Décollement Consulting Inc.

Scale: 5" / 100'
Measured Depth Log

Well Name	North Platte Federal A-E-22HC		
Location	NW/NW Section 22, T5N - R63W		
State	CO	**County**	Weld
Country	USA	**Rig Number**	Xtreme 22
API Number	05-123-40197	**Field**	Wattenberg
Region	D.J. Basin	**Drilling Completed**	6/3/2015
Spud Date	4/27/2015		
Surface Coordinates	617 FNL x 1205 FWL (Lat: 40.390450, -104.426820)		
Bottom Hole Coordinates	470 FSL x 10 FWL (Lat: 40.378986, -104.431092)		
Ground Elevation	4,658'	**K.B. Elevation**	4,675'
Logged Interval	7,360' **To** 11,332'	**Total Depth**	11,332'
Formation	Codell Sandstone		
Type of Drilling Fluid	Water Based Mud		

Operator

Address Bonanza Creek Energy, Inc.
410 17th Street, Suite 1500
Denver, Colorado 80202

Geologist

Name Scott Sawyer / Paul Givens

Company Decollement Consulting, Inc.

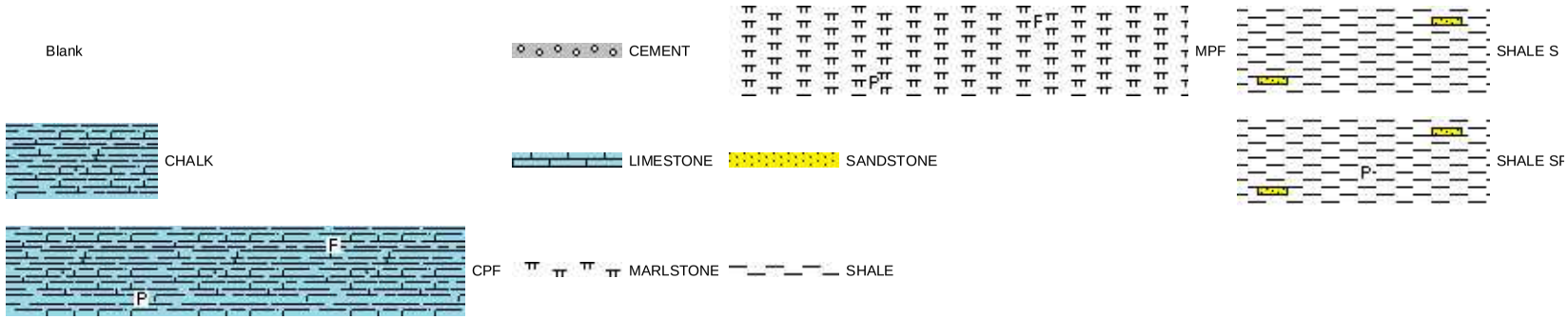
Address 13300 Braun Road
Golden, CO 80401

Décollement Consulting Inc.

Zone Color Coding

Oil	Condensate	Gas
Note	Core	Pressure
Error	Water	Seal

Rock Types



Accessories

Fossils

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

Minerals

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

Stringer

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

Other Symbols

O ORGANIC

FORMATION TOP

L LITHOGRAPHIC

Oil Show

P PINPOINT

GAS SHOW

Rounding

MX MICROXLN

DEAD

VUGGY

MN DEPTH

A ANGULAR

MS MUDSTONE

EVEN

NORMAL FAULT

R ROUNDED

PS PACKSTONE

Engineering

QUESTIONABLE

OIL SHOW

a SUBANG

WS WACKESTONE

SPOTTED STAINING

BIT

OVERTURNED STRATA

r SUBRND

Sorting

CASING

REVERSE FAULT

Porosity

Textures

CONNECTION (LEFT)

SIDEWALL CORE (LEFT)

M MODERATE

EARTHY

CONNECTION (RIGHT)

SIDEWALL CORE (RIGHT)

BS BOUNDSTONE

P POOR

FENESTRAL

CONNECTION GAS

SLIDE

C CHALKY

W WELL

FRACTURE

CORE - LOST

SURVEY

CX CRYPTOXLN

INTERCRYSTALLINE

CORE - RECOVERED

TRIP GAS

E EARTHY

INTEROOLITIC

DST INTERVAL

WIRELINE TESTED - LEFT

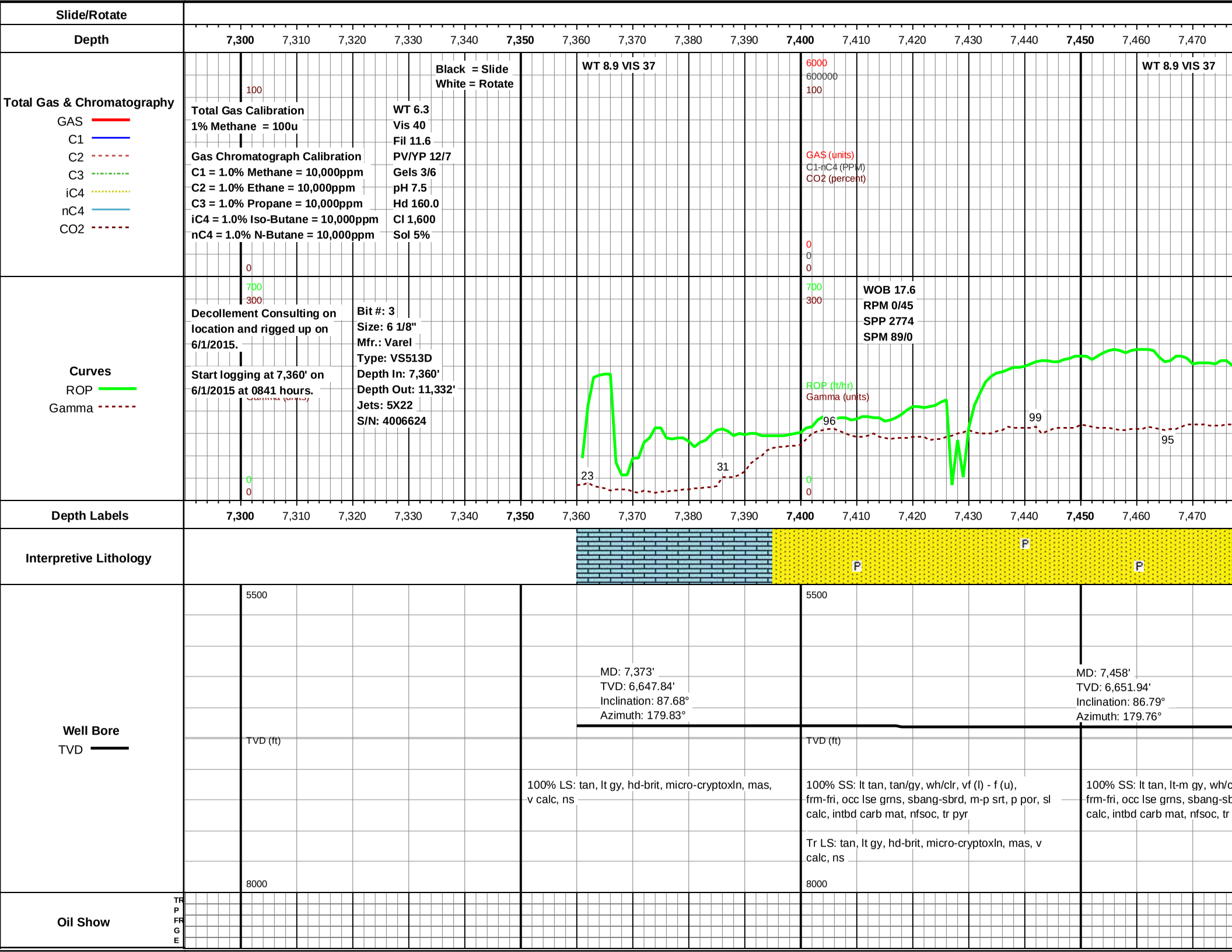
FX FINELYXLN

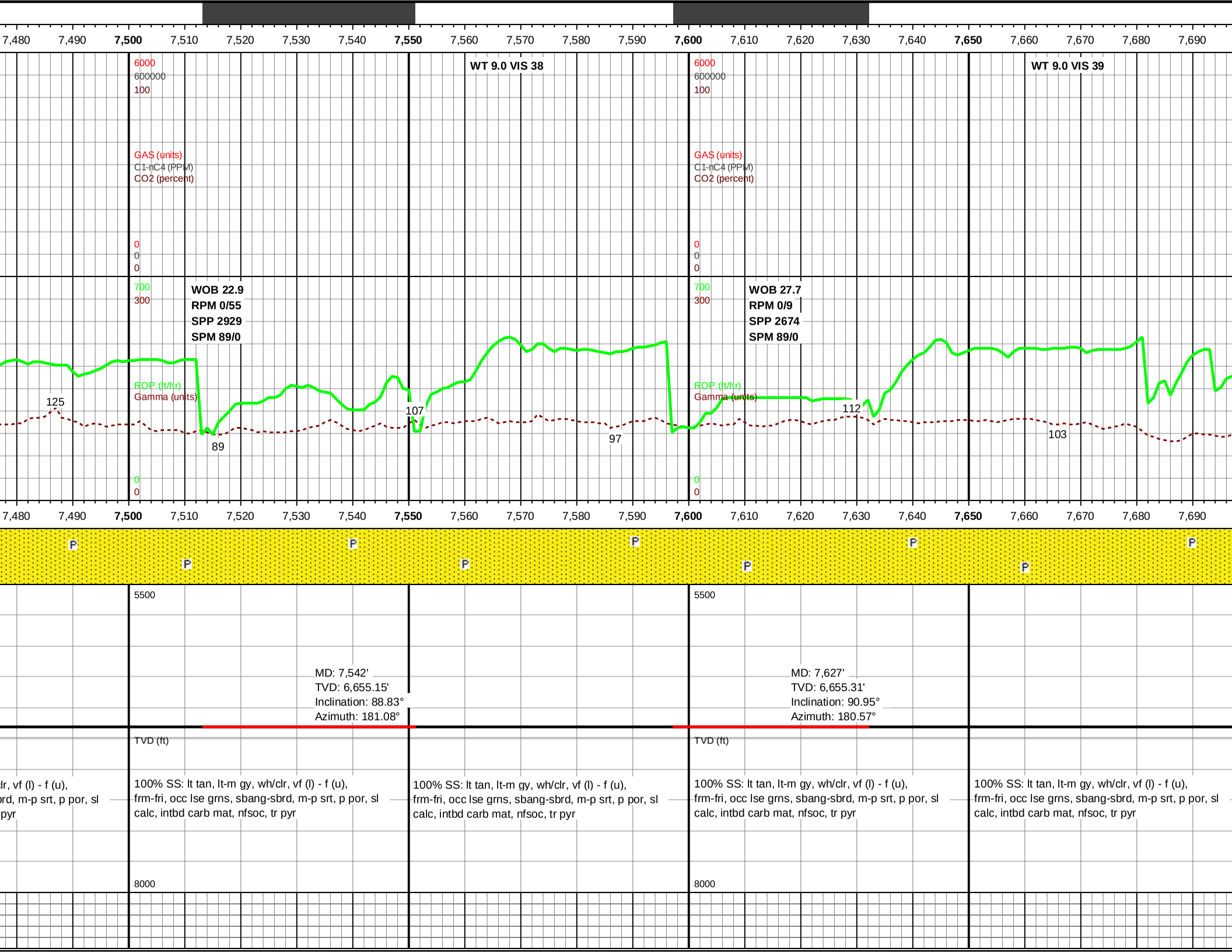
MOLDIC

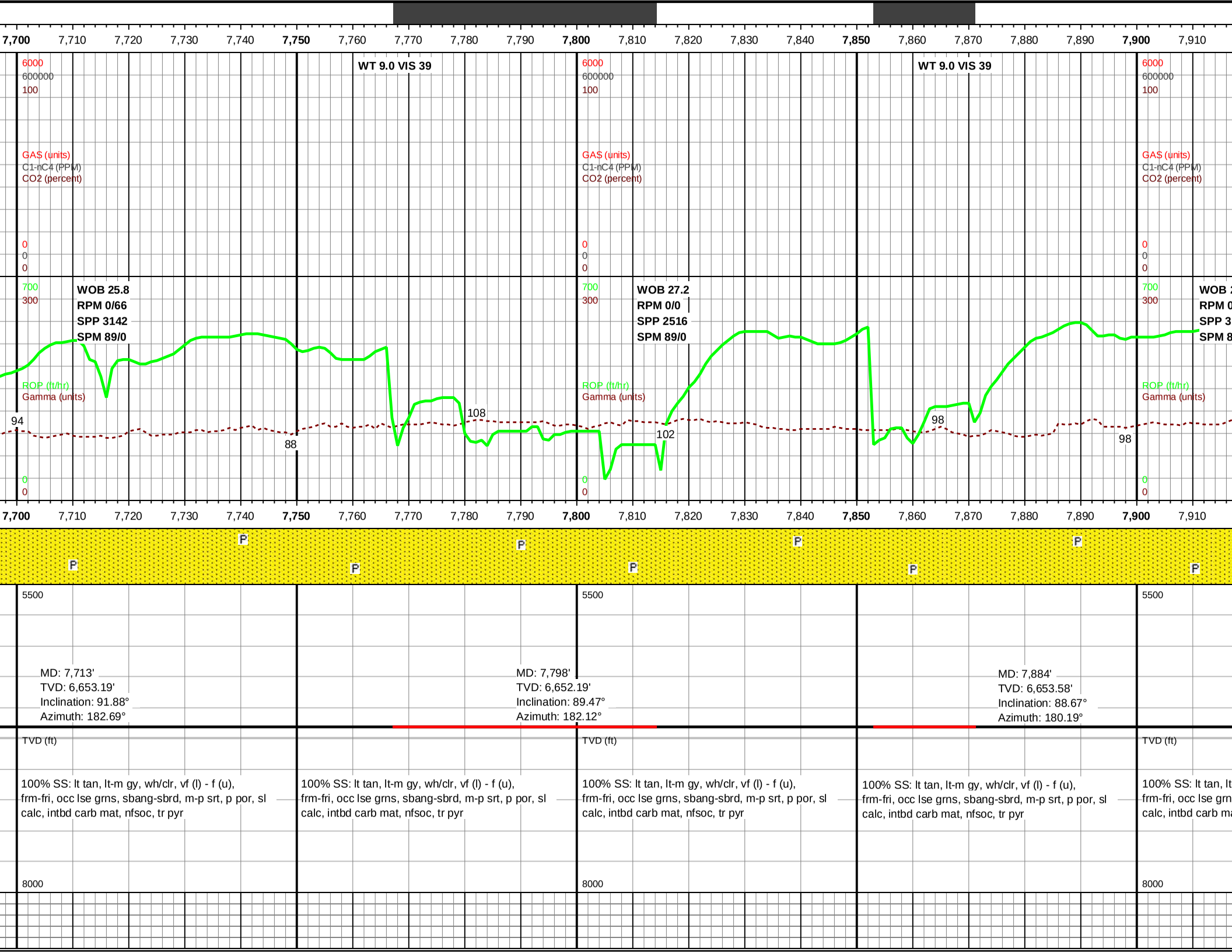
FAULT

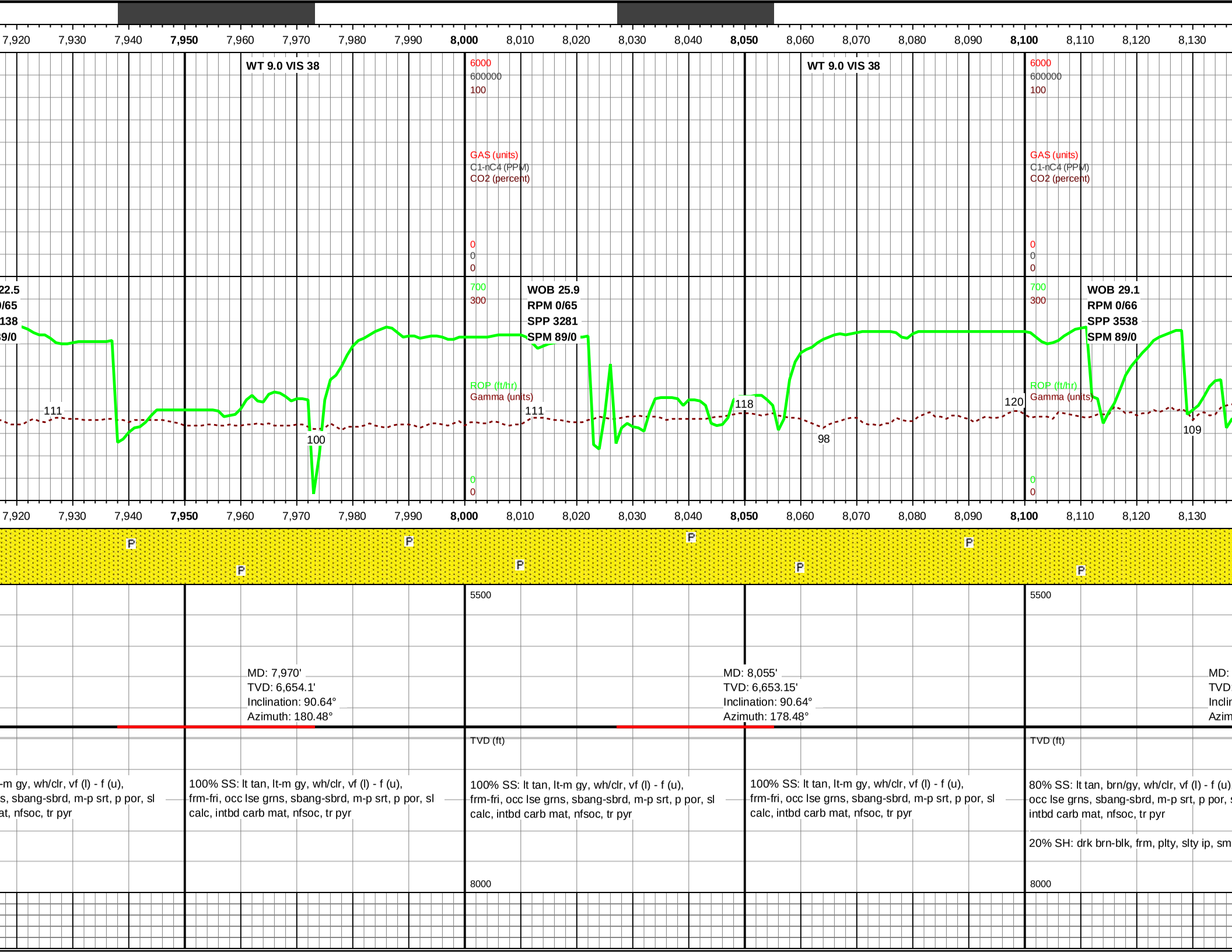
WIRELINE TESTED - RT

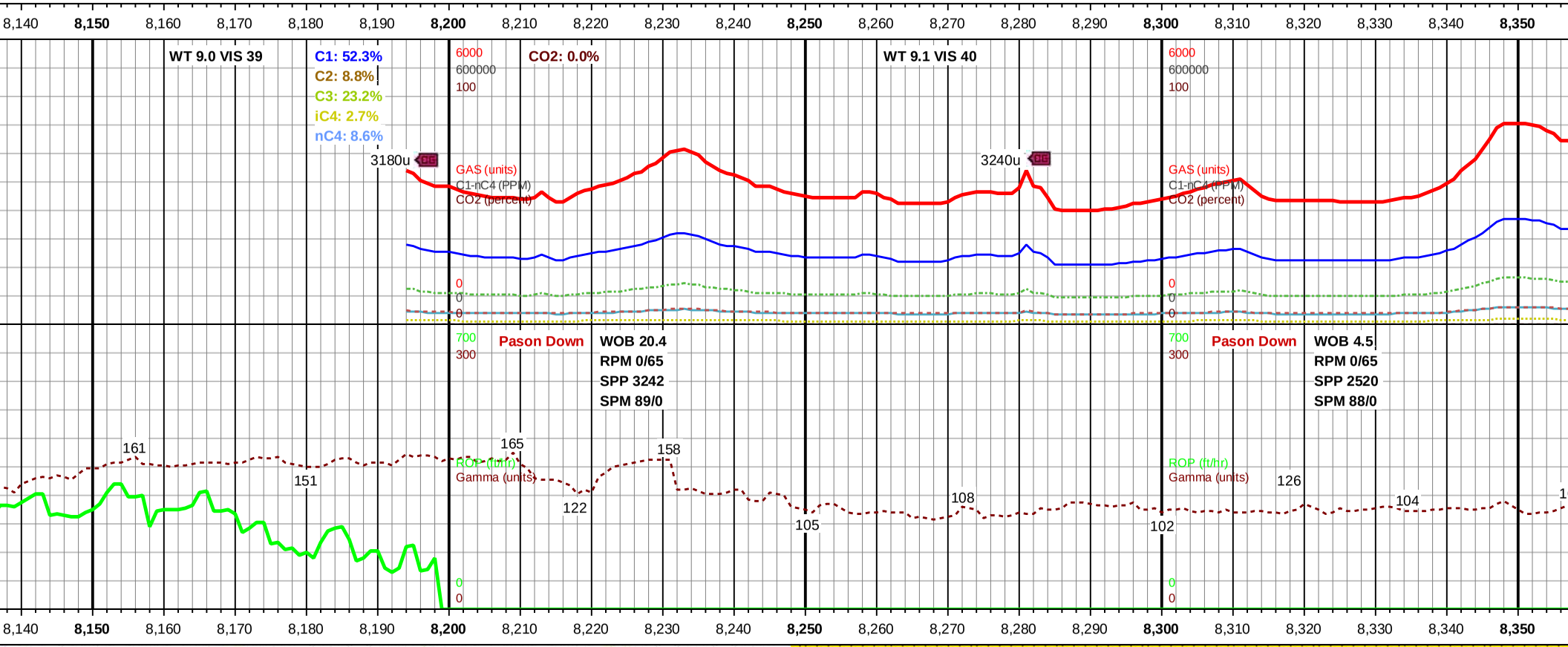
GS GRAINSTONE

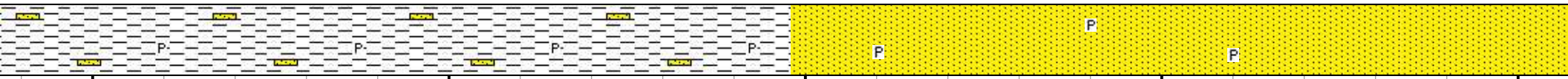

Slide/Rotate
Depth
7,300 7,310 7,320 7,330 7,340 7,350 7,360 7,370 7,380 7,390 7,400 7,410 7,420 7,430 7,440 7,450 7,460 7,470
Total Gas & Chromatography
GAS
C1
C2
C3
iC4
nC4
CO2
Black = Slide
White = Rotate
WT 8.9 VIS 37
WT 8.9 VIS 37
100
Total Gas Calibration
1% Methane = 100u
Gas Chromatograph Calibration
C1 = 1.0% Methane = 10,000ppm
C2 = 1.0% Ethane = 10,000ppm
C3 = 1.0% Propane = 10,000ppm
iC4 = 1.0% Iso-Butane = 10,000ppm
nC4 = 1.0% N-Butane = 10,000ppm
WT 6.3
Vis 40
Fil 11.6
PV/YP 12/7
Gels 3/6
pH 7.5
Hd 160.0
Cl 1,600
Sol 5%
0
6000
600000
100
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
0
0
0
Curves
ROP
Gamma
700
300
Decollement Consulting on location and rigged up on 6/1/2015.
Start logging at 7,360' on 6/1/2015 at 0841 hours.
Bit #: 3
Size: 6 1/8"
Mfr.: Varel
Type: VS513D
Depth In: 7,360'
Depth Out: 11,332'
Jets: 5X22
S/N: 4006624
700
300
WOB 17.6
RPM 0/45
SPP 2774
SPM 89/0
ROP (ft/hr)
Gamma (units)
23
31
96
99
95
0
0
0
0
Depth Labels
7,300 7,310 7,320 7,330 7,340 7,350 7,360 7,370 7,380 7,390 7,400 7,410 7,420 7,430 7,440 7,450 7,460 7,470
Interpretive Lithology
P
P
P
Well Bore
TVD
5500
TVD (ft)
8000
MD: 7,373'
TVD: 6,647.84'
Inclination: 87.68°
Azimuth: 179.83°
MD: 7,458'
TVD: 6,651.94'
Inclination: 86.79°
Azimuth: 179.76°
100% LS: tan, lt gy, hd-brit, micro-cryptoxln, mas, v calc, ns
100% SS: lt tan, tan/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
Tr LS: tan, lt gy, hd-brit, micro-cryptoxln, mas, v calc, ns
100% SS: lt tan, lt-m gy, wh/c
frm-fri, occ lse grns, sbang-sb
calc, intbd carb mat, nfsoc, tr
Oil Show
TR
P
FR
G
E


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
WT 9.0 VIS 38
WT 9.0 VIS 39
6000
600000
100
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
0
0
0
700
300
WOB 22.9
RPM 0/55
SPP 2929
SPM 89/0
WOB 27.7
RPM 0/9
SPP 2674
SPM 89/0
ROP (ft/hr)
Gamma (units)
125
89
107
97
112
103
0
0
P
5500
MD: 7,542'
TVD: 6,655.15'
Inclination: 88.83°
Azimuth: 181.08°
MD: 7,627'
TVD: 6,655.31'
Inclination: 90.95°
Azimuth: 180.57°
TVD (ft)
8000
100% SS: lt tan, lt-m gy, wh/clr, vf (l) - f (u),
frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl
calc, intbd carb mat, nfsoc, tr pyr


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
WT 9.0 VIS 39
WT 9.0 VIS 39
6000
600000
100
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
0
0
0
700
300
WOB 25.8
RPM 0/66
SPP 3142
SPM 89/0
WOB 27.2
RPM 0/0
SPP 2516
SPM 89/0
ROP (ft/hr)
Gamma (units)
94
88
108
102
98
98
P
5500
MD: 7,713'
TVD: 6,653.19'
Inclination: 91.88°
Azimuth: 182.69°
MD: 7,798'
TVD: 6,652.19'
Inclination: 89.47°
Azimuth: 182.12°
MD: 7,884'
TVD: 6,653.58'
Inclination: 88.67°
Azimuth: 180.19°
TVD (ft)
100% SS: lt tan, lt-m gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
8000


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
WT 9.0 VIS 38
WT 9.0 VIS 38
6000
600000
100
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
0
0
0
700
300
WOB 25.9
RPM 0/65
SPP 3281
SPM 89/0
WOB 29.1
RPM 0/66
SPP 3538
SPM 89/0
ROP (ft/hr)
Gamma (units)
111
100
111
118
98
120
109
0
0
5500
MD: 7,970'
TVD: 6,654.1'
Inclination: 90.64°
Azimuth: 180.48°
MD: 8,055'
TVD: 6,653.15'
Inclination: 90.64°
Azimuth: 178.48°
TVD (ft)
100% SS: lt tan, lt-m gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
80% SS: lt tan, brn/gy, wh/clr, vf (l) - f (u)
occ lse grns, sbang-sbrd, m-p srt, p por,
intbd carb mat, nfsoc, tr pyr
20% SH: drk brn-blk, frm, plty, slty ip, sm
8000





5500

8,141'
: 6,652.67'
nation: 90°
uth: 178.96°

MD: 8,226'
TVD: 6,650.97'
Inclination: 92.29°
Azimuth: 178.74°

5500

MD: 8,312'
TVD: 6,648.86'
Inclination: 90.52°
Azimuth: 178.48°

TVD (ft)

TVD (ft)

, frm-fri,
sl calc,

, n calc

85% SH: drk brn-blk, frm, plty, slty ip, sm, n calc

15% SS: lt tan, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr

70% SH: drk brn-blk, frm, plty, slty ip, sm, n calc

30% SS: lt tan, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr

90% SS: lt tan, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr

10% SH: drk brn-blk, frm, plty, slty ip, sm, n calc

95% SS: lt tan, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr

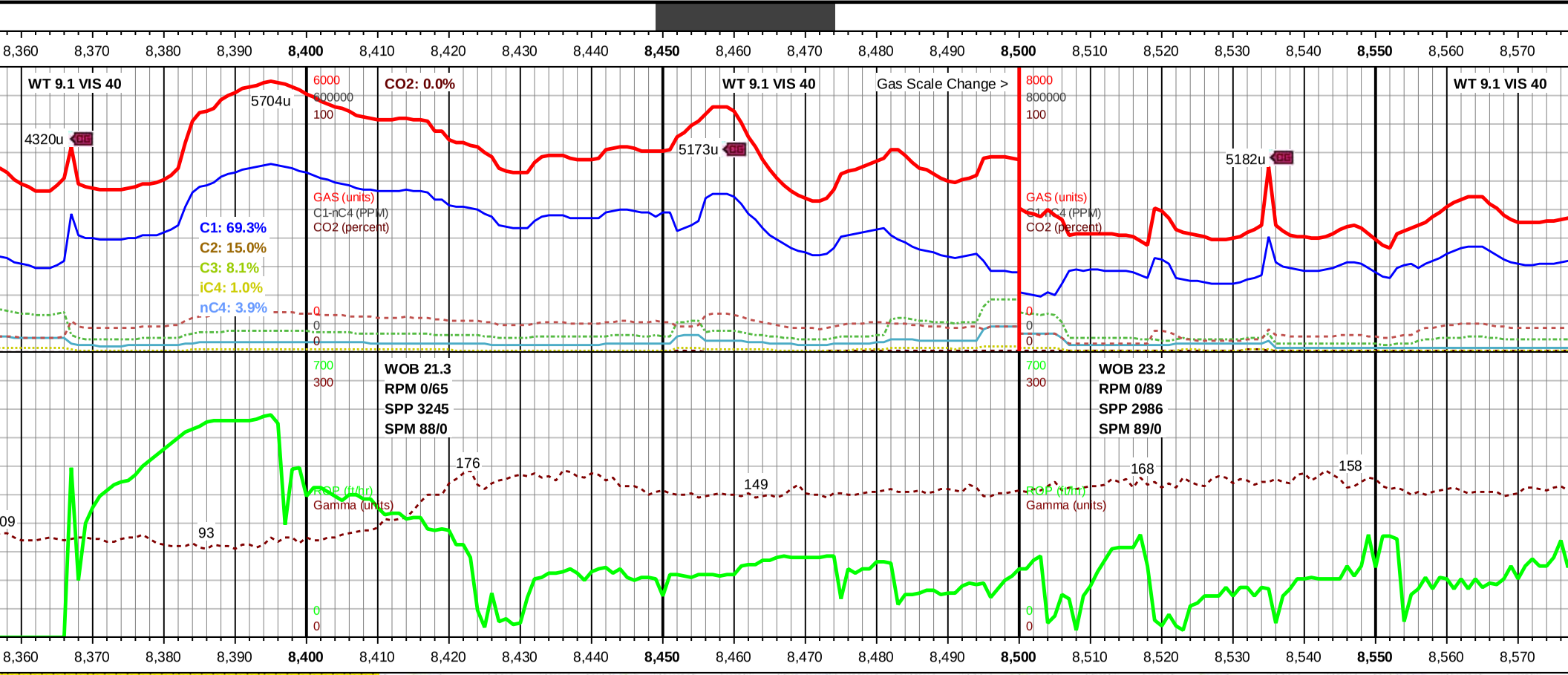
5% SH: drk brn-blk, frm, plty, slty ip, sm, n calc

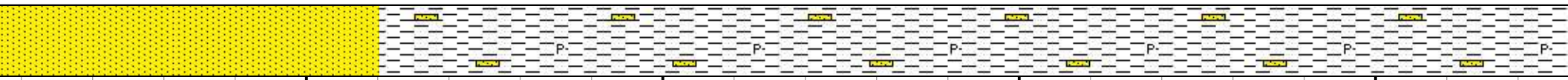
95% S
occ ls
intbd

5% SH

8000

8000





5500

MD: 8,398'
TVD: 6,648.41'
Inclination: 90.09°
Azimuth: 178.32°

MD: 8,483'
TVD: 6,647.25'
Inclination: 91.47°
Azimuth: 179.24°

5500

MD: 8,569'
TVD: 6,645.2'
Inclination: 91.26°
Azimuth: 178.78°

TVD (ft)

SS: lt tan, brn/gy, wh/clr, vf (l) - f (u), frm-fri,
e grns, sbang-sbrd, m-p srt, p por, sl calc,
carb mat, nfsoc, tr pyr

H: drk brn-blk, frm, plty, slty ip, sm, n calc

75% SH: drk brn, blk, frm, plty, slty ip, sm, n calc

25% SS: drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr

8000

95% SH: drk gy/brn, blk, frm, plty, slty ip, sm, n calc

5% SS: drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr

TVD (ft)

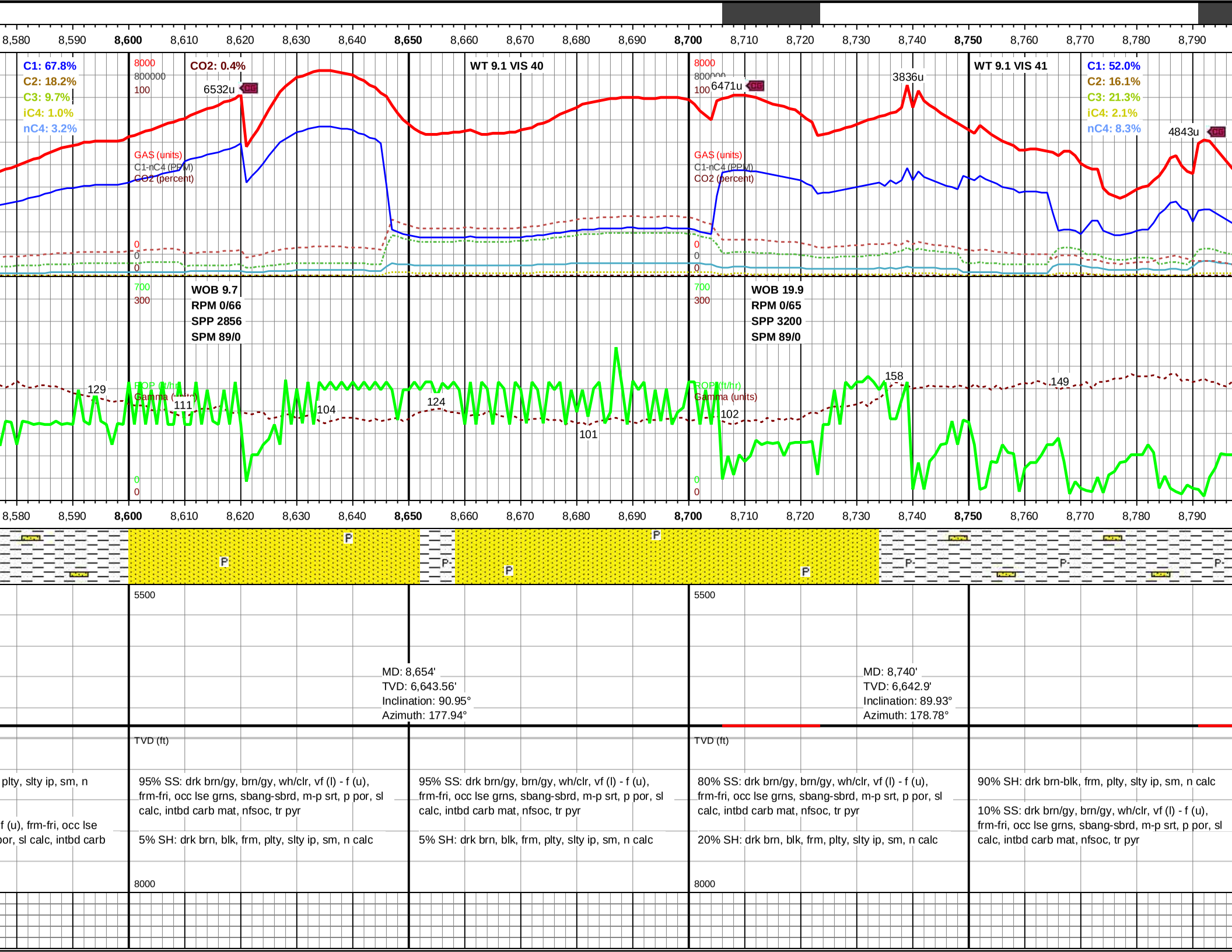
95% SH: drk gy/brn, blk, frm, plty, slty ip, sm, n calc

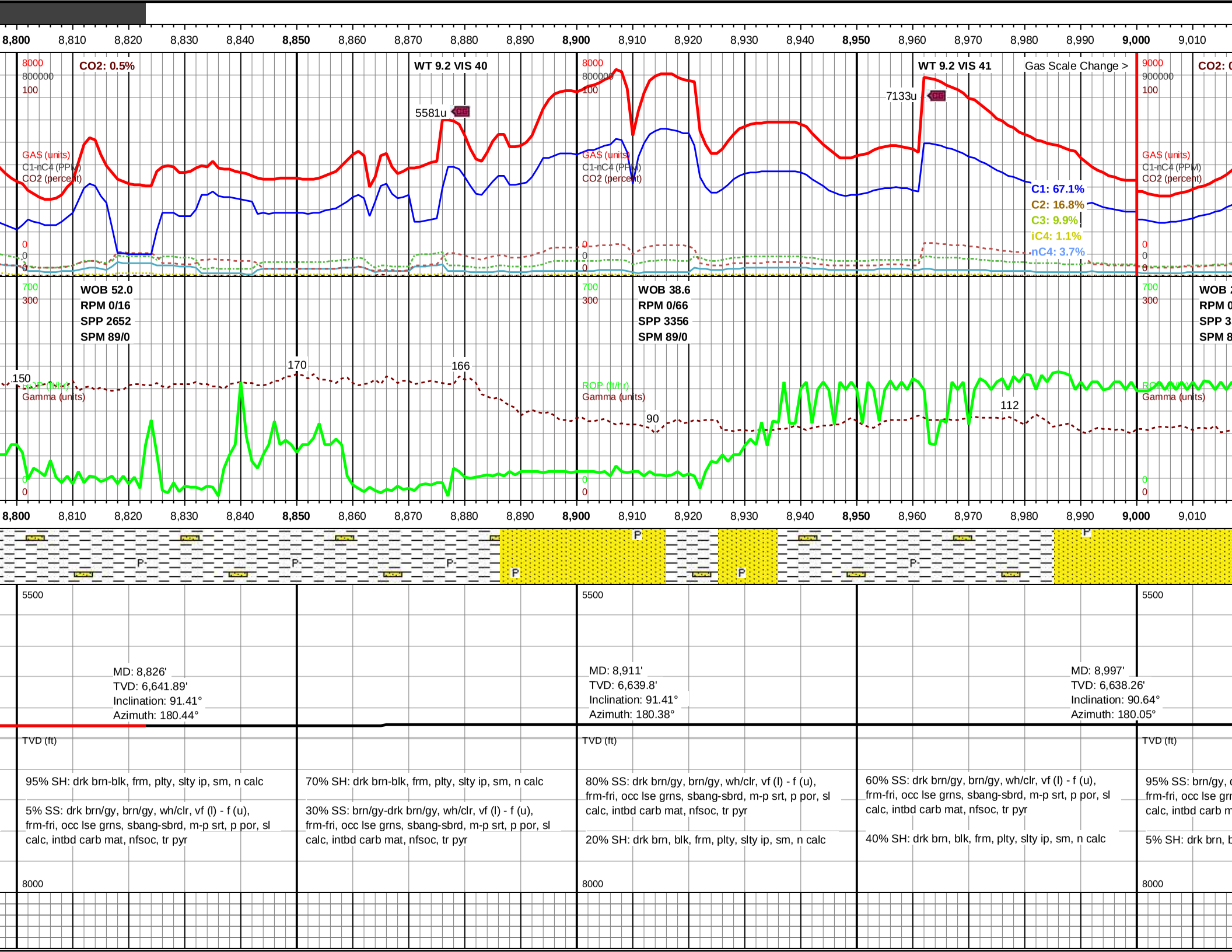
5% SS: drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr

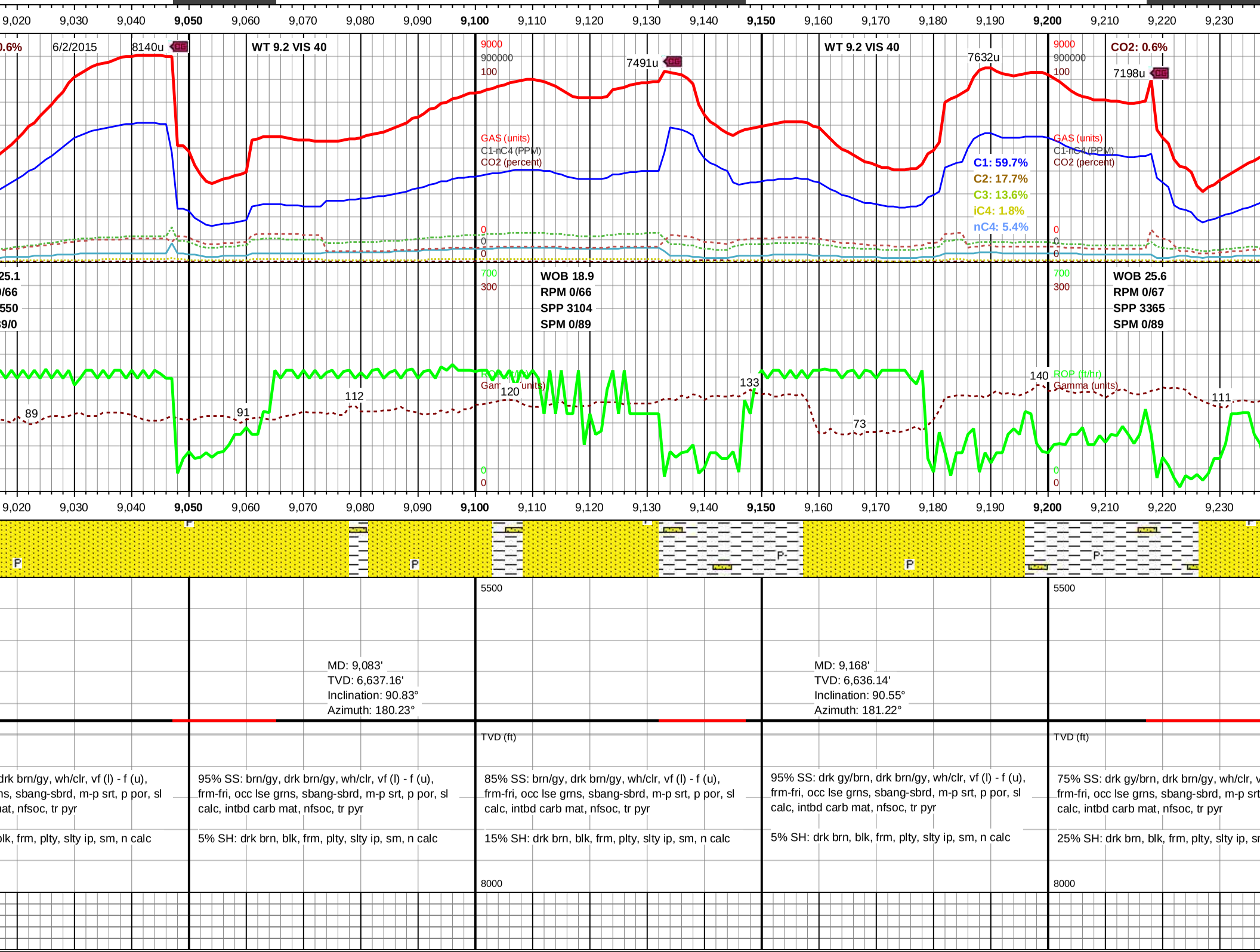
8000

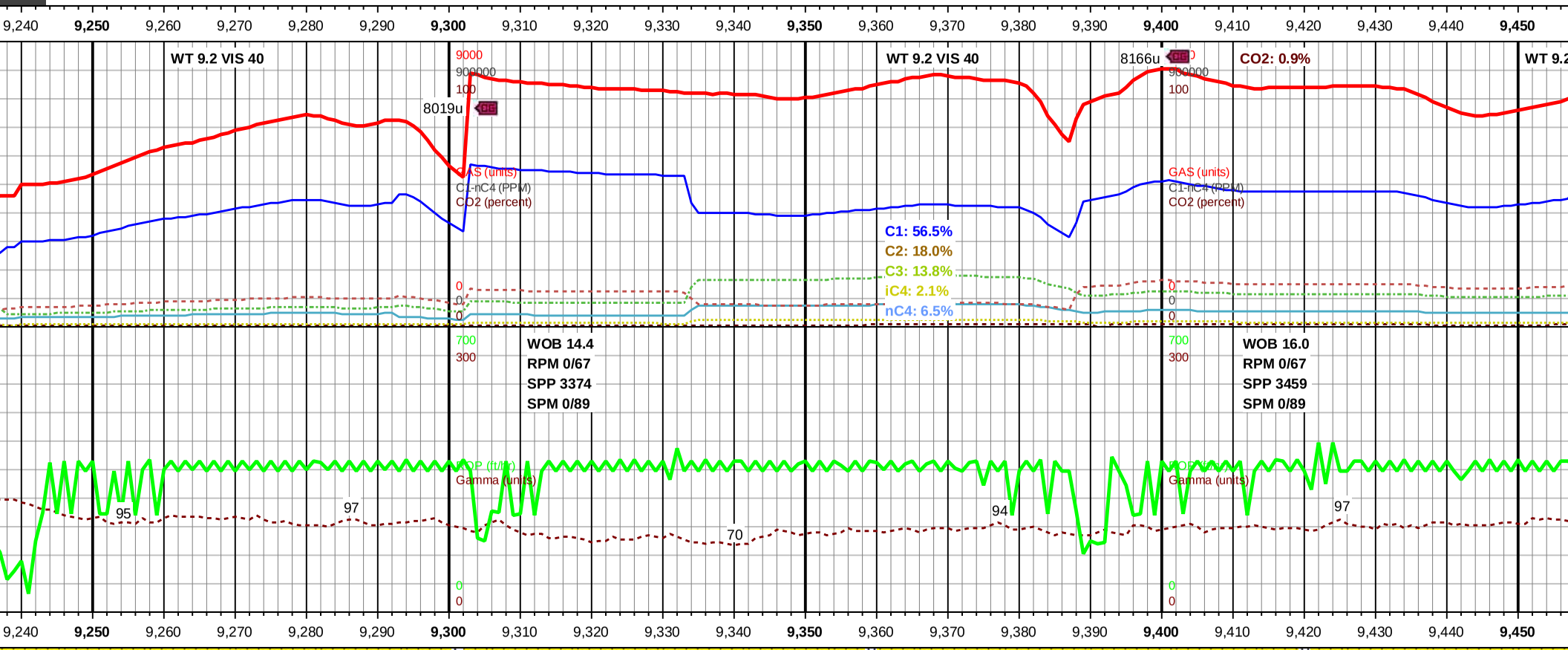
95% SH: drk brn/gy, blk, frm,
calc

5% SS: brn/gy, wh/clr, vf (l) -
grns, sbang-sbrd, m-p srt, p p
mat, nfsoc, tr pyr


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
C1: 67.8%
C2: 18.2%
C3: 9.7%
iC4: 1.0%
nC4: 3.2%
CO2: 0.4%
6532u
WT 9.1 VIS 40
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
WOB 9.7
RPM 0/66
SPP 2856
SPM 89/0
ROP (ft/hr)
Gamma (units)
129
111
104
124
101
6471u
3836u
WT 9.1 VIS 41
C1: 52.0%
C2: 16.1%
C3: 21.3%
iC4: 2.1%
nC4: 8.3%
4843u
WOB 19.9
RPM 0/65
SPP 3200
SPM 89/0
158
149
102
5500
MD: 8,654'
TVD: 6,643.56'
Inclination: 90.95°
Azimuth: 177.94°
MD: 8,740'
TVD: 6,642.9'
Inclination: 89.93°
Azimuth: 178.78°
TVD (ft)
95% SS: drk brn/gy, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
80% SS: drk brn/gy, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
20% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
90% SH: drk brn-blk, frm, plty, slty ip, sm, n calc
10% SS: drk brn/gy, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
8000


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
CO2: 0.5%
WT 9.2 VIS 40
WT 9.2 VIS 41
Gas Scale Change >
5581u
7133u
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
C1: 67.1%
C2: 16.8%
C3: 9.9%
iC4: 1.1%
nC4: 3.7%
WOB 52.0
RPM 0/16
SPP 2652
SPM 89/0
WOB 38.6
RPM 0/66
SPP 3356
SPM 89/0
ROP (ft/hr)
Gamma (units)
150
170
166
90
112
5500
MD: 8,826'
TVD: 6,641.89'
Inclination: 91.41°
Azimuth: 180.44°
MD: 8,911'
TVD: 6,639.8'
Inclination: 91.41°
Azimuth: 180.38°
MD: 8,997'
TVD: 6,638.26'
Inclination: 90.64°
Azimuth: 180.05°
TVD (ft)
95% SH: drk brn-blk, frm, plty, slty ip, sm, n calc
5% SS: drk brn/gy, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
70% SH: drk brn-blk, frm, plty, slty ip, sm, n calc
30% SS: brn/gy-drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
80% SS: drk brn/gy, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
20% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
60% SS: drk brn/gy, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
40% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
8000


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 9,180 9,190 9,200 9,210 9,220 9,230
0.6%
6/2/2015
8140u
WT 9.2 VIS 40
9000
900000
100
7491u
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
0
0
0
WT 9.2 VIS 40
7632u
C1: 59.7%
C2: 17.7%
C3: 13.6%
iC4: 1.8%
nC4: 5.4%
9000
900000
100
CO2: 0.6%
7198u
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
0
0
0
25.1
/66
550
9/0
700
300
WOB 18.9
RPM 0/66
SPP 3104
SPM 0/89
ROP (ft/hr)
Gamma (units)
89
91
112
120
133
73
140
111
0
0
700
300
WOB 25.6
RPM 0/67
SPP 3365
SPM 0/89
ROP (ft/hr)
Gamma (units)
0
0
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 9,180 9,190 9,200 9,210 9,220 9,230
P
P
P
P
P
5500
MD: 9,083'
TVD: 6,637.16'
Inclination: 90.83°
Azimuth: 180.23°
MD: 9,168'
TVD: 6,636.14'
Inclination: 90.55°
Azimuth: 181.22°
5500
TVD (ft)
TVD (ft)
drk brn/gy, wh/clr, vf (l) - f (u),
ns, sbang-sbrd, m-p srt, p por, sl
at, nfsoc, tr pyr
95% SS: brn/gy, drk brn/gy, wh/clr, vf (l) - f (u),
frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl
calc, intbd carb mat, nfsoc, tr pyr
85% SS: brn/gy, drk brn/gy, wh/clr, vf (l) - f (u),
frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl
calc, intbd carb mat, nfsoc, tr pyr
95% SS: drk gy/brn, drk brn/gy, wh/clr, vf (l) - f (u),
frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl
calc, intbd carb mat, nfsoc, tr pyr
75% SS: drk gy/brn, drk brn/gy, wh/clr, v
frm-fri, occ lse grns, sbang-sbrd, m-p srt
calc, intbd carb mat, nfsoc, tr pyr
lk, frm, plty, slty ip, sm, n calc
5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
15% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
25% SH: drk brn, blk, frm, plty, slty ip, sr
8000
8000



MD: 9,254'
TVD: 6,634.58'
Inclination: 91.53°
Azimuth: 180.66°

MD: 9,339'
TVD: 6,632.87'
Inclination: 90.77°
Azimuth: 179.9°

MD: 9,424'
TVD: 6,632.78'
Inclination: 89.35°
Azimuth: 177.89°

5500

TVD (ft)

8000

vf (l) - f (u), , p por, sl	95% SS: brn/gy, drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr	95% SS: drk gy/brn, drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr	95% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr	95% SS: brn/gy-drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr	95% S occ ls intbd
m, n calc	5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc	5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc	5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc	5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc	5% SH

MD: 9,509'
TVD: 6,633.26'
Inclination: 90°
Azimuth: 178.77°

MD: 9,595'
TVD: 6,632.96'
Inclination: 90.4°
Azimuth: 180.76°

MD: 9,
TVD: 6
Inclina
Azimut

TVD (ft)

SS: drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, e grns, sbang-sbrd, m-p srt, p por, sl calc, carb mat, nfsoc, tr pyr

H: drk brn, blk, frm, plty, slty ip, sm, n calc

95% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr

5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc

95% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr

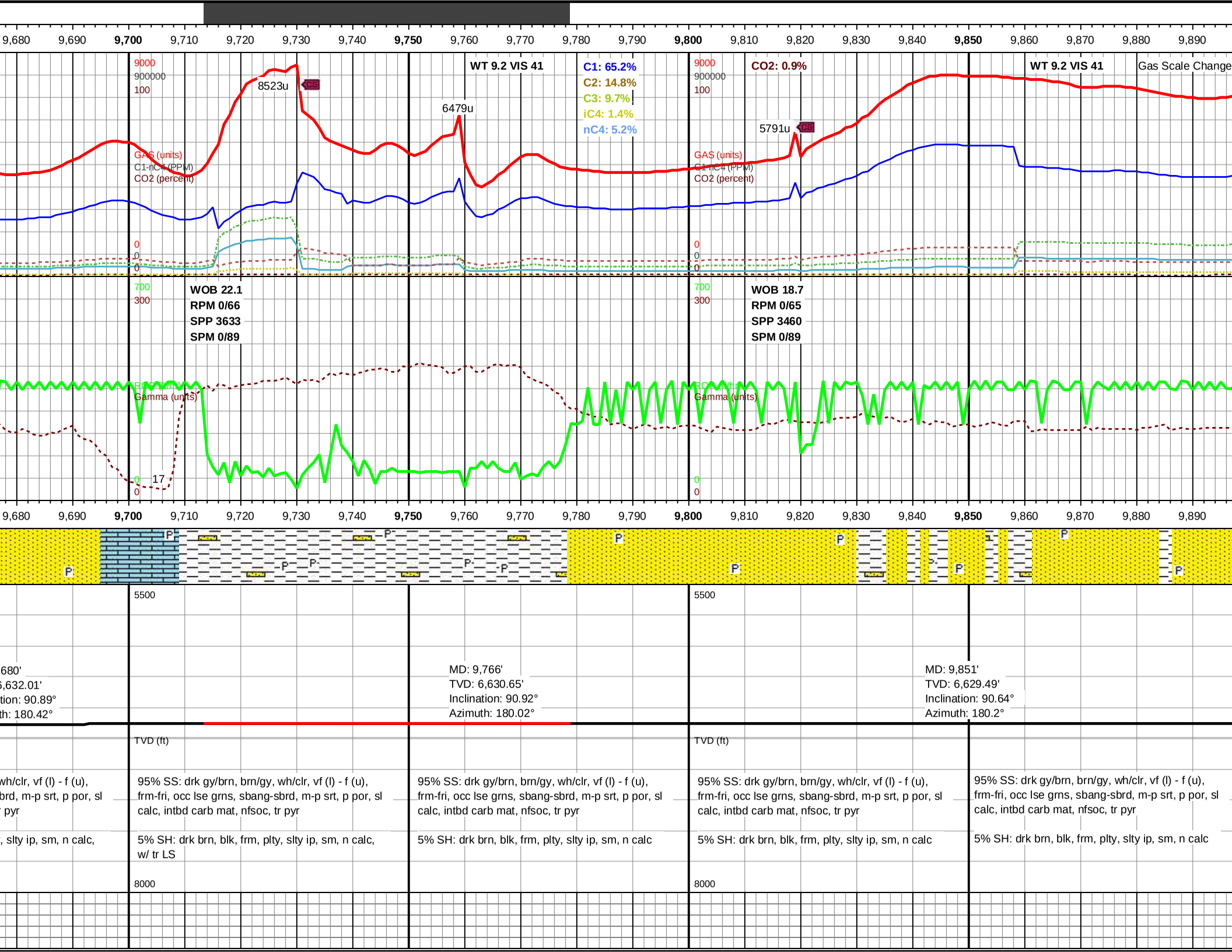
5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc

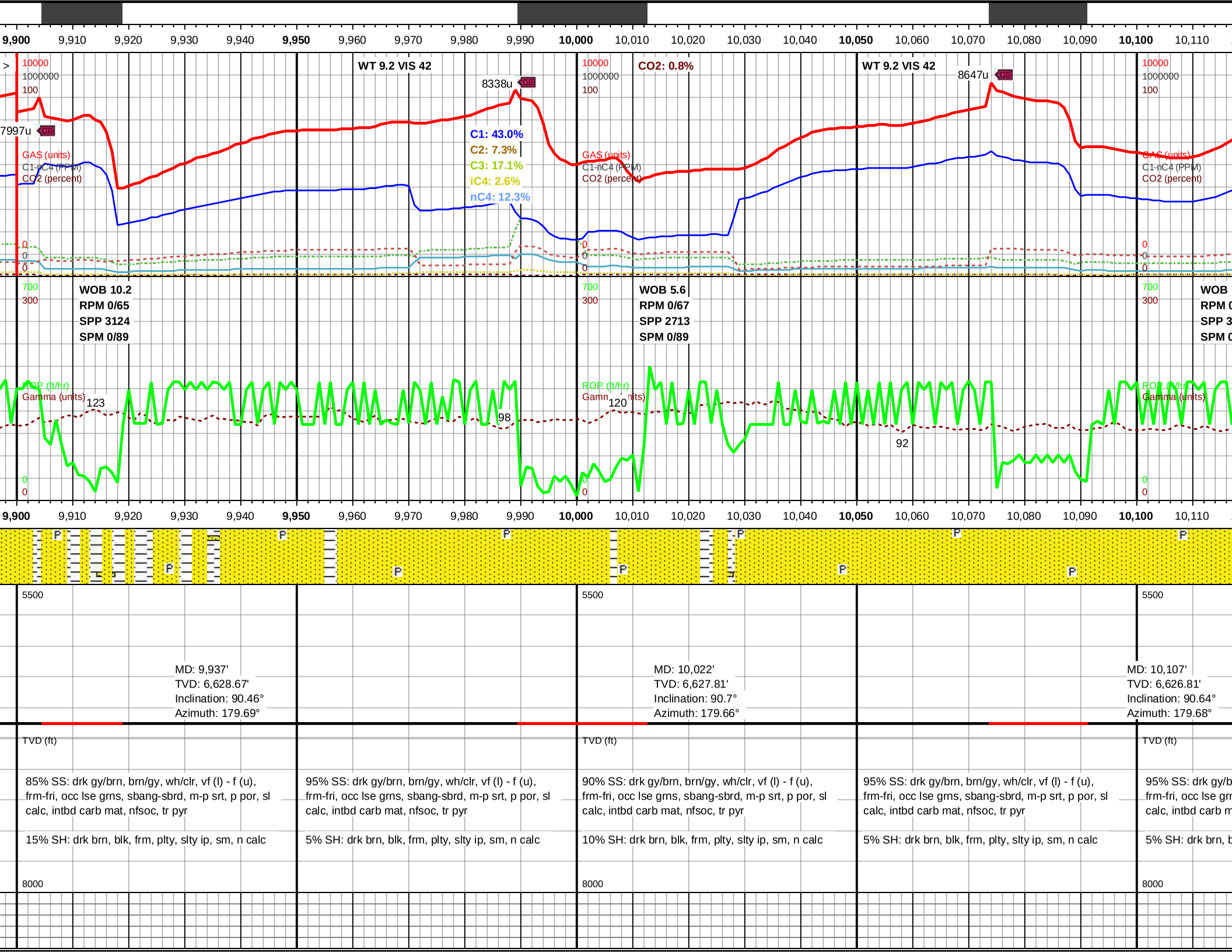
95% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr

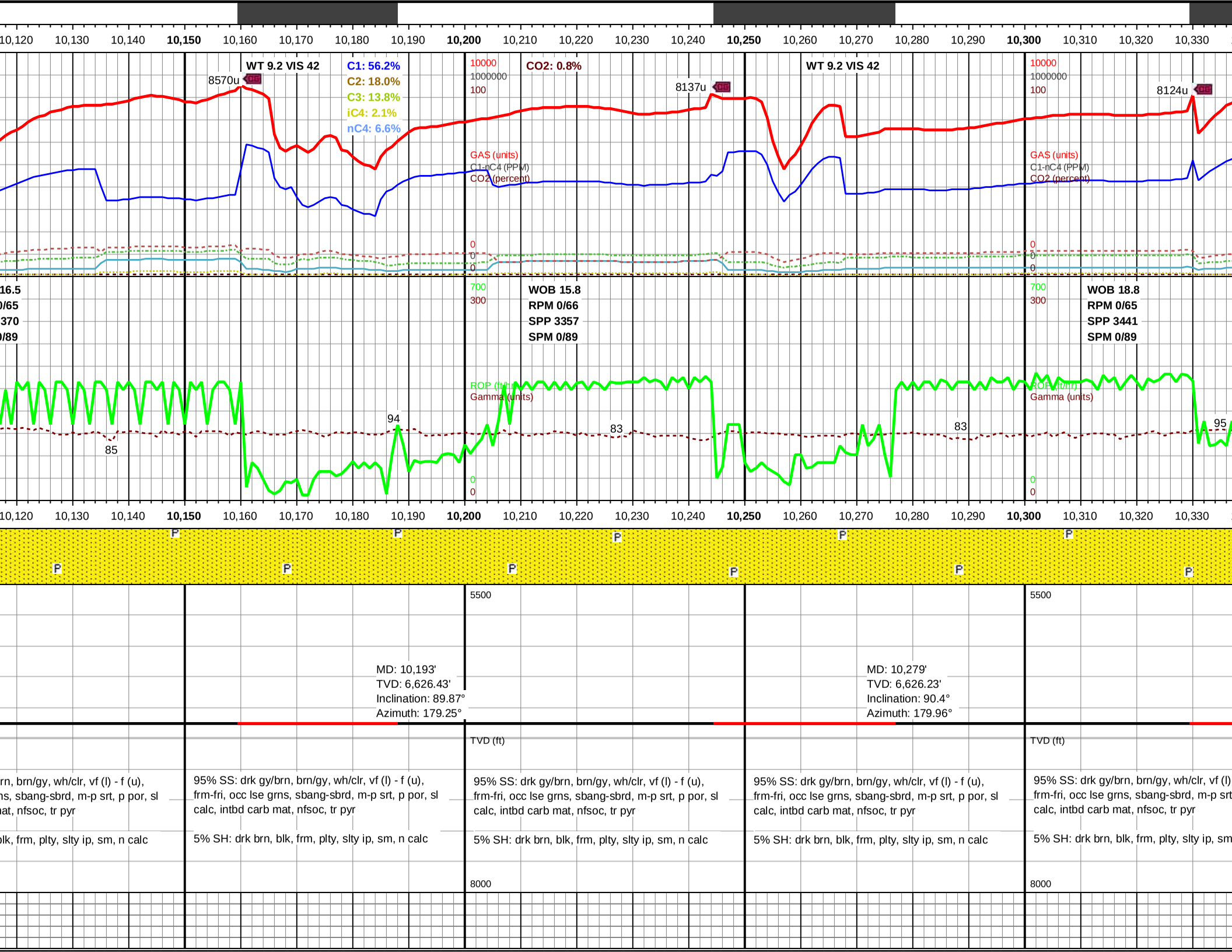
5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc

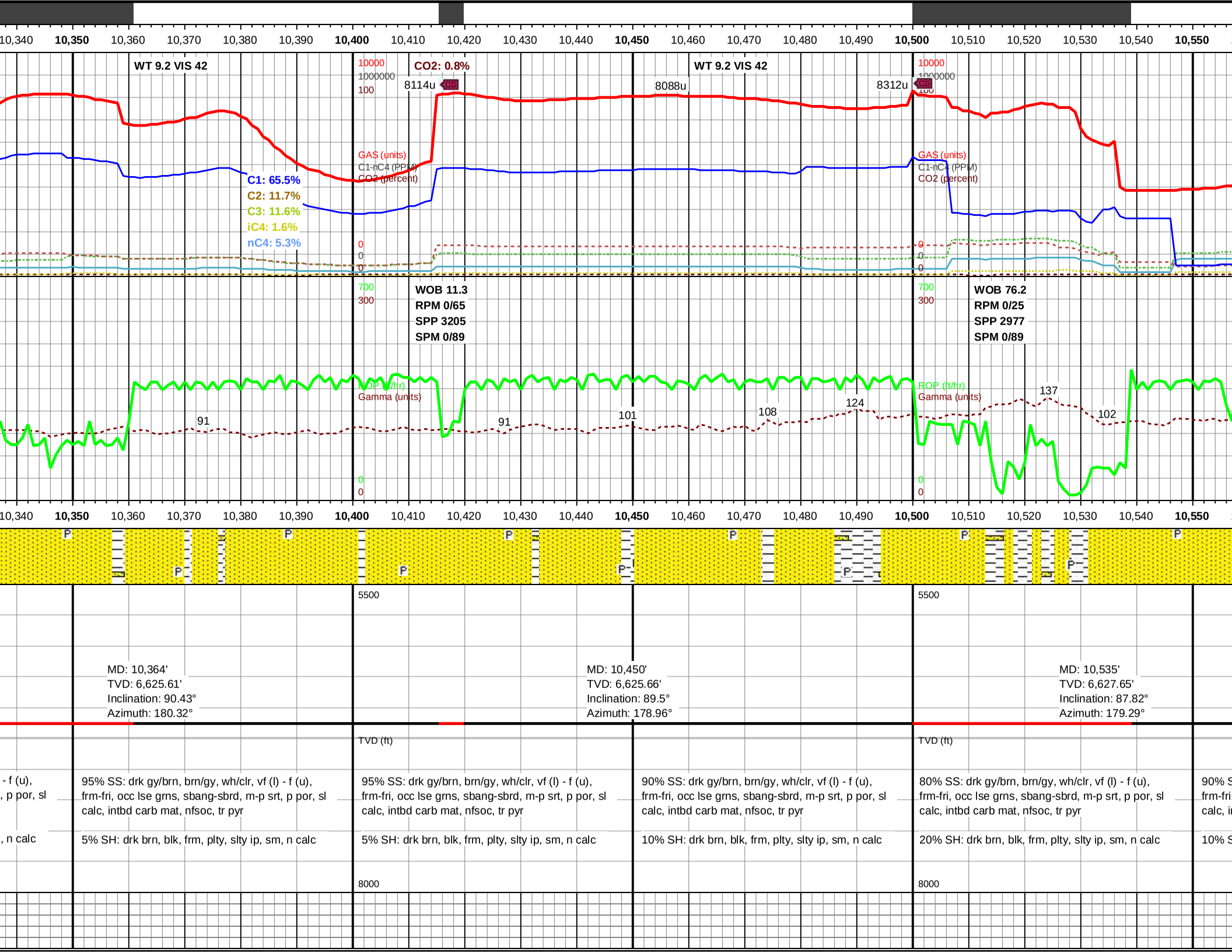
95% SS: drk gy/brn, brn/gy, w frm-fri, occ lse grns, sbang-s calc, intbd carb mat, nfsoc, tr

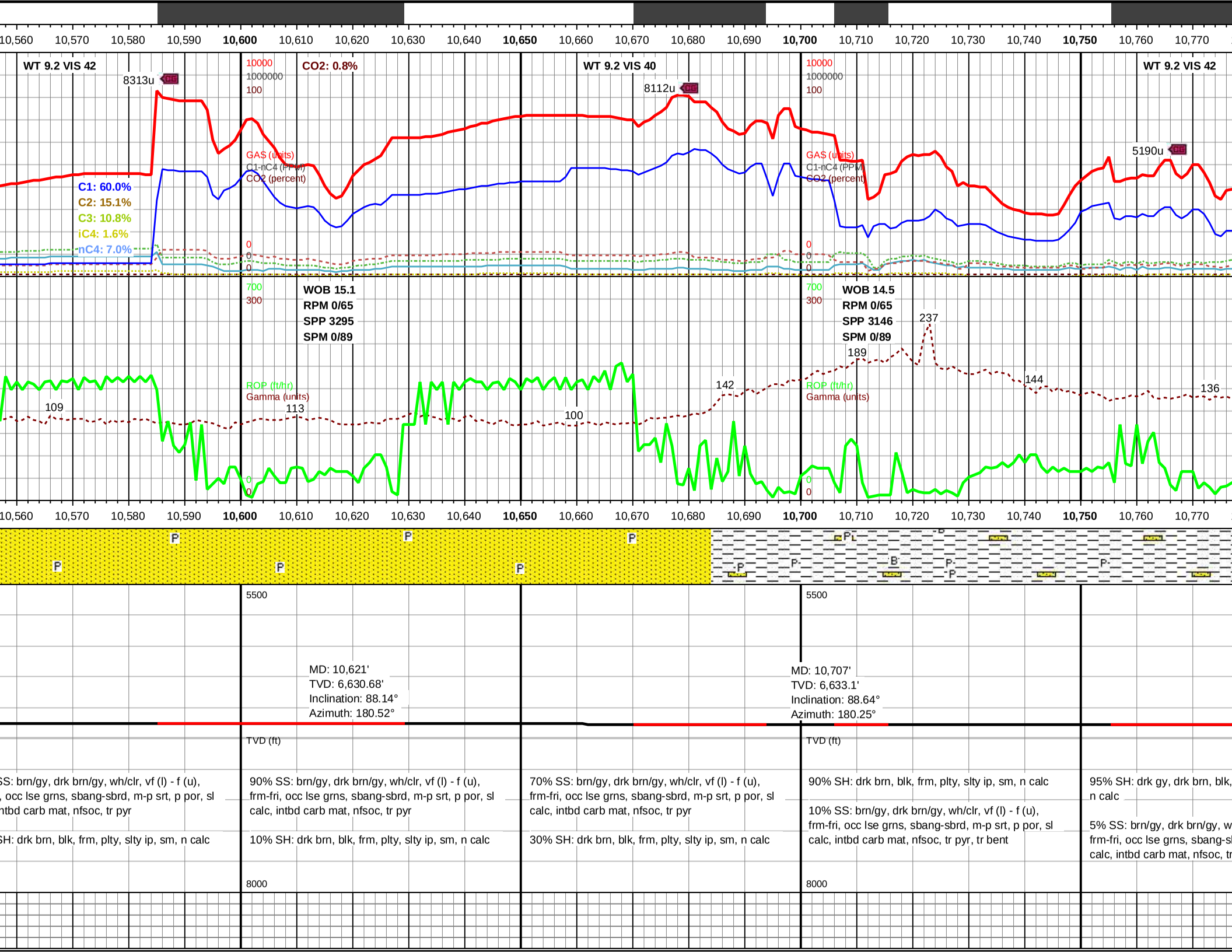
5% SH: drk brn, blk, frm, plty w/ tr LS


9,680 9,690 9,700 9,710 9,720 9,730 9,740 9,750 9,760 9,770 9,780 9,790 9,800 9,810 9,820 9,830 9,840 9,850 9,860 9,870 9,880 9,890
WT 9.2 VIS 41
C1: 65.2%
C2: 14.8%
C3: 9.7%
iC4: 1.4%
nC4: 5.2%
8523u
6479u
CO2: 0.9%
5791u
WT 9.2 VIS 41
Gas Scale Change
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
WOB 22.1
RPM 0/66
SPP 3633
SPM 0/89
WOB 18.7
RPM 0/65
SPP 3460
SPM 0/89
Gamma (units)
17
5500
MD: 9,766'
TVD: 6,630.65'
Inclination: 90.92°
Azimuth: 180.02°
MD: 9,851'
TVD: 6,629.49'
Inclination: 90.64°
Azimuth: 180.2°
TVD (ft)
95% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc, w/ tr LS
8000


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
10,060
10,070
10,080
10,090
10,100
10,110
10000
1000000
100
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
7997u
8338u
8647u
WT 9.2 VIS 42
CO2: 0.8%
C1: 43.0%
C2: 7.3%
C3: 17.1%
iC4: 2.6%
nC4: 12.3%
0
700
300
WOB 10.2
RPM 0/65
SPP 3124
SPM 0/89
WOB 5.6
RPM 0/67
SPP 2713
SPM 0/89
ROP (ft/hr)
Gamma (units)
123
98
120
92
5500
MD: 9,937'
TVD: 6,628.67'
Inclination: 90.46°
Azimuth: 179.69°
MD: 10,022'
TVD: 6,627.81'
Inclination: 90.7°
Azimuth: 179.66°
MD: 10,107'
TVD: 6,626.81'
Inclination: 90.64°
Azimuth: 179.68°
TVD (ft)
85% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
15% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
95% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
90% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
10% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
95% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
8000


10,120 10,130 10,140 10,150 10,160 10,170 10,180 10,190 10,200 10,210 10,220 10,230 10,240 10,250 10,260 10,270 10,280 10,290 10,300 10,310 10,320 10,330
WT 9.2 VIS 42
C1: 56.2%
C2: 18.0%
C3: 13.8%
iC4: 2.1%
nC4: 6.6%
8570u
CO2: 0.8%
8137u
WT 9.2 VIS 42
8124u
10000
1000000
100
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
0
0
0
16.5
0/65
370
0/89
700
300
WOB 15.8
RPM 0/66
SPP 3357
SPM 0/89
WOB 18.8
RPM 0/65
SPP 3441
SPM 0/89
ROP (ft/hr)
Gamma (units)
85
94
83
83
95
0
0
5500
MD: 10,193'
TVD: 6,626.43'
Inclination: 89.87°
Azimuth: 179.25°
MD: 10,279'
TVD: 6,626.23'
Inclination: 90.4°
Azimuth: 179.96°
TVD (ft)
rn, brn/gy, wh/clr, vf (l) - f (u),
ns, sbang-sbrd, m-p srt, p por, sl
at, nfsoc, tr pyr
lk, frm, plty, slty ip, sm, n calc
95% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u),
frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl
calc, intbd carb mat, nfsoc, tr pyr
5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
8000


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
10,500
10,510
10,520
10,530
10,540
10,550
WT 9.2 VIS 42
C1: 65.5%
C2: 11.7%
C3: 11.6%
iC4: 1.6%
nC4: 5.3%
10000
1000000
100
CO2: 0.8%
8114u
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
0
0
0
700
300
WOB 11.3
RPM 0/65
SPP 3205
SPM 0/89
ROP (ft/hr)
Gamma (units)
91
91
101
108
124
WT 9.2 VIS 42
8088u
8312u
WOB 76.2
RPM 0/25
SPP 2977
SPM 0/89
137
102
5500
MD: 10,364'
TVD: 6,625.61'
Inclination: 90.43°
Azimuth: 180.32°
MD: 10,450'
TVD: 6,625.66'
Inclination: 89.5°
Azimuth: 178.96°
MD: 10,535'
TVD: 6,627.65'
Inclination: 87.82°
Azimuth: 179.29°
TVD (ft)
- f (u),
, p por, sl
, n calc
95% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
95% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
5% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
90% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
10% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
80% SS: drk gy/brn, brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
20% SH: drk brn, blk, frm, plty, slty ip, sm, n calc
90% S
frm-fri
calc, i
10% S
8000



SS: brn/gy, drk brn/gy, wh/clr, vf (l) - f (u), , occ lse grns, sbang-sbrd, m-p srt, p por, sl ntbd carb mat, nfsoc, tr pyr

SH: drk brn, blk, frm, plty, slty ip, sm, n calc

90% SS: brn/gy, drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr

10% SH: drk brn, blk, frm, plty, slty ip, sm, n calc

70% SS: brn/gy, drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr

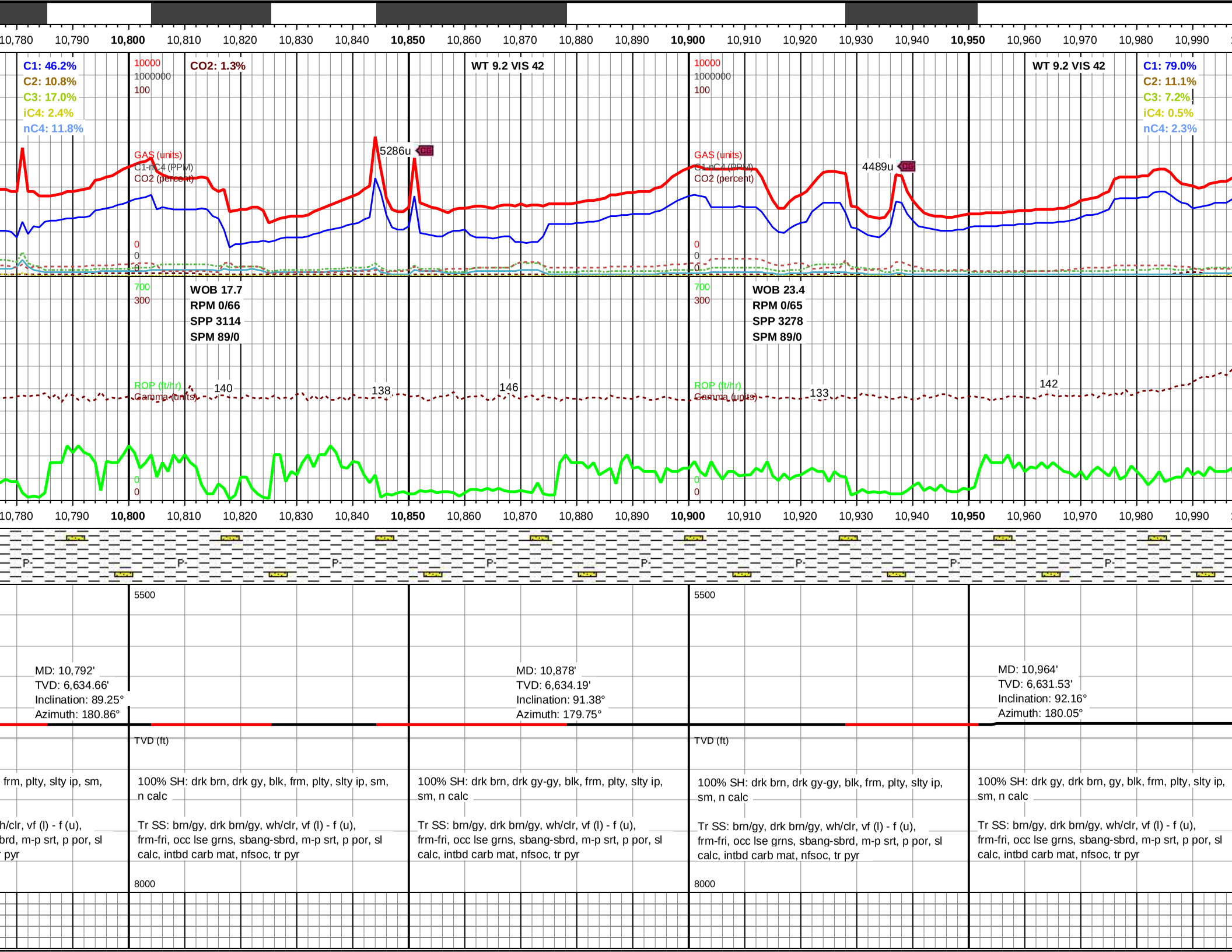
30% SH: drk brn, blk, frm, plty, slty ip, sm, n calc

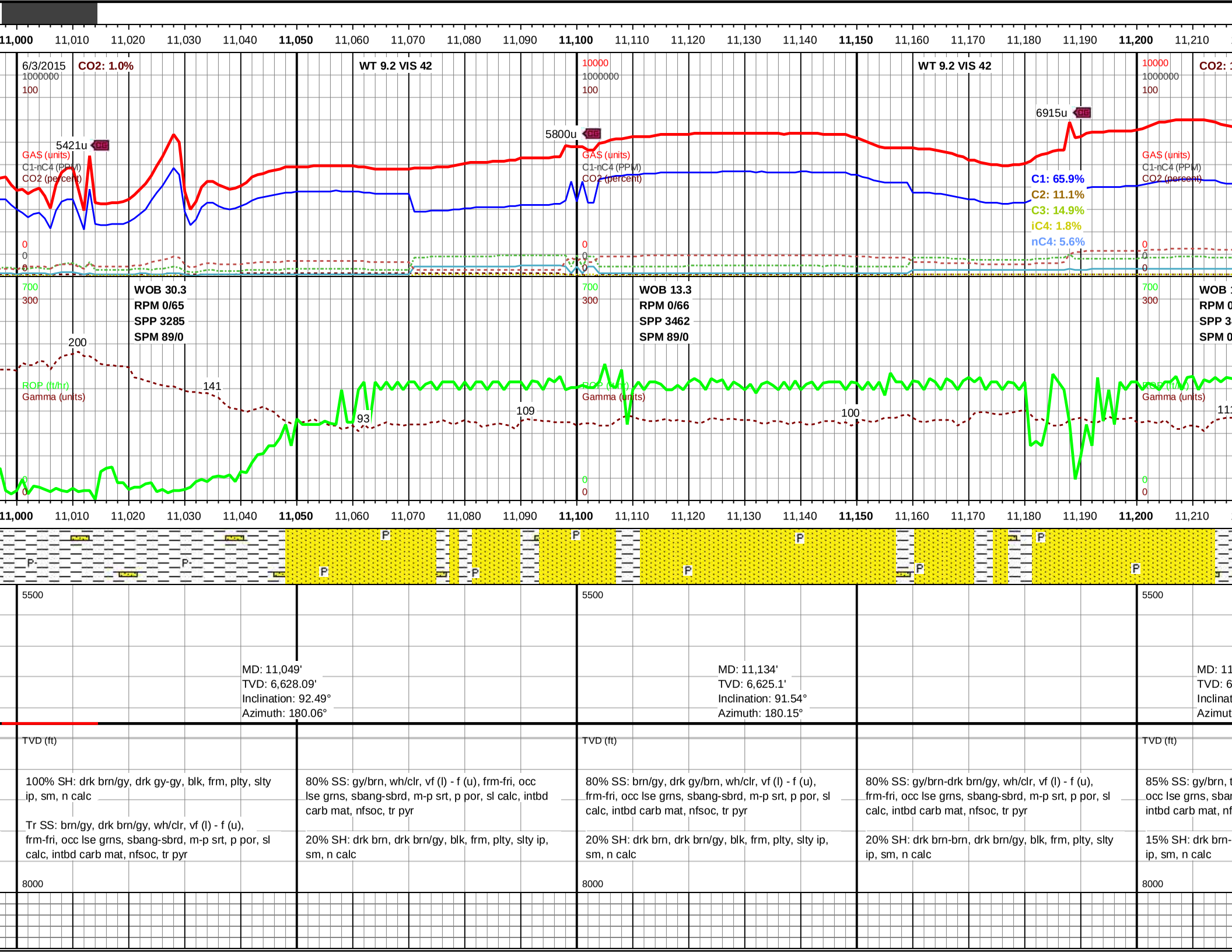
90% SH: drk brn, blk, frm, plty, slty ip, sm, n calc

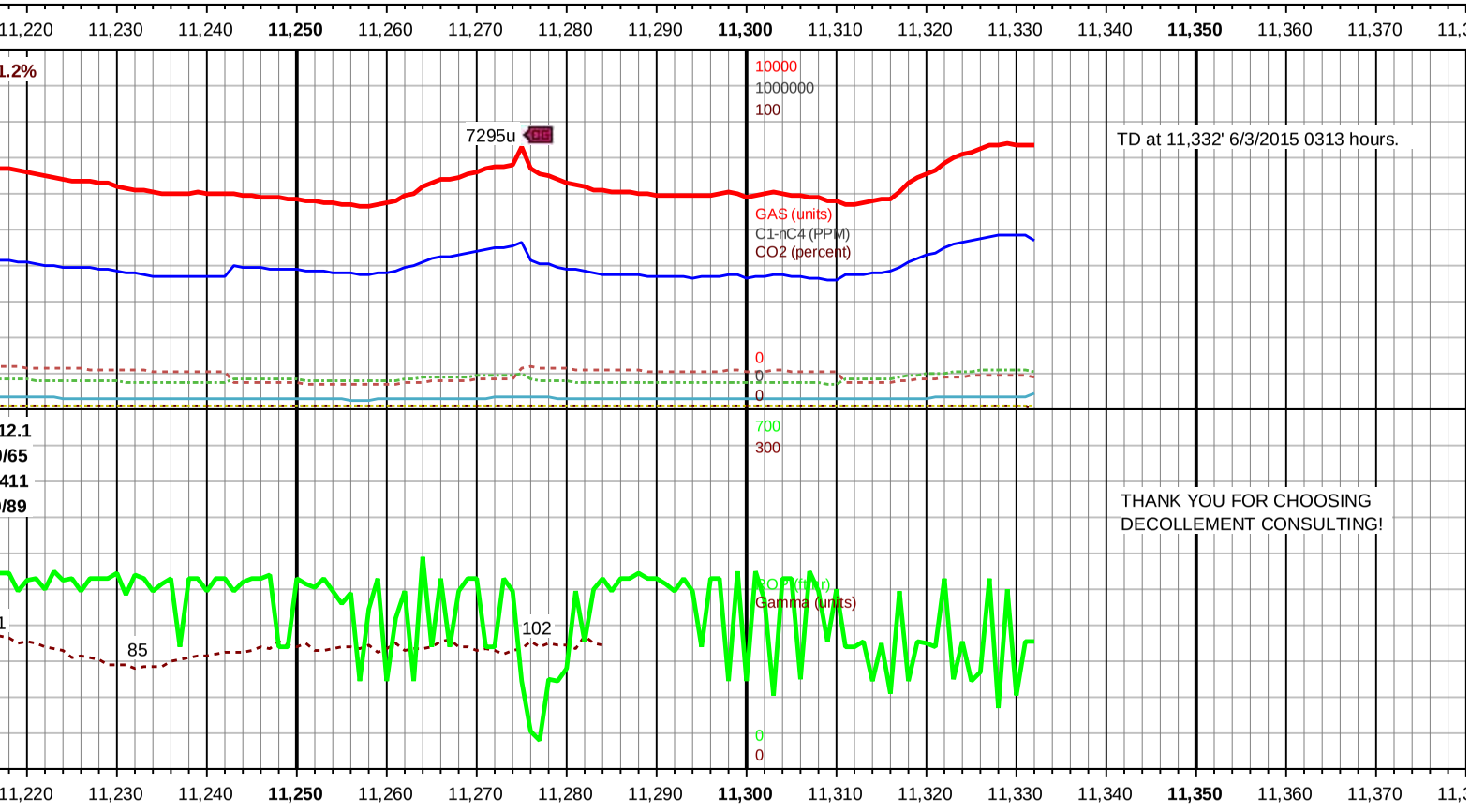
10% SS: brn/gy, drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr, tr bent

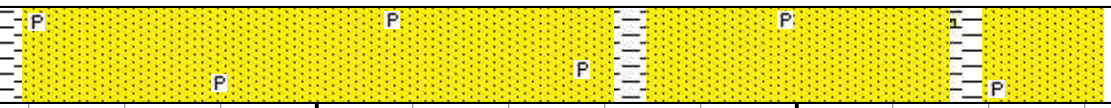
95% SH: drk gy, drk brn, blk, n calc

5% SS: brn/gy, drk brn/gy, w frm-fri, occ lse grns, sbang-sl calc, intbd carb mat, nfsoc, tr


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 10,940 10,950 10,960 10,970 10,980 10,990
C1: 46.2%
C2: 10.8%
C3: 17.0%
iC4: 2.4%
nC4: 11.8%
10000
1000000
100
CO2: 1.3%
WT 9.2 VIS 42
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
5286u
0
0
0
700
300
WOB 17.7
RPM 0/66
SPP 3114
SPM 89/0
ROP (ft/hr)
Gamma (units)
140
138
146
0
0
10000
1000000
100
WT 9.2 VIS 42
C1: 79.0%
C2: 11.1%
C3: 7.2%
iC4: 0.5%
nC4: 2.3%
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
4489u
0
0
0
700
300
WOB 23.4
RPM 0/65
SPP 3278
SPM 89/0
ROP (ft/hr)
Gamma (units)
133
142
0
0
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 10,940 10,950 10,960 10,970 10,980 10,990
5500
MD: 10,792'
TVD: 6,634.66'
Inclination: 89.25°
Azimuth: 180.86°
MD: 10,878'
TVD: 6,634.19'
Inclination: 91.38°
Azimuth: 179.75°
5500
MD: 10,964'
TVD: 6,631.53'
Inclination: 92.16°
Azimuth: 180.05°
TVD (ft)
TVD (ft)
frm, plty, slty ip, sm,
h/clr, vf (l) - f (u),
brd, m-p srt, p por, sl
pyr
100% SH: drk brn, drk gy, blk, frm, plty, slty ip, sm, n calc
Tr SS: brn/gy, drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
8000
100% SH: drk brn, drk gy-gy, blk, frm, plty, slty ip, sm, n calc
Tr SS: brn/gy, drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
100% SH: drk brn, drk gy-gy, blk, frm, plty, slty ip, sm, n calc
Tr SS: brn/gy, drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
8000
100% SH: drk gy, drk brn, gy, blk, frm, plty, slty ip, sm, n calc
Tr SS: brn/gy, drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr


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 11,160 11,170 11,180 11,190 11,200 11,210
6/3/2015
CO2: 1.0%
WT 9.2 VIS 42
WT 9.2 VIS 42
CO2:
1000000
100
10000
5421u
5800u
6915u
GAS (units)
C1-nC4 (PPM)
CO2 (percent)
C1: 65.9%
C2: 11.1%
C3: 14.9%
iC4: 1.8%
nC4: 5.6%
0
700
300
WOB 30.3
RPM 0/65
SPP 3285
SPM 89/0
WOB 13.3
RPM 0/66
SPP 3462
SPM 89/0
WOB
RPM 0
SPP 3
SPM 0
200
141
93
109
100
ROP (ft/hr)
Gamma (units)
5500
MD: 11,049'
TVD: 6,628.09'
Inclination: 92.49°
Azimuth: 180.06°
MD: 11,134'
TVD: 6,625.1'
Inclination: 91.54°
Azimuth: 180.15°
MD: 11
TVD: 6
Inclinat
Azimut
TVD (ft)
8000
100% SH: drk brn/gy, drk gy-gy, blk, frm, plty, slty ip, sm, n calc
Tr SS: brn/gy, drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
80% SS: gy/brn, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
20% SH: drk brn, drk brn/gy, blk, frm, plty, slty ip, sm, n calc
80% SS: brn/gy, drk gy/brn, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
20% SH: drk brn, drk brn/gy, blk, frm, plty, slty ip, sm, n calc
80% SS: gy/brn-drk brn/gy, wh/clr, vf (l) - f (u), frm-fri, occ lse grns, sbang-sbrd, m-p srt, p por, sl calc, intbd carb mat, nfsoc, tr pyr
20% SH: drk brn-brn, drk brn/gy, blk, frm, plty, slty ip, sm, n calc
85% SS: gy/brn, t
occ lse grns, sban
intbd carb mat, nf
15% SH: drk brn-
ip, sm, n calc





5500

,219'
,623.36'
tion: 90.8°
h: 179.97°

MD: 11,277'
TVD: 6,623.16'
Inclination: 89.59°
Azimuth: 179.25°

MD: 11,332'
TVD: 6,623.56'
Inclination: 89.59°
Azimuth: 179.25°

TVD (ft)

tan/gy, wh/clr, vf (l) - f (u), frm-fri,
ng-sbrd, m-p srt, p por, sl calc,
soc, tr pyr

90% SS: gy/brn, brn, wh/clr, vf (l) - f (u), frm-fri,
occ lse grns, sbang-sbrd, m-p srt, p por, sl calc,
intbd carb mat, nfsoc, tr pyr

95% SS: brn/gy-tan/gy, wh/clr, vf (l) - f (u), frm-fri,
occ lse grns, sbang-sbrd, m-p srt, p por, sl calc,
intbd carb mat, nfsoc, tr pyr

brn, drk brn/gy, blk, frm, plty, slty

10% SH: drk brn-brn, drk brn/gy, blk, frm, plty, slty
ip, sm, n calc

5% SH: drk brn, drk gy/brn, blk, frm, plty, slty ip,
sm, n calc

8000