

FIG 2:

RFT/FIT PRESSURE DATA

	Depths RKB	Depths MSL	Initial Hydro Pressure	Build up time in mn	Formation pressure psi/kg/cm ²	Pressure gradient
RFT	2152.6	2127.6	4984	2	3155	1.03
"	2163.3	2138.3	4104	3	3154	1.03
"	2167	2142	4121		3154	1.03
"	2171	2146	4121	3	3161	1.03
"	2174	2149	4121	4	3158	1.03
"	2177.5	2152.5	4133	3.5	3163	1.03
"	2181.5	2156.5	4141	3.5		
"	3695	3670	9804		8806/619	1.69
"	3707	3682	9832	3	8892/625	1.70
"	3712.7	3687.7	9848	4		
"	3713	3688	9867	4		
"	3717.5	3692.5	9868	8	8912/627	1.70
"	3723	3698	9876	5	8840/622	1.68
"	3721	3702	9885	2.5	8844/622	1.68
"	3737.3	3712.3	9913	19	8880/624	1.68
"	3745	3721	9933	8	8926/627	1.69
"	3754	3729	9956	3	8881/624	1.67
"	3761	3736	9958	10	9202/647	1.73
"	3771.4	3746.4				
"	3779.8	3754.8	10029	6	9005/633	1.69
FIT 3	3779.5	3754.5			8788/618	1.65
RFT	3779.2	3754.2	10022	5	9003/633	1.69
"	3783.5	3758.5	10052	2	8932/628	1.67
"	3796.5	3771.5	10071	4	8948/629	1.67
"	3803.5	3778.5	10090	2	8966/630	1.67
"	3808.5	3783.5	10105	3	8978/631	1.67
"	3950.5	3925.5	9924	5	9345/657	1.67
"	3953	3928	9935	2	9350/657	1.67
"	3960.3	3935.3	9950	2	9365/658	1.67
"	3967	3942	9966			
"	3969	3944	9974	2	9974/701	1.78
"	3972.5	3947.5	9981	10		
"	3977	3952	9995	4	9995/703	1.78
"	3995	3970	10037	9		
"	3995.8	3970.8	10042	10	10038/706	1.78
"	3996.8	3971.8	10011	55	9358/658	1.66
"	4025	4000	10116			
"	4029	4004	10128	2	10127/712	1.78
FIT 1	4160	4135			8512/598	1.48
RFT	4067	4042	10138	3		
FIT 2	4072	4047	11747	12	10950/770	1.90

Several testing operations have been attempted in order to get samples and formation data (fig. 3)

Two DST were performed; the results are summarized as following:

DST 3: 3969 - 3999 m - Upper Level.

Flowing 28 m³/d of water (NaCl 94 g/cc) and few bubbles of gas.

Formation pressure at 3951.7 m RKB (-3926.7 msl): Extrapolated at 9340 psi (663 kg/cm²)

Formation pressure gradient: 1.69 MWEQ

DST 2: 4065 - 4088 m - Mid Level.

Flowing 28 m³/d of water (NaCl 118 g/cc) and a few bubbles of gas.

Formation pressure at 4053 m RKB (-4028 msl): 9400 psi
660.9 kg/cm²)

Formation pressure gradient: 1.64 MWEQ.

Wireline tests were performed at:

- 4072 m (RKB) 22.5 liters of water (NaCl 36 g/cc¹) were recovered; the extrapolated formation pressure is estimated 9685 psi.

- 3996.8 m (RKB); 9.8 and 3.8 liters of water (NaCl: 43 g/cc) were recovered; the extrapolated formation pressure is estimated 9420 psi.

FIT #1 shot at 4160 m recovered 81 liters of gas and 10 liters of water (NaCl 29 g/cc); the extrapolated formation pressure was estimated at 9475 psi.

DST 1 was performed between 4154 and 4176 m; the test was run three times due to technical problems while the first test and an uncertain flow while running the second test. The final results concerning this zone are as following:

Flowing: 3.3 m³/d of water (NaCl 90 g/cc) and a volume of gas which could not be measured.

Formation pressure at 4128 m (RKB); each test provided an extrapolated formation pressure:

DST 1: 9500 psi = 668 kg/cm²
DST 1 bis: 9545 psi = 671.1 kg/cm²
DST 1 ter: 9625 psi = 671.1 kg/cm²

The increase of formation pressure must be pointed out, it can be related to pressurization of the tested level while operating.

25/4-5 TESTING
Main results JURASSIC+TRIASSIC

Tab. 10
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Formation	Date	Operation	Perforation Depths	Pressure Depth	Flowing period					Build up		Results			Sampling					
					t	Q _G	Q _W	Init P.	Final P.	t	Final P.	Static pressure SP	Skin	k	Origin	NaCl	R _w temp.	PH	density	
		m RKB	m RKB			liters	psi(bar)	psi(bar)		psi(bar)	psi(bar)		md		g/l	ohm-m		g/cc		
Triassic	20/2	FIT 1	4160	4160	15 min	81 L	10	100?	100?	1 h 18	8512	9475	—	0.33	RFT chamber	29 ⁽¹⁾		12.9	1.049	
	22/2	DST 1	4154-4176	4128	2 h ?	—	—	5910	5910	4 h 40	8807	9500	—	—	MFE chamber	52.2 ⁽¹⁾		8.7	1.06	
	24/2	DST 1bis	4154-4176	4128	7 h 10	bubbles	60	5228	5891	12 h 39	9421	9545	20	0.02	Rev. circ.	14 ⁽²⁾		8.5		
	02/3	DST 1 ter	4154-4176	4128	31 h	50 m ³ ?	4300	5338	4570	13 h	9548	9625	5	0.02	Rev. circ. MFE chamber	90 ⁽²⁾ 90 ⁽¹⁾	0.025	5.2	1.076	
Statfjord	01/2	RFT 50	3996.8	3996.8	14.5 min	—	9.8		1400	965	7.5'	9290	9420			RFT chamber	43 ⁽¹⁾		8.3	1.04
					5.4 min	—	3.8		1800		19.8'	9352	9420			RFT chamber	40 ⁽¹⁾		8.3	1.039
	06/3	FIT 2	4072	4072	10 min	ε	22.5	9400	9400	12'	9655	9685	—	11	RFT chamber	36 ⁽¹⁾		12.0	1.030	
	09/3	DST 2	4065-4088	4053	13 h 57	bubbles	16200	5816	6028	14 h 45	9149	9400	1.4	0.24	Reverse circ.	102 ⁽¹⁾	0.023	7.5	1.077	
	14/3	DST 3	3969-3999	3951.7	14.5 h	bubbles	1700	3932	5869	14.5 h	9270	9430	2.6	0.21	Reverse circ.	92 ⁽¹⁾	0.024	6.6	1.069	
Brent	29/11	RFT 21b	3779.2	3779.2	40? min	1391	8	1000	700	Build up to short for interpretation					RFT chamber	40 ⁽¹⁾		8.7	1.035	
	29/11	RFT 10	3698	3698	3 min	—	3.8	6000	6000	12'	8806	8882		1.8	RFT chamber					
	16/3	FIT 3	3779.5	3779.5	16 min	85 L	21	7969	7154	43'	8788	8970		0.5	RFT chamber	29 ⁽¹⁾		11.2	1.037	

Reservoir Engineering

- 1 Geco lab analysis
- 2 Provisional - Rig measurements