

Doc. no.
99S94+9776
Date
1999-11-02



Rev. no. 35 of 87
0

The following segregated samples were taken:

- Run 5C: One water sample at 4233 m using 2*20 liters pre flush chambers and one 4 liters chamber.
- Run 5D: One hydrocarbon sample at 4145.8 m using 2*20 liters pre flush chambers and one 4 liters PVT chamber.
- Run 5E: One hydrocarbon sample at 4197.8 m using 10 liters pre flush chamber and one 4 liters PVT chamber.

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The FMT sampling results are described in more details in Tables 3.3.

Two runs of MDT were performed in well 34/11-4T3 and hydrocarbon were sampled at two different depths. Extended MDT sampling were performed at 4151 m and 4194.8 m.

The MDT sampling results are summarized in Table 3.4.

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FMT PRESSURE RESULTS

Test no.	Formation	Depth m-MD-RKB	Hyd. press. before bar	Hyd. press. after bar	Formation pressure bar	Mob. md/cp	Temp. Deg. C	Comment
FMT RUN 5B								
1	Tarbert	4143	823	823	794	0.9	128.5	good
2	Tarbert	4145	823	823	793	400.9	130.5	very good
3	Tarbert	4147	824	823	793	13.4	131.6	very good
4	Ness	4151	825	825	794	22	132.5	very good
5	Ness	4155	825	825	794	0.7	133.5	good
6	Ness	4163	827	827	794	6.2	134.1	v good
7	Ness	4167	828	828	794	1.1	134.6	good
8	Ness	4175	830	829	-	-	135.4	tight
9	Ness	4194	834	833	795	3.6	136.1	good
10	Ness	4195	834	833	795	5.1	136.8	good
11	Ness	4196	834	834	795	3.4	137.4	good
12	Ness	4198	834	834	796	4.8	137.8	very good
13	Ness	4201	835	834	-	-	138.0	tight
14	Ness	4200	834	834	-	-	138.4	tight
15	Ness	4214	837	837	-	-	139.2	tight
16	Ness	4215	837	837	-	-	139.6	tight
17	Ness	4223	839	839	800	5.9	139.9	very good
18	Ness	4231	841	841	800	11.2	140.2	Excellent
19	Ness	4233	841	841	800	17.9	140.3	Excellent
20	Ness	4241	843	843	-	-	140	tight
21	Ness	4261	847	847	-	-	140	tight
22	Ness	4264	847	847	804	1	141	fair
23	Etive	4278	850	853	808	0	142	good
24	Etive	4284	851	851	809	0	143	superch ?
25	Etive	4287	852	852	807	2	143	good
26	Etive	4291	852	852	808	0	147	superch ?
27	Rannoch	4297	854	854	-	-	144	tight
28	Rannoch	4298	854	854	-	-		Lost Seal
29	Rannoch	4298	-	-	-	-		
30	Rannoch	4302	-	-	-	-		tight
31	Etive	4284	850	850	808	0	144	poor
FMT RUN 5C								
32	Ness	4233	840	-	-			No Seal
33	Ness	4233	840	840	800	19	141	Sampling
FMT RUN 5D								
34	Tarbert	4145	822	822	793	608	138	Sampling
FMT RUN 5E								
35	Ness	4195	832	832	795	0	138	fair
36	Ness	4196	833	833	795	1	139	fair
37	Ness	4197	833	833	796	6	141	Sampling

Table 3.3: FMT results, run 5B, 5C, 5D and 5E

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FMT SAMPLING RESULTS

Run No	Depth m RT	Sample type	Comments																																								
5C	4233.0	water	<p>Result from preflush chamber: 2 x 20 liters filled in 33 min. 4 liter chamber in 2 min 20 sec Volume: 2 x 20 liters, 35,5 liters water, 2,5 liters mudfiltrate 5.5 ft³ gas (probably air) Opening pressure 2 x 20 liter: 900 psi 4 liter 800 psi</p> <table border="0"> <tr> <td></td> <td></td> <td>2*20 liter</td> <td>4 liter chamber</td> </tr> <tr> <td>Density</td> <td>:</td> <td>1.0576/13.9</td> <td>1.0575/15.6 °C</td> </tr> <tr> <td>Chlorides</td> <td>:</td> <td>47000</td> <td>41000 mg/l</td> </tr> <tr> <td>Barium/Strontium</td> <td>:</td> <td>1450</td> <td>1300 mg/l</td> </tr> <tr> <td>Sulfate</td> <td>:</td> <td>1</td> <td>1 mg/l</td> </tr> <tr> <td>Resistivity</td> <td>:</td> <td>11.3</td> <td>11.9 ohm/cm at 15 °C</td> </tr> <tr> <td>Conductivity</td> <td>:</td> <td>88.7</td> <td>84.4 mg/l</td> </tr> <tr> <td>Tritium</td> <td>:</td> <td>0</td> <td>0</td> </tr> <tr> <td>Alkanity</td> <td>:</td> <td>n/a</td> <td>190.2 mg/l HCO₃</td> </tr> <tr> <td>ph</td> <td>:</td> <td>n/a</td> <td>5.34 at 9.9 °C</td> </tr> </table>			2*20 liter	4 liter chamber	Density	:	1.0576/13.9	1.0575/15.6 °C	Chlorides	:	47000	41000 mg/l	Barium/Strontium	:	1450	1300 mg/l	Sulfate	:	1	1 mg/l	Resistivity	:	11.3	11.9 ohm/cm at 15 °C	Conductivity	:	88.7	84.4 mg/l	Tritium	:	0	0	Alkanity	:	n/a	190.2 mg/l HCO ₃	ph	:	n/a	5.34 at 9.9 °C
		2*20 liter	4 liter chamber																																								
Density	:	1.0576/13.9	1.0575/15.6 °C																																								
Chlorides	:	47000	41000 mg/l																																								
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ph	:	n/a	5.34 at 9.9 °C																																								

Gas from bleed off 2*chambers had no smell and no H₂S. Probably from air in chambers
3 PVT samples transferred from sample. The rest was filled in plastic bottles.

Run No	Depth m RT	Sample type	Comments
5D	4145.7	gas/cond.	<p>Result from chambers: (1x4 l, 2x20 l) 2 x 20 liter chamber filled in 3 min 50 sec. 4 liter chamber in 8 sec Volume 2 x 20 liters: Total 6,2 liters liquids divided into : 2.2 l mudfiltrate, 3.0 l condensate Volume gas: 1140 ft³ gas Opening pressure: 4600 psi in preflush chamber, 3200 psi in PVT chamber Density for "condensate" phase: 0,818 g/cm³ (dark brown color) H₂S : 1.3 ppm CO₂: 1.5 %</p>

Analysis of gas from bleeding off 2*20 liter preflush chamber at drill floor. Performed by Geoservice.

C1	C2	C3	iC4	nC4	iC5	nC5
25351	2102	803	108	216	79	55

Sample diluted to 4%

4 liter sample transferred to 3 x 600 cc PVT sample chambers. Heated to 80 °C before transfer. Transferred at reservoir pressure

Run No	Depth m RT	Sample type	Comments
5E	4197.8	gas/cond.	<p>Result from chambers: (1x4 l, 1x10 l) 10 liter preflush chamber filled in 19 min, 4 liter chamber in 5 min 20 sec Volume 10 liters: 4 liters liquids: approx. 3.5 l mudfiltrate and 0.5 l condensate. Volume gas: 366 ft³ gas. Opening pressure: 3000 psi in preflush chamber, 3000 psi in PVT chamber Density for "condensate" phase: 0,818 g/cm³ H₂S: 2.1ppm CO₂: 1%</p> <p>4 liter sample transferred to 3 x 600 cc PVT sample chambers. Heated to 80 °C before transfer. Transferred at reservoir pressure</p>

Table 3.3: FMT sampling results

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MDT sampling results

Run # / Sample depth (m RT)	Chamber code / Serial no.	Chamber size	Shut in pressure (bar)	Opening pressure (bar)	Transferred to bottles	Volume pumped before sampling (liter)	Average pump drawdown (bar)	Volume pumped to fill chamber (liter)	Quality / sample contents	Chamber and bottle transport Container #	Comments
Run 6A 4151.0 m	MRSC-GA-152	1 gallon	1060	417	none	53.0	40	4.68		D258	Heating element failed, so not able to transfer sample offshore, sent onshore for transfer
	MPSR-605	450 cc	1050	421	sent to lab	64.3	40	1.17 2 strokes	Probably good	MCM-002 3)	'Dead volume' behind transport valve: High pressure experienced when drained Samples probably good. Sent to Oilphase lab for transfer
	MPSR-1041	450 cc	1060	438	sent to lab	64.3	40		Probably good	MCM-002	
	MPSR-1042	450 cc	1060	428	sent to lab	68.4	40	1.17 2 strokes	Probably good	MCM-002	
	MPSR-1043	450 cc	1060	424	sent to lab	68.4	40		Probably good	MCM-002	
	SPMC-76	250 cc	1060	759	1561EA 1)	74.3	40	0.585 1 stroke	Probably good	AMB 1689	
	SPMC-77	250 cc	1060	718	1567EA 1)	74.3	40		Probably good	AMB 1689	
Run 6B 4194.8 m	MRSC-JA-100	2.75 gal.5)	1065	324	2509EA 0707EA 2581EA 5258EA 1252EA 1481EA	19.8	105	13.45	Probably good	AMB 1689	Fill six bottles and drain 2.75 gal chamber.
	MRSC-GA-172	1 gallon 3)	1065	345	2090EA 0756EA 0861EA 0968EA	41.5	105	7.020	Probably good	AMB 1689	1st bottle only filled 250cc, due to waxing in line, changed lines and used heating cable, last 3 bottles filled ok
	MPSR-36	450 cc	1065	324	sent to lab	50.9	105	1.17 2 strokes	Probably good	MCM-002	'Dead volume' behind transport valve: High pressure when drained, small contents of condensate with some filtrate Sent to Oilphase lab for transfer
	MPSR-931	450 cc	1065	345	sent to lab	50.9	105		Probably good	MCM-002	
	MPSR-069	450 cc	1065	331	sent to lab	54.4	105	1.76 3 strokes	Probably good	MCM-002	
	MPSR-970	450 cc	1065	331	sent to lab	54.4	105		Probably good	MCM-002	
	SPMC-40	250 cc	1065	731	2389FA 2)	57.9	105	0.585 1 stroke	Probably good	AMB 1689	
	SPMC-41	250 cc	1065	697	1477EA 2)	57.9	105		Probably good	AMB 1689	

Table 3.4. MDT sampling results

Well Name	34/11-4	Location	Norway	Date & Time	10-Jan-99 16:29
Operator	STATOIL	Contractor/Rig	T. VØLSTADT-T. MYRVANG	Driller	Graham Mitchell/Tora Ludwig
Operator Rep.	MAGNE AASE	Contractor Rep.	QUADRI	Analyst	
Analyte Type	WDM	Fluid System		SPRD Date	01-25-1999

DRILLING FLUIDS PROPERTIES RECORD - From 19-Dec-1998 23:59 to 10-Jan-1999 16:29														
Property Name	Units	1	2	3	4	5	6	7	8	9	10	11	12	13
Date		20-Dec-98	21-Dec-98	21-Dec-98	22-Dec-98	22-Dec-98	23-Dec-98	23-Dec-98	23-Dec-98	23-Dec-98	24-Dec-98	24-Dec-98	24-Dec-98	25-Dec-98
Time		15:09	13:09	22:51	02:00	19:00	02:00	23:08	23:10	04:00	08:46	16:54	22:30	04:00
Sample Loc.		Active S	Active S	FlowLine	Active S	Active S	FlowLine	Active S	Active S	Active S	Active S	Active S	FlowLine	FlowLine
MD	m	1220.	1465.	1590.	1590.	1807.	1390.	1807.	1820.	1528.	1430.	1560.	1678.	1683.
TVD	m		1465.	1590.	1663.	1907.		1907.	1820.	1528.	1538.	1560.	1678.	1678.3
Flow. Temp.	degC		41.	47.		42.	45.		36.	39.4	42.	45.	48.	47.5
Density	g/cm3	1.4	1.4	1.39	1.4	1.4	1.41	1.4	1.4	1.4	1.4	1.4	1.42	1.41
Funnel Visc.	s	82	51	50	50	54	64	54	52	60	54	58	51	50
600 rpm		86	50	64	70	75	72	72	64	60	75	74	72	74
300 rpm		36	42	47	34	57	55	54	48	45	55	58	54	56
200 rpm		30	31	40	47	58	47	35	44	39	46	46	48	47
100 rpm		26	23	30	35	35	39	35	31	30	35	36	38	37
60 rpm		16	18		27	31	31	30	28	25	31	31	31	31
30 rpm		12	15		24	28	28	28	21	20	25	25	25	25
6 rpm		7	8	11	18	15	18	14	13	11	15	15	15	15
3 rpm		6	7	9	12	14	12	11	10	9	12	12	12	12
Plastic Visc.	cP	27.	18.	17.	18.	30.	17.	23.	19.	26.	20.	18.	18.	18.
Yield Point	Pa	8.7	11.5	14.4	18.2	18.2	18.2	17.2	15.3	14.4	18.6	18.2	17.2	18.2
10 sec. Gel	Pa	1.5	3.3	3.3	3.3	7.5	6.2	10.5	8.3	8.3	11.7	8.3	8.3	8.3
10 min. Gel	Pa	4.	5.	12.	15.	6.	8.	18.	6.7	8.7	14.4	9.8	9.	8.
n-annulus		0.498	0.498	0.588	0.587	0.588	0.591	0.585	0.591	0.588	0.594	0.588	0.587	0.585
K-annulus	Pa*s^n	1.38	1.698	2.801	3.589	4.891	3.878	3.189	2.892	2.801	3.878	3.583	3.598	3.863
API Filtrate	mL	2.3	2.3	2.6	2.5	2.5	1.9	2.3	2.3	2.3	2.3	2.3	2.3	2.3
API Cake	1/32nd"	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
Fra	mL					0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Pf	mL		0.2	0.25	0.2	0.2	0.08	0.15	0.02	0.08	0.0	0.2	0.02	0.02
Mf	mL		0.3	0.4	0.25	0.25	0.2	0.2	0.25	0.2	0.2	0.2	0.2	0.2
pH		11.	10.	10.	9.8	9.5	10.8	9.5	9.5	10.4	12.0	10.8	10.5	9.7
Ca2+	mg/L	1482.9	1402.7	1442.9	1422.8	1302.7	2165.	2382.7	1442.9	1822.9	282.4	1642.9	2282.4	2282.1
Mg2+	mg/L	72.9	48.6	48.6	72.9	48.6	12.2	72.9	12.2	12.2	48.6	24.3	12.2	12.2
K+	mg/L	80780.	84500.	82308.	81900.	84500.	87124.	83900.	84788.	84788.	84788.	84788.	84788.	84802.
Cl-	g/L	74.	80.	82.	82.	87.	87.	86.	84.	86.	84.	82.	88.	82.
KCl	g/L	158.	158.	187.	187.	188.	184.	188.	188.	188.	188.	188.	188.	181.
Sand %	%	0.1	0.3	0.5	0.5	0.3	0.5	0.5	0.4	0.3	0.	0.8	0.9	0.9
Water %	%	82.	79.	79.	78.	78.	78.	78.	78.	78.	78.	78.	77.8	78.
Polyol %	%	3.2	4.	4.5	4.5	5.	5.	5.	5.	5.	5.	5.	5.	5.
Contr. Solids %	%	8.4	11.2	10.5	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.4
LGS %	%	0.3	0.3	2.1	2.3	0.1	2.4	2.8	3.2	3.2	2.9	3.3	2.9	3.
HGS %	%	8.3	8.2	8.7	8.7	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
MBT	mg/ml	16.	15.	16.	22.	22.	25.	25.	22.	22.	22.	22.	20.	20.

* Mark of Schlumberger



DRILLING FLUIDS SERVICES

MudCADE*

Administration Data					
Well Name	34/11-4	Location	Norway	Date & Time	10-Jan-09 16:28
Operator	STATOIL	Contractor/Flag	Transocean Arctic	Interval	17.0 in
Operator Rep.	MAGNE AASE	Contractor Rep.	T.VØLSTADT-T.MYRVANG	Dowell Eng.	Graham Mitchell/Tom Ludwig
Analysis Type	WDM	Fluid System	QUADRILL	Spud Date	05-Dec-1998

DRILLING FLUIDS PROPERTIES RECORD - From 19-Dec-1998 23:00 to 10-Jan-1999 16:29														
Property Name	Units	14	15	16	17	18	19	20	21	22	23	24	25	26
Date		25-Dec-98	26-Dec-98	28-Dec-98	29-Dec-98	29-Dec-98	29-Dec-98	29-Dec-98	27-Dec-98	27-Dec-98	28-Dec-98	28-Dec-98	28-Dec-98	29-Dec-98
Time		08:30	16:00	22:30	04:30	06:33	16:00	22:09	04:00	16:31	07:54	16:00	22:40	04:30
Sample loc.		Active 9	Active 9	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine
MD	m	1890.	2060.	2156.	2210.	2210.	2300.	2348.	2396.	2399.	2430.	2510.	2571.	2640.
TVO	ft	1830.	2000.	2155.5	2209.5	2210.	2300.	2345.5	2394.5	2399.	2430.	2510.	2571.	2640.
Flow. Temp.	degC	45.	46.	50.8	50.	50.	50.	51.	50.	52.	40.	46.	56.	49.
Density	g/cm3	1.4	1.45	1.46	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
Funnel Visc.	s	51	54	54	55	58	58	58	58	56	62	54	59	59
600 rpm		72	98	84	87	92	90	85	94	85	85	88	89	85
300 rpm		52	64	63	64	68	68	65	61	62	62	61	57	59
200 rpm		40	54	53	54	57	59	53	51	51	51	50	47	49
100 rpm		34	41	41	41	44	43	40	39	38	39	37	34	35
60 rpm		28	36	35	35	38	38	33	32	34	32	30	28	29
30 rpm		24	28	28	29	30	28	27	28	28	29	29	22	22
8 rpm		13	16	17	17	17	18	15	15	16	16	14	14	13
3 rpm		10	13	14	14	14	16	14	13	13	13	11	12	11
Plastic Visc.	cP	28.	32.	31.	32.	34.	34.	31.	34.	32.	33.	24.	30.	25.
Yield Point	Pa	18.3	20.1	20.1	19.6	21.1	20.1	21.1	18.2	19.7	19.7	17.7	18.3	16.8
10 sec. Gel	Pa	5.	8.	7.	7.	6.3	6.3	5.7	6.7	5.9	6.6	6.	6.	5.
10 min. Gel	Pa	7.	10.	11.	11.	11.	10.5	11.5	11.5	14.	11.	10.	10.	10.
n-annulus		0.568	0.548	0.527	0.53	0.545	0.522	0.539	0.534	0.529	0.538	0.579	0.499	0.508
K-annulus	Pa-s^n	2.85	3.777	4.189	4.178	4.587	4.535	4.193	3.842	3.82	3.82	3.604	3.591	3.1
API Filtrate	mL	2.4	2.2	2.8	2.8	2.5	2.5	2.8	2.9	2.3	2.9	2.9	2.6	2.5
API Cake	1/32nd"	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
Pm	mL	0.9	0.7	0.5	0.5	0.5	0.5	0.36	0.29	0.4	0.3	0.3	0.3	0.3
Pf	mL	0.2	0.2	0.02	0.02	0.1	0.1	0.01	0.01	0.01	0.01	0.01	0.	0.
FM	mL	9.4	6.4	0.2	0.3	0.3	0.39	0.25	0.3	0.3	0.3	0.3	0.3	0.39
pH		9.6	9.5	9.5	9.3	9.2	9.1	9.1	8.9	8.	8.	8.5	8.4	8.4
Ca2+	mg/L	2505.	2824.9	3005.9	3123.1	2995.9	2995.9	3134.7	3005.9	2995.9	1995.9	2995.9	3045.9	2805.9
Mg2+	mg/L	24.3	24.3	24.3	12.2	24.3	24.3	0.	12.2	24.3	24.3	24.3	12.2	24.3
K+	mg/L	8700.	8690.	8677.4	8677.4	8746.	8690.	8677.4	8677.4	8690.	8700.	8490.	8627.	8627.
Cl-	g/L	84.	84.	84.	84.	84.	84.	85.	85.	84.	80.	82.	86.	86.
KCl	g/L	187.	188.	184.	184.	187.	185.	184.	185.	185.	185.	188.	185.	185.
Sand %	%	1.	0.	1.	0.9	1.	1.	1.	0.9	0.8	1.	0.8	0.7	0.6
Water %	%	78.	78.5	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.4	78.5
Polylol %	%	4.5	4.8	5.	5.	5.	4.8	5.1	5.1	5.	5.	5.	5.	5.
Corr. Solids %	%	11.5	13.2	13.9	13.4	13.2	13.8	13.6	13.6	13.3	13.3	13.3	13.3	13.9
UGB %	%	3.2	3.2	4.2	4.2	3.2	3.7	4.	4.	3.3	3.3	4.3	5.1	5.1
HGB %	%	9.4	10.	9.2	9.2	9.5	9.7	9.5	9.5	9.3	9.3	9.3	9.7	9.7
MBT	kg/m3	28.	32.	37.	41.	41.	43.	46.	48.	48.	50.	52.	60.	64.

* Mark of Schlumberger



DRILLING FLUIDS SERVICES

MudCADE*

Well Name	34/11-4	Location	Norway	Date & Time	12-Jan-99 8:00
Operator	STATOIL	Contractor/Rep	Transocean Arctic	Operator	17:00
Operator Rep.	Magne Aase	Contractor Rep.	O.Sævihe-T.Myrvang	Dowell Eng.	Graham Mitchell/Kari Øvstad
Analysis Type	WBM	Fluid System	QUADRILL	Start Date	06-05-1998

DRILLING FLUIDS PROPERTIES RECORD - From 19-Dec-1998 23:00 to 12-Jan-1999 05:00														
Property Name	Units	27	28	29	30	31	32	33	34	35	36	37	38	39
Date		29-Dec-98	29-Dec-98	30-Dec-98	30-Dec-98	31-Dec-98	31-Dec-98	31-Dec-98	01-Jan-99	01-Jan-99	01-Jan-99	02-Jan-99	02-Jan-99	05-Jan-99
Time		13:50	22:00	04:00	10:30	04:00	15:00	22:00	04:00	14:20	23:00	02:00	21:45	11:40
Sample loc.		FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine
MD	m	2788	2908	3010	3112	3169	3235	3342	3427	3479	3519	3519	3519	3519
TVD	m	2788	2908	3010	3112	3169	3235	3342	3427	3479	3519	3519	3519	3519
Flow. Temp.	degC	51.	52.7	51.8	50.	47.	50.	52.	50.5	53.	51.	50.	41.	48.
Density	g/cm3	1.45	1.45	1.45	1.45	1.47	1.52	1.55	1.55	1.56	1.54	1.53	1.54	1.57
Funnel Visc.	s	87	86	86	89	70	78	74	70	67	69	70	92	78
500 rpm		88	89	89	92	63	69	67	63	60	60	60	87	68
300 rpm		87	88	87	72	63	70	62	60	57	57	57	70	62
200 rpm		64	66	66	69	53	60	61	58	56	56	56	57	60
100 rpm		40	41	40	42	39	45	48	39	43	43	42	41	61
60 rpm		32	33	30	35	32	38	41	32	38	38	34	35	42
30 rpm		25	25	23	27	24	29	31	25	27	25	25	25	32
8 rpm		15	15	15	18	14	17	19	15	18	15	15	15	17
3 rpm		12	12	11	13	11	14	18	12	12	12	12	12	14
Plastic Visc.	sp	26	26	23	30	28	31	34	28	30	32	31	31	36
Yield Point	Pa	18.2	19.2	19.7	20.1	17.7	21.5	29.	17.7	20.1	19.2	19.2	18.7	21.1
10 sec. Gel	Pa	6.	6.7	6.7	6.7	5.5	6.3	7.5	6.2	7.2	6.7	6.7	6.7	6.8
10 min. Gel	Pa	11.	12.5	12.	12.5	11.8	15.	17.7	12.4	13.	12.6	12.	12.	12.9
n-annulus		0.379	0.59	0.392	0.372	0.389	0.387	0.389	0.387	0.382	0.389	0.389	0.389	0.389
K-annulus	Pa-c'n	3.338	3.3	2.994	3.023	2.908	3.029	4.583	5.958	3.281	3.281	3.287	3.289	3.925
API Filtrate	ml	2.6	2.8	2.8	2.8	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
API Cake	1/32nd'	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
Pwa	ml	0.2	0.38	0.4	0.38	0.4	0.2	0.4	0.3	0.3	0.3	0.4	0.4	0.38
Pf	ml	0.01	0.	0.	0.	0.	0.01	0.	0.	0.01	0.01	0.01	0.01	0.01
NF	ml	0.02	0.02	0.3	0.02	0.3	0.02	0.3	0.02	0.02	0.02	0.02	0.02	0.02
pH		8.2	8.1	8.1	8.1	8.1	8.1	8.1	7.9	7.9	7.9	7.9	7.9	7.8
Ca2+	mg/L	2204.5	2204.5	2204.5	2204.5	2204.5	2204.5	2204.5	2204.5	2204.5	2204.5	2204.5	2204.5	2204.5
Mg2+	mg/L	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3
K+	mg/L	17000	17000	17000	17000	17000	17000	17000	17000	17000	17000	17000	17000	17000
Cl-	g/L	88.	87.	88.5	88.	88.	88.	88.5	91.	89.	89.	91.	92.	82.
KCl	g/L	189.	188.	187.	188.	188.	188.	187.	188.	187.	187.	187.	187.	186.
Sand %	%	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Water %	%	78.	78.	78.	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5
Polyol %	%	5.	5.1	5.	5.	5.	5.	5.	5.	5.	5.1	5.	5.2	5.1
Conn. Solids %	%	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
LGS %	%	6.3	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
HGS %	%	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
MBT	kg/m3	67.	68.	70.	71.	69.	68.	67.	68.	68.	68.	67.	67.	69.

* Mark of Schlumberger

		Administration Data											
Well Name	34/11-4	Location			Norway			Date & Time		12-Jan-99 05:00			
Operator	STATOL	Contractor/RID			Transcoast Arctic			Interval		17.2 to			
Operator Rep.	Magne Aase	Contractor Rep.			O. Saethre-T. Myrvang			Dowell Eng.		Graham Mitchell/Karl Øvestad			
Analysis Type	WBH	Fluid System			OIL/OIL			ROD/DR		08-Dec-1998			
DRILLING FLUIDS PROPERTIES RECORD - From 19-Dec-1998 23:59 to 12-Jan-1999 05:00													
Property Name	Units	40	41	42	43	44	45	46	47	48	49	50	51
Date		03-Jan-99	04-Jan-99	05-Jan-99	06-Jan-99	07-Jan-99	08-Jan-99	08-Jan-99	08-Jan-99	09-Jan-99	10-Jan-99	10-Jan-99	11-Jan-99
Time		19:55	22:00	20:45	21:00	22:00	11:00	19:30	21:00	21:00	09:30	21:30	22:00
Sample loc.		Active 6	Active 8	Active 9	Active 8	Active 9	Active 9	FlowLine	FlowLine	FlowLine	FlowLine	FlowLine	Active 5
MD	m	3518.	3518.	3519.	3519.	3518.	3519.	3519.	3519.	3079.	3509.	3518.	3518.
TVD	m	3518.5	3518.5										3518.0
Flow. Temp.	degC	48.					30.3	40.	39.4	12.8	53.	18.	
Density	g/cm3	1.86	1.56	1.58	1.56	1.56	1.59	1.56	1.56	1.67	1.56	1.56	1.56
Funnel Visc.	s	63	65	115	110	66	66	60	64	63	66	110	100
600 rpm		62	61	60	62	65	67	64	69	100	67	66	66
300 rpm		63	61	61	69	69	67	63	61	67	65	69	69
200 rpm		51	49	50	49	48	54	62	49	63	58	49	48
100 rpm		37	35	36	35	34	39	38	35	36	37	34	34
60 rpm		29	28	28	27	27	32	33	29	31	30	28	28
30 rpm		21	20	21	20	20	24	22	21	22	21	20	20
6 rpm		12	11	11	11	10	12	12	11	12	12	10	10
3 rpm		9	8	9	8	8	10	8	9	9	9	8	8
Plastic Visc.	cP	29.	30.	29	29	29	30	31	29	33	32	27	27
Yield Point	Pa	16.3	14.8	15.3	14.4	14.4	12.7	15.3	15.3	18.3	15.8	15.3	15.3
10 sec. Gel	Pa	4.3	3.8	4.3	4.3	4.6	6.8	5.7	6.3	6.4	6.3	5.8	5.8
10 min. Gel	Pa	6.5	6.1	6.6	6.7	6.1	12.5	10.6	6.6	11.	10.8	6.6	6.6
n-annulus		0.433	0.441	0.419	0.434	0.43	0.419	0.435	0.416	0.459	0.435	0.434	0.433
K-annulus	Per'n	2.306	1.991	2.335	2.014	2.027	2.605	2.306	2.338	2.269	2.283	2.014	2.014
API Filtrate	mL	2.6	2.6	2.8	2.8	2.6	2.9	2.8	2.7	2.9	2.6	2.9	2.6
API Cake	1/32nd"	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
Pm	mL	0.25	0.25	0.2	0.2	0.25	0.35	0.35	0.35	0.35	0.35	0.35	0.3
Pf	mL	0.02	0.02	0.02	0.02	0.01	0.07	0.04	0.03	0.02	0.02	0.01	0.01
Mf	mL	0.25	0.25	0.25	0.25	0.25	0.3	0.3	0.25	0.35	0.35	0.35	0.35
pH		7.8	8.	8.	8.	7.9	7.8	7.8	7.9	7.9	7.8	7.9	7.9
Ca2+	mg/L	1723.4	1723.4	1723.4	1723.4	1723.4	1023.7	1023.7	1923.7	1923.7	1923.7	1923.7	1923.7
Mg2+	mg/L	24.3	24.3	24.3	24.3	24.3	48.5	12.2	24.3	24.3	24.3	24.3	24.3
K+	mg/L	69380.	67343.	67343.	67343.	67343.	91000.	58912.	68912.	68912.	68912.	68912.	68912.
Cl-	g/L	93.	90.	91.	91.	91.	94.	82.	92.	82.	85.	93.	93.
KCl	g/L	169.	167.	167.	167.	167.	175.	170.	179.	170.	170.	170.	170.
Sand %	%	0.6	0.5	0.5	0.5	0.6	0.4	0.5	0.5	0.5	0.5	0.4	0.4
Water %	%	70.8	70.9	70.8	70.9	70.9	70.8	70.5	70.5	70.5	70.5	70.5	70.5
Polyol %	%	5.	5.	5.	5.	5.	4.8	4.8	4.8	4.8	4.8	4.7	4.7
Corr. Solids %	%	18.7	18.7	18.7	18.7	18.7	18.9	18.9	18.9	18.9	18.9	18.9	18.9
LGS %	%	7.8	7.8	7.8	7.8	7.8	8.1	8.3	8.3	8.	8.2	8.2	8.8
HGS %	%	10.9	10.9	10.9	10.9	10.9	10.7	10.7	10.7	10.7	10.7	10.7	10.7
MBT	kg/m3	67.	56.	65.	66.	66.	55.	65.	65.	58.	68.	54.	54.



DRILLING FLUIDS SERVICES

MudCADE*

Well Name	34/11-4	Location	Norway	Date & Time	22-Feb-99 12:43
Operator	STATOIL	Contractor/Rig	Transocean Arctic	Interval	19:25 [1]
Operator Rep.	Johan Bysveen	Contractor Rep.	O.Sæviere-T. Myrvang	Dowell Eng.	G.Mitchell /Thierry Lapoire
Analysis Type	WBM	Fluid System	QUADRILL HT	SPUD Date	09-Dec-1998

DRILLING FLUIDS PROPERTIES RECORD - From 12-Jan-1999 05:00 to 22-Feb-1999 12:40

Property Name	Units	14	15	16	17	18	19	20	21	22	23	24	25	26
Date		20-Jan-99	20-Jan-99	21-Jan-99	21-Jan-99	21-Jan-99	21-Jan-99	22-Jan-99	22-Jan-99	22-Jan-99	23-Jan-99	23-Jan-99	23-Jan-99	24-Jan-99
Time		14:30	23:01	04:00	09:30	18:00	23:00	04:00	12:15	23:00	14:15	22:00	23:00	04:00
Sample loc.		Active S	FlowLine	Active S	Active S	Active S	Active S	FlowLine	FlowLine	Active S	Active S	FlowLine	FlowLine	FlowLine
MD	m	3573.	3605.	3615.	3629.	3637.	3645.	3651.	3654.	3671.	3671.	3671.	3725.	3752.
TVD	m		3605.				3645.	3651.	3654.	3671.		3671.	3725.	3752.
Flow. Temp.	degC	52.4	50.	50.	51.4	52.4	52.	51.	49.		48.3		48.	48.
Density	g/cm3	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
Funnel Visc.	s	55	53	54	50	57	53	59	55	55	55	55	58	58
600 rpm		90	100	102	92	98	100	102	94	90	94	94	104	101
300 rpm		62	69	70	65	69	70	71	64	60	60	58	71	69
200 rpm		61	55	55	54	56	56	56	52	55	49	52	55	55
100 rpm		39	40	41	38	40	38	40	35	38	35	25	40	39
60 rpm		30	32	34	32	33	32	32	28	28	29	22	32	32
30 rpm		22	24	25	24	25	24	24	22	23	21	20	24	24
8 rpm		11	13	13	12	12	13	13	12	11	11	17	13	13
3 rpm		8	10	11	10	10	10	10	9	8	8	17	12	13
Rheo. Temp.	degC	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.
Plastic Visc.	dP	26.	31.	32.	28.	29.	30.	31.	30.	31.	30.	15.	33.	32.
Yield Point	Pa	16.3	16.2	16.2	17.7	19.2	19.2	19.2	18.9	16.3	16.8	10.6	16.2	17.7
10 sec. Gel	Pa	5.	5.	5.5	6.	6.5	6.5	6.5	6.	5.5	7.	7.	6.5	7.
10 min. Gel	Pa	12.5	14.5	14.5	17.	19.	19.	19.	18.	15.3	13.3	3.	17.2	22.
n-annulus		0.445	0.419	0.402	0.408	0.419	0.423	0.428	0.426	0.455	0.438	0.175	0.365	0.362
K-annulus	Pa*s^n	1.879	2.478	2.576	2.453	2.974	2.955	2.922	2.899	2.555	2.606	0.839	3.367	3.974
API Filtrate	mL	4.	3.9	3.4	3.5	3.2	4.2	3.5	3.	2.8	2.8	8.2	4.2	4.4
HTHP Filtrate	mL	16.	15.5	15.3	17.8									
HTHP Cake	1/32nd"	3.	3.	3.	3.									
PI	mL	0.01	0.04	0.05	0.	0.16	0.04	0.09	0.04	0.05	0.1		0.09	0.2
MI	mL	0.25	0.06	0.25	0.28	0.55	0.04	0.03	0.05	0.03	0.58		0.03	0.5
pH		8.9	8.9	8.8	8.1	8.5	8.	8.3	8.2	8.3	8.6	8.	8.	8.3
Ca2+	mg/L	280.5	280.5	280.5	280.5	280.5	120.2	120.2	200.4	200.4	240.5		120.2	120.2
Mg2+	mg/L	0.	12.1	0.	0.	0.	0.	0.	0.	0.	0.		0.	0.
Cl-	g/L	73.	68.	68.	68.	66.	65.	64.	63.	63.	64.		62.	62.
KCl	g/L						140.	135.	100.	100.	100.		100.	100.
Sand %	%	0.4	0.4	0.4	0.4	0.2	0.3	0.4	0.2	0.2	0.2		0.3	0.3
Water %	%	67.	66.8	67.	67.	67.	66.5	66.5	68.8	68.8	68.8		66.	66.
Oil %	%	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		0.	0.
Polyol %	%	3.	3.5	3.	3.	3.	3.3	3.8	3.	3.	3.5		3.	3.
Corr. Solids %	%	28.	28.1	28.1	28.2	28.2	28.4	28.2	28.8	28.8	28.7		29.3	29.3
LGS %	%	4.9	5.2	5.1	5.2	5.2	5.5	5.2	6.3	6.3	6.3		7.3	7.3
MBT	kg/m3	25.	30.	30.	28.	28.	29.	30.	30.	30.	30.		33.	33.

This report has been produced with MudCADE Software 1.1c - Mon 22-Feb-1999 12:43

* Mark of Schlumberger



DRILLING FLUIDS SERVICES

MudCADE*

Well Name		34/11-4				Location				Date & Time				
Operator		STATOIL				Norway				22-Feb-99 12:43				
Operator Rep.		Johan Bysveen				Transocean Arctic				12:20 In				
Analysis Type		WBM				Contractor/Rep. O. Saethre-T. Myrvang				Dowell Eng. G. Mitchell / Thierry Lapoire				
		WBM				Fluid System				SPUD DATE 06-Dec-1998				
DRILLING FLUIDS PROPERTIES RECORD - From 12-Jan-99 05:00 to 22-Feb-1999 12:43														
Property Name	Units	27	28	29	30	31	32	33	34	35	36	37	38	39
Date		24-Jan-99	24-Jan-99	25-Jan-99	25-Jan-99	25-Jan-99	25-Jan-99	26-Jan-99	27-Jan-99	27-Jan-99	27-Jan-99	28-Jan-99	29-Jan-99	30-Jan-99
Time		13:00	18:00	11:00	14:00	23:00	12:30	23:00	08:30	15:30	20:30	21:00	22:00	14:30
Sample loc.		Active 8	Active 8	Active 8	FlowLine	FlowLine	FlowLine	Active 5	FlowLine	FlowLine	Active 5	Active 5	Active 5	Active 5
ND	m	3771.	3770.	3770.	3770.	3794.	3764.	3683.	3914.	3632.	3936.	3938.	3938.	3936.
TVD	m					3794.	3764.	3683.	3914.	3632.	3936.	3938.	3938.	3936.
Flow. Temp.	degC	60.7			51.8	52.	53.		55.	61.	58.			
Density	g/cm3	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
Funnel Visc.	s	60			58	62	58	58	62	64	63	61	55	58
600 rpm		99	39	77	98	105	163	91	112	116	118	85	87	101
300 rpm		69	30	64	68	71	68	68	75	77	77	67	68	85
200 rpm		59	26	44	55	58	58	53	59	60	66	43	43	61
100 rpm		41	22	34	40	42	43	40	43	45	39	39	40	38
60 rpm		33	20	30	34	35	35	34	33	34	30	28	24	28
30 rpm		26	18	26	25	28	30	28	29	27	23	17	18	21
6 rpm		14	10	21	15	20	22	21	19	18	19	10	11	12
3 rpm		13	19	19	19	18	21	20	15	16	10	8	9	10
Rheo. Temp.	degC	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.
Plastic Visc.	cP	30.	9.	22.	30.	34.	32.	28.	37.	38.	41.	28.	26.	38.
Yield Point	Pa	18.7	10.1	14.9	15.2	17.7	16.7	16.7	18.3	18.7	17.3	15.8	14.9	14.9
10 sec. Gel	Pa	8.	10.	11.5	9.	15.	11.	11.	8.	5.	7.	4.5	5.	5.
10 min. Gel	Pa	27.	19.	26.9	23.	32.	33.	32.	26.	25.	17.	15.	17.	17.
n-sinus		0.382	0.098	0.227	0.309	0.206	0.206	0.206	0.348	0.341	0.443	0.435	0.408	0.406
K-sinus	Pa·s ⁿ	3.979	1.209	2.704	3.837	0.697	1.42	0.742	1.904	3.638	2.89	3.089	2.977	2.859
API Filtrate	mL	3.8		5.8	4.5	8.8	6.	5.7	9.2	3.	3.	2.8	2.8	2.4
HTHP Filtrate	mL		68.			26.	32.	36.	18.	16.	15.	15.	16.2	16.6
HTHP Cake	1/32nd"		4.			3.	3.	4.	2.	2.	3.	2.	2.	2.
PI	mL	0.32			0.35	0.2	0.25	0.1	0.1	0.08	0.	0.05	0.08	0.05
MI	mL	0.7			0.9	0.7	0.55	0.5	0.1	0.08	0.1	0.08	0.08	0.62
pH		9.6	7.9	8.1	8.9	9.5	9.3	9.1	9.1	9.2	9.2	9.2	9.3	9.3
Ca2+	mg/L	320.6			200.4	20.	9.	601.2	160.3	240.8	320.5	206.4	200.4	160.3
Mg2+	mg/L	0.			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Cl-	g/L	81.			60.	68.	61.	61.	80.	59.	57.	56.	58.	57.
KCl	g/L	101.			100.	99.	97.	87.	89.	94.	93.	95.	94.	93.
Sand %	%	0.2			0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3
Water %	%	86.	0.		85.	84.3	82.	82.3	82.	82.3	82.3	82.3	82.3	82.3
Oil %	%	0.			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Polyol %	%	2.8			3.	3.	3.	3.	3.	3.	3.	3.	3.	3.
Corr. Solids %	%	29.5			30.4	28.9	29.3	29.1	29.4	29.9	30.	29.9	29.9	30.
LOG %	%	7.7			8.2	8.2	7.4	8.2	7.4	8.2	8.2	8.2	8.2	8.2
MBT	kg/m3	30.			40.	39.	40.	42.	43.	43.	42.	44.	43.	43.

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		Administration Data												
Well Name	34/11-4	Location		Norway		Date & Time		22-Feb-99 12:43						
Operator	STATOIL	Contractor/Flg		Thamesoil Arctic		Interval		12:25 to						
Operator Rep.	Johan Byeveen	Contractor Rep.		O.Sæthre-T. Myrvang		Dowell Eng.		G.Mitchell /Therry Laporte						
Analysis Type	YSM	Flgs System		QUADRILET		Spud Date		09-Dec-1998						
DRILLING FLUIDS PROPERTIES RECORD - From 12-Jan-1999 05:00 to 22-Feb-1999 12:40														
Property Name	Units	40	41	42	43	44	45	46	47	48	49	50	51	52
Date		31-Jan-99	01-Feb-99	02-Feb-99	03-Feb-99	04-Feb-99	05-Feb-99	06-Feb-99	06-Feb-99	07-Feb-99	08-Feb-99	08-Feb-99	08-Feb-99	08-Feb-99
Time		21:00	22:00	12:15	12:15	12:15	13:00	10:00	23:55	23:45	04:15	06:00	20:30	11:00
Sample loc.		Active S	Active S	Active S	Active S	Active S	Active S	Active S	FlowLine	Active S	FlowLine	Active S	FlowLine	Active S
MD	m	3936	3936	3936	3936	3936	3936	3936	3934	3549	3914	3856	3859	3859
TVD	m	3936	3936	3838	3936	3936	3936	3936	3934	3549	3814	3859	3859	3859
Flow. Temp.	degC								36		38		40	
Density	g/cm3	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
Funnel Visc.	s	59	56	55	55	58	50	61	64	62	60	61	119	119
600 rpm		103	100	98	85	87	88	112	82	80	80	122	100	87
300 rpm		66	65	58	53	56	45	70	58	51	52	77	63	59
200 rpm		53	50	50	42	43	33	54	46	46	46	61	50	48
100 rpm		38	34	34	29	30	23	37	31	26	28	42	36	30
60 rpm		28	27	25	23	23	16	30	25	22	22	35	30	25
30 rpm		22	20	19	18	18	13	23	21	19	18	28	24	18
6 rpm		12	11	11	13	13	6	17	16	15	16	22	30	13
3 rpm		10	10	10	11	12	7	15	15	12	14	20	18	13
Rheo. Temp.	degC	80	80	80	80	80	80	80	80	80	80	80	80	80
Plastic Visc.	cP	37	35	33	32	31	28	42	34	29	32	45	37	35
Yield Point	Pa	13.9	14.4	15.3	16.1	12	6.1	13.2	15.5	10.8	9.9	18.9	12.3	10.1
10 sec. Gel	Pa	6	6	5	5.5	5	4	8	7.2	5.7	6.6	14	15.3	15
10 min. Gel	Pa	18	17	13	12	12	10	15	14.5	10.5	11.5	18	21.1	16
n-annulus		0.41	0.408	0.406	0.341	0.335	0.384	0.395	0.294	0.314	0.288	0.293	0.272	0.297
K-annulus	Pa-s^n	2.619	2.653	2.829	3.281	3.393	1.89	4.49	4.746	3.879	4.488	1.65	5.802	4.719
API Filtrate	mL	2.8	2.8	3	3	3	3.4	4.4	8.0	6.8	6.4	4.5	6.8	6.3
HTHP Filtrate	mL	17	17	17	20	20	24	23	23	23	23	23	23	23
HTHP Cake	1/32nd"	2	2	2	2	2	3	3	3	3	3	3	3	3
Pf	mL	0.02	0.02	0.02	0.2	0.15	0.5	0.17	0.1	0.15	0.19	0.2	0.2	0.26
MI	mL	0.03	0.03	0.03	0.25	0.2	0.33	0.35	0.4	0.4	0.55	0.5	0.55	0.48
pH		8.3	8	8	11.3	11	11.7	12.1	12	12	12	12	12	12.2
Ca2+	mg/L	160.3	160.3	160.3	160.4	160.3	180.3	200.5	360.7	380.7	320.8	100.2	240.8	182.8
Mg2+	mg/L	0	0	0	0	0	0	0	0	0	0	138.7	0	24.3
Cl-	g/L	57	57	58	59	55	54	58	55	55	53	53	59	47
KCl	g/L	52	51	55	58	52	50	52	55	55	52	52	52	52
Sand %	%	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.5	0.8	0.6	0.5
Water %	%	65.5	65.5	65.5	65	65	65	65.5	65	65	65	65	65	65
OH %	%	0	0	0	0	0	0	0	0	0	0	0	0	0
Polyol %	%	3	3	3	2.8	2.3	2.5	3	2.1	2.3	2.5	2.3	2.5	2.5
Corr. Solids %	%	29.9	29.8	29.9	30	30	30	29.6	29.8	29.8	30	30	30	30.1
LGS %	%	8	8	8.5	8.5	8.3	8.5	8.5	8.3	8.3	8.3	8.4	8.4	8.8
MBT	kg/m3	43	43	45	42	43	43	45	43	43	43	43	43	43

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DRILLING FLUIDS SERVICES

MudCADE*

Well Name		34/11-4		Location		Norway		Date & Time		22-Feb-99 12:43					
Operator		STATOIL		Contractor/Flg		Theilstein AS		Time		12:43					
Operator Rep.		Johan Bysveen		Contractor Rep.		O.Sæthre-T. Myrvang		Dowell Eng.		G.Mitchell /Thierry Lapotre					
Analysis Type		WBM		FLUID SYSTEM		QUADRILL HT		Spid Date		09-Dec-1998					
DRILLING FLUIDS PROPERTIES RECORD - From 09-Feb-99 09:00 to 22-Feb-99 12:40															
Property Name	Units	53	54	55	56	57	58	59	60	61	62	63	64	65	66
Date		09-Feb-99	10-Feb-99	11-Feb-99	12-Feb-99	13-Feb-99	14-Feb-99	15-Feb-99	16-Feb-99	17-Feb-99	18-Feb-99	19-Feb-99	20-Feb-99	21-Feb-99	22-Feb-99
Time		17:15	22:45	14:15	22:00	21:35	09:00	02:30	06:00	14:43	02:30	10:30	23:00	23:00	10:15
Sample loc.		FlowLine	Active S	FlowLine	Active S	Active S	Active S	Active S	Active S	FlowLine	Active S	FlowLine	Active S	Active S	Active S
MD	m	3849.	3818.	3395.	2800.	3815.	3408.	400.	3583.	3863.	3815.	3483.	3018.	3018.	3028.
TYD	m	3849.	3818.	3395.	2800.	3815.	3408.	400.	3583.	3863.	3815.	3483.	3018.	3018.	3028.
Flow. Temp.	degC	43.		37.			35.	28.		18.7		49.2		28.6	
Density	g/cm3	1.65	1.65	1.64	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Funnel Visc.	s	120	112	110	115	109	95	102	112	86	103	140	145	147	147
600 rpm		100	94	110	118	110	95	102	109	103	98	100	100	100	172
300 rpm		63	53	79	78	69	56	62	62	63	58	120	127	128	
200 rpm		52	43	68	66	53	42	48	45	46	42	57	102	98	
100 rpm		38	30	48	48	35	32	30	28	29	26	37	72	72	
60 rpm		32	25	40	40	27	25	22	22	21	19	34	60	60	
30 rpm		28	20	36	36	21	18	16	15	15	13	40	45	46	
6 rpm		20	17	28	28	17	15	14	8	8	7	27	30	37	
3 rpm		20	18	26	26	18	12	10	7	7	6	25	25	24	
Rheo. Temp.	degC	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.	50.
Plastic Visc.	cP	37.	31.	38.	38.	41.	44.	48.	38.	38.	37.	60.	59.	54.	54.
Yield Point	Pa	124.	103.	152.	153.	134.	105.	104.	113.	142.	112.	202.	204.	204.	204.
10 sec. Gel	Pa	15.	7.5	18.5	18.5	18.2	6.7	6.7	6.2	4.5	6.7	10.1	14.6	12.5	12.5
10 min. Gel	Pa	39.	34.3	35.4	34.3	34.5	21.3	22.	11.1	20.3	18.3	28.9	31.8	32.	32.
n-annulus		0.299	0.28	0.241	0.241	0.217	0.37	0.386	0.474	0.477	0.488	0.341	0.359	0.388	0.388
Kernulup	Per'n	6.897	5.948	6.343	6.343	6.379	2.382	2.778	1.892	3.342	1.898	2.799	2.799	2.799	2.799
API Filtrate	mL	6.5	6.4	6.7	6.7	5.7	4.8	4.6	5.	4.2	4.2	3.8	3.7	2.8	2.8
HTHP Filtrate	mL														
HTHP Cake	1/32nd"														
PI	mL	0.36	0.18	0.1	0.1	0.1	0.3	0.1	0.1	0.08	0.08	0.08	0.08	0.08	0.08
Mf	mL	0.68	0.5	0.65	0.65	0.65	0.6	0.6	0.6	0.55	0.56	0.5	0.5	0.5	0.5
pH		12.0	12.2	11.9	11.9	11.9	11.9	11.9	11.9	12.0	12.0	12.0	12.0	12.0	12.0
Ca2+	mg/L	108.2	108.3	240.8	240.8	240.5	240.5	240.5	220.4	184.4	180.4	308.7	320.8	322.7	322.7
Mg2+	mg/L	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Cl-	g/L	47.	50.	54.	53.	60.	57.	55.	57.	54.	55.	58.	51.	55.	55.
KCl	g/L	78.	90.	84.	81.	85.	84.	84.	84.	84.	84.	84.	84.	84.	84.
Sand %	%	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Water %	%	88.	88.	88.	88.	88.	88.	88.	88.	88.	88.	88.	88.	88.	88.
GII %	%	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1	0.1	0.	0.
Polyol %	%	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Conn. Solids %	%	38.2	38.1	29.8	30.	29.8	29.8	29.8	29.8	29.3	29.9	29.5	29.8	29.8	29.8
LGS %	%	1.0	0.5	0.7	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
MBT	kg/m3	45.	43.	43.	43.	43.	48.	40.	40.	36.	36.	36.	64.	36.	36.

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