

**NORTHERN CANADA**  
**DISTRIBUTION OF ULTIMATE**  
**OIL AND GAS RESOURCES**

Prepared for  
Northern Oil and Gas Branch  
Indian and Northern Affairs Canada

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# Northern Canada Distribution of Ultimate Oil and Gas Resources

## Introduction

The study examines and collates published estimates and the distribution of oil and gas resources for Canada North of 60 degrees. The contents and conclusions of the report are entirely those of the author: endorsement by the Northern Oil and Gas Branch of the volumetric estimates, methodology and geographic assignment of resources should not be inferred.

Northern Canada north of 60<sup>0</sup> N contains three large territories, Yukon, Northwest Territories and Nunavut, plus adjacent offshore waters.

Nunavut for the purposes of this report is the area within the boundary of the Nunavut Settlement Area (including such Canadian waters as may lie within this outer boundary). Offshore Nunavut is the Arctic continental shelf, eastern Arctic offshore, and Hudson Bay, which lies outside, but adjacent to this area.

Yukon is the area onshore equivalent to Territory of Yukon. “Offshore Yukon” refers to Canada’s Arctic waters in the Arctic Ocean lying north of Yukon. The boundary between the offshore area north of the Yukon and Northwest Territories is the northern extension of the on-land border.

Northwest Territories for the purposes of this report is the onshore area within the mainland Northwest Territories and onshore areas of the Arctic Islands. “Offshore Northwest Territories” refers to Canada’s Arctic waters in the Arctic Ocean north of the mainland Northwest Territories plus Canadian arctic waters within the boundaries of the Canadian Arctic Archipelago lying west of the boundary of Nunavut. The offshore boundary between Northwest Territories and Nunavut is 110<sup>0</sup> W.

Notwithstanding these distinctions the name of the Territory is used to include the adjacent offshore to the extent that the context warrants such simplification.

## **Changes - 2008 Update versus 2002 Report**

Overall change in risked undiscovered resources for Northern Canada from the 2002 report to the 2008 update are, an increase in oil by 2,745 million barrels and a decrease for recoverable gas by 18,427 Bcf. A part of the decrease in gas is due to a greater fraction of the undiscovered considered to be oil. However the main reason for the decreased gas potential is the reduction in undiscovered gas for the Sverdrup Basin, which has been reduced by 19,438 Bcf.

The discovery of a 240 million barrel oil field at Paktoa C-60, suggests a greater fraction of oil versus gas for the western Beaufort Sea, than in the 2002 report. In general somewhat higher fractions of oil have been assigned for this update. This has resulted in an increase of undiscovered oil estimates, especially for the western Beaufort Sea. Many of the previous assessments by the author and others for Northern Canada have focused primarily on gas, with no particular attention of what fraction could be oil.

There is an increase for both discovered and undiscovered resources for the Yukon. In the 2002 report the resources in the western Beaufort Sea were all assigned to the NWT. In this update the discovered and undiscovered offshore resources west of the northern extension of the NT/YT border (at approx. 136.45 degrees) have been assigned to the Yukon offshore.

The increase in discovered oil and gas for the Yukon is a result of assigning offshore fields that are west of 136.45 degrees longitude to the Yukon, whereas in the 2002 report they were assigned to the offshore Northwest Territories. Paktoa C-60 discovered in 2006, is just west of the offshore extension of the Yukon /NWT border.

A re-evaluation of the potential for the Sverdrup Basin, and considering other recent assessments, has resulted in a decrease of the estimated undiscovered gas for the Sverdrup Basin. The 2002 report was based primarily on the GSC assessment of the Arctic Islands from GSC Paper 83-31. The current update gives greater consideration to more recent estimates by others, which have a very wide range. The new estimate gives a distribution that covers the range of estimates, with a lower mean than the previous evaluation.

## Methodology

An Excel spreadsheet (in database format) of discovered and undiscovered oil and gas resources was developed with identifiers to allow retrieval of information by fluid type, geological province, territorial jurisdiction, onshore, offshore, etc.

The present study is an update of the “Northern Canada Distribution of Ultimate Oil and Gas Resources” report prepared for the Northern Oil and Gas Directorate Indian and Northern Affairs Canada in October 2002. The assessment results from the various sources are quoted as either median or mean values, generally not both. For the 2002 study the Palisade Corporation @Risk simulation add-in program for Excel was used to reproduce the distributions of results published in the various reports. The @ Risk simulations allows for both the mean and the median to be derived. In this manner a constant set of estimated values for both mean and median is achieved. Where possible the distributions given in the various assessments were duplicated as closely as possible in @ Risk 4.5, and estimated recovery factors added to the simulation to give distribution results for recoverable and in-place. New assessments are available from published sources as well as independent assessments by the author. These have been incorporated into this update and will be noted at the appropriate point. In particular gas resource estimates were submitted to the National Energy Board hearing on the Mackenzie Gas Project by the Producers Group (proponent) and the Mackenzie Explorers Group. The author also prepared a quantitative assessment, “Oil and Gas Resources and Field Size Distribution of the Deh Cho Territory”, in October 2004, for the Deh Cho Land Use Planning Committee.

For the Mainland Mackenzie Corridor new @Risk estimates have been made for all plays, based on the geological plays outlined in Gal, L.P. and Jones, A.L., 2003 and Gal. L.P., 2005. The plays attributed to the Peel Basin were extended into the Yukon and estimates made for each territory.

For the study all plays, basins, and regions have been assessed probabilistically using Excel with the Palisade @Risk 5.0 add-in.

Conditional risk is applied to each individual play, where assessed by play, and risked resources are calculated for each play. For areas where this is done the conditional risk by basin or region is calculated by dividing the total risked resource by the total unrisked. This is done separately for oil and gas, with both based on recoverable volumes. Where assessments are done on a basin or exploration region a conditional risk is applied to the assessed volumes.

## **Discovered Resources North of 60° North**

A list of all discovered oil and gas fields, with discovered oil and gas reserves and resources and pertinent identifier fields has been compiled in Excel, with an effective date of December 31, 2008. The listings of discovered field sizes in table 3 are considered to be mean values of a probabilistic distribution, although some are deterministic or a simple estimate. A few of the producing fields are based on the production record. It should be noted there is both downside and upside potential associated with the field size estimates. Significant differences exist in gas resource estimates for the major fields in the Mackenzie/Beaufort between the National Energy Board 1998 published estimates and the operators from the 1988-89 export application. However, as the National Energy Board 1998 report is the only complete listing of both oil and gas resources for the fields of the Mackenzie/Beaufort, the field data of the National Energy Board report is used for this study. The author has used the NEB input data for a probabilistic estimate in @Risk, with some differences in discovered resources. A further review and discussion of field size estimates is included in the appendix.

The total discovered recoverable oil and gas resources for Northern Canada are 1,911 million barrels of oil and 32,727 billion cubic feet of natural gas. The initial recoverable resources by territory are, Northwest Territories – 1,183 million barrels of oil and 16,242 billion cubic feet of gas, Nunavut – 323 million barrels of oil and 15,963 billion cubic feet of gas, and the Yukon – 406 million barrels of oil and 523 billion cubic feet of gas. The discovered oil and gas resources, by territorial jurisdiction and onshore/offshore are summarized in tables 1 and 2.

In Northern Canada 46 fields have discovered oil with original recoverable oil of 1,911 million barrels, of which 256 million barrels has been produced to December 31, 2008. There are a total of 99 fields with initial recoverable gas resources of 32,727 billion cubic feet, of which only 747 billion cubic feet has been produced to December 31, 2008. There are a total of 104 discovered fields, 41 of which contain both oil and gas, 5 are only oil and 58 are only gas. The 41 fields with oil and gas contain 1,564 million barrels of recoverable oil and 11,850 billion cubic feet of recoverable gas. The 5 oil fields have 347 million barrels of oil and the gas only fields have 20,877 billion cubic feet of gas. The onshore/offshore distribution of recoverable oil resources is, Nunavut 317 million barrels offshore, 5.8 million barrels onshore, Northwest Territories, 736 million barrels offshore, 448 million barrels onshore, Yukon 12 million barrels onshore and 394 million barrels offshore. The onshore/offshore distribution of recoverable gas resources is, Nunavut 9,193 billion cubic feet offshore, 6,770 billion cubic feet onshore, Northwest Territories, 9,075 billion cubic feet offshore, 7,167 billion cubic feet onshore, Yukon 360 billion cubic feet onshore and 163 billion cubic feet offshore.

Recent discoveries, for which no estimate of the discovered resource is available, include Lac Maunoir C-34 and West Nogna K-14 in the Colville Hills, Summit Creek B-44 and Stewart D-57 in the Mackenzie Plain, and Ellice I-48, Olivier H-01, Langley K-30, Langley E-07, and Ellice J-27 in the Mackenzie Delta.



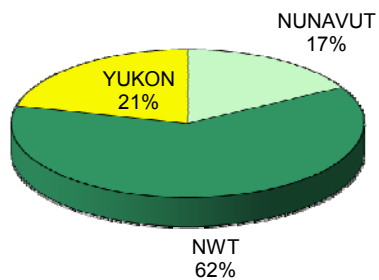
**TABLE 1  
YUKON, NUNAVUT AND NORTHWEST TERRITORIES  
DISCOVERED RECOVERABLE OIL AND GAS BY TERRITORY  
( OIL - MILLION BARRELS, GAS - BILLION CUBIC FEET)**

TERR	AREA	NUMBER OF FIELDS	RECOV OIL	RECOV GAS
NUNAVUT	SV	16	320.1	13,663.0
	FFB	1	2.8	0.0
	BF	1	0.0	2,300.0
SUB-TOTAL		18	322.9	15,963.0
NORTHWEST TERRITORIES	BS	22	615.9	4,705.2
	CH	4	0.0	832.4
	LP	7	0.0	588.3
	MD	28	248.3	6,282.0
	MP	1	301.6	0.0
	ST	13	4.5	114.0
	SV	1	12.1	3,720.0
SUB-TOTAL		76	1,182.5	16,241.9
YUKON	BS	4	393.8	162.6
	EP	3	11.7	83.7
	LP	3	0.0	276.1
SUB-TOTAL		10	405.5	522.5
GRAND TOTAL		104	1,910.9	32,727.3

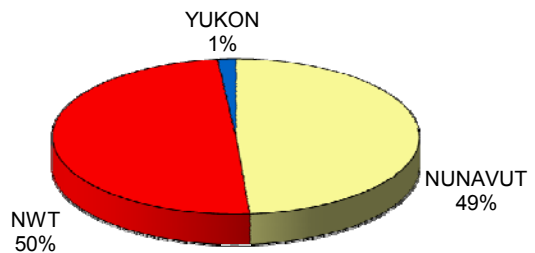
**EXPLANATION**

AI	ARCTIC ISLANDS
SV	SVERDRUP BASIN
FFB	FRANKLINIAN FOLD BELT
BS	BEAUFORT SEA
MD	MACKENZIE DELTA
EP	EAGLE PLAINS
CH	COLVILLE HILLS
MP	MACKENZIE PLAIN
LP	LIARD PLATEAU
ST	SOUTHERN TERRITORIES
BF	BAFFIN SHELF

**RECOVERABLE OIL**



**RECOVERABLE GAS**



**TABLE 2  
NORTHERN CANADA DISCOVERED OIL AND GAS RESOURCES (DEC. 31, 2008)**

**OIL RESOURCES (MILLION BARRELS)**

TERRITORY	AREA	ON_OFF	FIELDS	RECOVERABLE	CUM. PROD.	REMAINING
NUNAVUT	FFB	ONSH	1	2.8	2.8	0.0
	FFB Total		1	2.8	2.8	0.0
	SV	OFFSH	7	317.1	0.0	317.1
		ONSH	1	3.0	0.0	3.0
	SV Total		8	320.1	0.0	320.1
NUNAVUT Total			9	322.9	2.8	320.1
NORTHWEST TERRITORIES	BS	OFFSH	14	615.9	0.4	615.5
	BS Total		14	615.9	0.4	615.5
	MD	OFFSH	4	106.5	0.0	106.5
		ONSH	11	141.8	0.0	141.8
	MD Total		15	248.3	0.0	248.3
	MP	ONSH	1	301.6	250.9	50.7
	MP Total		1	301.6	250.9	50.7
	ST	ONSH	1	4.5	1.9	2.6
	ST Total		1	4.5	1.9	2.6
	SV	OFFSH	1	12.1	0.0	12.1
SV Total		1	12.1	0.0	12.1	
NWT Total			32	1,182.5	253.2	929.2
YUKON	BS	OFFSH	4	393.8	0.0	393.8
	BS Total		4	393.8	0.0	393.8
	EP	ONSH	1	11.7	0.0	11.7
	EP Total		1	11.7	0.0	11.7
YUKON Total			5	405.5	0.0	405.5
Grand Total			46	1,910.9	256.1	1,654.8

**GAS RESOURCES (BILLION CUBIC FEET)**

TERRITORY	AREA	ON_OFF	FIELDS	RECOVERABLE	CUM PROD	REMAINING
NUNAVUT	BF	OFFSH	1	2,300.0	0.0	2,300.0
	BF Total		1	2,300.0	0.0	2,300.0
	SV	OFFSH	11	6,893.0	0.0	6,893.0
		ONSH	4	6,770.0	0.0	6,770.0
	SV Total		15	13,663.0	0.0	13,663.0
NUNAVUT Total			16	15,963.0	0.0	15,963.0
NORTHWEST TERRITORIES	BS	OFFSH	22	4,705.2	0.0	4,705.2
	BS Total		22	4,705.2	0.0	4,705.2
	CH	ONSH	4	832.4	0.0	832.4
		CH Total		4	832.4	0.0
	LP	ONSH	7	588.3	478.3	110.0
	LP Total		7	588.3	478.3	110.0
	MD	OFFSH	6	649.8	0.0	649.8
		ONSH	21	5,632.2	5.0	5,627.2
	MD Total		27	6,282.0	5.0	6,277.0
	ST	ONSH	13	114.0	24.4	89.5
	ST Total		13	114.0	24.4	89.5
	SV	OFFSH	1	3,720.0	0.0	3,720.0
	SV Total		1	3,720.0	0.0	3,720.0
NWT Total			74	16,241.9	507.7	15,734.1
YUKON	BS	OFFSH	3	162.6	0.0	162.6
	BS Total		3	162.6	0.0	162.6
	EP	ONSH	3	83.7	0.0	83.7
		EP Total		3	83.7	0.0
	LP	ONSH	3	276.1	238.8	37.4
	LP Total		3	276.1	238.8	37.4
YUKON Total			9	522.5	238.8	283.7
Grand Total			99	32,727.3	746.5	31,980.8

**TABLE 3. OIL AND GAS DISCOVERIES OF NORTHERN CANADA**

(OIL - MILLION BARRELS ; GAS - BILLION CUBIC FEET)

FIELD/POOL	TERR	ON_OFF	AREA	OOIP	REC_OIL	CUMOIL	REMOIL	GIP	RRG	IMG	CUM_RRG	REM_RRG	YEAR	SOURCE
BELE	NWT	ONSH	CH	0.000	0.000	0.000	0.000	211.110	168.909	156.764	0.000	168.909	1986	NEB, 1993; CGPC, 2001
TEDJI LAKE	NWT	ONSH	CH	0.000	0.000	0.000	0.000	64.899	51.925	47.250	0.000	51.925	1974	NEB, 1993; CGPC, 2001
TWEED LAKE	NWT	ONSH	CH	0.000	0.000	0.000	0.000	444.826	354.790	326.407	0.000	354.790	1985	NEB, 1993; CGPC, 2001
NOGHA	NWT	ONSH	CH	0.000	0.000	0.000	0.000	320.952	256.785	238.323	0.000	256.785	1969	Drummond, 2008
BIRCH	YU	ONSH	EP	0.000	0.000	0.000	0.000	13.036	9.300	4.600	0.000	9.300	1965	YT Eagle Plain Assessment
BLACKIE	YU	ONSH	EP	0.000	0.000	0.000	0.000	42.364	23.300	21.000	0.000	23.300	1964	YT Eagle Plain Assessment
CHANCE	YU	ONSH	EP	39.000	11.705	0.000	11.705	73.208	51.100	36.220	0.000	51.100	1959	YT Eagle Plain Assessment
BEAVER RIVER (YU)	YU	ONSH	LP	0.000	0.000	0.000	0.000	28.200	9.000	7.210	8.605	0.395	1969	Extrapolated from BC
BOVIE LAKE J-72	NWT	ONSH	LP	0.000	0.000	0.000	0.000	8.401	6.300	5.607	0.000	6.300	1967	Recov Gas - NEB, 1996
KOTANEELEE	YU	ONSH	LP	0.000	0.000	0.000	0.000	395.349	264.000	237.600	230.171	33.829	1964	YT Gov't Liard PRA, Decline I-48 = 156 Bcf, B-38 = 108 Bcf
LA BICHE F-08 (NT)	NWT	ONSH	LP	0.000	0.000	0.000	0.000	78.993	59.707	52.542	0.000	59.707	1971	YT Gov't Liard Assessment
LA BICHE F-08 (YU)	YU	ONSH	LP	0.000	0.000	0.000	0.000	4.158	3.142	2.765	0.000	3.142	1971	YT Gov't Liard Assessment
RANGER FT. LIARD P-66A	NWT	ONSH	LP	0.000	0.000	0.000	0.000	10.000	4.000	3.600	2.547	1.453	1998	Field shut-in, Feb 2001 after 10 months prod. Last 1.5 mmcf/d
PARAMOUNT FT. LIARD F-36	NWT	ONSH	LP	0.000	0.000	0.000	0.000	50.000	17.500	15.750	9.355	8.145	1987	Paramount press releases
PARAMOUNT SE FT. LIARD N-01	NWT	ONSH	LP	0.000	0.000	0.000	0.000	35.000	12.250	11.025	8.697	3.553	1987	Paramount press releases
CHEVRON FT. LIARD K-29	NWT	ONSH	LP	0.000	0.000	0.000	0.000	685.000	172.500	155.250	141.956	30.544	1999	GLJ Audit as reported by Purcell
POINTED MOUNTAIN	NWT	ONSH	LP	0.000	0.000	0.000	0.000	532.406	316.000	279.444	315.731	0.269	1967	Estimated Remaining, Field shut-in, last 60 mcf/d Sept, 2001
NORMAN WELLS	NWT	ONSH	MP	630.000	301.644	250.940	50.704	0.000	0.000	0.000	0.000	0.000	1920	NEB, 2002 Personal Communication
ARROWHEAD B-41	NWT	ONSH	ST	0.000	0.000	0.000	0.000	12.575	8.802	8.098	0.000	8.802	1989	Recov Gas - NEB, 1996
ARROWHEAD G-69	NWT	ONSH	ST	0.000	0.000	0.000	0.000	5.431	3.801	3.497	0.000	3.801	1985	Recov Gas - NEB, 1996
CAMERON HILLS	NWT	ONSH	ST	18.000	4.500	1.873	2.627	75.000	53.250	47.000	24.412	28.838	1968	
CAMERON F-51	NWT	ONSH	ST	0.000	0.000	0.000	0.000	1.562	1.171	1.101	0.000	1.171	1969	Recov Gas - NEB, 1996
CAMERON M-31	NWT	ONSH	ST	0.000	0.000	0.000	0.000	2.839	2.130	2.002	0.000	2.130	1979	Recov Gas - NEB, 1996
CELIBETA H-78	NWT	ONSH	ST	0.000	0.000	0.000	0.000	6.211	4.969	4.671	0.000	4.969	1960	Recov Gas - NEB, 1996
GRUMBLER G-63	NWT	ONSH	ST	0.000	0.000	0.000	0.000	1.509	1.207	1.135	0.000	1.207	1969	NEB 1993
NETLA C-07	NWT	ONSH	ST	0.000	0.000	0.000	0.000	24.824	21.101	19.835	0.000	21.101	1961	Recov Gas - NEB, 1996
RABBIT LAKE O-16	NWT	ONSH	ST	0.000	0.000	0.000	0.000	16.597	11.287	10.610	0.000	11.287	1955	Recov Gas - NEB, 1996
S. ISLAND RIVER M-41	NWT	ONSH	ST	0.000	0.000	0.000	0.000	2.428	1.700	1.598	0.000	1.700	1964	Recov Gas - NEB, 1996
TATHLINA C-39	NWT	ONSH	ST	0.000	0.000	0.000	0.000	1.572	1.100	1.034	0.000	1.100	1965	Recov Gas - NEB, 1996
TATHLINA N-18	NWT	ONSH	ST	0.000	0.000	0.000	0.000	3.549	2.485	2.335	0.000	2.485	1973	Recov Gas - NEB, 1996
TRAINOR LAKE C-39	NWT	ONSH	ST	0.000	0.000	0.000	0.000	1.370	0.958	0.901	0.000	0.958	1965	Recov Gas - NEB, 1996
ADGO F-28	NWT	OFFSH	MD	172.811	38.910	0.000	38.910	167.757	120.141	114.154	0.000	120.141	1974	
ATKINSON H-25	NWT	ONSH	MD	169.755	42.400	0.000	42.400	8.284	2.069	2.069	0.000	2.069	1970	
GARRY N. G-07	NWT	OFFSH	MD	0.000	0.000	0.000	0.000	16.485	10.990	10.365	0.000	10.990	1978	
GARRY S. P-04	NWT	OFFSH	MD	381.234	57.170	0.000	57.170	330.397	284.107	271.873	0.000	284.107	1976	
HANSEN G-07	NWT	OFFSH	MD	29.080	4.330	0.000	4.330	157.158	122.852	116.105	0.000	122.852	1986	
IKHIL K-35	NWT	ONSH	MD	0.000	0.000	0.000	0.000	48.577	37.235	35.373	5.017	32.218	1986	
IMNAK J-29	NWT	ONSH	MD	69.099	10.360	0.000	10.360	31.371	4.702	4.467	0.000	4.702	1975	
IVIK J-26	NWT	ONSH	MD	29.119	5.950	0.000	5.950	5.569	1.138	1.081	0.000	1.138	1972	
IVIK K-54	NWT	ONSH	MD	19.644	4.250	0.000	4.250	13.162	2.850	2.707	0.000	2.850	1973	
KAMIK D-48	NWT	ONSH	MD	7.686	1.150	0.000	1.150	0.922	0.138	0.131	0.000	0.138	1975	
KUGPIK O-13	NWT	ONSH	MD	16.078	3.990	0.000	3.990	9.994	2.480	2.356	0.000	2.480	1973	
KUMAK J-06	NWT	ONSH	MD	62.873	12.150	0.000	12.150	41.898	28.934	27.046	0.000	28.934	1974	
MALLIK L-38	NWT	ONSH	MD	0.000	0.000	0.000	0.000	56.162	39.754	37.766	0.000	39.754	1972	
MAYOGIAK J-17	NWT	ONSH	MD	16.434	4.110	0.000	4.110	7.675	1.918	1.822	0.000	1.918	1971	
NIGLINTGAK H-30	NWT	ONSH	MD	98.386	21.350	0.000	21.350	721.839	509.609	488.677	0.000	509.609	1973	
PARSONS F-09	NWT	ONSH	MD	0.000	0.000	0.000	0.000	2,246.277	1,797.996	1,694.610	0.000	1,797.996	1973	
PELLY B-35	NWT	OFFSH	MD	0.000	0.000	0.000	0.000	165.474	110.312	104.796	0.000	110.312	1975	
REINDEER C-36	NWT	ONSH	MD	0.000	0.000	0.000	0.000	25.062	16.707	15.872	0.000	16.707	1973	
TAGLU G-33	NWT	ONSH	MD	0.000	0.000	0.000	0.000	2,837.584	2,269.935	2,080.770	0.000	2,269.935	1971	
TITALIK K-26	NWT	ONSH	MD	0.000	0.000	0.000	0.000	86.838	59.349	56.377	0.000	59.349	1973	
TUK J-29	NWT	ONSH	MD	10.897	1.230	0.000	1.230	0.000	0.000	0.000	0.000	0.000	1985	
TUK L-09	NWT	ONSH	MD	0.000	0.000	0.000	0.000	254.188	203.338	183.004	0.000	203.338	1984	
UMIAK N-16	NWT	ONSH	MD	0.000	0.000	0.000	0.000	637.188	477.921	443.506	0.000	477.921	2004	

**TABLE 3. OIL AND GAS DISCOVERIES OF NORTHERN CANADA**

(OIL - MILLION BARRELS ; GAS - BILLION CUBIC FEET)

FIELD/POOL	TERR	ON_OFF	AREA	OIIP	REC_OIL	CUMOIL	REMOIL	GIP	RRG	IMG	CUM_RRG	REM_RRG	YEAR	SOURCE
UNAK L-28	NWT	ONSH	MD	0.000	0.000	0.000	0.000	65.393	38.943	36.963	0.000	38.943	1986	
UNIPKAT N-12	NWT	ONSH	MD	152.473	34.850	0.000	34.850	21.343	29.682	28.971	0.000	29.682	1990	
W. ATKINSON L-17	NWT	OFFSH	MD	28.298	6.120	0.000	6.120	6.311	1.365	1.297	0.000	1.365	1982	Mackenzie Delta / Beaufort Sea Fields
YA YA N. A-28	NWT	ONSH	MD	0.000	0.000	0.000	0.000	80.053	56.010	53.208	0.000	56.010	1974	NEB, 1998 (Recov) OIP, GIP, IMG, @Risk Simulation of NEB
YA YA S. P-53	NWT	ONSH	MD	0.000	0.000	0.000	0.000	73.645	51.541	48.224	0.000	51.541	1973	
ADLARTOK P-09	YU	OFFSH	BS	519.908	112.588	0.000	112.588	161.688	35.014	35.014	0.000	35.014	1985	
AMAULIGAK J-44	NWT	OFFSH	BS	1,299.339	235.011	0.422	234.589	1,935.048	1,567.385	1,417.674	0.000	1,567.385	1983	
AMERK O-09	NWT	OFFSH	BS	0.000	0.000	0.000	0.000	34.067	21.432	19.962	0.000	21.432	1985	
ARNAK K-06	NWT	OFFSH	BS	14.736	2.689	0.000	2.689	50.960	38.783	34.685	0.000	38.783	1986	
HAVIK B-41	NWT	OFFSH	BS	221.932	37.111	0.000	37.111	237.534	39.720	37.337	0.000	39.720	1983	
W AMAULIGAK I-65A/O-86	NWT	OFFSH	BS	102.252	19.622	0.000	19.622	83.567	75.192	71.663	0.000	75.192	1986	
ISSERK E-27	NWT	OFFSH	BS	0.000	0.000	0.000	0.000	5.116	3.580	3.401	0.000	3.580	1978	
ISSUNGNAK O-61	NWT	OFFSH	BS	112.899	30.040	0.000	30.040	1,499.409	1,223.833	1,162.218	0.000	1,223.833	1980	
ITİYOK I-27	NWT	OFFSH	BS	41.035	5.060	0.000	5.060	132.191	118.491	113.685	0.000	118.491	1983	
KADLUK O-07	NWT	OFFSH	BS	0.000	0.000	0.000	0.000	124.705	75.302	71.537	0.000	75.302	1984	
KENALOOKAK J-94	NWT	OFFSH	BS	0.000	0.000	0.000	0.000	334.149	211.659	188.376	0.000	211.659	1979	
KIGGAVIK A-43	NWT	OFFSH	BS	0.000	0.000	0.000	0.000	169.498	127.105	120.750	0.000	127.105	1982	
KINGARK J-54	YU	OFFSH	BS	129.741	16.129	0.000	16.129	73.913	52.959	50.558	0.000	52.959	1989	
KOAKOAK O-22	NWT	OFFSH	BS	407.218	81.405	0.000	81.405	359.236	339.701	310.404	0.000	339.701	1981	
KOPANOAR M-13/21-44	NWT	OFFSH	BS	302.929	65.635	0.000	65.635	61.757	94.571	90.707	0.000	94.571	1979	
MINUK I-53	NWT	OFFSH	BS	0.000	0.000	0.000	0.000	124.226	99.919	94.181	0.000	99.919	1986	
NEKTORALIK K-59	NWT	OFFSH	BS	79.425	18.524	0.000	18.524	103.714	84.325	79.717	0.000	84.325	1976	
NERLERK M-98	NWT	OFFSH	BS	171.735	31.457	0.000	31.457	33.032	52.519	49.732	0.000	52.519	1979	
NETSERK F-40	NWT	OFFSH	BS	0.000	0.000	0.000	0.000	162.484	121.439	115.363	0.000	121.439	1975	
NIPTERK L-19	NWT	OFFSH	BS	127.092	16.831	0.000	16.831	18.644	14.915	14.170	0.000	14.915	1985	
NIPTERK P-32	NWT	OFFSH	BS	80.362	12.051	0.000	12.051	175.909	132.694	126.176	0.000	132.694	1989	
PAKTOA C-60	YU	OFFSH	BS	960.000	240.000	0.000	240.000	298.553	74.638	70.906	0.000	74.638	2006	
PITSIULAK A-05	YU	OFFSH	BS	175.401	25.120	0.000	25.120	0.000	0.000	0.000	0.000	0.000	1984	
S. ISSERK I-15	NWT	OFFSH	BS	107.248	13.950	0.000	13.950	145.829	116.656	110.824	0.000	116.656	1990	
TARSIUT A-25	NWT	OFFSH	BS	423.310	46.559	0.000	46.559	44.528	41.617	40.058	0.000	41.617	1979	
UKALERK C-50	NWT	OFFSH	BS	0.000	0.000	0.000	0.000	174.004	104.384	102.296	0.000	104.384	1977	
DRAKE POINT	NUN	ONSH	SV	0.000	0.000	0.000	0.000	5,982.000	5,369.000	5,046.900	0.000	5,369.000	1969	
HECLA	NWT	OFFSH	SV	60.300	12.050	0.000	12.050	4,199.000	3,720.000	3,496.800	0.000	3,720.000	1972	
WHITEFISH	NUN	OFFSH	SV	0.000	0.000	0.000	0.000	2,637.000	2,131.000	2,003.100	0.000	2,131.000	1979	
JACKSON BAY	NUN	OFFSH	SV	0.000	0.000	0.000	0.000	1,309.000	1,074.000	1,009.600	0.000	1,074.000	1976	
KRISTOFFER	NUN	OFFSH	SV	0.000	0.000	0.000	0.000	1,325.800	1,107.000	1,040.600	0.000	1,107.000	1972	
THOR	NUN	ONSH	SV	15.000	3.000	0.000	3.000	871.000	715.000	672.100	0.000	715.000	1972	
MACLEAN	NUN	OFFSH	SV	243.800	48.750	0.000	48.750	834.000	604.000	567.800	0.000	604.000	1981	
KING CHRISTIAN	NUN	ONSH	SV	0.000	0.000	0.000	0.000	677.000	588.000	552.700	0.000	588.000	1970	
ROCHE POINT	NUN	OFFSH	SV	0.000	0.000	0.000	0.000	520.000	427.000	401.400	0.000	427.000	1978	Arctic Islands Fields from:
CHAR	NUN	OFFSH	SV	15.000	3.000	0.000	3.000	510.000	377.000	354.400	0.000	377.000	1980	Circum-Pacific Energy Map of Arctic, 2001
CAPE ALLISON	NUN	OFFSH	SV	222.500	44.500	0.000	44.500	770.400	614.000	577.200	0.000	614.000	1985	and CGPC, 2001
SKATE	NUN	OFFSH	SV	145.000	29.000	0.000	29.000	310.000	221.000	207.700	0.000	221.000	1981	
CISCO	NUN	OFFSH	SV	876.000	175.200	0.000	175.200	248.000	204.000	191.800	0.000	204.000	1981	
WALLIS	NUN	ONSH	SV	0.000	0.000	0.000	0.000	126.000	98.000	92.100	0.000	98.000	1973	
MACMILLAN	NUN	OFFSH	SV	0.800	0.150	0.000	0.150	106.000	76.000	71.400	0.000	76.000	1983	
SCULPIN	NUN	OFFSH	SV	0.000	0.000	0.000	0.000	87.000	58.000	54.500	0.000	58.000	1982	
BALAENA	NUN	OFFSH	SV	82.300	16.450	0.000	16.450	0.000	0.000	0.000	0.000	0.000	1980	
BENT HORN	NUN	ONSH	FFB	14.200	2.836	2.836	0.000	0.000	0.000	0.000	0.000	0.000	1974	
HEKJA O-71	NUN	OFFSH	BF	0.000	0.000	0.000	0.000	2,875.000	2,300.000	2,139.000	0.000	2,300.000	1980	Klose, et al, 1982
TOTAL				8,902.3	1,910.9	256.1	1,654.8	41,200.9	32,727.3	30,579.3	746.5	31,980.8		

## **Current Estimates of Oil and Gas Potential for Northern Canada**

The last most comprehensive assessment of oil and gas for Canada was GSC Paper 83-31, published in 1984. K. Osadetz gave a recent review of GSC estimates for all of Canada at the GeoCanada 2000 conference in June 2000. The National Energy Board Canadian Energy Supply and Demand report published in 1999 is the most current compilation of resource assessments for all regions of Canada. A summary of these assessments is given in the discussion and tables that follow.

Assessments for oil or gas have been done for selected regions of Canada. Recent assessments for Natural gas have been reviewed in the Canada Ultimate Gas Study prepared for CERI in March 2002. In summary the recent studies for natural gas include; National Energy Board, 2004, the 2005, 2001 and 1997 reports by the Canadian Gas Potential Committee, Osadetz, K.G., (GSC) 1997, 2000,2001, National Petroleum Council, 1992 and 2000, and the Gas Research Institute (GRI), 2000. These estimates for Canada generally include estimates for the Frontier regions. Other assessments for individual Frontier areas, both oil and gas, include, GSC Open File 3629, for Offshore British Columbia, GSC Bulletin 474 for the Mackenzie-Beaufort, GSC Paper 88-19 for the Scotian Shelf, and the CNOPB/GSC unpublished estimates for the Jeanne d'arc Basin and Ridge Complex. The CNSOPB in October 2002 released the results of their assessment of the deep-water slope off Nova Scotia. Recent estimates of ultimate gas potential for provinces of the Western Canada Sedimentary Basin include joint assessments by the NEB and Governments of Alberta, Report 2005A, British Columbia, Report 2006A and Saskatchewan, Report 2008-8.

Assessments of oil and gas for portions of northern Canada, north of 60°N, are generally included in most of these studies. The only specific assessment for northern Canada is GSC Bulletin 474 for the Mackenzie-Beaufort and GSC Open File 3714 on the Cornwallis Fold Belt of the Bathurst Island area, Nunavut. The Yukon Government with assessments by NEB and GSC has published assessments for all the sedimentary basins of the Yukon.

The United States Geological Survey (USGS), in July, 2008, released the results of the Circum-Arctic Resource Appraisal (CARA) of undiscovered conventional oil and gas resources for the Circum-Arctic Region north of the Arctic Circle (66°33'N) in Fact Sheet 2008-3049. The information published by the USGS is very regional to this point, and it is difficult to get actual numbers for Canada at this time. Regions of Canada north of the Arctic Circle which are covered by the assessment include the Mackenzie Delta, Beaufort Sea, northwestern Mackenzie Corridor, Banks Basin, Sverdrup Basin and Baffin Bay. Detailed summary results were published for the Baffin Bay area in USGS Fact Sheet 2008-3014 (Schenk, 2008). Evaluating the Canadian portion of the assessment units indicates an undiscovered potential of 2,477 million barrels of oil and 17,740 billion cubic feet of gas by the USGS for the Canadian portion of Baffin Bay.

The USGS in an earlier assessment of the Mackenzie Delta/Beaufort Sea (Henry, et.al., 2004) estimated undiscovered resources of 10.4 billion barrels of oil and 86.6 trillion cubic feet of gas.

The ultimate oil and gas potential for northern Canada is summarized in table 4.

**TABLE 4.**  
**NORTHERN CANADA - NORTH OF 60° N**  
**ULTIMATE OIL AND GAS RESOURCES**

***RECOVERABLE OIL RESOURCES (MILLION BARRELS)***

TERRITORY	Discovered	Unrisked Conceptual Plays		Risked Conceptual Plays	
		Undiscovered	Ult. Recoverable	Undiscovered	Ult. Recoverable
NT	1,182.5	5,691.2	6,873.7	5,032.6	6,215.0
NU	322.9	2,401.3	2,724.2	1,455.9	1,778.8
ONU	0.0	1,463.4	1,463.4	883.5	883.5
YU	405.5	2,798.4	3,203.9	2,596.8	3,002.3
Grand Total	1,910.9	12,354.3	14,265.2	9,968.8	11,879.7

***RECOVERABLE GAS RESOURCES (BILLION CUBIC FEET)***

TERRITORY	Discovered	Unrisked Conceptual Plays		Risked Conceptual Plays	
		Undiscovered	Ult. Recoverable	Undiscovered	Ult. Recoverable
NT	16,241.9	64,924.3	81,166.2	54,739.9	70,981.8
NU	13,663.0	41,630.2	55,293.2	29,390.8	43,053.8
ONU	2,300.0	18,042.8	20,342.8	12,913.2	15,213.2
YU	522.5	20,663.2	21,185.7	17,271.2	17,793.7
Grand Total	32,727.3	145,260.5	177,987.8	114,315.1	147,042.4

***MARKETABLE GAS RESOURCES (BILLION CUBIC FEET)***

TERRITORY	Discovered	Unrisked Conceptual Plays		Risked Conceptual Plays	
		Undiscovered	Ult. Recoverable	Undiscovered	Ult. Recoverable
NT	15,131.1	60,516.5	75,647.6	50,894.3	66,025.4
NU	12,843.3	39,551.8	52,395.1	27,929.4	40,772.7
ONU	2,139.0	17,132.2	19,271.2	12,270.7	14,409.7
YU	465.9	19,299.7	19,765.6	16,138.5	16,604.4
Grand Total	30,579.3	136,500.3	167,079.5	107,233.0	137,812.2

NT - Northwest Territories, NU - Nunavut Settlement Area, includes Canadian Arctic waters within the Nunavut area, ONU - Offshore Nunavut outside settlement area, YU - Yukon

## **Southeast Yukon and Southern Northwest Territories**

The structural elements include the Liard, Liard Plateau and the Southern territories. The Liard Plateau is located in the Yukon and Northwest Territories. The Southern Territories (Trout Plain) is entirely within the Northwest Territories.

Paramount has discovered light oil in the Slave Point, Sulphur Point and Keg River in the Cameron Hills. The estimated recoverable oil is estimated to be 4.5 million barrels, with cumulative production to December 31, 2008 of 1,878 barrels. Cameron Hills has also produced 24.4 billion cubic feet of natural gas.

The NEB 1996 “A natural gas resource assessment of southeast Yukon and Northwest Territories Canada” estimated a total of 10.2 Tcf of marketable gas of which 6 Tcf was expected north of 60°. Established Plays in the Trout Plain area that were assessed in NEB 1996, include Keg River Cameron Hills, Slave Point Ekwan/Celibeta, Upper Keg River (Pine Point) Clarke Lake play (North of 60°), Sulphur Point (Bistcho), Slave Point Barrier – Helmet play. The author has re-run these plays in @ RISK keeping in mind that approximately 60% is north of 60°.

For the portion of the Western Canada Sedimentary Basin in the southern Northwest Territories and Yukon, the undiscovered oil and gas is based on the study “Oil and Gas Resources and Field Size Distribution of the Deh Cho Territory”, 2004, prepared for the Deh Cho Land Use Planning Committee by Drummond Consulting

Undiscovered resources of the Western Canada Sedimentary Basin, north of 60° N (Liard Plateau/ Trout Plain) are; Yukon gas-in-place, 1,471 Bcf, recoverable gas 893 Bcf, and marketable gas of 738 Bcf unrisks. Applying conditional risk to conceptual plays for the Yukon, undiscovered resources are 1,447 Bcf gas-in-place, 879 Bcf recoverable gas and 727 Bcf of marketable gas. For the Northwest Territories the unrisks undiscovered gas resource is 5,120 Bcf gas-in-place, 3,469 Bcf recoverable gas and 2,967 Bcf marketable Gas. Conditional risk of conceptual plays gives, 4,601 Bcf gas-in-place, 3,115 Bcf recoverable gas and 2,673 Bcf marketable Gas.

**TABLE 5.**  
**WESTERN CANADA SEDIMENTARY BASIN NORTH OF 60° N**  
**UNDISCOVERED OIL AND GAS - SOUTHERN YUKON & NORTHWEST TERRITORIES**

	UNDISCOVERED OIL (MMB)		UNDISCOVERED GAS (BCF)		
	RECOVERABLE	IN-PLACE	MARKETABLE	RECOVERABLE	IN-PLACE
<b>TOTAL ESTABLISHED + CONCEPTUAL UNRISKED</b>					
NORTHWEST TERRITORIES	51.8	330.9	2,966.8	3,469.5	5,120.2
YUKON	0.0	0.0	738.1	892.5	1,470.8
TOTAL IN WCSB NORTH OF 60°	51.8	330.9	3,704.9	4,362.0	6,590.9
<b>TOTAL ESTABLISHED + RISKED CONCEPTUAL</b>					
NORTHWEST TERRITORIES	47.2	304.4	2,673.0	3,114.6	4,600.6
YUKON	0.0	0.0	727.0	879.3	1,446.9
TOTAL IN WCSB NORTH OF 60°	47.2	304.4	3,400.0	3,993.9	6,047.5



## **Mainland Territories and Northern Yukon Basins**

### **Mainland Territories**

The Mackenzie corridor of the Northwest Territories has had no recent published assessments. The author has completed proprietary assessments of the Sahtu and Gwich'in Settlement Areas, and these studies are used for this report.

#### **Colville Hills**

In the 2002 report the undiscovered potential for the Cambrian was all assigned to the Colville Hills. For the 2009 update the Cambrian has been reassessed using the Play areas of Gal, 2005, and the resource distributed by quarter grid across the play area. As a result a portion of the Cambrian undiscovered potential occurs in the Great Bear region. The risked undiscovered recoverable resource for the Colville Hills is 22.4 million barrels of oil and 2,052.9 billion cubic feet of gas.

#### **Mackenzie Plain**

The Mackenzie Plain contains the Norman Wells oil field with cumulative production to December 31, 2008 of 251 million barrels and remaining recoverable oil reserves of 51 million barrels. Recent discoveries in the Devonian at Summit Creek B-44 (oil and gas) and in the Upper Cretaceous at Stewart D-57 have improved the undiscovered potential for this area. The risked undiscovered recoverable resources for the Mackenzie Plain are 152.4 million barrels of oil and 1,675.8 billion cubic feet of gas.

### **Northern Yukon Basins**

The Northern Yukon Basins include Eagle, Peel, Kandik, Bonnet Plume, and Old Crow. The Whitehorse Trough, a low potential basin in the south Yukon is included with this group. The Yukon Coastal Basin is included with the Mackenzie Delta/ Beaufort Sea. The undiscovered oil and gas potential is taken from the Petroleum Resource Assessments by the GSC and NEB, done for the Yukon Government and proprietary studies by the author.

#### **Peel Basin**

The Peel Basin is located in both the Yukon and Northwest Territories. The total undiscovered recoverable unrisks gas potential is 2,254.3 Bcf, with 1,511.7 Bcf estimated to be in the Yukon and 742.8 Bcf in the Northwest Territories. The risked potential is 1,012.8 Bcf in the Yukon and 482.1 Bcf in the Northwest Territories, for a total risked potential of 1,494.6 Bcf. There are no discoveries.

#### **Eagle Plain Basin**

In the Eagle Plain Basin there are 3 discovered gas fields with initial recoverable gas resource of 83.7 Bcf, with the largest field, chance, at 51.1 Bcf. The total undiscovered recoverable gas potential is 1,102.6 Bcf unrisks and 916.2 Bcf risked.

#### **Kandik Basin**

The Kandik Basin has an undiscovered unrisks recoverable gas potential of 491.1 Bcf, and risked recoverable gas potential of 171.9 Bcf, with no discoveries

### Bonnet Plume Basin

The Bonnet Plume Basin has undiscovered unrisks recoverable gas potential of 766.7 Bcf, and risks recoverable gas potential of 268.3 Bcf, with no discoveries.

### Old Crow Basin

Undiscovered unrisks recoverable gas potential of 840.0 Bcf, and risks recoverable gas potential of 252.0 Bcf, with no discoveries.

**TABLE 6.**

<b>RECOVERABLE RESOURCES (UNRISKED) OF THE YUKON &amp; MAINLAND NORTHWEST TERRITORIES</b>							
TERR	BASIN	OIL (MILLION BARRELS)			GAS (BILLION CUBIC FEET)		
		DISCOVERED	UNDISCOVERED	ULTIMATE	DISCOVERED	UNDISCOVERED	ULTIMATE
NT	LIARD / TROUT PLAIN	4.50	51.81	56.31	702.2	3,469.5	4,171.7
YU	EAGLE PLAIN	11.71	28.11	39.82	83.7	1,119.1	1,202.8
YU	PEEL PLAIN	0.00	10.17	10.17	0.0	1,511.7	1,511.7
NT	PEEL PLAIN	0.00	34.41	34.41	0.0	742.6	742.6
YU	KANDIK	0.00	14.22	14.22	0.0	491.1	491.1
YU	LIARD PLATEAU	0.00	0.00	0.00	276.1	892.5	1,168.6
YU	WHITEHORSE TROUGH	0.00	8.12	8.12	0.0	196.0	196.0
YU	BONNET PLUME	0.00	0.00	0.00	0.0	766.7	766.7
YU	OLD CROW	0.00	0.00	0.00	0.0	840.0	840.0
NT	GREAT SLAVE PLAIN	0.00	0.56	0.56	0.0	559.7	559.7
NT	GREAT BEAR PLAIN	0.00	16.33	16.33	0.0	1,784.7	1,784.7
NT	MACKENZIE PLAIN	301.64	156.92	458.57	0.0	1,832.1	1,832.1
NT	MACKENZIE MOUNTAINS	0.00	0.06	0.06	0.0	142.7	142.7
NT	COLVILLE HILLS	0.00	22.53	22.53	832.4	2,086.1	2,918.5
NT	ANDERSON/HORTON	0.00	15.00	15.00	0.0	486.7	486.7
TOTAL MAINLAND NWT		306.14	297.61	603.76	1,534.63	11,104.11	12,638.74
TOTAL YUKON		11.71	60.62	72.33	359.84	5,817.11	6,176.96
TOTAL - YUKON & MAINLAND NWT		317.85	358.23	676.08	1,894.5	16,921.2	18,815.7
Source: NEB, GSC and Yukon Petroleum Resource Assessments							

## **Mackenzie Delta Beaufort Sea**

Fields in the Beaufort Mackenzie Basin have been designated by onshore and offshore, based on the coastline. Also they have been designated as Mackenzie Delta (MD) or Beaufort Sea (BS), as identified by the NEB, 1998. The fields have been assigned by play as per GSC Bulletin 474. There are a few fields, which have two identified plays. These are, Minuk - Taglu and Netserk plays, Mayogiak - Tertiary Tuk play and Devonian Mayogiak plays, and Unak, South Delta Mesozoic and South Delta Paleozoic. The resources are assigned to the separate zones in the field based on the input sheets of NEB 1998. (Supplied by the NEB). All fields designated as Mackenzie Delta in NEB 1998 are in the onshore/shallow offshore playgroup. All fields except one designated as Beaufort Sea are in the offshore playgroup (offshore Delta, West Beaufort, and Deepwater). Arnak is in the Ivik play of the onshore/shallow offshore playgroup.

The GSC in Bulletin 474 only reports results for the playgroups. To be able to assign the undiscovered potential to specific areas, as offshore/onshore, it is necessary to disaggregate the total into the component parts, i.e. plays. This applies in particular to the onshore/shallow offshore playgroup. Part of the subdivision of the plays is included in the assessments by the GSC for the Yukon government on the Yukon Coastal Plain. The Yukon North Coast Petroleum assessment reported median (50%) values for in-place volumes of undiscovered oil and gas. GSC Bulletin 474 reported mean values of recoverable oil and gas. Both reports contained sufficient distribution information to allow @ RISK simulations to be run, and by applying recovery factors, complete distributors were derived for in-place and recoverable values and marketable gas.

The author has made some adjustments to the plays as defined by the GSC and new @Risk simulations have been done for all the plays to determine undiscovered volumes used in this study.

For the western Beaufort Sea the geological plays are assigned to the offshore Northwest Territories and offshore Yukon defined by the northward extension of the border at approximately 136°27'16" West (136.454°W). The estimated portion of the undiscovered resources in the two territories for the geological plays is estimated as follows; Tarsiut-Amaligak Fault Zone – 12% YT and 88% NT, Netserk – 10% YT and 90% NT, Kopanoar – 8% YT and 92% NT, Deep Water West – 70% YT and 30% NT. Adlartok, Herschel and Demarcation plays are entirely within the Yukon offshore.

Discovered resources for the Mackenzie Delta are: 248.3 million barrels of recoverable oil and 6,282.0 billion cubic feet of recoverable gas. Discovered resources for the Beaufort Sea are: 1,009.8 million barrels of recoverable oil and 4,867.8 billion cubic feet of recoverable gas. The undiscovered risked resources are estimated to be 962.9 million barrels of recoverable oil and 16,030.4 billion cubic feet of recoverable gas for the Mackenzie Delta and 5,771.8 million barrels of recoverable oil and 32,326.0 billion cubic feet of recoverable gas for the Beaufort Sea.

**TABLE 7.  
BEAUFORT - MACKENZIE BASIN  
DISTRIBUTION OF ULTIMATE OIL AND GAS RESOURCES**

**OIL RESOURCES**

TERRITORY	ONSHORE / OFFSHORE	DISCOVERED		UNDISCOVERED		ULTIMATE	
		IN-PLACE OIL (MMB)	RECOV OIL (MMB)	IN-PLACE OIL (MMB)	RECOV OIL (MMB)	IN-PLACE OIL (MMB)	RECOV OIL (MMB)
NORTHWEST	ONSHORE	652.44	141.79	2,922.93	553.29	3,575.37	695.08
TERRITORIES	OFFSHORE	5,887.98	1,116.32	25,709.85	4,866.29	31,597.83	5,982.61
	TOTAL	6,540.42	1,258.10	28,632.78	5,419.59	35,173.20	6,677.69
YUKON	ONSHORE	0.00	0.00	1.08	0.18	1.08	0.18
	OFFSHORE	0.00	0.00	8,795.20	1,518.01	8,795.20	1,518.01
	TOTAL	0.00	0.00	8,796.28	1,518.19	8,796.28	1,518.19
TOTAL BEAUFORT/MACKENZIE		6,540.42	1,258.10	37,429.05	6,937.78	43,969.47	8,195.88

**GAS RESOURCES**

TERRITORY	ONSHORE / OFFSHORE	DISCOVERED			UNDISCOVERED			ULTIMATE		
		IN-PLACE GAS (BCF)	RECOV GAS (BCF)	MARKETABLE GAS (BCF)	IN-PLACE GAS (BCF)	RECOV GAS (BCF)	MARKETABLE GAS (BCF)	IN-PLACE GAS (BCF)	RECOV GAS (BCF)	MARKETABLE GAS (BCF)
NORTHWEST	ONSHORE	6,635.8	5,154.3	4,801.5	17,015.5	11,122.1	10,364.8	23,651.3	16,276.4	15,166.3
TERRITORIES	OFFSHORE	8,024.5	5,995.5	5,593.5	58,843.7	31,985.9	29,958.5	66,868.2	37,981.4	35,551.9
	TOTAL	14,660.4	11,149.8	10,395.0	75,859.1	43,108.0	40,323.3	90,519.5	54,257.8	50,718.3
YUKON	ONSHORE	0.00	0.00	0.00	117.92	82.27	76.60	117.9	82.3	76.6
	OFFSHORE	0.00	0.00	0.00	13,102.76	6,484.04	6,141.26	13,102.8	6,484.0	6,141.3
	TOTAL	0.0	0.0	0.0	13,220.7	6,566.3	6,217.9	13,220.7	6,566.3	6,217.9
TOTAL BEAUFORT/MACKENZIE		14,660.368	11,149.848	10,394.983	89,079.783	49,674.293	46,541.146	103,740.151	60,824.141	56,936.129

## Arctic Islands

Several of the discoveries in the Sverdrup Basin are located both onshore and offshore. In order to be able to summarize the data by onshore/offshore, the following fields have been designated as either onshore or offshore. Drake point, King Christian, Thor and Wallis are all assigned to the onshore. The Hecla gas field is designated as offshore.

The Arctic Islands comprises four geological basin areas, Sverdrup Basin, Arctic Lowlands platform, Franklinian Fold Belt, and the Arctic Coastal Plain. The Arctic Island basin areas are all divided between the Northwest Territories and Nunavut. Most of the land areas north of 60° North are included in the Nunavut settlement area. The Sverdrup Basin, Arctic platform and Franklinian Fold Belt are all located within the Nunavut settlement area. Only a small portion (16%) of the Arctic Coastal Plain is in the settlement area, with the remainder in offshore waters outside the area.

The only complete assessment for the Arctic Islands is that of GSC Bulletin 83-31, and this assessment does not include the Arctic Coastal Plain. Recent assessments include Geological Survey of Canada, GSC, 2000), Canadian Gas Potential Committee (CGPC, 1997, 2001, 2005), Canadian Energy Research Institute (CERI, 2002) and the National Energy Board (NEB, 2004). In addition, an estimate of the discovered resources has been published by the Circum-Pacific Map Project (CPMP). The Mesozoic is considered as an established play and the Permo-Carboniferous is conceptual.

The GSC (Chen et al, 2000), median estimate of the undiscovered gas-in-place of 45.9 Tcf for the Mesozoic section of the Western Sverdrup Basin compares to a mean value of 63.9 Tcf recoverable gas in the 1984 GSC assessment (GSC 83-31) for the Mesozoic plus the Permo-Carboniferous of the same basin.

The GSC assessed a portion of the Franklinian Fold Belt in a recent open file report, OF 3714, “Mineral and Energy Resource Assessment of Bathurst Island Area, Nunavut”. In this assessment the mean oil in-place was 4.6 billion barrels of oil and in-place gas of 11.7 trillion cubic feet. This compares to the results from GSC Paper 83-31 of 2.3 billion barrels oil in-place and 10.4 Tcf gas in place for the entire fold belt.

The Canadian Gas Potential Committee in the 2001 report estimates the undiscovered gas-in-place at 11.4 Tcf for the Mesozoic section of the Sverdrup Basin. In the 2005 report the gas-in-place is estimated to be 8.2 trillion cubic feet.

The National Energy Board in the 2004 report on Canada’s Conventional Natural Gas Resources, A Status Report, estimated undiscovered marketable gas resources of 15 Tcf for the Sverdrup Basin and 13 Tcf for the other basins of the Arctic Islands.

The United States Geological Survey (USGS) in the recent 2008 Circum-Arctic Resource Appraisal estimates 851.1 million barrels of recoverable oil and 8,596.4 billion cubic feet of recoverable gas for the Sverdrup Basin.

In summary estimates of undiscovered gas for the Sverdrup Basin are; CERI, 2002 – 68.9 Tcf (recoverable), GSC, 1984 – 63.9 Tcf (recoverable), Chen, 2000 – 45.9 Tcf (recoverable), NEB, 2004 – 15 Tcf (marketable), CGPC, 2001 – 9.5 Tcf (marketable), CGPC, 2005 – 6.8 Tcf (marketable) and USGS, 2008 – 8.6 Tcf (recoverable). Considering all these estimates, the current study assumed a  $P_{10}$  value of 15.0 Tcf and a  $P_{90}$  of 88.0 Tcf gas-in-place for the total Sverdrup Basin section (Mesozoic and Permo-Carboniferous) to derive a probabilistic distribution. The @Risk simulation for recoverable gas gave a mean of 34.3 Tcf, a median of 26.7 Tcf, a  $P_{10}$  of 10.8 Tcf and a  $P_{90}$  of 67.1 Tcf. This distribution essentially covers all the various estimates for the Sverdrup Basin. Seventy-five percent of this is assigned to the Mesozoic which is considered to be an established play. The Permo-Carboniferous, with 25% of the unrisksed potential is a conceptual play.

For the other basins (Arctic Lowlands, Franklinian Fold Belt, and Arctic Coastal Plain a best guess estimate of  $P_{10}$  and  $P_{90}$  for recoverable gas was used to derive a cumulative probabilistic distribution. For oil  $P_5$  and  $P_{95}$  estimates of recoverable oil were used as input to derive the cumulative probabilistic distributions.

In the Canadian Arctic Islands, discovered recoverable oil resources are 335 MMB of which 323 MMB is in Nunavut and 12 MMB in the Northwest Territories. The undiscovered risked recoverable oil potential is estimated at 2,094 MMB, of which 637 MMB is located onshore and 1,457 MMB is offshore, with 1,513 MMB in Nunavut and 581 MMB in the Northwest Territories. The discovered recoverable raw gas resource is 17,383 Bcf, with 3,720 Bcf in the Northwest Territories and 13,663 Bcf in Nunavut. The undiscovered risked recoverable gas resource is estimated to be 40,894 Bcf, of which 12,335 Bcf is located onshore and 28,560 Bcf is offshore with 10,335 Bcf in the Northwest Territories and 30,560 Bcf in Nunavut.

## Arctic Islands – Estimation of Onshore/Offshore

For the discovered fields this was done from a consideration of the number of wells onshore versus offshore and an estimation of what percent of the discovered resource is onshore versus offshore. The estimation of the undiscovered resources for the onshore/offshore breakdown by the geological provinces is based on updating area numbers from Drummond 1973 (CSPG Memoir 1, p. 469).

### Arctic Platform

The total Arctic platform area, onshore and offshore was taken from Drummond, 1973. The onshore and offshore areas were measured for the Northwest Territories portion of the Arctic Platform. The Nunavut onshore/offshore areas were then calculated. The oil and gas resources were then distributed using the land/water ratios. The calculated percentages are Northwest Territories 15.7% of the oil and gas resources (7.7% onshore, 8.0% offshore) and 84.3% for Nunavut (39.9% onshore and 44.4% offshore).

### Franklinian Fold Belt

The areas for the Northwest Territories and Nunavut were calculated in a similar manner as for the Arctic Platform. The calculated distribution of oil and gas resources is 16.3% for the Northwest Territories (11.1% onshore and 5.2% offshore), and 83.7% (53.4% onshore and 30.3% offshore) for Nunavut.

### Sverdrup Basin

The area distribution for the Sverdrup Basin is calculated in the same manner as for the Arctic platform and the Franklinian Fold belt. For the Sverdrup Basin 86.6% of the area is in Nunavut (42.0% onshore and 44.6% offshore) and 13.4% in the Northwest Territories (4.1% onshore and 9.3% offshore). To date it appears that the offshore areas are more prospective, in particular for the eastern (Nunavut) part of the Basin. Therefore weighting factors are applied to the area ratios to calculate the oil and gas in offshore and onshore areas. Also the eastern part of the Sverdrup Basin contains mountainous areas where part of the prospective section is eroded. Thus a judgmental factor is applied to the percentage between Nunavut and the Northwest Territories. The percentages are adjusted to 20% for the Northwest Territories and 80% for Nunavut. Applying the offshore onshore ratios would give 45% onshore and 55% offshore. For the final adjusted distribution a portion of the onshore percentage is transferred to offshore, for Northwest Territories, 33% and 40% for Nunavut.

The adjusted distribution of resources based on this geologically based reasoning, would be 20% in the Northwest Territories, with 4.1% of the total onshore and 15.9% offshore, and for Nunavut, 80% of total, with 23.3% onshore and 56.7% offshore.



**TABLE 8**  
**CANADIAN ARCTIC ISLANDS - DISTRIBUTION OF ULTIMATE OIL RESOURCES**  
**(ALL VOLUMES IN MILLION BARRELS)**

TERR	ON_OFFSH	BASIN / PLAY	DISCOVERED		UNDISCOVERED		ULTIMATE		UNDISC % OF TOT
			Disc_OIP	Disc_RecO	Und_OIP	Und_RecO	Ult_OIP	Ult_RecO	
NT	ONSH	SVERDRUP BASIN -MZ	0.0	0.0	193.335	45.169	193.335	45.169	0.041
NT	OFFSH	SVERDRUP BASIN -MZ	60.3	12.1	749.761	175.168	810.061	187.218	0.159
NU	ONSH	SVERDRUP BASIN -MZ	15.0	3.0	1,098.706	256.692	1,113.706	259.692	0.233
NU	OFFSH	SVERDRUP BASIN -MZ	1,585.4	317.1	2,673.675	624.655	4,259.075	941.705	0.567
NT_NU	TOTAL	SVERDRUP BASIN -MZ	1,660.7	332.1	4,715.477	1,101.684	6,376.177	1,433.784	1.000
NT	ONSH	SVERDRUP BASIN -PERMO-CARB	0.0	0.0	69.541	16.296	69.541	16.296	0.041
NT	OFFSH	SVERDRUP BASIN -PERMO-CARB	0.0	0.0	269.685	63.198	269.685	63.198	0.159
NU	ONSH	SVERDRUP BASIN -PERMO-CARB	0.0	0.0	395.199	92.611	395.199	92.611	0.233
NU	OFFSH	SVERDRUP BASIN -PERMO-CARB	0.0	0.0	961.707	225.367	961.707	225.367	0.567
NT_NU	TOTAL	SVERDRUP BASIN -PERMO-CARB	0.0	0.0	1,696.133	397.473	1,696.133	397.473	1.000
NT	ONSH	FRANKLINIAN FOLD BELT	0.0	0.0	241.738	57.262	241.738	57.262	0.111
NT	OFFSH	FRANKLINIAN FOLD BELT	0.0	0.0	113.247	26.825	113.247	26.825	0.052
NU	ONSH	FRANKLINIAN FOLD BELT	14.2	2.8	1,162.957	275.477	1,177.157	278.313	0.534
NU	OFFSH	FRANKLINIAN FOLD BELT	0.0	0.0	659.880	156.310	659.880	156.310	0.303
NT_NU	TOTAL	FRANKLINIAN FOLD BELT	14.2	2.8	2,177.823	515.874	2,192.023	518.710	1.000
NT	ONSH	ARCTIC COASTAL PLAIN	0.0	0.0	389.302	91.501	389.302	91.501	0.083
NT	OFFSH	ARCTIC COASTAL PLAIN	0.0	0.0	2,739.184	643.814	2,739.184	643.814	0.584
NU	ONSH	ARCTIC COASTAL PLAIN	0.0	0.0	37.523	8.819	37.523	8.819	0.008
NU	OFFSH	ARCTIC COASTAL PLAIN	0.0	0.0	1,524.375	358.287	1,524.375	358.287	0.325
NT_NU	TOTAL	ARCTIC COASTAL PLAIN	0.0	0.0	4,690.384	1,102.422	4,690.384	1,102.422	1.000
NT	ONSH	ARCTIC PLATFORM	0.0	0.0	155.890	36.475	155.890	36.475	0.077
NT	OFFSH	ARCTIC PLATFORM	0.0	0.0	161.963	37.897	161.963	37.897	0.080
NU	ONSH	ARCTIC PLATFORM	0.0	0.0	807.792	189.009	807.792	189.009	0.399
NU	OFFSH	ARCTIC PLATFORM	0.0	0.0	898.896	210.326	898.896	210.326	0.444
NT_NU	TOTAL	ARCTIC PLATFORM	0.0	0.0	2,024.541	473.706	2,024.541	473.706	1.000
NT	ONSH	TOTAL ARCTIC ISLANDS	0.0	0.0	1,049.8	246.7	1,049.8	246.7	0.069
NT	OFFSH	TOTAL ARCTIC ISLANDS	60.3	12.1	4,033.8	946.9	4,094.1	959.0	0.264
NU	ONSH	TOTAL ARCTIC ISLANDS	29.2	5.8	3,502.2	822.6	3,531.4	828.4	0.229
NU	OFFSH	TOTAL ARCTIC ISLANDS	1,585.4	317.1	6,718.5	1,574.9	8,303.9	1,892.0	0.439
NT	TOTAL	TOTAL ARCTIC ISLANDS	60.3	12.1	5,083.6	1,193.6	5,143.9	1,205.7	0.332
NU	TOTAL	TOTAL ARCTIC ISLANDS	1,614.6	322.9	10,220.7	2,397.6	11,835.3	2,720.4	0.668
NT_NU	ONSH	TOTAL ARCTIC ISLANDS	29.2	5.8	4,552.0	1,069.3	4,581.2	1,075.1	0.297
NT_NU	OFFSH	TOTAL ARCTIC ISLANDS	1,645.7	329.1	10,752.4	2,521.8	12,398.1	2,850.9	0.703
NT_NU	TOTAL	TOTAL ARCTIC ISLANDS	1,674.9	334.9	15,304.4	3,591.2	16,979.3	3,926.1	1.000

**TABLE 9.**  
**CANADIAN ARCTIC ISLANDS - DISTRIBUTION OF ULTIMATE GAS RESOURCES**  
**(ALL VOLUMES IN BILLION CUBIC FEET)**

TERR	ON_OFFSH	BASIN / PLAY	DISCOVERED			UNDISCOVERED			ULTIMATE			Frac
			Disc_GIP	Disc_RRG	Disc_IMG	Und_GIP	Und_RRG	Und_IMG	Ult_GIP	Ult_RRG	Ult_IMG	
NT	ONSH	SVERDRUP BASIN MZ	0.0	0.0	0.0	1,417.4	1,054.4	1,002.0	1,417.4	1,054.4	1,002.0	0.041
NT	OFFSH	SVERDRUP BASIN MZ	4,199.0	3,720.0	3,496.8	5,496.7	4,089.1	3,885.8	9,695.7	7,809.1	7,382.6	0.159
NU	ONSH	SVERDRUP BASIN MZ	7,656.0	6,770.0	6,363.8	8,054.9	5,992.2	5,694.3	15,710.9	12,762.2	12,058.1	0.233
NU	OFFSH	SVERDRUP BASIN MZ	8,657.2	6,893.0	6,479.5	19,601.5	14,581.9	13,857.0	28,258.7	21,474.9	20,336.5	0.567
NT_NU	TOTAL	SVERDRUP BASIN MZ	20,512.2	17,383.0	16,340.1	34,570.6	25,717.6	24,439.1	55,082.8	43,100.6	40,779.2	1.000
NT	ONSH	SVERDRUP BASIN PM-CARB	0.0	0.0	0.0	472.5	351.5	334.0	472.5	351.5	334.0	0.041
NT	OFFSH	SVERDRUP BASIN PM-CARB	0.0	0.0	0.0	1,832.2	1,363.0	1,295.3	1,832.2	1,363.0	1,295.3	0.159
NU	ONSH	SVERDRUP BASIN PM-CARB	0.0	0.0	0.0	2,685.0	1,997.4	1,898.1	2,685.0	1,997.4	1,898.1	0.233
NU	OFFSH	SVERDRUP BASIN PM-CARB	0.0	0.0	0.0	6,533.8	4,860.6	4,619.0	6,533.8	4,860.6	4,619.0	0.567
NT_NU	TOTAL	SVERDRUP BASIN PM-CARB	0.0	0.0	0.0	11,523.5	8,572.5	8,146.4	11,523.5	8,572.5	8,146.4	1.000
NT	ONSH	FRANKLINIAN FOLD BELT	0.0	0.0	0.0	1,320.5	979.1	930.7	1,320.5	979.1	930.7	0.111
NT	OFFSH	FRANKLINIAN FOLD BELT	0.0	0.0	0.0	618.6	458.7	436.0	618.6	458.7	436.0	0.052
NU	ONSH	FRANKLINIAN FOLD BELT	0.0	0.0	0.0	6,352.8	4,710.2	4,477.7	6,352.8	4,710.2	4,477.7	0.534
NU	OFFSH	FRANKLINIAN FOLD BELT	0.0	0.0	0.0	3,604.7	2,672.6	2,540.7	3,604.7	2,672.6	2,540.7	0.303
NT_NU	TOTAL	FRANKLINIAN FOLD BELT	0.0	0.0	0.0	11,896.6	8,820.6	8,385.1	11,896.6	8,820.6	8,385.1	1.000
NT	ONSH	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	1,645.4	1,224.9	1,163.8	1,645.4	1,224.9	1,163.8	0.083
NT	OFFSH	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	11,577.5	8,618.8	8,188.9	11,577.5	8,618.8	8,188.9	0.584
NU	ONSH	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	158.6	118.1	112.2	158.6	118.1	112.2	0.008
NU	OFFSH	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	6,443.0	4,796.4	4,557.2	6,443.0	4,796.4	4,557.2	0.325
NT_NU	TOTAL	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	19,824.6	14,758.2	14,022.2	19,824.6	14,758.2	14,022.2	1.000
NT	ONSH	ARCTIC PLATFORM	0.0	0.0	0.0	577.0	418.1	397.4	577.0	418.1	397.4	0.077
NT	OFFSH	ARCTIC PLATFORM	0.0	0.0	0.0	599.5	434.4	412.9	599.5	434.4	412.9	0.080
NU	ONSH	ARCTIC PLATFORM	0.0	0.0	0.0	2,990.0	2,166.5	2,059.2	2,990.0	2,166.5	2,059.2	0.399
NU	OFFSH	ARCTIC PLATFORM	0.0	0.0	0.0	3,327.3	2,410.9	2,291.5	3,327.3	2,410.9	2,291.5	0.444
NT_NU	TOTAL	ARCTIC PLATFORM	0.0	0.0	0.0	7,493.8	5,429.9	5,161.0	7,493.8	5,429.9	5,161.0	1.000
NT	ONSH	TOTAL ARCTIC ISLANDS	0.0	0.0	0.0	5,432.8	4,028.0	3,828.0	5,432.8	4,028.0	3,828.0	0.064
NT	OFFSH	TOTAL ARCTIC ISLANDS	4,199.0	3,720.0	3,496.8	20,124.6	14,964.0	14,218.9	24,323.6	18,684.0	17,715.7	0.236
NU	ONSH	TOTAL ARCTIC ISLANDS	7,656.0	6,770.0	6,363.8	20,241.3	14,984.4	14,241.5	27,897.3	21,754.4	20,605.3	0.237
NU	OFFSH	TOTAL ARCTIC ISLANDS	8,657.2	6,893.0	6,479.5	39,510.3	29,322.5	27,865.3	48,167.5	36,215.5	34,344.8	0.463
NT	TOTAL	TOTAL ARCTIC ISLANDS	4,199.0	3,720.0	3,496.8	25,557.5	18,992.0	18,046.9	29,756.5	22,712.0	21,543.7	0.300
NU	TOTAL	TOTAL ARCTIC ISLANDS	16,313.2	13,663.0	12,843.3	59,751.6	44,306.9	42,106.8	76,064.8	57,969.9	54,950.1	0.700
NT_NU	ONSH	TOTAL ARCTIC ISLANDS	7,656.0	6,770.0	6,363.8	25,674.2	19,012.4	18,069.5	33,330.2	25,782.4	24,433.3	0.300
NT_NU	OFFSH	TOTAL ARCTIC ISLANDS	12,856.2	10,613.0	9,976.3	59,634.9	44,286.4	42,084.2	72,491.1	54,899.4	52,060.5	0.700
NT_NU	TOTAL	TOTAL ARCTIC ISLANDS	20,512.2	17,383.0	16,340.1	85,309.0	63,298.9	60,153.7	105,821.2	80,681.9	76,493.8	1.000

## Eastern Arctic

The Eastern Arctic area includes Baffin Bay, Hudson Bay Basin (north of 60°N) and the Foxe Basin. The Baffin Bay Basin is all in offshore waters, outside the Nunavut Settlement Area.

The Hudson Bay Basin area north of 60°N is 310,953 Km<sup>2</sup>, 36,151 Km<sup>2</sup> onshore (Coats Island, Mansell Island, and Southampton Island (66.7%)), and 274,802 Km<sup>2</sup> offshore. The total area in the Nunavut settlement area is 113,276 Km<sup>2</sup>, 32,971 Km<sup>2</sup> onshore, and 80,305 Km<sup>2</sup> offshore. The area outside the Nunavut Settlement Area is 3,180 Km<sup>2</sup> onshore and 194,491 Km<sup>2</sup> offshore for a total of 197,677 Km<sup>2</sup>. The percentages to apply to the resource potential are; Nunavut onshore – 10.6%, Nunavut offshore – 25.8%, outside of Nunavut – onshore – 1.0%, offshore – 62.5%

In GSC Bulletin 83-31 the Hudson Platform included Hudson Bay Basin and Foxe Basin. An @ RISK simulation was run on the distribution presented in Bulletin 83-31 and the results were recoverable oil, mean of 1,186 million barrels and recoverable gas mean of 4,739.3 Bcf. It is estimated that 55% of the potential is north of 60°N, with 48% in the Hudson Bay Basin and 7% in the Foxe Basin. The total area of the Foxe Basin is 151,656 Km<sup>2</sup>, with 51,894 Km<sup>2</sup> onshore, and 99,762 Km<sup>2</sup> offshore, 34.2% onshore and 65.8% offshore.

There has been one discovery in the Baffin Bay area, on the Southeast Baffin shelf in the Davis Strait. Hekja 0-71, completed in 1980 is a gas discovery in Paleocene sands. The estimated recoverable gas is 2.3 Tcf (Klose, et al, 1982).

Table 10.

## HUDSON BAY / FOXE BASIN - DISTRIBUTION OF ULTIMATE OIL AND GAS RESOURCES

## ULTIMATE OIL RESOURCE ESTIMATE (MILLION BARRELS)

AREA	TERR	ON_OFFSH	BASIN / PLAY	DISCOVERED		UNDISCOVERED		ULTIMATE		UNDISC % OF TOT
				Disc_OIP	Disc_RecO	Und_OIP	Und_RecO	Ult_OIP	Ult_RecO	
HB	NU	ONSH	NUNAVUT	0.0	0.0	262.4	60.4	262.4	60.4	0.106
HB	NU	OFFSH	NUNAVUT	0.0	0.0	639.2	147.0	639.2	147.0	0.258
HB	NU	TOTAL	NUNAVUT	0.0	0.0	901.7	207.4	901.7	207.4	0.364
HB	ONU	ONSH	NUNAVUT (OUTSIDE)	0.0	0.0	25.3	5.8	25.3	5.8	0.010
HB	ONU	OFFSH	NUNAVUT (OUTSIDE)	0.0	0.0	1,548.2	356.1	1,548.2	356.1	0.625
HB	ONU	TOTAL	NUNAVUT (OUTSIDE)	0.0	0.0	1,573.5	361.9	1,573.5	361.9	0.636
HB	ONU_NU	TOTAL	NUNAVUT	0.0	0.0	2,475.2	569.3	2,475.2	569.3	1.000
FB	NU	ONSH	NUNAVUT	0.0	0.0	123.4	28.4	123.4	28.4	0.342
FB	NU	OFFSH	NUNAVUT	0.0	0.0	237.5	54.6	237.5	54.6	0.658
FB	NU	TOTAL	NUNAVUT	0.0	0.0	361.0	83.0	361.0	83.0	1.000
GSC BULL 83-31		FRAC	TOTAL			5,156.6	1,186.0	5,156.6	1,186.0	
HB	S of 60	0.45	HUDSON BAY BASIN SOUTH			2,320.5	533.7	2,320.5	533.7	
HB	N of 60	0.48	HUDSON BAY BASIN NORTH			2,475.2	569.3	2,475.2	569.3	
FB		0.07	FOXES BASIN			361.0	83.0	361.0	83.0	

## ULTIMATE GAS RESOURCE ESTIMATE (BILLION CUBIC FEET)

AREA	TERR	ON_OFFSH	BASIN / PLAY	DISCOVERED			UNDISCOVERED			ULTIMATE			Frac
				Disc_GIP	Disc_RRG	Disc_IMG	Und_GIP	Und_RRG	Und_IMG	Ult_GIP	Ult_RRG	Ult_IMG	
HB	NU	ONSH	NUNAVUT	0.0	0.0	0.0	389.045	241.209	226.734	389.0	241.2	226.7	0.106
HB	NU	OFFSH	NUNAVUT	0.0	0.0	0.0	947.567	587.494	552.239	947.6	587.5	552.2	0.258
HB	NU	TOTAL	NUNAVUT	0.0	0.0	0.0	1,336.611	828.702	778.973	1,336.6	828.7	779.0	0.364
HB	ONU	ONSH	NUNAVUT (OUTSIDE)	0.0	0.0	0.0	37.523	23.264	21.868	37.5	23.3	21.9	0.010
HB	ONU	OFFSH	NUNAVUT (OUTSIDE)	0.0	0.0	0.0	2,294.986	1,422.897	1,337.511	2,295.0	1,422.9	1,337.5	0.625
HB	ONU	TOTAL	NUNAVUT (OUTSIDE)	0.0	0.0	0.0	2,332.509	1,446.162	1,359.379	2,332.5	1,446.2	1,359.4	0.636
HB	ONU_NU	TOTAL	NUNAVUT + OUTSIDE	0.0	0.0	0.0	3,669.120	2,274.864	2,138.352	3,669.1	2,274.9	2,138.4	1.000
FB	NU	ONSH	NUNAVUT	0.0	0.0	0.0	183.0	113.5	106.7	183.0	113.5	106.7	0.342
FB	NU	OFFSH	NUNAVUT	0.0	0.0	0.0	352.1	218.3	205.2	352.1	218.3	205.2	0.658
FB	NU	TOTAL	NUNAVUT	0.0	0.0	0.0	535.1	331.8	311.8	535.1	331.8	311.8	0.364
GSC BULL 83-31		FRAC	TOTAL				7,644.0	4,739.3	4,454.9				
HB	S of 60	0.45	HUDSON BAY BASIN SOUTH				3,439.8	2,132.7	2,004.7				
HB	N of 60	0.48	HUDSON BAY BASIN NORTH				3,669.1	2,274.9	2,138.4				
FB		0.07	FOXES BASIN				535.1	331.8	311.8				

## **Distribution of Oil and Gas North of 60 degrees North**

Tables 11 through 20 summarize the ultimate recoverable oil and gas potential for Northern Canada by territory and onshore / offshore, with conceptual plays unrisks and with conditional risk applied. Conceptual plays are those where no discoveries have been made. The distribution of resources is shown graphically in figures 1 and 2.

The total ultimate recoverable oil is 14,265 million barrels unrisks, which is reduced to 11,880 million barrels with conditional risk applied to the conceptual plays. The risks potential is considered the more reasonable number to use. Of the total risks ultimate recoverable oil, including adjacent offshore areas, 52.3% is in the Northwest Territories, 22.4% in Nunavut, and 25.3% in the Yukon Territory.

The total ultimate recoverable gas is 178.0 trillion cubic feet unrisks, which is reduced to 147.0 trillion cubic feet with conditional risk applied to the conceptual plays. The risks potential is considered the more reasonable number to use. Of the total risks ultimate marketable gas, including adjacent offshore areas, 48.3% is in the Northwest Territories, 39.6% in Nunavut, and 12.1% in the Yukon.

### **Nunavut**

The areas outside the boundary of the Nunavut Settlement Area includes part of Hudson Bay, most of the Arctic Coastal Plain and all of Baffin Bay and the Southeast Baffin Shelf. The area outside the settlement area is 99% offshore.

The ultimate risks recoverable oil and gas resources are; within Nunavut – 1,779 million barrels of oil and 43,054 billion cubic feet of gas, outside Nunavut – 884 million barrels of oil and 15,213 billion cubic feet of gas, for a total of 2,663 million barrels of oil and 58,267 billion cubic feet of gas. Risks oil resources for Nunavut are 70.2% offshore and for the area outside 99.9% is offshore. For risks recoverable natural gas in Nunavut 60.8% is offshore and for the area outside, 100% is offshore.

### **Northwest Territories**

The ultimate risks recoverable oil and gas resources of the Northwest Territories are 6,215 million barrels of oil and 70,982 billion cubic feet of gas. Risks oil resources for the Northwest Territories are 77.3% offshore and for risks recoverable natural gas 57.2% is offshore.

### **Yukon**

The ultimate risks recoverable oil and gas resources of the Yukon are 3,002 million barrels of oil and 17,794 billion cubic feet of gas. Risks oil resources for the Yukon are 98.3% offshore and for risks recoverable natural gas 76.8% is offshore.

**TABLE 11**  
**NORTHERN CANADA - NORTH OF 60° N ULTIMATE OIL RESOURCES (MILLION BARRELS)**

TERRITORY - AREA	DISCOVERED		UNDISCOVERED-UNRISKED		ULTIMATE - UNRISKED		UNDISCOVERED-RISKED		ULTIMATE - RISKED	
	IN-PLACE	RECOVERABLE	IN-PLACE	RECOVERABLE	IN-PLACE	RECOVERABLE	IN-PLACE	RECOVERABLE	IN-PLACE	RECOVERABLE
<b>NORTHWEST TERRITORIES</b>										
ARCTIC ISLANDS	60.3	12.1	5,083.6	1,193.6	5,143.9	1,205.7	2,478.4	581.3	2,538.7	593.3
BEAUFORT SEA	3,491.5	615.9	16,991.1	3,237.8	20,482.6	3,853.8	16,868.0	3,214.0	20,359.5	3,830.0
MACKENZIE DELTA	1,263.9	248.3	5,064.5	962.2	6,328.3	1,210.5	5,064.5	962.2	6,328.3	1,210.5
MACKENZIE PLAIN	630.0	301.6	738.4	156.9	1,368.4	458.6	719.4	152.4	1,349.4	454.0
OTHER MAINLAND	18.0	4.5	726.6	140.7	744.6	145.2	636.1	122.7	654.1	127.2
<b>TOTAL</b>	<b>5,463.7</b>	<b>1,182.5</b>	<b>28,604.2</b>	<b>5,691.2</b>	<b>34,067.9</b>	<b>6,873.7</b>	<b>25,766.3</b>	<b>5,032.6</b>	<b>31,230.0</b>	<b>6,215.0</b>
<b>NUNAVUT</b>										
SVERDRUP BASIN	1,600.4	320.1	5,129.3	1,199.3	6,729.7	1,519.4	4,315.1	1,008.5	5,915.5	1,328.6
ARCTIC COASTAL PLAIN	0.0	0.0	1,561.9	367.1	1,561.9	367.1	546.7	128.5	546.7	128.5
FRANKLINIAN FOLD BELT	14.2	2.8	1,822.8	431.8	1,837.0	434.6	911.4	215.9	925.6	218.7
ARCTIC PLATFORM	0.0	0.0	1,706.7	399.3	1,706.7	399.3	682.7	159.7	682.7	159.7
LANCASTER BASIN	0.0	0.0	1,318.2	306.7	1,318.2	306.7	949.1	220.8	949.1	220.8
BAFFIN BAY/DAVIS STRAIT	0.0	0.0	2,199.5	508.1	2,199.5	508.1	2,199.5	508.1	2,199.5	508.1
HUDSON / FOXE	0.0	0.0	2,836.1	652.3	2,836.1	652.3	425.4	97.8	425.4	97.8
<b>TOTAL</b>	<b>1,614.6</b>	<b>322.9</b>	<b>16,574.5</b>	<b>3,864.7</b>	<b>18,189.1</b>	<b>4,187.6</b>	<b>10,029.9</b>	<b>2,339.5</b>	<b>11,644.5</b>	<b>2,662.4</b>
<b>YUKON</b>										
BEAUFORT SEA	1,785.1	393.8	15,368.1	2,736.8	17,153.2	3,130.7	14,353.3	2,557.8	16,138.3	2,951.6
MACKENZIE DELTA	0.0	0.0	5.4	0.9	5.4	0.9	4.3	0.7	4.3	0.7
EAGLE PLAIN	39.0	11.7	105.2	28.1	144.2	39.8	105.2	28.1	144.2	39.8
OTHER YUKON BASINS	0.0	0.0	184.1	32.5	184.1	32.5	52.3	10.2	52.3	10.2
<b>TOTAL</b>	<b>1,824.1</b>	<b>405.5</b>	<b>15,662.7</b>	<b>2,798.4</b>	<b>17,486.8</b>	<b>3,203.9</b>	<b>14,515.0</b>	<b>2,596.8</b>	<b>16,339.0</b>	<b>3,002.3</b>
<b>TOTAL NORTH OF 60°N</b>	<b>8,902.3</b>	<b>1,910.9</b>	<b>60,841.5</b>	<b>12,354.3</b>	<b>69,743.8</b>	<b>14,265.2</b>	<b>50,311.2</b>	<b>9,968.9</b>	<b>59,213.5</b>	<b>11,879.7</b>

**TABLE 12: NORTHERN CANADA - NORTH OF 60° N ULTIMATE GAS RESOURCES**

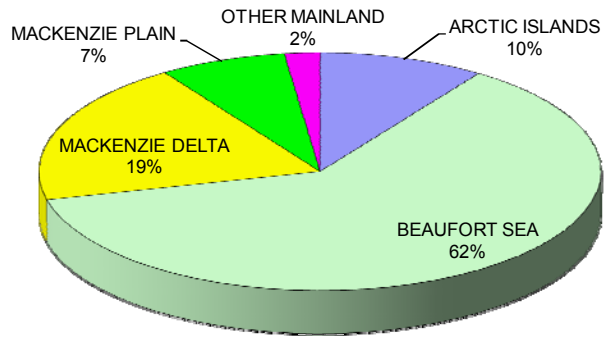
**ESTABLISHED PLUS CONCEPTUAL UNRISKED (BILLION CUBIC FEET)**

TERRITORY - AREA	DISCOVERED GAS RESOURCES			UNDISCOVERED GAS RESOURCES			ULTIMATE GAS RESOURCES		
	IN-PLACE	RECOVERABLE	MARKETABLE	IN-PLACE	RECOVERABLE	MARKETABLE	IN-PLACE	RECOVERABLE	MARKETABLE
<b>NORTHWEST TERRITORIES</b>									
SVERDRUP BASIN	4,199.0	3,720.0	3,496.8	9,218.8	6,858.0	6,517.1	13,417.8	10,578.0	10,013.9
OTHER ARCTIC ISLANDS	0.0	0.0	0.0	16,338.6	12,134.0	11,529.8	16,338.6	12,134.0	11,529.8
BEAUFORT SEA	6,009.6	4,705.2	4,374.9	35,968.9	19,126.9	17,867.0	41,978.5	23,832.1	22,241.9
MACKENZIE DELTA	8,116.6	6,282.0	5,863.6	24,456.9	15,701.3	14,670.0	32,573.5	21,983.3	20,533.6
COLVILLE HILLS	1,041.8	832.4	768.7	2,623.0	2,086.1	1,938.3	3,664.8	2,918.5	2,707.0
LIARD / TROUT PLAIN	1,555.3	702.2	627.0	5,120.2	3,469.5	2,966.8	6,675.4	4,171.7	3,593.8
OTHER MAINLAND	0.0	0.0	0.0	7,684.7	5,548.5	5,027.5	7,684.7	5,548.5	5,027.5
<b>TOTAL</b>	<b>20,922.3</b>	<b>16,241.9</b>	<b>15,131.1</b>	<b>101,411.1</b>	<b>64,924.3</b>	<b>60,516.5</b>	<b>122,333.4</b>	<b>81,166.2</b>	<b>75,647.6</b>
<b>NUNAVUT</b>									
SVERDRUP MZ	16,313.2	13,663.0	12,843.3	27,656.5	20,574.1	19,551.3	43,969.7	34,237.1	32,394.6
SVERDRUP U.PZ	0.0	0.0	0.0	9,218.8	6,858.0	6,517.1	9,218.8	6,858.0	6,517.1
ARCTIC COASTAL PLAIN	0.0	0.0	0.0	6,601.6	4,914.5	4,669.4	6,601.6	4,914.5	4,669.4
ARCTIC PLATFORM	0.0	0.0	0.0	6,317.3	4,577.4	4,350.7	6,317.3	4,577.4	4,350.7
FRANKLINIAN FOLD BELT	0.0	0.0	0.0	9,957.4	7,382.9	7,018.3	9,957.4	7,382.9	7,018.3
LANCASTER BASIN	0.0	0.0	0.0	6,764.1	5,022.2	4,772.5	6,764.1	5,022.2	4,772.5
BAFFIN BAY/DAVIS STRAIT	2,875.0	2,300.0	2,139.0	10,427.3	7,737.2	7,354.6	13,302.3	10,037.2	9,493.6
HUDSON/FOXE	0.0	0.0	0.0	4,204.2	2,606.6	2,450.2	4,204.2	2,606.6	2,450.2
<b>TOTAL</b>	<b>19,188.2</b>	<b>15,963.0</b>	<b>14,982.3</b>	<b>81,147.2</b>	<b>59,673.0</b>	<b>56,684.1</b>	<b>100,335.4</b>	<b>75,636.0</b>	<b>71,666.4</b>
<b>YUKON</b>									
BEAUFORT SEA	534.2	162.6	156.5	28,654.1	14,846.1	14,004.1	29,188.2	15,008.7	14,160.6
LIARD PLATEAU	427.7	276.1	247.6	1,470.8	892.5	738.1	1,898.5	1,168.6	985.7
EAGLE PLAIN	128.6	83.7	61.8	1,619.6	1,119.1	1,020.7	1,748.2	1,202.8	1,082.5
PEEL BASIN	0.0	0.0	0.0	2,068.6	1,511.7	1,394.0	2,068.6	1,511.7	1,394.0
OTHER YUKON	0.0	0.0	0.0	3,179.0	2,293.8	2,142.7	3,179.0	2,293.8	2,142.7
<b>TOTAL</b>	<b>1,090.5</b>	<b>522.5</b>	<b>465.9</b>	<b>36,992.0</b>	<b>20,663.2</b>	<b>19,299.7</b>	<b>38,082.4</b>	<b>21,185.7</b>	<b>19,765.6</b>
<b>TOTAL NORTH OF 60°N</b>	<b>41,200.9</b>	<b>32,727.3</b>	<b>30,579.3</b>	<b>219,550.3</b>	<b>145,260.5</b>	<b>136,500.3</b>	<b>260,751.3</b>	<b>177,987.8</b>	<b>167,079.5</b>

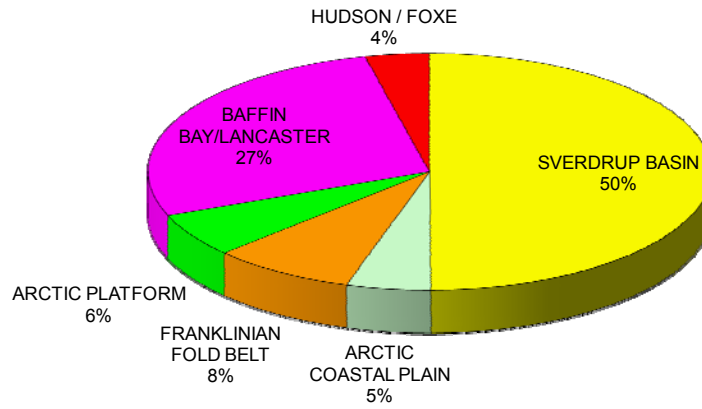
**ESTABLISHED PLUS RISKED CONCEPTUAL PLAYS (BILLION CUBIC FEET)**

TERRITORY - AREA	DISCOVERED GAS RESOURCES			UNDISCOVERED GAS RESOURCES			ULTIMATE GAS RESOURCES		
	IN-PLACE	RECOVERABLE	MARKETABLE	IN-PLACE	RECOVERABLE	MARKETABLE	IN-PLACE	RECOVERABLE	MARKETABLE
<b>NORTHWEST TERRITORIES</b>									
SVERDRUP BASIN	4,199.0	3,720.0	3,496.8	7,836.0	5,829.3	5,539.5	12,035.0	9,549.3	9,036.3
OTHER ARCTIC ISLANDS	0.0	0.0	0.0	6,068.2	4,505.2	4,281.0	6,068.2	4,505.2	4,281.0
BEAUFORT SEA	6,009.6	4,705.2	4,374.9	35,583.8	18,913.5	17,666.2	41,593.4	23,618.7	22,041.1
MACKENZIE DELTA	8,116.6	6,282.0	5,863.6	24,456.9	15,701.3	14,670.0	32,573.5	21,983.3	20,533.6
COLVILLE HILLS	1,041.8	832.4	768.7	2,571.4	2,052.9	1,907.6	3,613.2	2,885.3	2,676.3
LIARD / TROUT PLAIN	1,555.3	702.2	627.0	4,600.6	3,114.6	2,673.0	6,155.9	3,816.8	3,300.1
OTHER MAINLAND	0.0	0.0	0.0	6,296.4	4,623.1	4,157.0	6,296.4	4,623.1	4,157.0
<b>TOTAL</b>	<b>20,922.3</b>	<b>16,241.9</b>	<b>15,131.1</b>	<b>87,413.4</b>	<b>54,739.9</b>	<b>50,894.3</b>	<b>108,335.6</b>	<b>70,981.8</b>	<b>66,025.4</b>
<b>NUNAVUT</b>									
SVERDRUP MZ	16,313.2	13,663.0	12,843.3	27,656.5	20,574.1	19,551.3	43,969.7	34,237.1	32,394.6
SVERDRUP U.PZ	0.0	0.0	0.0	3,687.5	2,743.2	2,606.8	3,687.5	2,743.2	2,606.8
ARCTIC COASTAL PLAIN	0.0	0.0	0.0	2,310.6	1,720.1	1,634.3	2,310.6	1,720.1	1,634.3
ARCTIC PLATFORM	0.0	0.0	0.0	2,526.9	1,831.0	1,740.3	2,526.9	1,831.0	1,740.3
FRANKLINIAN FOLD BELT	0.0	0.0	0.0	4,978.7	3,691.4	3,509.2	4,978.7	3,691.4	3,509.2
LANCASTER BASIN	0.0	0.0	0.0	4,870.2	3,616.0	3,436.2	4,870.2	3,616.0	3,436.2
BAFFIN BAY/DAVIS STRAIT	2,875.0	2,300.0	2,139.0	10,427.3	7,737.2	7,354.6	13,302.3	10,037.2	9,493.6
HUDSON/FOXE	0.0	0.0	0.0	630.6	391.0	367.5	630.6	391.0	367.5
<b>TOTAL</b>	<b>19,188.2</b>	<b>15,963.0</b>	<b>14,982.3</b>	<b>57,088.3</b>	<b>42,304.0</b>	<b>40,200.1</b>	<b>76,276.5</b>	<b>58,267.0</b>	<b>55,182.4</b>
<b>YUKON</b>									
BEAUFORT SEA	534.2	162.6	156.5	26,632.3	13,741.5	12,964.1	27,166.5	13,904.2	13,120.6
LIARD PLATEAU	427.7	276.1	247.6	1,446.9	879.3	727.0	1,874.6	1,155.5	974.6
EAGLE PLAIN	128.6	83.7	61.8	1,338.3	916.2	838.0	1,467.0	999.9	899.8
PEEL BASIN	0.0	0.0	0.0	1,385.0	1,012.6	933.1	1,385.0	1,012.6	933.1
OTHER YUKON	0.0	0.0	0.0	992.2	721.6	676.3	992.2	721.6	676.3
<b>TOTAL</b>	<b>1,090.5</b>	<b>522.5</b>	<b>465.9</b>	<b>31,794.8</b>	<b>17,271.2</b>	<b>16,138.5</b>	<b>32,885.3</b>	<b>17,793.7</b>	<b>16,604.4</b>
<b>TOTAL NORTH OF 60°N</b>	<b>41,200.9</b>	<b>32,727.3</b>	<b>30,579.3</b>	<b>176,296.5</b>	<b>114,315.1</b>	<b>107,233.0</b>	<b>217,497.4</b>	<b>147,042.4</b>	<b>137,812.2</b>

**NORTHWEST TERRITORIES ULTIMATE RECOVERABLE OIL  
TOTAL (RISKED) = 6,215 MMB**



**NUNAVUT ULTIMATE RECOVERABLE OIL  
TOTAL (RISKED) = 2,662 MMB**



**YUKON ULTIMATE RECOVERABLE OIL  
TOTAL (RISKED) = 3,002 MMB**

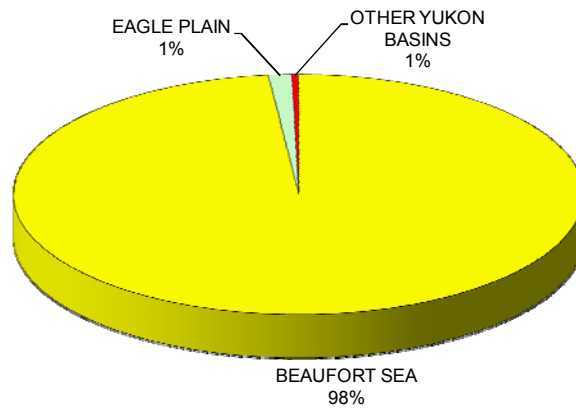
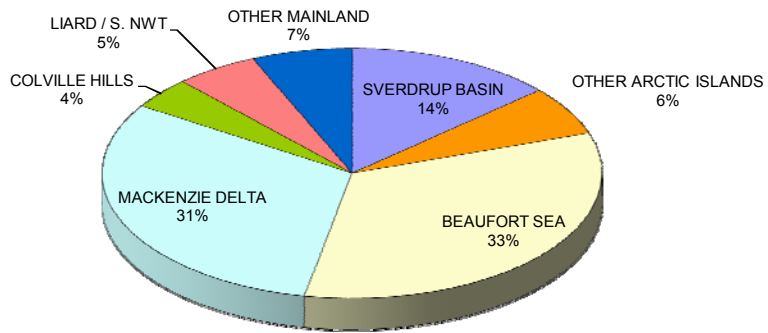


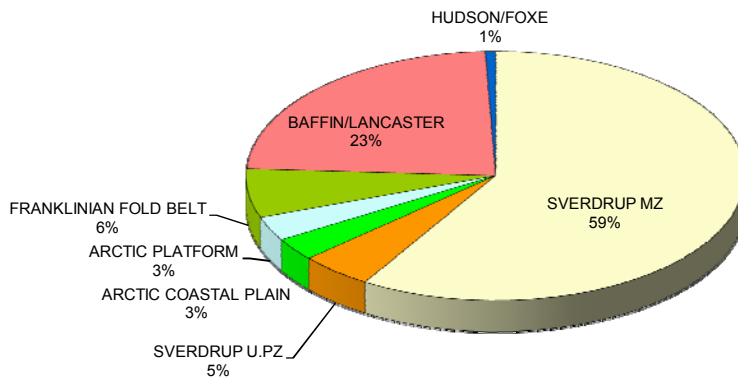
FIGURE 1. DISTRIBUTION OF RISKED RECOVERABLE OIL RESOURCES FOR CANADA NORTH OF 60°N.



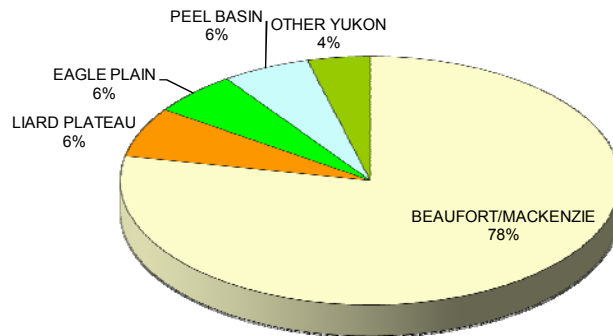
**NORTHWEST TERRITORIES ULTIMATE RECOVERABLE GAS  
TOTAL (RISKED) 70,982BCF**



**NUNAVUT ULTIMATE RECOVERABLE GAS  
TOTAL (RISKED) = 58,267 BCF**



**YUKON ULTIMATE RECOVERABLE GAS  
TOTAL (RISKED) = 17,795 BCF**



**FIGURE 2. DISTRIBUTION OF RISKED RECOVERABLE GAS RESOURCES FOR CANADA NORTH OF 60°N.**

**TABLE 13. NORTHERN CANADA - DISTRIBUTION OF ULTIMATE OIL RESOURCES**  
(ALL VOLUMES IN MILLION BARRELS)

TERR	ON_OFF	BASIN / PLAY	EST_CON	DISCOVERED		UNDISCOVERED		ULTIMATE		RISK	UNDISCOVERED - RISKED		ULTIMATE - RISKED	
				Disc_OIP	Disc_RecO	Und_OIP	Und_RecO	Ult_OIP	Ult_RecO		UndOIP_R	UndRecO_R	UltOIP_R	UltRecO_R
NT	ONSH	ARCTIC COASTAL PLAIN	CON	0.0	0.0	389.3	91.5	389.3	91.5	0.35	136.3	32.0	136.3	32.0
NT	OFFSH	ARCTIC COASTAL PLAIN	CON	0.0	0.0	2,739.2	643.8	2,739.2	643.8	0.35	958.7	225.3	958.7	225.3
NU	ONSH	ARCTIC COASTAL PLAIN	CON	0.0	0.0	37.5	8.8	37.5	8.8	0.35	13.1	3.1	13.1	3.1
ONU	OFFSH	ARCTIC COASTAL PLAIN	CON	0.0	0.0	1,219.5	286.6	1,219.5	286.6	0.35	426.8	100.3	426.8	100.3
NU	OFFSH	ARCTIC COASTAL PLAIN	CON	0.0	0.0	304.9	71.7	304.9	71.7	0.35	106.7	25.1	106.7	25.1
NT	ONSH	ARCTIC PLATFORM	CON	0.0	0.0	155.9	36.5	155.9	36.5	0.40	62.4	14.6	62.4	14.6
NT	OFFSH	ARCTIC PLATFORM	CON	0.0	0.0	162.0	37.9	162.0	37.9	0.40	64.8	15.2	64.8	15.2
NU	ONSH	ARCTIC PLATFORM	CON	0.0	0.0	807.8	189.0	807.8	189.0	0.40	323.1	75.6	323.1	75.6
NU	OFFSH	ARCTIC PLATFORM	CON	0.0	0.0	898.9	210.3	898.9	210.3	0.40	359.6	84.1	359.6	84.1
NT	ONSH	FRANKLINIAN FOLD BELT	CON	0.0	0.0	241.7	57.3	241.7	57.3	0.50	120.9	28.6	120.9	28.6
NT	OFFSH	FRANKLINIAN FOLD BELT	CON	0.0	0.0	113.2	26.8	113.2	26.8	0.50	56.6	13.4	56.6	13.4
NU	ONSH	FRANKLINIAN FOLD BELT	CON	14.2	2.8	1,163.0	275.5	1,177.2	278.3	0.50	581.5	137.7	595.7	140.6
NU	OFFSH	FRANKLINIAN FOLD BELT	CON	0.0	0.0	659.9	156.3	659.9	156.3	0.50	329.9	78.2	329.9	78.2
NT	ONSH	SVERDRUP BASIN MZ	EST	0.0	0.0	193.3	45.2	193.3	45.2	1.00	193.3	45.2	193.3	45.2
NT	OFFSH	SVERDRUP BASIN MZ	EST	60.3	12.1	749.8	175.2	810.1	187.2	1.00	749.8	175.2	810.1	187.2
NU	ONSH	SVERDRUP BASIN MZ	EST	15.0	3.0	1,098.7	256.7	1,113.7	259.7	1.00	1,098.7	256.7	1,113.7	259.7
NU	OFFSH	SVERDRUP BASIN MZ	EST	1,585.4	317.1	2,673.7	624.7	4,259.1	941.7	1.00	2,673.7	624.7	4,259.1	941.7
NT	ONSH	SVERDRUP BASIN PM-CARB	CON	0.0	0.0	69.5	16.3	69.5	16.3	0.40	27.8	6.5	27.8	6.5
NT	OFFSH	SVERDRUP BASIN PM-CARB	CON	0.0	0.0	269.7	63.2	269.7	63.2	0.40	107.9	25.3	107.9	25.3
NU	ONSH	SVERDRUP BASIN PM-CARB	CON	0.0	0.0	395.2	92.6	395.2	92.6	0.40	158.1	37.0	158.1	37.0
NU	OFFSH	SVERDRUP BASIN PM-CARB	CON	0.0	0.0	961.7	225.4	961.7	225.4	0.40	384.7	90.1	384.7	90.1
NT	OFFSH	BEAUFORT SEA	EST	3,491.5	615.9	16,991.1	3,237.8	20,482.6	3,853.8	0.99	16,868.0	3,214.0	20,359.5	3,830.0
NT	OFFSH	MACKENZIE DELTA	EST	611.4	106.5	2,094.7	399.6	2,706.1	506.1	1.00	2,094.7	399.6	2,706.1	506.1
NT	ONSH	MACKENZIE DELTA	EST	652.4	141.8	2,969.8	562.7	3,622.2	704.4	1.00	2,969.8	562.7	3,622.2	704.4
YU	OFFSH	BEAUFORT SEA	EST	1,785.1	393.8	15,368.1	2,736.8	17,153.2	3,130.7	0.93	14,353.3	2,557.8	16,138.3	2,951.6
YU	OFFSH	MACKENZIE DELTA	CON	0.0	0.0	1.3	0.2	1.3	0.2	0.80	1.1	0.2	1.1	0.2
YU	ONSH	MACKENZIE DELTA	CON	0.0	0.0	4.0	0.7	4.0	0.7	0.80	3.2	0.5	3.2	0.5
ONU	OFFSH	BAFFIN BAY / LANCASTER	CON	0.0	0.0	3,517.7	814.9	3,517.7	814.9	0.89	3,148.6	728.9	3,148.6	728.9
NU	ONSH	HUDSON BAY	CON	0.0	0.0	262.4	60.4	262.4	60.4	0.15	39.4	9.1	39.4	9.1
NU	OFFSH	HUDSON BAY	CON	0.0	0.0	639.2	147.0	639.2	147.0	0.15	95.9	22.1	95.9	22.1
ONU	ONSH	HUDSON BAY	CON	0.0	0.0	25.3	5.8	25.3	5.8	0.15	3.8	0.9	3.8	0.9
ONU	OFFSH	HUDSON BAY	CON	0.0	0.0	1,548.2	356.1	1,548.2	356.1	0.15	232.2	53.4	232.2	53.4
NU	ONSH	FOX E BASIN	CON	0.0	0.0	123.4	28.4	123.4	28.4	0.15	18.5	4.3	18.5	4.3
NU	OFFSH	FOX E BASIN	CON	0.0	0.0	237.5	54.6	237.5	54.6	0.15	35.6	8.2	35.6	8.2
NT	ONSH	ANDERSON/HORTON	CON	0.0	0.0	70.0	15.0	70.0	15.0	0.88	56.1	13.2	56.1	13.2
NT	ONSH	COLVILLE HILLS	EST	0.0	0.0	113.4	22.5	113.4	22.5	1.00	112.7	22.4	112.7	22.4
NT	ONSH	GREAT BEAR PLAIN	CON	0.0	0.0	84.3	16.3	84.3	16.3	0.95	79.4	15.5	79.4	15.5
NT	ONSH	GREAT SLAVE PLAIN	CON	0.0	0.0	2.6	0.6	2.6	0.6	1.00	2.6	0.6	2.6	0.6
NT	ONSH	MACKENZIE MOUNTAINS	CON	0.0	0.0	0.2	0.1	0.2	0.1	0.70	0.2	0.0	0.2	0.0
NT	ONSH	MACKENZIE PLAIN	CON	630.0	301.6	738.4	156.9	1,368.4	458.6	0.97	719.4	152.4	1,349.4	454.0
NT	ONSH	PEEL BASIN	CON	0.0	0.0	143.3	34.4	143.3	34.4	0.69	98.8	23.8	98.8	23.8
YU	ONSH	BONNET PLUME	CON	0.0	0.0	0.0	0.0	0.0	0.0	0.35	0.0	0.0	0.0	0.0
YU	ONSH	EAGLE PLAIN	CON	0.0	0.0	0.0	0.0	0.0	0.0	0.35	0.0	0.0	0.0	0.0
YU	ONSH	EAGLE PLAIN	EST	39.0	11.7	105.2	28.1	144.2	39.8	1.00	105.2	28.1	144.2	39.8
YU	ONSH	KANDIK	CON	0.0	0.0	94.8	14.2	94.8	14.2	0.20	19.0	2.8	19.0	2.8
YU	ONSH	OLD CROW	CON	0.0	0.0	0.0	0.0	0.0	0.0	0.35	0.0	0.0	0.0	0.0
YU	ONSH	PEEL	CON	0.0	0.0	44.2	10.2	44.2	10.2	0.60	26.5	6.1	26.5	6.1
YU	ONSH	WHITEHORSE TROUGH	CON	0.0	0.0	45.1	8.1	45.1	8.1	0.15	6.8	1.2	6.8	1.2
NT	ONSH	LIARD/TROUT PLAIN	EST	18.0	4.5	312.9	51.8	330.9	56.3	0.91	286.4	47.2	304.4	51.7
YU	ONSH	LIARD/TROUT PLAIN	CON	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.0	0.0	0.0	0.0
NT	ONSH	LIARD/TROUT PLAIN	CON	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0
YU	ONSH	LIARD/TROUT PLAIN	EST	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0
TOTAL				8,902.3	1,910.9	60,841.5	12,354.3	69,743.8	14,265.2		50,311.2	9,968.8	59,213.5	11,879.7

**TABLE 14. NORTHERN CANADA - DISTRIBUTION OF ULTIMATE GAS RESOURCES**  
(ALL VOLUMES IN BILLION CUBIC FEET)

TERR	ON_OFF	BASIN / PLAY	EST_CON	DISCOVERED			UNDISCOVERED			ULTIMATE			RISK	UNDISCOVERED - RISKED			ULTIMATE - RISKED		
				Disc_GIP	Disc_RRG	Disc_IMG	Und_GIP	Und_RRG	Und_IMG	Ult_GIP	Ult_RRG	Ult_IMG		UNDGIP_R	UNDRRG_R	UNDIMG_R	ULTGIP_R	ULTRRG_R	ULTIMG_R
NT	ONSH	ARCTIC COASTAL PLAIN	CON	0.0	0.0	0.0	1,645.4	1,224.9	1,163.8	1,645.4	1,224.9	1,163.8	0.35	575.9	428.7	407.3	575.9	428.7	407.3
NT	OFFSH	ARCTIC COASTAL PLAIN	CON	0.0	0.0	0.0	11,577.5	8,618.8	8,188.9	11,577.5	8,618.8	8,188.9	0.35	4,052.1	3,016.6	2,866.1	4,052.1	3,016.6	2,866.1
NU	ONSH	ARCTIC COASTAL PLAIN	CON	0.0	0.0	0.0	158.6	118.1	112.2	158.6	118.1	112.2	0.35	55.5	41.3	39.3	55.5	41.3	39.3
ONU	OFFSH	ARCTIC COASTAL PLAIN	CON	0.0	0.0	0.0	5,154.4	3,837.1	3,645.8	5,154.4	3,837.1	3,645.8	0.35	1,804.0	1,343.0	1,276.0	1,804.0	1,343.0	1,276.0
NU	OFFSH	ARCTIC COASTAL PLAIN	CON	0.0	0.0	0.0	1,288.6	959.3	911.4	1,288.6	959.3	911.4	0.35	451.0	335.7	319.0	451.0	335.7	319.0
NT	ONSH	ARCTIC PLATFORM	CON	0.0	0.0	0.0	577.0	418.1	397.4	577.0	418.1	397.4	0.40	230.8	167.2	159.0	230.8	167.2	159.0
NT	OFFSH	ARCTIC PLATFORM	CON	0.0	0.0	0.0	599.5	434.4	412.9	599.5	434.4	412.9	0.40	239.8	173.8	165.2	239.8	173.8	165.2
NU	ONSH	ARCTIC PLATFORM	CON	0.0	0.0	0.0	2,990.0	2,166.5	2,059.2	2,990.0	2,166.5	2,059.2	0.40	1,196.0	866.6	823.7	1,196.0	866.6	823.7
NU	OFFSH	ARCTIC PLATFORM	CON	0.0	0.0	0.0	3,327.3	2,410.9	2,291.5	3,327.3	2,410.9	2,291.5	0.40	1,330.9	964.4	916.6	1,330.9	964.4	916.6
NT	ONSH	FRANKLINIAN FOLD BELT	CON	0.0	0.0	0.0	1,320.5	979.1	930.7	1,320.5	979.1	930.7	0.50	660.3	489.5	465.4	660.3	489.5	465.4
NT	OFFSH	FRANKLINIAN FOLD BELT	CON	0.0	0.0	0.0	618.6	458.7	436.0	618.6	458.7	436.0	0.50	309.3	229.3	218.0	309.3	229.3	218.0
NU	ONSH	FRANKLINIAN FOLD BELT	CON	0.0	0.0	0.0	6,352.8	4,710.2	4,477.7	6,352.8	4,710.2	4,477.7	0.50	3,176.4	2,355.1	2,238.8	3,176.4	2,355.1	2,238.8
NU	OFFSH	FRANKLINIAN FOLD BELT	CON	0.0	0.0	0.0	3,604.7	2,672.6	2,540.7	3,604.7	2,672.6	2,540.7	0.50	1,802.3	1,336.3	1,270.3	1,802.3	1,336.3	1,270.3
NT	ONSH	SVERDRUP BASIN MZ	EST	0.0	0.0	0.0	1,417.4	1,054.4	1,002.0	1,417.4	1,054.4	1,002.0	1.00	1,417.4	1,054.4	1,002.0	1,417.4	1,054.4	1,002.0
NT	OFFSH	SVERDRUP BASIN MZ	EST	4,199.0	3,720.0	3,496.8	5,496.7	4,089.1	3,885.8	9,695.7	7,809.1	7,382.6	1.00	5,496.7	4,089.1	3,885.8	9,695.7	7,809.1	7,382.6
NU	ONSH	SVERDRUP BASIN MZ	EST	7,656.0	6,770.0	6,363.8	8,054.9	5,992.2	5,694.3	15,710.9	12,762.2	12,058.1	1.00	8,054.9	5,992.2	5,694.3	15,710.9	12,762.2	12,058.1
NU	OFFSH	SVERDRUP BASIN MZ	EST	8,657.2	6,893.0	6,479.5	19,601.5	14,581.9	13,857.0	28,258.7	21,474.9	20,336.5	1.00	19,601.5	14,581.9	13,857.0	28,258.7	21,474.9	20,336.5
NT	ONSH	SVERDRUP BASIN PM-CARB	CON	0.0	0.0	0.0	472.5	351.5	334.0	472.5	351.5	334.0	0.40	189.0	140.6	133.6	189.0	140.6	133.6
NT	OFFSH	SVERDRUP BASIN PM-CARB	CON	0.0	0.0	0.0	1,832.2	1,363.0	1,295.3	1,832.2	1,363.0	1,295.3	0.40	732.9	545.2	518.1	732.9	545.2	518.1
NU	ONSH	SVERDRUP BASIN PM-CARB	CON	0.0	0.0	0.0	2,685.0	1,997.4	1,898.1	2,685.0	1,997.4	1,898.1	0.40	1,074.0	799.0	759.2	1,074.0	799.0	759.2
NU	OFFSH	SVERDRUP BASIN PM-CARB	CON	0.0	0.0	0.0	6,533.8	4,860.6	4,619.0	6,533.8	4,860.6	4,619.0	0.40	2,613.5	1,944.3	1,847.6	2,613.5	1,944.3	1,847.6
NT	OFFSH	MACKENZIE DELTA	EST	843.6	649.8	618.6	7,412.8	4,572.6	4,298.6	8,256.4	5,222.3	4,917.2	1.00	7,412.8	4,572.6	4,298.6	8,256.4	5,222.3	4,917.2
NT	OFFSH	BEAUFORT SEA	EST	6,009.6	4,705.2	4,374.9	35,968.9	19,126.9	17,867.0	41,978.5	23,832.1	22,241.9	0.99	35,583.8	18,913.5	17,666.2	41,593.4	23,617.8	22,041.1
NT	ONSH	MACKENZIE DELTA	EST	7,273.0	5,632.2	5,245.0	17,044.0	11,128.7	10,371.4	24,317.0	16,761.0	15,616.4	1.00	17,044.0	11,128.7	10,371.4	24,317.0	16,761.0	15,616.4
YU	ONSH	MACKENZIE DELTA	CON	0.0	0.0	0.0	442.2	308.5	287.2	442.2	308.5	287.2	0.80	353.7	246.8	229.8	353.7	246.8	229.8
YU	OFFSH	MACKENZIE DELTA	CON	0.0	0.0	0.0	147.4	102.8	95.7	147.4	102.8	95.7	0.80	117.9	82.3	76.6	117.9	82.3	76.6
YU	OFFSH	BEAUFORT SEA	EST	534.2	162.6	156.5	28,064.5	14,434.8	13,621.1	28,598.6	14,597.4	13,777.6	0.93	26,160.7	13,412.5	12,657.7	26,694.8	13,575.1	12,814.2
ONU	OFFSH	BAFFIN BAY / LANCASTER	CON	2,875.0	2,300.0	2,139.0	17,191.5	12,759.5	12,127.1	20,066.5	15,059.5	14,266.1	0.89	15,297.5	11,353.2	10,790.8	18,172.5	13,653.2	12,929.8
NU	ONSH	HUDSON BAY	CON	0.0	0.0	0.0	389.0	241.2	226.7	389.0	241.2	226.7	0.15	58.4	36.2	34.0	58.4	36.2	34.0
NU	OFFSH	HUDSON BAY	CON	0.0	0.0	0.0	947.6	587.5	552.2	947.6	587.5	552.2	0.15	142.1	88.1	82.8	142.1	88.1	82.8
ONU	ONSH	HUDSON BAY	CON	0.0	0.0	0.0	37.5	23.3	21.9	37.5	23.3	21.9	0.15	5.6	3.5	3.3	5.6	3.5	3.3
ONU	OFFSH	HUDSON BAY	CON	0.0	0.0	0.0	2,295.0	1,422.9	1,337.5	2,295.0	1,422.9	1,337.5	0.15	344.2	213.4	200.6	344.2	213.4	200.6
NU	ONSH	FOXE BASIN	CON	0.0	0.0	0.0	183.0	113.5	106.7	183.0	113.5	106.7	0.15	27.4	17.0	16.0	27.4	17.0	16.0
NU	OFFSH	FOXE BASIN	CON	0.0	0.0	0.0	352.1	218.3	205.2	352.1	218.3	205.2	0.15	52.8	32.7	30.8	52.8	32.7	30.8
NT	ONSH	ANDERSON/HORTON	CON	0.0	0.0	0.0	676.9	486.7	450.6	676.9	486.7	450.6	0.82	543.9	399.7	370.3	543.9	399.7	370.3
NT	ONSH	COLVILLE HILLS	EST	1,041.8	832.4	768.7	2,623.0	2,086.1	1,938.3	3,664.8	2,918.5	2,707.0	0.70	2,571.4	2,052.9	1,907.6	3,613.2	2,885.3	2,676.3
NT	ONSH	GREAT BEAR PLAIN	CON	0.0	0.0	0.0	2,346.2	1,784.7	1,630.6	2,346.2	1,784.7	1,630.6	0.91	2,102.8	1,624.4	1,485.7	2,102.8	1,624.4	1,485.7
NT	ONSH	GREAT SLAVE PLAIN	CON	0.0	0.0	0.0	785.7	559.7	467.3	785.7	559.7	467.3	0.72	562.8	404.7	336.9	562.8	404.7	336.9
NT	ONSH	MACKENZIE MOUNTAINS	CON	0.0	0.0	0.0	218.8	142.7	120.7	218.8	142.7	120.7	0.26	55.6	36.4	31.0	55.6	36.4	31.0
NT	ONSH	MACKENZIE PLAIN	CON	0.0	0.0	0.0	2,544.0	1,832.1	1,668.9	2,544.0	1,832.1	1,668.9	0.91	2,309.6	1,675.8	1,485.7	2,309.6	1,675.8	1,485.7
NT	ONSH	PEEL BASIN	CON	0.0	0.0	0.0	1,113.1	742.6	689.4	1,113.1	742.6	689.4	0.65	721.6	482.1	447.4	721.6	482.1	447.4
YU	ONSH	BONNET PLUME	CON	0.0	0.0	0.0	1,022.3	766.7	728.4	1,022.3	766.7	728.4	0.35	357.8	268.3	254.9	357.8	268.3	254.9
YU	ONSH	EAGLE PLAIN	CON	0.0	0.0	0.0	893.0	642.3	577.5	893.0	642.3	577.5	0.68	611.7	439.3	394.8	611.7	439.3	394.8
YU	ONSH	EAGLE PLAIN	EST	128.6	83.7	61.8	726.6	476.8	443.2	855.2	560.5	505.0	1.00	726.6	476.8	443.2	855.2	560.5	505.0
YU	ONSH	KANDIK	CON	0.0	0.0	0.0	654.8	491.1	466.5	654.8	491.1	466.5	0.35	229.2	171.9	163.3	229.2	171.9	163.3
YU	ONSH	OLD CROW	CON	0.0	0.0	0.0	1,200.0	840.0	772.8	1,200.0	840.0	772.8	0.30	360.0	252.0	231.8	360.0	252.0	231.8
YU	ONSH	PEEL BASIN	CON	0.0	0.0	0.0	2,068.6	1,511.7	1,394.0	2,068.6	1,511.7	1,394.0	0.67	1,385.0	1,012.6	933.1	1,385.0	1,012.6	933.1
YU	ONSH	WHITEHORSE TROUGH	CON	0.0	0.0	0.0	302.0	196.0	175.0	302.0	196.0	175.0	0.15	45.3	29.4	26.3	45.3	29.4	26.3
NT	ONSH	LIARD/TROUT PLAIN	CON	0.0	0.0	0.0	1,654.7	1,130.5	946.6	1,654.7	1,130.5	946.6	0.69	1,135.1	775.6	652.8	1,135.1	775.6	652.8
YU	ONSH	LIARD/TROUT PLAIN	CON	0.0	0.0	0.0	59.9	33.2	27.9	59.9	33.2	27.9	0.60	36.0	20.0	16.8	36.0	20.0	16.8
NT	ONSH	LIARD/TROUT PLAIN	EST	1,555.3	702.2	627.0	3,465.5	2,339.0	2,020.2	5,020.8	3,041.2	2,647.2	1.00	3,465.5	2,339.0	2,020.2	5,020.8	3,041.2	2,647.2
YU	ONSH	LIARD/TROUT PLAIN	EST	427.7	276.1	247.6	1,410.9	859.3	710.2	1,838.6	1,135.5	957.8	1.00	1,410.9	859.3	710.2	1,838.6	1,135.5	957.8
			TOTAL	41,200.9	32,727.3	30,579.3	219,550.3	145,260.5	136,500.3	260,751.3	177,987.8	167,079.5		176,296.5	114,315.1	107,233.0	217,497.4	147,042.4	137,812.2

**TABLE 15.  
NORTHERN CANADA - NORTH OF 60° N ULTIMATE OIL RESOURCES (MILLION BARRELS)**

TERR	BASIN / PLAY	DISCOVERED		UNDISCOVERED-UNRISKED		ULTIMATE - UNRISKED		UNDISCOVERED-RISKED		ULTIMATE - RISKED	
		IN-PLACE	RECOVERABLE	IN-PLACE	RECOVERABLE	Ult_OIP	Ult_RecOil	IN-PLACE	RECOVERABLE	Ult_OIP	Ult_RecOil
NWT	ANDERSON/HORTON	0.0	0.0	70.0	15.0	70.0	15.0	56.1	13.2	56.1	13.2
	ARCTIC COASTAL PLAIN	0.0	0.0	3,128.5	735.3	3,128.5	735.3	1,095.0	257.4	1,095.0	257.4
	ARCTIC PLATFORM	0.0	0.0	317.9	74.4	317.9	74.4	127.1	29.7	127.1	29.7
	BEAUFORT SEA	3,491.5	615.9	16,991.1	3,237.8	20,482.6	3,853.8	16,868.0	3,214.0	20,359.5	3,830.0
	COLVILLE HILLS	0.0	0.0	113.4	22.5	113.4	22.5	112.7	22.4	112.7	22.4
	FRANKLINIAN FOLD BELT	0.0	0.0	355.0	84.1	355.0	84.1	177.5	42.0	177.5	42.0
	GREAT BEAR PLAIN	0.0	0.0	84.3	16.3	84.3	16.3	79.4	15.5	79.4	15.5
	GREAT SLAVE PLAIN	0.0	0.0	2.6	0.6	2.6	0.6	2.6	0.6	2.6	0.6
	LIARD/TROUT PLAIN	18.0	4.5	312.9	51.8	330.9	56.3	286.4	47.2	304.4	51.7
	MACKENZIE DELTA	1,263.9	248.3	5,064.5	962.2	6,328.3	1,210.5	5,064.5	962.2	6,328.3	1,210.5
	MACKENZIE MOUNTAINS	0.0	0.0	0.2	0.1	0.2	0.1	0.2	0.0	0.2	0.0
	MACKENZIE PLAIN	630.0	301.6	738.4	156.9	1,368.4	458.6	719.4	152.4	1,349.4	454.0
	PEEL BASIN	0.0	0.0	143.3	34.4	143.3	34.4	98.8	23.8	98.8	23.8
	SVERDRUP BASIN_MZ	60.3	12.1	943.1	220.3	1,003.4	232.4	943.1	220.3	1,003.4	232.4
SVERDRUP BASIN_PM-CARB	0.0	0.0	339.2	79.5	339.2	79.5	135.7	31.8	135.7	31.8	
<b>NORTHWEST TERRITORIES TOTAL</b>		<b>5,463.7</b>	<b>1,182.5</b>	<b>28,604.2</b>	<b>5,691.2</b>	<b>34,067.9</b>	<b>6,873.7</b>	<b>25,766.3</b>	<b>5,032.6</b>	<b>31,230.0</b>	<b>6,215.0</b>
NUNAVUT	ARCTIC COASTAL PLAIN	0.0	0.0	342.4	80.5	342.4	80.5	119.8	28.2	119.8	28.2
	ARCTIC PLATFORM	0.0	0.0	1,706.7	399.3	1,706.7	399.3	682.7	159.7	682.7	159.7
	FOX E BASIN	0.0	0.0	361.0	83.0	361.0	83.0	54.1	12.5	54.1	12.5
	FRANKLINIAN FOLD BELT	14.2	2.8	1,822.8	431.8	1,837.0	434.6	911.4	215.9	925.6	218.7
	HUDSON BAY	0.0	0.0	901.7	207.4	901.7	207.4	135.3	31.1	135.3	31.1
	SVERDRUP BASIN_MZ	1,600.4	320.1	3,772.4	881.3	5,372.8	1,201.4	3,772.4	881.3	5,372.8	1,201.4
	SVERDRUP BASIN_PM-CARB	0.0	0.0	1,356.9	318.0	1,356.9	318.0	542.8	127.2	542.8	127.2
<b>NUNAVUT SETTLEMENT AREA TOTAL</b>		<b>1,614.6</b>	<b>322.9</b>	<b>10,263.8</b>	<b>2,401.3</b>	<b>11,878.4</b>	<b>2,724.2</b>	<b>6,218.5</b>	<b>1,455.9</b>	<b>7,833.1</b>	<b>1,778.8</b>
OFFSHORE	ARCTIC COASTAL PLAIN	0.0	0.0	1,219.5	286.6	1,219.5	286.6	426.8	100.3	426.8	100.3
	BAFFIN BAY	0.0	0.0	2,199.5	508.1	2,199.5	508.1	2,199.5	508.1	2,199.5	508.1
NUNAVUT	HUDSON BAY	0.0	0.0	1,573.5	361.9	1,573.5	361.9	236.0	54.3	236.0	54.3
	LANCASTER	0.0	0.0	1,318.2	306.7	1,318.2	306.7	949.1	220.8	949.1	220.8
<b>NUNAVUT OUTSIDE NSA TOTAL</b>		<b>0.0</b>	<b>0.0</b>	<b>6,310.7</b>	<b>1,463.4</b>	<b>6,310.7</b>	<b>1,463.4</b>	<b>3,811.4</b>	<b>883.6</b>	<b>3,811.4</b>	<b>883.6</b>
YUKON	BEAUFORT SEA	1,785.1	393.8	15,368.1	2,736.8	17,153.2	3,130.7	14,353.3	2,557.8	16,138.3	2,951.6
	BONNET PLUME	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EAGLE PLAIN	39.0	11.7	105.2	28.1	144.2	39.8	105.2	28.1	144.2	39.8
	KANDIK	0.0	0.0	94.8	14.2	94.8	14.2	19.0	2.8	19.0	2.8
	LIARD/TROUT PLAIN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	MACKENZIE DELTA	0.0	0.0	5.4	0.9	5.4	0.9	4.3	0.7	4.3	0.7
	OLD CROW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	PEEL	0.0	0.0	44.2	10.2	44.2	10.2	26.5	6.1	26.5	6.1
WHITEHORSE TROUGH	0.0	0.0	45.1	8.1	45.1	8.1	6.8	1.2	6.8	1.2	
<b>YUKON TOTAL</b>		<b>1,824.1</b>	<b>405.5</b>	<b>15,662.7</b>	<b>2,798.4</b>	<b>17,486.8</b>	<b>3,203.9</b>	<b>14,515.0</b>	<b>2,596.8</b>	<b>16,339.0</b>	<b>3,002.3</b>
<b>Grand Total</b>		<b>8,902.3</b>	<b>1,910.9</b>	<b>60,841.5</b>	<b>12,354.3</b>	<b>69,743.8</b>	<b>14,265.2</b>	<b>50,311.2</b>	<b>9,968.9</b>	<b>59,213.5</b>	<b>11,879.7</b>

**TABLE 16. NORTHERN CANADA - NORTH OF 60 ° N ULTIMATE GAS RESOURCES**

<b>ESTABLISHED PLUS CONCEPTUAL UNRISKED (BILLION CUBIC FEET)</b>											
TERRITORY	BASIN / PLAY	DISCOVERED			UNDISCOVERED			ULTIMATE GAS RESOURCE			
		IN-PLACE	RECOVERABLE	MARKETABLE	IN-PLACE	RECOVERABLE	MARKETABLE	IN-PLACE	RECOVERABLE	MARKETABLE	
NORTHWEST TERRITORIES	ANDERSON/HORTON	0.0	0.0	0.0	676.9	486.7	450.6	676.9	486.7	450.6	
	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	13,223.0	9,843.7	9,352.8	13,223.0	9,843.7	9,352.8	
	ARCTIC PLATFORM	0.0	0.0	0.0	1,176.5	852.5	810.3	1,176.5	852.5	810.3	
	BEAUFORT SEA	6,009.6	4,705.2	4,374.9	35,968.9	19,126.9	17,867.0	41,978.5	23,832.1	22,241.9	
	COLVILLE HILLS	1,041.8	832.4	768.7	2,623.0	2,086.1	1,938.3	3,664.8	2,918.5	2,707.0	
	FRANKLINIAN FOLD BELT	0.0	0.0	0.0	1,939.1	1,437.8	1,366.8	1,939.1	1,437.8	1,366.8	
	GREAT BEAR PLAIN	0.0	0.0	0.0	2,346.2	1,784.7	1,630.6	2,346.2	1,784.7	1,630.6	
	GREAT SLAVE PLAIN	0.0	0.0	0.0	785.7	559.7	467.3	785.7	559.7	467.3	
	LIARD/TROUT PLAIN	1,555.3	702.2	627.0	5,120.2	3,469.5	2,966.8	6,675.4	4,171.7	3,593.8	
	MACKENZIE DELTA	8,116.6	6,282.0	5,863.6	24,456.9	15,701.3	14,670.0	32,573.5	21,983.3	20,533.6	
	MACKENZIE MOUNTAINS	0.0	0.0	0.0	218.8	142.7	120.7	218.8	142.7	120.7	
	MACKENZIE PLAIN	0.0	0.0	0.0	2,544.0	1,832.1	1,668.9	2,544.0	1,832.1	1,668.9	
	PEEL BASIN	0.0	0.0	0.0	1,113.1	742.6	689.4	1,113.1	742.6	689.4	
	SVERDRUP BASIN MZ	4,199.0	3,720.0	3,496.8	6,914.1	5,143.5	4,887.8	11,113.1	8,863.5	8,384.6	
	SVERDRUP BASIN PM-CARB	0.0	0.0	0.0	2,304.7	1,714.5	1,629.3	2,304.7	1,714.5	1,629.3	
	<b>SUB-TOTAL</b>		<b>20,922.3</b>	<b>16,241.9</b>	<b>15,131.1</b>	<b>101,411.1</b>	<b>64,924.3</b>	<b>60,516.5</b>	<b>122,333.4</b>	<b>81,166.2</b>	<b>75,647.6</b>
NUNAVUT SETTLEMENT AREA	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	1,447.2	1,077.3	1,023.6	1,447.2	1,077.3	1,023.6	
	ARCTIC PLATFORM	0.0	0.0	0.0	6,317.3	4,577.4	4,350.7	6,317.3	4,577.4	4,350.7	
	FOX E BASIN	0.0	0.0	0.0	535.1	331.8	311.8	535.1	331.8	311.8	
	FRANKLINIAN FOLD BELT	0.0	0.0	0.0	9,957.4	7,382.9	7,018.3	9,957.4	7,382.9	7,018.3	
	HUDSON BAY	0.0	0.0	0.0	1,336.6	828.7	779.0	1,336.6	828.7	779.0	
	SVERDRUP BASIN MZ	16,313.2	13,663.0	12,843.3	27,656.5	20,574.1	19,551.3	43,969.7	34,237.1	32,394.6	
	SVERDRUP BASIN PM-CARB	0.0	0.0	0.0	9,218.8	6,858.0	6,517.1	9,218.8	6,858.0	6,517.1	
<b>SUB-TOTAL</b>		<b>16,313.2</b>	<b>13,663.0</b>	<b>12,843.3</b>	<b>56,468.9</b>	<b>41,630.2</b>	<b>39,551.8</b>	<b>72,782.1</b>	<b>55,293.2</b>	<b>52,395.1</b>	
OFFSHORE NUNAVUT	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	5,154.4	3,837.1	3,645.8	5,154.4	3,837.1	3,645.8	
OUTSIDE SETTLEMENT AREA	BAFFIN BAY	2,875.0	2,300.0	2,139.0	10,427.3	7,737.2	7,354.6	13,302.3	10,037.2	9,493.6	
	HUDSON BAY	0.0	0.0	0.0	2,332.5	1,446.2	1,359.4	2,332.5	1,446.2	1,359.4	
	LANCASTER	0.0	0.0	0.0	6,764.1	5,022.2	4,772.5	6,764.1	5,022.2	4,772.5	
<b>SUB-TOTAL</b>		<b>2,875.0</b>	<b>2,300.0</b>	<b>2,139.0</b>	<b>24,678.4</b>	<b>18,042.8</b>	<b>17,132.2</b>	<b>27,553.4</b>	<b>20,342.8</b>	<b>19,271.2</b>	
YUKON	BEAUFORT SEA	534.2	162.6	156.5	28,064.5	14,434.8	13,621.1	28,598.6	14,597.4	13,777.6	
	BONNET PLUME	0.0	0.0	0.0	1,022.3	766.7	728.4	1,022.3	766.7	728.4	
	EAGLE PLAIN	128.6	83.7	61.8	1,619.6	1,119.1	1,020.7	1,748.2	1,202.8	1,082.5	
	KANDIK	0.0	0.0	0.0	654.8	491.1	466.5	654.8	491.1	466.5	
	LIARD/TROUT PLAIN	427.7	276.1	247.6	1,470.8	892.5	738.1	1,898.5	1,168.6	985.7	
	MACKENZIE DELTA	0.0	0.0	0.0	589.6	411.3	383.0	589.6	411.3	383.0	
	OLD CROW	0.0	0.0	0.0	1,200.0	840.0	772.8	1,200.0	840.0	772.8	
	PEEL BASIN	0.0	0.0	0.0	2,068.6	1,511.7	1,394.0	2,068.6	1,511.7	1,394.0	
	WHITEHORSE TROUGH	0.0	0.0	0.0	302.0	196.0	175.0	302.0	196.0	175.0	
	<b>SUB-TOTAL</b>		<b>1,090.5</b>	<b>522.5</b>	<b>465.9</b>	<b>36,992.0</b>	<b>20,663.2</b>	<b>19,299.7</b>	<b>38,082.4</b>	<b>21,185.7</b>	<b>19,765.6</b>
<b>Grand Total</b>		<b>41,200.9</b>	<b>32,727.3</b>	<b>30,579.3</b>	<b>219,550.3</b>	<b>145,260.5</b>	<b>136,500.3</b>	<b>260,751.3</b>	<b>177,987.8</b>	<b>167,079.5</b>	

<b>RISKED CONCEPTUAL PLAYS (BILLION CUBIC FEET)</b>											
TERRITORY	BASIN / PLAY	DISCOVERED			UNDISCOVERED			ULTIMATE GAS RESOURCE			
		IN-PLACE	RECOVERABLE	MARKETABLE	IN-PLACE	RECOVERABLE	MARKETABLE	IN-PLACE	RECOVERABLE	MARKETABLE	
NORTHWEST TERRITORIES	ANDERSON/HORTON	0.0	0.0	0.0	543.9	399.7	370.3	543.9	399.7	370.3	
	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	4,628.0	3,445.3	3,273.5	4,628.0	3,445.3	3,273.5	
	ARCTIC PLATFORM	0.0	0.0	0.0	470.6	341.0	324.1	470.6	341.0	324.1	
	BEAUFORT SEA	6,009.6	4,705.2	4,374.9	35,583.8	18,913.5	17,666.2	41,593.4	23,618.7	22,041.1	
	COLVILLE HILLS	1,041.8	832.4	768.7	2,571.4	2,052.9	1,907.6	3,613.2	2,885.3	2,676.3	
	FRANKLINIAN FOLD BELT	0.0	0.0	0.0	969.6	718.9	683.4	969.6	718.9	683.4	
	GREAT BEAR PLAIN	0.0	0.0	0.0	2,102.8	1,624.4	1,485.7	2,102.8	1,624.4	1,485.7	
	GREAT SLAVE PLAIN	0.0	0.0	0.0	562.8	404.7	336.9	562.8	404.7	336.9	
	LIARD/TROUT PLAIN	1,555.3	702.2	627.0	4,600.6	3,114.6	2,673.0	6,155.9	3,816.8	3,300.1	
	MACKENZIE DELTA	8,116.6	6,282.0	5,863.6	24,456.9	15,701.3	14,670.0	32,573.5	21,983.3	20,533.6	
	MACKENZIE MOUNTAINS	0.0	0.0	0.0	55.6	36.4	31.0	55.6	36.4	31.0	
	MACKENZIE PLAIN	0.0	0.0	0.0	2,309.6	1,675.8	1,485.7	2,309.6	1,675.8	1,485.7	
	PEEL BASIN	0.0	0.0	0.0	721.6	482.1	447.4	721.6	482.1	447.4	
	SVERDRUP BASIN MZ	4,199.0	3,720.0	3,496.8	6,914.1	5,143.5	4,887.8	11,113.1	8,863.5	8,384.6	
	SVERDRUP BASIN PM-CARB	0.0	0.0	0.0	921.9	685.8	651.7	921.9	685.8	651.7	
	<b>SUB-TOTAL</b>		<b>20,922.3</b>	<b>16,241.9</b>	<b>15,131.1</b>	<b>87,413.4</b>	<b>54,739.9</b>	<b>50,894.3</b>	<b>108,335.6</b>	<b>70,981.8</b>	<b>66,025.4</b>
NUNAVUT SETTLEMENT AREA	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	506.5	377.1	358.3	506.5	377.1	358.3	
	ARCTIC PLATFORM	0.0	0.0	0.0	2,526.9	1,831.0	1,740.3	2,526.9	1,831.0	1,740.3	
	FOX E BASIN	0.0	0.0	0.0	80.3	49.8	46.8	80.3	49.8	46.8	
	FRANKLINIAN FOLD BELT	0.0	0.0	0.0	4,978.7	3,691.4	3,509.2	4,978.7	3,691.4	3,509.2	
	HUDSON BAY	0.0	0.0	0.0	200.5	124.3	116.8	200.5	124.3	116.8	
	SVERDRUP BASIN MZ	16,313.2	13,663.0	12,843.3	27,656.5	20,574.1	19,551.3	43,969.7	34,237.1	32,394.6	
	SVERDRUP BASIN PM-CARB	0.0	0.0	0.0	3,687.5	2,743.2	2,606.8	3,687.5	2,743.2	2,606.8	
<b>SUB-TOTAL</b>		<b>16,313.2</b>	<b>13,663.0</b>	<b>12,843.3</b>	<b>39,636.9</b>	<b>29,390.8</b>	<b>27,929.4</b>	<b>55,950.1</b>	<b>43,053.8</b>	<b>40,772.7</b>	
OFFSHORE NUNAVUT	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	1,804.0	1,343.0	1,276.0	1,804.0	1,343.0	1,276.0	
OUTSIDE SETTLEMENT AREA	BAFFIN BAY	2,875.0	2,300.0	2,139.0	10,427.3	7,737.2	7,354.6	13,302.3	10,037.2	9,493.6	
	HUDSON BAY	0.0	0.0	0.0	349.9	216.9	203.9	349.9	216.9	203.9	
	LANCASTER	0.0	0.0	0.0	4,870.2	3,616.0	3,436.2	4,870.2	3,616.0	3,436.2	
<b>SUB-TOTAL</b>		<b>2,875.0</b>	<b>2,300.0</b>	<b>2,139.0</b>	<b>17,451.4</b>	<b>12,913.2</b>	<b>12,270.7</b>	<b>20,326.4</b>	<b>15,213.2</b>	<b>14,409.7</b>	
YUKON TERRITORY	BEAUFORT SEA	534.2	162.6	156.5	26,160.7	13,412.5	12,657.7	26,694.8	13,575.1	12,814.2	
	BONNET PLUME	0.0	0.0	0.0	357.8	268.3	254.9	357.8	268.3	254.9	
	EAGLE PLAIN	128.6	83.7	61.8	1,338.3	916.2	838.0	1,467.0	999.9	899.8	
	KANDIK	0.0	0.0	0.0	229.2	171.9	163.3	229.2	171.9	163.3	
	LIARD/TROUT PLAIN	427.7	276.1	247.6	1,446.9	879.3	727.0	1,874.6	1,155.5	974.6	
	MACKENZIE DELTA	0.0	0.0	0.0	471.7	329.1	306.4	471.7	329.1	306.4	
	OLD CROW	0.0	0.0	0.0	360.0	252.0	231.8	360.0	252.0	231.8	
	PEEL BASIN	0.0	0.0	0.0	1,385.0	1,012.6	933.1	1,385.0	1,012.6	933.1	
	WHITEHORSE TROUGH	0.0	0.0	0.0	45.3	29.4	26.3	45.3	29.4	26.3	
	<b>SUB-TOTAL</b>		<b>1,090.5</b>	<b>522.5</b>	<b>465.9</b>	<b>31,794.8</b>	<b>17,271.2</b>	<b>16,138.5</b>	<b>32,885.3</b>	<b>17,793.7</b>	<b>16,604.4</b>
<b>Grand Total</b>		<b>41,200.9</b>	<b>32,727.3</b>	<b>30,579.3</b>	<b>176,296.5</b>	<b>114,315.1</b>	<b>107,233.0</b>	<b>217,497.4</b>	<b>147,042.4</b>	<b>137,812.2</b>	

**TABLE 17. NORTHERN CANADA ULTIMATE RECOVERABLE OIL RESOURCES**  
(NORTH OF 60° NORTH)

**ESTABLISHED AND CONCEPTUAL PLAYS UNRISKED (MILLION BARRELS)**

TERRITORY	ON_OFF	DISCOVERED	UNDISCOVERED	ULTIMATE	% of Total	% Onshore /Offshore
NT	OFFSHORE	734.5	4,584.3	5,318.8	37.3%	77.4%
	ONSHORE	447.9	1,107.0	1,554.9	10.9%	22.6%
NT Total		1,182.5	5,691.2	6,873.7	48.2%	
NU	OFFSHORE	317.1	1,490.0	1,807.0	12.7%	66.3%
	ONSHORE	5.8	911.4	917.2	6.4%	33.7%
NU Total		322.9	2,401.3	2,724.2	19.1%	
ONU	OFFSHORE	0.0	1,457.6	1,457.6	10.2%	99.6%
	ONSHORE	0.0	5.8	5.8	0.0%	0.4%
ONU Total		0.0	1,463.4	1,463.4	10.3%	
YU	OFFSHORE	393.8	2,737.1	3,130.9	21.9%	97.7%
	ONSHORE	11.7	61.3	73.0	0.5%	2.3%
YU Total		405.5	2,798.4	3,203.9	22.5%	
Grand Total		1,910.9	12,354.3	14,265.2	100.0%	

**ESTABLISHED AND CONCEPTUAL PLAYS RISKED (MILLION BARRELS)**

TERRITORY	ON_OFF	DISCOVERED	UNDISCOVERED	ULTIMATE	% of Total	% Onshore /Offshore
NT	OFFSHORE	734.5	4,067.9	4,802.5	40.4%	77.3%
	ONSHORE	447.9	964.7	1,412.6	11.9%	22.7%
NT Total		1,182.5	5,032.6	6,215.0	52.3%	
NU	OFFSHORE	317.1	932.4	1,249.5	10.5%	70.2%
	ONSHORE	5.8	523.5	529.3	4.5%	29.8%
NU Total		322.9	1,455.9	1,778.8	15.0%	
ONU	OFFSHORE	0.0	882.7	882.7	7.4%	99.9%
	ONSHORE	0.0	0.9	0.9	0.0%	0.1%
ONU Total		0.0	883.6	883.6	7.4%	
YU	OFFSHORE	393.8	2,558.0	2,951.8	24.8%	98.3%
	ONSHORE	11.7	38.8	50.5	0.4%	1.7%
YU Total		405.5	2,596.8	3,002.3	25.3%	
Grand Total		1,910.9	9,968.9	11,879.7	100.0%	

NT - Northwest Territories, NU - Nunavut Settlement Area, includes Canadian Arctic waters within the Nunavut area, ONU - Offshore Nunavut outside settlement area, YU - Yukon

**TABLE 18. NORTHERN CANADA ULTIMATE RECOVERABLE GAS RESOURCES  
(NORTH OF 60° NORTH)**

***ESTABLISHED AND CONCEPTUAL PLAYS UNRISKED (BILLION CUBIC FEET)***

TERRITORY	ON_OFF	DISCOVERED	UNDISCOVERED	ULTIMATE	% of Total	% Onshore /Offshore
NT	OFFSHORE	9,075.0	38,663.4	47,738.4	26.8%	58.8%
	ONSHORE	7,166.9	26,260.9	33,427.7	18.8%	41.2%
NT Total		16,241.9	64,924.3	81,166.2	45.6%	
NU	OFFSHORE	6,893.0	26,291.1	33,184.1	18.6%	60.0%
	ONSHORE	6,770.0	15,339.1	22,109.1	12.4%	40.0%
NU Total		13,663.0	41,630.2	55,293.2	31.1%	
ONU	OFFSHORE	2,300.0	18,019.5	20,319.5	11.4%	99.9%
	ONSHORE	0.0	23.3	23.3	0.0%	0.1%
ONU Total		2,300.0	18,042.8	20,342.8	11.4%	
YU	OFFSHORE	162.6	14,537.6	14,700.2	8.3%	69.4%
	ONSHORE	359.8	6,125.6	6,485.5	3.6%	30.6%
YU Total		522.5	20,663.2	21,185.7	11.9%	
Grand Total		32,727.3	145,260.5	177,987.8	100.0%	

***ESTABLISHED AND CONCEPTUAL PLAYS RISKED (BILLION CUBIC FEET)***

TERRITORY	ON_OFF	DISCOVERED	UNDISCOVERED	ULTIMATE	% of Total	% Onshore /Offshore
NT	OFFSHORE	9,075.0	31,540.1	40,615.1	27.6%	57.2%
	ONSHORE	7,166.9	23,199.8	30,366.7	20.7%	42.8%
NT Total		16,241.9	54,739.9	70,981.8	48.3%	
NU	OFFSHORE	6,893.0	19,283.4	26,176.4	17.8%	60.8%
	ONSHORE	6,770.0	10,107.4	16,877.4	11.5%	39.2%
NU Total		13,663.0	29,390.8	43,053.8	29.3%	
ONU	OFFSHORE	2,300.0	12,909.7	15,209.7	10.3%	100.0%
	ONSHORE	0.0	3.5	3.5	0.0%	0.0%
ONU Total		2,300.0	12,913.2	15,213.2	10.3%	
YU	OFFSHORE	162.6	13,494.7	13,657.3	9.3%	76.8%
	ONSHORE	359.8	3,776.5	4,136.3	2.8%	23.2%
YU Total		522.5	17,271.2	17,793.7	12.1%	
Grand Total		32,727.3	114,315.1	147,042.4	100.0%	

NT - Northwest Territories, NU - Nunavut Settlement Area, includes Canadian Arctic waters within the Nunavut area, ONU - Offshore Nunavut outside settlement area, YU - Yukon

**TABLE 19  
NORTHERN CANADA - NORTH OF 60° N ULTIMATE GAS RESOURCES**

<b>ESTABLISHED PLUS CONCEPTUAL UNRISKED (BILLION CUBIC FEET)</b>										
AREA	BASIN / PLAY	Disc_GIP	Disc_RRG	Disc_IMG	Und_GIP	Und_RRG	Und_IMG	Ult_GIP	Ult_RRG	Ult_IMG
ARCTIC ISLANDS	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	19,824.6	14,758.2	14,022.2	19,824.6	14,758.2	14,022.2
	ARCTIC PLATFORM	0.0	0.0	0.0	7,493.8	5,429.9	5,161.0	7,493.8	5,429.9	5,161.0
	FRANKLINIAN FOLD BELT	0.0	0.0	0.0	11,896.6	8,820.6	8,385.1	11,896.6	8,820.6	8,385.1
	SVERDRUP BASIN MZ	20,512.2	17,383.0	16,340.1	34,570.6	25,717.6	24,439.1	55,082.8	43,100.6	40,779.2
	SVERDRUP BASIN PM-CARB	0.0	0.0	0.0	11,523.5	8,572.5	8,146.4	11,523.5	8,572.5	8,146.4
<b>ARCTIC ISLANDS TOTAL</b>		<b>20,512.2</b>	<b>17,383.0</b>	<b>16,340.1</b>	<b>85,309.0</b>	<b>63,298.9</b>	<b>60,153.7</b>	<b>105,821.2</b>	<b>80,681.9</b>	<b>76,493.8</b>
BEAUFORT/MACKENZIE	BEAUFORT SEA	6,543.8	4,867.8	4,531.4	64,033.3	33,561.6	31,488.2	70,577.1	38,429.5	36,019.5
	MACKENZIE DELTA	8,116.6	6,282.0	5,863.6	25,046.4	16,112.6	15,053.0	33,163.0	22,394.7	20,916.6
<b>BEAUFORT/MACKENZIE TOTAL</b>		<b>14,660.4</b>	<b>11,149.8</b>	<b>10,395.0</b>	<b>89,079.8</b>	<b>49,674.3</b>	<b>46,541.1</b>	<b>103,740.2</b>	<b>60,824.1</b>	<b>56,936.1</b>
EASTERN ARCTIC	BAFFIN BAY	2,875.0	2,300.0	2,139.0	10,427.3	7,737.2	7,354.6	13,302.3	10,037.2	9,493.6
	FOX E BASIN	0.0	0.0	0.0	535.1	331.8	311.8	535.1	331.8	311.8
	HUDSON BAY	0.0	0.0	0.0	3,669.1	2,274.9	2,138.4	3,669.1	2,274.9	2,138.4
	LANCASTER	0.0	0.0	0.0	6,764.1	5,022.2	4,772.5	6,764.1	5,022.2	4,772.5
<b>EASTERN ARCTIC TOTAL</b>		<b>2,875.0</b>	<b>2,300.0</b>	<b>2,139.0</b>	<b>21,395.7</b>	<b>15,366.1</b>	<b>14,577.3</b>	<b>24,270.7</b>	<b>17,666.1</b>	<b>16,716.3</b>
MAINLAND TERRITORIES	ANDERSON/HORTON	0.0	0.0	0.0	676.9	486.7	450.6	676.9	486.7	450.6
	COLVILLE HILLS	1,041.8	832.4	768.7	2,623.0	2,086.1	1,938.3	3,664.8	2,918.5	2,707.0
	GREAT BEAR PLAIN	0.0	0.0	0.0	2,346.2	1,784.7	1,630.6	2,346.2	1,784.7	1,630.6
	GREAT SLAVE PLAIN	0.0	0.0	0.0	785.7	559.7	467.3	785.7	559.7	467.3
	MACKENZIE MOUNTAINS	0.0	0.0	0.0	218.8	142.7	120.7	218.8	142.7	120.7
	PEEL BASIN	0.0	0.0	0.0	2,544.0	1,832.1	1,668.9	2,544.0	1,832.1	1,668.9
<b>MAINLAND TERRITORIES TOTAL</b>		<b>1,041.8</b>	<b>832.4</b>	<b>768.7</b>	<b>10,307.8</b>	<b>7,634.6</b>	<b>6,965.8</b>	<b>11,349.6</b>	<b>8,467.0</b>	<b>7,734.6</b>
NORTH YUKON	BONNET PLUME	0.0	0.0	0.0	1,022.3	766.7	728.4	1,022.3	766.7	728.4
	EAGLE PLAIN	128.6	83.7	61.8	1,619.6	1,119.1	1,020.7	1,748.2	1,202.8	1,082.5
	KANDIK	0.0	0.0	0.0	654.8	491.1	466.5	654.8	491.1	466.5
	OLD CROW	0.0	0.0	0.0	1,200.0	840.0	772.8	1,200.0	840.0	772.8
	PEEL BASIN	0.0	0.0	0.0	2,068.6	1,511.7	1,394.0	2,068.6	1,511.7	1,394.0
	WHITEHORSE TROUGH	0.0	0.0	0.0	302.0	196.0	175.0	302.0	196.0	175.0
<b>NORTH YUKON TOTAL</b>		<b>128.6</b>	<b>83.7</b>	<b>61.8</b>	<b>6,867.1</b>	<b>4,924.6</b>	<b>4,557.5</b>	<b>6,995.7</b>	<b>5,008.3</b>	<b>4,619.3</b>
SE YUKON / NWT	LIARD/TROUT PLAIN	1,983.0	978.4	874.6	6,590.9	4,362.0	3,704.9	8,573.9	5,340.4	4,579.5
<b>SE YUKON / NWT TOTAL</b>		<b>1,983.0</b>	<b>978.4</b>	<b>874.6</b>	<b>6,590.9</b>	<b>4,362.0</b>	<b>3,704.9</b>	<b>8,573.9</b>	<b>5,340.4</b>	<b>4,579.5</b>
<b>Grand Total</b>		<b>41,200.9</b>	<b>32,727.3</b>	<b>30,579.3</b>	<b>219,550.3</b>	<b>145,260.5</b>	<b>136,500.3</b>	<b>260,751.3</b>	<b>177,987.8</b>	<b>167,079.5</b>

<b>RISKED CONCEPTUAL PLAYS (BILLION CUBIC FEET)</b>										
AREA	BASIN / PLAY	Disc_GIP	Disc_RRG	Disc_IMG	UNDGIP_R	UNDRRG_R	UNDIMG_R	ULTGIP_R	ULTRRG_R	ULTIMG_R
ARCTIC ISLANDS	ARCTIC COASTAL PLAIN	0.0	0.0	0.0	6,938.6	5,165.4	4,907.8	6,938.6	5,165.4	4,907.8
	ARCTIC PLATFORM	0.0	0.0	0.0	2,997.5	2,172.0	2,064.4	2,997.5	2,172.0	2,064.4
	FRANKLINIAN FOLD BELT	0.0	0.0	0.0	5,948.3	4,410.3	4,192.6	5,948.3	4,410.3	4,192.6
	SVERDRUP BASIN MZ	20,512.2	17,383.0	16,340.1	34,570.6	25,717.6	24,439.1	55,082.8	43,100.6	40,779.2
	SVERDRUP BASIN PM-CARB	0.0	0.0	0.0	4,609.4	3,429.0	3,258.5	4,609.4	3,429.0	3,258.5
<b>ARCTIC ISLANDS TOTAL</b>		<b>20,512.2</b>	<b>17,383.0</b>	<b>16,340.1</b>	<b>55,064.4</b>	<b>40,894.3</b>	<b>38,862.3</b>	<b>75,576.6</b>	<b>58,277.3</b>	<b>55,202.4</b>
BEAUFORT/MACKENZIE	BEAUFORT SEA	6,543.8	4,867.8	4,531.4	61,744.4	32,326.0	30,324.0	68,288.2	37,193.8	34,855.3
	MACKENZIE DELTA	8,116.6	6,282.0	5,863.6	24,928.5	16,030.4	14,976.4	33,045.1	22,312.4	20,840.0
<b>BEAUFORT/MACKENZIE TOTAL</b>		<b>14,660.4</b>	<b>11,149.8</b>	<b>10,395.0</b>	<b>86,673.0</b>	<b>48,356.4</b>	<b>45,300.4</b>	<b>101,333.3</b>	<b>59,506.2</b>	<b>55,695.3</b>
EASTERN ARCTIC	BAFFIN BAY	2,875.0	2,300.0	2,139.0	10,427.3	7,737.2	7,354.6	13,302.3	10,037.2	9,493.6
	FOX E BASIN	0.0	0.0	0.0	80.3	49.8	46.8	80.3	49.8	46.8
	HUDSON BAY	0.0	0.0	0.0	550.4	341.2	320.8	550.4	341.2	320.8
	LANCASTER	0.0	0.0	0.0	4,870.2	3,616.0	3,436.2	4,870.2	3,616.0	3,436.2
<b>EASTERN ARCTIC TOTAL</b>		<b>2,875.0</b>	<b>2,300.0</b>	<b>2,139.0</b>	<b>15,928.1</b>	<b>11,744.2</b>	<b>11,158.3</b>	<b>18,803.1</b>	<b>14,044.2</b>	<b>13,297.3</b>
MAINLAND TERRITORIES	ANDERSON/HORTON	0.0	0.0	0.0	543.9	399.7	370.3	543.9	399.7	370.3
	COLVILLE HILLS	1,041.8	832.4	768.7	2,571.4	2,052.9	1,907.6	3,613.2	2,885.3	2,676.3
	GREAT BEAR PLAIN	0.0	0.0	0.0	2,102.8	1,624.4	1,485.7	2,102.8	1,624.4	1,485.7
	GREAT SLAVE PLAIN	0.0	0.0	0.0	562.8	404.7	336.9	562.8	404.7	336.9
	MACKENZIE MOUNTAINS	0.0	0.0	0.0	55.6	36.4	31.0	55.6	36.4	31.0
	PEEL BASIN	0.0	0.0	0.0	2,309.6	1,675.8	1,485.7	2,309.6	1,675.8	1,485.7
<b>MAINLAND TERRITORIES TOTAL</b>		<b>1,041.8</b>	<b>832.4</b>	<b>768.7</b>	<b>8,867.9</b>	<b>6,676.0</b>	<b>6,064.6</b>	<b>9,909.7</b>	<b>7,508.4</b>	<b>6,833.3</b>
NORTH YUKON	BONNET PLUME	0.0	0.0	0.0	357.8	268.3	254.9	357.8	268.3	254.9
	EAGLE PLAIN	128.6	83.7	61.8	1,338.3	916.2	838.0	1,467.0	999.9	899.8
	KANDIK	0.0	0.0	0.0	229.2	171.9	163.3	229.2	171.9	163.3
	OLD CROW	0.0	0.0	0.0	360.0	252.0	231.8	360.0	252.0	231.8
	PEEL BASIN	0.0	0.0	0.0	1,385.0	1,012.6	933.1	1,385.0	1,012.6	933.1
	WHITEHORSE TROUGH	0.0	0.0	0.0	45.3	29.4	26.3	45.3	29.4	26.3
<b>NORTH YUKON TOTAL</b>		<b>128.6</b>	<b>83.7</b>	<b>61.8</b>	<b>3,715.6</b>	<b>2,650.3</b>	<b>2,447.4</b>	<b>3,844.2</b>	<b>2,734.0</b>	<b>2,509.2</b>
SE YUKON / NWT	LIARD/TROUT PLAIN	1,983.0	978.4	874.6	6,047.5	3,993.9	3,400.0	8,030.5	4,972.3	4,274.6
<b>SE YUKON / NWT TOTAL</b>		<b>1,983.0</b>	<b>978.4</b>	<b>874.6</b>	<b>6,047.5</b>	<b>3,993.9</b>	<b>3,400.0</b>	<b>8,030.5</b>	<b>4,972.3</b>	<b>4,274.6</b>
<b>Grand Total</b>		<b>41,200.9</b>	<b>32,727.3</b>	<b>30,579.3</b>	<b>176,296.5</b>	<b>114,315.1</b>	<b>107,233.0</b>	<b>217,497.4</b>	<b>147,042.4</b>	<b>137,812.2</b>



**TABLE 20  
NORTHERN CANADA - NORTH OF 60° N ULTIMATE OIL RESOURCES (MILLION BARRELS)**

AREA	BASIN / PLAY	Disc_OIP	Disc_RecO	Und_OIP	Und_RecO	Ult_OIP	Ult_RecO	UNDOIP_R	UNDRO_R	ULTOIP_R	ULTRO_R
AI	ARCTIC COASTAL PLAIN	0.0	0.0	4,690.4	1,102.4	4,690.4	1,102.4	1,641.6	385.8	1,641.6	385.8
	ARCTIC PLATFORM	0.0	0.0	2,024.5	473.7	2,024.5	473.7	809.8	189.5	809.8	189.5
	FRANKLINIAN FOLD BELT	14.2	2.8	2,177.8	515.9	2,192.0	518.7	1,088.9	257.9	1,103.1	260.8
	SVERDRUP BASIN_MZ	1,660.7	332.1	4,715.5	1,101.7	6,376.2	1,433.8	4,715.5	1,101.7	6,376.2	1,433.8
	SVERDRUP BASIN_PM-CARB	0.0	0.0	1,696.1	397.5	1,696.1	397.5	678.5	159.0	678.5	159.0
<b>AI Total</b>		<b>1,674.9</b>	<b>334.9</b>	<b>15,304.4</b>	<b>3,591.2</b>	<b>16,979.3</b>	<b>3,926.1</b>	<b>8,934.3</b>	<b>2,093.9</b>	<b>10,609.2</b>	<b>2,428.9</b>
BMB	BEAUFORT SEA	5,276.6	1,009.8	32,359.2	5,974.7	37,635.8	6,984.4	31,221.2	5,771.8	36,497.8	6,781.6
	MACKENZIE DELTA	1,263.9	248.3	5,069.9	963.1	6,333.7	1,211.4	5,068.8	962.9	6,332.6	1,211.3
<b>BMB Total</b>		<b>6,540.4</b>	<b>1,258.1</b>	<b>37,429.1</b>	<b>6,937.8</b>	<b>43,969.5</b>	<b>8,195.9</b>	<b>36,290.0</b>	<b>6,734.8</b>	<b>42,830.4</b>	<b>7,992.9</b>
EA	BAFFIN BAY	0.0	0.0	2,199.5	508.1	2,199.5	508.1	2,199.5	508.1	2,199.5	508.1
	FOX E BASIN	0.0	0.0	361.0	83.0	361.0	83.0	54.1	12.5	54.1	12.5
	HUDSON BAY	0.0	0.0	2,475.2	569.3	2,475.2	569.3	371.3	85.4	371.3	85.4
	LANCASTER	0.0	0.0	1,318.2	306.7	1,318.2	306.7	949.1	220.8	949.1	220.8
<b>EA Total</b>		<b>0.0</b>	<b>0.0</b>	<b>6,353.8</b>	<b>1,467.2</b>	<b>6,353.8</b>	<b>1,467.2</b>	<b>3,574.0</b>	<b>826.8</b>	<b>3,574.0</b>	<b>826.8</b>
MNT	ANDERSON/HORTON	0.0	0.0	70.0	15.0	70.0	15.0	56.1	13.2	56.1	13.2
	COLVILLE HILLS	0.0	0.0	113.4	22.5	113.4	22.5	112.7	22.4	112.7	22.4
	GREAT BEAR PLAIN	0.0	0.0	84.3	16.3	84.3	16.3	79.4	15.5	79.4	15.5
	GREAT SLAVE PLAIN	0.0	0.0	2.6	0.6	2.6	0.6	2.6	0.6	2.6	0.6
	MACKENZIE MOUNTAINS	0.0	0.0	0.2	0.1	0.2	0.1	0.2	0.0	0.2	0.0
	MACKENZIE PLAIN	630.0	301.6	738.4	156.9	1,368.4	458.6	719.4	152.4	1,349.4	454.0
	PEEL BASIN	0.0	0.0	143.3	34.4	143.3	34.4	98.8	23.8	98.8	23.8
<b>MNT Total</b>		<b>630.0</b>	<b>301.6</b>	<b>1,152.1</b>	<b>245.8</b>	<b>1,782.1</b>	<b>547.5</b>	<b>1,069.1</b>	<b>227.9</b>	<b>1,699.1</b>	<b>529.5</b>
NYU	BONNET PLUME	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EAGLE PLAIN	39.0	11.7	105.2	28.1	144.2	39.8	105.2	28.1	144.2	39.8
	KANDIK	0.0	0.0	94.8	14.2	94.8	14.2	19.0	2.8	19.0	2.8
	OLD CROW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	PEEL	0.0	0.0	44.2	10.2	44.2	10.2	26.5	6.1	26.5	6.1
	WHITEHORSE TROUGH	0.0	0.0	45.1	8.1	45.1	8.1	6.8	1.2	6.8	1.2
<b>NYU Total</b>		<b>39.0</b>	<b>11.7</b>	<b>289.2</b>	<b>60.6</b>	<b>328.2</b>	<b>72.3</b>	<b>157.4</b>	<b>38.3</b>	<b>196.4</b>	<b>50.0</b>
SYUNT	LIARD/TROUT PLAIN	18.0	4.5	312.9	51.8	330.9	56.3	286.4	47.2	304.4	51.7
<b>SYUNT Total</b>		<b>18.0</b>	<b>4.5</b>	<b>312.9</b>	<b>51.8</b>	<b>330.9</b>	<b>56.3</b>	<b>286.4</b>	<b>47.2</b>	<b>304.4</b>	<b>51.7</b>
<b>Grand Total</b>		<b>8,902.3</b>	<b>1,910.9</b>	<b>60,841.5</b>	<b>12,354.3</b>	<b>69,743.8</b>	<b>14,265.2</b>	<b>50,311.2</b>	<b>9,968.9</b>	<b>59,213.5</b>	<b>11,879.7</b>

AI ARCTIC ISLANDS  
BMB BEAUFORT MACKENZIE BASIN  
EA EASTERN ARCTIC  
MNT MAINLAND TERRITORIES  
NYU NORTH YUKON  
SYUNT SE YUKON / SOUTH NWT

## **Comparison with Total Canada**

The National Energy Board in the 1999 Supply Demand report estimates conventional crude oil resources to be “34 billion cubic metres (m<sup>3</sup>) of original oil-in-place, of which only about 9.2 billion m<sup>3</sup> (27 percent) is estimated to be ultimately recoverable. Of this, some 7.9 billion m<sup>3</sup> is categorized as light crude oil and 1.3 billion m<sup>3</sup> as heavy crude oil. For light crude oil, 3.6 billion m<sup>3</sup> are estimated to exist in the WCSB and 4.3 billion m<sup>3</sup> in other basins (northern Canada, Ontario and offshore areas). All of the recoverable heavy crude oil is located in the WCSB.”

“Canada’s frontier areas include the B.C. offshore, the central Mackenzie Valley region, the interior Yukon Territory basins, the Mackenzie Delta/ Beaufort Sea region, the Arctic Islands and the east coast offshore. In these projections, only portions of the east coast and northern Canada resources are expected to be exploited during the study period; therefore, the discussion is limited to these areas. For the ultimate recoverable resources, the Board has adopted the GSC estimates. For each basin, these estimates are usually expressed as a range with associated probabilities of occurrence. For the purpose of aggregating resource estimates, the mean expectation was selected from the probability distribution for each assessment area.”

Of the total assigned to the Frontiers, 40% is in other Frontier Basins. These include the Georges Bank and Laurentian Sub-basin, East Newfoundland Basin and southern Grand Banks, the St. Lawrence Lowlands and Maritimes Basin, Hudson Bay, eastern Arctic offshore and the Queen Charlotte, Tofino and Georgia Basins.

To get a better idea of the distribution of Canada’s oil resources, it is necessary to disaggregate the NEB Other Frontier Basins. The assessments from GSC Bulletin 83-31 are used as a guide to get resource numbers for the frontier basins and/or areas.

The NEB estimated ultimate recoverable oil is 4,726 million barrels for the Arctic Islands and 6,708 million barrels for the Mackenzie/Beaufort. This compares to the estimates of 2,429 and 7,793 million barrels, respectively for the current study. For the Mainland Territories and Yukon the comparison is ultimate recoverable oil of 598 million barrels by the NEB, and 580 for this study.

The ultimate recoverable oil resources for all of Canada are shown in tables 21 through 24. Table 21 is for ultimate recoverable gas with conceptual plays unrisked. Table 22 applies a conditional risk to the Frontier conceptual plays. Tables 23 and 24 are similar tables for oil. The risked potential numbers are considered to be the most realistic and these numbers are used for discussion and comparison purposes.

The western Canada provinces have been updated with the latest cumulative production and remaining reserves. The effective dates are Alberta and British Columbia, December 31, 2007, Saskatchewan, December 31, 2004, and for Manitoba, cumulative production is December 31, 2003 and reserves are as of December 31, 1999. The ultimate oil and gas for the Western Provinces was updated to the end of 2008 using the NEB Supply Demand Report and publications by the Provincial Governments.

For discussion of the distribution of Canada's oil and gas resources, as shown in figures 3 and 4, Eastern Canada includes all areas east of the Western Canada Sedimentary Basin, south of 60<sup>0</sup>N. This includes the East Coast offshore, Maritimes basins, Ontario, Quebec and Hudson Bay. The West Coast includes the Pacific offshore and British Columbia Intermontane basins.

The NEB in "Canada's Conventional Gas resources, A Status Report", 2004, estimates the undiscovered marketable gas potential for Canada to be 286 trillion cubic feet. For Northern Canada the estimated undiscovered marketable gas potential is 94 trillion cubic feet, 32.9%, of the total for Canada.

A summary of the distribution of risked recoverable oil and gas resources for Canada is shown in table 25. Figure 3 shows the distribution of Canada's recoverable oil for the four major regions, Western Canada Sedimentary Basin (western provinces only), Eastern Canada, West Coast, and Northern Canada. Chart 3A shows the distribution of ultimate recoverable oil, 54% in the Western Provinces of the Western Canada Sedimentary Basin, 22% in Eastern Canada, 21% in Northern Canada and 3% for the West Coast. Chart 3B shows 26% of the remaining recoverable oil resource is in the western provinces, 34% in Eastern Canada, 35% in Northern Canada, and 5% in the West Coast. For undiscovered risked recoverable oil (3C), shows 34% in Eastern Canada, 38% in Northern Canada, 22% in the western provinces, and 6% for the West Coast.

Figure 4 shows the distribution of Canada's recoverable gas for the four major regions. Chart 4A shows the distribution of ultimate recoverable gas, with 56% in the Western Provinces, followed by Northern Canada with 23%, Eastern Canada 18% and the West Coast 3%. Chart 4B shows 37% of the remaining recoverable gas resource is in the western provinces, 33% in Northern Canada, 25% in Eastern Canada and 5% in the West Coast. Considering only undiscovered risked recoverable gas, chart 4C shows 34% is in the Northern basins, 31% in the western provinces, 29% in Eastern Canada, and 6% for the West Coast. The greatest undiscovered recoverable gas (risked) is in Northern Canada, estimated to be 114.3 trillion cubic feet.

**TABLE 21**

**CANADA - CONVENTIONAL RECOVERABLE GAS (BILLION CUBIC FEET)**

December 31, 2007	GAS-IN-PLACE		CUM.	REM	DISCOV.	UNDISCOV.	ULTIMATE	REMAINING	SOURCE
	DISCOV	UNDISCOV	PROD.	RESERVES	RESOURCES	RESOURCES	RESOURCE	RESOURCE	
<b>WESTERN CANADA SEDIMENTARY BASIN</b>									
ALBERTA	299,128	90,450	159,906	44,716	0	64,097	268,719	108,814	ERCB, NEB 2005
BRITISH COLUMBIA	55,130	46,891	24,161	17,411	0	34,227	75,799	51,637	BCMEMP, NEB 2006
SASKATCHEWAN	11,589	3,794	5,955	2,067	0	3,201	11,223	5,268	SEM, NEB 2008
TOTAL WCSB	365,847	141,134	190,022	64,194	0	101,525	355,740	165,719	
ONTARIO/QUEBEC	2,180	1,802	1,204	332	0	1,298	2,833	1,630	CGPC 2005
<b>TOTAL PRODUCING AREAS</b>	<b>368,027</b>	<b>142,936</b>	<b>191,225</b>	<b>64,525</b>	<b>0</b>	<b>102,823</b>	<b>358,573</b>	<b>167,348</b>	
<b>FRONTIER</b>									
<b>EAST COAST</b>									
SCOTIAN SHELF	9,126	22,633	1,431	1,672	2,132	14,737	19,972	18,541	GSC P 88-19, SOEI, CNSOPB
LAURENTIAN CHANNEL	0	14,106	0	0	0	9,169	9,169	9,169	MCLEAN & WADE, 1992
GEORGES BANK	0	8,635	0	0	0	5,613	5,613	5,613	GSC Paper 83-31
SCOTIAN DEEP-WATER SLOPE	0	60,400	0	0	0	41,102	41,102	41,102	CNSOPB, 2002
JEANNE D'ARC BASIN/SHELF	10,933	25,696	0	0	5,681	13,439	19,120	19,120	CNOPB, GSC 2001
E NEWFOUNDLAND BASIN	0	22,786	0	0	0	14,811	14,811	14,811	GSC Paper 83-31
SOUTH GRAND BANKS	0	5,364	0	0	0	3,326	3,326	3,326	GSC Paper 83-31
ANTICOSTI/W NEWFOUNDLAND	0	6,609	0	0	0	4,098	4,098	4,098	MILLAN, 1998
LABRADOR SHELF	6,065	40,421	0	0	4,244	28,295	32,539	32,539	GSC Paper 83-31
MARITIMES BASINS	0	3,223	0	0	0	1,998	1,998	1,998	GSC Paper 83-31
<b>TOTAL EAST COAST</b>	<b>26,124</b>	<b>209,873</b>	<b>1,431</b>	<b>1,672</b>	<b>12,057</b>	<b>136,588</b>	<b>151,748</b>	<b>150,317</b>	
<b>NORTHERN CANADA (N 60° N)</b>									
MACKENZIE/BEAUFORT	14,660	89,080	5	32	11,113	49,674	60,824	60,819	GSC Bull 474
ARCTIC ISLANDS	20,512	85,309	0	0	17,383	63,299	80,682	80,682	GSC Paper 83-31
SOUTH YT & NWT	1,983	6,591	741	107	130	4,362	5,340	4,599	NOGD, NEB, YU Govt
COLVILLE HILLS	1,042	2,623	0	0	832	2,086	2,918	2,918	CGPC, 2001, Bever, 1992
PEEL BASIN	0	3,182	0	0	0	2,254	2,254	2,254	YU Govt, NEB
EAGLE PLAIN	129	1,620	0	0	84	1,119	1,203	1,203	YU Govt, NEB
OTHER YUKON BASINS	0	3,179	0	0	0	2,294	2,294	2,294	YU Govt, NEB, GSC
OTHER MAINLAND	0	6,572	0	0	0	4,806	4,806	4,806	NOGD, NEB
BAFFIN BAY / LANCASTER	2,875	17,191	0	0	2,300	12,759	15,059	15,059	GSC 83-31, Klose, 1982
FOXE/HUDSON BAY (N of 60°N)	0	4,204	0	0	0	2,607	2,607	2,607	
<b>TOTAL NORTHERN CANADA</b>	<b>41,201</b>	<b>219,550</b>	<b>746</b>	<b>139</b>	<b>31,842</b>	<b>145,261</b>	<b>177,988</b>	<b>177,241</b>	
<b>OTHER FRONTIER</b>									
BC OFFSHORE	0	45,438	0	0	0	31,754	31,754	31,754	GSC Open File 3629
BC INTERMONTANE	0	23,600	0	0	0	15,320	15,320	15,320	BC MEM
HUDSON BAY (S of 60°N)	0	3,274	0	0	0	2,029	2,029	2,029	GSC Paper 83-31
<b>TOTAL OTHER</b>	<b>0</b>	<b>72,312</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>49,103</b>	<b>49,103</b>	<b>49,103</b>	
<b>TOTAL FRONTIER</b>	<b>67,325</b>	<b>501,735</b>	<b>2,177</b>	<b>1,811</b>	<b>43,898</b>	<b>330,952</b>	<b>378,839</b>	<b>376,662</b>	
<b>TOTAL CANADA</b>	<b>435,352</b>	<b>644,671</b>	<b>193,403</b>	<b>66,337</b>	<b>43,898</b>	<b>433,775</b>	<b>737,412</b>	<b>544,010</b>	

**TABLE 22**  
**CANADA - CONVENTIONAL RECOVERABLE GAS (BILLION CUBIC FEET)**  
**RISKED FRONTIER CONCEPTUAL**

December 31, 2007	GAS-IN-PLACE		CUM.	REM	DISCOV.	UNDISCOV.	ULTIMATE	REMAINING	SOURCE
	DISCOV	UNDISCOV	PROD.	RESERVES	RESOURCES	RESOURCES	RESOURCE	RESOURCE	
<b>WESTERN CANADA SEDIMENTARY BASIN</b>									
ALBERTA	299,128	90,450	159,906	44,716	0	64,097	268,719	108,814	AEUB
BRITISH COLUMBIA	55,130	46,891	24,161	17,411	0	34,227	75,799	51,637	BCMEM, NEB 2000
SASKATCHEWAN	11,589	3,794	5,955	2,067	0	3,201	11,223	5,268	SEM, NEB 1998
TOTAL WCSB	365,847	141,134	190,022	64,194	0	101,525	355,740	165,719	
ONTARIO/QUEBEC	2,180	1,802	1,204	332	0	1,298	2,833	1,630	CGPC 2001
<b>TOTAL PRODUCING AREAS</b>	<b>368,027</b>	<b>142,936</b>	<b>191,225</b>	<b>64,525</b>	<b>0</b>	<b>102,823</b>	<b>358,573</b>	<b>167,348</b>	
<b>FRONTIER</b>									
<b>EAST COAST</b>									
SCOTIAN SHELF	9,126	22,633	1,431	1,672	2,132	14,737	19,972	18,541	GSC P 88-19, SOEI, CNSOPB
LAURENTIAN CHANNEL	0	11,990	0	0	0	7,794	7,794	7,794	MCLEAN & WADE, 1992
GEORGES BANK	0	3,022	0	0	0	1,965	1,965	1,965	GSC Paper 83-31
SCOTIAN DEEP-WATER SLOPE	0	22,100	0	0	0	15,200	15,200	15,200	CNSOPB, 2002
JEANNE D'ARC BASIN/SHELF	10,933	25,696	0	0	5,681	13,439	19,120	19,120	CNOPB, GSC 2001
E NEWFOUNDLAND BASIN	0	13,672	0	0	0	8,887	8,887	8,887	GSC Paper 83-31
SOUTH GRAND BANKS	0	1,341	0	0	0	832	832	832	GSC Paper 83-31
ANTICOSTI/W NEWFOUNDLAND	0	2,974	0	0	0	1,844	1,844	1,844	MILLAN, 1998
LABRADOR SHELF	6,065	40,421	0	0	4,244	28,295	32,539	32,539	GSC Paper 83-31
MARITIMES BASINS	0	1,128	0	0	0	699	699	699	GSC Paper 83-31
<b>TOTAL EAST COAST</b>	<b>26,124</b>	<b>144,977</b>	<b>1,431</b>	<b>1,672</b>	<b>12,057</b>	<b>93,691</b>	<b>108,850</b>	<b>107,419</b>	
<b>NORTHERN CANADA (N 60° N)</b>									
MACKENZIE/BEAUFORT	14,660	86,673	5	32	11,113	48,356	59,506	59,501	GSC Bull 474
ARCTIC ISLANDS	20,512	55,064	0	0	17,383	40,894	58,277	58,277	GSC Paper 83-31
SOUTH YT & NWT	1,983	6,048	741	107	130	3,994	4,972	4,231	NOGD, NEB, YU Govt
COLVILLE HILLS	1,042	2,571	0	0	832	2,053	2,885	2,885	CGPC, 2001, Bever, 1992
PEEL BASIN	0	2,107	0	0	0	1,495	1,495	1,495	YU Govt, NEB
EAGLE PLAIN	129	1,338	0	0	84	916	1,000	1,000	YU Govt, NEB
OTHER YUKON BASINS	0	992	0	0	0	722	722	722	YU Govt, NEB, GSC
OTHER MAINLAND	0	5,575	0	0	0	4,141	4,141	4,141	NOGD, NEB
BAFFIN BAY / LANCASTER	2,875	15,297	0	0	2,300	11,353	13,653	13,653	GSC 83-31, Klose, 1982
FOX E/ HUDSON BAY (N of 60°N)	0	631	0	0	0	391	391	391	
<b>TOTAL NORTHERN CANADA</b>	<b>41,201</b>	<b>176,297</b>	<b>746</b>	<b>139</b>	<b>31,842</b>	<b>114,315</b>	<b>147,042</b>	<b>146,296</b>	
<b>OTHER FRONTIER</b>									
BC OFFSHORE	0	27,263	0	0	0	19,052	19,052	19,052	GSC Open File 3629
BC INTERMONTANE	0	3,540	0	0	0	2,298	2,298	2,298	BC MEM
HUDSON BAY (S of 60°N)	0	491	0	0	0	304	304	304	GSC Paper 83-31
<b>TOTAL OTHER</b>	<b>0</b>	<b>31,294</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>21,654</b>	<b>21,654</b>	<b>21,654</b>	
<b>TOTAL FRONTIER</b>	<b>67,325</b>	<b>352,568</b>	<b>2,177</b>	<b>1,811</b>	<b>43,898</b>	<b>229,660</b>	<b>277,547</b>	<b>275,370</b>	
<b>TOTAL CANADA</b>	<b>435,352</b>	<b>495,503</b>	<b>193,403</b>	<b>66,337</b>	<b>43,898</b>	<b>332,483</b>	<b>636,120</b>	<b>442,718</b>	

**TABLE 23**

**CANADA - CONVENTIONAL RECOVERABLE OIL (MILLION BARRELS)**

December 31, 2007	OIL-IN-PLACE		CUM.	REM	DISCOV.	UNDISCOV.	ULTIMATE	REMAINING	
	DISCOV	UNDISCOV	PROD.	RESERVES	RESOURCES	RESOURCES	RESOURCE	RESOURCE	SOURCE
<b>WESTERN CANADA SEDIMENTARY BASIN</b>									
ALBERTA	66,274	9,118	15,801	1,513	0	3,310	20,625	4,823	ERCB ST98-2008
BRITISH COLUMBIA	2,760	1,180	688	124	0	346	1,158	470	BCMEM, NEB 2000
SASKATCHEWAN	39,331	14,296	4,530	1,174	0	2,073	7,778	3,248	SEM, NEB 1998
MANITOBA	1,315	151	253	24	0	31	308	55	MITM Petr Branch
TOTAL WCSB	109,681	24,745	21,273	2,835	0	5,761	29,869	8,596	
ONTARIO/QUEBEC	504	10	87	11	0	2	99	13	CAPP, 2007
<b>TOTAL PRODUCING AREAS</b>	<b>110,184</b>	<b>24,755</b>	<b>21,360</b>	<b>2,845</b>	<b>0</b>	<b>5,763</b>	<b>29,968</b>	<b>8,609</b>	
<b>FRONTIER</b>									
<b>EAST COAST</b>									
SCOTIAN SHELF	215	2,959	44	0	32	714	790	746	GSC P 88-19, CNSOPB
LAURENTIAN CHANNEL	0	2,736	0	0	0	629	629	629	MCLEAN & WADE, 1992
GEORGES BANK	0	4,340	0	0	0	1,085	1,085	1,085	GSC Paper 83-31
SCOTIAN DEEP-WATER SLOPE	0	14,400	0	0	0	4,685	4,685	4,685	CNSOPB, 2002
JEANNE D'ARC BASIN/SHELF	7,686	8,452	993	910	937	2,338	5,178	4,185	CNOPB, GSC 2001
E NEWFOUNDLAND BASIN	0	7,859	0	0	0	1,965	1,965	1,965	GSC Paper 83-31
SOUTH GRAND BANKS	0	1,263	0	0	0	316	316	316	GSC Paper 83-31
ANTICOSTI/W NEWFOUNDLAND	0	1,247	0	0	0	2,867	2,867	2,867	MILLAN, 1998
LABRADOR SHELF	0	3,052	0	0	0	763	763	763	GSC Paper 83-31
MARITIMES BASINS	0	1,335	0	0	0	307	307	307	GSC Paper 83-31
<b>TOTAL EAST COAST</b>	<b>7,901</b>	<b>47,642</b>	<b>1,037</b>	<b>910</b>	<b>969</b>	<b>15,668</b>	<b>18,585</b>	<b>17,547</b>	
<b>NORTHERN CANADA (N 60° N)</b>									
MACKENZIE/BEAUFORT	6,540	37,429	0.4	235	1,023	6,938	8,196	8,195	GSC Bull 474
ARCTIC ISLANDS	1,674	15,304	3	0	332	3,591	3,926	3,923	GSC Paper 83-31
SOUTH YT & NWT	18	313	2	3	0	52	56	54	NOGD, NEB, YU Govt
COLVILLE HILLS	0	113	0	0	0	23	23	23	CGPC, 2001, Bever, 1992
PEEL BASIN	0	187	0	0	0	45	45	45	YU Govt, NEB
EAGLE PLAIN	39	105	0	0	12	28	40	40	YU Govt, NEB
OTHER YUKON BASINS	0	140	0	0	0	22	22	22	YU Govt, NEB, GSC
OTHER MAINLAND	630	895	251	51	0	189	491	240	NOGD, NEB
BAFFIN BAY / LANCASTER	0	3,517.7	0	0	0	814.9	815	815	GSC Paper 83-31
FOXEHUDSON BAY (N of 60°N)	0	2,836	0	0	0	652	652	652	
<b>TOTAL NORTHERN CANADA</b>	<b>8,902</b>	<b>60,841</b>	<b>256</b>	<b>288</b>	<b>1,367</b>	<b>12,354</b>	<b>14,265</b>	<b>14,009</b>	
<b>OTHER FRONTIER</b>									
BC OFFSHORE	0	11,037	0	0	0	2,483	2,483	2,483	GSC Open File 3629
BC INTERMONTANE	0	7,607	0	0	0	1,521	1,521	1,521	BC MEM
HUDSON BAY (S of 60°N)	0	2,320	0	0	0	534	534	534	GSC Paper 83-31
<b>TOTAL OTHER</b>	<b>0</b>	<b>20,964</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,538</b>	<b>4,538</b>	<b>4,538</b>	
<b>TOTAL FRONTIER</b>	<b>16,803</b>	<b>129,448</b>	<b>1,293</b>	<b>1,198</b>	<b>2,336</b>	<b>32,560</b>	<b>37,387</b>	<b>36,094</b>	
<b>TOTAL CANADA</b>	<b>126,987</b>	<b>154,203</b>	<b>22,653</b>	<b>4,043</b>	<b>2,336</b>	<b>38,324</b>	<b>67,356</b>	<b>44,703</b>	

**TABLE 24**  
**CANADA - CONVENTIONAL RECOVERABLE OIL (MILLION BARRELS)**  
**RISKED FRONTIER CONCEPTUAL**

December 31, 2007	OIL-IN-PLACE		CUM	REM	DISCOV.	UNDISCOV.	ULTIMATE	REMAINING	SOURCE
	DISCOV	UNDISCOV	PROD.	RESERVES	RESOURCES	RESOURCES	RESOURCE	RESOURCE	
<b>WESTERN CANADA SEDIMENTARY BASIN</b>									
ALBERTA	66,274	9,118	15,801	1,513	0	3,310	20,625	4,823	EUB, NEB, 1999, NEB, 2001
BRITISH COLUMBIA	2,760	1,180	688	124	0	346	1,158	470	BCMEM, NEB 2000
SASKATCHEWAN	39,331	14,296	4,530	1,174	0	2,073	7,778	3,248	SEM, NEB 1998
MANITOBA	1,315	151	253	24	0	31	308	55	SEM, NEB 1998
TOTAL WCSB	109,681	24,745	21,273	2,835	0	5,761	29,869	8,596	MITM Petr Branch
ONTARIO/QUEBEC	504	10	87	11	0	2	99	13	CGPC 2001
<b>TOTAL PRODUCING AREAS</b>	<b>110,184</b>	<b>24,755</b>	<b>21,360</b>	<b>2,845</b>	<b>0</b>	<b>5,763</b>	<b>29,968</b>	<b>8,609</b>	
<b>FRONTIER</b>									
<b>EAST COAST</b>									
SCOTIAN SHELF	215	2,959	44	0	32	714	790	746	GSC P 88-19, SOEI, CNSOPB
LAURENTIAN CHANNEL	0	2,326	0	0	0	535	535	535	MCLEAN & WADE, 1992
GEORGES BANK	0	1,519	0	0	0	380	380	380	GSC Paper 83-31
SCOTIAN DEEP-WATER SLOPE	0	5,000	0	0	0	1,700	1,700	1,700	CNSOPB, 2002
JEANNE D'ARC BASIN/SHELF	7,686	8,452	993	910	937	2,338	5,178	4,185	CNOPB, GSC 2001
E NEWFOUNDLAND BASIN	0	4,715	0	0	0	1,179	1,179	1,179	GSC Paper 83-31
SOUTH GRAND BANKS	0	316	0	0	0	79	79	79	GSC Paper 83-31
ANTICOSTI/W NEWFOUNDLAND	0	561	0	0	0	1,290	1,290	1,290	MILLAN, 1998
LABRADOR SHELF	0	3,052	0	0	0	763	763	763	GSC Paper 83-31
MARITIMES BASINS	0	467	0	0	0	107	107	107	GSC Paper 83-31
<b>TOTAL EAST COAST</b>	<b>7,901</b>	<b>29,367</b>	<b>1,037</b>	<b>910</b>	<b>969</b>	<b>9,085</b>	<b>12,001</b>	<b>10,963</b>	
<b>NORTHERN CANADA (N 60° N)</b>									
MACKENZIE/BEAUFORT	6,540	36,290	0	235	1,023	6,735	7,993	7,992	GSC Bull 474
ARCTIC ISLANDS	1,674	8,934	3	0	332	2,094	2,429	2,426	GSC Paper 83-31
SOUTH YT & NWT	18	286	2	3	0	47	52	50	NOGD, NEB, YU Govt
COLVILLE HILLS	0	113	0	0	0	22	22	22	CGPC, 2001, Bever, 1992
PEEL BASIN	0	125	0	0	0	30	30	30	YU Govt, NEB
EAGLE PLAIN	39	105	0	0	12	28	40	40	YU Govt, NEB
OTHER YUKON BASINS	0	26	0	0	0	4	4	4	YU Govt, NEB, GSC
OTHER MAINLAND	630	858	251	51	0	182	483	232	NOGD, NEB
BAFFIN BAY / LANCASTER	0	3,149	0	0	0	729	729	729	GSC Paper 83-31
FOXEHUDSON BAY (N of 60°N)	0	425	0	0	0	98	98	98	
<b>TOTAL NORTHERN CANADA</b>	<b>8,902</b>	<b>50,311</b>	<b>256</b>	<b>288</b>	<b>1,367</b>	<b>9,969</b>	<b>11,880</b>	<b>11,624</b>	
<b>OTHER FRONTIER</b>									
BC OFFSHORE	0	6,622	0	0	0	1,490	1,490	1,490	GSC Open File 3629
BC INTERMONTANE	0	1,141	0	0	0	228	228	228	BC MEM
HUDSON BAY (S of 60°N)	0	348	0	0	0	80	80	80	GSC Paper 83-31
<b>TOTAL OTHER</b>	<b>0</b>	<b>8,111</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,798</b>	<b>1,798</b>	<b>1,798</b>	
<b>TOTAL FRONTIER</b>	<b>16,803</b>	<b>87,789</b>	<b>1,293</b>	<b>1,198</b>	<b>2,336</b>	<b>20,851</b>	<b>25,678</b>	<b>24,385</b>	
<b>TOTAL CANADA</b>	<b>126,987</b>	<b>112,544</b>	<b>22,653</b>	<b>4,043</b>	<b>2,336</b>	<b>26,614</b>	<b>55,647</b>	<b>32,994</b>	

**TABLE 25  
CANADA DISTRIBUTION OF RECOVERABLE OIL AND GAS RESOURCES  
(WITH CONDITIONAL RISK OF FRONTIER CONCEPTUAL PLAYS)**

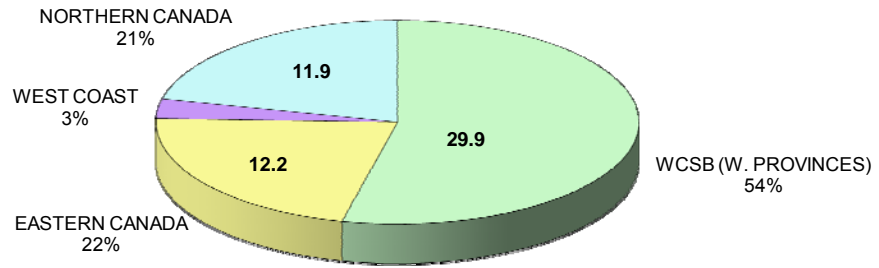
	<b>RECOVERABLE GAS (RISKED) - BCF</b>				<b>PERCENT OF TOTAL CANADA</b>			
	DISCOV	UND	ULT	REM_RS	DISCOV	UND	ULT	REM_RS
WCSB (W. PROVINCES)	254,215	101,525	355,740	165,719	83.7%	30.5%	55.9%	37.4%
EASTERN CANADA	16,695	95,292	111,988	109,353	5.5%	28.7%	17.6%	24.7%
WEST COAST	0	21,350	21,350	21,350	0.0%	6.4%	3.4%	4.8%
NORTHERN CANADA	32,727	114,315	147,042	146,296	10.8%	34.4%	23.1%	33.0%
<b>TOTAL</b>	<b>303,638</b>	<b>332,483</b>	<b>636,120</b>	<b>442,718</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

	<b>RECOVERABLE OIL (RISKED) - MMB</b>				<b>PERCENT OF TOTAL CANADA</b>			
	DISCOV	UND	ULT	REM_RS	DISCOV	UND	ULT	REM_RS
WCSB (W. PROVINCES)	24,108	5,761	29,869	8,596	83.0%	21.6%	53.7%	26.1%
EASTERN CANADA	3,014	9,167	12,180	11,056	10.4%	34.4%	21.9%	33.5%
WEST COAST	0	1,718	1,718	1,718	0.0%	6.5%	3.1%	5.2%
NORTHERN CANADA	1,911	9,969	11,880	11,624	6.6%	37.5%	21.3%	35.2%
<b>TOTAL</b>	<b>29,032</b>	<b>26,614</b>	<b>55,647</b>	<b>32,994</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

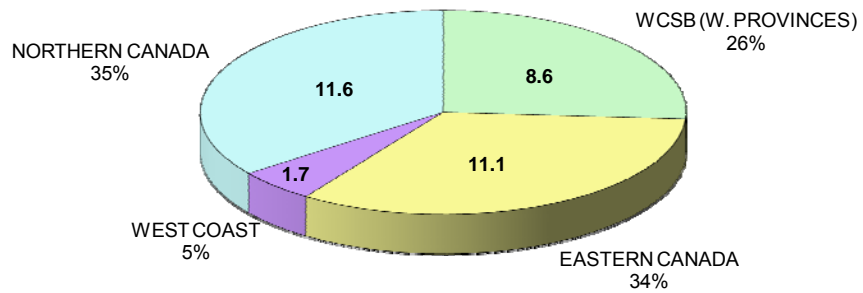
WCSB                   WESTERN CANADA SEDIMENTARY BASIN  
DISCOV               DISCOVERED RESOURCES (RESERVES AND/OR RESOURCES)  
UND                    UNDISCOVERED RESOURCES  
ULT                    ULTIMATE RESOURCES (DISCOVERED + UNDISCOVERED)  
REM\_RS              REMAINING RESOURCES  
                          (REMAINING DISCOVERED + UNDISCOVERED)



**A: CANADA ULTIMATE RECOVERABLE OIL RESOURCE  
55.6 BILLION BARRELS**



**B: CANADA REMAINING RECOVERABLE OIL RESOURCE  
33.0 BILLION BARRELS**



**C: CANADA UNDISCOVERED RECOVERABLE OIL RESOURCE  
26.6 BILLION BARRELS**

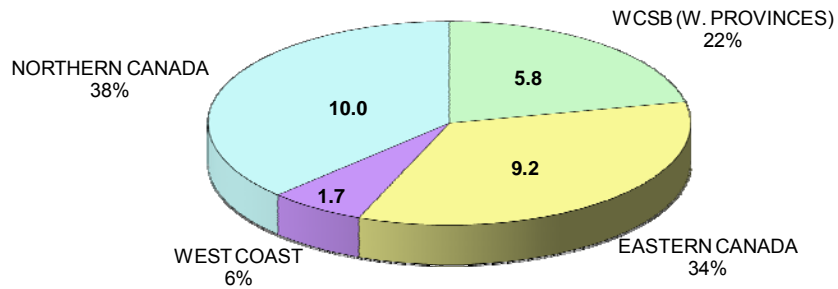
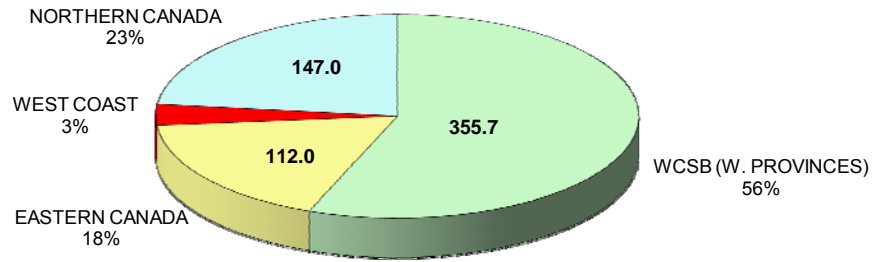
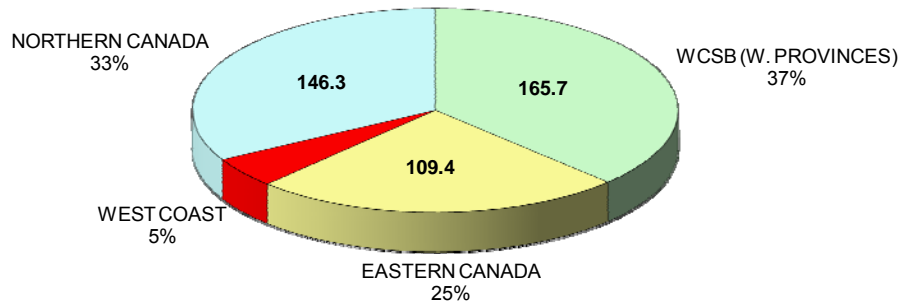


FIGURE 3. DISTRIBUTION OF RISKED RECOVERABLE OIL RESOURCES FOR CANADA

**A: CANADA ULTIMATE RECOVERABLE GAS RESOURCE  
636.1 TRILLION CUBIC FEET**



**B: CANADA REMAINING RECOVERABLE GAS RESOURCE  
442.7 TRILLION CUBIC FEET**



**C: CANADA UNDISCOVERED RECOVERABLE GAS RESOURCE  
332.5 TRILLION CUBIC FEET**

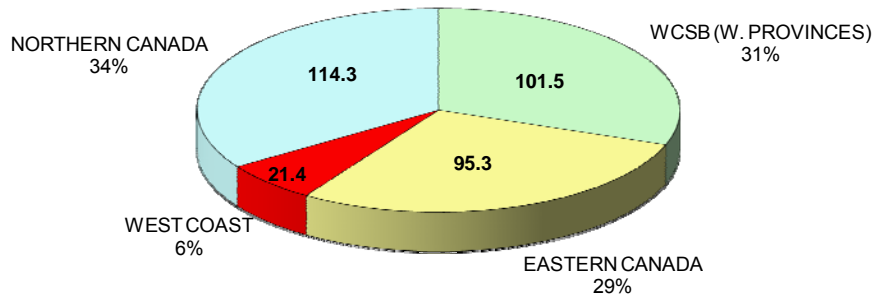


FIGURE 4. DISTRIBUTION OF RISKED RECOVERABLE GAS RESOURCES FOR CANADA

## Conclusions

A review of the oil and gas resources for Northern Canada north of 60°N has been done and the resources assigned to the territories, onshore and adjacent offshore Canadian waters. The ultimate risked recoverable resources are, 11.9 billion barrels of oil and 147.0 trillion cubic feet of natural gas. This represents 21% of the oil and 23% of the gas, estimated for Canada. The remaining recoverable resources for Northern Canada are 11.6 billion barrels of oil and 146.3 trillion cubic feet of gas, 35% and 33%, respectively of the Canada total.

The distribution by territory, including adjacent offshore Canadian waters is summarized in table 26. For the remaining risked recoverable resources in Northern Canada, including adjacent offshore Canadian waters, 51% of the oil and 48% of the gas is in the Northwest Territories, 23% of the oil and 40% of the gas in Nunavut and 26% of the oil and 12% of the gas in the Yukon.

**TABLE 26 DISTRIBUTION OF NORTHERN CANADA OIL AND GAS RESOURCES**

	RECOVERABLE GAS (RISKED) - BCF			REMAINING RESOURCE	% CANADA REMAINING
	DISCOVERED	UNDISCOVERED	ULTIMATE		
CANADA	303,638	332,483	636,120	442,718	
<b>NORTHERN CANADA</b>					
NORTHWEST TERRITORIES	16,242	54,740	70,982	70,474	15.9%
NUNAVUT	15,963	42,304	58,267	58,267	13.2%
YUKON	522	17,271	17,794	17,555	4.0%
TOTAL	32,727	114,315	147,042	146,296	33.0%
% OF CANADA	10.8%	34.4%	23.1%	33.0%	
	RECOVERABLE OIL (RISKED) - MMB			REMAINING RESOURCE	% CANADA REMAINING
	DISCOVERED	UNDISCOVERED	ULTIMATE		
CANADA	29,032	26,614	55,647	32,994	
<b>NORTHERN CANADA</b>					
NORTHWEST TERRITORIES	1,182	5,032.586	6,215	5,962	18.1%
NUNAVUT	323	2,339.467	2,662	2,660	8.1%
YUKON	406	2,596.803	3,002	3,002	9.1%
TOTAL	1,911	9,969	11,880	11,624	35.2%
% OF CANADA	6.6%	37.5%	21.3%	35.2%	

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## List of Acronyms and Abbreviations

AI	Arctic Islands
BF	Baffin Bay
BS	Beaufort Sea
CH	Colville Hills
EA	Eastern Arctic
EP	Eagle Plains
FFB	Franklinian Fold Belt
LP	Liard Plateau
MD	Mackenzie Delta
MP	Mackenzie Plain
ST	Southern Territories
SV	Sverdrup Basin
WCSB	Western Canada Sedimentary Basin
NT	Northwest Territories
NWT	Northwest Territories
NU	Nunavut
ONU	Nunavut outside Nunavut Settlement Area
YT	Yukon
YU	Yukon
AEUB	Alberta Energy Utilities Board
BC MEM	British Columbia Ministry of Energy and Mines
CAPP	Canadian Association of Petroleum Producers
CERI	Canadian Energy Research Institute
CGPC	Canadian Gas Potential Committee
CNLOPB	Canada - Newfoundland and Labrador Offshore Petroleum Board
CNSOPB	Canada - Nova Scotia Offshore Petroleum Board
CSPG	Canadian Society of Petroleum Geologists
ERCB	Energy Resources Conservation Board
GRI	Gas Research Institute
GSC	Geological Survey of Canada
MITM	Manitoba Industry, Trade and Mines
NEB	National Energy Board
NOGD	Northern Oil and Gas Directorate (Indian and Northern Affairs Canada)
SEM	Saskatchewan Energy and Mines
SOEI	Sable Offshore Energy Incorporated
USGS	United States Geological Survey
Bcf	Billion Cubic Feet
CON	Conceptual (no oil or gas has been discovered)
Cum Prod.	Cumulative Production
Cum	Cumulative

Cum_RRG	Cumulative Raw Gas production
Cumoil	Cumulative Oil Production
Cumul	Cumulative
Disc_GIP	Discovered Gas in-place (reserves and/or resources)
Disc_IMG	Discovered Initial Marketable Gas (reserves and/or resources)
Disc_OIP	Discovered Oil in-place (reserves and/or resources)
Disc_RecO	Discovered Recoverable Oil (reserves and/or resources)
Disc_RRG	Discovered Recoverable Raw Gas (reserves and/or resources)
EST	Established (Established play – oil and/or gas has been discovered)
Frac	Fraction
GIP	Gas in-place
IMG	Initial Marketable Gas (Sales Gas)
MMB	Million Barrels
Offsh	Offshore
On_Off	Onshore_Offshore
Onsh	Onshore
OOIP	Original Oil in-place
Rec_Oil	Recoverable Oil
Recov	Recoverable
Rem_RRG	Remaining Raw Gas( reserves and/or resources)
Remoil	Remaining Oil (reserves and/or resources)
RRG	Recoverable Raw Gas
Tcf	Trillion Cubic Feet
Terr	Territory
TOT	Total
Ult	Ultimate (Reserves and/or resources)
Ult_GIP	Ultimate Gas in-place (reserves and/or resources)
Ult_IMG	Ultimate Initial Marketable Gas (reserves and/or resources)
Ult_OIP	Ultimate Oil in-place (reserves and/or resources)
Ult_RecO	Ultimate Recoverable Oil (reserves and/or resources)
Ult_RRG	Ultimate Recoverable Raw Gas (reserves and/or resources)
ULTGIP_R	Risked Ultimate Gas in-place (reserves and/or resources)
ULTIMG_R	Risked Ultimate Initial Marketable Gas (reserves and/or resources)
ULTOIP_R	Risked Ultimate Oil in-place (reserves and/or resources)
ULTRO_R	Risked Ultimate Recoverable Oil (reserves and/or resources)
ULTRRG_R	Risked Ultimate Raw Recoverable Gas (reserves and/or resources)
Und	Undiscovered (oil and/or gas resources)
Und_GIP	Undiscovered Gas in-place (resources)
Und_IMG	Undiscovered Initial Marketable Gas (reserves and/or resources)
Und_OIP	Undiscovered Oil in-place (resources)
Und_RecO	Undiscovered Recoverable Oil (resources)
Und_RRG	Undiscovered Recoverable Raw Gas (resources)
UNDGIP_R	Risked Undiscovered Gas in-place (resources)
UNDIMG_R	Risked Undiscovered Initial Marketable Gas (resources)
Undisc	Undiscovered (oil and/or gas resources)

UNDOIP_R	Risked Undiscovered Oil in-place (resources)
UNDRO_R	Risked Undiscovered Recoverable Oil (resources)
UNDRRG_R	Risked Undiscovered Raw Recoverable Gas (resources)

## Appendix

### Discussion of Field Size Estimates for the Mackenzie Delta / Beaufort Sea

There are significant differences between the operator and NEB estimates on the discovered field sizes in the Mackenzie / Beaufort. The operator estimates are from the 1988-1989 export application, and the current 2004 Mackenzie Gas Project Application GH-1-2004. The NEB in 1989 was in general agreement with the applicants. The 1998 probabilistic estimates are generally lower than the estimates of 1989 and 2004. There are a total of 14 fields with operator estimates in the 1988-89 export application, and three fields in the 2004 application. The estimates for the three anchor fields, Taglu, Parsons and Niglintgak in the 2004 application supersede those from the earlier application.

The NEB 1998 report is the only complete listing of estimates for both oil and gas for the Mackenzie Delta/Beaufort Sea. For this reason it is the NEB estimates that are used for the current study. The NEB reported the 95% probability, mean, median (50%) and 5% probability values for the fields. The values for the 14 fields are compared to the operator estimates, shown in table 27. The sum of the operator estimates is 9,121 Bcf, which compares to the sum of the NEB means of 7,114 Bcf. The operator estimates in total are some 2,007 Bcf higher. The NEB input data for the 14 fields was statistically aggregated in @Risk to get the distribution for the 14 fields. The operator total corresponds to the 8% probability value on the distribution. The aggregation was done with total dependency (correlation =1) between the fields. The NEB cumulative distribution curves are shown in figure 5.

The NEB estimates may be somewhat conservative, and the operator estimates could be considered as an upside number. It should be noted that for the three main Mackenzie Delta fields, Taglu, Parsons and Niglintgak, the 5% probability values by the NEB are less than the operator estimates, and the Operator estimate occurs at about 2.7% probability on the NEB curve of the total for the three fields.

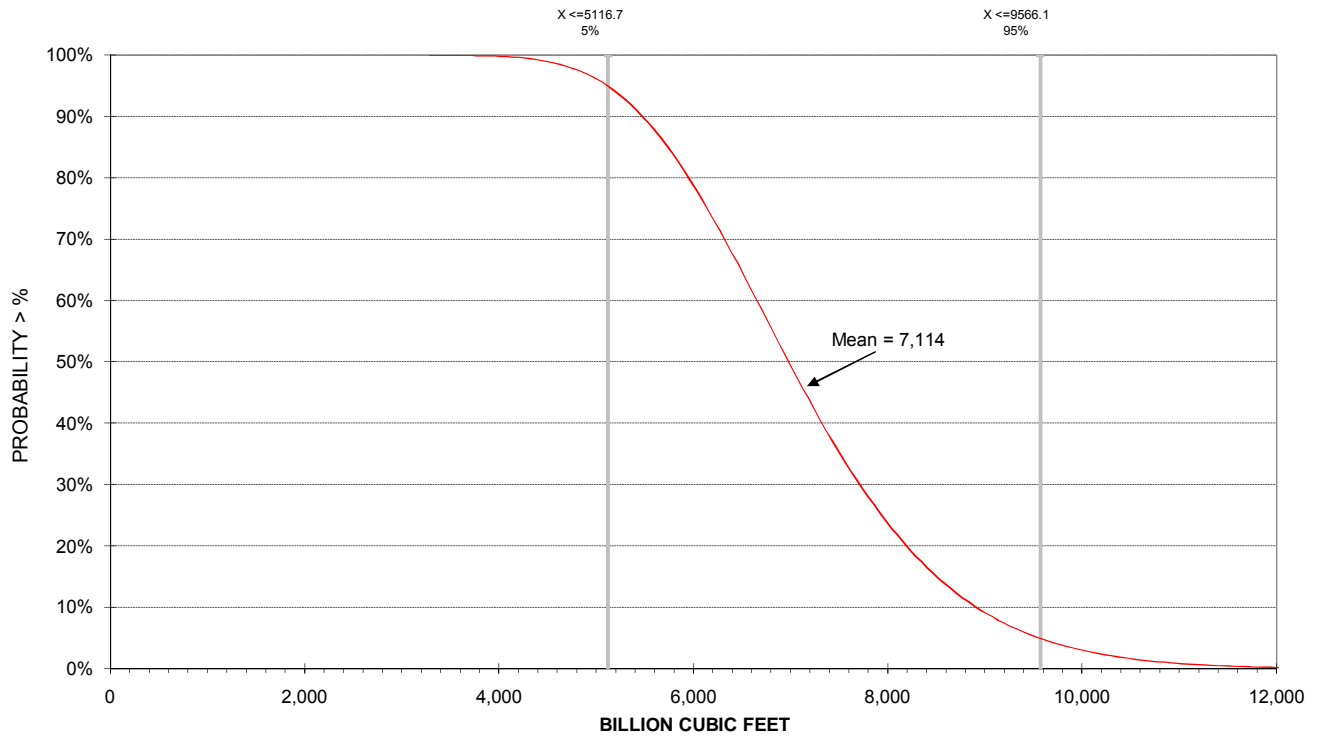
A study of the differences in value and percentages for the fields in table 27 indicates there is considerable uncertainty in the estimates for the Mackenzie Delta / Beaufort Sea.

**TABLE 27**

<b>GAS FIELDS IN THE MACKENZIE DELTA / BEAUFORT SEA                      COMPARISON OF NEB, 1998 PROBABILISTIC ESTIMATES                      WITH OPERATOR ESTIMATES FOR 1988 AND 2004 APPLICATIONS                      MARKETABLE GAS - BILLION CUBIC FEET</b>								
	FIELD	NEB PROBABILISTIC ESTIMATE (BCF)				OPERATOR ESTIMATE BCF	DIFFERENCE OPERATOR vs NEB	
		0.95	median	mean	0.05		BCF	% DIFF
MACKENZIE DELTA	TAGLU	1,434.79	2,037.47	2,080.55	2,886.29	2,690.60	610.06	29.3%
	PARSONS	929.86	1,233.96	1,258.70	1,660.39	2,122.00	863.31	68.6%
	NIGLINTGAK	298.03	460.89	483.46	743.64	844.80	361.34	74.7%
	TUK M-09	135.01	182.14	183.07	233.74	241.32	58.25	31.8%
	HANSEN	90.73	155.85	163.06	259.82	57.61	-105.45	-64.7%
	YA YA N. A-28	36.62	53.13	53.19	69.50	57.53	4.34	8.2%
	YA YA S. P-53	20.45	48.47	48.19	75.82	12.87	-35.32	-73.3%
	MALLIK	12.48	27.89	26.80	37.49	100.77	73.97	276.1%
BEAUFORT SEA	AMAILIGAK	1,130.84	1,365.21	1,367.31	1,611.07	1,336.52	-30.80	-2.3%
	ISSUNGNAK	826.58	1,108.54	1,134.25	1,525.09	1,126.00	-8.25	-0.7%
	NETSERK	71.19	112.63	115.33	168.62	137.82	22.49	19.5%
	ITIYOK	65.99	89.46	91.34	123.29	110.03	18.69	20.5%
	KADLUK	47.21	69.42	71.57	102.80	232.91	161.34	225.4%
	ARNAK	17.56	35.33	37.26	61.31	50.08	12.82	34.4%
	TOTAL OF 14 FIELDS	5116.7	6980.1	7,114.06	9564.8	9,120.86	2,006.80	28.2%
	3 LARGEST (ONSHORE)	2662.3	3732.2	3,822.70	5288.9	5,657.40	1,834.70	48.0%

Note: Operator estimates for Taglu, Parsons and Niglintgak are from the 2004 Mackenzie Gas Project Application  
 Others are from the 1988 Gas Export Application

**TOTAL FOR 14 FIELDS, MACKENZIE DELTA / BEAUFORT SEA  
NEB - DISTRIBUTION FOR MARKETABLE GAS**



**TAGLU, PARSONS AND NIGLINTGAK FIELDS, MACKENZIE DELTA  
NEB - DISTRIBUTION FOR MARKETABLE GAS**

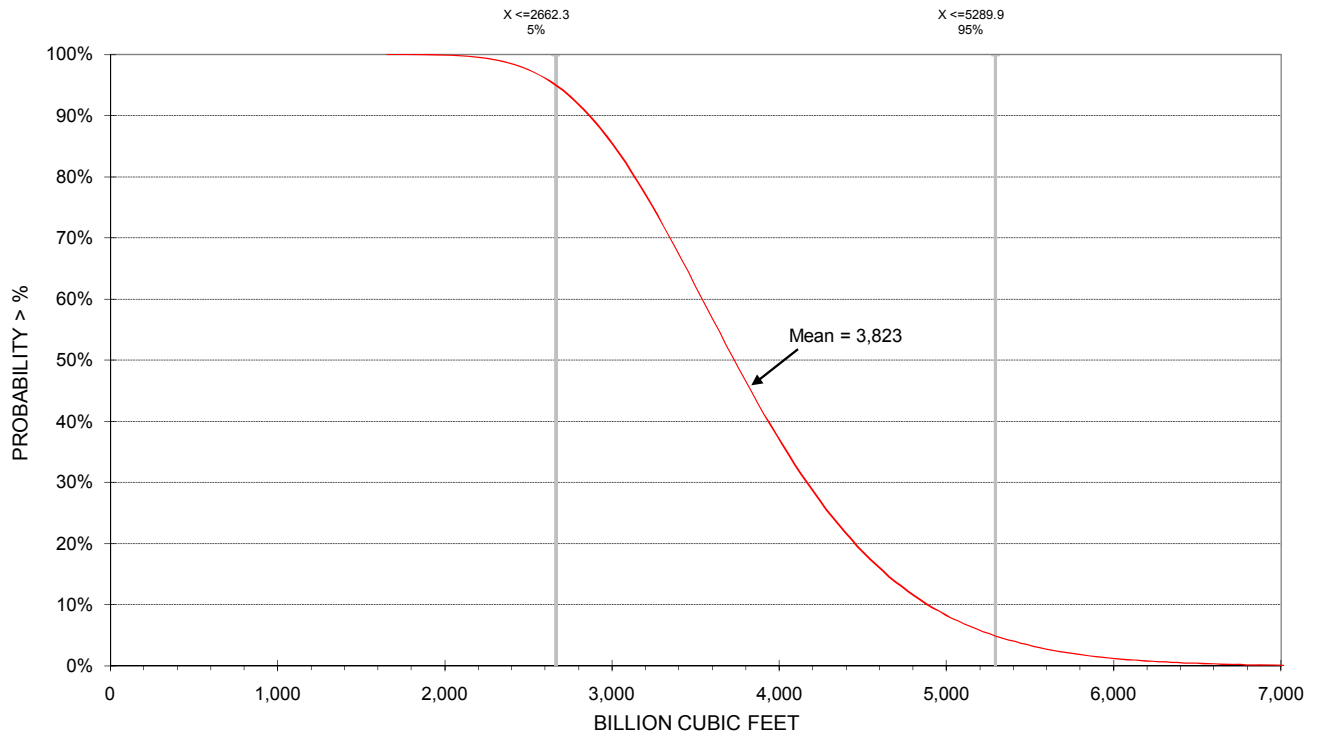


Figure 5. Cumulative distribution curves for NEB probabilistic estimates of marketable gas, Mackenzie Delta / Beaufort Sea  
For fields submitted in the 1988-89 export application and 2004 Mackenzie Gas Project application