COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name	Pronghorn C-W-28HNC		
Location	SWSW SEC. 28 T5N R61W		
State	COLORADO	**County**	WELD
Country	USA	**Rig Number**	XTREME 20
API Number	05-123-41221-00	**AFE #**	15148
Region	DJ BASIN	**Field**	WATTENBERG
Spud Date	8/3/2015	**Drilling Completed**	8/27/2015
Surface Coordinates	1250' FSL x 389' FWL (LAT: 40.36801, -104.22219)		
Bottom Hole Coordinates	2640' FSL x 470' FEL (LAT: 40.37189, -104.20623) PROJECTED		
Ground Elevation	4597'	**K.B. Elevation**	4614'
Logged Interval	5800' **To** 10952'	**Total Depth**	10952'
Formation	NIOBRARA C-CHALK		
Type of Drilling Fluid	H20, LSND		

Operator

Company Bonanza Creek Energy Inc.

Address 410 17th Street, Suite 1500 Denver, CO 802

Geologist

Name Paul McKay

Company Bonanza Creek

Address 410 17TH STREET, SUITE 1500 DENVER,

Zone Color Co

- Oil
- Note
- Error
- Condensate
- Core
- Water

Rock Types

- UNKNOWN
- ANHYDRITE
- GYPSUM
- SALT
- SIDERITE or LIMONITE
- LIMESTONE
- DOLOMITE
- CHERT
- COAL
- MARLSTONE
- CLAYSTONE
- SHALE
- SHALE GRAY
- SHALE COLORED
- SILTSTONE
- SANDSTONE

02

CO 80202

ding

Gas
Pressure
Seal

s

CONGLOMERATE
BRECCIA
TILL
BENTONITE
TUFF
IGNEOUS
METAMORPHIC
CEMENT
CHALK
SILTY SHALE
NO SAMPLE
SHALY SANDSTONE
SHALY SILTSONE

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

Other Symbols

Oil Show

DEAD
EVEN
QUESTIONABLE
SPOTTED STAINING

Porosity

EARTHY
FENESTRAL
FRACTURE
INTERCRYSTALLINE
INTEROOLITIC
MOLDIC
ORGANIC
PINPOINT
VUGGY

Engineering

BIT
CASING
CONNECTION (LEFT)
CONNECTION (RIGHT)
CONNECTION GAS
CORE - LOST
CORE - RECOVERED
DST INTERVAL
FAULT
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
CONNECTION GAS
CONNECTION DOWN
CASING
FORMATION TOP

Rounding

ANGULAR
ROUNDED
SUBANG
SUBRND

Textures

BOUNDSTONE
CHALKY
CRYPTOXLN
EARTHY
FINELYXLN
GRAINSTONE
LITHOGRAPHIC
MICROXLN
MUDSTONE
PACKSTONE
WACKESTONE

Sorting

MODERATE
POOR
WELL

Slide/Rotate

ROP
ROP
GAMMA

Bit Data
Bit #: 2
Type: VS513HG
Size: 8.75
Depth In: 742'
Hours: 3 hrs
Jets: 7x18
S/N: 4008669

900
300
ROP (ft/hr)
GAMMA (units)
107
0
0

Total Gas & Chromatograph
GAS
C1
C2
C3
C4

4000
400000
GAS (units)
C1-C4 (PPM)
1400u
0
0

Depth Labels
5,760 5,770 5,780 5,790 5,800 5,810 5,820 5,830 5,840 5,850 5,860 5,870 5,880 5,890 5,900 5,910 5,920 5,930

% Lith

Well Bore
TVD

5550
TVD (ft)

MD: 5,827'
Inclination: 1.79°
Azimuth: 10.28°
TVD: 5,577.36'
VS: 1,368.64'

MD: 5,921'
Inclination: 10.15°
Azimuth: 85.99°
TVD: 5,670.84'
VS: 1,370.67'

COLUMBINE LOGGING INC.
RIGGED UP ON 8/3/2015
MANNED 2-PERSON
LOGGING WITH
BLOODHOUND GAS
CHROMATOGRAPH UNIT
#311 BEGAN LOGGING ON
8/4/2015 @ 03:20 MST

100% SLTY SH: med-dk gy, lt gy, sft-sl firm, some sft, blky-sb blky, sb plty, occ plty, rthy, mtx; arg-slty, sl-mod calc

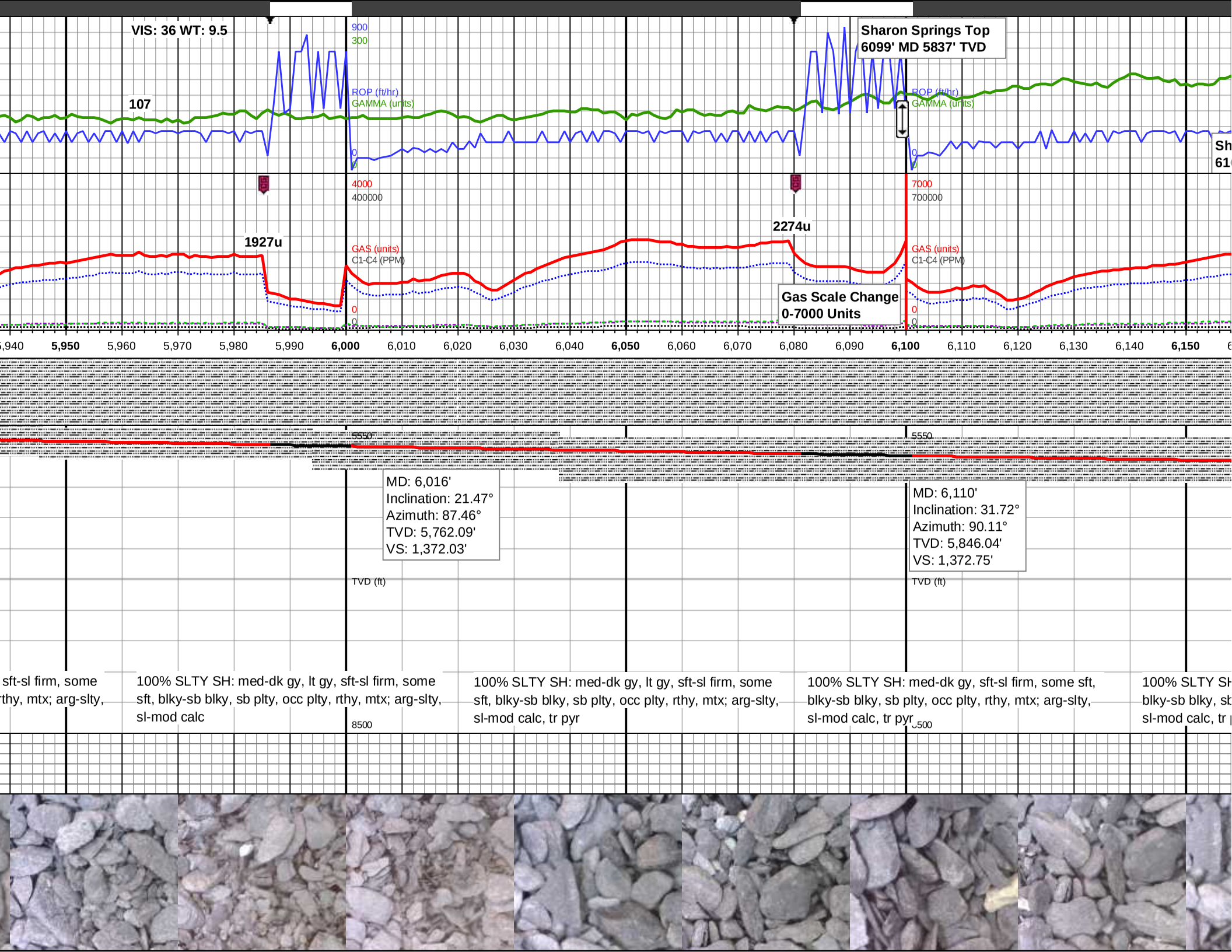
100% SLTY SH: med-dk gy, lt gy, sft-sl firm, some sft, blky-sb blky, sb plty, occ plty, rthy, mtx; arg-slty, sl-mod calc

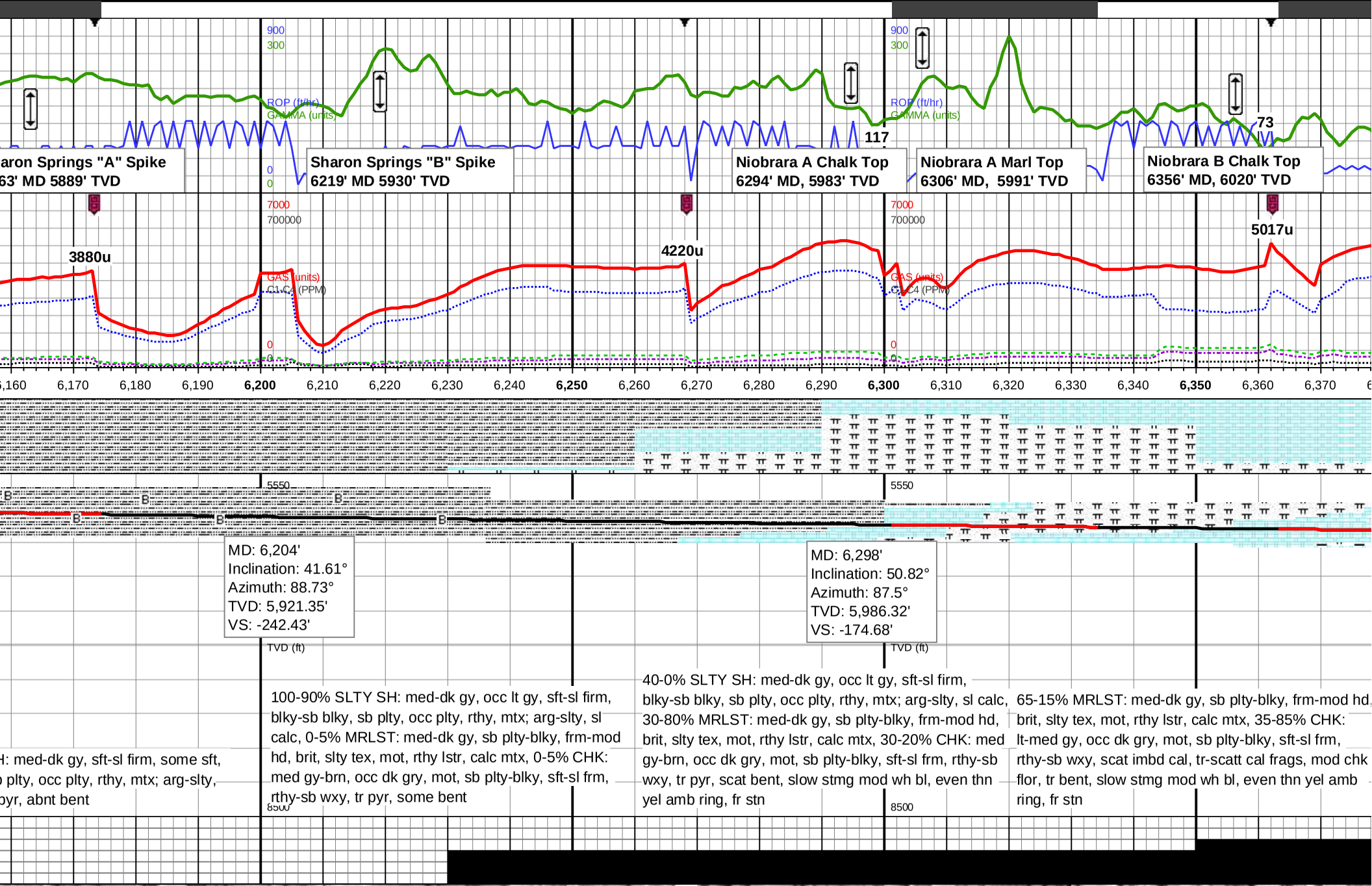
100% SLTY SH: med-dk gy, lt gy, sft, blky-sb blky, sb plty, occ plty, sl-mod calc

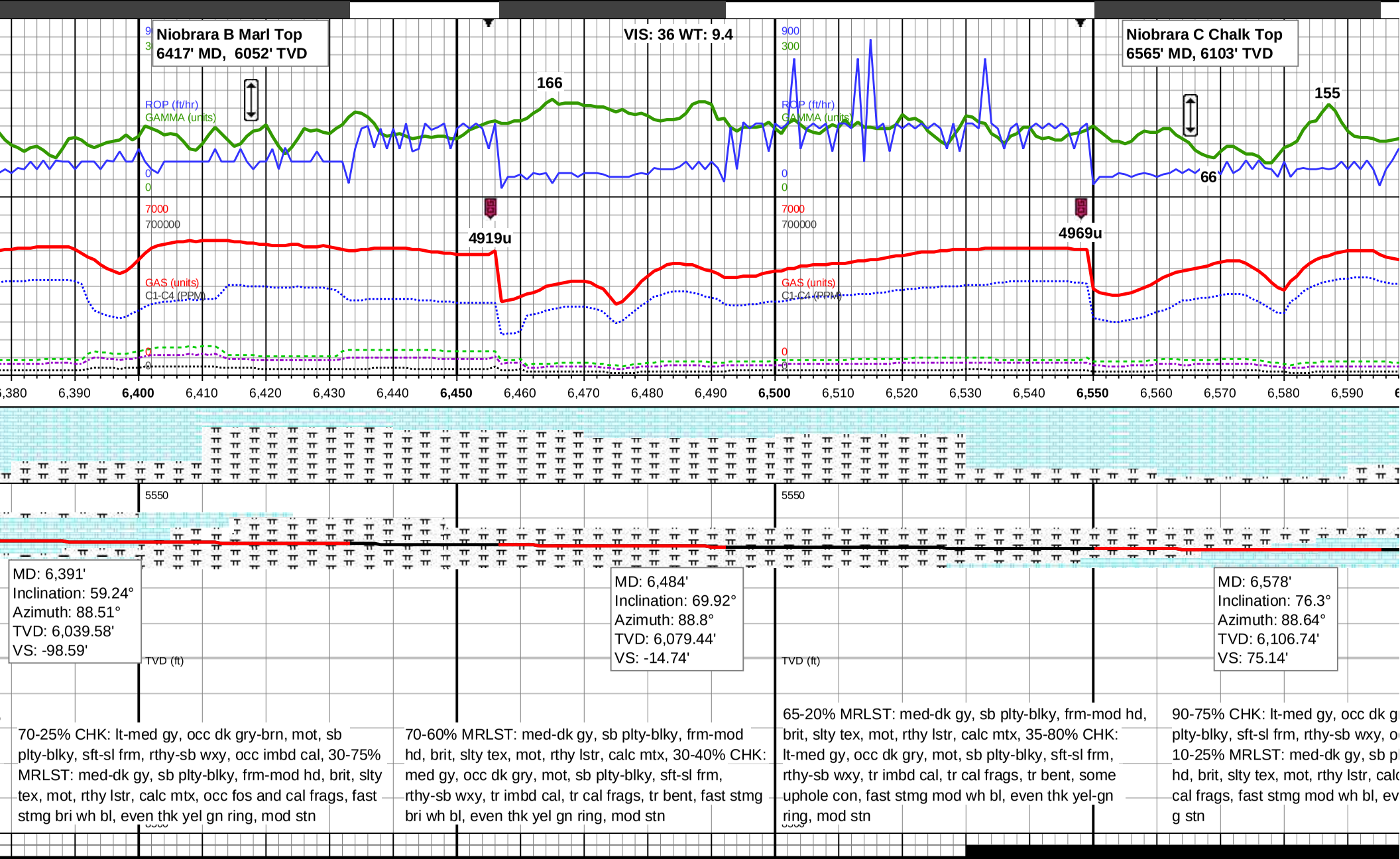
Oil Show
E
G
M
F
T
ST

Images




VIS: 36 WT: 9.5
107
900
300
ROP (ft/hr)
GAMMA (units)
0
0
4000
400000
1927u
GAS (units)
C1-C4 (PPM)
0
0
Sharon Springs Top
6099' MD 5837' TVD
ROP (ft/hr)
GAMMA (units)
0
0
7000
700000
2274u
GAS (units)
C1-C4 (PPM)
Gas Scale Change
0-7000 Units
0
0
5,940
5,950
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
6,140
6,150
5550
MD: 6,016'
Inclination: 21.47°
Azimuth: 87.46°
TVD: 5,762.09'
VS: 1,372.03'
TVD (ft)
5550
MD: 6,110'
Inclination: 31.72°
Azimuth: 90.11°
TVD: 5,846.04'
VS: 1,372.75'
TVD (ft)
sft-sl firm, some
rthy, mtx; arg-slty,
100% SLTY SH: med-dk gy, lt gy, sft-sl firm, some sft, blky-sb blky, sb plty, occ plty, rthy, mtx; arg-slty, sl-mod calc
8500
100% SLTY SH: med-dk gy, lt gy, sft-sl firm, some sft, blky-sb blky, sb plty, occ plty, rthy, mtx; arg-slty, sl-mod calc, tr pyr
100% SLTY SH: med-dk gy, sft-sl firm, some sft, blky-sb blky, sb plty, occ plty, rthy, mtx; arg-slty, sl-mod calc, tr pyr
8500
100% SLTY SH
blky-sb blky, sb
sl-mod calc, tr


900
300
ROP (ft/hr)
GAMMA (units)
0
0
aron Springs "A" Spike
63' MD 5889' TVD
Sharon Springs "B" Spike
6219' MD 5930' TVD
117
Niobrara A Chalk Top
6294' MD, 5983' TVD
Niobrara A Marl Top
6306' MD, 5991' TVD
73
Niobrara B Chalk Top
6356' MD, 6020' TVD
7000
700000
GAS (units)
C1-C4 (PPM)
3880u
4220u
5017u
6,160
6,170
6,180
6,190
6,200
6,210
6,220
6,230
6,240
6,250
6,260
6,270
6,280
6,290
6,300
6,310
6,320
6,330
6,340
6,350
6,360
6,370
5550
MD: 6,204'
Inclination: 41.61°
Azimuth: 88.73°
TVD: 5,921.35'
VS: -242.43'
TVD (ft)
MD: 6,298'
Inclination: 50.82°
Azimuth: 87.5°
TVD: 5,986.32'
VS: -174.68'
8500
H: med-dk gy, sft-sl firm, some sft,
plty, occ plty, rthy, mtx; arg-slty,
pyr, abnt bent
100-90% SLTY SH: med-dk gy, occ lt gy, sft-sl firm, blky-sb blky, sb plty, occ plty, rthy, mtx; arg-slty, sl calc, 0-5% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, 0-5% CHK: med gy-brn, occ dk gry, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr pyr, some bent
40-0% SLTY SH: med-dk gy, occ lt gy, sft-sl firm, blky-sb blky, sb plty, occ plty, rthy, mtx; arg-slty, sl calc, 30-80% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, 30-20% CHK: med gy-brn, occ dk gry, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr pyr, scat bent, slow stmg mod wh bl, even thn yel amb ring, fr stn
65-15% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, 35-85% CHK: lt-med gy, occ dk gry, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, scat imbd cal, tr-scatt cal frags, mod chk flor, tr bent, slow stmg mod wh bl, even thn yel amb ring, fr stn

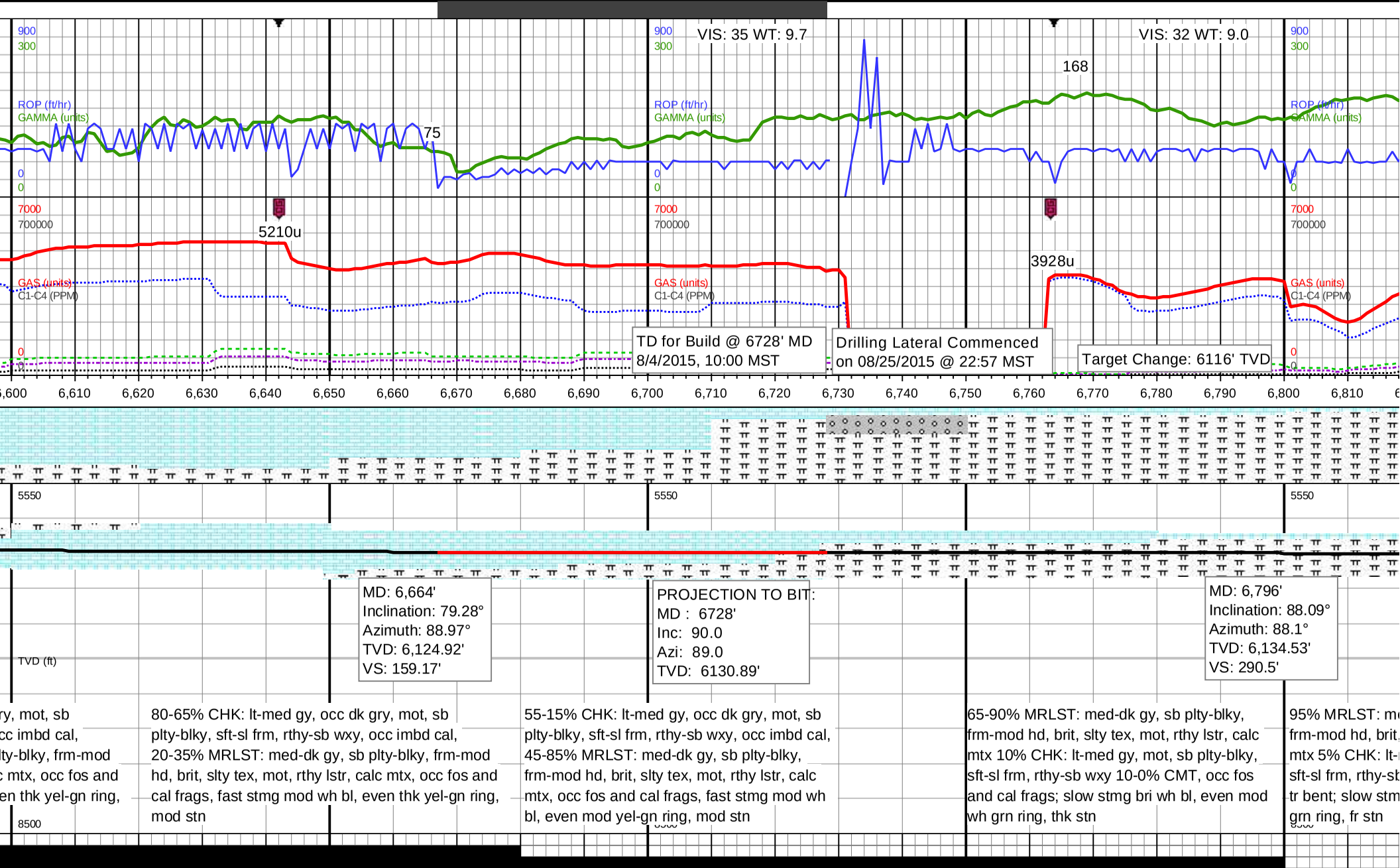


70-25% CHK: lt-med gy, occ dk gry-brn, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ imbd cal, 30-75% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, occ fos and cal frags, fast stmg bri wh bl, even thk yel gn ring, mod stn

70-60% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, 30-40% CHK: med gy, occ dk gry, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr imbd cal, tr cal frags, tr bent, fast stmg bri wh bl, even thk yel gn ring, mod stn

65-20% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, 35-80% CHK: lt-med gy, occ dk gry, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr imbd cal, tr cal frags, tr bent, some uphole con, fast stmg mod wh bl, even thk yel-gn ring, mod stn

90-75% CHK: lt-med gy, occ dk g
plty-blky, sft-sl frm, rthy-sb wxy, o
10-25% MRLST: med-dk gy, sb pl
hd, brit, slty tex, mot, rthy lstr, calc
cal frags, fast stmg mod wh bl, ev
g stn



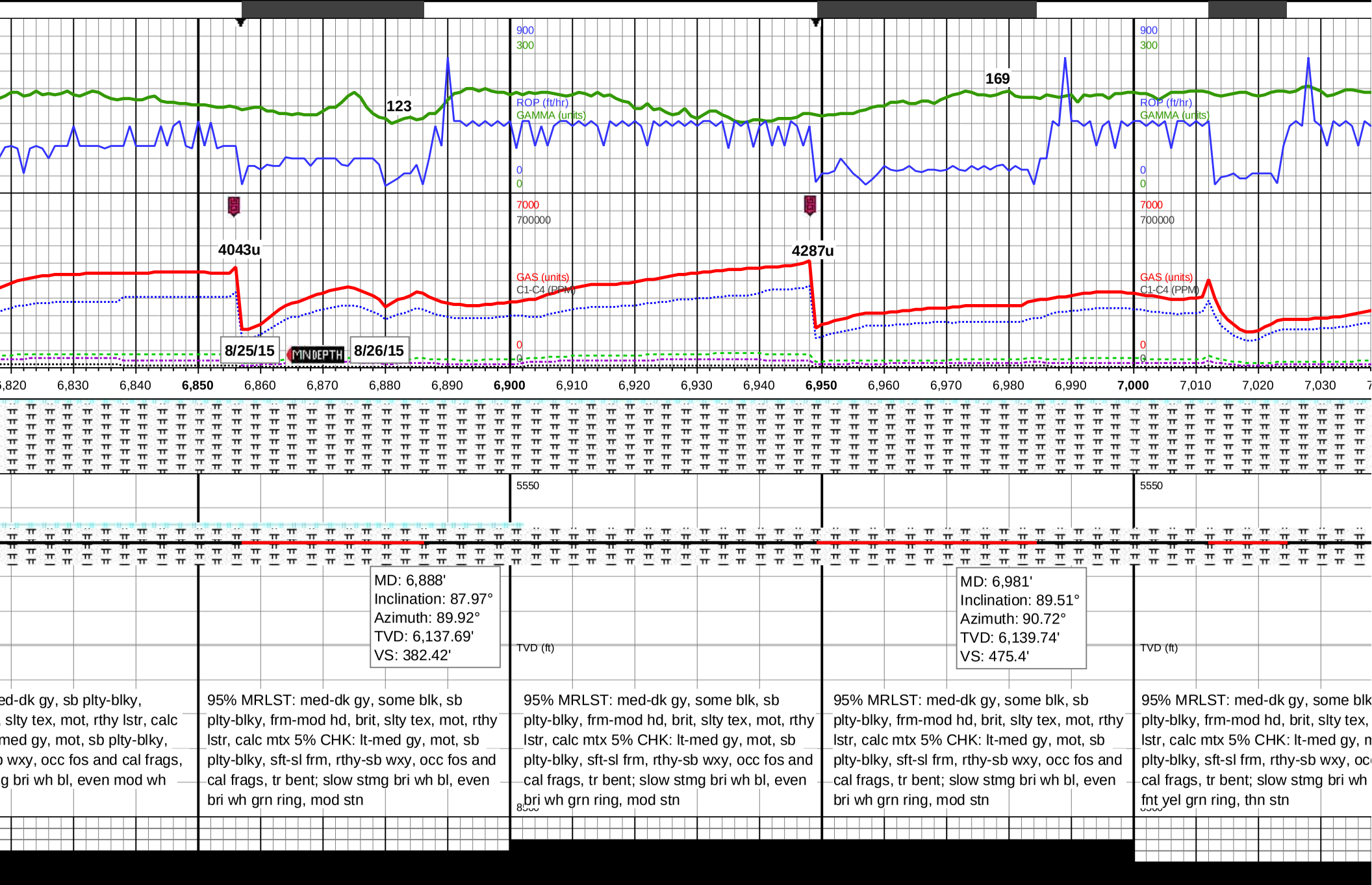
ry, mot, sb
cc imbd cal,
lty-blky, frm-mod
c mtx, occ fos and
en thk yel-gn ring,

80-65% CHK: lt-med gy, occ dk gry, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ imbd cal, 20-35% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, occ fos and cal frags, fast stmg mod wh bl, even thk yel-gn ring, mod stn

55-15% CHK: lt-med gy, occ dk gry, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ imbd cal, 45-85% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, occ fos and cal frags, fast stmg mod wh bl, even mod yel-gn ring, mod stn

65-90% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 10% CHK: lt-med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy 10-0% CMT, occ fos and cal frags; slow stmg bri wh bl, even mod wh grn ring, thk stn

95% MRLST: m
frm-mod hd, brit
mtx 5% CHK: lt-
sft-sl frm, rthy-sb
tr bent; slow stm
grn ring, fr stn



TVD (ft)

TVD (ft)

ed-dk gy, sb plty-blky, slty tex, mot, rthy lstr, calc med gy, mot, sb plty-blky, wxy, occ fos and cal frags, g bri wh bl, even mod wh

MD: 6,888'
Inclination: 87.97°
Azimuth: 89.92°
TVD: 6,137.69'
VS: 382.42'

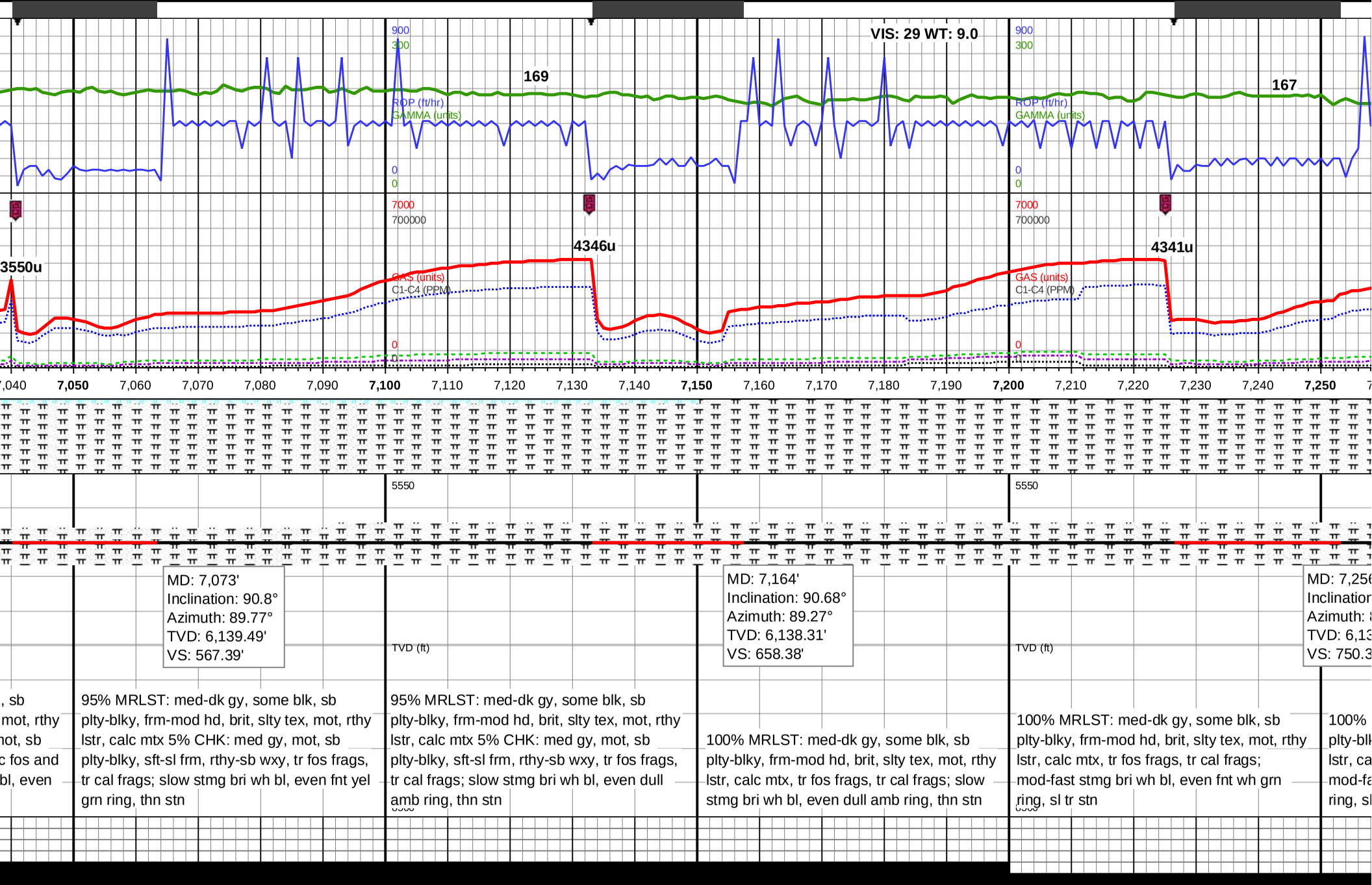
95% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 5% CHK: lt-med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ fos and cal frags, tr bent; slow stmg bri wh bl, even bri wh grn ring, mod stn

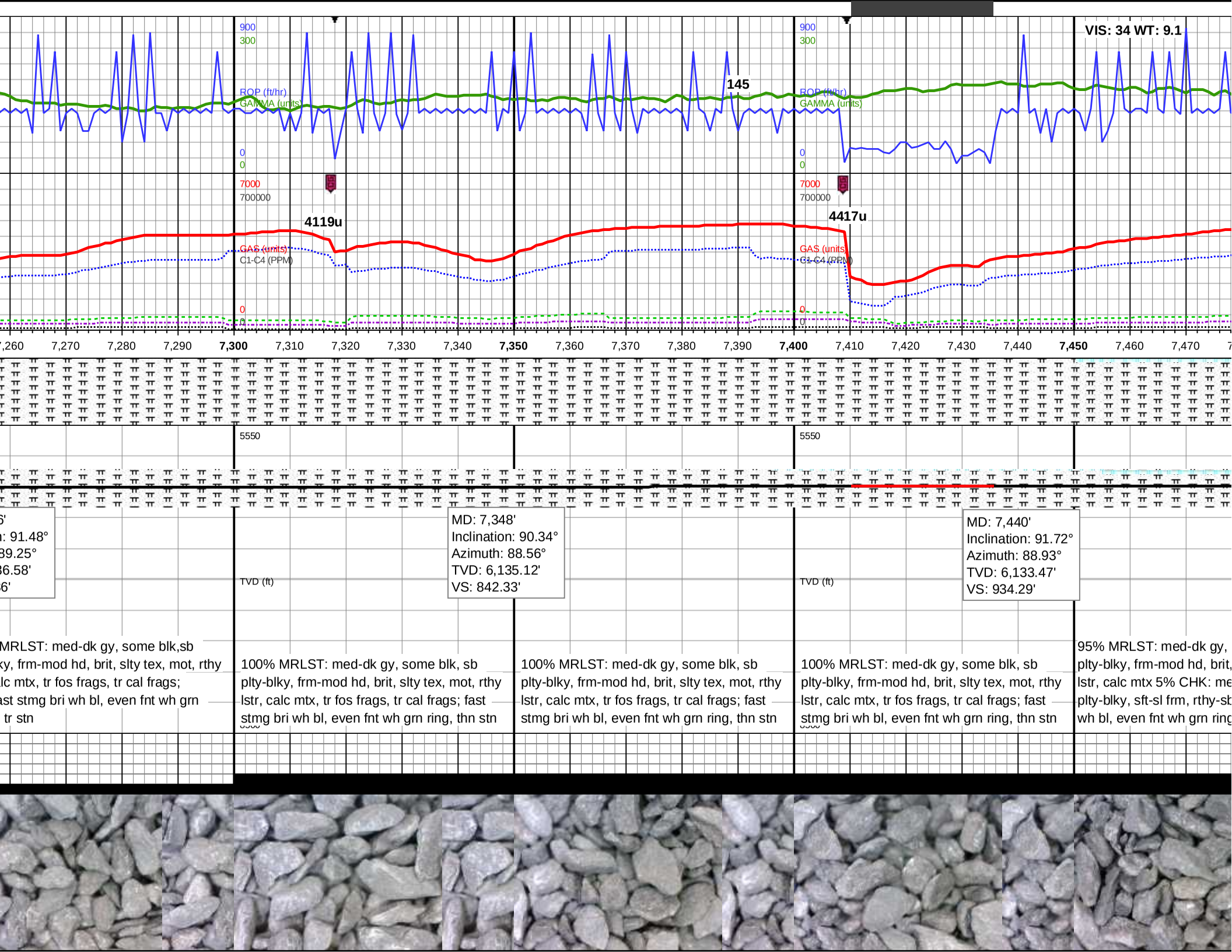
95% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 5% CHK: lt-med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ fos and cal frags, tr bent; slow stmg bri wh bl, even bri wh grn ring, mod stn

MD: 6,981'
Inclination: 89.51°
Azimuth: 90.72°
TVD: 6,139.74'
VS: 475.4'

95% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 5% CHK: lt-med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ fos and cal frags, tr bent; slow stmg bri wh bl, even bri wh grn ring, mod stn

95% MRLST: med-dk gy, some blk, plty-blky, frm-mod hd, brit, slty tex, lstr, calc mtx 5% CHK: lt-med gy, plty-blky, sft-sl frm, rthy-sb wxy, oc cal frags, tr bent; slow stmg bri wh fnt yel grn ring, thn stn


VIS: 29 WT: 9.0
900
300
ROP (ft/hr)
GAMMA (units)
0
0
169
167
7000
700000
GAS (units)
C1-C4 (PPM)
0
0
3550u
4346u
4341u
7,040
7,050
7,060
7,070
7,080
7,090
7,100
7,110
7,120
7,130
7,140
7,150
7,160
7,170
7,180
7,190
7,200
7,210
7,220
7,230
7,240
7,250
5550
5550
MD: 7,073'
Inclination: 90.8°
Azimuth: 89.77°
TVD: 6,139.49'
VS: 567.39'
TVD (ft)
MD: 7,164'
Inclination: 90.68°
Azimuth: 89.27°
TVD: 6,138.31'
VS: 658.38'
TVD (ft)
MD: 7,256
Inclination
Azimuth:
TVD: 6,13
VS: 750.3
, sb
mot, rthy
not, sb
c fos and
bl, even
95% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 5% CHK: med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr fos frags, tr cal frags; slow stmg bri wh bl, even fnt yel grn ring, thn stn
95% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 5% CHK: med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr fos frags, tr cal frags; slow stmg bri wh bl, even dull amb ring, thn stn
100% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, tr fos frags, tr cal frags; slow stmg bri wh bl, even dull amb ring, thn stn
100% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, tr fos frags, tr cal frags; mod-fast stmg bri wh bl, even fnt wh grn ring, sl tr stn
100%
plty-blk
lstr, ca
mod-fa
ring, sl



6'
n: 91.48°
39.25°
36.58'
6'

MD: 7,348'
Inclination: 90.34°
Azimuth: 88.56°
TVD: 6,135.12'
VS: 842.33'

MD: 7,440'
Inclination: 91.72°
Azimuth: 88.93°
TVD: 6,133.47'
VS: 934.29'

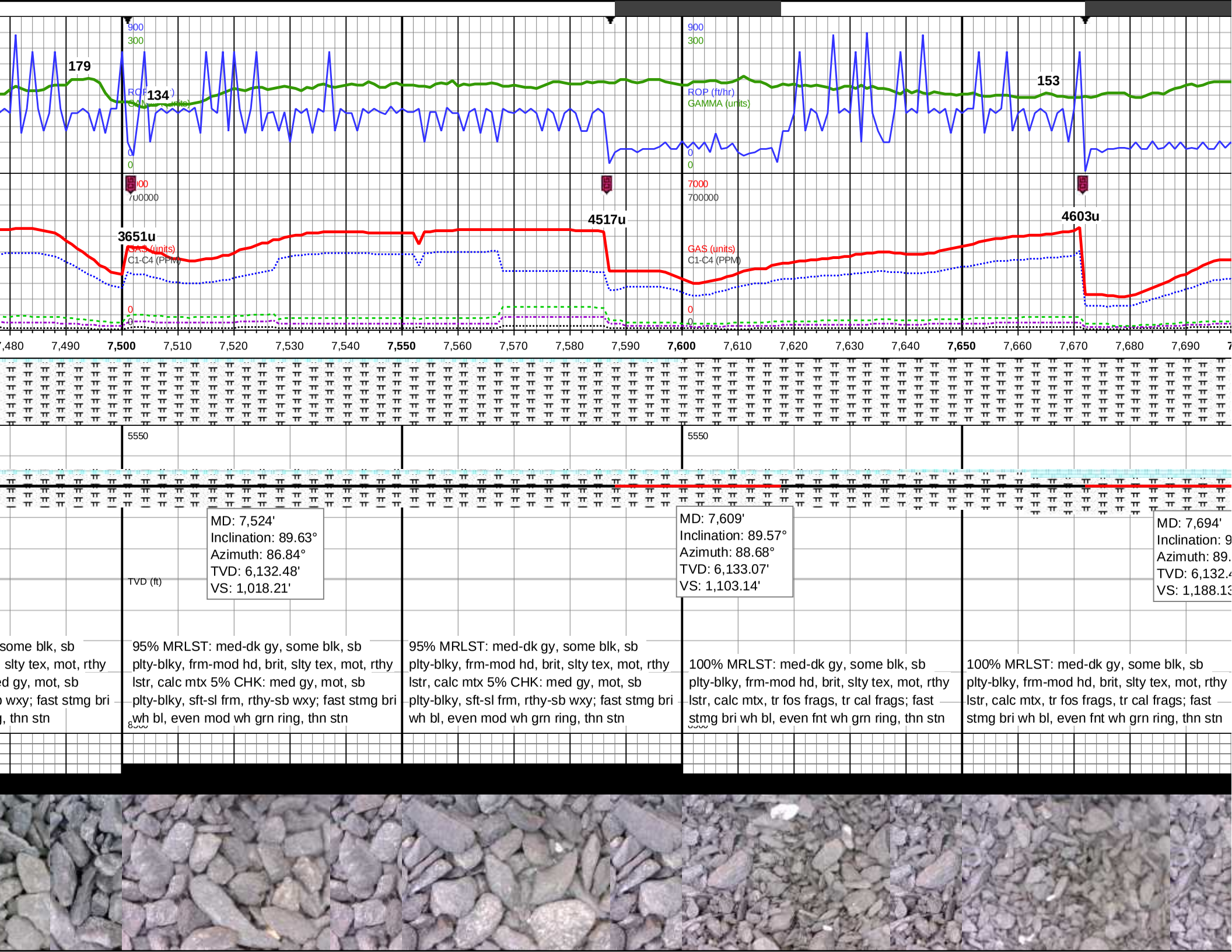
MRLST: med-dk gy, some blk,sb
ky, frm-mod hd, brit, slty tex, mot, rthy
lc mtx, tr fos frags, tr cal frags;
ast stmg bri wh bl, even fnt wh grn
tr stn

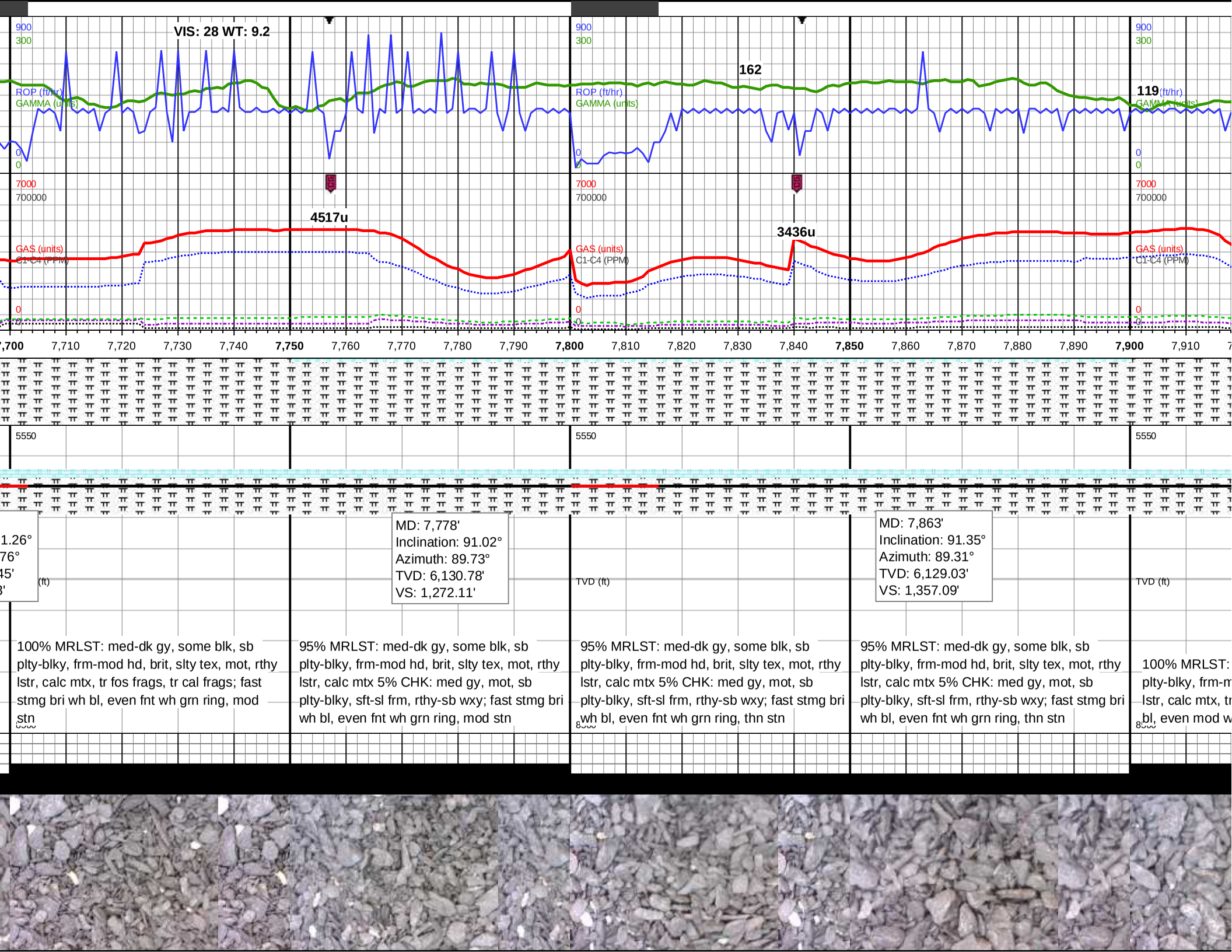
100% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, tr fos frags, tr cal frags; fast stmg bri wh bl, even fnt wh grn ring, thn stn

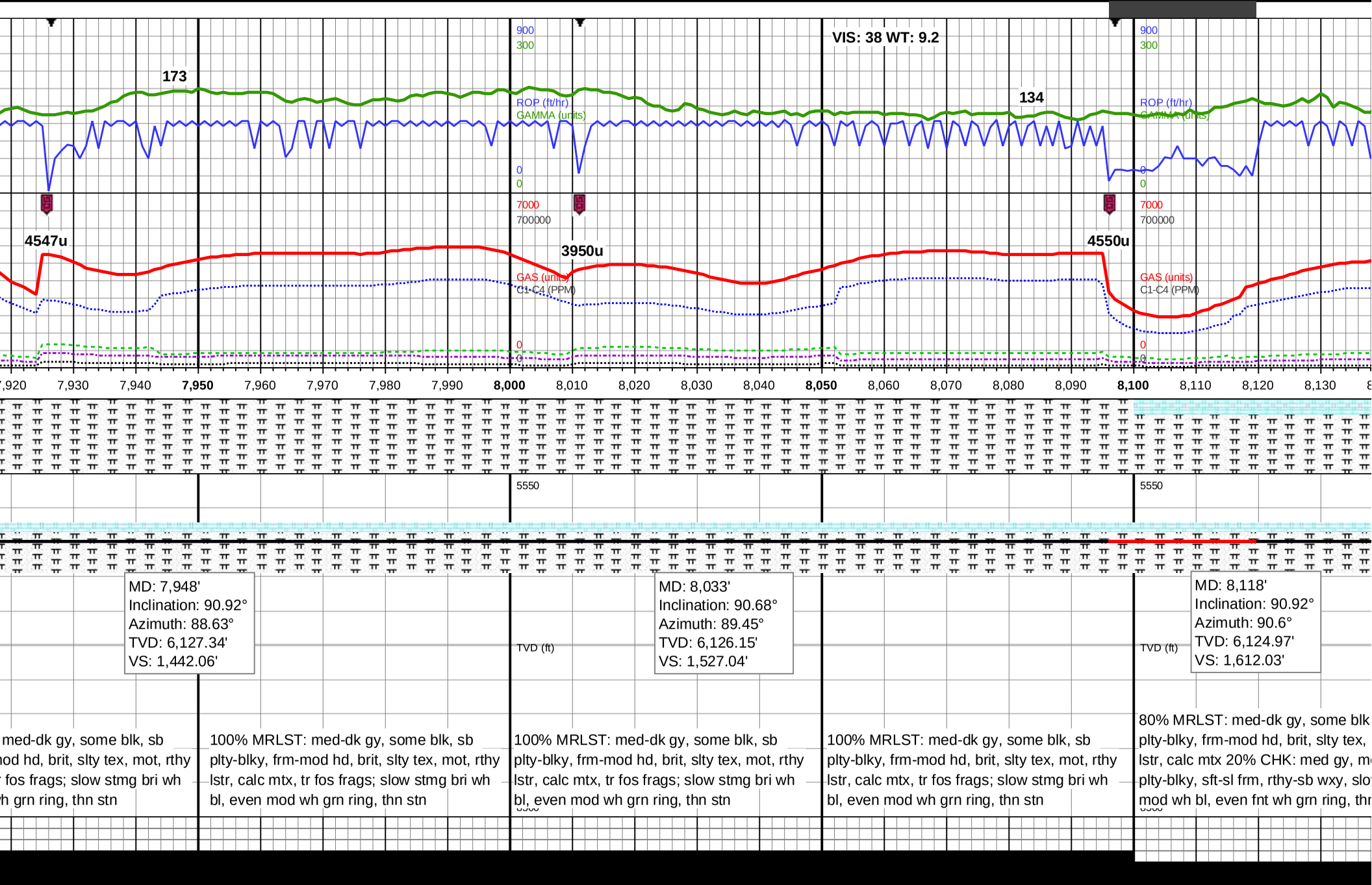
100% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, tr fos frags, tr cal frags; fast stmg bri wh bl, even fnt wh grn ring, thn stn

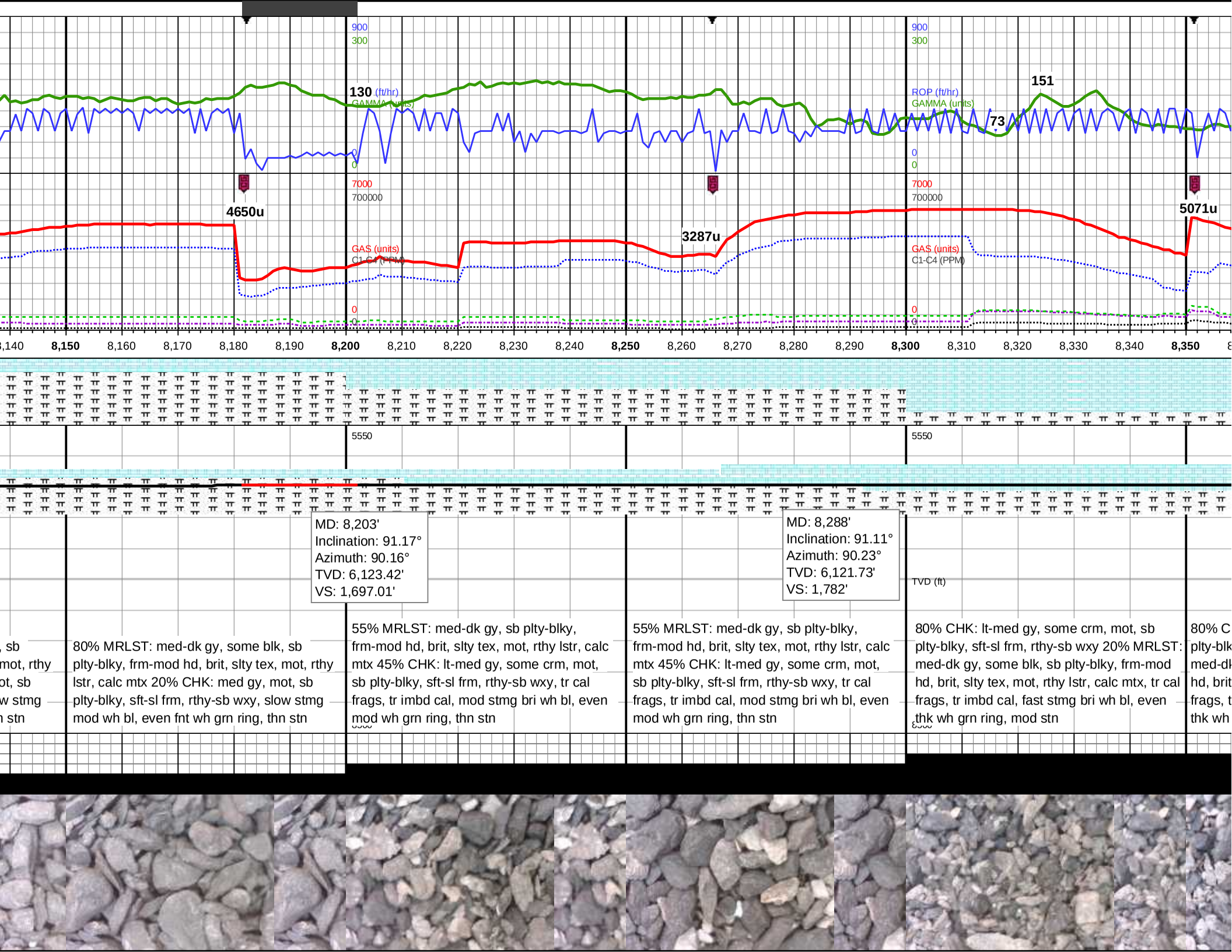
100% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, tr fos frags, tr cal frags; fast stmg bri wh bl, even fnt wh grn ring, thn stn

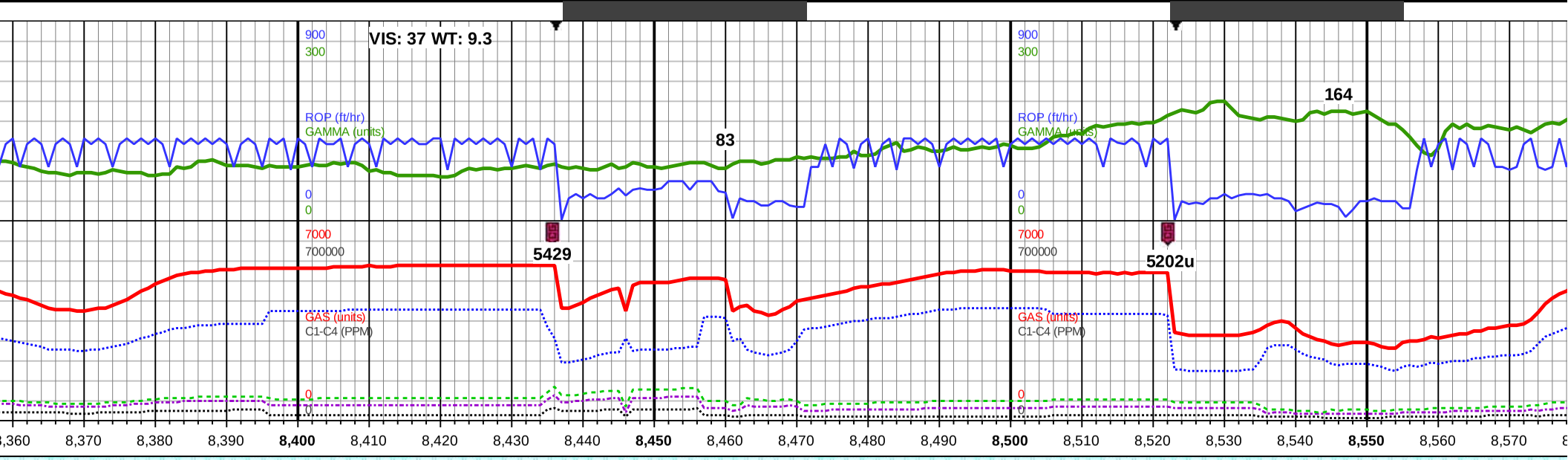
95% MRLST: med-dk gy,
plty-blky, frm-mod hd, brit,
lstr, calc mtx 5% CHK: me
plty-blky, sft-sl frm, rthy-sb
wh bl, even fnt wh grn ring

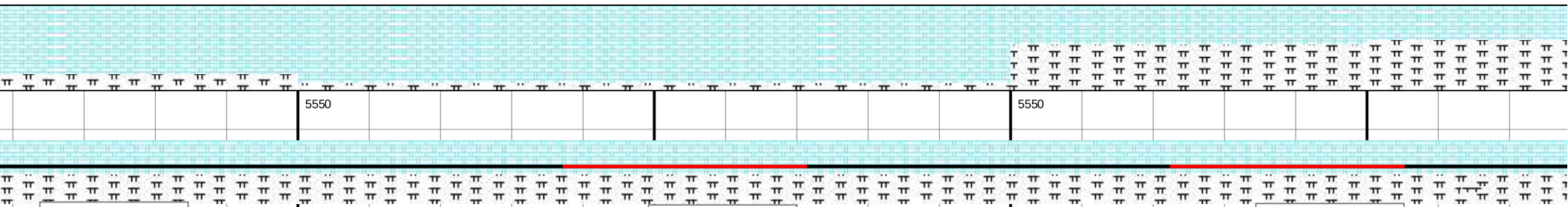

900
300
179
ROP (ft/hr)
GAMMA (units)
134
0
0
7000
700000
3651u
GAS (units)
C1-C4 (PPM)
4517u
0
0
900
300
153
ROP (ft/hr)
GAMMA (units)
0
0
7000
700000
4603u
GAS (units)
C1-C4 (PPM)
0
0
7,480
7,490
7,500
7,510
7,520
7,530
7,540
7,550
7,560
7,570
7,580
7,590
7,600
7,610
7,620
7,630
7,640
7,650
7,660
7,670
7,680
7,690
5550
5550
TVD (ft)
MD: 7,524'
Inclination: 89.63°
Azimuth: 86.84°
TVD: 6,132.48'
VS: 1,018.21'
MD: 7,609'
Inclination: 89.57°
Azimuth: 88.68°
TVD: 6,133.07'
VS: 1,103.14'
MD: 7,694'
Inclination: 9
Azimuth: 89.
TVD: 6,132.4
VS: 1,188.13
some blk, sb
slty tex, mot, rthy
ed gy, mot, sb
wxy; fast stmg bri
, thn stn
95% MRLST: med-dk gy, some blk, sb
plty-blky, frm-mod hd, brit, slty tex, mot, rthy
lstr, calc mtx 5% CHK: med gy, mot, sb
plty-blky, sft-sl frm, rthy-sb wxy; fast stmg bri
wh bl, even mod wh grn ring, thn stn
95% MRLST: med-dk gy, some blk, sb
plty-blky, frm-mod hd, brit, slty tex, mot, rthy
lstr, calc mtx 5% CHK: med gy, mot, sb
plty-blky, sft-sl frm, rthy-sb wxy; fast stmg bri
wh bl, even mod wh grn ring, thn stn
100% MRLST: med-dk gy, some blk, sb
plty-blky, frm-mod hd, brit, slty tex, mot, rthy
lstr, calc mtx, tr fos frags, tr cal frags; fast
stmg bri wh bl, even fnt wh grn ring, thn stn
100% MRLST: med-dk gy, some blk, sb
plty-blky, frm-mod hd, brit, slty tex, mot, rthy
lstr, calc mtx, tr fos frags, tr cal frags; fast
stmg bri wh bl, even fnt wh grn ring, thn stn


VIS: 28 WT: 9.2
900
300
ROP (ft/hr)
GAMMA (units)
0
0
7000
700000
GAS (units)
C1-C4 (PPM)
0
0
4517u
162
3436u
119 (ft/hr)
7,700
7,710
7,720
7,730
7,740
7,750
7,760
7,770
7,780
7,790
7,800
7,810
7,820
7,830
7,840
7,850
7,860
7,870
7,880
7,890
7,900
7,910
5550
TVD (ft)
MD: 7,778'
Inclination: 91.02°
Azimuth: 89.73°
TVD: 6,130.78'
VS: 1,272.11'
MD: 7,863'
Inclination: 91.35°
Azimuth: 89.31°
TVD: 6,129.03'
VS: 1,357.09'
100% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, tr fos frags, tr cal frags; fast stmg bri wh bl, even fnt wh grn ring, mod stn
95% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 5% CHK: med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy; fast stmg bri wh bl, even fnt wh grn ring, mod stn
95% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 5% CHK: med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy; fast stmg bri wh bl, even fnt wh grn ring, thn stn
95% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 5% CHK: med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy; fast stmg bri wh bl, even fnt wh grn ring, thn stn


VIS: 38 WT: 9.2
173
134
900
300
ROP (ft/hr)
GAMMA (units)
0
0
7000
700000
GAS (units)
C1-C4 (PPM)
4547u
3950u
4550u
7,920
7,930
7,940
7,950
7,960
7,970
7,980
7,990
8,000
8,010
8,020
8,030
8,040
8,050
8,060
8,070
8,080
8,090
8,100
8,110
8,120
8,130
5550
TVD (ft)
MD: 7,948'
Inclination: 90.92°
Azimuth: 88.63°
TVD: 6,127.34'
VS: 1,442.06'
MD: 8,033'
Inclination: 90.68°
Azimuth: 89.45°
TVD: 6,126.15'
VS: 1,527.04'
MD: 8,118'
Inclination: 90.92°
Azimuth: 90.6°
TVD: 6,124.97'
VS: 1,612.03'
med-dk gy, some blk, sb
od hd, brit, slty tex, mot, rthy
fos frags; slow stmg bri wh
h grn ring, thn stn
100% MRLST: med-dk gy, some blk, sb
plty-blky, frm-mod hd, brit, slty tex, mot, rthy
lstr, calc mtx, tr fos frags; slow stmg bri wh
bl, even mod wh grn ring, thn stn
100% MRLST: med-dk gy, some blk, sb
plty-blky, frm-mod hd, brit, slty tex, mot, rthy
lstr, calc mtx, tr fos frags; slow stmg bri wh
bl, even mod wh grn ring, thn stn
100% MRLST: med-dk gy, some blk, sb
plty-blky, frm-mod hd, brit, slty tex, mot, rthy
lstr, calc mtx, tr fos frags; slow stmg bri wh
bl, even mod wh grn ring, thn stn
80% MRLST: med-dk gy, some blk
plty-blky, frm-mod hd, brit, slty tex,
lstr, calc mtx 20% CHK: med gy, m
plty-blky, sft-sl frm, rthy-sb wxy, slo
mod wh bl, even fnt wh grn ring, thn


900
300
130 (ft/hr)
GAMMA (units)
0
0
7000
700000
4650u
GAS (units)
C1-C4 (PPM)
0
0
900
300
ROP (ft/hr)
GAMMA (units)
151
73
0
0
7000
700000
3287u
5071u
GAS (units)
C1-C4 (PPM)
0
0
8,140
8,150
8,160
8,170
8,180
8,190
8,200
8,210
8,220
8,230
8,240
8,250
8,260
8,270
8,280
8,290
8,300
8,310
8,320
8,330
8,340
8,350
5550
5550
MD: 8,203'
Inclination: 91.17°
Azimuth: 90.16°
TVD: 6,123.42'
VS: 1,697.01'
MD: 8,288'
Inclination: 91.11°
Azimuth: 90.23°
TVD: 6,121.73'
VS: 1,782'
TVD (ft)
, sb
mot, rthy
ot, sb
w stmg
n stn
80% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 20% CHK: med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, slow stmg mod wh bl, even fnt wh grn ring, thn stn
55% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 45% CHK: lt-med gy, some crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr cal frags, tr imbd cal, mod stmg bri wh bl, even mod wh grn ring, thn stn
55% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 45% CHK: lt-med gy, some crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr cal frags, tr imbd cal, mod stmg bri wh bl, even mod wh grn ring, thn stn
80% CHK: lt-med gy, some crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy 20% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, tr cal frags, tr imbd cal, fast stmg bri wh bl, even thk wh grn ring, mod stn
80% C
plty-blk
med-dk
hd, brit
frags, t
thk wh





MD: 8,373'
Inclination: 89.63°
Azimuth: 90.04°
TVD: 6,121.18'
VS: 1,866.99'

TVD (ft)

MD: 8,459'
Inclination: 89.66°
Azimuth: 88.89°
TVD: 6,121.71'
VS: 1,952.98'

TVD (ft)

MD: 8,544'
Inclination: 90.55°
Azimuth: 88.78°
TVD: 6,121.55'
VS: 2,037.97'

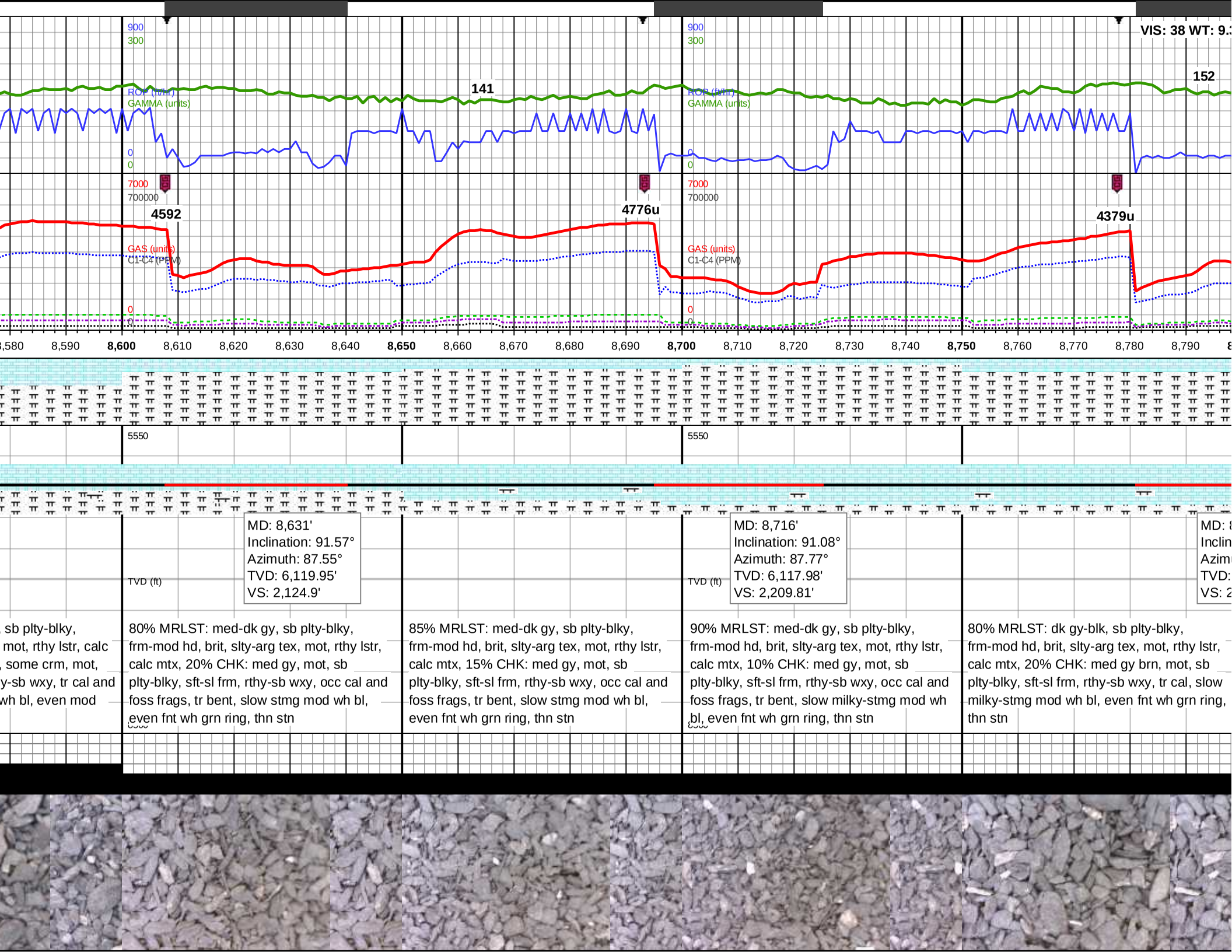
HK: lt-med gy, some crm, mot, sb
y, sft-sl frm, rthy-sb wxy 20% MRLST:
k gy, some blk, sb plty-blky, frm-mod
, slty tex, mot, rthy lstr, calc mtx, tr cal
r imbd cal, fast stmg bri wh bl, even
grn ring, mod stn

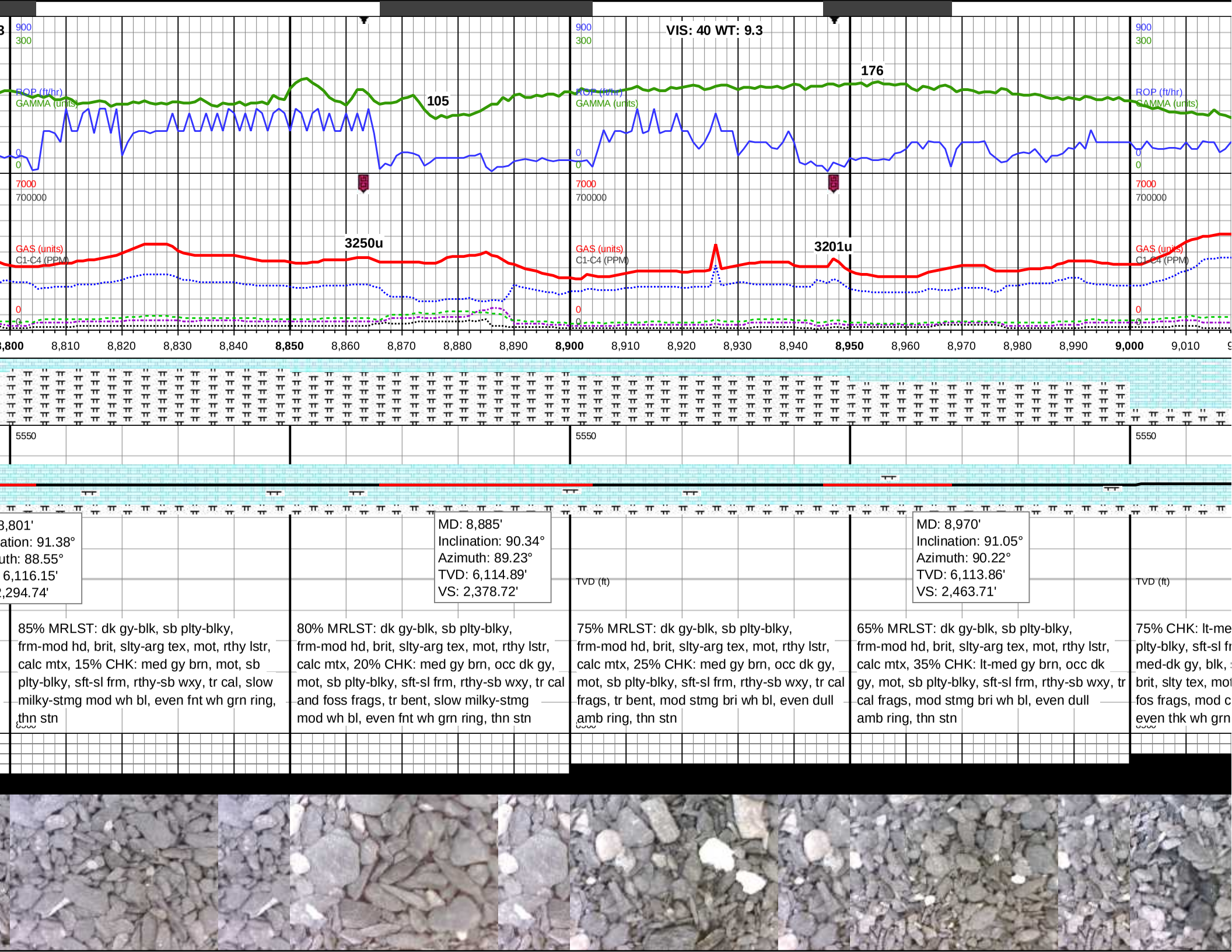
90% CHK: lt-med gy, some crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy 10% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, tr cal frags, fast stmg bri wh bl, even thk wh grn ring, mod stn

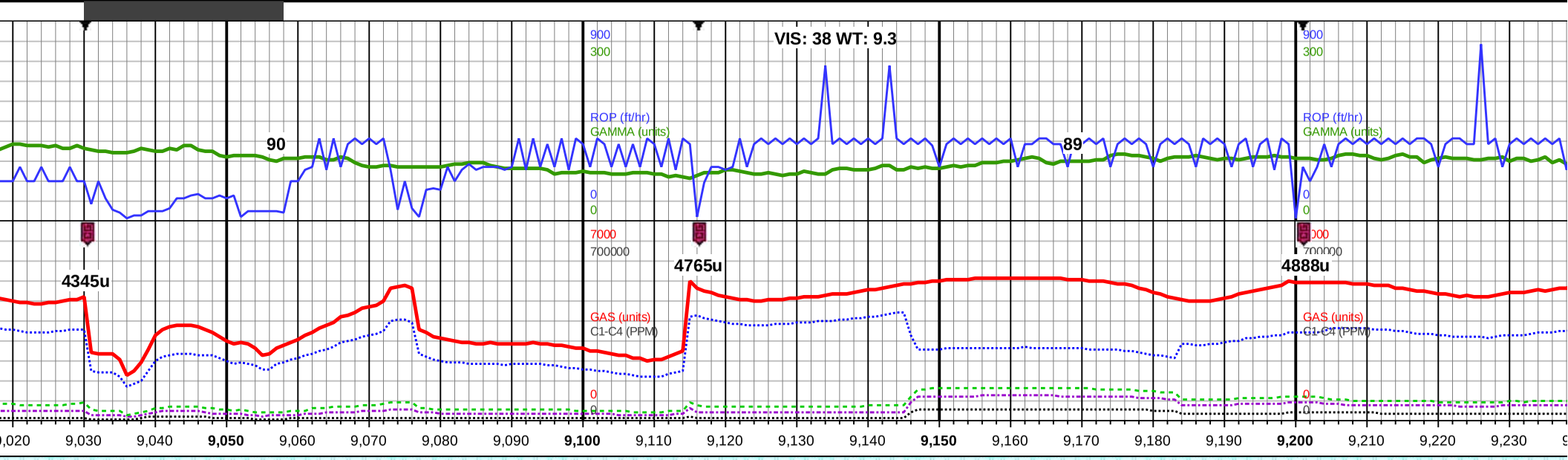
90% CHK: lt-med gy, some crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy 10% MRLST: med-dk gy, some blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, tr cal frags, fast stmg bri wh bl, even thk wh grn ring, mod stn

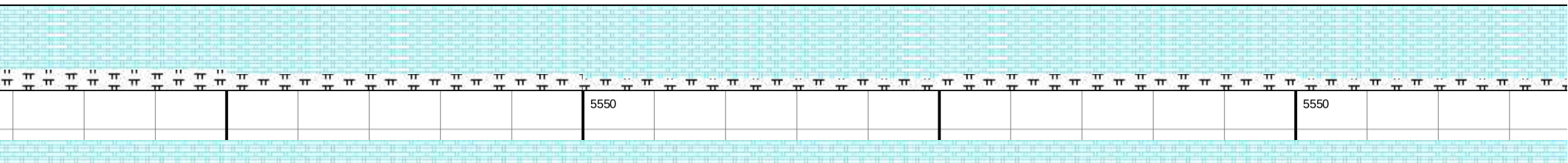
55% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx 45% CHK: lt-med gy, some crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr cal and foss frags, mod stmg bri wh bl, even mod wh grn ring, thn stn

60% MRLST: med-dk gy,
frm-mod hd, brit, slty tex,
mtx 40% CHK: lt-med gy
sb plty-blky, sft-sl frm, rth
foss frags, mod stmg bri
wh grn ring, thn stn


900
300
ROP (ft/hr)
GAMMA (units)
0
0
7000
700000
GAS (units)
C1-C4 (PPM)
0
0
141
4592
4776u
4379u
152
VIS: 38 WT: 9.
8,580
8,590
8,600
8,610
8,620
8,630
8,640
8,650
8,660
8,670
8,680
8,690
8,700
8,710
8,720
8,730
8,740
8,750
8,760
8,770
8,780
8,790
5550
TVD (ft)
MD: 8,631'
Inclination: 91.57°
Azimuth: 87.55°
TVD: 6,119.95'
VS: 2,124.9'
MD: 8,716'
Inclination: 91.08°
Azimuth: 87.77°
TVD: 6,117.98'
VS: 2,209.81'
sb plty-blky,
mot, rthy lstr, calc
some crm, mot,
y-sb wxy, tr cal and
wh bl, even mod
80% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 20% CHK: med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ cal and foss frags, tr bent, slow stmg mod wh bl, even fnt wh grn ring, thn stn
85% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 15% CHK: med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ cal and foss frags, tr bent, slow stmg mod wh bl, even fnt wh grn ring, thn stn
90% MRLST: med-dk gy, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 10% CHK: med gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ cal and foss frags, tr bent, slow milky-stmg mod wh bl, even fnt wh grn ring, thn stn
80% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 20% CHK: med gy brn, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr cal, slow milky-stmg mod wh bl, even fnt wh grn ring, thn stn


VIS: 40 WT: 9.3
900
300
ROP (ft/hr)
GAMMA (units)
0
0
7000
700000
GAS (units)
C1-C4 (PPM)
105
176
3250u
3201u
8,800
8,810
8,820
8,830
8,840
8,850
8,860
8,870
8,880
8,890
8,900
8,910
8,920
8,930
8,940
8,950
8,960
8,970
8,980
8,990
9,000
9,010
5550
TVD (ft)
8,801'
ation: 91.38°
uth: 88.55°
6,116.15'
2,294.74'
MD: 8,885'
Inclination: 90.34°
Azimuth: 89.23°
TVD: 6,114.89'
VS: 2,378.72'
MD: 8,970'
Inclination: 91.05°
Azimuth: 90.22°
TVD: 6,113.86'
VS: 2,463.71'
85% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 15% CHK: med gy brn, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr cal, slow milky-stmg mod wh bl, even fnt wh grn ring, thn stn
80% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 20% CHK: med gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr cal and foss frags, tr bent, slow milky-stmg mod wh bl, even fnt wh grn ring, thn stn
75% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 25% CHK: med gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr cal frags, tr bent, mod stmg bri wh bl, even dull amb ring, thn stn
65% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 35% CHK: lt-med gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr cal frags, mod stmg bri wh bl, even dull amb ring, thn stn
75% CHK: lt-me
plty-blky, sft-sl fr
med-dk gy, blk,
brit, slty tex, mot
fos frags, mod c
even thk wh grn





MD: 9,054'
Inclination: 91.39°
Azimuth: 90.67°
TVD: 6,112.07'
VS: 2,547.69'

MD: 9,139'
Inclination: 91.17°
Azimuth: 90.84°
TVD: 6,110.18'
VS: 2,632.66'

MD: 9,224'
Inclination: 89.69°
Azimuth: 89.56°
TVD: 6,109.54'
VS: 2,717.65'

TVD (ft)

TVD (ft)

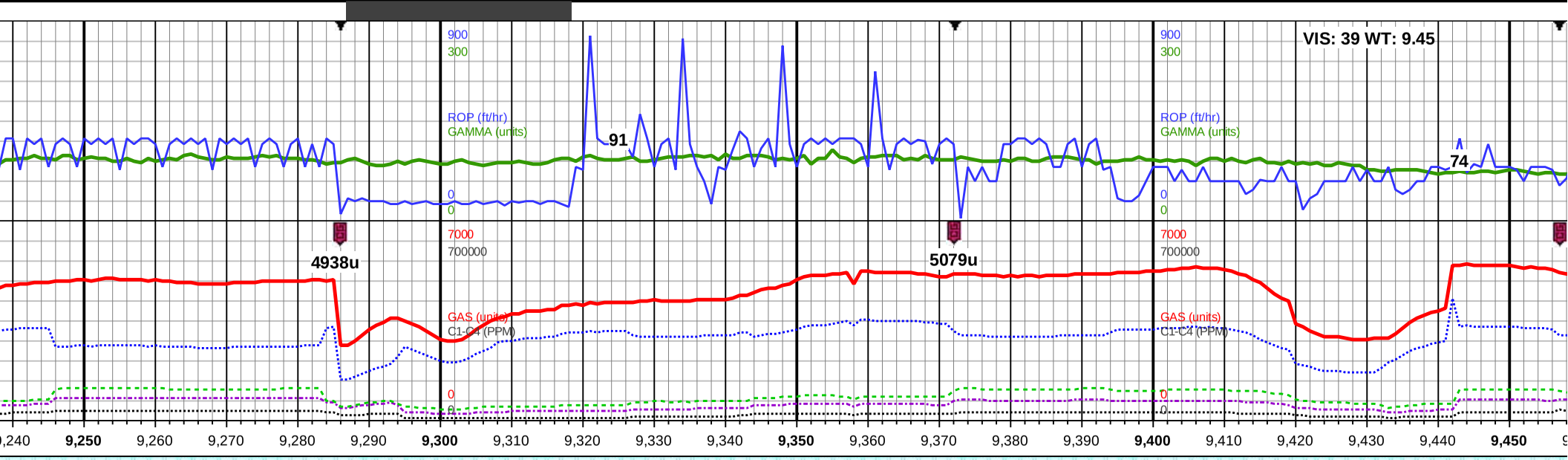
d gy, some crm, mot, sb rm, rthy-sb wxy 25% MRLST: sb plty-blky, frm-mod hd, , rthy lstr, calc mtx, tr cal and hk flor, fast stmg bri wh bl, ring, mod stn

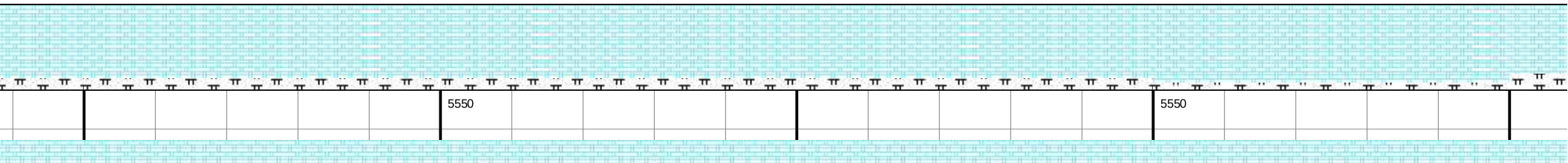
80% CHK: lt-med gy, some crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy 20% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, tr cal and fos frags, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, mod stn

85% CHK: lt-med gy, some crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy 15% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, occ cal, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, fr stn

80% CHK: lt-med gy, some crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy 20% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, occ cal, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, fr stn

85% CHK: lt-med gy brn, some crm sb plty-blky, sft-sl frm, rthy-sb wxy, 15% MRLST: med-dk gy, blk, sb pl frm-mod hd, brit, slty tex, mot, rthy mtx, occ cal, mod chk flor, fast stm bl, even thk wh grn ring, mod stn





MD: 9,310'
Inclination: 90.99°
Azimuth: 90.81°
TVD: 6,109.03'
VS: 2,803.65'

MD: 9,395'
Inclination: 89.88°
Azimuth: 89.22°
TVD: 6,108.38'
VS: 2,888.64'

n, mot,
cal incl,
ty-blky,
lstr, calc
g bri wh

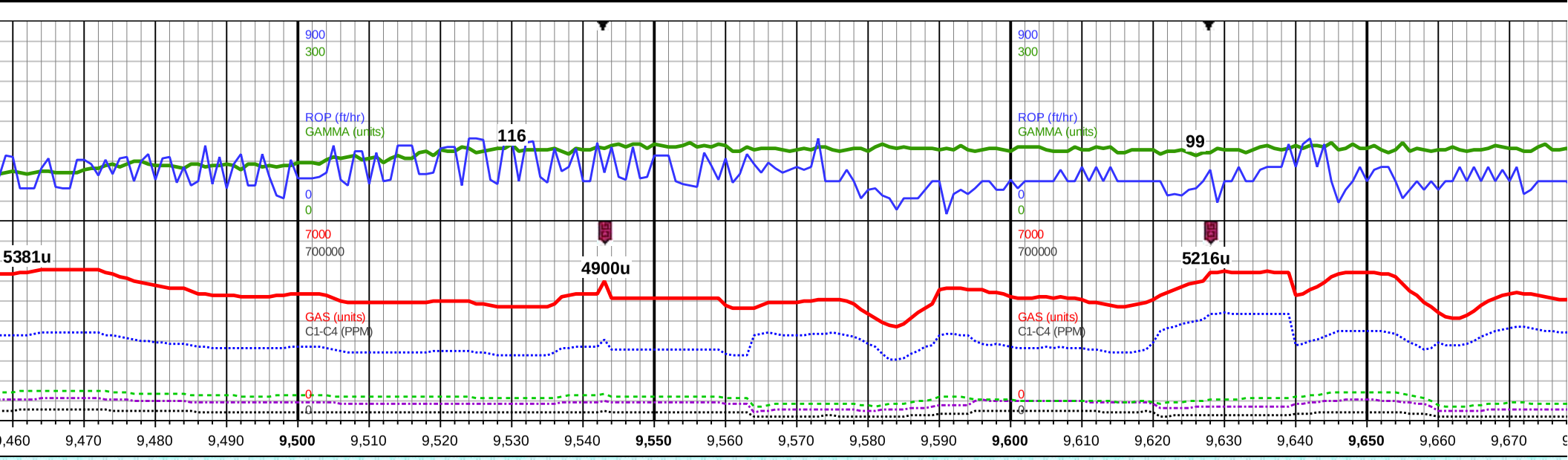
85% CHK: lt-med gy brn, some crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 15% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, occ cal, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, mod stn

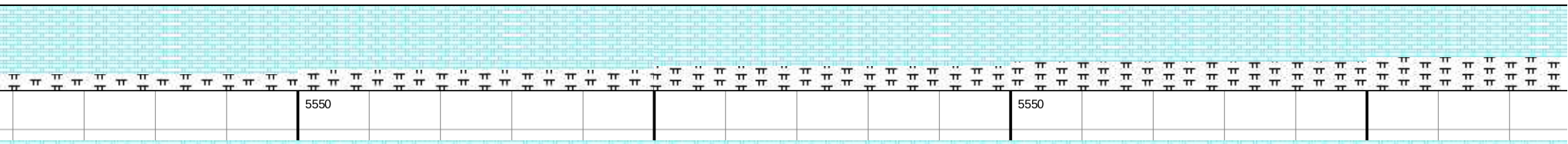
85% CHK: lt-med gy brn, some crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 15% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, occ cal, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, mod stn

85% CHK: lt-med gy brn, some crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 15% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, mot, rthy lstr, calc mtx, occ cal, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, mod stn

90% CHK: lt-med gy brn, occ crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 10% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, tr mot, rthy lstr, calc mtx, occ cal frags, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, fr stn

80% C
plty-bl
20% M
frm-mo
calc m
stmg b





MD: 9,481'
Inclination: 89.32°
Azimuth: 90.5°
TVD: 6,108.98'
VS: 2,974.64'

MD: 9,566'
Inclination: 90.56°
Azimuth: 90.55°
TVD: 6,109.07'
VS: 3,059.63'

MD: 9,651'
Inclination: 89.78°
Azimuth: 88.1°
TVD: 6,108.82'
VS: 3,144.62'

TVD (ft)

TVD (ft)

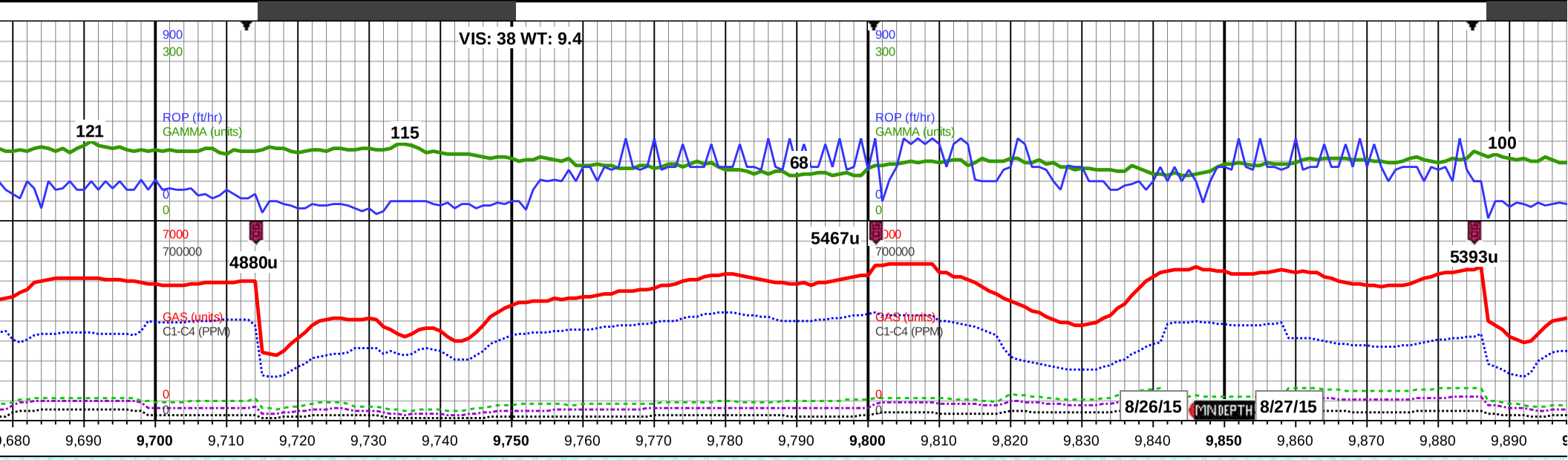
CHK: lt-med gy brn, tr crm, mot, sb
ky, sft-sl frm, rthy-sb wxy, cal incl,
MRLST: med-dk gy, blk, sb plty-blky,
od hd, brit, slty tex, tr mot, rthy lstr,
tx, occ cal frags, mod chk flor, fast
ri wh bl, even thk wh grn ring, fr stn

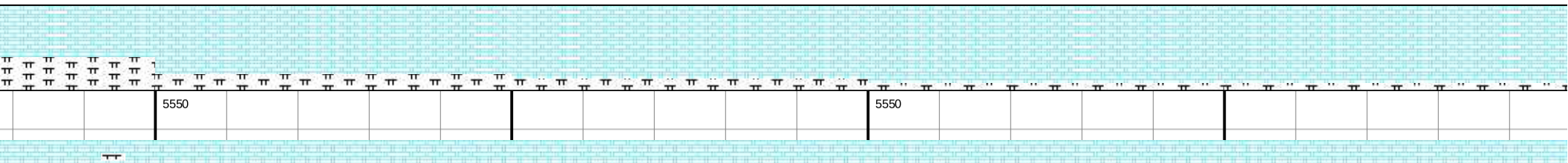
75% CHK: lt-med gy brn, tr crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 25% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, occ mot, rthy lstr, calc mtx, occ cal frags, mod chk flor, mod stmg bri wh bl, even mod wh grn ring, fr stn

70% CHK: lt-med gy brn, tr crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 30% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, occ mot, rthy lstr, calc mtx, tr cal frags, mod chk flor, mod stmg bri wh bl, even mod wh grn ring, fr stn

65% CHK: lt-med gy brn, tr crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 35% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, occ mot, rthy lstr, calc mtx, occ foss frags, tr pyr, mod chk flor, mod stmg bri wh bl, even mod wh grn ring, fr stn

60% CHK: lt-med gy brn
plty-blky, sft-sl frm, rthy-s
30% MRLST: med-dk gy
frm-mod hd, brit, slty tex,
calc mtx, occ foss frags,
flor, mod stmg bri wh bl,
ring, fr stn





MD: 9,738'
Inclination: 91.67°
Azimuth: 89.73°
TVD: 6,107.72'
VS: 3,231.59'

MD: 9,823'
Inclination: 91.73°
Azimuth: 90.16°
TVD: 6,105.2'
VS: 3,316.55'

TVD (ft)

TVD (ft)

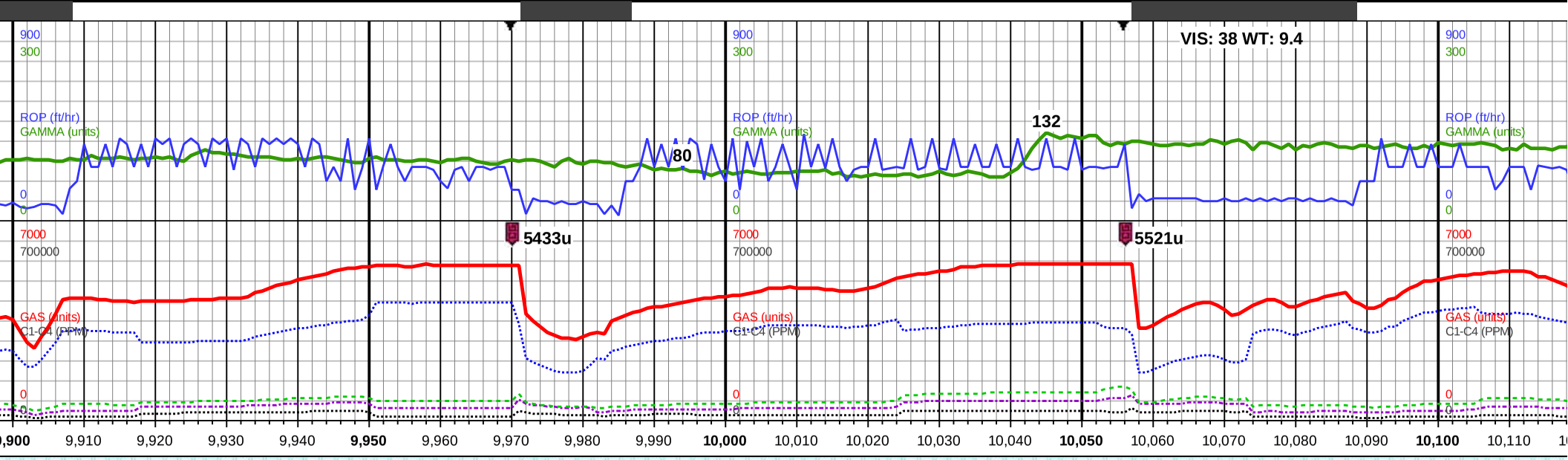
, tr crm, mot, sb
sb wxy, cal incl,
, blk, sb plty-blky,
occ mot, rthy lstr,
tr pyr, mod chk
even mod wh grn

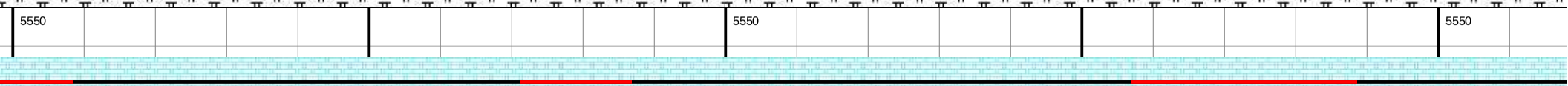
80% CHK: lt-med gy brn, tr crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 20% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, occ mot, rthy lstr, calc mtx, occ foss frags, mod chk flor, mod stmg bri wh bl, even mod dull amb ring, fr stn

85% CHK: lt-med gy brn, tr crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 15% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, occ mot, rthy lstr, calc mtx, occ foss frags, mod chk flor, mod stmg bri wh bl, even mod dull amb ring, fr stn

90% CHK: lt-med gy brn, tr crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 10% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, occ mot, rthy lstr, calc mtx, occ foss frags, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, mod stn

90% CHK: lt-med gy brn, tr crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 10% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, occ mot, rthy lstr, calc mtx, tr calc frags, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, mod stn





MD: 9,908'
Inclination: 90°
Azimuth: 91.02°
TVD: 6,103.91'
VS: 3,401.53'

85% CHK: lt-med gy tn, tr crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 15% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, occ mot, rthy lstr, calc mtx, tr calc frags, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, mod stn

MD: 9,993'
Inclination: 88.45°
Azimuth: 90.74°
TVD: 6,105.06'
VS: 3,486.51'

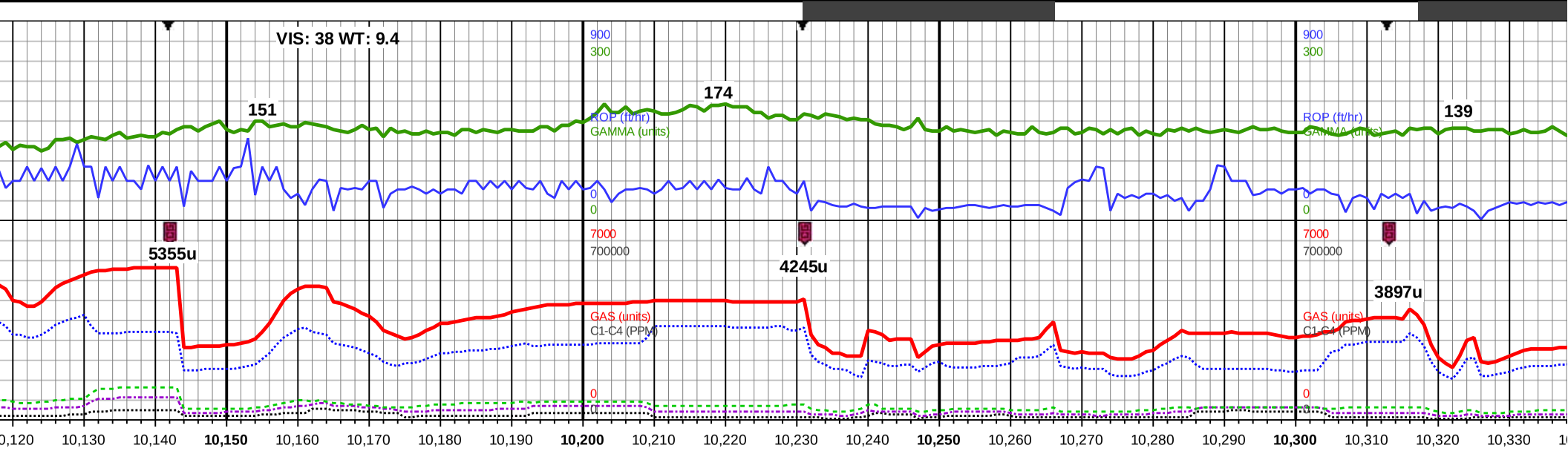
90% CHK: lt-med gy tn, tr crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 10% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, occ mot, rthy lstr, calc mtx, tr foss frags, tr pyr, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, mod stn

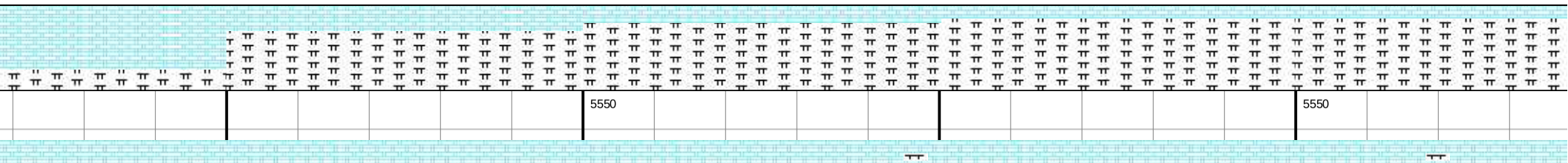
90% CHK: lt-med gy tn, occ crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 10% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, occ mot, rthy lstr, calc mtx, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, mod stn

MD: 10,079'
Inclination: 89.57°
Azimuth: 90.71°
TVD: 6,106.55'
VS: 3,572.49'

80% CHK: lt-med gy tn, occ crm, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, cal incl, 20% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty tex, occ mot, rthy lstr, calc mtx, mod chk flor, fast stmg bri wh bl, even thk wh grn ring, mod stn

75% CHK: lt-me
plty-blky, sft-sl f
MRLST: med-dk
frm-mod hd, brit
calc mtx, occ ca
chk flor, mod str
grn ring, fr stn





MD: 10,167'
Inclination: 88.27°
Azimuth: 89.87°
TVD: 6,108.21'
VS: 3,660.47'

MD: 10,252'
Inclination: 89.2°
Azimuth: 88.46°
TVD: 6,110.08'
VS: 3,745.44'

MD: 10,33
Inclination
Azimuth:
TVD: 6,11
VS: 3,830

TVD (ft)

TVD (ft)

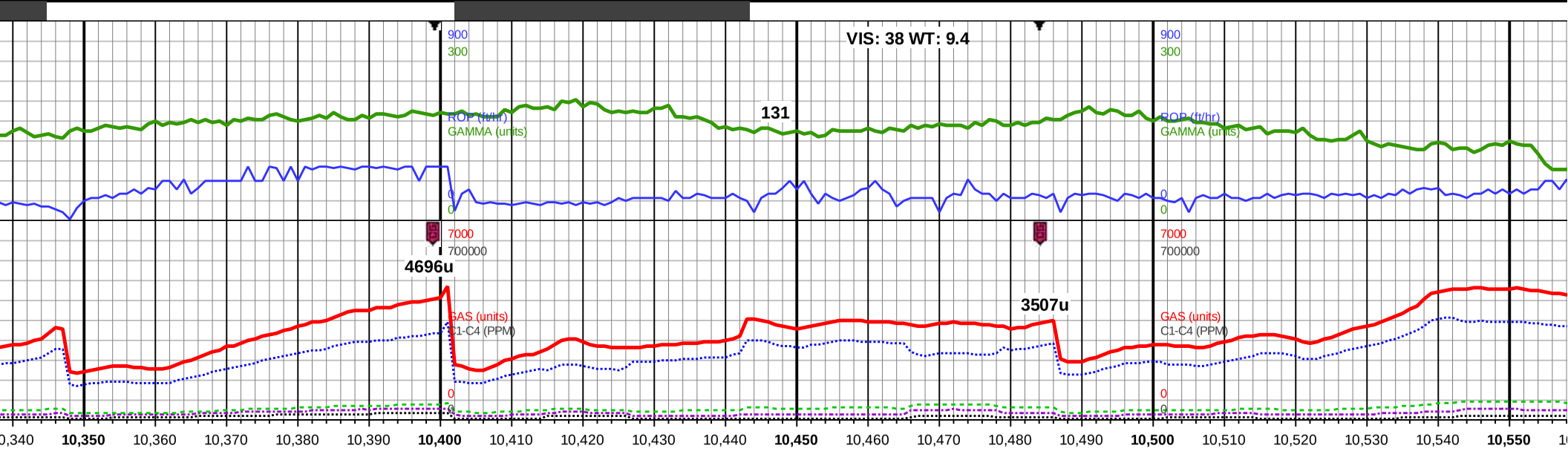
d gy tn, occ crm, mot, sb
rm, rthy-sb wxy, cal incl, 25%
k gy, blk, sb plty-blky,
, slty tex, occ mot, rthy lstr,
cl frags, tr foss frags, mod
mg bri wh bl, even mod wh

70% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 30% CHK: med-dk gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr pyr, mod chk flor, mod stmg bri wh bl, even mod wh grn ring, fr stn

80% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 20% CHK: med-dk gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr bent, mod chk flor, mod stmg bri wh bl, even mod wh grn ring, tr stn

85% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 15% CHK: med-dk gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, mod stmg bri wh bl, even mod wh grn ring, tr stn

85% MRLST: dk gy-blk, sb plty-blky
frm-mod hd, brit, slty-arg tex, mot,
calc mtx, 15% CHK: med-dk gy brn
gy, mot, sb plty-blky, sft-sl frm, rthy
cal frags, slow stmg-milky mod wh
thin wh grn ring, tr stn



37'
n: 90.68°
88.11°
10.17'
.4'

MD: 10,422'
Inclination: 91.66°
Azimuth: 89.61°
TVD: 6,108.44'
VS: 3,915.36'

TVD (ft)

MD: 10,506'
Inclination: 91.66°
Azimuth: 89.64°
TVD: 6,106'
VS: 3,999.32'

y,
rthy lstr,
, occ dk
-sb wxy, tr
bl, even

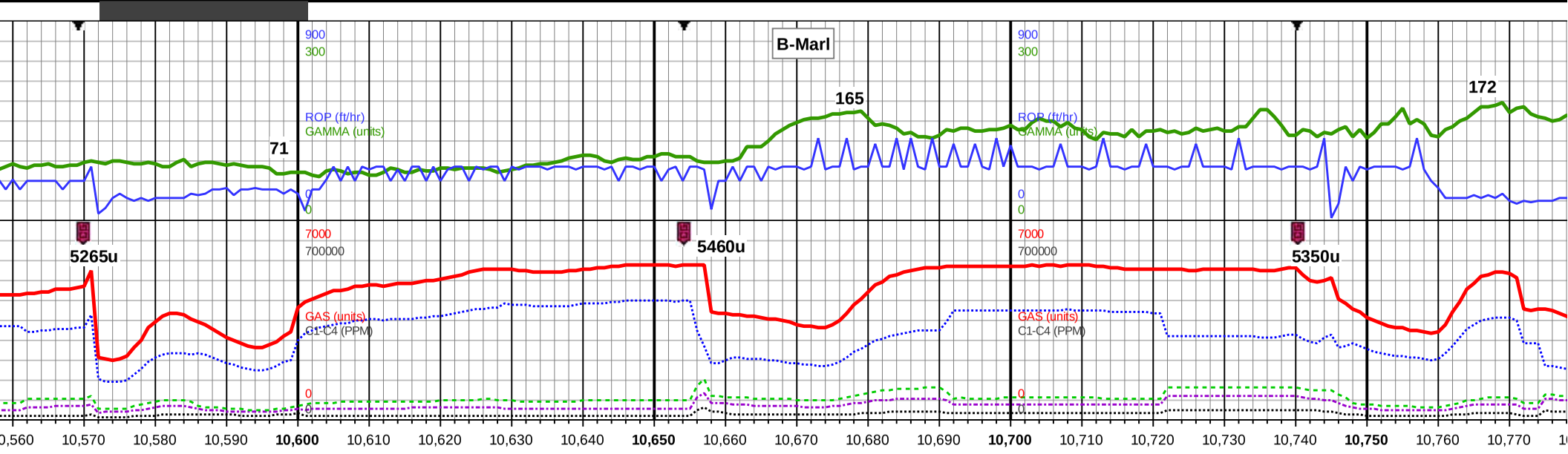
80% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 20% CHK: med-dk gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr pyr, slow stmg-milky mod wh bl, even thin wh grn ring, tr stn

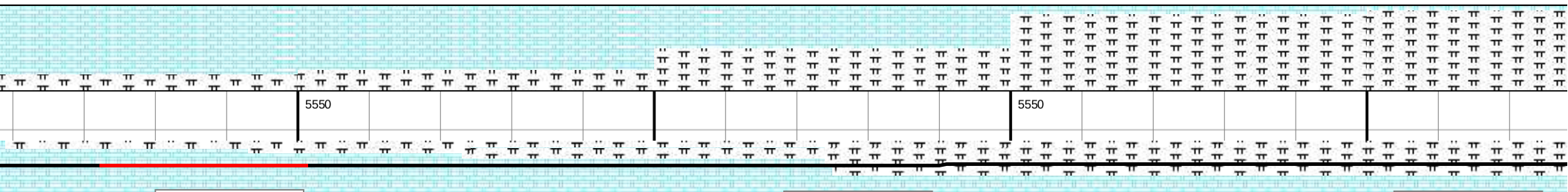
75% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 25% CHK: med-dk gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, tr cal frags, mod stmg bri wh bl, even mod wh grn ring, fr stn

65% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 35% CHK: med-dk gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, scat fos frags, tr imbd cal, mod stmg bri wh bl, even mod wh grn ring, fr stn

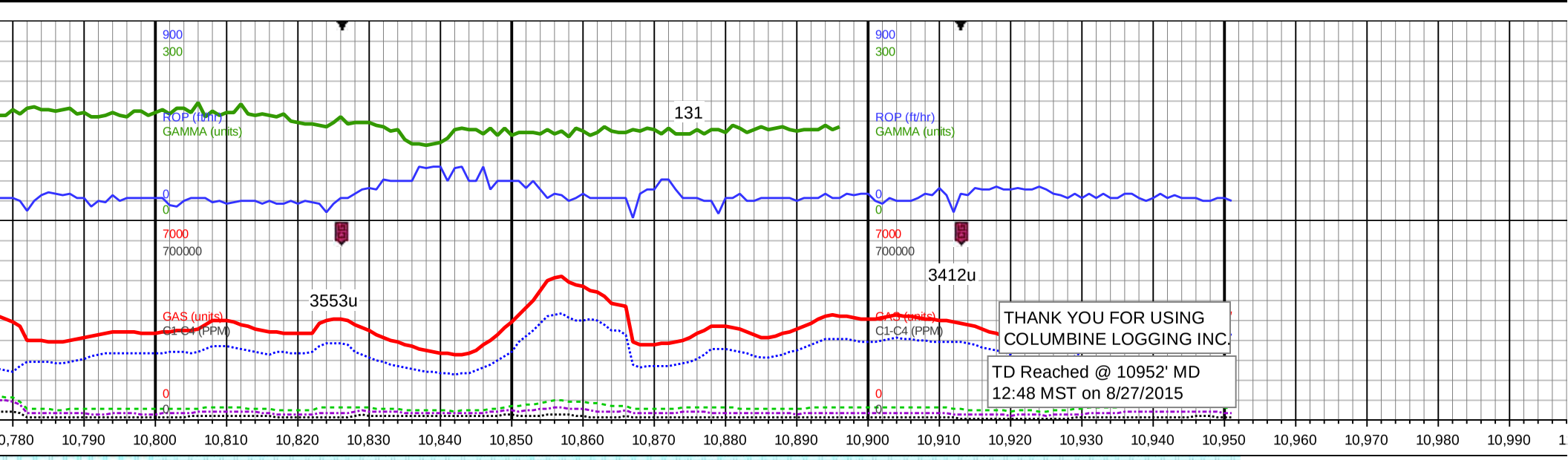
65% CHK: med-dk gy brn, occ lt gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, 35% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, scat fos frags, tr imbd cal, tr bent, fast stmg bri wh bl, even thk wh grn ring, mod stn

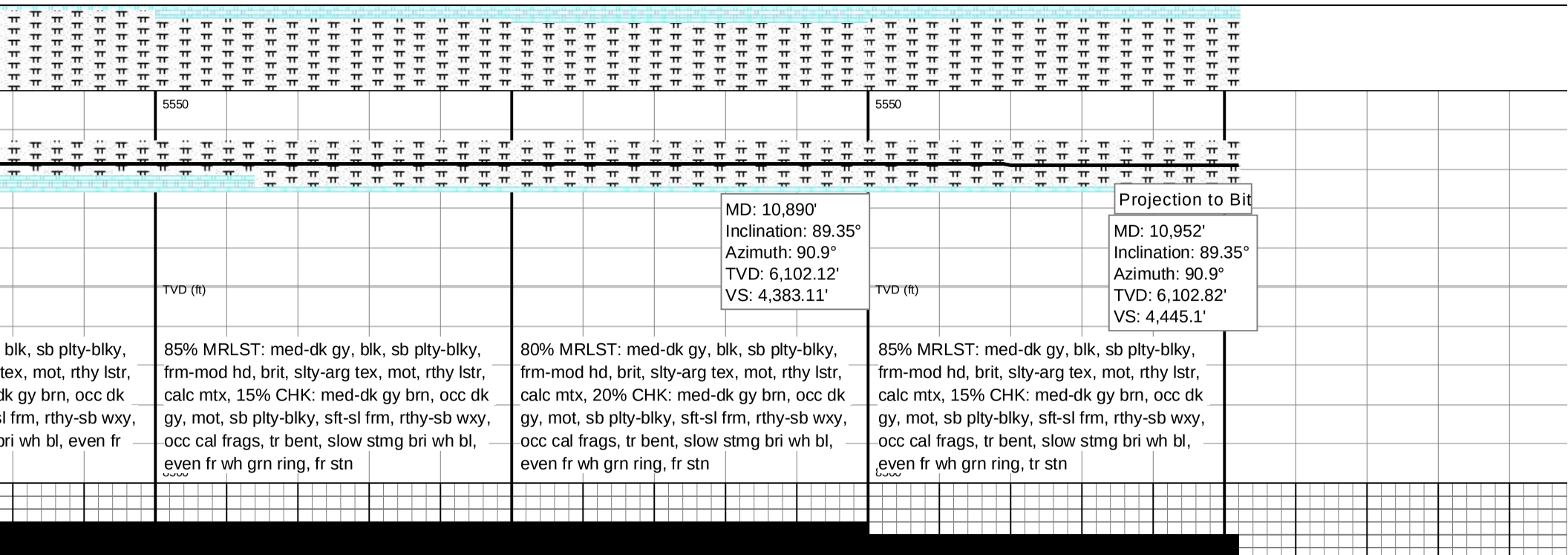
80% C
plty-blk
dk gy-
slty-arg
frags,
thk wh





MD: 10,591' Inclination: 91.11° Azimuth: 91.83° TVD: 6,103.95' VS: 4,084.28'	MD: 10,678' Inclination: 90.71° Azimuth: 91.91° TVD: 6,102.57' VS: 4,171.23'		MD: 10,764' Inclination: 90.34° Azimuth: 92.3° TVD: 6,101.78' VS: 4,257.16'
TVD (ft)		TVD (ft)	
HK: med-dk gy brn, occ lt gy, mot, sb y, sft-sl frm, rthy-sb wxy, 20% MRLST: lk, sb plty-blky, frm-mod hd, brit, tex, mot, rthy lstr, calc mtx, occ fos r imbd cal, fast stmg bri wh bl, even grn ring, mod stn	75% CHK: med-dk gy brn, occ lt gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, 25% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, tr imbd cal, fast stmg bri wh bl, even thk wh grn ring, mod stn	50% CHK: med-dk gy brn, occ lt gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, 50% MRLST: dk gy-blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, occ cal and fos frags, fast stmg bri wh bl, even thk wh grn ring, mod stn	90% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 10% CHK: med-dk gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ cal frags, slow stmg bri wh bl, even fr wh grn ring, fr stn	95% MRLST: med-dk gy, frm-mod hd, brit, slty-arg calc mtx, 5% CHK: med- gy, mot, sb plty-blky, sft-s occ cal frags, slow stmg b wh grn ring, fr stn





blk, sb plty-blky,
tex, mot, rthy lstr,
dk gy brn, occ dk
l frm, rthy-sb wxy,
ri wh bl, even fr

85% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 15% CHK: med-dk gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ cal frags, tr bent, slow stmg bri wh bl, even fr wh grn ring, fr stn

80% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 20% CHK: med-dk gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ cal frags, tr bent, slow stmg bri wh bl, even fr wh grn ring, fr stn

85% MRLST: med-dk gy, blk, sb plty-blky, frm-mod hd, brit, slty-arg tex, mot, rthy lstr, calc mtx, 15% CHK: med-dk gy brn, occ dk gy, mot, sb plty-blky, sft-sl frm, rthy-sb wxy, occ cal frags, tr bent, slow stmg bri wh bl, even fr wh grn ring, tr stn