OPERATOR STATOIL

WELL NO. 34/10-16

MATERIAL CONSUMPTION & COST ANALYSIS

36" HOLE DRILLED TO 225 Meters ~~Feet~~ 30" CASING SET AT 225 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 62 Meters ~~Feet~~ DAYS ON INTERVAL 3

DRILLING FLUID SYSTEM SPUD MUD

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	US$ COST
BENTONITE BULK	M/T	22	21	- 1	7,980.00
CAUSTIC SODA	25 KG	22	23	+ 2	460.00
SODA ASH	50 KG	3	5	+ 2	100.00

COST/DAY US$2,846.70 TOTAL COST FOR INTERVAL US$ 8,540.00

COST/Mt. ~~OR Ft.~~ US$ 137.74 PROG. COST FOR INTERVAL US$ 8,860.00

ENGR. COST * US$2,362.500 COST VARIANCE FOR INTERVAL US$ - 320.00

* INCLUDING 1 DAY RIG MOVE AND ANHOR HANDLING

OPERATOR STATOIL

WELL NO. 34/10-16

MATERIAL CONSUMPTION & COST ANALYSIS

26" HOLE DRILLED TO 617 Meters 20" CASING SET AT 598 Meters

ACTUAL AMOUNT OF HOLE DRILLED 392 Meters DAYS ON INTERVAL 9

DRILLING FLUID SYSTEM GEL/ SEAWATER

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	US$ COST
BENTONITE BULK	M/T	35	34	- 1	12,920.00
BENTONITE SXS	50 KG	0	237	+ 237	4,266.00
CAUSTIC SODA	25 KG	92	169	+ 77	3,380.00
SODA ASH	50 KG	10	12	+ 2	240.00
LIGNOSULPHONATE	25 KG	0	46	+ 46	828.00
BARITE	M/T	0	178	+ 178	24,386.00
MICA F/C	25 KG	0	70	+ 70	1,351.00
NUTPLUG F/C	25 KG	0	50	+ 50	965.00

COST/DAY US$ 5,370.67 TOTAL COST FOR INTERVAL US$ 48,336.00

COST/Mt. US$ 123.31 PROG. COST FOR INTERVAL US$ 15,340.00

ENGR. COST US$ 7,087.50 COST VARIANCE FOR INTERVAL US$ +32,996.00

OPERATOR STATOIL

WELL NO. 34/10-16

MATERIAL CONSUMPTION & COST ANALYSIS

17 1/2" HOLE DRILLED TO 1920 Meters 13 3/5" CASING SET AT 1904 Meters

ACTUAL AMOUNT OF HOLE DRILLED 1303 Meters DAYS ON INTERVAL 19

DRILLING FLUID SYSTEM LIGNO/ CMC/ GEL

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	US$ COST
WYOMING BENTONITE	M/T	24	49.5	+ 25.5	18,810.00
CAUSTIC SODA	25 KG	72	156	+ 84	3,120.00
CHROME LIGNO.	25 KG	170	166	- 4	2,988.00
BARITE	M/T	350	286	- 64	39,182.00
SODIUM BICARBONATE	50 KG	10	19	+ 9	399.00
CMC LOVIS	25 KG	75	101	+ 26	6,565.00
CMC HIVIS	25 KG	0	46	+ 46	3,082.00
SODA ASH	50 KG	10	18	+ 8	360.00
DRISPAC REG.	50 LBS	0	1	+ 1	181.00

COST/DAY US$ 3,931.00

TOTAL COST FOR INTERVAL US$ 74,687.00

COST/Mt. US$ 57.32

PROG. COST FOR INTERVAL US$ 66,855.00

ENGR. COST US$ 14,962.50

COST VARIANCE FOR INTERVAL US$ + 7,832.00

OPERATOR STATOIL

WELL NO. 34/10-16

MATERIAL CONSUMPTION & COST ANALYSIS

12 1/4" HOLE DRILLED TO 2930 Meters ~~Feet~~ 9 5/8" CASING SET AT 2914 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 1010 Meters ~~Feet~~ DAYS ON INTERVAL 16

DRILLING FLUID SYSTEM GEL/ LIGNO/ CMC

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	US$ COST
BENTONITE BULK	M/T	0	8	+ 8	3.040.00
BENTONITE SXS	50 KG	270	53	- 217	954.00
BARITE BULK	M/T	305	96	- 209	13,152.00
CAUSTIC	25 KG	110	60	- 50	1,200.00
LIGNOSULPHONATE	25 KG	195	224	+ 29	4,032.00
BICARBONATE	50 KG	10	49	+ 39	1,029.00
SODA ASH	50 KG	10	68	+ 58	1,360.00
CMC LOVIS	25 KG	120	68	- 52	4,420.00
CMC HIVIS	25 KG	0	50	+ 50	3,350.00
DRISPAC REG.	50 LBS	0	2	- 2	362.00
LIGNITE	25 KG	75	0	- 75	-
MICA COARSE	25 KG	0	10	+ 10	193.00
MICA FINE	25 KG	0	15	+ 15	289.50
DRILLING DETERGENT	200 LTR	0	3	+ 3	1,050.00
LIME	25 KG	0	1	+ 1	6.00

COST/DAY US$ 2,152.34

TOTAL COST FOR INTERVAL US$ 34,437.50

COST/Mt. ~~Ft~~ US$ 34.10

PROG. COST FOR INTERVAL US$ 62.965.00

ENGR. COST US$12,600.00

COST VARIANCE FOR INTERVAL US$- 28,527.50

OPERATOR STATOIL

WELL NO. 34/10-16

MATERIAL CONSUMPTION & COST ANALYSIS

8 1/2" HOLE DRILLED TO 4042 Meters ~~Feet~~ | 7" LINER ~~CASING~~ SET AT 4035 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 1112 Meters ~~Feet~~ | DAYS ON INTERVAL 68

DRILLING FLUID SYSTEM GEL/ LIGNO/ LIGNITE

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	US$ COST
BENTONITE BULK	M/T	0	54.5	+ 54.5	20,710.00
BENTONITE SXS	50 KG	190	0	- 190	-
CAUSTIC SODA	25 KG	160	292	+ 132	5,840.00
SODA ASH	50 KG	10	1	- 9	20.00
BICARBOANTE	50 KG	15	50	+ 35	1,050.00
CHROME LIGNO.	25 KG	180	757	+ 577	13,626
CHROME LIGNITE	25 KG	180	423	+ 243	13,536.00
DURENEX (RESINEX)	25 KG	0	259	+ 259	24,980.55
DESCO	50 LBS	0	90	+ 90	3,420.00
CMC HIVIS	25 KG	50	52	+ 2	3,484.00
CMC LOVIS	25 KG	110	290	+ 180	18,850.00
DRISPAC REG.	50 LBS	0	0	-	-
DRISPAC SUPERLO	50 LBS	0	42	+ 42	8,064.00
BARITE BULK	M/T	175	841	+ 666	115,217.00
DRILLING DETERGENT	200 L/DR	0	5	+ 5	1,750.00
LIME	25 KG	0	4	+ 4	24.00
IMCO-SPOT	50 LBS	0	65	+ 65	6,435.00
PIPE-LAX	200 LTR	0	4	+ 4	3,180.00
DEFOAMER	LITRES	0	120	+ 120	420.00

COST/DAY US$ 3,538.33

COST/Mt. ~~Foot~~ US$ 216.37

ENGR. COST US$ 53,550.00

TOTAL COST FOR INTERVAL US$ 240,606.55

PROG. COST FOR INTERVAL US$ 50,610.00

COST VARIANCE FOR INTERVAL US$ 189,996.55

OPERATOR STATOIL

WELL NO. 34/10-16

MATERIAL CONSUMPTION & COST ANALYSIS

PLUGGING BACK [ ] HOLE DRILLED TO [ ] Meters / Feet [ ] CASING SET AT [ ] Meters / Feet

ACTUAL AMOUNT OF HOLE DRILLED [ ] Meters / Feet DAYS ON INTERVAL 3

DRILLING FLUID SYSTEM GEL/ LIGNO/ LIGNITE

MATERIAL	UNIT SIZE	PROG. *	USED	VARIANCE ±	US$ COST
BARITE BULK	M/T	-	7	-	959.00
LIGNOSULPHONATE	25 KG	-	14	-	252.00
BICARBONATE	50 KG	-	7	-	147.00

COST/DAY US$ 452.67 TOTAL COST FOR INTERVAL SU$ 1,358.00

COST/Mt. ~~or Ft.~~ - PROG. COST FOR INTERVAL -

ENGR. COST US$ 3,150.00** COST VARIANCE FOR INTERVAL -

* NO PROGNOSIS FOR TESTING AND PLUGGING BACK

** INCLUDING TWO DAYS PREPARING RIG MOVE AND ANCHOR HANDLIN

OPERATOR STATOIL

WELL NO. 34/10-16

TOTAL CONSUMPTION & COST ANALYSIS

TOTAL DEPTH 4042 Meters ~~Feet~~

TOTAL HOLE DRILLED 4042 Meters ~~Feet~~

TOTAL DAYS 119

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	US$ COST
BENTONITE BULK	M/T	81	167	+ 86	63,460.00
BENTONITE SXS	50 KG	460	290	- 170	5,220.00
BARITE	M/T	830	1408	+ 578	192,896.00
CAUSTIC	25 KG	456	700	+ 244	14,000.00
SODA ASH	50 KG	43	104	+ 61	2,080.00
BICARBONATE	50 KG	35	125	+ 90	2,625.00
LIGNOSULPHONATE	25 KG	545	1207	+ 662	21,726.00
CHROME LIGNITE	25 KG	255	423	+ 168	13,536.00
DESCO	25 KG	0	90	+ 90	3,420.00
DURENEX (RESINEX)	25 KG	0	259	+ 259	24,980.55
CMC LOVIS	25 KG	305	459	+ 154	29,835.00
CMC HIVIS	25 KG	50	148	+ 98	9,916.00
DRISPAC REG.	25 KG	0	3	+ 3	543.00
DRISPAC SUPERLO	25 KG	0	42	+ 42	8,064.00
LIME	25 KG	0	5	+ 5	30.00
DRILLING DETERGENT	200 LTR	0	8	+ 8	2,800.00
PIPE-LAX	200 LTR	0	4	+ 4	3,180.00
IMCO-SPOT	25 KG	0	65	+ 65	6,435.00
NUTPLUG COARSE	25 KG	0	50	+ 50	965.00
MICA FINE/COARSE	25 KG	0	70/25	+ 70/25	1,833.50
DEFOAMER	LITRES	0	120	+ 120	420.00

COST/DAY US$ 3,428.28

TOTAL COST FOR INTERVAL US$ 407,965.05

COST/Mt ~~or Ft~~ US$ 100.93

PROG. COST FOR INTERVAL US$ 204,630.00

ENGR. COST * US$ 93,712.50

COST VARIANCE FOR INTERVAL US$+203,335.05

* INCLUDING TWO DAYS PREPARING RIG MOVE AND ANCHOR HANDLING

...NSOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

WELL NAME 34/10-16 AREA NORTH SEA
OPERATOR STATOIL RIG. NEPTUNO NORDRAUG
MUD SYSTEM GEL ENGINEERS H. WIIK/ W. SUNDE/ I. TORGERSEN

Day No	DATE 1982 1983	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: M/T BARITE	BENTONITE M/T	SACK MATERIALS: BENTONITE	BARITE	THINNERS: LIGNO	LIGNITE	DESCO	POLYMERS: CMC LOVIS	CMC HIVIS	STARCH	DRISPAC REG.	DRISPAC SUPERLO	SODA ASH	BICARB.	CAUSTIC SODA	DRILLING DETERGENT	OTHERS: MICA F/C	NUTPLUG F/C	LIME	DEFOAMER (1ltr)	DURENEX	(resinex) LMCO SPOT PTDF
1	13.12						N O		U S A G E																	
2	14.12	40		1360		17											3		12							
3	15.12	250		198		2											1		4							
4	16.12	283		415		2											1		7							
5	17.12	1119		535			117										2		8							
6	18.12		5	448	24		90										1		6							
7	19.12	200	300	848	18	10			7								1		24							
8	20.12		10	130			N O		U S A G E																	
9	21.12		429	400													1		10							
10	22.12		800	921	20	2											2		21							
11	23.12		984	1700			10		9										55							
12	24.12		500	500	56				24										21		10/60	50				
13	25.12	3103		1850	60	22	20		6								5		24							
14	26.12		35	408	5	4											1		3							
FORWARD																										
ESTIMATED TOTALS		4955	3063	9713	183	59	237		46								18		195		10/60	50				

REMARKS:

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

MUD SYSTEM: GEL/ SEAWATER/ LIGNO/ CMC

WELL NAME: 34/10-16 AREA: NORTH SEA
OPERATOR: STATOIL RIG: NEPTUNO NORDRAUG
ENGINEERS: I. TORGERSEN/ E. SUNDE (M. CHAVEZ/H. WIIK)

Day No	DATE 1982 1983	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: M/T BARITE	BENTONITE M/T	SACK MATERIALS: BENTONITE	BARITE	THINNERS: LIGNO	LIGNITE	DESCO	POLYMERS: CMC LOVIS	CMC HIVIS	STARCH	DRISPAC REG.	DRISPAC SUPERLO	SODA ASH	BICARB.	CAUSTIC SODA	DRILLING DETERGENT	OTHERS: MICA F/C	NUTPLUG F/C	LIME	DEFOAMER (1ltr)	DURENEX	(resinex) EMCO SPOT	PTDF
15	27.12					NO USAGE																					
16	28.12					NO USAGE																					
17	29.12		155	260	10	3			27			14	6				2	12	2								
18	30.12	0	458	720	23	6							16				1		20								
19	31.12	0	681	900	29	3			6				6				10		14								
20	01.01		431	1020	35	13			2			28	4				2		30								
21	02.01		692	636	100	3			37			14	3				1		17								
22	03.01		714	850	23	6			17			3	3					1	11								
23	04.01		162	420	19	105			26			6	1					3	18								
24	05.01		579	247	12	1.5			10			4	4					3	10								
25	06.01		75	198					15			22							12								
26	07.01		0	0	0	1.5																					
27	08.01		99	0		NONE USED																					
28	09..01	100		396	3	5.5			9			10	3						6								
FORWARD		4955	3063	9713	183	59	237		46								18		195								
ESTIMATED TOTALS		5095	7109	15360	437	103	237		195			101	46				34	19	335								

REMARKS:

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

WELL NAME 34/10-16 AREA NORTH SEA
OPERATOR STATOIL RIG. NEPTUNO NORDRAUG
MUD SYSTEM GEL/ LIGNO/ CMC ENGINEERS M. CHAVEZ/ E. SUNDE/ I. TORGERSEN

Day No	DATE 1982 1983	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: M/T BARITE	BENTONITE M/T	SACK MATERIALS: BENTONITE	BARITE	THINNERS: LIGNO	LIGNITE	DESCO	POLYMERS: CMC LOVIS	CMC HIVIS	STARCH	DRISPAC REG.	DRISPAC SUPERLO	SODA ASH	BICARB.	CAUSTIC SODA	DRILLING DETERGENT	OTHERS: MICA F/C	NUTPLUG F/C	LIME	DEFOAMER (1 ltr)	DURENEX (resinex)	LMCO SPOT	RTDF
29	10.10	0	0	0		NONE			USED																		
30	11.01				13																						
31	12.01	100	338	150	14	1.5			11						1		1		9								
32	13.01	281	70						6										4								
33	14.01	603	20	250	23	5			4								2	1	2		15	10					
34	15.01		595	200	6				25			3					3	17									
35	16.01		150	574	29	3			55			16	7	1			2	26	4								
36	17.01		120	220	8				32			11	2				4										
37	18.01		154	240					3				4				12										
38	19.01		741	820					3			13	30				21		6								
39	20.01		146	160					16								13		2	2							
40	21.01		120	220			11		7										5	1							
41	22.01		301	490			12		14				7				7	5	15								
42	23.01		53	125					7			5					4										
FORWARD		5095	7109	15360	437	103	237		195			101	46				34	19	335		10 25	60					
ESTIMATED TOTALS		6079	9917	18809	530	112.5	260		378			149	96	2			103	68	382	3	70						

REMARKS:

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

MUD SYSTEM: GEL/ LIGNO/ CMC

WELL NAME: 34/10-16 AREA: NORTH SEA
OPERATOR: STATOIL RIG: NEPTUNO NORDRAUG
ENGINEERS: H. WIIK/ E. SUNCE/ M. CHAVEZ

Day No	DATE 1982 1983	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: M/T BARITE	BENTONITE M/T	SACK MATERIALS: BENTONITE	BARITE	MATERIALS ADDED TO CONTROL PROPERTIES: THINNERS: LIGNO	LIGNITE	DESCO	POLYMERS: CMC LOVIS	CMC HIVIS	STARCH	DRISPAC REG.	DRISPAC SUPERLO	SODA ASH	BICARB.	CAUSTIC SODA	DRILLING DETERGENT	OTHERS: MICA F/C	NUTPLUG F/C	LIME	DEFOAMER (1ltr)	DURENEX (resimex)	IMCO SPOT PIPE FREE
43	24.01		199	310					17			15			1				11							
44	25.01		241	90					22			5							7							
45	26.01		99	35	30				9										5							
46	27.01		92						2														1			
47	28.01						30												3							
48	29.01	500	87						8																	
49	30.01		338	259	17	5.5			27	15		19						10	10					60		
50	31.01		297	314	107	1			11	10		15							1							
51	01.02		238	180	54				15	22		21							21							
52	02.02		191	80	3				35	35		14							4							
53	03.02		97	144	20				30	15		8	8						12							
54	04.02		24	80	11				14			6	1						4							
55	05.02		38	35	4				9			1	3						4	2				2		
56	06.01		51	36	17							3	3						1							
FORWARD		6079	9917	18809	530	112.5	260		378			149	96	2			103	68	382	3	25/70	50				
ESTIMATED TOTALS		6579	11901	20372	790	119	290		577	97		300	111	3			103	78	465	5	25/70	50	1	60		

REMARKS

MI DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

MUD SYSTEM: GEL/ LINGO/ LIGNITE

WELL NAME: 34/10-16 AREA: NORTH SEA
OPERATOR: STATOIL RIG: NEPTUNO NORDRAUG
ENGINEERS: M. CHAVEZ/ I. TORGERSEN/ C. PARSONS/ H. WIIK

Day No.	DATE 1982 1983	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: M/T BARITE	M/T BENTONITE	SACK MATERIALS: BENTONITE	BARITE	THINNERS: LIGNO	LIGNITE	DESCO		POLYMERS: CMC LOVIS	CMC HIVIS	STARCH	DRISPAC REG.	DRISPAC SUPERLO		SODA ASH	BICARB.	CAUSTIC SODA	DRILLING DETERGENT	OTHERS: MICA F/C	NUTPLUG F/C		LIME		DEFOAMER (1tr)	DURENEX (resinex)	LMCO SPOT PIPE L	
57	07.02		48	270	29	4			9	17			15								6									
58	08.02		28	60	31	3			8	8			10								4									
59	09.02		274	145	18	3			9	12			1	2							6									
60	10.02		85		3				1					1																
61	11.02		119		5				4	3											2									
62	12.02		45		5				1	5				4							4									
63	13.02		42		8				1	1			4	4							4									
64	14.02		56		8				3																					
65	15.02		58		14				9	2											4	1								
66	16.02		98						2	1				1							2									
67	17.02		35		25				3	1			2								6									
68	18.02		5	128	3				2				7	1							7									
69	19.02		37		3																									
70	20.02		21	10	7																									
FORWARD		6579	11901	20372	790	119	290		577	97			256	111		3		103	78	465	5	25/70	50		1		60			
ESTIMATED TOTALS		6579	12861	20985	949	129	290		634	151			300	124		3		103	78	513	6	25/70	50		1		60			

REMARKS:

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

WELL NAME 34/10-16 AREA NORTH SEA
OPERATOR STATOIL RIG. NEPTUNO NORDRAUG
MUD SYSTEM GEL/ LINGO/ LIGNITE ENGINEERS H. WIIK/ C. PARSONS/ M. CHAVEZ

Day No	DATE 1982 1983	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: M/T BARITE	BENTONITE M/T	SACK MATERIALS: BENTONITE	BARITE	MATERIALS ADDED TO CONTROL PROPERTIES: THINNERS: LIGNO	LIGNITE	DESCO	POLYMERS: CMC LOVIS	CMC HIVIS	STARCH	DRISPAC REG.	DRISPAC SUPERLO	SODA ASH	BICARB.	CAUSTIC SODA	DRILLING DETERGENT	OTHERS: MICA F/C	NUTPLUG F/C	LIME	DEFOAMER (ltr)	DURENEX (resinex)	EMCO SPOT	PTPF
71	21.02		20	150		1			5	4		4							6								
72	22.02		10	34	19				16	19		8							3								
73	23.02		38		2				1	14		6	3						3	200							
74	24.02		118	300	4	5			2	9		7							3								
75	25.02		86	68	14	2			21				11						16								
76	26.02		150	50	6				15	8						3			6								
77	27.02		180	155	11				10	2						3			5								
78	28.02		311	180	18	3			24	11		1				6			12								
79	01.03			200	10	2			7							1			1								
80	02.03		6	182	39											4			2								
81	03.03	20	15		6				3										3								
82	04.03	22		20												1											
83	05.03	13														1											
84	06.03	7																									
FORWARD		6579	12861	20985	949	129	290		634	151		200	124		3		103	78	513	1200	25/70	50	1	60			
ESTIMATED TOTALS		6641	13795	22324	1078	142	290		738	218		326	138		3	19	103	78	573	1400	25/70	50	1	60			

REMARKS

A/S NORSK DRILLING FLUIDS
OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

MUD SYSTEM: GEL/ LIGNO/ LIGNITE

WELL NAME: 34/10-16 AREA: NORTH SEA
OPERATOR: STATOIL RIG: NEPTUNO NORDRAUG
ENGINEERS: M. CHAVEZ/ I. TORGERSEN/ H. WIIK/ C. PARSONS

Day No	DATE 1982 1983	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: M/T BARITE	BENTONITE M/T	BENTONITE	SACK MATERIALS: BARITE	MATERIALS ADDED TO CONTROL PROPERTIES: THINNERS: LIGNO	LIGNITE	DESCO	POLYMERS: CMC LOVIS	CMC HIVIS	STARCH	DRISPAC REG.	DRISPAC SUPERLO	SODA ASH	BICARB.	CAUSTIC SODA	DRILLING DETERGENT	OTHERS: MICA F/C	NUTPLUG F/C	LIME	DEFOAMER (1+1)	DURENEX (resinex)	TMCO SPOT RTDF
85	07.03	6	10						2										1							
86	08.02	232*	67		9				4							3			4							
87	09.03	53*	3		7							5				2										
88	10.03		7		3														1							
89	11.03							NO USAGE																		
90	12.03							NO USAGE																		
91	13.03							NO USAGE																		
92	14.03		80					NO USAGE																		
93	15.03			107	13				15	10								13								
94	16.03		72		62				49	23			5			3		11						16		65/4
95	17.03				10				27	17		12	3					3						40		
96	18.03		49	40	13				22	34	6	23						2						34		
97	19.03		77	245	1				8	1	8	13					1		2					8		
98	20.03		157	195	25	6			25	10	9	20						3	7					19		
FORWARD		6641	13795	22324	1078	142	290		738	213		326	138		3	19	103	78	573	1400	25/70	50	1	60		
ESTIMATED TOTALS		6932	14317	22911	1221	148	290		890	315	23	399	146		3	27	104	110	588	1400	25/70	50	1	60	117	65/4

REMARKS

* 232 BBLS TRAPPED BELOW CMT PLUG

** 53 BBLS TRAPPED BELOW CMT PLUB

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

MUD SYSTEM: GEL/ LINGO/ LIGNITE

WELL NAME: 34/10-16 AREA: NORTH SEA
OPERATOR: STATOIL RIG: NEPTUNO NORDRAUG
ENGINEERS: H. WIIK/ C. PARSONS/ T. VASTVEIT/ I. TORGERSEN

Day No	DATE 1982 1983	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: M/T BARITE	BENTONITE M/T	SACK MATERIALS: BENTONITE	BARITE	MATERIALS ADDED TO CONTROL PROPERTIES: THINNERS: LIGNO	LIGNITE	DESCO	POLYMERS: CMC LOVIS	CMC HIVIS	STARCH	DRISPAC REG.	DRISPAC SUPERLO	SODA ASH	BICARB.	CAUSTIC SODA	DRILLING DETERGENT	OTHERS: MICA F/C	NUTPLUG F/C	LIME	DEFOAMER (1ltr)	DURENEX (resinex)	LMCO SPOT PIPE LU
99	21.03		110	148	22				26	7		18	2					4							18	
100	22.03		127		22				1			8						3							21	
101	23.03		173	40	4				20	13		8						1	13					30	15	
102	24.03		60	188					17	11		10							10						11	
103	25.03		133	103	7	1			7	2		6							2						12	
104	26.03		74	40	3	2			36	14		1				1			8						16	
105	27.03		178	200	18	2			32	22									12				1	20		
106	28.03		122	240	21	8			30	6						5			9	200				10	6	
107	29.03		55	160	17	2			10	5						1			4						5	
108	30.03		199	20	20				30	16						4			10				2		17	
109	31.03		67	140	12	4			41	2	33					1			11				1		4	
110	01.04		86	110					4	2	2								4						1	
111	02.04		56	50												2			5						5	
112	03.04		167	250								2				1			4						2	
FORWARD		6932	14317	22911	1221	148	290		890	313	23	399	146		3	27	104	110	588	1400	25 / 70	50	1	60	117	65 / 4
ESTIMATED TOTALS		6932	15924	24600	1367	167	290		1144	413	58	452	148		3	42	104	118	680	1600	25 / 70	50	5	120	250	65 / 4

REMARKS:

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

WELL NAME 34/10-16 AREA NORTH SEA
OPERATOR STATOIL RIG. NEPTUNO NORDRAUG
MUD SYSTEM GEL/ LIGNO/ LIGNITE ENGINEERS T. VASTVEIT/ R. FOLKVORD

Day No	DATE 1982 1983	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: M/T BARITE	BENTONITE M/T	SACK MATERIALS: BENTONITE	BARITE	MATERIALS ADDED TO CONTROL PROPERTIES — THINNERS: LIGNO	LIGNITE	DESCO	POLYMERS: CMC LOVIS	CMC HIVIS	STARCH	DRISPAC REG.	DRISPAC SUPERLO	SODA ASH	BICARB.	CAUSTIC SODA	DRILLING DETERGENT	OTHERS: MICA F/C	NUTPLUG F/C	LIME	DEFOAMER (1+1)	DURENEX	LMCO SPOT PIPE LUB
11	304.04		23		10					5		7							7						8	
11	405.04		138	30	22				5	2	3								2						1	
11	506.04		12	50	1				23	2	15								5							
11	607.04			74	1				21	1	14								6							
11	708.04		30	41					7									1								
11	809.04	148*	30	55	5				7		PLUG	BACK						3								
11	910.04	570	1447		2													3								
FORWARD		6932	15294	24600	1367	164	290		1144	413	58	452	148	3	42		104	118	680	1600	25 70	50	5	120	250	65 4
ESTIMATED TOTALS		7650	17402	24850	1408	164	290		1207	423	90	459	148	3	42		104	125	700	1600	25 70	50	5	120	259	65 4

REMARKS:

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

WELL NAME 34/10-16 AREA NORTH SEA

OPERATOR STATOIL RIG. NORDRAUG

MUD SYSTEM GEL ENGINEERS H. WIIK/ E. SUNDE/ I. TORGERSEN

Day No.	DATE	DEPTH FEET □ METERS □	MUD PROPERTIES																						OPERATION REMARKS
			DENSITY PPG □ SG □		VISCOSITY			GELS	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis			RETORT		% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"		
				sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	0 / 10					Cl⁻ ppm X 1000	Ca ++ ppm T.H.	Pf	% OIL	% SOLIDS CORR.								
	1982	METER	SG																						
2	14/12		1.04	100								10.5													
3	15/12		1.04	100								10.5													
4	16/12		1.04	90								10.5													
5	17/12		1.04	60								10.5													
6	18/12	258	1.05	49	23.5	6.0	35.0	20/21				10.5							20.00			.20	13.33		
7	19/12	418	1.08	57	36.5	8.0	57.0	25/25				10.4					0.00	17.00				.17	25.02		
8	20/12	418	1.06	53	35.0	8.0	54.0	24/24				10.1					0.00	17.00				.17	22.85		
9	21/12	498	1.07	41	28.0	6.0	44.0	20/25				9.8					0.00	15.00				.16	19.69		
10	22/12		1.05	41	20.5	5.0	31.0	19/19				10.5						20.00				.19	12.35		
11	23/12	461	1.09	44	28.5	4.0	49.0	23/12				10.3	18	200	.20		7.00	0.00	15.00			.10	29.13		
12	24/12	617	1.30	42	29.0	7.0	44.0	22/24				10.0	18	200	.20		10.00	0.00	15.00			.19	17.71		
13	25/12	617	1.12	40	21.5	5.0	33.0	19/20				10.8	9	80	.45		7.00	0.00	20.00			.18	13.75		
14	26/12	617	1.10	40	17.0	4.0	26.0	18/20				10.8	8	80	.45		7.00	0.00	20.00			.18	10.72		
15	27/12	617	1.10	40	16.0	4.0	24.0	17/19				10.8	8		.50		7.00	0.00	20.00			.19	9.34		

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM GEL/ SEAWATER/ LIGNO/ CMC

WELL NAME 34/10-16 AREA NORTH SEA

OPERATOR STATOIL RIG. NORDRAUG

ENGINEERS I. TORGERSEN/ E. SUNDE/ M. CHAVEZ/ H. WIIK

Day No.	DATE	DEPTH FEET □ METERS □	MUD PROPERTIES																						OPERATION REMARKS
			DENSITY PPG □ SG □	VISCOSITY				GELS	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis			RETORT			BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	
				sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	0 / 10					X 1000 Cl⁻ ppm	Ca. ++ ppm T.H.	Pf ●	% OIL	% SOLIDS CORR.	% SAND						
	1982	METER	SG																						
16	28/12	617	1.10	40	15.5	4.0	23.0	16/19				10.8	8	80	.50		7.00	0.00	20.00			.20	8.67		
17	29/12	705	1.10	45	7.0	6.0	22.0	21/48	15.4	2		11.0	9	160	.50		8.00	0.00	18.00			.28	5.67		
18	30/12	1046	1.15	47	19.5	7.0	25.0	21/46	13.5	2		10.0	13	120	1.00		8.00	0.00	21.00			.29	6.29		
19	31/12	1364	1.15	47																					
20	1/ 1	1630	1.15	46	19.0	7.0	24.0	25/45	16.0	2		10.0	13	240	.10		8.00	0.00	20.00			.29	5.81		
21	2/ 1	1839	1.27	49	22.5	8.0	29.0	25/35	15.5	2		15.5	13	380	.10		11.00	0.00	21.00			.28	7.40		
22	3/ 1	1874	1.27	55	18.5	8.0	21.0	23/48	16.5	2			13	500	.10		11.00	0.00				.35	3.91		
23	4/ 1	1920	1.27	52	19.0	10.0	18.0	22/53	15.0	2		10.3	13	340	.15		15.00	0.00	23.00			.44	2.27		
24	5/ 1	1920	1.27	55	20.5	11.0	19.0	17/40	15.0	2		10.0	125	320	.10		15.00	.25	23.00			.45	2.30		
25	6/ 1	1920	1.27	54	22.0	12.0	20.0	10/31	11.5	2		10.5	10	60	.40		15.00	0.00	22.00			.46	2.33		
26	7/ 1	1920	1.27	57	19.0	11.0	16.0	10/28	9.0	2		10.6	11	80	.30		14.00	.25	22.00			.49	1.62		
27	8/ 1	1920	1.27	51	18.5	11.0	15.0	9/25	8.6	2		10.6	11	60	.60		14.00	.25	22.00			.51	1.43		
28	9/ 1	1920	1.28	54	21.0	13.0	16.0	7/24	7.8	1		10.4	12	100	.35		15.00	.25	26.00			.53	1.38		
29	10/ 1	1920	1.28	53	19.0	12.0	14.0	5/18	7.8	1		10.4	12	100	.30		15.00	.25	26.00			.55	1.15		

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM LIGNO/ SEAWATER/ CMC

WELL NAME 34/10-16 AREA NORTH SEA

OPERATOR STATOIL RIG. NORDRAUG

ENGINEERS M. CHAVEZ/ I. TORGERSEN/ E. SUNDE

Day No.	DATE 1983	DEPTH FEET ☐ METERS ☐ METER	MUD PROPERTIES																						OPERATION REMARKS
			DENSITY PPG ☐ SG ☐		VISCOSITY sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	GELS 0 / 10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis Cl⁻ ppm X 1000	Ca. ++ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	
			SG																						
30	11/ 1	1920	1.28	51	17.0	11.0	12.0	4/15	8.0	1		10.2	12	100	.25		15.00	.25	26.00			.56	.92		
31	12/ 1	1920	1.27	53	21.0	13.0	16.0	7/28	8.4	1		10.4	11	100	.30		13.00	.25	26.00			.53	1.38		
32	13/ 1	1920	1.28	57	22.5	14.0	17.0	8/31	9.2	1		10.2	10	100	.25		13.00		27.00			.54	1.45		
33	14/ 1	1920	1.28	52	21.0	13.0	16.0	9/30	11.2	2		10.0	10	140	.15		13.00	.25	27.00			.53	1.38		
34	15/ 1	1924	1.27	48	19.0	12.0	14.0	5/28	9.8	2		11.0	11	80	.45		11.00		28.00			.55	1.15		
35	16/ 1	1927	1.27	52	19.0	12.0	14.0	5/30	9.4	1		12.1	12	80	1.90		10.00		24.00			.55	1.15		
36	17/ 1	2121	1.27	50	20.0	12.0	16.0	5/37	8.6	1		11.7	125	180	.60		11.00		26.00			.51	1.49		
37	18/ 1	2180	1.23	47	16.0	9.0	14.0	6/32	9.5	1		11.5	140	160	.40		10.00		25.00			.48	1.52		
38	19/ 1	2393	1.18	50	18.5	10.0	17.0	10/39	8.2	1		11.1	15	160	.20		9.00		24.00			.45	2.02		
39	20/ 1		1.18	47	15.5	9.0	13.0	5/28	8.6	1		10.9	15	120	.30		9.00		26.00			.49	1.31		
41	22/ 1	2718	1.18	44	14.5	8.0	13.0	14/47	9.3	1		10.9	150	40	.35		8.00		27.00			.47	1.48		
40	21/ 1	2560	1.18	46	15.0	8.0	14.0	12/42	8.5	1		11.1	150	140	.20		9.00		28.00			.45	1.72		
42	23/ 1	2747	1.18	56	17.0	8.0	18.0	18/56	9.5	1		10.5	150	40	.30		8.00		29.00			.39	2.86		
43	24/ 1	2885	1.18	48	15.0	8.0	14.0	14/52	9.0	1		11.0	14	80	.60		8.00		28.00			.45	1.72		

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM GEL/ LIGNO/ CMC

WELL NAME 34/10-16 AREA NORTH SEA
OPERATOR STATOIL RIG. NORDRAUG
ENGINEERS H. WIIK/ E. SUNDE/ M. CHAVEZ

Day No.	DATE	DEPTH (FEET ☐ METERS ☐)	MUD PROPERTIES																								OPERATION REMARKS
			DENSITY PPG ☐ SG ☐	VISCOSITY				GELS	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis			RETORT		% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"				
				sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	0 / 10					Cl⁻ ppm X 1000	Ca. ++ ppm T.H.	Pf	% OIL	% SOLIDS CORR.										
	1983	METER	SG																								
44	25/ 1	2930	1.18	50	15.0	9.0	13.0	13/47	9.5	1		10.0	14	60	.20	8.00		28.00			.49	1.31					
45	26/ 1	2930	1.25	48	16.0	10.0	12.0	10/38	9.5	1		10.3	14	60	.25	12.00		28.00			.54	1.01					
46	27/ 1	2930	1.25	61	17.0	10.0	14.0	16/55	9.8	1		10.2	150	100	.25	12.00		27.50			.50	1.37					
47	28/ 1	2930	1.25	59	16.5	10.0	14.0	13/39	9.5	1		10.3	15	100	.25	12.00		28.00			.50	1.37					
48	29/ 1	2930	1.25	48	14.0	9.0	10.0	5/25	9.8	1		9.5	15	120	.15	11.00		27.00			.56	.78					
49	30/ 1	2981	1.25	46	17.0	11.0	12.0	5/30	8.0	1		11.6	15	100	.75	13.00		27.00			.56	.92					
50	31/ 1	3021	1.52	60	29.0	20.0	18.0	11/53	6.6	1		10.7	14	160	.20	20.00	.25	28.00			.61	1.17					
51	1/ 2	3078	1.52	52	25.0	17.0	16.0	6/35	6.4	1		11.6	15	80	.60	20.00	.25	27.00			.60	1.08					
53	3/ 2	3170	1.52	57	26.5	20.0	13.0	3/47	6.0	1		10.5	15	60	.40	20.00		20.00			.68	.67					
52	2/ 2	3126	1.52	47	24.0	18.0	12.0	3/24	5.8	1		10.9	14	100	.40	18.00		25.00			.68	.63					
54	4/ 2	3194	1.52	55	24.0	18.0	12.0	3/24	5.4	1		10.8	15	100	.45	18.00		20.00			.68	.63					
57	5/ 2	3224	1.52	54	22.0	16.0	12.0	3/20	5.5	1		10.8	15	80	.50	18.00		20.00			.65	.68					
56	6/ 2	3229	1.52	54	22.0	16.0	12.0	3/22	5.4	1		10.5	15	120	.35	18.00		20.00			.65	.68					
57	7/ 2	3247	1.52	58	24.0	18.0	12.0	3/23	5.3	1		10.9	145	120	.60	18.00		21.00			.68	.63					

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM GEL/ LIGNO/ LIGNITE

WELL NAME 34/10-16 AREA NORTH SEA

OPERATOR STATOIL RIG. NORDRAUG

ENGINEERS M. CHAVEZ/ I. TORGERSEN/ C.PARSONS/ H. WIIK

Day No.	DATE	DEPTH	MUD PROPERTIES																						
					VISCOSITY				GELS							Filtrate Analysis			RETORT							
		FEET ☐ METERS ☐	DENSITY PPG ☐ SG ☐		sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	0 / 10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Cl⁻ ppm X 1000	Ca. ++ ppm T.H.	Pf	% OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
	1983	METER	SG																						
58	8/ 2	3261	1.52	54	25.5	19.0	13.0	3/21	5.3	1		10.7	14	80	.50		18.00		21.00			.67	.69		
59	9/ 2	3279	1.52	57	25.5	19.0	13.0	3/20	5.2	1		10.8	14	80	.55		18.00		21.00			.67	.69		
60	10/ 2	3279	1.53	56	28.0	22.0	14.0	3/21	5.2	1		10.8	150	100	.50		18.00		21.00			.69	.71		
61	11/ 2	3279	1.52	57	26.5	22.0	9.0	2/19	5.4	1		10.6	14	120	.50		18.00		21.00			.77	.38		
62	12/ 2	3279	1.52	54	24.0	18.0	12.0	3/19	5.4	1		10.6	14	100	.40		18.00		20.00			.68	.63		
63	13/ 2	3279	1.52	56	31.5	23.0	17.0	4/21	5.4	1		10.8	14	100	.50		18.00	.25	20.00			.65	.95		
64	14/ 2	3280	1.52	60	28.5	21.0	15.0	3/18	5.4	1		10.8	140	80	.50		18.00	.25	20.00			.66	.82		
65	15/ 2	3298	1.52	62	27.0	20.0	14.0	1/2	5.4	1		10.8	14	100	.50		18.00	.25	21.00			.67	.76		
66	16/ 2	3314	1.52	52	24.0	18.0	12.0	3/17	5.4	1		10.6	14	100	.40		18.00	.25	20.00			.68	.63		
67	17/ 2	3329	1.52	53	25.0	19.0	12.0	3/18	5.6	1		10.6	14	100	.40		18.00	.25	20.00			.69	.61		
68	18/ 2	3347	1.52	54	27.0	20.0	14.0	4/27	5.8	1		10.5	14	40	.75		18.00		22.00			.67	.76		
69	19/ 2	3348	1.52	58	25.0	19.0	12.0	6/34	5.6	1		10.6	14	100	.55		18.00		21.00			.69	.61		
70	20/ 2	3361	1.52	57	26.5	20.0	13.0	4/21	5.5	1		10.5	14	160	.45		18.00		21.00			.68	.67		
71	21/ 2	3367	1.52	59	25.0	19.0	12.0	5/27	5.6	2		10.5	15	160	.40		18.00		20.00			.69	.61		

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM GEL/ LIGNO/ LIGNITE

WELL NAME 34/10-16 AREA NORTH SEA

OPERATOR STATOIL RIG. NORDRAUG

ENGINEERS H. WIIK/ C. PARSONS/ M. CHAVEZ

Day No.	DATE 1983	DEPTH FEET ☐ METERS ☐ METER	MUD PROPERTIES: DENSITY PPG ☐ SG ☐ SG	VISCOSITY sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	GELS 0/10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis Cl⁻ppm X 1000	Ca. ++ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
72	22/ 2	3378	1.52	51	23.5	18.0	11.0	3/21	5.6	1		10.4	15	140	.45		18.00		20.00			.70	.55	
73	23/ 2	3387	1.52	57	26.0	20.0	12.0	3/21	5.4	1	16.0	10.9	14	100	.65		18.00		21.00			.70	.59	
74	24/ 2	3396	1.52	55	26.5	20.0	13.0	3/24	5.2	1		10.0	13	80	.40		18.00		21.00			.68	.67	
76	26/ 2	3461	1.52	57	29.0	22.0	14.0	3/23	5.0	1	16.0	10.4	13	80	.70		18.00	.25	21.00			.69	.71	
77	27/ 2	3480	1.52	63	27.0	21.0	12.0	2/18	5.2	1	16.0	10.0	13	120	.50		18.00		20.00			.71	.57	
78	28/ 2	3492	1.51	68	32.5	25.0	15.0	4/24	4.7	1		10.2	10	100	.60		16.00		22.50			.70	.74	
79	1/ 3		1.52	58	25.0	19.0	12.0	3/15	4.9	1		10.9	11	60	.90		18.00		20.00			.69	.61	
80	2/ 3		1.52	76	32.5	25.0	15.0	2/18	4.2	1		10.6	10	100	.60		18.00		20.00			.70	.74	
81	3/ 3		1.52	72	33.0	27.0	12.0	4/14	4.4	1	15.0	10.2	10	100	.72		18.00		20.00			.76	.52	
84	6/ 3		1.52	70	34.0	28.0	12.0	2/16	4.2	1		10.0	10	80	.60		17.00		20.00			.77	.51	
83	5/ 3		1.52	60	31.0	25.0	12.0	2/16	4.3	1		10.1	11	80	.60		17.00		20.00			.74	.53	
82	4/ 3		1.52	61	30.5	24.0	13.0	2/16	4.2	1		10.2	11		.60		17.00		20.00			.72	.61	
85	7/ 3		1.52	68	34.0	27.0	14.0	3/15	4.1	1	14.0	10.6	10	80	.80		18.00		20.00			.73	.64	
86	8/ 3	1800	1.52	64	32.0	26.0	12.0	3/14	4.9	1	15.0	10.4	10	80	.90		18.00	.25	21.00			.75	.52	

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM GEL/ LIGNO/ LIGNITE

WELL NAME 34/10-16 AREA NORTH SEA

OPERATOR STATOIL RIG. NORDRAUG

ENGINEERS M. CHAVEZ/ I. TORGERSEN/ H. WIIK/ C. PARSONS

Day No.	DATE	DEPTH	MUD PROPERTIES																						OPERATION REMARKS
		FEET □ METERS □	DENSITY PPG □ SG □	VISCOSITY				GELS	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis			RETORT									
				sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	0 / 10					Cl⁻ppm X 1000	Ca. ++ ppm T.H.	Pf	% OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	
	1983	METER	SG																						
87	9/ 3		1.52	61	30.0	24.0	12.0	2/12	4.9	1	15.0	10.3	10	120	.70		18.00	.25	20.00			.74	.54		
88	10/ 3		1.52	65	28.5	23.0	11.0	3/12	4.8	1	15.0	10.7	11	80	1.10		18.00	.25	20.00			.74	.49		
90	12/ 3		1.52	66	27.0	21.0	12.0	3/11	4.8	1	15.0	10.7	11	80	.90		18.00	.25	20.00			.71	.57		
89	11/ 3		1.52	65	27.5	22.0	11.0	3/11	4.8	1		10.7	11	80	.90		18.00	.25	20.00			.74	.49		
91	13/ 3		1.52	64	27.0	21.0	12.0	3/10	4.8	1	15.0	10.6	11	100	.90		18.00	.25	20.00			.71	.57		
92	14/ 3		1.52	67	26.0	21.0	10.0	3/10	5.0	1	15.0	10.5	13	100	.90	0.0	18.00	.25	20.00			.75	.44		
93	15/ 3	2335	1.65	75	32.5	27.0	11.0	9/39	7.2	1	18.0	14.0	14	140	4.10	0.0	21.00	.25	20.00			.77	.46		
94	16/ 3	3201	1.52	63	34.0	27.0	14.0	4/25	7.2	1	18.0	13.0	140	120	2.70	0.0	18.00	.25	21.00			.73	.64		
95	17/ 3	3149	1.52	67	31.0	25.0	12.0	3/18	5.8	1	15.0	13.0	14	160	2.40		18.00	.25	20.00			.74	.53		
96	18/ 3	3493	1.55	77	38.5	30.0	17.0	5/22	4.8	2	14.0	12.5	14	180	1.45	0.0	19.00	.25	21.00			.71	.81		
97	19/ 3	3516	1.55	88	38.0	29.0	18.0	6/29	4.6	1	13.0	12.0	14	200	1.10	0.0	20.00	.25	20.00			.69	.90		
98	20/ 3	3547	1.55	67	32.0	25.0	14.0	5/24	4.5	1	14.0	11.2	15	240	.60	0.0	19.00	.25	20.00			.71	.66		
99	21/ 3	3629	1.55	70	41.0	32.0	18.0	7/31	4.9	1	14.0	10.6	14	240	.40	0.0	20.00	.50	20.00			.71	.86		
100	22/ 3	3719	1.55	68	37.0	29.0	16.0	6/28	4.8	1	15.0	10.2	14	200	.30	0.0	20.00		20.00			.72	.75		

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM GEL/ LIGNO/ LIGNITE

WELL NAME 34/10-16 AREA NORTH SEA

OPERATOR STATOIL RIG. NORDRAUG

ENGINEERS I. TORGERSEN/ H. WIIK/ T. VASTVEIT/ C. PARSON

Day No.	DATE	DEPTH	MUD PROPERTIES																							OPERATION REMARKS
		FEET ☐ METERS ☐	DENSITY PPG ☐ SG ☐	VISCOSITY sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	GELS 0 / 10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis Cl⁻ ppm X 1000	Ca. ++ ppm T.H.	Pf	RETORT % OIL	% SOLIDS CORR.	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"			
	1983	METER	SG																							
101	23/ 3	3794	1.55	65	34.5	27.0	15.0	4/19	4.7	1	14.0	10.7	14	160	.50	0.0	19.00		19.00			.72	.71			
102	24/ 3	3799	1.55	66	32.0	26.0	12.0	4/18	4.7	1	14.0	10.8	13	160	.60	0.0	19.00	.25	19.00			.75	.52			
103	25/ 3	3811	1.55	62	34.5	27.0	15.0	4/18	4.6	1	14.0	10.8	13	100	.65	0.0	20.00	.25	20.00			.72	.71			
104	26/ 3	3852	1.55	74	36.0	28.0	16.0	4/17	4.3	1	14.0	10.2	13	180	.35	0.0	19.00	.25	20.00			.71	.77			
105	27/ 3	3937	1.55	74	36.0	32.0	14.0	4/8	4.6	1	14.0	10.6	12	160	.55	0.0	20.00	.25	20.00			.76	.60			
106	28/ 3	3963	1.55	66	38.0	30.0	16.0	4/17	4.8	1	14.0	10.6	11	80	.60	0.0	20.00		22.50			.72	.74			
108	30/ 3	4040	1.55	73	42.0	32.0	18.0	5/18	4.8	1	14.0	10.8	10	40	.75	0.0	20.00		23.00			.71	.86			
110	1/ 4		1.55	60	32.0	27.0	10.0	3/10	4.8	1	14.0	11.2	11	40	1.20	0.0	20.00		22.00			.79	.41			
111	2/ 4		1.55	65	33.5	28.0	11.0	3/11	4.6	1	14.0	11.4	12	60	1.35	0.0	20.00		21.00			.78	.46			
112	3/ 4	4042	1.55	65	35.0	29.0	12.0	3/11	4.9	1	14.0	10.8	12	40	.90	0.0	20.00		20.00			.77	.50			
113	4/ 4	4042	1.55	72	36.0	30.0	12.0	4/12	4.8	1	14.0	11.2	12	40	1.00	0.0	20.00		21.00			.78	.50			
109	31/ 3	4042	1.55	65	36.0	30.0	12.0	3/13	4.6	1	14.0	11.6	10	60	1.30	0.0	21.00		2.00			.78	.50			
114	5/ 4	4040	1.56	93	40.0	31.0	18.0	4/17	4.7	1	15.0	10.2	11	40	.90		21.00	.25	23.00			.71	.87			
115	6/ 4	4002	1.55	68	37.5	31.0	13.0	4/15	4.7	1	14.0	10.4	11	40	.90		20.00		22.00			.77	.55			

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM GEL/ LIGNO/ LIGNITE

WELL NAME 34/10-16 AREA NORTH SEA

OPERATOR STATOIL RIG. NORDRAUG

ENGINEERS T. VASTVEIT/ R. FOLKVORD/ I. TORGERSEN

Day No.	DATE	DEPTH FEET □ METERS □	MUD PROPERTIES																						OPERATION REMARKS
			DENSITY PPG □ SG □	VISCOSITY				GELS	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis			RETORT		% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"		
				sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	0 / 10					Cl⁻ ppm X 1000	Ca. ++ ppm T.H.	Pf	% OIL	% SOLIDS CORR.								
	1983	METER	SG																						
116	7/ 4	2500	1.55	64	31.5	26.0	11.0	4 / 15	5.0	1		10.3	12	40	1.00		20.00	.25	22.00			.77	.46		
117	8/ 4	4010	1.55	68	32.5	27.0	11.0	4 / 14	5.8	1	15.0	12.0	12	240	1.90		20.00	.25	22.00			.77	.46		
118	9/ 4		1.55	74	32.5	27.0	11.0	3 / 16	3.0	1	17.0	12.0	12	240	1.70	0.0	20.00	.25	21.00			.77	.46		
119	10/ 4		1.55	70	30.0	25.0	10.0	3 / 17	5.4	1		12.0	12	240	1.70	0.0	20.00		21.00			.78	.42		

REMARKS

CONCLUSION

DST no 1 (3397 - 3407 m RKB)

The average production rate during the main flow was:
(choke size = 48/64")

Oil: 960 Sm^3/D
Gas: 182 x 10^3 Sm^3/D
GOR: 191 Sm^3/Sm^3
Oil gravity: 0.857 g/cc
Gas gravity: 0.670 (air = 1)

The drillstem test analysis gives a reservoir pressure of 458.4 bar at the midpoint of the perforated interval.

The permeability is calculated to 138 md.

The total skinfactor is estimated to 11.

The maximum recorded bottomhole temperature was 128.8°C.

Three sets of PVT samples were taken during the main flow.

One succesful run with two bottomhole samplers were carried out.

No sand was produced.

DST no 2 (3177 - 3187 m RKB)

The reservoir pressure is estimated to 449.2 bar.

The permeability is calculated to 379 mD (second build up) 360 mD (third build up).

The total skinfactor is estimated to 71.5 (second) 77.8 (third).

The average production rate was:

	Gas $10Sm^3/D$	Condensate Sm^3/D	GOR Sm^3/Sm^3	Oil grav g/cc	Gas grav (air=1)
Second flow (48/64")	1293	314	4120	0.79	0.66
Third flow (80/64")	1647	400	4118	0.79	0.66

The maximum recorded bottomhole temperature was 117.9°C.

Four sets of PVT samples were taken from the separator. Two during the second and third flow resp.

The test produced a small amount of water.

No sand was produced.

RFT-A

Two segregated fluid samples were successfully recovered.

Sampling results (6 gallon chambers)

Depth, m RKB	3356	3345
Fluid type	Oil	Condensate
Fluid density, g/cc	0.88	0.80

The sampling results proves that the gas/oil contact is, as expected, between these two points.

TABLE 1 TESTI

WELL 34/10-16

			TEST OPERATION										TEST ANALYSIS		
DST NO.	FM	PERF. INT.MRKB	OPER.	DURATION MIN.	BHP BAR	CHOKE 1/64"	T °C	OIL RATE SM^3/D	GAS RATE $10^3 SM^3/D$	GOR SM^3/SM^3	OIL GRAV g/cc	GAS GRAV (AIR=1)	KH KH (MDM)	K K (MD)	SKIN
1	Etive	3397-3407	Initial flow	3	348	48	122								
			Initial build-up	64	458.4		124								
			Second flow	667	307	48	129	955	182	191	0.86	0.67	1790	138	11
			Second build-up	656	460		129								
			BHS		450	8	127								
2	Tarbert	3177-3187	Initial flow	2	396	52	110								
			Initial build-up	66	449.2		112								
			Second flow	550	408	52	117	314	1293	4120	0.79	0.66	7200	379	71.5
			Second build-up	539	448.9		118								
			Third flow	423	392	80	118	400	1647	4118	0.79	0.66	6832	360	77.8
			Third build-up	575	448.6		118								

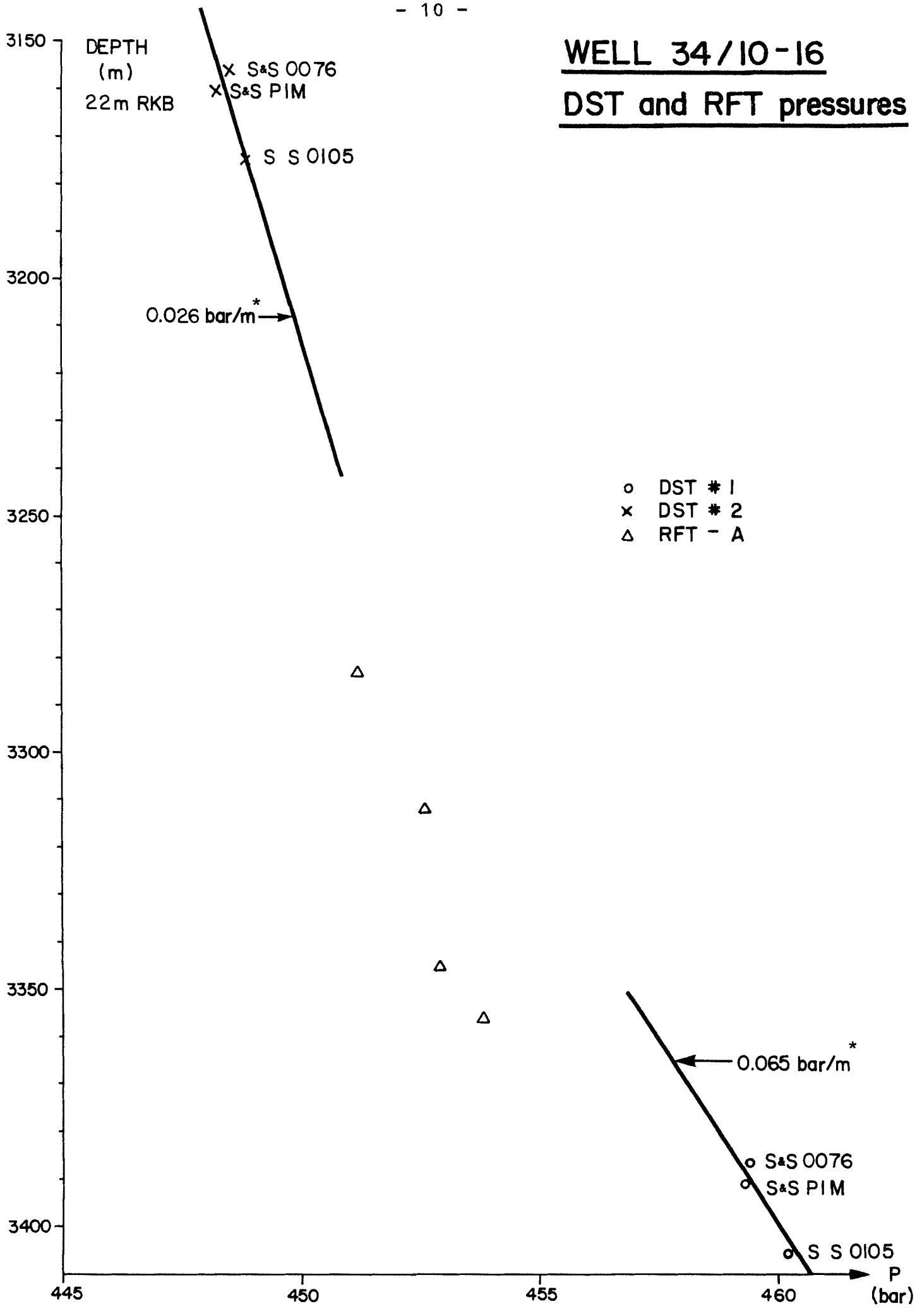

Figure 3

*/ laboratory measurements