
Pressure readings from well 15/12-8

Depth m TVDRKB	Formation pressure kPa	Comments
2838.5	-	No seal
2850.0	33926	Good permeability
2853.5	33928	Good permeability
2862.5	33980	Good/fair permeability
2858.2	33994	Fair permeability
2863.2	33980	Excellent permeability
2868.5	-	Tight
2872.7	34019	Good permeability

2874.8	34126	Fair/poor permeability
2878.0	34092	Poor permeability
2879.5	34056	Excellent permeability
2886.5	34136	Excellent permeability
2890.4	34356	Tight/poor permeability
2894.5	34223	Very good permeability
2900.0	-	Tight
2910.7	-	Tight
2916.0	34580	Tight/poor permeability
2917.5	34497	Very good permeability
2921.4	34576	Tight/poor permeability
2930.5	-	Tight
2945.0	34791	Poor permeability
2959.0	-	No seal
2958.7	34900	Good permeability
2969.8	-	Tight
2977.0	-	Tight
2978.0	35111	Good permeability
2985.8	35184	Good permeability
2994.5	35273	Good permeability
3009.2	35436	Good permeability

Segregated sample at 2863.0 m RKB

2 3/4 gallon chamber:	Opening pres.	11700 kPa
	Gas	1.1 m ³
	Condensate	1.5 litre
	Mud/filtrate	2.3 litre

1 gallon chamber:	Opening pres.	14000 kPa
	Gas	0.7 m ³
	Condensate	0.4 litre
	Mud/filtrate	0.2 litre

Pressure readings from well 15/12-8A

Depth m TVDRKB	Formation pressure kPa	Comments
2838.4	33844	Good permeability
2840.1	-	Tight
2839.6	33853	Good permeability
2842.5	33878	Fair/good perm.
2845.4	33887	Good permeability
2847.3	-	Tight
2850.0	33624	Fair permeability
2853.5	33622	Good permeability
2863.0	-	Tight
2864.5	33867	Good permeability
2851.5	33687	Poor permeability
2888.0	34170	Lost seal
2888.6	34181	Lost seal

Segregated sample at 2888.0 m TVDRKB.

2 3/4 gallon chamber contained 9.5 litre mud
1 gallon chamber contained 3.0 litre mud

All pressure readings from HP gauge.

Well testing

One test was performed in well 15/12-8. The well produced gas-condensate with a dew point of 230 bar at 123 °C.

RESERVOIR PROPERTIES:

Perforated interval:	2838 - 2869 m MDRKB
Initial reservoir pressure:	33686 kPa at 2853.5 m RKB
Reservoir temperature:	123 °C
Productivity index (ideal):	136 Sm ³ /D/kPa
Productivity index (real):	109 Sm ³ /D/kPa
Permeability:	0.024 μm ² (25 mD)
Skin factor:	+ 2

(Based on gauge MURR-24, sensing depth: 2781.66 m MDRKB).

OPERATOR: STATOIL			TOTAL MATERIAL COST AND CONSUMPTION											WELL: 15/12-8 and 15/12-8A		
Product	Unit size	Unit price NOK	36" sect.	Cost NOK	26" sect.	Cost NOK	17 1/2" sect.	Cost NOK	12 1/4" sect.	Cost NOK	8 1/2" sect.	Cost NOK	8 1/2" S/T sect.	Cost NOK	Total consumed	Total cost NOK
Barite	M.T	645,00	61	39 345,00	46	29 670,00	211	136 095,00	270	174 150,00	187	120 615,00	118	76 110,00	962	575 985,00
Wyoming bentonite	M.T.	1 716,00	29	49 764,00	3	5 148,00					42	72 072,00	14	24 024,00	116	151 008,00
Soda Ash	kg	2,31	350	808,50	50	115,50	375	866,25	1100	2 541,00	300	693,00	125	288,75	2475	5 313,00
Celcol LV	kg	32,28					10450	337 326,00	6500	209 820,00					16950	547 146,00
Celcol R	kg	32,28	225	7 263,00			275	8 877,00	700	22 596,00			50	1 614,00	1200	40 350,00
KCL Brine	m3	802,50					330	264 825,00	140	112 350,00					470	377 175,00
CMC EHV	kg	14,56			4550	66 248,00									4550	66 248,00
Lime	kg	1,56	200	312,00	40	62,40					260	405,60	60	93,60	500	873,60
KCL	kg	2,26					3750	8 475,00	16250	36 725,00					20000	45 200,00
Ancocide	ltr	18,22	25	405,50											25	405,50
Anco PHPA	kg	38,19					2406,2	91 892,78	1225,3	46 794,21					3631,5	138 686,99
Caustr.Lignite	kg	3,89									1900	7 391,00	3350	13 031,50	1900	20 422,50
Ancotemp	kg	90,37									2532	228 816,84	204	18 435,48	2532	247 252,32
Anco Resin	kg	12,46									4400	54 824,00	3900	48 594,00	4400	103 418,00
Ironite Sponge	kg	24,77					209,1	5 179,41							209,1	5 179,41
Desco CF	kg	19,68					22,7	446,74			45	885,60	113	2 223,84	67,7	3 556,18
Bicarbonate	kg	3,31					425	1 406,75			3775	12 495,25			4200	13 902,00
Gypsum	kg	1,62									1025	1 660,50			1025	1 660,50
Spercelf FE	kg	3,77									575	2 167,75			575	2 167,75
Defoamer	ltr	15,55									100	1 555,00	50	777,50	100	2 332,50
Bentonite	kg	2,16					1250	2 700,00							1250	2 700,00
Total cost	NOK			97 898,00		101 243,90		858 089,92		604 976,21		503 581,54		185 192,67		2 350 982,24
Hole drilled	m			60,5		444,5		1200		1040		199		317		2944
Cost per metre	NOK			1 618,15		227,77		715,07		581,71		2 530,56		584,20		798,57
Total days				3		3		7		11		16		16		56
Cost per day	NOK			32 632,67		33 747,97		122 584,27		54 997,84		31 473,85		11 574,54		41 981,83
Mud mixed	m3			403		408		898		329		567		147		2 605,00
Cost per m3	NOK			242,92		248,15		955,56		1 838,83		888,15		1 259,81		902,49

TABLE 4.1

ANCHOR KILLING FLUIDS A/S

WELL: 15/12-8 and 15/12-8A

RIG :DEEPSEA BERGEN

AREA:SLEIPNER

Mud volume distribution summary

Hole size	Hole From-to	Hole Length	Mud/brine Built	Dumped	Lost to Formation	Lost over solids control equipment	Mud left between csg/csg plus left in hole	cuttings volume drilled	Mud transferred to next section	Mud type used for interval
inch	m	m	m3	m3	m3	m3	m3	m3	m3	
36	110-170,5	60,5	403	150				40	253	SW/HIVIS PILLS
26	170,5-615	444,5	408	601				152	60	SW/HIVIS PILLS
17 1/2	615-1815	1200	898	200		324	65	186	369	KCL/PHPA/PAC
12 1/4	1815-2853	1038	329	353		144	35	79	166	KCL/PHPA/PAC
8 1/2	2853-3054	201	567	435	3	39		7	256	ANCOTEMP/BENTONITE
8 1/2 S/T	2623-2940	317	147	290		38	75	11	0	ANCOTEMP/BENTONITE
TOTALS										
Start volume			0	m3			Total mud/Brine left/lost in hole	178	m3	
Mud/Brine built			2752	m3			Total mud/Brine to sea	2574	m3	
Mud/Brine dumped			2029	m3			Total cuttings volume drilled	475	m3	
Mud/Brine lost to formation			3	m3						
Mud/Brine lost over solids control equipment			545	m3						
Mud/Brine left between csg/csg plus left in hole			175	m3						
Final volume			0	m3						
							COMMENTS:			
							36"SECTION: 150 m3 dumped due to returns to seabed.			
							26"SECTION: 601 m3 dumped due to returns to seabed.			
							17 1/2" SECTION: 65 m3 left behind csg.			
							12 1/4" SECTION: 35 m3 left behind csg.			
							8 1/2" SECTION: 3 m3 lost downhole when killing well after testing.			
							8 1/2" SIDETRACK: 75 m3 left in hole.			

