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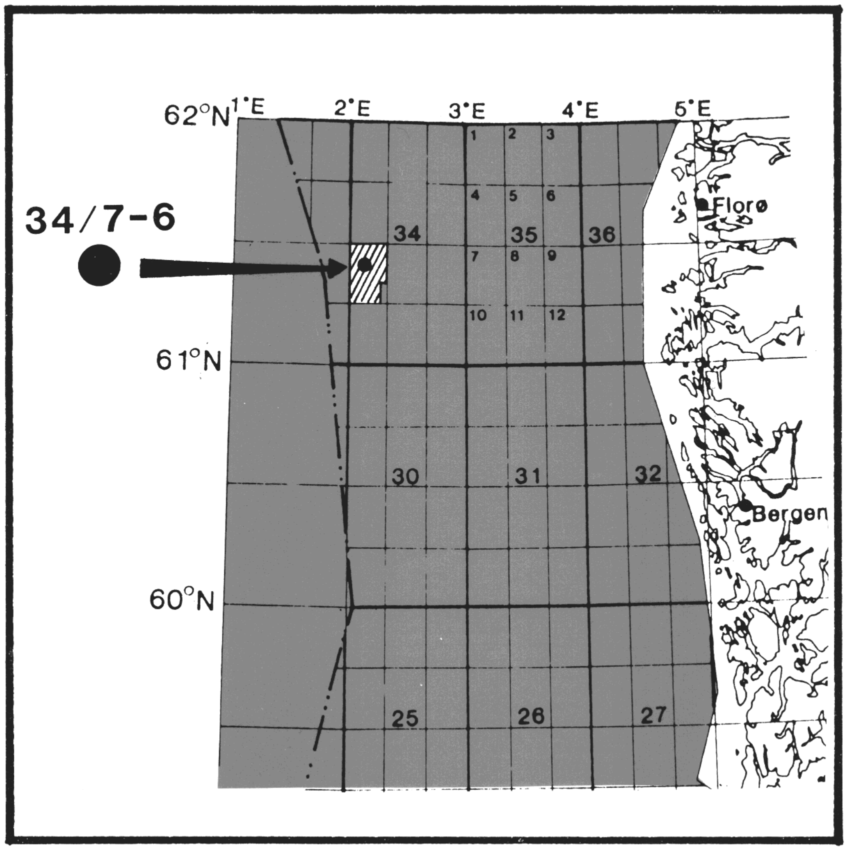

FINAL WELL REPORT

34/7-6

December 1985

Bl.nr. 504

Saga
Petroleum a.s.

Licence	:	089
Partners	:	SAGA/ESSO/STATOIL/NORSK HYDRO/ELF/DEMINEX/DNO
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FINAL WELL REPORT

34/7-6

Norwegian Continental Shelf

Classification / Distribution

[X] Saga and partners

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2. SUMMARY

2.1 Exploration

The objectives of the well 34/7-6 were to test the reservoir quality of the Statfjord Formation and the extent of the low GOR oil encountered in the 34/7-3 and 34/7-4 wells. Further purposes of the well were to test the proposed subdivision and reservoir characteristics of the Upper Lunde Formation and the stratigraphy and reservoir of the Middle and Lower Lunde together with the Lomvi Formation.

The final depth (T.D.) of 3685 m RKB was reached into the sandstones/ claystones of the Middle Triassic age. Apart from the sandy Utsira Formation of Upper Oligocene - Pliocene age, a Lower Oligocene (1215 - 1280 m RKB) and a Middle - Upper Eocene (1370 - 1420 m RKB) sandstone unit within the Hordaland Group, the upper section down to Jurassic proved mainly claystones. The Jurassic consists of a silty Dunlin Group and a sandy Statfjord Formation. The Triassic shows sandstones alternating and interbedded with claystones down to T.D.

The Statfjord Formation was encountered at 2511 m RKB, with a gross thickness of 85.3 m and 41 m net sand. Ten cores totalling 108 m were cut (recovered 93.6 m, 86.7%) in this section and across the stratigraphic border zone into the Upper Lunde Formation of the Hegre Group. Hydrocarbons were encountered in the section belonging to the Statfjord Formation and the uppermost part of the Upper Lunde Formation.

Cores No. 11 and 12, 40 m, were cut further down in Upper Lunde Formation (recovered 38.5 m, 96.3%). The formation shows alternating sandstone and claystone with poor to fair porosity in the sandstones.

Core No. 13, 18.5 m, was cut in the Lomvi Formation (recovered 18.5 m, 100%). The lithology was very fine sandstone with poor to fair porosity.

The well was drilled to 3685 m RKB (driller's depth) into the Teist Formation of Triassic age. It was plugged and abandoned after testing as an oil discovery.

2.2 Operation

The well was drilled by the semi-submersible "Treasure Saga". Taken over by the licence on March 16, 1985, the well was spudded on March 17, 1985 in a water depth of 307 m MSL. T.D. was reached on May 2, 1985, and after testing the well the rig was released from licence 089 on May 31, 1985.

The 36" section was drilled without problems and the 30" casing was set at 455 m RKB.

The seabed diverter was run on riser, but had to be pulled again after 6 riser joints were run, due to leakage in hydraulic control hose.

4 cylinders for the upper latch were changed, and the seabed diverter was rerun and landed on the 30" W.H.

The 26" section was drilled, underreamed and logged simultaneously. The 20" casing was set at 935 m RKB on March 25, 1985.

The BOP stack was run before drilling ahead. The 17 1/2" section was drilled from 935 to 1895 m RKB. The 13 3/8" casing was set at 1876 m RKB on March 31, 1985

The 12 1/4" section was drilled from 1876 to 3015 m RKB.

A total of 12 cores were cut in this section, 10 cores from 2516 to 2624 m RKB and two cores from 2913 to 2953 m RKB.

The 9 5/8" casing was set at 3000 m RKB on April 24, 1985.

The 8 1/2" section was drilled from 3000 m RKB to T.D. at 3685 m RKB.

One core (No. 13) was cut from 3560 to 3578.5 m RKB.

The section was plugged back to 2925 m RKB and mud weight increased to 1.70 s.g. prior to testing.

2.3 Testing and Formation Evaluation.

Well 34/7-6 penetrated top reservoir at 2511 m RKB. A gross oil column of 99 m was found in the Jurassic Statfjord Formation and partly in the Upper Lunde. The N/G ratio in the Statfjord Formation (2511 - 2596.3 m RKB) was 0.5. The average porosity was 22.2%, and the average water saturation was 18.5%.

The Triassic Upper Lunde (2596.3 - 3268.5 m RKB) had a N/G ratio of 0.34. The average porosity was 16.5% and the average water saturation 100%.

The oil-water contact was encountered in a shale interval, but estimated at 2610 m RKB from Formation Pressure Measurements.

Altogether 13 cores were cut in the intervals 2516 - 2624 m RKB, 2913 - 2953 m RKB and 3560 - 3578.5 m RKB with a total recovery of 78.9%.

Four DST's were carried out. One in the Upper Lunde, 2679 - 2687 m RKB, and three in Statfjord, 2549.5 - 2572.5 m RKB, 2518.5 - 2522.5 m RKB and 2518.5 - 2536.5 m RKB.

The zone in Upper Lunde produced water at a final rate of 225 m^3/day, with a wellhead pressure of 4.6 bar. The flowing bottom hole pressure was 251.5 bar and the initial pressure was 375 bar at a depth of 2483 m RKB. The water specific gravity was 1.025. See section 5.5 for water analysis.

In Statfjord a flowrate of 1729 Sm^3/day was obtained with a wellhead pressure of 157.1 bar. The flowing bottomhole pressure was 338.3 bar and the static pressure was 369.9 bar at 2327 m RKB. The GOR was 85 Sm^3/Sm^3, the oil gravity 838.9 kg/m^3 and the formation volume factor was 1.3. See section 5.5 for further PVT-analyses.

3. GENERAL INFORMATION

3.1 Licence and General Well Information

Licence 089, awarded on March 9, 1984, covers most of block 34/7 on the Tampen Spur, approximately 240 km northwest of Bergen (fig. 3.1).

Group Members	Working Interest	Net Interest
Saga Petroleum a.s. (operator)	10%	10%
Esso	30%	15%
Statoil	23%	50%
Norsk Hydro	12%	12%
Elf Aquitaine	16%	8%
Deminex	8%	4%
DNO	1%	1%

Rig taken over by PL 089:	March 16, 1985.
Spud date:	March 17, 1985.
T.D. date:	May 2, 1985.
Rig released from PL 089:	May 31, 1985.
Completion status:	Plugged and abandoned as an oil discovery.
Final location coordinates:	Latitude 61° 27' 10.85" N Longitude 02° 08' 17.26" E
Seismic position:	Line G/E-106, SP 420.
Rig:	"Treasure Saga"
RKB - MSL:	26 m
MSL - Seabed (water depth):	307 m
RKB - Seabed:	333 m
RKB - T.D.	3685 m RKB (driller's depth) 3677 m RKB (logger's depth)

Saga Petroleum a.s.

Small scale map, showing the position of well 34/7-6.

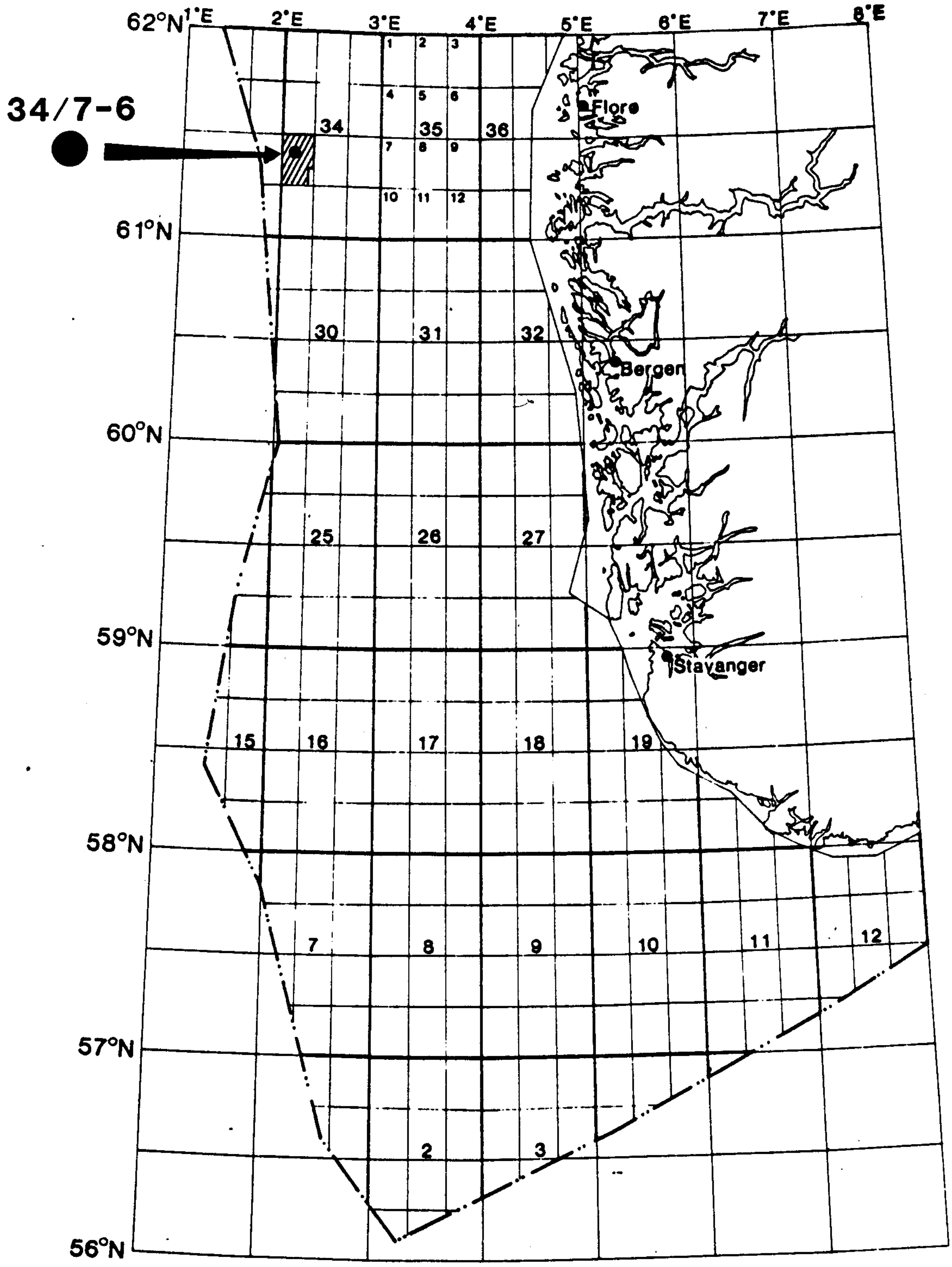

Fig. 3.1

DATE Oct. 85	AUTH. ÖM
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3.2 Saga Personnel

3.2.1 Drilling

Onshore:	
Vice President, Drilling Operations:	Reidar Nyvik
Section Manager, Drilling Operations:	Terje Vatn
Senior Drilling Engineer:	Svein Sætervik
Drilling Engineer:	Kristian Sirevaag
Offshore:	
Drilling Supervisors:	Leif Johnsen
	Jan Petter Røed
	Morten Sæbø
Assistent Drilling Supervisors:	Ole Kristian Brobak
	Johan Bysveen
	Einar Framnes
	Kjell Randulff
	Jon Arne Aase
Drilling Engineers:	Øyvind Holte
	Trond Myrseth

3.2.2 Geology

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Exploration Department	
Vice President, Exploration:	Hans Chr. Rønnevik
Senior Manager, Operation Geology:	Bjørn Gustavsen
Operation Geologist:	Bjørn Karlstad
Operation Geo-Engineer:	Jan Egil Pedersen
Senior Manager, Geophysical Laboratory:	Karl A. Berteussen
Geophysicist:	Vidar Danielsen
Senior Manager, Geological Laboratory:	Arvid Elvsborg
Palynologist:	Frøydis Eide
Sedimentologists:	Ragnar Knarud
	Tormod Sæther
Geochemist:	Ellen Sofie Mo
Sample distribution:	Ann Kristin Selbekk

Offshore:

Well-site Geologists:	Per Bakøy
	Carl W. Carstens
	Brit Riise Fredheim
	Bjørn Karlstad
	Øystein Mjelde
	Terje Solli
	Unni Stenstadvold
	Leif Straume

34/7 Team Organization, Exploration Department:

Exploration Manager:	Nils B. Hollander
Exploration Deputy Manager:	Brian G. Pryce
Licence geologists:	Chris Stockbridge
	John Wood
Licence geophysicists:	Arve Gulbrandsen
	Arild Lie
	George Ramsayer
	Sveinulf Vågene

3.2.3 Petroleum Technology

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Senior Manager, Formation Evaluation:	Hallvard Høydalsvik
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	Inge Nysetvold
	Pål Smestad

Offshore:

Petrophysicists:	Jan Kielland
	Siv Kari Lien
	Pål Smestad

Test Engineers:	Bård Beldring
	Bengt Hultberg
	John Magne Hvidsten
	Øistein Høimyr
	Robert Nygård
	Thor Sollie
	Tom Tinholt

3.3 Contractors and Service Companies

Drilling Contractor:	Wilh. Wilhelmsen
Mud Logging:	Exploration Logging Norge A/S
Wireline Services:	Dresser Atlas
Mud Engineering:	Promud A/S
Cement and Pumping Services:	B. J. Hughes B.V.
Casing Services:	Norcasing
Cutting Services:	Deepwater
Coring Services:	Norton Christensen
Underreaming:	Tri-State
Tubing Services:	British Steel
Tubing Make Up:	Troms Casing
Well Head System:	Vetco
Jarring Services:	Eastman Whipstock
Stabilizers:	Norton Christensen
Sampling:	Flopetrol/Petrotech
Sampling Consultant:	Aquateam
Surface Test Equipment:	Flopetrol
Production Testing:	Flopetrol
DST-Equipment/Sand Pumping:	Halliburton
Pressure Recording:	Flopetrol and Sperry Sun
Perforating:	Geovann
Supply Boats:	"Nordfonn" and "Skandi Beta"
Standby Boat:	"Standby Master"
Helicopter Service:	Helicopter Service A/S
Catering Service:	Wilh. Wilhelmsen

4. GEOLOGY AND GEOPHYSICS

4.1 Geographic and Structural Setting

The 34/7-6 well was drilled in the northern part of the block, towards the geographic centre of the Snorre field (fig. 4.1). The Late Triassic - Early Jurassic reservoirs of the Snorre structure are tilted fault blocks dipping between 5 and 7 degrees in a generally north-westerly direction. The structure is divided into elongated fault blocks by major NNE-SSW trending faults, downthrown by up to 250 m to the east. The structure map is defined at the Base Cretaceous/Top Statfjord Formation.

4.2 Purpose of the Well

The main objectives were to test the quality of the Statfjord Formation and the GOR. Furthermore the stratigraphy and reservoir characteristics of the Lunde and Lomvi Formations were tested.

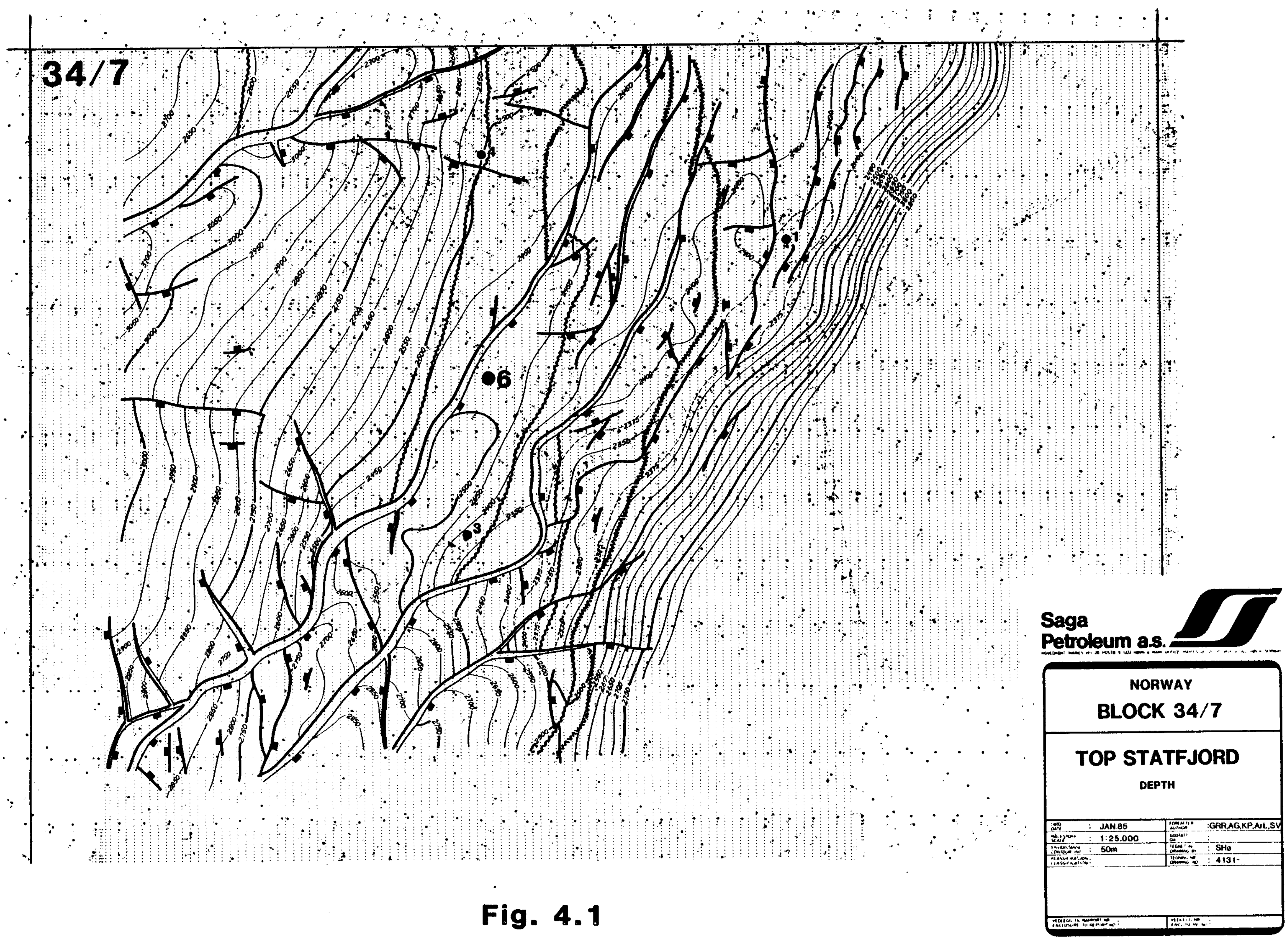
34/7
6
3
7
Saga
Petroleum a.s.
NORWAY
BLOCK 34/7
TOP STATFJORD
DEPTH
JAN.85
1:25.000
50m
GRR,AG,KP,ArL,SV
SHe
4131-

Fig. 4.1

4.3 Sampling

4.3.1 Routine Samples

The following routine samples were collected:

a) Six sets of wet ditch cuttings (a 1/2 kg).

b) Two sets of well-site washed and dried cuttings.

No returns:	Seabed (333 m) - 470 m RKB
10 m intervals:	470 - 1810 m RKB
5 m intervals:	1810 - 2435 m RKB
3 m intervals:	2435 - 3683 m RKB

c) One set of ditch cuttings (250 grams) dried with a paper towel and washed with diesel. Thereafter they were put in cloth bags and air dried for 2 days.

Interval:	500 - 1600 m RKB each 100 m
	1600 - 1810 m RKB each 10 m
	1810 - 2070 m RKB each 9 m

d) One set of canned composite wet samples for geochemical analyses were collected.

10 m intervals:	470 - 1810 m RKB
9 m intervals:	1810 - 3683 m RKB

4.3.2 Distribution and Analyses of Samples

Six sets of wet cutting samples, two sets of washed and dried samples, and one set of canned samples were collected from first sample return to total depth. One set of samples washed with diesel was collected from first sample return down to the reservoir. These samples were distributed the following way:

Wet samples:

a) Sent to Robertson Research for paleodating. The rest material was returned to Saga.

b) Treated according to NPD regulations by Core Lab. and sent to NPD.

c) Washed and divided into 10 splits by Core Lab. and transferred to Statoil as trade sets.

d) Sent to Saga, Høvik, for paleontological and mineralogical analysis.

e) Sent to I.F.E. and split into two parts. One half washed and dried and one half untreated. Thereafter they were returned to Saga, Høvik.

f) Washed and divided into 6 splits by Core Lab. One split containing one half of this set was transferred to Statoil, and the other splits were sent to partners.

g) One set of samples washed with diesel was transferred to Saga, Høvik.

Washed and dried samples directly from the rig:

a) One set transferred to Saga, Høvik.
b) One set transferred to NPD.

Canned samples were sent to IKU for geochemical analysis. The remaining material was returned to Saga.

The petrophysical measurements and the slabbing of the cores were carried out by Core Lab. Cut C was sent to Statoil and cut D to NPD. Cuts A and B were transferred to Saga, Høvik, for detailed sedimentological and structural description together with petrographical and paleontological analysis. The A and B cuts will be stored at Saga, Høvik, when the analyses are completed.

The sidewall cores (SWC) were sent to Saga, Høvik, for paleontological, geochemical and petrographical analysis. Selected SWC were sent to Robertson Research for paleodating.

4.3.3 Conventional Cores

Core No. 1	Cut	: 2516.0 - 2527.5 m RKB
	Recovered	: 2516.0 - 2524.6 m RKB
	Recovery	: 8.6 m (75%)
	Correction factor	: -1.3 m
	Recovered interval, log	: 2514.7 - 2523.3 m RKB
Core No. 2	Cut	: 2527.5 - 2543.0 m RKB
	Recovered (A)	: 2527.5 - 2533.0 m RKB
	" (B)	: 2533.0 - 2542.7 m RKB
	Recovery	: 15.2 m (98%)
	Correction factor (A)	: -3 m
	" " (B)	: -2 m
	Recovered interval, log (A)	: 2524.5 - 2530.0 m RKB
	" " " (B)	: 2531.0 - 2540.7 m RKB
Core No. 3	Cut	: 2543.0 - 2546.5 m RKB
	Recovered	: 0
	Recovery	: 0
	Correction factor	: 0
	Recovered interval, log	: 0
Core No. 4	Cut	: 2546.5 - 2549.0 m RKB
	Recovered	: 0
	Recovery	: 0
	Correction factor	: 0
	Recovered interval, log	: 0

Core No. 5	Cut	:	2549.0 - 2557.5 m RKB
	Recovered	:	2549.0 - 2556.8 m RKB
	Recovery	:	7.8 m (92%)
	Correction factor	:	-3.5 m
	Recovered interval, log	:	2545.5 - 2553.3 m RKB
Core No. 6	Cut	:	2557.5 - 2568.5 m RKB
	Recovered	:	2557.5 - 2568.5 m RKB
	Recovery	:	11 m (100%)
	Correction factor	:	-4 m
	Recovered interval, log	:	2553.5 - 2564.5 m RKB
Core No. 7	Cut	:	2568.5 - 2582.0 m RKB
	Recovered	:	2568.5 - 2582.0 m RKB
	Recovery	:	13.5 m (100%)
	Correction factor	:	-3.5 m
	Recovered interval, log	:	2565.0 - 2578.5 m RKB
Core No. 8	Cut	:	2582.0 - 2598.5 m RKB
	Recovered	:	2582.0 - 2594.5 m RKB
	Recovery	:	12.5 m (76%)
	Correction factor	:	-3.5 m
	Recovered interval, log	:	2578.5 - 2591.0 m RKB
Core No. 9	Cut	:	2598.5 - 2612.5 m RKB
	Recovered (A)	:	2598.5 - 2603.0 m RKB
	" (B)	:	2603.0 - 2612.0 m RKB
	Recovery	:	13.5 m (96%)
	Correction factor (A)	:	-5.0 m
	" " (B)	:	-4.5 m
	Recovered interval, log (A)	:	2593.5 - 2598.0 m RKB
	" " " (B)	:	2598.5 - 2607.5 m RKB
Core No. 10	Cut	:	2612.5 - 2624.0 m RKB
	Recovered	:	2612.5 - 2624.0 m RKB
	Recovery	:	11.5 m (100%)
	Correction factor	:	-2 m
	Recovered interval, log	:	2610.5 - 2622.0 m RKB

Core No. 11	Cut	:	2913.0 - 2927.0 m RKB
	Recovered	:	2913.0 - 2925.5 m RKB
	Recovery	:	12.5 m (89%)
	Correction factor	:	-4.5 m
	Recovered interval, log	:	2908.5 - 2921.0 m RKB
Core No. 12	Cut	:	2927.0 - 2953.0 m RKB
	Recovered (A)	:	2927.0 - 2937.5 m RKB
	" (B)	:	2937.5 - 2953.3 m RKB
	Recovery	:	26 m (100%)
	Correction factor (A)	:	-4.3 m
	" " (B)	:	-3.0 m
	Recovered interval, log (A)	:	2922.7 - 2933.2 m RKB
	" " " (B)	:	2934.5 - 2950.3 m RKB
Core No. 13	Cut	:	3560.0 - 3578.5 m RKB
	Recovered	:	3560.0 - 3578.5 m RKB
	Recovery	:	18.5 m (100%)
	Correction factor	:	0
	Recovered interval, log	:	3560.0 - 3578.5 m RKB

Comments:

All core depths (cut) in chapter 4.3.3 correspond to driller's depth. The log depths correspond to the DIFL-LSBHC logs. The wellsite core descriptions are presented in Enclosures III A-B, and the core analyses are given in chapter 5.2.

The splitting of cores 2, 9 and 12 into two parts (A+B) with different correction factors are most likely due to washing away some parts of the interval during coring.

4.3.4 Sidewall Cores

Four runs were made with coregun, attempting a total of 175 sidewall cores (table 4.1).

73 cores were recovered (42%), 39 were lost, 38 were emty and 25 were misfires due to tool failure.

The geological descriptions are given in table 4.2 (due to double samples from 3 depths only 70 descriptions in the table).

Table 4.1: Sidewall Core Sampling, Well 34/7-6

Run: 2A

No.	No. on log	Depth m RKB	Formation	ΔT	Over-pull	Recovery cm	Remarks
1		1900	clyst	117	1300	0	Lost
2	1	1902.5	"	125	1000	3.8	
3	2	1906	"	108	500	1.9	
4	3	1976	"	110	200	1.3	
5	4	2122.5	"	106	600	4.4	
6		2162.5	"	118	1200	0	Lost
7	5	2268	"	115	800	3.2	
8	6	2333	"	110	200	3.2	
9	7	2343	"	125	200	3.8	
10	8	2388	"	115	1000	4.4	
11		2398	"	114	800	0	Lost
12	9	2423.5	"	115	800	3.8	
13	10	2433	"	114	1200	3.2	
14	11	2438.5	"	106	500	4.4	
15		2441.5	ls/mrl	110	2400	0	Lost
16	12	2443.5	"	90	500	0.5	
17		2448.5	"	109	600	0	Empty
18		2453.5	clyst	108	1200	0	Lost
19	13	2456.5	"	110	300	4.4	
20		2461.5	"	106	800	0	Lost
21		2465.5	"	112	1200	0	"
22		2471.5	"	112	1200	0	"
23		2475	"	110	1200	0	"
24	14	2478.5	"	107	500	3.2	
25	15	2485	ss	90	800	3.2	
26		2487	clyst	104	1000	0	Lost
27	16	2495	"	103	500	3.2	
28		2502	"	84	0	0	Lost
29	17	2504	"	104	1000	3.8	
30	18	2507	"	95	0	3.2	

Run: 2A

No.	No. on log	Depth m RKB	Formation	ΔT	Over-pull	Recovery cm	Remarks
31	19	2508	clyst	96	0	3.2	
32	20	2510	ss	81	600	3.2	
33	21	2643	clyst	115	1000	3.8	
34		2651	ss	103	800	0	Lost
35	22	2654	clyst	76	0	3.2	
36	23	2655.5	"	80	0	1.9	
37	24	2659.5	"	90	500	3.8	
38	25	2682	ss	102	800	3.8	
39	26	2699	clyst	100	500	3.8	
40	27	2739	"	102	600	4.4	
41	28	2763	"	110	700	4.4	
42	29	2773	ss	95	500	3.8	
43	30	2817	clyst	90	400	4.4	
44	31	2838	"	95	500	4.4	
45	32	2850	"	95	500	3.2	
46	33	2877.5	"	98	800	4.4	
47	34	2887.5	ss	90	500	0.5	
48		2893.5	sh	102	1000	0	Lost
49	35	2911.5	ss	80	500	0.5	
50		2929	sh	95	900	0	Lost

Run: 3B

No.	No. on log	Depth m RKB	Formation	ΔT	Over-pull	Recovery cm	Remarks
1		3675	sh	-	0	0	Empty
2		3665	"	88	300	0	"
3		3657	"	84	50	0	"
4		3654	ss	64	0	0	"
5		3652	"	75	0	0	"
6		3650	sh	77	0	0	"
7		3641	"	68	0	0	"
8		3635	"	76	0	0	"
9		3630	ss	74	0	0	"
10		3628	sltst	70	0	0	"
11		3614	"	72	0	0	"
12		3612	ss	70	0	0	"
13		3542	"	73	0	0	"
14		3540	"	74	0	0	"
15		3538	sh	74	0	0	"
16		3533	"	72	0	0	"
17		3531	ss	67	0	0	"
18		3528	"	64	0	0	"
19		3520	sh/sltst	74	0	0	"
20		3457	sh	77	100	0	"
21	53	3401	"	78	0	0.5	
22		3393	"	78	0	0	Empty
23	51	3390	ss	74	0	0.5	
24		3384	sh	86	400	0	Empty
25		3375	"	82	500	0	"
26		3370	"	79	0	0	"
27		3356	sltst	82	0	0	"
28		3350	sh	75	0	0	"
29		3343	ls	63	0	0	"
30		3330	sh	90	0	0	"
31		3324	ss	73	100	0	"
32	48	3313	"	62	0	2.0	

Run: 3B

No.	No. on log	Depth m RKB	Formation	ΔT	Over-pull	Recovery cm	Remarks
33	47	3305	sh	98	0	3.0	
34		3292	"	86	200	0	Empty
35		3291	ss	64	0	0	"
36		3288	sh	90	0	0	"
37		3285	"	90	0	0	"
38		3283	sh/sltst	85	500	0	"
39		3278	ss	79	0	0	"
40		3269	sh	78	600	0	"
41	45	3267	ss	80	600	1.0	
42	43	3227	sh	93	0	1.0	
43	42	3200	"	78	500	1.0	
44		3162	"	65	0	0	Empty
45	41	3150	sltst	84	500	1.0	
46	40	3102	sh	98	500	1.0	
47	39	3036	ss	67	400	1.0	
48	38	3034	"	84	500	1.5	
49	37	3029	"	91	0	1.0	
50	36	3024	sh	87	500	3.0	

Run: 3C

No.	No. on log	Depth m RKB	Formation	ΔT	Over-pull	Recovery cm	Remarks
1		3675	sh	85	0	0	Tool failure
2		3670	"	75	0	0	" "
3		3665	"	88	0	0	" "
4		3657	"	84	0	0	" "
5		3654	ss	64	0	0	" "
6		3652	sh	75	0	0	" "
7		3650	"	77	0	0	" "
8		3641	"	68	0	0	" "
9		3637	"	72	0	0	" "
10		3635	"	76	0	0	" "
11		3630	ss	74	0	0	" "
12		3628	sltst	70	0	0	" "
13		3614	"	72	0	0	" "
14		3612	ss	70	0	0	" "
15		3542	"	73	0	0	" "
16		3540	"	74	0	0	" "
17		3538	sh	74	0	0	" "
18		3533	"	72	0	0	" "
19		3531	ss	67	0	0	" "
20		3528	"	64	0	0	" "
21		3524	sh	74	0	0	" "
22		3520	sltst	74	0	0	" "
23		3499	sh	80	0	0	" "
24		3432	"	80	0	0	" "
25		3401	"	78	0	0	" "
26	51	3390	ss	74	600	1.5	
27		3384	sh	86	1500	0	Lost
28		3375	"	82	1200	0	"
29		3369	"	79	1000	0	"
30		3363	"	80	800	0	"
31		3356	sltst	82	1400	0	"
32		3350	sh	75	0	0	"

Run: 3C

No.	No. on log	Depth m RKB	Formation	ΔT	Over-pull	Recovery cm	Remarks
33	49	3343	ls	63	200	1.0	
34		3340	sh	77	1000	0	Lost
35		3330	"	90	600	0	"
36		3324	ss	73	1200	0	"
37	48	3313	ls	62	800	3.0	
38		3312	sh	80	800	0	Lost
39	47	3305	"	98	0	3.0	
40	46	3298	ss	75	1000	2.0	
41		3292	sh	86	1000	0	Lost
42		3291	ls	64	600	0	"
43		3288	sh	90	1200	0	"
44		3285	"	90	1000	0	"
45	44	3244	"	80	800	3.0	
46		3205	"	88	1200	0	Lost
47		3140	"	90	1200	0	"
48		3108	"	95	800	0	"
49		3078	"	90	800	0	"
50		3018	sltst	86	2000	0	"

Run: 3D

No.	No. on log	Depth m RKB	Formation	ΔT	Over-pull	Recovery cm	Remarks
1	70	3675	sh	90	600	1.5	
2	69	3665	"	88	900	2.5	
3	68	3657	"	84	700	2.0	
4	67	3654	ls	64	400	2.0	
5		3652	ss	75	1000	0	Lost
6		3650	sh	77	800	0	"
7	66	3641	"	68	600	2.0	
8		3635	"	76	1000	0	Lost
9	65	3630	ss	74	600	2.5	
10	64	3628	sltst	70	300	2.0	
11	63	3614	"	72	600	3.0	
12	62	3612	ss	70	700	2.5	
13	61	3542	"	73	900	2.0	
14	60	3540	"	74	700	2.5	
15	59	3538	sh	74	700	2.0	
16	58	3533	"	72	700	3.0	
17	57	3531	ss	67	300	2.5	
18	56	3528	"	64	900	1.5	
19	55	3520	sltst	74	600	2.0	
20	54	3457	sh	77	100	2.0	
21	52	3393	"	78	800	3.0	
22		3384	"	86	800	0	Lost
23		3375	"	82	600	0	"
24	50	3370	"	79	800	2.5	
25		3356	sltst	82	1000	0	Lost

Table 4.2: Sidewall Core Description, Well 34/7-6

No. on log	Depth m RKB	Lithology
1	1920.5	Clyst, sl slty, m-dk gy, frm calc
2	1906	Clyst, lt olv gy, frm, calc
3	1976	Clyst, sl slty, dk gy, frm, sft, sl calc
4	2122.5	Clyst, occ sl slty, dk gy, frm, sl calc - non calc
5	2268	Clyst, sl slty, dk gy - gy blk, frm, sl calc
6	2333	Clyst, slty, dk gy, frm, calc
7	2340	Clyst, m gy - m dk gy, sft-frm, non calc
8	2383	Clyst, grn blk - olv blk, frm, calc
9	2423.5	Clyst, gy blk - brn blk - olv blk, frm calc
10	2433	Clyst, sl slty, brn blk - olv blk, sft-stc, calc
11	2438.5	Mrl, sl slty, gy brn - gy rd, sft-frm
12	2443.5	Interlaminated mrl/arg sltst
		Mrl, as above
		Sltst, arg, gy rd, frm, v calc
		Shows sltst, no stn, 60% v weak brn flor, slow strmg pale yel cut, mod brn res
		Shows mrl, no stn, 5% v weak brn flor, occ v slow strmg pale yel cut, tr of brn res
13	2456.5	Clyst, brn blk - olv blk, frm, sl-non calc
14	2478.5	Clyst, slty, gy blk - olv blk, sft-frm, v calc
		Shows, tr of dk brn flor, tr of v slow strmg cut
15	2485	Ss, arg, olv gy, slt-vf, sbang, sbrnd, p srtd, fri, mica, v calc, p por
		Shows, tr of o stn, 90% mod yel brn flor, slow strmg pale wh yel cut, pale yel brn res, p od
16	2495	Sdy sltst, arg, olv gy - gn gy, slty-vf, occ f, lse-fri, ang-sbang, p strd, mica, calc, p por
		Shows, no vis o stn, 25% weak yel-brn patchy flor, v slow strm pale yel wh cut, yel brn res, no od
17	2504	Sltst, as above
18	2507	Sdy sltst, arg, olv gy - grn gy, else as above
19	2508	Sltst, as above

No. on log	Depth m RKB	Lithology
20	2510	Sdy sltst, arg, olv gy - brn gy, slt-vf, occ f, fri, ang-sbang, p srtd, v mica, v calc Tr, nodules of ls, wh gy wh, frm Shows, no vis o stn, 25% weak patchy yel brn flor, v slow strmg pale yel wh cut, yel brn res, no od
21	2643	Clyst, sl slty, mod brn, frm, calc
22	2654	Ss, sl arg, clr-lt olv gy, vf-f, pred f, occ m sbang-sbrnd, p-mod srtd, v mica, v calc, p por
23	2655.5	Ss, sl arg, clr-lt olv gy, vf, sbang-sbrnd, mod srtd, v mica, v calc, p por
24	2659.5	Clyst, sl slty, mod brn, frm, sl mic-mica, non calc
25	2682	Ss, sl slty, clr-lt olv gy, lse, vf, occ f, sbrnd, w srtd, sl mica, non calc, g por
26	2699	Clyst, gy brn - mod brn, frm, mic-mica, non calc
27	2739	Clyst, sl slty, dk rd brn, frm, mic-mica, sl calc
28	2763	Clyst, sl slty, dk rd brn - mod brn, frm, calc
29	2773	Ss, sl slty, clr-lt olv gy, occ lt brn, lse, vf-f, pred f, sbang-sbrnd, p-mod srtd, sl mica, non-sl calc, fr por
30	2814	Clyst, sl slty, mod brn - dk rd brn, frm, mic-mica, sl calc
31	2833	Clyst, as above
32	2850	Clyst, as above
33	2877.5	Clyst, sl slty, mod brn - dk rd brn, frm, mic-mica, calc
34	2887.5	Ss, sl slty, clr-lt olv gy, vf, fri, sbrnd-rnd, w srtd, sl mica, calc, fr por
35	2911.5	Ss, clr-lt olv gy, occ lt brn, fri-hd, f-m, pred f, occ m, sbrnd-rnd, w srtd, sl mica, calc, fr-g por
36	3024	Clyst, slty, dk rd brn, frm, sbfis, v mica, calc
37	3029	Ss, qtz, clr-mlky, m-vc, p-mod srtd, sbang-sbrnd, frm-hd, tt calc cmtd, kaol, p vis por, no shows

No. on log	Depth m RKB	Lithology
38	3034	Ss, qtz, clr-mlky, pred m, occ c, p-mod srtd, ang-sbang, frm-hd, mica, calc, chl, fr vis por, no shows
39	3036	Ss, as above
40	3102	Clyst, grd to sltst, dk rd brn, v mica, frm, v calc
41	3150	Sltst, arg, dk rd brn, frm-hd, v mica, v calc, no shows
42	3200	Ss, qtz, wh-clr, f-m, occ c, p-mod srtd, sbang-sbrnd, fri-frm, mica, v calc, p-fr vis por, no shows
43	3227	Clyst, dk rd brn, sbfis, frm, mic-mica, calc
44	3244	Ss, arg, lt gn gy, vf, mod srtd, sbang-sbrnd, frm-hd, mica, tt calc cmt, p vis por
45	3267	Ss, qtz, wh-clr, f-m, mod srtd, sbang-sbrnd, fri-frm, mica, v calc, fr vis por, no shows
46	3298	Ls, sdy, wh-clr, xln, hd
47	3305	Clyst, slty, m-dk gy, mic-mica, calc
48	3313	Clyst, as above
49	3343	Ls, wh-buff, lam, arg, w mica lam, frm-hd
50	3370	Clyst/sltst interbedded Clyst, lt-mod rd brn gy, sft-frm, sbfis, mic-mica, sl calc Sltst, clr-trnsl lt gy, frm, mica lamina, v calc
51	3390	Ss & anhy Ss, qtz, clr-wh, f-m, mod srtd, sbang-sbrnd, fri-frm, mica, sl calc, p vis por, no shows Anhy, clr, mxcl, arg, mica
52	3393	Clyst/sltst interbedded Clyst, m gy, sft-frm, sbfis, mic-mica, sl calc Sltst, clr-trnsl lt gy, frm, mica lamina, calc
53	3401	Ss, qtz, lt-m gy, vf, sbang-sbrnd, w srtd, sl arg, lse-fri, mica, calc, fr vis por, no shows
54	3457	Clyst with minor ss Clyst, dk gy gy blk, sft-frm, sbfis, mic-mica, calc Ss, clr-trnsl lt gy qtz, f-m, mod srtd, ang-sbang, calc & sil cmt, occ mica, p por

No. on log	Depth m RKB	Lithology
55	3520	Sltst, lt gy - m gy, frm, mic-mica lamina, calc cmt Clyst, rd brn, frm, occ slty, sl-mod calc
56	3528	Ss, clr-trnsl lt gy - m gy, vf-f, mod srtd, sbang-sbrnd, frm-fri, calc cmt, p-f por Tr, ls wh minxln & clr xln Tr, mica, kaolin
57	3531	Ss, as above
58	3533	Ss/sltst, pred m gy, /dk-m gy mica lamina, vf-f, mod srtd, sbang-sbrnd, frm-fri, calc cmt, p-f por, no shows
59	3538	Ss/sltst, lt-m gy - gn gy, /dk-m gy mica lamina, vf-f, mod srtd, sbang-sbrnd, frm-fri, calc cmt, p-f por, no shows
60	3540	Ss, rd brn, occ trnsl m gy, vf, occ f, mod srtd, sbang-sbrnd, frm-fri, tr mic-mica, calc cmt, p-f por, no shows
61	3542	Ss, rd brn, vf, slty, mod-w srtd, sbang-sbrnd, frm, tr mica, sl calc cmt, p por
62	3612	Ss, m rd brn, vf, sl slty, mod-w srtd, sbang-sbrnd, frm, tr mica, sl-mod calc cmt, chl, no shows (p por)
63	3614	Sltst, ss, rd brn, occ brn blk, uf-vf, occ f grns, mod srtd, sbang-sbrnd, frm, mica, calc cmt, no shows
64	3628	Sltst/ss, rd brn Fe stn, uf-vf, occ f grns, mod srtd, sbang-sbrnd, frm, mica, calc cmt, no shows
65	3630	Sltst/ss, as above
66	3641	Clyst/sh, m rd brn - gy, frm, sbfis, slty, mic-mica, calc cmt & occ calc lam
67	3654	Ls, wh-lt pk, buff, frm, m xln, occ clr xln grns Tr, chl, mica, clyst lam, no shows
68	3657	Clyst/sh, rd brn - rd blk, slty, frm-hd, fis, mica, no shows
69	3665	Clyst/sh, rd brn & gn gy, frm, sbfis, mic-mica, calc, no shows
70	3675	Clyst/sh, lt rd brn, brn, slty, frm, fis, mica, calc cmt, no shows

4.4 Wireline Logs (open hole), 34/7-6

Casing Record	Hole Size	Logged Interval (m RKB)	Type of Log	Run No.	Date
30" 455 m	36" to 460 m		GR to surface		
20" 935 m	26" (17 1/2") to 965 m		GR to surface MWD (GR, Res, Dir, T^{o}, DTOR, DWOB, SWOB)		
13 3/8" 1876 m	17 1/2" to 1895 m	 935.0 - 1894.8 935.0 - 1871.0	MWD DIFL-LSBHC-GR CDL-GR	 1A 1A	 30.03.85 30.03.85
9 5/8" 3000 m	12 1/4" to 3015 m	 1878.0 - 3011.3 2452.0 - 3011.5 1878.0 - 3011.4 2450.0 - 3011.3 1878.0 - 3008.0 35 samples rec.	MWD DIFL-LSBHC-GR DLL-MLL-GR CDL-CNL SPECTRALOG DIPLOG FMT COREGUN VSP	 2B 2A 2A 2A 2A 2A-G 2A 2A	 19.04.85 18.04.85 18.04.85 18.04.85 20.04.85 19-21.04.85 21.04.85 21.04.85
T.D. 3685 m		 2999.1 - 3676.3 2999.1 - 3675.9 2999.1 - 3676.0 3084.0 - 3642.0 38 samples rec.	MWD DIFL-LSBHC-GR CDL-CNL-GR DIPLOG FMT VSP COREGUN	 3C 3B 3B 3H-I 3B 3B-D	 02.05.85 02.05.85 03.05.85 03.05.85

4.5 Well Velocity Survey

A Zero offset VSP was acquired and processed by GWS.

A Bolt 1500-airgun, 286 cu.in. capacity, a Teledyne hydrophone and a Geosource VSP-tool was used during acquisition.

The gun offset was 38 m at 330 NW.

The spatial sampling rate was 20 m while the time sampling rate was 1 ms. Total recording length was 4 sec. Number of shots at each level varied between 4 and 10.

The VSP started at 3670 m RKB and was then shot every 20th meter from 3660 m RKB and up to 900 m RKB.

The corrected velocity and density data were used in the production of the synthetic seismograms by GWS. Frequency tests were performed, using a minimum and a zero phase Ricker wavelet with center frequencies at 20, 25, 30, 35 and 40 Hz. Synthetic seismograms were produced for the frequency of a 20 Hz Ricker wavelet. All synthetic seismograms were displayed in both normal and reverse polarity with both minimum and zero phase Ricker wavelets. The display scales were 10 cm/sec.

A selection of the seismic line and the 20 Hz minimum phase normal polarity seismogram is shown in fig. 4.2.

A seismic summary is given in table 4.3. The Composite Well Log also shows the travel times to the different geological units and reflectors.

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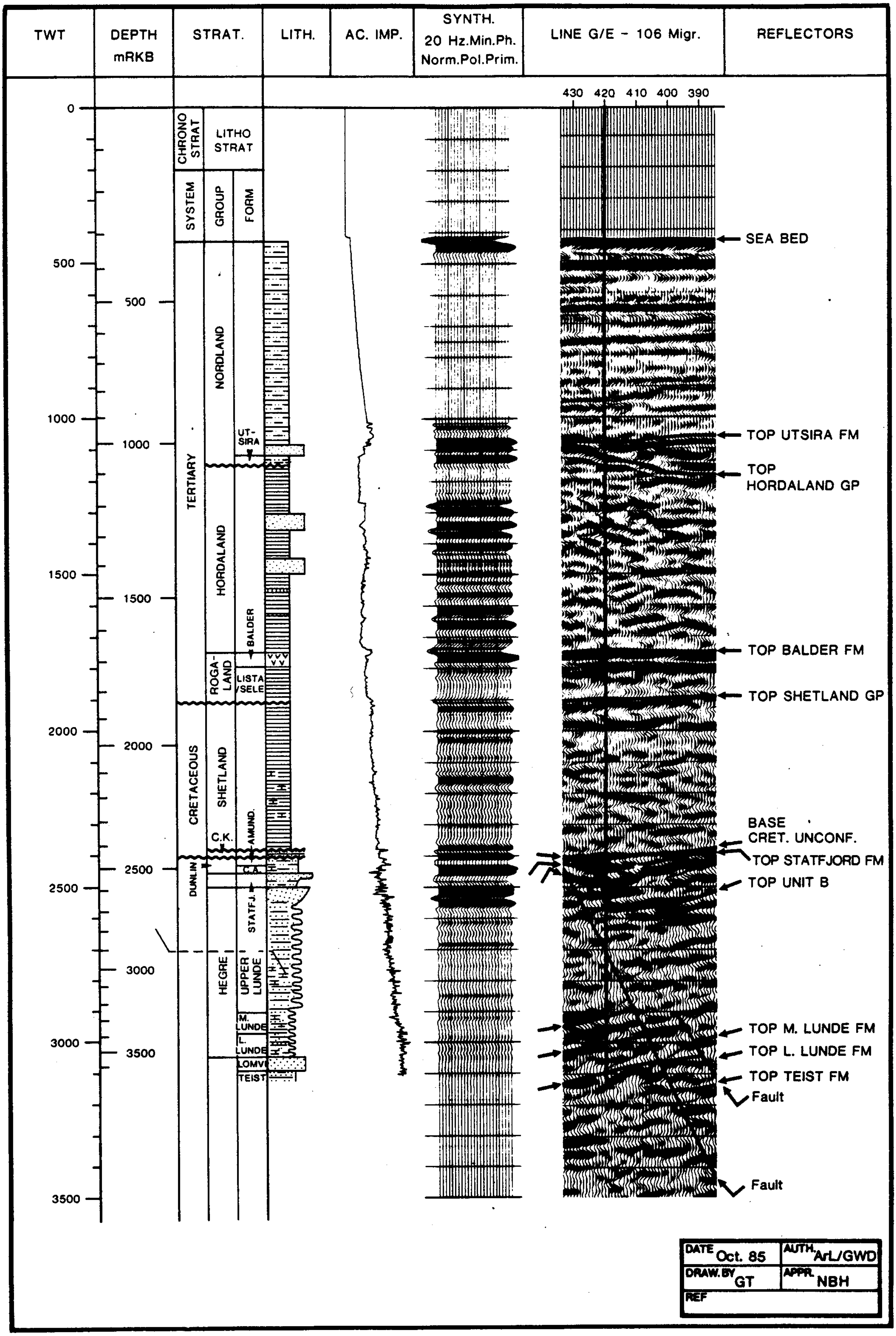
TWT
DEPTH mRKB
STRAT.
LITH.
AC. IMP.
SYNTH. 20 Hz.Min.Ph. Norm.Pol.Prim.
LINE G/E - 106 Migr.
REFLECTORS
CHRONO STRAT
LITHO STRAT
SYSTEM
GROUP
FORM
TERTIARY
CRETACEOUS
DUNLIN
HEGRE
NORDLAND
HORDALAND
ROGA-LAND
SHETLAND
UT-SIRA
BALDER
LISTA /SELE
C.K.
AMUND.
C.A.
STATFJ.
UPPER LUNDE
M. LUNDE
L. LUNDE
LOMVI
TEIST
430 420 410 400 390
SEA BED
TOP UTSIRA FM
TOP HORDALAND GP
TOP BALDER FM
TOP SHETLAND GP
BASE CRET. UNCONF.
TOP STATFJORD FM
TOP UNIT B
TOP M. LUNDE FM
TOP L. LUNDE FM
TOP TEIST FM
Fault
Fault
0
500
1000
1500
2000
2500
3000
3500
DATE Oct. 85
AUTH. ArL/GWD
DRAW.BY GT
APPR. NBH
REF

Table 4.3: Seismic summary, line G/E-106, SP 420.

REFLECTOR	FORMATION TOPS	TWT sec.	ΔT sec.	DEPTH m RKB	DEPTH m MSL	ΔZ m	VINT m/s
			0.415			307.0	1480
Seabed	T. Nordland Gr.	0.4149		333.0	307.0		
			0.675			703.0	2082
T. Utsira	T. Utsira Fm.	1.0903		1036.0	1010.0		
			0.033			36.0	2202
T. Hordal.	T. Hordaland Gr.	1.1230		1072.0	1046.0		
			0.615			607.0	1974
T. Balder	T. Balder Fm.	1.7380		1679.0	1653.0		
			0.023			27.5	2391
	T. Lista/Sele Fm.	1.7610		1706.5	1680.5		
			0.129			134.5	2084
T. Cret.	T. Shetland Gr.	1.8901		1841.0	1815.0		
			0.490			596.3	2434
	T. Cromer Knoll Gr.	2.3800		2437.3	2411.3		
			0.007			9.7	2658
B. Cret.	T. Dunlin Gr.	2.3873		2447.0	2421.0		
			0.045			64.0	2813
T. Statfj.	T. Statfjord Fm.	2.4328		2511.0	2485.0		
			0.060			85.3	2834
Hegre Gr.	T. Lunde Fm.	2.4930		2596.3	2570.3		
			0.010			13.7	2635
	OWC	2.5034		2610.0	2584.0		
			0.048			69.5	2890
	T. Unit B	2.5515		2679.5	2653.5		
			0.350			589.0	3365
	T. M. Lunde Fm.	2.9016		3268.5	3242.5		
			0.063			116.5	3675
	T. L. Lunde Fm.	2.9650		3385.0	3359.0		
			0.077			154.5	3997
	T. Lomvi Fm.	3.0423		3539.5	3513.5		
			0.045			93.0	4106
	T. Teist Fm.	3.0876		3632.5	3606.5		

4.6 Formation Temperature

The maximum recorded temperatures (BHT) obtained during logging have been converted to static formation temperatures (T_f) using a Horner plot technique. The recorded BHT's and the estimated static formation temperatures are listed in table 4.4. The data used for the calculations are listed in table 4.5.

All the data have been plotted in fig. 4.3.

In addition to the calculated static formation temperatures, four bottom hole temperatures were measured during testing:

m RKB	Temp. °C
2683.0	93.7
2562.5	90.9
2520.5	90.2
2527.5	89.9

Table 4.4: Average bottom hole temperatures (BHT) and static formation temperatures (T_f).

Depth m RKB	No. of BHT readings	Average BHT °C	T_f °C
1892.9	3	39	48 at 1870 m
3001	3	60	98 at 3015 m
3005	3	75	
2993	3	82	
*3001	3	64	
3677	2	92	125 at 3670 m
3678	3	104	
3678	3	114.5	
3642	3	114	

*New circulation

Table 4.5: Temperature Data

Log	Date	Run No.	Btm log interval (m RKB)	Avg. rec. temp. (BHT)	Time since circ. (d t)	Circ. time (t)
DIFL-LSBHC-CDL-GR	30.03.85	1A	1892.9	39.0° C	5.3 hrs.	6.0 hrs.
DLL-MLL-GR	18.04.85	2A	3001.0	60.0° C	6.2 hrs.	4.2 hrs.
CDL-CNL	18.04.85	2A	3005.0	75.0° C	10.5 hrs.	3.7 hrs.
DIFL-LSBHC-GR	19.04.85	2B	2993.0	82.0° C	21.0 hrs.	4.9 hrs.
DIPLOG*	20.04.85	2A	3001.0	64.0° C	6.2 hrs.	4.9 hrs.
DIFL-LSBHC-GR	02.05.85	3C	3677.0	92.0° C	5.7 hrs.	2.5 hrs.
CDL-CNL-GR	03.05.85	3B	3678.0	104.0° C	14.0 hrs.	2.5 hrs.
DIPLOG	03.05.85	3B	3678.0	114.5° C	18.0 hrs.	2.5 hrs.
FMT	03.05.85	3H-I	3642.0	114.0° C	20.2 hrs.	2.5 hrs.

*New circulation

Saga Petroleum a.s.

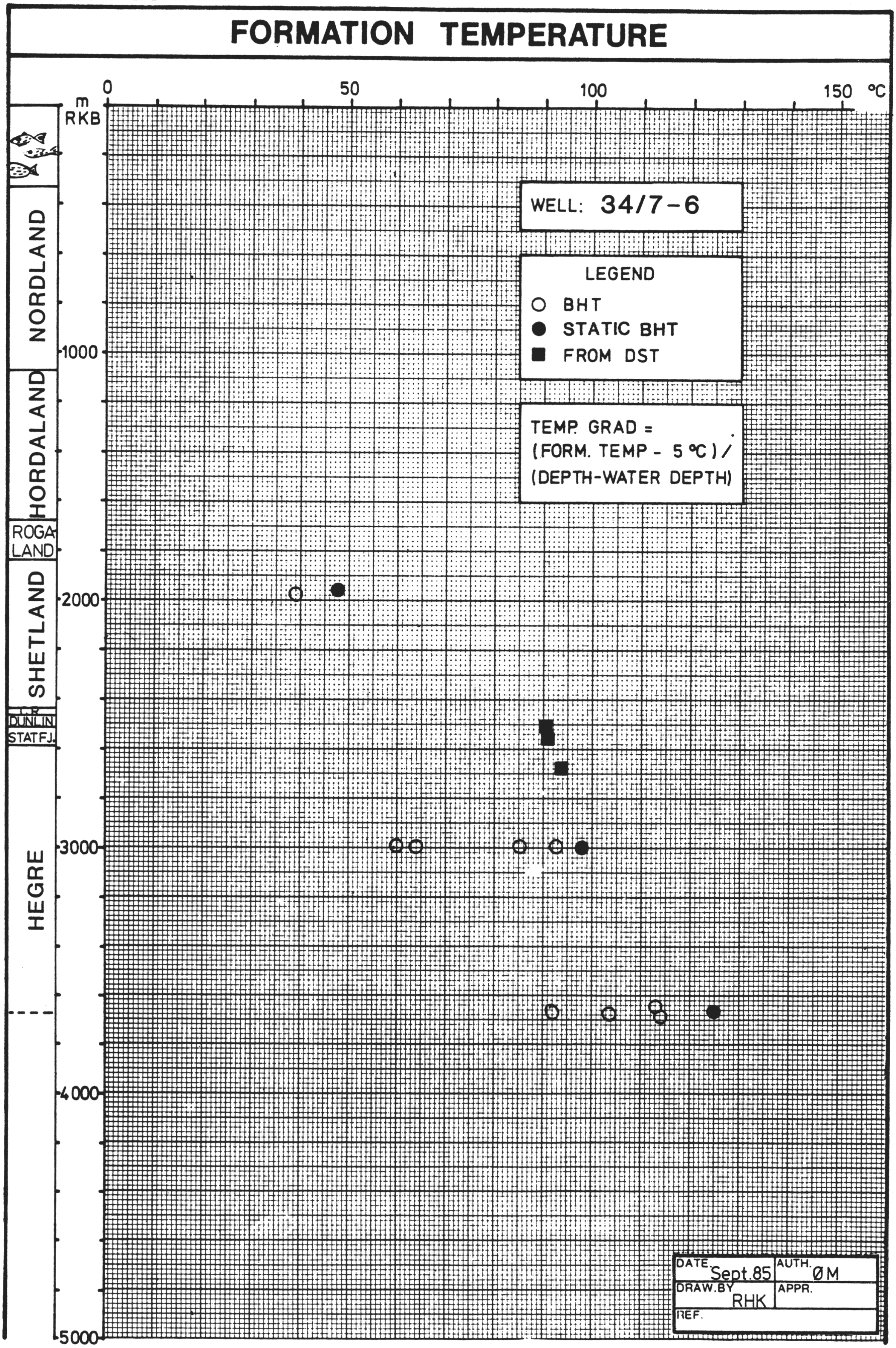

Fig. 4.3

4.7 Formation Pressure

The most relevant parameters in the pressure detection are plotted in the Formation Evaluation Sheet (see Enclosure II). An interpreted pressure gradient profile sheet, including mud weight (ECD), leak off tests and FMT results, is given in fig. 4.4.

Throughout the sediments of the Nordland Group and upper part of the Hordaland Group down to approximately 1500 m RKB, normal hydrostatic pressure prevails (gradient of 1.04 g/cm^3). When entering the Hordaland Group a trend shift to the left appears on the d_c-exponent curve. Most likely this is due to changes in lithology and not as an effect of a build-up in pressure gradient. The sonic log and density log also respond to this change in lithology.

From 1500 m RKB the d_c-exponent starts to cut back towards lower values, and since no major changes in lithology appears, this is interpreted as a build-up in pressure gradient. The sonic log deviates towards higher Δt's (transit times) over the same section which also is indicative of an increasing pressure gradient. The increase in pressure gradient continues throughout the Rogaland Group and into the Shetland Group.

At Top Shetland Group (1841 m RKB) a pressure gradient around 1.30 g/cm^3 E.M.W. is estimated. The mud weight (ECD) was increased steadily over this section so the pressure estimates cannot be confirmed by the gas data.

In the sediments of the Shetland Group the d_c-exponent again is very much affected by lithology, especially in the lower part. However, the increase in pressure gradient most likely continues throughout the Shetland Group and into the sediments of the Dunlin Group. Pressure measurements performed in the Statfjord Formation (refered to below) also confirm this.

In the Statfjord and Lunde Formations several FMT's were performed. The shallowest reading at 2512.5 m RKB indicates a pressure/depth ratio of 1.57 g/cm^3 E.M.W. (384 bar). From this depth towards T.D.

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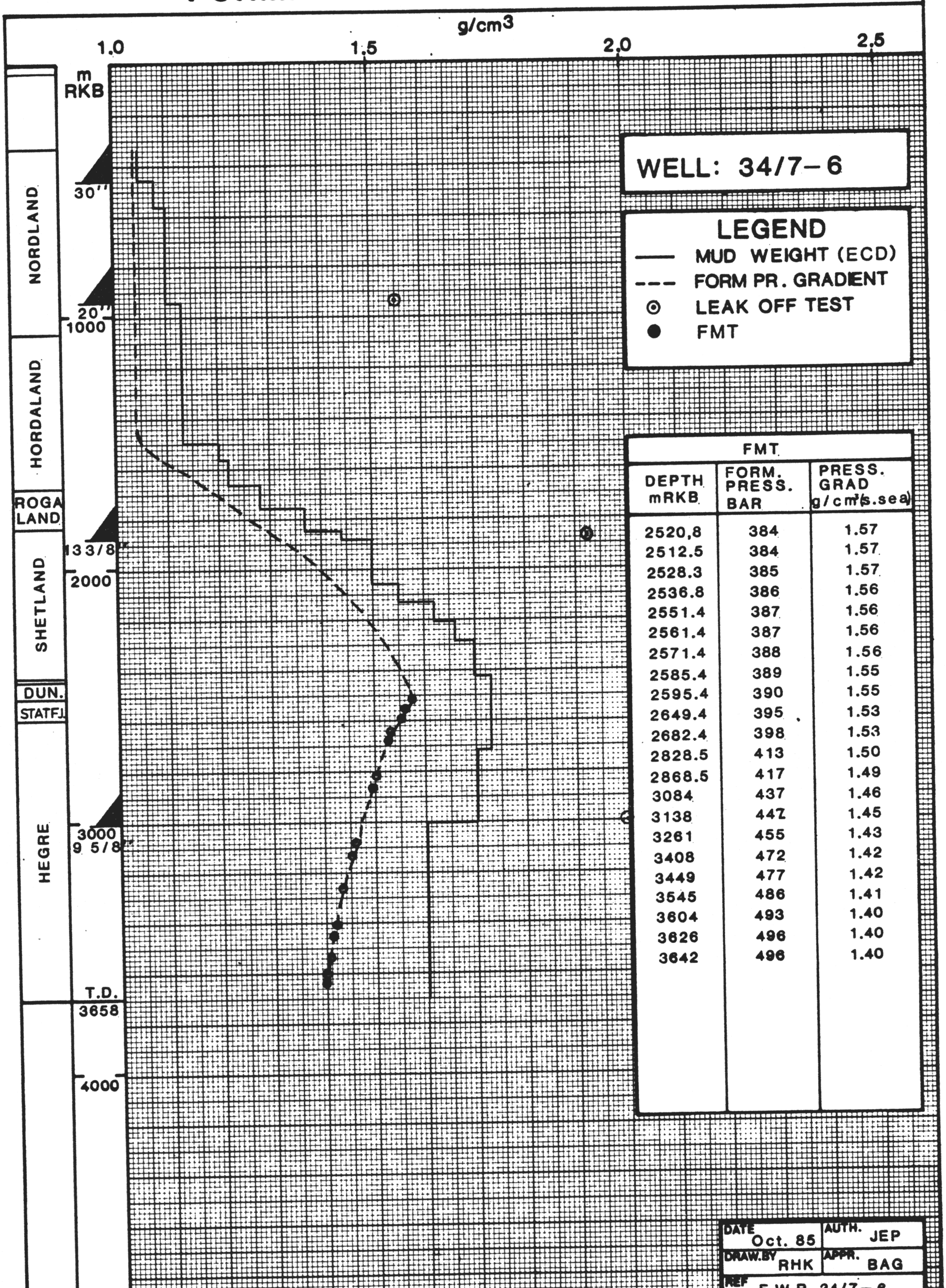
FORMATION PRESSURE GRADIENT



FMT

DEPTH mRKB	FORM. PRESS. BAR	PRESS. GRAD g/cm³s.sea
2520,8	384	1.57
2512.5	384	1.57
2528.3	385	1.57
2536.8	386	1.56
2551.4	387	1.56
2561.4	387	1.56
2571.4	388	1.56
2585.4	389	1.55
2595.4	390	1.55
2649.4	395	1.53
2682.4	398	1.53
2828.5	413	1.50
2868.5	417	1.49
3084	437	1.46
3138	447	1.45
3261	455	1.43
3408	472	1.42
3449	477	1.42
3545	486	1.41
3604	493	1.40
3626	496	1.40
3642	496	1.40

Fig 4.4

at 3685 m RKB the pressure gradient (or pressure/depth ratio) decreases, due to vertical pressure communication in the sandy, silty sequences of the Statfjord and Lunde Formations. The deepest pressure reading at 3642 m RKB gives a pressure/depth ratio of 1.40 g/cm^3 E.M.W. (496 bar).

4.8 Stratigraphy

4.8.1 Lithostratigraphic Summary

The lithostratigraphic subdivision (table 4.6) of well 34/7-6 is based on wireline log responses, conventional cores, sidewall cores and the cutting descriptions, supported by the biostratigraphic breakdown prepared by Robertson Research and Saga/Palcon.

Table 4.6: Lithostratigraphic Summary

Formation Tops	Depths (m RKB)	Thickness m
Nordland Group (Seabed)	333.0	703.0
Utsira Formation	1036.0	36.0
Hordaland Group	1072.0	607.0
Rogaland Group	1679.0	162.0
Balder Formation	1679.0	27.5
Lista/Sele Formation	1706.5	134.5
Shetland Group	1841.0	596.3
Cromer Knoll Group	2437.3	9.7
Dunlin Group	2447.0	64.0
Amundsen Member	2447.0	34.3
Calc. Amundsen	2481.3	29.7
Statfjord Formation	2511.0	85.3
Hegre Group	2596.3	+1088.7
Upper Lunde Formation	2596.3	672.2
Middle Lunde Formation	3268.5	116.5
Lower Lunde Formation	3385.0	154.5
Lomvi Formation	3539.5	93.0
Teist Formation	3632.5	+52.5
T.D.	3685.0 (driller's depth)	

4.8.2 Biostratigraphic Summary

The biostratigraphic interpretation was prepared by Robertson Research and Palcon, in co-operation with Saga. The following analyses were carried out:

1. Robertson Research:

Lithology:	752 ditch cutting, 43 sidewall cores and 37 core samples.
Micropaleontology:	299 ditch cuttings, 11 sidewall cores and 1 core sample.
Palynology:	134 ditch cuttings, 28 sidewall cores and 13 core samples.

2. Palcon/Saga:

Micropaleontology:	10 ditch cuttings, 14 sidewall cores and 11 core samples.
Palynology:	39 core samples.

The biostratigraphic breakdown is given in table 4.7. The Cainozoic and Mesozoic stratigraphic history is given in figs. 4.5 and 4.6.

Table 4.7: Biostratigraphic Summary, Well 34/7-6

Age	Depth m RKB	Thick-ness m	Remarks
Pleistocene	470	+30	Top not seen
UNCONFORMITY			
Pliocene	500	530	
Upper Miocene	1030	10	
UNCONFORMITY			
Upper Oligocene	1036.5	123.5	Log
Lower Oligocene	1160	150	
?UNCONFORMITY			
Upper Eocene	1310	70	
Middle - Lower ?Eocene	1380	280	
Lower Eocene	1660	40	
?UNCONFORMITY			
Upper Paleocene	1700	141	
UNCONFORMITY			
Upper Cretaceous	1841	596.5	Log
Uppermost Maastrichtian	1841	29	
Upper Maastrichtian	1870	50	
Lower Maastrichtian	1920	25	
Upper Campanian	1945	35	
Lower Campanian	2080	290	
Santonian - Turonian	2370	67.3	
UNCONFORMITY			
Lower Cretaceous	2437.3	9.7	Log
Alb./Apt. - Early Bar./Neoc.	2437.3	9.7	
UNCONFORMITY			
Lower Jurassic	2447	149.3	
Upper Pliensbachian	2447	12	
Lowest Upper Pliensbachian	2459	12	
Lower Pliensbachian	2471	30	
Lower Pliensbachian - ?Sinemurian	2501	10	
Sinemurian - ?Hettangian	2511	85.3	
Upper Triassic	2596.3	943.2	Log
Rhaetian	2596.3	678.7	
Lower Rhaetian - Carnian	3275	264.5	
?Middle Triassic	3539.5	+145.5	Log
T.D..	3685 (driller's depth)		

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WELL 34/7-6 CAINOZOIC STRATIGRAPHIC HISTORY

PAGE ONE OF TWO

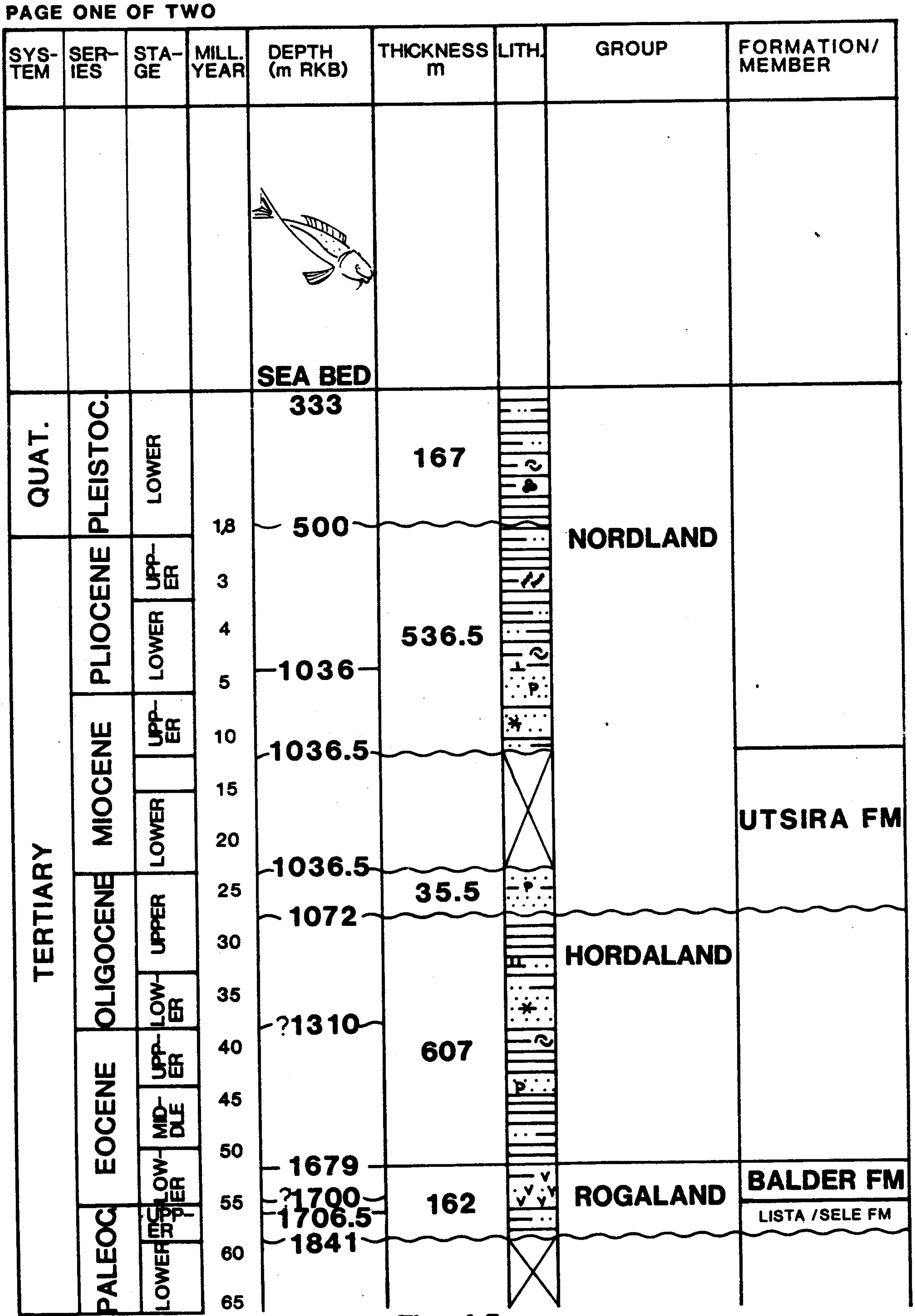

Fig. 4.5

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WELL 34/7-6 MESOZOIC STRATIGRAPHIC HISTORY

PAGE TWO OF TWO

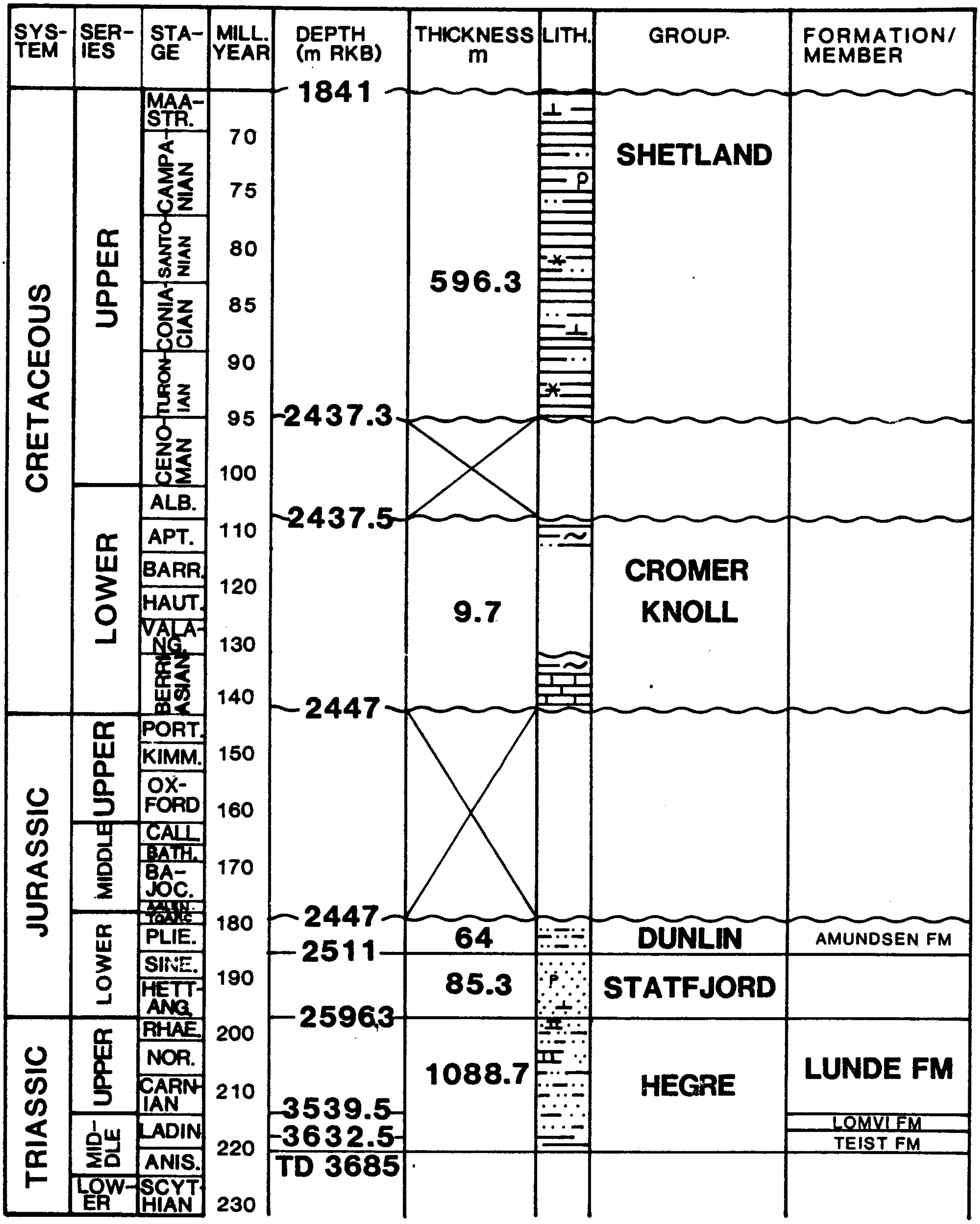

Fig. 4.6

4.8.3 Hegre Group

4.8.3.1 Teist Formation

Depth interval: 3632.5 - 3685 m RKB (T.D. - logger's depth)
Thickness: Minimum 52.5 m
Age: Middle Triassic

Lithology

The Teist Formation is composed of sandstones interbedded with siltstones/claystones and trace of limestones.

The sandstones are greyish white and clear to light yellow and light orange. Grains are predominantly fine, occasionally medium to coarse, moderately to well sorted, and subangular to subrounded. They are mainly loose, however, firm to hard when calcite and silica cemented.

The siltstones are argillaceous, redish brown, occasionally light green grey, friable to firm, micromicaceous and non to slightly calcareous.

The claystones are redish brown to medium brown, friable to soft, micromicaceous and calcareous.

The limestones are argillaceous, white to buff, occasionally clear and crystalline and friable to firm.

Upper boundary

The overlying Lomvi Formation is recognized on wireline logs by decreasing resistivity readings.

4.8.3.2 Lomvi Formation

Depth interval: 3539.5 - 3632.5 m RKB
Thickness: 93 m
Age: Middle Triassic

Lithology

The main lithology in the Lomvi Formation is sandstones.

The sandstones are occasionally silty, clear to pale brown of colour, very fine to fine but predominantly fine, well sorted and subangular to subrounded. They are mainly loose in consistency, occasionally calcite cemented and the porosity is good.

Upper boundary

The overlying Lower Lunde Formation is recognized on wireline logs mainly by increasing gamma and resistivity readings, but also by neutron/density responses.

4.8.3.3 Lower Lunde Formation

Depth interval: 3385 - 3539.5 m RKB
Thickness: 154.5 m
Age: Lower Rhaetian - Carnian

Lithology

The Lower Lunde Formation is composed of sandstones interbedded with shales, siltstones and limestones.

The sandstones are clear to light grey, predominantly fine to medium, moderately to well sorted, subangular to subrounded. They are loose in consistency but occasionally calcite and silica cemented.

The shales are occasionally silty and mainly medium to dark grey. Occasionally their colour is red brown. They are firm to hard, subfissile to fissile, micromicaceous, predominantly non but occasionally very calcareous.

The siltstones are light grey, occasionally light brown and medium grey specs. They are mainly firm but somewhere calcite and silica cemented.

The limestones are argillaceous, white to dark grey, occasionally buff and soft to firm.

Upper boundary

The overlying silty Middle Lunde Formation shows increasing gamma readings on wireline logs. Resistivity and sonic responses are gradually decreasing.

4.8.3.4 Middle Lunde Formation

Depth interval:	3268.5 - 3385 m RKB
Thickness:	116.5 m
Age:	Rhaetian - Lower Rhaetian

Lithology

The lithology in the Middle Lunde Formation is siltstones interbedded with sandstones, shales and limestones.

The siltstones are argillaceous and grading to sandstones. They are light to medium brown grey, friable to firm, micaceous and calcareous.

The sandstones are clear to light grey, predominantly fine to medium, moderately to well sorted, subangular to subrounded. They are loose in consistency but occasionally calcite and silica cemented.

The shales are occasionally silty and mainly medium to dark grey but can be red brown. They are firm to hard, subfissile to fissile, micromicaceous, predominantly non, but occasionally very calcareous.

The limestones are argillaceous, white to dark grey, occasionally buff and soft to firm.

Upper boundary

The Upper Lunde Formation is recognized on electrical logs on decreasing gamma reading. There is also a tendency towards lower resistivity.

4.8.3.5 Upper Lunde Formation

Depth interval:	2596.3 - 3268.5 m RKB
Thickness:	672.2 m
Age:	Rhaetian

Lithology

The Upper Lunde Formation is mainly composed of sandstones alternating and interbedded with claystones and trace of limestones. The uppermost 50 m are claystone with minor silty sandstones. Stringers of limestone occur mainly in the lower 300 m of the formation.

The sandstones are clear to white, occasionally light to moderate brown. They are very fine to coarse, predominantly fine to medium and grading to silt in the uppermost part, angular to subrounded and moderately to well sorted. In consistency they are mainly loose, but firm when calcite and silica cemented. They contain some mica and are slightly to very calcareous.

The claystones are silty and mainly grey brown to moderate brown and red brown. Occasionally their colour is olive black and dark greenish grey. They are soft to firm, subfissile and blocky in the lower part, slightly calcareous and micromicaceous.

The limestones are argillaceous and grade occasionally to marl. Their colour is white to light grey and soft to firm in consistency.

Upper boundary

The overlying Statfjord Formation is recognized on wireline logs by decreasing gamma readings in the sandstones. It is difficult exact to determine the boundary due to tight silty sandstones both below and above.

4.8.4 Statfjord Formation

Depth interval:	2511 - 2596.3 m RKB
Thickness:	85.3 m
Age:	Sinemurian - Hettangian?

Lithology

The Statfjord Formation consists mainly of sandstones alternating with claystones/shales. Traces of coal occur throughout the unit.

The sandstones are brown, predominantly medium to coarse, occasionally very coarse. They are moderately sorted, subangular to subrounded and firm. Porosity is dominantly good, but occasionally the sandstones are kaolinite cemented. They are non calcareous and micaceous.

The claystones are grading to siltstone, and occasionally they are sandy. In colour they are green to green grey, and they are very hard, subfissile, occasionally very micaceous and non calcareous.

The shales are silty, dark olive green, firm, fissile, micaceous and non calcareous.

Upper boundary

The overlying Dunlin Group is recognized on wireline logs by increasing gamma ray and density readings.

4.8.5 Dunlin Group

Amundsen Formation

Depth interval:	2447 - 2511 m RKB
Thickness:	64 m
Age:	Lower Pliensbachian - Sinemurian?

Lithology

The lithology in the Amundsen Formation is mainly siltstones, but with trace of sandstones.

The siltstones are very argillaceous, medium grey to light grey, firm, occasionally blocky and calcareous.

The sandstones are clear to light grey, very fine to fine, occasionally medium to coarse, subangular to subrounded, predominantly loose, but occasionally calcite cemented.

Upper boundary

The overlying Cromer Knoll Group is recognized on all wireline logs. Gamma readings and sonic transit time decrease but resistivity and density increase.

4.8.6 Cromer Knoll Group

Depth interval:	2437.3 - 2447 m RKB
Thickness:	9.7 m
Age:	Lower Aptian - Lower Barremian

Lithology

Alternating marl and limestone are the main lithology of the Cromer Knoll Group.

The marl is moderately red brown, sticky and soft.

The limestone is argillaceous, white to buff and firm.

Upper boundary

The overlying Shetland Group is recognized on wireline logs by increasing gamma ray and sonic transition time and the decrease in resistivity.

4.8.7 Shetland Group

Depth interval:	1841 - 2437.3 m RKB
Thickness:	596.3 m
Age:	Uppermost Maastrichtian - Turonian

Lithology

The Shetland Group consists of very uniform claystone lithology. It is occasionally silty, mainly light to medium grey, soft to firm, occasionally sticky and calcareous.

Throughout the group there are minor stringers of limestone and dolomite. The limestone is white to light grey, argillaceous and firm. The dolomite is dark brown to red brown, microcrystalline and hard.

The lowest 140 m contain minor thin sandstone/siltstone stringers. These are sandstones grading to siltstones. They are very fine, subangular to subrounded and medium sorted. In consistency they are mainly loose, but occasionally calcite and silica cemented. Glauconite and pyrite are noticed in accessial amounts.

Upper boundary

The boundary to the overlying Rogaland Group (Lista/Sele Formation) is seen on wireline logs by a decrease in gamma ray and the resistivity and an increase of the sonic transit time.

4.8.8 Rogaland Group

4.8.8.1 Lista/Sele Formation

Depth interval: 1706.5 - 1841 m RKB
Thickness: 134.5 m
Age: Upper Paleocene

Lithology

The Lista/Sele Formation is composed of a silty light grey claystone sequence which can be tuffaceous, particularly near the uppermost boundary. The claystones are blocky and firm.

Upper boundary

The boundary to the overlying Balder Formation is well defined on the logs by a decrease in the gamma ray, the sonic transit time and an increase in the resistivity.

4.8.8.2 Balder Formation

Depth interval: 1679 - 1706.5 m RKB
Thickness: 27.5 m
Age: Lower Eocene - Upper Paleocene

Lithology

The Balder Formation consists of tuffaceous claystone. It is varigated coloured in light and medium grey to brick red, nottled with black specs, soft to firm and non to slightly calcareous.

Upper boundary

The overlying Hordaland Group is marked by an increase in the gamma ray and the sonic transit time and a decrease in the resistivity on the wireline logs.

4.8.9 Hordaland Group

Depth interval:	1072 - 1679 m RKB
Thickness:	607 m
Age:	Upper Oligocene - Lower Eocene

Lithology

The Hordaland Group is mainly composed of claystones and two thick sandstone layers, each about 60 m thick.

The claystones are occasionally silty, medium grey to green grey and olive grey in colour, soft to firm and non to slightly calcareous.

The upper 150 m of the Hordaland Group is claystone with minor thin sandstone and siltstone layers. The sandstones are argillaceous, silty, clear to milky, very fine to medium, moderately to well sorted and subrounded. The siltstones are grading to claystones, medium grey, soft, sticky and non to slightly calcareous. Throughout the rest of the claystone sequence limestone and dolomite stringers are seen. The limestone is occasionally argillaceous, white to light brown and firm. The dolomite is dark brown, microcrystalline and hard.

The thick sandstone layers are clear to milky, medium, well sorted, well rounded and loose in consistency. There is traces of claystone in the sandstones. These are as described above.

Traces of pyrite, glauconite and mica occur throughout the whole group.

Upper boundary

The Nordland Group (Utsira Formation) above is recognized by increase in gamma readings and decrease in sonic transit time.

4.8.10 Nordland Group

Depth interval: 333 - 1072 m RKB
Thickness: 739 m
Age: Pleistocene - Upper Miocene

4.8.10.1 Utsira Formation

Depth interval: 1036 - 1072 m RKB
Thickness: 36 m
Age: Pliocene - Upper Oligocene

Lithology

The Utsira Formation is composed of sandstones interbedded with claystones.

The sandstones are clear to milky, very fine to moderate, moderately to well sorted, subrounded and loose.

The claystones are very silty, medium grey, soft, sticky and non to slightly calcareous.

Traces of glauconite, pyrite, mica, shell fragments and rock fragments are common. The sandstones are very glauconitic at the base.

Upper boundary

The Nordland Group above is characterized by an increase in gamma, resistivity and density readings. Sonic transition time is decreasing on wireline logs.

4.8.10.2 Nordland Group above the Utsira Formation

Depth interval:	333 - 1036 m RKB
Thickness:	703 m
Age:	Pleistocene - Pliocene

Lithology

The lithology in the Nordland Group above the Utsira Formation is claystones. The claystones are occasionally silty and there are traces of sand.

The claystones are occasionally silty, medium grey, soft, sticky and slightly calcareous.

The sand is clear, very fine to fine, occasionally coarse, poorly sorted and angular to subangular.

There are also traces of pyrite, rock and shell fragments, foraminifers and glauconite.

4.9 Hydrocarbon Indications

From the 30" casing (at 455 m RKB) and down to 965 m RKB the mud weight was gradually risen from 1.09 g/cc to 1.12 g/cc (ECD). From 935 m RKB down to 1450 m RKB the mud weight was 1.10 g/cc. In this interval the average background gas was less than 0.6%. There were no connection gases. Trip gases recorded at 759 m RKB and 765 m RKB were 0.1% and 0.04% respectively.

In accordance with the prognosed pore pressures the mud weight was progressively increased from 1.10 g/cc (ECD) at 1450 m RKB to 1.72 g/cc (ECD) at 2516 m RKB. From 1450 m RKB to 2130 m RKB gas levels remained low, generally being less than 0.04% with occasional peaks up to 0.08%. From 2130 m RKB to 2510 m RKB gas levels were higher and more variable with a maximum of 0.97% at 2495 m RKB. Trip gases were also low with a maximum of 0.34% after a wiper trip at 1705 m RKB.

C2, C3 iC4 and nC4 were first detected from 2120 m RKB. Silty laminae in the Shetland Group had traces of shows from about 2110 m RKB. These were described as gold yellow fluorescence with no cut. From 2155 m RKB and down to 2500 m RKB silt and sandstone show golden yellow fluorescence and slow streaming cloudy yellow fluorescence cut. Occasionally light brown staining and weak odour are observed from 2500 m RKB.

Mud weight was 1.72 g/cc at 2514 m RKB, and was reduced to 1.70 g/cc at 2740 m RKB. At 3000 m RKB the mud weight was reduced further to 1.64 g/cc, after this it was continually reduced to a final weight of 1.55 g/cc at T.D.

From 2514 m RKB to 2610 m RKB total gas was high and variable, 0.01% to a maximum of 2.19% at 2573 m RKB. A full range of gases from C1 to nC4 were present. From 2610 m RKB the gas readings dropped off dramatically to being trace to 0.01%. From this point and to T.D. C1 was generally the only gas present. Trip gases were low in the section from 2514 m RKB to 2610 m RKB. Average is 0.06% with a maximum of 0.36% at 2516 m RKB. Below 2610 m RKB trip gases were very low or non existent.

From the top reservoar in the Statfjord Formation at 2511 m RKB the shows had good odour, excellent light brown stain, strong white yellow fluorescence, fast streaming cloudy white yellow fluorescence cut and leaving a white residue upon evaporation.

From 2601 m RKB to T.D. no shows were seen.

5. FORMATION EVALUATION

5.1 Logging

The logging programme is summarized in chapter 4.4. The target interval 2500 - 3000 m RKB (Statfjord and Upper Lunde) was recorded in run 2.

During the logging jobs there were depth discrepancies between depth measured by driller and log depths in run 1 and 2. These differences were due to an incorrectly marked logging cable, and the cable was changed for the final logging job (run 3).

Field logs have been played back from tape and depth-corrected. These logs are marked "Final depth corrected copy".

Depth corrections applied were (m RKB):

Field Depth	Correction	Corrected Depth
935.0	0.0	935.0
1878.0	2.0	1876.0
2450.0	3.3	2446.7
2650.0	3.4	2646.6
3000.0	3.6	2996.4

with intermediate points at linear interpolation.

A standard in-house computer log analysis was carried out and the results are summarized in table 5.1.

The Statfjord Formation was found oil bearing, with average porosity of 22.2% and average water saturation of 18.5%.

5.2 Core Analyses

Cores were cut in the Statfjord Formation (Jurassic sequence) and the Upper and Lower Lunde (Triassic sequence). A total of 13 cores were taken in the interval 2514.7 - 3578.5 m RKB (driller's depth: 2516.0 - 3578.5 m RKB), with a core recovery of 90%.

The main results of the conventional core analyses are presented in table 5.2. In addition, vertical air permeability, grain density and summation porosity were measured.

For each meter two 1.5" plugs and 0.20 m seal peal have been preserved. Special core analyses have not yet been requested.

5.3 Formation Pressure Measurements

A Dresser Atlas Formation Multi Tester (FMT) with both an HP-gauge and a strain gauge were used to obtain pressure measurements.

A total of nine runs with the FMT-tool were performed including the intermediate and the final logging run (No. 2 and 3). The measurements are summarized in table 5.3.

There were some tool failures and sealing problems while sampling. Four segregated samples were recovered, see table 5.4.

As seen from the formation pressure plot (fig. 5.1) a common oil gradient of 0.074 bar/m is found in the Statfjord and Lunde Formations. Assuming pressure communication between the two formations, extrapolation gives an oil-water contact at 2610 m RKB. (This contact does not take into account possible heavier oil near the contact giving the possibility of deepening the contact up to 4 m.) The pressure in the Statfjord Formation was measured to 386.42 bar at 2550 m RKB.

5.4 Testing

DST No. 1 was performed in the water bearing section of the Lunde Formation. DST No. 2 was performed in the lower part of the oil bearing section of Statfjord. DST No. 3A and 3B were both carried out in the upper part of the oil bearing Statfjord, with DST No. 3B having an additional perforated section.

DST No. 1, water zone:	2679.0 - 2687.0 m RKB
	2549.5 - 2552.0 m RKB
DST No. 2, oil zone:	2555.0 - 2563.0 m RKB
	2568.0 - 2572.5 m RKB
DST No. 3A, oil zone,	2518.5 - 2522.5 m RKB
DST No. 3B, oil zone:	2518.5 - 2522.5 m RKB
	2526.5 - 2536.5 m RKB

The test objectives were to:

- sample formation water (DST No. 1).
- sample reservoir fluids (confirmation of vertical distribution of properties).
- obtain formation pressure and temperature.
- estimate reservoir properties.
- define and compare single layer and multilayer productivity, (DST No. 3A and 3B).
- provide data for assessing the correct core permeability averaging technique (DST No. 2 and 3B).
- investigate vertical communication across interchannel shale layers (DST No. 3A and 3B).
- investigate the extension and potential sealing of the interval 2536 - 2545 m RKB, which can be correlated to neighbouring wells (DST No. 2).
- determine lateral heterogenities and extension of sands.

The main components in the test string were:

- A Geo Vann tubing conveyed perforating system.
- One internal bundle carrier and one F-nipple where pressure/temperature recorders were installed.
- A standard Halliburton DST-string with a downhole tester valve, circulating valves and retrievable packer.
- MUST; multiple shut in tool with TPT-gauge
- 5" VAM tubing 18 lbs/ft.
- A Flopetrol subsea test tree, lubricator valve and surface test tree.

DST No. 1

The zone was perforated with 55 bar underbalance against a 9.5 mm choke. During the 10 min. initial flow period, 1.9 m^3 cushion water was flowed back to the tank. The well was shut in for 3 hours to obtain the initial pressure.

The well was then opened for an 18 hours main flow period followed by a 20 hours main pressure build-up period. The surface sampling programme was performed during the main flow period.

After the main pressure build-up period the well was opened for 6 hours and the bottom hole sampling program was performed.

The main flow data are listed in table 5.5. The flow rates and the bottom hole pressures are shown in fig. 5.2 and the pressure from the main build-up period are listed in table 5.6.

During the main flow period the flowrate decreased from 674 m^3/day to 225 m^3/day through a 12.7 mm fixed choke.

DST No. 2

Before DST No. 2 a squeeze cement job was performed to prevent leak to the overlying high permeable zone.

The zone was perforated against a 9.5 mm fixed choke with approximately 69 bar underbalance. A total of 3.4 m^3 cushion water was flowed back over a period of 10 min. This flow period was followed by a 2 1/2 hours initial pressure build-up period.

The well was then opened and a 24 hours main flow period was carried out followed by a 30 hours pressure build-up period.

The entire sampling programme was carried out during the main flow period. The monophasic samples were taken at the wellhead and the recombination samples were taken at the separator.

The flow and pressure data are presented in tables 5.7, 5.8 and fig. 5.3.

The guns were stuck and left in the hole because the tubing above the guns parted as the packer was unseated after the test.

DST No. 3A was perforated overbalanced both a 4" casing gun/4 shots per foot and mud in the hole.

The test string was run with a tubing conveyed gun assembly to be used in DST No. 3B.

An initial flow period was carried out as 2.1 m^3 cushion water was flowed back through a 6.3 mm choke over a period of 12 minutes, followed by a 2 1/2 hours initial build-up period.

The main flow and build-up period both lasted for 24 hours and the entire sampling programme was performed during the main flow period.

The flow and pressure data are presented in tables 5.9, 5.10 and fig. 5.4.

DST No. 3B

The additional zone was perforated balanced to the formation pressure from DST No. 3A. The well was closed in at the wellhead and the string filled with reservoir fluid from the previous DST.

The entire DST consisted of a flow period of 12 hours and a pressure build-up period of 12 hours. The sampling programme was carried out as in DST No. 3A.

The additional perforated interval in DST No. 3B was shorter than planned because the gun assembly from DST No. 2 was left in the hole.

The flow and pressure data are presented in tables 5.11, 5.12 and fig. 5.5.

5.5 Fluid Analyses

Four FMT chambers containing pressurized reservoir fluid were collected. Analyses of the fluid from three of the FMT-chambers are presented in table 5.4.

Fluid samples were obtained from all of the four drillstem tests.

During the water test (DST No. 1) both wellhead samples and bottomhole samples were collected. The analyses of the wellhead samples and one bottomhole sample are presented in table 5.13.

The remaining bottomhole samples have not yet been analysed.

In DST No. 2, DST No. 3A and DST No. 3B single phase oil samples were taken during the main flow. The samles were taken at the wellhead as the bubble point pressure of the fluid was below the wellhead flowing pressure.

PVT analyses have been requested from all three oil tests, but the reports are not received to date. Preliminary data for DST No. 2 are presented in table 5.14.

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TABLE 5.1: LOG ANALYSIS RESULTS SUMMARY

WELL : 34/7-6

FORMATION	STATFJORD	LUNDE UPPER	LUNDE MIDDLE	LUNDE LOWER	LOMVI
TOP M RKB	2511	2596.3	3268.5	3385.0	3539.5
BOTTOM M RKB	2596.3	3268.5	3385.0	3539.5	3632.5
GROSS M	85.3	672.2	117.0	154.5	88
NET SAND M	41	229	9.4	9.3	36
N/G	0.5	0.34	0.08	0.06	0.41
Φ %	22.2	16.5	15.3	16.2	13.6
SW %	18.5	-	-	-	-
CUTOFFS:					
Φ %	12	15	15	15	12
VSH FRACTION	0.4	0.4	0.4	0.4	0.4

REMARKS

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TABLE 5.2: CONVENTIONAL CORE ANALYSIS

WELL: 34/7-6

NPP
No plug possible

CORE DEPTH (M)	POROSITY (%)	HORIZONTAL PERM (mD)	OIL SATURATION (%)
2516.ØØ - 2519.75 NO ANALYSIS SHALE/SILTSTONE AND RUBBLE			
252Ø.ØØ	2.1	Ø.Ø1	44.3
252Ø.25			
252Ø.5Ø	14.2	15.ØØ	
252Ø.75	12.6	1.5Ø	
2521.ØØ	26.4	113Ø.ØØ	24.5
2521.25	29.5	176Ø.ØØ	
2521.5Ø	27.4	176Ø.ØØ	
2521.75	NPP		
2522.ØØ	29.4	158Ø.ØØ	28.8
2522.25	29.5	29ØØ.ØØ	
2522.5Ø	25.4	346Ø.ØØ	
2522.75	27.6	448Ø.ØØ	
2523.ØØ	NPP		
2523.25	27.6	3Ø3Ø.ØØ	
2523.5Ø	29.3	248Ø.ØØ	
2523.75	26.8	11ØØ.ØØ	
2524.ØØ	24.4	273Ø.ØØ	3Ø.4
2524.25	4.2	Ø.14	
2524.5Ø	18.2	93Ø.ØØ	
CORE 1 ENDS AT 2524.6 M			
2529.5 2527.5Ø - 253Ø.25 NO ANALYSIS SHALY SILTSTONE / SHALE			
253Ø.5Ø	24.Ø	25ØØ.ØØ	
253Ø.75	28.2	35ØØ.ØØ	
2531.ØØ	31.5	42ØØ.ØØ	32.5
2531.25	25.1	23ØØ.ØØ	
2531.5Ø	NPP		
2531.75	27.6	52ØØ.ØØ	
2532.ØØ	27.9	33ØØ.ØØ	25.6
2532.25	NPP		
2532.5Ø	NPP		
2532.75	PRESERVED SAMPLE		
2533.ØØ	NMP	2ØØØ.ØØ	25.Ø
2533.25	24.3	4ØØØ.ØØ	
2533.5Ø	24.Ø	13ØØ.ØØ	
2533.75	NPP		
2534.ØØ	21.3	81ØØ.ØØ	23.5
2534.25	21.8	23ØØ.ØØ	
2534.5Ø	NPP		
2534.75	NMP	4ØØØ.ØØ	
2535.ØØ	23.9	995.ØØ	26.3
2535.25	25.3	43ØØ.ØØ	
2535.5Ø	19.2	NMP	
2535.75	23.9	21ØØ.ØØ	
2536.ØØ	26.1	1ØØØØ.ØØ	21.6
2536.25	22.1	NMP	
2536.5Ø	NPP		
2536.75	26.5	NMP	
2537.ØØ	NMP	Ø.19 wt	3Ø.2
2537.25	1.3	Ø.Ø2	
2537.5Ø	NMP	414.ØØ	
2537.75	"	1749.ØØ	
2538.ØØ	"	25Ø6.ØØ	29.1
2538.25	PRESERVED SAMPLE		
2538.5Ø	26.9	NMP	

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TABLE 5.2: CONVENTIONAL CORE ANALYSIS

WELL: 34/7-6

CORE DEPTH (M)	POROSITY (%)	HORIZONTAL PERM (mD)	OIL SATURATION (%)
2538.75	25.7	"	
2539.ØØ	27.8	"	23.4
2539.25		1849.ØØ	
2539.5Ø	PRESERVED SAMPLE		
2539.75	28.5		
254Ø.ØØ	NPP		31.Ø
254Ø.25	NMP	18Ø3.ØØ	
254Ø.5Ø	"	832.ØØ	
254Ø.75	PRESERVED SAMPLE		
2541.ØØ	21.6	293Ø.ØØ	25.Ø
2541.25	26.9	1879.ØØ	
2541.5Ø	22.8	158.ØØ	
2541.75	16.1	Ø.92	
2542.ØØ	15.3	4.5Ø	31.Ø
2542.25	12.7	7.5Ø	
2542.5Ø	11.2	1.5Ø	
CORE 2 ENDS AT 2542.7 M			
2549.ØØ - 2551.ØØ NO ANALYSIS SHALY SILTSTONE / SHALE			
2551.25	12.Ø	16.ØØ	
2551.5Ø	12.8	NMP	
2551.75	14.3	2.7Ø	
2552.ØØ	14.4	1.2Ø	Ø.Ø
2552.25	14.1	NMP	
2552.5Ø	24.1	32.ØØ	
2552.75	24.2	71.ØØ	
2553.ØØ	23.Ø	72.ØØ	27.4
2553.25	25.6	23Ø.ØØ	
2553.5Ø	27.2	25Ø.ØØ	
2553.75	28.Ø	195.ØØ	
2554.ØØ	23.9	13.ØØ	37.5
2554.25	21.6	6.ØØ	
2554.5Ø	PRESERVED SAMPLE		
2554.75	26.4	13Ø.ØØ	
2555.ØØ	22.5	12.ØØ	29.1
2555.25	2Ø.9	14Ø.ØØ	
2555.5Ø	24.7	185.ØØ	
2555.75 - 2556.75 NO ANALYSIS SHALE RUBBLE			
CORE 5 ENDS AT 2556.8Ø M			
2557.5Ø NO ANALYSIS SHALE			
2557.75	"		
2558.ØØ	13.1	Ø.68	
2558.25	NO ANALYSIS SHALE		
2558.5Ø	23.6	13.ØØ	
2558.75	25.2	52Ø.ØØ	
2559.ØØ	22.9	1Ø5.ØØ	3Ø.6
2559.25	23.9	26Ø.ØØ	
2559.5Ø	24.2	22Ø.ØØ	
2559.75	27.2	39Ø.ØØ	
256Ø.ØØ	26.4	1Ø5.ØØ	23.Ø
256Ø.25	29.9	1Ø5Ø.ØØ	
256Ø.5Ø	3Ø.2	73Ø.ØØ	
256Ø.75	29.5	42Ø.ØØ	
2561.ØØ	29.Ø	68.ØØ	3Ø.2
2561.25	28.5	34Ø.ØØ	
2561.5Ø	29.1	97Ø.ØØ	
2561.75	19.2	NMP	
2562.ØØ	25.3	54.ØØ	25.Ø
2562.25	23.5	25.ØØ	
2562.5Ø	28.5	49Ø.ØØ	
2562.75	27.7	35Ø.ØØ	
2563.ØØ	PRESERVED SAMPLE		

DST #2
K_A = 111 md
h = 3 m
kh = 334

DST #2
K_A = 578 md
h = 7.25 m
kh = 4188

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TABLE 5.2: CONVENTIONAL CORE ANALYSIS

WELL: 34/7-6

CORE DEPTH (M)	POROSITY (%)	HORIZONTAL PERM (mD)	OIL SATURATION (%)
2563.25	26.1	22Ø.ØØ	
2563.5Ø	26.9	43Ø.ØØ	
2563.75	27.8	88Ø.ØØ	
2564.ØØ	27.2	1Ø1Ø.ØØ	23.6
2564.25	27.1	129Ø.ØØ	
2564.5Ø	22.5	174.ØØ	
2564.75	24.2	1724.ØØ	
2565.ØØ	NPP		25.7
2565.25	PRESERVED SAMPLE		
2565.5Ø	22.9	1281.ØØ	
2565.75	24.5	19Ø1.ØØ	
2566.ØØ	NPP		23.5
2566.25	NPP		
2566.5Ø - 2568.5Ø NO ANALYSIS SHALE / RUBBLE			
CORE 6 ENDS AT 2568.7Ø M			
2568.75	NMP	1.6Ø	
2569.ØØ NO ANALYSIS SHALE			
2569.25	"		
2569.5Ø	"		
2569.75	NPP		
257Ø.ØØ	NPP		24.5
257Ø.25	PRESERVED SAMPLE		
257Ø.5Ø NO ANALYSIS SHALE			
257Ø.75	"		
2571.ØØ	15.6	NMP	Ø.Ø
2571.25	18.6	1.6Ø	
2571.5Ø	26.6	33.ØØ	
2571.75	21.9	~~1.7Ø~~	
2572.ØØ	NPP		28.7
2572.25	NPP		
2572.5Ø	29.6	53Ø.ØØ	
2572.75	27.9	27Ø.ØØ	
2573.ØØ	NPP		28.1
2573.25	28.Ø	55Ø.ØØ	
2573.5Ø	27.2	42Ø.ØØ	
2573.75	NPP		
2574.ØØ	28.2	34Ø.ØØ	25.2
2574.25	NPP		
2574.5Ø	25.1	165.ØØ	
2574.75	23.1	8Ø.ØØ	
2575.ØØ	NPP		32.4
2575.25 - 2581.75 NO ANALYSIS SHALE			
CORE 7 ENDS AT 2582.ØØ M			
2582.ØØ - 2584.25 NO ANALYSIS SHALE			
2584.5Ø	22.5	129.ØØ	
2584.75	24.9	78.ØØ	
2585.ØØ	9.8	Ø.67	21.2
2585.25	PRESERVED SAMPLE		
2585.5Ø	27.6	367.ØØ	
2585.75	25.8	39Ø.ØØ	
2586.ØØ	26.1	254.ØØ	27.9
2586.25	26.6	247.ØØ	
2586.5Ø	26.5	243.ØØ	
2586.75	17.Ø	65.ØØ	
2587.ØØ	27.1	188.ØØ	25.Ø
2587.25	26.Ø	161.ØØ	
2587.5Ø	26.Ø	185.ØØ	
2587.75	24.3	195.ØØ	
2588.ØØ	25.3	212.ØØ	23.9
2588.25	26.9	243.ØØ	
2588.5Ø	25.4	34.ØØ	

$K_{19} = 299$ md

DST #2 $h = 3$ m

$kh = 897$

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TABLE 5.2: CONVENTIONAL CORE ANALYSIS

WELL: 34/7-6

CORE DEPTH (M)	POROSITY (%)	HORIZONTAL PERM (mD)	OIL SATURATION (%)
2588.75	27.6	456.00	
2589.00	26.4	1080.00	20.6
2589.25 - 2594.50 NO ANALYSIS SHALE / RUBBLE			
CORE 8 ENDS AT 2594.50 M			
2598.50 - 2599.25 NO ANALYSIS SHALE			
2599.50	25.1	244.00	
2599.75	26.9	3688.00	
2600.00	27.3	1734.00	19.4
2600.25	19.5	6.80	
2600.50	20.1	5.90	
2600.75	19.3	4.50	
2601.00	15.0	1.50	14.3
2601.25	14.3	1.60	
2601.50	16.0	2.70	
2601.75 - 2603.75 NO ANALYSIS SHALE			
2604.00	17.9	3.40	
2604.25	13.9	1.10	
2604.50	14.4	3.00	
2604.75	22.4	13.00	
2605.00	18.6	6.70	
2605.25	21.0	6.00	
2605.50	21.5	9.80	
2605.75	19.8	14.00	
2606.00	7.3	1.10	
2606.25	10.9	1.50	
2606.50 - 2612.00 NO ANALYSIS SHALE			
CORE 9 ENDS AT 2612 M			
2612.50 - 2615.50 NO ANALYSIS SHALE			
2615.75	12.7	0.33	
2616.00 NO ANALYSIS SHALE			
2616.25	12.4	0.11	
2616.50	NMP	0.16	
2616.75	NMP	0.[illegible]5	
2617.00	12.2	0.21	0.0
2617.25 - 2624.00 NO ANALYSIS SHALE			
CORE 10 ENDS AT 2624 M			
2913.00	19.3	15.00	0.0
2913.25	19.9	7.20	
2913.50	19.6	0.90	
2913.75	21.3	2.50	
2914.00	20.1	4.[illegible]0	0.0
2914.25	18.1	4.[illegible]	
2914.50	18.7	2.[illegible]0	
2914.75	15.3	1.40	
2915.00	11.5	0.42	0.0
2915.25	2.6	0.02	
2915.50	9.2	0.52	
2915.75	15.6	7.50	
2916.00	13.5	7.90	0.0
2916.25	16.3	15.00	
2916.50 NO ANALYSIS SHALE			
2916.75	"		
2917.00	"		
2917.25	13.5	0.53	
2917.50	15.2	0.37	
2917.75	13.5	0.83	
2918.00	20.9	0.54	0.0
2918.25	23.5	1.00	
2918.50	25.1	2.10	
2918.75	NPP		

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TABLE 5.2: CONVENTIONAL CORE ANALYSIS

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WELL: 34/7-6

CORE DEPTH (M)	POROSITY (%)	HORIZONTAL PERM (mD)	OIL SATURATION (%)
2919.ØØ	22.9	Ø.96	Ø.Ø
2919.25	2Ø.6	Ø.32	
2919.5Ø	18.1	Ø.27	
2919.75	17.9	Ø.11	
292Ø.ØØ	NO ANALYSIS SHALE		
292Ø.25	"		
292Ø.5Ø	17.6	1.5Ø	
292Ø.75	17.9	1.7Ø	
2921.ØØ	18.9	Ø.27	
2921.25	18.7	Ø.33	
2921.5Ø	19.6	Ø.12	
2921.75	19.6	3.4Ø	
2922.ØØ	18.6	1.1Ø	Ø.Ø
2922.25	NPP		
2922.5Ø	13.1	1.1Ø	
2922.75	18.6	2.7Ø	
2923.ØØ	18.2	Ø.82	
2923.25	18.7	Ø.84	
2923.5Ø	11.8	Ø.27	
2923.75 - 2925.5Ø NO ANALYSIS SHALE / RUBBLE			
CORE 11 ENDS AT 2925.5 M			
2927.ØØ	NO ANALYSIS SHALE		
2927.25	"		
2927.5Ø	"		
2927.75	25.5	39.ØØ	
2928.ØØ	25.4	45.ØØ	Ø.Ø
2928.25	24.2	42.ØØ	
2928.5Ø	NO ANALYSIS SHALE / SILT		
2928.75	23.9	53.ØØ	
2929.ØØ	23.Ø	36.ØØ	Ø.Ø
2929.25	23.1	12.ØØ	
2929.5Ø	24.9	54.ØØ	
2929.75	23.3	54.ØØ	
293Ø.ØØ	21.7	32.ØØ	Ø.Ø
293Ø.25	19.Ø	47.ØØ	
293Ø.5Ø - 2935.25 NO ANALYSIS SHALE / SILT			
2935.5Ø	13.4	Ø.Ø7	
2935.75	18.4	3.5Ø	
2936.ØØ	16.5	1.5Ø	
2936.25	14.Ø	Ø.96	
2936.5Ø	8.1	Ø.12	
2936.75	7.9	Ø.Ø6	
2937.ØØ	7.9	Ø.Ø8	Ø.Ø
2937.25	8.3	Ø.24	
2937.5Ø - 2538.75 NO ANALYSIS SHALE			
2939.ØØ	NPP		Ø.Ø
2939.25	18.4	17.ØØ	
2939.5Ø	6.8	Ø.Ø7	
2939.75	15.2	Ø.67	
294Ø.ØØ	18.6	4.2Ø	Ø.Ø
294Ø.25	18.3	2.8Ø	
294Ø.5Ø	17.2	1.5Ø	
294Ø.75	17.3	4.4Ø	
2941.ØØ	18.6	4.4Ø	Ø.Ø
2941.25	18.5	4.9Ø	
2941.5Ø	17.Ø	2.5Ø	
2941.75	15.5	1.6Ø	
2942.ØØ	13.4	Ø.62	Ø.Ø
2942.25	15.Ø	4.1Ø	
2942.5Ø	19.Ø	5.2Ø	
2942.75	17.4	7.2Ø	
2943.ØØ	17.Ø	2.2Ø	Ø.Ø

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TABLE 5.2: CONVENTIONAL CORE ANALYSIS

WELL: 34/7-6

CORE DEPTH (M)	POROSITY (%)	HORIZONTAL PERM (mD)	OIL SATURATION (%)
2943.25	16.7	1.7Ø	
2943.5Ø	15.7	Ø.54	
2943.75	NPP		
2944.ØØ	15.8	Ø.39	Ø.Ø
2944.25	16.Ø	Ø.24	
2944.5Ø	15.7		
2944.75	17.6	Ø.31	
2945.ØØ	16.9	Ø.79	Ø.Ø
2945.25	NPP		
2945.5Ø	17.4	2.ØØ	
2945.75	21.7	195.ØØ	
2946.ØØ	23.1	24Ø.ØØ	Ø.Ø
2946.25	12.2	6.5Ø	
2946.5Ø	1Ø.Ø	2.7Ø	
2946.75	21.6	99.ØØ	
2947.ØØ	24.1	21.ØØ	Ø.Ø
2947.25	12.Ø	Ø.Ø7	
2947.5Ø	24.4	7.4Ø	
2947.75	25.5	19.ØØ	
2948.ØØ	21.7	4.5Ø	Ø.Ø
2948.25	22.Ø	28.ØØ	
2948.5Ø	21.9	36.ØØ	
2948.75	22.Ø	39.ØØ	
2949.ØØ	22.8	33.ØØ	Ø.Ø
2949.25	18.9	13.ØØ	
2949.5Ø	22.1	67.ØØ	
2949.75	21.2	23.ØØ	
295Ø.ØØ	NPP		
295Ø.25	11.1	Ø.Ø5	
295Ø.5Ø	24.5	21.ØØ	
295Ø.75	23.6	34.ØØ	
2951.ØØ	24.2	1ØØ.ØØ	Ø.Ø
2951.25	26.Ø	35.ØØ	
2951.5Ø	22.7	13.ØØ	
2951.75	22.8	1.ØØ	
2952.ØØ	NPP		
2952.25	NPP		
2952.5Ø	NPP		
2952.75	23.5	1Ø7.ØØ	
2953.ØØ	22.4	95.ØØ	Ø.Ø
2953.25	25.Ø	137.ØØ	
CORE 12 ENDS AT 2953.3Ø M			
356Ø.ØØ	14.1	11.ØØ	Ø.Ø
356Ø.25	15.4	18.ØØ	
356Ø.5Ø	15.4	4Ø.ØØ	
356Ø.75	15.2	44.ØØ	
3561.ØØ	15.6	37.ØØ	Ø.Ø
3561.25	15.3	46.ØØ	
3561.5Ø	15.Ø	36.ØØ	
3561.75	15.Ø	38.ØØ	
3562.ØØ	14.7	28.ØØ	Ø.Ø
3562.25	14.Ø	2Ø.ØØ	
3562.5Ø	15.2	32.ØØ	
3562.75	15.1	29.ØØ	
3563.ØØ	15.2	34.ØØ	Ø.Ø
3563.25	15.Ø	51.ØØ	
3563.5Ø	3.5	Ø.Ø8	
3563.75	15.7	52.ØØ	
3564.ØØ	13.5	47.ØØ	Ø.Ø
3564.25	6.9	Ø.Ø3	
3564.5Ø	6.5	Ø.Ø2	
3564.75	9.Ø	Ø.19	

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TABLE 5.2: CONVENTIONAL CORE ANALYSIS

WELL: 34/7-6

CORE DEPTH (M)	POROSITY (%)	HORIZONTAL PERM (mD)	OIL SATURATION (%)
3565.ØØ	9.3	Ø.21	Ø.Ø
3565.25	NMP	Ø.17	
3565.5Ø	9.5	Ø.23	
3565.75	9.9	Ø.3Ø	
3566.ØØ	1Ø.8	Ø.43	Ø.Ø
3566.25	11.Ø	Ø.53	
3566.5Ø	1Ø.4	Ø.38	
3566.75	11.3	Ø.58	
3567.ØØ	11.2	Ø.55	Ø.Ø
3567.25	11.4	Ø.68	
3567.5Ø	11.1	Ø.9Ø	
3567.75	9.8	Ø.22	
3568.ØØ	9.1	Ø.73	Ø.Ø
3568.25	9.8	Ø.33	
3568.5Ø	11.1	Ø.4Ø	
3568.75	11.6	Ø.63	
3569.ØØ	11.3	Ø.52	Ø.Ø
3569.25	11.Ø	Ø.55	
3569.5Ø	11.3	Ø.57	
3569.75	12.Ø	Ø.74	
357Ø.ØØ	12.5	1.ØØ	Ø.Ø
357Ø.25	11.1	Ø.69	
357Ø.5Ø	11.3	Ø.65	
357Ø.75	1Ø.4	Ø.51	
3571.ØØ	11.1	Ø.51	Ø.Ø
3571.25	11.Ø	Ø.43	
3571.5Ø	11.Ø	Ø.72	
3571.75	11.Ø	Ø.49	
3572.ØØ	1Ø.8	Ø.56	
3572.25	11.Ø	Ø.52	

3572.5Ø - 3578.5Ø NO ANALYSIS RUBBLE

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TABLE 5.3: FORMATION PRESSURE MEASUREMENTS

WELL: 34/7-6 PAGE 1

DEPTH (m RKB)	HYDROSTATIC MUD PRESSURE (psia)	MEASURED FORMATION PRESSURE (psia)	TEMPERATURE CORRECTED FORMATION PRESSURE (psia)	TEMPERATURE CORRECTED FORMATION PRESSURE (bar)	EQUIVALENT PRESSURE GRADIENT (MSL) (g/cm^3)	PRETEST PERMEABILITY (md)
Run 2A (HP-gauge)						
2520.8	6230	5575.1	5572.1	384.18	1.51	62
2510.8	No seal					
2512.5	6211	5569.8	5566.8	383.82	1.51	12
2528.3	6245	5582.2	5579.2	384.67	1.51	150
2536.8	6269	5593.5	5590.5	385.45	1.51	140
2551.4	6301	5608.7	5605.7	386.50	1.50	62
2561.4	6326	5622.4	5619.4	387.44	1.50	140
2571.4	6351	5636.3	5633.3	388.40	1.50	62
2585.4	6382	5646.5	5643.5	389.11	1.49	140
2595.4	6407	5661.5	5658.5	390.14	1.49	35
2606.4	No seal					
2650.4	" "					
2649.4	6539	5728.9	5725.9	394.79	1.48	40
2682.4	6615	5781.1	5778.1	398.39	1.47	40
2734.9	No seal					
2732.9	Tight					
2584.4 *						
Run 2A (Strain gauge 75841)						
	(psig)	(psig)				
2520.8	6228	5573	5575.7	384.43	1.51	62
2510.8	No seal					
2512.5	6209	5566	5568.7	383.95	1.51	12
2528.3	6243	5580	5582.7	384.91	1.51	150
2536.8	6269	5592	5594.7	385.74	1.51	140
2551.4	6298	5603	5605.7	386.50	1.50	62
2561.4	6326	5621	5623.7	387.74	1.50	140
2571.4	6350	5633	5635.7	388.57	1.50	35
2585.4	6381	5643	5645.7	398.26	1.49	25
2595.4	6404	5660	5662.7	390.43	1.49	170
2606.4	No seal					
2650.4	" "					
2649.4	6542	5724	5726.2	394.81	1.48	40
2682.4	6616	5777	5779.2	398.46	1.47	40
2734.9	No seal					
2732.9	" "					
2584.4 *						

CONVERSIONS

1 bar 14.5038 psi
1 g/cc 8.34523 ppg
1 kg/cm^2 14.2233 psi

RKB = 26 m

* Sample Tool plugged 4299 cc in 23/4 gal chamber

Final depth corrected

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TABLE 5.3: FORMATION PRESSURE MEASUREMENTS

WELL: 34/7-6 PAGE 2

DEPTH (m RKB)	HYDROSTATIC MUD PRESSURE (psig)	MEASURED FORMATION PRESSURE (psig)	TEMPERATURE CORRECTED FORMATION PRESSURE (psia)	(bar)	EQUIVALENT PRESSURE GRADIENT (MSL) (g/cm^3)	PRETEST PERMEABILITY (md)
Run 2B (Strain gauge 66571) VPC-tool						
	(psig)	(psig)	(psig)			
2520.8	6206	5558	5578.7	384.64	1.51	
2595.4	6383	5629	5649.7	389.53	1.49	
2585.4	6354	5628	5648.7	389.46	1.49	
2595.4	6378	5642	5662.7	390.43	1.49	
2649.4	6504	5701	5722.7	394.57	1.48	
2682.4	6584	5754	5775.7	398.22	1.47	
2701.4	6635	5902	5924.7	408.49	1.50	
2776.5	6824	5887	5909.7	407.46	1.45	
2828.5	6945	5965	5987.7	412.84	1.45	
2868.5	No seal					
2868.5	7032	6022	6044.7	416.77	1.44	
2595.4 *	6379	5640	5660.7	390.29	1.49	
2561.4	6314	5609	5629.7	388.15	1.50	
Run 2C (Strain gauge 75841)						
2595.4 *	Seg. sample PVT No. ST012					
Run 2D (Strain gauge 75841)						
2584.4 *	2581.0 Seg. sample PVT No. ST018					
Run 2E						
2561.4 *	2558.0 Operational error => No. seg. sample					
Run 2F (Strain gauge 75841)						
2520.8 *	Seg. sample PVT No. ST020					
2520.8	6219	5585	5587.7	385.26	1.51	350
2528.3	6240	5593	5595.7	385.81	1.51	85
2561.4	6314	5624	5626.7	387.95	1.50	10
2571.4	Tight					
2569.4	6331	5631 +	5633.7	388.43	1.50	120
Run 2G (Strain gauge 75841)						
2561.4 *	Seg. sample PVT No. ST005					

CONVERSIONS

1 bar 14.5038 psi
1 g/cc 8.34523 ppg
1 kg/cm^2 14.2233 psi

RKB = 26 m

* = Sample: Tool plugged => empty chambers
+ = Logreading: 4630 psig

Final depth corrected

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TABLE 5.3: FORMATION PRESSURE MEASUREMENTS

WELL: 34/7-6 PAGE 3

DEPTH (m RKB)	HYDROSTATIC MUD PRESSURE (psig)	MEASURED FORMATION PRESSURE (psig)	TEMPERATURE CORRECTED FORMATION PRESSURE (psia)	(bar)	EQUIVALENT PRESSURE GRADIENT (MSL) (g/cm^3)	PRETEST PERMEABILITY (md)
Run 3H (Strain gauge 62592)						
3084.0	6684	6358	6336.7	436.90	1.40	20
3138.0	7007	6435	6413.7	442.21	1.40	45
3261.0	7279	6612	6591.7	454.48	1.38	55
Run 3I (Strain gauge 62592)						
3309	Lost seal					
3408	7651	6870	6850.7	472.34	1.37	20
3449	7742	6931	6911.7	476.54	1.37	100
3545	7963	7073	7054.7	486.40	1.36	5
3604	8096	7164	7145.7	492.68	1.35	10
3626	8141	7209	7190.7	495.78	1.35	2
3642	8180	7218	7199.7	496.40	1.35	1
3261	7337	6666	6645.7 *	458.20	1.39	45
3084	6944	6417	6395.7 *	440.97	1.41	20

* Drifting

RKB = 26 m

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TABLE 5.4: ANALYSES OF FMT-CHAMBERS

WELL: 34/7-6

Flash of reservoir fluid to stock tank conditions: (250 bar, 93.0°C to atmosphere and 15°C).

GOR (Sm^3/Sm^3)	85.0
B_o (m^3/Sm^3)	1.30
ρ stock tank oil (kg/m^3)	838.9
Molecular weight stock tank oil	208
Molecular weight $C_{10}+$	328
γ Gas gravity (air = 1.0)	1.001

Component	Recombined reservoir fluid composition (mol %)
Nitrogen	1.30
Carbon dioxide	0.22
Methane	25.28
Ethane	7.14
Propane	9.37
iso-Butane	1.33
n-Butane	6.11
iso-Pentane	2.03
n-Pentane	3.17
Hexanes	3.43
Heptanes	5.28
Octanes	5.04
Nonanes	3.64
Decanes plus	26.65

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TABLE 5.5: FLOW DATA

WELL: 34/7-6 DST NO. 1

Event	Date	Clock time (hrs. min)	Choke (mm)	Flowrate (Sm^3/day)	Bottomhole pressure (bar)	Wellhead pressure (bar)	Remarks
Initial flow	8.5.85	21.51-22.01	9.5	248	344.9	19.1	Abnormal wellhead pressure due to cushion in the string.
Well opened for main flow:	9.5.85	02.50	12.7				
	"	03.30	12.7	674	306.2	32.1	
	"	05.30	12.7	640	274.8	27.7	
	"	09.00	12.7	379	259.5	13.6	
	"	12.00	12.7	308	255.2	9.3	
	"	17.00	12.7	255	252.5	5.7	
Well shut in	9.5.85	20.50	12.7	225	251.5	4.6	
Well opened for sampling flow:	10.5.85	19.35	6.3				
	"	20.00	6.3	236	300.1	51.1	
Changed choke	"	21.00	6.3	223	295.1	44.5	
	"	21.15	4.8	147	297.3	49.7	
Well shut in	11.5.85	01.30	4.8	129	290.5	43.1	

The water gas ratio was measured to 0.89 Sm^3/Sm^3 at separator conditions of 1 bar and 30.5°C.
The bottomhole pressure refers to 2483 m RKB and the initial pressure at this depth was 375 bar.
The formation temperature is estimated to 93.7°C.

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TABLE 5.6: MAIN PRESSURE BUILD-UP DATA

WELL: 34/7-6 DST NO. 1

TIME (HRS)	PRESSURE (PSIG)	REMARKS
20.8333	3646.710	
20.8403	3693.710	
20.8419	3715.360	
20.8431	3725.890	
20.8439	3733.740	
20.8447	3739.950	
20.8458	3745.100	
20.8467	3749.500	
20.8475	3753.360	
20.8486	3756.810	
20.8525	3762.710	
20.8550	3774.030	
20.8631	3787.970	
20.8733	3799.890	
20.8914	3815.100	
20.9233	3832.800	
20.9842	3854.310	
21.1308	3887.350	
22.0633	4005.140	
23.3811	4108.170	
0.4325	4169.680	
2.5853	4266.970	
5.2994	4359.210	
9.2581	4461.200	
16.7128	4599.520	
16.7450	4600.010	
19.5833	4600.240	
19.5861	4462.200	
19.6167	4462.200	
19.7833	4387.080	
20.0167	4345.240	
20.5167	4285.690	
21.0500	4238.930	
21.0833	4307.290	
21.5167	4309.280	
22.0167	4301.980	
22.5167	4288.470	
23.0167	4265.870	
23.5167	4258.310	
0.0167	4241.160	
0.4833	4228.000	
0.5500	4232.350	
1.0167	4229.240	
1.4833	4213.140	
1.5000	4212.565	
1.5167	4292.910	
2.0167	4376.670	
2.1500	4386.390	

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TABLE 5.7: FLOW DATA

WELL: 34/7-6 DST NO. 2

Event	Date	Clock time (hrs. min)	Choke (mm)	Flowrate (Sm^3/day)	Bottomhole pressure (bar)	Wellhead pressure (bar)	GOR (Sm^3/Sm^3)	Remarks
Initial flow period	15.5.85	18.20-18.30	9.5	484	354.8	48.9		Cushion water in the string
Opened the well for main flow	"	22.25	9.5					
	16.5.85	01.00	9.5	795	321.9	144.8		Rate decreased continously
Changed choke to 7.9 mm	16.5.85	03.00	9.5	773	317.7	141.4		Started the sampling programme
	"	04.00	7.9	537	328.5	153.8	64.8	Sampling programme at 03.25
	"	12.00	7.9	529	325.4	151.7	66.3	
	"	19.00	7.9	521	322.5	148.9	66.6	
	"	22.30	7.9	519	321.2	147.5	66.3	
Shut in the well	16.5.85	22.32						

The GOR measured at separator condition of 11.7 bar and 29.4°C.
The bottomhole pressure refers to 2350 m RKB and the initial pressure at this depth is 373.8 bar.
The formation temperature is estimated to 90.9°C.

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TABLE 5.8: MAIN PRESSURE BUILD-UP DATA

WELL: 34/7-6 DST NO. 2

TIME (HRS)	PRESSURE (PSIG)
22.5319	4656.820
22.5333	4791.750
22.5342	4808.510
22.5356	4816.220
22.5367	4821.580
22.5378	4825.680
22.5392	4829.140
22.5403	4832.230
22.5414	4834.880
22.5425	4837.220
22.5450	4841.430
22.5472	4845.140
22.5494	4848.440
22.5517	4851.470
22.5553	4855.570
22.5589	4859.350
22.5611	4861.760
22.5656	4866.140
22.5672	4867.470
22.5692	4869.170
22.5739	4872.960
22.5786	4876.510
22.5844	4880.680
22.5925	4886.060
22.6053	4893.600
22.6122	4897.380
22.6167	4899.790
22.6342	4908.200
22.6444	4912.820
22.6550	4917.200
22.6947	4931.780
22.7317	4943.500
22.7617	4951.990
22.7781	4956.270
22.8267	4967.960
22.8989	4982.810
22.9494	4991.950
23.0603	5009.160
23.0811	5011.980
23.2092	5027.170
23.2314	5029.540
23.2500	5031.460
23.3333	5039.480
23.4167	5046.690
23.5000	5053.290
23.5833	5059.130
23.6667	5064.690
23.7500	5069.660
23.8333	5074.320
23.9167	5078.600
0.0000	5082.570
0.2500	5093.300
0.5000	5102.370

TIME (HRS)	PRESSURE (PSIG)
0.7500	5110.190
1.0000	5117.080
1.2500	5123.220
1.5000	5128.760
1.7500	5133.780
2.0000	5138.410
2.2500	5143.010
2.5000	5147.000
2.7500	5150.660
3.0000	5154.150
3.5000	5160.540
4.0000	5166.160
4.5000	5171.350
5.0000	5176.110
5.5000	5180.510
6.0000	5184.600
6.5000	5188.390
7.0000	5191.950
7.5000	5195.360
8.0000	5198.630
8.5000	5201.650
9.0000	5204.650
9.5000	5207.360
10.0000	5210.070
11.0000	5215.070
12.0000	5219.720
13.0000	5223.670
14.0000	5227.950
15.0000	5231.770
16.0000	5235.410
17.0000	5238.890
18.0000	5242.260
19.0000	5245.500
20.0000	5248.660
21.0000	5251.620
22.0000	5254.560
23.0000	5257.320
0.0000	5259.890
1.0000	5262.290
2.0000	5264.730
3.0000	5267.000
4.0000	5269.250

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TABLE 5.9: FLOW DATA

WELL: 34/7-6 DST NO. 3A

Event	Date	Clock time (hrs.min)	Choke (mm)	Flowrate (Sm^3/day)	Bottomhole pressure (bar)	Wellhead pressure (bar)	GOR (Sm^3/Sm^3)	Remarks
Perforated	21.5	09.00						
Initial flow	24.5	01.34-01.46	6.3	242	356.9	93.8	-	The string was filled with cushion water.
Opened the well for main flow	24.5	04.00	6.3					
	24.5	08.00	6.3	358	350.8	176.4	53.75	Started the sampling programme at 08.40.
	24.5	12.00	6.3	371	351.2	179.9	57.3	
	24.5	18.00	6.3	385	353.6	182.7	54.1	
	24.5	24.00	6.3	391	353.7	182.8	52.2	
Shut in the well at 04.00	25.5	04.00	6.3	396	353.8	182.9	52.0	

The GOR measured at separator condition of 15 bar and 16.7°C.
The bottomhole pressure refers to 2327 m RKB and the initial pressure at that depth is 369.9 bar.
The formation temperature is estimated to 90.2°C.

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TABLE 5.10: MAIN PRESSURE BUILD-UP DATA

WELL: 34/7-6 DST NO. 3A

TIME (HRS)	PRESSURE (PSIG)	REMARKS
4.0031	5131.240	
4.0056	5333.930	
4.0083	5340.770	
4.0111	5343.500	
4.0139	5345.400	
4.0167	5346.760	
4.0194	5347.920	
4.0222	5348.920	
4.0250	5349.630	
4.0278	5350.290	
4.0306	5350.970	
4.0333	5351.510	
4.0361	5352.020	
4.0389	5352.500	
4.0417	5352.940	
4.0444	5353.240	
4.0472	5353.530	
4.0500	5383.830	
4.0667	5355.160	
4.0833	5356.190	
4.1000	5356.860	
4.1167	5357.350	
4.1333	5357.840	
4.1500	5358.170	
4.1667	5358.450	
4.2000	5358.760	
4.2333	5359.140	
4.2667	5359.370	
4.3000	5359.540	
4.3333	5359.780	
4.5000	5360.320	
4.6667	5360.660	
4.8333	5360.900	
5.0000	5361.080	
5.3333	5361.310	
5.6667	5361.750	
6.0000	5361.880	
6.5000	5362.050	
7.0000	5362.180	
8.0000	5362.420	
9.0000	5352.380	
10.0000	5362.320	
12.0000	5362.380	
14.0000	5362.510	
16.0000	5362.780	
18.0000	5362.760	
20.0000	5362.780	
22.0000	5362.720	
0.0000	5362.770	
2.0000	5362.830	
4.0000	5362.910	

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TABLE 5.11: FLOW DATA

WELL: 34/7-6 DST NO. 3B

Event	Date	Clock time (hrs.min)	Choke (mm)	Flowrate (Sm^3/day)	Bottomhole pressure (bar)	Wellhead pressure (bar)	GOR (Sm^3/Sm^3)	Remarks
Perforated the additional zone	26.5.85	07.35						
Opened the well for main flow	26.5.85	10.35	12.7					
		13.00	12.7	1765	337.4	154.8	46.8	Sampling programme started at 12.15
		17.00	12.7	1757	338.1	156.9	46.8	
		22.30	12.7	1729	338.3	157.1	49.1	
Shut in the well at the wellhead at	"	22.34						

The GOR measured at separator condition of 36.2 bar and 52.8°C.
The bottomhole pressure and temperature refers to 2327 m RKB and the initial pressure at that depth is 369.9 bar.
The formation temperature is estimated to 89.9°C.

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TABLE 5.12: MAIN PRESSURE BUILD-UP DATA

WELL: 34/7-6 DST NO. 3B

TIME (HRS)	PRESSURE (PSIG)	REMARKS
22.5769	4906.590	
22.5778	5070.110	
22.5806	5314.850	
22.5833	5318.080	
22.5861	5320.730	
22.5889	5322.550	
22.5917	5323.790	
22.5944	5324.900	
22.5972	5325.790	
22.6000	5326.450	
22.6167	5329.750	
22.6333	5331.900	
22.6500	5333.110	
22.6667	5334.380	
22.6833	5335.400	
22.7000	5336.470	
22.7167	5337.310	
22.7333	5338.110	
22.7500	5338.640	
22.7667	5339.300	
22.7833	5339.790	
22.8000	5340.280	
22.8167	5340.690	
22.8333	5341.220	
22.8667	5342.090	
22.9000	5342.670	
22.9333	5343.390	
22.9667	5343.810	
23.0000	5344.620	
23.0833	5345.720	
23.1667	5346.790	
23.2500	5347.580	
23.3333	5348.510	
23.4167	5348.820	
23.5000	5349.520	
23.6667	5350.570	
23.8333	5351.340	
0.0000	5352.140	
0.5000	5353.690	
1.0000	5354.690	
1.5000	5355.620	
2.0000	5356.260	
2.5000	5356.690	
3.0000	5357.430	
3.5000	5357.610	
4.0000	5357.780	
4.5000	5358.040	
5.0000	5358.060	
5.5000	5358.350	
6.0000	5358.410	
6.5000	5358.600	
7.0000	5358.470	
8.0000	5358.520	
9.0000	5358.960	
10.0000	5358.770	
10.6667	5358.880	

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TABLE 5.13: WATER ANALYSES

WELL: 34/7-6 DST NO. 1

WELLHEAD SAMPLES:

Cations	mg/l
Na	11000-13300
CA	1115-1160
Mg	155-165
Ba	40-49
K	115-120
Sr	146-143
Al	<1
Mn	1.75-1.85
Fe	<0.1

Anions	
Cl	19900-22100
So_4	<10
Co_3	0
HCO_3	334-350

Specific gravity	1.0248-1.0260
Resistivity @ 19.9-20.9°C	0.199-0.205 ohm-m
Fe, total	10.3-22.3 mg/l
pH	6.87-7.31

Bottomhole Sample

Cations	mg/l
Na	11400
Ca	1200
Mg	165
Ba	48.3
K	120 *
Sr	154
Al	
Mn	
Fe	0.1

Anions	
Cl	20600
SO_4	<10
CO_3	0
HCO_3	383

Resistivity @ ca. 20°C	0.1957 ohm-m
Fe, total	52 mg/l
pH	7.83

* Approximate value

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TABLE 5.14: OIL ANALYSES

WELL: 34/7-6 DST NO. 2

Bubble point pressure @ 90.9°C: 118.5 bar.

Flash of reservoir fluid to stock tank conditions: (250 bar, 93.0°C to atmosphere and 15°C).

GOR (Sm^3/Sm^3)	85.0
Bo (m^3/Sm^3)	1.30
ρ stock tank oil (kg/m^3)	838.9
Molecular weight stock tank oil	208
Molecular weight $C_{10}+$	328
γ (air=1.0)	1.001

Same data as FMT sample?

Component	Recombined reservoir fluid composition (rest %)
Nitrogen	1.38
Carbon dioxide	0.22
Methane	25.32
Ethane	7.15
Propane	9.38
iso-Butane	1.33
n-Butane	6.12
iso-Pentane	2.03
n-Pentane	3.16
Hexanes	3.44
Heptanes	5.27
Octanes	5.03
Nonanes	3.63
Decanes plus	26.60

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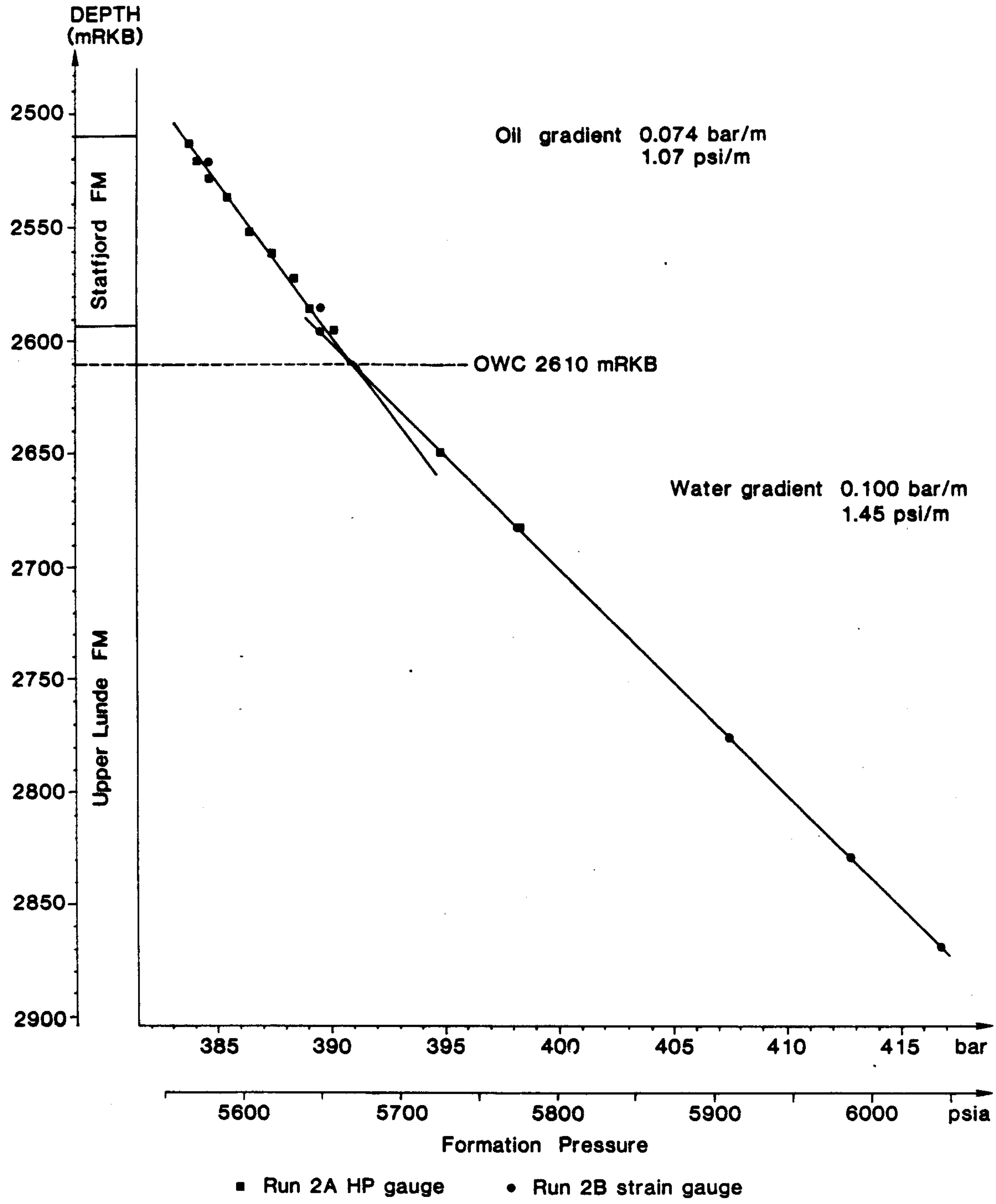
FIGURE 5.1: FORMATION PRESSURE VERSUS DEPTH

WELL: 34/7-6 PAGE 1



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REF.	

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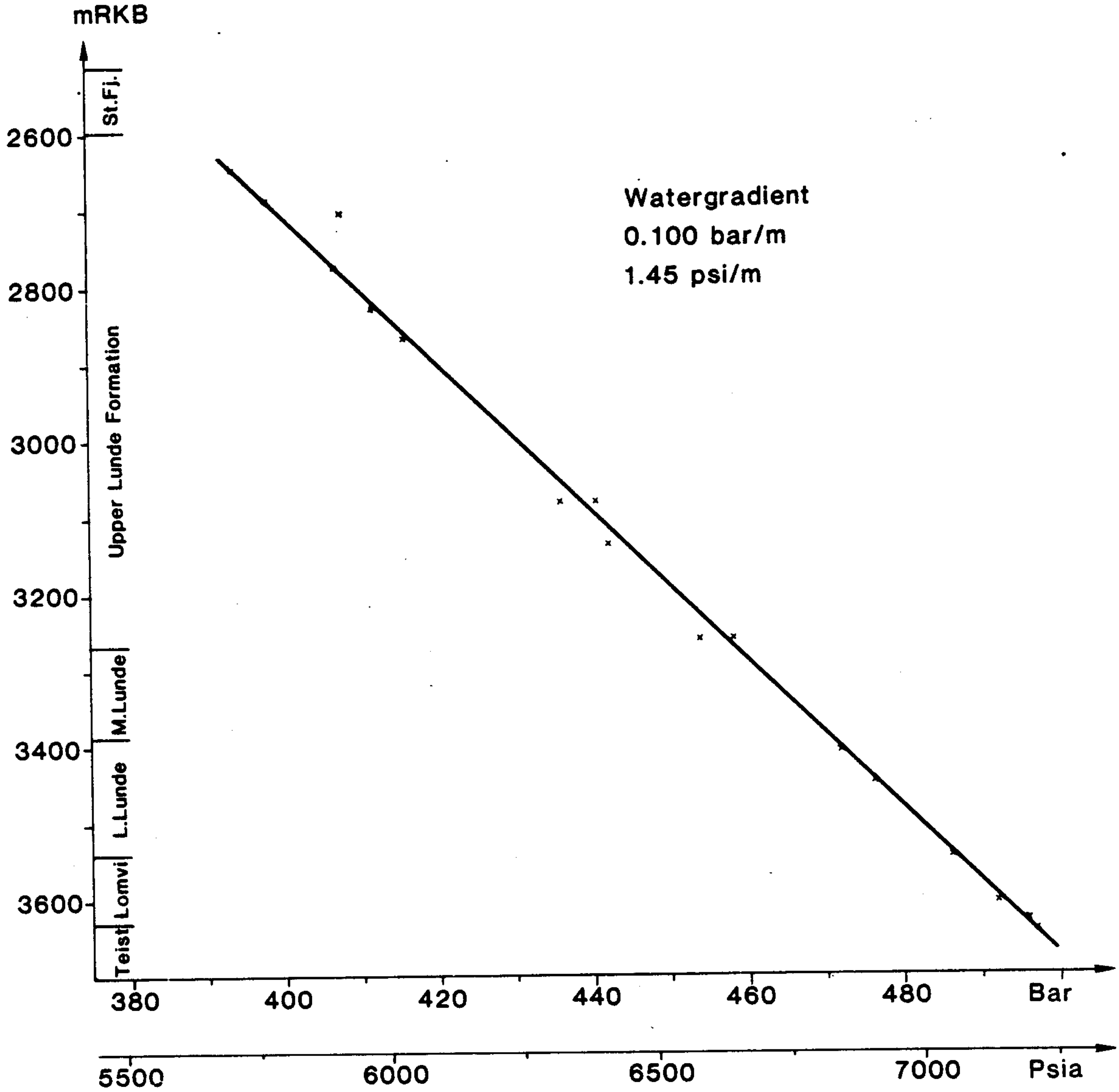
FIGURE 5.1: FORMATION PRESSURE VERSUS DEPTH

WELL: 34/7-6 PAGE 2



DATE 9/85	AUTH. SKL
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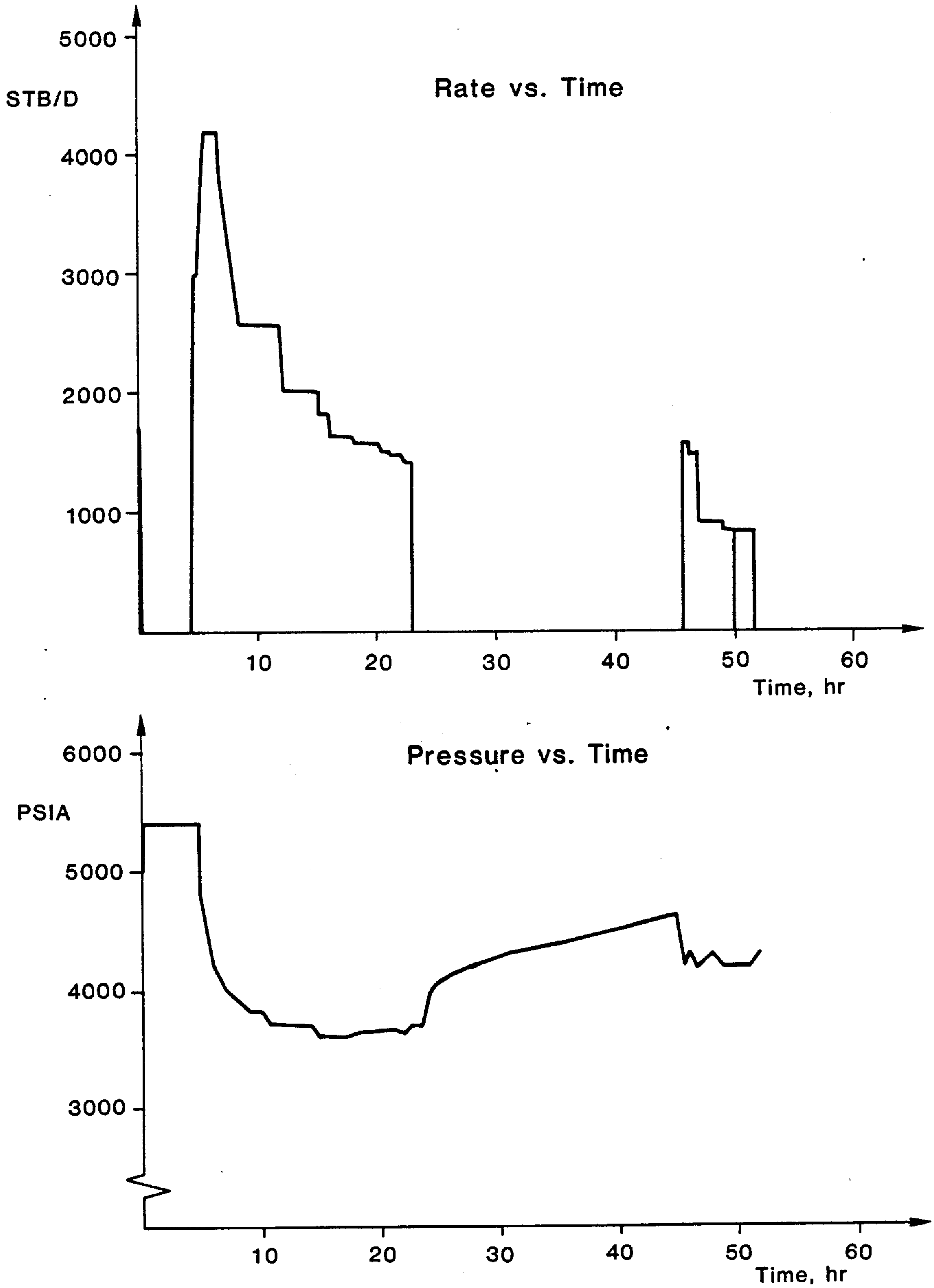
FIGURE 5.2: BOTTOM HOLE PRESSURE AND FLOW RATES

WELL: 34/7-6 DST NO. 1



DATE 9/85	AUTH. ThS
DRAW.BY AMJo	APPR.
REF. EPF	

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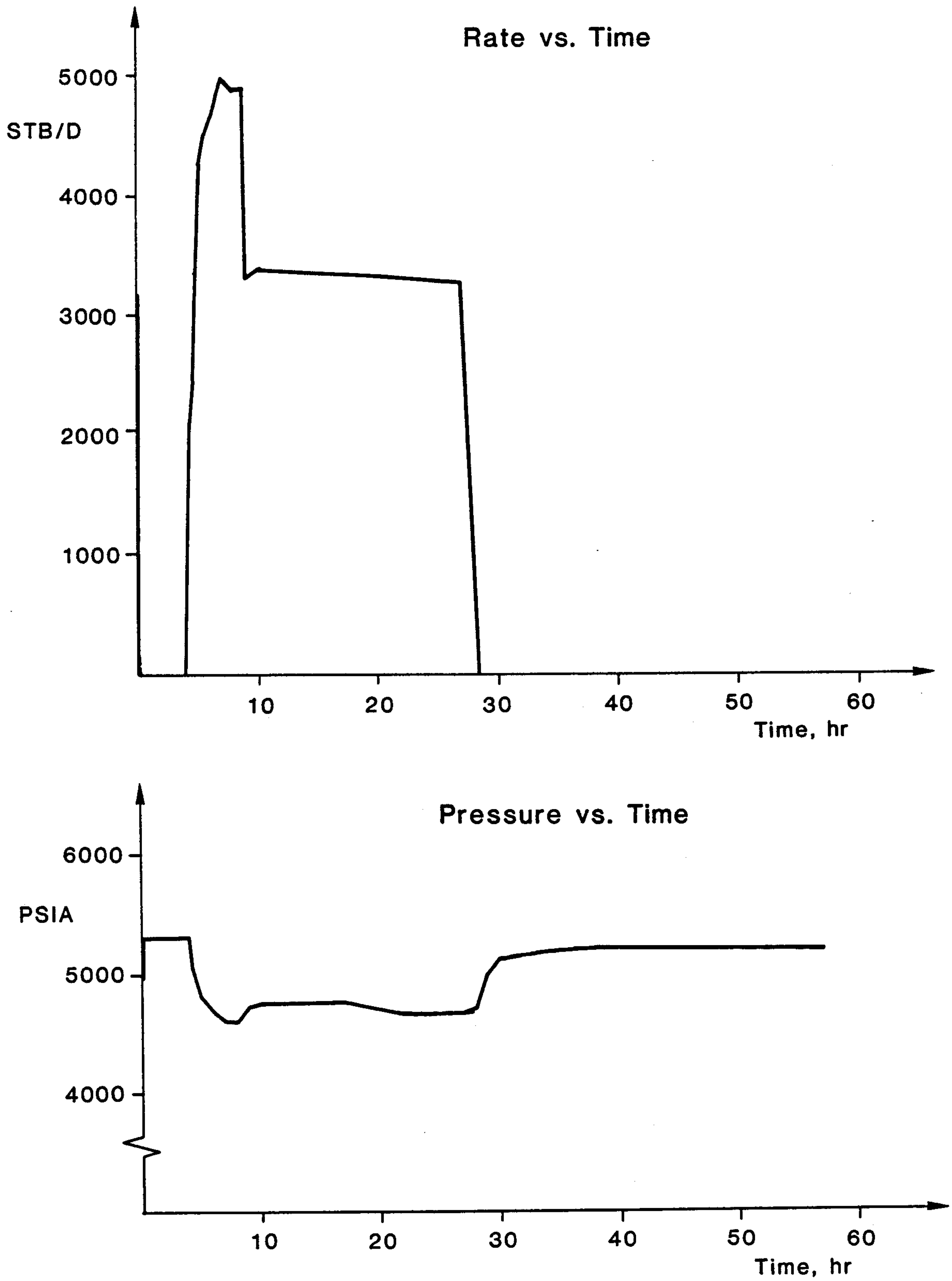
FIGURE 5.3: BOTTOM HOLE PRESSURE AND FLOW RATES

WELL: 34/7-6 DST NO. 2



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REF. EPF	

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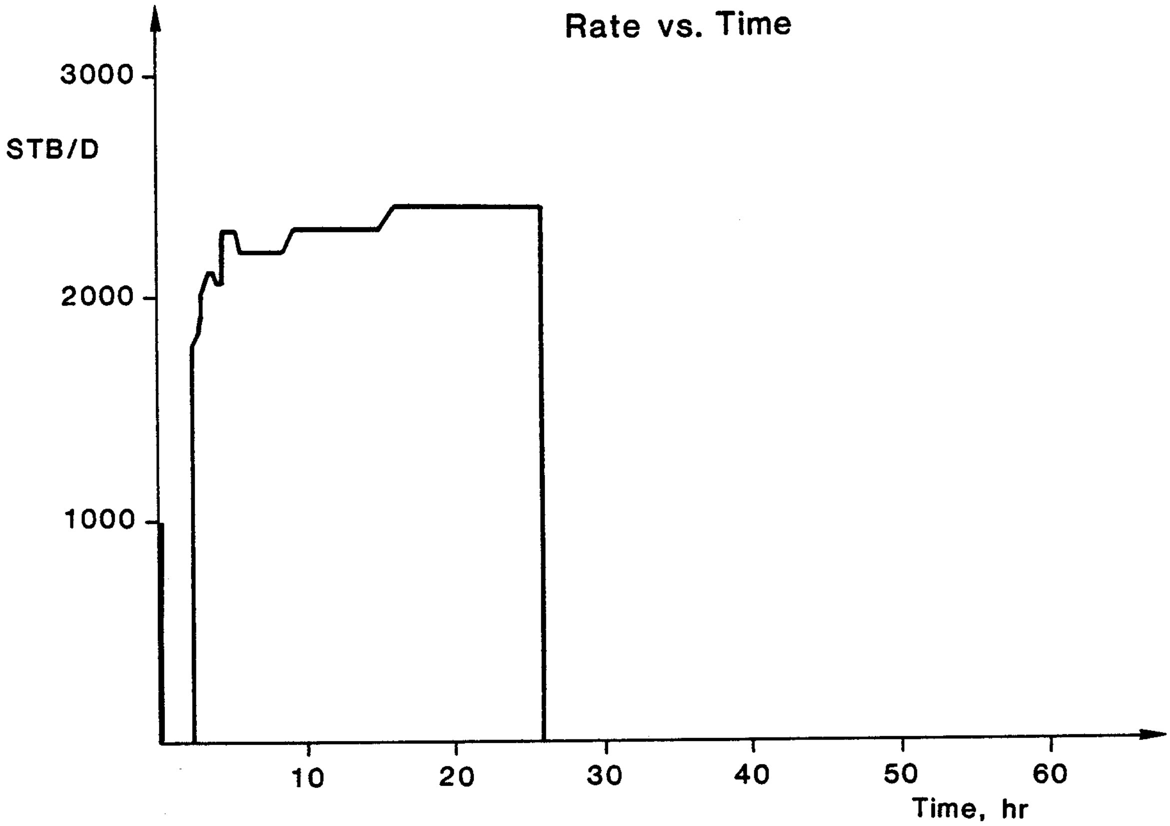
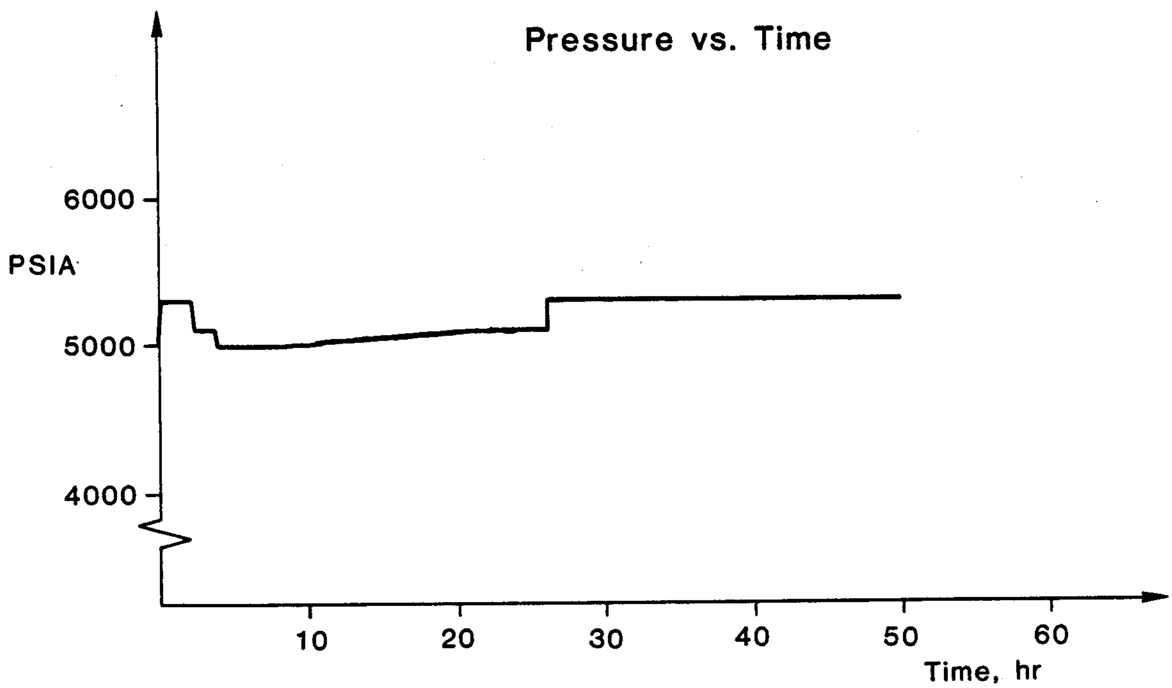
FIGURE 5.4: BOTTOM HOLE PRESSURE AND FLOW RATES

WELL: 34/7-6 DST NO. 3A





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REF. EPF	

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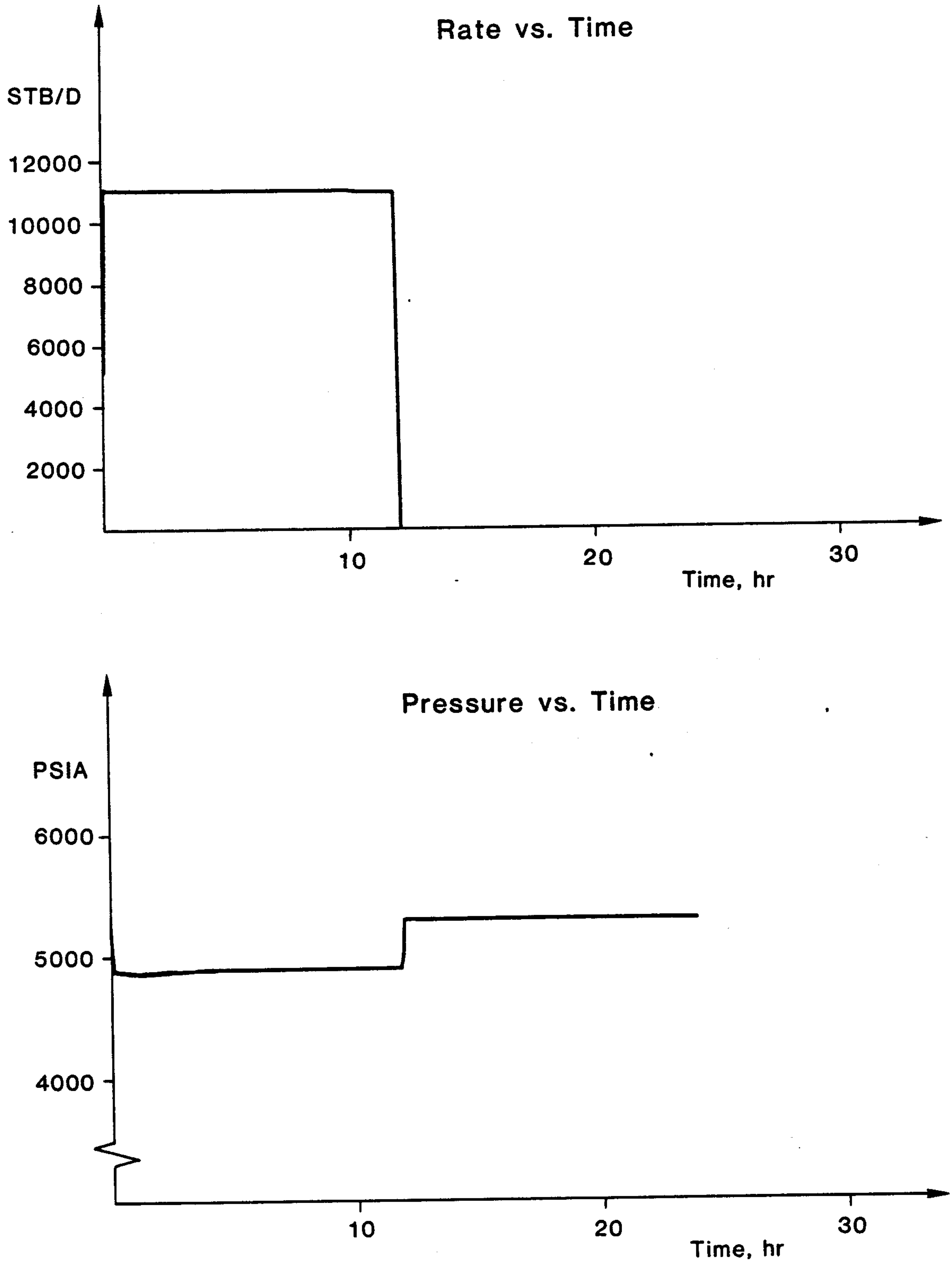
FIGURE 5.5: BOTTOM HOLE PRESSURE AND FLOW RATES

WELL: 34/7-6 DST NO. 3B



DATE 9/85	AUTH. ThS
DRAW.BY AMJo	APPR.
REF. EPF	

6. DRILLING DATA

If not otherwise mentioned, all depths in this chapter refer to m RKB (Rotary Kelly Bushing).

6.1 Operation

36" Section

The well was spudded at 1650 hrs on March 17, 1985. TGB was run and waterdepth recorded to 333 m RKB.

36" hole was drilled to 460 m using a 26" bit and 36" holeopener. 30" casing was run and landed with the shoe at 455 m. Minor problems occured during mixing cement. Had good returns during cement job.

26" Section

Before running the séabed diverter and riser, the 30" casing shoe was drilled out with a 26" bit.

After 6 joints of riser was run, fluid started to leak through the control hose for the upper latch on the seabed diverter. The seabed diverter was pulled and all four cylinders on the upper latch were changed out before the seabed diverter was rerun and latched onto the 30" wellhead housing.

The section was simultaneously drilled, underreamed and logged in three runs. One run was a misrun due to malfunction of the MWD tool. Due to increasing inclination, drilling rate had to be kept at 10 - 12 m/hr. 26" hole was drilled down to 965 m.

After reaching T.D. the dumpvalve on the seabed diverter was opened and the well observed for flow. The hole and casing was displaced to 1.18 s.g. mud. The riser was displaced to seawater and the seabed diverter pulled.

Before running the 20" casing a check trip with a 26" bit was made.

The 20" casing was run and landed with the shoe at 935 m on March 25, 1985.

17 1/2" Section

The BOP stack was run on riser, latched onto the 18 3/4" wellhead housing and pressure tested before drilling out the 20" casing shoe and performing a leak-off test. A leak-off value of 1.55 s.g. was obtained.

The section was drilled to 1895 m in two bit runs. A MWD tool was used for deviation surveys and formation logging. A packed bottom hole assembly was used when drilling the section causing hole angle up to 3 degrees.

Prior to logging, mudweight was increased from 1.46 to 1.50 s.g. One log run with DIFL, LSBHC, GR and CDL was done.

A clean out trip to T.D. was done and 13 3/8" casing was run and landed with casing shoe at 1876 m on March 31, 1985.

While cementing the casing, had partial returns due to lost circulation after approximately half of the cement volume was displaced.

12 1/4" Section

The 13 3/8" casing shoe plus 5 m of new formation was drilled and a leak-off test was performed. A leak-off value of 1.91 s.g. was obtained.

The section was drilled down to 2516 m in two bit runs. On the first bit run a pendulum assembly was used to reduce the hole angle.

10 cores were cut over the interval 2516 to 2624 m.

After logging through the reservoir with the MWD-tool, drilling continued in two bit runs down to 2913 m.

The corebarrel was made up and two cores were cut in the Upper Lunder Unit D down to 2953 m.

One more bit run was made to end the section at 3015 m.

Four log runs, 7 FMT runs, 2 SWC runs and a velocity survey were run.

The 9 5/8" casing was run and landed with the shoe at 3000 m on April 24, 1985

8 1/2" Section

The 9 5/8" casing shoe and 5 m of new formation was drilled and a leak-off test was performed. A leak-off value of 2.01 s.g. was obtained.

A junk bit and junk basked was used to drill the casing shoe and new formation down to 3024 m, as 14 corechambers were lost in the hole on th last SWC run.

The bit and junk basket was pulled, but no metal was found in the basket.

The section was drilled down to corepoint at 3560 m in 3 bit runs.

One core was cut from 3560 m to 3578.5 m. One more bit run was made to end the section at 3685 m.

Four log runs, two FMT runs, three SWC runs and a velocity survey were made.

The section was plugged back to 2925 m by using 4 cement plugs, and the mud weight was increased to 1.70 s.g.

Testing

A 9 5/8" casing scraper was run on tubing to 2790 m. The mud was conditioned and the scraper pulled out.

A mechanical bridge plug was set at 2920 m on wireline, and the 9 5/8" casing was pressure tested to 375 bar.

A dummy run with fluted hanger and subsea test tree was made to space out before running in with 5" test string. The test string was pressure tested regularly while running in.

A CCL log was then run for depth correlation, and the string was found to be 3 m too short.

The landing string was pulled out and a 3 m pup joint was made up below the fluted hanger.

The test string was landed in the wellhead and the RTTS packer set at 2649 m.

The test string was pressured up, and the 9 5/8" casing was perforated from 2679 m to 2687 m.

The well was opened up for initial flow (2 m^3) and shut in for two hrs.

After the Must valve assembly was run and installed, the well was opened up for main flow on a 32/64" choke.

The well was flowed for 21 hrs and shut in for 20 hrs.

After the shut in period, the well was opened up on a 12/64" choke for bottom hole sampling.

The well was then killed by bullheading 1.70 s.g. mud down the test string.

A cement retainer was set at 2674 m and cement was squeezed through the perforations.

The 9 5/8" casing was then perforated from 2950 m to 2593 m. A cement retainer was set at 2587 m, and cement was squeezed through the perforations.

A CBL was run and indicated poor bonding behind casing.

The 9 5/8" casing was perforated from 2545 m to 2547 m.

A balanced cement plug was set across the perforations and 0.7 m^3 cement was squeezed through the perforations.

A bit and casing scraper was run and the mud conditioned.

A CBL was run and indicated improved cement bonding.

The test string was run and landed in the wellhead. A CCL log was run for depth correlation and the RTTS packer was set at 2519.4 m.

The Geovann detonating bar was dropped, and the 9 5/8" casing perforated for DST 2.

After initial flow and shut in, the well was opened up on 24/64" choke for main flow. The well was flowed for 24 hrs and shut in for 10.5 hrs.

After the well was killed, the string was pulled free with an overpull of 70 m/t.

The string was pulled out, and it was found that 43 m of tailpipe was left in the hole.

A junk mill and casing scraper was run and the tailpipe was pushed down from 2533 m to 2545 m.

A cement retainer was set at 2542 m and cement squeezed through the perforations.

The cement retainer was then pressure tested to 345 bar, but pressure dropped to 69 bar in 5 minutes.

After the casing above the retainer was pressure tested using a RTTS packer, another cement retainer was set at 2540.5 m. 2.5 m^3 cement was squeezed below the retainer.

After the mud was conditioned a mechanical bridgeplug was set at 2539.3 m.

The 9 5/8" casing was perforated from 2518.5 m to 2522.5 m prior to running the test string for DST 3A.

After all the tubing was run, a leak in the string was detected. The string was pulled, and the drill pipe tester valve was found to be washed out.

The DPT valve was changed out and the test string run again.

A CCL run was made for depth correlation and the packer had to be reset twice in order to get it at correct detph.

Due to leakage in a control line to the SSTT, the tree had to be disconnected and the landing string pulled out. The leakage was detected 60 m below lubricator valve. The control line was repaired and the SSTT was latched on again.

After the RTTS packer was reset, the well was opened up.

After initial flow and shut in, the well was opened up on a 17/64" choke. The well was flowed for 24 hrs and shut in for 24 hrs.

The Geovan detonator bar was then dropped and the 9 5/8" casing perforated for DST 3B.

After initial flow and build up, the well was opened up on a 36/64" choke for main flow.

The well was flowed for 12 hrs and shut in for 12 hrs.

After the well was killed by bullheading 1.70 s.g. mud, the test string was pulled out.

A cement retainer was set at 2510 m, and cement was squeezed through the perforations.

Plug and Abandonment

The 9 5/8" casing was perforated at 404 m and cut at 454 m. The cut off casing was retrieved and the casing overlap pressure tested to 104 bar.

The 13 3/8" casing was perforated at 409 m and cut at 401 m. The cut off casing was retrieved and the casing overlap pressure tested to 34 bar.

A cement plug was set from 576 m to 365 m.

After the BOP stack was pulled, the 20" and 30" casing was cut at 339 m.

The cut off casings and the PGB was retrieved with the 18 3/4" R.T.

The TGB was retrieved without problems.

Last anchor was on bolster at 1230 hrs on May 31, 1985.

No	Size	Make	Type	Ser.no.	Jets 32 inch	Depth out	Drld depth	Hrs	m/HR	WOB tons	RPM	Dull.cond. T	B	G	Other	Bitactivity	Rem
1	26	VAREL	L3A	10391	24-24-24	460.0	127.0	15.0	8.5	2/9	95/95	3	6	I		DRILLING	*
2	26	TRISTA	LWA	31463	6 X 10	759.0	299.0	31.5	9.5	2/5	125/125	6	7	I		DRILLING	*
2 RR	26	TRISTA	LWA	31463	6 X 10	765.0	6.0	1.0	6.0	5/5	120/120					DRILLING	*
3	26	TRISTA	LWA	31462	4X10 2X16	965.0	200.0	30.5	6.6	5/7	120/120	4	5	I		DRILLING	*
4	17-1/2	SMITH	SDS	XD 7961	18-18-18-16	1268.0	303.0	20.0	15.1	8/15	110/110	5	2	1/8		DRILLING	
5	17-1/2	SMITH	SDS	XB 1514	20-20-20	1895.0	627.0	38.0	16.5	8/15	110/140	4	4	1/8		DRILLING	
6	12-1/4	SMITH	SDGH	XD 7501	18-18-18	2076.0	181.0	18.5	9.8	10/10	140/160	3	3	1/16		DRILLING	
7	12-1/4	REED	HP11J	CDM554	18-18-18	2516.0	440.0	58.5	7.5	20/20	125/125	6	7	1/8		DRILLING	
8	12-1/4	CHRIST	SC226	121187		2527.5	11.5	4.5	2.6	20/20	90/90				15%	CORING	
8 RR	12-1/4	CHRIST	SC226	121187		2543.0	15.5	7.0	2.2	20/20	90/90				15%	CORING	
8 RR	12-1/4	CHRIST	SC226	SC226		2546.5	3.5	3.0	1.2	20/20	90/120				15%	CORING	
9	12-1/4	CHRIST	RC 476	110595		2549.0	2.5	2.0	1.8	20/20	90/120				5%	CORING	
8 RR	12-1/4	CHRIST	SC226	121187		2557.5	8.5	8.0	1.1	20/20	90/120				20%	CORING	
8 RR	12-1/4	CHRIST	SC226	121187		2568.5	11.0	6.0	1.8	20/20	90/120				30%	CORING	
10	12-1/4	CHRIST	SC226	1450097		2582.0	13.5	6.5	2.0	20/20	90/120				5%	CORING	
10RR	12-1/4	CHRIST	SC226	1450097		2598.5	16.5	14.5	1.1	10/16	50/90				10%	CORING	
10RR	12-1/4	CHRIST	SC226	1450097		2612.5	14.0	13.5	1.0	18/18	80/80				15%	CORING	
10RR	12-1/4	CHRIST	SC226	1450097		2624.0	11.5	12.0	1.0	22/22	80/80				15%	CORING	
11	12-1/4	HTC	J 22	420	DL	2823.0	199.0	49.0	4.1	23/23	60/90	1	5	I		DRILLING	
12	12-1/4	HTC	X1G	427 JF	15-15-16	2913.0	90.0	16.0	5.6	23/23	80/80	6	5	I		DRILLING	
10RR	12-1/4	CHRIST	SC226	1450097		2927.0	14.0	4.5	3.1	9/9	110/110				35%	CORING	
10RR	12-1/4	CHRIST	SC226	1450097		2953.0	26.0	10.5	2.5	9/9	110/110				45%	CORING	
13	12-1/4	HTC	X1G	186MF	16-16-16	3015.0	62.0	11.0	5.6	20/20	90/90	3	4	I		DRILLING	
14	8-1/2	HTC	R8	601COF	12-12-12	3024.0	9.0	7.0	1.3	5/9	50/70	4	8	I		DRILLING	*
15	8-1/2	HTC	JD3	891JK	12-12-12	3142.0	118.0	21.0	5.6	5/15	80/100	4	6	I		DRILLING	
16	8-1/2	CHRIST	R482	1062314	11-12-13	3448.0	306.0	68.0	4.5	5/12	130/130	7	6	I		CORING	
17	8-1/2	HTC	J33	899VL	12-12-12	3560.0	112.0	31.5	3.6	5/14	60/60	1	3	I		DRILLING	
18	8-1/2	CHRIST	RC476	1440644		3578.5	18.5	3.5	5.3	3/9	90/90	1	0	I		CORING	
19	8-1/2	HTC	J22	142BK	12-12-13	3685.0	106.5	15.5	6.9	10/18	60/100	1	4	I		DRILLING	

No	Size	Make	Type	Ser.no.	Remarks
1	26	VAREL	L3A	10391	Drilled 10m cement.
2	26	TRISTATE	LWA	31463	Underreamer with 17-1/2" HTC OSC3AJ
2 RR	26	TRISTATE	LWA	31463	POOH due to mwd-tool not working. Turbine plugged
3	26	TRISTATE	LWA	31462	Underreamer with 17-1/2" HTC OSC 3J.
14	8-1/2	HTC	R8	601COF	Drilled 25m of cement in shoe.

6.1.2 **Bottom Hole Assemblies**

Well no: 34/7-6

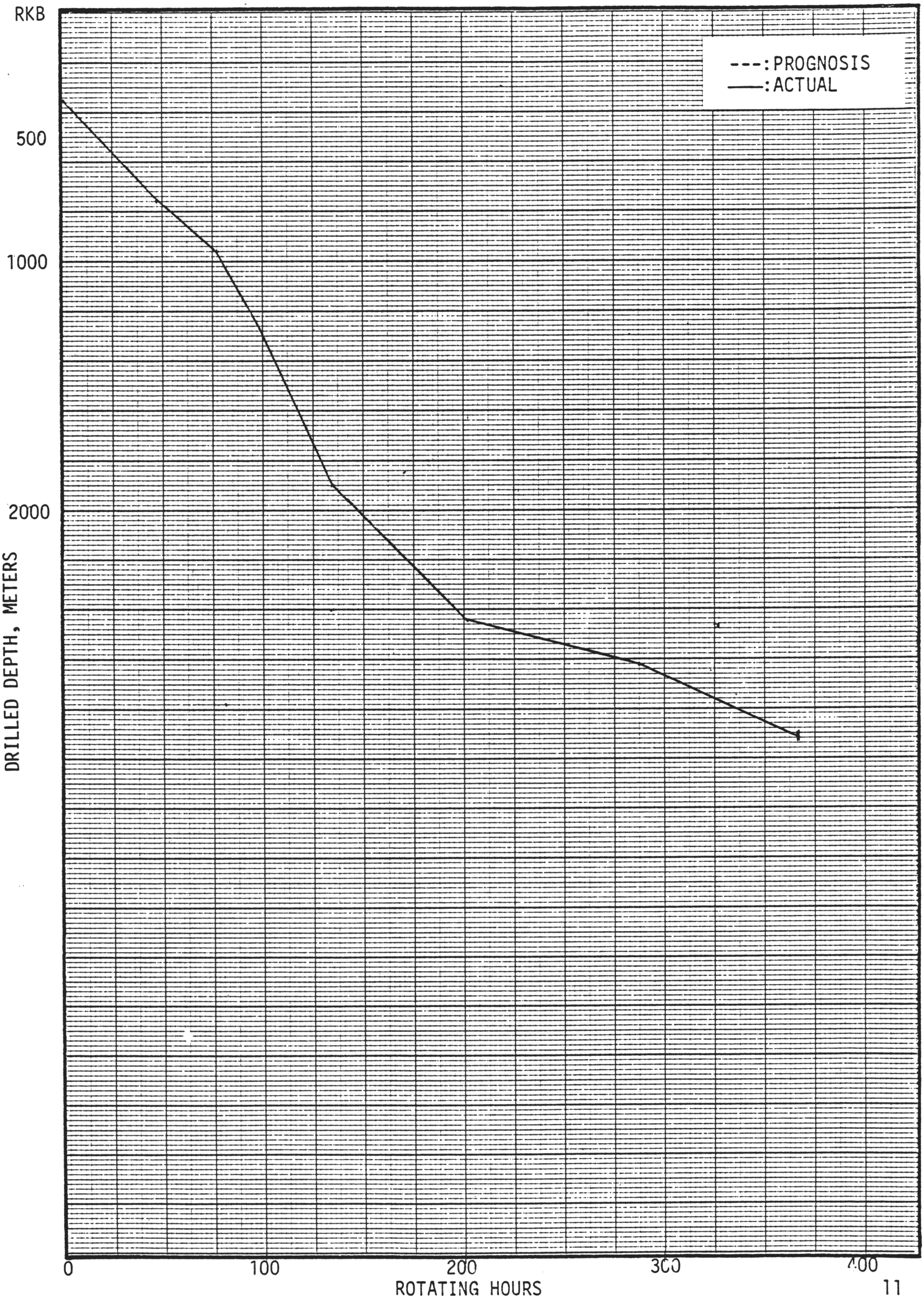
Saga Petroleum a.s.

BIT SIZE	DEPTH INTERVAL	DESCRIPTION	COMMENTS
26"+36" H.O	333 - 400	26" bit/36" H.O/bit sub/6 x 9½" DC/ x/o/7 x 8 DC/X/0/ 15 HWDP.	
17½+26" U.R	460 - 965	17½ bit/bit sub/9" MWD/x/o/26" UR/bit sub w float/9 5/8 monel/6 x 9 5/8 DC/x/o/6- 8" DC/7 3/4" jar/ 3 x 8" DC/x/o/9 HWDP	
17½	965 - 1895	Bit/Nb stab/9" MWD/ x/o/Stb/8" monel/8" DC/Stab/11 x 8" DC/7 3/4" jar/3 x 8" DC x/o/ 15 x HWDP	
12 1/4	1895 - 2076	Bit/bit sub/8" MWD/x/o/ x/o /8" monel/stab/ 15 x 8" DC/7 3/4" jar/3 x 8" DC/x/o/HWDP/dart sub/14 x HWDP	
12 1/4"	2076 - 2516	Bit/Nb stab/8" MWD/stab/8" monel/8" DC/s tab/14 x 8" DC/7 3/4" jar/3 x 8" DC/x/o/HWDP/dart sub/14 - HWDP	
12 1/4"	2516 - 2546,5	Corehead/60' corebarrel/1 x 8" DC/stab/12 x 8" DC/jar/3 x 8"DC/x/o/1 HWDP/dart sub/14 HWDP	
12 1/4"	2546,5- 2624	Corehead/60' corebarrel/2 x 8" DC stab/11 x 8" DC/ jar/ 3 x 8" DC/x/o/1 HWDP/dart sub/14 HWDP	
12 1/4"	2624 - 2913	Bit/Nb stab/MWD/stab/monel/ 1 x 8" DC/ stab/14 x 8" DC/jar/3x8" DC/ x/o/1 HWDP/dart sub/14 HWDP	
12 1/4"	2913 - 2927	corehead/90' corebarrel/ 2 x 8" DC/stab/ 11 x 8" DC/ jar/3 x 8" DC/x/o/1 HWDP/dart sub/14 HWDP	
12 1/4"	2927 - 2953	Corehead/90' corebarrel/1 x 8" DC/stab/ 12 x 8"DC/jar/3 x 8" DC/x/o/1 x HWDP/dart sub/14 HWDP	
12 1/4"	2953 - 3015	Bit/NB stab/MWD/stab/monel/1x8"DC/stab/14x8"DC/jar/3x8"DC/X/0/1xHWDP/Dart sub/14 HWDP	
12 1/4"	-	Bit/junk-sub/NB-stab/monel/1 x 8" DC/stab/14 x 8" DC/jar/3 x 8" DC/x/o/1 x HWDP/dart sub/14 x HWDP	
8 1/2"	3015 - 3024	Bit/junk sub/junk sub/ bit sub/monel/12 x 6½"DC/jar/3 x 6½"DC/1 HWDP/dart sub/14 x HWDP	
8 1/2"	3024 - 3560	Bit/Nb stab/7" MWD/stab/6½"monel/6½"DC/stab/14 x 6½"DC/jar/3 x 6½"DC/1 x HWDP/dart sub/14 x HWDP	
8 1/2"	3560 - 3578.5	Corehead/60' corebarrel/1 x 6½"DC/stab/14 x 6½"DC/jar/3 x 6½" DC/1 x HWDP/dart sub/14 x HWDP	
8 1/2"	3578.5 - 3685	Bit/Nb stab/7" MWD/stab/6½" monel/6½" DC/stab/14 x 6½"DC/jar/3 x 6½" DC/1 x HWDP/dart sub/14 x HWDP	

6.1.3 Rotating Hours vs. Drilled Depth

Well no: 34/7-6

Saga Petroleum a.s.



6.2.1 **Mud Properties,Daily Report**

Well no: 34/7-6

Saga Petroleum a.s.

DATE	HOLE SIZE INCHES	DEPTH METERS	MUD WEIGHT ppg	P.V.	Y.P.	GEL STRENGHT	n	K	WATER LOSS	pH	ALKALINITY Pf/Mf	Ca+ ppM	CL- ppM	SAND %	SOLIDS %	COMMENTS
17/3 85	36"	390							SPUD	MUD						
18/3	36"	460	1.08						SPUD	MUD						
19/3	36"	460	1.08						SPUD	MUD						
20/3	26"	560	1.08													
21/3	26"	750	1.10	8	47	38/42	.196	16.221	N/C	8.9	.1/.3	160	7000	TR	6	
22/3	26"	817	1.10	8	43	30/33	.210	11.893	N/C	9.5	.1/.3	160	9000	TR	8	
23/3	26"	965	1.11	10	45	34/35	.068	11.829	-	9.5	.1/.3	200	11000	TR	9	
24/3	26"	965	1.18	11	44	32/33	.263	10.676	N/C	9.3	.1/.4	220	11500	TR	11	
25/3									MIXING MUD GYP-POLYMER							
26/3	17 1/2"	970	1.10	12	16	3/5	.514	1.133	6	10.0	.1/.4	1480	21000	TR	5	
27/3	17 1/2"	1268	1.10	14	17	4/7	.537	1.088	5	9.7	.1/.4	2000	20000	TR	6	
28/3	17 1/2"	1551	1.20	20	25	6/10	.530	1.649	5	9.5	.11/.3	1800	21000	TR	7	
29/3	17 1/2"	1878	1.46	33	21	7/14	.688	.741	5	9.2	.11/.2	1800	21000	TR	15	
30/3	17 1/2"	1895	1.50	36	25	7/15	.669	.942	6	9.2	.1/.2	2000	21000	TR	17	LOGGING
31/3	17 1/2"	1895	1.50	33	24	7/16	.659	1.011	6.5	9.3	.11/.2	2000	21000	TR	17	RUN CSG/CMT CSG
1.4	12 1/4"	1890	1.50	27	33	8/30	.536	2.124	16	10.5	.2/.4	2320	20000	TR	18	MUD CMT CONT.
2.4	12 1/4"	2076	1.58	36	30	22/45	.628	1.317	5.5	10.6	.1/.8	1920	20000	TR	19	
3/4	12 1/4"	2280	1.68	25	17	10/41	.673	.630	6.0	10.3	.15/1.0	2400	17000	TR	22	
4/4	12 1/4"	2446	1.72	22	20	15/46	.607	.952	6.3	10.4	.1/.9	1600	19000	TR	24	
5/5	12 1/4"	2516	1.72	20	20	13/39	.585	1.044	5.5	10.1	.1/.9	1640	19000	TR	24	
6/4	12 1/4"	2543	1.72	24	18	9/36	.652	.720	5.0	10.4	.1/.9	1800	18000	TR	24	
7/4	12 1/4"	2553	1.72	23	16	3/25	.668	.601	5.0	9.8	.05/.9	2000	18000	TR	24	
8/4	12 1/4"	2557	1.72	23	16	3/25	.668	.601	5.0	10.3	.05/.8	2000	18000	TR	24	
9/4	12 1/4"	2582	1.72	26	18	5/35	.670	.677	4.0	10.6	.3/.9	1560	18000	TR	24	
10/4	12 1/4"	2601	1.72	26	14	3/17	.722	.470	4.3	10.5	.15/1.2	1560	15000	TR	24	
11/4	12 1/4"	2618	1.72	26	14	3/22	.722	.470	4.0	10.5	.1/.11	1700	14000	TR	24	
12/4	12 1/4"	2635	1.72	28	15	4/26	.723	.473	4.0	10.2	.15/1.2	1900	14000	TR	24	
13/4	12 1/4"	2730	1.70	26	15	3/24	.708	.496	4.5	10.3	.15/.9	1800	13000	TR	24	
14/4	12 1/4"	2828	1.70	27	13	4/31	.73	.43	4.5	10.5	.15/.8	1480	12000	TR	24	
15/4	12 1/4"	2912	1.70	27	13	4/30	.73	.43	5	10.3	.15/.7	1400	12500	TR	24	
16/4	12 1/4"	2940	1.70	23	15	5/26	.90	.14	4.8	10.3	.1/1.3	1200	12000	TR	24	
17/4	12 1/4"	3015	1.70	25	15	5/26	.70	.51	4.6	10.3	.2/1.2	1140	11000	TR	24	

6.2.1. Mud Properties,Daily Report

Well no: 34/7-6

Saga Petroleum a.s.

DATE	HOLE SIZE INCHES	DEPTH METERS	MUD WEIGHT ppg	P.V.	Y.P.	GEL STRENGHT	n	K	WATER LOSS	pH	ALKALINITY Pf/Mf	Ca+ ppM	CL- ppM	SAND %	SOLIDS %	COMMENTS
18.4.	12 1/4	3015	1.70	26	16	6/29	.69	.57	4.7	10.0	.2/1.1	1140	11000	TR	24	Logging
19.4.	12 1/4	3015	1.70	26	15	5/29	.71	.49	4.7	9.8	.2/1.0	1140	11000	TR	24	"
20.4.	12 1/4	3015	1.69	23	15	5/25	.68	.55	4.5	10.3	.2/1.0	1080	11000	TR	23	Log.Wipertr.Log
21.4.	12 1/4	3015	1.69	24	16	6/28	.68	.58	4.5	10.0	.2/1.0	1080	11000	TR	23	Logging
22.4.	12 1/4	3015	1.69	24	15	5/26	.69	.53	4.6	10.4	.2/1.8	1100	11000	TR	23	Run 9 5/8 csg.
23.4.	8½	3017	1.64	22	15	5/25	.67	.57	5	11.4	.3/1.5	840	11000	TR	22	Cmt. csg.
24.4.	8½	3070	1.55	20	14	4/17	.67	.52	5	11.3	.3/1.2	800	11000	TR	20	Drl. 8½"
25.4.	8½	3149	1.55	19	15	4/21	.667	.553	5	11.1	.3/1.3	850	10000	TR	19	Drl. 8½"
26.4.	8½	3300	1.55	20	16	4/28	.637	.704	6.2	10.5	.2/1.1	840	10000	TR	19	Drl. 8½"
27.4.	8½	3395	1.55	22	14	4/24	.688	.515	5.8	10.3	.2/1.0	770	9500	TR	19	Drl. 8½"
28.4.	8½	3448	1.55	20	14	5/29	–	–	5.6	10.3	.2/1.1	760	10000	TR	19	POOH for bit
29.4.	8½	3522	1.55	23	16	4/25	.668	.605	5.0	9.9	.15/1.0	440	10000	TR	20	Drlg. ahead
30.4.	8½	3578	1.55	23	14	4/24	–	–	5.0	10.3	.2/1.0	360	9500	TR	20	Cut core no. 13
1.5.	8½	3658	1.55	23	14	4/20	.697	.479	5.0	9.9	.2/1.0	360	10000	TR	20	Drlg. ahead
2.5.	8½	3685	1.56	24	15	5/25	.69	.53	5.0	10.1	.2/1.0	360	10000	TR	21	Drl. to TD log
3.5.	8½	3685	1.56	23	15	5/25	.68	.55	5.0	10	.2/1.0	360	10000	TR	21	Logging
4.5.	8½	3315	1.55	22	14	4/24	.69	.52	5.0	10	.2/1.1	360	10000	TR	21	Start plug back
5.5.	8½	2925	1.70	23	16	6/26	.668	.605	6.0	11	.4/1.2	480	10000	TR	22	Weighted up to 1.70sg
6.5.	8½	2970	1.70	21	12	4/23	.710	.394	6.0	10.8	.4/1.2	440	10000	TR	22	Run bit&scraper.Circ.
7.5.	8½	2920	1.70	22	13	4/24	.703	.437	6.0	10.8	.4/1.2	440	10000	TR	22	Ran test-string
8.5.	8½	2920	1.70	22	13	4/24	.703	.437	6.0	10.8	.4/1.2	440	10000	TR	22	Testing
9.5.	8½	2920	1.70	23	13	4/23	.712	.425	6.0	10.7	.4/1.2	440	10000	TR	22	Testing
10.5.	8½	2920	1.70	23	13	4/23	.712	.425	6.0	10.7	.4/1.2	440	10000	TR	22	Testing
11.5.	8½	2674	1.70	21	13	4/24	.693	.452	6.5	10.5	.2/.5	440	10000	TR	22	Bullhead-squeeze
12.5.	8½	2587	1.70	22	13	4/24	.703	.437	8.0	10.5	.15/.4	560	10000	TR	22	Squeeze-run bit&scraper
13.5.	8½	2590	1.70	20	11	5/23	.718	.352	8.0	10.8	.15/.35	600	10000	TR	22	Logging-squeeze
14.5.	8½	2590	1.65	22	12	5/24	.719	.384	9.0	10.0	.10/.25	380	11000	TR	21	Logging-ran teststring
15.5.	8½	2590	1.65	15	12	5/24	.637	.508	9.5	10.3	.10/.25	440	12000	TR	21	Testing
16.5.	8½	2590	1.70	20	12	10/25	.700	.407	20	11	.2/.4	2000	17000	TR	22	Weigh up activ-testing
17.5.	8½	2590	1.70	20	12	10/25	.700	.407	20	11	.2/.4	2000	17000	TR	22	Testing
18.5.	8½	2590	1.70	20	13	10/25	.683	.466	20	11	.2/.6	2000	15000	TR	22	Test - bullhead
19.5.	8½	2542	1.70	18	13	10/25	.660	.506	20	10.9	.2/.6	1800	15000	TR	22	Milling - squeeze

6.2.1. Mud Properties,Daily Report

Well no: 34/7-6

Saga Petroleum a.s.

DATE	HOLE SIZE INCHES	DEPTH METERS	MUD WEIGHT ppg	P.V.	Y.P.	GEL STRENGHT	n	K	WATER LOSS	pH	ALKALINITY Pf/Mf	Ca+ ppM	CL- ppM	SAND %	SOLIDS %	COMMENTS
20.5.	8½	2540	1.70	19	13	10/25	.672	.484	20	10.9	.2/.7	1800	14000	TR	22	Squeeze - circ.
21.5.	8½	2540	1.70	19	13	8/25	.672	.484	20	11.1	.2/.9	1700	14000	TR	22	Run test-string
22.5.	8½	2540	1.70	19	13	11/25	.672	.484	25	11	.2/.9	2800	17000	TR	22	Misrun w/test-string
23.5.	8½	2540	1.70	19	13	11/25	.672	.484	25	11	.2/.9	2800	17000	TR	22	Prep. for testing
24.5.	8½	2540	1.70	18	14	12/28	.643	.580	30	11.2	.2/.9	5000	23000	TR	22	Testing/treat mud
25.5.	8½	2540	1.66	17	15	12/28	.614	.696	30	11	.2/.9	4000	23000	TR	22	Testing
26.5.	8½	2540	1,66	17	14	12/28	.630	.610	30	11	.2/.9	4000	23000	TR	22	Testing
27.5.	8½	2540	1.70	17	14	12/28	.630	.610	30	10.8	.2/.9	3600	23000	TR	22	Bullhead, weight up
																to 1.70
28.5.	8½	2510	1.70	17	14	12/28	.630	.610	30	10.8	.2/.9	3600	23000	TR	22	Squeeze, perf 9 5/8csg.
29.5.	-	-	1.70	17	14	12/28	.630	.610	30	10.8	.2/.9	3600	23000	TR	22	Displaced riser
																End

SAGA PETROLEUM A.S. 6.2.2 MUD MATERIALS USED

Well no: 34/7-6

Materials	Unit	36 in hole	26 in hole	17-1/2 hole	12-1/4 hole	8-1/2 hole	Total
BARITE	M/T	0	74	396	1117	366	1953
BICARBONATE	50 KG	0	0	0	15	15	30
CAUSTIC SODA	25 KG	10	19	56	189	46	320
DRISPAC REG	50 LB	0	0	97	0	3	100
DRISPAC S/L	50 LB	0	0	0	171	14	185
GYPSUM	50 KG	0	0	341	211	0	552
LD-8	5 GAL	0	0	3	3	2	8
LIGCO	25 KG	0	0	0	0	12	12
LIGCON	50 LB	0	0	0	0	149	149
LIME	40 KG	2	0	1	4	0	7
MD	200 L	0	0	0	1	0	1
MILBIO	55 GA	0	0	6	0	0	6
MILPOL 302	25 KG	0	0	160	1	0	161
PERMALOSE	25 KG	0	0	233	40	0	273
PRO-DEFOAMER	25 L	0	0	0	4	11	15
SODA ASH	50 KG	1	1	0	0	14	16
W.O.21	25 KG	0	3	0	1	3	7
BENTONITE	M/T	7	35	5	8	23	78
PRO-THIN	25 KG	0	0	0	607	176	783
CACL2	25 KG	0	0	0	0	3036	3036

6.3 Casing Data

Well no: 34/7-6

Saga Petroleum a.s.

SIZE INCHES	DATE RUN	GRADE	NO OF JOINTS	TOTAL LENGTH M	WEIGHT LBS/FT	COUPLINGS	SHOE DEPTH M-RKB	FLOAT COLL DEPTH M-RKB	CENTRALIZERS JOINT NO.	REMARKS
30"	18.3.85	B	10	123,65	309	ST-2	455	-	-	
20"	24.3.85	X-56	49	603,5	133	LS	935	920	Bowtype at 885 m 897m, 909m, 922m, & at 932m Positive type at 437m & 449m	
13 3/8"	31.3.85	N-80	131	1544,66	72	Buttress	1876	1852	Bowtype at 1804m, 1816m, 1827m, 1839m, 1849m, 1863m, & 1873m Positive type at 930 m & 941 m	Connection torque : 10.500 - 11.000 ft. lbs Packoff torque : 12.500 ft. lbs (low torque packoff)
9 5/8"	23.4.85	N-80	215	2669,4	47	Buttress	3000	2975	Bow type: 2492,6 - 2505,2 2517,5 - 2530,1 2542,4 - 2555,1 2889,8 - 2901,1 2913,8 - 2926,3 2938,5 - 2951,3 2963,5 - 2981,4 2987,6 & 2997,0 Positive type: 1853.0-1865.5	Connection torque : 10.000 - 10.500 ft. lbs Packoff torque : 12.000 ft. lbs

6.4 **Cement Data**

Well no: 34/7-6

Saga Petroleum a.s.

DATE	JOB DESCRIPTION	SHOE DEPTH M-RKB	CEMENT TYPE	SLURRY WEIGHT PPG	VOLUME USED SACKS	ADDITIVES	MIX WATER	LOSSES BBLS	REMARKS:
18.3	30" Csg	455	"G"	L:1,56 T:1,92	L: 61,1 T: 16,3	A-3L:4,0 A-7L: 3,55	sw:93,6 sw:40,9		Due to malfunction of the pump controlling the gate valve, the slurry had to be jet-mixed. A stinger was run to 445 m before circulating casing volume & mixed & pumped lead & tail slurries. Had good returns all the time.
25.3	20" Csg	935	"G"	L:1,56 T:1,92	L:147,3 T: 16,1	A-3L:3,55 R-12L: 1,42 Neat	sw: 91,6 sw: 44,0	-	Pumped 30 bbls of seawater ahead of slurry as a space. mixed & pumped lead & tail slurries according to program. Dropped dart & displaced with BJ to share wiper plug. No pressure increase indicating shearing of plug was observed so wiper plug probably sheared during pumping of cmt. slurry. Casing volume was displaced w/rig pumps, bumping of plug was of course not obtained. It was necessary to hold pressure on displacement line due to leaking float, and one waited for 2 hrs after finishing displacement for cement to set. When drilling out shoe, traces of cement were found 20 m high, but there was no problem to drill.
31.3-1.4	13 3/8" Csg	1876	"G"	L:1,56 T: 1,90	L:73,4 T:16,3	2,25% cmt weight D-31LN: 1,78 R-12L: 0,40 D-31LN:0,89	Fw: 90,1 Fw:43,1		35 bbls of Turbo Sweep was pumped ahead of cement to increase cement binding against formation. The ball was dropped, lead & tail slurries were mixed according to program & pumped, before dropping dart. The top plug sheared at 1900 psi, using the cement unit, then rest of displacement was done withrig pumps. The plug was not bumped after theortical necessary displacement, so casing pressure test was not performed until cement had set.

6.4 **Cement Data**

Well no: 34/7-6

Saga Petroleum a.s.

DATE	JOB DESCRIPTION	SHOE DEPTH M-RKB	CEMENT TYPE	SLURRY WEIGHT PPG	VOLUME USED SACKS	ADDITIVES	MIX WATER	LOSSES BBLS	REMARKS:
23.4.85	9 5/8" Csg	3000	"G"	15,8	1725	D-19LN 0,3 D-31LN 0,1 D-12L 0,04	FW: 4,61	–	35 bbls of Turbo sweep was pumped ahead as spacer. Ball was dropped and plug sheared. CMT as pr program. Bottom plug launched with dart cmt displaced with mud and top plug bumped with 3000 psi for 10 min. No back flow recorded.
4.5.85	Abandonment cmt plug no.1	–	"G"	15,8	198	R-12L:0,12 gps	FW: 4,86 gps	–	Interval covered: 3685 – 3510 m.
4.5.85	Aboandonment cmt plug no.2	–	"G"	15,8	198	R-12L:0,12 gps	FW: 4,86 gps	–	Interval covered: 3490 – 3315 m.
5.5.85	Abandonment cmt plug no.3	–	"G"	15,8	198	R-12L:0,12 gps	FW: 4,86 gps		Interval covered: 3295 – 3120 m
5.5.85	Abandonment cmtplug no. 4	–	"G"	15,8	228	R-12L:0,12 gps	FW: 4,86 gps	–	Interval covered: 3100 – 2925 m
11.5.85	SQUEEZE	–	"G"	15,8	180	D-19LN: 0,3 D-31LN: 0.1 R-12L: 0,055	FW: 4,61	–	5 bbls was pumped ahead the slurry. 37 bbls was squeezed through the perforations F/ 2679 to 2687 m
12.5.85	SQUEEZE	–	"G"	15,8	140	D-19LN: 0,3 D-31LN: 0,1 R-12L : 0,055	FW: 4,61	–	5 bbls was pumped ahead the slurry 4 bbls was squeezed through the perforations F/ 2590 to 2593 m.

6.4. Cement Data

Saga Petroleum a.s.

Well no: 34/7-6

DATE	JOB DESCRIPTION	SHOE DEPTH M-RKB	CEMENT TYPE	SLURRY WEIGHT PPG	VOLUME USED SACKS	ADDITIVES	MIX WATER	LOSSES BBLS	REMARKS:
13.5.85	SQUEEZE	-	"G"	15,8	35	D-19LN: 0,3 D-31LN: 0,1 R-12L : 0,055	FW: 4,61	-	A balanced cmt. Plug was set f/2565 to 2525 m. 4,5 bbls was squeezed through perf. f/2545 - 2547 m. No cmt was found when RIH with 12 1/4 bit.
24.5.85	Abandonment cmt. plug no. 5	-	"G"	15.9	110	A-7L 0.4 gps	SW:4.62		

6.5. Deviation Data
Well no: 34/7-6

MD meter	TVD meter	INCLIN. deg.	AZIMUT deg.	DOGLEG °/30m	+N,-S meter	+E,-W meter
0.00	0.00	0.00	0.00	0.00	+0.00	+0.00
460.00	460.00	0.00	0.00	0.00	+0.00	+0.00
479.00	479.00	.50	183.00	.79	-.00	+.05
486.00	486.00	.60	206.00	1.03	-.07	+.04
498.00	498.00	.50	209.00	.26	-.17	-.02
507.00	507.00	.50	184.00	.72	-.24	-.04
516.00	516.00	.60	201.00	.63	-.33	-.06
526.00	526.00	.90	181.00	1.18	-.45	-.08
535.00	535.00	.40	153.00	1.93	-.55	-.06
545.00	545.00	1.00	177.00	1.97	-.67	-.03
554.00	553.99	.80	171.00	.74	-.81	-.01
564.00	563.99	.80	203.00	1.32	-.95	-.03
576.00	575.99	1.00	201.00	.51	-1.12	-.10
585.00	584.99	.90	198.00	.37	-1.26	-.15
595.00	594.99	.80	188.00	.54	-1.41	-.19
605.00	604.99	.80	189.00	.04	-1.55	-.21
614.00	613.99	.90	192.00	.36	-1.68	-.23
624.00	623.99	1.00	188.00	.36	-1.84	-.26
633.00	632.99	1.10	209.00	1.32	-2.00	-.31
643.00	642.98	1.10	222.00	.75	-2.15	-.42
653.00	652.98	1.10	211.00	.63	-2.31	-.54
662.00	661.98	1.40	218.00	1.12	-2.47	-.65
672.00	671.98	1.20	227.00	.86	-2.63	-.80
682.00	681.97	1.10	226.00	.31	-2.77	-.95
692.00	691.97	1.20	218.00	.57	-2.92	-1.08
702.00	701.97	1.20	233.00	.94	-3.07	-1.23
712.00	711.97	1.50	237.00	.94	-3.20	-1.42
721.00	720.96	1.60	238.00	.35	-3.33	-1.63
730.00	729.96	1.30	240.00	1.01	-3.45	-1.82
739.00	738.96	1.60	236.00	1.05	-3.57	-2.02
749.00	748.95	1.80	236.00	.60	-3.74	-2.26
757.00	756.95	1.70	235.00	.39	-3.88	-2.46
770.00	769.94	1.90	235.00	.46	-4.11	-2.80
779.00	778.94	1.80	248.00	1.43	-4.25	-3.05
788.00	787.93	1.90	249.00	.35	-4.36	-3.32
797.00	796.93	1.90	248.00	.11	-4.46	-3.60
807.00	806.92	2.00	250.00	.36	-4.59	-3.92
816.00	815.92	1.90	253.00	.48	-4.68	-4.21
826.00	825.91	2.10	257.00	.73	-4.77	-4.55
836.00	835.91	2.20	257.00	.30	-4.86	-4.91
846.00	845.90	2.30	260.00	.46	-4.94	-5.30
856.00	855.89	2.10	262.00	.64	-5.00	-5.67
865.00	864.88	2.30	265.00	.77	-5.04	-6.02
874.00	873.88	2.40	264.00	.36	-5.07	-6.39
884.00	883.87	2.20	273.00	1.24	-5.08	-6.79
894.00	893.86	2.50	272.00	.91	-5.06	-7.20
903.00	902.85	2.40	273.00	.36	-5.05	-7.58
913.00	912.84	2.50	284.00	1.44	-4.98	-8.00
923.00	922.83	2.40	288.00	.59	-4.87	-8.41
933.00	932.82	2.80	278.00	1.81	-4.76	-8.85
943.00	942.81	2.60	286.00	1.28	-4.67	-9.31

Saga Petroleum a.s.

DATE	AUTH.
DRAW. BY	APPR.
REF.	

6.5. Deviation Data
Well no: 34/7-6

MD meter	TVD meter	INCLIN. deg.	AZIMUT deg.	DOGLEG °/30m	+N,-S meter	+E,-W meter
951.00	950.80	2.70	283.00	.64	-4.57	-9.67
957.00	956.80	2.50	296.00	3.11	-4.48	-9.93
963.00	962.79	2.70	288.00	2.07	-4.38	-10.18
974.00	973.78	2.80	292.00	.59	-4.20	-10.68
984.00	983.77	2.80	288.00	.59	-4.03	-11.14
993.00	992.76	2.80	281.00	1.14	-3.92	-11.56
1006.00	1005.74	2.60	290.00	1.08	-3.76	-12.15
1022.00	1021.72	2.90	290.00	.56	-3.50	-12.87
1042.00	1041.70	2.90	290.00	0.00	-3.15	-13.82
1061.00	1060.67	2.70	288.00	.35	-2.85	-14.70
1081.00	1080.65	2.60	292.00	.32	-2.53	-15.57
1108.00	1107.63	2.60	288.00	.20	-2.11	-16.72
1159.00	1158.57	2.70	294.00	.17	-1.27	-18.92
1206.00	1205.52	2.80	289.00	.17	-.44	-21.02
1258.00	1257.46	2.70	294.00	.15	+.47	-23.34
1300.00	1299.41	2.90	293.00	.15	+1.29	-25.22
1348.00	1347.34	2.90	298.00	.16	+2.33	-27.41
1396.00	1395.28	2.90	296.00	.06	+3.44	-29.57
1445.00	1444.22	3.10	293.00	.16	+4.50	-31.91
1465.00	1464.19	3.10	294.00	.08	+4.93	-32.90
1494.00	1493.15	3.00	292.00	.15	+5.53	-34.32
1542.00	1541.07	3.30	296.00	.23	+6.61	-36.73
1578.00	1577.02	3.10	297.00	.17	+7.50	-38.53
1618.00	1616.95	3.40	298.00	.23	+8.55	-40.54
1666.00	1664.87	3.40	303.00	.19	+9.99	-42.99
1692.00	1690.82	3.50	301.00	.18	+10.82	-44.32
1715.00	1713.78	3.60	302.00	.15	+11.57	-45.53
1733.00	1731.74	3.50	301.00	.20	+12.15	-46.48
1752.00	1750.71	3.20	302.00	.48	+12.73	-47.43
1772.00	1770.68	3.40	304.00	.35	+13.36	-48.39
1792.00	1790.64	3.20	305.00	.31	+14.01	-49.34
1812.00	1810.61	3.20	305.00	0.00	+14.65	-50.26
1830.00	1828.58	3.20	302.00	.28	+15.20	-51.10
1850.00	1848.55	3.20	304.00	.17	+15.81	-52.03
1862.00	1860.53	3.20	300.00	.56	+16.17	-52.60
1883.00	1881.50	3.00	294.00	.54	+16.68	-53.61
1912.00	1910.47	2.70	308.00	.78	+17.42	-54.84
1932.00	1930.45	2.70	301.00	.49	+17.96	-55.62
1942.00	1940.44	2.40	295.00	1.20	+18.17	-56.01
1953.00	1951.43	2.60	297.00	.60	+18.38	-56.44
1976.00	1974.41	2.10	296.00	.65	+18.80	-57.29
1992.00	1990.40	1.90	292.00	.46	+19.02	-57.80
2009.00	2007.39	1.90	290.00	.12	+19.23	-58.32
2040.00	2038.37	1.90	309.00	.61	+19.73	-59.21
2065.00	2063.36	1.40	306.00	.61	+20.17	-59.79
2087.00	2085.35	1.60	313.00	.37	+20.53	-60.23
2106.00	2104.35	1.40	311.00	.33	+20.87	-60.60
2125.00	2123.34	1.40	309.00	.08	+21.16	-60.95
2173.00	2171.32	1.60	296.00	.25	+21.84	-62.01
2221.00	2219.31	1.40	312.00	.29	+22.54	-63.05
2267.00	2265.29	1.50	301.00	.19	+23.23	-63.98

Saga Petroleum a.s.

DATE	AUTH.
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REF.	

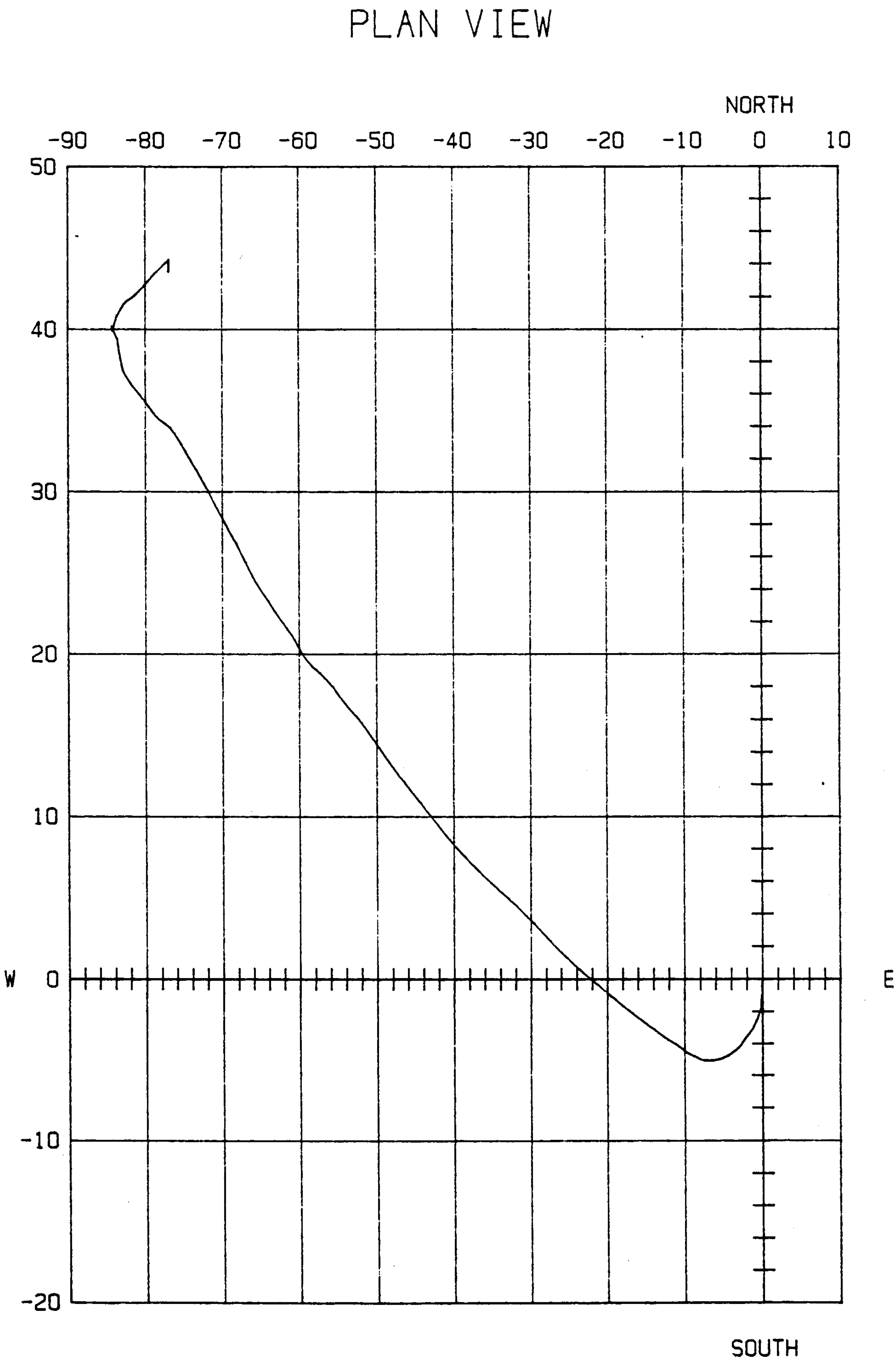
6.5. Deviation Data
Well no: 34/7-6

MD meter	TVD meter	INCLIN. deg.	AZIMUT deg.	DOGLEG °/30m	+N,-S meter	+E,-W meter
2316.00	2314.28	1.50	309.00	.13	+23.97	-65.03
2364.00	2362.26	1.50	308.00	.02	+24.75	-66.02
2410.00	2408.24	1.80	318.00	.27	+25.65	-66.99
2459.00	2457.21	2.20	310.00	.30	+26.84	-68.21
2477.00	2475.20	2.00	307.00	.38	+27.25	-68.73
2497.00	2495.18	2.10	314.00	.40	+27.71	-69.27
2507.00	2505.18	1.90	311.00	.68	+27.95	-69.53
2621.00	2619.13	1.30	313.00	.16	+30.08	-71.90
2649.00	2647.13	1.40	307.00	.19	+30.50	-72.40
2669.00	2667.12	1.50	311.00	.21	+30.82	-72.80
2696.00	2694.11	1.70	310.00	.22	+31.31	-73.37
2735.00	2733.09	1.50	307.00	.17	+31.99	-74.22
2764.00	2762.08	1.50	309.00	.05	+32.45	-74.82
2792.00	2790.08	1.30	310.00	.22	+32.89	-75.35
2839.00	2837.06	1.40	304.00	.11	+33.56	-76.23
2868.00	2866.05	1.30	300.00	.14	+33.92	-76.81
2897.00	2895.05	1.20	285.00	.35	+34.16	-77.39
2956.00	2954.04	1.00	293.00	.13	+34.53	-78.46
2985.00	2983.03	1.30	305.00	.40	+34.81	-78.97
3006.00	3004.03	1.20	302.00	.17	+35.06	-79.35
3019.00	3017.02	1.40	301.50	.46	+35.22	-79.60
3070.00	3068.00	1.60	303.00	.12	+35.93	-80.73
3118.00	3115.99	1.50	299.00	.09	+36.60	-81.85
3167.00	3164.97	1.70	316.00	.31	+37.43	-82.93
3214.00	3211.95	1.20	357.00	.71	+38.49	-83.39
3263.00	3260.94	1.10	328.00	.36	+39.42	-83.68
3310.00	3307.93	1.50	303.00	.44	+40.18	-84.43
3358.00	3355.91	1.50	16.00	1.12	+39.90	-84.32
3406.00	3403.90	1.00	48.00	.53	+40.77	-83.77
3456.00	3453.89	1.90	55.00	.55	+41.56	-82.78
3466.00	3463.88	1.40	74.00	2.20	+41.68	-82.52
3514.00	3511.86	1.70	67.00	.22	+42.12	-81.30
3550.00	3547.84	2.10	61.00	.37	+42.64	-80.23
3592.00	3589.81	2.30	60.80	.14	+43.43	-78.82
3639.00	3636.77	2.70	70.00	.36	+44.28	-76.96
3678.00	3675.73	2.30	299.00	3.50	+43.51	-77.02

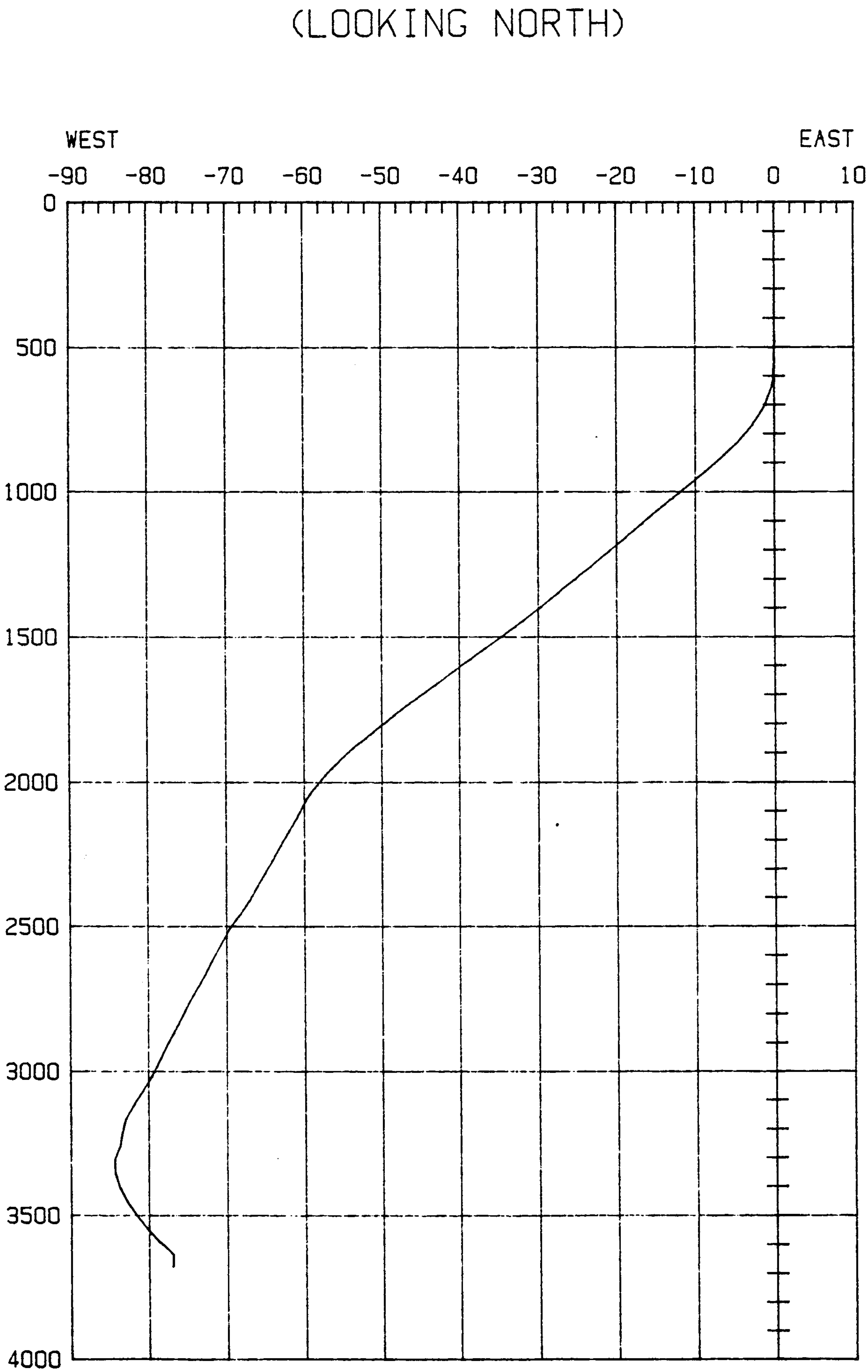
Saga Petroleum a.s.

DATE	AUTH.
DRAW. BY	APPR.
REF.	

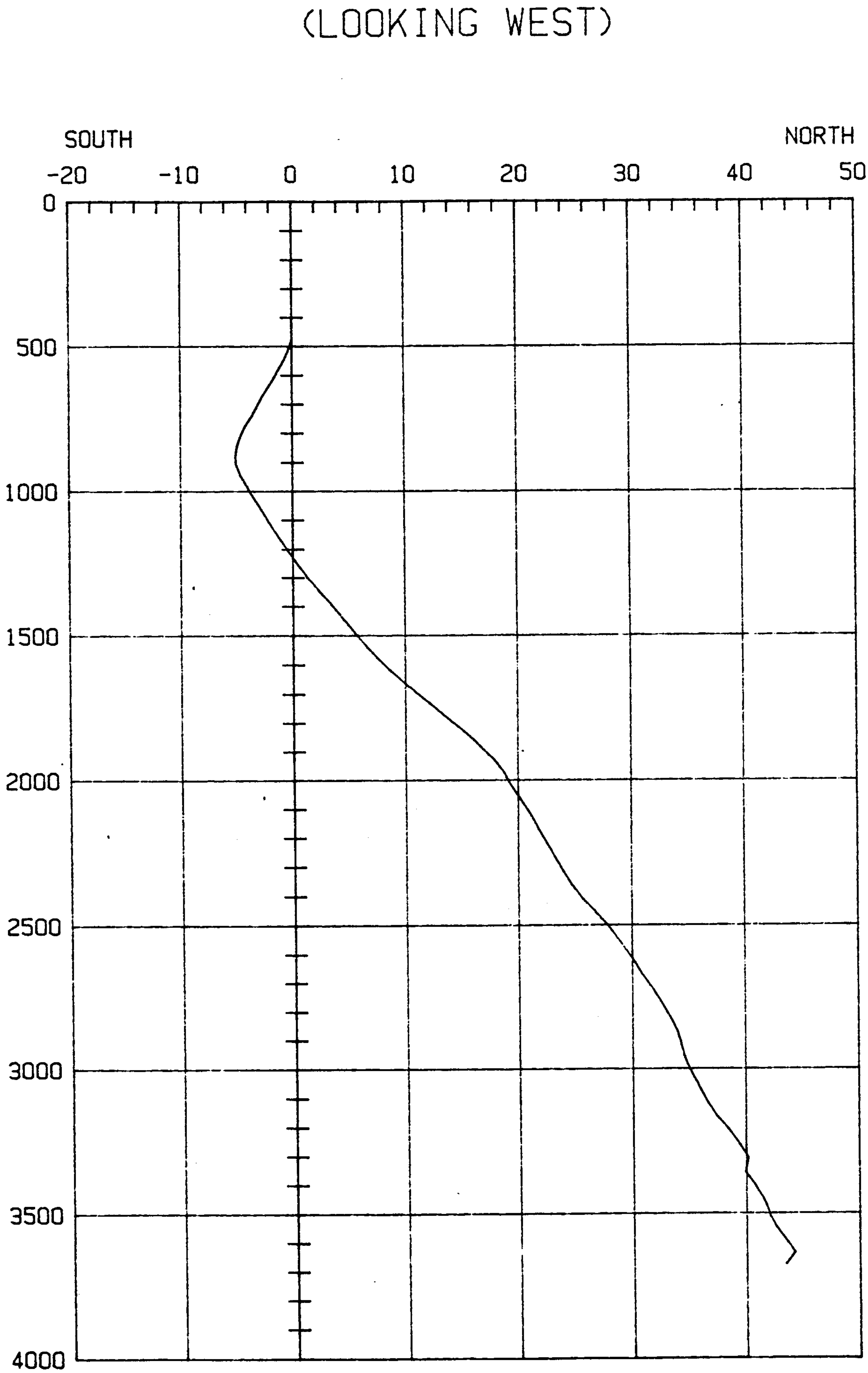
6.5.1. Horizontal Projection
Well no: 34/7-6



6.5.2. Vertical Projection
Well no: 34/7-6



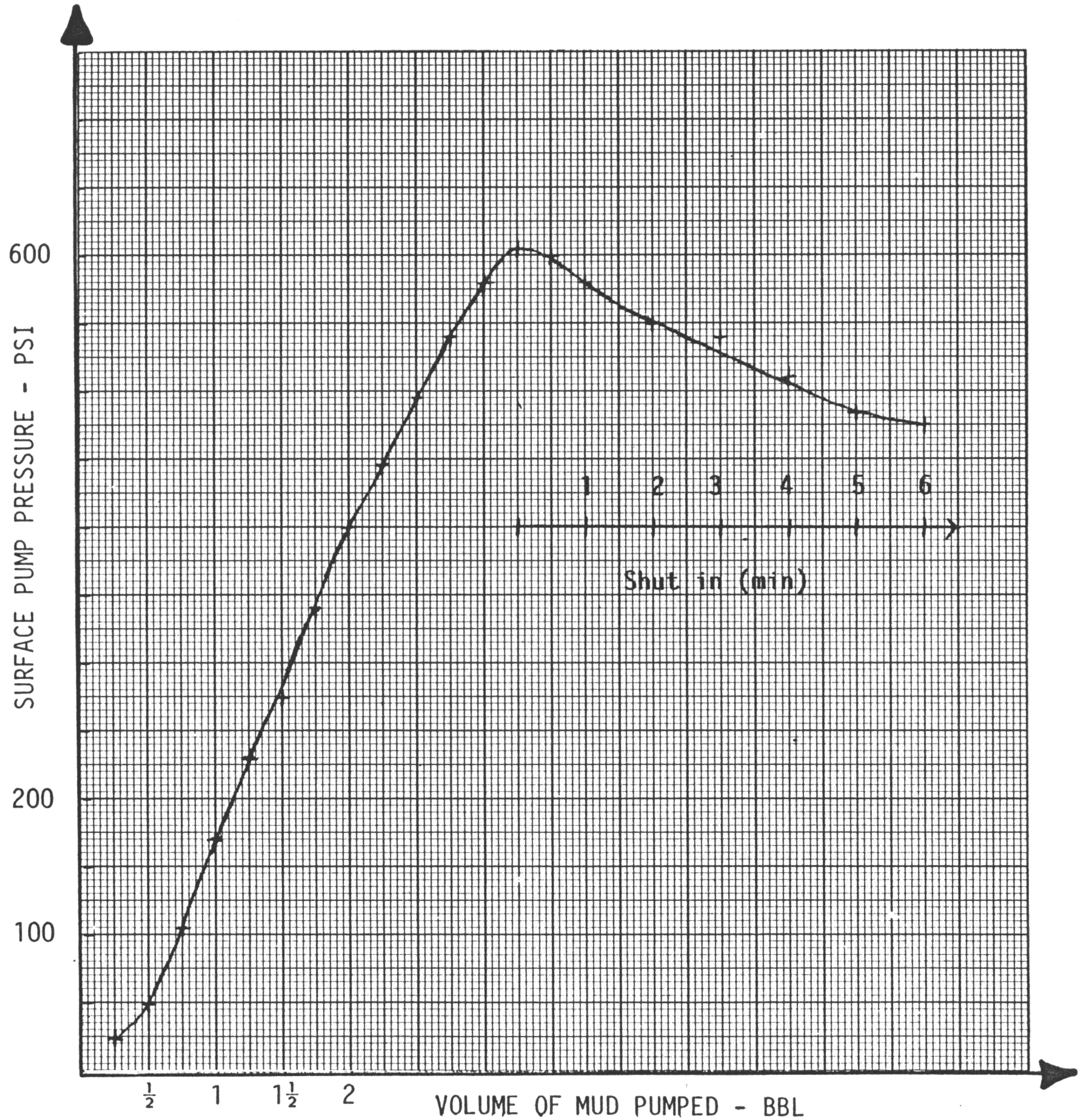
6.5.2. Vertical Projection
Well no: 34/7-6



6.6.1 **Formation Leak off Test Data**

Well no: 34/7-6

Saga Petroleum a.s.



WELL	:	34/7-6
DATE	:	27/3-85
CONTRACTOR	:	WW
RIG	:	Treasure Saga
PUMPING UNIT	:	BJ
DRLG. SUPV.	:	Sæbø, Bjerke

CSG.SIZE	:	20
CSG.SHOE DEPTH	:	935
WATER DEPTH	:	307 m
HOLE SIZE	:	17 1/2
HOLE DEPTH	:	970
MUD WEIGHT	:	9,2
PUMP RATE	:	1/4 bbl/min
VOLUME PUMPED	:	3 1/4
VOLUME RECOVERED	:	1 3/4
FORMATION TYPE	:	Clay
LEAK-OFF PRESSURE	:	600 psi
SHUT-IN PRESSURE	:	605 psi
SHUT-IN TIME	:	6 min

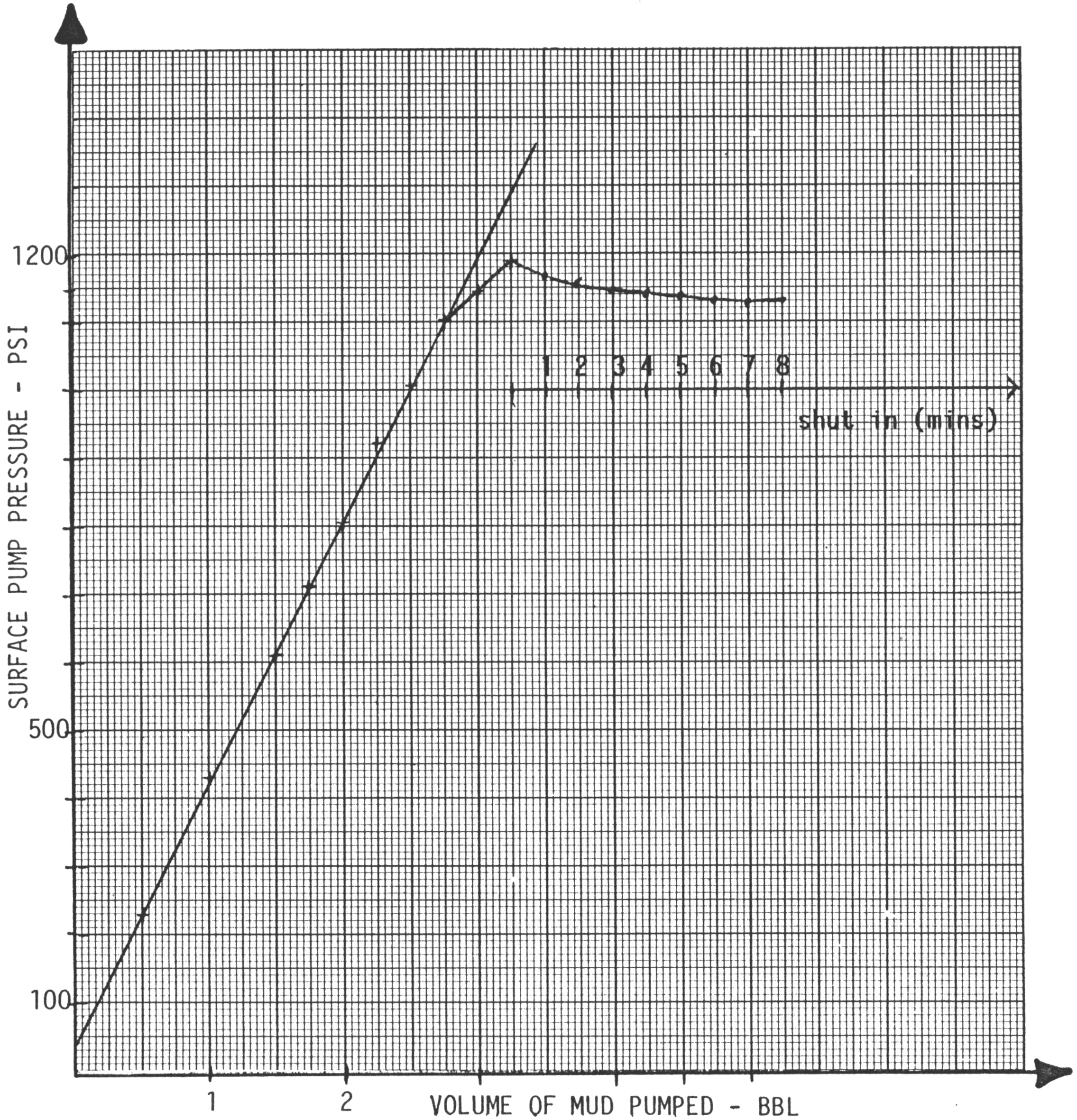
EQV. MUD WEIGHT AT CSG. SHOE: 13,0 ppg

NO.OF BBL	PUMP PRESSURE	NO.OF BBL	PUMP PRESSURE
1/4	25	2 3/4	540
1/2	50	3	580
3/4	105	3 1/4	605
1	170	½ min	600
1 1/4	230	1 min	580
1 1/2	275	2 min	550
1 3/4	340	3 min	540
2	400	4 min	510
2 1/4	445	5 min	485
2 1/2	495	6 min	475

6.6.1. **Formation Leak off Test Data**

Well no: 34/7-6

Saga Petroleum a.s.



WELL	:	34/7-6
DATE	:	2/4-85
CONTRACTOR	:	WW
RIG	:	Treasure Saga
PUMPING UNIT	:	BJ
DRLG. SUPV.	:	Johnsen/Bysveen

CSG.SIZE	:	13 3/8"
CSG.SHOE DEPTH	:	1876 m
WATER DEPTH	:	307 m
HOLE SIZE	:	12 1/4"
HOLE DEPTH	:	1900 m
MUD WEIGHT	:	1.5 SG
PUMP RATE	:	1/4 bpm
VOLUME PUMPED	:	3 1/4 bbl
VOLUME RECOVERED	:	n/a
FORMATION TYPE	:	Claystone
LEAK-OFF PRESSURE	:	1100 psi
SHUT-IN PRESSURE	:	1120 psi
SHUT-IN TIME	:	8 min.

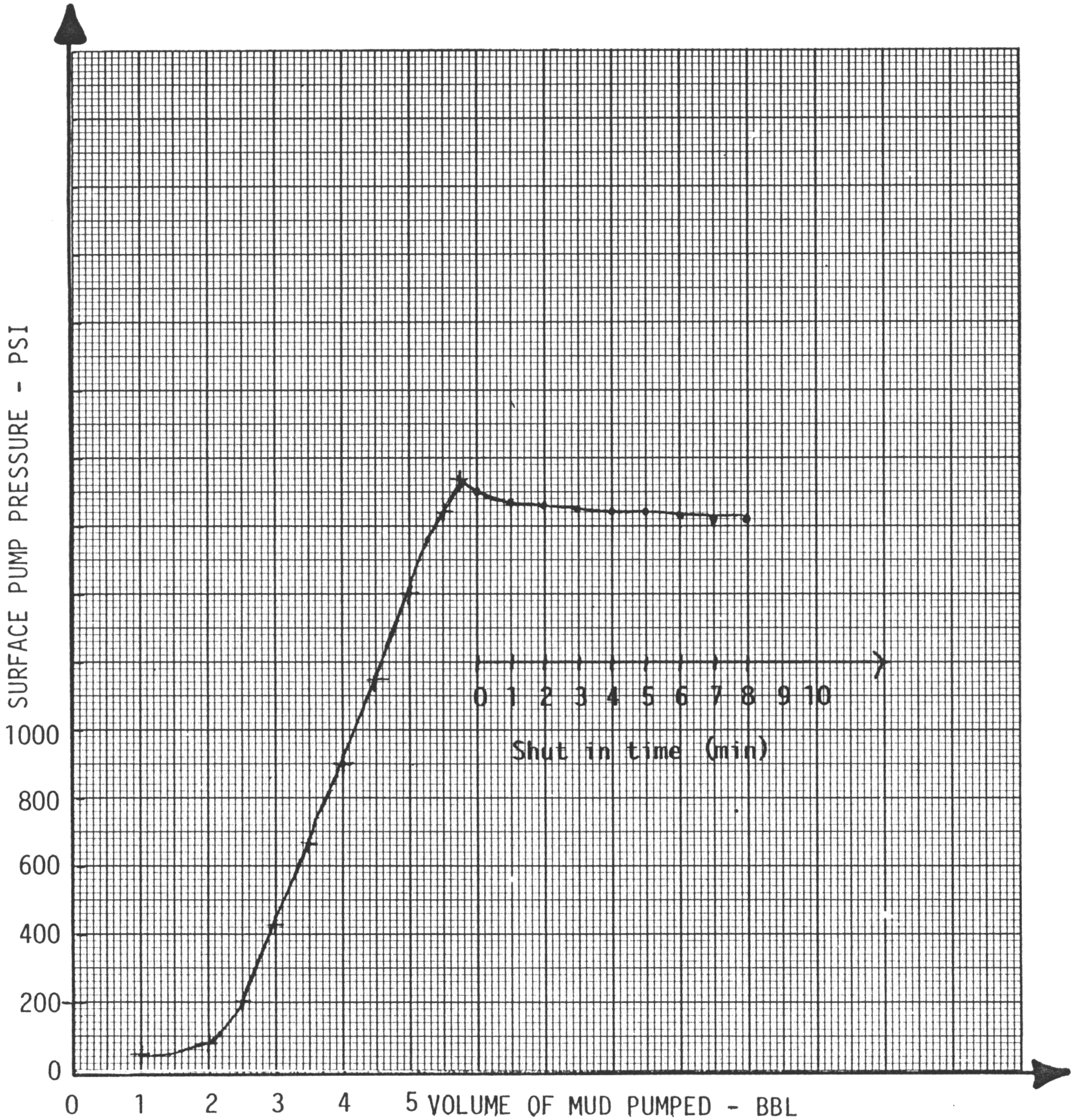
EQV. MUD WEIGHT AT CSG. SHOE: 1.91 SG (15.9 ppg)

NO.OF BBL	PUMP PRESSURE	NO.OF BBL	PUMP PRESSURE
1/2	230 psi		
1	430		
1 1/2	610		
1 3/4	710		
2	805		
2 1/4	920		
2 1/2	1005		
2 3/4	1100		
3	1145		
3 1/4	1190		

6.6.1. Formation Leak off Test Data

Well no: 34/7-6

Saga
Petroleum a.s.



WELL	:	34/7-6
DATE	:	24/4-85
CONTRACTOR	:	WW
RIG	:	Treasure Saga
PUMPING UNIT	:	BJ
DRLG. SUPV.	:	Sæbø, Holte

CSG.SIZE	:	9 5/8"
CSG.SHOE DEPTH	:	3000 m
WATER DEPTH	:	307 m
HOLE SIZE	:	8 1/2"
HOLE DEPTH	:	3020 m
MUD WEIGHT	:	1.63 SG
PUMP RATE	:	1/4 bpm
VOLUME PUMPED	:	5 3/4 bbl
VOLUME RECOVERED	:	3 bbl
FORMATION TYPE	:	Shale/sandstone
LEAK-OFF PRESSURE	:	1640 psi
SHUT-IN PRESSURE	:	1600 psi
SHUT-IN TIME	:	10 min.

EQV. MUD WEIGHT AT CSG. SHOE: 2.01 SG

NO.OF BBL	PUMP PRESSURE	NO.OF BBL	PUMP PRESSURE
1	50	Shut-in Time	
2	80	0 min	1700
2 1/2	200	1	1670
3	430	2	1660
3 1/2	670	3	1650
4	900	4	1640
4 1/2	1150	5	1640
5	1400	6	1630
5 1/2	1640	7	1620
5 3/4	1740	8	1620

SAGA PETROLEUM A.S. 6.7. RIG TIME DISTRIBUTION

Well no: 34/7-6

Mainoperation	Suboperation	Hours		% of total rig time	
MOVING	ANCHOR	30.0		1.7	
MOVING	TRANSIT	2.5		0.1	
Sum :			32.5		1.8
DRILLING	BOP ACTIVITIES	29.0		1.6	
DRILLING	BOP/WELLHEAD EQ	35.0		1.9	
DRILLING	CASING	82.0		4.5	
DRILLING	CIRC/COND	42.0		2.3	
DRILLING	DRILL	443.5		24.4	
DRILLING	OTHER	43.5		2.4	
DRILLING	REAM	4.5		0.2	
DRILLING	SURVEY	1.0		0.1	
DRILLING	TRIP	152.5		8.4	
DRILLING	WAIT	2.0		0.1	
Sum :			835.0		46.0
FORMATION EVAL	CIRC/COND	39.0		2.1	
FORMATION EVAL	CORE	111.5		6.1	
FORMATION EVAL	DST	294.5		16.2	
FORMATION EVAL	LOG	143.5		7.9	
FORMATION EVAL	OTHER	20.5		1.1	
FORMATION EVAL	TRIP	236.0		13.0	
FORMATION EVAL	WAIT	5.0		0.3	
Sum :			850.0		46.8
INTERRUPTION	FISH	17.5		1.0	
INTERRUPTION	MAINTAIN/REP	24.0		1.3	
Sum :			41.5		2.3
PLUG & ABANDON	CEMENT PLUG	9.5		0.5	
PLUG & ABANDON	CIRC/COND	6.0		0.3	
PLUG & ABANDON	CUT	9.5		0.5	
PLUG & ABANDON	EQUIP RECOVERY	10.5		0.6	
PLUG & ABANDON	PERFORATE	6.0		0.3	
PLUG & ABANDON	TRIP	16.5		0.9	
Sum :			58.0		3.2
Total rig time :		1817.0		100.0	

Rig time distribution.

Well no. 34/7–6

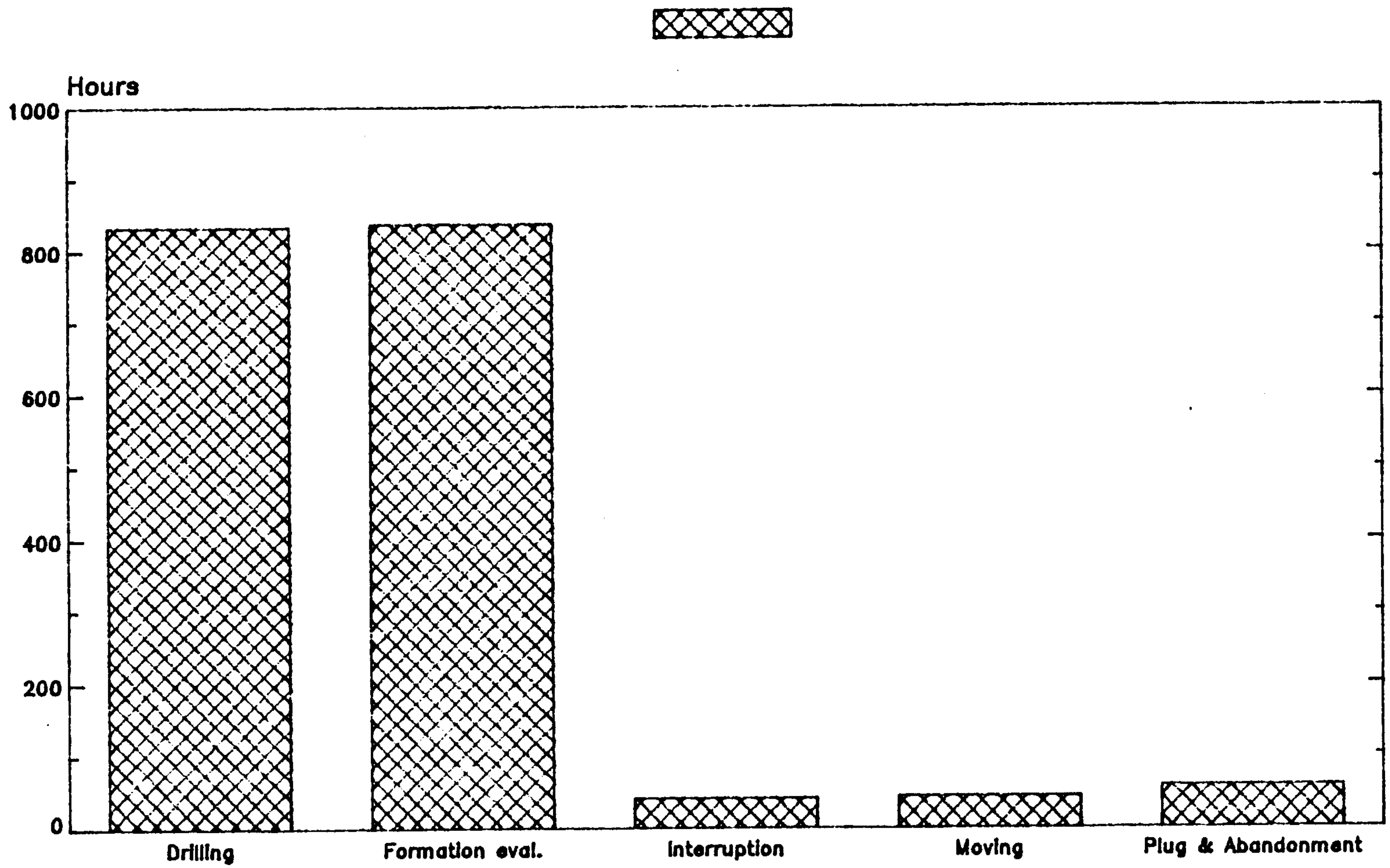


Fig 6.7.

Saga Petroleum a.s.

DATE	AUTH.
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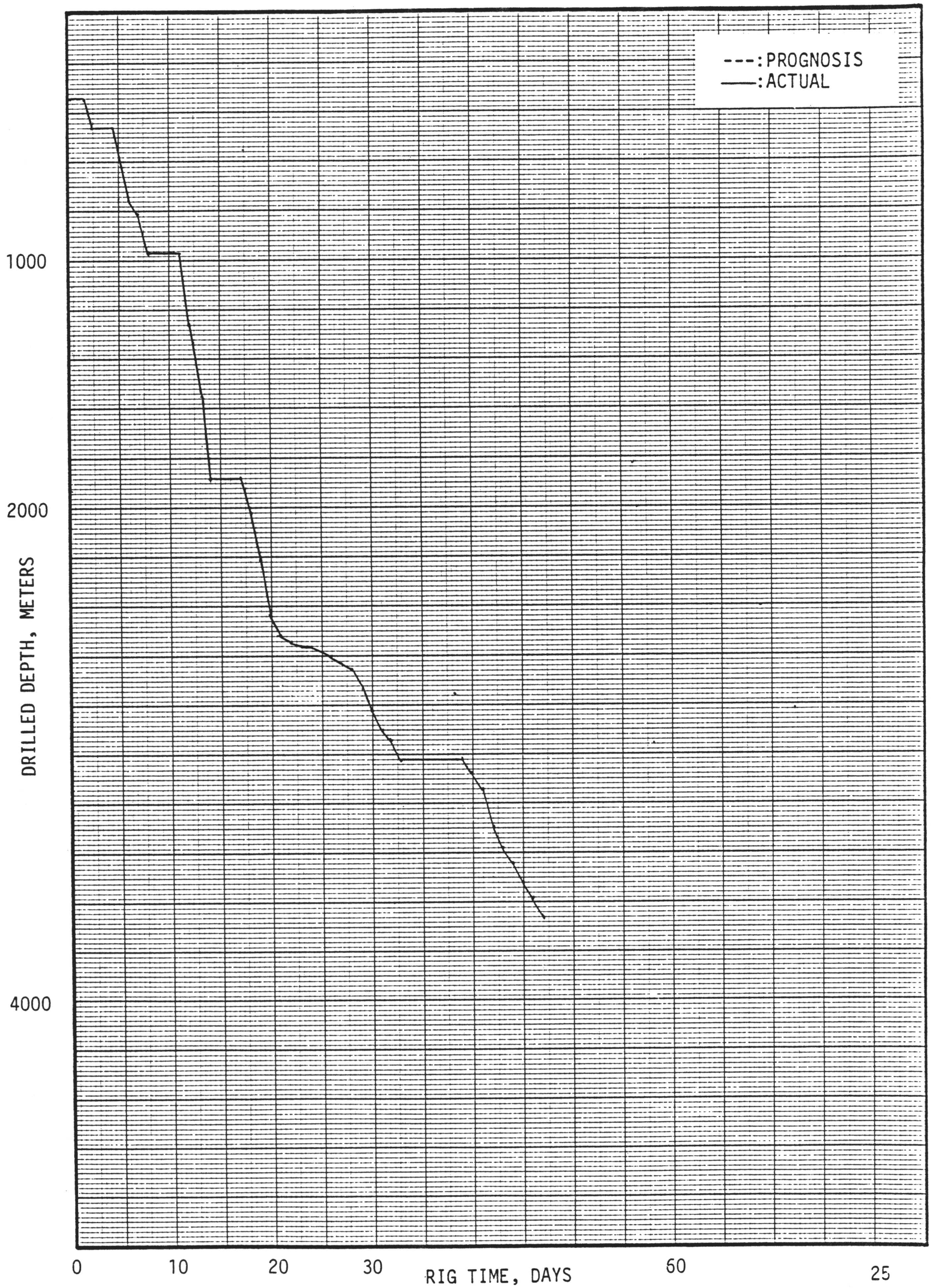
REF.	

6.7.1. Drilled Depth vs. Rig Time
Well no: 34/7-6

Saga
Petroleum a.s.



SAGA PETROLEUM A.S. 6.7.2. DAILY RIG TIME DISTRIBUTION

Well no: 34/7-6

Dato	Mainoperation	Suboperation	Hours	
16/03/85	MOVING	ANCHOR	3.0	
	MOVING	TRANSIT	2.5	
	Sum :			5.5
17/03/85	DRILLING	DRILL	7.0	
	DRILLING	TRIP	4.0	
	MOVING	ANCHOR	13.0	
	Sum :			24.0
18/03/85	DRILLING	CASING	5.5	
	DRILLING	CIRC/COND	4.0	
	DRILLING	DRILL	8.0	
	DRILLING	OTHER	2.5	
	DRILLING	TRIP	4.0	
	Sum :			24.0
19/03/85	DRILLING	DRILL	1.0	
	DRILLING	OTHER	14.0	
	DRILLING	TRIP	9.0	
	Sum :			24.0
20/03/85	DRILLING	DRILL	9.5	
	DRILLING	OTHER	1.5	
	DRILLING	TRIP	13.0	
	Sum :			24.0
21/03/85	DRILLING	CIRC/COND	1.5	
	DRILLING	DRILL	22.0	
	DRILLING	TRIP	0.5	
	Sum :			24.0
22/03/85	DRILLING	DRILL	9.0	
	DRILLING	OTHER	5.5	
	DRILLING	REAM	1.0	
	DRILLING	TRIP	8.5	
	Sum :			24.0
23/03/85	DRILLING	CIRC/COND	1.5	
	DRILLING	DRILL	22.5	
	Sum :			24.0
24/03/85	DRILLING	CASING	2.0	
	DRILLING	CIRC/COND	4.5	
	DRILLING	OTHER	4.0	
	DRILLING	TRIP	13.5	
	Sum :			24.0
25/03/85	DRILLING	BOP/WELLHEAD EQ	4.0	
	DRILLING	CASING	16.0	
	DRILLING	OTHER	2.0	
	DRILLING	WAIT	2.0	
	Sum :			24.0
26/03/85	DRILLING	BOP/WELLHEAD EQ	14.0	
	DRILLING	CASING	3.5	
	DRILLING	CIRC/COND	0.5	
	DRILLING	DRILL	1.0	
	DRILLING	OTHER	1.0	
	DRILLING	TRIP	4.0	
	Sum :			24.0
27/03/85	DRILLING	CIRC/COND	1.5	
	DRILLING	DRILL	19.0	
	DRILLING	OTHER	1.0	
	DRILLING	TRIP	2.0	

Well no: 34/7-6

Dato	Mainoperation	Suboperation	Hours	
27/03/85	INTERRUPTION	MAINTAIN/REP	0.5	
	Sum :			24.0
28/03/85	DRILLING	CIRC/COND	1.0	
	DRILLING	DRILL	15.0	
	DRILLING	REAM	1.0	
	DRILLING	TRIP	6.5	
	INTERRUPTION	MAINTAIN/REP	0.5	
	Sum :			24.0
29/03/85	DRILLING	CIRC/COND	1.5	
	DRILLING	DRILL	21.5	
	DRILLING	TRIP	1.0	
	Sum :			24.0
30/03/85	DRILLING	CASING	1.0	
	DRILLING	CIRC/COND	8.5	
	DRILLING	DRILL	1.5	
	DRILLING	TRIP	7.0	
	FORMATION EVAL	LOG	6.0	
	Sum :			24.0
31/03/85	DRILLING	BOP/WELLHEAD EQ	1.5	
	DRILLING	CASING	18.0	
	DRILLING	CIRC/COND	1.5	
	DRILLING	TRIP	2.0	
	Sum :			23.0
01/04/85	DRILLING	BOP ACTIVITIES	4.0	
	DRILLING	BOP/WELLHEAD EQ	2.0	
	DRILLING	CASING	13.5	
	DRILLING	TRIP	3.0	
	INTERRUPTION	MAINTAIN/REP	1.5	
	Sum :			24.0
02/04/85	DRILLING	CIRC/COND	1.5	
	DRILLING	DRILL	18.5	
	DRILLING	OTHER	1.0	
	DRILLING	TRIP	3.0	
	Sum :			24.0
03/04/85	DRILLING	CIRC/COND	1.5	
	DRILLING	DRILL	19.5	
	DRILLING	TRIP	3.0	
	Sum :			24.0
04/04/85	DRILLING	DRILL	24.0	
	Sum :			24.0
05/04/85	DRILLING	CIRC/COND	2.0	
	DRILLING	DRILL	15.0	
	DRILLING	TRIP	3.0	
	FORMATION EVAL	CIRC/COND	0.5	
	FORMATION EVAL	TRIP	3.5	
	Sum :			24.0
06/04/85	FORMATION EVAL	CIRC/COND	2.0	
	FORMATION EVAL	CORE	13.0	
	FORMATION EVAL	OTHER	0.5	
	FORMATION EVAL	TRIP	8.5	
	Sum :			24.0
07/04/85	FORMATION EVAL	CIRC/COND	2.5	
	FORMATION EVAL	CORE	11.5	
	FORMATION EVAL	OTHER	1.0	

Well no: 34/7-6

Dato	Mainoperation	Suboperation	Hours	
07/04/85	FORMATION EVAL	TRIP	9.0	
	Sum :			24.0
08/04/85	DRILLING	BOP ACTIVITIES	8.5	
	DRILLING	OTHER	4.5	
	DRILLING	REAM	0.5	
	DRILLING	TRIP	3.0	
	FORMATION EVAL	CORE	5.5	
	FORMATION EVAL	TRIP	2.0	
	Sum :			24.0
09/04/85	FORMATION EVAL	CIRC/COND	1.0	
	FORMATION EVAL	CORE	15.0	
	FORMATION EVAL	OTHER	0.5	
	FORMATION EVAL	TRIP	7.5	
	Sum :			24.0
10/04/85	FORMATION EVAL	CIRC/COND	1.0	
	FORMATION EVAL	CORE	17.0	
	FORMATION EVAL	TRIP	6.0	
	Sum :			24.0
11/04/85	FORMATION EVAL	CIRC/COND	0.5	
	FORMATION EVAL	CORE	18.5	
	FORMATION EVAL	OTHER	1.0	
	FORMATION EVAL	TRIP	4.0	
	Sum :			24.0
12/04/85	DRILLING	DRILL	3.5	
	FORMATION EVAL	CORE	8.5	
	FORMATION EVAL	LOG	7.0	
	FORMATION EVAL	TRIP	5.0	
	Sum :			24.0
13/04/85	DRILLING	DRILL	24.0	
	Sum :			24.0
14/04/85	DRILLING	DRILL	21.5	
	DRILLING	TRIP	2.5	
	Sum :			24.0
15/04/85	DRILLING	BOP ACTIVITIES	1.0	
	DRILLING	DRILL	16.0	
	DRILLING	OTHER	0.5	
	DRILLING	TRIP	6.5	
	Sum :			24.0
16/04/85	DRILLING	BOP ACTIVITIES	2.0	
	FORMATION EVAL	CIRC/COND	1.0	
	FORMATION EVAL	CORE	11.5	
	FORMATION EVAL	OTHER	1.0	
	FORMATION EVAL	TRIP	8.5	
	Sum :			24.0
17/04/85	DRILLING	CIRC/COND	1.0	
	DRILLING	DRILL	11.0	
	DRILLING	TRIP	3.0	
	FORMATION EVAL	CORE	6.5	
	FORMATION EVAL	TRIP	2.5	
	Sum :			24.0
18/04/85	DRILLING	CIRC/COND	1.0	
	DRILLING	SURVEY	0.5	
	DRILLING	TRIP	5.5	
	FORMATION EVAL	CIRC/COND	2.5	

Well no: 34/7-6

Dato	Mainoperation	Suboperation	Hours	
18/04/85	FORMATION EVAL	LOG	13.5	
	INTERRUPTION	MAINTAIN/REP	1.0	
	Sum :			24.0
19/04/85	FORMATION EVAL	LOG	24.0	
	Sum :			24.0
20/04/85	FORMATION EVAL	CIRC/COND	3.0	
	FORMATION EVAL	LOG	14.5	
	FORMATION EVAL	TRIP	6.5	
	Sum :			24.0
21/04/85	DRILLING	CASING	1.0	
	FORMATION EVAL	LOG	23.0	
	Sum :			24.0
22/04/85	DRILLING	BOP/WELLHEAD EQ	2.0	
	DRILLING	CASING	10.0	
	DRILLING	CIRC/COND	2.5	
	DRILLING	OTHER	1.0	
	DRILLING	REAM	1.5	
	DRILLING	TRIP	7.0	
	Sum :			24.0
23/04/85	DRILLING	BOP ACTIVITIES	2.0	
	DRILLING	BOP/WELLHEAD EQ	1.0	
	DRILLING	CASING	11.5	
	DRILLING	DRILL	2.0	
	DRILLING	OTHER	2.0	
	DRILLING	REAM	0.5	
	DRILLING	TRIP	5.0	
	Sum :			24.0
24/04/85	DRILLING	CIRC/COND	2.5	
	DRILLING	DRILL	13.0	
	DRILLING	OTHER	1.5	
	DRILLING	TRIP	7.0	
	Sum :			24.0
25/04/85	DRILLING	DRILL	16.0	
	DRILLING	TRIP	8.0	
	Sum :			24.0
26/04/85	DRILLING	DRILL	23.0	
	INTERRUPTION	MAINTAIN/REP	1.0	
	Sum :			24.0
27/04/85	DRILLING	DRILL	24.0	
	Sum :			24.0
28/04/85	DRILLING	CIRC/COND	0.5	
	DRILLING	DRILL	18.0	
	DRILLING	TRIP	5.5	
	Sum :			24.0
29/04/85	DRILLING	DRILL	22.0	
	DRILLING	OTHER	1.0	
	DRILLING	TRIP	1.0	
	Sum :			24.0
30/04/85	DRILLING	CIRC/COND	1.5	
	DRILLING	DRILL	9.5	
	DRILLING	SURVEY	0.5	
	DRILLING	TRIP	3.5	
	FORMATION EVAL	CIRC/COND	0.5	
	FORMATION EVAL	CORE	3.5	

Well no: 34/7-6

Dato	Mainoperation	Suboperation	Hours	
30/04/85	FORMATION EVAL	TRIP	5.0	
	Sum :			24.0
01/05/85	DRILLING	DRILL	15.5	
	DRILLING	OTHER	0.5	
	DRILLING	TRIP	4.5	
	FORMATION EVAL	CORE	1.0	
	FORMATION EVAL	TRIP	2.5	
	Sum :			24.0
02/05/85	DRILLING	CIRC/COND	2.0	
	DRILLING	DRILL	10.5	
	DRILLING	TRIP	3.5	
	FORMATION EVAL	LOG	8.0	
	Sum :			24.0
03/05/85	FORMATION EVAL	LOG	24.0	
	Sum :			24.0
04/05/85	FORMATION EVAL	LOG	17.0	
	PLUG & ABANDON	CEMENT PLUG	3.0	
	PLUG & ABANDON	CIRC/COND	1.0	
	PLUG & ABANDON	TRIP	3.0	
	Sum :			24.0
05/05/85	DRILLING	BOP ACTIVITIES	5.0	
	FORMATION EVAL	TRIP	6.0	
	INTERRUPTION	MAINTAIN/REP	1.0	
	PLUG & ABANDON	CEMENT PLUG	5.0	
	PLUG & ABANDON	CIRC/COND	4.0	
	PLUG & ABANDON	TRIP	3.0	
	Sum :			24.0
06/05/85	FORMATION EVAL	CIRC/COND	5.5	
	FORMATION EVAL	OTHER	1.0	
	FORMATION EVAL	TRIP	17.5	
	Sum :			24.0
07/05/85	FORMATION EVAL	DST	4.0	
	FORMATION EVAL	TRIP	20.0	
	Sum :			24.0
08/05/85	FORMATION EVAL	DST	15.5	
	FORMATION EVAL	TRIP	8.5	
	Sum :			24.0
09/05/85	FORMATION EVAL	DST	24.0	
	Sum :			24.0
10/05/85	FORMATION EVAL	DST	24.0	
	Sum :			24.0
11/05/85	FORMATION EVAL	CIRC/COND	3.5	
	FORMATION EVAL	DST	7.0	
	FORMATION EVAL	TRIP	13.0	
	INTERRUPTION	MAINTAIN/REP	0.5	
	Sum :			24.0
12/05/85	DRILLING	BOP ACTIVITIES	3.5	
	FORMATION EVAL	CIRC/COND	2.5	
	FORMATION EVAL	DST	12.5	
	FORMATION EVAL	TRIP	4.5	
	INTERRUPTION	MAINTAIN/REP	1.0	
	Sum :			24.0
13/05/85	FORMATION EVAL	CIRC/COND	1.5	
	FORMATION EVAL	DST	6.5	

Well no: 34/7-6

Dato	Mainoperation	Suboperation	Hours	
13/05/85	FORMATION EVAL	LOG	3.0	
	FORMATION EVAL	OTHER	1.0	
	FORMATION EVAL	TRIP	7.0	
	FORMATION EVAL	WAIT	5.0	
	Sum :			24.0
14/05/85	FORMATION EVAL	CIRC/COND	0.5	
	FORMATION EVAL	LOG	3.5	
	FORMATION EVAL	OTHER	3.0	
	FORMATION EVAL	TRIP	16.5	
	INTERRUPTION	MAINTAIN/REP	0.5	
	Sum :			24.0
15/05/85	FORMATION EVAL	DST	19.0	
	FORMATION EVAL	TRIP	3.5	
	INTERRUPTION	MAINTAIN/REP	1.5	
	Sum :			24.0
16/05/85	FORMATION EVAL	DST	24.0	
	Sum :			24.0
17/05/85	FORMATION EVAL	DST	24.0	
	Sum :			24.0
18/05/85	FORMATION EVAL	CIRC/COND	4.0	
	FORMATION EVAL	DST	4.5	
	FORMATION EVAL	OTHER	3.5	
	FORMATION EVAL	TRIP	1.5	
	INTERRUPTION	FISH	10.5	
	Sum :			24.0
19/05/85	FORMATION EVAL	CIRC/COND	2.5	
	FORMATION EVAL	DST	8.5	
	FORMATION EVAL	TRIP	6.0	
	INTERRUPTION	FISH	7.0	
	Sum :			24.0
20/05/85	DRILLING	BOP ACTIVITIES	3.0	
	FORMATION EVAL	CIRC/COND	1.5	
	FORMATION EVAL	DST	5.5	
	FORMATION EVAL	OTHER	3.0	
	FORMATION EVAL	TRIP	10.0	
	INTERRUPTION	MAINTAIN/REP	1.0	
	Sum :			24.0
21/05/85	FORMATION EVAL	CIRC/COND	1.5	
	FORMATION EVAL	DST	5.5	
	FORMATION EVAL	TRIP	16.0	
	INTERRUPTION	MAINTAIN/REP	1.0	
	Sum :			24.0
22/05/85	FORMATION EVAL	TRIP	12.5	
	INTERRUPTION	MAINTAIN/REP	11.5	
	Sum :			24.0
23/05/85	FORMATION EVAL	DST	22.0	
	FORMATION EVAL	TRIP	2.0	
	Sum :			24.0
24/05/85	FORMATION EVAL	DST	24.0	
	Sum :			24.0
25/05/85	FORMATION EVAL	DST	24.0	
	Sum :			24.0
26/05/85	FORMATION EVAL	DST	24.0	
	Sum :			24.0

Well no: 34/7-6

Dato	Mainoperation	Suboperation	Hours	
27/05/85	FORMATION EVAL	DST	16.0	
	FORMATION EVAL	TRIP	8.0	
	Sum :			24.0
28/05/85	FORMATION EVAL	CIRC/COND	1.5	
	FORMATION EVAL	OTHER	5.0	
	FORMATION EVAL	TRIP	13.0	
	INTERRUPTION	MAINTAIN/REP	0.5	
	PLUG & ABANDON	PERFORATE	3.0	
	PLUG & ABANDON	TRIP	1.0	
	Sum :			24.0
29/05/85	DRILLING	BOP/WELLHEAD EQ	4.0	
	PLUG & ABANDON	CEMENT PLUG	1.5	
	PLUG & ABANDON	CIRC/COND	1.0	
	PLUG & ABANDON	CUT	6.5	
	PLUG & ABANDON	EQUIP RECOVERY	7.5	
	PLUG & ABANDON	PERFORATE	3.0	
	PLUG & ABANDON	TRIP	0.5	
	Sum :			24.0
30/05/85	DRILLING	BOP/WELLHEAD EQ	6.5	
	INTERRUPTION	MAINTAIN/REP	1.0	
	MOVING	ANCHOR	1.5	
	PLUG & ABANDON	CUT	3.0	
	PLUG & ABANDON	EQUIP RECOVERY	3.0	
	PLUG & ABANDON	TRIP	9.0	
	Sum :			24.0
31/05/85	MOVING	ANCHOR	12.5	
	Sum :			12.5

7. OPERATIONAL DATA

If not otherwise mentioned, all depths in this chapter refer to m RKB (Rotary Kelly Bushing).

7.1 **Equipment Failure Report**

Well no: 34/7-6

Saga Petroleum a.s.

DATE	DESCRIPTION OF EQUIPMENT	LOST RIG TIME (HRS)	DESCRIPTION OF FAILURE	CAUSE, REASON	COMMENTS AND RECOMMENDATIONS
18/3	BJ Hydraulic pump for gatevalve on PSM unit.	1	Hydraulic pump failed. Swithed over to jet-mix equipment.	Plugged	BJ to function, test equipment more accurately
19/3	Upper latch on sub-sea diverter	5 1/2	Leak in upper latch sylinder	Sub-sea diverter delivered with bad latch sylinders	Sylinders are changed
22/3	MWD-Tool	12	No signal transmission from tool to monitor at surface	One nozzle + nozzle-carrrier was washed away fraom Tristate Under-Reamer and plugged the turbine in MWD-Tool, thereby preventing the signal transmission	The nozzle-carrier was washed loose while pumping. When stopping pump the items fell down inside U.R. and down to MWD-turbine, preventing it from rotating. The procedure for installing the nozzle carrier in the under-reamer should be checked & preferably modified to avoid corresponding failures in the future
7/4	Bit breaker, corehead stabilizer	3/4	One of the pins on the bit breaker sheared and the slots on the core-head were squeezed. In a second attempt where the rig tong was used instead of bit breaker, the stab-ilizer above the bit was damaged by the tong dies	- Bit breaker not good enough - Lower tong placed too high causing the tong dies to catch on the stabilizer	Recommendations: Use stronger bit breaker. Make sure the rig tong is placed correct
8/4	Core catcher	0	Core catcher was washed out during coring using "mouse trap" core catcher and circ. w/1799 l/min and surface pressure of 207 bar	The connection between upper and lower part (probably welded) are too weak. When setting too much weight on the catcher it cracked and caused a smaller space between the catcher and outer barrel so that a washout occured.	Supplier should pay closer attention to quality and condition of equipment sent out to rig
8/5	LPR-N valve Halliburton	0	LPR-N failed to seal for initial build up. Indication on surface that valve closed but failed to seal	O-ring failure. Upon inspection after failure on O-ring it was found to be cut.	Surface shut in on initial build up. Must valve used on main build up. Test proceeded as per program

7.2 Anchor Pattern

Well no: 34/7-6

Saga Petroleum a.s.

ANCHOR NO	1	2	3	4	5	6	7	8
COMPASS DIRECTION	202	247	292	337	022	067	112	157
CHAIN/WIRE ON DRUM (M)								
LENGTH OF WIRE/CHAIN OUT	1438	1438	1400	1400	1380	1375	1500	1390
MAX.INITIAL TENSION (KIPS)	160	160	160	160	160	160	160	160

REMARKS:

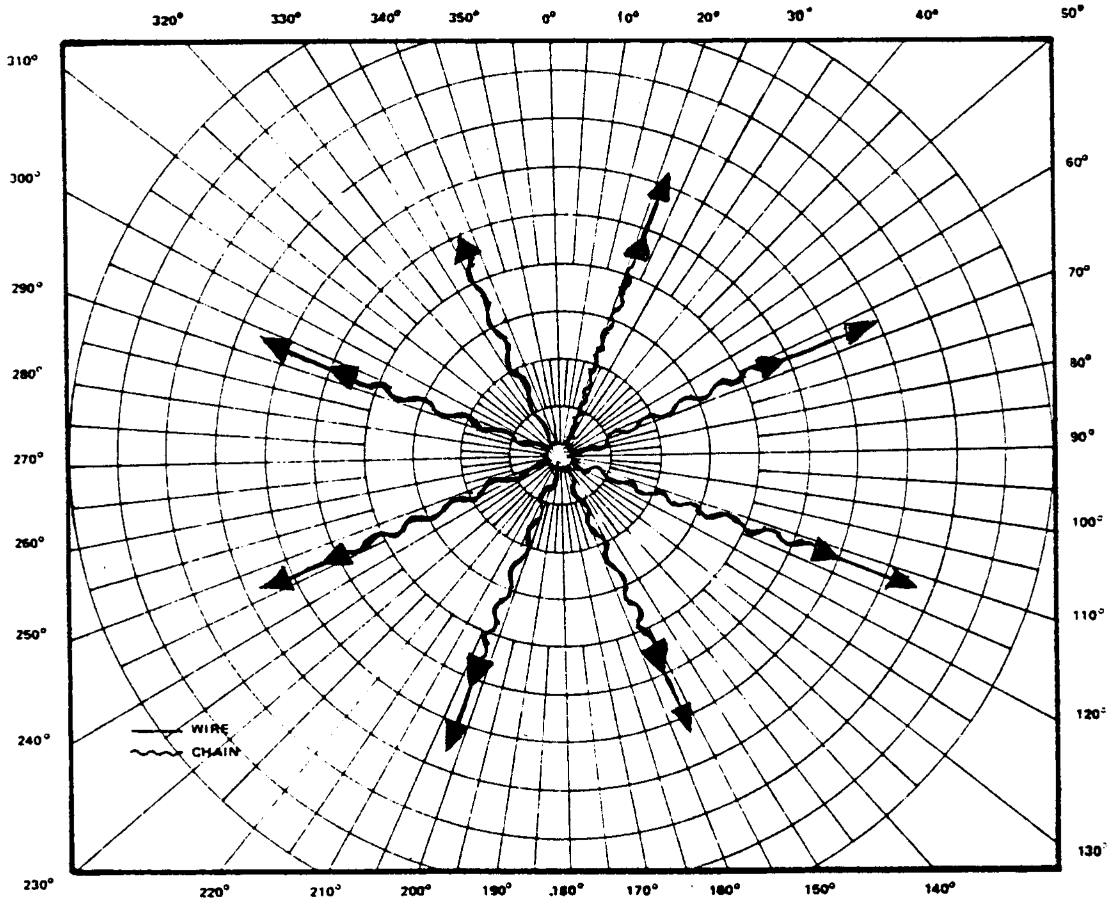
	MAIN ANCHOR		PIGGY BACK
1	→	1800 FT →	1500 FT
2	→	1800 FT →	1500 FT
3	→	1750 FT →	1500 FT
4	→		
5	→	1800 FT →	1500 FT
6	→	1800 FT →	1500 FT
7	→	1800 FT →	1500 FT
8	→	1800 FT →	1500 FT

FINAL POSITION:

N 61° 27' 10.85"

E 02° 08' 17.26"

Water Depth 307 m



RIG HEADING: 180°

7.3. **Helicopter and Charter Flights**

Well no: 34/7-6

Saga Petroleum a.s.

NO OF FLIGHT		FLIGHT ROUTE	PASSENGERS OUT	PASSENGERS IN	DESCRIPTION OF CARGO	REMARKS
33	SCHEDULED HELICOPTER FLIGHTS	BGO -T.SAGA	464	457	Mail and Oil Equipm.	
NIL	SCHEDULED CHARTER FLIGHTS					
12	EXTRA HELICOPTER FL.	BGO - T.SAGA	84	81	700 kgs Oil Equipm.	
2	" " "	BGO - T.SAGA	-	-	240 kgs " "	MOBILE FLIGHT
3	" " "	BGO - T.SAGA	8	12	154 kgs " "	AMOCO FLIGHT

7.4.1. Occupational Accidents - Arbeidsulykker
Incident/Profession - Skadehendelse/Yrke

Saga Petroleum a.s.

Well no: 34/7-6

Incident – Skadehendelse / Profession – Yrke	Administration – Administrasjon	Roughneck – Boredekksarbeider	Driller – Borer	Electrician – Elektriker	Catering – Forpleining	Roustabout – Hjelpearbeider	Electronic technican – Instrumenttekniker	Crane operator – Kranfører	Derrikman – Tårnmann	Painter Sandblaster worker – Maler Sandblåser	Mechanic/ Repairer – Mekaniker/Motormann/ Reparatør	Operator – Operatør	Plumber – Rørlegger	Service technichan – Servicetekniker	Scaffolding worker – Stillasbygger	Welder – Sveiser	Unspecified – Uspesifisert	Total – Totalt	%	Year – år
Contact with machinery in motion Kontakt med maskindel i bevegelse																				
Fire, explosion, etc. Brann, eksplosjon e.l.																				
Fall to same level Fall til samme nivå																				
False step Tråkk på ujevnheter, feiltråkk																				
Falling objects Fallende gjenstander																				
Contact with stationary objects Kontakt med gjenstander i ro																				
Accident of handling mobile units Håndteringsulykker		2							1									3		
Chemicals Kontakt med kjemiske forbindelser																				
Body overload Overbelastning av kroppsdeler																				
Splinter, spurt Splinter, sprut																				
Electricity Elektrisk strøm																				
Extreme temperatures Ekstreme temperaturer																				
Occupational disease Yrkessykdommer																				
Man overboard Mann overbord																				
Other Annet																				
Total Totalt		2							1									3		

27137C Industritrykk

7.4.2. Occupational Accidents - Arbeidsulykker Incident/injured part - Skadehendelse/ of the body skadet legemsdel

Saga Petroleum a.s.

Well no: 34/7-6

Injured part of the body / Skadet legemsdel — Incident / Skadehendelse	Eye – Øye	Back – Rygg	Toe/foot – Tå/fot	Hip/leg – Hofte/bein	Abdomen/Chest – Mage/bryst	Arm/shoulder – Arm/skulder	Head – Hode	Tooth – Tann	Hand/finger – Hånd/finger	Other – Annet	Total – Totalt	%	Year – år
Contact with machinery in motion Kontakt med maskindel i bevegelse													
Fire, explosion, etc. Brann, eksplosjon e.l.													
Fall to lower level Fall til lavere nivå													
Fall to same level Fall til samme nivå													
False step Tråkking på ujevnheter, feiltråkk													
Falling objects Fallende gjenstander													
Contact with stationary objects Kontakt med gjenstander i ro													
Accident of handling mobile units Håndteringsulykker			1						2		3		
Chemicals Kontakt med kjemiske forbindelser													
Bodity overload Overbelastning av kroppsdeler													
Splinter, spurt Splinter, sprut													
Electricity Elektrisk strøm													
Extreme temperatures Ekstreme temperaturer													
Occupational disease Yrkessykdommer													
Man overboard Mann overbord													
Other Annet													
Total Totalt			1						2		3		

27137A Industritrykk

7.4.3. Occupational Accidents - Arbeidsulykker Incident/external influence - Skadehendelse/Ytre faktor

Saga Petroleum a.s.

Well no: 34/7-6

External Influence / Ytre factor — Incident / Skadehendelse	Chemical, physical, biological influence / Kjemisk, fysisk, biologisk faktor	Cooling, presure, wormth, ventilation / Kjøling, tryukk, varme, ventilasjon	Material, goods, packing / Materiale, gods, emballasje	Electric equipment / Electrisk utrustning	Other machine / Annen maskin	Drilling tools / Boretenger	Handcraft tool, machines, instruments / Håndverktøy, maskiner, instrumenter	Movable/fixed arrangements of the constr. / Løs/fast innretning på bygning, kônstruksjon	Lifting-/transport equipment / Løfte-/transport anordning	Other / Annet	Total / Totalt	%	Year / år
Contact with machinery in motion / Kontakt med maskindel i bevegelse													
Fire, explosion, etc. / Brann, eksplosjon e.l.													
Fall to lower level / Fall til lavere nivå													
Fall to the same level / Fall til samme nivå													
False step / Tråkk på ujevnheter, feiltråkk													
Falling objects / Fallende gjenstander													
Contact with stationary objects / Kontakt med gjenstander i ro													
Accident of handling mobile units / Håndteringsulykker						2	1				3		
Chemicals / Kontakt med kjemiske forbindelser													
Bodity overload / Overbelastning av kroppsdeler													
Splinter, spurt / Splinter, sprut													
Electricity / Elektrisk strøm													
Extreme temperatures / Ekstreme temperaturer													
Occupational disease / Yrkessykdommer													
Man overboard / Mann overbord													
Other / Annet													
Total / Totalt						2	1				3		

27137B Industritrykk

Date	MAX WIND speed m/s	MAX WIND dir deg	MAX SEAS height m	MAX SEAS dir deg	MAX SWELL height m	MAX SWELL dir deg	periode sec	MAX RIG MOVEMENT heave m	roll deg	pitch deg	head deg	ANCHOR tons min	ANCHOR tons max	RISER max	Remarks
850316	8	50	4.0	50				1.2	5.0	4.0	180	0	0	0	
850317	3	90	2.0	20				0.3	1.8	1.1	180	107	150	0	Riser disconnected.
850318	13	180	3.5	180				0.4	2.0	2.0	180	102	150	0	Riser disconnected.
850319	12	125	3.2	130				0.7	2.0	6.0	180	110	150	0	Riser disconnected.
850320	10	90	3.0	90				0.6	1.8	3.0	180	110	138	144	
850321	8	90	1.0	90				0.6	1.4	1.4	180	105	136	156	
850322	5	90	1.0	90				0.4	0.8	1.2	180	105	137	156	
850323	6	135	.8	135				0.6	1.0	1.0	180	106	146	160	
850324	7	135	1.0	180				0.5	1.0	1.0	180	106	143	0	Riser disconnected.
850325	4	135	1.0	135				0.6	1.5	2.0	180	105	142	0	Riser disconnected.
850326	17	320	4.0	320				0.8	3.0	2.6	180	103	144	216	
850327	17	319	4.6	320				6.8	3.0	3.5	180	102	136	214	
850328	17	321	5.0	340				2.0	4.0	3.4	180	100	139	214	
850329	18	276	7.0	270				1.9	5.0	2.5	180	106	140	248	
850330	6	270	2.8	270				1.6	2.6	2.2	180	105	136	254	
850331	3	140	.5	140				1.5	1.8	2.0	180	103	136	254	
850401	14	44	2.2	80				0.7	1.4	1.6	180	100	141	256	
850402	3	317	1.6	320				0.6	1.7	2.0	180	100	140	256	
850403	10	120	2.5	140				0.8	2.0	2.8	180	100	149	282	
850404	7	140	1.8	140				0.6	1.4	1.5	180	100	146	292	
850405	11	140	2.0	160				0.7	1.8	2.2	180	100	146	292	
850406	17	140	2.5	105				0.6	2.6	3.5	180	100	155	292	
850407	10	150	2.7	170				0.6	2.0	2.2	180	108	145	288	
850408	19	40	4.6	10				0.9	6.0	3.4	180	105	159	292	
850409	7	40	2.4	40				0.5	2.4	1.6	180	104	145	296	
850410	15	174	3.4	174				0.2	1.5	2.0	180	104	143	287	
850411	21	165	5.2	170				2.1	3.2	3.6	180	112	142	291	
850412	16	176	5.0	180				0.9	3.0	2.0	180	104	146	291	
850413	15	164	5.4	175				1.2	2.2	2.4	180	59	142	293	Anchor 4,8 slacked.
850414	5	216	3.1	215				0.9	1.0	1.6	180	105	138	293	

Well no: 34/7-6

	MAX WIND		MAX SEAS		MAX SWELL			MAX RIG MOVEMENT				ANCHOR		RISER	
Date	speed	dir	height	dir	height	dir	periode	heave	roll	pitch	head		tons		Remarks
	m/s	deg	m	deg	m	deg	sec	m	deg	deg	deg	min	max	max	
850415	4	93	3.4	120				0.6	1.6	1.2	180	120	141	293	
850416	14	242	3.6	240				0.8	2.2	2.0	180	108	145	293	
850417	17	270	5.4	250				1.5	3.6	1.6	180	110	167	294	
850418	10	300	2.5	300				0.9	2.8	1.0	180	104	170	292	
850419	25	28	7.2	30				1.2	3.4	3.6	180	81	170	290	
850420	23	21	10.0	20				1.6	3.4	3.6	180	84	171	292	
850421	10	270	2.5	270				0.3	1.2	1.0	180	70	167	288	
850422	16	30	4.0	30				0.9	4.2	2.6	180	71	170	286	
850423	15	0	3.5	0				1.0	2.6	1.2	180	51	152	285	
850424	28	335	15.0	335				5.2	5.0	5.0	180	83	177	285	
850425	6	315	4.0	315				2.5	3.0	3.0	180	95	141	294	
850426	18	80	5.0	40				0.9	4.0	2.5	180	104	142	292	
850427	21	30	8.0	15				2.9	4.0	4.0	180	100	145	294	
850428	10	40	4.1	40				0.5	2.0	2.0	180	100	134	296	
850429	5	135	2.0	100				0.2	1.2	1.0	180	100	131	301	
850430	10	180	1.3	180				0.1	1.2	1.0	180	122	134	292	
850501	12	27	2.5	45				0.4	1.8	1.8	180	120	133	284	
850502	17	22	4.0	22				0.8	2.8	2.9	180	121	142	286	
850503	12	44	3.0	45				0.7	2.2	2.3	180	121	137	286	
850504	4	207	1.0	180				0.4	1.4	1.4	180	121	132	298	
850505	12	198	2.3	180				0.5	2.0	2.2	180	114	132	306	
850506	11	156	2.2	160				0.6	1.2	2.7	180	114	131	312	
850507	7	181	1.1	180				0.3	1.0	1.0	180	115	140	312	
850508	5	152	.9	152				0.7	0.6	0.6	180	116	139	326	
850509	6	395	1.1	278				0.5	1.0	0.4	180	114	131	324	
850510	11	353	1.4	340				0.3	1.8	0.8	180	116	130	318	
850511	2	340	1.2	350				0.2	1.2	1.0	180	116	131	316	
850512	3	315	1.6	275				0.8	1.6	0.4	180	116	130	318	
850513	6	20	1.0	9				0.4	1.0	0.4	180	116	130	314	
850514	19	50	3.4	50				0.6	3.8	2.2	180	120	136	314	

Well no: 34/7-6

Date	MAX WIND speed m/s	MAX WIND dir deg	MAX SEAS height m	MAX SEAS dir deg	MAX SWELL height m	MAX SWELL dir deg	periode sec	MAX RIG MOVEMENT heave m	MAX RIG MOVEMENT roll deg	MAX RIG MOVEMENT pitch deg	head deg	ANCHOR tons min	ANCHOR tons max	RISER max	Remarks
850515	6	77	2.9	80				0.3	1.2	1.2	180	115	140	314	
850516	5	25	1.1	20				0.4	0.8	1.0	180	113	136	308	
850517	7	34	1.9	30				0.2	0.8	0.8	180	115	136	305	
850518	14	40	2.4	40				0.8	2.0	1.8	180	115	141	312	
850519	13	20	2.4	30				0.4	1.2	1.0	180	115	138	310	
850520	14	12	1.4	10				0.5	0.8	1.2	180	114	137	307	
850521	14	352	2.0	360				0.2	0.8	0.8	180	113	137	306	
850522	10	15	3.3	6				0.3	1.4	2.0	180	112	137	308	
850523	4	280	2.0	275				0.5	1.0	0.8	180	113	136	306	
850524	21	180	4.2	180				0.8	3.2	2.8	180	108	138	300	
850525	16	203	5.2	200				0.5	3.4	2.4	180	110	135	300	
850526	15	180	3.0	180				0.4	2.2	2.0	180	100	132	305	
850527	14	180	2.1	180				0.2	0.6	1.2	180	100	130	299	
850528	11	220	3.9	220				0.2	2.0	2.0	180	100	132	298	
850529	9	180	2.8	180				0.2	1.0	1.0	180	100	133	300	
850530	4	225	2.8	225				0.3	2.0	2.0	180	0	0	0	Anchor 2,6,7s pulled.
850531	0	0		0							180	0	0	0	

7.6 Special Report

Stuck RTTS packer/tailpipe

After the well was killed by pumping down 1.70 g/cc mud (after DST-I), it was attempted to pull test string.

While unseating the RTTS packer the string was stuck after 4 m was pulled.

The string was lowered and pulled up again, but was stuck at the same place.

After several unsuccessful attempts to pull the string free, it was decided to pull the string, to break the tail pipe (weakest point). The string was pulled free with an overpull of 65 m/t.

43 m of tailpipe was left in hole - top of fish at 2533 m.

The fish was pushed down to 2545 m using a 8 1/8" mill, to give enough rathole space for the next DST.

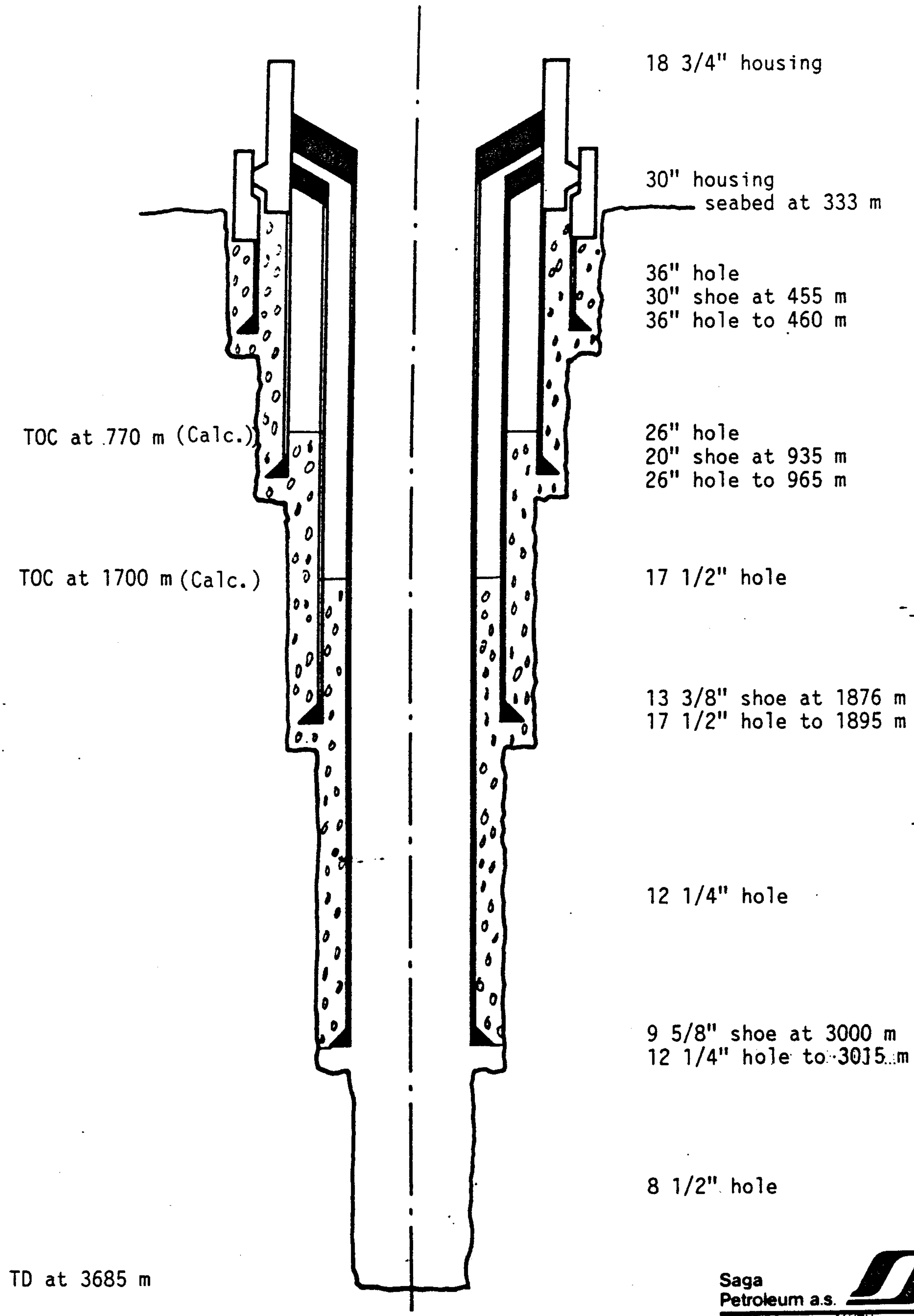
The most probably reason why the tailpipe got stuck is settling of sand around the tailpipe and Geovann perforating gun.

One solution to avoid this problem in the future can be to redesign the tailpipe - either stronger tubing and/or smaller O.D. on the perforating gun.

8. WELL PROFILES

If not otherwise mentioned, all depths in this chapter refer to m RKB (Rotary Kelly Bushing).

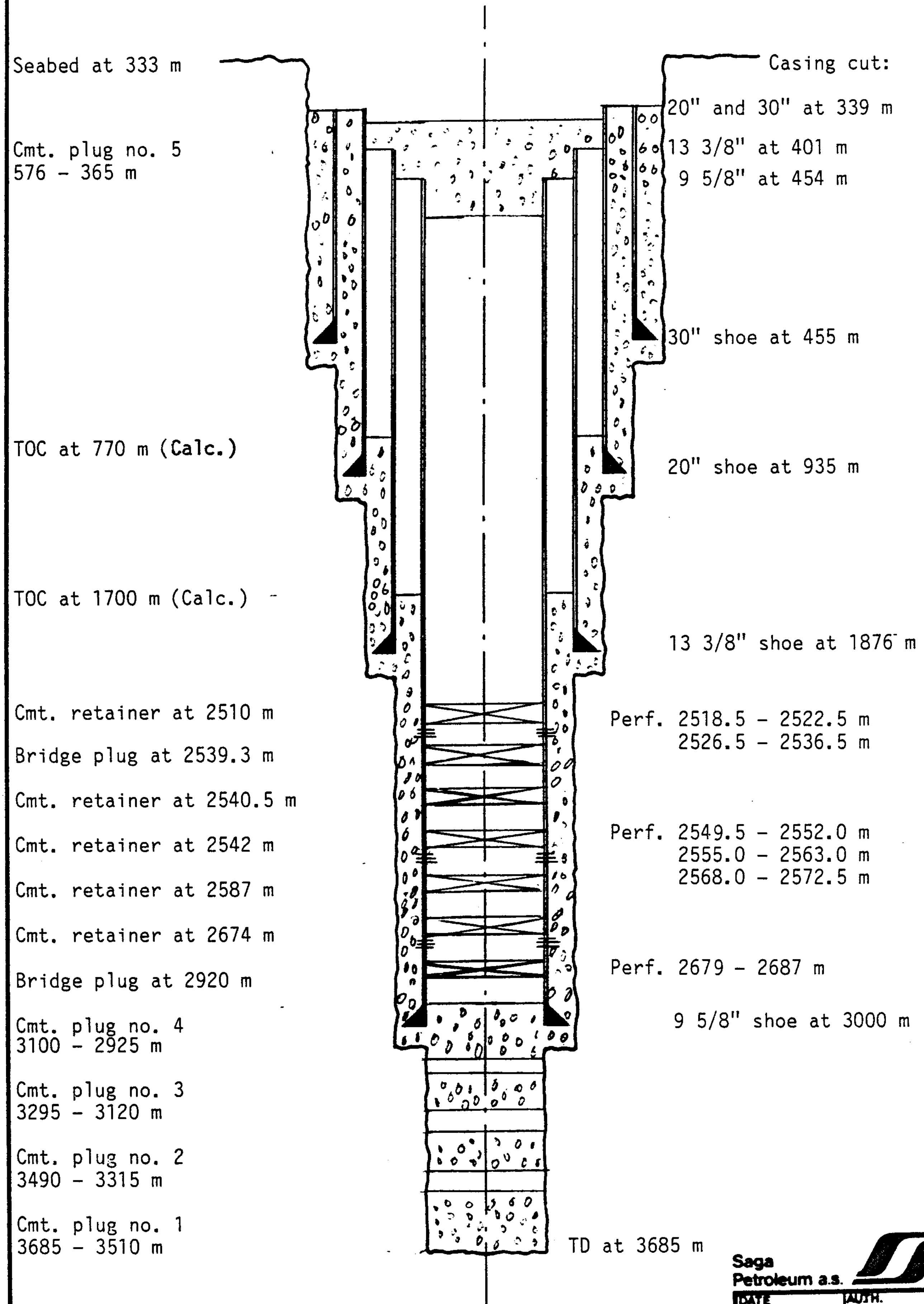
8.1. Wellbore Schematic
Well no. 34/7-6



Saga
Petroleum a.s.

DATE	AUTH.
DRAW. BY	APPR.
REF.	

8.2. Abandonment Profile
Well no: 34/7-6



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DATE	AUTH.
DRAW. BY	APPR.
REF.	

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ESSO / STATOIL / NORSK HYDRO / ELF
DEMINEX / DNO

Saga Petroleum a.s.

Composite Well Log

Well 34/7-6

SCALE	: 1:500	RIG	: TREASURE SAGA
COUNTRY	: NORWAY	LOCATION COORDINATES	
AREA	: TAMPEN SPUR	LATITUDE	: 61° 27' 10.85"N
OPERATOR	: SAGA PETROLEUM a.s.	LONGITUDE	: 02° 08' 17.26"E
LICENCE	: 089	ELEVATIONS	
RIG TAKEN OVER BY THE LICENCE	: MARCH 16th, 1985	RKB-MEAN SEA LEVEL	: 26m
DATE SPUDDED	: MARCH 17th, 1985	RKB-SEA FLOOR	: 333m
T.D. DATE	: MAY 2nd, 1985	WATER DEPTH	: 307m
RIG RELEASED	: MAY 31st, 1985	TOTAL DEPTH driller's depth	: 3685m
COMPLETION STATUS	: P&A as an OIL WELL	logger's depth	: 3677m

DRILLING CONTRACTOR	MUDLOGGING SERVICE
WILH. WILHELMSEN	EXPLORATION LOGGING

CASING	SHOE (mRKB)	HOLE SIZE	INTERVALL (mRKB)
30"	455	36"	333-460m
20"	935	26" (17 1/2")	460-965m
13 3/8"	1876	17 1/2"	965-1895m
9 5/8"	3000	12 1/4"	1895-3015m
		8 1/2"	3015-3685m

LOCATION MAP

LOGS

ANADRILL (MWD) / DRESSER ATLAS (WIRELINE LOGS)

Casing Record	Hole Size	Logged Interval (m RKB)	Type of Log	Run No.	Date
30" 455 m	36" to 460 m		GR to surface		
20" 935 m	26" (17 1/2") to 965 m		GR to surface MWD (GR, Res, Dir, T°, DTOR, DWOB, SWOB)		
13 3/8" 1876 m	17 1/2" to 1895 m	935.0 - 1894.8 935.0 - 1871.0	MWD DIFL-LSBHC-GR CDL-GR	1A 1A	30.03.85 30.03.85
9 5/8" 3000 m	12 1/4" to 3015 m	1878.0 - 3011.3 2452.0 - 3011.5 1878.0 - 3011.4 2450.0 - 3011.3 1878.0 - 3008.0 35 samples rec.	MWD DIFL-LSBHC-GR DLL-MLL-GR CDL-CNL SPECTRALOG DIPLOG FMT CORGUN VSP	2B 2A 2A 2A 2A 2A-C 2A 2A	19.04.85 18.04.85 18.04.85 18.04.85 20.04.85 19-21.04.85 21.04.85 21.04.85
T.D. 3685 m		2999.1 - 3676.3 2999.1 - 3675.9 2999.1 - 3676.0 3084.0 - 3642.0 38 samples rec.	MWD DIFL-LSBHC-GR CDL-CNL-GR DIPLOG FMT VSP CORGUN	3C 3B 3B 3H-I 3B 3B-D	02.05.85 02.05.85 03.05.85 03.05.85

AUTHOR: Ø. MJELDE APPR: B.A. GUSTAVSEN DRAFTED BY: R. KJØLSTAD DATE: OCTOBER 1985

GEOLOGICAL SYMBOLS

CLAY/CLAYSTONE, BRECCIA, SALT, SHALE, LIMESTONE, ANHYDRITE/GYPSUM, SILTSTONE, CHALK, VOLCANICS, SAND/SANDSTONE, DOLOMITE, COAL, CONGLOMERATE, MARL, GNEISSEOUS/BASEMENT

LITH. PREFIXES

CALCAREOUS, DOLOMITIC, ARGILLACEOUS, CHERTY, GLAUCONITIC, MICACEOUS, PYRITIC, TUFFACEOUS, METAMORPHICS, SIDERITE

FOSSILS

FORAMINIFERA, SHELL DEBRIS, MACROFOSSILS

WELL LOG SYMBOLS

SIDEWALL CORE, SIDEWALL CORE, NO RECOVERY, CORE, RFT, OIL SHOW, GAS SHOW, CASING SHOE, DRILL STEM TEST

WELL 34/7-6 - CORE SUMMARY

Core No.	Cut Interval m RKB	m	Recovered Interval m RKB	m	%	Correction factor m	Recovered interval, log m RKB
1	2516.0 - 2527.5	11.5	2516.0 - 2524.6	8.6	75	-1.3	2514.7 - 2523.3
2A	2527.5 - 2543.0	15.5	2527.5 - 2533.0			-3.0	2524.5 - 2530.0
				15.2	98		
2B			2533.0 - 2542.7			-2.0	2531.0 - 2540.7
3	2543.0 - 2546.5	3.5	0	0	0		
4	2546.5 - 2549.0	2.5	0	0	0		
5	2549.0 - 2557.5	8.5	2549.0 - 2556.8	7.8	92	-3.5	2545.5 - 2553.3
6	2557.5 - 2568.5	11.0	2557.5 - 2568.5	11.0	100	-4.0	2553.5 - 2564.5
7	2568.5 - 2582.0	13.5	2568.5 - 2582.0	13.5	100	-3.5	2565.0 - 2578.5
8	2582.0 - 2598.5	16.5	2582.0 - 2594.5	12.5	76	-3.5	2578.5 - 2591.0
9A	2598.5 - 2612.5	14.0	2598.5 - 2603.0			-5.0	2593.5 - 2598.0
				13.5	96		
9B			2603.0 - 2612.0			-4.5	2598.5 - 2607.5
10	2612.5 - 2624.0	11.5	2612.5 - 2624.0	11.5	100	-2.0	2610.5 - 2622.0
11	2913.0 - 2927.0	14.0	2913.0 - 2925.5	12.5	89	-4.5	2908.5 - 2921.0
12A	2927.0 - 2953.0	26.0	2927.0 - 2937.5	26.0	100	-4.3	2922.7 - 2933.2
12B			2937.5 - 2953.3			-3.0	2934.5 - 2950.3
13	3560.0 - 3578.5	18.5	3560.0 - 3578.5	18.5	100	0	3560.0 - 3578.5

WELL 34/7-6 - FORMATION MULTI TESTER

Depth m RKB	Formation pressure, temp. corrected psia	bar HP gauge	psia	bar Strain gauge	Remarks
RUN 2A					
2520.8	5572.1	384.18	5575.7	384.43	
2510.8					No seal
2512.5	5569.8	383.82	5568.7	383.95	
2528.3	5582.2	384.67	5582.7	384.91	
2536.8	5593.5	385.45	5594.7	385.74	
2551.4	5608.7	386.50	5605.7	386.50	
2561.4	5622.4	387.44	5623.7	387.74	
2571.4	5636.3	388.40	5635.7	388.57	
2585.4	5646.5	389.11	5645.7	398.26	
2595.4	5661.5	390.14	5662.7	390.43	
2606.4					No seal
2650.4					No seal
2649.4	5725.9	394.79	5726.2	394.81	
2682.4	5778.1	398.39	5779.2	398.46	
2734.9					No seal
2732.9					Tight
2584.4					Tool plugged
RUN 2B					
2520.8			5578.7	384.64	
2595.4			5649.7	389.53	
2585.4			5648.7	389.46	
2595.4			5662.7	390.43	
2649.4			5722.7	394.57	
2682.4			5775.7	398.22	
2701.4			5924.7	408.49	
2776.5			5909.7	407.46	
2828.5			5987.7	412.84	
2868.5					No seal
2868.5			6044.7	416.77	
2595.4			5660.7	390.29	
2561.4			5629.7	388.15	
RUN 2F					
2520.8					Seg. sample
2520.8			5587.7	385.26	
2528.3			5595.7	385.81	
2561.4			5626.7	387.95	
2571.4					Tight
2569.4			5633.7	388.43	
RUN 3H					
3084.0			6336.7	436.90	
3138.0			6413.7	442.21	
3261.0			6591.7	454.48	
RUN 3I					
3309.0					Lost seal
3408.0			6850.7	472.34	
3449.0			6911.7	476.54	
3545.0			7054.7	486.40	
3604.0			7145.7	492.68	
3626.0			7190.7	495.78	
3642.0			7199.7	496.40	
3261.0			6645.7	458.20	
3084.0			6395.7	440.97	

WELL 34/7-6 - DST SUMMARY

3 Drill Stem Tests were carried out, one in the Lunde Formation and two in the Statfjord Formation.

DST No.	Interval m RKB (logged)	BHP BAR (psia)	BHT °C	WHP BAR	WHT °C	Choke size mm	Flow rate Sm^3/day
1	2679.0 - 2687.0	396.2 (5744.7) (at 2683)	93.7	5.6	36.7	12.7	224.8 water
2	2549.5 - 2552.0 2555.0 - 2563.0 2568.0 - 2572.5	386.9 (5609.5) (at 2562.5)	90.9	148.5	41.1	7.9	519.1 oil
3A	2518.5 - 2522.5	383.7 (5563.4) (at 2520.5)	90.2	183.9	15.0	6.4	392.6 oil
3B	2518.5 - 2522.5 2526.5 - 2536.5	384.2 (5570.7) (at 2527.5)	89.9	158.1	58.9	14.3	1729.3 oil

4131/05-857528/H 6cx

Enclosure II

FORMATION PRESSURE EVALUATION SHEET 34/7-6

4131/05-857528/H 6ex

SAGA PETROLEUM

Enclosure III A

CONVENTIONAL CORE DESCRIPTION

FIELD: SNORRE WELL NO. 34/7-6 CORE NO: 1 PAGE 1 of 2

FROM: 2516 TO: 2527.5 CORED. 11.5 m REC: 8.6 m 75 %

FORMATION: STATFJORD GEOL: OM/BK DATE: 6/4-85

CORING RATE | LITHOLOGY GRAIN SIZE | CORE | POROSITY | STAIN | FLUOR | CUT | DESCRIPTION

Inst strmg — SS:dk brn,pred m-c occ v c,mod srtd,sbang-sbrd,frm, non-sl calc,tr mica,g por

No cut — SLTST:grdg clyst,gy-dk gy,hd,sbfis,mica

CLYST:dk gy,v hd,sbfis,non calc,mic,carb

fast strmg — SS:gy-brn gy,v f-m,p srtd,sbang-sbrd,frm,non-sl calc,p-mod por

Inst strmg — SS:dk brn,m-c,wl srtd,sbang-sbrd,lse-fri, pred non calc,g por

a/a — SS:dk brn,m-v c occ pbly,p-mod srtd,lse-fri, non-sl calc,occ sl mica,g por

Slow strmg — SS:dk brn,f-m,mod srtd,fri-frm,v calc cmt, carb,v mica,p por

Shows in ss:Exc brn oil stn.Strong yel-lt yel flor.
Inst strmg cloudy wh yel cut,leaving a wh res upon evap.Brn vis cut.
G od.

Tr: fast strmg — SS:cl,vf,m srtd,sbang-sbrnd,hd,v mica,p-fr por

SH:sl slty,gy blk,brit-frm,fis,v mica,p por

inst strmg — SS:lt brn,pred c occ m and v c,v srtd,sbrnd-rnd,fri lse,g por

SHOWS:exc stn,str yel flor,inst cloudy yel-wh cut, yel-wh flor res,str od

SS:lt brn,pred c occ m and v c,v srtd,sbrnd-rnd,fri-lse,g por

SHOWS:exc stn,str yel flor,inst cloudt yel-wh cut, yel-wh flor res,str od

inst strmg — SH:sl slty,lt-m gy,brit-frm,fis,v mic,p por

SS:cl occ lt brn,c ,v srtd,sbrnd-rnd,h-v h,v calc cmtd,mica,p por

SS:lt brn,pred c occ m and v c,v srtd,sbrnd-rnd,fri-lse,g por

SHOWS:excstn,str yel flor,inst cloudy yel-wh cut, yel-wh flor res,str od

inst strmg — SS:lt brn,pred c occ m and v c,v srtd,sbrnd-rnd,fri-lse,g por

SHOWS:ecx stn,str yel flor,inst cloudy yel-wh cut, yel-wh flor res,str od

SS:cl-wh,vf,v srtd,sbrnd-rnd,v mica,p por

SANDSTONE FINING UPWARDS TO CLAYSTONE, WITH MUD CLAST AT BASE

Clyst:grdg sltst occ sdy,pa gn and gy red, frm,blky,non calc,sl mica.

Sltst:arg,grdg f ss,pa gn gy,frm-fri,blky, pred non calc,sl mica.

Fast stmg — Ss:brn gy oil stn,f-c,pred mod srtd,sbang-sbrd, frm,non calc,slmica,mod-g por.

Ss:/mud clast,brn gy oil stn,f-v c,p srtd, sbang-sbrnd,frm,non calc,sl mica.

Clyst:grdg sltst,gy red occ pa gn gy,frm,blky, non calc,tr mica.

Shows in ss: Lt brn oil stn,100%strong-exc yel-lt yel flor,fast stmg cloudy wh yel cut.Brn vis cut.G od.

No cut — Sltst:occ grdg f-vf ss,gy gn and rd,hd,blky,mica.

Ss:arg,gy,vf-f,mod srtd,sbang-sbrd,hd,mica,p por.

Fast stmg — Ss:brn oil stn,f-m occ c,p-modsrtd,sbang-sbrd,frm,mica, occ kao,pred non calc,g vis por.

Ss:brn oil stn,m-c,mod srtd,sbang-sbrd,frm,mica,occ kao, non calc,g vis por.

No cut — Sltst/clyst:occ sdy,gy-gn gy,v hd,sbfis,v mica(musc,bio), kao cmt,non calc.

Ss:brn oil stn,f-m,mod srtd,sbang-sbrd,fri-frm,kao,non calc,g vis por.

Fast stmg — Ss:brn oil stn,m-v c,p-mod srtd,sbang-sbrd,fri,non calc,mod-p por.

Ss:brn oil stn,pred c-vc occ pbly and mud clast, p-mod srtd,fri,sl calc,mod por.

No cut — Clyst:slty,and sdy,gn gy,frm-hd,blky,sl mica,non calc.

No cut — SS:slty-arg,cl-lt brn,vf-c,m srtd,sbrnd-sbang,frm-fri, mica,clyst clasts and qtz pbl near base,non calc

Fast stmg — Shows:g lt brn stn,75% mod yel flor,fast stmg cloudy yel-wh cut,yel-wh flor res,weak od

SH:slty,lt-m gy,fri-frm,sbfis,mica,non calc

Fast stmg — SS:lt brn,m-c occ vc,m-v srtd,sbrnd-sbang,fri-lse,mica kaolin,g por,non calc

Shows:exc lt brn stn,100% str yel flor,fast stmg cloudy yel-wh cut,yel-wh flor res,g od

Fast stmg — SS:lt brn vc occ pbly.sbrnd,fri,mica,clyst clasts near base,g por,no calc

Shows:exc lt brn stn,100% str yel flor,fast stmg cloudy yel-wh cut,yel-wh flor res,g od

No cut — SH:aren,dk gy occ dk red brn,fri,sbfis-fis,mica,non calc

No cut — SH:aren,dk gy occ dk red brn,fri,sbfis-fis,mica,non calc

No cut — SH:slty,olv gy-v dk red,frm,fis,mica,non calc

SLT:sdy,m gy,frm-fri,v mica,f por,no calc

fast stmg — SS:lt brn,m,m-v srtd,sbang-sbrnd,fr-frm,sl calc cem, kao-mica

Shows:g-exc stn,100% mod pale yel flor,fast stmg cloudy wh yel flor cut.brn vis cut,g od

fast stmg — SS:lt brn,m-pbl near base,sbang-sbrnd,fr-frm kao-mica,non-sl calc

Shows:g-exc stn,100% mod pale yel flor,fast stmg cloudy wh-yel flor cut,brn vis cut,g od

No cut — SH:slty-occ aren,dk olv gn,frm,fis,mica,non calc

Top Core no 9: 2598.5 m

SILTSTONE

sltst: arg and aren,m-dk gy,vf sd grns,frm,v mica, non calc,p vis por

SANDSTONE (2599.3-2600.1 m)

ss:clr [illegible] o stn,m and c,w srtd,sbang-sbrnd,fri-frm,kao,sl calc,g vis por

wh-yel — shows: exc-g o stn,100 strong yel flor,fast streaming cloudy wh-yel flor cut,weak yel wh res, strong od

ss (2600.1-2601.5 m):clr-gn wh,m-vf,mod srtd,ang-sbang,frm-hd,sl mica,sl calc,fr vis por

yel wh — shows: 50% lt brn o stn,90 % orng yel flor,mod-slow streaming cloudy yel wh cut,weak yel wh res, sl od

CLAYSTONE-SHALE (2601.5-2601.8 m)

clyst-sh:sl aren,dk gy,frm,sl mica,non calc abundant slickensides

SANDSTONE (2601.8-2604.0 m)

ss: v arg,dk rd brn and dk gn gy,m-slty,p srtd, ang,hd,mica,non calc,p vis por abundant slickensides

no shows

SILTSTONE

sltst: arg,occ aren,dk gy,hd-frm,sbfis,mica, non-sl calc

Abundant limestone precipitation between 2606.0-2609.8 m

Siltstone is occasional laminated

No shows

Siltstone becomes variegated dark red brown and moderate olive brown

Top Core no 10: 2612.5 m

SILTSTONE WITH OCCASIONAL LIMESTONE NOUDULES

sltst: occ vf sdy,vgt dk rd brn and gn gy,ang,hd sbfis,v mica,sl-non calc

ls: arg and aren,dk gn gy-m dk gy,hd

LIMESTONE (2615.4-2615.8 m)

ls: as above

SILTSTONE (2615.8-2616.2 m)

~~SANDSTONE (2616.2-2617.1 m)~~

ss: arg,dk gn gy-m dk gy,f-slty,mod srtd,ang,frm-hd, mica,non-sl calc,p vis por no shows

SILTSTONE (2617.1-2618.4 m)

sltst: as above

CLAYSTONE/SHALE (2618.4-2624 m) with abundant slickensides

clyst/sh:occ sl aren,vgt dk rd brn,dk gy,hd-frm, sbfis,mica,non calc to calc

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SAGA PETROLEUM

Enclosure III B

CONVENTIONAL CORE DESCRIPTION

FIELD: Snorre WELL NO: 34/7-6 CORE NO: 11 PAGE: 1 of 3

FROM: 2913 m TO: 2927 m CORED: 14 m REC: 12.5 m 89.3 %

FORMATION: LUNDE GEOL: CWC/TSo DATE: 16/4-85

CORING RATE 8 6 4 2 | LITHOLOGY GRAIN SIZE mµ si vf f m c vc | CORE | POROSITY 10 20 30 | STAIN 25 50 75 | FLUOR 25 50 75 | CUT | DESCRIPTION

TOP CORE NO 11: 2913 m

MASSIVE SANDSTONE WITH OCCASIONAL THIN CLAYSTONE LAMINA

ss: clr-wh,vf-f,w srtd,sbang,frm,mica,sl calc
from 2914.6 m: v calc and hd

2915.0-2915.1 m: Interbedded sandstone/claystone with small limestone clasts

2915.1-2916.4 m: Massive sandstone with occasional small claystone clasts. Large scale cross-bedding on top. Occasional 60° fractures with calcite

ss: clr-wh,vf-f,w srtd,sbang,hd,mica,v calc

2916.4-2917.5m: ALTERNATING SANDSTONE/CLAYSTONE WITH SOFT SEDIMENT DEFORMATION AND SMALL SCALE FAULTING

ss: clr-wh,vf-f,w srtd,sbang,frm,mica,sl calc
clyst: v slty,mod brn-gy brn,frm,blky,mic-mica, sl calc

2917.5-2918.3 m: MASSIVE SANDSTONE WITH OCCASIONAL SMALL SCALE CROSS BEDDING.

ss: as above, occasional fractures

2918.3-2919.8 m: ALTERNETING SANDSTONE/CLAYSTONE WITH SOFT SEDIMENT DEFORMATION AND LATER SMALL SCALE FAULTING

ss: as above
clyst: as above

2919.8-2921.6 m: CLAYSTONE WITH OCCASIONAL SMALL LIMESTONE NOUDULES

clyst: v slty,mod brn-gy brn,frm blky,sl calc mic-mica

2921.6-2923.6 m: SANDSTONE WITH SMALL CLASTS OF CLAYSTONE.

ss: wh-clr,vf-f,wl srtd,sbang,frm-hd,mica,calc

in the interval 2923.2-2923.6 the sandstone is fractured with calcite fill and faulted.

2923.6-2925.5 m: CLAYSTONE WITH OCCASIONAL SMALL LIMESTONE NOUDULES

clyst: sl slty,dk gy,mod brn gy-gy brn,frm,blky, mic-mica,non calc

TOP CORE NO 12: 2927 m

CLAYSTONE WITH THIN BEDS OF SANDSTONE

clyst: slty,mod dk brn-gy brn,frm,sbfis,mica,non-sl calc

ss: clr-gn wh,vf-f,wl srtd,sbang-sbrnd,frm-hd, mica

2928.6-2930.3 m: SANDSTONE, OCCASIONAL THIN CLAY LAMINA AT TOP.

ss: as above
Rip off clasts of clay at bottom

2930.3-2934.3 m: CLAYSTONE WITH SIDERITE NOUDULES

clyst: as above

2934.3-2934.8 m: SANDSTONE WITH SMALL SCALE CROSS BEDS.
ss: as above
2934.8-2935.3 m: LAMINATED CLAYSTONE/SANDSTONE

2935.3-2937.2 m SANDSTONE, FINING UPWARD

Small scale crossbedding and ripples

Sandstone is pebbly at base.

2937.2-2939.1 m: CLAYSTONE WITH SMALL SIDERITE CONCRETIONS.

clyst: as above

2939.1-2941.0 m: LAMINATED CLAYSTONE/SANDSTONE

2941.0-2941.3 m SANDSTONE

ss: clr-gn wh,vf-f,wl srtd,sbang,frm-hd,mica,sl calc

2941.3-2944.5 m CLAYSTONE WITH OCCASIONAL SANDSTONE LAMINA

clyst:slty,mod dk brn-gy brn,frm,sbfis,mica,non sl calc

2944.5-2945.8 m: SANDSTONE WITH THIN CLAYSTONE LAMINA

ss: as above

Erosional contact at 2945.8 m

2945.8-2950.1 m: SANDSTONE WITH LIMESTONE NOUDULES

Noudules disappear below 2948.0 m

Small scale cross-bedding and ripples below 2948.0 m

ss: as above

2950.1-2950.5 m: CLAYSTONE
clyst: as above

2950.5-2953.3 m: SANDSTONE WITH CLAYSTONE LAMINA

ss: as above, but more calcareous towards the base

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SAGA PETROLEUM

Enclosure III C

CONVENTIONAL CORE DESCRIPTION

FIELD: Snorre WELL NO. 34/7-6 CORE NO: 13 PAGE 1

FROM: 3560.0m TO: 3578.5 m CORED: 18.5 m REC: 18.5 m 100 %

FORMATION: Top Lomvi Fm GEOL: L. Straume/ P. Bakøy/ U.M. Stenstadvold DATE: 1.5.85

	CORING RATE 12 9 6 3	LITHOLOGY GRAIN SIZE mp si vf f m c vc	CORE	PORO-SITY 10 20 30	STAIN 25 50 75	FLUOR 25 50 75	CUT	DESCRIPTION
3560.0								TOP CORE no. 13: 3560.0 m
3561.0								Ss, dk red brn, vf - f, occ slty, mas, mod - w srtd, sbang -sbrnd, frm - hd, sl calc, occ sil cmt, kaol, mica, p vis por. No shows.
3562.0								
3563.0								
3564.0								
3565.0								
3566.0								
3567.0								Ss A/A
3568.0								
3569.0								
3570.0								
3571.0								
3572.0								
3573.0								
3574.0								Ss: A/A
3575.0								
3576.0								
3577.0								
3578.0								BOTTOM CORE no. 13 - 3578.5 m
3579.0