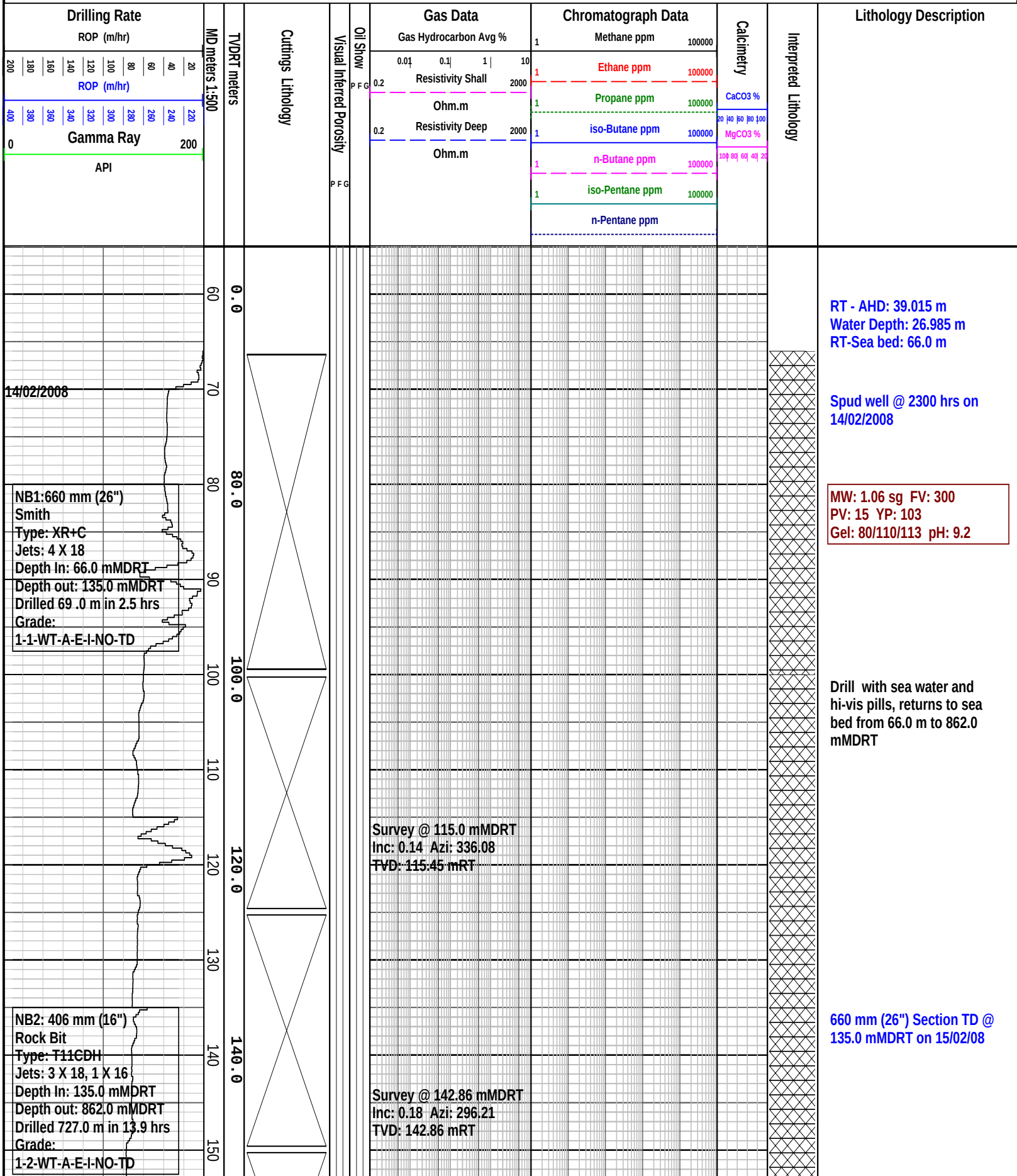
BAKER HUGHES
INTEQ

Company : Apache Energy Ltd
Well : Wasabi-1
Interval : 55.00 - 1909.87 meters
Created : 27/Feb/2008 8:48:06 AM

FORMATION EVALUATION LOG



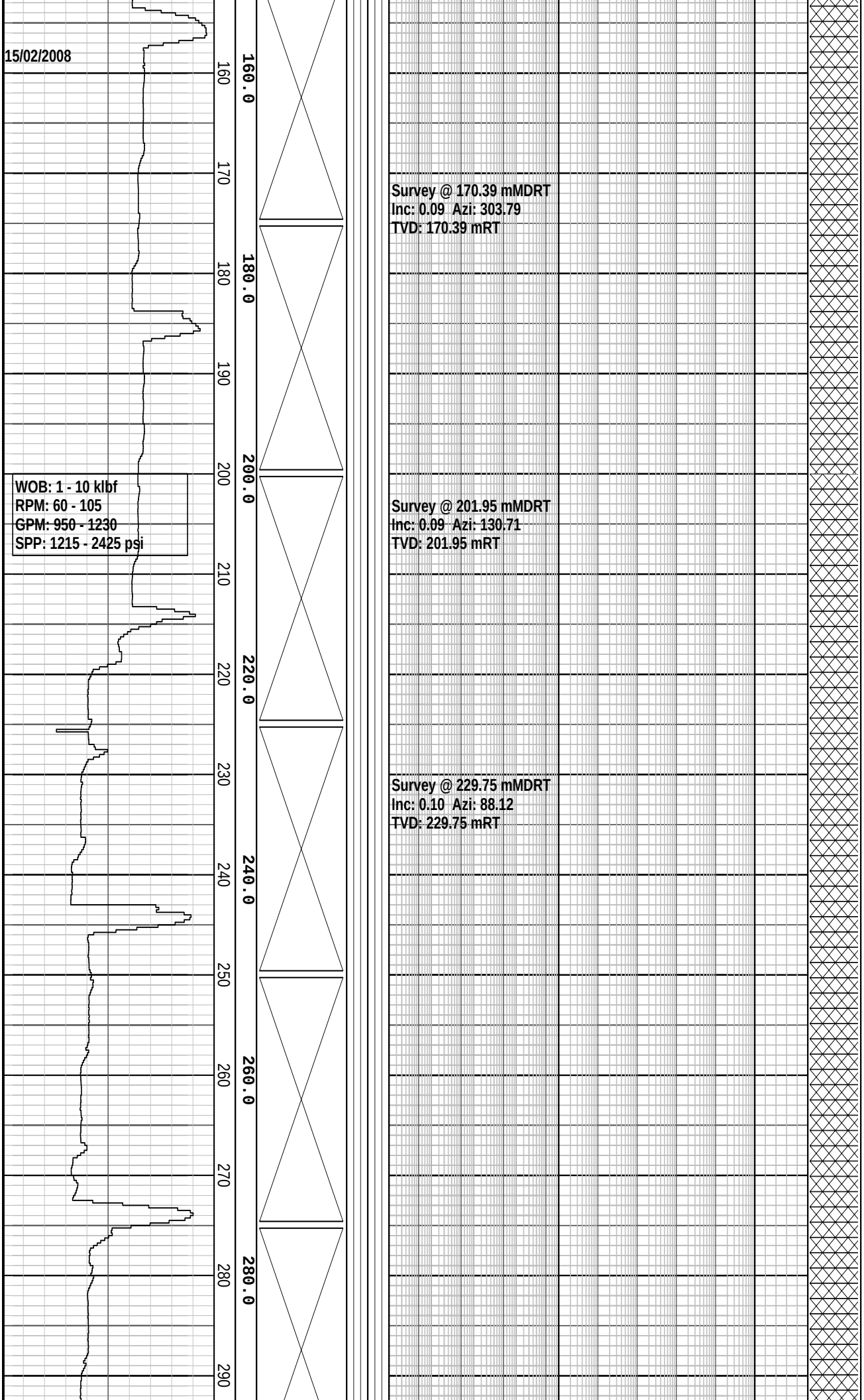
RT - AHD: 39.015 m
Water Depth: 26.985 m
RT-Sea bed: 66.0 m

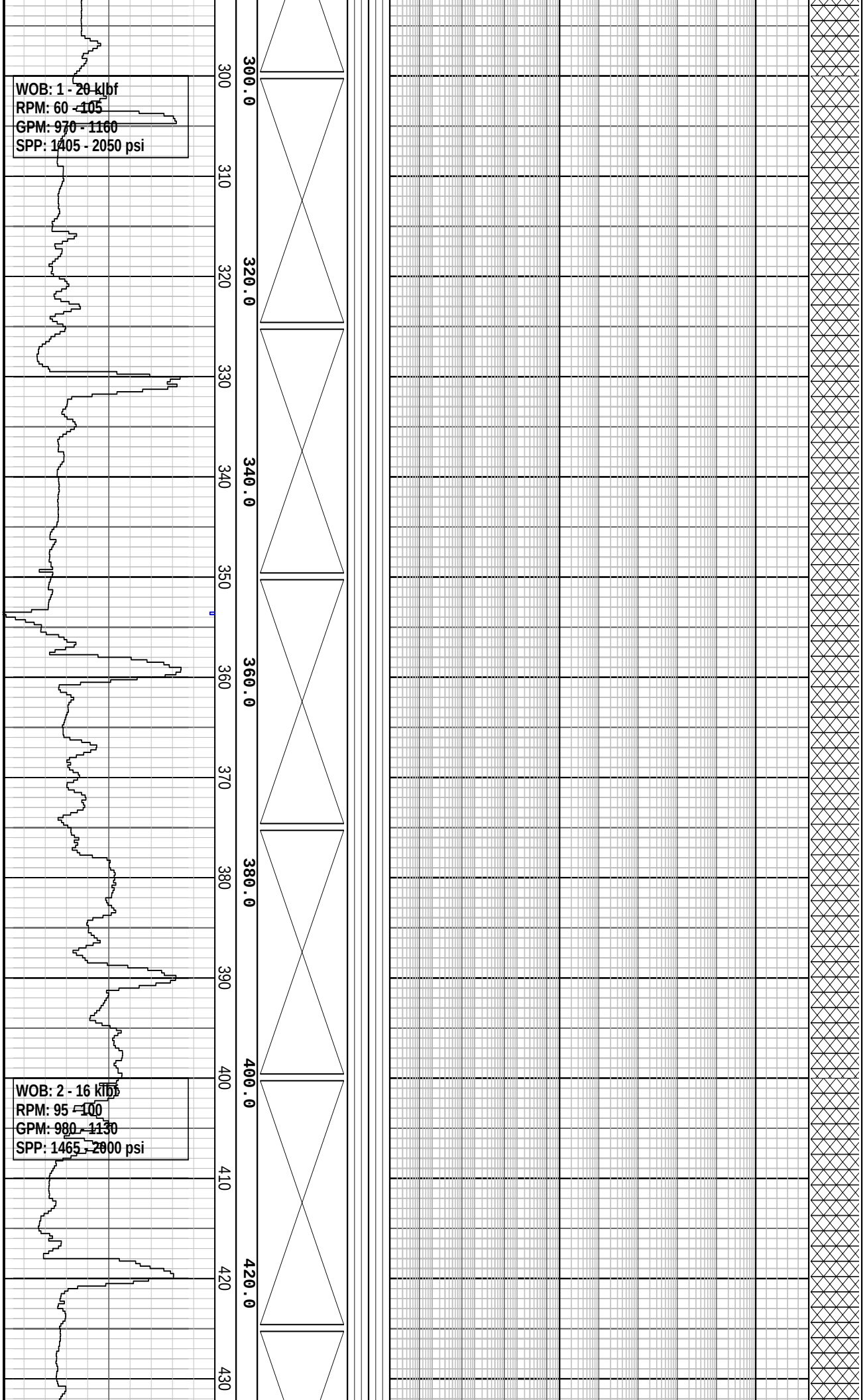
Spud well @ 2300 hrs on 14/02/2008

MW: 1.06 sg FV: 300
PV: 15 YP: 103
Gel: 80/110/113 pH: 9.2

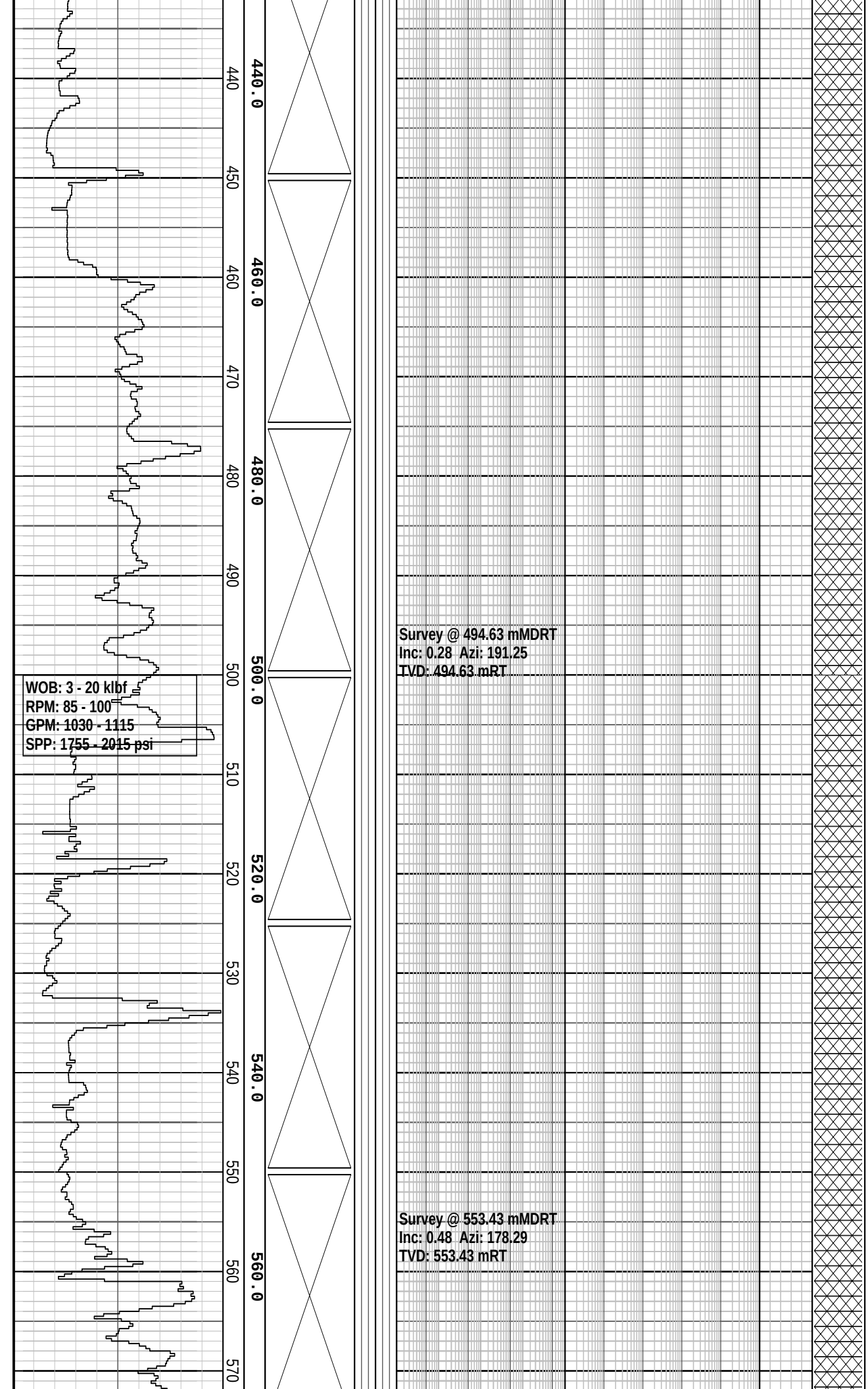
Drill with sea water and hi-vis pills, returns to sea bed from 66.0 m to 862.0 mMDRT

660 mm (26") Section TD @ 135.0 mMDRT on 15/02/08


15/02/2008
160
170
180
190
200
210
220
230
240
250
260
270
280
290
160.0
180.0
200.0
220.0
240.0
260.0
280.0
WOB: 1 - 10 klbf
RPM: 60 - 105
GPM: 950 - 1230
SPP: 1215 - 2425 psi
Survey @ 170.39 mMDRT
Inc: 0.09 Azi: 303.79
TVD: 170.39 mRT
Survey @ 201.95 mMDRT
Inc: 0.09 Azi: 130.71
TVD: 201.95 mRT
Survey @ 229.75 mMDRT
Inc: 0.10 Azi: 88.12
TVD: 229.75 mRT

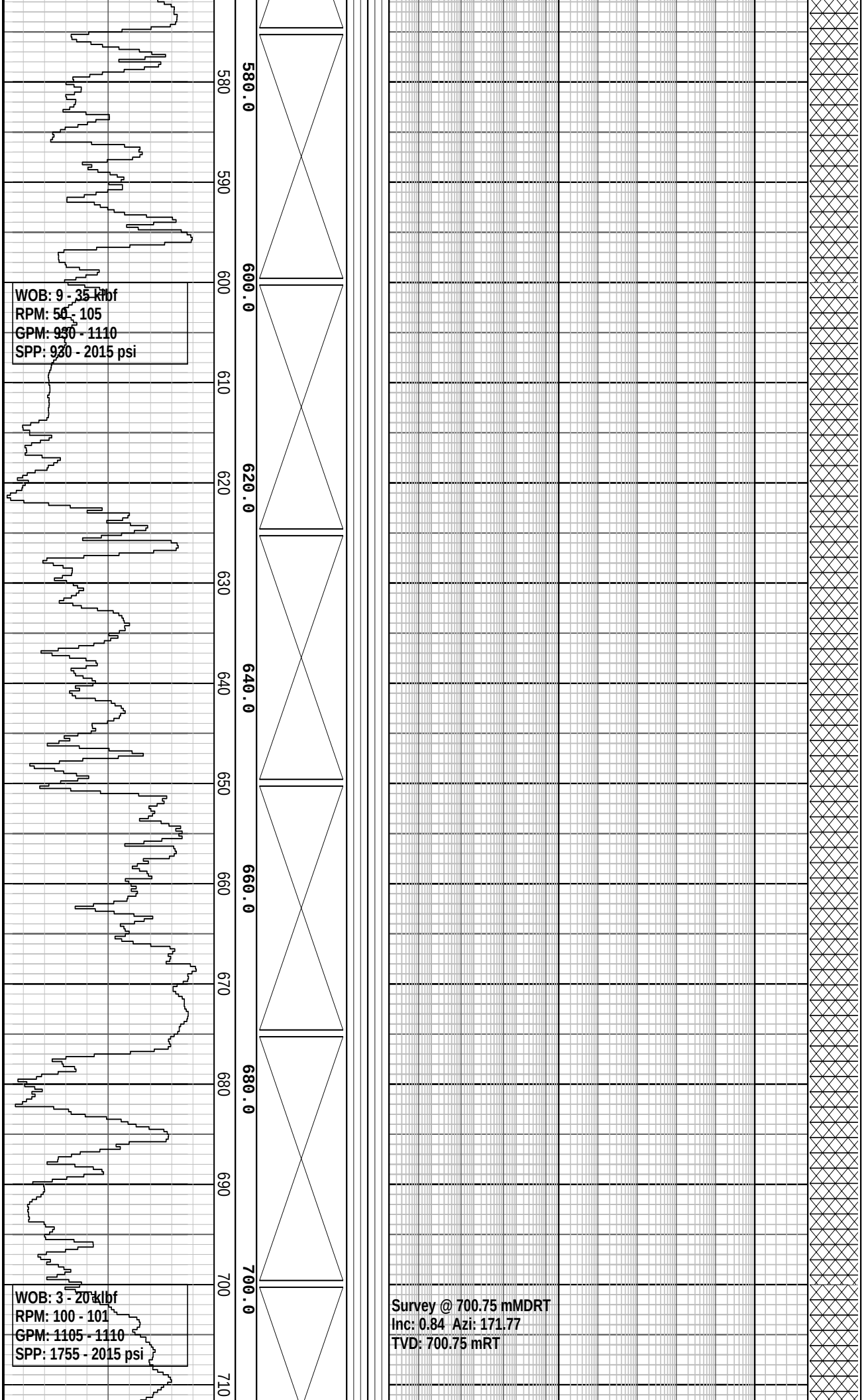


Drill with sea water and hi-vis pills, returns to sea bed from 66.0 m to 862.0 m

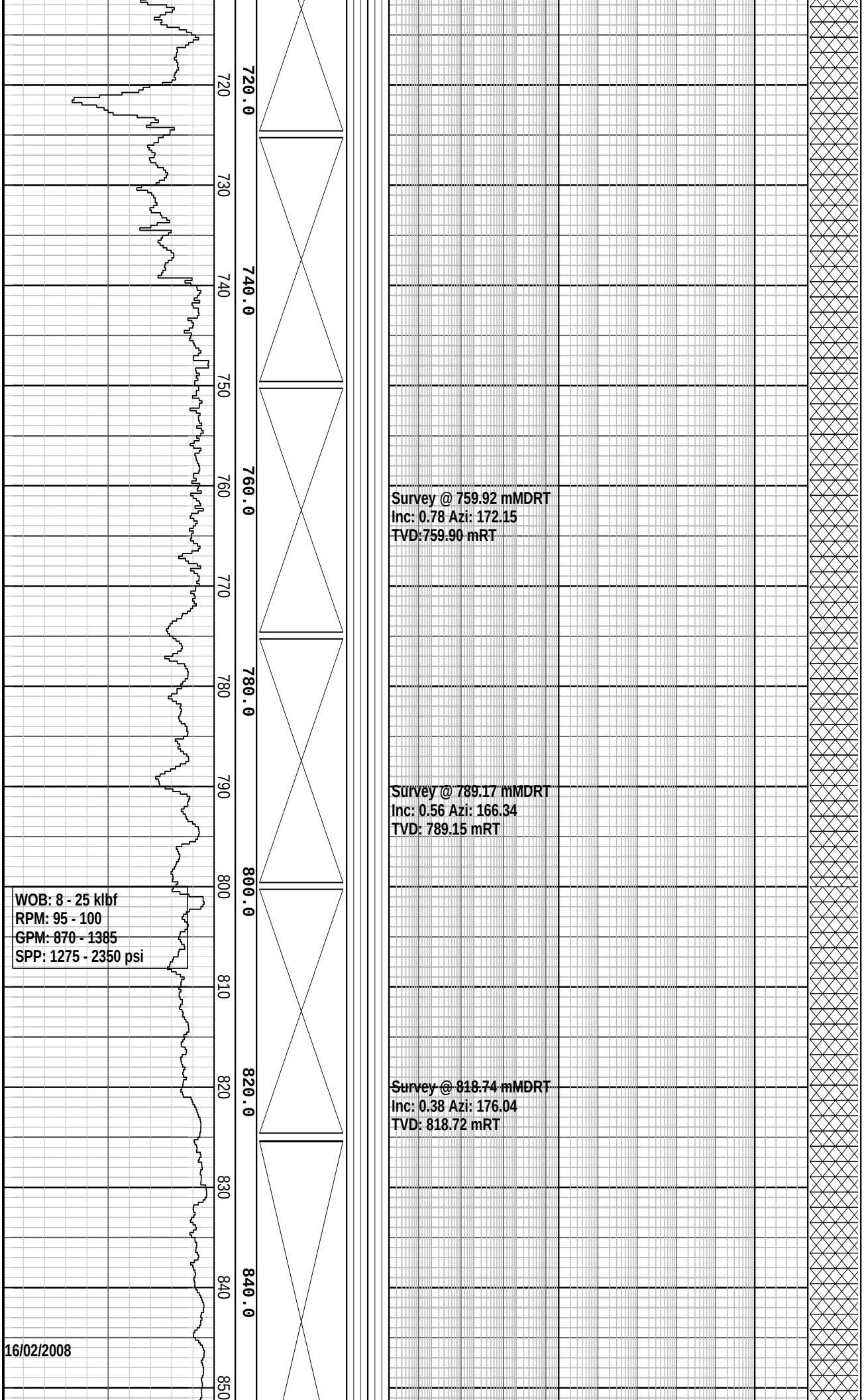


Drill with sea water and hi-vis pills, returns to sea bed from 66.0 m to 862.0 m

MW:1.06 sg FV: 120
PV: 6 YP: 88
Gel: 65/80/90 pH: 9.2

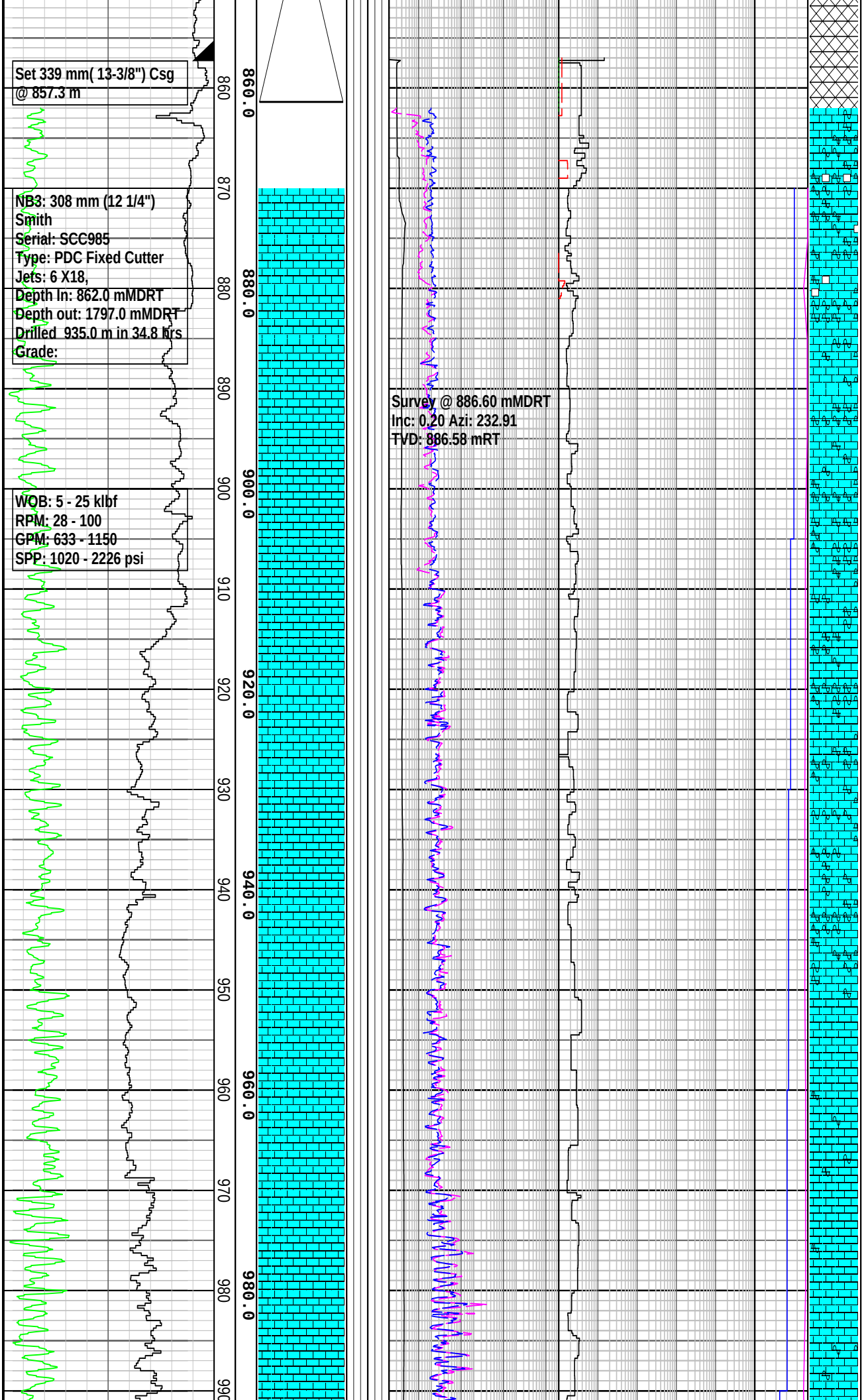


Drill with sea water and hi-vis pills, returns to sea bed from 66.0 m to 862.0 m



Drill with sea water and hi-vis pills, returns to sea bed from 66.0 m to 862.0 mMDRT

MW: 1.06 sg FV: 120
PV: 6 YP: 88
Gel: 65/80/90 pH:9.2



406 mm (16") Section TD @ 862.0 mMDRT on 17/02/08

FIT: EMW = 1.91 sg @ 925 psi

MW: 1.15 sg FV: 90
PV: 18 YP: 24
Gel: 9/11/14 pH: 9.6

CALCARENITE: off wh, lt-med gy, lt brn i/p, aren, abd microfos, com v crs arg qtz gr w/ Fe strgr, com pl gy slty mtx, tr nod pyr, mod hd aggs, tr vis por, tr min flour

CALCILUTITE: lt med gy, off wh-pl gy, tr dk gy, arg, tr microxln, mnr microfos, sft-disp, mod hd i/p

CALCISILTITE: gy, med dk gy i/p, com arg & grd to CLCLT, mnr vf glauc, sbblky-blky

CALCILUTITE: lt med gy, off wh-pl gy, tr dk gy, arg, tr microxln, mnr microfos, sft-disp, mod hd i/p

CALCARENITE: off wh, lt-med gy, lt brn i/p, aren, abd microfos, com v crs arg qtz gr w/ Fe strgr, com slty mtx, tr nod pyr, mod hd aggs, tr vis por, tr min flour

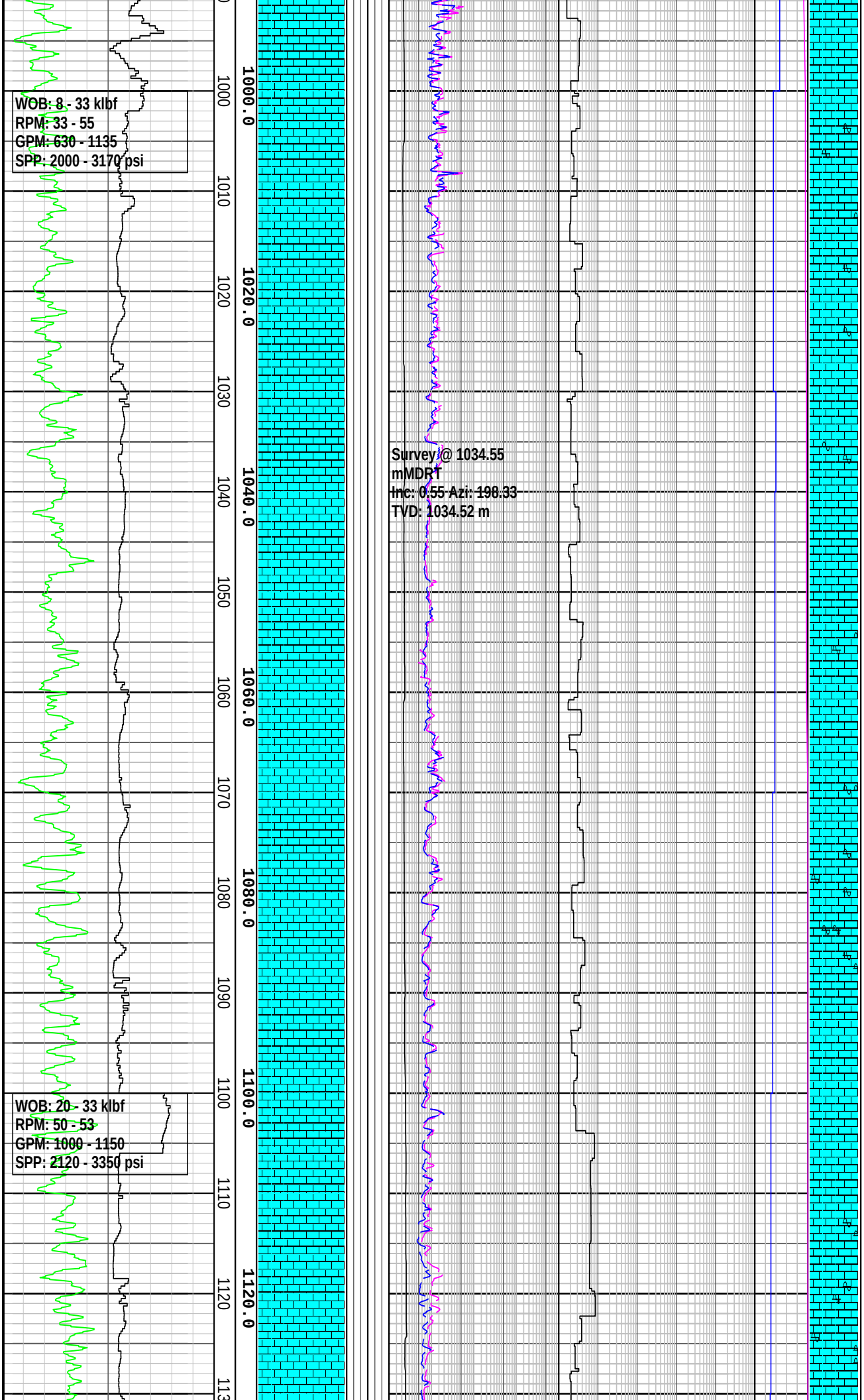
CALCISILTITE: gy, med dk gy i/p, com arg & grd to CLCLT, mnr vf glauc, sbblky-blky, com abd microfos

CALCILUTITE: lt-med gy, off wh-pl gy, tr dk gy, arg, tr micrxln, mnr microfos, sft-disp, mod hd i/p

CALCARENITE: off wh, lt-med gy, lt brn i/p, aren, abd microfoss, com v crs arg qtz grs w/ Fe strgr, com slty mtx, tr nod pyr, mod hd aggs, tr vis por, tr min flour

CALCISILTITE: gy, med dk gy i/p, com arg & grd to CLCLT, mnr vf glauc, sbblky-blky

CALCILUTITE: lt med gy, off wh-pl gy, tr dk gy, arg, tr microxln, mnr microfos, sft-disp, mod hd i/p



CALCISILTITE: gy, med dk gy i/p, com arg & grd to CLCLT, mnr vf glauc, sbblky-blky, com abd microfos

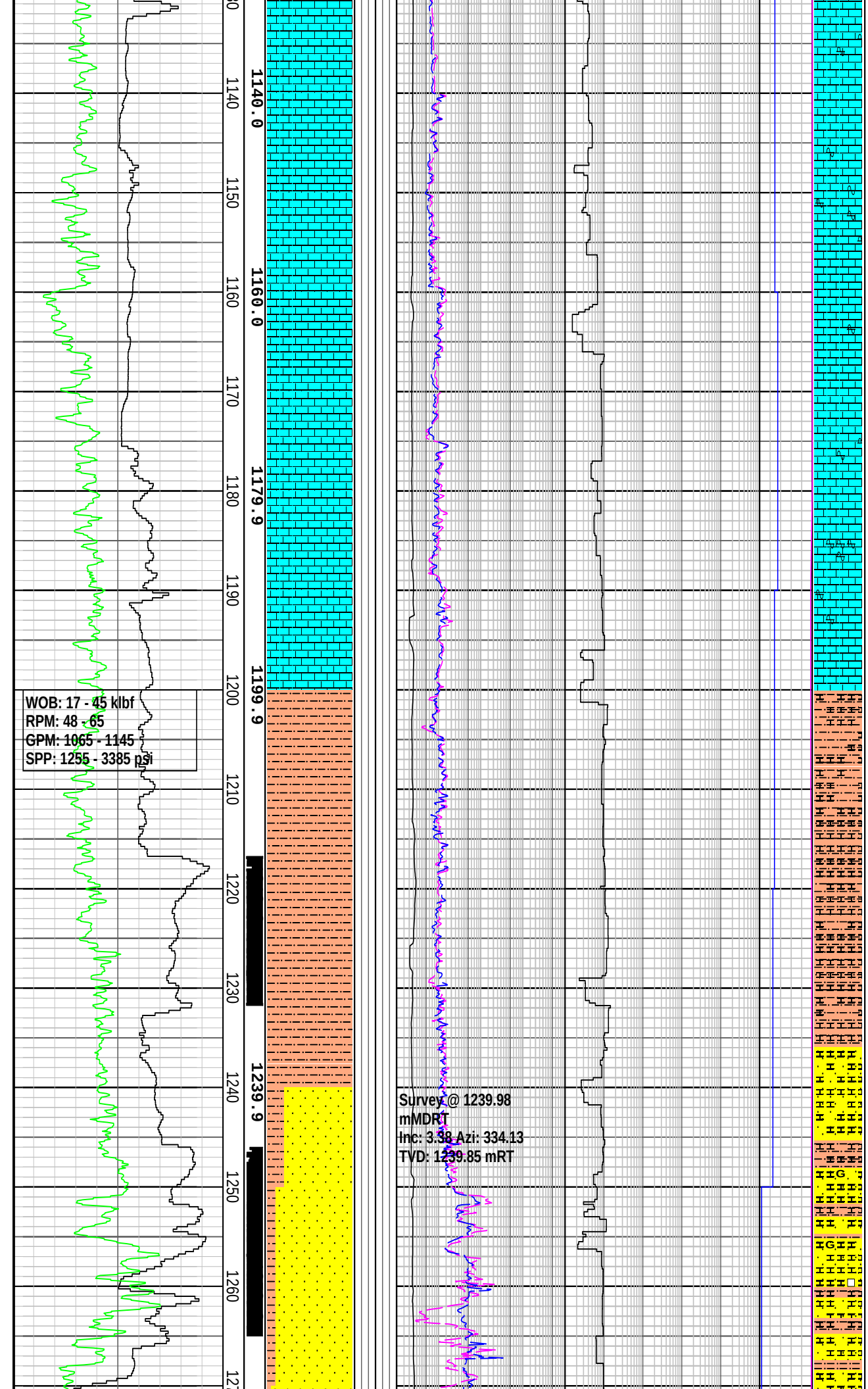
CALCILUTITE: lt med gy, off wh-pl gy, tr dk gy, arg, tr microxln, mnr microfos, sft-disp, mod hd i/p

CALCISILTITE: gy, med dk gy i/p, com arg & grdng to CLCLT, mnr vf glauc, sbblky-blky, com abdt microfos

CALCILUTITE: lt med gy, off wh-pl gy, tr dk gy, arg, tr microxln, mnr microfos, sft-disp, mod hd i/p

CALCISILTITE: gy, med dk gy i/p, com arg & grdng to CLCLT, mnr vf glauc, sbblky-blky, com abdt microfos

CALCILUTITE: lt med gy, off wh-pl gy, tr dk gy, arg, tr microxln, mnr microfos, sft-disp, mod hd i/p



CALCISILTITE: gy, med dk gy i/p, com arg & grdng to CLCLT, mnr vf glauc, sbblky-blky, com abdt microfos

CALCILUTITE: lt med gy, off wh-pl gy, tr dk gy, arg, tr microxln, mnr microfos, sft-disp, mod hd i/p

CALCISILTITE: gy, med dk gy i/p, com arg & grdng to CLCLT, mnr vf glauc, sbblky-blky, com abdt micr foss

CALCILUTITE: lt med gy, off wh-pl gy, tr dk gy, arg, tr microxln, mnr microfos, sft-disp, mod hd i/p

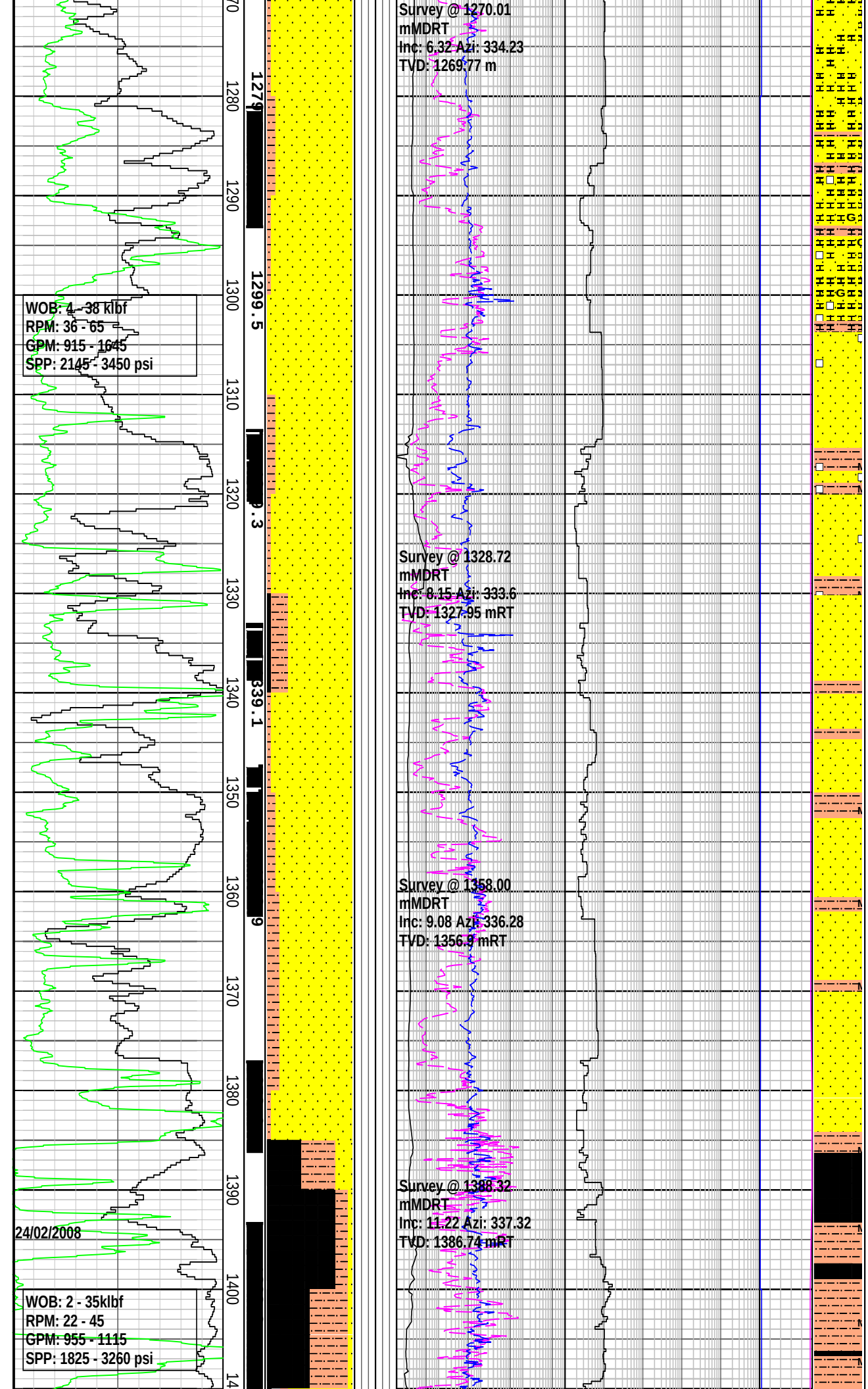
CALCAREOUS SILTSTONE: pl-med gy, v arg & com grdng to CALC CLYST, min calc frag, frm-mod hd, sbblky-blky

CALCAREOUS SILTSTONE: pl-med gy, v arg & com grd to CALC CLYST, min calc frag, frm-mod hd, sbblky-blky

MW: 1.15 sg FV: 74
PV: 13 YP: 29
Gel: 11/14/16 pH: 9.4

CALCAREOUS SANDSTONE: pl brn, lt gy brn, trnsl i/p, vf-crs, dom vf-f, pr-mod srt, sbang-sbrnd, loc ang crs grs, com strng calc cmt, com pl gy arg mtx & loc grd-aren

sltst, com carb spk, loc com v f glauc, min dissem & nod pyr, gen lse grs, v hd agg, pr vis por.



CALCAREOUS SANDSTONE: med gy, occ off wh-pl grn, vf-crs, dom med, pr srt, ang-sbrndd, min mod strgr, calc cmt, loc com lt brn-gy arg mtx, com-abd, dissem pyr, com glauc, gen lse gr, v hd aggs, pr-fr vis por, fr-gd inf por

SANDSTONE: clr-trnsl, pl brn, f-crs, pr srt, ang-sbrndd, tr wk calc cmt, loc med brn, arg mtx, com Fe strgr, com carb frags, occ nod pyr, gen lse gr, gd vis and inf por, no flour

SILTSTONE: lt med gy, lt brnsh gy, arg & loc grd to CLYST, occ liths & carb spks, tr nod pyr, tr mic, mnr calc mtx, frm-hd, sbfiss-blky

SANDSTONE: clr-trnsl, pl-med brn gy, vf-crs, pr srt, ang-sbang, mnr wk calc cmt, com lt brnsh gy arg mtx w/ f gr & grd to aren SLTST, com carb spks, lse, mod hd aggs, pr vis por

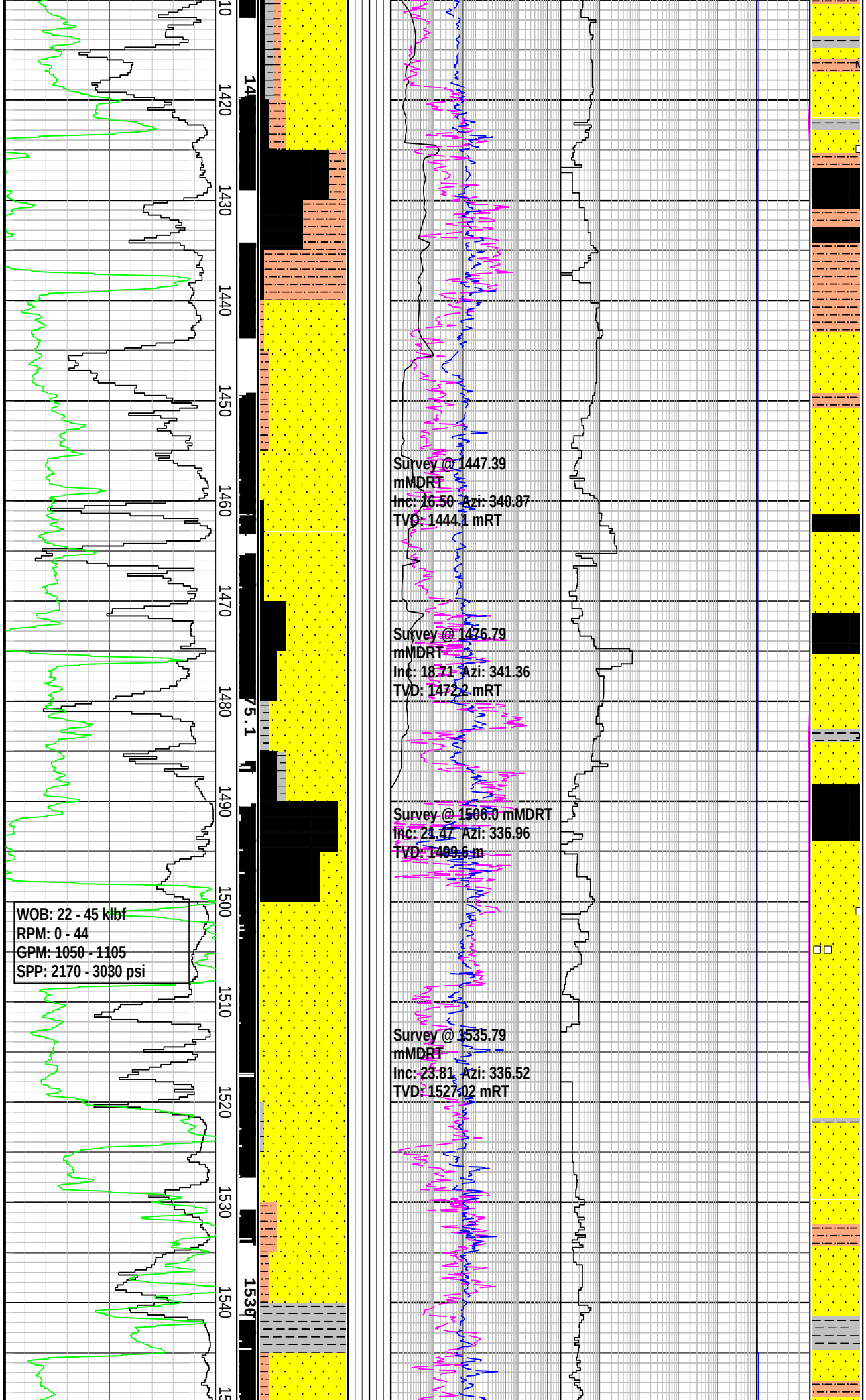
SILTSTONE: med gy-dk gy, lt gy i/p, arg, com carb mat, lse aren & grd to vf SST, mnr mic flks, mod hd-hd, sbblky-sbfiss, com-abd carb mat

SANDSTONE: clr-trnsl, pl-med brn gy, vf-crs, pr srt, ang-sbang, mnr wk calc cmt, com lt brnsh gy arg mtx w/ f gr & grd to aren SLTST, com carb spks, lse, mod hd aggs, pr vis por

COAL: dk gy-blk, sbvit-vit, com slty lams & grd to CARB SLTST, frm-mod hd, sbfiss-sbblky

SILTSTONE: med-dk gy, lt gy i/p, arg, com carb mat, lse aren & grd to vf SST, mnr mic flks, mod hd-hd, sbblky-sbfiss, com abd carb mat

COAL: dk gy-blk, sbvit-vit, com sli lam & grd- CARB



SLTST, frm-mod hd, sbfiss-sbblky

SANDSTONE: lt gy brn, trnsl, f-crs, pr srt, sbang-sbrnd, mnr mod calc cmt, mnr nod pyr, gen lse gr, fr-gd inf por, no flour

COAL: dk gy-blk, sbvit-vit, com sli lam & grd - CARB SLTST, frm-mod hd, sbfiss-sbblky

SILTSTONE: dk brn gy, dk gy, arg, abd carb mat & lam, com grd COAL, hd-v hd, sbfiss

SANDSTONE: clr-trnsl, fros, Fe stn, med-v crs, gen wl srt, ang-sbang, abd clr qtz gr, gd vis por, gd inf por, no flour

COAL: hd, blky, conch frac i/p

SANDSTONE: clr-trnsl, fros, Fe stn, med-v crs, gen wl srt, ang-sbang, abd clr qtz gr, gd vis por, gd inf por, no flour

CLAYSTONE: lt bl gy-m bl gy, frm-mod hd, blky, mod calc

COAL: hd, blky, conch frac i/p

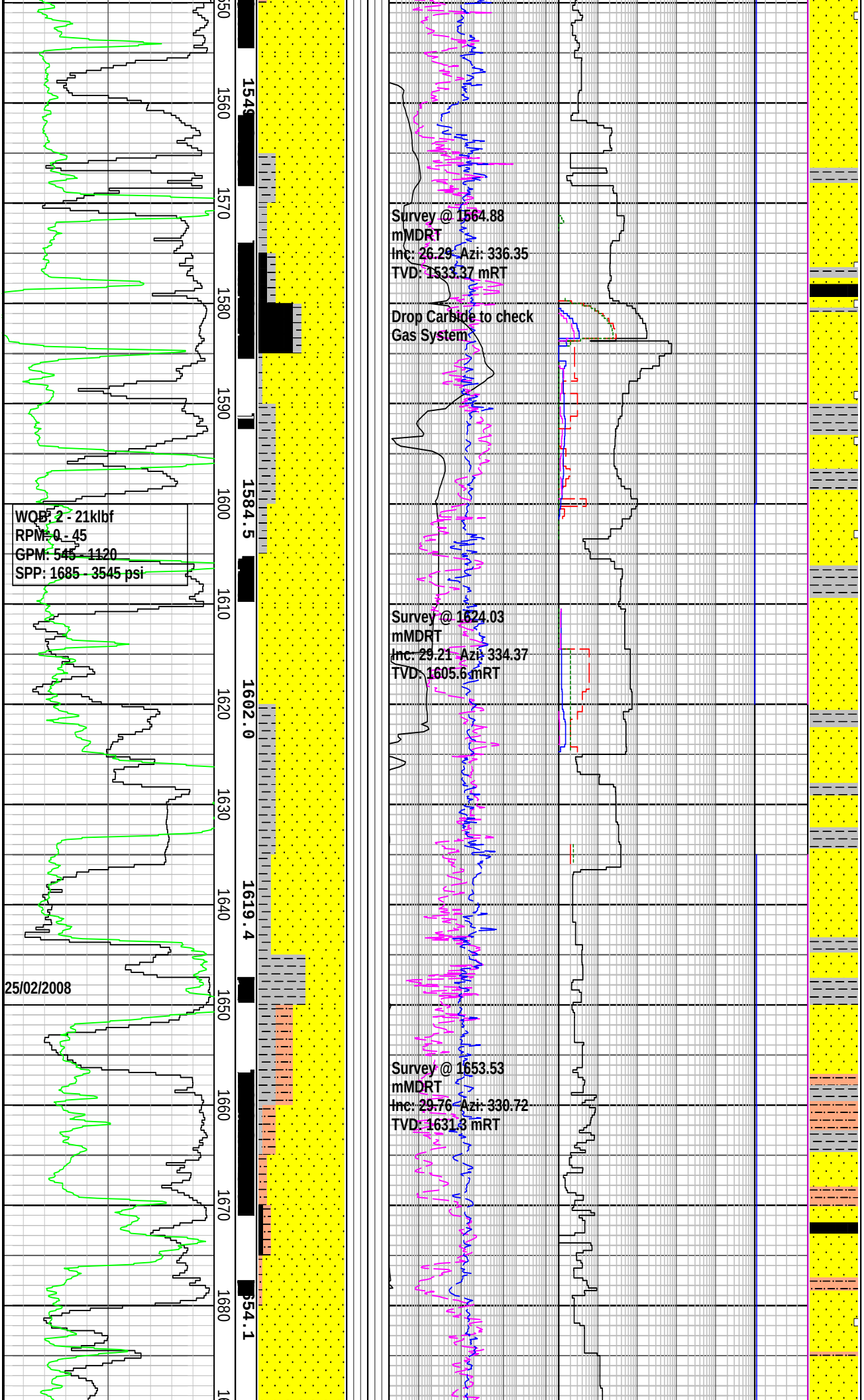
SANDSTONE: clr, trnsp, vf-f, dom f, wl srt, sbang-sbrnd, dom sbang, sph, r nod pyr, no show

CLAYSTONE: lt ol gy-lt brn gy, sft, sbblky, sli calc

SANDSTONE: wh, trnsl, clrless, lse, f-v crs, pred v crs, wl srt, sbrnd-rnd, dom sbrnd, sph, no show

SILTSTONE: dk brn gy, dk gy, arg, abd carb mat & lam, com grd- COAL, hd-v hd, sbfiss

CLAYSTONE: med brn, org brn, v dk brn gy, tr aren i/p, tr calc mtrx, com carb mat, grd



- CARB CLYST, frm-hd, disp, sbblky, sbfiss i/p

SANDSTONE: trnsl-fros, vf-v crs, gen crs, mod srt, ang-sbang, tr wk calc cmt, mnr off wh-lt brn arg mtx, tr dissem pyr, gen lse gr, gd inf por, no flour.

MW: 1.15 sg FV: 63
PV: 20 YP: 25
Gel: 9/14/16 pH: 9.5

COAL: dk gy-blk, sbvit-vit, com sli lam & grd - CARB SLTST, frm-mod hd, conch-sbconch

Carbide Run @ 1589mMDRT
Theo: 5250stks. Act: 6350stks
Hole Washout = 20.9%

SILTSTONE: dk brn gy, dk gy, arg, abd carb mat & lam, com grd - COAL, hd-v hd, sbfiss

CLAYSTONE: off wh-pl brn, tr med gy, tr sli lam, hd-v hd, sblky-sbfiss

SANDSTONE: trnsl-fros, f-v crs, pr srt, ang-sbang, gen lse clr grs, gd inf por, no flour

CLAYSTONE: off wh-v pl brn, tr med gy, tr sli lam, tr foss frag, com calc mat, hd-v hd, sblky-sbfiss

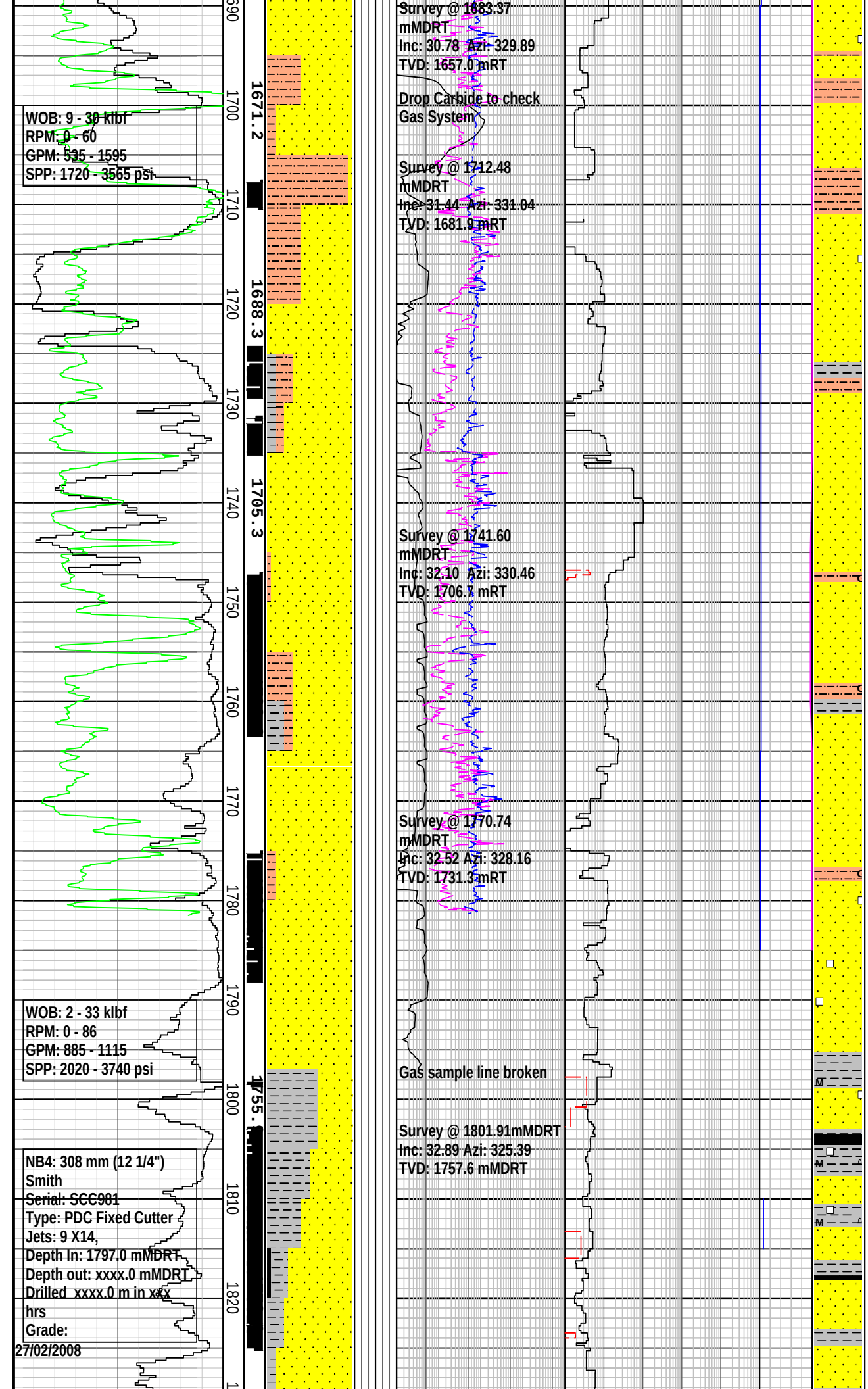
SANDSTONE: pl brn, trnsl-fros, f-v crs, pr srt, ang-sbang, gen lse clr grs, gd inf por, no flour

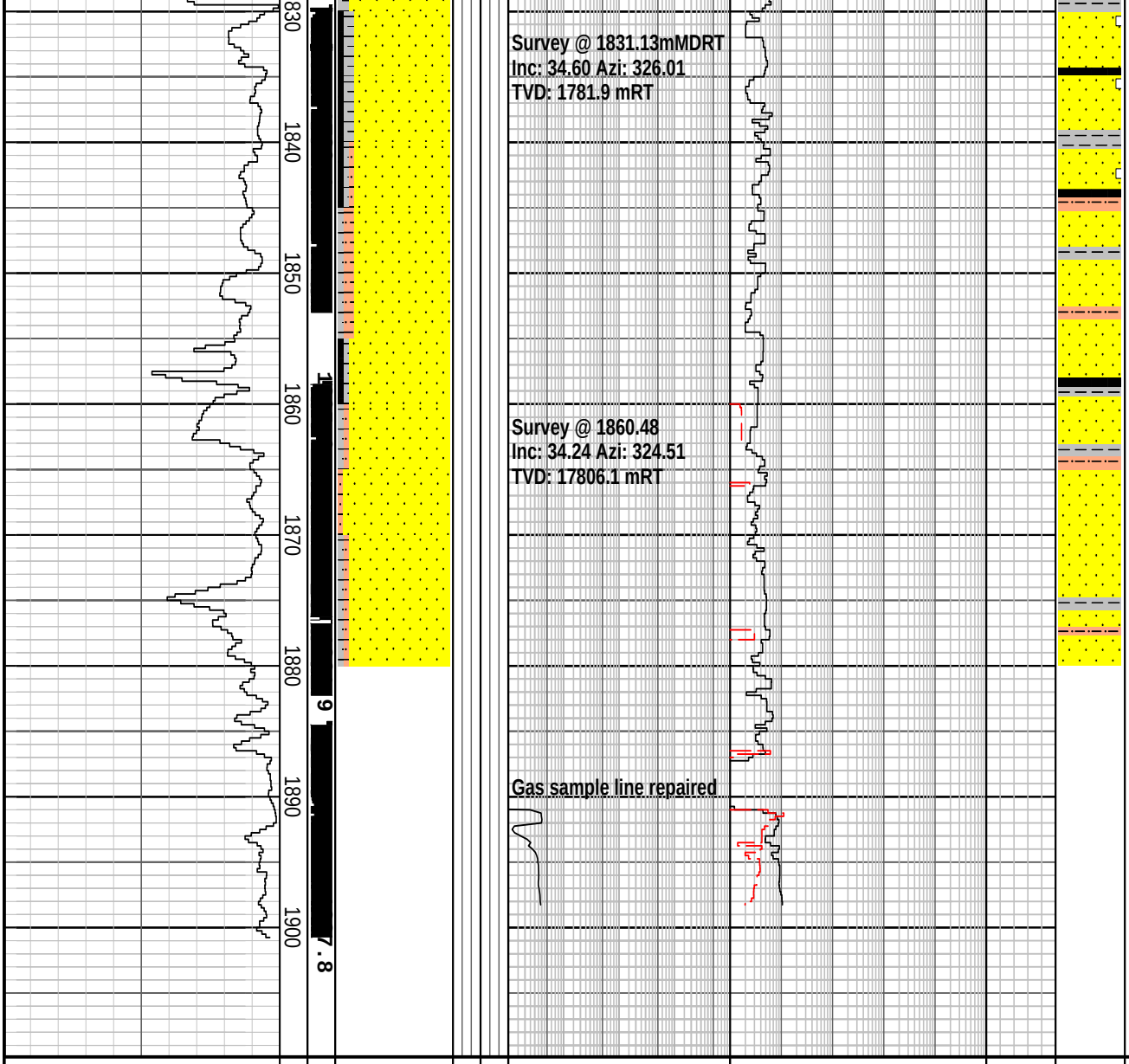
CLAYSTONE: off wh-v pl brn, tr med gy, tr sli lam, tr foss frag, com calc mat, hd-v hd, sblky-sbfiss

SILTSTONE: pl-med gy, med brn gy, mnr arg, grd - CLYST, occ calc mat, mnr carb spk, tr mic, tr lith, hd-v hd, sbfiss-sbblky

COAL: dk gy-blk, sbvit-vit, com sli lam, grd - CARB SLTST, frm-mod hd, conch-sbconch

SANDSTONE: pl brn, clr-trnsl, fros, vf-v crs, dom f-med, pr srt, sbang-sbrnd, tr wk calc cmt, com pl brn arg mtx, com carb lam, mnr nod pyr, gen lse, mod hd aggs,


WOB: 9 - 30 klbf
RPM: 0 - 60
GPM: 535 - 1595
SPP: 1720 - 3565 psi
WOB: 2 - 33 klbf
RPM: 0 - 86
GPM: 885 - 1115
SPP: 2020 - 3740 psi
NB4: 308 mm (12 1/4")
Smith
Serial: SCC981
Type: PDC Fixed Cutter
Jets: 9 X14,
Depth In: 1797.0 mMDRT
Depth out: xxxx.0 mMDRT
Drilled xxxx.0 m in xxx hrs
Grade:
27/02/2008
1671.2
1688.3
1705.3
1755.
1690
1700
1710
1720
1730
1740
1750
1760
1770
1780
1790
1800
1810
1820
Survey @ 1683.37 mMDRT
Inc: 30.78 Azi: 329.89
TVD: 1657.0 mRT
Drop Carbide to check Gas System
Survey @ 1712.48 mMDRT
Inc: 31.44 Azi: 331.04
TVD: 1681.9 mRT
Survey @ 1741.60 mMDRT
Inc: 32.10 Azi: 330.46
TVD: 1706.7 mRT
Survey @ 1770.74 mMDRT
Inc: 32.52 Azi: 328.16
TVD: 1731.3 mRT
Gas sample line broken
Survey @ 1801.91mMDRT
Inc: 32.89 Azi: 325.39
TVD: 1757.6 mMDRT
tr-pr vis por
SILTSTONE: off wh-pl brn, loc pl brn gy, aren, com grd - vf SST, com lith, carb spk, hd-v hd, sbblky
Carbide Run @ 1707mMDRT
Theo: 6200stks. Act: 7130stks
Hole washout = 15.0%.
SANDSTONE: off wh, wh, trnsl, bimod, f-med, ang-sbang, dom sbang, mod-wl sort, v crs, sbrnd-rnd, v wl srt, r nod pyr, r carb frag, r shl frag
SILTSTONE: med gy-dk gy, grn gy, frm, blky, sbfiss i/p, aren i/p, mod calc
CLAYSTONE: pl bl gy, lt gy, frm-mod hd, blky, sli calc
SANDSTONE: of wh, wh, trnsl, bimod, f-med, ang-sbang, dom sbang, mod-wl srt, v crs, sbrnd-rnd, v wl srt, r nod pyr, r carb frag, r shl frag
CLAYSTONE: pl yel brn-yel gy, sft-frm, dom frm, blk, sub blk pt, non calc
SILTSTONE: med gy-dk gy, grnsh gy, frm, blky, sbfiss i/p, aren i/p, mod calc, r glau, carb mat
SANDSTONE: of wh, wh, trnsl, f-v crs, dom med-v crs, ang-sbrnd, dom sbang, pr srt, r nod pyr, r shl frag, no vis cmt, mod inf por
SILTSTONE: trnsl-clr, fros, f-v ccrs, dom med crs, pr srt, ang-sbang, com wk calc cmt, lse pl gy-brn atrg mtx, occ COAL lam, mnr nod pyr, gen lse gr, tr-gd inf por, no flour
CLAYSTONE: lt bl gy-grn gy, sil, occ microfoss, com mic, loc carb mat, com-abd calc mat, tr nod pyr, hd-v hd, sbblky-sbfiss
SANDSTONE: off wh-pl brn, trnsl-clr, vf-v crs, pr srt, ang-sbrndd, com mod strngr calc cmt, loc brn arg mtx where f, com rk flour, gen lse, v hd arr with f, pr vis por,



COAL: dk gy-blk, sbvit-vit, com sli lam & grd - CARB SLTST, frm-mod hd, conch-sbconch

SANDSTONE: pl brn gy, clr-trnsl, fros, vf-v crs, dom f-med, pr srt, sbang-sbrnd, mnr wk calc cmt, com pl brn slty mtx, occ nod pyr, com lse grs, v hd f agg, tr-pr vis por, no flour

SILTSTONE: med brn, med gy, aren & com grdng to vf SST, com micmic, com liths & carb spks, hd, sbblky

CLAYSTONE: lt bl gy-grn, sil, tr microfoss, com mic, com calc mat, tr nod pyr, hd-v hd, sbblky-sbfiss

FORMATION EVALUATION LOG

Drilling Rate
ROP (m/hr)
200 180 160 140 120 100 80 60 40 20
ROP (m/hr)
400 380 360 340 320 300 280 260 240 220
Gamma Ray
0 200
API

MD meters 1:500

TVDRT meters

Cuttings Lithology

Visual Inferred Porosity
P F G

Oil Show
P F G

Gas Data
Gas Hydrocarbon Avg %
0.01 0.1 1 10
0.2 Resistivity Shall 2000
Ohm.m
0.2 Resistivity Deep 2000
Ohm.m

Chromatograph Data
1 Methane ppm 100000
1 Ethane ppm 100000
1 Propane ppm 100000
1 iso-Butane ppm 100000
1 n-Butane ppm 100000
1 iso-Pentane ppm 100000
n-Pentane ppm

Calcimetry
CaCO3 %
20 40 60 80 100
MgCO3 %
100 80 60 40 20

Interpreted Lithology

Lithology Description