OFFSHORE NORWAY

PL 229 - BLOCK 7122/7,8,9,10 & 7123/7

Report title:

WELL 7122/7-2

FINAL WELL REPORT

Abstract:

This report deals with the geological and drilling results of well 7122/7-2.
In section 1 general information is reported. Section 2 comprises a geological summary and a description of the acquisition of data with their interpretation. Section 3, the drilling report, details all drilling operations and results.
Enclosed are the composite log, the computer processing interpretation of the reservoir section and the well test report.

Note:

Date: April 2002	**Report no.:**	
Prepared by:	**Verified by:**	**Approved by:**
D. Stensland (Subs. Geol.)	J. Seldal (Proj. Leader.)	F. Conticini (Exp. Manager)
T. Austlid (Drilling Eng.)	M. Zuvo (Drl. Manager)	

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1. GENERAL

1.1 Introduction

The 7122/7-2 well is an appraisal well of the oil discovery done by well 7122/7-1 in year 2000. This is the first appraisal well on the Goliath field and the well is located to test the central fault compartment to the west of the already proven eastern compartment of the field.

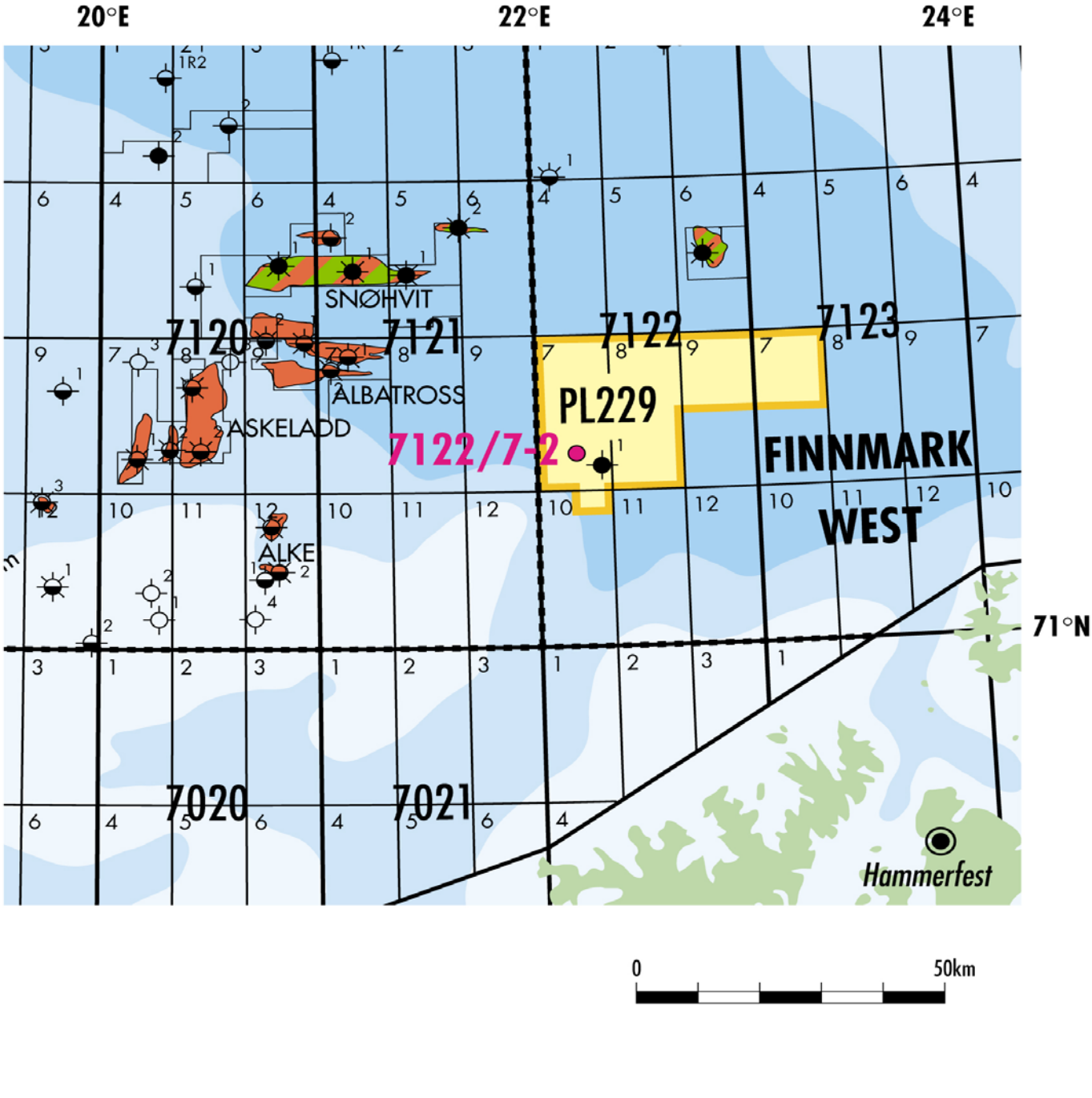
The purpose of drilling the well was to test the hydrocarbon potential of the central fault compartment to the west of the discovery well 7122/7-1, and to see if a deeper oil/water contact could be proved.

Costs of this well were shared in the following percentages:

Norsk Agip:	25%
Phillips	25%
Statoil:	20%
Enterprise:	15%
Fortum :	15%

The 7122/7-2 well was drilled in 2001 to a total depth of 1418 m and oil was discovered in sandstones of the Realgrunnen Group. The top of the reservoir was found at 1078 m RKB and the OWC at 1153.8 m RKB.
The well was tested.
Test intervals: 1078-1106 m, 1127-1136 m RKB.
The best flow was 685 m^3/day of a 33.5^0 API oil through a 48/64" choke. The GOR was 59 m^3/m^3.

1.2 Location map



1.3 Basic Well Data

COUNTRY	:	Norway	
AREA	:	Barents Sea	
PRODUCTION LICENCE No.	:	PL 229	
BLOCK	:	7122/7, 8, 9,10 & 7123/7	
WELL NAME	:	7122/7-2	
PROSPECT	:	Goliath	
SEISMIC REFERENCE	:	NA9801-3D	
		inline 710, crossline 3000	
COORDINATES (ED-50)	:	N 71deg 17min 28.46 sec	
	:	E 22deg 16min 57.22 sec	
	:	545 915.0 East, 7 910 579.5 North.	
TOLERANCE	:	50 m in any direction	
DISTANCE	:	85 km from Shore Base	
SPUDDING CLASSIFICATION	:	Appraisal	
WATER DEPTH	:	377 m	
RKB ELEVATION	:	18 m	
RKB-SEA FLOOR	:	395 m	
TOTAL DEPTH	:	1418 m RKB	
PRIMARY TARGET	:	Realgrunnen Group	
DEPTH TO PRIMARY TARGET	:	1078 m RKB	
TARGET TOLERANCE	:	Radius of 50 m	
DRILLING RIG	:	West Alpha	
OPERATOR	:	Norsk Agip A/S	25%
PARTNERS	:	Phillips Petroleum Company Norway	25%
		Statoil ASA	20%
		Enterprise Oil Norwegian A/S	15%
		Fortum Petroleum A/S	15%

2. GEOLOGY AND GEOPHYSICS

2.1 GEOLOGICAL SUMMARY

All depth in the geological part of the final well report is referred to RKB if not otherwise is mentioned

The purpose for drilling the well 7122/7-2 was to apprise the potential of the Realgrunnen Group in the central fault compartment of the Goliath structure, and to see if a deeper oil/water contact could be proved. The main, eastern compartment was proven oil bearing by the exploration well 7122/7-1 drilled in year 2000.

The Goliat field is a faulted structural closure in the crestal part of a major Northeast-Southwest trending roll-over anticline situated in the southeastern part of the Hammerfest Basin.

The top of the main reservoir was found at 1078m (1060m TVDSS), 9m abowe the prognosis. The reservoir was oil bearing. The well was cored from 1075 to 1160m. The well was tested after final wirline logging at a Total Depth of 1418m.

Well 7122/7-2 Prognosis vs Actual

Location NA9801, line 680, trace 2784 X = 545 915.0, Y = 7 910 579.5 BRT = 18 m

Tops	Calibr. Sonic Log TWT (sec.)	Progn. Depth (m MSL)	Progn. Depth (m RKB)	Actual Depth (m MSL)	Actual Depth (m RKB)	Delta (m)	%
Sea Floor	0,51	377	395	377	395	0	0 %
Base Tertiary Unc.	0,709	579	597	582	600	3	1 %
Upper Cretaceous Unc.	0,747	621	639	620	638	-1	0 %
Top Knurr Fm.	1,044	970	988	968	986	-2	0 %
Lower Cretaceous Unc./ Hekkingen Fm	1,069	1005	1023	1003	1021	-2	0 %
Fuglen Fm	1,107	1058	1076	1049	1067	-9	-1 %
Top Realgrunnen Gp.	1,114	1069	1087	1060	1078	-9	-1 %
OWC	1,162			1135,8	1153,8		
Top Ingøydjupet Gp./ Top Snadd Fm.	0,1188	1180	1198	1177,5	1195,5	-2,5	0 %
Top Middle Snadd Sst.	1,286	1353	1371	1343	1361	-10	-1 %
TD	1,321	1400	1418	1400	1418		

2.2 MAIN RESULTS

The well was drilled to a total depth of 1418m (drillers and loggers depth) and terminated in the middle Snadd Sandstone Formation. The oil reservoir of The Realgrunnen Group was encountered at 1078m, 9m abowe the prognosed depth. (Fig.2.2.1). Free water level was found at 115.8m based on the MDT pressure plot (Fig.2.7.2) and log interpretation.

Good to very good shows were observed in cuttings, and conventional cores from 1078m to 1153m. Evidence of water wet sand was seen on core chips from 1155m. Maximum total gas was 8.52% at 1135m.

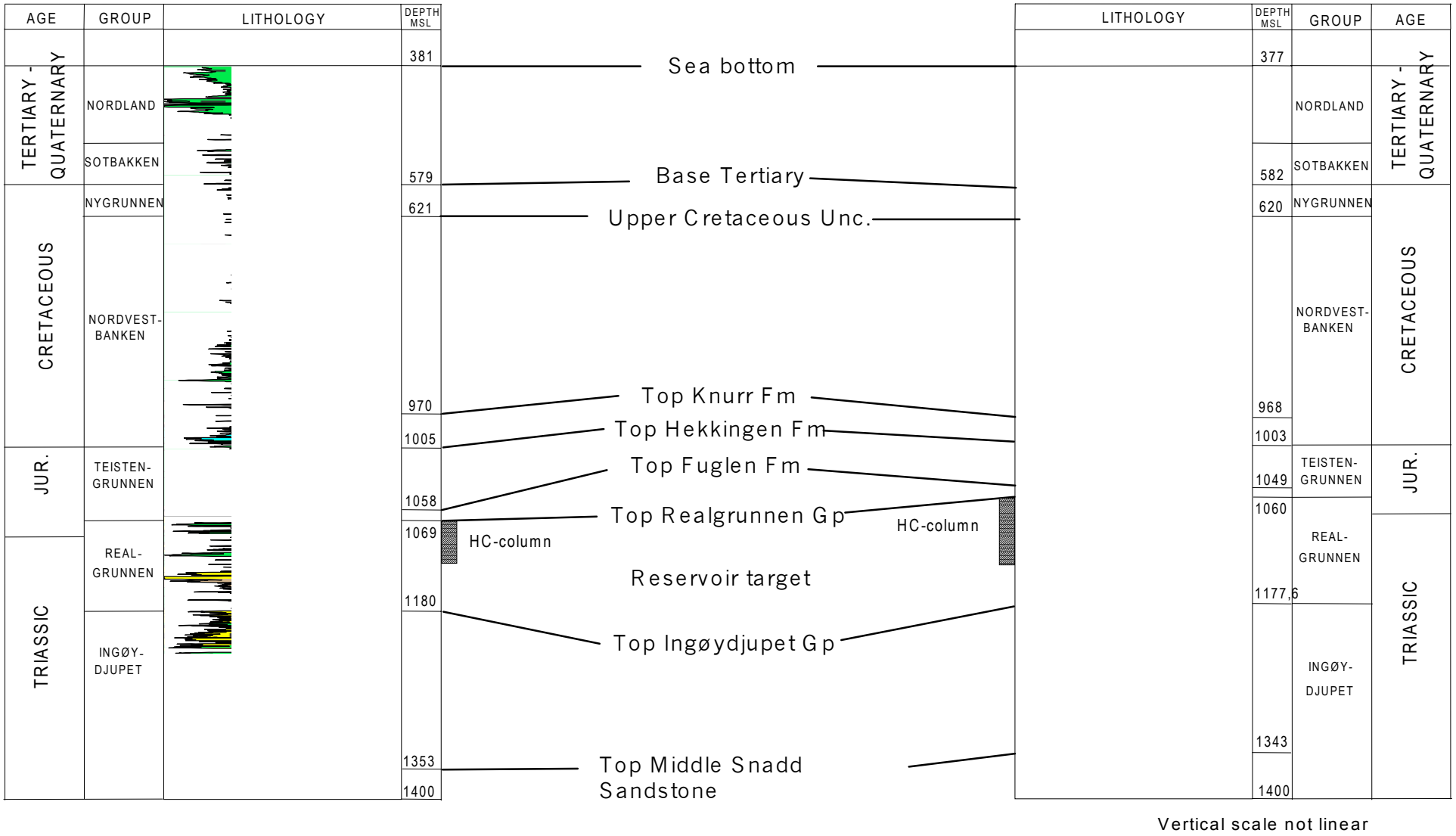
Hydrogen sulphide was recorded as 6 to 25 ppm at app1075m. Appropriate safety and testing precautions in accordance with Norsk Agip procedures were put into effect. A MDT sampling taken at 1078m proved that the reservoir do not contain any H_2S. This was confirmed during the DST.

One DST was performed in the well.

Perforated intervals: 1078-1106 and 1127-1136.5m

Best flow:	Choke:	48/64”
	Oil flow:	685 m^3/d
	Gas flow:	40.4 Km^3/d
	GOR	59 m^3/m^3
	Oil density:	33.5^0 API

The well was plugged and abandoned after testing.


Pre-Drilling 7122/7-2
Post-Drilling 7122/7-2
AGE
GROUP
LITHOLOGY
DEPTH MSL
TERTIARY - QUATERNARY
NORDLAND
SOTBAKKEN
CRETACEOUS
NYGRUNNEN
NORDVEST-BANKEN
JUR.
TEISTEN-GRUNNEN
TRIASSIC
REAL-GRUNNEN
INGØY-DJUPET
381
579
621
970
1005
1058
1069
1180
1353
1400
Sea bottom
Base Tertiary
Upper Cretaceous Unc.
Top Knurr Fm
Top Hekkingen Fm
Top Fuglen Fm
Top Realgrunnen Gp
HC-column
Reservoir target
Top Ingøydjupet Gp
Top Middle Snadd Sandstone
HC-column
377
582
620
968
1003
1049
1060
1177,6
1343
1400
Vertical scale not linear

2.3 DATA ACQUISITION

2.3.1 Routine Sampling

Cuttings were collected and described offshore by Baker Huges Inteq personnel (see Mudlogging Final Well Report) and revised by the Norsk Agip wellsite geologist.

The cuttings sample interval was:

- Every 4m from the 13 3/8" casing shoe at 900m down to TD at 1418m.
  During coring samples were taken every 1 m.

Exceptions were made during fast ROP sections and also during sections over which Hydrogen Sulphide gas was indicated by sensors and Norsk Agip safety procedures in the shakers prevented sampling personell from taking samples,

Approximately 4 kgs of unwashed cuttings were collected offshore and sent to Reslab for preparation and distribution according to NPD and partner's requirements.

Composite geochemical bulk samples in cans with bacteriacide were taken every 12m from the top of the Hekkingen Fm and every 100m below the cored interval.

Mud samples were taken throughout the well at relevant intervals.

2.3.2 Shows

During drilling of the pilot hole section to 900m the LWD Schlumberger sonic amplitude and sonic/ noise ratio was run for detection of shallow gas. A possible gas anomaly prognosed at 450m proved to be a water bearing sand. Gas was detected at 610m, but the pressure was low enough to be controlled by the drilling fluid hydrostatic pressure. No further indications of shallow gas were noted during the drilling of the pilot hole.

The evaluation of hydrocarbon gas was carried out at the wellsite by B.H.I. A standard gas trap and digital gas chromatograph from 900m to 1418m. Gas values were consistent in quality through out the well.

Hydrocarbon shows on cuttings, cores were described by Norsk Agip's wellsite geologist.

In the 12¼" hole section total gas values predominantly ranged from 0.27% to 0.9% to 1070m. At the corepoint at 1075m the gas content increased to 2.33%. From 1075m to the base of coring at 1160m, gas values ranged between 0.25 to 4.79%. Thereafter the background gasses decreased down to 0.15 near TD.

Oils shows were noted from cuttings sample at 1062m, where the siltstones had a light brown natural fluorescence with slow blooming white cut and no residual fluorescence.
The cored interval from 1075 to 1160m had oil shows. In the upper part the shows were light to medium brown becoming medium to dark brown stained, initially with no natural fluorescence which rapidly became variable dull to bright yellow. The cut was variable instant white occasionally blue white blooming that streamed in parts. Residue was nil with white to blue white fluorescence.

The shows below the cored section were generally thought to be residual until 1286m where no further shows were recorded.

Reference should be made to the bottom hole core reports

2.3.3 Measurements while Drilling and Wireline Logs

From spud to 910m Anadrill CDR – I-Sonic were run whilst returns were made to the seabed. The Measurement while drilling directional package gave main drilling and directional parameters like Azimuth and inclination.
Below the 13 3/8" shoe Anadrill directional, gamma ray and resistivity were run in the 12 ¼" hole as per table below.

Run No	Hole Diam	Drilled Intvl.	Tool Type	Logs	Op. Mode
0100	12 1/4"	395-910m	81/2" CDR-ISONIC	GR/Dir/Res/Sonic	Drilling
0200	12 1/4"	910-1075m	8 ¼" CDR	GR/Dir/Res	Drilling
	8 ½"	1075-1160m	None		coring
0300	12 1/4"	1075-1418	8 ¼" CDR	GR/Dir/Res	Drilling

No problems were experienced with the tools run or decoding of data.

2.3.4 Wireline Logs

The following is a summary of the 8 ½" hole wireline logs run in the well.

Run No	TYPE OF LOGS	RECORDED INTERVAL m	DATE	SERVICE STARTED Hrs.min	SERVICE ENDED Hrs.min	TOTAL TIME Hrs.min	LOST TIME Hrs.dec.	TIME SINCE CIRC Hrs.dec.
1	MDT	1080	29.09.01					
2	HRLA – PEX – GR	1419-900	01/10/01	12:15	17:00	4,75	NIL	5,5
3	CMR – APS – HNGS	1419-900	01-02/10	17:45	00:30	6,75	NIL	11,50
4	FMI – DSI	1419-900	02/10	01:05	07:00	5,92	NIL	17,42
5A	MDT		02/10	07:55	17:30	9,9	6,67	34,09
6	VSP	1415-465	02-03/10	18:25	00:10	6,75	NIL	34,09
5B	MDT		03/10	16:15	21:00	5,25	2	9,5
5C	MDT	1162	03-04/10	21:30	02:00	3,5	3,5	13

Comments:
The MDT run 1 was performed to sample the top of the reservoir due to H_2S warning.
No H_2S was detected in the sample.
The MDT 5A failed and a new MDT tool had to be brought out to the rig.

Cablehead tension, total tension and borehole temperature was included in all runs.

Total lost time for wireline logging was 12 hours.

2.3.5 Formation Pressure

Baker Huges performed the pore pressure evaluation while drilling supervised by the Norsk Agip well site geologist.

Gas was detected at 610m, but the pressure was low enough to be controlled by the drilling fluid hydrostatic pressure. No further indications of shallow gas were noted during the drilling of the pilot hole.

The predominantly claystone formation remained normally pressured in the 17 1/2" hole to 900m,

The 12 1/4" section comprised interbedded claystones and sandstones which made pore pressure estimates difficult during drilling, but all readings indicated a normal hydrostatic pressure.
MDT readings indicated a maximum pore pressure of 1.11sg (119.50 bar) at 1079m

2.3.6 Formation Temperature

The extrapolated static bottom hole temperature (SBHT) from wireline logs is 36^0C at 1418m(Logger's TD). This value gives a geothermal gradient of 3.5^0C / 100m. (Fig 2.3.2)

2.3.7 Side wall cores

No side wall cores were taken in this well.

2.3.8 Bottom hole cores

Five bottom hole cores were cut according to the programme. The coring program was intended to acquire petrophysical, stratigraphic, and sedimentological data in the potential reservoir.

For the first time in Norway a " Half Moon aluminum" inner tube was used while coring. By this technique it was possible to take images in white and UV light of the full core immediately after the core was recovered. The core images was filed together with the core gamma and only hours after the core was on the drill floor, all involved parties had a full description of the core with core gamma and images in white and UV light. This technique was useful both for operational reasons to decide for further coring and for planning the core analysis program.
The 5 cores were cut from 1075m to 1160m. The core gamma and images taken at the rig site is shown in figure 2.3.3.

A full core analysis was made onshore (see separate report).

Below is the well site core report summary:

Well name: 7122/7-2 **Licence:** PL 229

Core No: 1 **Interval:** 1075m - 1089m **Core Rec:** 1075 – 1087,4m **Recovery:** 88%

Group: Realgrunnen **Age:** Lower Jurassic

Barrel size: 8 ½" Barrel type: **Half moon** **Core purpose:** appraisal

Depth MRKB	Lithology	Grain Size	Description	Shows + Rating	Porosity
1075	Sandstone	Vf-f	Subr-round,wk-mod cmt,.	No fluor. Inst.weak blooming cut Med. dark brown oil stain	fair
1076	Sandstone	Vf – f	a/a , micaceous	No fluor. Inst.weak blooming cut Med. dark brown oil stain	Poor-fair
1077	Sandstone	Vf – f	qtz, lt –m brn, sbrnd-round, w srt, mod cmt, muscovite present	No fluor. Inst.weak blooming cut Med. dark brown oil stain	Pr vis
1078	Sandstone	m-c	Qtz, f- c loose, subr-round, unconsoliated	Bright yellow fluorescence, instant milky to blue white blooming cut Med. dark brown oil stain	good
1079	Sandstone	F - m	Qtz, lt – m brn, occ m gy,subang.tu subround,occ weak silty cmt	Dull yellow fluor, instant milky to blue whitish cut Med. dark brown oil stain	good
1080	Sandstone	M – c	Pred. Loose Qtz grains, subround.-round, occ. Weak arg. Cmt,	2.3.9 Dull yellow fluor, instant milky to blue white cut Med. dark brown oil stain	good
1081	Sandstone	M –C	Pred. Med grained loose Qtz grains, no vis. Cmt.,	Bright yellow fluorescence, instant milky to blue white blooming cut Med to light brown oil stain	V gd vis
1082	Sandstone	M-C	Loose Qtz, abundant gravels (5 mm), occ weak silty cmt,	Bright yellow fluorescence, instant milky to blue white blooming cut Med to light brown oil stain	V gd vis
1083	Sandstone	f-m	Pred. Loose Qtz , occ.weak cmt.	Bright yellow fluorescence, instant milky to blue white blooming cut Med to light brown oil stain	Fair to good
1084	SST/ Claystone	f	Fine grained sst, well cmt grading to siltstone and claystone		non
1085	Sandstone	Vf	Very fine sst grading to siltstone	Instant dull blue blooming cut, light brown oil stain	fair
1086	Claystone		Grey to dk. Grey, occ brown to grey, firm to hard,micaceous		
1087	Claystone		Grey to dk. Grey, occ brown to grey, firm to hard,micaceous		

Remarks: core barrel jammed off in claystone.

Core Interval: 1089m - 1109m	**Core Rec:** 1089 – 1105,5	**Recovery:** 82%
No: 2		

Group: Realgrunnen		**Age:** Lower Jurassic
Barrel size: 8 ½"	Barrel type: **Half moon**	**Core purpose:** appraisal

Depth mRKB	Lithology	Grain Size	Description	Shows + Rating	Porosity
1089	Sandstone	Vf-f	Angular-subr,occ loose grains,wk cmt,.	Dull yellow fluor, inst. Blue to white blooming cut. Light to med brown oil stain.	fair
1090	SLTST		angular to sub-rounded quartz grains, cement getting tighter,	dull yellow fluorescence, instant blue to white blooming cut	Poor
1091	SLTST		A/a	A/a	Poor
1092	SLTST		dark grey, hard, occasionally fissile, shaly, muscovite is present	none	
1093	SLTST		A/A	Non	
1094	Shale		medium to dark grey, occasionally brown to grey, hard, occasionally silty, micaceous,	None	
1095	A/A		A/A	None	
1096	Shale		A/A becoming silty	None	
1097	SLTST		angular to sub-rounded quartz grains, weak cement, grading to very fine sand in places	bright yellow fluorescence, instant blue to white blooming cut	
1098	SLTST/ SST	Vf	quartz grains, angular to sub-rounded, occasionally loose, very weak cmt.	bright yellow fluorescence, instant bright blue to milky white blooming cut, weak yellow residue	poor
1099	Sandstone	Vf	as above, getting coarser with increasing depth	bright yellow fluorescence, instant bright blue to milky white blooming cut, weak yellow residue	fair
1100	Sandstone	f-m	as above, but fine to medium grained (getting coarser with increasing depth	bright yellow fluorescence, instant bright blue to milky white blooming cut, weak yellow residue	good
1101	Sandstone	F	sub-angular to sub-rounded quartz grains, occasionally loose, occasionally moderate cement is present, contains black carbonaceous streaks	very faint yellow fluorescence, weak blooming cut	fair
1102	Sandstone	f-m	sub-angular to sub-rounded quartz grains, occasionally loose, very weak cement is present in places	bright yellow fluorescence, instant blue to milky white blooming cut	good
1103	Sandstone	f-m	Asd above	bright yellow fluorescence, instant blue to milky white blooming cut	good
1104	Claystone		light grey to grey, platy, fissile, silty, micaceous	NO SHOW	
1105	SST/ SLTST	Vf	sub-angular to sub-rounded quartz grains, occasionally loose, weak cement is present	bright yellow fluorescence, instant blue to milky white blooming cut	

Remarks: core barrel jammed off in claystone.

Core No: 3	Interval: 1109m – 1122,17m	Core Rec: 13,17m	Recovery: 94%

Group: Realgrunnen **Age:** Lower Jurassic

Barrel size: 8 ½" Barrel type: Half moon **Core purpose:** appraisal

Depth mRKB	Lithology	Grain Size	Description	Shows + Rating	Porosity
1109	shale		grey/brwn,firm,silty,micaceous	none.	
1110	Shale		A/A	Non	
1111	Sandstone	v.f	Sub ang.-sub round.,loose to weak calcite cmt.	Light to med. brn. Oil stain,bright yellow fluo., instant blue to milky white blooming cut	Fair
1112	Shale		Med.dk. grey,firm to hard, occ. Fissile micaceous	none	
1113	Shale		A/A	Non	
1114	Shale		A/A	None	
1115	Shale		A/A	None	
1116	Shale		A/A	None	
1117	Shale		A/A		
1118	Shale		A/A		
1119	Shale		A/A		
1120	Shale		A/A		
1121	Sandstone	VF	sub-angular to sub-rounded quartz grains, occasionally loose, weak cement is present	Light to med. brn. Oil stain,bright yellow fluo., instant blue to milky white blooming cut	fair
1122	Shale		Med.dk. grey,firm to hard, occ. Fissile micaceous		

Remarks: core barrel jammed off in claystone.

Core No: 4	Interval:1123– 1135m	Core Rec: 12,18m	Recovery: 100%

Group: Realgrunnen **Age:** Lower Jurassic/Triassic

Barrel size: 8 ½" Barrel type: Half moon **Core purpose:** appraisal

Depth mRKB	Lithology	Grain Size	Description	Shows + Rating	Porosity
1123	shale		Med.dk. grey,firm to hard, occ. Fissile micaceous		
1124	Shale		A/A		
1125	Shale		A/A		
1126	Shale		Med.dk. grey,firm to hard, occ. Fissile micaceous		
1127	Siltstone		Med.,dk. Grey, occ.brn.grey,arg. Mica.,		
1128	Shale		A/A		
1129	Sandstone	VF-F	Sub ang.-round.mod.cmt., occ. loose	Wk.dull yel. Fluor., fast mod. Bl.-wh bloom. Cut.	fair
1130	Siltstone		Med.,dk. Grey, occ.brn.grey,arg. Mica.,		
1131	Sandstone	VF-F	Sub ang.-round. Qtz grains, mod. Cmt.	Wk.dull yel. Fluor., fast mod. Bl.-wh bloom. Cut.	fair
1132	Siltstone		Med.,dk. Grey, occ.brn.grey,arg. Mica.		
1133	Sandstone	F	Subround.-round., grey, mod-weak cmt., occ. Dk. Silt lamina	Yel. Fluor. Fast milky wh. Bloom. cut	good
1134	Sandstone	F	Subround.-round., grey, mod-weak cmt., occ. Dk. Silt lamina	Yel. Fluor. Fast milky wh. Bloom. cut	good
1135	Sandstone	F	Subround.-round., grey, mod-weak cmt., occ. Dk. Silt lamina	Yel. Fluor. Fast milky wh. Bloom. cut	good

Remarks:

Core No: 5	**Interval:**1135– 1160m	**Core Rec:** 25m	**Recovery:** 100%

Group: Realgrunnen		**Age:** Triassic
Barrel size: 8 ½"	**Barrel type**: Half moon	**Core purpose:** appraisal

Depth mRKB	Lithology	Grain Size	**Description**	**Shows + Rating**	**Porosity**
1136	Sandstone	VF-F	Lt. Med brn.mottled in parts, firm, angular, well sorted	FAIR, strong HC odour, yellow green fluorescence, instant slow streaming blue white cut, no visible residue with blue white fluorescence.	good
1137	Sandstone	VF-F	as above with visible clear oil grain coating coal from coarse sand to small pebble sizes,	SHOWS: as above.	poor
1138	Siltstone		dark grey, laminated, hard, blocky to splintery		
1139	Sandstone	F-M	brown, firm, crumbly, fine angular	Strong odour, bright yellow fluorescence, instant streaming blue white cut.	Good
1140	Sandstone	VF	as above becoming finer grained	as above	Poor
1141	Sandstone	F	A/A with dark laminations	as above with very slow streaming blue white cut.	Fair
1142	Siltstone		very dark grey, hard, laminated, micaceous, splintery.		
1143	Siltstone		A/A		
1144	Sandstone	F-M	very dark brown, moderately hard, angular, moderate sorted	: MODERATE to FAIR strong odour, dull brown fluorescence, slow blooming diffuse white cut, no visible residue with weak white fluorescence	fair
1145	Siltstone		brown, hard, blocky, micaceous	POOR, slight odour, patchy dul yellow fluorescence, weak milky white cut. Nil visible residue with weak white fluorescence.	
1146	Siltstone	F	as above with carbonised plant	POOR as above.	
1147	Sandstone	F-M	yellow brown to brown, angular to sub angular	strong odour, bright yellow natural fluorescence, instant bloomig blue white cut, no visible residue with blue white fluorescence.	good
1148	Sandstone	F-M	A/A	GOOD as above.	Good
1149	Shale		Very dark grey brown, hard, blocky	VERY POOR, rare spotty fluorescence, no cut.	
1150	Sandstone	VF	yellow brown, soft, crumbly, very fine, grading to siltstone,	GOOD to FAIR, bright yellow fluorescsnce, very slow blooming blue white cut, nil visible residue, with blue white fluorescence.	Fair
1151	Siltstone		Dark grey brown, hard, blocky.	VERY POOR, nil to very slight odour	
1152	Siltstone		as above but with carbonised plant fragments	VERY POOR as above.	
1153	Sandstone	VF-F	brown, moderately hard, grading to siltstone	FAIR, strong odour, dull yellow brown fluorescence, white cut, no visible residue with white fluorescence.	Good
1154	Sandstone	VF-F	as above	FAIR, patchy fluorescence as above with bright blue white cut	Fair
1155	Sandstone	VF-F	as above	VERY POOR, weak odour, very weak white cut cut	Fair
1156	Sandstone	VF-F	as above	VERY POOR, as above	Fair
1157	Sandstone	VF-F	as above	VERY POOR, as above	Fair
1158	Sandstone	VF-F	as above	VERY POOR, as above	Fair
1159	Shale		very dark grey, very hard, fissile to blocky, carbonaceous plant remains		
1160	Sandstone	F-M	light brown, moist, hard, crumbly, abundant carbonised plant fragments.	VERY POOR, weak odour dull brown fluorescence, very weak white cut.	Fair

Remarks:

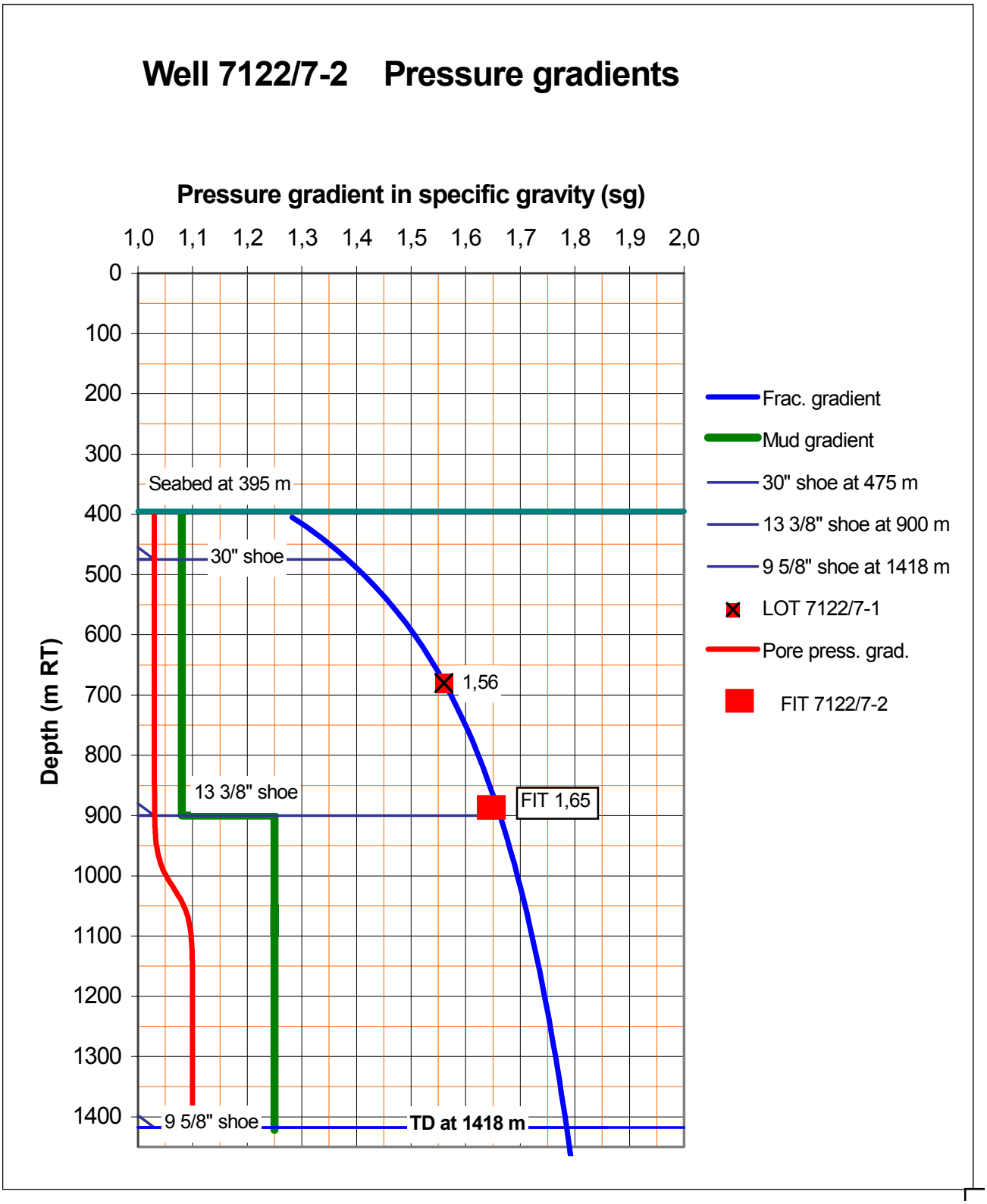

Well 7122/7-2 Pressure gradients
Pressure gradient in specific gravity (sg)
1,0 1,1 1,2 1,3 1,4 1,5 1,6 1,7 1,8 1,9 2,0
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
Depth (m RT)
Seabed at 395 m
30" shoe
13 3/8" shoe
9 5/8" shoe
TD at 1418 m
1,56
FIT 1,65
Frac. gradient
Mud gradient
30" shoe at 475 m
13 3/8" shoe at 900 m
9 5/8" shoe at 1418 m
LOT 7122/7-1
Pore press. grad.
FIT 7122/7-2

Fig.2.3.2

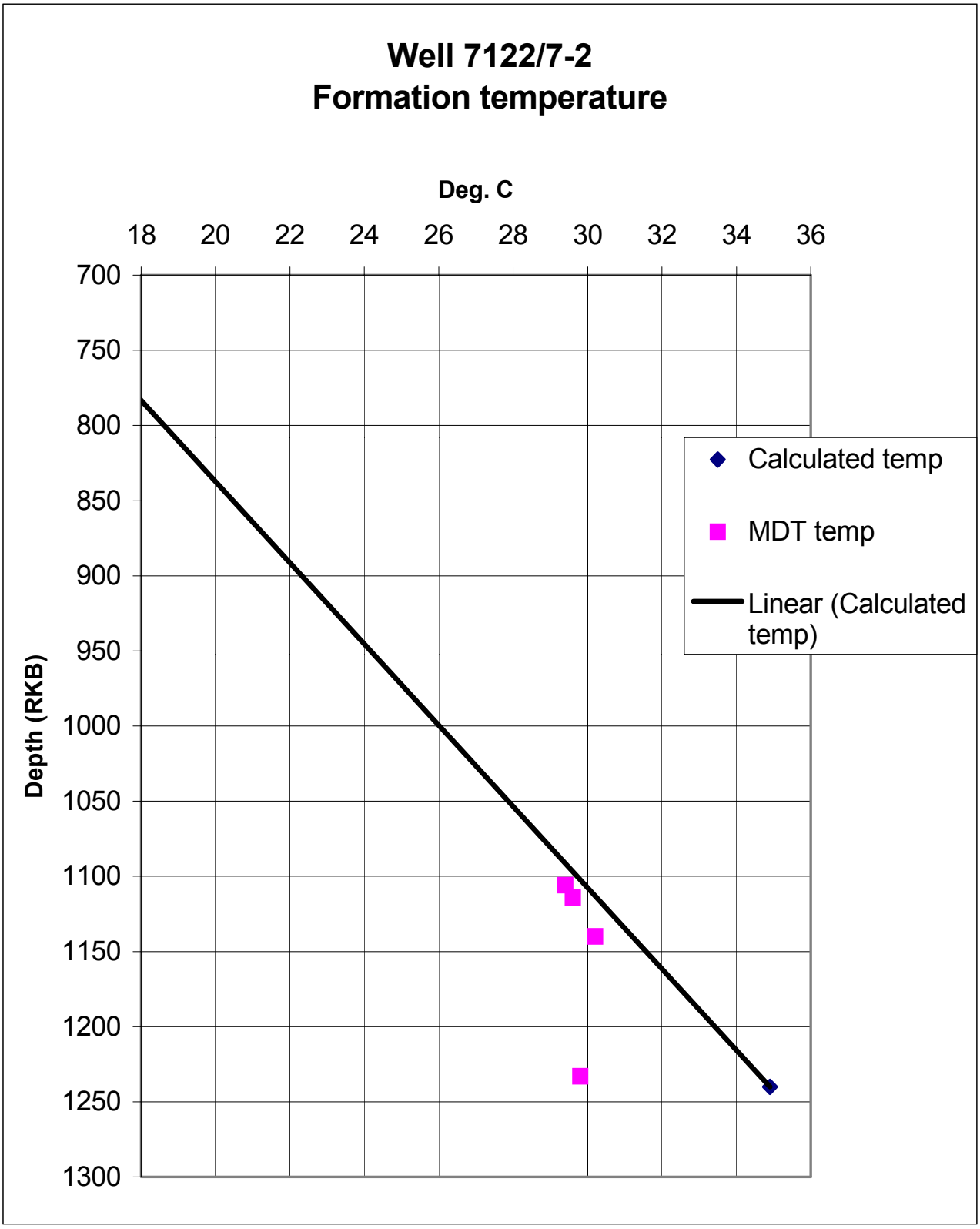

Well 7122/7-2
Formation temperature
Deg. C
18
20
22
24
26
28
30
32
34
36
Depth (RKB)
700
750
800
850
900
950
1000
1050
1100
1150
1200
1250
1300
Calculated temp
MDT temp
Linear (Calculated temp)

Fig. 2.3.2

Core Gamma/ photo offshore

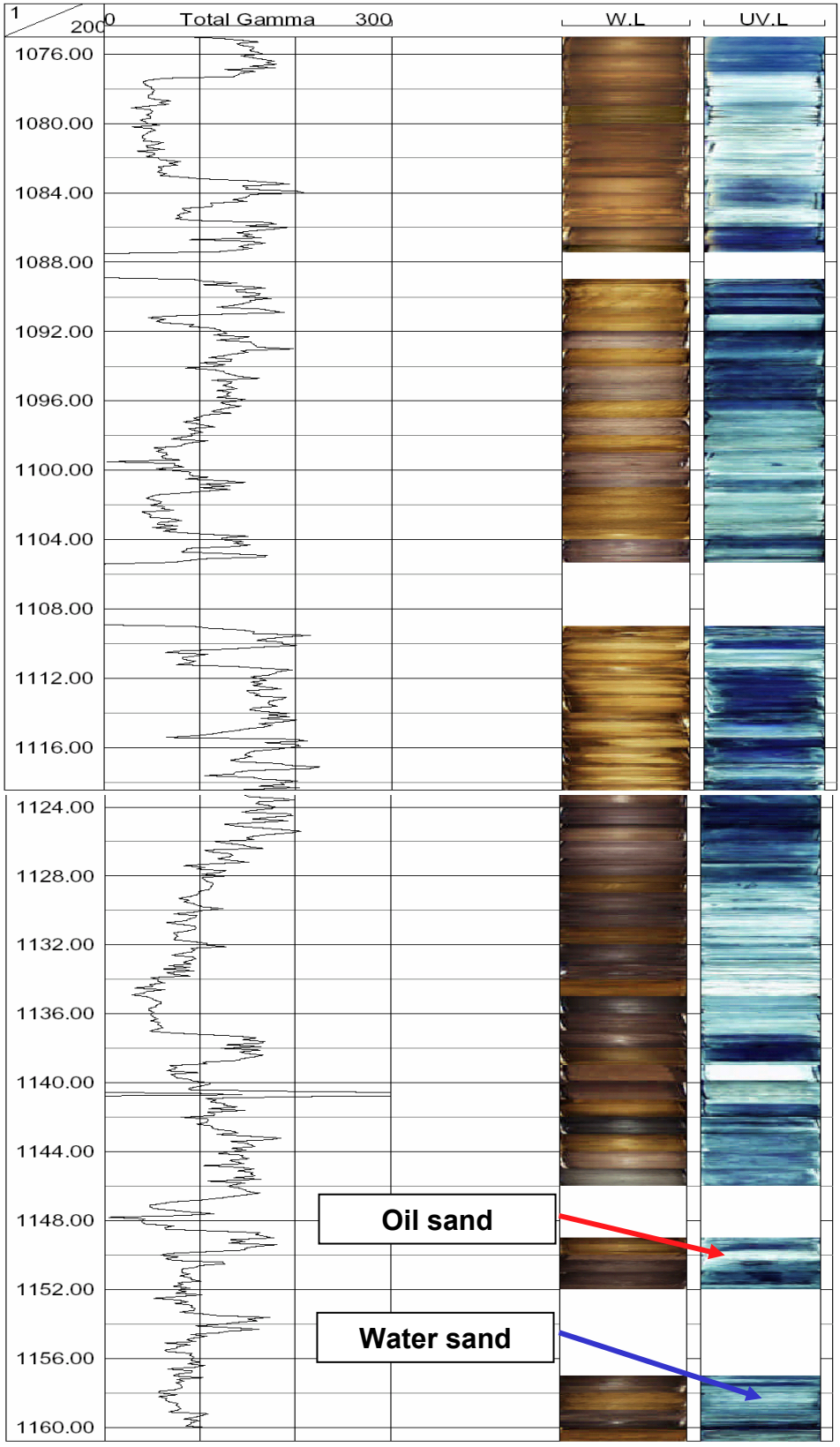


Fig. 2.3.3

2.4 STRATIGRAPHY

2.4.1 Biostratigraphy

The biostratigraphical study of well 7122/7-2 was carried out by Eni S.p.A. Divisione Agip.

Fig. 2.4.1 shows a summarised chronostratigraphic and lithostratigraphic subdivision of the well. Further details may be found in the report "Norsk Agip Well 7122/7-2, Biostratigraphic analysis of the interval 900m – 1418m".

2.4.2 Lithostratigraphy

The following summary is compiled predominantly from LWD data in the pilot hole from seabed at 395m (-377m TVDSS) to the 13 3/8" casing shoe at 900m. This section was drilled with return to seabed and Gamma ray, resistivity and ROP were used for interpretation.
From 900m (-882m TVDSS) cuttings and cores were used in addition to wireline data for the interpretation.

Nordland Group (395m – 448)
Age: Tertiary/Quaternary

Based on GR and resistivity the Nordland Group comprises undifferentiated siltstones.

Sotbakken Group (448 – 600m)
Age: Tertiary

Sandstone becoming silty and argillaceous with occasionaly limestone stringers.

Nygrunnen Group (600 – 638m)
Age: Cretaceous

Siltstone with claystone beds.

Nordwestbanken Group (638 – 986m)

Massive claystone, initially with sandstone stringers. Claystone with thin Limestone and Dolomite stringers is the dominant lithology below the 13 3/8" shoe where cuttings were available for description.
The **Claystone** is dark grey, soft to firm occasionally silty, with glauconite and pyrite.
The **Limestone** is pale red brown to dusty yellow brown, hard, brittle in parts, very argillaceous grading to marl.

Knurr Formation (984m – 1021m)
Age: Early Cretaceous

Upper Boundary: Shows a slightly increasing gamma ray combined with a general drop and less spiky resistivity.
The lithology is a massive claystone with two dolomitic limestone stringers around 1000m.

The **claystone** is dark grey, earthy, firm to hard, occasionally soft and sticky, fissile in parts, amorphous to sub blocky, occasionally calcareous with abundant pyrite.
The dolomitic **limestone** is cryptocrystalline to microcrystalline, light grey to light brown-grey, occasionally translucent yellow, hard to very hard and argillaceous in parts

Teistengrunnen Group (1021m – 1078m)
Age: Late Jurassic

Hekkingen Formation (1021m – 1067m)
Age: Late Jurassic

Upper Boundary: The top of the Jurassic is represented by a small decrease in resistivity following a distinctive spike, a marked increase in gamma ray and an increase in ROP.
The formation is characterised by dark, carbonaceous claystones with light coloured limestones.
The **claystones** are brownish black, medium dark grey in part, firm to moderately hard, blocky, becoming fissile, non to slightly silty and carbonaceous. With depth they become micromicaceous, pyritic and silty in part with a weak hydrocarbon odour in part.
Limestone stringers are white to light, firm to hard, cryptocrystalline and slightly argillaceous in part.

Fuglen Formation (1067m – 1078m)
Age: Late Jurassic

Upper Boundary: The top is characterised by a drop in gamma ray corresponding to a general slow increase in resistivity. The sonic values remain generally at levels only slightly faster than the overlying formation. The lithology is generally a dolomitic claystone with minor siltstone interbeds.
The **claystone** is dark to very dark, moderately hard to hard, blocky to flakey, micromicaceous, pyritic and generally dolomitic.
The **siltstone** is light brown to light grey, soft to hard, crumbly, occasionally loose sand, fine to medium and subrounded.
Good gas and weak oil shows were noted in this interval.

Realgrunnen Group (1078m – 1195m)
Age: Late Triassic

Upper Boundary: A distinct cutback of gamma ray indicates sandstone; the resistivity also increases greatly in the oil-bearing units.
The sequence consists of interbedded sandstones and claystones with minor siltstones. Reference should also be made to the core description.
The **sandstones** are quartzose, light to medium brown, occasionally dark grey with clear, colorless grains, subangular to subrounded, subspherical to subelongated, fine to coarse. Commonly well sorted, moderately hard, friable in part, weak calcareous/silicic cement with trace of mica, good visible porosity. Shows were initially nil, but became good. Bright yellow fluorescence with instant blooming blue white cut that left a light brown to brown residue with blue-white residual fluorescence. The cuttings and core chips had a strong HC odour which weakened with depth.

The **claystones** are medium to medium dark grey, hard, blocky, non-calcareous, micromicaceous in part, occasional carbonaceous material and occasionally silty.
The **siltstones** are dark grey, occasionally brownish grey, moderately hard to hard, blocky, commonly fractured, very slightly calcareous, micromicaceous, with occasional black carbonaceous/coaly laminations, occasionally with very fine sand grains.

Ingøydjupet Group (1195m – 1418m TD)
Age: Late Triassic

Snadd Formation (1195m – 1361m)
Age: LateTriassic

Upper Boundary: Indicated by a drop in gamma ray and an increase in resistivity and a decrease in ROP. Sonic values increase, neutron and bulk density logs show a definite decrease in porosity.
The formation comprise a very thick sequence of sandstone, siltstone and limestone with increasing siltstone and claystone content below 1261m. Levels of coal was observed.
From 1195.5m to 1261m the **sandstone** is loose quartz, clear, translucent and occasionally orange to light brown, very fine, rounded to subangular, occasionally with weak calcite / silica cement. Sandstones are quartzose medium grey to yellowish grey, clear to translucent grains, very fine to fine, subrounded to subangular, spherical, moderately sorted, weakly calcareous cemented, good silicica cemented.
The **siltstone** is light grey, very argillaceous. The **claystone** is very light brown, occasionally red brown, firm to hard, subblocky and crumby in part. In part friable and argillaceous with moderate to good visible porosity. No show is recorded. The **coal** is black, shiny and hard with a brittle break.

Middle Snadd Formation (1361m – 1418m)
Age: Late Triassic

Upper Boundary: The top of the Middle Snadd is distinguished by a massive sandstone bed confirmed by a cutback in gamma ray and an increase in penetration rate. There is also a decrease and smoothing of the resistivity curve.
The Middle Snadd comprises an upper massive sandstone bed followed by claystones interbedded with thinner sandstones and minor limestone stringers.
The **sandstone** bed is quartzose, pale yellowish brown to very light grey, commonly loose clear to translucent grains, very fine to fine, subangular to subrounded, subspherical, moderately sorted, weakly calcareous cemented, argillaceous in part with no visible porosity.
The **claystone** is medium dark grey to dark greenish grey, soft, sticky, non to very calcareous in parts, commonly pyritic and micromicaceous.

Well 7122/7-2

Stratigraphic column

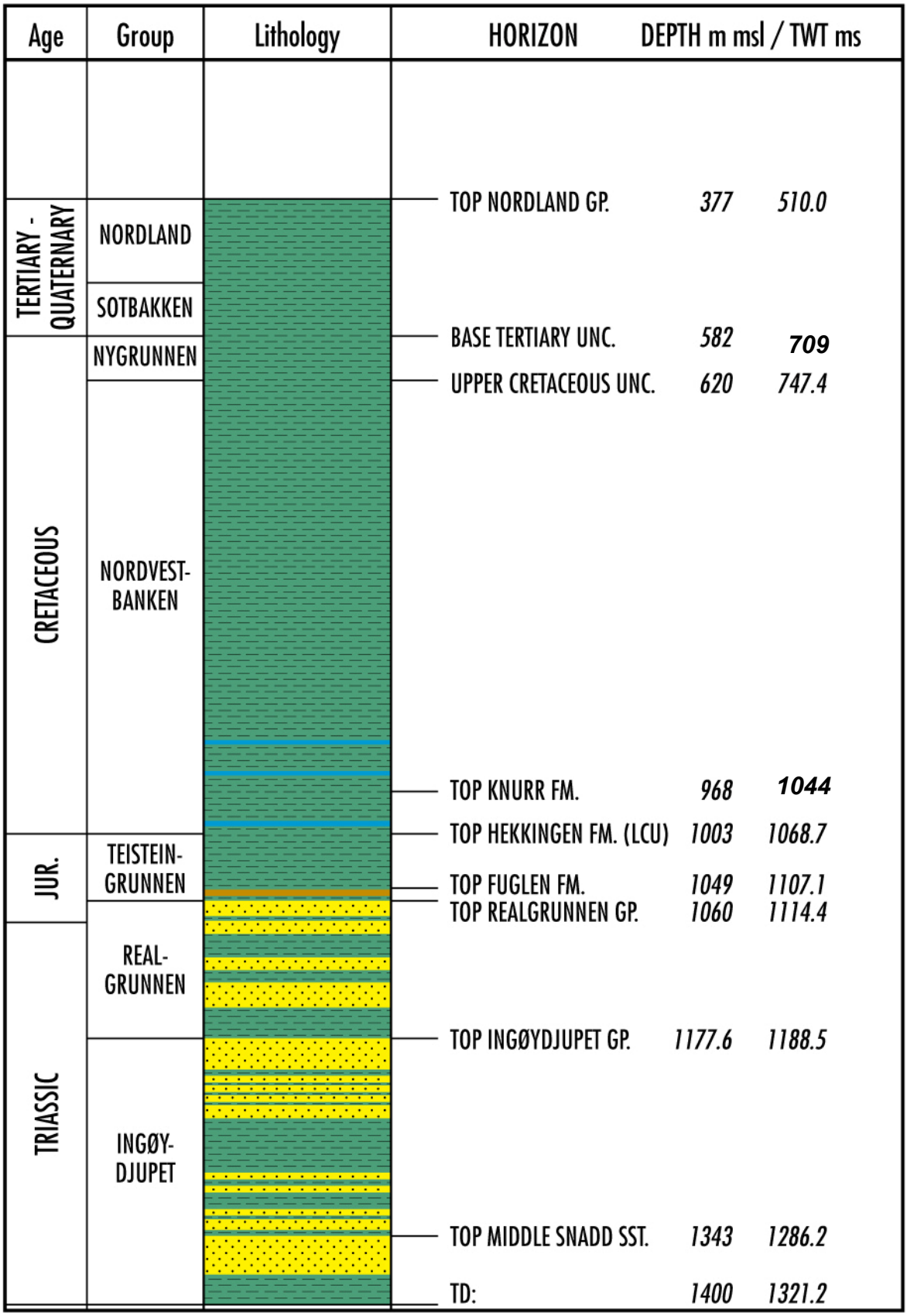


Fig. 2.4.1

2.5 WELL VELOCITY

A VSP survey was recorded in well 7122/7-2, in order to provide a correlation between the well logs and the 3D seismic data and to obtain seismic velocities for depth conversion of seismic data.

2.5.1 VSP

Full details of the vertical seismic profile are given in the report by Schlumberger entitled "7122/7-2 VSP, Sonic Calibration and Synthetic Seismogram Processing Report".

The survey was recorded on 2nd October 2001 from 1410 to 465 mRKB using a 2 level CSI receiver assembly with 15m spacing between the receivers. The seismic source was a cluster of three 155 cu.in. Bolt airguns. The horizontal offset of the source from the wellbore was 55 m in direction 40 degrees. Due to large waveheights the source depth was set at 6 m below MSL on this survey. It was not operationally feasible to wait for the waveheights to decrease. The frequency content is lower than in the 7122/7-1 VSP, but the sonic calibration is satisfactory.

At the onshore processing centre, full processing of the data was performed, to produce the "Enhanced Deconvolved Upgoing Wavefield" and corridor stacks. Figure 2.5.1 shows the positions of the main formation tops where they intersect the corridor stack and the first arrival curve of the VSP display.

2.5.2 Synthetic Seismogram

Wireline sonic and density logs are available in well 7122/7-2 between 900 mRKB and TD. The 13 3/8" casing shoe was positioned stratigraphically shallower than the 9 5/8" casing shoe in the 7122/7-1 well and therefore there should be better log coverage above the reservoir and a more reliable synthetic seismogram in the reservoir interval in well 7122/7-2.

In the shallower part of well 7122/7-2, only MWD sonic is available and density was computed from the sonic using Gardner's formula. This less reliable zone has to be included in the window for seismic wavelet extraction and it distorts the estimated wavelet. It is therefore recommended that density is logged in the shallow section of at least one future well in PL 229.

The calibrated sonic log was combined with the density log to produce the acoustic impedance log and reflection coefficients. Figure 2.5.1 shows the logs and three synthetic seismograms, together with the upgoing VSP and the corridor stack.

The synthetic with the wavelet extracted from the NA9801 3D surface seismic data has a phase about 90 degrees different from the other two synthetics, which are zero phase. This is because no wells had been drilled within the 3D area at the time of processing in 1998 and a statistical zero phasing method was attempted.

The reprocessed 3D named NA01M1 has been zero phased using both the PL 229 wells and the zero phase synthetics are a good match to that version of the 3D seismic data at the reservoir level.

The Top Fuglen Fm. produces a more significant interface on the acoustic impedance log than the top reservoir, which is the Top Realgrunnen Gp. The two interfaces cannot be separated seismically and the composite reflection is seen as a white negative trough on the synthetics, VSP, corridor stack and 3D surface seismic data. Therefore the reflection amplitude is influenced by acoustic impedance and thickness changes in and above the Fuglen Fm. as well as in the upper part of the Realgrunnen Gp. reservoir. This limitation should be kept in mind when attempting to map the reservoir properties using the 3D seismic data.

2.6 GEOCHEMISTRY

The geochemical study of cuttings and oils was performed in the Agip labs in Milan.
For details see the report" Goliath field-Well 7122/7-2 Geochemical study".

Main conclusions:

Oil characterisation

The oil sample of the well 7122/7-2 is very similar to that found in the well 7122/7-1: all the geochemical features indicate a shaly, marine source rock equivalent to the Kimmeridgian shales or to the Spekk Fm. in the Norwegian offshore as responsible of its generation. The Hekkingen Fm. seems to be, for this reason, the most probable source rock of these HCs.
The thermal maturity level is not very high corresponding to the first part of the oil window (terpane and sterane isomerisation close to the equilibrium, sterane aromatisation around 0.50).

Correlation

The oil in well 7122/7-2 correlates perfectly with the oil in well 7122/7-1: the biomarker distribution shows that the source rock generating the oils is the same and the maturity level is only slightly lower in the 7122/7-2 oil. Also the alteration level (biodegradation) is similar.

As a consequence the conclusion drawn in the previous geochemical study (Goliath field – Geochemical study – March 2001) can be extended also to the present study.

Geochemical well logging

Interesting source rock levels have been detected in the 1000-1075 m interval (Knurr and Hekkingen Fm.) and around 1208 m, the Tmax values indicate that in the Goliath wells the possible source rock levels are too immature to generate HCs.
Summarising:

Knurr Fm. is a fair/good source rock with a low Hydrogen Index (<100) typical of a mainly gas prone type III organic matter;

Hekkingen Fm. has a very good organic content (TOC up to 10%) and can be defined as gas or gas and oil prone (type II/III to type III; HI 240-300).

2.7 FORMATION EVALUATION

2.7.1 Reservoir Petrophysical Description

The top of Realgrunnen Group was penetrated at 1078m (1060 m TVD).
5 cores were cut from 1075 to 1160m. The routine core por/perm data are listed below. The cores confirmed the hetrogenity of the Realgrunnen reservoir as observed in well 7122/7-1
The depositional environment is described as fluvial channels to bay fill sediments indicating a marginal marin environment with fluvial influence.
Based on the strong variation in reservoir properties The Realgrunnen Group has been subdivided in 7 reservoir units.

The petrophysical properties from the cores are listed in table 2.7.1, 2.7.2 and 2.7.3.

CORE	PLUG	Depth (m)	Hor,Perm Kn²(mD)	Hor,Perm 1/Pm	Hor,Perm KL(mD)	Vert,Perm Kn²(mD)	Vert,Perm 1/Pm	Vert,Perm KL(mD)	Hor, Porosity(%)	Hor,Gr,Density (g/cm³)
1	1	1075,05	0,15	0,50	0,09				10,20	2,69
1	2	1075,25	0,17	0,50	0,10				13,30	2,75
1	3	1075,45	0,29	0,50	0,18	0,05	0,50	0,03	9,20	2,67
1	4	1075,70	0,18	0,50	0,11				11,10	2,71
1	5	1076,00	0,29	0,50	0,18				10,50	2,70
1	6	1076,25	0,25	0,50	0,16				9,80	2,68
1	7	1076,50	0,36	0,50	0,23	0,05	0,50	0,03	9,00	2,64
1	8	1076,75	1,25	0,50	0,86				10,00	2,63
1	9	1077,00	0,57	0,50	0,37				11,90	2,64
1	10	1077,30	2,79	0,50	2,17	238	0,97	218	12,20	2,78
1	11	1077,55	NPP		NPP				NPP	NPP
1	12	1077,80	8516	1,00	8325				28,50	2,63
1	13	1078,05	2325	1,00	2240				29,60	2,62
1	14	1078,25	3780	1,00	3664				31,20	2,62
1	15	1078,50	2624	1,00	2532	857	0,99	812	29,10	2,63
1	16	1078,75	1120	0,99	1066				29,90	2,61
1	17	1079,05	4191	1,00	4068				31,60	2,60
1	18	1079,25	7943	1,00	7760	NPP		NPP	29,30	2,61
1	19	1079,55	NPP		NPP				NPP	NPP
1	20	1079,75	1652	0,99	1584				19,10	2,65
1	21	1080,10	3795	1,00	3679				31,40	2,64
1	22	1081,10	3410	1,00	3302				28,30	2,65
1	23	1081,25	5513	1,00	5367				29,90	2,61
1	24	1081,65	13274	1,00	13023	NPP		NPP	29,60	2,62
1	25	1081,85	NPP		NPP				NPP	NPP
1	26	1082,10	291	0,96	268				28,10	2,62
1	27	1082,30	NMP		NMP	0,11	0,50	0,06	26,00	2,64
1	28	1082,65	0,17	0,50	0,10				9,50	2,66
1	29	1083,15	NMP		NMP				9,20	2,66
1	30	1083,35	NMP		NMP				7,70	2,64
1	31	1083,50	NMP		NMP	0,04	0,50	0,02	8,50	2,63
1	32	1083,75	NMP		NMP				9,20	2,62
1	33	1084,05	NMP		NMP				9,10	2,63
1	34	1084,25	0,52	0,50	0,34				7,40	2,63
1	35	1084,55	NMP		NMP	0,05	0,50	0,03	7,40	2,63
1	36	1084,85	NMP		NMP				8,40	2,63
1	37	1085,00	0,33	0,50	0,21				12,40	2,63
1	38	1085,20	NMP		NMP				18,20	2,66
1	39	1085,40	NMP		NMP	23,90	0,75	20,30	27,00	2,66
1	40	1085,85	NMP		NMP				9,50	2,64
1	41	1086,05	NMP		NMP				9,70	2,56
1	42	1086,25	NMP		NMP				8,80	2,64
1	43	1086,55	0,41	0,50	0,27	NMP		NMP	7,20	2,64
1	44	1086,80	NMP		NMP				7,80	2,64
1	45	1087,00	NMP		NMP				8,40	2,65
1	46	1087,35	0,37	0,50	0,24				8,40	2,65
2	47	1089,20	0,23	0,50	0,15				8,10	2,65
2	48	1089,40	NMP		NMP				8,10	2,65
2	49	1089,65	2,98	0,50	2,33	0,07	0,50	0,04	9,90	2,66
2	50	1089,85	0,30	0,50	0,19				8,20	2,65
2	51	1090,05	0,44	0,50	0,28				8,30	2,64
2	52	1090,30	NMP		NMP				11,00	2,67
2	53	1090,55	0,71	0,60	0,47	0,05	0,50	0,03	8,80	2,67
2	54	1090,80	0,45	0,50	0,29				9,50	2,62
2	55	1091,00	178	0,95	162				18,20	2,87
2	56	1091,25	977	0,99	927				30,90	2,65

CORE	PLUG	Depth (m)	Hor,Perm Kn²(mD)	Hor,Perm 1/Pm	Hor,Perm KL(mD)	Vert,Perm Kn²(mD)	Vert,Perm 1/Pm	Vert,Perm KL(mD)	Hor, Porosity(%)	Hor,Gr,Density (g/cm³)
2	57	1091,50	1547	0,99	1481	0,85	0,58	0,58	33,20	2,64
2	58	1091,80	95,50	0,89	85,10				23,10	2,66
2	59	1092,00	NMP		NMP				12,90	2,43
2	60	1092,25	NMP		NMP				9,30	2,61
2	61	1092,45	0,38	0,50	0,24	0,06	0,50	0,03	8,40	2,66
2	62	1092,70	0,21	0,50	0,13				8,50	2,65
2	63	1093,05	1,01	0,50	0,69				9,40	2,66
2	64	1093,25	0,42	0,50	0,27				11,70	2,66
2	65	1093,45	0,35	0,50	0,22	0,09	0,50	0,05	12,10	2,66
2	66	1093,70	NMP		NMP				15,70	2,46
2	67	1094,00	NMP		NMP				11,00	2,65
2	68	1094,25	NMP		NMP				10,50	2,66
2	69	1094,55	0,62	0,50	0,41	0,27	0,50	0,17	11,20	2,65
2	70	1094,75	NMP		NMP				11,90	2,65
2	71	1095,00	NMP		NMP				11,10	2,65
2	72	1095,20	1,26	0,50	0,87				11,60	2,65
2	73	1095,50	NMP		NMP	0,07	0,50	0,04	12,30	2,64
2	74	1095,80	NMP		NMP				9,70	2,61
2	75	1096,00	0,25	0,50	0,16				9,00	2,63
2	76	1096,30	0,08	0,50	0,05				8,90	2,65
2	77	1096,60	1,35	0,50	0,94	2,91	0,50	2,27	17,60	2,66
2	78	1096,80	7,84	0,55	6,49				20,80	2,65
2	79	1097,00	10,90	0,60	9,11				19,40	2,65
2	80	1097,20	10,50	0,60	8,78				16,30	2,66
2	81	1097,40	34,40	0,81	29,40	0,26	0,50	0,16	18,50	2,67
2	82	1097,60	185	0,95	168				21,10	2,73
2	83	1098,00	482	0,98	450				27,60	2,65
2	84	1098,20	712	0,98	672				27,80	2,65
2	85	1098,40	484	0,98	453	97,70	0,91	86,90	24,40	2,66
2	86	1098,60	855	0,99	809				27,00	2,67
2	87	1099,05	866	0,99	821				27,00	2,65
2	88	1099,30	1698	0,99	1628				22,30	2,65
2	89	1099,50	1289	0,99	1230	1530	0,99	1465	28,40	2,69
2	90	1099,70	1525	0,99	1460				30,90	2,65
2	91	1100,00	54,90	0,86	47,90				21,10	2,65
2	92	1100,25	923	0,99	875				19,00	2,66
2	93	1100,50	1326	0,99	1266	551	0,98	517	26,30	2,66
2	94	1100,80	362	0,97	336				24,90	2,65
2	95	1101,00	22,70	0,75	19,10				18,60	2,56
2	96	1101,25	10,90	0,63	9,03				16,90	2,63
2	97	1101,60	7878	1,00	7696	2006	1,00	1928	26,70	2,65
2	98	1101,80	1421	0,99	1358				22,40	2,64
2	99	1102,00	1641	0,99	1572				26,50	2,64
2	100	1102,25	2583	1,00	2492				27,00	2,64
2	101	1102,70	4343	1,00	4218	NMP		NMP	29,10	2,66
2	102	1102,85	3430	1,00	3321				29,30	2,65
2	103	1103,05	1771	0,99	1699				26,80	2,65
2	104	1103,40	4278	1,00	4153	390	0,97	362	30,00	2,65
2	105	1103,60	1144	0,99	1089				29,10	2,65
2	106	1103,80	0,37	0,50	0,24				9,00	2,62
2	107	1104,00	0,23	0,50	0,14				7,00	2,65
2	108	1104,25	0,80	0,56	0,54				9,10	2,64
2	109	1104,50	1,74	0,50	1,22	0,31	0,50	0,20	12,40	2,66
2	110	1104,75	83,70	0,88	74,20				25,10	2,68
2	111	1105,10	5,32	0,50	4,37				8,70	2,66

CORE	PLUG	Depth (m)	Hor,Perm Kn²(mD)	Hor,Perm 1/Pm	Hor,Perm KL(mD)	Vert,Perm Kn²(mD)	Vert,Perm 1/Pm	Vert,Perm KL(mD)	Hor, Porosity(%)	Hor,Gr,Density (g/cm³)
2	112	1105,30	0,08	0,50	0,05				6,50	2,66
3	113	1109,70	NMP		NMP				9,50	2,58
3	114	1109,85	NMP		NMP				10,70	2,53
3	115	1110,00	0,20	0,50	0,12				8,00	2,64
3	116	1110,20	0,15	0,50	0,09				7,60	2,64
3	117	1110,45	1948	0,99	1871	1989	0,99	1912	32,20	2,65
3	118	1110,75	0,14	0,50	0,09				9,90	2,70
3	119	1111,00	10,10	0,60	8,37				19,80	2,74
3	120	1112,00	0,66	0,50	0,44				7,20	2,62
3	121	1112,25	0,33	0,50	0,21				10,20	2,63
3	122	1112,55	NMP		NMP	0,07	0,50	0,04	9,50	2,61
3	123	1112,80	0,18	0,50	0,11				8,40	2,63
3	124	1113,00	NMP		NMP				8,80	2,63
3	125	1113,20	0,13	0,50	0,08				7,80	2,77
3	126	1113,50	1,47	0,50	1,02	0,06	0,50	0,04	9,20	2,65
3	127	1113,75	0,07	0,50	0,04				7,80	2,65
3	128	1114,00	0,34	0,50	0,22				10,40	2,64
3	129	1114,20	0,24	0,50	0,15				8,40	2,65
3	130	1114,55	0,17	0,50	0,10	0,05	0,50	0,03	8,10	2,65
3	131	1114,85	0,19	0,50	0,12				11,30	2,65
3	132	1115,05	0,09	0,50	0,05				7,30	2,71
3	133	1115,25	0,10	0,50	0,06				8,50	2,71
3	134	1115,50	0,70	0,53	0,47	0,09	0,50	0,05	8,70	2,62
3	135	1115,75	NMP		NMP				10,20	2,62
3	136	1116,00	NMP		NMP				10,60	2,59
3	137	1116,20	0,25	0,50	0,16				7,80	2,62
3	138	1116,40	0,06	0,50	0,04	0,05	0,50	0,03	4,60	2,65
3	139	1116,75	0,10	0,50	0,06				5,70	2,67
3	140	1117,10	0,17	0,50	0,10				6,80	2,67
3	141	1117,30	5,04	0,50	4,12				11,60	2,66
3	142	1117,50	59,90	0,87	52,40	0,16	0,50	0,10	14,30	2,66
3	143	1117,80	0,15	0,50	0,09				7,70	2,63
3	144	1118,05	0,41	0,50	0,26				8,10	2,63
3	145	1118,25	0,18	0,50	0,11				8,00	2,67
3	146	1118,45	0,09	0,50	0,05	0,12	0,50	0,07	8,80	2,65
3	147	1118,70	0,26	0,50	0,16				11,80	2,56
3	148	1119,15	0,28	0,50	0,17				13,00	2,67
3	149	1119,35	NMP		NMP	0,10	0,50	0,06	11,60	2,60
3	150	1119,55	0,43	0,50	0,28				9,20	2,63
3	151	1119,75	0,31	0,50	0,20				8,90	2,64
3	152	1120,00	0,58	0,50	0,38				10,50	2,62
3	153	1120,25	0,24	0,50	0,15				8,90	2,64
3	154	1120,55	71,10	0,87	62,60	55,70	0,86	48,60	19,00	2,65
3	155	1120,80	0,33	0,50	0,21				11,90	2,64
4	156	1123,25	0,07	0,50	0,04				8,70	2,64
4	157	1123,45	0,36	0,50	0,23	0,05	0,50	0,03	8,70	2,62
4	158	1123,75	0,16	0,50	0,10				8,40	2,65
4	159	1124,00	NMP		NMP				11,30	2,42
4	160	1124,25	0,22	0,50	0,14				9,50	2,62
4	161	1124,45	0,17	0,50	0,10	0,08	0,50	0,05	8,70	2,58
4	162	1124,80	NMP		NMP				9,00	2,59
4	163	1125,00	NMP		NMP				19,30	2,32
4	164	1125,20	NMP		NMP				14,30	2,48
4	165	1125,50	0,38	0,50	0,24	1,40	0,50	0,97	9,00	2,63
4	166	1125,75	0,15	0,50	0,09				8,90	2,63
4	167	1126,00	NMP		NMP				8,60	2,63
4	168	1126,25	NMP		NMP				9,30	2,61
4	169	1126,50	NMP		NMP	0,06	0,50	0,03	9,10	2,62
4	170	1126,75	0,14	0,50	0,09				7,60	2,66
4	171	1127,00	NMP		NMP				8,30	2,64
4	172	1127,25	NMP		NMP				10,30	2,62
4	173	1127,50	NMP		NMP	0,05	0,50	0,03	11,70	2,63
4	174	1127,75	NMP		NMP				9,70	2,61
4	175	1128,00	NMP		NMP				9,00	2,61
4	176	1128,25	0,55	0,50	0,36				10,30	2,61

CORE	PLUG	Depth (m)	Hor,Perm Kn²(mD)	Hor,Perm 1/Pm	Hor,Perm KL(mD)	Vert,Perm Kn²(mD)	Vert,Perm 1/Pm	Vert,Perm KL(mD)	Hor, Porosity(%)	Hor,Gr,Density (g/cm³)
4	177	1128,55	0,55	0,50	0,36	0,05	0,50	0,03	8,30	2,57
4	178	1128,80	0,90	0,57	0,61				13,30	2,65
4	179	1129,10	NMP		NMP				20,90	2,61
4	180	1129,30	11,50	0,60	9,62				14,30	2,60
4	181	1129,50	NMP		NMP				14,40	2,58
4	182	1129,70	NMP		NMP				15,30	2,57
4	183	1130,10	NMP		NMP				15,30	2,57
4	184	1130,35	NMP		NMP				14,00	2,56
4	185	1130,55	NMP		NMP				15,80	2,53
4	186	1130,75	NMP		NMP				23,60	2,60
4	187	1131,05	NMP		NMP				21,00	2,59
4	188	1131,30	9,76	0,60	8,10				11,40	2,95
4	189	1131,50	NPP		NPP				NPP	NPP
4	190	1131,70	NPP		NPP				NPP	NPP
4	191	1132,15	NMP		NMP				13,90	2,48
4	192	1132,35	NMP		NMP				24,00	2,59
4	193	1132,55	NMP		NMP				20,40	2,59
4	194	1132,70	NMP		NMP				25,40	2,56
4	195	1133,20	NMP		NMP				10,60	2,48
4	196	1133,60	822	0,99	778				24,20	2,59
4	197	1133,95	193	0,95	176				21,20	2,57
5	198	1135,20	1499	0,99	1434				29,00	2,62
5	199	1135,40	777	0,99	735				26,00	2,60
5	200	1135,60	173	0,94	157	14,50	0,69	12,00	20,60	2,57
5	201	1135,80	2740	1,00	2646				32,90	2,66
5	202	1136,00	2195	0,99	2113				29,90	2,63
5	203	1136,25	1246	0,99	1189				25,50	2,62
5	204	1136,45	3592	1,00	3480	1202	0,99	1146	31,60	2,63
5	205	1136,80	1276	0,99	1218				28,70	2,64
5	206	1137,00	1704	0,99	1634				28,90	2,65
5	207	1137,20	983	0,99	933				25,00	2,68
5	208	1137,60	0,49	0,50	0,32	0,05	0,50	0,03	7,60	2,62
5	209	1137,80	NMP		NMP				9,30	2,52
5	210	1138,00	NMP		NMP	0,05	0,50	0,03	9,20	2,62
5	211	1138,25	1,55	0,50	1,08				8,90	2,61
5	212	1138,45	NMP		NMP				8,20	2,57
5	213	1138,80	570	0,98	535				25,70	2,64
5	214	1139,00	1122	0,99	1068				28,00	2,64
5	215	1139,45	2972	1,00	2873				31,40	2,65
5	216	1139,50	2787	1,00	2691				30,70	2,64
5	217	1139,75	2861	1,00	2764				30,40	2,63
5	218	1140,00	594	0,98	558				25,80	2,58
5	219	1140,25	973	0,99	924				27,20	2,62
5	220	1140,50	1029	0,99	978	330	0,97	306	27,70	2,63
5	221	1140,75	423	0,97	394				25,70	2,65
5	222	1141,00	688	0,98	648				27,80	2,65
5	223	1141,20	581	0,98	545				24,70	2,64
5	224	1141,50	0,39	0,50	0,25	0,05	0,50	0,03	6,40	2,62
5	225	1141,80	5,10	0,50	4,17				6,40	2,58
5	226	1142,00	0,26	0,50	0,16				8,30	2,56
5	227	1142,25	0,25	0,50	0,15				7,40	2,52
5	228	1142,45	0,34	0,50	0,22	0,07	0,50	0,04	10,80	2,60
5	229	1142,80	NMP		NMP				8,10	2,68
5	230	1143,00	NMP		NMP				11,60	2,51
5	231	1143,25	NPP		NPP				NPP	NPP
5	232	1143,50	NMP		NMP	0,06	0,50	0,03	7,90	2,60
5	233	1143,80	0,34	0,50	0,22				6,80	2,60
5	234	1144,00	NMP		NMP				10,60	2,66
5	235	1144,25	0,88	0,56	0,59				6,90	2,61
5	236	1144,50	0,15	0,50	0,09	1,12	0,50	0,77	5,90	2,61
5	237	1144,85	0,08	0,50	0,05				3,70	2,99
5	238	1145,00	0,31	0,50	0,19				9,00	2,70
5	239	1145,25	NMP		NMP				7,90	2,59
5	240	1145,45	NMP		NMP	0,06	0,50	0,04	6,20	2,61
5	241	1145,75	0,15	0,50	0,09				6,60	2,63

CORE	PLUG	Depth (m)	Hor,Perm Kn²(mD)	Hor,Perm 1/Pm	Hor,Perm KL(mD)	Vert,Perm Kn²(mD)	Vert,Perm 1/Pm	Vert,Perm KL(mD)	Hor, Porosity(%)	Hor,Gr,Density (g/cm³)
5	242	1146,05	0,07	0,50	0,04				5,60	2,64
5	243	1146,30	NMP		NMP				7,80	2,60
5	244	1146,50	0,06	0,50	0,03	0,05	0,50	0,03	6,00	2,62
5	245	1146,70	0,14	0,50	0,09				7,50	2,64
5	246	1147,10	NMP		NMP	0,06	0,50	0,03	22,60	2,64
5	247	1147,30	NPP		NPP	NPP		NPP	NPP	NPP
5	248	1147,60	NPP		NPP				NPP	NPP
5	249	1147,85	NPP		NPP				NPP	NPP
5	250	1148,05	3781	1,00	3666				31,10	2,64
5	251	1148,20	3485	1,00	3375				30,50	2,63
5	252	1148,35	2823	1,00	2726	12,60	0,63	10,50	30,70	2,64
5	253	1148,60	4,01	0,50	3,22				9,60	2,51
5	254	1149,10	0,52	0,50	0,34				8,00	2,60
5	255	1149,30	1,00	0,50	0,68				8,90	2,60
5	256	1149,50	NMP		NMP	0,06	0,50	0,04	9,50	2,59
5	257	1149,85	0,12	0,50	0,07				29,10	2,63
5	258	1150,05	173	0,94	157				26,60	2,62
5	259	1150,25	412	0,97	384				29,60	2,63
5	260	1150,60	NMP		NMP	0,11	0,50	0,07	8,20	2,53
5	261	1150,90	1,75	0,50	1,23				11,00	2,59
5	262	1151,10	0,42	0,50	0,27				14,20	2,56
5	263	1151,30	NMP		NMP				7,80	2,56
5	264	1151,55	2,72	0,50	2,11	NMP		NMP	14,20	2,54
5	265	1151,85	2,32	0,50	1,77				21,30	2,62
5	266	1152,05	10,10	0,60	8,40				21,30	2,59
5	267	1152,30	7,16	0,56	5,87				23,90	2,59
5	268	1152,50	75,00	0,88	66,20	76,50	0,88	67,60	25,90	2,62
5	269	1152,70	1,41	0,50	0,98				22,20	2,65
5	270	1153,25	58,60	0,86	51,30				21,30	2,65
5	271	1153,45	0,18	0,50	0,11	0,06	0,50	0,04	8,70	2,62
5	272	1153,65	1,38	0,50	0,95				8,30	2,57
5	273	1153,85	NMP		NMP				9,00	2,60
5	274	1154,25	NMP		NMP				8,80	2,62
5	275	1154,45	0,25	0,50	0,15				8,00	2,61
5	276	1154,60	0,58	0,50	0,38	0,08	0,50	0,05	8,00	2,61
5	277	1154,80	NMP		NMP				17,60	2,62
5	278	1155,00	0,46	0,50	0,30				14,30	2,65
5	279	1155,20	1,97	0,50	1,40				19,10	2,62
5	280	1155,40	1,40	0,50	0,97	1,31	0,50	0,91	19,50	2,62
5	281	1155,60	NMP		NMP				22,50	2,64
5	282	1156,00	NMP		NMP				13,60	2,80
5	283	1156,25	NMP		NMP				17,40	2,57
5	284	1156,60	NMP		NMP	NMP		NMP	14,60	1,93
5	285	1156,80	2,52	0,50	1,94				24,20	2,59
5	286	1157,05	NMP		NMP				21,70	2,57
5	287	1157,25	NMP		NMP				15,90	2,55
5	288	1157,45	0,36	0,50	0,23	0,11	0,50	0,07	9,10	2,55
5	289	1157,65	0,52	0,50	0,34				18,40	2,65
5	290	1158,00	185	0,95	168				29,40	2,62
5	291	1158,15	NMP		NMP				32,20	2,64
5	292	1158,35	125	0,92	113	73,20	0,88	64,50	27,40	2,66
5	293	1158,75	171	0,94	156				30,50	2,65
5	294	1159,00	55,80	0,86	48,70				27,10	2,62
5	295	1159,20	21,90	0,71	18,60				21,60	2,67
5	296	1159,65	0,17	0,50	0,10	0,24	0,50	0,15	8,80	2,54
5	297	1159,90	NMP		NMP				10,70	2,39
5	298	1160,00	NMP		NMP				11,70	2,29
5	299	1160,15	NMP		NMP				7,40	2,59

2.7.2 Log Evaluation

Using the ELANPLUS software Agip Milan has carried out a quantitative log interpretation. The analysis was based on the set of logs acquired by Schlumberger including HRLA, PEX, FMI, and CMR.
Table 2.7.3 and Fig.2.7.1 summaries the well 7122/7-2 reservoir zone parameters.

REALGRUNNEN RESERVOIR ZONES

PARAMETERS :

VSH MAX = 0.40

PHIE MIN = 0.10

Sw MAX = 0.60

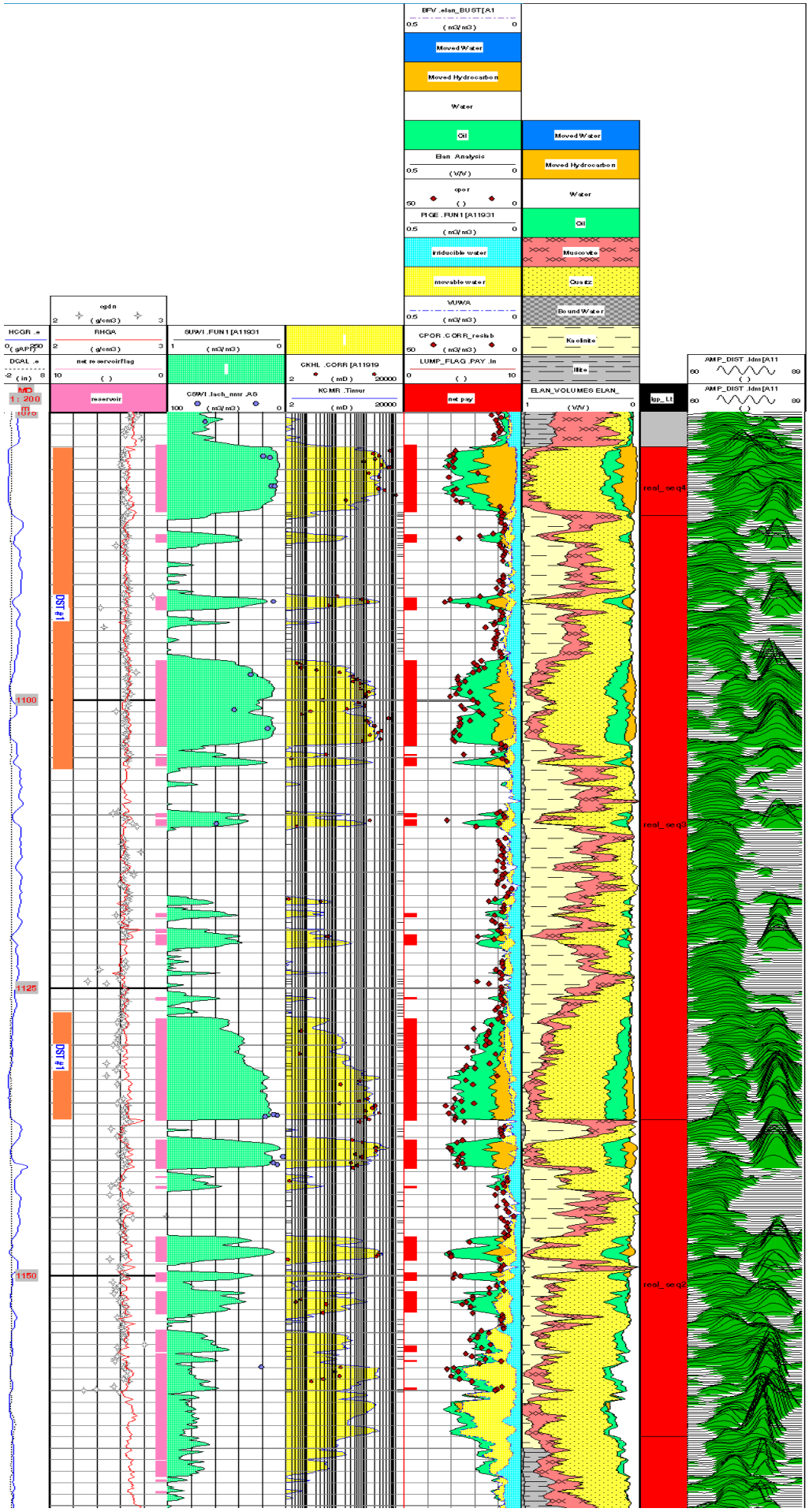
RESERVOIR : REALGRUNNEN GROUP

OWC FROM LOG ANALYSIS : m 1153 MD

MEASURED DEPTH

LEVEL NAME	GROSS THICK.	NET RESERV	NET PAY	PHIE AVG	SW AVG	NET/ GROSS
SEQUENCE 5	6.0 m	5.6 m	5.6 m	0.27	0.10	0.93
SEQUENCE 4	20.0 m	9.1 m	9.0 m	0.23	0.21	0.45
SEQUENCE 3	32.5 m	12.3 m	12.0 m	0.21	0.29	0.37
SEQUENCE 2	27.8 m	17.1 m	7.9 m	0.23	0.30	0.29
SEQUENCE 1	31.2 m	3.8 m	-	0.16	-	-
TOTAL	117.5 m	47.9 m	34.5 m			

CPI well 7122/7-2



2.7.3 FMT Pressure Interpretation

25 MDT pressure measurements were taken in the well in two runs. The MDT failed during operation and the 13 last points were taken with another MDT tool. The pressure difference between the two runs is app. 0.1 bar.

The MDT pressure points give an OWC at 1135m msl (Fig. 2.7.2). This is 14 m deeper than in the well 7122/7-1. There is also a pressure difference between the two wells in the oil zone of 1 bar. The difference in OWC and reservoir pressure is indicating a reservoir barrier between the two wells. The most likely candidate for such a pressure barrier is the NE – SW trending fault just east of well 7122/7-2.

Test No.	Test Depth	Test TVD	Gauge	Formation	Mud Befor	Mud After	Drawdown	Pretest Vc	Remarks
	m	m		BAR	BAR	BAR	md/cp	cc	
1	1079,06	1078,92	BQP1	119,6	136,42	136,41	982,8	20	
2	1081,05	1080,91	BQP1	119,73	136,65	136,62	26,7	20	
3	1083,07	1082,93	BQP1	119,9	136,88	136,88	312,03	20	
4	1091,49	1091,34	BQP1	120,54	137,93	137,94	413,68	20	
5	1098,99	1098,83	BQP1	121,09	138,85	138,87	625,78	20	
6	1102,99	1102,82	BQP1	121,41	139,39	139,34	661,78	20	
7	1133,02	1132,81	BQP1	123,75	143,12	143,12	1056,55	20	
8	1136,01	1135,8	BQP1	123,98	143,5	143,47	58,79	20	
9	1139,01	1138,79	BQP1	124,22	143,87	143,86	475,22	20	
10	1148,2	1147,97	BQP1	124,94	145,02	145,02	644,3	20	
11	1150,1	1149,87	BQP1	125,29	145,26	145,25	62,62	20	
12	1152,5	1152,26	BQP1	125,37	145,56	145,55	29,34	20	
1	1079,09	1078,96	BQP1	119,69	135,98	135,98	1010,06	20	
2	1103,09	1102,92	BQP1	121,54	138,96	138,92	86,52	20	
3	1133,09	1132,88	BQP1	123,88	142,65	142,68	260,72	20	
4	1156,7	1156,46	BQP1	25,64	145,59	145,62		0,96	
5	1158,52	1158,28	BQP1	126,02	145,81	145,83	110,78	20	
6	1162	1161,75	BQP1	126,38	146,28	146,23	105,82	20	
7	1164	1163,75	BQP1	126,61	146,49	146,44	8,37	0,79	
8	1197,31	1197	BQP1	131,79	150,66	150,68	114,96	20	
9	1228,99	1228,64	BQP1	135,13	154,63	154,63	884,76	20	
10	1244,02	1243,65	BQP1	136,72	156,52	156,51	48,52	20	
11	1387,01	1386,49	BQP1	152,66	174,35	174,32	117	20	
12	1389	1388,48	BQP1	152,86	174,59	174,54	108,1	20	
13	1162	1161,75	BQP1	126,38	142,39	126,38		20	Sampling

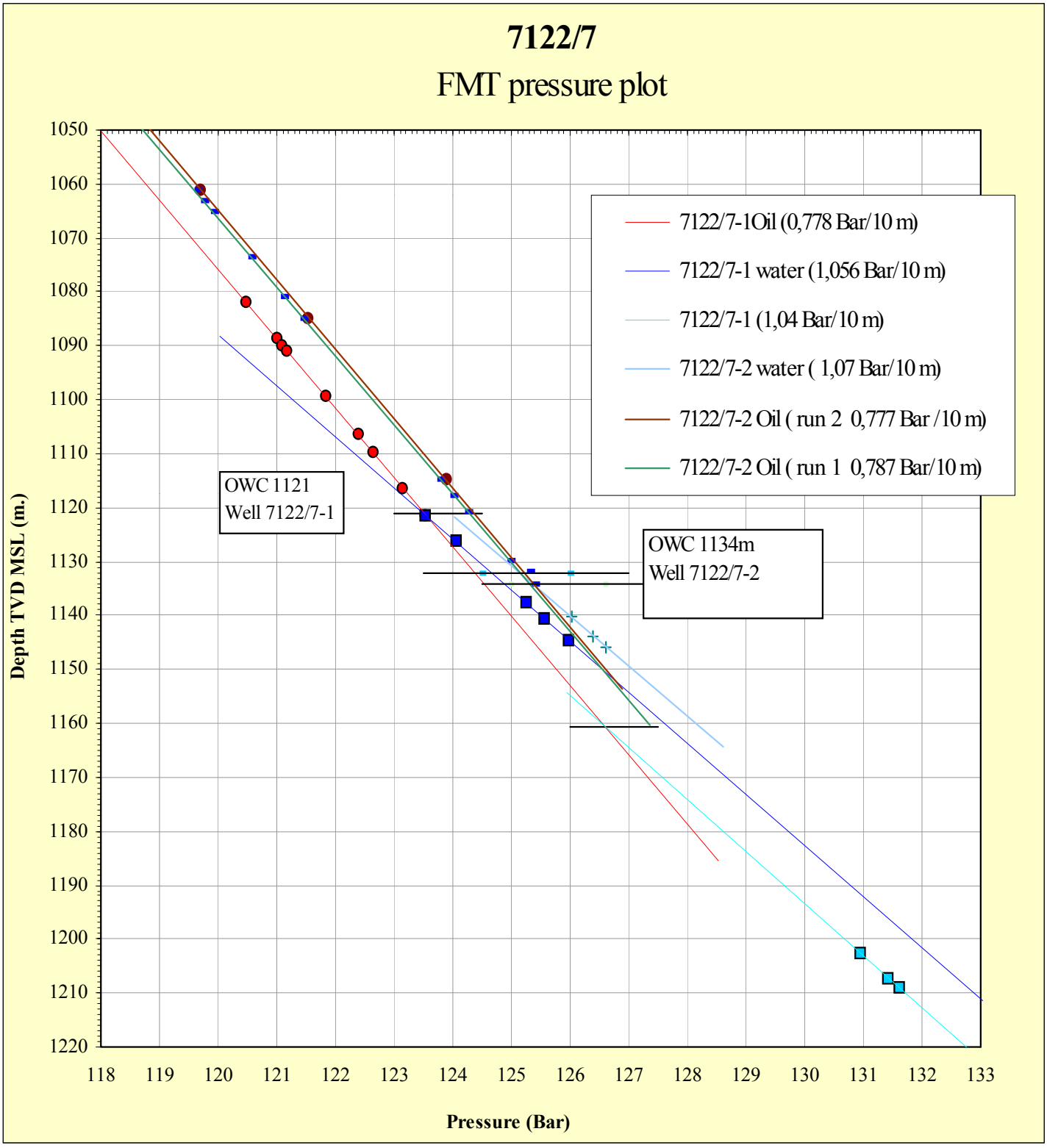

7122/7
FMT pressure plot
Depth TVD MSL (m.)
Pressure (Bar)
1050
1060
1070
1080
1090
1100
1110
1120
1130
1140
1150
1160
1170
1180
1190
1200
1210
1220
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
7122/7-1Oil (0,778 Bar/10 m)
7122/7-1 water (1,056 Bar/10 m)
7122/7-1 (1,04 Bar/10 m)
7122/7-2 water (1,07 Bar/10 m)
7122/7-2 Oil (run 2 0,777 Bar /10 m)
7122/7-2 Oil (run 1 0,787 Bar/10 m)
OWC 1121
Well 7122/7-1
OWC 1134m
Well 7122/7-2

Fig. 2.7.2

2.7.4 Well testing

In the period from 6 to 13 October 2001, a test was performed on well 7122/7-2. The purpose of the well was to test the hydrocarbon potential of the Jurassic Realgrunnen Group Formation in the central fault compartment of the Goliath Prospect to the west of the already proven eastern compartment of the field (well 7122/7-1).
The Realgrunnen Formation was found to be an oil bearing reservoir (33.5^0 API) and two different intervals (1078-1106, 1127-1136.5 mRKB) were tested in commingle.

The main targets of the well test were:

to evaluate the main formation properties (permeability, skin damage, reservoir pressure);
to evaluate the well productivity;
to determine the proper reservoir model and to verify the presence of boundaries (if any);
to collect representative samples of the produced fluid for PVT analysis;
to assess any water and sand production.

Test reults

The main interpretation results are reported in the following table:

	WELL 7122/7-2
Test date	6-13 Oct 2001
Formation	Realgrunnen
Tested Interval [mRKB]	1078.2-1160.6 1126.3-1135.4
Completion type	Cased Hole
Gauge Depth [mRKB]	1063.3
Reservoir Model	Part. Compl. - Rectangle
Initial Reservoir Pressure [bar]	118.4
Final Reservoir Pressure [bar]	118.2
Depletion [bar]	0.289
Kh [mD*m]	1.581E+05
K(xy) [mD]	6200
K(z) [mD]	2.5
Well Skin S_w	-0.68
D_1 [m]	400
D_2 [m]	700
D_3 [m]	500
D_4 [m]	3500
Area [m^2]	3.78E+06
PI_{SS} [m^3/D/bar]	130.4

The general conclusions are highlighted herebelow:

The interpretation model was a closed rectangle where the well is placed in the proximity of one of the shorter sides. This model is consistent with the position of the well that was drilled in a block of the field whose shape looks like a rectangle closed by sealing faults and whose dimensions are of the same magnitude order as the results of the interpretation.

During the test a depletion effect (0.289 bar) was observed.

Based on both volumetric and material balance calculation, the connected volume of fluid ($12*10^6$ Sm^3) is consistent with the estimation from geological data.

A Partial Completion model was adopted. This model can be explained as the effect of the flow into the wellbore, from all the oil bearing intervals, through only a limited part of the total perforated interval. This phenomenon could be the consequence of a partial plugging of the perforations due to the inadequate underbalance pressure applied during the firing of the guns.
Neither sand nor water were produced throughout the test.

The estimated initial SBHP is representative of the real bottom hole static pressure since it falls on the pressure gradient line based on MDT measurements.

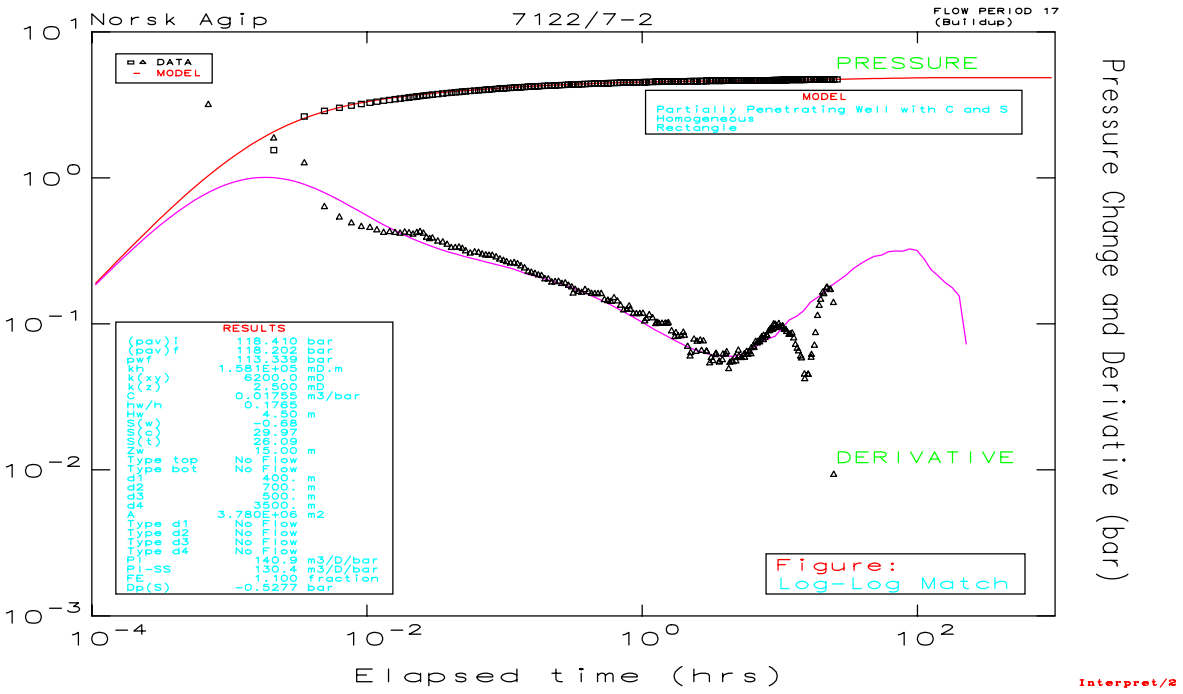


Fig.2.7.3 log log plot

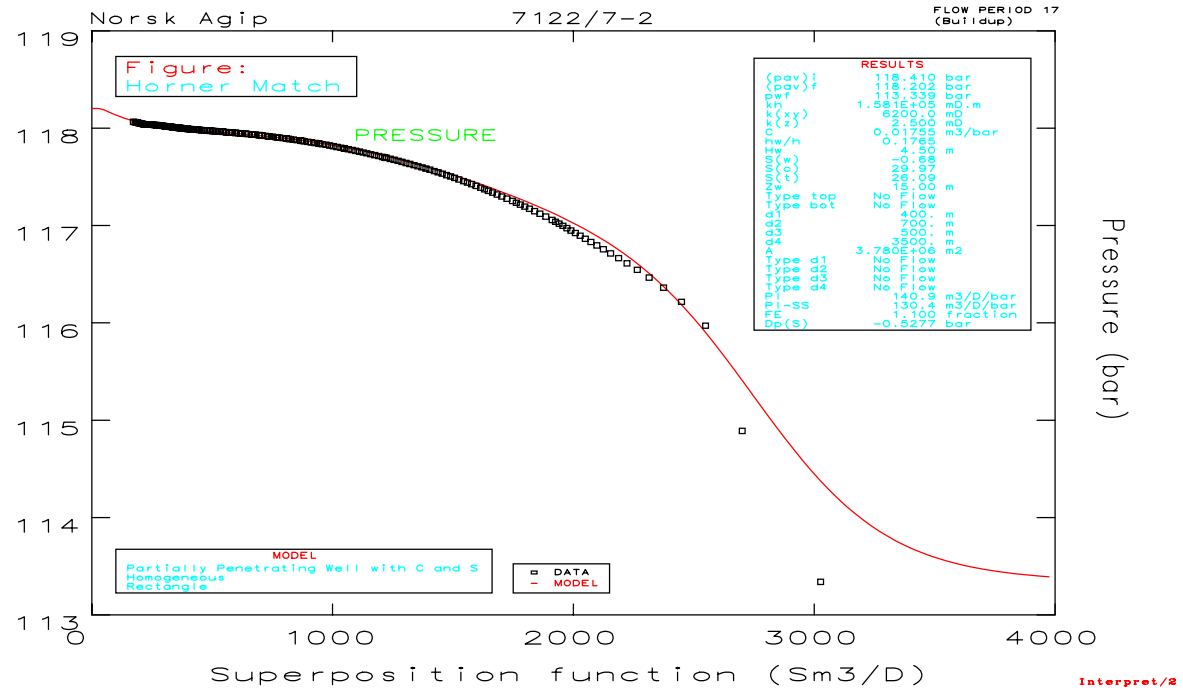


Fig. 4.7.4 horner plot

3. DRILLING

3.1 INTRODUCTION

Norsk Agip A/S drilled the exploration well 7122/7-2 in the PL 229, Block 7122/7 in the Barents Sea with the semi-submersible drilling rig "West Alpha". The well was flow tested. The total time on the well was 55.9 days, consisting of 45.5 days used for drilling related operations and rig move under the Drilling Budget, and 10.4 days for operations related to the well testing under the Testing Budget. The cost for the drilling related operations was 168 million NOK, and the cost for the testing phase was 50 million NOK.

Of the total well time, the time for rig move and rig-up/rig-down time was 40.5%, the drilling operation time amounted to 40.9% (including coring and logging time 13.4%), and the flow testing operations to 18.7%. The unproductive time was 14 % of the total time.

The rig "West Alpha" went on contract to Norsk Agip on 31 August 2001 at 1709 hrs. The rig was taken over from Statoil on block 15/3. The rig was towed north to the drilling location in the Barents Sea where the anchors were set and the rig ballasted down to drilling draft, these operations were completed in 7.7 days. At drilling draft the distance from the rotary table to the sea surface (RT – MSL) was 18 m.

After the rig had anchored on location, Norsk Agip had to wait for 4.3 days before getting a permission from SFT to start the drilling operations.

The well was spudded on 12 September 2001 at 1830 hrs. The distance from the rotary table to the seabed (RT – seabed) was 395 m.

A 12 ¼" pilot hole was first drilled to a depth of 910 m to check for shallow gas – no shallow gas was observed. The pilot hole was opened up to 36" down to 481 m. The 30" conductor pipe was set at 479 m and cemented on 16 September 2001.

The pilot hole was then opened up to 17 ½" from the 30" shoe and down to 910 m and the 20" x 13 3/8" casing string was set at 900 m and cemented on 18 September 2001.

After installing the BOP and riser, a 12 ½" hole was drilled from the 13 3/8" shoe and down to 1075 m where 5 cores were taken from 1075 m – 1160 m. The drilling of the 12 ¼" hole then continued until total depth of the well was reached at 1418 m MD RT (1417 m TVD RT). After reaching TD the well was logged.

After logging a 9 5/8" casing string was installed and the well was flow tested.

Permanent abandonment of the well was finished on 16 October and after preparing for rig move and some waiting on weather the rig left location on 19 October 2001 at 2030 hrs. The rig had to be towed south to the 62 parallel before going off contract. This towing was completed, and the rig went off contract on 26 October 2001 at 1500 hrs.

The objective of the well 7122/7-2 was to investigate the hydrocarbon potential of the central fault compartment to the west of the discovery well 7122/7-1, where the reservoir is comprised of sand stones in the Lower Jurassic / Upper Triassic Realgrunnen Group.

3.1.1 Well Data summary

Well 7122/7-2

HOLE SECTION	1	2	3	4
Hole size	12 1/4" pilot hole to 910 m	36" hole to 481 m (seabed at 395 m)	17 1/2" hole to 910 m	12 1/4" hole to 1418 m (TD of well)
Drilling fluids	Type: Seawater / High Viscous Sweeps with prehydrated bentonite mud Viscous Sweeps: Density: 1.03 -1.20 sg	Type: Seawater / High Viscous Sweeps with prehydrated bentonite mud Viscous Sweeps: Density: 1.03 – 1.20 sg	Type: Seawater / High Viscous Sweeps with prehydrated bentonite mud Viscous Sweeps: Density: 1.03 – 1.20 sg	Type: Formate/XC Polymer/Pac Density: 1.25 – 1.26 sg
Coring				Core no. 1: 1075 m – 1089 m Core no. 2: 1089 m – 1109 m Core no. 3: 1109 m – 1123 m Core no. 4: 1123 m – 1135 m Core no. 5: 1135 m – 1160 m
Logging	Drilling: MWD-GR-Resistivity-Sonic Logging in open hole: None	Drilling: None Logging in open hole: None	Drilling: None Logging in open hole: None	Drilling: MWD-GR-Resistivity Logging in open hole: HRLA-PEX-GR APS-HNGS-CMR-GR FMI-DSI MDT VSP
Casing		30" casing, Shoe at 479 m. Vetco MS-700 Wellhead System 18 ¾" x 15000 psi 30", 310 lbs/ft, grade X-52, ST-2 FB connectors.	18 ¾" wellhead x 13 3/8" casing, shoe at 900 m. 13 3/8", 72 lbs/ft, grade L-80, Buttress threads.	9 5/8" casing (for well testing purpose) Shoe at 1403 m. 9 5/8", 53.5 lbs/ft, grade P-110, Antares MS threads.
Cement		Cement type: Norcem Class G Mixwater: Seawater (lead & tail) Density: 1.56 sg lead, 1.95 sg tail Top cement: Lead: Seabed Tail: 430 m	Cement type: Norcem Class G Mixwater: Seawater (lead & tail) Density: 1.56 sg lead, 1.95 sg tail Top cement: Lead: Seabed Tail: 702 m	Cement type: Norcem Class G Mixwater: Fresh water Density: 1.90 sg Top cement: 670 m

3.1.2 Operational Achievements

The well was drilled to TD in an efficient manner.
The total rig time for the well, including well testing operations and rig move to/from the well location was planned to 50 days. Actual rig time for the well was 55.9 days. The reason for the additional 5.9 days above planned time was mainly due to:

- After the rig had anchored on location, Norsk Agip had to wait for 4.3 days before getting a permission from SFT to start the drilling operations.
- The actual coring that was carried out in the well was more extensive than what had been originally planned.

(The well testing phase took 10.4 days).

The time used for the drilling Phases (36" Phase, 17 ½" Phase and 12 ¼" Phase) was 22.9 days, which was slightly better than the planned time (23 days).

3.1.3 Operational problems

No significant operational problems were experienced during the drilling of this well.

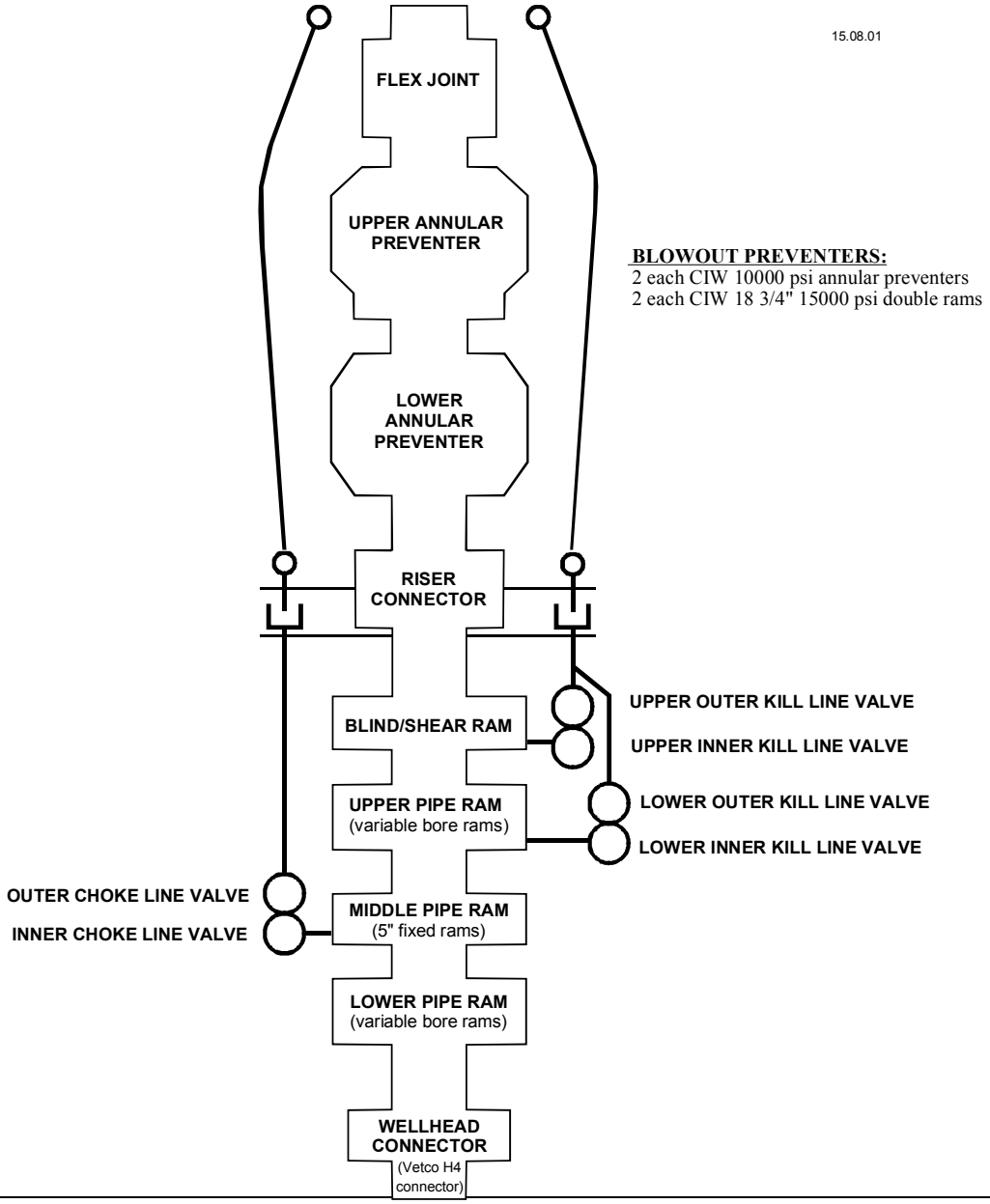
3.1.4 BOP Sketch

18 5/8" 15000 psi BOP

BOP Testing

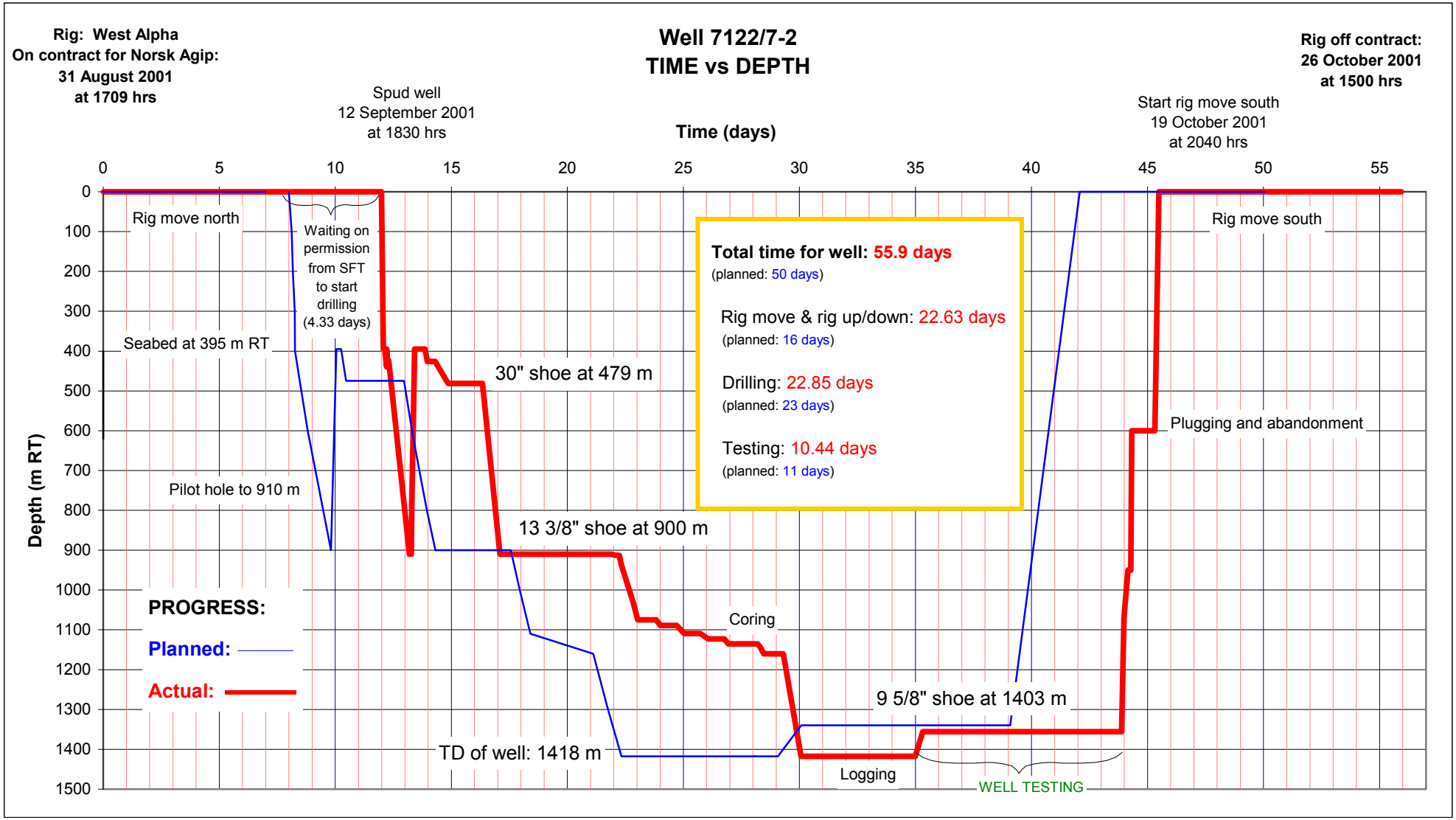
EQUIPMENT	BEFORE INSTALLATION	FIRST TEST ON WELLHEAD	BEFORE DRILLING OUT OF CASING	BI-WEEKLY IN OPEN HOLE
BAGS,LMRP CONNECTION	500psi / 7000 psi	None	500 psi/ 70% of csg. burst pressure (max. 5000 psi)	500 psi/ 70% of csg. burst pressure (max. 5000 psi)
SHEAR RAMS	500 psi/ 7000 psi	None	500 psi/ casing test pressure	
PIPE RAMS, FAIL SAFES	500 psi/ 7000 psi	None	500 psi/ 70% of csg. burst pressure (max. 5000 psi)	500 psi/ 70% of csg. burst pressure (max. 5000 psi)
WELLHEAD CONNECTION	500 psi/ 7000 psi	500 psi/ 5000 psi	500 psi/ 70% of csg. burst pressure (max. 5000 psi)	500 psi/ 70% of csg. burst pressure (max. 5000 psi)
K/C-LINES, HOSES	None	500 psi/ 5000 psi	500 psi/ 70% of csg. burst pressure (max. 5000 psi)	**WEEKLY:** 500 psi/ 70% of csg. burst pressure (max. 5000 psi)

WEST ALPHA
BOP STACK ARRANGEMENT

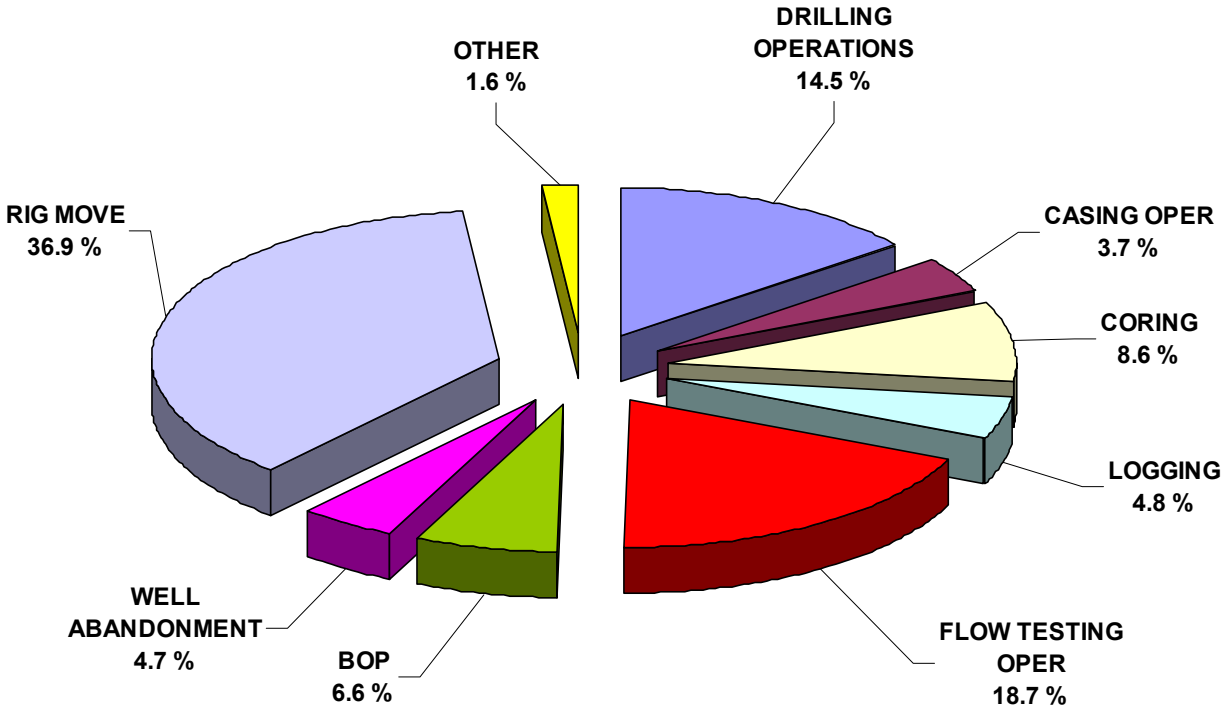


3.2 Time and Cost Analysis

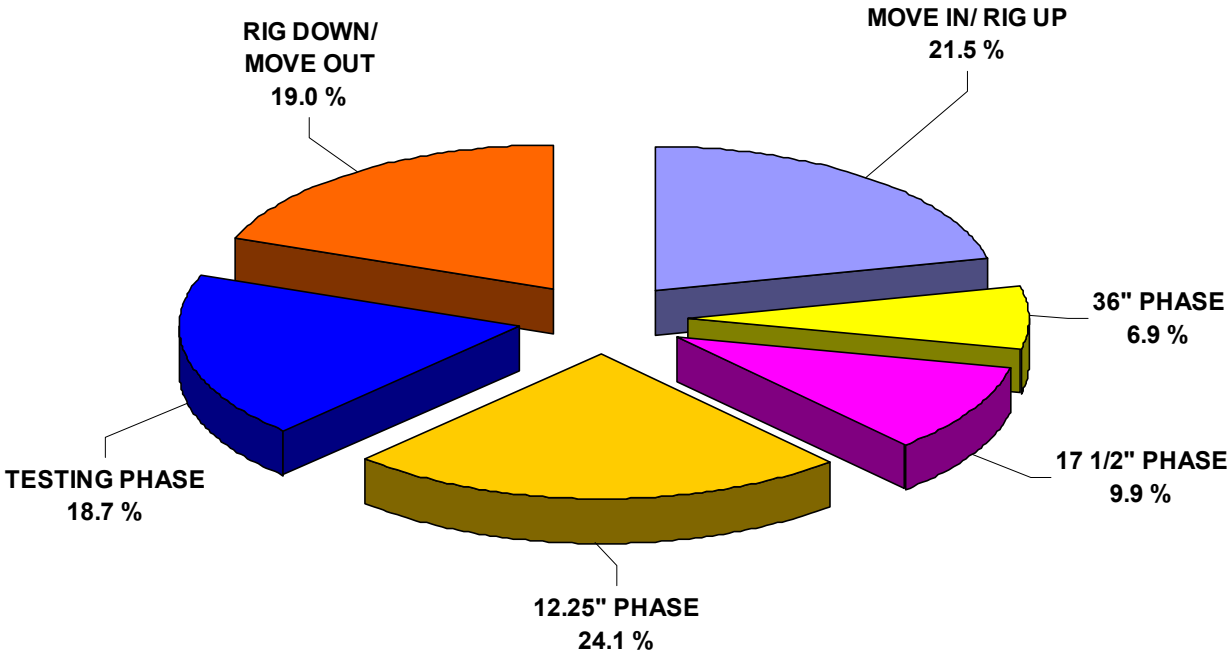
3.2.1 Days vs. Depth



3.2.2 Total Well Time Breakdown by Function



3.2.3 Time by phase

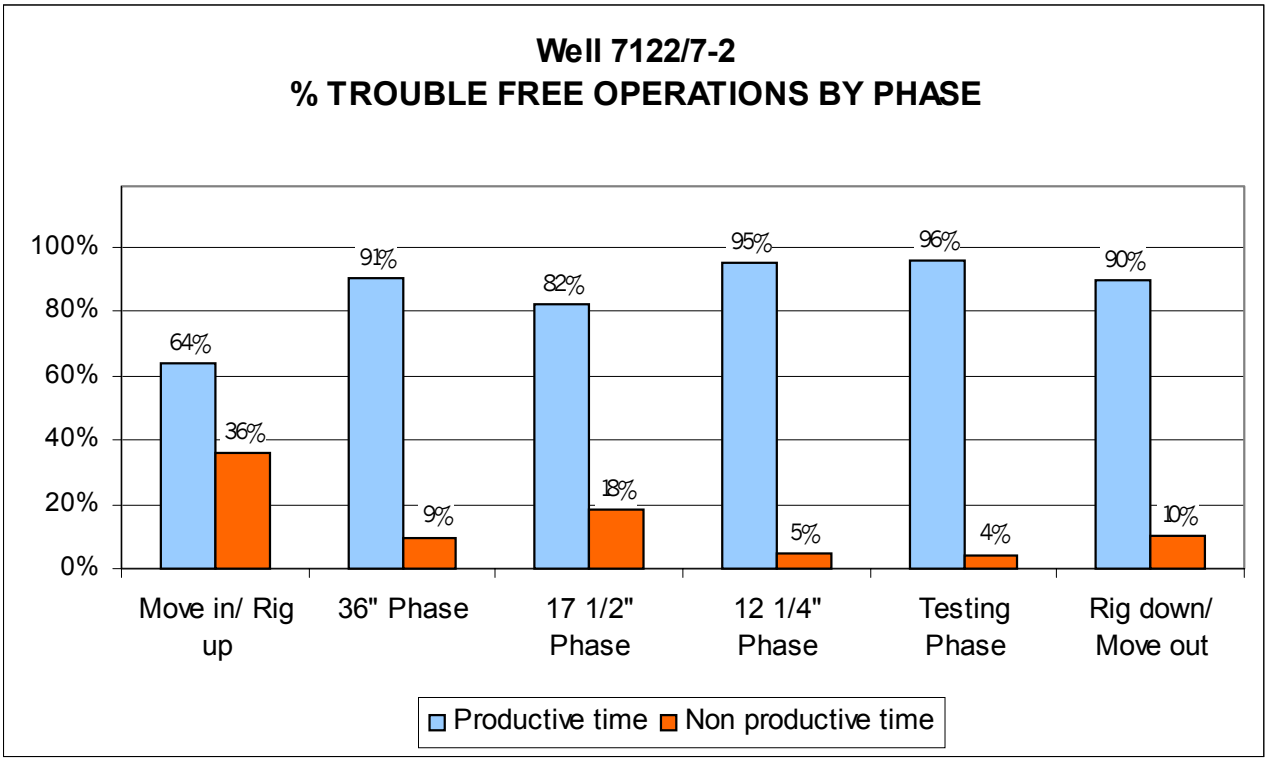


Time Breakdown by Phase

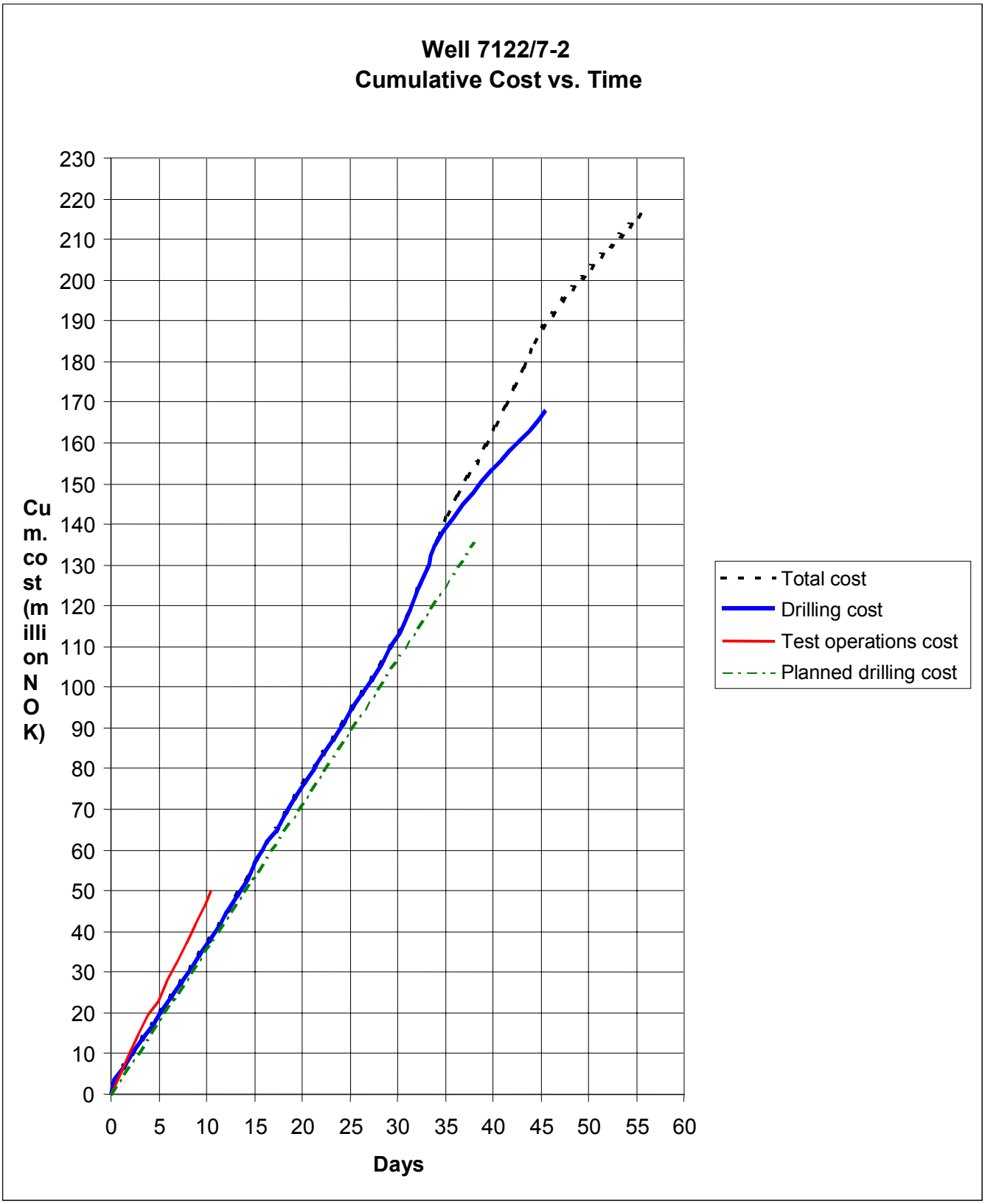
WELL 7122/7-2 TIME BREAKDOWN

	Start	End	Days	Tot. hrs	Tot. m	m/Day
	Year 2001	Year 2001				
Move In/Rig Up	August 31 1709	Sept. 12 1700	12	287.9	N / A	N / A
36" Phase	Sept. 12 1700	Sept. 16 1300	3.83	12 1/4" pilot hole: 36 Total 36" Phase: 92	505	131.7
17.5" Phase	Sept. 16 1300	Sept. 22 0200	5.54	133	431	77.8
12 1/4" Phase	Sept. 22 0200	Oct. 15 2400	13.48	323.5	518	38.4
Testing Phase (time on Testing Budget)	Oct. 4 0300	Oct. 14 1330	10.44	*250.5*	N / A	N / A
Rig Down/Move Out	Oct. 16 0000	Oct. 26 1500	10.63	255	N / A	N / A
Total time on Drilling Budget (including rig move)			*45.47*	*1091.4 (excluding the time for the well testing phase)*	*1023*	*22.5*
Total time used on well (including well testing and rig move)	1709 hrs August 31 Year 2001	1500 hrs Oct. 26 Year 2001	55.91	1341.9	1023	18.3

3.2.4 Non-Productive vs. Productive Time



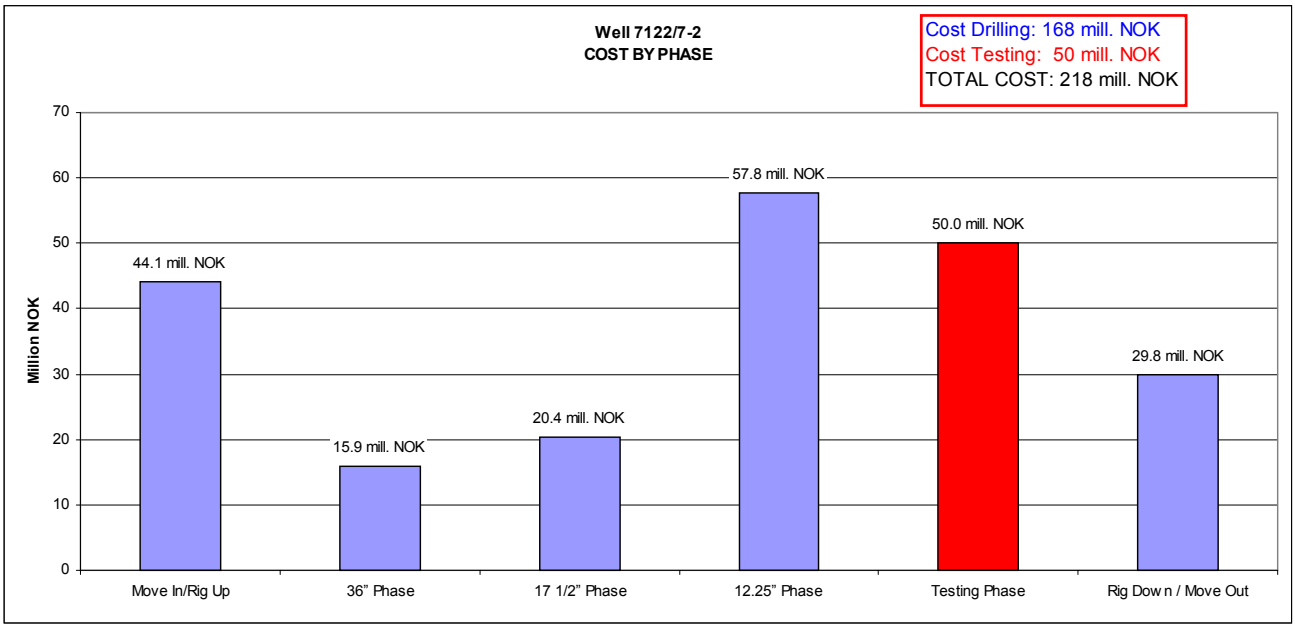
3.2.5 Cost vs. Depth

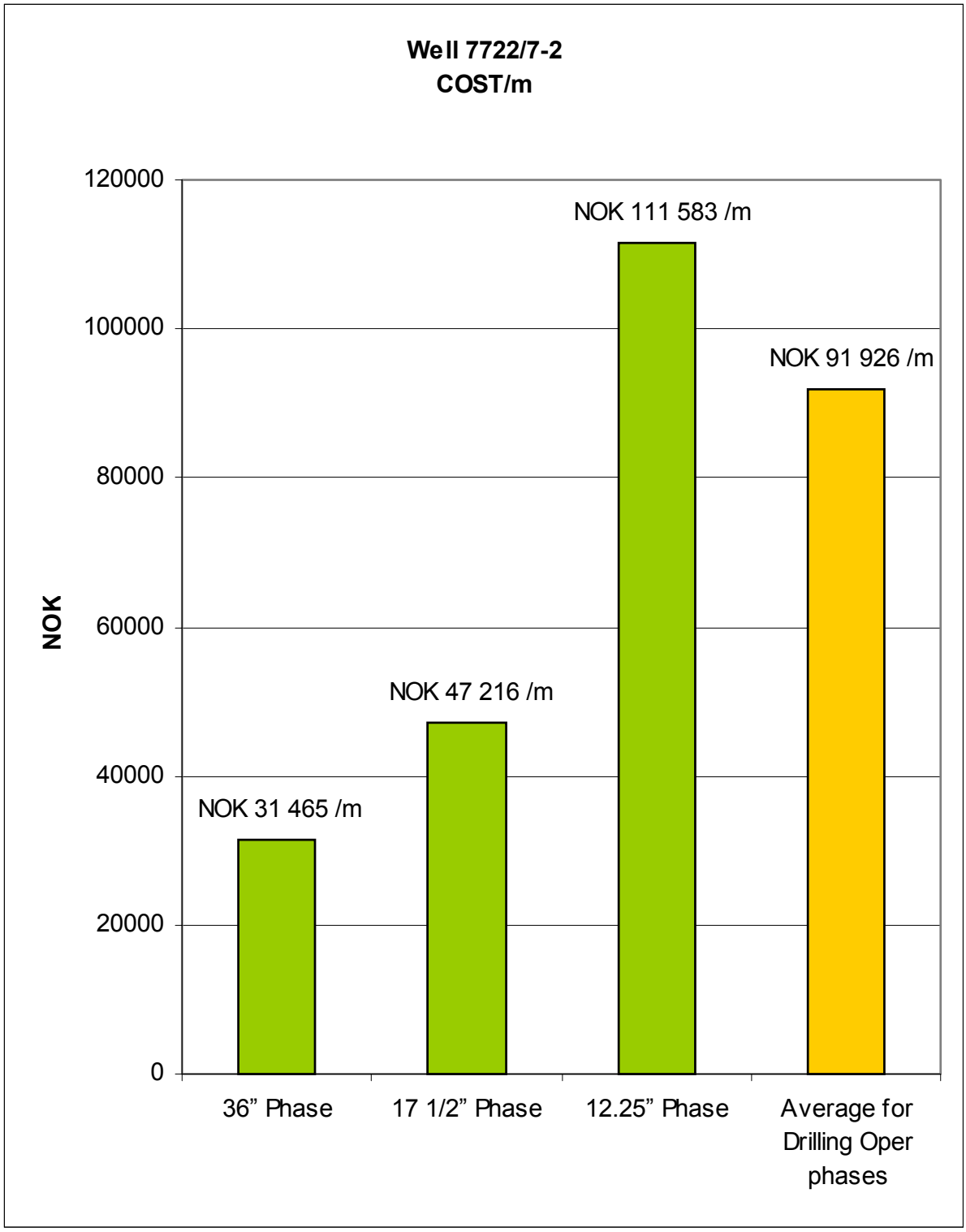


3.2.6 Cost per Phase

COST BY PHASE	Start 2001	End 2001	Days	Section Cost (in million NOK)	Cost/Day (in million NOK)	Meter	Cost/Meter (NOK)
Move in/Rig Up	August 31 1709	Sept. 12 1700	12	44.13	3.68	N/A	N/A
36" Phase	Sept. 12 1700	Sept. 16 1300	3.83	15.89	4.15	505	31465
17 1/2" Phase	Sept. 16 1300	Sept. 22 0200	5.54	20.35	3.67	431	47216
12.25" Phase	Sept. 22 0200	Oct. 15 2400	13.48	57.80	4.29	518	111583
Testing Phase (time on Testing Budget)	Oct. 4 0300	Oct. 14 1330	10.44	50.00	4.79	N/A	N/A
Rig Down/Move Out	Oct. 16 0000	Oct. 26 1500	10.63	29.81	2.80	N/A	N/A

Drilling operations phase (time on Drilling Budget)			***45.47***	***168.0***	3.69	***1023***	***164223***
TOTAL (drilling + testing)	**August 31 1709**	**Oct. 26 1500**	**55.91**	**218.0**	3.90	**1023**	**213099**

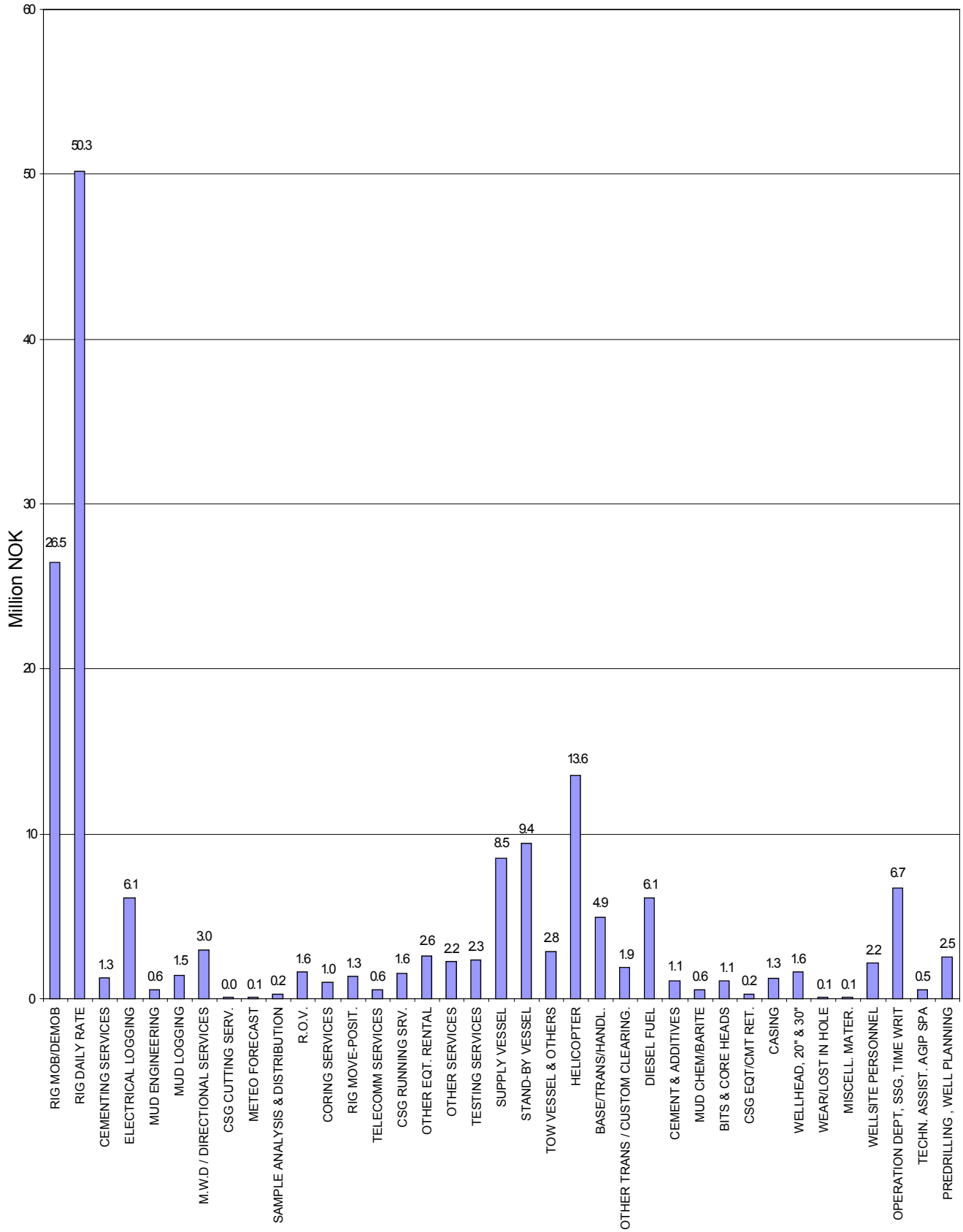



Well 7722/7-2
COST/m
120000
100000
80000
60000
40000
20000
0
NOK
NOK 31 465 /m
NOK 47 216 /m
NOK 111 583 /m
NOK 91 926 /m
36" Phase
17 1/2" Phase
12.25" Phase
Average for Drilling Oper phases

3.2.7 Itemized Cost by Service

Well 7122/7-2

DRILLING OPERATIONS - ITEMIZED COST BY SERVICES



3.3 OPERATIONS

3.3.1 Unplanned Events

During the entire well operations, including well testing, the unplanned/ unproductive time amounted to 188 hours (14% of total time). Of this time 104 hours (7.75% of total time) were lost having to wait for a special permission from SFT to start the drilling operation. In the 36" Phase the unplanned/ unproductive time was 8.5 hours, mainly due to malfunction and repair of the top drive. In the 17 ½" Phase the unplanned/ unproductive time was 1 day, mainly due to problems with the BOP. In the 12 1/4" Phase the unplanned/ unproductive time was 15 hours, mainly due to problems with the MDT tool during intermediate logging. In the Well Testing Phase the unplanned/ unproductive time was 10 hours, mainly due to problems deriving from the malfunction of one of the lubricator valves. In the "Rig down/Move out" Phase the unplanned/ unproductive time was 26.5 hours, caused mainly by having to wait on weather before being able to start the rig move south.

3.3.2 Drilling Summary

Move In & Mooring Operations:

The rig "West Alpha" was taken over from Statoil on 31 August 2001 at 1709 hrs after Statoil had finished a well in block 15/3. The rig was towed north to the drilling location in the Barents Sea. When reaching the planned well location, the rig was placed 50 m away from the location. The anchors were set and the rig was ballasted down to drilling draft. The rig then had to wait for
4.33 days before Norsk Agip received a permission from SFT to start the drilling operations. When this permission was received, the rig was pulled over the well location by pulling on the anchors.
The rig move to the well location, mooring and waiting on the permission to drill took 12 days. At drilling draft the distance from the rotary table to the sea surface (RT – MSL) was 18 m.

Final rig Geographical Location:

Lat. = 71 deg. 17 min 28.46" N
Long. = 22 deg. 16 min 57.22" E

UTM Location:
X = 545915.0 m Easting
Y = 7910579.5 m Northing

The co-ordinates above refer to the European Datum 1950 (ED50), UTM projection, Zone 34 with Central Meridian 21 degrees East.

12 ¼" Pilot hole/ 36" Hole section / 30" Conductor

DEPTH INTERVAL:
12 ¼" Pilot Hole: **Seabed (at 395 m RT) – 910 m RT**
36" Hole Section: **Seabed (at 395 m RT) – 481 m RT**

General:
With regard to operations time and cost the 12 ¼" pilot hole is defined as part of the operations on the 36" hole section.

The purpose of drilling the pilot hole was to check for possible shallow gas, using seawater and high viscosity sweeps of bentonite mud to clean the hole. No shallow gas was observed.
The major goals established for drilling the 36" hole section was to drill the hole quickly, using seawater and high viscosity sweeps of bentonite mud to clean the hole, run casing as quickly as possible, and cement the casing up to seabed.

The total cost for the 36" phase, from spud of the 12 ¼" pilot hole to the start of the 13 3/8" phase, was 15.89 million NOK or 31465 NOK/m. The total time for the 36" phase was 3.83 days with 8.5 hours of unscheduled events due to malfunction and repair of the top drive.

Drilling:
The ROV was first used to place 2 marker buoys at the well location.
Pilot hole
With a 12 1/4" bit, and with MWD/Sonic in the BHA, the pilot hole was spudded and first drilled down to 422 m. A survey showed that the hole had an inclination of 3.11 degrees. The rig was therefore moved 11 m to the south and the pilot hole was re-spudded. The pilot hole was drilled to 910 m and a flow check was made while the ROV observed at seabed, no shallow gas was seen. The pilot hole was drilled with seawater, using high viscosity sweeps to clean the hole. The hole was displaced to 1.20 sg high viscosity mud.

36" hole section
The 36" hole section was then drilled using a 17 ½" bit followed by a 2-stage 36" hole opener behind the bit. This section was drilled with seawater, using high viscosity sweeps to clean the hole. Once the 36" hole had been drilled to the depth of 481 m, the hole was displaced to high viscosity bentonite slurry. A wiper trip was made without encountering any tight spots, and the hole was again circulated until clean and displaced with 1.20 sg high viscosity mud prior to pulling out of hole to run the 30" casing.

Bits/BHA:
The pilot hole was drilled with a 12 ¼" Smith MGGH+ODC bit (IADC Code 135).

A 17 ½" Smith 10M bit was used on bottom of the 36" 2-stage hole opener to drill the 36" section. The BHA used was a slick assembly.

The detailed assemblies are described in the BHA report section.

Mud/Solids Control:
Seawater was used to drill both the 12 ¼" pilot hole and the 36" hole section. High viscosity sweeps were employed to help clean the holes. Upon displacement, a high viscosity/weighted mud was used to ensure good cleaning of the hole and to improve hole stability.

Casing/Cementing:
The 30" casing string consisted of 7 joints of 310 lbs/ft, grade X-52 casing with ST-2 FB connections. The wellhead used was a Vetco MS-700 18 ¾" x 15000 psi subsea wellhead.

The 30" casing string was run on drillpipe with the RGB installed around the 30" wellhead and with the cementing stinger installed on bottom of the wellhead running tool. The 30" shoe was set at 479 m.

The 30" casing was cemented up to seabed with 40.4 m^3 1.56 sg lead slurry and 11.82 m^3 1.95 sg tail slurry.
While cementing the 30" casing the ROV was used to observe for cement returns to the seabed.

17 1/2" Hole section / 18 ¾" Wellhead x 13 3/8" Casing

DEPTH INTERVAL: 395 – 910 m RT

General:
The 17 1/2" hole section was drilled with the intention to set the 13 3/8" casing deep enough to achieve a leak-off sufficient for drilling to well TD. The casing string consisted of the 18 ¾" wellhead housing with a cross-over to the 13 3/8" casing below. The 18 3/4" x 13 3/8" casing was run and cemented without problems. In the 17 ½" Phase the unplanned/ unproductive time was 1 day, mainly due to problems with landing the BOP. Total time for the 17 1/2" Phase was 5.54 days, and the cost was 20.35 million NOK or 47216 NOK/m.

Drilling:
A 17 1/2" bit was used to drill out the 30" shoe and open up the pilot hole down to 910 m. The hole was circulated clean and displaced to 1.20 sg high viscosity/weighted mud prior to pulling out to run the 13 3/8" casing.

Bits/BHA:
A 17 1/2" Smith 10MODRDPD (IADC Code 435) was used for drilling the hole section.

Mud/Solids Control:
Seawater was used to drill the 17 1/2" hole, with high viscosity sweeps employed to help clean the hole.

A 1.20 sg seawater/bentonite mud with ilmenite used as the weighting material was used to displace the 17 1/2" hole section prior to run the 13 3/8" casing.

Casing/Cementing/ install BOP & riser:
The 13 3/8" casing was run on drill pipe, and the 18 ¾" wellhead housing was landed in the 30" wellhead. The 18 ¾" x 13 3/8" casing string was cemented up to seabed with 66.65 m^3 1.56 sg lead slurry and 15.52 m^3 1.95 sg tail slurry. The ROV, stationed at the seabed during the cementing, observed returns during the entire cement job. The 13 3/8" shoe was set at 900 m.

The BOP stack was run on the marine riser and installed on the 18 ¾" wellhead. The diverter was installed, and the choke and kill line were pressure tested. The BOP test tool was run, and the BOP stack was pressure and function tested.

12 1/4" Hole section / Logging / Well Testing/ P&A

DEPTH INTERVAL: 900 – 1418 m RT

General:
After drilling out of the 13 3/8" casing shoe, the 12 1/4" hole was first drilled down to 1075 m where the interval 1075 – 1160 m was cored with a 8 ½" core bit. The drilling of the 12 1/4" section was then resumed until the TD of the well was reached at 1418 m.
The total time for the 12 1/4" phase was 13.48 days (including coring, logging and P&A). Unplanned/unproductive time was 15 hours due to unscheduled events caused by problems with the MDT tool during intermediate logging. The interval cost was 57.8 million NOK or
111583 NOK/m.

Drilling:
A 12 1/4" bit was used to drill out the 13 3/8" shoe and clean out the rat hole to 915 m. A formation integrity test (FIT) was performed to an equivalent mud density of 1.65 sg. The drilling of the 12 1/4" hole section continued down to 1075 m where the coring was started. Using 8 ½" core bit and coring assembly, Core no. 1 was taken from 1075m to 1089 m where the ROP dropped to zero; core recovery was 89%. Core no. 2 was taken from 1089 m to 1109 m; core recovery was 82%.
Core no. 3 was taken from 1109m to 1123 m; core recovery was 94%. Core no. 4 was taken from 1123 m to 1135 m; core recovery was 100%. An MDT log was then run to establish pressure points. Core no. 5 was taken from 1135m to 1160 m; core recovery was 100%.

When continuing the drilling of the 12 ¼" section the cored interval was first opened up to

12 ¼". The drilling then continued down to 1418 m which was TD of the well. During the wiper trip from TD, back-reaming had to be done through tight spots. The hole was circulated and cleaned prior to pulling out to start the logging.

The time required for the coring operations in well 7122/7-2 was 4.8 days (the coring time is included in the total time for the 12 1/4" Phase).

Logging
Schlumberger was the logging contractor. The time required for the wireline logging in the 12 1/4" hole was 2.67 days (the logging time is included in the total time for the 12 1/4" Phase).

Intermediate log runs: One MDT log run was made after having cut Core no. 4.

Logs run after reaching well TD:
Run no. 1: HRLA-PEX-GR
Run no. 2: APS-HNGS-CMR-GR
Run no. 3: FMI-DSI
Run no. 4: MDT (electric fault in MDT tool string, causing 7 hours lost time)
Run no. 5: VSP
Re-run of log no. 4: MDT

Bits/BHA:
In the 12 1/4" hole section two drill bits and one core bit was used.

The first drill bit was a 12 1/4" Smith MGGH+ODC (IADC Code 135), used for the interval 910 – 1075 m, and came out with the teeth approx. 10% worn.
The second drill bit was a 12 1/4" bit from DPI, and was used for the interval 1160 – 1418 m. The bit came out with the cutters approx. 50% worn.

For the coring runs one core bit type MCP 682 was used.

Mud/solids control:
The mud used for the 12 1/4" hole section was 1.25 sg Formate brine where XCpolymer and PAC was used for obtaining viscosity and to maintain rheology.
No problems with the mud were experienced during the drilling of the 12 1/4" hole section.

Testing Phase Summary:
The total time for the Testing Phase was 10.44 days. The well was not flowed at maximum rate due to the failure of a lubricator valve in the test string. The cost of the Testing Phase was
50 MM NOK.

A 9 5/8" casing string was run and cemented with the shoe at 1403 m. After clean-out of the casing the test string with TCP guns on bottom was run and the fluted hanger was landed in the wellhead. The test string was displaced with nitrogen down to above the test packer. The test packer was set at 1056 m and the 9 5/8" casing was perforated in the intervals 1078 m – 1106 m and 1127 m – 1136.5 m by firing the pressure activated TCP guns. The well was opened for clean-up flow and then shut in for build-up prior to main flow. During the main flow the well was flowed through a 48/64" choke at a rate of 685 Sm3/day oil and 39758 Sm3/day gas, at a tubing head pressure of 39 bar. The flowing tubing head temperature was 15.3^{o}C. The CO_2 content in the gas was approximately 8.5%. After main flow the well was shut in for build-up. During the build-up, while attempting to run the LINC tool into the well to monitor the build-up pressure, it was found that the lower lubricator valve had failed and was stuck in a partly closed position. Because of the malfunctioned valve it was decided not to perform the maximum flow rate test that had been planned at the end of the well test. After the build-up the well was therefore killed and the test string retrieved.

A cement retainer was set above the perforated interval at 1070 m and a high pressure cement squeeze was performed to seal off the perforations. After this had been done the final work to permanently plug and abandon the well followed.

Plug and Abandonment Summary:
The time required for setting the abandonment plugs in well 7122/7-2 (excluding Plug no. 1 which is included in the Well Testing Phase) was 2.6 days. This time is included in the 12 ¼" Phase.

Plug no. 1: **Cement retainer set at 1070 m and a high pressure cement squeeze of the perforated intervals below from 1078 m to 1136.5 m.**

Plug no. 2: **Cement from 950 m up to 800 m.**

9 5/8" casing was cut at 600 m and retrieved.

Plug no. 3: **Cement from 610 m up and to 440 m (45 m below seabed).**

30" and 20" casings were cut at 400 m (5 m below seabed) and retrieved.

Note: There was cement behind both the 30" and 20" x 13 3/8" casing strings up to seabed at 395 m. Top of cement behind the 9 5/8" casing was at 670 m (verified by CBL).

The BOP stack and marine riser was pulled after Plug no. 3 had been set and tested.

See also the attached figure of P & A.

<u>Rig down/Move out</u>

The Rig down/Move out Phase began on 16 October, 2001, and the total time used for this phase was 10.63 days. The operations under "Rig down/Move out" includes the pulling of the BOP stack and riser, the cutting & retrieval of the 30" and 20" casing and the pulling of the anchors. The rig move south started on 19 October 2001 and was finished on 26 October 2001 at 1500 hrs.
Operations on well 7122/7-2 ended on 26 October 2001 at 1500 hours.

3.3.3 Daily Operations

NORSK AGIP
Operations Summary Report

Well Name: 7122/7-2 Start: 31.08.01
Contractor Name: SMEDVIG End: 26.10.01
Rig name: WEST ALPHA Spud: 12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
31-aug-01								Rig on Hire at 17:09. Rig on tow from block 15/3-7 to 7122/7-2 location. Tow vessels: Stirling Iona & Torm Heron
31-aug-01	17:09	00:00	7	M	P	b	MIRU	On tow to Barents Sea TIME Position HDG SPD WIND SEA DTG (NM) 1800 N 58* 50 E *1 45' 034 5,9 0 0,5 940 2100 N 59* 10' E 2* 09' 032 5,4 NW2 0,5 924 2400 N 59* 18' E 2* 22' 032 5,0 NW2 0,5 911
01-sep-01	00:00	00:00	24	M	P	b	MIRU	On tow to Barents Sea Time Position HDG SPD WIND SEA (m) DTG (NM) 00:00 N 59* 18' E 2* 22' 032 5,0 NW2 0,5 911 21:00 N 60.38.5* E 3* 16' 010 4,0 NNW1 0,5 824
02-sep-01	00:00	00:00	24	M	P	b	MIRU	On tow to Barents Sea Time Position HDG SPD WIND SEA (m) DTG (NM) 00:00 N 60* 47.5' E 3* 19' 003 0.0 S1 0.5 816 24:00 N 62.29* 54.3' E 3* 53' 001 5.0 N2 2.0 699
03-sep-01	00:00	00:00	24	M	P	b	MIRU	On tow to Barents Sea Time Position HDG SPD WIND SEA (m) DTG (NM) 24:00 N 64* 03' E 4* 31' 010 4.0 N6 4.0 638
04-sep-01	00:00	00:00	24	M	P	b	MIRU	On tow to Barents Sea Time Position HDG SPD WIND SEA (m) DTG (NM) 24:00 N 65* 53' E6* 20' 036 7.3 NW 1 0.5 467
05-sep-01	00:00	00:00	24	M	P	b	MIRU	On tow to Barents Sea Time Position HDG SPD WIND SEA (m) DTG (NM) 24:00 N 68* 24' E 9* 52' 046 7.1 S7 4.0 303
06-sep-01	00:00	00:00	24	M	P	b	MIRU	On tow to Barents Sea Time Position HDG SPD WIND SEA (m) DTG (NM) 24:00 N 70*09' E 16*34' 052 7.7 SE 1 1.0 131
07-sep-01	00:00	18:30	18.5	M	P	b	MIRU	On tow to Barents Sea Time Position HDG SPD WIND SEA (m) DTG (NM) 15:00 N 71*07' E 21*09' 057 7.9 NE 3 1.5 20 18:30 N 71*17' E 22*16'
07-sep-01	18:30	00:00	5.5	M	P	d	MIRU	Anchor handling 18:30 Anchor no. 5 on bottom 20:21 Anchor no. 1 on bottom 22:10 Anchor no. 4 on bottom 23:44 Anchor no. 3 on bottom At 21:10 pennant wire no 8 broke, changed same.

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
08-sep-01	00:00	04:00	4	M	P	d	MIRU	01:30 Anchor no. 2 on bottom 02:01 Anchor no. 8 on bottom 02:52 Started ballasting 03:08 Anchor no. 6 on bottom 03:45 Anchor no. 7 on bottom
08-sep-01	04:00	07:00	3	M	P	d	MIRU	Pretension tested anchors to 180 ton, OK.
08-sep-01	07:00	08:30	1.5	M	P	d	MIRU	Ballasting rig.
08-sep-01	08:30	00:00	15.5	P	U	e	MIRU	Waiting on permission to perform drilling activities.
09-sep-01	00:00	00:00	24	P	U	e	MIRU	Waiting on permission to perform drilling activities.
10-sep-01	00:00	00:00	24	P	U	e	MIRU	Waiting on permission to perform drilling activities.
11-sep-01	00:00	00:00	24	P	U	e	MIRU	Waiting on permission to perform drilling activities Cut and slip Rucker lines and pressure test stand pipes to 350 bar. Start to make up 12 1/4" pilot hole BHA and 36" BHA. Mud engineer making kill mud to 1.5 sg.
12-sep-01	00:00	16:30	16.5	P	U	e	MIRU	Waiting for permission to drill well.
12-sep-01	16:30	17:00	0.5	M	P	c	MIRU	Permission received to spud well at 16:30 12/09/01. Rig moved over location.
12-sep-01	17:00	18:30	1.5	A	P	b	DRLSUR	Picked up 12 1/4" bottom hole assembly, and run in hole to seabed. Tagged seabed at 394.47m MD RKB.
12-sep-01	18:30	19:00	0.5	A	P	f	DRLSUR	Conducted shallow gas meeting with all involved personnel, ROV deployed marker buoys on seabed.
12-sep-01	19:00	19:30	0.5	A	U	f	DRLSUR	ROV back to surface for two new marker buoys. Buoys deployed earlier got tangled together.
12-sep-01	19:30	20:00	0.5	A	U	f	DRLSUR	ROV jumped and new marker buoys deployed at seabed.
12-sep-01	20:00	22:00	2	A	P	a	DRLSUR	Drill 12 1/4" hole from 394.5m to 440m. Survey taken at 440m - Inclination 3.11 degrees. Pull out of hole and move rig 2.5 m to the south.
12-sep-01	22:00	22:30	0.5	A	U	d	DRLSUR	Re-spud well 2 m from previous locations. Drill from 394.5 m to 422.5 m. Take survey at 422 m - inclination 3.22 degrees.
12-sep-01	22:30	23:30	1	A	P	d	DRLSUR	Move rig 11m to the south to adjust for seabed current. Reamed interval from seabed to 422 m several times. Survey taken at 422 m - inclination 1.8 degrees.
12-sep-01	23:30	00:00	0.5	A	P	a	DRLSUR	Continue drilling from 422 m to 425 m.
13-sep-01	00:00	21:30	21.5	A	P	a	DRLSUR	Continue to drill 12 1/4" pilot hole from 425 m to 616 m, over pull seen at 458 m & 482 m, maximum 40T & 10T respectively. Well flow checked for 15 mins at 616 m OK. Continue to drill from 616 m to 910 m, section TD.
13-sep-01	21:30	22:00	0.5	A	P	c	DRLSUR	Circulated hole clean and condition mud. Pump 10 m^3 Hi-Vis pill and displaced using seawater. Well flow checked for 15 mins. OK.
13-sep-01	22:00	23:00	1	A	P	c	DRLSUR	Displaced hole with 1.06 sg mud. Pulled 10 m off bottom and flow checked well for 30 mins, ROV observing at seabed, OK.
13-sep-01	23:00	23:30	0.5	A	P	c	DRLSUR	Run back to bottom and displaced hole to 1.2 sg mud.
13-sep-01	23:30	00:00	0.5	A	P	b	DRLSUR	Pull out of hole from 910 m to 790 m.
14-sep-01	00:00	03:00	3	A	P	b	DRLSUR	Continue to pull out of hole with 12 1/4" pilot hole assembly, tight hole encountered from 900 m to 477 m, maximum overpull seen 40T, worked through tight intervals, OK. Continue to POOH from 477 m to surface.
14-sep-01	03:00	05:00	2	A	P	b	DRLSUR	At surface, rack back BHA and lay down bit, stabilizers, sonic, MWD and CDR tools.
14-sep-01	05:00	05:30	0.5	A	P	e	CSGCON	Hold pre-job safety meeting. Clear rig floor.
14-sep-01	05:30	06:00	0.5	A	P	e	CSGCON	Make up 30" running tool to single stand of 5" drillpipe and rack back in derrick. Rig up 30" handling equipment.

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
14-sep-01	06:00	08:30	2.5	A	P	b	CSGCON	Picked up the following 30" conductor: 1 x 30" X52 460 kg/m - ST-2 FB Shoe joint 5 x 30" X52 460 kg/m - ST-2 FB Intermediate joints 1 x 30"x1.5" Wellhead Housing joint
14-sep-01	08:30	10:30	2	A	P	b	CSGCON	Make up 30" running tool to conductor, run through rotary table and land 30" conductor string in retrievable guide base, release running tool and rack back same.
14-sep-01	10:30	11:30	1	A	P	b	DRLSUR	Make up 36" bottom hole assembly and run in hole to 390 m.
14-sep-01	11:30	13:30	2	A	P	a	DRLSUR	Move rig over well. Stab into hole, ROV observing at seabed.
14-sep-01	13:30	16:00	2.5	A	P	a	DRLSUR	Open up 12 1/4" pilot hole to 36". Drill 36" hole from 395 m to 426 m.
14-sep-01	16:00	00:00	8	A	U	a	DRLSUR	DDM pipe handler suddenly rotated on string. POOH from 426 m to 419 m, laid down single stand. Changed broken hydraulic hose on DDM. POOH from 419 m to 389 m. Investigated incident with DDM. Found fixing bolt on thrust nut loose, causing thrust nut to move up on main shaft. Repairing same.
15-sep-01	00:00	13:30	13.5	A	P	a	DRLCON	Run in hole to 389 m . Position rig over well and stab into hole. Continue to wash down from 395 m to 426 m. Drill from 426 m to 481.4 m.
15-sep-01	13:30	15:00	1.5	A	P	c	DRLCON	Displace hole with 56 m^3 of gel mud.
15-sep-01	15:00	16:30	1.5	A	P	a	DRLCON	Perform check trip to seabed. No overpull seen. Run in hole to TD, 7m of fill encountered, wash and reamed down to 481 m.
15-sep-01	16:30	17:30	1	A	P	c	DRLCON	Displace hole with 1.2 sg mud.
15-sep-01	17:30	18:00	0.5	A	P	b	DRLCON	Pull out of hole to 246 m, used rig tongs on several connections, due to over tight connections.
15-sep-01	18:00	19:30	1.5	A	P	e	DRLCON	Continue to pull out of hole with 36" BHA, rack back same in derrick.
15-sep-01	19:30	00:00	4.5	C	P	b	CSGCON	Skid 30" conductor and RGB. Make up cement stinger and running tool, land into 30" housing. Connect guidelines. Run in hole with 30" on 5" drillpipe to 425m.
16-sep-01	00:00	00:30	0.5	C	P	c	CSGCON	Continue to run in hole with 30" conductor, tight spot encountered at 425 m, worked pass. OK. 30" shoe set at 478.6 m.
16-sep-01	00:30	01:30	1	C	P	c	CSGCON	Circulate one casing volume. Pressure test lines to 200 bar.
16-sep-01	01:30	03:30	2	C	P	c	CSGCON	Commence 30" cementing operations. Pressure test cement lines to 240 bar for 5 minutes. Pump and flush 1.5 m^3 of seawater to check lines. Mix and pump 40.35 m^3 of 1.56 sg lead slurry at 800 l/min. Mix and pump 11.93 m^3 of 1.95 sg tail slurry at 800 l/min. Displace cement with 6.19 m^3 of seawater at 1000 l/min. Cementing operations complete.
16-sep-01	03:30	10:00	6.5	C	P	d	CSGCON	Waiting on cement.
16-sep-01	10:00	12:00	2	C	P	c	CSGCON	Release running Tool and pull out of hole with RT and cement stinger and rack back in derrick. Laid down running tool complete with pup joint on top.
16-sep-01	12:00	13:00	1	C	P	e	CSGCON	Pick up cement stand, break out side inlet sub and lay down. Make up Halliburton cement head with ball and dart installed and rack back in derrick.
16-sep-01	13:00	17:00	4	A	P	e	CSGIN1	Make up 18 3/4" well head housing and rack back in derrick. Laid down bit, bit sub, hole opener, anderdrift, X-over and 2 joint of 8" drill collars. Make up 17 1/2" bit, bit sub , anderdrift, 1x 9 1/2" drill collar and run in hole.

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
16-sep-01	17:00	21:30	4.5	O	U	e	CSGIN1	Work on DDM. At 18:30 all personnel mustered for boat drill, 19.00 drill complete. 20:15 Weekly safety meeting with all off duty personnel.
16-sep-01	21:30	00:00	2.5	A	P	b	CSGIN1	Continue to make up and run in hole with 17 1/2" BHA to 395 m.
17-sep-01	00:00	00:30	0.5	A	P	a	DRLIN1	Continue to run in hole from 395 m to 475 m.
17-sep-01	00:30	01:00	0.5	A	P	a	DRLIN1	Tag firm cement at 475 m. Drill out shoe track from 475 m to 482 m.
17-sep-01	01:00	19:00	18	A	P	a	DRLIN1	Drill 17 1/2" hole from 482 m to 910 m. Pump 5-10 m^3 Hi-Vis sweep every 15 m. At 651m & 833 m take survey using Anderdrift. Inclination - 1.75 degs at 651 m and 1.25 degs at 833 m.
17-sep-01	19:00	20:30	1.5	A	P	a	DRLIN1	Pulled out of hole from 910 m to 760 m. Tight hole encountered at 760 m. Reamed through interval. OK. Maximum overpull seen 40T.
17-sep-01	20:30	21:00	0.5	A	P	a	DRLIN1	Make up DDM, pumped out of hole from 760 m to 458 m.
17-sep-01	21:00	23:00	2	A	P	d	DRLIN1	Run in hole from 458 m to 837 m. Maximum drag seen 5-10T.
17-sep-01	23:00	00:00	1	A	P	d	DRLIN1	Reamed down from 834 m to 875 m. OK.
18-sep-01	00:00	00:30	0.5	A	P	d	DRLIN1	Continued to ream down from 875 m to 910 m. No fill encountered.
18-sep-01	00:30	01:00	0.5	A	P	c	DRLIN1	Displaced hole to 1.2 sg mud.
18-sep-01	01:00	03:00	2	A	P	b	DRLIN1	Pulled out of hole and Racked back BHA. L/D 17 1/2" bit and 2 x 17 1/2" stabilizers.
18-sep-01	03:00	05:00	2	C	P	b	CSGIN1	Held pre-job safety meeting for 13 3/8" casing operations. Rigged up 13 3/8" casing handling equipment.
18-sep-01	05:00	08:30	3.5	C	P	b	CSGIN1	Picked up 13 3/8" casing shoe and run in hole as per tally to 116 m.
18-sep-01	08:30	09:00	0.5	N	U	e	CSGIN1	Worked on torque wrench on DDM.
18-sep-01	09:00	12:00	3	C	P	b	CSGIN1	Continued to run in hole with 13 3/8" casing from 116 m to 392 m.
18-sep-01	12:00	13:30	1.5	C	U	b	CSGIN1	Pulled out of 30" housing , due to damaged thread connections on 13 3/8" casing joints. Laid down 3 joints of 13 3/8" casing and picked up 3 new joints and run in hole.
18-sep-01	13:30	15:00	1.5	C	P	b	CSGIN1	Re-entered 30" casing and continued to run in hole. The following 20" x 13 3/8" casing was run: 1 x 13 3/8" 107.2 kg/m N-80 BTC Shoe joint 1 x 13 3/8" 107.2 kg/m L-80 BTC Intermediate joint 1 x 13 3/8" 107.2 kg/m N-80 BTC Float collar 37 x 13 3/8" 107.2 kg/m L-80 BTC Internal joints 1 x 18 ¾" wellhead with 20" wellhead housing extension
18-sep-01	15:00	16:30	1.5	C	P	b	CSGIN1	Picked up 18 3/4" wellhead with 20" extension housing. Conducted pre-job safety meeting prior to operations.
18-sep-01	16:30	18:30	2	C	P	b	CSGIN1	Run in hole with landing string. Picked up cement stand from derrick, continued to run in hole.
18-sep-01	18:30	19:00	0.5	C	U	b	CSGIN1	Pulled out of hole with landing string due to string being too short. Placed a single 5.37 m pup joint into string and run in hole.
18-sep-01	19:00	19:30	0.5	C	P	b	CSGIN1	Circulated last joint and landed 18 3/4" wellhead in 30" housing. Performed over pull test using 25T.
18-sep-01	19:30	20:00	0.5	C	U	c	CSGIN1	While testing cement lines, erratic pump pressures were seen while using the rig pump, attempted to stabilize pressure. No-go.
18-sep-01	20:00	20:30	0.5	C	P	c	CSGIN1	Tested cement lines using Halliburton cement unit to 200 bars for 5 minutes. Flushed 5 m^3 of seawater to check lines were clear. Dropped ball.

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
18-sep-01	20:30	23:30	3	C	P	c	CSGIN1	Commence 13 3/8" cementing operations. Mixed and pumped 66.6 m^3 of 1.56 sg lead slurry at 800 l/min. Mixed and pumped 15.5 m^3 of 1.95 sg tail slurry at 800 l/min. Released dart. Pumped 3.6 m^3 of seawater, wiper plug sheared at 160 bar. Displace cement with 39 m^3 of seawater at 2200 l/min. Plug bumped at 140 bar. Pressure bled back and casing pressure tested to 138 bar for 10 minutes.
18-sep-01	23:30	00:00	0.5	I	P	b	DRLIN2	Conducted pre-job safety meeting for Riser and BOP operations. Preparing equipment for same.
19-sep-01	00:00	02:00	2	C	P	c	CSGIN1	Pulled out of hole with 18 3/4" CART from 395 m to rotary table. Laid down running tool and cement stand.
19-sep-01	02:00	02:30	0.5	I	P	b	CSGIN1	Held pre-job safety meeting for running BOP.
19-sep-01	02:30	04:30	2	I	P	b	CSGIN1	Rigged up for running BOP. Installed 500T bails and elevators. Installed riser spider and disconnected rotary equipment.
19-sep-01	04:30	08:30	4	I	P	b	CSGIN1	Picked up 7.6 m riser pup joint from catwalk. Rigged up rotary lifting equipment, moved BOP into moonpool area and made up 7.6 m pup joint to BOP.
19-sep-01	08:30	11:00	2.5	I	P	b	CSGIN1	Picked up BOP and landed out in spider beams. Installed pod hoses and guidelines etc. Picked up BOP, and retracted spider beams and then landed rotary table back on rig floor.
19-sep-01	11:00	14:00	3	I	P	b	CSGIN1	Removed lifting equipment and beams, closed drill floor hatches. Picked up 7.5 m joint of riser from cat walk and made up riser joint. Run BOP through splash zone at 12:40. Pressure tested choke and kill lines to 35 / 517 bar for 5 / 10 minutes and fluid lines to 206.6 bar for 10 minutes.
19-sep-01	14:00	00:00	10	I	P	b	CSGIN1	Run BOPs on marine riser joints as per tally to 175m. Pressure test choke and kill lines to 35 / 517 bar and fluid lines to 206 bar for 10 minutes. Continue to run BOP on marine riser joints from 175 m to 328 m.
20-sep-01	00:00	02:30	2.5	I	P	b	CSGIN1	Continued to run BOP on marine riser joints from 325 m to 362 m. Pressure tested choke and kill lines to 35 / 517 bar and fluid lines to 206 bar for 10 minutes.
20-sep-01	02:30	16:00	13.5	I	P	b	CSGIN1	Picked up slip joint and dressed joint with Rucker wires, choke & kill lines, fluid and boost lines.
20-sep-01	16:00	17:30	1.5	I	P	b	CSGIN1	Pressure tested choke and kill lines to 35 / 517 bar while moving rig back over location. ROV installed guide lines in to guide posts.
20-sep-01	17:30	19:00	1.5	I	U	b	CSGIN1	ROV attempted to untangle trapped guide line from BOPs, no-go. Released guide wire no 4.
20-sep-01	19:00	19:30	0.5	I	U	b	CSGIN1	Attempted to land BOPs onto well head, discovered that riser space-out was incorrect. Riser length too short.
20-sep-01	19:30	00:00	4.5	I	U	b	CSGIN1	ROV released guide lines from guide posts. Rig moved off location. Removed Rucker wires, choke & kill lines, fluid and boost lines from slip joint and laid down same.
21-sep-01	00:00	02:30	2.5	I	U	b	CSGIN1	Pulled up 3m riser pup joint and made up to riser string. Pressure tested kill and choke lines to 35 / 517 bar for 5 / 10 minutes and fluid lines to 206 bar for 10 minutes.
21-sep-01	02:30	08:00	5.5	I	U	b	CSGIN1	Picked up slip joint from cat walk. Connected Rucker lines and hoses to slip joint.
21-sep-01	08:00	10:00	2	I	U	b	CSGIN1	Pressure tested choke and kill lines to 35 / 517 bar for 5 / 10 minutes while moving rig back over location. ROV connected guidelines.
21-sep-01	10:00	10:30	0.5	I	P	b	CSGIN1	Landed BOP stack. ROV assisting operation. Took 25T over pull to check that BOPs were secure to wellhead.

NORSK AGIP

Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
21-sep-01	10:30	14:00	3.5	I	P	b	CSGIN1	Picked up and installed diverter. Connected diverter lock down control hose and took 5T over pull. Installed pod hose saddles and removed riser spider. Installed outer ring and master bushings.
21-sep-01	14:00	18:00	4	I	P	b	CSGIN1	Continued to install pod hoses, flow lines, trip tank and drain lines.
21-sep-01	18:00	18:30	0.5	I	P	b	CSGIN1	Pressure tested BOPs / wellhead connection to 15 bar for 5 minutes and 138 bar for 15 minutes. 2.4 bbls were pumped and 2.4 bbls returned.
21-sep-01	18:30	00:00	5.5	I	P	b	CSGIN1	Conducted derrick inspection for loose objects. Changed out bails and elevators.
22-sep-01	00:00	01:30	1.5	I	P	b	CSGIN1	Continued to install eagle light and adjust brake on draw-works. Make up main shaft to rotary table.
22-sep-01	01:30	02:00	0.5	A	P	f	CSGIN1	Cleared rig floor of all riser & BOP equipment.
22-sep-01	02:00	08:30	6.5	A	P	b	DRLPRO	Held pre-job safety meeting on rig floor before picking up BHA from cat walk. Made up 12 1/4" BHA and run in hole to 243 m.
22-sep-01	08:30	09:00	0.5	A	P	b	DRLPRO	Tested MWD to 65 bar - 2500 l/min.
22-sep-01	09:00	09:30	0.5	A	P	b	DRLPRO	Function tested diverter system to 35 bar.
22-sep-01	09:30	11:00	1.5	A	P	b	DRLPRO	Run in hole with 5" drillpipe from 243 m to 756 m. Measured drillpipe while running in hole. Drill crew held kick drill.
22-sep-01	11:00	12:00	1	A	P	b	DRLPRO	Made up DDM. Function tested BOP on blue pod - drillers panel and yellow pod on tool pushers panel.
22-sep-01	12:00	12:30	0.5	A	P	b	DRLPRO	Held choke drill - estimated slow circulation rates - 30 strokes - 8 bar.
22-sep-01	12:30	13:00	0.5	A	P	b	DRLPRO	Continued to run in hole with 12 1/4" BHA to 840 m.
22-sep-01	13:00	13:30	0.5	A	P	a	DRLPRO	Made up DDM, washed down to 865m. Tagged cement at 867m. Establish drilling parameters. RPM - 80, Torque - 8-10k, Pump pressure - 75 bar.
22-sep-01	13:30	18:00	4.5	A	P	a	DRLPRO	Drilled out shoe track from 867m to 900m with 5T- WOB. Pumped Hi-Vis pills as required.
22-sep-01	18:00	18:30	0.5	A	P	a	DRLPRO	At 900 m broke through shoe and cleaned rat hole. Pumped a 6m3 Hi-Vis pill to clean-out rat hole.
22-sep-01	18:30	19:00	0.5	A	P	a	DRLPRO	Drilled 3 m of new formation from 912 m to 915 m.
22-sep-01	19:00	20:00	1	A	P	c	DRLPRO	Pumped and circulated a 4 m^3 Hi- Vis pill to clean out hole.
22-sep-01	20:00	21:00	1	A	P	f	DRLPRO	Racked back drilling stand. Installed circulation sub and cement hose onto string. Performed formation integrity test to 1.65 sg EMW.
22-sep-01	21:00	22:00	1	A	P	c	DRLPRO	Displaced kill & choke lines, booster lines and hole to 1.25 sg formate mud.
22-sep-01	22:00	00:00	2	A	P	a	DRLPRO	Drill 12 1/4" hole from 915 m to 936 m.
23-sep-01	00:00	12:30	12.5	A	P	a	DRLPRO	Drilled 12 1/4" hole from 936 m to 1032 m.
23-sep-01	12:30	17:00	4.5	A	P	a	DRLPRO	Time drilled 12 1/4" hole at 10m / hr from 1032 m to 1075 m for selection of core point.
23-sep-01	17:00	18:00	1	A	P	c	DRLPRO	Circulated bottoms-up for geological sample.
23-sep-01	18:00	18:30	0.5	A	P	c	DRLPRO	Flow checked well - static. Pumped 5 m^3 of Hi-Vis.
23-sep-01	18:30	20:00	1.5	A	P	b	DRLPRO	Flow checked well static. Pulled 2 stand from 1075 m to 1000 m. Had increasing overpull, max 40ton. Ran in to TD at 1075 m.
23-sep-01	20:00	21:00	1	A	P	b	DRLPRO	Circulated bottoms up at 1075 m Had max gas readings of 40% on bottoms up. Flow checked well static.
23-sep-01	21:00	21:30	0.5	A	P	b	DRLPRO	Pumped out of hole to 896 m at 1500 l/min - 40 bar.
23-sep-01	21:30	22:30	1	A	P	b	DRLPRO	Flow checked for 15 minutes, hole static
23-sep-01	22:30	00:00	1.5	A	P	b	DRLPRO	Pulled out of hole from 896 m to 243 m. Flow checked, before BHA entered BOP.
24-sep-01	00:00	02:00	2	B	P	b	DRLPRO	Continued to pull out of hole with 12 1/4" BHA from 234 m to rotary table and rack back in derrick. Laid down 12 1/4" bit. Down loaded data from MWD tool.

NORSK AGIP

Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
24-sep-01	02:00	06:00	4	B	P	a	EVALPR	Held pre job safety meeting before making up core assembly #1. Made up 8 1/2" coring BHA and run in hole to 34m. Picked up 1 single 6 1/2" drill collar from deck. Continued to run in hole to 237 m.
24-sep-01	06:00	06:30	0.5	B	P	a	EVALPR	Installed diverter element and wiper into rotary table. Installed auto slips.
24-sep-01	06:30	08:00	1.5	B	P	a	EVALPR	Run in hole from 237 m to 870 m.
24-sep-01	08:00	09:00	1	B	P	b	EVALPR	Fill pipe and re-built drilling pup. Lubricated rig equipment.
24-sep-01	09:00	10:00	1	B	P	b	EVALPR	Run in hole from 870 m to 1050 m.
24-sep-01	10:00	10:30	0.5	B	P	b	EVALPR	Circulate and conditioned mud at 80 stk/min = 80 bar while turning pipe at 20 RPM.
24-sep-01	10:30	12:00	1.5	B	P	b	EVALPR	Picked up drilling stand. Dropped circulating ball. Established parameters. Take Slow Circulating Rates.
24-sep-01	12:00	16:30	4.5	B	P	a	EVALPR	Cut core # 1 from 1075 m to 1089 m. ROP dropped to zero.
24-sep-01	16:30	18:00	1.5	B	P	f	EVALPR	Picked up, no over pull seen from core. Had 25 ppm H_2S gas peak on Baker gas detector. No H_2S gas indication on any other gas sensors or Garret Gas Train. Circulated at 900 l/min = 40 bar and 20 RPM. Pumped 5000 strokes at 97 stk/min = 30 bar via booster line.
24-sep-01	18:00	20:00	2	B	P	f	EVALPR	Flow checked. Pumped slug and pulled out of hole from 1089 m to 891 m. Flow checked for 10 minutes at casing shoe. Continued to pull out of hole from 891 m to 650 m. Flow checked for 10 minutes prior to entering BOP. Continued to pull out of hole to surface.
24-sep-01	20:00	20:30	0.5	B	P	f	EVALPR	Removed auto slip, diverter element and wiper from rotary table. Installed bushings.
24-sep-01	20:30	23:00	2.5	B	P	f	EVALPR	Continued to pull out of hole with BHA, and racked back in derrick. Pulled up two singles of 6 1/2" drill collars from deck. Held pre- job safety meeting on rig floor prior to core reaching surface. Laid down core head.
24-sep-01	23:00	00:00	1	B	P	f	EVALPR	Laid down inner barrels. Checked for H_2S, no gas registered.
25-sep-01	00:00	01:00	1	B	P	b	EVALPR	Continued to lay down inner core tubes.
25-sep-01	01:00	04:00	3	B	P	b	EVALPR	Made up 8 1/2" coring BHA #2 and run in hole to 38 m.
25-sep-01	04:00	05:30	1.5	B	P	b	EVALPR	Run in hole with drill collars and heavy weight drill pipe from derrick. Picked up 3 joints of 6 1/2" drill collars from deck and run in hole to 288 m. Installed auto slips and wiper into rotary table.
25-sep-01	05:30	07:00	1.5	B	P	b	EVALPR	Run in hole on 5" drill pipe from 288 m to 864 m. Filled pipe and break circulation.
25-sep-01	07:00	07:30	0.5	B	P	b	EVALPR	Continued to run in hole on 5" drill pipe from 864 m to 1075 m.
25-sep-01	07:30	08:30	1	B	P	b	EVALPR	Made up DDM and wash down from 1075m to 1089m at 80 stk/min = 34 bar and 40 RPM and tagged bottom. Tight hole seen after connection at 1060m.
25-sep-01	08:30	09:30	1	B	P	a	EVALPR	Pull back BHA to 1086m and dropped circulation ball. Took slow circulation rates.
25-sep-01	09:30	17:00	7.5	B	P	a	EVALPR	Cut core # 2 from 1089m to 1109m with coring parameters: WOB = 2-9T, RPM = 60 -100 , Torque = 2-18 K, 50- 55 stk = 26 - 44 bar. From 1097 m to 1104 m returns showed maximum gas of 4% HC and 3 ppm H_2S.
25-sep-01	17:00	18:00	1	B	P	b	EVALPR	Pumped out of hole from 1109 m to 1059 m at 50 stk/min = 37 bar. Flow checked for 15 minutes at 1059 m - hole static.
25-sep-01	18:00	20:30	2.5	B	P	b	EVALPR	Pumped slug and pulled out of hole from 1059 m to 893 m. Flow checked in casing, OK. Continued to pull out of hole to 691 m, flow checked, before pulling BHA into BOPs. OK. Continued to pull out of hole to 288 m.
25-sep-01	20:30	23:00	2.5	B	P	b	EVALPR	Took out auto slips and wiper from rotary table. Continued to pull out of hole with coring BHA #2 and racked back in derrick. Held pre-job safety meeting on rig floor for core handling operations at surface.

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
25-sep-01	23:00	00:00	1	B	P	b	EVALPR	Laid down coring inner tubes.
26-sep-01	00:00	01:00	1	B	P	b	EVALPR	Continued to lay down inner tubes, laid down 1 outer barrel.
26-sep-01	01:00	03:00	2	B	P	b	EVALPR	Picked up core stand, broke out core head & change bearing, make up same core head. Picked up 1 outer barrel, run in hole to 38 m & picked up inner tubes.
26-sep-01	03:00	05:00	2	B	P	b	EVALPR	Run in hole with drill collars and heavy weight drill pipe from derrick, picked up 3 drill collars (6 1/2") from deck while running in hole to 315 m. Installed auto slips & wiper in rotary table.
26-sep-01	05:00	06:30	1.5	B	P	b	EVALPR	Run in hole with 5" drill pipe from 315 m to 881 m. Filled pipe & broke circulation.
26-sep-01	06:30	07:00	0.5	B	P	b	EVALPR	Serviced rig - fill string and lubricated DDM.
26-sep-01	07:00	08:00	1	B	P	b	EVALPR	Run in hole with 5" drill pipe and spaced out.
26-sep-01	08:00	08:30	0.5	B	P	b	EVALPR	Wash down from 1075 m to 1100 m. Took 3 ton down weight.
26-sep-01	08:30	09:30	1	B	P	b	EVALPR	Washed and reamed from 1100 m (1- 2 ton weight on bit, 70 strokes with 24 to 40 bar - 40 RPM and torque 2 - 3 K) down to depth of 1109 m and tagged bottom.
26-sep-01	09:30	10:00	0.5	B	P	b	EVALPR	Dropped ball, observed pressure increase, took slow circulation rates.
26-sep-01	10:00	18:00	8	B	P	a	EVALPR	Cut core from 1109 m to 1123 m (50 stroke/ 38 bar, 95 RPM, torque 2 - 10 K, weight on bit 5 - 10 T).
26-sep-01	18:00	19:00	1	B	P	b	EVALPR	Pumped out of hole from 1123 m to 1075 m (50 strokes / 36 bar - no over pull seen). Flow checked for 15 min.- negative and pumped slug.
26-sep-01	19:00	20:30	1.5	B	P	b	EVALPR	Pulled out of hole from 1075 m to 885 m. Flow checked in casing - negative, continued to pull out of hole from 885 m to 731 m. Flow checked - negative - continued to pull out of hole to 315 m.
26-sep-01	20:30	23:00	2.5	B	P	b	EVALPR	Took out auto slips & wipers from rotary table, continued to pull out of hole with bottom hole assembly and racked same back in derrick. Held pre job safety meeting with crew on rig floor before laying down core BHA # 3.
26-sep-01	23:00	00:00	1	B	P	b	EVALPR	Lay down inner tubes.
27-sep-01	00:00	02:30	2.5	B	P	b	EVALPR	Continued to lay down inner tubes, laid down 1 outer barrel, picked up core stand, broke out core head & checked core head - ok. Made up same core head, run in hole to 32 m & picked up inner tubes.
27-sep-01	02:30	04:00	1.5	B	P	b	EVALPR	Run with BHA to 309 m. Installed auto slips & wiper in rotary table.
27-sep-01	04:00	04:30	0.5	B	P	b	EVALPR	Run in hole with 5" drill pipe from 309 m to 597 m.
27-sep-01	04:30	05:00	0.5	B	P	b	EVALPR	Laid down 1 single drill pipe due to bad shoulder, picked up pup joint with saver sub on & broke out sub with rig tongs, laid down pup joint & saver sub.
27-sep-01	05:00	05:30	0.5	B	P	b	EVALPR	Continued to run in hole from 597 m to 885 m & filled pipe.
27-sep-01	05:30	07:30	2	B	P	b	EVALPR	Held pre job safety meeting. Slipped and cut drilling line.
27-sep-01	07:30	08:00	0.5	B	P	b	EVALPR	Serviced DDM.
27-sep-01	08:00	08:30	0.5	B	P	b	EVALPR	Repaired air operated elevator.
27-sep-01	08:30	09:00	0.5	B	P	b	EVALPR	Run in hole from 885 m to 1075 m (spaced out with pup joint).
27-sep-01	09:00	10:00	1	B	P	b	EVALPR	Washed down from 1075 m to 1123 m (60 strokes / 30 RPM, Torque 2-3 K).
27-sep-01	10:00	10:30	0.5	B	P	b	EVALPR	Dropped ball, observed pressure increase, took slow circulation rates.
27-sep-01	10:30	15:00	4.5	B	P	a	EVALPR	Cut core no 4 from 1123 m to 1135 m (Torque 2 - 18 K, 60 RPM, weight on bit 3 - 9 T, 50 strokes/34 - 40 bar). Core jammed.
27-sep-01	15:00	15:30	0.5	B	P	c	EVALPR	Circulated and conditioned mud.

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
27-sep-01	15:30	16:30	1	B	P	b	EVALPR	Flow checked -ok. Pumped out from 1135 m to 1064 m. Installed auto slips & wiper in rotary table.
27-sep-01	16:30	18:00	1.5	B	P	b	EVALPR	Pumped slug & pulled out from 1064 m to 890 m. Flow checked in casing -ok. Continued to pull out to 746 m. Flow checked prior to pull BHA into BOP. Continued to pull out of hole to 309 m.
27-sep-01	18:00	20:00	2	B	P	b	EVALPR	Continued to pull out of hole with BHA, racked back same in derrick, held pre job safety meeting.
27-sep-01	20:00	22:00	2	B	P	b	EVALPR	Laid down core head and inner tubes. Racked back 1 stand with outer barrel in derrick.
27-sep-01	22:00	00:00	2	B	P	b	EVALPR	Rigged up wire line & made up MDT tool string.
28-sep-01	00:00	00:30	0.5	B	P	b	EVALPR	Continued to rig up wire line / MDT tool string.
28-sep-01	00:30	02:00	1.5	B	P	b	EVALPR	Run in hole with MDT to 1100 m.
28-sep-01	02:00	06:30	4.5	F	U	f	EVALPR	Rectified problem with MDT/ wire line.
28-sep-01	06:30	10:00	3.5	F	P	a	EVALPR	Took MDT samples.
28-sep-01	10:00	12:30	2.5	B	P	b	EVALPR	Pulled out of hole and rigged down wire line equipment.
28-sep-01	12:30	17:30	5	B	P	b	EVALPR	Made up coring assembly and run in hole to 900 m.
28-sep-01	17:30	18:30	1	O	P	d	EVALPR	Function test BOP from consoles.
28-sep-01	18:30	19:00	0.5	B	P	b	EVALPR	Continued to run in hole from 900 m to 1075 m.
28-sep-01	19:00	19:30	0.5	B	P	d	EVALPR	Washed down from 1075 m to 1127 m.
28-sep-01	19:30	21:00	1.5	B	P	d	EVALPR	Washed fill from 1127 m to 1135 m. Dropped ball.
28-sep-01	21:00	00:00	3	B	P	d	EVALPR	Cut core No 5 from 1135 m to 1144 m.
29-sep-01	00:00	03:30	3.5	B	P	a	EVALPR	Continued to cut core from 1144 m to 1160 m.
29-sep-01	03:30	07:00	3.5	B	P	b	EVALPR	Pumped out of hole from 1160 m to 1047 m. Continued to pull out of hole to 309 m.
29-sep-01	07:00	13:00	6	B	P	b	EVALPR	Pulled out of hole with core BHA, laid down outer and inner barrels & core head.
29-sep-01	13:00	17:00	4	A	P	e	DRLPRO	Cleaned drill floor, changed out one stabilizer in 12 1/4" BHA and tested MWD. Run in hole with 12 1/4" BHA to 243 m.
29-sep-01	17:00	20:00	3	A	P	b	DRLPRO	Continued to run in hole with 12 1/4" BHA from 243 m to 900 m, filled pipe and installed mouse hole. Continued to run in hole from 900 m to 1070 m, and established parameters.
29-sep-01	20:00	23:30	3.5	A	P	d	DRLPRO	Opened 8 1/2" hole to 12 1/4" from 1075 m to 1160 m (130 RPM, Torque 3 - 18 K, 217 strokes/196 bar, WOB 0 - 2 T, survey @ 1121m, inc. 3.07, azi. 226,4).
29-sep-01	23:30	00:00	0.5	A	P	a	DRLPRO	Drilled 12 1/4" hole from 1160 m to 1164 m (survey @ 1147 m, inc. 3.04, azi 233,6).
30-sep-01	00:00	18:00	18	A	P	a	DRLPRO	Drilled 12 1/4" hole from 1164 m to TD @ 1418 m. Stringers from 1227 m and down to TD.
30-sep-01	18:00	19:30	1.5	A	P	c	DRLPRO	Circulated bottoms up twice due to high loads on shakers.
30-sep-01	19:30	21:30	2	A	P	b	DRLPRO	Pulled out of hole 1 stand. Started to backream due to 25 t overpull. Several attempts to pull without and with circulation, no go. Backreamed to 1295 m.
30-sep-01	21:30	22:00	0.5	A	D	b	DRLPRO	Cyberbase shut down on DDM and mud pumps.
30-sep-01	22:00	00:00	2	A	P	b	DRLPRO	Backreamed out of hole from 1295 m to 1100 m.
01-okt-01	00:00	02:30	2.5	A	P	b	DRLPRO	Backreamed from 1100 m into casing shoe. Attempted to pull without circulation, no go. Had a 5 min stop due to a full shut down on drillers control system.
01-okt-01	02:30	03:30	1	A	U	c	DRLPRO	Circulated and conditioned mud.
01-okt-01	03:30	05:00	1.5	A	P	b	DRLPRO	Run in hole to TD. No drag.
01-okt-01	05:00	07:00	2	A	P	c	DRLPRO	Circulated and conditioned mud.
01-okt-01	07:00	12:00	5	A	P	b	DRLPRO	Pulled out of hole, no overpull. Laid down MWD.
01-okt-01	12:00	13:00	1	F	P	f	EVALPR	Rigged up W.L. equipment.
01-okt-01	13:00	17:00	4	F	P	a	EVALPR	Schlumberger run log no 1 HRLA-PEX-GR. (In13:20 Out 16:25)
01-okt-01	17:00	00:00	7	F	P	a	EVALPR	Schlumberger run log no 2 APS-HNGS-CMR-GR. (In 17:55 Out 24:00)

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
02-okt-01	00:00	01:00	1	F	P	a	EVALPR	Schlumberger run log no 2 APS-HNGS-CMR-GR. (Out 00:00)
02-okt-01	01:00	06:30	5.5				EVALPR	Schlumberger run log no 3 FMI-DSI. (In 01:15 Out 06:10)
02-okt-01	06:30	11:00	4.5	F	P	a	EVALPR	Schlumberger run log no 4 MDT. (In 08:10 Took 21 pressure points)
02-okt-01	11:00	18:00	7	N	D	f	EVALPR	Electric fault in MDT tool string. Attempted to trouble shoot, no success. Pulled logging string. Continue to trouble shoot and changing to backup tool. Problems occur on both & all combination of tool strings.
02-okt-01	18:00	00:00	6	F	P	a	EVALPR	Schlumberger run log no 5 VSP. (In 18:25)
03-okt-01	00:00	00:30	0.5	F	P	a	EVALPR	Schlumberger run log no 5 VSP. (Out 00:30)
03-okt-01	00:30	01:30	1	F	P	a	EVALPR	Rigged down wireline equipment.
03-okt-01	01:30	03:00	1.5	C	P	f	CSGPRO	Made up cementing stand and racked back in derrick.
03-okt-01	03:00	08:30	5.5	F	P	b	EVALPR	Run in hole with 12 1/4" bit to 1392 m. Reamed tight hole at 1330 m.
03-okt-01	08:30	09:30	1	F	P	b	EVALPR	Washed down to 1418 m Reamed tight spot at 1403 m. 3 m fill on bottom.
03-okt-01	09:30	11:30	2	F	P	c	EVALPR	Circulated and conditioned mud. Pumped a 8 m3 high vis pill around. Flow checked 15 min, OK.
03-okt-01	11:30	15:30	4	F	P	b	EVALPR	POOH No overpull.
03-okt-01	15:30	16:30	1	F	P	a	EVALPR	Rigged up wireline equipment.
03-okt-01	16:30	20:30	4	F	P	a	EVALPR	Schlumberger rerun MDT. (In 17:00)
03-okt-01	20:30	22:00	1.5	F	U	f	EVALPR	Schlumberger pulled MDT to configure tool to take water sample and run in hole again.
03-okt-01	22:00	00:00	2	F	P	a	EVALPR	Schlumberger continued rerun log no 4 MDT. (taking water sample)
04-okt-01	00:00	02:00	2	F	P	a	EVALPR	Schlumberger rerun log no 4 MDT (out 02:00).
04-okt-01	02:00	03:00	1	F	P	a	EVALPR	Changed to BX elevator and made up jetting tool on a stand.
04-okt-01	03:00	06:00	3	C	P	e	CSGPRO	03:00 hrs on 04.10.2001, START OF TESTING BUDGET. Made up wear bushing running and retrieving tool and run in hole.
04-okt-01	06:00	06:30	0.5	C	P	e	CSGPRO	Jetting in BOP and wellhead area.
04-okt-01	06:30	08:00	1.5	C	P	e	CSGPRO	Continue run in hole retrieved seat protector from wellhead. Took measurements for casing hanger running.
04-okt-01	08:00	08:30	0.5	C	P	b	CSGPRO	Held pre casing job meeting.
04-okt-01	08:30	09:00	0.5	C	P	e	CSGPRO	Laid down seat protector, running tool and jet sub.
04-okt-01	09:00	09:30	0.5	C	P	e	CSGPRO	Prepare to run casing .
04-okt-01	09:30	20:00	10.5	C	P	b	CSGPRO	Run 9 5/8" casing; shoe jnt, 2 x intermediate jts, pup/float jnt, 24 jts 53.5 # P-110 Antares, X-over, 51 jts 53.5 # P-110 New Vam. Install 2 radio-active markers; 1001 m & 952 m.
04-okt-01	20:00	21:00	1	C	P	b	CSGPRO	Install 9 5/8" casing hanger .
04-okt-01	21:00	23:00	2	C	P	b	CSGPRO	Run 5" DP landing string. Landed 9 5/8" hanger in wellhead housing.
04-okt-01	23:00	00:00	1	C	P	c	CSGPRO	Circulate prior cement job.
05-okt-01	00:00	03:00	3	C	P	c	CSGPRO	Pressure tested cement lines to 35 & 345 bar for 5 & 10 minutes. Flushed 4 m^3 of drill water to check that lines were clear. Released ball. Pumped 15 m^3 of 1.60 sg spacer using 92 strokes = 30 bar. Mixed and pumped 25.7 m^3 of 1.9 sg tail slurry at 1000/min. Release dart. Pumped 4.77 m^3 of 1.25 sg mud at 1900 l/min using rig pumps. Plug did not bump. Checked for backflow, OK.

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
05-okt-01	03:00	04:00	1	C	P	c	CSGPRO	Set seal assembly. Energized assembly to 35 bar for 2 minutes then continued up to 207 bar for 5 minutes.
05-okt-01	04:00	06:30	2.5	C	P	e	CSGPRO	Circulated BOP / riser and checked for cement. Tested seal assembly and BOPs to 35 bar for 5 minutes and 345 bar for 10 minutes. Continued to test BOPs / seal assembly to 35 bar for 5 mins and 345 bar for 10 minutes using blue pod.
05-okt-01	06:30	07:00	0.5	G	P	d	CSGPRO	Function tested BOPs from yellow pod using panel in tool pushers office.
05-okt-01	07:00	08:30	1.5	C	P	f	CSGPRO	Released PADPRT and pulled out of hole with PADPRT. Lead impression blocks reading - 1 3/4". Seal fully set on 9 5/8" casing hanger.
05-okt-01	08:30	09:00	0.5	N	P	f	CSGPRO	Checked and lubricated DDM.
05-okt-01	09:00	11:30	2.5	C	P	e	CSGPRO	Made up wear bushing running tool and run in hole. Engaged wear bushing and pulled out of hole with same.
05-okt-01	11:30	16:00	4.5	C	P	e	CSGPRO	Laid down cement head, 5 x 8" drill collars, 3 x 9 1/2" drill collars, bit sub and anderdrift.
05-okt-01	16:00	21:00	5	N	P	e	EVALPR	Made up and run in hole to 58 m with 8 1/2" scraper / cleanout BHA. Cleaned and inspected all drill collar connections and installed O-rings. Picked up 6 1/2" drill collars from deck and run in hole from 58 m to 161 m. Cleaned, inspected and installed O-rings on all connections.
05-okt-01	21:00	22:30	1.5	N	P	f	EVALPR	Run in hole from 263 m to 1006 m
05-okt-01	22:30	23:30	1	N	P	f	EVALPR	Scraped and worked string at packer setting depth, from 1006 m to 1106 m.
05-okt-01	23:30	00:00	0.5	N	P	f	EVALPR	Continued to run in hole from 1106m to 1313m.
06-okt-01	00:00	01:30	1.5	G	P	d	EVALPR	Washed down from 1313 m to 1356 m. Hard cement encountered at 1356 m. Pumped 7 m^3 of Hi-Vis sweep and circulated hole clean .
06-okt-01	01:30	02:30	1	G	P	f	EVALPR	Pressure tested casing to 68 bar for 10 minutes. Function tested the LPR from yellow pod in tool pushers office.
06-okt-01	02:30	04:00	1.5	G	P	b	EVALPR	Pulled out of hole with 8 1/2" cleanout BHA from 1356 m to 273 m.
06-okt-01	04:00	05:00	1	G	P	b	EVALPR	Pulled out of hole from 273 m and racked back BHA in derrick. Drifted 6 1/2" drill collars while pulling out of hole. Laid down bit, bit sub and scraper.
06-okt-01	05:00	06:00	1	F	P	a	EVALPR	Rigged up wireline equipment
06-okt-01	06:00	09:30	3.5	F	P	a	EVALPR	Schlumberger run log CBL/VDL/CCL GR from 1175 m to 375 m
06-okt-01	09:30	10:00	0.5	F	P	a	EVALPR	Rigged down wireline equipment.
06-okt-01	10:00	11:30	1.5	G	P	f	EVALPR	Pressure tested kelly hoses and IBOP to 35 bar for 5 minutes and 345 bar for 10 minutes.
06-okt-01	11:30	15:30	4	G	P	e	EVALPR	Made up cross over and coflexip hose to test pipe in derrick
06-okt-01	15:30	17:00	1.5	G	P	f	EVALPR	Held pre-job safety meeting prior to pulling up surface test tree. Made up crossover and single tubing to test tree. Laid down on deck.
06-okt-01	17:00	18:30	1.5	F	U	a	EVALPR	Rigged up wireline equipment Schlumberger run 2nd log CBL/VDL/CCL/GR Re-logged interval from 1200 m to 1020 m.
06-okt-01	18:30	19:30	1	F	U	a	EVALPR	Rigged down wireline equipment.
06-okt-01	19:30	20:30	1	G	P	f	EVALPR	Pressure tested casing against shear rams to 345 bar. Pumped 0.58 m^3 of 1.25 sg mud, bleed back same.
06-okt-01	20:30	00:00	3.5	G	P	b	EVALPR	Held pre job safety meeting for running test string. Picked up test string BHA and run in hole.
07-okt-01	00:00	01:00	1	G	P	a	EVALPR	Continued to make up test BHA.
07-okt-01	01:00	02:00	1	G	P	a	EVALPR	Tested lines to 345 bar for 5 minutes. Pressure tested BHA against TFTV to 345 bar for 10 minutes.
07-okt-01	02:00	02:30	0.5	G	P	a	EVALPR	Changed out handling equipment and picked up 3 stands of 6 1/2" drill collars.
07-okt-01	02:30	03:30	1	G	P	b	EVALPR	Continued to make up test BHA.

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
07-okt-01	03:30	04:30	1	G	P	b	EVALPR	Changed handling equipment and picked up 3 stands of 6 1/2" drill collars from derrick.
07-okt-01	04:30	05:30	1	G	P	b	EVALPR	Picked up 5" tubing from deck and made up with power tongs. Prepared for pressure testing TFTV.
07-okt-01	05:30	06:30	1	G	P	b	EVALPR	Tested lines to 345 bar. Pressure tested BHA against TFTV to 345 bar for 10 minutes.
07-okt-01	06:30	07:30	1	G	P	b	EVALPR	Rigged up wireline equipment.
07-okt-01	07:30	08:30	1	G	P	b	EVALPR	Ran in hole to check communication link with DGA.
07-okt-01	08:30	09:00	0.5	G	P	b	EVALPR	Pulled out of hole and rigged down wireline equipment.
07-okt-01	09:00	15:00	6	G	P	b	EVALPR	Continued to run in hole on 5" tubing from 314 m to 741 m.
07-okt-01	15:00	16:00	1	G	P	b	EVALPR	Picked up fluted hanger and single joint of drill pipe and made up same.
07-okt-01	16:00	20:30	4.5	G	P	b	EVALPR	Ran in hole with 5" tubing from 757 m to 1115 m.
07-okt-01	20:30	21:00	0.5	G	P	b	EVALPR	Replaced short bails with long bails.
07-okt-01	21:00	21:30	0.5	G	P	b	EVALPR	Continued to run in hole with 5" tubing from 1115 m to 1134 m.
07-okt-01	21:30	22:00	0.5	G	P	b	EVALPR	Rigged up wireline equipment. Made up GR toolstring.
07-okt-01	22:00	22:30	0.5	G	P	b	EVALPR	Landed fluted hanger at 395.56m. Middle pipe rams closed.
07-okt-01	22:30	23:00	0.5	G	P	b	EVALPR	Schlumberger ran in hole with run #1 GR correlation to 1035m.
07-okt-01	23:00	00:00	1	G	P	b	EVALPR	Rigged down wireline equipment.
08-okt-01	00:00	01:30	1.5	G	P	b	EVALPR	Continued to rig down wireline. Pulled out of hole from 1136 m to 1124 m. Laid down long bails and installed tripping bails and 5" air operated elevators.
08-okt-01	01:30	03:30	2	G	P	b	EVALPR	Pulled out of hole from 1124 m to 742 m.
08-okt-01	03:30	04:00	0.5	G	P	b	EVALPR	Laid down 5" drillpipe and fluted hanger to deck.
08-okt-01	04:00	04:30	0.5	G	P	b	EVALPR	Pulled out of hole from 741m to 712m and installed 2.32 m pup joint between joint 55 / 56 and run in hole from 712 m to 741 m.
08-okt-01	04:30	07:00	2.5	G	P	b	EVALPR	Installed SST assembly and rigged up Schlumberger surface control equipment. Checked all connection on assembly and performed all function tests.
08-okt-01	07:00	11:00	4	G	P	b	EVALPR	Continued to run in hole with tubing landing string and control lines.
08-okt-01	11:00	17:00	6	G	P	b	EVALPR	Picked up and made up lubricator assembly. Made up control lines. Pressure tested string, SST, Lower lubricator and Upper lubricator as per program.
08-okt-01	17:00	17:30	0.5	G	P	b	EVALPR	Made up and run in hole with one stand of landing string, lubricator and control lines.
08-okt-01	17:30	19:00	1.5	G	P	b	EVALPR	Changed bails. Installed 5" elevators. Held pre job safety meeting prior to picking up flowhead.
08-okt-01	19:00	21:00	2	G	P	b	EVALPR	Picked up flow head from deck and connected hoses to kill / flowline.
08-okt-01	21:00	00:00	3	G	P	b	EVALPR	Connected flow head to tubing and landed fluted hanger in wear bushing. Rigged up chicksand for cement and nitrogen pumping to kill wing valve.
09-okt-01	00:00	03:30	3.5	G	P	a	EVALPR	Pressure tested connections from lubricator to surface safety valve to 345 bar for 10 mins.
09-okt-01	03:30	04:30	1	G	P	a	EVALPR	Changed swivel on nitrogen unit due to leak, and continued pressure test on line.
09-okt-01	04:30	05:00	0.5	G	P	a	EVALPR	Set packer, pull up 2.2 m and rotated two turns to the right and landed fluted hanger in wear bushing. Closed middle pipe rams and pulled 5 ton overpull on landing string.
09-okt-01	05:00	06:00	1	G	P	a	EVALPR	Locked open TFTV and pressure tested packer from above to 35 bar. Pressured up annulus to 35 bar and ruptured TFTV, bleed off to zero bar. Cycled IRDV to open position with 64 bar and bled down to zero. Bled down annulus pressure to zero.

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
09-okt-01	06:00	07:00	1	G	P	a	EVALPR	Pressure tested low torque valve on nitrogen stand pipe.
09-okt-01	07:00	07:30	0.5	G	P	a	EVALPR	Conducted pre-job safety meeting prior to nitrogen pumping operations.
09-okt-01	07:30	09:30	2	G	P	a	EVALPR	Prepared and pumped 6960 liter of nitrogen down to 850 m.
09-okt-01	09:30	11:00	1.5	G	P	a	EVALPR	Attempted to close IRDV with cement unit, on-go.
09-okt-01	11:00	12:00	1	G	P	a	EVALPR	Closed IRDV using rig pumps.
09-okt-01	12:00	12:30	0.5	G	P	a	EVALPR	Held pre-job safety meeting prior to opening well.
09-okt-01	12:30	13:00	0.5	G	P	a	EVALPR	Opened IRDV and maintained 35 bar on annulus.
09-okt-01	13:00	14:30	1.5	G	P	a	EVALPR	Pressured up tubing string to 300 bar with nitrogen to activate TCP firing head. Bled off pressure to 70 bar.
09-okt-01	14:30	00:00	9.5	G	P	a	EVALPR	Opened choke and bled down tubing pressure recorded well behavior. Started clean up flow at 15:17 hrs, oil at surface at 15:25 hrs. Continued to flow well to port side burner. Held 35 bar in annulus to hold open IRDV.
10-okt-01	00:00	03:00	3	G	P	a	EVALPR	Continued to clean up well. Held 35 bar in annulus to hold open IRDV.
10-okt-01	03:00	06:00	3	G	P	a	EVALPR	Bled off annulus pressure from 35 bar to zero and closed IRDV. Started main build up phase.
10-okt-01	06:00	13:00	7	G	P	a	EVALPR	Continued with main build-up. Changed to starboard burner boom.
10-okt-01	13:00	13:30	0.5	G	P	a	EVALPR	Pressured up annulus to 35 bars. Opened IRDV.
10-okt-01	13:30	00:00	10.5	G	P	a	EVALPR	Started main flow phase. Held 35 bar in annulus to hold open IRDV. At 22:00 hrs collected gas and oil PVT samples.
11-okt-01	00:00	09:00	9	G	P	a	EVALPR	Continued with main flow. Held 35 bar in annulus to hold open IRDV.
11-okt-01	09:00	10:00	1	G	P	a	EVALPR	Bled annulus pressure to zero bar and closed IRDV. Held pre-job safety meeting prior to rigging up wireline.
11-okt-01	10:00	12:30	2.5	G	P	a	EVALPR	Flushed flow head with 90% water / 10% glycol mix. Rigged up wireline.
11-okt-01	12:30	15:30	3	G	P	a	EVALPR	During rigging up of wireline equipment damage to wireline spool threads was seen. Removed spool with damaged threads.
11-okt-01	15:30	16:30	1	G	P	a	EVALPR	Opened swab valve, installed wireline string and lubricator. Installed wireline BOP and needle valve with hose.
11-okt-01	16:30	17:00	0.5	G	P	a	EVALPR	Pressure tested wireline lubricator and BOP assembly to 140 bar for 10 minutes.
11-okt-01	17:00	19:00	2	G	P	a	EVALPR	Opened upper and lower lubricator valves. Run in hole with LINC, unable to pass through top lubricator valve.
11-okt-01	19:00	20:30	1.5	G	U	a	EVALPR	Pulled wireline LINC into toolstring catcher. Attempted to solve problem. No-go. Valve stuck in partially open position.
11-okt-01	20:30	21:30	1	G	P	a	EVALPR	Held pre-job safety meeting prior to rigging down wireline. Closed lower lubricator and attempt inflow test, valve leaking. Bled pressure down to 5.8 bar, valve still leaking.
11-okt-01	21:30	22:00	0.5	G	U	a	EVALPR	Bled down pressure to zero bar. Inflow tested for 10 minutes, confirm valve leaking on lower lubricator. Stopped rigging down wireline equipment.
11-okt-01	22:00	22:30	0.5	G	P	a	EVALPR	Opened kill wing valve. Pressured tested valve to 38 bar. Opened lower lubricator valve and closed kill wing valve.
11-okt-01	22:30	00:00	1.5	G	P	a	EVALPR	Continued with main build up phase while monitoring well.
12-okt-01	00:00	10:00	10	G	P	a	EVALPR	Continued with main build up phase while monitoring well. Held pre job safety meeting prior to killing well.
12-okt-01	10:00	11:00	1	G	P	a	EVALPR	Pressure tested surface lines to 35 / 350 bar for 10 minutes. Pressured up annulus to 35 bar and opened IRDV. Pressured up to equalize pressure across kill wing valve and opened same. Bullhead 10.4 m^3 of 1.26 sg mud down tubing.

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
12-okt-01	11:00	12:00	1	G	P	a	EVALPR	Bled down tubing pressure to 6 bar and observed well - stable.
12-okt-01	12:00	12:30	0.5	G	P	a	EVALPR	Cycled IRDV to check if functioning correctly, applied 11 bar to IRDV and bled pressure back to zero bar.
12-okt-01	12:30	14:30	2	G	P	a	EVALPR	Held pre-job safety meeting with new drill crew. Attempted to reverse circulate - No-go. Observed pressure increase on annulus side, trouble shoot problem. Identified that IRDV not open.
12-okt-01	14:30	15:30	1	G	U	a	EVALPR	Cycled IRDV to open - No-go. Attempted to reverse circulate - No-go.
12-okt-01	15:30	18:00	2.5	G	U	a	EVALPR	Revised well kill program. Held pre-job safety meeting with all involved personnel on revised program.
12-okt-01	18:00	18:30	0.5	G	U	a	EVALPR	Pressured up annulus to 180 bar to default IRDV, OK. Bullhead 0.23 m^3 of 1.26 sg mud to verify IRDV default.
12-okt-01	18:30	20:00	1.5	G	U	a	EVALPR	Picked up string 2.5 m to unseat packer, no-go. Picked up string 3 m to unseat packer, OK, set packer back down. Bullhead 2.73 m^3 of 1.26 sg mud. Flow checked well for 10 minutes OK.
12-okt-01	20:00	22:00	2	G	P	a	EVALPR	Reverse circulated 2 string volumes. Total pumped 85.6 m^3 at 46 SPM = 30 bar. Circulated gas down to 2.5%.
12-okt-01	22:00	23:30	1.5	G	P	a	EVALPR	Circulated down string and up annulus at 745 l/min = 26 bar. Total circulated = 418 m^3. Circulated until gas down to 1.9%.
12-okt-01	23:30	00:00	0.5	G	P	a	EVALPR	Flow checked for 30 minutes, OK.
13-okt-01	00:00	01:30	1.5	G	P	c	EVALPR	Circulated one riser volume at 745 l/min.
13-okt-01	01:30	02:00	0.5	G	P	b	EVALPR	Flow checked for 15 minutes - well static. Held pre-job safety meeting on rig floor prior to rigging down wireline equipment.
13-okt-01	02:00	08:00	6	G	P	b	EVALPR	Rigged down wireline equipment, surface tree and surface equipment.
13-okt-01	08:00	16:00	8	G	P	b	EVALPR	Pulled out of hole with test string and laid down same.
13-okt-01	16:00	23:00	7	G	P	b	EVALPR	BHA at surface, Schlumberger checked TCP guns, OK, no miss fires. Continued to lay out DST BHA.
13-okt-01	23:00	23:30	0.5	G	P	e	EVALPR	Cleared rig floor of all DST equipment.
13-okt-01	23:30	00:00	0.5	G	P	e	EVALPR	Held pre-job safety meeting on rig floor prior to rigging down test hose from derrick.
14-okt-01	00:00	01:30	1.5	G	P	e	EVALPR	Continued to rig down test hose from derrick.
14-okt-01	01:30	04:00	2.5	L	P	d	EVALPR	Held pre-job safety meeting for wireline operations. Rigged up wireline equipment. Made up gauge ring and junk basket assembly. Run in hole to 1074 m. Pulled out of hole. Junk basket empty.
14-okt-01	04:00	07:00	3	L	P	b	EVALPR	Held pre-job safety meeting for bridge plug setting operations. Run in hole with plug to 1072 m. Conducted correlation run and set bridge plug at 1070 m. Pull out of hole.
14-okt-01	07:00	07:30	0.5	L	P	f	EVALPR	Rigged down wireline equipment.
14-okt-01	07:30	09:30	2	L	P	d	EVALPR	Made up cement stinger to 5" drillpipe and run in hole to 1015 m.
14-okt-01	09:30	10:00	0.5	L	P	d	EVALPR	Made up side inlet kelly cock and pup joint to single 5" drillpipe and set in mouse hole.
14-okt-01	10:00	11:30	1.5	L	P	c	EVALPR	Continued to run in hole with cement stinger, stung into EZSV bridge plug. Held pre-job safety meeting prior to squeezing cement.
14-okt-01	11:30	12:00	0.5	L	P	c	EVALPR	Closed upper annular and pressured up annulus to 14 bar. Established injection rate at 2 bbl/min and bled off annulus pressure. Opened upper annulars. Pull out of EZSV. Tested surface lines to 35 / 172 bar for 5/10 minutes.

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
14-okt-01	12:00	13:30	1.5	L	P	c	EVALPR	Set squeeze plug #1. Halliburton Pumped 2 m^3 of fresh water spacer. Mixed and pumped 3.9 m3 of 1.9 sg class G cement slurry. Displaced cement with 3.83 m^3 of 1.26 sg mud. Sting back into EZSV, set down 10T. Closed annular preventer, pressured up to 14 bar. Displaced with 5.5 m^3 of mud at 2 bbls/min. Squeezed 1 m^3 into perforations. Bled off annulus pressure, opened annular preventer, sting out, dumped 0.4 m^3 on top of EZSV. (END OF TESTING BUDGET).
14-okt-01	13:30	14:00	0.5	L	P	c	EVALPR	Pulled out of hole to 950m.
14-okt-01	14:00	15:00	1	L	P	c	EVALPR	Circulated bottoms up. Maximum gas seen 5.1 %. No cement seen.
14-okt-01	15:00	16:00	1	L	P	c	EVALPR	Set balanced cement plug #2. Pumped 5 m^3 of fresh water spacer. Mixed and pumped 5.54 m^3 of 1.9 sg class G cement slurry. Pumped 1.9 m^3 of fresh water behind cement. Displaced cement with 5 m^3 of 1.26 sg mud.
14-okt-01	16:00	18:00	2	L	P	c	EVALPR	Pulled out of hole to 750 m. Circulated bottoms up. No cement seen. Maximum gas - 1.1%. Flow checked well for 15 minutes. OK.
14-okt-01	18:00	20:00	2	L	P	c	EVALPR	Continued to pull out of hole. Laid down cement stinger and cleared rig floor.
14-okt-01	20:00	22:00	2	L	P	a	EVALPR	Picked up 9 5/8" casing cutting assembly, tested motor - OK and run in hole with same. Picked up wear bushing running tool and continued to run in hole.
14-okt-01	22:00	23:00	1	L	P	a	EVALPR	Installed diverter element. Continued to run in hole, land out in wellhead and pulled wear bushing.
14-okt-01	23:00	00:00	1	L	P	a	EVALPR	Started to cut 9 5/8" casing at 599.5 m with 2300 l/min flow rate.
15-okt-01	00:00	00:30	0.5	L	P	e	EVALPR	Continued to cut 9 5/8" casing.
15-okt-01	00:30	01:00	0.5	L	P	e	EVALPR	Monitored for pressure against closed choke for 15 minutes. Flow checked well for 15 minutes.
15-okt-01	01:00	04:00	3	L	P	e	EVALPR	Pulled out of hole with wear bushing and cutting assembly to 210 m. Removed auto slips and diverter element. Laid down wear bushing and retrieval tool. Continued to pull out of hole to 10 m.
15-okt-01	04:00	05:00	1	L	P	e	EVALPR	Pulled out of hole with cutting assembly, Weatherford checked equipment OK. Laid down same.
15-okt-01	05:00	07:30	2.5	L	P	e	EVALPR	Picked up seal assembly retrieving tool. Made up to 7 stands 5" drillpipe. Run in hole to 143 m, installed diverter element and auto slips. Continued to run in hole. Stung into seal assembly and pulled with 18T overpull. Flow checked well for 15 minutes.
15-okt-01	07:30	09:00	1.5	L	P	e	EVALPR	Pulled out of hole with seal assembly and laid down same.
15-okt-01	09:00	12:00	3	L	P	e	EVALPR	Made up 9 5/8" casing spear assembly and run in hole. Engaged casing and pulled out of hole. Released spear assembly and laid down same.
15-okt-01	12:00	13:00	1	L	P	a	EVALPR	Laid down 8 joints of 9 5/8" casing.
15-okt-01	13:00	13:30	0.5	L	U	a	EVALPR	Repaired broken bolt on casing tongs
15-okt-01	13:30	14:30	1	L	P	a	EVALPR	Continued to lay down remaining 9 5/8" casing.
15-okt-01	14:30	16:00	1.5	L	P	c	EVALPR	Made up mule shoe on 5" drillpipe and run in hole to 610m.
15-okt-01	16:00	17:30	1.5	L	P	c	EVALPR	Held pre-job safety meeting prior to setting cement plug # 3. Tested cement unit lines to 35 / 172 bar for 5/10 minutes. Pumped 10 m^3 of seawater spacer. Mixed and pumped 14.68 m^3 of 1.95 sg class G cement slurry. Pumped 1.4 m^3 of seawater behind to balance plug. Displaced cement with 2 m^3 of 1.26 sg mud.

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Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
15-okt-01	17:30	18:00	0.5	L	P	c	EVALPR	Pulled out of hole to 395 m.
15-okt-01	18:00	18:30	0.5	L	P	c	EVALPR	Circulated bottoms up. Flow checked for 15 minutes.
15-okt-01	18:30	20:30	2	L	P	b	EVALPR	Pulled out of hole to 84m laying out excess drill pipe.
15-okt-01	20:30	21:00	0.5	L	U	b	EVALPR	Worked on cat walk skate.
15-okt-01	21:00	00:00	3	L	P	f	EVALPR	Continued to lay down drillpipe while pulling out of hole. Laid down mule shoe. Continued to lay down excess drillpipe from derrick while waiting on cement.
16-okt-01	00:00	04:00	4	L	P	f	RDMO	Continued to lay down excess drill pipe from derrick.
16-okt-01	04:00	06:30	2.5	L	P	f	RDMO	Changed to 5" drillpipe handling equipment. Made up 8 1/2" bit and bit sub to 7 stands of 5" drillpipe and run in hole to 405 m. Washed down from 405 m and tagged firm cement at 440 m. Set down 10T. Pulled out of hole to 346 m and closed shear rams.
16-okt-01	06:30	07:00	0.5	L	P	f	RDMO	Flushed cement lines with 1.4 m^3 of seawater. Pressure tested cement plug to 125 bar using seawater for 10 minutes. Bled off pressure to zero. Pumped - 0.563 m^3 of seawater, 0.563m m^3 returned.
16-okt-01	07:00	08:00	1	L	P	f	RDMO	Run in hole to 400m. Displaced kill & choke lines, booster and riser contents to seawater.
16-okt-01	08:00	13:30	5.5	L	P	b	RDMO	Pulled out of hole. Broke out bit and bit sub.
16-okt-01	13:30	14:00	0.5	L	P	b	RDMO	Pulled diverter and laid down same.
16-okt-01	14:00	20:00	6	I	P	f	RDMO	Held pre-job safety meeting prior to pulling BOP. Removed all lines from slip joint. Moved rig 15 m off location. Disconnected Rucker ring prior to laying down slip joint.
16-okt-01	20:00	00:00	4	I	P	f	RDMO	Continued to pull BOP on marine riser to 205 m.
17-okt-01	00:00	05:30	5.5	I	P	b	RDMO	Continued to pull BOP on marine riser from 205 m to surface. Pulled BOP through splash zone.
17-okt-01	05:30	08:00	2.5	I	P	b	RDMO	Rigged up for lifting rig floor. Disconnected pod wires.
17-okt-01	08:00	10:00	2	I	P	b	RDMO	Pulled up BOP and land out in spider beams in moonpool area. Disconnected pup joint above BOPs and land out on transporter. Skid rig too BOP parking position.
17-okt-01	10:00	12:30	2.5	I	P	b	RDMO	Closed rig floor. Laid down riser pup joint and all riser handling equipment.
17-okt-01	12:30	15:30	3	I	P	b	RDMO	Made up 30" x 20" wellhead cutting assembly and MOST tool housing. Secured knives with tape. Tied ropes to MOST tool assembly above stabilizer and run through rotary table and secured to guide wires.
17-okt-01	15:30	18:00	2.5	L	P	e	RDMO	Made up cutting assembly to 6 joints of 8" DC & 12 joints x 5" HWDP and run in hole on 5" drillpipe. Cut 30" x 20" casing 5m below surface.
17-okt-01	18:00	19:30	1.5	L	U	e	RDMO	Attempted to latch MOST tool on to 18 3/4" wellhead - No go. ROV inspected MOST tool, cutting debris was packed off under latching mechanism, attempted to flush same - No go.
17-okt-01	19:30	21:00	1.5	L	U	e	RDMO	Pulled out of hole with cutting assembly. Laid down assembly on catwalk. Weatherford inspected tool, approximately 2 kg of metal cutting removed from under latching mechanisms.
17-okt-01	21:00	00:00	3	L	P	e	RDMO	Made up CART tool to 14 stands of 5" drillpipe with 1 single DP w/ jet sub below tool. Run in hole with same. Engaged CART tool to wellhead and rotated tool 4.5 turns to left - OK. Worked and pulled wellhead free with 88T overpull. Continued to pull out of hole and laid down same.

NORSK AGIP

Operations Summary Report

Well Name:	7122/7-2	Start:	31.08.01
Contractor Name:	SMEDVIG	End:	26.10.01
Rig name:	WEST ALPHA	Spud:	12.09.01

Date	From	To	Hours	Code 1	Code 2	Sub Code	Phase	Description of Operations
18-okt-01	00:00	05:00	5	M	P	e	RDMO	Start anchor handling operations. Deballasted rig to transit draft. Anchor # 8 taken onboard West Alpha for repairs at 02:20. Anchor # 2 on bolster at 04:40. Stopped anchor handling operations at 05:00 due to bad weather. While anchor handling operations were being conducted, pulled out with 30” and 20” casing stump and RGB. Removed guidepost #3 and land RGB on transport skid. Laid down casing and wellhead on catwalk. Skid RGB out of moonpool area.
18-okt-01	05:00	13:30	8.5	P	U	a	RDMO	Waiting on weather. Laid down excess tubulars from derrick while WOW.
18-okt-01	13:30	19:00	5.5	M	P	d	RDMO	Continued anchor handling operations. Anchor # 6 on bolster at 15:50 Anchor # 4 on bolster at 19:00 Stopped anchor handling operations due to bad weather.
18-okt-01	19:00	00:00	5	P	U	a	RDMO	Waiting on weather.
19-okt-01	00:00	10:00	10	P	U	a	RDMO	Waiting on weather.
19-okt-01	10:00	20:30	10.5	M	P	d	RDMO	Resumed anchor handling operations. Anchor # 5 on bolster at 12:20 Anchor # 3 on bolster at 14:40 Anchor # 7 on bolster at 17:25 Anchor # 1 on bolster at 20:00 Northern Corona on bridal at 20:30. Tow commenced at 20:40.
19-okt-01	20:30	00:00	3.5	M	P	b	RDMO	Rig on tow to 62 degs. Time Position HDG SPD WIND SEA (m) DTG (NM) 24:00 N 71* 00.10' E 021* 35' 237 5.1 SW6 2.0 683
20-okt-01	00:00	00:00	24	M	P	b	RDMO	Rig on tow to 62 degs. Time Position HDG SPD WIND SEA (m) DTG (NM) 24:00 N 70* 28.9' E 17* 49' 220 2.6 V5 3.0 604
21-okt-01	00:00	00:00	24	M	P	b	RDMO	Rig on tow to 62 degs. Time Position HDG SPD WIND SEA (m) DTG (NM) 24:00 N69* 26, E015*17' 220 2.4 NW6 4 522
22-okt-01	00:00	00:00	24	M	P	b	RDMO	Rig on tow to 62 degs. Time Position HDG SPD WIND SEA (m) DTG (NM) 24:00 N68* 27.3 E 12*59' 219 5.0 NNW3 4 445
23-okt-01	00:00	00:00	24	M	P	b	RDMO	Rig on tow to 62 degs. Time Position HDG SPD WIND SEA (m) DTG (NM) 24:00 N66* 31.0 E 9*58' 168 6.6 SSE3 1.5 309
24-okt-01	00:00	00:00	24	M	P	b	RDMO	Rig on tow to 62 degs. Time Position HDG SPD WIND SEA (m) DTG (NM) 24:00 N64* 14.2 E 6*53' 198 6.5 SSE4 2.0 152
25-okt-01	00:00	00:00	24	M	P	b	RDMO	Rig on tow to 62 degs. Time Position HDG SPD WIND SEA (m) DTG (NM) 24:00 N62* 48.5 E 5*18' 203 2.4 S8 3.5 54
26-okt-01	00:00	15:00	15	M	P	b	RDMO	Rig on tow to 62 degs. Time, Pos, HDG, SPD, WIND, SEA(m), DTG (NM) 00:00 N62*48, E005*09', 203, 2.4, S8, 3.5, 54 06:00 N62*39, E004*58', 213, 3.4, S9, 4.5, 38 15:00 N62*06, E004*21', Rig handed over to Exxon Mobil at 15:00 hrs on 26.10.2001

3.4 TECHNICAL INFORMATION AND REPORTS

3.4.1 Bit Record

Well: 7122/7-2 Spud date: Sept. 12, 2001
Rig: West Alpha Release date: Oct. 26, 2001

Bit no.	Bit size inches	Bit make	Bit type	Serial no.	IADC Code	Depth in m	Depth out m	Drilled interval m	Rotation hours	ROP m/hr	WOB (min/max) ton	RPM (min/max) rpm	I	O	D	L	B	G	O	R
1	12.25	Smith	MGGH + ODC	LW7342	135	394	910	516	22.5	22.91	6	5/ 190	3	3	WT	A	E	2	PN	TD
2	17.50	Smith	10M	LR 4051	435	395	481	86	8.5	10.16	7	60/ 105	3	3	RO	N	E	4	RG	TD
3	17.50	SMITH	10 MODRDPD	LR 6990	435	481	910	429	18	23.81	10	80/ 160	3	3	LT	M	E	4	NO	TD
3rr1	12.25	Smith	MGGH + ODC	LW7342	135	910	1075	165	19.5	8.46	10/ 17	100/ 140	4	4	WT	A	E	2	CT	CP
4	8.50	CORE	MCP 682	CP-5841 C		1075	1089	14	4.5	3.11	2/ 6	70	0	0				I		
4rr1	8.50	CORE	MCP 682	CP-5841 C		1089	1109	20	7.5	2.67	6	70	1	1	WT	N		I	PN	
4rr2	8.50	CORE	MCP 682	CP-5841 C		1109	1123	14	8	1.75	5/ 10	50/ 70	1	1	WT	N		I	PN	
4rr3	8.50	CORE	MCP 682	CP-5841 C		1123	1135	12	4.5	2.67	5/ 10	50/ 70	1	1	WT	A		I	PN	
4rr4	8.50	CORE	MCP 682	CP-5841 C		1135	1160	25	6.5	3.85	5/ 10	50/ 70	1	1	WT	A		I	PN	
5	12.25	DPI	Tapered	1963133		1160	1418	258	18.5	13.95			2	7	JD	S	D	I	RO	TD
3rr2	12.25	Smith	MGGH + ODC	LW7342	135	1418	1418	Clean-out trip					0	0						
6	8.50	Smith	MFDGH	LW7078	135	395	1356	Scrape csg.					0	0						
6rr1	8.50	Smith	MFDGH	LW7079	136			Tag cem. plug												

Bit no.	Bit size in	Jet size in 1/32"	T.F.A. mm2	Pump output lpm	Pump pressure bar	deltaP Bit kPa	Jet vel. m/sec	Mud type	Mud weight sg	Mud visc. Cp	Mud Y.P. lb/100ft2	Depth m	Incl. deg.	Az. deg.
1	12.25	20/ 18/ 16	486.42	3850	0	9871	131.9	Spud Mud	1.03					
2	17.5	18/ 18/ 18/ 18	641.30	3487	48	4659	90.6	Spud Mud	1.03			415	2.26	248.00
3	17.5	18/ 18/ 18/ 15	592.31	3593	140	5967	101.1	Spud Mud	1.06			898	1.03	100.36
3rr1	12.25	20/ 18/ 18/ 15	631.40	2998	175	4311	79.1	Formate/Pol.	1.25	8	5	1059	2.85	221.09
4	8.5			780	34			Formate/Pol.	1.25	11	7			
4rr1	8.5			800	34			Formate/Pol.	1.25	11	7			
4rr2	8.5			800	34			Formate/Pol.	1.25	13	6	1121	3.7	226.40
4rr3	8.5			800	34			Formate/Pol.	1.25	12	6			
4rr4	8.5			800	34			Formate/Pol.	1.25	12	6	1147	3.04	233.60
5	12.25	12/12/12/12/12/13/13/13/13	690.32	810	9	30	20.0	Formate/Pol.	1.25	16	7	1382	2.23	268.48
3rr2	12.25	20/ 18/ 16	486.42	3500	180	9980	119.9	Formate/Pol.	1.26	16	7			
6	8.5	28/ 28/ 28	1163.84	0	0	0	0.0	Formate/Pol.	1.26	17	5			
6rr1	8.5			0	0	0	0.0	Formate/Pol.	1.26	17	5			

3.4.2 BHA Record

Purpose	BHA no.	Bit no.	Date in	Date out	Depth in	Depth out
Drill 12 1/4" pilot hole	**1**	**1**	**12-sep-01**	**13-sep-01**	**395**	**910**

Description	Number	OD (in)	ID (in)	Length (m)
Bit	1	12.25	2.81	
Stab (NB) 12 1/4" FG	1	12.25	3.50	1.53
CDR	1	9.00	2.50	6.91
M.W.D.	1	8.37	2.50	8.28
Stab (IB) 12 1/4" FG	1	12.25	3.50	1.37
Sonic	1	8.00	3.00	7.09
Stab (IB) 12 1/4" FG	1	12.25	3.50	1.98
Drill Collar	3	8.00	2.81	25.88
String Stab	1	12.25	2.75	2.34
Drill Collar	6	8.00	2.75	53.34
Jar - Griffith	1	8.25	2.81	9.75
Drill Collar	2	8.00	3.00	17.86
Acc - Griffith	1	8.25	2.81	10.16
Drill Collar	2	8.00	2.81	18.01
Cross Over	1	7.56	2.75	1.08
H.W.D.P.	12	5.00	3.00	111.31
			Total length	**276.89 m**

Purpose	BHA no.	Bit no.	Date in	Date out	Depth in	Depth out
Drill 36" hole	**2**	**2**	**14-sep-01**	**15-sep-01**	**395**	**481**

Description	Number	OD (in)	ID (in)	Length (m)
Bit	1	17.50	2.81	
Bit Sub	1	9.50	3.00	0.88
Hole Opener	1	26 - 36	2.81	3.34
Float Sub	1	8.87	2.81	0.81
Andergage	1	6.75	2.50	3.35
Cross Over	1	8.50	3.25	0.96
Drill Collar	11	8.00	2.81	97.19
Jar - Griffith	1	8.25	2.81	9.75
Drill Collar	2	8.00	3.00	17.86
Cross Over	1	7.56	2.81	1.08
H.W.D.P.	12	5.00	3.00	111.30
			Total length	**246.52m**

Purpose	BHA no.	Bit no.	Date in	Date out	Depth in	Depth out
Drill 17 1/2" hole	**3**	**3**	**17-sep-01**	**17-sep-01**	**481**	**910**

Description	Number	OD (in)	ID (in)	Length (m)
Bit	1	17.50	2.81	
Bit Sub	1	8.87	3.00	0.81
Andergage	1	9.18	2.50	3.35
Drill Collar	1	9.50	3.00	8.84
Stab (IB) 17 1/2" FG	1	17.50	3.00	1.91
Drill Collar	2	9.50	3.00	17.88
Stab (IB) 17 1/2" FG	1	17.50	3.00	2.02
Cross Over	1	8.50	2.75	0.96
Drill Collar	6	8.00	3.00	53.34
Jar - Griffith	1	8.25	2.81	9.75
Drill Collar	2	8.00	3.00	17.86
Acc - Griffith	1	8.25	2.50	10.16
Drill Collar	2	8.00	3.00	18.01
Cross Over	1	7.56	2.81	1.08
H.W.D.P.	12	5.00	3.00	111.30
			Total length	**257.27m**

Purpose	BHA no.	Bit no.	Date in	Date out	Depth in	Depth out
Drill 12 1/4" hole	**4**	**3rr1**	**22-sep-01**	**23-sep-01**	**911**	**1075**

Description	Number	OD (in)	ID (in)	Length (m)
Bit	1	8.50		
Bit Sub	1	8.00	2.87	0.87
CDR	1	9.00	2.50	7.02
Stab (IB) 12 1/4" FG	1	12.00	3.50	1.50
M.W.D.	1	8.50	3.00	8.76
P/P sub	1	7.93	2.81	0.43
Bit Sub	1	8.06	3.00	0.76
Stab (IB) 12 1/4" FG	1	12.25	2.81	2.34
Drill Collar	6	8.00	2.81	53.34
Jar - Griffith	1	8.25	2.81	9.62
Drill Collar	2	8.00	2.81	17.86
Acc - Griffith	1	8.25	2.81	10.16
Drill Collar	2	8.00	2.81	18.01
Cross Over	1	7.56	2.75	1.08
H.W.D.P.	12	5.00	3.00	111.30
			Total length	**243.05m**

Purpose	BHA no.	Bit no.	Date in	Date out	Depth in	Depth out
CORING	**5**	**4**	**24-sep-01**	**25-sep-01**	**1075**	**1089**

Description	Number	OD (in)	ID (in)	Length (m)
Bit	1	8.50		
Core Barrel	5	6.75	5.38	31.83
P/P sub	1	6.63	2.25	0.99
Bit Sub	1	6.37	2.25	0.74
Drill Collar	1	6.37	2.25	9.05
Cross Over	1	8.00	2.81	1.06
Drill Collar	6	8.00	2.81	53.34
Jar - Griffith	1	8.00	2.81	9.62
Drill Collar	2	8.00	3.00	17.86
Cross Over	1	8.00	2.81	1.08
H.W.D.P.	12	5.00	3.00	111.30
			Total length	**236.87m**

Purpose	BHA no.	Bit no.	Date in	Date out	Depth in	Depth out
CORING	**6**	**4rr1**	**25-sep-01**	**26-sep-01**	**1089**	**1109**

Description	Number	OD (in)	ID (in)	Length (m)
Bit	1	8.50		
Core Barrel	6	6.75	5.38	37.92
P/P sub	1	6.63	2.25	0.99
Bit Sub	1	6.37	2.25	0.74
Drill Collar	6	6.50	2.25	53.83
Cross Over	1	8.00	2.81	1.06
Drill Collar	6	8.00	2.81	53.34
Jar - Griffith	1	8.00	2.81	9.62
Drill Collar	2	8.00	3.00	17.86
Cross Over	1	8.00	2.81	1.08
H.W.D.P.	12	5.00	3.00	111.30
			Total length	**287.74m**

Purpose	BHA no.	Bit no.	Date in	Date out	Depth in	Depth out
CORING	**7**	**4rr2**	**26-sep-01**	**27-sep-01**	**1109**	**1123**

Description	Number	OD (in)	ID (in)	Length (m)
Bit	1	8.50		
Core Barrel	6	6.75	5.38	37.92
P/P sub	1	6.63	2.25	0.99
Bit Sub	1	6.37	2.25	0.74
Drill Collar	9	6.50	2.25	80.71
Cross Over	1	8.00	2.81	1.06
Drill Collar	6	8.00	2.81	53.34
Jar - Griffith	1	8.00	2.81	9.62
Drill Collar	2	8.00	3.00	17.86
Cross Over	1	8.00	2.81	1.08
H.W.D.P.	12	5.00	3.00	111.30
			Total length	**314.62m**

Purpose	BHA no.	Bit no.	Date in	Date out	Depth in	Depth out
CORING	**8**	**4rr3**	**27-sep-01**	**27-sep-01**	**1123**	**1135**
CORING	**9**	**4rr4**	**28-sep-01**	**29-sep-01**	**1135**	**1160**

Description	Number	OD (in)	ID (in)	Length (m)
Bit	1	8.50		
Core Barrel	5	6.75	5.38	31.83
P/P sub	1	6.63	2.25	0.99
Bit Sub	1	6.37	2.25	0.74
Drill Collar	9	6.50	2.25	80.71
Cross Over	1	8.00	2.81	1.06
Drill Collar	6	8.00	2.81	53.34
Jar - Griffith	1	8.00	2.81	9.62
Drill Collar	2	8.00	3.00	17.86
Cross Over	1	8.00	2.81	1.08
H.W.D.P.	12	5.00	3.00	111.30
			Total length	**308.53m**

Purpose	BHA no.	Bit no.	Date in	Date out	Depth in	Depth out
Drill to TD	**10**	**5**	**29-sep-01**	**01-okt-01**	**1160**	**1418**

Description	Number	OD (in)	ID (in)	Length (m)
Bit (PDC type DPI)	1	12.25		
Bit Sub	1	8.00	2.87	0.87
CDR	1	9.00	2.50	7.02
Stab (IB) 12 1/4" FG	1	12.00	3.50	1.50
MWD	1	8.50	3.00	8.76
P/P sub	1	7.95	2.81	0.43
Bit Sub	1	8.06	3.00	0.76
Stab (IB) 12 1/4" FG	1	12.25	2.81	2.34
6 x DC	6	8.00	2.81	53.34
Jar - Griffith	1	8.25	2.81	9.62
2 x DC	2	8.00	2.81	17.86
Acc - Griffith	1	8.25	2.81	10.16
2 x DC	2	8.00	2.81	18.01
Cross Over	1	7.56	2.81	1.08
H.W.D.P.	12	5.00	3.00	111.30
			Total length	**243.05m**

Purpose	BHA no.	Bit no.	Date in	Date out	Depth in	Depth out
Wipertrip	**11**	**3rr2**	**03-okt-01**		**1418**	**0**

Description	Number	OD (in)	ID (in)	Length (m)
Bit	1	12.25	2.81	
Bit Sub	1	8.00	2.87	0.76
Stab (IB) 12 1/4" FG	1	12.25	3.50	2.34
Drill Collar	6	8.00	2.81	53.34
Jar - Griffith	1	8.25	2.81	9.62
Drill Collar	2	8.00	2.81	17.86
Acc - Griffith	1	8.25	2.81	10.16
Drill Collar	2	8.00	2.81	18.01
Cross Over	1	7.56	2.75	1.08
H.W.D.P.	12	5.00	3.00	111.30
			Total length	**224.47m**

Purpose	BHA no.	Bit no.	Date in	Date out	Depth in	Depth out
Clean out 9 5/8" csg	**12**	**6**	**05-okt-01**	**06-okt-01**	**395**	**1356**

Description	Number	OD (in)	ID (in)	Length (m)
Bit	1	8.50		0.25
Bit Sub	1	6.37	2.81	0.74
Casing Scraper	1	6.75		0.86
Drill Collar	18	6.50	3.00	160.48
H.W.D.P.	12	5.00	3.00	111.30
			Total length	**273.63m**

3.4.3 Casing Data Summary

OD	30"	20" x 13 3/8"		9 5/8"
		20" housing	13 3/8"	(For well testing purpose)
WEIGHT (PPF)	333	133	72	53.5
GRADE	X-52	X-56	L-80	P-110
CONNECTION	ST-2		Buttress	Antares MS
PIPE ID (IN)	27	18.376	12.347	8.535
PIPE DRIFT (IN)	27		12.25	8.5
CONN. OD (IN)	33	21.50	14.375	10.625
CONN. ID (IN)	28	18.63	12.25	8.5
BURST (bar)		211	371	737
BURST Design	N/A	97.4	96.6	171.3
BURST SF	N/A	2.16	3.84	4.30
COLLAPSE (bar)	N/A	N/A	183	538
COLLAPSE Design	N/A	N/A	94.5	147.2
COLLAPSE SF	N/A	N/A	1.95	3.64
TENSION (MT)		964	753	761
TENSION Design	35	171.7	169.8	113.4
TENSION SF		5.61	4.44	6.34
CASING TOP (m)	392	392.47	405.32	393.56
CASING BTM. (m)	479	405.32	900	1403
CASING LENGTH (m)	87	12.85	494.7	1009.44

3.4.4 Formation Integrity Test Result

In well 7122/7-2 the following FIT was made:

After drilling out of the 13 3/8" shoe set at 900 m a Formation Integrity Test was performed to an equivalent mud weight of 1.65 sg.

3.4.5 Cementing Reports

3.4.5.1 30" Conductor Pipe

Well 7122/7-2	GENERAL DATA				30" casing
SHOE DEPTH	**479** m-RKB	**30** CSG - I.D.=	**28.0**	WT=	**310.00** ppf
SEABED	**395** m-RKB	OPEN HOLE DIAMETER =	**36.0**	inches	
HOLE SIZE	**36.00** in				
EXCESS (lead slurry/open hole)	**198** %	FRAC.GRAD @ SHOE	**1.38**	SG-EMW	
TOP CMT LEAD SLURRY	**395** m-RKB	FG @ PREVIOUS CSG	**1.28**	SG-EMW	
TOP CMT TAIL SLURRY	**430** m-RKB	MUD WEIGHT	**1.03**	SG	
B.H.S.T.	**10** Deg C	WATER DEPTH	**377**	m	

TOTAL DRY CMT REQUIRED >>>	47.0 ton	<<<

SLURRY VOLUME CALCULATION		
ANNULAR VOLUME CSG-OPEN HOLE	16.86 m^3	595.2 Cuft
EXCESS OVER THEOR.LEAD VOLUME (or tail volume if lead slurry is not used)	33.37 m^3	1 178.4 Cuft
ANNULAR VOLUME CSG-CSG	0.00 m^3	0.0 Cuft
5 m INTERNAL VOL. (SHOE-COLL)	1.99 m^3	70.1 Cuft
TOTAL SLURRY VOLUME =	**52.21** m^3	1 843.7 Cuft

SPACERS

TYPE: Circulate one casing volume of mud prior to cementing

CEMENT SLURRY COMPOSITION

LEAD SLURRY	**1.56 SG**	**F/**	**430 m**	**TO**	**395 m**		
SLURRY VOLUME		**35** m of ANNULUS + EXCESS				**40.40** m^3	**1 426.4 Cuft**
"G" CEMENT	Yield	**129.42** l/100kg		0.773 ton/m3		31.21 ton	732.0 Sx
ECONOLITE		**3.20** l/100kg				998.82 liter	264.2 Gall
NF-6/DEFOAMER		**0.10** l/100kg				31.21 liter	8.3 Gall
SEAWATER		**95.07** l/100kg				29.67 m^3	186.6 Bbl
TOTAL MIX FLUID		**98.37** l/100kg				30.70 m^3	193.1 Bbl

ESTIMATED TICKENING TIME @ 70 BC	hr.min	**> 6**

TAIL SLURRY	**1.95 SG**	**S F/**	**479 m**	**TO**	**430 m**		
SLURRY VOLUME		**49** m of ANNULUS+INT.VOL.(SHOE-COLL)				**11.82** m^3	**417.3 Cuft**
"G" CEMENT	Yield	**75.06** l/100kg		1.332 ton/m3		15.75 ton	369.4 Sx
CaCl2/ACCELERATOR		**4.35** l/100kg				684.92 liter	181.2 Gall
DISPERSANT		**0.00** l/100kg				0.00 liter	0.0 Gall
NF-6/DEFOAMER		**0.10** l/100kg				15.75 liter	4.2 Gall
DRLG WATER MIXING		**39.56** l/100kg				6.23 m^3	39.2 Bbl
TOTAL MIX FLUID		**44.01** l/100kg				6.93 m^3	43.6 Bbl

ESTIMATED TICKENING TIME @ 70 BC	hr.min	**3 - 4**

CEMENTING TECHNIQUE : CONVENTIONAL DOUBLE PLUG CEMENTING

CMT SLURRY HYROSTATIC GRADIENT : EVALUATION

FRACTURE-P @ NEW SHOE	64.82 bar	940 psi
CMT HYDRO-P @ SEABED	39.91 bar	579 psi
CMT HYDRO-P @ NEW SHOE	54.64 bar	793 psi
MIN. PRESSURE MARGIN AT NEW SHOE AT THE END OF THE CEMENT JOB	10.18 bar	148 psi

3.4.5.2 20" X 13 3/8" Casing

Well 7122/7-2		**GENERAL DATA**				**20" x 13 3/8" surface casing**
SHOE DEPTH	900 m-RKB	Top sect.:	**OD= 20.00**	**ID= 19.000**	Length = **10 m**	**WT= 133.0 ppf**
PREVIOUS CASING SHOE:	**479** m-RKB	Btm. Sect.:	**OD= 13.38**	**ID= 12.250**	Length = **495 m**	**WT= 72.0 ppf**
HOLE SIZE	**17.50** in	Perv. csg.:	**OD= 30.00**	**ID= 28.000**	Length = **84 m**	**WT= 310.0 ppf**
EXCESS (in open hole)	**99** %					
TOP CMT LEAD SLURRY	**395** m-RKB	FRAC.GRAD @ SHOE	**1.66**	sg EMW		
TOP CMT TAIL SLURRY	**702** m-RKB	FG @ PREVIOUS CSG	**1.38**	sg EMW		
B.H.S.T.	**22** Deg C	MUD WEIGHT	**1.20**	sg EMW		
Seabed at: 395 m RT		SEABED	395	m		
	TOTAL DRY CMT REQUIRED >>>	**72.4 ton**	**<<<**			

SLURRY VOLUME CALCULATION		
ANNULAR VOLUME CSG-OPEN HOLE	27.17 m^3	959.3 Cuft
EXCESS OVER THEOR.LEAD VOLUME (or tail volume if lead slurry is not used)	26.70 m^3	942.8 Cuft
ANNULAR VOLUME CSG-CSG	25.56 m^3	902.4 Cuft
36 m INTERNAL VOL. (SHOE-COLL)	2.74 m^3	96.7 Cuft
TOTAL SLURRY VOLUME =	**82.17** m^3	2 901.3 Cuft

SPACERS				**LENGTH**
TYPE : **SPACER 500**	**1.60** SG	VOL. =	**5.00 m^3**	232 m.

CEMENT SLURRY COMPOSITION

LEAD SLURRY	**1.56 SG**	**F/**	**702 m**	**TO**	**395 m**		
SLURRY VOLUME	**307** m of ANNULUS + EXCESS					**66.65 m^3**	**2 353.4 Cuft**
"G" CEMENT Yield	**129.42** l/100kg		0.773 ton/m3			51.50 ton	1 207.8 Sx
ECONOLITE	**3.20** l/100kg					1647.98 liter	436.0 Gall
NF-6/DEFOAMER	**0.10** l/100kg					51.50 liter	13.6 Gall
SEAWATER	**95.07** l/100kg					48.96 m^3	307.9 Bbl
TOTAL MIX FLUID	**98.37** l/100kg					50.66 m^3	318.6 Bbl
ESTIMATED TICKENING TIME @ 70 BC	hr.min	**> 6**					

TAIL SLURRY	**1.95 SG**	**F/**	**900 m**	**TO**	**702 m**		
SLURRY VOLUME	**198** m of ANNULUS+INT.VOL.(SHOE-COLL)					**15.52 m^3**	**547.8 Cuft**
"G" CEMENT Yield	**74.38** l/100kg		1.344 ton/m3			20.86 ton	489.4 Sx
LIQUID $CaCl_2$	**2.20** l/100kg					458.90 liter	121.4 Gall
NF-6/DEFOAMER	**0.10** l/100kg					20.86 liter	5.5 Gall
DRLG WATER MIXING	**41.03** l/100kg					8.56 m^3	53.8 Bbl
TOTAL MIX FLUID	**43.33** l/100kg					9.04 m^3	56.8 Bbl
ESTIMATED TICKENING TIME @ 70 BC	hr.min	**3 - 4**					

CEMENTING TECHNIQUE : CONVENTIONAL DOUBLE PLUG CEMENTING

CMT SLURRY HYROSTATIC GRADIENT : EVALUATION		
FRACTURE-P @ PREVIOUS SHOE	64.82 bar	940 psi
FRACTURE-P @ NEW SHOE	146.50 bar	2125 psi
CMT HYDRO-P @ PREV. SHOE	59.99 bar	870 psi
CMT HYDRO-P @ NEW SHOE	132.00 bar	1914 psi
MIN. PRESSURE MARGIN AT PREV. SHOE AT THE END OF THE CEMENT JOB	4.83 bar	70 psi
MIN. PRESSURE MARGIN AT NEW SHOE AT THE END OF THE CEMENT JOB	14.50 bar	210 psi

3.4.5.3 9 5/8" Casing

Well 7122/7-2	**GENERAL DATA**			**9 5/8" casing**
SHOE DEPTH	**1403** m-RKB	**9.625** CSG - I.D.= **8.535**	WT= **53.50** ppf	
PREVIOUS CASING	**900** m-RKB	**13.375** CSG - I.D.= **12.250**	WT= **72.00** ppf	
HOLE SIZE	**12.25** in			
EXCESS (in open hole)	**21** %	FRAC.GRAD @ SHOE	**1.78**	SG-EMW
TOP CMT LEAD SLURRY	**N/A** m-RKB	FG @ PREVIOUS CSG	**1.66**	SG-EMW
TOP CMT (TAIL) SLURRY	**670** m-RKB	MUD WEIGHT	**1.25**	SG
B.H.S.T.	**38** Deg C	WATER DEPTH	**377**	m

TOTAL DRY CMT REQUIRED >>>	**33.6 ton**	**<<<**

SLURRY VOLUME CALCULATION		
ANNULAR VOLUME CSG-OPEN HOLE	14.64 m^3	516.8 Cuft
EXCESS OVER THEOR.LEAD VOLUME (or tail volume if lead slurry is not used)	3.07 m^3	108.5 Cuft
ANNULAR VOLUME CSG-CSG	6.69 m^3	236.3 Cuft
36 m INTERNAL VOL. (SHOE-COLL)	1.33 m^3	46.9 Cuft
TOTAL SLURRY VOLUME =	**25.73** m^3	908.5 Cuft

	SPACERS			**LENGTH**
TYPE : **SPACER 500**	**1.60** SG	VOL. =	**15.00** m3.	516 m.

CEMENT SLURRY COMPOSITION

LEAD SLURRY **1.56** **SG** **F/** **0** **TO** **0** **m.**			
SLURRY VOLUME **0** m of ANNULUS + EXCESS		**0.00 m^3**	**0.0 Cuft**
"G" CEMENT Yield **129.40** l/100kg 0.773 ton/m3		0.00 ton	0.0 Sx
ECONOLITE **3.20** l/100kg		0.00 liter	0.0 Gall
HR-4L/RETARDER **0.00** l/100kg		0.00 liter	0.0 Gall
NF-6/DEFOAMER **0.10** l/100kg		0.00 liter	0.0 Gall
SEAWATER **95.05** l/100kg		0.00 m^3	0.0 Bbl
TOTAL MIX FLUID **98.35** l/100kg		0.00 m^3	0.0 Bbl
ESTIMATED TICKENING TIME @ 70 BC hr.min **> N/A**			

TAIL SLURRY **1.90 SG** **F/** **1403 m** **TO** **670 m**			
SLURRY VOLUME **733** m of ANNULUS+INT.VOL.(SHOE-COLL)		**25.73 m^3**	**908.5 Cuft**
"G" CEMENT Yield **76.61** l/100kg 1.305 ton/m3		33.59 ton	787.9 Sx
HALAD 99LE+/FILTER LOSS **0.50** l/100kg		167.93 liter	44.4 Gall
HR-4L/RETARDER **0.00** l/100kg		0.00 liter	0.0 Gall
NF-6/DEFOAMER **0.10** l/100kg		33.59 liter	8.9 Gall
DRLG WATER MIXING **44.95** l/100kg		15.10 m^3	94.9 Bbl
TOTAL MIX FLUID **45.55** l/100kg		15.30 m^3	96.2 Bbl
ESTIMATED TICKENING TIME @ 70 BC hr.min **3 - 4**			

CEMENTING TECHNIQUE : CONVENTIONAL DOUBLE PLUG CEMENTING

CMT SLURRY HYROSTATIC GRADIENT : EVALUATION		
FRACTURE-P @ PREVIOUS SHOE	146.50 bar	2125 psi
FRACTURE-P @ NEW SHOE	244.89 bar	3552 psi
CMT HYDRO-P @ PREV. SHOE	99.86 bar	1448 psi
CMT HYDRO-P @ NEW SHOE	236.48 bar	3430 psi
MIN. PRESSURE MARGIN AT PREV. SHOE AT THE END OF THE CEMENT JOB	46.64 bar	676 psi
MIN. PRESSURE MARGIN AT NEW SHOE AT THE END OF THE CEMENT JOB	8.41 bar	122 psi

3.4.6 Mud Summary by Phase

Mud summary for the 12 1/4" pilot hole

A 12 ¼" pilot hole was first drilled from seabed and down to 910 m with seawater, and with returns to seabed. High viscosity sweeps were used during the drilling to keep the hole clean. After reaching the pilot hole TD, the hole was first displaced to 1.06 sg pre-hydrated bentonite mud and was observed for any indications of shallow gas (none were observed). Prior to pulling out, the hole was displaced to 1.20 sg kill mud.

Mud summary for the 36" hole section

The 36" hole section was drilled by opening up the pilot hole to 36" down to 481 m. The 36" hole was drilled using sea water with returns to seabed. High viscosity sweeps were used during the drilling to keep the 36" hole clean. The hole was circulated clean and displaced with a 1.20 sg pre-hydrated bentonite mud prior to pulling out for running the 30" casing string.

Mud summary for the 17 1/2" hole section

After having set the 30" casing, the remaining part of the pilot hole from the 30" shoe and down to 910 m was opened up to 17 ½" using seawater with returns to seabed. High viscosity sweeps were used to keep the hole clean. After making a flow check at section TD (no shallow gas detected) the 17 ½" section was displaced to 1.20 sg pre-hydrated bentonite mud prior to pulling out for running the 20"x 13 3/8" casing string.

Mud summary for the 12 ¼" hole section

After having installed the 20 x 13 3/8" casing (13 3/8" shoe at 900 m), the cement in the shoe was drilled out with a 12 1/4" bit. The drilling fluid in the well was then changed to 1.25 sg Formate brine where XC polymer and PAC was used for obtaining viscosity and to maintain rheology. After having displaced the well to the new mud, 12 ¼" hole was drilled down to 1075 m where the coring started. A total of 5 cores were taken from 1075 m down to 1160 m with a 8 ½" core bit. The cored section was then opened up to 12 ¼", and the drilling of the 12 ¼" section continued to well TD at 1418 m. "Bottoms up" was circulated two times and a short trip to the 13 3/8" shoe was done. The string was run back to bottom with no drag. Prior to pulling out of hole for logging the mud was circulated and conditioned. No problems with the Formate mud was experienced during the drilling of the 12 ¼" hole section.

MUD SUMMARY REPORT
Well 7122/7-2

Day no.	TMD (m)	Hole size (in)	Mud type	MW (g/cm3)	Viscosity (s/L)	PV (mPa*s)	YP (Pa)	Gels 10s/10m (Pa)	API WL (mL)	HTHP WL (mL)	HTHP TEMP (°C)	pH	Cl (mg/L)	Sand (%)	TS (%)	LGS (kg/m3)	MBT (kg/m3)	Tot. Hard. (mg/L)	Oil (%)	Tot. Vol. (m3)
13	0	12.25	SW/Bentonite	1.06	100	12	23	21/0/0			20									
14	910	12.25	SW/Bentonite	1.06	150	0	0	0/0/0			50									63
15	425	36	SW/Bentonite	1.06	150	19	19	0/0/0			50									271
16	481	36	SW/Bentonite	1.06	150	7	25	21/25/0			50									310
17	481	17.5	SW/Bentonite	1.06	150	7	25	21/25/0			50									208
18	910	17.5	SW/Bentonite	1.06	150	16	23	21/25/0			50									252
23	935	12.25	FORMATE/POLYMER	1.25	35	8	5	2/3/0	6			9.5	500	0	0				0	221
24	1075	12.25	FORMATE/POLYMER	1.25	35	8	6	2/4/0	6			9.5	500	0	0				0	240
25	1075	12.25	FORMATE/POLYMER	1.26	35	11	7	3/7/0	4			8.5	500	0	0				0	242
26	1109	12.25	FORMATE/POLYMER	1.26	35	11	7	3/6/0	3			8.5	500	0	0				0	244
27	1123	12.25	FORMATE/POLYMER	1.26	50	13	6	3/6/0	2.9			8.5	500	0	0				0	261
28	1135	12.25	FORMATE/POLYMER	1.25	50	12	6	2/4/0	3			9	500	0	0				0	263
29	1144	12.25	FORMATE/POLYMER	1.26	55	12	6	3/4/0	3			8	500	0	0				0	148
30	1159	12.25	FORMATE/POLYMER	1.25	59	12	6	3/4/0	3.2			9	500	0	0				0	149
31	1418	12.25	FORMATE/POLYMER	1.27	59	16	7	3/4/0	2			9	500	0	0				0	187
32	1418	12.25	FORMATE/POLYMER	1.26	58	16	7	3/4/0	2			9	500	0	0				0	
33	1418	12.25	FORMATE/POLYMER	1.26	58	16	7	3/4/0	2			9	500	0	0				0	
34	1418	12.25	FORMATE/POLYMER	1.26	49	17	5	2/3/0	2			8.8	500	0	0				0	
35	1418	12.25	FORMATE/POLYMER	1.26	49	17	5	2/3/0	2			8.8	500	0	0				0	

3.4.7 Deviation Summary

Deviation Summary Well 7122/7-2										
TMD (m)	Angle (deg.)	Azimuth (deg.)	CMT	TVD (m)	North (m)	East (m)	Horizontal distance (m)	DLS (deg./30m)	BUR (deg./30m)	TYPE
0.00	0.00	0.00	YNN	0.00	0.00	0.00	0.00	0.00	0.00	
415	2.36	248.00	NNN	414.88	-3.20	-7.92	8.55	0.17	0.17	MWD
480	2.00	0.00	NNY	479.86	-2.57	-9.16	9.52	1.67	-0.17	INC
651	1.75	0.00	YNN	650.77	3.03	-9.16	9.65	0.04	-0.04	INC
833	1.25	27.00	YNN	832.70	7.57	-8.26	11.21	0.14	-0.08	INC
862	0.92	29.50	NNY	861.70	8.06	-8.01	11.36	0.34	-0.34	MWD
898	1.03	100.36	NNY	897.70	8.25	-7.54	11.18	0.94	0.09	MWD
921	0.70	128.30	NNY	920.98	8.13	-7.23	10.88	0.68	-0.43	MWD
1035	2.20	212.66	NNY	1034.66	5.86	-7.86	9.80	0.59	0.40	MWD
1059	2.85	221.09	NNY	1058.33	5.03	-8.49	9.87	0.95	0.82	MWD
1121	3.70	226.40	YNN	1120.54	2.48	-10.97	11.24	0.43	0.41	MWD
1147	3.04	233.60	YNN	1146.49	1.49	-12.13	12.22	0.90	-0.76	MWD
1177	3.08	244.71	YNN	1176.69	0.67	-13.51	13.53	0.59	0.04	MWD
1209	3.47	243.11	YNN	1208.87	-0.14	-15.16	15.16	0.37	0.36	MWD
1239	2.67	251.49	YNN	1238.11	-0.76	-16.60	16.62	0.94	-0.82	MWD
1270	2.79	257.53	YNN	1269.23	-1.16	-18.03	18.06	0.30	0.12	MWD
1296	2.85	256.60	YNN	1295.24	-1.44	-19.28	19.33	0.09	0.07	MWD
1324	2.56	262.64	YNN	1322.80	-1.68	-20.55	20.62	0.44	-0.32	MWD
1354	2.40	259.70	YNN	1352.90	-1.88	-21.84	21.92	0.20	-0.16	MWD
1382	2.23	268.48	YNN	1380.93	-2.00	-22.97	23.05	0.42	-0.18	MWD
Estimated values for well TD:										
1418	*2.00*	*268.00*	*YNN*	*1417.18*	*-2.04*	*-24.30*	*24.39*	*0.19*	*-0.19*	*Estimated*

3.5 PLUG AND ABANDONMENT

3.5.1 P & A Program

Objectives:

The plugging and abandonment program for well 7122/7-2 had the following objectives:

1) Isolation of the perforations after the well testing.

2) Isolation of the 13 3/8" x 9 5/8" casing annulus. To cut the casing strings a minimum of 5 m below seabed.

3) Ensure that no obstructions or debris of any kind that might cause damage or impediment to fishing, shipping or other activities would remaining on the seabed at the well site location.

Permanent plugging and abandonment of well 7122/7-2

The well 7122/7-2 was permanently plugged and abandoned as follows
(ref. figure "Well 7122/7-2 PEMANENT ABANDONMENT" on next page):

Plug no. 1:
A cement retainer was set at 1070 m and a high pressure cement squeeze of the perforated intervals below from 1078 m to 1136.5 m was performed.

Plug no. 2:
A cement plug was set from 950 m up to 800 m.

The 9 5/8" casing was cut at 600 m (205 m below seabed) and retrieved.

Plug no. 3:
A cement plug was set from 610 m up and to 440 m (45 m below seabed).
(The plug was tagged with 10 ton and pressure tested).

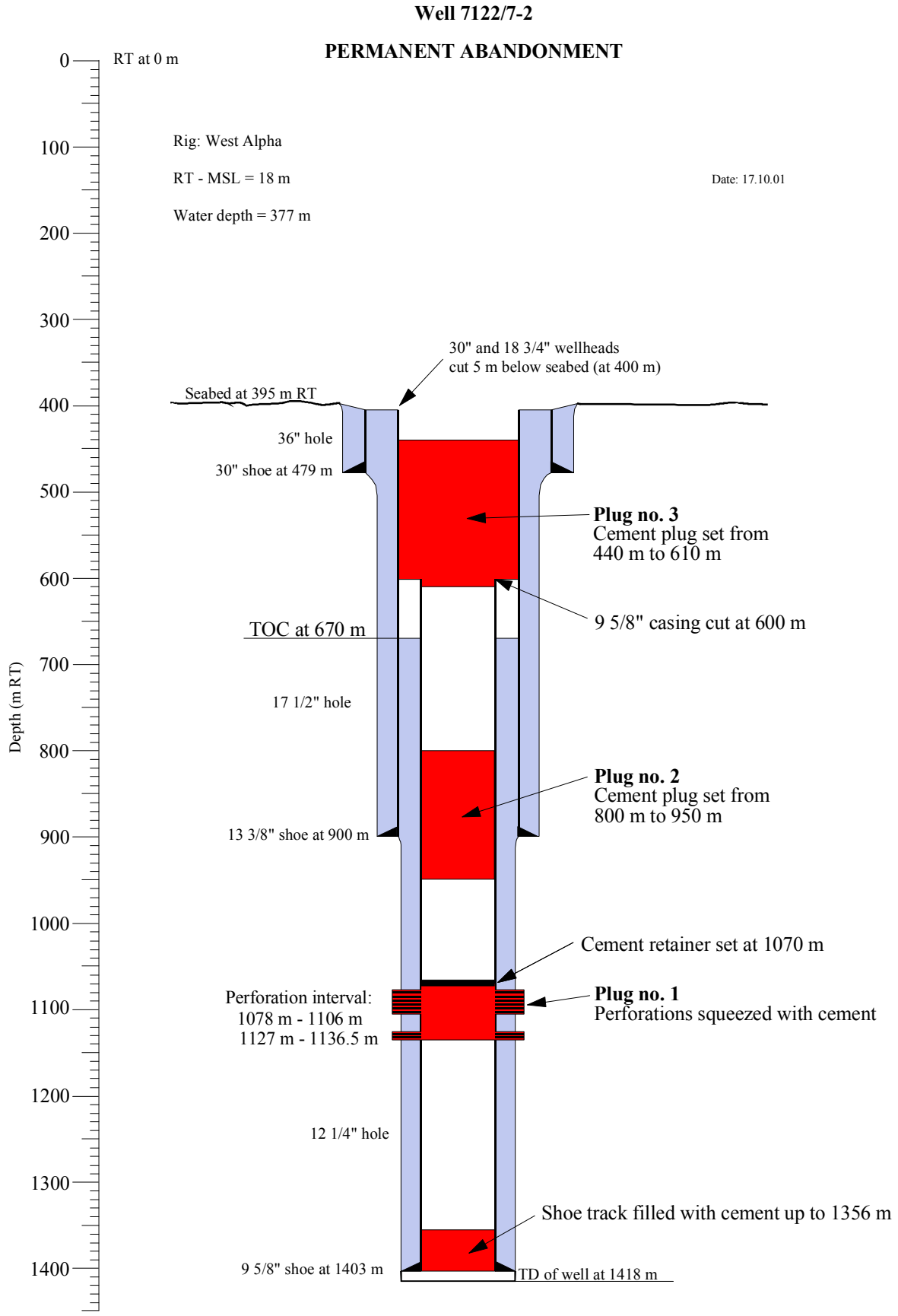
The 20" and 30" wellhead housings were cut at 400 m (5 m below seabed) and retrieved.

An ROV survey of the seabed within a 50 m radius around the well location was performed to ensure that no debris had been left.

Note: There was cement behind both the 30" and 20" x 13 3/8" casing strings up to seabed at 395 m.
Top of cement behind the 9 5/8" casing was at 670 m (verified by CBL).

The BOP stack and marine riser was pulled after Plug no. 3 had been set and tested.

3.5.2 P& A Sketch



3.6 LOGISTICS

3.6.1 Offices

The operations office was located at Norsk Agip, Forus. The main logistics coordinator was placed at Polarbase in Hammerfest while a local logistics coordinator was placed at the Aker Base, Tananger. The main logistics coordinator at Polarbase used the local coordinator at the Aker Base to handle shipments of equipment sent from Stavanger to the rig/Polarbase.

3.6.2 Base

The operating base for the rig during the drilling of well 7122/7-2 was Polarbase in Hammerfest. In Stavanger the Aker Base in Tananger was used for shipments of equipment sent from Stavanger to the rig/Polarbase.

3.6.3 Helicopter

The helicopter services were contracted from Norsk Helikopter AS. One helicopters was on contract.

3.6.4 Boats

During the drilling operations on well 7122/7-2 two supply vessels were used. Changing between the two vessels, on of them was always kept at the rig as standby vessel while the other was used as supply vessel between the rig and Polarbase.

3.7 SAFETY AND ENVIRONMENT

3.7.1 Risk Analysis Summary and Implementation

Before starting the drilling operations on the well 7122/7-2 a risk analysis session was carried out and documented in a report. The report was submitted to the rig for follow-up by the drilling supervisors.

During the drilling of the well, various types of safety meetings and drills were held on the rig:

30	Pre-job Safety Meetings & Safe Job Analysis
2	BOP Drills

General Safety Meetings with the various crews were held frequently, and along with the various safety meetings a general operation meeting was held daily on the rig with key personnel to discuss upcoming operations and improvement of communications on the rig site.

Unintentional Events related to personnel safety during the drilling of the well:

0	Medical Treatment cases
1	First Aid cases
0	Near misses (related to personnel safety)

3.7.2 Discharges, Emissions and Waste

Discharges to Sea

Ilmenite	123,0 ton
Bentonite	56,0 ton
Potassium (K) Formate Salt	83,2 ton
Mud chemicals	12,9 ton
Cement chemicals	0,0 ton
Drill cuttings	470,3 ton
Discharges to Sea	745,3 ton

Emissions to Air

	Total (rig/well testing/vessels/helicopter)
CO_2	7 330,1 ton
NO_x	122,8 ton
VOC	10,5 ton
CO	22,3 ton
N_2O	0,3 ton
SO_2	4,8 ton
Emissions to Air	7 490,8 ton

Waste returned to shore:

Metal	19,02 ton
Glass	0,00 ton
Wood	2,90 ton
Paper (white)	0,22 ton
Paper (brown)	0,65 ton
Food infested waste	0,15 ton
General	11,64 ton
Plastic	0,80 ton
Waste	35,38 ton

Special waste to approved contractor for disposal:

Empty drums	0,14 ton
Waste oil (engine)	12,30 m^3
Waste oil (crude)	2,00 m^3
Oily waste/rags	0,35 ton
Oil-cont. slop/mud	84,03 ton
Paint (dry)	0,05 ton
Special waste	98,87 ton
Waste total	134,25 ton

3.7.3 Requirements – Accounting of Compliance

A set of requirements and goals for the 7122/7-2 operations were established prior to planning the well. The requirements were submitted to and followed up by involved supervisory personnel.

Following the completion of the operations, an accounting of compliances with the established requirements/goals was made, ref. Section 4 ENCLOSURES –
"ENCLOSURE 1 - 7122/7-2 Requirements Accounting.

4. ENCLOSURES

ENCLOSURE 1 7122/7-2 Requirements Accounting

ENCLOSURE 2 7122/7-2 Composite Log

ENCLOSURE 3 7122/7-2 C.P.I.

ENCLOSURE 4 7122/7-2 Composite Log CD

ENCLOSURE 1 – 7122/7-2 Requirements accounting

ENCLOSURE 2 – 7122/7-2 Composite Log

ENCLOSURE 3 – 7122/7-2 C.P.I.

ENCLOSURE 4 – 7122/7-2 Composite Log CD