COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name	Encana DHN 08B-1		
Location	NE 1/4 NE 1/4 SEC. 11 T2S R100W		
State	Colorado	**County**	Rio Blanco
Country	USA	**Rig Number**	Patterson UTI 326
API Number	05-103-11886	**AFE #**	13173180
Region	Piceance Basin	**Field**	Wildcat
Spud Date	7/5/2013		
Surface Coordinates	1169' FNL 1061' FEL		
Bottom Hole Coordinates	1360' FNL 1100' FWL (Lot 8 Sec. 1 T2S R100W)		
Ground Elevation	7940.8'	**K.B. Elevation**	7970'
Logged Interval	2553'		
Formation	Wasatch through Niobrara		
Type of Drilling Fluid	Water-based Gel		

Operator

Company Encana Oil & Gas (USA), Inc.

Geologist

Name Brendan kelly, John Thomas

Company Columbine Logging, Inc.

Rock Types

- UNKNOWN
- ANHYDRITE
- BENTONITE
- BRECCIA
- CEMENT
- CHALK
- CHERT
- CLAY CHOKE SAND
- COAL
- CONGLOMERATE
- DOLOMITE
- GRANITE
- GYPSUM
- IGNEOUS
- LIMESTONE
- SIDERITE or LIMONITE
- METAMORPHIC
- NO SAMPLE
- SALT
- SALT- PEPPER SAND
- SANDSTONE
- SHALE
- SHALE COLORED
- SHALE GRAY
- SHALY SILTSTONE
- SILTSTONE
- SILTY SHALE
- TILL
- TUFF
- WELDED TUFF

CLAYSTONE

MARLSTONE

SHALY SANDSTONE

Accessories

Fossils

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

Minerals

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

Stringer

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

Other Symbols

Oil Show

DEAD
EVEN
QUESTIONABLE
SPOTTED STAINING

Porosity

EARTHY
FENESTRAL
FRACTURE
INTERCRYSTALLINE
INTEROOLITIC
MOLDIC
ORGANIC
PINPOINT
VUGGY

Engineering

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

Rounding

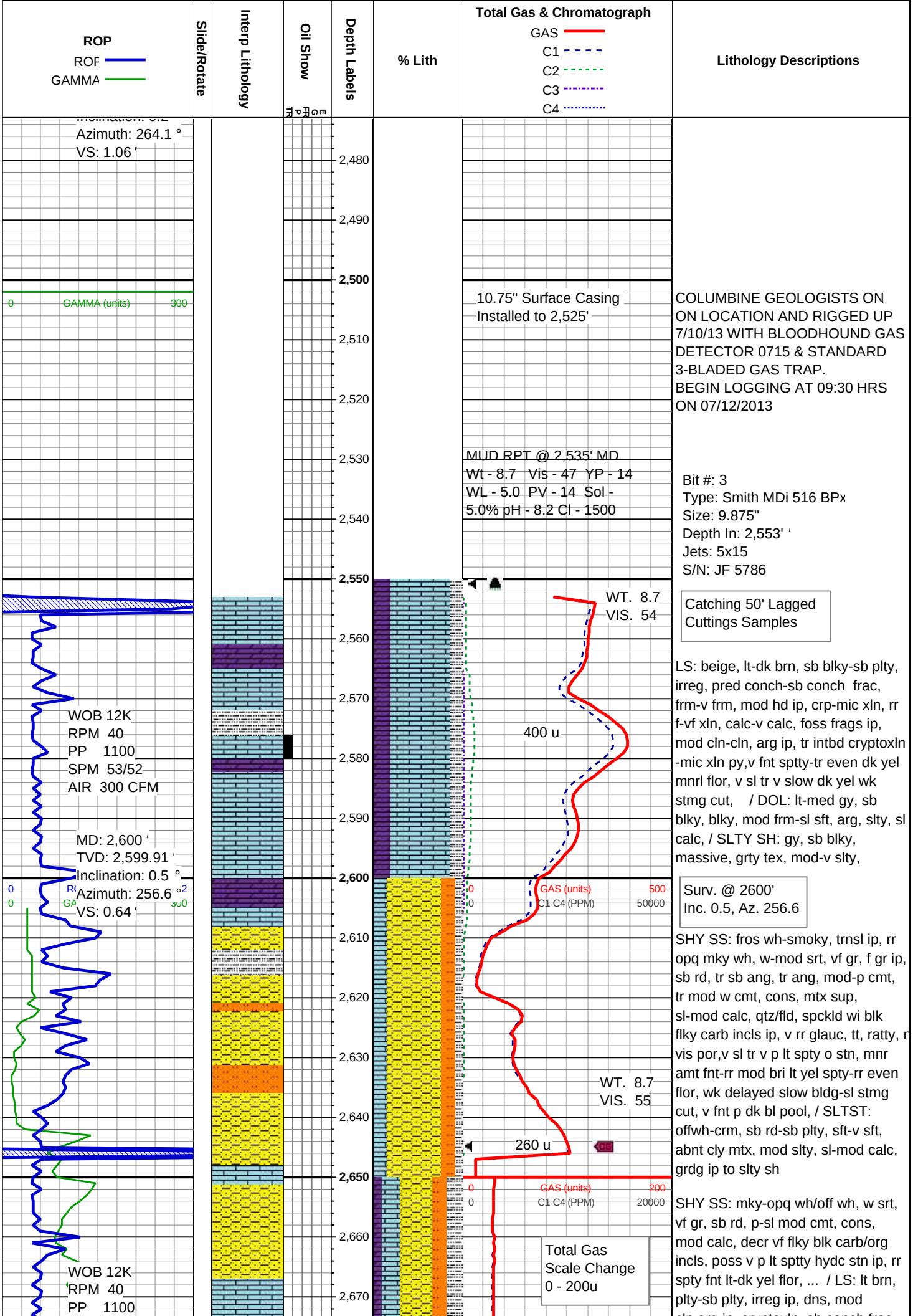
ANGULAR
ROUNDED
SUBANG
SUBRND

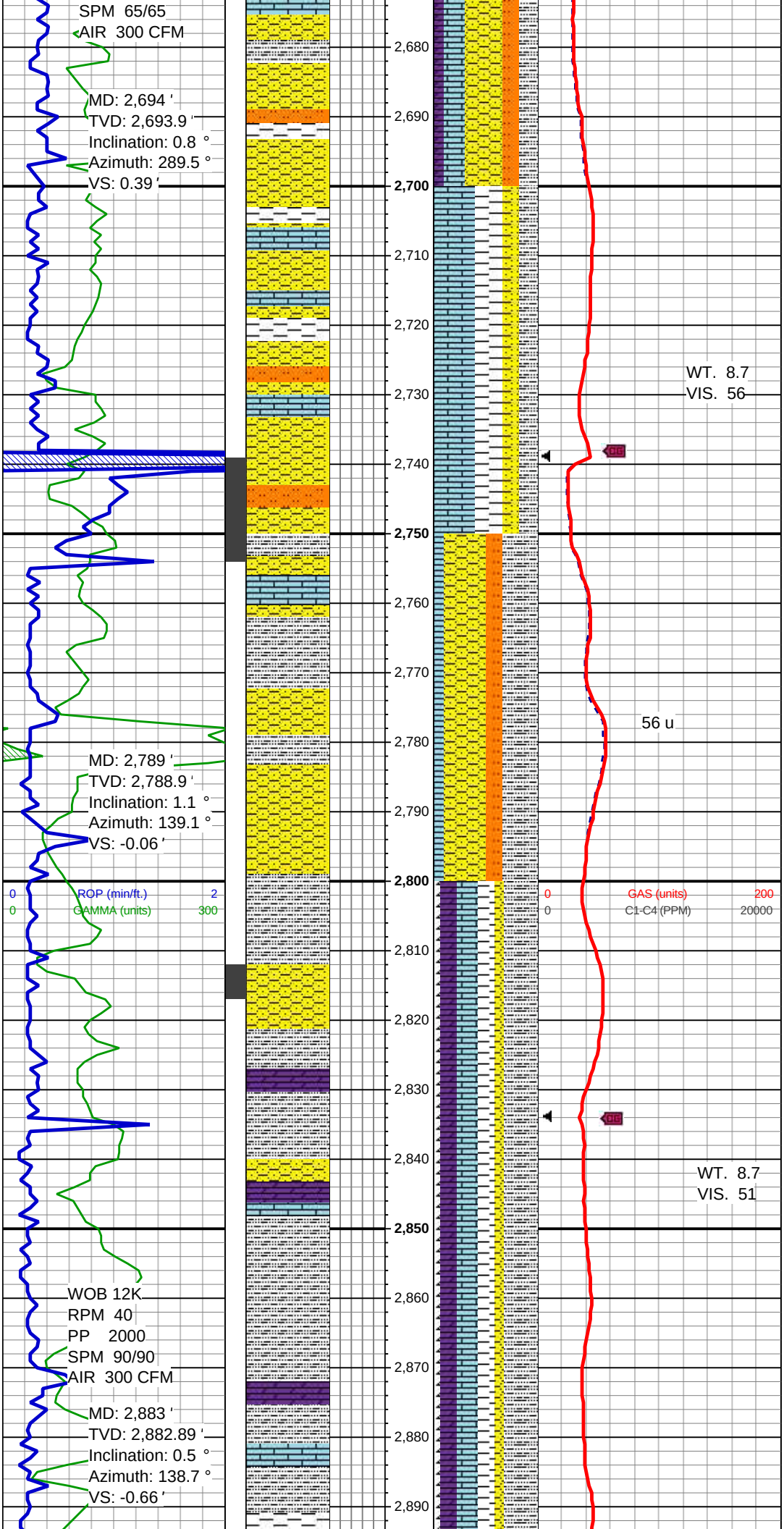
Textures

BOUNDSTONE
CHALKY
CRYPTOXLN
EARTHY
FINELYXLN
GRAINSTONE
LITHOGRAPHIC
MICROXLN
MUDSTONE
PACKSTONE
WACKESTONE

Sorting

MODERATE
POOR
WELL


ROP
ROP
GAMMA
Slide/Rotate
Interp Lithology
Oil Show
Depth Labels
% Lith
Total Gas & Chromatograph
GAS
C1
C2
C3
C4
Lithology Descriptions
Azimuth: 264.1 °
VS: 1.06 '
0 GAMMA (units) 300
2,480
2,490
2,500
2,510
2,520
2,530
2,540
2,550
2,560
2,570
2,580
2,590
2,600
2,610
2,620
2,630
2,640
2,650
2,660
2,670
10.75" Surface Casing
Installed to 2,525'
COLUMBINE GEOLOGISTS ON
ON LOCATION AND RIGGED UP
7/10/13 WITH BLOODHOUND GAS
DETECTOR 0715 & STANDARD
3-BLADED GAS TRAP.
BEGIN LOGGING AT 09:30 HRS
ON 07/12/2013
MUD RPT @ 2,535' MD
Wt - 8.7 Vis - 47 YP - 14
WL - 5.0 PV - 14 Sol -
5.0% pH - 8.2 Cl - 1500
Bit #: 3
Type: Smith MDi 516 BPx
Size: 9.875"
Depth In: 2,553' '
Jets: 5x15
S/N: JF 5786
WT. 8.7
VIS. 54
Catching 50' Lagged
Cuttings Samples
WOB 12K
RPM 40
PP 1100
SPM 53/52
AIR 300 CFM
400 u
LS: beige, lt-dk brn, sb blky-sb plty, irreg, pred conch-sb conch frac, frm-v frm, mod hd ip, crp-mic xln, rr f-vf xln, calc-v calc, foss frags ip, mod cln-cln, arg ip, tr intbd cryptoxln -mic xln py,v fnt sptty-tr even dk yel mnrl flor, v sl tr v slow dk yel wk stmg cut, / DOL: lt-med gy, sb blky, blky, mod frm-sl sft, arg, slty, sl calc, / SLTY SH: gy, sb blky, massive, grty tex, mod-v slty,
MD: 2,600 '
TVD: 2,599.91 '
Inclination: 0.5 °
Azimuth: 256.6 °
VS: 0.64 '
0 GAS (units) 500
0 C1-C4 (PPM) 50000
Surv. @ 2600'
Inc. 0.5, Az. 256.6
SHY SS: fros wh-smoky, trnsl ip, rr opq mky wh, w-mod srt, vf gr, f gr ip, sb rd, tr sb ang, tr ang, mod-p cmt, tr mod w cmt, cons, mtx sup, sl-mod calc, qtz/fld, spckld wi blk flky carb incls ip, v rr glauc, tt, ratty, r vis por,v sl tr v p lt spty o stn, mnr amt fnt-rr mod bri lt yel spty-rr even flor, wk delayed slow bldg-sl stmg cut, v fnt p dk bl pool, / SLTST: offwh-crm, sb rd-sb plty, sft-v sft, abnt cly mtx, mod slty, sl-mod calc, grdg ip to slty sh
WT. 8.7
VIS. 55
260 u
0 GAS (units) 200
0 C1-C4 (PPM) 20000
Total Gas
Scale Change
0 - 200u
WOB 12K
RPM 40
PP 1100
SHY SS: mky-opq wh/off wh, w srt, vf gr, sb rd, p-sl mod cmt, cons, mod calc, decr vf flky blk carb/org incls, poss v p lt sptty hydc stn ip, rr spty fnt lt-dk yel flor, ... / LS: lt brn, plty-sb plty, irreg ip, dns, mod



cln,arg lp, cryptoxln, sb conch frac ip, pred sm tex, calc-v calc / SLTST: dk brn, dk gy ip, sb blky, sl frm-mod sft, v arg, sl-tr calc, slty ip, tr sdy, v fnt & spty dk yel mnrl flor, NSOC

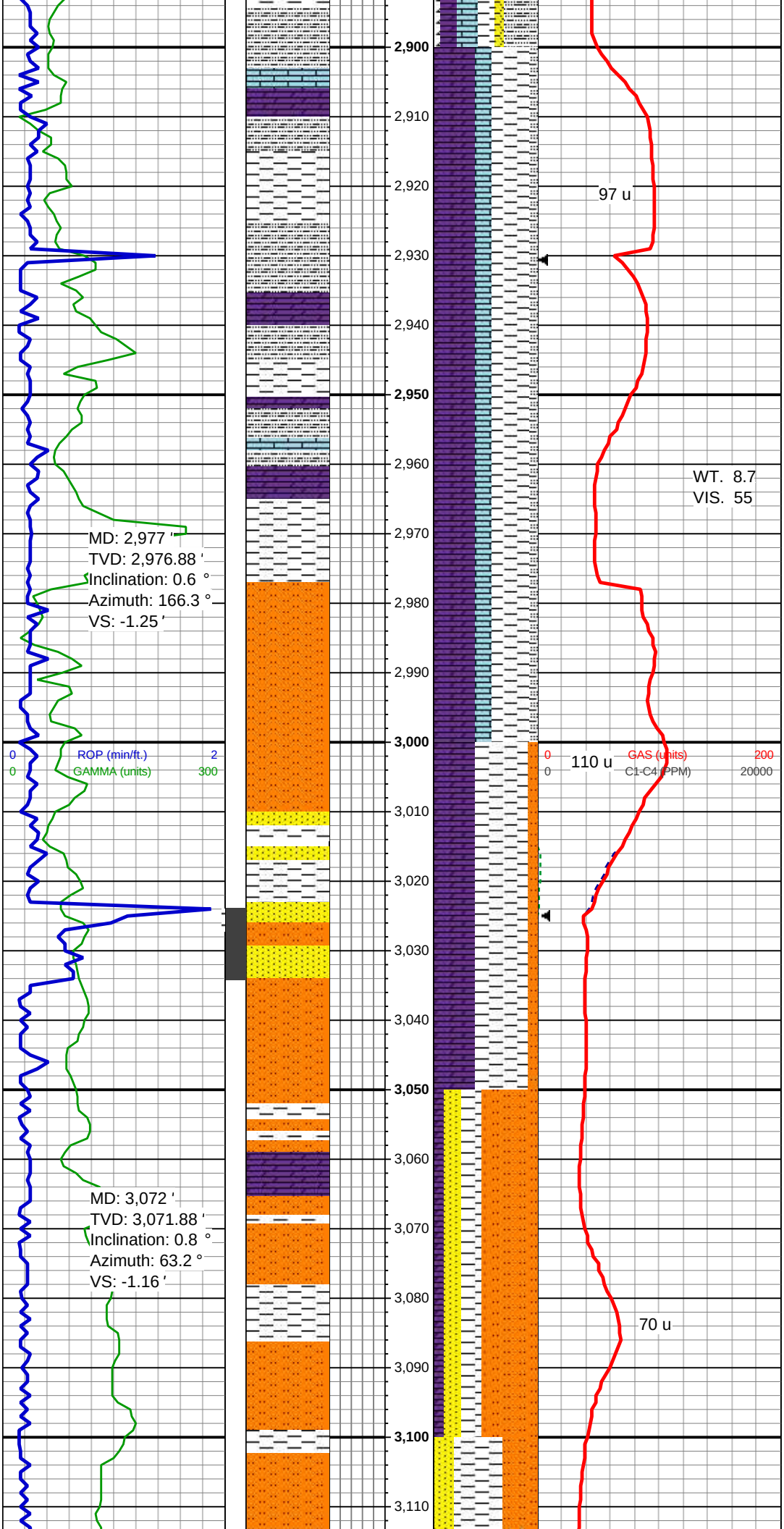
Surv. @ 2694'
Inc. 0.8, Az. 289.5

SLTY SH: dk gy, occ dk brn, sb blky, rr sb plty, sft-sl frm, v sft ip, rr sb fis, occ v thn intlam org/carb mat, sl calc, / SH: grdg to ARG LS: lt brn, sb plty, plty ip, sl frm-mod sft, frm ip, pred arg, rr mod cln & sm tex, cryptoxln, calc-v calc, slty ip,/ occ SHY SS: aa

SHY SS: off wh, crm, mky -occ fros wh, w srt, vf gr, tr l f gr, sb rd, rd ip, cons, mod-p cmt, tr dns & mod w cmt, tt gr packing, mod-sl calc, qtz/fld, tr liths, blk flky incls ip, / SLTY SH: beige, tan, gy brn ip, sb plty-sb blky, sft-mod sft, rthy, arg, mod-occ v slty, mod calc

LS: dk brn, brn, sb blky, irreg, coch-sb conch frac, cryptoxln-rr micxln, mod frm-sl hd, dns ip, rr mod cln, pred arg, v fnt-fnt dk yel spty-rr even pred mnrl flor, poss some hydc stn, v sl tr-0 wk v thn dk yel stmg cut, n signif pool, n resid cut, v arg ip & grdg to limy SH: lt gy brn, lt gy, sb plty, plty, sft-mod sft, slty ip, mod calc, grdg to sltst ip, / decr intbd shy ss aa

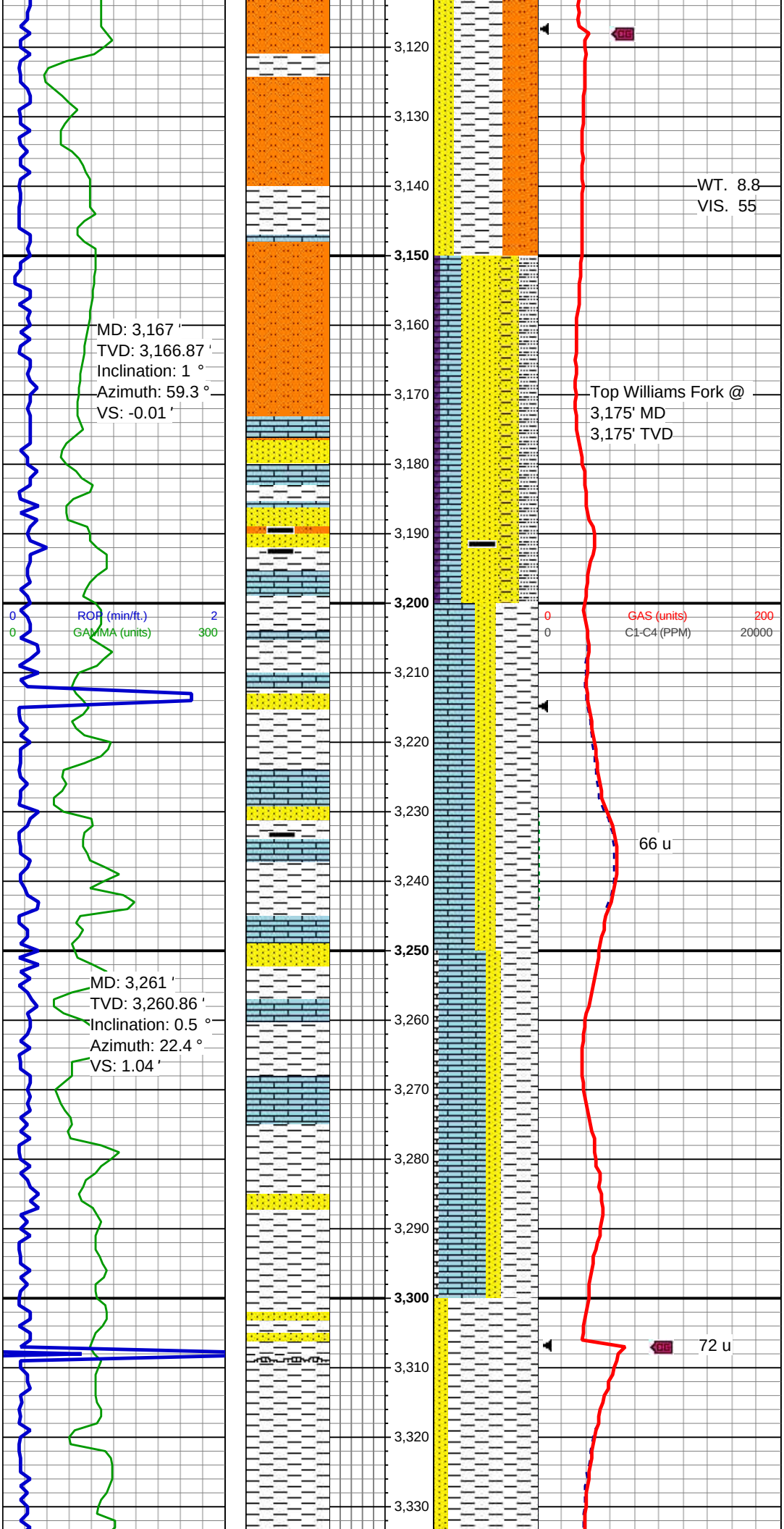
DOL: rr, beige, flesh col, irreg, sb blky ip, mod hd-v frm, dns, mic-cryptoxln, pred dl-rr adam lstr, mod cln, sl-tr calc, occ arg & slty, v fnt spty mnrl flor ip, NSOC



DOL: beige, lt-occ dk brn, lt gy ip, sb plty, irreg, sb blky ip, mod frm-frm, pred arg, mod cln ip, dns, cryptoxln, arg ip, sl-tr calc, occ v calc & grdg to arg ls, / SH: lt-dk gy, sb plty, mod sft-sl frm, rthy, cly rich, mnr amt slt ip, mod calc-occ v calc

DOL: lt bl-gy, occ lt beige, tr dk specs, hd, sb blky, sm-rthy / SH: lt-m gy, fm, sb blky, rthy, occ sl slty ip, sl calc / SLTST: lt rd-brn, wl ind, sb blky, slty, sl arg, sl calc

SLTST: lt rd-brn, wl ind, sb blky, sl arg, sl calc // Sh: lt gy, lt gy-brn, fm, sb blky, sm-rthy // SS: milk-wh, sme wh-opaq, tr clr, milk-wh, arg cmt, pred vf, occ f-m, sb ang, sme sb rd, mod-wl srt, sl calc, p por

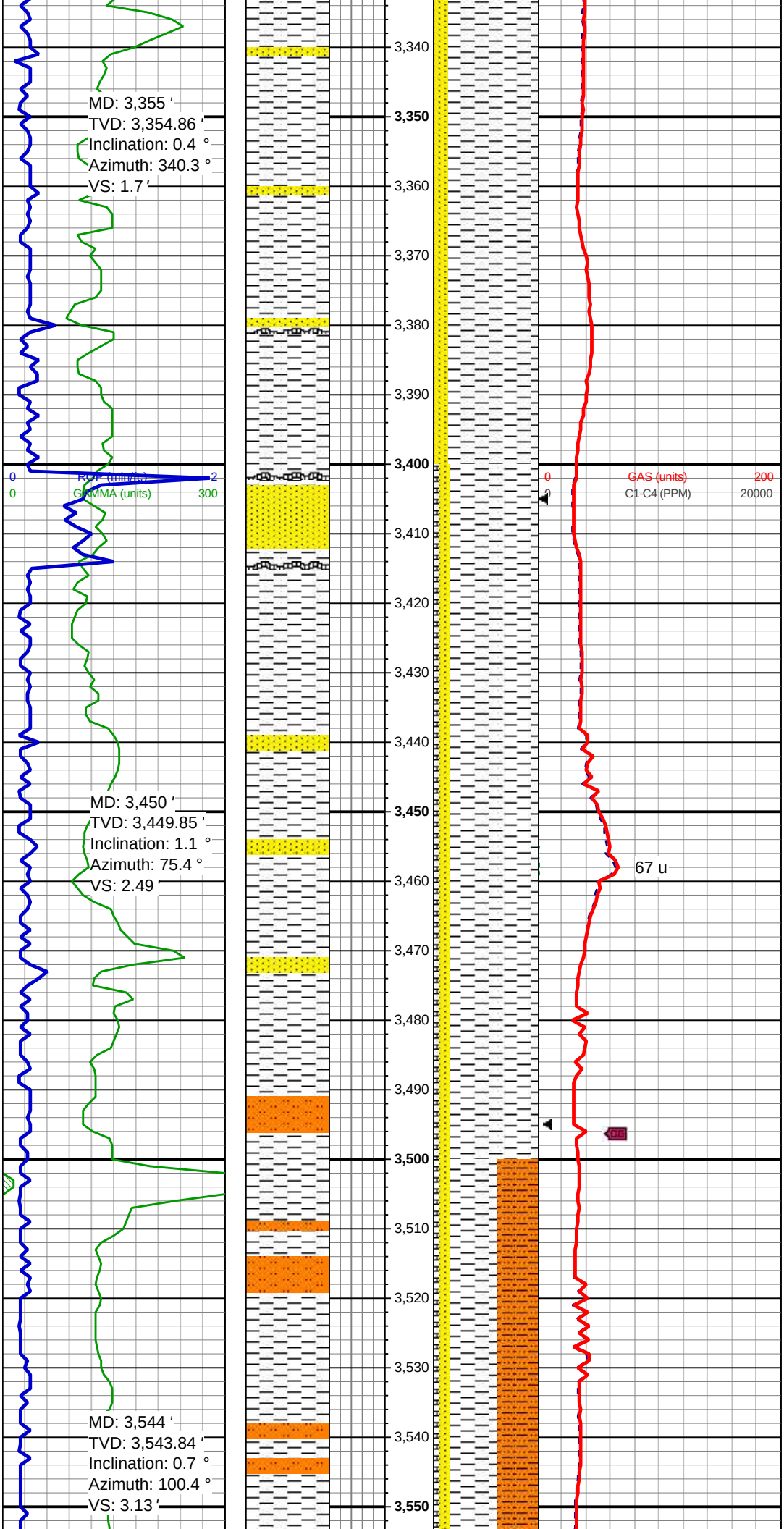


SLTST: lt rd-brn, v lt gy, wl ind, sb blky, sl arg, sl calc // Sh:off-wh, lt gy, tr lt gy-brn, fm, sb blky, sm-rthy, sl calc // SS: milk-wh, sme wh-opaq, tr clr, milk-wh, arg cmt, pred vf, occ tr f-m, sb ang, sme sb rd, mod-wl srt, sl calc, p por, occ lse cmt w/ fr-g por / NSOC

LS: lt gy, wh-but, lt gy-brn,fm-hd, sb blky-sb plty, smth-sl rthy /SS: wh-opq, milk-wh, tr clr, milk-wh areg cmt, vf, occ tr f, sb ang-ang, tr sb rd, wl srt, sl calc-calc, p por // COAL: blk,sb blky-blky, sl arg rthy-sl vit, occ emb in sand & sh / ~25% w/ sl amb-brn raw flor, bl-wh stmg/bldg cut flor, sl dk amb resid dry cut flor

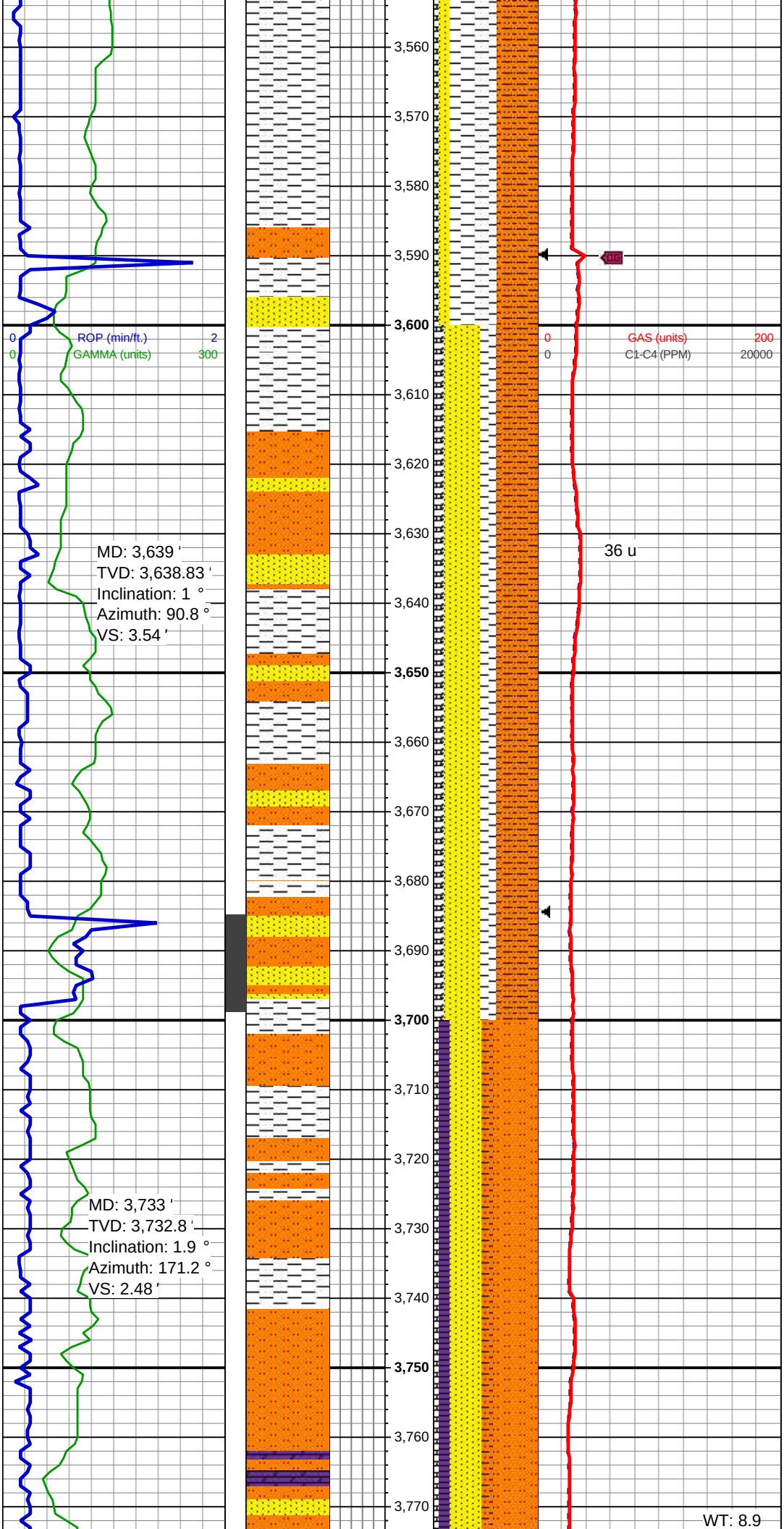
LS: lt gy, wh-but, lt gy-brn,fm-hd, sb blky-sb plty, smth-sl rthy /SS: wh-opq, milk-wh, tr clr, milk-wh areg cmt, vf, occ tr f, sb ang-ang, tr sb rd, wl srt, sl calc-calc, p por / ~10% w/ sl amb-brn raw flor, bl-wh stmg/bldg cut flor, sl dk amb resid dry cut flor

LS: lt gy, wh-but, lt gy-brn,fm-hd, sb blky-sb plty, smth-sl rthy / SH: lt gy, firm, sb blk-sb plty, sm, tr rthy, sl calc-sil / SS: wh-opq, milk-wh, tr clr, milk-wh areg cmt, vf, occ tr f, sb ang-ang, tr sb rd, wl srt, sl calc-calc, p por occ grds to lt gy SLTST /BENT: milk-wh firm, sb blky, rr tr brn mica, sil / ~30% w/ sl amb-brn raw flor, bl-wh stmg/bldg cut flor, sl dk amb resid dry cut flor



SH/MDST: lt-m gy, firm, sb blky, sm e sb plty, smth, tr rthy, arg, occ sl slty ip, sl calc / SS: clr, wh-opq, tr milk-wh, occ tr dk mnrl grs, vf, sme f, sb ang-ang, tr sb rd, wl srt, sl calc-sil / no raw flor, sl stmg bl-wh cut flor, sl tr brn resid dry cut flor

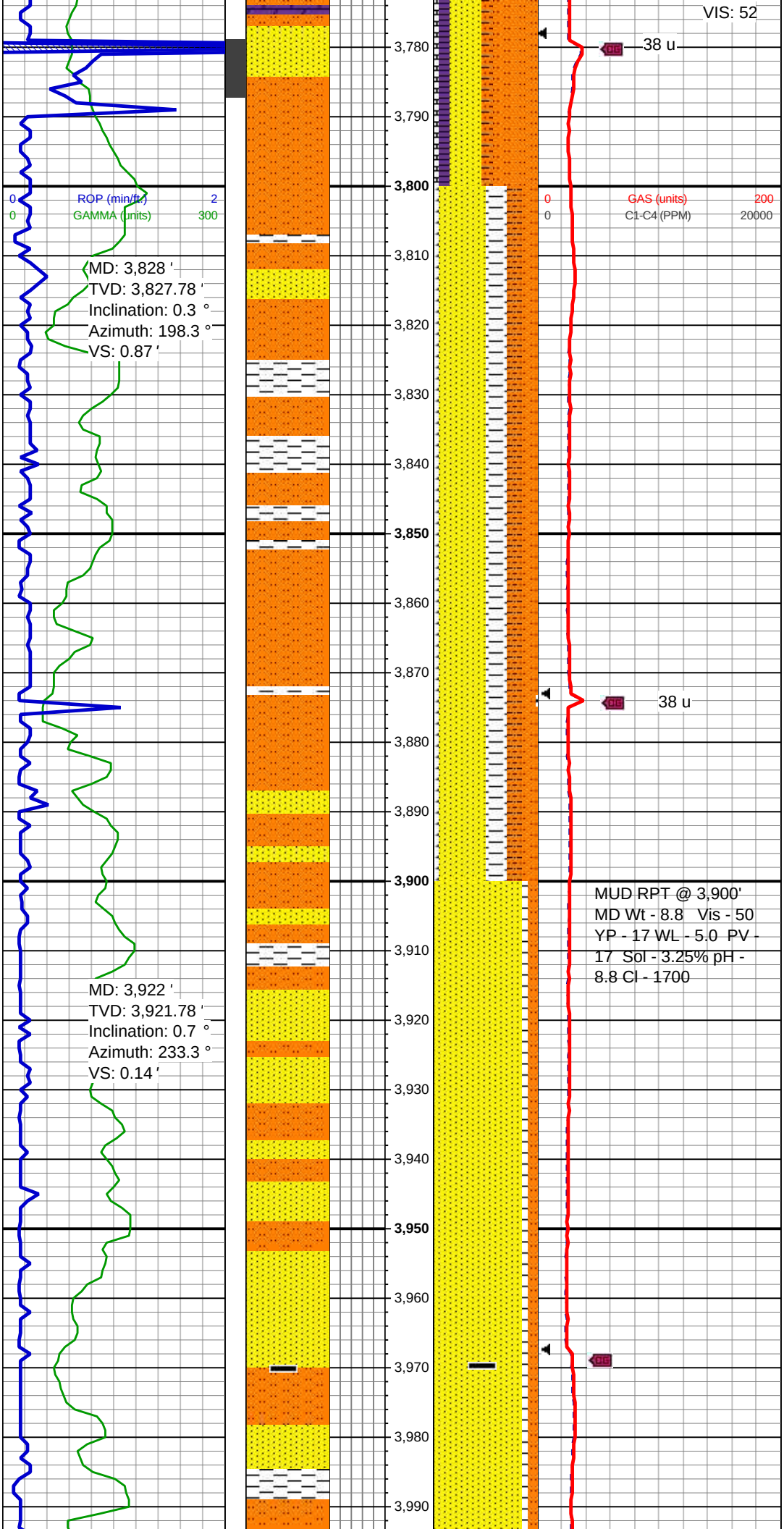
Sh: lt-m gy, sm pk-gy, tr gn-gy w/ grn glau, firm, tr hd, sb blky, sm, sme rthy, rr sl abs w/ occ vf sand, occ silty, sil - sl calc MDST // SS: clr, tr-sme wh-opq, occ tr milk-wh, vf, occ tr-sme f, sb ang, tr ang, tr rd, wl srt, sil, fr por (~10%) // Bent: wh, fm, sb blky, sl calc // No raw flor, bl-wh bldg/stmg cut flor, sl brn resid dry cut flor



SH: lt-m gy, tr lt bl-gy, rr lt pk-gy, rr lt gn-brn, firm-hd, sb blky, rthy, tr sm, occ slty ip, sil // SLTST: lt gy-brn, buf, tr off-wh, wl ind, sb blky, grty, occ tr vf sand, sl arg-arg // BENT: wh, firm, sb blky, sil // SS: milk-wh arg mtx, rr tr cln w/ clr grs, wh-opq, var tr-pred clr, rr tr dk mnrl grs, vf-f, sb ang-ang, mod-wl srt, pred tt w/ milk-wh arg cmt, occ tr fr por // no raw flor, sl stmg/bldg bl-wh cut flor, tr brn resid dry cut flor

SH: lt-m gy, rr lt gn-brn, firm-hd, sb blky, rthy, tr sm, occ slty ip, sil // SLTST: lt gy-brn, buf, tr off-wh, wl ind, sb blky, grty, occ tr vf sand, sl arg-arg // BENT: wh, firm, sb blky, sil // SS: clr, wh-opq, tr milk-wh, rr tr dk mnrl grs, vf-f clusters, scatt sme m-crs clr grs - occ fros, sb ang-ang, sme sb rd p-wl srt, sme tt w/ milk-wh arg cmt, sme fr-g por assumed for lse grs / no raw flor, sl stmg/bldg bl-wh cut flor, v sl tr brn resid dry cut flor

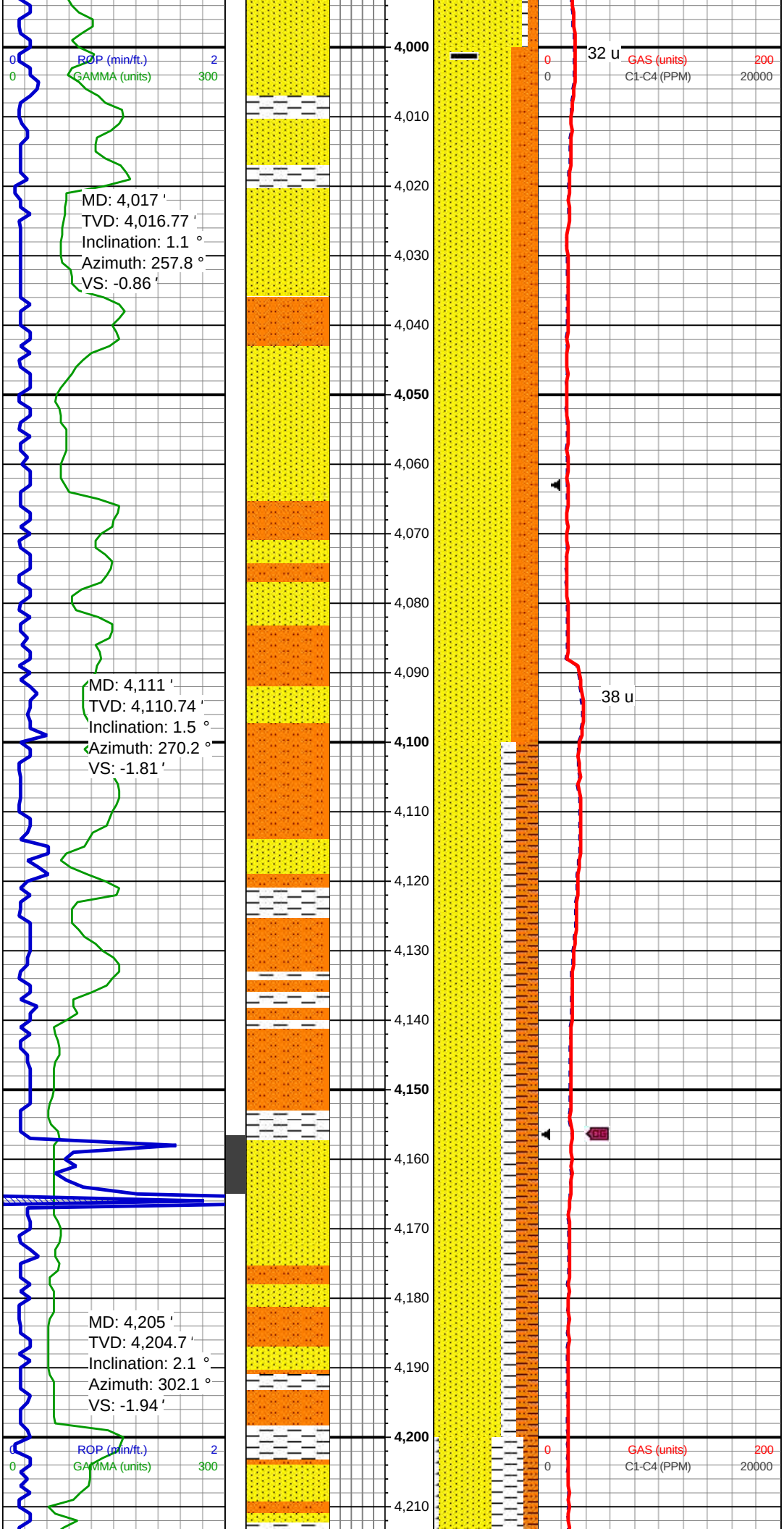
SLTST: lt gy-brn, buf, tr off-wh, wl ind, sb blky, grty, occ tr vf sand, sl arg // BENT: wh, firm, sb blky, sil // SS: wh-opq, tr-sme clr, tr milk-wh



freq tr dk mnrl grs, vf, sme f, sb ang-ang, sme sb rd, wl srt, sme tt w/ milk-wh arg cmt, pred fr por, tr g por with lse cmt, up to 12% // DOL: wh, tr pk, fm, sm, sb blky // no raw flor, stmg bl-wh cut flor, v sl tr brn resid dry cut flor

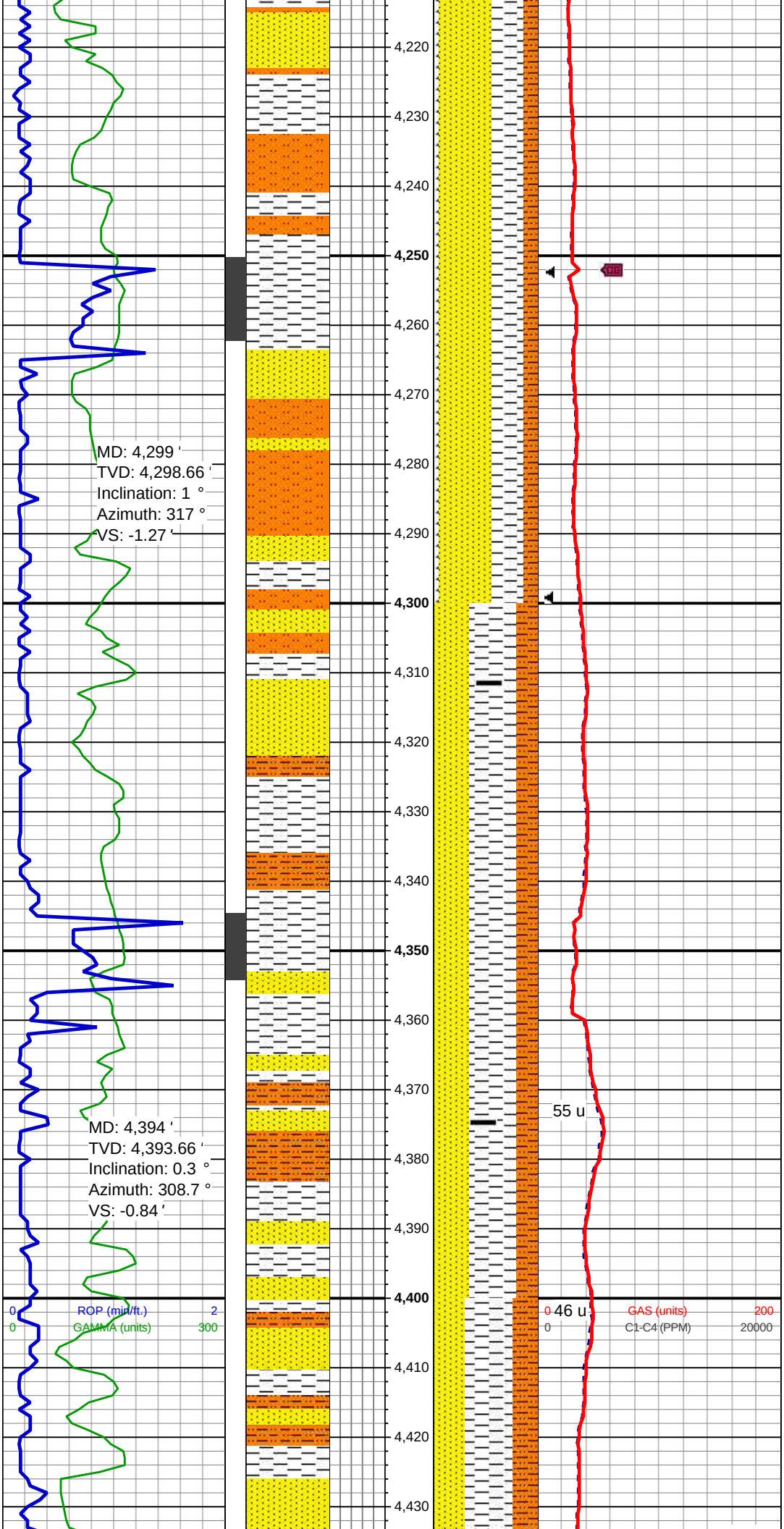
SS: clr, occ tr fros, sme-with wh-opq, occ tr milk-wh, oc tr dk mnrl grs, vf-f, tr-sme m qtz ovgths, sb ang-sb rd, tr ang, freq irreg grs, ~40% p por w/ wh clayey cmt, pred fr-g por loosely cmt, sil, occ sl calc // SH: lt gy, firm,-hd, sb plty, rthy // SLTST: lt gy, tr lt gy-brn, wl ind, sb blky, grty, occ tr vf sand, sl arg, sl calc-sil // CHT: wh, occ tr gy strs, hd,fiss // No raw flor, stmg bl-wh cut flor, no resid cut flor

SS: clr - occ fros, sme wh-opq, tr milk-wh, oc tr dk mnrl grs, vf-f, tr-sme m qtz ovgths, sb ang-sb rd, tr ang, freq irreg grs, ~40% p por w/ wh clayey cmt, pred fr-g por loosely cmt, sil, occ sl calc // SH: lt gy, firm-hd, sb plty, rthy // SLTST: lt gy, t lt gy-brn, wl ind, sb blky, grty, occ tr vf sand, sl arg, sl calc-sil // COAL: blk, tr dk brn, sb blky, rthy, occ sl ptch lstr, lo-bit to lig// No raw flor, stmg bl-wh cut flor, no resid cut flor



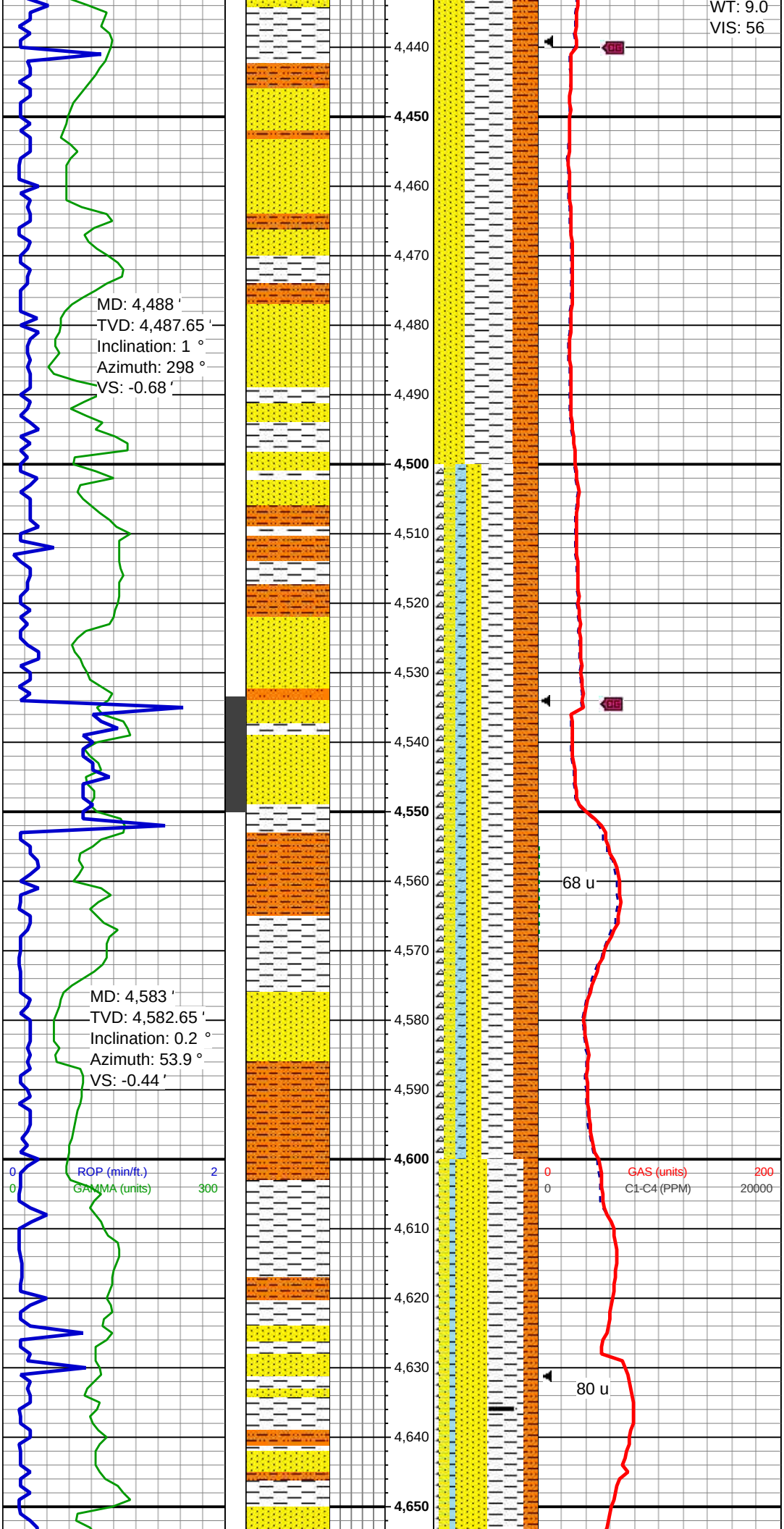
S: clr - occ fors, tr wh-opq, tr milk-wh, f-m, uncons in sample, sb ang-sb rd, tr rd, wl srt, sil, por est up to 17% if uncons as in sample // SLTST: lt gy, wl ind, sb plty, grty, sil // no raw flor, stmg, bl-wh cut flor, no resid cut flor

SS: wh-opq, sme clr, tr milk-wh, tr dk mnrl grs, vf, occ tr f, sb ang, sme sb rd, v wl srt, pred p por with wh clayey cmt, sme fr por with lsr cmt, sl calc -sil // SH: gy, firm, sb blky, rthy-sl grty, sl slty-slty, sil // SHLY SLTST: lt-m gy, wl ind, sb blky, grty, occ tr vf sand, sl arg, sl calc-sil // no raw flor, sl stmg bl-wh cut flor, no dry resid cut flor



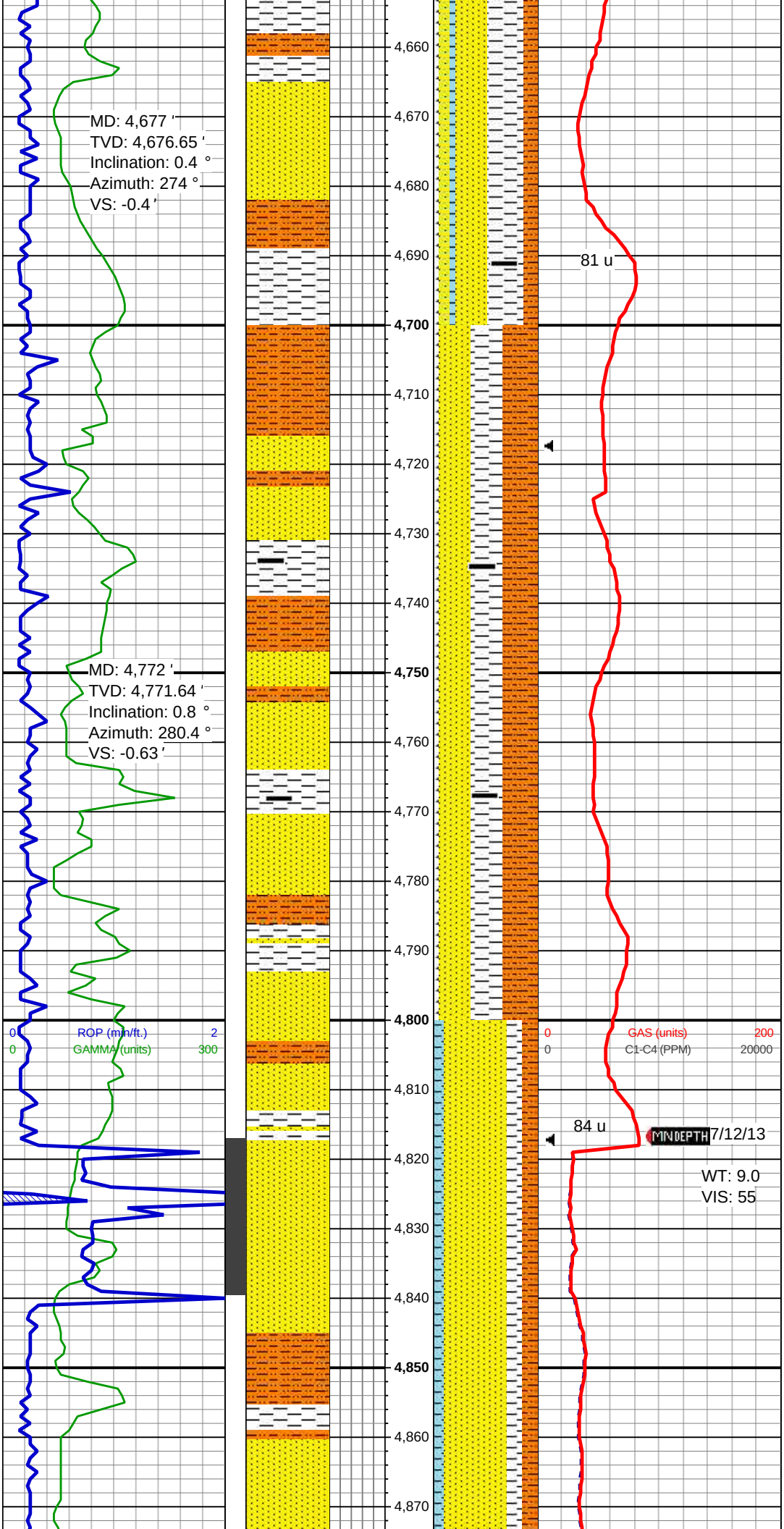
SS: clr - occ fros, wh-opq, tr milk-wh, freq tr dk mnrl grs, vf-f, rr m qtz ovgths, sb ang-sb rd, tr ang, occ irreg grs, ~40% p por w/ wh clayey cmt, pred fr-g por loosely cmt, sil, occ sl calc // SH: lt gy, sme lt gy-brn, firm-hd, sb plty, sm-rthy // SLTST: lt gy, tr lt gy-brn, wl ind, sb blky, grty, sl arg, sl calc-sil // CHT: wh w/ occ tr gy strs, hd, fiss, sil // No raw flor, stmg bl-wh cut flor, no resid cut flor

SH: gy, tr dk gy w/ carb stn, occ blk carb vns, fm, tr hd, sb blky, sme sb plty, smth-rthy, tr sl abs/silty ip, sil SS: clr, wh-opq, tr milk-wh occ tr dk mnrl grs, occ tr gy rk frgs, vf, sb ang, sme sb rd, tr ang, wl srt sl calc-sil, sme p por with wh clayey or gy silty/shaley mtx, pred fr por, tr g por with clean cmt, sl calc -sil // SLTST: lt gy, occ tr dk gy-blk carb vns, rr tr pyr nods, sl calc-sil // no raw flor, stmg bl-wh cut flor, sl brn resid dry cut flor



SH:lt gy, lt gy-brn, fm, tr hd, sb blky, sme sb plty, smth-rthy, tr sl abs/silty ip, sil SS: clr, wh-opq, tr milk-wh occ tr dk mnrl grs, occ tr gy rk frgs, vf, sb ang, sme sb rd, tr ang, wl srt sl calc-sil, sme p por with wh clayey or gy silty/shaley mtx, pred fr por, tr g por with clean cmt, sl calc -sil // SLTST: lt gy, sl calc-sil // no raw flor, stmg bl-wh cut flor, sl brn resid dry cut flor

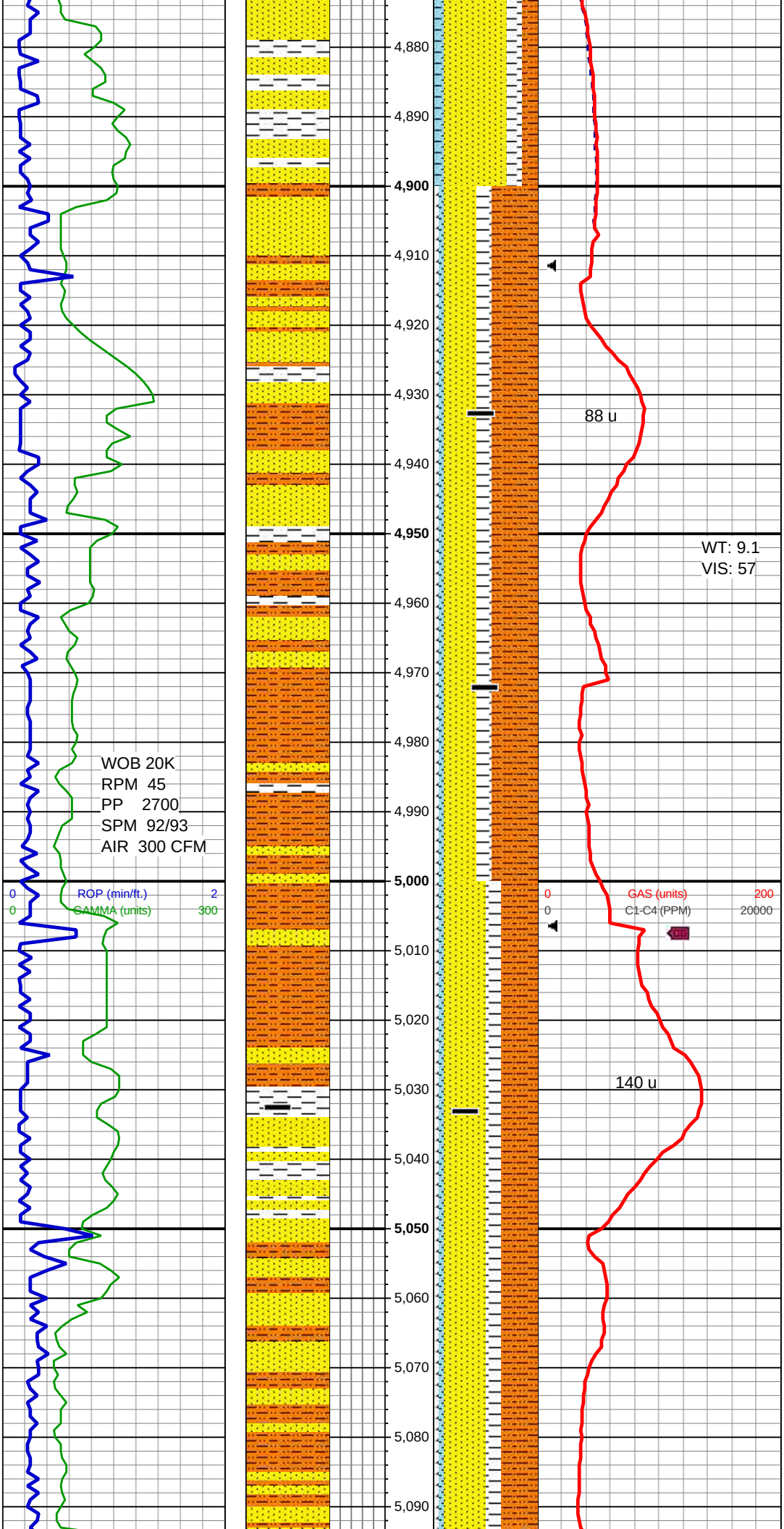
Sh: lt gy, lt gy-brn, fm-hd, sb blky-sb plty,sm- rthy, sil // SLTST: lt gy, tr m gy, mod-wl ind, sb lbky, rgh-grty, freq sl arg, occ tr-sme vf sand, sl calc-sil // SS: wh-opq, sme milk-wh, tr-sme clr, vf, occ tr f, sb ang-ang, tr sb rd, wl srt sl calc-sil, pred tt clayey cmt with p por, tr fr por // CLST: wh, tr dk gy, fm, sb blky, sl calc-sil, CHT: wh, occ tr gy strs, hd, fiss // no raw flor, stmg bl-wh cut flor, lt brn resid cut flor



Sh: lt gy, lt gy-brn,occ scatt tr emb coal frgs, fm-hd, sb blky-sb plty,sm-rthy, sil // SLTST: lt gy, tr m gy, mod-wl ind, sb blky, rgh-grty, freq sl arg, occ tr-sme vf sand, sl calc-sil // SS: wh-opq, sme-with clr, sme milk-wh, occ tr dk mnrl grs, vf, occ tr-pred f, sb ang, with sb rd,tr ang, tr rd, wl srt, sl calc-sil, sme tt clayey cmt with p por, pred fr por, tr g por // CLST: wh, tr dk gy, fm, sb blky, sl calc-sil, CHT: wh, occ tr gy strs, hd, fiss // no raw flor, stmg bl-wh cut flor, lt brn resid cut flor

Sh: lt gy, lt gy-brn, lt brn, rr scatt tr emb coal frgs, fm-hd, sb blky-sb plty,sm- rthy, sil // SLTST:lt brn, sme lt gy, tr m gy, mod-wl ind, sb blky, rgh-grty, freq sl arg, occ tr vf sand, sl calc-sil // SS: wh-opq, sme-with clr, sme milk-wh, occ tr dk mnrl grs, vf, occ tr f, sb ang, with sb rd,tr ang, tr rd, wl srt, sl calc-sil, tr tt clayey cmt with p por, pred fr por, tr g por // CHT: wh, occ tr gy strs, hd, fiss // no raw flor, stmg bl-wh cut flor, lt brn resid cut flor

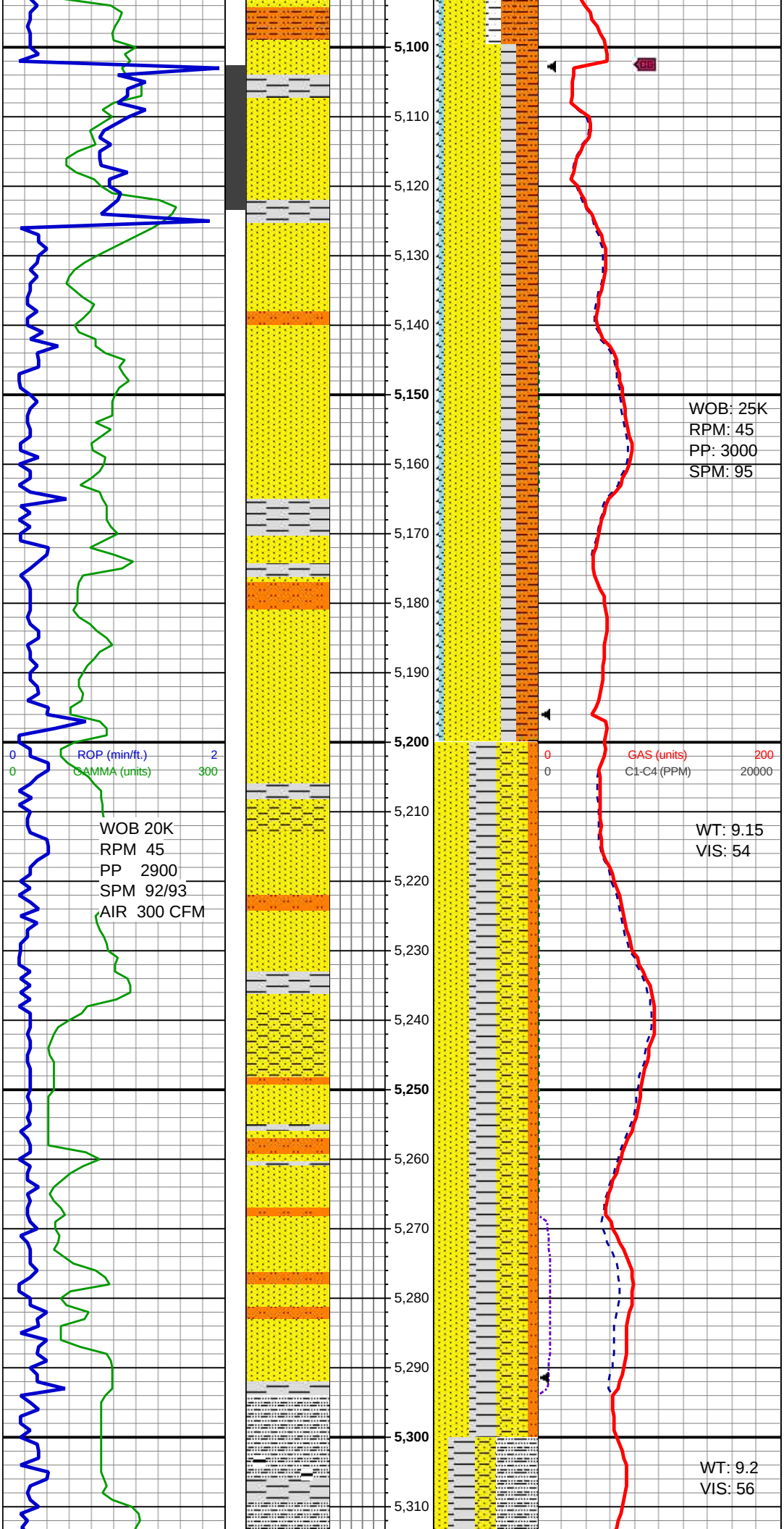
SS: clr - occ tr fros, tr wh-opq, tr milk-wh, occ tr dk mnrl grs, rr tr imb coal frags, f, sm vf , tr m sb ang, sme-with sb rd, tr ang, tr rd,occ irreg grs, mod-wl srt, sil, tr sl calc, tr p por with wh clayey cmt, sme fr por, pred g por with uncons grs up to 15% SH: lt gy, lt gy-brn, fm-hd



to 15% SH: lt gy, lt gy-brn, lm-hd, sb blky-sb plty, sm-rthy, tr sl abs/slty ip, sil // SHLY SLTST: lt gy, mod-wl ind, sb blky, sl abs - grty, sl arg, freq tr-sme vf sand, sl calc-sil // CLST: wh, sb blky, firm, sl calc-sil // no raw flor, stmg bl-wh cut flor, sl brn dry cut resid flor

SLTST: lt gy, lt gy-brn, wh, wl ind, sme mod ind, sb blky, sl abs-grty, freq tr-sme vf sand, occ sl arg, sil, occ v sl calc // SS: wh-opq, sme milk-wh, tr-with clr, vf, rr tr f, sb ang-ang, occ tr-sme sb rd, wl srt, sil, occ v sl calc, pred p por with tt clayey cmt, sme fr por // Sh: lt gy, lt gy-brn, occ tr blk carb stn in vns, hd, sb plty, sm-rthy, sil // CLYST: wh, firm, sb blky, sil // CHT: wh w/ gy strs, hd, fiss // No raw flor, stmg bl-wh cut flor, sl brn dry cut flor

SLTST: lt gy, lt gy-brn,tr m gy, wl ind, sme mod ind, sb blky, sl abs-grty, occ tr vf sand, occ sl arg, sil, occ v sl calc // SS: wh-opq, sme milk-wh, sme clr, occ tr dk mnrl grs, rr tr diss coal frags, vf, rr tr f, sb ang-ang, occ tr-sme sb rd, wl srt, sil, occ v sl calc, pred p por with tt clayey cmt, tr-sme fr por // Sh: lt gy, lt gy-brn, occ tr blk carb stn in vns, hd, sb plty, sm-rthy, sil // CLYST: wh, firm, sb blky, sil // CHT: wh w/ gy strs, hd,



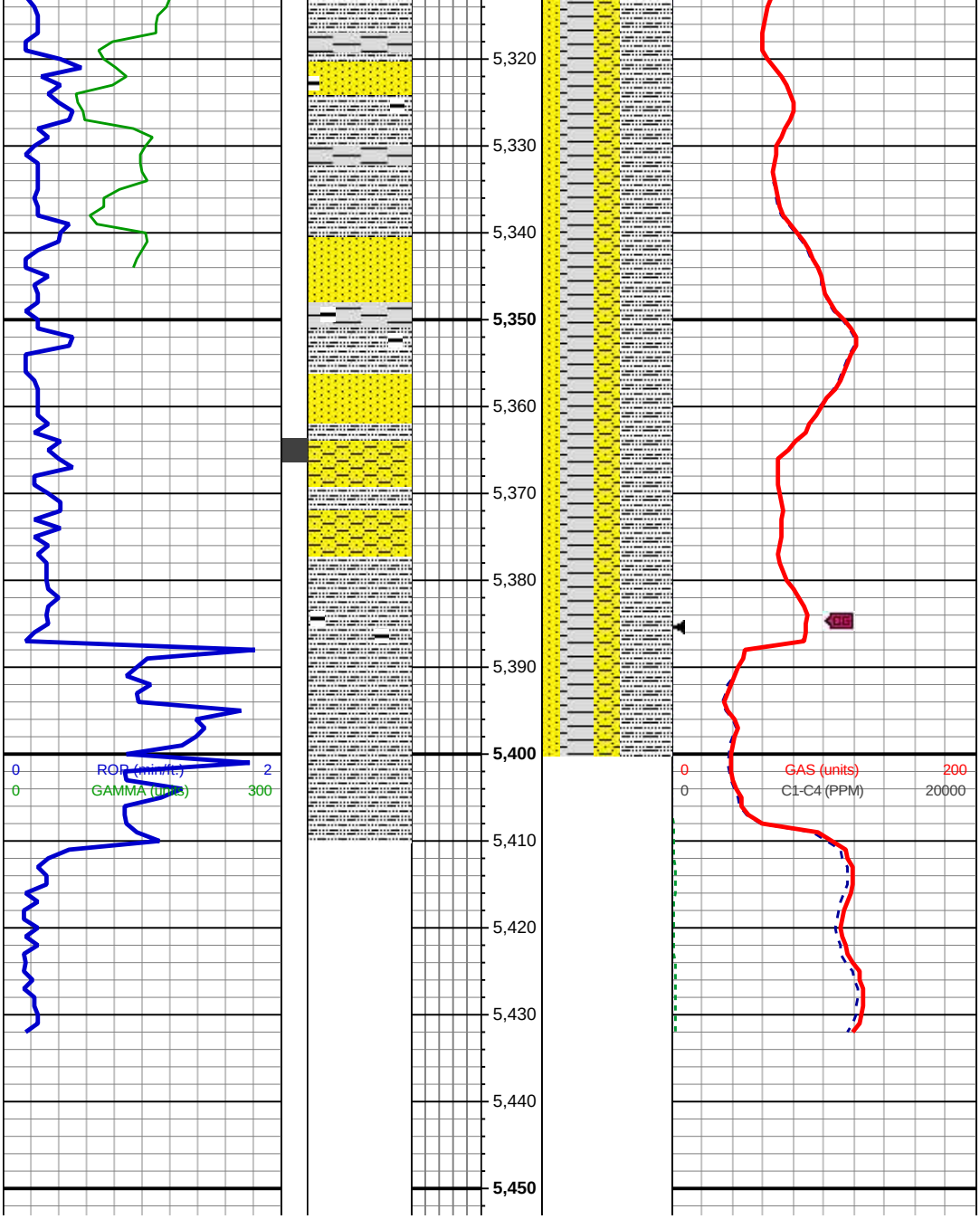
fiss // No raw flor, stmg bl-wh cut flor, sl brn dry cut flor

SS: wh-opq, clr, sme milk-wh, occ tr dk mnrl grs, occ tr gy rk frgs,occ tr dis coal frags, vf, freq tr f, sb ang-ang, tr-sme sb rd, wl srt, sl calc, pred p por with tt clayey cmt, with fr por cleaner cmt // SLTST: lt gy-brn, sm lt gy, rr tr blk carb stn, wl ind, tr mod ind, sb blky, sl abs-grty, occ tr vf sand, sl calc-sil // Sh: lt gy, lt gy-brn, fim-hard, sb blky-sb plty, rthy, sil // CLST: wh, sb blky, firm, sl calc // CHT: wh with gy strs, hd, fiss // no raw flor, stmg, bl-wh cut flor, sl brn dry residual cut flor

SS: fros wh, trnsl, occ mky, rr gly grs, w-m srt, f-occ vf gr, sb ang, sbrd ip, p-sl mod cmt, pred qtz/fld, rr-occ blk carb/org intcls, n calc, occ gr sup, mnr-mod amt cly fl, rr vis por, pred tt, / SHY SS: lt-med gy, rr dk gy, w srt, vf gr, sbrd, cons, mod-mod w cmt, mod-abnt cly mtx, , sl-tr calc, tt, ratty

SH: med gy, lt gy, rr dk gy brn, sb plty, sb blky ip, sft, cly rich, sb wxy tex ip, n slty, n calc, dissme mica ip

SLTY SH: lt gy, gy, rr dk gy, sb blky, sb plty ip, sft-mod sft, sl frm ip, rthy, grty tex, mod-v slty, tr sdy, mica, n-rr sl tr calc, / SH: dk gy, med gy, gy/blk ip, sb plty, sft-mod sft, sbwxy tex, cly



rich, pred massive, sb fis ip, sl-tr calc, g amt intbd/intlam coaly carb mat

SHY SS: lt gy, dk gy, rr gy/off wh, w srt, vf gr, sbrd, rd, cons, mod-p cmt, tr mod w cmt, tt pckg, n calc, mod-mnr amt cly fl, abnt cly fl ip, fr-mnr amt dissem carb org mat throughout, / occ cleaner ss aa