

Field : OTWAY BASIN
 Block : PEP-154
 State : VICTORIA
 Country : AUSTRALIA
 Scale : 1/ 500

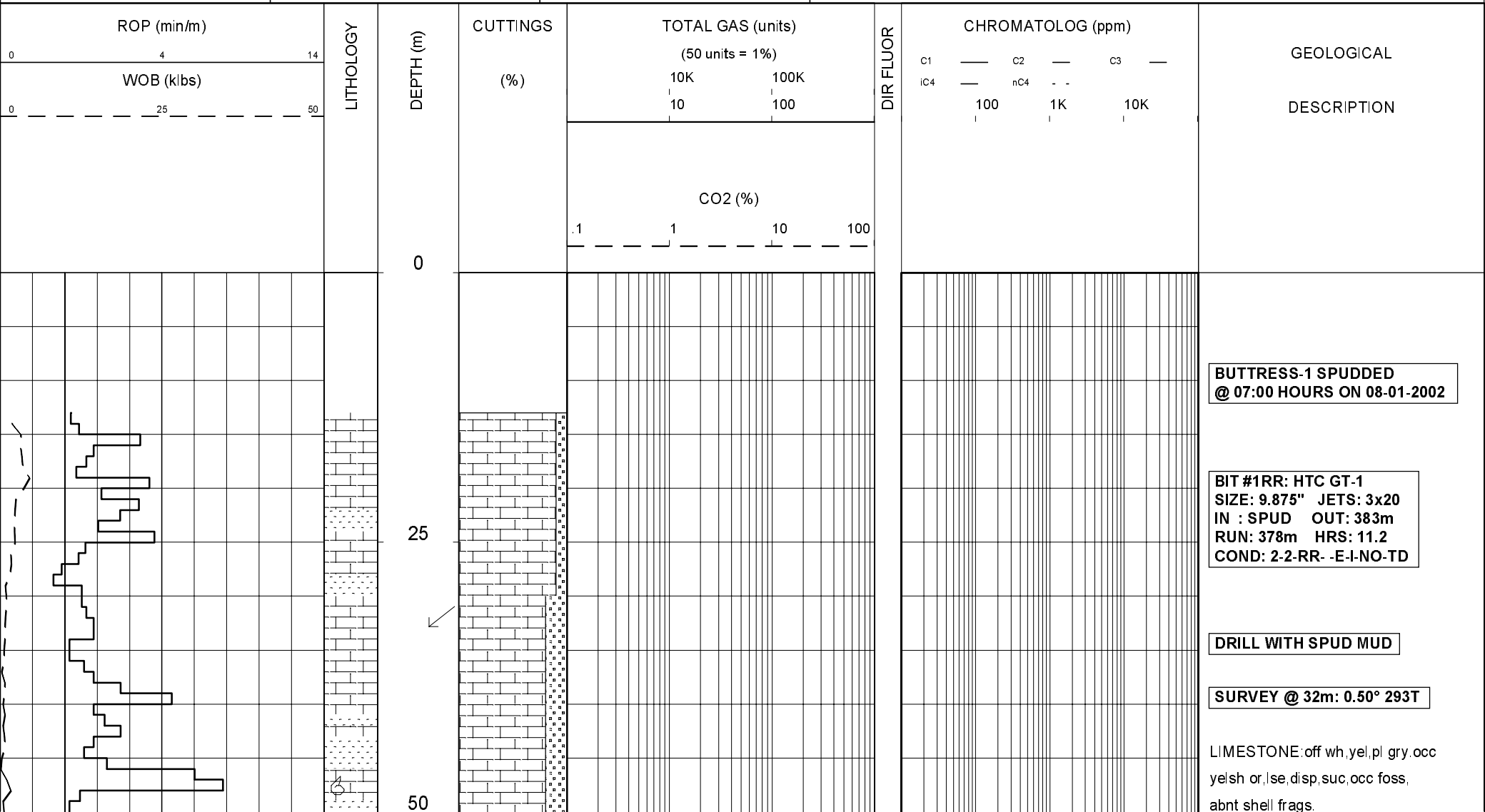
Rotary table : 50.7m
 Ground level : 46.0m
 GDA 94 Co-ordinates :
 Lat. : 38° 30' 59.40" S (PRELIM.)
 Long. : 142° 48' 30.70" E (PRELIM.)

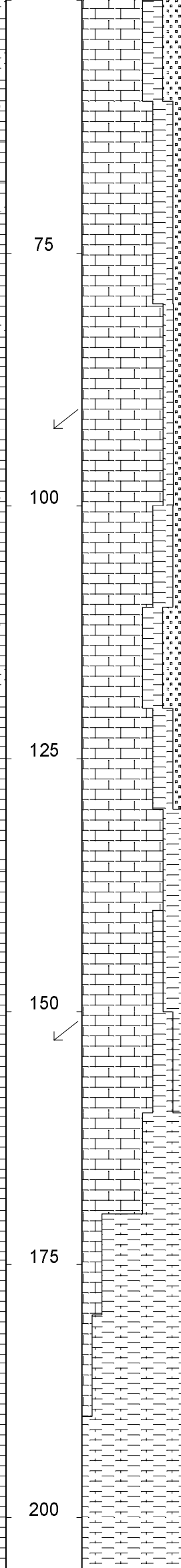
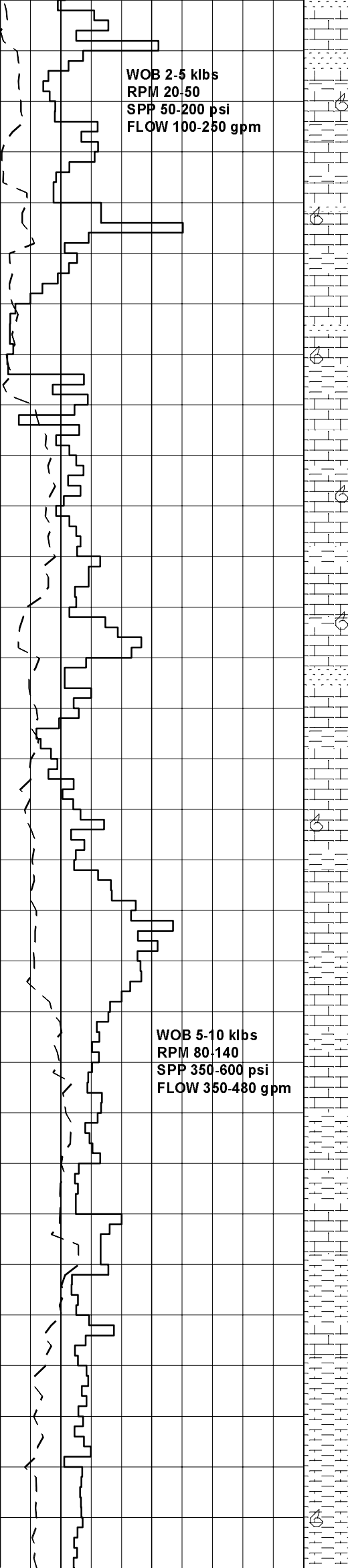
Rig : OD&E-30
 Spud date : 08-01-2002
 TD date : 16-01-2002
 Total depth : 1730m
 Final status : C & S

Open Hole: 9.875" 383m
 6.75" 1730m
 Cased Hole: 7.625" 378m
 3.5" 1717m

Loggers : D.VAN DER AA
 J.HOBDAY
 S.SENNIS

LITHOLOGY	ACCESSORIES	DRILLING DATA	ABBREVIATIONS																																				
<ul style="list-style-type: none"> Conglomerate Coarse Sandstone Med Sandstone Fine Sandstone VF Sandstone Siltstone Carb. Siltstone Calc. Siltstone Clay Limestone Dolomite Coal Anhydrite Gypsum Igneous Volcanic Metamorphic Cement 	<ul style="list-style-type: none"> Pyrite Siderite Glauconite Feldspar Mica Ferrous Chert Calcareous Dolomitic Carbonaceous Lithoclast Breccia Foraminifera Corals Inoceramus Bryozoa Plant remains Fossils 	<ul style="list-style-type: none"> Casing Shoe Bit trip Wiper Trip Core DST Deviation survey 	<p>ABBREVIATIONS</p> <table border="0"> <tr> <td>BOPD - Barrels of Oil Per Day</td> <td>OG - Over Gauge</td> </tr> <tr> <td>BWPD - Barrels of Water Per Day</td> <td>OH - Open Hole</td> </tr> <tr> <td>CG - Connection Gas</td> <td>OTS - Oil To Surface</td> </tr> <tr> <td>CO - Circulate Out</td> <td>Q - Flow Rate</td> </tr> <tr> <td>COND - Condensate</td> <td>REC - Recovery</td> </tr> <tr> <td>c/c - Crush Cut</td> <td>Rmf - Resistivity mud filtrate</td> </tr> <tr> <td>DST - Drill Stem Test</td> <td>ROP - Rate Of Penetration</td> </tr> <tr> <td>FLOW - Flow Rate (gal/min)</td> <td>RPM - Revolutions Per Minute</td> </tr> <tr> <td>GCM - Gas Cut Mud</td> <td>RTSTM- Rate Too Small To Measure</td> </tr> <tr> <td>GCW - Gas Cut Water</td> <td>Rw - Resistivity water</td> </tr> <tr> <td>GTS - Gas To Surface</td> <td>r/r - ring residue</td> </tr> <tr> <td>INJ - Injection of Mist (bbls/hr)</td> <td>SCFM - Standard Cubic Ft/Min (air)</td> </tr> <tr> <td>LCM - Lost Circulation Material</td> <td>SGCM - Slightly Gas Cut Mud</td> </tr> <tr> <td>MMCFD- Million Cubic Feet / Day</td> <td>SPM - Strokes Per Minute</td> </tr> <tr> <td>NGTS - No Gas To Surface</td> <td>SPP - Stand Pipe Pressure</td> </tr> <tr> <td>NOTS - No Oil To Surface</td> <td>SWC - Side-Wall Core</td> </tr> <tr> <td>NR - No Returns</td> <td>TG - Trip Gas</td> </tr> <tr> <td>OCM - Oil Cut Mud</td> <td>WOB - Weight On Bit</td> </tr> </table>	BOPD - Barrels of Oil Per Day	OG - Over Gauge	BWPD - Barrels of Water Per Day	OH - Open Hole	CG - Connection Gas	OTS - Oil To Surface	CO - Circulate Out	Q - Flow Rate	COND - Condensate	REC - Recovery	c/c - Crush Cut	Rmf - Resistivity mud filtrate	DST - Drill Stem Test	ROP - Rate Of Penetration	FLOW - Flow Rate (gal/min)	RPM - Revolutions Per Minute	GCM - Gas Cut Mud	RTSTM- Rate Too Small To Measure	GCW - Gas Cut Water	Rw - Resistivity water	GTS - Gas To Surface	r/r - ring residue	INJ - Injection of Mist (bbls/hr)	SCFM - Standard Cubic Ft/Min (air)	LCM - Lost Circulation Material	SGCM - Slightly Gas Cut Mud	MMCFD- Million Cubic Feet / Day	SPM - Strokes Per Minute	NGTS - No Gas To Surface	SPP - Stand Pipe Pressure	NOTS - No Oil To Surface	SWC - Side-Wall Core	NR - No Returns	TG - Trip Gas	OCM - Oil Cut Mud	WOB - Weight On Bit
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		<p>MUD DATA</p> <p>MW - Mud Weight (lb/gal) FV - Funnel Viscosity (s/qt) PV - Plastic Viscosity (cps) YP - Yield Point (lb/100ftsq) Gel - Gel Strength (10sec) WL - Water Loss (cc/30min) pH - Acidity / Alkalinity Ck - Cake (32nd/inch) Sol - Solids (% vol) Cl - Chlorides (mg/l)</p>																																					





NIL GAS

NIL GAS

SANDSTONE: cir, off wh, pl gry, f-m, mod srt, sbang-sbrn, com calc cmt, lse, pr-fr inf por, no fluor.

SURVEY @ 94m: 0.50° 356T

LIMESTONE: off wh, yel, pl gry, occ yelsh or, lse, disp, suc i/p, occ fri, com shell frags.

MARL: pl gry-pl brn, m gry i/p, com foss frahs, v sft-sft, sity, disp, amorph.

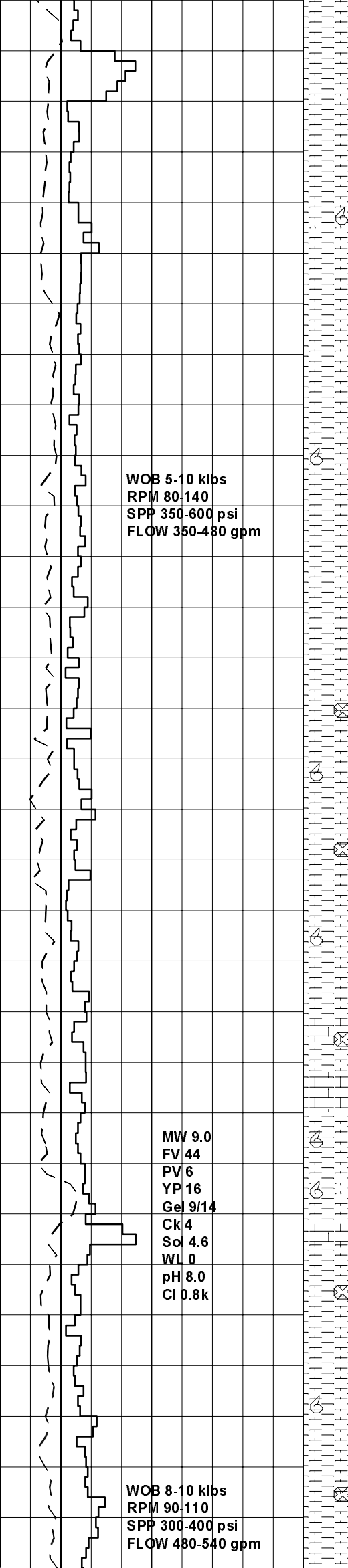
LIMESTONE: off wh, yel, pl gry, occ yelsh or, lse, disp, occ frm, com shell frags.

SURVEY @ 152m: 0.50° 001T

MARL: pl-m gry, m grysh brn, v calc tr foss frags, sft, amorph-sbbiky

MARL: pl-m gry, m grysh brn, v calc tr foss frags, sft, sticky, amorph

SURVEY @ 211m: 0.25° 343T



225

250

275

300

325

350

WOB 5-10 klbs
RPM 80-140
SPP 350-600 psi
FLOW 350-480 gpm

MW 9.0
FV 44
PV 6
YP 16
Gel 9/14
Ck 4
Sol 4.6
WL 0
pH 8.0
Cl 0.8k

WOB 8-10 klbs
RPM 90-110
SPP 300-400 psi
FLOW 480-540 gpm

NIL GAS

10K 100K
10 100

100 1K 10K

MARL:pl-m gry,m grysh brn,v carb
tr foss frags,sft,sticky,amorph

SURVEY @ 273m: 0.20° 221T

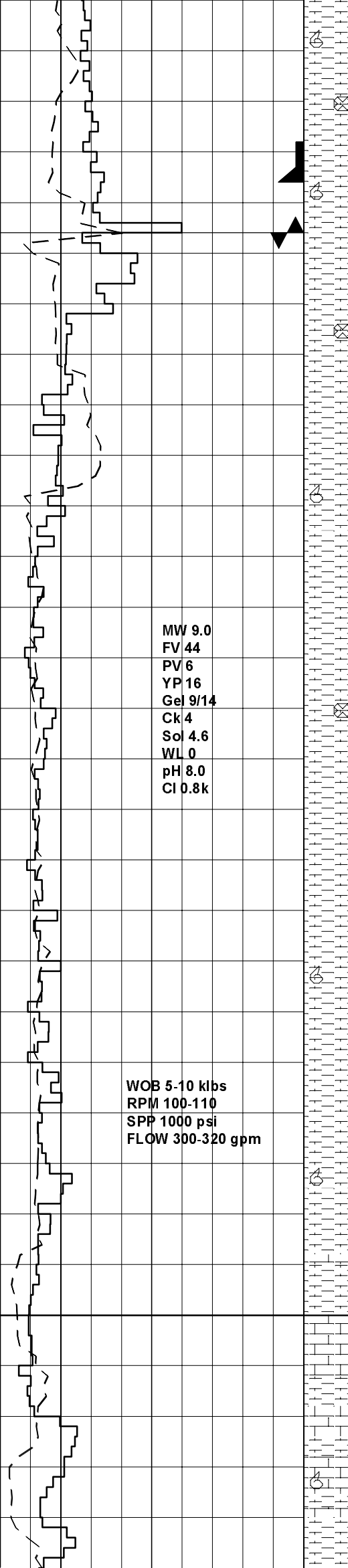
MARL:pl-m gry, com calc,com foss
frags,com shell frags,disp,v sft
amorph.

LIMESTONE:off wh,crm,v pl
or-brn,yelsh brn,xln,abdt foss
frags,abdt shell frags,fri-brit

MARL:pl-m gry, v calc,abdt foss
frags,abdt shell frags,v sft,
stky i/p,disp,sbbiky-amorph.

SURVEY @ 343m: 0.20° 169T

MARL:pl-m gry, v calc,abdt foss
frags,abdt shell frags,v sft,
stky i/p,disp,sbbiky-amorph.



MW 9.0
 FV 44
 PV 6
 YP 16
 Gel 9/14
 Ck 4
 Sol 4.6
 WL 0
 pH 8.0
 Cl 0.8k

WOB 5-10 klbs
 RPM 100-110
 SPP 1000 psi
 FLOW 300-320 gpm

7.625" CASING SHOE
 SET @ 378m

BIT #2: SMITH S98PX
 SIZE: 6.75" JETS: 4x11
 IN: 383m OUT: 1370m
 RUN: 987m HRS: 43.8
 COND: 2-3-LT-N2-X-I-CT-PR

FIT @ 386m: EMW =16.8 ppg

MARL: pl-m gry, v calc, abdt foss
 frags, abdt shell frags, v sft,
 stky i/p, disp, sbbiky-amorph.

MARL: pl-m gry, v calc, abdt foss
 frags, abdt shell frags, v sft,
 stky i/p, disp, sbbiky-amorph.

CLIFTON FORMATION
 490mRT (-439mSS)

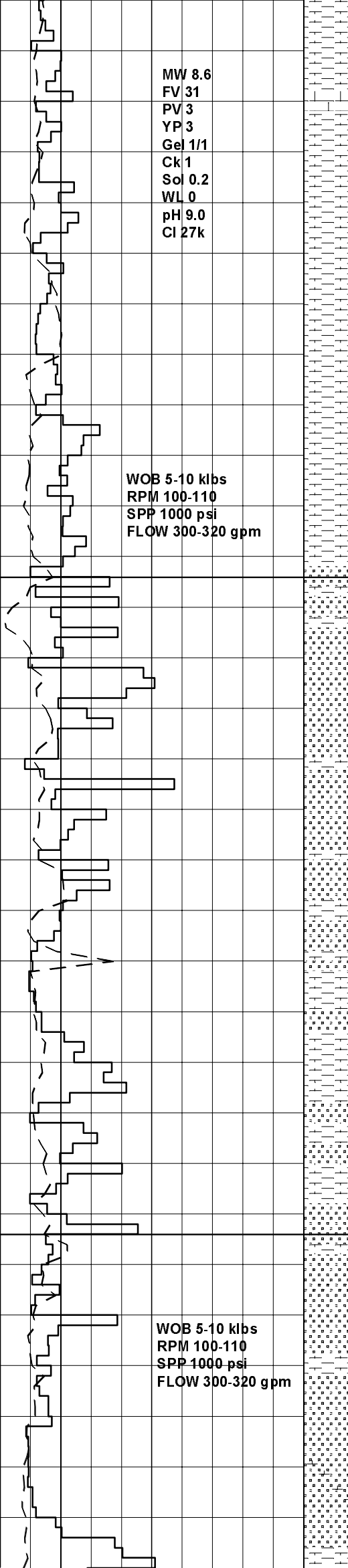
MARL: pl-grysh gn, v calc, com foss
 frags, v sft, sbbiky-amorph.

LIMESTONE: orsh rd-orsh brn, pl
 yel, crm, micr, m hd-hd, xin, com

10K 100K
 10 100

100 1K 10K

375
 400
 425
 450
 475
 500



MW 8.6
 FV 31
 PV 3
 YP 3
 Gel 1/1
 Ck 1
 Sol 0.2
 WL 0
 pH 9.0
 CI 27k

WOB 5-10 klbs
 RPM 100-110
 SPP 1000 psi
 FLOW 300-320 gpm

WOB 5-10 klbs
 RPM 100-110
 SPP 1000 psi
 FLOW 300-320 gpm

525
 550
 575
 600
 625
 650

NIL GAS

10K 100K
 10 100 100 1K 10K

foss frags, burrow casts, tr com pyr.

SURVEY @ 530m: 0.40° 134T

MARL: pl gry, brnsh gry, v calc, occ foss frags, v sft, stky i/p, disp, sbbiky-amorph.

**MEPUNGA FORMATION
 572mRT (-521mSS)**

SANDSTONE: pl rdsh brn, trnsl, clr, f-m, occ crs, sbang-sbrnd, v calc, lse grns, pr inf por, no fluor.

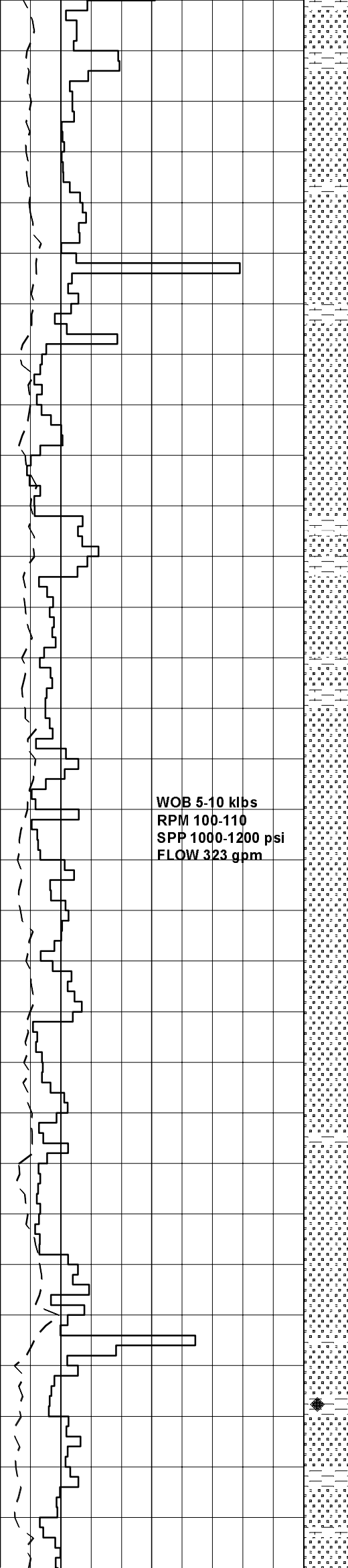
SANDSTONE: pl rdsh brn, clr-trnsl, m-crs, occ f, sbang-sbrnd, v calc, lse grns, pr inf por, no fluor.

MARL: brn, grysh brn, pl gry, v calc, sft-disp, occ frm.

**DILWYN FORMATION
 637mRT (-586mSS)**

SANDSTONE: clr-opq, pl yelsh brn, f-crs, tr vcrs, sbang-sbrnd, rr-com wk calc cmt, tr pl brn arg mtrx, pred lse, tr fri-frm aggs, pr-fr inf por, no fluor.

SANDSTONE: clr-opq, pl yelsh brn, m-vcrs, pr srt, sbang-sbrnd, mnr wk calc cmt, tr pl brn arg mtrx, lse,



675
 700
 725
 750
 775
 800
 825

NIL GAS

10K 100K
 10 100

100 1K 10K

fr inf por, no fluor.

SURVEY @ 684m: 0.50° 191T

SANDSTONE: cir-trnsl, pl yel-opq, m
 -crs, occ f, tr vcrs, mod srt, sbang
 -sbrnrd, tr mod calc cmt, pred lse
 pr-fr inf por, no fluor.

SANDSTONE: cir-trnsl, m-crs, occ v
 crs, mod srt, sbang-sbrnrd, tr calc
 cmt, lse, fr inf por, no fluor.

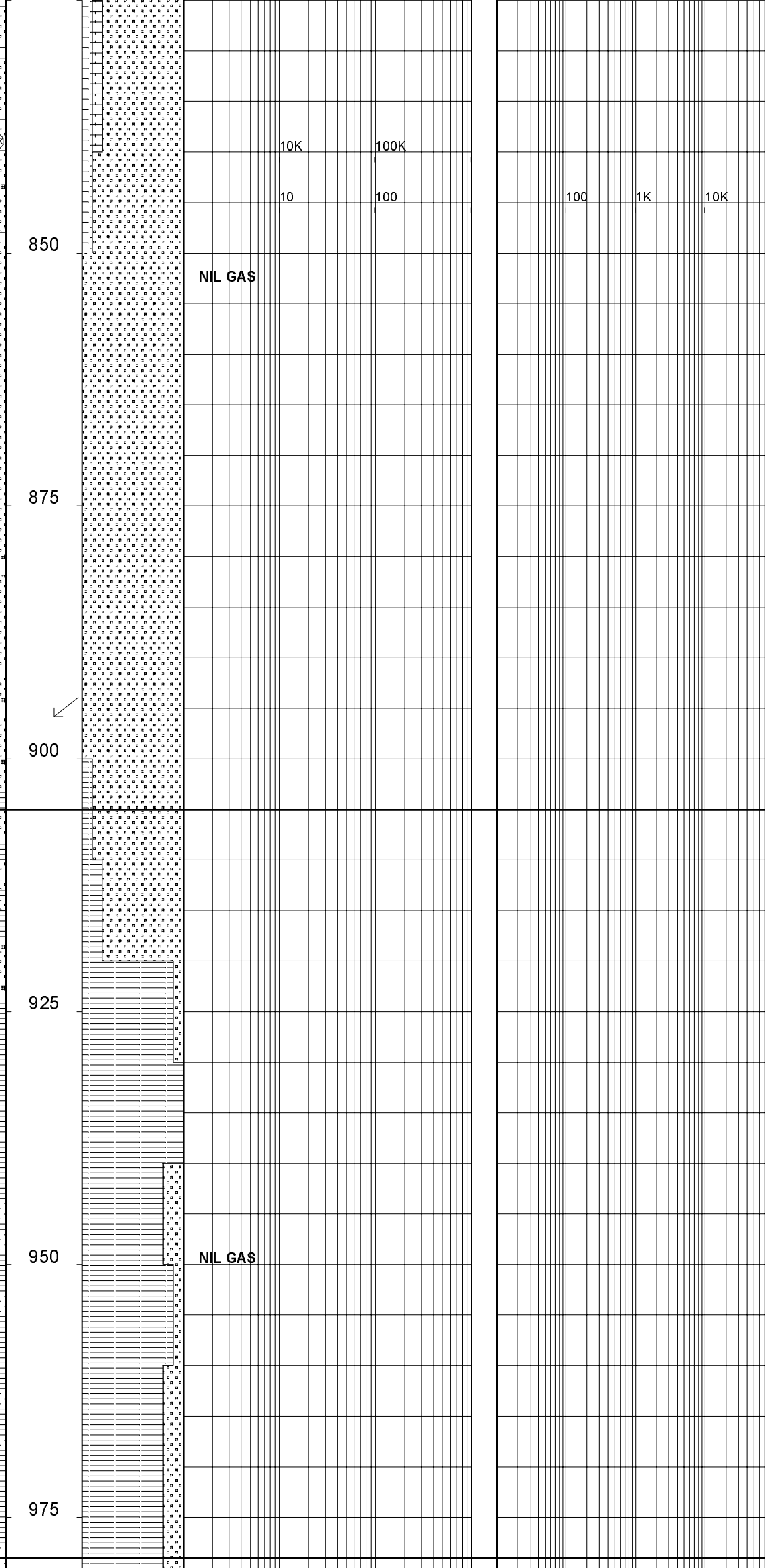
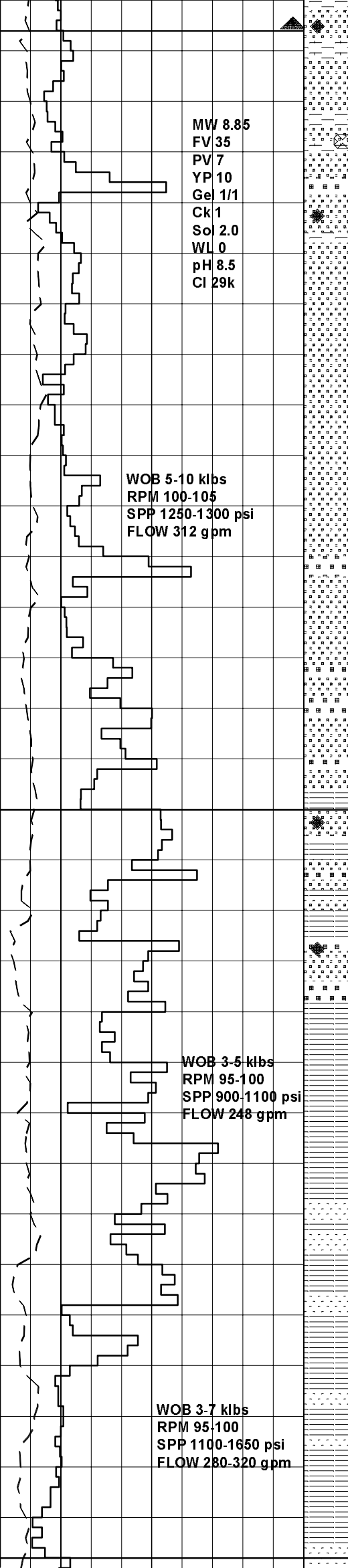
MARL: brnsh gry, v calc, rr foss
 frags, sft-disp, amorph-sbblky.

SANDSTONE: cir-trnsl, m-crs, occ v
 crs, mod srt, sbang-sbrnrd, tr calc
 cmt, pred lse, tr fri aggs, fr inf
 por, no fluor.

SANDSTONE: cir-trnsl, m-crs, occ v
 crs, mod srt, sbang-sbrnrd, lse &
 cin, fr inf por, no fluor.

SILTSTONE: gry-grysh brn, m-dk brn
 i/p, aren, tr arg, calc, mnr carb
 spks, sft-disp, amorph, sbblky i/p

16 STD WIPER TRIP @ 828m



SILTSTONE: brn, grysh brn, aren, frm-hd, sbfiss-sbbiky.

SANDSTONE: clr-trnsl, frstd, pl yelsh brn, brn, m-v crs, mod srt, sbrnd-rnd, com pyr, tr foss frags, lse grns, fr inf por, no fluor.

MARL: pl gry, grysh brn, calc, com foss frags, frm-sft, sbbiky-disp.

SANDSTONE: clr-trnsl, rr brnsh yel frstd, m-v crs, sbrnd-rnd, mod wl srt, rr pyr, lse, fr-gd inf por.

SURVEY @ 896m: 0.75° 181T

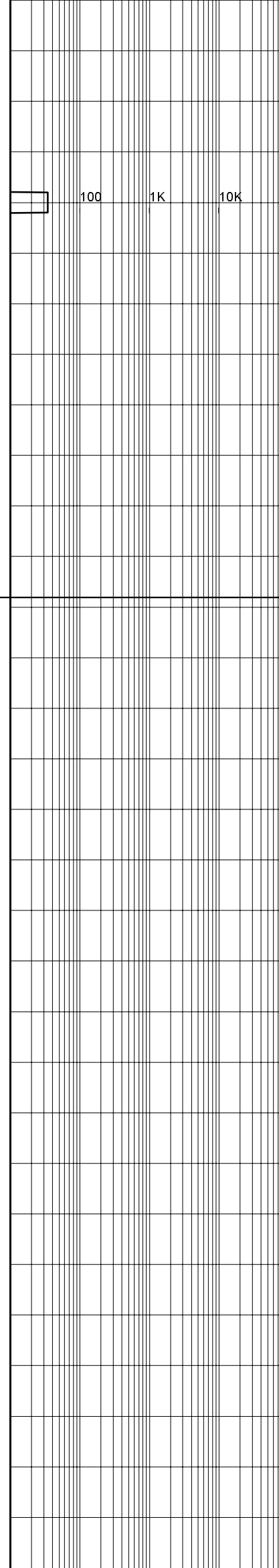
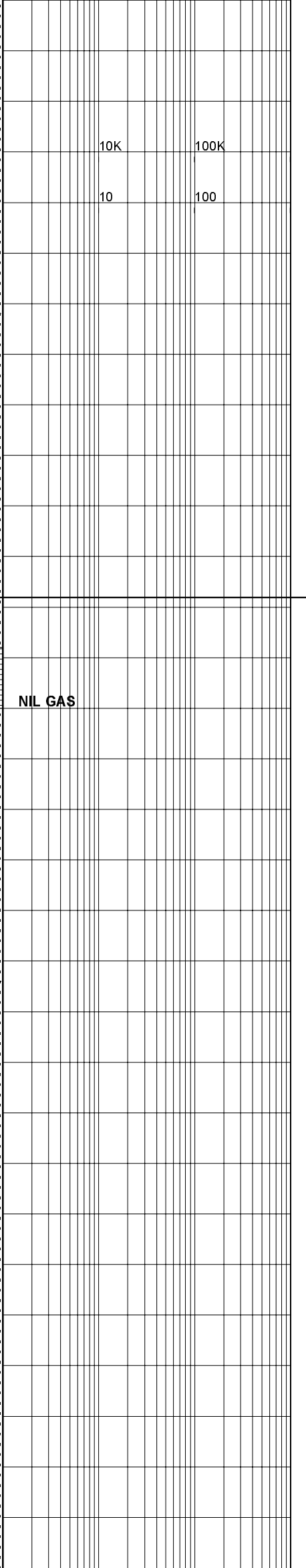
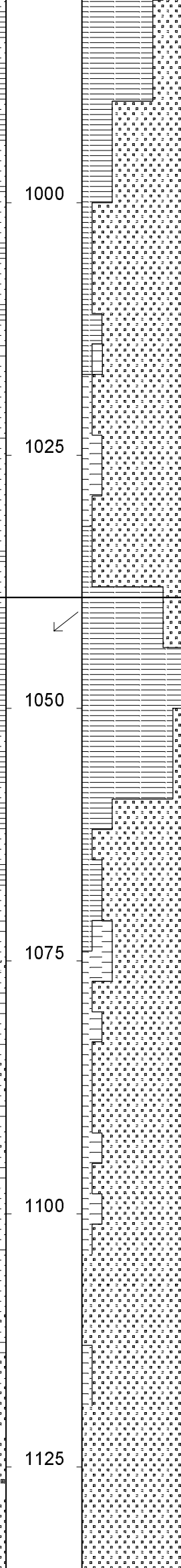
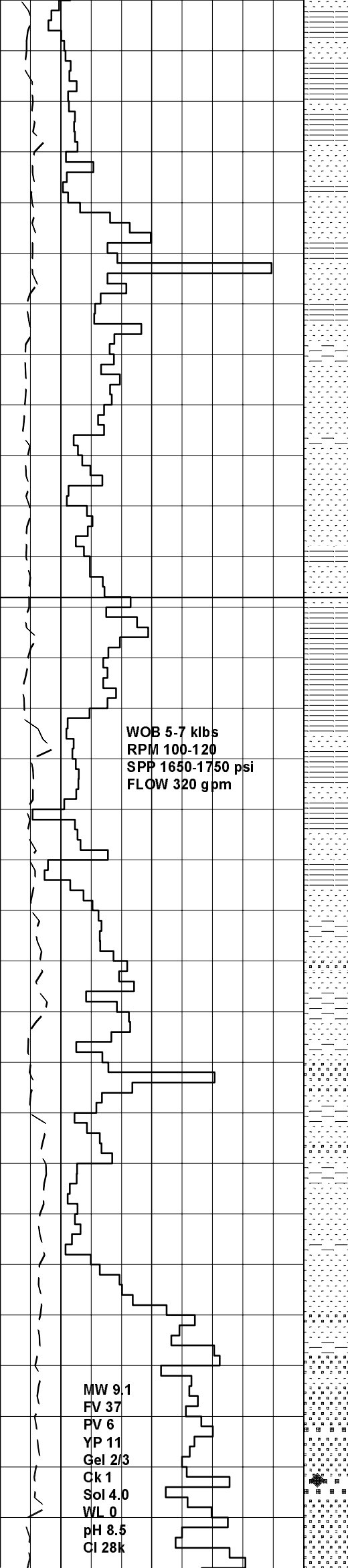
PEMBER MUDSTONE 905mRT (-854mSS)

SANDSTONE: clr-trnsl, rr brnsh yel frstd, m-v crs, com v crs, sbrnd-rnd, mod wl srt, pyr, rr glauc, lse, fr-gd inf por, no fluor.

CLAYSTONE: brn, pl brn, occ carb spks, disp-amorph.

CLAYSTONE: pl-m brn, mnr carb spks sity i/p, sft-disp, amorph-rr sbbiky.

PEBBLE POINT FORMATION 979mRT (-928mSS)



SANDSTONE: opq-trnsl, pl brn, m-crs
tr vcrs, mod-pr srt, sbang-sbrndd,
wk sil cmt, pred lse, tr fri aggs,
pr-fr inf por, no fluor.

SILTSTONE: m-dk brn, arg, tr carb
spks, frm-sft, sbbkly.

SANDSTONE: cir-opq, trnsl, pl brn
i/p, f-m, mod srt, sbang-sbrndd, wk
sil cmt, pred lse, tr fri aggs, pr-
fr inf por, no fluor.

**PAARATTE FORMATION
1039mRT (-988mSS)**

SURVEY @ 1042m: 0.50° 201T

CLAYSTONE: m-dk brn, tr brnsh gry,
sity, sft-disp, rr frm, amorph-
sbbkly.

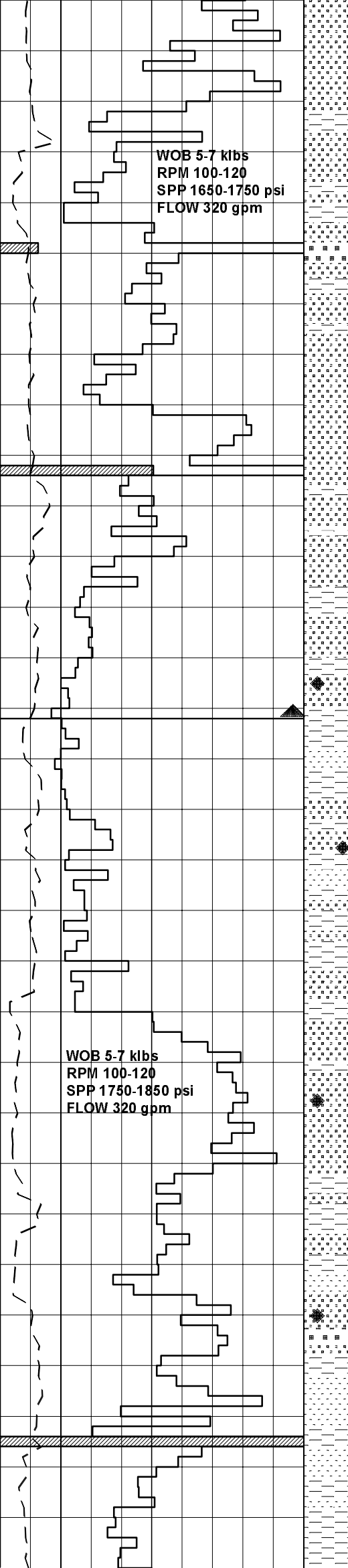
SILTSTONE: m-dk brn, brnsh gry,
aren, arg i/p, mnr carb spks, sft-
frm, disp i/p, sbbkly.

SANDSTONE: cir-trnsl, pl brn i/p, f
-vcrs, pred crs-vcrs, pr srt,
sbrndd-rnd, fr-gd inf por, no
fluor.

SILTSTONE: m-dk brnsh gry, aren,
arg i/p, micmic, tr carb spks, tr
pyr, sft-frm, sbbkly.

SANDSTONE: cir-trnsl, opq, f-m, crs
i/p, mod srt, sbrnd-rndd, sbang i/p
tr calc cmt, lse, pr-fr inf por, no
fluor.

MW 9.1
FV 37
PV 6
YP 11
Gel 2/3
Ck 1
Sol 4.0
WL 0
pH 8.5
Cl 28k



WOB 5-7 klbs
RPM 100-120
SPP 1650-1750 psi
FLOW 320 gpm

WOB 5-7 klbs
RPM 100-120
SPP 1750-1850 psi
FLOW 320 gpm

1150
1175
1200
1225
1250
1275

10K 100K
10 100

100 1K 10K

SILTSTONE: pl-m gry, occ dk gry, pl
brn i/p, aren, fri-mod hd, sbbiky.

SANDSTONE: cir-trnsl, fros, mky, f-
crs, pred m, sbang-sbrnnd, calc
cmt, wh arg mtx, mod hd, pr-fr inf
por, no fluor.

SILTSTONE: m-dk grysh brn, pl brn
i/p, mnr pyr, tr carb spks, fri-
mod hd, sbbiky.

SURVEY @ 1187m: 1.00° 275T

10 STD WIPER TRIP @ 1206m

SANDSTONE: cir-trnsl, fros, f-crs, v
crs i/p, pred m, sbang-sbrnnd, calc
cmt, tr off wh arg mtrx, mod hd,
lse, pr-fr inf por, no fluor.

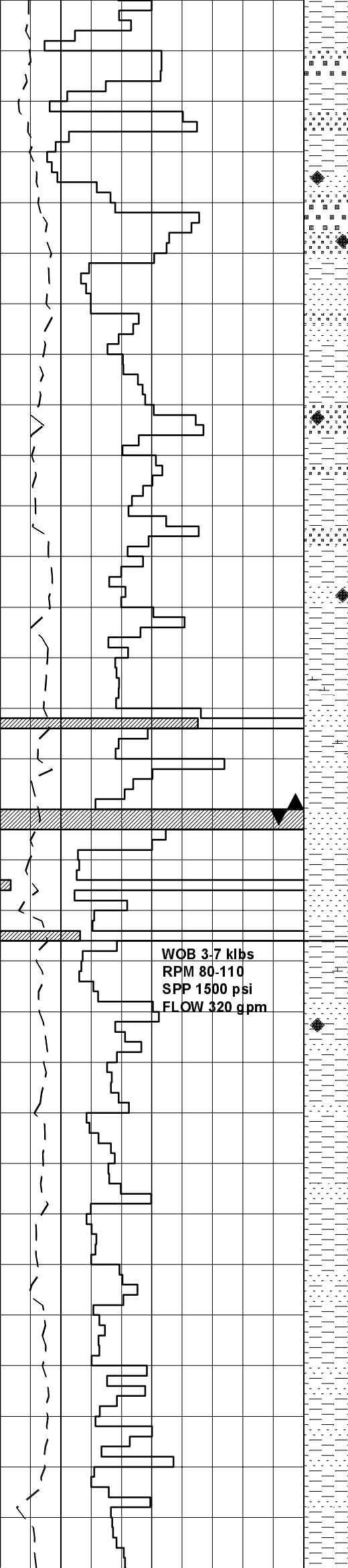
CARBIDE LAG CHECK @ 1206m
THEOR. STKS.: 2664
ACTUAL STKS.: 3050
OPEN HOLE O.G.: 17.2%

SILTSTONE: m-dk grysh brn, pl brn,
aren, arg i/p, micmic, pyr i/p, tr
carb spks, fri-frn, mod hd i/p,
sbbiky.

SANDSTONE: cir-trnsl, opq, m-vcrs,
pr srt, sbang-rr sbrnnd, lse & cin
fr inf por, no fluor.

SILTSTONE: lt-med gry, lt-med gry/
brn, aren, tr arg, tr carb spks, sft
-frn, sbbiky.

SANDSTONE: cir-opq, v lt gry, f-crs
sbang-sbrnnd, pr srt, wk cal cmt,
tr sil cmt, com wh arg mtrx, tr lt
gry stly mtr, tr pyr nods, lse-fri
occ mod hd, pr vis & inf por, no
fluor.



WOB 3.7 klbs
 RPM 80-110
 SPP 1500 psi
 FLOW 320 gpm

1300
 1325
 1350
 1375
 1400
 1425

100 % C1

100 / Tr

100 % C1

100 % C1

10K 100K
 10 100

100 1K 10K

SILTSTONE:lt brn,brn/gry,aren,
 g/t vf SST i/p,com pyr,com carb
 spks,frm,sbbiky.

SANDSTONE:clr,opq-trnsl,crs-v
 crs,occ f-med,mod pr srt,ang-
 sbrndd,brkn qtz grns,com-abdt
 pyr nods,lse,fr inf por,no fluor

SILTSTONE:lt-m gry,grysh brn,
 aren g/t vf SST i/p,pyr,com carb
 spks,calc,fri-frm,sbbiky.

SURVEY @ 1341m: 1.37° 286T

SANDSTONE:clr,opq-trnsl,f-crs,
 pred m,mod srt,sbang-sbrndd,pyr
 nods,lse,frm aggs,pr-fr inf por,
 no fluor.

SILTSTONE:lt-m gry,grysh brn,
 aren g/t vf SST i/p,tr arg,com
 carb spks,com-loc abdt pyr nods,
 micmic i/p,fri-frm,sbbiky.

**BIT #3: GEODIAMOND S75PX
 SIZE: 6.75" JETS: 4x11
 IN: 1370m OUT: 1730m
 RUN: 360m HRS: 17.6
 COND: 2-1-CT-N-X-I-RR-TD**

**SKULL CREEK FORMATION
 1383m (-1332m)**

SILTSTONE:m grysh brn,occ lt-m
 gry,aren,mnr arg i/p,calc i/p,tr
 vf micmic,tr-occ carb spks,com
 pyr nods,sft-v sft,disp i/p,
 sbbiky-amorph.

SANDSTONE:lt gry,lt grysh brn,
 occ clt,trnsl,vf-f,occ m,mod wl
 srt,sa-sr,tr wk sil cmt,com slty
 mtrx,occ carb spks,dom lse,tr
 fri aggs,pr inf por,tr vis por,
 no fluor.

SILTSTONE:m gry,lt gry,brn,pred
 aren,g/t vf SST i/p,occ arg i/p,
 occ carb spks,disp-occ frm.

WOB 3-7 klbs
RPM 100-110
SPP 1650 psi
FLOW 320 gpm

MW 9.2
FV 39
PV 10
YP 14
Gel 4/5
Ck 1
Sol 4.9
WL 0
pH 9.0
CI 26k

WOB 4-8 klbs
RPM 100-110
SPP 1750-1830 psi
FLOW 313 gpm

1450

1475

1500

1525

1550

1575

1600

10K

100K

10

100

100

1K

10K

99 / 1

94 / 6

95 / 5

94 / 5 / 1

94 / 5 / 1

sbbiky-amorph.

SILTSTONE:lt-m gry,m grysh brn,
aren,calc,com carb spks,occ carb
frags,tr felds,sft frm,sbbiky-tr
sbfiss.

BELFAST MUDSTONE
1475mRT (-1424mSS)

SANDSTONE:clr-trnsi,vf-f,rr m,
mod srt,sbang-sbrndd,wk sil cmt,
tr off wh arg mtrx,fri frm,pr
vis por,no fluor.

SURVEY @ 1485m: 1.67° 311T

SILTSTONE:m-dk gry,grysh brn,
aren,arg,mnr carb spks,mnr-com
glauc grs,tr micmic,tr LMST,calc
i/p,sft frm,sbbiky-sbfiss.

Rmf @ 1504m: 0.18 @ 76°F

SILTSTONE:m-dk gry,arg g/t CLYST
i/p,com glauc grs,tr micmic,sft-
frm,sbbiky.

SILTSTONE:m-dk gry,arg g/t CLYST
i/p,mnr glauc grs,tr micmic,sft-
frm,sbbiky-sbfiss.

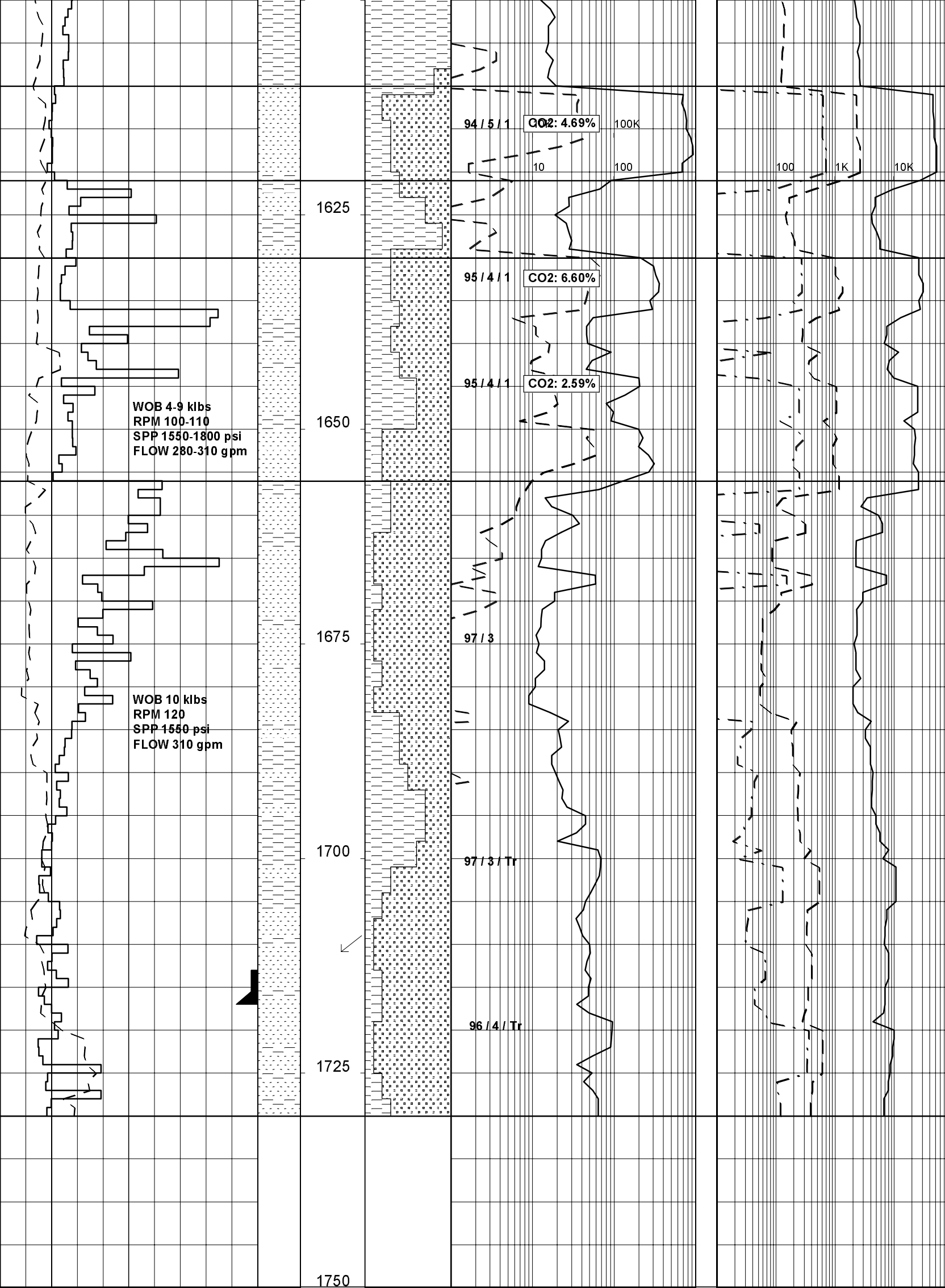
SILTSTONE:m-dk gry,arg g/t CLYST
i/p,mnr glauc grs,sft frm,sbbiky
-sbfiss.

SURVEY @ 1590m: 1.70° 341T

SANDSTONE(TR):clr-trnsi,pl brn,
vf-f,mod srt,sbang-sbrndd,wk sil
calc cmt,tr wk sil cmt,tr pl brn
arg mtrx,mnr-loc com glauc grs,
fri frm,lse,pr vis & inf por,no
fluor.

FLAXMANS FORMATION
1595mRT (-1544mSS)

SILTSTONE:m-dk gry,arg aren i/p,
tr glauc grs,tr pyr,tr carb spks
sft frm,sbbiky.



**WAARRE SANDSTONE
1610mRT (-1559mSS)**

SANDSTONE: cl-trnsl, off wh, f-crs pred m, mod pr srt, sbang-sbrndd, tr wk sil cmt, mnfr off wh arg mtrx, fri-frm, lse i/p, pr-fr vis & inf por, no fluor.

**WAARRE UNIT B
1621mRT (-1570mSS)**

SILTSTONE: pl brnsh gry, pl-m gry, arg, vf aren i/p, com micmic, com carb spks & occ lams, sft-frm, sbbiky, mnfr sbfiss.

**WAARRE UNIT A
1630mRT (-1579mSS)**

SANDSTONE: cl-trnsl, off wh, f-crs pr srt, sbang-sbrndd, tr wk calc cmt, mnfr-loc com off wh arg mtrx, fri-frm, lse i/p, pr-fr inf por, no fluor.

**EUMERALLA FORMATION
1656m (-1605m)**

SANDSTONE: cl-trnsl, opq, f-m, rr crs, mod srt, sbang-sbrndd, wk calc cmt, mnfr-loc abdt off wh arg mtrx fri-frm, lse i/p, pr-fr vis por, fr inf por, no fluor.

SANDSTONE: wh, v lt gry, tr cl-trnsl, f-m, pred f, mod wl srt, sbang-sbrndd, com wk calc cmt, com wh arg mtrx, com liths, fri, tr lse pr-ti vis & inf por, no fluor.

SILTSTONE: m-dk gry, grysh brn, arg, com carb spks, tr feld flks, tr liths, frm, sbbiky-sbfiss.

SILTSTONE: lt gry, arg, g/t CLYST i/p, sft, stcky i/p, sbbiky.

SURVEY @ 1711m: 2.12° 021T

SILTSTONE: lt gry-lt gnsh gry, arg g/t CLYST i/p, sft-occ frm, sbbiky

3.5" CASING SHOE @ 1717m

BUTTRESS-1 REACHED TD @ 14:45 HRS ON 16-01-2002

DRILLER'S DEPTH: 1730m
LOGGER'S DEPTH: 1707m
- UNABLE TO REACH BOTTOM

ELECTRIC LOGS RUN:
RUN 1: GR-SDT-MLL-DLL-CAL
LDL-CNL
RUN 2: GR-MDT