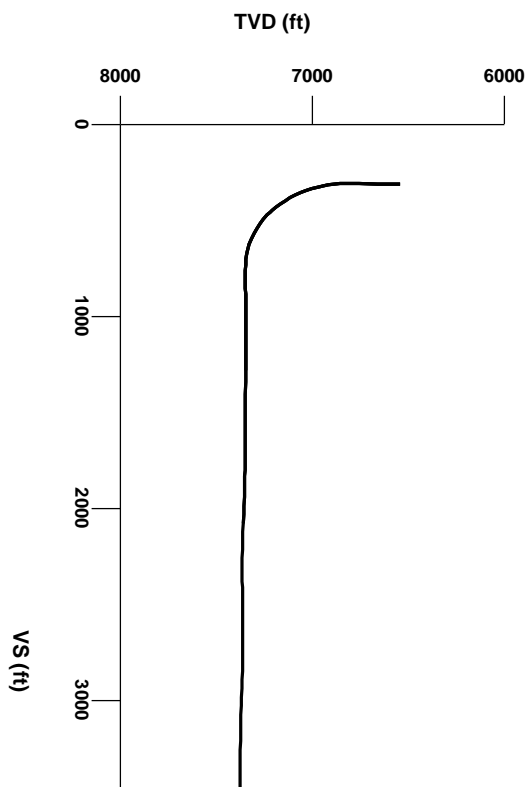
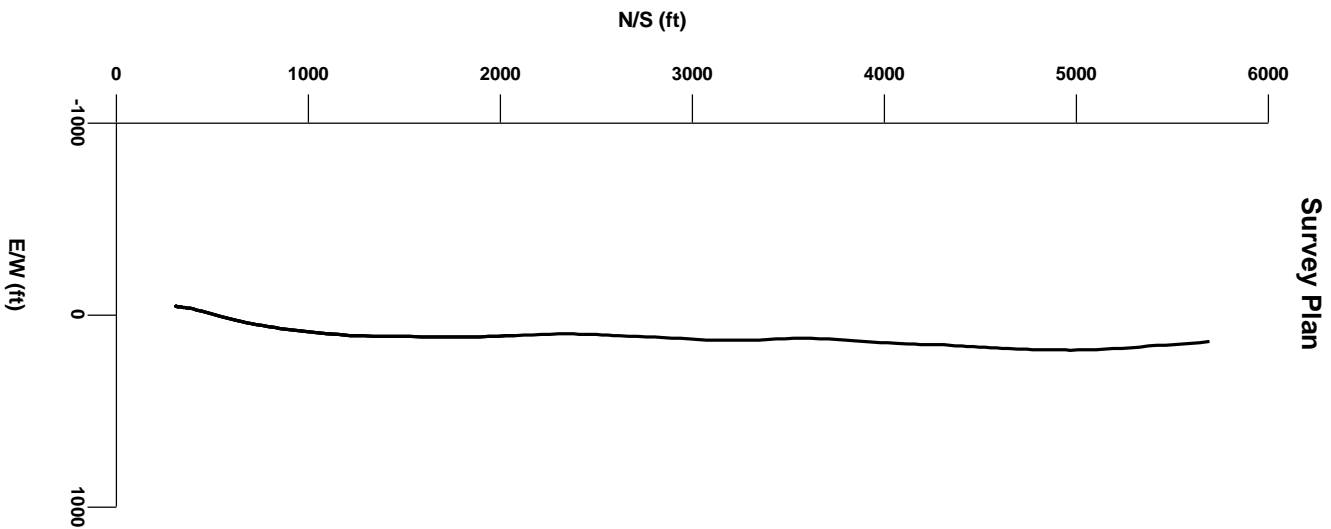
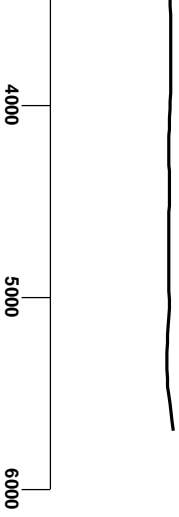


LOG created using Lplot VH Version 3.0, September 29, 2009, Copyright (C) 1999-2009 Pason Systems Corp.

OPERATOR: ENCANA OIL & GAS
WELL: EFH320-10N C29 595
LOCATION: NENW SEC 29 T5S R95W
COUNTY: GARFIELD
STATE: COLORADO
SPOT: 667' FNL x 2149' FWL
ELEVATION: GL: 7010'; KB: 7033'
FIELD: WILDCAT
SPUD DATE: SEPTEMBER 18, 2009
TD DATE: SEPTEMBER 29, 2009
DATES LOGGED: 09/17/09 TO 09/29/09
DEPTHS LOGGED: 6760' - 12572'
LOGGERS: KATHY BLUM
DRILLING FLUID: LSND
DRILLING RIG: PATTERSON UTI RIG #308
API: 05-045-15492-0000
LOG TYPE: MUDLOG, VERT Kickoff Build to HORIZONTAL
SCALE: 1:240 (5 inches per 100 feet)
REMARKS: DIRECTIONAL DRILLING BY DIRECTIONAL PLUS
 BOTTOM HOLE: Sec 20 T5S R95W
 TVD: 7360'; N/S @ 5692.3; E/W @ 139.7

AFE# 08103397





Carbonaceous Shale

Sandstone

Claystone

Shale

Coal

Siltstone

—

Argillaceous

■

Carbonaceous Flakes

■

Coal

P

Pyrite

Λ

Siliceous

..

Silty

Bit Change

Connection

Connection Gas

Gas Show

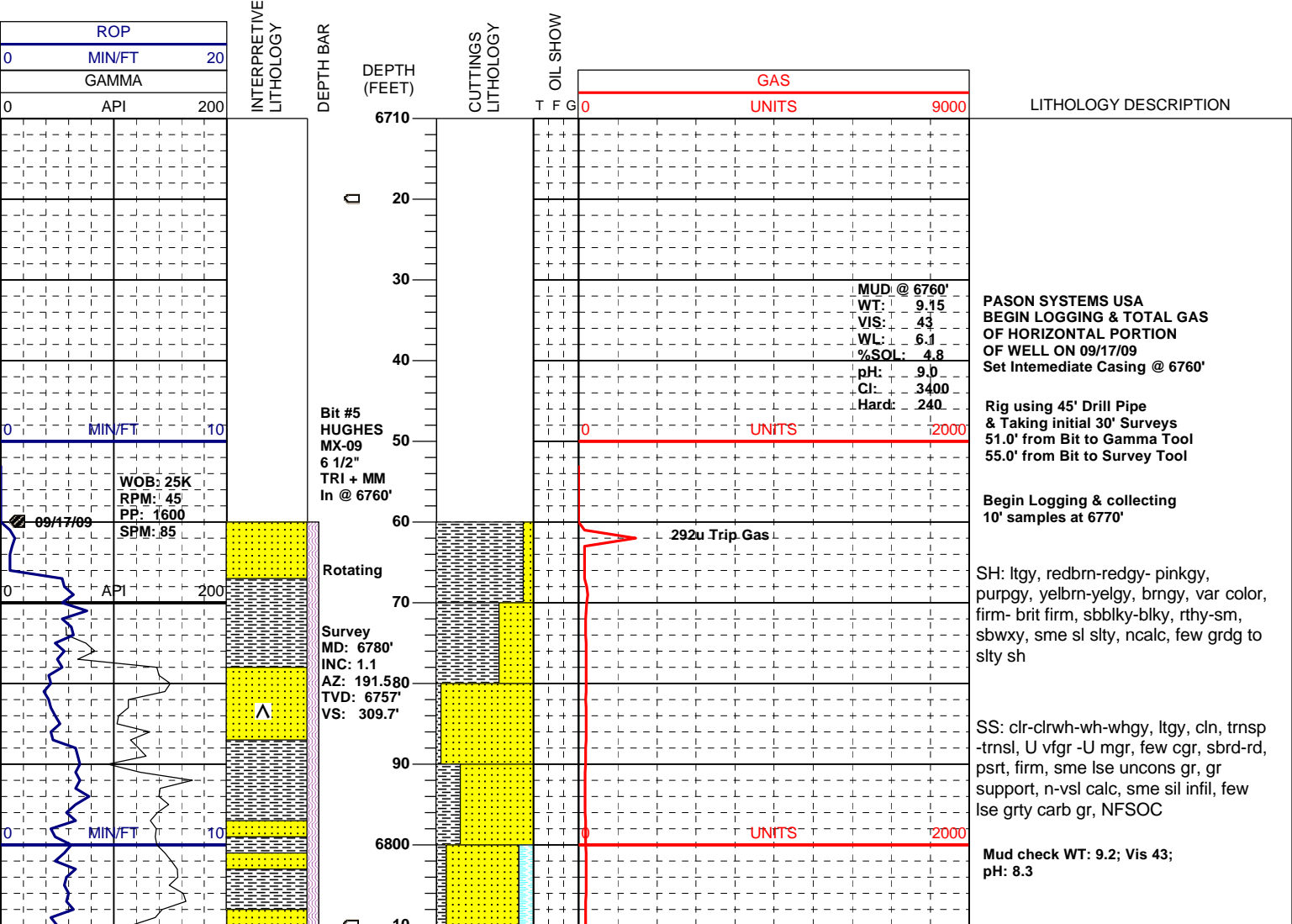
Lost Circulation

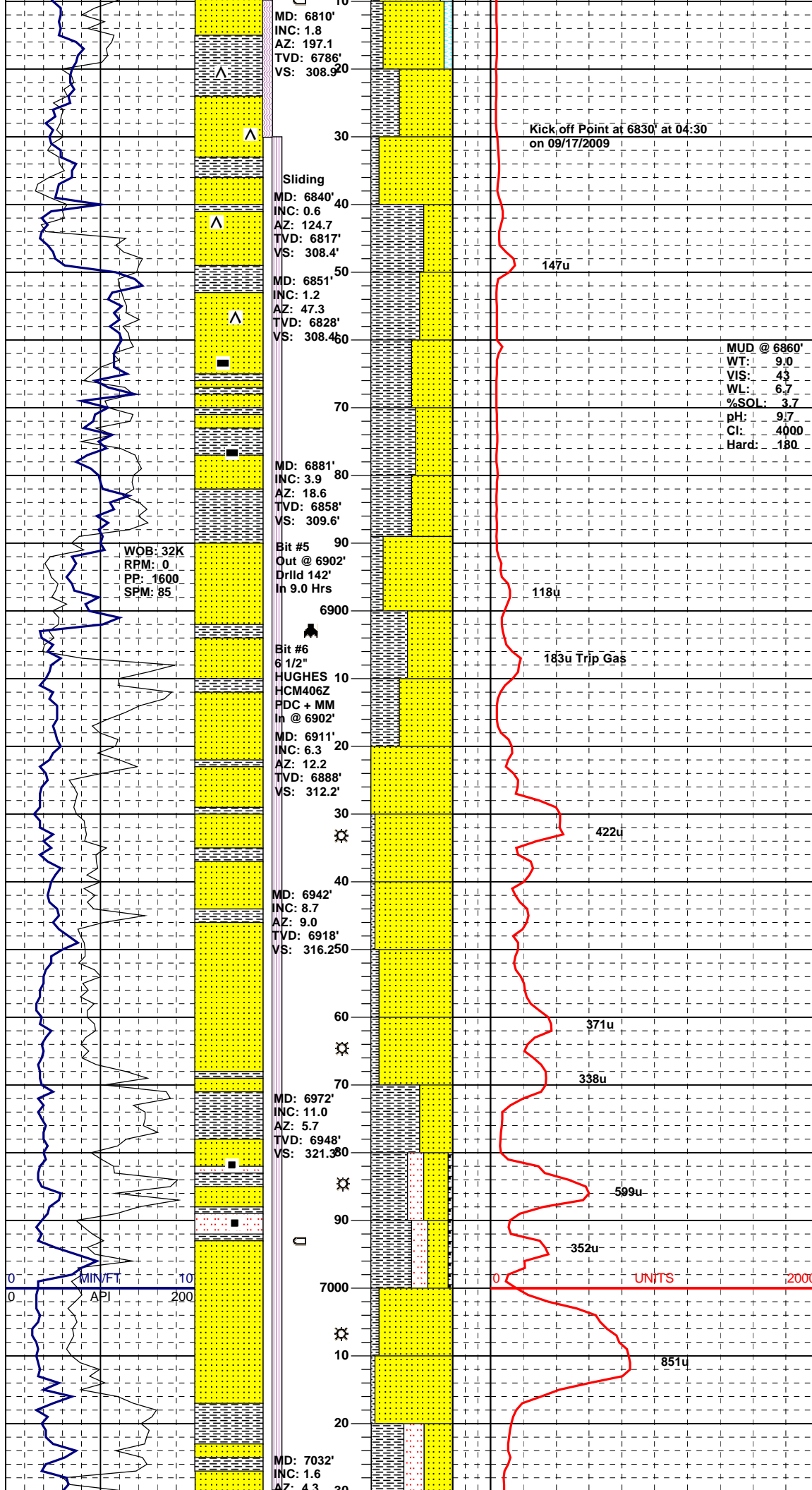
Midnight Depth

Arrow

Rotating

Sliding





tr CLYST: ltgy-whgy, vsft-sft, gummy-sticky, amorph, abnt resd cly w/ sample washing

SS: ltgy-mgy, whgngy, gngy, clrgngy, cln, op-trnsl, L vf-L fgr, sbang-sbrd, wrst, firm- brit hd, vhd, dns-grny, gr support, ncalc, sme clr -sl milky sil infil, NFSOC

SH: ltgy-ltngy, gngy, mgy, whgy, ltpurpgy, firm-brit firm, brit hd, sbbiky-blky, wxy-sbwxy, dns, rthy-sl slty, ncalc, sme xl milky qtz

Mud check WT: 9.0; Vis 43; pH: 9.6

SS: clr-clrgy, ltgy-ltngy, whgy, wh, mgy, cln. op-trnsl, trnsp, U vf-U mgr, few cgr, sbang-sbrd, ang, psrt, firm - brit hd, vhd, dns, sme lse gr, gr support, ncalc, sme clr sil infil, tr lse shy carb & coal frag, NFSOC

SS: clr-clrwh, wh-whgy, ltgy, cln, trnsp -trnsl, U fgr -U mgr, few cgr, sbrd-rd, psrt, firm, abnt lse uncons gr, sme dns, gr support, n-vsl calc, sme sil infil, few lse grty carb gr, NFSOC

TOOH @ 6902' for Bit Change Change from Tricone to PDC Bit 45.7' from Bit to Gamma Tool 50.0' from Bit to Survey Tool

SH: ltgy-ltngy, gngy, mgy, whgy, firm -brit firm, brit hd, sbbiky-blky, wxy-sbwxy, dns, rthy-sl slty, sme sdy, ncalc, sme xl milky qtz

SS: clr-clrwh, clrgy, wh, whgy, ltgy, cln, fros, trnsp-trnsl, sl op, U vf- L cgr, sbang-ang, sbrd, sme gr frac, psrt, pred lse uncons gr, gr support, n-sl calc, weak pale bluewh flor (70%), NSOC

Mud check WT: 9.2; Vis 56; pH: 9.5

SS: clr-clrgy, clrwh, ltgy, wh-whgy, mgy, few gngy-mgngy, cln, trnsp-trnsl, op, sme fros, L vf- L cgr, sbang-ang, sbrd, psrt, abnt lse uncons gr, sme sft clus, gr support, n-sl calc, sme grdg to slty ss, NFSOC

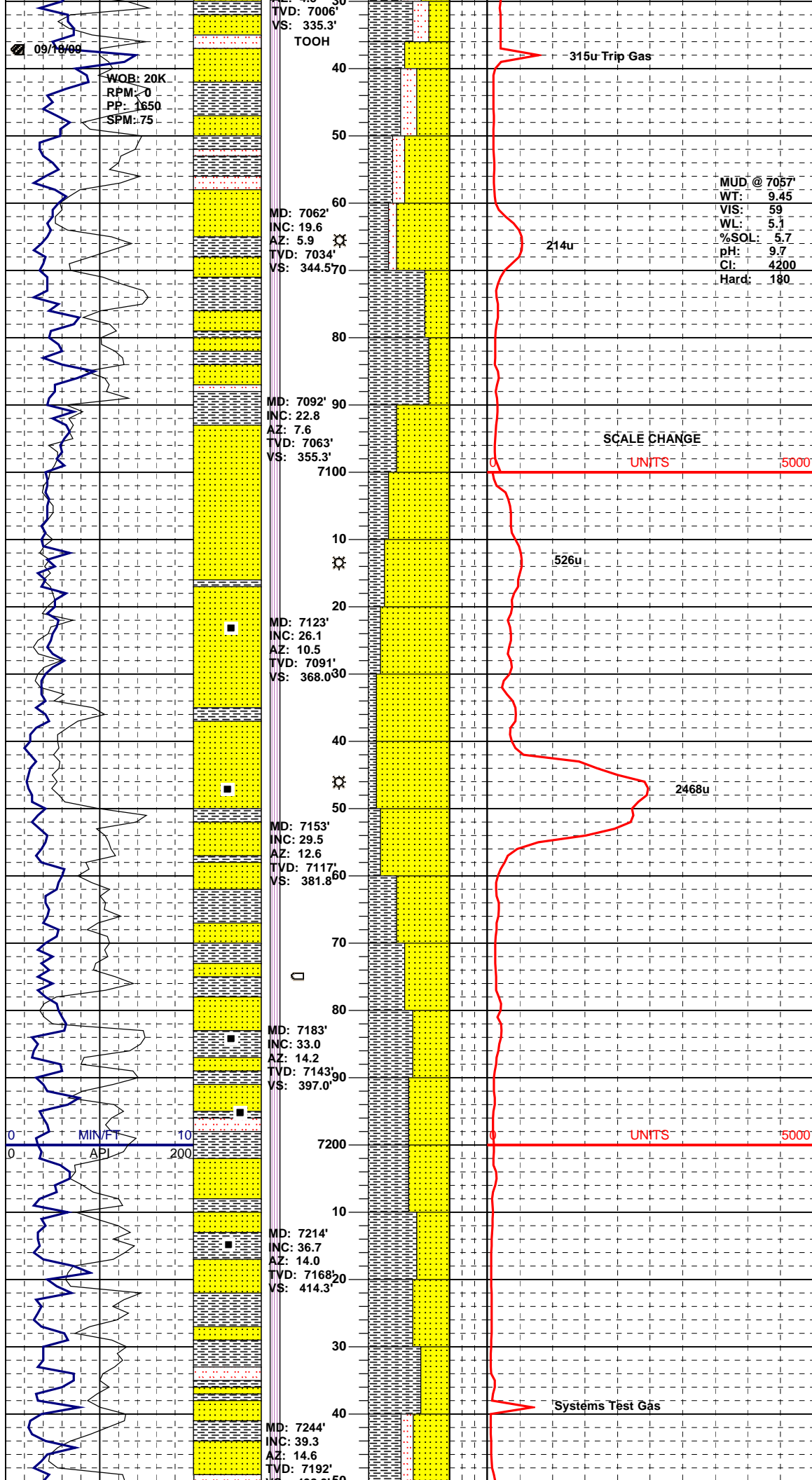
SLTST: ltgy-mgy, gngy, mgy, firm-brit firm, brit hd, blky-sbbiky, grty-shy, ncalc, grdg to slty ss-slty sh, tr carb

tr CARB SH: dkgy-blkgy, firm- brit sft, slty-rthy, tr carb-coaly frag

SS: clr-clrgy, clrbn, tan, wh, ltgy, cln, trnsp-trnsl, U vf -U fgr, few m-cgr, sbang-sbrd, psrt, pred lse uncons gr, sme sft clus, gr support, n-sl calc, NFSOC

Mud check WT: 9.2; Vis 56; pH: 9.5

SH: ltgy-mgy, few dkgy, firm- brit firm, sbbiky-blky, slty-grty, rthy, few sm, ncalc, grdg to slty ss-slty sh, tr carb



sh

SS: ltgy-whgy, wh, clrgy-clrwhgy, few mgy, cln-sl drty, op-trnsl, U f-L vfgr, slty i.p., sbdr, wsrt, firm -brit firm, brit hd, sme lse gr, gr support, sme dns-slty, n-vsl calc, sme grdg to slty ss, NFSOC

Mud check WT: 9.3+; Vis 56; pH: 9.6

SH: ltgy-mgy, tr dkgy, firm- brit firm, sbplty-sbblky, rthy-slty, sme sl sbwxy, ncalc, sme grdg to slty sh, tr carb sh

SS: ltgy-ltbrngy, mbrngy, clbrngy, clrgy, op-trnsl, L fgr-U vfgr, sbdr-sbang, wsrt, hd- firm clus, sme sl sft, gr support, m-slc alc, sme grdg to shy ss, NFSOC

Mud check WT: 9.3+; Vis 57; pH: 9.6

SS: clrwh-clrgy, whgy-wh, clrwhgy, ltgy, s&p, cln trnsl-sl trnsp, op, U f-U vfgr, few mgr, sbang-sbdr, msrt, firm-brit firm, gr support, m-sl calc, abnt p-p blk carb flks, tr carb sh/coal frag, NFSOC

SS: clrwh-clrwhgy, clr, wh-ltgy, s&p, cln, trnsl-sl op, trnsp, L fgr-L mgr, vfgr, sbang-sbdr, ang, wsrt, firm, brit firm, sl sft, gr support, m-sl calc cmt, sme p-p blk carb flk, pale whblue FLOR (100% even) weak slow pale yel cut, pale yel res ring

SH: mgy-ltgy, tr dkgy, firm- brit sft, sl cly, sbplty-sbblky, blk, rthy-slty, sm, sme cly sh, n-sl calc, sme grdg to slty sh, tr carb sh, sme sft gy cly in sample washing

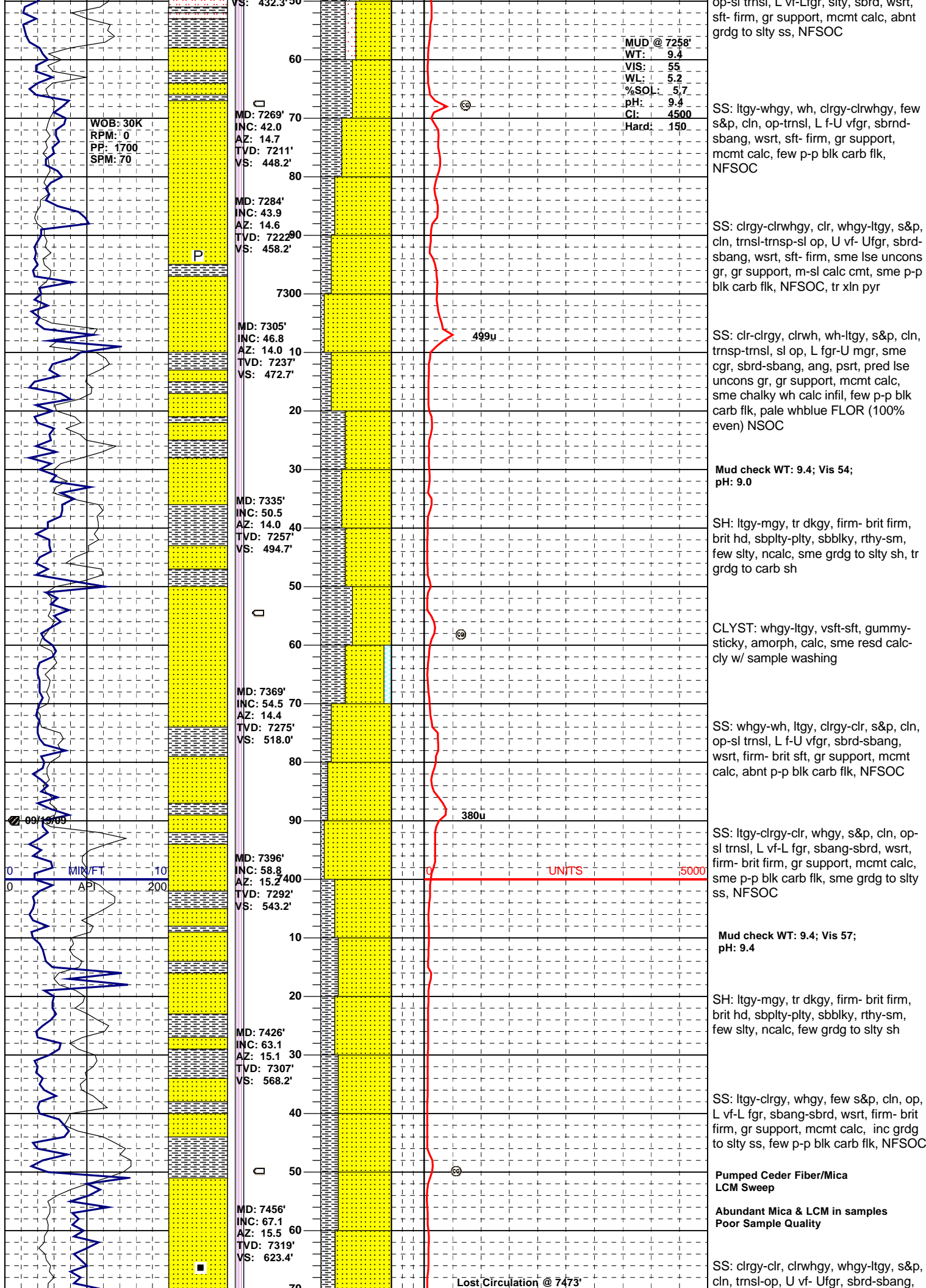
Mud check WT: 9.3+; Vis 56; pH: 9.4

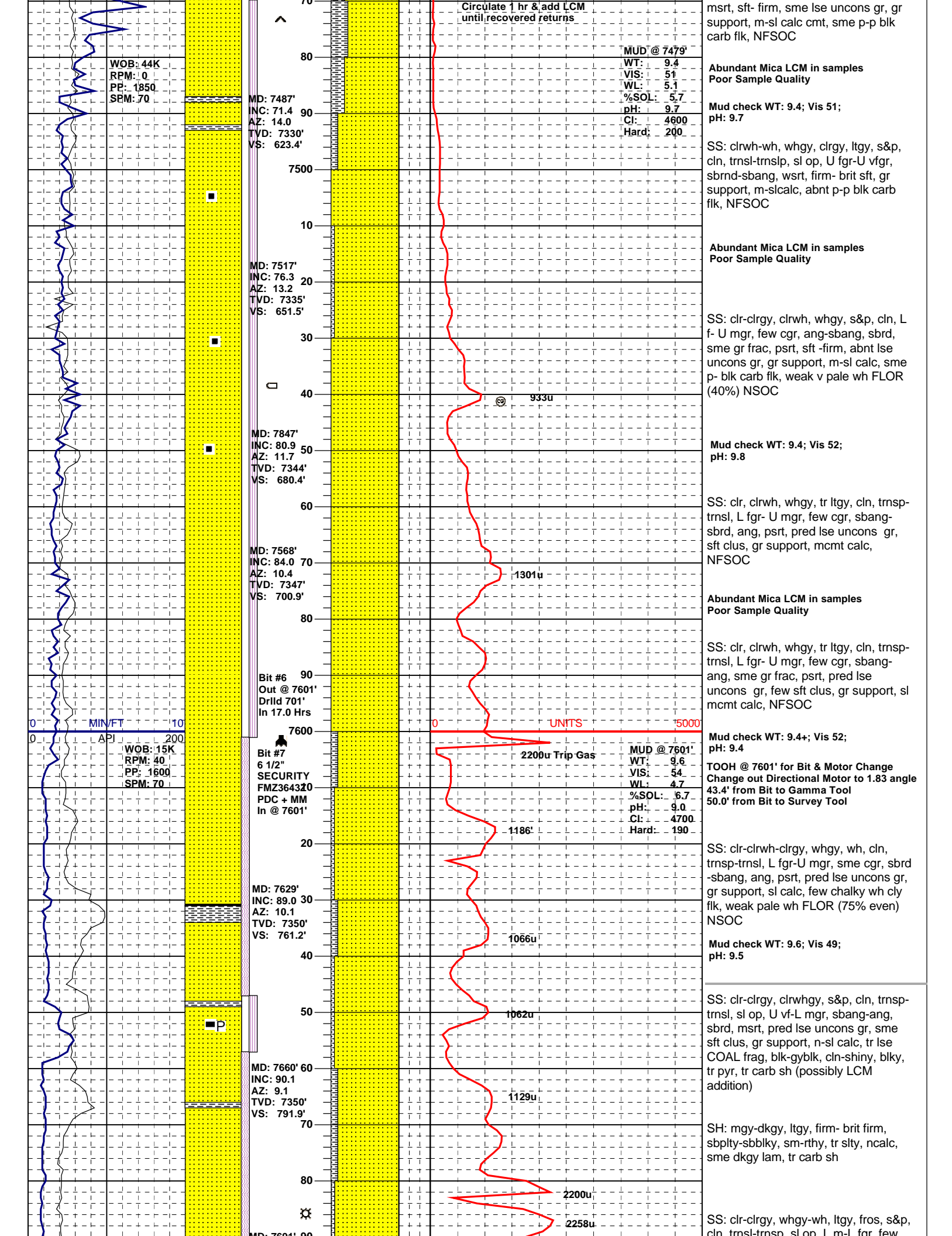
SS: ltgy, mgy, whgy-clrgy, cln-drty, op-trnsl, L vf -U fgr, sbdr, wsrt, gr-sl mtx support, m-sl calc, sme gy cly infil, tr carb infil, sme grdg to slty-shy ss, NFSOC sme sft gy cly in sample washing

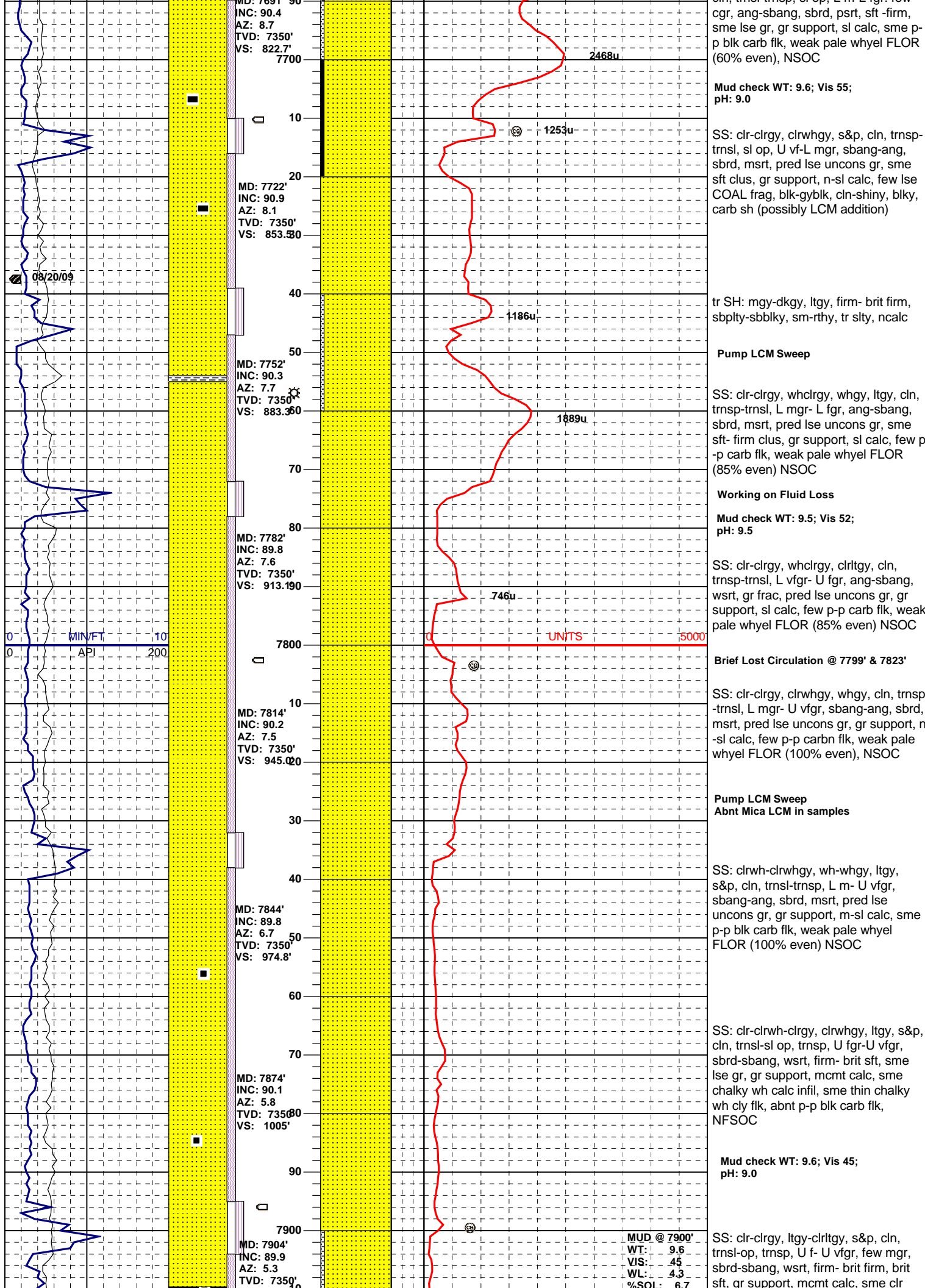
SH: mgy-dkgy, ltgy, firm- brit firm, sbblky-blky, slty-grty, rthy, few sm, ncalc, inc grdg to slty/grty sh, few carb sh

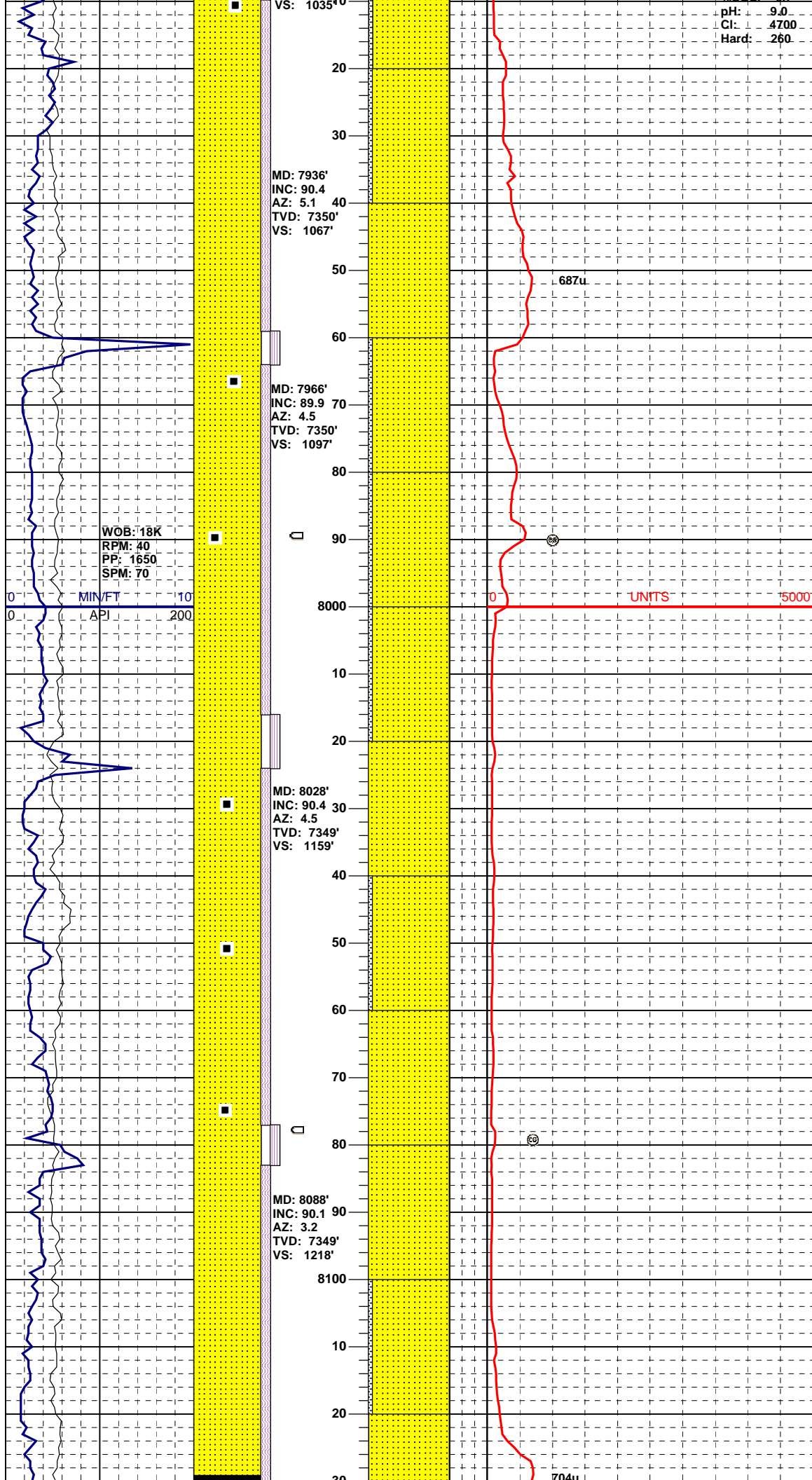
Mud check WT: 9.3+; Vis 54; pH: 9.4

SS: ltgy-mgy, clrgy, whgy, cln-sl drty, op-trnsl, L fgr, vfgr, sbdr, wsrt, firm-brit firm, brit hd, sme lse gr, gr support, sme dns-slty, n-vsl calc, sme grdg to slty ss, NFSOC









calc infil, tr chalky calc, abnt p-p blk carb flk, NFSOC

pH: 9.0
Cl: 4700
Hard: 260

SS: clr-clrgy, clrwghy, ltgy, s&p, cln, trnsp-trnsl, U f -U vfgr, sbdr-sbang, few rd, abnt lse unconcs gr, sme sft-firm clus, gr support, m-sl calc, sme p-p blk carb flk, pale bluwh FLOR (100% even) NSOC

687u

tr SH: mgy-ltgy, firm- brit firm, sbply-sbblky, sm-rthy, tr slty, ncalc

Mud check WT: 9.6; Vis 48; pH: 9.4

SS: clr-clrgy, clrwghy, ltgy, s&p, cln, trnsp-trnsl, U f -U vfgr, sbdr-sbang, few rnd, sft-firm clus, gr support, m-sl calc, sme p-p blk carb flk, weak pale bluwh FLOR (80% even) NSOC

SH: mgy-ltgy, firm- brit firm, sbply-sbblky, sm-rthy, tr slty, ncalc

SS: clrgy-clr, ltgy, clrmgy, crm, cln, trnsl-sl opa, trnsp, U vf- U fgr, few v fgr, sbdr-rd, sbang, wsrt, pred lse unconcs gr, sme sft-firm, few dns clus, gr support mcmnt calc, tr carb infil, abnt p-p carb flk, tr thin chalky calc flk, NFSOC

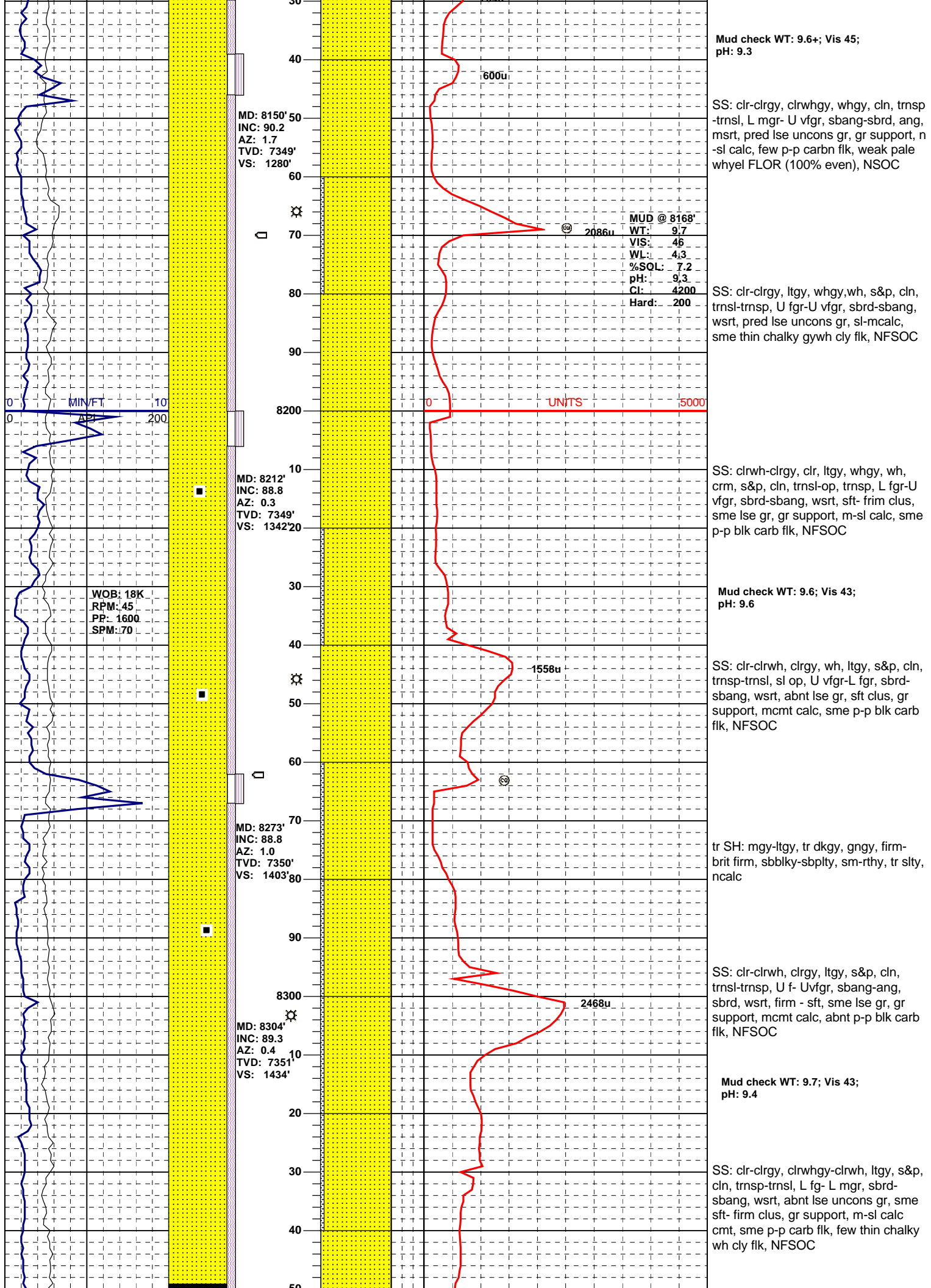
Mud check WT: 9.6; Vis 45; pH: 9.4

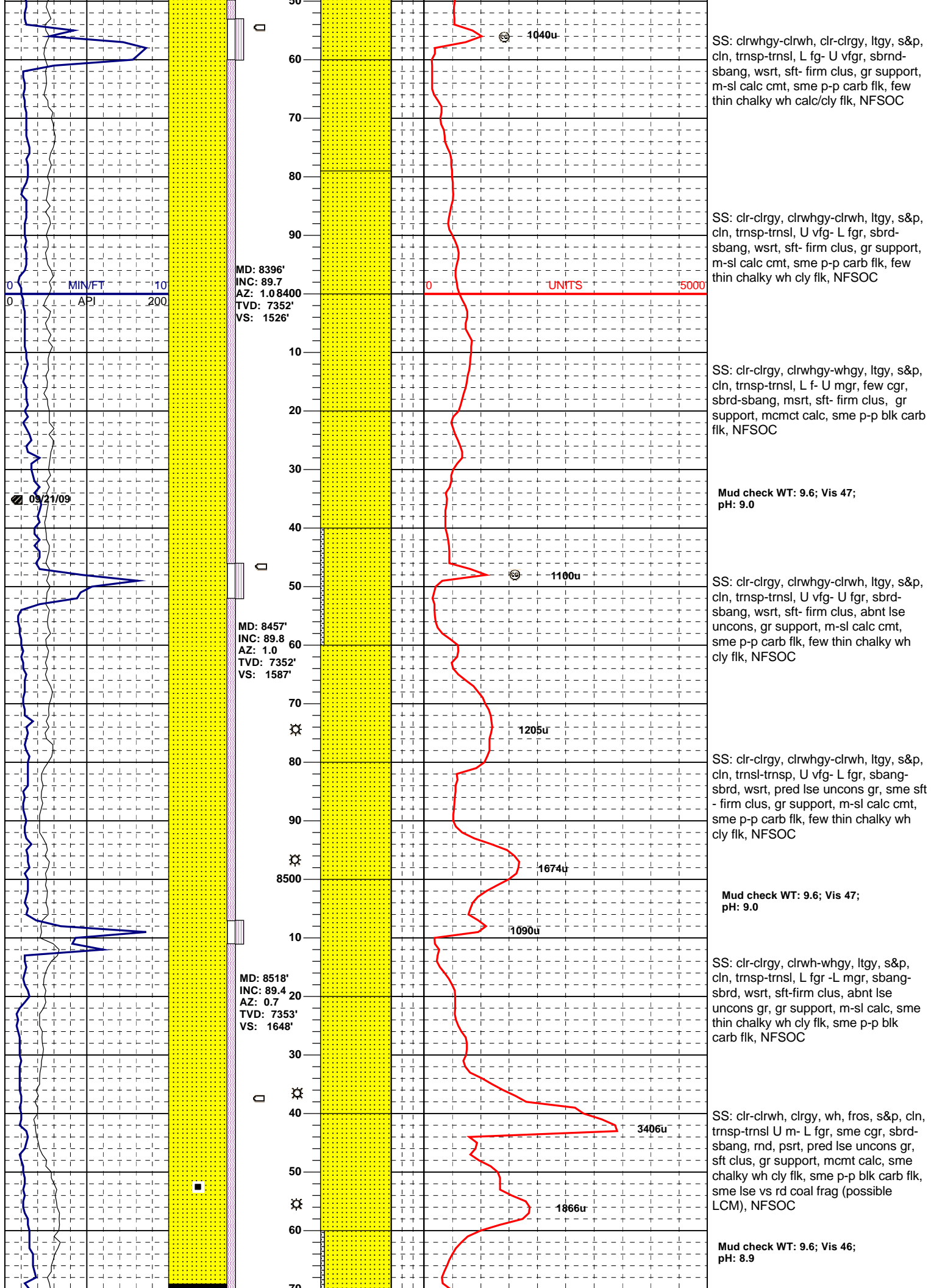
SS: clr-clrgy, ltgy-clrltgy, s&p, cln, trnsl-op, trnsp, U f- U vfgr, few mgr, sbdr-sbang, wsrt, firm- brit firm, brit sft, gr support, mcmnt calc, sme clr calc infil, tr chalky calc, abnt p-p blk carb flk, NFSOC

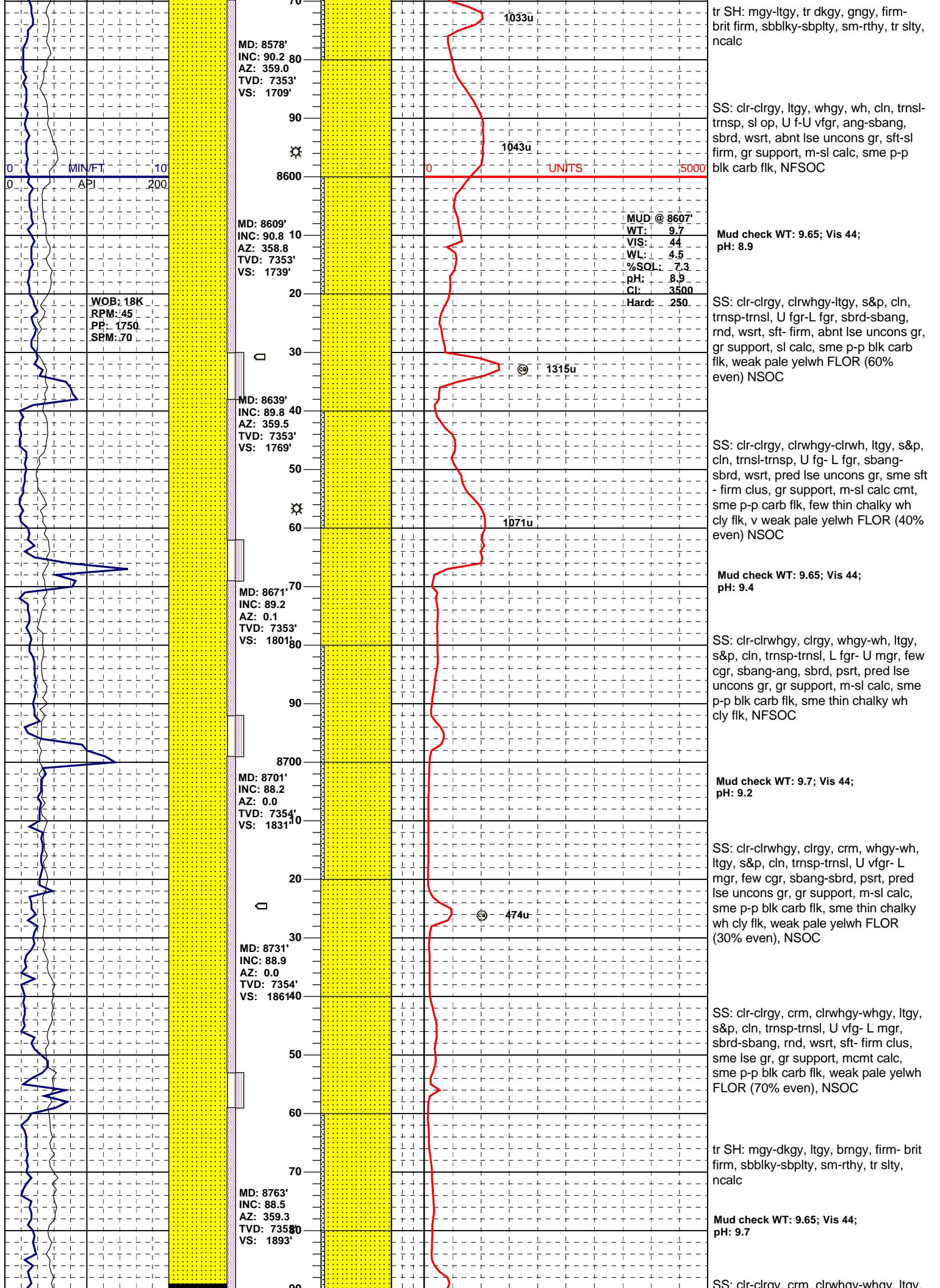
SS: clr-clrgy, clrwghy, ltgy, s&p, cln, trnsp-trnsl, U f -U vfgr, sbdr-sbang, few rnd, sft-firm clus, gr support, m-sl calc, sme p-p blk carb flk, weak pale bluwh FLOR (80% even) NSOC

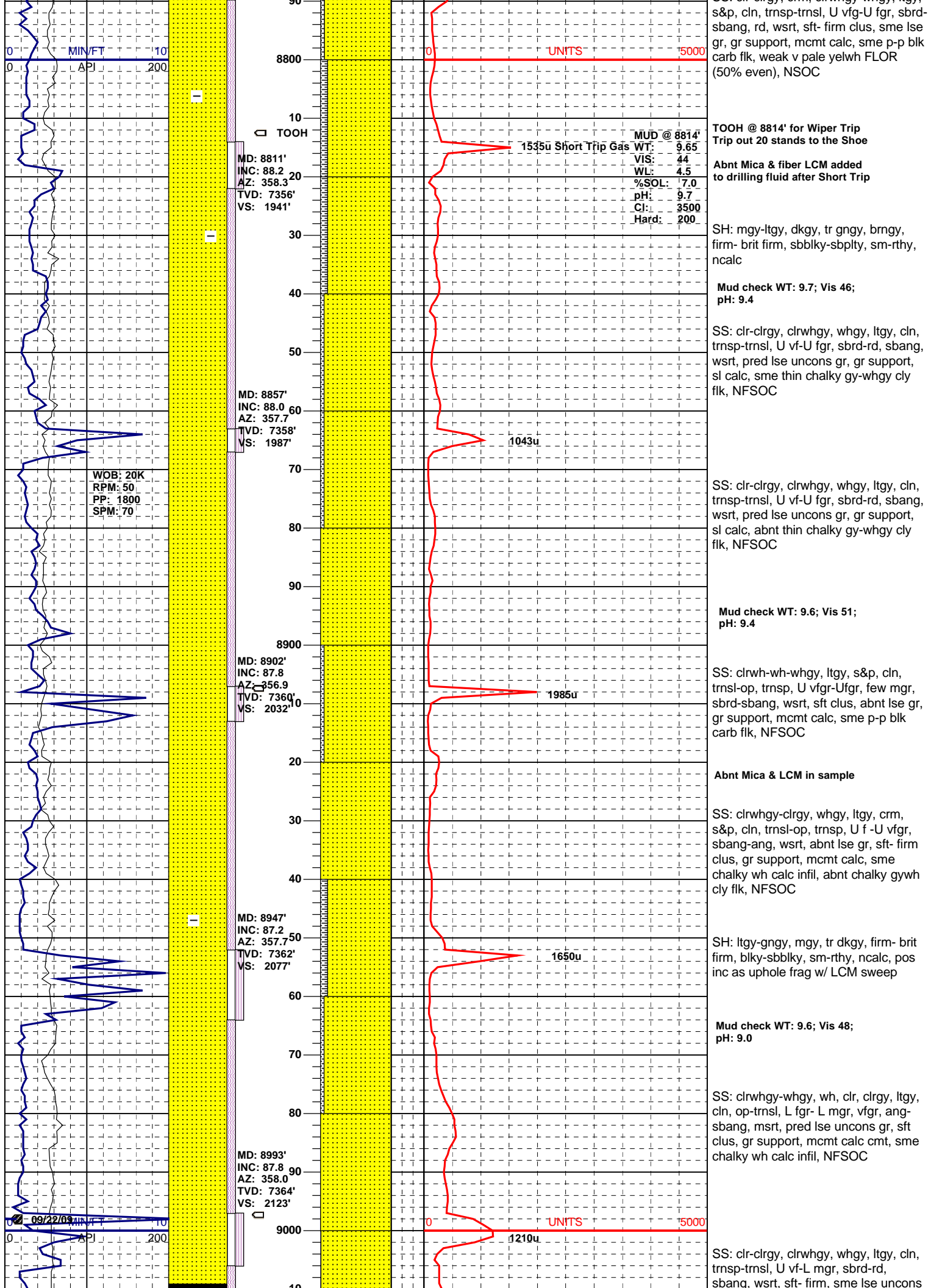
Small Seepage Loss 10 Bbl Pump Hi Vis Sweep

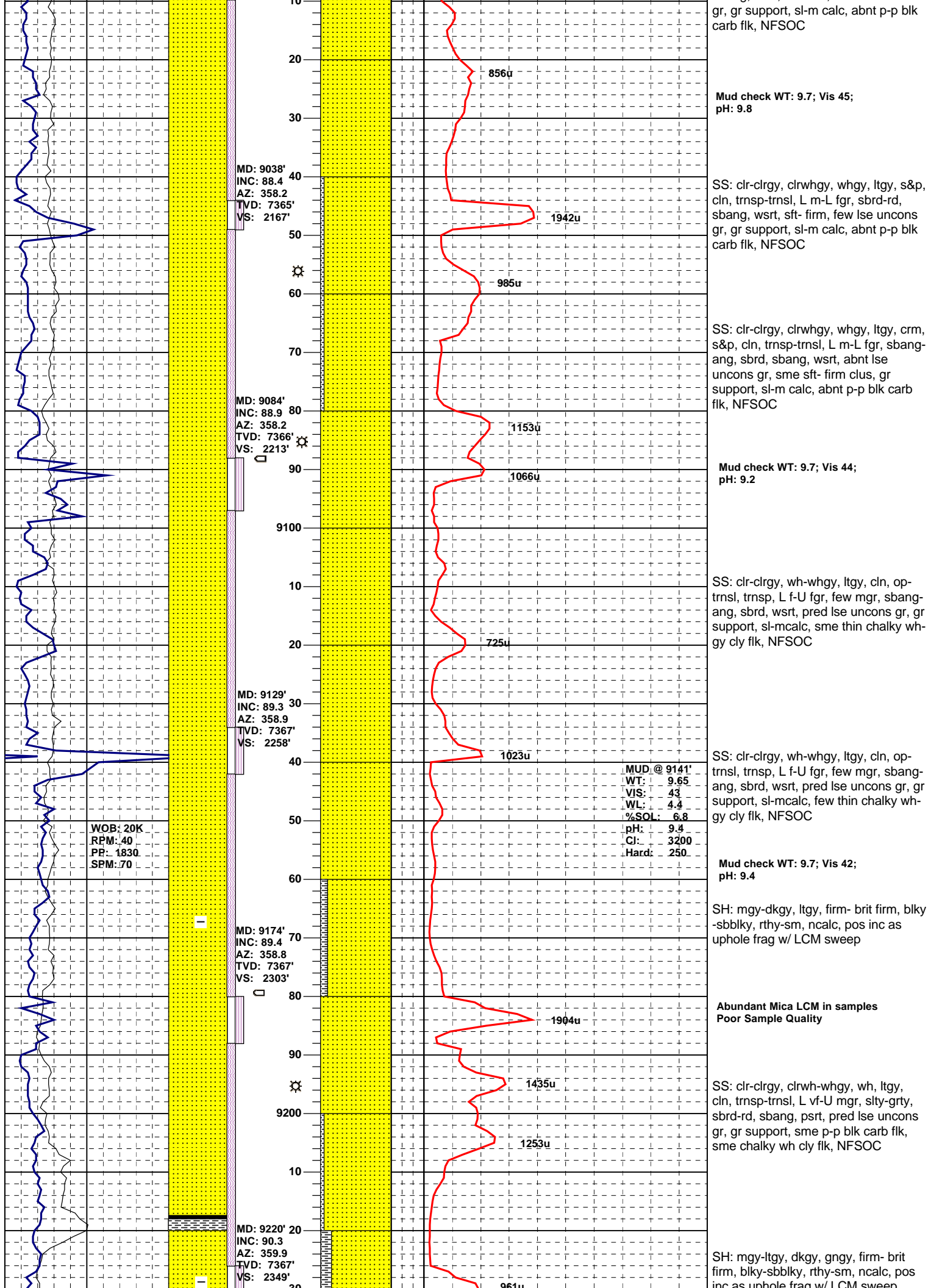
SS: clr-clrgy, clrwghy, ltgy, s&p, cln, trnsp-trnsl, U f -U vfgr, sbdr-sbang, few rnd, abnt lse unconcs gr, sme sft-firm clus, gr support, m-sl calc, sme p-p blk carb flk, weak pale bluwh FLOR (50% even) NSOC

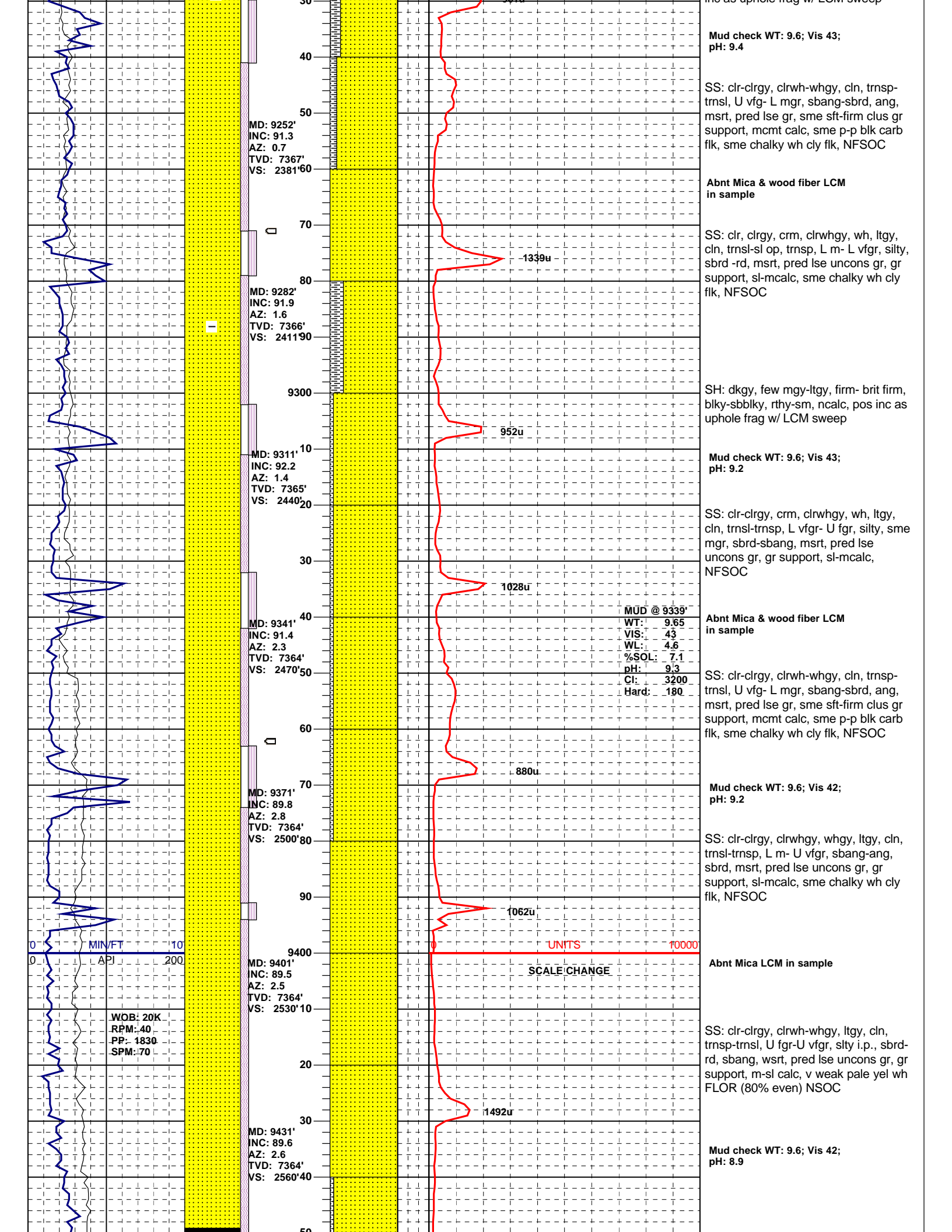


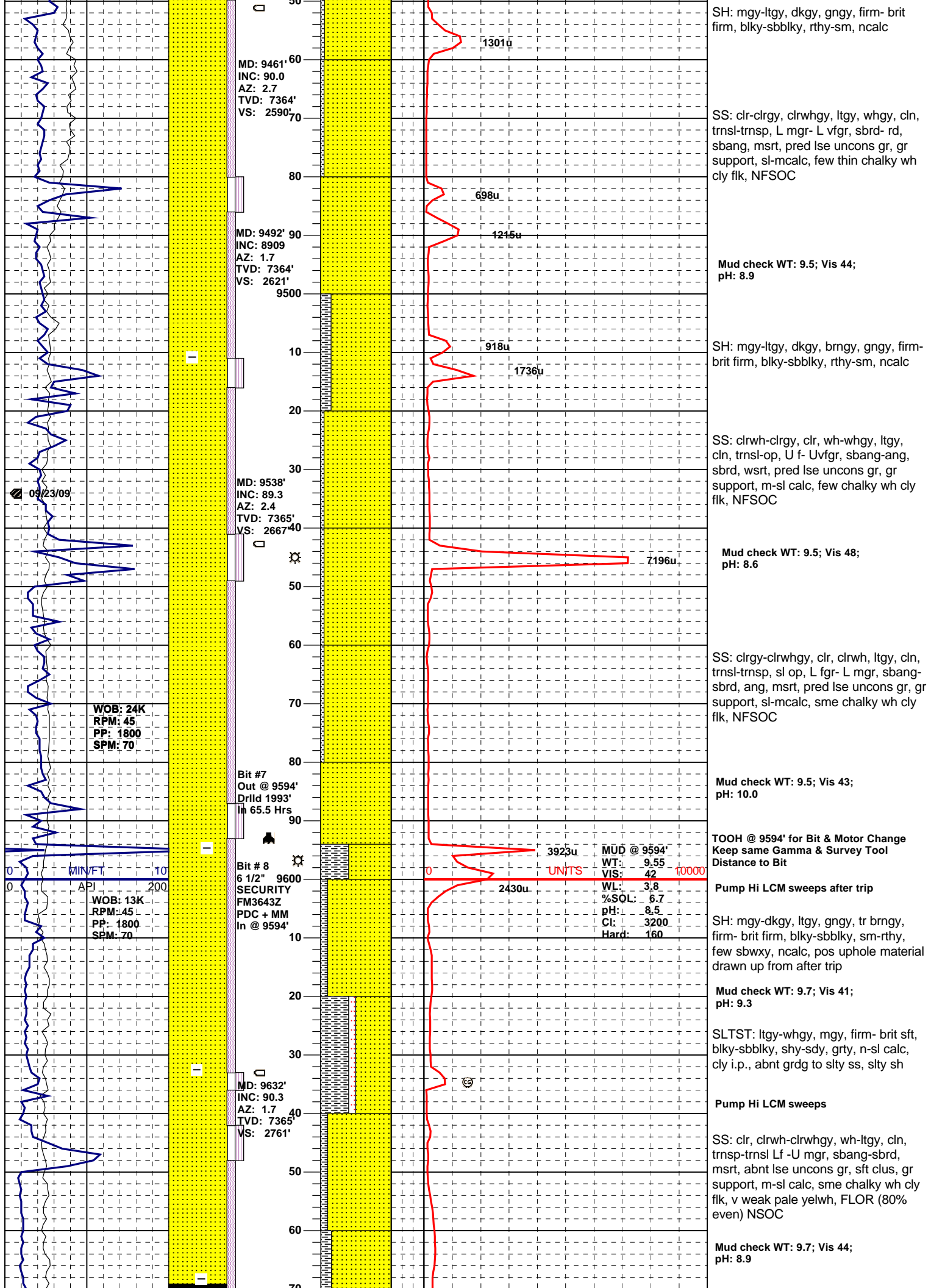












SH: mgy-ltgy, dkgy, gngy, firm- brit firm, blkys-sbbilky, rthy-sm, ncalc

SS: clr-clrgy, clrwhgy, ltgy, whgy, cln, trnsi-trnsp, L mgr- L vfgr, sbrd- rd, sbang, msrt, pred lse uncongs gr, gr support, sl-mcalc, few thin chalky wh cly flk, NFSOC

Mud check WT: 9.5; Vis 44; pH: 8.9

SH: mgy-ltgy, dkgy, brngy, gngy, firm- brit firm, blkys-sbbilky, rthy-sm, ncalc

SS: clrwh-clrgy, clr, wh-whgy, ltgy, cln, trnsi-op, U f- Uvfgr, sbang-ang, sbrd, wsrt, pred lse uncongs gr, gr support, m-sl calc, few chalky wh cly flk, NFSOC

Mud check WT: 9.5; Vis 48; pH: 8.6

SS: clrgy-clrwhgy, clr, clrwh, ltgy, cln, trnsi-trnsp, sl op, L fgr- L mgr, sbang-sbrd, ang, msrt, pred lse uncongs gr, gr support, sl-mcalc, sme chalky wh cly flk, NFSOC

Mud check WT: 9.5; Vis 43; pH: 10.0

TOOH @ 9594' for Bit & Motor Change Keep same Gamma & Survey Tool Distance to Bit

Pump Hi LCM sweeps after trip

SH: mgy-dkgy, ltgy, gngy, tr brngy, firm- brit firm, blkys-sbbilky, sm-rthy, few sbwxy, ncalc, pos uphole material drawn up from after trip

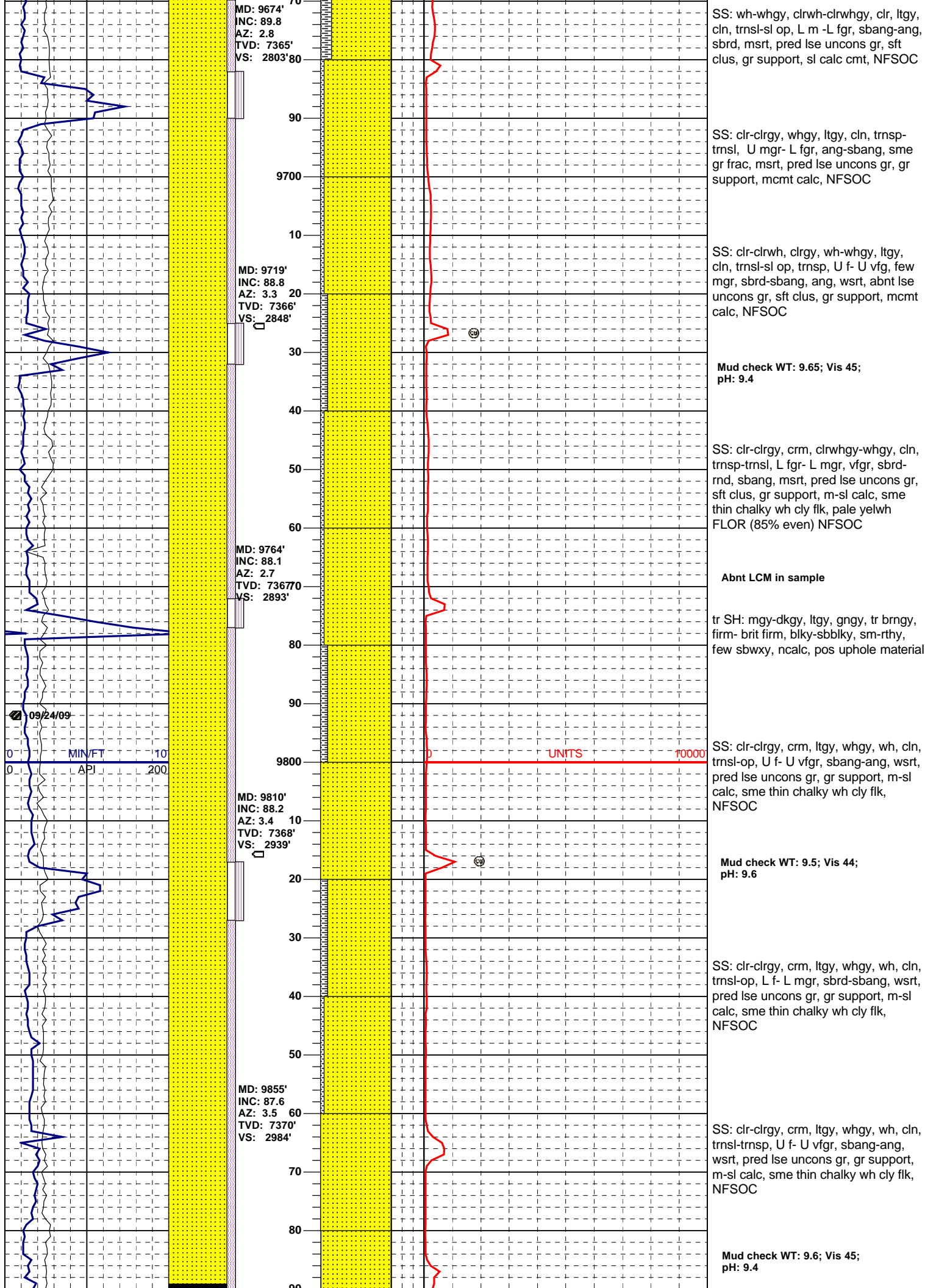
Mud check WT: 9.7; Vis 41; pH: 9.3

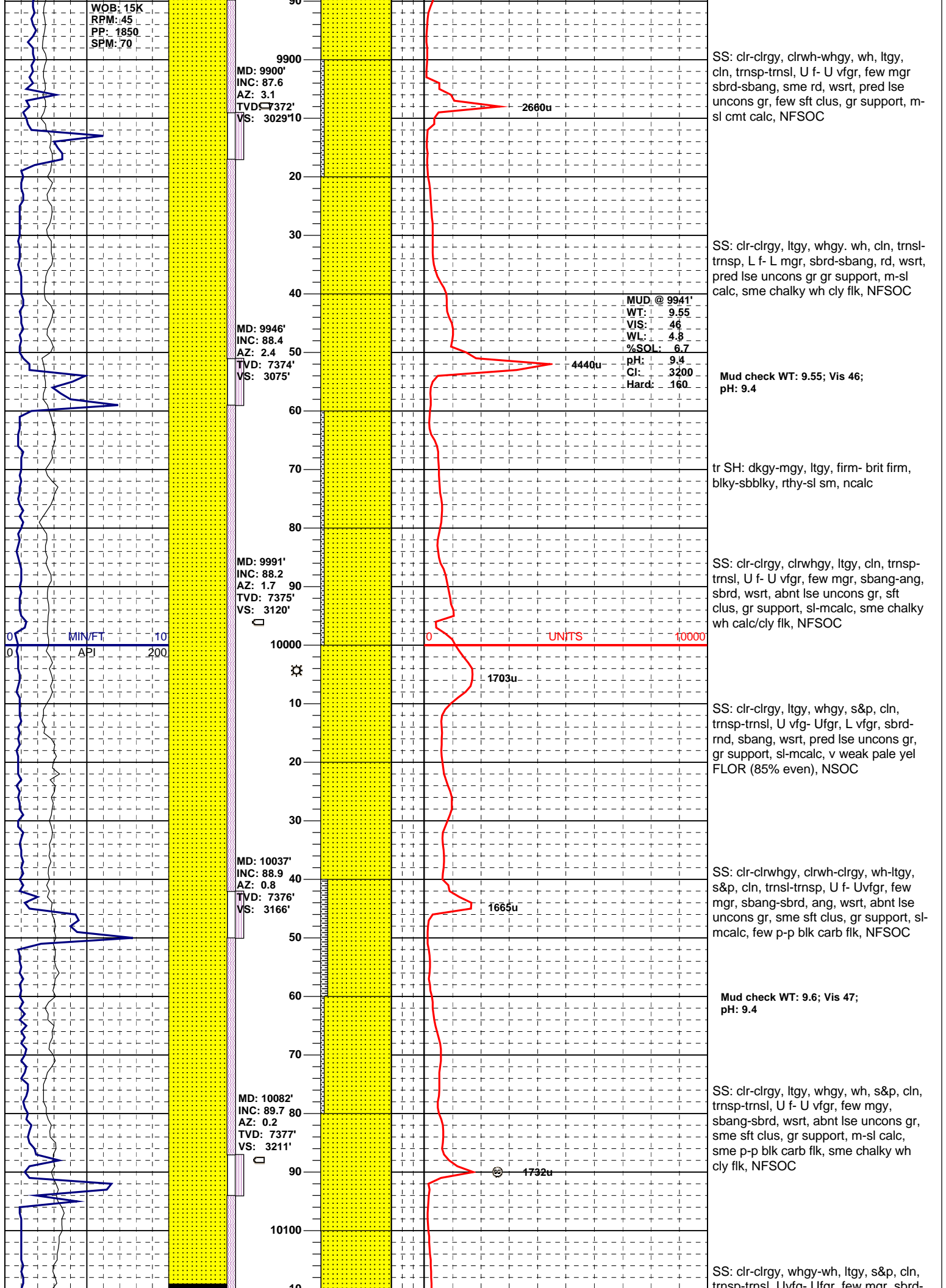
SLTST: ltgy-whgy, mgy, firm- brit sft, blkys-sbbilky, shy-sdy, grty, n-sl calc, cly i.p., abnt grdg to slty ss, slty sh

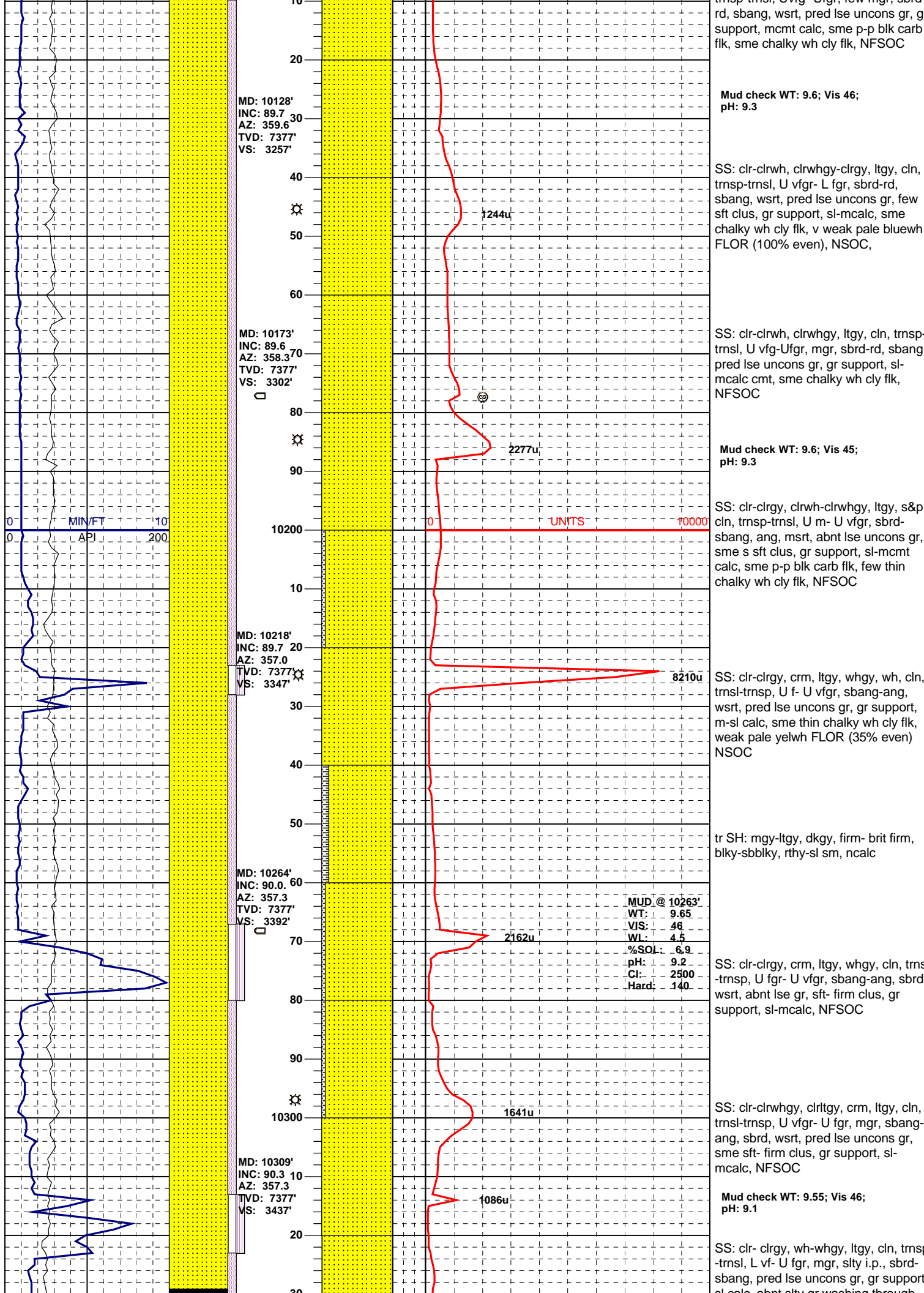
Pump Hi LCM sweeps

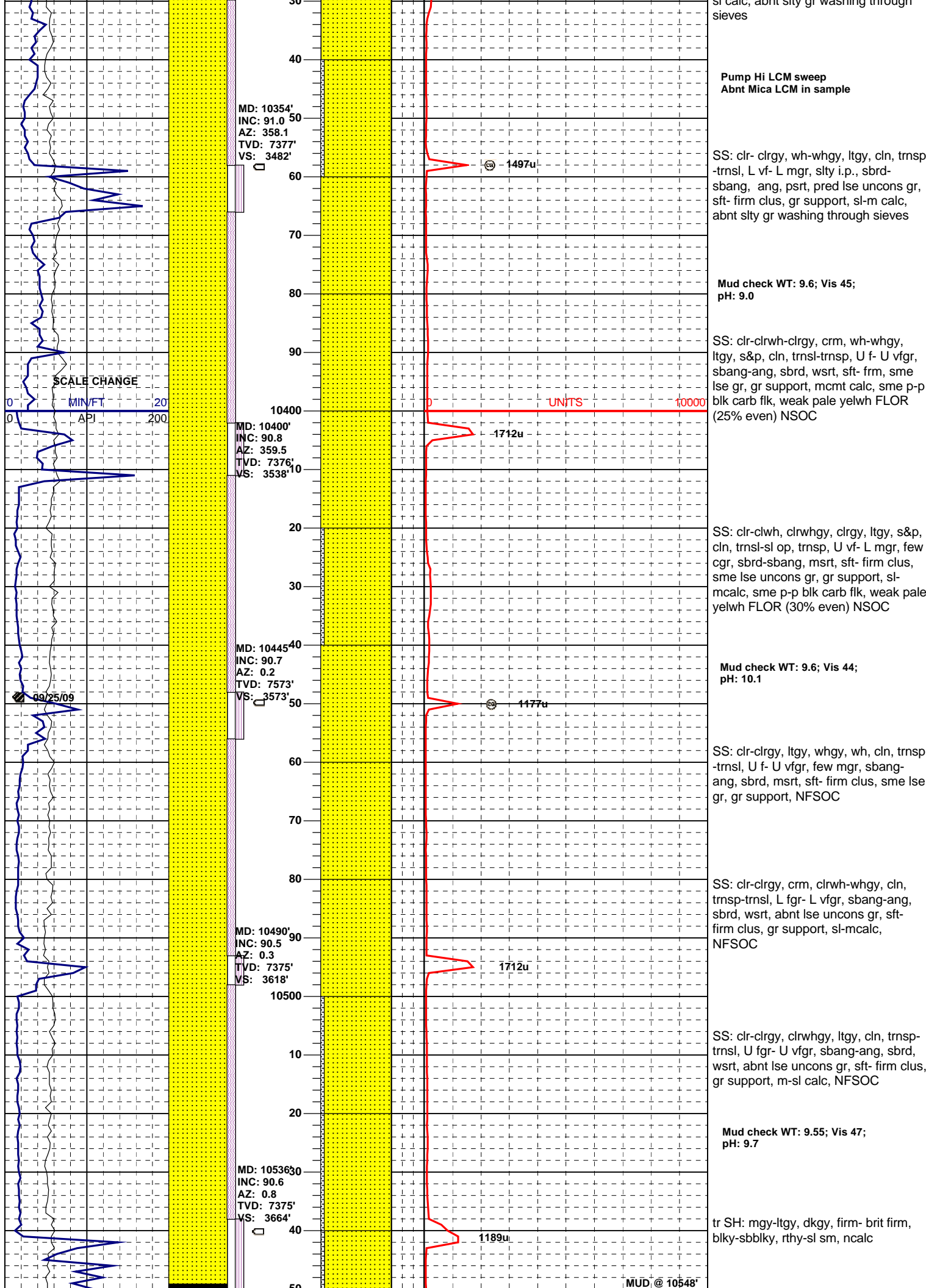
SS: clr, clrwh-clrwhgy, wh-ltgy, cln, trnsi-trnsi Lf -U mgr, sbang-sbrd, msrt, abnt lse uncongs gr, sft clus, gr support, m-sl calc, sme chalky wh cly flk, v weak pale yelwh, FLOR (80% even) NSOC

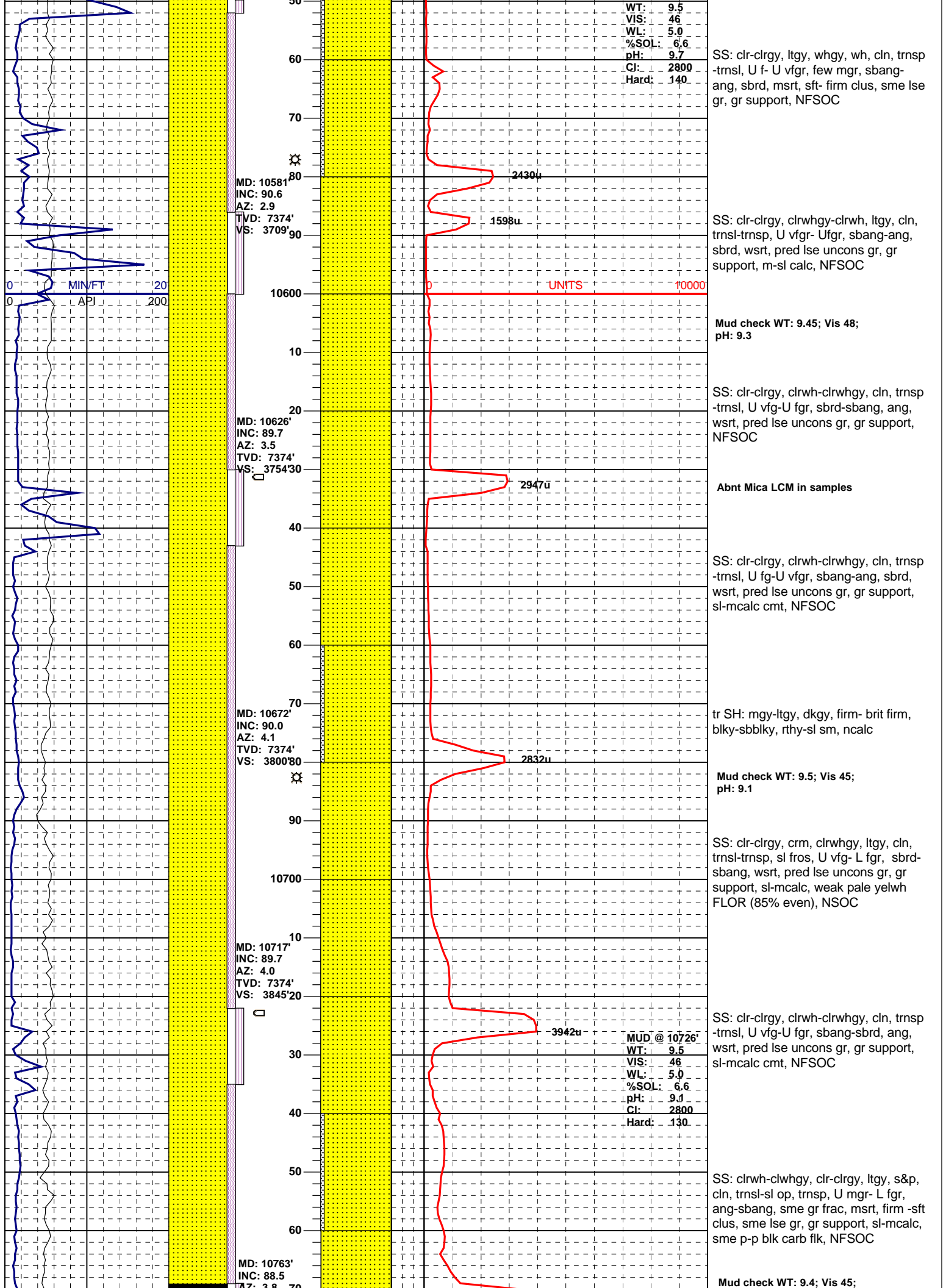
Mud check WT: 9.7; Vis 44; pH: 8.9

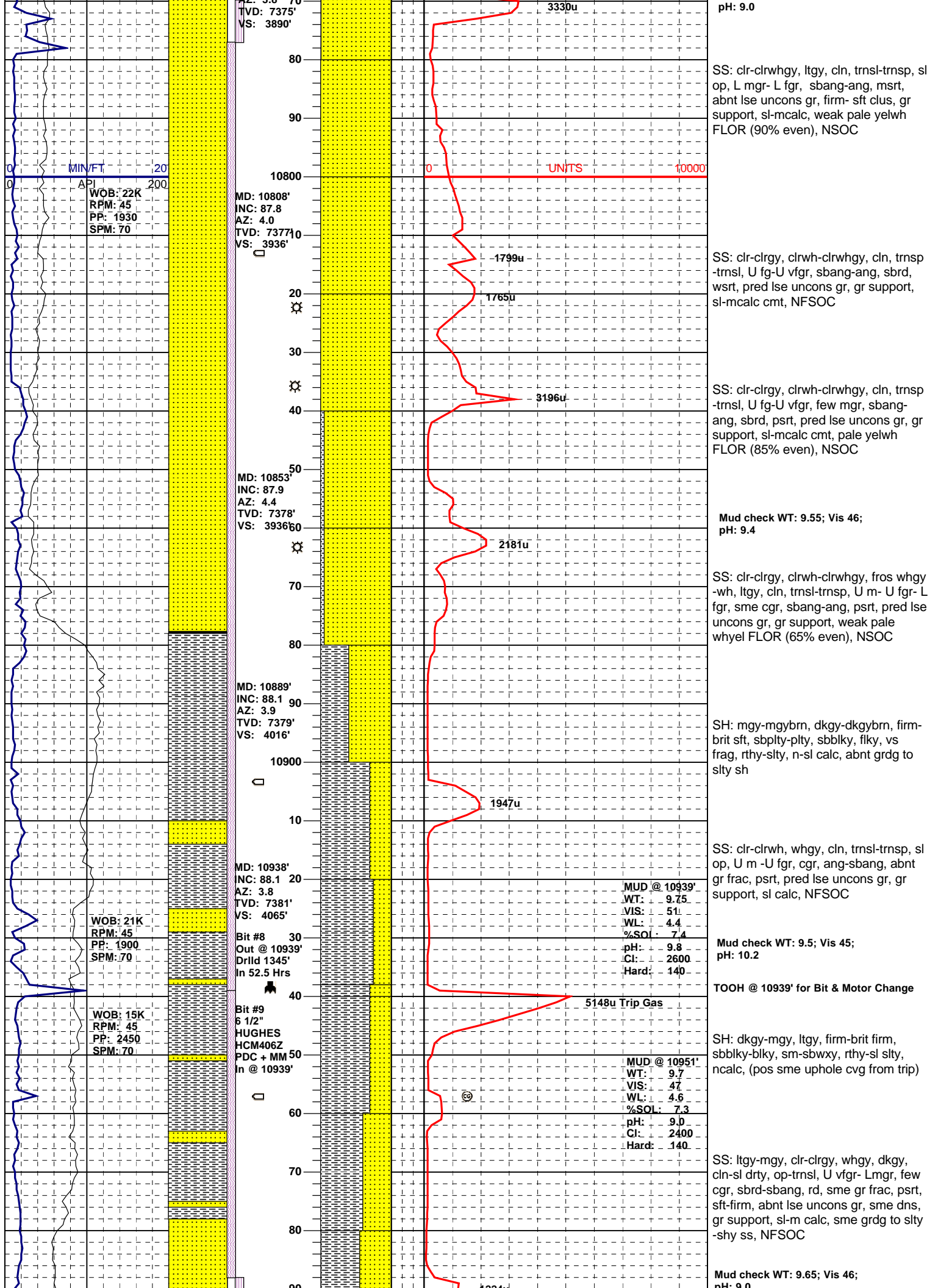


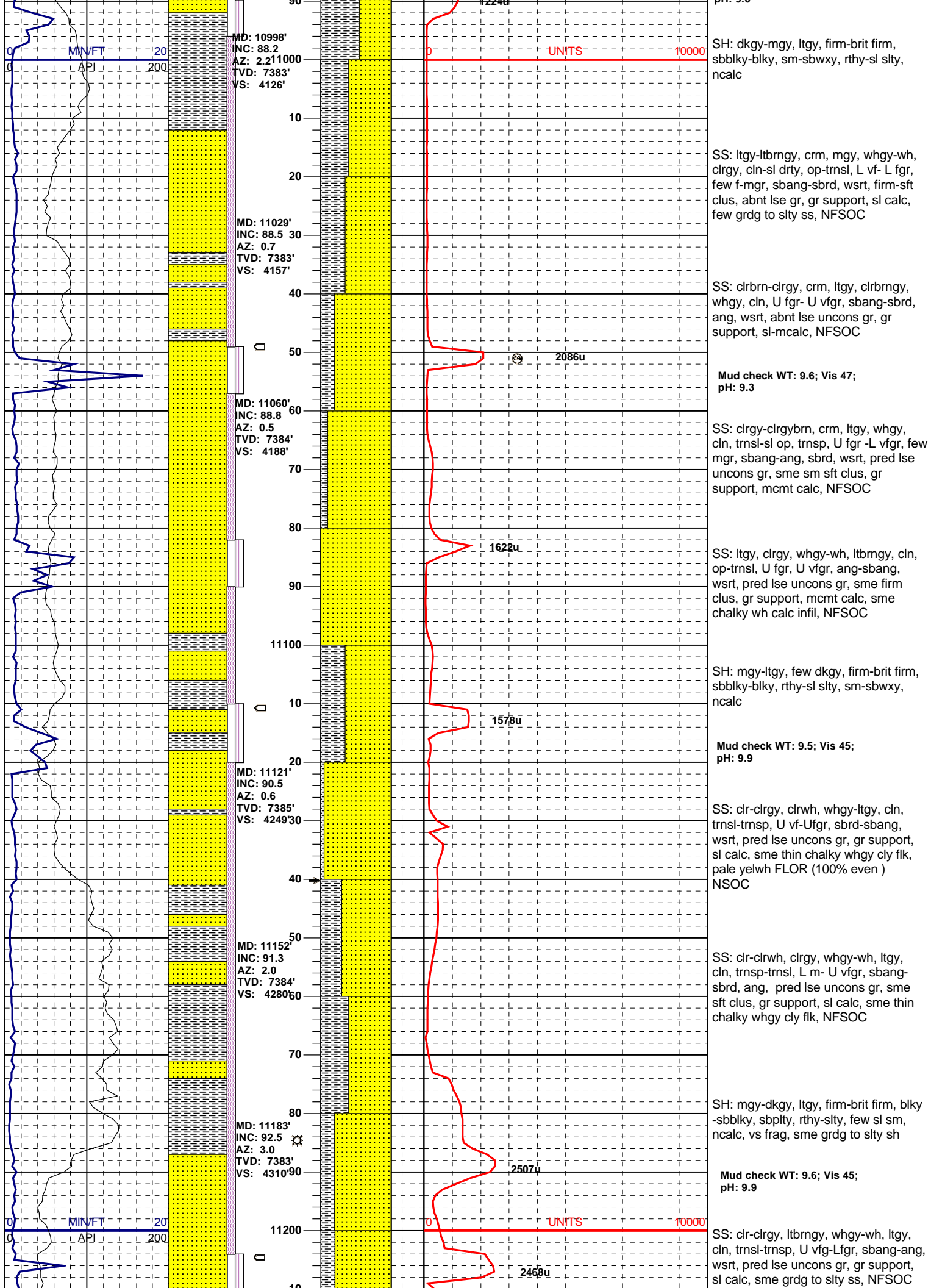


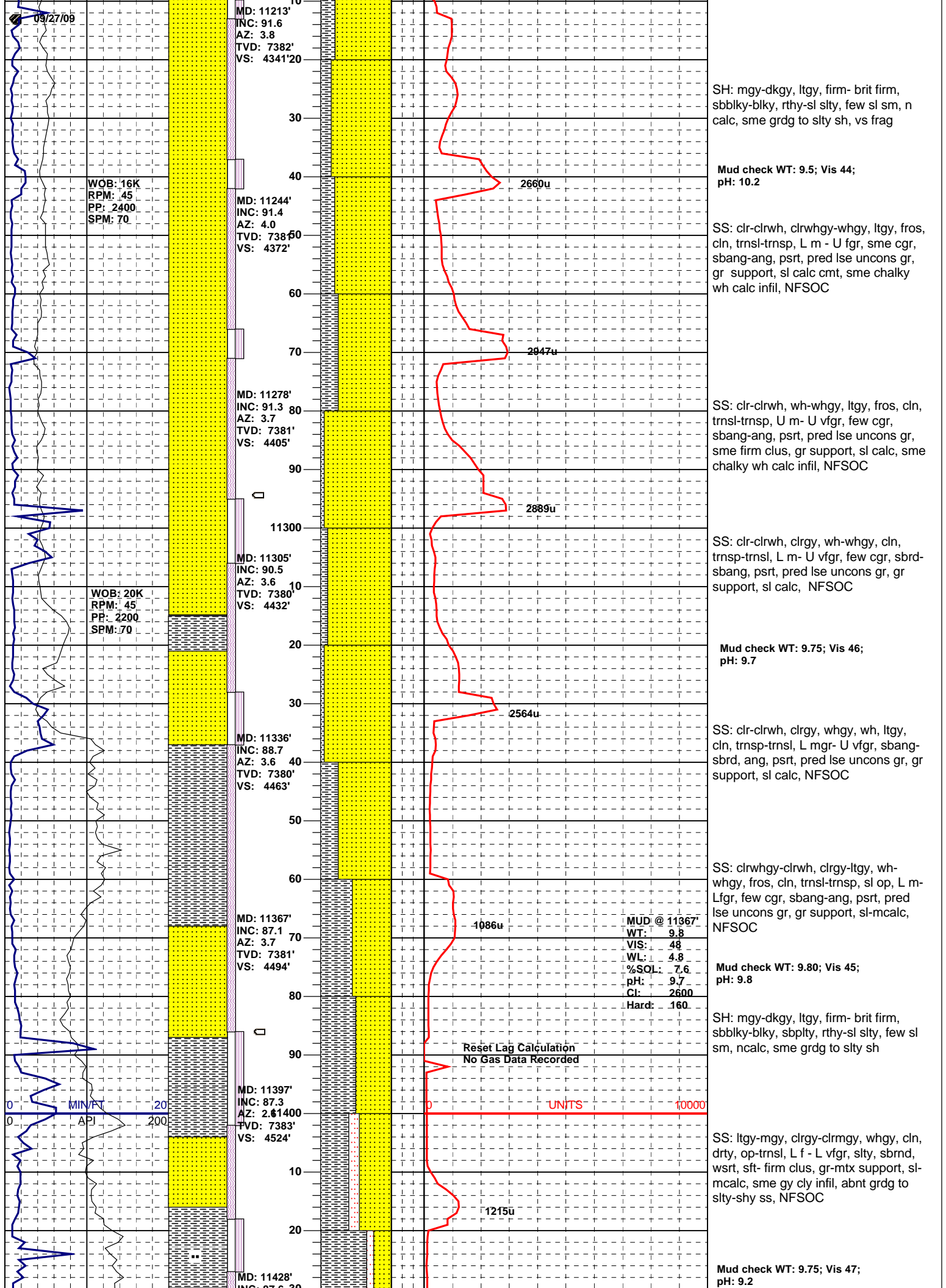


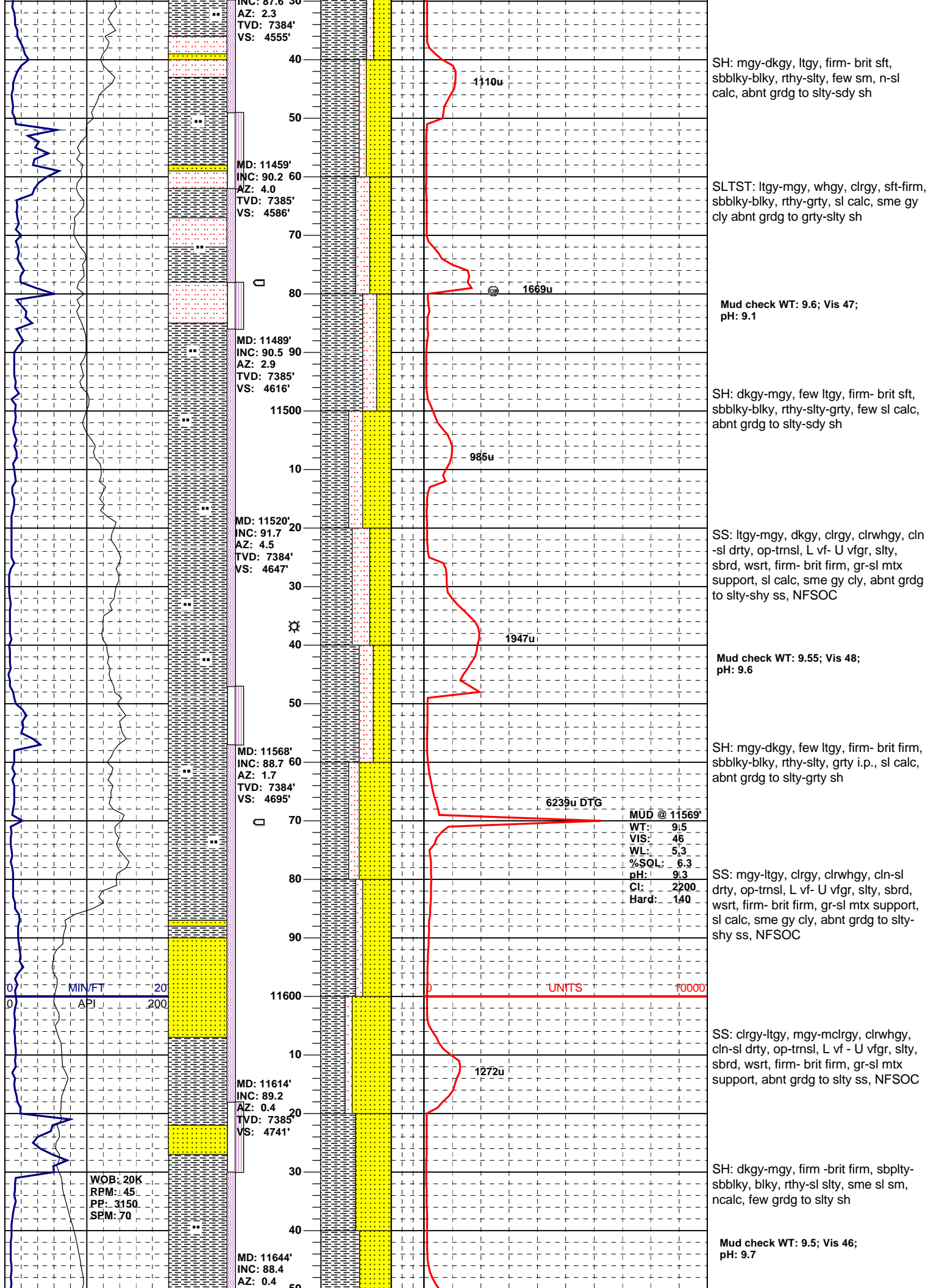


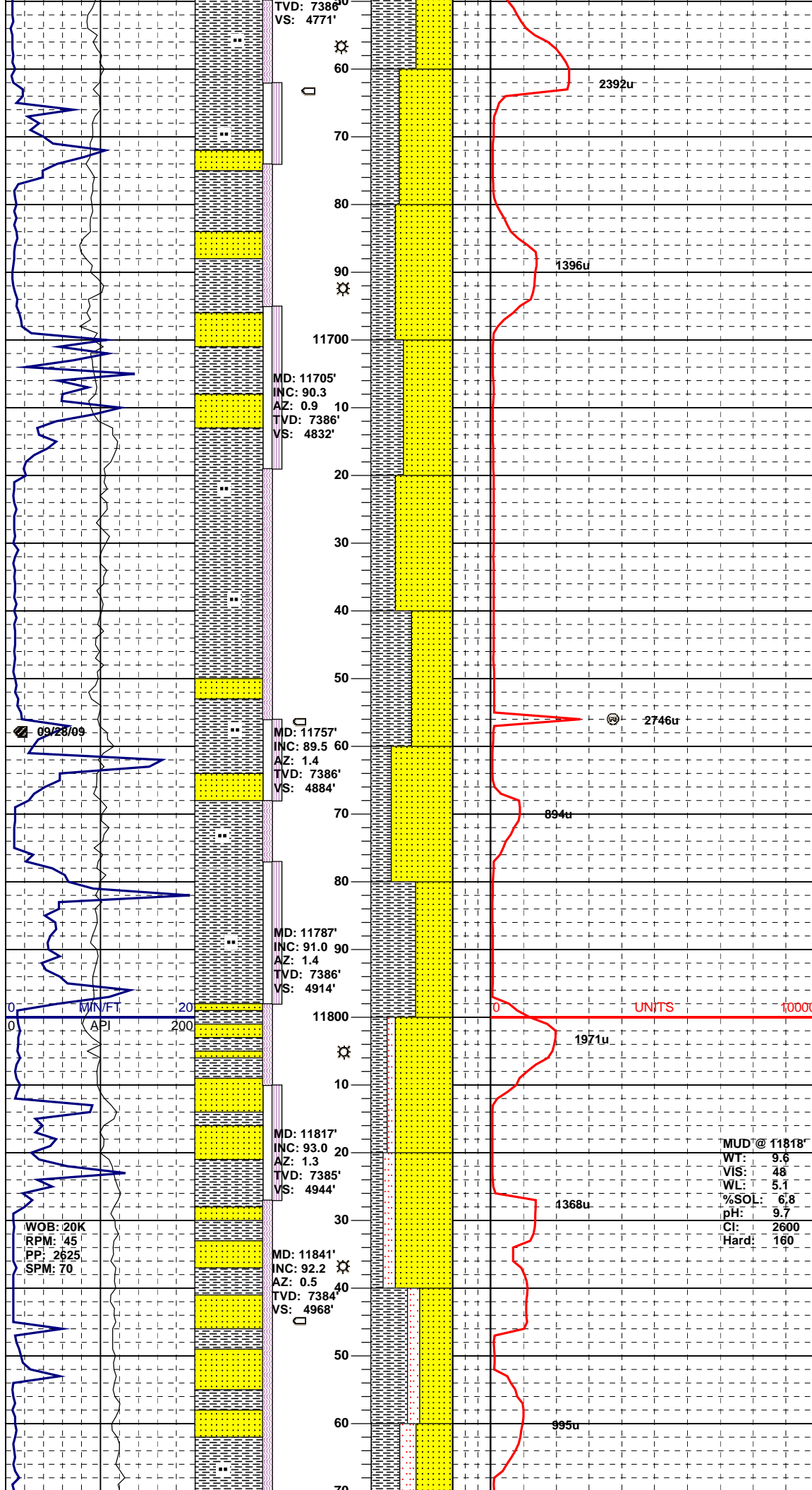












SS: clrgy-clrmgy, clrwhgy, tangy, ltgy, mgy, whgy, cln, op-trnsl, L fgr- L vfgr, slty, sbdr, wsrt, firm - brit firm, gr-sl mtz support, sl calc, sme grdg to slty ss, NFSOC

SS: clrmgy-clrltgy, tangy, ltgy, mgy, whgy, cln, op-trnsl, L fgr- L vfgr, slty, sbdr, wsrt, firm- brit firm, abnt lse uncongs gr, gr-sl mtz support, sl calc, sme grdg to slty ss, NFSOC

Mud check WT: 9.6; Vis 47; pH: 9.4

SH: dkgy-mgy, few ltgy, firm- brit sft, sbblky-blky, rthy-slty-grty, few sl calc, abnt grdg to slty-sdy sh

SS: ltgy-clrgy, clrbngy, mgy, cln-sl drty, trnsl-op, L f- L vfgr, sbdr, wsrt, firm- brit firm, abnt lse gr, gr support, sl calc, sme grdg to slty ss, NFSOC

SS: clrgy-clrbngy, ltgy-mgy, whgy, cln-sl drty, trnsl-op, LvF-Lfgr, sbdr, wsrt, firm- brit firm, sme lse gr, gr support, sl calc, sme grdg to slty ss, NFSOC

Mud check WT: 9.6; Vis 48; pH: 9.0

SS: clrgy-clrmgy, clrwhgy, clr, ltgy-mgy, whgy, cln, trnsl-sl op, L f- Lvfr, slty i.p., few mgr, sbdr, wsrt, firm- brit sft clus, sme lse gr, gr support, sl calc, sme grdg to slty ss, NFSOC

SH: dkgy-mgy, few ltgy, tr ltngy, firm- brit firm, sbblky-blky, sbply, rthy-slty, grty i.p., ncalc, abnt grdg to slty-grty sh, sme thin dkbrngy flk

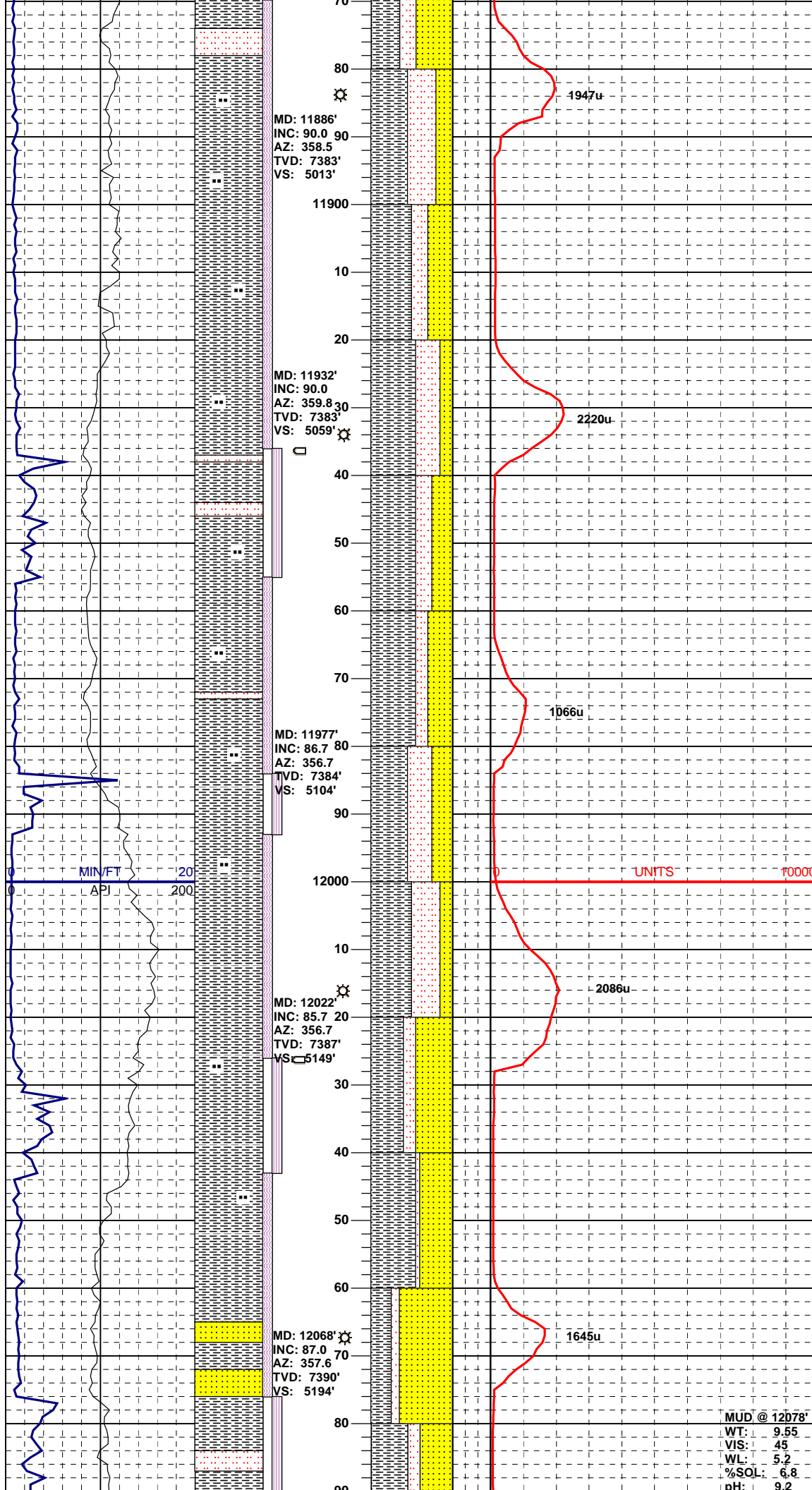
SS: ltgy-clrgy, clrbngy, mgy, cln-drty, trnsl-op, U vf- L vfgr, sbdr, wsrt, firm- brit firm, abnt lse gr, gr support, sl calc, sme grdg to slty ss, NFSOC

Mud check WT: 9.55; Vis 48; pH: 9.8

SS: ltgy-ltbrngy, mgy, clrgy, clrbngy, drty, op-sl trnsl, L vf- U vfgr, slty, sbdr, wsrt, vs clus, sme lse gr, gr-mtz support, sl calc, sme cly infil, abnt grdg to slty ss, NFSOC

SH: dkgy-mgy, few ltgy, firm- brit sft, sbblky-blky, rthy-slty-grty, few sl calc, abnt arda to slty-sdy sh

MUD @ 11818'	
WT:	9.6
VIS:	48
WL:	5.1
%SOL:	6.8
pH:	9.7
CI:	2600
Hard:	160



SLTST: ltgy-mgy, whgy, clrgy, sft-firm, sbblky-blky, rthy-grty, sl calc, sme gy cly abnt grd to grty-slty sh

Mud check WT: 9.55; Vis 50; pH: 9.4

SS: ltgy-mgy, ltbrngy, clrgy, clrbngy, drty, op-sl trns, L vf- U vfgr, slty, sbrd, wsrt, vs clus, sme lse gr, gr-mtx support, sl calc, sme cly infil, abnt grd to slty-shy ss, NFSOC

SLTST: ltgy-mgy, whgy, clrgy, sft-firm, sbblky-blky, rthy-grty, sl calc, sme gy cly abnt grd to grty-slty sh

SH: mgy-ltgy, dkgy, firm- brit firm, sbblky-sbply, rthy-slty, ncalc, abnt grd to slty sh

Mud check WT: 9.55; Vis 47; pH: 9.3

SLTST: mgy-ltgy, firm-brit firm, sbblky-blky, slty-rthy, grty, ncalc, abnt grd to slty-grty sh

SH: med-dkgy, ltgy, firm- brit firm, sbply-sbblky, rthy-sm, sme sl slty, ncalc, sme grd to slty sh

SS: mgy-ltgy, clrgy-clrdkgy, few whgy, cin-drty, op-sl trns, L vf-L fgr, slty i.p., sbrnd, wsrt, abnt lse uncons gr, sme s sft clus, gr-mtx support, sl-mcalc, abnt grd to slty-shy ss, NFSOC

Mud check WT: 9.55; Vis 48; pH: 8.9

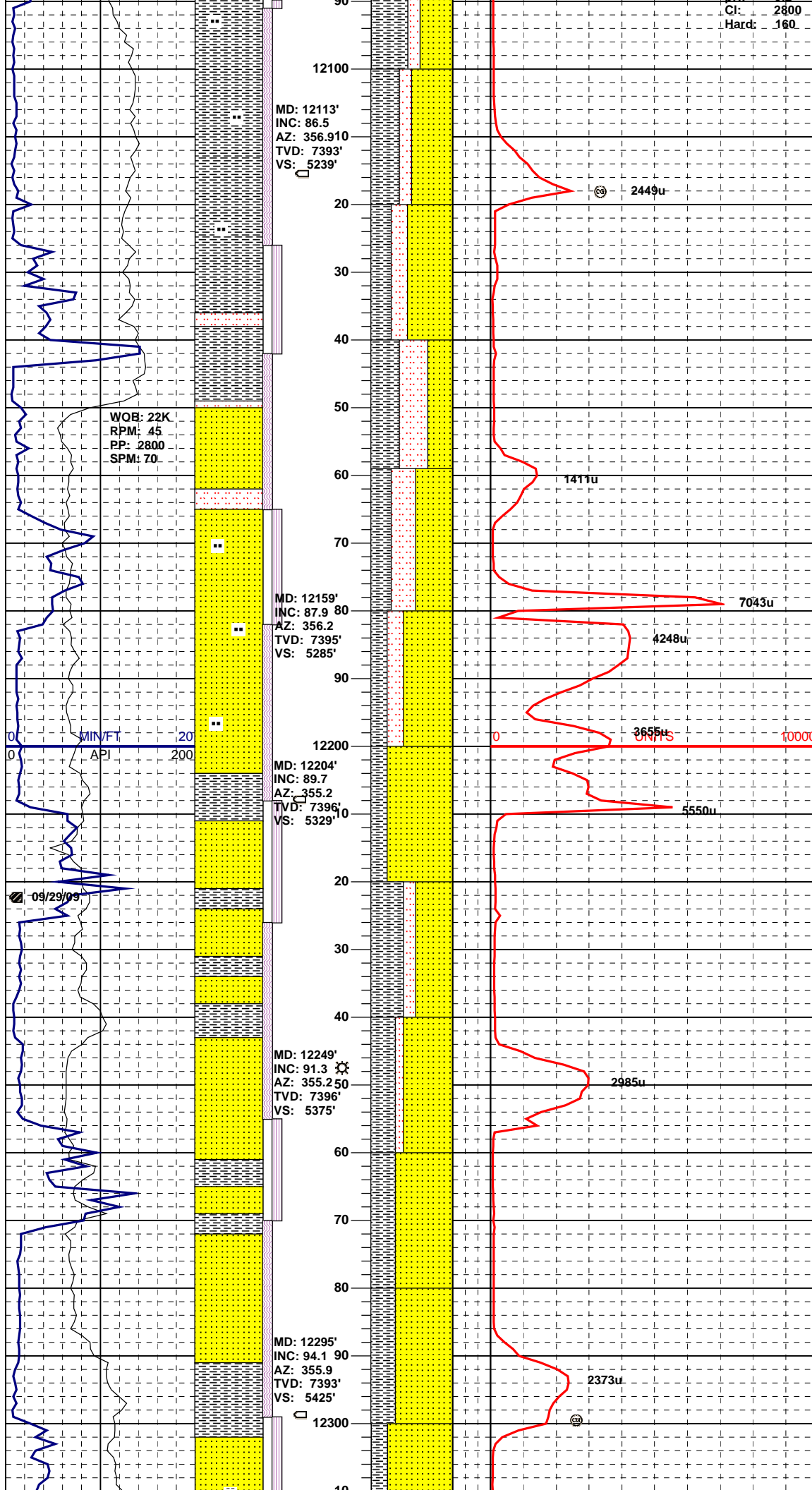
SH: med-dkgy, ltgy, firm- brit firm, sbply-sbblky, rthy-sm, sme sl slty, ncalc, sme grd to slty sh

SS: ltgy-clrgy, clrmgy, whgy, wh, mgy, cin-sl drty, op-sl trns, L vf-L fgr, slty i.p. sbrd, wsrt, firm- sft clus, abnt lse uncons gr, gr support, sl-mcalc, sme grd to slty-shy ss, NFSOC

MUD @ 12078'

WT: 9.55
VIS: 45
WL: 5.2
%SOL: 6.8
pH: 9.2

Mud check WT: 9.55; Vis 45; pH: 9.2



SLTST: ltgy-mgy, whgy, clrgy, sft-firm, sbblky-blky, rthy-grty, sl calc, sme gy cly abnt grdg to grty-slty sh

SH: med-dkgy, ltgy, firm- brit firm, sbply-sbblky, rthy-slty, ncalc, sme grdg to slty sh

SS: ltgy-clrgy, mgy, clrmgy, whgy, dkgy, cln-drty, op-sl trns, L vfgr- Lfgr, slty i.p, sbnd, wsrt, sft- firm clus, abnt lse uncongs gr, gr support, abnt grdg to slty ss, NFSOC

SLTST: ltgy-mgy, whgy, clrgy, sft-firm, sbblky-blky, rthy-grty, sl calc, sme gy cly abnt grdg to grty-slty sh

Mud check WT: 9.6; Vis 45; pH: 9.3

SS: ltgy-mgy, whgy, clrgy, cln-sl drty, op- trns, L vf- Lfgr, slty, sbnd, wsrt, sft -firm, abnt lse uncongs gr, gr support, sl calc, abnt grdg to slty ss, NFSOC

SH: med-ltgy, few dkgy, firm- brit firm, sbply-sbblky, rthy-sm, sl slty, ncalc, sme grdg to slty sh

SS: clr-clrgy, ltgy, whgy-wh, clrwh, cln, trns-sl op, trns, U f- L vfgr, few mgr, sbnd, wsrt, pred lse uncongs gr, gr support, sl-mcalc, sme cly, NFSOC

Mud check WT: 9.6; Vis 46; pH: 9.4

SH: mgy-ltgy-ltgny, few dkgy, firm- brit firm, brit sft, sbply-sbblky, plty, sm-sbwxy, wxy, rthy-sl slty, n-sl calc, few grdg to slty sh

SS: ltgy-mgy, ltgngy, whgy-wh, clrgy, cln-sl drty, op-trns, L f-L vfgr, slty i.p, sbnd, wsrt, firm- sft clus, sme lse gr, gr -sl mtx support, sl calc, sme gy cly infil, sme grdg to slty ss, NFSOC

Mud check WT: 9.7; Vis 47; pH: 9.0

SS: clrgy-clrbngy, crm, mgy, whgy-wh, cln-sl drty, trns-op, Lf- Lvgr, slty, sbnd, wsrt, sft- firm clus, abnt lse uncongs gr, gr support, m-sl calc, tr cly, sme grdg to slty ss, NFSOC

