



Scale: 6.32" / 100'
Measured Depth Log

Well Name COW CANYON D-4 (CD-4) M40

Location NW, NW, Section 18, Township 38N, Range 18W, NMPM

State COLORADO

County MONTEZUMA

Country US

Rig Number NABORS M40

API Number 05-083-06718-00

AFE # 200462

Region SOUTHWEST COLORADO

Field McElmo Dome 53674

Spud Date 11/6/2014

Drilling Completed 12/5/2014

Surface Coordinates 1580' FSL & 2356' FEL, Section 18, T38N, R18W, NMPM

Bottom Hole Coordinates 1582' FSL & 3051' FWL, Section 18, T38N, R18W, NMPM

Ground Elevation 6795.4'

K.B. Elevation 6818'

Logged Interval 160' To 8725'

Total Depth 8725'

Formation LEADVILLE

Type of Drilling Fluid FRESH WATER & BRINE

Other Symbols

Oil Show

- DEAD
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

Porosity

- E EARTHY
- F FENESTRAL
- F FRACTURE
- X INTERCRYSTALLINE
- INTEROOLITIC

MOLDIC

ORGANIC

PINPOINT

VUGGY

Engineering

BIT

CONNECTION (LEFT)

CONNECTION (RIGHT)

CONNECTION GAS

CORE - LOST

CORE - RECOVERED

DST INTERVAL

FAULT

FORMATION TOP

GAS SHOW

MINDEPTH MN DEPTH

NORMAL FAULT

OIL SHOW

OVERTURNED STRATA

REVERSE FAULT

SIDEWALL CORE (LEFT)

SIDEWALL CORE (RIGHT)

SLIDE

SURVEY

TRIP GAS

WIRELINE TESTED - LEFT

WIRELINE TESTED - RT

Rounding

ANGULAR

ROUNDED

SUBANG

SUBRND

Textures

BOUNDSTONE

CHALKY

CRYPTOXLN

E EARTHY

FINELYXLN

GRAINSTONE

L LITHOGRAPHIC

MX MICROXLN

MS MUDSTONE

PS PACKSTONE

WS WACKSTONE

Sorting

M MODERATE

P POOR

W WELL

Zone Color Coding

- Oil
- Condensate
- Gas
- Note
- Core
- Pressure
- Error
- Water
- Seal

Accessories

Fossils

- ALGAE
- AMPHIPORA
- BELEMNITE
- BIOCLASTIC

F FOSSIL

GASTROPOD

OOLITE

OSTRACOD

PELECYPOD

PELLET

ARGILLACEOUS

ARGILLITE GRAIN

B BENTONITE

BITUMENOUS SUBSTANCE

BRECCIA FRAGMENTS

CALCAREOUS

GLAUCONITE

GYPSIFEROUS

HEAVY MINERAL

KAOLIN

MARLSTONE

MINERAL CRYSTALS

Stringer

- ANHYDRITE STRINGER
- BENTONITE STRINGER
- COAL STRINGER
- DOLOMITE STRINGER

BRACHIOPOD
BRYOZOA
CEPHALOPOD
CORAL
CRINOID
ECHINOID
FISH
FORAMINIFERA

PISOLITE
PLANT REMAINS
PLANT SPORES
SCAPHOPOD
STROMATOPOROID

Minerals

ANHYDRITIC

CARBONACEOUS FLAKES
CHTDK
CHTLT
COAL - THIN BEDS
DOLOMITIC
FELDSPAR
FERRUGINOUS PELLET
FERRUGINOUS

NODULES
PHOSPHATE PELLETS
PYRITE
SALT CAST
SANDY
SILICEOUS
SILTY
TUFFACEOUS

GYPSUM STRINGER
LIMESTONE STRINGER
MARLSTONE (CALC) STRG
MARLSTONE (DOL) STRG
SANDSTONE STRINGER
SHALE STRINGER
SILTSTONE STRINGER

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

Operator

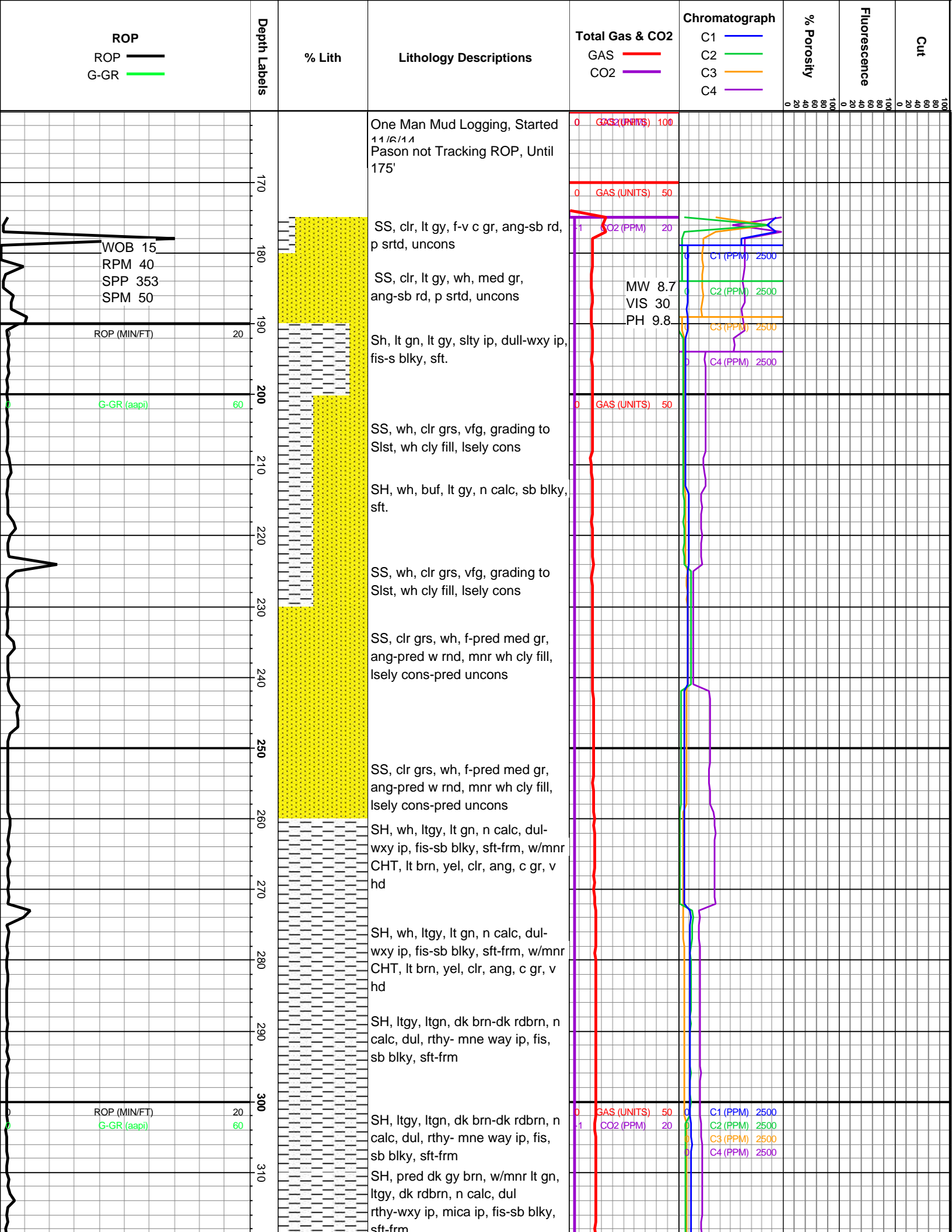
Company KINDER MORGAN

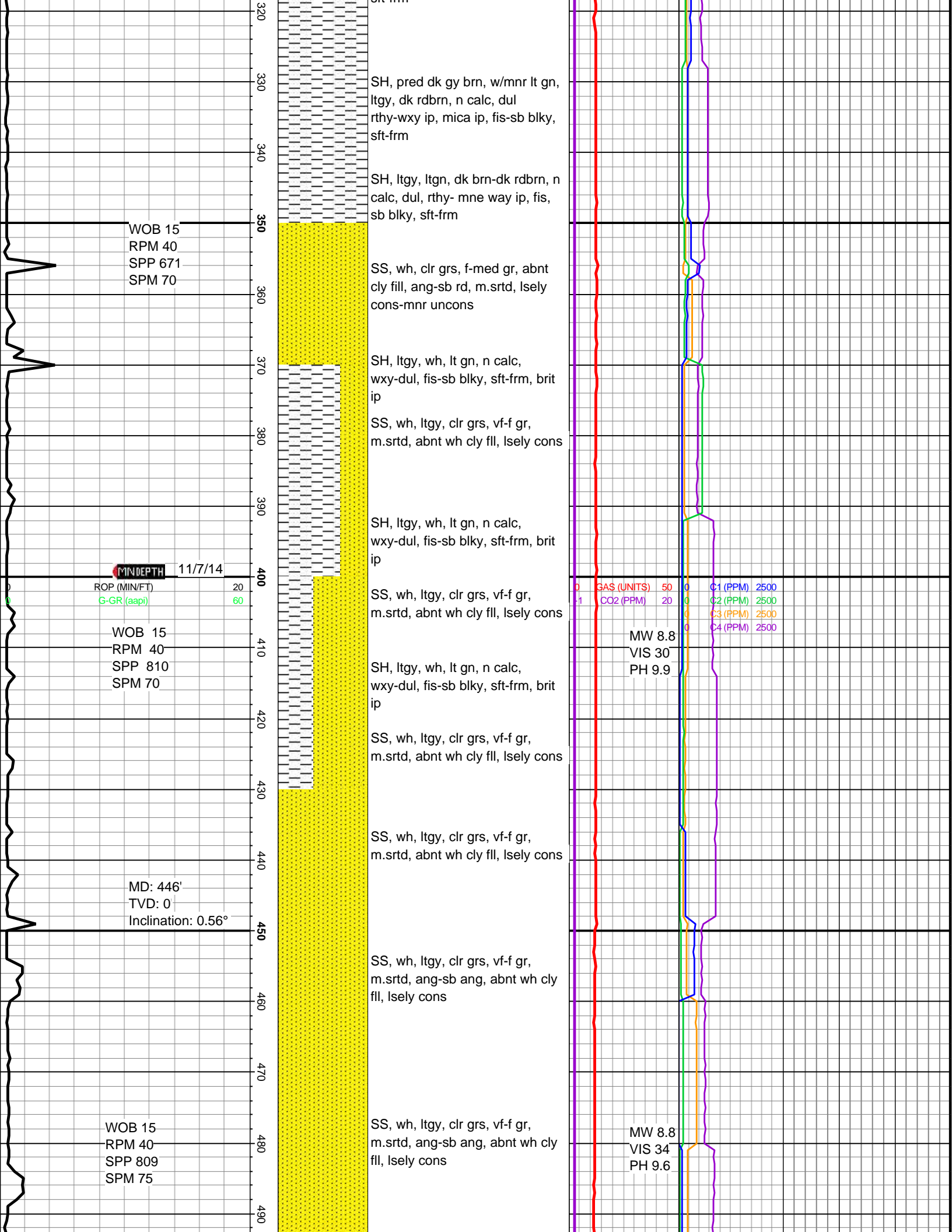
Geologist

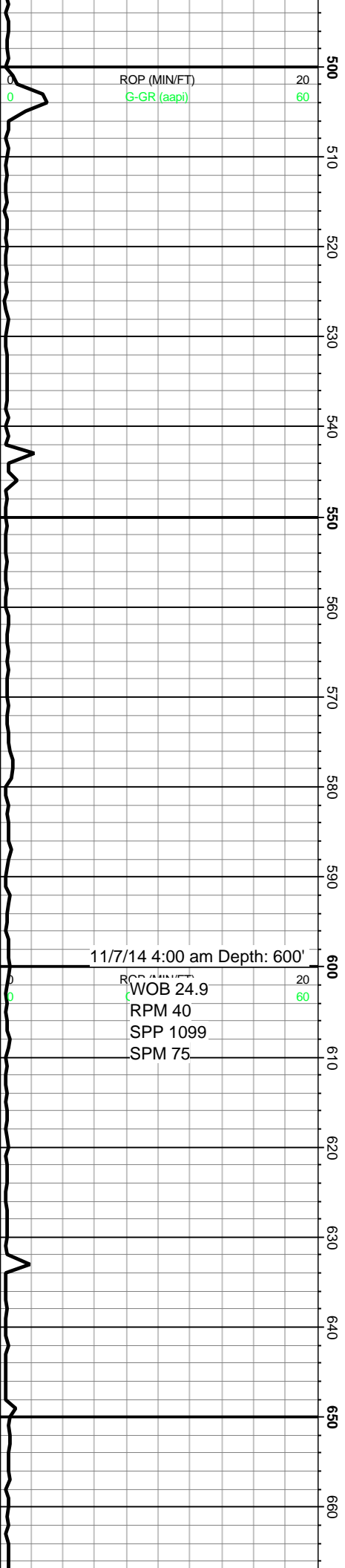
Name CHARLES S. CHAPMAN

Company ABOVE ENTERPRISE

Address 510 OLD LUBBOCK HIGHWAY
SNYDER, TEXAS 79549







SS, wh, ltgy, clr grs, vf-f gr,
m.srted, ang-sb ang, abnt wh cly
fill, lsely cons

SS, clr grs, wh, ltgy, f-pred med
gr, abnt c gr, ang-sb rd, mnr w
rd, abnt wh cly fill, lsely cons-
uncons

SS, clr grs, wh, ltgy, f-pred med
gr, abnt c gr, ang-sb rd, mnr w
rd, abnt wh cly fill, lsely cons-
uncons

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uncons

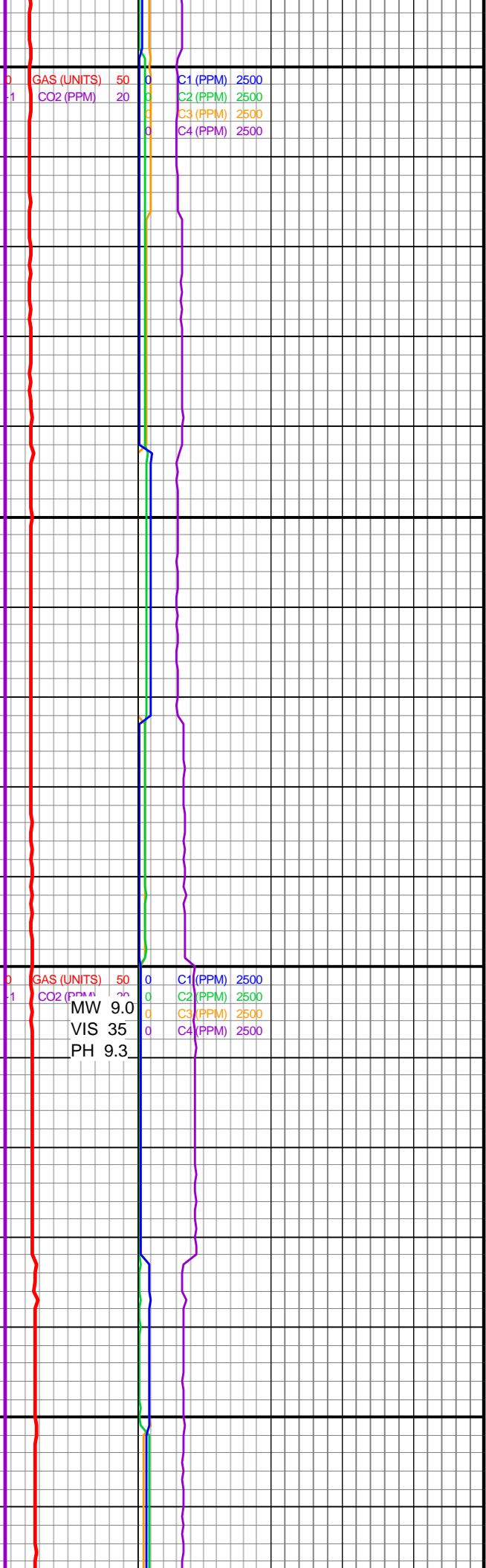
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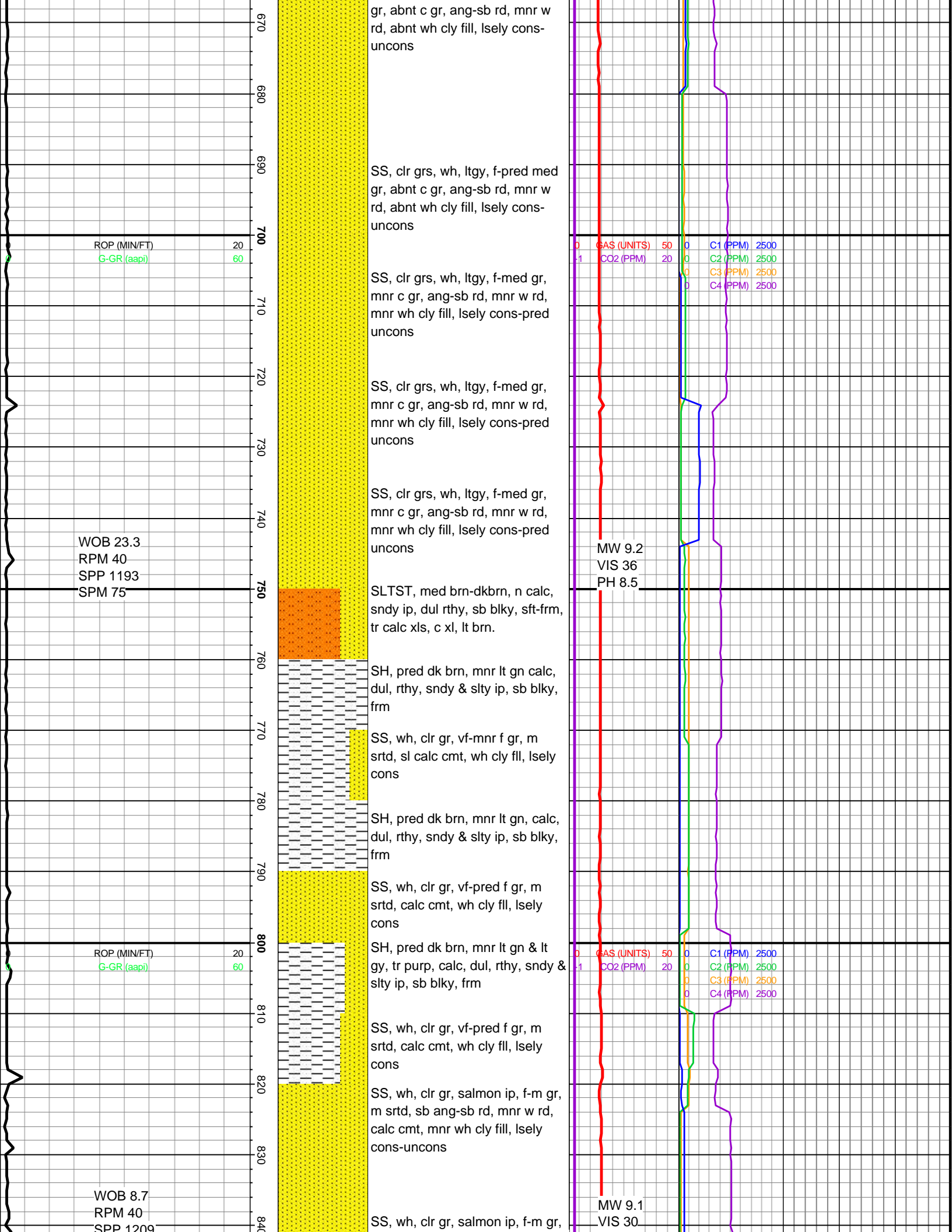
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uncons

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SS, clr grs, wh, ltgy, f-pred med
gr, abnt c gr, ang-sb rd, mnr w
rd, abnt wh cly fill, lsely cons-
uncons

SS, clr grs, wh, ltgy, f-pred med





Well 1200

SPM 75

ROP (MIN/FT)

G-GR (aapi)

WOB 26.2

RPM 40

SPP 1252

SPM 75

MD: 936'

TVD: 0'

Inclination: 0.25°

850

860

870

880

890

900

910

920

930

940

950

960

970

980

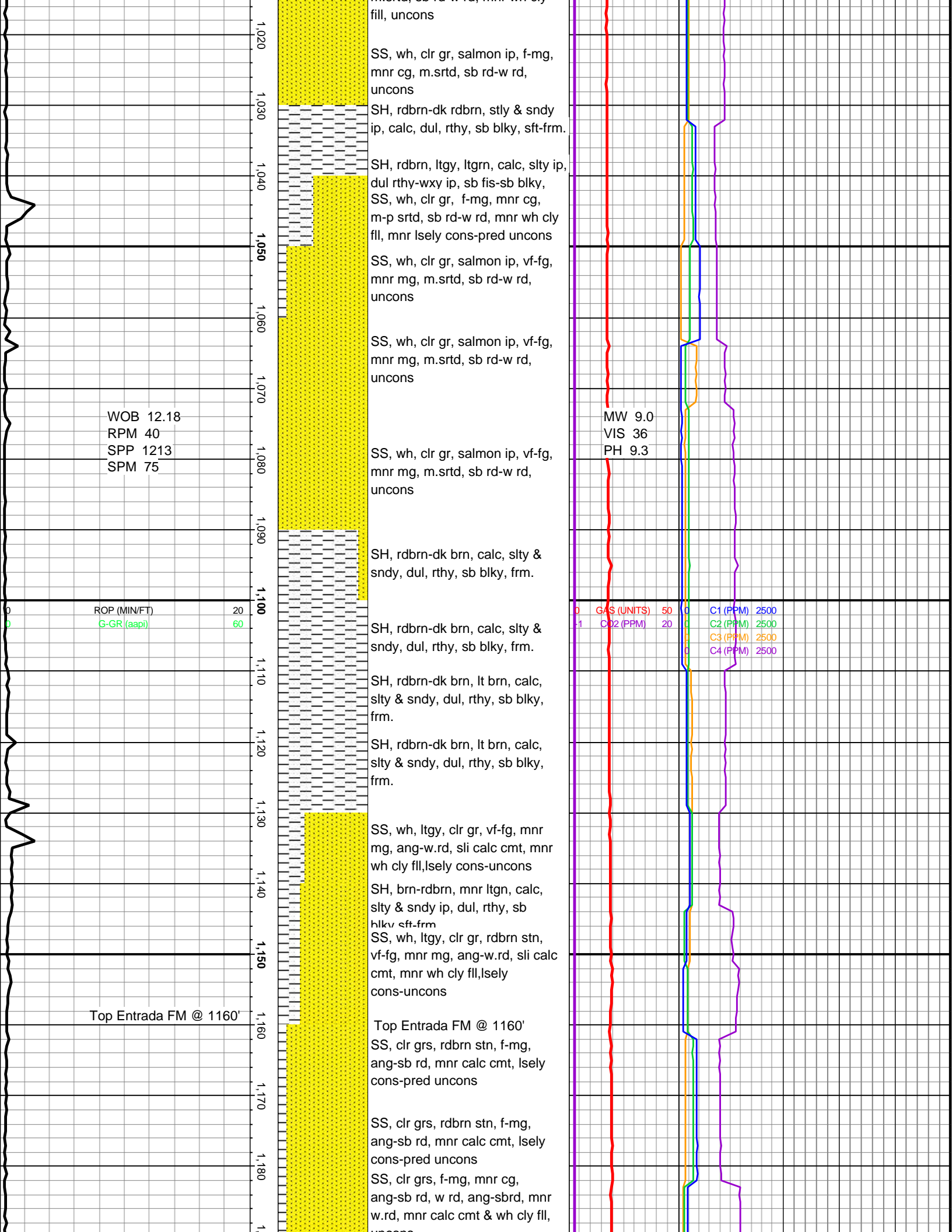
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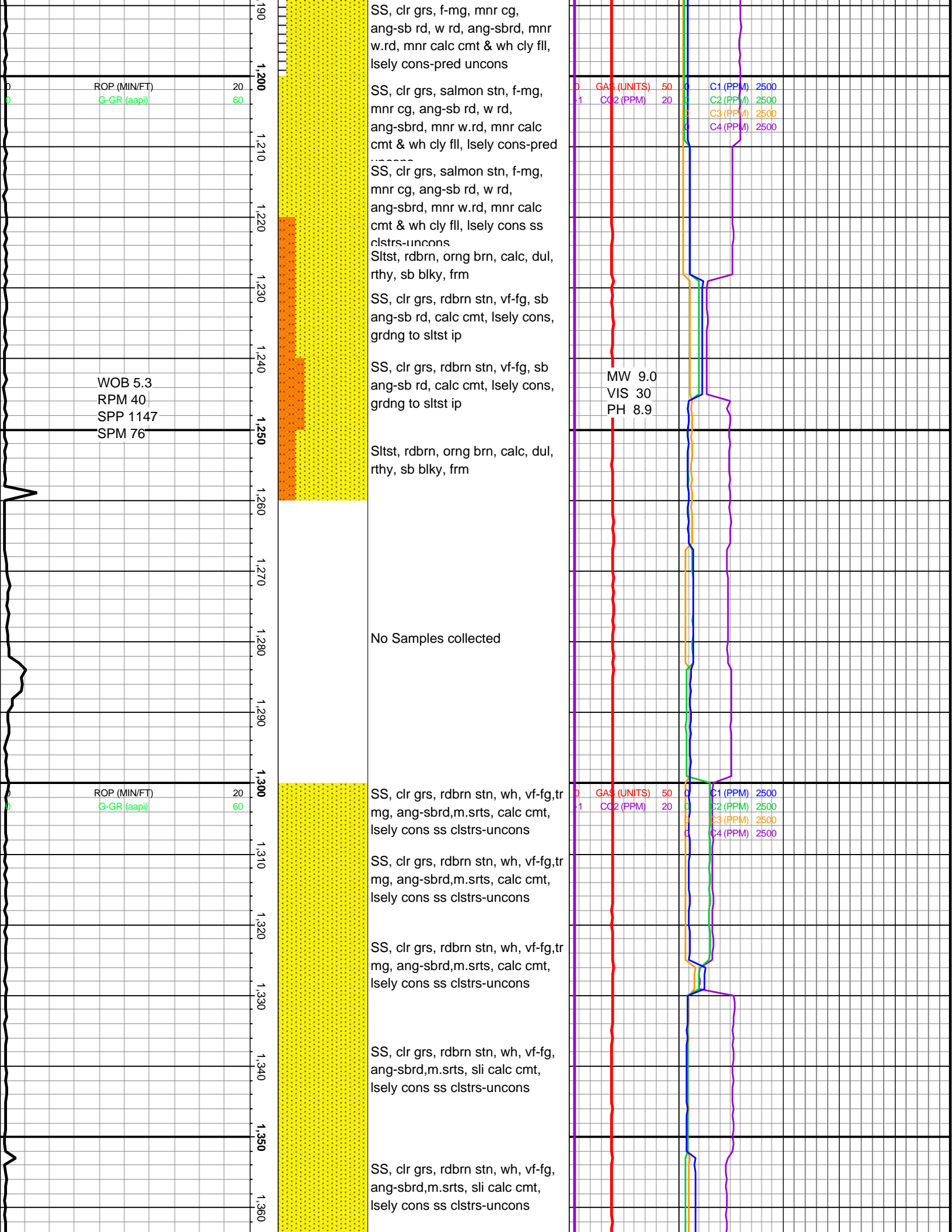
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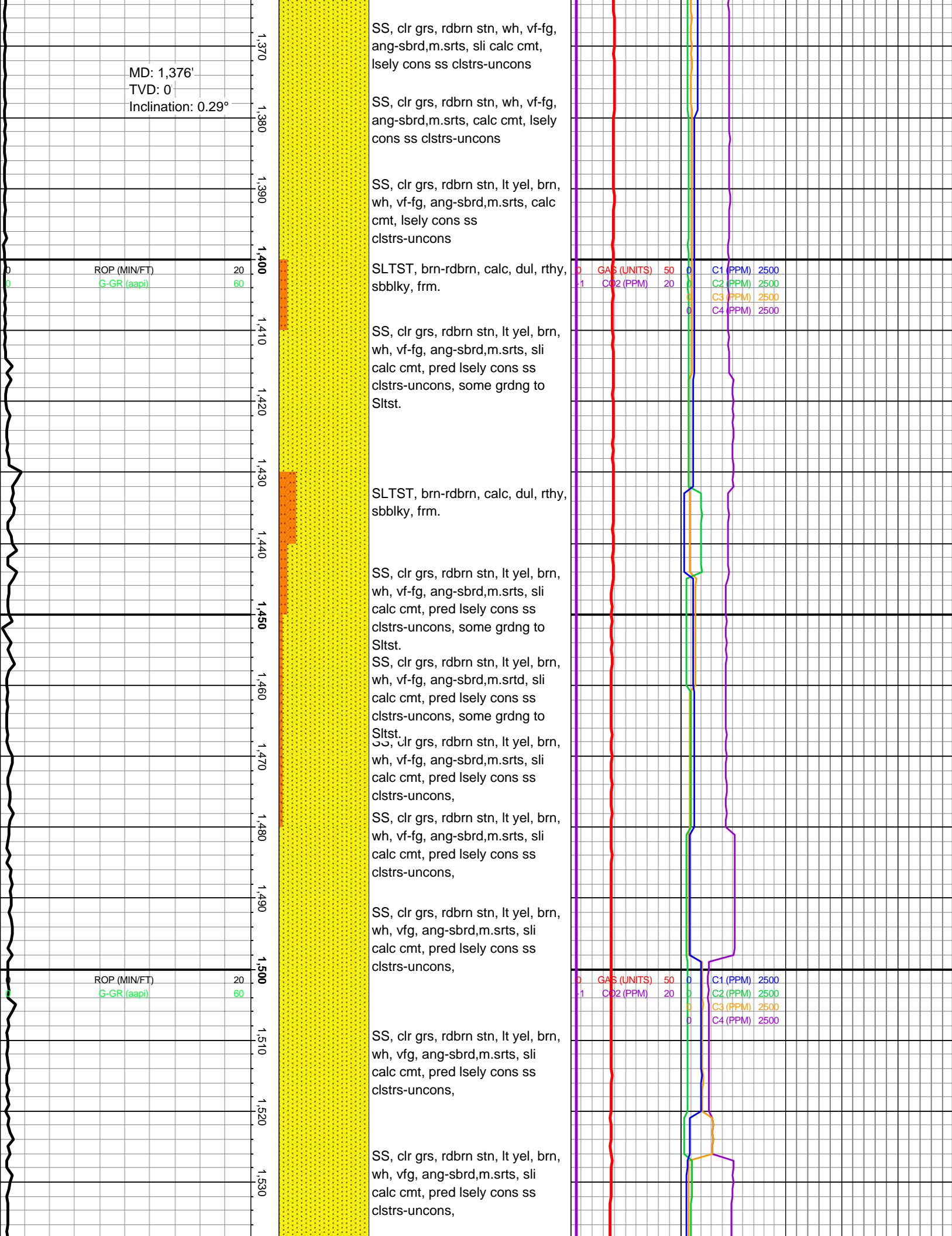
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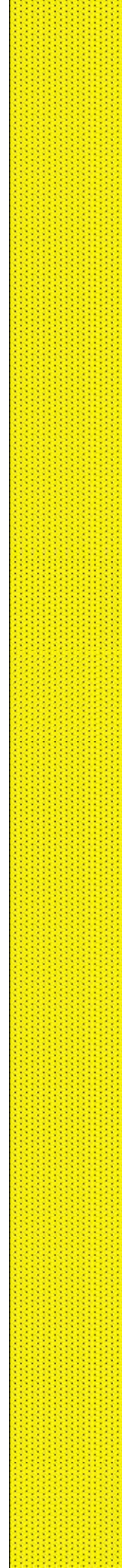
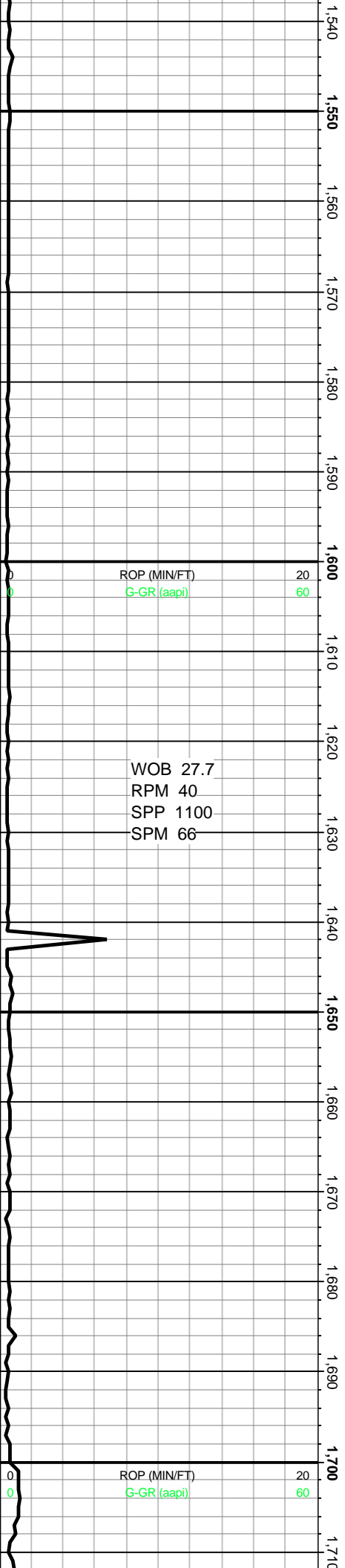
SS, wh, clr gr, salmon ip, f-mg,
m.srt'd. sb rd-w rd. mnr wh clv

MW 9.1
VIS 36
PH 9.0









SS, clr grs, rdbrn stn, lt yel, brn, wh, vfg, ang-sbrd,m.srts, sli calc cmt, pred lsely cons ss clstrs-uncons,

SS, clr grs, rdbrn stn, lt yel, brn, wh, vfg, ang-sbrd,m.srts, sli calc cmt, pred lsely cons ss clstrs-uncons,

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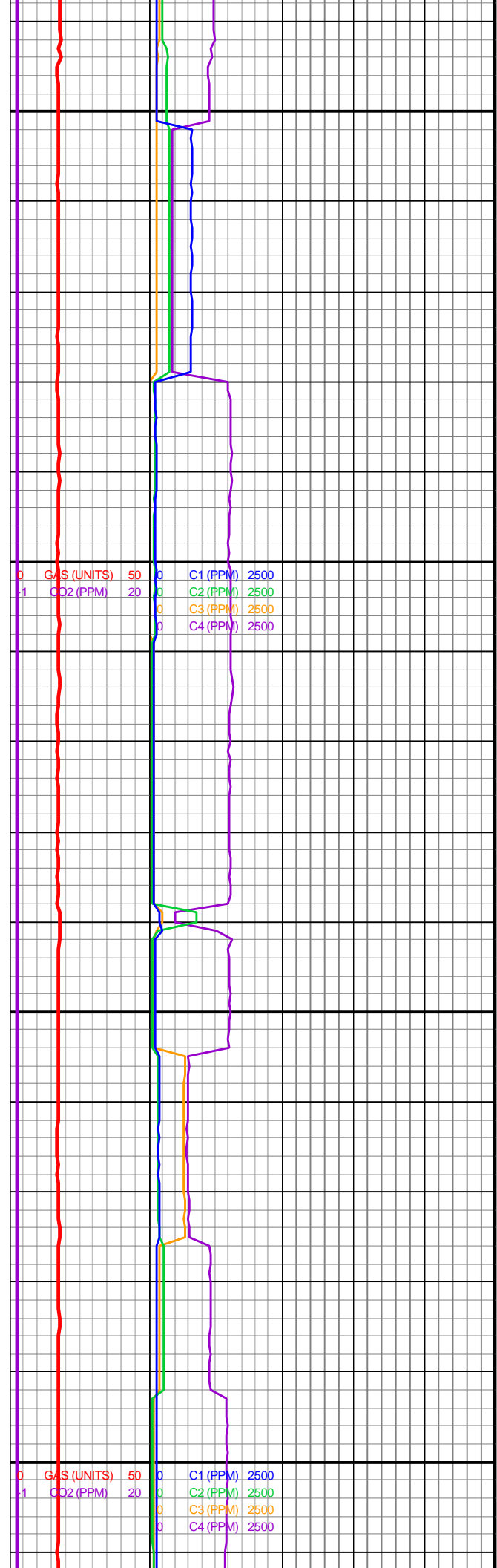
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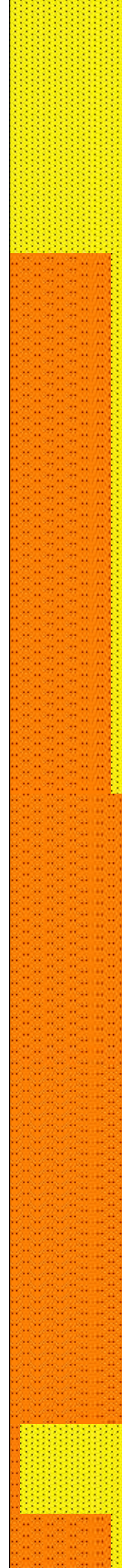
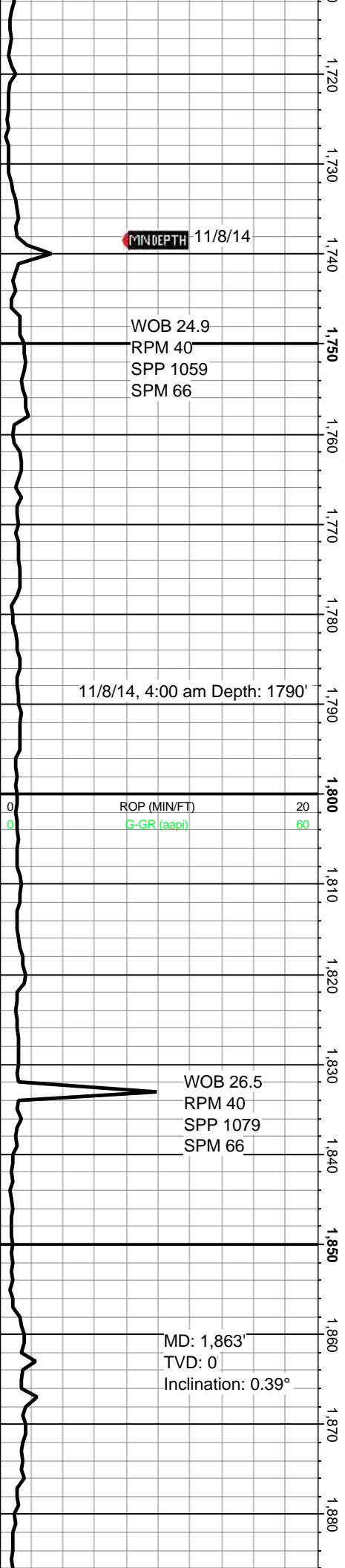
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SS, clr grs, rdbrn stn, lt yel, brn, wh, vf-fg, ang-sbrd,m.srts, n-sli calc cmt, pred lsely cons ss clstrs-uncons,

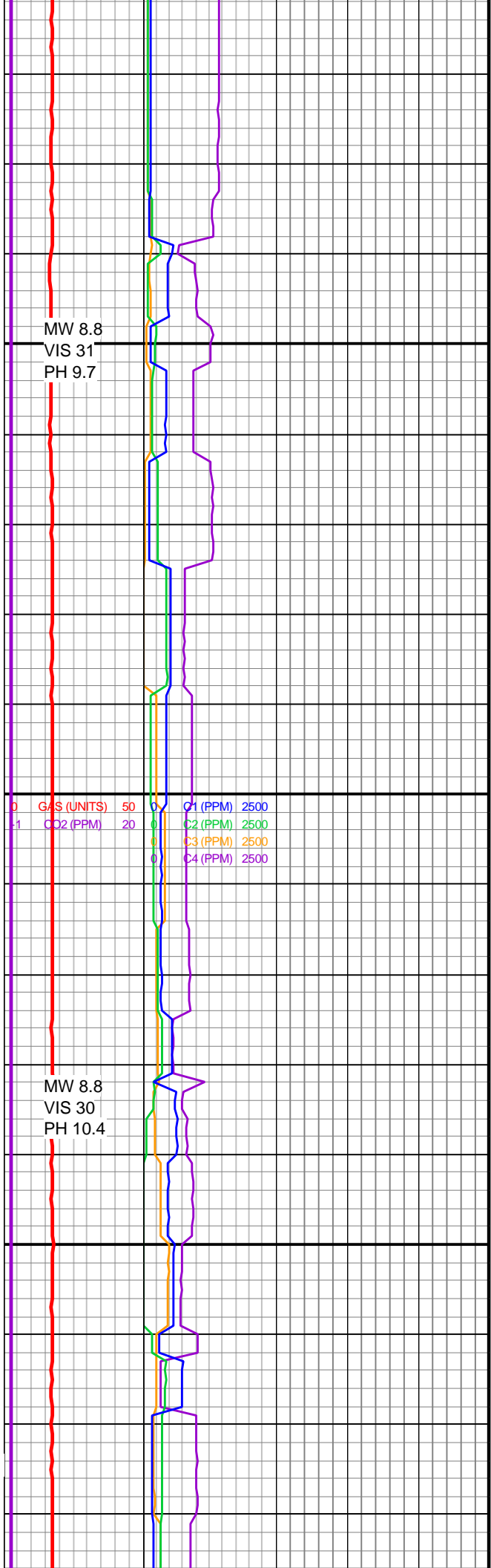
Poor Sample Quality, Pumping Gel Sweeps

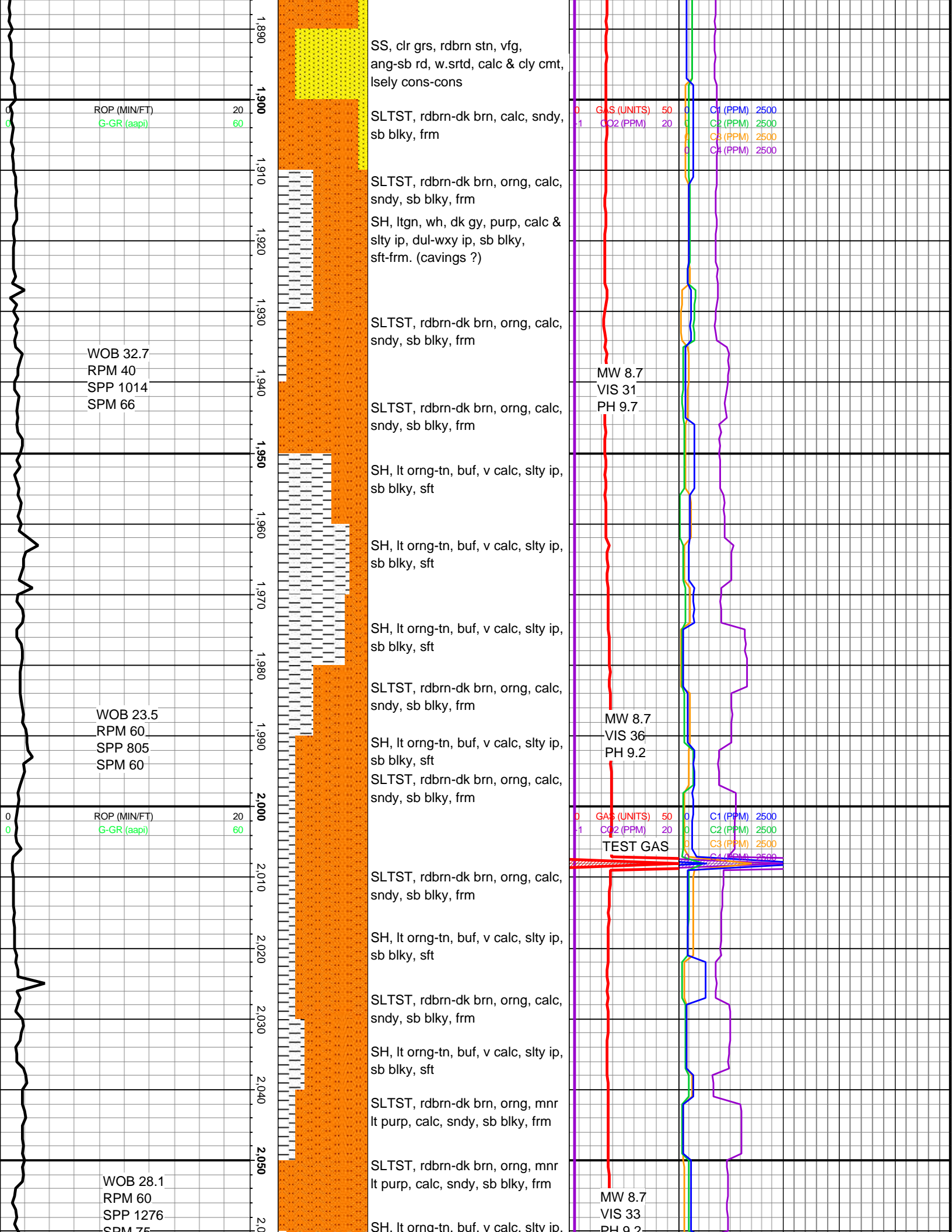
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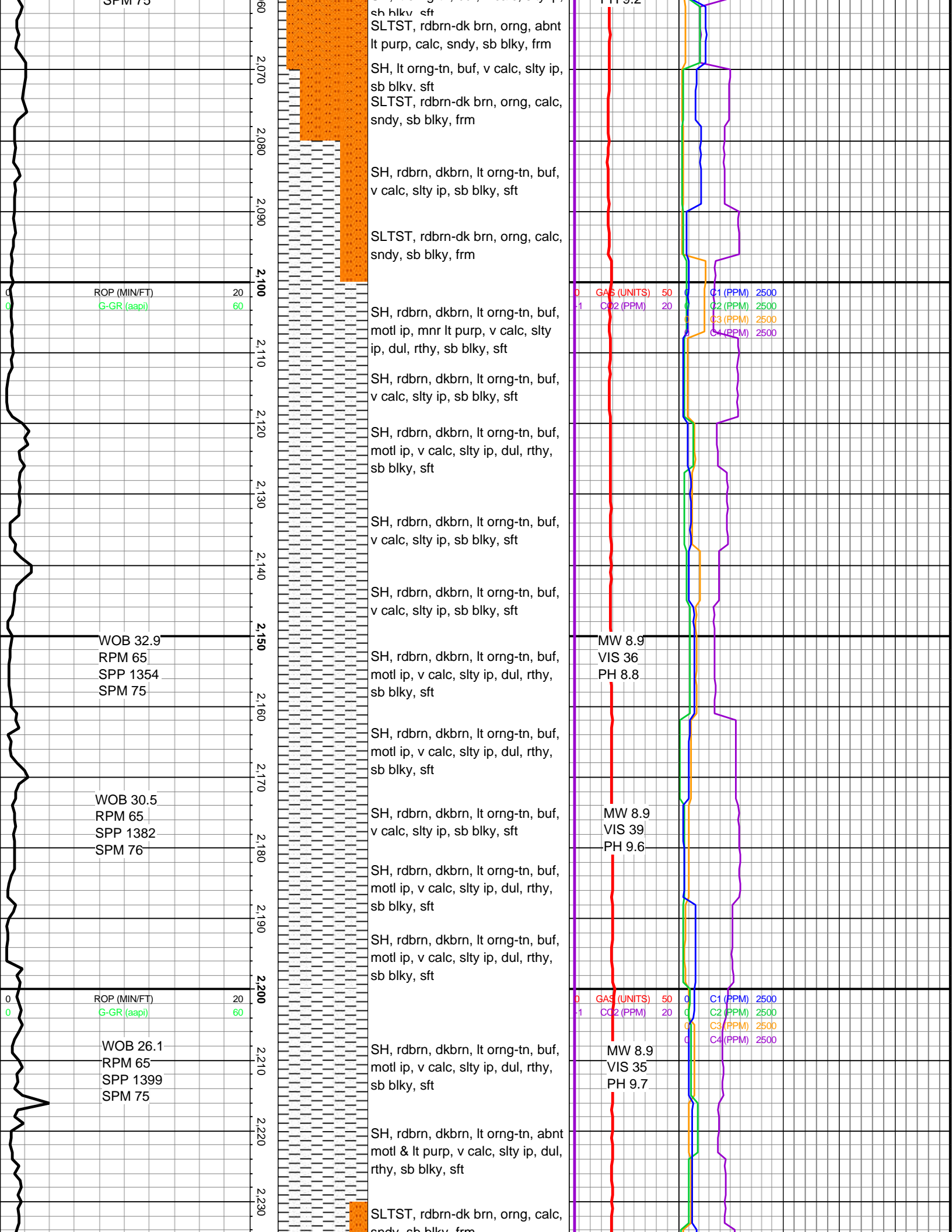


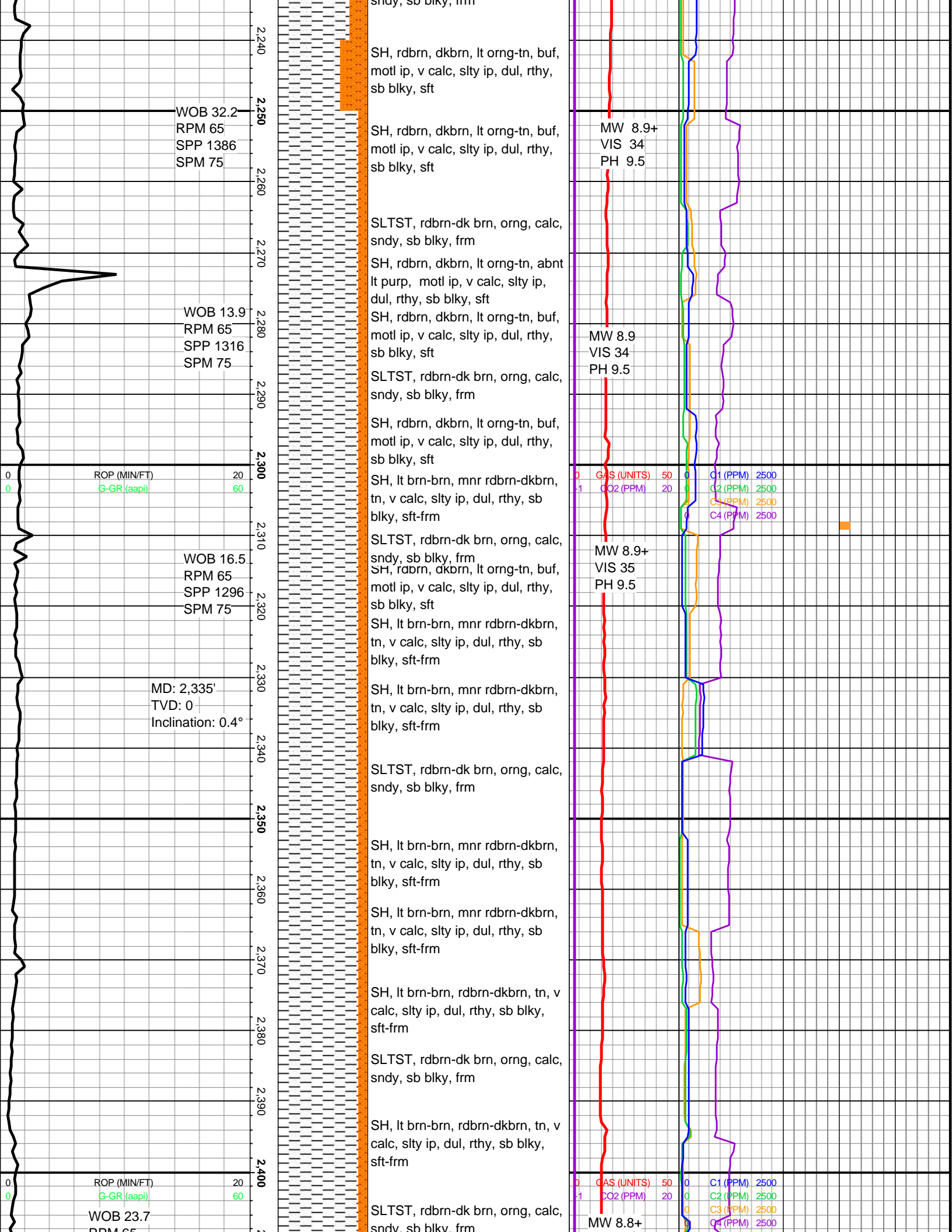


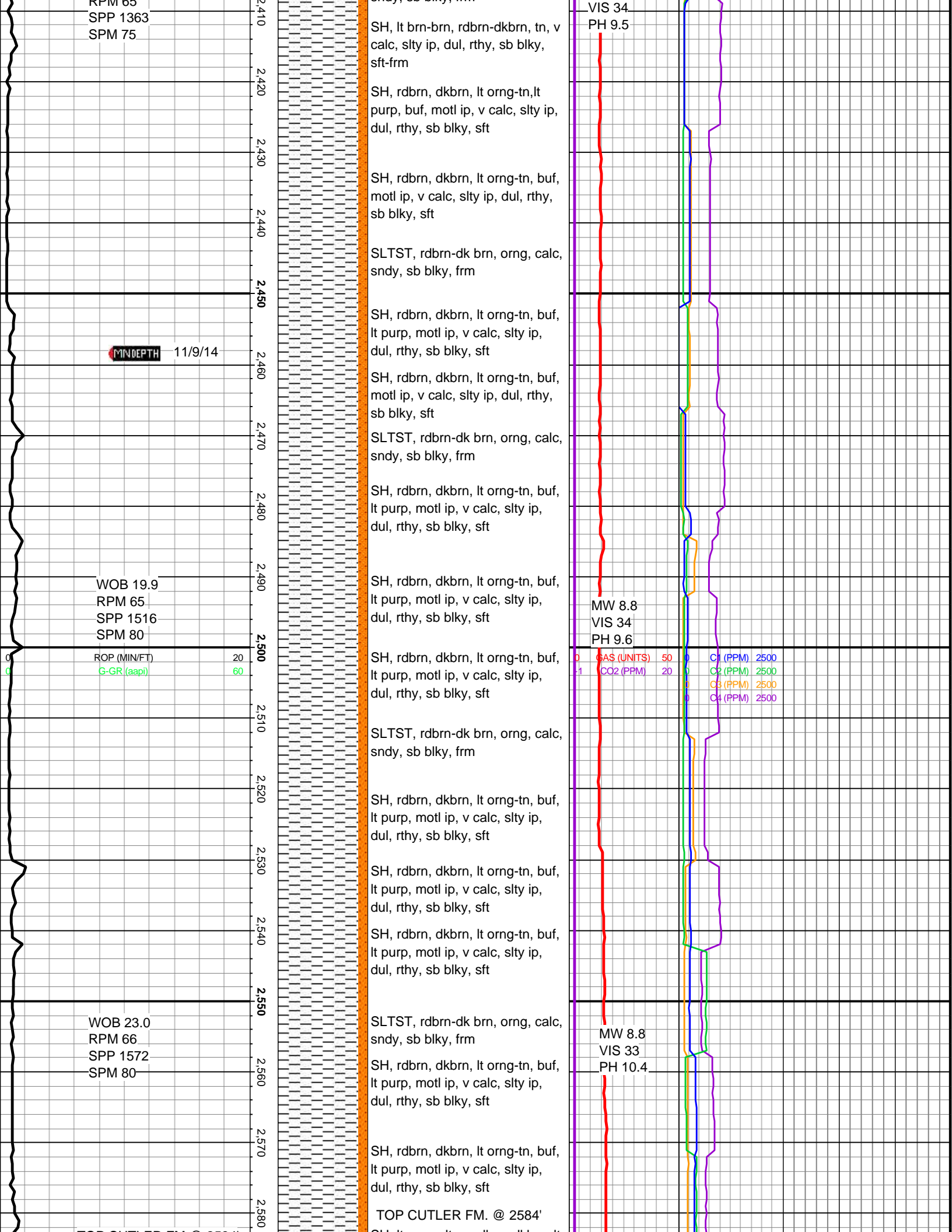
clstrs-uncons,
SS, clr grs, rdbrn stn, lt yel, brn,
wh, vf-fg, ang-sbrd,m.srts, n-sli
calc cmt, pred lsely cons ss
clstrs-uncons,
SS, clr grs, rdbrn stn, lt yel, brn,
wh, vf-fg, ang-sbrd,m.srts, n-sli
calc cmt, pred lsely cons ss
clstrs-uncons,
Pumping Gel Sweeps to Clean
Hole, Short Trip To Drill Collars
To Work & Clean Hole
SLTST, rdbrn-dk brn, calc, sndy,
sb blkly, frm
SS, clr grs, rdbrn stn, lt yel, brn,
wh, vf-fg, ang-sbrd,m.srts, n-sli
calc cmt, pred lsely cons ss
clstrs-uncons,
SLTST, rdbrn-dk brn, calc, sndy,
sb blkly, frm
SS, clr grs, rdbrn stn, lt yel, brn,
wh, vf-fg, ang-sbrd,m.srts, n-sli
calc cmt, pred lsely cons ss
clstrs-uncons,
SLTST, rdbrn-dk brn, calc, sndy,
sb blkly, frm
SLTST, rdbrn-dk brn, calc, sndy,
sb blkly, frm
SLTST, rdbrn-dk brn, calc, sndy,
sb blkly, frm
SLTST, rdbrn-dk brn, calc, sndy,
sb blkly, frm
SLTST, rdbrn-dk brn, calc, sndy,
sb blkly, frm
SS, clr grs, rdbrn stn, vfg,
ang-sb rd, w.srtd, calc & cly cmt,
lsely cons-cons
SLTST, rdbrn-dk brn, calc, sndy,
sb blkly, frm

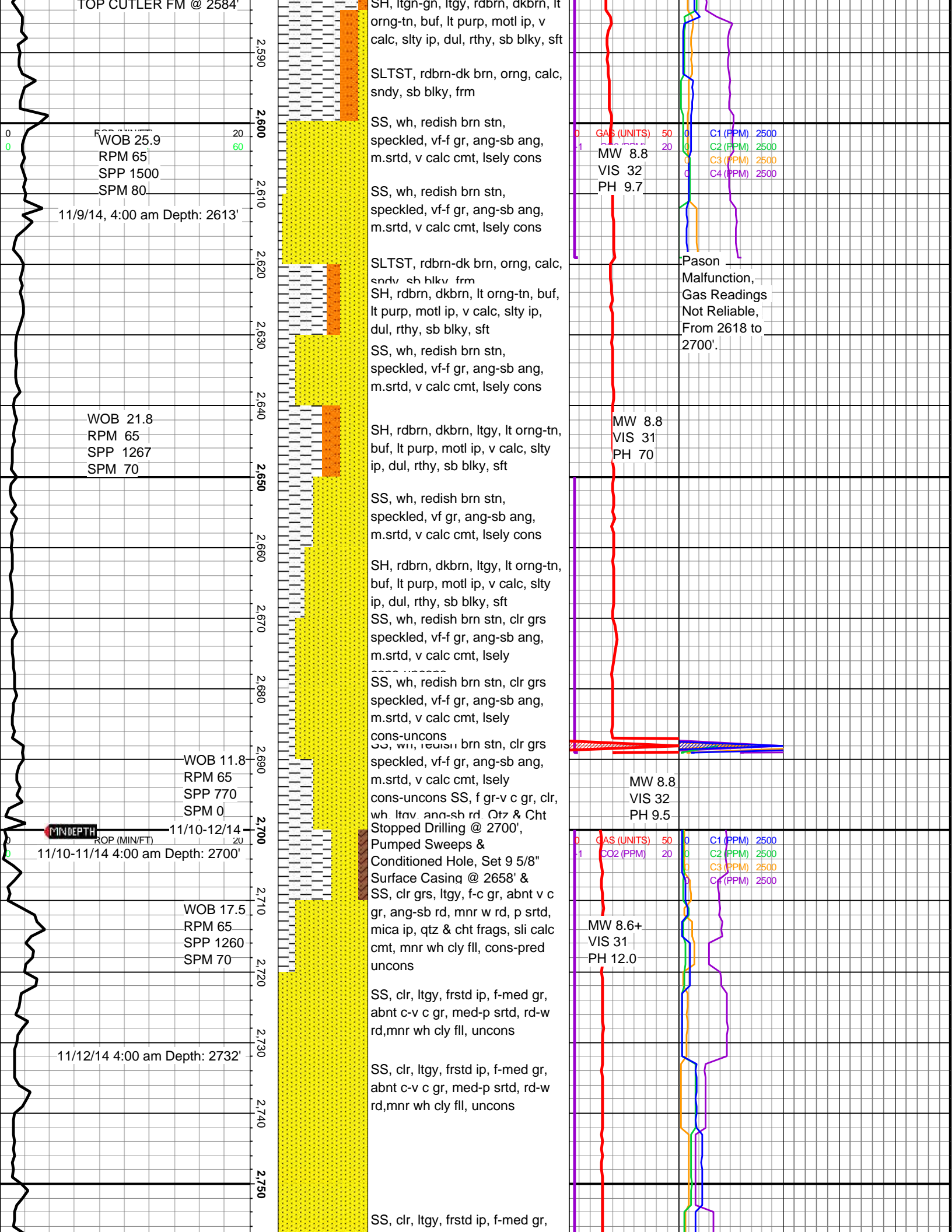


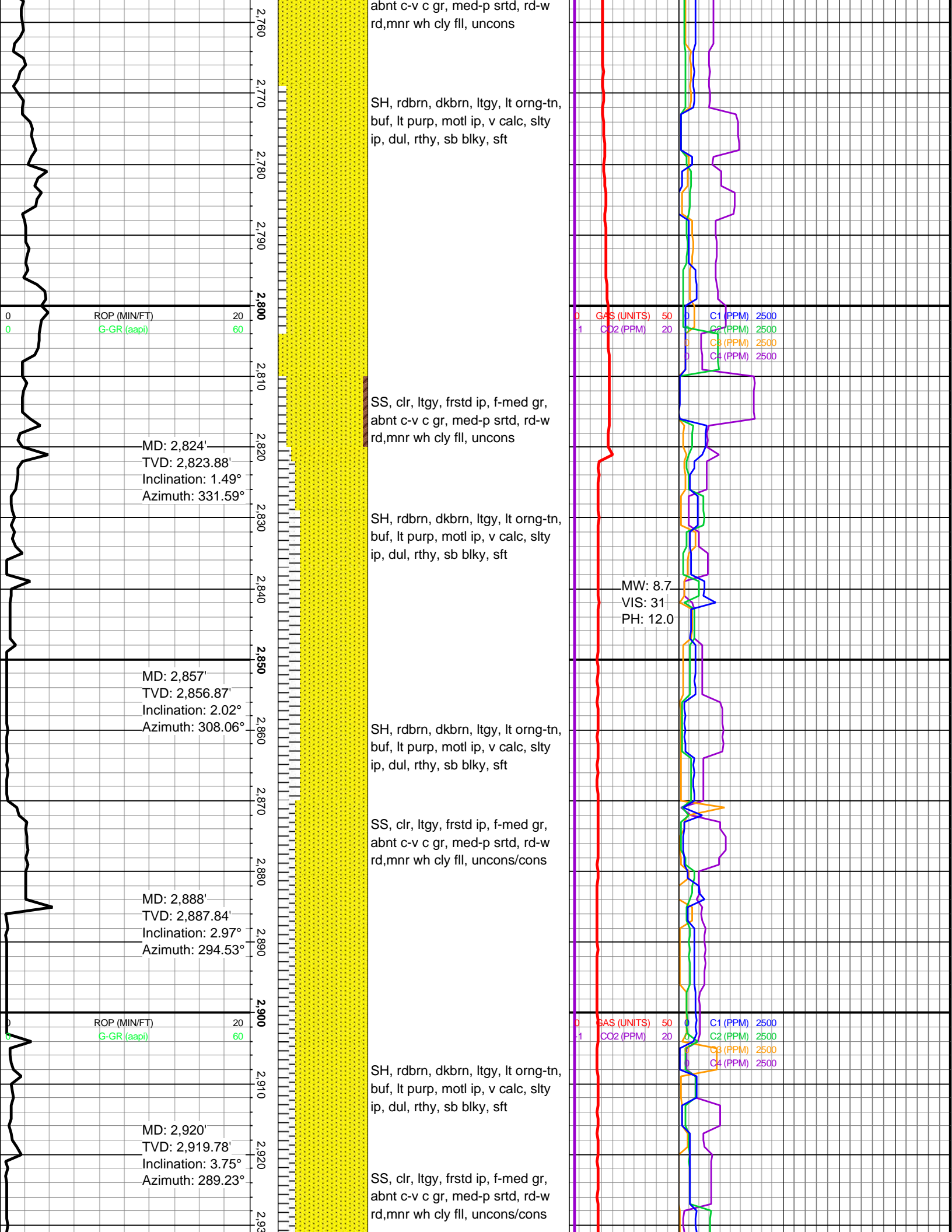


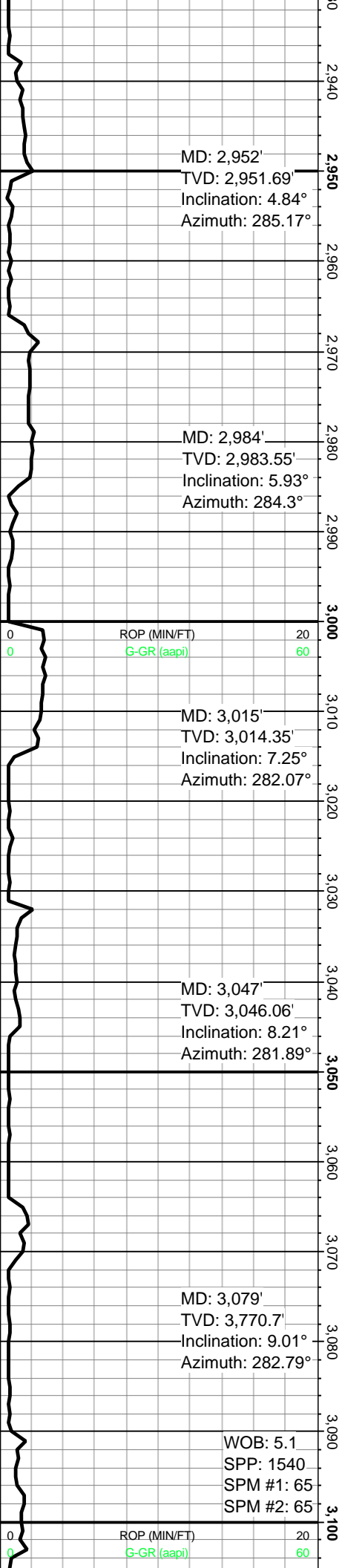












SH, rdbrn, dkbrn, ltgy, lt orng-tn,
buf, lt purp, motl ip, v calc, slty
ip, dul, rthy, sb blkly, sft

SS, clr, ltgy, frstd ip, f-med gr,
abnt c-v c gr, med-p srtd, rd-w
rd,mnr wh cly fll, uncon/cons

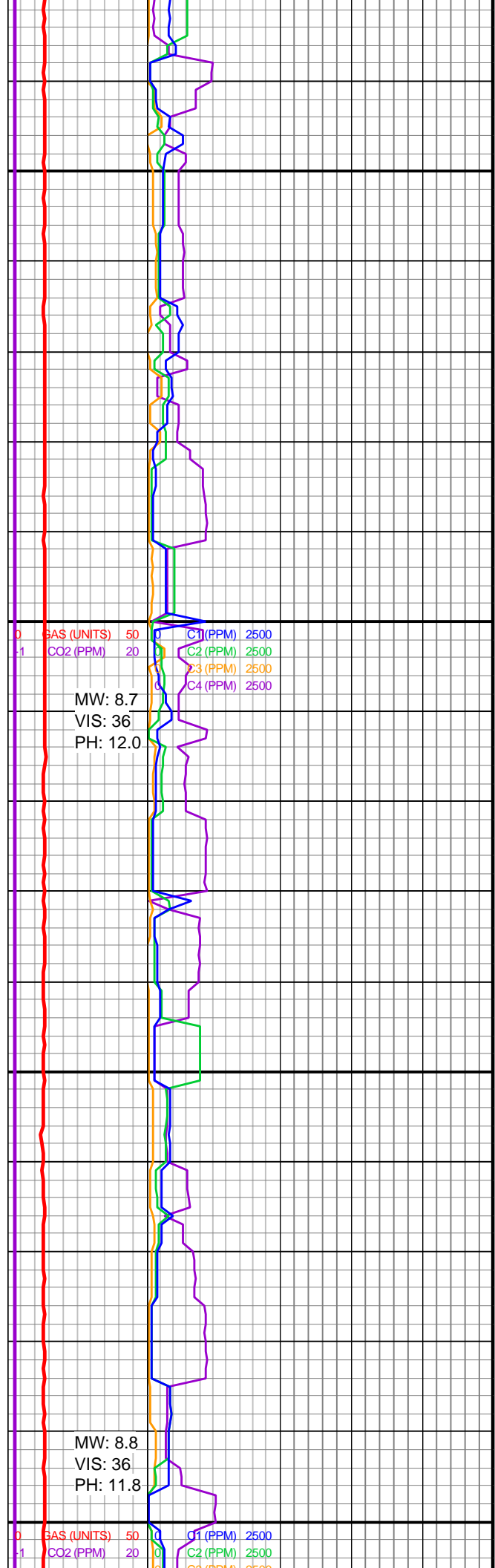
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ip, dul, rthy, sb blkly, sft

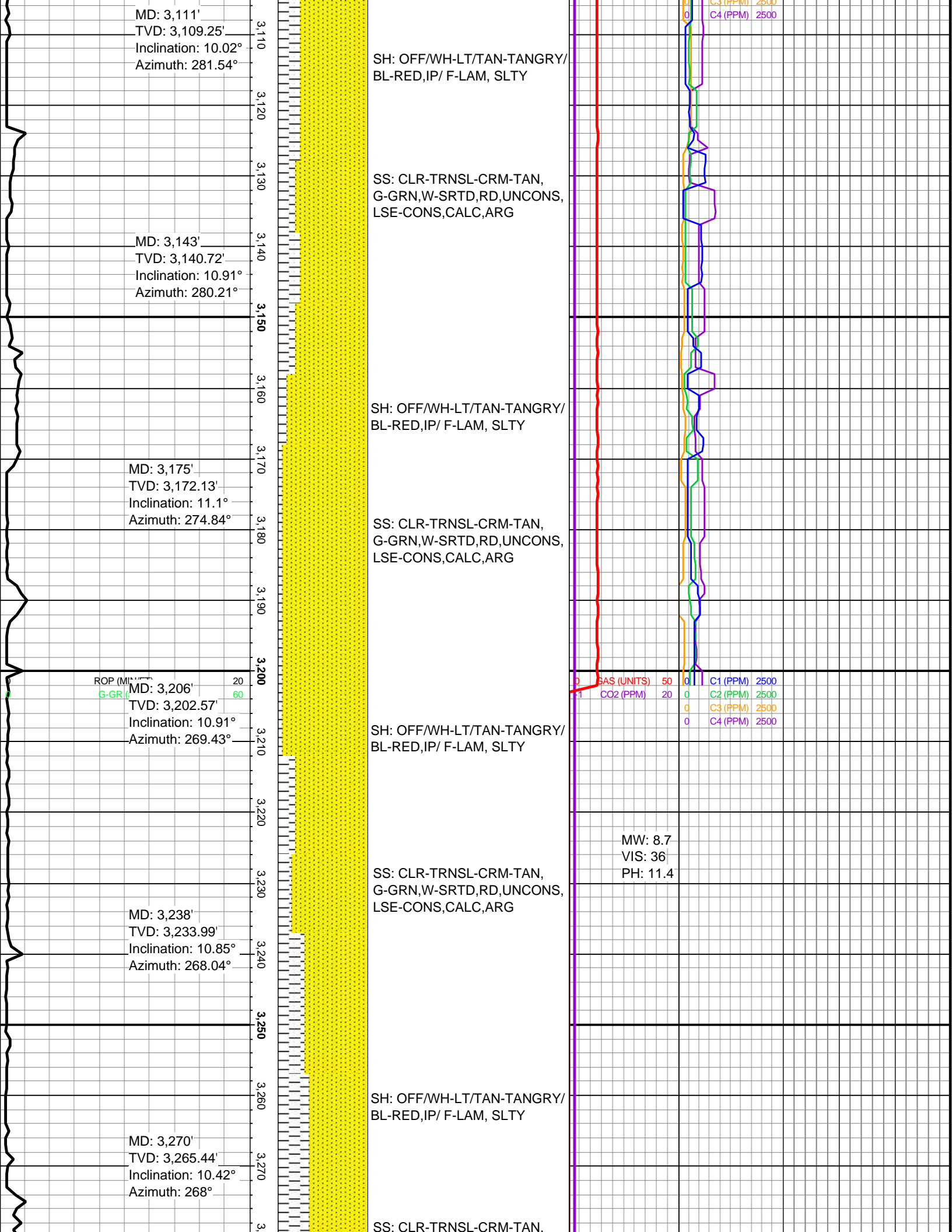
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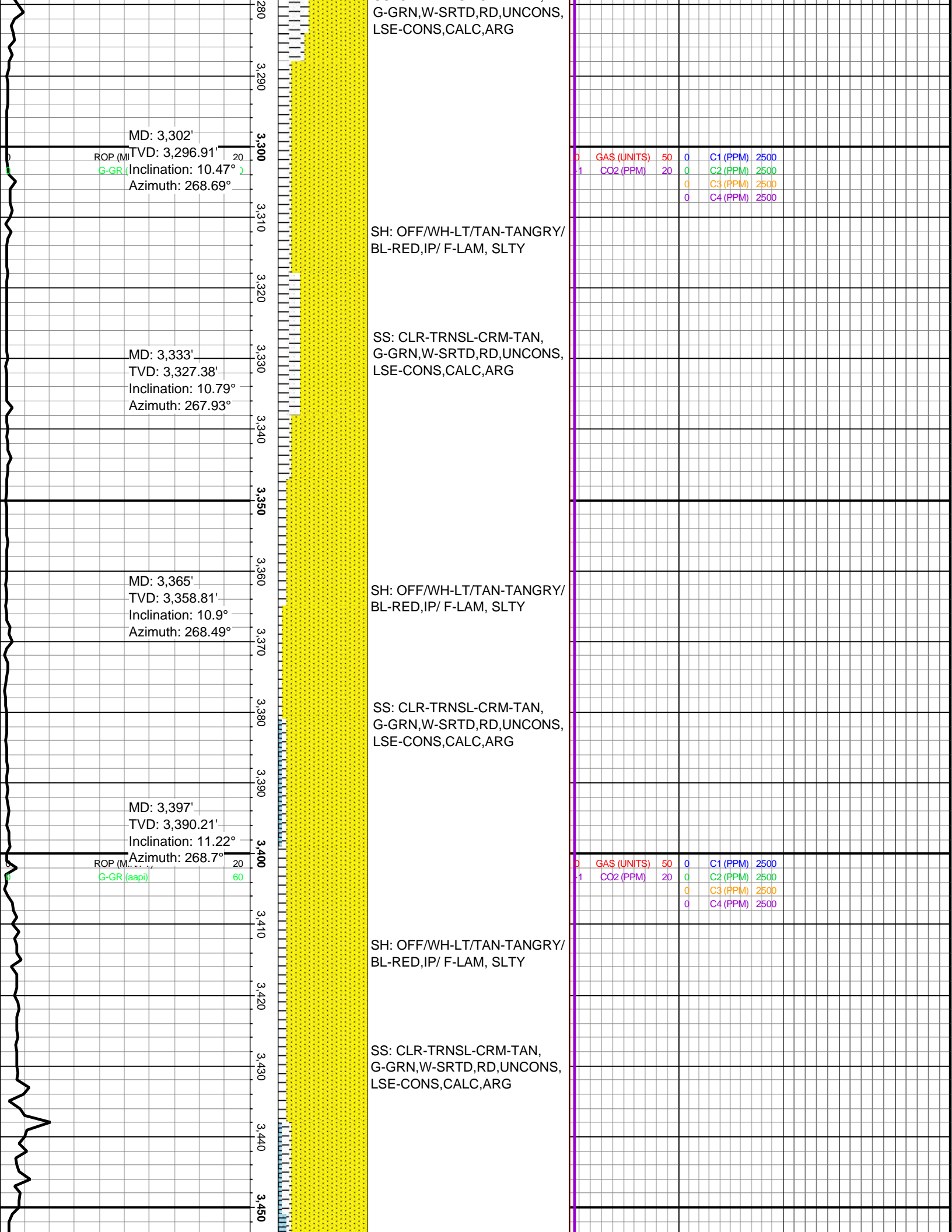
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ip, dul, rthy, sb blkly, sft

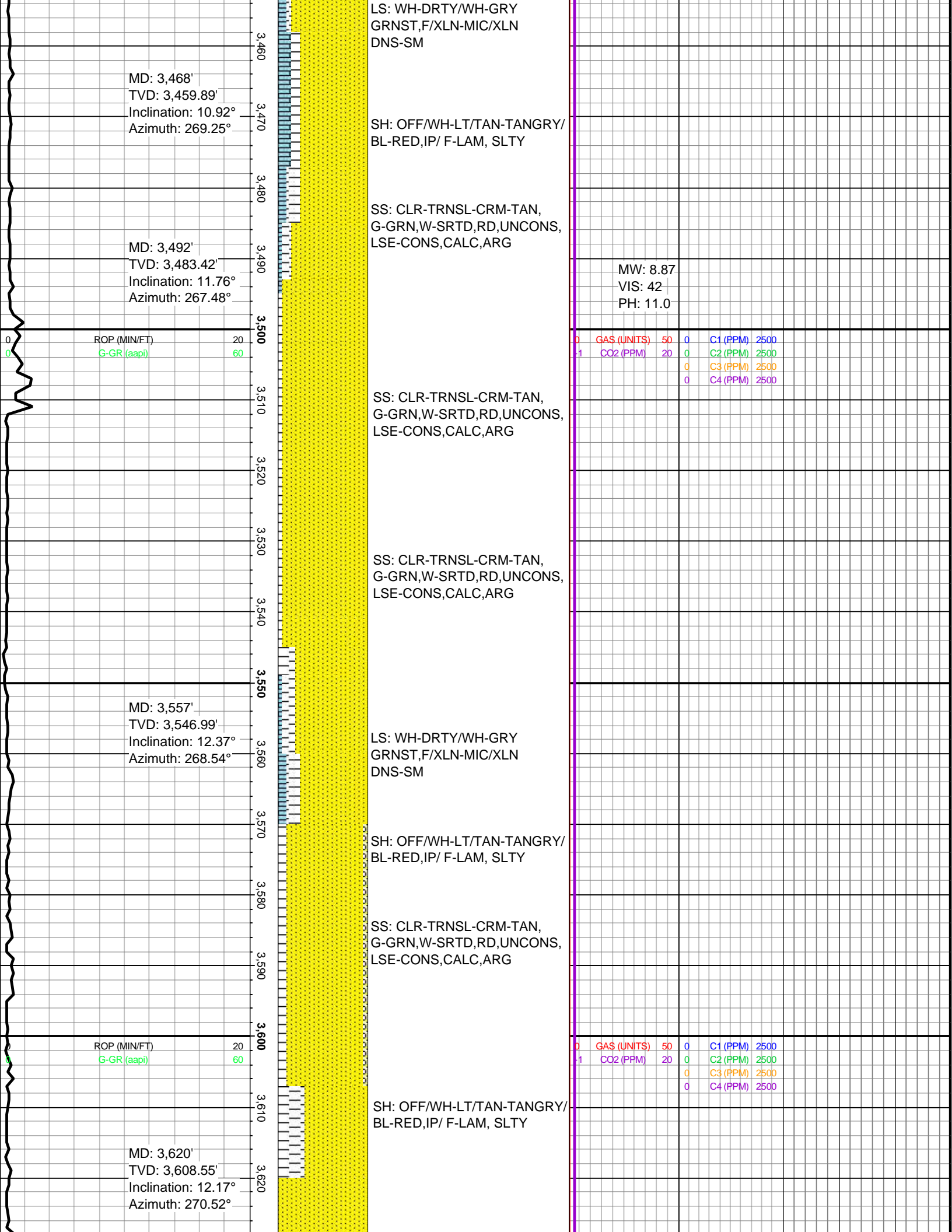
SS, clr, ltgy, frstd ip, f-med gr,
abnt c-v c gr, med-p srtd, rd-w
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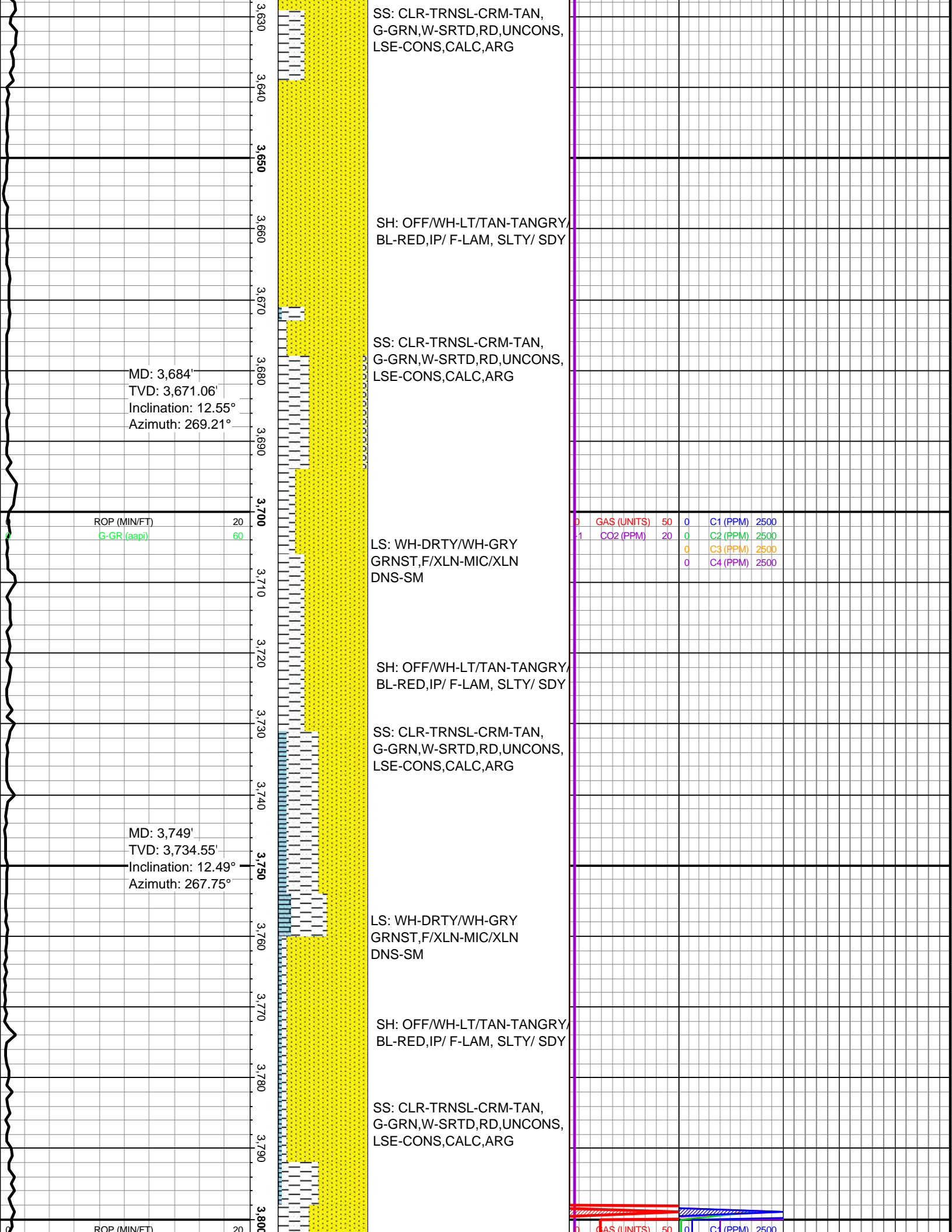
11/13/2014 (THUR) 4AM
@ 3097.8'

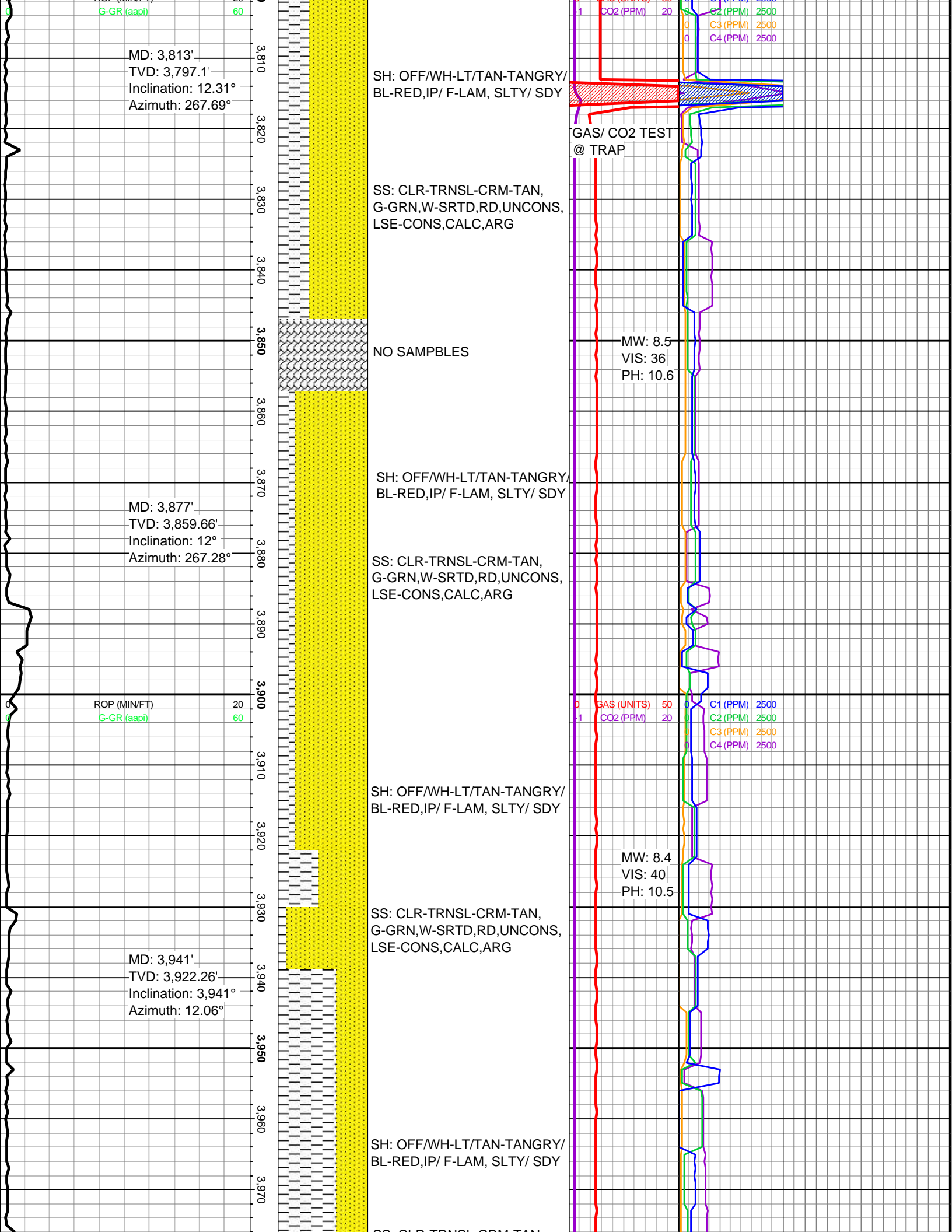


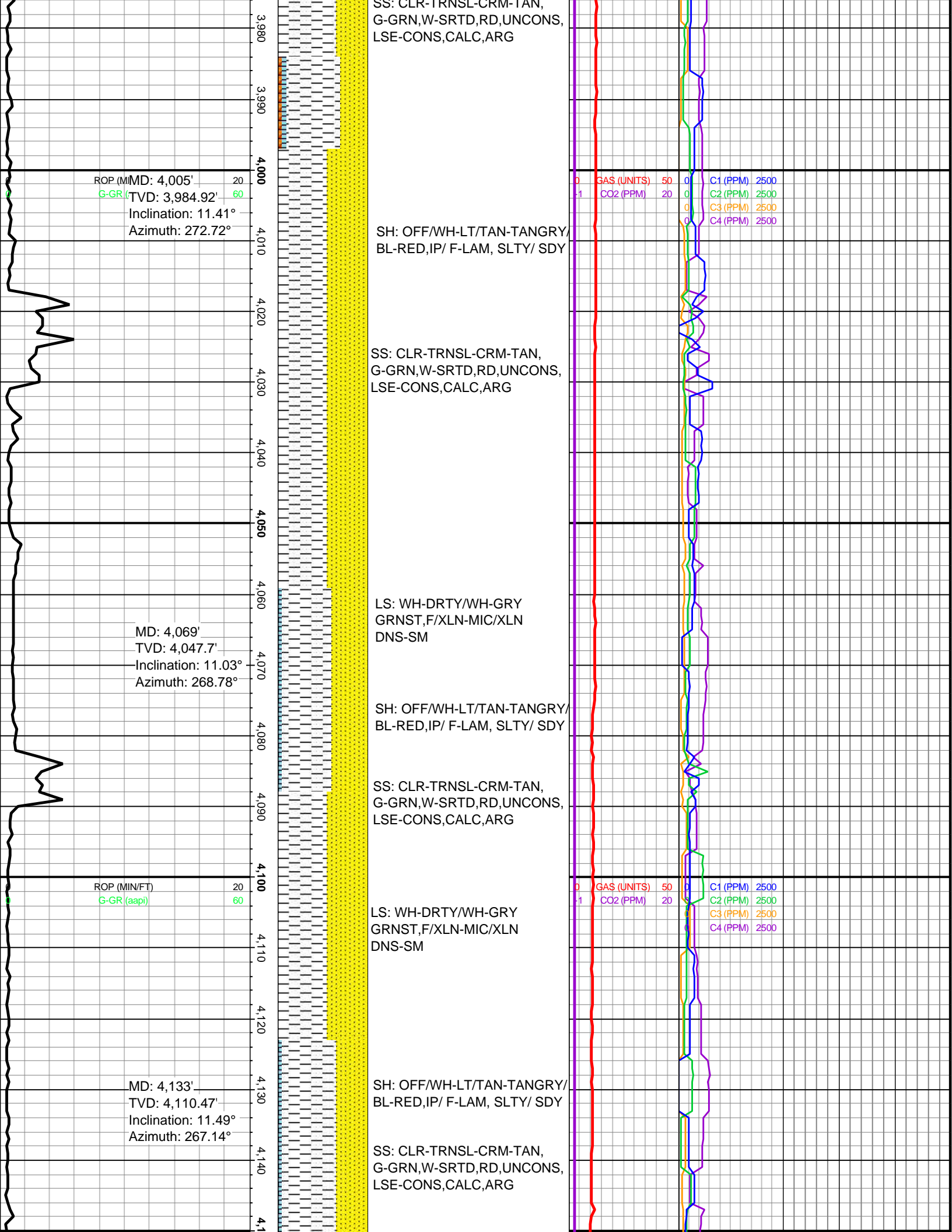


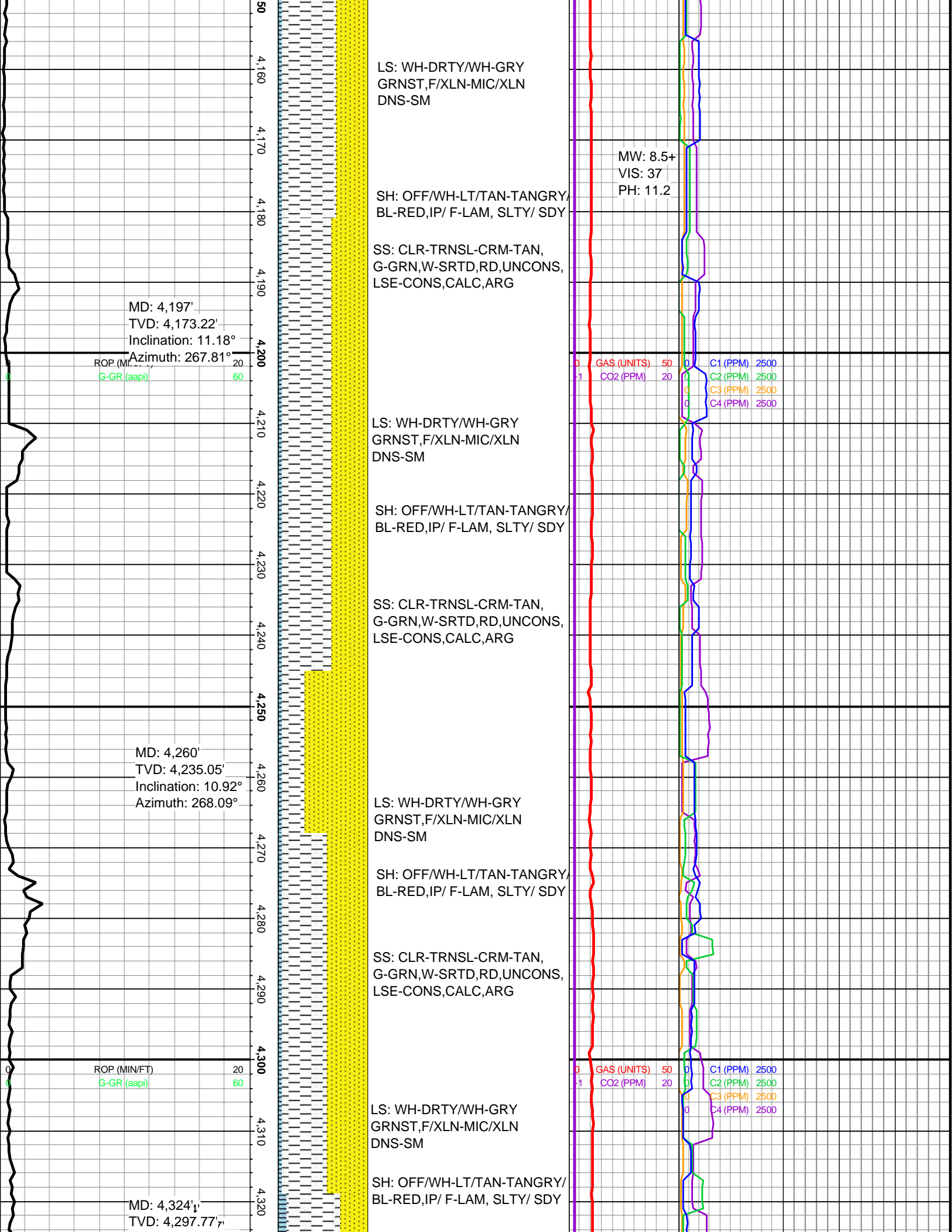


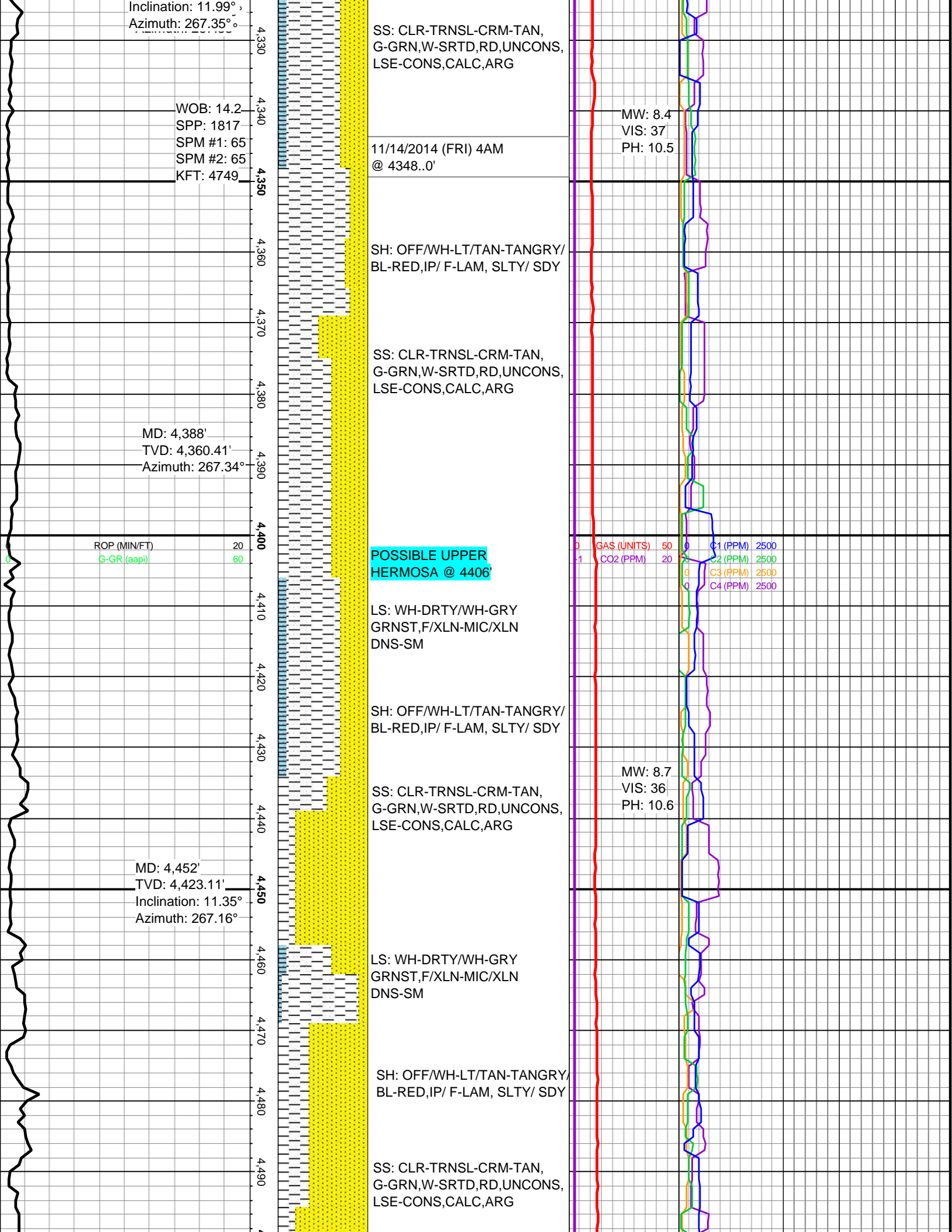


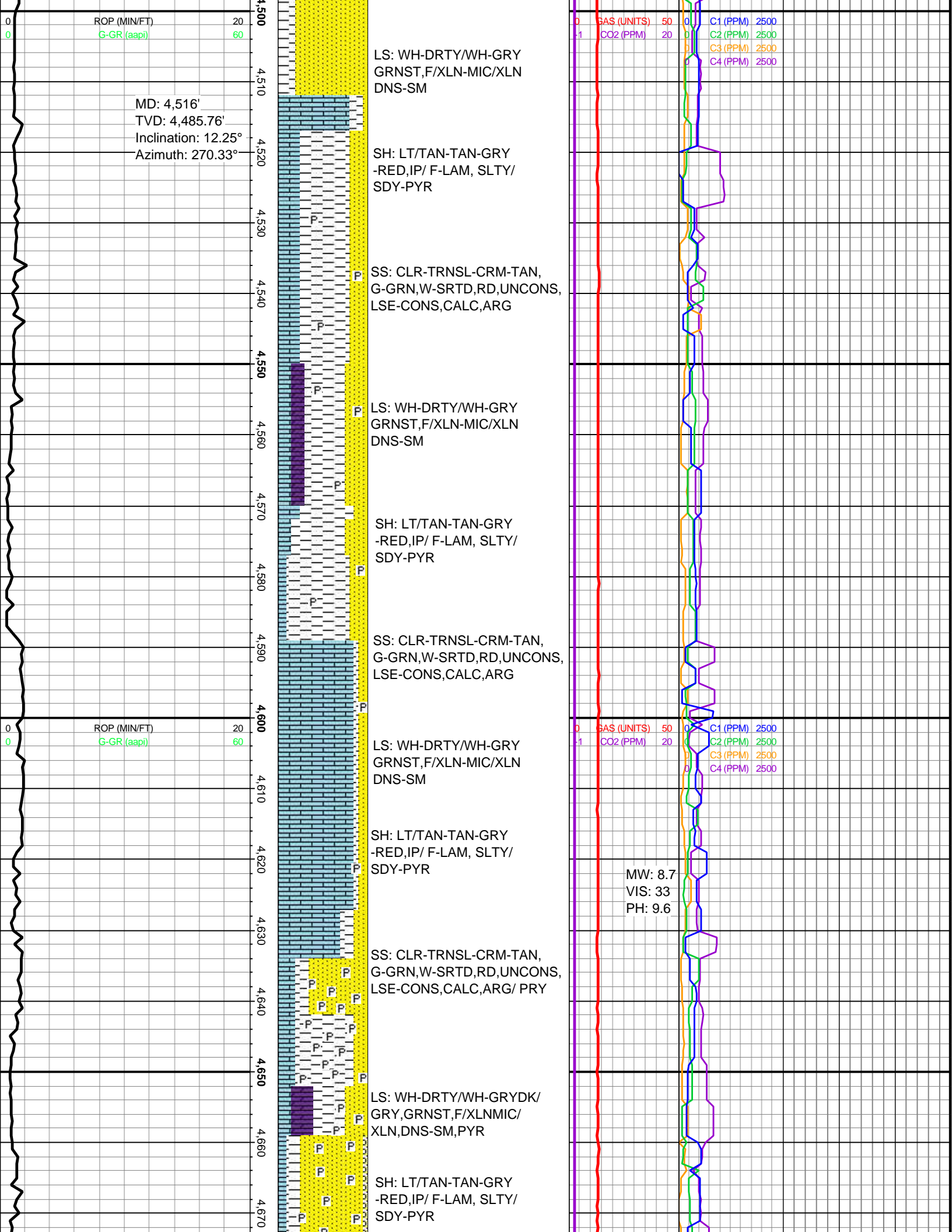


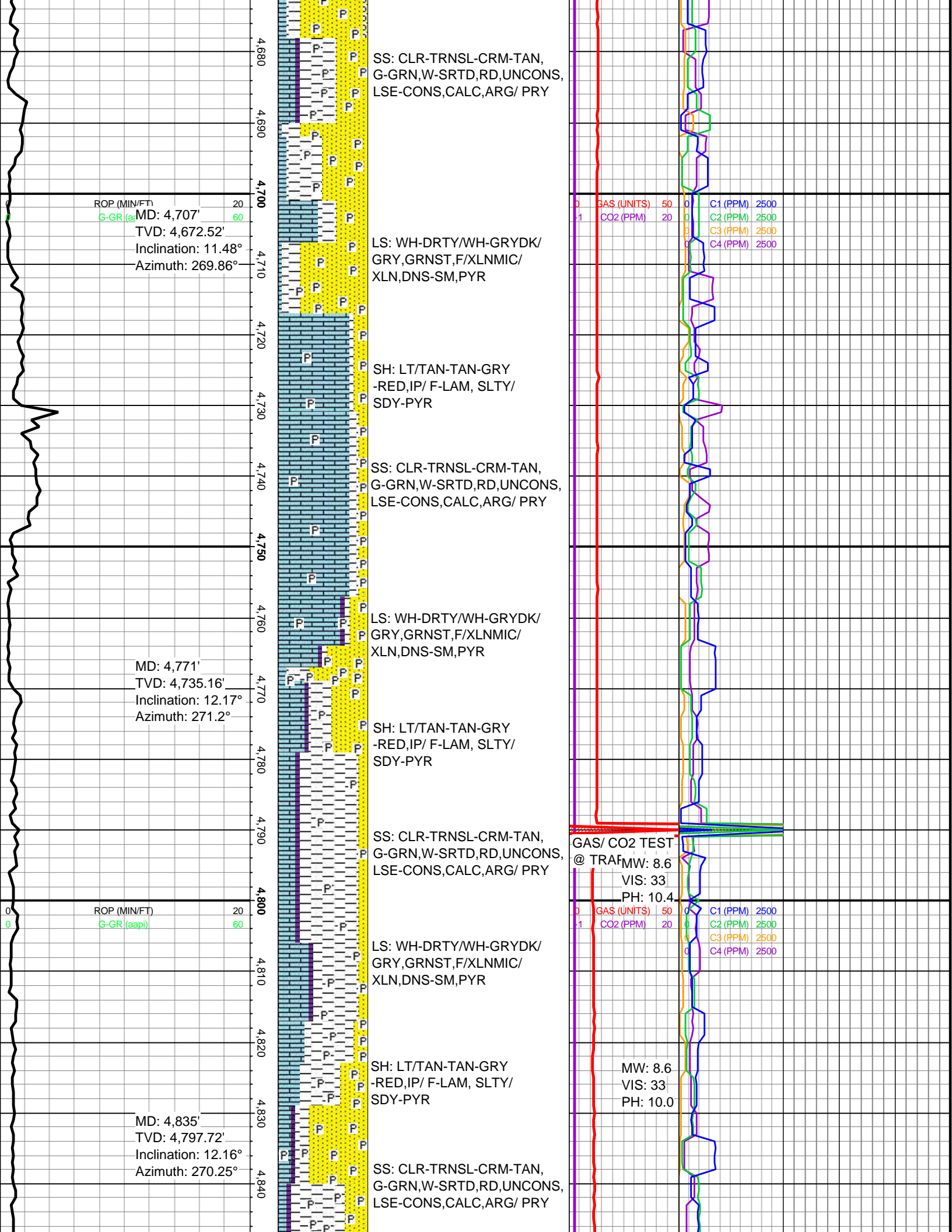


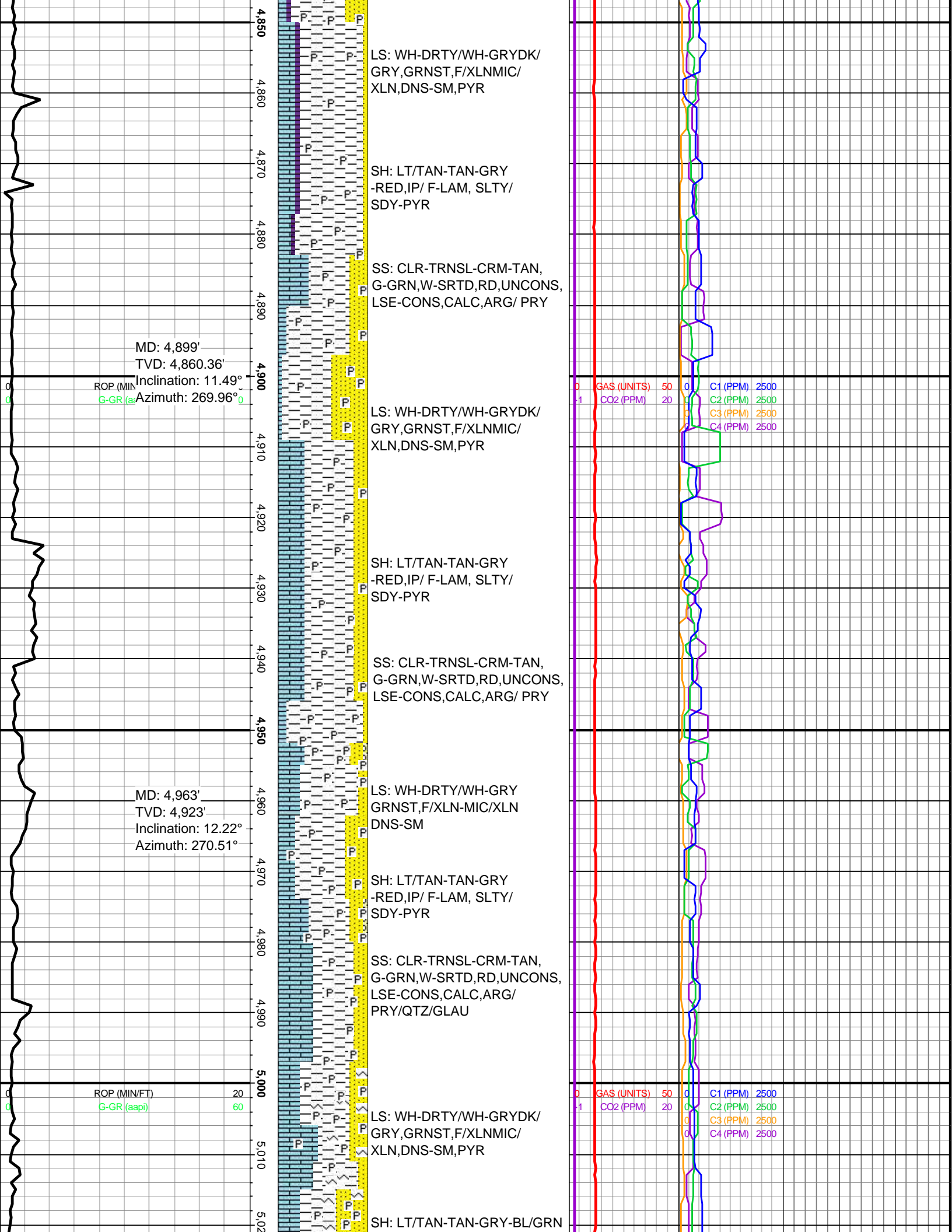


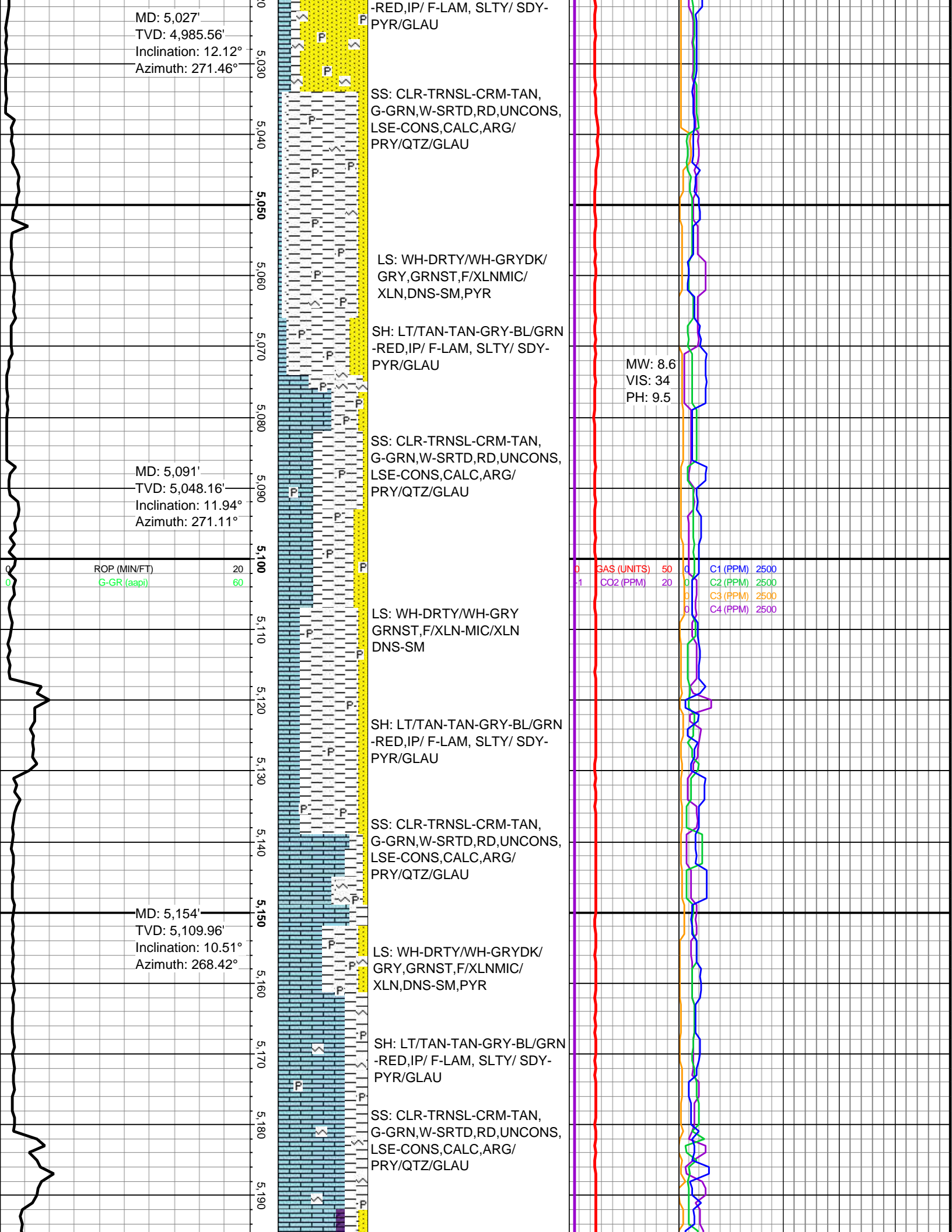


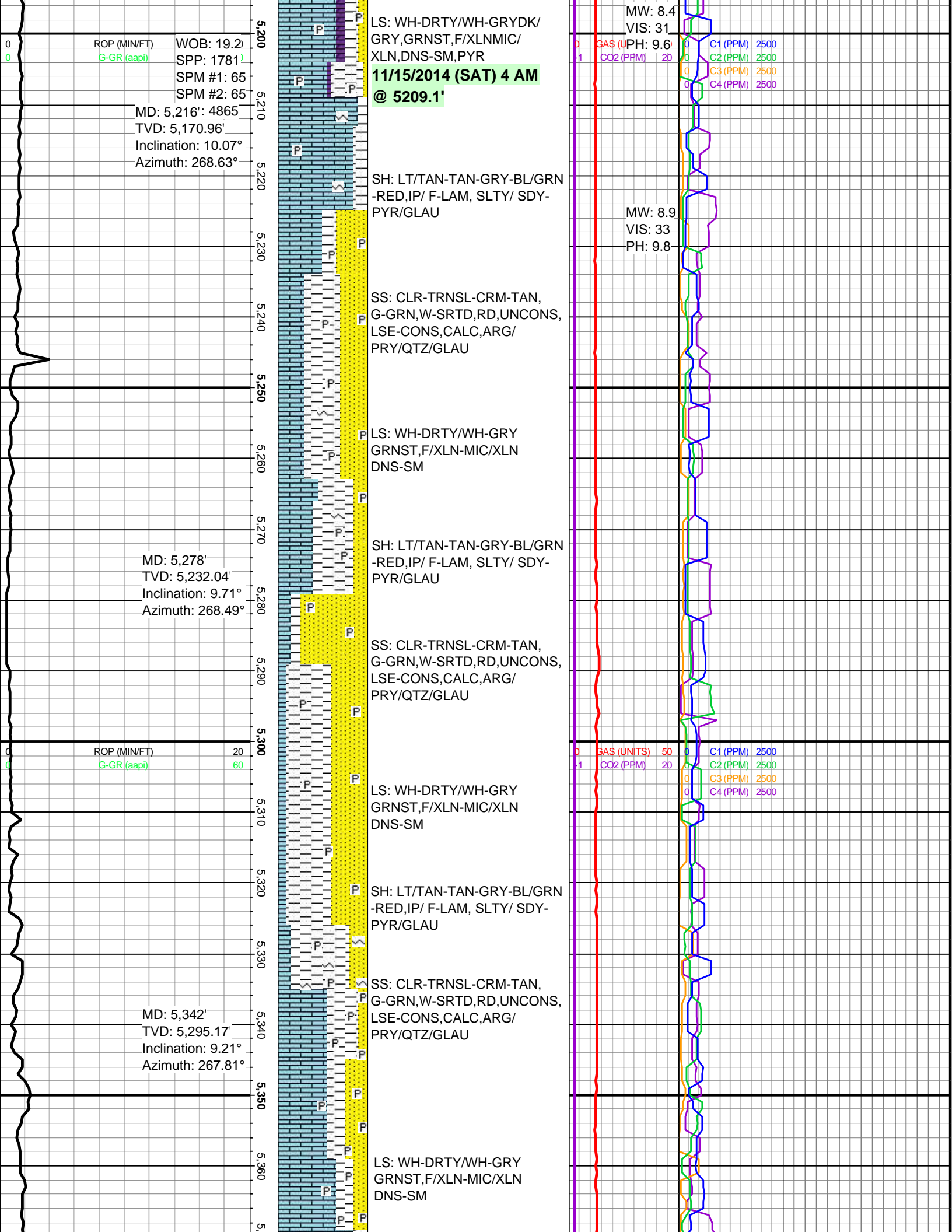


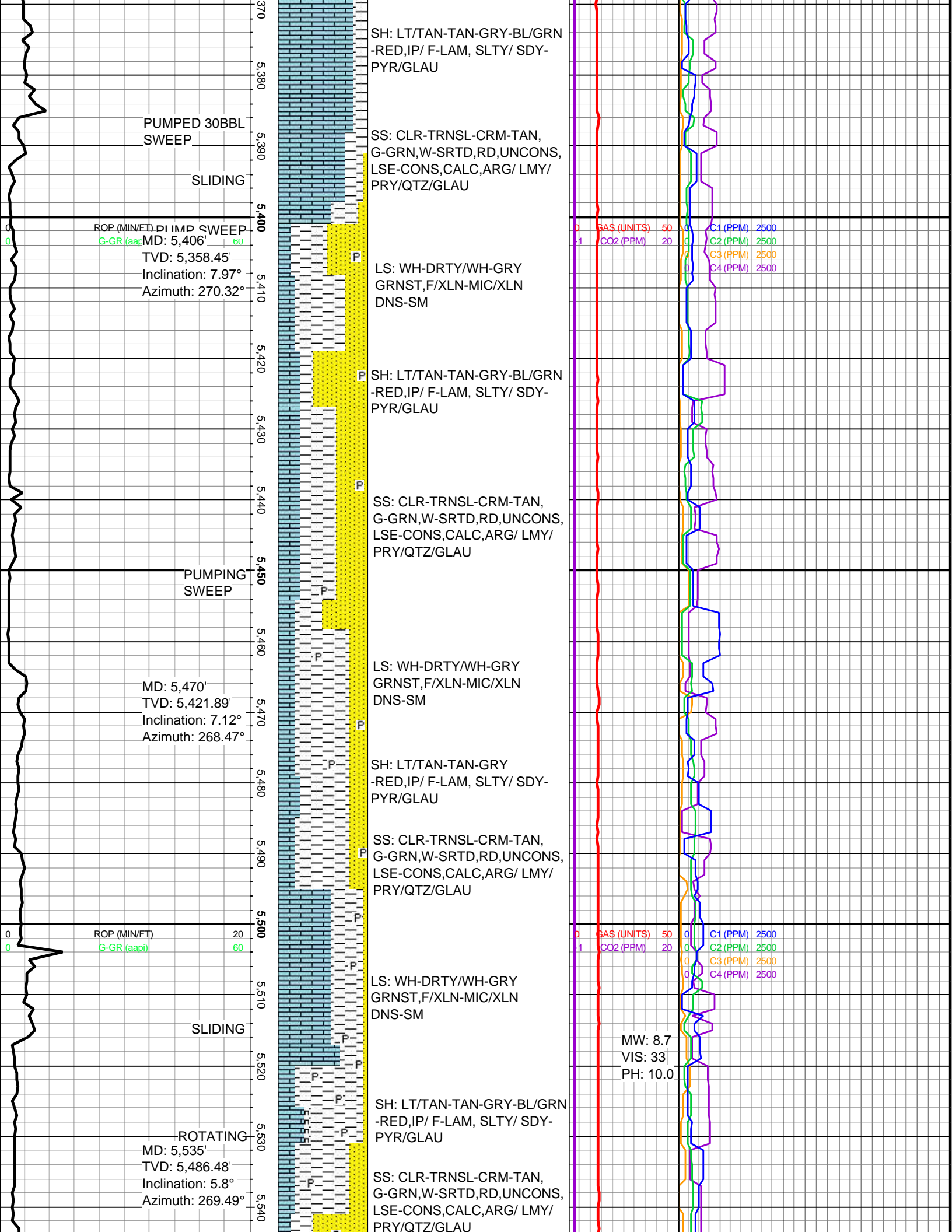


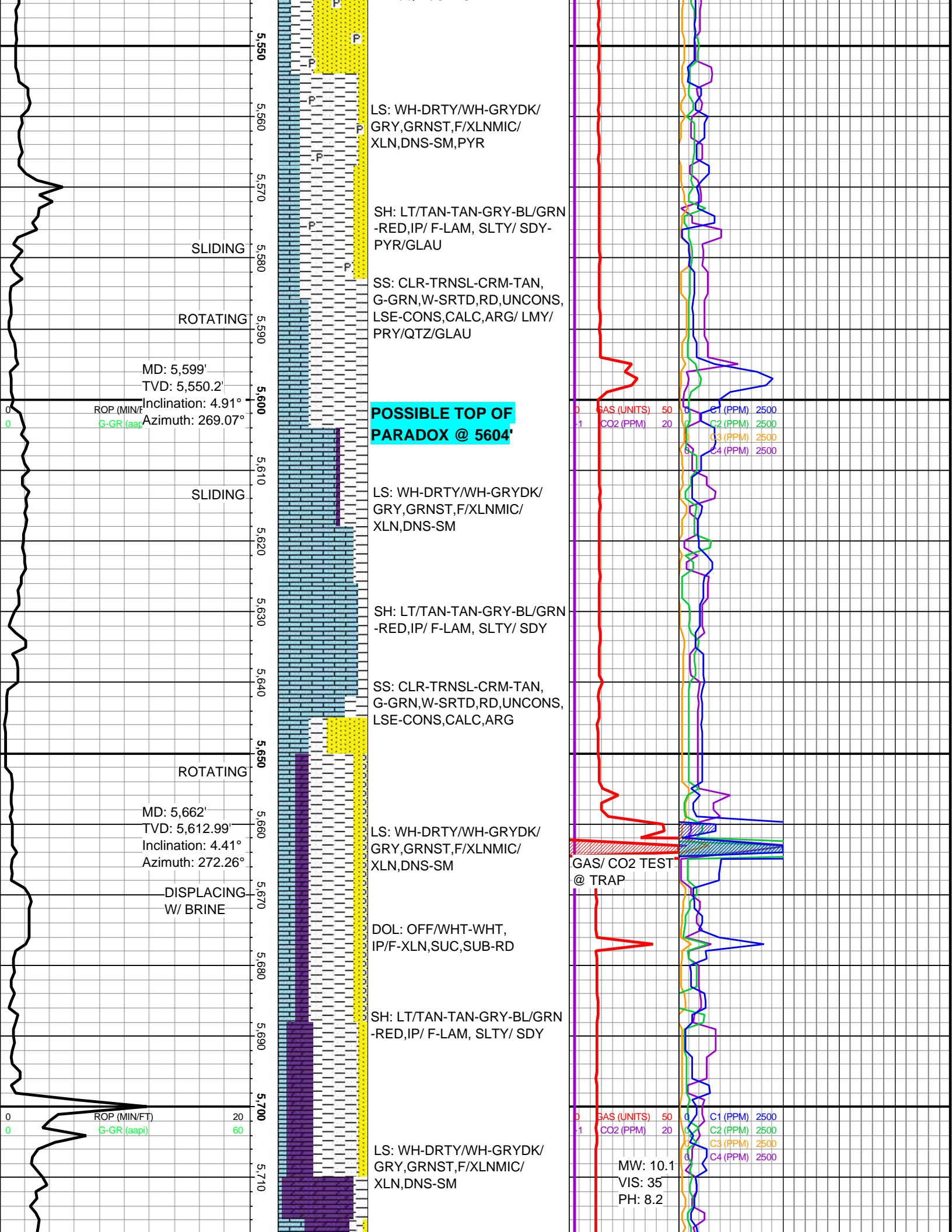


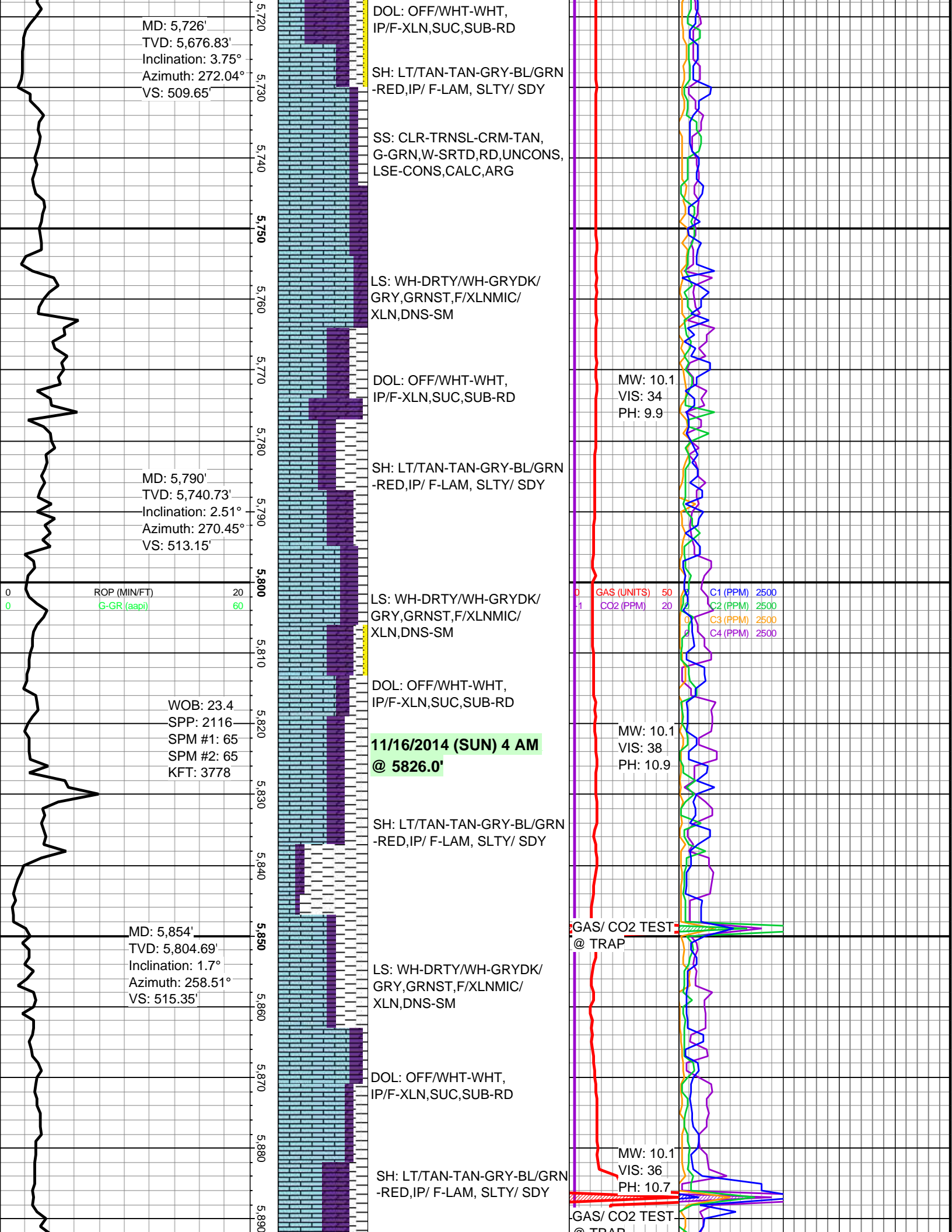


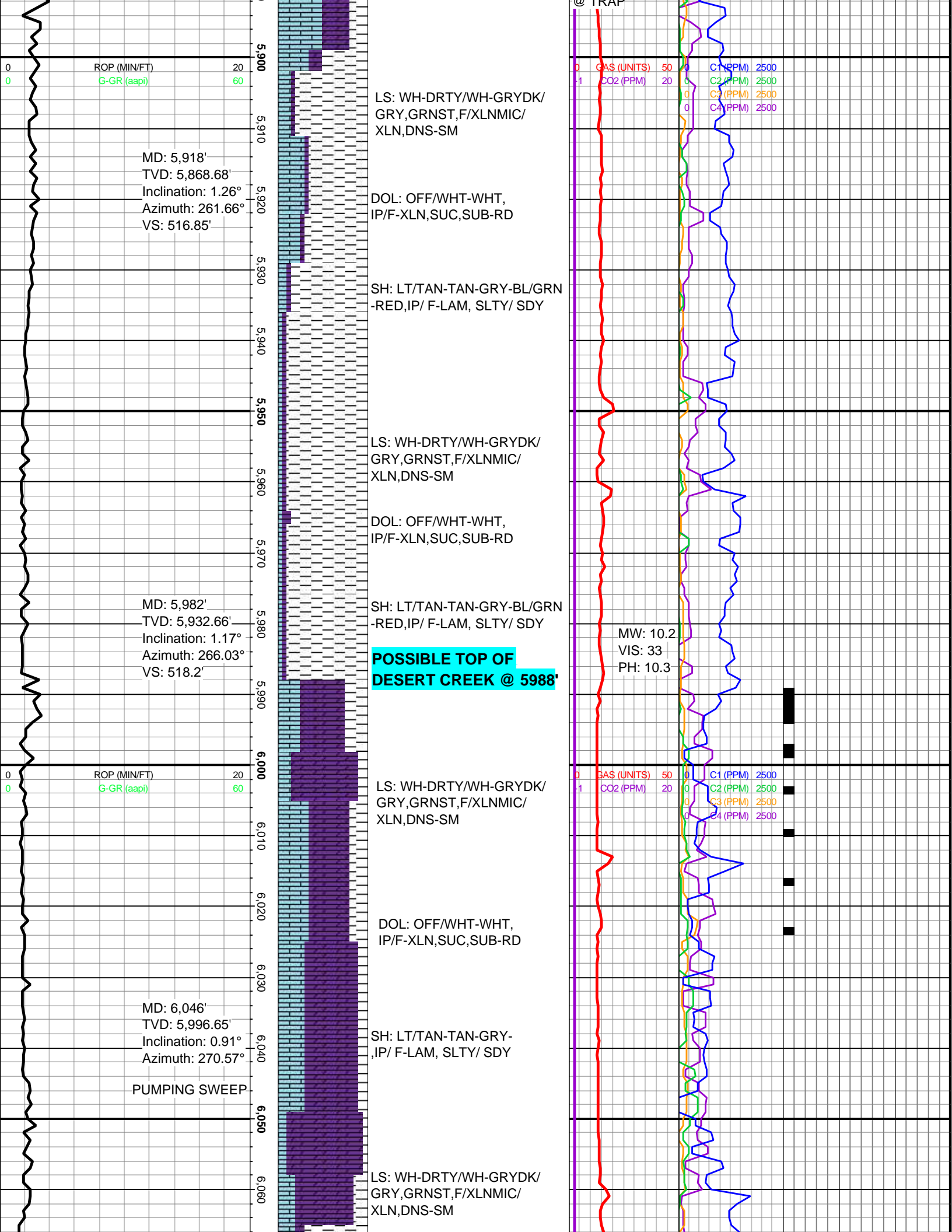


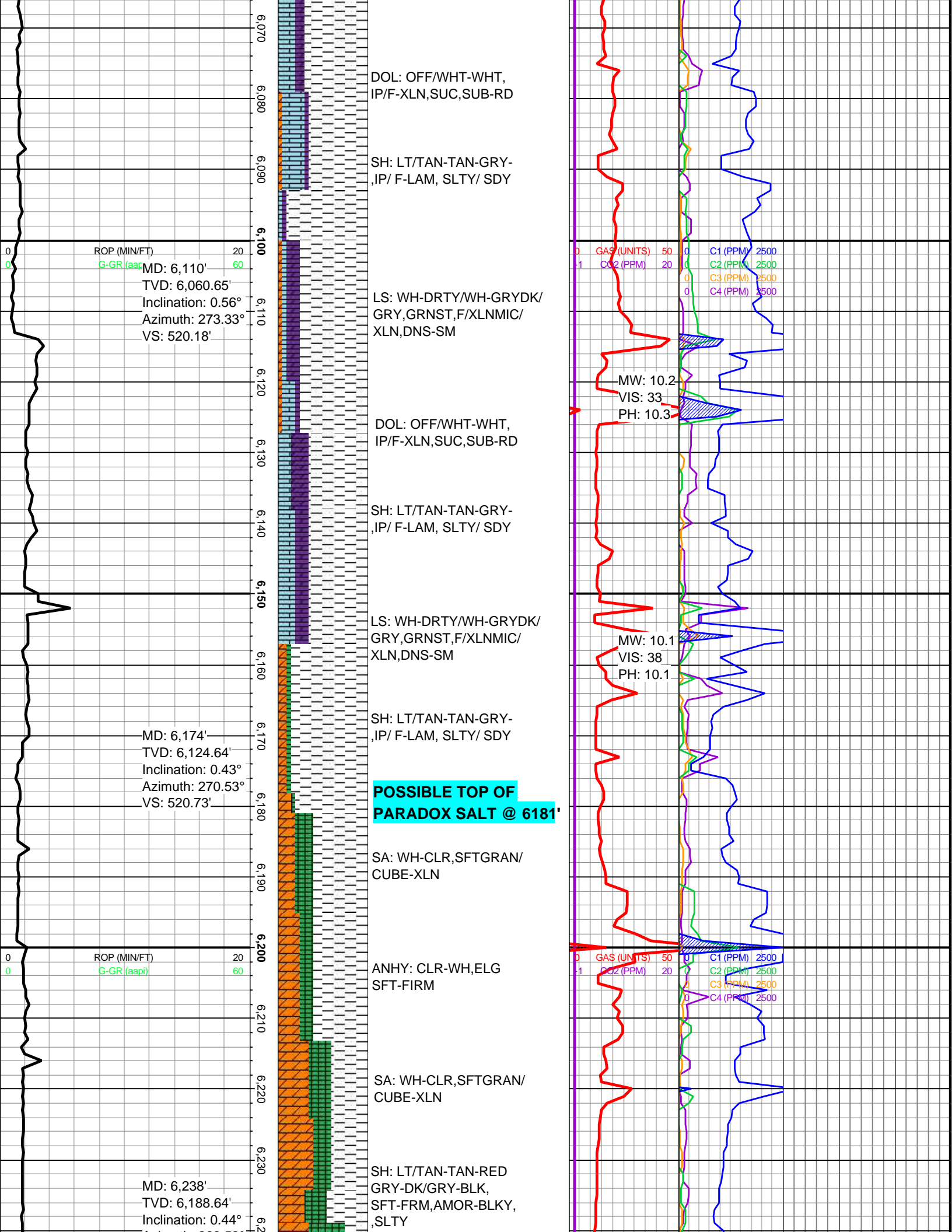


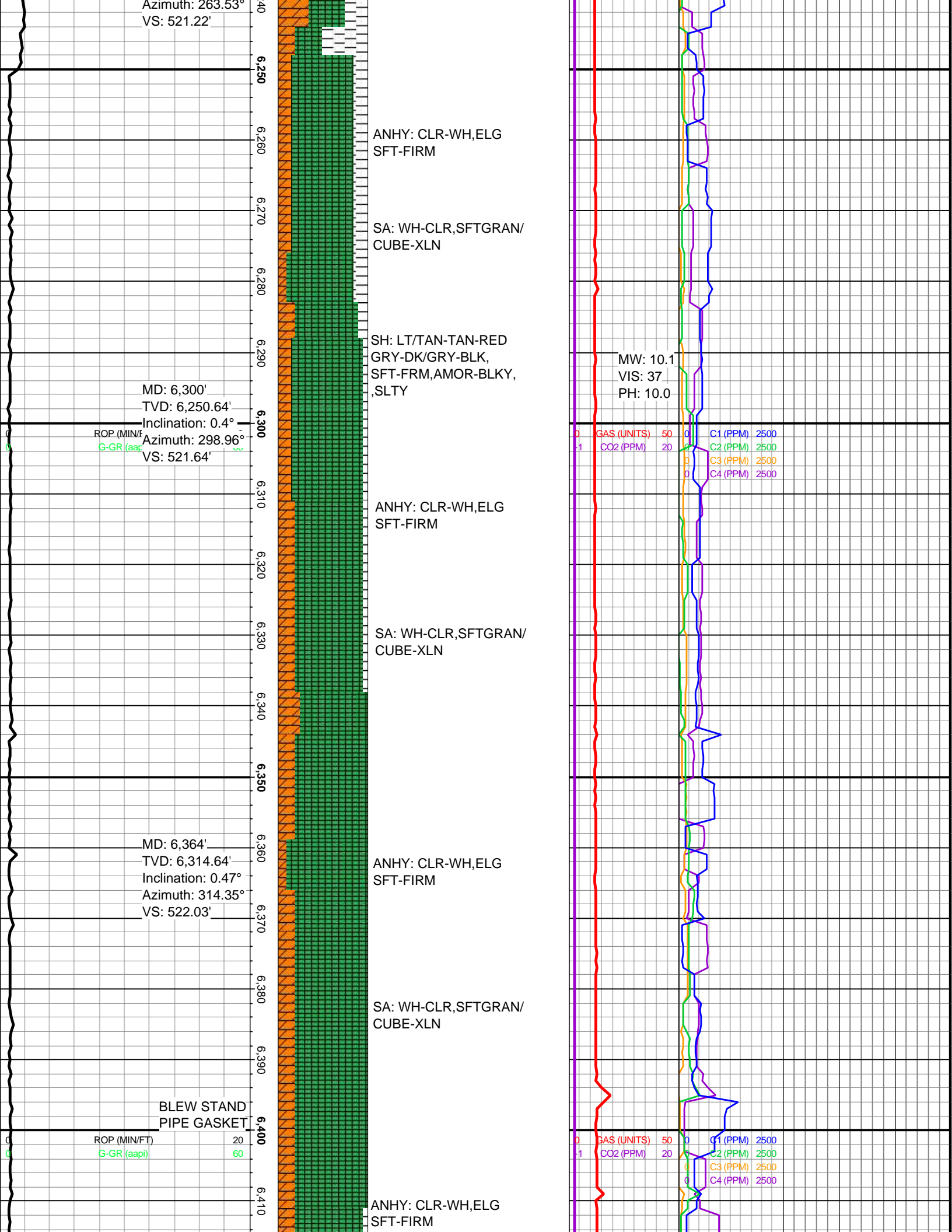


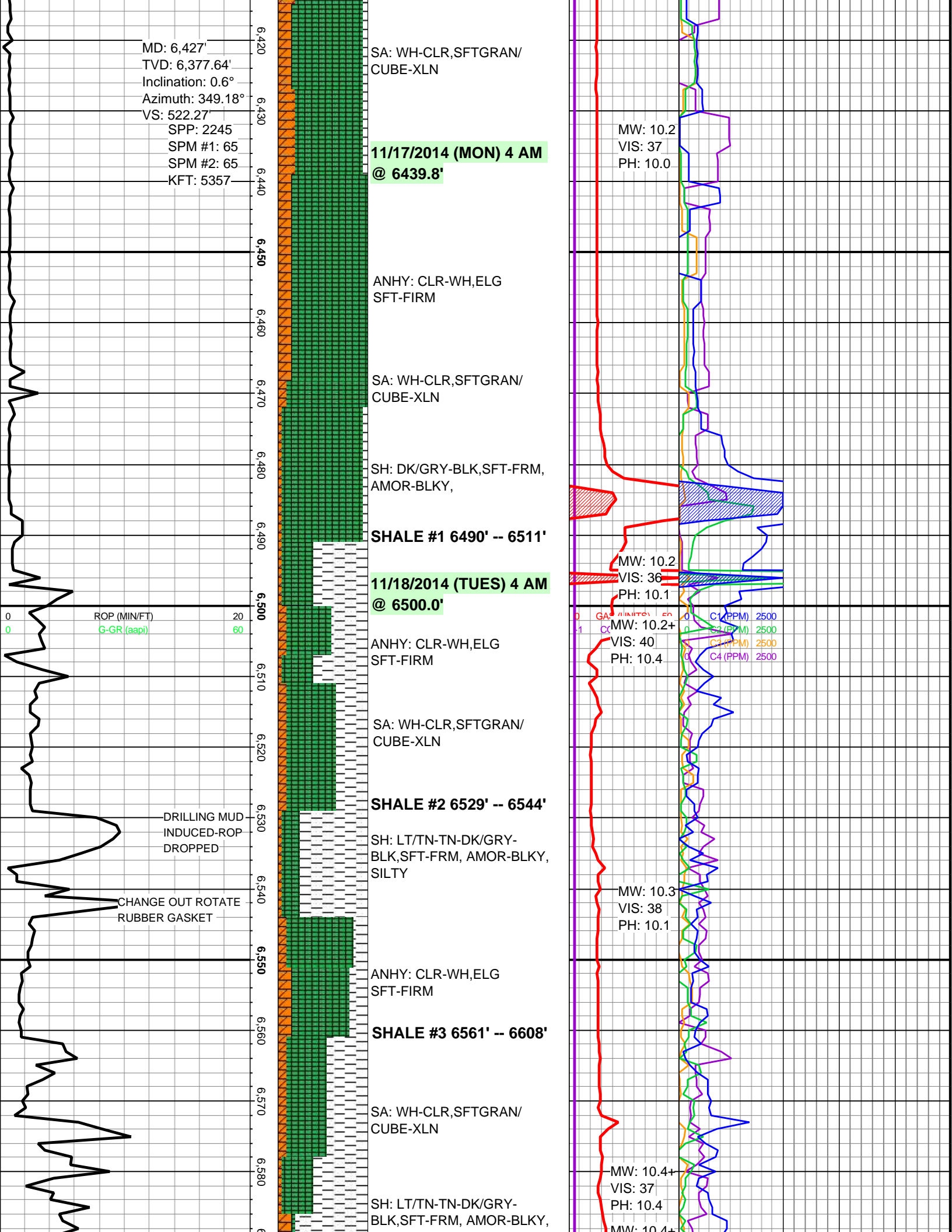


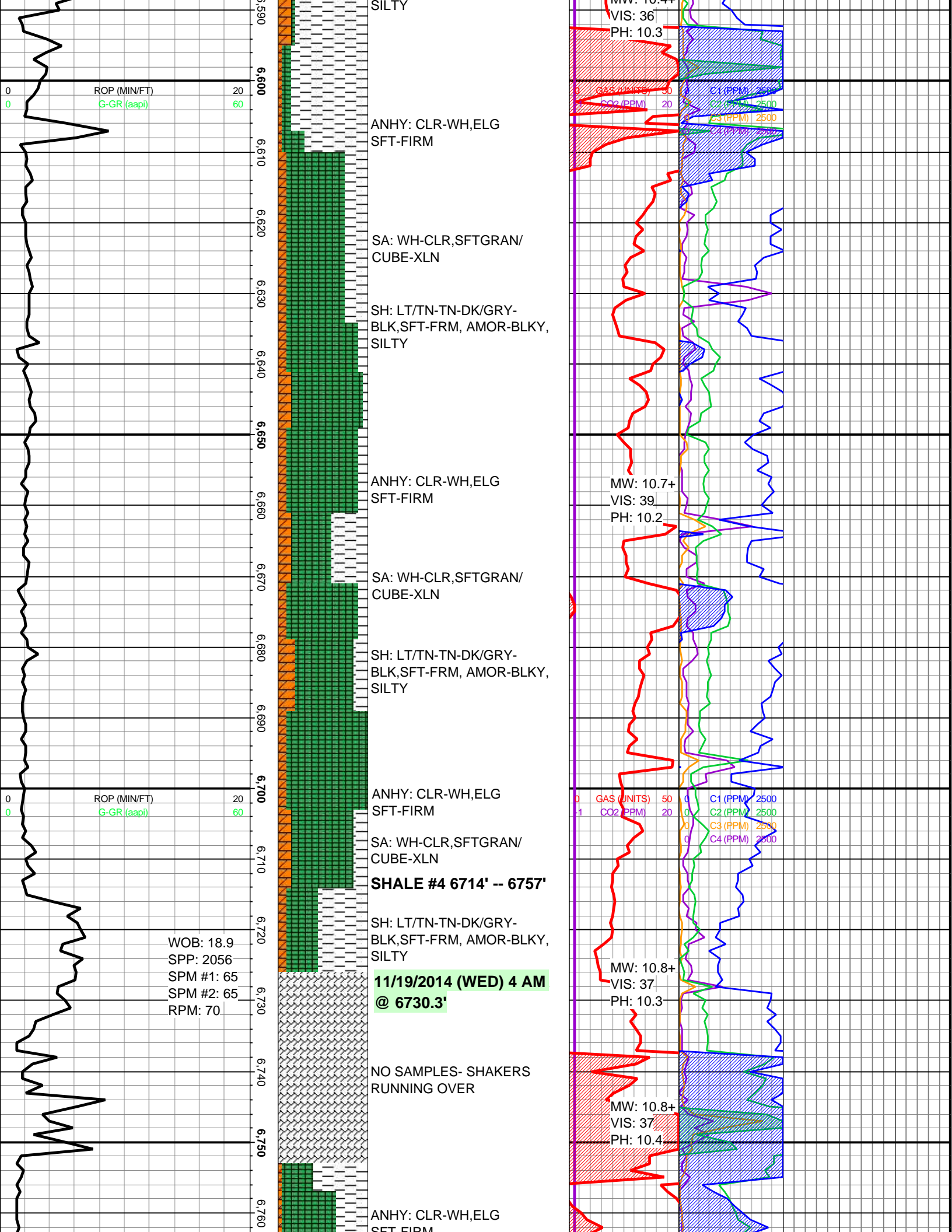


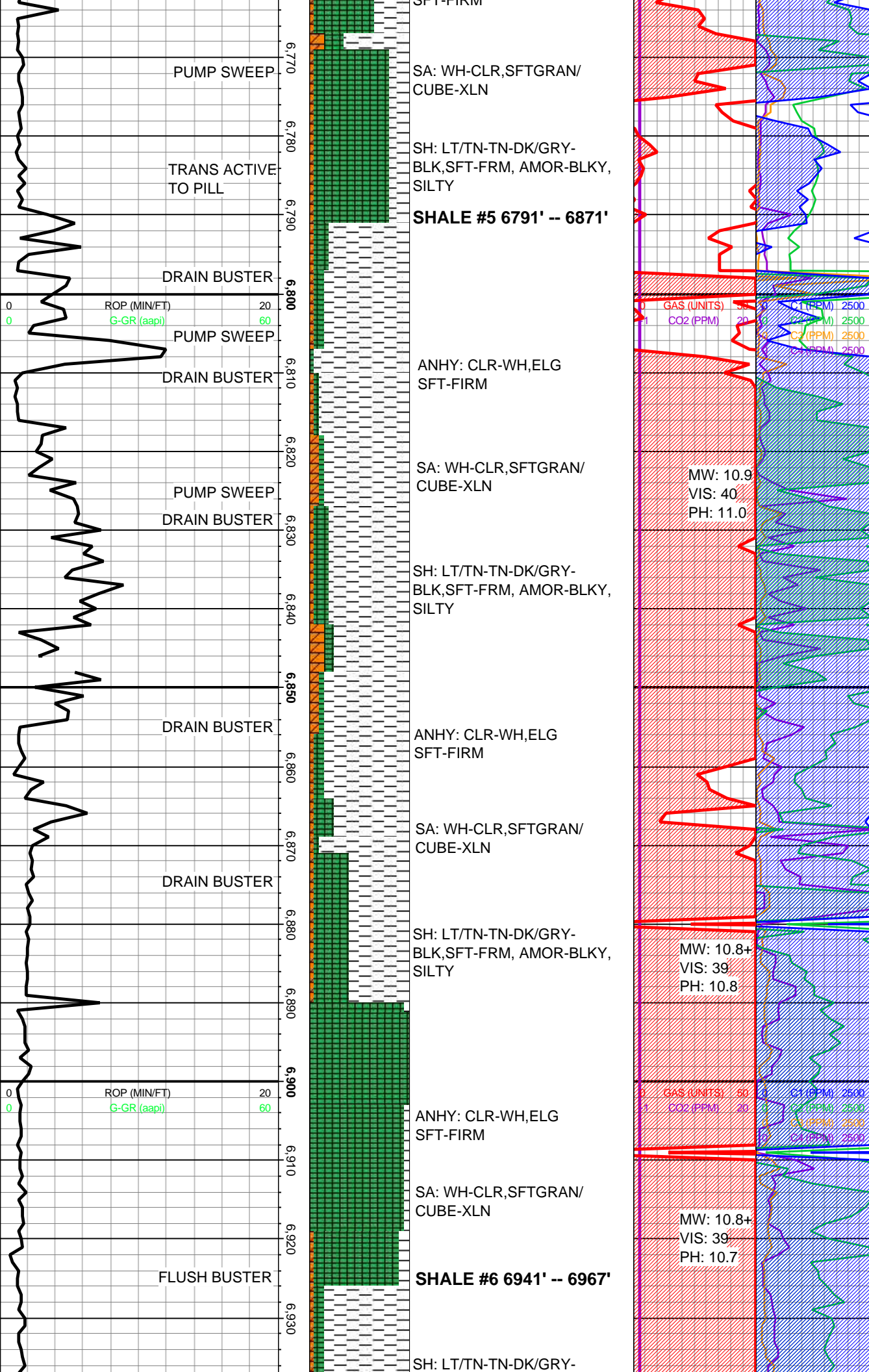


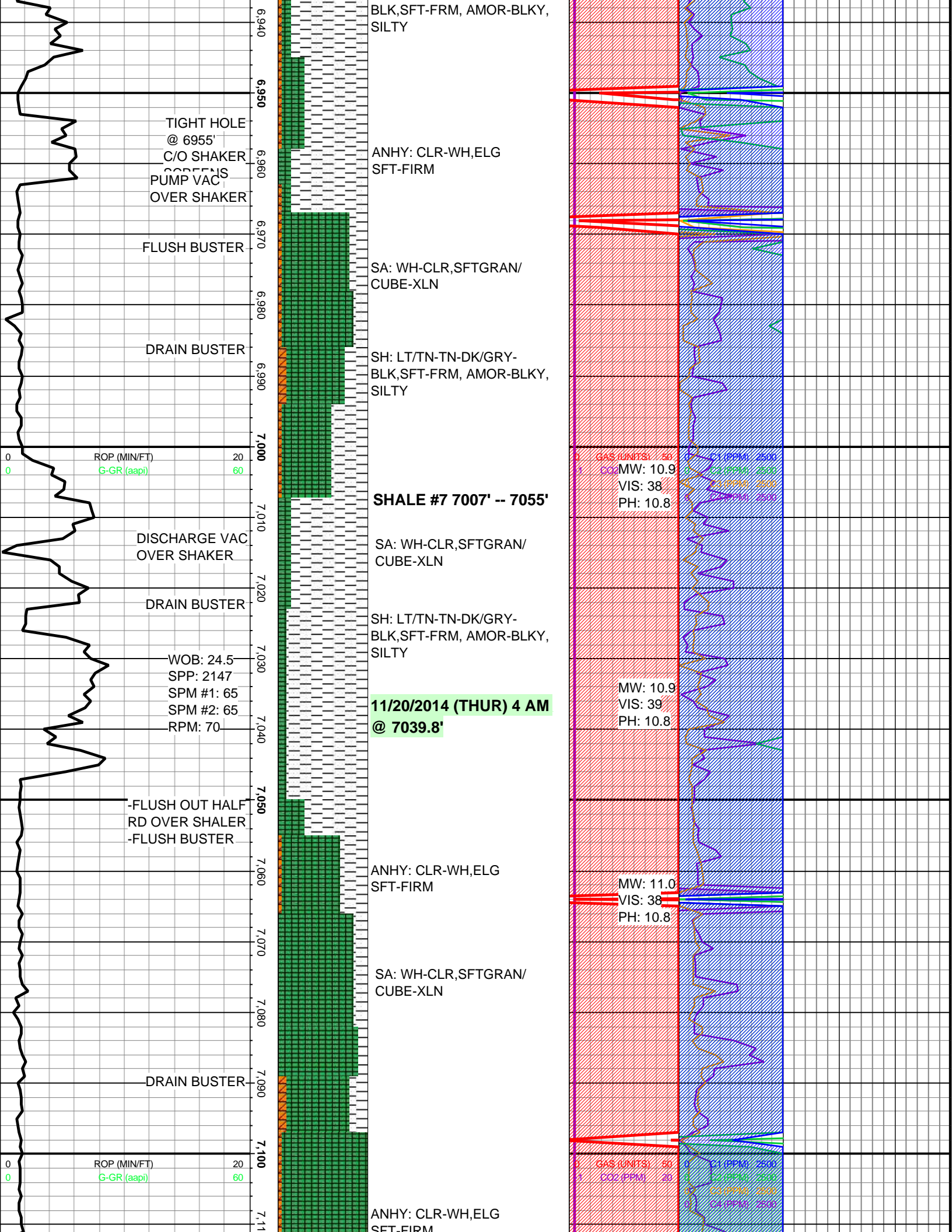


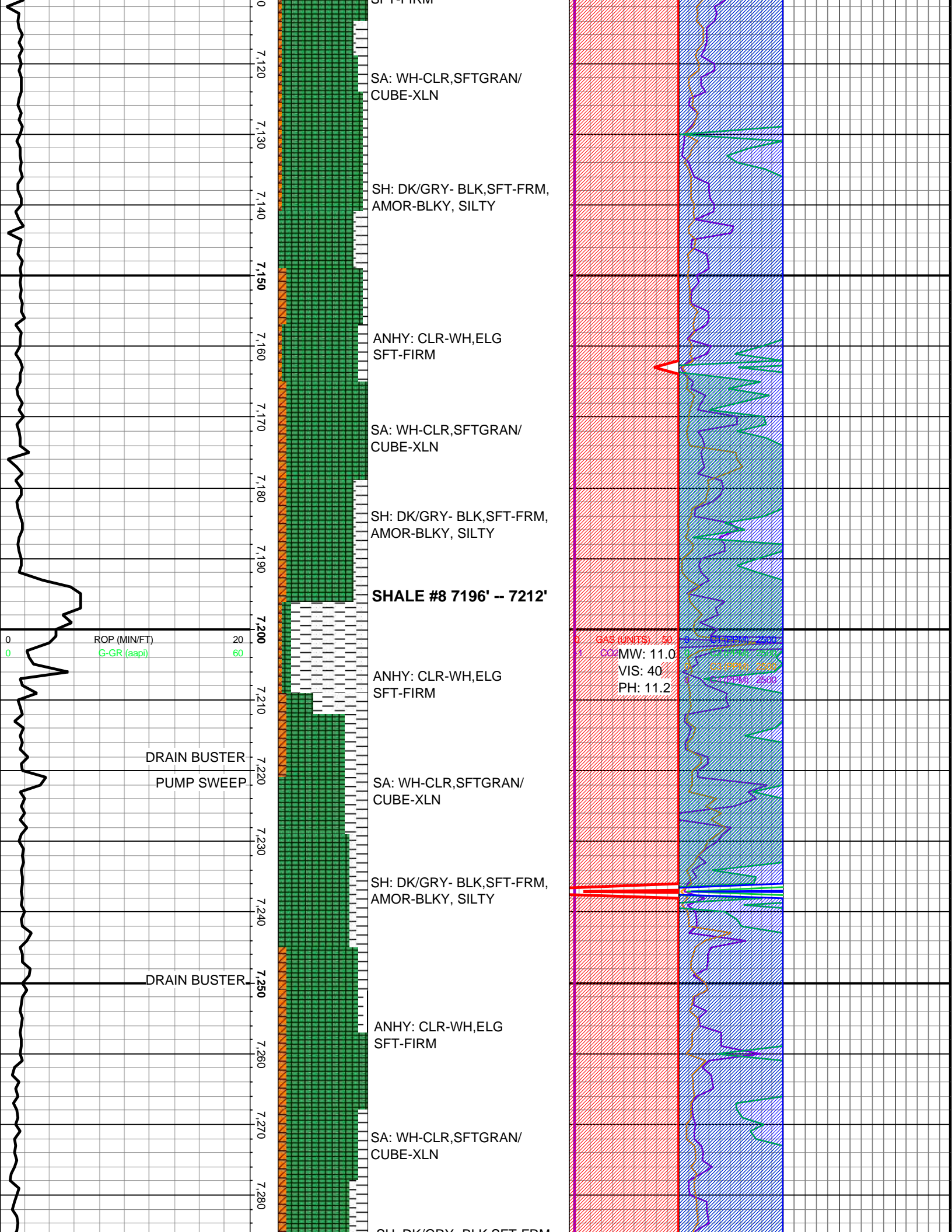


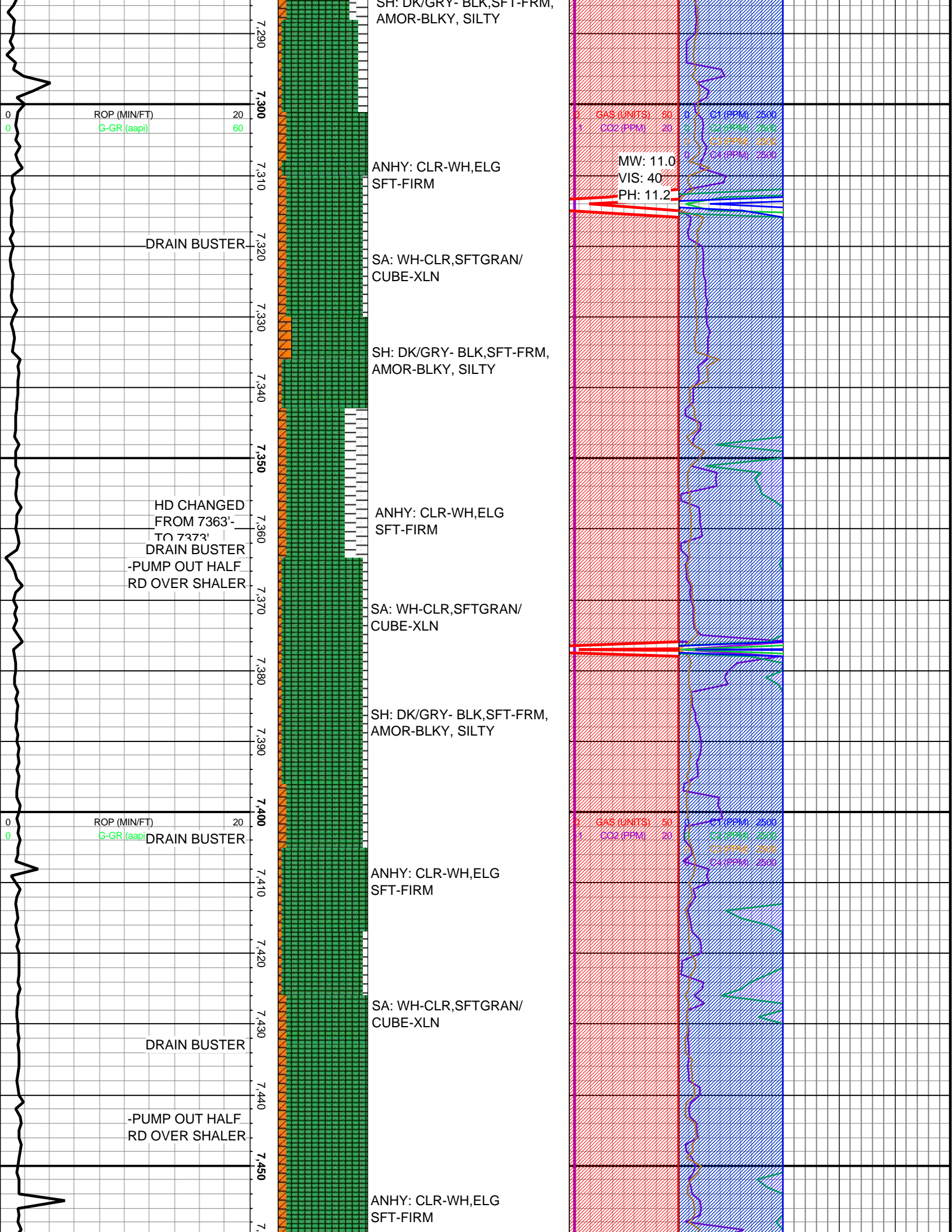


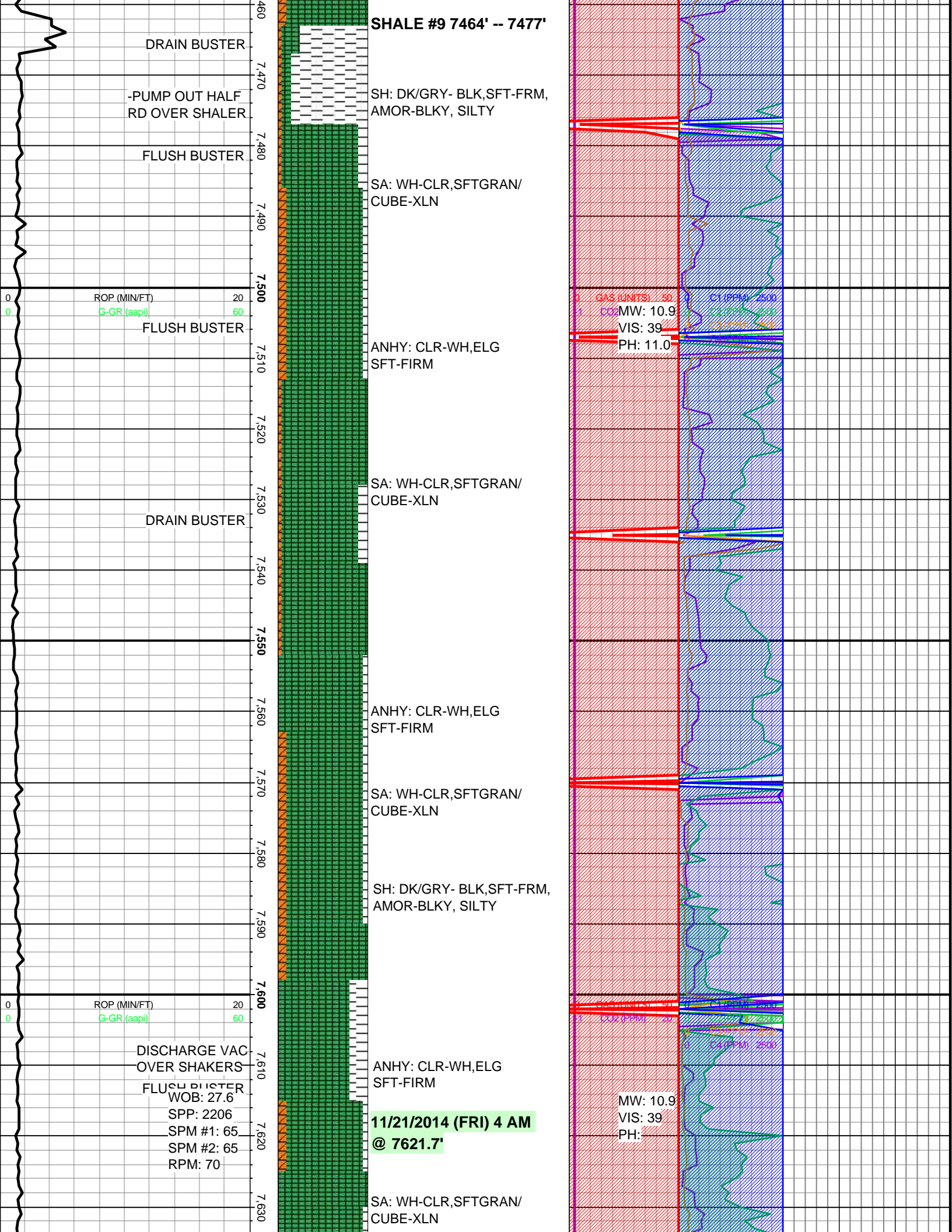


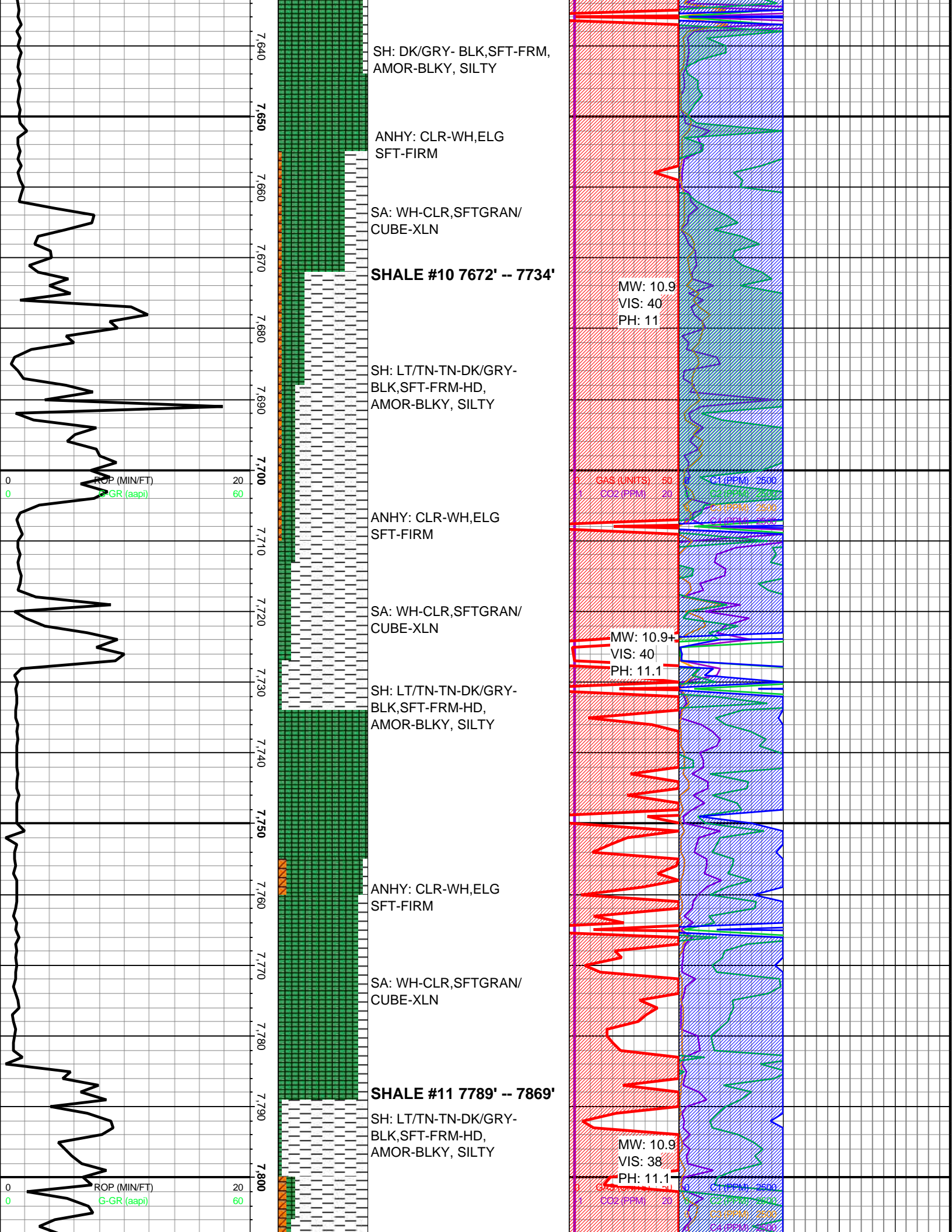


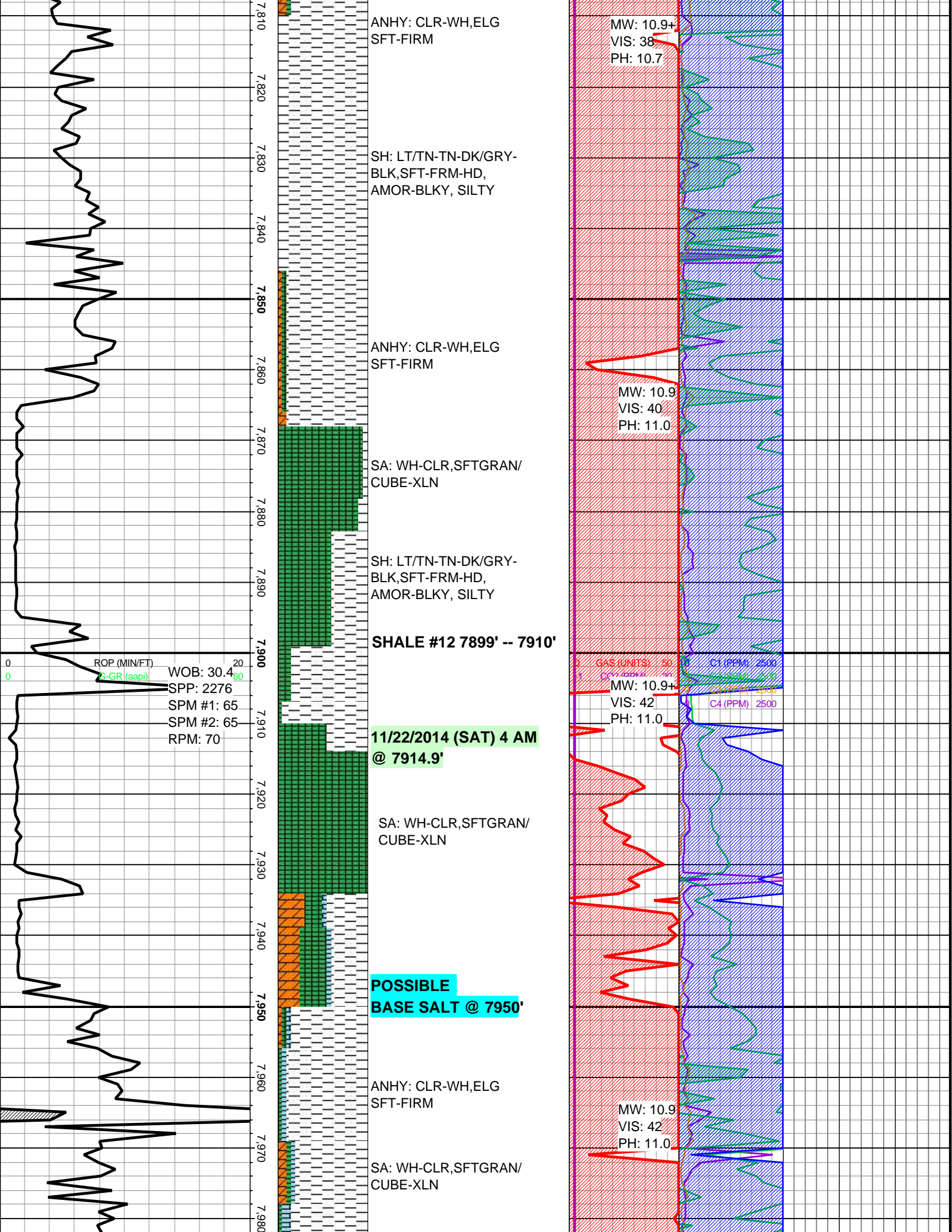


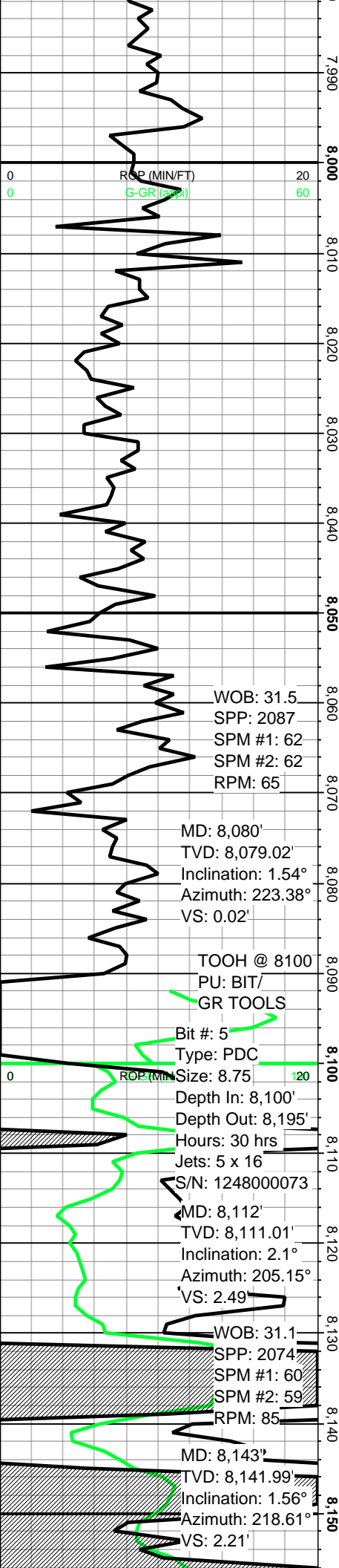












SH: LT/TN-TN-DK/GRY-
BLK,SFT-FRM-HD,
AMOR-BLKY, SILTY

ANHY: CLR-WH,ELG
SFT-FIRM

**POSSIBLE TOP OF
MOLAS @ 8026'**

LS: WH-DRTY/WH-GRYDK/
GRY,GRNST,F/XLNMIC/
XLN,DNS-SM

SH: LT/TN-TN-DK/GRY-
BLK,SFT-FRM-HD,
AMOR-BLKY, SILTY

ANHY: CLR-WH,ELG
SFT-FIRM

LS: WH-DRTY/WH-GRYDK/
GRY,GRNST,F/XLNMIC/
XLN,DNS-SM

**11/23/2014 (SUN) 4 AM
@ 8082.4'**

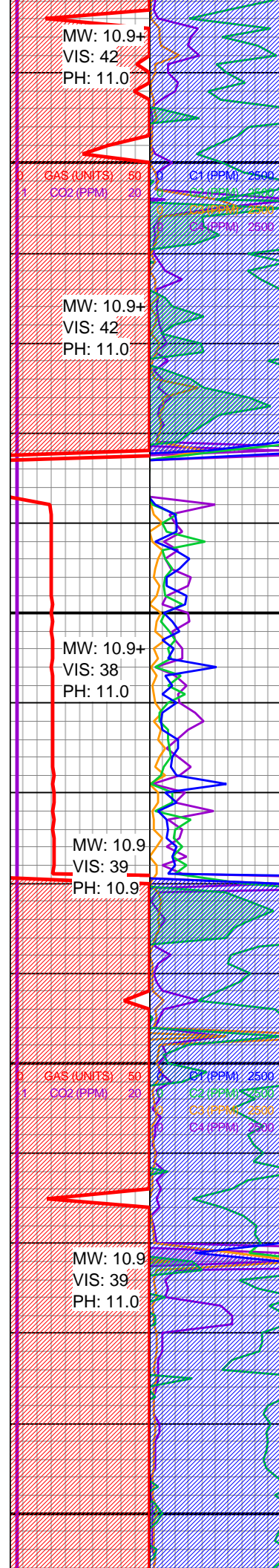
SH: LT/TN-TN-DK/GRY-
BLK,SFT-FRM-HD,
AMOR-BLKY, SILTY

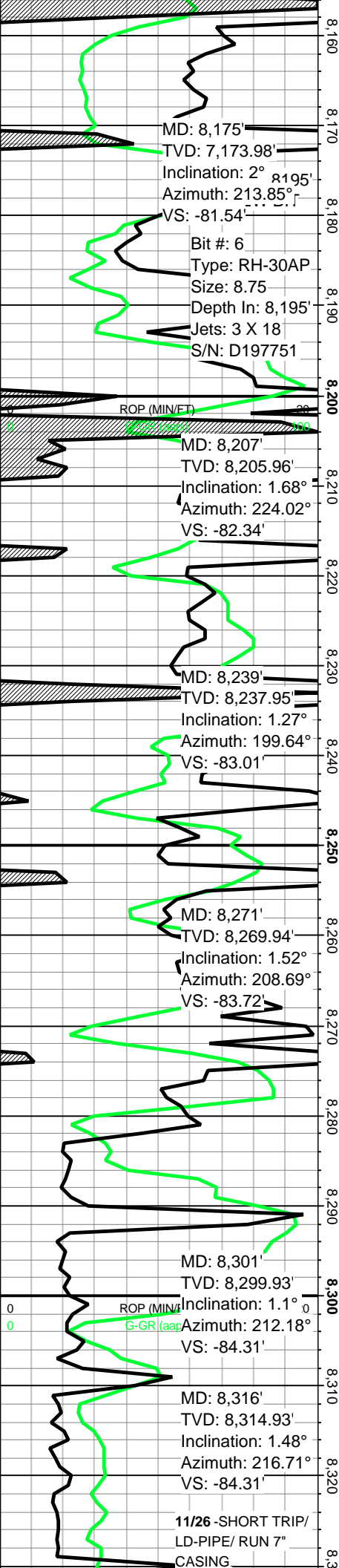
LS: WH-DRTY/WH-GRYDK/
GRY,GRNST,F/XLNMIC/
XLN,DNS-SM

**11/24/2014 (MON) 4 AM
@ 8127.8'**

SH: LT/TN-TN-DK/GRY-
BLK,SFT-FRM-HD,
AMOR-BLKY, SILTY

LS: WH-DRTY/WH-GRYDK/
GRY,BRIT-FRM,GRNST,F/





XLN,DNS-SM

DOL: OFF/WHT-WHT,
IP/F-XLN,SUC,SUB-RD

SH: LT/TN-TN-DK/GRY-
BLK,SFT-FRM-HD,
AMOR-BLKY, SILTY

PNK: TR

**11/25/2014 (TUES) 4 AM
@ 8195.1'**

PNK: TR

PNK: 5%

PNK: 50%

LS: WH-DRTY/WH-GRYDK/
GRY,BRIT-FRM,GRNST,F/
XLN,DNS-SM

PNK: 75%

PNK: 80%

PNK: 35%

PNK: 60%

PNK: 40%

LS: WH-DRTY/WH-GRYDK/
GRY,BRIT-FRM,GRNST,F/
XLN,DNS-SM

PNK: 50%

PNK: 30%

SH: LT/TN-TN-DK/GRY-
BLK,SFT-FRM-HD,
AMOR-BLKY, SILTY

PNK: 60%

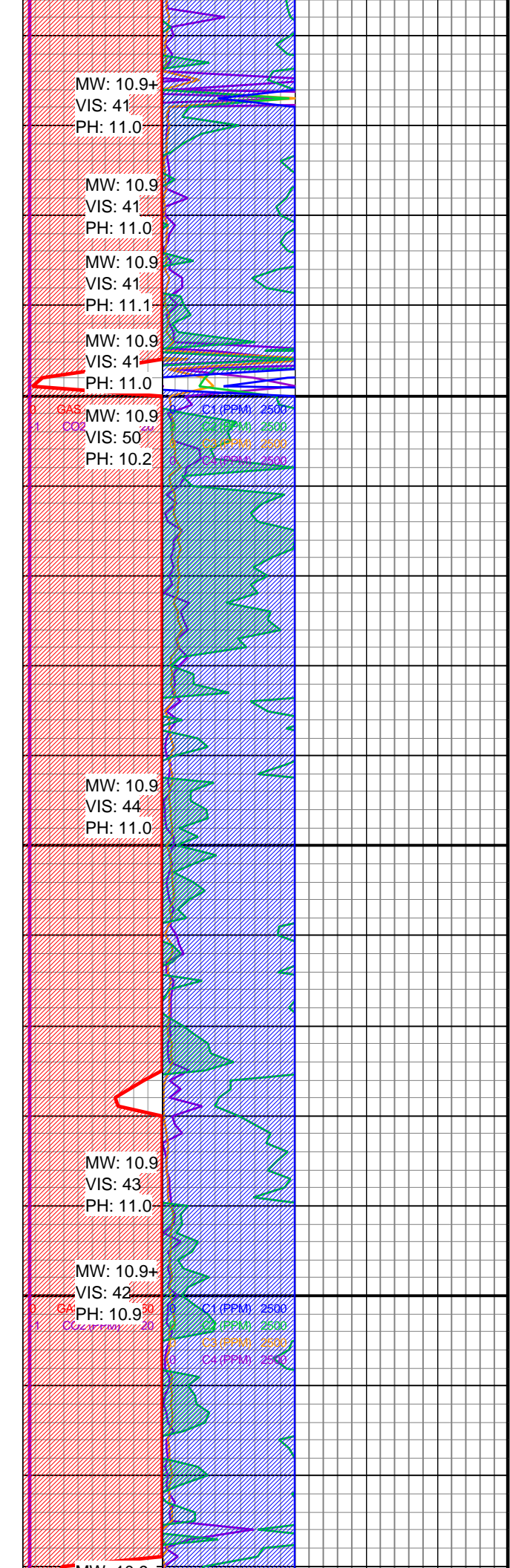
PNK: 30%

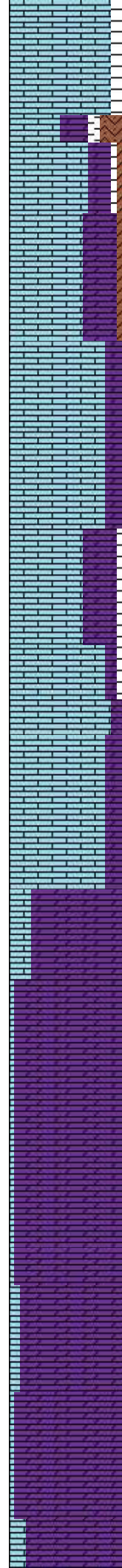
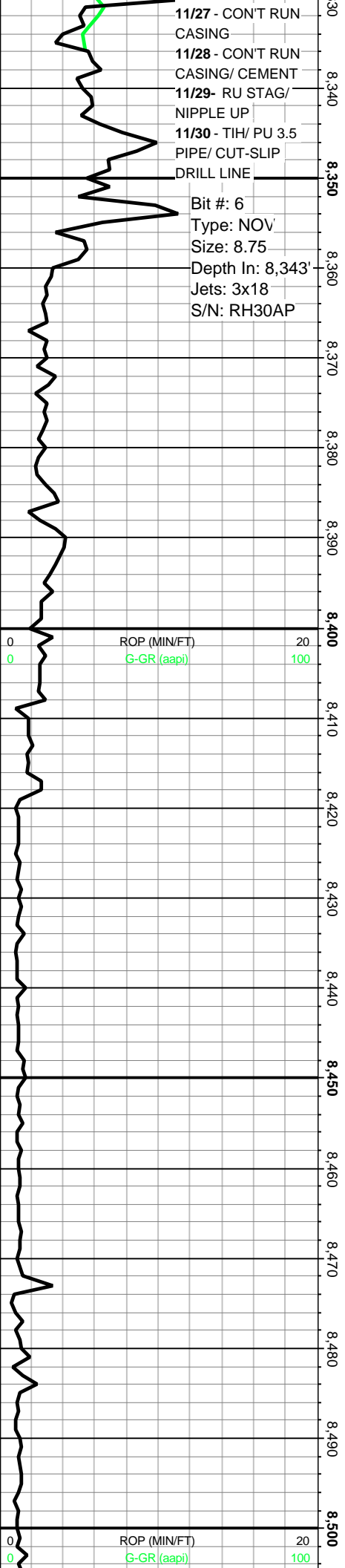
PNK: 30%

LS: WH-DRTY/WH-GRYDK/
GRY,BRIT-FRM,GRNST,F/
XLN,DNS-SM

PNK: 20%

SH: LT/TN-TN-DK/GRY-
BLK,SFT-FRM-HD,
AMOR-BLKY, SILTY





PNK: 15%
PNK: 5%
11/26/2014 (WED) 4 AM @ 8343.4'
11/27-30/2014 4 AM @ 8343.4'
CMT: 5-20%
LS: WH-DRTY/WH-GRYDK/GRY,BRIT-FRM,GRNST,F/XLN,DNS-SM
DOL: OFF/WHT-WHT, IP/F-XLN,SUC,SUB-RD
LS: WH-DRTY/WH-GRYDK/GRY,BRIT-FRM,GRNST,F/XLN,DNS-SM
DOL: OFF/WHT-WHT, IP/F-XLN,SUC,SUB-RD
LS: WH-DRTY/WH-GRYDK/GRY,BRIT-FRM,GRNST,F/XLN,DNS-SM
DOL: OFF/WHT-WHT-LT/GRY-MED/GRY,IP/F-XLN,SUC,SUB-RD

