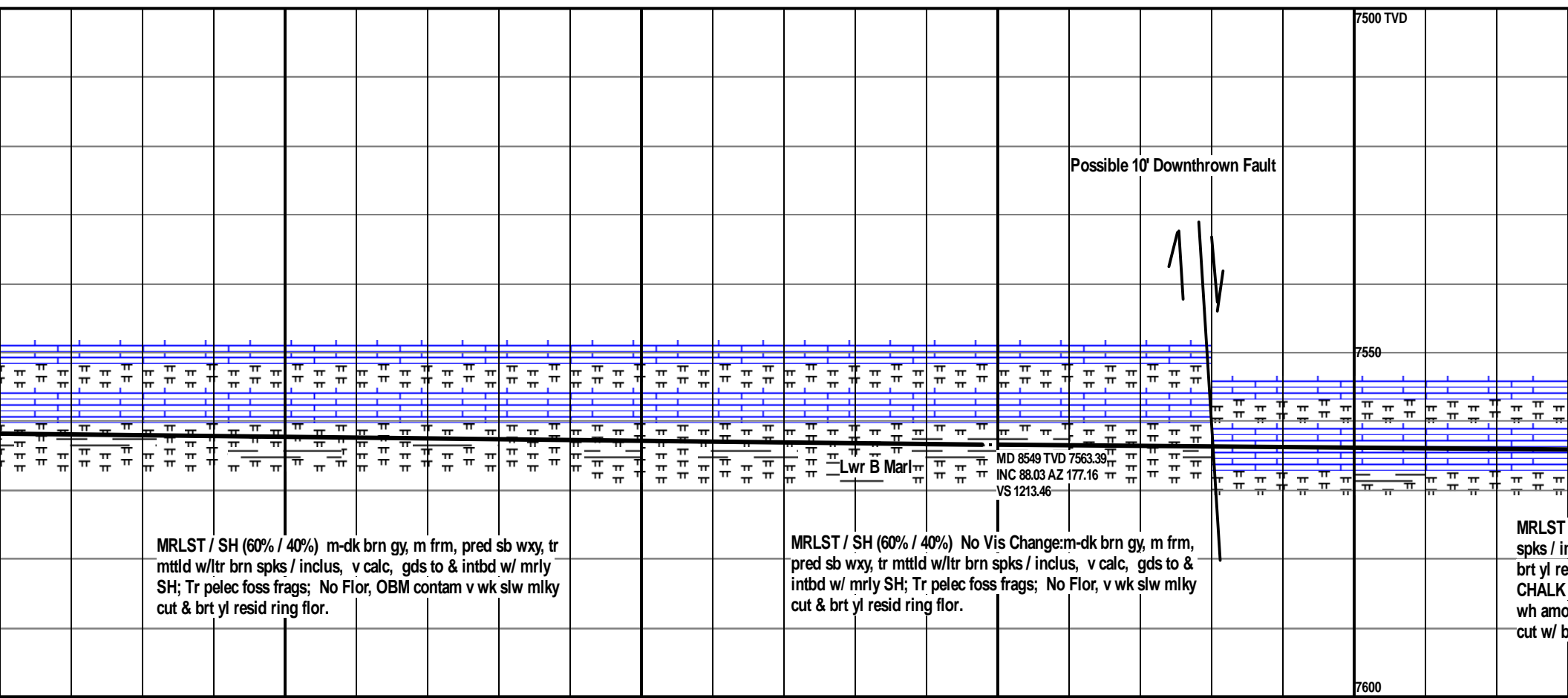
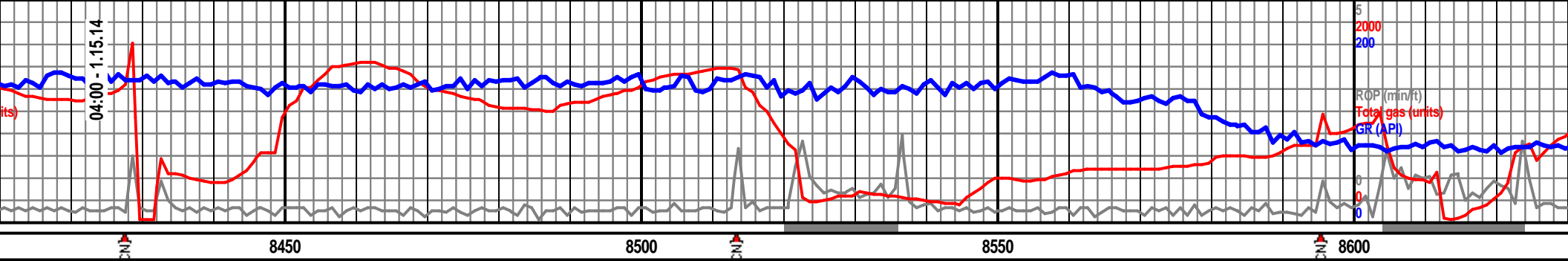










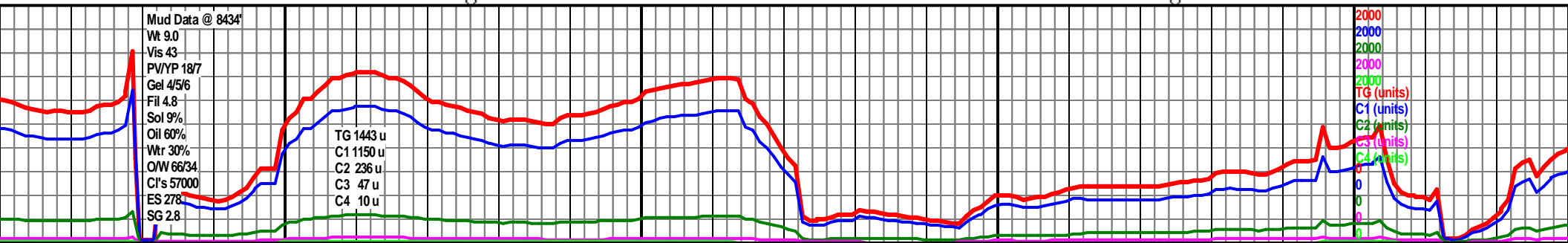


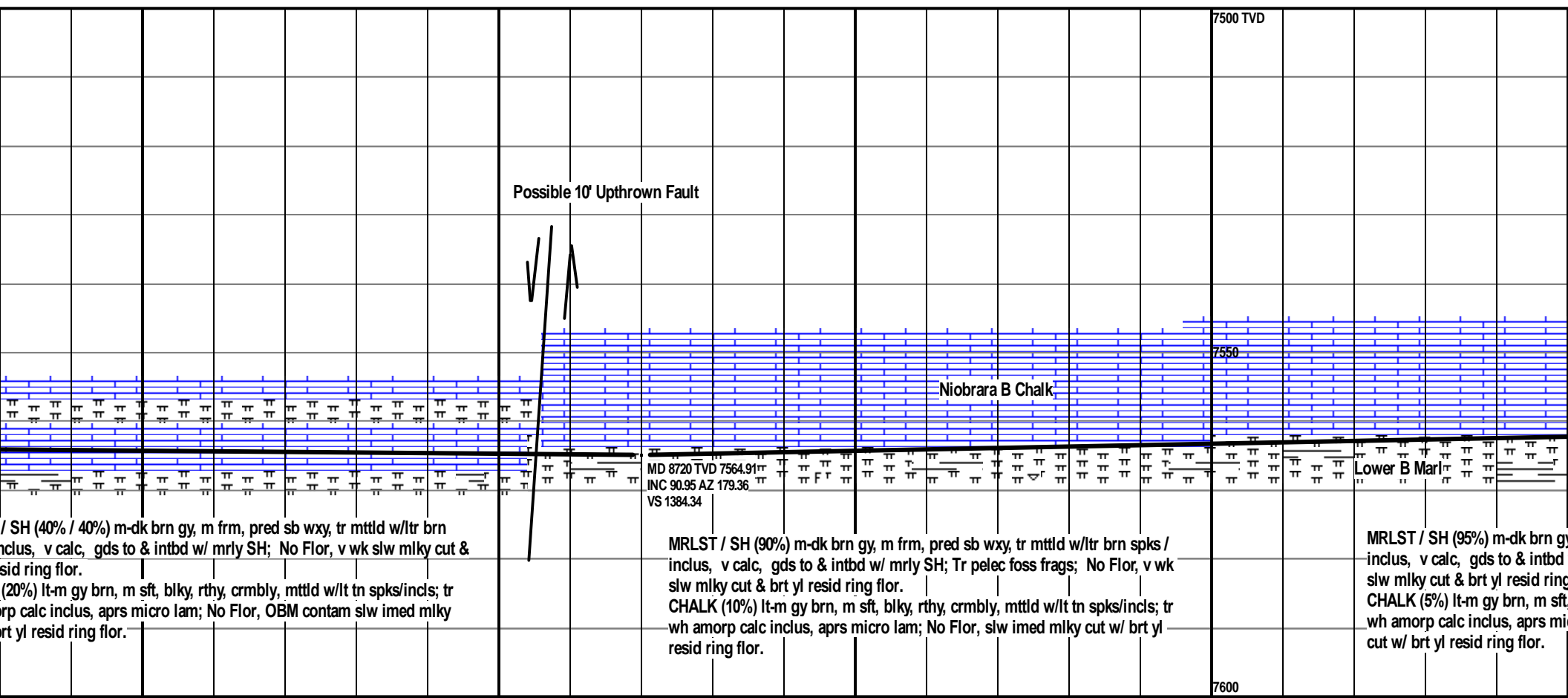
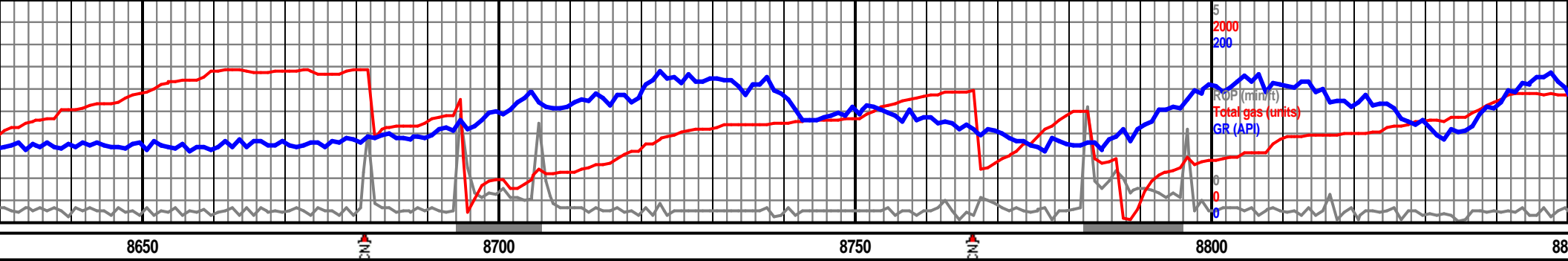
Mud Data @ 8434'

Wt 9.0
Vis 43
PV/YP 18/7
Gel 4/5/6
Fil 4.8
Sol 9%
Oil 60%
Wtr 30%
O/W 66/34
Cl's 57000
ES 278
SG 2.8

TG 1443 u
C1 1150 u
C2 236 u
C3 47 u
C4 10 u

2000
2000
2000
2000
2000
2000
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)





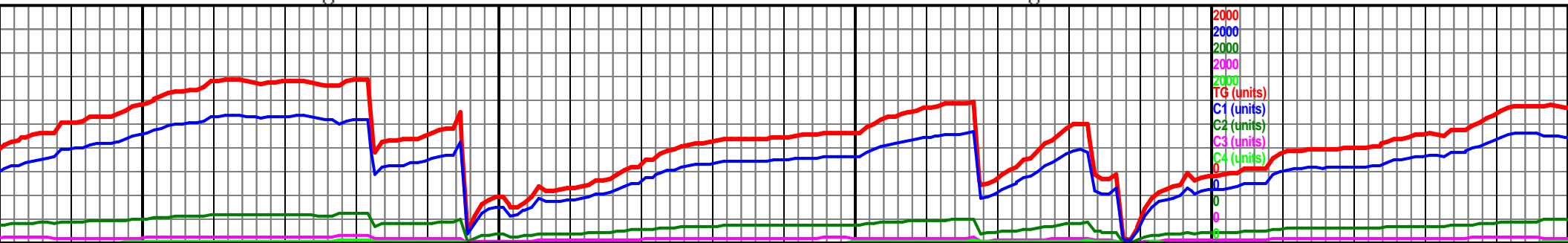
/ SH (40% / 40%) m-dk brn gy, m frm, pred sb wxy, tr mttld w/ltr brn
includ, v calc, gds to & intbd w/ mrlly SH; No Flor, v wk slw mlky cut &
sid ring flor.

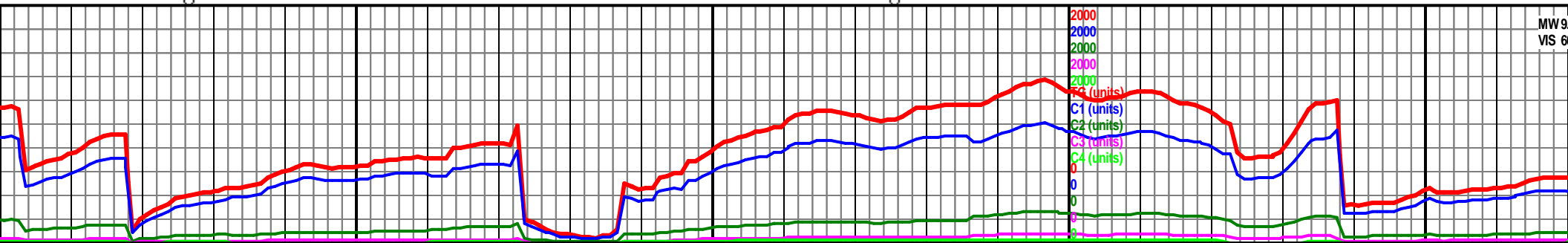
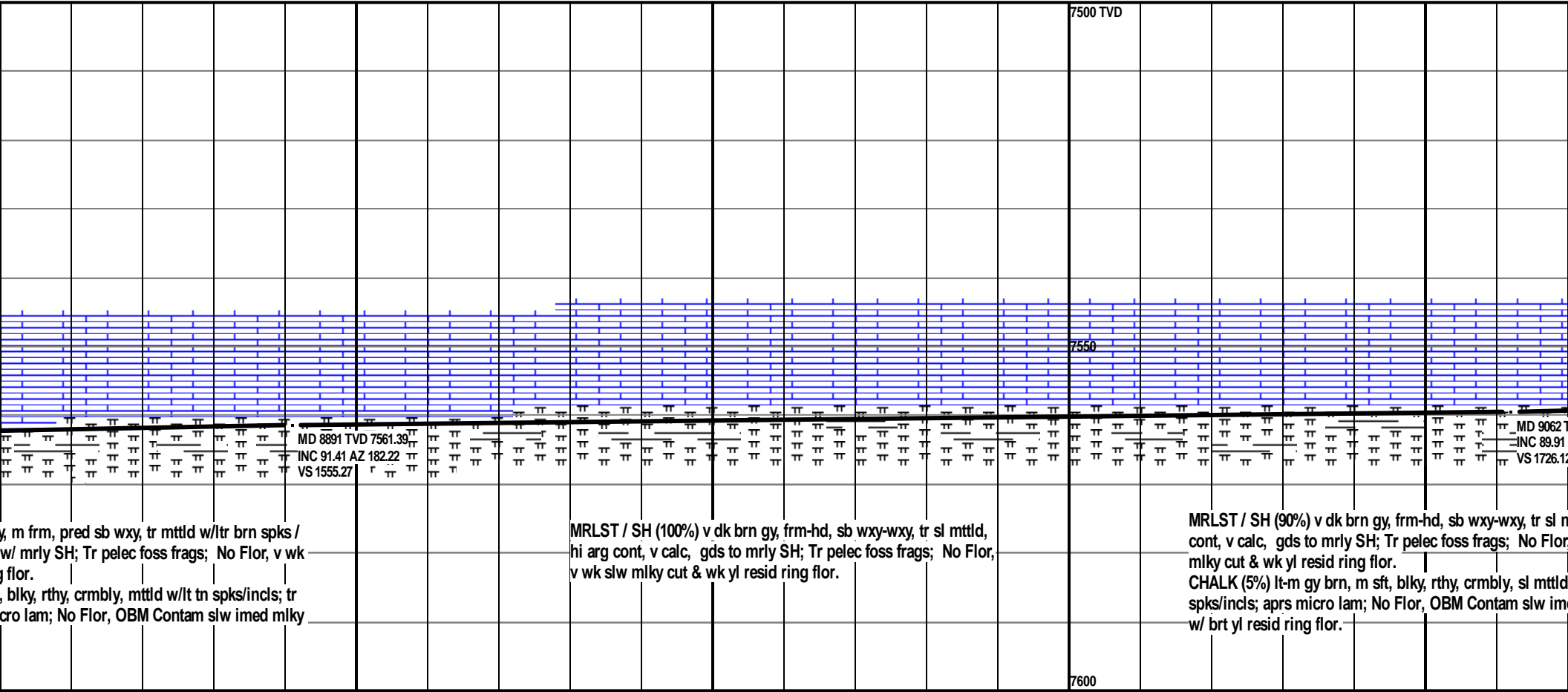
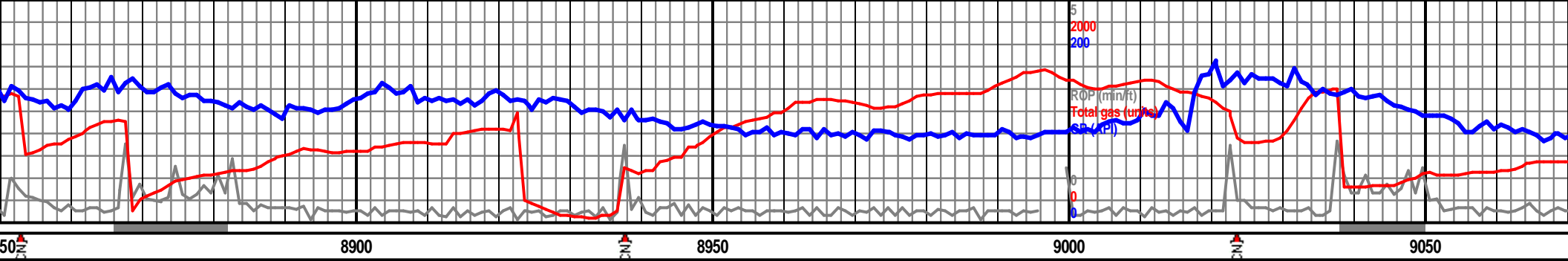
(20%) lt-m gy brn, m sft, blk, rthy, crmbly, mttld w/lt tn spks/incls; tr
rpp calc includ, aprs micro lam; No Flor, OBM contam slw imed mlky
brt yl resid ring flor.

MRLST / SH (90%) m-dk brn gy, m frm, pred sb wxy, tr mttld w/ltr brn spks /
includ, v calc, gds to & intbd w/ mrlly SH; Tr pelec foss frags; No Flor, v wk
slw mlky cut & brt yl resid ring flor.

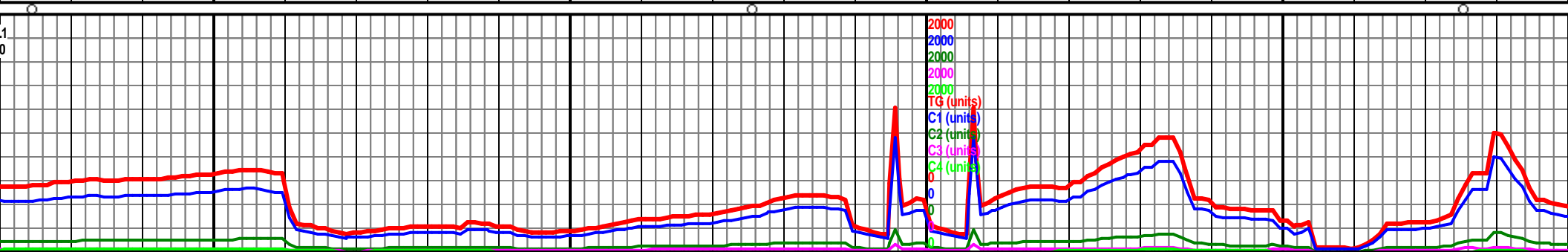
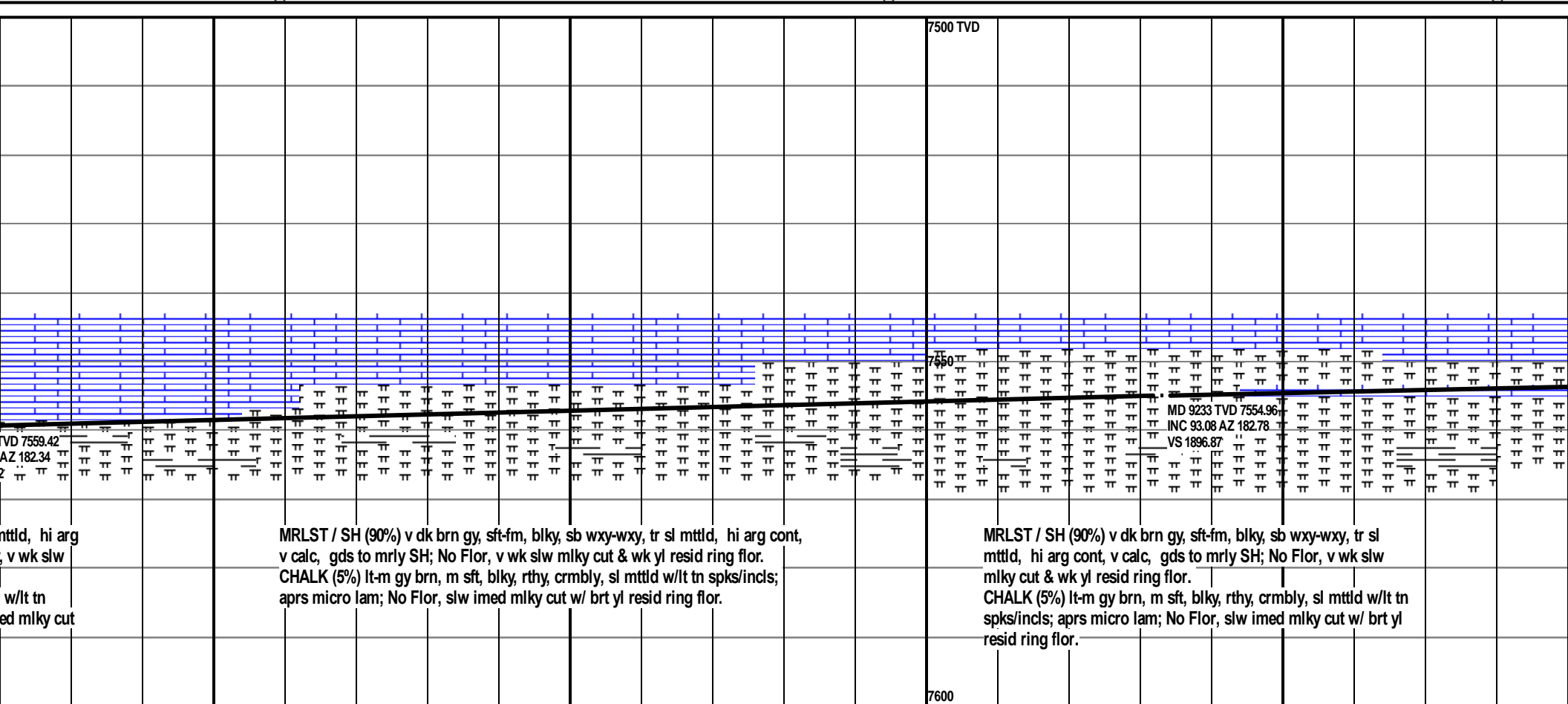
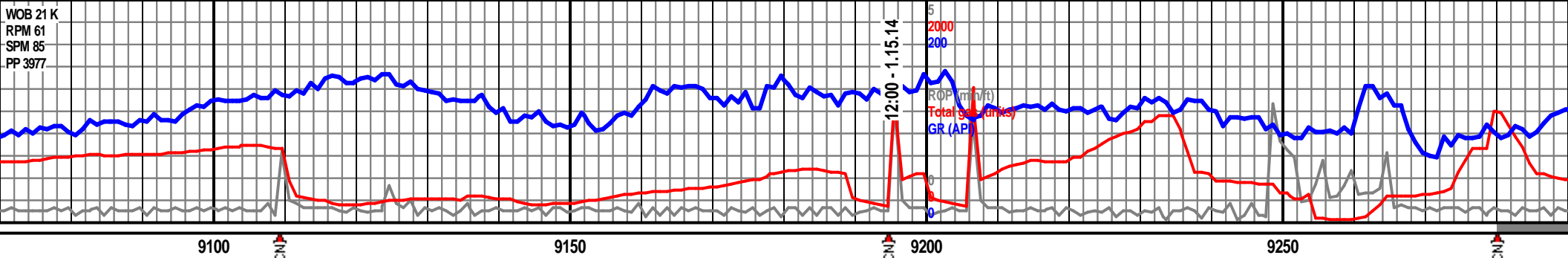
CHALK (10%) lt-m gy brn, m sft, blk, rthy, crmbly, mttld w/lt tn spks/incls; tr
wh amorp calc includ, aprs micro lam; No Flor, slw imed mlky cut w/ brt yl
resid ring flor.

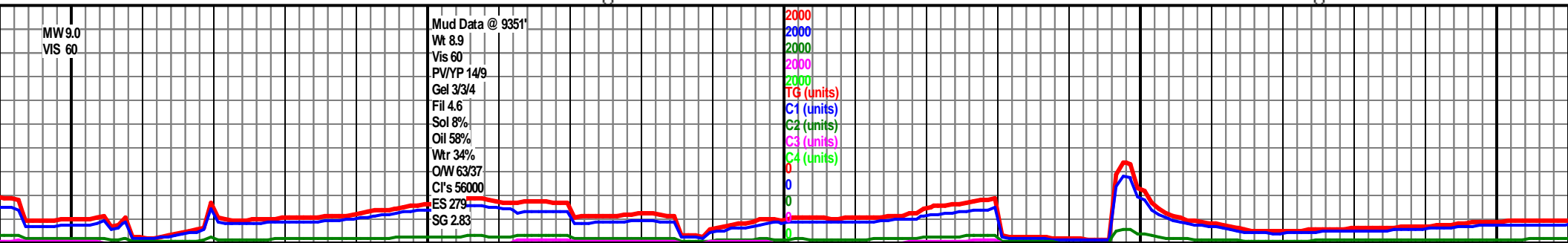
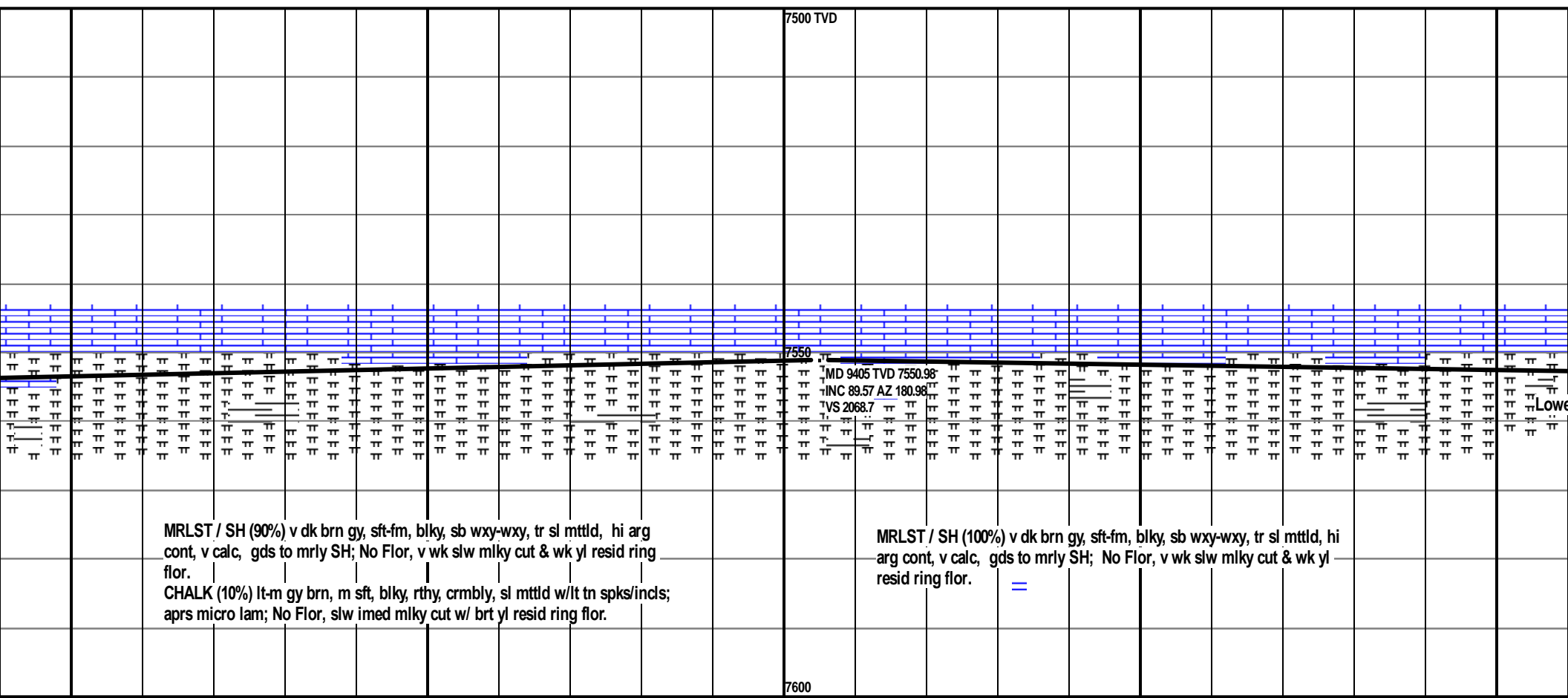
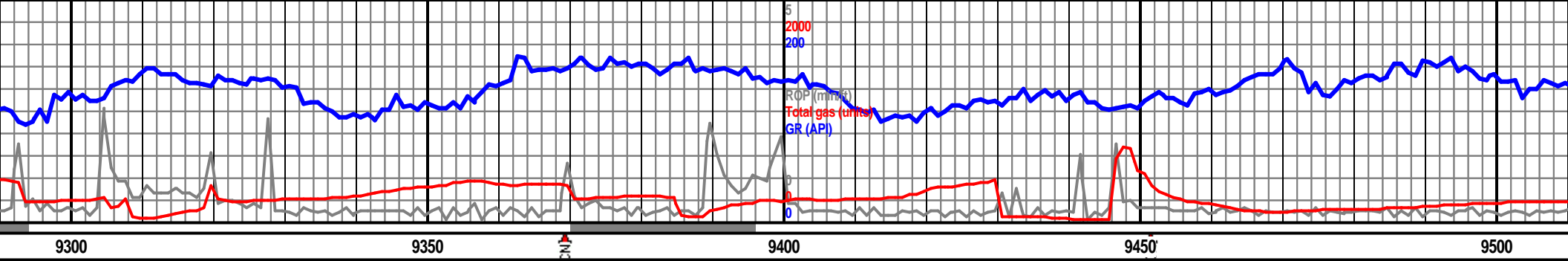
MRLST / SH (95%) m-dk brn gy
includ, v calc, gds to & intbd
slw mlky cut & brt yl resid ring
CHALK (5%) lt-m gy brn, m sft,
wh amorp calc includ, aprs mi
cut w/ brt yl resid ring flor.

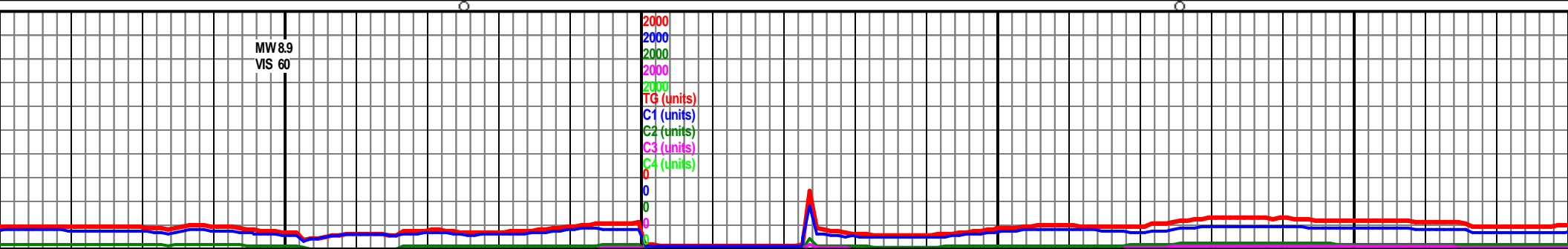
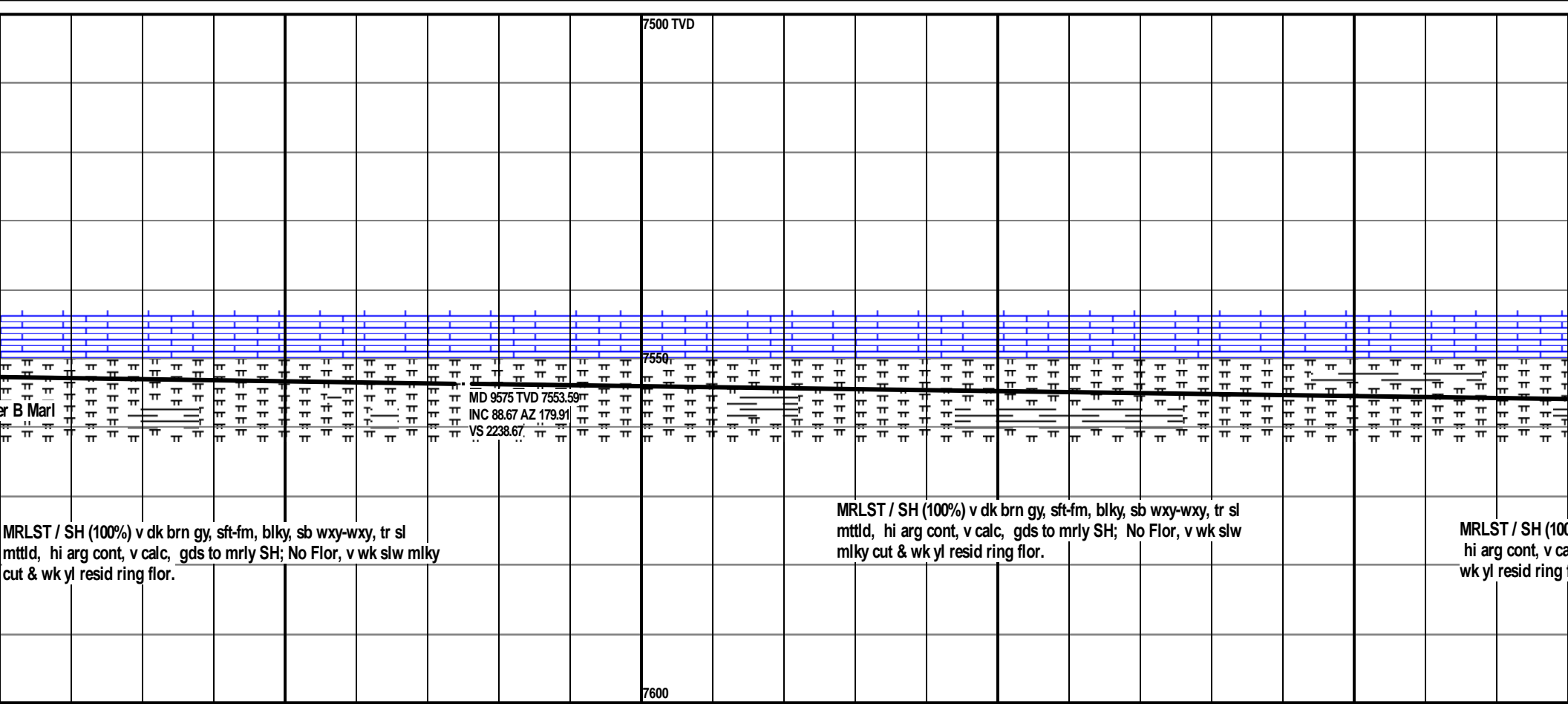
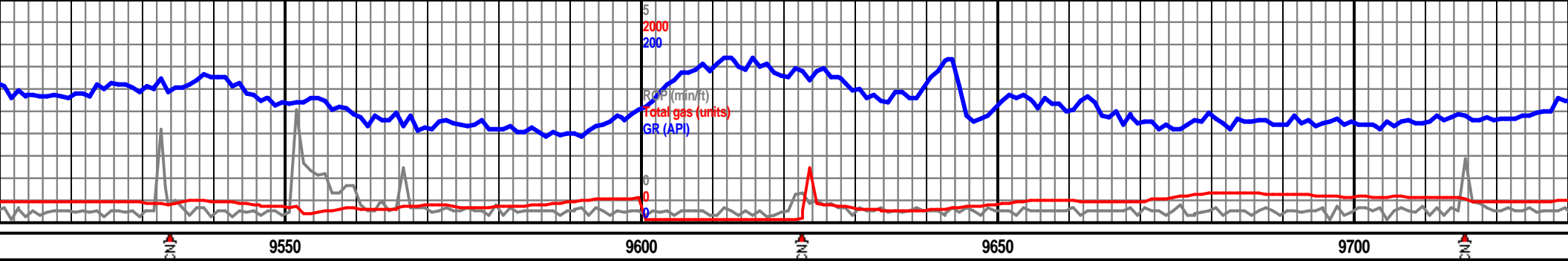


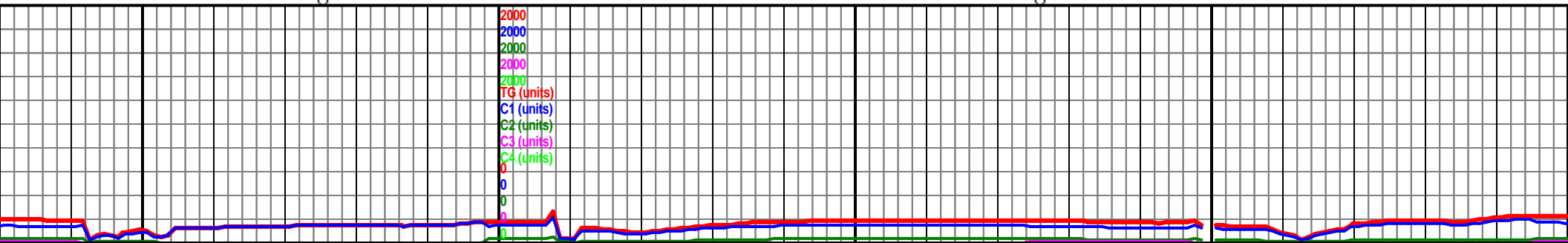
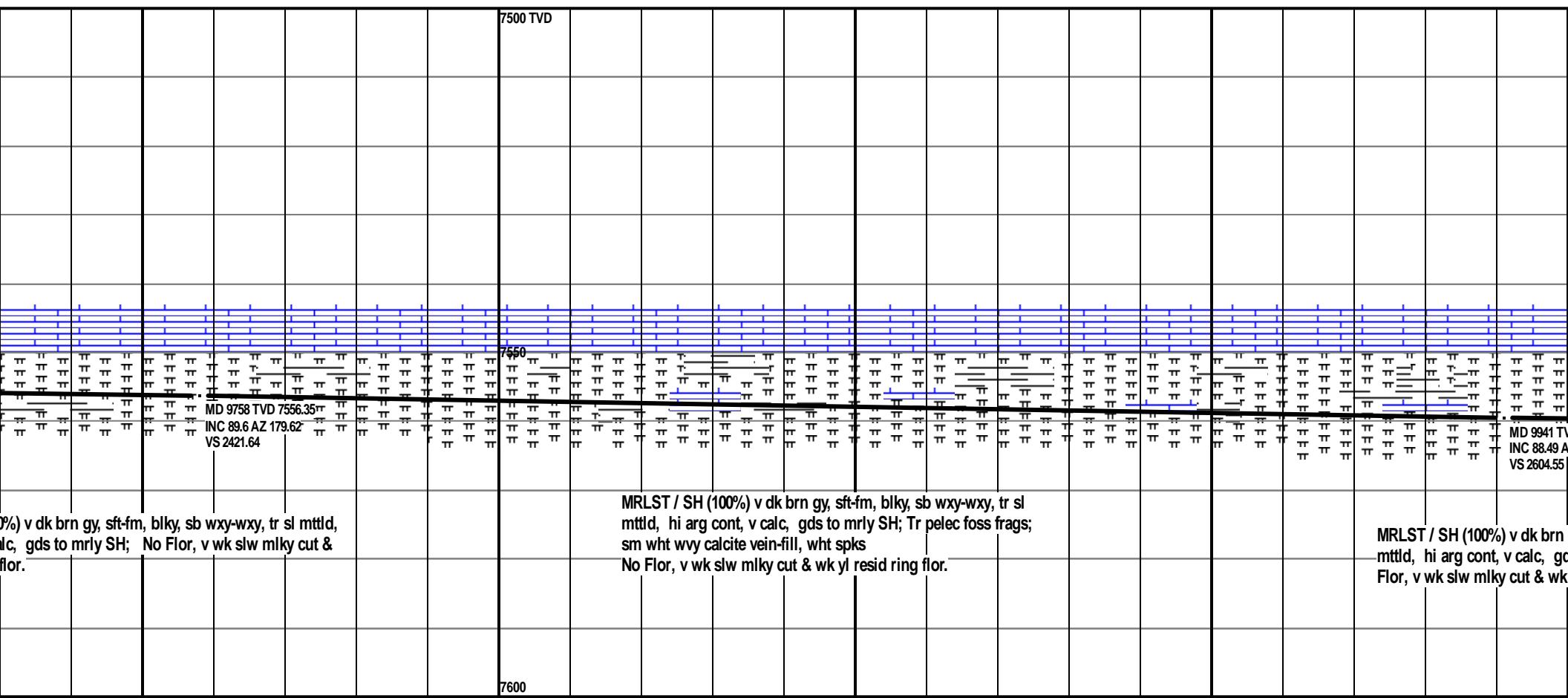
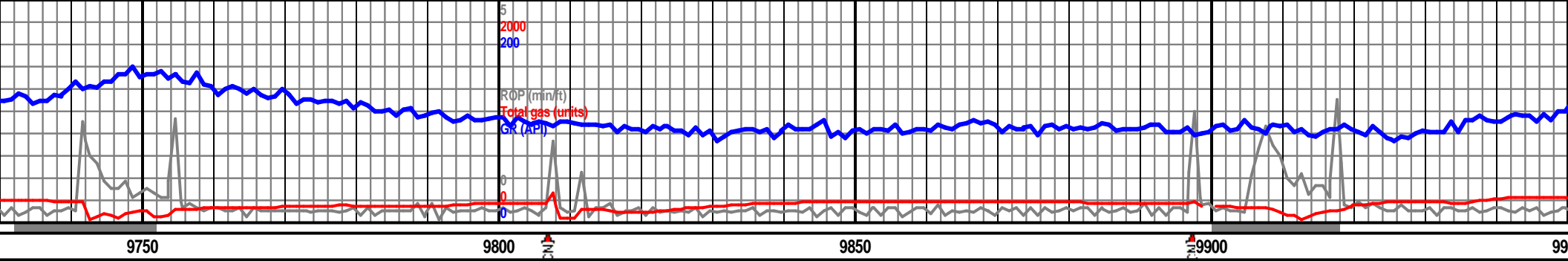


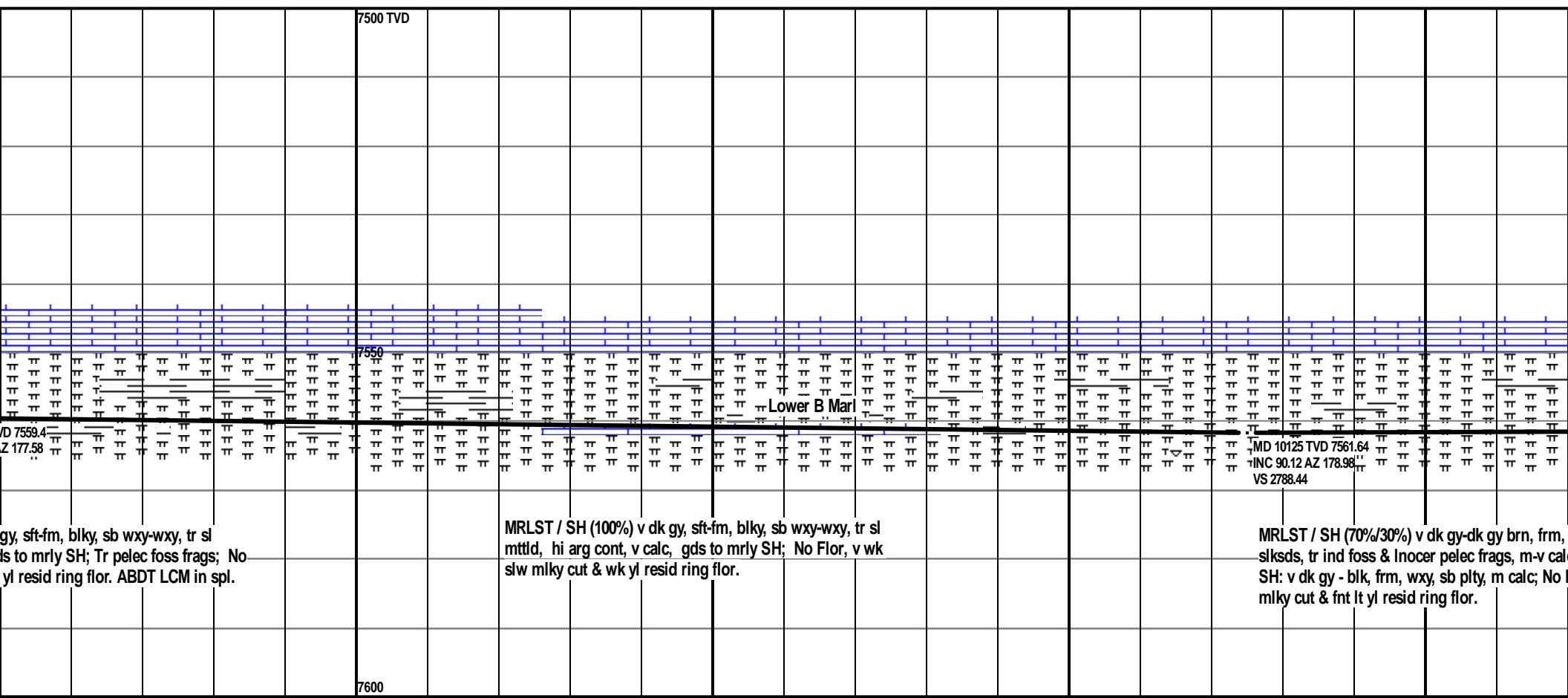
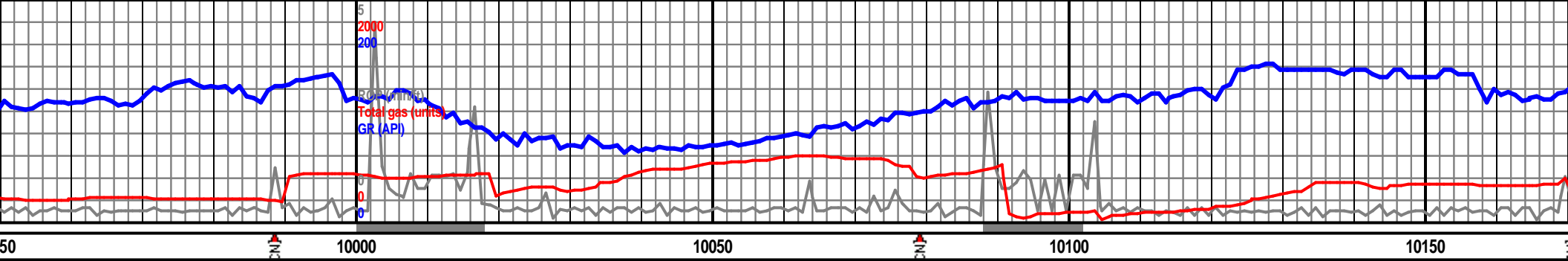
WOB 21 K
RPM 61
SPM 85
PP 3977







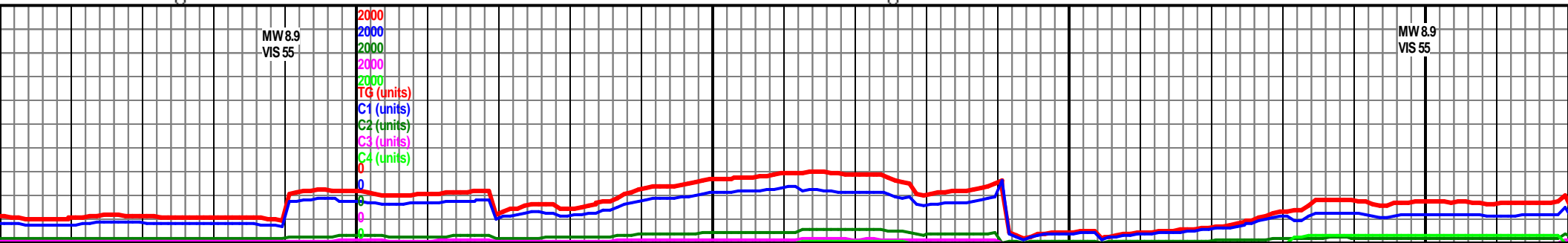




gy, sft-fm, blk, sb wxy-wxy, tr sl
ls to mrly SH; Tr pelec foss frags; No
yl resid ring flor. ABDT LCM in spl.

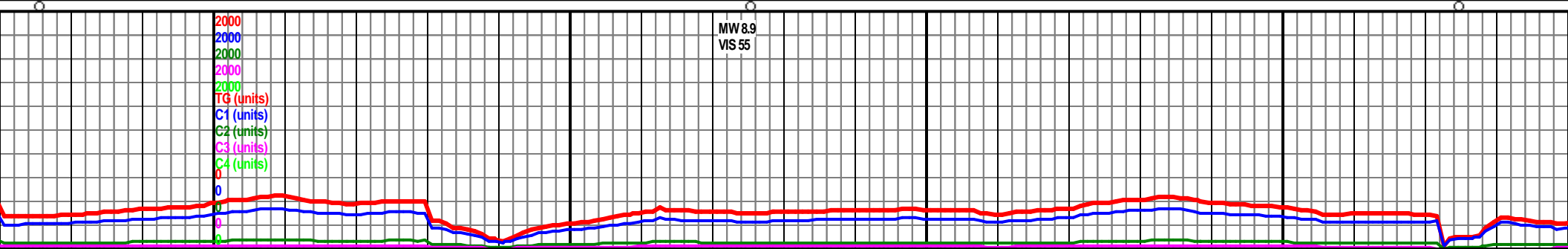
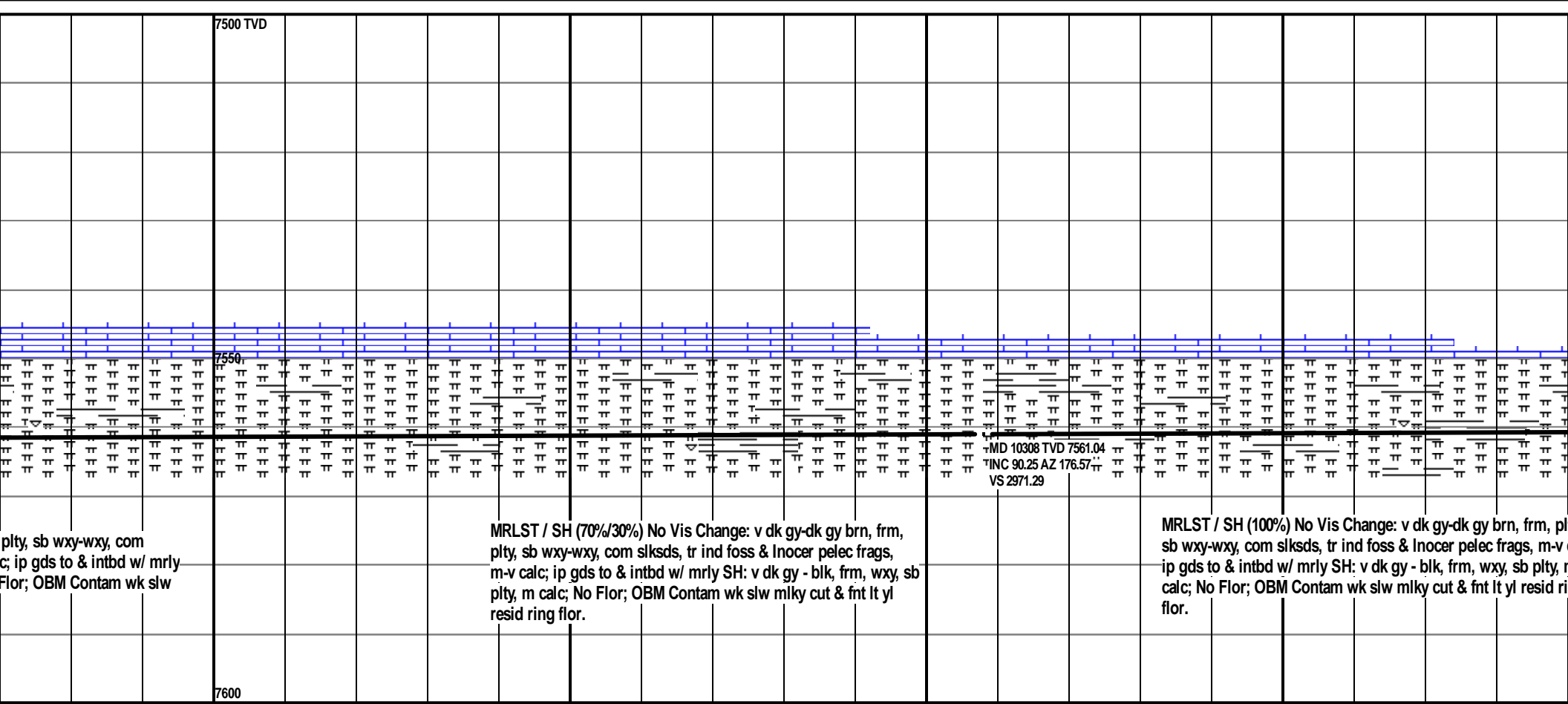
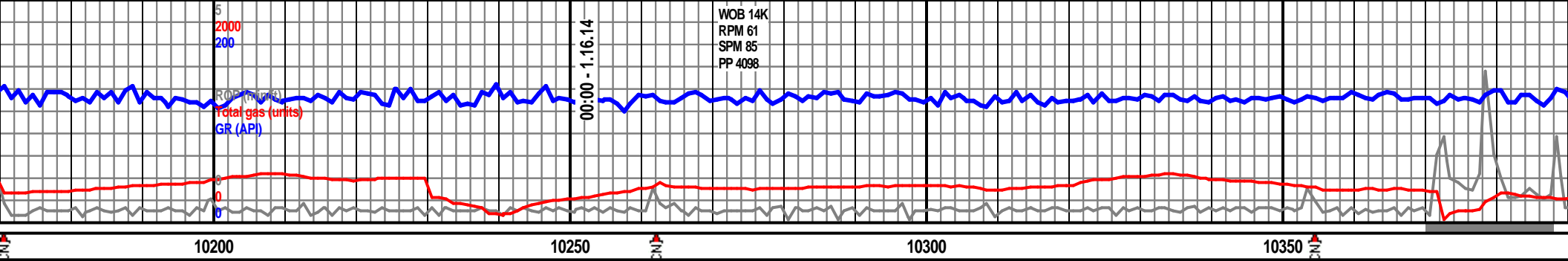
MRLST / SH (100%) v dk gy, sft-fm, blk, sb wxy-wxy, tr sl
mtld, hi arg cont, v calc, gds to mrly SH; No Flor, v wk
slw mlky cut & wk yl resid ring flor.

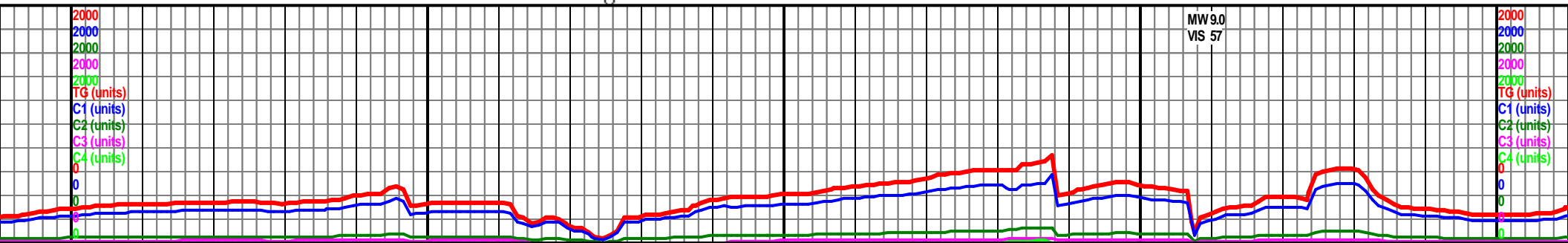
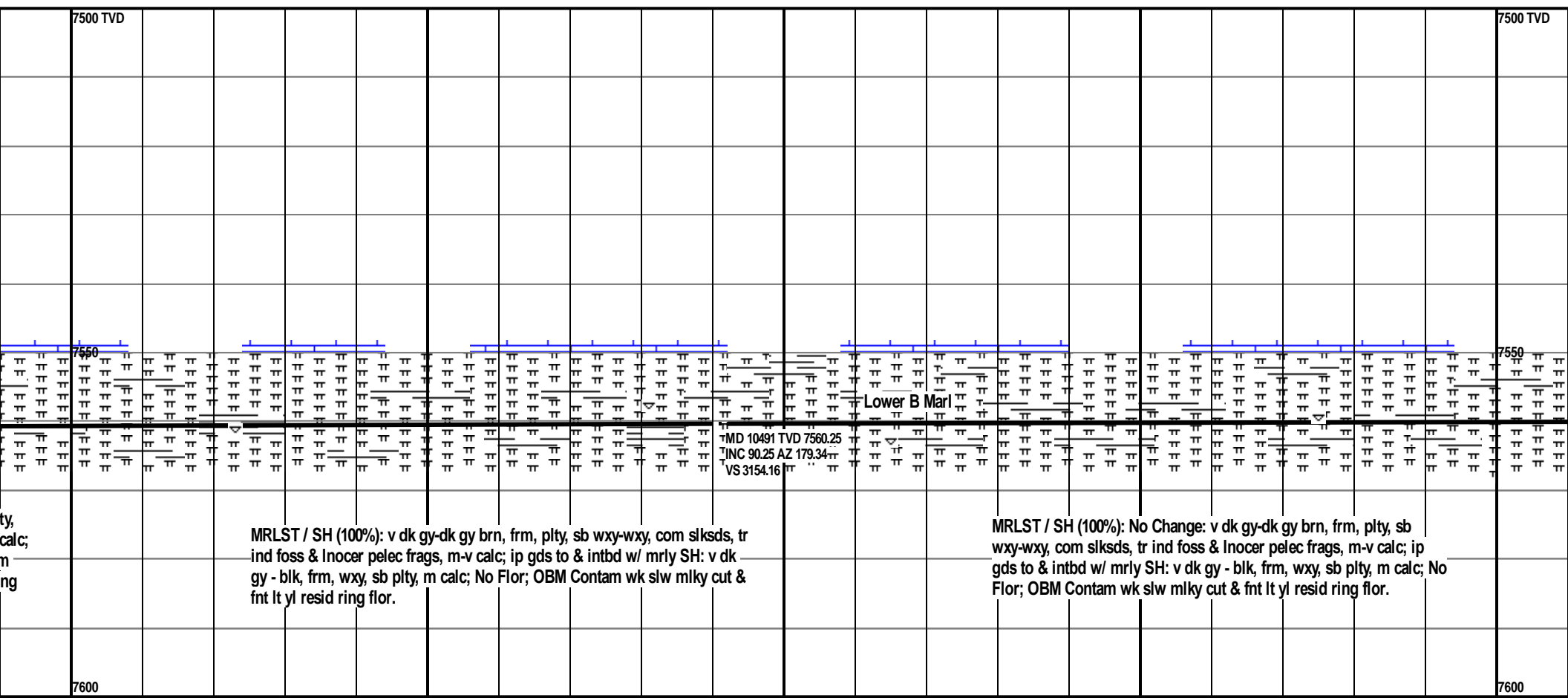
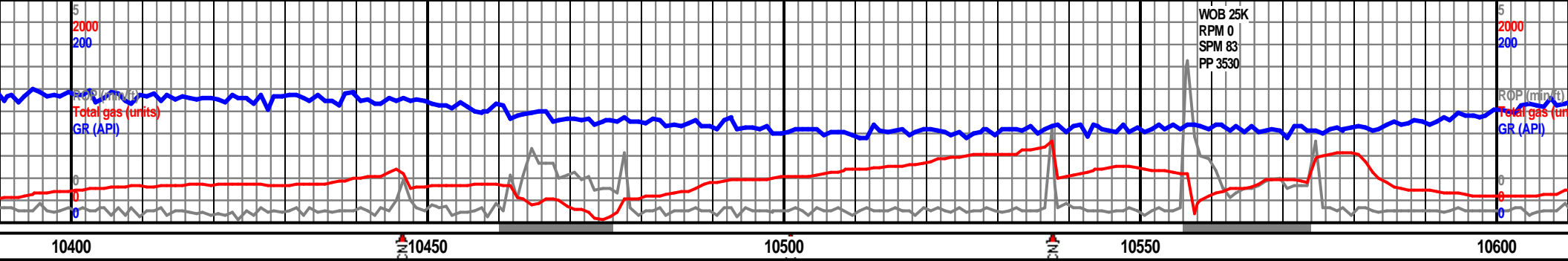
MRLST / SH (70%/30%) v dk gy-dk gy brn, frm,
slksds, tr ind foss & Inocer pelec frags, m-v cal
SH: v dk gy - blk, frm, wxy, sb ply, m calc; No
mlky cut & fnt lt yl resid ring flor.

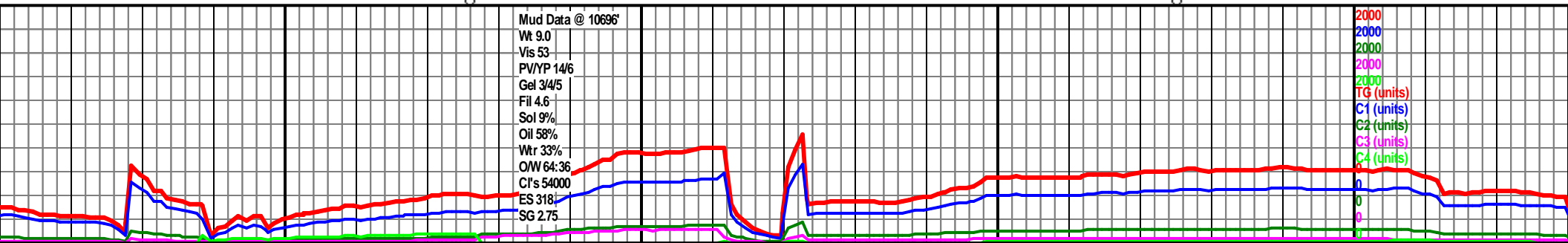
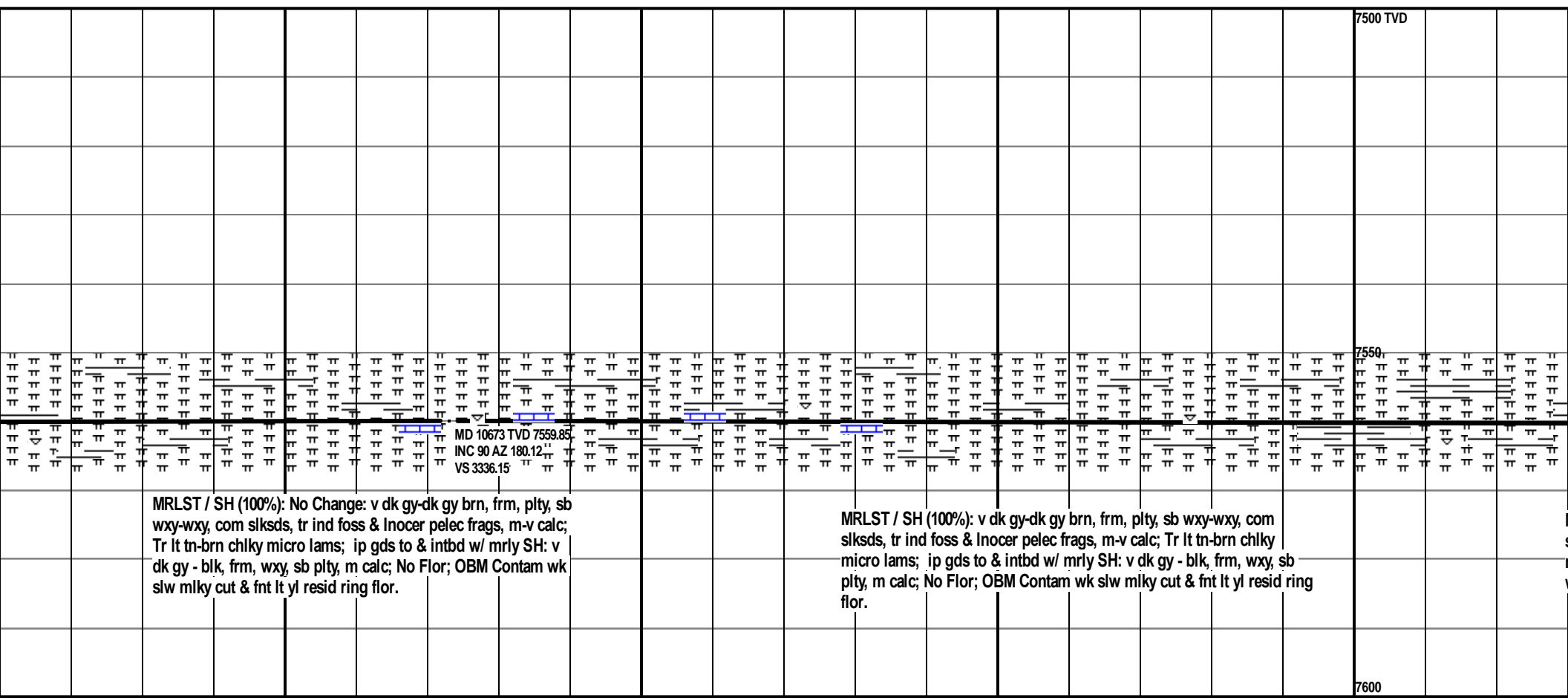
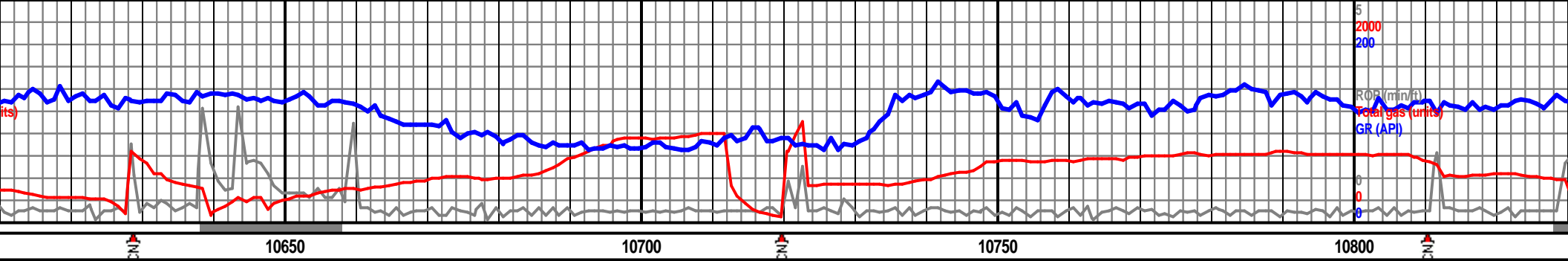


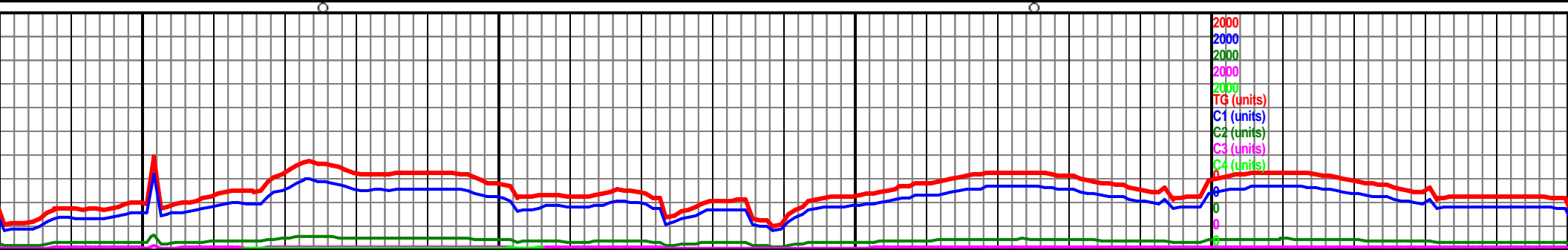
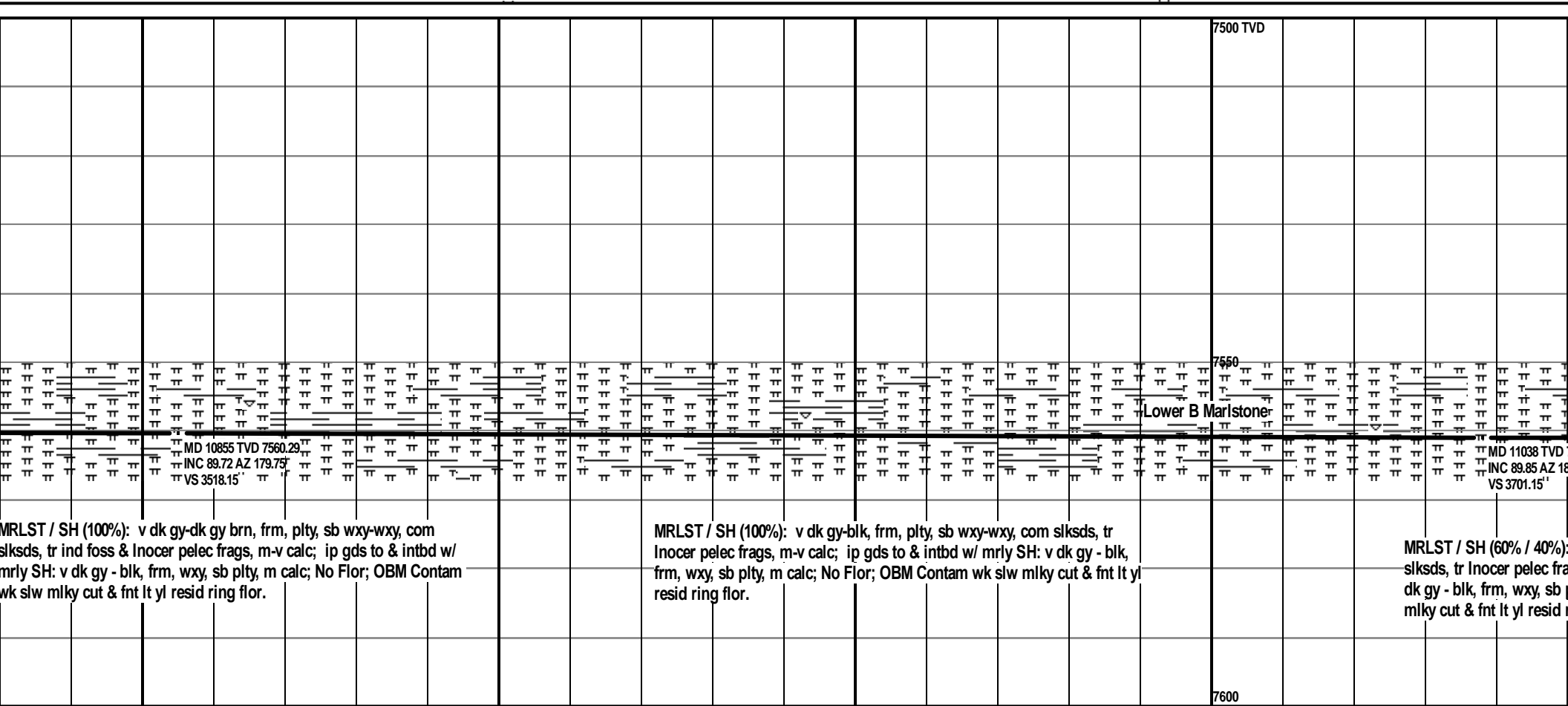
MW 8.9
VIS 55

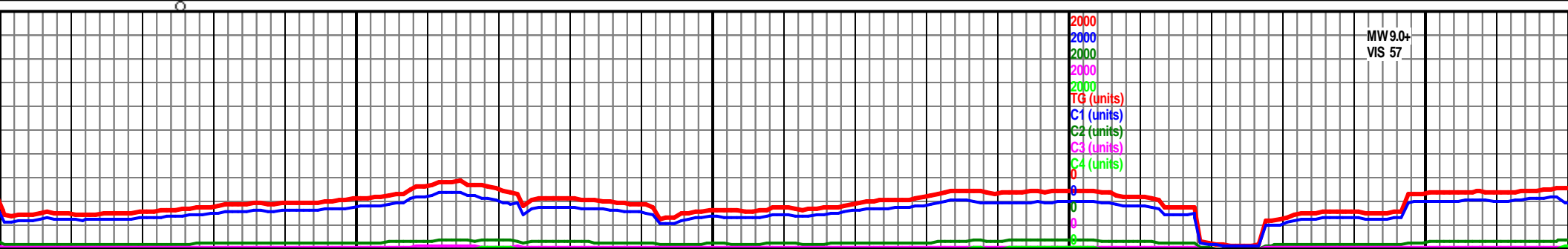
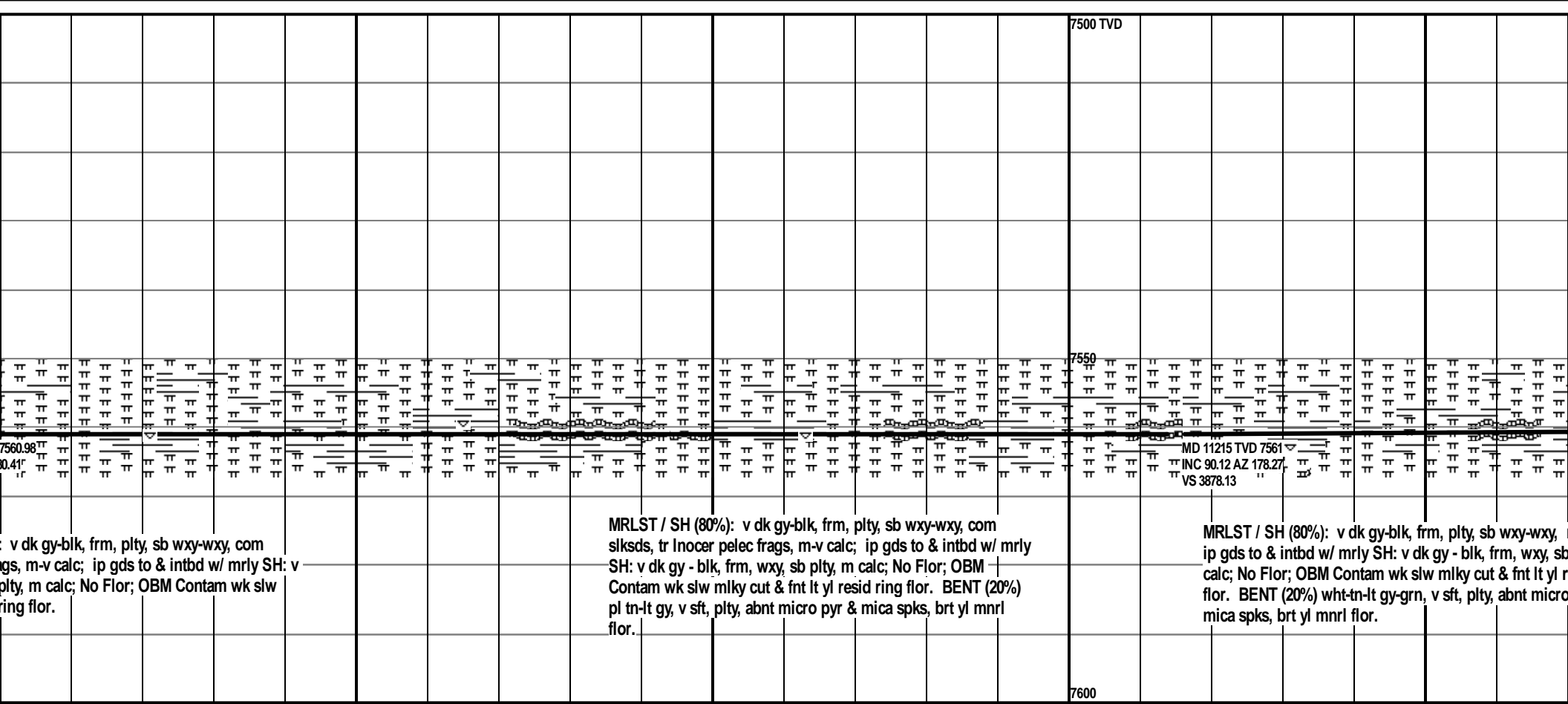
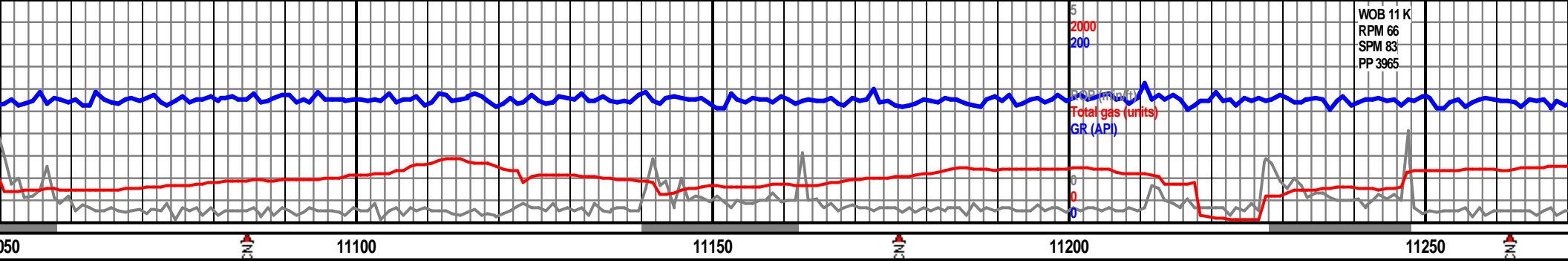
MW 8.9
VIS 55

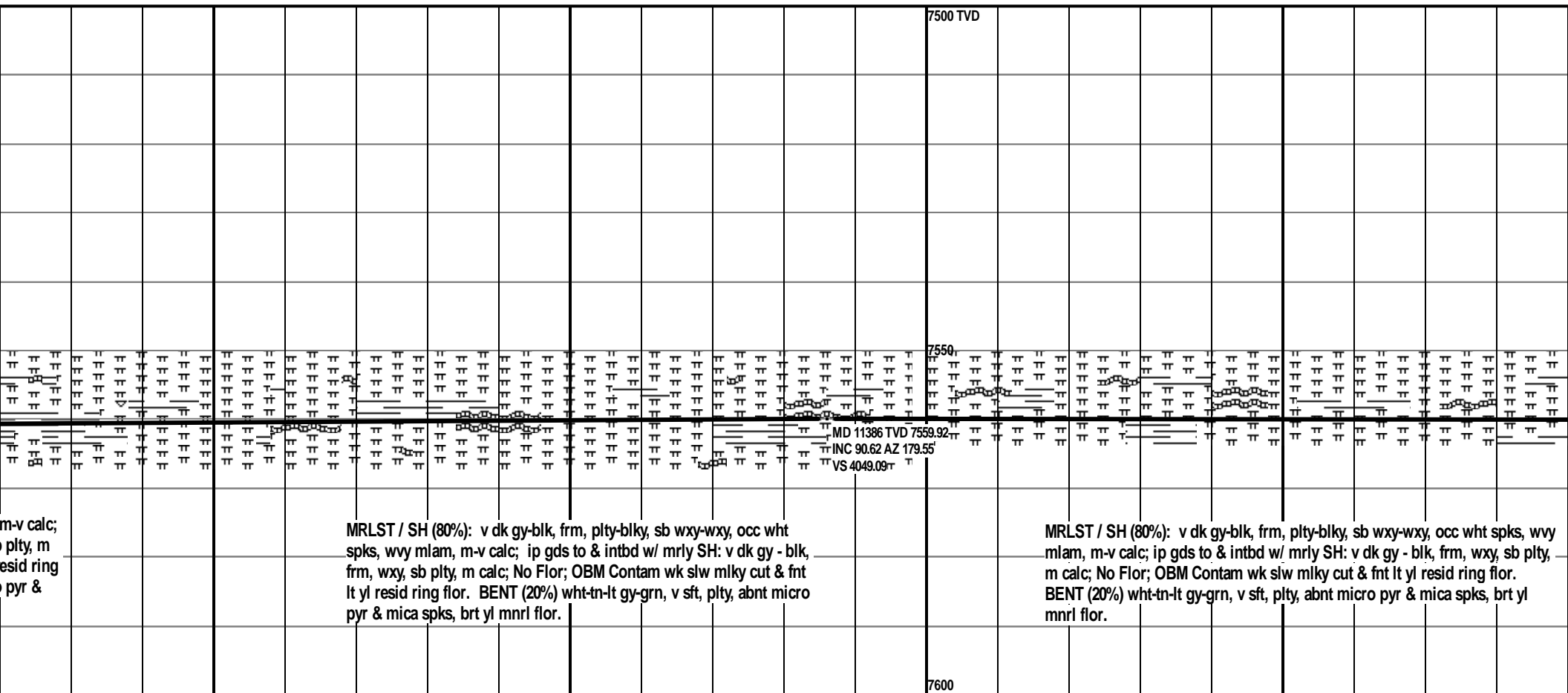






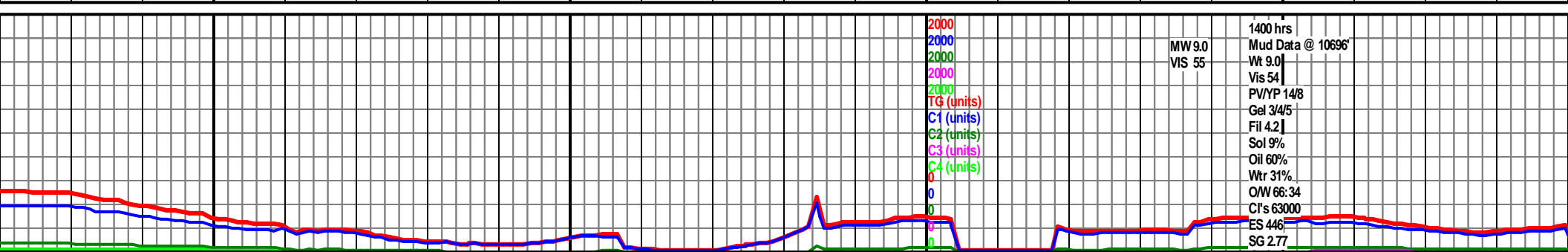


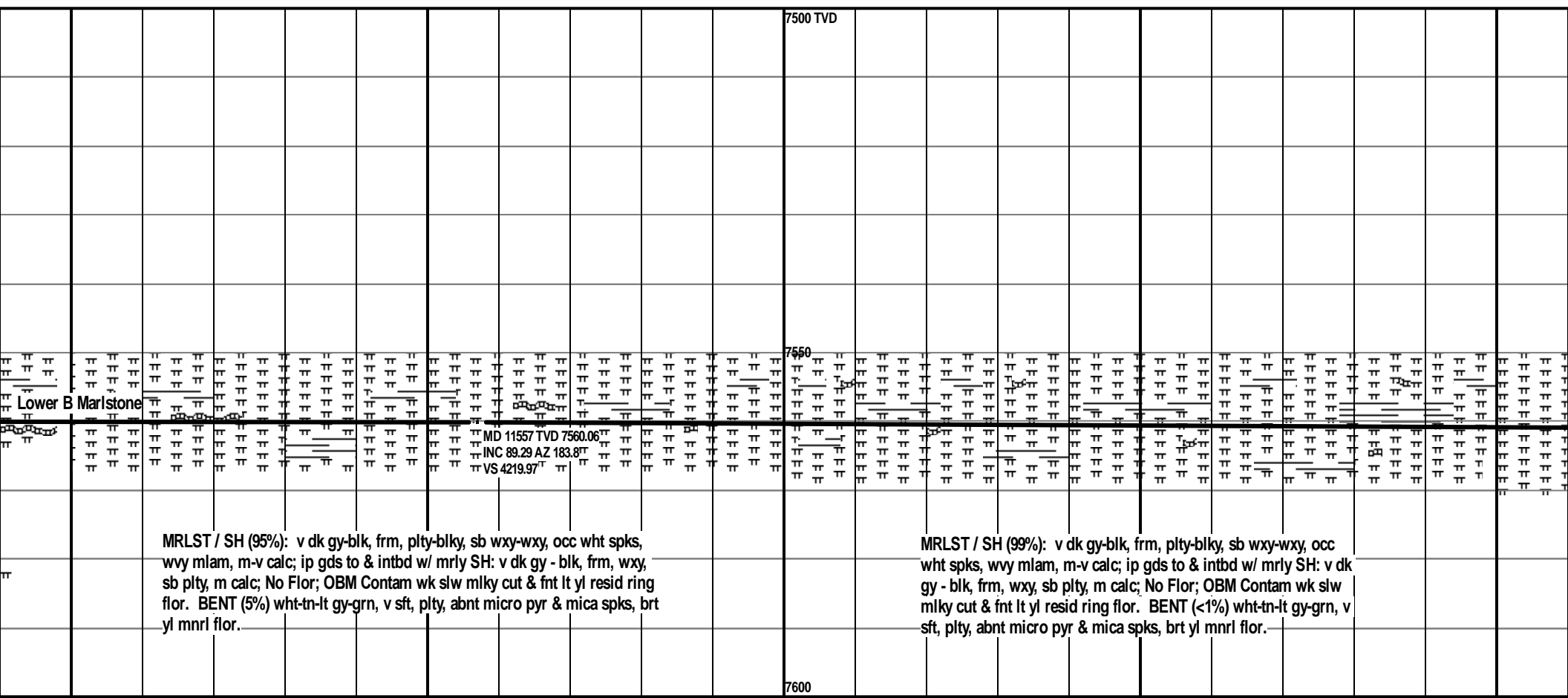
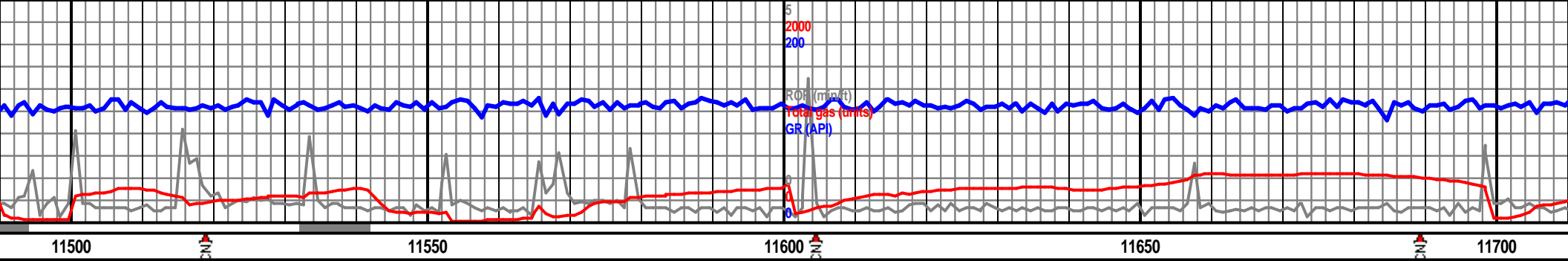




MRLST / SH (80%): v dk gy-blk, frm, plty-blky, sb wxy-wxy, occ wht spks, wvy mlam, m-v calc; ip gds to & intbd w/ mrlly SH: v dk gy - blk, frm, wxy, sb plty, m calc; No Flor; OBM Contam wk slw mlky cut & frt lt yl resid ring flor. BENT (20%) wht-tn-lt gy-grn, v sft, plty, abnt micro pyr & mica spks, brt yl mnrl flor.

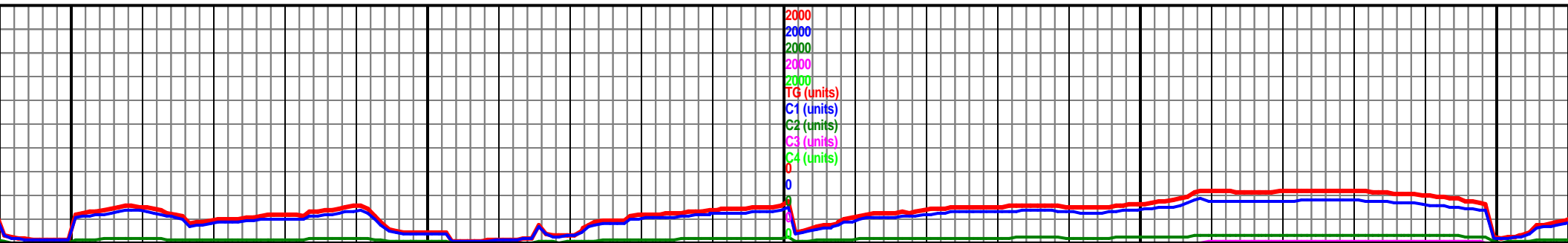
MRLST / SH (80%): v dk gy-blk, frm, plty-blky, sb wxy-wxy, occ wht spks, wvy mlam, m-v calc; ip gds to & intbd w/ mrlly SH: v dk gy - blk, frm, wxy, sb plty, m calc; No Flor; OBM Contam wk slw milky cut & fnt lt yl resid ring flor.
BENT (20%) wht-tn-lt gy-grn, v sft, plty, abnt micro pyr & mica spks, brt yl mnlr flor

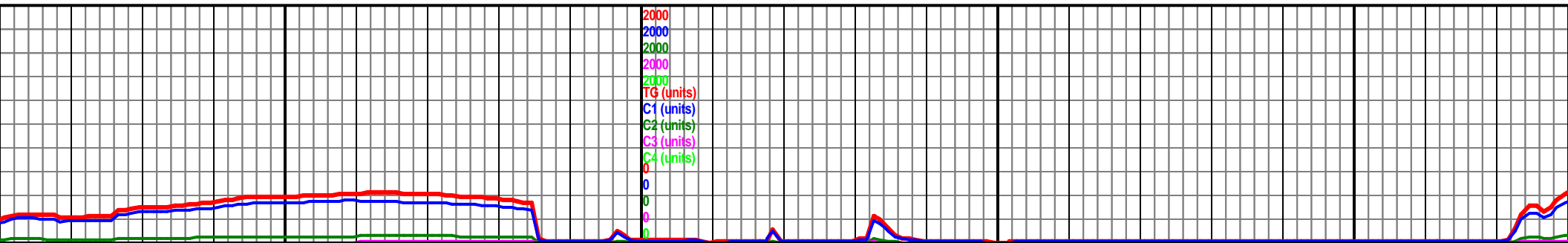
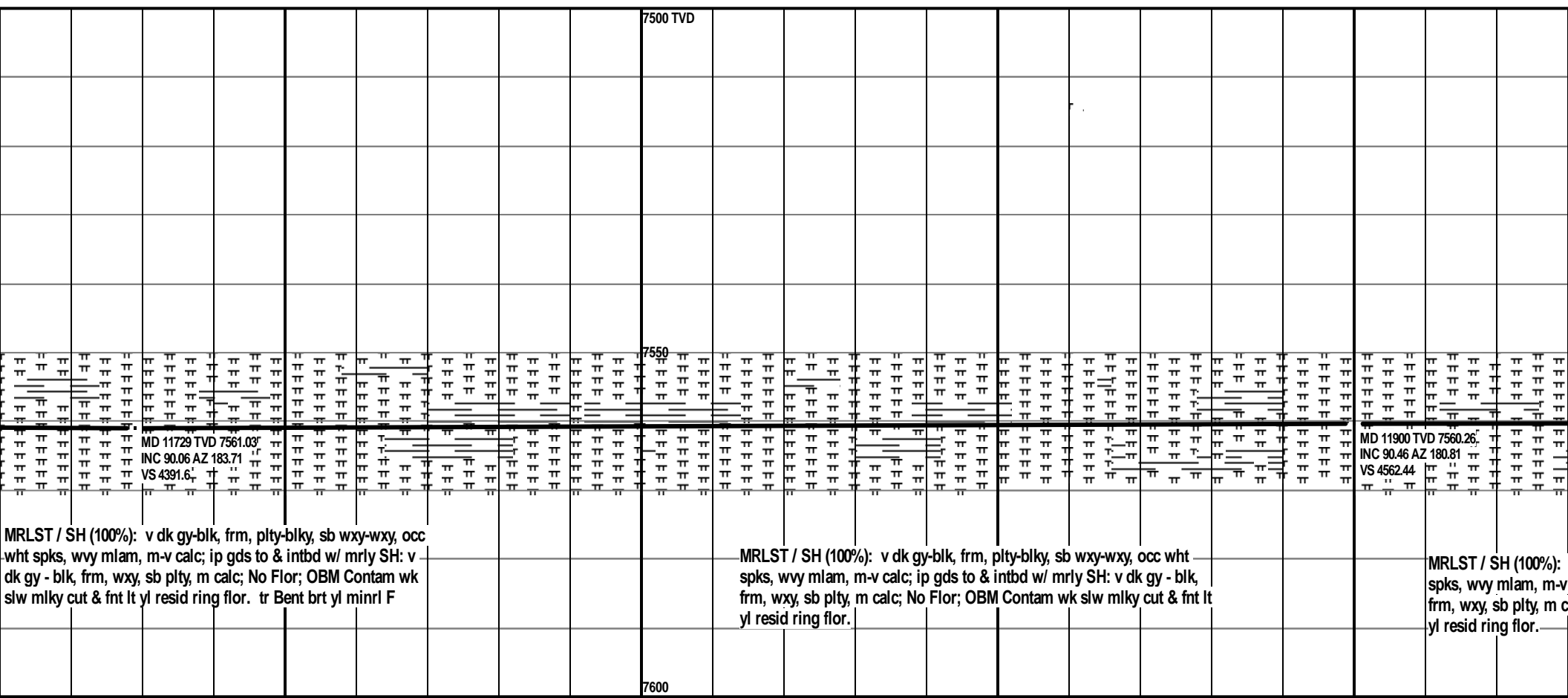
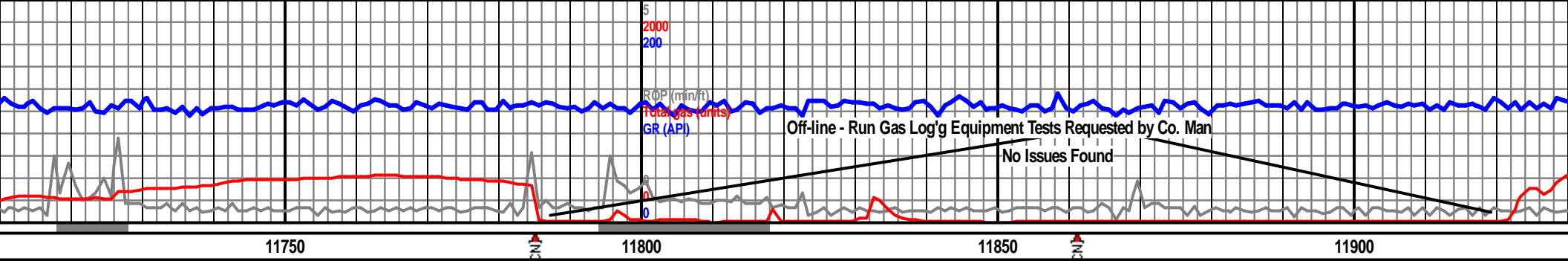


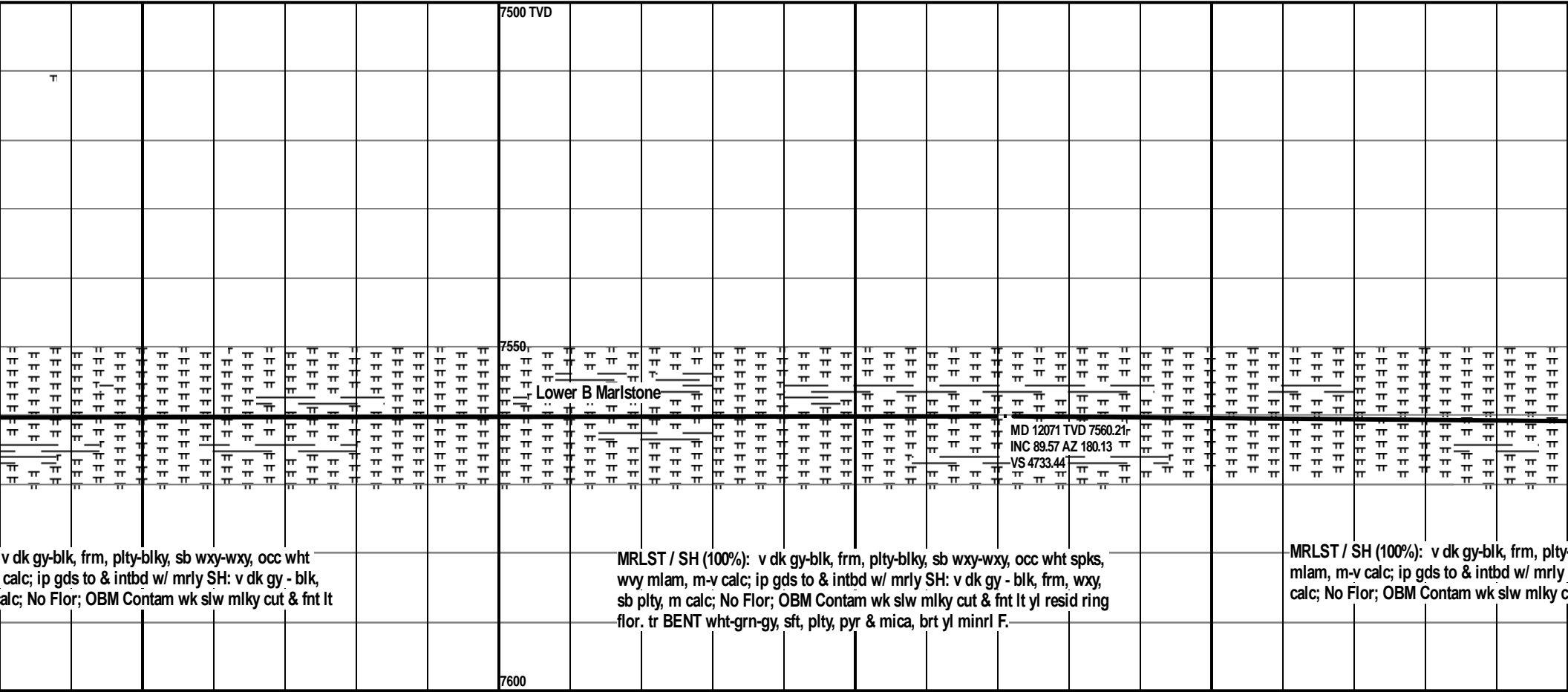
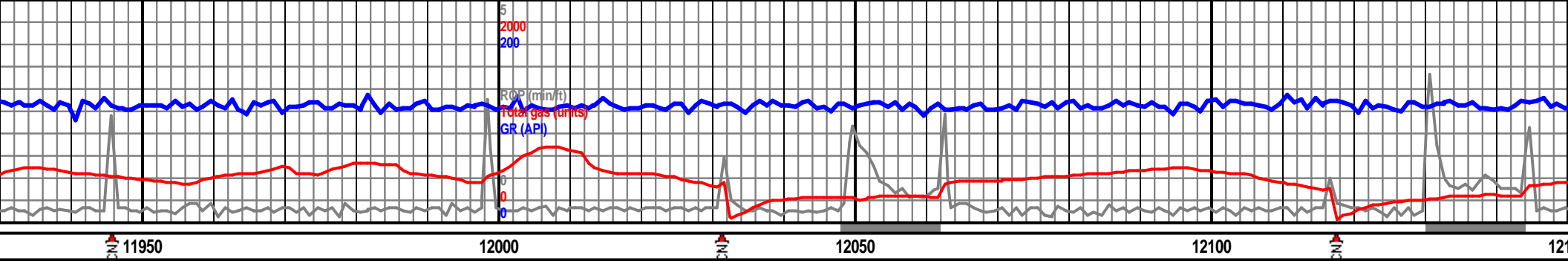


MRLST / SH (95%): v dk gy-blk, frm, plty-blky, sb wxy-wxy, occ wht spks, wvy mlam, m-v calc; ip gds to & intbd w/ mrlly SH: v dk gy - blk, frm, wxy, sb plty, m calc; No Flor; OBM Contam wk slw mlky cut & fnt lt yl resid ring flor. BENT (5%) wht-tn-lt gy-grn, v sft, plty, abnt micro pyr & mica spks, brt yl mnrl flor.

MRLST / SH (99%): v dk gy-blk, frm, plty-blky, sb wxy-wxy, occ wht spks, wvy mlam, m-v calc; ip gds to & intbd w/ mrlly SH: v dk gy - blk, frm, wxy, sb plty, m calc; No Flor; OBM Contam wk slw mlky cut & fnt lt yl resid ring flor. BENT (<1%) wht-tn-lt gy-grn, v sft, plty, abnt micro pyr & mica spks, brt yl mnrl flor.



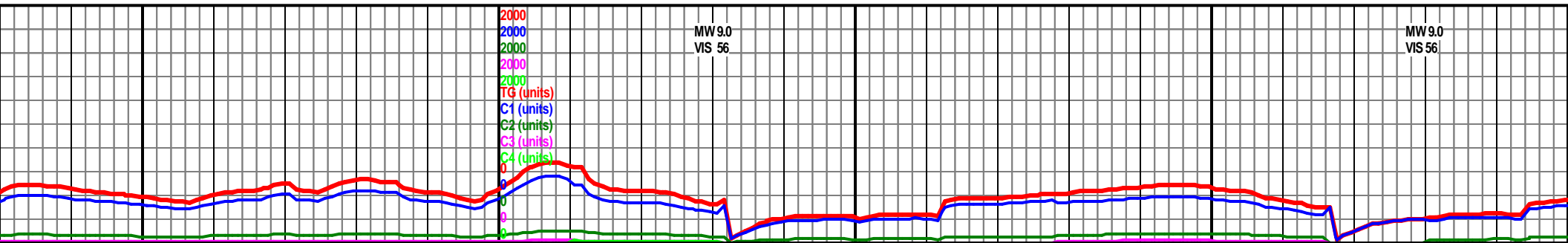


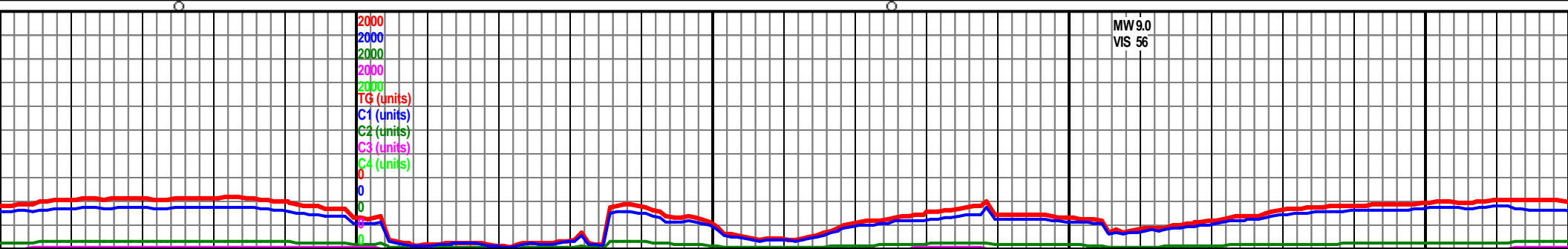
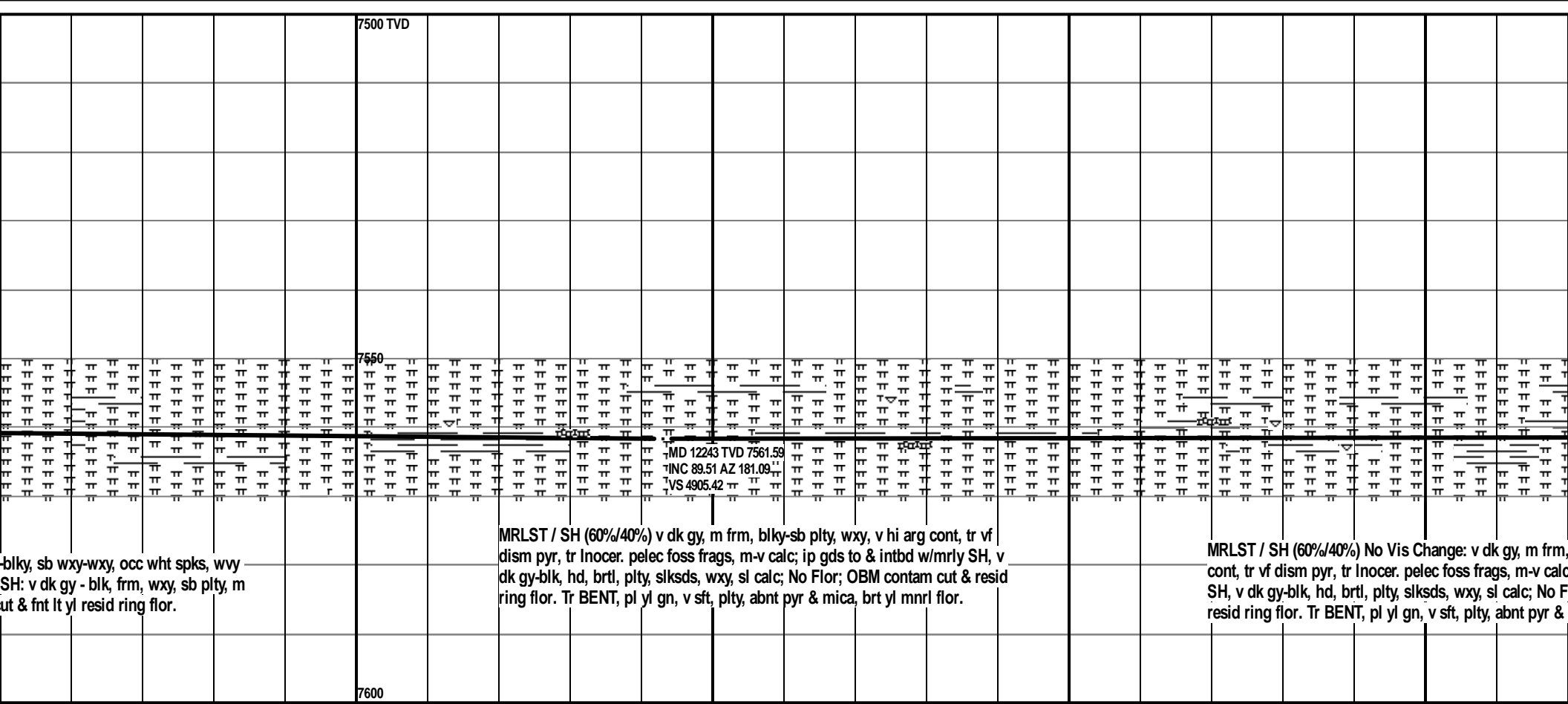
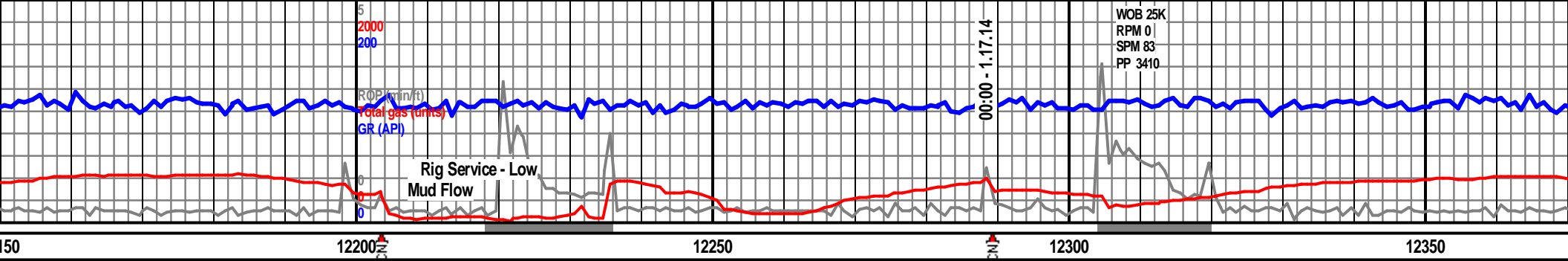


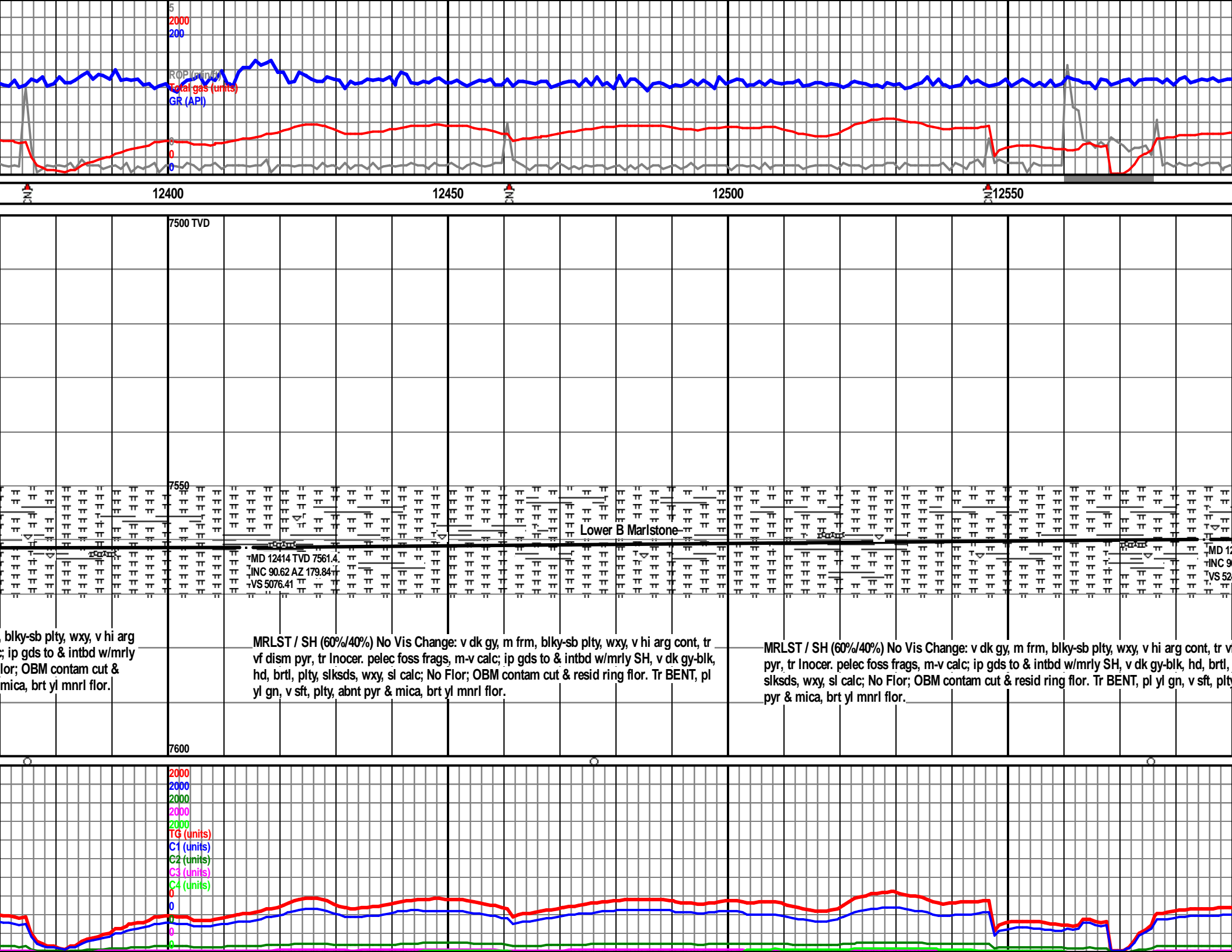
v dk gy-blk, frm, plty-blky, sb wxy-wxy, occ wht
calc; ip gds to & intbd w/ mrlly SH: v dk gy - blk,
alc; No Flor; OBM Contam wk slw mlky cut & fnt lt

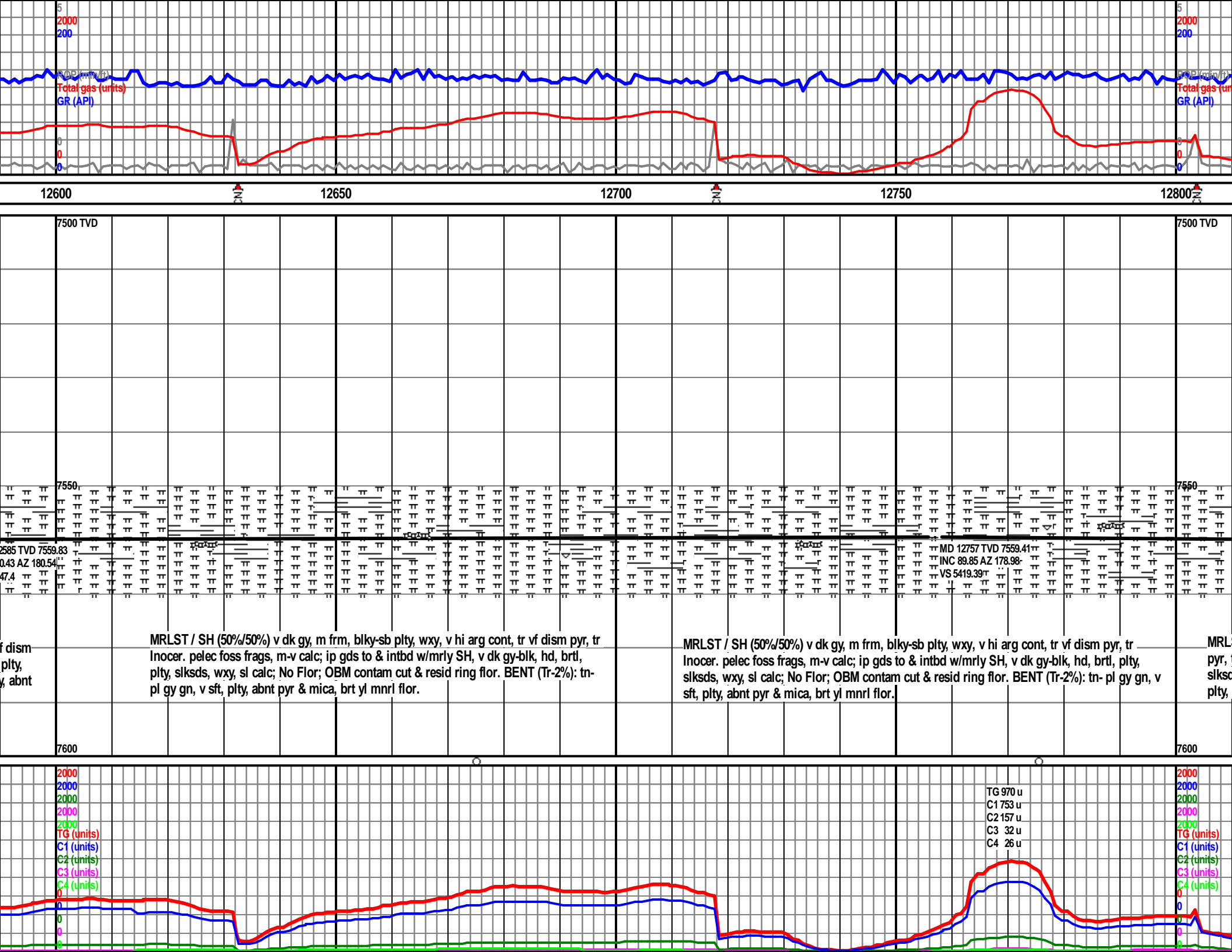
MRLST / SH (100%): v dk gy-blk, frm, plty-blky, sb wxy-wxy, occ wht spks,
wvy mlam, m-v calc; ip gds to & intbd w/ mrlly SH: v dk gy - blk, frm, wxy,
sb plty, m calc; No Flor; OBM Contam wk slw mlky cut & fnt lt yl resid ring
flor. tr BENT wht-grn-gy, sft, plty, pyr & mica, brt yl minrl F.

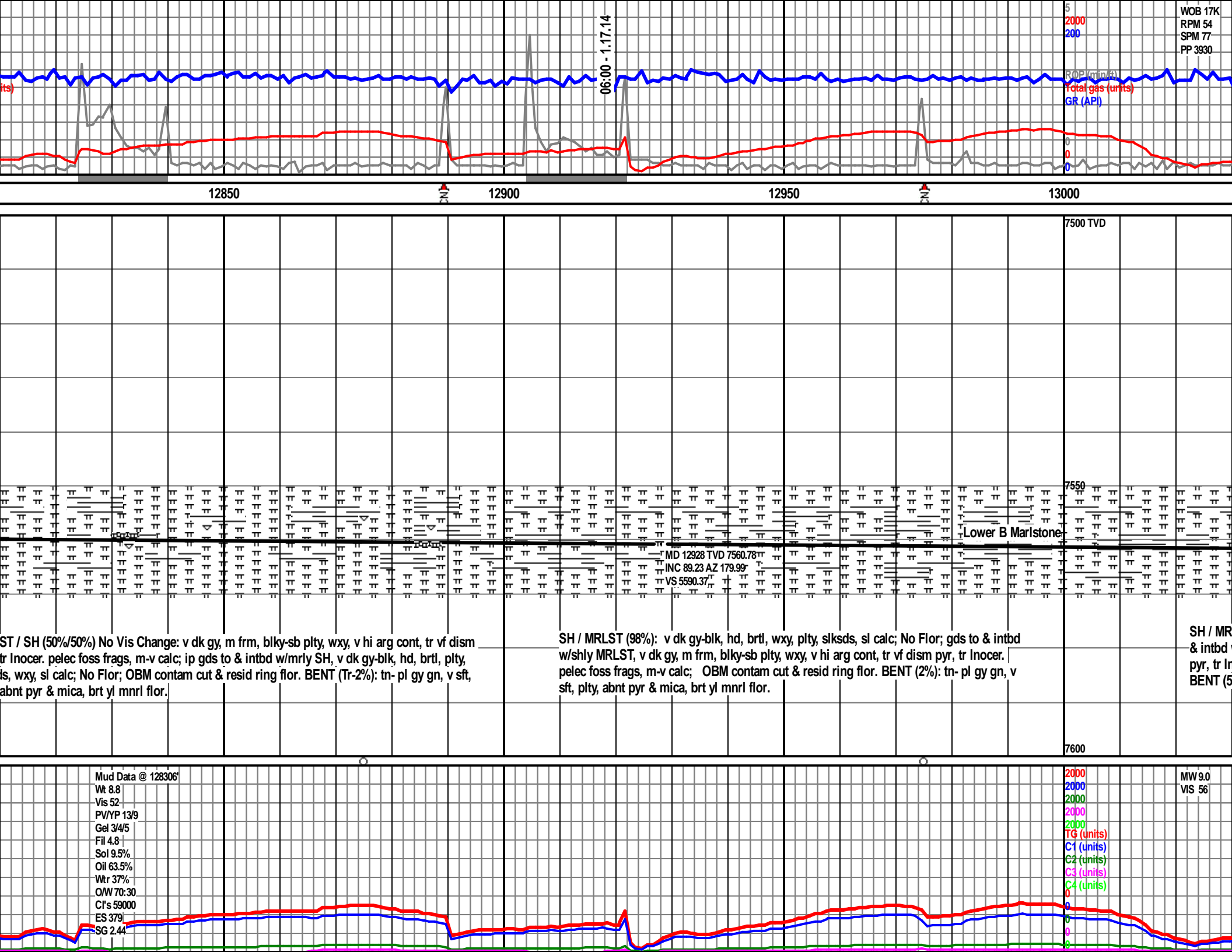
MRLST / SH (100%): v dk gy-blk, frm, plty-blky, sb wxy-wxy, occ wht spks,
wvy mlam, m-v calc; ip gds to & intbd w/ mrlly SH: v dk gy - blk, frm, wxy,
sb plty, m calc; No Flor; OBM Contam wk slw mlky cut & fnt lt

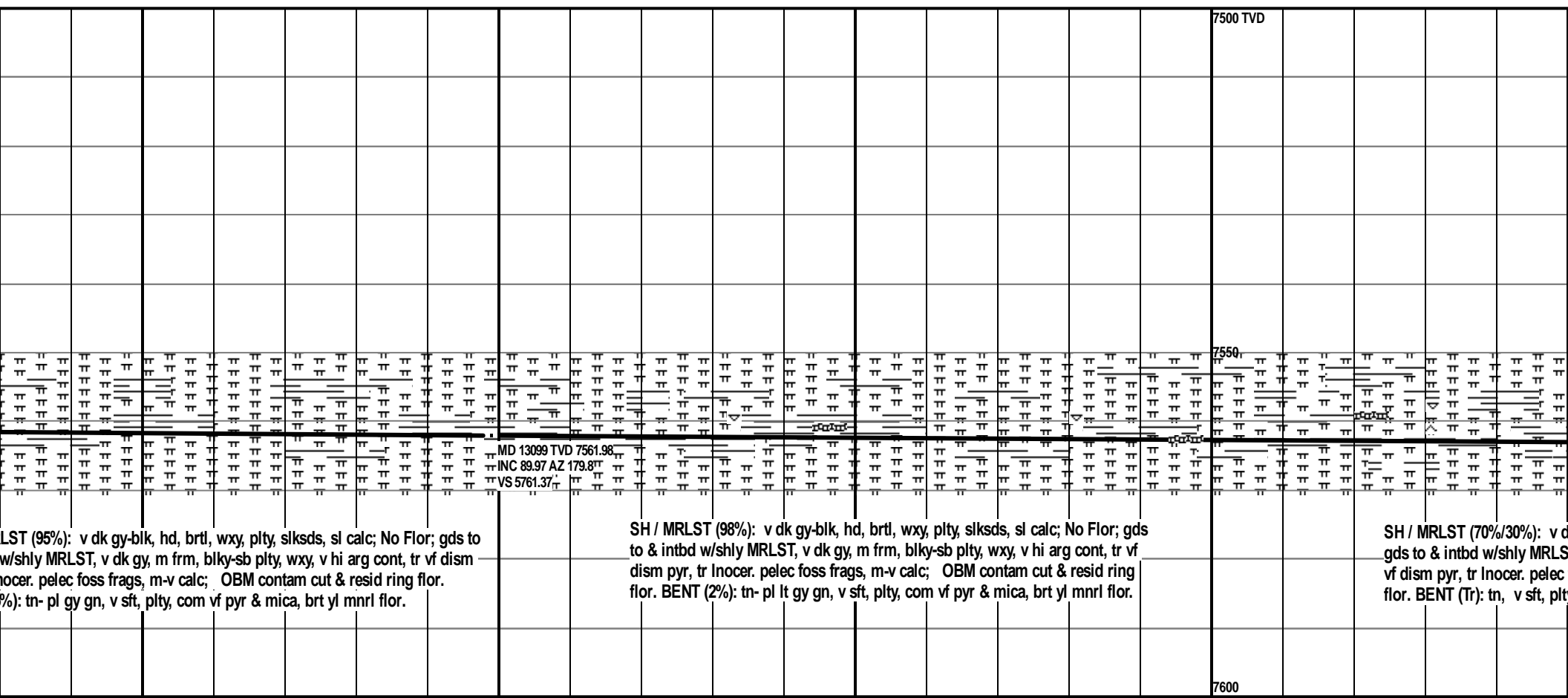
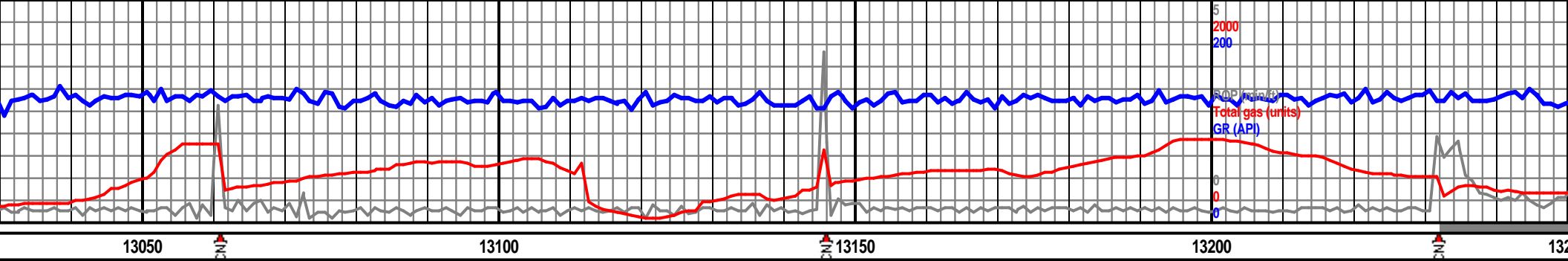








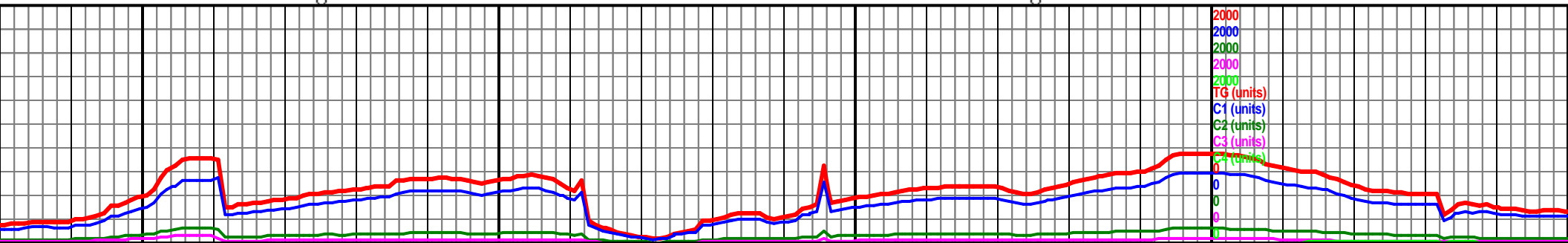


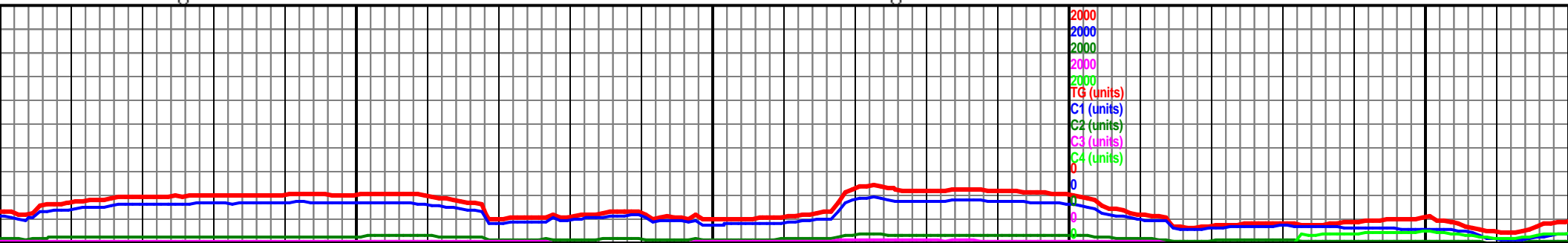
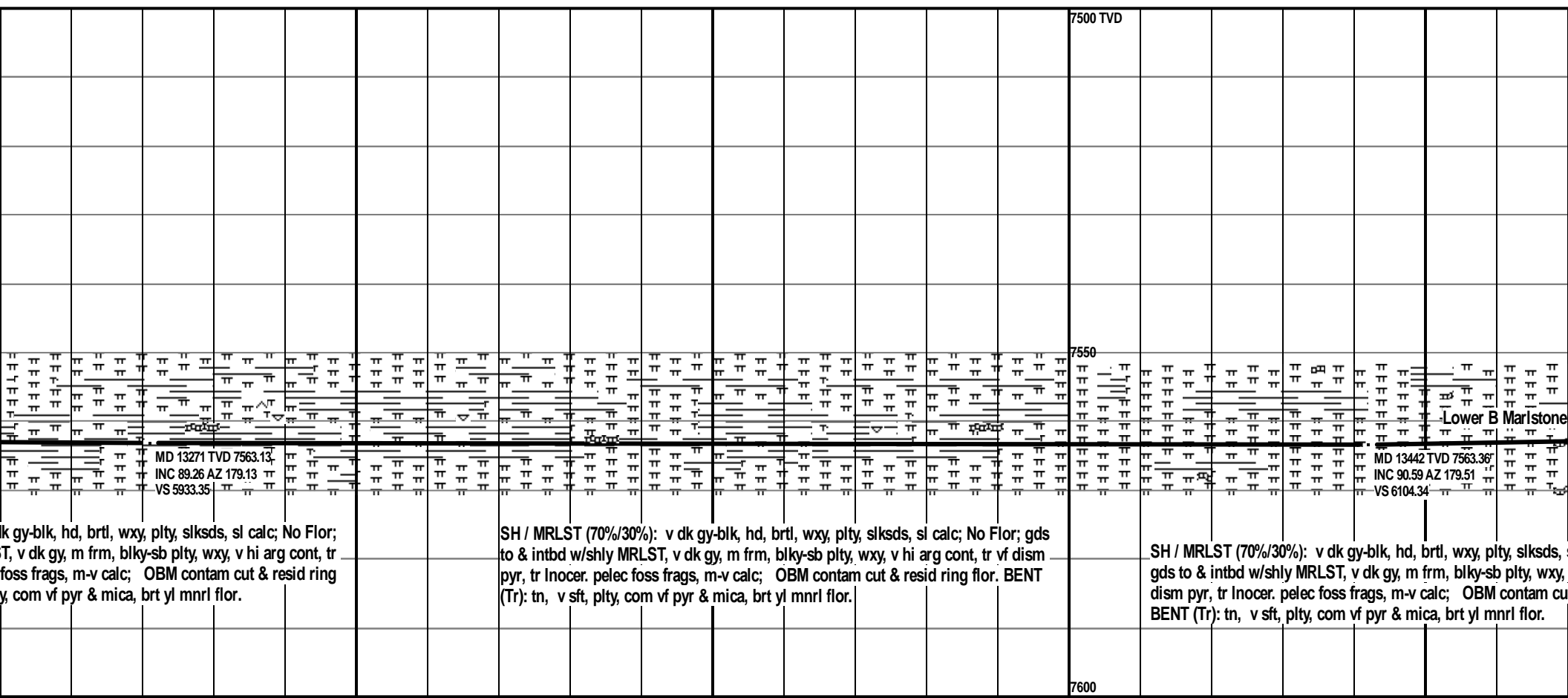
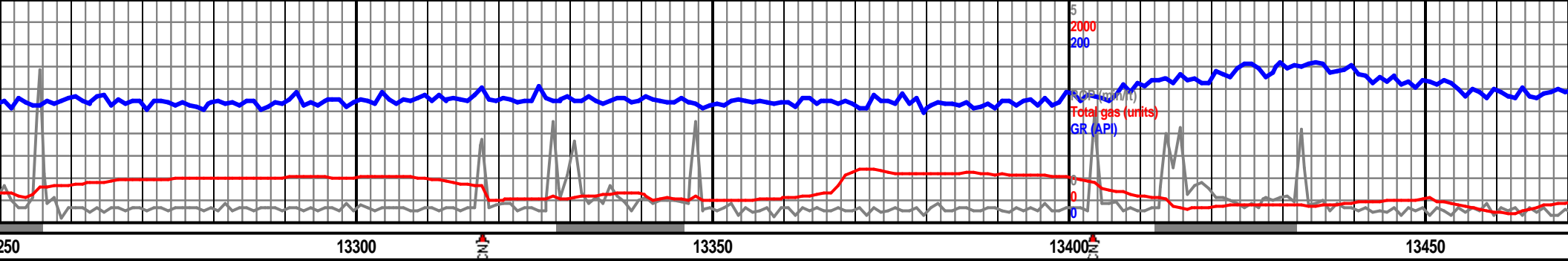


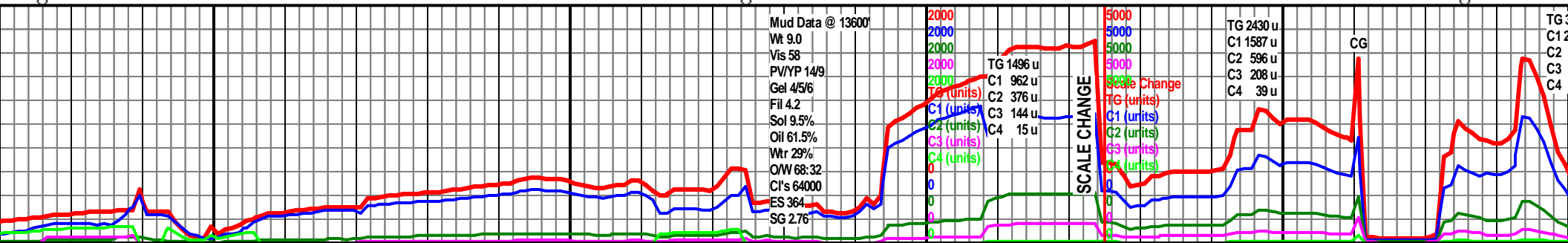
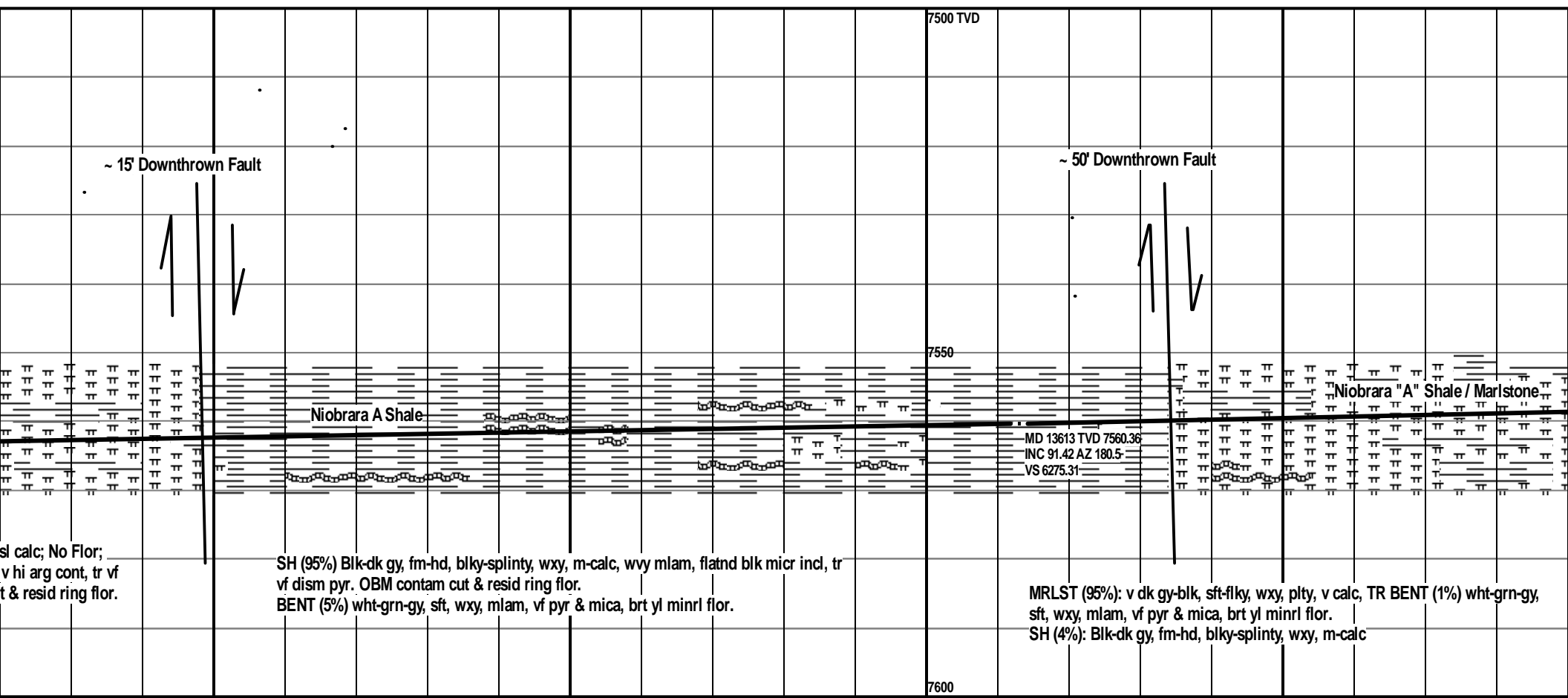
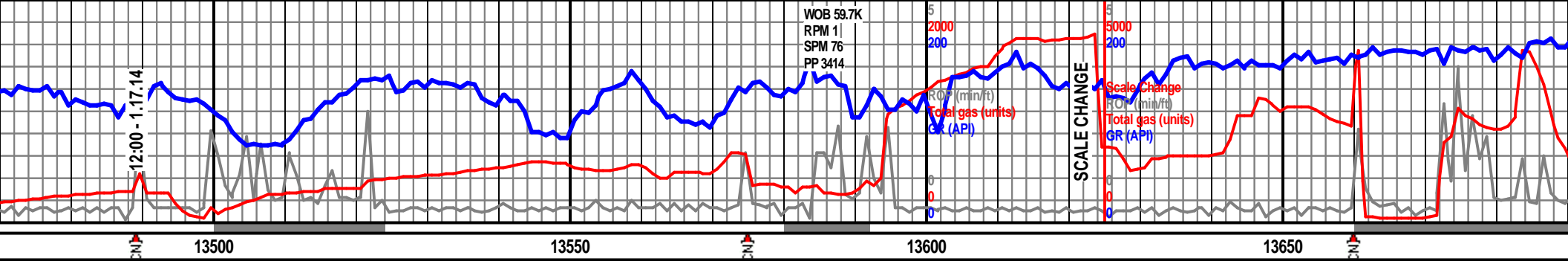
LST (95%): v dk gy-blk, hd, brtl, wxy, plty, slksds, sl calc; No Flor; gds to w/shly MRLST, v dk gy, m frm, blk-sb plty, wxy, v hi arg cont, tr vf dism Inocer. pelec foss frags, m-v calc; OBM contam cut & resid ring flor. BENT (2%): tn- pl gy gn, v sft, plty, com vf pyr & mica, brt yl mnrl flor.

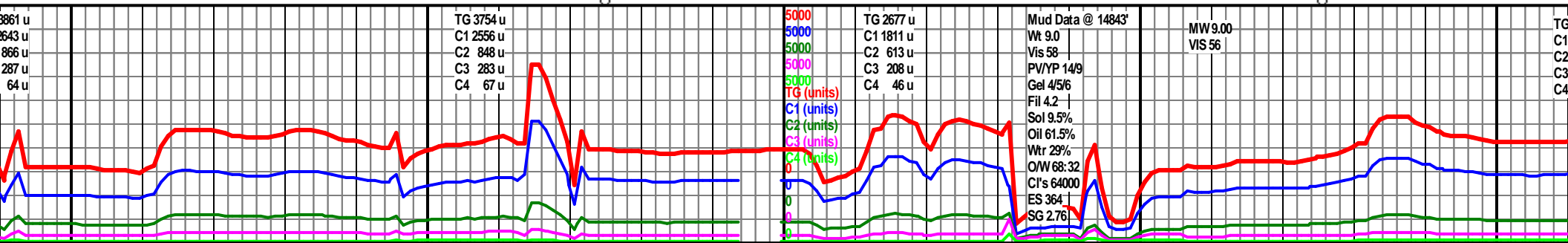
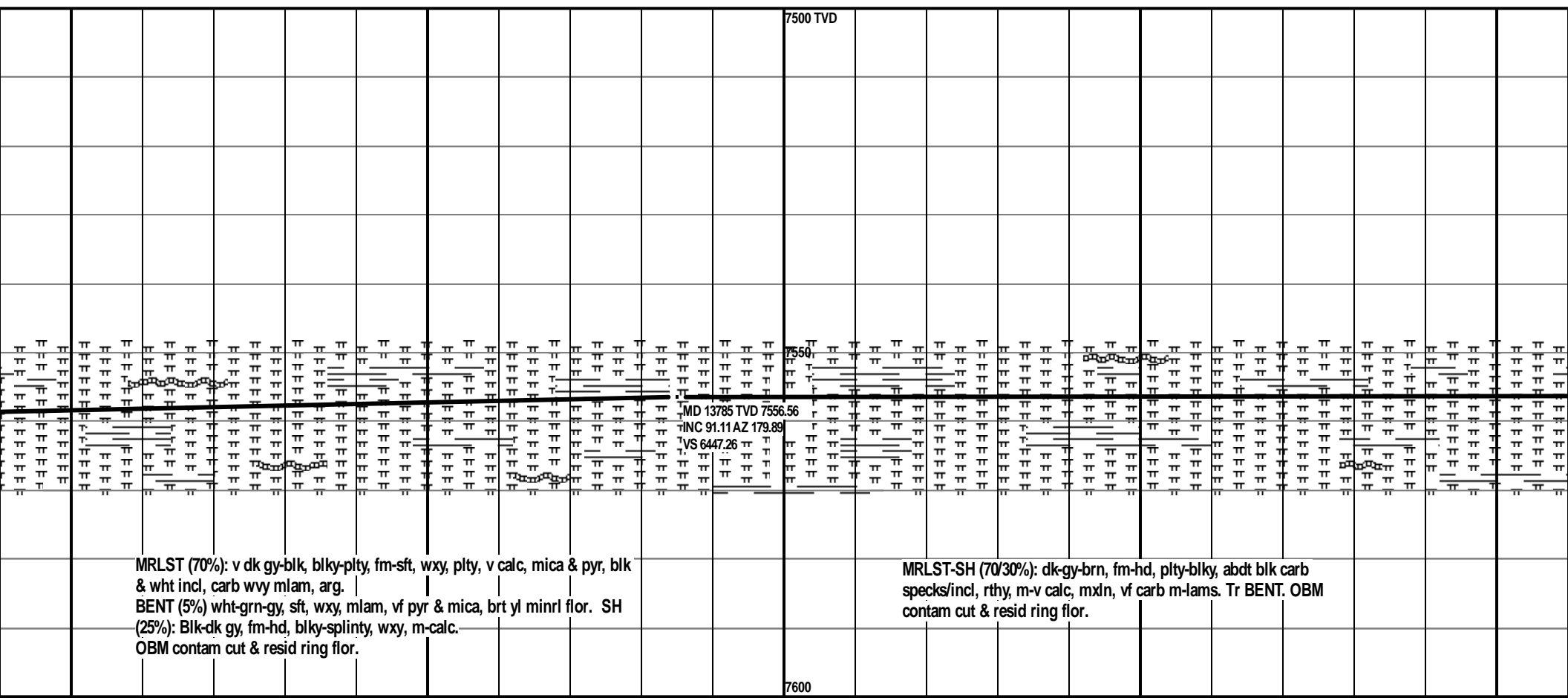
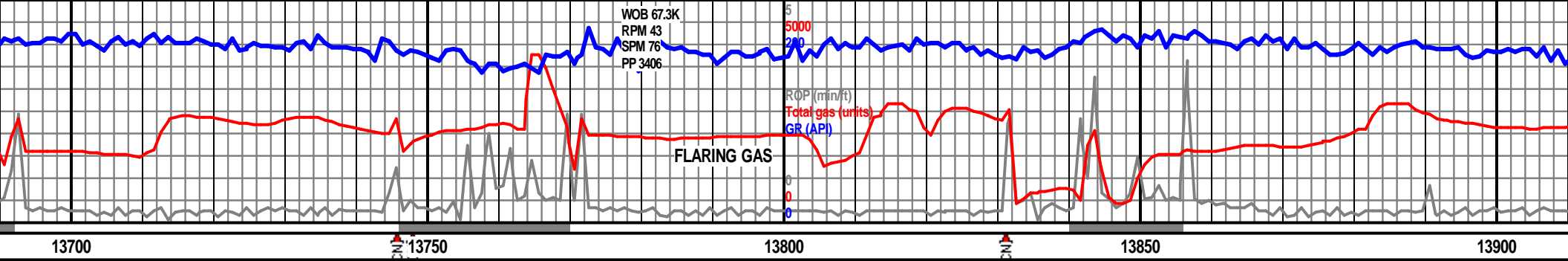
SH / MRLST (98%): v dk gy-blk, hd, brtl, wxy, plty, slksds, sl calc; No Flor; gds to & intbd w/shly MRLST, v dk gy, m frm, blk-sb plty, wxy, v hi arg cont, tr vf dism pyr, tr Inocer. pelec foss frags, m-v calc; OBM contam cut & resid ring flor. BENT (2%): tn- pl lt gy gn, v sft, plty, com vf pyr & mica, brt yl mnrl flor.

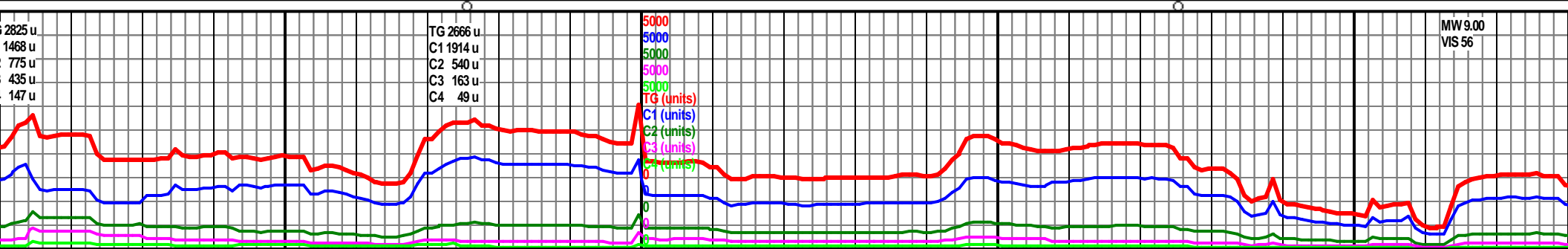
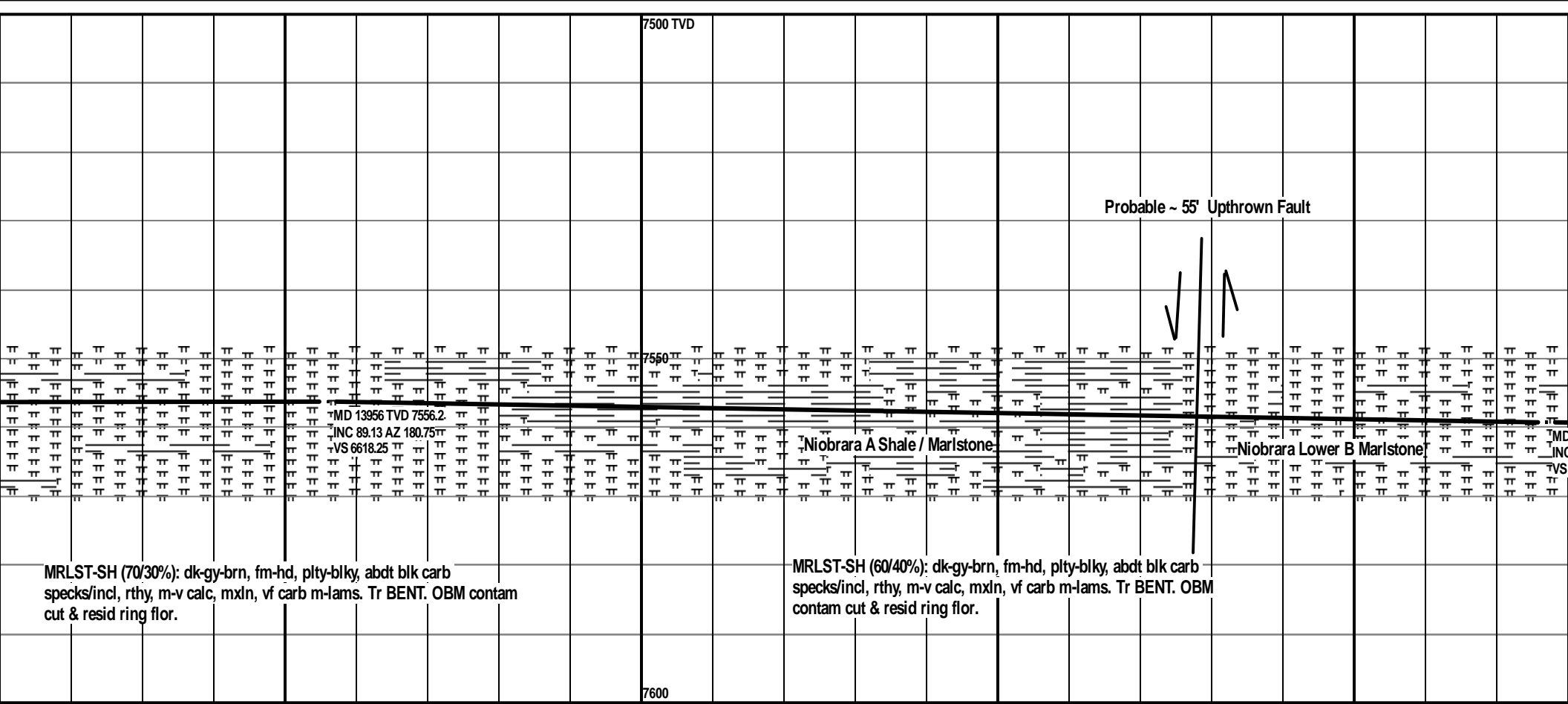
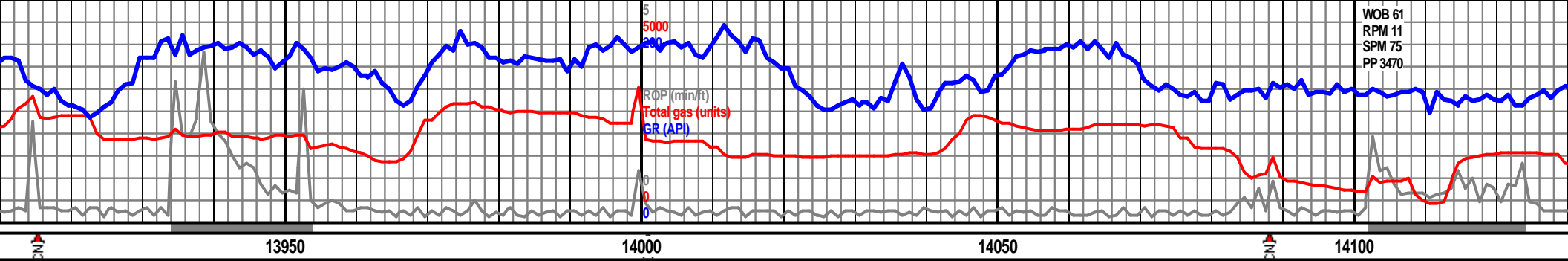
SH / MRLST (70%/30%): v dk gy-blk, hd, brtl, wxy, plty, slksds, sl calc; No Flor; gds to & intbd w/shly MRLST, v dk gy, m frm, blk-sb plty, wxy, v hi arg cont, tr vf dism pyr, tr Inocer. pelec foss frags, m-v calc; OBM contam cut & resid ring flor. BENT (Tr): tn, v sft, plty, com vf pyr & mica, brt yl mnrl flor.

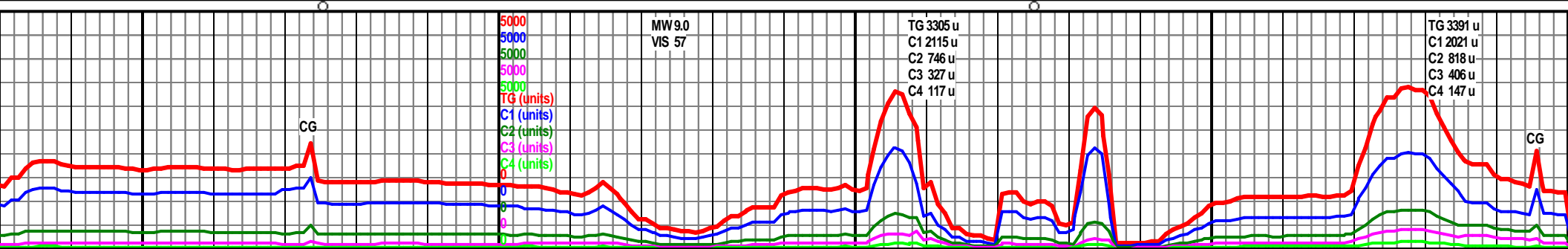
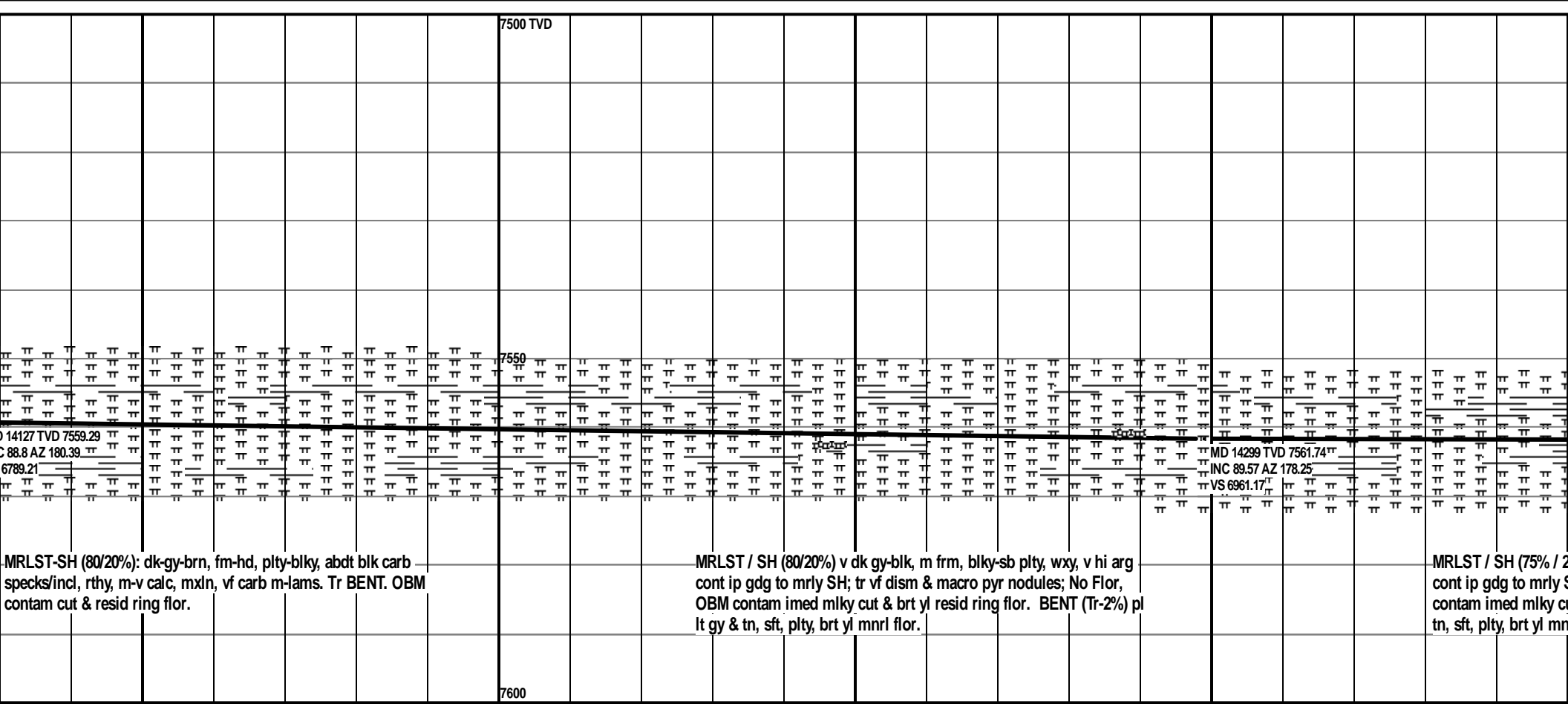
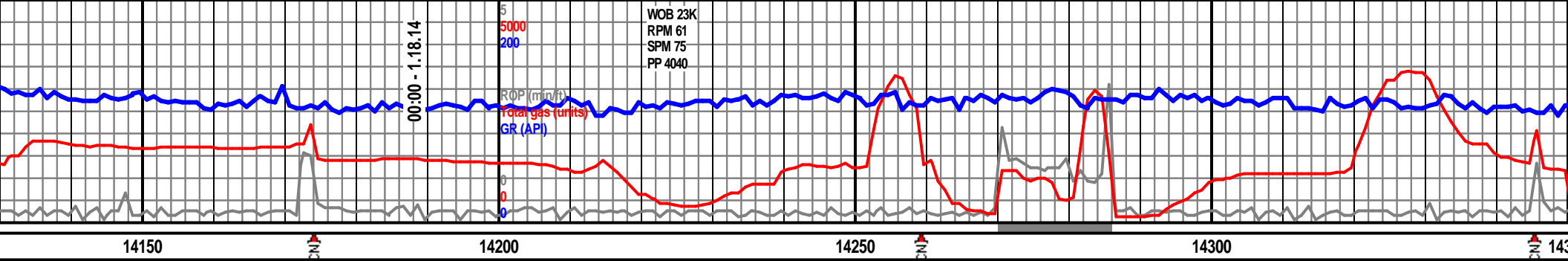


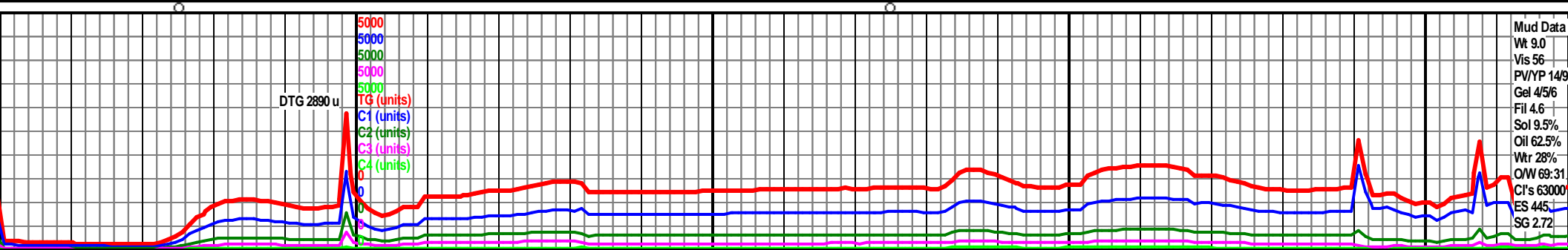
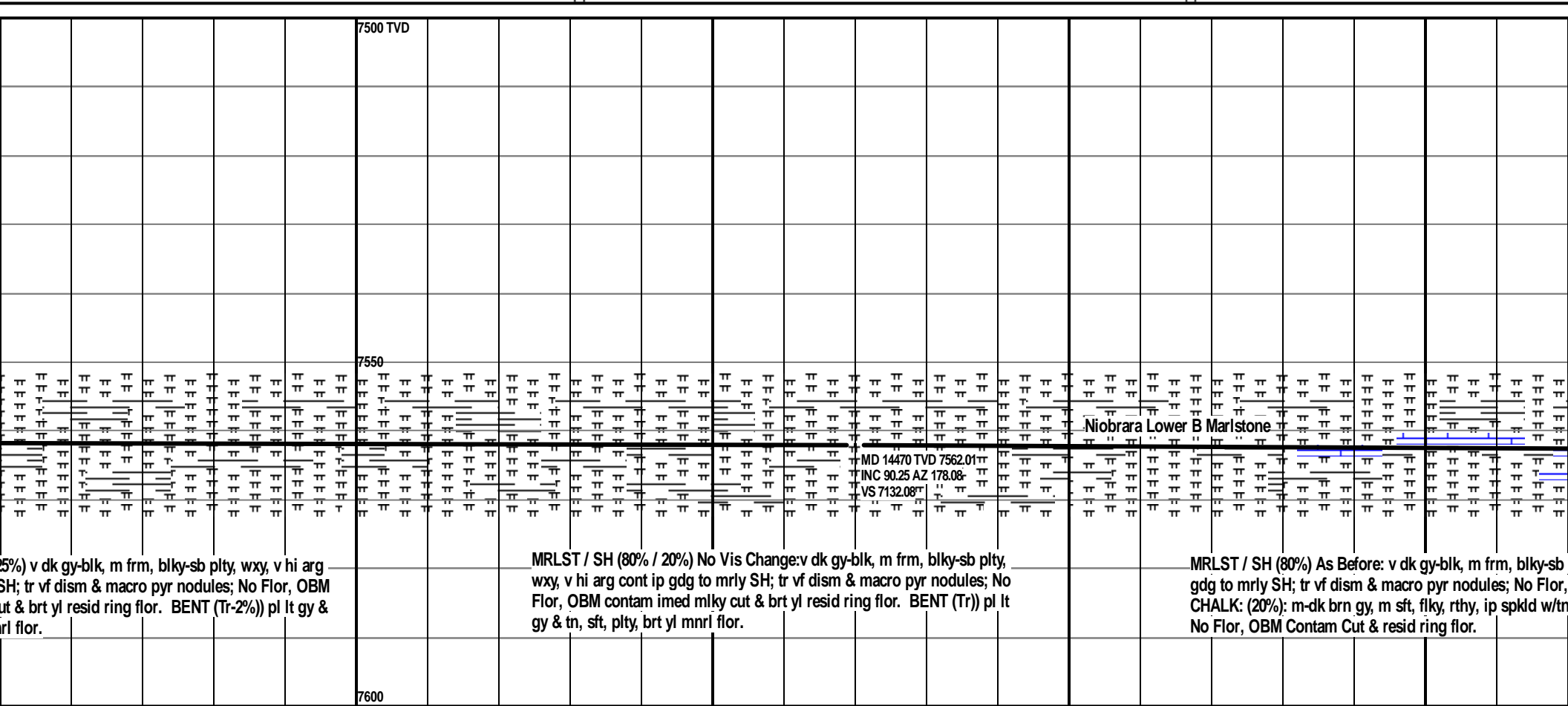
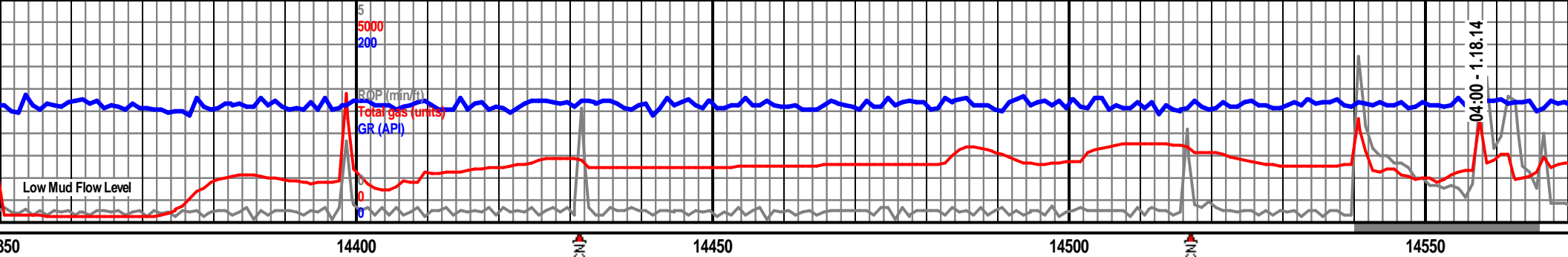


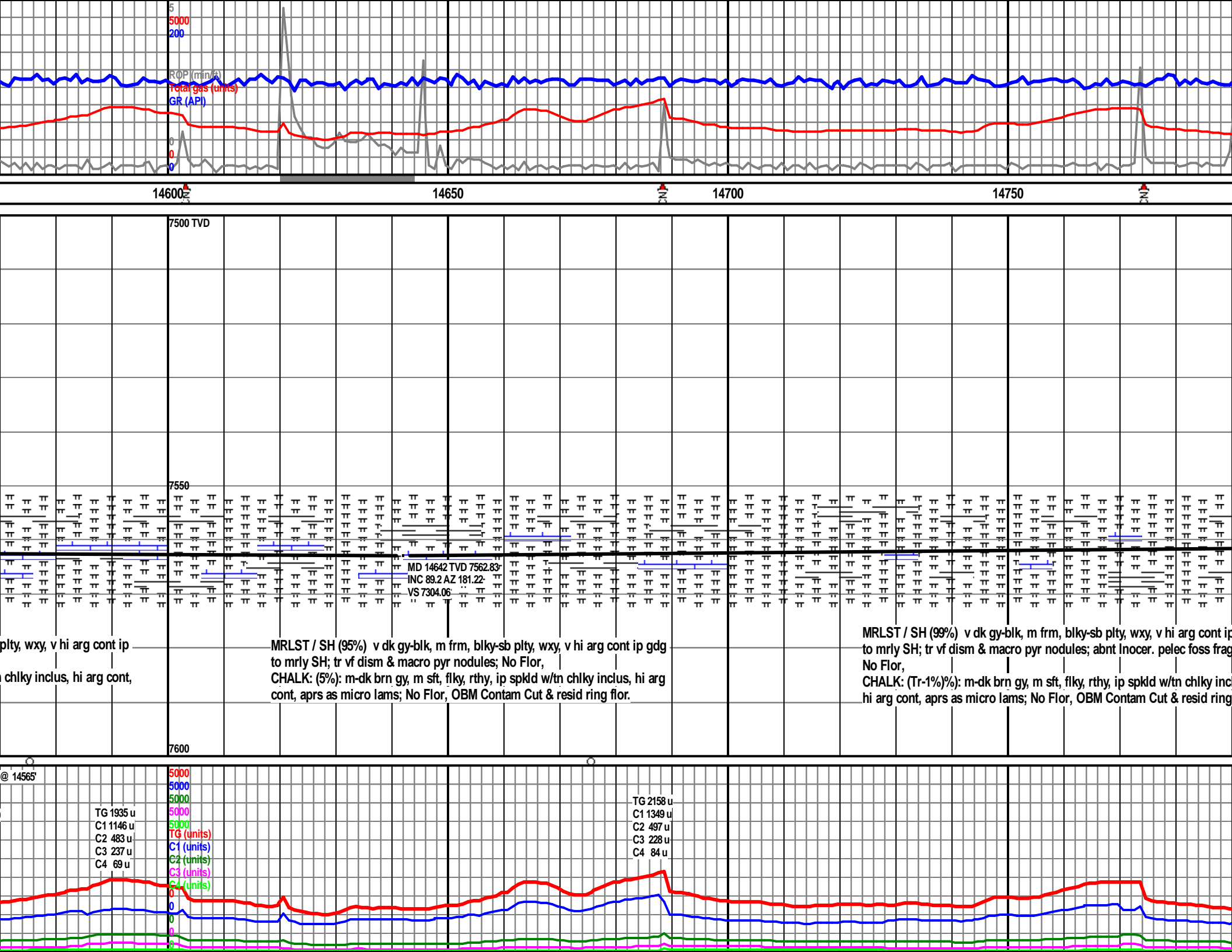


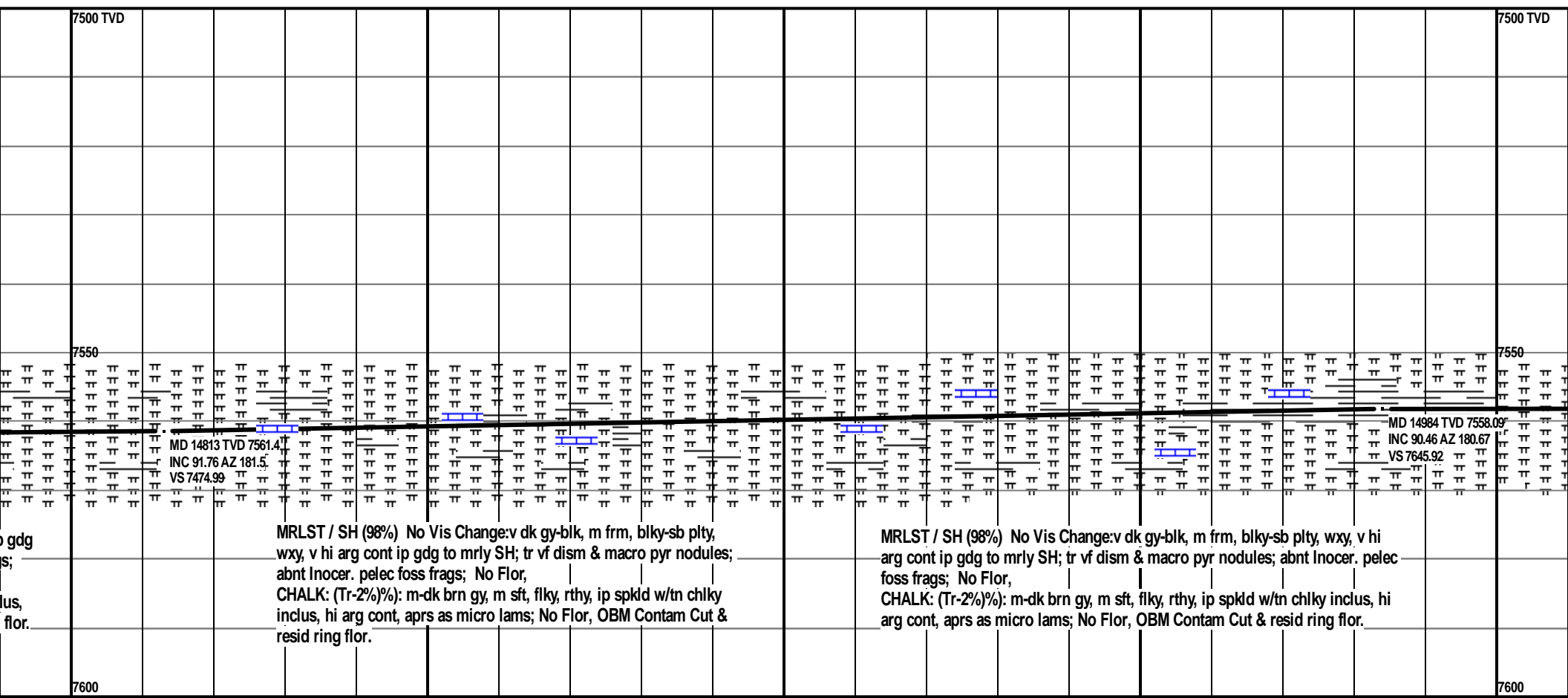
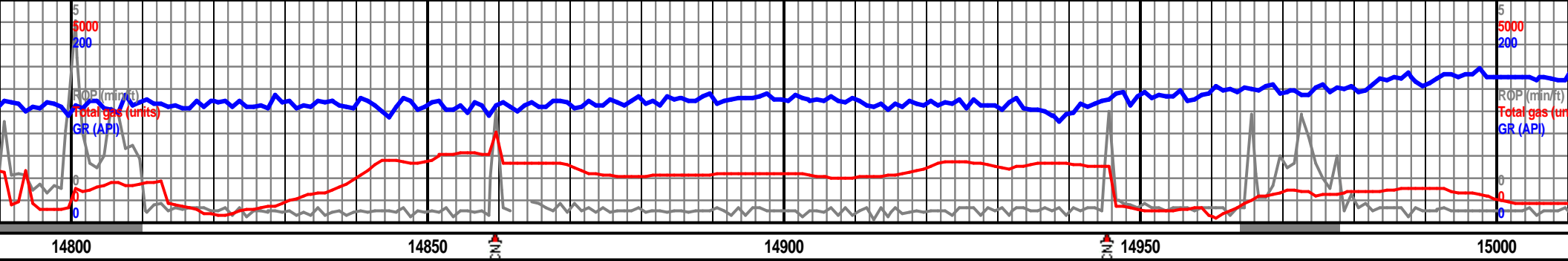








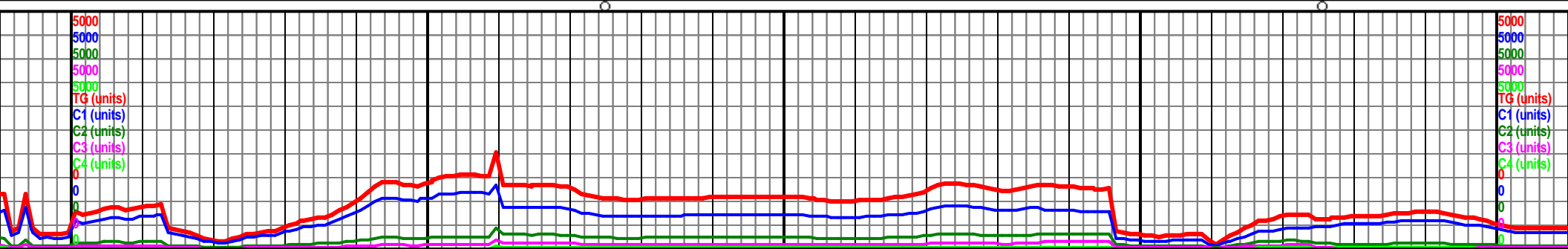


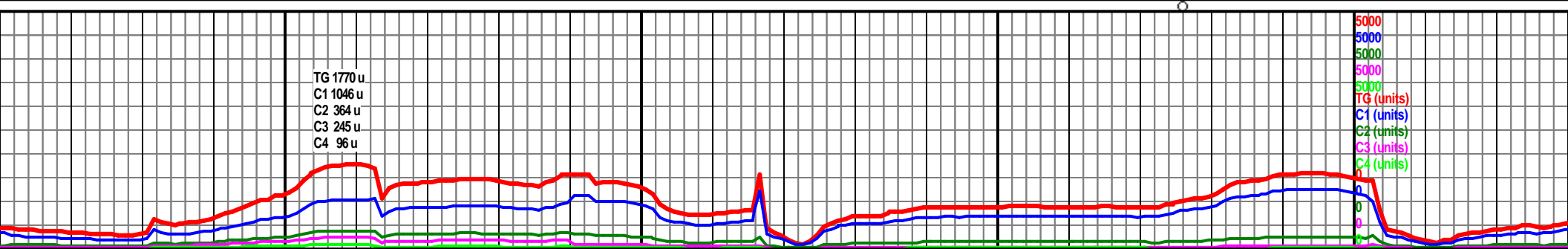
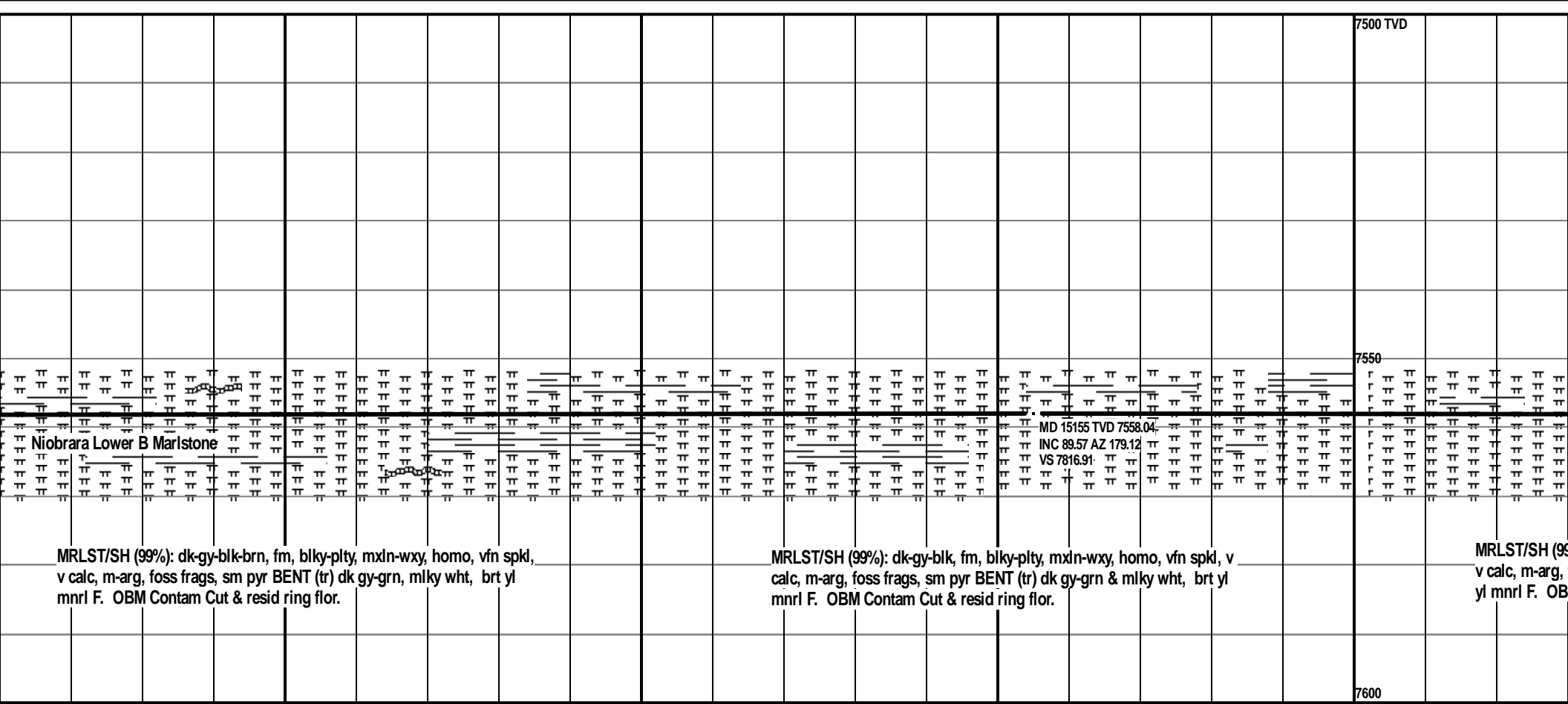
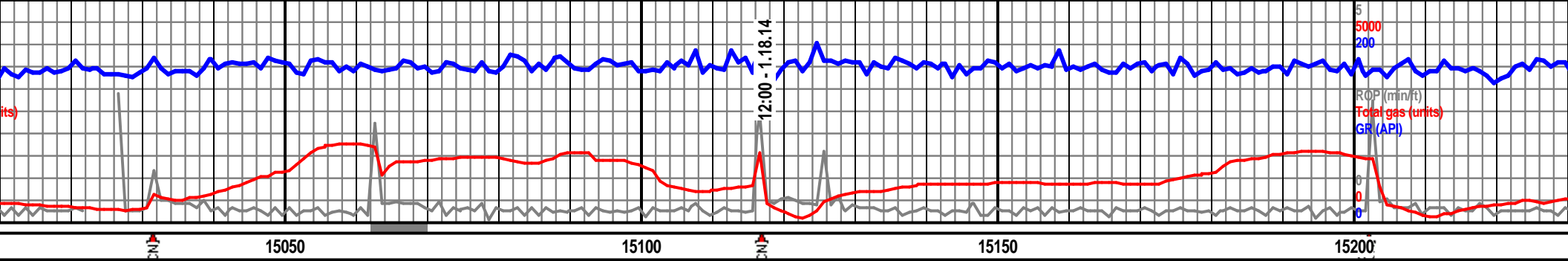


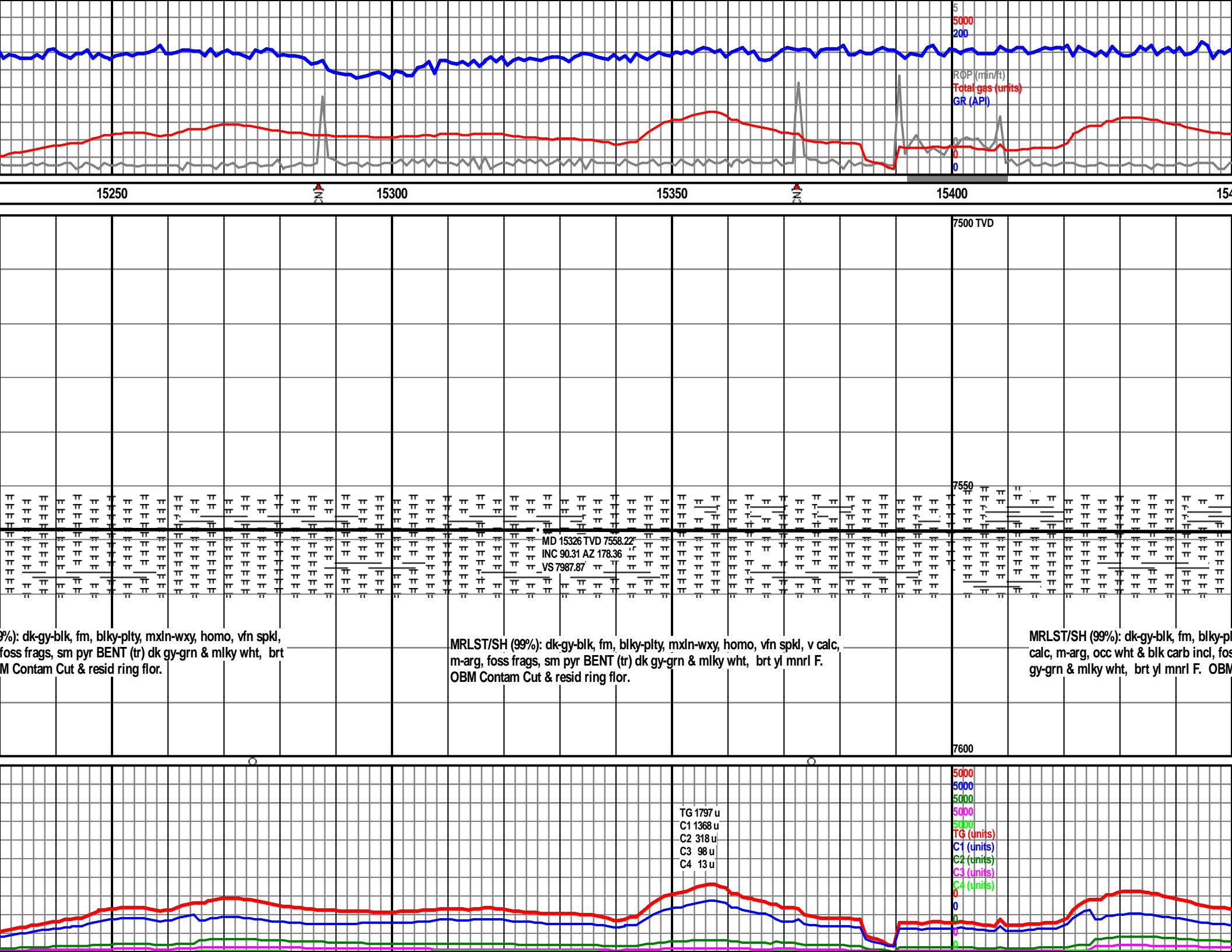
o gdg
s;
us,
flor.

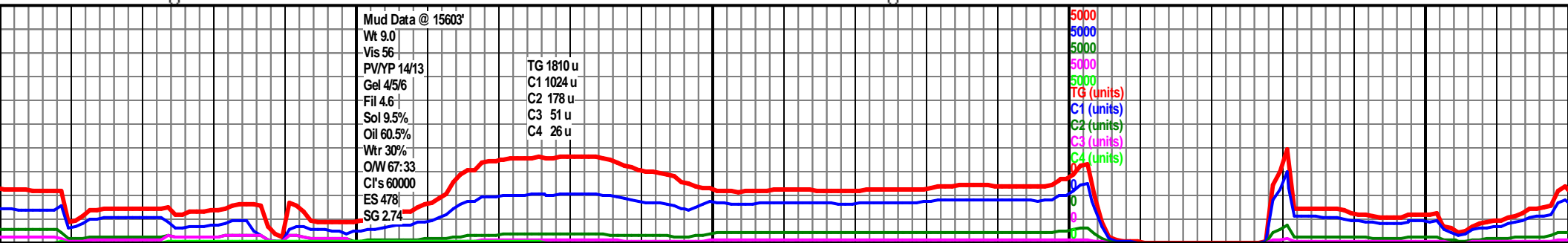
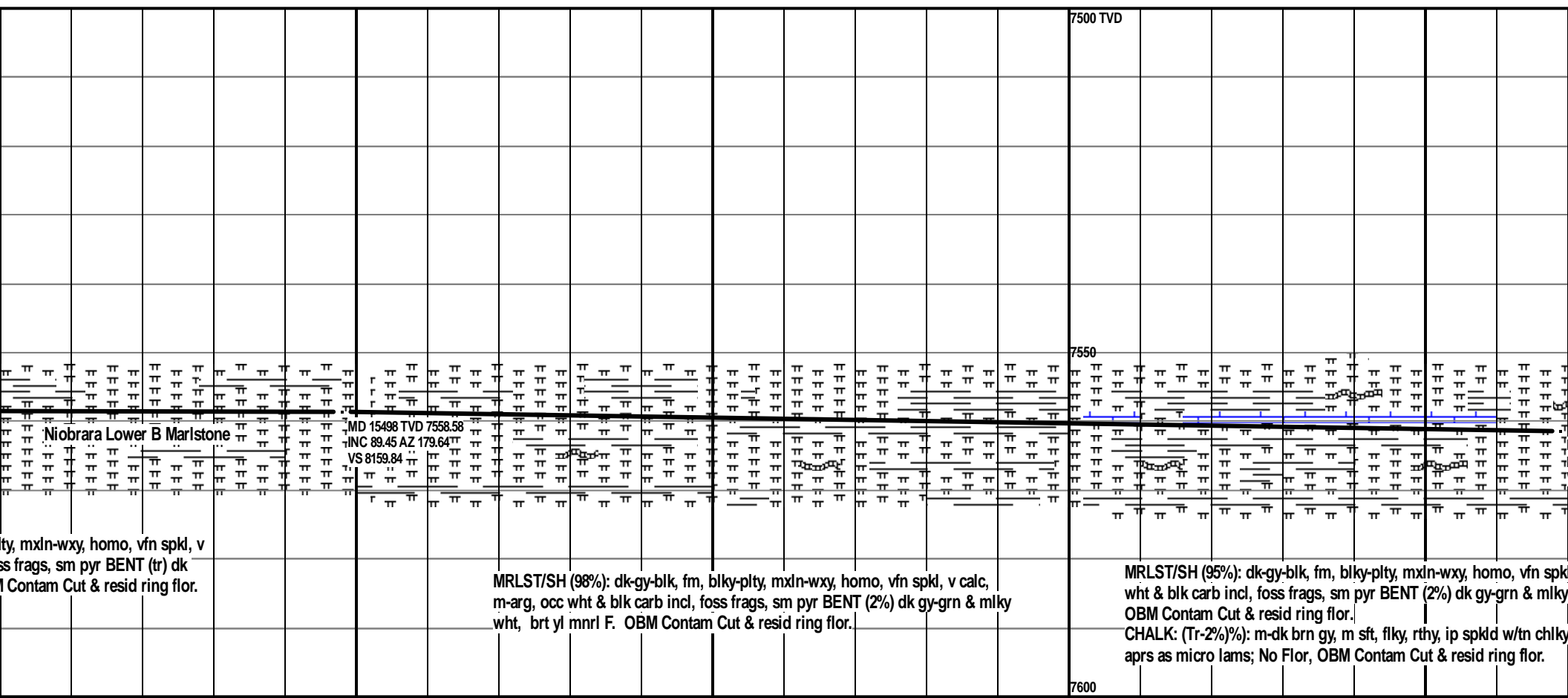
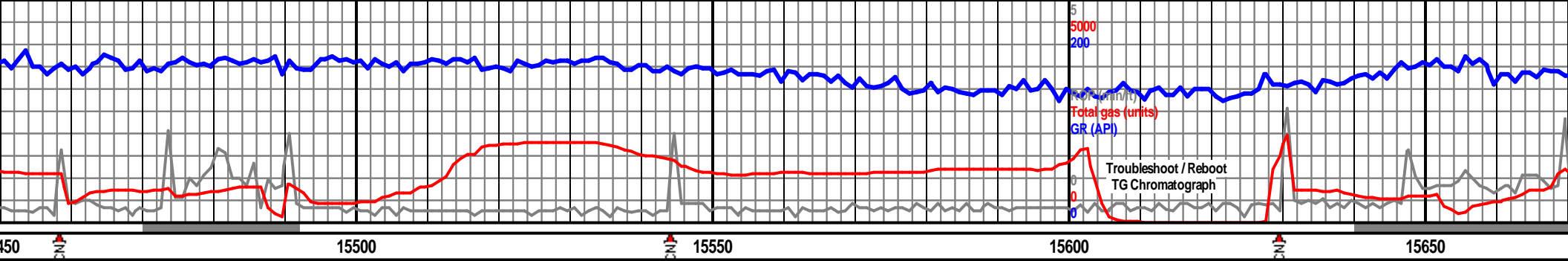
MRLST / SH (98%) No Vis Change:v dk gy-blk, m frm, blk-y-sb plty,
wxy, v hi arg cont ip gdg to mrlly SH; tr vf dism & macro pyr nodules;
abnt Inocer. pelec foss frags; No Flor,
CHALK: (Tr-2%)%: m-dk brn gy, m sft, flky, rthy, ip spkld w/tn chlky
inlus, hi arg cont, aprs as micro lams; No Flor, OBM Contam Cut &
resid ring flor.

MRLST / SH (98%) No Vis Change:v dk gy-blk, m frm, blk-y-sb plty, wxy, v hi
arg cont ip gdg to mrlly SH; tr vf dism & macro pyr nodules; abnt Inocer. pelec
foss frags; No Flor,
CHALK: (Tr-2%)%: m-dk brn gy, m sft, flky, rthy, ip spkld w/tn chlky inlus, hi
arg cont, aprs as micro lams; No Flor, OBM Contam Cut & resid ring flor.







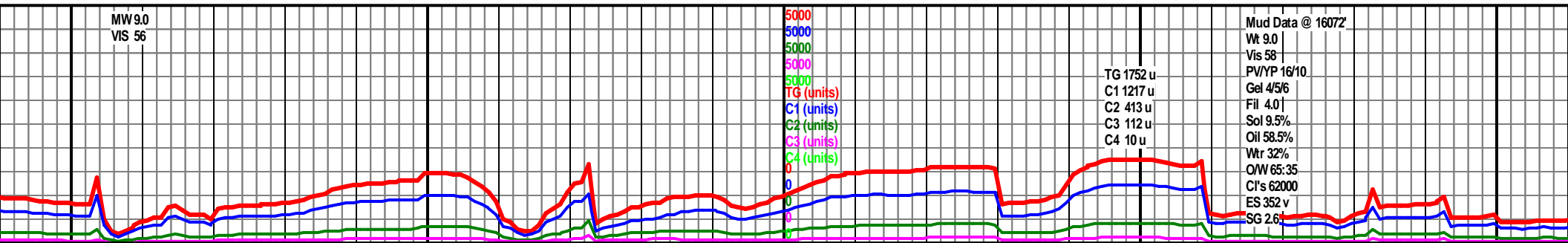
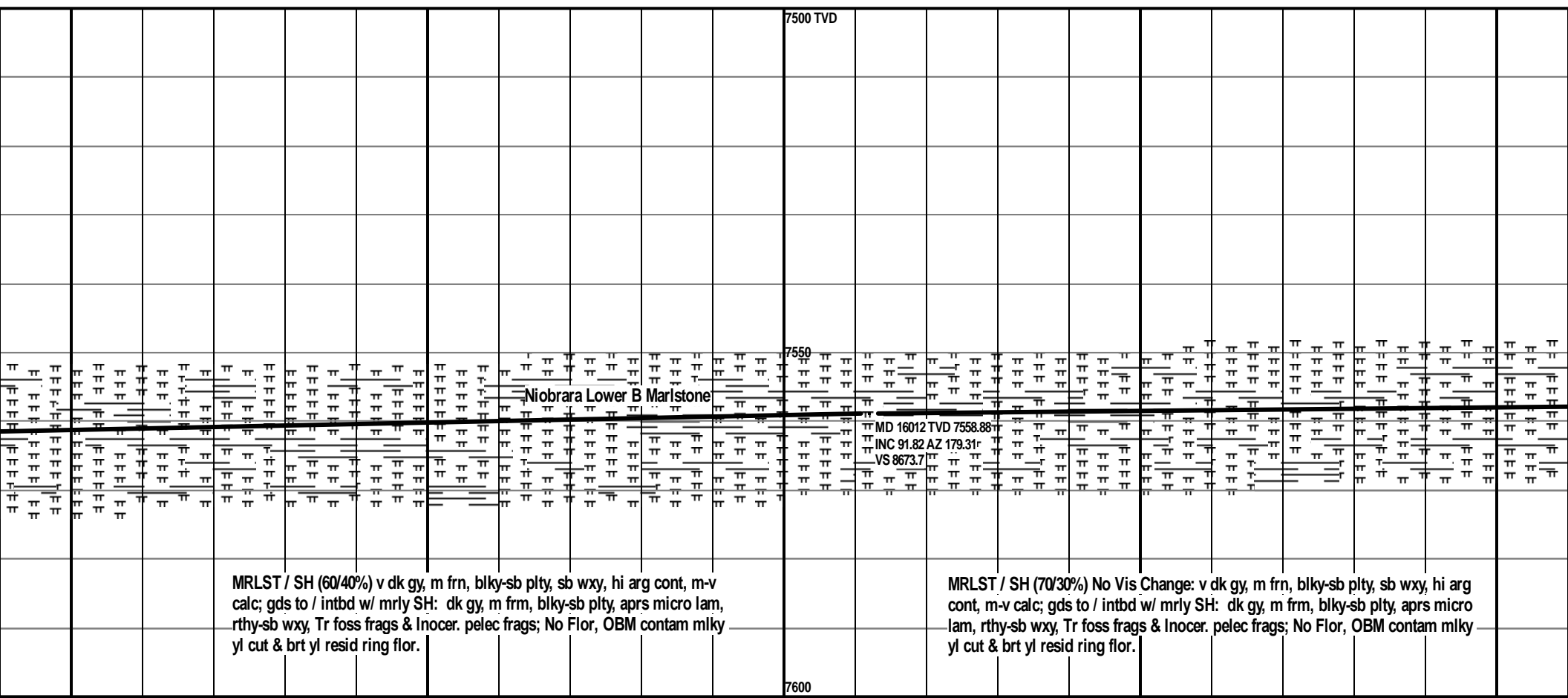
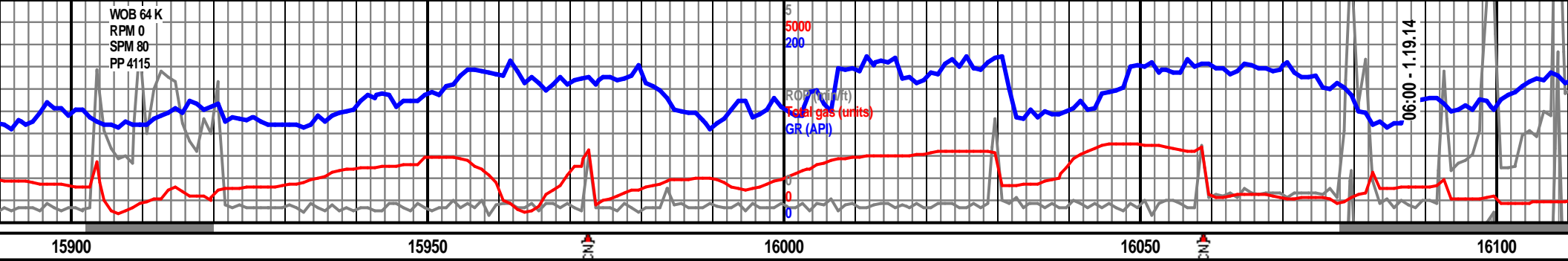


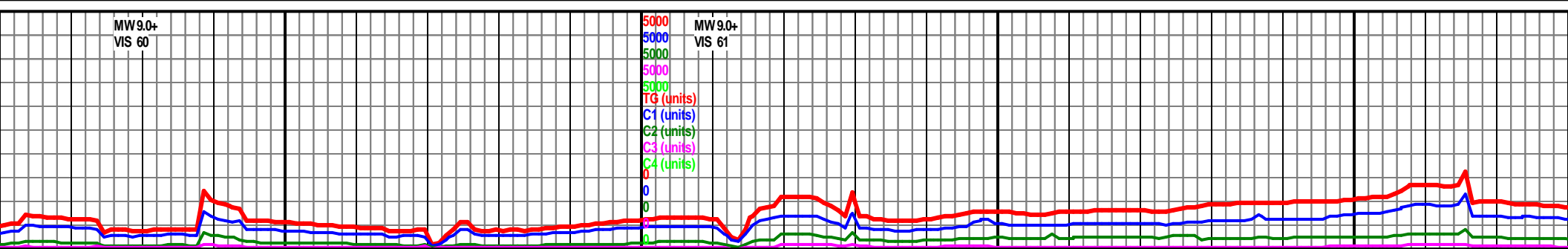
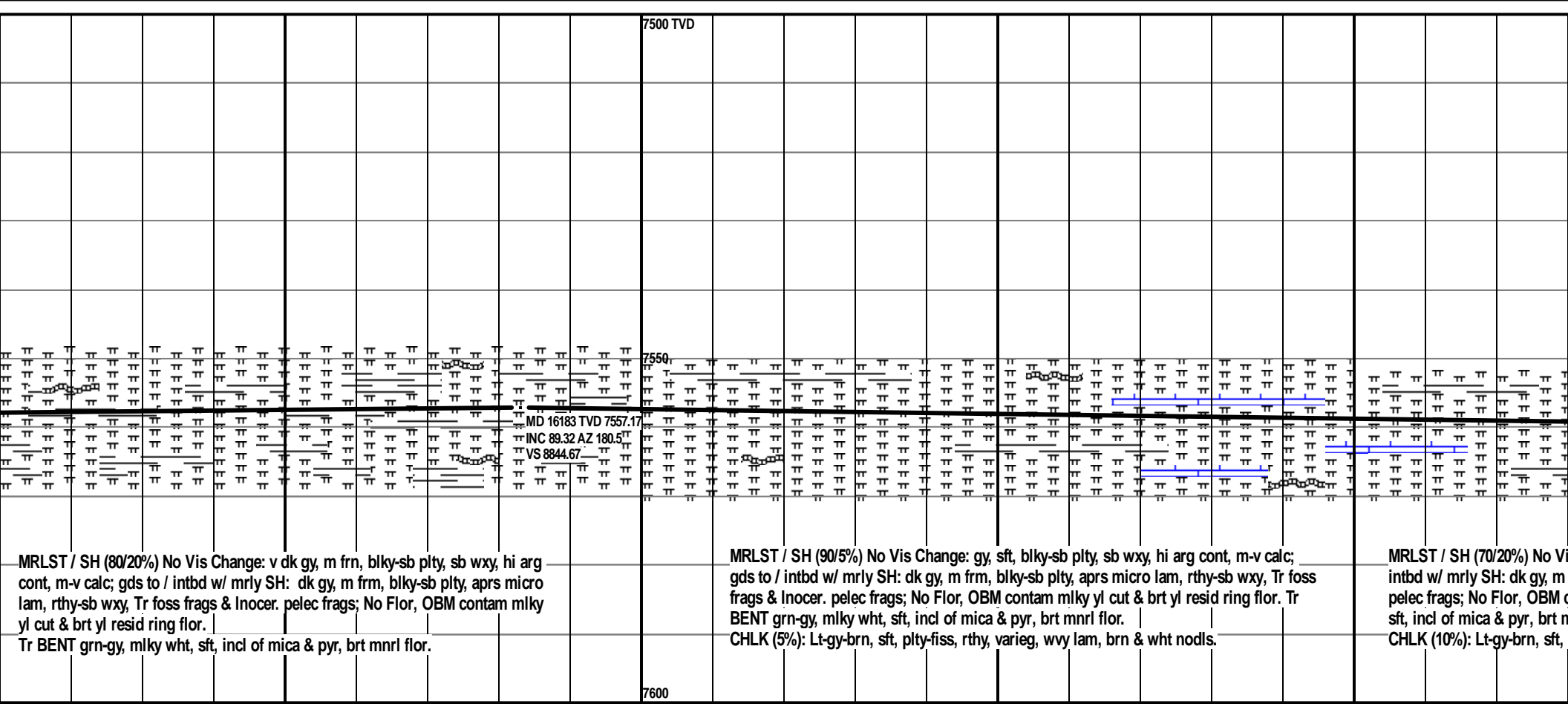
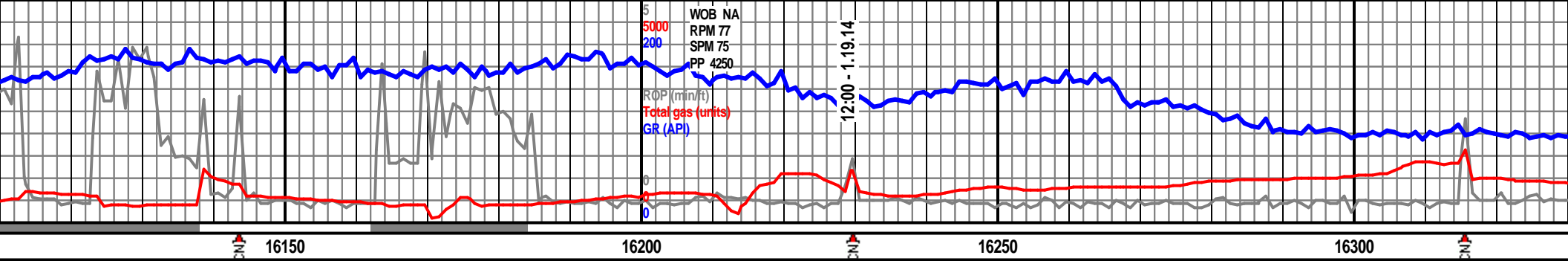


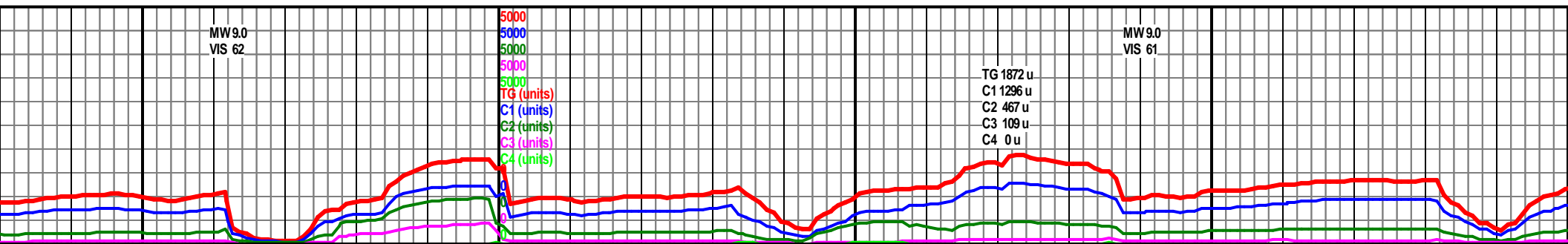
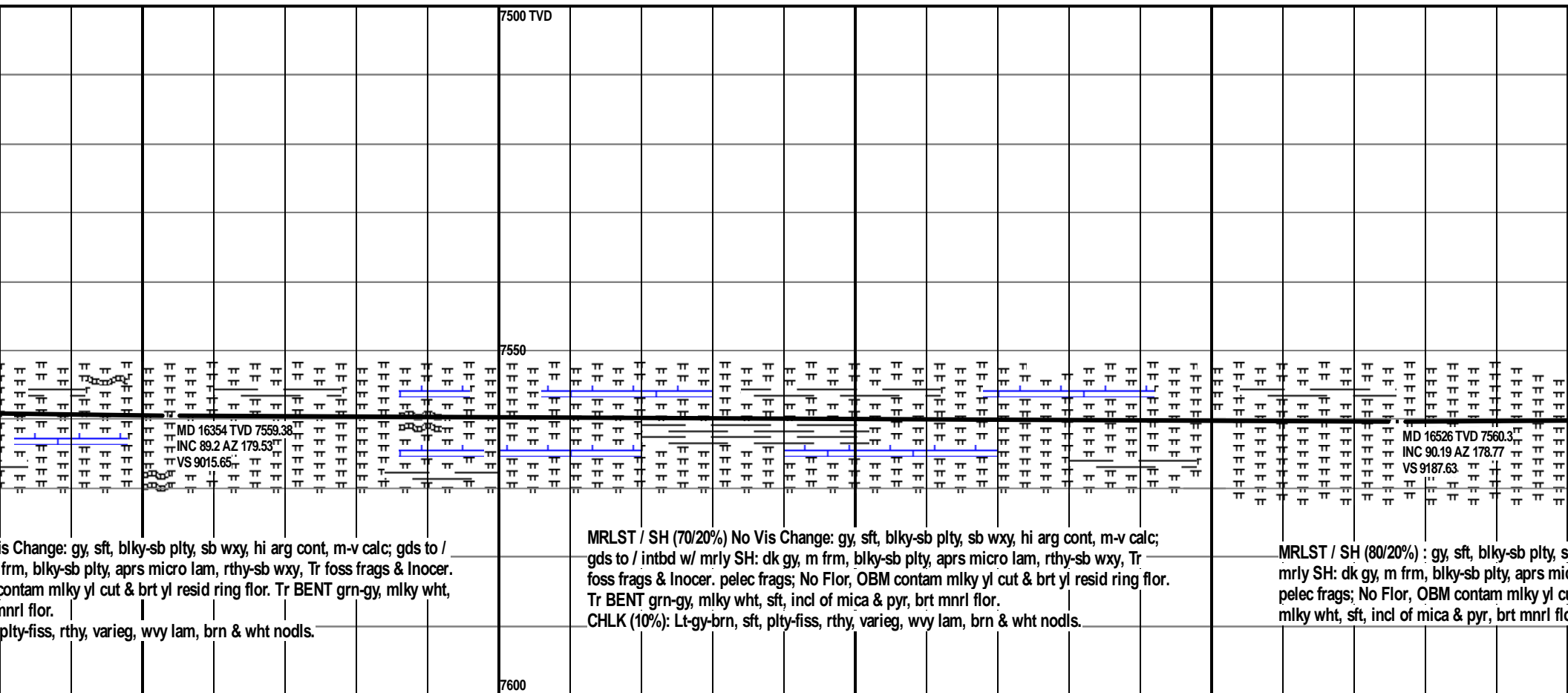
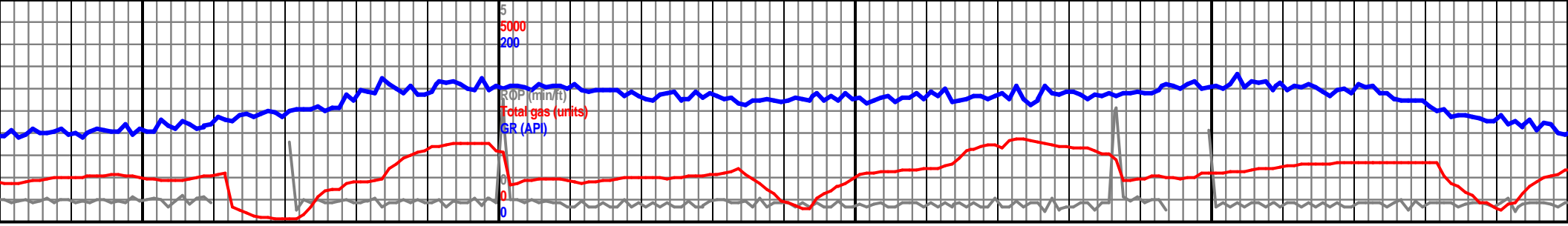
Red

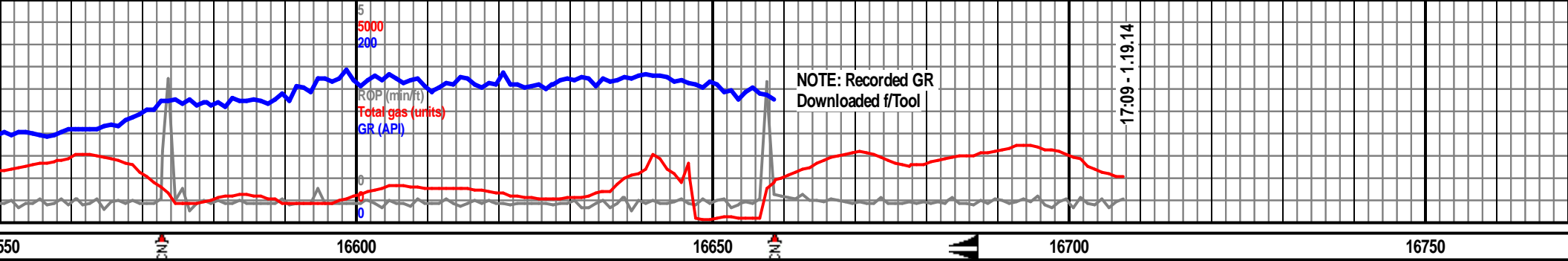
7600

CG

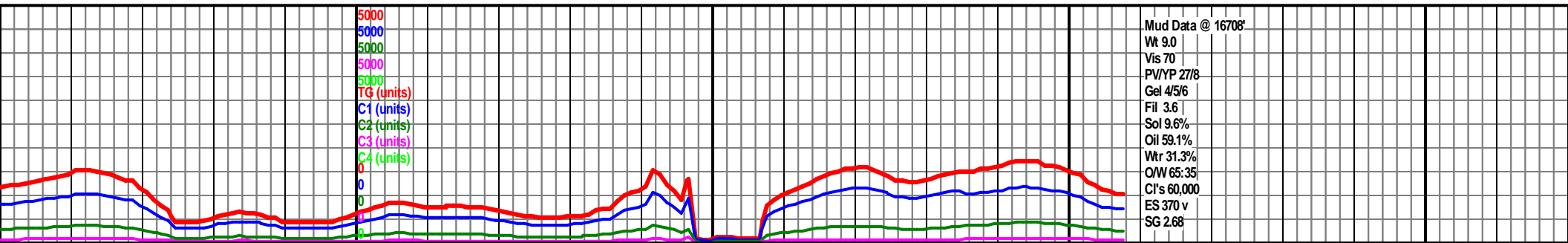








7500 TVD		Reached TD @ 16,708' - Sunday 17:09 - 1.19.14	
		Bit No.2 Made 8744' in 62.6 Hrs	
		Blow Down, TOOH 8 stands, ream to bottom, Circ & Cond Hole, TOOH, Run & Land Liner @ 16,687'; Cement Liner w/ Baker/Hughes.	
		BOTTOM HOLE LOCATION: 300' FSL X 756' FWL SESWSW Sec 3, T1S_R67W	
7550		Projection to Bit:	
Niobrara Lower B Marlstone		MD 16662 TVD 7559.46 INC 90.52 AZ 177.85 VS 9323.57	
		MD 16708 TVD 7559.46 INC 90.52 AZ 177.85 VS 9369.5	
b wxy, hi arg cont, m-v calc; gds to / intbd w/ cro lam, rthy-sb wxy, Tr foss frags & Inocer. cut & brt yl resid ring flor. Tr BENT grn-gy, or.		MRLST / SH (80/20%) : gy, sft, blk-y-sb pty, sb wxy, hi arg cont, m-v calc; gds to / intbd w/ mrlly SH: dk gy, m frm, blk-y-sb pty, aprs micro lam, rthy-sb wxy, Tr foss frags & Inocer. pelec frags; No Flor, OBM contam milky yl cut & brt yl resid ring flor. Tr BENT grn-gy, milky wht, sft, incl of mica & pyr, brt mnrl flor.	
7600		THANK GOOLS ASSOC Robert Alex R.	



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