

NORWAY

PL 067

2/5

Central Graben

SH8903-103, SP 370.8

Polar Frontier Drilling

4715m MD, 4676m TVD (-4653.5m)

4721m MD, 4682.5m TVD (-4659.5m)

82-411, SP 484.1

Polar Pioneer (Semi-submersible)

TRIASSIC

13/9/93

23m

2m

65m

27/8/93

North Sea

**COUNTRY:** 

AREA:

LICENCE :

RIG (TYPE):

CONTRACTOR:

T.D. (DRILLER):

T.D. (LOGGER):

T.D. (FORMATION):

T.D. (REACHED):

FIRST FLANGE:

**WATER DEPTH:** 

SPUD DATE:

KB:

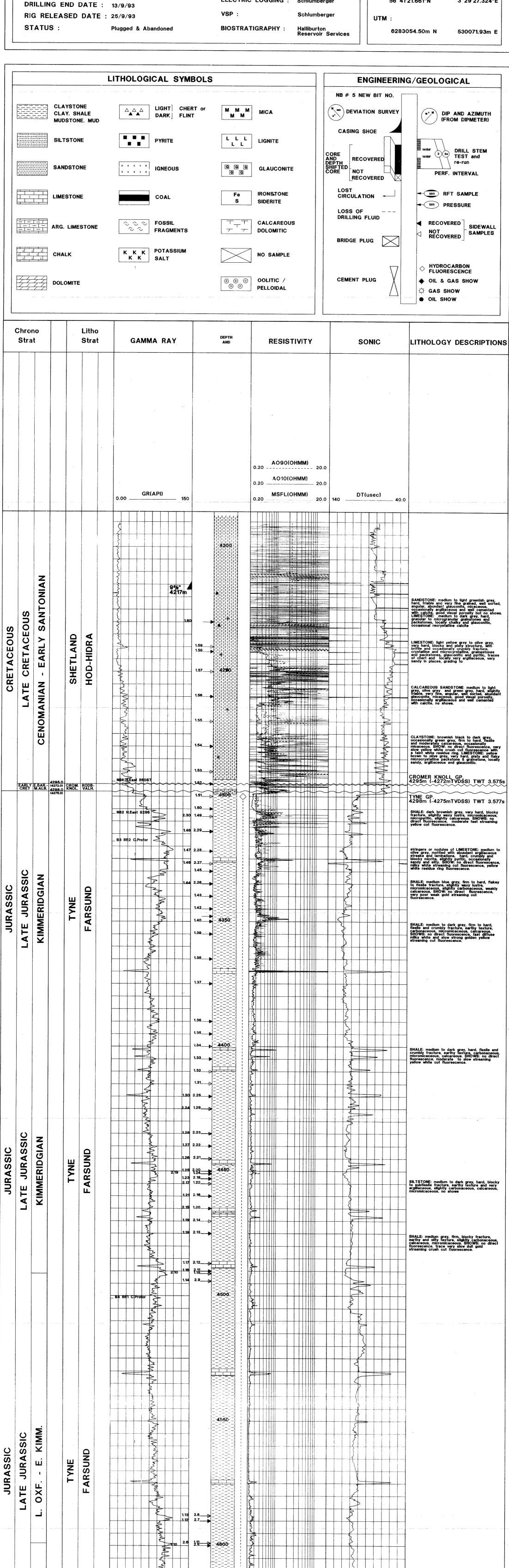
SEISMIC LINE + S.P. :

**BLOCK:** 

2/5-10ACOMPOSITE LOG

LOCATION MAP **OPERATOR:** Norsk Agip (40%) PARTNERS: Statoil (50%) Phillips (10%) GEOLOGIST(S): T.Herrett T.Watts DRILLING ENGINEER(S): N.Bronzi F.Sirchia **⇔**\$ DRILLING SUPERVISOR(S): **G.Conway** E.Hinterlang S.Jeffery R.Kennedy 3 40E MUD LOGGING/ MWD : Baker Hughes Inteq **MUD ENGINEERING:** Schlumberger (IDF) LAT: LONG : **ELECTRIC LOGGING:** 56° 41'21.661"N Schlumberger 3°29'27.324"E

Scale 1:500



	rono trat			Litho Strat		GAMMA	RAY		DEPTH AND LITH		RESIST	IVITY	so	NIC	LITHO	LOGY DE	SCRIPTIO
<del> </del>		*****		HOL	E & C/	SING				]				MUD			
HOL	LE INTERVA		VAL	L CSG. C		CSG. SHOE	CSG. LENGTH	CSG. WEIGHT (lb/ft)	CSG. GRADE	tan di tanggan dan pertagan di termasan teng	HOLE	INTERVAL	MUD TYPE	MUD WEI	GHT (SG)	VISCOSITY (FUNNEL)	WL (API)
8 3/	8"	4292-47	15 m								8 3/8"	4292-4715 m	HPHT polymer	2.03-2	.06	55	2-2.5
			-														
										J							
RUN Nr	HOLE	E	DRIL.	LED RVAL	IN DATE OUT DATE TOOL TYPE MWD CIRC. SURVEY LOGS COM				СОММЕ	NT							
1	8 3/8"	он	4292-4		26/8-16:05	28/8-23:0	0 6 3/4	" D	MWD	44	O DIR						
2	8 3/8"	он	4306-4	318 m	26/8-23:30	30/8-19:00	6 3/4	" D	MWD	25.5	O DIR						
3	8 3/3"	он	4318-4	500 m	30/8-21:00	05/9-08:0	0 6 3/4	" DG	MWD	118.5	14	14 GR/DIR		<del></del>			
4	8 3/8"	ОН	4500-4	l612 m	05/9-16:30	08/9-17:00	6 3/4	" DG	MWD	59.5	16	GR/DIR					
5	8 3/8"		4631-4		10/9-11:50	11/9-04:10			MAD	5	1	GR/DIR					
6	8 3/8"	ОН	4640-4	1715 m	12/9-01:30	13/9-22:00	6 3/4	" DPR	MWD	21.2	8	GR/RAR/RPI	D/DIR	GAMMA EF	RRATIC REA	ADINGS	
											· ·						
	············						<del></del>	· ·	WIREL	INE L	ogs	\					
OP Nr	RUN Nr	HOLE		INTERV (LOGGE	AL R)	TD (DRILLE	R)		LOGS			C	DPERATIONAL	PROBLEM		DATE	внт°С
1	A-1	8 3/8	t-	4219-4715	m	4715m		Al'	T/BHC/MSFL	/GR/AMS		,				14/9/93	144
1	A-2	8 3/8	"ОН	4219-4711	m	4715m	1	LD	L/CNL/NGS	FMS/AMS					l	14/9/93	149

CBL-VDL/GR

VSP

CB1 D.Boart CD930

CB1 RR1 1 Boart CD93

\_B4 RR2 C.Proter

GR(API)

M

4650

4700

2.2\_\_

2.1\_

4616.0 (4569.5)

OXFORDIAN

ATE

JURASSIC

ATE

TRIASSIC

SST

JURASSIC

UPPER

SKAGERRA

HEGRE

4715.0

8 3/8" OH 8 3/8" OH

GROUP

CROMER-

TYNE

4308.1m

FORMATION

FARSUND

SKAGERRAK

UPPER
VESTLAND JURASSIC SS

FARSUND FM.

10P LD

RKB

4295m

**4298**m

4616m

4673m

FORMATION TOPS

TOP TVD

SSL

4272m

4569.5m

**4617**m

THICKNESS

57m

42m

BOTTOM BOTTOM

LD RKB TVD SSL

4298m

4673m

4715m

4275m

4569.5m

4617m

4657m

3000-4715 m

4715m

VESTLAND

VESTLAND GP. 4616m(-4569.5mTVDSS) TWT 3.795s

SHOW(4623-24m): strong h/c odour, oil stained, bright yellow white direct fluoresc streaming milky white cut, white residue fluorescence

SANDSTONE: olive grey & brown grey, very fine to fine, hard, friable, subangular to subrounded, well sorted, silica cement, patchy dolomitic matrix, micromicaceous, occasional bloturbated argillaceous material, traces of kaolinite and chlorite, fair occasionally good porosity & permeability. SHOWS: very poor, no fluorescence, trace weak cut fluorescence

SANDSTONE: light greyish white, firm, friable, very fine grained, rounded to subrounded, occasional red stained grains in an argillaceous control of the stained grains in an argillaceous categories of the stained grains and the stained grains are stained grai

fluoreacence.

CLAYSTONE: medium blue grey, hard, blocky structure, earthy texture, elity with traces of fine sand, carbonaceous, micromicaceous, weakly calcareous. SHOW: no direct fluoreacence, trace very slow blooming dull gold cut.

HEGRE GP.

4673m (-4617mTVDSS) TWT 3.823s

stringers of LIMESTONE: off white to yellow greenish grey, firm to moderately hard, blocky fracture, cryptocrystalline wackestone, slightly argillaceous and dolomitic.

157

16/9/93 17/9/93

Drillers Depth : 4715 mMD, (-4653.5 mSS) Loggers Depth : 4721mMD, (-4657 mSS)

20.0

DT(usec)

MSFL(OHMM)

AO10(OHMM)

A090(OHMM)

			SIDEWALL	CORES		ĺ				BOT	TOM H	HOLE CO	ORES	
swc Nr	DEPTH	TOOL TYPE	FORMATION	LITHOLOGY	shows	RESULT	COR Nr	E DEPTH	FORMATION	AGE		LIT	HOLOGY	shows
4A6.1 2	4704m 4695,1m	CST	TRIASSIC TRIASSIC	SILTY SST SANDY SLTST	NO NO	RECOVERED RECOVERED	1	4612	UPPER JURASSIC	UPPER JUR			, very fine grained, very	NO
3	4671.9m		UPPER JURASSIC SST.		"	EMPTY	<u>                                   </u>	1	UPPER JURASSIC		well s	sorted.		
4 5	4666.9m 4658.1m		UPPER JURASSIC SST.	CLST	YES	RECOVERED EMPTY		4613	SST	UPPER JUR				NO
6	4655.1m	1	UPPER JURASSIC SST.	SST	YES	RECOVERED	ĺ	4614	UPPER JURASSIC SST	UPPER JUR		medium-dark grey, very d. siitv.	tine grained, very well	NO
7 8	4650m 4618m		UPPER JURASSIC SST. UPPER JURASSIC SST.			MISFIRED MISFIRED		4615	UPPER JURASSIC SST	UPPER JUR	l	a, on.y.		NO
9	4610m		FARSUND FM.		<b>1</b>	MISFIRED		4019	UPPER JURASSIC	OFFER JUN		light to medium-dark gr	rev wary fine grained	oil stain: direct cut
10	4600m		FARSUND FM.		1	MISFIRED		4616	SST	UPPER JUR	ASSIC 1	•	ited, dark grey burrows,	resid but yellow that
11 12	4599m 4590.1m	<del>                                     </del>	FARSUND FM.			MISFIRED MISFIRED	.	4617	UPPER JURASSIC SST	UPPER JUR	ASSIC	•		NO
13 14	4588.1m 4494.1m		FARSUND FM. FARSUND FM.			MISFIRED		4618	UPPER JURASSIC	LIDOED KID	1000			NO
15	4494.1m 4491,1m	-	FARSUND FM.			MISFIRED MISFIRED	<del></del>	4010	SST UPPER JURASSIC	UPPER JUR	ASSIC			
16	4490.1m		FARSUND FM.			MISFIRED		4619	SST	UPPER JUR				NO
17 18	4487.1m 4475.1m		FARSUND FM.			MISFIRED MISFIRED		4620	UPPER JURASSIC	UPPER JUR		light-medium grey, very ne, well sorted, slightiv	fine grained, grading to	NO
19	4470.1m		FARSUND FM.			MISFIRED	<u> </u>		UPPER JURASSIC	1	antatu	ine, men surreu, sayareş	varva tivis.	NO
20 21	4465m 4460.1m	<b></b>	FARSUND FM. FARSUND FM.			MISFIRED MISFIRED	<u> </u>	4620.8	UPPER JURASSIC	UPPER JUR	ASSIC		¥	
22	4455m		FARSUND FM.	1		MISFIRED	2	4621.5	SST	UPPER JUR				NO
23 24	4453.1m 4451.1m	<del></del>	FARSUND FM.			MISFIRED MISFIRED	1	4622	UPPER JURASSIC SST	UPPER JUR			very fine grained, very well	NO
25	4450.1		FARSUND FM.			MISFIRED		1	UPPER JURASSIC		thin si	l, non calcareous, bivalv Etstone.	re shells, interbedded with	LIA
26 27	4445.1m 4440m		FARSUND FM.		ļ-	MISFIRED MISFIRED		4623	SST HODER HIRASSIC	UPPER JUR	ASSIC			NO
28	4435.1m	<b>†</b>	FARSUND FM.			MISFIRED		4624	UPPER JURASSIC SST	UPPER JUR	ASSIC			NO
29 30	4425m		FARSUND FM.			MISFIRED		4625	UPPER JURASSIC	UPPER JUR	A 0010			NO
30	4420m 4414.9m	-	FARSUND FM.		<del> </del>	MISFIRED LOST		4023	UPPER JURASSIC	<b>+</b>	ASSIC			
32	4410.1m		FARSUND FM.			EMPTY		4626	SST	UPPER JUR	ASSIC			NO
33 34	4405m 4400m	<del> </del>	FARSUND FM. FARSUND FM.	SHALE SHALE	YES	RECOVERED RECOVERED		4627	UPPER JURASSIC SST	UPPER JUR	ASSIC			NO
35	4395m		FARSUND FM.	SHALE	YES	RECOVERED		4000	UPPER JURASSIC	10000 000	SLTS1	T: medium-dark grey, fin	ely interlaminated.	NO
36 37	4390m 4375.1m		FARSUND FM.	SHALE Shale	YES	RECOVERED RECOVERED		4628	SST UPPER JURASSIC	UPPER JUR	ASSIC		•	
38	4365m		FARSUND FM.	SHALE	YES	RECOVERED	ļ	4629	SST	UPPER JUR	ASSIC			NO
39 40	4355.1m 4350.1m	<b>_</b>	FARSUND FM.	SHALE	YES	RECOVERED		4630	UPPER JURASSIC	UPPER JUR	ASSIC SST:	light grey, very fine grai	ined.	NO
41	4347.7m		FARSUND FM.	SHALE SHALE	YES	RECOVERED RECOVERED			UPPER JURASSIC		SI TST	T: medium-dark grev. fin	ely interlaminated fine and	, NO
42 43	4345.1m		FARSUND FM.	SHALE	YES	RECOVERED		4631	SST	UPPER JUR			burrowing, intensity bioturbated	i. NO
44	4339.7m 4335.1m		FARSUND FM.	SHALE	YES	RECOVERED EMPTY		4631.	UPPER JURASSIC SST	UPPER JUR	ASSIC			NO
45	4330.1m		FARSUND FM.	SHALE	YES	RECOVERED	3	4631.	UPPER JURASSIC	UPPER JUR	A C C IC			NO
46 47	4327m 4322m	+	FARSUND FM. FARSUND FM.			EMPTY LOST		3007.	UPPER JURASSIC		AJOR			
48	4314.1m		FARSUND FM.			EMPT Y		4632		UPPER JUR	ASSIC			NO
49 50	4308.1m 4305m	<u> </u>	FARSUND FM.	SHALE	YES	EMPTY RECOVERED		4633	UPPER JURASSIC SST	UPPER JUR	ASSIC			NO
51	4300m	1	FARSUND FM.			EMPTY		4634	UPPER JURASSIC	UPPER JUR	1000			NO
52 53	4295m 4290.1m	-	CROMEF: KNOLL GP. HOD-HIDRA FM.	SHALE	NO	RECOVERED EMPTY		4034	UPPER JURASSIC	<del></del>	MODIC			Additional Control of
54	4280m		HOD-HIDRA FM.	LMST	NO	RECOVERED		4635	SST	UPPER JUR	ASSIC			NO
55 56	4270m 4260m	-	HOD-HIDRA FM. HOD-HIDRA FM.	LMST	NO	EMPTY RECOVERED		4636	UPPER JURASSIC	UPPER JUR	ASSIC		-	NO
57	4250m		HOD-HIDRA FM.	LM31	1	EMPTY		4607	UPPER JURASSIC		10016			NO
58 59	4242m 4240m		HOD-HIDRA FM.	LMST	NO	RECOVERED MISFIRED		4637	UPPER JURASSIC	UPPER JUR	ADDIC	,		
60	4230.1m		HCD-HIDRA FM.	LMST	NO	RECOVERED		4638	SST	UPPER JUR	ASSIC			NO
1 2	4655m 4650m	CST	UPFER JUR. SST UPFER JUR. SST	CLYST	YES YES	RECOVERED		4639	UPPER JURASSIC SST	UPPER JUR	ASSIC			NO
3	4618.1m		UPI'ER JUR. SST	SST SST	YES	RECOVERED RECOVERED		T	UPPER JURASSIC	:				NO
4 5	4610m 4600m		FARSUND FM. FARSUND FM.	SHALE	NO	RECOVERED		4640	UPPER JURASSIC	UPPER JUF				
6	4500m 4599.1m	<del>                                     </del>	FANSUND FM.	SHALE	NO	PARTLY RECOVERED LOST		4640.		UPPER JUF	ASSIC			NO NO
7	4590m	1	FARSUND FM.	SLTST	NO	PARTLY RECOVERED								
8 9	4588m 4494m	+	FARSUND FM.		-	EMPTY EMPTY	le:===							
10	4491m		FARSUND FM.			EMPTY				1	RFT -	MDT		
11 12	4490.1m 4487m		FARSUND FM. FARSUND FM.	SHALE	YES	PARTLY RECOVERED EMPTY								
13	4475m		FARSUND FM.	SHALE	YES	PARTLY RECOVERED	S <sup>1</sup>		LE DEPTH	TVD DEPTH	TCOL TYPE	PROBE TYPE	GAUGE	RESULT
14 15	4470.1m	+	FARSUND FM. FARSUND FM.	SHALE	YES	LOST RECOVERED				4595.3m	MOT	CONVENTIONAL		ABANDONED
16	4460m		FARSUND FM.	SHALE	YES	RECOVERED	1A		13 4620.1m		MRL/ I	CONTENTIONAL	III SIRAN	
17 18	4455.1m 4453m		FARSUND FM.	SLYST	NO	EMPTY PARTLY RECOVERED	<b> </b>		4625.95m	4600.4m			<b></b>	DRAWDOWN DRAWDOWN
19	4451m	1	FARSUND FM.	SHALE	NO	RECOVERED			17 4619.05m	4594.3m	Andrea a		<b></b>	
20 21	4450m 4445m		FARSUND FM. FARSUND FM.	SHALE	YES	RECOVERED			18 4624.1m	4598.6m		1	<b> </b>	DRAWDOWN
22	4440m		FARSUND FM.	SHALE	YES	MISFIRED PARTLY RECOVERED	<u> </u>		19 4624.65m	4599m				ABANDONED
23	4435m		FARSUND FM.	SHALE	YES	PARTLY RECOVERED	<u> </u>		50 4627.55m	4602m		<b>-</b>	<b> </b>	LOST SEAL
24 25	4425.1m 4420.1m	+	FARSUND FM.	SHALE	YES	MISFIRED RECOVERED	ļ		51 4630.1m	4603.6m		<u> </u>		DRAWDOWN
26	4335m		FARSUND FM.	SHALE	YES	RECOVERED	<b> </b>		52 4634.05m	4607m		1		DRAWDOWN
27 28	4327m 4322.1m		FARSUND FM. FARSUND FM.	SHALE	YES	MISFIRED PARTLY RECOVERED			53 4639.05m	4611.2m				LOST SEAL
29	4314m		FARSUND FM.	SHALE	YES	RECOVERED	<b> </b>		54 4639.05m	4611.2m			ļ	LOST SEAL
			<u> </u>						E 40570E					DD 4 MD CMM

	COVERED		6	50	4627.55m	4602m				LOST	SEAL
SF	RED		7	51	4630.1m	4603.6m				DRAW	DOWN
	VERED		8	52	4634.05m	4607m			The state of the s	DRAW	DOWN
	VERED IRED		9	53	4639.05m					LOST	SEAL
R	ECOVERED		10	54	4639.05m					LOST	
	VERED IRED		11	55	4657.05m	4625.7m				DRAW	
	and the second s	Name and the control of the control	12	56	4663.3m	4631.2m			a desir di in transcription de	NORI	
			13	57	4688.05m					DRAW	
			14	59	4616m	4591.9m		<u> </u>		ABAND	
1			15	60	4617m	4592.7m				DR	
;	TWT		12	00	4619m	4594.25m				SAMPLI	
					4624.1m					SAMPLE	
						4598.6m				SAMPLE	
_	3.575				4630m	4603.5m				SAMPLE	
	3.577				4657m	4625.65m				SAMPLI	: NU.4
	3.795							·			
	3.823			·····			<del> </del>				
	3.823										
										·····	
									<u> </u>		
-					<u> </u>		***	<u> </u>	4		······································
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