DEPT. NAT. RES & ENV
PE600436

BAKER HUGHES INTEQ

HOLE SIZE

36.0"	TO	119m
26.0"	TO	565m
17.5"	TO	1538m
12.25"	TO	2170m
	TO	

EXLOG SUITE

Formation Evaluation Log	Pressure Data Log
Drilling Data Log	Well Progress Log
Pressure Gradient Analysis Log	MWD Data Log

COMPANY	: BHP PETROLEUM PTY LTD
WELL	: MINERVA - 2A
FIELD	: OTWAY BASIN
REGION	: AUSTRALIA
COORDINATES	: 38deg 43' 04.3" S 142deg 57' 19.9" E
API INDEX	:
SPUD DATE	: 21th September 1993
ELEVATION	: RKB - MSL = 25.0M RKB - FOR = 85.0M
TOTAL DEPTH	: 2170m
CONTRACTOR	: DOLPHIN OFFSHORE
RIG	: BYFORD DOLPHIN
TYPE	: SEMI SUBMERSIBLE

CASING RECORD

30.0"	AT	118.0m
20.0"	AT	553.0m
13.375"	AT	1526.0m
	AT	
	AT	

MUD TYPES

Sea Water/Hi-Vis Sweeps	TO	565m
KLC/GEL/POLYMER	TO	1538m
KCL/PHPA/POLYMER	TO	2170m

ABBREVIATIONS

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

◢	CASING SEAT		
▮	CORED INTERVAL	▯	TEST INTERVAL
▯	UNRECOVERED	◢	CONNECTION
▶	SIDEWALL CORE		

GAS - 100 Total Gas units equivalent to 2% methane.

OIL - Based on live oil in unwashed and stain of washed cuttings

LOG INTERVAL

DEPTH	FROM	: 85m	TO :	2170m
DATE	FROM	: 21/09/93	TO :	12/10/1993
SCALE	:	1 : 500	UNIT :	503
CREW	:	V.Surla, D.Alsop, C.Dickinson, M.Kraljevic		

LITHOLOGY SYMBOLS

Limestone, Dolomite, No Returns, Fossil

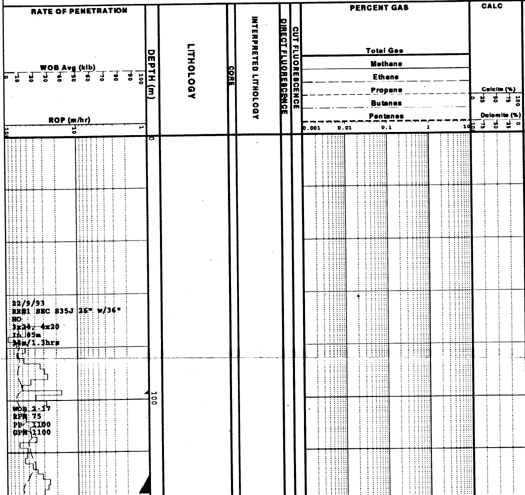
Coal And Lignite, Claystone, Shale, Siltstone

Sandstone, Conglomerate, Chert, Volcanics

DRILLBYTE FORMATION EVALUATION LOG

MINERVA - 2A

Scale 1 : 500



22/9/93
RR#1 SEC S35J 26" w/36"
HO
3x24, 4x20
In 85m
34m/1.3hrs

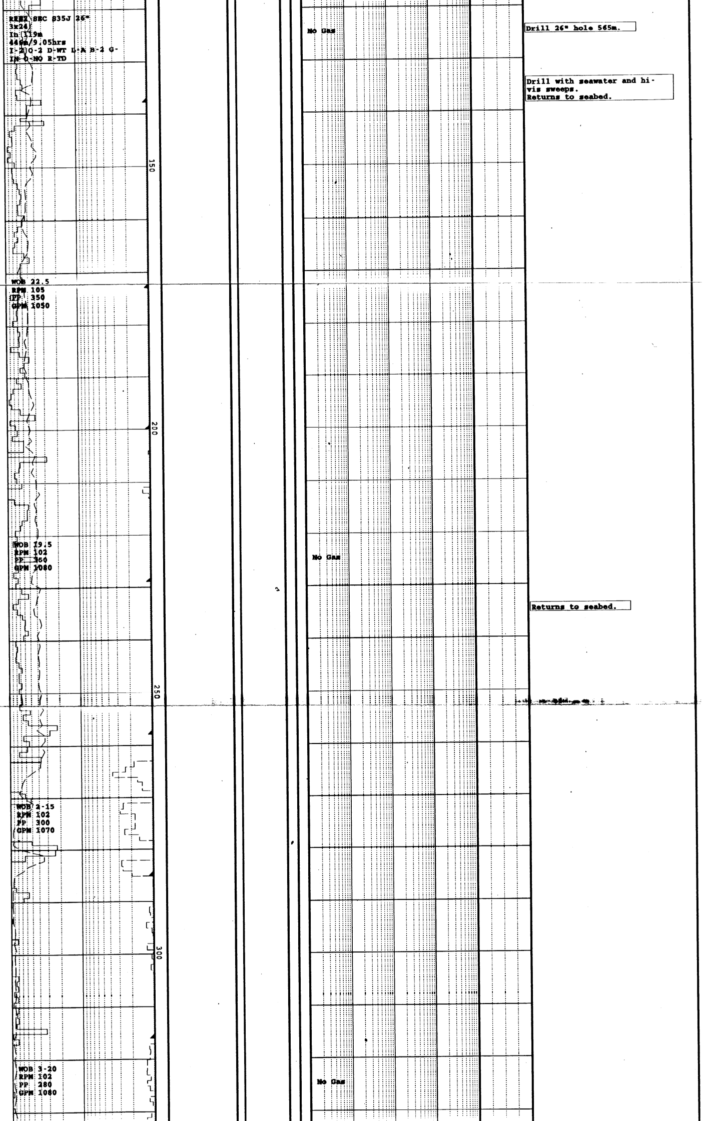
WOB 2-17
RPM 75
PP 1100
GPM 1100

REMARKS

Spud MINERVA-2A @ 22:45hrs on 21/09/93

Drill with seawater and hi-vis sweeps.
Returns to seabed.

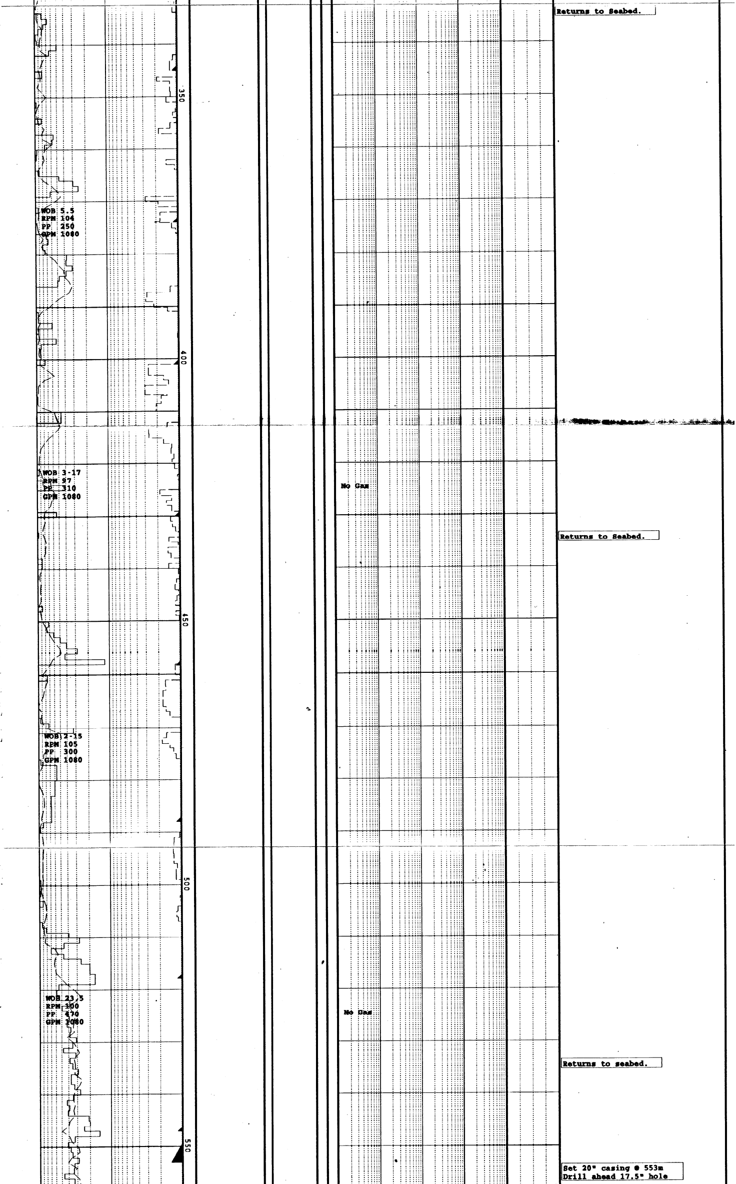
Drill 36" hole to 118m.
Set 30" casing @ 118m.

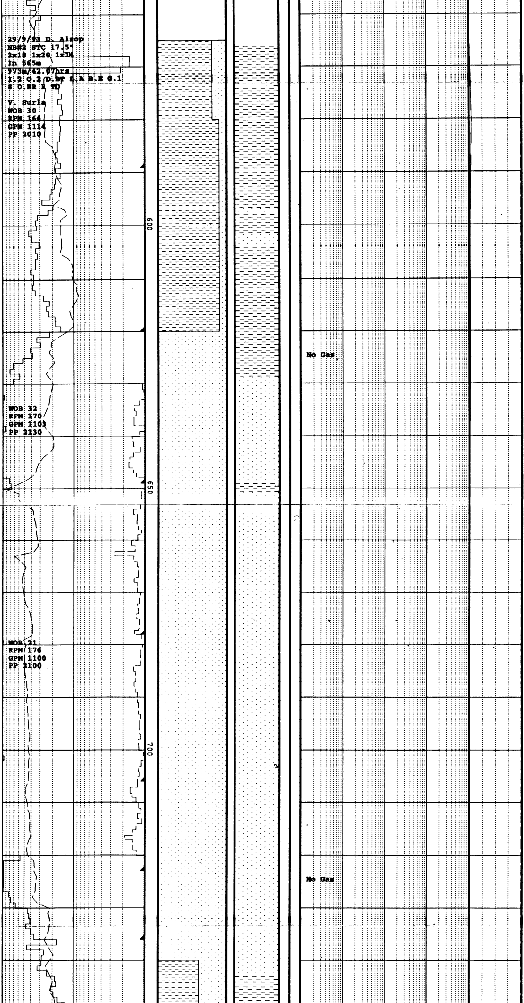


Drill 26" hole 565m.

Drill with seawater and hi-vis sweeps.
Returns to seabed.

Returns to seabed.



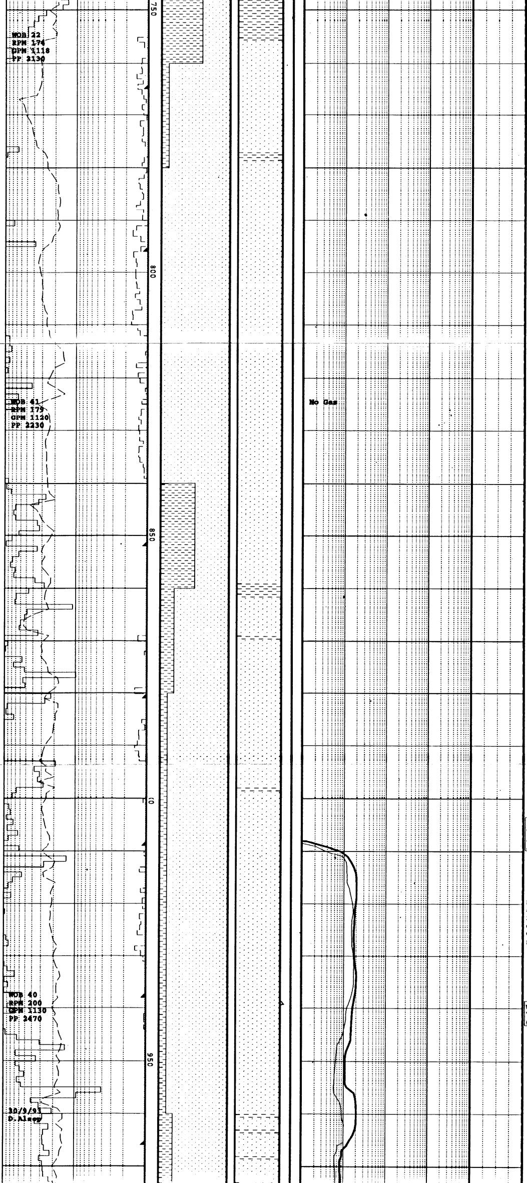


CLAYSTONE:lt brn-brn,occ dk brn,sft,mass,silty I.P.,occ carb Mat I.P.,v aren I.P,v com Qtz Gr,occ Pyr Gr,occ foss
w/intbed
SANDSTONE:lt brn-brn,fri,m-crs,sbang-sbrndd,mod srt,v com arg Mtrx,sil Cmt,occ calc cmt I.P.,occ foss,pr vis por, no show

SANDSTONE:m-dk brn,fri w/abd lse Gr,m-crs,dom crs,sbang-sbrndd,occ brn v disp arg Mtrx,com sbang Qtz Gr,com sbang grn Gr,v gd vis por,no show

W 1.08,V 52,PV/YP 12/19,Gels 7/15,F 6.0,FC 1,Sol 5.0,Sd 0.2,pH 9.5,Cl 52k,Ca 220

SANDSTONE:lt brn-brn,fri w/abd lse Gr,f-crs,dom m,sbang-rndd,dom sbrndd,mod srt,occ sil cmt,occ brn v disp arg Mtrx,occ Pyr Gr,occ blk lith, gd vis por,no show



Run Carbide @ 765m
Theor. Lag = 5999stks
Actual Lag = 6270stks
Avg. Hole Size = 18.93"

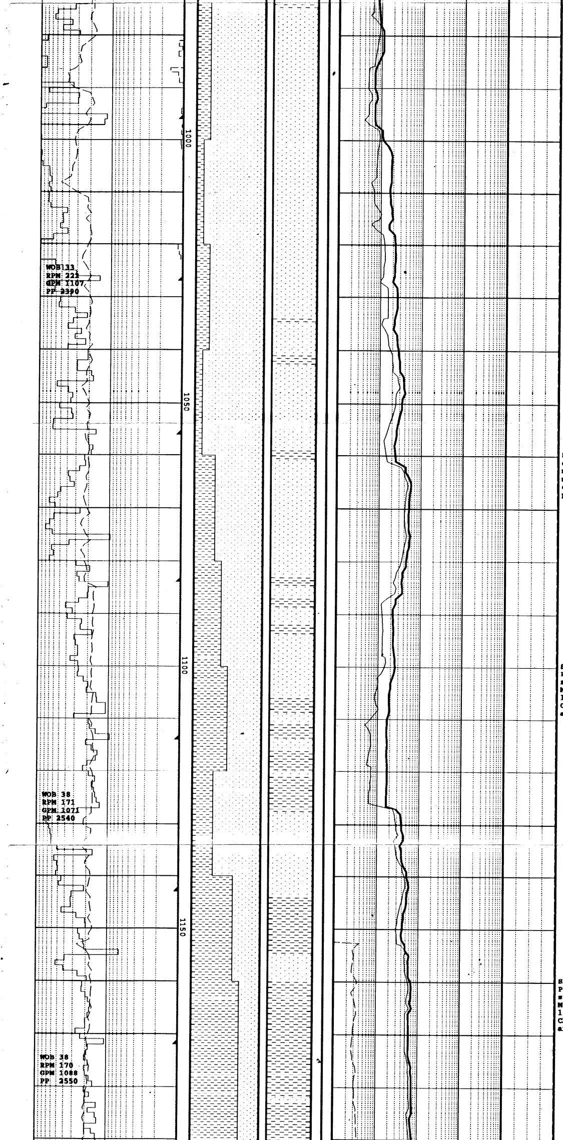
SANDSTONE:lt gry-brn-gry,fri w/abd lse Gr,m-crs,dom m,mod srt,sbang-sbrndd,occ sil cmt, occ-com gry-brn v disp arg Mtrx,occ Pyr Gr,occ grn-yel-blk lith,gd vis por,no show w/intbed
CLAYSTONE:lt gry-gry-dk brn, sft,mass,v disp,v aren

SANDSTONE:wh-v lt gry,fri w/ abd lse Gr,f-crs,dom m,mod srt,occ sil cmt I.P.,occ gry v disp arg mtx I.P.,occ Pyr Gr,occ grn-yel-bk lith,tr C, gd vis por,no show

Run Carbide @ 910m
Theor. Lag = 7007stks
Actual Lag = 7533stks
Avg. Hole size = 19.12"

SANDSTONE:lt gry-wh,fri w/ abd lse Gr,f-crs,dom m,sbrndd rnd,wl srt,occ sil cmt I.P., occ wh v disp arg Mtrx,occ grn,bk lith,gd vis por,no show

W 1.12,V 56,PV/YP 12/23,Gels 7/15,F 6.0,FC 1,Sol 7.5,Sd 3.0,pH 8.7,Cl 45k,Ca 380

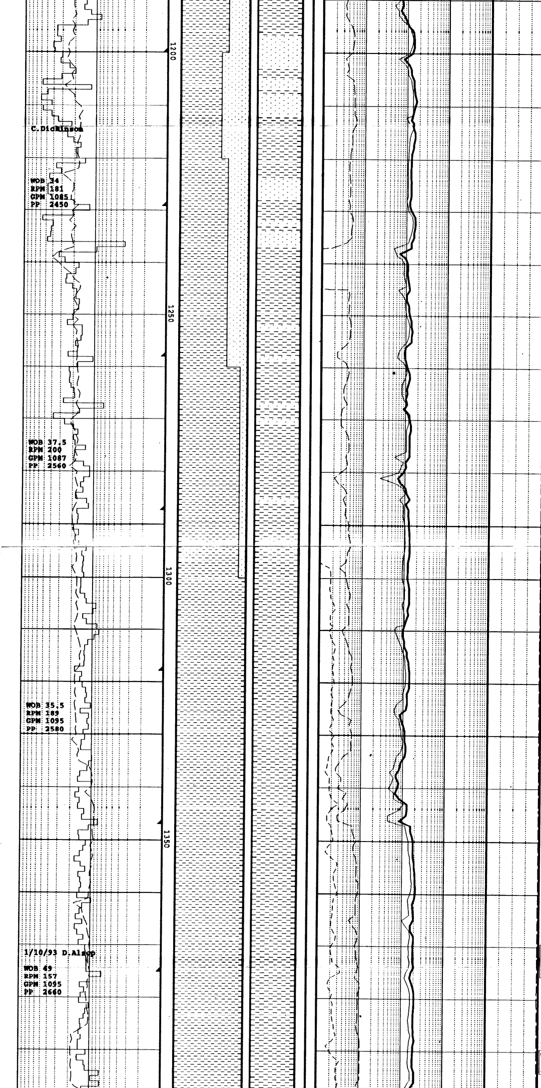


SANDSTONE:lt gry-occ m brn gry,fri w/ lse Gr,mod hd I.P. m-v crs,dom m,sbrndd-sbang, mod-pr srt,tr Qtz cmt,tr-com arg Mtrx,tr Pyr cmt,fr vis por,no show

SANDSTONE:lt gry-occ m brn gry,fri w/ lse Gr,mod hd I.P. m-v crs,dom m,sbrndd-sbang, mod-pr srt,tr Qtz cmt,tr-com arg Mtrx,tr Pyr cmt,fr vis por,no show

SANDSTONE:lt gry,fri-mod hd I P.,m-crs,dom m,rndd-sbang,mod srt,tr-com sil cmt,abd arg Mtrx,tr Pyr,tr Glauc,tr blk lith,mod-pr vis por,no show
CLAYSTONE:m-dk brn,sft-disp,v aren,mass

SANDSTONE:lt gry,fri-mod hd I P.,m-crs,dom m,rndd-sbang,mod srt,tr-com sil cmt,abd arg Mtrx,tr Pyr,tr Glauc,tr blk lith,mod-pr vis por,no show
CLAYSTONE:m-dk brn,sft-disp,v aren,mass



CLAYSTONE:brn blk-olv blk,sft mod disp,mass,aren w/ **SANDSTONE**:lt-v lt gry,fri w/ lse Gr,dom f,occ med,trnsp-trnsl,sbrndd-sbang,pr srt,occ Qtz cmt,tr Pyr,no show

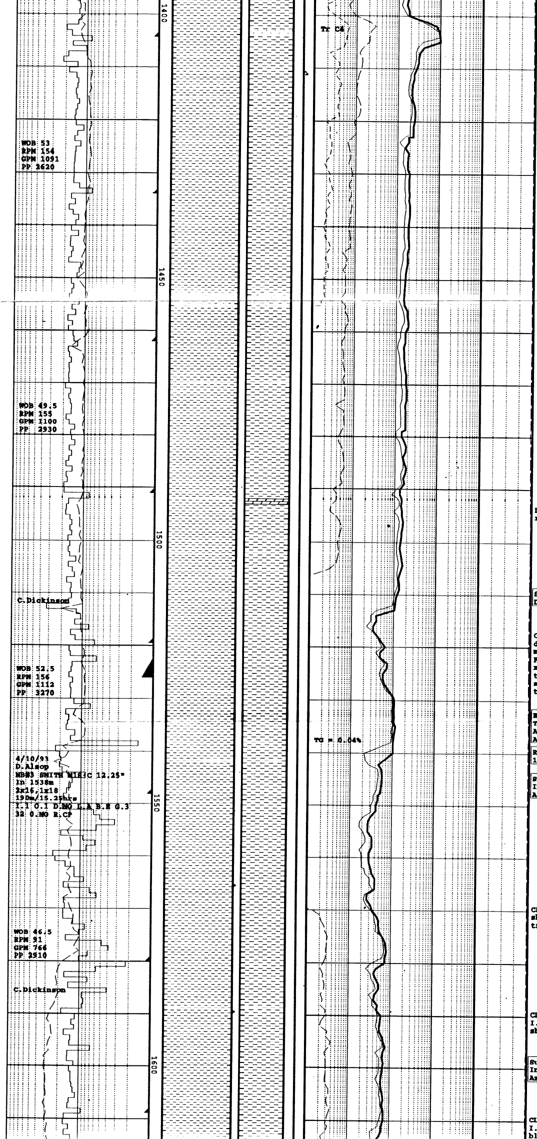
CLAYSTONE:dk brn gry-olv blk, sft,disp,mass,aren,tr-r dk brn Dol Frag w/ **SANDSTONE**:v lt-lt gry,fri w/ lse Gr,v f-med,dom f,sbrndd-sbang,trnsl,trnsp I.P.,pr srt occ Qtz cmt,no show

CLAYSTONE:dk brn gry-olv blk, sft,occ frm,mod disp,stky I.P ,slty I.P.,mass,tr dk brn Dol Frag,tr f Pyr Agg,tr Mic Mat, tr lt gry,f-med,trnsl,dom sbang,lse,pr srt Qtz Gr w/ r Fe stn

Run Carbide @ 1375m
Theor. Lag = 10240stks
Actual Lag = 10953stks
Av Hole Size = 17.75"

CLAYSTONE:dk brn gry-olv blk, sft,occ frm,mod disp,stky I.P ,slty I.P.,mass,tr dk brn Dol Frag,tr f Pyr Agg,tr Mic Mat, tr lt gry,f-med,trnsl,dom sbang,lse,pr srt Qtz Gr w/ r Fe stn

W 1.11,V 56,PV/YP 15/28,Gels 7/12,F 5.5,FC 1,Sol 7.0,Sd 3.0,pH 9.3,Cl 50k,Ca 320



SANDSTONE:lt gry,fri,vf,sbang wl srt,tr Glauc,tr carb,tr alt Fspr,tr lith,nil-tr mic, gd por,no show

CLAYSTONE:dk brn gry-olv blk, sft,occ frm,mod disp,stky I.P ,mass,tr dk brn Dol Frag,tr f Pyr,tr Mic Mat,tr Slick

DOLOMITE:med-mod dk brn,v hd, xln,blky I.P.

Survey @ 1521m
Dev = 1 deg

CLAYSTONE:med-dk brn-brn blk, dom sft,occ frm I.P.,v disp, mod blky I.P.,slty I.P.,tr Foss Inoc,tr-com med-dk brn xln Dol Frag,tr-com lt gry, transl,f-crs,pr srt,rndd-sbang Qtz Gr,tr Pyr,tr Glauc, tr-r f Carb Mat

Run Carbide @ 1519.5m
Theor. Lag = 11244stks
Actual Lag = 12767stks
Avg. Hole size = 19.26"

Run E-Logs @ 1517m
1.MSFL-DLL-SLS-GR-AMS-SP-GPIT

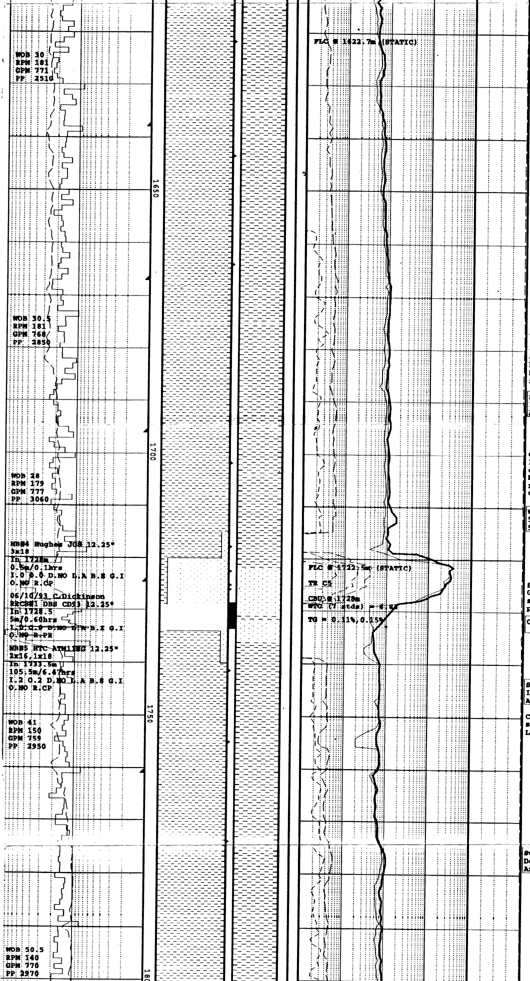
Survey @ 1539m
Inc = 2.2 deg
Az = 37.6

CLAYSTONE:m-dk gry,frm-mod hd sbblky,slt-sdy I.P.,tr carb, tr Glauc

CLAYSTONE:med-dk gry,gry brn I.P.,frm-mod hd,occ sft, sbblky,tr carb Mat,tr Pyr

Survey @ 1599m
Inc = 2.5 deg
Azi = 46.8

CLAYSTONE:med-dk gry,gry brn I.P.,frm-hd,occ sft,sbblky-blky,mod disp I.P.,tr Carb



Mat,tr-r med-dk brn xln Dol Frag

CLAYSTONE:med-dk gry,sft-mod hd,sbblky-blky,disp,tr Carb Mat,tr med-dk brn xln Dol Frag

CLAYSTONE:med gry-gry brn,sft frm,occ hd,sbblky,disp,stky, tr Carb Mat,tr Pyr,tr med-dk brn xln Dol Frag,r calc Foss Frag

CLAYSTONE:lt-med gry-gry brn, occ dk gry,sft-hd,dom sft, blky,mod disp,stky,tr f carb Mat,tr f Pyr Agg,tr lt-dk brn xln Dol Frag

Survey @ 1687m
Inc = 3.2 deg
Azi = 62.9

CLAYSTONE:med-dk gry,gry brn I.P.,sft-hd,dom mod hd,blky, disp,stky,slty I.P.,tr Carb Mat,tr f Pyr Agg,tr lt-dk brn xln Dol Frag,tr-r Glauc,tr-r Calc Foss Frag

W 1.16,V 43,PV/YP 13/22,Gels 5/10,F 5.8,FC 1,Sol 9.0,Sd 0.50,pH 9.0,Cl 35k,Ca 240

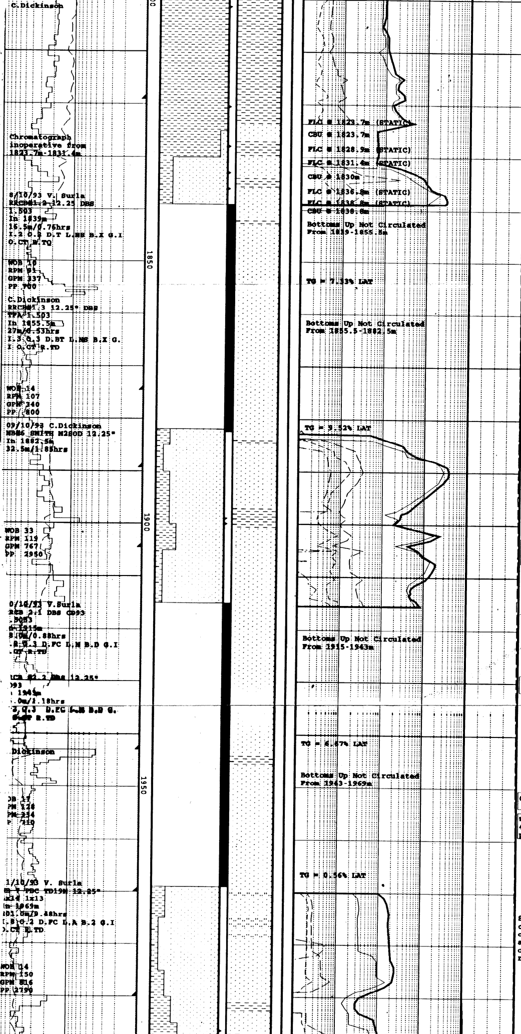
SANDSTONE:lt gry,fri w/ lse Gr,f-med,sbrndd-sbang,mod wl srt,tr Glauc,tr Pyr,fr vis por

Core #1:1728.5-1733.5m
100% Recovery

Survey @ 1748m
Inc = 3.3 deg
Azi = 83.3

CLAYSTONE:m gry,frm-mod hd, sbblky,slty,tr Pyr,tr Carb Lam & Spks,tr Glauc

Survey @ 1776m
Dev = 3.7 deg
Azi = 90.4



CLAYSTONE:med gry,occ dk gry,
sft-hd,dom sft,sbblky,slty,tr
carb Spks

Survey @ 1806m
Dev = 3.9 deg
Azi = 94.2

CLAYSTONE:med gry,occ dk gry,
sft-frm,occ hd,dom sft,sbblky
slty,stky I.P.,tr-com carb
Spks,r wh,f-med,transl,sbang
Qtz Gr

CLAYSTONE:med gry,sft-frm,dom
sft,sbblky,slty I.P.,tr-com
carb Spks

SANDSTONE:wh-lt gry,transl-
transp,dom lse Gr,fri I.P.,f-
v crs,dom f-med,sbrndd-sbang,
fr-pr srt,wk sil cmt I.P.,tr
f Pyr Agg,tr-r dl blk C

Core #2:1839-1855.5m
97.5% Recovery

SANDSTONE:wh-lt gry,trans-
transp,hd-v hd,brit I.P.,f-
med,dom med,sbrndd-sbang,mod
wl srt,str sil cmt,tr f blk
lith,fr-gd vis por

SHOW:Up to 5% p.p,,ptchy I.P.
mod dl,mod wk grn-grn yel dir
fst blm,mod dl,str,mlky grn
yel ct,inst blm,mod brt,mod
str grn yel cct,thk,mod brt,
mod str,grn yel rr

Core #3:1855.5-1882.5m
100% Recovery

W 1.16,V 42,PV/YP 13/22,Gels
4/8,F 6.0.FC 1,Sol 9.8,Sd 1.0
pH 9.3,Cl 46k,Ca 120

SANDSTONE:wh-v lt gry,transl-
transp,dom lse Gr,fri I.P.,f-
crs,dom med,sbrndd-sbang,mod
wl srt,mod str sil cmt I.P.,
wh arg Mtrx I.P.,v gd-ex vis
por
SHOW:5% p.p mod str,brt grn
dir,no ct,mod sl strm,mod str
brt grn yel cct,thn,mod str,
brt grn yel rr

CLAYSTONE:med-dk gry,dom med
gry,sft-mod hd,dom frm,sbblky
tr dl blk C

Survey @ 1901m
Dev = 3.9 deg
Azi = 99.8

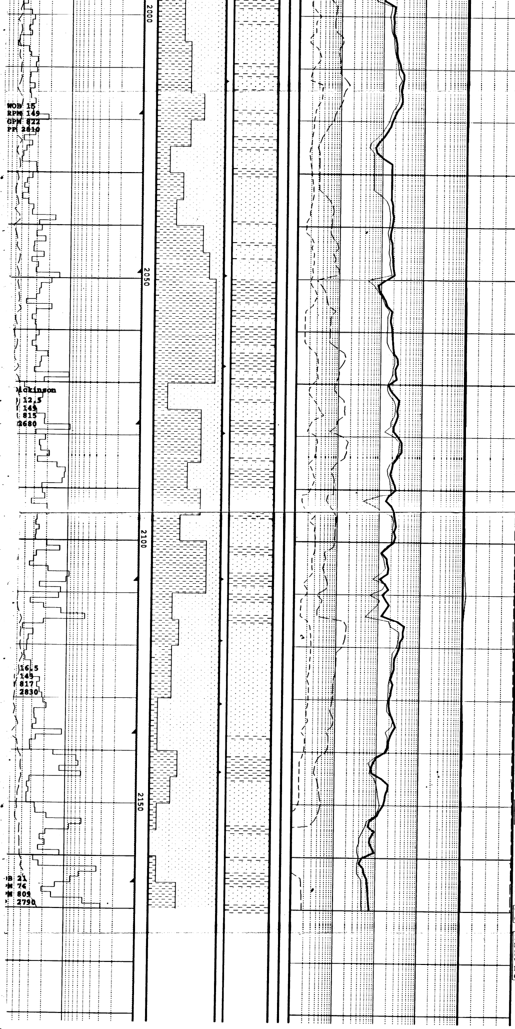
SANDSTONE:wh-v lt gry,lse Qtz
Gr,med-crs,dom med,sbrndd-
sbang,occ ang,fr srt,tr carb
Mat,v gd-ex vis por
SHOW:5% p.p mod str,brt or
dir,occ mod brt grn dir,no ct
mod sl strm,mod str,brt or-bl
wh cct,thk grn-grn yel,mod
str,mod dl rr,mod brt or-bl
wh mod str res

Core #4:1915-1943m
100% Recovery

Core #5:1943-1969m
100% Recovery

W 1.18,V 42,PV/YP 14/23,Gels
4/8,F 6.0,FC 1,Sol 9.8,Sd 1.0
pH 9.3,Cl 46k,Ca 120

SANDSTONE:wh-v lt gry,fri,m-
crs,dom m,com Qtz Gr,com
ovgth Gr,com v disp v lt gry
arg Mtx,com dk gry slty Mtrx,
occ Pyr Gr,occ yel lith,occ
red lith,v gd vis por no Show



SANDSTONE:wh-lt gry,fri,m-crs dom m,occ Qtz Gr,com Qtz ovgth,com v lt gry arg Mtrx, occ yel-red lith,com Pyr Gr,v gd vis por,no Show
w/intbed
CLAYSTONE:lt gy-gy,sft-mod hd mass,sbfis I.P.,v disp,occ bk Carb flks

Survey @ 2036m
Dev = 3.6 deg
Azi = 102.7

CLAYSTONE:v lt gry-gry,occ brn I.P.,sft-mod hd,mass, sbfis I.P.,mod aren I.P.,occ blk Carb flks,occ Qtz Gr,occ yel flks

SANDSTONE:lt-v lt gry,occ wh, dom lse Gr,fri I.P,f-med,dom med,occ crs,sbrndd-ang,mod wl srt,w/ mod str sil cmt,lt-med gry arg Mtrx I.P.,v gd vis por,no show

CLAYSTONE:lt-med gry,dk gry-blk I.P.,sft-hd,dom sft-frm, sblky,aren I.P.,mass I.P.,tr Pyr Agg,tr f blk carb Spks

CLAYSTONE:lt gry,occ dk gry, sft,mod hd I.P.,disp,sblky,tr com wh-lt gry arg Mtrx,tr Pyr Agg,tr blk carb Spks

SANDSTONE:wh-lt gry,occ med gry,fri,v f-med,dom f,sbrndd-sbang,transl I.P.,mod wl srt, mod wk sil cmt,tr calc cmt,tr lt gry arg Mtrx,tr f Pyr Agg, gd vis por,no show

CLAYSTONE:lt-med gry,sft,v disp,aren,tr dl blk brit C,tr f Pyr Agg

W 1.17,V 42,PV/YP 14/24,Gels 5/10,FC 1,Sol 9.8,Sd 0.5,pH 9 2,Cl 47k,Ca 80

SANDSTONE:wh-v lt gry,dom lse Gr,mod hd I.P.,v f-med,occ crs,sbrndd-sbang,transl-transp,mod wl srt,mod str sil cmt,occ calc cmt I.P.,tr lt gry arg Mtrx,tr-com sbvit blk brit C,tr Pyr Agg,v gd por,no show

TD Well @ 2170m
@18:00hrs on 11/10/93

Run logs @ 2170m:
DLL-MSFL-AS-GR-SP-CAL-AMS
LDL-CNL-GR-FMS-AMS
VSP
RFT-GR
CST-GR