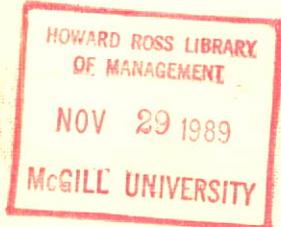


CANADA SOUTHERN Petroleum Ltd.



ANNUAL REPORT 1989



CANADA SOUTHERN PETROLEUM LTD. — 1989 ANNUAL REPORT

The Company and its Properties

In General

Canada Southern Petroleum Ltd. was incorporated under the Canada Corporations Act in 1954 as the successor to Canada Southern Oils Ltd., and has been a Nova Scotia corporation since 1980.

The Company's only business is petroleum exploration and development, principally in northwestern Canada and the Arctic Islands, where it holds property interests now aggregating approximately 810,000 gross acres. It has no short or long-term debt, and has cash and cash equivalents of about \$5.3 million.

More than half of the Company's acreage is covered by *carried interest* agreements with other companies. These have enabled Canada Southern to participate in oil and gas ventures in which its share of the exploration, development, and operating costs is advanced by the working-interest partners, and is repaid out of operating income.

British Columbia

Substantially all of Canada Southern's operating income, at present, is derived from production in northeastern British Columbia, where Canada Southern has varying interests in eight mature fields with about 113 productive oil and/or gas wells on 43,255 developed acres. These are the Boundary Lake, Buick Creek, Flatrock, Inga, Peejay, Siphon, Stoddard, and Town fields, all located generally within an 80-mile radius of Fort St. John.

The Yukon Territory

One of the Company's major assets is its 30 percent carried interest in the Kotaneelee gas field—discovered by Canada Southern in 1964—in the southeastern corner of the Yukon. This field, *only partially developed*, has proved and probable reserves estimated at 390 billion cubic feet by the operator's consultants, is capable of producing 120 million cubic feet per day from two wells on a sustained basis, and has been connected to a major pipeline system since 1974. Nonetheless, the working-interest partners have not sold any significant amount of Kotaneelee gas over the years, and thus the field remains shut-in.

When production does commence at Kotaneelee, Canada Southern will not receive any of the operating revenue until the working-interest partners have recovered their prior development and operating costs, which are approximately \$62 million. (In the present market environment, this "payout period" is estimated at about 10 years, but the length of that period could be shortened if gas prices were to rise.) Thereafter, under the current operating agreement, Canada Southern would receive a 30 percent share of the field's revenues net of operating costs. However, the operating agreement also stipulates that Canada Southern retains the absolute right to revert to a *working interest* by repaying its 30 percent share of any unrecouped prior development and operating costs, or about \$18.6 million.

The Arctic Islands

The Company's Arctic properties now aggregate approximately 335,000 gross acres, mostly in the western Sverdrup Basin to the north of Melville Island. Canada Southern has working and carried interests in the Government-designated "significant discovery areas"—*Hecla*, *Whitefish*, *Drake Point*, *Roche Point*, and *Kristoffer*—in this region, where major gas reserves have been established. Canada Southern's share of the estimated gas reserves in these areas is about 780 billion cubic feet.

The Company also has a 5 percent carried interest in an Arctic oilfield, *Bent Horn*, which is located on Cameron Island. In recent years, several shipments of crude oil have been made from Bent Horn to Montreal (by ice-breaking tanker) in an attempt to establish the feasibility of continuous production from the field, but economic and environmental considerations have mitigated against such production thus far.

At present, Bent Horn has three wells that are capable of production—one of which was tested at an average rate of 3,500 barrels per day over an extended period—and the field's reserves are believed to be very substantial. However, due to the highly fractured and cavernous nature of the reservoir, an ancient coral reef, a meaningful production history must be developed before in-place and recoverable reserves can be quantified.

Financial Highlights

Year ended June 30,

	1989	1988	1987	1986	1985
Operating revenues	<u>\$ 1,450,920</u>	<u>\$ 1,779,853</u>	<u>\$ 1,893,575</u>	<u>\$ 2,557,635</u>	<u>\$ 2,728,013</u>
Total revenues	<u>\$ 2,036,188</u>	<u>\$ 2,282,916</u>	<u>\$ 2,071,919</u>	<u>\$ 2,720,668</u>	<u>\$ 2,836,476</u>
Net income (loss)	<u>\$(1,181,175)</u>	<u>\$(25,333)*</u>	<u>\$ 143,853*</u>	<u>\$ 589,757*</u>	<u>\$ 895,000*</u>
Net income (loss) per share	<u>\$.10</u>	<u>—*</u>	<u>\$.02*</u>	<u>\$.07*</u>	<u>\$.10*</u>
Working capital	<u>\$ 5,566,844</u>	<u>\$ 6,443,327</u>	<u>\$ 2,466,843</u>	<u>\$ 2,489,956</u>	<u>\$ 1,858,026</u>
Total assets	<u>\$15,376,459</u>	<u>\$16,394,438</u>	<u>\$12,714,002</u>	<u>\$12,703,616</u>	<u>\$12,003,486</u>
Shareholders' equity:					
Limited Voting Shares	<u>\$11,989,954</u>	<u>\$11,989,954</u>	<u>\$ 8,992,465</u>	<u>\$ 8,992,465</u>	<u>\$ 8,992,465</u>
Capital in excess of par value ...	<u>15,586,274</u>	<u>15,586,274</u>	<u>14,693,788</u>	<u>14,982,543</u>	<u>14,982,543</u>
Accumulated deficit	<u>(12,559,622)</u>	<u>(11,378,447)</u>	<u>(11,353,114)</u>	<u>(11,496,967)</u>	<u>(12,086,724)</u>
	<u>\$15,016,606</u>	<u>\$16,197,781</u>	<u>\$12,333,139</u>	<u>\$12,478,041</u>	<u>\$11,888,284</u>
Average number of outstanding shares	<u>11,989,954</u>	<u>11,298,226</u>	<u>8,992,465</u>	<u>8,992,465</u>	<u>8,992,465</u>
Year-end exchange rate (\$1 Can. expressed in \$U.S.) ..	<u>\$.8357</u>	<u>\$.8245</u>	<u>\$.7515</u>	<u>\$.7216</u>	<u>\$.7359</u>

*Net income includes an extraordinary item of \$104,000 (1 cent a share) in 1988, \$148,000 (2 cents a share) in 1987, \$361,000 (4 cents a share) in 1986, and \$535,000 (6 cents a share) in 1985, representing tax benefits from the carryforward of exploration, development, and lease operating costs not claimed in prior years.

To Our Shareholders:

For the fiscal year ended June 30, 1989, Canada Southern incurred a net loss of \$1.2 million (10 cents a share) on total revenues of \$2.0 million, as compared to the \$25,000 loss (less than one cent a share) on revenues of \$2.3 million in fiscal 1988.

This year's loss is attributable to several factors, one of which was an 18 percent reduction in operating revenues from our producing properties in British Columbia. This was due largely to the sharply reduced oil prices, and the correlative reduction in oil revenue, prevailing during the first six months of fiscal 1989.

A second contributing factor was a 25 percent increase in general and administrative expense, which resulted from the costs incurred in the lawsuits relating to the Kotaneelee field, discussed hereinafter. Third, our lease operating costs were significantly higher in fiscal 1989 as a consequence of (a) the operator's adjusted method of billing these costs in the prior-year period, and (b) a 29 percent increase in the cost levels themselves. (See *1989 vs. 1988*, p. 13) In addition, depreciation and depletion charges for fiscal 1989 were more than double the 1988 charges as a result of the exclusion of Kotaneelee gas reserves from our depletion computation, as reported last year.

With respect to the Kotaneelee litigation, shareholders will recall that our U.S. lawsuit, initiated in mid-1987, sought substantial damages from Allied-Signal for failing to perform its contractual obligation to develop and market gas from the Kotaneelee field, in which we hold a 30 percent carried interest.

As the U.S. case was proceeding toward trial, Allied-Signal brought suit against Amoco Production Company and two related companies ("the Amoco group") in the Court of Queens Bench, Calgary, to seek indemnification from those companies, as its assignees, for any damages that might be awarded to Canada Southern in the U.S. case.

The Amoco group, in response, filed a counterclaim against Allied-Signal, Canada Southern, and several other oil companies, in which it asked the Court of Queens Bench to issue an injunction to prevent Canada Southern from pursuing its U.S. case. Such an injunction—albeit unprecedented in Canada—was granted last December; and Canada Southern obviously could not ignore that injunction. Shortly thereafter, the U.S. Court dismissed the case on the grounds that it should not be tried there, and subsequent appeals in the U.S. and Canadian Courts were abandoned on the advice of counsel.

As this report goes to press, Canada Southern has not initiated its damage claim against Allied-Signal in the Calgary Court; and neither the Allied-Signal indemnification action nor the Amoco group's counterclaim have been scheduled by that Court. However, the Company *has* entered into confidential discussions with certain adverse parties to the Kotaneelee litigation.

Canada Southern and the others have agreed not to comment further on the substance of these discussions; and we naturally intend to abide by that agreement. However, I would like to make it quite clear that our attorneys are continuing to advise the Company on its options, and that we will vigorously pursue appropriate actions as the situation unfolds.

Shortly after the publication of last year's annual report, our consulting geologist, Tony Ashton, was named vice president-exploration by the Board of Directors, and subsequently was elected to the Board to fill a vacancy created by the resignation of John W. Bush.

Mr. Ashton has been a professional petroleum geologist for the past 30 years, specializing in exploration plays in the western U.S. and Canada. His close association with the management of our Company is particularly advantageous at this juncture, for we believe we must acquire additional oil and gas assets with the potential cash flow needed to replace the maturing production from our British Columbia properties and to compensate for the long delay in bringing Kotaneelee gas to market. Given the improving price stability of the international oil market and the deregulation of the North American gas market, combined with lower land acquisition and drilling costs, these are indeed opportune times for increased participation in oil and gas ventures.

One approach we have adopted this year is a program of evaluating and bidding on Crown Lands where geologic prospects have been profiled. Naturally, in light of the technical work involved, such a program involves very long lead times; and only one lease—a 689-acre tract in northeastern B.C.—has been acquired thus far. However, the program is gaining momentum, and, over the next few years, we expect to build up an inventory of drillable oil and gas prospects.

We also have made a commitment to participate in drilling two wildcat wells—subject to the conclusion of satisfactory farm out agreements—on an oil prospect and a gas prospect in Alberta; and these wells should be completed before the end of this year. As you know, we already have participated in a 9,600-foot wildcat in the Sylvan Lake area, about 75 miles north of Calgary. This potential gas well, in which we have a 10 percent interest, is not yet in production due to technical problems that have made it quite difficult to conduct a proper evaluation; and the operator is now examining alternative solutions to these problems.

As a third approach, we are actively seeking to increase Canada Southern's revenues by acquiring producing properties from other companies. I would emphasize, however, that, while this approach *may* involve debt-financing, we are committed to a very conservative debt-to-equity ratio, or, preferably, to remaining debt-free.

In conclusion, I would like to express the view that the political and economic realities of the North American energy market are such that a substantial increase in Canadian gas sales to the United States has already commenced. That being the case, there is no question that Canada Southern's assets will become increasingly valuable; and I assure you of our dedication to preserve, protect, and enhance those assets.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Charles J. Horne".

Charles J. Horne
President

Calgary, Alberta
September 30, 1989

Petroleum Acreage Summary

as of June 30, 1989

	Gross Acres	Net Acres
Canada		
Alberta:		
Working Interests.....	640	40
British Columbia:		
Carried Interests.....	129,819	13,995
Working Interests.....	52,775	11,775
Overriding Royalty Interests.....	<u>5,184</u>	<u>353</u>
Total British Columbia.....	187,778	26,123
Yukon & Northwest Territories:		
Carried Interests.....	127,963	31,541
Working Interests.....	<u>157,882</u>	<u>18,967</u>
Total Yukon & Northwest Territories	285,845	50,508
Arctic Islands:		
Carried Interests.....	290,762	44,777
Working Interests.....	<u>44,577</u>	<u>1,795</u>
Total Arctic Islands	<u>335,339</u>	<u>46,572</u>
Total Canada	809,602	123,243
Australia	<u>1,475,825</u>	<u>955</u>
TOTAL	<u>2,285,427</u>	<u>124,198</u>

CANADA SOUTHERN PETROLEUM LTD.
(A Nova Scotia corporation)

Consolidated Balance Sheet
(Expressed in Canadian dollars)

June 30,

	1989	1988
Assets		
Current assets:		
Cash and cash equivalents	\$ 5,339,832	\$ 6,186,050
Accounts receivable	<u>389,694</u>	260,910
Prepaid insurance and other	<u>197,171</u>	193,024
Total current assets	<u>5,926,697</u>	6,639,984
Oil and gas properties (full cost method):		
Costs being depleted	<u>12,948,646</u>	12,637,987
Less accumulated depletion	<u>(3,823,735)</u>	<u>(3,175,253)</u>
	<u>9,124,911</u>	9,462,734
Costs not being depleted	<u>159,892</u>	142,960
	<u>9,284,803</u>	9,605,694
Other	<u>164,959</u>	148,760
	<u>\$15,376,459</u>	<u>\$16,394,438</u>
Liabilities and Shareholders' Equity		
Current liabilities:		
Accounts payable	<u>\$ 347,724</u>	\$ 188,167
Accrued liabilities — other	<u>12,129</u>	8,490
Total current liabilities	<u>359,853</u>	196,657
Shareholders' equity:		
Limited Voting Shares, par value \$1 per share		
Authorized — 15,000,000 shares		
Outstanding — 11,989,954 shares	<u>11,989,954</u>	11,989,954
Capital in excess of par value	<u>15,586,274</u>	15,586,274
	<u>27,576,228</u>	27,576,228
Accumulated deficit	<u>(12,559,622)</u>	<u>(11,378,447)</u>
Total shareholders' equity	<u>15,016,606</u>	16,197,781
	<u>\$15,376,459</u>	<u>\$16,394,438</u>

See accompanying notes.

CANADA SOUTHERN PETROLEUM LTD.
(A Nova Scotia corporation)

Consolidated Statement of Operations and Accumulated Deficit
(Expressed in Canadian dollars)

	Year ended June 30,		
	1989	1988	1987
Revenues:			
Oil and gas sales	\$ 1,436,450	\$ 1,591,337	\$ 1,783,319
Proceeds under carried interest agreements	14,470	188,516	110,256
Interest	585,268	503,063	178,344
	2,036,188	2,282,916	2,071,919
Costs and expenses:			
General and administrative	1,691,723	1,356,685	1,071,085
Lease operating costs	791,276	451,254	523,028
Depletion and depreciation	654,613	309,346	299,448
Foreign exchange losses	48,260	128,583	3,544
Abandonments	7,252	41,607	43,143
Petroleum and gas revenue tax	—	—	(40,476)
Rent	24,239	20,774	28,294
	3,217,363	2,308,249	1,928,066
Income (loss) before income taxes and extraordinary item	(1,181,175)	(25,333)	143,853
Income taxes	—	104,000	148,000
Income (loss) before extraordinary item	(1,181,175)	(129,333)	(4,147)
Extraordinary item —Tax benefit realized from carryforward of exploration, development, and lease acquisition costs not claimed in prior years	—	104,000	148,000
Net income (loss)	(1,181,175)	(25,333)	143,853
Accumulated deficit—beginning of year	(11,378,447)	(11,353,114)	(11,496,967)
Accumulated deficit—end of year	\$12,559,622	\$11,378,447	\$11,353,114
Average number of shares outstanding	11,989,954	11,298,226	8,992,465
Income (loss) per share based on average number of shares outstanding during the period:			
Income (loss) before extraordinary item	\$(.10)	\$(.01)	\$ —
Extraordinary item	—	.01	.02
Net income (loss)	\$(.10)	\$ —	\$.02

See accompanying notes.

CANADA SOUTHERN PETROLEUM LTD.
(A Nova Scotia corporation)

Consolidated Statement of Cash Flows
(Expressed in Canadian dollars)

Year ended June 30,

	1989	1988	1987
Cash Flows from Operating Activities:			
Loss before extraordinary item.....	\$ (1,181,175)	\$ (129,333)	\$ (4,147)
Adjustments to reconcile net loss to net cash provided by operating activities:			
Depreciation and depletion	654,613	309,346	299,448
Other.....	884	2,221	2,223
	(525,678)	182,234	297,524
Extraordinary item*.....	—	104,000	148,000
	(525,678)	286,234	445,524
Change in assets and liabilities:			
Accounts receivable and other current assets.....	(132,931)	40,267	(58,438)
Accounts payable and accrued expenses.....	163,196	(184,206)	155,288
Net cash provided by (used in) operations	(495,413)	142,295	542,374
Cash Flows from Investing Activities:			
Additions to oil and gas properties and other equipment.....	(350,805)	(199,725)	(179,883)
Cash Flows from Financing Activities:			
Proceeds of sales of Limited Voting Shares less expenses.....	—	3,889,975	(288,755)
Net cash provided by (used in) investing and financing activities.....	(350,805)	3,690,250	(468,638)
Increase (decrease) in cash and cash equivalents.....	(846,218)	3,832,545	73,736
Cash and cash equivalents at beginning of period.....	6,186,050	2,353,505	2,279,769
Cash and cash equivalents at end of period	\$ 5,339,832	\$ 6,186,050	\$ 2,353,505

*Tax benefit realized from carryforward of exploration, development, and lease acquisition costs not claimed in prior years.

Consolidated Statement of Limited Voting Shares and Capital in Excess of Par Value
(Expressed in Canadian dollars)

Three years ended June 30, 1989

	Number of shares	Limited Voting Shares, \$1 par value	Capital in excess of par value	Total
Balance at June 30, 1986	8,992,465	\$ 8,992,465	\$ 14,982,543	\$ 23,975,008
Expenses of proposed offering	<u>—</u>	<u>—</u>	(288,755)	(288,755)
Balance at June 30, 1987	8,992,465	8,992,465	14,693,788	23,686,253
Sales of shares less related fiscal 1988 expenses.....	<u>2,997,489</u>	<u>2,997,489</u>	<u>892,486</u>	<u>3,889,975</u>
Balance at June 30, 1988 and June 30, 1989	<u>11,989,954</u>	<u>\$ 11,989,954</u>	<u>\$ 15,586,274</u>	<u>\$ 27,576,228</u>

See accompanying notes.

CANADA SOUTHERN PETROLEUM LTD.
(A Nova Scotia corporation)

Notes to Consolidated Financial Statements—June 30, 1989
(Expressed in Canadian dollars)

1. Summary of significant accounting policies

The accompanying consolidated financial statements include the accounts of Canada Southern Petroleum Ltd. (Canada Southern) and its wholly-owned subsidiaries, Canpet Inc. and C.S. Petroleum Limited, hereafter referred to collectively as the Company. The financial statements are in conformity with Canadian generally accepted accounting principles. There would have been no material differences had United States generally accepted accounting principles been followed.

The Company, which is engaged primarily in one industry, exploration for and development of oil and gas properties, principally in Canada, follows the full cost method of accounting for oil and gas properties, whereby all costs associated with the exploration for and the development of oil and gas reserves are capitalized. Proceeds received from disposal of properties are credited against accumulated costs. Depletion of net costs accumulated in the Canada cost center is provided on the composite unit-of-production method, which is based on estimated recoverable proved reserves. Until March 31, 1986, expenditures incurred in the Arctic Islands had been excluded from the capitalized costs in the Canada cost center to be depleted pending the commencement of payouts, if any, of the Company's interests in this major development project. On April 1, 1986, costs of \$4,881,981 relating to the Arctic Islands were transferred to the Canada cost center and included in the cost depletion pool because the decline in petroleum prices had caused an indeterminate delay in the commencement of payouts of the Company's Arctic interests.

The carrying value of the Company's petroleum and natural gas properties within each cost center is limited to the aggregate of (i) the cost of properties not being amortized, (ii) the lower of amortized cost and estimated fair value of unproved properties, and (iii) future net revenues from estimated production or proved petroleum and natural gas reserves using either year-end prices or average prices for a period not exceeding twelve months. The carrying value of petroleum and natural gas properties on a consolidated basis is limited to the aggregate of the carrying value of each cost center, less future general and administrative costs, financing costs and income taxes.

For fiscal 1987, the Company prospectively adopted the guideline issued by the Canadian Institute of Chartered Accountants for petroleum and natural gas companies using the full cost method of accounting. In determining the limitation on the carrying value of petroleum and natural gas properties, the Company

previously discounted the future net revenues from estimated production of petroleum and natural gas reserves using year end prices and costs at a rate of 10 percent. This change in accounting has had no effect on the results of operations for fiscal 1987, 1988, or 1989.

Under Canadian generally accepted accounting principles (G.A.A.P.), a ceiling test was conducted in two parts:

- (1). The net book value of each cost center was compared to future net revenues plus the net cost of major development projects and unproved properties.
- (2). The net book value of the two Company cost centers, net of related deferred taxes, was compared to the future net revenues plus the net cost of major development projects, and unproved properties, less future general and administrative expenses, financing costs and income taxes.

Under U.S. G.A.A.P., a ceiling test was conducted using a discount rate of 10 percent but excluding a deduction for future general and administrative expenses.

No excess carrying amounts requiring a write-off were established using either Canadian or U.S. G.A.A.P. for the three years ended June 30, 1989.

Depreciation has been computed for equipment, other than well equipment, by the straight-line method based on estimated useful lives of four to ten years. Depreciation of well equipment and depletion of leasehold acquisition and intangible drilling costs pertaining to producing wells are computed by the unit-of-production method.

Effective as of April 1, 1988, reserves relating to the Kotaneelee Field have been eliminated for the purpose of computing depreciation and depletion, based upon the anticipated length of the period before payout to the Company of its carried interest in this field. This change resulted in an increase in depreciation and depletion of \$50,139 in fiscal 1988.

Any interest costs incurred that are applicable to oil and gas properties not being depleted currently, and on which exploration or development activities are in progress, are capitalized.

Transactions for settlement in U.S. dollars have been converted at average monthly exchange rates. Assets and liabilities in U.S. dollars have been translated at the year-end exchange rates. During the years ended June 30, 1989 and 1988, respectively, the Company recorded exchange losses of \$48,260 and \$128,583 as a result of

an investment in U.S. Treasury bills. During the year ended June 30, 1987, exchange gains and losses were not significant.

The Financial Accounting Standards Board issued Statement on Financial Accounting Standard No. 96, "Accounting for Income Taxes," in December 1987. This complex standard requires, among other things, the use of a liability method to compute deferred income taxes and permits either prospective or retroactive adoption. This standard is effective for fiscal years beginning after

December 15, 1989. Management does not expect this standard to have a material impact on the consolidated financial position of the Company.

In fiscal year 1989, the Company adopted Statement of Accounting Standards No. 95, Statement of Cash Flows. For the purposes of the statement of cash flows, the Company considers all highly liquid investments with short-term maturities to be cash equivalents. Cash and cash equivalents at June 30, 1989 consisted of the following:

Cash equivalents:

Bankers Acceptance, due July 13, 1989		
Bankers Acceptance, due August 2, 1989		
U.S. Treasury bill, due August 16, 1989	\$500,000 (U.S.)	575,583
U.S. Treasury bill, due July 6, 1989	500,000 (U.S.)	572,986
U.S. Treasury bill, due December 14, 1989	500,000 (U.S.)	574,740
Term Deposit—Bermuda, due September 25, 1989		149,745

Cash

	Principal Amount	Carrying value in balance sheet (Cost)
		\$1,500,163
		1,835,250
		575,583
		572,986
		574,740
		149,745
		5,208,467
		131,365
		<u>\$5,339,832</u>

Note: Market value approximates cost.

2. Properties

The Company's property interests are located in Alberta, British Columbia, the Yukon and Northwest Territories, and the Arctic Islands in Canada, and in the Northern Territory of Australia.

At June 30, 1989, a substantial portion of the acreage located in British Columbia and the Yukon and Northwest Territories was covered by carried interest agreements. These carried interest agreements provide that revenues are not payable to the Company until expenditures by the operators have been recouped from production. Also, the Company may at any time elect to convert from a carried interest to a working interest by paying its share of the expenditures not recouped from revenues from production. At June 30, 1989, for the carried interest areas that have not reached payout status, the Company would have been required to pay approximately \$22,000,000, to convert all of the carried interests to working interests.

The Company has a 30% carried interest in the Kotaneelee field in the Yukon Territory, where three gas wells capable of production have been completed. The operator had incurred development costs of approximately \$62,000,000 at June 30, 1989. It is expected that

the Company will begin to receive proceeds from the carried interest approximately ten years after commencement of production from the field, assuming a graduated build-up and based upon present prices. See also Note 7.

Charges to abandonments of \$43,143 in fiscal 1987 and \$41,607 in fiscal 1988 related to the cost associated with a previously abandoned well drilled in the 1950's.

Oil and gas properties and mineral properties, aggregating \$303,618 and \$286,686 at June 30, 1989 and 1988, respectively, are substantially unexplored or undeveloped. The amount relating to mineral properties was \$143,726 at June 30, 1989 and 1988.

At June 30, 1989, the Company's carried and working interest in the Arctic Islands ranged from 3% to 30% in 335,339 gross acres (46,572 net acres).

The Company has an interest in 1,475,825 gross (955 net) acres in the Amadeus Basin in the Northern Territory in Australia. It was a minor participant in a five year exploration program begun in 1980 and completed in 1985. To date, eleven wells have been drilled resulting in one potentially commercial gas field and two uneconomic gas accumulations.

Costs of oil and gas properties excluded from the depletion computation are as follows:

	Cumulative to June 30, 1989	Activity for years ended June 30,			Cumulative to June 30, 1986
		1989	1988	1987	
Australia (all exploration costs)	\$159,892	\$16,932	\$348	\$—	\$142,612

3. Line of credit

The Company has a line of credit with a Canadian chartered bank that provides for a revolving loan of \$2 million. The interest rate on borrowing is at 3/4% above the bank's prime lending rate. The line of credit is subject to annual review, and is secured by a general assignment

of accounts receivable and an undertaking to provide security in the form of assignment of future working interest proceeds. No drawings were made under this line during the year ended June 30, 1989.

4. Limited Voting Shares and stock options

The Articles of Continuance of Canada Southern provide that no person (as defined) shall vote more than 1,000 shares.

On August 3, 1987, the Company completed a rights offering to shareholders of 2,997,489 shares at a subscription price of \$1.34 (Canadian) or \$1.00 (U.S.). All of the shares offered by the Company were sold, and the Company realized \$3,601,220 after deducting related expenses of \$288,755 in fiscal 1987 and \$126,660 in fiscal 1988.

A stock option plan was adopted at the Annual General Meeting of Shareholders on December 3, 1985 reserving 400,000 Limited Voting Shares for issuance under the Plan. On March 19, 1986, pursuant to the plan, options on 25,000 shares were granted to a director and options on 50,000 shares were granted to consultants, one of whom is an officer of the Company, at a price of

\$3.85, the market price on the date of grant. The options are exercisable for five years from the date of grant. On October 5, 1987, these options were increased to 33,333 and 66,665, respectively, at a price of \$3.30, the market price on that date, to offset the dilution resulting from the 1987 rights offering.

On August 5, 1987, pursuant to the plan, options on 35,000 shares were granted to the President, options on 50,000 shares were granted to directors, and options on 22,500 shares were granted to officers and employees, all at a price of \$3.90, the market price on the date of grant, and all exercisable for five years from the date of grant.

On January 20, 1987, an option on 15,000 shares expired by its terms.

There were no other changes in stock options during the three years ended June 30, 1989.

Stock options outstanding at June 30, 1989 are summarized as follows:

Optionee	Date of grant	Expiration date	Number of shares	Option price		Market price at date of grant	
				Per share	Aggregate	Per share	Aggregate
Former director	3/19/86	3/18/91	33,333	\$3.30	\$109,999	\$3.30	\$109,999
Consultants	3/19/86	3/18/91	66,665	3.30	219,994	3.30	219,994
Directors, officers and employee	8/5/87	8/4/92	107,500	3.90	419,250	3.90	419,250
			207,498		\$749,243		\$749,243

Upon exercise of options, the excess of the proceeds over the par value of the shares issued is credited to capital in excess of par value. No charges are made against income in accounting for options.

5. Compensation

The Company has a contributory pension plan for all employees, which is administered by an insurance company. Benefits payable on retirement to employees are guaranteed by annuities purchased from the insurance company. The Company's policy is to fund pension cost currently. Contributions by the Company to the pension plan were \$5,569, \$14,148, and \$13,607 for the years ended June 30, 1989, 1988 and 1987, respectively.

Directors' fees and other compensation to directors for the years ended June 30, 1989, 1988 and 1987

amounted to \$174,445, \$135,865, and \$112,983, respectively. Of these amounts, for the same periods, \$69,250, \$61,500, and \$40,248, respectively, were directors' fees.

Fees paid or accrued for legal services rendered to the Company by Reasoner, Davis & Fox, of which firm Mr. C. Dean Reasoner, a director of the Company, is a partner, during the years ended June 30, 1989, 1988 and 1987 amounted to \$124,000 (U.S.), \$111,500 (U.S.) and \$96,500 (U.S.), respectively.

6. Income taxes and extraordinary item

The following table reconciles the statutory Canadian income tax rate and provision with the recorded income tax rate and expense:

	1988	1987	Percent of pretax earnings
	Amount	Amount	
Statutory tax expense	\$(12,522)	\$73,638	51.19%
Tax effect of permanent differences between financial statements and tax return income:			
PGRT and resource royalty taxes	—	(20,720)	(14.40)
Crown royalties	155,606	183,798	127.77
Resource allowance	(40,902)	(72,388)	(50.32)
Earned depletion	—	(17,647)	(12.27)
Other	1,818	1,319	.91
Provision for income tax	<u>\$104,000</u>	<u>\$148,000</u>	<u>102.88%</u>

At June 30, 1989, the Company had net operating losses for financial reporting purposes of approximately \$895,000 available to be carried forward to future periods. In addition, the Company had a net operating loss of approximately \$246,000 which may be used to reduce taxable income, if any. This carryforward expires July 1, 1996.

At June 30, 1989, the following oil and gas tax pools of deductions were available to reduce future taxable income, subject to a final determination by taxation authorities:

Drilling, exploration, and lease acquisition costs	\$9,860,808
Earned depletion	2,183,256
Undepreciated capital costs	634,281
Capital losses (can only be used against future years' capital gains)	30,276

The tax benefits attributable to the above accumulated expenditures will not be reflected in the consolidated financial statements until such benefits are realized.

During fiscal 1987, the Company recorded credits of \$40,476 relating to PGRT taxes paid in prior years, which had been received or were receivable at June 30, 1987.

7. Litigation

On August 28, 1987 the Company commenced a lawsuit in the United States District Court for the Northern District of Florida, Tallahassee Division (the U.S. Court), against Allied-Signal Inc. and Allied Corporation (collectively, Allied-Signal). The action alleged, among other things, breach of contract by Allied-Signal by reason of its failure to assure the earliest feasible development and marketing of Kotaneelee gas in accordance with an agreement dated as of May 28, 1959 (the 1959 Agreement). The Company and Signal Oil and Gas Company, a predecessor of Allied Corporation, and Allied-Signal Inc., are among the parties to the 1959 Agreement. On December 19, 1988, this action was dismissed by the U.S. Court.

On September 2, 1988, Allied-Signal commenced a lawsuit against Amoco Canada Petroleum Company Ltd., Dome Petroleum Limited, and Amoco Production Company (collectively, the Amoco-Dome Group) in the Court of Queens Bench of Alberta, Judicial District of Calgary, Canada (the Canada Court) seeking indemnification for any amounts found to be due and owing by Allied-Signal

to the Company by the U.S. Court. In its complaint, Allied-Signal alleges that it has a right to indemnification by the Amoco-Dome Group on the basis of agreements made in the early 1960's, in which Allied-Signal assigned its interest in the 1959 Agreement to members of the Amoco-Dome Group.

On September 21, 1988, the Company was named as a counterclaim defendant to Allied-Signal's lawsuit in the Canada Court by the Amoco-Dome Group. This counterclaim seeks, among other things, to have the Canada Court decide in favor of the Amoco-Dome Group and Allied-Signal the issues which were before the U.S. Court, and to enjoin the Company from proceeding in the U.S. Court against Allied-Signal. Also named as counterclaim defendants are Allied-Signal, Canadian Superior Oil Ltd., Columbia Gas Development of Canada Ltd., Esso Resources of Canada Ltd., Home Oil Company Limited, Kern County Land Company, Magellan Petroleum Corporation, Mobil Oil Canada Ltd., and Pantepec International, Ltd. The Amoco-Dome Group's claim against the Company is pending.

7. Litigation (Cont.)

On December 15, 1988, the Canada Court, granting Amoco's motion, enjoined the Company from proceeding with its lawsuit against Allied-Signal in the U.S. Court. The Canadian injunction was reported to the U.S. Court. On December 19, 1988, the U.S. Court dismissed the Company's lawsuit against Allied-Signal on the grounds that Florida was not an appropriate forum for the case. The Company filed an appeal of the Canadian injunction, and obtained permission to file an appeal of the U.S. order of dismissal. The Company subsequently abandoned both appeals because they appeared to involve costly delays and because alternative courses of action appeared to be available.

On March 8, 1989, Allied-Signal filed an amended statement of claim seeking additional relief against the

Company to preclude other types of suits by the Company and to recover the costs of defense of the Florida action. The Company has filed a motion to dismiss the Allied-Signal claim on the grounds, among other things, that Allied-Signal has not stated any claim on which relief can be granted. That motion has not yet been heard. If Allied-Signal were successful in its efforts to recover such unspecified costs, that recovery could have a material adverse effect on the Company's financial condition.

The Company has entered into confidential discussions with representatives of certain adverse parties to the litigation. The parties have agreed not to comment further on the substance of such discussions.

Report of Independent Public Accountants

The Shareholders
Canada Southern Petroleum Ltd.

We have audited the accompanying consolidated balance sheet of Canada Southern Petroleum Ltd. at June 30, 1989 and 1988, and the related consolidated statements of operations and accumulated deficit, cash flows, and limited voting shares and capital in excess of par value for each of the three years in the period ended June 30, 1989. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Canada Southern Petroleum Ltd. at June 30, 1989 and 1988, and the consolidated results of operations and cash flows for each of the three years in the period ended June 30, 1989, in conformity with generally accepted Canadian accounting principles.

As discussed in Note 7 to the consolidated financial statements, Canada Southern Petroleum Ltd. is involved in certain litigation, the eventual outcome of which is uncertain. Accordingly, no provision for any liability that may result has been made in the consolidated financial statements.

ERNST & YOUNG

Hartford, Connecticut
September 13, 1989

Management's Discussion and Analysis

Liquidity and Capital Resources

A significant proportion of the Company's property interests are covered by carried interest agreements, which provide that expenditures are made by the operator and are recouped solely out of revenues from production. Certain of the properties in which the Company has carried interests have reached payout status. Proceeds from these carried interests plus oil and gas sales are the major continuing sources of working capital for the Company.

The Company's short-term investments of \$5,208,467, its \$2,000,000 line of credit with a Canadian bank, and operating revenues have been the Company's principal sources of liquidity. These sources are expected to provide adequate liquidity both on a short-term and long-term basis. During the fiscal year, the Company made no drawings under its bank line of credit.

The Company currently is evaluating, and expects to continue to evaluate, oil and gas properties; and may make investments in such properties utilizing cash on hand. Presently, the Company has no commitments to make material capital expenditures.

Allied-Signal has filed an amended statement of claim against the Company in the Canada Court to recover Allied-Signal's costs of defense of the claims brought by the Company in Florida. The Company has filed a motion to dismiss the Allied-Signal claims. If Allied-Signal were successful in its efforts to recover such unspecified costs, that recovery could have a material adverse effect on the Company's financial condition. Because the Allied-Signal claim has not yet proceeded substantially beyond the filing of the initial pleadings, the Company is currently unable to determine whether such a recovery is likely to occur.

Results of Operations

Fiscal Year ended June 30, 1989 vs. 1988

The Company incurred a loss of \$1,181,175 (10 cents per share) in fiscal 1989 compared to a loss of \$25,333 (less than one cent per share) in fiscal 1988. The increased loss is due to a combination of decreased revenues from operations and increased costs.

Operating revenues were down 18 percent, principally because of lower oil prices in the first half of the 1989 fiscal year. Oil unit sales were virtually identical in 1989 and 1988. Proceeds under carried interests were lower because of significant capital expenditures that are recouped by the operator before any amounts are paid over to the Company.

The 25 percent increase in general and administrative expense resulted from the cost of litigation relating to the Kotaneelee field, discussed elsewhere. Lease operating costs recorded in fiscal 1989 were significantly higher than in fiscal 1988 due to the following reasons. The company relies on data submitted by the field operator (Petro-Canada) in determining certain of the lease operating data. The operator adjusted the method of billing for these costs effective January 1, 1988. Due to this change, the Company underestimated lease operating costs for fiscal 1988 and recorded \$90,000 of such costs in fiscal 1989. In addition, the overall operating cost levels have increased by 29 percent in 1989 as compared to 1988.

Interest income increased by 16 percent, mostly due to higher rates on funds invested. Depletion and depreciation charges for 1989 were more than double 1988 charges because of the exclusion of Kotaneelee field reserves as discussed in detail below.

Foreign exchange losses, which were \$48,260 in the latest fiscal year as compared to \$128,583 in the previous year, relate to United States dollar-denominated investments. The reduced loss relates to the strengthening of the U.S. dollar versus the Canadian dollar.

Fiscal Year ended June 30, 1988 vs. 1987

Operating revenues, which includes oil or gas sales and proceeds under carried interest agreements, were 6 percent lower due to 12 percent lower gas prices and reduced oil and gas production. The average selling price per barrel of oil improved 5 percent over the previous year.

Overall revenues were higher in 1988 because of the 182 percent increase in interest income, reflecting the additional funds from the 1987 rights offering available for investment.

General and administrative expenses increased 27 percent in 1988, due principally to the costs incurred relating to the Allied-Signal lawsuit.

Lease operating costs were 14 percent lower than in fiscal 1987, due in part to the field operator (Petro-Canada) changing its method of billing lease operating costs effective January 1, 1988.

Effective April 1, 1988, reserves relating to the Kotaneelee Field were eliminated for the purpose of computing depreciation and depletion, based upon the anticipated length of the period before payout to the Company of its carried interest in this field. As a consequence, depletion and depreciation for fiscal 1988 increased by approximately \$50,000. In addition, the Company's proved gas reserves have been reduced by 23.216 bcf to 18.527 bcf as the result of the elimination of the Kotaneelee reserves.

The foreign exchange losses of \$128,583 in 1988 (an increase of \$125,039) relate to the United States dollar-denominated investments.

The 1988 charge to abandonments relates to the additional cost of reabandoning a well in Alberta drilled in the 1950's.

Supplemental Information on Oil and Gas Activities

The following information includes estimates which are subject to rapid and unanticipated change. Therefore, these estimates may not accurately reflect future net income to the Company.

The Company has no proved oil and gas reserves in Australia that require disclosure under SEC regulations, and has no revenues from oil and gas production in that country. All amounts below—except for costs, acreage, wells drilled, and present activities—relate to Canada. Oil and gas reserve data and the information relating to cash flows were provided by D & S Petroleum Consulting Group Ltd., independent consultants.

1. Estimated net quantities of proved oil and gas reserves:

	Oil (bbls)	Gas (bcf)
Proved reserves:		
June 30, 1986	356,381	38.917
Revisions of previous estimates	133,241	4.575
Production	<u>(49,157)</u>	<u>(1.088)</u>
June 30, 1987	440,465	42.404
Revisions of previous estimates	94,867	(22.960)
Production	<u>(45,635)</u>	<u>(.917)</u>
June 30, 1988	489,697	18.527
Revisions of previous estimates	4,232	1.245
Production	<u>(45,980)</u>	<u>(1.158)</u>
June 30, 1989	<u>447,949</u>	<u>18.614</u>
Proved developed reserves:		
June 30, 1986	356,381	38.917
June 30, 1987	440,465	42.404
June 30, 1988	489,697	18.527
June 30, 1989	<u>447,949</u>	<u>18.614</u>

In 1987, oil and gas reserves were revised upward as price increases improved the economics of development of certain areas.

Effective April 1, 1988, Kotaneelee field reserves, amounting to approximately 23 bcf, were eliminated from estimated net quantities of proved gas reserves, based upon the anticipated length of the period before payout to the Company of its carried interest in that field.

2. Results of oil and gas operations:

	1989	1988	1987
Income:			
Oil and gas sales	\$ 1,436,450	\$ 1,591,337	\$ 1,783,319
Proceeds under carried interest agreements	14,470	188,516	110,256
	<u>1,450,920</u>	<u>1,779,853</u>	<u>1,893,575</u>
Costs and expenses:			
Production costs			
-lifting costs	791,276	451,254	523,028
-wellhead taxes	—	—	(40,476)
Abandonments	7,252	41,607	43,143
Depletion and depreciation	654,613	309,346	299,448
Income tax expense*	—	—	—
	<u>1,453,141</u>	<u>802,207</u>	<u>825,143</u>
Net income (loss) from operations	<u>\$ (2,221)</u>	<u>\$ 977,646</u>	<u>\$ 1,068,432</u>

*For the purposes of preparing this table only, the Company considered that during the fiscal years ended June 30, 1988 and 1987 the Company realized tax benefits of \$571,118 and \$621,293, respectively, from carryforward of exploration, development and lease acquisition costs not claimed in prior years.

3. Costs of oil and gas activities*:

	1989	1988	1987
Exploration	\$178,341	\$ 82,906	\$95,800
Development	149,250	116,819	79,588

*Excluding costs relating to carried interests but including \$16,933 and \$348 for exploration in Australia in 1989 and 1988, respectively.

4. Standardized measure of discounted future net cash flows relating to proved oil and gas reserve quantities during the three years ended June 30, 1989:

	(In thousands of dollars)		
	1989	1988	1987
Future cash inflows	\$ 35,158	\$ 35,340	\$ 61,526
Future development and production costs	(15,036)	(15,121)	(22,426)
	20,122	20,219	39,100
Future income tax expense*	(2,836)	(2,867)	(11,854)
Future net cash flows	17,286	17,352	27,246
10% annual discount	(8,338)	(7,894)	(16,183)
Standardized measure of discounted future net cash flows	<u>\$ 8,948</u>	<u>\$ 9,458</u>	<u>\$ 11,063</u>

*Reflects tax benefit for the years ended June 30, 1989, 1988, and 1987, respectively, from carryforward of exploration, development and lease acquisition costs, undepreciated capital costs and book earned depletion of \$12,678,345, \$12,356,597 and \$12,709,358, respectively.

Current prices used in the foregoing estimates were based upon selling prices at the wellhead in June of each fiscal year. Current costs were based upon estimates made by consulting engineers in June of each fiscal year.

Cash flows for 1987 were predicated upon timely approval by U.S. authorities of the importation of gas from the Kotaneelee field. The above amounts were calculated based upon a start-up date of January 1, 1989 for fiscal 1987 for sales of Kotaneelee gas. No cash flows for the Kotaneelee field are included for fiscal 1988 or 1989 based upon the elimination of Kotaneelee field reserve amounts discussed on page 14.

5. Changes in the standardized measure during the year:

	(In thousands of dollars)		
	1989	1988	1987
Changes due to:			
Prices, production costs, development costs ⁽¹⁾	\$ (984)	\$ 18,098	\$(1,975)
Sales net of production costs	(660)	(1,329)	(1,406)
Development costs incurred during the year	149	117	80
Revisions of previous quantity estimates ⁽²⁾	1,428	(29,890)	5,695
Accretion of discount ⁽³⁾	(474)	2,412	(838)
Net change in income taxes	31	8,987	(1,220)
Net change	<u>\$ (510)</u>	<u>\$ (1,605)</u>	<u>\$ 336</u>

(1) The positive revision in 1988 is due principally to the increased natural gas price and reduced operating costs. The negative revision in 1989 is due principally to increased operating costs at the Peejay field.

(2) The negative value in 1988 is due principally to the reclassification of Kotaneelee reserves.

(3) The negative accretion in 1987 was due principally to the change in the assumed start-up date for Kotaneelee production: January 1, 1989 was used in fiscal 1987.

Market Information

Canada Southern Petroleum Ltd. has approximately 12 million Limited Voting Shares outstanding, held by about 9,200 shareholders of record as of September 30, 1989. This is the Company's sole class of stock, of which 15 million shares are authorized.

The stock, par value \$1.00, is listed on the Toronto Stock Exchange and the Pacific Stock Exchange—which are the principal markets in Canada and the United States—and also is traded on several regional exchanges and in the over-the-counter market. *The ticker symbol in both countries is CSW.*

The Company has never paid a dividend; and future dividends necessarily will be dependent on its earnings, overall financial condition, and business prospects. The Company also is legally restricted from paying dividends or making any other payments to shareholders (except by way of return on capital) until its accumulated deficit—\$12.6 million as of June 30, 1989—has been eliminated.

Current Canadian law does not restrict the remittance of dividends to shareholders who are not residents of Canada. However, under the provisions of the current Canadian tax code and the U.S.-Canada tax treaty, any dividends paid to U.S. shareholders would be subject to Canadian withholding tax.

The quarterly high and low closing prices (*in Canadian dollars*) on the Toronto Stock Exchange over the past 33 months were as follows:

1987	1st quarter	2nd quarter	3rd quarter	4th quarter
High	6.25	5.88	4.35	3.50
Low	3.20	3.95	3.35	1.85
1988	1st quarter	2nd quarter	3rd quarter	4th quarter
High	5.62	9.25	7.62	7.50
Low	2.25	4.90	5.75	3.80
1989	1st quarter	2nd quarter	3rd quarter	
High	4.60	4.20	3.65	
Low	3.35	3.05	3.05	

The quarterly high and low closing prices (*in U.S. dollars*) on the Pacific Stock Exchange over the past 33 months were as follows:

1987	1st quarter	2nd quarter	3rd quarter	4th quarter
High	4 $\frac{5}{8}$	4 $\frac{3}{8}$	3 $\frac{5}{16}$	2 $\frac{9}{16}$
Low	2 $\frac{1}{2}$	2 $\frac{3}{4}$	2 $\frac{1}{2}$	1 $\frac{3}{8}$
1988	1st quarter	2nd quarter	3rd quarter	4th quarter
High	4 $\frac{11}{16}$	7 $\frac{1}{2}$	6 $\frac{1}{8}$	6 $\frac{1}{4}$
Low	1 $\frac{3}{4}$	4	4 $\frac{15}{32}$	3 $\frac{3}{16}$
1989	1st quarter	2nd quarter	3rd quarter	
High	3 $\frac{13}{16}$	3 $\frac{1}{2}$	3	
Low	2 $\frac{3}{4}$	2 $\frac{1}{2}$	2 $\frac{9}{16}$	

All shareholder correspondence relating to stock ownership or address changes, lost stock certificates, and other such matters should be directed to the Company's Transfer Agents in Canada or the U.S., as shown on the adjacent page. Other enquiries may be directed to Canada Southern's Executive Offices in Calgary, or, if more convenient, to Gherardi & O'Donnell Associates, Inc., 241 Main Street, Hartford, Connecticut 06103. Telephone: (203) 525-1202.

To Canada Southern Shareholders:

The following article on Panarctic Oils Ltd. and its CEO, Charles R. Heatherington, originally appeared in the September 11, 1989 edition of Oilweek, the weekly news-magazine of the Canadian petroleum industry. It has been reprinted verbatim to accompany Canada Southern's 1989 Annual Report, for we believe it contains information of some interest to you.

We would like to express our appreciation to Oilweek for their assistance in making this article available to our shareholders.

Canada Southern Petroleum Ltd.

October 4, 1989



Hetherington optimistic about development

CHARLES R. Heatherington president and CEO of Calgary based Panarctic Oils Ltd. is not a superstitious man. In a city where builders of downtown skyscrapers routinely ignore the 13th story (elevator button numbers jump from 12 to 14), Heatherington conducts business from room 1313 on the 13th floor of Panarctic Plaza.

From there, he controls over 18 trillion cubic feet of natural gas, nearly 60 million recoverable barrels of natural gas liquids, and billions of barrels of original oil in place, both on and offshore.

Unfortunately, superstitious or not, Heatherington is plagued by two numbers. One is the world price of oil, the other number is the degree of latitude

which marks the Arctic Circle, for all of Panarctic's vast reserves are north of there, buried deep beneath frigid seas and snow covered landscapes.

Still, Heatherington is an optimist, who believes that one day price, preparation and opportunity will all meet, and then quantities of sweet, 55°API oil will flow from Panarctic wells just like the tomato juice the oil resembles. Until then however, Panarctic remains a story only half told.

Incorporated in May, 1966, Panarctic is jointly owned by a consortium of 36 companies and individuals, with federally owned Petro-Canada being the largest single shareholder, controlling 37 million of 70 million issued shares. The

next largest shareholder, PanCanadian Petroleum owns only 5.5 million shares. Panarctic ran its first high Arctic Islands seismic in 1968 and was drilling one year later.

"We were successful almost from the start in finding gas," recalls Heatherington. Unfortunately, at the same time, gas markets and prices fell dramatically and so did prospects for commercial production of Arctic gas.

But oil was also found. Some onshore, and a "tremendous amount offshore," says Heatherington. Panarctic also pioneered a novel method of drilling offshore in an area of the world where snow, cold, ice and darkness are the most common of commodities.



Panarctic's Bent Horn oilfield production facility on Cameron Island.

Crews simply located where they wanted to drill, waited for the sea ice pack to form, and then started pumping sea water up through holes drilled in the ice, flooding and freezing to depths of several feet.

"When you build up 22 feet of ice, that'll hold the drilling rig," says Heatherington. "Just five feet of ice will support a Boeing 727 or a Hercules aircraft, so we could supply our locations by air, landing on frozen runways."

After drilling three Arctic wells in 1969 (including a gas discovery) and eight wells in 1970 (three more gas finds), Panarctic really got rolling. Thirteen wells in 1971, 20 wells in '72, 23 wells in '73, and discovery after discovery along the way.

On Cameron Island, 76°20'N;104°W, the company found oil at a location called Bent Horn. Just a bit further north at the next island (called Lougheed) more oil was encountered. "The geologists call it an oil window," says Heatherington, "if you stay in the window' the odds are you'll hit oil."

And what oil this is. Light (up to 55°API) and sweet without any sulphur, the crude can be used as diesel engine fuel without any refining at all. "We supply all of the Arctic's requirements for stationary diesel engines with this oil, including the Northern Canada Power Commission which generates electricity in the Arctic, and we supply Cominco's

big lead/zinc mine at Polaris on Little Cornwallis Island. We also do all of our own drilling using this oil as fuel instead of diesel," Heatherington notes.

While drilling all these wells on the frigid frontier sounds expensive, the use of ice platforms and conventional (covered and heated) drilling rigs allowed Panarctic to drill a well for about 10% of the cost of a well drilled using a drillship in the Beaufort Sea. "We got a lot for our money," says Heatherington.

The company also perfected a method of drilling an offshore gas well, completing it, and then hooking up a sub-sea flow line without using divers. Heatherington says the same thing could be done with offshore oil wells, "but we hadn't quite got to that stage when the price of oil fell."

The 1986 price collapse also saw Panarctic collapse. From 160 people employed in 1985, only eight remain.

But down doesn't necessarily mean out, and Panarctic retains enormous reserves, both in the strength of its management and the volumes of its oil and gas. A bit of planning, combined with some luck, has also left the company with cash flow to tide it over during the current downturn, plus making a bit of history every year as well.

In early 1985, Panarctic received permission to begin producing oil from its Bent Horn field and production facilities were tied to the Bent Horn A-02 well,

located near the edge of Cameron Island. A 4.5 kilometre long flow line moves the oil from the wellhead into a 100,000 barrel steel tank and some storage bladders, located about 1,000 yards from the shoreline.

The producing formation at Bent Horn is the Blue Fiord limestone carbonate reef of Devonian age. Panarctic says the crude is 42°API and is waxy with a big middle distillate cut. Combined capacity of the tank and storage bladders is 150,000 barrels.

Now, once or twice per summer, depending on ice, the ice breaking tanker MV Arctic loads this oil at Cameron Island, and then heads south and east towards Lancaster Sound off the north coast of Baffin Island. Here, out of ice danger, it offloads into another tanker which then proceeds to make deliveries to various northern markets before proceeding to Montreal. In 1988, Panarctic delivered 295,968 barrels of oil, which made the company about \$2 million profit.

Overall, the combination of income from these oil shipments, coupled with minimal staff and expenses have left Panarctic on a sound financial footing. Cash and term deposits total nearly \$20 million, while liabilities are just over \$150,000.

While the money from this oil is very rewarding, the shipping risks are great, making Panarctic extremely conscious of the environment. An example is the company policy of two captains sharing responsibility for the tanker. "We never have a captain off the bridge," points out Heatherington, referring to the recent Exxon Valdez oil spill, where the captain was below and a mate was steering the vessel out of port. Heatherington adds that the latest in ice watch technology is also used, and that as many as six people are often plotting the position of the vessel. "We have back-ups to our back-ups," he says.

Currently, on a day to day basis, Heatherington and Panarctic are involved in two things:

- Shipping oil and generating cash flow.
- Reviewing the possibility of new land based oil plays in the Cameron Island/Lougheed Island area.

This is an exciting concept, designed to move Panarctic back from the brink of cold storage, into mainstream exploration and production.

The company has hired exploration professionals who were not associated with Panarctic previously, to review past

seismic and geologic records with a view to discovering potential new oil fields near the shore line of Cameron/Lougheed.

Heatherington says he hopes to propose a new drilling program to his board of directors in November, depending on the findings of the review. If a new oil field is indicated, drilling would proceed and if warranted, development and production would be similar to Bent Horn.

However, Heatherington takes an even longer view, saying that such a program could possibly be the first step towards eventual offshore oil production from a field such as Cisco, located only 10 miles (16 km) from Lougheed Island. Cisco has about 1 billion barrels of sweet, light crude in place, and Heatherington says Panarctic knows how to produce this oil, if only the price is right.

Similarly, Heatherington has plans for his gas reserves, if the price is high

enough, and enough circumstances come together.

Currently, Shell Canada and Esso Resources Canada have applied to the National Energy Board to export natural gas via pipeline from the Mackenzie Delta/Beaufort Sea region, down the Mackenzie Valley to Norman Wells, NWT and hence along an existing pipeline and right of way into Alberta.

"We could build a pipeline from our fields to join into the Shell/Esso line," says Heatherington, adding, "these are big reserves, our Drake gas field is 5.5 trillion cubic feet all by itself, and the wells will produce 50 million cubic feet per day."

If the pipeline doesn't happen, Heatherington is examining another option. That being shipping methanol produced from his gas fields via tanker to U.S. and European markets, in much the same way Panarctic now ships oil from Bent Horn.

"Our development will proceed along

the lines of finding new oil on land, and then using that as a springboard to develop the nearby offshore fields," says Heatherington. "It's awful hard to get someone to go up to the Arctic and spend billions of dollars developing an offshore oil field, there's enough trouble with Hibernia. But, it's another thing to show that for \$20 or \$30 million we can up there, drill one offshore well, hook it up to shore and prove that it all works. And if we have the infrastructure of an oil production system already on land on Lougheed Island, the costs are even less than that."

Heatherington says he needs steady oil prices of US\$25 to \$30 per barrel for his plans to work. "You can't have prices drop back to \$18 like they did earlier this year."

Whether or not those prices rise, two things remain certain. It's very cold in the Arctic, but there's an awful lot of oil and gas.

Greg Gilbertson

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