

# EAST WING 1

## WELL HYDROCARBON LOG









Company	ESSENTIAL PETROLEUM RESOURCES LTD
Well Name	EAST WING 1
Township	PT CAMPBELL
Country	AUSTRALIA
State	VICTORIA
County or Rig name	ADS RIG 6
Latitude	038 31' 33.760" S DMS
Longitude	142 46' 52.640" E DMS
Permanent Datum	MSL
Elevation of PD	.00 M
Elevation of KB	59.00 M
Elevation Ground lv	54.74 M
Elevation Log Zero	59.00 M
Log measured from	KB
Drill measured from	KB
Service company	PECTIL ENGINEERING
Well class	EXPLORATION
Basin	OTWAY
Tenement/Concession	PEP 168
Spud Date	26 APRIL 2008
Date plotted	08-05-2008
Time plotted	07:52:01

PETROLOG SOFTWARE Revision 9.50

CROCKER

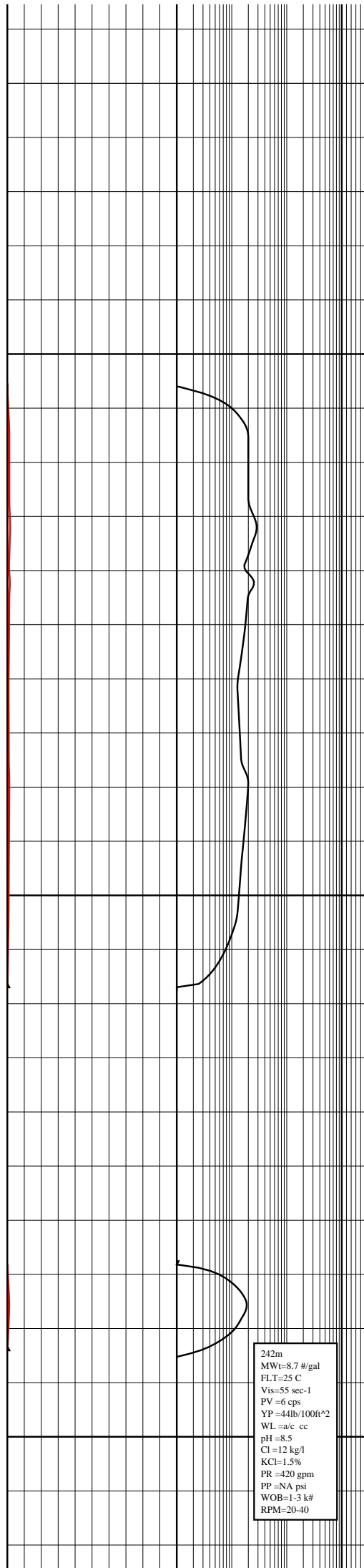
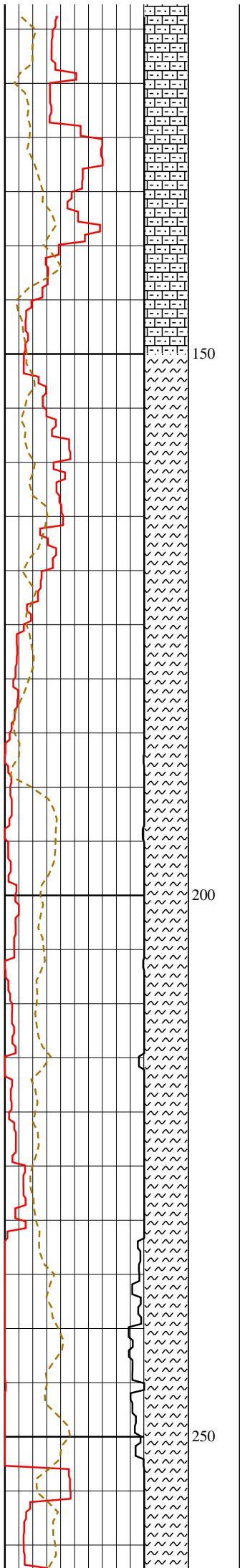
DATA PROCESSING

### LITHOLOGIES

 Oil	 Shales	 Silty LS
 Marl	 Claystone	 SandStone
 Silt/Siltstone	 Coal	

### SYMBOL LEGEND

Casing shoe														
Drill Parameters			LITHO	DEPTH	Symbol	Total Gas			Component Gas			HS	REMARKS	
ROP			M	1:500		Gas			C1			HS		
50.0	(M/H)	0.0				0.0	(U)	100.0	0.001	(%)	1.0	HS		
ROP						Gas			C2					
100.0	(M/H)	50.0				100.0	(U)	200.0	0.001	(%)	1.0			
Bit Wt									C3					
0.0	(k.lb)	20.0							0.001	(%)	1.0			
									Spud 12 1/4" Hole					
									26 April 2008					
21m												4 - 21m Precollarred, not logged		
13 3/8" Conductor														
Bit #1														
12 1/4" Stealth														
3x14 + 1x16 jets														
561m in 16.3Rhr														
												21 - 30m    CALCARENITE: Yellowish grey, fine to predominantly very fine grained, well sorted, rare coarse fossil fragments, trace glauconite and rare terrigenous grain, clear calcite cement, friable to loose		
												30 - 40m    CALCARENITE: Yellowish grey, fine to predominantly very fine grained, well sorted, rare coarse fossil fragments, trace glauconite and rare terrigenous grain, clear calcite cement, friable to loose, NB: perfect spiral shaped glauconite grain? Shell cavity fill?		
												40 - 50m    CALCARENITE: Yellowish grey, fine to predominantly very fine grained, well sorted, rare coarse fossil fragments, trace glauconite and rare terrigenous grain, clear calcite cement, friable to loose, firmly cemented, common echinoid fossil fragments, common aggregates with glauconite and terrigenous grains		
												50 - 60m    CALCARENITE: Yellowish grey, fine to predominantly very fine grained, well sorted, rare coarse fossil fragments, trace glauconite and rare terrigenous grain, clear calcite cement, friable to loose, firmly cemented, common echinoid fossil fragments, common aggregates with glauconite and terrigenous grains, common yellow grains		
												60 - 70m    CALCARENITE: Yellowish grey, fine to predominantly very fine grained, well sorted, rare coarse fossil fragments, trace glauconite and rare terrigenous grain, clear calcite cement, friable to loose, firmly cemented, common echinoid fossil fragments, common aggregates with glauconite and terrigenous grains, common yellow grains, trace spiral glauc, trace clear well rounded quartz grains. Variably cemented		
												70 - 80m    CALCARENITE: Yellowish grey, fine to predominantly very fine grained, well sorted, rare coarse fossil fragments, trace glauconite and rare terrigenous grain, clear calcite cement, friable to loose, firmly cemented, common echinoid fossil fragments, common aggregates with glauconite and terrigenous grains, common yellow grains, trace spiral glauc, trace clear well rounded quartz grains. Variably cemented, very fine to rarely medium as above		
												80 - 100m    CALCARENITE: Light yellowish grey, trace yellow, orange, green grains. Fine to very fine grained, predominately loose, occasional laminae of grey calc mudstone. Variably cemented, aggregates with clear cement and trace micritic and clay matrix and organic flakes and filaments		
												100 - 110m    CALCARENITE: Light yellowish grey, trace yellow, orange, green grains. fine to very fine grained, predominately loose, occasional laminae of grey calc mudstone. variably cemented, aggregates with clear cement and trace micritic and clay matrix and organic flakes and filaments. Common clear quartz grains with occasional Fe staining		
												110 - 120m    CALCARENITE: Light grey, light yellowish grey, very fine to fine grained, friable sucrosic aggregates, laminae of finer muddy limestone, firm to friable, variably cemented, trace micrite matrix, trace terrigenous and organic material, trace glauconite		



120 - 130m    **CALCARENITE:**  
a/a becoming very fine grained. Fossil fragments: bryo, echino, gastro, rare sponge spic, trace glauconite

130 - 140m    **CALCARENITE:**  
Light grey, occasionally speckled greyish green, silty to very fine grained, occasionally medium, poorly sorted, predominately white calc fragments, trace glauc and terrigenous and quartz grains, soft to hard/splintery, variably cemented, occasional aphanitic

140 - 150m    **CALCARENITE:**  
Light grey, occasionally speckled greyish green, silty to very fine grained, occasionally medium, poorly sorted, predominately white calc fragments, trace glauc and terrigenous and quartz grains, soft to hard/splintery, variably cemented, occasional aphanitic, grades to calcisiltite

150 - 160m    **MARL:**  
Light olive grey, blocky, trace coarse fossil material, sticky to amorphous

160 - 170m    **MARL:**  
Light olive grey, blocky, trace coarse fossil material, sticky amorphous silty lime mud with common fine to medium grained fossil fragments

170 - 180m    **MARL:**  
Light olive grey, blocky, trace coarse fossil material, sticky amorphous silty lime mud with common fine to medium grained fossil fragments, well preserved forams in sticky lime mud

180 - 190m    **MARL:**  
Light olive grey, blocky, trace coarse fossil material, sticky amorphous silty lime mud with common fine to medium grained fossil fragments, well preserved forams in sticky lime mud, trace gastropods.

190 - 200m    **MARL:**  
Light olive grey, blocky, trace coarse fossil material, sticky amorphous silty lime mud with common fine to medium grained fossil fragments, well preserved forams in sticky lime mud, trace gastropods, coarse residue is fossil predominately foram, echinoid spines, and clear very angular to moderately rounded quartz grains, clear to Fe stained, trace pyritized.

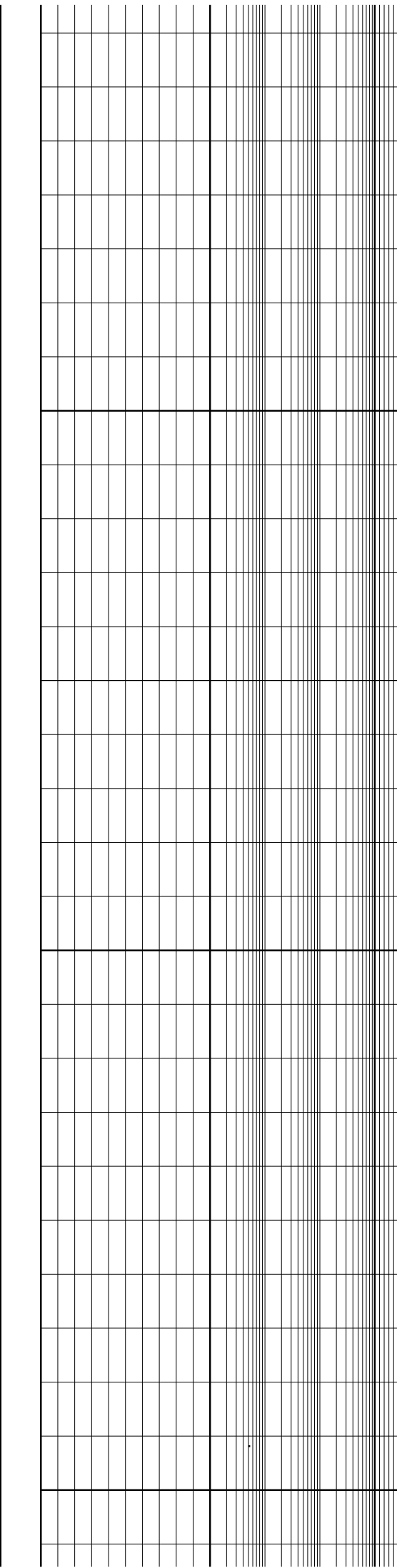
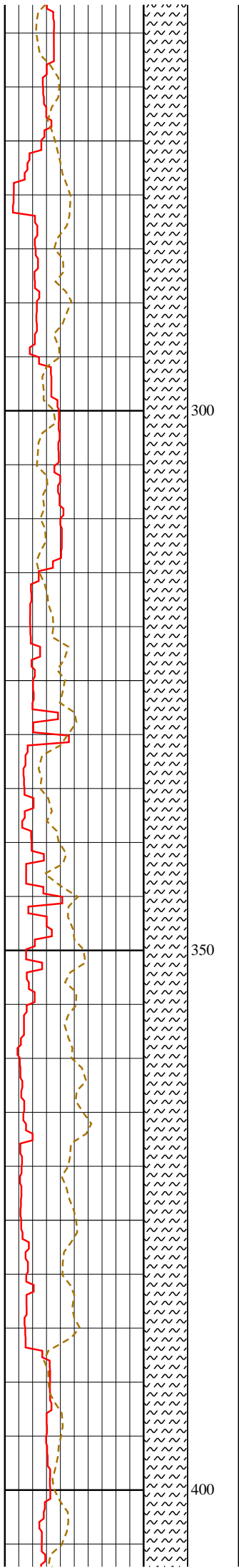
200 - 230m    **MARL:**  
Light olive grey, blocky, trace coarse fossil material, sticky amorphous silty lime mud with common fine to medium grained fossil fragments, well preserved forams in sticky lime mud, trace gastropods, coarse residue is fossil predominately foram, echinoid spines, and clear very angular to moderately rounded quartz grains, clear to Fe stained, trace pyritized, very homogenous.

230 - 250m    **MARL:**  
Light olive grey, blocky, trace coarse fossil material, sticky amorphous silty lime mud with common fine to medium grained fossil fragments, well preserved forams in sticky lime mud, trace gastropods, coarse residue is fossil predominately foram, echinoid spines, and clear very angular to moderately rounded quartz grains, clear to Fe stained, trace pyritized, very homogenous, abundant greyish pink to greyish orange fossil fragments: shelly fossils and forams.

250 - 260m    **MARL:**  
Light olive grey, blocky, trace coarse fossil material, sticky amorphous silty lime mud with common fine to medium grained fossil fragments, well preserved forams in sticky lime mud, trace gastropods, coarse residue is fossil predominately foram, echinoid spines, and clear very angular to moderately rounded quartz grains, clear to Fe stained, trace pyritized, very homogenous, abundant greyish pink to greyish orange fossil fragments: shelly fossils and forams, very soft, sticky

260 - 280m    **MARL:**  
Very light to light grey, light to medium olive grey, ? interlaminated lighter and darker lithologies? occasionally crinoid with pink and greenish orange

242m  
MWt=8.7 #/gal  
FLT=25 C  
Vis=55 sec-1  
PV =6 cps  
YP =44lb/100ft^2  
WL =a/c cc  
pH =8.5  
Cl =12 kg/l  
KCl=1.5%  
PR =420 gpm  
PP =NA psi  
WOB=1-3 k#  
RPM=20-40



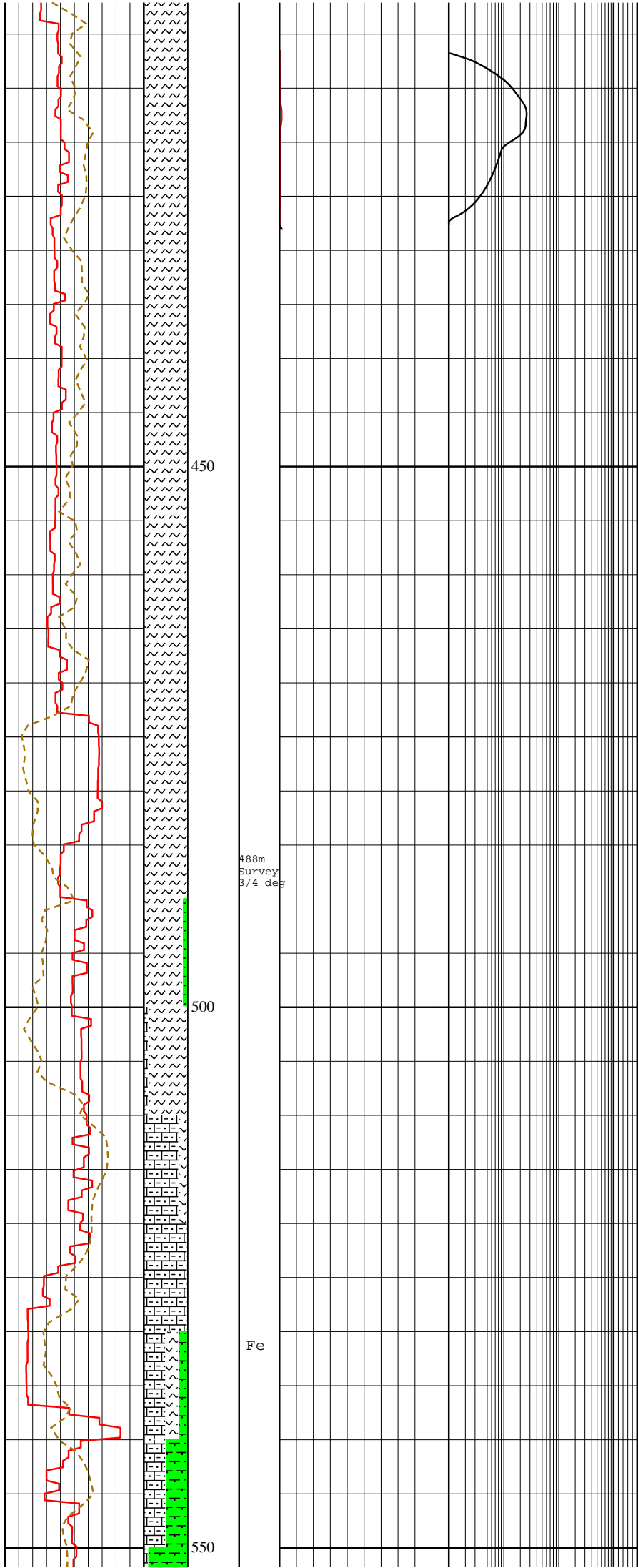
and darker lithologies? occasionally speckled with pink and greyish orange fossil fragments ( forams, gastro, bryoz, echinoid, sponge) trace glauc as pellets and as void-filling, soft to firm, blocky, abundant soft sticky washing out at shaker, occ ? laminae or nodules more well cemented, grades to muddy limestone.

280 - 290m    MARL:  
Very light to light grey, light to medium olive grey, ? interlaminated lighter and darker lithologies? occasionally speckled with pink and greyish orange fossil fragments ( forams, gastro, bryoz, echinoid, sponge) trace glauc as pellets and as void-filling, soft to firm, blocky, abundant soft sticky washing out at shaker, occ ? laminae or nodules more well cemented, grades to muddy limestone.

290 - 350m    MARL:  
a/a becoming more homogenous, firm, blocky, grades to sticky, soft, abundant fine fossil materia,trace quratz grains

350 - 370m    MARL:  
very light to light grey, light to s, medium olive grey, ? interlaminated lighter and darker lithologies? occasionally speckled with pink and greyish orange fossil fragments ( forams, gastro, bryoz, echinoid, sponge) trace glauc as pellets and as void-fil

370 - 410m    MARL:  
predominantly medium grey, occ v slightly grrnish grey, sticky to firm, blocky, abundant coarse and medium grain fossil detritus washing out, occ firm waxy to soapy, very fine micrite and clay, no silt or sand. Loose grains contain rare coarse quartz grains, abundant fossil material and trace glauconite.



410 - 510m    MARL & CLAYSTONE:  
 MARL; multicorouled grey, abundant pink to white to pale orange fossil fragments, common very fine to coarse non-grain supported fossil material. Grades to calcareous claystone, trace yellowish v fine siltstone aggregates, white, pulpy in part.

CLAYSTONE: greyish yellow, sandy, soft, sticky.

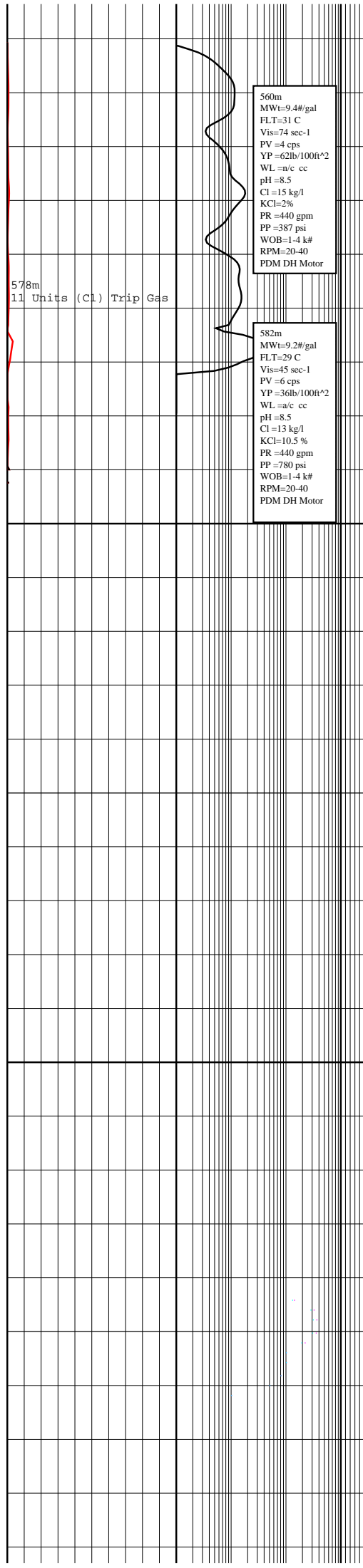
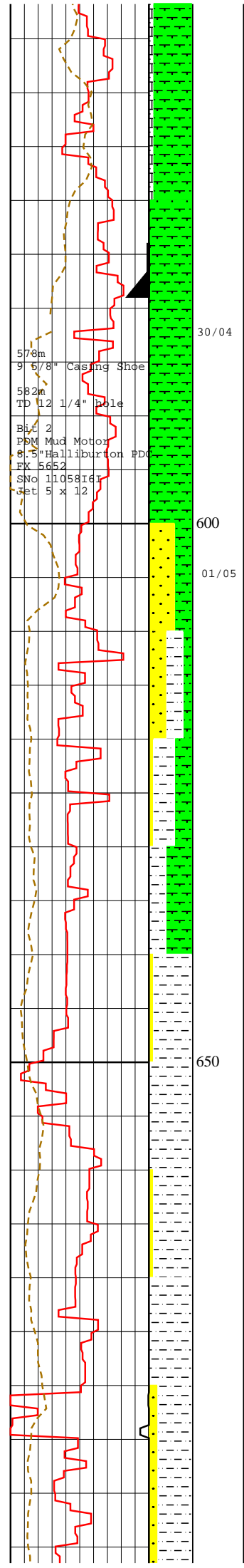
510 - 520m    MARL & CALCARENITE:  
 MARL: a/a abundant fine to coarse fossil material as loose grains, ? Laminae of coraes calcarenite?

CALCARENITE: heterogeneous, pink to pale yellow, occ reddish brown, composed of fossil fragments and pyritised and ferruginised chamosite nodules and irregular nodules, and trace coarse quartz grains, heavily Fe stained,common branching bryozan limbs with pyrite replacement in individual cells

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520 - 580m    CLAYSTONE & CALCARENITE  
 CALCARENITE:abundant fine well rounded pyrite garins, large rounded nodules? Water worn, chaomiste and glauconite pellets, some pyritised and limonitised, abundant partially fe-stained fine to coarse fossil material.Trace glauconitic ironstone; becoming glauconitic, up to 15% fine well rounded glauconite pellets some pyritised, ? Bryozan filling of pores by glauc/pyrite. Calcareous claystone, medium olive grey, very soft, fossiliferous, veryu finely sandy.

CALCAREOUS SILTY CLAYSTONE:medium greyish to olive grey and olive brown, firm, friable, smooth to very finely sandy inpart, finely fossiliferous part pale greenish and bluish grey, dispersed glauconite. Persistent trace of calcarENite, becoming less pyritic, part firm to friable, trace very coarse pyrite nodules. Up to 20% OF CLAYSTONE IS PALE BLUISH GREY, APHANTIC, glauconitic or tuffaceous. Trac e coarse glauconite grains in claystone matrix.



578m  
11 Units (Cl) Trip Gas

560m  
MWt=9.4#/gal  
FLT=31 C  
Vis=74 sec-1  
PV =4 cps  
YP =62lb/100ft^2  
WL =n/c cc  
pH =8.5  
Cl=15 kg/l  
KCl=2%  
PR =440 gpm  
PP =387 psi  
WOB=1-4 k#  
RPM=20-40  
PDM DH Motor

582m  
MWt=9.2#/gal  
FLT=29 C  
Vis=45 sec-1  
PV =6 cps  
YP =36lb/100ft^2  
WL =a/c cc  
pH =8.5  
Cl=13 kg/l  
KCl=10.5 %  
PR =440 gpm  
PP =780 psi  
WOB=1-4 k#  
RPM=20-40  
PDM DH Motor

580 - 600m  
CALCAREOUS SILTY CLAYSTONE:olive grey, in part (10%) apple  
bluish grey, aphanitic, hard, ? Tuffaceous? very finely sandy in part, trace  
glauconite, v fine carbonaceous material, friable, soft.

600 - 650m  
SANDSTONE:clear to yellowish brown, very fine to very coarse grained,  
poorly sorted, subangular, common composite quartz grains, predominantly  
loose with yellow to reddish brown clay matrix adhering, slightly  
calcareous, vis porosity poor to fair.

CALCAREOUS SILTY CLAYSTONE: as above.

SILTSTONE: medium to dark grey, to greyish brown, blocky, soft, common  
very fine carbonaceous material, speckled dark green in part, finely sandy,  
glauconitic, grades to silty sandy claystone and to minor sandstone as above

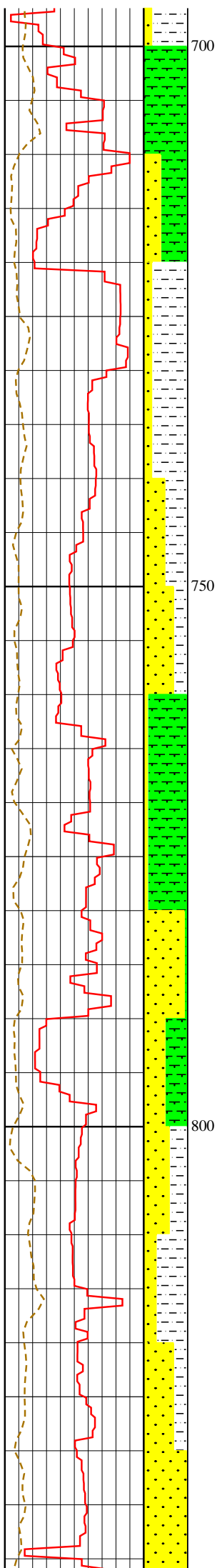
650 - 680m  
CALCAREOUS SILTSTONE:brownish grey, soft when wet, firm and  
blocky when dry, with dark greenish grey glauconitic pelloids, occ fossil  
frags (branched bryozoans) grading to-

SANDSTONE: greenish grey, yellowish grey, yellowish orange, f-m quartz  
grains translucent with yellowish orange limonite? stain, sa, also rounded  
claystone intraclasts, or pelloids?, poorly sorted, in abundant white calcite  
matrix, soft to very firm, trace white calcite, soft, possible vein material;  
trace very dull yellow mineral fluorescence from vein calcite sr-r quartz  
grains more common; fossil fragments include bryozoans, whole gastropod,  
trace mineral fluorescence

CALCAREOUS SILTSTONE: a/a With sand sized fossil fragments more  
common.

680 - 690m  
CALCAREOUS SILTSTONE: brownish grey, dark brownish grey, rarely  
greenish grey, with greyish green glauconite pelloids, soft to firm, blocky,  
with sand sized fossil fragments gt CALC CLYSTN.

SANDSTONE: predom 1 loose, c-vc quartz grains, translucent with orange  
brown limonite stain, sr-r. Minor 2. greenish grey, yellowish grey,  
yellowish orange, f-m, quartz grains translucent with yellowish orange  
limonite? stain, sa, also rounded claystone intraclasts, or pelloids?, poorly  
sorted, in abundant white calcite matrix, soft to very firm. Fossil frags  
predom bryozoans, rarely pyritised, with greyish green glauconitic clay  
adhering ip.

[illegible]

700 - 780m

**SILTSTONE:** 1. brn gy, dk brn gy, soft to firm, sandy ip, calc with fine fossil frags, rare glauc pelloids and 2. Gn gy, firm, blocky, non-calc, sandy (vfn) ip.

CLAYSTONE: Pred 1. Brn gy, lt brn gy, predom soft, disp, silty, calc.  
Minor 2. Lt gy, lt gn gy, generally non-calc and 3. white, orange brn, soft,  
disp, sandy (vf).

**SANDSTONE** : disagg quartz sand, clear, transl, to white and opaque, orange brown limonite stain ip, m-vc, generally sr-r. Trace fossil frags and coalified wood.

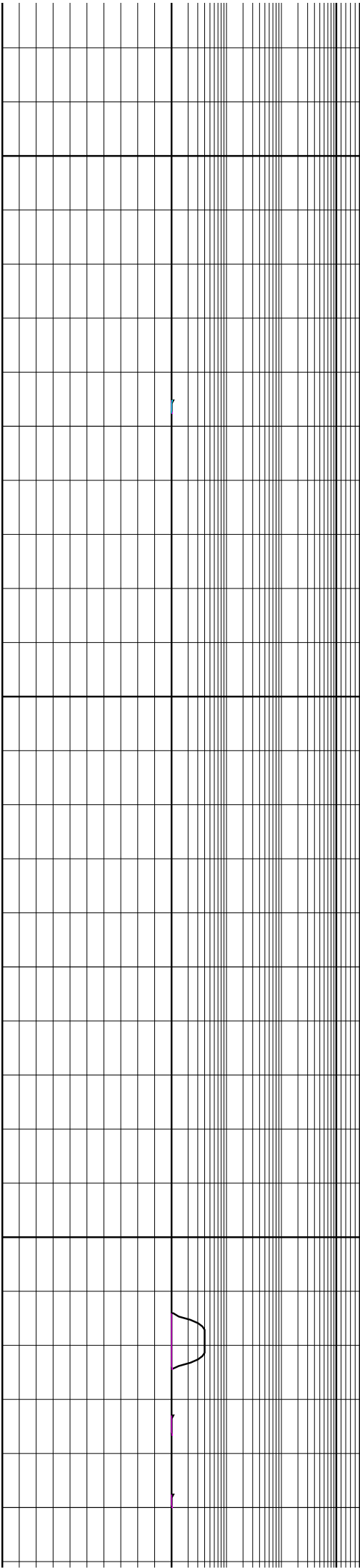
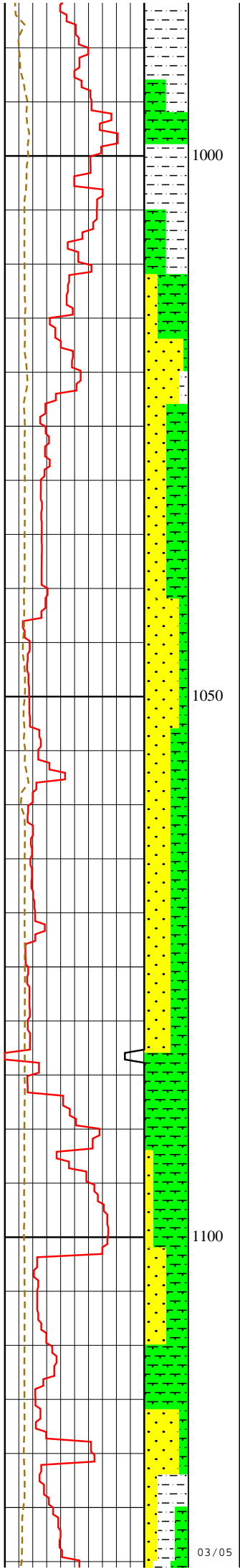
780 - 860m

**SANDSTONE:** predom 1. disagg quartz grains, clear and translucent to opaque, m-vc, sr-r. Minor 2. aggregates, f-m quartz sand with abundant brownish grey clay matrix and siliceous cement, poorly sorted, firm to hard.

**SILTSTONE:** brownish grey, generally soft, amorphous when wet, dispersive ip, sandy (vf - c quartz grains) ip, calcareous ip, glauconitic pelloids ip





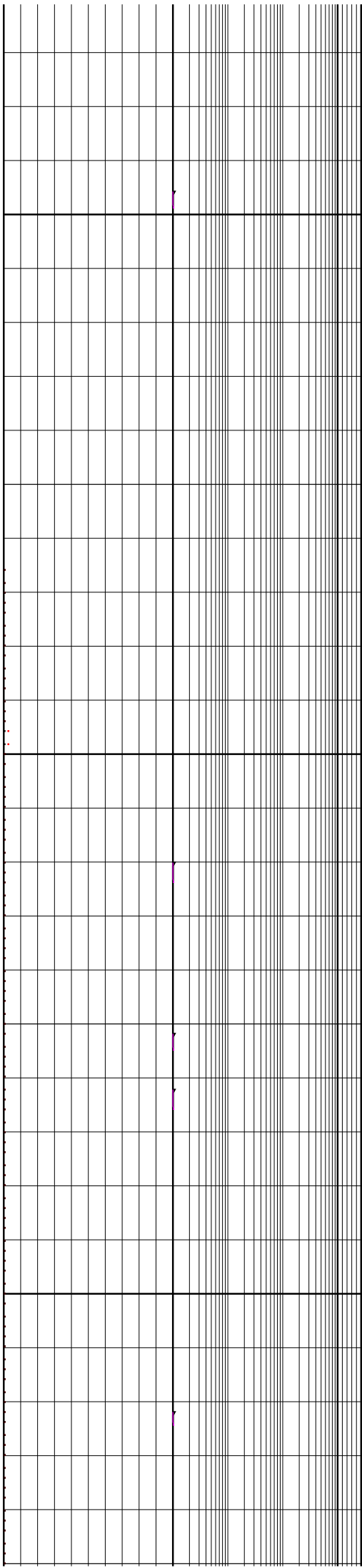
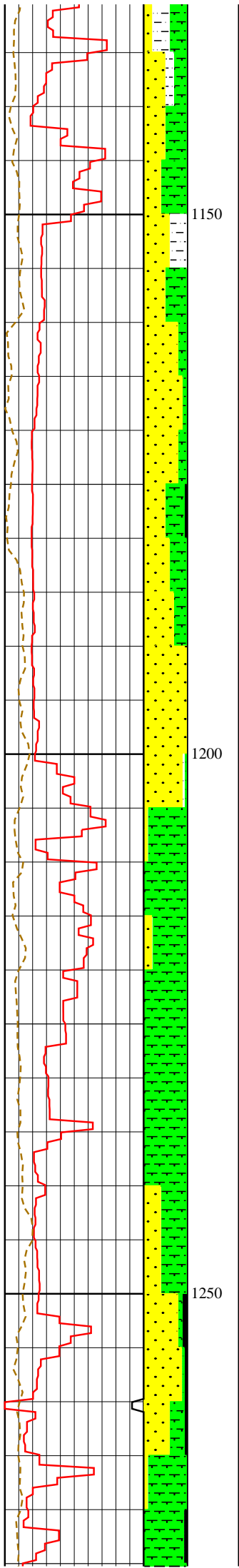


1017 - 1083m  
SANDSTONE: loose quartz grains, clear, translucent to opaque, stained pale yell orange, sa-sr, m-c grained. Trace dense pyrite cement. Rare glauconite peloids.  
  
SILTY CLAYSTONE: sandy ip, light to medium greyish brown, med grey, rarely greenish grey, soft to friable, pyritic ip, glauconitic ip, trace marine fossil frags (bivalves, gastropods, bryozoans), rare coalified wood fragments

1083 - 1103m  
SILTY CLAYSTONE dark brownish grey, olive black, dark grey with carbonaceous flecks, occasioanlly greyish red speckled white, trace dark yell orange, soft to firm with common fossil frags (forams, bryozoans) with occ lenses of f-m quartz sand.  
  
SANDSTONE loose quartz grains, m-c, sa-r with dark yellowish orange and brown clay matrix adhering to grains. Rare greyish green schist fragments.

1103 - 1129m  
SANDSTONE as loose quartz grains, clear and translucent to opaque, white, yellowish orange, coarse to granular, sr, occ well rd, commonly broken, also well rounded lithic grains (yellowish grey), dark green clay matrix adhering to grains ip.  
  
SILTY CLAYSTONE: light brownish grey, dispersive, med grey, dark brownish grey, rarely glauconitic, trace marine fossil frags.

1129 - 1205m  
SANDSTONE (20-100%): disasp quartz grains, clear, translucent, light



SANDSTONE (20-100%): disagg quartz grains, clear, translucent, light grey, grey yell to yell brown, v fn to vc, sa-occ well rd. Trace lithics: green, black and brick red, rare dense pyrite cement.

SILTSTONE (0-40%): Light brownish grey, brownish grey, greyish red, dark greenish grey, occ dark grey green glauconitic pelloids, sandy (vfn) ip.

SILTY CLAYSTONE (0-60%): v light grey to dark grey, greyish brown, carbonaceous ip, glauc ip, v fn sand ip. Trace marine fossils.

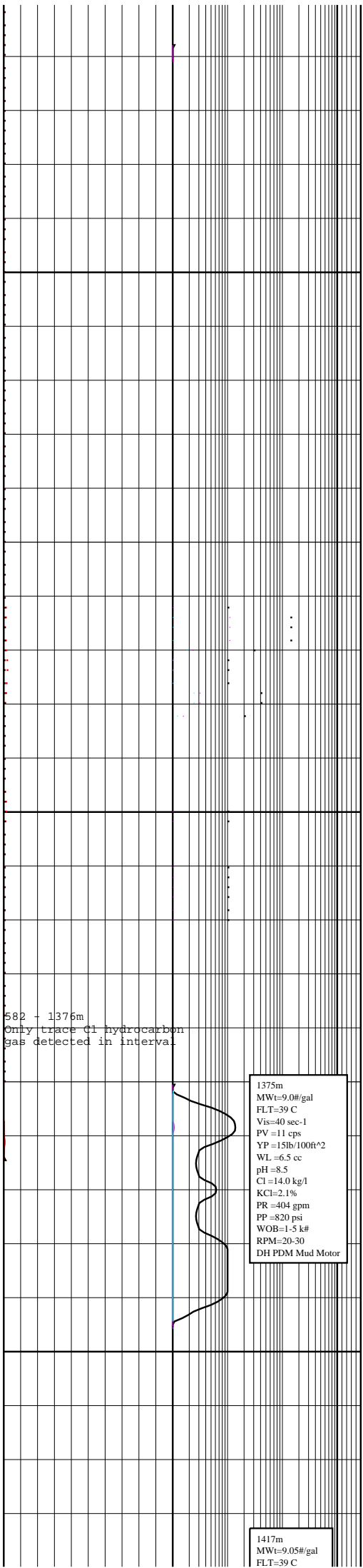
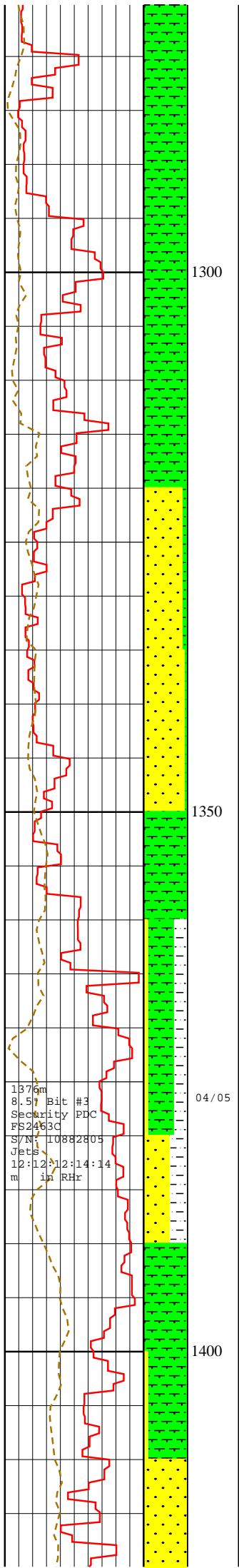
1205 - 1376m

SANDSTONE disagg quartz grains, clear to white, rare grey lithics, rare schist frags, f-vc, ang-sr, white clay matrix adhering to grains ip.

SILTSTONE (0-30%): brown grey, green grey (glauc), soft to firm, blocky, sandy ip.

CLAYSTONE brown grey, pink grey, occ green grey and glauconitic, soft, amorphous, dispersive ip, v finely sandy ip.

COAL: traces



582 - 1376m  
Only trace of hydrocarbon  
gas detected in interval

1375m  
MWt=9.0#/gal  
FLT=39 C  
Vis=40 sec-1  
PV=11 cps  
YP=15lb/100ft<sup>2</sup>  
WL=6.5 cc  
pH=8.5  
Cl=14.0 kg/l  
KCl=2.1%  
PR=404 gpm  
PP=820 psi  
WOB=1-5 k#  
RPM=20-30  
DH PDM Mud Motor

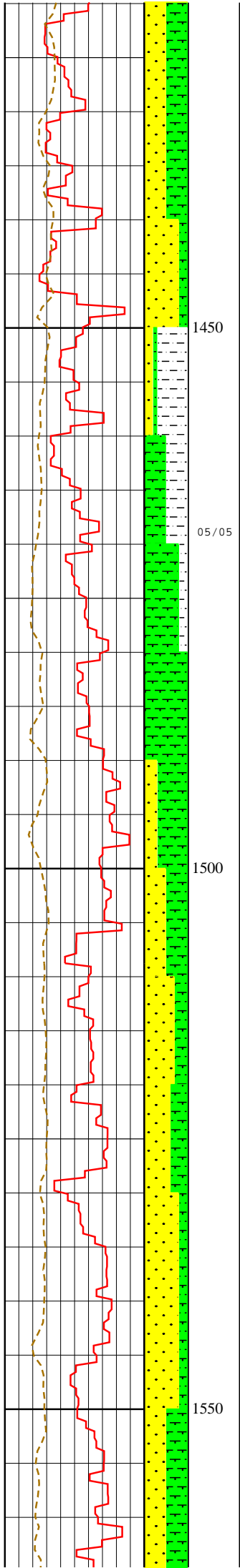
1376 - 1468m  
SANDSTONE (0-100%): Two types 1.

ARGILLACEOUS SANDSTONE: white, brownish grey, vf, quartzose, soft, dispersive, pulpy, with abundant white and light brown clay matrix 2. SANDSTONE: Loose, predominantly clear to translucent quartz, rare grey cherty lithics, vc - probably granule and pebble conglomerate, grains predominantly broken.

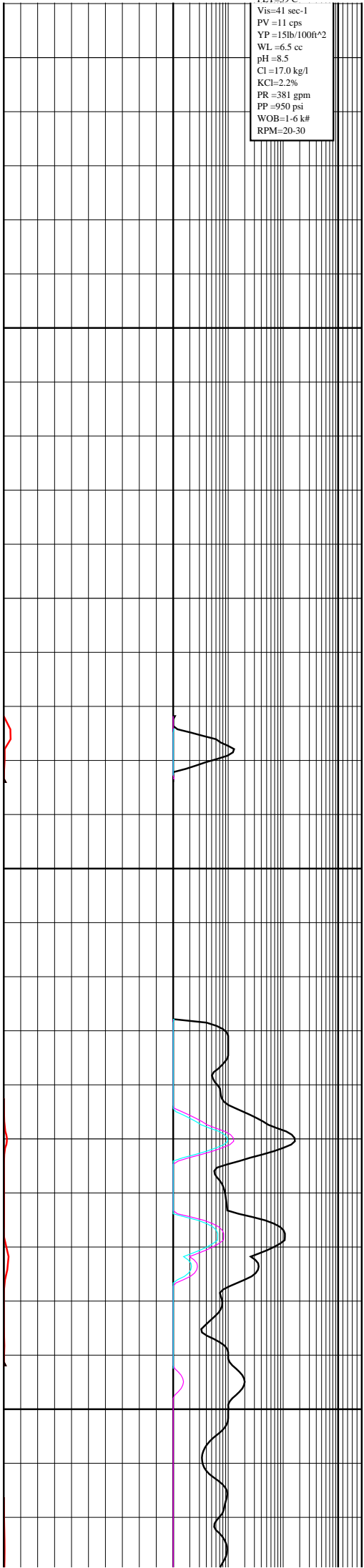
SILTSTONE (0-40%): light brownish grey, brownish grey, with abundant sand sized fossil frags including forams ip, also medium sand sized glauconite pelloids ip. SANDY and

SILTY CLAYSTONE (0-100%): brownish grey, occ very pale orange, soft to firm, sand component is vf, trace glauconite pelloids, trace carbonaceous flecks and laminae, slightly glauconitic ip. Trace marine fossil frags. Trace coalified wood frags.

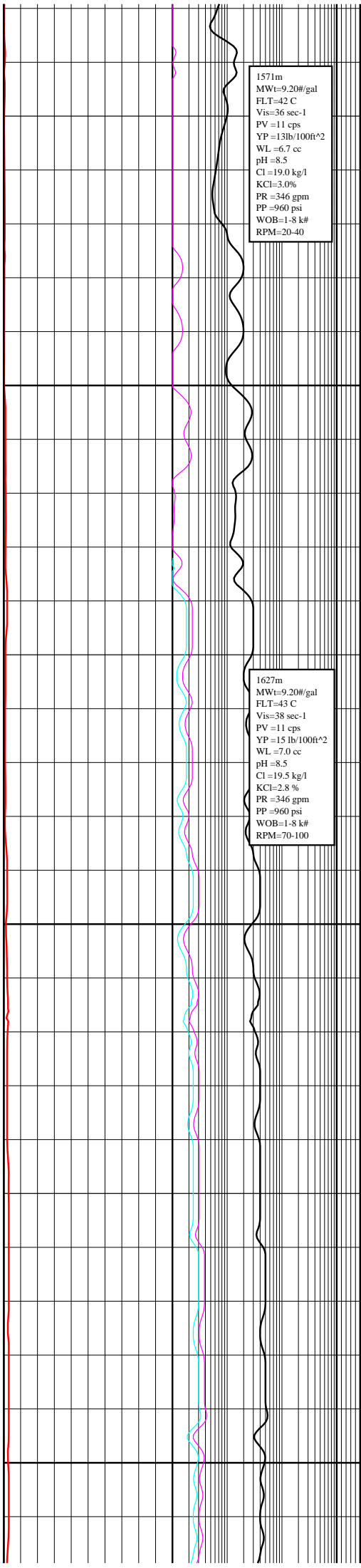
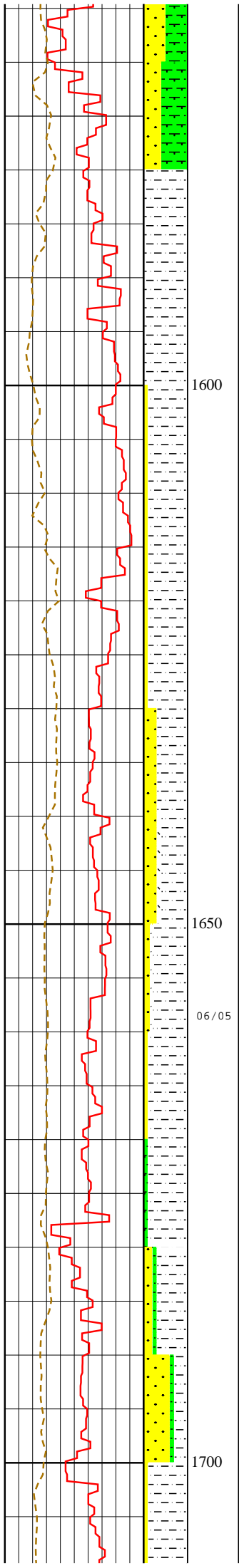
1417m  
MWt=9.05#/gal  
FLT=39 C



FL1=39 C  
Vis=41 sec-1  
PV =11 cps  
YP =15lb/100ft^2  
WL =6.5 cc  
pH =8.5  
Cl =17.0 kg/l  
KCl=2.2%  
PR =381 gpm  
PP =950 psi  
WOB=1-6 k#  
RPM=20-30



1468 - 1580m  
ARGILLACEOUS SANDSTONE (0-80%): White and light brownish grey, soft when wet, firm and friable when dry, vf, quartzose, with abundant white clay matrix ip, abundant light brown silty matrix ip, common carbonaceous flecks and laminae ip, rare med grained glauconite pelloids.  
Grading to  
SILTY CLAYSTONE (20-100%): medium grey, soft, carbonaceous, micromicaceous, with rare fossil frags and med grained glauconitic pelloids.

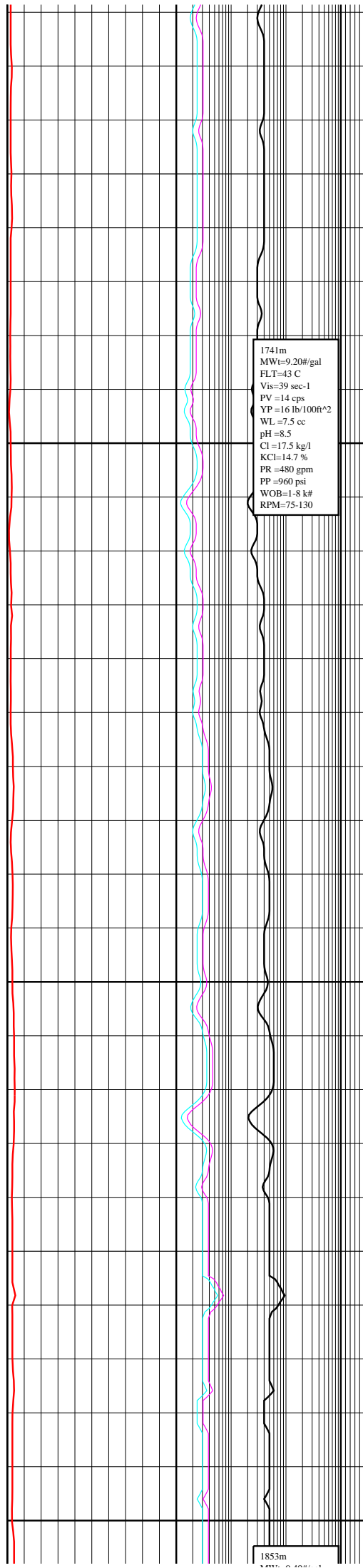
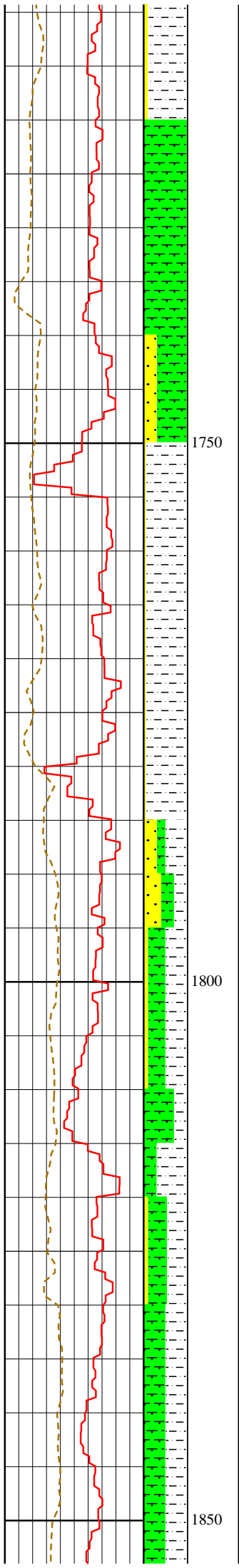


1571m  
MWt=9.20#/gal  
FLT=42 C  
Vis=36 sec-1  
PV =11 cps  
YP =13lb/100ft^2  
WL =6.7 cc  
pH =8.5  
Cl =19.0 kg/l  
KCl=3.0%  
PR =346 gpm  
PP =960 psi  
WOB=1-8 k#  
RPM=20-40

1580 - 1620m  
SANDY SILTSTONE (90-100%) brownish grey, soft when wet, firm when dry, sand component very fine grained, quartzose, clayey ip, common carbonaceous flecks and laminae, rare m-c grained glauconite pellicles, rare marine fossil fragments  
  
SANDSTONE (0-10%) aggregates, white, quartzose, fine grained, well sorted, hard, siliceous cement; trace amber fragments, fluorescing bright yellowish white; trace coalified wood fragments; trace m-vc grained broken quartz grains

1627m  
MWt=9.20#/gal  
FLT=43 C  
Vis=38 sec-1  
PV =11 cps  
YP =15 lb/100ft^2  
WL =7.0 cc  
pH =8.5  
Cl =19.5 kg/l  
KCl=2.8 %  
PR =346 gpm  
PP =960 psi  
WOB=1-8 k#  
RPM=70-100

1620 - 1659m  
SILTSTONE (60-90%): medium grey, brownish grey, soft, pulpy, sandy (vf, quartzose) ip, very clayey ip, carbonaceous (flecks and laminae), rare glauconite, rare marine fossil fragments (bryozoan stems).  
  
SANDSTONE (10-30%): white, soft and pulpy with white argillaceous matrix, vf, quartzose, also firm to hard, vf-f, quartzose, with siliceous cement.  
  
DOLOSTONE (0-10%): greyish orange, hard, sandy (f-m) ip. Rare fossil frags. Rare amber, fluorescing bright yellowish white.



1853m

