BP NORWAY LIMITED U.A. **RIG: ROSS ISLE**

WELL MUD MATERIALS COST SUMMARY **WELL 7/12-10**

PRODUCT	UNIT SIZE	UNIT COST NOK	TOP HOLES			17 1/2" HOLE			12 1/4" HOLE			TOTAL WELL		
			USED	COST (NOK)	COST/M	USED	COST (NOK)	COST/M	USED	COST (NOK)	COST/M	USED	COST (NOK)	COST/M
BARITE	MT	605.00	124	75020.00	87.64	902	545710.00	307.62	129	78045.00	83.29	1155	698775.00	195.90
BENTONITE	MT	1600.00	76	121600.00	142.06	21	33600.00	18.94	28	44800.00	47.81	125	200000.00	56.07
CAUSTIC SODA	25 kg sx	105.00	42	4410.00	5.15	188	19740.00	11.13	120	12600.00	13.45	350	36750.00	10.30
SODA ASH	25 kg sx	80.00	28	2240.00	2.62	46	3680.00	2.07	62	4960.00	5.29	136	10880.00	3.05
SODIUM BICARB.	25 kg sx	80.00							45	3600.00	3.84	45	3600.00	1.01
XCD POLYMER	25 kg sx	1700.00	7	11900.00	13.90	186	316200.00	178.24				193	328100.00	91.98
KCL-HF BRINE	bbl	906.00				1365	1236690.00	697.12				1365	1236690.00	346.70
KCL-I BRINE	bbl	562.00				1243	698566.00	393.78	133	74746.00	79.77	1376	773312.00	216.80
ANCOQUAT I	200 ltr dm	7500.00				492	3690000.00	2080.05				492	3690000.00	1034.48
ANCOQUAT FC	25 kg sx	420.00				815	342300.00	192.95	35	14700.00	15.69	850	357000.00	100.08
ANCOQUAT I	1 m3	37500.00				12	450000.00	253.66				12	450000.00	126.16
ANCOQUAT T	200 ltr dm	4900.00				11	53900.00	30.38	19	93100.00	99.36	30	147000.00	41.21
HF100	1 m3	21253.00				14	297542.00	167.72				14	297542.00	83.42
KCL	25 kg sx	50.00				2400	120000.00	67.64	1708	85400.00	91.14	4108	205400.00	57.58
LIME	20 kg sx	35.00				2	70.00	0.04				2	70.00	0.02
CITRIC ACID	25 kg sx	550.00							68	37400.00	39.91	68	37400.00	10.49
ANCOCIDE	25 ltr dm	648.00				26	16848.00	9.50	5	3240.00	3.46	31	20088.00	5.63
SOD.SULPHITE	25 kg sx	195.00				30	5850.00	3.30	30	5850.00	6.24	60	11700.00	3.28
CM-HEC	25 kg sx	975.00							503	490425.00	523.40	503	490425.00	137.49
OM SEAL	25 kg.	475.00				6	2850.00	1.61				6	2850.00	0.80
LIQUID CASING	25 kg.	475.00				6	2850.00	1.61				6	2850.00	0.80
MICA FINE	25 kg.	75.00				6	450.00	0.25				6	450.00	0.13
DESCO	25 lbs.	175.00				116	20300.00	11.44	346	60550.00	64.62	462	80850.00	22.67
DEFOAMER	25ltr dr	255				7	1785.00	1.01	17	4335.00	4.63	24	6120.00	1.72
SECTION COST				215170			7858931			1013751			9087852	
SECTION DAYS				7			19			22			48	
COST/DAY				30738.57			413627.95			46079.59			189330.25	
SECTION LENGTH				856			1774			937			3567	
COST/METRE				251.37			4430.06			1081.91			2547.76	
MUD VOLUME				8303			8107			3411			19821	
COST/BBL				25.91			969.40			297.20			458.50	
ENGINEERING COST				53900			148200			169400			371500	

BP NORWAY LIMITED U.A. ROSS ISLE WELL MUD PROPERTIES SUMMARY WELL No. 7/12-10.

DAY	DATE	DEPTH	HOLE	S.G.	VISCOSITY						GELS		FILTRATION			pH	Pf	Mf	SOLIDS	HF100	LGS	HGS	SAND	MBT	KCl	SALINITY	TH(mg/l)	AQT I	NOTES
No.		M	SIZE		FV	AV	PV	YP	6RPM	3RPM	0	10	API	HPHT	CAKE	ESV	Mp	XS LIME	%	%	ppb	ppb	%	(PPB)	(PPB)	MG/L	CaCl2(%)	(ppb)	
1	7-7-91																												MOVED ONTO LOCATION.
2	8-7-91	550	9.78	1.03	120																								SPUDDED WELL.
3	9-7-91	950	9.78	1.03	120																								DRILLED PILOT HOLE
4	10-7-91	168	36	1.03	120																								SET 30" CONDUCTOR.
5	11-7-91	580	26	1.03	120																								OPENED HOLE TO 26".
5	12-7-91	948	26	1.03	120																								OPENED HOLE TO 26".
7	13-7-91	950	26	1.03	120																								RAN 20" CASING.
8	14-7-91	950	17.5	1.4	50	23	15	16	3	2	2	10	3.1		1	8		1	13	10	25	136	0.25			63000	1000	8	UNABLE TO OBTAIN CASING TEST.
9	15-7-91	950	17.5	1.4	52	30	16	27	8	7	7	10	2.6		1	9	0.1	1.8	13	10	10	162			38	68000	1600	11	SQUEEZED CEMENT.
10	16-7-91	1024	17.5	1.42	52	34	18	31	11	9	10	13	3		1	9	0.1	1.8	18	10	22	140	1.5		33	68000	1600	11	DRILL TO 954M. DISPLACE TO ANCOQUAT.
11	17-7-91	1212	17.5	1.48	50	38	22	31	8	6	7	10	5.2		1	9	0.1	1.5	20	10	11	175	1		33	60000	2100	8	MAKE WIPER TRIP. PUMP OUT TO 1010M.
12	18-7-91	1366	17.5	1.55	48	37	25	24	7	5	5	8	7.6		1	8.4	1.2	1.2	22	10	13	208	2		33	64000	2000	9	INCREASE MW TO 1,55 SG. HOLE STICKY.
13	19-7-91	1501	17.5	1.55	48	42	27	29	8	5	5	8	4.1		1	7.9		1.5	25	10	57	168	1		40	72000	2400	11	DRILL AHEAD TO 1501M. PUMP OUT .
14	20-7-91	1715	17.5	1.58	56	48	32	31	10	8	5	7	6		1	8.4	0.05	1.2	26	10	38	199	1		40	75000	2000	9	PUMP OUT. RIH AND DRILLED AHEAD.
15	21-7-91	1903	17.5	1.6	61	63	41	44	11	7	8	22	5.2		1	8.4	0.05	1.3	28	10	90	167	1		34	66000	2120	6	DRILLED AHEAD.
16	22-7-91	1911	17.5	1.6	61	58	41	33	12	9	8	22	4.8		1	9.1	0.15	1.5	28	2.6	79	172	2		41	76000	2120	5	PUMP OUT. TIGHT SPOTS . RIH AND DRILL
17	23-7-91	2127	17.5	1.6	62	62	40	44	14	11	10	26	4.8		1	8.8	0.15	1.2	30	3.7	112	144	2		41	78000	1120	6	DRILL TO 2127M. CIRCULATE.
18	24-7-91	2300	17.5	1.6	62	61	38	45	15	11	11	27	6		1	8.5	0.1	1.3	26	3.4	46	200	1		36	73000	1280	7	LOSSES AT 2207M. PUMP LCM PILL.
19	25-7-91	2326	17.5	1.6	62	46	28	35	14	10	10	29	7		1	9.1	0.2	1.6	25	2.76	31	213	1		36	70000	1480	7	DRILL TO 2326 M. PUMP OUT OF HOLE.
20	26-7-91	2448	17.5	1.6	61	50	31	37	24	12	9	29	7		1	8.7	0.1	1.5	26	2.19	42	201	1		39	76000	1320	8	WASH AND REAM FROM 2107M. TO 2326M.
21	27-7-91	2503	17.5	1.6	70	47	31	32	13	10	9	38	9.9		1	9.1	0.4	2.1	26	2.05	47	200	1		31	72000	1320	8	DRILL TO 2503M.
22	28-7-91	2698	17.5	1.6	68	50	33	34	10	7	7	43	8.4		1	8.6	0.1	1.8	26	1.7	39	203	1		36	79000	1240	9	DRILL FROM 2503M. TO 2698M.
23	29-7-91	2722	17.5	1.6	68	42	29	26	12	11	7	54	10.4		1	8.8	0.1	1.7	26	1.58	45	200	1		33	74000	1200	6	DRILL AHEAD TO 2722M. POOH. BACKREAM .
24	30-7-91	2730	17.5	1.65	68	37	27	20	8	7	6	46	10.8		1	9.2	0.3	1.9	27	1.49	37	231	0.5		32	72000	1240	7	RIH . DRILL TO 2730M.
25	31-7-91	2730	17.5	1.65	89	45	30	29	20	19	16	55	20.8		1	8.5	0.05	1.7	27	1.6	34	232	0.5		35	74000	1360	6	POOH. RUN LOGS. RUN 13 3/8" CASING.
26	1-8-91	2724	17.5	1.64	89	42	28	28	15	14	18	61	18.6		3	8.8	0.2	1.8	27	1.59	34	225	0.5		35	79000	1260	4	RUN 13 3/8" CASING.CEMENT CASING. .
27	2-8-91	2747	12.25	1.55	59	36	27	18	6	5	7	34	10		3	11	1.9	3.5	23	1.25	83	197	0.5		27	70000	2320		DRILL CEMENT AND 12 1/4" HOLE.
28	3-8-91	2805	12.25	1.55	61	59	44	30	13	12	24	52	6.9		3	10.6	1.1	2.9	25		99	144	0.5		27	65000	2200		DRILL 12 1/4" HOLE.
29	4-8-91	2866	12.25	1.55	74	59		42	25	21	36	48	8.4		3	10.1	0.7	2.6	24		83	156	0.5		27	65000	1700		DRILL 12 1/4" HOLE.
30	5-8-91	2933	12.25	1.55	65	45	30	30	16	15	20	35	7.6		3	9.6	0.3	1.5	24		82	155	0.5		30	66000	1280		DRILL 12 1/4" HOLE.

BP NORWAY LIMITED U.A. ROSS ISLE WELL MUD PROPERTIES SUMMARY WELL No. 7/12-10.

DAY	DATE	DEPTH	HOLE	S.G.	VISCOSITY						GELS		FILTRATION			pH	Pf	Mf	SOLIDS	HF100	LGS	HGS	SAND	MBT	KCl	SALINITY	TH(mg/l)	AQT I	NOTES
No.		M	SIZE		FV	AV	PV	YP	6RPM	3RPM	0	10	API	HPHT	CAKE	ESV	Mp	XS LIME	%	%	ppb	ppb	%	(PPB)	(PPB)	MG/L	CaCl2(%)	(ppb)	
31	6-8-91	3020	12.25	1.55	59	44	31	25	11	10	14	25	5.6		2	8.8	0.3	1.9	24		82	159	0.5		30	68000	1120		DRILL 12 1/4" HOLE.
32	7-8-91	3074	12.25	1.55	63	41	31	20	11	9	9	22	5.9		2	9	0.2	2	24		59	171	0.5		30	70000	1120		DRILL 12 1/4" HOLE. TEST BOP.
33	8-8-91	3076	12.25	1.55	60	43	31	24	11	9	12	32	6.8		2	10.2	0.5	2.5	24		65	177	0.5		28	70000	1600		DRILL 12 1/4" HOLE.
34	9-8-91	3151	12.25	1.55	58	37	27	20	10	9	11	23	6.8		2	9	0.2	2.3	23		52	184	0.5		27	70000	1240		TRIP OUT FOR LOGS.
35	10-8-91	3151	12.25	1.55	58	29	20	17	8	7	8	17	6.2		2	8.9	0.15	2.2	23		46	187	0.5		27	70000	1400		CONTINUE LOGGING.
36	11-8-91	3202	12.25	1.55	46	34	24	19	8	7	9	21	6.4		2	8.7	0.15	2	23.5		46	187	TR		29	70000	1320		DRILL 12 1/4" HOLE.
37	12-8-91	3275	12.25	1.55	48	39	30	17	7	6	8	22	6.7		2	9	0.15	2	23.5		46	187	TR		27	70000	1040		DRILL 12 1/4" HOLE.
38	13-8-91	3308	12.25	1.55	48	37	28	17	7	6	7	18	6.7		2	8.6	0.1	1.8	23.5		45	187	TR		30	72000	1080		DRILL 12 1/4" HOLE.
39	14-8-91	3346	12.25	1.55	47	36	27	17	7	6	7	17	7.5		2	9	0.2	2	23.5		45	187	TR		26	72000	680		DRILL 12 1/4" HOLE.
40	15-8-91	3388	12.25	1.55	49	38	29	18	6	6	6	17	6.2		2	9.2	0.2	2.2	23.5		45	187	TR		30	72000	640		DRILL 12 1/4" HOLE.
41	16-8-91	3448	12.25	1.55	54	45	35	20	8	7	8	22	5.6		1	8.6	0.1	1.8	24		51	183	TR		29	73000	720		DRILL 12 1/4" HOLE.
42	17-8-91	3522	12.25	1.55	51	46	34	23	11	5	9	27	5.6		1	8.7	0.1	1.8	24.5		56	178	TR		35	75000	600		DRILL 12 1/4" HOLE.
43	18-8-91	3585	12.25	1.55	52	43	31	24	10	8	11	30	5.6	19	1	8.9	0.1	2	24.5		55	178	TR		34	77000	560		DRILL 12 1/4" HOLE.
44	19-8-91	3616	12.25	1.55	55	41	32	18	12	10	10	28	5.8		1	8.9	0.15	1.7	25		63	174	TR	8	33	75000	360		DRILL 12 1/4" HOLE.
45	20-8-91	3628	12.25	1.55	53	37	27	19	8	7	10	31	5.8		1	9.7	0.25	2.1	24		49	182	TR	8	34	77000	320		CUT CORE #1.
46	21-8-91	3655	12.25	1.55	60	39	29	19	9	8	10	26	5.5	22	1	9.5	0.3	2.1	25		62	173	TR	8	32	76000	400		CUT CORE #2.
47	22-8-91	3667	12.25	1.55	49	37	27	19	10	8	9	27	6.2	22	1	9.1	0.2	2	24.5		55	178	TR	8	28	75000	300		DRILLED TO FINAL DEPTH
48	23-8-91	3667	12.25	1.55																									

36"/24" HOLE SECTIONS

VOLUMES IN BBLS

REPORT No.	1	2	3	4	5	6	7	TOTAL
INITIAL VOL.		0	826	1590	1719	2704	4561	0
VOL RECIEVED.								0
VOL BUILT CHEMICALS		1326	1013	1255	1431	1857	1421	8303
VOL GAINED EX HOLE								
VOL LOST SURFACE								0
VOL DUMPED		500	249	1126	446		5982	8303
VOL LOST DOWNHOLE								0
FINAL VOLUME		826	1590	1719	2704	4561	0	

17 1/2" HOLE SECTION

REPORT No.	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
INITIAL VOL.	0	741	1638	1855	2371	2863	2608	2912	3136	3348	3635	3868	3690	3464	3618	4178	4313	4326	4202	0
VOL BUIT CHEMICALS	741	897	104	328	308	161	293	300	125	131	138	120	178	25	175	36	57	8	5	4130
VOL BUILT WATER			65	253	116	120	240	200	321	200	108	60	125	126	357	181	70	150	100	2792
VOL BUILT BARITE			88	71	188	4	136	78	111	58	59	65	40	33	85	63	91		15	1185
VOL GAINED EX HOLE																				0
VOL LOST ON DISPL.			25																	25
VOL LOST LEAKS																				0
VOL LOST BEHIND CASING																			927	927
VOL LOST BOP																				0
VOL LOST DOWNHOLE											20									20
VOL. DUMPED												167	271					282		720
VOL LOST CENTRIFUGES																				0
OTHER LOSSES			15	136	120	540	365	354	345	102	52	256	298	30	57	145	205			3020
VOL HOLE DRILLED	0	0	111	164	131	132	209	183	8	211	169	25	128	45	190	23	8			1737
FINAL VOLUME	741	1638	1855	2371	2863	2608	2912	3136	3348	3635	3868	3690	3464	3618	4178	4313	4326	4202	3395	3395

* CORRECTED VOLUMES ON REPORT 20

12 1/4" HOLE SECTION

REPORT No.	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	TOTAL
INITIAL VOL	3395	2975	3038	3091	2781	2451	2593	2579	2759	2460	2477	2416	2553	2504	2746	2604	2894	2844	2818	2821	2825	2968	2672	2673	**3395**
VOL BUIT CHEMICALS	7	4	9		16	16			8		3	11	2	20	3	21	4	2	1	1	10				**138**
VOL BUILT WATER	130	218	299	300	300	300		300	200	10		280		245		300	40			25	140				**3087**
VOL BUILT BARITE	12	6		35	35	8	10	10		20		7							30	13					**186**
VOL GAINED EX HOLE																									**0**
VOL LOST ON SHAKERS										13	64	71	51	23	54	31	94	28	13	17	7				**466**
VOL LOST LEAKS																									**0**
VOL LOST BEHIND CASING																									**0**
VOL LOST BOP																									**0**
VOL LOST DOWNHOLE																									**0**
VOL. LOST BELOW PLUG																								381	**381**
VOL. DUMPED	569	165	255	573	593	110	16	102	507			6							15	18		296		129	**3354**
VOL LOST CENTRIFUGES				72	88	72	8	28				84			91										**443**
OTHER LOSSES																									**0**
FINAL VOLUME	2975	3038	3091	2781	2451	2593	2579	2759	2460	2477	2416	2553	2504	2746	2604	2894	2844	2818	2821	2825	2968	2672	2673	2163	**2162**

MUD TYPE: SPUD MUD		TOP HOLE	
		ESTIMATED	ACTUAL
DENSITY	sg		1.05
VISCOSITY	sec/qt		110

MUD TYPE: ANCOQUAT		17 1/2" HOLE	
		ESTIMATED	ACTUAL
DENSITY	sg	1,40-1,60	1.56
VISCOSITY	sec/qt		62
PV	cps		29
YP	lbs/100ft^2	25-30	31
GELS	lbs/100ft^2		8/27
API	mls	<5	7.7
FILT CAKE	ins/32		1
pH		8,5-9	8.7
Pf/Mf	mls		0,2/1,5
HF100	%		5.5
SALINITY	mg/l Cl-		72000
SOLIDS	%corr		24
SAND	%		0.5
LGS/HGS	ppb		43/188
LGS	ppb		43
HGS	ppb		186
KCL	ppb	30-35	36
AQT I	ppb		7.7

MUD TYPE: CMHEC		12 1/4" HOLE	
		ESTIMATED	ACTUAL
DENSITY	sg	1,55-1,59	1.55
VISCOSITY	sec/qt		52
PV	cps	<30	30
YP	lbs/100ft^2	15-20	22
GELS	lbs/100ft^2	<30	.12/27
HPHT	mls(290F)	NA	22
FL.LOSS-API	mls	<5	6.5
PH		9-9,5	9.3
PF/MF	mls	NA	0,3/2,1
T.HARDNESS	mg/l	1000	1050
SALINITY	mg/l		70000
SOLIDS	%corr		24
SAND	%		0.2
KCL	ppb	<30	29
LGS	ppb		60
HGS	ppb		177

TOP HOLE SECTIONS

PRODUCT	UNIT SIZE	REP No. 1	2	3	4	5	6	7	SECTION TOTAL
BARITE	MT		36			37	51		124
BENTONITE	MT		17	9	14	20	11	5	76
CAUSTIC SODA	25 kg sx		7	5	11	13	6		42
SODA ASH	25 kg sx		4	3	7	12	2		28
XCD POLYMER	25kg sx		1				4	2	7

17 1/2" HOLE SECTION

PRODUCT	UNIT SIZE	REP No. 8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	SECTION TOTAL
BARITE	MT	21	81	60	48	127	3	92	53	75	39	40	44	27	22	57	42	61		10	902
KCL-HF BRINE	BBL	312	469	102	237	230		15													1365
KCL/I BRINE							100	204	198	98		51	111	98		267	95	21			1243
ANCOQUAT I	200 ltr drn				30	42	30	40	75	7	60	66	6	48	20	60	8				492
ANCOQUAT FC	25 kg sx	25	52	9	46	20	30	125	35	50	87	18	10	43	25	200		40			815
HF100	1 m3	2	5	1	6																14
ANCOQUAT I	1 m3															4	4	4			12
ANCOQUAT T	200 ltr drn																	11			11
XCD POLYMER	25 kg sx	12	24	22	5	2	6	31	16	15	31	25	7						10		206
CAUSTIC SODA	25 kg sx				2	4	4	10	26	15	24	14	19	22	15	20		10	2	1	188
KCL	25 kg sx				150	290	190	300	70	125	575			200	100	250		150			2400
SODA ASH	25 kg.		10					9	3	13	5	6									46
ANCOCIDE	25 ltr drns		3	1	1	1		2	2		1	2		3			10				26
DEFOAMER	25 ltr dr.		2			1								4							7
SOD. SULPHITE	25 kg.																20	10			30
LIME	20 kg sx											2									2
BENTONITE	MT.											4	11						6		21
DESCO	25lbs											15	18						48	35	116
OM SEAL	25 kg											6									6
LIQUID CASING	25 kg											6									6
MICA FINE	25 kg											6									6

12 1/4" HOLE SECTION

PRODUCT	UNIT SIZE	REP No.	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	SECTION TOTAL
BARITE	1	MT	7	4	2	24	24	5	7	7		14		5	1						20	9					129
BENTONITE	1	MT	3	7		3	8	1	2	1	3																28
CAUSTIC SODA	25	kg					3	2		1	2	3	16	10	20	10	6	13	15		7	3	9				120
SODA ASH	25	kg			30		5	6		2	1	10					6									2	62
DESCO	25	lbs				40	84	16	31	19	54							12	28	30	9	7	16				346
SODIUM BICARB.	25	Kg	18	12										4												11	45
XCD POLYMER	25	Kg																								-10	-10
ANCOQUAT FC	25	kg	35																								35
KCL/I BRINE	1	bbl	133																								133
ANCOQUAT T	200	ltr		9	8						2																19
CM-HEC	25	kg		115	17	33	42	32			12	10	41	43	16	54	28	31	18				11				503
KCL	25	kg		160	130	197	200	190			180	21		152		200		200					93			-15	1708
DEFOAMER	25	ltr	12											1									2			2	17
CITRIC ACID	25	kg	16	12	40																						68
BIOCIDE	25	ltr				1								4													5
SOD. SULPHITE	25	kg				10	20																				30