Scale: 5" / 100'

Measured Depth Log

Well Name	Schneider HD 11-142HN		
Location	Section 7, T4N, R66W		
State	COLORADO	**County**	WELD
Country	USA	**Rig Number**	PRECISION 466
API Number	051234641800	**AFE #**	19DC0223
Geographic Region	DJ BASIN	**Field**	WATTENBERG
Ground Elevation	4735.0'	**K.B. Elevation**	4755.0'
Logged Interval	6000' MD **To** 17687' MD	**Total Depth**	17687' MD
Formation	NIOBRARA B CHALK		
Type of Drilling Fluid	OIL BASED MUD		

Operator

Company Great Western Operating Company, LLC

Address 1001 17th Street, Suite 2000
Denver, CO 80202

Geologist

Name Gabriel Rubio, Kennedy Oginga

Company Terra Guidance

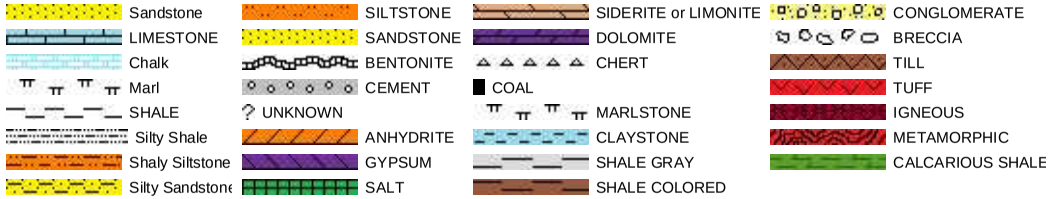
Address 67 W. Floyd Ave. Ste 105
Englewood, CO 80110
(970) 260-5408

Other

MUDLOG START DATE 10/20/2019

MUDLOG END DATE 10/22/2019

Rock Types



Accessories

Fossils

- ALGAE
- AMPHIPORA
- BELEMNITE
- BIOCLASTIC
- BRACHOIPOD
- BRYOZOA
- CEPHALOPOD
- CORAL
- CRINOID
- ECHINOID
- FISH
- FORAMINIFERA
- FOSSIL
- GASTROPOD
- OOLITE
- OSTRACOD
- PELECYPOD
- PELLET
- PISOLITE
- PLANT REMAINS
- PLANT SPORES
- SCAPHOPOD
- STROMATOPOROID

Minerals

- ANHYDRITIC
- ARGILLACEOUS
- ARGILLITE GRAIN
- BENTONITE
- BITUMENOUS SUBSTANCE
- BRECCIA FRAGMENTS
- CALCAREOUS
- CARBONACEOUS FLAKES
- CHTDK
- CHTLT
- COAL - THIN BEDS
- DOLOMITIC
- FELDSPAR
- FERRUGINOUS PELLET
- FERRUGINOUS
- GLAUCONITE
- GYPSIFEROUS
- HEAVY MINERAL
- KAOLIN
- MARLSTONE
- MINERAL CRYSTALS
- NODULES
- PHOSPHATE PELLETS
- PYRITE
- SALT CAST
- SANDY
- SILICEOUS
- SILTY
- TUFFACEOUS

Stringer

- ANHYDRITE STRINGER
- BENTONITE STRINGER
- COAL STRINGER
- DOLOMITE STRINGER
- GYPSUM STRINGER
- LIMESTONE STRINGER
- MARLSTONE (CALC) STRG
- MARLSTONE (DOL) STRG
- SANDSTONE STRINGER
- SHALE STRINGER
- SILTSTONE STRINGER
- CALC SHALE
- CHALK

Oil Show

- ORGANIC
- PINPOINT
- DEAD
- VUGGY
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

Engineering

- BIT
- CASING

Porosity

- CONNECTION (LEFT)
- EARTHY
- CONNECTION (RIGHT)
- FENESTRAL
- CONNECTION GAS
- FRACTURE
- CORE - LOST
- INTERCRYSTALLINE
- CORE - RECOVERED
- INTEROOLITIC
- DST INTERVAL
- MOLDIC
- FAULT

Other Symbols

FORMATION TOP

GAS SHOW

MN DEPTH

NORMAL FAULT

OIL SHOW

OVERTURNED STRATA

REVERSE FAULT

SIDEWALL CORE (LEFT)

SIDEWALL CORE (RIGHT)

SLIDE

SURVEY

TRIP GAS

WIRELINE TESTED - LEFT

WIRELINE TESTED - RT

Rounding

A ANGULAR

R ROUNDED

SA SUBANG

SR SUBRND

Textures

BS BOUNDSTONE

C CHALKY

CX CRYPTOXLN

E EARTHY

FX FINELYXLN

GS GRAINSTONE

L LITHOGRAPHIC

MX MICROXLN

MS MUDSTONE

PS PACKSTONE

WS WACKESTONE

Sorting

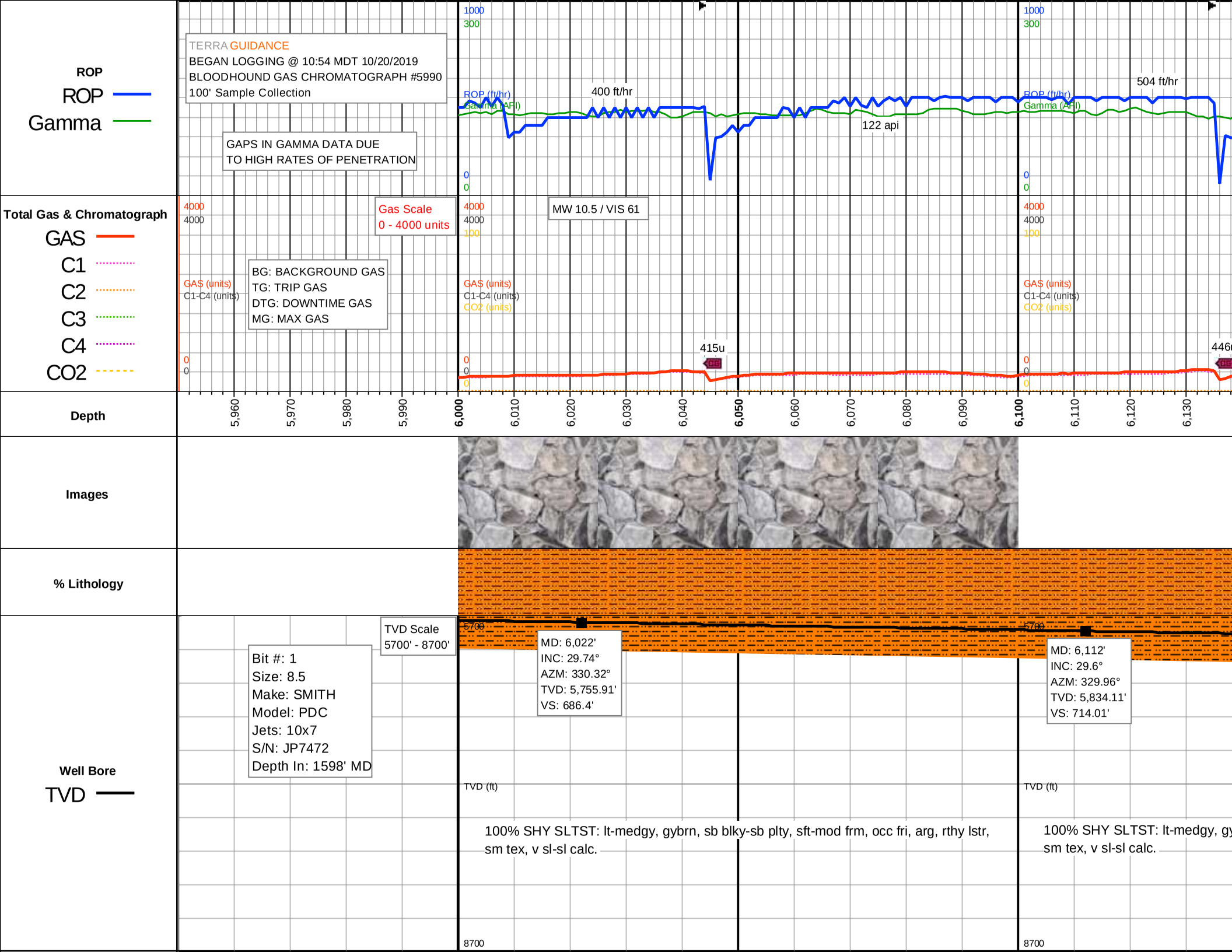
M MODERATE

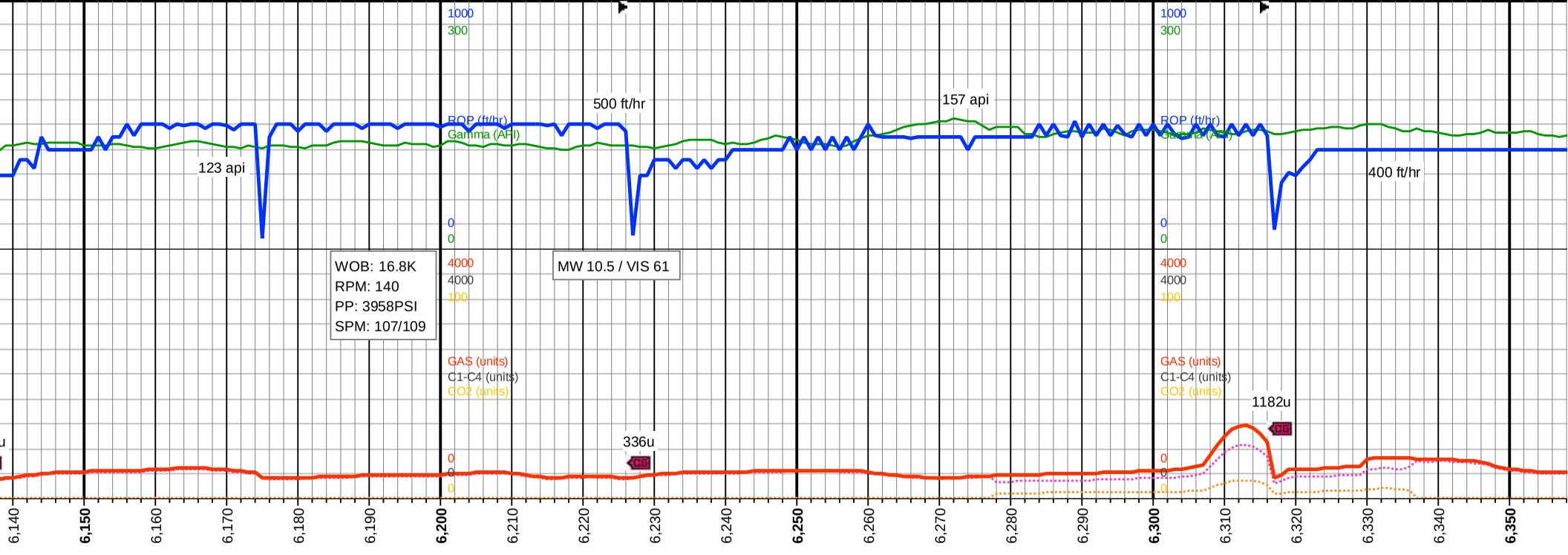
P POOR

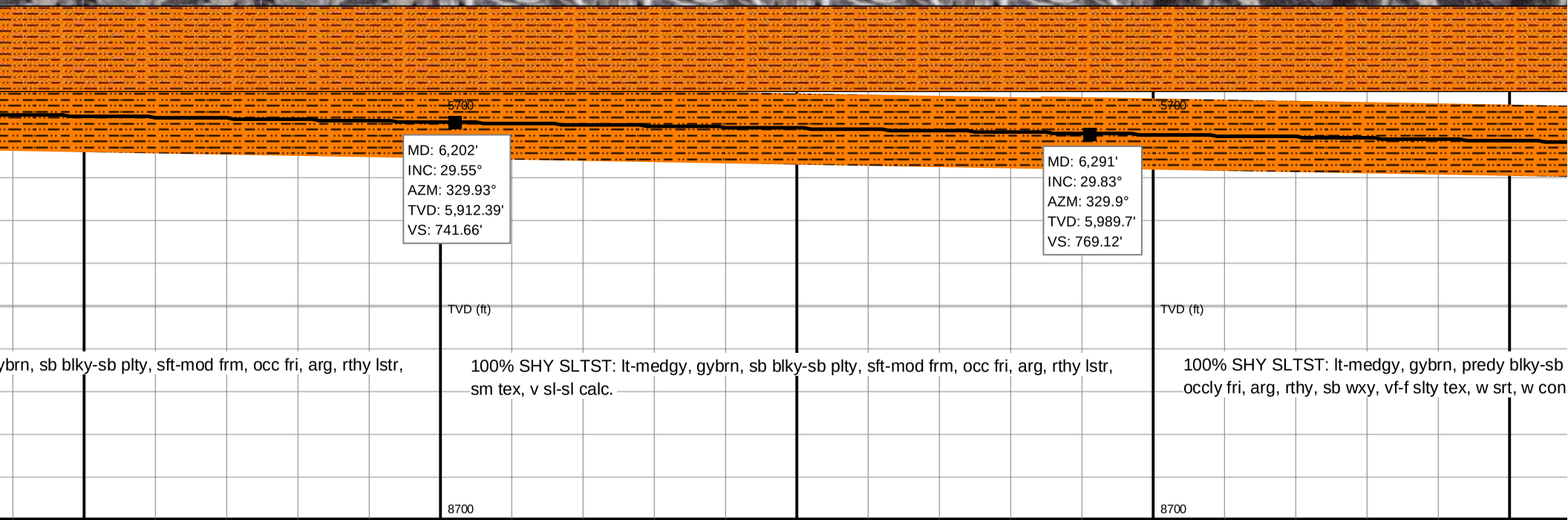
W WELL

CALCARIUOS SHALE

CALCARIOUS SHALE


ROP
ROP
Gamma
TERRA GUIDANCE
BEGAN LOGGING @ 10:54 MDT 10/20/2019
BLOODHOUND GAS CHROMATOGRAPH #5990
100' Sample Collection
GAPS IN GAMMA DATA DUE
TO HIGH RATES OF PENETRATION
ROP (ft/hr)
Gamma (API)
400 ft/hr
122 api
504 ft/hr
Total Gas & Chromatograph
GAS
C1
C2
C3
C4
CO2
Gas Scale
0 - 4000 units
MW 10.5 / VIS 61
BG: BACKGROUND GAS
TG: TRIP GAS
DTG: DOWNTIME GAS
MG: MAX GAS
GA$ (units)
C1-C4 (units)
CO2 (units)
415u
Depth
5,960
5,970
5,980
5,990
6,000
6,010
6,020
6,030
6,040
6,050
6,060
6,070
6,080
6,090
6,100
6,110
6,120
6,130
Images
% Lithology
Well Bore
TVD
TVD Scale
5700' - 8700'
Bit #: 1
Size: 8.5
Make: SMITH
Model: PDC
Jets: 10x7
S/N: JP7472
Depth In: 1598' MD
MD: 6,022'
INC: 29.74°
AZM: 330.32°
TVD: 5,755.91'
VS: 686.4'
MD: 6,112'
INC: 29.6°
AZM: 329.96°
TVD: 5,834.11'
VS: 714.01'
TVD (ft)
5700
8700
100% SHY SLTST: lt-medgy, gybrn, sb blky-sb plty, sft-mod frm, occ fri, arg, rthy lstr, sm tex, v sl-sl calc.
100% SHY SLTST: lt-medgy, gy
sm tex, v sl-sl calc.

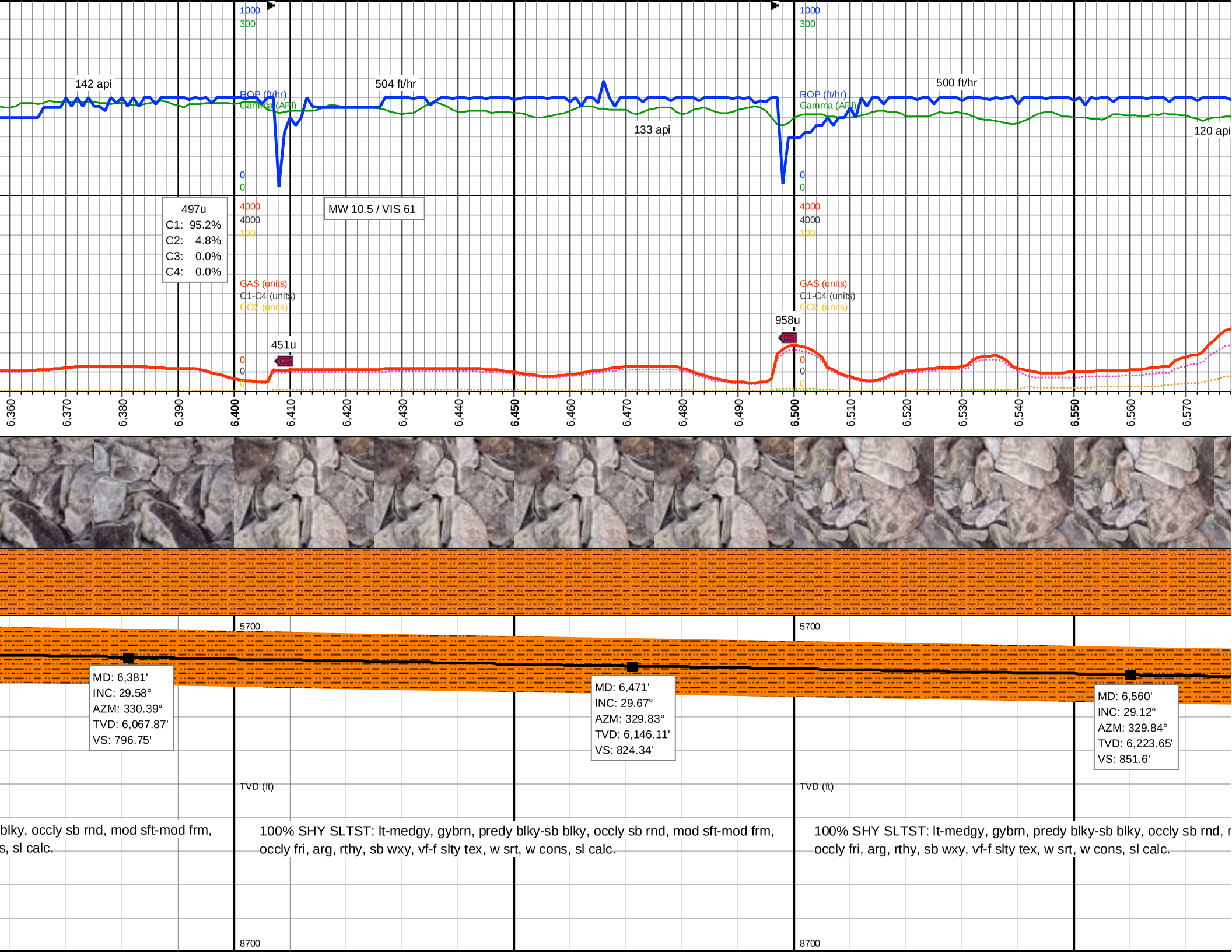




ybrn, sb blky-sb plty, sft-mod frm, occ fri, arg, rthy lstr,

100% SHY SLTST: lt-medgy, gybrn, sb blky-sb plty, sft-mod frm, occ fri, arg, rthy lstr, sm tex, v sl-sl calc.

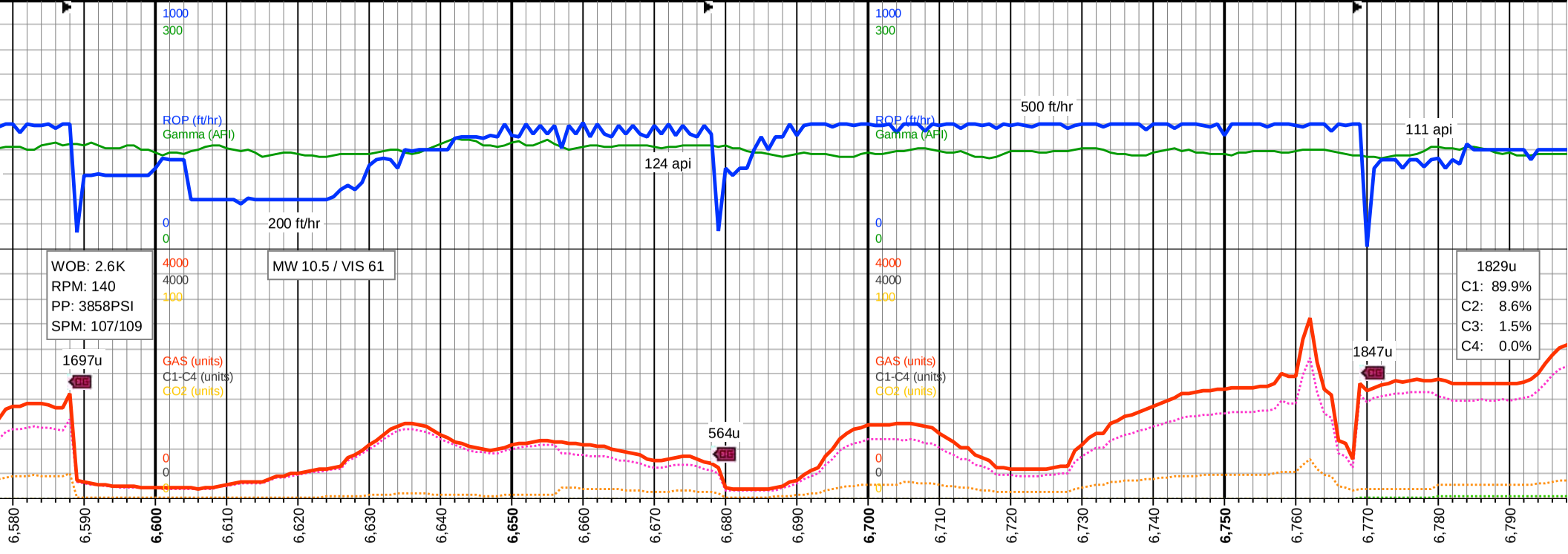
100% SHY SLTST: lt-medgy, gybrn, predy blky-sb occly fri, arg, rthy, sb wxy, vf-f slty tex, w srt, w con

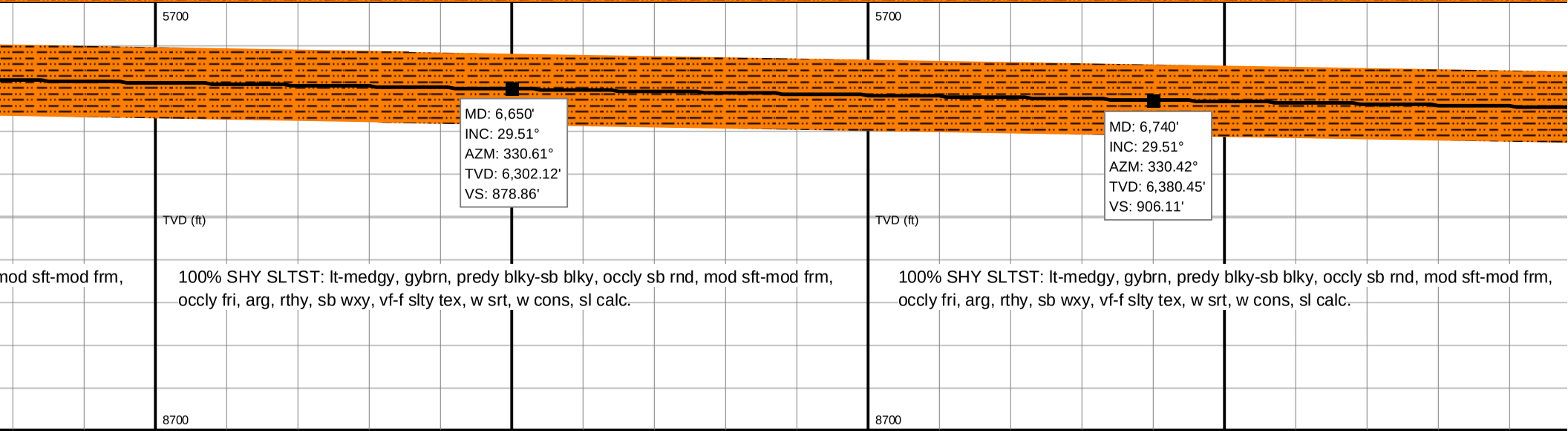


blky, occly sb rnd, mod sft-mod frm, s, sl calc.

100% SHY SLTST: lt-medgy, gybrn, predy blky-sb blky, occly sb rnd, mod sft-mod frm, occly fri, arg, rthy, sb wxy, vf-f slty tex, w srt, w cons, sl calc.

100% SHY SLTST: lt-medgy, gybrn, predy blky-sb blky, occly sb rnd, r occly fri, arg, rthy, sb wxy, vf-f slty tex, w srt, w cons, sl calc.

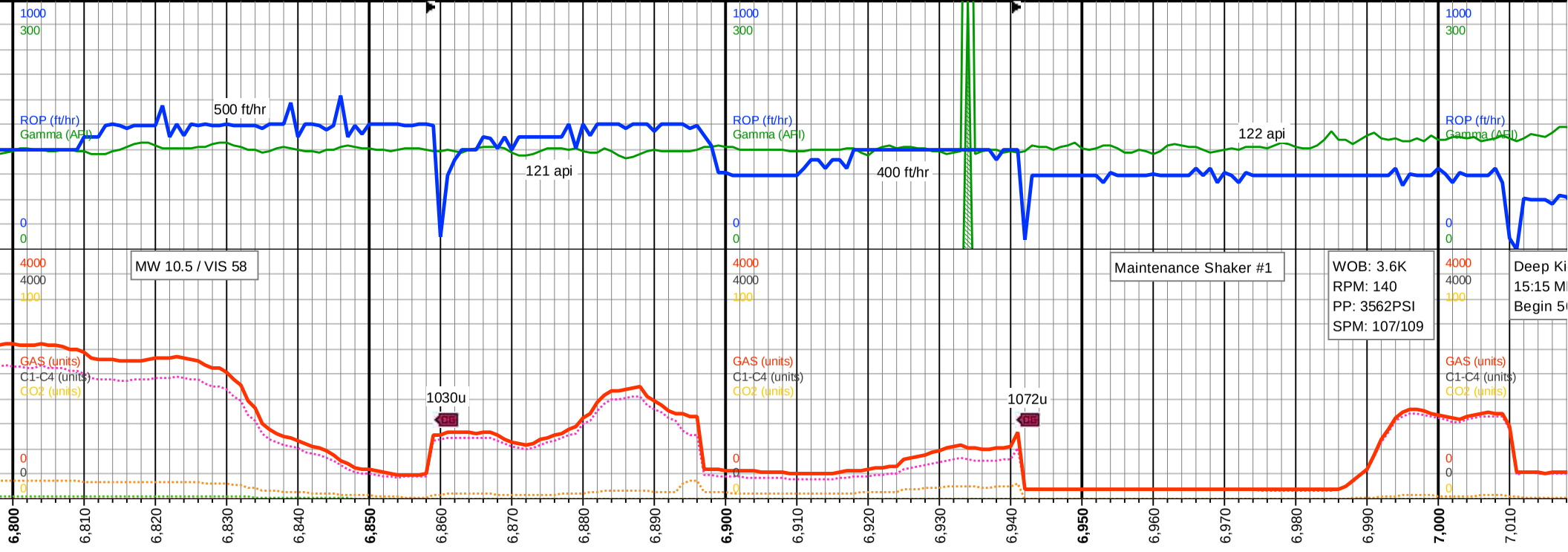


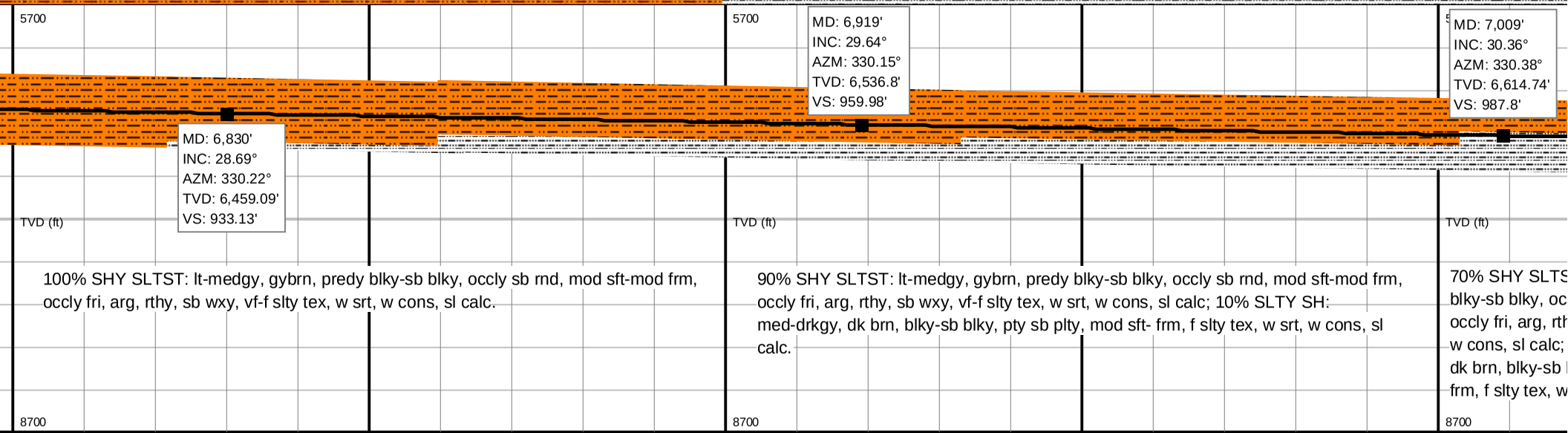


mod sft-mod frm,

100% SHY SLTST: lt-medgy, gybrn, predy blky-sb blky, occly sb rnd, mod sft-mod frm, occly fri, arg, rthy, sb wxy, vf-f slty tex, w srt, w cons, sl calc.

100% SHY SLTST: lt-medgy, gybrn, predy blky-sb blky, occly sb rnd, mod sft-mod frm, occly fri, arg, rthy, sb wxy, vf-f slty tex, w srt, w cons, sl calc.

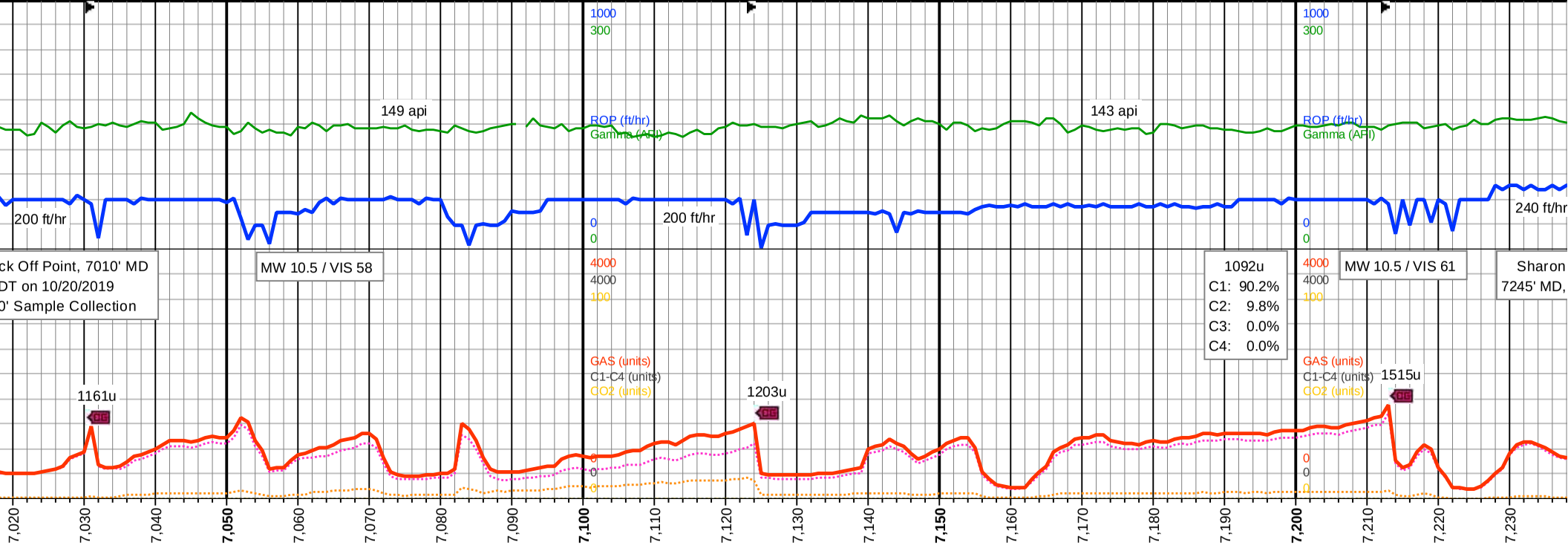


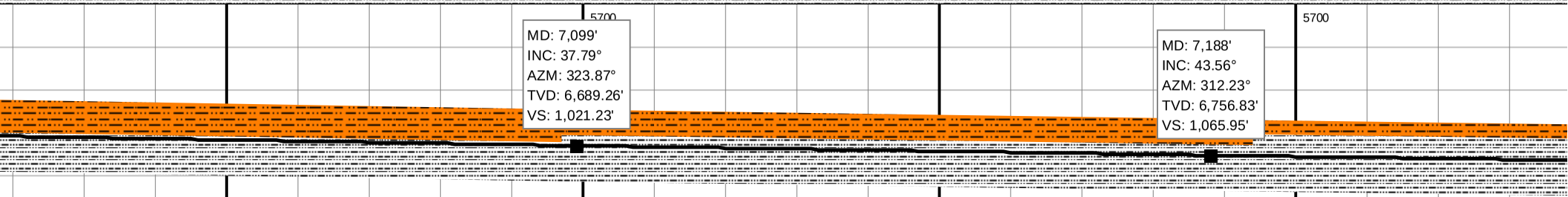


100% SHY SLTST: lt-medgy, gybrn, predy blky-sb blky, occly sb rnd, mod sft-mod frm, occly fri, arg, rthy, sb wxy, vf-f slty tex, w srt, w cons, sl calc.

90% SHY SLTST: lt-medgy, gybrn, predy blky-sb blky, occly sb rnd, mod sft-mod frm, occly fri, arg, rthy, sb wxy, vf-f slty tex, w srt, w cons, sl calc; 10% SLTY SH: med-drkgy, dk brn, blky-sb blky, pty sb plty, mod sft- frm, f slty tex, w srt, w cons, sl calc.

70% SHY SLTS
blky-sb blky, oc
occly fri, arg, rth
w cons, sl calc;
dk brn, blky-sb
frm, f slty tex, w





ST: lt-medgy, gybrn, predy cly sb rnd, mod sft-mod frm, ny, sb wxy, vf-f slty tex, w srt, 30% SLTY SH: med-drkgy, blky, pty sb plty, mod sft- srt, w cons, sl calc.

60% SLTY SH: med-drkgy, dk brn, blky-sb blky, pty sb plty, mod sft- frm, f slty tex, w srt, w cons, sl calc; 40% SHY SLTST: lt-medgy, gybrn, predy blky-sb blky, occly sb rnd, mod sft-mod frm, occly fri, arg, rthy, sb wxy, vf-f slty tex, w srt, w cons, sl calc.

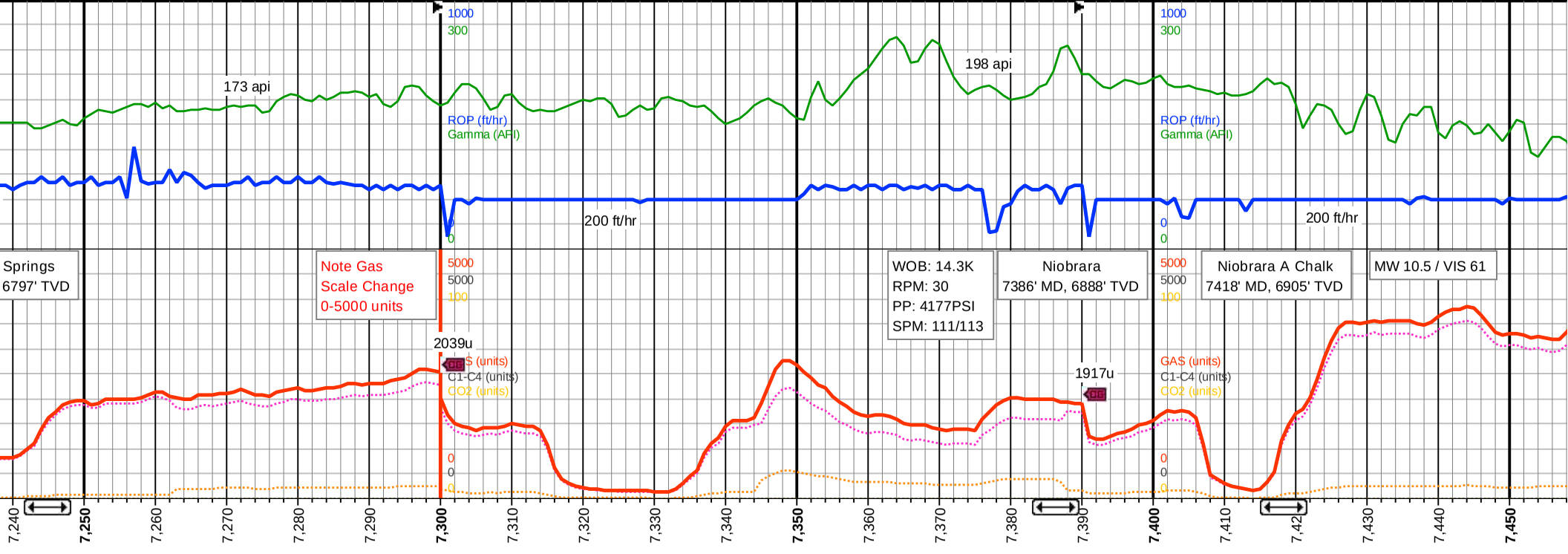
70% SLTY SH: med-drkgy, dk brn, blky-sb blky, pty sb plty, mod sft- frm, f slty tex, w srt, w cons, sl calc; 30% SHY SLTST: lt-medgy, gybrn, predy blky-sb blky, occly sb rnd, mod sft-mod frm, occly fri, arg, rthy, sb wxy, vf-f slty tex, w srt, w cons, sl calc.

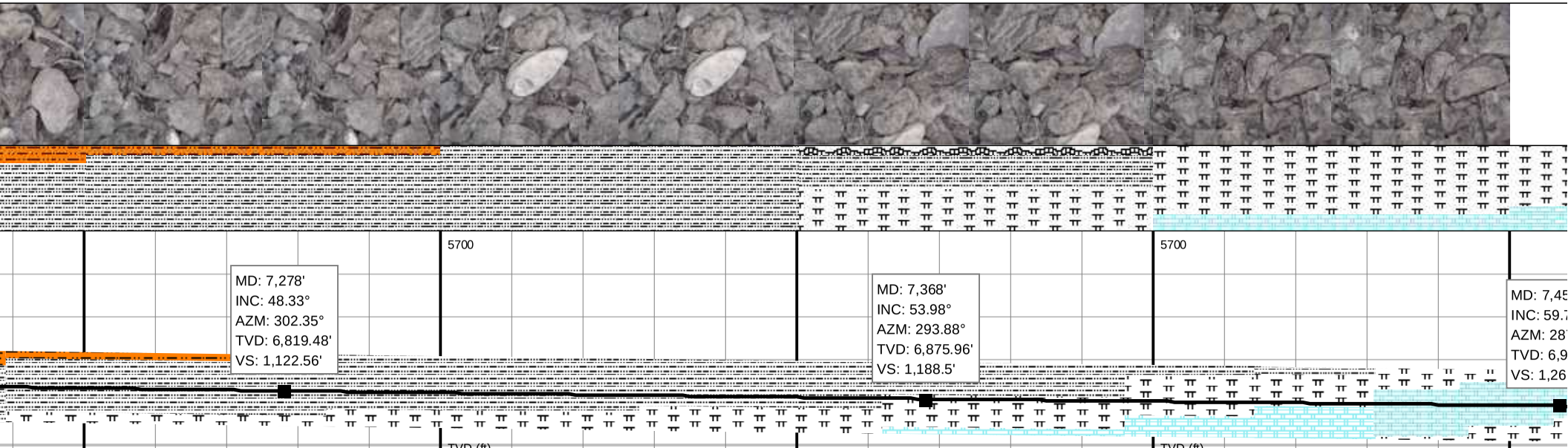
70% SLTY SH: med-drkgy, dk brn, blky-sb blky, pty sb plty, mod sft- frm, f slty tex, w srt, w cons, sl calc; 30% SHY SLTST: lt-medgy, gybrn, predy blky-sb blky, occly sb rnd, mod sft-mod frm, occly fri, arg, rthy, sb wxy, vf-f slty tex, w srt, w cons, sl calc.

80% SLTY SH: med-drkgy, dk brn blky, pty sb plty, mod sft- frm, f slty srt, w cons, sl calc; 20% SHY SLT lt-medgy, gybrn, predy blky-sb blky sb rnd, mod sft-mod frm, occly fri, sb wxy, vf-f slty tex, w srt, w cons,

8700

8700





, blky-sb
y tex, w
ST:
y, occly
arg, rthy,
sl calc.

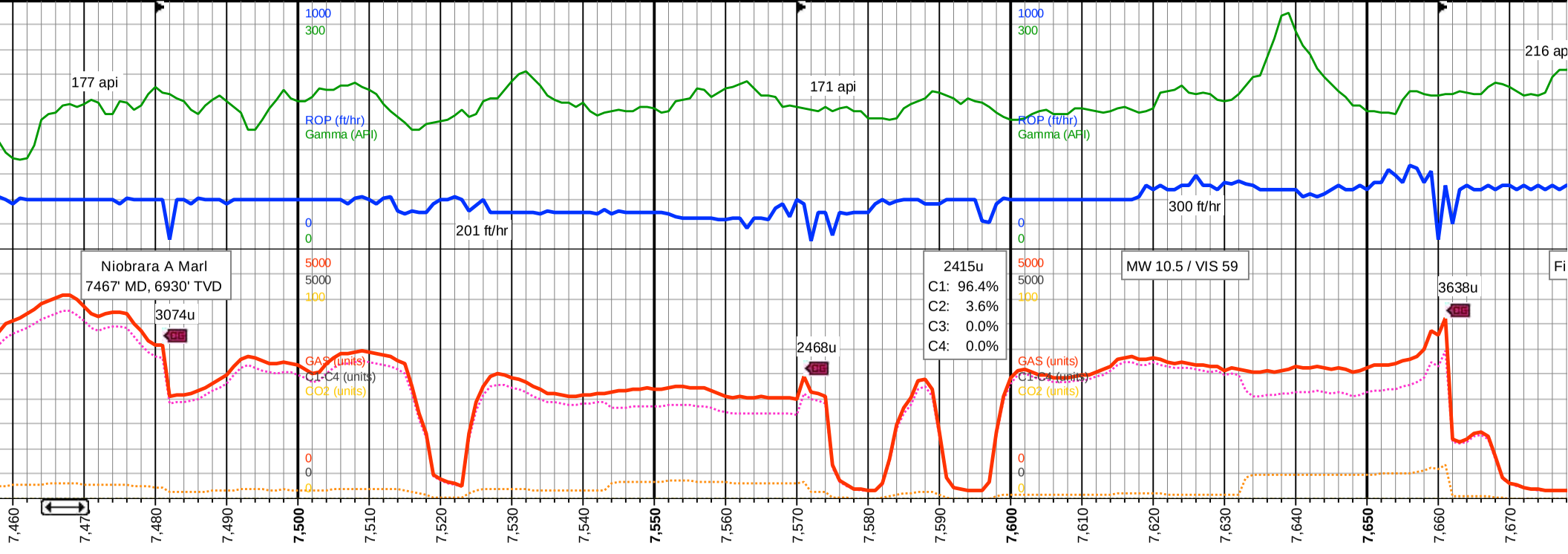
90% SLTY SH: med-drkgy, dk brn, blky-sb blky, pty sb plty, mod sft- frm, f slty tex, w srt, w cons, sl calc; 10% SHY SLTST: lt-medgy, gybrn, predy blky-sb blky, occly sb rnd, mod sft-mod frm, occly fri, arg, rthy, sb wxy, vf-f slty tex, w srt, w cons, sl calc.

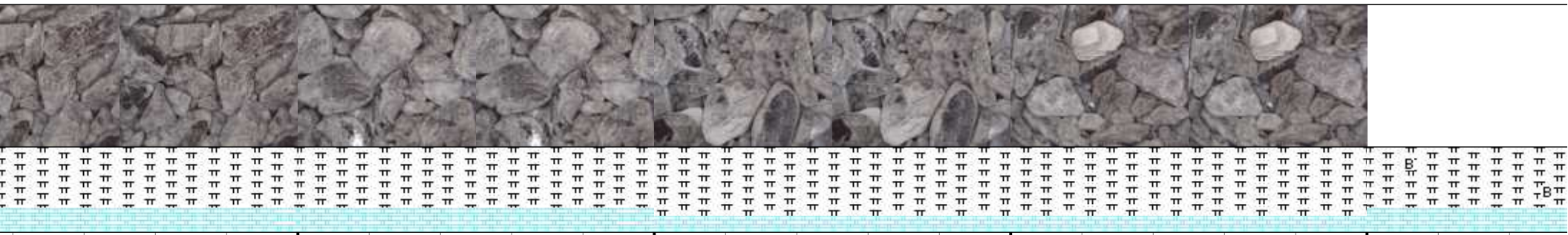
100% SLTY SH: med-drkgy, dk brn, blky-sb blky, pty sb plty, mod sft- frm, f slty tex, w srt, w cons, sl calc.

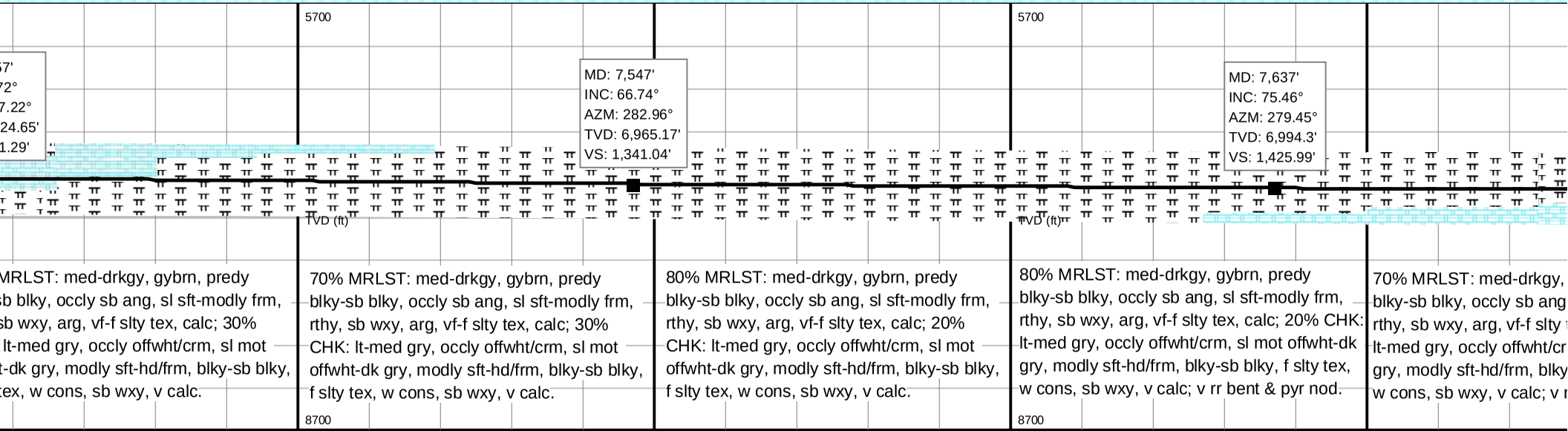
50% MRLST: med-drkgy, gybrn, sb blky-sb plty, sl sft- frm, mod fr, rthy lstr, arg, f slty tex, calc; 40% SLTY SH: med-drkgy, dk brn, blky-sb blky, pty sb ang-plty, mod sft- frm, f slty tex, w srt, w cons, sl calc; 10% BENT: offwht-crm, lt brn, yel under flor, mot ip, rnd-sb blky, v sft, fri, vf slty tex.

80% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc; 20% CHK: lt-med gry, occly offwht/crm, sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; tr pyr nod.

70%
blky-s
rthy, s
CHK:
offwht
f slty







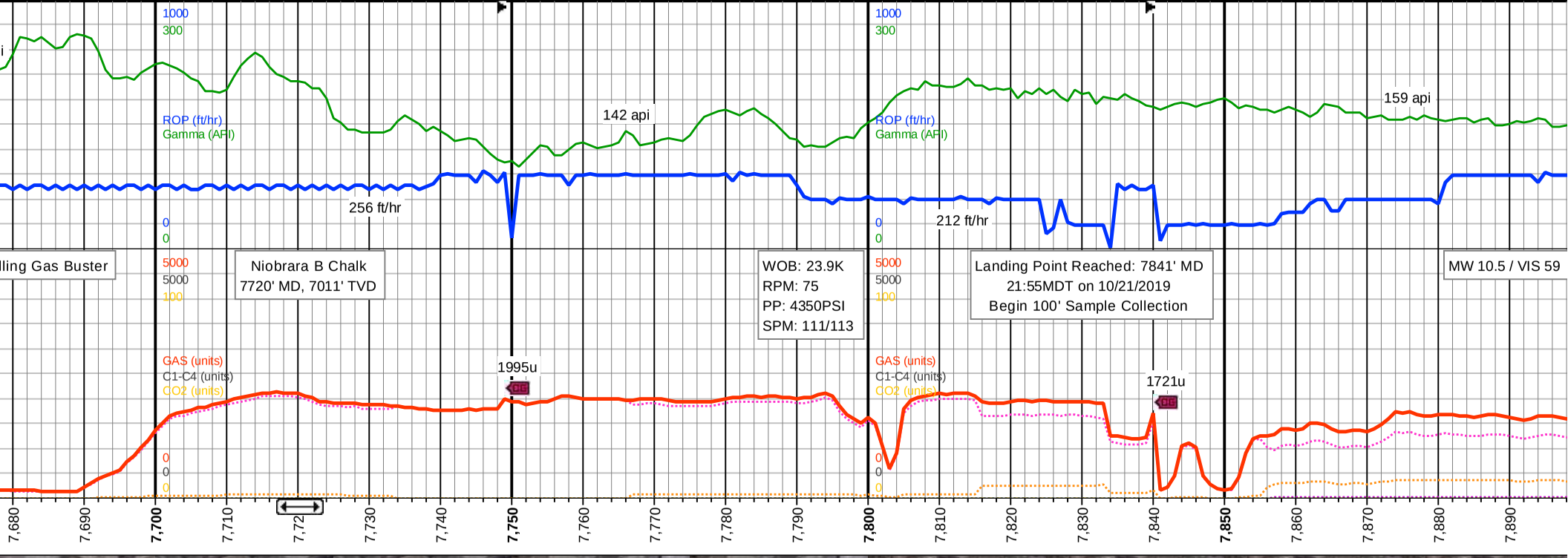
MRLST: med-drkgy, gybrn, predy sb blky, occly sb ang, sl sft-modly frm, sb wxy, arg, vf-f slty tex, calc; 30% lt-med gry, occly offwht/crm, sl mot t-dk gry, modly sft-hd/frm, blky-sb blky, tex, w cons, sb wxy, v calc.

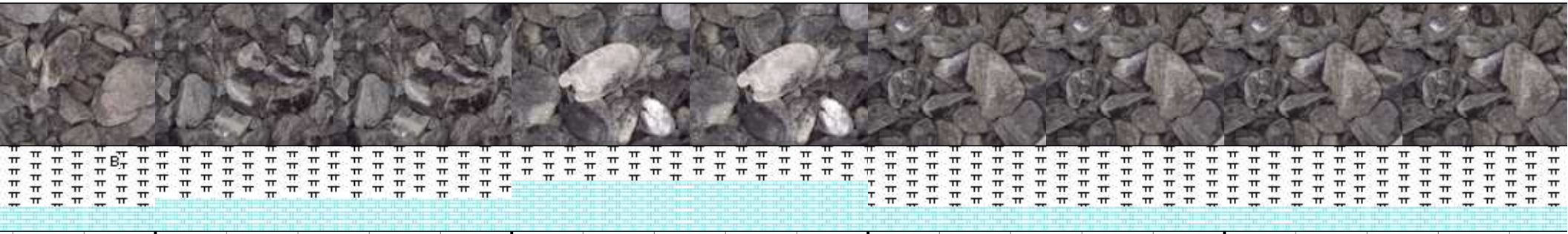
70% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc; 30% CHK: lt-med gry, occly offwht/crm, sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc.

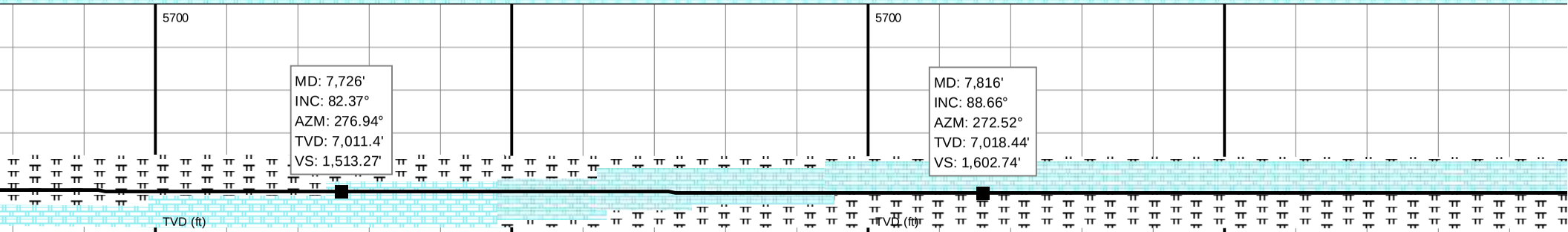
80% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc; 20% CHK: lt-med gry, occly offwht/crm, sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc.

80% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc; 20% CHK: lt-med gry, occly offwht/crm, sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; v rr bent & pyr nod.

70% MRLST: med-drkgy, blky-sb blky, occly sb ang rthy, sb wxy, arg, vf-f slty lt-med gry, occly offwht/cr gry, modly sft-hd/frm, blky w cons, sb wxy, v calc; v r







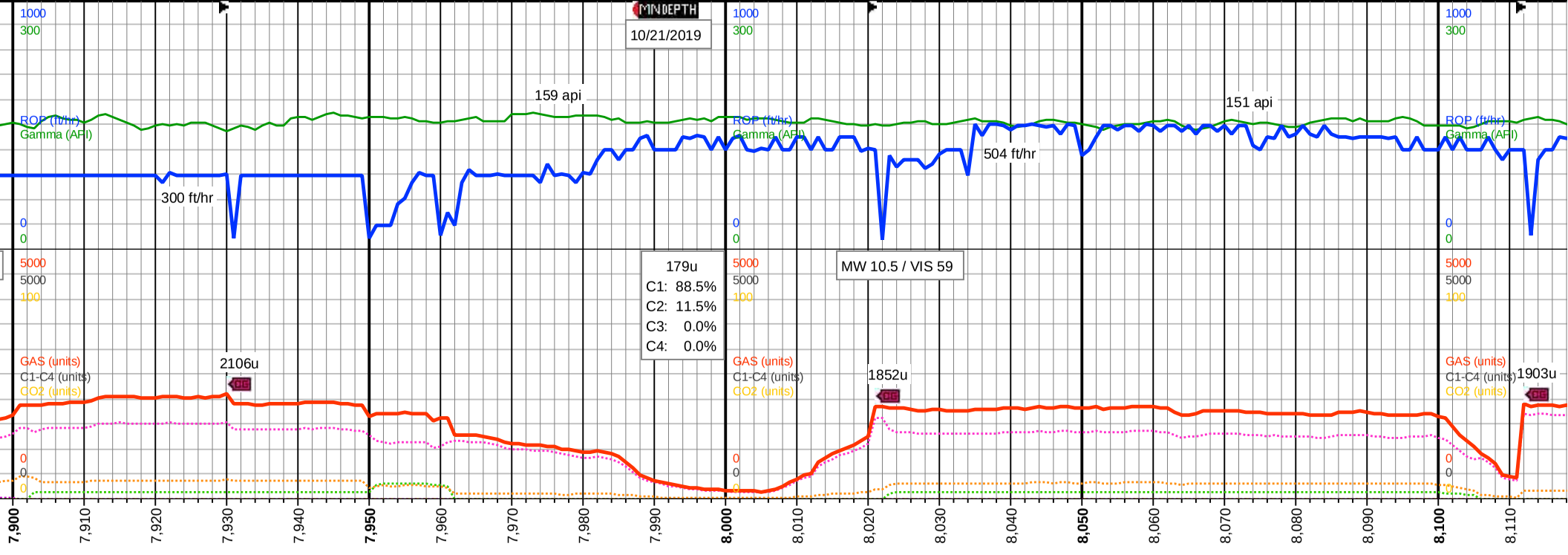
gybrn, predy
, sl sft-modly frm,
tex, calc; 30% CHK:
m, sl mot offwht-dk
-sb blky, f slty tex,
r bent.

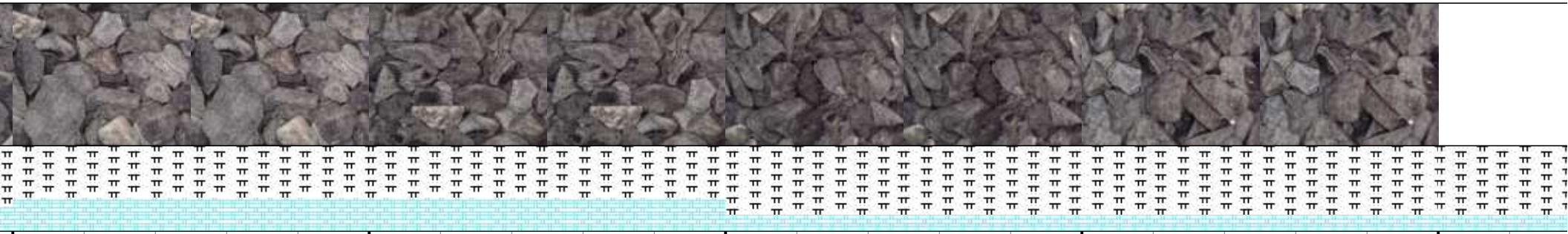
60% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc; 40% CHK: lt-med gry, occly offwht/crm, sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; v rr bent & tr inoc frags.

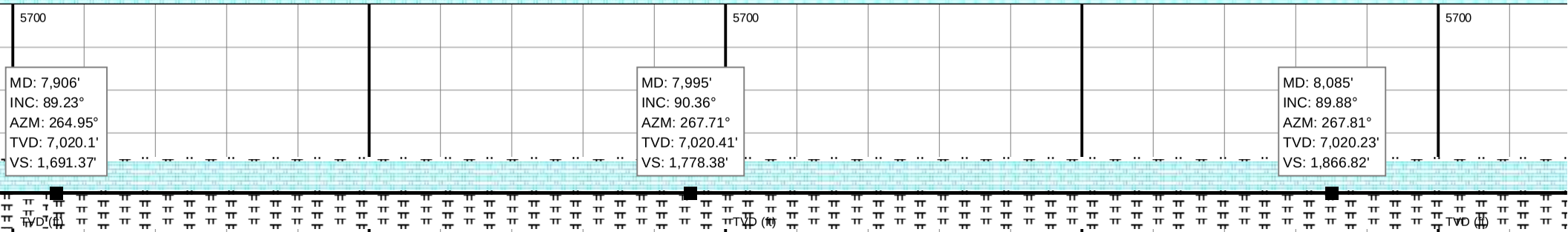
60% CHK: lt-med gry, occly offwht/crm, sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc; v rr bent & tr inoc frags.

70% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc; 30% CHK: lt-med gry, occly offwht/crm, sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; tr bent & tr inoc frags.

70% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc; 30% CHK: lt-med gry, occly offwht/crm, sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; tr bent & tr inoc frags.



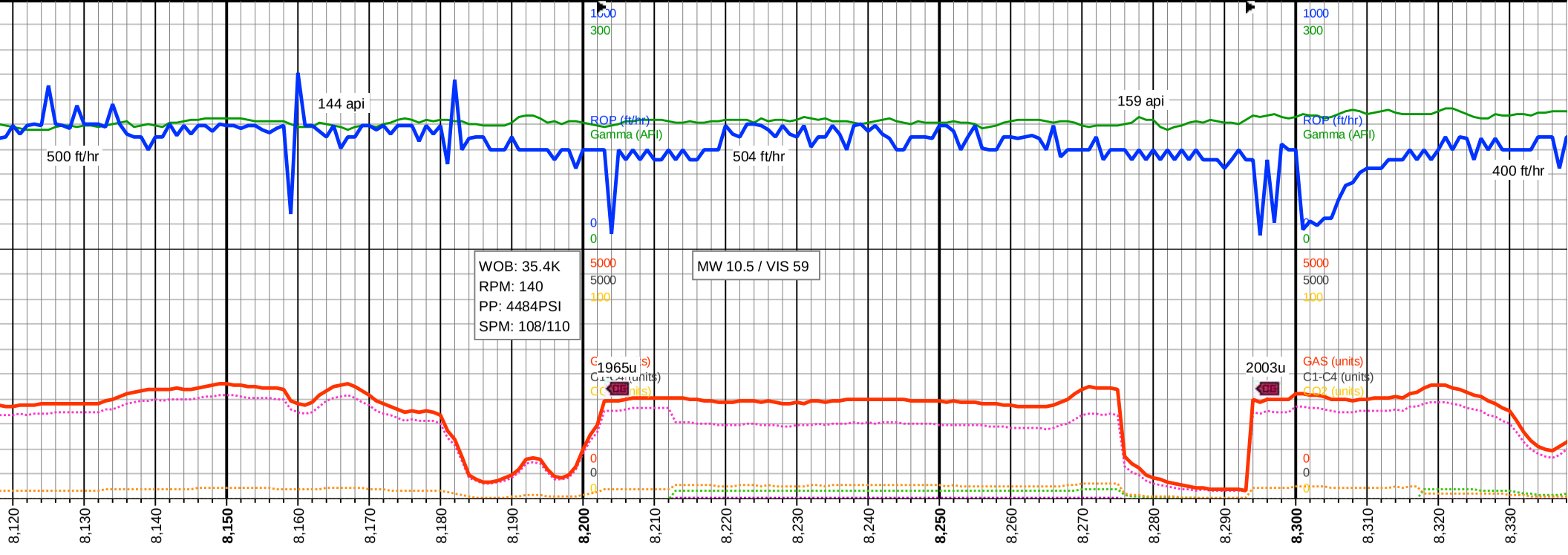


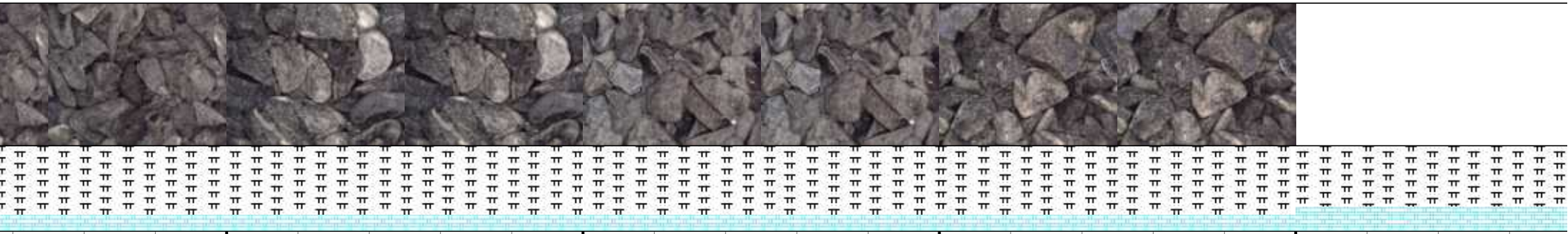


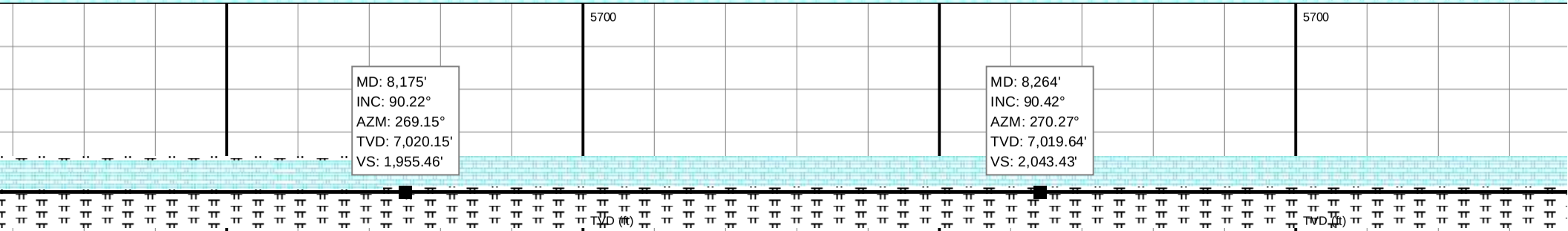
60% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc; 40% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; tr bent & tr inoc frags.

80% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; 20% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; tr inoc frags.

80% MRLST: sb wxy, arg, v offwht-dk gry,



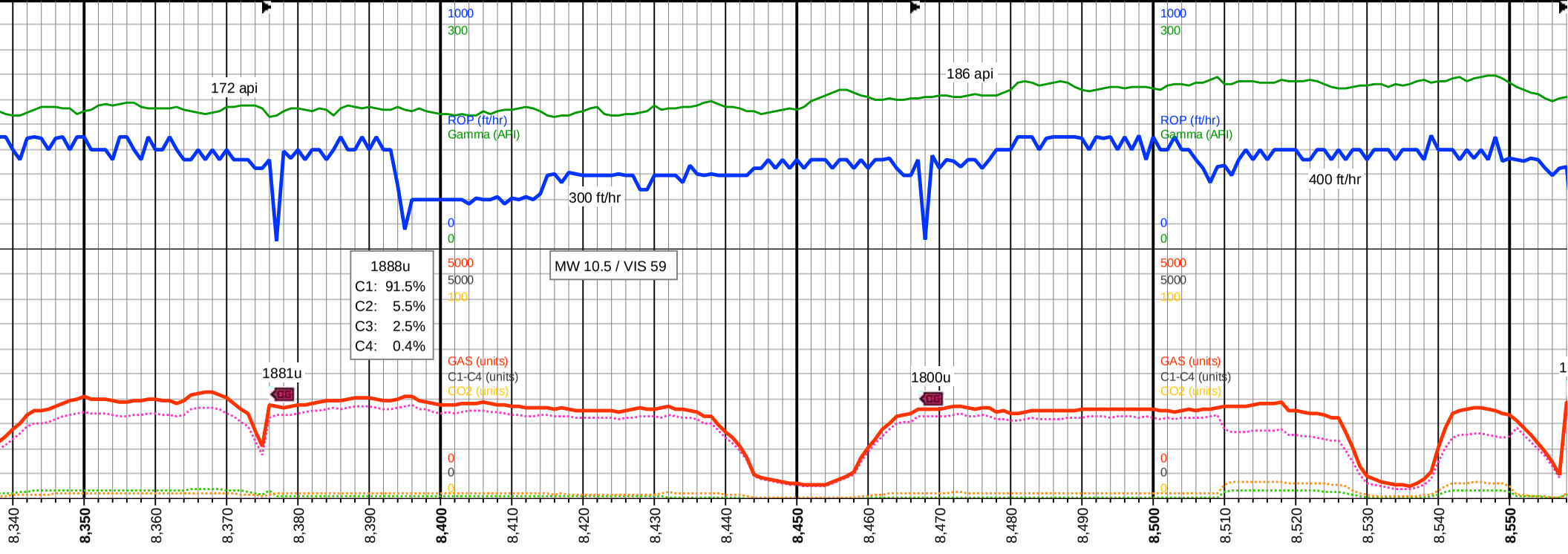


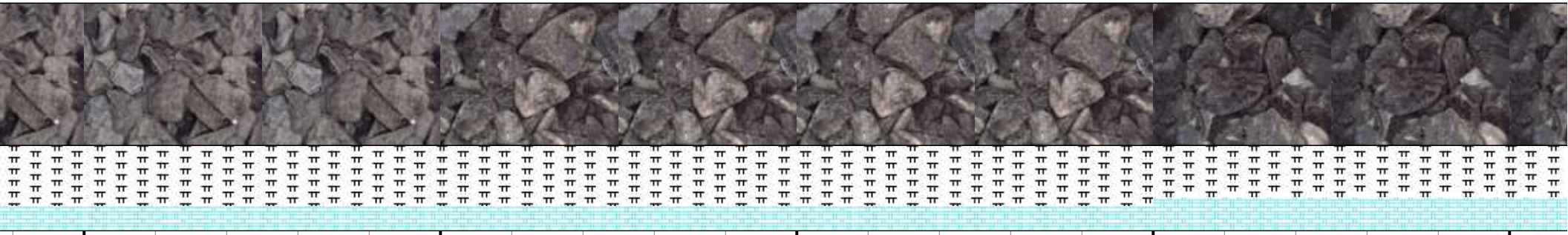


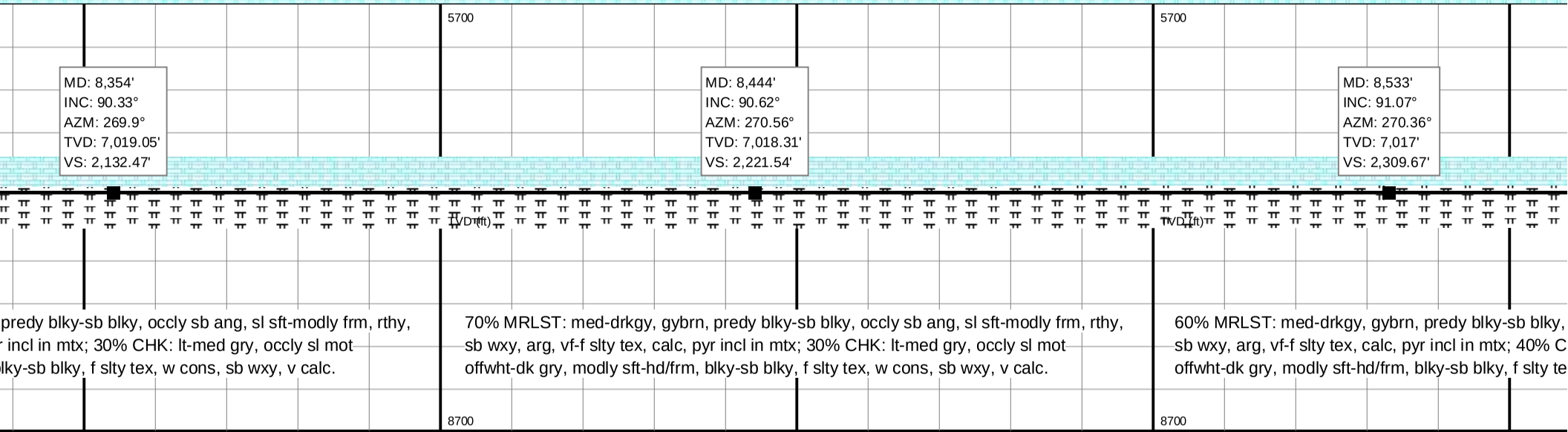
med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy,
f-f slty tex, calc, pyr incl in mtx; 20% CHK: lt-med gry, occly sl mot
modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc.

80% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy,
sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; 20% CHK: lt-med gry, occly sl mot
offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc.

70% MRLST: med-drkgy, gybrn,
sb wxy, arg, vf-f slty tex, calc, pyr
offwht-dk gry, modly sft-hd/frm, b



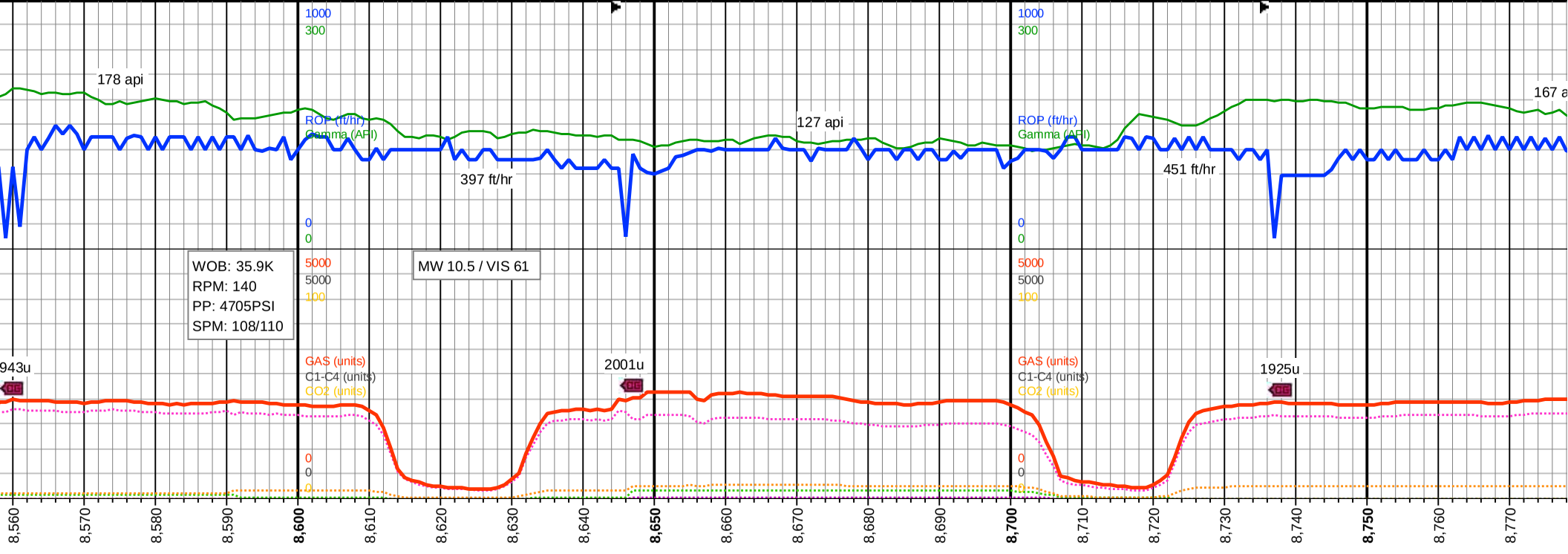


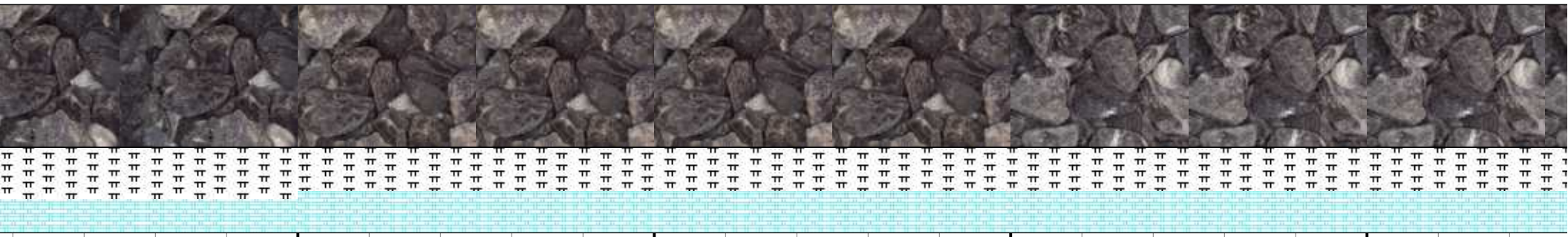


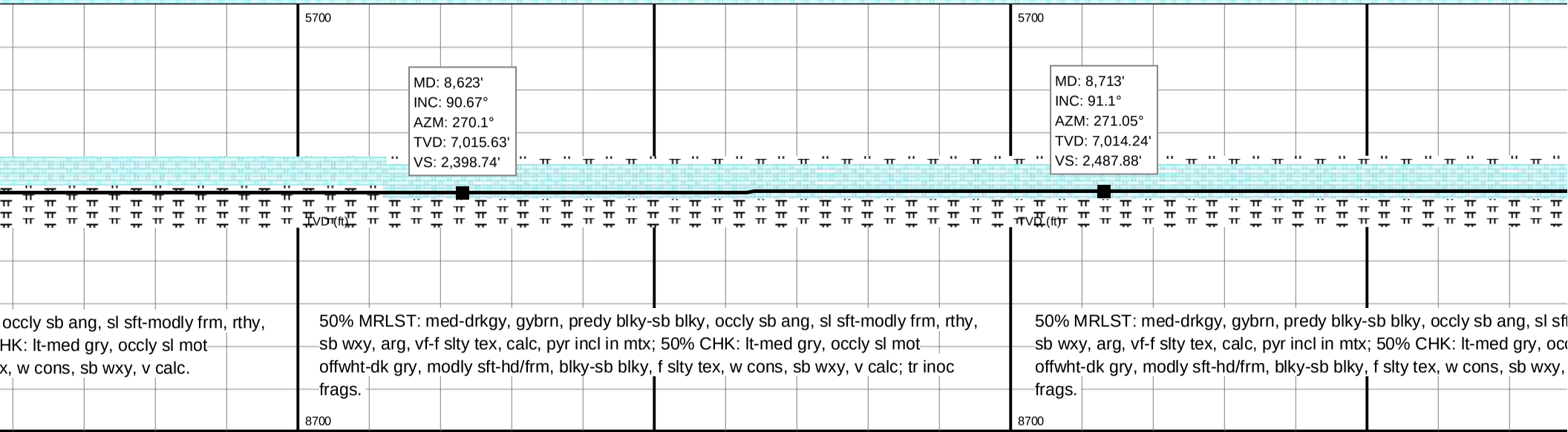
predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy,
r incl in mtx; 30% CHK: lt-med gry, occly sl mot
lky-sb blky, f slty tex, w cons, sb wxy, v calc.

70% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; 30% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc.

60% MRLST: med-drkgy, gybrn, predy blky-sb blky, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; 40% C offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty te



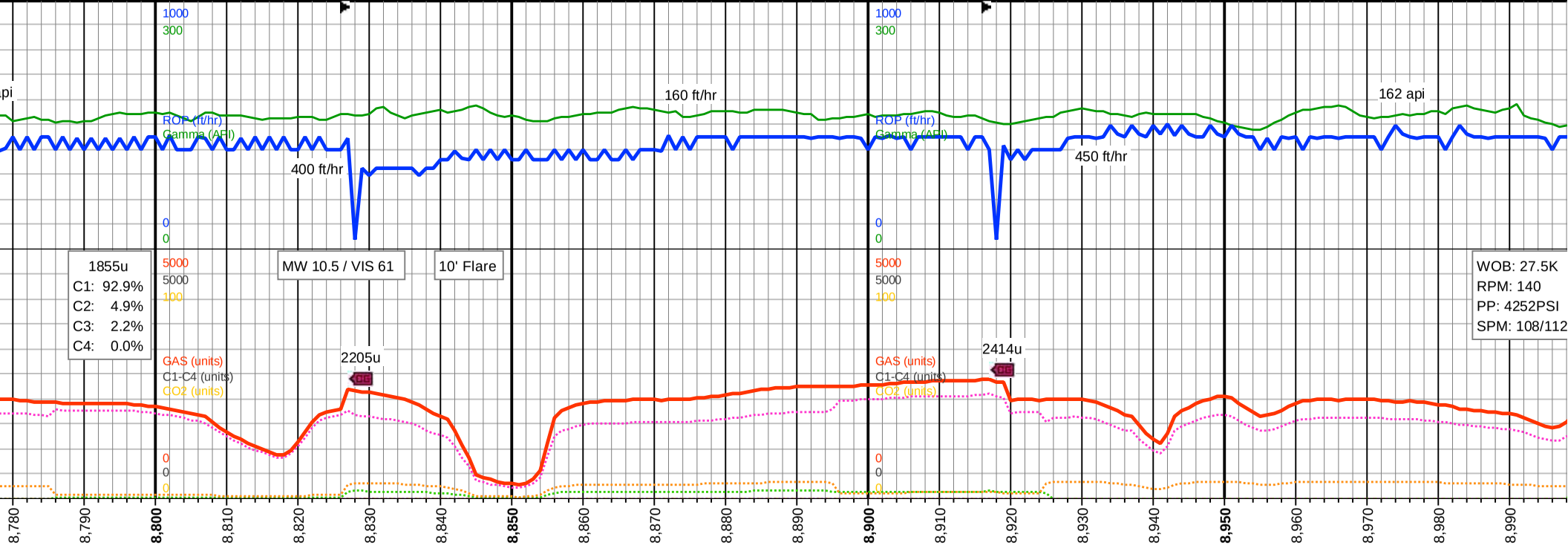


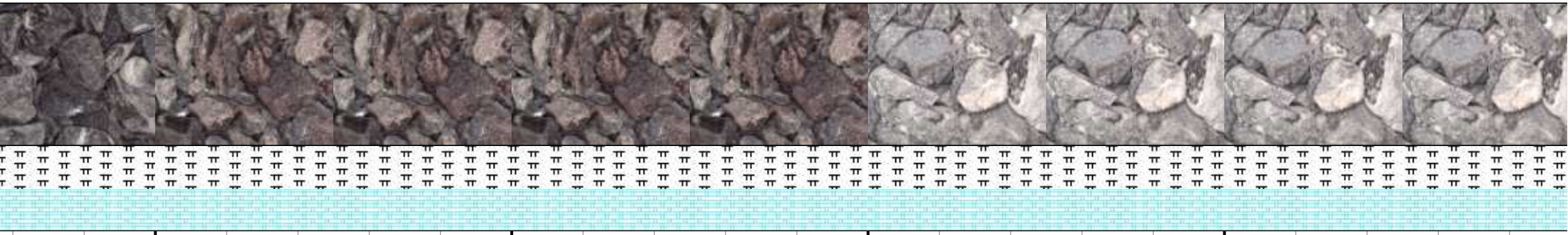


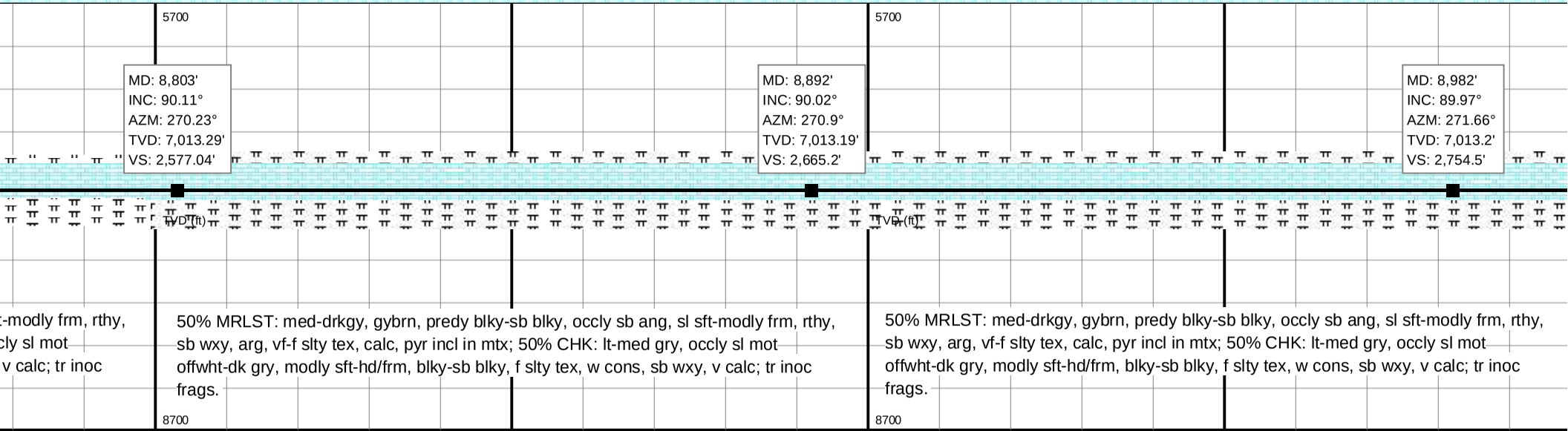
occly sb ang, sl sft-modly frm, rthy,
HK: lt-med gry, occly sl mot
x, w cons, sb wxy, v calc.

50% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; 50% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; tr inoc frags.

50% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft
sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; 50% CHK: lt-med gry, occ
offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy,
frags.



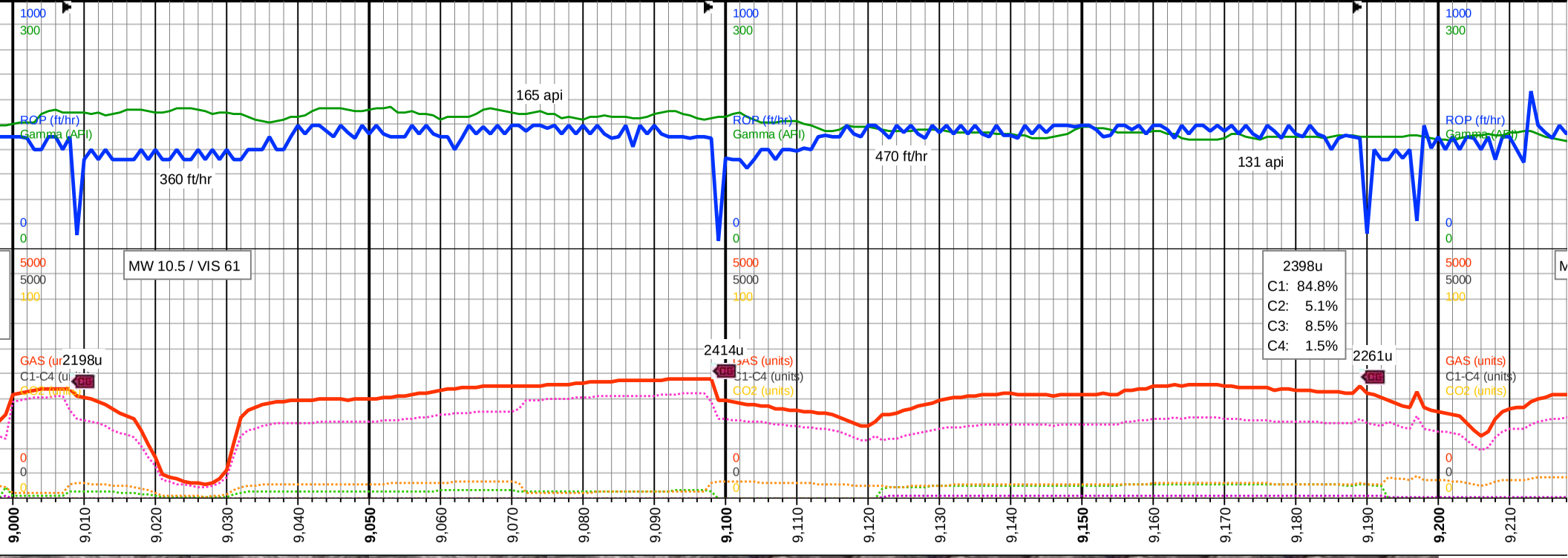


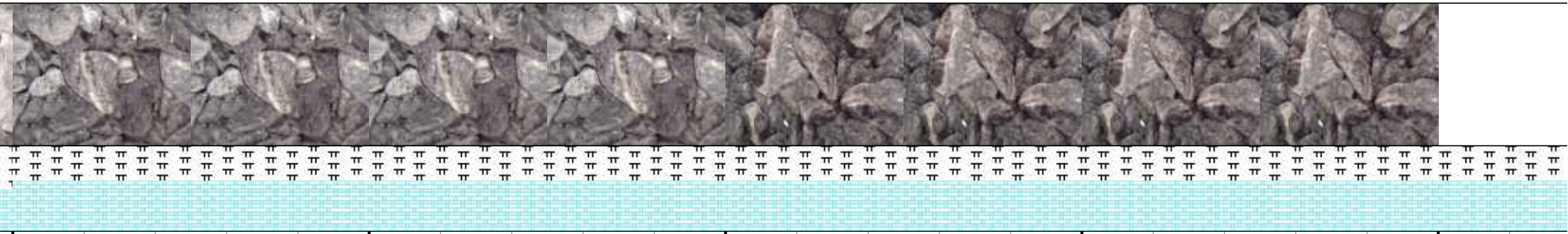


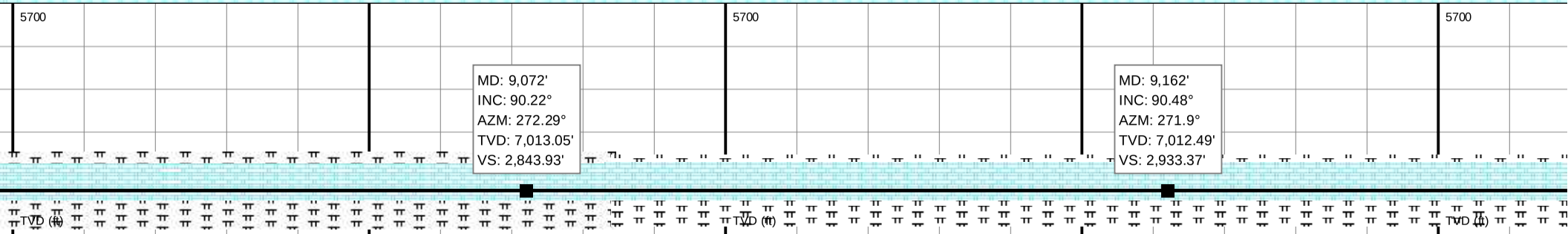
t-modly frm, rthy,
cly sl mot
v calc; tr inoc

50% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; 50% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; tr inoc frags.

50% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; 50% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; tr inoc frags.



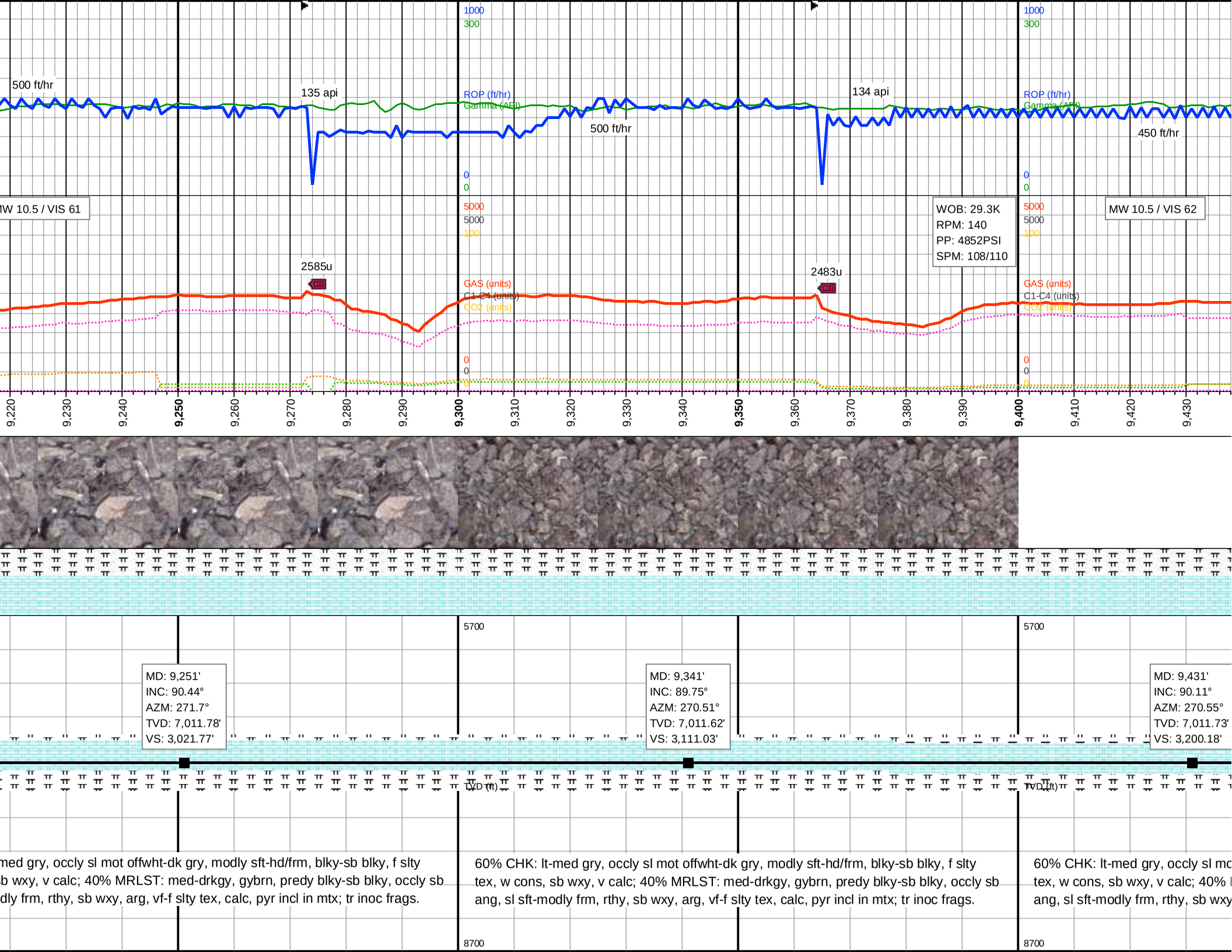




60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags.

60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags.

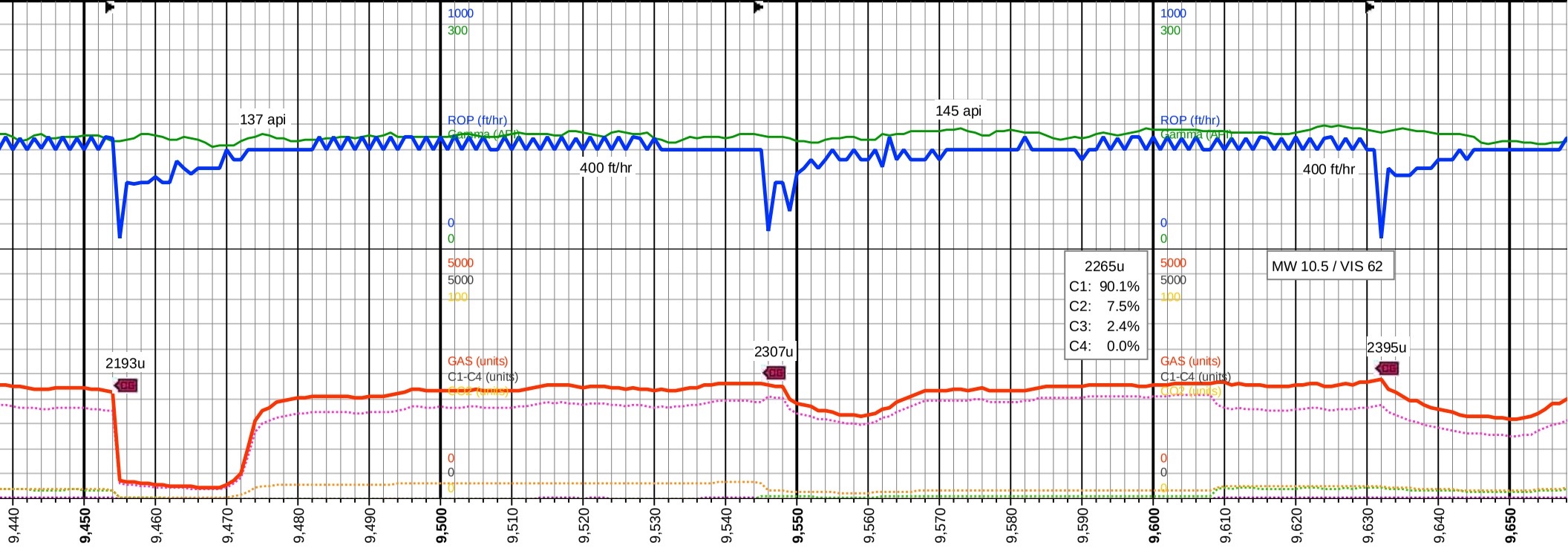
60% CHK: lt-m
tex, w cons, s
ang, sl sft-mo

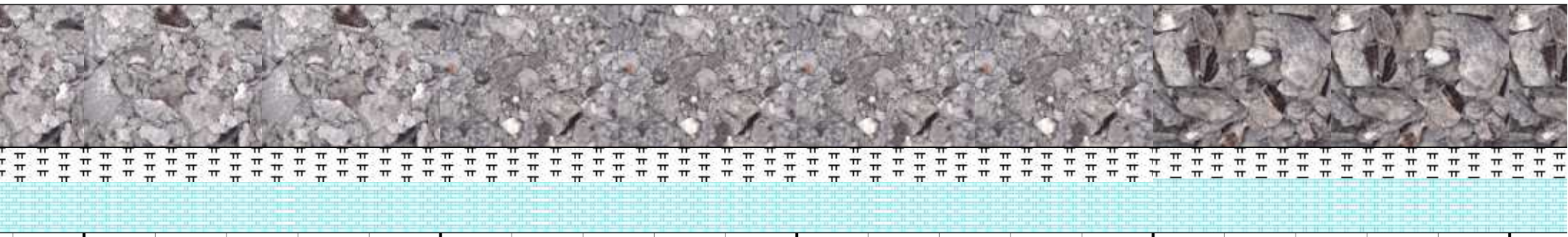


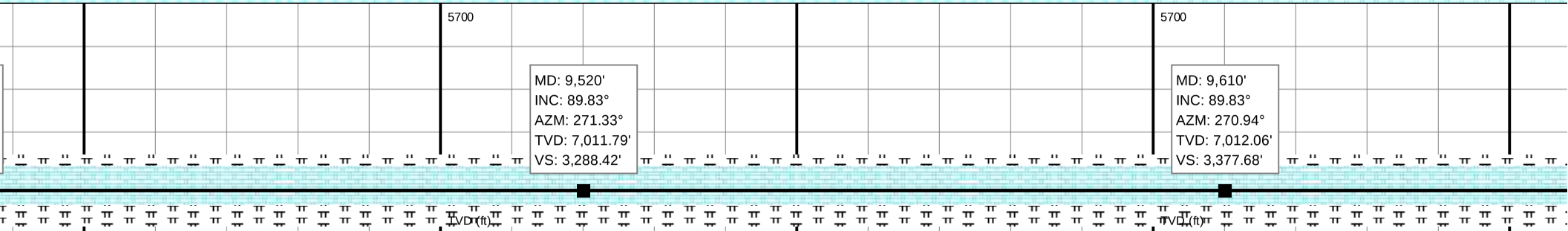
med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb
dly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags.

60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags.

60% CHK: lt-med gry, occly sl mo
tex, w cons, sb wxy, v calc; 40%
ang, sl sft-modly frm, rthy, sb wxy



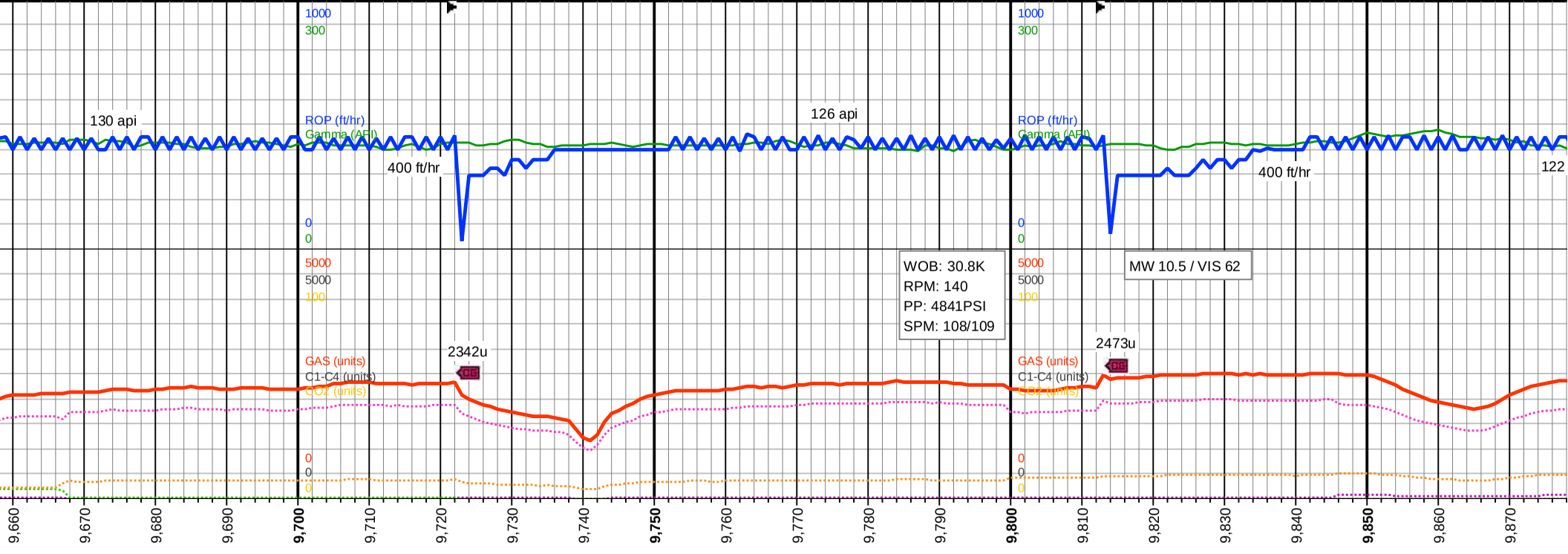




ot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb
, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags.

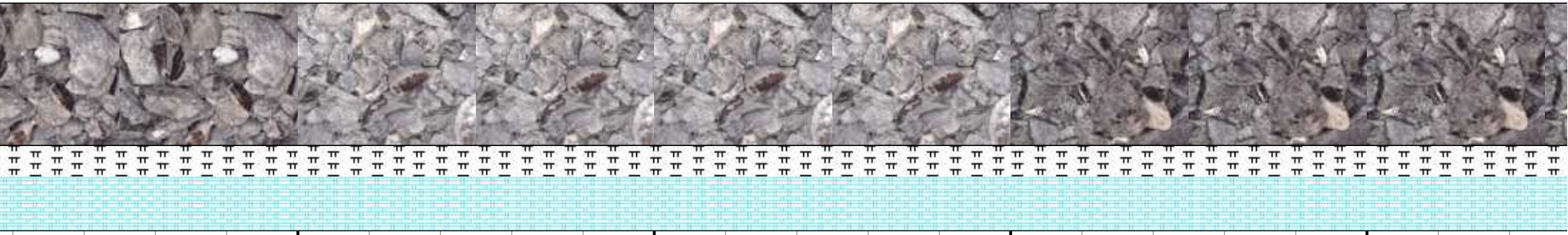
60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags.

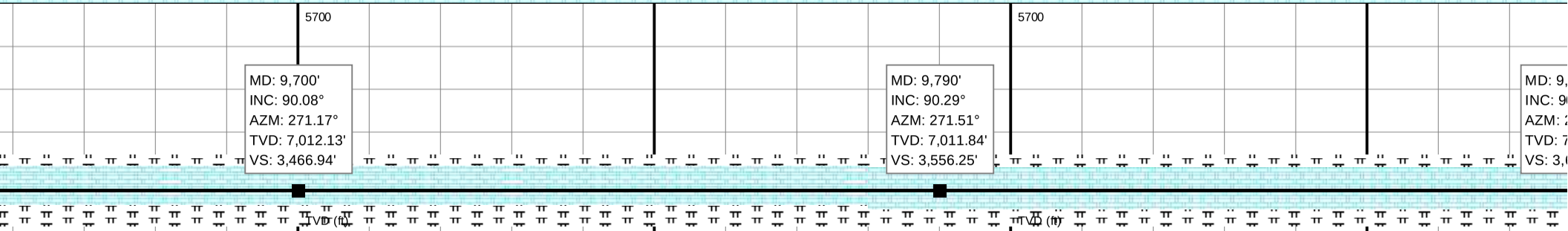
65% CHK: lt-med gry, occly sl mot offwht-dk gry, m
tex, w cons, sb wxy, v calc; 35% MRLST: med-drkg
ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex,
bent frags.



WOB: 30.8K
RPM: 140
PP: 4841PSI
SPM: 108/109

MW 10.5 / VIS 62





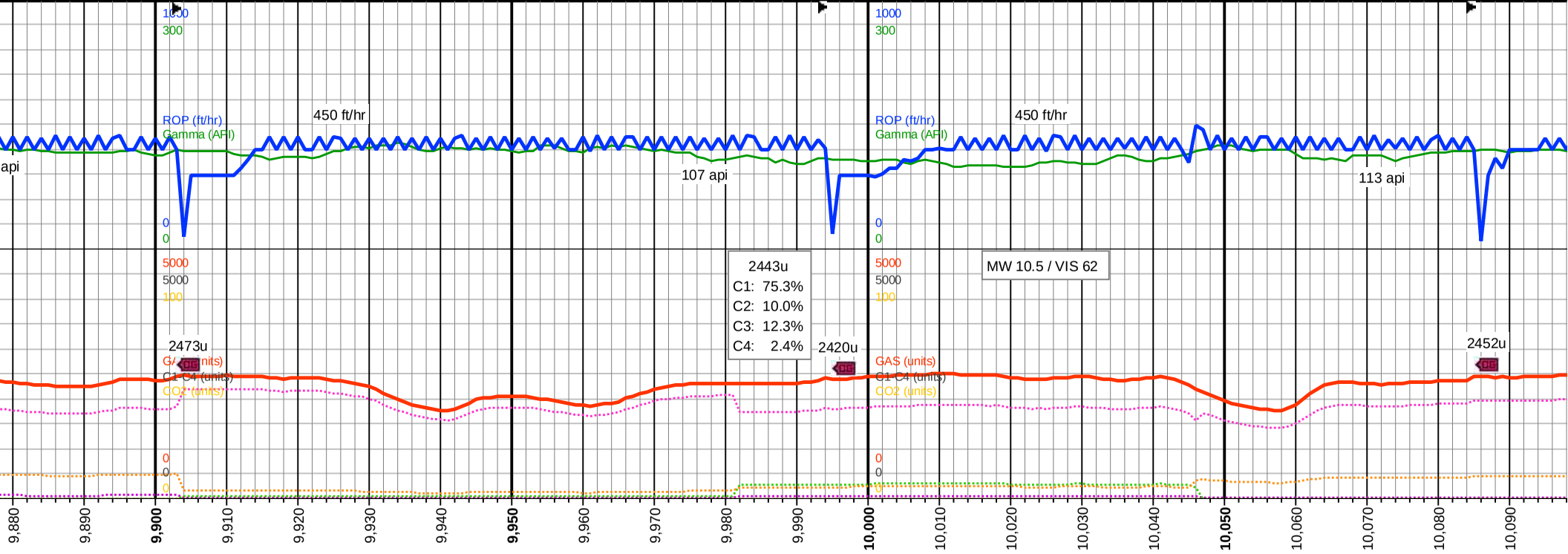
MD: 9,700'
INC: 90.08°
AZM: 271.17°
TVD: 7,012.13'
VS: 3,466.94'

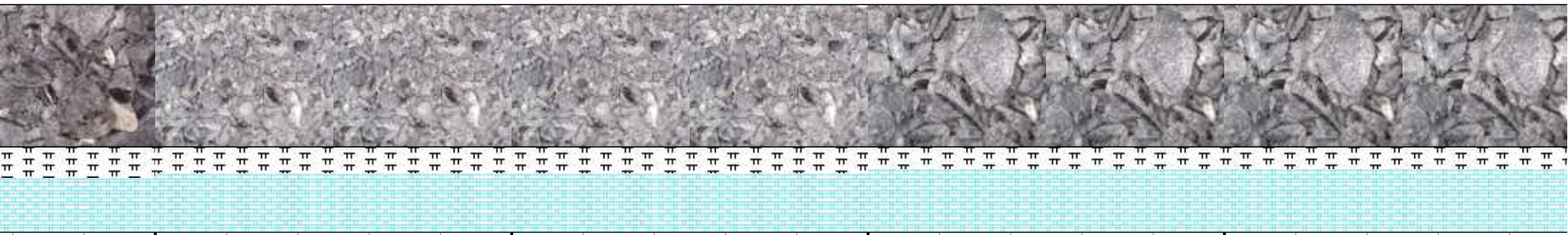
MD: 9,790'
INC: 90.29°
AZM: 271.51°
TVD: 7,011.84'
VS: 3,556.25'

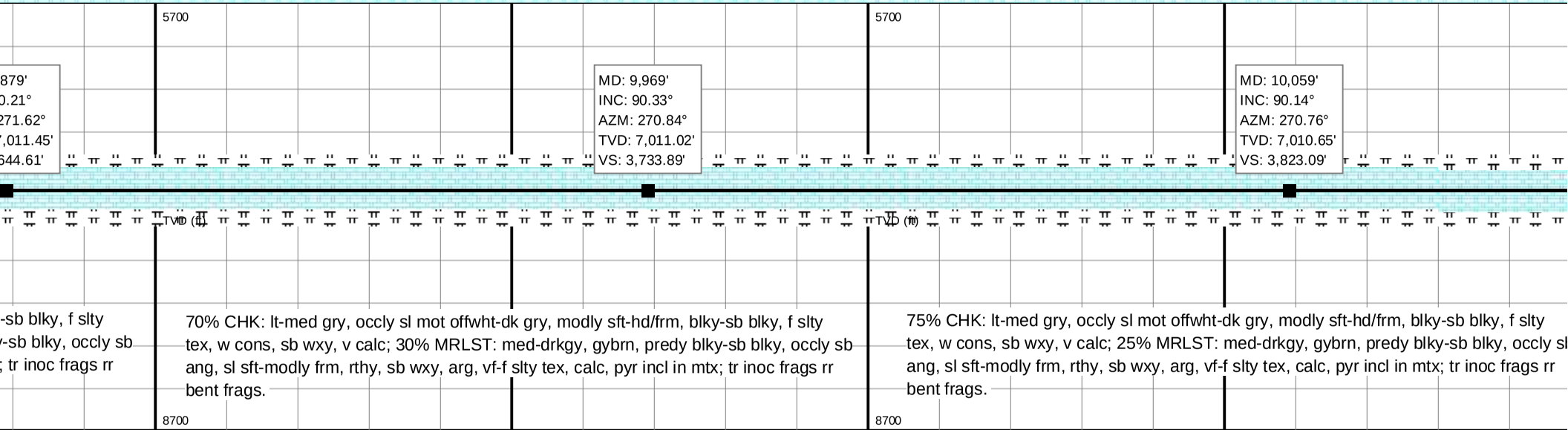
odly sft-hd/frm, blky-sb blky, f slty
y, gybrn, predy blky-sb blky, occly sb
calc, pyr incl in mtx; tr inoc frags rr

65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky
tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky
ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx
bent frags.







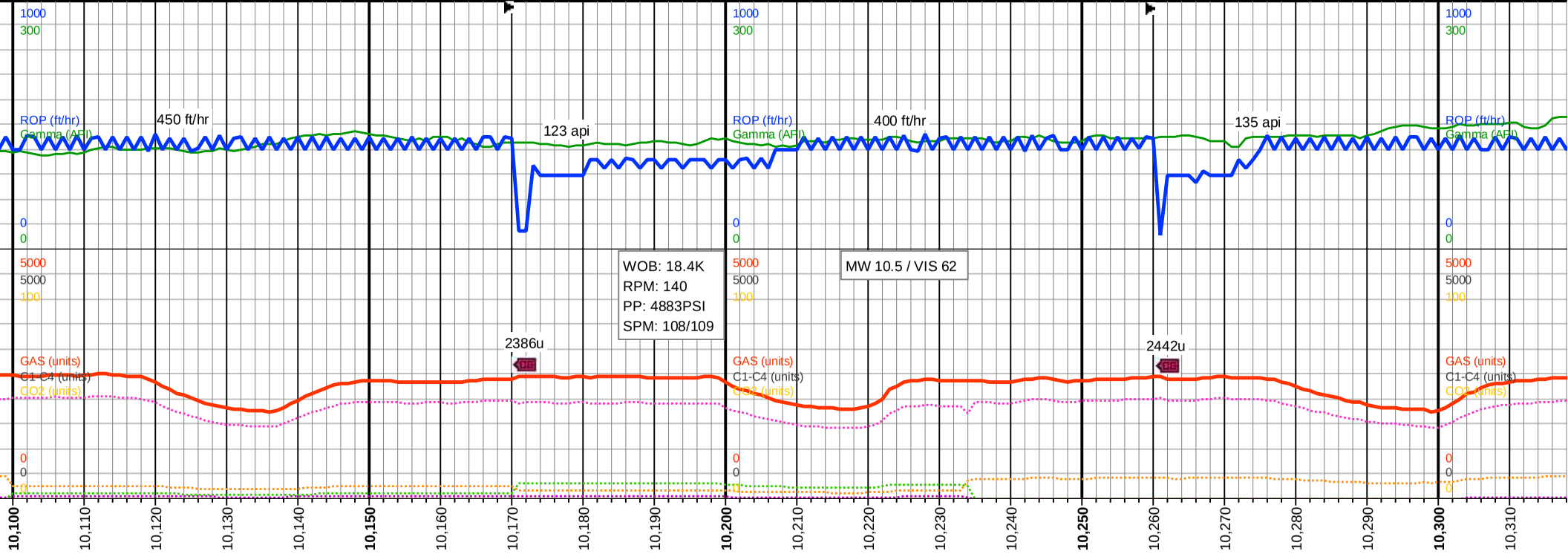
-sb blky, f slty
-sb blky, occly sb
; tr inoc frags rr

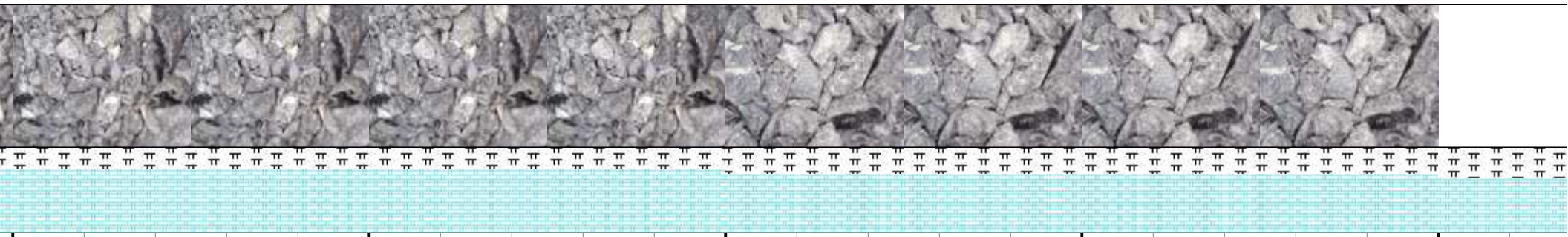
70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

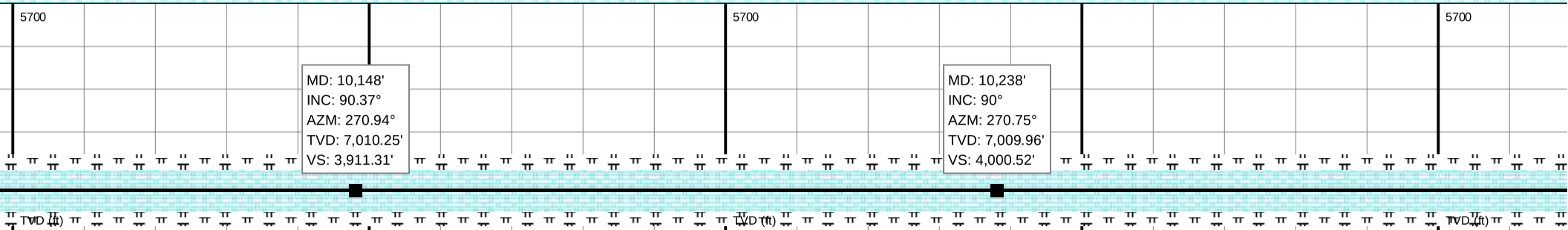
8700

75% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 25% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sl ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

8700



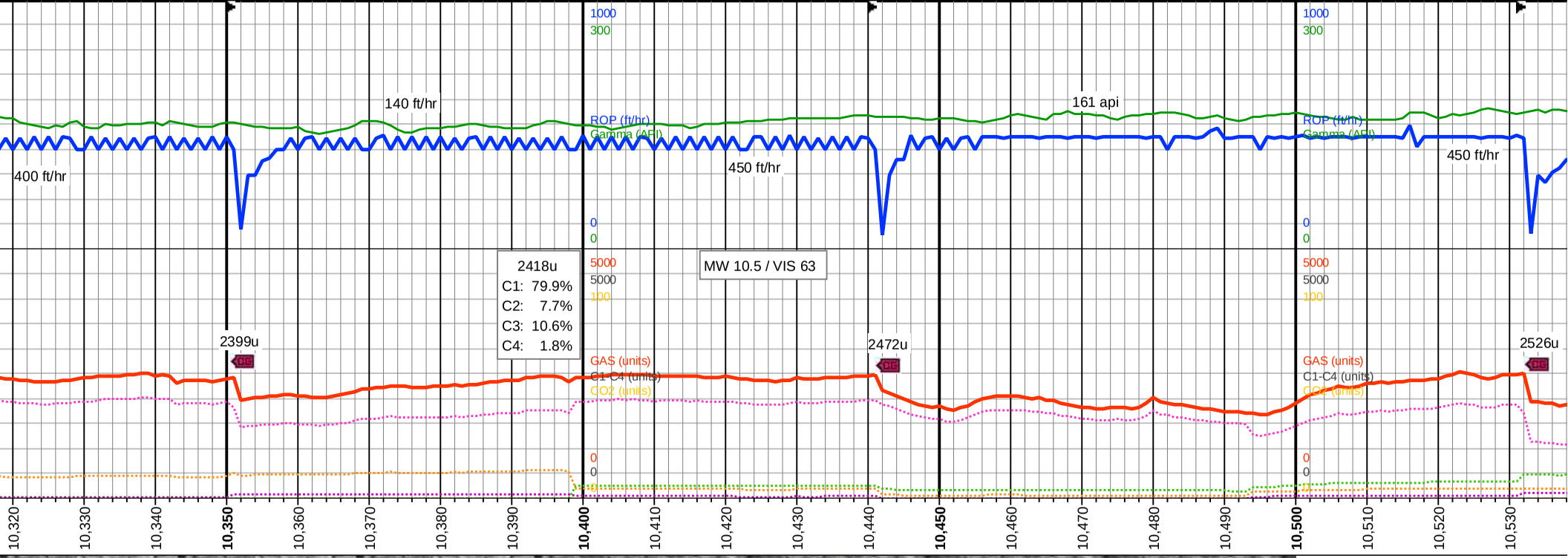


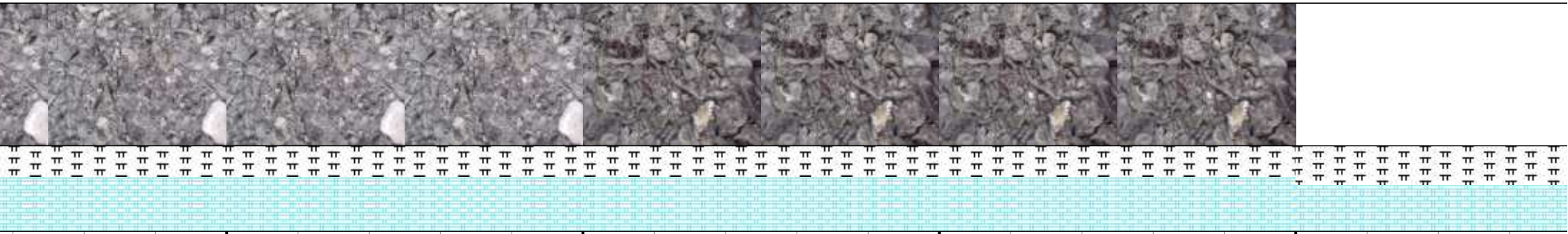


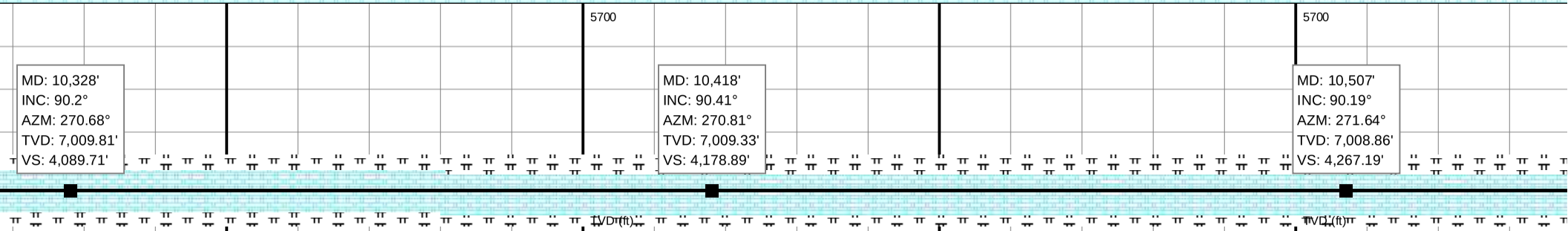
75% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 25% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

65% CHK: lt
tex, w cons,
ang, sl sft-m
bent frags.



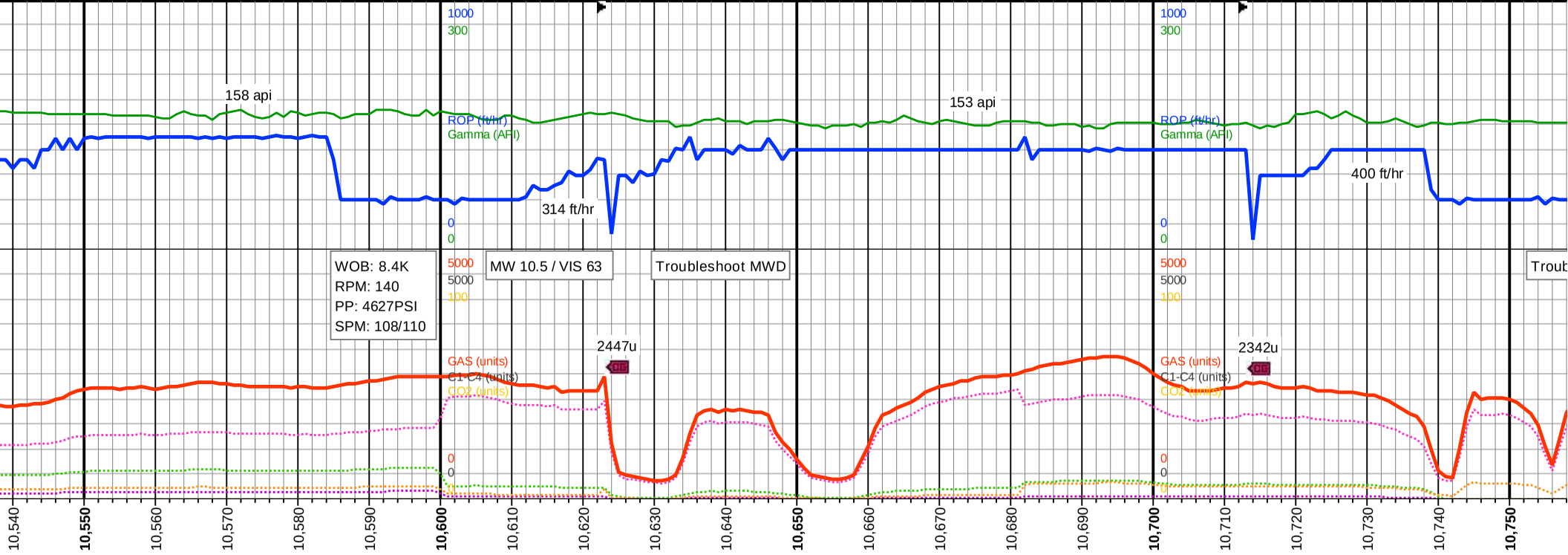


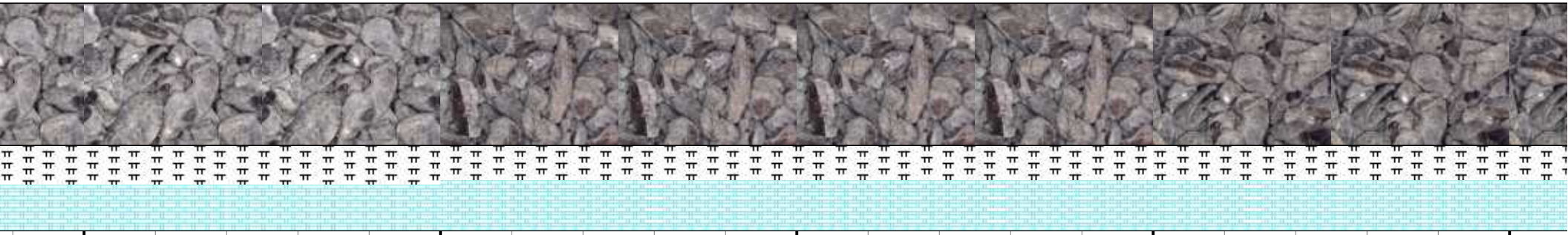


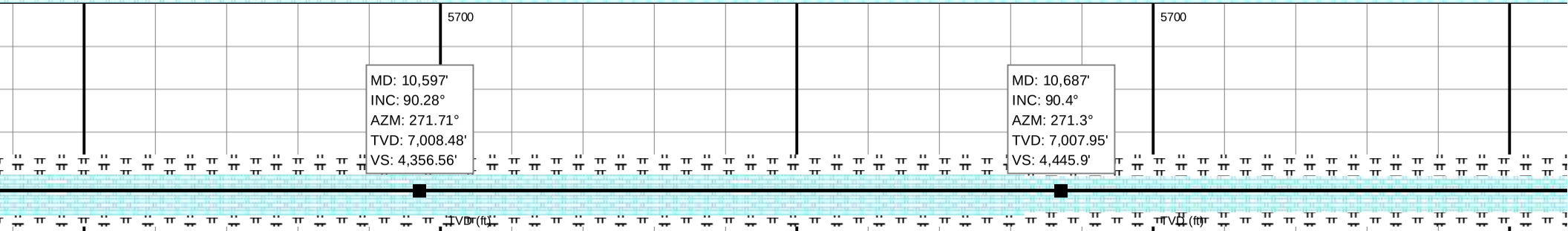
-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb odly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr

65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

55% CHK: lt-med gry, occly sl mo tex, w cons, sb wxy, v calc; 45% ang, sl sft-modly frm, rthy, sb wxy bent frags.







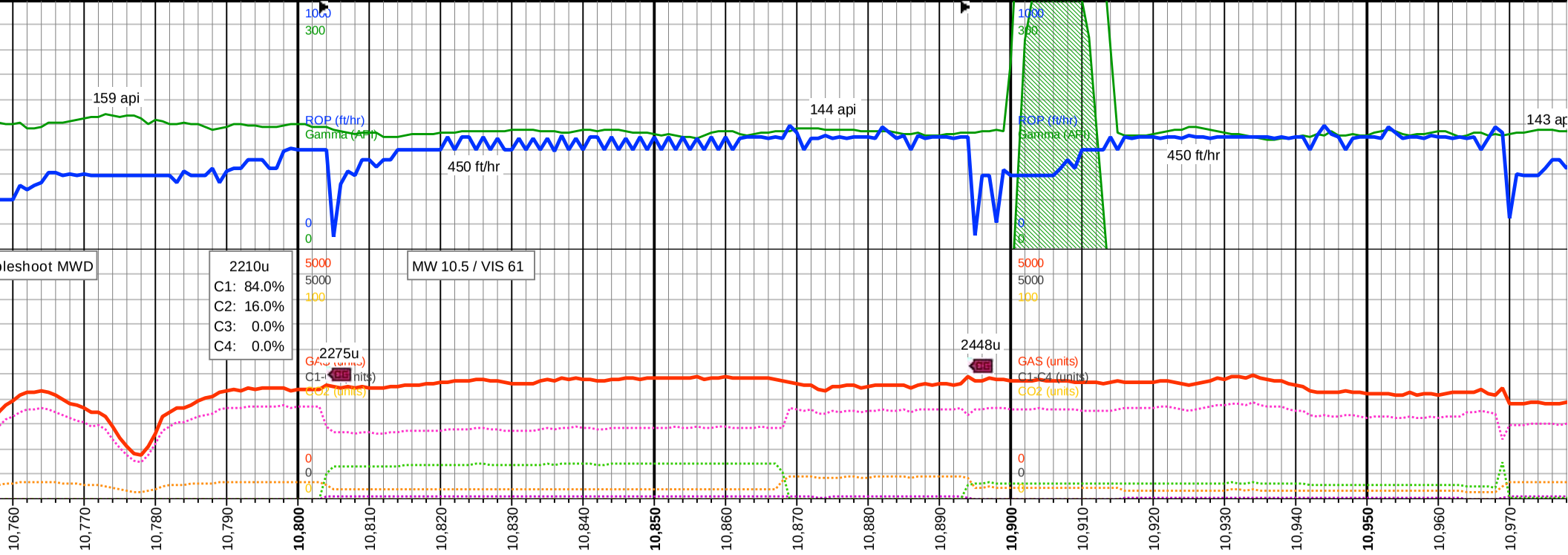
ot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb
y, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr

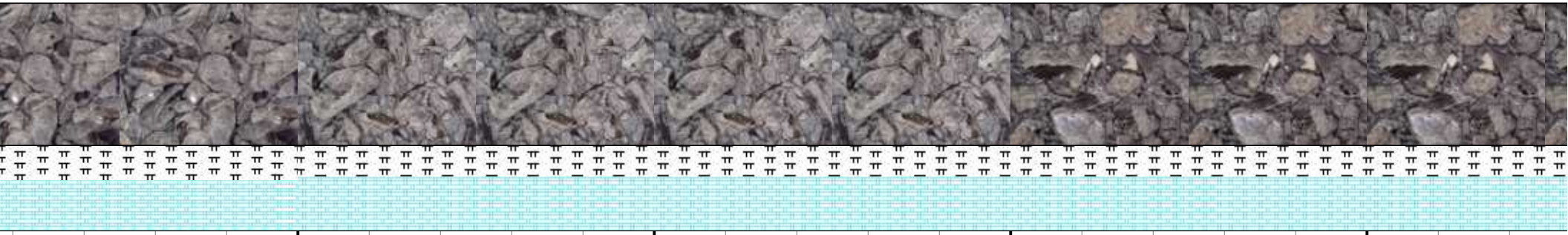
60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

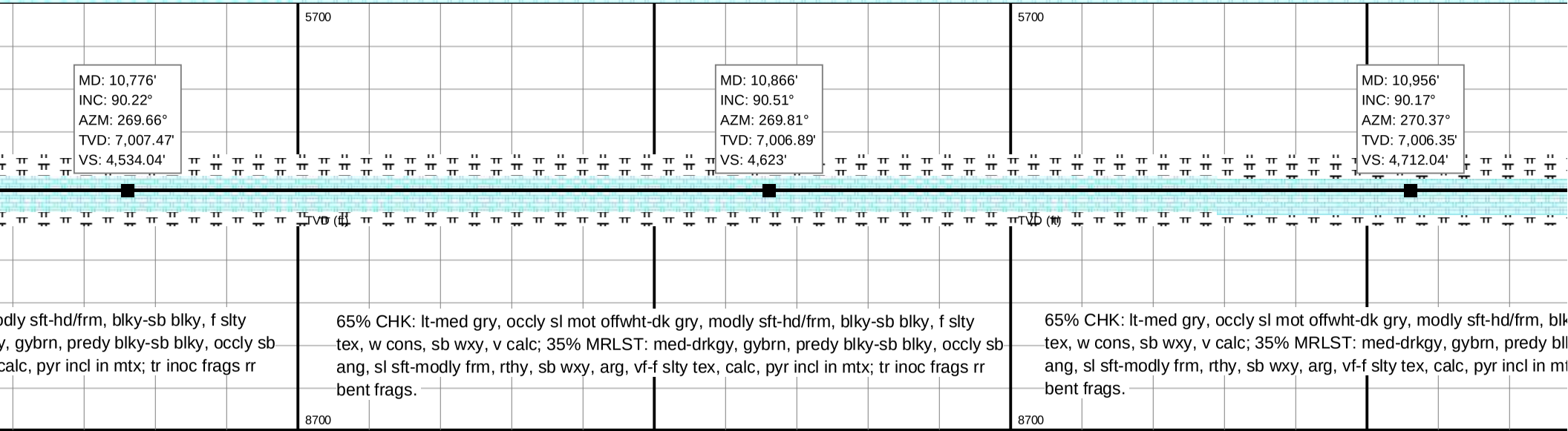
8700

60% CHK: lt-med gry, occly sl mot offwht-dk gry, mo
tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy
ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex,
bent frags.

8700



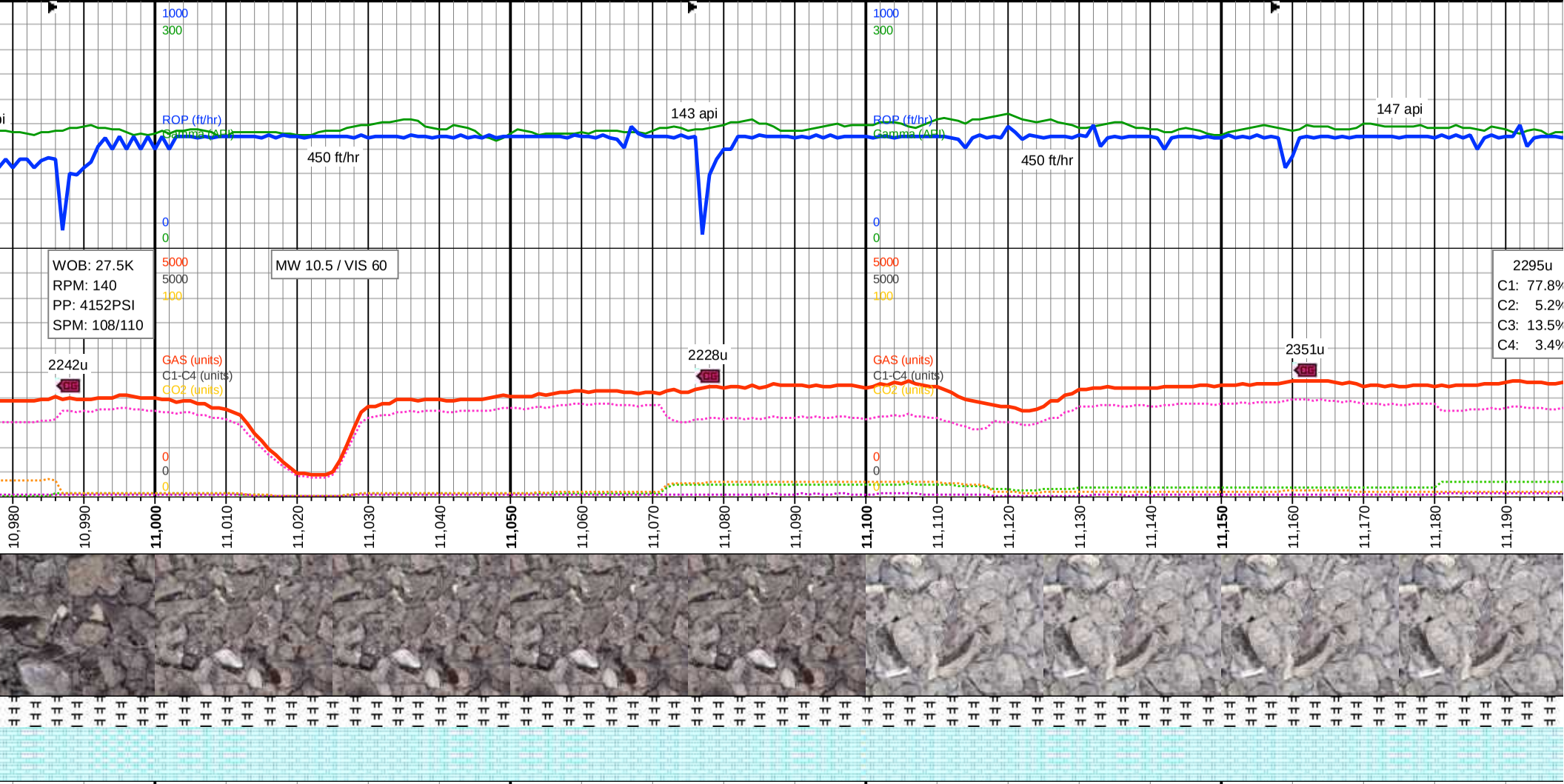


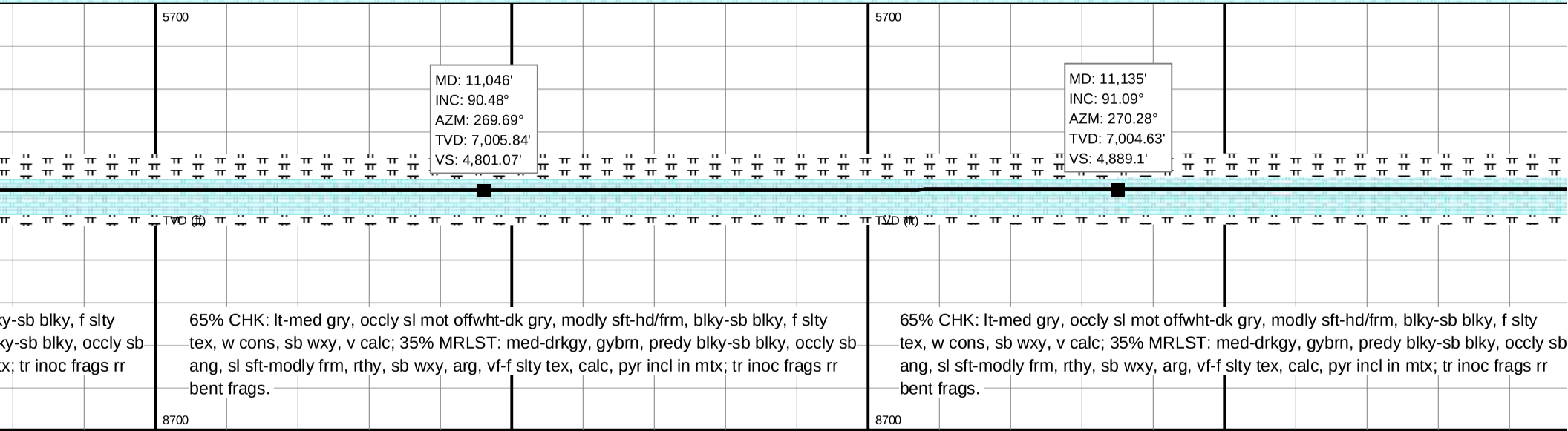


odly sft-hd/frm, blky-sb blky, f slty
y, gybrn, predy blky-sb blky, occly sb
calc, pyr incl in mtx; tr inoc frags rr

65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blk
tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy bl
ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in m
bent frags.

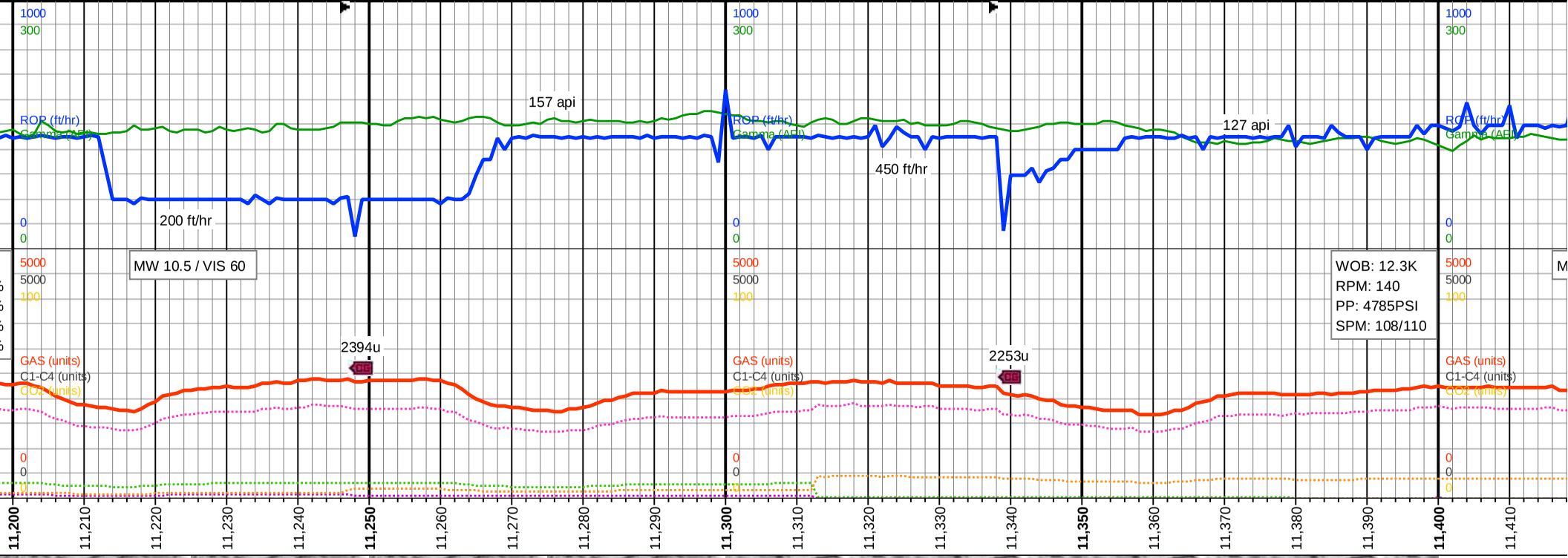


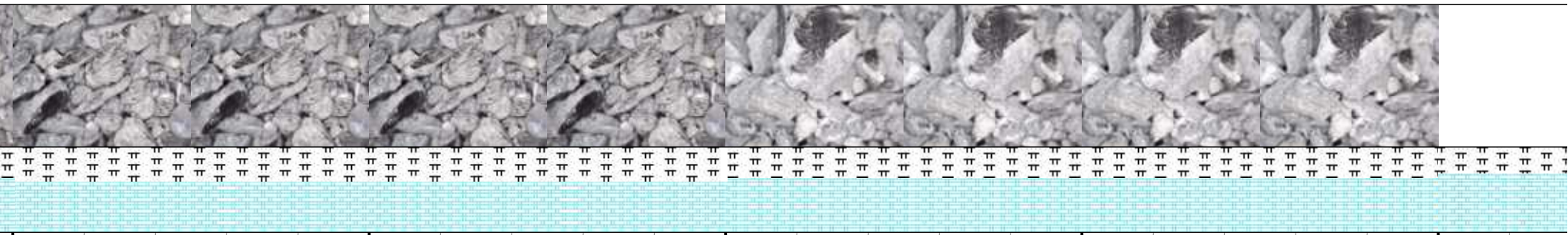


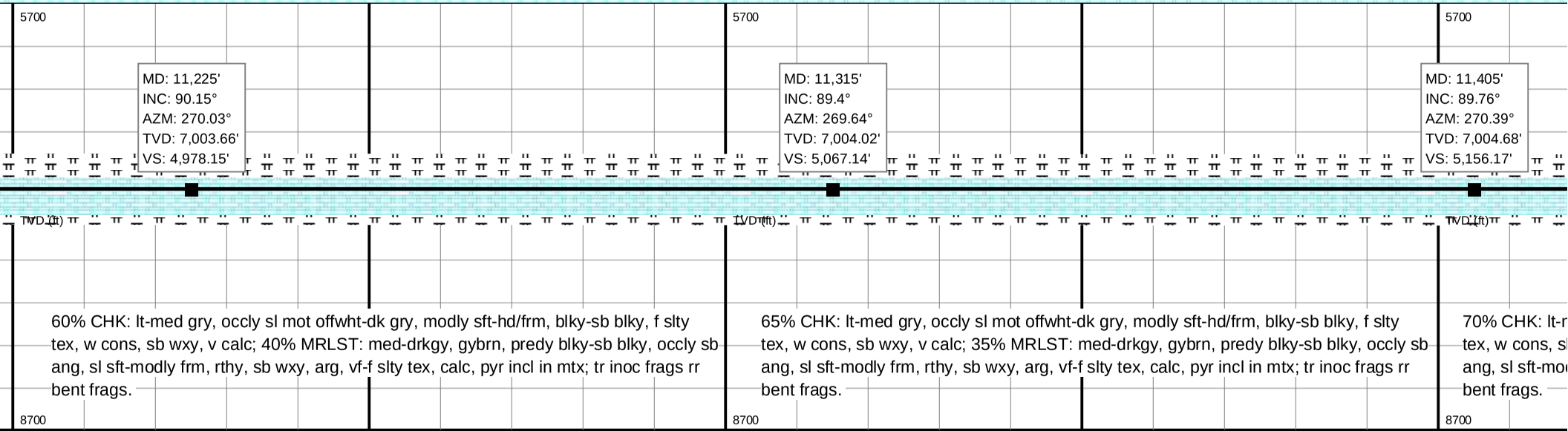
ky-sb blky, f slty
ky-sb blky, occly sb
tx; tr inoc frags rr

65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.



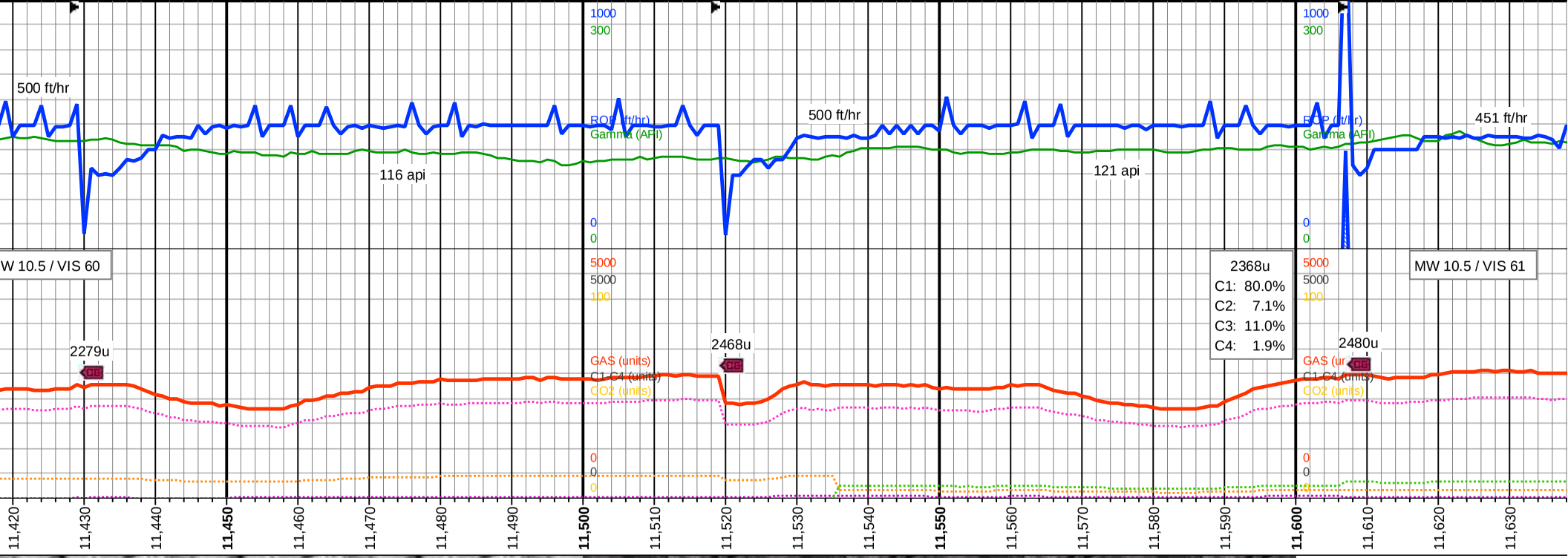


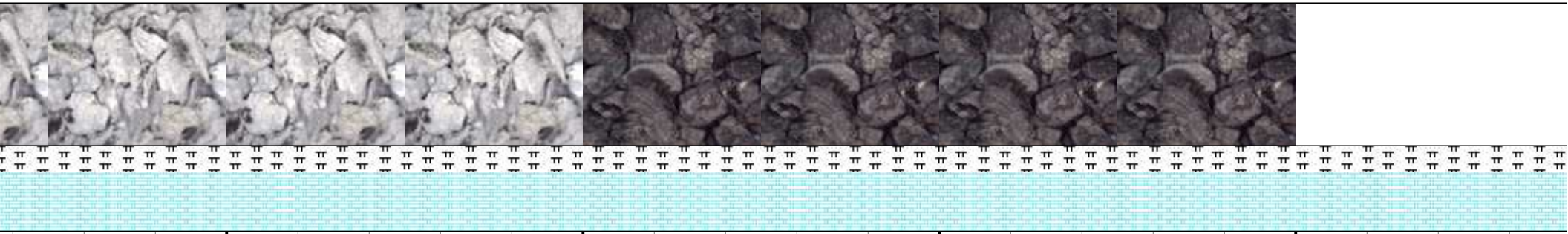


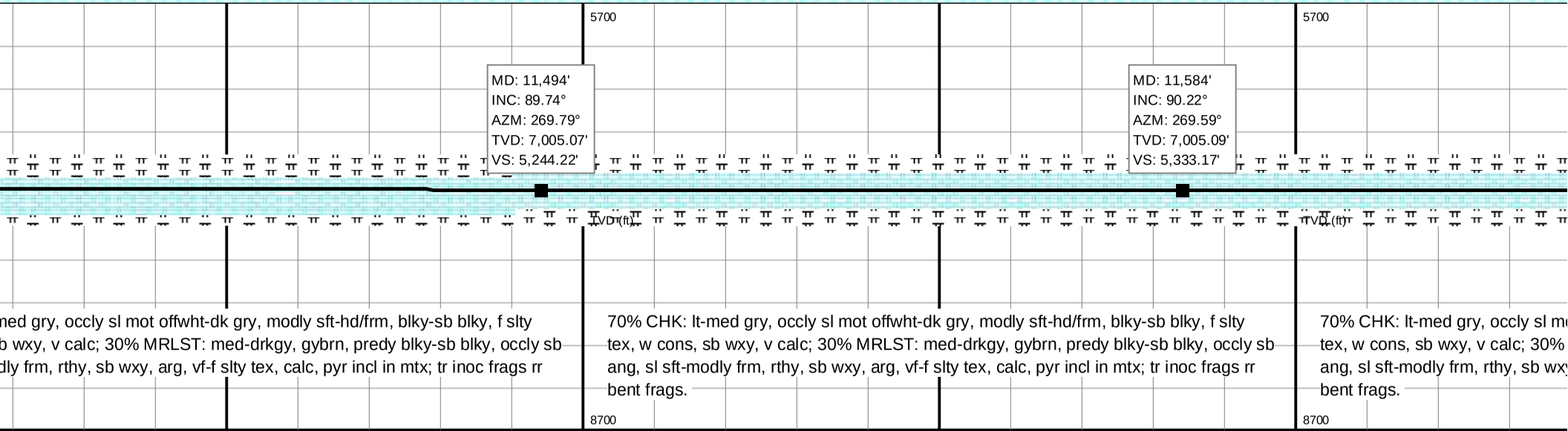
60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

70% CHK: lt-r
tex, w cons, sl
ang, sl sft-mo
bent frags.



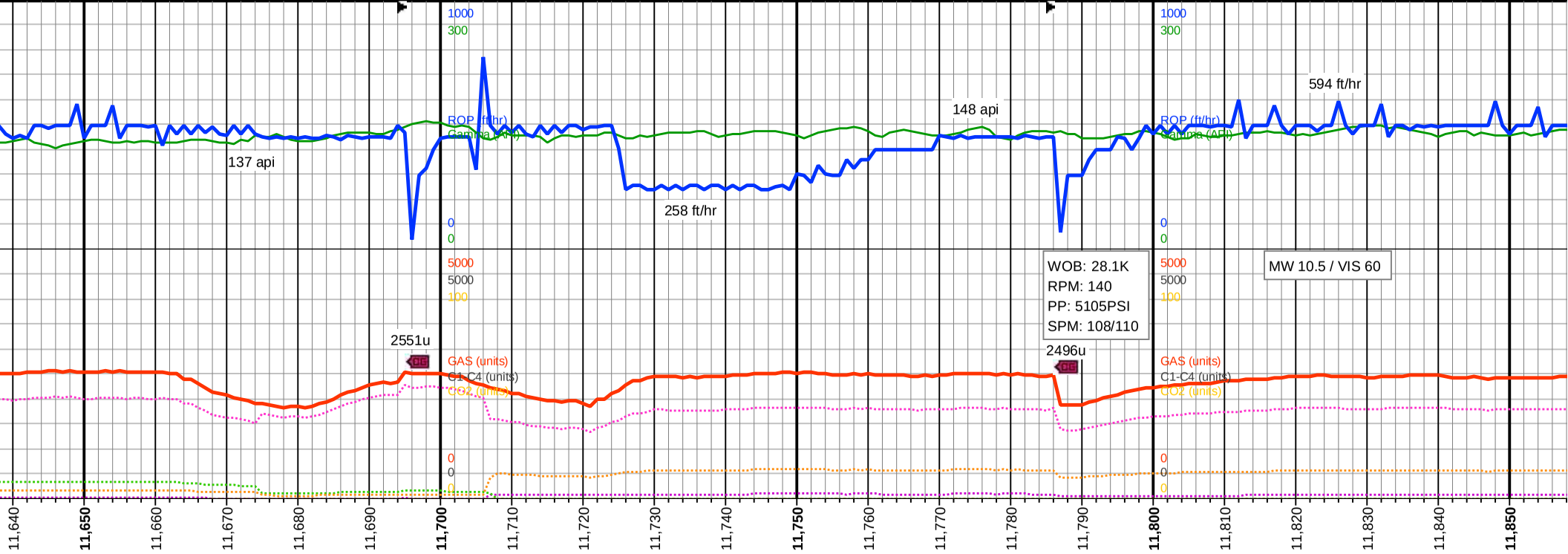


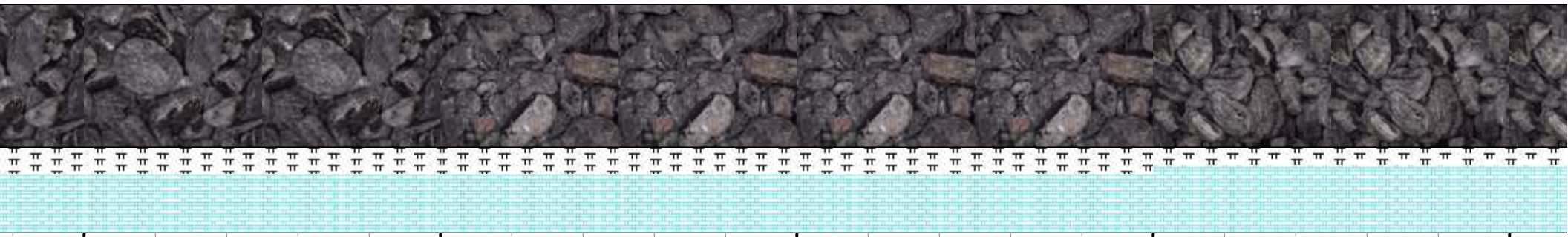


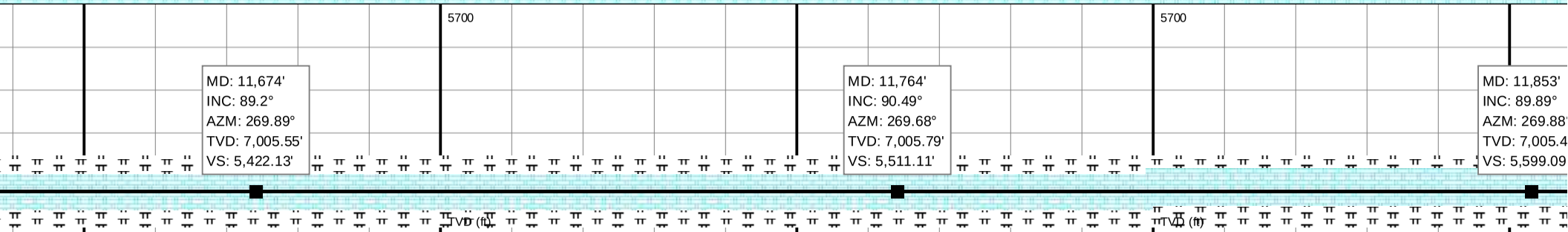
med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
b wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb
dly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

70% CHK: lt-med gry, occly sl mo
tex, w cons, sb wxy, v calc; 30%
ang, sl sft-modly frm, rthy, sb wx
bent frags.



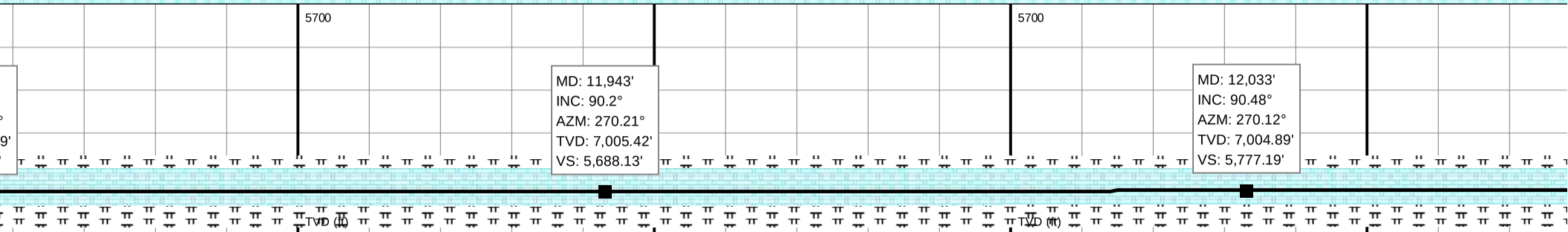


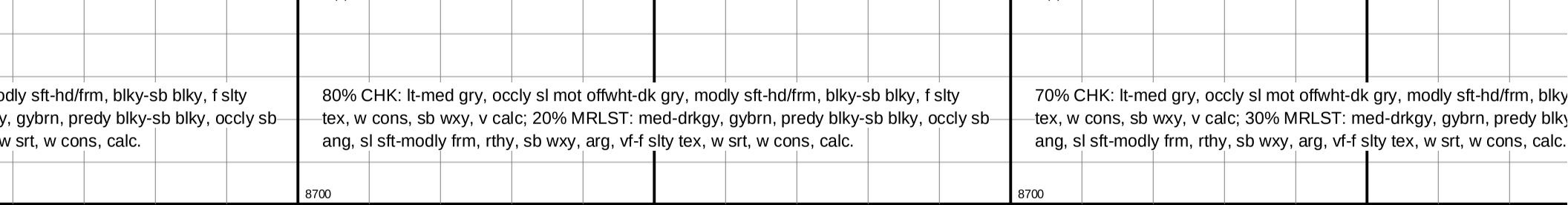


ot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb
y, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc.

80% CHK: lt-med gry, occly sl mot offwht-dk gry, mo
tex, w cons, sb wxy, v calc; 20% MRLST: med-drkg
ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex,

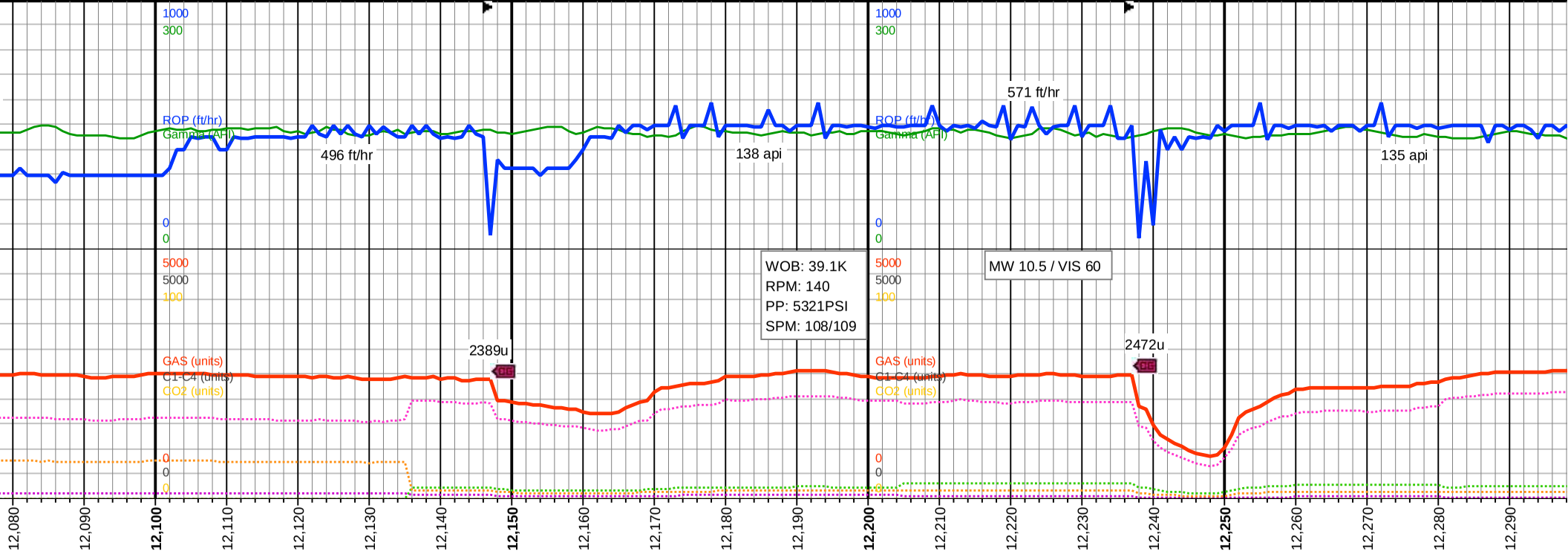


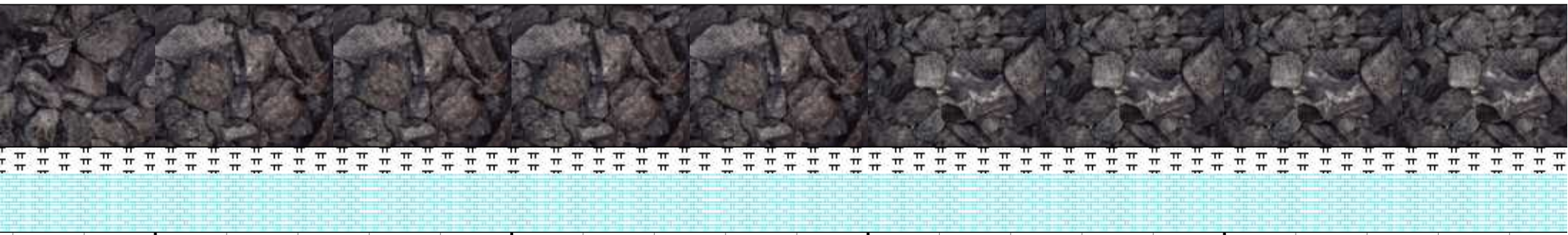


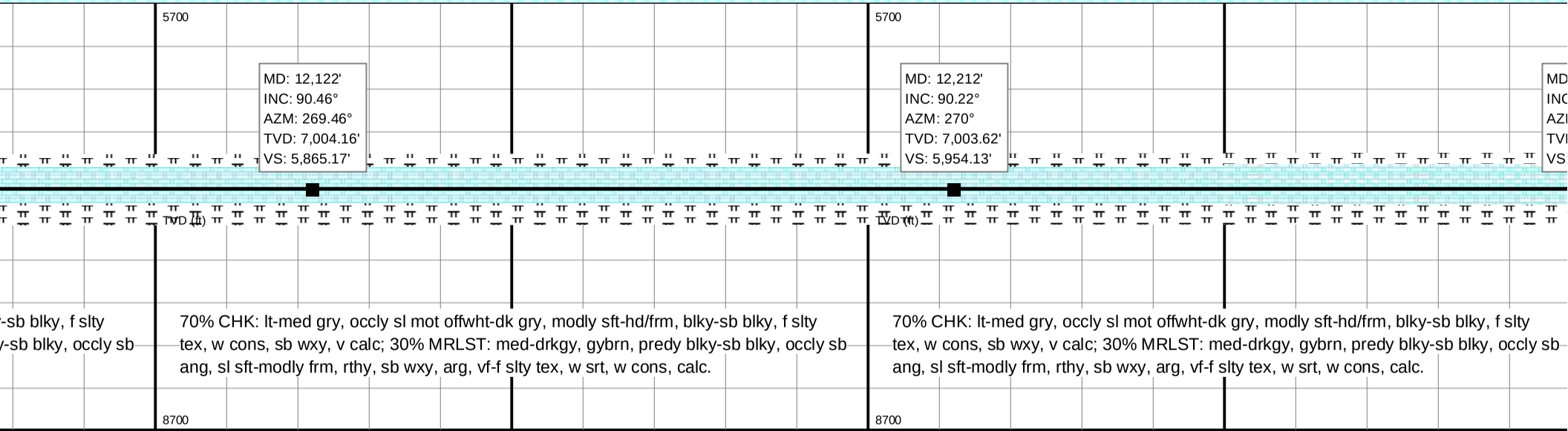
odly sft-hd/frm, blky-sb blky, f slty
y, gybrn, predy blky-sb blky, occly sb
w srt, w cons, calc.

80% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 20% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc.



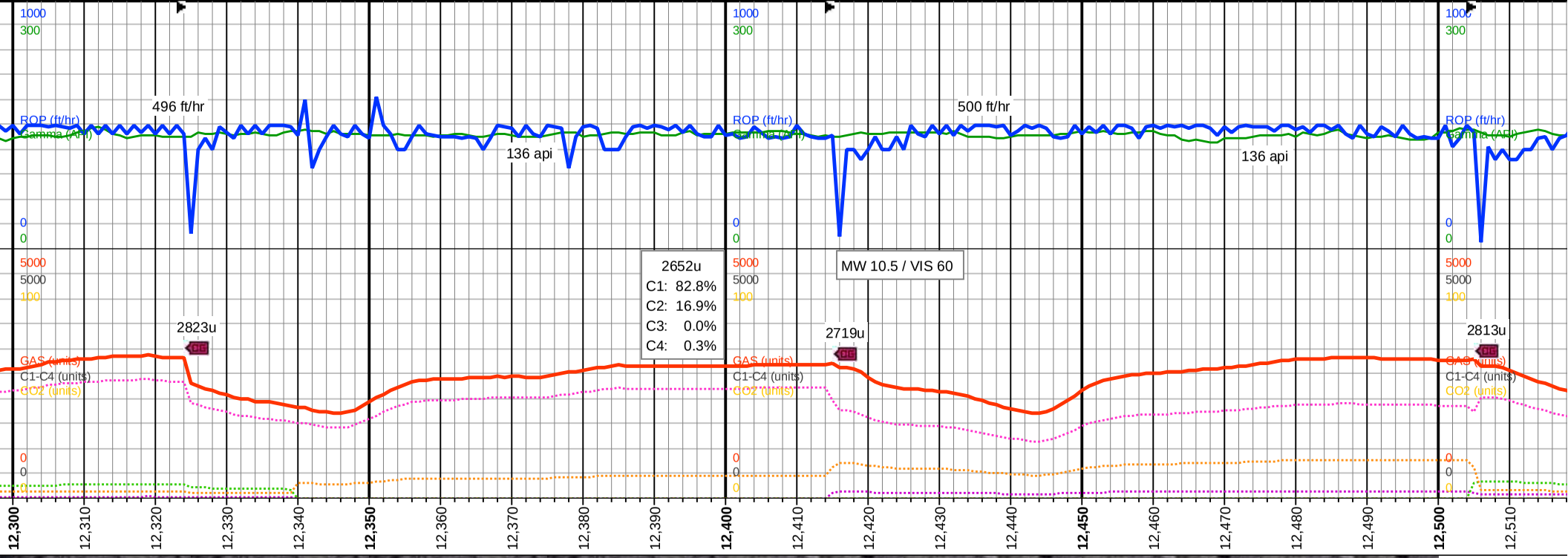


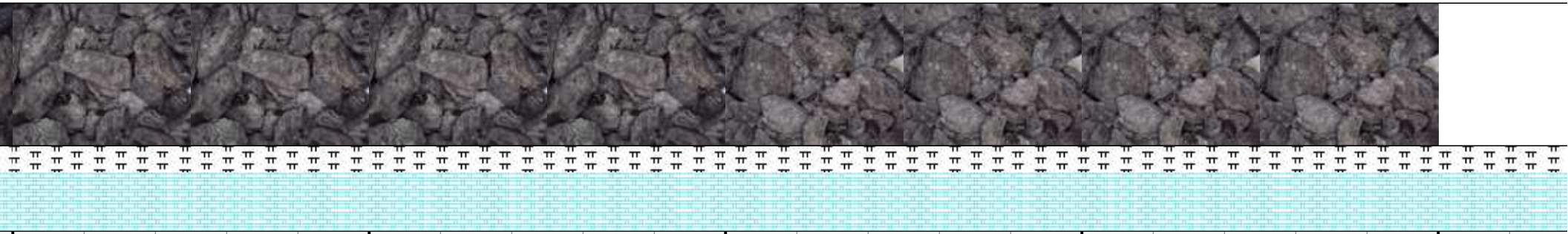


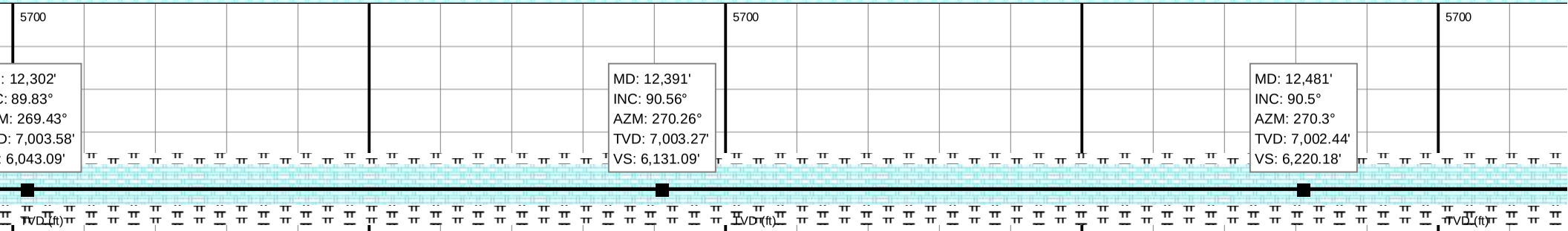
-sb blky, f slty
-sb blky, occly sb

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc.



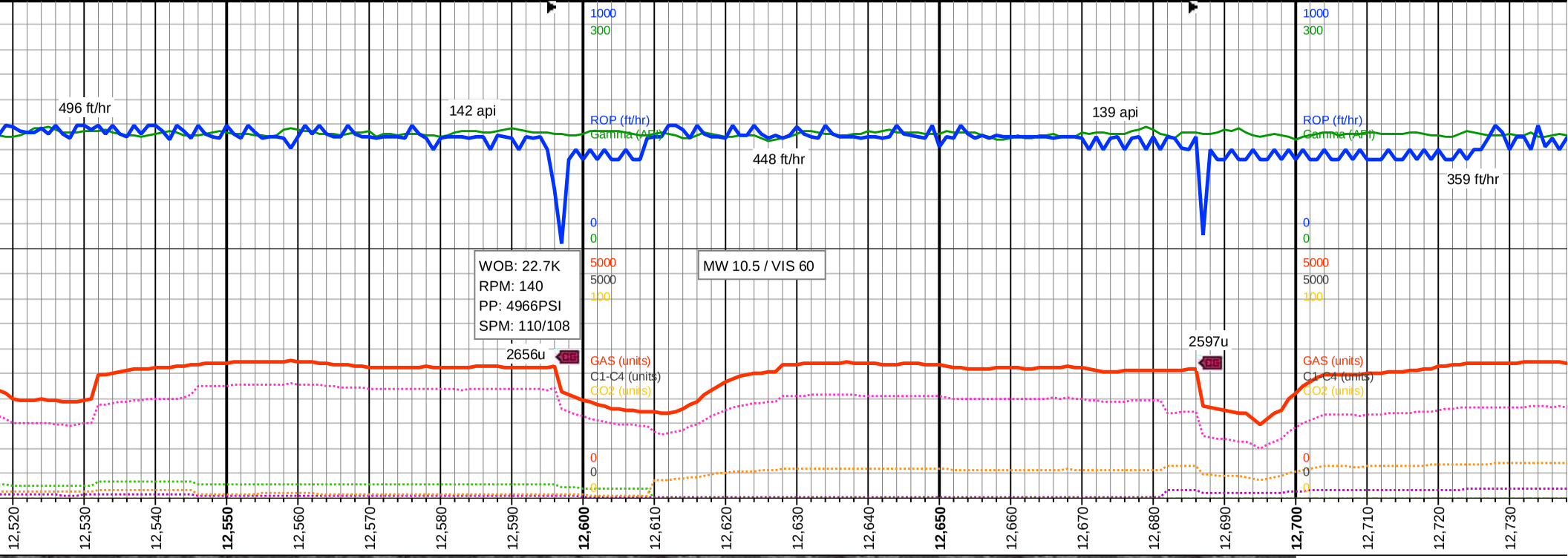


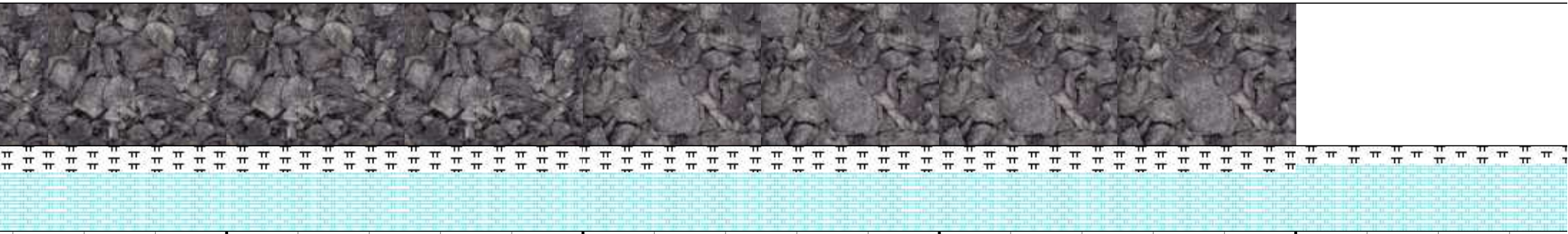


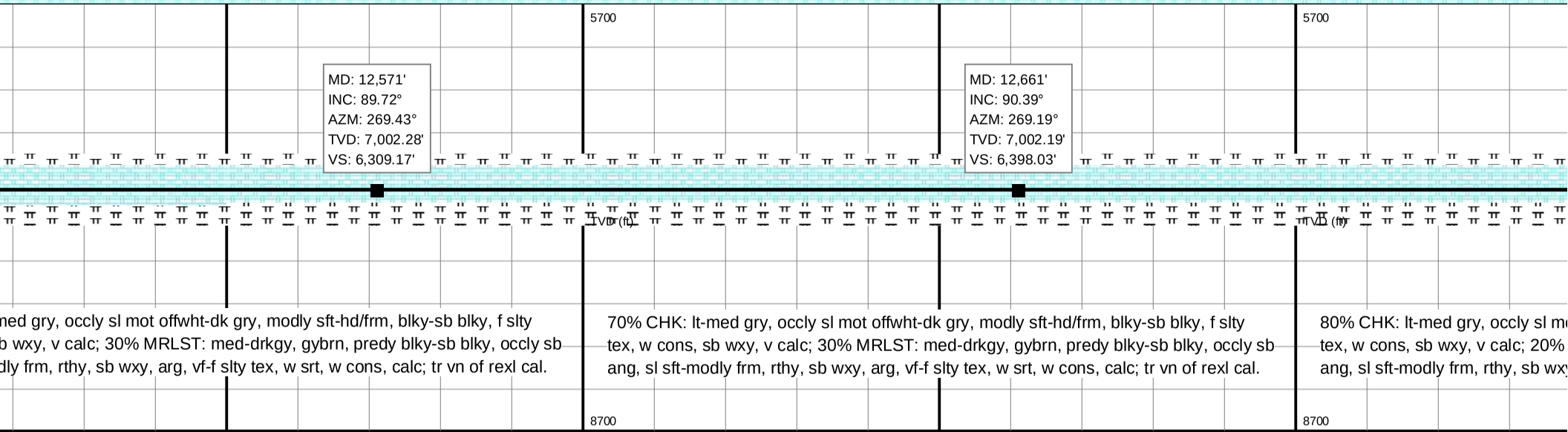
70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr vn of rexl cal.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr vn of rexl cal.

70% CHK: lt-r
tex, w cons, sl
ang, sl sft-mo



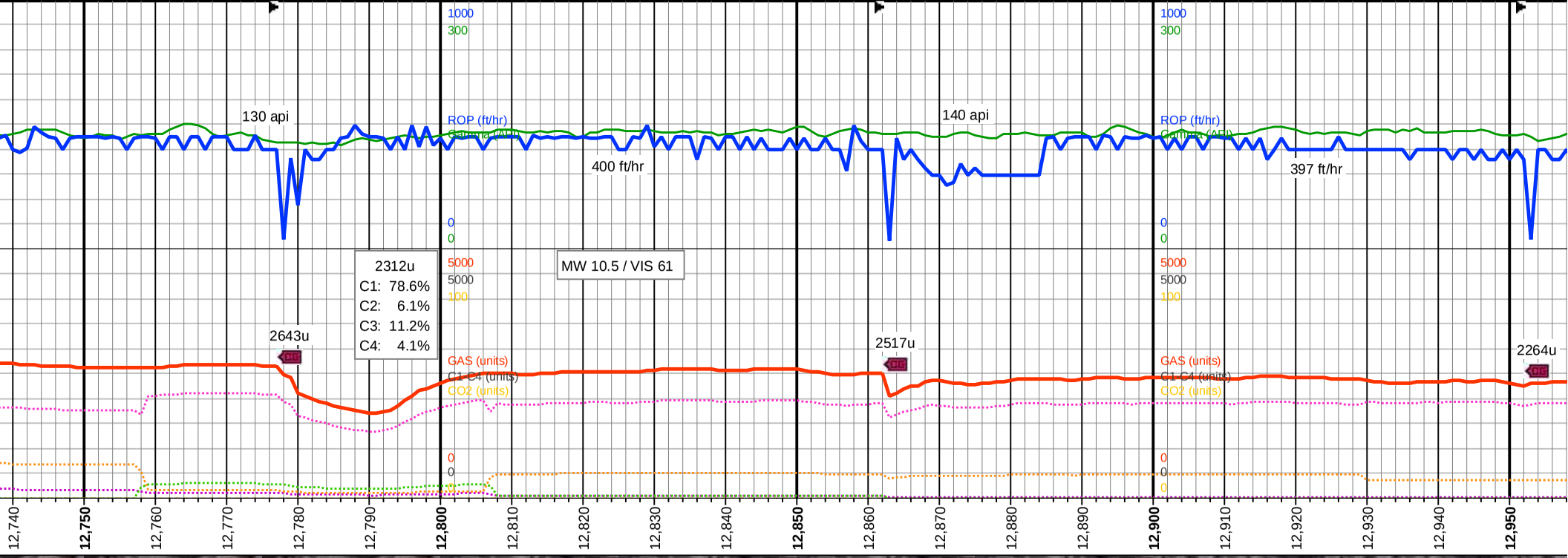


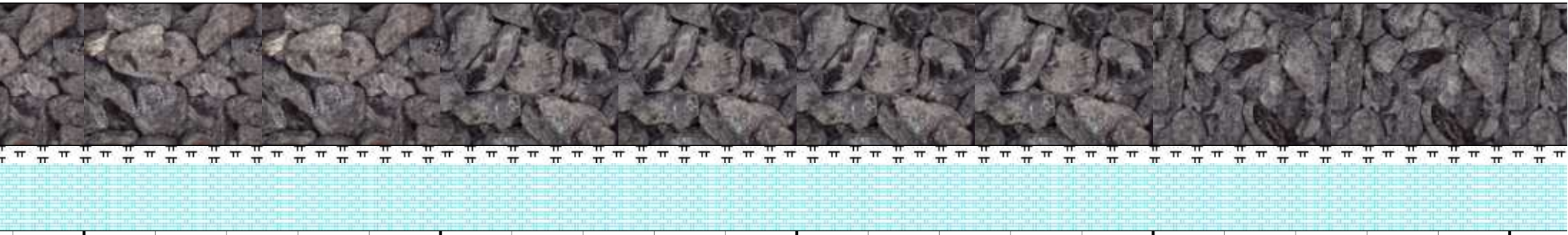


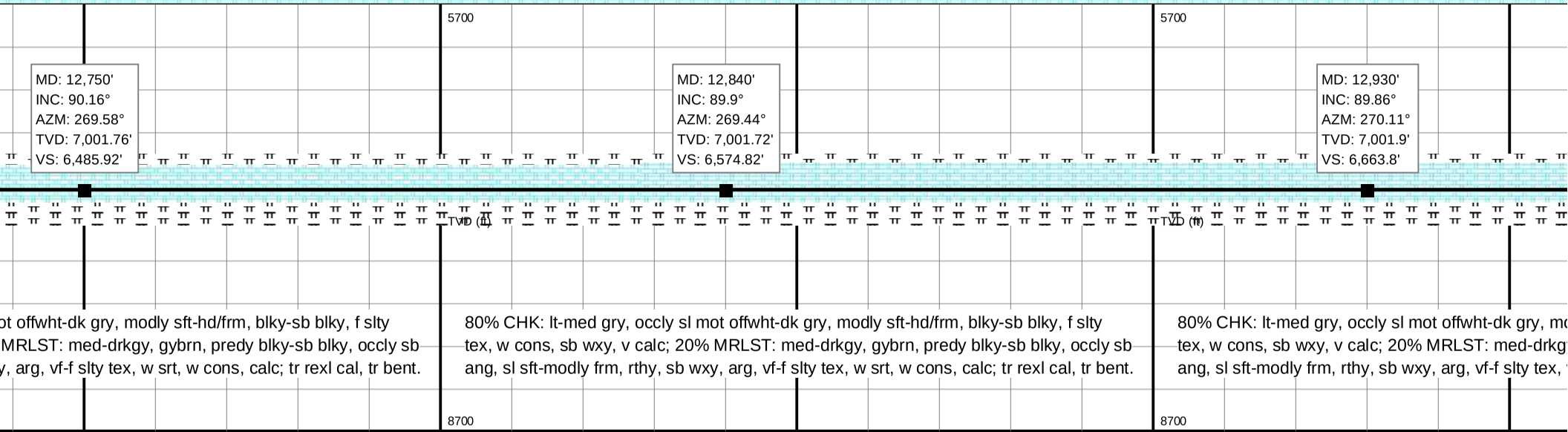
med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
b wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb
dly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr vn of rexl cal.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr vn of rexl cal.

80% CHK: lt-med gry, occly sl mo
tex, w cons, sb wxy, v calc; 20%
ang, sl sft-modly frm, rthy, sb wx



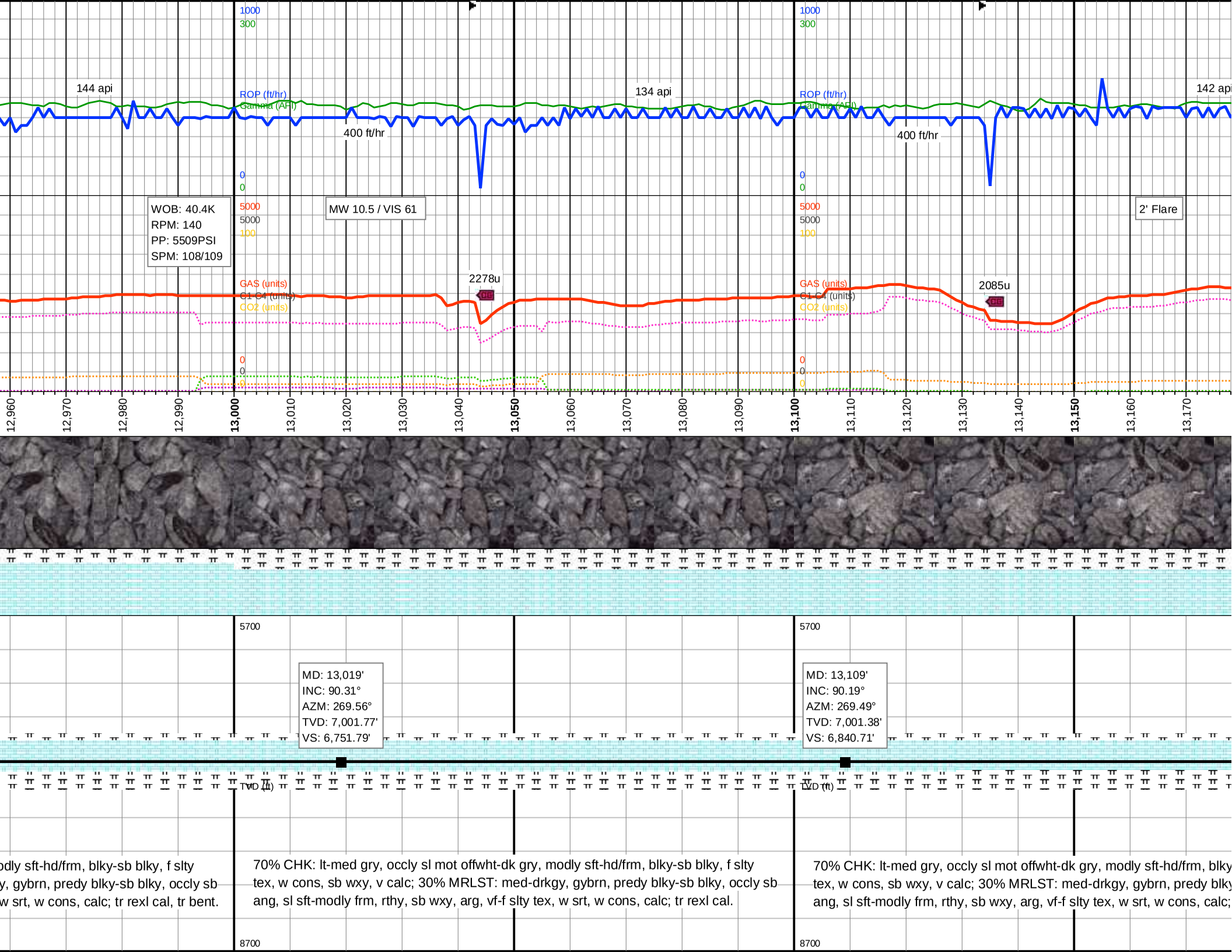


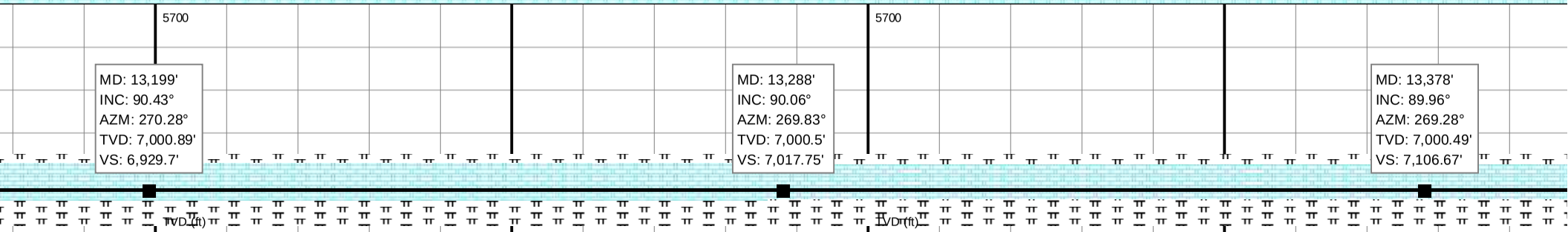


ot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb y, arg, vf-f slty tex, w srt, w cons, calc; tr rexl cal, tr bent.

80% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 20% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr rexl cal, tr bent.

80% CHK: lt-med gry, occly sl mot offwht-dk gry, mo tex, w cons, sb wxy, v calc; 20% MRLST: med-drkg ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex,

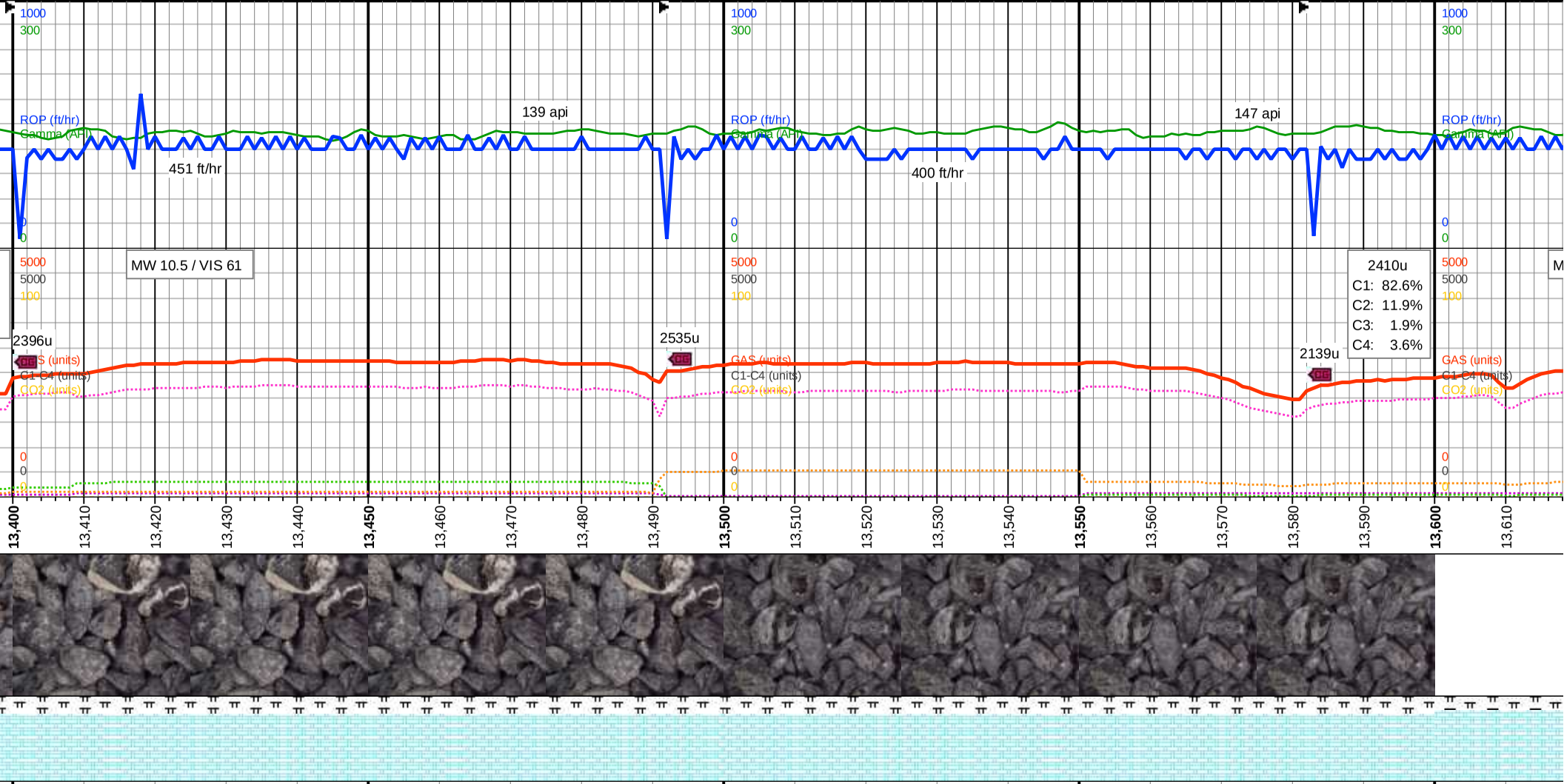

144 api
ROP (ft/hr)
Gamma (API)
400 ft/hr
134 api
ROP (ft/hr)
Gamma (API)
400 ft/hr
142 api
WOB: 40.4K
RPM: 140
PP: 5509PSI
SPM: 108/109
MW 10.5 / VIS 61
2' Flare
GAS (units)
C1-C4 (units)
CO2 (units)
2278u
2085u
12,960
12,970
12,980
12,990
13,000
13,010
13,020
13,030
13,040
13,050
13,060
13,070
13,080
13,090
13,100
13,110
13,120
13,130
13,140
13,150
13,160
13,170
MD: 13,019'
INC: 90.31°
AZM: 269.56°
TVD: 7,001.77'
VS: 6,751.79'
MD: 13,109'
INC: 90.19°
AZM: 269.49°
TVD: 7,001.38'
VS: 6,840.71'
TVD (ft)
odly sft-hd/frm, blky-sb blky, f slty
y, gybrn, predy blky-sb blky, occly sb
w srt, w cons, calc; tr rexl cal, tr bent.
70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr rexl cal.
70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc;

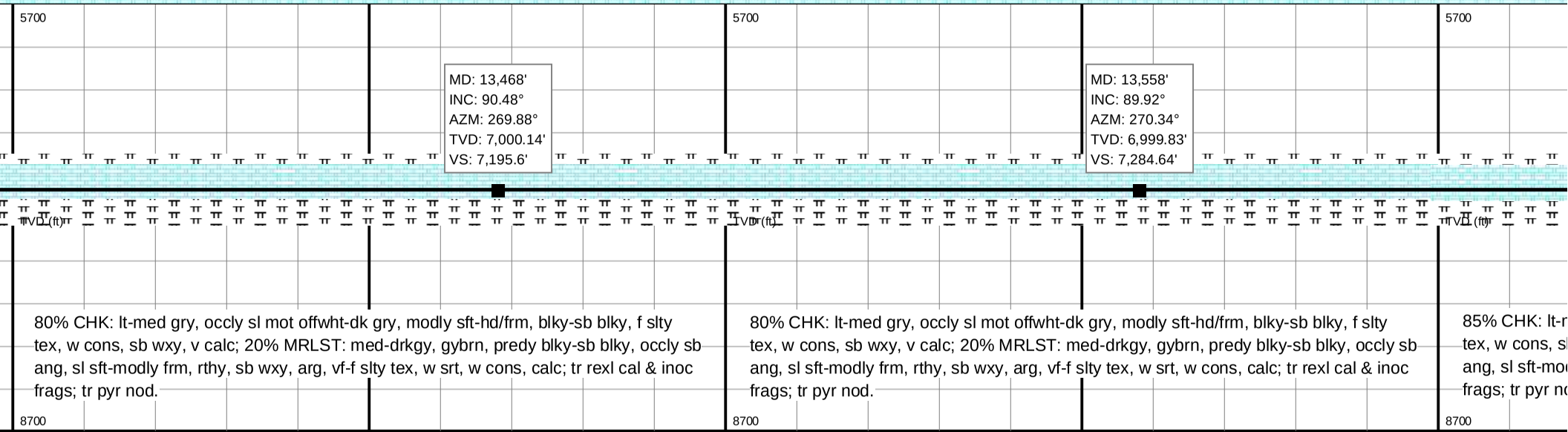


-sb blky, f slty
-sb blky, occly sb
tr rexl cal.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr rexl cal.

80% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 20% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr rexl cal & inoc frags; tr pyr nod.

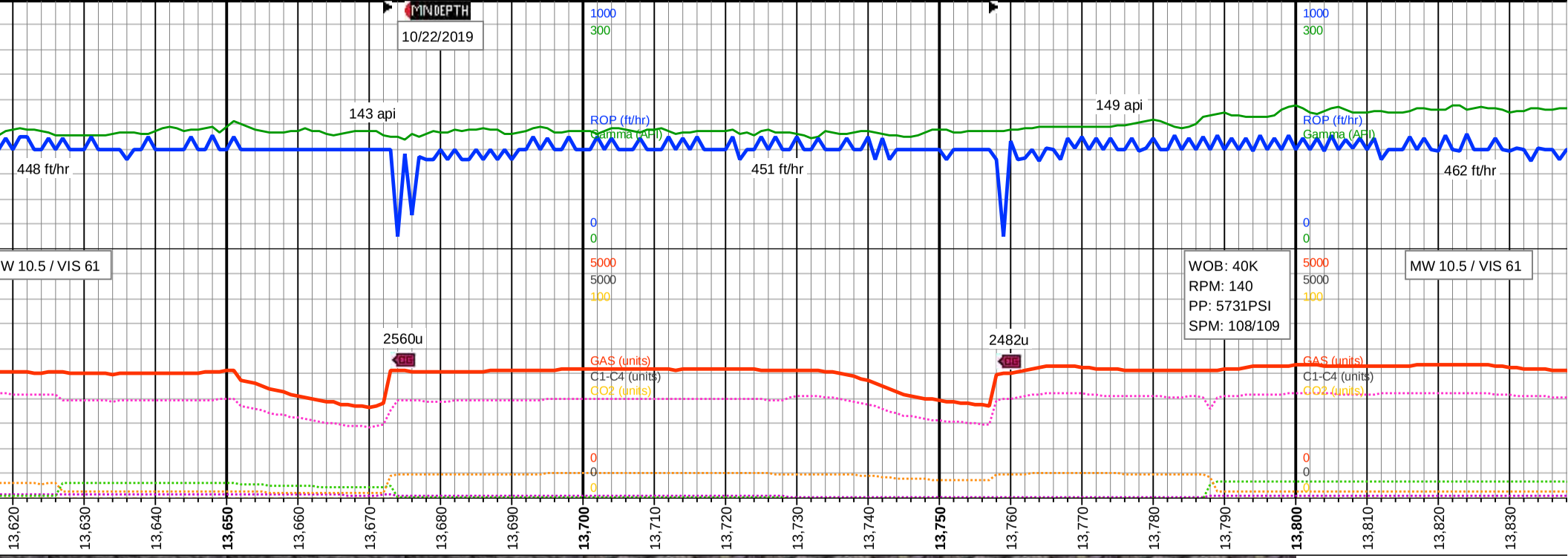


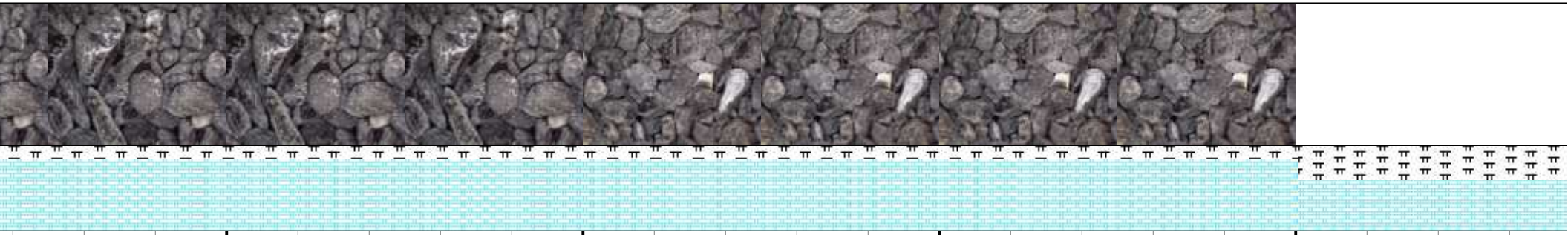


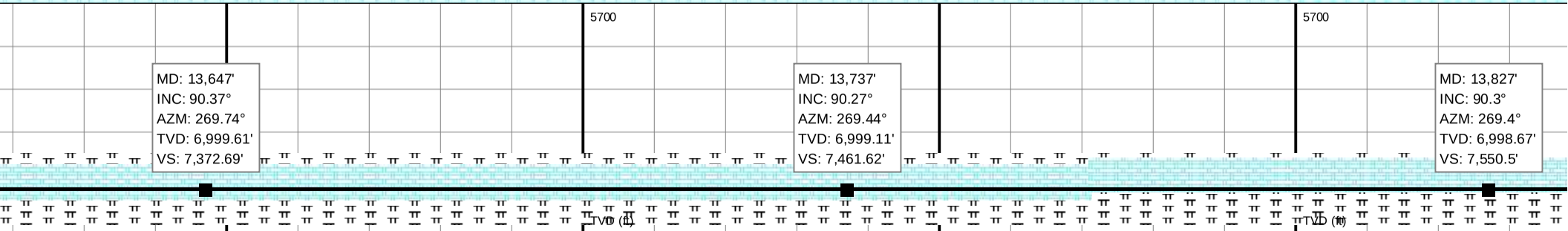
80% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 20% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr rexl cal & inoc frags; tr pyr nod.

80% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 20% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr rexl cal & inoc frags; tr pyr nod.

85% CHK: lt-r
tex, w cons, s
ang, sl sft-mo
frags; tr pyr n



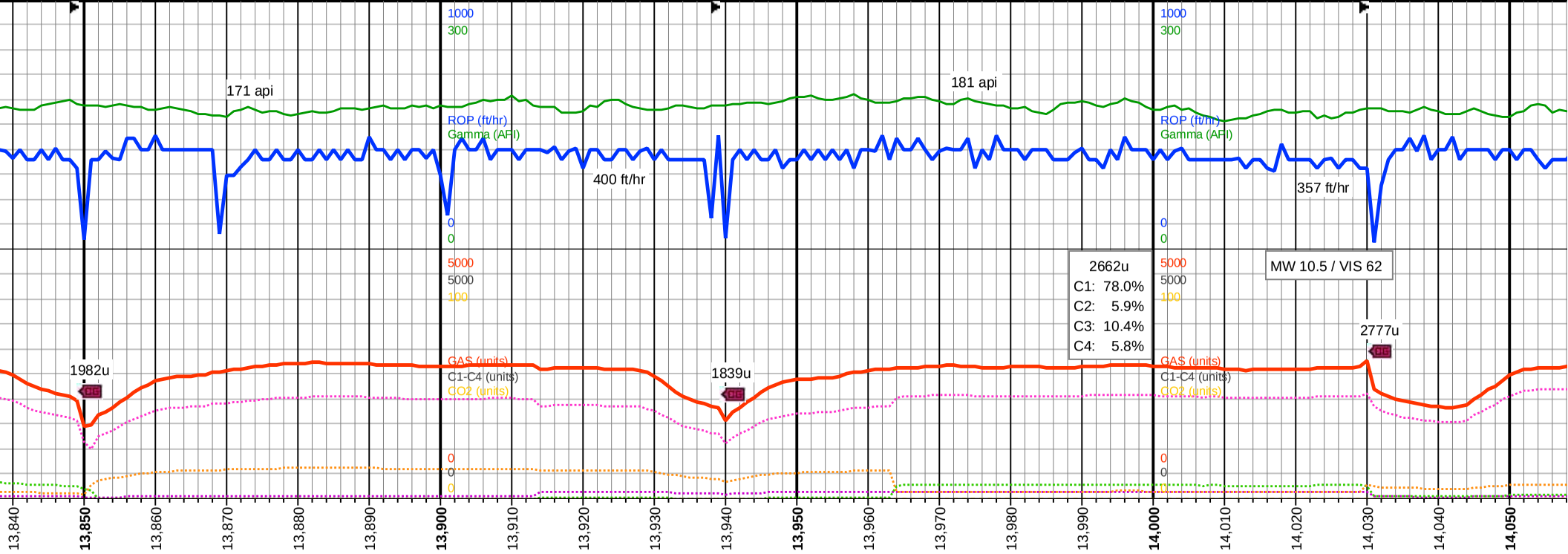


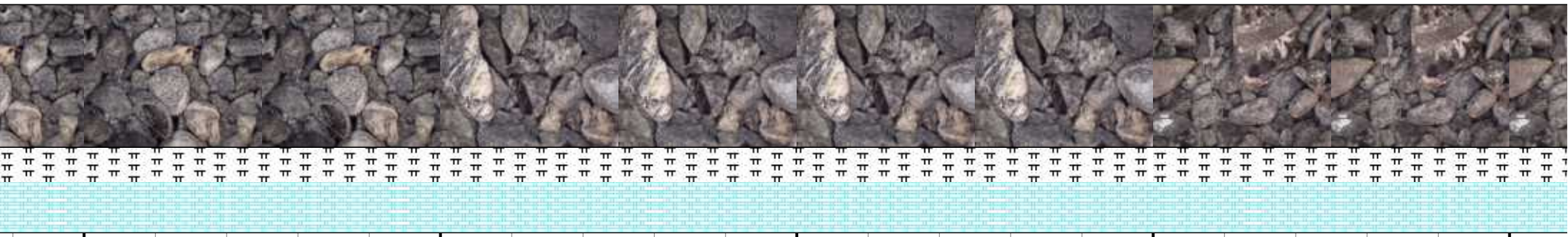


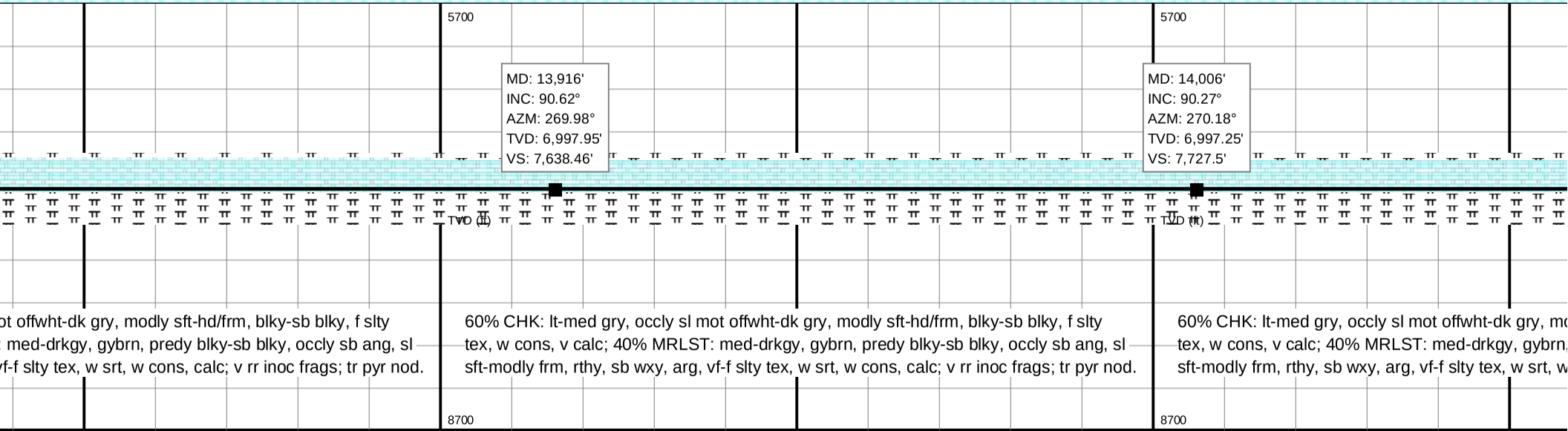
med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
b wxy, v calc; 15% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb
dly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr rexl cal & inoc
od.

85% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 15% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr inoc frags; tr pyr nod.

60% CHK: lt-med gry, occly sl m
tex, w cons, v calc; 40% MRLST
sft-modly frm, rthy, sb wxy, arg, v



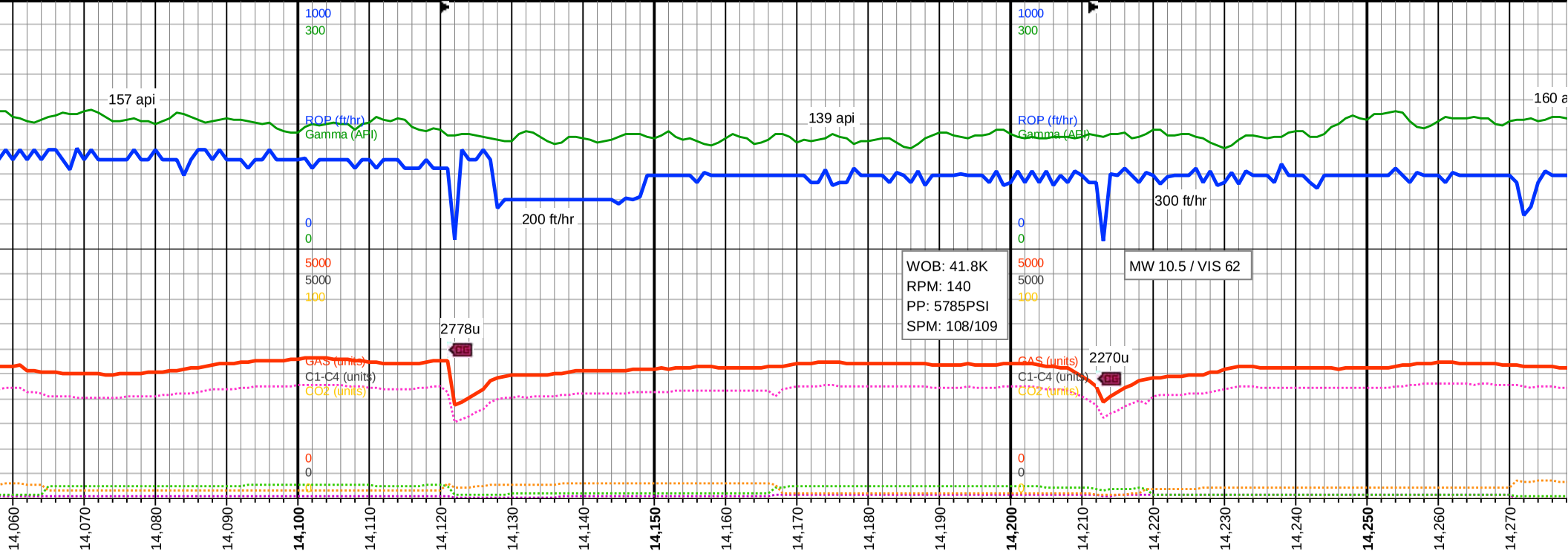


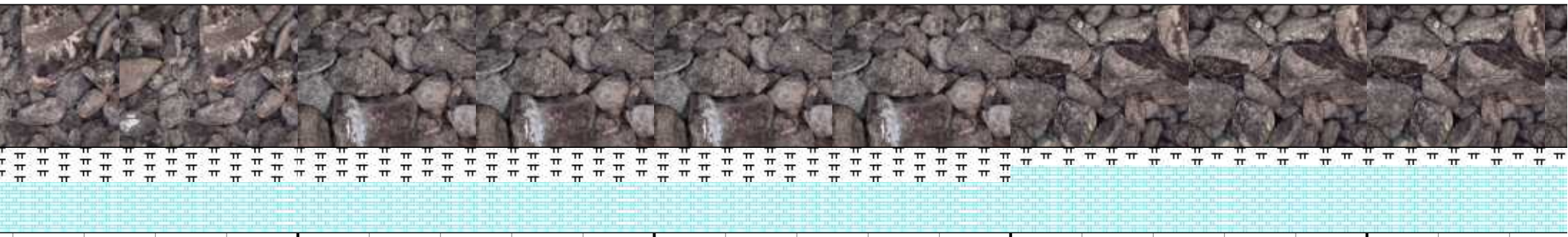


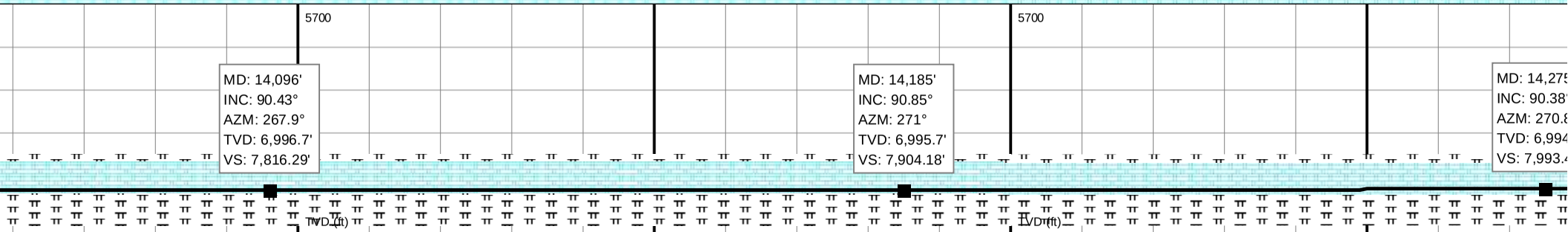
ot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl
vf-f slty tex, w srt, w cons, calc; v rr inoc frags; tr pyr nod.

60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; v rr inoc frags; tr pyr nod.

60% CHK: lt-med gry, occly sl mot offwht-dk gry, mo
tex, w cons, v calc; 40% MRLST: med-drkgy, gybrn,
sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w



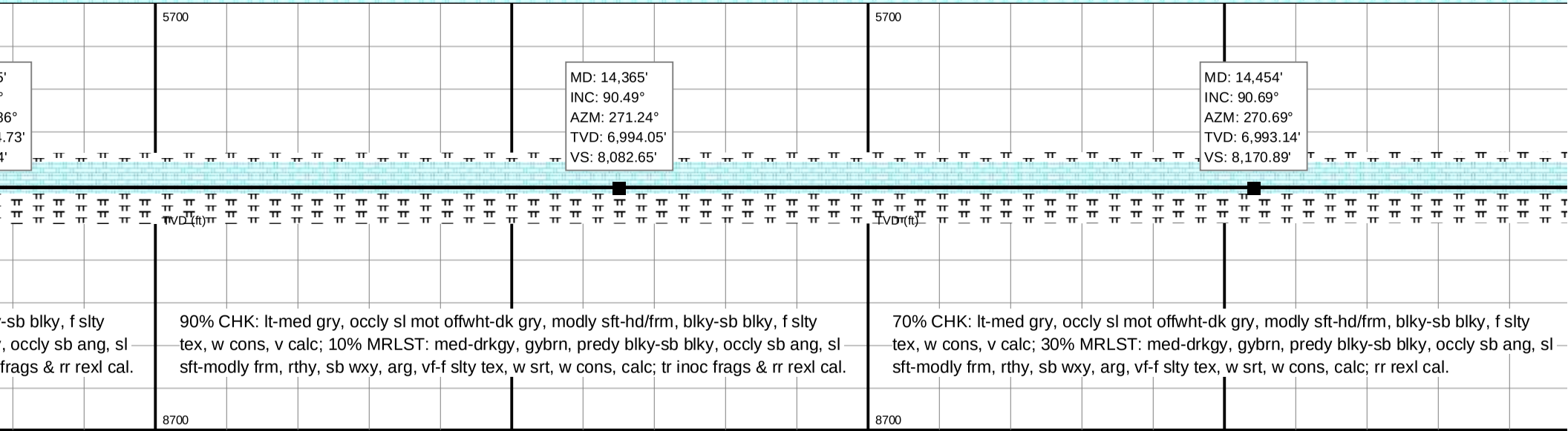




odly sft-hd/frm, blky-sb blky, f slty
, predy blky-sb blky, occly sb ang, sl
cons, calc; v rr inoc frags; tr pyr nod.

60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; v rr inoc frags; tr pyr nod.

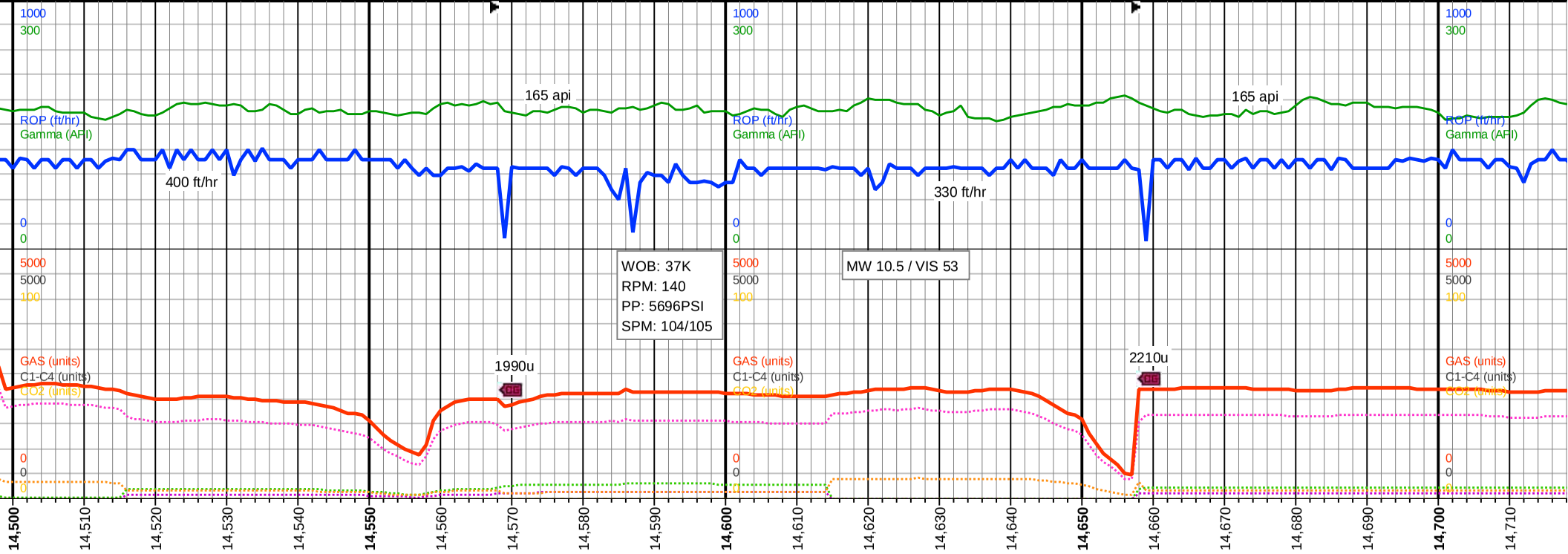
80% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky tex, w cons, v calc; 20% MRLST: med-drkgy, gybrn, predy blky-sb blky sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr inoc

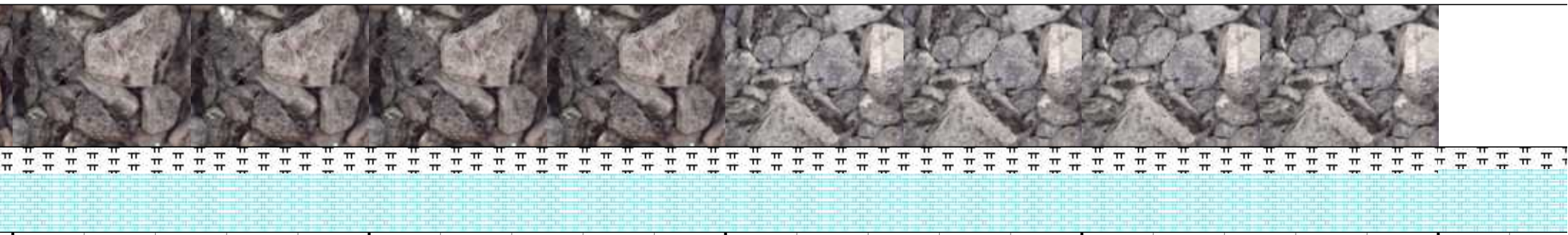


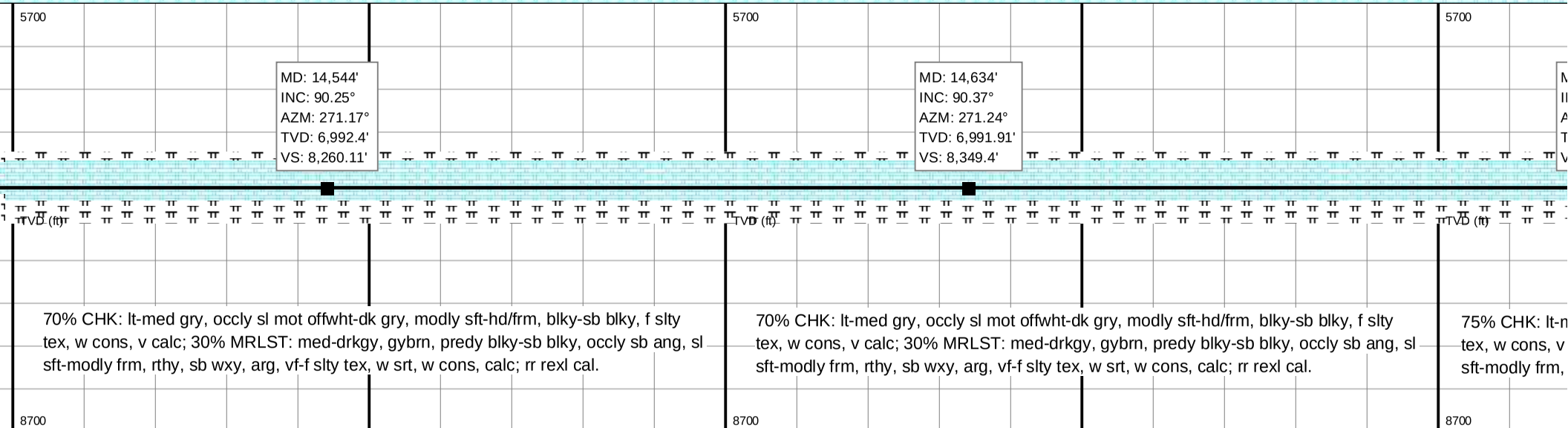
-sb blky, f slty
, occly sb ang, sl
frags & rr rexl cal.

90% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 10% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; tr inoc frags & rr rexl cal.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.



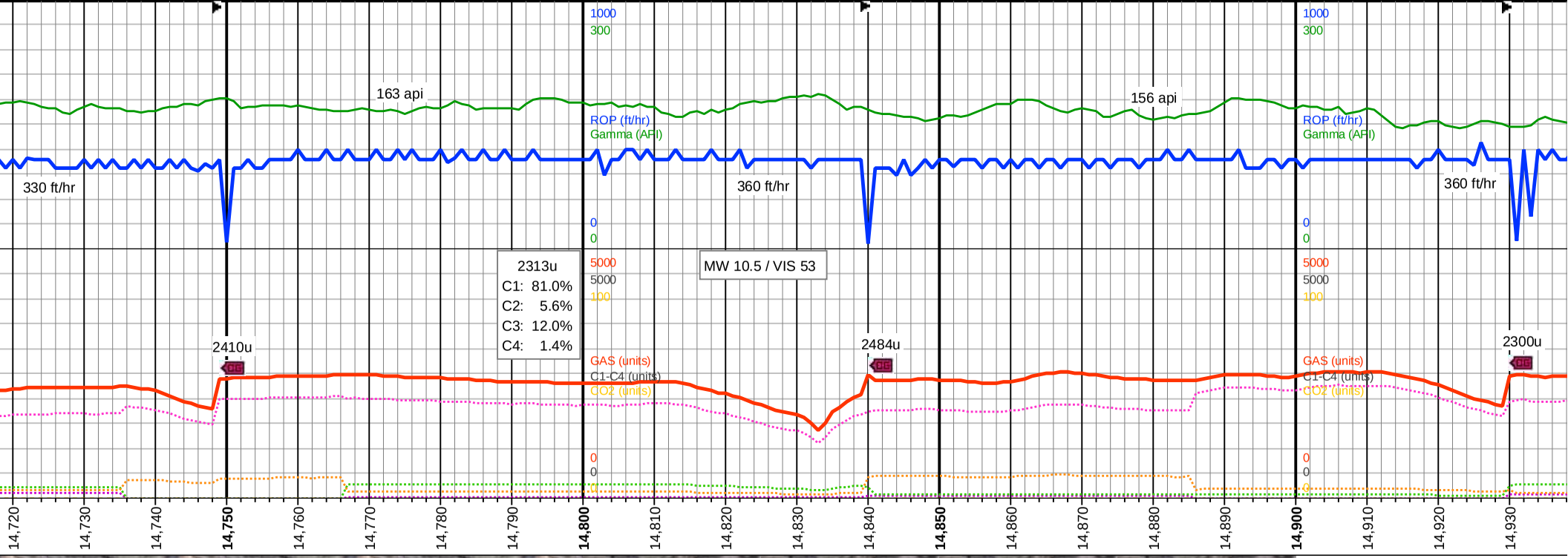


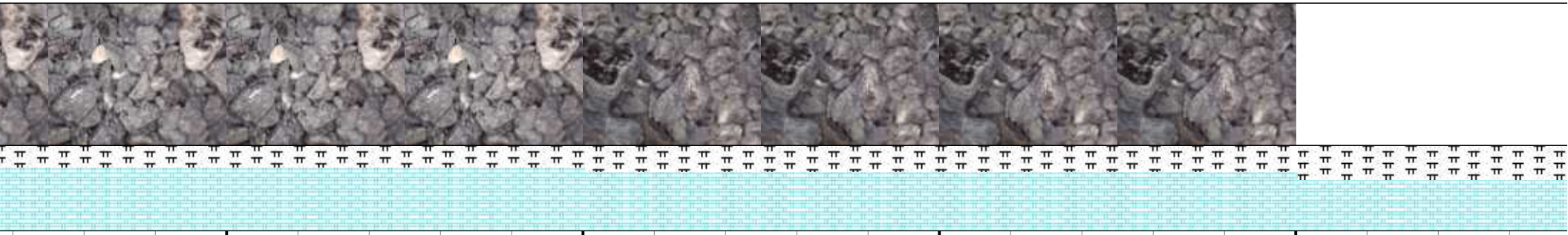


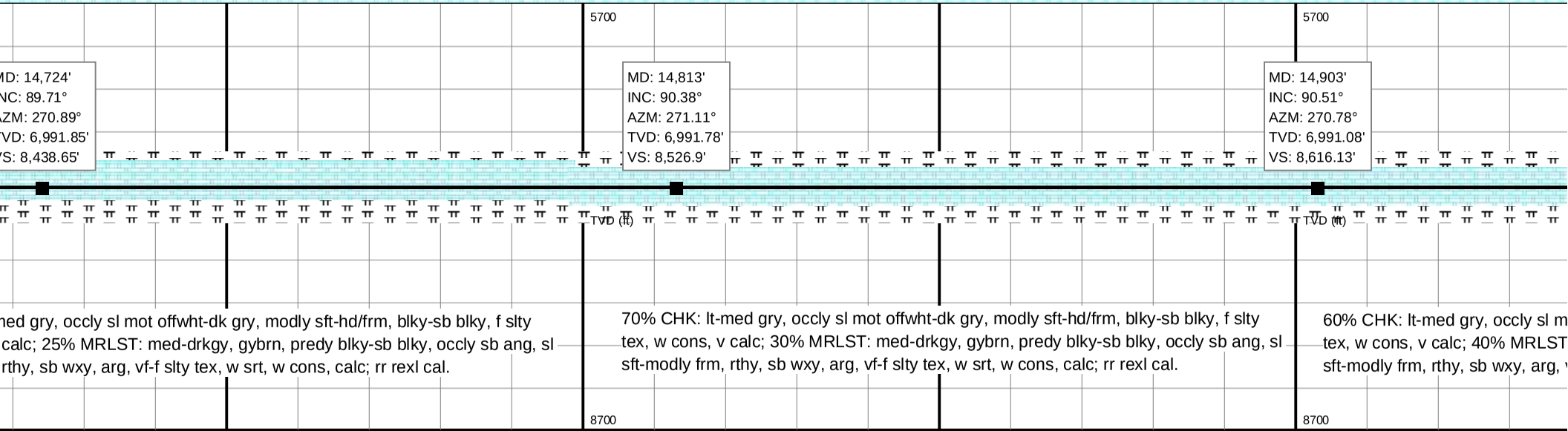
70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.

75% CHK: lt-m
tex, w cons, v
sft-modly frm,



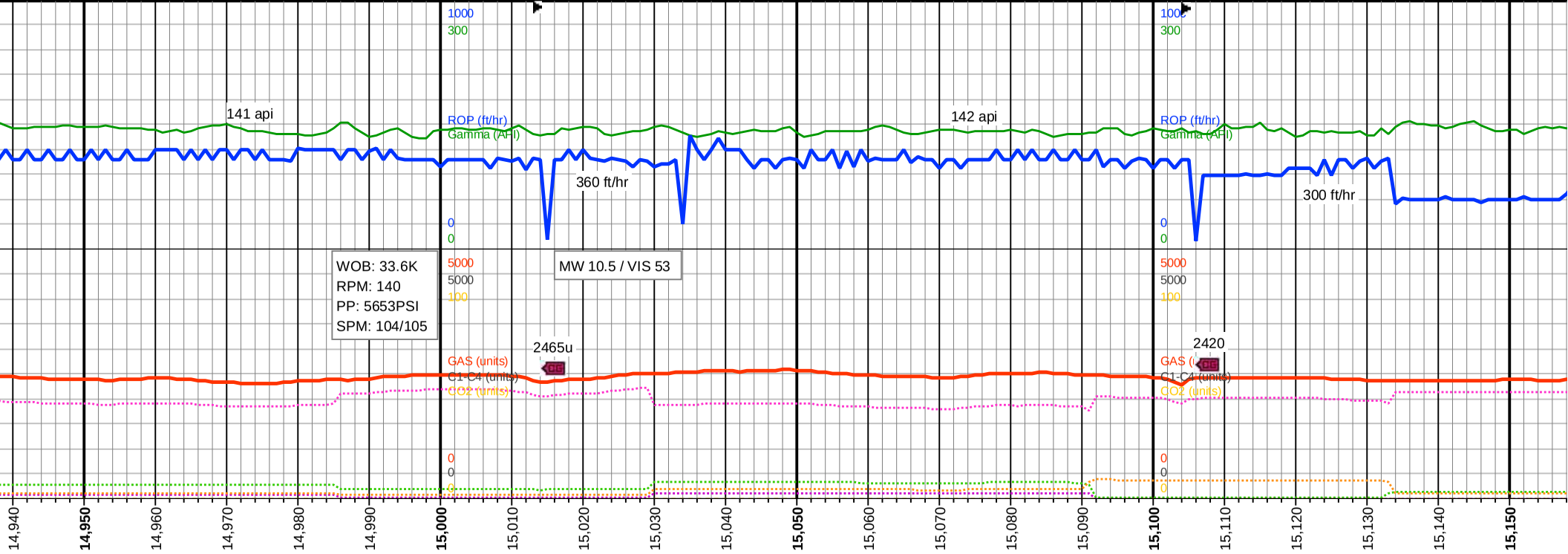


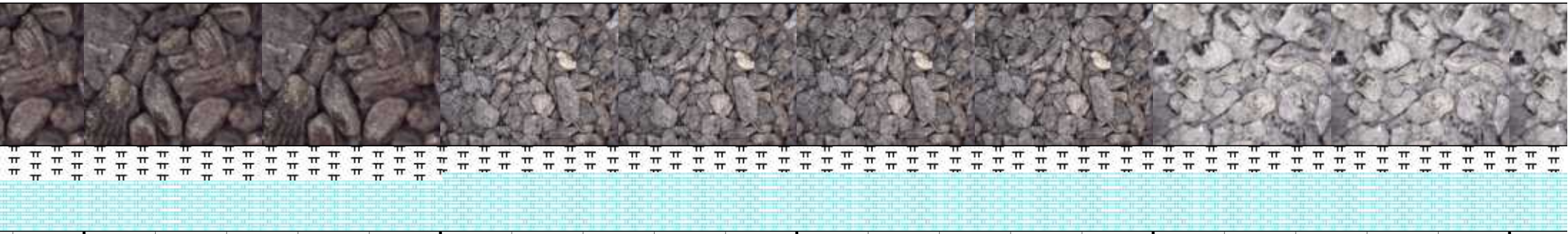


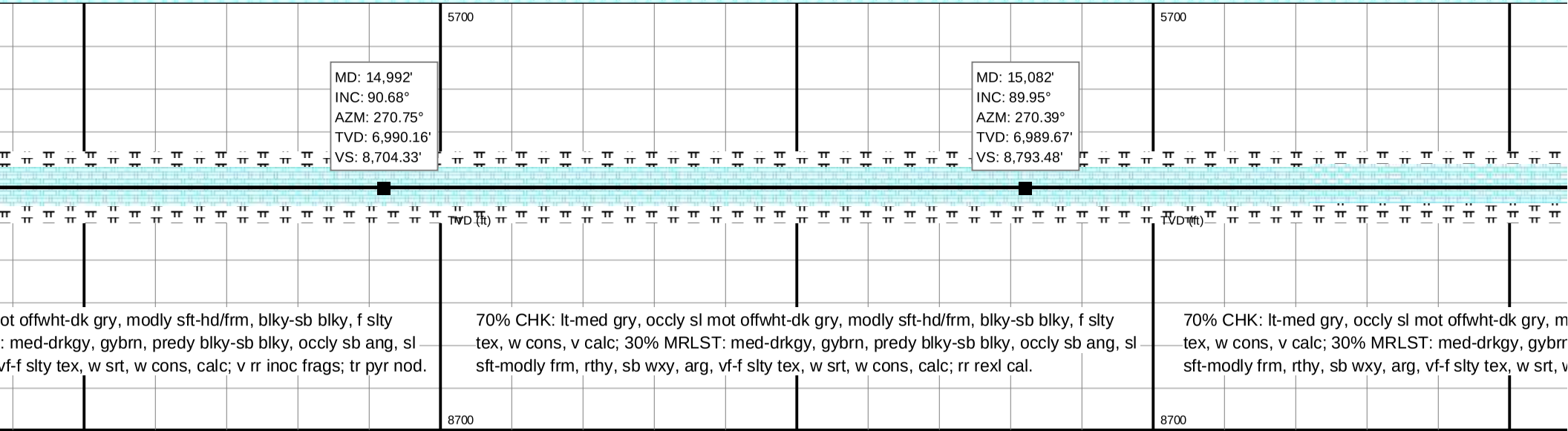
ned gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
calc; 25% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl
rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.

60% CHK: lt-med gry, occly sl m
tex, w cons, v calc; 40% MRLST
sft-modly frm, rthy, sb wxy, arg,



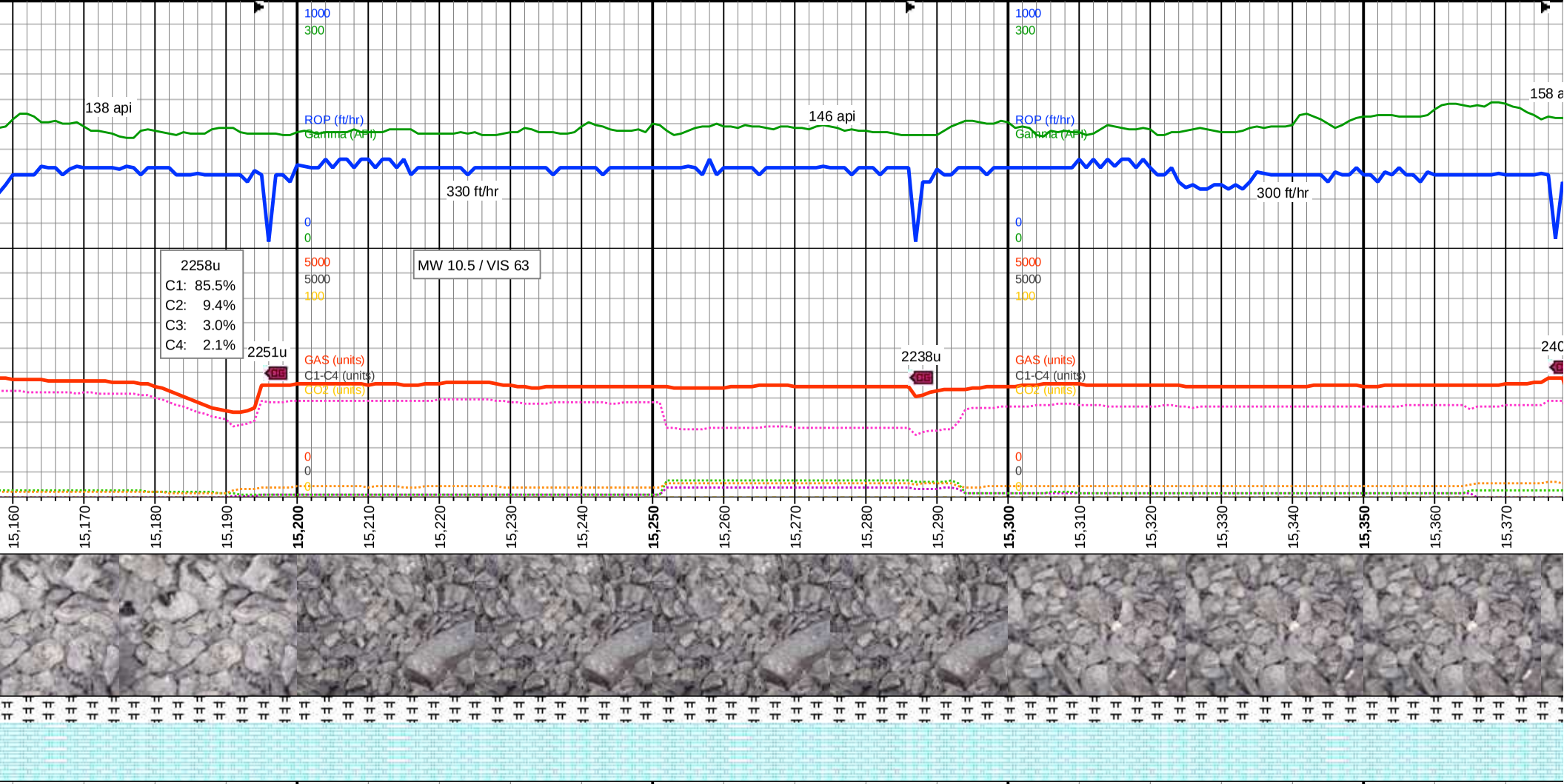


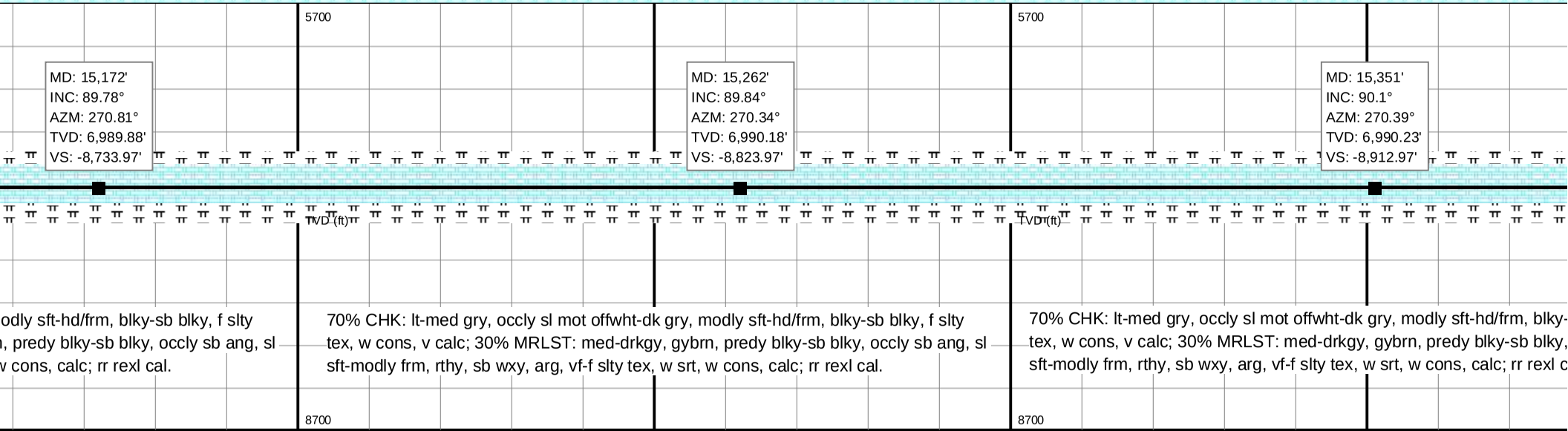


ot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl
vf-f slty tex, w srt, w cons, calc; v rr inoc frags; tr pyr nod.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, m
tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn
sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w

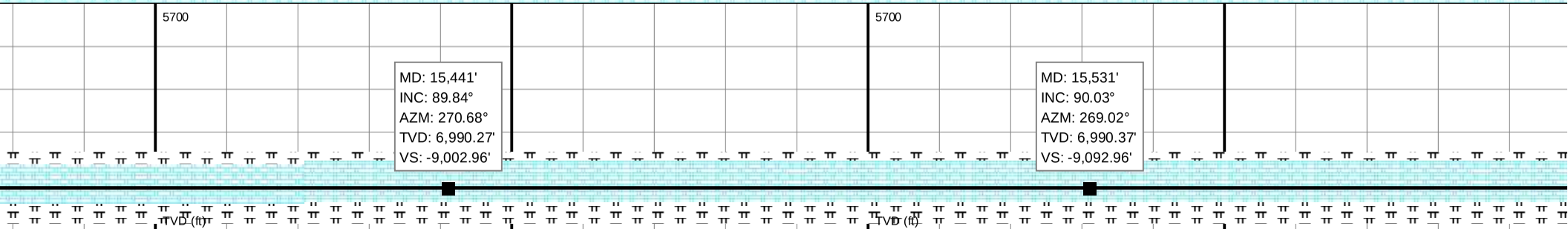




odly sft-hd/frm, blky-sb blky, f slty
, predy blky-sb blky, occly sb ang, sl
v cons, calc; rr rexl cal.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.

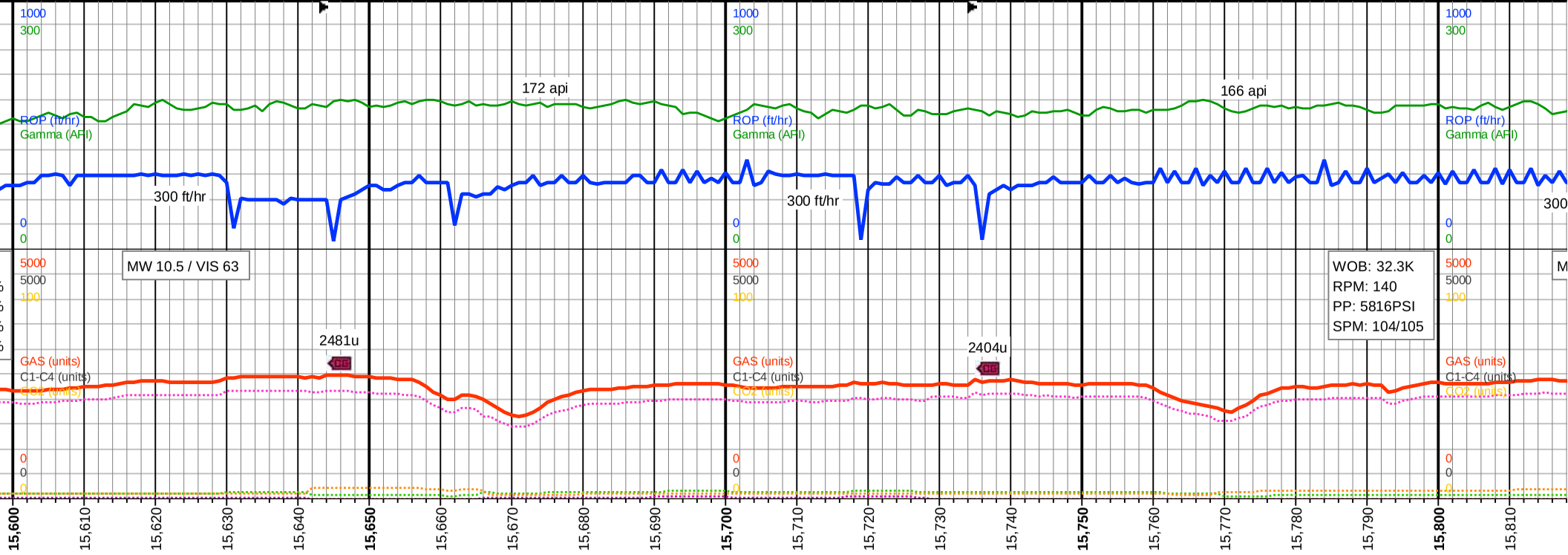
70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-
tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky,
sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl c

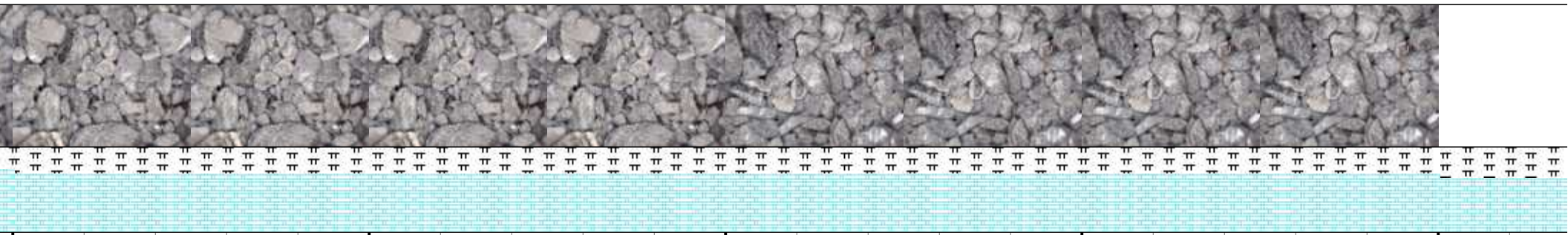


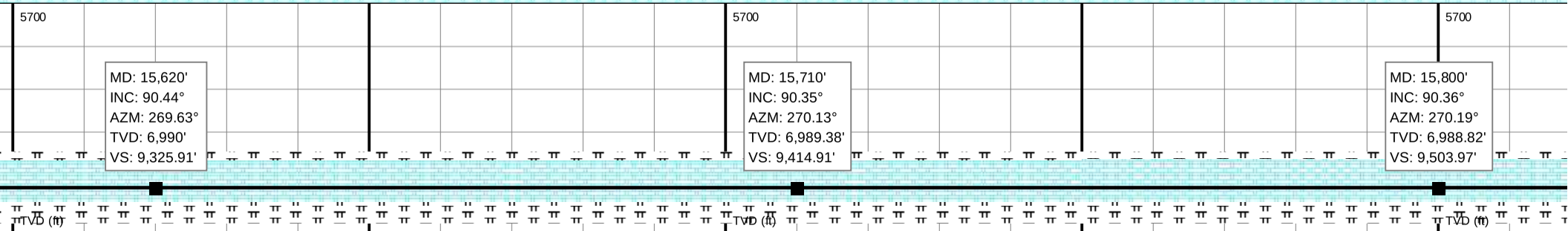
sb blky, f slty
occly sb ang, sl
al.

75% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 25% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.

75% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 25% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.



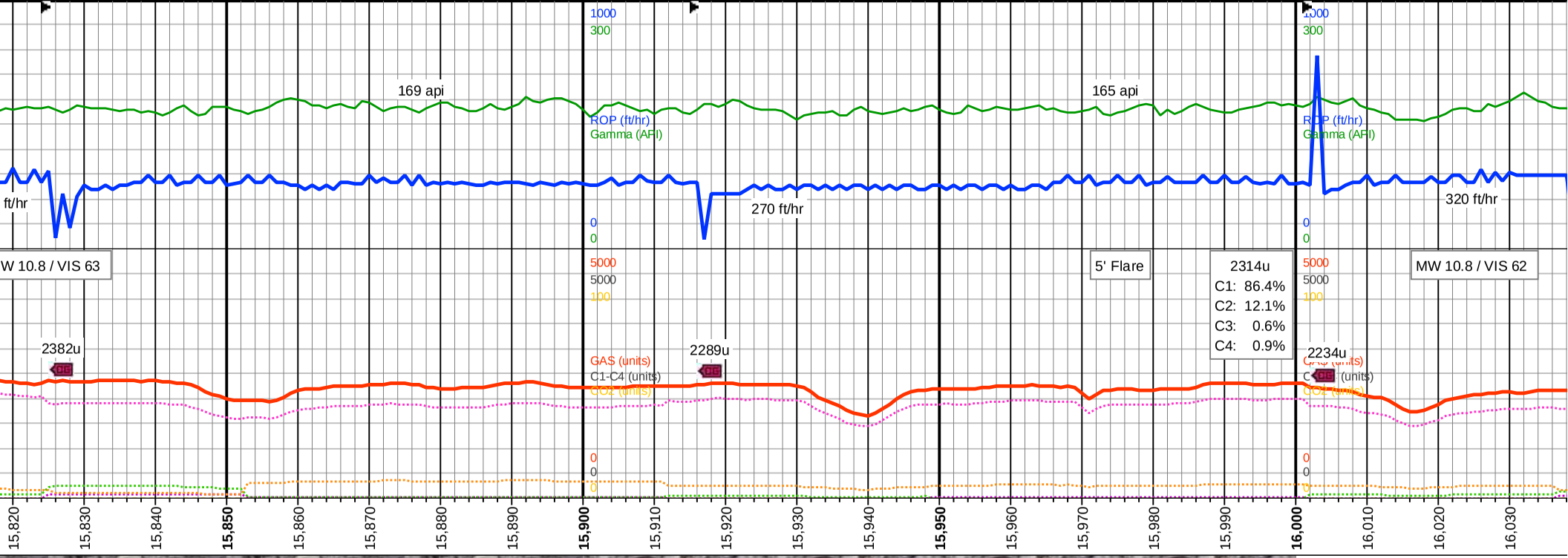


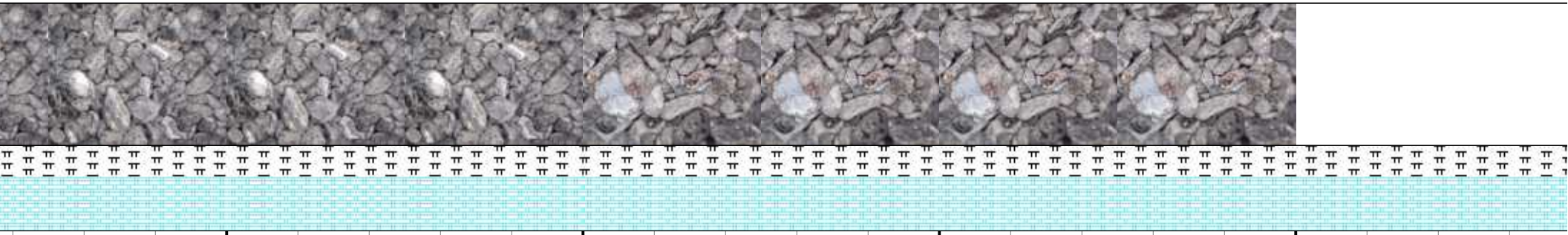


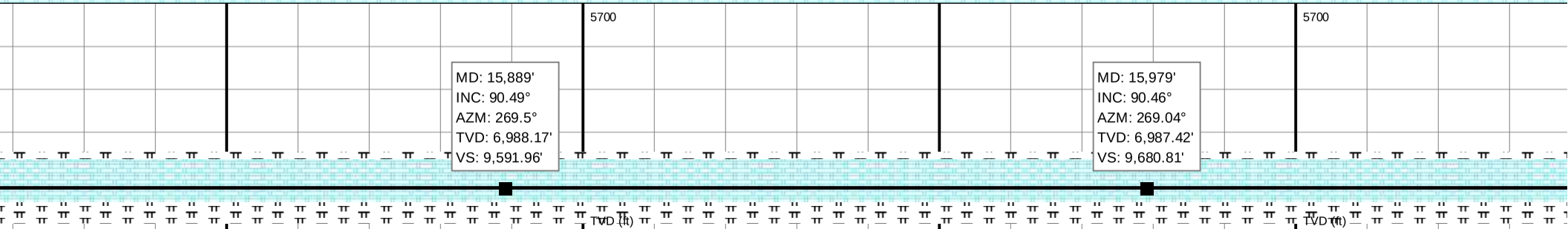
70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.

65% CHK: lt
tex, w cons,
ang, sl sft-m
bent frags.



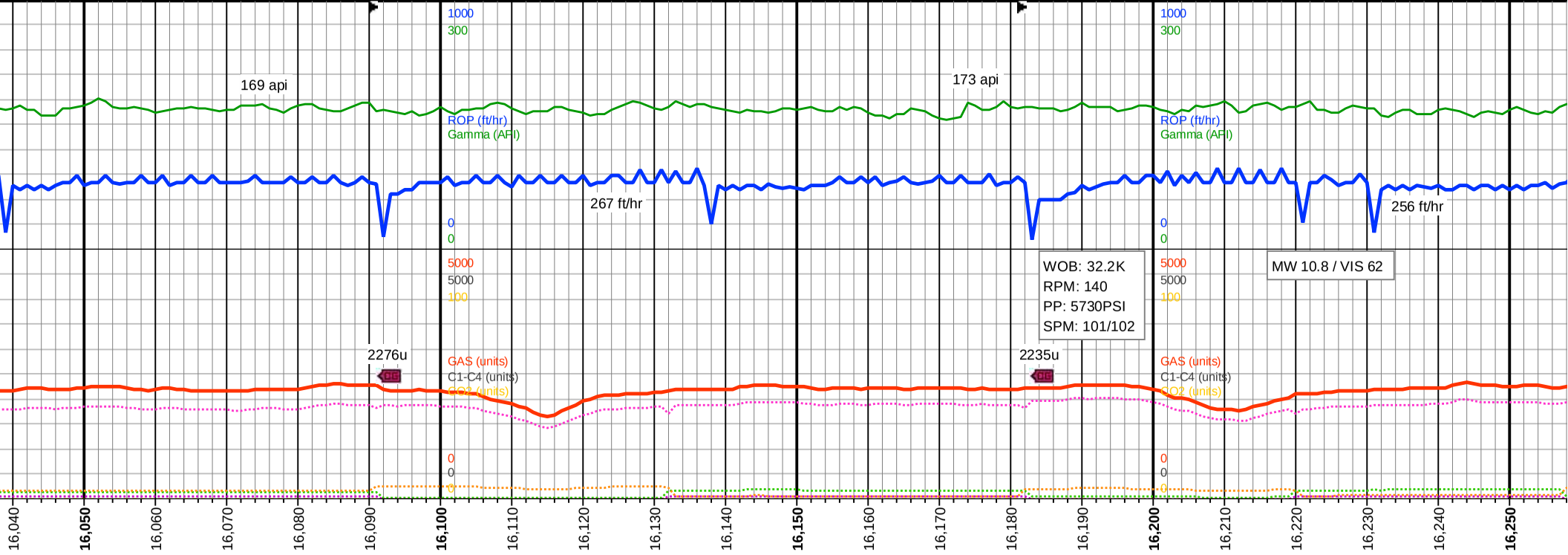


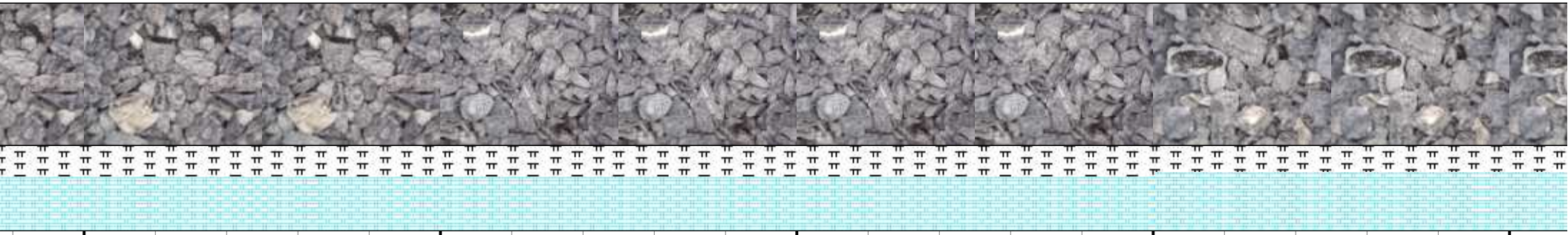


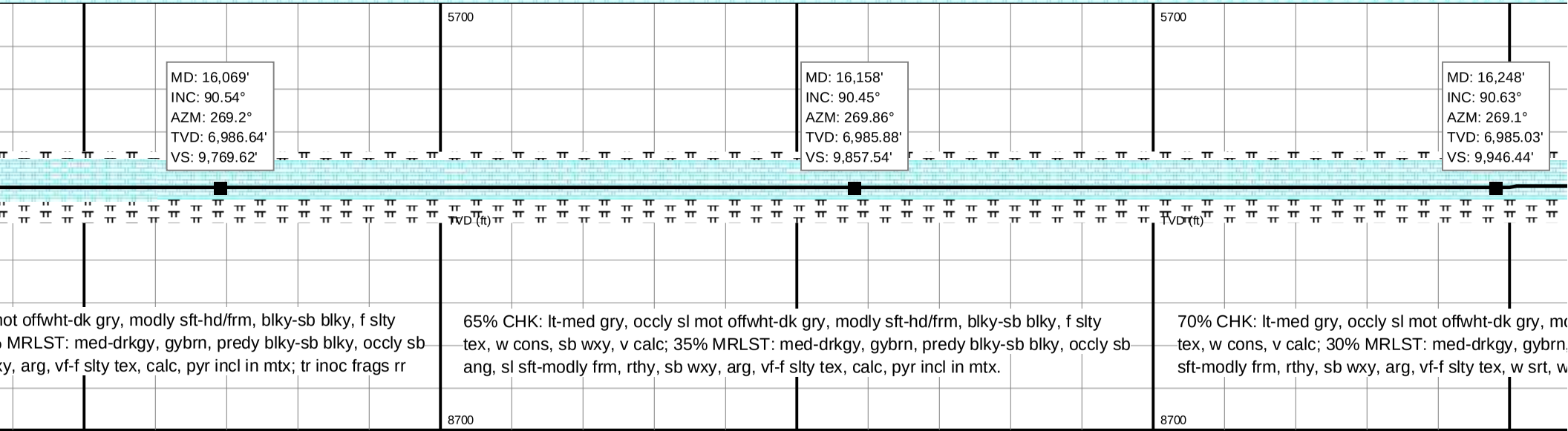
-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb odly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr

65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr bent frags.

65% CHK: lt-med gry, occly sl m tex, w cons, sb wxy, v calc; 35% ang, sl sft-modly frm, rthy, sb wx bent frags.



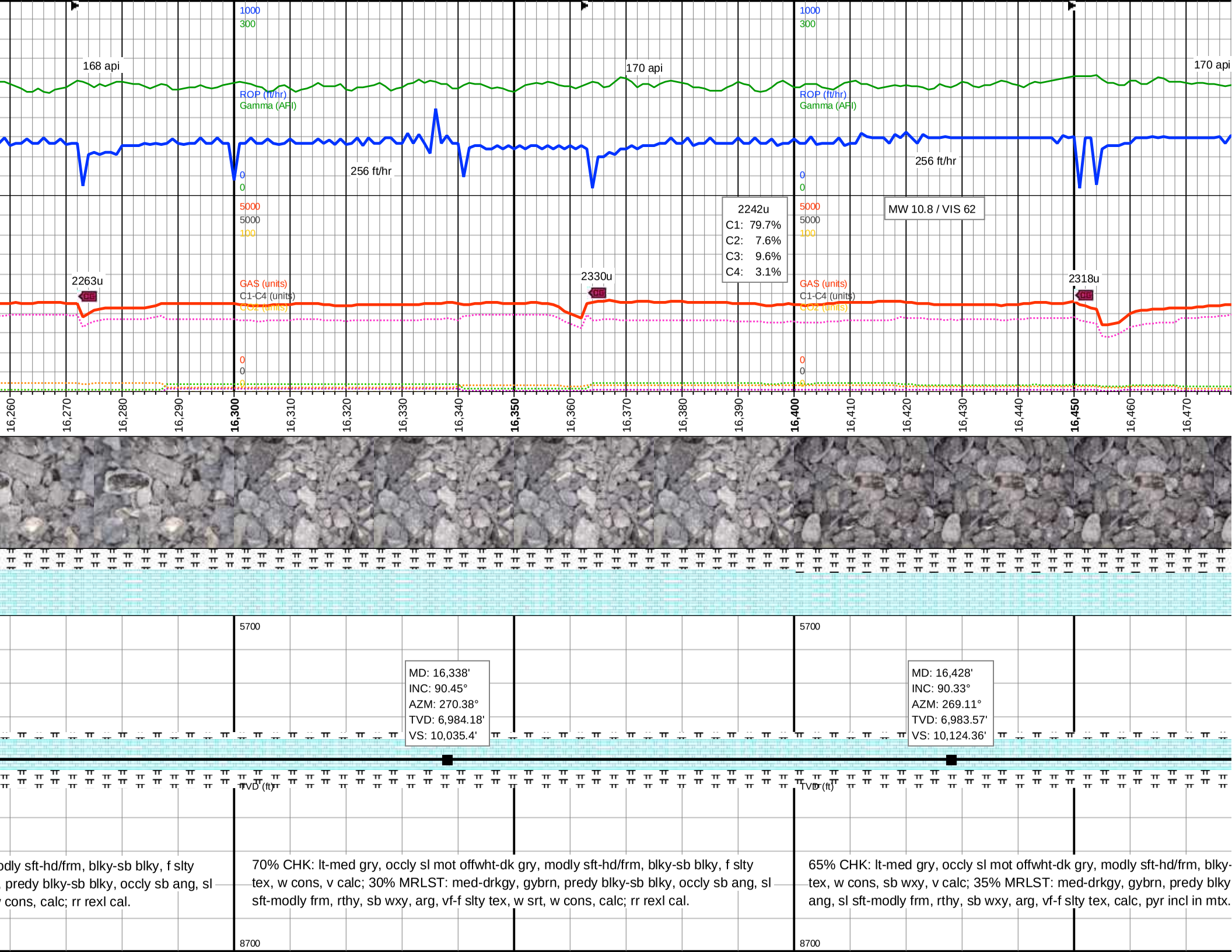


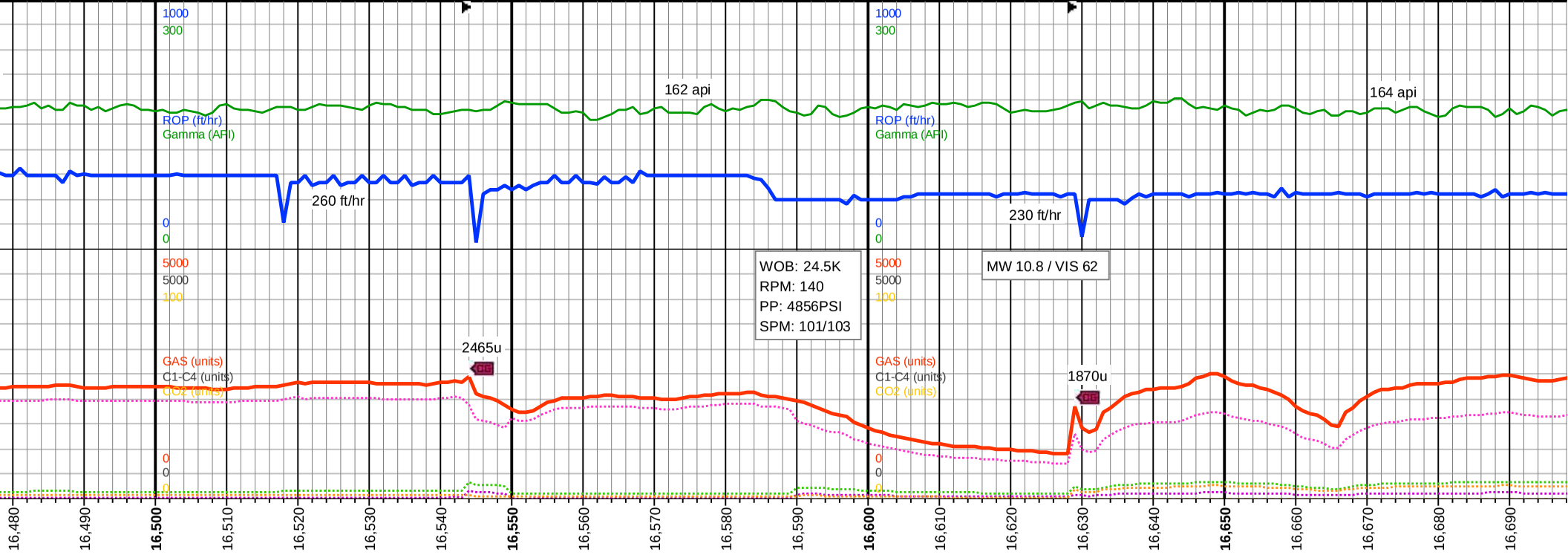


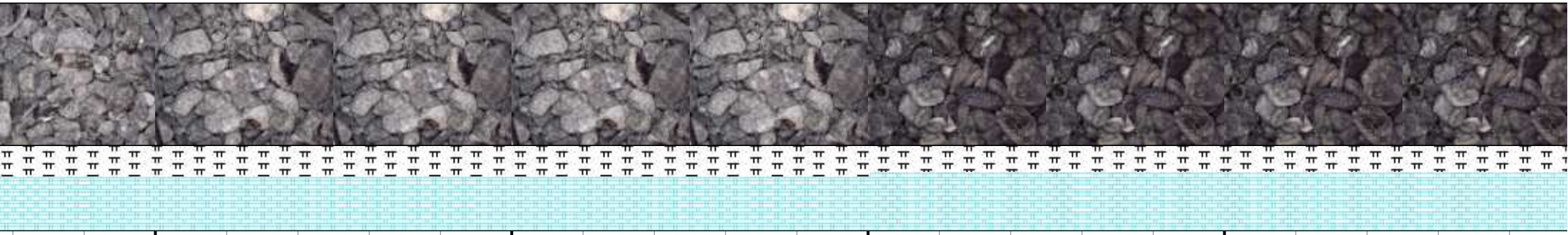
ot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb
y, arg, vf-f slty tex, calc, pyr incl in mtx; tr inoc frags rr

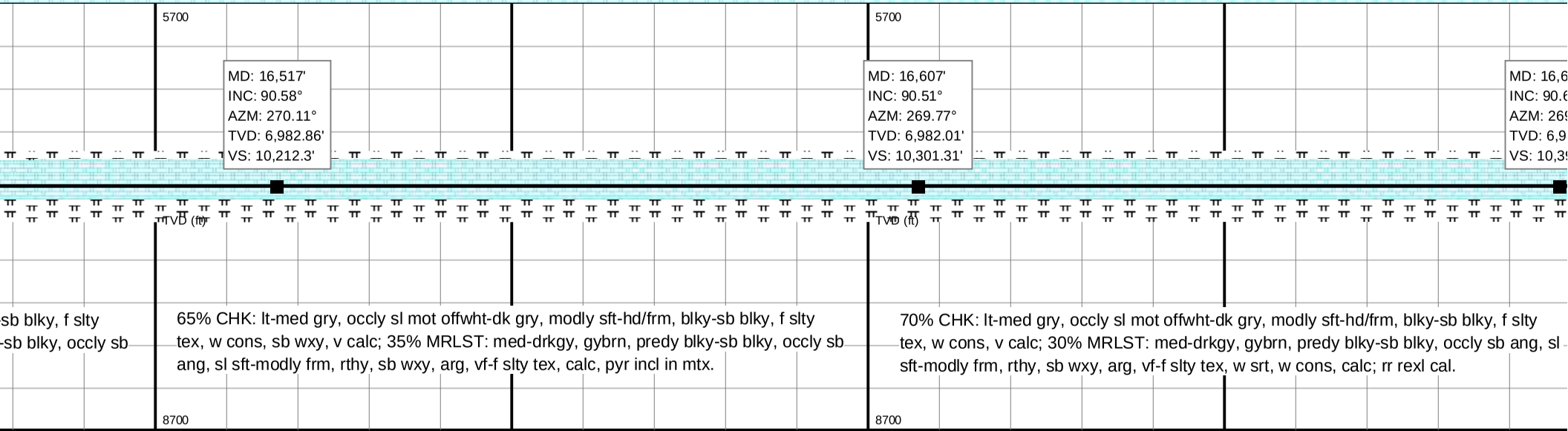
65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, mo
tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn,
sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w


168 api
170 api
170 api
1000
300
ROP (ft/hr)
Gamma (API)
256 ft/hr
256 ft/hr
0
0
5000
5000
100
2242u
C1: 79.7%
C2: 7.6%
C3: 9.6%
C4: 3.1%
MW 10.8 / VIS 62
2263u
2330u
2318u
GAS (units)
C1-C4 (units)
CO2 (units)
16,260
16,270
16,280
16,290
16,300
16,310
16,320
16,330
16,340
16,350
16,360
16,370
16,380
16,390
16,400
16,410
16,420
16,430
16,440
16,450
16,460
16,470
5700
MD: 16,338'
INC: 90.45°
AZM: 270.38°
TVD: 6,984.18'
VS: 10,035.4'
MD: 16,428'
INC: 90.33°
AZM: 269.11°
TVD: 6,983.57'
VS: 10,124.36'
TVD (ft)
8700
odly sft-hd/frm, blky-sb blky, f slty
, predy blky-sb blky, occly sb ang, sl
cons, calc; rr rexl cal.
70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.
65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-
tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky
ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx.



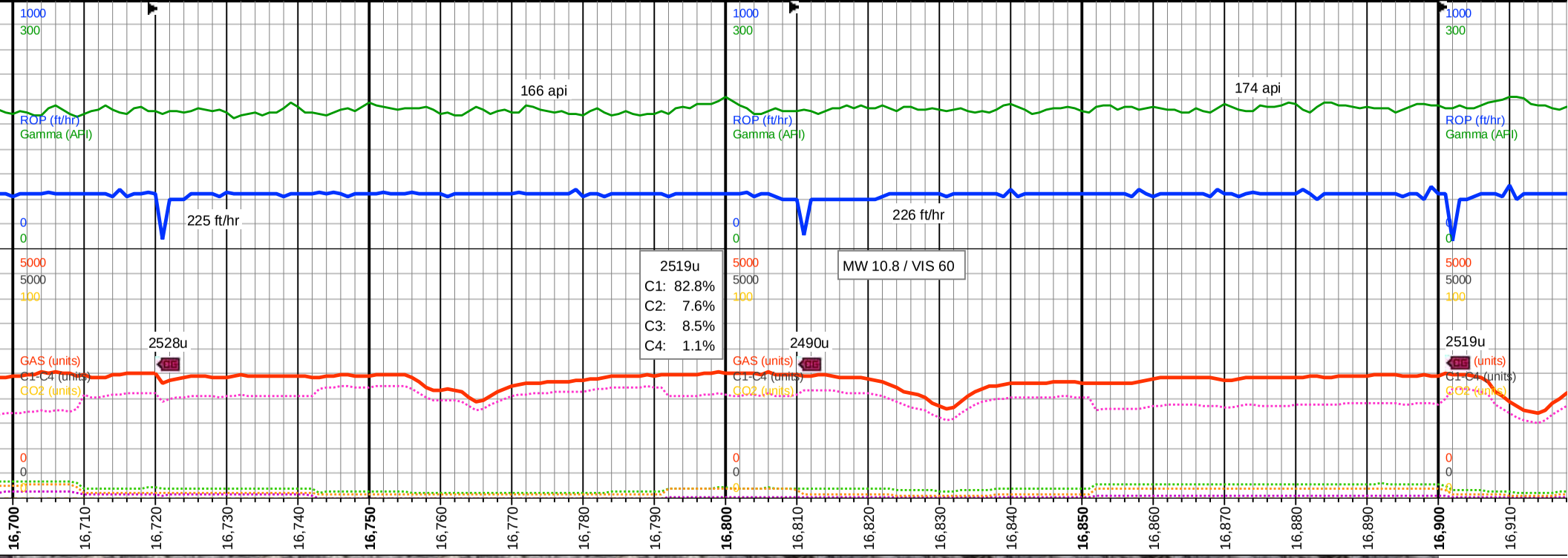


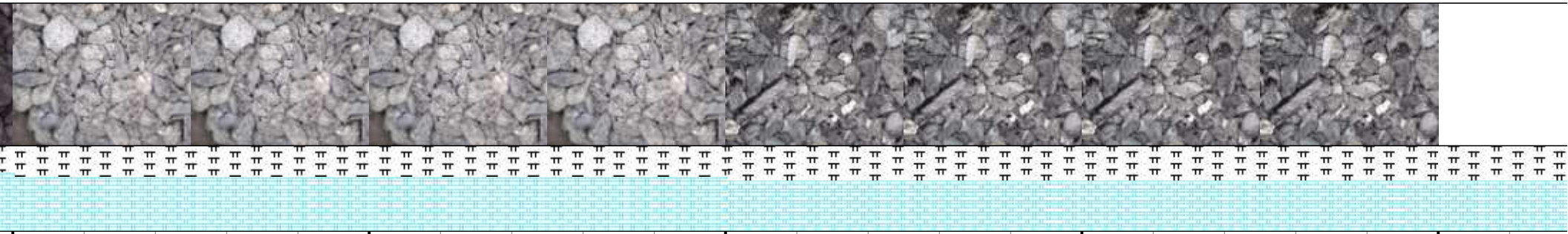


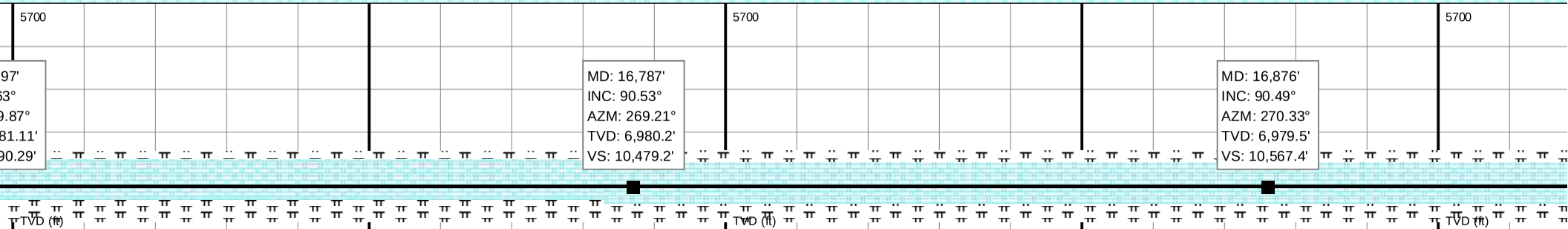
-sb blky, f slty
-sb blky, occly sb

65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, w cons, calc; rr rexl cal.



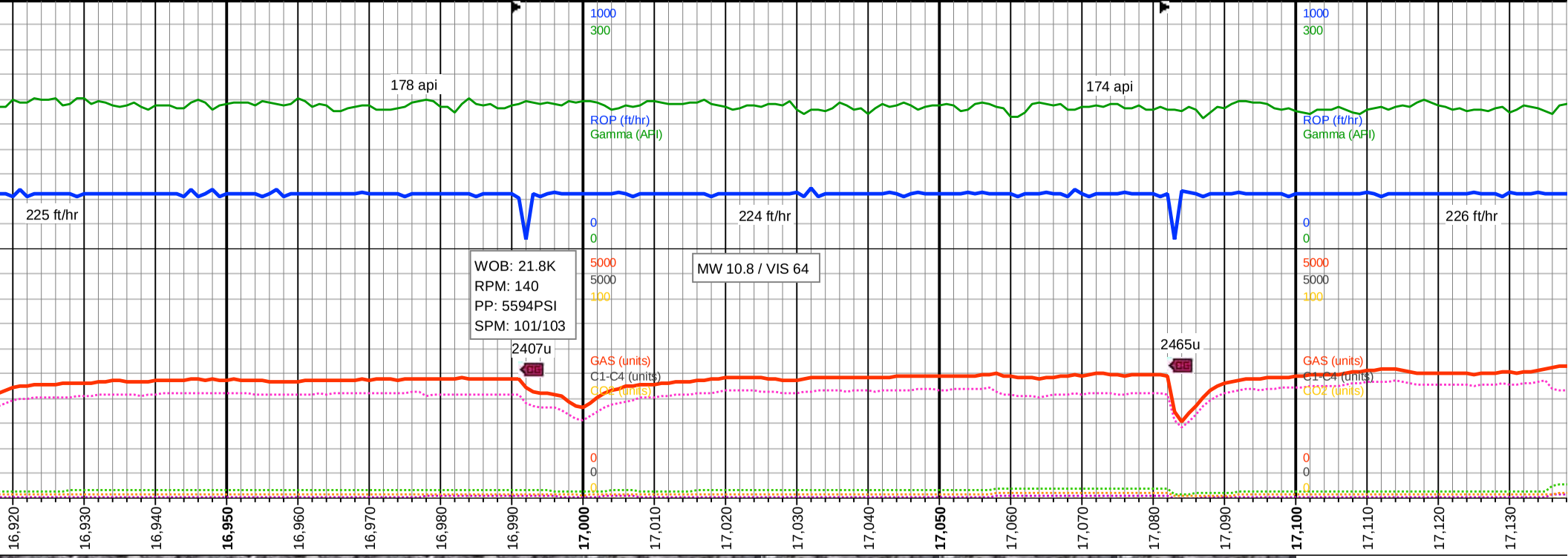


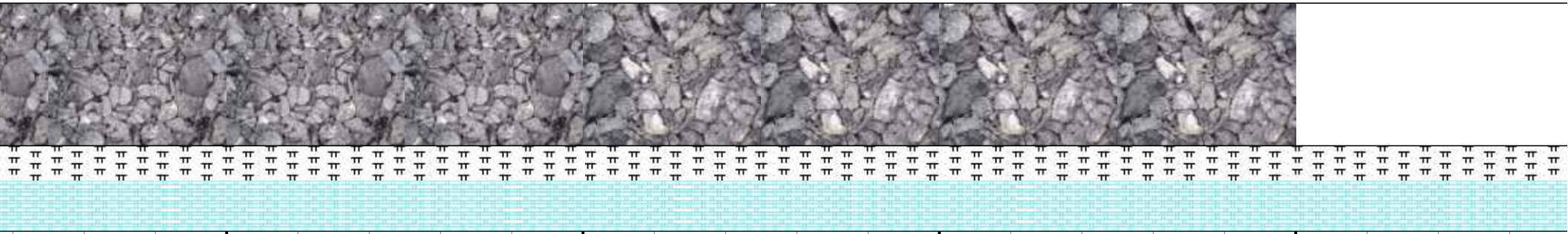


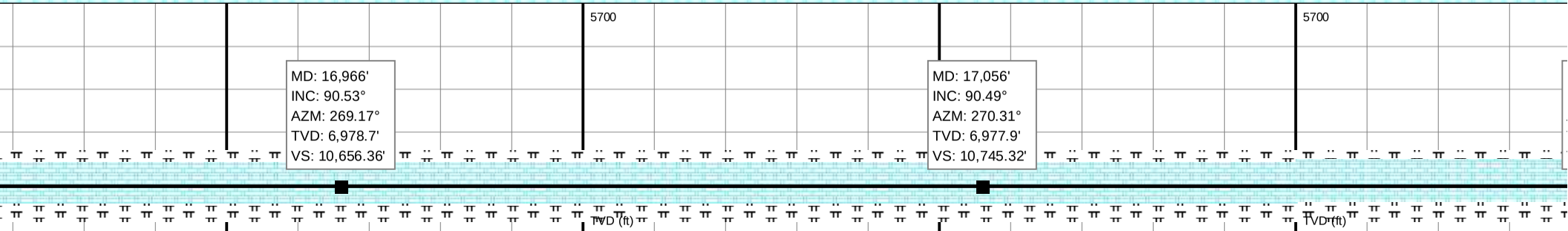
65% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 35% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx.

60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx.

60% CHK: lt-m
tex, w cons, s
ang, sl sft-mo



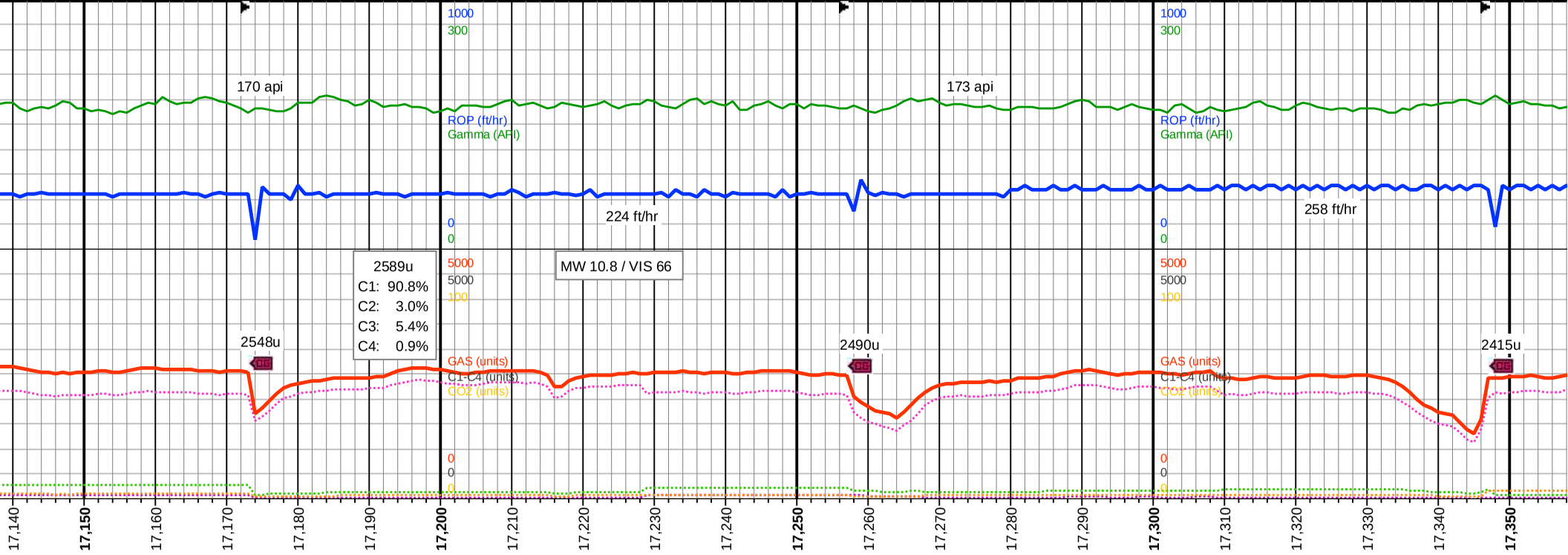


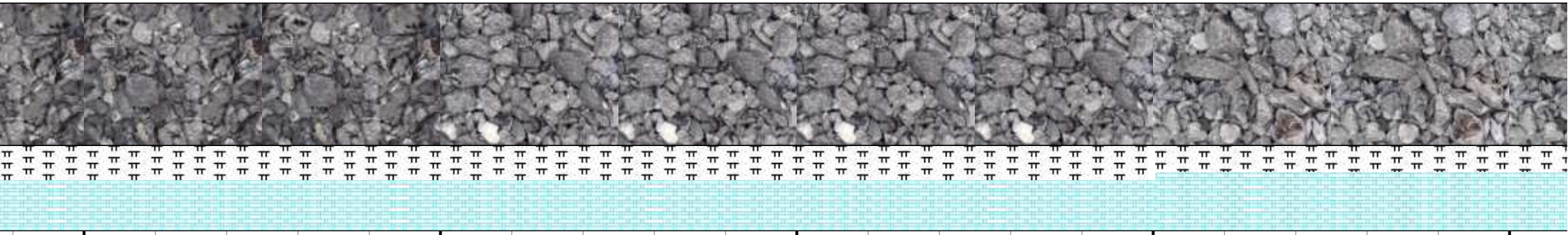


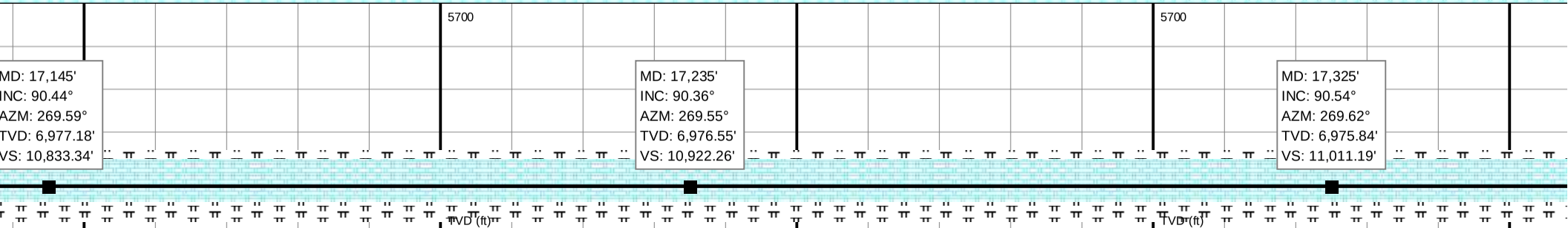
med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
b wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb
dly frm, rthy, sb wxy, arg, vf-f slty tex, calc, pyr incl in mtx.

60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc; tr inoc frags.

60% CHK: lt-med gry, occly sl mo
tex, w cons, sb wxy, v calc; 40%
ang, sl sft-modly frm, rthy, sb wx



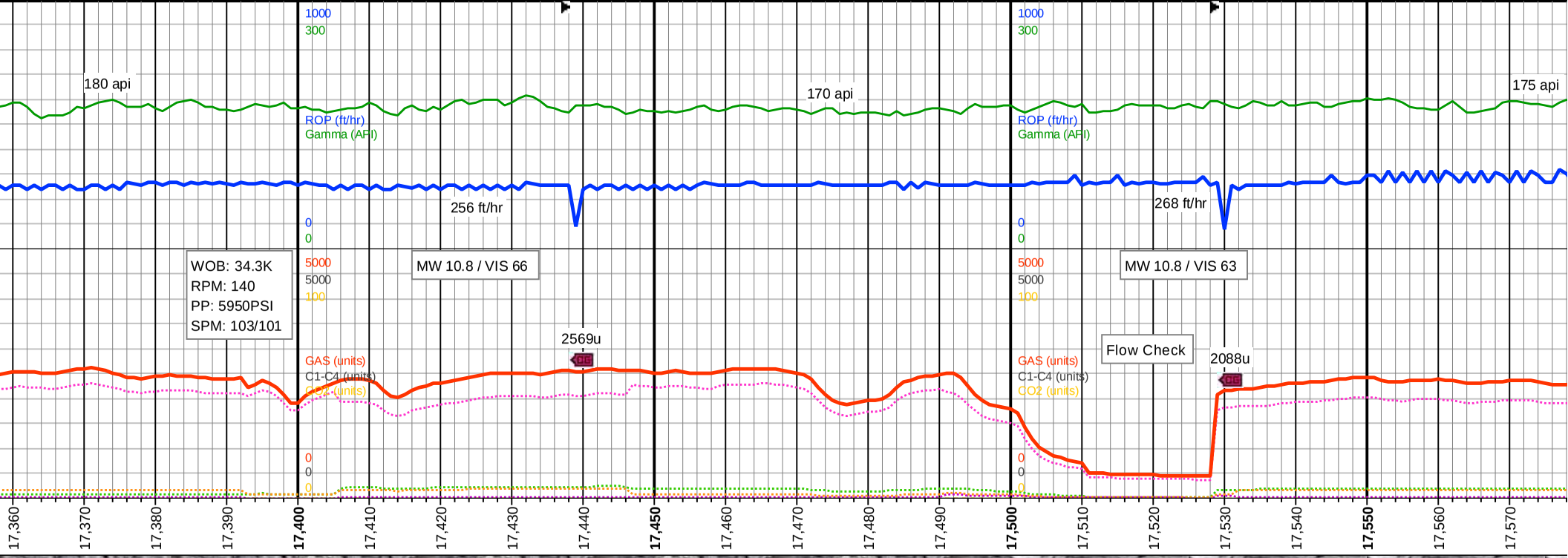


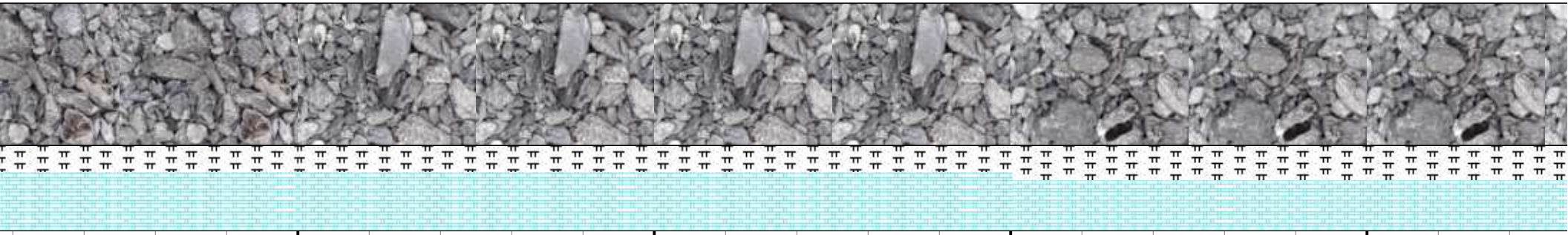


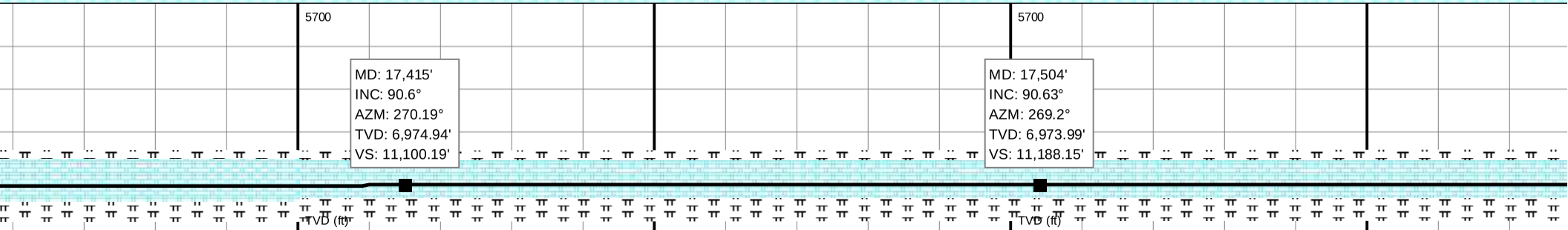
ot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty
MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb
y, arg, vf-f slty tex, calc; tr inoc frags.

60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, calc; tr inoc frags.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, mo
tex, w cons, sb wxy, v calc; 30% MRLST: med-drkg
ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex,







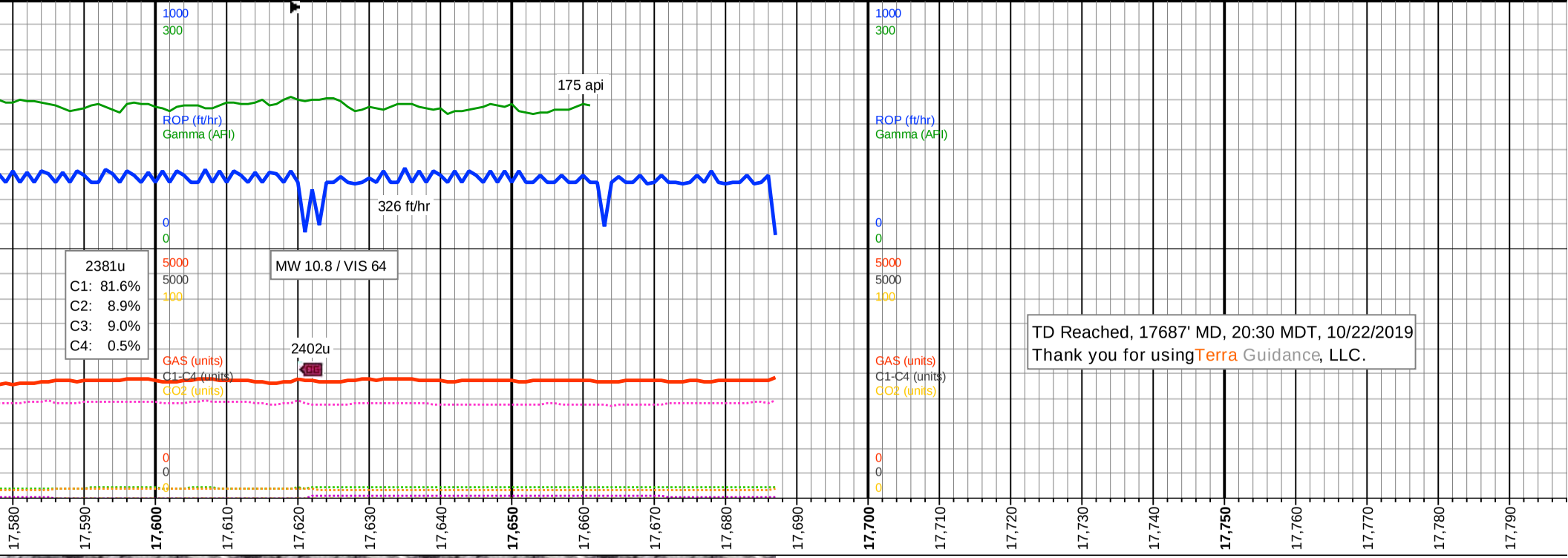
odly sft-hd/frm, blky-sb blky, f slty
y, gybrn, predy blky-sb blky, occly sb
calc; tr inoc frags; tr rexl cal.

70% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 30% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, q cons, mod calc; tr inoc frags; tr rexl cal.

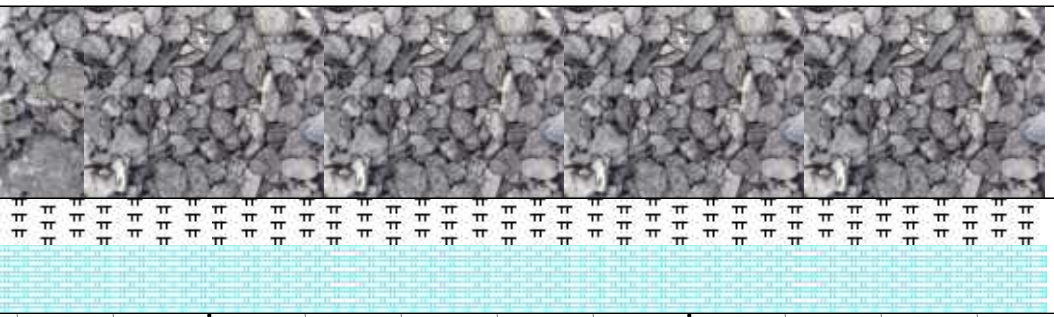
8700

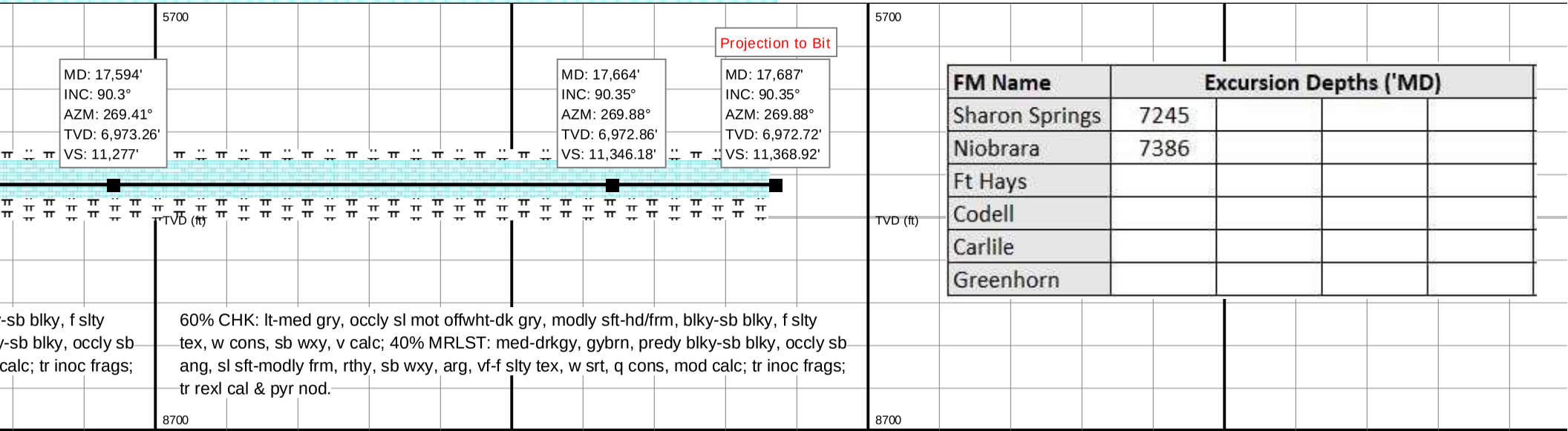
60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, q cons, mod tr rexl cal.

8700



TD Reached, 17687' MD, 20:30 MDT, 10/22/2019
Thank you for using Terra Guidance, LLC.





FM Name	Excursion Depths ('MD)			
Sharon Springs	7245			
Niobrara	7386			
Ft Hays				
Codell				
Carlile				
Greenhorn				

-sb blky, f slty
y-sb blky, occly sb
calc; tr inoc frags;

60% CHK: lt-med gry, occly sl mot offwht-dk gry, modly sft-hd/frm, blky-sb blky, f slty tex, w cons, sb wxy, v calc; 40% MRLST: med-drkgy, gybrn, predy blky-sb blky, occly sb ang, sl sft-modly frm, rthy, sb wxy, arg, vf-f slty tex, w srt, q cons, mod calc; tr inoc frags; tr rexl cal & pyr nod.

17,800