



Scale: 5" / 100'  
Measured Depth Log

**Well Name** WATERS 34-12-32 # 1H

**Location** Sec. 32-T34N-R12W

**State** Colorado

**County** La Plata

**Country** USA

**Rig Number** Aztec 711

**API Number** 0506709897000

**AFE #** 12605-D

**Region** SOUTHWEST COLORADO

**Field** Niobrara

**Spud Date** 9/8/2013

**Drilling Completed** ????

**Surface Coordinates** 1399' FNL & 235' FWL  
Sec. 32-T34N-R12W

**Bottom Hole Coordinates** 908' FNL & 638' FWL  
Sec. 31-T34N-R12W

**Ground Elevation** 6907'

**K.B. Elevation** 6921'

**Logged Interval** 650' **To** 3500

**Total Depth** 3500

**Formation** Point Lookout, Mancos, Dakota Sandstone

**Type of Drilling Fluid** LSND

## Operator

**Company** Swift Energy

**Address** 16825 Northchase Dr., Suite 400  
Houston, Texas 77060

## Geologist

**Name** Michael D'Anna & Nate Workman

**Company** Field Geo Services

**Address** 533 Bogart Lane, Unit A  
Grand Junction, Colorado 81505

## Core Information

Contractor Swift Energy

Core # 1

Formation MANCOS

Core Intervals

From	To	Cut	Recovered
2166.0	2226.0	60.0	60.0
2226.0	2286.0	60.0	60.0
2396.0	2456.0	60.0	60.0

## Rock Types

? UNKNOWN

ANHYDRITE  
GYPSUM  
SALT  
SIDERITE or LIMONITE  
LIMESTONE

DOLOMITE  
CHERT  
COAL  
MARLSTONE  
CLAYSTONE  
SHALE

SHALE GRAY  
SHALE COLORED  
SILTSTONE  
SANDSTONE  
CONGLOMERATE  
BRECCIA

TILL  
BENTONITE  
TUFF  
IGNEOUS  
METAMORPHIC  
CEMENT

## Accessories

### Fossils

ALGAE  
AMPHIPORA  
BELEMNITE  
BIOCLASTIC  
BRACHIOPOD  
BRYOZOA  
CEPHALOPOD  
CORAL  
CRINOID  
ECHINOID  
FISH  
FORAMINIFERA

F 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

E EARTHY  
F FENESTRAL  
F FRACTURE  
X INTERCRYSTALLINE  
Q INTEROOLITIC

ORGANIC

P PINPOINT

V VUGGY

### Engineering

BIT  
CASING  
CONNECTION (LEFT)  
CONNECTION (RIGHT)  
CONNECTION GAS  
CORE - LOST  
CORE - RECOVERED  
DST INTERVAL

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

### Rounding

ANGULAR  
ROUNDED  
SUBANG  
SUBRND

### Textures

BOUNDSTONE  
CHALKY  
CRYPTOXLN  
E EARTHY  
FINELYXLN

L LITHOGRAPHIC

MX MICROXLN

MS MUDSTONE

PS PACKSTONE

WS WACKESTONE

### Sorting

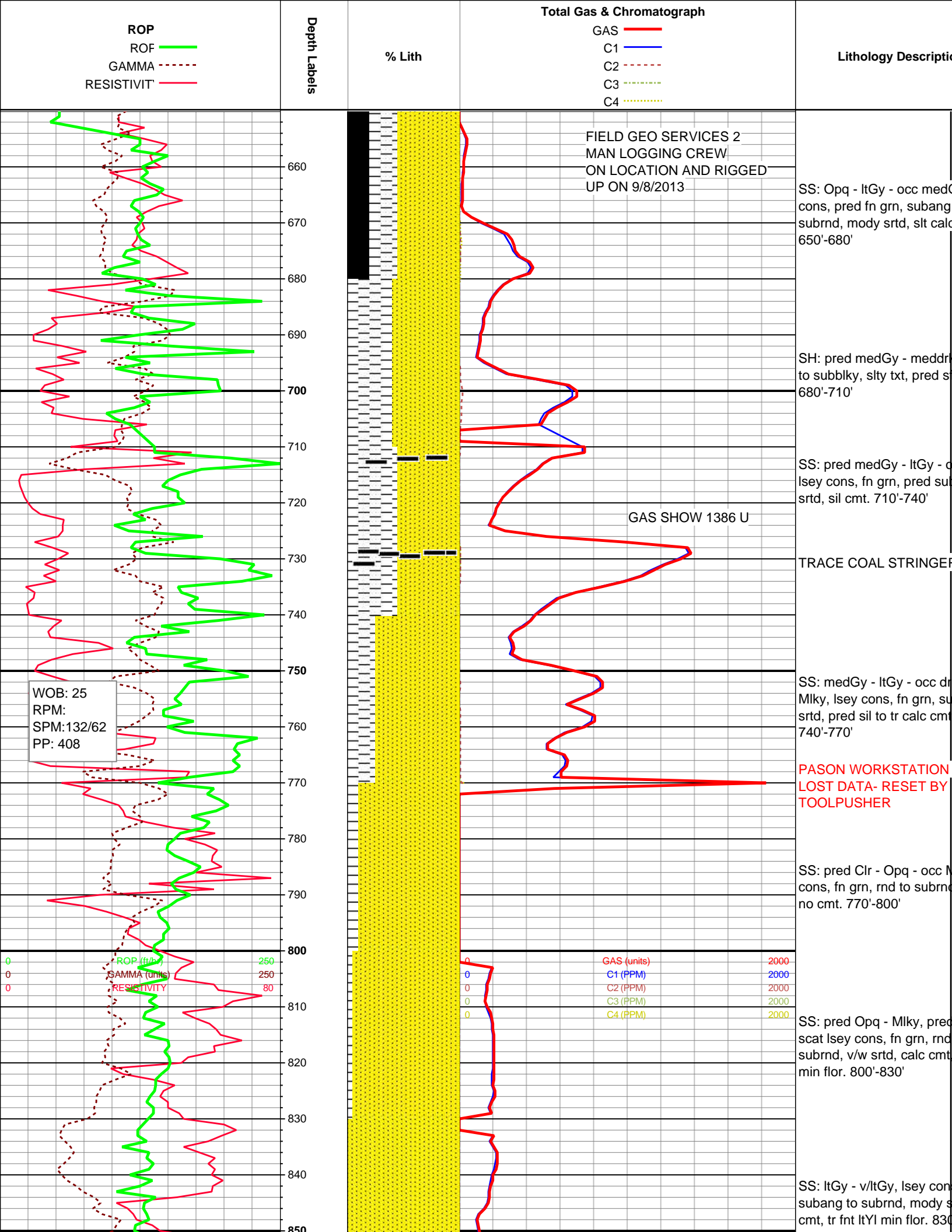
M MODERATE  
P POOR  
W WELL

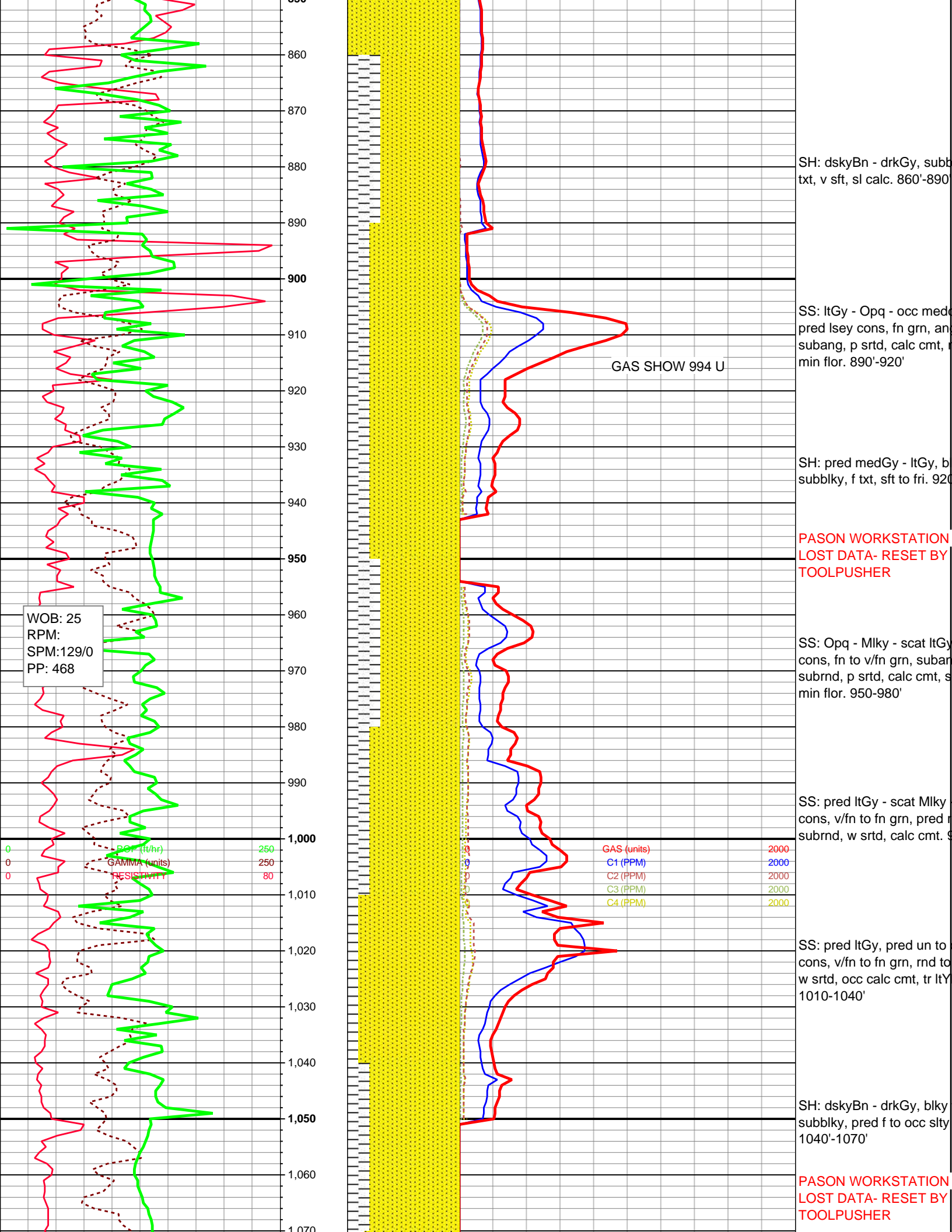
MOLDIC

FAULT

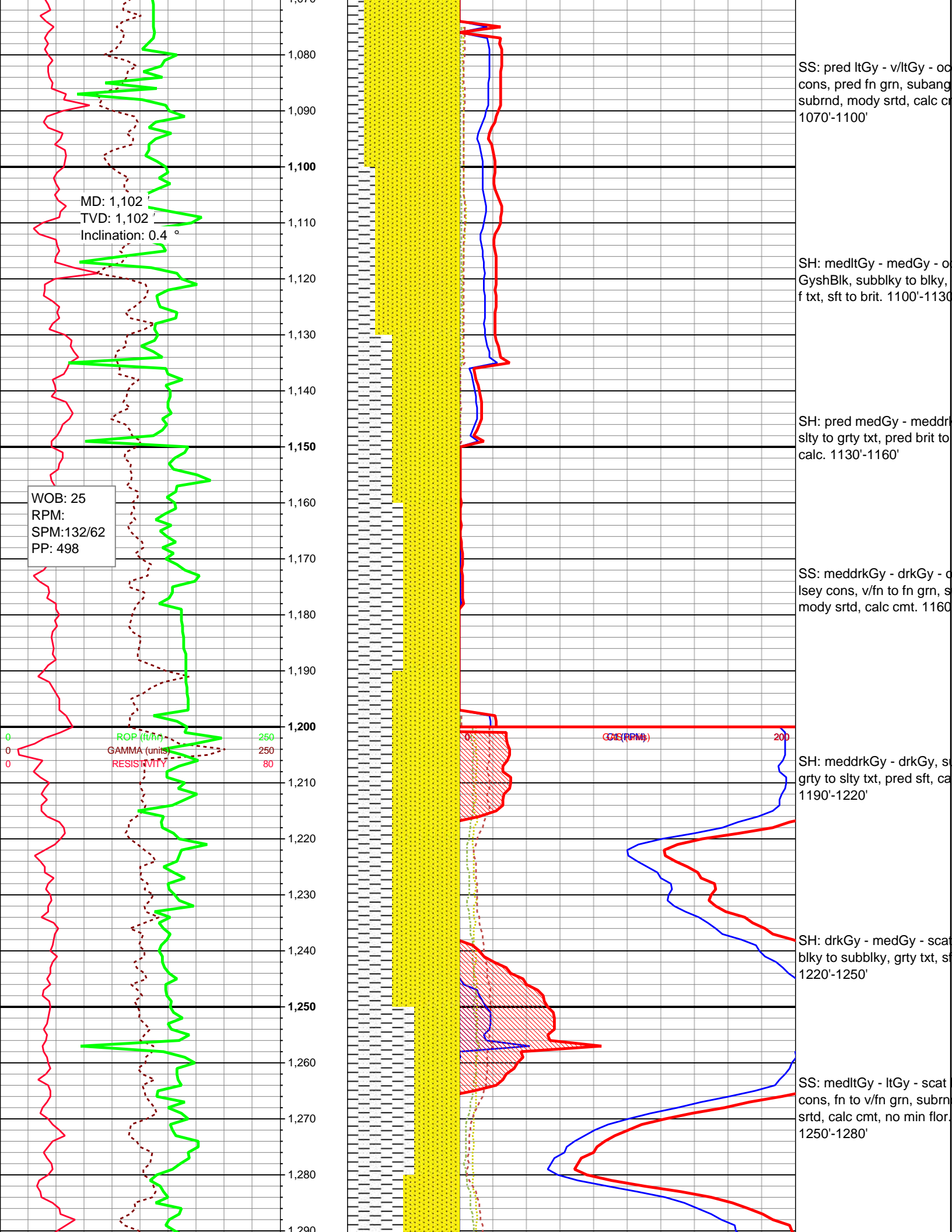
WIRELINE TESTED - RT

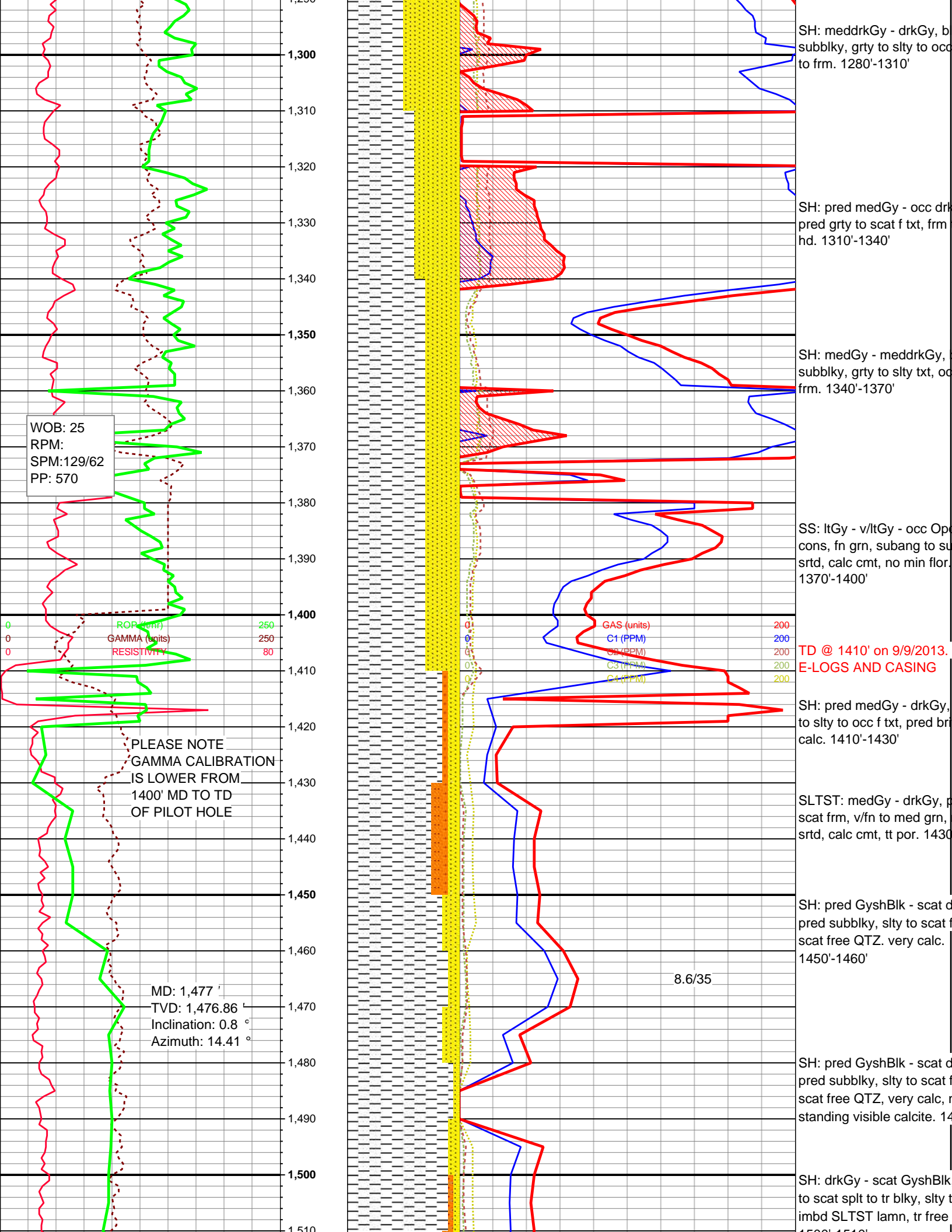
GRAINSTONE

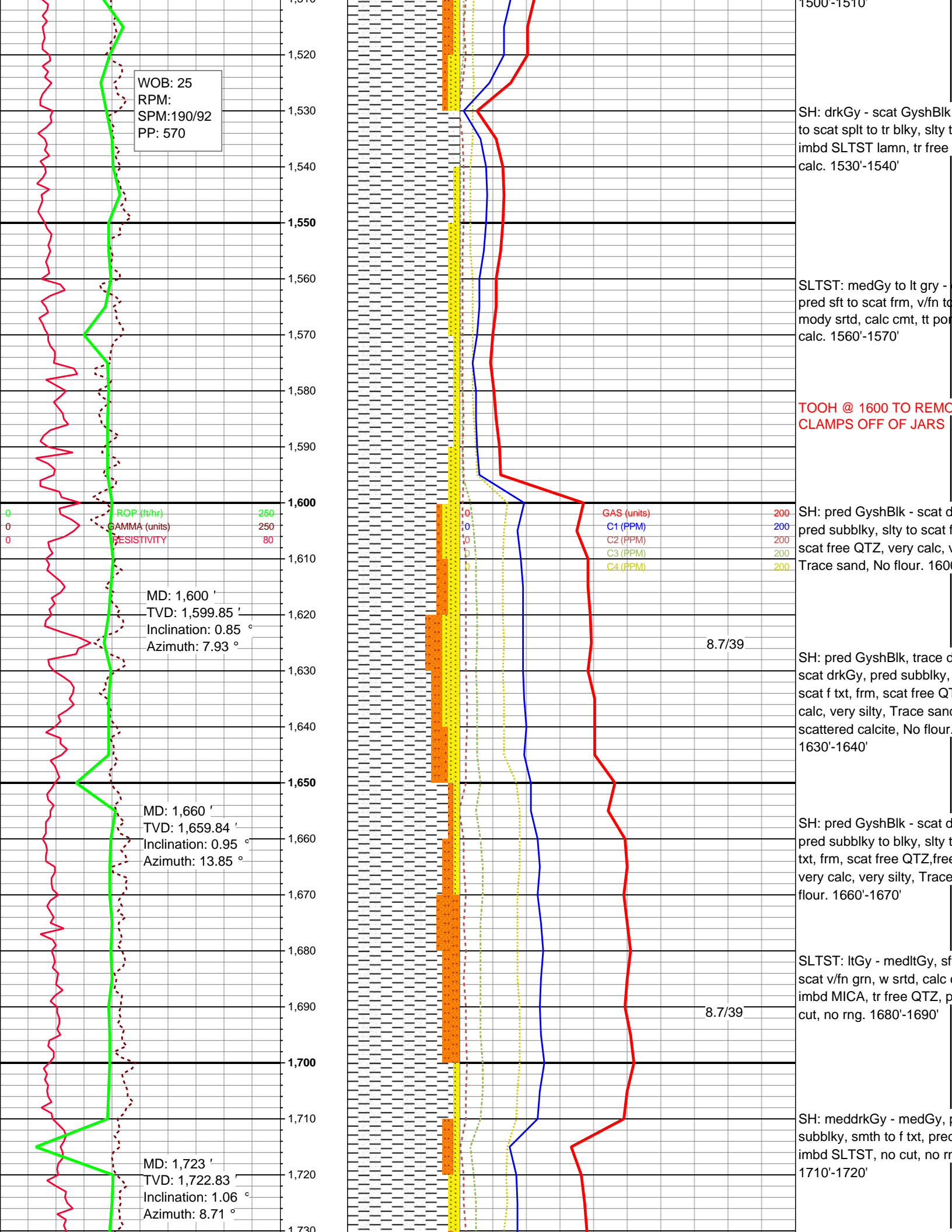




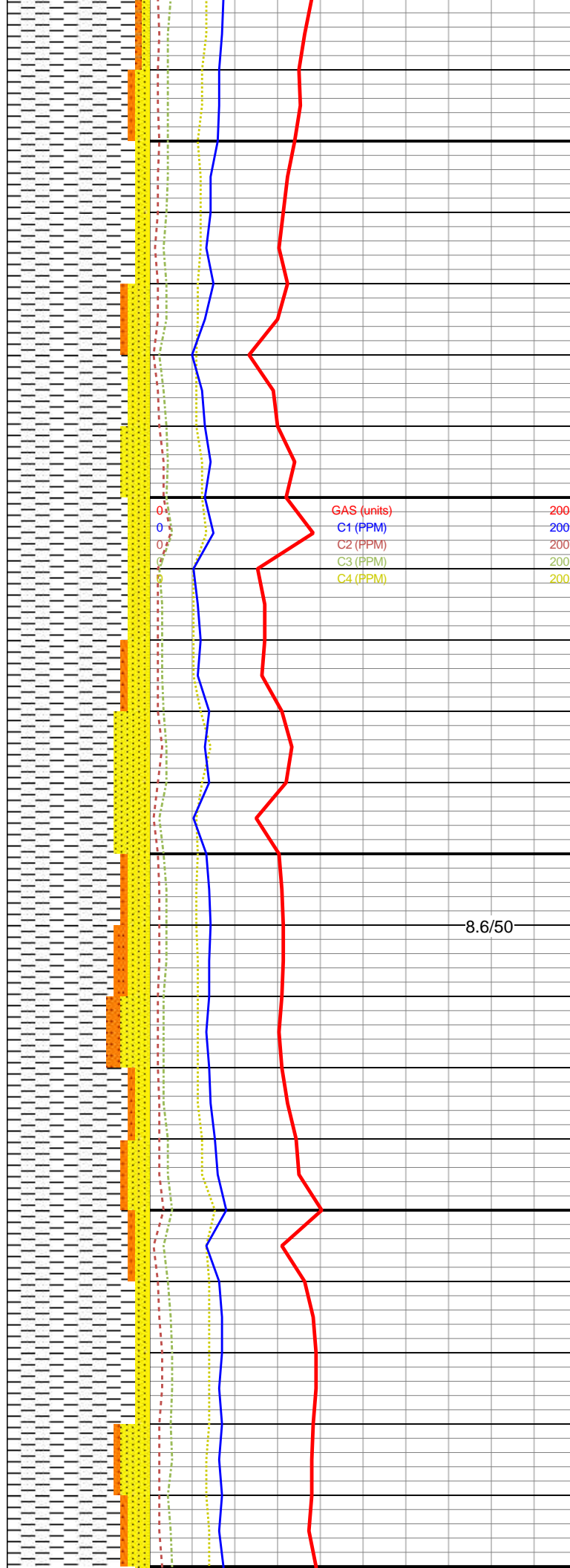
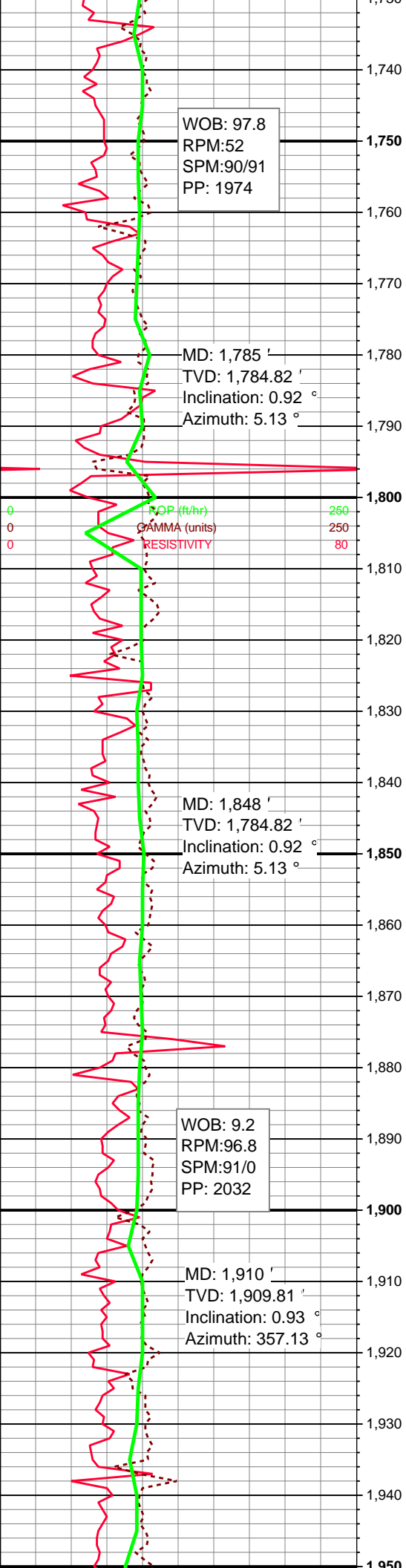












SH: meddrkGy - drkGy, su  
smth txt, frm, tr imbd MICA  
QTZ, no cut, no rng. 1730'

SH: meddrkGy - drkGy, su  
smth txt, frm, tr imbd MICA  
QTZ, no cut, no rng. 1750'

SS: ltGy - medGy - tr v/ltG  
to tr mod cons, pred v/fn g  
subang, pred w srtd, calc  
imbd MICA, tr pp por, no s  
min flor, no o flor, no cut,  
1770'-1780'

SH: medGy - meddrkGy, p  
subblky, pred smth to tr f  
imbd MICA, no cut, no rng  
1790'-1800'

SS: meddrkGy - medGy, v  
cons, pred v/fn to fn grn, p  
pred w srtd, pred calc to tr  
tr imbd MICA, tr pp por, no  
min flor, no o flor, no cut.  
1820'-1830'

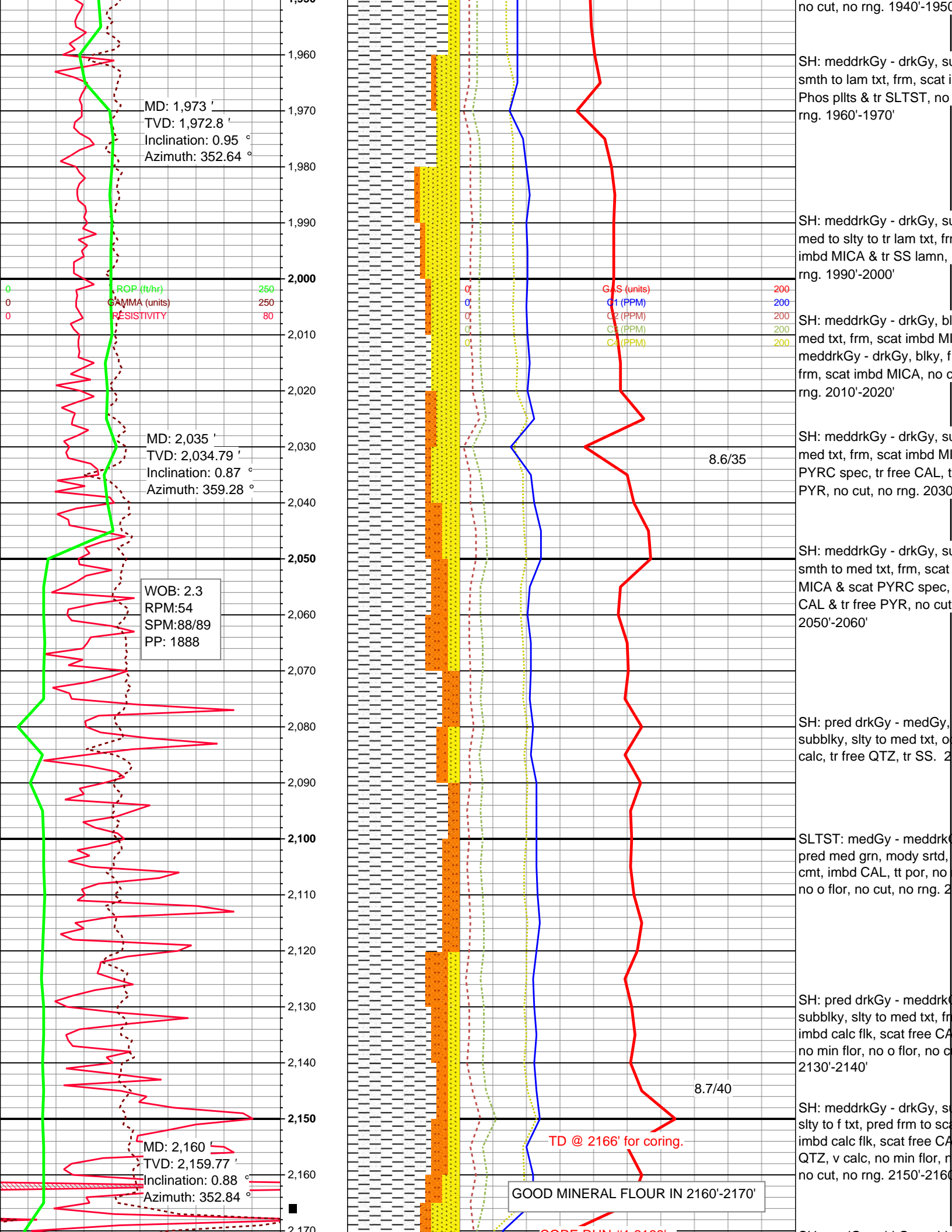
SH: meddrkGy - drkGy, p  
subblky, smth to f txt, frm,  
MICA & tr SS lamn, no cu  
1850'-1860'

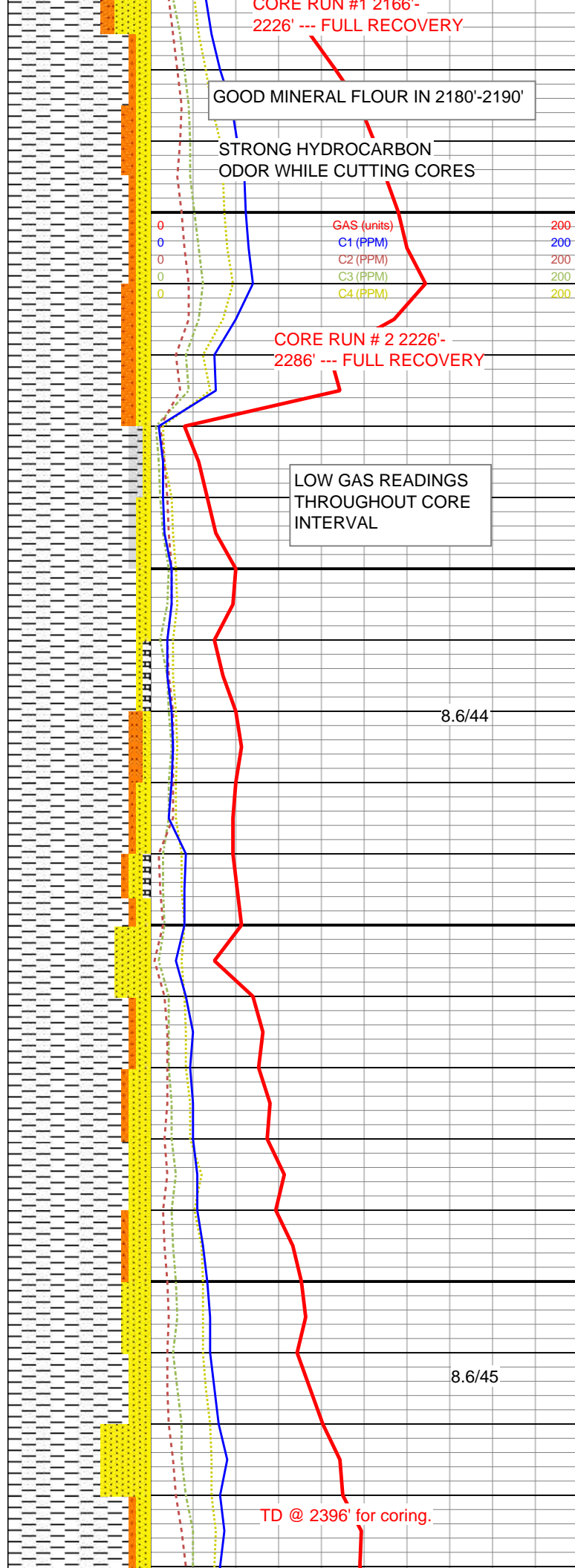
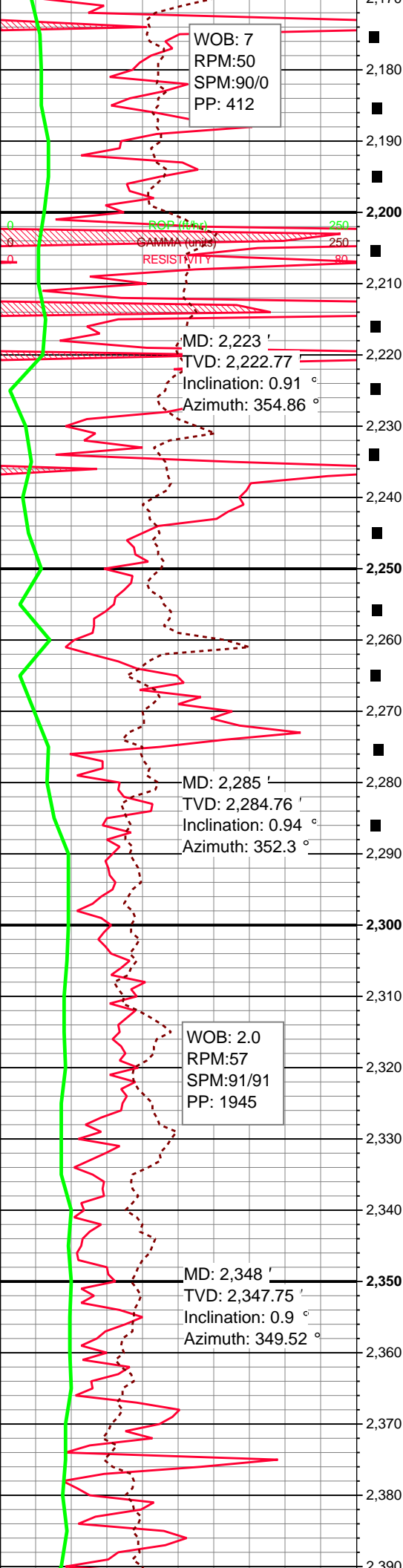
SH: meddrkGy - drkGy, p  
subblky, med to slty to tr l  
frm, scat imbd MICA & sca  
w/ scat SS lamn, no cut, n  
1870'-1880'

SH: meddrkGy - drkGy, p  
subblky, med to slty to tr l  
frm, scat imbd MICA & sca  
w/ scat SS lamn, free CAL  
cut, no rng. 1890'-1900'

SS: medGy - meddrkGy -  
mod to w cons, pred v/fn t  
rnd to subang, w srtd, pre  
calc cmt, tr imbd MICA & s  
frags, tr pp por, no stn, no  
no o flor, no cut, no rng. 1

SH: meddrkGy - drkGy, su  
smth to lam txt, frm, scat i  
Phos pllts & tr SLTST, tr f





SH: medGy - drkGy, subb  
med txt, frm, imbd MICA &  
tr free PYR, no min flor, no  
no cut, no rng. 2170'-2180'

SH: meddrkGy - drkGy, su  
blky, f to med to tr slty txt,  
imbd MICA & tr PYRC spe  
vert calc, no min flor, no o  
cut, no rng. 2200'-2210'

SH: meddrkGy - drkGy, su  
blky, f to med to tr slty txt,  
imbd MICA & tr PYRC spe  
flor, no o flor, no cut, no m  
2220'-2230'

SH: meddrkGy - drkGy, su  
blky, f to med to vry slty tx  
mod sft, brittle, scat imbd  
PYRC spec, no min flor, n  
no cut, no rng. Slight mine  
in SS. 2240'-2250'

SH: meddltGy - drkGy, su  
blky, f to med to vry slty tx  
mod sft, brittle scat imbd M  
PYRC spec, no min flor, n  
no cut, no rng. Slight mine  
in SS. 2270'-2280'

SH: drkGy - GyshBlk, sub  
to f txt, frm, scat imbd MIC  
microxln PYR w/ tr SS lam  
flor, tr bl cut, fnt Yel rng. 2

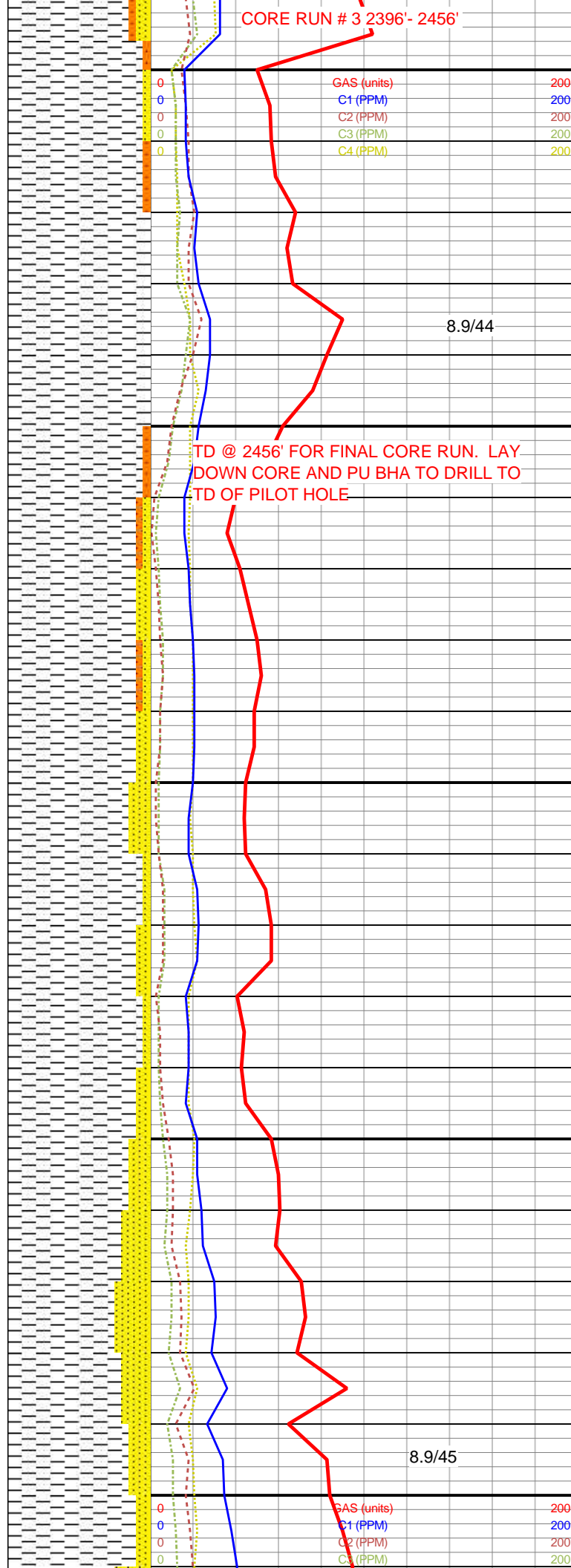
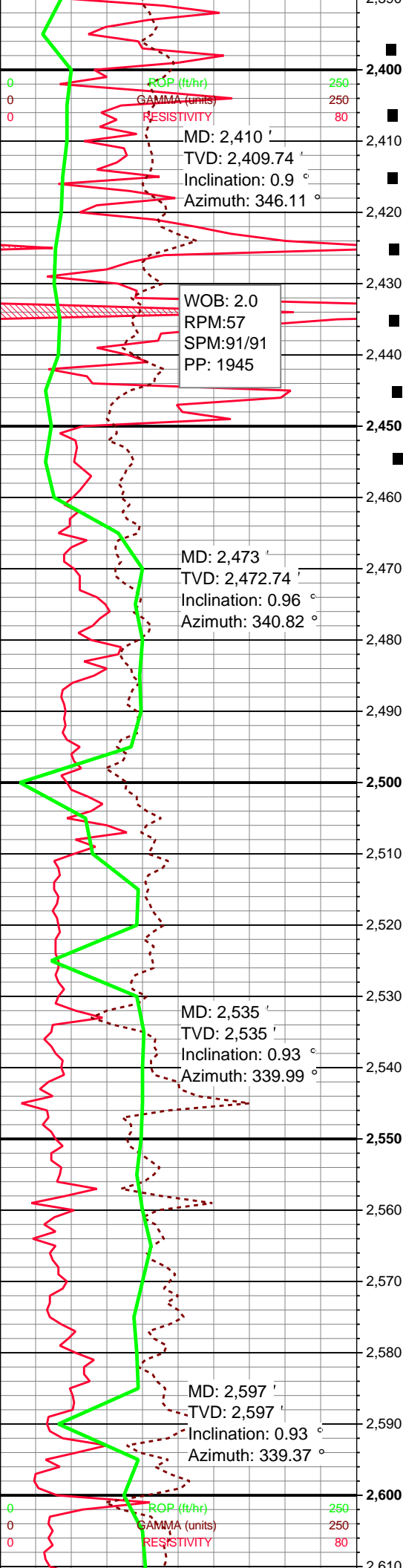
SH: drkGy - GyshBlk, sub  
to f txt, frm, scat imbd MIC  
microxln PYR w/ tr SS lam  
no cut, fnt Yel rng. 2310'-2

SH: drkGy - GyshBlk, sub  
to slty txt, frm, scat imbd M  
SS lamn, no flor, no cut, n  
2330'-2340'

SH: drkGy - GyshBlk, sub  
to slty txt, frm, scat imbd M  
SS lamn w/ scat PYR xls,  
PYR, no flor, no cut, no m  
2350'-2360'

SH: drkGy - GyshBlk, sub  
to slty txt, frm, scat imbd M  
SS lamn w/ scat PYR xls,  
CAL, no flor, no cut, fnt Ye  
2370'-2380'





SH: drkGy - GyshBlk to bl  
subbly, med to slty txt, fr  
brittle, scat imbd MICA & t  
lamn w/ scat PYR xls, tr to  
free CAL, no flor, no cut, f  
good mineral flour in calci  
2400'-2410'

SH: drkGy to blk, subbly  
ply, med to slty txt, frm to  
brittle, scat imbd MICA & t  
lamn w/ scat PYR xls, tr to  
free CAL, no flor, no cut, f  
weak Yel/brn rng, good m  
flour in calcite. 2420'-2430'

SH: drkGy - GyshBlk, sub  
med txt, frm, tr imbd SS la  
free CAL, bri Yel flor in fre  
Yel rng. 2460'-2470'

SH: meddrkGy - drkGy, p  
subbly to scat subsplt, sl  
txt, pred frm to occ brit, sc  
SS lamn, scat free CAL, r  
SH. 2480'-2490'

SH: GyshBlk - drkGy - oc  
pred subbly, slty to f txt,  
hd, scat imbd SS lamn, tr  
2500'-2510'

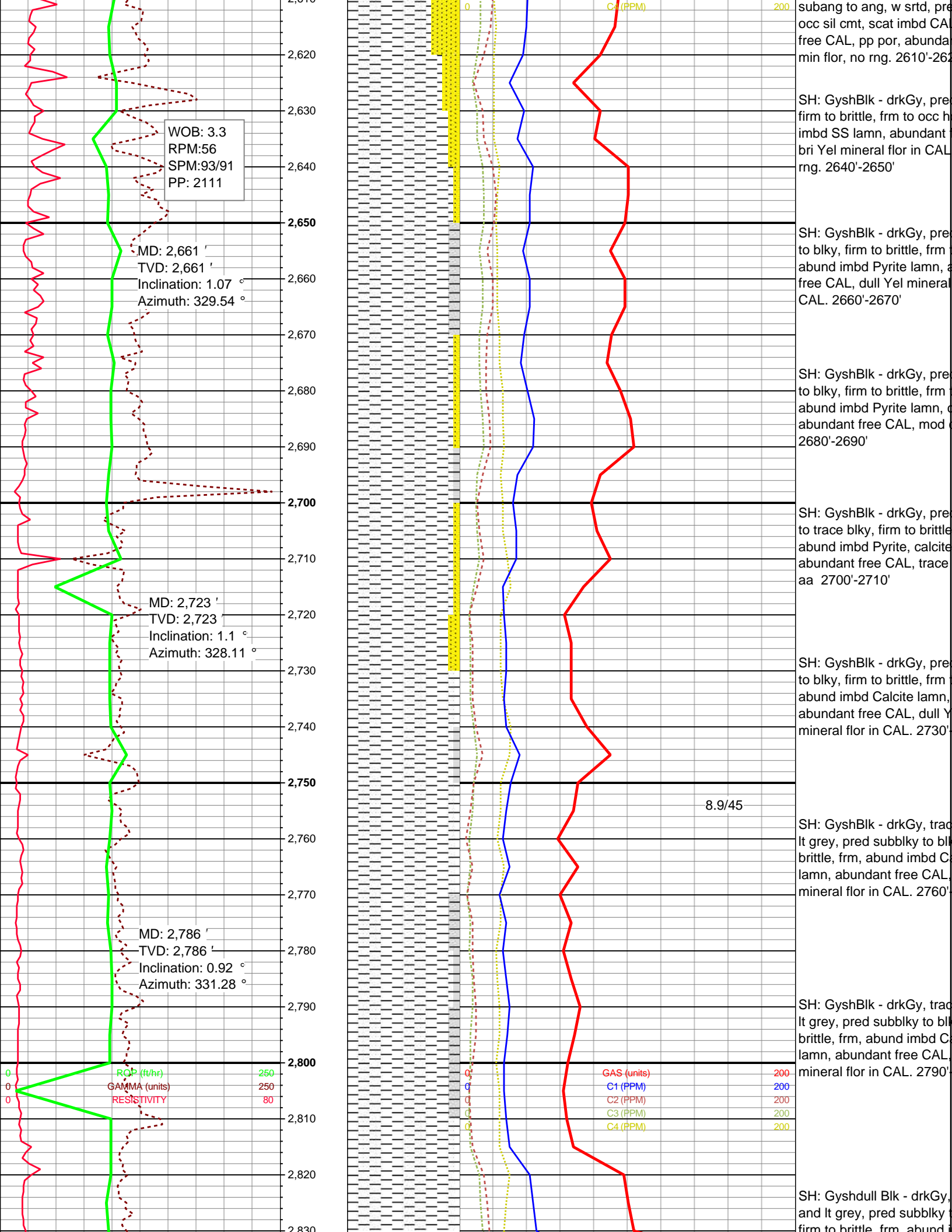
SH: GyshBlk - meddrkGy  
to occ subsplt, slty to f txt  
to scat hd, scat imbd SS l  
MICA, tr free CAL. no flor  
2520'-2530'

SH: GyshBlk - drkGy, pre  
f txt, frm to occ hd, abund  
lamn, free CAL, bri Yel m  
in CAL, fnt Yel rng. 2540'-

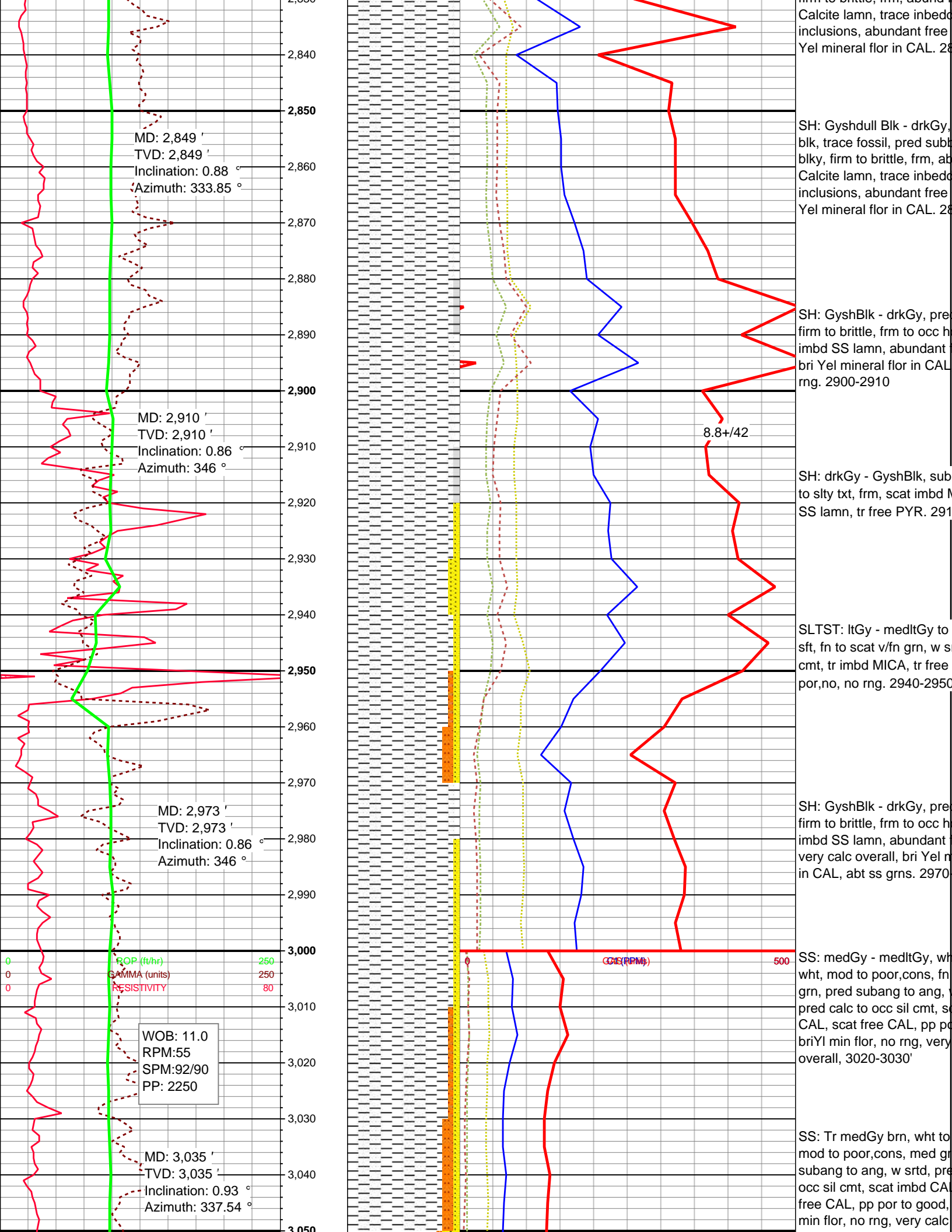
SS: meddrkGy - medGy -  
medltGy, mod cons, fn to  
subang, w srtd, pred calc  
cmt, imbd CAL, occ free C  
por, no stn, tr briYl min flo  
2560'-2570'

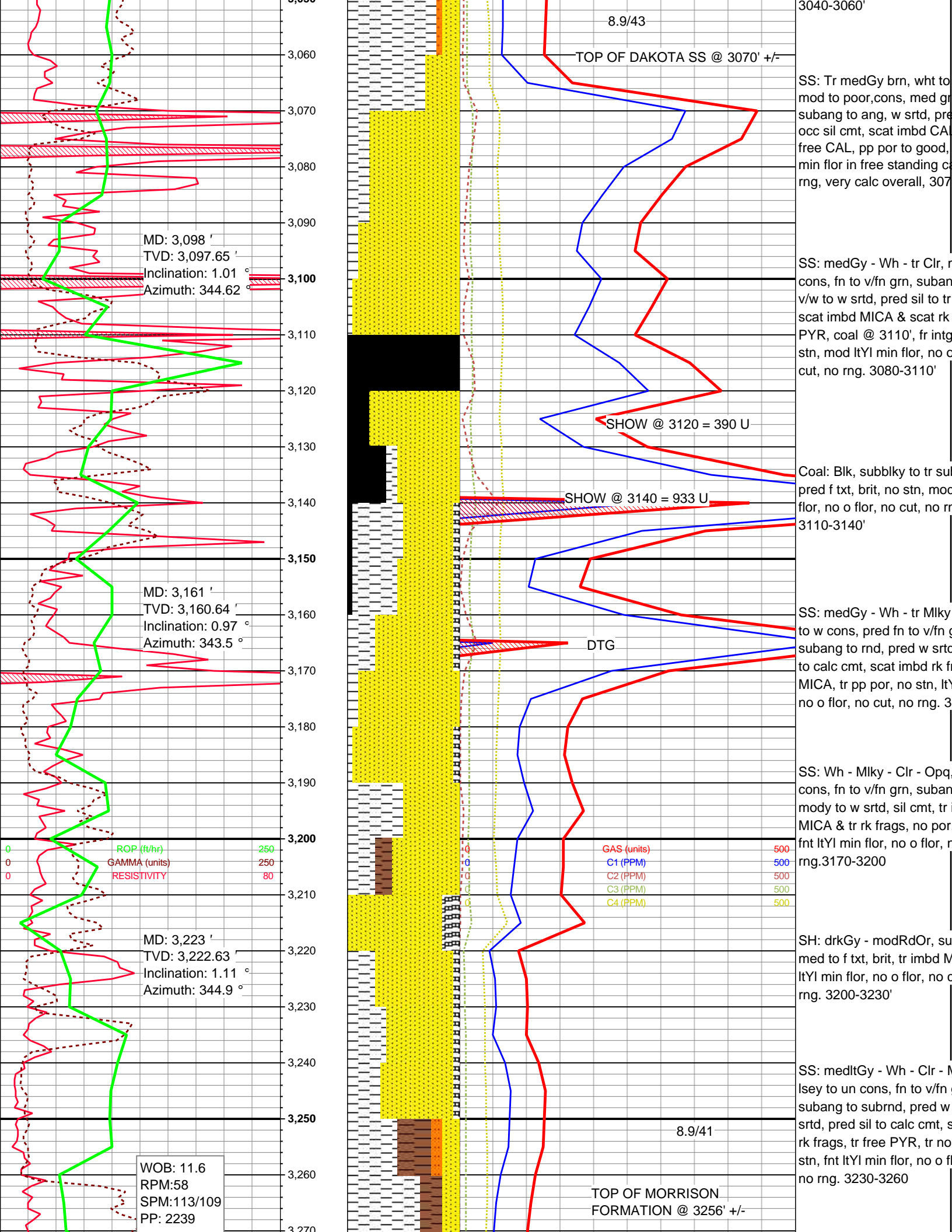
SS: meddrkGy - medltGy,  
cons, fn to med grn, pred  
to ang, w srtd, pred calc t  
cmt, scat imbd CAL, scat  
pp por, scat briYl min flor,  
2580'-2590'

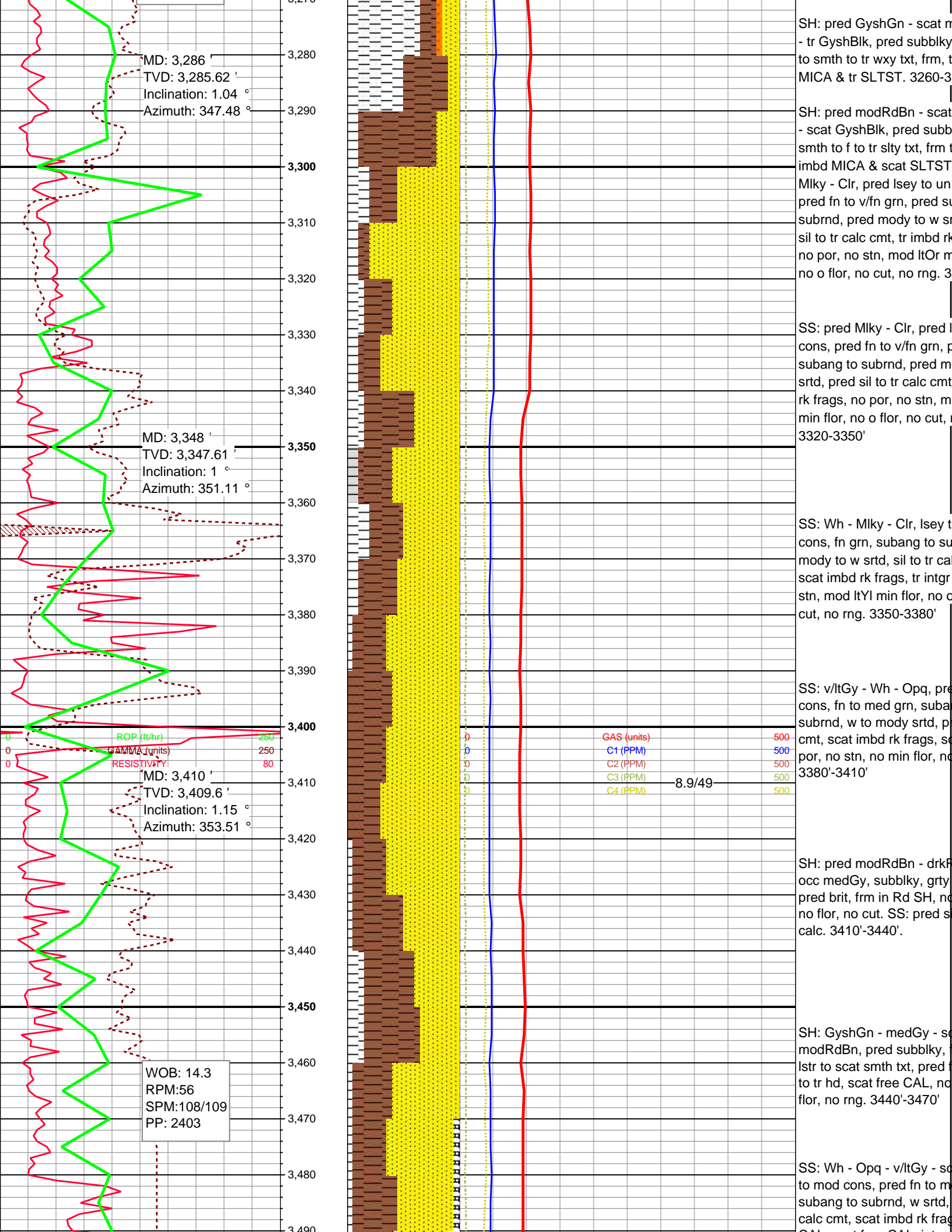
SS: meddrkGy - medltGy,  
brn, mod cons, fn to med

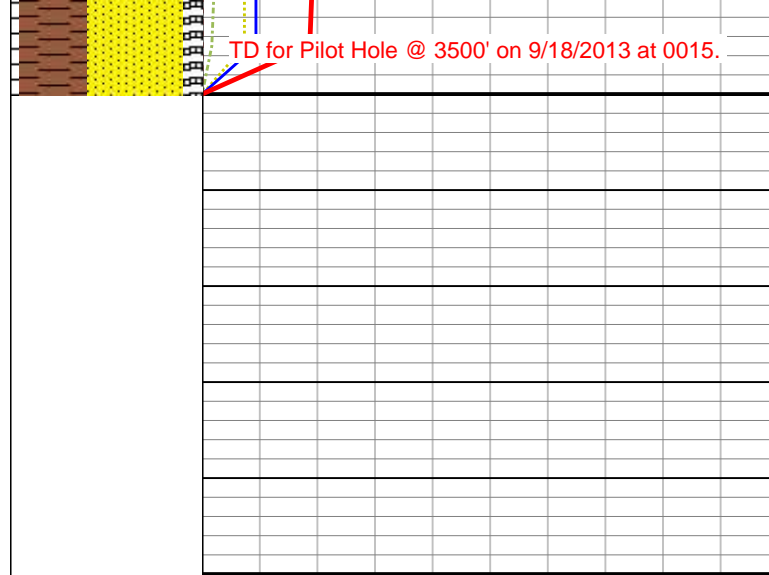
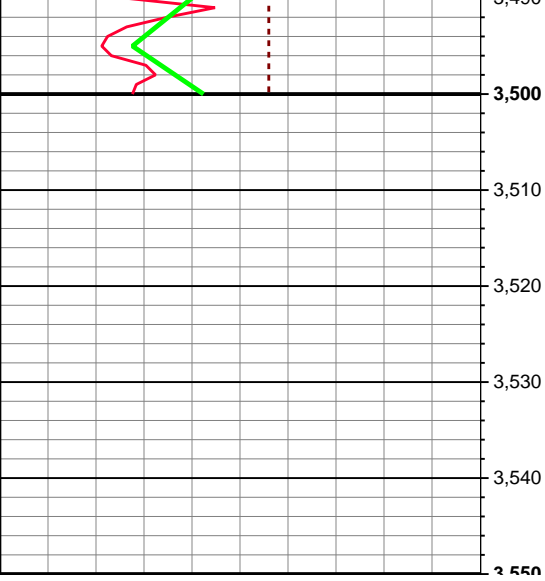












CAL, scat free CAL, integr  
no stn, no min flor, no o fl  
3470'-3500'