



FORMATION EVALUATION LOG



WELL : TREFOIL-2

FROM (m): 0

TO (m): 3270

SCALE: 1/ 500

Country : : AUSTRALIA
Region : : TASMANIA
Field : : TREFOIL
Permit : : T/18P
Well Type : : APPRAISAL
Rig Name : : KAN TAN 4

POSITION
Latitude : 39 53' 07.93" S
Longitude : 145 22' 14.62" E
X (m) : 360690.389
Y (m) : 5583676.588
RT-Sealevel (m MSL) : 26
RT-Seabed (m) : 95

CASING SHOE SIZE / DEPTH
762mm (30") at (m MDRT) : 153.00
340mm (13 3/8") at (m MDRT) : 930.00
245mm (9 5/8") at (m MDRT) : 2520.00

Spud Date : 06-10-2009
Total Depth Date : 18-11-2009
Total Depth (m MDRT) : 3235.0
Total Depth (m TVSS) : 3234.0
Status : P & A

ABBREVIATIONS

MW MUD WEIGHT NB NEW BIT
FV FUNNEL VISCOSITY RR RERUN BIT
PV PLASTIC VISCOSITY CB CORE BIT
YP YIELD POINT WOB WEIGHT ON BIT
FC FILTER CAKE RPM REVS PER MINUTE
SOL SOLIDS FLC FLOW CHECK
CR CIRCULATE RETURNS WL FILTRATE
SD SAND - % PR POOR RETURNS
S SALINITY - PPM NR NO RETURNS
RM MUD RESISTIVITY BG BACKGROUND GAS
RMF MUD FILTRATE TG TRIP GAS
C CARBIDE TEST STG SHORT TRIP GAS
LAT LOGGED AFTER TRIP CG CONNECTION GAS
DS DEVIATION SURVEY SG SWAB GAS
SVG SURVEY GAS

LITHOLOGY LEGEND

Dolomite

Claystone

Argil Siltstone

Calcareous

Calcirudite

Siltstone

Sandy Siltstone

Dolomitic

Calcareenite

Sandstone

Calcareous Siltstone

Fossils

Calcsiltite

Coal

Argil Sandstone

Foraminiferae

Calcilutite

Intrusive Volcanics

Calcareous Sandstone

Carbonaceous

Sandy Claystone

Volcaniclastics

Dolomitic Sandstone

Chert

Silty Claystone

Tuff

Silty Sandstone

Pyrite

Calcareous Claystone

Cement

Glauconite

Argil Calcilutite

Mica

ENGINEERING

Test

FIT or LOT

Mud loss

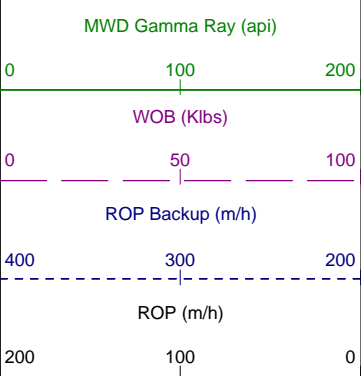
Mud gain

Deviation survey

Core

Shoe

Calcimetry

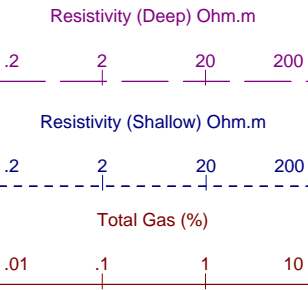


DEPTH
mMDRT

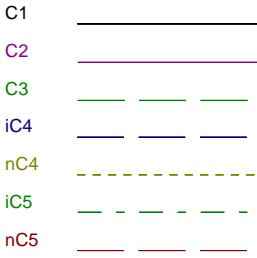
CUTTINGS LITHOLOGY %

INTERPRETED LITHOLOGY

TOTAL GAS & RESISTIVITY

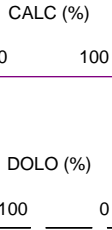


CHROMATOGRAPH %



DIRECT FLUOR.

GOOD
POOR
FOR



LITHOLOGICAL DESCRIPTIONS

AND REMARKS

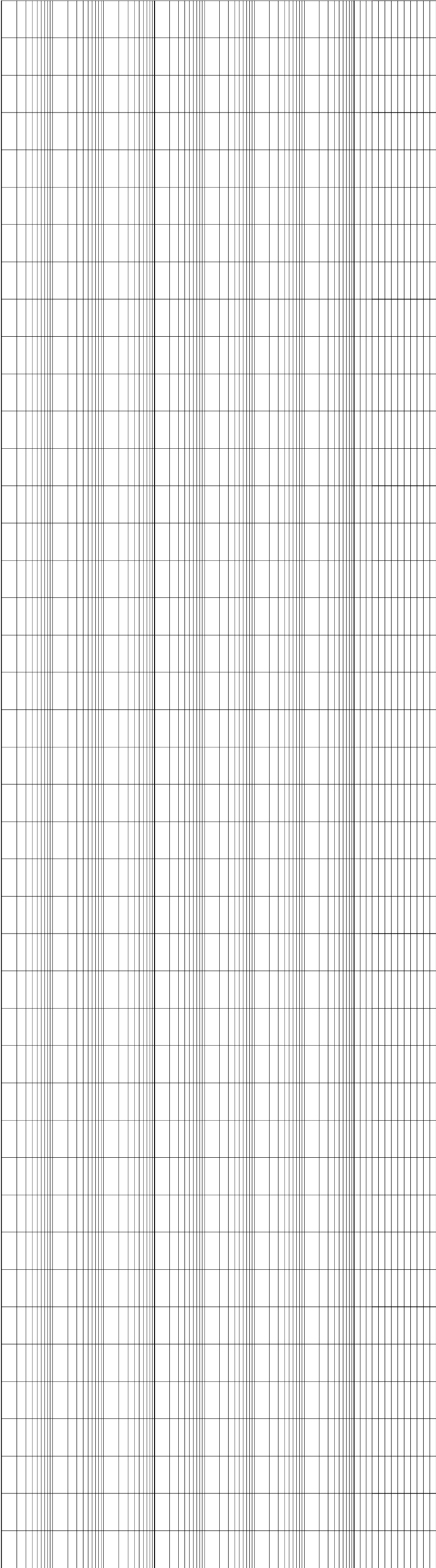
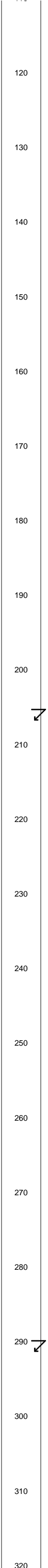
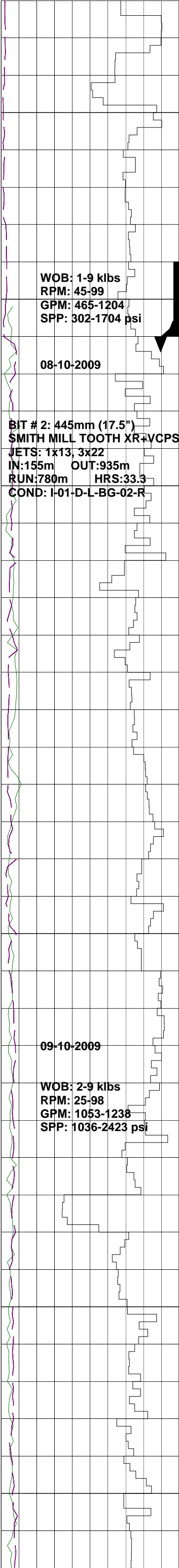
06-10-2009

BIT # 1: 914mm (36")
HUGHES CR-1

JETS: N/A
IN:95m OUT:155m
RUN:60m HRS:4.00
COND: 0-0-NO-0-1-NO-TD

SPUD TREFOIL-2 @ 08:00
914mm (36") SECTION
ON THE 6TH OCT 2009

SEABED @ 95m



DRILL WITH SEA WATER
AND GEL SWEEPS

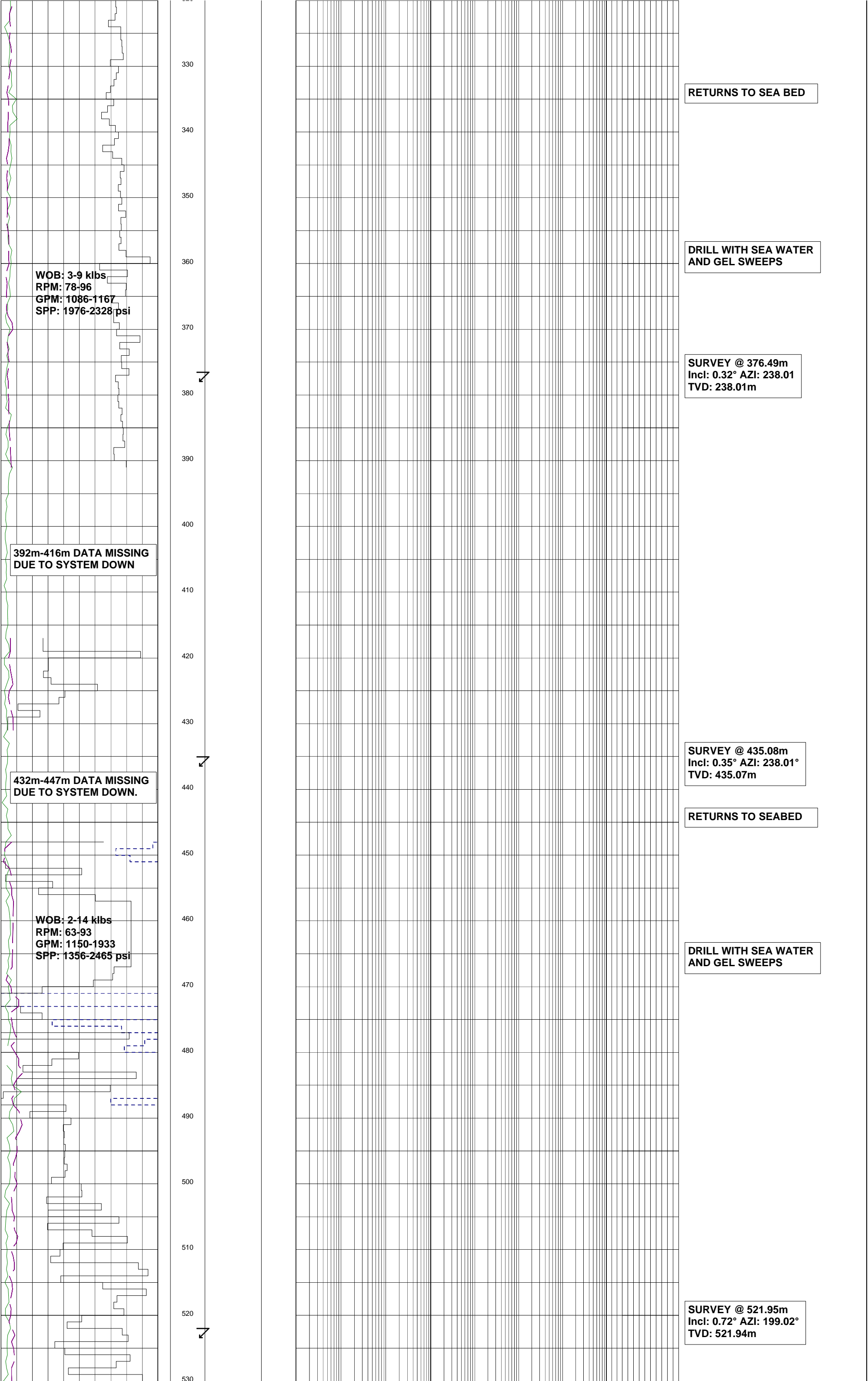
RETURNS TO SEABED

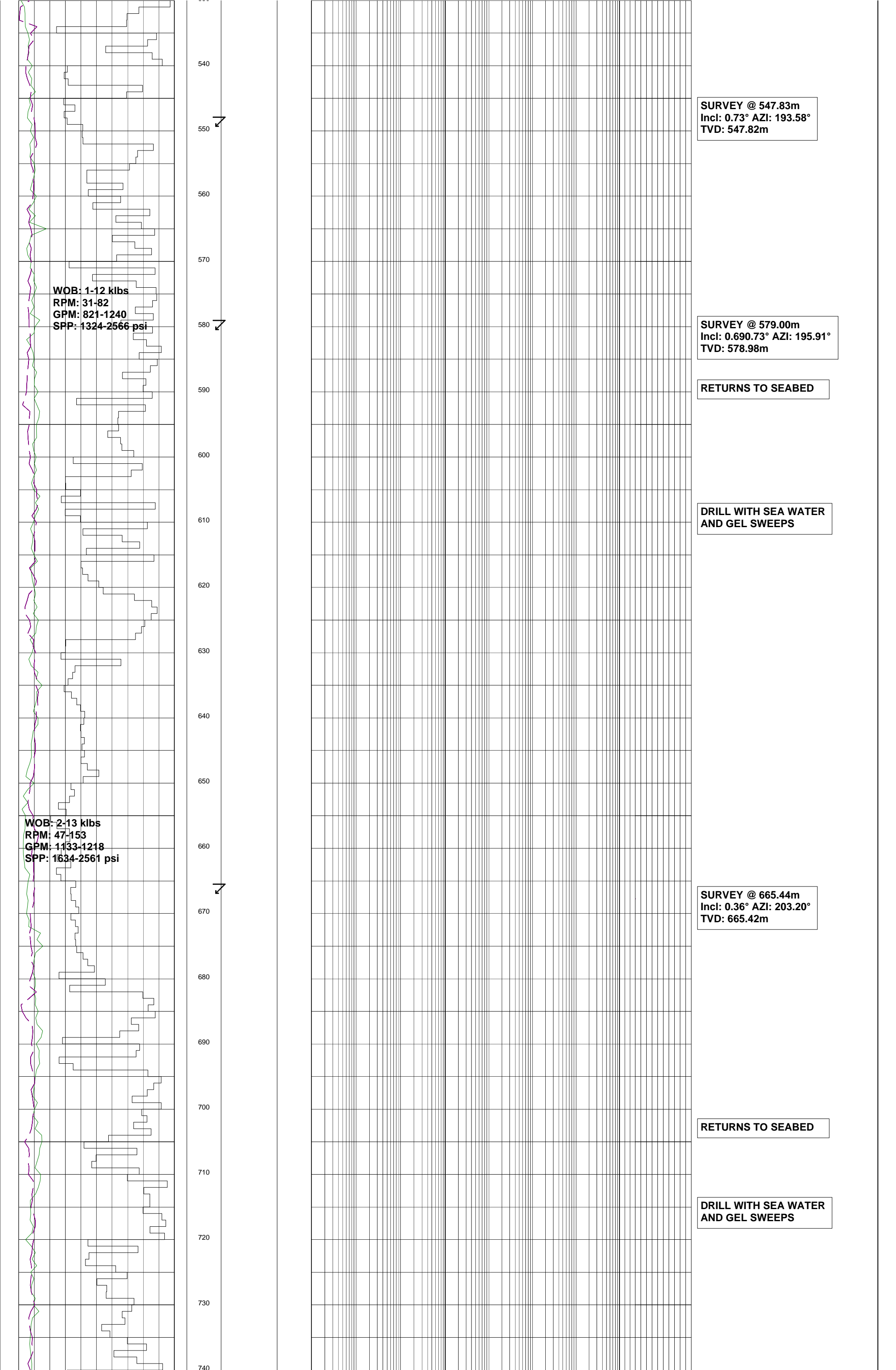
762mm(30") CONDUCTOR
@ 155m

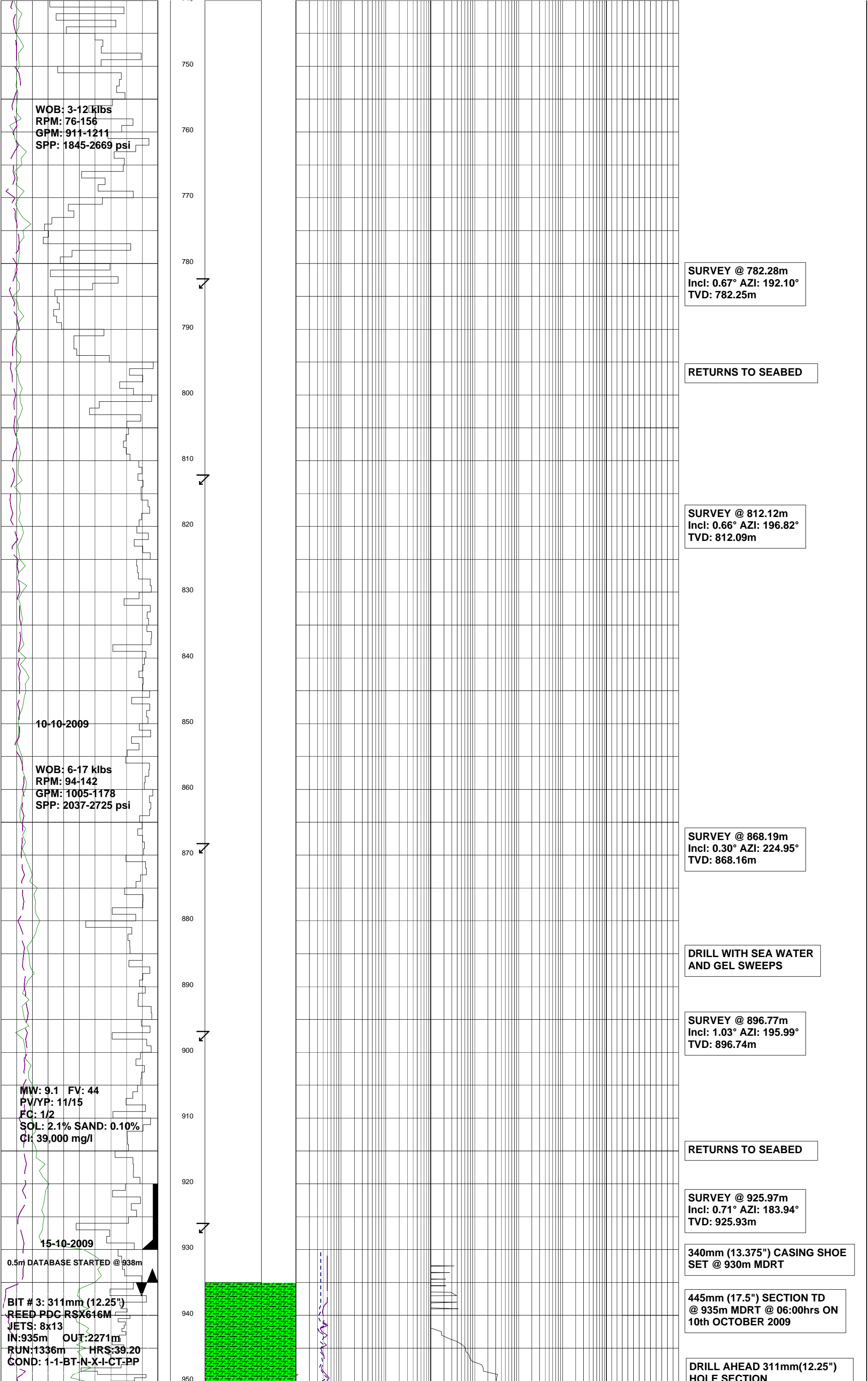
SURVEY @ 204.92m
Incl: 0.58° AZI: 282.17°
TVD: 204.92m

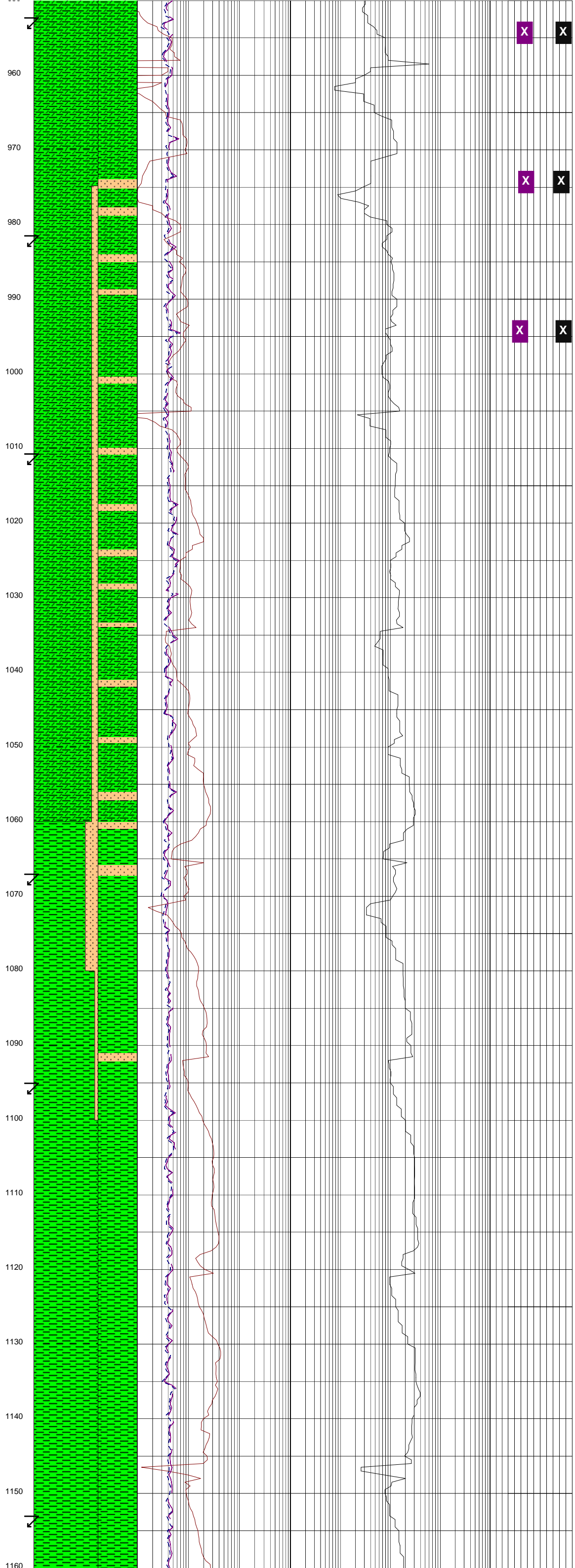
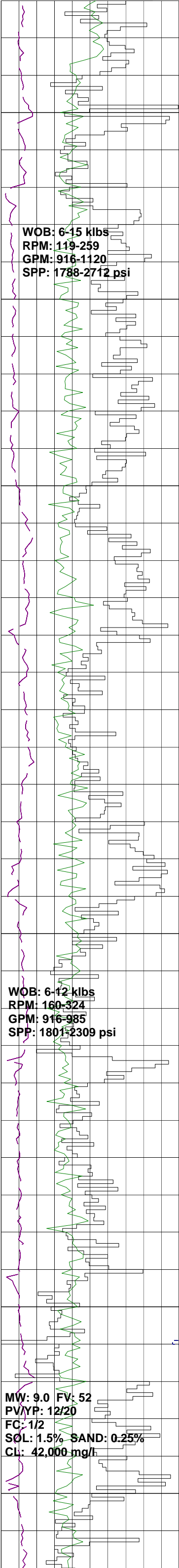
DRILL WITH SEA WATER
AND GEL SWEEPS

SURVEY @ 289.50m
Incl: 0.55° AZI: 277.88°
TVD: 289.49m









FROM 935m MDRT
@ 16:00HRS on 15th OCT 2009

CONDUCT LOT @ 930m
15.15ppg EMW.

CLAYSTONE:med gry,v sft-sft,
rr frm,amor-sbblky,tr bryz &
shell frags,tr pyr,35% calc cly.

SURVEY @ 952.44m
Incl: 0.80° AZI: 188.49°
TVD: 952.40m

SILTSTONE:med dk gry,frm-
hd,amor-sbblky,tr byrz & forams,
tr shell frags,30% calc cly.

SURVEY @ 981.35m
Incl: 0.74° AZI: 192.99°
TVD: 981.31m

SURVEY @ 1010.2m
Incl: 0.83° AZI: 198.72°
TVD: 1010.16m

CLAYSTONE:med-occ lt gry,sft-
occ frm,amor-sbblky,mnr micmic,
tr bryz,tr forams,tr shell frags,30%
calc..

CLAYSTONE:med-occ lt gry,sft-
occ frm,amor-sbblky,mnr micmic,
tr bryz,tr forams,tr shell frags,30%
calc.

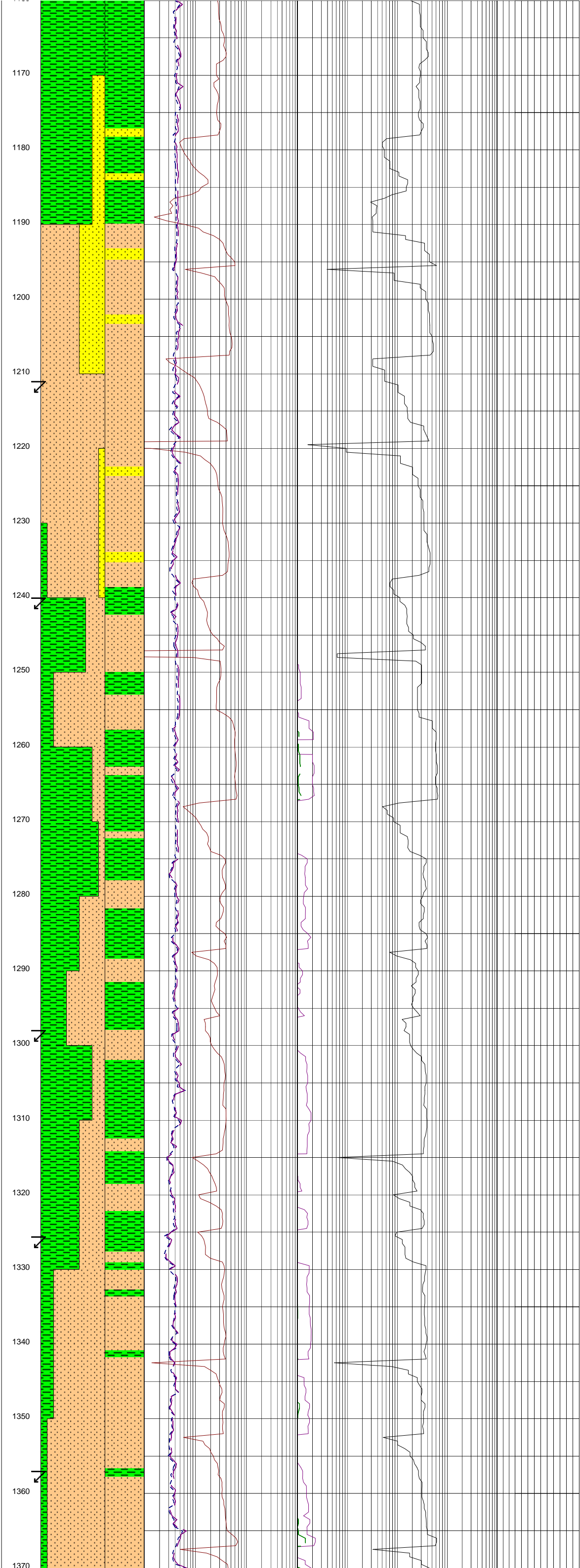
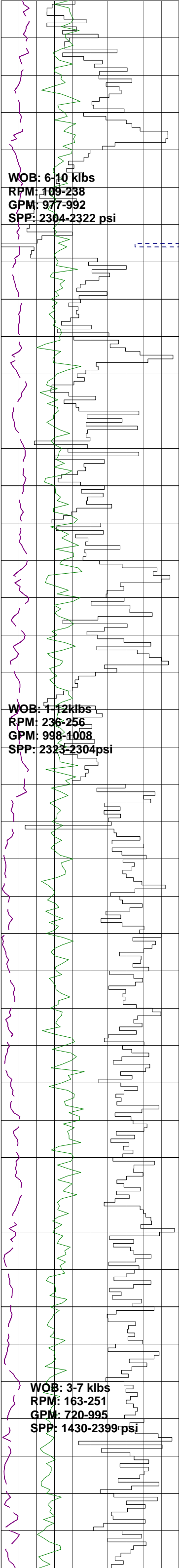
SURVEY @ 1067.21m
Incl: 0.87° AZI: 190.96°
TVD: 1067.16m

CALCAREOUS CLAYSTONE:med-dk
gry,sft-frm,blky-sbblky,tr micmic,foss
frags,forams,10% calc cly.

SURVEY @ 1095.87m
Incl: 0.84° AZI: 194.49°
TVD: 1095.82m

CLAYSTONE:med-dk gry,sft-frm,
sbblky-blky,tr micmic,shell frags,
coral,tr vf pyr aggs,10% calc cly.

SURVEY @ 1153.51m
Incl: 1.11° AZI: 191.81°
TVD: 1153.45m



CLAYSTONE:med-dk gry,olv gry, sft-frm,sbblky-blky,tr micmic,shell frags,5% calc cly.

CLAYSTONE:olv gry,dk grn/gry, sft-frm,sbblky-blky,tr grd to sbfiss, tr vf pyr as repl,tr shell frags, tr micmic,5% calc cly.

SURVEY @ 1152.36m
Incl: 1.27° AZI: 187.06°
TVD: 1182.29m

SANDSTONE:lt olv gry,med gry,v sft-fri,vf grs,sbang-sbrnd,wl srt, sph,sbsph,tr lithic frags,10% pr calc cmt,gd vis por,no fluor.

SURVEY @ 1211.30m
Incl: 0.97° AZI: 182.631°
TVD: 1211.23m

SILTSTONE:med gry,med-lt gry,sft, sbblky,tr carb lam,tr lithic frags,tr calc cly.

SANDSTONE:lt olv gry,med gry,vf, wl srt,sbang-sbrnd,s-ss,10% pr calc cmt,tr lithic frags,sft-fri aggs,gd vis por,no fluor.

SURVEY @ 1240.32m
Incl: 1.00° AZI: 184.76°
TVD: 1240.24m

CLAYSTONE:olv gry,sft-frm, sbblky-blky,tr shell frags, lithic frags,forams,5% calc cly, 10% cly.

SURVEY @ 1298.71m
Incl: 1.13° AZI: 178.12°
TVD: 1298.62m

SILTSTONE:med gry,med-lt gry,sft-frm,sbblky,tr shell frags,lithic frags, forams,5%calc cly,10% cly.

CLAYSTONE:olv gry,dk grn/gry,sft-frm,sbblky,tr forams,2% micmic,tr f grs pyr aggs,10% calc cly.

SILTSTONE:med gry,med-lt gry,sft-frm,sbblky,1% shell frags,tr rd/brn, dol lmst,tr lithic frags,forams,f grs pyr aggs,5% calc cly,10% cly.

SURVEY @ 1327.95m
Incl: 1.27° AZI: 184.82°
TVD: 1327.86m

SILTSTONE:olv gry,med-dk gry, sft-frm,sbblky-blky,tr carb alt lithic frags,tr spks,tr vf dissem pyr,tr glauc grs,5% cly,15% calc cly,grd to loc ARGILLACEOUS SILTSTONE.

SURVEY @ 1357.12m
Incl: 1.31° AZI: 184.97°
TVD: 1357.02m

SILTSTONE:olv gry,med-dk gry,sft-

frm,sbblky-blky,tr lithic frags,tr
carb spks,tr vf dissem pyr,tr glauc
grs,5% calc cly.

SURVEY @ 1385.95m
Incl: 1.43° AZI: 187.08°
TVD: 1385.84m

SILTSTONE: olv gry, med-dk gry, med gry, sft frm, sbbly-blky, r alt lithic frags, tr carb spks, r vf dissem pyr, tr glauc grs, 10% calc cly, 15% cly, grd to **ARGILLACEOUS SILTSTONE.**

SURVEY @ 1414.80m
Incl: 1.33° AZI: 186.15°
TVD: 1414.68m

SILTSTONE: olv gry, med-dk gry, med gry, sft frm, sbblky-blky, 10% f grs, qrtz grs, tr alt lithic frags, tr carb spks, tr vf dissem pyr, tr glauc grs, 5% calc cly, 15% cly, grd to ARGILLACEOUS SILTSTONE.

SILT SANDSTONE: olv gry, med-dk
gry, vf grs, wl srt, sbrnd, sbsph-sph,
qtz grs w/ 0-20% lith comp, sft frm,
r carb spks, 5% calc cmt, pr
is por, no fluor.

CARBIDE LAG CHECK @ 1438m
THEOR. STKS: 5872
ACTUAL STKS: 6090
OPEN HOLE O.G: 4.2%

SURVEY @ 1443.26m
Incl: 1.42° AZI: 189.23°
TVD: 1443.14m

SILT SANDSTONE: olv gry, med
lk gry, vf grs, sbrnd, wl srt,
absph-sph, w/- 0 to 20% liths,
lft frm, tr carb spks, 5% calc
emt, pr vis por, no fluor.

SURVEY @ 1471.76m
Incl: 1.41° AZI: 188.77°
TVD: 1471.63m

SILTSTONE: olv gry, med gry,
r dk gry, sft frm, sbblky, tr carb
pkps, lithic frags, glauc, 5% calc
ly, 10% vf qtz snd.

SURVEY @ 1500.56m
Incl: 1.44° AZI: 186.77°
TVD: 1500.42m

SILTSTONE: olv gry, med dk gry,
r carb spks, calcite cly, glauc, lithic
frags, 5% calc cly, 10% cly, 15% vf
qtz snd, sft frm, tr fri, ang-sbblky,

SANDSTONE: med dk gry, dk gry,
f grs, sbrnd, wl srt, sbsph-sph,
0-15% lithic frags, 5% calc
cly cmt, 10% cly, por vis por,
no fluor.

SURVEY @ 1529.74m
Incl: 1.02° AZI: 177.87°
TVD: 1529.59m

SILTSTONE: olv gry, sft frm, blkky, tr glauc, lithic frags, 5% calc cly, 15% cly, 10% vf qrtz grs, tr vlt gry, hly degraded volcanics.

SURVEY @ 1559m
Incl: 1.11° AZI: 183.32°
TVD: 1558.85m

SANDSTONE: med blu gry, vf grs, brnd, wl srt-v wl srt, sph qtz grs w/- 10% lithic comp, mod hd-d, ang-sbblky, tr micmic, hly cmt, 0% calc cmt, 10% cly, no is por, no fluor.

MW: 9.0 FV: 55
PV/YR: 13/21
FC: 1/2
SOL: 1.8% SAND: 0.25%
CL: 42,000 mg/l

SLIDING: 1422m-1433m

MW: 9.0 FV: 56
PV/YP: 13/22
FC: 1/2
SOL: 1.7% SAND: 0.25%
CL: 40,000 mg/l

WOB: 1-3 klbs
RPM: 131-244
GPM: 994-1005
SPP: 2379-2440 psi

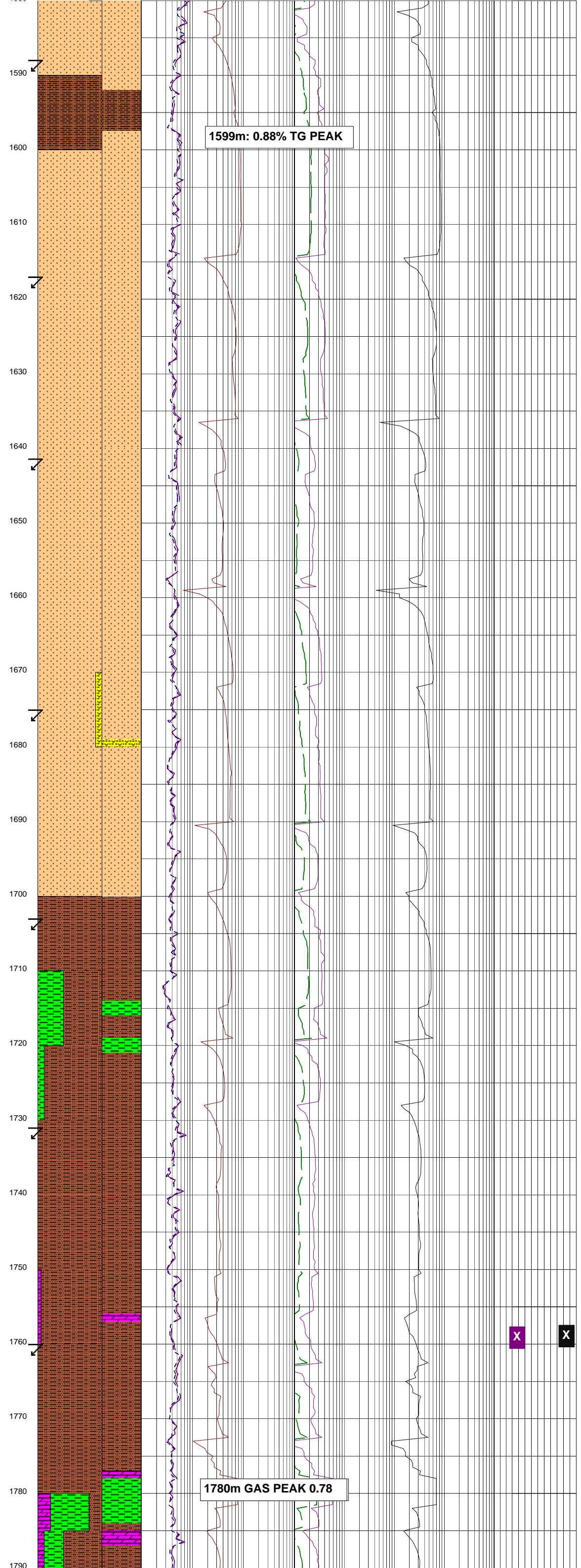
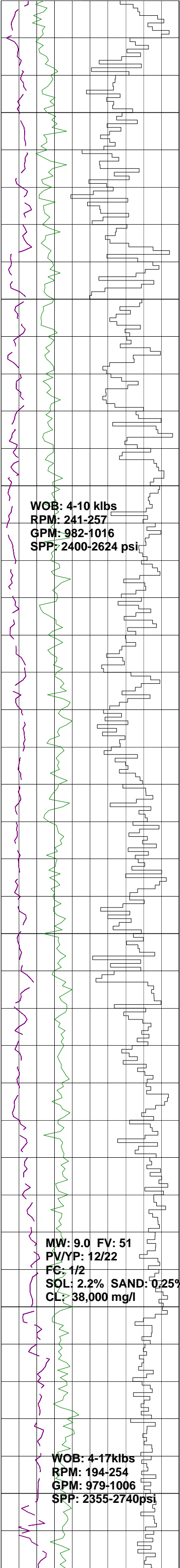
SLIDING: 1503m-1515m

~~17-10-2009~~

WOB: 1-6 klbs
RPM: 234-251
GPM: 998-1005
SPP: 2581-2734 psi

1483m: 0.64% TG PEAK

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SURVEY @ 1588.15m
Incl: 1.05° AZI: 181.86°
TVD: 1587.99m

SANDY SILTSTONE:olv gry,med dk gry,sft-frm,ang-sbang grs, tr carb spks,glauc,lithic frags, micmic,shell frags,5% calc cly, 10% cly,20% vf qtz snd.

SILTSTONE:olv gry,med gry,sft-frm,sbblky,tr carb spks,glauc,lithic frags,shell frags,5% calc clay,15% clay.

SURVEY @ 1617.27m
Incl: 1.14° AZI: 175.03°
TVD: 1617.11m

SILTSTONE:olv gry,sft-frm,sbblky, tr carb spks,glauc,lithic frags,5% calc cly,10% cly,5% vf qtz sand.

SURVEY @ 1646.32m
Incl: 1.17° AZI: 184.16°
TVD: 1646.15m

SILTSTONE:olv gry,sft-frm,sbblky, tr carb spks,glauc,tr lithic frags,tr shell frags,5% calc cly,10% cly,5% vf qtz snd.

SURVEY @ 1675.15m
Incl: 1.31° AZI: 182.99°
TVD: 1672.97m

SILTY SANDSTONE:med blu/gry, med gry,vf grs,wl-v wl srt,sbrnd, sbsph qtz grs,10% lithic comp, mod hd-hd aggs,tr micmic,tr xln calc,tr shellfrags,10% calc cmt, 25% slt,no vispor,no fluor.

SURVEY @ 1703.61m
Incl: 1.02° AZI: 183.90°
TVD: 1703.43m

CLAYSTONE:olv/blk,sft-frm,sbblky, tr micmic,tr carb spks,5% calc cly.

SURVEY @ 1731.98m
Incl: 1.12° AZI: 176.27°
TVD: 1731.79m

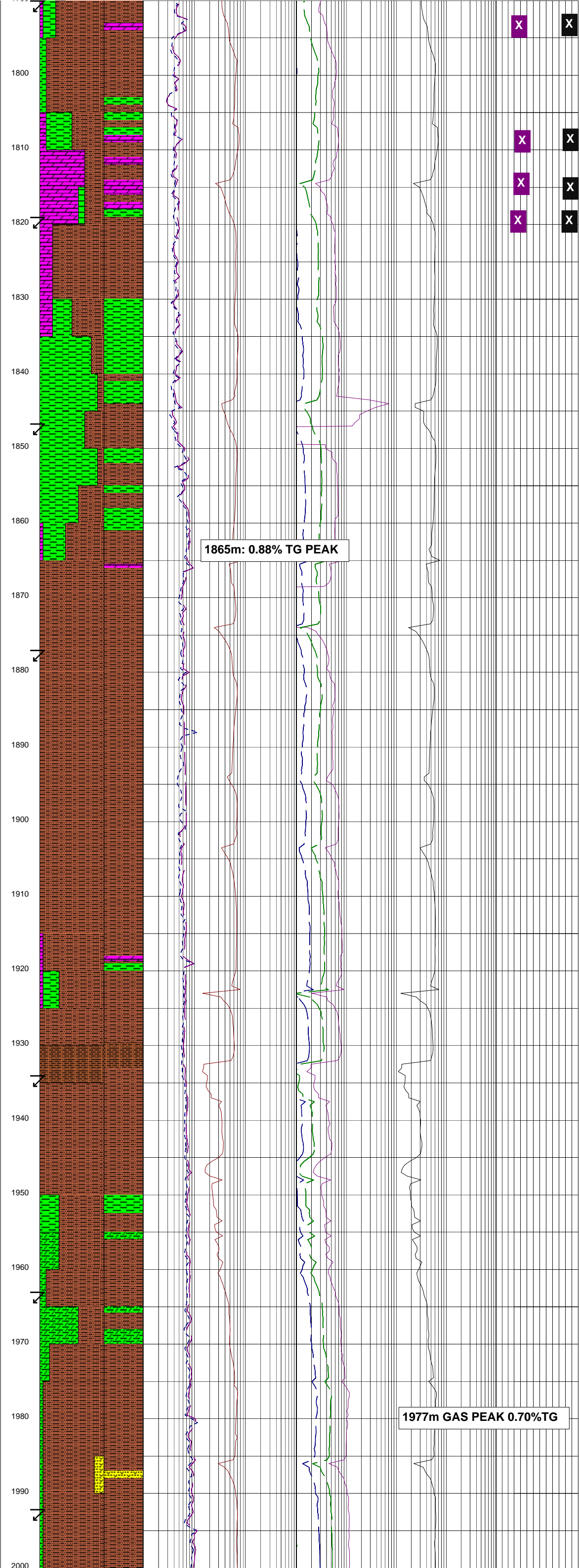
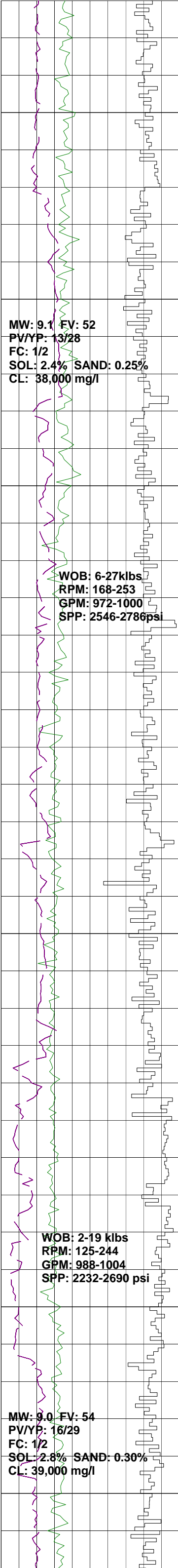
ARGILLACEOUS SILTSTONE:olv-gry,tr micmic,tr pyr aggs,tr lithic frags,tr foss frags,tr glauc,tr dol, 5% calc cly,25% vf qtz sand, sft-frm,sbblky.

SURVEY @ 1760.71m
Incl: 1.20° AZI: 179.48°
TVD: 1760.52m

ARGILLACEOUS SILTSTONE:olv-gry,tr micmic,tr glauc,5% calc cly, 25% cly,sft-frm,sbblky.

DOLOMITE:pl yel brn,dk yel brn,sft-v hd,spiral-sbconch frac,xln-ea i/p,tr opq xln cal.

ARGILLACEOUS SILTSTONE:olv gry,tr micmic,tr pyr aggs,tr lithic frags tr foss frags 5% calc clay 5%



frags, tr 100% frags, 0% calc clay, 0%
vf qtz snd, sft frm, sbblky.

SURVEY @ 1790.08m
Incl: 1.13° AZI: 181.99°
TVD: 1789.88m

CLAYSTONE: dsky brn, brn gry, tr
micmic & glauc, sft, sbblky-stky.

SURVEY @ 1819.45m
Incl: 1.17° AZI: 182.73°
TVD: 1819.24m

ARGILLACEOUS SILTSTONE: olv
gry, yel brn i/p, olv blk, tr micmic, 25%
cly, sft frm, sbblky.

DOLOMITE: pl yel brn, dk yel
brn, sft-v hd, splin-sbconch
frac, xln-ea i/p.

CARBIDE LAG CHECK @ 1843m
THEOR. STKS: 7680
ACTUAL STKS: 8502
OPEN HOLE O.G: 4.2

SURVEY @ 1848.52m
Incl: 1.17° AZI: 190.32°
TVD: 1848.31m

CLAYSTONE: olv blk, olv gry,
tr dk yel brn, micmic, sft-
frm, sbblky-blky.

DOLOMITE: pl yel brn, frm-hd, splin-
conch frac i/p, ea.

ARGILLACEOUS SILTSTONE: brn
blk, tr micmic, lithic frags, glauc grs,
pyr, 5% vf qtz grs, 25% clys fri frm,
sbblky.

SURVEY @ 1877.80m
Incl: 1.13° AZI: 190.92°
TVD: 1877.58m

ARGILLACEOUS SILTSTONE: brn blk
olv blk, tr micmic, lithic frags, grs,
tr glauc pyr, 25% clys, fri frm,
sbblky-blky.

ARGILLACEOUS SILTSTONE: brn
blk, olv blk, tr micmic, lithic frags,
glauc grs, pyr, tr Dolomite, 30% cly,
sft frm, sbblky-blky,.

DOLOMITE: pl yel brn, dk yel brn,
frm-hd, splin frac, xln-microxln i/p.

CLAYSTONE: med gry, dk gry, tr
micmic, lithic frags, 10% slt sz frac,
v sft-sft, amor-sbblky.

SURVEY @ 1934.67m
Incl: 1.08° AZI: 194.42°
TVD: 1934.44m

ARGILLACEOUS SILTSTONE: brn
blk, tr micmic, dol, 20% cly, 10% vf qtz
snd grs, sft frm, sbblky,.

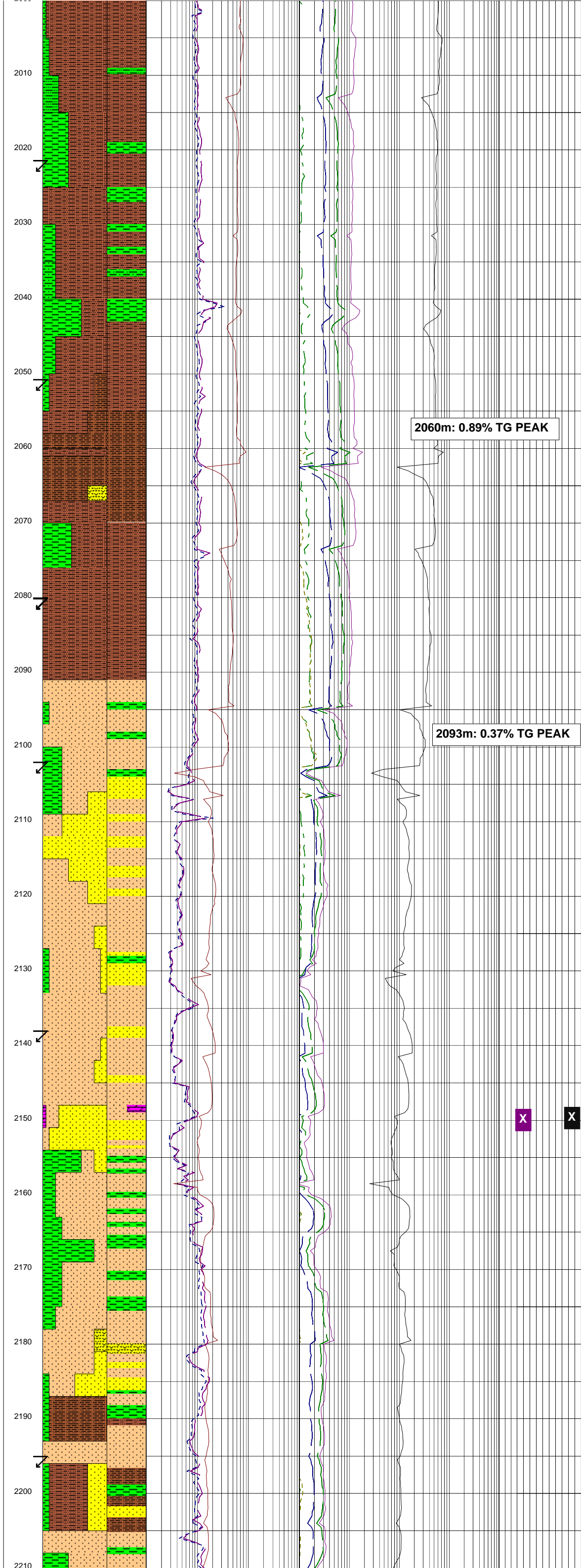
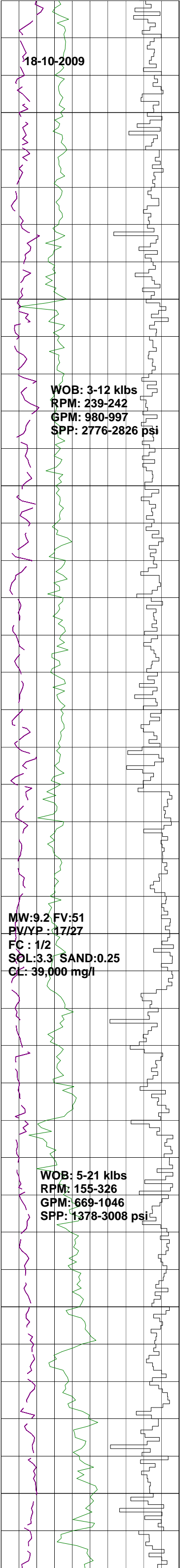
CLAYSTONE: brn blk, olv blk, tr
micmic, tr glauc, 10% slt sz, v sft-
sft, amor-sbblky.

SURVEY @ 1963.22m
Incl 0.48° AZI: 64.50°
TVD: 1962.99m

ARGILLACEOUS SILTSTONE: brn
blk, olv blk, tr shell frags,
liths 20% cly, glauc, 5% vf
qtz snd, sft frm, sbblky.

SILTY SANDSTONE: brn blk, olv
blk, vf grs, wl-v wl srt, sbrnd, sbsph
qtz grs, sft fri, tr lithic frags,
15% cly, 25% slt.

SURVEY @ 1992.33m
Incl 0.56° AZI: 59.70°
TVD: 1992.69m



CALCAREOUS CLAYSTONE:med gry,med lt gry,tr calcite vein, lithic frag,shell frags,10% slt, frm-mod hd,sbblky.

SURVEY @ 2021.46m
Incl 0.59° AZI:61.98°
TVD:2021.23m

ARGILLACEOUS SILTSTONE:brn blk,olv blk,tr carb spks, lithic frags,35% cly,5% calc cly, sft-fri,amor-sbblky.

CLAYSTONE:med gry,med dk gry, tr shell frag,micmic, calcite vein,10% calc clay, 15% slt,mod hd-hd,ang-sbblky,.

SURVEY @ 2050.74m
Incl 0.68° AZI:78.76°
TVD:2050.5m

SANDY SILTSTONE:brn blk,olv blk, tr lithic frags,10% cly,30% vf qtz snd, sft-fri,sbblky.

SILTY SANDSTONE:olv gry,lt olv gry,sbrnd,wl srt,ss qtz grs w/- 10% lith comp,frm-mod hd,tr shell micmic,lithic frags,10% calc frags,cmt,pr-nil vis por, no fluor.

CLAYSTONE:brn blk,olv blk,v sft-sft,sbblky,tr lithic frags,15% slt.

SURVEY @ 2080.19m
Incl 0.61° AZI:81.26°
TVD:2079.95m

SILTSTONE:olv blk,tr lithic frags, alt i/p,tr micmic,tr carb spks, 10% dissem vf clr sbrnd qtz grs, 10% cly sft-frm, sbblky.

SURVEY @ 2102.2m
Incl 0.68° AZI:80.27°
TVD:2101.96m

SANDSTONE:dk grn gry,mott, dsky yel grn,lt gry,vf grs,30% f grs,mod wl srt,sbrnd-sbang,v sft-frm,10% glauc grs & cly,15% cly,pr vis por,no fluor.

CLAYSTONE:dk yel brn,gry grs,tr carb mat,tr vf pyr,tr cal,frm,sbblky.

SANDSTONE:mult col,olv gry,dk grn gry,mott,dsky yel grn,lt gry,qtz, vf grs,30% f grs,sbrnd-sbang,mod-wl srt,0-10% glauc grs,15% cly,v sft-frm,pr vis por,no fluor.

SILTSTONE:brn gry,olv gry,10% cly,10% vf clr qtz grs,sbblky.

SURVEY @ 2138.04m
Incl 0.69° AZI:75.36°
TVD:2137.80m

DOLOMITE:brn gry,mod hd,conch-splin frac,tr glauc grs.

SANDSTONE:clr,opq,pol,frstd, lse qtz grs,20% med,40% crs,30% v crs,10% gran,ang-rnd,v pr-pr srt, sbelg-sph,tr wh cly mtx adh to srf,fr vis por inf,no fluor.

SILTSTONE:brn blk,olv blk,sft-fri, tr carb lam,lithic frags,10% cly,10% vf qtz snd grs.

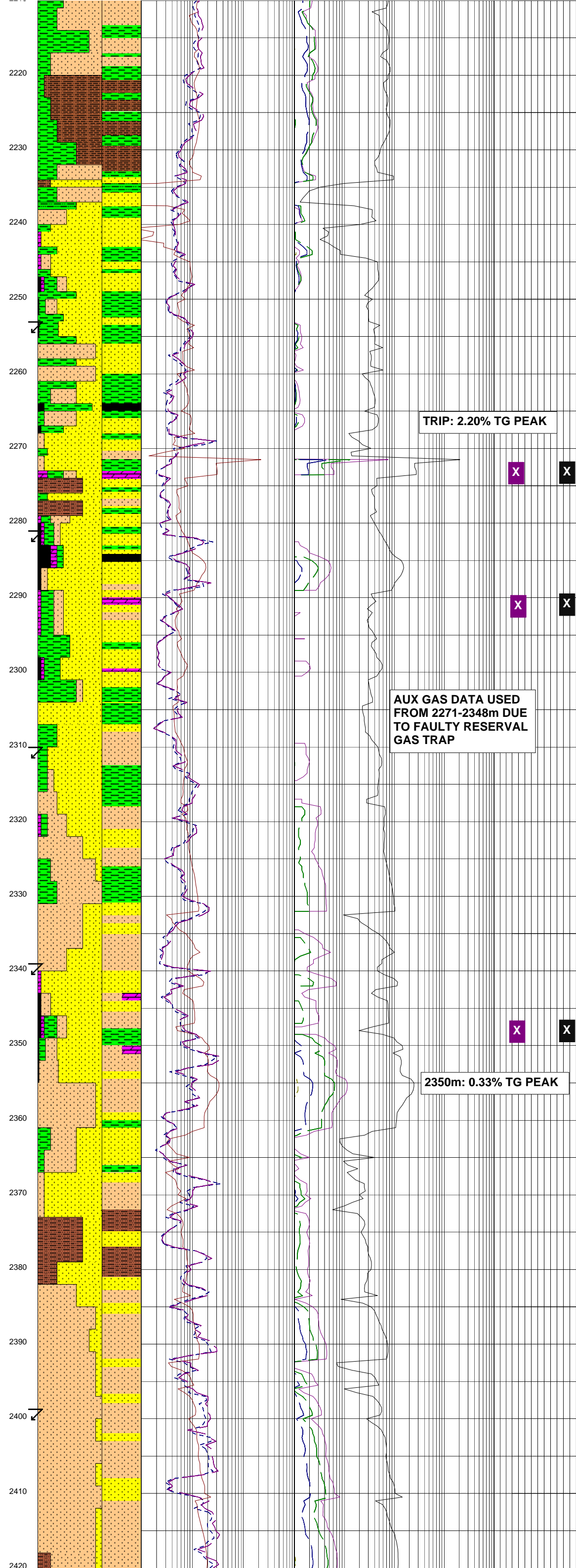
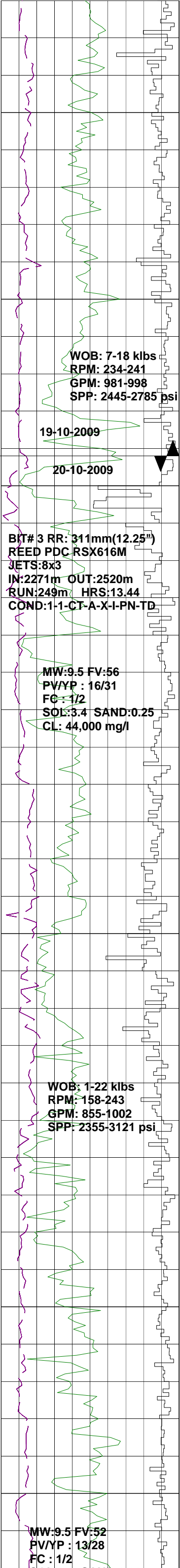
CLAYSTONE:med blu gry,olv gry, med gry,tr micmic,5% calc cly,sft-frm,sbblky.

SILTY SANDSTONE:brn blk,olv gry,sbrnd,wl srt,sbsph,vf,clr, pol qtz grs,sft-fri,tr lithic frags,10% calc cmt,5% rck flr, pr vis por,no fluor.

SURVEY @ 2195.19m
Incl 0.63° AZI:82.85°
TVD:2194.94m

CLAYSTONE:med blu gry,olv gry, med gry,tr micmic,calcite vein,frm, sbblky.

SILTSTONE:olv gry,dk yel brn,tr carb lam,lithic frags,shell frags,15% cly,



vf qtz snd,10% rck flr,sft-fri,sbblky.

SANDY SILTSTONE:brn blk,brn gry,olv gry,tr f carb lams,lithic frags, crs clr qtz grs,20% vf clr qtz,5% rck flr,sft-fri,sbblky.

SILTY CLAYSTONE:olv gry,med gry,brn blk,tr lithic frags,carb frags, shell frags,20% slt,sft-frn,sbblky.

SANDSTONE:v lt gry,olv gry,vf clr qtz grs,sbrnd-sbang(shtd) wl srt,sbsph,fri,tr lithic frags, 80% rckflr,no fluor.

CLAYSTONE:olv-gry,med gry,sft-frn,sbblky,tr liths frags,dol,glauc.

SANDSTONE:v lt gry,olv gry,vf clr qtz grs,sbrnd-sbang(shtd) wl srt,ss,fri,tr lithic frags,90% rck flr,no fluor.

SURVEY @ 2253.19m
Incl 0.62° AZI:89.29°
TVD:2252.94m

COAL:blk,frm,sbblky-blky,tr f dissem pyr.

DOLOMITE:pl yel org,mod hd-hd,conch-splnt.

SANDSTONE:v lt gry,olv gry,40% crs,50% v crs,10% gran,clr qtz grs, sbrnd-sbang(shttd)pr srt,ss,fri,ang, tr lithic frags,kaol cly mtx,80% rck flr,no fluor.

SURVEY @ 2281.35m
Incl 0.84° AZI:88.95°
TVD:2281.10m

COAL:blk,brn.sft-fri,sbblky, tr f dissem pyr.

SANDSTONE:v lt gry,40% f,30% med,20% crs,10% v crs clr qtz grns, pr srt,sbrnd-sbang,sbsph,fri,ang, kaol cly mtx,40% rck flr,pr inf por, no fluor.

SURVEY @ 2310.29m
Incl 0.91° AZI:90.74°
TVD:2310.04m

SILTSTONE:brn gry,brn blk,olv gry,sft-frn,sbblky,tr lithic frags, thn carb lam.

SANDSTONE:v lt gry,30% vf,50% f,5% med,5% crs grs,clr qtz grs, sbrnd-sbang(shttd),pr srt,sbsph, fri,ang,tr lithic frags,kaol cly mtx,90% rck flr,pr inf vis por,no fluor.

CLAYSTONE:olv gry,med gry, tr lithic frags,micmic,sft-frn, sbblky.

SURVEY @ 2339.67m
Incl 0.80° AZI:84.68°
TVD:2339.41m

COAL:blk,brn blk,sft,wdy-brit,i/p as lam.

SANDSTONE:olv gry,v lt gry qtz,10% vf,10% med,sbrnd-sbang, mod srt,sbsph,fri,tr lithic frags,i/p wh cly mtx,pr sil cmt,fr vis por,no fluor.

ARGILLACEOUS SILTSTONE: olv gry,tr coal & carb mat,10% calc cly,30% cly,sft,amor-stky.

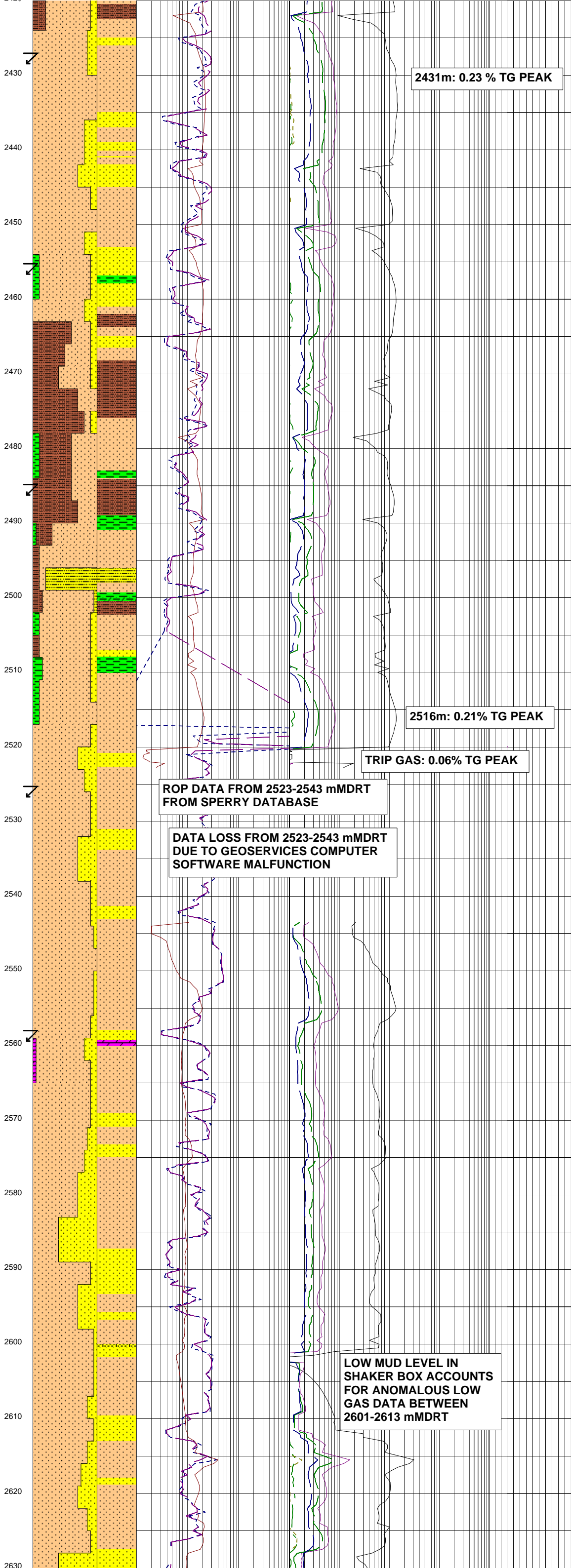
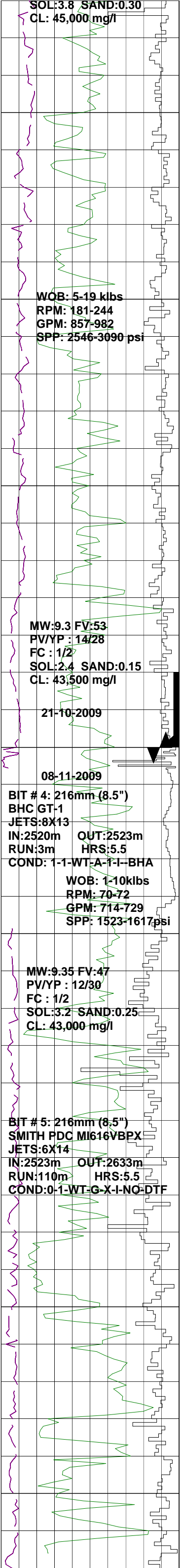
SANDSTONE:clr,opq,lt olv gry, v lt gry,lse & fri,pred f grs,10% vf, 10% vf,10% v crs grs,pr-v pr srt, sbang-sbrnd,sbsph-sbelg,15% wh cly mtx,pr sil cmt,tr lithic frags, tr carbmater,pr-fr vis por,no fluor.

SILTSTONE:brn gry,brn blk,olv gry,sft-frn,sbblky,tr lithic frags thn carb thrds & spks.

SURVEY @ 2398.22m
Incl 0.81° AZI:98.78°
TVD:2397.96m

SANDSTONE:lt olv gry,v lt gry, f grs,mod srt,sbang-sbrnd,sbsph, fri,fr vis por,no fluor.

ARGILLACEOUS SILTSTONE:olv gry,lt gry,brn gry,tr coal & carb mat, 30% cly,sft,amor.



SURVEY @ 2426.57m
Incl 1.08° AZI:93.16°
TVD:2426.30m

SANDSTONE:lt olv gry,v lt gry,
f grs,sbang-sbrnd,mod srt,sbsph,
fri,fr vis por,no fluor.

CARBIDE LAG CHECK @ 2449m
THEOR. STKS: 9730
ACT. STKS: 10505
OPEN HOLE O.G : 7.5 %
(13.15" equiv)

SURVEY @ 2454.95m
Incl 0.96° AZI:91.77°
TVD:2454.68m

SANDSTONE:lt olv gry,v lt gry,
fri-lse,f grs,10% vf,10% med,10%
lse crs qtz grs,mod-pr srt,
sbang (shthd i/p)-sbrnd,sbsph-sbelg,
5% pr sil cmt,fr vis por,no
fluor.

ARGILLACEOUS SILTSTONE:olv
gry,lt gry,brn gry,tr coal & carb
mat,30% cly,sft,amor-stky.

SURVEY @ 2484.55m
Incl 1.06° AZI:89.94°
TVD:2484.27m

CLAYSTONE:olv gry,dk grnsh gry,
tr micmic,frm,sbblky.

SILTSTONE:brn gry,brn blk,
olv gry,tr lithic frags,thn
carb-coaly lam & spks,
sft-frm,sbblky.

ARGILLACEOUS SANDSTONE:
med lt gry,olv gry,clr,opq,f grs,10%
vf,20% med,10% crs,10% v crs,10%
gran,fri-lse w/- crs,sbang-sbrnd,pr
srt,sbsph-sbelg,pr vis por,no fluor.

311mm (12.25") SECTION TD
@ 2520mMDRT @ 19:00hrs on
21-OCT 09

DRILL AHEAD 216mm (8.5")
HOLE SECTION FROM
2520mMDRT @ 11:45 hrs,
7 Nov. 2009

CONDUCT FIT @ 2523mMDRT
EMW: 11.0 ppg

SURVEY @ 2524.75m
Incl 1.00° AZI:97.22°
TVD:2524.47m

SANDSTONE:yelsh gry,v lt gry,
olv gry,20% vf,50% f,30% med
grs,tr crs grs,clr qtz grs,pr-
mod srt,sbang-sbrnd,sbsph-sbelg,
10% sil cmt,10% wh cly mtx,tr
lithic frags,tr carb mat,pr inf
vis por,no fluor.

SURVEY @ 2557.55m
Incl 1.13° AZI:91.00°
TVD:2557.30m

DOLOMITE:brnsh gry,frm-mod hd,
sbblky w/- conch frac i/p.

SILTSTONE:pred brnsh blk,tr
olv gry & brnsh gry,sft-frm,blky-
sbblky,tr carb spks & lam,tr
micmic & lam mica flks.

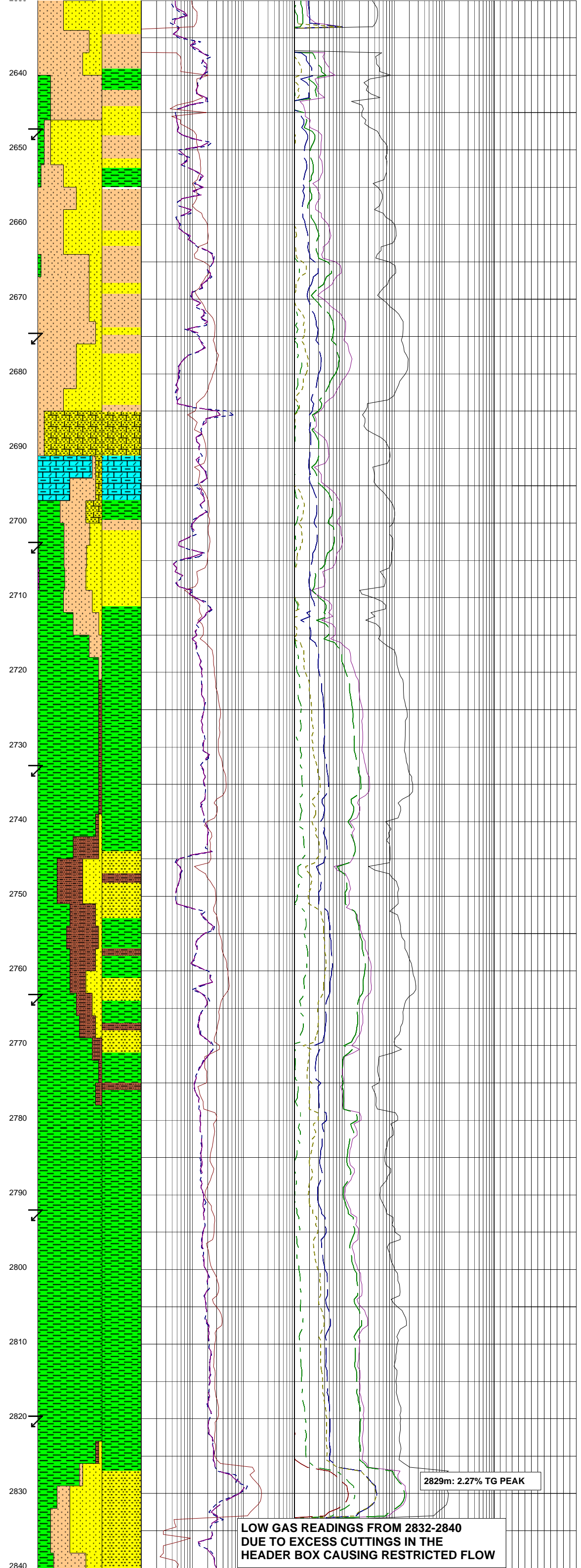
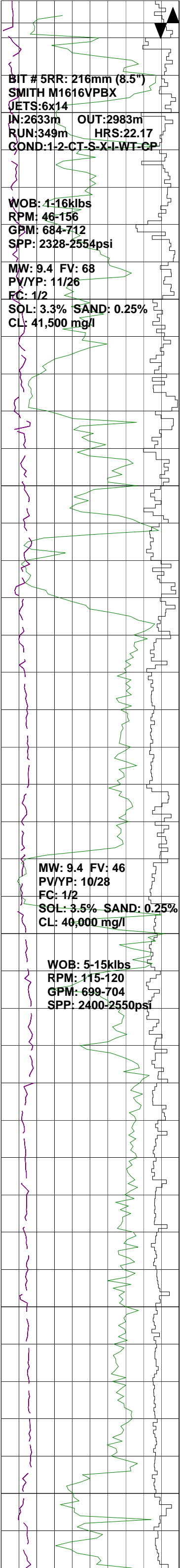
SANDSTONE:v lt gry,olv gry,
tr yelsh gry,tr lt olv gry,20%
vf,50% f,30% med grs,clr qtz
grs,lse-frm,pr-mod srt,sbrnd-
ang,sbsph-sbelg,10% wh cly mat,
tr lithic frags,tr carb mat,pr
pyr,pr inf vis por,no fluor.

SURVEY @ 2588.22m
Incl 1.30° AZI:90.35°
TVD:2587.90m

SANDSTONE:v lt gry-lt gry-
clr-opq,olv gry,5% vf,30% f,
40% med,20% crs,5% v crs grs,
lse-frm,pr-mod srt,sbrnd-ang,
sbsph-sbelg,tr sil cmt,tr pyr
cmt,tr calcite cmt,incr in lse,
clr v crs qtz grs,tr lithic
frags,tr carb mat,tr glauc,tr nod
pyr,gd inf por,no fluor.

SILTSTONE:brnsh gry,brnsh blk,
olv blk,olv gry,sft-frm,blky-
sbfiss,tr carb mat,tr lithic frags,
tr coal,micr.

CARBIDE LAG CHECK @ 2630m
THEOR STKS:4148
ACTUAL STKS:4299



ASTORAL STR:4200
INGAUGE HOLE.

SANDSTONE:v lt gry-lt gry-clr-opq, tr yelsh gry,5% vf,35% f,30% med,30% crs grs,lse-frm,por-mod srt,sbrnd-sbang,sbsph-sph, tr sil cmt, tr calcite cmt, tr lithic frags, tr carb mat, tr nod pyr, tr glauc, pr inf vis por, no fluor.

POOH @ 2633 mMDRT DUE TO
LWD 'PULSER' FAILURE. P/U
COMPLETE LWD TOOL STRING

SURVEY @ 2646.63m
Incl 1.43° AZI:86.39°
TVD:2646.32m

CLAYSTONE:olv blk,frm,sbblky, tr micmic, tr carb spks.

SURVEY @ 2674.00m
Incl 1.43° AZI:86.39°
TVD:2673.70m

SANDSTONE:v lt gry,clr & opq, pred lse-fri,qtz,f grs,10% vf grs,40% med,sbang-sbrnd,sbsph-sbelg,pr sil cmt when aggs, tr pyr cmt,5% cl mtz, tr brn mica flks, fr vis por infr, no fluor.

CALCILUTITE:lt gry-med lt gry, tr yelsh gry,v sft-frm,sbblky-blky, grd to CLYST i/p, tr carb mat.

SURVEY @ 2702.98m
Incl 1.62° AZI:88.34°
TVD:2702.65m

ARGILLACEOUS SILTSTONE: brnsh blk,olv blk,olv gry,sft-frm,sbblky-blky, tr carb mat, tr lithic frags.

CLAYSTONE:med gry-med dk gry, sft-frm,sbblky-blky, tr carb mat, tr micmic.

SURVEY @ 2732.91m
Incl 1.69° AZI:88.47°
TVD:2732.57m

SANDSTONE:wh-v lt gry,clr-opq, tr yelsh gry,10% vf,70% f, 20% med,lse-mod hd,mod wl-wl srt,sbrnd-rnd,sbsph-sph, tr sil cmt,gd inf vis por, no fluor.

CLAYSTONE:med gry-med dk gry, olv gry-lt olv gry,sft-frm,sbblky-blky, tr carb mat, tr micmic.

SURVEY @ 2762.56m
Incl 1.85° AZI:89.89°
TVD:2762.20m

ARGILLACEOUS SILTSTONE: brnsh blk,olv blk,olv gry-brnsh gry,sft-frm,sbblky-blky, tr carb mat, tr lithic frags, tr pyr.

CLAYSTONE:med gry-med dk gry, olv gry-lt olv gry,v sft-frm, sbblky-blky, tr carb mat, tr micmic.

SURVEY @ 2791.49m
Incl 1.82° AZI:85.29°
TVD:2791.12m

CLAYSTONE:med gry-med dk gry, olv gry-lt olv gry,sft-frm,sbblky-blky, tr carb mat, tr micmic

CLAYSTONE:med gry-med dk gry, olv gry-lt olv gry,sft-mod hd, sbblky-blky, tr carb mat.

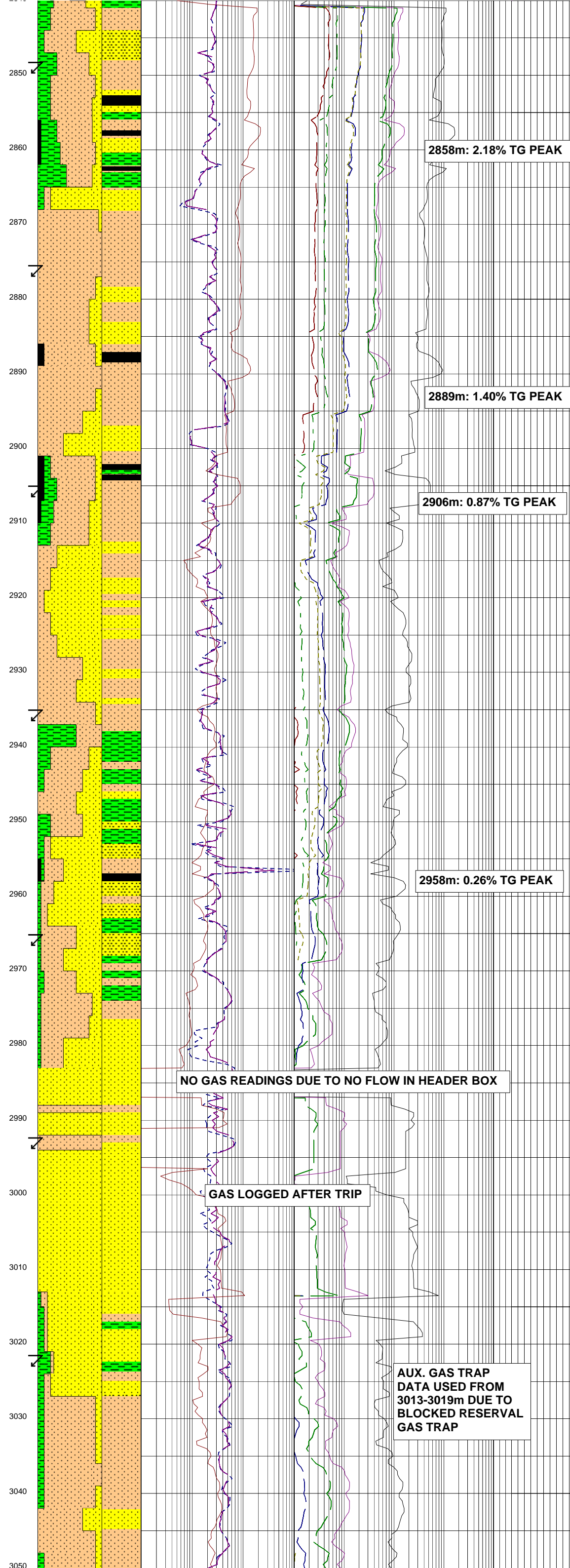
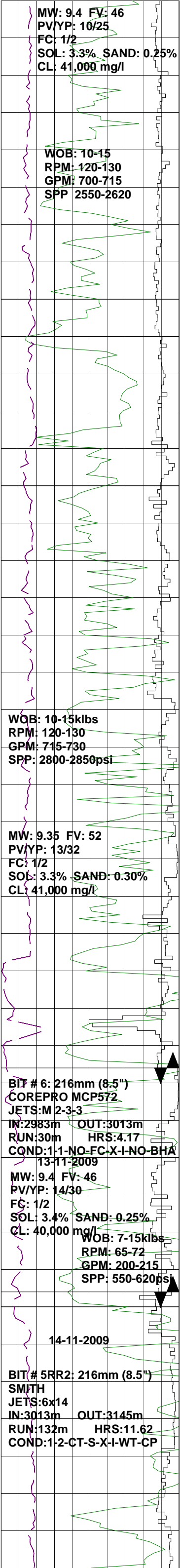
ARGILLACEOUS SILTSTONE: brnsh blk,olv blk,olv gry-brnsh gry,sft-frm,sbblky-blky, tr carb mat, tr lith frags,

SURVEY @ 2819.89m
Incl 1.94° AZI:85.21°
TVD:2819.50m

SANDSTONE:wh-v lt gry,clr-opq, 10% f,30% med,50% crs,10% v crs, lse-mod hd,pr-mod wl srt,rnd-ang,

2829m: 2.27% TG PEAK

LOW GAS READINGS FROM 2832-2840
DUE TO EXCESS CUTTINGS IN THE
HEADER BOX CAUSING RESTRICTED FLOW



SURVEY @ 2847.72m
Incl 2.06° AZI:83.71°
TVD:2847.31m

SILTSTONE:brnsh blk,olv blk,
olv gry-brnsh gry,sft-frm,sbblky-
blky,tr carb mat,tr lithic
frags,tr grd to ARG SLTST.

COAL:brn blk-blk,olv gry,
sft-frm,sbblky-blky,dull-
sbvit.

CLAYSTONE:med gry-med
dkgry,olv gry-lt olv gry,
sft-mod hd,sbblky-blky,
com carb mat.

SURVEY @ 2876.19m
Incl 2.24° AZI:81.90°
TVD:2875.76m

SANDSTONE:wh-v lt gry,40%
v f,60% f,frm,mod-wl srt,sbrnd-
sbang,sbsph,tr sil cmt,tr carb
mat,fr inf vis por,no fluor.

COAL:brn blk-blk,olv gry,
sft-frm,sbblky-blky,dull-
sbvit.

SURVEY @ 2905.64m
Incl 2.46° AZI:85.79°
TVD:2905.19m

SANDSTONE,wh-v lt gry,40%
vf,60% f,frm,sbrnd-sbang,mod
-wl srt,sbsph,tr sil cmt,tr
carb mat,tr disp coal pieces,
fr infr vis por,no fluor.

CLAYSTONE:olv gry,olv blk,
sft-frm,sbblky-blky,increase
in carb mat.

SILTSTONE:olv gry,brn blk,
sft-frm,sbblky-blky,tr carb
mat as thn lam spks,tr lithic
frags,tr micmic,tr blk,bright
coal pieces.

SANDSTONE:olv gry,mott,fri,
lithofelds,vf grs,30% f grs,
mod srt,sbsph,10% cly mtx,
2% carb mat,1% alt felds,tr
lithic frags,fr vis por,no fluor.

CLAYSTONE:olv blk,sft-frm,
blky-sbblky,tr dk mica flks.

SURVEY @ 2935.67m
Incl 2.58° AZI:82.74°
TVD:2935.19m

COAL:blk,grysh blk,sft,sp.

CLAYSTONE:brnsh gry-brnsh blk,
olv blk,sft-frm,sbblky,tr carb
strks.

SURVEY @ 2963.22m
Incl 2.93° AZI:85.15°
TVD:2962.71m

SANDSTONE:wh-v lt gry,olv gry,
mott,lt gry,clr,opq,tr yelsh,gry,
5% vf,5% f,20 med,40% crs,30% v
crs,tr gran grs,lse-mod hd,pr-
mod srt,sbrnd-sbang,sbsph-sph,tr
carb mat,tr micmic flks,gd inf vis
por,no fluor.

CORE RUN # 1
2983 - 3013 mMDRT
CUT 30m, REC 31.2m
104%

SANDSTONE:wh-v lt gry,yelsh
gry,clr,vf-v crs grs,frm-hd,pr
srt,sbrnd-ang,sbsph-sph,7-10% sil
cmt,1% mic flks,fr inf vis por,
tr-1% amber,no fluor.

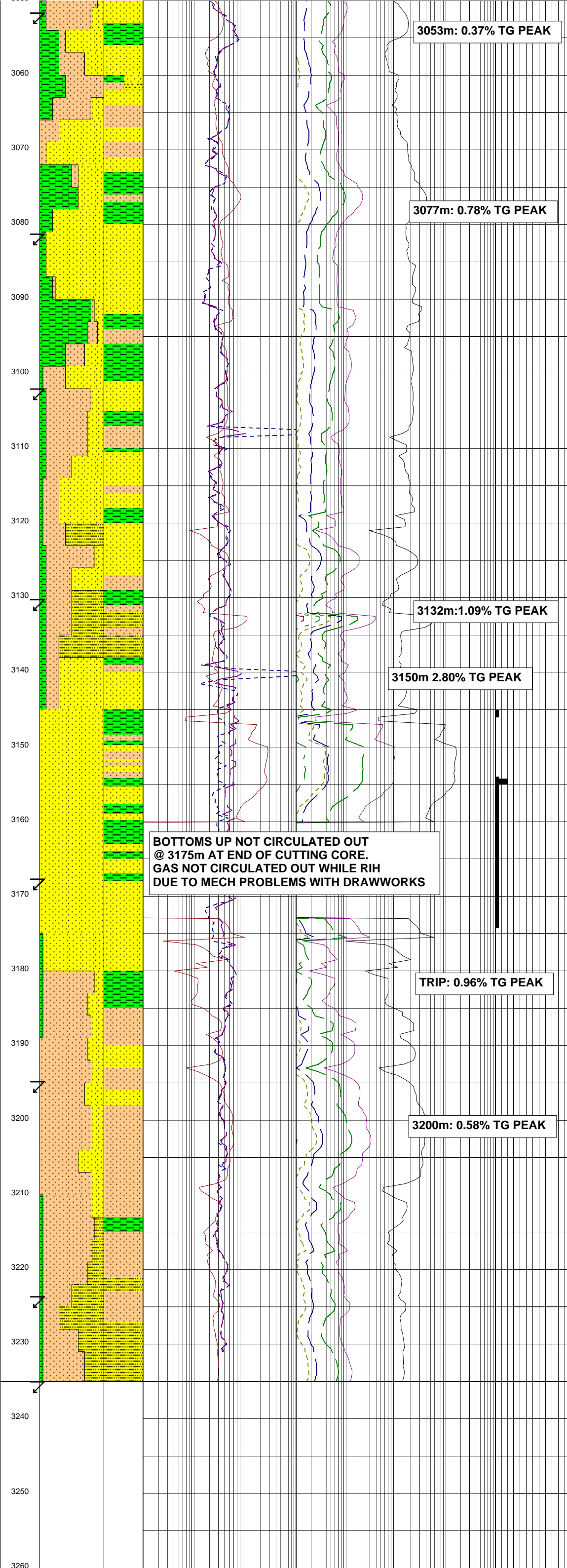
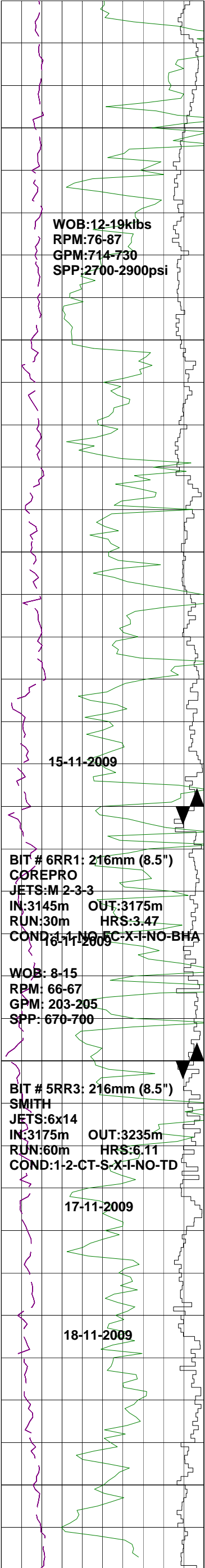
SILTSTONE:med gry-med dk gry,
dk gry,mod hd-hd,blky-sbfiss,
15-25% mic flks.

SURVEY @ 2992.32m
Incl 2.88° AZI:83.61°
TVD:2991.77m

SURVEY @ 3021.53m
Incl 3.01° AZI:83.20°
TVD:3020.94m

SANDSTONE:lse qrtz grns,clr,
opq,v lt gry,crs grs,10% v crs,
10% med grs,ang(shtd)-sbang to
sbrnd,mod srt,sbelg-sbsph,tr wh
cly mtx,adhr to grn surfaces & i/p
recon as sft,sticky,amorph cly,fr-
gd vis por inf,no fluor.

SILTSTONE:olv blk,olv gry,sft-
frm,sbblky-sbfiss i/p,2% mica
flks,incl lrg muscovitic typ,
tr lith frags,tr carb mat.



SURVEY @ 3051.62m
Incl 3.07° AZI:82.21°
TVD:3050.99m

SANDSTONE:v lt gry,grysh blk,
clr & opq,qtzose,20% v f-60% f
gr aggs,20% crs gr lse,sft-fri
aggs,ang & shatt lse frac,sbang-
sbrnd,pr srt,sbsph-sbelg,aggs w/
10% cly mtx,10% slt & wk sil cmt,
tr mic flks,tr carb spks, lse
frac w/ wh cly mtx to grs,fr vis
por,no fluor.

SURVEY @ 3080.66m
Incl 3.23° AZI:81.34°
TVD:3079.99m

CLAYSTONE:brnsh gry,frm,
sbbiky-blky,tr micmic,tr carb
mat,f lam.

SURVEY @ 3101.98m
Incl 3.47° AZI:82.50°
TVD:3101.27m

SILTSTONE:v lt gry-lt gry,med
lt gry-med dk gry,sft-frm,sbbiky-
blky,com carb lam,tr micmic,grd
to ARG SLTST i/p.

SANSTONE:wh-v lt gry,clr,tr
lt grnsh gry,10% v f,55% f,30%
med,5% crs grs,sft-mod hd, mod
srt,rnd-sbrnd,sbsph-sph,tr
micmic,tr lith frag,fr inf vis
por,no fluor.

SURVEY @ 3130.21m
Incl 3.75° AZI:81.59°
TVD:3129.44m

ARGILLACEOUS SANDSTONE:
wh-v lt gry,clr,yelsh gry,tr lt
grnsh gry,med dk gry-brnsh gry,
50% v f,40% f,50% med,5% crs
grs,20% cly,sft-frm,mod-wl srt,
sbrnd-rnd,sbsph-sph,tr carb mat,
tr lith frag,tr micmic,pr inf vis
por,no fluor.

CORE RUN # 2
3145 - 3175 mMDRT
CUT 30m, REC 29.25m
97.5%

SANDSTONE:@3147m med lt gry,
qtzse,vf-crs grs,hd,sbang-sbrnd,
mod-pr srt,sbsph,10% gry cly
mtx,wl sil cmt,10% muscovitic &
biotitic mic flks,tr carb mat,
pr vis por,no fluor.

SANDSTONE:@3155m v lt gry,tr
yelsh gry grs,qtzse,hd-mod hd,
f-v crs grs,rnd v crs grs-sbang-
sbrnd,pr srt,sph-sbsph-sbelb,tr
amber,tr carb mat,tr biotitic
mic flks,fr vis por,ov yel grn
fluor,slw bloo-strmg blu wh cut,
blu yel bri flm res.

SURVEY @ 3167.65m
Incl 3.79° AZI:84.07°
TVD:3166.80m

CLAYSTONE:lt brnsh gry-brnsh
gry,mod yelsh gry-grysh brn,sft-
frm,sbbiky-blky,tr carb mat.

SURVEY @ 3194.79m
Incl 3.87° AZI:83.32°
TVD:3193.88m

SILTSTONE:med lt gry-med gry,
dk gry-olv blk,sft-frm,sbbiky-
sbfiss,tr micmic,tr carb mat.

SANDSTONE:wh-v lt gry,lt gry,
clr,tr yelsh gry,tr pnksh gry,
20% f,40% med,30% crs,10% v crs,
sft-mod hd,mod srt,sbrnd-ang,
sbsph-sph,tr carb mat,gd inf
vis por.no fluor.

SURVEY @ 3235.00m
Incl 4.33° AZI:83.41°
TVD:3233.99m

SURVEY @ 3223.60m
Incl 4.33° AZI:83.41°
TVD:3222.62m

TD TREFOIL-2 @ 03:00
216mm (8.5") SECTION
ON THE 18TH NOV 2009

WIRELINE LOGS
RUN #1: SP-CMR+-HRLA
-PEX-HNGS
RUN #2: MDT-GR
RUN #3: FMI-DSI-GR

[illegible]