



Northern Oil and Gas Annual Report 1997

The management of oil and gas resources North of 60⁰ latitude in the Northwest Territories and in Yukon is a federal responsibility. This responsibility is carried out by the Northern Oil and Gas Directorate of the Department of Indian Affairs and Northern Development.

Petroleum resource management on Crown lands north of 60⁰ latitude is exercised under two federal statutes: the *Canada Petroleum Resources Act* (CPRA) and the *Canada Oil and Gas Operations Act* (COGOA). The CPRA governs the allocation of Crown lands to the private sector, tenure to the allocated rights, and the setting and collection of royalties. It is administered by the Minister of Indian Affairs and Northern Development. The COGOA regulates the industrial activities with respect to resource conservation, environmental protection and safety of workers. It is administered by the National Energy Board.

Published under the authority of the
Honourable Jane Stewart, P.C., M.P.
Minister of Indian Affairs and
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MESSAGE FROM THE HONOURABLE JANE STEWART
MINISTER OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

I am pleased to table before Parliament the Northern Oil and Gas Report for 1997.

Readers will find this report interesting and informative. The oil and gas industry in Northern Canada continues building its partnerships with the Government of Canada, territorial governments and Aboriginal groups in the North.

The Canada- Yukon Oil and Gas Accord of 1993 was re-introduced to Parliament. The proposed legislation aims to carry forward the agenda of devolution to the Yukon government, making it responsible for administration and regulation of onshore oil and gas exploration and development in Yukon. The transfer of powers is expected to take place in 1998.

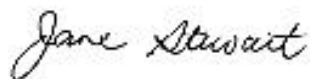
In the Southern NWT, new gas reserves were uncovered in 1997. Across the NWT, there were 13 wells drilled and approximately \$45 million in exploration work completed. In the Mackenzie Delta, the Inuvialuit Petroleum Corporation (IPC) submitted a development plan for the Ikhil gas field which could end the dependency of the Town of Inuvik on imported petroleum products. Town residents could soon be using a cheaper and cleaner source of energy.

In conjunction with the energy sector and with our northern partners, we are careful to safeguard the environment of the North. Today's projects are built in a responsible and sustainable fashion with an eye toward the future health of the environment and the people who depend on it, both in the energy sector and for other users of the land.

The northern oil and gas industry continues to generate business and job opportunities in the region. It provides a vehicle for building stronger communities by opening up chances for Aboriginal and non-Aboriginal workers to learn trades, to develop their own business ventures and to find work close to home.

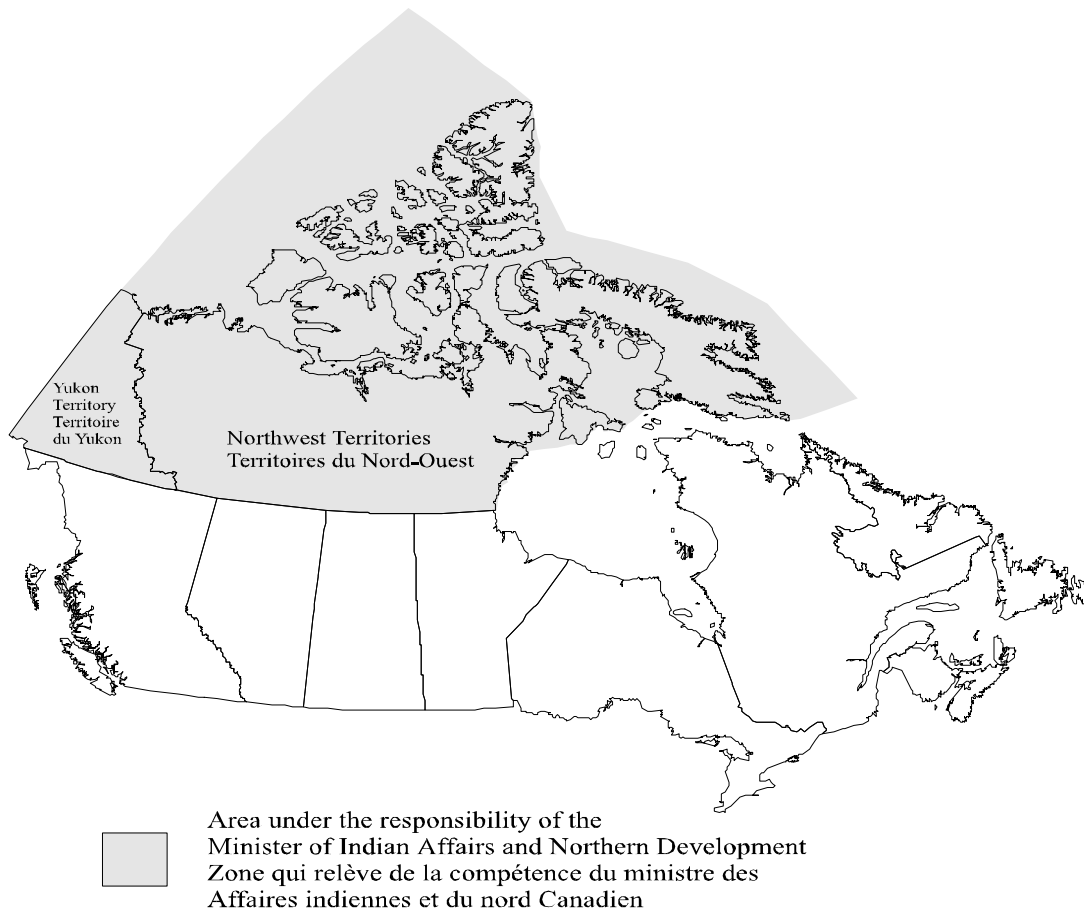
Economic development in the North is guided by the four principles of Gathering Strength: Canada's Aboriginal Action Plan -- partnership, strengthened Aboriginal governance, a new fiscal relationship, and building stronger communities. We are committed to work with our northern partners to bring about meaningful change that will strengthen northern communities both socially and economically.

Yours sincerely,

A handwritten signature in cursive script that reads "Jane Stewart".

Jane Stewart P.C., M.P.

Canada's Northern Frontier Lands



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OVERVIEW OF NORTHERN OIL AND GAS ACTIVITIES

For the third year in a row, the rights issuance process has attracted new investors to the Mackenzie Valley. In 1997, nine exploration licences were awarded to AEC-West, Canadian Abraxas, Cascade Oil and Gas, Grand River Resources, International Frontier Resources, Murphy Oil and Ranger Oil.

The rights issuance cycle initiated in the Central Mackenzie Valley in 1996 resulted in work expenditure bids totalling \$35,153,243 for seven of the eleven parcels posted. The call for nominations had attracted posting requests for some 1 070 572 hectares. The call for bids which closed in May 1997, resulted in the issuance of exploration licences totalling 577 018 hectares.

Two more exploration licences were issued to Husky Oil and Gulf Canada in the Mackenzie Delta in exchange for 21 exploration permits in the Cape Bathurst area. Cape Bathurst is part of the land for which the Inuvialuit received title, including minerals, under the Inuvialuit Final Agreement in 1984. The exchange allowed government to honour its commitments and deal with industry's exploration rights fairly.

One of the Department's objective in inviting resource development to the North is to diversify and strengthen the northern economy in support of land claim objectives and to enhance northern participation in all aspects of the economy.

In an effort to strengthen relationships with local communities, the Department undertook a review of the rights issuance process in collaboration with northern communities interested in oil and gas activity. This review should assist in providing greater certainty to

both local communities and industry as future rights issuance initiatives in the Central Mackenzie Valley are undertaken.

Exploration activity continued on exploration licences issued in 1995, 1996 and 1997. Six exploratory wells were commenced in 1997 on existing exploration licences, for a total of seven new exploratory wells drilled on licences issued in 1995 and subsequently. The exploration rights granted expire if a well is not drilled on the licence within four years of issuance. As of December 31, the requirement to drill a well had been met for six of the 28 licences with this stipulation.

Eight field geophysical operations were conducted in 1997. The total kilometrage of seismic shot, (449 km) was somewhat less than in previous years, reflecting progression to an emphasis on exploratory drilling as exploration licences mature.

One development 3-D seismic survey was conducted over the Ikhil discovery in the Mackenzie Delta. A development plan for this field was submitted and approved in 1997 by the National Energy Board.

Exploration activities, well abandonments and field development drilling resulted in expenditures of \$46.9 million. The creation of jobs and business opportunities for northern communities was focussed in the areas seeing active exploration: Tulita and Norman Wells in the Central Mackenzie Valley and Fort Liard in the southern Northwest Territories.

The annual call for nominations for the Beaufort Sea and Mackenzie Delta region

closed in April 1997. Although a region with high potential and 53 oil and gas discoveries -as yet undeveloped- no nominations were received.

In 1997, the federal legislation enabling the transfer to Yukon of the responsibilities for the administration and regulation of onshore

oil and natural gas in the Territory, in accordance with the Canada Yukon Oil and Gas Accord, received first and second readings in the House of Commons.

Royal Assent and implementation of the Accord are expected in 1998.

Overview of Northern Oil and Gas Activities, 1997

Lands held under licence as of year-end (millions of hectares).....	3.9
Licences active as of year-end..... (includes exploration, significant discovery and production licences)	174
Licences issued during the year	9
Natural gas production (millions of cubic metres).....	574
Oil production (millions of cubic metres).....	1.585
Exploration, development and abandonment expenditures (\$millions).....	46.9
Oil and gas revenues received in 1996 (\$millions)..... (royalties, rentals, fees, deposit forfeitures)	9.8

Discovered Resource Inventory

	Crude Oil (millions of m ³)	Natural Gas (billions of m ³)
Mainland Territories	39	35
Mackenzie Delta and Beaufort Sea	240	360
Arctic Islands and Eastern Arctic Offshore	66	416
Total	345	811

NORTHERN OIL AND GAS RESOURCES

Estimates of oil and gas resources discovered in the mainland Northwest Territories and Yukon, the Mackenzie Delta-Beaufort Sea, and the Arctic Islands (including the eastern Arctic offshore) amount to some 345 million cubic metres of oil and 811 billion cubic metres of natural gas.

Over time, and in the absence of new discoveries, the total remaining resources declines as fields are produced. As of the end of 1997, the North holds about 25 percent of Canada's remaining discovered conventional oil and 24 percent of remaining discovered gas. The importance of the northern basins is even more evident when one considers undiscovered conventional oil and gas resources (see table). The North is estimated to contain roughly 40 percent of both Canada's undiscovered conventional light crude oil potential and its undiscovered conventional gas potential.

One-third of northern Canada (north of 60°N latitude) is covered by sedimentary rock. Major basins with proven petroleum potential

lie beneath the mainland Northwest Territories and Yukon between the Canadian Shield in the East and the Rocky Mountains to the west (overlying the northern part of the Western Canada Sedimentary Basin); the Mackenzie Delta/Beaufort Sea, and the Arctic Islands (the Sverdrup and Franklinian basins).

In the far northwest, oil and gas have been found in the Eagle Plain of the Yukon, and in the east, gas/condensate has been discovered on the continental shelf southeast of Baffin Island. Between these geographic extremes lie numerous basins and subbasins with petroleum potential which remain largely unexplored.

The North has seen relatively little production of its oil and natural gas compared to southern Canada. To date, most oil production has been from the Norman Wells field in the central Mackenzie Valley (with some production from the much smaller Bent Horn field in the Arctic Islands). Gas is currently being produced from two fields close to the territorial border with British Columbia.

Northern Remaining Resources as Percentage of Total Canadian Remaining Resources*				
	Recoverable Conventional Light Crude Oil		Recoverable Conventional Natural Gas	
	Discovered	Undiscovered	Discovered	Undiscovered
Mainland Territories	2%	1%	1%	4%
Mackenzie Delta / Beaufort Sea	18%	21%	12%	15%
Arctic Islands/Eastern Arctic Offshore	5%	16%	13%	21%
Northern Canada Total	25%	38%	26%	40%

* As of end 1996: source - National Energy Board.

OIL AND GAS MANAGEMENT

Rights Issuance

The Central Mackenzie Valley Call for Bids, initiated in the fall of 1996, closed in May 1997. Seven of the eleven parcels posted attracted work expenditure bids totaling \$35,153,243. The exploration licences issued cover some 577 018 hectares of land.

In 1994, thirteen parcels were offered in the Southern and Central Mackenzie Valley resulting in ten exploration licences issued in exchange for work proposals of \$27,046,389. In 1995, thirteen new parcels were offered for the same region, resulting in eleven exploration licences issued in exchange for work proposals totalling \$29,660,131.

Since 1994, a total of 30 new exploration licences covering some 1 411 068 hectares have been issued in the Northwest Territories. Work proposals total \$91,859,763. At the end of 1997, approximately twenty oil and gas companies held newly acquired exploration acreage in the North.

In 1997, the annual call for nominations in the Mackenzie Delta and Beaufort Sea area was launched in January. The call for nominations closed on April 4, 1997 with no new posting requests received.

On January 6, 1997, Husky Oil Operations Ltd. and Gulf Canada Resources Limited received two new oil and gas exploration licences in the Mackenzie Delta in exchange for the surrender of 21 former permits in the Cape Bathurst region of the N.W.T. These former permits were on land for which the Inuvialuit received title, including subsurface mineral rights, under the Inuvialuit Final Agreement in 1984. The land exchange was

concluded with the support of the Inuvialuit and the Government of the Northwest Territories and allowed Canada to honour its commitments under the Inuvialuit Final Agreement as well as Husky's and Gulf's exploration rights.

Northern Benefits

When exploration and development are undertaken in northern Canada, the proponent must ensure full and fair access to employment, training and business opportunities for northerners, and give first consideration to qualified individuals resident in regional communities.

The gradual reopening of the mainland Northwest Territories to oil and gas exploration is beginning to generate employment and business opportunities for northern communities.

In particular, the community of Fort Liard has seen continued growth in local businesses and employment due to oil and gas exploration. As well, the Sahtu communities of Tulita and Norman Wells are gaining economic benefits from renewed exploration activity.

Environmental Considerations

Prior to issuing Calls for Nominations consultations are held with First Nations to identify areas of environmental sensitivity, including those holding special interest for cultural or spiritual reasons to First Nations. Some of these areas are then either excluded from the lands available for nomination or are flagged as being subject to certain terms and

conditions at the activity permitting stage. Environmental considerations also play an important role in regard to the issuance of land use permits, water licences and all work authorizations.

The Environmental Studies Research Funds (ESRF)

Under the Canada Petroleum Resources Act, the ESRF finances environmental and social studies related to the exploration and development of oil and gas resources on frontier lands. The program is funded through levies paid by interest holders. Levies have not been imposed since 1994 as no new projects were initiated. Since its inception in 1983, the ESRF has published 134 reports which are available from the National Energy Board.

Canada-Yukon Oil & Gas Accord

The Federal and Yukon governments signed the Canada-Yukon Oil and Gas Accord in May 1993. This agreement provides for the transfer to Yukon of the responsibilities for the administration and regulation of onshore oil and natural gas exploration and development in Yukon. This provincial-type responsibility will be exercised by the government of Yukon once the agreement is implemented.

Bill C-8, the *Canada-Yukon Oil and Gas Accord Implementation Act*, was introduced into Parliament on October 2, 1997. The proposed Act had to be reintroduced after Bill C-50 died on the order paper when the federal election was called in April 1997. The proposed legislation, once passed by Parliament, will implement the agreement. An implementation date will be set once the federal legislation receives Royal Assent.

Oil and Gas Revenues Received (\$)					
	1993	1994	1995	1996	1997
Royalty	7 075 862	7 455 222	7 633 984	13 967 952	9 887 982
Rentals	25 755	7 818	7 818	7 525	7 818
Issuance/Registration Fees	886	17 897	4 621	14 907	22 464
Work Deposit Forfeitures	0	1 050 119	10 576 840	649 000	0
Total	7 102 503	8 531 056	18 223 263	14 639 384	9 918 264

Expenditures & Royalties

Royalties received from industry on northern oil and natural gas production amounted to about \$10 million during 1997. From this amount, the Sahtu and Gwich'in First Nations received a share in fulfilment of royalty

sharing provisions in their land claim settlement agreements.

Exploration and development expenditures amounted to \$46.6 million.

DEVELOPMENT AND PRODUCTION

Norman Wells

Imperial Oil's Norman Wells oil field lies in the central Mackenzie Valley about halfway between oil producing regions of northern Alberta and the undeveloped resources of the Mackenzie Delta and offshore Beaufort Sea.

The field, at the current terminus of the Norman Wells pipeline is strategically placed to act as a focus for production from future oil discoveries in the mid-section of the Mackenzie Valley -- currently the object of intense exploration. Interprovincial Pipeline Ltd's 30 cm (12") diameter line runs from the Norman Wells field to Zama, Alberta, 866 km to the south. Towards the end of 1997, oil was pumping at rates of about 4,770 cubic metres per day.

Norman Wells production in 1997 was 1.585×10^6 cubic metres, reflecting the expected gentle decline in production over the previous year. A total of 135.5×10^6 cubic metres of gas was produced with the oil. Seven development wells were drilled within the Norman Wells field in 1997. These were drilled as part of a continuing program to optimize recovery of known reserves.

Pointed Mountain

Amoco-operated Pointed Mountain gas field entered production in 1972. Peak production approaching 1.0×10^9 cubic metres per year in the mid-1970s was followed by decline to a production plateau at about one tenth of this flow in 1988. Rates of this order endured until 1994 when production again began to show significant decline. Total gas produced in 1997

was 33.9×10^6 cubic metres, 72% of the total for the previous year. Gas from the single producing well flows through a raw gas pipeline to Fort Nelson, B.C., where it enters the Westcoast system.

Bent Horn

The National Energy Board (NEB) reported that the *M.V. Arctic* oil tanker, carrying approximately 100 000 barrels, departed Bent Horn for Montreal August 27, 1997 with the last load of crude from Bent Horn. Abandonment of the Bent Horn facility continues, and is expected to be completed in 1999.

Kotaneelee

The Kotaneelee gas field in southeastern Yukon is operated by Anderson Oil and Gas. The field lies 11 km north of the border with British Columbia and some 30 km southwest of the Pointed Mountain gas field.

After producing a small amount of gas in 1979 and 1980, the field was shut in until 1991. Production peaked in 1992 and the field has since entered the expected gentle decline.

In 1997, total production of natural gas was 404.5×10^6 cubic metres, 95% of 1996 production. Gas is produced from two wells and enters the raw gas pipeline running south from the Pointed Mountain field.

Ikhil Gas Field

A development plan for the Ikhil K-35 gas discovery on the Mackenzie Delta was filed with the National Energy Board (NEB) by the Inuvialuit Petroleum Company.

The field lies some 50 km north of the town of Inuvik and the project will supply gas by pipeline to this community for electrical power generation and town gas.

The Development plan was approved by the NEB on 23 December 1997 subject to the consent of the Governor in Council.

This project will substantially replace diesel fuel imported to Inuvik from Edmonton with locally produced natural gas. This increases local self-sufficiency, improves efficiency, and is expected to reduce energy costs substantially. The project furthers sustainable development objectives of this remote community.

Chance Field, Yukon

Northern Cross (Yukon) Ltd. plans to reenter and evaluate wells at the Chance oil and gas discovery on the Eagle Plain of northern Yukon. Field operations are expected to commence in the spring of 1998.

STATISTICAL OVERVIEW

The following statistics summarize oil and gas activities under the management of Northern Oil and Gas. A breakdown is also provided by region. The exploration, development, production and resource inventory statistics below and reported previously are provided courtesy of the National Energy Board. Discovered resource totals are estimates of original recoverable volumes and do not reflect production; totals have been rounded; crude oil includes condensates. Licences include exploration, significant discovery and production licences as well as leases.

Oil and Gas Production					
	1993	1994	1995	1996	1997
Oil Production (thousands of m³)					
Norman Wells	1790.0	1730.0	1697.6	1631.8	1584.6
Bent Horn	56.9	52.9	35.3	39.6	0
Total	1846.9	1782.9	1732.9	1671.4	1584.6
Gas Production (millions of m³)					
Pointed Mountain	99.6	63.6	65.9	47.2	33.9
Norman Wells	133.6	123.9	129.8	132.4	135.5
Kotanelee	492.3	471.1	442.9	427.5	404.5
Total	725.5	658.6	638.6	607.1	573.9

Activity Status					
	1993	1994	1995	1996	1997
Licences issued	2	0	10	11	9
Wells spudded	0	4*	3	7	13
Metres drilled	0	6 471 *	4 850	12 677	17 163
Wells terminated	0	4	3	6	12
Geophysical programs run	2	0	3	15	8
Reflection seismic (km)	340	0	698	922	449
Rig-months	0	5*	3	5	20
Industry Expenditures (\$million)	15.5	12.4	16.6	50	46.9

* Corrections.

STATISTICAL OVERVIEW cont'd

Exploration Licences Issued In 1997						
LICENCE No.	AREA (in ha)	REPRESENTATIVE	DATES (y.m.d.)			WORK BID
			Issue	Well to be drilled by	Expiry	
EL 384	85 761	Husky Oil Operations Ltd.	1997.01.06	2006.01.05	2006.01.05	n/a *1
EL 385	128 327	Husky Oil Operations Ltd.	1997.01.06	2006.01.05	2006.01.05	n/a *1
EL 386	114 737	Grand River Resources Inc.	1997.05.05	2001.05.04	2005.05.04	\$1 072 000
EL 387	128 575	AEC West Ltd.	1997.05.05	2001.05.04	2005.05.04	\$9 482 688
EL 388	30 696	Murphy Oil Company Ltd.	1997.05.05	2001.05.04	2005.05.04	\$2 831 080
EL 389	46 738	Canadian Abraxas Petroleum Limited	1997.05.05	2001.05.04	2005.05.04	\$3 101 015
EL 390	50 938	Ranger Oil Limited	1997.05.05	2001.05.04	✓ 2005.05.04	\$6 200 000
EL 391	71 816	International Frontier Resources Ltd.	1997.05.05	2001.05.04	2005.05.04	\$4 000 000
EL 392	133 518	AEC West Ltd.	1997.05.05	2001.05.04	2005.05.04	\$8 466 460

*1 Land exchange for Cape Bathurst Former Permits.

✓ The drilling of one (1) exploratory or delineation well prior to the end of Period 1 of the term is a condition precedent to obtaining tenure to Period 2. Well requirement met as of year end.

STATISTICAL OVERVIEW cont'd

Exploration Licences Issued Before 1997							
LICENCE No.	AREA (in ha)	REPRESENTATIVE	DATES (y.m.d.)			WORK BID	
			Issue	Well to Be Drilled by	Expiry		
Eastern Arctic Offshore							
EL 297	931 640	CanNat Resources Inc.	1986.07.15	n/a		1998.07.14	n/a ^{*3}
Beaufort Sea\Mackenzie Delta							
EL 317 ^{1*}	175 810	Pembina Resources	1986.10.05	n/a		n/a	n/a ^{*3}
EL 329 ^{1*}	349 982	Amoco Canada Resources Ltd.	1987.09.05	n/a		n/a	
EL 344 ^{2*}	7 787	Imperial Oil Resources Limited	1987.06.01	n/a		n/a	
EL 355 ^{2*}	15 351	Imperial Oil Resources Limited	1990.08.01	n/a		1998.08.01	\$1 500 031
Mainland - Southern NWT							
EL 362	20 918	Ranger Oil Limited	1995.01.23	1999.01.22		2002.01.22	\$1 838 075
EL 363	9 864	Ranger Oil Limited	1995.01.23	1999.01.22	✓	2002.01.22	\$3 529 000
EL 364	13 357	Ranger Oil Limited	1995.01.23	1999.01.22		2002.01.22	\$1 278 934
EL 365	20 635	Ocelot Energy Inc.	1995.01.23	1999.01.22		2002.01.22	\$1 500 000
EL 366	11 839	Chevron Canada Resources Limited	1995.01.23	1999.01.22		2002.01.22	\$1 201 200
EL 367	24 382	Shell Canada Limited	1995.01.23	1999.01.22		2002.01.22	\$1 768 600
EL 368	23 085	Paramount Resources Ltd.	1995.01.23	1999.01.22		2002.01.22	\$2 800 000
EL 369	25 737	Shell Canada Limited	1995.01.23	1999.01.22	✓	2002.01.22	\$8 765 580

^{*1} Under work prohibition orders.

^{*2} Maintained under applications for significant discovery.

^{*3} Originally issued pursuant to the Canada Oil and Gas Land Regulations.

✓ The drilling of one (1) exploratory or delineation well prior to the end of Period 1 of the term is a condition precedent to obtaining tenure to Period 2. Well requirement met as of year end.

STATISTICAL OVERVIEW cont'd

Exploration Licences Issued Before 1997 cont'd							
LICENCE NO.	AREA (in ha)	REPRESENTATIVE	DATES (y.m.d.)			WORK BID	
			Issue	Well to Be Drilled by	Expiry		
Mainland - Southern NWT							
EL 378	23 145	Husky Oil Operations Ltd.	1996.04.10	2000.04.09		2003.04.09	\$3 154 000
EL 379	24 420	Norcen Energy Resources Limited	1996.04.10	2000.04.09		2003.04.09	\$6 388 731
EL 380	25 606	Paramount Resources Ltd.	1996.04.10	2000.04.09		2003.04.09	\$2 200 000
EL 381	21 236	Unocal Canada Exploration Limited	1996.04.10	2000.04.09	✓	2003.04.09	\$6 250 000
EL 382	25 335	Ocelot Energy Inc.	1996.04.10	2000.04.09	✓	2003.04.09	\$1 100 000
EL 383	25 515	Shell Canada Limited	1996.04.10	2000.04.09		2003.04.09	\$1 224 400
Mainland - Central Mackenzie Valley							
EL 371	75 196	Foxboro Ltd.	1995.06.08	2000.06.07		2004.06.07	\$1 150 000
EL 372	88 693	Ranger Oil Limited	1995.05.18	1999.05.17		2003.05.17	\$3 215 000
EL 373	99 560	Grand River Resources Inc.	1996.03.27	2001.03.26		2005.03.26	\$1 226 000
EL 374	138 170	Grand River Resources Inc.	1996.03.27	2001.03.26		2005.03.26	\$1 042 000
EL 375	3 508	Murphy Oil Company Ltd.	1996.03.27	2000.03.26	✓	2004.03.26	\$2 806 000
EL 376	86 156	Canadian 88 Resources Corp.	1996.03.27	2000.03.26		2004.03.26	\$1 200 000
EL 377	47 693	Ranger Oil Limited	1996.03.27	2000.03.26		2004.03.26	\$3 069 000

✓ The drilling of one (1) exploratory or delineation well prior to the end of Period 1 of the term is a condition precedent to obtaining tenure to Period 2. Well requirement met as of year end.

STATISTICAL OVERVIEW cont'd

Land Status					
	1993	1994	1995	1996	1997
Number of Licences Issued					
Mainland Territories	0	0	10	11	7
Mackenzie Delta & Beaufort Sea	2	0	0	0	2
Arctic Islands & Eastern Arctic Offshore	0	0	0	0	0
Total	2	0	10	11	9
Number of Licences Active					
Mainland Territories	53	53	63	74	81
Mackenzie Delta & Beaufort Sea	73	72	69	68	70
Arctic Islands & Eastern Arctic Offshore	23	23	23	23	23
Total	149	148	155	165	174
Lands Issued in Licences (in millions of hectares)					
Mainland Territories	0	0	0.3	0.5	0.6
Mackenzie Delta & Beaufort Sea	0 ^{*1}	0	0	0	0.2
Arctic Islands & Eastern Arctic Offshore	0	0	0	0	0
Total	0	0	0.3	0.5	0.8
Lands Relinquished or Surrendered (in millions of hectares)					
Mainland Territories	0	0	0	0	0
Mackenzie Delta & Beaufort Sea	0 ^{*1}	0 ^{*1}	0.1	0.1	0
Arctic Islands & Eastern Arctic Offshore	0	0	0	0	0
Total	0	0^{*1}	0.1	0.1	0
Lands Held Under Licence (in millions of ha)					
Mainland Territories	0.2	0.2	0.5	1.0	1.6
Mackenzie Delta & Beaufort Sea	1.1	1.1	1.0	0.9	1.1
Arctic Islands & Eastern Arctic Offshore	1.3	1.3	1.3	1.3	1.3
Total	2.6	2.6	2.8	3.2	4.0

^{*1} Less than 0.1 million hectares.

STATISTICAL OVERVIEW cont'd

Regional Exploration Activity					
	1993	1994	1995	1996	1997
Mainland Territories					
Wells spudded					
Exploratory/delineation	0	0	0	1	6
Development	0	4	3	6	7
Wells terminated ^{*1}					
Exploratory/delineation	0	0	0	0	5
Development	0	4	3	6	7
Metres drilled					
Exploratory/delineation	0	0	0	1 309	11 281
Development	0	0	4 850	11 368	5 882
Rigs active	0	0	1	2	6
Geophysical programs run	1	0	8	15	7
Reflection seismic (km)	55	0	698		449
Total money spent (millions of \$)	11.1	12.8	16.47	921.5 ^{*2}	
				33.25	43.55 ^{*3}
Mackenzie Delta & Beaufort Sea					
Wells spudded	0	0	0	0	0
Wells Terminated	0	0	0	0	0
Metres drilled	0	0	0	0	0
Rigs Active	0	0	0	0	1
Geophysical programs run	1	0	0	0	1
Reflection seismic (km)	285 ^{*2}	0	0	0	199 ^{*2}
Total money spent (millions of \$)	18.9	4	0.04	3.5	3.05
Arctic Islands & Eastern Arctic Offshore					
Wells spudded	0	0	0	0	0
Wells terminated	0	0	0	0	0
Metres drilled	0	0	0	0	0
Rigs Active	0	0	0	0	0
Geophysical programs run	0	0	0	0	0
Reflection seismic (km)	0	0	0	0	0
Total money spent (millions of \$)	0.4	0	0.1	13.0 ^{*4}	0

^{*1} In the Mainland Territories, where exploratory operations are generally restricted to the winter months, a well is deemed to be terminated in the year in which it reaches total depth, even though it may be re-entered in the following year for testing.

^{*2} Includes three-dimensional seismic equivalent.

^{*3} Includes two well abandonments in Yukon.

^{*4} Estimated cost of abandoning four wells, including two at the Bent Horn Field.

STATISTICAL OVERVIEW cont'd

Well Activity: Exploration Drilling			
Well Name	LOCATION Latitude \Longitude	Status	Total Depth
Mainland Northwest Territories			
Ucel OEI Liard K-02	60°11'33.8" N 123°31'10.2" W	COMPLETED: spud 1996.12.14; rig release 1997.01.20 (Cactus #1)	1657 m
Paramount Bowie C-76	60°15'14.8" N 122°59'22.3" W	COMPLETED: spud 1997.01.16; rig release 1997.03.30 (Kenting #22)	3220 m
Paramount Bowie C-76 (Re-entry)	60°15'14.8" N 122°59'22.3" W	REENTRY: spud 1997.12.18; (Rig - Alberta Gold #30)	3220 m
OEI Liard N-60	60°19'55.3" N 123°10'36.0" W	COMPLETED: spud 1997.12.12; rig release 1997.12.25 (Precision #403)	835 m
Ranger Fort Liard P-66	60°35'55.7" N 123°41'25.3" W	COMPLETED: spud 1997.01.10; rig release 1997.07.13 (Cactus #26E)	3121 m
Ranger Fort Liard P-66A	60°35'55.7" N 123°41'25.3" W	DRILLING: spud 1997.07.14; (rig -Cactus #26E)	3500 m
Murphy Discovery Ridge H-55	65°24'15.7"N 126°54'25.0"W	COMPLETED: spud 1997.02.26; rig release 1997.03.12 (Shehtah #1)	580 m
IPC et al Ikhil K-35 (work-over)	68°44'43.7"N 134°09'16.1"W	COMPLETED: spud 1997.02.22; rig release 1997.03.19 (Roll'n #12)	1540 m
Ranger Nota Creek C-17	65°06'01.0" N 126°02'56.0" W	DRILLING: spud 1997.12.20; (rig- Shehtah #1)	to be determined

STATISTICAL OVERVIEW cont'd

Well Activity : Development Drilling			
Well Name	LOCATION Latitude \ Longitude	Status	Total Depth
Mainland Northwest Territories			
Imp Norman Wells P-32X (Producer)	65°15'28.9" N 126°53'56.4" W	COMPLETED: spud 1997.06.16; rig release 1997.07.07 (Shehtah #1)	960 m
Imp Norman Wells M-42X (Producer)	65°15'30.8" N 126°52'30.9" W	COMPLETED : spud 1997.07.13; rig release 1997.08.16 (Shehtah #1)	781 m
Imp Norman Wells M-39X (Producer)	65°15'30.7" N 126°52'31.0" W	COMPLETED: spud 1997.08.17; rig release 1997.08.29 (Shehtah #1)	945 m
Imp Norman Wells N-40X (Injector)	65°15'30.5" N 126°52'31.2" W	COMPLETED: spud 1997.08.30; rig release 1997.09.05 (Shehtah #1)	750 m
Imp Norman Wells O-40X (Producer)	65°15'30.4" N 126°52'31.3" W	COMPLETED: spud 1997.09.07; rig release 1997.09.13 (Shehtah #1)	811 m
Imp Norman Wells Q-37X (Producer)	65°15'28.9" N 126°53'55.9" W	COMPLETED: spud 1997.09.15; rig release 1997.09.21 (Shehtah #1)	739 m
Imp Norman Wells O-38X (Producer)	65°15'28.9" N 126°53'55.6" W	COMPLETED: spud 1997.09.22; rig release 1997.09.29 (Shehtah #1)	896 m

Well Activity - Abandonments			
Mainland Yukon			
Columbia et al Kotaneelee YT E-37	60°06'27.0"N 124°07'16.0"W	ABANDONED: 1997.08.17	4191.0 m
CS et al N. Beaver R. YT I-27	60°06'40.6"N 124°03'53.3"W	ABANDONED: 1997.09.26	4418.1 m
Mackenzie Delta & Beaufort Sea			
Sun SOBC BVX et al Garry P-04	69°23'45.8" N 135°30'19.4" W	ABANDONED: 1997.03.30	3352.8 m
Sun CCL BVX et al Garry G-07	69°26'23.0" N 135°30'56.0" W	ABANDONED: 1997.03.29	4021.2 m

SOURCES OF INFORMATION

Northern Oil and Gas Directorate

Many sources of information on oil and gas, environmental and land use matters originate with the Department of Indian Affairs and Northern Development. To obtain specific information, please include the appropriate contact listed in the sources below with the general mailing address for the department.

Northern Oil and Gas Directorate
Department of Indian Affairs and Northern Development
OTTAWA, Ontario, Canada K1A 0H4

Information on the resource management regime, calls for nominations and bids and other related information is available from: Chief, Rights Issuance and Policy-
Telephone (819) 994-1606.

Information on registration procedures and regulations, exploration, significant discovery and production licences, transfers, notices and maps is available from: Rights Administrator /Registrar-
Telephone (819) 953-8490.

Information on northern exploration history and geological/geophysical activities is available from:
Staff Geologist -Telephone (819) 953-8722.

Other relevant departmental information and publications such as *Land Use Regulations*, *Environmental Operating Guideline Handbooks* and land claim settlement agreements are available from the department's Enquiries Kiosk, by calling (819) 997-0380 or by Fax (819) 953-3017.

Northern Oil and Gas Directorate

Department of Indian Affairs and Northern Development

Street Address: 6th Floor, 10 Wellington Street, Hull, Quebec

Telephone: (819) 997-0877

Fax: (819) 953-5828

Internet: <http://www.inac.gc.ca/oil/index.html>

Other Sources of Information

National Energy Board (NEB)

Energy Plaza

311-6th Ave. SW,

Calgary AB T2P 3H2

Telephone: (403) 292-4800

Fax: (403) 292-5503

Through the offices of the NEB, information on the following is available:

- the Regulatory Support Office has information on exploration, development, production, pipeline transportation and export;
- the Frontier Information Office provides access to maps, technical information, geological and geophysical reports, well history reports and records; and
- the Environmental Directorate has information relating to the Environmental Studies Research Funds.

The Geological Survey of Canada's Institute of Sedimentary and Petroleum Geology, provides public viewing and sampling facilities for cores and samples, and information on wells drilled North of 60° at its offices at 3303-33rd Street NW, Calgary AB T2L 2A7.

Telephone: (403) 292-7000 Fax: (403) 292-5377

Information on wells drilled in the Baffin Bay – Davis Strait region is available from:

Core Storage and Laboratory,

Atlantic Geoscience Centre, Bedford Institute of Oceanography,

Dartmouth NS B2Y 4A2

Telephone: (902) 426-6127 Fax: (902) 426-6186

Information concerning Program on Energy Research and Development (PERD) is available from:

Office of Energy Research and Development,

Natural Resources Canada,

580 Booth Street, Ottawa ON K1A 0E4

Telephone: (613) 995-8860 Fax: (613) 995-6146