

OPERATOR STATOIL

WELL NO. 30/6-2



ANCHOR DRILLING FLUIDS AS

**MATERIAL CONSUMPTION & COST ANALYSIS**

36" HOLE DRILLED TO 178.5M <sup>Meters</sup> ~~DEE~~ 30" CASING SET AT 177 <sup>Meters</sup> ~~DEE~~  
ACTUAL AMOUNT OF HOLE DRILLED 48.5 <sup>Meters</sup> ~~DEE~~ DAYS ON INTERVAL 2  
DRILLING FLUID SYSTEM SPUD-MUD

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BARITE	M/T	-	5	+5	575.00
BENTONITE	M/T	21	20	-1	5.400.00
CAUSTIC SODA	25KG	12	26	+14	273.00
MICA	25KG	-	15	+15	198.75
WALNUT	25KG	-	40	+40	530.00

COST/DAY \$ 3.488.38 TOTAL COST FOR INTERVAL \$ 6.976.75  
COST/Mt. or Ft. \$ 143.85 PROG. COST FOR INTERVAL \$ 5.410.00  
ENGR. COST \$ 1.050.00 COST VARIANCE FOR INTERVAL \$ +1.566.75

OPERATOR STATOIL

WELL NO. 30/6-2



ANCHOR DRILLING FLUIDS AS

# MATERIAL CONSUMPTION & COST ANALYSIS

26" HOLE DRILLED TO 915 M Meters 20" CASING SET AT 904 Meters

ACTUAL AMOUNT OF HOLE DRILLED 736.5 Meters DAYS ON INTERVAL 5

DRILLING FLUID SYSTEM SPUD-MUD

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BARITE	M/T	-	19		2.185.00
BENTONITE	M/T	46	47	+1	12.690.00
CAUSTIC SODA	25KG	24	88	+64	924.00
SODIUM BICARB.	50KG	-	4		66.00
FLOSAL	50LB	-	18		297.90
DRISPAC SUPERLO	50LB	-	1		142.00
MICA	25KG	-	20		265.00
WALNUT	25KG	-	65		861.25

COST/DAY	\$ 3.486.23	TOTAL COST FOR INTERVAL	\$ 17.431.15
COST/Mt. or Ft.	\$ 23.66	PROG. COST FOR INTERVAL	\$ 11.831.25
ENGR. COST	\$ 2.625.00	COST VARIANCE FOR INTERVAL	\$ +5.599.90

OPERATOR STATOIL

WELL NO. 30/6-2



ANCHOR DRILLING FLUIDS AS

### MATERIAL CONSUMPTION & COST ANALYSIS

17-1/2" HOLE DRILLED TO 1715 Meters XXX Feet 13-3/8" CASING SET AT 1704 Meters XXX Feet

ACTUAL AMOUNT OF HOLE DRILLED 800 Meters XXX Feet DAYS ON INTERVAL 11

DRILLING FLUID SYSTEM CHROME LIGNOSULFONATE-BENTONITE

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BARITE	M/T	354	402	+48	46.230.00
CHROME LIGNOSULF.	25KG	315	531	+216	7.965.00
CAUSTIC SODA	25KG	95	285	+190	2.992.50
CMC LO VIS	25KG	-	31	+31	1.550.00
DRISPAC REGULAR	50LB	-	11	+11	1.430.00
SODA ASH	50KG	-	2	+2	33.00
AL. STEARATE	25KG	-	2	+2	100.00
DRLG. DETERGENT	DRM	-	2	+2	350.00
BENTONITE	M/T	18	29	+11	7.830.00

COST/DAY \$ 6.225.50      TOTAL COST FOR INTERVAL \$ 68.480.50

COST/Mt. or Ft. \$ 85.60      PROG. COST FOR INTERVAL \$ 50.982.00

ENGR. COST \$ 5.775.00      COST VARIANCE FOR INTERVAL \$ +17.498.50

OPERATOR STATOIL

WELL NO. 30/6-2



ANCHOR DRILLING FLUIDS AS

# MATERIAL CONSUMPTION & COST ANALYSIS

12-1/4" HOLE DRILLED TO 2400 <sup>Meters</sup>/<sub>Feet</sub> 9-5/8" CASING SET AT 2389 <sup>Meters</sup>/<sub>Feet</sub>

ACTUAL AMOUNT OF HOLE DRILLED 685 <sup>Meters</sup>/<sub>Feet</sub> DAYS ON INTERVAL 16

DRILLING FLUID SYSTEM CHROME LIGNOSULFONATE-BENTONITE

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BARITE	M/T	298	319	+21	36.685.00
BENTONITE	M/T	-	4	+4	1.080.00
BENTONITE	50KG	230	40	-190	500.00
CHROME LIGNOSULF.	25KG	320	486	+166	7.290.00
CAUSTIC SODA	25KG	76	113	+37	1.186.50
SODA ASH	50KG	-	5	+5	82.50
SODIUM BICARB.	50KG	9	5	-4	82.50
DRISPAC REGULAR	50LB	-	22	+22	2.860.00
AL. STEARATE	25KG	-	3	+3	150.00
DRLG. DETERGENT	DRUM	-	5	+5	875.00

COST/DAY \$ 3.174.47 TOTAL COST FOR INTERVAL \$ 50.791.50

COST/Mt. or Ft. \$ 74.15 PROG. COST FOR INTERVAL \$ 47.491.50

ENGR. COST \$ 8.400.00 COST VARIANCE FOR INTERVAL \$ +3.300.00

OPERATOR      STATOIL

WELL NO.      30/6-2



ANCHOR DRILLING FLUIDS AS

# MATERIAL CONSUMPTION & COST ANALYSIS

8-1/2" HOLE DRILLED TO 2890 Meters CASING SET AT - Meters Feet

ACTUAL AMOUNT OF HOLE DRILLED 490 Meters DAYS ON INTERVAL 24

DRILLING FLUID SYSTEM CHROME LIGNOSULFONATE - BENTONITE

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BARITE	M/T	130	136	+6	15.640.00
BENTONITE	M/T	15.25	26	+10.75	7.020.00
CHROME LIGNOSULF.	25KG	285	342	+57	5.130.00
CAUSTIC SODA	25KG	65	101	+36	1.060.50
DRISPAC REGULAR	50LB	-	19	+19	2.470.00
SODIUM BICARB.	50KG	8	2	-6	33.00
SODA ASH	50KG	-	9	+9	148.50
CMC LO VIS	25KG	50	7	-43	350.00
CHROME LIGNITE	50LB	-	40	+40	800.00
AL. STEARATE	25KG	-	1	+1	50.00

COST/DAY      \$ 1.362.58      TOTAL COST FOR INTERVAL      \$ 32.702.00  
 COST/Mt. or Ft.      \$ 66.74      PROG. COST FOR INTERVAL      \$ 26.352.00  
 ENGR. COST      \$ 13.125.00      COST VARIANCE FOR INTERVAL      \$ +5.830.00

OPERATOR STATOIL

WELL NO. 30/6-2



ANCHOR DRILLING FLUIDS AS

# MATERIAL CONSUMPTION & COST ANALYSIS

## TESTING

HOLE DRILLED TO  Meters Feet  CASING SET AT  Meters Feet

ACTUAL AMOUNT OF HOLE DRILLED  Meters Feet DAYS ON INTERVAL

DRILLING FLUID SYSTEM

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BARITE	M/T	-	58	-	6.670.00
CHROME LIGNOSULF.	25KG	-	101	-	1.515.00
DRISPAC SUPERLO	50LB	-	13	-	1.846.00
CAUSTIC SODA	25KG	-	12	-	126.00
SODIUM BICARB.	50KG	-	5	-	82.50
BENTONITE	M/T	-	15	-	4.050.00
BENTONITE	50KG	-	9	-	112.50
SODA ASH	50KG	-	1	-	16.50
CMC HI VIS	25KG	-	9	-	477.00

COST/DAY  TOTAL COST FOR INTERVAL

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

ENGR. COST  COST VARIANCE FOR INTERVAL

OPERATOR STATOIL

WELL NO. 30/6-2



ANCHOR DRILLING FLUIDS AS

# TOTAL CONSUMPTION & COST ANALYSIS

TOTAL DEPTH 2890 Meters  
~~Feet~~

TOTAL HOLE DRILLED 2760 Meters  
~~Feet~~

TOTAL DAYS 78

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BARITE	M/T	782	939	+157	107,985.00
BENTONITE	M/T	100.25	141	+40.75	38,070.00
BENTONITE	50KG	230	49	-181	612.50
CHROME LIGNOSULF.	25KG	920	1460	+540	21,900.00
CAUSTIC SODA	25KG	272	625	+353	6,562.50
CMC LO VIS	25KG	50	38	-12	1,900.00
SODIUM BICARB.	50KG	17	16	-1	264.00
SODA ASH	50KG	?	17		280.50
CHROME LIGNITE	50LB	?	40		800.00
DRISPAC REGULAR	50LB	?	52		6,760.00
DRISPAC SUPERLO	50LB	?	14		1,988.00
CMC HI VIS	25KG	?	9		477.00
FLOSAL	50LB	?	18		297.90
MICA F	25KG	?	35		463.75
WALNUT F	25KG	?	105		1,391.25
AL. STEARATE	25KG	?	6		300.00
DRLG. DETERGENT	DRM	?	7		1,225.00

COST/DAY \$ 2,452.27

TOTAL COST FOR INTERVAL \$ 191,277.40

COST/Mt. or Ft. \$ 69.30

WELL INTERVAL  
 PROG. COST FOR INTERVAL  
 EXCLUDING TESTING \$ 142,066.75

ENGR. COST \$ 38,500.00

COST VARIANCE FOR INTERVAL \$ 49,210.65



# ANCHOR DRILLING FLUIDS AS

OSLO - STAVANGER

WELL NAME 30/6-2 AREA NORTH SEA

OPERATOR STATOIL RIG. DEEP SEA SAGA

ENGINEERS JENSEN, SØRLID, STRAND

## Drilling Fluid & Material Consumption Report

MUD SYSTEM SPUD MUD - SEAWATER

Day No.	DATE	ESTIMATED DAILY MUD VOLUMES			BULK MATERIALS		SACK MATERIALS		MATERIALS ADDED TO CONTROL PROPERTIES																													
		LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BARITE	BENTONITE		LIGNOSULF.	THINNERS	DRISPAC SUPERLO	POLYMERS		CAUSTIC SODA	MICA FINE	WALNUT	SODIUM BICARB.	FLOSAL	OTHERS																				
1	24.09	800		1600	5	20											26																					
2	25.09	120																15	40																			
3	26.09	50	136	720	5												12	20	65																			
4	27.09		1900	2000		23											36																					
5	28.09		50	959	3	13											10									4												
6	29.09		160	655	16	6								1			30																					
7	30.09				NIL																																	
8	1.10					11																																
FORWARD		970	2246	5934	29	63																																
ESTIMATED TOTALS		970	2246	5934	29	63																																

REMARKS:

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# ANCHOR DRILLING FLUIDS AS

OSLO — STAVANGER

WELL NAME 30/6-2 AREA NORTH SEA  
 OPERATOR STATOIL RIG. DEEP SEA SAGA  
 ENGINEERS STRAND, ABUSDAL, JENSEN, SØRLID

## Drilling Fluid & Material Consumption Report

FLUID SYSTEM GEL/LIGNO

Day No.	DATE	ESTIMATED DAILY MUD VOLUMES			BULK MATERIALS			SACK MATERIALS	MATERIALS ADDED TO CONTROL PROPERTIES																						
		LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BARITE	BENTONITE	BENTONITE	LIGNOSULF:	THINNERS			CMC LO VIS		POLYMERS			CAUSTIC SODA	SODA ASH	AL:	STEARATE	SOD:	BICARB.	DRILLING DETERGENT	OTHERS							
9	2.10		10	37																											
10	3.10		64	600	8	8		24																			19				
11	4.10		63	300	15	10		102																			41				
12	5.10		145	250	90			75																			41				
13	6.10		70	281	33			33					7														20				
14	7.10		305	200	61			63																			33	1			2
15	8.10		439	700	62			53																			46	1	2		
16	9.10		1123	1000	105			57					20	5													54				
17	10.10		320	140	27			39						6													12				
18	11.10			40	1			18																			5				
19	12.10		379	70	4			71																			10				
20	13.10		80	120	53			60						7													10	5	1	5	2
21	14.10		110	150	61			83						4													17				1
FORWARD			970	2246	5934	29	63		67					27	22												128	7	3	4	5
ESTIMATED TOTALS			970	5354	9822	549	81		745					27	22												436	7	3	9	5

REMARKS:

WELL NAME 30/6-2 AREA NORTH SEA  
 OPERATOR STATOIL RIG. DEEP SEA SAGA  
 ENGINEERS STRAND, ABUSDAL, JENSEN, SØRLID
**Drilling Fluid & Material Consumption Report**

MUD SYSTEM \_\_\_\_\_

Day No.	DATE	ESTIMATED DAILY MUD VOLUMES			BULK MATERIALS			SACK MATERIALS	MATERIALS ADDED TO CONTROL PROPERTIES																		
		LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BARITE	BENTONITE	BENTONITE	LIGNOSULF.	THINNERS			CMC LO VIS	DRISPAK REGULAR	POLYMERS	CAUSTIC SODA	SODA ASH	AL. STEARATE	SOD. BICARBONATE	DRILLING DETERGENTS	MICA							
22	15.10																										
23	16.10		10	41	79			45						4				22									
24	17.10	16		10	12			15									1							5			
25	18.10			13	9			18						2				7									
26	19.10			10																							
27	20.10		5	49	26		18							1				5									
28	21.10		20	18		1	22											6									
29	22.10		20	91	31	3		29										12									
30	23.10		30					8										2									
31	24.10		30		3			50										10									
FORWARD		970	5354	9822	549	81		745						27	22			436	7	3	9	5	35				
ESTIMATED TOTALS		986	5469	10044	709	85	40	910						27	29			501	7	3	9	5	40				
REMARKS:																											



# ANCHOR DRILLING FLUIDS AS

OSLO - STAVANGER

WELL NAME 30/6-2 AREA NORTH SEA  
 OPERATOR STATOIL RIG. DEEP SEA SAGA  
 ENGINEERS JENSEN, SØRLID, HOLGATE, BJØRHEIM

## Drilling Fluid & Material Consumption Report

MUD SYSTEM GEL/LIGNO

Day No.	DATE	ESTIMATED DAILY MUD VOLUMES			BULK MATERIALS			SACK MATERIALS		MATERIALS ADDED TO CONTROL PROPERTIES																							
		LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BARITE	BENTONITE	BENTONITE	CHROME LIGNOSULF.	THINNERS	DRISPAK REGULAR	CMC	LO VIS	POLYMERS				CAUSTIC SODA	SODIUM BICARB.	SODA ASH	OTHERS													
32	25.10		14																														
33	26.10		30		8		33												11														
34	27.10				3	12																											
35	28.10		110		3	2	5			3									7														
36	29.10			100	12	1	8			4									2														
37	30.10		219							4	7								2	2													
38	31.10			50	7	5	13												1														
39	1.11																																
40	2.11			9		2	19												2		1												
41	3.11																		2		4												
42	4.11																																
43	5.11																																
44	6.11		211		8		6			1									2														
45	7.11		25	45		4	10			2									3														
FORWARD		986	5469	10044	709	85	40	910		29	27								501	9	7												
ESTIMATED TOTALS		986	6078	10248	750	111	40	1004		43	34								533	11	12												

REMARKS:



# ANCHOR DRILLING FLUIDS AS

OSLO — STAVANGER

WELL NAME 30/6-2 AREA NORTH SEA  
 OPERATOR STATOIL RIG. DEEP SEA SAGA  
 ENGINEERS HOLGATE, BJØRHEIM, SØRLID, LINDSETH

## Drilling Fluid & Material Consumption Report

MUD SYSTEM GEL/LIGNO

Day No.	DATE	ESTIMATED DAILY MUD VOLUMES			BULK MATERIALS			SACK MATERIALS		MATERIALS ADDED TO CONTROL PROPERTIES																																		
		LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BARITE	BENTONITE	BENTONITE	CHROME LIGNOSULF.	CAUST. LIGNITE	THINNERS	DRISPAC REGULAR	POLYMERS			CAUSTIC SODA	SODA ASH	AL. STEARATE	OTHERS																										
46	8.11		25										2				7																											
47	9.11				16									3				4	1																									
48	10.11		30	80	5	2												6																										
49	11.11		17	10		3												2																										
50	12.11		20	100	2	1												7	1																									
51	13.11				4	3												5			1																							
52	14.11		20	75	6	1												6	1																									
53	15.11		40	20		2												5																										
54	16.11		5	40	57													14	1																									
55	17.11		44		8													9																										
56	18.11		50															6																										
57	19.11		60		3													3																										
58	20.11		25		5													6																										
59	21.11		15															6																										
FORWARD		986	6078	10248	750	111	40		1004				43					533	12	3																								
ESTIMATED TOTALS		986	6429	10573	856	123	40		1302	40			48					619	16	4																								

REMARKS:

Drilling Fluid & Material Consumption Report

MUD SYSTEM GEL/LIGNO

WELL NAME 30/6-2 AREA NORTH SEA  
 OPERATOR STATOIL RIG DEEP SEA SAGA  
 ENGINEERS ÅRSETH, VIGEN

Day No.	DATE	ESTIMATED DAILY MUD VOLUMES			BULK MATERIALS			SACK MATERIALS	MATERIALS ADDED TO CONTROL PROPERTIES															
		LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BARITE	BENTONITE	BENTONITE		CHROME LIGNOSULF.	CAUST. LIGNITE	THINNERS	DRISPAC REGULAR	DRISPAC SUPERLO	CMC	HI VIS	POLYMERS	CAUSTIC SODA	SODA ASH	AL.	STEARATE	SODIUM BICARB.	LIME	OTHERS	
60	22.11		67	50	6				6									1						
61	23.11		33	100	11	5			9									2						
62	24.11																							
63	25.11			80		3			4									1	1					
64	26.11		15																		5			
65	27.11			10																				
66	28.11		111		12				53							7								
67	29.11																							
68	30.11		143	30	6		9																	
69	1.12			20														1						
70	2.12	23	122		4										9									
71	3.12		40	80	19	7			12									1						
72	4.12		28																					
73	5.12																							
FORWARD		986	6429	10573	856	123	40		1302	40				48	1			619	16	4	11			
ESTIMATED TOTALS		1009	6988	10943	914	138	49		1386	40				48	14	9		625	17	4	16			

REMARKS



# ANCHOR DRILLING FLUIDS AS

OSLO — STAVANGER

WELL NAME 30/6-2 AREA NORTH SEA

OPERATOR STATOIL RIG. DEEP SEA SAGA

ENGINEERS VIGEN, ÅRSETH

## Drilling Fluid & Material Consumption Report

MUD SYSTEM GEL/LIGNO

Day No.	DATE	ESTIMATED DAILY MUD VOLUMES			BULK MATERIALS			SACK MATERIALS		MATERIALS ADDED TO CONTROL PROPERTIES													
		LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BARITE	BENTONITE	BENTONITE	CHROME LIGNOSULF.	THINNERS	DRISERIC REGULAR	DRISERIC SUPERLO	POLYMERS	CMC HI VIS	CMC LO VIS	CAUSTIC SODA	SODA ASH	AL. STEARATE	SODIUM BICARB.	LINE	MICA			
74	6.12																						
75	7.12																						
76	8.12																						
77	9.12	*				-2	+2																
78	10.12																						
FORWARD		1009	6988	10943	914	138	49	1386															
ESTIMATED TOTALS		1009	6988	10943	914	138	47	1388															

REMARKS \* Inventory made.



# ANCHOR DRILLING FLUIDS AS

OSLO - STAVANGER

WELL NAME 30/6-2 AREA NORTH SEA  
 OPERATOR STATOIL RIG. DEEP SEA SAGA  
 ENGINEERS JENSEN, SØRLID

## Drilling Mud Properties Record

MUD SYSTEM SPUD-MUD

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.						Cl <sup>-</sup> ppm	Ca. ++ ppm	Py	% OIL	% SOLIDS							% SAND
1	24.9	178½	1.05	125				N/C	N/C	11.0	0.6	70											Drl. 36" hole. Run and cmt. 30" csg.	
2	25.9	180	1.05	118				N/C	N/C	11.0	0.6	70												
3	26.9	568	1.08	41	22.5	17	11	5/9	N/C	10.0	12.0	120	.30		4.5	TR	17.5							Drl. 17½" pilot.
4	27.9	915	1.06	39	20	15	10	4/8	N/C	9.5	12.0	100			4.5	TR	14.5							Drl. 17½" pilot
5	28.9	484	1.10	37	17	6	22	7/12	N/C	10.0	10	680	.30		5	1/4	15.0							Drl. 26" H.O.
6	29.9	860	1.10	39	18	7	21	12/13	N/C	10.0	14.7	100	.10		5	1/4	13.0							Drl. 26" H.O. to 915m.
7	30.9	915	1.09	44	22	10	22	10/13	N/C	10.0	14.8	100	.10		5	TR	13.0							Run and cmt. 20" csg.
8	1.10	915	1.11	47	23	20	10	2/10	11.4	2	10.0	7.0	220	.20		6	TR	22.5						Mixing new mud.
9	2.10	918	1.10	50	20	16	9	6/25	11.0	2	10.5	6.7	240	.60		7	1/4	22.5						Drl. 17½" hole.
10	3.10	1096	1.12	42	15	9	11	12/26	12.3	2	11.0	6.8	260	.30		7	1/2	25.0						Drl. ahead.
11	4.10	1334	1.13	42	16.5	11	11	4/38	9.5	2	11.2	5.0	180	.50	TR	8	1/2	30.0						Drl. tight hole.
12	5.10	1362	1.30	47	30	25	9	6/35	6.0	2	11.2	8.5	40	.70	7	15	1/2	30.0						Drl. tight hole.
13	6.10	1550	1.30	51	32.5	27	11	4/30	6.5	2	11.0	8.0	40	.50	5	14	1/4	29.0						Drl. tight hole.
14	7.10	1602	1.35	53	35.0	28	15	4/24	5.6	2	11.1	12.0	100	.70	7	15	1/4	32.5						Drl. tight hole.

REMARKS



# ANCHOR DRILLING FLUIDS AS

OSLO - STAVANGER

## Drilling Mud Properties Record

MUD SYSTEM CHROME LIGNOSULFONATE/BENTONITE

WELL NAME 30/6-2 AREA NORTH SEA  
 OPERATOR STATOIL RIG. DEEP SEA SAGA  
 ENGINEERS JENSEN, SØRLID

Day No.	DATE	DEPTH FEET METERS	MUD PROPERTIES																				OPERATION REMARKS				
			DENSITY PPG SG	VISCOSITY				GELS 0 10	FLUID LOSS 30 Min cc's	CAKE 32 hrs	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.						Ca. ++ ppm	PI	% OIL	% SOLIDS	% SAND										
15	8.10	1695	1.35	48	28	21	14	6 28	6.8	2		11.4	14.5	50	.80	7.5	14.5	1/4	32.5							Drl. tight hole.	
16	9.10	1715	1.35	49	28	22	12	5 19	7.0	2		11.3	16.5	50	.70	7.5	14	1/4	27.5								Drl. to csg. depth.
17	10.10	1715	1.35	52	32.5	26	13	4 19	7.1	2		10.5	16.5	50	.50	6	14	1/4	25.0								Logging.
18	11.10	1715	1.35	48	29	24	10	3 14	5.6	1		10.8	17.0	50	.60	5	14	1/4	25.0								Run csg.
19	12.10	1715	1.35	49	16.5	15	3	4 9	5.6	1		10.5	16.5	40	.50	4	13	1/4	22.5								W.O.C.
20	13.10	1878	1.40	50	24	18	8	3 20	4.0	1		10.8	16.5	100	.90	4	16	1/4	22.5								Drl. 12-1/4" hole.
21	14.10	2055	1.50	48	22	17	10	3 19	5.2	1		10.5	17.5	230	.40	3	19	1/4	22.5								Drl. 12-1/4" hole.
22	15.10																										
23	16.10	2202	1.50	48	23	18	10	4 16	4.8	1		10.5	19.0	240	0.4	2.5	19	1/4	22.5								P.O.O.H. for coring.
24	17.10																										
25	18.10	2225	1.50	48	20	17	10	5 17	5.1	1	16	11.0	19.0	220	0.6	2.0	19	1/4	22.5								
26	19.10	2202	1.50	47	20.5	16	9	3 13	5.4	1	15.7	10.8	19.0	240	0.55	2.0	19	1/4	22.5								
27	20.10	2227	1.51	48	20.5	16	9	2 12	5.1	1	15.2	10.9	18.5	220	0.6	2.0	19	1/4	21.0								
28	21.10	2278	1.50	48	22	17	10	3 15	5.4	1	15.2	11.0	19.0	220	0.65	2.0	19	1/4	22.0								

REMARKS





# ANCHOR DRILLING FLUIDS AS

OSLO - STAVANGER

WELL NAME 30/6-2 AREA NORTH SEA

OPERATOR STATOIL RIG. DEEP SEA SAGA

ENGINEERS JENSEN, BJØRHEIM, HOLGATE, SØRLID

## Drilling Mud Properties Record

MUD SYSTEM GEL./LIGNO.

Day No.	DATE	DEPTH FEET <input type="checkbox"/> METERS <input checked="" type="checkbox"/>	MUD PROPERTIES																				OPERATION REMARKS					
			DENSITY PPG <input type="checkbox"/> SG <input checked="" type="checkbox"/>	VISCOSITY				GELS 0	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.						Ca. ++ ppm	PI	% OIL	% SOLIDS	% SAND											
29	22.10	2400	1.50	49	25.5	19	13	3	19	5.5	1	15.6	10.8	19.0	240	0.65	1.5	19	1/4	22.5								
30	23.10	2400	1.50	50	23.5	18	11	3	17	5.6	1	15.6	11	19.0	240	0.7	1.5	19	1/4	22.5								
31	24.10	2400	1.50	50	24.0	19	10	2	14	4.8	1	15.4	10.8	19.0	240	0.65	1.5	19	1/4	22.5								
32	25.10	2400	1.50	50	23.0	18	10	2	14	4.8	1	15.3	10.8	19.0	240	0.65	1.5	19	1/4	22.5								
33	26.10	2400	1.50	47	22.0	18	8	4	9	5.5	1	16.0	10.5	19.0	200	0.70	1	19	1/3	22.5								
34	27.10	2400	1.50	47	20.0	16	8	3	9	5.0	1	15.5	10.5	19.0	200	0.60	1	19	TR	22.5								Running csg.
35	28.10	2374	1.35	39	18.0	15	6	4	7	4.9	1	16.0	10.5	15.0	280	0.50	1	15	TR	22.5								Drig. cmt.
36	29.10	2435	1.35	47	19.5	15	9	4	25	5.3	1	16.5	11.0	15.0	280	0.70	1/2	15	TR	20								
37	30.10	2435	1.35	45	17.5	13	9	3	21	5.3	1		11.0	15.0	280	0.70	1/2	15	TR	20								W.O.W.
38	31.10	2435	1.35	50	20.5	15	9	4	20	5.1	1	15.9	11.0	15.0	240	0.7	1/2	15	TR	22.5								Add. prehydr. bent. to increase CEC.
39	1.11	2435	1.35	47	22.0	17	10	3	10	5.1	1		10.8	16.0	120	0.4	1	14	TR	20								W.O.W.
40	2.11	2435	1.35	48	21.0	16	10	3	11	5.2	1	15.4	10.8	14.0	220	0.9	1	15	TR	17.5								W.O.W. test BOP wip coring tri
41	3.11	2437	1.35	48	19.5	15	9	4	12	5.0	1		11.0	15.0	200	0.35	1/2	15	TR	19								W.O.W.
42	4.11	2437	1.35	48	19.5	15	9	4	12	5.0	1		11.0	15.0	200	0.35	1/2	15	TR	19								W.O.W.

REMARKS



# ANCHOR DRILLING FLUIDS AS

OSLO - STAVANGER

WELL NAME 30/6-2 AREA NORTH SEA  
 OPERATOR STATOIL RIG. DEEP SEA SAGA  
 ENGINEERS HOLGATE, BJØRHEIM, SØRLID, LINDSETH

## Drilling Mud Properties Record

MUD SYSTEM GEL-LIGNOSULFONATE

Day No.	DATE	DEPTH FEET METERS	MUD PROPERTIES																				OPERATION REMARKS			
			DENSITY PPG SG	VISCOSITY				GELS 0	FLUID LOSS 30 Min cc's	CAKE 32 rds 3000 F	H.T.H.P. cc's F	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.						10	CT ppm	TH/ Ca. + ppm MF	PI	% OIL							% SOLIDS	% SAND	
43	5.11.	2437	1.35	48	19.5	15	9	4	12	5.0	1	10.6	15	200	0.35	0.8	1/2	15	TR	19						W.O.W.
44	6.11.	2437	1.35	48	20.5	16	9	3	10	4.2	1	16.5	15	200	0.3	1.0	1/2	16	0.3	20						W.O.W.
45	7.11.	2437	1.35	50	19	14	10	5	15	4.0	1	10.4	15	200	0.5	1.0	1/2	15	TR	20						Ashing for pipe protectors.
46	8.11.	2437	1.35	53	23.5	18	11	4	16	5.0	1	10.8	15	160	0.6	1.1	1/2	15	TR	20			0.70	0.38	Fishing for junk.	
47	9.11.	2437	1.35	55	24.5	19	11	3	14	5.2	1	17	10.4	14	180	0.5	1.6	1/2	14	TR	20		0.70	0.37		
48	10.11.	2443	1.35	53	22	17	10	3	11	4.9	1	17	10.4	14	180	0.6	1.9	1/2	14	TR	20		0.70	0.36	Drilling/fishing.	
49	11.11.	2455	1.35	53	20	15	10	3	11	4.8	1	20	10.2	14	200	0.5	1.7	1/4	14	TR	21		0.68	0.31	Drilling: coring	
50	12.11.	2560	1.35	53	20.5	16	9	3	9	4.5	1	14	10.2	14	180	0.4	1.6	1/4	15	TR	20		0.71	0.29	Drilling.	
51	13.11.	2577	1.35	53	20.5	16	9	3	11	4.2	1	20	10.6	14	140	0.6	1.9		16	TR	20		0.71	0.29	Coring. Gel strenght.	
52	14.11.	2681	1.35	60	26	20	10	3	15	3.8	1	18	10.4	14	120	0.5	1.6	1/4	16	TR	22				Drilling for testing	
53	15.11.	2694	1.35	60	24	19	10	3	15	3.7	1	18	10.4	14	120	0.5	1.7	1/4	15	TR	22				BOP test Drilling.	
54	16.11.	2799	1.35	51	25.5	20	11	3	15	3.8	1	17	10.5	15	120	.4	.13	1/4	16	TR	22				Drilling.	
55	17.11.	2850	1.35	53	21.5	16	11	3	14	4.5	2	17	10.4	16	120	.65	.63	1/4	16	TR	22				Drl.-trip-drl.	
56	18.11.	2876	1.35	54	22.5	16	11	3	14	3.8	1	15	10.2	16	200	.6	1.2	1/4	16	TR	22				Drilling.	

REMARKS



# ANCHOR DRILLING FLUIDS AS

OSLO - STAVANGER

## Drilling Mud Properties Record

MUD SYSTEM GEL-LIGNOSULFONATE

WELL NAME 30/6-2 AREA NORTH SEA  
 OPERATOR STATOIL RIG. DEEP SEA SAGA  
 ENGINEERS HOLGATE, BJØRHEIM, SØRLID, LINDSETH

Day No.	DATE	DEPTH FEET METERS	MUD PROPERTIES																				OPERATION REMARKS				
			DENSITY PPG SG	VISCOSITY				GELS 0	FLUID LOSS 30 Min cc's	CAKE 32 nds 3000 F	H.T.H.P. cc's x1000	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. 10						Ca. +x ppm Mf	PI	% OIL	% SOLIDS	% SAND										
																								10	3000 F	x1000	
57	19.11.	2890	1.35	62	26.5	20	13	3	13	3.7	1	15	9.8	16	160	.35	1/4	16	TR	22½							Logging-trip-loggin
58	20.11.	2890	1.35	63	25	19	12	3	14	3.8	1	15	10.5	16	160	.7	1/4	16	TR	22½							Logging.
59	21.11.	2310	1.35	53	20	16	8	3	9	3.4	1	13	10.8	16	120	.8	1/4	16	TR	21.25							Plugging
60	22.11.	2310	1.37	57	20.5	17	7	2	10	3.5	1		11.2	15.5	150	1.4	1/4	16	TR	21½							Fail to pressure test csq.
61	23.11.	2310	1.36	60	23.5	19	9	3	14	3.5	1		11.2	15	280	1.5	TR	15	TR	22½							Set cmt. plug. Test csq.
62	24.11.	2310	1.36	54	20.5	17	7	2	12	3.5	1		11.2	15	270	1.5	TR	15	TR	21							Pull BOP.
63	25.11.	2310	1.36	59	23	18	10	2	17	4.0	1		11.2	11½	240	1.5		15	TR	22½							Working on BOP.
64	26.11.	2310	1.36	59	24	19	10	3	22	4.0	1		11.6	11½	190	1.9		15	TR	22½							Test BOP.
65	27.11.	2310	1.39	63	25.5	20	11	3	24	4.0	1		11.6	11½	190	1.9		15½	TR	22½							
66	28.11.	2310	1.40	66	28.5	22	13	3	15	3.0	1		11.5	13	220	1.9		16½	TR	22½							Circl.
67	29.11.	2310	1.40	70	27	22	10	4	23	3.4	1		11.5	13	240	1.9		16½	TR	22½							Perforate.
68	30.11.	2310	1.40	55	21	18	6	3	16	3.9	1		11.4	13	240	1.8		15½	TR	20							POOH w/test string (change valve)
69	1.12.	2310	1.40	56	21.5	19	5	3	18	5.5	2		11.6	12	260	2.2		15	TR	20							Testing.
70	2.12.	2310	1.40	55	23	20	6	3	15	4.5	2		11.7	13	280	2.0		15½	TR	18							P.O.O.H.

REMARKS



# ANCHOR DRILLING FLUIDS AS

OSLO - STAVANGER

WELL NAME 30/6-2 AREA NORTH SEA  
 OPERATOR STATOIL RIG DEEP SEA SAGA  
 ENGINEERS ÅRSETH, VIGEN

## Drilling Mud Properties Record

MUD SYSTEM GEL-LIGNO

Day No.	DATE	DEPTH FEET METERS	MUD PROPERTIES																				OPERATION REMARKS				
			DENSITY PPG SG	VISCOSITY				GELS 0	FLUID LOSS 30 Min cc's	CAKE 32 nds 300°F	H.T.H.P. cc's	PH	CF ppm	Filtrate Analysis			RETORT		BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"		"K"			
				sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.							Ca. ++ ppm	TH ppm	Mf	% OIL	% SOLIDS							% SAND	TR	%
71	3.12.	2310	1.40	66	28.5	24	9	4	18	4.5	2	11.4	12	320	2.0	3.5	16	TR	19						RIH with retainer.		
72	4.12.	2310	1.35	57	21.5	19	5	3	15	4.7	2	11.4	13	280	1.4	2.7	15	TR	17½						Plugging.		
73	5.12.	2310	1.35	55	20	17	6	3	17	4.7	2	11.4	13	280	1.5	2.7	15	TR	17½						W.O.W.		
74	6.12.	2310	1.35	54	20.5	18	6	3	16	4.6	2	11.4	13	280	1.5	2.7	15	TR	17½						W.O.W. Land riser.		
75	7.12.	2310	1.35	54	20	17	6	3	16	4.8	2	11.4	13	280	1.5	2.7	15	TR	17½								
76	8.12.																										
77	9.12.																										
78	10.12.																										

REMARKS

FORMATION TESTING

1. Two series of RFT tests were run.

Run No. 1      2064 - 2309 m RKB  
22 recordings were made, only 9 of them  
were successful.  
One successful RFT sample was taken at  
2222.3 m RKB.

Run No. 2      2433 - 2857 m RKB  
19 recordings were made and 18 of them were  
successful.

RUN No. 1

REC NO	DEPTH (m)	PRESSURE (bar)		COMMENTS
		HYDROST.	FORM.	
1	2064	308.2		No SEAL
2	2065.5	308.5		"
3	2065.3	308.5		TIGHT
4	2081.4	310.8		"
5	2107.6	314.6		
6	2157.6	322.1		
7	2168	323.6		"
8	2168.5	323.3		"
9	2169	323.0		"
10	2173.8	324.0		"
11	2181.3	325.3		"
12	2181.0	325.3		"
13	2174	324.1		"
14	2157.7	321.3		"
15	2196.0	<u>328.1</u>	271.7	
16	2201.7	329.1	271.7	
17	2215	330.3	271.9	
18	2214.5	331.0	272.1	
19	2222.3	331.9	272.2	RFT SAMPLE GAS
20	2231	332.8	272.2	
21	2309.4	344.8		LOW PERM.
22	2080.5	311.2	308.6	

BRENT FORM.

RUN No. 2

	REC NO.	DEPTH (m)	PRESSURE (bar)		COMMENTS
			HYDROST.	FORM.	
↑ DUNLIN SAND	1	2433	330.5	287.6	NO PERM.
	2	2436	331.0		
	3	2437.5	331.2	288.1	
	4	2440	331.6	288.3	
	5	2442	331.9	288.6	
	6	2445	332.4	289.0	
← STATFJORD SAND	7	2570	349.7	305.0	
	8	2578	350.7	305.6	
	9	2600	352.9	307.1	
	10	2630	357.0	310.0	
	11	2654	360.2	312.4	
	12	2676	363.3	314.5	
	13	2709	367.7	317.7	
	14	2743	372.3	321.2	
	15	2800	380.1	326.7	
	16	2840	385.4	330.6	
	17	2857	387.7	332.2	
	18	2586	351.4	306.1	
	19	2570	349.2	304.5	

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RFT PLOT - RUN No. 1

BRENT FORMATION

DEPTH  
(m)

2190

2200

2210

2220

2230

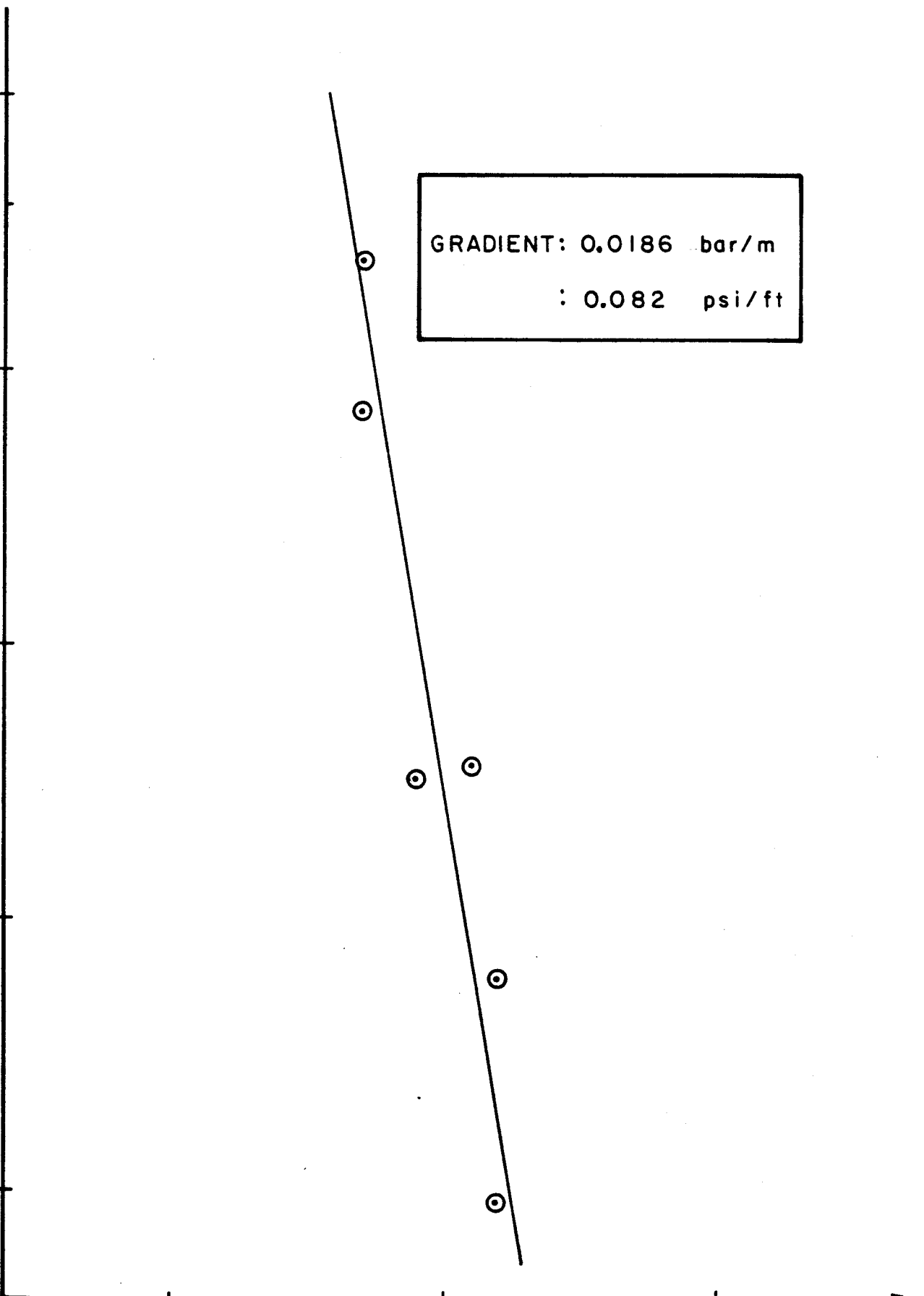
GRADIENT: 0.0186 bar/m  
: 0.082 psi/ft

271

272

273

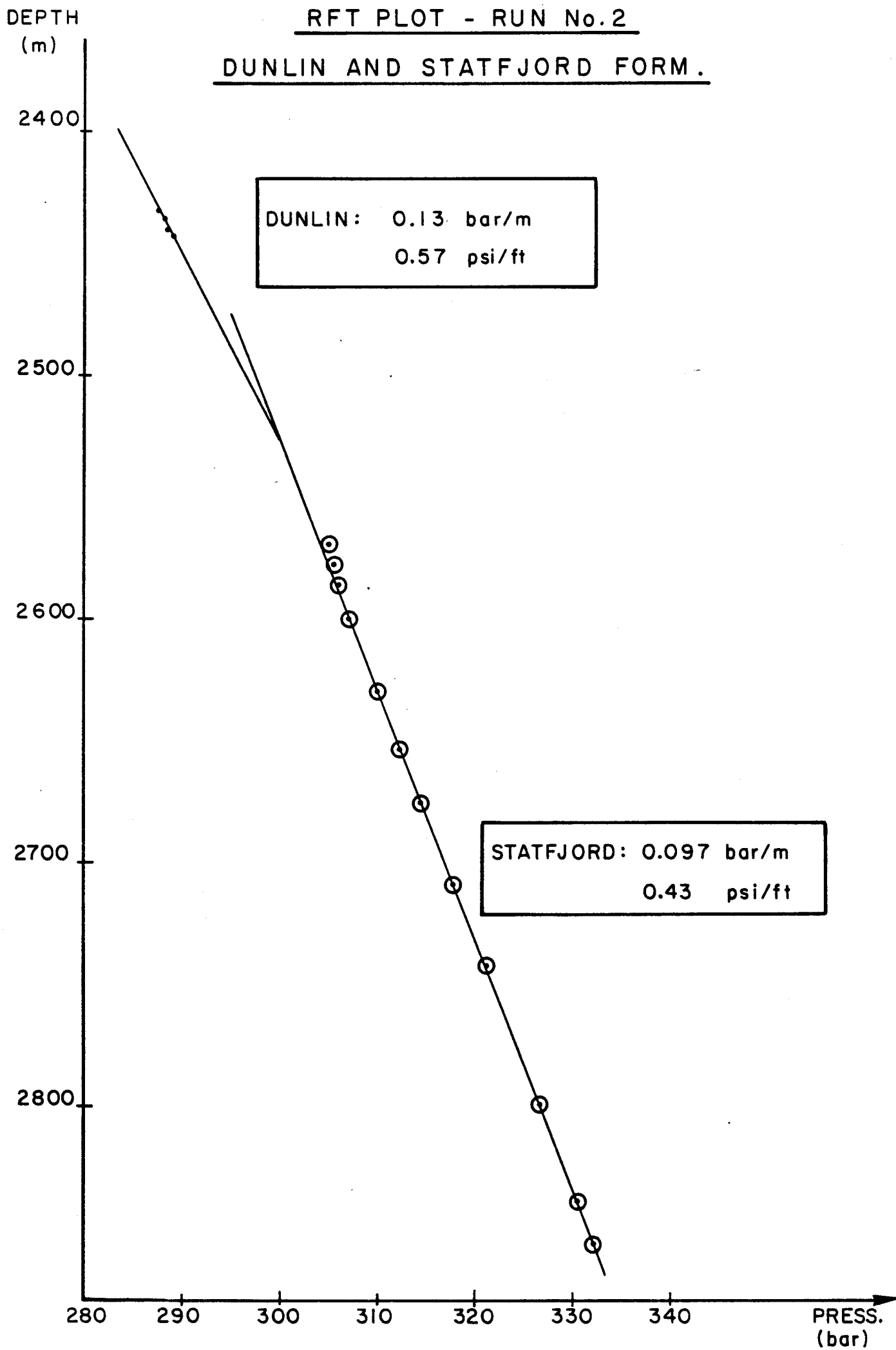
PRESS.  
(bar)





RFT PLOT - RUN No.2

DUNLIN AND STATFJORD FORM.



## DRILL STEM TEST

Production test was carried out in the "Brent" sand at the interval from 2212 to 2222 m RKB.

### Test string

A Halliburton test string was run, and the packer was set at depth of 2183 m RKB. Four Lynes pressure and temperature gauges and two Amerade pressure gauges were run.

### Test operations

Due to stuck APR-N valve the DST no. 1 was interrupted and the string was pulled. The test was continued as DST no. 1A after change of the APR-N valve.

The test consisted of an initial flow for 6 mins followed by a 64 mins. initial build-up, then a 477 mins. flow period and a 302 mins. final build-up.

The ports through the running tool in the F-Nipple were blocked during the test and the bottom hole gauges were isolated from the wellbore pressure, and no bottom hole information were obtained.

*W, BHP*

### Fluid production and sampling

During the final flow an average rate of about 1200 SBBL/D of condensate and 22.8 MMSCF/D of gas was measured.

Fluid samples were caught at the "Goos Neck" for solids control. No traces of Water, sand and H<sub>2</sub>S were observed but small traces of Co<sub>2</sub> were indicated. The average API gravity of the condensate was measured to about 58.6° and the specific gravity of the gas to 0.66.

During the final flow period, three complete PVT samples were caught.

Conclusion of DST No. 1A

In spite of the missing bottom hole pressure, comparisons with 30/6-1 data indicated similar reservoir conditions. A prediction of flowing bottom hole pressure was done by use of Intercomp "Multiphase Pressure Drops Program" and by use of R.V. Smith's Equation. Comparisons with known results from 30/6-1 indicated a deviation of about 3-5 per cent for both methods.

In the appendix a calculated flowing bottom hole pressure after R.V. Smith's method are listed under flowdata.

Date/Time	Bottom hole *		Well head		Chokes		Separator data						Liq. and gas analysis at goos neck						
	Press. Psi	Temp. F	Press. Psi	Temp. F	Manifold	Heater 64. inc.	Press. Psi	Temp. F	Gas rat. mmscf/d	Oil rate stb/d	GOR scf/stb	Oil API	Gas S.G.	Water %	PH	Sedim. %	Oil API	Co2 %	H2S
Des. 1979																			
1054						48													
1100						"										0.5		0.3	neg.
1115			1956			"	473												
1130		193	1962	87		"	481	68	22.7			59.5	0.652			"			
1145			1957	88		"	"												
1200			1959	89		"	"	70	22.7	1262	17987	"	"			"		0.5	"
1230			1966	91		"	"	73	22.7	1210	18793	"	"			"			
1300	3640		1972	93		"	482	74	22.9	1194	19154	"	"			"		0.6	"
1330	3635		1971	94		"	482	76	22.8	1206	18922	"	"			"			
1400	3637		1976	95		"	481	76	22.8	1191	19160	"	"			"		0.6	"
1430			1523	94		64	487	80	25.5			58.6	0.660			0.4			
1445	3451		1523	93		"	489	80	25.5	1346	18945	"	"			"		0.5	"
1500	3451		1528	94		"	487	80	25.5	1334	19115	"	"			"			
1515			1989	96		48	481	75	22.9			"	"			0.5			
1530	3679		1996	97		"	482	75	22.8	1199	19016	"	"			"			
1545	3681		1996	98		"	481	75	22.8	1210	18884	"	"			"			
1600	3683		1998	98		"	481	75	22.8	1207	18931	"	"			"			
1615	3683		1996	98		"	482	75	22.8	1214	18806	"	"			"			
1630	3678		1995	97		"	483	76	22.8	1192	19153	"	"			"			
1645	3683		2000	98		"	483	76	22.8	1199	19041	"	"			"			
1700	3683		2000	98		"	483	77	22.8	1191	19152	"	"			0.4			
1715	3678		1995	99		"	482	77	22.8	1196	19072	"	"			"			
1725	3681		1998	99		"	483	77	22.8	1196	19072	"	"			"			
1728		SHUT	IN THE WELL																
* ALL BOTTOMHOLE PRESSURE ARE CALCULATED FROM THE R.V. SMIT'S EQUATION																			