

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECT FILES 86 / 2

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## ADVANTAGES OF THE MAPLE LEAF PROJECT

The advantages which are listed in this part are not meant to be a complete catalogue. Only the most significant are included.

- (1) The Canadian gas from the Beaufort Basin area will flow the entire distance, from point of origin to burner tip, through Canadian owned and operated transmission systems.
- (2) Spare capacity which develops in existing Canadian systems as provincial production declines will be utilized with consequent savings in unit costs.
- (3) Implementation does not depend upon approvals by foreign agencies for the transmission of gas of foreign origin.
- (4) No other announced project makes provision for Beaufort Basin gas to be supplied to British Columbia for the requirements of the Westcoast system and the systems of its British Columbia customers.
- (5) The capital costs are substantially less and, so far as is known, the unit transmission costs are less than the other announced project.
- (6) Because the pipe and other equipment is of conventional design and can be manufactured in Canada, there will be major orders in Canada for steel manufacturers and fabricators.
- (7) All of the above factors contribute to a substantial savings in the time required to obtain approvals, construct and put the pipeline into operation.
- (8) As all the companies involved in transmission and distribution are Canadian, there will be much greater sensitivity to provincial and national needs and aspirations than there would be if there was a substantial degree of foreign influence and control.

SCOMM

#21:8

### Do We Really Need a Natural Gas Pipeline from Alaska?

Two of the major decisions on energy facing our country now have to do with natural gas. What are we going to do to counteract the rapid decline of gas reserves in the lower 48-states, and what are we going to do to get Prudhoe Bay gas to market? Many think that the answer to both problems is a transportation system for the latter to the former, but this is not necessarily true. Very high costs as well as the time required for construction both argue against this answer. Should we pay about the same price for a gas transportation system as for the Alyeska oil pipeline when it will carry only about one-tenth of the energy? Can we afford to wait another five years or so for governmental approval and construction of such a transportation system? For the reasons presented below, we believe the answer to both questions is a very firm no.

There is very good reason to believe that a great deal of natural gas remains to be discovered in or offshore of the lower 48-states. In recent years economics dominated by Federal price control has prevented discovery of this gas. There has simply not been the income to pay for the high costs of deeper drilling and offshore drilling. Now there are hopeful signs that Federal policy is becoming more realistic and cognizant of the basic economic fact that more income is needed to pay for higher costs to find and produce this gas.

In about a half-year we shall have a pipeline completed to carry Prudhoe Bay's crude oil to Valdez and thence to market. (Although title to this line is held by Alyeska Pipeline Service Co., it really belongs to all future consumers of this oil because they will be paying for it.) While it was designed to carry 2,000,000 bbl/day, there is serious doubt as to whether we have supplementary transportation systems and readily accessible domestic markets for even the initially planned throughput of 1,200,000 bbl/day. It will probably take several years for both of the latter to develop and even longer for the full capacity of the pipeline to be used. Considering the errors in other estimates made for this line, one might even question whether it will ever be fully used for the designed capacity. Few people remember the original cost estimate was \$900,000,000 while the most recent one is \$7,700,000,000.

Three proposals for transporting Prudhoe Bay natural gas have been made and are now being considered by various governmental agencies. Recently estimated costs of these range from about that of the oil pipeline to half again as much.

Final costs and completion times are anyone's guess at this point in time, but we can be assured that both will probably be greater than present estimates. We believe there is a better, less costly and more rapidly attainable way of solving this problem than constructing a new transportation system when we will soon have another completed which is likely to be underused.

It is unfortunate that natural gas cannot be transported as such in the oil pipeline. However, some petrochemicals manufactured from natural gas could be transported in the pipeline with the oil, and this is the gist of our proposal. We have considered methanol in some detail and have looked at both urea and ammonia in a preliminary way. All are currently manufactured from natural gas in the lower 48-states; we are simply proposing that the site of the conversion plants be moved from the present locations to Prudhoe Bay. This would also free a considerable amount of present natural gas production which could go into readily accessible gas transportation lines and then to gas utilities in the lower 48-states.

Because use of natural gas for household purposes seems to take priority over that for industrial ones, petrochemical plants needing it would appear to have a precarious future in the lower 48-states. Companies owning these should give serious consideration to the movement of these plants to the location of our major uncommitted source of natural gas, namely, Prudhoe Bay. By methods examined earlier, this can be done by building or relocating them on large reinforced concrete barges, transporting the barges to Prudhoe Bay and mooring or beaching them there. It should be emphasized that these barges are not simply transportation vehicles; the plants should be reconstructed or constructed on the barges and fully operable there before leaving their origin. At Prudhoe Bay the plants would not be removed from the barges, which could then serve as operation pads with the former buoyancy chambers then being used for storage of products.

With the Alyeska pipeline having the status of a common carrier, other liquids than simply crude oil can be transported in it. Solids such as urea could be slurried in crude oil or some other medium. Liquids such as methanol could either be batched as in a product line or else blended in some way with the crude oil. We have investigated the dispersion of crude oil in methanol and have learned that with the use of very small amounts of chemical agents, stable dispersions of crude oil droplets in a continuum of methanol can be obtained. These would

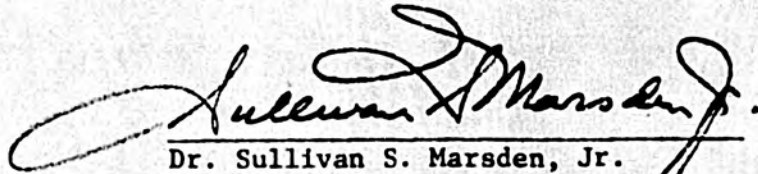
be easily pumpable at temperatures ranging from the coldest ever found in Alaska up to the proposed operating temperatures for Alyeska's hot oil line, i.e., 145°F. Perhaps the optimum arrangement might be to have batches of such a dispersion or others in a pipeline mainly devoted to crude oil.

Even at the initial oil production rates, the anticipated production rates for natural gas at Prudhoe Bay probably exceeds what is needed to manufacture all of our methanol, urea and a number of other petrochemicals. There should be no legal restrictions on exporting these as there is for the crude oil. We will also need to develop and perfect other uses for some of these such as the methanol. It and other lower alcohols have been used before as I.C. engine fuels and octane improvement components in hydrocarbon fuels. If we are to phase out lead compounds in gasoline and still have high octane fuels for efficient, high compression ratio engines, then we need to rediscover ways of handling such alcohols in our fuel systems.

What would be the cost and time required to implement such a scheme? Only a detailed study can tell but a few comparisons can show relative orders of magnitude. As for capital costs, there seems to be little doubt that relocating the petrochemical plants would be less expensive than building an entirely new gas transportation system. The environmental impact of petrochemical plants at Prudhoe Bay will be significant but probably less than that of an entirely new pipeline. The material required insofar as it has an impact on the environment will also be less. As for operating costs, liquid-carrying pipelines are always more efficient on a mass or energy basis than are gas-carrying ones. Because it has less environmental impact than the three gas alternatives, it should be more acceptable to environmentalists and this should lead to quicker governmental approval. Implementation time should also be a fraction of that required for the gas alternatives.

We are not suggesting that this scheme be implemented immediately, but we are proposing that a careful study be funded and started as soon as possible. Input and cost estimates should be obtained from all interested parties--the petrochemical companies, the gas pipeline companies, the gas utilities, the environmentalists, Alyeska Pipeline Service Co., the oil refining and marketing companies, the automotive industry, and possibly others. We need to have an

unbiased evaluation of this proposal to be considered along with the three being backed by the gas pipeline companies and utilities. There is no reason why natural gas consumers should pay for another grandiose, expensive slow scheme to fill their needs when a better method may well already exist.



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# ESTIMATED POTENTIAL VALUE OF NATURAL GAS LIQUIDS IN 1981

TO

THE STATE OF ALASKA

(Basis: 2.4 Billion Cubic Feet Per Day of Gas)

| Product       | Total Liquids<br>in Prudhoe Gas<br>(B/D) | Alaska's<br>Share<br>(B/D) | Value<br>as Liquid(1)<br>(\$/B) | Value<br>as Gas(2)<br>(\$/B) | Value<br>Difference<br>(\$/B) | Added<br>Income to Alaska<br>from Royalty Sales(3)<br>(\$/D) | Added<br>Income to Alaska<br>from Severance Tax(4)<br>(\$/D) | Total<br>Income to<br>Alaska<br>(\$/D) | Total Annual<br>Income to<br>Alaska<br>(\$/yr) |
|---------------|------------------------------------------|----------------------------|---------------------------------|------------------------------|-------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------|------------------------------------------------|
| Ethane        | 163,700                                  | 20,500                     | 6.00(5)                         | 4.00                         | 2.00                          | 41,000                                                       | 28,600                                                       | 69,600                                 | 25,400,000                                     |
| Propane       | 87,300                                   | 10,900                     | 12.00(6)                        | 5.70                         | 6.30                          | 69,000                                                       | 38,500                                                       | 107,500                                | 39,200,000                                     |
| Butane        | 31,400                                   | 3,900                      | 13.00(7)                        | 6.20                         | 6.80                          | 27,000                                                       | 15,000                                                       | 42,000                                 | 15,300,000                                     |
| Pentanes Plus | <u>6,120</u>                             | <u>800</u>                 | <u>13.00(7)</u>                 | <u>7.20</u>                  | <u>5.80</u>                   | <u>4,500</u>                                                 | <u>2,500</u>                                                 | <u>7,100</u>                           | <u>2,600,000</u>                               |
| Total         | 288,500                                  | 36,100                     |                                 |                              |                               | 141,600                                                      | 84,600                                                       | 226,200                                | 82,500,000                                     |

This is the estimated 1981 value at Prudhoe Bay after allowing for extraction costs and shipment to California.

Based on delivered value in midwest of \$3.00 per MMBTUs and transmission cost of \$1.50 per MMBTUs in 1981.

Based on 12.5% Alaska royalty share.

Based on 0% severance tax.

Based on ethane being worth \$6.00 per barrel at Prudhoe Bay in 1981.

Based on propane being worth \$18.00 per barrel, delivered to California.

Based on butane and pentane being worth \$19.00 per barrel in California.

(1937), wherein the Supreme Court of the United States upheld a Texas statute prohibiting the use of sweet gas in the production of carbon black. Although the State did not prohibit production from the wells in question, the effect was the same because there was no other market for the sweet gas at that time.

10. It is probable that the State may be able to require that a producer of natural gas extract liquid hydrocarbons from the gas before the gas enters an interstate pipeline.

No cases have dealt with the precise issue here under consideration, and accordingly an unconditional opinion cannot be given. There is, however, an abundance of authority recognizing that a State may validly regulate production of oil and gas by virtue of the police power inherently possessed by the State. Summers, The Law of Oil and Gas, § 106 (1927). These authorities are set out above in the discussion of the general power of a State to control production of oil and gas.

The cases dealing with questions most closely related to the one at hand were decided by the United States Supreme Court in 1920 and 1937. Those cases dealt with the authority of a State to regulate and/or prohibit the use of natural gas for the manufacture of carbon black.

*From Moody  
"Legal Analysis of Issues  
Relating to Natural Gas  
Transportation"*

The leading case is Walls v. Midland Carbon Company, 254 U.S. 300 (1920). Wyoming had enacted a statute which provided that:

"The use, consumption or burning of natural gas taken or drawn from any natural gas well or wells, or borings from which natural gas is produced for the products where such natural gas is burned, consumed or otherwise wasted without the heat therein contained being fully and actually applied and utilized for other manufacturing purposes or domestic purposes is hereby declared to be a wasteful and extravagant use of natural gas and shall be unlawful when such gas well or source of supply is located within ten miles of any incorporated town or industrial plant." Walls at 309.

In addition, Section 2 of the statute prohibited "the use, sale or other distribution of natural gas, the product of any well owned, leased or managed by any person, for the purpose of manufacturing or producing carbon or other resultant products from the burning or consumption of such gas, without the heat therein being fully and actually utilized for other manufacturing purposes or domestic purposes". Walls at 310.

The statute was attacked on the grounds that (i) the statute transcended the police power of the State of Wyoming, in that its purpose and effect was not to regulate and conserve natural gas but to prohibit the use thereof; (ii) the statute made a discrimination between owners having equal rights, and thereby violated Article I, §10 of the United States Constitution and the Fourteenth Amendment thereof; (iii) the law deprived the companies of their property by the ruin of their business, and (iv) the statute impaired the obligation of pre-existing contracts.

The United States Supreme Court held that while the prohibition contained in the statute is upon the use or consumption of the natural gas, and not the production thereof, the statute was constitutional. Unfortunately, the Supreme Court's opinion is dedicated to a detailed analysis of the facts, and the opinion cites little authority and few principles of law in reaching its decision.

The Court stated that while it was clear that carbon black has many uses and great utility, this fact is of incidental importance.

"The determining consideration is the power of the State over, and its regulation of a property in which others besides the companies may have rights in and which the State has an interest to adjust and preserve, natural gas being one of the resources of the State. And in this consideration it is more important to consider not for what a particular owner uses the gas, but the proportion of his use to that of others, or it may be, the prevention of the use by others. . . ." Walls at 319.

The Court also said that Wyoming was not "required by the Constitution of the United States to stand idly by while these resources were disproportionately used, or used in such a way that tended to their depletion, having no power of interference." Walls at 324.

The decision in Walls was re-affirmed in Henderson Company v. Thompson, 300 U.S. 258 (1937). Again, the Supreme Court's opinion cited little authority, its decision resting upon a finding that the facts demonstrated that the legislature had acted reasonably.

In Henderson, the plaintiff attacked the validity of orders entered by the Railroad Commission of the State of Texas pursuant to a statute prohibiting the use of "sweet gas" for the manufacture of carbon black. Sweet gas was defined by the statute as any natural gas containing more than one and one-half grains of hydrogen sulfide per 100 cubic feet, or more than 30 grains of total sulphur per 100 cubic feet of gas, or "gas which in its natural state is found by the Commission to be unfit for use in generating light or fuel for domestic purposes." Henderson at 260, n.1. Once again a claim was made that the statute violated the equal protection clause of the Fourteenth Amendment, as well as that the statute violated the due process and contract clauses of the United States Constitution.

The Supreme Court cited Walls for the proposition that "the needs of conservation are to be determined by the Legislature." Henderson at 264. While the plaintiff conceded this, it urged that in the absence of waste, the legislature of the State of Texas lacked the power to regulate production, since in that State the law gives the owner of land title to the gas in place and to that which may migrate to formations under his land. The Court rejected this argument, stating:

"One principal established by the Walls case is that the Legislature may, for the purpose of conserving natural resources, regulate their production and use. The findings of the district court in this case

support the reasonableness of the present statute on that basis. It is also urged that there is this vital difference in the facts: that in the Panhandle field [Texas] the challenged prohibition will not prevent waste, or conserve the supply of sweet gas, since the sweet gas, if not used, will drain into the sour gas area, because of the lower pressures there. Moreover, it is insisted that, unlike the Walls case, there is here in the record convincing evidence that the use of sweet gas in the manufacture of carbon black is not wasteful. Our decision in that case rested upon no particular theory of the nature of the carbon black industry. It was based simply upon the determination that the statute in question was not shown to have been an arbitrary exercise of legislative power." Henderson at 267 (emphasis added).

Thus, there is authority from the United States Supreme Court that a State may, under its police powers, regulate the use, as well as the production, of oil and gas for purposes of conservation. The State has discretion in deciding what is wasteful production and use. However, in both Walls and Henderson, the Court took great effort in discussing the facts to demonstrate that the legislature had not acted unreasonably in prohibiting the use of the gas for the manufacture of carbon black. And in each case the States of Wyoming and Texas were able to demonstrate that the statutes involved were reasonably related to conservation measures.

It is arguable that, under the authority of Walls and Henderson, a State could require that liquid hydrocarbons be removed from any natural gas produced as long as it reasonably could be demonstrated that such a requirement

would prevent waste or otherwise would be in the interest of conservation. For example, if it could be demonstrated that the dry gas (after the liquids had been removed) was of sufficient B.T.U. content to generate enough heat for its needed uses, and that the extracted liquids themselves could then be used as an energy source, or as a valuable raw material or feedstock, waste is prevented (and conservation is thereby served) - that is, more total utility is derived from the gas produced than if the liquids were not so extracted. Obviously, the questions of whether conservation will be served and waste prevented, are scientific, fact questions which will have to be answered by qualified experts, and accordingly the power to require extraction should be vested by the Legislature in the State's conservation agency where decisions may be reached with appropriate protection of the rights of all.

The Walls case has been cited many times by Courts for the proposition that a state has complete authority to regulate the use, as well as the production, of natural gas. One case cites Walls in stating that "its [the gas] extraction and use is subject to regulation, or even complete restriction or suppression, by the state." Herkness v. Irion, 11 F.2d 386, 388 (E.D. La. 1926).

One Texas case was found wherein the Supreme Court of Texas upheld the general authority of the Railroad Commission to regulate the production of oil and gas through

proration and other orders. One of the orders entered by the Railroad Commission directed "that all of the gas from the Bammel Field shall be processed for its liquid hydrocarbons and condensates therein efficiently extracted and the residue gas either returned to said sand from which it was produced or utilized for light and fuel and other lawful uses. . . ." Unfortunately, this order was not attacked in the Courts, and therefore the Texas Supreme Court never ruled on the enforceability of the order. However, the Court was aware of the order and made clear that the Railroad Commission did have the power to regulate the manner of production in the Bammel Field. Corzeli v. Harrell, 186 S.W.2d 961, 971 (Tex. 1945).

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March 12, 1977

Senate President John Rader  
Alaska State Legislature  
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Dear Senator Rader:

The enclosed critique of the recently issued FPC "Initial Decision on Proposed Alaska Natural Gas Transportation System" will, we think, be of interest to you. One of the reasons we feel the State of Alaska must take the initiative in examining the "ALASKAN METHANOL WAY" is because the Federal Government staff work has been so inadequate, as the critique shows.

We hope you found the booklet sent to you on February 7th over our Arctic Enterprises letterhead to be useful and interesting. We wonder whether the State is now ready to sponsor a study on the ALASKAN METHANOL WAY in the light of the FPC Decision.

Sincerely,

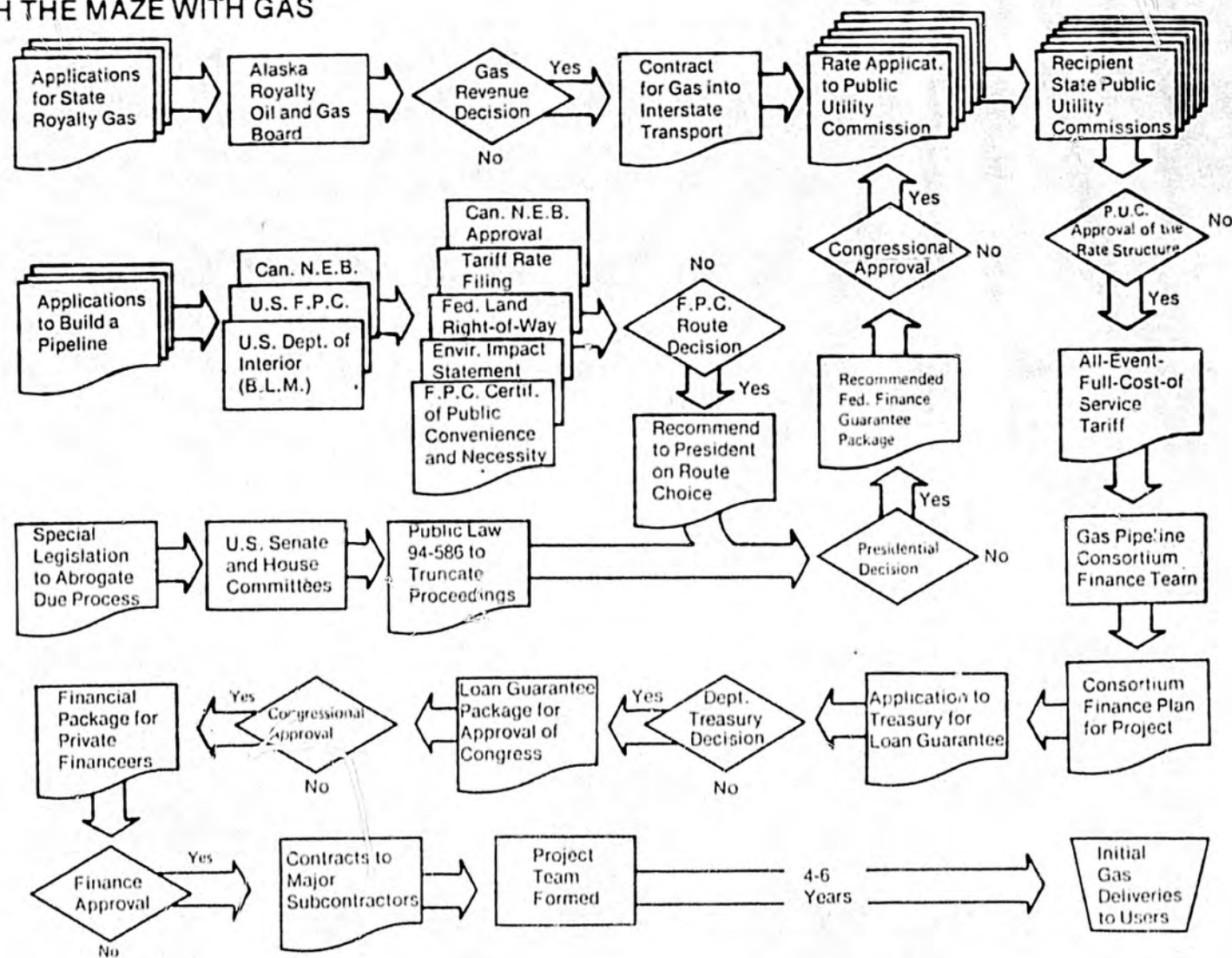


William H. Kumm  
Principal, KM Associates and,  
President, Arctic Enterprises Inc.

enclosure

WHK:agk

# THROUGH THE MAZE WITH GAS



CRITIQUE OF THE FPC REPORT

"EL PASO ALASKA COMPANY DOCKET  
CP 75-96 ET AL.  
INITIAL DECISION ON PROPOSED  
ALASKA NATURAL GAS  
GAS TRANSPORTATION SYSTEM"  
FEB. 1, 1977

K M ASSOCIATES  
*Consultants*

February 28, 1977

## CRITIQUE OF THE FPC REPORT

"EL PASO ALASKA COMPANY DOCKET CP 75-96 ET AL.  
INITIAL DECISION ON PROPOSED ALASKA NATURAL  
GAS TRANSPORTATION SYSTEM" FEB. 1, 1977

### 1.0 Purpose of this Critique

With reference to Public Law 94-586, Oct. 22, 1976. <sup>1/</sup>

We are responding both in general to the report and in particular to the part of the report dealing with alternatives to the gas pipeline approaches.<sup>2/</sup> (We, **K M ASSOCIATES Consultants**, are not Federal officers.)

### 2.0 General Nature of the Comments

We have neither the expertise nor the requirement to evaluate the specifics of the decision for one or another pipeline. We can, however, comment on the decision methodology used by the Federal Power Commission within the terms given by the Commission in the report. We will also comment extensively on the one area of the report within the governmental mission, that is, "alternatives".

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<sup>1/</sup> Public Law 94-586, Oct. 22, 1976

Section 6 OTHER REPORTS

"Sec. 6(a) Not later than July 1, 1977 any Federal officer or agency may submit written comments to the President with respect to the recommendation and report of the Commission and alternative methods for transportation of Alaska natural gas for delivery to the contiguous states ..."

<sup>2/</sup> "El Paso Alaska Company Docket CP 75-96 ..." pp. 248-9

## 2.1 Comments on the FPC Decision Methodology

Several sectors of the economy are supplied by regulated industries. One fundamental feature of the jurisdictional aspects of regulation is that some "public convenience and necessity" be served by the regulations. It is true that the issue of jurisdiction is usually dealt with pro forma because of judicial reluctance to interfere with the intent of legislation. It is still true, however, that the premise of public convenience and necessity must be established.

In the report of the FPC no such foundation has been established. This point is not trivial. The Commission, in its own words, finds the Alaska North Slope gas issue unusually important financially,

"The present level of discovered gas reserves will justify only one transportation system, and the billions of dollars of capital costs for initial construction are simply so high that it would be cheaper in the foreseeable future to add to an existing line rather than to commence another.

"The magnitude of the physical undertaking and cost of building a gas transportation system from Alaska apparently exceeds any prior U.S. private undertaking. The estimated \$8-\$11 billion costs are such that the resolve to go forward will require a financial commitment over the construction period of a substantial amount of that funding normally available to all utilities." (page 9)

and unusually difficult procedurally,

"But these (technical) impediments pale when compared to those problems covered throughout the entire period of the hearing by the failure of those owning the reserves to enter into sales contracts ... This refusal, by itself, has prevented the expeditious and orderly examination of sizing the pipeline, financing, marketability, and a host of related matters, including disputes as to which companies would ultimately buy the gas." (page 12)

"... (As a result) the Commission would not insist on compliance with the general Commission requirement that sales agreements be on file before this phase of the application is completed." (pages 12-13)

"In addition to the lack of sales (of gas) agreements, there is still no approved production agreement for oil or gas from the Prudhoe Bay Field." (page 14)

## 2.2 Conclusion About the Decision Methodology

The Commission's findings in view of the factual and administrative uncertainties would seem suspect. Perhaps the Commission report itself best summarizes our misgivings -

"The net result of the lack of sales contracts and lack of an approved field production agreement is that the record has been closed without a deliverability schedule of gas which will be sold and without knowing the purchasers of this gas. The record has been closed without knowing more than the alleged general cost of field gathering and gas conditioning facilities or who would pay for them. The record has been closed without specific estimates of reserves on the Lisbourne and Kuparuk formations which are part of the Prudhoe Bay Field. These record deficiencies in the usual case would require that the entire proceeding be held in abeyance pending their resolution. Here an overwhelming consensus on the part of the Commission, the Congress and the Executive Branch has been to go forward anyway and to pick a pipeline. It is not the best way to make rational decisions." (page 15)

We agree.

## 3.0 The Public Convenience and Necessity

The usual practice is that a public convenience and necessity is served when a regulatory commission asserts such a view. This particular case must be considered an exception. The report cites numerous issues which, on their face, raise questions about the premise of public convenience and necessity. Nevertheless, because of the tradition of regulatory practice, we will seek to

show that neither the public convenience nor the public necessity is automatically served by the pipeline choice.

### 3.1 Public Convenience

If disturbing the ordinary affairs of the public and its sub-groups can be considered as public inconvenience, then the recommendations of FPC will definitely cause "inconvenience."

The disturbances fall into three categories: physical/environmental, financial/economic and judicial/institutional.

Physical/environmental: The Commission treats the physical environmental issues with considerable thoroughness. The report shows that a considerable disturbance of the environment will occur for any pipeline, which recommends the least "impactful", i.e., the Arctic Gas proposal. The Commission is considerably less even-handed in its treatment of the sociological issues of the pipeline approaches. In particular, the Commission weighs the total Arctic Gas impact against the total El Paso or Alcan impact while quietly ignoring the ratio of intrusion to the base environment. That is to say, the El Paso and Alcan intrusions are in regions where prior intrusion, largely in the TAP's (oil) area, have occurred. The Arctic Gas intrusion is in practically virgin territory or upon very small or fragile ecologies, i.e., the North Slope. The "overwhelming consensus" seems to have overwhelmed a careful treatment of the North Slope intrusion issue.

Financial/economic: The Commission did examine economic and financing issues at considerable length in spite of having no concrete cost, price or wellhead value data. In the case of

"inconvenience" to the economy, the very substantial impact upon utility capital markets of the pipeline finance requirements were dealt with somewhat briefly.<sup>3/</sup> This in spite of the fact that the material in Appendix I examined the capital market impact at some length and concluded that a sizeable disturbance would develop.

Concerning the impact upon the general public, the Commission displayed the results of a gas cost model submitted by the Federal Energy Administration.<sup>4/</sup> The model showed relative gas costs given wellhead prices of 55¢ and \$1.00 and transport tariffs of \$1.29 to \$1.60. Possibilities of wellhead prices of \$1.42 or higher or tariffs in excess of \$1.60 were ignored. Yet the economic impact of gas at \$3.00 to the city gate is substantial.<sup>5/</sup>

Judicial/institutional: The relative disturbance recommended by the Commission with respect to federal operations, new legislation, interstate court battles, even public/private standing is staggering. In the Chapter "Potpourri" the Commission's Judge recommends:

- A) Sections 13(a), 13(b) be deleted from the "Alaska Natural Gas Act of 1976".
- B) Jurisdiction over rates and operations of LNG ships be conferred on the Commission.
- C) The Treasury Department should develop a plan for Federal participation in the finance of the pipeline. (pages 426-7)

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<sup>3/</sup> FPC Report, page 378.

<sup>4/</sup> Cited in the report on page 302.

<sup>5/</sup> The FEA gas marketability model is "proof" the entire pipeline concept is a wise investment from a national point of view. We merely note that a much larger set of marginal cost/marginal benefit analyses would seem to be required given the private market reluctance to underwrite the concept.

In other places in the report the Commission advocates a legal battle with the State of Alaska over its "Hire Alaskan" statute (page 267), its royalty gas allocability (p. 18-19), and the terms of the statute (Alaska Natural Gas Act of 1976) (page 256).

There are not a few comments in the Report which suggest a sort of "Eminent Domain" attitude developing about the gas itself. For example -

"This, while stating their (the oil producers) concern for the national interest and the requirements of this country for energy at an early date, their prime consideration for early sale turns on other more parochial interests. The only conclusion possible from their actions is that the national interest to ARCO, EXXON, SOHIO, etc., lies somewhere below their own economic interest ..." (page 13-14)

While the national security aspects of energy have extended Federal power over state's rights and private property, we do note that considerable "inconvenience" seems associated with the Commission's propositions.

### 3.2 Public Necessity

There is no doubt that the public can be legally and reasonably "inconvenienced" if an adequate "necessity" exists. Indeed that is very much a functional definition of most of government. The real issue turns on the question, "Is a new pipeline necessary to deal with Prudhoe Bay gas?"

The proposition that a pipeline is necessary is not established anywhere in the report. The page and one-half on alternatives is not even a legitimate Commission comment much less a proper treatment of the issue.

We believe that the legislative record supports the

point that the Commission had to make a thorough study of alternatives. This sanction is in addition to the philosophical imperative of the certification requirement. We note that our own interest is very much in possible non-pipeline methods of energy transport.

This interest biases our concern but has not biased our judgement. Given the huge cost of the pipeline approaches, the complex evolution of a project, etc., the possible methods of moving the energy or rather hydrocarbons south by another means must be explored.

To sum up, are there any alternatives to a new gas pipeline?

In view of the "inconveniences" to the public discussed above it is essential that the "necessity" of a new gas pipeline be thoroughly established. The only legitimate procedure is to exhaustively examine all alternative techniques of hydrocarbon transport and reject them on proven and substantive (as opposed to jurisdictional) grounds.

#### 4.0 Alternatives

The prior discussion can be said in another context. The FPC is statutorily limited to the consideration of natural gas distributed and marketed as a fuel by jurisdictional gas utilities. On the other hand it is obvious that larger national energy policy issues are involved, indeed were so involved in several places in the report. When the level of a decision making process is elevated the criteria may change and the answer may be different. Hence the footnote on page 248 of the report - "Since the object is to bring natural gas to market, the use of methanol in the lower 48 states was not extensively investigated." - is simply presumptuous. Should not the object be, "Bring energy to market?"

#### 4.1 The Basic Alternative

In the national energy context, the plain fact has to be admitted that of all the estimated recoverable energy in the Prudhoe field, only 22% of it is gas. Moreover, at the planned transport costs, the gas energy is costing \$1.60 per million BTU's to deliver to the lower 48 while the oil energy will cost 88¢ per million BTU's. A priori it seems clear that utilization of the gas must be done with careful consideration of the oil recovery issue. This latter consideration opens up one very simple alternative. To not take any of the gas away from Prudhoe Bay.

Consider that tertiary recovery of oil in the lower 48 has been done using field gas, that local purchases of non-field gas are used and that in one case nitrogen is being manufactured at 75¢ per Mcf in order to increase recovery.

The solution gas, gas cap, oil recovery rate questions were not addressed by the FPC.

#### 4.2 Considering the Environment

We are surprised that the Commission failed to mention in its "Alternative Transportation Methods" (about one page, total) the most prominent man-made feature in Alaska, the Trans-Alaska Pipeline. The Commission also gave little attention to the other prominent feature of Prudhoe Bay, the presence of the Arctic Ocean.

#### 4.3 Available Capacity in the Trans-Alaska Pipeline

As has been brought out in Senate Joint Commerce and Interior Committee hearings on the disposition of Alaska North Slope Crude Oil during the Autumn of 1976, there is, and will

continue to be, excess carrying capacity in this liquids pipeline into the foreseeable future.

This is further substantiated in the FEA Nov. 30, 1976 draft document "An analysis of the alternatives available for the transportation and disposition of Alaskan North Slope Crude", FEA document no. FEA/G-76/477.

The Trans-Alaska liquids pipeline has a design throughput of 2 MMBD (Million barrels per day). It is currently built only to a throughput of 1.2 MMBD. At the lower 48 state West Coast market (the PADD V market) the following is the data from the report, page 00133.

"FEA Surplus Forecast

FEA's current estimate of the crude oil excess in PADD V is presented below: (MB/D is thousands of barrels per day)

| <u>1978</u> | <u>MB/D</u><br><u>1980</u> | <u>1985</u> |
|-------------|----------------------------|-------------|
| 600         | 900-1100                   | 700-1300 "  |

Clearly the Trans-Alaska liquids pipeline will have excess capacity for many years. Some of this capacity could be used for another oil-compatible liquid on a batch basis, in the manner of pipelines in the lower 48 states.

4.4 The Asset, Its Use and The "Alternatives" Section of the Report

The existence of the surplus capacity would suggest that one alternative method of moving the gas energy would be to transform the gas into an oil-compatible liquid. Methanol is such an oil-compatible liquid. It could be made from oil-associated natural gas at Prudhoe Bay, and batch shipped in the Alyeska pipeline if

the government deemed it to be wiser than constructing new gas pipelines. It is obvious that a lesser capital cost would be involved in using an under-utilized asset than building a new gas pipeline. Only the capital cost of methanol synthesis, and the batch shipment inventory tankage would be involved. Since no new pipeline would be required the statement -

"According to FEIS of DOI, the total common-destination capital cost would be almost 1.5 times that of the Arctic Gas proposal ..." (page 248)

- would indicate the DOI believes the methanol synthesis operation require some \$12 billion, that is, the stated Arctic Gas cost of \$8 billion times 1.5.

This patently absurd conclusion raises the question, where did these values come from?

#### 4.5 The Commission's Treatment of "Alternatives"

The FPC report says, on page 248, "that ... while methanol production and transport might be technically viable, several severe drawbacks make it impractical. First, the methanol conversion is costly". The FEA report then goes on to cite the Department of Interior Final Environmental Impact Statement to the effect that "... the total common-destination capital cost would be almost 1.5 times that of the Arctic Gas proposal, and the total operating cost would be three times greater."

What is the source of the attributed DOI information? Does it represent the result of a definitive economic analysis by the government of the alternative to the proposed action?

The DOI EIS task force specifically examined the environmental aspects of the three competitive applications to build natural gas pipelines because a right-of-way would be required over federal lands for a new pipeline. The DOI EIS task force was not charged with examining the economic aspects of the issue.

The element of the DOI which was charged with the examination of the economic and technical issues of Alaska gas transportation did so under the mandate of section 302 of P.L. 92-153, the so-called "Trans-Alaska Oil Pipeline Act." This section of this act required the examination to be completed within two years of the enactment of the original law in November 1973. The DOI study was completed in November 1975. The June 1975 draft of the study report "Alaskan Natural Gas Transportation Systems. Economic and Risk Analysis Conclusions and Results" said, on pages 4 and 5: "Of all the various types of systems to transport North Slope gas that have been discussed, only two have received the support of private industry to the extent that they have been proposed in applications before U.S. and Canadian regulatory agencies." And,

"DELIVERY SYSTEM ISSUES NOT ADDRESSED BY THIS STUDY

- ENVIRONMENTAL IMPACT
- REGIONAL ECONOMIC IMPACTS AND CONCERNS
- INTERNATIONAL POLITICAL IMPLICATIONS
- U.S. AND CANADIAN GAS RATE REGULATION
  - RATE BASE
  - RATE OF RETURN ON RATE BASE
  - FAIR TRANSPORTATION CHARGES
- OTHER TRANSPORTATION SYSTEMS
  - ALTERNATIVE PIPELINE ROUTES
  - CONVERSION TO METHANOL
  - SUBMARINES, AIRCRAFT, ETC."

As the final report of the DOI section 302 study also says, on page 28 of the INTRODUCTION, the DOI did not examine the

alternatives. In fact the report even allows that it only examined systems which ... "are similar but not identical to the systems presented to the Federal Power Commission in the formal applications." (Last paragraph on page 24 of "Alaskan Natural Gas Transportation Systems. A report to the Congress, pursuant to Public Law 93-153 December 1975".)

If the DOI EIS group did not examine the economics of the alternatives and the DOI "302 study" team did not examine the economics, where does the statement about the common-destination capital cost of the (methanol) alternative come from? The answer to the question is that it comes from the application filed by the Arctic Gas Consortium!

The Federal Power Commission February 1977 document is based on the earlier FPC documents, specifically the April 1976 Final Environmental Impact Statement on Alaska Natural Gas Transportation System. Volume II, the El Paso System volume, says on page II-376 in Section II ALTERNATIVES TO THE PROPOSED ACTION, as follows:

"This section discusses the alternatives to implementing the proposed project. These alternatives include:

- 1) Alternative Pipeline Routes
- 2) Alternative Sites for LNG Facilities
- 3) The Alternative of No Action
- 4) The Alternative Modes and Systems
- 5) Alternative Sources of Energy
- 6) Energy Conservation

"Alternatives 1, 2 and 3 are covered on the following pages. The discussion of alternatives 4, 5, and 6 are adopted by reference from the U.S. Department of Interior's Final Environmental Impact Statement issues in March 1976 for the Alaskan Natural Gas Transmission System."

The March 1976 DOI Final EIS makes certain admissions in the section 8-F on alternative transportation systems, starting on page 116. Specifically, on page 124 in the fourth paragraph, the following is stated:

"According to the Canadian Arctic proposal (CAG P.L. 1974), the total common destination capital cost of a methanol pipeline would be almost 1.5 times that of the Alaska Natural Gas Transportation System and the total operating cost, 3 times greater."

In short, the entire FPC treatment of alternatives to gas pipelines is lifted almost virgo intacto from the pipeline applicant's original filing.

But the Arctic Gas Consortium did not examine the methanol alternative. This is acknowledged in the Hearing Report of the Joint Hearings before the Committees on Interior and Insular Affairs and the Commerce, U.S. Senate of February and March 1976, pursuant to S. Res. 45, the National Fuels and Energy Policy Study. The committee report on the transportation of Alaskan Natural Gas, in Part 2 of Serial No. 94-29 (92-119) gives the following answers to the Questionnaire "Issues concerning the Transportation of Alaskan Natural Gas". The questionnaire was prepared by the committee staff to invite answers from hearing witnesses and interested parties. On page 1025 of the Hearing Record the following is stated:

"The following responses are submitted by the Alaskan Gas Pipeline Company to the questionnaire..."

On page 1134 and 1135 of the Committee Hearing report, in answer to the following question, Arctic Gas says:

"Question III STATUS OF REGULATORY APPROVALS

D. Alternatives

Please provide estimates of the costs environmental impacts, construction lead times and other relevant facts concerning:

(1) An alternative pipeline route from the North

Slope to Fairbanks and then paralleling the Alcan Highway:

- (2) Conversion of the natural gas to methanol and shipment by the Trans-Alaskan oil pipeline or tanker or submarine; and
- (3) Other possible alternatives.

Response:

... Arctic Gas has not studied the possibility of shipment of methanol in the Trans-Alaska oil pipeline nor by tanker or submarine..."

If the Arctic Gas did not examine the batch basis methanol concept, where do all the FPC judgements, "... extremely energy-inefficient", "...requires large amounts of fresh water", "...the total operating cost would be three times greater", come from?

● "Energy Inefficiency"

Referring to page VI-328 of the June 1975 DOI draft, Environmental/impact Statement, Part VI Alternatives, Volume 1 of 2, the following is stated:

"One of the main drawbacks of the (methanol) method is its lower overall efficiency to a common destination, which is only 48.2% with a loss of 2,546 BBTUD in contrast to the natural gas pipeline system, which has a 90% efficiency and only 489 BBTUD loss. The total common destination capital cost was calculated to be almost 1.5 times that of the natural gas pipeline and the total operating cost to be 3 times greater".

These are the same words as before, only the order in the sentence has been reversed. The DOI draft EIS goes on:

"Environmental Impact"

"Because the methanol pipeline system at present appears to be economically unfeasible although technically viable when compared with the natural gas pipeline and because the energy loss in conversion to methanol, not all of its potential environmental effects are considered in detail".

What the February 1977 report of the FPC is in fact citing at the bottom of page 248, is a sentence out of the Arctic Gas Consortium application with respect to a comparison between

the proposed natural gas pipeline and hypothetical methanol pipeline over the same route. Aside from the technical and economic questionableness of simply quoting of the applicant's data, the FPC has slightly oversimplified the issue.

Figure 1 titled PRINCIPAL PROCESS STEPS IN DELIVERING ENERGY TO MARKET BY VARIOUS TRANSPORTATION SYSTEMS, of subsection 2.1 of Chapter V-B of the Arctic Gas applicant's filing is attached as an exhibit. As can be seen, the applicant's treatment of the alternative methanol pipeline includes a gas processing plant which is common to both the gas pipeline proposed approach and the methanol alternative. In fact, the methanol alternative would not use a gas processing plant. Thus some 7% of the BTU's of the Natural Gas Liquids (NGL) are used by the methanol approach, but they are sacrificed by any gas pipeline approach. Second, the figure shows that the applicant's treatment of the methanol pipeline alternative shows a block labeled "SNG Plant" and another block labeled "Gas Pipeline" before the "common destination" is reached at the bottom of the illustration page. It need only be pointed out that it is not necessary to take methanol, an unregulated chemical and fuel, and put it through the last two blocks of the sequence in order to serve the regulated natural gas market place. Methanol would be sold, as now, outside of FPC regulated channels and therefore does not require the further BTU losses that would occur with the last two blocks to the "common destination". Once the methanol pipeline alternative is relieved of the losses attendant to the three unnecessary blocks, the BTU loss for the methanol pipeline alternative, and

the capital cost of these three blocks are not present.

- Fresh Water Issue

The FPC report makes another statement about the "Alternative Transportation Methods" in regard to methanol as the only alternative commodity discussed. The following sentence is from the top of page 249 of the FPC February 1, 1977 report:

"Second, methanol conversion requires large amounts of fresh water. Estimates range from 125 gallons to 300 gallons of water required for every ton of methanol produced."

Using the same procedure as that used above of tracing back through the existing FPC, DOI and FEA documentation on the subject, we find, in the March 1976 DOI FEIS, at the top of page 128:

"Because the North Slope fresh water is frozen most of the year, the processing water probably would also have to be taken from the Beaufort Sea and then subjected to desalination before it could be used in the methanol plant. Desalination facilities could add considerably to the plant cost. The Maritime Administration report (1975, already cited earlier) suggests that, after the submarines (submarine tankers capable of carrying crude oil or methanol from the North Slope to the East Coast via the Arctic Ocean) were in operation, their methanol-ballast water could be converted for use in the methanol process and thus eliminate the need for taking water from the North Slope (i.e. the Beaufort Sea)."

It need hardly be added that potable water is not required from the desalination facility, that such plants are in use today, and their cost and reliability is reasonable, not prohibitive. This does not appear to be an overwhelming reason for dismissing this alternative transportation method.

- Energy Efficiency/Inefficiency

The FPC February 1977 report says as follows on page 249, in the first paragraph:

"Third, the methanol scheme is extremely energy-inefficient. The chemical conversion of natural gas to methanol and the possible reconversion to synthetic natural gas requires large amounts of energy."

This assertion requires a little analysis. First, the same sentence could have been written about naptha, a similar clean storable liquid fuel to methanol. Naptha is an oil refinery product, produced through a process involving a chemical conversion energy loss. The FPC and FEA, however, currently permit various municipal gas utilities to use naptha as a synthetic natural gas (SNG) feedstock. This SNG conversion consumes energy too. Should not the FPC be required to show the BTU losses for this SNG energy source process, as the basis of comparison for the methanol commodity fuel transport alternative to natural gas pipelines, with and without SNG produced from the methanol? Methanol does not have to be reconverted back to SNG to have many market uses, as has already been mentioned.

Second, as was previously mentioned, the natural gas liquids can go to market along with the methanol as a "carrying fluid". 7 percent more energy can thus be marketed, compared with the "dry pipeline quality natural gas" which must be prepared for the gas pipeline transportation approach.

Third, the chemical synthesis of methanol ( $\text{CH}_3\text{OH}$ ) from natural gas or methane, ( $\text{CH}_4$ ) requires more carbon than is available from the gas, for maximum conversion efficiency, or minimum BTU loss. The addition of carbon from a local source on the North Slope of Alaska could be very useful. There are abundant coal reserves on the North Slope. The conversion of the coal to methanol is conversely, rich in carbon and shy in hydrogen. Thus, a synergistic process is

possible which would reduce the methanol synthesis BTU shrinkage substantially, in both instances.

Fourth, the new natural gas pipeline, if approved and built is many years from completion. For the duration of the time that a natural gas energy utilization or transportation system is delayed, once the oil production begins in 1977, there will be a gas energy BTU shrinkage caused by the pumping power of the reinjection of the gas into the formation. This represents some 10% loss in gas BTU's until the day that a gas pipeline is completely finished. A methanol transportation system, on the other hand, based on modular plants and the use of the existing trans-Alaska pipeline on a batch basis can be built up incrementally and eliminate the 10% reinjection energy cost much earlier than any gas pipeline system. This is not a trivial point but the FPC appears to have chosen to ignore it.

Fifth, the gas pipeline applicants have based their discussion of the throughput required to make a new gas pipeline economic on the use of the gas cap as well as the solution gas. The use of this gas will have a shrinkage effect on the oil production BTU's or the gas cap contribution to the pressure must be substituted by another form of active pressure maintenance, again at a BTU loss. Because a methanol delivery system can be implemented on only the solution gas, there is a BTU shrinkage tradeoff in this aspect also.

The FPC analysis of gas distribution considers the "displacement" of lower 48 gas supplies at some length. Geographic displacement is considered a legitimate method of "substitution".

There is an analogous market "displacement" phenomenon between one and another uses of gas, coal and oil - even between various supplies of gas.

The principle of substitution in the energy marketplace can be applied to methanol, for example, in the automotive fuel sector of the national economy. Natural gas would not be readily used in the automotive fuel sector. When a barrel, or gallon, of methanol is substituted for a barrel, or gallon, respectively, of gasoline in a 1-in-10 mixture ratio, the internal combustion engine used in the automotive sector will operate as well on 10 units of mixture as on 10 units of gasoline. Gasoline has double the BTU heating value by volume of methanol. Therefore, substituting natural gas derived methanol for foreign oil derived gasoline in the automotive fuel sector more than makes up for the methanol synthesis loss in BTU's, and provides a source of domestic fuel in a market place with a very high social utility. This aspect of the methanol is totally ignored in the FPC documentation, but it is mentioned in the DOI March 1976 FEIS in the ALTERNATIVES volume on page 126, as follows:

"Methanol has many uses as a well-known petrochemical feedstock, a solvent, or a fuel, alone or mixed with gasoline for internal combustion engines. Less well known uses might, with proper development, provide a methanol market for applications in turbogenerators, peak load shaving for limited periods, fuel cells for running motors, and production of single-cell protein... While these uses might make major contributions to other energy and food problems, they would not solve the dilemma of natural gas distribution companies, who want and need gas for their customers. If methanol were produced from Arctic gas, only incentives for further drilling in the continental United States, namely higher field prices, could provide this gas supply. Still, paying high transportation costs for remote Arctic gas would add unnecessarily to the country's energy bills."

#### 4.6 A Broader Consideration of Alternatives

The foregoing is not meant to break a butterfly on a wheel. The analysis of the sources is done to prove that the FPC treatment of alternatives is not only inadequate but intellectually dishonest.

The broadest look at alternatives requires consideration of several categories. First, there is the alternative of doing nothing, that is, leave the cap gas untouched and reinject the solution gas. This has some probable value in its effect on ultimate oil recovery.

A second category is beneficiation of the product into a more tractable product to ship. Within this category is the alternative of low value beneficiation - say, for example, ammonium nitrate, which would allow for annual shipment to the lower 48 during the summer retreat of the pack ice. Or, on the other hand, much more extensive processing in situ could yield a product for the TAP's line or even air freight.

Perhaps none of these alternatives are sound and economic uses for the gas. Perhaps they are. We shall never know from the FPC treatment.

#### 5.0 To Sum Up

The FPC report can be seriously faulted because its conclusions on the Alternatives are neither supported by the documents cited in the report, nor by any independent federal analysis of the technical and economic aspects of several alternatives. Only the methanol approach was even mentioned in the FPC report. That much, much more could be learned about that particular activity is

suggested from Congressional testimony. In 1975 a study was performed by the Associated Universities of Oak Ridge for the FEA. It showed that the methanol approach using the Trans-Alaska liquids pipeline on a batch basis should be examined in detail. The principal investigator reported, in testimony before the previously cited joint hearings before the Senate Committees on Interior and Insular Affairs and Commerce, as follows, from pages 1770 and 1771 of Part 3, Serial No. 92-72 (Commerce):

"SENATOR STEVENS. In your opinion is there enough merit in this strategy to warrant an extensive study of it at this point and if so, how long would you guess such a study would take?

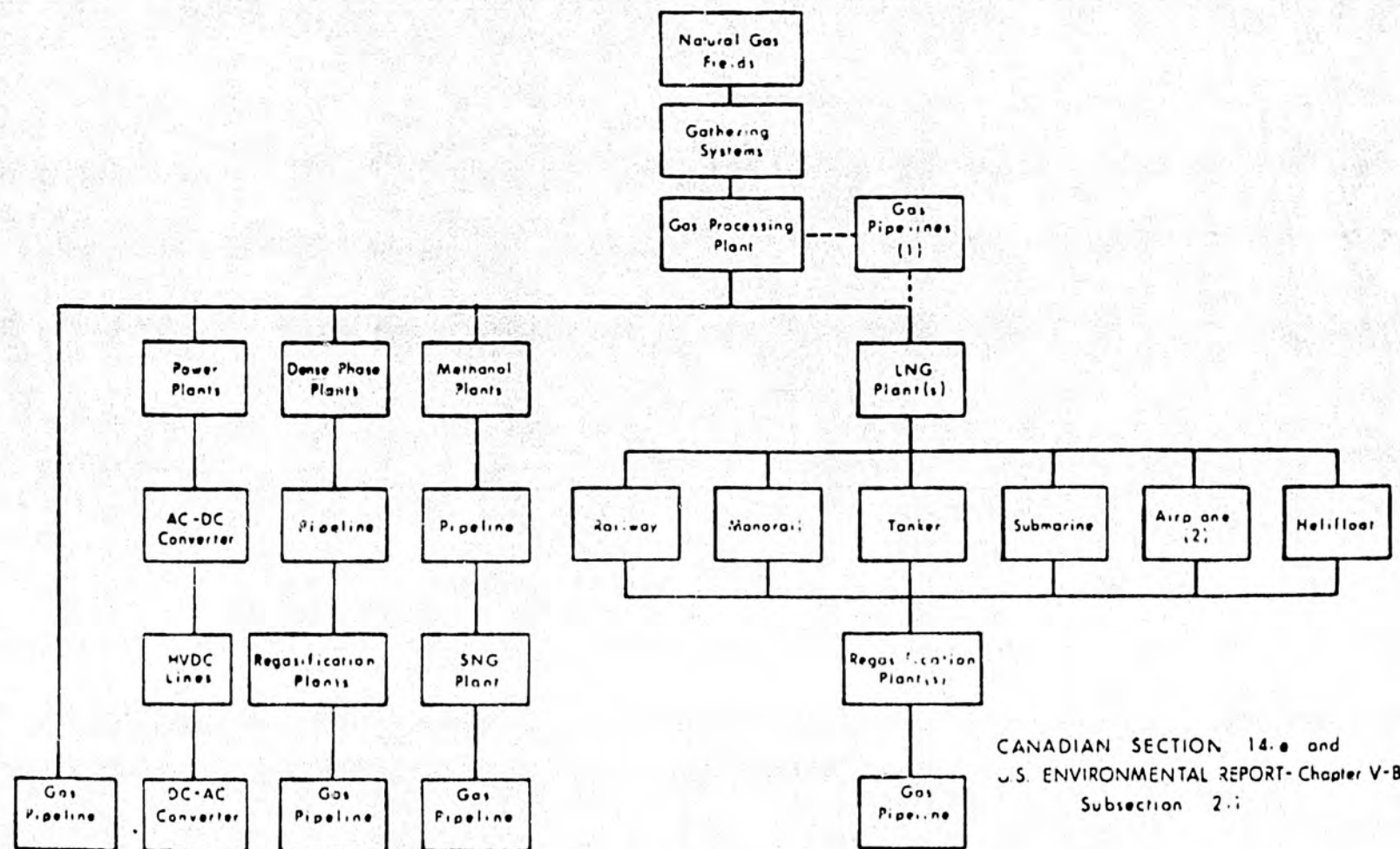
"DR. THOMAS. To your first question, I think yes; there is enough merit to warrant a comprehensive study. I think such a study could be conducted, if it were undertaken promptly within a 6 month time frame. I suspect the cost would be trivial compared to the investment at stake here."

and on page 1772:

"SENATOR STEVENS. What would be the cost of the independent study for 6 months?

"DR. THOMAS. I think one could do this within 6 months on the order of \$200,000 - \$400,000 ..."

PRINCIPAL PROCESS STEPS IN DELIVERING ENERGY TO MARKET  
BY VARIOUS TRANSPORTATION SYSTEMS



CANADIAN SECTION 14.6 and  
U.S. ENVIRONMENTAL REPORT- Chapter V-B,  
Subsection 2.1

- (1) For the tanker or submarine system, pipelines are required to move the natural gas to a central LNG Plant
- (2) Short range and Long range alternatives were estimated.

Block Diagram From Arctic Gas  
Consortium Application Filed With Department of Interior

#21: 6

www.ocs



Federal-State  
Land Use Planning Commission  
For Alaska

May 9, 1977

Honorable John L. Rader  
President of the Senate  
Alaska Senate  
Pouch V  
Juneau, Alaska 99811

Dear Senator Rader:

At its budget hearings before the House Appropriations Committee and during its report to the Alaska State Legislature Joint Resources Committee, the Federal-State Land Use Planning Commission was requested to develop a briefing document on the Canadian land claims situation and the effect the claims settlement would have upon possible pipelines for the transportation of natural gas from Alaska to the contiguous United States. In the process of developing this briefing paper, there have been several discussions with Canadian officials in Ottawa and Anchorage. The following perceptions are a result of those discussions.

There are two major thrusts in Canadian land claims that affect the construction of a natural gas pipeline. One of these is the negotiations being conducted with the Council of Yukon Indians in the Yukon Territory, and the other is the discussions being conducted with various groups in the Northwest Territories. The background to these discussions is covered at length in our briefing memo which will be forthcoming within two weeks.

In Yukon Territory, a formal negotiating structure has been instituted and discussions are well underway. With some luck, the Council of Yukon Indians and the government negotiators could reach agreement in the fall of 1977. This agreement would then have to be considered by the Canadian Cabinet and then passed as legislation by Parliament. Thus, the critical factor is whether the initial agreement between the Council and the government would be sufficient to allow pipeline construction to go forward or whether Parliamentary action would be required. The latter case would probably lengthen the time of decision from one to two years.

There are still three groups with which to negotiate in the Mackenzie Valley. The Committee for Original People's Entitlement (COPE) representing the Inuit peoples in the Mackenzie Delta is expected to submit

a proposed negotiating arrangement at any time, the METIS organization is planning to come in with such an arrangement around July 1, 1977, and Indian Brotherhood of Northwest Peoples brought an arrangement to the government in October of 1976. Thus, three arrangements at this time must be negotiated in the Mackenzie Valley.

A strong feeling was gained from several discussions that Canadian polar gas either from the Arctic Islands or the Beaufort Sea would not be available for export. The published oil and natural gas resources of Canada for 1976 reveal the following possibilities. The reserves run from a high 90 percent probability of 229 trillion cubic feet to a low 10 percent probability of 378 TCF. The 50 percent probability figure of 277 TCF would take Canada to the year 2055 if one expands present natural gas utilization at a rate of two percent per annum. This growth rate is probably somewhat conservative and is based upon some major shifts in energy sources during the next half century.

Some energy planners in Canada are advancing proposals to transport the gas from the Sverdrup Basin and the Arctic Fold Belt region via LNG tankers in the early years of production. A pipeline could then be constructed at a later date when sufficient financial reserves had been accumulated. Thus, the discovered natural gas reserves could be utilized to serve Eastern Canada fairly soon. With the Western Canadian reserves taking care of the rest of the country's needs, it would not be necessary to begin construction on a Mackenzie pipeline until the first quarter of the next century.

The three major options for relating Canadian Beaufort Sea and Mackenzie Delta natural gas development to Prudhoe Bay development are, as identified thus far:

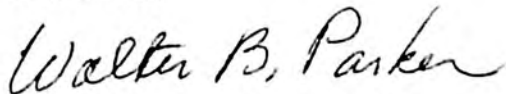
- o The Arctic Gas proposal
- o A pipeline from the Mackenzie Delta westward to Prudhoe Bay
- o A pipeline from the Mackenzie Delta southward to join the Alcan route in the vicinity of Whitehorse

All three of the above options are impacted heavily by both Yukon and Mackenzie Valley Native claims. The Council of Yukon Indians has said consistently that no pipeline across northern Yukon is acceptable to them at this time. Both COPE and the two Indian groups in the Mackenzie Valley are making similar statements regarding pipeline construction in their areas. Thus, at this time, it would appear that intensive negotiations would be necessary in order to make any of the three options acceptable to the Native groups involved. The first option involves all the Native groups. The second and third would involve COPE and the Council of Yukon Indians.

In summary, it appears that strategies are possible for developing Arctic natural gas provinces in Canada over the long term without export of natural gas being necessary to amortize those projects. Polar gas development is not dependent upon Native claims settlement if the LNG option is utilized but it is virtually impossible for any Beaufort/Mackenzie Delta development to avoid some resolution of the claims settlement. The impetus to a quick claims settlement in Canada is dependent upon support for a policy based upon future export of natural gas. There are also the strong desires of many Canadians to resolve the issue quickly on its own merits.

The above observations are my best personal perceptions at this time. They have no particular foundation in any official statements.

Sincerely,

A handwritten signature in cursive script that reads "Walter B. Parker".

Walter B. Parker  
State Co-Chairman

WBP:go

SCOMM

#21:10

# Berger 'Buries' Arctic Gas

OTTAWA (AP) — The Berger Commission recommends that no pipeline be built along the Mackenzie River valley for 10 years and that there should be a permanent ban on any pipeline from Alaska crossing the environmentally sensitive Northern Yukon.

The commission said in a report presented to Parliament today that they feel it will take 10 years to settle and implement Native land claims in the North.

More time also is needed to solve technical and environmental problems involved in building the line, the report said.

If accepted by the Canadian government, the recommendations would spell the end of the Canadian Arctic Pipeline Ltd. proposal to build one pipeline to serve both Alaska and the Mackenzie Delta.

Bob Ward, president of Arctic, said in Anchorage that it remains to be seen what impact the report will have on the Canadian government.

A spokesman for El Paso Alaska, one of Arctic's two competitors, said the report's conclusion should come as no surprise. He said El Paso hopes a similar study of a proposed southern Yukon route — the Alaska highway route proposed by Northwest Pipeline Corp. — will reach the same conclusions.

El Paso proposes a trans-Alaska line to Prince William Sound where the gas would be liquified and put on tankers for the trip south to the lower 48.

There was no immediate comment from Northwest.

The government sources said that if a pipeline is to be built now the commission leans toward an Alaskan Highway route through the Yukon with a route along the Dempster Highway to move the Mackenzie Delta gas to market.

But the report adds that those routes were not included in the commission's study and need more study before any decision can be made.

Native groups have pressed Justice Thomas Berger of the British Columbia Supreme Court — who heads the commission — to put a moratorium on pipeline construction for 10 to 15 years after settlement of land claims to give them time to adjust.

Environmental groups hotly oppose any pipeline across the northern coastline, saying it could destroy the Porcupine caribou herd and disrupt important nesting areas for birds and the calving waters of the Beluga whale.

*Lab*

# NORTHERN FRONTIER NORTHERN HOMELAND



THE REPORT OF THE MACKENZIE VALLEY PIPELINE INQUIRY: VOLUME ONE



**Design and Photocomposition:**  
**Alphatext Ltd.**

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1977**

**Available by mail from  
Printing and Publishing  
Supply and Services Canada  
Ottawa, Canada K1A 0S9  
or through your bookseller**

**Catalogue number:  
English edition CP32-25/1977-1  
French edition CP32-25/1977-1F**

**ISBN:  
English edition 0-660-00775-4  
French edition 0-660-00776-2**

**Price: Canada \$5.00; other countries \$6.00  
Price subject to change without notice**

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# MACKENZIE VALLEY PIPELINE INQUIRY

COMMISSIONER

Mr. Justice Thomas R. Berger

10th Floor  
One Nicholas Street  
Ottawa, Ontario K1N 7B7

April 15, 1977

The Honourable Warren Allmand  
Minister of Indian Affairs and Northern Development  
House of Commons  
Ottawa, Ontario

Dear Mr. Allmand:

We are now at our last frontier. It is a frontier that all of us have read about, but few of us have seen. Profound issues, touching our deepest concerns as a nation, await us there.

The North is a frontier, but it is a homeland too, the homeland of the Dene, Inuit and Metis, as it is also the home of the white people who live there. And it is a heritage, a unique environment that we are called upon to preserve for all Canadians.

The decisions we have to make are not, therefore, simply about northern pipelines. They are decisions about the protection of the northern environment and the future of northern peoples.

At the formal hearings of the Inquiry in Yellowknife, I heard the evidence of 300 experts on northern conditions, northern environment and northern peoples. But, sitting in a hearing room in Yellowknife, it is easy to forget the real extent of the North. The Mackenzie Valley and the Western Arctic is a vast land where people of four races live, speaking seven different languages. To hear what they had to say, I took the Inquiry to 35 communities — from Sachs Harbour to Fort Smith, from Old Crow to Fort Franklin — to every city and town, village and settlement in the Mackenzie Valley and the Western Arctic. I listened to the evidence of almost one thousand northerners.

I discovered that people in the North have strong feelings about the pipeline and large-scale frontier development. I listened to a brief by northern businessmen in Yellowknife who favour a pipeline through the North. Later, in a native village far away, I heard virtually the whole community express vehement opposition to such a pipeline. Both were talking about the same pipeline; both were talking about the same region — but for one group it is a frontier, for the other a homeland.

All those who had something to say — white or native — were given an opportunity to speak. The native organizations claim to speak for the native people. They oppose the pipeline without a settlement of native claims. The Territorial Council claims to speak for all



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northerners. It supports the pipeline. Wally Firth, Member of Parliament for the Northwest Territories, opposes the pipeline. I decided that I should give northerners an opportunity to speak for themselves. That is why I held hearings in all northern communities, where the people could speak directly to the Inquiry. I held hearings in the white centres of population, and in the native villages. I heard from municipal councillors, from band chiefs and band councils and from the people themselves. This report reflects what they told me.

The North is a region of conflicting goals, preferences and aspirations. The conflict focuses on the pipeline. The pipeline represents the advance of the industrial system to the Arctic. The impact of the industrial system upon the native people has been the special concern of the Inquiry, for one thing is certain: the impact of a pipeline will bear especially upon the native people. That is why I have been concerned that the native people should have an opportunity to speak to the Inquiry in their own villages, in their own languages, and in their own way.

I have proceeded on the assumption that, in due course, the industrial system will require the gas and oil of the Western Arctic, and that they will have to be transported along the Mackenzie Valley to markets in the South. I have also proceeded on the assumption that we intend to protect and preserve Canada's northern environment, and that, above all else, we intend to honour the legitimate claims and aspirations of the native people. All of these assumptions are embedded in the federal government's expressed northern policy for the 1970s.

*The Corridor Concept  
and Cumulative Impact*

The proposed natural gas pipeline is not to be considered in isolation. The Expanded Guidelines for Northern Pipelines, tabled in the House of Commons on June 28, 1972, assume that, if a gas pipeline is built, an oil pipeline will follow, and they call for examination of the proposed gas pipeline from the point of view of cumulative impact. We must

*Spring on the Yukon Coastal Plain. (ISL—G. Calef)*

*Pingos near Tuktoyaktuk. (GNWT)*

*Old Crow River. (ISL—G. Calef)*

*Autumn on Mackenzie River. (R. Fumoleau)*



*Letter to the Minister*

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consider, then, the impact of a transportation corridor for two energy systems, a corridor that may eventually include roads and other transportation systems.

The construction of a gas pipeline and the establishment of an energy corridor will intensify oil and gas exploration activity all along the corridor. The cumulative impact of all these developments will bring immense and irreversible changes to the Mackenzie Valley and the Western Arctic. And we must bear in mind that we have two corridors under consideration: a corridor from Alaska across the Northern Yukon to the Mackenzie Delta, and a corridor along the Mackenzie Valley from the Delta to the Alberta border.

### *The Project: Its Scope and Scale*

A gas pipeline will entail much more than a right-of-way. It will be a major construction project across our northern territories, across a land that is cold and dark in winter, a land largely inaccessible by rail or road, where it will be necessary to construct wharves, warehouses, storage sites, airstrips — a huge infrastructure — just to build the pipeline. There will be a network of hundreds of miles of roads built over the snow and ice. Take the Arctic Gas project: the capacity of the fleet of tugs and barges on the Mackenzie River will have to be doubled. There will be 6,000 construction workers required North of 60 to build the pipeline, and 1,200 more to build gas plants and gathering systems in the Mackenzie Delta. There will be about 130 gravel mining operations. There will be 600 river and stream crossings. There will be innumerable aircraft, tractors, earth-movers, trucks and trailers. Indeed, the Arctic Gas project has been described as the greatest construction project, in terms of capital expenditure, ever contemplated by private enterprise.

### *Engineering and Construction*

The gas pipeline across the North from Prudhoe Bay and from the Mackenzie Delta will confront designers and builders with major challenges of engineering and logistics. These relate not only to the

size and complexity of the project but also to its remote setting, the arctic climate and terrain, and those components of the project and its design that are innovative or lack precedent.

The question of frost heave is basic to the engineering design of the gas pipeline. Both Arctic Gas and Foothills propose to bury their pipe throughout its length, and to refrigerate the gas to avoid the engineering and environmental problems resulting from thawing permafrost. But where unfrozen ground is encountered, in the zone of discontinuous permafrost or at river crossings, the chilled gas will freeze the ground around the pipe, and may produce frost heave and potential damage to the pipe.

The pipeline companies are obviously having trouble in designing their proposal to deal with frost heave. They are making fundamental changes in the methods proposed for heave control; the methods seem to be getting more complex, and the conditions for success more restrictive. It is likely that the companies will make yet further changes in their proposals, changes that are likely to increase costs and to alter substantially the environmental impact of the project.

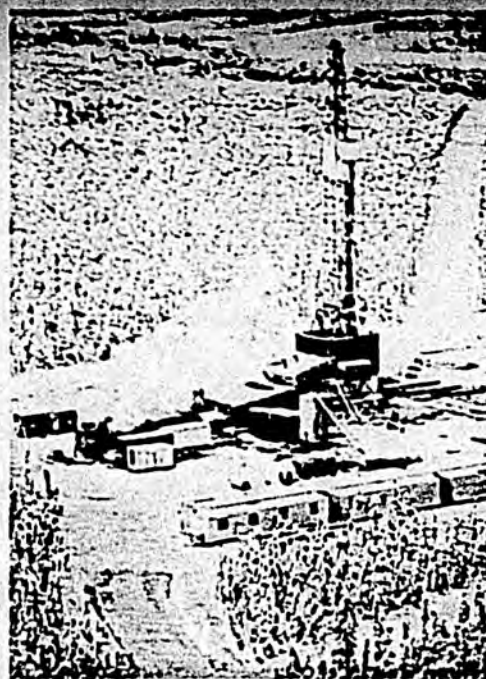
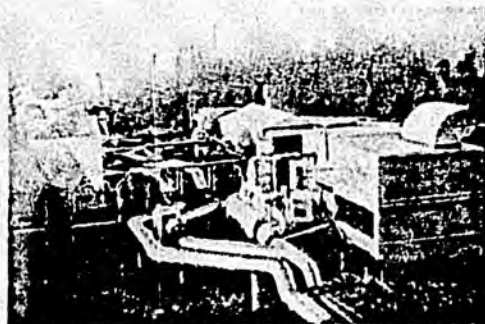
Another issue is construction scheduling. The pipeline companies propose to construct the pipeline in winter. But we have limited experience of pipelining in far northern latitudes and in permafrost. There are uncertainties about scheduling, so far as logistics, the construction of snow roads, and productivity are concerned. In this respect, the greatest challenges will be encountered in the Northern Yukon, which is also the most environmentally sensitive area along the route. I am not persuaded that Arctic Gas can meet its construction schedule across the Northern Yukon. Should this occur, there is a likelihood of cost overruns, of construction being extended into the summer, or even of a permanent road being built to permit summer construction. The environmental impact of a change to summer construction would be very severe. The project would then have to be completely reassessed.

Construction of artificial island in the Beaufort Sea.  
(J. Inglis)

Compressor unit, Sans Sault Test Site. (Arctic Gas)

Drill site on the Eagle Plain, southeast of Old Crow.  
(ISL-G. Calef)

Permafrost test at Sans Sault Test Site. (Arctic Gas)



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I recognize, of course, that the proposals of the pipeline companies are in a preliminary, conceptual stage, not in their final design stage. I recognize, too, that improvements will appear in the final design. But my responsibility is to assess the project proposals as they now stand.

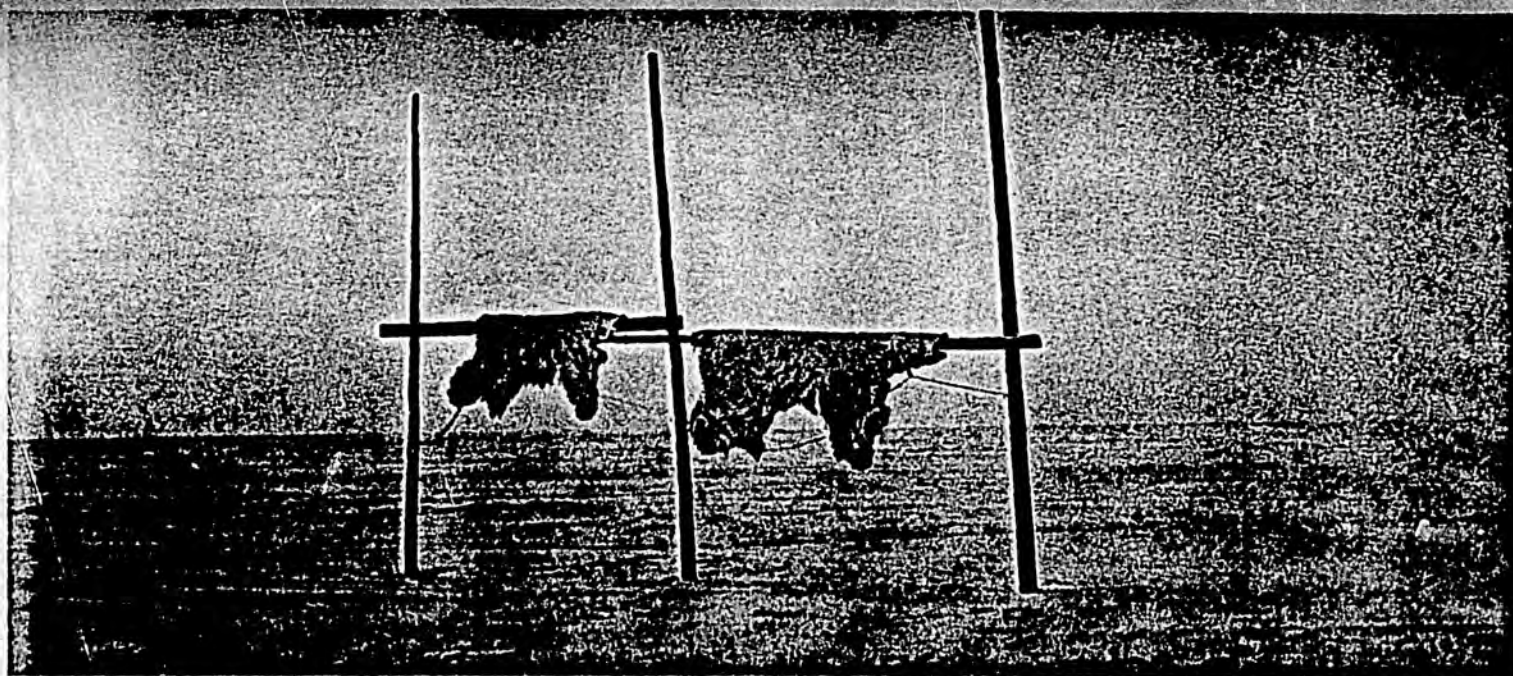
Given the uncertainties relating to design and construction, illustrated by the foregoing comments on frost heave and scheduling, and given the bearing they have on environmental impact and the enforcement of environmental standards, it seems to me unreasonable that the Government of Canada should give unqualified approval to a right-of-way or provide financial guarantees to the project without a convincing resolution of these concerns.

### The Northern Environment

There is a myth that terms and conditions that will protect the environment can be imposed, no matter how large a project is proposed. There is a feeling that, with enough studies and reports, and once enough evidence is accumulated, somehow all will be well. It is an assumption that implies the choice we intend to make. It is an assumption that does not hold in the North.

It is often thought that, because of the immense geographic area of the North, construction of a gas pipeline or establishment of a corridor could not cause major damage to the land, the water or the wildlife. But within this vast area are tracts of land and water of limited size that are vital to the survival of whole populations of certain species of mammals, birds and fish at certain times of the year. Disturbance of such areas by industrial activities can have adverse biological effects that go far beyond the areas of impact. This concern with critical habitat and with critical life stages lies at the heart of my consideration of environmental issues.

We should recognize that in the North, land use regulations, based on the concept of multiple use, will not always protect environmental



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values, and they will never fully protect wilderness values. Withdrawal of land from any industrial use will be necessary in some instances to preserve wilderness, wildlife species and critical habitat.

### *The Northern Yukon*

The Northern Yukon is an arctic and sub-arctic wilderness of incredible beauty, a rich and varied ecosystem inhabited by thriving populations of wildlife. The Porcupine caribou herd, comprising 110,000 animals or more, ranges throughout the Northern Yukon and into Alaska. It is one of the last great caribou herds in North America. The Yukon Coastal Plain and the Old Crow Flats provide essential habitat for hundreds of thousands of migratory waterfowl each summer and fall. This unique ecosystem — the caribou, the birds, other wildlife, and the wilderness itself — has survived until now because of the inaccessibility of the area. But it is vulnerable to the kind of disturbance that industrial development would bring.

The Arctic Gas pipeline, to carry gas from Prudhoe Bay, Alaska, to markets in the Lower 48, would cross this region, either along the Coastal Route or, as a second choice, along the Interior Route. Once a gas pipeline is approved along either route, exploration and development in the promising oil and gas areas of Northern Alaska will accelerate, and it is inevitable that the gas pipeline will be looped and that an oil pipeline, a road and other developments will follow.

Gas pipeline and corridor development along the Coastal Route, passing through the restricted calving range of the Porcupine caribou herd, would have highly adverse effects on the animals during the critical calving and post-calving phases of their life cycle. The preservation of the herd is incompatible with the building of a gas pipeline and the establishment of an energy corridor through its calving grounds. If a pipeline is built along the Coastal Plain, there will be serious losses to the herd. With the establishment of the corridor I foresee that, within our lifetime, this herd will be reduced to a remnant. Similarly, some of the large populations of migratory

*Polar bear skins, Sachs Harbour. (M. Jackson)*

*Inuit women cutting up whale, Tuktoyaktuk. (D. Campbell)*

*Scraping a caribou hide. (A. Steen)*

*Arctic fox pelts, Sachs Harbour. (M. Jackson)*



waterfowl and sea birds along the Coastal Route, particularly the fall staging snow geese, would likely decline in the face of pipeline and corridor development.

Gas pipeline and corridor development along the Interior Route would open up the winter range of the caribou herd. The impact of this development combined with that of the Dempster Highway could substantially reduce the herd's numbers and undermine the caribou-based economy of the Old Crow people.

Thus, I have concluded that there are sound environmental reasons for not building a pipeline or establishing an energy corridor along the Coastal Route. There are also sound environmental reasons for not building a pipeline or establishing an energy corridor along the Interior Route, although they are not as compelling as for the Coastal Route. A pipeline and corridor along the Interior Route would have a devastating impact on Old Crow, the only community in the Northern Yukon. All the people in the village told me they are opposed to the pipeline. They fear it will destroy their village, their way of life, and their land.

I recommend that no pipeline be built and no energy corridor be established across the Northern Yukon, along either route. Moreover, if we are to protect the wilderness, the caribou, birds and other wildlife, we must designate the Northern Yukon, north of the Porcupine River, as a National Wilderness Park. Oil and gas exploration, pipeline construction and industrial activity must be prohibited within the Park. The native people must continue to have the right to hunt, fish and trap within the Park. The Park must indeed be the means for protecting their renewable resource base.

You and your colleagues will have to consider whether Canada ought to provide a corridor across the Yukon for the delivery of Alaskan gas and oil to the Lower 48. I recommend that no such route be approved across the Northern Yukon. An alternate route has been proposed across the Southern Yukon, along the Alaska Highway.



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Some of the concerns about wildlife, wilderness, and engineering and construction that led me to reject the corridor across the Northern Yukon do not appear to apply in the case of the Alaska Highway Route. It is a route with an established infrastructure. In my view, the construction of a pipeline along this route would not threaten any substantial populations of any species in the Yukon or in Alaska. But I am in no position to endorse such a route: an assessment of social and economic impact must still be made, and native claims have not been settled.

*The Mackenzie Delta  
and the Beaufort Sea*

The Mackenzie Delta and Beaufort Sea region supports a unique and vulnerable arctic ecosystem. Its wildlife has been a mainstay of the native people of the region for a long time, and still is today.

In my opinion, unlike the Northern Yukon, oil and gas development in the Mackenzie Delta-Beaufort Sea region is inevitable. Notwithstanding the disappointing level of discoveries so far, the Delta-Beaufort region has been rated by the Department of Energy, Mines and Resources as one of three frontier areas in Canada that potentially contain major undeveloped reserves of oil and gas.

A decision to build the pipeline now would act as a spur to oil and gas exploration and development in the Mackenzie Delta and the Beaufort Sea. Future discoveries will probably lead to offshore production. It is the impact of this whole range of oil and gas exploration and development activity that must concern us.

In order to protect the Delta ecosystem, the birds and the whales, I recommend that no corridor should cross the outer Delta. This means that the Arctic Gas Cross-Delta Route must not be permitted. Also, strict limitations will have to be placed on other oil and gas facilities on the Delta, particularly the outer Delta. Special measures will be needed to avoid disturbance to fish populations within the Delta. I also propose that a bird sanctuary should extend across the outer part of the Delta to protect migratory waterfowl, giving the Canadian

*Caribou fording Porcupine River. (ISL—G. Calef)*

*Caribou with newborn calves migrating. (ISL—G. Calef)*

*Foraging caribou in the Northern Yukon. (ISL—G. Calef)*

*Bull caribou. (C. Dauphiné Jr.)*



Wildlife Service jurisdiction to regulate industrial activity in the sanctuary.

The white whales of the Beaufort Sea — 5,000 in number — come to the warm waters bordering the Mackenzie Delta each summer to have their young. To preserve this population from declining in the face of pipeline construction and the cumulative stresses imposed by ongoing oil and gas exploration, production and transportation, I recommend that a whale sanctuary be established in west Mackenzie Bay covering the principal calving area. If the herd is driven from its calving area, it will die out. Unlike the bird sanctuary, the whale sanctuary will be an area in which oil and gas exploration and development would be forbidden at any time of the year.

Much of the oil and gas potential of the region is believed to lie offshore beneath the Beaufort Sea. You and your colleagues have decided that the risk entailed in the Dome exploratory drilling program in the Beaufort Sea is acceptable, on the ground that it is in the national interest to begin delineating the extent of these reserves. I am not offering any opinion on that decision. I am, however, urging that, once the Dome program is completed, careful consideration be given to the timing and extent of the drilling and development that may take place thereafter. A proliferation of oil and gas exploration and development wells in the Beaufort Sea will pose an environmental risk of a different order of magnitude than the risk entailed in drilling 16 exploration wells to see if oil and gas are to be found there.

The matter is not, however, simply one of Canadian drilling activity in arctic waters. We have preceded all of the other circumpolar countries — the United States, the Soviet Union, Denmark and Norway — across this geographic and technological frontier. We are pioneering on this frontier and establishing the standards that may well guide other circumpolar countries in future arctic drilling and production programs.

The greatest concern in the Beaufort Sea is the threat of oil spills. In



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my opinion, the techniques presently available will not be successful in controlling or cleaning up a major spill in this remote area, particularly under conditions involving floating ice or rough water. Therefore, I urge the Government of Canada to ensure that improvements in technology for prevention of spills and development of effective technology for containment and clean-up of spills precede further advance of industry in the Beaufort Sea. I further urge that advances in knowledge of the environmental consequences of oil spills should likewise keep ahead of offshore development. Here I am referring not only to impacts on mammals, birds and fish in the Beaufort Sea area but also to the possibility that accumulation of oil in the Arctic Ocean could affect climate. In this I am referring to the possibility that oil spills from offshore petroleum development by all the circumpolar powers could diminish the albedo (the reflective capacity of ice), causing a decrease in the sea ice cover and hence changes in climate. Canada should propose that research be undertaken jointly by the circumpolar powers into the risks and consequences of oil and gas exploration, development and transportation activities around the Arctic Ocean.

*The Mackenzie Valley*

The Mackenzie Valley is a natural transportation route that has already seen several decades of industrial development. It is the longest river system in Canada, one of the ten longest rivers in the world, and one of the last great rivers that is not polluted.

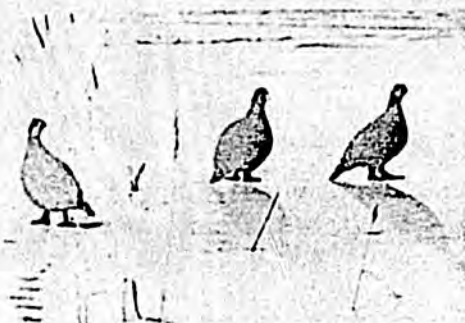
I have concluded that it is feasible, from an environmental point of view, to build a pipeline and to establish an energy corridor along the Mackenzie Valley, running south from the Mackenzie Delta to the Alberta border. Unlike the Northern Yukon, no major wildlife populations would be threatened and no wilderness areas would be violated. I believe that we can devise terms and conditions that will allow a pipeline to be built and an energy corridor established along the Mackenzie Valley without significant losses to the populations of

Snow geese feeding. (Arctic Gas)

Willow ptarmigan. (A. Steen)

Peregrine falcon. (R. Fyfe)

Gyr falcon. (R. Fyfe)



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birds, furbearers, large mammals and fish. A pipeline along the Mackenzie Valley would impinge on the outer limits of the winter ranges of the Bluenose and the Bathurst caribou herds, but would not cross their calving grounds or disturb their main migration routes. These herds are not threatened.

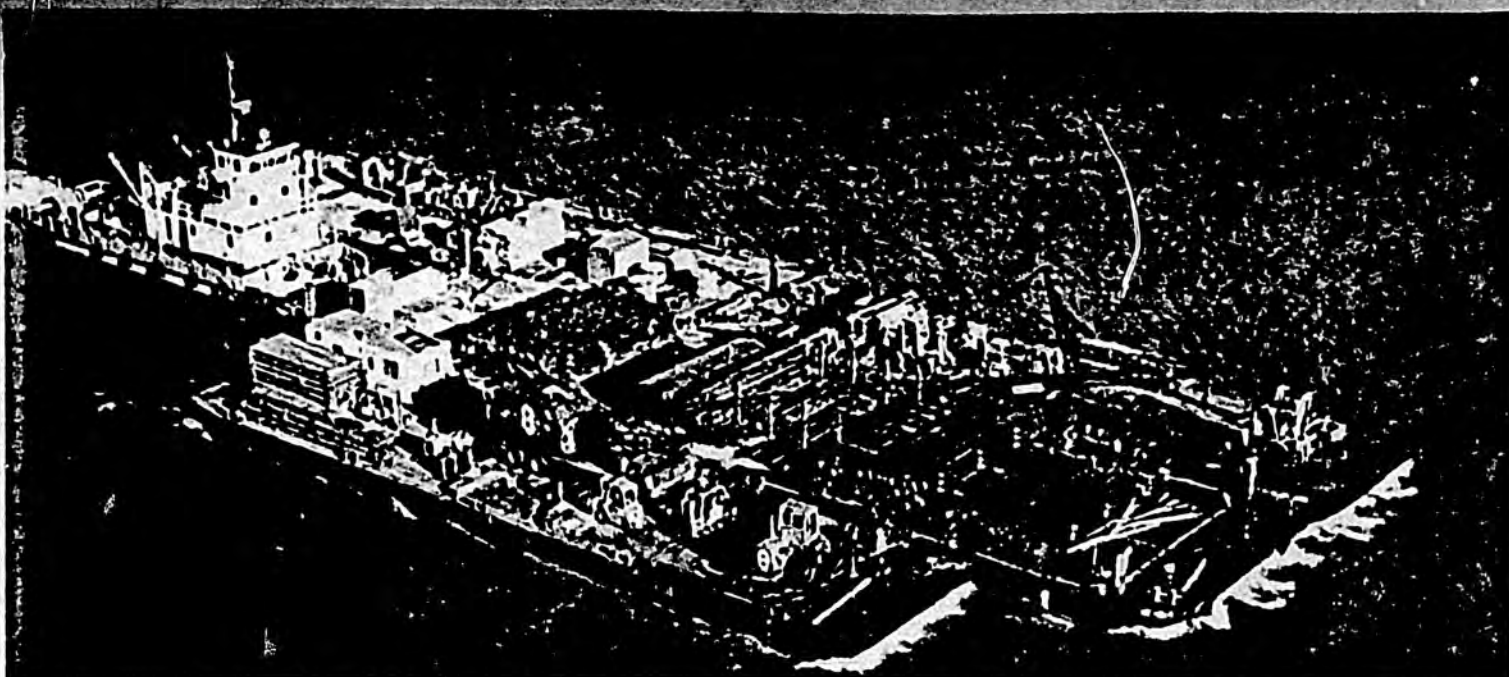
However, to keep the environmental impacts of a pipeline to an acceptable level, its construction and operation should proceed only under careful planning and strict regulation. The corridor should be based on a comprehensive plan that takes into account the many land use conflicts apparent in the region even today.

Comprehensive land use planning in the Mackenzie Valley can emerge only from a settlement of native claims, but, on purely environmental grounds, there are several areas of land that warrant immediate protection. I recommend sanctuaries to protect migratory waterfowl and the already endangered falcons. These sites have been identified under the International Biological Programme, namely: the Campbell Hills-Dolomite Lake site, which is important to nesting falcons, and the Willow Lake and Mills Lake sites, which are of importance to migratory waterfowl.

Northern Science and Research

Throughout the Inquiry, we found that there are critical gaps in the information available about the northern environment, about environmental impact, and about engineering design and construction on permafrost terrain and under arctic conditions. I have already referred to the inadequate state of knowledge about frost heave. This is a very practical question. Others, such as the albedo question, that seem to be less definite or to lie far in the future also demand our attention now. There is a whole range of issues that fall between, many of which are discussed in this report.

We are entering an era in the North when the government, its departments and agencies, will have to be in a position to assess — and to judge — the feasibility, desirability and impact of a whole series of



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proposals for northern oil and gas exploration and development. Industry proposes; government disposes. But for government to make an intelligent disposition of industry's proposals — whether they be for pipelining in permafrost, for drilling in the Beaufort Sea, for under the sea transportation systems, or for tankering in arctic waters — it must have an independent body of knowledge. A continuing and comprehensive program of northern science and research is called for.

*Cultural Impact*

It is, however, the people who live in the North that we ought to be most concerned about, especially the native people. Euro-Canadian society has refused to take native culture seriously. European institutions, values and use of land were seen as the basis of culture. Native institutions, values and language were rejected, ignored or misunderstood and — given the native people's use of land — the Europeans had no difficulty in supposing that native people possessed no real culture at all. Education was perceived as the most effective instrument of cultural change: so, educational systems were introduced that were intended to provide the native people with a useful and meaningful cultural inheritance, since their own ancestors had left them none.

The culture, values and traditions of the native people amount to a great deal more than crafts and carvings. Their respect for the wisdom of the elders, their concept of family responsibilities, their willingness to share, their special relationship with the land — all of these values persist today, although native people have been under almost unremitting pressure to abandon them.

Native society is not static. The things the native people have said to this Inquiry should not be regarded as a lament for a lost way of life, but as a plea for an opportunity to shape their own future, out of their own past. They are not seeking to entrench the past, but to build on it.

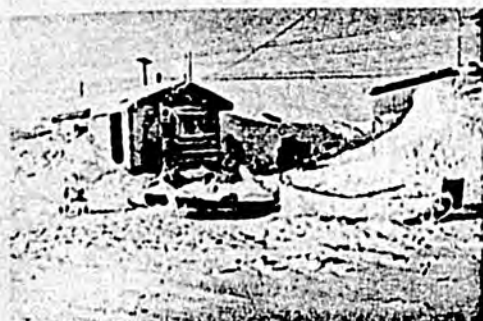
Today white and native populations in the Mackenzie Valley and Western Arctic are about equal in number. But it is the native people

Barge on Mackenzie River. (Arctic Gas)

Snowmobiles and sleigh, Tuktoyaktuk. (H. Lloyd)

Northern bush aircraft. (DIAND Yellowknife)

Boats used to hunt whale, Kugmallit Bay. (W. Hoek)



who constitute the permanent population of the North. There they were born, and there they will die. A large part of the white population consists of public servants, employees of the mining industry and of the oil and gas industry and their families. Most of them do not regard the North as their permanent home, and usually return to the South. There are, of course, white people in the North who have lived there all their lives, and some others who intend to make the North their permanent home, but their numbers are small in comparison to the native population.

So the future of the North ought not to be determined only by our own southern ideas of frontier development. It should also reflect the ideas of the people who call it their homeland.

### *Economic Impact*

The pipeline companies see the pipeline as an unqualified gain to the North; northern businessmen perceive it as the impetus for growth and expansion. But all along, the construction of the pipeline has been justified mainly on the ground that it would provide jobs for thousands of native people.

We have been committed to the view that the economic future of the North lay in large-scale industrial development. We have generated, especially in northern business, an atmosphere of expectancy about industrial development. Although there has always been a native economy in the North, based on the bush and the barrens, we have for a decade or more followed policies by which it could only be weakened and depreciated. We have assumed that the native economy is moribund and that the native people should therefore be induced to enter industrial wage employment. But I have found that income in kind from hunting, fishing and trapping is a far more important element in the northern economy than we had thought.

The fact is that large-scale projects based on non-renewable resources have rarely provided permanent employment for any significant number of native people. There is abundant reason to



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doubt that a pipeline would provide meaningful and ongoing employment to many native people. The pipeline contractors and unions have made it plain that native northerners are not qualified to hold down skilled positions in pipeline construction, and that they will be employed largely in unskilled and semi-skilled jobs. Once the pipeline is built, only about 250 people will be needed to operate it. Most of these jobs are of a technical nature and will have to be filled by qualified personnel from the South.

I have no doubt that terms and conditions could be imposed that would enable northern businesses to expand during the construction of the pipeline. But there are hazards for northern businessmen. Construction of the Mackenzie Valley pipeline could produce a serious distortion of the small business sector of the Northwest Territories. This would raise problems for the orderly development of regional economic and commercial activity in the long run.

If communities in the Mackenzie Valley and Western Arctic are made to depend exclusively on industrial wage employment and if the production of country food for local consumption ceases to be an important component in the economy, then the self-employed will certainly become the unemployed. The point is simple enough: the extension of the industrial system creates unemployment as well as employment. In an industrial economy there is virtually no alternative to a livelihood based on wage employment. Those who are unable or unprepared to work for wages become unemployed and then dependent on welfare. To the extent that the development of the northern frontier undermines the possibilities of self-employment provided by hunting, fishing and trapping, employment and unemployment will go hand-in-hand.

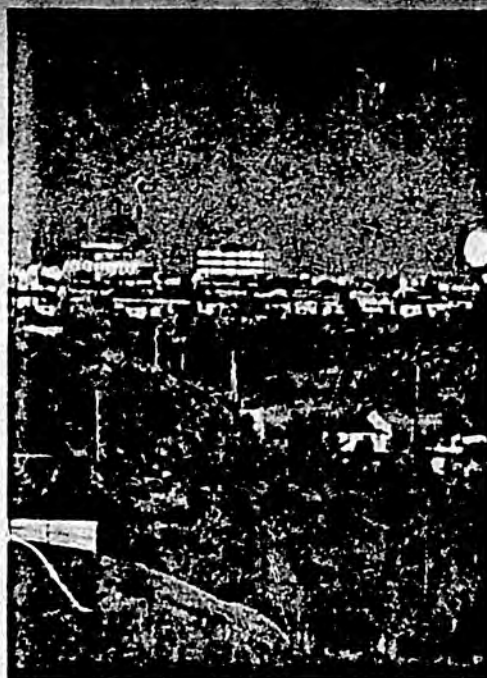
I do not mean to suggest that native people will not want to participate in the opportunities for employment that industrial development will create. Some native people already work alongside workers from the South. Many native people have taken advantage of

Detah Indian village. (R. Fumoleau)

Inuit housing. (GNWT)

Yellowknife. (A. Steen)

Fort Franklin. (R. Fumoleau)



opportunities for wage employment — particularly in the Delta — on a seasonal basis to obtain the cash they need to equip or re-equip themselves for traditional pursuits. But when the native people are made to feel they have no choice other than the industrial system, when they have no control over entering it or leaving it, when wage labour becomes the strongest, the most compelling and finally the only option, then the disruptive effects of large-scale, rapid development can only proliferate.

It is an illusion to believe that the pipeline will solve the economic problems of the North. Its whole purpose is to deliver northern gas to homes and industries in the South. Indeed, rather than solving the North's economic problems, it may accentuate them.

The native people, both young and old, see clearly the short-term character of pipeline construction. They see the need to build an economic future for themselves on a surer foundation. The real economic problems in the North will be solved only when we accept the view the native people themselves expressed so often to the Inquiry: that is, the strengthening of the native economy. We must look at forms of economic development that really do accord with native values and preferences. If the kinds of things that native people now want are taken seriously, we must cease to regard large-scale industrial development as a panacea for the economic ills of the North.

### Social Impact

I am convinced that the native people of the North told the Inquiry of their innermost concerns and their deepest fears. Although they had been told — and some indeed had agreed — that the proposed pipeline would offer them unprecedented opportunities for wage employment, the great majority of them expressed their fears of what a pipeline would bring: an influx of construction workers, more alcoholism, tearing of the social fabric, injury to the land, and the loss of their identity as a people. They said that wage employment on the pipeline



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would count for little or nothing when set against the social costs. I am persuaded that these fears are well-founded.

The alarming rise in the incidence of alcoholism, crime, violence and welfare dependence in the North in the last decade is closely bound up with the rapid expansion of the industrial system and with its intrusion into every part of the native people's lives. The process affects the close link between native people and their past, their own economy, their values and self-respect. The evidence is clear: the more the industrial frontier displaces the homeland in the North, the greater the incidence of social pathology will be. Superimposed on problems that already exist in the Mackenzie Valley and the Western Arctic, the social consequences of the pipeline will not only be serious — they will be devastating.

The social costs of building a pipeline now will be enormous, and no remedial programs are likely to ameliorate them. The expenditure of money, the hiring of social workers, doctors, nurses, even police — these things will not begin to solve the problem. This will mean an advance of the industrial system to the frontier that will not be orderly and beneficial, but sudden, massive and overwhelming.

*Native Claims*

Native people desire a settlement of native claims before a pipeline is built. They do not want a settlement — in the tradition of the treaties — that will extinguish their rights to the land. They want a settlement that will entrench their rights to the land and that will lay the foundations of native self-determination under the Constitution of Canada.

The native people of the North now insist that the settlement of native claims must be seen as a fundamental re-ordering of their relationship with the rest of us. Their claims must be seen as the means to establishing a social contract based on a clear understanding that they are distinct peoples in history. They insist upon the right to

*Inuit at Northern Games, Coppermine, 1976.*  
(GNWT—R. Wilson)

*Reindeer round-up, Atkinson Point. (J. Inglis)*

*Holman youngster. (P. Scott)*

*Children playing in Holman, 1959. (J. Fyles)*



determine their own future, to ensure their place, but not their assimilation, in Canadian life.

The federal government is now prepared to negotiate with the native people on a comprehensive basis, and the native people of the North are prepared to articulate their interests over a broad range of concerns. These concerns begin with the land, but are not limited to it: they include land and land use, renewable and non-renewable resources, schools, health and social services, public order and, overarching all of these, the future shape and composition of political institutions in the North.

The concept of native self-determination must be understood in the context of native claims. When the Dene refer to themselves as a nation, as many of them have, they are not renouncing Canada or Confederation. Rather, they are proclaiming that they are a distinct people, who share a common historical experience, a common set of values, and a common world view. They want their children and their children's children to be secure in that same knowledge of who they are and where they came from. They want their own experience, traditions and values to occupy an honourable place in the contemporary life of our country. Seen in this light, they say their claims will lead to the enhancement of Confederation — not to its renunciation.

It will be for you and your colleagues, in negotiations with the native people, to determine the extent to which native claims can be acceded to, and to work out the way in which self-determination might be effected in the North, whether by the establishment of native institutions on a geographical basis or by the transfer of certain functions of the Government of Canada and the Government of the Northwest Territories to native institutions.

The idea of new institutions that give meaning to native self-determination should not frighten us. Special status for native people is an element of our constitutional tradition, one that is recognized by the British North America Act, by the treaties, by the Indian Act, and



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by the statement of policy approved by Cabinet in July 1976. It is an ethnic thread in our constitutional fabric. In the past, special status has meant Indian reserves. Now the native people wish to substitute self-determination for enforced dependency.

The attainment of native goals implies one thing: the native people must be allowed a choice about their own future. If the pipeline is approved before a settlement of claims takes place, the future of the North — and the place of the native people in the North — will, in effect, have been decided for them.

The construction of the pipeline now will entail a commitment by the Government of Canada and the Government of the Northwest Territories to a program of large-scale frontier development, which, once begun, cannot be diverted from its course. Once construction begins, the concentration on the non-renewable resource sector and the movement away from the renewable resource sector will become inexorable. The goal of strengthening the native economy will be frustrated.

An increase in the white population in the wake of pipeline construction will entrench southern patterns of political, social and industrial development, will reduce the native people to a minority position, and will undermine their claim to self-determination.

The settlement of native claims is not a mere transaction. Intrinsic to settlement is the establishment of new institutions and programs that will form the basis for native self-determination. It would be wrong, therefore, to think that signing a piece of paper would put the whole question behind us, as if all that were involved was the removal of a legal impediment to industrial development. The native people insist that the settlement of native claims should be a beginning rather than an end of the recognition of native rights and native aspirations. In my opinion, a period of ten years will be required in the Mackenzie Valley and Western Arctic to settle native claims, and to establish the

*Snowdrift children. (R. Fumoleau)*

*Johnny Crapeau of Detah. (R. Fumoleau)*

*Maggie Fisher of Fort Good Hope. (R. Fumoleau)*

*François Paulette of Fort Smith. (M. Jackson)*



new institutions and new programs that a settlement will entail. No pipeline should be built until these things have been achieved.

It would therefore be dishonest to try to impose an immediate settlement that we know now – and that the native people will know before the ink is dry – will not achieve their goals. They will soon realize – just as the native people on the prairies realized a century ago as the settlers poured in – that the actual course of events on the ground will deny the promises that appear on paper. The advance of the industrial system would determine the course of events, no matter what Parliament, the courts, this Inquiry or anyone else may say.

In recent years in the North we have witnessed a growing sense of native awareness and native identity. The same phenomenon can be observed throughout the country. It is not going to go away. To establish political institutions in the North that ignore this fact of life would be unwise and unjust. Special status can be – and ought to be – a constructive and creative means by which native people, through the development of institutions of their own, can thrive in a new partnership of interests.

### *If There is no Pipeline Now*

If the native people are to achieve their goals, no pipeline can be built now. Some will say this decision must mean that there will be no economic development in the North. If a pipeline is not built now, so the argument goes, the northern economy will come to a halt. But this view misconstrues the nature of the northern economy and northern development.

If there is no pipeline, the native economy based on hunting, fishing and trapping will scarcely be affected. The mining industry, which is the largest component of the private sector of the economy of both the Yukon Territory and the Northwest Territories, will not be greatly affected. Government, the largest employer and the main source of income for white northerners, and the federal and territorial



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bureaucracies are not likely to decrease in size simply because a pipeline is not built now.

A decision not to build a pipeline now would not necessarily bring an end to oil and gas exploration. There will be a setback to Inuvik and, to a lesser extent, to other Delta communities. If exploratory drilling in the Delta and the Beaufort Sea ought to continue in the national interest, the Government of Canada has the means to see that it does.

I am convinced that non-renewable resources need not necessarily be the sole basis of the northern economy in the future. We should not place absolute faith in any model of development requiring large-scale technology. The development of the whole renewable resource sector — including the strengthening of the native economy — would enable native people to enter the industrial system without becoming completely dependent on it.

An economy based on modernization of hunting, fishing and trapping, on efficient game and fisheries management, on small-scale enterprise, and on the orderly development of gas and oil resources over a period of years — this is no retreat into the past; rather, it is a rational program for northern development based on the ideals and aspirations of northern native peoples.

To develop a diversified economy will take time. It will be tedious, not glamorous, work. No quick and easy fortunes will be made. There will be failures. The economy will not necessarily attract the interest of the multinational corporations. It will be regarded by many as a step backward. But the evidence I have heard has led me to the conclusion that such a program is the only one that makes sense.

### *Implications*

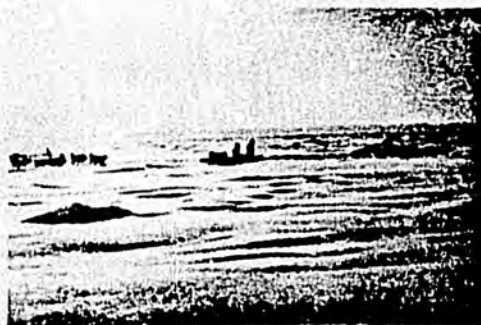
There should be no pipeline across the Northern Yukon. It would entail irreparable environmental losses of national and international importance. And a Mackenzie Valley pipeline should be postponed for ten years. If it were built now, it would bring limited economic

Northern Yukon. (E. Peterson)

Dogteams trek across sea ice. (GNWT)

Little Bell River. (ISL-G. Calef)

Winter - Yukon North Slope. (Arctic Gas)



Letter to the Minister

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benefits, its social impact would be devastating, and it would frustrate the goals of native claims. Postponement will allow sufficient time for native claims to be settled, and for new programs and new institutions to be established. This does not mean that we must renounce our northern gas and oil. But it does mean that we must allow sufficient time for an orderly, not hasty, program of exploration to determine the full extent of our oil and gas reserves in the Mackenzie Delta and the Beaufort Sea. Postponement will offer time for you and your colleagues to make a rational determination regarding the priorities to be adopted in relation to the exploitation of all our frontier oil and gas resources, at a time when the full extent of our frontier reserves has been ascertained.

I believe that, if you and your colleagues accept the recommendations I am making, we can build a Mackenzie Valley pipeline at a time of our own choosing, along a route of our own choice. With time, it may, after all, be possible to reconcile the urgent claims of northern native people with the future requirements of all Canadians for gas and oil.

Yours truly,

*Thos R. Berger*

## Epilogue: Themes for the National Interest

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Prime Minister Trudeau has said that Canada is a product of the providential encounter between the French and the English on this continent. Canada takes its identity from the evolution of that encounter. The contours of that meeting between the French and the English in North America define the political institutions of the nation, and constitute Canada's unique contribution to the search by man for a rational polity.

But there was an earlier encounter on this continent that made possible the very existence of the nation — between the Europeans and the indigenous peoples of the Americas. Here, in what is now Canada, it was an encounter first between the French and the native people, then between the English and the native people. It was an encounter which has ramified throughout our history, and the consequences of which are with us today. This encounter may be as important to us all, in the long sweep of history, as any other on this continent. And it is taking place in its most intense and contemporary form on our northern frontier.

It is for this reason that so many eyes are drawn to the North. As André Siegfried, the de Tocqueville of Canada, said:

Many countries — and they are to be envied — possess in one direction or another a window which opens out on to the infinite — on to the potential future. . . . The North is always there like a presence, it is the background of the picture, without which Canada would not be Canadian. [*Canada* p. 28-29]

It may be that, through this window, we shall discover something of the shape that our future relations with the native people of our country must assume.

The English and French are the inheritors of two great streams of western civilization. They hold far more in common than divides

them: they have similar linguistic and literary traditions and rivalry and commonality of interests that have caused their histories repeatedly to overlap. What is more, the industrial system is the foundation for the material well-being they both enjoy.

Now the industrial system beckons to the native people. But it does not merely beckon: it has intruded into their culture, economy and society, now pulling, now pushing them towards another, and in many ways an alien, way of life. In the North today, the native people are being urged to give up their life on the land; they are being told that their days and their lives should become partitioned like our own. We have often urged that their commitment to the industrial system be entire and complete. Native people have even been told that they cannot compromise: they must become industrial workers, or go naked back to the bush.

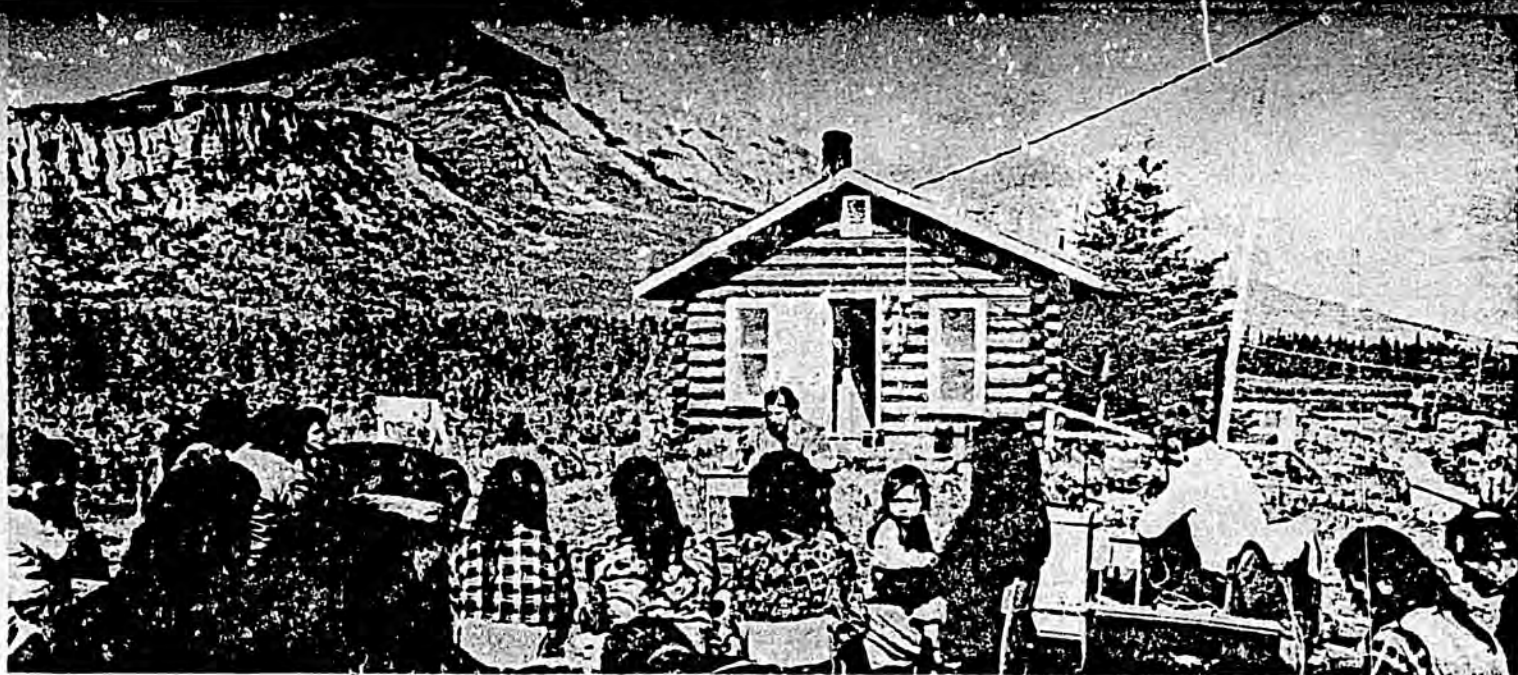
Yet many of them refuse. They say they have a past of their own; they see that complete dependence on the industrial system entails a future that has no place for the values they cherish. Their refusal to make the commitment asked of them is one of the points of recurring tension in the North today. They acknowledge the benefits we have brought to them. They say that they are, in some respects, more comfortable now than they were in the old days. The industrial system has provided many things that they value, such as rifles, radios, outboard motors and snowmobiles. But they know that, in the old days, the land was their own. Even in the days of the fur trade, they and the land were essential to it. Now they recognize they are not essential. If it is in the national interest, a pipeline can and will be built across their land. They fear that they will become strangers in their own land. The native people know that somehow they

must gain a measure of control over their lives and over the political institutions that shape their lives, and that they must do this before the industrial system overtakes and, it may be, overwhelms them. This is what their claims are about, and this is why they say their claims must be settled before a pipeline is built.

The native people know their land is important to us as a source of oil and gas and mineral wealth, but that its preservation is not essential to us. They know that above all else we have wanted to subdue the land and extract its resources. They recognize that we do not regard their hunting, trapping and fishing as essential, that it is something we often regard in a patronizing way. They say that we reject the things that are valuable to them in life: that we do so explicitly and implicitly.

We have sought to make over these people in our own image, but this pronounced, consistent and well-intentioned effort at assimilation has failed. The use of the bush and the barrens, and the values associated with them, have persisted. The native economy refuses to die. The Dene, Inuit and Metis survive, determined to be themselves. In the past their refusal to be assimilated has usually been passive, even covert. Today it is plain and unmistakable, a fact of northern life that must be understood.

The native people have had some hard things to say about the government, about the oil and gas industry and about the white man and his institutions. The allegation has been made that what the leaders of native organizations in Northern Canada are saying is not representative of the attitudes and thinking of northern native peoples. But this Inquiry not only has sought the views of the native organizations, but has obtained the views of the native people who live in every



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settlement and village of the Mackenzie Valley and the Western Arctic. There the native people, speaking in their own villages, in their own languages and in their own way, expressed their real views. About that I am in no doubt.

It would be a mistake to think that the native people are being manipulated by sinister forces, unseen by them, yet discernible to us. It is demeaning and degrading to tell someone that he does not mean or does not know what he is saying, that someone has told him to say it. It would be wrong to dismiss what they have said because we would rather believe that they are not capable of expressing their own opinions.

It may be uncomfortable to have to listen, when we have never listened in the past. But we must listen now. If we do not understand what is in the minds of the native people, what their attitudes really are toward industrial development, we shall have no way of knowing what impact a pipeline and an energy corridor will have on the people of the North.

We all have different ideas of progress and our own definitions of the national interest. It is commonplace for people in Southern Canada to dismiss the notion that a few thousand native people have a right to stand in the way of industrial imperatives. But many of the Dene intend to do just that. Philip Blake told the Inquiry at Fort McPherson:

If your nation chooses ... to continue to try and destroy our nation, then I hope you will understand why we are willing to fight so that our nation can survive. It is our world.

We do not wish to push our world onto you. But we are willing to defend it for ourselves, our children, and our grandchildren. If your nation becomes so violent that it would tear up our land, destroy our society and our future, and occupy our homeland, by trying to

impose this pipeline against our will, then of course we will have no choice but to react with violence.

I hope we do not have to do that. For it is not the way we would choose. However, if we are forced to blow up the pipeline ... I hope you will not only look on the violence of Indian action, but also on the violence of your own nation which would force us to take such a course.

We will never initiate violence. But if your nation threatens by its own violent action to destroy our nation, you will have given us no choice. Please do not force us into this position. For we would all lose too much. [C1085ff.]

Chief Fred Greenland said to the Inquiry at Aklavik:

It's clear to me what the native people are saying today. They're discussing not their future but the future of their children and grandchildren, and if the government continues to refuse or neglect [us] ... I think the natives would just stop their effort and discussions and the opportunities for a peaceful settlement would be lost. We must choose wisely and carefully because there will be a future generation of Canadians who will live with the results. [C3863]

Frank T'Seleic, then Chief at Fort Good Hope, also spoke of the future generations, of the children yet unborn. He told the Inquiry:

It is for this unborn child, Mr. Berger, that my nation will stop the pipeline. It is so that this unborn child can know the freedom of this land that I am willing to lay down my life. [C1778ff.]

Chief Jim Antoine of Fort Simpson:

... every time we try to do something, within the system ... it doesn't seem to work for us, as Indian people. We tried it, we tried to use it, it doesn't work for us. ... We're going to keep on trying to use the system until we get frustrated enough that we're going to try changing it. I think that's where it's directed, that's where it's going. I would stand with my brother from Good Hope that he would lay

down his life for what he believes in, and I feel the same way. There's a lot of us young people who feel the same way. [C2625]

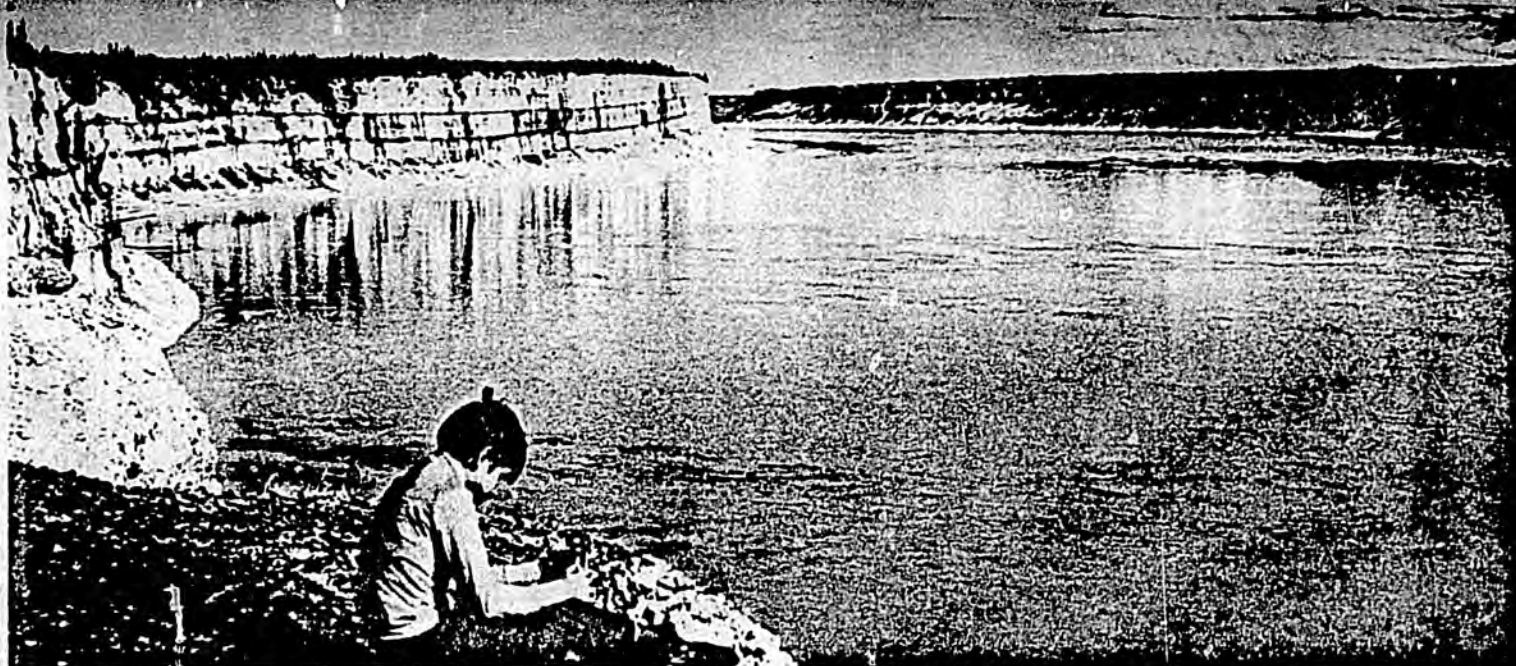
Raymond Yakaleya, speaking at Norman Wells:

Our backs are turned to the corners. This is our last stand.

I ask each and every one of you in this room what would you do if you were in our shoes? How would you feel if you had these conditions on you? I ask you one more time, let us negotiate, there's still time, but don't force us, because this time we have nothing to lose. When I ask for the lives of my people, am I asking you for too much? [C2177]

I have given the most anxious consideration to whether or not I should make any reference in this report to these statements. It may be said that merely reciting them would be to invite a violent reaction to the pipeline, if it were built without a just settlement of native claims. Yet these statements were not lightly made. No one who heard them could doubt that they were said in earnest. So I have concluded that they cannot be ignored. They illustrate the depth of feeling among the native people.

I want to emphasize that my recommendation that the construction of a Mackenzie Valley pipeline should be postponed until native claims are settled is not dependent upon this evidence. That recommendation is based upon the social and economic impact of a pipeline, and upon the impact it would have on native claims. I would be remiss in my duty, however, if I did not remind the Government of Canada that these things were said. I do not want anyone to think I am predicting an insurrection. But I am saying there is a real possibility of civil disobedience and civil disorder that — if they did occur — might well render orderly political evolution of the North impossible, and could poison relations between the Government of



The Ramparts along the Mackenzie River. (R. Fumoleau)

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and economic advancement of the native people are concerned. Those social and economic gains will follow from the achievement of a sense of collective pride and initiative by the Dene, Inuit and Metis, and not simply from a clearing away of legal complications to enable industrial development to proceed.

If the pipeline is not built now, an orderly program of exploration can still proceed in the Mackenzie Delta and the Beaufort Sea. And, even if the oil and gas industry withdraws from its exploration activities because of a decision to postpone the pipeline, the Government of Canada has the means to ensure the continuation of exploratory drilling if it were held to be in the national interest. Postponement of the pipeline would mean that, if continued drilling in the Mackenzie Delta and the Beaufort Sea reveals sufficient reserves, Canada can proceed to build a pipeline at a time of its own choosing, along a route of its own choice, by means it has decided upon, and with the cooperation of the native people of the North.

Let me make it clear that if we decide to postpone the pipeline, we shall not be renouncing our northern energy supplies. They will still be there. No one is going to take them away. In years to come, it will still be available as fuel or as industrial feedstocks.

We have never had to determine what is the most intelligent use to make of our

resources. We have never had to consider restraint. Will we continue, driven by technology and egregious patterns of consumption, to deplete our energy resources wherever and whenever we find them? Upon this question depends the future of northern native people and their environment.

Maurice Strong, Chairman of Petro Canada, has written:

Man's very skills, the very technical success with which he overspreads the earth, makes him the most dangerous of all creatures.

One critical aspect of man's use of planetary resources is the way in which he is burning up more and more of the world's energy....

We can no longer afford to plan on the basis of past and current trends in consumption. If we assume that a decent standard of life for the world's peoples inevitably requires increasing per capita use of energy, we shall be planning for an energy starved world, or an ecological disaster, or both. Rather than searching endlessly for new energy sources, we must contribute to its wiser use....

At present, we are far from this ideal. We have recklessly assumed that no matter how wasteful our lifestyle, we shall somehow find the energy to support it....

In the last 15 years, world use of energy has doubled. North America now uses about five times as much energy as is consumed in the whole of Asia, and per capita consumption is about 24 times higher. The United States each year wastes more fossil fuel than is used by two-thirds of the world's population. [Edmonton Journal, September 22, 1976]

If we build the pipeline, it will seem

strange, years from now, that we refused to do justice to the native people merely to continue to provide ourselves with a range of consumer goods and comforts without even asking Canadians to consider an alternative. Such a course is not necessary, nor is it acceptable.

I have said that, under the present conditions, the pipeline, if it were built now, would do enormous damage to the social fabric in the North, would bring only limited economic benefits, and would stand in the way of a just settlement of native claims. It would exacerbate tension. It would leave a legacy of bitterness throughout a region in which the native people have protested, with virtual unanimity, against the pipeline. For a time, some of them may be co-opted. But in the end, the Dene, Inuit and Metis will follow those of their leaders who refuse to turn their backs on their own history, who insist that they must be true to themselves, and who articulate the values that lie at the heart of the native identity.

No pipeline should be built now. Time is needed to settle native claims, set up new institutions and establish a truly diversified economy in the North. This, I suggest, is the course northern development should take.

We have the opportunity to make a new departure, to open a new chapter in the history of the indigenous peoples of the Americas. We must not reject the opportunity that is now before us.

# The Corridor Concept

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## The Corridor Concept and Cumulative Impact

The concept of a pipeline corridor from the North was first enunciated by the Government of Canada in the 1970 Pipeline Guidelines. In 1972, these Guidelines were expanded. The Expanded Guidelines for Northern Pipelines (to which I shall refer as the "Pipeline Guidelines") were tabled in the House of Commons in June 1972, and they form the cornerstone of Canadian policy with regard to the construction of northern pipelines. The Inquiry is bound by Order-in-Council, P.C. 1974-641 March 21, 1974, under which it was established, to consider the proposals made by the pipeline companies to meet the specific environmental and social concerns set out in the Pipeline Guidelines.

The significance of the corridor concept to this Inquiry relates to the consideration of impact and cumulative impact. The Pipeline Guidelines assume that, if a gas pipeline is built, an oil pipeline will probably follow it, and they call for examination of the proposed gas pipeline from the point of view of cumulative impact. We must consider then, not only the impact of a gas pipeline, but also the impact of an oil pipeline — in sum, the impact of a transportation corridor for two energy systems.

The government's corridor policy is plainly spelled out in the Pipeline Guidelines:

In view of the influence of the first trunk pipeline in shaping the transportation corridor system and in moulding the environmental and social future of the region, any applicant to build a first trunk pipeline within any segment of the corridor system outlined in 1. above must provide with [its] application;

- i) assessment of the suitability of the applicant's route for nearby routing of the other pipeline, in terms of the environmental-social and terrain-engineering consequences of the other pipeline and the combined effect of the two pipelines;...
- ii) assessment of the environmental-social impact of both pipelines on nearby settlements or nearby existing or proposed transportation systems...[p. 10]

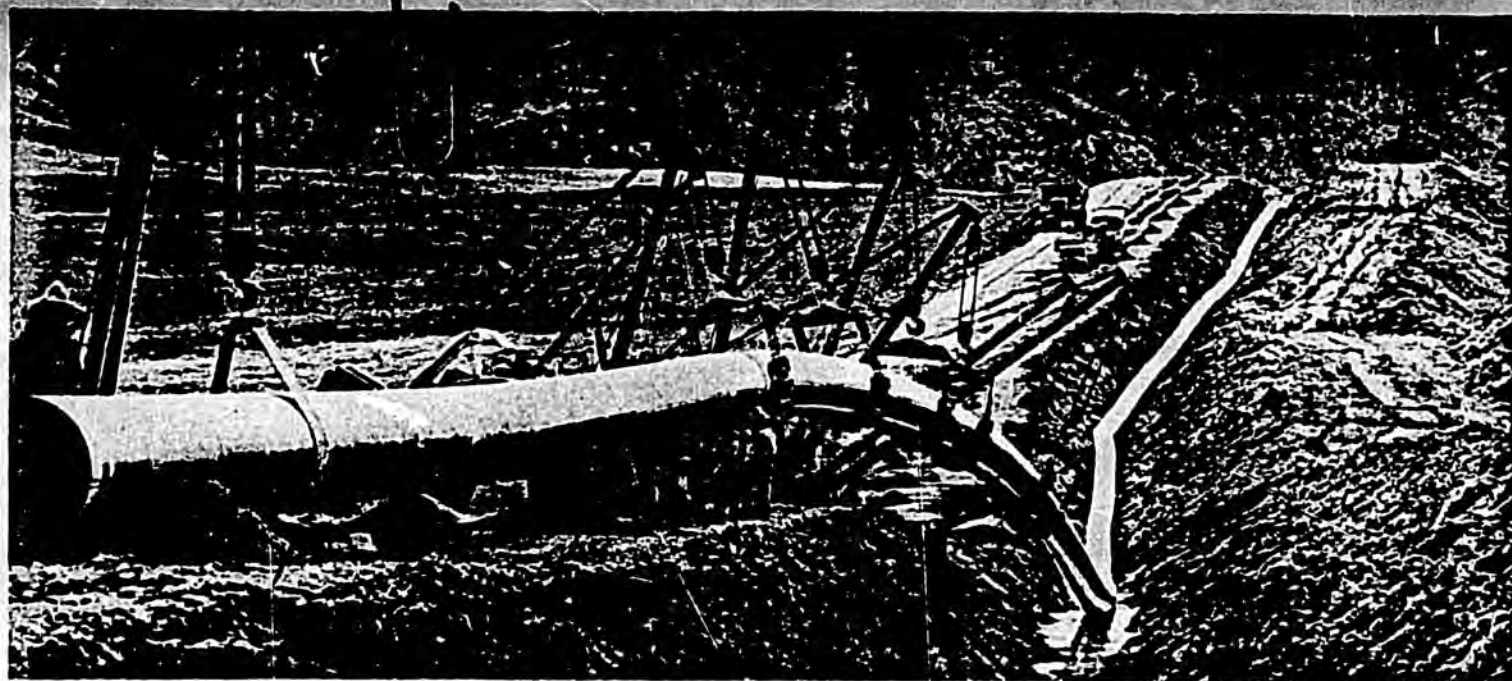
The assumption in 1970 was that an oil pipeline would be built first, and a gas pipeline would be likely to follow it; ever since the Pipeline Guidelines were issued in 1972, the assumption has been that a gas pipeline would come first and that an oil pipeline would be likely to follow it. Now we have before us proposals by Arctic Gas and Foothills to build a gas pipeline. The influence of a gas pipeline on the development of an energy corridor and in moulding the social, economic and environmental future of the North will be enormous. The Pipeline Guidelines call for a consideration of the environmental and social impact of a gas pipeline and an oil pipeline, as well as of the combined impact of the construction of both pipelines along the corridor. That policy ramifies throughout the Inquiry's consideration of the environmental and social issues that arise along the whole route. However, the corridor will not be simply a corridor for gas and oil pipelines. The Pipeline Guidelines envisage that the corridor may eventually include roads, a railroad, hydro-electric transmission lines and telecommunications facilities.

There are real limits to our capacity to forecast the impact of such a corridor. The Pipeline Guidelines are principally concerned with the impact that gas and oil pipelines will have in the North. The Inquiry has, therefore, largely limited itself to a consideration of the impact of these energy

transportation systems. But sometimes it has been necessary to consider the impact of pipelines in relation to other transportation systems. For instance, what if a haul road had to be built along the Arctic Coastal Plain of the Northern Yukon? Or to what extent will the capacity of the existing fleet of tugs and barges on the Mackenzie River have to be augmented? Or to what extent will hunting from the Dempster Highway have to be restricted to enable the recommendations of this Inquiry to be carried out? We cannot make an intelligent assessment of the impact of a gas pipeline unless we do so in the light of the cumulative impact of the corridor.

Of course, the gas pipeline itself will be a multi-stage project involving considerations of cumulative impact. The gas pipelines proposed by Arctic Gas and by Foothills can be expected to be looped. Looping is the process of progressively increasing the amount of gas that can be transported by the pipeline system; a second (or third) pipeline is built beside the first in sections or loops from one compressor station to the next. This means that construction along the gas pipeline right-of-way can be an ongoing or repetitive process and can involve cumulative impacts over and above those resulting from the project that was originally proposed.

The importance of considering the impact of a gas pipeline in the light of cumulative impact along the corridor is obvious. This importance can be illustrated by reference to gravel, which is in short supply in the North. Arctic Gas estimate that the gas pipeline will require 30 million cubic yards of gravel and other borrow materials within Canada and North of 60. Mackenzie Valley Pipeline Research Limited estimated the gravel requirements for an oil pipeline at 42 million



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cubic yards. It would be foolish to consider the impact of the borrow requirements of a gas pipeline without taking into account the gravel requirements of an oil pipeline, as well as those of other regional and local projects. Substantial amounts of borrow materials will be required for gas plants and gas-gathering systems in the Mackenzie Delta, for the completion of the Mackenzie Highway and the Dempster Highway, and for airports, not to mention the needs of communities along the route. Gravel provides a quite straightforward example of cumulative impact. There are many other examples, some of them by no means as straightforward, that I shall be dealing with in this report.

### The Northern Yukon Corridor and the Mackenzie Valley Corridor

It should be borne in mind that there are two proposed corridors: one across the Northern Yukon and another along the Mackenzie Valley. The following passage from the Pipeline Guidelines makes this plain:

The Government of Canada is prepared to receive and review applications to construct one trunk oil pipeline and/or one trunk gas pipeline within the following broad "corridors":

- i) Along the Mackenzie Valley region (in a broad sense) from the Arctic coast to the provincial [Alberta] boundary;
- ii) Across the northern part of the Yukon Territory either adjacent to the Arctic coast or through the northern interior region from the boundary of Alaska to the general vicinity of Fort McPherson, and thus to join the Mackenzie "corridor"; ... [p. 9]

Arctic Gas propose to build a pipeline from Alaska that would use the corridor across the Northern Yukon as well as the corridor along the Mackenzie Valley. Foothills propose to build a pipeline that would use only the corridor along the Mackenzie Valley.

Arctic Gas propose to transport only Alaskan gas in the corridor across the Northern Yukon, and to transport both Alaskan and Canadian gas in the Mackenzie Valley corridor. Under the Foothills proposal, the Mackenzie Valley corridor would be used to carry only Canadian gas.

Since 1972, as mentioned above, the Government of Canada has assumed that a gas pipeline along either of these corridors would probably be followed by an oil pipeline. That assumption is a sound one: once a gas pipeline is built across the Northern Yukon, there will be every reason for an oil pipeline carrying American oil to follow the same route. You may ask, is not the trans-Alaska pipeline to carry American oil to the Lower 48? The Alyeska pipeline was built to deliver oil to the western states, but the United States still has severe shortages of oil in the midwest and the east. And there are great petroleum reserves in northern Alaska, especially in Naval Petroleum Reserve No. 4 lying to the west of Prudhoe Bay. The urgency of bringing oil from northern Alaska to the markets in the Lower 48 that need it most is obvious. If a gas pipeline and energy corridor were already in place across the Northern Yukon and along the Mackenzie Valley, it is quite likely this corridor would be the route of choice.

Once a gas pipeline is built along the Mackenzie Valley, it is likely that in the future an oil pipeline will follow. Oil has in fact been found in the Mackenzie Delta region. It is said that discoveries of oil in the

Mackenzie Delta and the Beaufort Sea do not justify an oil pipeline today. Nonetheless, while the proven reserves of oil in the Mackenzie Delta region have not yet reached threshold levels, they may do so in time. In any event, it is obvious that if present or future exploration programs reveal large reserves of oil under the Beaufort Sea, the call for an oil pipeline from the Delta to the mid-continent will be made once again.

I think all of this demonstrates the wisdom of the Pipeline Guidelines, which insist that there should be an examination of the impact of an oil pipeline along with the gas pipeline. Any attempt to dismember the policy and to assess the impacts piecemeal, along either the Northern Yukon corridor or the Mackenzie Valley corridor, should be resisted.

### The United States' Interest in the Corridor

The Arctic Gas pipeline, if it is built, would provide a land bridge for the delivery of Alaskan gas across Canada to the Lower 48. The implications of this prospect, from the point of view of Canadian policy in the North, should be borne in mind.

The corridor across the Northern Yukon will be an exclusively American energy corridor. The Mackenzie Valley corridor, under the Arctic Gas proposal, will be an American energy corridor as much as it is a Canadian energy corridor. The United States will have an interest in the scheduling of pipeline construction in Canada and, when the pipeline is built, in seeing that it remains safe and secure, because it will be carrying Alaskan gas in bond to the Lower 48. It will be an energy lifeline for the United States,

Trans-Alaska pipeline and gravel haul road.  
Sideboom tractors lower pipe into ditch. (Alyeska)

Stockpile of drill pipe. (NFB-McNeill)

Drill rig in the Delta. (Arctic Gas)

Mackenzie Highway right-of-way beside  
Mackenzie River. (J. Inglis)



## The Corridor Concept

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extending across the Northern Yukon, across the Mackenzie Delta, along the Mackenzie Valley, and then through Alberta, Saskatchewan and British Columbia to the Lower 48. It will supply gas to a complex of industries and urban centres in the United States. The Americans will be dependent on the continuous supply of gas, and the gas being transported from Alaska will be their own gas. Moreover, the United States wants the pipeline to begin to deliver that gas as soon as possible.

There are, of course, pipelines that cross United States territory and carry oil and gas to Canadian markets: the Interprovincial pipeline, which delivers western oil to Ontario; the Portland-Montreal pipeline, which delivers offshore oil to Quebec; and the Great Lakes Transmission Company pipeline, which delivers gas to Ontario. All of them pass through the United States. But these connections cannot be compared in magnitude or impact to the Arctic Gas proposal. They are not pipelines reaching some 2,000 miles from a distant frontier.

The consequences of such American interest in the pipeline are of special concern to the inquiry. The impact of the pipeline, so far as northern peoples and the northern environment is concerned, will be largely within Canada (the line from Prudhoe Bay to the Alaska-Yukon border is only 200 miles long, whereas the line from the Alaska-Yukon boundary to the Northwest

Territories-Alberta border is 1,000 miles long). The native people's concern over when a pipeline is built, the environmental concern over where it should be built, and the stipulations for protecting the people and the environment apply largely in Canada. The United States cannot be expected to be as concerned as Canada with the seriousness of the social and environmental impact of the pipeline along its route. This difference, coupled with the Americans' rather more urgent need of gas, might result in pressure to complete the pipeline without due regard to the social and environmental concerns in Canada. The risk is in Canada. The urgency is in the United States.

A pipeline 2,200 miles long (in Canada) is a highly vulnerable artery. What measures might have to be taken to forestall an interruption of delivery — an interruption that would affect vital Canadian interests, but even more tellingly, vital American interests? There may be real possibilities for misunderstanding and tension between our two countries, notwithstanding our long history of good relations. These considerations deserve the attention of the Government of the United States as well as of the Government of Canada. It may be that they are not at all daunting. But they should still not be overlooked.

A treaty between Canada and the United States will not cover all possibilities. It will, of course, define the rights of our two

governments with regard to the pipeline and to the gas being transported in that pipeline. And it will establish the ground rules for the transportation of Alaskan gas across Canada to the United States. It cannot do more. I say this because a treaty, although it will regulate the conduct of our two governments, will not necessarily regulate the conduct of the two countries' citizens.

The implications for our relations with the United States of the building and maintenance of the proposed gas transmission system deserve careful consideration by all Canadians. We are not simply considering a proposal to build a pipeline on an isolated frontier. We are considering, in the Arctic Gas proposal, the establishment of an international energy corridor that will cross some 2,200 miles of Canadian territory, opening up wilderness areas that are among the most important wildlife habitat in North America. It will cross lands that are claimed by Canada's native people, a region where the struggle for a new social and economic order and political responsibility is taking place.

It seems to me the question of whether or not there should be a corridor to carry vital energy supplies from Alaska through the heartland of Canada to the Lower 48, is at the threshold of the decision-making process. If Canadians decide that there is to be such a corridor, then we must also consider when it should be established and what route it should follow. These are questions Canadians must decide for themselves.



Hunting camp near Fort Resolution. (R. Fumoleau)

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### Postponement of the Pipeline

In my judgment, we must settle native claims before we build a Mackenzie Valley pipeline. Such a settlement will not be simply the signing of an agreement, after which pipeline construction can then immediately proceed. Intrinsic to the settlement of native land claims is the establishment of new institutions and programs that will form the basis for native self-determination.

The native people of the North reject the model of the James Bay Agreement. They seek new institutions of local, regional and indeed territorial government. John Ciaccia, speaking to the Parliamentary Committee convened to examine the James Bay Agreement, said that the Government of Quebec was "taking the opportunity to extend its administration, its laws, its services, its governmental structures through the entirety of Québec." [*The James Bay and Northern Québec Agreement*, p. xvi] The Dene and the Inuit seek a very different kind of settlement.

They also reject the Alaskan model. The Alaskan settlement was designed to provide the native people with land, capital and corporate structures to enable them to participate in what has become the dominant mode of economic development in Alaska, the non-renewable resource sector. This model is only relevant if we decide against the strengthening of the renewable resource sector in the Canadian North.

The Alaskan settlement also rejects the idea that there should be any special status for native people. That is a policy quite different from the policy formulated by the Government of Canada. In Alaska the settlement was designed to do away with special status by 1991 and to assimilate Alaskan

natives. The Government of Canada faced that issue between 1969 and 1976 and decided against it.

The issue comes down to this: will native claims be rendered more difficult or even impossible of achievement if we build a pipeline without first settling those claims? Must we establish the political, social and economic institutions and programs embodied in the settlement before building a pipeline? Unless we do, will the progress of the native people toward realization of their goals be irremediably retarded? I think the answer clearly is yes. The progress of events, once a pipeline is under construction, will place the native people at a grave disadvantage, and will place the government itself in an increasingly difficult position.

In my opinion a period of ten years will be required in the Mackenzie Valley and Western Arctic to settle native claims, and to establish the new institutions and new programs that a settlement will entail. No pipeline should be built until these things have been achieved.

It might be possible to make a settlement within the year with the Metis, and perhaps to force a settlement upon the Inuit. It would, however, be impossible, I think, to coerce the Dene to agree to such a settlement. It would have to be an imposed settlement.

You can sign an agreement or you can impose one; you can proceed with land selection; you can promise the native people that no encroachments will be made upon their lands. Yet you will discover before long that such encroachments are necessary. You can, in an agreement, promise the native people the right to rebuild the native economy. The influx of whites, the divisions created among the native people, the preoccupations of the federal and territorial

governments, faced with the problems of pipeline construction and the development of the corridor, would make fulfilment of such a promise impossible. That is why the pipeline should be postponed for 10 years.

A decision to build the pipeline now would imply a decision to bring to production now the gas and oil resources of the Mackenzie Delta and the Beaufort Sea. The industrial activity that would follow this decision would be on a scale such as to require the full attention of the government, and entrench its commitment to non-renewable resource development in the North. The drive to bring the native people into the industrial system would intensify, and there would be little likelihood of the native people receiving any support in their desire to expand the renewable resource sector.

If we believe that the industrial system must advance now into the Mackenzie Valley and the Western Arctic, then we must not delude ourselves or the native people about what a settlement of their claims will mean in such circumstances.

It would be dishonest to impose a settlement that we know now — and that the native people will know before the ink is dry on it — will not achieve their goals. They will soon realize — just as the native people on the prairies realized a century ago as the settlers poured in — that the actual course of events on the ground will deny the promises that appear on paper. The advance of the industrial system would determine the course of events, no matter what Parliament, the courts, this Inquiry or anyone else may say.

If we think back to the days when the treaties were signed on the prairies, we can predict what will happen in the North if a settlement is forced upon the native people. We shall soon see that we cannot keep the promises we have made.

Phillips Bay, Yukon coast; breeding and staging area for waterfowl. (I. MacNeil)

Porcupine River. (ISL—C. Calef)

Alaska North Slope. (ISL—C. Calef)



## The Northern Yukon

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and the Northern Yukon biota, can be consistent with and complementary to these principles.

We have already some experience in the establishment and management of parks (although not wilderness parks) in the North and have seen their effects on the interests of the native people. At Nahanni Butte the Inquiry was told that the Dene play no part in the management of the South Nahanni National Park. This experience must not be repeated in the wilderness park for the Northern Yukon that I am urging upon the Government of Canada. The conditions I have outlined will, in my judgment, avoid such a repetition and will avoid prejudice to native claims.

In *Runes of the North*, Sigurd Olson, an American naturalist, wrote:

It may well be that with [the help of the native people] the Canadian north, with its vast expanses of primeval country, can restore to modern man a semblance of balance and completeness. In the long run, these last wild regions of the continent might be worth far more to North Americans from a recreational and spiritual standpoint than through industrial exploitation. (p. 156)

It may be said that no one will visit the park because it is too remote. Only the wealthy, it may be argued, will have the opportunity to see the caribou and to enjoy the solitude and the scenery. But Canadians of ordinary means and less are there now, enjoying these wonders of nature. I speak, of course, of the native people. Is that not enough? Canadians from the provinces do not have to visit the wilderness or see the herd of caribou to confirm its existence or to justify its retention. The point I am making here is that the preservation of the wilderness and its wildlife can be justified on the grounds of its importance to the native people. But the preservation of wilderness

can also be justified because it is there, an Arctic ecosystem, in which life forms are limited in number, and where, if we exterminate them, we impoverish the frontier, our knowledge of the frontier, and the variety and beauty of the earth's creatures.

## An Alternative Route Across the Yukon

I have recommended that no pipeline be built and no energy corridor be established across the Northern Yukon along either of the routes proposed by Arctic Gas. This means that, if gas from Prudhoe Bay and, subsequently, gas and oil from other sources in Alaska must pass overland to the Lower 48, the pipeline will have to be routed through the southern part of the Yukon Territory. The only overland route that has been seriously advanced as an alternative to the routes proposed by Arctic Gas is the Alaska Highway Route (also known as the Fairbanks Route) which is the route proposed for the Alcan Pipeline. This route would follow the trans-Alaska pipeline from Prudhoe Bay to Fairbanks, the Alaska Highway to the eastern border of Alaska and then cross the Southern Yukon into British Columbia and Alberta.

At Whitehorse, I heard evidence from Arctic Gas and from other participants in the Inquiry, comparing this route with the Coastal and Interior Routes. On the basis of that evidence, many of the concerns that led me to reject the pipeline routes across the Northern Yukon do not appear to apply to the Alaska Highway Route.

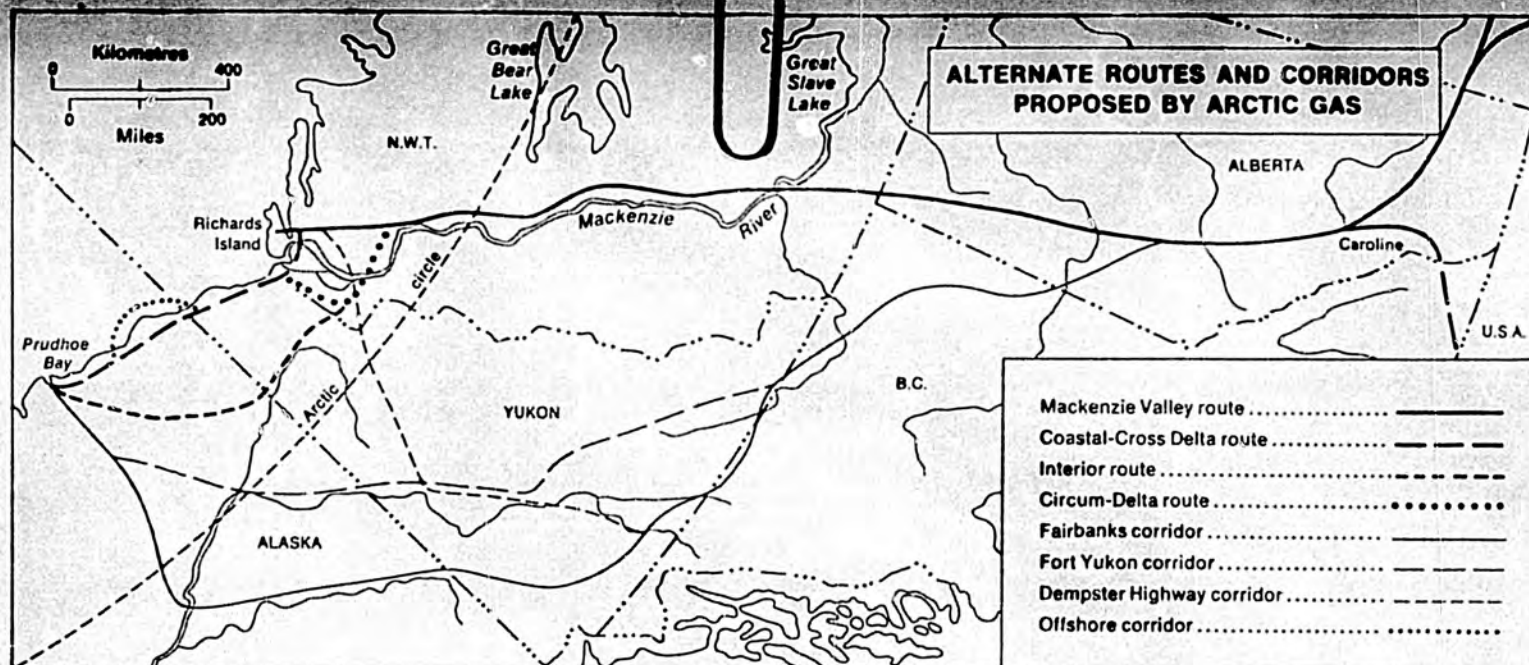
No major populations of any wildlife species appear to be threatened by the construction of a pipeline paralleling the

Alaska Highway, either in the Yukon or in Alaska. The route follows an existing corridor along the trans-Alaska pipeline north of Fairbanks and along the Alaska Highway south and east of Fairbanks. Like the trans-Alaska pipeline, this route would come into contact with only small numbers of caribou south of Prudhoe Bay. Elsewhere, although there are important wildlife populations in the area traversed by the proposed route, they apparently would not have major contact with the corridor.

The concerns that I have expressed about the scheduling and logistics of building a pipeline across the Northern Yukon would not apply (or would be much less important) if a pipeline were built along the Alaska Highway Route. The Arctic Gas pipeline would have to be built in the cold and darkness of winter north of the Arctic Circle, from a snow working surface. It would depend upon a limited shipping season, and a whole infrastructure would have to be established to bring in material, equipment and supplies. In contrast, a pipeline following the Alaska Highway Route in Canada could probably be built in either winter or summer, and it would cross an area with less extreme winter weather, and follow a main highway that has a short connection to the Pacific coast.

Within Canada, only short sections of the Alaska Highway Route would encounter permafrost, and the problems of pipeline construction and operation across permafrost and of controlling frost heave would be of little concern. Of course, permafrost does exist throughout most of the Alaska portion of this proposed route.

I have not examined the social and economic impact of a pipeline along the Alaska Highway Route. Neither have I considered the question of native claims in the Southern

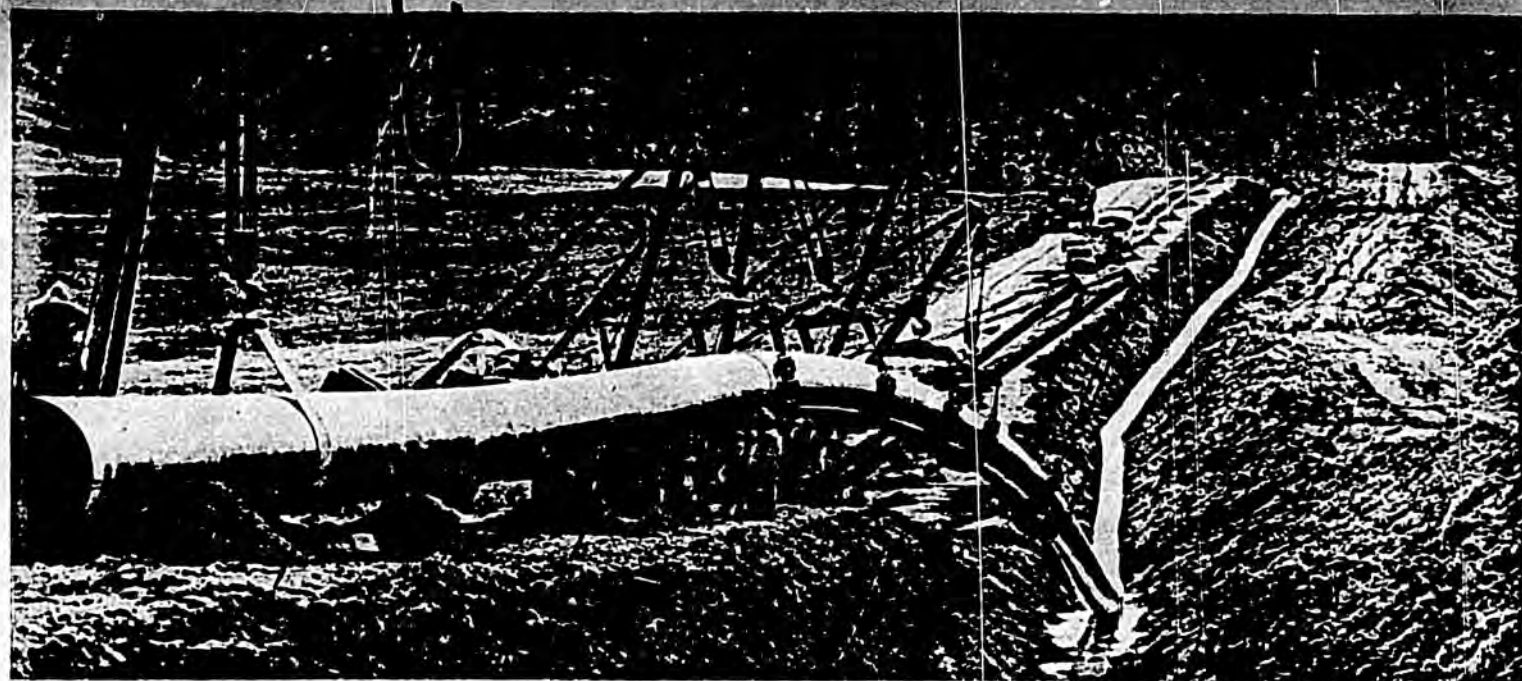


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Yukon. The Council of Yukon Indians have advised that native claims must be settled in the Southern Yukon before any pipeline is built. These matters would be of fundamental importance in any decision to build a pipeline across the Southern Yukon and they must be assessed carefully before any recommendation is made for a pipeline along the Alaska Highway. Certainly, I am in no position to make such a recommendation.

If a decision should be made in favour of a pipeline along the Alaska Highway Route, or over any other southerly route across the Yukon Territory, I recommend that any agreement in this regard between Canada and the United States should include provisions to protect the Porcupine caribou herd and the wilderness of the Northern Yukon and Northeastern Alaska. By this agreement,

Canada should undertake to establish a wilderness park in the Northern Yukon and the United States should agree to accord wilderness status to its Arctic National Wildlife Range, thus creating a unique international wilderness park in the Arctic. It would be an important symbol of the dedication of our two countries to environmental as well as industrial goals.



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cubic yards. It would be foolish to consider the impact of the borrow requirements of a gas pipeline without taking into account the gravel requirements of an oil pipeline, as well as those of other regional and local projects. Substantial amounts of borrow materials will be required for gas plants and gas-gathering systems in the Mackenzie Delta, for the completion of the Mackenzie Highway and the Dempster Highway, and for airports, not to mention the needs of communities along the route. Gravel provides a quite straightforward example of cumulative impact. There are many other examples, some of them by no means as straightforward, that I shall be dealing with in this report.

### The Northern Yukon Corridor and the Mackenzie Valley Corridor

It should be borne in mind that there are two proposed corridors: one across the Northern Yukon and another along the Mackenzie Valley. The following passage from the Pipeline Guidelines makes this plain:

The Government of Canada is prepared to receive and review applications to construct one trunk oil pipeline and/or one trunk gas pipeline within the following broad "corridors":

- i) Along the Mackenzie Valley region (in a broad sense) from the Arctic coast to the provincial [Alberta] boundary;
  - ii) Across the northern part of the Yukon Territory either adjacent to the Arctic coast or through the northern interior region from the boundary of Alaska to the general vicinity of Fort McPherson, and thus to join the Mackenzie "corridor"; ...
- [p. 9]

Arctic Gas propose to build a pipeline from Alaska that would use the corridor across the Northern Yukon as well as the corridor along the Mackenzie Valley. Foothills propose to build a pipeline that would use only the corridor along the Mackenzie Valley.

Arctic Gas propose to transport only Alaskan gas in the corridor across the Northern Yukon, and to transport both Alaskan and Canadian gas in the Mackenzie Valley corridor. Under the Foothills proposal, the Mackenzie Valley corridor would be used to carry only Canadian gas.

Since 1972, as mentioned above, the Government of Canada has assumed that a gas pipeline along either of these corridors would probably be followed by an oil pipeline. That assumption is a sound one: once a gas pipeline is built across the Northern Yukon, there will be every reason for an oil pipeline carrying American oil to follow the same route. You may ask, is not the trans-Alaska pipeline to carry American oil to the Lower 48? The Alyeska pipeline was built to deliver oil to the western states, but the United States still has severe shortages of oil in the midwest and the east. And there are great petroleum reserves in northern Alaska, especially in Naval Petroleum Reserve No. 4 lying to the west of Prudhoe Bay. The urgency of bringing oil from northern Alaska to the markets in the Lower 48 that need it most is obvious. If a gas pipeline and energy corridor were already in place across the Northern Yukon and along the Mackenzie Valley, it is quite likely this corridor would be the route of choice.

Once a gas pipeline is built along the Mackenzie Valley, it is likely that in the future an oil pipeline will follow. Oil has in fact been found in the Mackenzie Delta region. It is said that discoveries of oil in the

Mackenzie Delta and the Beaufort Sea do not justify an oil pipeline today. Nonetheless, while the proven reserves of oil in the Mackenzie Delta region have not yet reached threshold levels, they may do so in time. In any event, it is obvious that if present or future exploration programs reveal large reserves of oil under the Beaufort Sea, the call for an oil pipeline from the Delta to the mid-continent will be made once again.

I think all of this demonstrates the wisdom of the Pipeline Guidelines, which insist that there should be an examination of the impact of an oil pipeline along with the gas pipeline. Any attempt to dismember the policy and to assess the impacts piecemeal, along either the Northern Yukon corridor or the Mackenzie Valley corridor, should be resisted.

### The United States' Interest in the Corridor

The Arctic Gas pipeline, if it is built, would provide a land bridge for the delivery of Alaskan gas across Canada to the Lower 48. The implications of this prospect, from the point of view of Canadian policy in the North, should be borne in mind.

The corridor across the Northern Yukon will be an exclusively American energy corridor. The Mackenzie Valley corridor, under the Arctic Gas proposal, will be an American energy corridor as much as it is a Canadian energy corridor. The United States will have an interest in the scheduling of pipeline construction in Canada and, when the pipeline is built, in seeing that it remains safe and secure, because it will be carrying Alaskan gas in bond to the Lower 48. It will be an energy lifeline for the United States,

Trans-Alaska pipeline and gravel haul road.  
Sideboom tractors lower pipe into ditch. (Alyeska)

Stockpile of drill pipe. (NFB-McNeill)

Drill rig in the Delta. (Arctic Gas)

Mackenzie Highway right-of-way beside  
Mackenzie River. (J. Inglis)



## The Corridor Concept

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extending across the Northern Yukon, across the Mackenzie Delta, along the Mackenzie Valley, and then through Alberta, Saskatchewan and British Columbia to the Lower 48. It will supply gas to a complex of industries and urban centres in the United States. The Americans will be dependent on the continuous supply of gas, and the gas being transported from Alaska will be their own gas. Moreover, the United States wants the pipeline to begin to deliver that gas as soon as possible.

There are, of course, pipelines that cross United States territory and carry oil and gas to Canadian markets: the Interprovincial pipeline, which delivers western oil to Ontario; the Portland-Montreal pipeline, which delivers offshore oil to Quebec; and the Great Lakes Transmission Company pipeline, which delivers gas to Ontario. All of them pass through the United States. But these connections cannot be compared in magnitude or impact to the Arctic Gas proposal. They are not pipelines reaching some 2,000 miles from a distant frontier.

The consequences of such American interest in the pipeline are of special concern to the Inquiry. The impact of the pipeline, so far as northern peoples and the northern environment is concerned, will be largely within Canada (the line from Prudhoe Bay to the Alaska-Yukon border is only 200 miles long, whereas the line from the Alaska-Yukon boundary to the Northwest

Territories-Alberta border is 1,000 miles long). The native people's concern over when a pipeline is built, the environmental concern over where it should be built, and the stipulations for protecting the people and the environment apply largely in Canada. The United States cannot be expected to be as concerned as Canada with the seriousness of the social and environmental impact of the pipeline along its route. This difference, coupled with the Americans' rather more urgent need of gas, might result in pressure to complete the pipeline without due regard to the social and environmental concerns in Canada. The risk is in Canada. The urgency is in the United States.

A pipeline 2,200 miles long (in Canada) is a highly vulnerable artery. What measures might have to be taken to forestall an interruption of delivery — an interruption that would affect vital Canadian interests, but even more tellingly, vital American interests? There may be real possibilities for misunderstanding and tension between our two countries, notwithstanding our long history of good relations. These considerations deserve the attention of the Government of the United States as well as of the Government of Canada. It may be that they are not at all daunting. But they should still not be overlooked.

A treaty between Canada and the United States will not cover all possibilities. It will, of course, define the rights of our two

governments with regard to the pipeline and to the gas being transported in that pipeline. And it will establish the ground rules for the transportation of Alaskan gas across Canada to the United States. It cannot do more. I say this because a treaty, although it will regulate the conduct of our two governments, will not necessarily regulate the conduct of the two countries' citizens.

The implications for our relations with the United States of the building and maintenance of the proposed gas transmission system deserve careful consideration by all Canadians. We are not simply considering a proposal to build a pipeline on an isolated frontier. We are considering, in the Arctic Gas proposal, the establishment of an international energy corridor that will cross some 2,200 miles of Canadian territory, opening up wilderness areas that are among the most important wildlife habitat in North America. It will cross lands that are claimed by Canada's native people, a region where the struggle for a new social and economic order and political responsibility is taking place.

It seems to me the question of whether or not there should be a corridor to carry vital energy supplies from Alaska through the heartland of Canada to the Lower 48, is at the threshold of the decision-making process. If Canadians decide that there is to be such a corridor, then we must also consider when it should be established and what route it should follow. These are questions Canadians must decide for themselves.



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the sense of medication. So at least in its initial stages, southern psychiatry is appropriate. However, many of the problems seen are so closely interwoven with the life-style of the native people in the North, which in turn is closely bound to such problems as economics, housing, self-esteem and cultural identity, that to label them as psychiatric disorders is frankly fraudulent and of no value whatsoever, as the treatment must eventually be the treatment of the whole community rather than [of] the individual. [F28437]

### Social Impact and the Pipeline

Some advocates of the pipeline say that the wage employment it would provide, even though temporary, would ameliorate the social problems that underlie the psychological symptoms that Kehoe, Abbott and others have described. In the light of all of the evidence and our experience, this attitude must be regarded as wrong. We cannot ignore the truly frightening increases in crime, abuse of alcohol, diet-related illness, venereal disease rates and mental illness that have occurred during the past ten years in the North.

At the same time, we should acknowledge some encouraging trends: violent deaths of native people in the Northwest Territories fell from 28.4 percent of all deaths in 1974 to 22.5 percent in 1975. There was a reduction in the number of cases of venereal disease reported in 1976. I have described some local reactions against alcohol abuse that have led to measures of local prohibition. Why have these indicators of crime and social disease, which for years have gone from bad to worse, broken their upward trend? Perhaps it has been a result of heightened native consciousness, the determination of the native people to be true to themselves, that is responsible. But let us make no mistake: these improvements, although welcome, are

small, and they may prove to be merely an interruption of longer-term trends. In communities into which the industrial economy has only recently penetrated, the situation is deeply alarming.

The question we face is, will construction of the pipeline hamper social improvements? The answer must be yes. If pipeline construction goes ahead now, can we ensure that its effects will not halt these social improvements? The answer must be no. Although some ameliorative measures can be taken to lessen the social impact of pipeline construction and related activity on the northern people, no one should think that these measures will prevent the further and serious deterioration of social and personal well-being in the native communities.

The process of rebuilding a strong, self-confident society in the Mackenzie Valley has begun. Major industrial development now may well have a disastrous effect on that process. With the pipeline, I should expect the high rate of alcohol consumption to persist and worsen. I should expect further erosion of native culture, further demoralization of the native people, and degradation and violence beyond anything previously seen in the Mackenzie Valley and the Western Arctic.

The presence of a huge migrant labour force and the impact of construction over the years will mean that alcohol and drugs will become more serious problems. It is fanciful to think that greater opportunities for wage employment on a pipeline will stop or reverse the effects of past economic deprivation.

Let me cite what Dr. Wheeler said of the Dene, because this statement applies to all the native peoples of the Mackenzie Valley

and the Western Arctic. His views exemplify those of every doctor and nurse who spoke to the Inquiry.

The Dene have great strength as a people. Part of this strength lies in their extended families which they have been able to maintain close-knit communities. We white people know the value of these kinds of ties, as we are now feeling the loss of them in terms of the depersonalization and dehumanization of southern urban living. How long will the Dene family survive the loss of its young men and the degradation of its women?

We want to hear what plans the territorial and federal governments have or are developing for these kinds of social problems. Perhaps the answer lies not with increasing government bureaucracy, with all its control. The solution to these problems, and with it the survival of the Dene, lies within the Dene. They must be allowed to develop these solutions within a time frame of their own choosing before we get stampeded into social disaster from which the North may never recover. The people need time and freedom in order to survive. [C3402]

### The Limits to Planning

I have been asked to predict the impact of the pipeline and energy corridor and to recommend terms and conditions that might mitigate their impact. Some impacts are easier to predict than others: there is a vast difference between the effects that are likely to occur in the first year and those that will be important in ten years. And there are difficulties in prediction that involve more than time or scale, for even short-term causal chains can be intricately connected. Moreover, some consequences of the pipeline will be controllable, but others will not. Just as there are limits to predicting, so also are there limits to planning.

Arctic Red River. (M. Jackson)

Café and bar in Fort Providence. (Native Press)

Elizabeth Mackenzie, activist against liquor abuse, being sworn in as a Justice of the Peace, Rae-Edzo. (Native Press)

People visiting outside the Bay, Fort Norman. (N. Cooper)



## Social Impact

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I can recommend terms and conditions that will to some extent mitigate the social impact of the pipeline and energy corridor, but some of the consequences I have predicted will occur no matter what controls we impose. Other consequences can be predicted only in a vague and general way: we can anticipate their scale, but cannot adequately plan for them. There is a gulf, therefore, between the nature of the predictions and the nature of the terms and conditions I am asked to propose. The one is imprecise and often speculative; the other, if the terms and conditions are to be effective, must be very precise. We must never forget their limitations; it is all too easy to be overconfident of our ability to act as social engineers and to suppose — quite wrongly — that all problems can be foreseen and resolved. The nature of human affairs often defies the planners. In the case of a vast undertaking like the Mackenzie Valley pipeline, overconfidence in our ability to anticipate and to manage social problems would be foolish and dangerous.

I am prepared to accept that the oil and gas industry, the pipeline company, and the contractors will be able to exercise a measure

of control over the movement and behaviour of their personnel. I am prepared to accept that government will expand its services and infrastructure in major communities to serve the requirements of pipeline construction in the Mackenzie Valley and of gas plant development in the Delta. Where actual numbers of people can be predicted, planning is possible and orderly procedures and cost-sharing arrangements can be worked out. However, there are obvious limitations to planning of this sort. The cost of the project or the number of workers required may be so far in excess of the figures we have now that it will seem as though we had planned one project but had built another. There is the question of how many people will be involved in secondary employment: their number will be large, no matter what measures are taken to discourage them, and the costs associated with their presence in the North will be very high.

There are also political limits to planning. The impacts that lead to social costs vary in the degree to which they can be treated. There are matters over which government and industry can exercise some control; there are other matters over which control would

not be in keeping with the principles of a democratic society. And there are social impacts over which no control could be exercised even under the most authoritarian regime.

Finally, I am not prepared to accept that, in the case of an enormous project like the pipeline, there can be any real control over how much people will drink and over what the abuse of alcohol will do to their lives. There can be no control over how many families will break up, how many children will become delinquent and have criminal records, how many communities will see their young people drifting towards the larger urban centres, and how many people may be driven from a way of life they know to one they do not understand and in which they have no real place. Such problems are beyond anyone's power to control, but they will generate enormous social costs. Because these costs are, by and large, neither measurable nor assignable, we tend to forget them or to pretend they do not exist. But with construction of a pipeline, they would occur, and the native people of the North would then have to pay the price.

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The ORGANIZATION for the MANAGEMENT of ALASKA'S RESOURCES, INC.

Beverly Isenson  
Executive Director

Paula Pence Easley  
Community Relations Director

Olga DeMay  
Special Events Director

August 29 1976

Dear John,

Attached is the opinion on Canadian provincial powers of Gerald Levey, a Canadian constitutional lawyer. His opinion was sought by our supporters in Seattle. Mr. Levey came to their attention because he was an advisor to a British Columbia interest involving Ross Dam, in which provincial powers were a question.

While Mr. Levey disagrees with Mr. Williston on some points, he agrees on others, and recommends that the proposed hydrocarbon treaty between the U. S. and Canada be amended significantly to protect our interests.

If you have any comments on this, please let me know.

Cordially,