



Company : Apache

Well : Madfish-1

Interval : 3713.00 - 4373.44 meters

Created : 09/Dec/2008 7:16:15 AM

INTEQ

FORMATION EVALUATION LOG

Drilling Rate		MD meters	TVDRT meters	Cuttings Lithology	Visual Inferred Porosity	Gas Data		Chromatograph Data		Calcmetry	Interpreted Lithology	Lithology Description
ROP (m/hr)	ROP (m/hr)					Gas Hydrocarbon Avg %	Methane ppm	Ethane ppm	Propane ppm			
200	200	3720	3658.7			0.1 1 10 100	1	100000	100000	CaCO3 %		<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">POOH due to MWD tool failure</div> <p>SANDSTONE: lt brn-olv gry, mnr off wh-trnsl, v f-med gr, occ crs fros ang gr, dom v f, gen wl srt, rnd-sbang, mnr wk calc cmt, incr com mod stg pyr cmt, com-abdt olv gry slty mtz & com grd to AREN SLTST, com carb spks, com lith, mnr pyr, com glauc mat, gen disagg, occ rk flour, r mod hd agg, v p vis por, n shw</p> <p>SILTSTONE: olv gry, med brn gry, v aren & com grd to SLTY SST, mnr arg, com carb lam & spks, mnr calc mat, tr v f glauc, com micmic, tr nod pyr, frm-mod hd, sbbiky</p> <p>SANDSTONE: lt brn-olv gry, mnr off wh-trnsl, v f-med gr, occ crs fros ang gr, dom v f, gen wl srt, rnd-sbang, mnr wk calc cmt, incr com mod stg pyr cmt, com-abdt olv gry slty</p>
180	180	3730	3677.7			0.1	1	10000	100000	MgCO3 %		
160	160	3740	3696.4									
140	140	3750	3715.0									
120	120	3760	3733.6									
100	100	3770										
80	80	3780										
60	60	3790										
40	40	3800										
20	20	381										

08/12/08
 RR1 NB4 SMITH M716
 216mm (8-1/2")
 Jets: 7x13
 Depth In: 3718.0m
 Depth Out: xxxxm
 Drilled: xxxxm in xxxhrs
 Grade: x-x-x-x-x-x-x-x-x-x

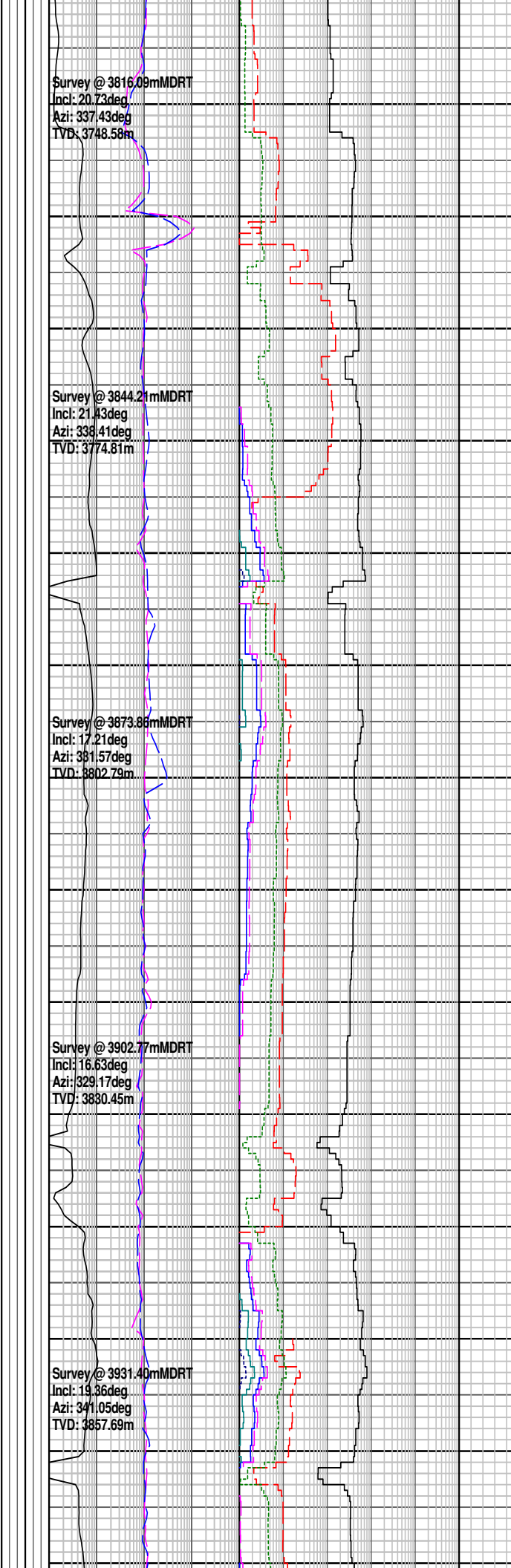
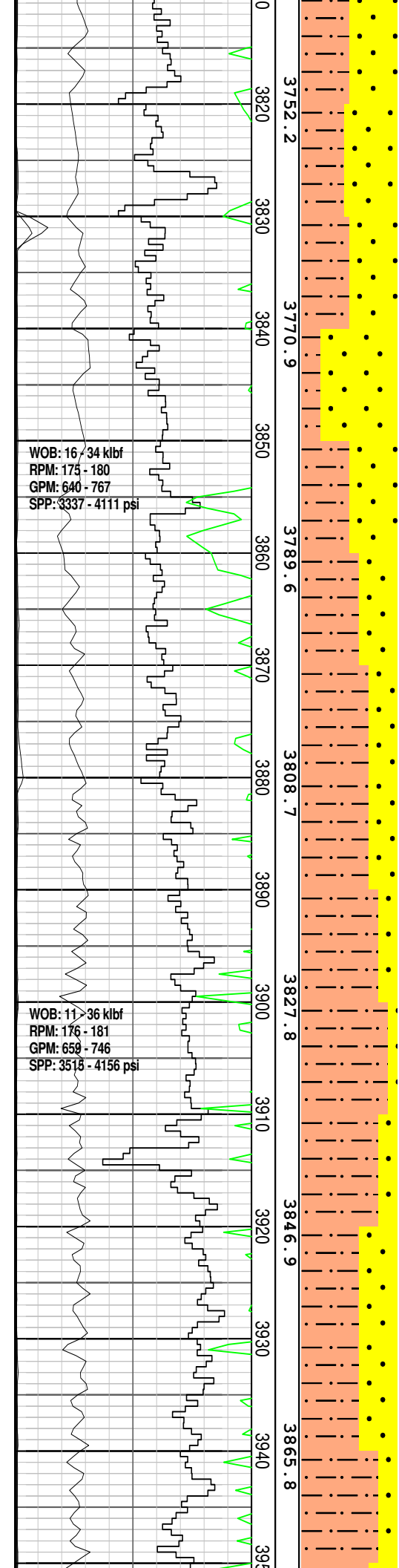
WOB: 8 - 37 klbf
 RPM: 172 - 182
 GPM: 644 - 759
 SPP: 3151 - 4431 psi

WOB: 12 - 35 klbf
 RPM: 171 - 182
 GPM: 655 - 753
 SPP: 3280 - 4067 psi

Survey @ 3726.65mMDRT
 Incl: 18.0deg
 Azi: 13.2deg
 TVD: 3665.03m

Survey @ 3756.94mMDRT
 Incl: 21.43deg
 Azi: 1.01deg
 TVD: 3693.55m

Survey @ 3787.49mMDRT
 Incl: 22.10deg
 Azi: 344.54deg
 TVD: 3721.95m



pyr cmt, com abut olv gry sily
mtx & com grd to AREN
SLTST, com carb spks, com
lith, mnr pyr, com glauc mat,
gen disagg, occ rk flour, r
mod hd agg, v p vis por, n
shw

Dropped carbide @ 3824.0 m and
hole is in gauge

SILTSTONE: olv blk, com dk
gry & grysh blk, dom aren,
com arg, mnr carb lam &
spks, tr micmic, tr mic flk, tr
calc mat, tr lith, tr v f glauc,
tr v f qtz, tr pyr, sft-mod hd,
dom frm-brit, com sft, mnr
mod hd, sbbiky

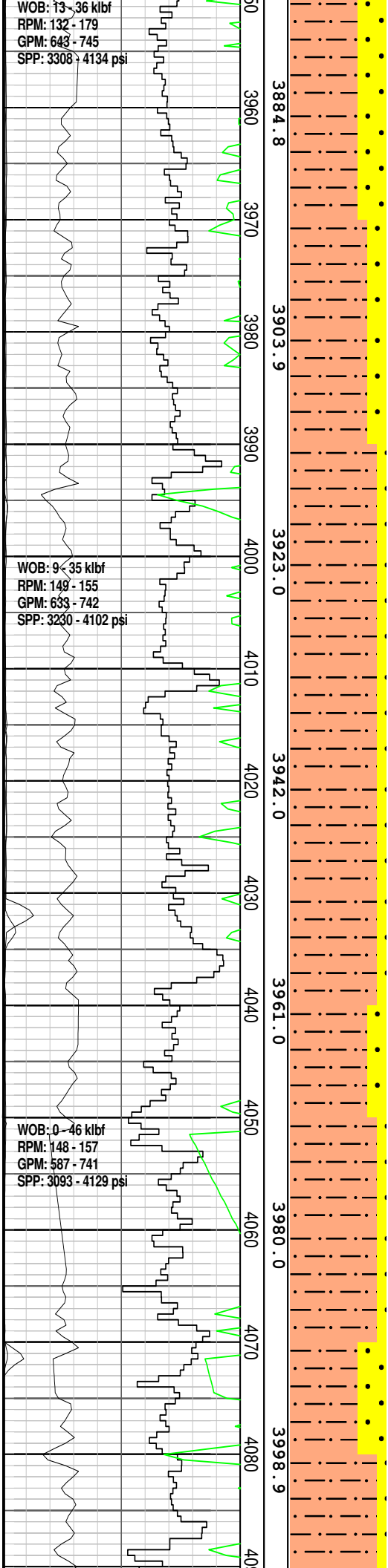
SILTSTONE: olv blk-grysh
blk, mnr dk gry, aren, com
arg, com carb lam & spks, tr
micmic, mnr calc mat, mnr
lith, tr v f glauc, tr v f qtz,
tr pyr, sft-hd, dom brit-mod
hd, mnr sft-frm, com brit &
hd, sbbiky-sbfiss

SANDSTONE: med gry-med
dk gry agg, clr-trnsl, v f-crs,
dom v f-f, com med, tr crs, wl
srt, rnd-ang, dom sbang-
sbrnd, com rnd, mnr ang,
tr str calc cmt, tr olv gry sily
mtx & grad to SLTY SST, com
carb spks, com lith, r mic flk,

WOB: 13 - 36 kbf
RPM: 132 - 179
GPM: 643 - 745
SPP: 3308 - 4134 psi

WOB: 9 - 35 kbf
RPM: 149 - 155
GPM: 633 - 742
SPP: 3230 - 4102 psi

WOB: 0 - 46 kbf
RPM: 148 - 157
GPM: 587 - 741
SPP: 3093 - 4129 psi



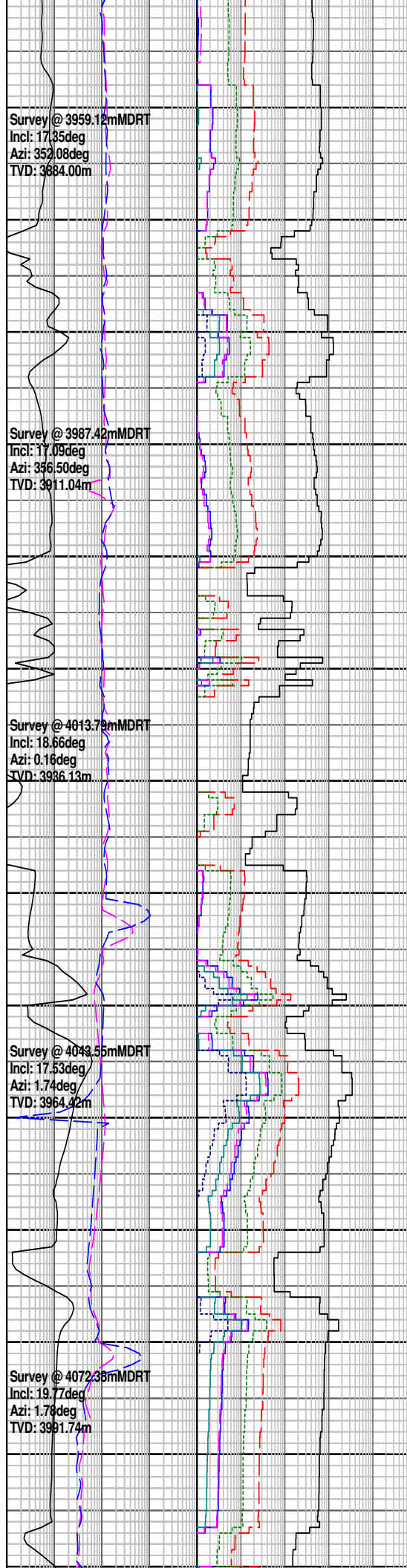
Survey @ 3959.12mMDRT
Incl: 17.35deg
Azi: 352.08deg
TVD: 3884.00m

Survey @ 3987.42mMDRT
Incl: 17.09deg
Azi: 336.50deg
TVD: 3911.04m

Survey @ 4013.79mMDRT
Incl: 18.66deg
Azi: 0.16deg
TVD: 3936.13m

Survey @ 4043.55mMDRT
Incl: 17.53deg
Azi: 1.74deg
TVD: 3964.42m

Survey @ 4072.39mMDRT
Incl: 19.77deg
Azi: 1.78deg
TVD: 3991.74m



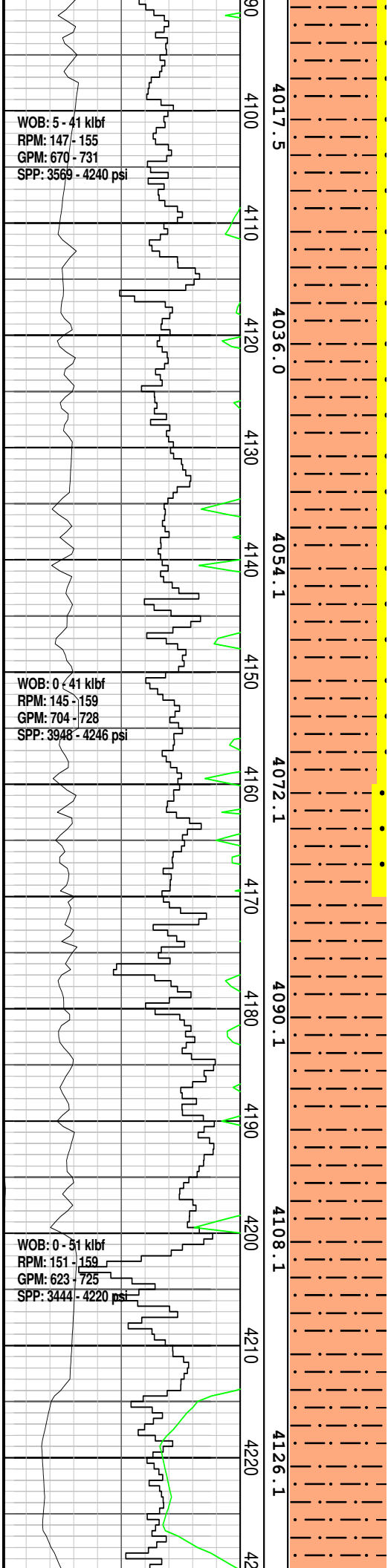
dom disag, tr fri-hd agg, v p
vis por, fr inf por, n shw

SILTSTONE: olv blk, mnr grysh blk, aren, com carb lam & spks, tr micmic, mnr calc mat, mnr lith, tr glauc, tr pyr, soft-hd, dom brit-mod hd, mnr sft-frm, com brit-hd, sbbly-sbfiss

SANDSTONE: clr-trnsl, v f-crs, dom v f-f, com med, tr crs, wl srt, rnd-sbang, dom sbang-sbrnd, com rnd, mnr ang, tr mic flk, disag, p inf por, n shw

SILTSTONE: olv blk, com grysh blk, v aren, carb whr grysh blk, mnr arg, com carb lam & spks, mnr micmic, mnr lith, tr glauc, tr pyr, sft-hd, dom brit-hd whr aren, hd whr carb, mnr sft-frm whr arg, sbbly-sbfiss, dom sbbly

SILTSTONE: olv blk, aren, rarely carb, mnr arg, r Dol, micmic, r carb lam & spks, mnr lith, tr nod & dissem pyr, frm-mod hd, dom brit, abdt mod hd, com frm, sbbly-sbfiss, dom sbbly



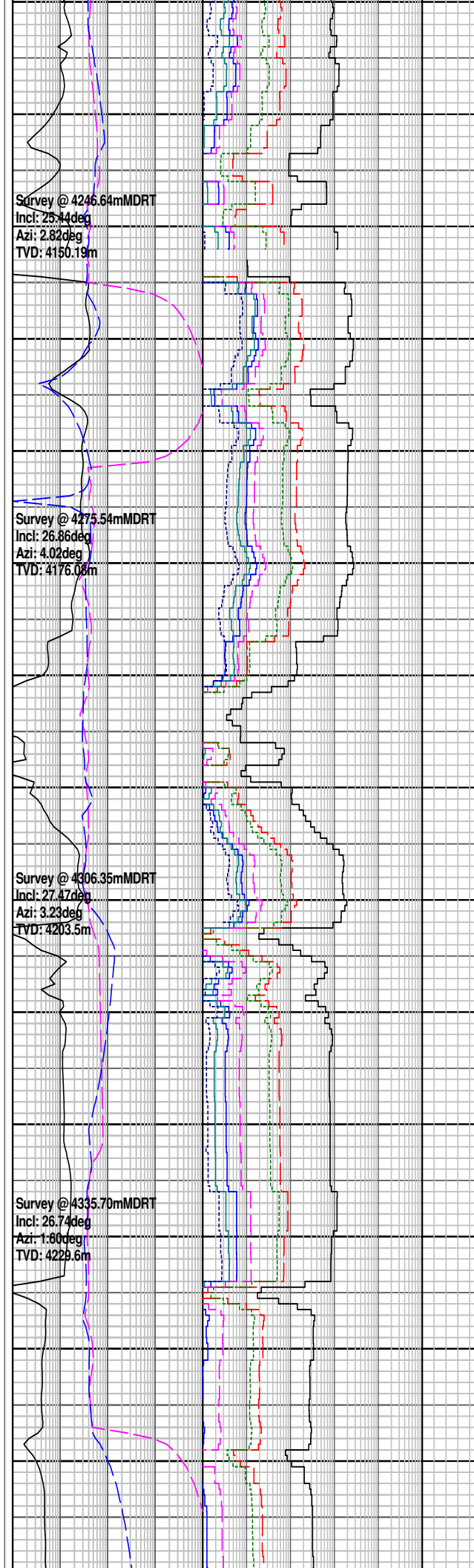
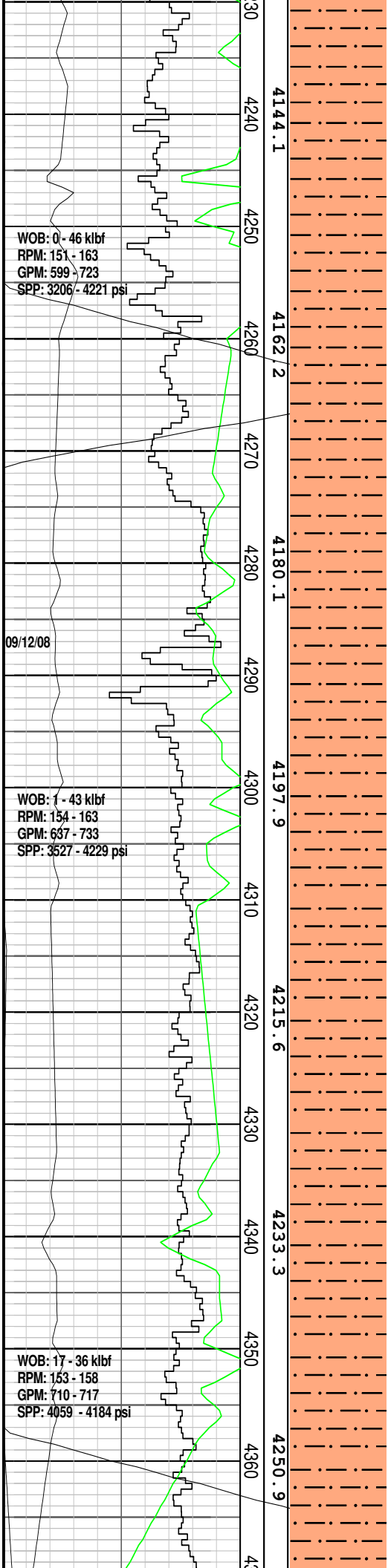
FLUORESCENCE: (4100.0-4160.0)
tr-5%, dll-mod brt ptchy-evn yelsh gn
fluor ass/w calc cmt agg, v slw yelsh
gn strg ct, thn r/r (>5min form r/r)

SANDSTONE: cl-trnsl, med lt
gry-med gry agg, v f-f, v wl
srt, sbrnd-sbang, dom mod
stg calc cmt, tr mod stg sil
cmt i/p, abdt arg mtx, com
lith, tr v f carb mat, dom
brit-hd agg, abdt disagg, v p
vis por, p inf por, fluor

SILTSTONE: olv blk, arg, abdt
aren, tr Dol, micmic, mnr v f
carb mat, tr lith, tr nod &
dissem pyr, tr calc frag,
sft-mod hd, dom brit, abdt
mod hd, com frm & sft,
sbblyk-sbfiss, dom sbblyk

SILTSTONE: olv blk, dom arg,
com aren, micmic, tr mic flk, r
v f carb mat, tr lith, tr nod &
dissem pyr, tr v f glauc,
frm-mod hd, dom frm-brit,
mnr mod hd, sbblyk-sbfiss,
dom sbblyk

SILTSTONE: dk gry-olv blk,
dom arg, com aren, micmic, tr
carb spks, tr v f glauc gr,
frm-mod hd, brit i/p,
sbblyk-sbfiss



SILTSTONE: olv blk, dom arg, abdt aren, micmic, mnr carb spks & tr lam, tr nod pyr, tr v f glauc gr, tr lith, tr wh calc mat, frm-mod hd, brit i/p, sbblky-sbfiss

SILTSTONE: med dk gry-olv blk, abdt arg, com aren, micmic, tr carb spks, tr v f glauc gr, tr nod pyr, tr wh calc mat, frm-mod hd, brit i/p, sbblky-sbfiss

SILTSTONE: dk gry-olv blk, com arg, mnr aren, micmic, tr carb spks, tr v f glauc gr, tr nod pyr, tr wh calc mat, frm-mod hd, brit i/p, sbblky-sbfiss

SILTSTONE: dk gry-olv blk, com arg, mnr aren, micmic, tr carb spks, tr v f glauc gr, tr nod pyr, tr wh calc mat, frm-mod hd, brit i/p, sbblky-sbfiss

FORMATION EVALUATION LOG

Drilling Rate	MD meters	TVDR meters	Cuttings Lithology	Visual Inferred Porosity	Oil Show	Gas Data	Chromatograph Data	Calcinetry	Interpreted Lithology	Lithology Description
ROP (m/hr) 20 40 60 80 100 120 140 160 180 200 ROP (m/hr) 220 240 260 280 300 320 340 360 380 400 Gamma Ray 0 200 API	370					Gas Hydrocarbon Avg % 0.1 1 10 100 Resistivity Shall 0.1 1000 Ohm.m Resistivity Deep 0.1 1000 Ohm.m	Methane ppm 100000 Ethane ppm 100000 Propane ppm 100000 iso-Butane ppm 100000 n-Butane ppm 100000 iso-Pentane ppm 100000 n-Pentane ppm	CaCO3 % MgCO3 %		