

RFT RESULTS PRESSURE

WELL 30/9-5

RUN NO./ TEST No.	DEPTH MRKB	IHP PSIA	FP PSIA	FHP PSIA	REMARKS
3A /1	2238.5	4052.7	3345.1	4052.8	GOOD PERM.
/2	2240.5	4056.6	3348.0	4056.6	POOR PERM.
/3	2450.5	4434.2	3852.2	4434.4	MODERATE PERM.
/4	2452.0	4436.9	3852.3	4437.0	FAIRLY GOOD PERM.
/5	2454.0	4440.6	3852.7	-	LOST SEAL
/6	2454.0	4440.5	3852.7	4440.7	MODERATE PERM.
/7	2456.5	4445.2	4051.0	4445.2	LOST SEAL
/8	2456.5	4445.0	-	-	LOST SEAL
/9	2456.3	4445.1	3853.8	4445.0	LOW PERM.
/10	2458.2	4448.4	3855.0	4448.4	SUPERCHARGED
/11	2611.0	4722.9	3946.5	4722.4	GOOD PERM.
/12	2627.0	4750.4	3969.0	4750.9	GOOD PERM.
/13	2643.0	4781.0	3991.7	4781.3	GOOD PERM.
/14	2653.0	4800.4	4006.3	4800.7	GOOD PERM.
/15	2678.0	4845.8	4043.3	4845.9	GOOD PERM.
/16	2696.0	4876.9	4067.6	4877.0	GOOD PERM.
/17	2725.0	4929.3	4109.4	4929.3	GOOD PERM.
/18	2758.0	4987.1	4156.4	4987.2	MODERATE PERM.
/19	2802.0	5065.9	4220.4	5066.0	MODERATE PERM.
/20	2837.0	5126.7	4269.8	5126.8	MODERATE PERM.
/21	2863.0	5172.7	4307.4	5172.8	MODERATE PERM.
/22	2902.0	5241.9	4363.9	5241.9	MODERATE PERM.
/23	2933.0	5296.6	4407.4	5296.0	GOOD PERM.
/24	2938.0	5304.2	4414.0	5304.4	GOOD PERM.
/25	2940.0	5308.0	4416.8	5308.0	GOOD PERM.
/26	2452.0	4442.5	3853.1		SEGREGATED SAMPLES
3B /1	2238.5				SEGREGATED SAMPLES

- All pressure readings are from HP-gauge, i.e. temperature corrected.
- IHP: Initial Hydrostatic Pressure
FP: Formation Pressure
FHP: Final Hydrostatic Pressure
- Max Recorded Downhole Temperature: 222°F (106.8°C)

RFT RESULTS SAMPLES

WELL 30/9-5

SAMPLES ARE TAKEN IN THE COOK FM. AND THE BRENT GR.

SEGREGATED SAMPLE NO.1 AT 2452 MRKB (RUN NO.1) COOK FM

	1ST CHAMBER	2ND CHAMBER
CHAMBER VOL., GAL :	23.4	1
FILLING TIME, MIN. :	10	3.3
P CHAMBER, PSIG :	2120	
GAS VOL., SCF :	50.8	
OIL VOL., LITER :	0.3 cond.	-
OIL GRAVITY, API :	-	-
WATER/FILT., LITER :	2.2	
WATER/FILT., PPM CL. :	-	-
REMARKS :	Drained at rig floor.	Sealed and sent ashore for transfer

SEGREGATED SAMPLE NO. 2 AT 2238 MRKB (RUN NO.2) BRENT GROUP

	1ST CHAMBER	2ND CAMBER
CHAMBER VOL., GAL :	23.4	1
FILLING TIME, MIN. :	11.5	-
P CHAMBER, PSIG :	2100	
GAS VOL., SCF :	40.8	
OIL VOL., LITER :	Traces of cond.	-
OIL GRAVITY, API :	-	-
WATER/FILT., LITER :	1.5	
WATER/FILT., PPM CL. :	-	
REMARKS :	Partial plugged flow line. Drained at rig floor.	Sealed and sent ashore for transfer.

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MUD REPORT

Drilling fluid used.

Hole section:	Mud:
36"	Spud mud
26"	Spud mud
17 1/2"	KCL/Polymer
12 1/4"	NaCl/Polymer

36" hole section

The 36" hole was drilled down to 219 m using seawater/high viscous s slugs. 8m³ of high viscous mud was pumped on each connection to help cleaning the hole. At TD, the hole was displaced with 50m3 high viscous mud prior to run the casing.

Materials used in this section:

Bentonite, Caustic soda, Aluminium sterate.

0012o

26" hole section

The 26" hole was drilled down to 910 m using prehydrated bentonite/seawater. The 17 1/2" pilot hole was drilled to 885 m with at 8m³ high viscous pill on every third connection. 107m³ high viscous pill was then spotted, a wiper trip was made and another 111m³ of havis mud was spotted before the hole was logged.

After logging, the hole was underreamed to 26" and displaced to 1,20 rd mud. The riser was then displaced to seawater and a flow check was made. The riser was then pulled and the hole was reamed with a 26" bit to 907 m with a high viscous pill on each connection. The hole was then filled with 1,23 rd mud and the 20" casing was run.

Materials used in this section:

Barite, Bentonite, Causic soda, Soda ash, AA-100 regular

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17 1/2" hole section

The 17 1/2" hole was drilled to 1935 m using a KCL/polymer system. When drilling out the shoe, the mudweight was kept at 1,15 rd. At 1214 m the mudweight was increased to 1,25 rd due to sticky hole. The hole continued being tight and sticky, and the mudweight was increased to 1,30 rd at 1525 m and to 1,35 rd at 1558 m. The mud was also treated with lubricants at this stage and high viscous pills were pumped around to assist improving the hole cleaning. At 1746 m the bit balled up and detergent and nut plug was added to the mud to clean up the bit and bottom hole assembly.

After reaching TD of this section, the mud weight was cut back to 1,30 rd prior to logging. After logging, 15m³ of high viscous 1,40 rd mud was spotted on the bottom and the 13 3/8" casing was run.

Materials used in this section:

Barite, KCL brine, KCL sxs, AA-100 regular, AA-100 lovis, Anco biovis, Ancomel, Caustic soda, Drilling detergent, Defoamer, Soltex, Nut plug, Bentonite, Ancolube.

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12 1/4" hole section

Prior to drilling out the casing shoe, the hole was displaced to NaCl/polymer mud. Chlorides were kept in the 55 -60000 mg/l range to optimize logging conditions. The hole was drilled to 2980 m. First wiper trip at 1999 m proved some tight spots. At 2363 the mud weight was cut to 1,25 rd and bentonite was added to improve the HTHP conditions. High viscous pills at 1.30 rd were pumped as required while drilling sandstone to give better hole cleaning. At TD a wiper trip was done without any problems. Logs were run and the well was plugged back.

Materials used in this section:

Barite, Bentonite, Caustic, NaCl sxs, NaCl, Anco biovis, AA-100 regular, AA-100 lovis, Soda ash, Ancotemp, CMC lovis, Drispac regular, Ancolube, Drilling detergent, DF-vis(xc), Sodium bicarbonate.

Daily mud properties

..Date..
19860311

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System : Boredata Sandnes

Well: 0030/09-05

Norsk Mud Contractor: ANCHOR.DRLG.SERVICES

Hydro

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Date	Mid depth (m)	Mud dens. (SG)	PV cps	YP mPa	GEL 0 mPa	GEL 10 mPa	Ph	100 psi (cc)	HP/HT (cc)	Cl- inn/out mg/l	Alkalinity Pf Pm Mf			Ca++ inn/out mg/l	Oil %	Sol %	H2O %	V.G. meter at 115AF						Mud type																			
					600 rpm	300 rpm					200 rpm	100 rpm	6 rpm					3 rpm	rpm	rpm	rpm	rpm	rpm		rpm																		
850526	126	1.0	0	0													100																				WATER						
850527	126	1.05															100																				SPUD						
850528	219	1.05															100																				SPUD						
850529	219	1.05															100																				SPUD						
850530	549	1.10	3	25													100																				GEL/S.WATER						
850531	885	1.09	6	14						12000/							100																				GEL/S.WATER						
850601	885	1.09	8	34													100																				GEL/S.WATER						
850602	897	1.20	9	14													100																				GEL/S.WATER						
850603	910	1.23	21	15													100																				GEL/S.WATER						
850604	910	1.03															100																				SEA WATER						
850605	910	1.12	14	5			8.6	7.5		72000/			580/			100	38	24																		KCl polymer							
850606	1000	1.15	16	6	1	1	10.6	6.2		69000/		0.8	1.3	640/		9	91	44	28																		KCl/POLYMER						
850607	1188	1.17	21	10	2	2	10.5	5.2		70000/		0.5	0.9	580/		10	90	63	42	34	22	5	2														KCl/POLYMER						
850608	1343	1.25	22	11	2	4	10.0	5.5		80000/		0.2	0.5	900/		13	87	66	44																			KCl/POLYMER					
850609	1525	1.30	27	13	2	6	8.5	6.4		78000/		0.1	0.2	1200/		14	86	70	53																			KCl/POLYMER					
850610	1714	1.35	28	12	3	7	8.4	8.0		81000/		.05	.2	1600/		16	84	80	52																			KCl/POLYMER					
850611	1746	1.35	24	12	2	5	8.3	8.0		78000/		.05	.3	1600/		18	82	72	48																				KCl/POLYMER				
850612	1935	1.30	30	13	2	5	8.3	7.4		75000/		0.1	0.4	1600/		16	84	85	55																				KCl/POLYMER				
850613	1935	1.30	29	11	2	4	8.4	7.6		76000/		0.1	0.4	1600/		17	83	80	51																				KCl/POLYMER				
850614	1935	1.31	24	10	2	4	8.4	7.6		82000/		.1	.45	1560/		17	83	68	44																				KCl/POLYMER				
850615	1935	1.30	22	9	1	3	8.4	7.5		83000/		.1	.45	1580/		17	83	62	40																				KCl/POLYMER				
850616	1935																100																							KCl/POLYMER			
850617	1935																100																								KCl/POLYMER		
850618	1935																100																									KCl/POLYMER	
850619	1935																100																									KCl/POLYMER	
850620	1935																100																									KCl/POLYMER	
850621	1935																100																									KCl/POLYMER	
850622	1935																100																									KCl/POLYMER	
850623	1935																100																									KCl/POLYMER	
850624	1935																100																									KCl/POLYMER	
850625	1935																100																										KCl/POLYMER
850626	1935																100																										KCl/POLYMER
850627	1935																100																										KCl/POLYMER
850628	1935	1.30	27	9													100																									NaCl/Polym.	
850629	1935	1.3	27	8	1	1	10.5	8.5		70000/		0.8	2.2	400/		14	86	72	45																						NaCl/Polym.		
850630	2028	1.3	23	9	1	1	10	5.1	20	72000/		0.4	0.9	280/		14	86	66	43	31	20	3	1																	NaCl/Polym.			
850701	2171	1.3	25	9	1	1	10.5	4.6	10.5	76000/		0.6	1.3	120/		14	86	70	45	30	21	3	1																	NaCl/Polym.			
850702	2250	1.29	26	9	1	1	10.7	4	15	70000/		0.8	1.3	80/		13	87	72	46	32	21	2	1																		NaCl/Polym.		
850703	2367	1.25	26	11	1	2	10.2	5.2	14	65000/		0.3	0.9	80/		11	89	75	49	3	22	3	1																		NaCl/Polym.		
850704	2455	1.25	24	10	1	2	10.4	4.5	14	63000/		0.3	1.1	60/		11	89	68	44	33	21	2	1																		NaCl/Polym.		

TABLE B-5

D a i l y m u d p r o p e r t i e s

..Date..
19860311

System : Boredata Sandnes

Well: 0030/09-05

Norsk Mud Contractor: ANCHOR.DRLG.SERVICES

Hydro

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Date	Mid depth (m)	Mud dens. (SG)	PV cps	YP mPa	GEL mPa		Ph	100 psi (cc)	HP/HT (cc)	Cl- inn/out mg/l	Alkalinity			Ca++ inn/out mg/l	Oil %	Sol %	H2O %	V.G. meter at 115AF						Mud type
					0 mPa	10 mPa					Pf	Pm	Mf					600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	
850708	2608	1.25	26	11	1	2	10.5	4.5	18	60000/	0.6	1.3	80/	12	88	67	43	32	18	3	1	NaCl/Polym.		
850709	2659	1.25	26	10	1	2	9.9	4.3	17	59000/	.55	1.4	80/	13	87	72	46	35	22	3	2	NaCl/Polym.		
850710	2775	1.25	22	9	1	2	10.4	4.5	15	61000/	.65	1.5	40/	13	87	62	40	29	18	3	2	NaCl/Polym.		
850711	2905	1.25	27	12	2	5	10.3	4.3	14	63000/	0.7	1.6	40/	13	87	78	51	40	25	4	3	NaCl/Polym.		
850712	2947	1.25	24	10	2	3	10.2	4.4	12	70000/	0.6	1.3	40/	13	87	73	47	36	23	4	3	NaCl/Polym.		
850713	2980	1.25	26	11	2	6	10.0	4.2	12	67000/	.55	1.3	80/	13	87	80	53	42	28	5	3	NaCl/Polym.		
850714	2980	1.25	29	13	2	4	10.0	4.0	12	67000/	.55	1.3	100/	13	87	84	55					NaCl/Polym.		
850715	2980	1.25	27	13	2	4	9.9	4.0	12	65000/	0.5	1.2	120/	13	87	81	54					NaCl/Polym.		
850716	2980	1.25	28	13		4	9.9		12	64000/	.45	1.2	120/	13	87							NaCl/Polym.		
850717		1.26	25	10	2	4	11.8	4.5		59000/	1.3	2.1	80/	14	86	70	45					NaCl/Polym.		
850718		1.25	24	9	1	3	11.7	4.6		58000/	1.3	2.1	100/	14	86	66	42					NaCl/Polym.		
850719		1.25	20	9	1	3		4.7		58000/	.45	.75	100/	14	86	57	37					NaCl/Polym.		
850720															100									

1901M

TABLE B-6

MUD MATERIAL CONSUMPTION

<u>Material</u>	<u>Consumption</u>	<u>Unit Size</u>
Barite	451	MT
Bentonite	114	MT
Caustic soda	264	25 kg/sx
NaCl sxs	80	50 kg/SX
NaCl	90	MT
Anco biovis	150	25 kg/sx
AA-100 lovis	328	25 kg/sx
AA-100 regular	336	25 kg/sx
Soda ash	132	30 kg/sx
Ancotemp	78	25 l/can
CMC lovis	230	25 kg/sx
Drispac regular	10	50 lbs/sx
Ancolube	10	200 l/drum
Drilling detergent	11	200 l/drum
DF-vis (XC)	13	25 kg/sx
Sodium bicarbonate	11	50 kg/sx
Aluminium sterate	8	25 kg/sx
KCl brine	2000	bbls
KCl sxs	915	50 kg/sx
Ancomel	300	25 kg/sx
Defoamer	1	25 l/can
Soltex	169	50 lbs/sx
Nutplug	8	25 kg/sx
Ancolube	20	200 l/drum