Scale: 5" / 100'
Measured Depth Log

Well Name	Nelson Farm3_Lat_Extraction.mplot
Location	Sec.28-T07N-R67W
State	CO
County	Weld
Country	USA
Rig Number	Xtreme7
API Number	05-123-39958-00
AFE #	14-203
Region	DJ Basin
Field	Wattenberg
Spud Date	9/27/2014
Drilling Completed	10/7/2014
Surface Coordinates	N 1,443,923.76' E 3,164,958.10' Lat 40°33'1.638" N Long 104°54'23.008" W
Bottom Hole Coordinates	X 3,172,349.54' Y 1,444,195.12' Lat 40°33'3.819" N Long 104°52'47.2326" W
Ground Elevation	4973'
K.B. Elevation	4989'
Logged Interval	6405' **To** 14640'
Total Depth	14640'
Formation	Niobrara B
Type of Drilling Fluid	Water based mud

Company Extraction Oil &

Address 1888 Sherman S
Denver, CO 802

Name Hana Waldhaus

Company ALS Empirica

Address 6360 W Sam Ho
Suite 100
Houston, TX 770

Logging start date:

Logging end date:

2 man logging service

Operator

Gas

St., Suite 500
03

Geologist

erova & Edward Knight

uston Pkwy N

041

Other

9/29/2014

10/07/2014

ML-131

Rock Types

Accessories

Fossils

FOSSIL
GASTROPOD
ALGAE
AMPHIPORA
BELEMNITE
BIOCLASTIC
BRACHOIPOD
BRYOZOA
CEPHALOPOD
CORAL
CRINOID
ECHINOID
FISH
FORAMINIFERA
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
PINPOINT
VUGGY

Porosity

EARTHY
FENESTRAL
FRACTURE
INTERCRYSTALLINE
INTEROOLITIC
MOLDIC
ORGANIC

Engineering

CONNECTION (LEFT)
CONNECTION (RIGHT)
CONNECTION GAS
MN DEPTH DOWN
MN DEPTH
MN DEPTH UP
FORMATION TOP
CG UP
SLIDE
SURVEY
TRIP GAS
DTG
CASING
BIT
DST INTERVAL
FAULT
GAS SHOW
NORMAL FAULT
OIL SHOW
OVERTURNED STRATA
REVERSE FAULT
SIDEWALL CORE (LEFT)
SIDEWALL CORE (RIGHT)
CORE - RECOVERED
CORE - LOST
WIRELINE TESTED - LEFT
WIRELINE TESTED - RT

Rounding

ANGULAR
ROUNDED
SUBANG
SUBRND

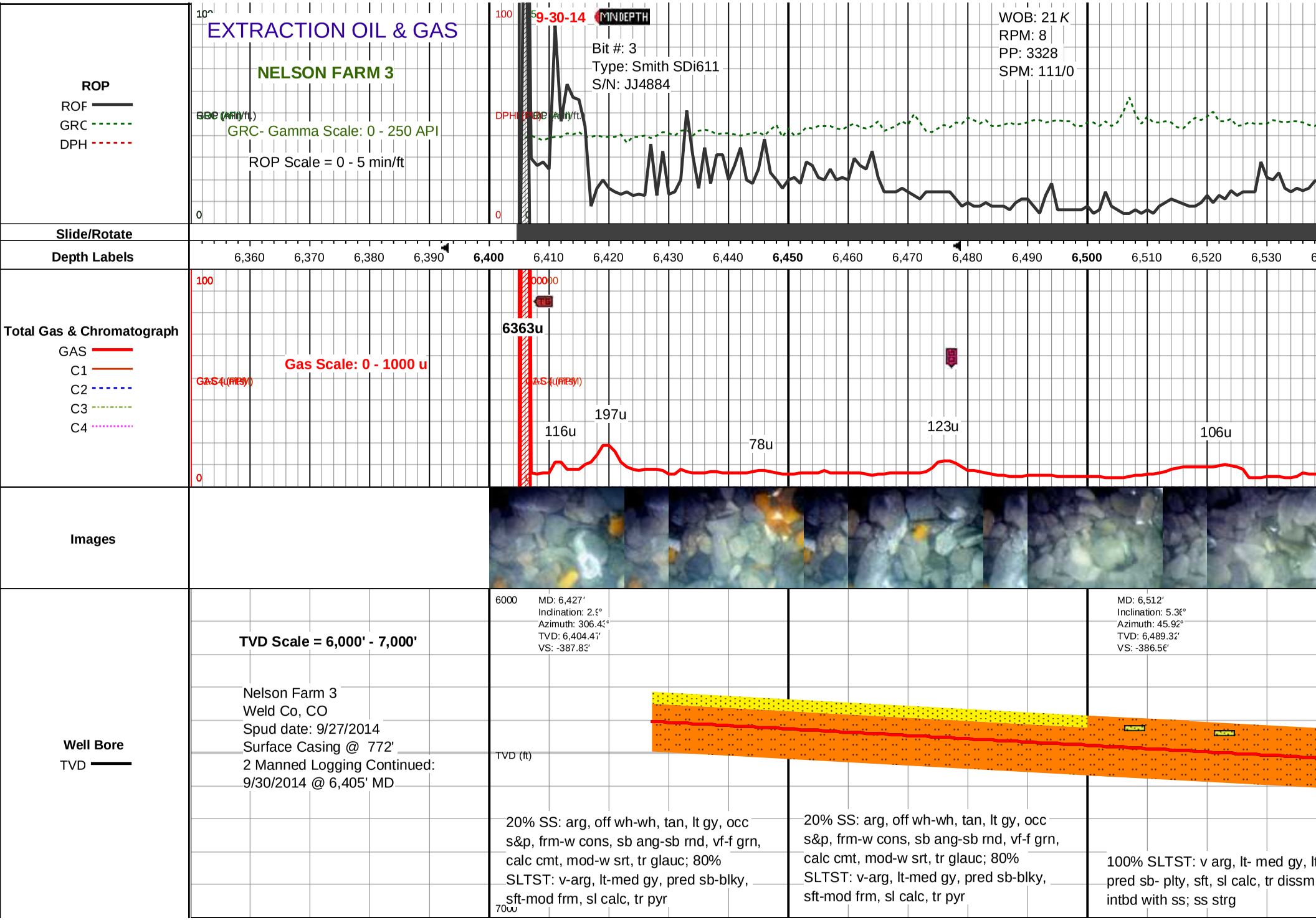
Textures

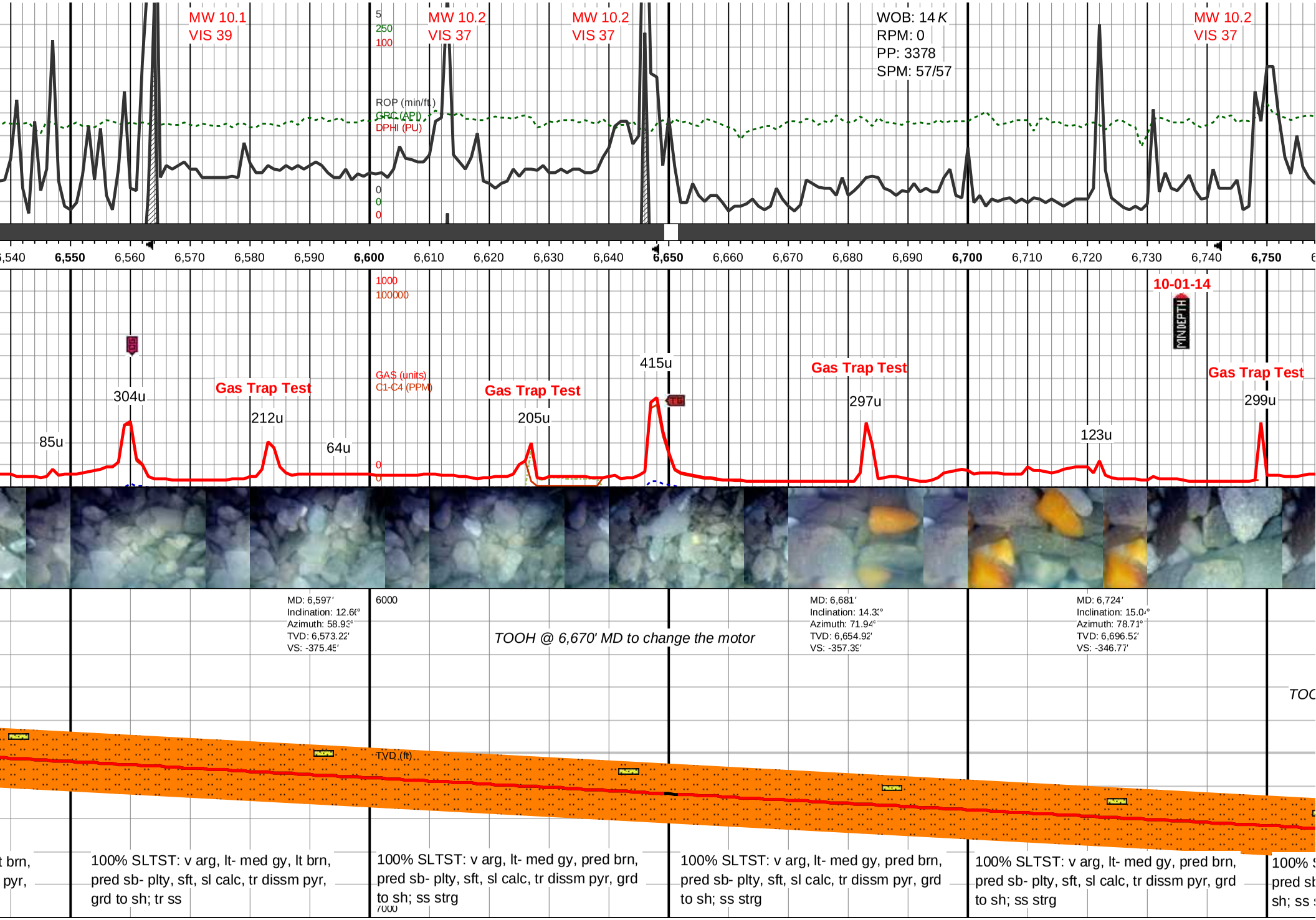
BOUNDSTONE
CHALKY
CRYPTOXLN
EARTHY
FINELYXLN
GRAINSTONE
LITHOGRAPHIC
MICROXLN
MUDSTONE
PACKSTONE
WACKESTONE

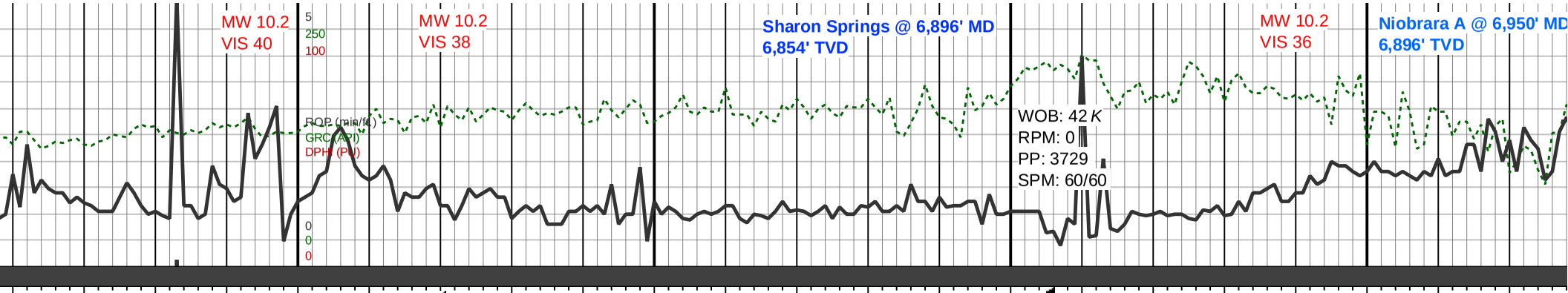
Sorting

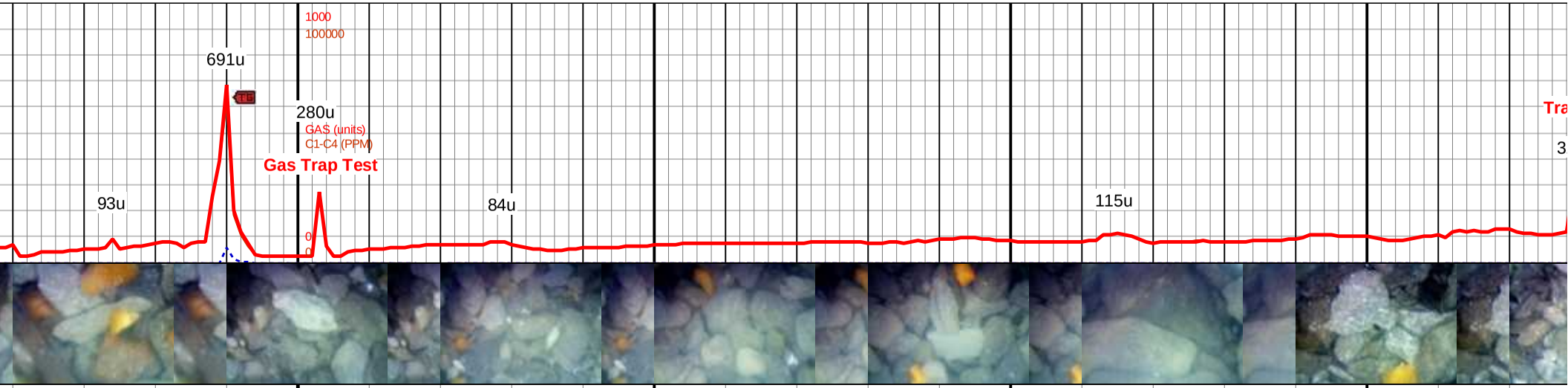
MODERATE
POOR
WELL

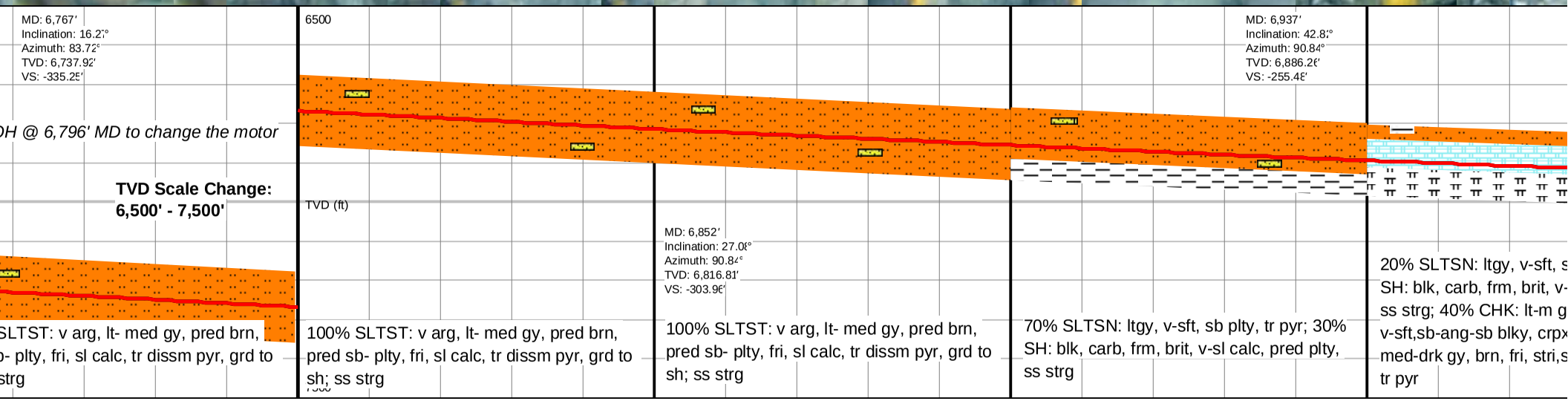
SILTY SHALE


EXTRACTION OIL & GAS
NELSON FARM 3
ROP
ROP
GRC
DPH
GRC- Gamma Scale: 0 - 250 API
ROP Scale = 0 - 5 min/ft
9-30-14
MWDEPTH
Bit #: 3
Type: Smith SDi611
S/N: JJ4884
WOB: 21 K
RPM: 8
PP: 3328
SPM: 111/0
Slide/Rotate
Depth Labels
6,360
6,370
6,380
6,390
6,400
6,410
6,420
6,430
6,440
6,450
6,460
6,470
6,480
6,490
6,500
6,510
6,520
6,530
Total Gas & Chromatograph
GAS
C1
C2
C3
C4
Gas Scale: 0 - 1000 u
6363u
116u
197u
78u
123u
106u
Images
TVD Scale = 6,000' - 7,000'
Nelson Farm 3
Weld Co, CO
Spud date: 9/27/2014
Surface Casing @ 772'
2 Manned Logging Continued:
9/30/2014 @ 6,405' MD
Well Bore
TVD
6000
MD: 6,427'
Inclination: 2.5°
Azimuth: 306.4°
TVD: 6,404.4'
VS: -387.8'
MD: 6,512'
Inclination: 5.3°
Azimuth: 45.9°
TVD: 6,489.3'
VS: -386.5'
TVD (ft)
7000
20% SS: arg, off wh-wh, tan, lt gy, occ s&p, frm-w cons, sb ang-sb rnd, vf-f grn, calc cmt, mod-w srt, tr glauc; 80% SLTST: v-arg, lt-med gy, pred sb-blky, sft-mod frm, sl calc, tr pyr
20% SS: arg, off wh-wh, tan, lt gy, occ s&p, frm-w cons, sb ang-sb rnd, vf-f grn, calc cmt, mod-w srt, tr glauc; 80% SLTST: v-arg, lt-med gy, pred sb-blky, sft-mod frm, sl calc, tr pyr
100% SLTST: v arg, lt- med gy, lt
pred sb- plty, sft, sl calc, tr dissm
intbd with ss; ss strg


MW 10.1
VIS 39
MW 10.2
VIS 37
MW 10.2
VIS 37
MW 10.2
VIS 37
WOB: 14 K
RPM: 0
PP: 3378
SPM: 57/57
ROP (min/ft)
GRC (API)
DPHI (PU)
6,540
6,550
6,560
6,570
6,580
6,590
6,600
6,610
6,620
6,630
6,640
6,650
6,660
6,670
6,680
6,690
6,700
6,710
6,720
6,730
6,740
6,750
10-01-14
MINDEPTH
GAS (units)
C1-C4 (PPM)
85u
304u
212u
64u
205u
415u
297u
123u
299u
Gas Trap Test
Gas Trap Test
Gas Trap Test
Gas Trap Test
MD: 6,597'
Inclination: 12.6°
Azimuth: 58.9°
TVD: 6,573.2'
VS: -375.4'
MD: 6,681'
Inclination: 14.3°
Azimuth: 71.9°
TVD: 6,654.9'
VS: -357.3'
MD: 6,724'
Inclination: 15.0°
Azimuth: 78.71°
TVD: 6,696.5'
VS: -346.77'
TOOH @ 6,670' MD to change the motor
TVD (ft)
100% SLTST: v arg, lt- med gy, lt brn, pred sb- plty, sft, sl calc, tr dissm pyr, grd to sh; tr ss
100% SLTST: v arg, lt- med gy, pred brn, pred sb- plty, sft, sl calc, tr dissm pyr, grd to sh; ss strg
100% SLTST: v arg, lt- med gy, pred brn, pred sb- plty, sft, sl calc, tr dissm pyr, grd to sh; ss strg
100% SLTST: v arg, lt- med gy, pred brn, pred sb- plty, sft, sl calc, tr dissm pyr, grd to sh; ss strg







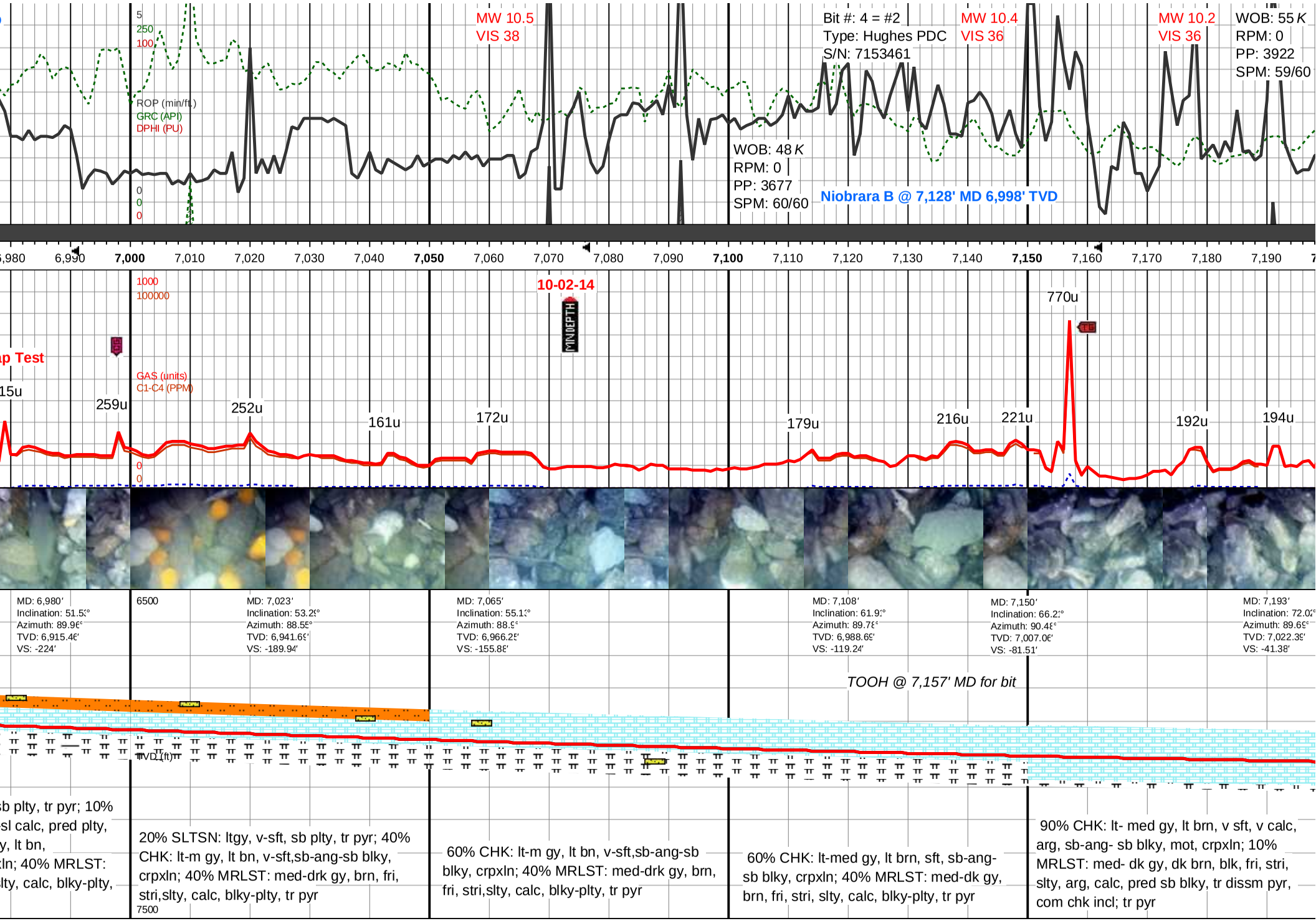
SLTST: v arg, lt- med gy, pred brn, b- plty, fri, sl calc, tr dissm pyr, grd to strg

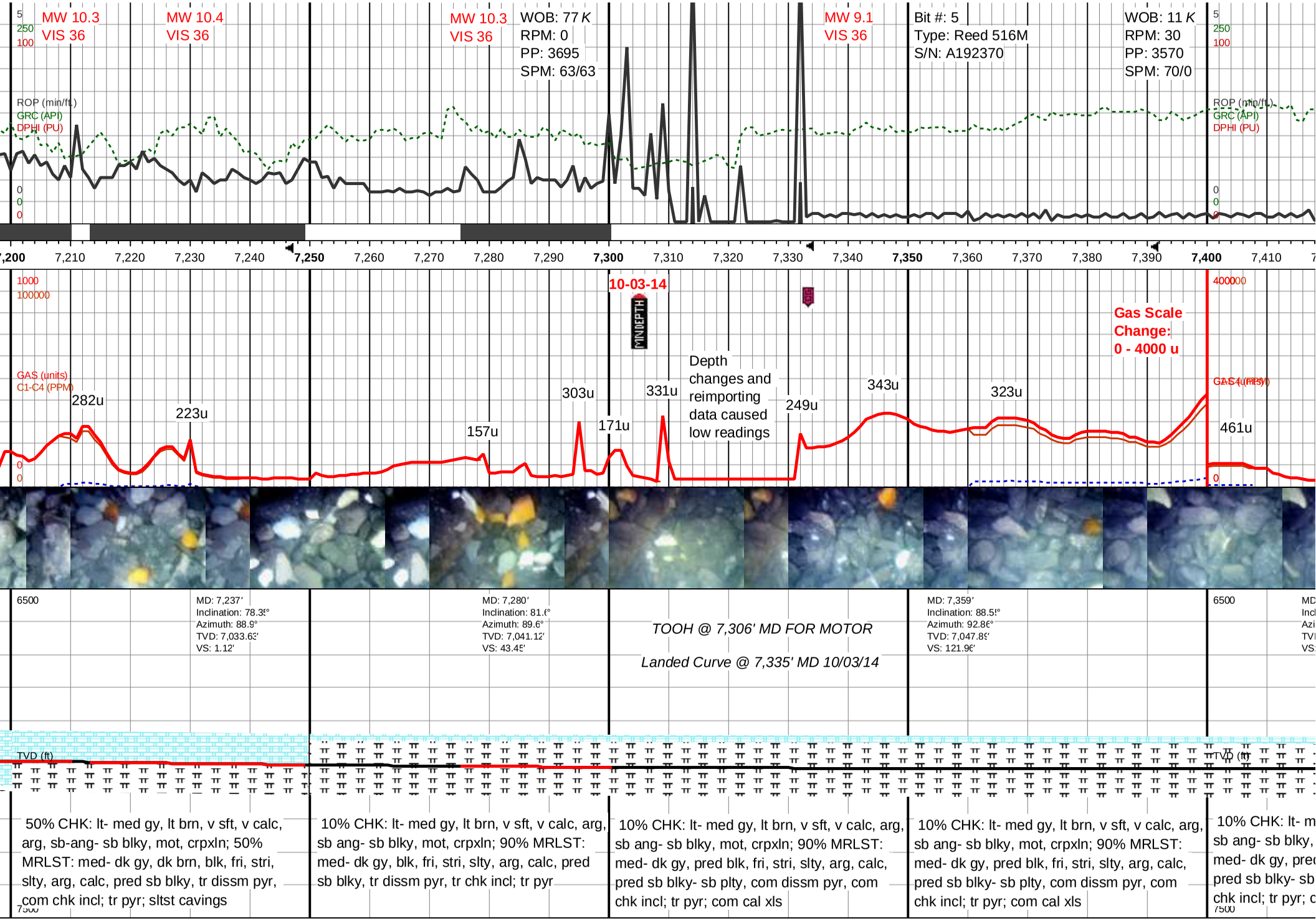
100% SLTST: v arg, lt- med gy, pred brn, pred sb- plty, fri, sl calc, tr dissm pyr, grd to sh; ss strg

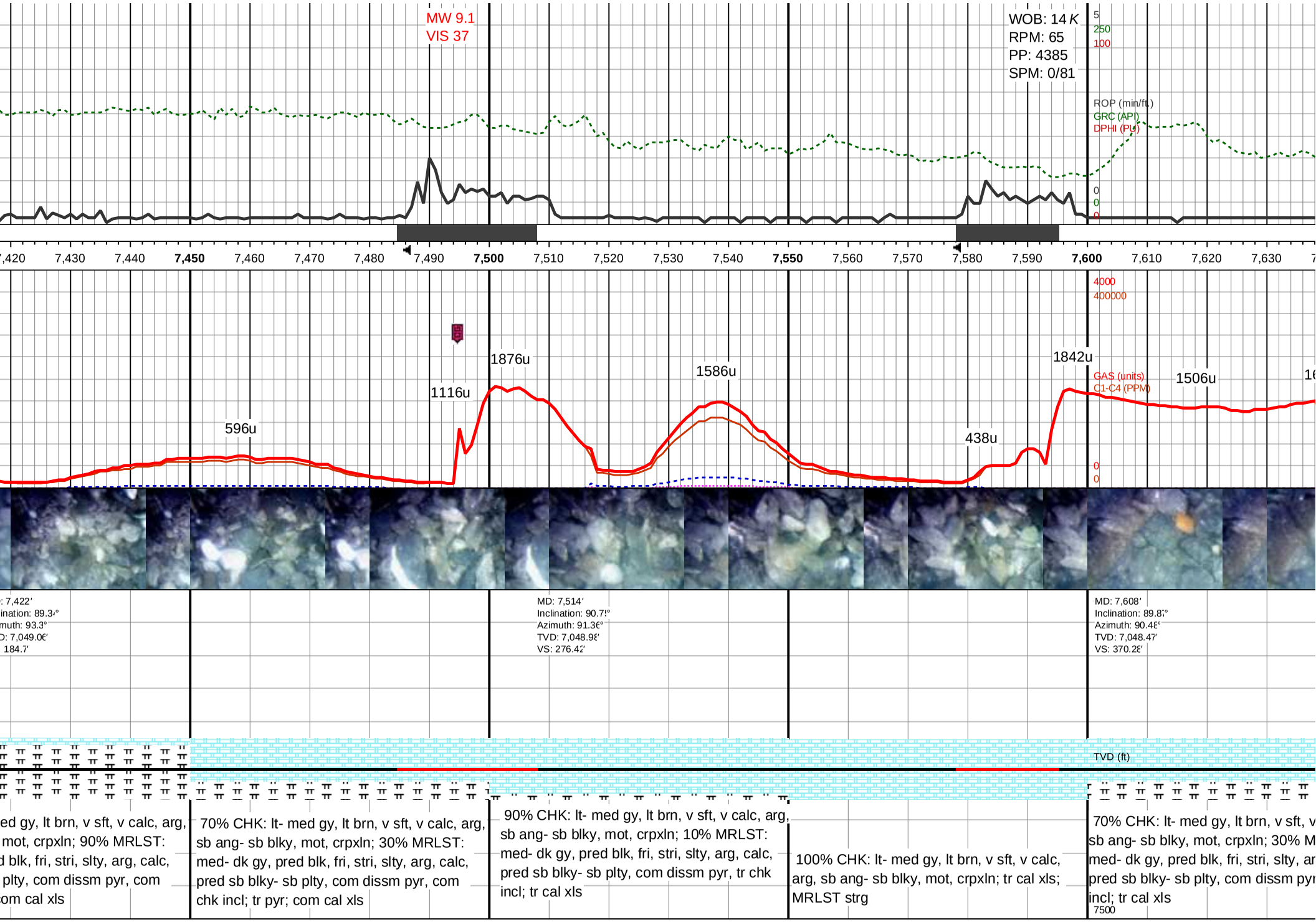
100% SLTST: v arg, lt- med gy, pred brn, pred sb- plty, fri, sl calc, tr dissm pyr, grd to sh; ss strg

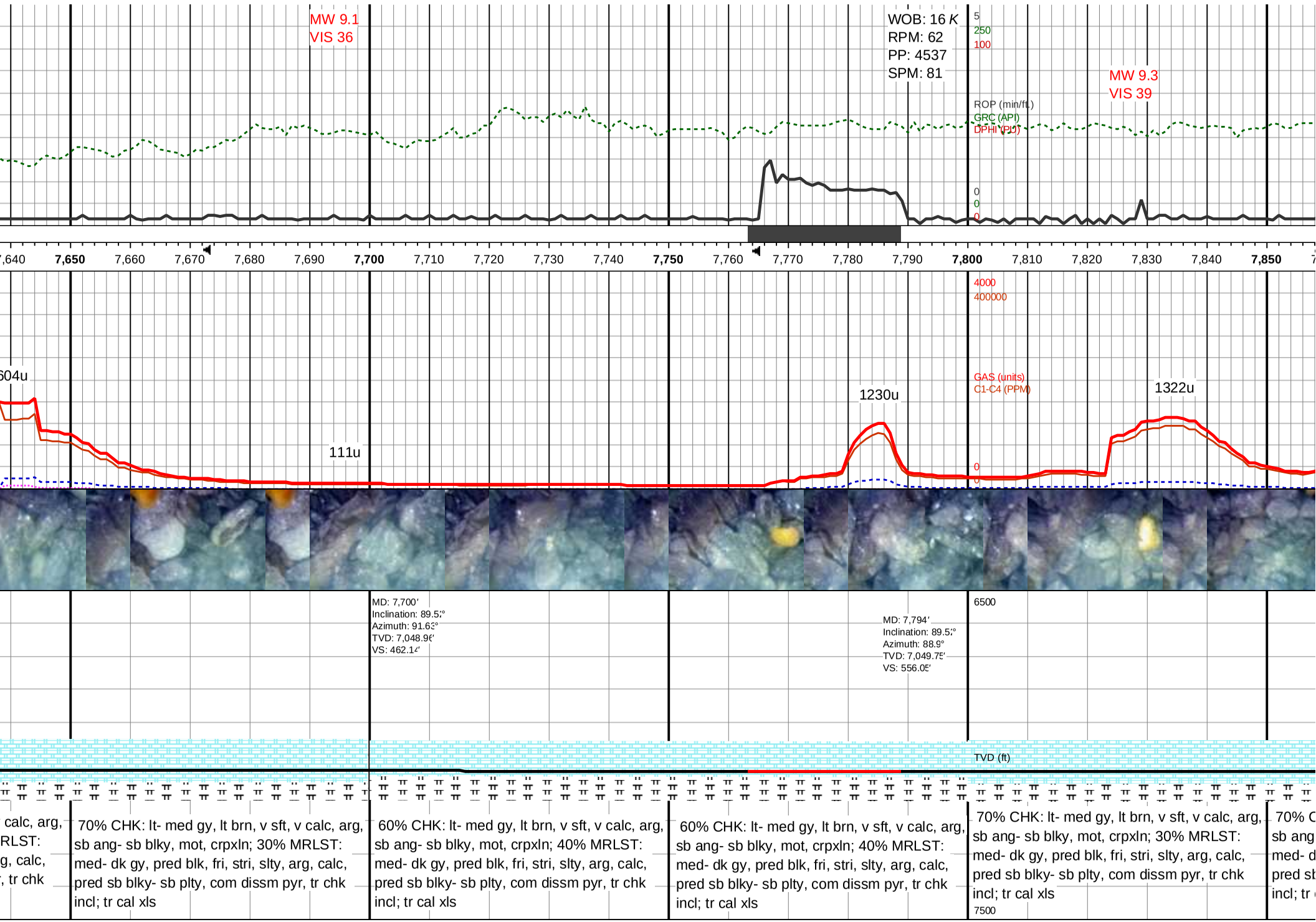
70% SLTSN: ltgy, v-sft, sb plty, tr pyr; 30% SH: blk, carb, frm, brit, v-sl calc, pred plty, ss strg

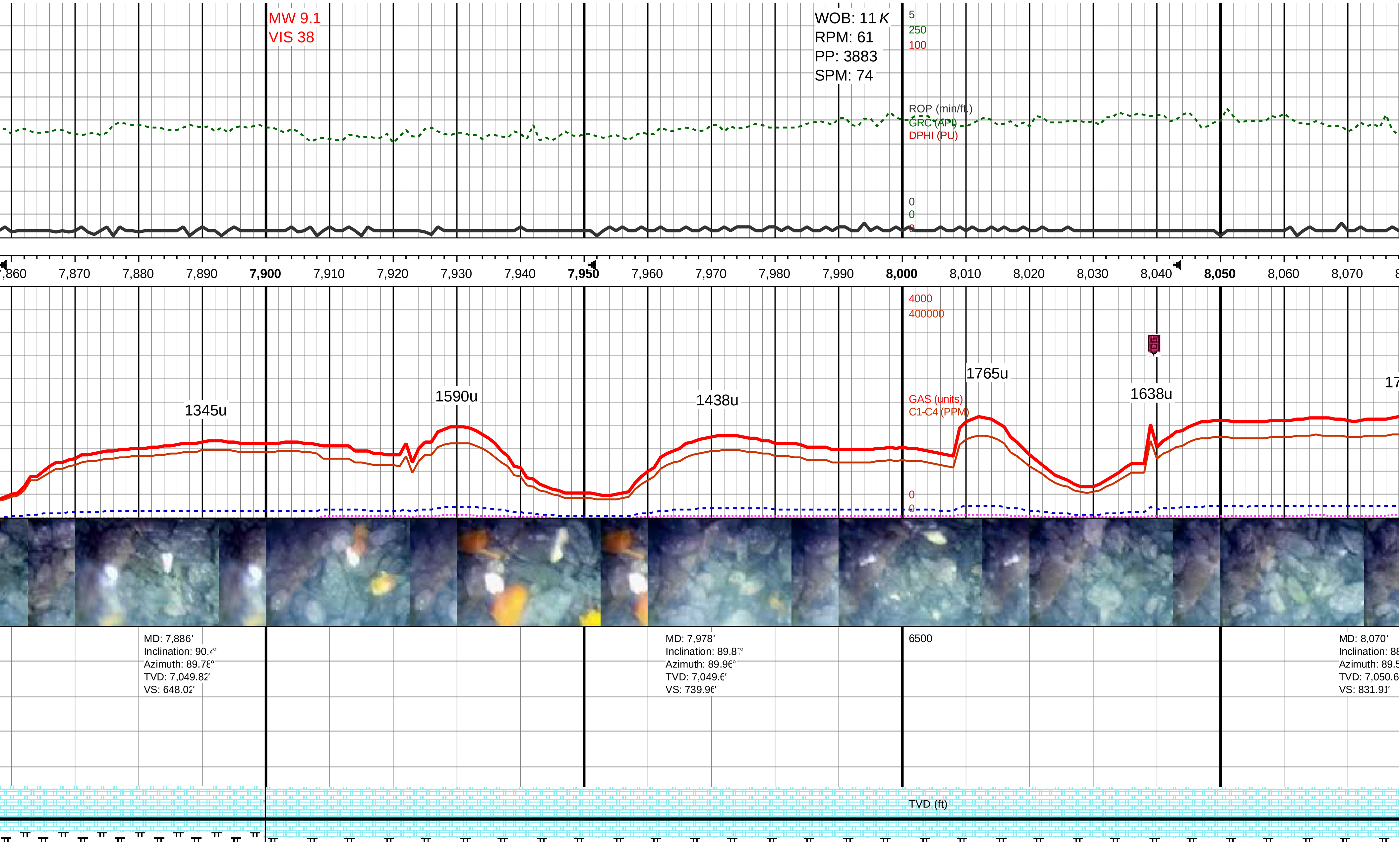
20% SLTSN: ltgy, v-sft, s
SH: blk, carb, frm, brit, v-
ss strg; 40% CHK: lt-m g
v-sft,sb-ang-sb blky, crpx
med-drk gy, brn, fri, stri,s
tr pyr


MW 10.5
VIS 38
Bit #: 4 = #2
Type: Hughes PDC
S/N: 7153461
MW 10.4
VIS 36
MW 10.2
VIS 36
WOB: 55 K
RPM: 0
PP: 3922
SPM: 59/60
ROP (min/ft)
GRC (API)
DPHI (PU)
WOB: 48 K
RPM: 0
PP: 3677
SPM: 60/60
Niobrara B @ 7,128' MD 6,998' TVD
6,980
6,990
7,000
7,010
7,020
7,030
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
10-02-14
MNDEPTH
GAS (units)
C1-C4 (PPM)
259u
252u
161u
172u
179u
216u
221u
770u
192u
194u
MD: 6,980'
Inclination: 51.5°
Azimuth: 89.9°
TVD: 6,915.4'
VS: -224'
6500
MD: 7,023'
Inclination: 53.2°
Azimuth: 88.5°
TVD: 6,941.6'
VS: -189.9'
MD: 7,065'
Inclination: 55.1°
Azimuth: 88.5°
TVD: 6,966.2'
VS: -155.8'
MD: 7,108'
Inclination: 61.9°
Azimuth: 89.7°
TVD: 6,988.6'
VS: -119.2'
MD: 7,150'
Inclination: 66.2°
Azimuth: 90.4°
TVD: 7,007.0'
VS: -81.51'
MD: 7,193'
Inclination: 72.0°
Azimuth: 89.6°
TVD: 7,022.3'
VS: -41.38'
TOOH @ 7,157' MD for bit
TVD (ft)
7500
sb plty, tr pyr; 10%
sl calc, pred plty,
y, lt bn,
xln; 40% MRLST:
lty, calc, blky-plty,
20% SLTSN: ltgy, v-sft, sb plty, tr pyr; 40% CHK: lt-m gy, lt bn, v-sft,sb-ang-sb blky, crpxln; 40% MRLST: med-drk gy, brn, fri, stri,slty, calc, blky-plty, tr pyr
60% CHK: lt-m gy, lt bn, v-sft,sb-ang-sb blky, crpxln; 40% MRLST: med-drk gy, brn, fri, stri,slty, calc, blky-plty, tr pyr
60% CHK: lt-med gy, lt brn, sft, sb-ang-sb blky, crpxln; 40% MRLST: med-dk gy, brn, fri, stri, slty, calc, blky-plty, tr pyr
90% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb-ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, dk brn, blk, fri, stri, slty, arg, calc, pred sb blky, tr dissm pyr, com chk incl; tr pyr


MW 10.3
VIS 36
MW 10.4
VIS 36
MW 10.3
VIS 36
WOB: 77 K
RPM: 0
PP: 3695
SPM: 63/63
MW 9.1
VIS 36
Bit #: 5
Type: Reed 516M
S/N: A192370
WOB: 11 K
RPM: 30
PP: 3570
SPM: 70/0
ROP (min/ft)
GRC (API)
DPHI (PU)
7,200
7,210
7,220
7,230
7,240
7,250
7,260
7,270
7,280
7,290
7,300
7,310
7,320
7,330
7,340
7,350
7,360
7,370
7,380
7,390
7,400
7,410
10-03-14
MINDEPTH
DIF
Gas Scale Change: 0 - 4000 u
GAS (units)
C1-C4 (PPM)
282u
223u
157u
303u
171u
331u
Depth changes and reimporting data caused low readings
249u
343u
323u
461u
MD: 7,237'
Inclination: 78.3°
Azimuth: 88.9°
TVD: 7,033.6'
VS: 1.12'
MD: 7,280'
Inclination: 81.4°
Azimuth: 89.6°
TVD: 7,041.12'
VS: 43.45'
TOOH @ 7,306' MD FOR MOTOR
Landed Curve @ 7,335' MD 10/03/14
MD: 7,359'
Inclination: 88.5°
Azimuth: 92.8°
TVD: 7,047.8'
VS: 121.9'
TVD (ft)
50% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb-ang- sb blky, mot, crpxln; 50% MRLST: med- dk gy, dk brn, blk, fri, stri, slty, arg, calc, pred sb blky, tr dissm pyr, com chk incl; tr pyr; sltst cavings
10% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 90% MRLST: med- dk gy, blk, fri, stri, slty, arg, calc, pred sb blky, tr dissm pyr, tr chk incl; tr pyr
10% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 90% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, com chk incl; tr pyr; com cal xls
10% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 90% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, com chk incl; tr pyr; com cal xls


MW 9.1
VIS 37
WOB: 14 K
RPM: 65
PP: 4385
SPM: 0/81
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
0
7,420
7,430
7,440
7,450
7,460
7,470
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
4000
400000
596u
1116u
1876u
1586u
438u
1842u
1506u
GAS (units)
C1-C4 (PPM)
0
0
MD: 7,422′
Inclination: 89.3°
Azimuth: 93.3°
TVD: 7,049.0′
184.7′
MD: 7,514′
Inclination: 90.7°
Azimuth: 91.3°
TVD: 7,048.9′
VS: 276.4′
MD: 7,608′
Inclination: 89.8°
Azimuth: 90.4°
TVD: 7,048.4′
VS: 370.2′
TVD (ft)
ed gy, lt brn, v sft, v calc, arg,
mot, crpxln; 90% MRLST:
d blk, fri, stri, slty, arg, calc,
plty, com dissm pyr, com
om cal xls
70% CHK: lt- med gy, lt brn, v sft, v calc, arg,
sb ang- sb blky, mot, crpxln; 30% MRLST:
med- dk gy, pred blk, fri, stri, slty, arg, calc,
pred sb blky- sb plty, com dissm pyr, com
chk incl; tr pyr; com cal xls
90% CHK: lt- med gy, lt brn, v sft, v calc, arg,
sb ang- sb blky, mot, crpxln; 10% MRLST:
med- dk gy, pred blk, fri, stri, slty, arg, calc,
pred sb blky- sb plty, com dissm pyr, tr chk
incl; tr cal xls
100% CHK: lt- med gy, lt brn, v sft, v calc,
arg, sb ang- sb blky, mot, crpxln; tr cal xls;
MRLST strg
70% CHK: lt- med gy, lt brn, v sft, v
sb ang- sb blky, mot, crpxln; 30% M
med- dk gy, pred blk, fri, stri, slty, ar
pred sb blky- sb plty, com dissm pyr
incl; tr cal xls
7500


MW 9.1
VIS 36
WOB: 16 K
RPM: 62
PP: 4537
SPM: 81
5
250
100
MW 9.3
VIS 39
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
0
7,640
7,650
7,660
7,670
7,680
7,690
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
4000
400000
604u
111u
1230u
1322u
GAS (units)
C1-C4 (PPM)
0
0
MD: 7,700'
Inclination: 89.5°
Azimuth: 91.6°
TVD: 7,048.9'
VS: 462.1'
MD: 7,794'
Inclination: 89.5°
Azimuth: 88.9°
TVD: 7,049.7'
VS: 556.0'
6500
TVD (ft)
7500
calc, arg,
RLST:
g, calc,
, tr chk
70% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 30% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls
60% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 40% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls
60% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 40% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls
70% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 30% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls
70% C
sb ang
med- d
pred sb
incl; tr



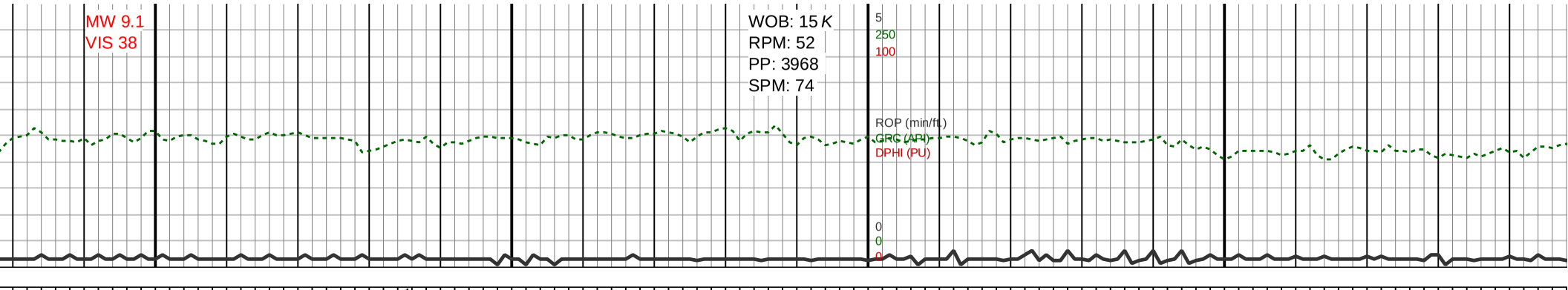
CHK: lt- med gy, lt brn, v sft, v calc, arg, - sb blky, mot, crpxln; 30% MRLST: k gy, pred blk, fri, stri, slty, arg, calc, b blky- sb plty, com dissm pyr, tr chk cal xls

80% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls

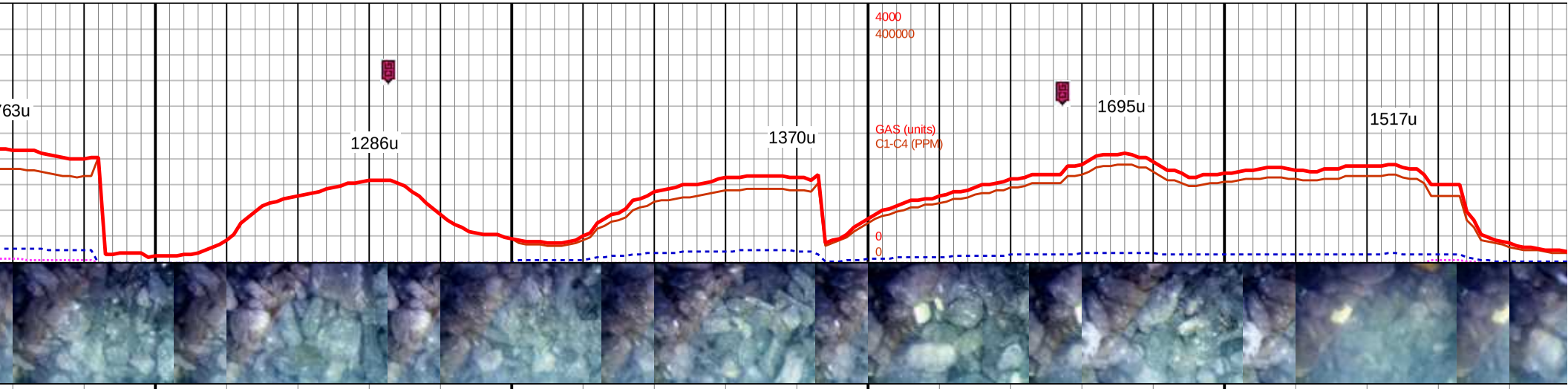
80% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls

80% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls

80% CHK: lt- med gy, lt b sb ang- sb blky, mot, crpx med- dk gy, pred blk, fri, s pred sb blky- sb plty, com incl; tr cal xls



8,080 8,090 **8,100** 8,110 8,120 8,130 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



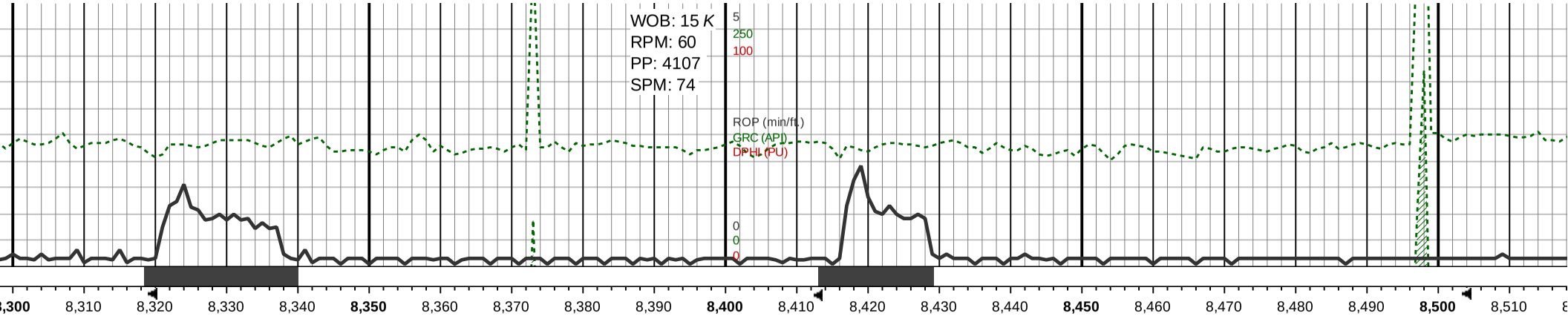
MD: 8,162′
Inclination: 89.5;°
Azimuth: 90.6€°
TVD: 7,052′
VS: 923.8;′

6500

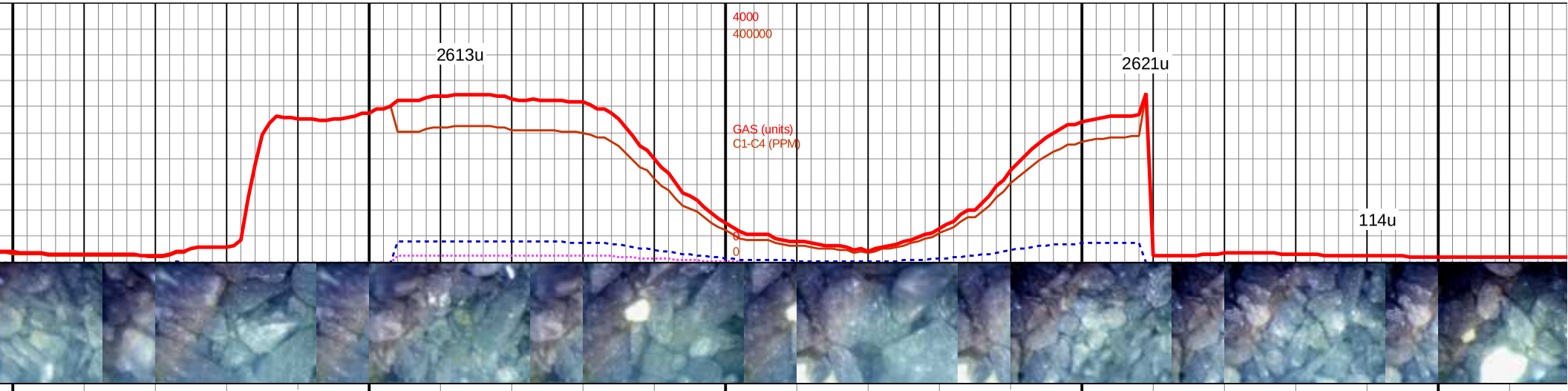
MD: 8,255′
Inclination: 88.1;°
Azimuth: 90.84°
TVD: 7,053.92′
VS: 1,016.7′

TVD (ft)

brn, v sft, v calc, arg, lln; 20% MRLST: stri, slty, arg, calc, dissm pyr, tr chk	80% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls	90% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls	70% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 30% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls	80% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls



8,300 8,310 8,320 8,330 8,340 **8,350** 8,360 8,370 8,380 8,390 **8,400** 8,410 8,420 8,430 8,440 **8,450** 8,460 8,470 8,480 8,490 **8,500** 8,510



MD: 8,347'
Inclination: 89.4°
Azimuth: 89.87°
TVD: 7,055.9'
VS: 1,108.5'

6500

MD: 8,439'
Inclination: 90.5°
Azimuth: 87.41°
TVD: 7,055.9'
VS: 1,200.5'

TVD (ft)

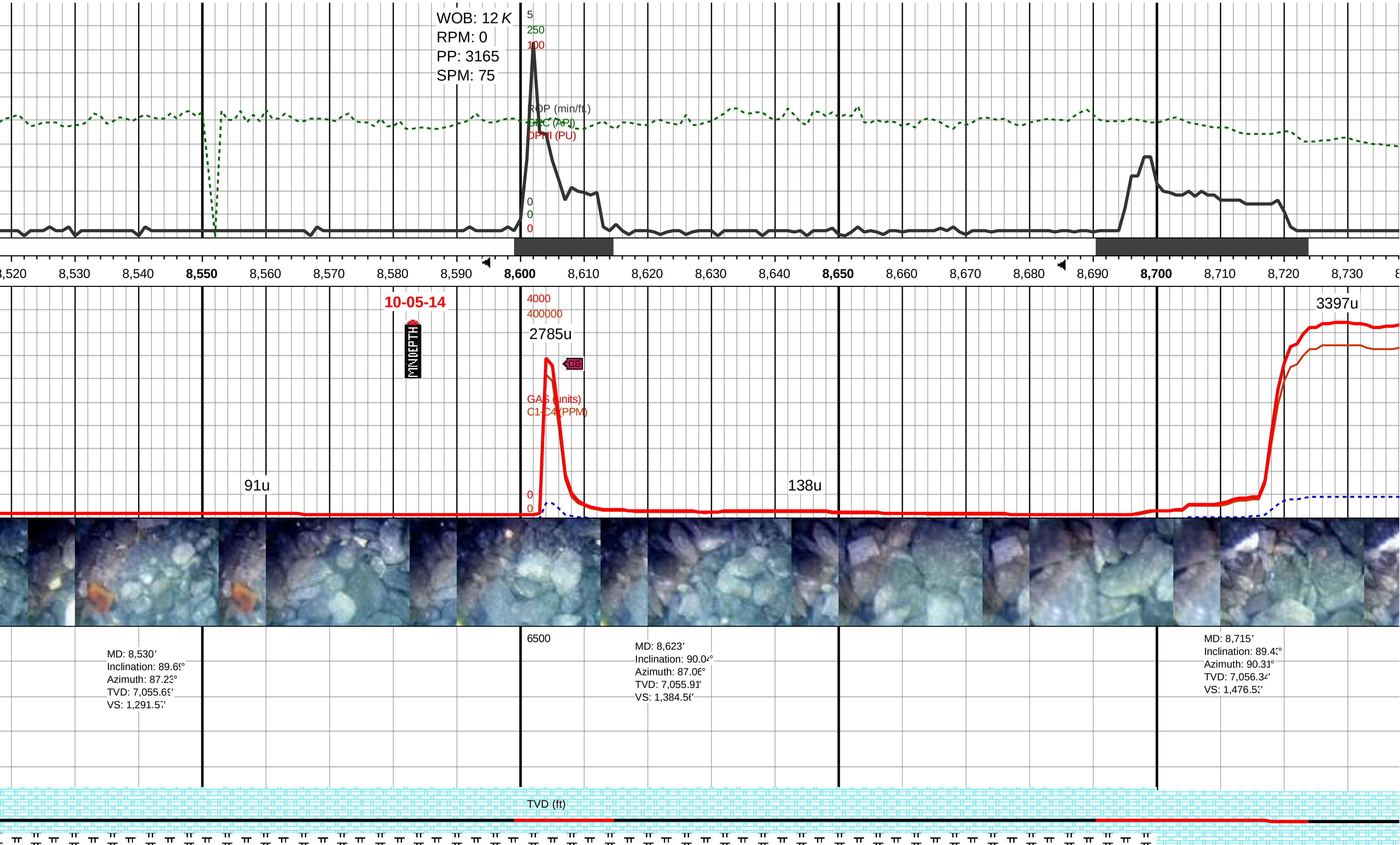
70% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 30% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls

70% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 30% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls

60% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 40% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls

70% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 30% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls

70% CHK: lt- m
sb ang- sb blky,
med- dk gy, pred
pred sb blky- sb
incl; tr cal xls



MD: 8,530'
Inclination: 89.6°
Azimuth: 87.22°
TVD: 7,055.6'
VS: 1,291.5'

MD: 8,623'
Inclination: 90.0°
Azimuth: 87.0°
TVD: 7,055.91'
VS: 1,384.5'

MD: 8,715'
Inclination: 89.4°
Azimuth: 90.31°
TVD: 7,056.3'
VS: 1,476.5'

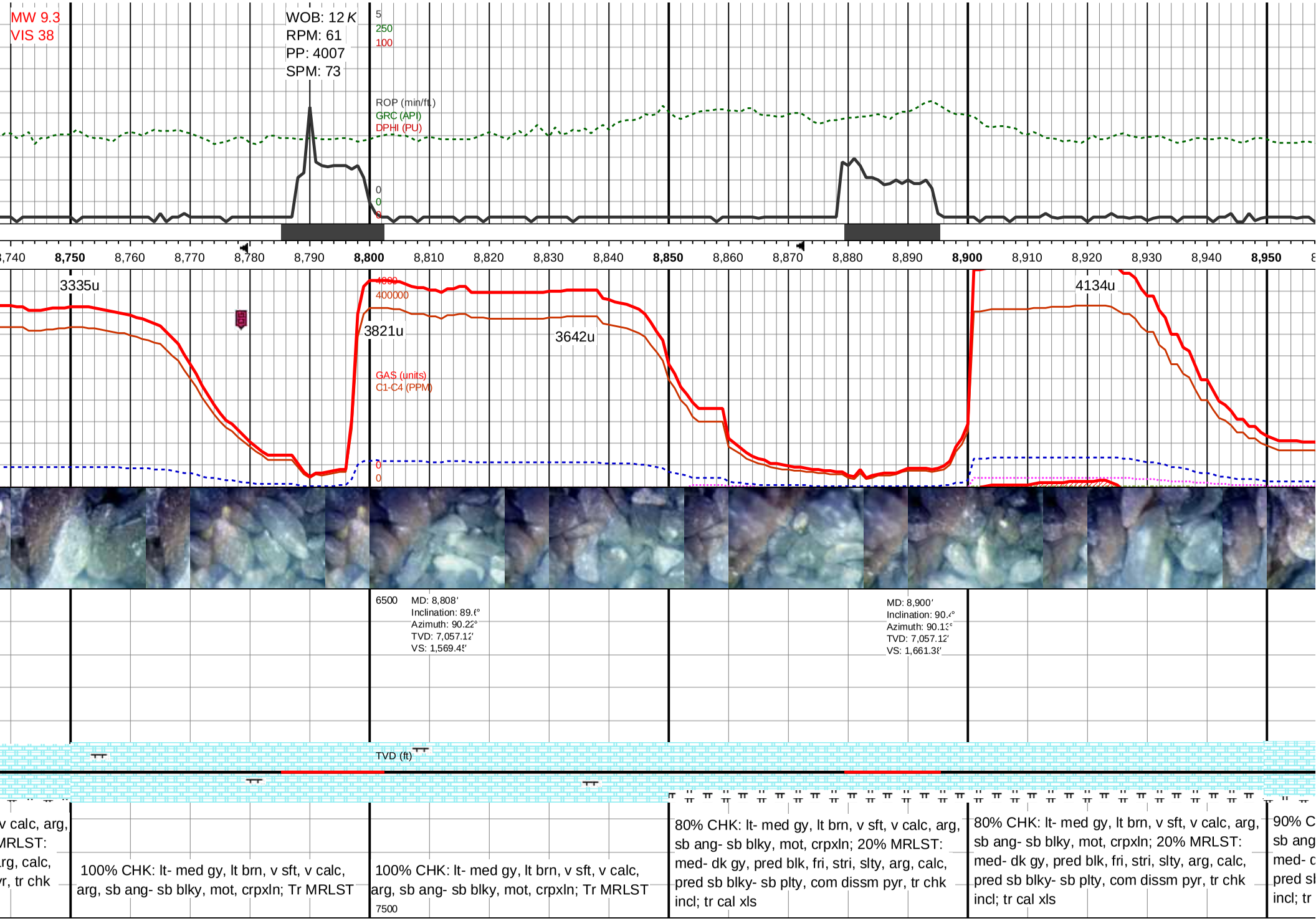
ed gy, lt brn, v sft, v calc, arg, mot, crpxln; 30% MRLST: l blk, fri, stri, slty, arg, calc, plty, com dissm pyr, tr chk

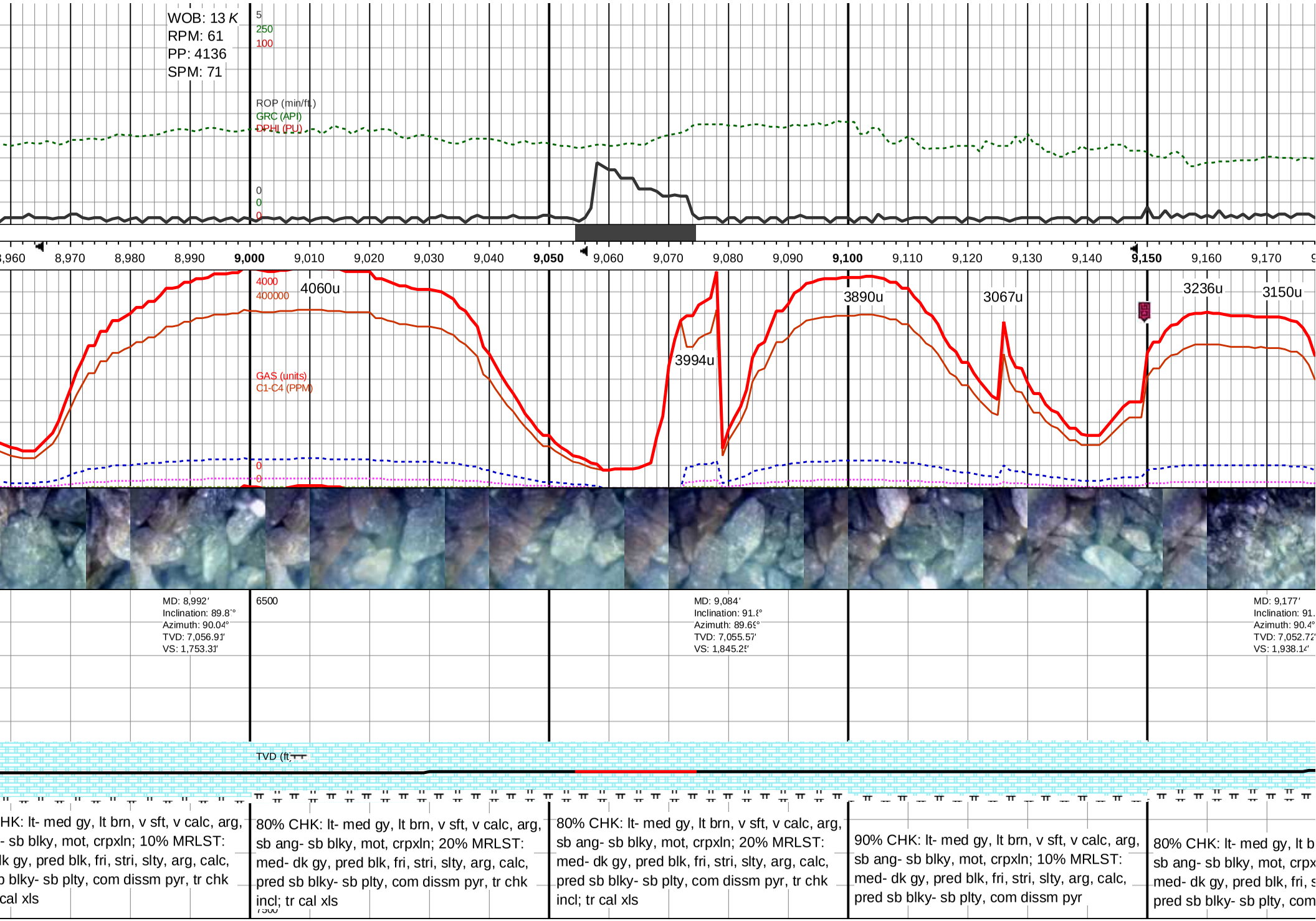
70% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 30% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls

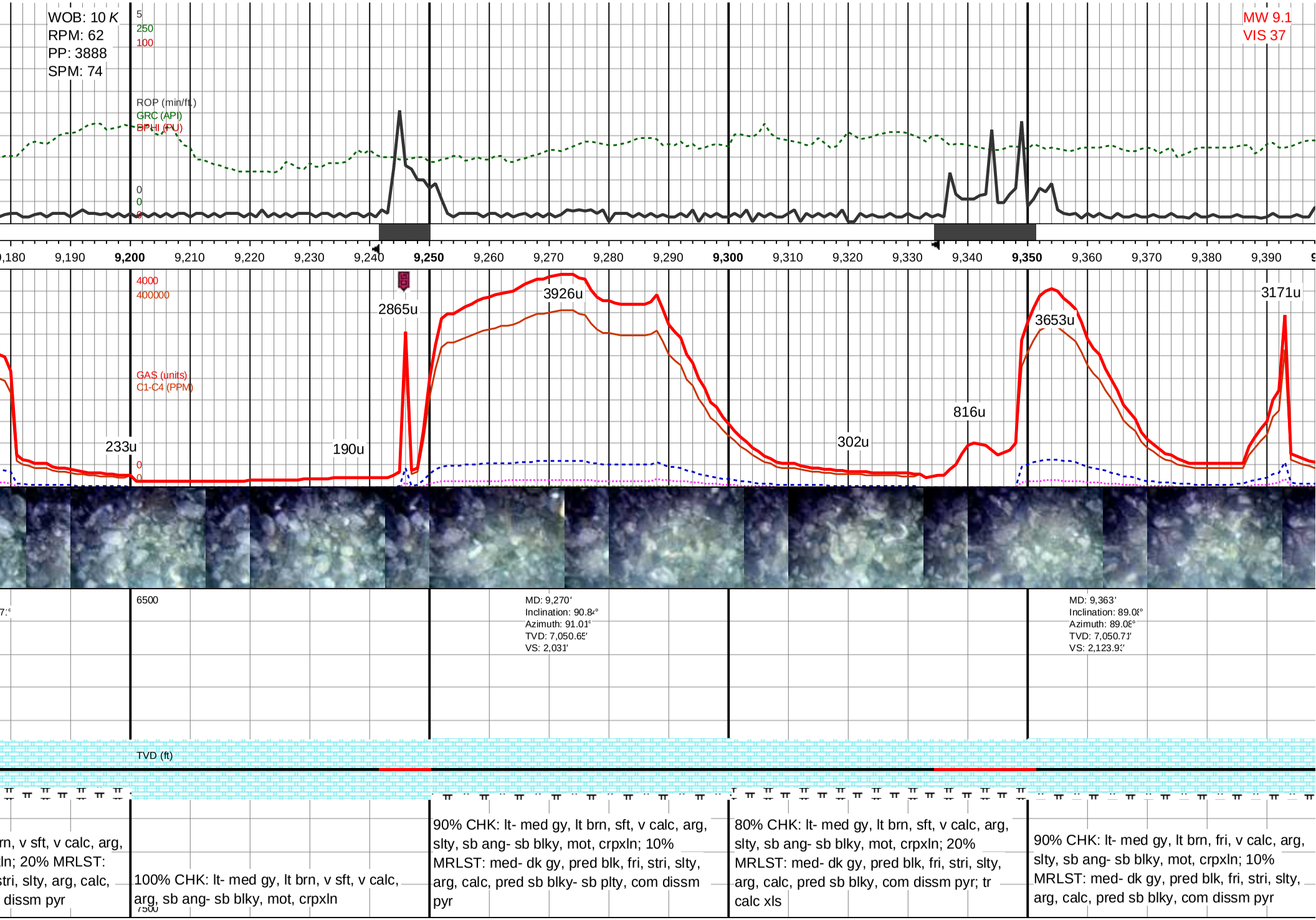
70% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 30% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls

70% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 30% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls

90% CHK: lt- med gy, lt brn, v sft, sb ang- sb blky, mot, crpxln; 10% M med- dk gy, pred blk, fri, stri, slty, a pred sb blky- sb plty, com dissm py incl; tr cal xls


MW 9.3
VIS 38
WOB: 12 K
RPM: 61
PP: 4007
SPM: 73
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
0
8,740
8,750
8,760
8,770
8,780
8,790
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
3335u
4000
400000
3821u
3642u
4134u
GAS (units)
C1-C4 (PPM)
0
0
6500
MD: 8,808'
Inclination: 89.6°
Azimuth: 90.22°
TVD: 7,057.12'
VS: 1,569.45'
MD: 8,900'
Inclination: 90.4°
Azimuth: 90.13°
TVD: 7,057.12'
VS: 1,661.38'
TVD (ft)
7500
v calc, arg,
MRLST:
rg, calc,
r, tr chk
100% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; Tr MRLST
100% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; Tr MRLST
80% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls
80% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls
90% C
sb ang
med- d
pred sl
incl; tr


WOB: 13 K
RPM: 61
PP: 4136
SPM: 71
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
0
8,960
8,970
8,980
8,990
9,000
9,010
9,020
9,030
9,040
9,050
9,060
9,070
9,080
9,090
9,100
9,110
9,120
9,130
9,140
9,150
9,160
9,170
4000
400000
4060u
3994u
3890u
3067u
3236u
3150u
GAS (units)
C1-C4 (PPM)
0
0
MD: 8,992'
Inclination: 89.8°
Azimuth: 90.04°
TVD: 7,056.91'
VS: 1,753.31'
6500
MD: 9,084'
Inclination: 91.8°
Azimuth: 89.69°
TVD: 7,055.57'
VS: 1,845.25'
MD: 9,177'
Inclination: 91.
Azimuth: 90.4°
TVD: 7,052.72'
VS: 1,938.14'
TVD (ft)
HK: lt- med gy, lt brn, v sft, v calc, arg,
- sb blky, mot, crpxln; 10% MRLST:
lk gy, pred blk, fri, stri, slty, arg, calc,
b blky- sb plty, com dissm pyr, tr chk
cal xls
80% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls
7500
80% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr, tr chk incl; tr cal xls
90% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr
80% CHK: lt- med gy, lt b
sb ang- sb blky, mot, crpx
med- dk gy, pred blk, fri, s
pred sb blky- sb plty, com



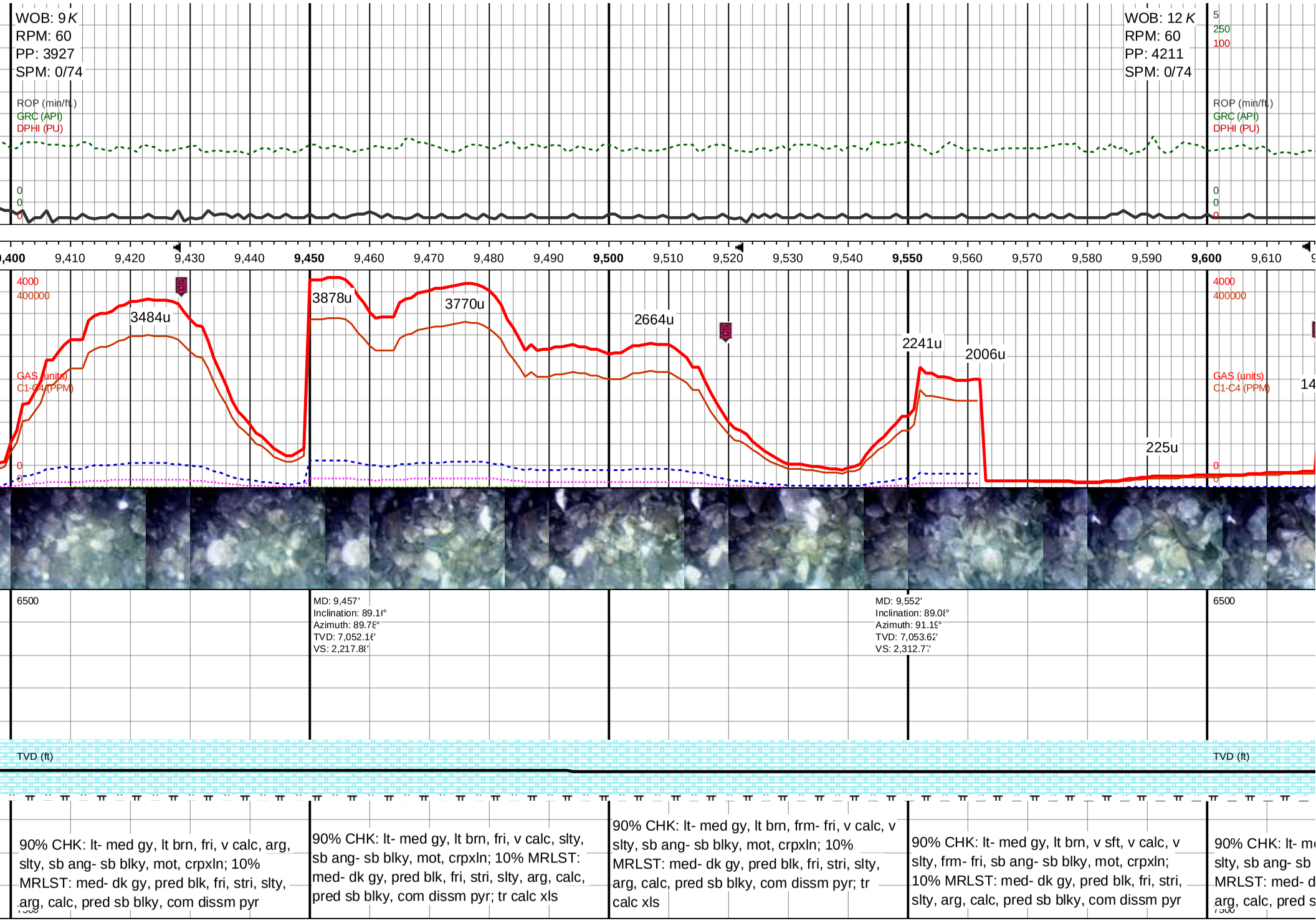
rn, v sft, v calc, arg, ln; 20% MRLST: tri, slty, arg, calc, dissm pyr

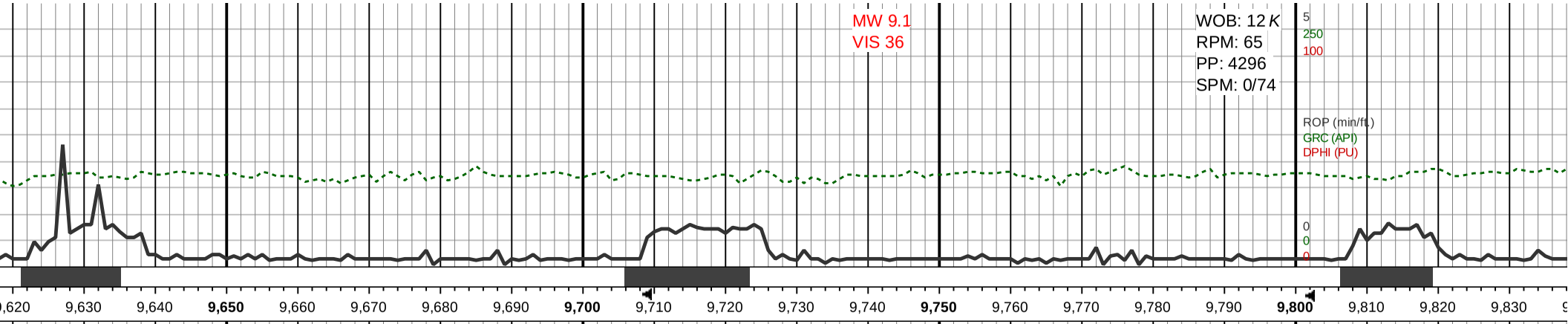
100% CHK: lt- med gy, lt brn, v sft, v calc, arg, sb ang- sb blky, mot, crpxln

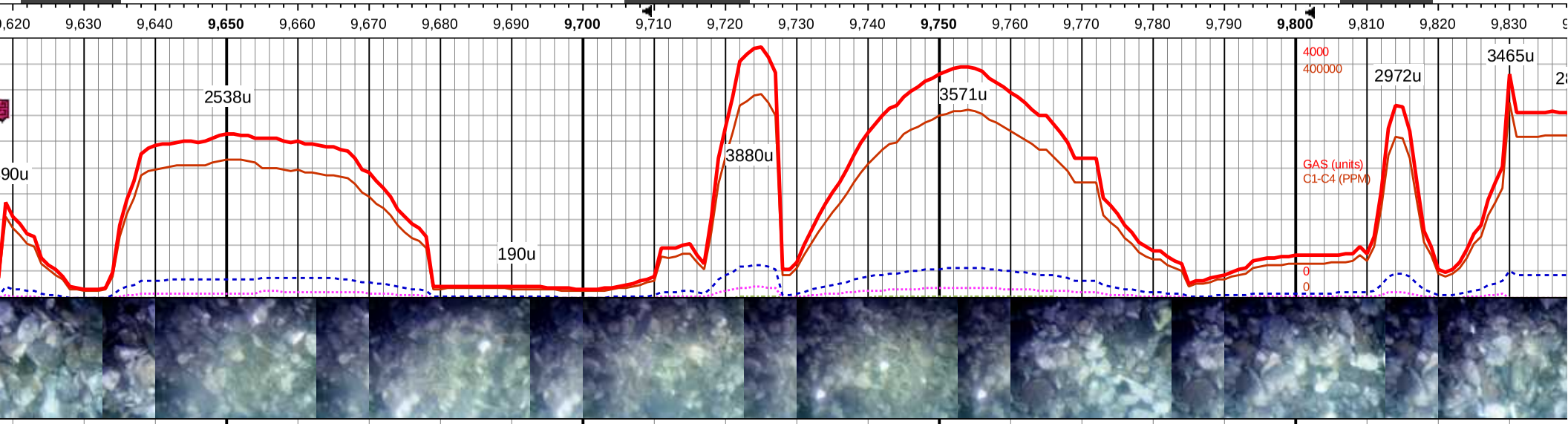
90% CHK: lt- med gy, lt brn, sft, v calc, arg, slty, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky- sb plty, com dissm pyr

80% CHK: lt- med gy, lt brn, sft, v calc, arg, slty, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr calc xls

90% CHK: lt- med gy, lt brn, fri, v calc, arg, slty, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr


WOB: 9 K
RPM: 60
PP: 3927
SPM: 0/74
WOB: 12 K
RPM: 60
PP: 4211
SPM: 0/74
ROP (min/ft)
GRC (API)
DPHI (PU)
5
250
100
0
0
0
9,400
9,410
9,420
9,430
9,440
9,450
9,460
9,470
9,480
9,490
9,500
9,510
9,520
9,530
9,540
9,550
9,560
9,570
9,580
9,590
9,600
9,610
4000
400000
GAS (units)
C1-C4 (PPM)
3484u
3878u
3770u
2664u
2241u
2006u
225u
6500
MD: 9,457′
Inclination: 89.1°
Azimuth: 89.7°
TVD: 7,052.1′
VS: 2,217.8′
MD: 9,552′
Inclination: 89.0°
Azimuth: 91.1°
TVD: 7,053.6′
VS: 2,312.7′
TVD (ft)
90% CHK: lt- med gy, lt brn, fri, v calc, arg, slty, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr
90% CHK: lt- med gy, lt brn, fri, v calc, slty, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr calc xls
90% CHK: lt- med gy, lt brn, frm- fri, v calc, v slty, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr calc xls
90% CHK: lt- med gy, lt brn, v sft, v calc, v slty, frm- fri, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr



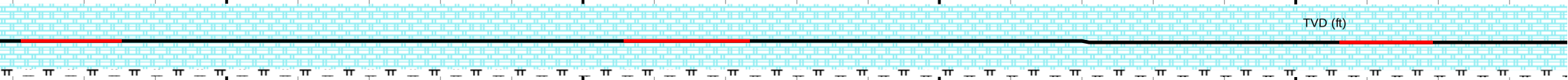


MD: 9,645′
Inclination: 89.3°
Azimuth: 91.01°
TVD: 7,054.9′
VS: 2,405.6′

MD: 9,738′
Inclination: 89.3°
Azimuth: 90.31°
TVD: 7,055.97′
VS: 2,498.5′

6500

MD: 9,831′
Inclination: 89.2°
Azimuth: 89.7°
TVD: 7,057.11′
VS: 2,591.4′



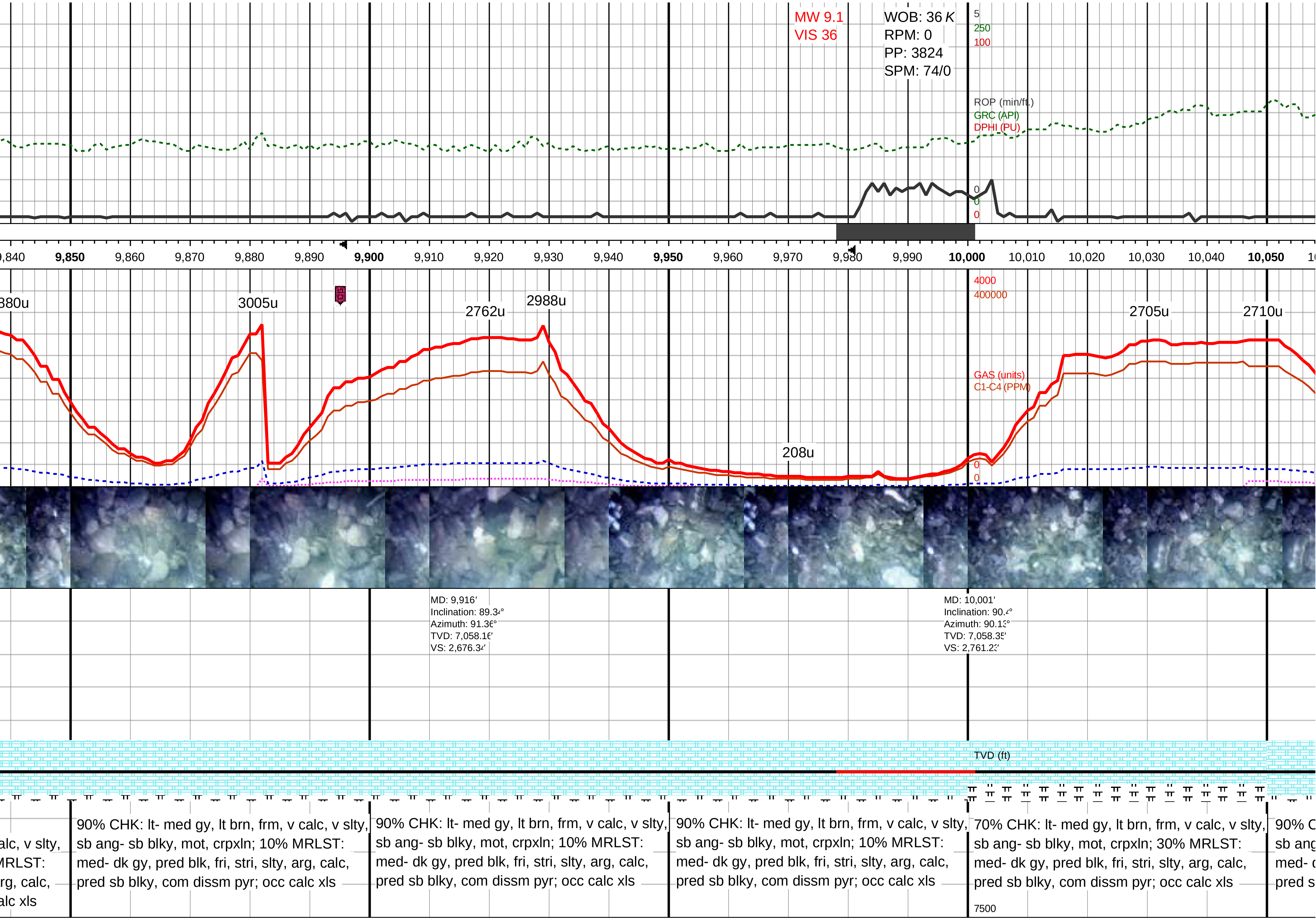
ed gy, lt brn, frm- fri, v calc, v blky, mot, crpxln; 10% k gy, pred blk, fri, stri, slty, b blky, com dissm pyr

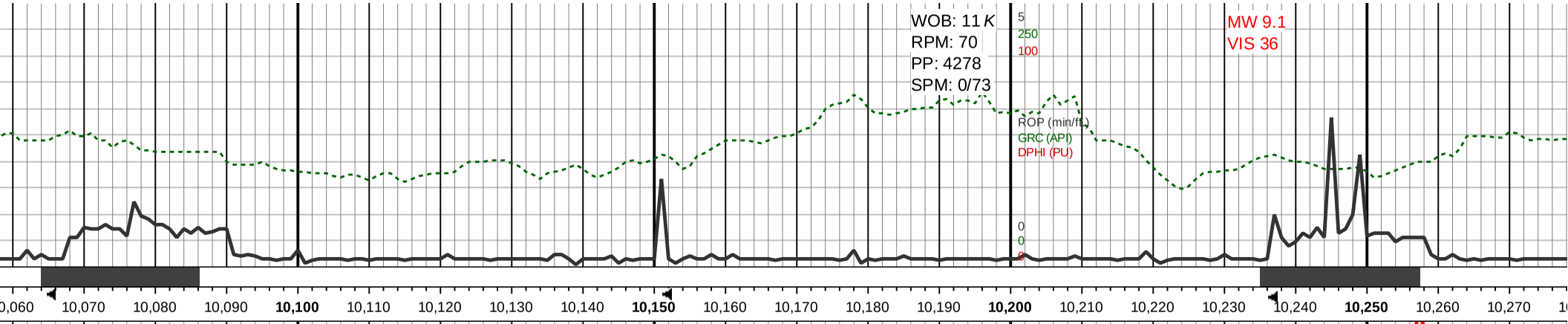
90% CHK: lt- med gy, lt brn, fri, v calc, v slty, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr

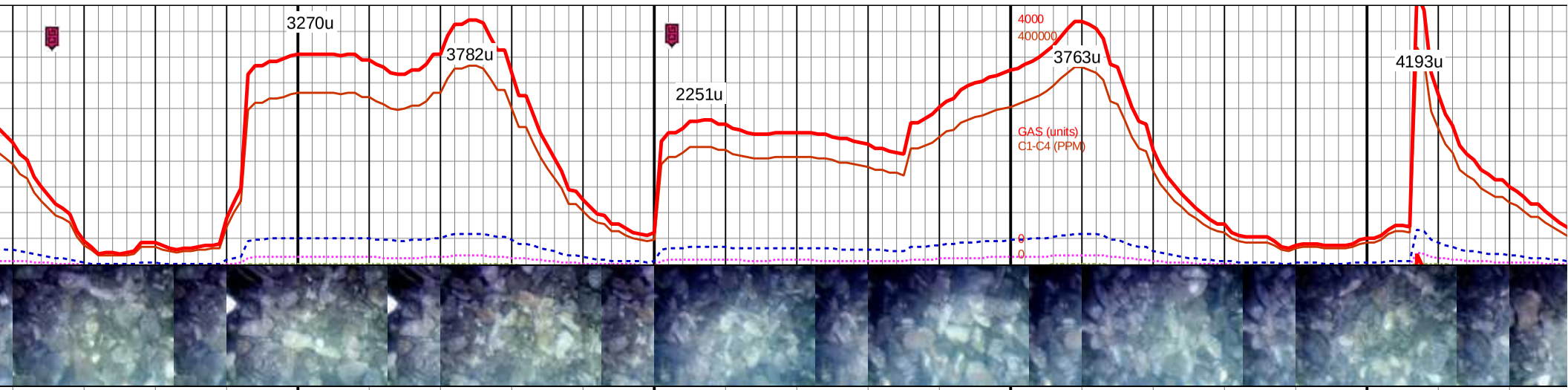
90% CHK: lt- med gy, lt brn, fri, v calc, v slty, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr

90% CHK: lt- med gy, lt brn, fri, v calc, v slty, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr

90% CHK: lt- med gy, lt brn, fri, v c sb ang- sb blky, mot, crpxln; 10% M med- dk gy, pred blk, fri, stri, slty, a pred sb blky, com dissm pyr; occ ca


MW 9.1
VIS 36
WOB: 36 K
RPM: 0
PP: 3824
SPM: 74/0
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
0
9,840
9,850
9,860
9,870
9,880
9,890
9,900
9,910
9,920
9,930
9,940
9,950
9,960
9,970
9,980
9,990
10,000
10,010
10,020
10,030
10,040
10,050
4000
400000
GAS (units)
C1-C4 (PPM)
380u
3005u
2762u
2988u
208u
2705u
2710u
0
0
MD: 9,916'
Inclination: 89.3°
Azimuth: 91.36°
TVD: 7,058.16'
VS: 2,676.34'
MD: 10,001'
Inclination: 90.°
Azimuth: 90.13°
TVD: 7,058.35'
VS: 2,761.23'
TVD (ft)
7500
alc, v slty,
MRLST:
rg, calc,
alc xls
90% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; occ calc xls
90% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; occ calc xls
90% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 10% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; occ calc xls
70% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 30% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; occ calc xls
90% C
sb ang
med-
pred s





MD: 10,087'
Inclination: 90.1°
Azimuth: 87.5°
TVD: 7,057.9'
VS: 2,847.2'

MD: 10,172'
Inclination: 90.6°
Azimuth: 87.3°
TVD: 7,057.3'
VS: 2,932.2'

6500

MD: 10,257'
Inclination: 89.8°
Azimuth: 88.6°
TVD: 7,056.9'
VS: 3,017.2'

TVD (ft)

7500

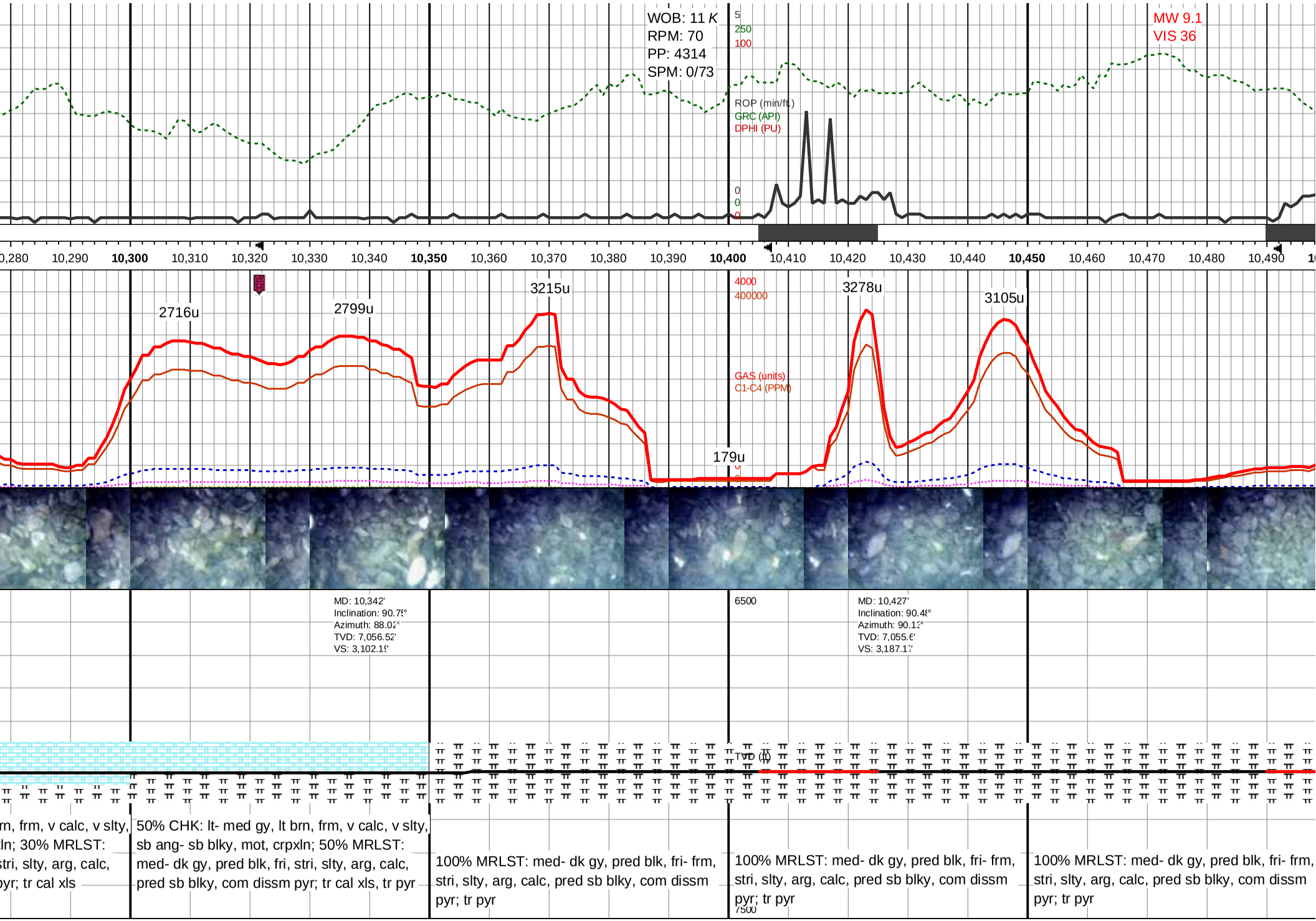
CHK: lt- med gy, lt brn, frm, v calc, v slty, g- sb blky, mot, crpxln; 10% MRLST: dk gy, pred blk, fri, stri, slty, arg, calc, b blky, com dissm pyr; tr calc xls

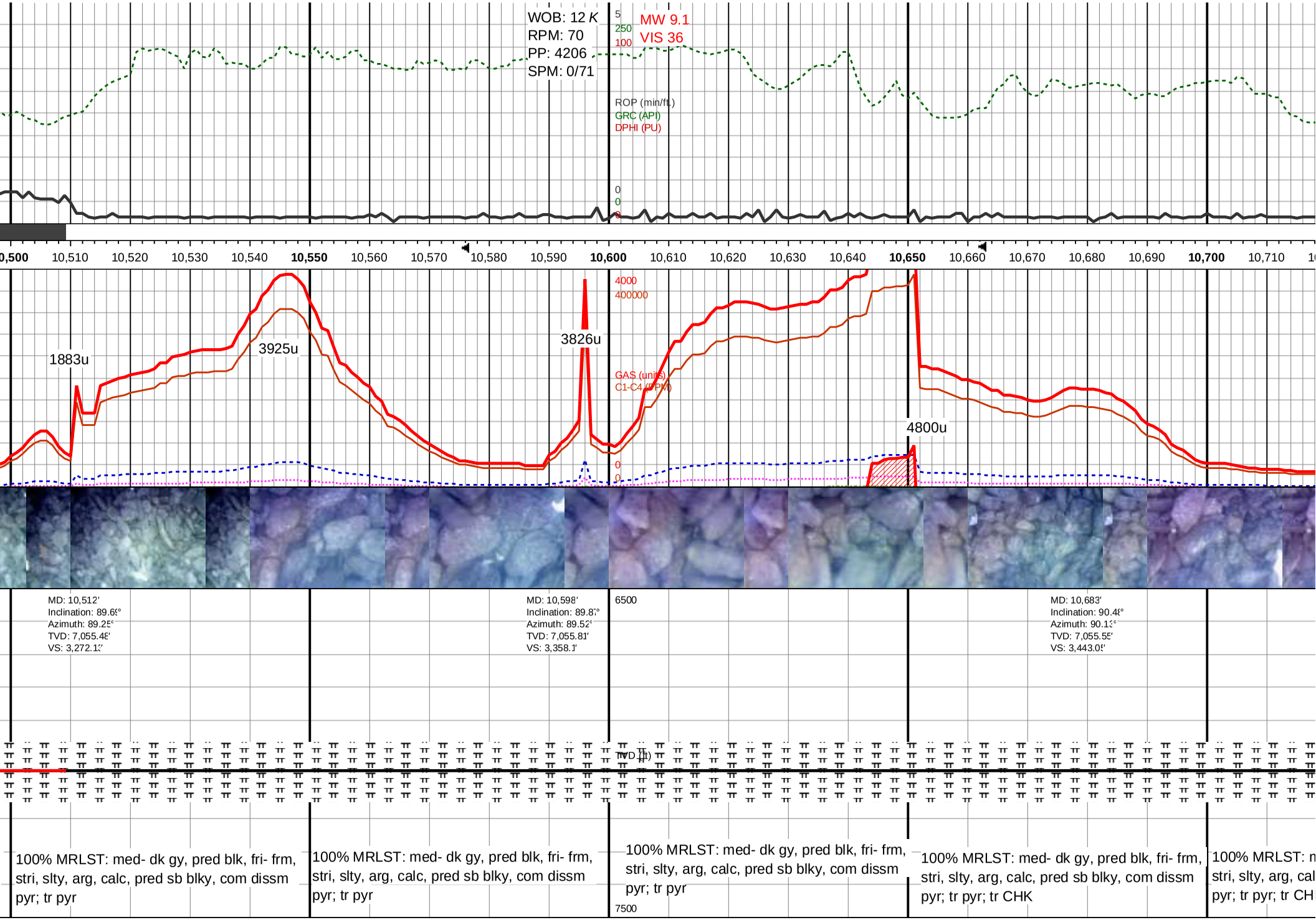
80% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr calc xls

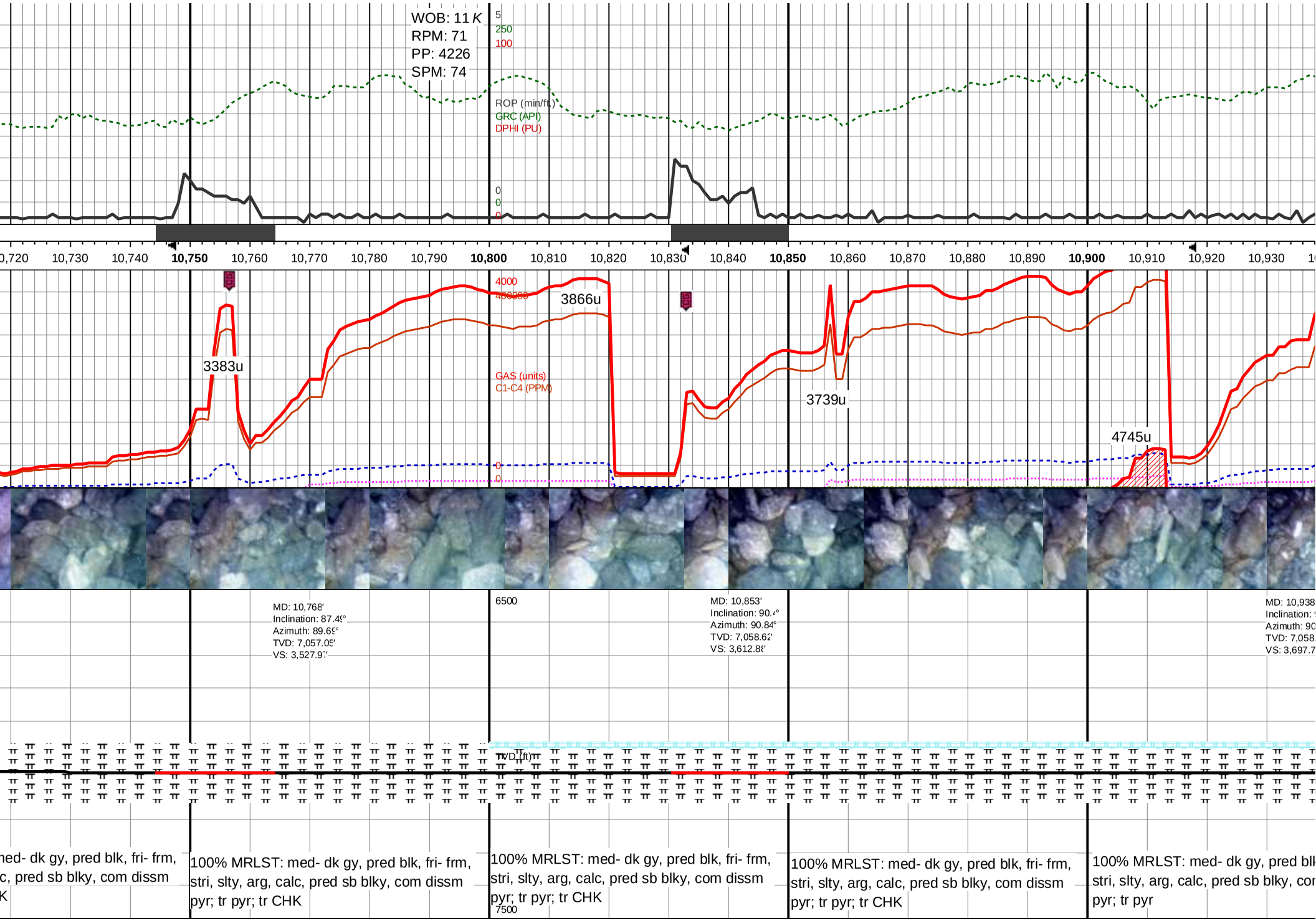
60% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 40% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr

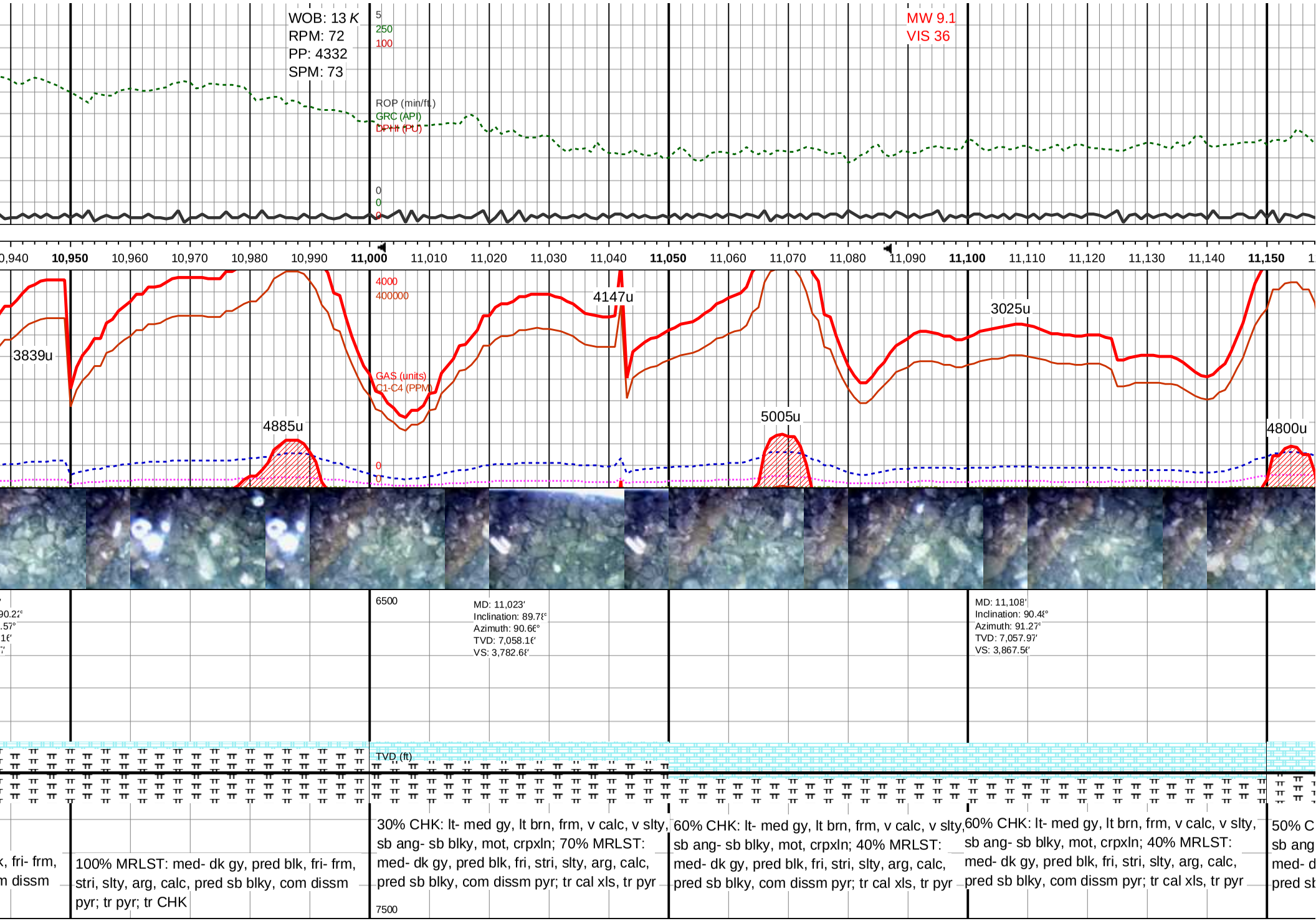
80% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr

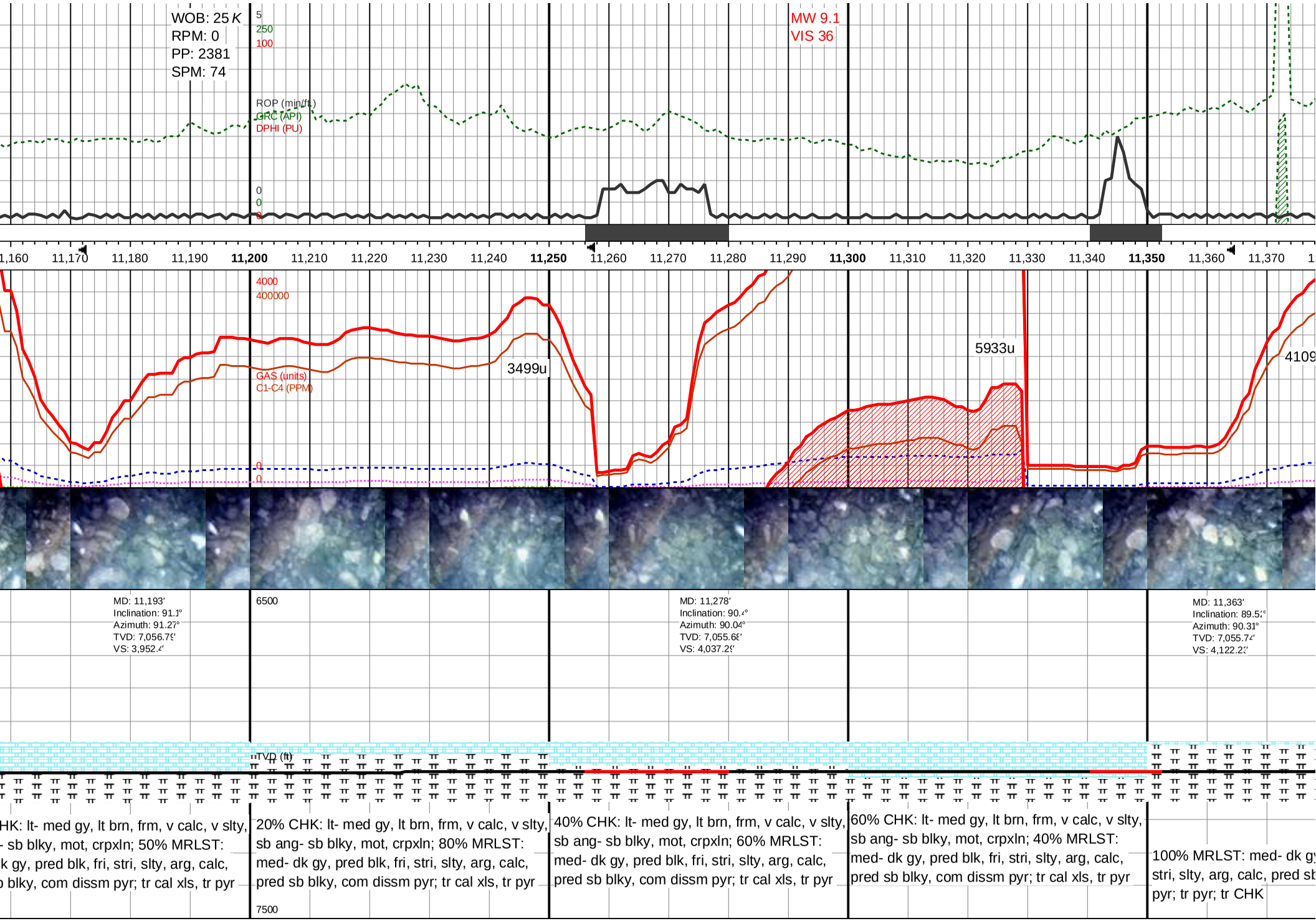
70% CHK: lt- med gy, lt b
sb ang- sb blky, mot, crpx
med- dk gy, pred blk, fri, s
pred sb blky, com dissm p

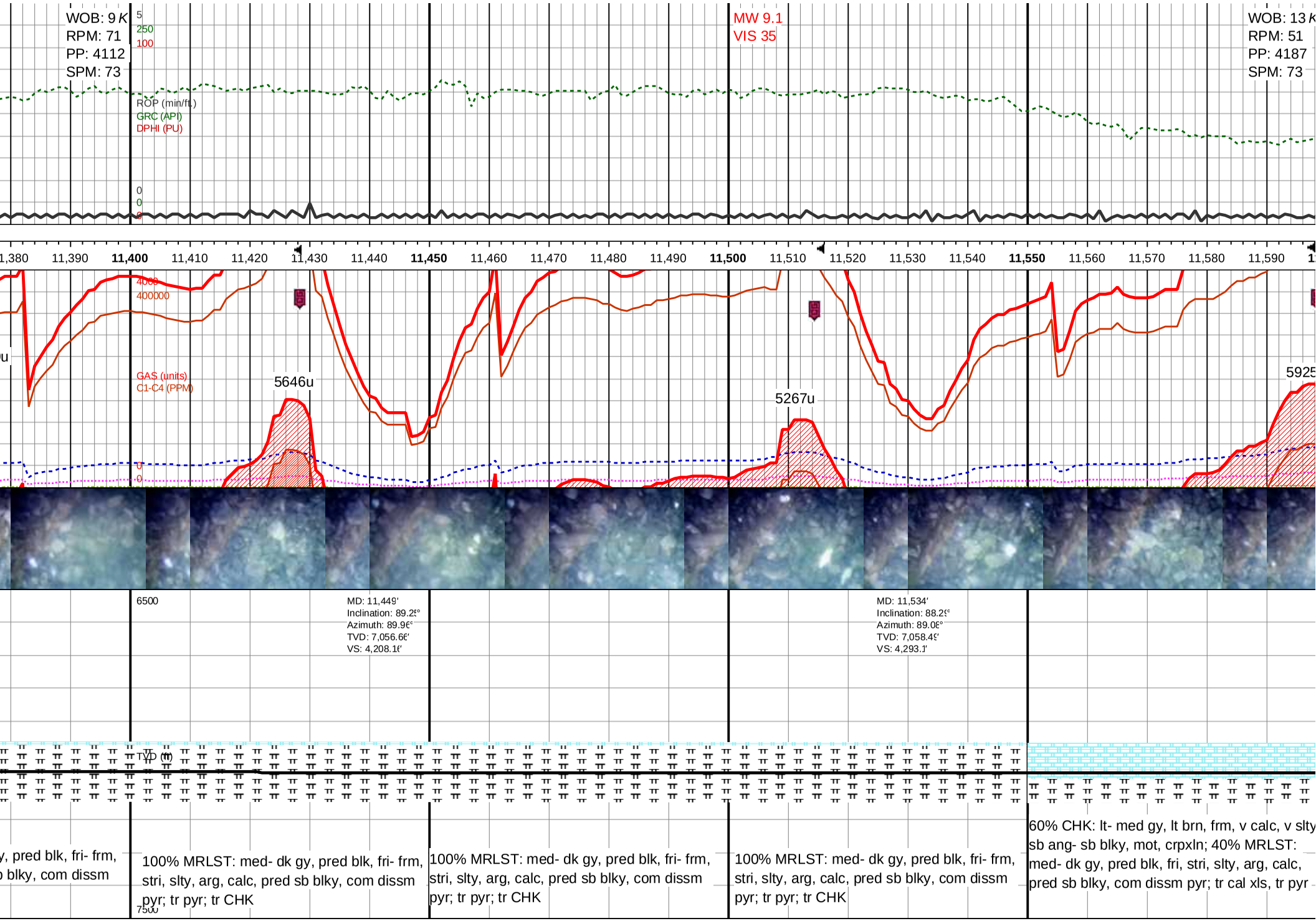

WOB: 11 K
RPM: 70
PP: 4314
SPM: 0/73
MW 9.1
VIS 36
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
0
10,280
10,290
10,300
10,310
10,320
10,330
10,340
10,350
10,360
10,370
10,380
10,390
10,400
10,410
10,420
10,430
10,440
10,450
10,460
10,470
10,480
10,490
2716u
2799u
3215u
3278u
3105u
179u
4000
400000
GAS (units)
C1-C4 (PPM)
MD: 10,342'
Inclination: 90.7
Azimuth: 88.0
TVD: 7,056.5
VS: 3,102.1
6500
MD: 10,427'
Inclination: 90.4°
Azimuth: 90.1°
TVD: 7,055.6'
VS: 3,187.1'
TVD (ft)
7500
rn, frm, v calc, v slty,
ln; 30% MRLST:
tri, slty, arg, calc,
yr; tr cal xls
50% CHK: lt- med gy, lt brn, frm, v calc, v slty,
sb ang- sb blky, mot, crpxln; 50% MRLST:
med- dk gy, pred blk, fri, stri, slty, arg, calc,
pred sb blky, com dissm pyr; tr cal xls, tr pyr
100% MRLST: med- dk gy, pred blk, fri- frm,
stri, slty, arg, calc, pred sb blky, com dissm
pyr; tr pyr
100% MRLST: med- dk gy, pred blk, fri- frm,
stri, slty, arg, calc, pred sb blky, com dissm
pyr; tr pyr
100% MRLST: med- dk gy, pred blk, fri- frm,
stri, slty, arg, calc, pred sb blky, com dissm
pyr; tr pyr

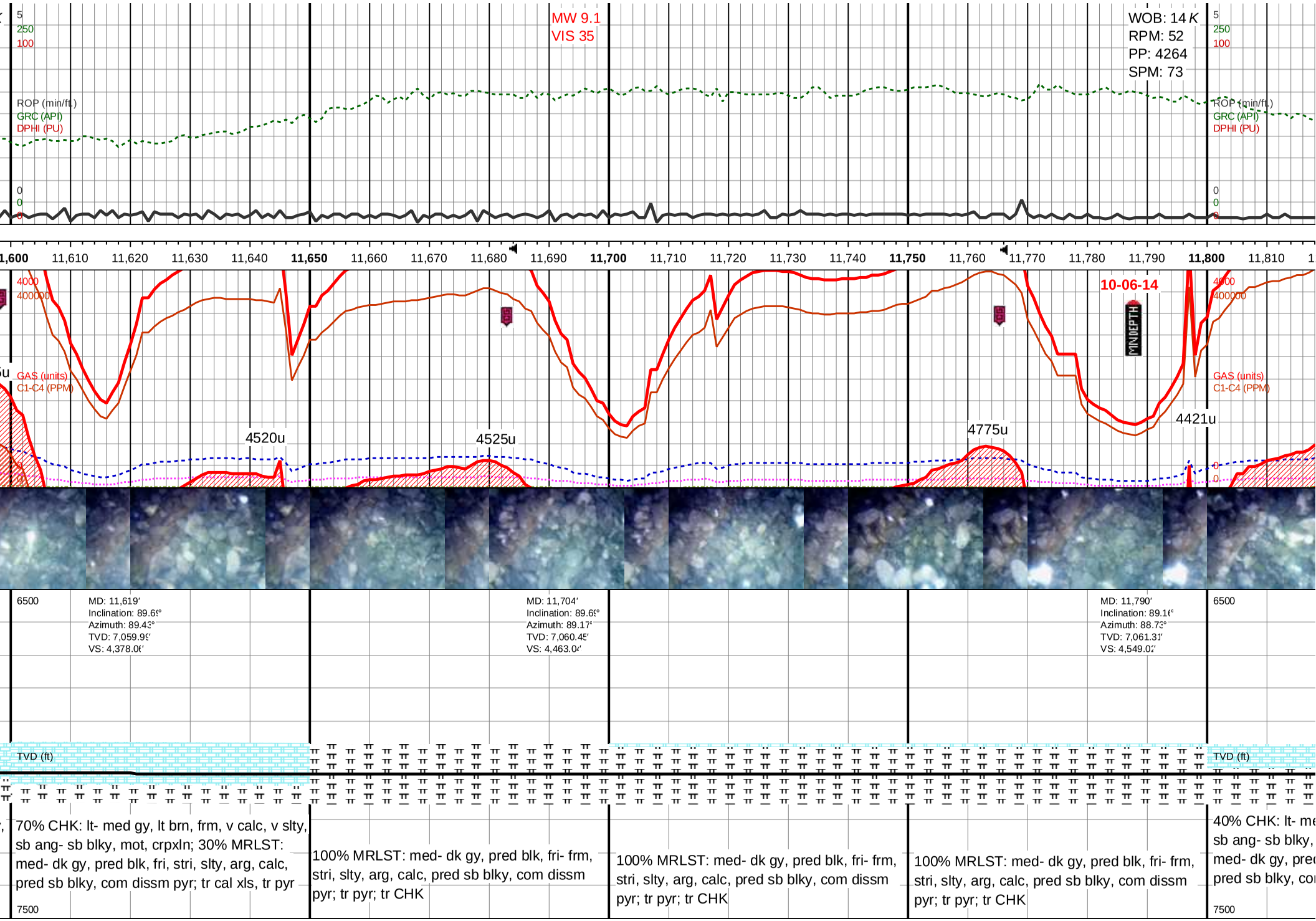

WOB: 12 K
RPM: 70
PP: 4206
SPM: 0/71
MW 9.1
VIS 36
ROP (min/ft)
GRC (API)
DPHI (PU)
10,500
10,510
10,520
10,530
10,540
10,550
10,560
10,570
10,580
10,590
10,600
10,610
10,620
10,630
10,640
10,650
10,660
10,670
10,680
10,690
10,700
1883u
3925u
3826u
4800u
GAS (units)
C1-C4 (PPM)
MD: 10,512'
Inclination: 89.6°
Azimuth: 89.25°
TVD: 7,055.4'
VS: 3,272.1'
MD: 10,598'
Inclination: 89.8°
Azimuth: 89.52°
TVD: 7,055.81'
VS: 3,358.1'
6500
MD: 10,683'
Inclination: 90.4°
Azimuth: 90.1°
TVD: 7,055.5'
VS: 3,443.0'
TVD (ft)
7500
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK
100% MRLST: m
stri, slty, arg, cal
pyr; tr pyr; tr CH

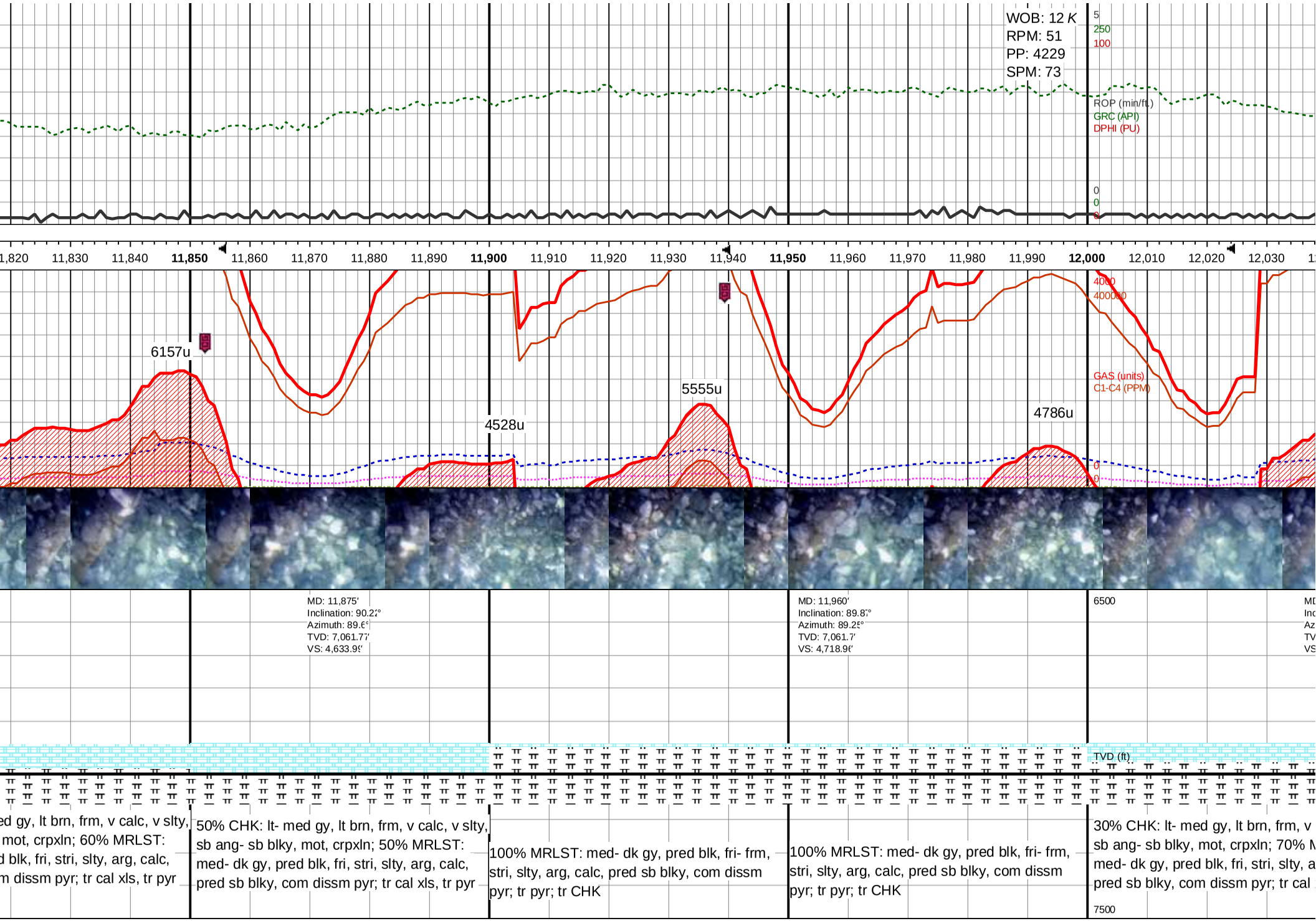

WOB: 11 K
RPM: 71
PP: 4226
SPM: 74
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
0
10,720
10,730
10,740
10,750
10,760
10,770
10,780
10,790
10,800
10,810
10,820
10,830
10,840
10,850
10,860
10,870
10,880
10,890
10,900
10,910
10,920
10,930
4000
3383u
3866u
3739u
4745u
GAS (units)
C1-C4 (PPM)
0
0
MD: 10,768'
Inclination: 87.4°
Azimuth: 89.6°
TVD: 7,057.0'
VS: 3,527.9'
6500
MD: 10,853'
Inclination: 90.4°
Azimuth: 90.84°
TVD: 7,058.6'
VS: 3,612.8'
MD: 10,938
Inclination:
Azimuth: 90
TVD: 7,058.
VS: 3,697.7
TVD (ft)
7500
med- dk gy, pred blk, fri- frm, c, pred sb blky, com dissm K
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK
100% MRLST: med- dk gy, pred blk stri, slty, arg, calc, pred sb blky, com pyr; tr pyr


WOB: 13 K
RPM: 72
PP: 4332
SPM: 73
MW 9.1
VIS 36
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
0
10,940
10,950
10,960
10,970
10,980
10,990
11,000
11,010
11,020
11,030
11,040
11,050
11,060
11,070
11,080
11,090
11,100
11,110
11,120
11,130
11,140
11,150
4000
400000
3839u
4885u
4147u
5005u
3025u
4800u
GAS (units)
C1-C4 (PPM)
0
0
6500
MD: 11,023'
Inclination: 89.7
Azimuth: 90.6
TVD: 7,058.1'
VS: 3,782.6'
MD: 11,108'
Inclination: 90.4
Azimuth: 91.27
TVD: 7,057.97'
VS: 3,867.5'
TVD (ft)
7500
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK
30% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 70% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr cal xls, tr pyr
60% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 40% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr cal xls, tr pyr
60% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 40% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr cal xls, tr pyr


WOB: 25 K
RPM: 0
PP: 2381
SPM: 74
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
0
MW 9.1
VIS 36
11,160
11,170
11,180
11,190
11,200
11,210
11,220
11,230
11,240
11,250
11,260
11,270
11,280
11,290
11,300
11,310
11,320
11,330
11,340
11,350
11,360
11,370
4000
400000
GAS (units)
C1-C4 (PPM)
3499u
5933u
4109
0
0
MD: 11,193'
Inclination: 91.1°
Azimuth: 91.27°
TVD: 7,056.7'
VS: 3,952.4'
6500
MD: 11,278'
Inclination: 90.4°
Azimuth: 90.04°
TVD: 7,055.6'
VS: 4,037.2'
MD: 11,363'
Inclination: 89.5'
Azimuth: 90.31°
TVD: 7,055.7'
VS: 4,122.2'
TVD (ft)
7500
HK: lt- med gy, lt brn, frm, v calc, v slty,
- sb blky, mot, crpxln; 50% MRLST:
k gy, pred blk, fri, stri, slty, arg, calc,
b blky, com dissm pyr; tr cal xls, tr pyr
20% CHK: lt- med gy, lt brn, frm, v calc, v slty,
sb ang- sb blky, mot, crpxln; 80% MRLST:
med- dk gy, pred blk, fri, stri, slty, arg, calc,
pred sb blky, com dissm pyr; tr cal xls, tr pyr
40% CHK: lt- med gy, lt brn, frm, v calc, v slty,
sb ang- sb blky, mot, crpxln; 60% MRLST:
med- dk gy, pred blk, fri, stri, slty, arg, calc,
pred sb blky, com dissm pyr; tr cal xls, tr pyr
60% CHK: lt- med gy, lt brn, frm, v calc, v slty,
sb ang- sb blky, mot, crpxln; 40% MRLST:
med- dk gy, pred blk, fri, stri, slty, arg, calc,
pred sb blky, com dissm pyr; tr cal xls, tr pyr
100% MRLST: med- dk gy
stri, slty, arg, calc, pred sb
pyr; tr pyr; tr CHK


WOB: 9 K
RPM: 71
PP: 4112
SPM: 73
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
MW 9.1
VIS 35
WOB: 13 K
RPM: 51
PP: 4187
SPM: 73
11,380
11,390
11,400
11,410
11,420
11,430
11,440
11,450
11,460
11,470
11,480
11,490
11,500
11,510
11,520
11,530
11,540
11,550
11,560
11,570
11,580
11,590
400000
GAS (units)
C1-C4 (PPM)
5646u
5267u
5925
0
0
6500
MD: 11,449'
Inclination: 89.2°
Azimuth: 89.9°
TVD: 7,056.6'
VS: 4,208.1'
MD: 11,534'
Inclination: 88.2°
Azimuth: 89.0°
TVD: 7,058.4'
VS: 4,293.1'
TVD (ft)
7500
y, pred blk, fri- frm,
b blky, com dissm
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK
60% CHK: lt- med gy, lt brn, frm, v calc, v slty sb ang- sb blky, mot, crpxln; 40% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr cal xls, tr pyr


MW 9.1
VIS 35
WOB: 14 K
RPM: 52
PP: 4264
SPM: 73
ROP (min/ft)
GRC (API)
DPHI (PU)
GAS (units)
C1-C4 (PPM)
10-06-14
MINDEPTH
4520u
4525u
4775u
4421u
11,600
11,610
11,620
11,630
11,640
11,650
11,660
11,670
11,680
11,690
11,700
11,710
11,720
11,730
11,740
11,750
11,760
11,770
11,780
11,790
11,800
11,810
6500
MD: 11,619'
Inclination: 89.6°
Azimuth: 89.4°
TVD: 7,059.9'
VS: 4,378.0'
MD: 11,704'
Inclination: 89.6°
Azimuth: 89.1°
TVD: 7,060.4'
VS: 4,463.0'
MD: 11,790'
Inclination: 89.1°
Azimuth: 88.7°
TVD: 7,061.3'
VS: 4,549.0'
TVD (ft)
7500
70% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 30% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr cal xls, tr pyr
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK
40% CHK: lt- me
sb ang- sb blky,
med- dk gy, pred
pred sb blky, co



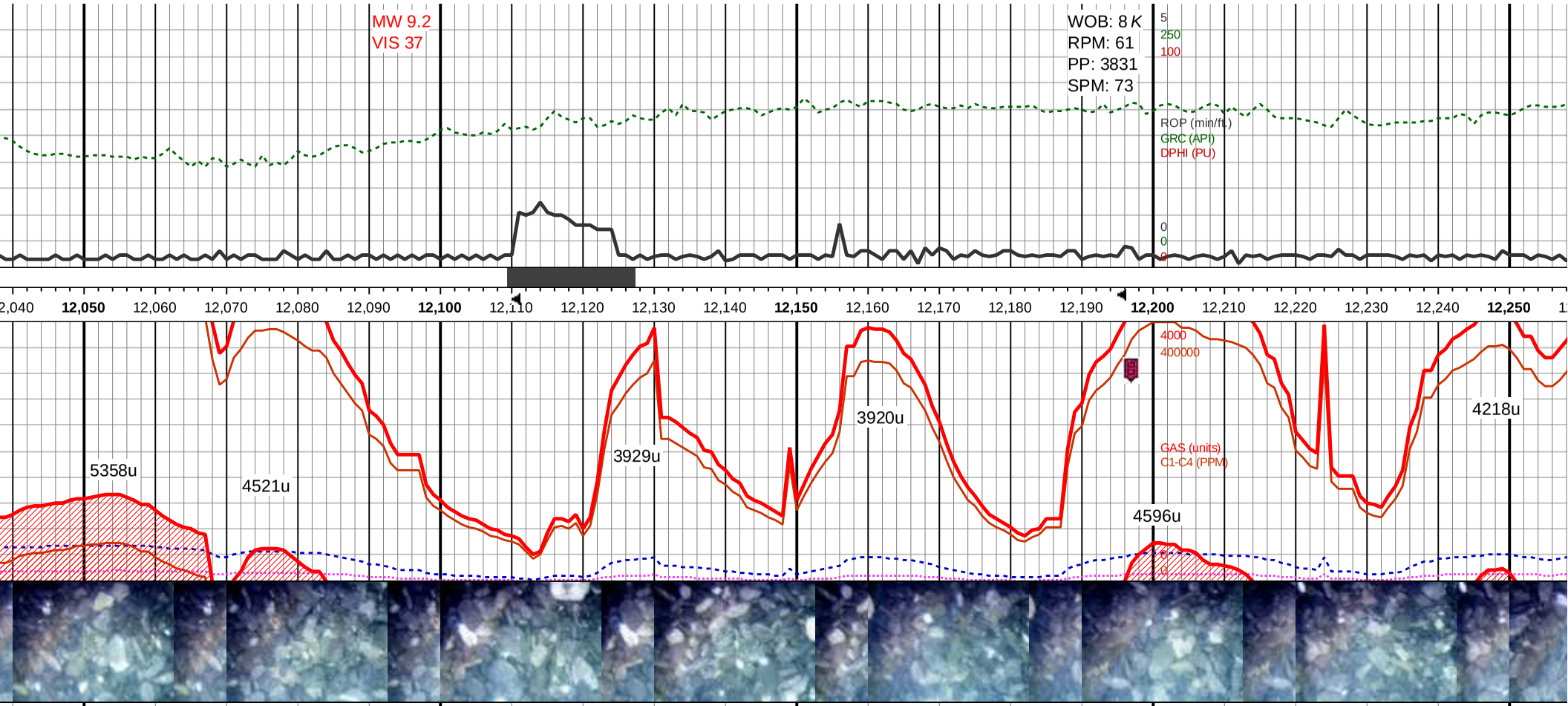
ed gy, lt brn, frm, v calc, v slty, mot, crpxln; 60% MRLST: d blk, fri, stri, slty, arg, calc, m dissm pyr; tr cal xls, tr pyr

50% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 50% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr cal xls, tr pyr

100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK

100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK

30% CHK: lt- med gy, lt brn, frm, v sb ang- sb blky, mot, crpxln; 70% M med- dk gy, pred blk, fri, stri, slty, a pred sb blky, com dissm pyr; tr cal



calc, v slty, MRLST: rg, calc, xls, tr pyr

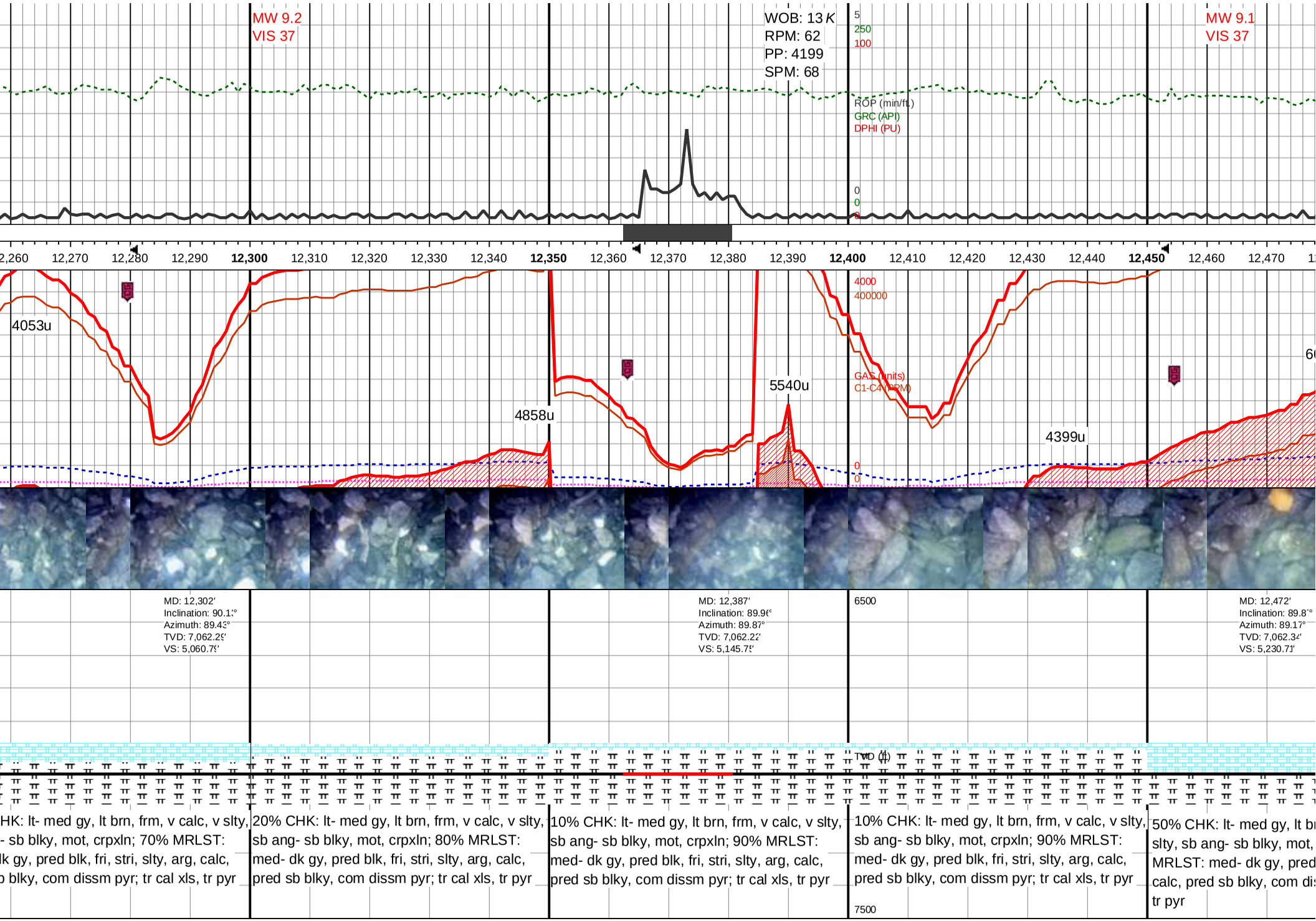
30% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 70% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr cal xls, tr pyr

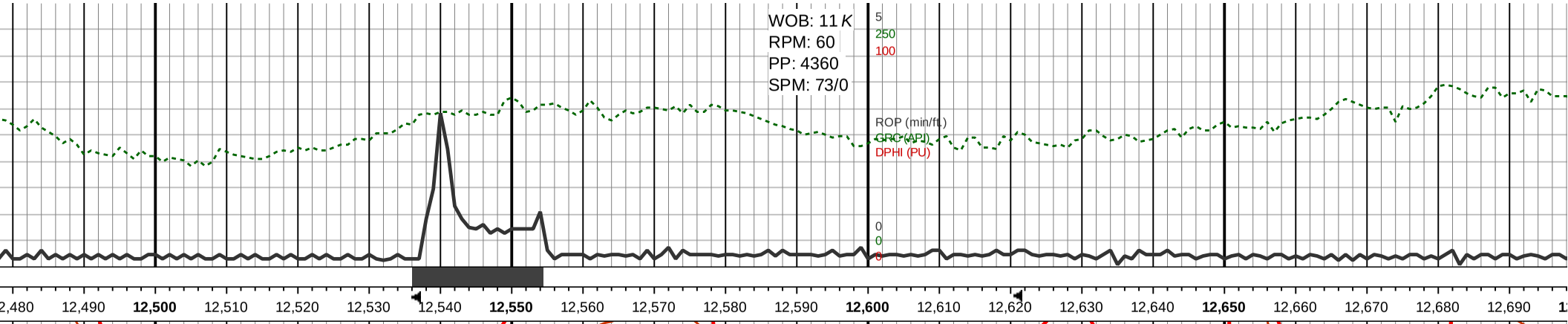
20% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 80% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr cal xls, tr pyr

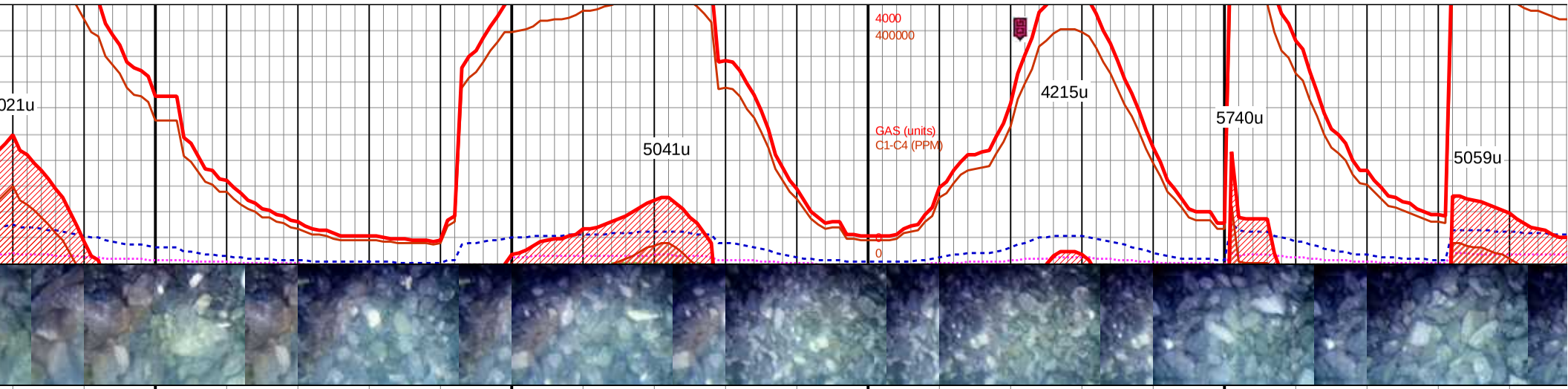
100% MRLST: med- dk gy, pred blk, fri- frm, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr pyr; tr CHK

20% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 80% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr cal xls, tr pyr

30% C sb ang med- c pred sl


MW 9.2
VIS 37
WOB: 13 K
RPM: 62
PP: 4199
SPM: 68
MW 9.1
VIS 37
ROP (min/ft)
GRC (API)
DPHI (PU)
12,260
12,270
12,280
12,290
12,300
12,310
12,320
12,330
12,340
12,350
12,360
12,370
12,380
12,390
12,400
12,410
12,420
12,430
12,440
12,450
12,460
12,470
4053u
4858u
5540u
4399u
GAS (units)
C1-C4 (PPM)
MD: 12,302'
Inclination: 90.1°
Azimuth: 89.4°
TVD: 7,062.2'
VS: 5,060.7'
MD: 12,387'
Inclination: 89.9°
Azimuth: 89.8°
TVD: 7,062.2'
VS: 5,145.7'
6500
TVD (ft)
7500
MD: 12,472'
Inclination: 89.8°
Azimuth: 89.1°
TVD: 7,062.3'
VS: 5,230.7'
HK: lt- med gy, lt brn, frm, v calc, v slty, - sb blky, mot, crpxln; 70% MRLST: lk gy, pred blk, fri, stri, slty, arg, calc, b blky, com dissm pyr; tr cal xls, tr pyr
20% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 80% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr cal xls, tr pyr
10% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 90% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr cal xls, tr pyr
10% CHK: lt- med gy, lt brn, frm, v calc, v slty, sb ang- sb blky, mot, crpxln; 90% MRLST: med- dk gy, pred blk, fri, stri, slty, arg, calc, pred sb blky, com dissm pyr; tr cal xls, tr pyr
50% CHK: lt- med gy, lt br slty, sb ang- sb blky, mot, MRLST: med- dk gy, pred calc, pred sb blky, com di tr pyr

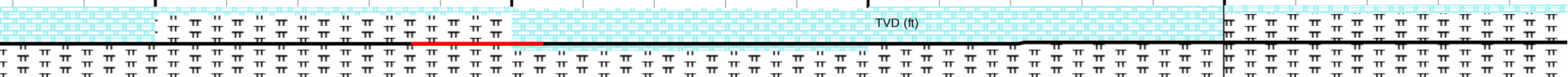




MD: 12,557'
Inclination: 91.2[illegible]°
Azimuth: 91.5[illegible]°
TVD: 7,061.4[illegible]'
VS: 5,315.6[illegible]'

6500

MD: 12,642'
Inclination: 91.3[illegible]°
Azimuth: 91.0[illegible]°
TVD: 7,059.5[illegible]'
VS: 5,400.4[illegible]'



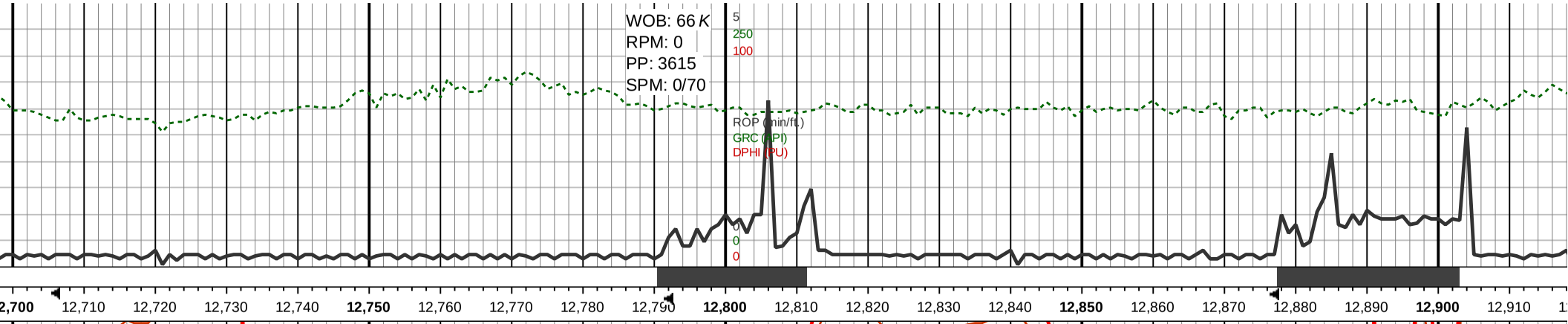
rn, fri- frm, v calc, v
crpxln; 50%
blk, frm, stri, slty,
ssm pyr; tr cal xls,

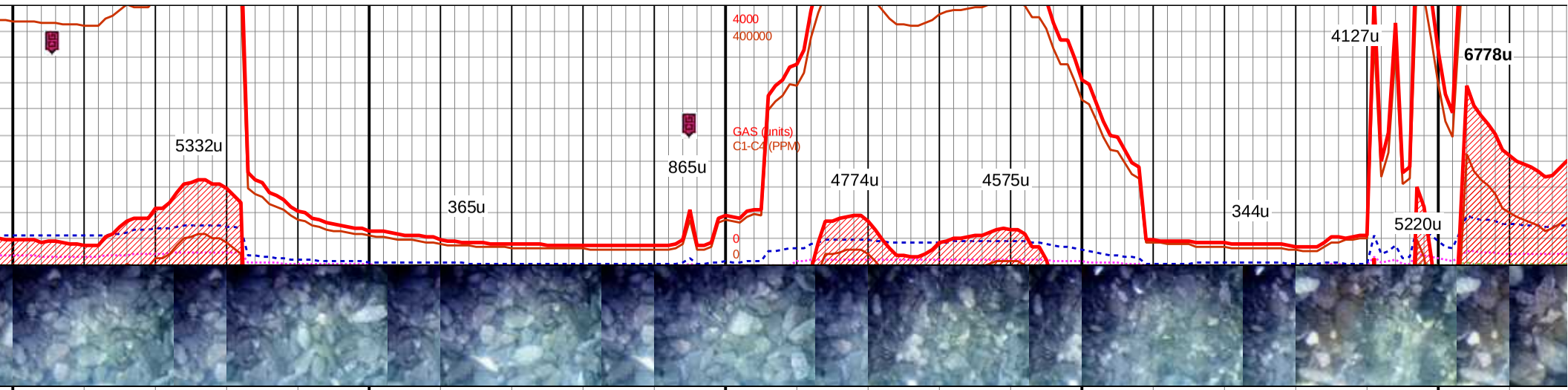
10% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 90%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; tr pyr

60% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 40%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; tr pyr

50% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 50%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; tr pyr

10% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 90%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; tr pyr



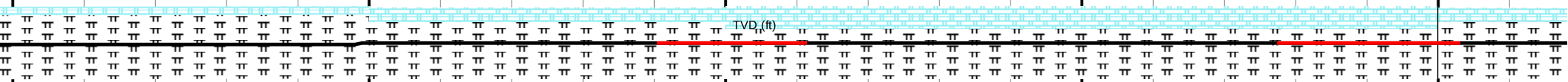


MD: 12,728′
Inclination: 92.0°
Azimuth: 90.31°
TVD: 7,056.9′
VS: 5,486.3′

6500 MD: 12,813′
Inclination: 91.2°
Azimuth: 90.7°
TVD: 7,054.47′
VS: 5,571.1′

MD: 12,898′
Inclination: 87.5°
Azimuth: 90.0°
TVD: 7,055.3′
VS: 5,656.0′

Note: Rig service



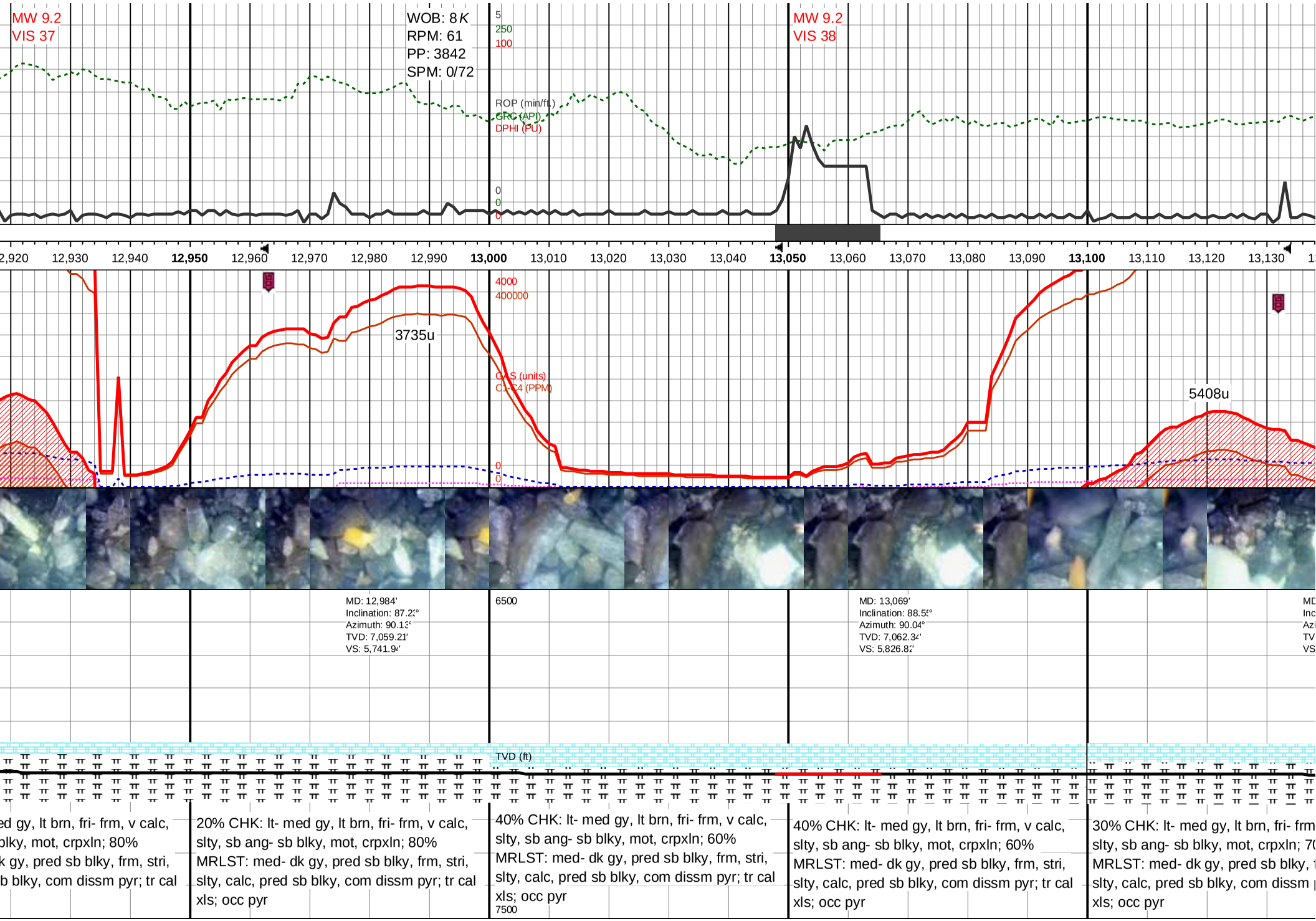
10% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 90%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; tr pyr

20% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 80%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; tr pyr

30% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 70%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

30% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 70%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

20% CHK: lt- me
slty, sb ang- sb
MRLST: med- d
slty, calc, pred s
xls; occ pyr



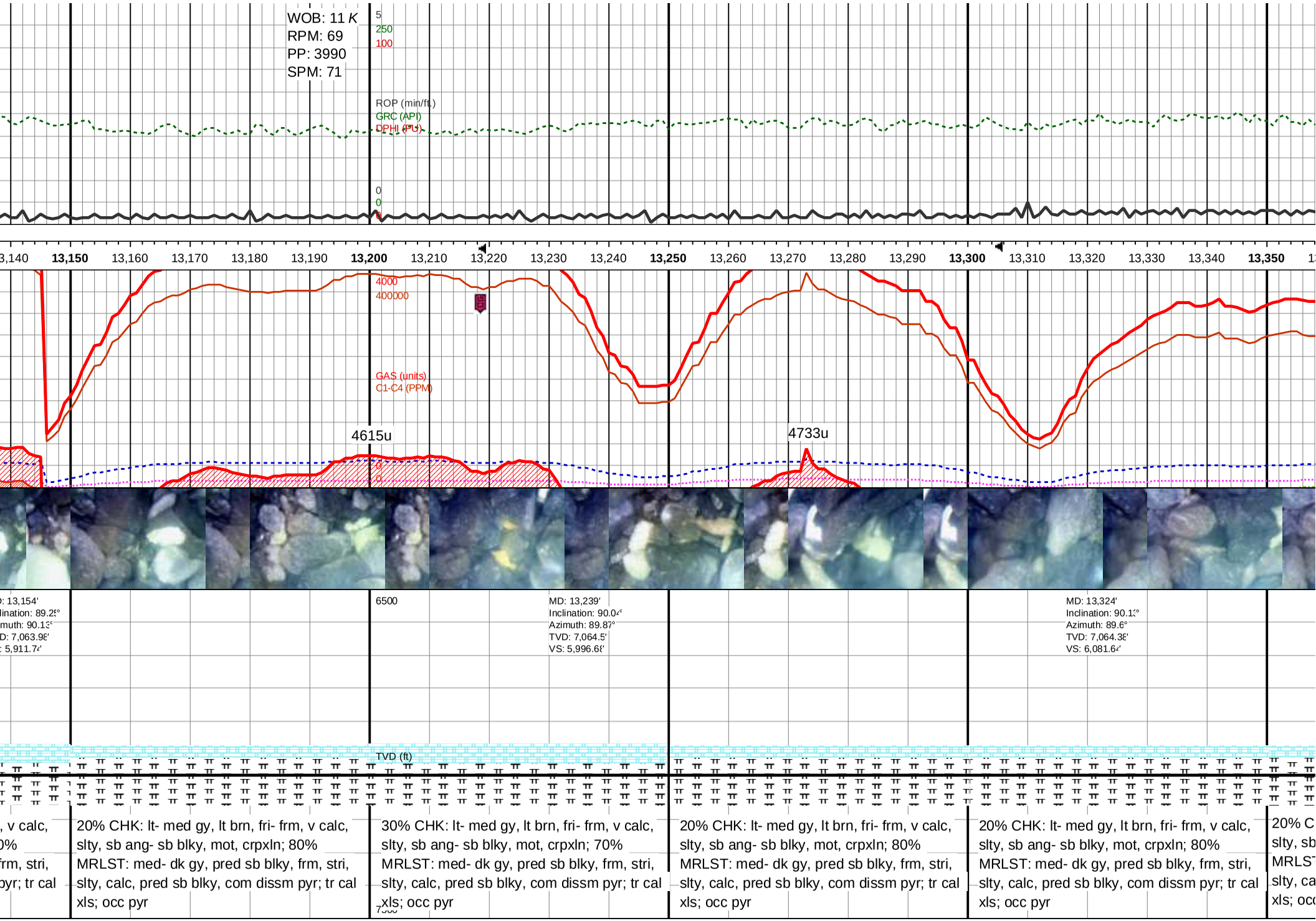
ed gy, lt brn, fri- frm, v calc, blky, mot, crpxln; 80% k gy, pred sb blky, frm, stri, b blky, com dissm pyr; tr cal

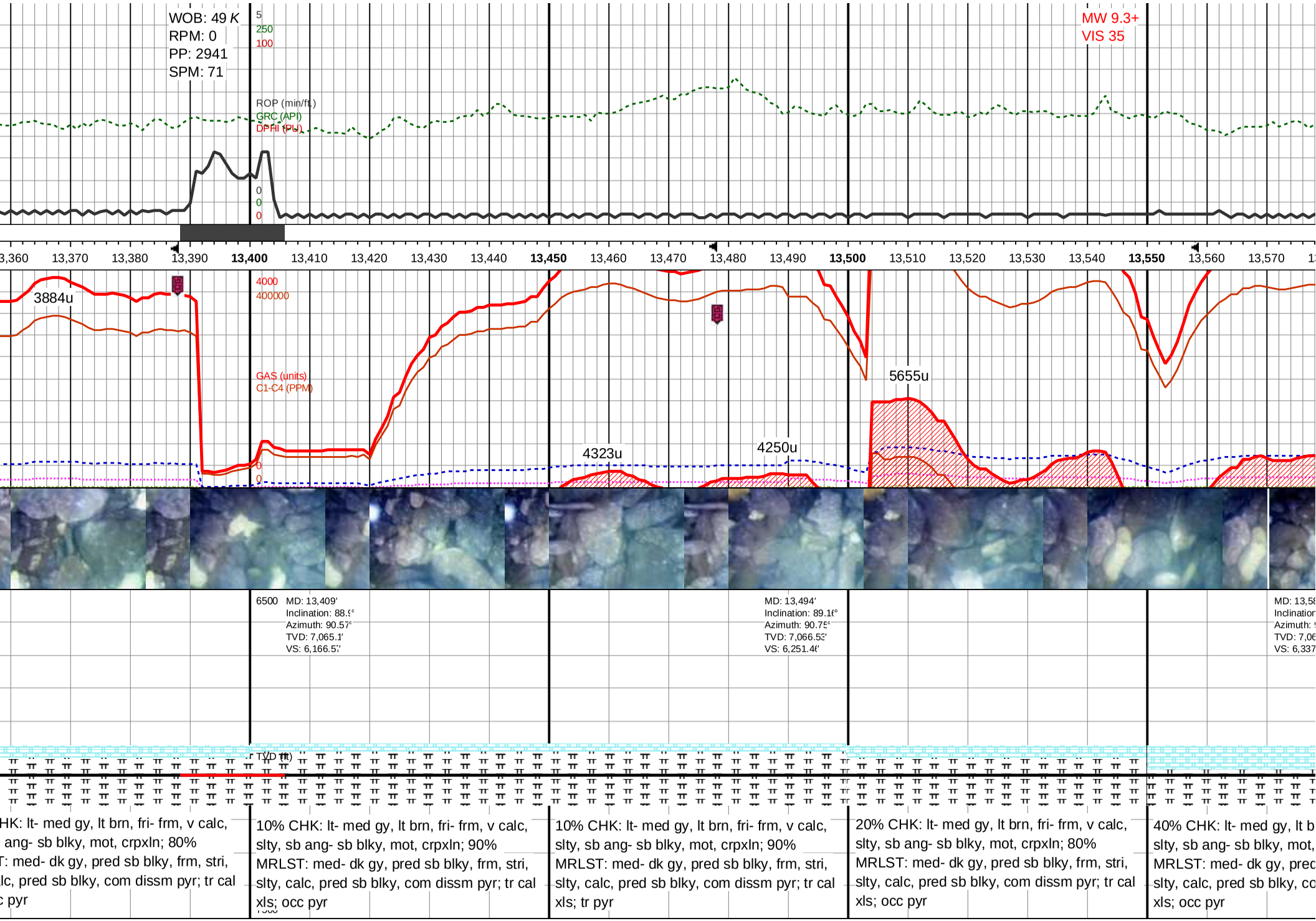
20% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 80% MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

40% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 60% MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

40% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 60% MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

30% CHK: lt- med gy, lt brn, fri- frm slty, sb ang- sb blky, mot, crpxln; 7 MRLST: med- dk gy, pred sb blky, slty, calc, pred sb blky, com dissm xls; occ pyr


WOB: 11 K
RPM: 69
PP: 3990
SPM: 71
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
13,140
13,150
13,160
13,170
13,180
13,190
13,200
13,210
13,220
13,230
13,240
13,250
13,260
13,270
13,280
13,290
13,300
13,310
13,320
13,330
13,340
13,350
4000
400000
GAS (units)
C1-C4 (PPM)
4615u
4733u
0
0
MD: 13,154'
Inclination: 89.2°
Azimuth: 90.1°
TVD: 7,063.9'
VS: 5,911.7'
6500
MD: 13,239'
Inclination: 90.0°
Azimuth: 89.87°
TVD: 7,064.5'
VS: 5,996.6'
MD: 13,324'
Inclination: 90.1°
Azimuth: 89.6°
TVD: 7,064.3'
VS: 6,081.6'
TVD (ft)
, v calc,
0%
frm, stri,
pyr; tr cal
20% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 80% MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr
30% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 70% MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr
7500
20% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 80% MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr
20% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 80% MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr
20% C
slty, sb
MRLST
slty, ca
xls; occ



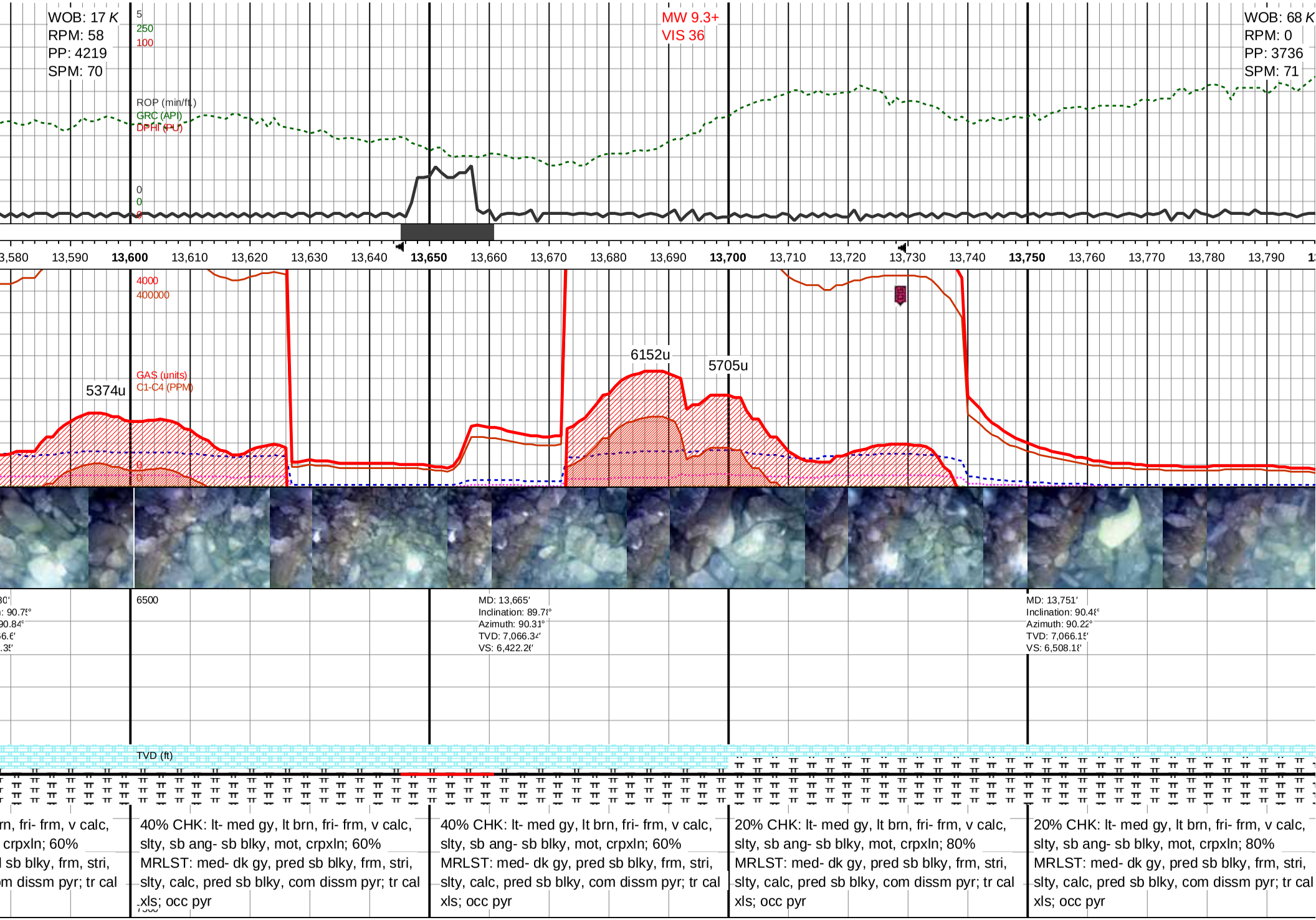
HK: lt- med gy, lt brn, fri- frm, v calc, ang- sb blky, mot, crpxln; 80%
T: med- dk gy, pred sb blky, frm, stri, lc, pred sb blky, com dissm pyr; tr cal c pyr

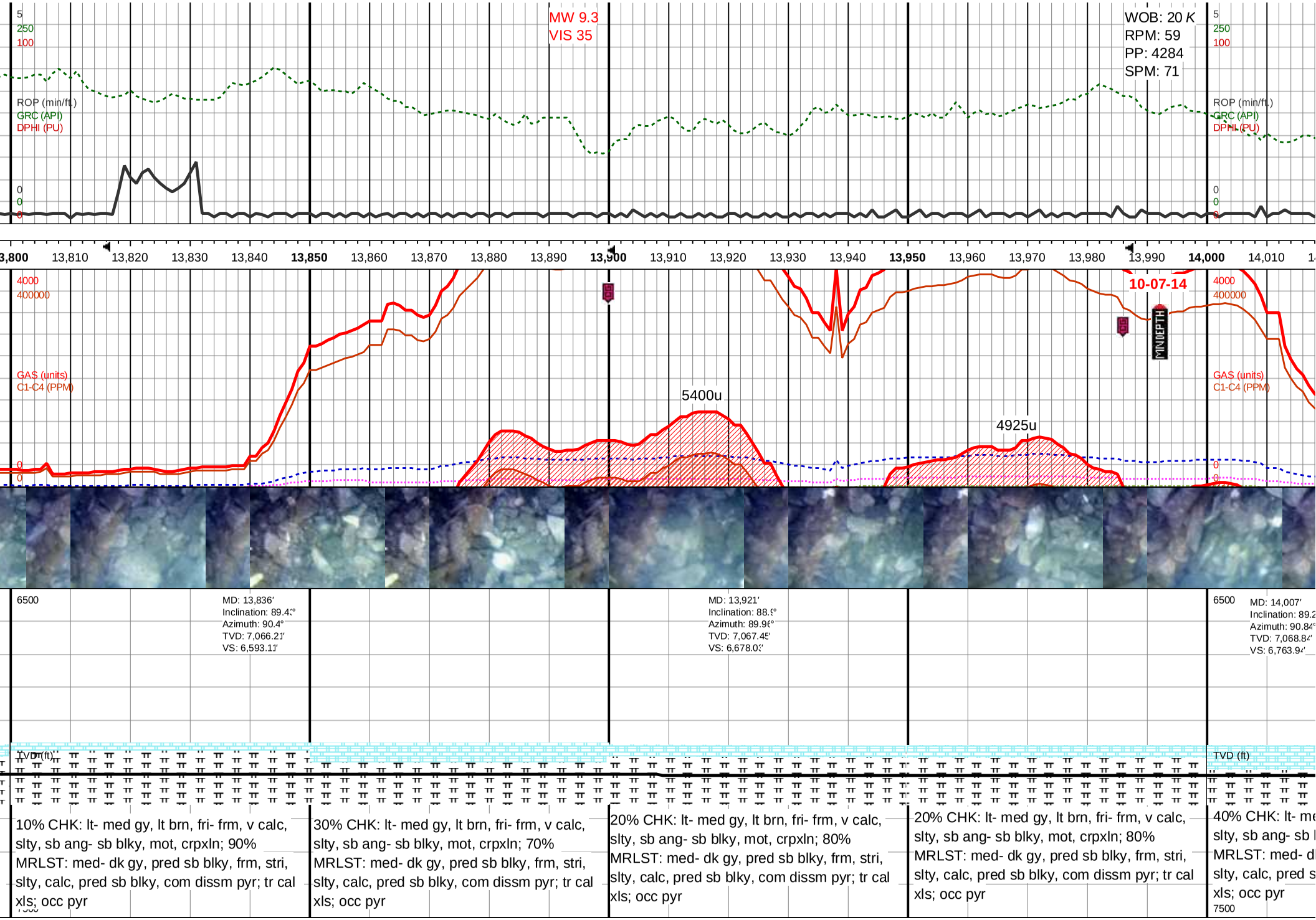
10% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 90%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

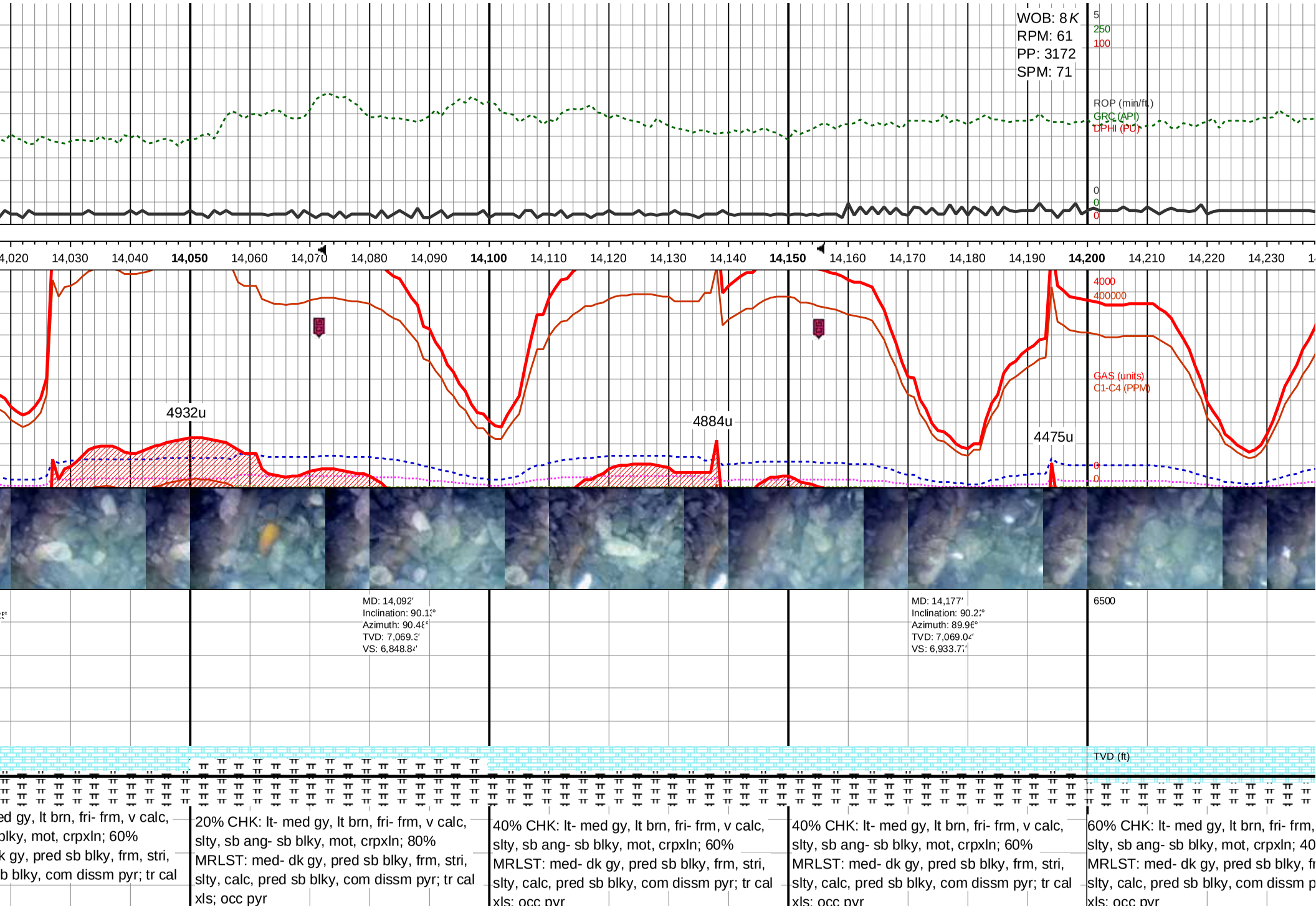
10% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 90%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; tr pyr

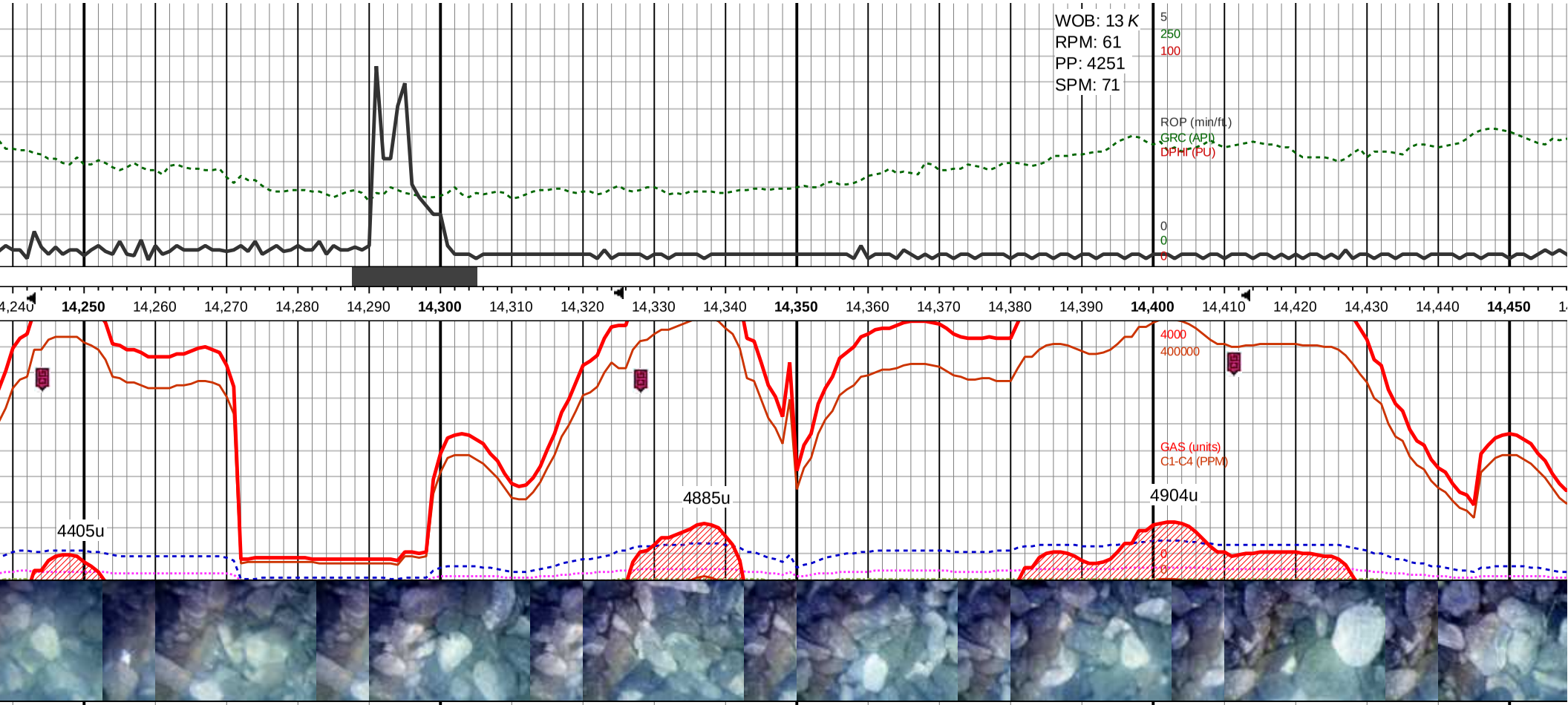
20% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 80%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

40% CHK: lt- med gy, lt b slty, sb ang- sb blky, mot, MRLST: med- dk gy, pred slty, calc, pred sb blky, co xls; occ pyr


WOB: 17 K
RPM: 58
PP: 4219
SPM: 70
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
0
MW 9.3+
VIS 36
WOB: 68 K
RPM: 0
PP: 3736
SPM: 71
13,580
13,590
13,600
13,610
13,620
13,630
13,640
13,650
13,660
13,670
13,680
13,690
13,700
13,710
13,720
13,730
13,740
13,750
13,760
13,770
13,780
13,790
4000
400000
GAS (units)
C1-C4 (PPM)
5374u
6152u
5705u
0
0
6500
MD: 13,665′
Inclination: 89.7°
Azimuth: 90.31°
TVD: 7,066.3′
VS: 6,422.2′
MD: 13,751′
Inclination: 90.4°
Azimuth: 90.22°
TVD: 7,066.1′
VS: 6,508.1′
TVD (ft)
rn, fri- frm, v calc,
crpxln; 60%
sb blky, frm, stri,
m dissm pyr; tr cal
40% CHK: lt- med gy, lt brn, fri- frm, v calc,
slty, sb ang- sb blky, mot, crpxln; 60%
MRLST: med- dk gy, pred sb blky, frm, stri,
slty, calc, pred sb blky, com dissm pyr; tr cal
xls; occ pyr
40% CHK: lt- med gy, lt brn, fri- frm, v calc,
slty, sb ang- sb blky, mot, crpxln; 60%
MRLST: med- dk gy, pred sb blky, frm, stri,
slty, calc, pred sb blky, com dissm pyr; tr cal
xls; occ pyr
20% CHK: lt- med gy, lt brn, fri- frm, v calc,
slty, sb ang- sb blky, mot, crpxln; 80%
MRLST: med- dk gy, pred sb blky, frm, stri,
slty, calc, pred sb blky, com dissm pyr; tr cal
xls; occ pyr
20% CHK: lt- med gy, lt brn, fri- frm, v calc,
slty, sb ang- sb blky, mot, crpxln; 80%
MRLST: med- dk gy, pred sb blky, frm, stri,
slty, calc, pred sb blky, com dissm pyr; tr cal
xls; occ pyr


MW 9.3
VIS 35
WOB: 20 K
RPM: 59
PP: 4284
SPM: 71
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
0
13,800
13,810
13,820
13,830
13,840
13,850
13,860
13,870
13,880
13,890
13,900
13,910
13,920
13,930
13,940
13,950
13,960
13,970
13,980
13,990
14,000
14,010
4000
400000
GAS (units)
C1-C4 (PPM)
10-07-14
MINDEPTH
5400u
4925u
6500
MD: 13,836'
Inclination: 89.4°
Azimuth: 90.4°
TVD: 7,066.2'
VS: 6,593.1'
MD: 13,921'
Inclination: 88.9°
Azimuth: 89.9°
TVD: 7,067.4'
VS: 6,678.0'
MD: 14,007'
Inclination: 89.2
Azimuth: 90.84°
TVD: 7,068.8'
VS: 6,763.9'
TVD (ft)
7500
10% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 90%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr
30% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 70%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr
20% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 80%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr
20% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 80%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr
40% CHK: lt- me
slty, sb ang- sb
MRLST: med- d
slty, calc, pred s
xls; occ pyr


WOB: 8 K
RPM: 61
PP: 3172
SPM: 71
5
250
100
ROP (min/ft)
GRC (API)
DPHI (PU)
0
0
0
14,020
14,030
14,040
14,050
14,060
14,070
14,080
14,090
14,100
14,110
14,120
14,130
14,140
14,150
14,160
14,170
14,180
14,190
14,200
14,210
14,220
14,230
4000
400000
GAS (units)
C1-C4 (PPM)
4932u
4884u
4475u
0
0
MD: 14,092'
Inclination: 90.1°
Azimuth: 90.4°
TVD: 7,069.3'
VS: 6,848.8'
MD: 14,177'
Inclination: 90.2°
Azimuth: 89.9°
TVD: 7,069.0'
VS: 6,933.7'
6500
TVD (ft)
ed gy, lt brn, fri- frm, v calc,
blky, mot, crpxln; 60%
k gy, pred sb blky, frm, stri,
b blky, com dissm pyr; tr cal
20% CHK: lt- med gy, lt brn, fri- frm, v calc,
slty, sb ang- sb blky, mot, crpxln; 80%
MRLST: med- dk gy, pred sb blky, frm, stri,
slty, calc, pred sb blky, com dissm pyr; tr cal
xls; occ pyr
40% CHK: lt- med gy, lt brn, fri- frm, v calc,
slty, sb ang- sb blky, mot, crpxln; 60%
MRLST: med- dk gy, pred sb blky, frm, stri,
slty, calc, pred sb blky, com dissm pyr; tr cal
xls; occ pyr
40% CHK: lt- med gy, lt brn, fri- frm, v calc,
slty, sb ang- sb blky, mot, crpxln; 60%
MRLST: med- dk gy, pred sb blky, frm, stri,
slty, calc, pred sb blky, com dissm pyr; tr cal
xls; occ pyr
60% CHK: lt- med gy, lt brn, fri- frm,
slty, sb ang- sb blky, mot, crpxln; 40
MRLST: med- dk gy, pred sb blky, fr
slty, calc, pred sb blky, com dissm p
xls; occ pyr



v calc,
%
rm, stri,
yr; tr cal

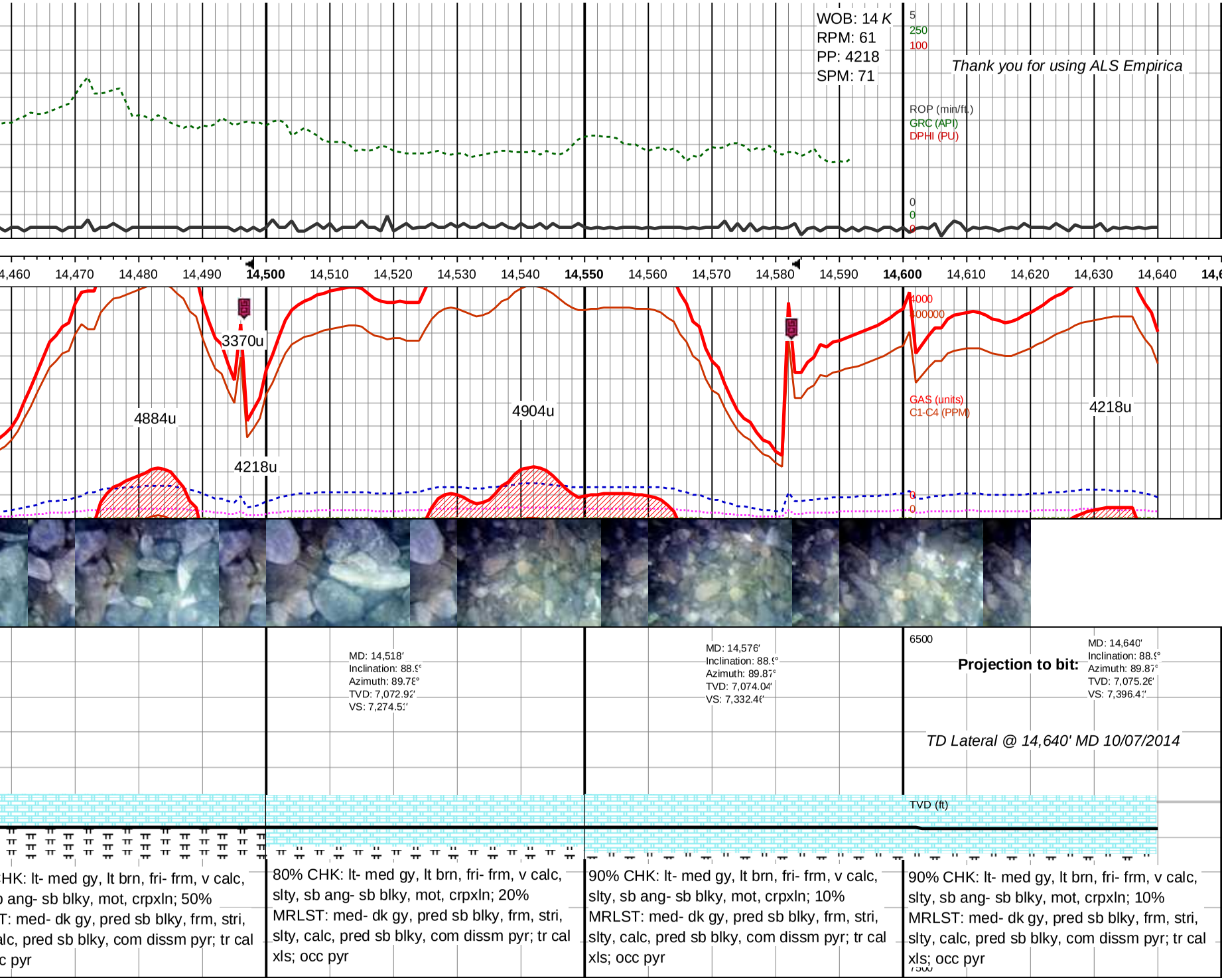
70% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 30% MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

80% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 20% MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

50% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 50% MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

50% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 50% MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

50% C
slty, sb
MRLST
slty, ca
xls; oc



HK: lt- med gy, lt brn, fri- frm, v calc,
ang- sb blky, mot, crpxln; 50%
T: med- dk gy, pred sb blky, frm, stri,
lc, pred sb blky, com dissm pyr; tr cal
c pyr

80% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 20%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

90% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 10%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr

90% CHK: lt- med gy, lt brn, fri- frm, v calc, slty, sb ang- sb blky, mot, crpxln; 10%
MRLST: med- dk gy, pred sb blky, frm, stri, slty, calc, pred sb blky, com dissm pyr; tr cal xls; occ pyr