

TABLE 1. Labrador Shelf Well Bore Breakouts

Well	Location	No. of break-outs	Net Thickness of Breakout Zones	Shallowest Breakout (m below sea level)	Deepest Breakout (m below sea level)	S _{Hmin} Mean Breakout Azimuth		S _{Hmax} Predicted Hydraulic Fracture Azimuth	Data Quality
						Major Population (standard deviation)	Minor Population (standard deviation)		
Hare Bay E-21	51.173°N 51.075°W	30	103.0	3828	4108	162.3 (10.9)		72.3	A
Freydis B-87	53.937°N 54.711°W	2	8.8	1680	1695	91.8 (7.6)		1.8	D
Indian Harbour M-12	54.364°N 54.398°W	14	150.6	1797	2275	112.0 (9.7)		22.0	A
North Leif I-05	54.411°N 55.253°W	2	74.0	1755	2063	117.8 (5.4)		27.8	B
Cartier D-70	54.651°N 55.675°W	3	4.3	1751	1814	113.0 (9.3)		23.0	D
Roberval C-02	54.852°N 55.768°W	7	75.4	1891	1984	188.3 (2.3)		98.3	B
Tyrk P-100	55.497°N 58.231°W	3	13.1	1536	1628	115.6 (10.0)		25.6	C
Bjarni O-82	55.530°N 57.710°W	2	34.0	1865	1913	147.5 (13.7)		57.5	C
Herjolf M-92	55.531°N 57.748°W	8	81.7	1376	2423	101.4 (12.0)		11.4	B
Hopedale E-33	55.873°N 58.848°W	4	86.7	1729	1862	117.7 (8.7)		27.7	B
Snorri J-90	57.329°N 59.962°W	3	3.0	2251	2263	132.8 (11.6)		42.8	D
Skolp E-07	58.440°N 61.769°W	5	37.9	2376	2463	212.0 (9.3)		122.0	B
Karlsefni A-13	58.871°N 61.778°W	3	20.7	3769	3795	109.5 (8.7)		19.5	B
Gilbert F-53	58.874°N 62.140°W	19	311.2	1553	3529	112.1 (14.0)	33.5 (5.6)	22.1	B

TABLE 2. In-Situ Stress Magnitude Estimates from Leak-Off Tests and Density Logs

Well (Location; Water Depth)	Depth to Base Casing (metres below sea level)	Drilled Depth (metres below sea level)	Open Interval Thickness (metres)	Rock Types in Open Interval	Pore Pressure at Base of Casing in MPa (data source)	Leak-off Pressure at Base of Casing in MPa (c. S _{Hmin})	Calculated S _{Hmax} at Base of Casing in MPa	Litho-static Pressure SV at Base of Casing in MPa
Hare Bay E-211 (51.173°N, 51.074°W; 239.1 m)	739.0	751.0	12.0	siltstone	7.8 (H ⁵ , MW ⁶)	>11.8	>15.8	-
	1547.0	1559.0	12.0	siltstone	16.0 (H, MW)	25.5	35.0	-
Indian Harbour M-522.3 (54.364°N, 54.398°W; 146.0 m)	3348.0	3362.0	14.0	shale	36.0 (MW)	63.1	90.2	-
	537.6	538.2	0.6	sandstone	5.8 (H, MW)	6.6	7.4	10.6
North Leif I-05 (54.389°N, 55.253°W; 146.0 m)	1547.8	1552.7	4.9	shale	16.4 (H, MW)	>25.2	>34.0	28.5
	3118.0	3136.2	18.2	shale	<44.5 (MW)	58.7	>72.9	67.7
North Leif I-05 (54.389°N, 55.253°W; 146.0 m)	1146.0	1147.0	1.0	claystone	12.2 (H, MW)	19.4	26.6	22.3
	2638.0	2659.0	21.0	shale	27.9 - 30.7 (H, MW)	47.3	63.9-66.7	54.4
North Bjarni F-063 (55.591°N, 57.764°W; 150.0 m)	1142.0	1158.0	16.0	claystone	12.2 (H, MW)	17.9	23.6	22.4
	2391.0	-	-	shale (below casing)	26.0 (MW)	>46.7	>67.4	51.2
South Hopedale L-391 (55.809°N, 58.442°W; 449.8 m)	936.0	956.0	20.0	unconsolidated sediments	10.0 (H)	10.8	11.6	-
	1767.0	1796.0	29	shale	18.7 (H, MW)	26.1	33.5	-
South Labrador N-792 (55.813°N, 58.442°W; 449.8 m)	704.0	712.0	8.0	sandstone	7.5 (H)	8.1	8.7	9.6
	1481.0	1501.0	20.0	mudstone	15.7 (H)	22.6	29.5	25.5
Hopedale E-33 (56.873°N, 58.848°W; 549.9 m)	1625.9	1657.2	31.3	shale	18.7 (MW)	24.5	30.3	28.1
Corte Real P-85 (55.080°N, 58.202°W; 438.0 m)	1696.5	1723.6	27.1	claystone	17.6 (H, MW)	28.3	39.0	33.3
	3907.6	3941.6	34.0	shale, siltstone	50.7 - 55.7 (MW)	78.3	102.1-107.1	83.2
Ogmund E-72 (57.525°N, 60.444°W; 156.2 m)	1197.0	1224.0	27.0	claystone	12.7 (H, MW)	18.0	23.3	22.3
Pothurst P-191 (58.815°N, 60.526°W; 192.0 m)	1492.0	1518.0	26.0	claystone	16.1 (H, MW)	21.2	26.3	-
	3679.0	3877.0	209.0	shale, sandstone	41.5 (MW)	70.4	99.3	-
Rut H-114 (59.171°N, 62.280°W; 124.0 m)	3579.0	3972.0	393.0	shale, sandstone	41.5 (MW)	70.4	99.3	-
	2131.0	2160.0	29.0	claystone	22.7 (H, MW)	24.4	26.1	44.5
	4044.6	4081.0	36.4	shale	54.4 (MW)	80.0	105.6	91.1

- no density logs run
- formation unconsolidated
- no leak off
- casing leak, leak-off pressure low
- H = hydrostatic pressure
- MW = mud weight

TABLEAU 1. Zones de fractures dans les puits de forage du plateau continental du Labrador

Puits	Emplacement	Nombre de Fractures	Épaisseur Nette des Zones de Fractures (m)	Fracture la Moins Profonde (en m en dessous du niveau de la mer)	Fracture la Plus Profonde (en m en dessous du niveau de la mer)	Azimuth Moyen de S _{Hmin} Pour la Fracture		Azimuth Prédit de S _{Hmax} Pour la Fracture Hydraulique	Qualité des Données
						Population Majeure (écarte-type)	Population Mineure (écarte-type)		
Hare Bay E-21	51.173°N 51.075°O	30	103.0	3828	4108	162.3 (10.9)		72.3	A
Freydis B-87	53.937°N 54.711°O	2	8.8	1680	1695	91.8 (7.6)		1.8	D
Indian Harbour M-12	54.364°N 54.398°O	14	150.6	1797	2275	112.0 (9.7)		22.0	A
North Leif I-05	54.411°N 55.253°O	2	74.0	1755	2063	117.8 (5.4)		27.8	B
Cartier D-70	54.651°N 55.675°O	3	4.3	1751	1814	113.0 (9.3)		23.0	D
Roberval C-02	54.852°N 55.768°O	7	75.4	1891	1984	188.3 (2.3)		98.3	B
Tyrk P-100	55.497°N 58.231°O	3	13.1	1536	1628	115.6 (10.0)		25.6	C
Bjarni O-82	55.530°N 57.710°O	2	34.0	1865	1913	147.5 (13.7)		57.5	C
Herjolf M-92	55.531°N 57.748°O	8	81.7	1376	2423	101.4 (12.0)		11.4	B
Hopedale E-33	55.873°N 58.848°O	4	86.7	1729	1862	117.7 (8.7)		27.7	B
Snorri J-90	57.329°N 59.962°O	3	3.0	2251	2263	132.8 (11.6)		42.8	D
Skolp E-07	58.440°N 61.769°O	5	37.9	2376	2463	212.0 (9.3)		122.0	B
Karlsefni A-13	58.871°N 61.778°O	3	20.7	3769	3795	109.5 (8.7)		19.5	B
Gilbert F-53	58.874°N 62.140°O	19	311.2	1553	3529	112.1 (14.0)	33.5 (5.6)	22.1	B

TABLEAU 2. Valeurs estimées de la contrainte "in situ" à partir des tests de pression et des diagrammes de densité

Puits (emplacement; profondeur de l'eau)	Profondeur à la Base du Sabot de Tubage (m en dessous du niveau de la mer)	Profondeur du Forage (m en dessous du niveau de la mer)	Épaisseur de l'Ouverture (m)	Types de Roches Dans l'Ouverture	Pression des Pores à la Base du Sabot de Tubage en MPa (données d'origine)	Pression de la Fuite de Trop-plein à la Base du Sabot de Tubage en MPa (c. S _{Hmin})	S _{Hmax} Calculé à la Base du Sabot de Tubage en MPa	Pression Litho-statique SV à la Base du Sabot de Tubage en MPa
Hare Bay E-211 (51.173°N, 51.074°O; 239.1 m)	739.0	751.0	12.0	siltstone	7.8 (H ⁵ , MW ⁶)	>11.8	>15.8	-
	1547.0	1559.0	12.0	siltstone	16.0 (H, MW)	25.5	35.0	-
Indian Harbour M-522.3 (54.364°N, 54.398°O; 146.0 m)	3348.0	3362.0	14.0	argile shisteuse	36.0 (MW)	63.1	90.2	-
	537.6	538.2	0.6	grès	5.8 (H, MW)	6.6	7.4	10.6
North Leif I-05 (54.389°N, 55.253°O; 146.0 m)	1547.8	1552.7	4.9	argile shisteuse	16.4 (H, MW)	>25.2	>34.0	28.5
	3118.0	3136.2	18.2	argile shisteuse	<44.5 (MW)	58.7	>72.9	67.7
North Leif I-05 (54.389°N, 55.253°O; 146.0 m)	1146.0	1147.0	1.0	argillite	12.2 (H, MW)	19.4	26.6	22.3
	2638.0	2659.0	21.0	argile shisteuse	27.9 - 30.7 (H, MW)	47.3	63.9-66.7	54.4
North Bjarni F-063 (55.591°N, 57.764°O; 150.0 m)	1142.0	1158.0	16.0	argillite	12.2 (H, MW)	17.9	23.6	22.4
	2391.0	-	-	argile shisteuse (en dessous du sabot de tubage)	26.0 (MW)	>46.7	>67.4	51.2
South Hopedale L-391 (55.809°N, 58.442°O; 449.8 m)	936.0	956.0	20.0	sédiments non consolidés	10.0 (H)	10.8	11.6	-
	1767.0	1796.0	29	argile shisteuse	18.7 (H, MW)	26.1	33.5	-
South Labrador N-792 (55.813°N, 58.442°O; 449.8 m)	704.0	712.0	8.0	grès	7.5 (H)	8.1	8.7	9.6
	1481.0	1501.0	20.0	boue consolidée	15.7 (H)	22.6	29.5	25.5
Hopedale E-33 (56.873°N, 58.848°O; 549.9 m)	1625.9	1657.2	31.3	argile shisteuse	18.7 (MW)	24.5	30.3	28.1
Corte Real P-85 (55.080°N, 58.202°O; 438.0 m)	1696.5	1723.6	27.1	argillite	17.6 (H, MW)	28.3	39.0	33.3
	3907.6	3941.6	34.0	argile shisteuse, siltstone	50.7 - 55.7 (MW)	78.3	102.1-107.1	83.2
Ogmund E-72 (57.525°N, 60.444°O; 156.2 m)	1197.0	1224.0	27.0	argillite	12.7 (H, MW)	18.0	23.3	22.3
Pothurst P-191 (58.815°N, 60.526°O; 192.0 m)	1492.0	1518.0	26.0	argillite	16.1 (H, MW)	21.2	26.3	-
	3679.0	3877.0	209.0	argile shisteuse, grès	41.5 (MW)	70.4	99.3	-
Rut H-114 (59.171°N, 62.280°O; 124.0 m)	3579.0	3972.0	393.0	argile shisteuse, grès	41.5 (MW)	70.4	99.3	-
	2131.0	2160.0	29.0	argillite	22.7 (H, MW)	24.4	26.1	44.5
	4044.6	4081.0	36.4	argile shisteuse	54.4 (MW)	80.0	105.6	91.1

- pas de diagrammes de densité
- formation non consolidée
- pas de fuite de trop-plein
- faible fuite de trop-plein à la base du sabot de tubage
- H = pression hydrostatique
- MW = poids de boue