



STATE OF ALASKA

EARTH RESOURCES COMPANY OF ALASKA

A COMPLETE PROPOSAL FOR

A

STATE OF ALASKA

NATURAL GAS AND GAS LIQUIDS AUTHORITY

WHICH WILL

OWN, DESIGN, CONSTRUCT AND OPERATE

THE ALASKA NORTH SLOPE NATURAL GAS

CONDITIONING FACILITY

AND

NATURAL GAS LIQUIDS DISTRIBUTION SYSTEM

AND AN ACTION PROGRAM

FOR THE STATE TO REALIZE

IT'S OPPORTUNITY

February 6, 1980

ALASKA
DOCUMENT

HD
9581
452
A475



EARTH RESOURCES COMPANY OF ALASKA

Proposal for

A STATE OF ALASKA NATURAL GAS AND GAS
LIQUIDS AUTHORITY WHICH WILL OWN, DESIGN,
CONSTRUCT AND OPERATE THE ALASKA NORTH
SLOPE NATURAL GAS CONDITIONING FACILITY
AND NATURAL GAS LIQUIDS DISTRIBUTION SYSTEM

February 6, 1980



Earth Resources Company of Alaska

1001 NOBLE, FAIRBANKS, ALASKA 99701

907/456-ERCA

February 6, 1980

The Honorable Thomas K. Williams
Chairman - Alaska Gas Pipeline Financing Authority
Alaska Department of Revenue
Pouch S
Juneau, Alaska 99811

Dear Commissioner Williams:

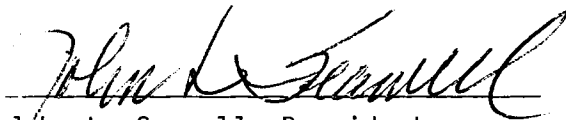
Earth Resources Company of Alaska (ERCA) is pleased to submit herewith its Proposal to expedite the accomplishment of the State of Alaska's goal of financing, owning and controlling a gas conditioning system for North Slope gas, and to deliver natural gas liquids as feedstock to in-state petrochemical industry plant sites.

This Proposal sets forth a step-by-step program for a Project attaining that goal. The Action Plan outlined will effectively demonstrate the serious intent of Alaska to develop a petrochemical industry. Through this Plan, Alaska's economy will be enhanced, and the petrochemical industry sought by Alaska will become a reality.

We look forward to meeting with you and the other members of the Authority in the near future to discuss the Proposal.

Sincerely,

EARTH RESOURCES COMPANY OF ALASKA



John L. Seawell, President

TABLE OF CONTENTS

INTRODUCTION

- I. EXECUTIVE SUMMARY
 - II. RATIONALE FOR THE PROJECT
 - A. GENERAL
 - B. OPPORTUNITY
 - C. BENEFITS
 - D. OPERATION OF THE AUTHORITY
 - III. PROPOSED ACTION BY THE STATE
 - A. NEW LEGISLATION
 - B. STUDY AUTHORIZATION
 - IV. PROJECT PHASING
 - A. PHASE I - SYSTEM/SITE STUDY
 - B. PHASE II - DEFINITIVE PLANNING/FINANCIAL AND LEGAL DETERMINATIONS
 - C. PHASE III - ENGINEERING, PROCUREMENT, CONSTRUCTION AND COMMISSIONING
 - D. PHASE IV - OPERATIONS
 - V. EARTH RESOURCES COMPANY OF ALASKA
- ### APPENDICES
- A. PROPOSED AUTHORITY STATUTE
 - B. MEMORANDUM CONCERNING TAX-FREE STATUS OF BONDS
 - C. EARTH RESOURCES COMPANY ANNUAL REPORT 1979

I N T R O D U C T I O N

For more than two years, Earth Resources Company of Alaska (ERCA) has been investigating the technical and economic feasibility of establishing a petrochemical industry in Alaska, based on natural gas liquids extracted from the associated natural gas produced at Alaska's North Slope. Based on its positive findings, ERCA published a Position Paper on February 1, 1979 entitled, Opportunities to Maximize Alaska's Benefits from the Design of the Natural Gas Pipeline and Location of the Conditioning Facilities.

Until now, Alaska has been precluded from realizing the full benefits of its natural gas resource, and the nation has been denied access to a major energy resource through the inability of Northwest Pipeline to secure a financial package for the pipeline. Through the efforts of the Department of Energy, an accommodation may shortly be reached between Northwest Pipeline, the State of Alaska and the North Slope producers regarding the payment of gas conditioning costs and other areas of responsibility to be assumed.

The State of Alaska, recognizing the coincidence of national goals with its own, has indicated its willingness to participate in the Alaska Natural Gas Transportation System (ANGTS) project through revenue bond funding of the gas conditioning facility, provided that access to natural gas liquids in a quantity sufficient for in-state petrochemical development is attained.

The State has defined, over the last calendar year, through a Governor's Task Force, that petrochemical development in Alaska is desirable and the State should utilize its royalty position to secure this industry and resultant economic good for the State.

In its continuing effort to assist the State in realizing the full benefits accruing from the completed Northwest Pipeline, ERCA has developed an Action Plan for use by the State, and hereby submits this Proposal.

This Proposal outlines a step-by-step plan offering a solution to the following problems: a) Timely construction of the Alaska North Slope Natural Gas Conditioning Facility and Natural Gas Liquids Distribution System (Project), b) The facilitating of the State of Alaska's financial participation in the ANGTS and, c) enabling the delivery of natural gas liquids (NGL's) to its in-state petrochemical industry.

A key element described by this Proposal is a proposed successor to the present Alaska Gas Pipeline Financing Authority (Authority), specifically designed for the Project, to be established by the Alaska Legislature during the 1980 session. The successor Authority would finance, construct, own, and arrange for the management and operation of the Project. Careful attention to the Authority's structure and operation is necessary to secure tax exempt bonding. To begin discussion, a preliminary statute draft is given in Appendix A,

a memorandum relating to the tax considerations surrounding the issuance of the Authority's bonds, prepared by a nationally recognized bond counsel, is contained in Appendix B. The draft statute of the proposed Authority and the tax memorandum are contributed herein for the State's use and consideration. It is recommended that the Act creating the Alaska Gas Liquids Authority be introduced as legislation at the earliest possible date.

The Proposal provides for project management services to be provided by ERCA under contract to the Authority. A single contract consolidating all required project management services and related responsibilities, from inception through operation, provides a simplified mechanism for the State's Administration and control of the Project through the Authority. ERCA stands ready to aid the Authority.

The Project financing and Phase I management concepts described in this Proposal have been developed by ERCA with the assistance of its own consultants. The interests of the State will be best served if a thorough and deliberate search is made for execution contractors for each, or a portion thereof, of all of the Project phases described herein. Requests for proposals (RFP's) developed and managed by ERCA will be issued and awarded by the Authority. This will maintain for the State the greatest latitude of options in the selection of execution contractors, and will provide the greatest cost savings to the Authority's administrative operations while seeking the best available

talent.

ERCA does not intend to participate as an execution contractor in any portion of Phases I, II, or III. ERCA will, therefore, be free of any conflict of interest that would attend a project manager wishing to engage in the actual engineering design work.

Under its proposed single management contract with the Authority, ERCA will secure and monitor all of the resources and work needed for the construction of the Project, and will operate it upon completion. ERCA proposes to undertake all of the functions of staff to the existing Alaska Gas Pipeline Financing Authority and to the successor Authority proposed herein.

I. EXECUTIVE SUMMARY

It is proposed that an Authority of the State (Authority) construct, own and operate a North Slope Gas Conditioning Facility and Natural Gas Distribution System(Project). It is also proposed that the Project be 100% financed through the issuance of the Authority's tax exempt revenue bonds. The bonds will be repaid from the revenues of the Project, and may be further supported through the Authority's collection of royalty gas/gas liquids revenues on behalf of the State.

The Project will facilitate the completion of the Northwest Pipeline project through the State's participation in financing, and will reduce the cost of conditioning the North Slope produced natural gas through a tax exempt status of the financing. In addition, it will enable the State to utilize the natural gas liquids (NGL's) extracted from the North Slope gas to promote a petrochemical industry in Alaska by providing natural gas liquid (NGL) delivery to plant sites.

It will be necessary for the Alaska State Legislature to amend the existing Alaska Gas Pipeline Financing Authority statutes to create a successor Authority with powers and duties specifically addressing the Project. To enable the Authority to develop a defensible legal opinion on the status of the Authority's tax free bonds, this Proposal offers a carefully developed proposed format of the Authority's operations.

Earth Resources Company of Alaska (ERCA) offers its capabilities to provide overall Project management services to the State of Alaska through the Authority, in the Authority's securing of studies, engineering, financing, procurement, construction and operation of the Alaska North Slope Natural Gas Conditioning Facility and Natural Gas Liquids Distribution System. ERCA is prepared to assist the Authority across the full range of actions necessary to implement its purposes, including obtaining the necessary financing through a bond issue of the Authority.

The Project would be implemented in four phases as follows:

- A. Phase I - System/Site Study
- B. Phase II - Definitive Planning/Financial and Legal
 Determinations
- C. Phase III - Engineering, Procurement, Construction,
 and Commissioning
- D. Phase IV - Operation

The early completion of a definitive and defensible system/site study is essential to the success of the State's goals. The Proposal recommends that the Authority initiate this Project by authorizing ERCA to proceed with the Authority's implementation of the Phase I study.

This would comply with the urgency expressed in the President's Decision regarding completion of the Alaska Natural Gas Transportation System.

As a first step, ERCA is prepared to immediately receive comments on

the parameters of system/site study,as outlined in this Proposal,
from all of the principals.

II. RATIONALE FOR THE PROJECT

A. GENERAL

In a press release on January 14, 1980, the Governor of Alaska announced that the State intends to consider financing a Natural Gas Conditioning Facility to enable the people of Alaska to secure the benefits attending completion of the Alaskan portion of the ANGTS.

The discovery of oil at Prudhoe Bay in 1969 revealed the presence of approximately 26 trillion cubic feet of recoverable associated natural gas and natural gas liquids. Since the production of oil began in 1977, this gas has been reinjected into the gas cap. The ANGTS has been conceived to transport this gas through Alaska, Canada and into the lower 48 states of the United States by pipeline. The President's Decision approving the concept of the Alaskan Natural Gas Transportation System mandates a flow of marketable gas of 2.0 billion cubic feet per day to the lower 48 United States with a possibility of a larger flow as reservoir conditions and pipeline capacities permit. The State of Alaska has a 12.5% royalty share of the hydrocarbons produced at Prudhoe Bay.

The associated gas contains significant quantities of carbon

dioxide, natural gas liquids, and minor quantities of sulfur compounds. Because of this, it must be determined whether conditioning will be more desirable at Prudhoe Bay prior to gas transmission in the ANGTS, or at an Interior location with gas and NGL's transported in the ANGTS to the Interior, or whether some other combination is desirable.

A Federal Energy Regulatory Commission (FERC) ruling of August 6, 1979 has approved an application by Alaska Northwest Natural Gas Transportation Company (Northwest) to construct a 1260 psig, 48-inch section of pipeline from Prudhoe Bay to the Canadian Border. In a subsequent appeal by ERCA and the State of this ruling (which precludes conditioning at an Interior site), the U.S. Court of Appeals recognized that the Federal Energy Regulatory Commission (FERC) would consider an alternate proposal for a higher operating pressure upon new application by Northwest. If an alternate higher pressure were requested and approved, either a conditioning facility location in the Interior would be possible or a greater amount of the natural gas liquids could be transported to the Interior for extraction. In the case of operation at 1260 psig, the majority of the natural gas liquids could be removed at Prudhoe Bay and shipped by separate pipeline to the railbelt area of the State.

As a part of the State of Alaska's continuing efforts to expand the economy, the State is seriously interested in fostering a petrochemical industry, and is creating a climate to encourage proposals from the

major companies in the industry. Availability plus delivery of the natural gas liquids will be a necessary requirement to develop the petrochemical industry.

B. OPPORTUNITY

An opportunity exists for an Authority of the State to own and operate a Natural Gas Conditioning Facility and Natural Gas Liquids Distribution System (Project), at the appropriate location(s).

This Project will:

- (1) Condition North Slope gas for delivery to the Northwest Pipeline. This service will be provided to all participants in the Alaska portion of the ANGTS.
- (2) Extract the natural gas liquids and transport these for feedstock for a petrochemical industry and to other users.
- (3) Extract and deliver the pentanes and heavier (C₅+) gas liquids to the crude oil producers for shipment in the Trans Alaska Pipeline System (TAPS) or for sale to others.
- (4) Acquire surplus NGL's for delivery to petrochemical plant sites within Alaska and other markets. As a result, the

nation, as a whole, will attain the use of a critical energy source.

C. BENEFITS

This comprehensive Proposal supports the purposes of the Alaska Gas Pipeline Financing Authority by capturing for Alaskans some of the benefits inherent in the trillions of BTU's annually flowing through Alaska and leaving the State, and at the same time it advances the nation's energy policy. The Project will be the foundation for other industries and the key to the following immediate and/or potential long-term developments:

- (1) The cost of conditioning North Slope-produced natural gas will be significantly reduced because of the tax-exempt bond financing.
- (2) Overall natural gas transportation system financing will be enhanced by the indication to the financial community that the State of Alaska is willing to share the financing risk. At the same time, the State's participation does not result in a drawdown of either the State's General or Permanent Funds.
- (3) As discussed earlier in this Proposal, the direct and primary benefit resulting from the Project will be the development of

a petrochemical industry in Alaska.

- (4) A direct consequence of the development of a petrochemical industry will be the development of a variety of peripheral industries.
- (5) The growth of these industries in the state will increase the industrial tax base for the State of Alaska.
- (6) The growth of these industries in Alaska will increase the diversity of Alaskan markets for goods and services produced by Alaskans.
- (7) All transportation networks in the State, including water, air, rail, and highway systems will benefit from the development of the new industries.
- (8) The Alaska construction industry will grow and be further diversified.
- (9) Depending on the site location(s) for the gas conditioning facilities and of the petrochemical industry, there is a possibility of significant growth of the Alaskan coal production industry.
- (10) Development of the petrochemical and peripheral industries

would have a positive effect on the Alaskan economy and social systems through stabilization of the employment level.

- (11) Depending on the site location(s) and process economics for the gas conditioning facilities, there is potential for energy conservation and reduced energy costs through the co-generation of electrical power using waste heat from the conditioning process.
- (12) The availability of natural gas liquids in the Interior of Alaska will provide a new, lower-cost energy source to satisfy both domestic and industrial requirements.

D. OPERATION OF THE AUTHORITY

The operation of the Gas Conditioning Facility and Distribution System by the Authority will provide a key link in the ANGTS which will not be able to operate without this service. The conditioning facility must begin operation concurrently with the ANGTS.

Under this Proposal the Authority will operate under the direction of a Board of Directors composed of the Commissioner of Natural Resources, Commissioner of Commerce and Economic Development, Commissioner of Transportation and Commissioner of Revenue. The Commissioner of Revenue will be Chairman of the Board.

The Authority will have an Executive Director and necessary staff to conduct its business, plus limited powers of eminent domain and subpoena. It will construct and operate its facilities by means of long-term management contracts. ERCA seeks a long-term contract (20 years) for this service, subject to cancellation by either party, upon two (2) years notice. This is important to financial interests in that it secures a continuous long-term operation of the Authority's facilities.

The Authority, an entity of the State operating for the public good, will, in all likelihood, be able to secure a 100% tax-free bond financing. This aspect secures significant savings for the users of services of the Authority.

Due to the magnitude of the bond issue required to finance the Project, an opinion from the Internal Revenue Service on the tax-free status of the bond issue should be essential. The Authority should seek this opinion as expeditiously as possible. Based on counsel's memo, an adverse ruling is not likely. This memorandum is attached as Appendix B. Alternatively, the Authority could approach Congress to have the system be declared an exempt facility.

The Authority will collect, on behalf of the State, payments for the State's royalty gas and gas liquids and negotiate trades of agreements to secure adequate gas liquids for in-state petrochem-

ical development. In addition, the Authority will collect service fees to meet its contractual staff and operations expenses, debt retirement, and to secure a rate of return per regulatory guidelines (i.e. Department of Energy (DOE) and/or FERC). Funds surplus to these obligations will be deposited in the State's General Fund. A portion of the revenue derived from the sale of the State's royalty oil would further support the bond issue as the guarantee. In this manner, adequate coverage of the debt retirement will be demonstrated to the bond market.

The service fees discussed above may be subject to FERC review for the part of conditioning costs borne by the gas liquids. Further, the service costs associated with transportation of the gas liquids may be subject to DOE review. The Authority should seek clarification on these issues from the appropriate agency. The national urgency for construction of the ANGTS will aid in securing necessary opinions and review.

The FERC has prepared an environmental impact statement for a conditioning facility located at the North Slope. The Authority may have the responsibility of preparing such a statement(s) for those parts of the system different from either of the previous conditioning and ANGTS environmental impact statements.

The Authority would be custodian of the gas and gas liquids on behalf of the State. (i.e. It would not have title, except for those gas

liquids surplus to trades made with royalty methane and which surplus is needed for petrochemical feedstocks, or are surplus at the point of conditioning in which case the Authority may purchase them for resale.)

The full development of a petrochemical industry from these resources will take time. It is anticipated that gas liquids not used in petrochemicals at the time ANGTS operations are started will be marketed as fuel stocks at tidewater until needed for petrochemical feedstocks. The magnitude of the available natural gas liquids feedstock is sufficient to support four to six world-scale petrochemical complexes in Alaska. Alaska may see a number of different companies operating from this one feedstock.

The Authority will not interfere with existing functions of the Alaska Royalty Oil and Gas Development Advisory Board nor the mandate of the Commissioner of Natural Resources to secure the best contracts for development of the State's royalty resources.

One of the Authority's first tasks will be to determine the best siting of the conditioning facility and system configuration. Serious questions have arisen with regard to the best engineering/economic/operations location for the conditioning facility. No one entity to date has adequately addressed these complex issues. Their early resolution, in a carefully designed study, is essential to assure that the final facility location and configuration is optimum.

III. PROPOSED ACTION BY THE STATE OF ALASKA

For the State of Alaska to secure the benefits outlined above and participate in the ANGTS, certain actions are needed. They are delineated below.

A. LEGISLATIVE/ADMINISTRATIVE ACTION

The Proposal contemplates that a successor to the Alaska Gas Pipeline Financing Authority (AGPFA) will be the State agency which will own and operate the gas conditioning facility and natural gas liquids distribution system. The AGPFA statute defined the intent of the State of Alaska with respect to its participation in the ANGTS. The State's intent has changed from an AGPFA. A new and different Authority is needed which recognizes the State's new position in the ANGTS, and optimizes Alaskan petrochemical industry development. The suggested name of the new Authority is the Alaska Gas Liquids Authority.

For purposes of initiating legislative discussion, a carefully developed Authority statute, prepared by counsel, is included as Appendix A. This draft statute includes the following points:

1. Legislative findings and determinations of public policy to

support the acquisition, construction and operation of the Project.

2. Creation of the Authority and provisions for the governing of the Authority including the power of appointment of staff members. The Attorney General is designated as the legal counsel for the Authority.
3. Provisions setting forth powers necessary for the Project including the power to acquire land by the exercise of the power of eminent domain.
4. Provisions for the issuance of bonds to mature no later than forty (40) years from the date of issuance and for the securing of the bonds, including the power to pledge amounts derived from the sale of natural gas liquids.
5. Permission for various institutions to invest in obligations of the Authority.
6. The Authority is given an exemption from property taxes.

B. STUDY AUTHORIZATION

Timing is critical. The President has identified the ANGTS Project as a priority in his energy program. Prompt action is required to

capture natural gas liquids for the State's benefit.

The first necessary step is the final resolution of the issue concerning the location of the gas conditioning facility and the facility/process design which is mandated by the facility's location. To enable resolution of this vital issue, it is recommended that the Authority authorize ERCA to prepare the Authority's RFP's for the performance of the Phase I systems/site study as defined herein, and to prepare detailed schedules and plans for securing the manpower and other resources necessary to begin Phase I work immediately.

ERCA proposes to enter into an Agreement with the Authority to provide all necessary management services to the Authority for Phases I through IV of the Project described in this Proposal, with specific terms being established as each phase of the concept is implemented. For all phases, ERCA suggests that it be compensated through payment of its costs plus a fixed management fee to be negotiated. Pending the execution of a formal Agreement between the State and ERCA, ERCA is prepared to proceed upon receipt of a letter of authorization from the existing AGPF Authority.

IV. PROJECT PHASING

ERCA's Action Plan, offered to the State in this Proposal, sets forth an orderly, sequential approach to the activities inherent in the planning, project management, engineering, construction and operation of a facility of this nature. The plan consists of four phases, which are listed below, and discussed in the following paragraphs:

- Phase I - Systems/Site Study
- Phase II - Definitive Planning/Financial and Legal
 Determinations
- Phase III - Engineering, Procurement, Construction
 and Commissioning
- Phase IV - Operation

A. PHASE I - SYSTEMS/SITE STUDY

1. PRODUCT

The Systems Site/Study will analyze major processing and site selection alternatives to resolve major Project issues. The engineering/economic study will recommend a process, storage, and transportation system configuration, including sites, for

the conditioning of associated gas and for the transportation/delivery of gas liquids and saleable gas. Pentanes and heavier (C_5+) may be injected into the TAPS crude oil line.

The recommended facilities will:

- a) Condition the gas as required for transport to the lower 48 States, specifically including CO_2 and H_2S removal, hydrocarbon dewpoint control, and BTU control.
- b) Recover gas liquids for fractionation to realize sale as petrochemical feedstock.
- c) Be located at sites for the overall benefit to the consumers in the lower 48 States and to the State of Alaska, considering capital and operating costs, labor markets, environmental impacts and Alaska's development plan.
- d) Be based on state-of-the-art technology, operational safety and reliability.
- e) Meet all environmental requirements of the National Environmental Protection Act and the State of Alaska.

(ERCA believes that environmental planning is of major importance in the development of this facility. A plan

will be developed during Phase I which will outline the necessary steps and coordinated activities required to obtain the environmental construction permits with minimum delay.)

2. METHOD OF APPROACH

- a) IDENTIFICATION OF CONSTRAINTS - The first step in conducting the system/site feasibility study will be to identify and confirm the fixed parameters to form the basis for design such as:
1. Projected rate of gas production as a function of planned crude oil production and sequent changes in gas composition.
 2. Nature and availability of existing gas processing/ compression facilities at Prudhoe to determine the range of operating conditions at which the untreated gas is available.
 3. Required pipeline gas specifications, including saleable gas, dewpoint, CO₂ and H₂S content and heating value constraints.
 4. Pipeline size, routing, operating and regulatory restraints.

5. Site-specific construction and operation constraints from both geographic and demographic viewpoints.

b) CASES TO BE STUDIED

Process, storage and transportation alternatives will be formulated for technical and economics evaluation. As used in these case studies, the term natural gas liquids includes ethane, propane, and butane. To assure that the "natural gas liquids" remain in a gaseous state in the pipeline until they reach the conditioning facility where they are removed, a very high pressure will be needed in that portion of the pipeline.

The three major cases to be studied are outlined below:

Case I

Location of a natural gas conditioning facility for removal of CO₂ only at Prudhoe Bay. A high pressure ANGTS pipeline will move gas and liquids to an Interior location. An Interior natural gas extraction facility will separate natural gas liquids for sale to the rail-belt petrochemical industry while the pentanes and heavier liquids are injected into TAPS or sold to market.

Case II

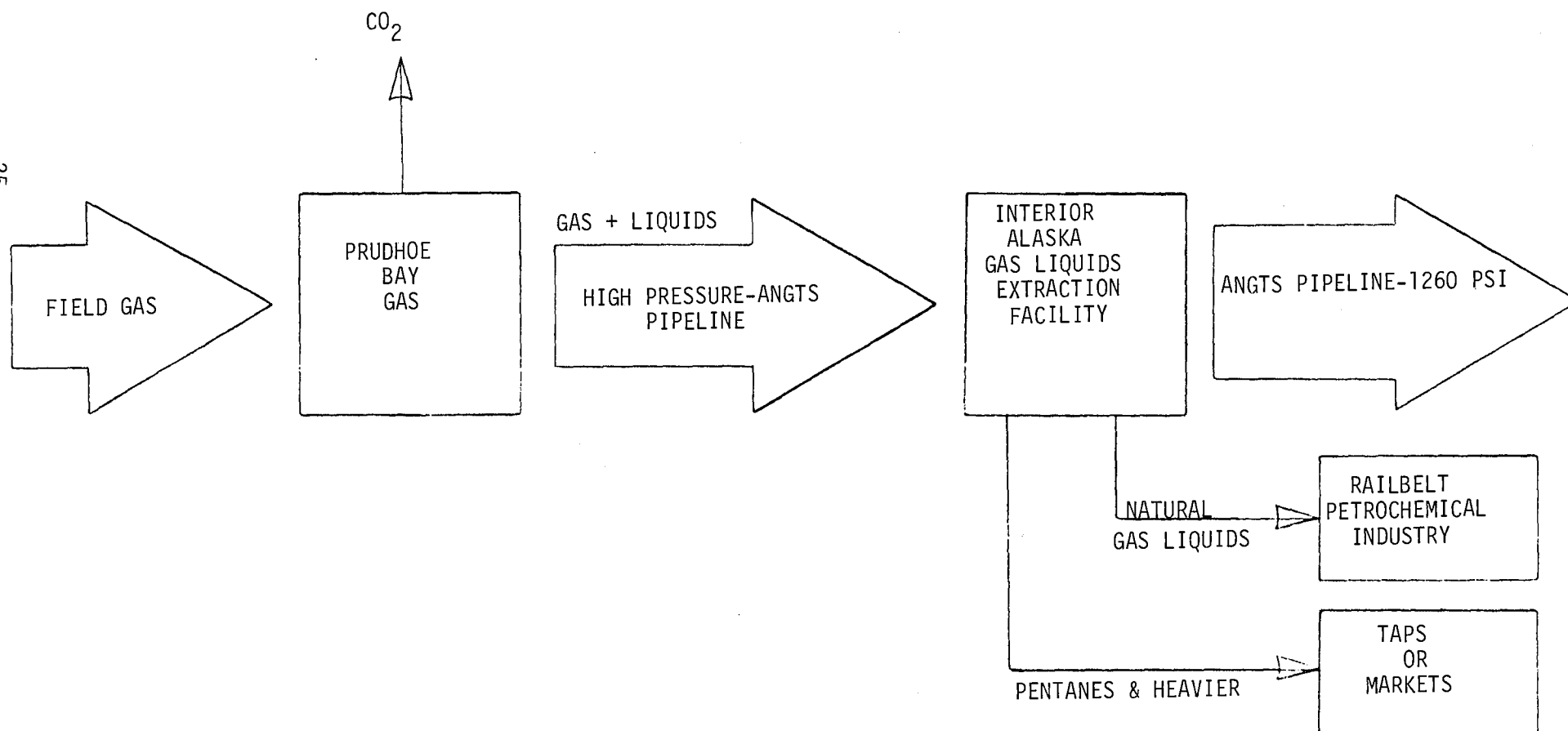
Location of the natural gas conditioning facility at an Interior Location based upon a high pressure ANGTS pipeline from Prudhoe Bay. CO₂ removal is at the Interior location; pentanes and heavier liquids are injected into TAPS or sold to market; and natural gas liquids are sold to the railbelt petrochemical industry.

Case III

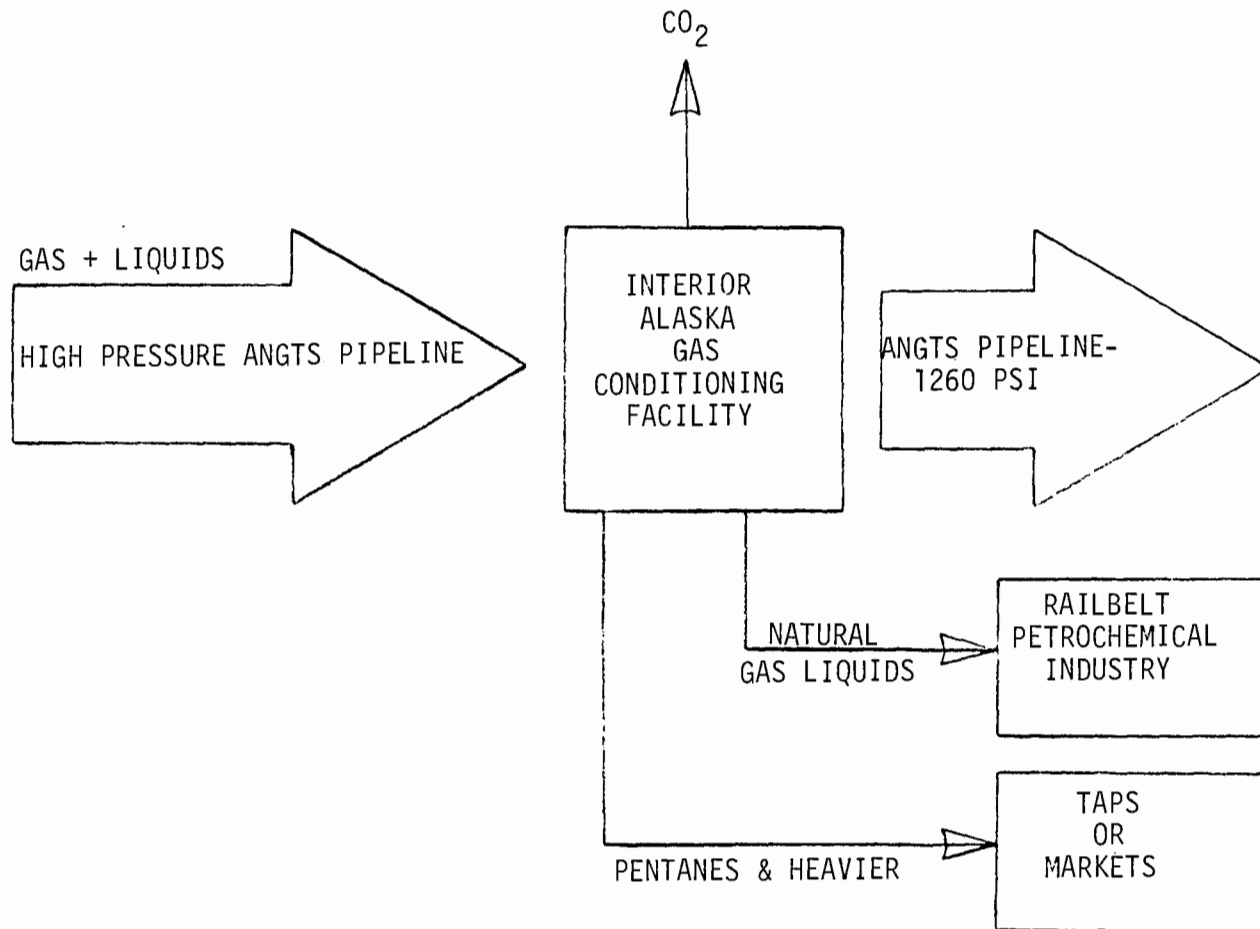
Location of the natural gas conditioning facility at Prudhoe Bay with a separate pipeline to ship the natural gas liquids to a petrochemical industry in the railbelt. CO₂ is removed at Prudhoe Bay and pentanes and heavier liquids are injected into TAPS.

PHASE I
SYSTEM/SITE STUDY
CASE I

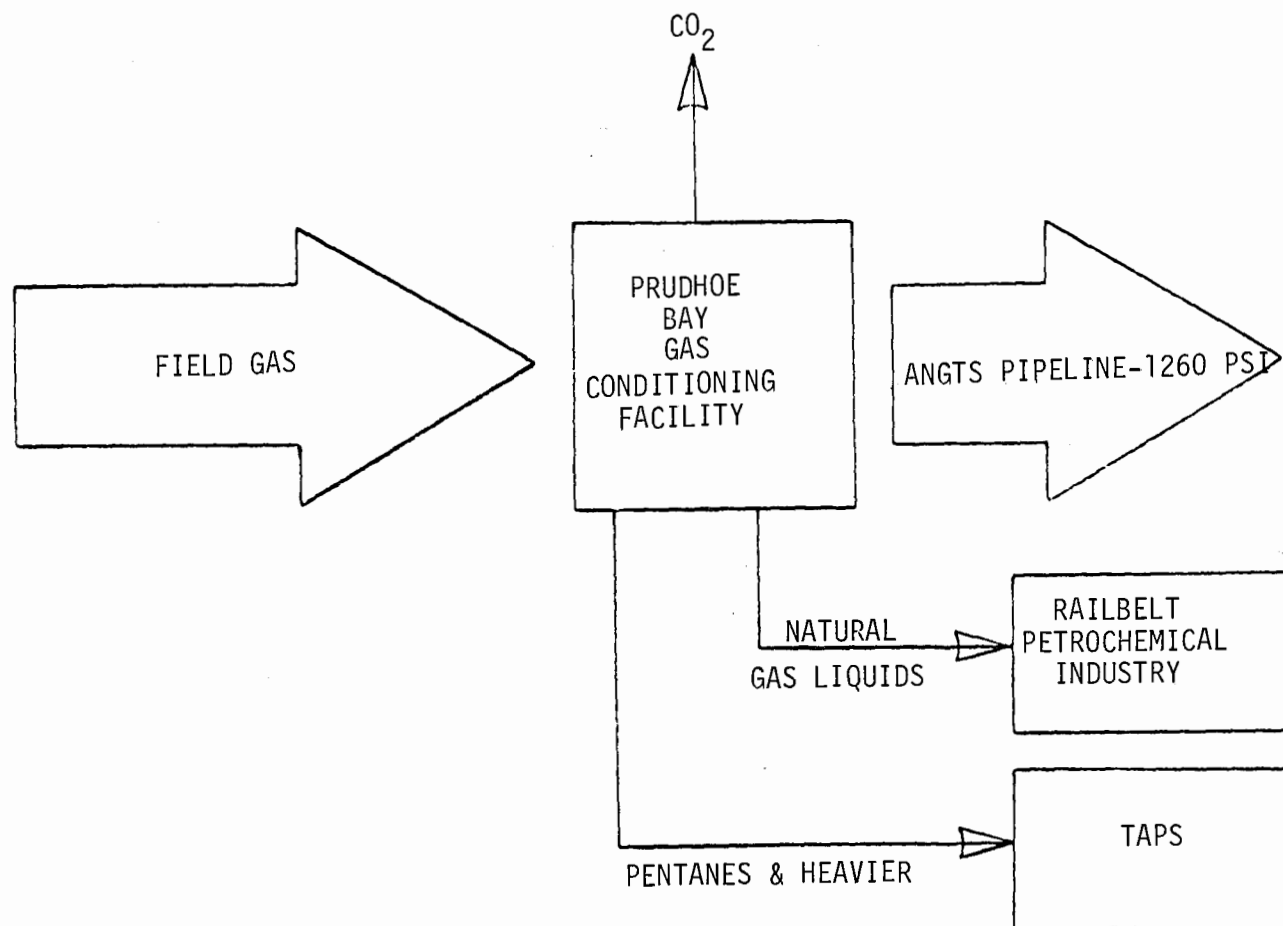
-25-



PHASE I
SYSTEM/SITE STUDY
CASE II



PHASE I
SYSTEM/SITE STUDY
CASE III



3. PROCESSING ALTERNATIVES/CONSIDERATIONS

Additionally, sub-studies will be performed optimizing the following elements of the system:

- a) CO₂ removal process, comparing alternative technologies.
- b) Hydrocarbon dewpoint control methods.
- c) Process/potable water source and treatment.
- d) The possible future installation of an ethylene plant, or similar plants.
- e) Construction cost analysis, module vs. block mount.
- f) Number of process trains.
- g) Power generation.
- h) Disposal of effluents.
- i) Utility systems and offsites.

4. SCREENING OF ALTERNATIVES

Alternative cases and processing schemes described in 2 & 3 above will be evaluated on the basis of present worth of costs utilizing appropriate discount factors over the project life. Both capital cost and operating and maintenance costs will be considered. The alternates and options will be evaluated using conceptual design and estimating techniques to develop

the following information:

- Overall material balances
- Plant definition
- Process description/simplified flow sheets
- Operating requirements
- Efficiencies of modularization
- Order of magnitude cost estimates
- Workup on cost of production for various products

The conceptual evaluation will narrow the alternatives to a viable case with possible options.

This case and options will be further evaluated by developing the following information in order to better define the scope and develop more accurate parameters for Project evaluation:

- a) Process flow diagrams
- b) Simplified piping and instrumentation diagrams
- c) Major equipment data
- d) Plot plans
- e) Principal pipe layouts
- f) Electrical one-line diagrams
- g) Bulk material take-offs
- h) Fabrication and installation cost estimates

Gas and liquid pipelines and necessary storage will be sized and estimated.

5. ECONOMIC ANALYSIS

After a system configuration is selected, analyses will be applied to develop the cost of service of each of the products of the Project. A sensitivity analysis on all the above will be performed. A discounted cash flow analysis will be provided over the life of the project to determine the system(s) with the lowest total costs of service.

B. PHASE II - DEFINITIVE PLANNING

The phase will determine and accomplish all actions required to implement the recommendations developed during Phase I. This will include the following functions:

1. Preparing the Execution Plan describing the key items needed to implement Phase III.
2. Executing the basic plant and process design for gas conditioning and gas liquid extraction.
3. Preparing a definitive cost estimate to define the financing required to construct the Project.

4. Establish the availability of the land required for the Project and arrange for commitment of the land.
5. Assisting the Authority in developing the financial proposal to generate the capital required to construct the Project.
6. Negotiating toll processing agreements for the Authority's services to be provided on a BTU-unit toll/fee/tariff basis.

In the event that any of the service fees are subject to Federal Energy Regulatory Commission (FERC) review jurisdiction, or the U.S. Department of Energy's review jurisdiction, ERCA will provide the Authority with whatever assistance is necessary in developing the tariff review defense.

C. PHASE III - ENGINEERING/PROCUREMENT, CONSTRUCTION AND COMMISSIONING

This phase follows the Phase II effort in securing of the bond financing necessary to build the facilities required to condition the natural gas and to extract and transport the natural gas liquids.

The overall integration of engineering, procurement, construction and commissioning will be accomplished through the ERCA Project management. ERCA will supervise the contract work on behalf of the Authority. The ultimate goal of this Phase will be to build safe, efficient and reliable facilities with technical integrity within the prescribed budget and schedule.

D. PHASE IV - OPERATIONS

ERCA proposes to manage all aspects of operating the Gas Conditioning Facility and the Natural Gas Liquids Transportation System. This will be accomplished through a management team which will organize a facility staff and develop operating and maintenance procedures, training, budget and facility control systems. The critical aspects of this service will be to train local personnel for assuming a role in the management and operation of the facility. The basic objectives will be to operate within a budget plan with high on-stream time while achieving specified quality and quantity of output. The maintenance of a safe operation will be a paramount objective. The entire production/delivery/use of Alaska North Slope gas depends on the reliability of the system.

As a first step toward the implementation of this Proposal, ERCA has identified the following firms as potential execution contractors on the various phases of the Project, and has made preliminary contact with them:

- The Bechtel Group
- The Badger Company, Inc.
- Brown and Root, Inc.
- C-E Lummus
- Chiyoda International
- Foster Wheeler Energy Corporation

- Fluor Corporation
- JGC Corporation
- Ralph M. Parsons Company
- The Prichard Corporation
- Procon International, Inc.
- Pullman Kellogg
- Snamprogetti SPA
- Stearns-Roger, Inc.

V. EARTH RESOURCES COMPANY OF ALASKA

ERCA is an Alaskan corporation dedicated to the responsible development and in-state use of Alaska's diverse resources. In particular, ERCA has exhibited continuing interest and a depth of practical experience in Alaska's energy-related projects, including economic and engineering feasibility determination of in-state petrochemical manufacture. It has a significant presence through its 30,000 bpd North Pole Refining subsidiary near Fairbanks, which pioneered arctic oil refinery construction and operation and which is making an important contribution to Alaska as the first refinery in the Interior. Also, part of ERCA is the major Alaskan road building and site construction firm of Rogers & Babler, headquartered in Anchorage. ERCA, itself, is part of a larger entity, Earth Resources Company, an American Stock Exchange-listed corporation whose other activities include large movements of crude oil, a 60,000 bpd refinery at Memphis, product marketing operations in the mid-South States and an Idaho silver and gold mine. (See Appendix C for a brochure more fully describing ERCA).

Important to this Proposal, and to the full realization of Alaska's goals to achieve the maximum benefit from its natural gas resource, ERCA has exhibited its initiative in management and research resulting in the legal/financing/development/operational concepts described in this Proposal, which are uniquely suited to the accomplishment of

those goals.

ERCA is experienced in the financing, construction and operation of hydrocarbon processing facilities and is routinely involved in their transportation and in the structuring of tolls and fees. ERCA has been a co-litigant with the State of Alaska in the Northwest Alaska Pipeline size and pressure suit before the U.S. Court of Appeals, which the State entered into in pursuit of its policy of in-state use of its gas liquids resource. ERCA is also a co-participant with the State in FERC hearings on the establishment of TAPS tariffs. The economic and social interests of the State of Alaska will be best served through the continuation of this coincidence of interests between ERCA and itself by implementing this Proposal and Action Plan, as presented.

A P P E N D I X A

PROPOSED DRAFT LEGISLATION

Hawkins, Delafield & Wood
67 Wall Street, New York 10005

(Area Code 212) 952-4700

Cable Address: "Hawksdel New York"

This Draft statute Includes the Following:

1. Legislative findings and determinations of public policy to support the acquisition, construction and operation of the Project.
2. Creation of the Authority and provisions for the governing of the Authority including the power of appointment of staff members. The Attorney General is made the legal counsel for the Authority.
3. Provisions setting forth powers necessary for the Project including the power to acquire land by the exercise of the power of Eminent Domain.
4. Provisions for the issuance of bonds to mature no later than 40 years from the date of issuance and provisions for the securing of bonds including the power to pledge amounts derived from the sale of natural gas liquids.
5. Permission for various institutions to invest in obligations of the Authority.
6. The Authority is given an exemption from property taxes.

HAWKINS, DELAFIELD & WOOD

Proposed Draft Legislation

For an Act entitled: "AN ACT CREATING THE ALASKA GAS LIQUIDS
AUTHORITY"

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

Section 1. AS 44.55 is repealed and reenacted to
read:

"Sec. 44.55.010. Legislative Findings and Policy

(a) The legislature finds, determines and declares
that

(1) the Prudhoe Bay natural gas is a natural
resource which will promote the long term economic
growth of the state, and will directly or indirectly
alleviate unemployment in the state;

(2) the state has a royalty interest in the
Prudhoe Bay natural gas, and it is in the interest
of the state to condition the Prudhoe Bay natural
gas to provide the state with natural gas liquids
for eventual disposition to petrochemical industries
which the state seeks to promote to create new
employment opportunities;

(3) there exist areas in the state in which
seasonal and nonseasonal unemployment which is a
serious menace to the health, safety and general
welfare, not only to the people in those areas,
but also to the people of the entire state;

(4) the goal of full employment and of the
development of the state's natural resources will
be accelerated and facilitated by the creation of
an instrumentality of the state with powers to
incur debt secured solely by the resources and
credit of such public corporation for acquiring
and constructing, conditioning and fractionation
facilities and pipelines for the transmission of
natural gas liquids as set forth in this chapter.

(b) It is declared to be the policy of the state, in the interest of promoting the health, security and general welfare of all the people of the state, and a public purpose, to increase job opportunities and otherwise to encourage the economic growth of the state, including the development of its natural resources, by granting a public corporation with power, duties and functions as provided in this chapter.

(c) It is the purpose of this chapter to grant the authority with all powers necessary for the authority's acquisition, construction and operation of the project.

Sec. 44.55.020. Definitions. The following definitions shall apply throughout this act unless the context clearly requires otherwise:

(1) "Authority" means the Alaska Gas Liquids Authority established by this act;

(2) "Bonds" means any bonds of the authority issued under this act;

(3) "Cost" as applied to the project or any portion thereof financed under this act includes the cost of construction and acquisition of all lands, structures, real or personal property or rights or interests therein, rights of way, franchises, and interests acquired by the authority for the project; the cost of demolishing or removing any buildings or structures on land so acquired, including the costs of acquiring any lands to which the buildings or structures may be moved; the cost of all vehicles, furnishings, fixtures, machinery and equipment; financing charges; charges or premiums for insurance or bonds; interest prior to and during construction and, if judged advisable by the authority, for a period not exceeding five years after completion of the construction; provisions for working capital; reserves for principal and interest and for extensions, enlargements, additions and improvements; the cost of architectural, engineering, financial and legal services; plans, specifications, landscaping, site preparation, studies, surveys; estimates of cost and of revenues; administrative expenses; and any other expenses necessary or incident to the construction and acquisition of the project, the financing of the construction and acquisition and the placing of the project in operation;

(4) "Notes" means any notes of the authority issued under this act;

(5) "Project" means any facility or facilities designed for the conditioning of associated gas to provide marketable gas for delivery to the Alaska Natural Gas Transportation System and natural gas liquids for disposition by the authority, including facilities for the delivery of pentanes and heavier gas liquids to crude oil producers for shipment in the Trans Alaskan Pipeline System, transmission lines deemed necessary in connection therewith, any facilities determined by the authority to be necessary or desirable for the fractionating of natural gas liquids, and all real and personal property and rights or interest therein, improvements, pipelines, driveways, roads, approaches, pedestrian access roads, rights of way, railroad sidings, utilities, easements, vehicles, furniture, fixtures, machinery and equipment, and other similar items necessary or convenient for the operation of any of such facilities in the manner for which its use is intended and all other appurtenances and facilities either on, above or under the ground which are used or usable in connection with any such facilities;

(6) "Prudhoe Bay Natural Gas" means gas and related natural gas liquids derived from the Prudhoe Bay reservoir.

Sec. 44.55.030. Creation of authority. There is hereby created the Alaska Gas Liquids Authority. The authority is a public corporation and a political subdivision of the state. It is an instrumentality of the state within the Department of Revenue, but has a legal existence independent of and separate from the state. Exercise by the authority of the powers conferred by this chapter is an essential governmental function of the state.

Sec. 44.55.040. Membership. The membership of the authority consists of the commissioner of revenue, the commissioner of commerce and economic development, the commissioner of natural resources and the commissioner of transportation. The commissioner of revenue is chairman of the authority. If a member is unable for any reason to attend a meeting of the authority, the member may, by a written instrument filed with the authority, designate a person within his department to act in the member's place at the meeting. For all purposes of this chapter, the designee is a member of the authority at the meeting.

Sec. 44.55.050. Officers and quorum. The members of the authority may elect other officers. Three members constitute a quorum. Action may be taken and motions and resolutions adopted by the authority at a meeting by the affirmative vote of at least three members.

Sec. 44.55.060. Compensation. The members of the authority serve without compensation but are entitled to the same travel pay and per diem as provided by law for board members who are state employees.

Sec. 44.55.070. Staff. The authority may employ an executive director who may, with the approval of the authority, select and employ additional staff as necessary. Employees of the authority are in the exempt service under AS 39.25.110. In addition to its staff of regular employees, the authority may contract for and engage the services of bond counsel, consultants, experts, and financial advisors the authority considers necessary for the purpose of developing information, furnishing advice, or conducting studies, investigations, hearings, or other proceedings.

Sec. 44.55.080. Legal counsel. The attorney general is the legal counsel for the authority. He shall advise the corporation in legal matters and represent it in legal actions.

Sec. 44.55.090. General Powers. The authority has the following powers for carrying out the purposes of this act:

- (1) To sue and be sued in its own name and plead and be impleaded and to litigate or adjust, compromise or settle all claims or litigation in which it may be involved;

- (2) To adopt an official seal and alter the same at pleasure;

- (3) To adopt and amend bylaws for the management and regulation of its affairs and make, alter and enforce rules and regulations for the conduct of its business and for use of its services and facilities;

- (4) To maintain an office or offices at any place or places within the state;

(5) To acquire, hold, use and dispose of its income, revenues, funds and moneys;

(6) To acquire, construct, reconstruct, purchase, hold, maintain, repair, operate, lease as lessor or lessee, dispose of and use any real or personal property or any interest therein necessary, convenient or desirable to carry out the purpose of this chapter, including, without limiting the generality of the foregoing, to sell, transfer, donate, convey or encumber in any manner by mortgage or by creation of any other security interest any property or interest therein at any time required by it in the exercise of its powers; to enter into contracts for any or all of those purposes; to enter into contracts for the management and operation of the project and to designate an agent to acquire, construct, reconstruct, purchase, hold, maintain, repair, operate, lease as lessor or lessee, and regulate the same; and to designate an agent to enter into contracts for any of those purposes, including contracts for the management and operation of the project;

(7) To make plans, surveys, and studies necessary, convenient or desirable to the effectuation of the purposes and powers of the authority and to prepare recommendations with respect thereto;

(8) To make investigations with respect to the conditioning, transmission and pricing of Prudhoe Bay natural gas and to have subpoena powers in accordance with law in connection with any such investigations;

(9) To enter upon such lands, waters, or premises as in the judgment of the authority may be necessary, convenient or desirable for the purpose of making surveys, soundings, borings and examinations to accomplish any purpose authorized by this chapter;

(10) To borrow money and to issue its negotiable bonds or notes and to provide for the payment thereof and to provide for the rights of the holders thereof, and to purchase, hold and dispose of any of its bonds or notes;

(11) To fix and revise from time to time and charge and collect rents, fees and charges for the use of the project or of its services or facilities;

(12) To dispose of natural gas liquids on behalf of the state in the manner set forth in AS 38.06 and to receive on behalf of the state revenues derived from the sale or other disposition of natural gas liquids transmitted through the project.

(13) To apply for and accept gifts or grants of property, funds, money, materials, labor, supplies or services from the United States of America or from any governmental unit or any person, firm or corporation, and to carry out the terms or provisions of or make agreements with respect to any gifts or grants, and to do any and all things necessary, useful, desirable or convenient in connection with procuring, acceptance or disposition of gifts or grants;

(14) To do anything authorized by this act, through its officers, agents or employees or by contract with any person, firm, corporation or the state;

(15) To enter into and enforce all contracts, agreements or leases necessary, convenient or desirable for the purposes of the authority or to the performance of its duties and the execution or carrying out of any of its powers under this chapter including the operation and management of any portion of the project;

(16) To employ consulting engineers, architects, superintendents, managers, and such other employees and agents as are necessary or desirable in its judgment to carry out its powers or purposes or to do anything authorized by this chapter, and to designate their responsibilities and fix their compensation;

(17) To invest any funds or moneys of the authority in the same manner as permitted for investment of funds belonging to the state or held in the treasury, except as otherwise provided by this chapter and subject to agreements with bondholders;

(18) To do all things necessary, convenient or desirable to carry out the purposes of this act or the powers expressly granted or necessarily implied in this chapter.

Sec. 44.55.100. Acquisition of Land; Power of Eminent Domain. The Authority is empowered to acquire rights of way, approaches and all lands necessary for the project by gift or purchase or by condemnation in the manner provided by law for the taking of private property.

Sec. 44.55.110. Bonds or notes. The authority is hereby authorized to provide by resolution, at one time or from time to time, for the issuance of its bonds or notes for the purpose of paying the cost of the project or for any of its other corporate purposes, including the refunding of bonds or notes. Except as otherwise provided herein or by the authority, every issue of bonds or notes shall be general obligations of the authority payable out of any revenues or funds of the authority, subject only to any agreements with the holders of particular bonds or notes pledging any particular revenues or funds. Any bonds or notes may be additionally secured by a pledge of any grant or contributions from the United States of America or the state, or any governmental unit or any person, firm or corporation or a pledge of any income or revenues, funds or moneys of the authority from any source whatsoever.

Sec. 44.55.120. Form of Issuance. (a) Bonds or notes shall be authorized by resolution of the authority, and shall be dated and shall mature as the resolution may provide, except that no bond shall mature more than 40 years from the date of its issue. Bonds or notes shall bear interest at the rate or rates, be in the denominations, be in the form, either coupon or registered, carry the registration privileges, be executed in the manner, be payable in the medium of payment, at the place or places, and be subject to the terms of redemption which the resolution or a subsequent resolution may provide.

(b) All bonds or notes, regardless of form or character, shall be negotiable instruments for all the purposes of the Uniform Commercial Code.

(c) All bonds or notes may be sold at public or private sale in the manner, for the price or prices, and at the time or times which the authority may determine.

(d) The superior court shall have jurisdiction to hear and determine suits, actions or proceedings relating to the authority, including suits, actions or proceedings brought to foreclose or otherwise enforce a mortgage, pledge, assignment

or security interest or brought by or for the benefit or security of a holder of its bonds or notes or by a trustee for or other representative of the holders.

Sec. 44.55.130. Payment or Refunding of Notes. The authority may from time to time issue its notes under this act and pay and retire or fund or refund the notes from proceeds of bonds or of other notes, or from any other funds or moneys of the authority available for that purpose in accordance with any contract between the authority and the holders of the notes. Unless provided otherwise in any contract between the authority and the holders of notes, and unless the notes are otherwise paid, funded or refunded, the proceeds of any bonds of the authority issued, among other things, to fund any outstanding notes, shall be held, used and applied by the authority to the payment and retirement of the principal of the notes and the interest due and payable thereon.

Sec. 44.55.140. Bonds or Notes as Legal Investment. Notwithstanding any other law, the state and all public officers, governmental units and agencies thereof, all banks, trust companies, savings banks and institutions, building and loan associations, savings and loan associations, investment companies, and other persons carrying on a banking business, all insurance companies, insurance associations and other persons carrying on an insurance business, all credit unions, and all executors, administrators, guardians, trustees and other fiduciaries, may legally invest any sinking funds, moneys or other funds belonging to them or within their control in any bonds or notes issued under this act, and the bonds or notes are authorized security for any and all public deposits.

Sec. 44.55.150. Tax Exemption. (a) All property of the authority is public property devoted to an essential public and governmental function and purpose and is exempt from all taxes, franchise fees and special assessments of whatever nature of the state or any subdivision thereof. All bonds or notes issued under this act are issued by a body corporate and public of this state and for an essential public and governmental purpose and those bonds and notes, and the interest thereon and the income therefrom, and all activities of the authority and fees, charges, funds, revenues, incomes and other moneys of the authority whether or not pledged or available to pay or secure the payment of those bonds or notes,

or interest thereon, are exempt from all taxation, franchise fees or special assessments of whatever kind except for transfer, inheritance and estate taxes.

(b) The authority shall not be required to make or file any reports, statements or informational returns required on any other bodies corporate except as provided in this chapter.

Sec. 44.55.160. Terms of Agreement with Bond or Noteholder. (a) In the discretion of the authority any bonds or notes issued under this act may be secured by a trust agreement by and between the authority and a corporate trustee, which may be any trust company or bank having the powers of a trust company within or without the state. The authority in such trust agreement or the resolution of the authority authorizing, or relating to the issuance of any bonds or notes, in order to secure the payment of the bonds or notes and in addition to its other powers, may covenant and contract with the holders of the bonds or notes:

(1) To pledge to any payment or purpose all or any part of its revenues to which its right then exists or may thereafter come into existence, including revenues derived on behalf of the state from the sale of natural gas liquids free and clear of any royalty encumbrance to which the state is entitled, and the moneys derived therefrom, and the proceeds of any bonds or notes;

(2) To covenant against pledging all or any part of its revenues, or against permitting or suffering any lien on those revenues;

(3) To covenant as to the establishment of funds and accounts deemed appropriate including reserves and sinking funds, the making of provision for them, and the regulation and disposition thereof;

(4) To covenant with respect to or against limitations on any right to sell or otherwise dispose of any property of any kind;

(5) To covenant as to any bonds and notes to be issued and their limitations and their terms and conditions and as to the custody, application and disposition of their proceeds;

(6) To covenant as to the issuance of additional bonds or notes or as to limitations on the issuance of additional bonds or notes and on the incurring of other debts;

(7) To covenant as to the payment of the principal of or interest on the bonds or notes, as to the sources and methods of payment, as to the rank or priority of any bonds or notes with respect to any lien or security or as to the acceleration of the maturity of any bonds or notes;

(8) To provide for the replacement of lost, stolen, destroyed or mutilated bonds or notes;

(9) To covenant against extending the time for the payment of bonds or notes or interest thereon;

(10) To covenant as to the redemption of bonds or notes and privileges of exchange thereof for other bonds or notes of the authority;

(11) To covenant as to any rates, rents or charges to be established and charged and collected, the amount to be raised each year or other period of time by rates, rents or charges or other revenues and as to the use and disposition to be made thereof;

(12) To covenant to create or authorize the creation of special funds or moneys to be held in pledge or otherwise for operating expenses, payment or redemption of bonds or notes, reserves or other purposes and as to the use and disposition of the moneys held in those funds;

(13) To establish the procedure, if any, by which the terms of any contract or covenant with or for the benefit of the holders of bonds or notes may be amended or abrogated, the amount of bonds or notes the holders of which must consent thereto, and the manner in which the consent may be given;

(14) To covenant as to the custody of any of its properties or investments, the safekeeping thereof, the insurance to be carried thereon, and the use and disposition of insurance moneys;

(15) To covenant as to the time or manner of enforcement or restraint from enforcement of any rights of the authority arising by reason of or with respect to nonpayment of any rates, rents or charges;

(16) To provide for the rights and liabilities, powers and duties arising upon the breach of any covenant, condition or obligation and to prescribe the event of default and the terms and conditions upon which any or all of the bonds, notes or other obligations of the authority shall become or may be declared due and payable before maturity and the terms and conditions upon which the declaration and its consequences may be waived;

(17) To vest in a trustee or trustees within or without the state such property, rights, powers and duties in trust as the authority may determine, which may include any of the rights, powers and duties of any trustee appointed by the holders of any bonds or notes and to limit or abrogate the right of the holders of any bonds or notes of the authority to appoint a trustee under this act or limiting the rights, powers and duties of the trustee;

(18) To pay the costs or expenses incident to the enforcement of the bonds or notes or of the resolution or of any covenant or agreement of the authority with the holders of its bonds or notes;

(19) To agree as to the pledging or assigning of any revenues or funds to which the authority has any rights or interest, and may further provide for such other rights and remedies exercisable by the trustee as may be proper for the protection of the holders of any bonds or notes of the authority and not otherwise in violation of law, and which agreement may provide for the restriction of the rights of any individual holder of bonds or notes of the authority;

(20) To appoint and to provide for the duties and obligations of a paying agent or paying agents, or such other fiduciaries as the resolution may provide within or without the state;

(21) To limit the rights of the holders of any bonds or notes to enforce any pledge or covenant securing bonds or notes; and

(22) To make covenants other than and in addition to the covenants herein expressly authorized, of like or different character, and to make covenants to

do or refrain from doing such things as may be necessary, or convenient and desirable, in order to better secure bonds or notes or which, in the absolute discretion of the authority, will tend to make bonds or notes more marketable, notwithstanding that the covenants or things may not be enumerated herein.

(b) If the bonds or notes of the authority are secured by a trust agreement or by the appointment of a trustee pursuant to any resolution authorizing the bonds or notes, the bond or noteholders shall have no authority to appoint a separate trustee to represent them.

Sec. 44.55.170. Purchase and Disposition of Own Obligations. The authority may purchase bonds or notes of the authority out of any of its funds or money available therefor. The authority may hold, cancel or resell the bonds or notes subject to and in accordance with agreements with holders of its bonds or notes.

Sec. 44.55.180. Revenues. (a) The authority is authorized to fix, revise, charge, and collect fees and charges for the use of the project or any portion or facility thereof and for the services furnished or to be furnished in connection therewith and to contract with the state or any agency or instrumentality thereof or with any person, partnership, association or corporation, or other body, public or private, in respect thereof. The fees and charges shall be fixed and adjusted in respect of the aggregate of fees and charges from the project so as to provide funds sufficient with other revenues, if any:

(1) To pay the cost of maintaining, insuring, repairing, and operating the project and each and every portion thereof, to the extent that the authority has not otherwise adequately provided for the maintenance, insurance, repair and operation of the project or for the payment of such cost;

(2) To pay the principal of and the interest and redemption premium, if any, on outstanding bonds or notes of the authority issued in respect of the project as the same become due and payable; and

(3) To create and maintain reserves required or provided for in any resolution authorizing, or trust agreement securing, such bonds, or notes of the authority. The fees and charges shall not be subject

to supervision or regulation by any department, commission, board, body, bureau or agency of the state other than the authority.

(b) A sufficient amount of the revenues derived in respect of the project, except such part of the revenues as may be necessary to pay the cost of maintenance, repair, and operation and to provide reserves and for the renewals, replacements, extensions, enlargements, and improvements as may be provided for in the resolution authorizing the issuance of any bonds or notes of the authority or in the trust agreement securing the same, shall be set aside at such regular intervals as may be provided in the resolution or trust agreement in a sinking or other similar fund which is hereby pledged to, and charged with, the payment of the principal of and the interest on the bonds or notes as the same become due, and the redemption price or the purchase price of bonds or notes retired by call or purchase as therein provided. The pledge shall be valid and binding from the time when the pledge is made; the fees and charges, and other revenues or other moneys so pledged and thereafter received by the authority are immediately subject to the lien of the pledge without any physical delivery thereof or further act, and the lien of any pledge is valid and binding as against all parties having claims of any kind in tort, contract, or otherwise against the authority, irrespective of whether the parties have notice thereof. Neither the resolution nor any trust agreement by which a pledge is created need be filed or recorded except in the records of the authority. The use and disposition of moneys to the credit of the sinking or other similar fund shall be subject to the provisions of the resolution authorizing the issuance of the bonds or notes or of the trust agreement. Except as otherwise provided in the resolution or trust agreement, the sinking or other similar fund shall be a fund for all the bonds or notes issued to finance the project without distinction or priority of one over another. However, the authority in the resolution or trust agreement may permit and provide for the issuance of bonds or notes having a subordinate lien in respect of the security herein authorized to other bonds or notes of the authority and, in that case, the authority may create separate sinking or other similar funds in respect of the subordinate lien bonds or notes.

Sec. 44.55.190. Funds and Accounts. The authority may establish such reserves or other funds or accounts as may be, in its discretion, necessary, desirable or convenient to further the accomplishment of its purposes or to

comply with the provisions of any of its agreements or resolutions. All moneys received by the authority pursuant to this act whether as proceeds from the sale of bonds or notes or as revenues, rates, rents, fees or charges are trust funds to be held and applied solely as provided in this act. Any officer with whom, or any bank or trust company with which, the moneys are deposited shall act as trustee of the moneys and shall hold and apply them for the purposes of this act, subject to such regulations as this act and the resolution authorizing any bonds or notes of the authority or the trust agreement securing the bonds or notes may provide.

Sec. 44.55.200. Default in Payment. If the authority defaults in the payment of principal or interest on any of its bonds or notes of any series after they become due, whether at maturity or upon call for redemption, and the default continues for thirty days, or if the authority fails or refuses to comply with this act or defaults in any agreement made with the holders of the bonds or notes of the series, the holders of twenty-five per centum in aggregate principal amount of the outstanding notes or bonds of the series as to which any default is claimed, upon thirty days' notice in writing to the authority, by an instrument in writing filed in the office of the District Recorder, Juneau Recording District and executed and acknowledged in the same manner as a deed of real estate to be recorded, may, subject to the limitation in Section 160 of this act appoint a trustee to represent the holders of those notes or bonds for the purposes herein provided.

Sec. 44.55.210 Action on Default. (a) A trustee appointed under section 160(a)(17) of this act may, and shall in his or its name, upon written request of the holders of twenty-five per centum in principal amount of the outstanding notes or bonds of the series as to which a default has occurred:

(1) By mandamus or other suit, action or proceeding at law or in equity, enforce all rights of the noteholders or bondholders of the series in default, including the right to require the authority to collect rates, charges and other fees adequate to carry out any agreement as to, or pledge of, the rate, charges and other fees and of the interest and amortization payments, and to require the authority to carry out any other agreements with the holders of the notes or bonds of the series in default and to perform its duties under this act.

(2) Bring suit upon the notes or bonds of the series in default;

(3) By action or suit, require the authority to account as if it were the trustee of an express trust for the holders of the notes or bonds of the series in default;

(4) By action or suit in equity enjoin anything which may be unlawful or in violation of the rights of the holders of the notes or bonds of the series in default;

(5) Declare, upon thirty days notice in writing to the authority, all the notes or bonds of the series in default due and payable, and if all defaults are made good, then with the consent of the holders of twenty-five per centum of the principal amount of the outstanding notes or bonds of the series in default, annul the declaration and its consequences;

(6) The trustee shall in addition to the foregoing have all the powers necessary for the exercise of any functions specifically set forth herein or incident to the general representation of the bondholders or noteholders of the series in default in the enforcement and protection of their rights.

(b) The bondholders or noteholders of any series of outstanding bonds or notes of the authority which shall be in default may exercise in their own right without the appointment of a trustee any of the powers or rights described in subsection (a) of this section, subject to the limitation of section 13(b) of this act.

Sec. 44.55.220. Cooperation by Government Agencies; Cost. All officers, departments, boards, agencies, divisions and commissions of the state may render any services to the authority as are within the area of their respective governmental functions as fixed by law and as may be requested by the authority. The cost and expense of any services requested by the authority shall, at the request of the officer, department, board, agency, division or commission rendering the service, be paid for by the authority.

Sec. 44.55.230. Annual Report; Audit. (a) On or before the last day of January in each year the authority shall make a report of its activities for the preceding calendar year

to the governor and to the Legislature. Each report shall set forth a complete operating and financial statement covering its operations during the year and shall contain a full and complete statement of the authority's anticipated budget and operations for the ensuing year. The authority shall cause an audit of its books and accounts to be made at least once in each year by certified public accountants and the cost thereof shall be considered an expense of the authority and a copy thereof shall be filed with the state treasurer.

(b) The legislative Budget and Audit Committee (or its authorized representatives) may at any time examine the accounts and books of the authority including its receipts, disbursements, contracts, sinking funds, investments and any other matters relating to its financial standing.

Sec. 44.55.240. Personal Liability. Neither the members of the authority nor any person executing the bonds or notes issued under this act are liable personally on the bonds or notes.

Sec. 44.55.250. Law Governing. It is the intent of the Legislature that in the event of any conflict or inconsistency in the provisions of this act and any other laws pertaining to matters herein established or provided for or in any rules adopted under this act or other laws, to the extent of that conflict or inconsistency the provisions of this act shall be enforced and the provisions of the other laws and rules adopted thereunder shall be of no effect.

Sec. 44.55.260. Liberal Construction. This act shall be construed liberally to effectuate the legislative intent and the purposes of this act as complete and independent authority for the performance of each and every act and thing herein authorized and all powers herein granted shall be broadly interpreted to effectuate that intent and the purposes of this act and not as a limitation of powers.

Sec. 44.55.270. Presumption of Validity. After issuance, all bonds or notes of the authority shall be conclusively presumed to be fully authorized and issued in conformity with all the laws of this state and all persons shall be estopped from questioning their authorization, sale, issuance, execution or delivery by the authority.

APPENDIX B

MEMORANDUM

Hawkins, Delafield & Wood
67 Wall Street, New York 10005

(Area Code 212) 952-4700

Cable Address: "Hawdel New York"

M E M O R A N D U M

We have been asked to consider whether interest on bonds issued to finance the construction of a natural gas conditioning facility and a gas liquids distribution and fractionation system (the "Project") would be excludable from Federal income taxation under section 103(a)(1) of the Internal Revenue Code of 1954, as amended (the "Code") and the regulations promulgated thereunder (the "Regulations").

In order to reach any conclusion in respect of this question it is necessary to make certain assumptions regarding the scope of the legislation which will be enacted to authorize the construction, financing and operation of the Project, including the type of bonds to be issued to finance the Project, and the security therefor, and the plans for the operation of the facilities and the sale or other disposition of the natural gas liquids. The facts to the extent now known or assumed for the purpose of this discussion follow.

Facts and Assumptions

The discovery of oil at Prudhoe Bay in 1969 revealed the presence of approximately 26 trillion cubic feet of recoverable associated gas. The associated gas contains in addition to methane, approximately 13 percent carbon dioxide, 13 percent natural gas liquids and minor quantities of sulfur compounds.

If marketable natural gas is to be transported to the Canadian border by the 48" 1260 psig pipeline approved by the Federal Energy Regulatory Commission ("FERC"), the carbon dioxide, sulfur compounds and most of the gas liquids must be removed and a small portion of gas liquids must be blended with methane to produce marketable natural gas at a conditioning plant located at Prudhoe Bay (the "Conditioning Plant"). (If a higher operating pressure pipeline is approved the Conditioning Plant can be located at an interior Alaska site.) The State of Alaska has indicated its willingness to participate in the financing of the gas pipeline, the Alaska Northwest Gas Transportation System ("ANGTS"), through the financing of the natural gas conditioning facility, an essential part of ANGTS. ANGTS is expected to be licensed as a common carrier.

The State of Alaska has expressed interest in the development of a petrochemical industry in Alaska. The natural gas liquids include ethane, propane and butane which constitute feedstocks for the petrochemical industry. The State of Alaska presently has a 12.5 percent royalty share in all hydrocarbons produced in Alaska. Quantities of gas liquids adequate to foster an instate petrochemical industry could be secured by the State by trades of methane for gas liquids or purchase agreements for gas liquids with the producer companies. After extraction from the associated gas at the Conditioning Plant these gas liquids could be directed by a pipeline to fractionation facilities to be located at tidewater or other petrochemical plant sites. The gas liquids would there be

broken down into propane, butane and ethane and sold either as fuel stocks or petrochemical feedstocks.

It has been proposed that the Alaska State Legislature amend the existing Alaska Gas Pipeline Authority Act to create a successor authority (the "Authority") as a public corporate agency and instrumentality of the State empowered to issue its bonds to finance the Project, to own and operate the Project and to fix rates and tariffs for the use of the Project or the sale of the gas liquids on behalf of the State of Alaska. The Authority would be empowered to enter into contracts for the construction, operation and management of the Project. The Authority would also have powers of eminent domain to acquire property enabling it to accomplish its corporate purposes.

Revenues for the payment of operating costs and debt service on the bonds to be issued to finance the Project will be payable from two, or possibly three, sources. First, all users of the ANGTS pipeline will pay a service fee for the conditioning of gas (to the extent that conditioning is in fact required). This fee will be established on a tariff basis. Second, substantial revenues are expected to be derived from the sale of gas liquids to petrochemical companies at a price roughly equivalent to the wellhead price of the gas liquids plus a service fee for their conditioning and extraction, transportation and fractionation. Third, there is a possibility that a portion of the oil royalty funds of the

State of Alaska may be made available on a backup basis for debt service if appropriated for that purpose by the legislature.

The sale of the State's royalty resources, including gas liquids, is governed by procedures established by the Alaska Royalty Oil and Gas Development Advisory Act which require the solicitation of bids by the Commissioner of Natural Resources, the approval of the Advisory Board and legislative concurrence. This or a similar procedure will be followed for sales of gas liquids. Specific terms of such sales contracts have not yet been determined.

No producer of gas is now, and we understand that there is no reason why any such producer must become, legally obligated to deliver gas to the Conditioning Plant, which is to say that if new gas production requiring no conditioning (e.g., from Kuparik Field) became available or if alternate technologies were found or developed the Conditioning Plant could be bypassed altogether.

The Authority is expected to enter into management contracts for the operation of both the Conditioning Plant and the gas liquids transportation and fractionation facility, perhaps with the joint venture to be established by Earth Resources Co. of Alaska and the Lummus Company (the "Joint Venture"). It is proposed at this time that such a contract would likely provide for the

recovery of costs plus a fixed fee and would run for a term of 20 years, cancellable on 2 years' notice by either party.

Discussion of Code and Regulations

Section 103(a)(1) of the Code* provides that interest derived from obligations issued by a state or any of its political subdivisions is excludable from the gross income of the bondholder. The term "political subdivision" includes a state instrumentality which has been created for a public purpose and which is authorized to execute a portion of the sovereign power of the state. The Authority would be an agency and instrumentality of the State, and, if invested with substantial powers of eminent domain, should be considered a political subdivision for Federal income tax purposes. However, whether deemed to be a political subdivision or, alternatively, an arm or a branch of the State of Alaska, interest on bonds issued by it to accomplish its statutory purposes would in the first instance be tax exempt.

The exclusion provided by section 103(a)(1) is not, however, absolute. Section 103(b)(1) provides that section 103(a)(1) shall not apply to interest on an industrial development bond. Section 103(b)(2) defines the term "industrial development bond" as any obligation:

*Hereinafter all references to section 103 are to such section of the Code.

applicable the trade or business test and security interest test do not apply except as there prescribed. See further discussion, infra. In the situation raised by the facts of this proposal it is not clear whether the output test will apply. A major revenue-generating aspect of the proposal will be the sale of the gas liquids produced by the Project, which could be considered part of the output of the two facilities. On the other hand, a major purpose of the Conditioning Plant is the performance of a service on gas owned at all times by non-exempt persons and which might not be considered the generation of an output. Because of the uncertainty with regard to which test applies, it is advisable to address all concerns raised by both the normal tests and the output test.

The Trade or Business Test

Section 1.103-7(b)(3) of the Regulations describes the trade of business test as follows:

(3) Trade or business test. (i) The trade or business test relates to the use of the proceeds of a bond issue. The test is met if all or a major portion of the proceeds of a bond issue is used in a trade or business carried on by a nonexempt person. For example, if all or a major portion of the proceeds of a bond issue is to be loaned to one or more private business users, or is to be used to acquire, construct, or reconstruct facilities to be leased or sold to such private business users, and such proceeds or facilities are to be used in trades or businesses carried on by them, such proceeds are to be used in a trade or business carried on by persons who are not exempt persons, and the debt obligations comprising the bond issue satisfy the trade or business test. If, however, less than a major portion of the proceeds of an issue is to be loaned to nonexempt persons or is to be used to acquire or construct facilities which will be used in a trade or business carried on by a nonexempt person, the debt obligations

will not be industrial development bonds. Also, when publicly-owned facilities which are intended for general public use, such as toll roads or bridges, are constructed with the proceeds of a bond issue and used by nonexempt persons in their trades or businesses on the same basis as other members of the public, such use does not constitute a use in the trade or business of a nonexempt person for purposes of the trade or business test.

(ii) In determining whether a debt obligation meets the trade or business test, the indirect, as well as the direct, use of the proceeds is to be taken into account. For example, the debt obligations comprising a bond issue do not fail to satisfy the trade or business test merely because the State or local governmental unit uses the proceeds to engage in a series of financing transactions for property to be used by private business users in trades or business carried on by them. Similarly, if such proceeds are to be used to construct facilities to be leased or sold to any nonexempt person for use in a trade or business it carries on, such proceeds are to be used in a trade or business carried on by a nonexempt person and the debt obligations comprising such issue satisfy the trade or business test. If such proceeds are to be used to construct facilities to be leased or sold to an exempt person who will, in turn, lease or sell the facilities to a nonexempt person for use in a trade or business, such proceeds are to be used in a trade or business carried on by a nonexempt person and the debt obligations comprising such issue satisfy the trade or business test. In addition, proceeds will be treated as being used in the trade or business of a nonexempt person in situations involving other arrangements, whether in a single transaction or in a series of transactions, whereby a nonexempt person uses property acquired with the proceeds of a bond issue in its trade or business.

(iii) The use of more than 25 percent of the proceeds of an issue of obligations in the trades or businesses of nonexempt persons will constitute the use of a major portion of such proceeds in such manner. In the case of the direct or indirect use of the proceeds of an issue of obligations or the direct or indirect use of a facility constructed, reconstructed, or acquired with such proceeds, the use by all nonexempt persons in their trades or businesses must be aggregated to determine whether the trade or business test is satisfied. If more than 25 percent of the proceeds of a bond issue is used in the trades or businesses of nonexempt persons, the trade or business test is satisfied. For special rules with respect to the acquisition of the output of facilities, see subparagraph (5) of this paragraph.

The above-quoted language indicates that the term "used in a trade or business carried on by a non-exempt person" is intended to be construed broadly. By implication, however, it does not reach a facility used solely in a trade or business of an exempt person. The proposed Project viewed as a whole will be used in the business of the State of Alaska of bringing to market the natural resources of that State. It will carry on this business by (1) separating from the associated gas the gas liquids, (2) separating the components of such liquids for ultimate sale to world markets and (3) conditioning methane for transportation to the lower 48 states as natural gas.

The conditioning process may raise some concern in connection with the concept of indirect use of bond proceeds in the trade or business of a non-exempt person. As noted above, section 1.103-7(b)(3)(ii) of the Regulations provide that the proceeds of an issue are considered used in a non-exempt person's trade or business if there exists an arrangement whereby a non-exempt person uses property acquired with the proceeds in its trade or business. It may be possible to argue based on this language that the gas producers using the pipeline are using the Conditioning Plant in their trades or businesses of selling and transporting natural gas. To the extent, however, that the gas pipeline will operate as a common carrier, the Conditioning Plant will likewise

serve anyone with gas to be transported and conditioned and thus does not benefit any specific non-exempt person to the exclusion of others and will arguably come within the ambit of the final sentence of section 1.103-7(b)(3)(i) quoted above.

It is clear that the broad trade or business language of the Regulations includes not only the use of bond proceeds to make a loan to a non-exempt person and to acquire, construct or reconstruct facilities to be leased or sold to such a person, but also to all other situations in which there is an arrangement whereby the bond proceeds could be said to be so used. Such an arrangement can arguably be found in a management contract entered into between an exempt person (normally the issuer of obligations) and a non-exempt person whereunder the latter will manage or operate facilities belonging to the former.

Although there is some reason to believe that in private unpublished rulings the Service at one time indicated that operation of a facility under a management contract would satisfy the trade or business test, there may have been a shift in the Service's position in recent years. While the extent of such shift has not, to our knowledge, been fully articulated, it is useful to note that the Service did approve a one-year, fixed-fee contract renewable at the option of the exempt person in a private letter ruling issued in 1978.

The proposal in the instant situation calls for a contract to be entered between a management contractor and the Authority under which a management contractor would operate and

manage the Project and would receive a management fee sufficient to compensate it for its costs and risks in operating the business. It has been proposed that the contract term be set for 20 years, cancellable by the Authority with notice to the management contractor. The notice provision will be stated in terms of the period required to achieve an orderly, nondisruptive transition, which is currently expected to be two years. Given the uncertainty surrounding the status of a management contract, it cannot be concluded that the arrangement will not meet the trade or business test unless the management contract provides for a one-year term (renewable at the option of the issuer) and a fixed fee. It is thus necessary to secure a ruling on any other set of contract terms to insure that the trade or business test is not met.

The Security Interest Test

Section 1.103-7(b)(4) of the Regulations describes the security interest test as follows:

(4) Security interest test. The security interest test relates to the nature of the security for, and the source of, the payment of either the principal or interest on a bond issue. The nature of the security for, and the source of, the payment may be determined from the terms of the bond indenture or on the basis of an underlying arrangement. An underlying arrangement to provide security for, or the source of, the payment of the principal or interest on an obligation may result from separate agreements between the parties or may be determined on the basis of all the facts and circumstances surrounding the issuance of the bonds. The property which is the security for, or the source of, the payment of either the principal or interest on a debt obligation need not be property acquired with bond proceeds. The security interest test is satisfied if, for example, a debt obligation is secured by unimproved

land or investment securities used, directly or indirectly, in any trade or business carried on by any private business user. A pledge of the full faith and credit of a State or local governmental unit will not prevent a debt obligation from otherwise satisfying the security interest test. For example, if the payment of either the principal or interest on a bond issue is secured by both a pledge of the full faith and credit of a State or local governmental unit and any interest in property used or to be used in a trade or business, the bond issue satisfies the security interest test. For rules with respect to the acquisition of the output of facilities see subparagraph (5) of this paragraph.

Furthermore, example (14) of section 1.103-7(c) of the Regulations illustrates that the security interest test will be satisfied if the issuer requires the revenues derived from the operation of the facility to meet debt service even though there is no direct arrangement securing the revenues for that purpose. Example (14) reads as follows:

Example (14). J, a political subdivision of a State will issue several series of bonds from time to time and will use the proceeds to rehabilitate urban areas. More than 25 percent of the proceeds of each issue will be used for the rehabilitation and construction of buildings which will be leased or sold to nonexempt persons for use in their trades or businesses. There is no limitation either on the number of issues or the aggregate amount of bonds which may be outstanding. No group of bondholders has any legal claim prior to any other bondholders or creditors with respect to specific revenues of J, and there is no arrangement whereby revenues from a particular project are paid into a trust or constructive trust, or sinking fund, or are otherwise segregated or restricted for the benefit of any group of bondholders. There is, however, an unconditional obligation by J to pay the principal and interest on each issue of bonds. Further, it is apparent that J requires the revenues from the lease or sale of buildings to nonexempt persons in order to pay in full the principal and interest on the bonds in question. The bonds are industrial development bonds because a major portion of the proceeds will be used in the trades or businesses of nonexempt persons and, pursuant to an underlying arrangement, payment of the principal and interest is, in major part, to be derived from payments in respect of property or borrowed money used in the trades or businesses of nonexempt persons.

The substance of the above quoted regulation and example is that if the revenues of the Project are pledged to meet debt service on the bonds issued to finance it, or if such revenues will be needed to meet such debt service, the security interest test will be met. As the example makes clear, one or the other of these results will be found to exist by reason of any kind of "arrangement" which can be said to have such effect. Since we do not have any information as to how the bonds are to be supported, we are unable to advise as to whether or not the security interest test will be met. In view of the nature of the Project, we consider it more likely that the Project is not one to which the above rules are applicable, but rather that it will constitute the type of facility governed by section 1.103-7(b)(5) of the Regulations, and, at bottom, that the applicability of both the trade or business test and the security interest test will be controlled by the provisions thereof.

The Subparagraph (5) Output Test

Section 1.103-7(b)(5) of the Regulations establishes a test, satisfaction of which will meet both the trade or business test and the security interest test of section 103(b)(1) of the Code. This test applies when one or more non-exempt persons use the output of facilities such as electric energy, gas or water facilities constructed or acquired with bond proceeds. This section provides:

(5) Trade or business test and security interest test with respect to certain output contracts. (i) The use by one or more nonexempt persons of a major portion of the subparagraph (5) output of facilities such as electric energy, gas, or water facilities constructed, reconstructed, or acquired with the proceeds of an issue satisfies the trade or business test and the security interest test if such use has the effect of transferring to nonexempt persons the benefits of ownership of such facilities, and the burdens of paying the debt service on governmental obligations used directly or indirectly to finance such facilities, so as to constitute the indirect use by them of a major portion of such proceeds. Such benefits and burdens are transferred and a major portion of the proceeds of an issue is used indirectly by the users of the subparagraph (5) output of such a facility which is owned and operated by an exempt person where --

(a) (1) One nonexempt person agrees pursuant to a contract to take, or to take or pay for, a major portion (more than 25 percent) of the subparagraph (5) output (within the meaning of subdivision (ii) of this subparagraph) of such a facility (whether or not conditional upon the production of such output) or (2) two or more nonexempt persons, each of which pays annually a guaranteed minimum payment exceeding 3 percent of the average annual debt service with respect to the obligations in question, agree, pursuant to contracts, to take, or to take or pay for, a major portion (more than 25 percent) of the subparagraph (5) output of such a facility (whether or not conditioned upon the production of such output), and

(b) Payment made or to be made with respect to such contract or contracts by such nonexempt person or persons exceeds a major part (more than 25 percent) of the total debt service with respect to such issue of obligations.

For purposes of the quoted passage the "subparagraph (5) output" of a facility means the number of units produced or to be produced by the facility in one year multiplied by the number of years between the date that the output of such facility is first taken, pursuant to a take or take or pay

contract, by a non-exempt person and ending on the last maturity date of any obligation issued to provide the facility. Further, the "total debt service with respect to an issue of obligations" means the total dollar amount payable with respect to such issue over its entire term.

Assuming that the output test does apply, the focus of the analysis will be on the contracts entered into between the Authority and the producers for the conditioning of the gas, and, as is more likely to be of importance, between the Authority and the purchasers of gas liquids. Given the early stage of development of the proposal very little is yet known about the types of contracts which will be ultimately involved. It must be emphasized that not more than 25 percent of the output can be sold under contracts "to take or to take or pay for" such output. This rule is illustrated by example (13) of the Regulations:

Example (13). In order to construct an electric generating facility of a size sufficient to take advantage of the economics of scale: (1) City H will issue \$50 million of its 25-year bonds and Z (a privately owned electric utility) will use \$100 million of its funds for construction of a facility they will jointly own as tenants in common. (2) Each of the participants will share in the ownership, output, and operating expenses of the facility in proportion to its contribution to the cost of the facility, that is, one-third by H and two-thirds by Z. (3) H's bonds will be secured by H's ownership in the facility and by revenues to be derived from the sale of H's share of the annual output of the facility. (4) Because H will need only 50 percent of its share of the annual output of the facility, it agrees to sell to Z 25 percent of its share of such annual output for a period of 20 years pursuant to a contract under which Z agrees to take or pay for such power in all events. The facility will begin operation, and Z will begin to receive power, 4 years after the City H obligations are issued. The contract term of the issue will, therefore, be 21 years. (5) H also agrees to sell the remaining 25

percent of its share of the annual output to numerous other private utilities under a prevailing rate schedule including demand charges. (6) No contracts will be executed obligating any person other than Z to purchase any specified amount of the power for any specified period of time and no one such person (other than Z) will pay a demand charge or other minimum payment under conditions which, under paragraph (b)(5) of this section, result in a transfer of the benefits of ownership and the burdens of paying the debt service on obligations used directly or indirectly to provide such facilities. The bonds are not industrial development bonds because H's one-third interest in the facility (financed with bond proceeds) shall be treated as a separate property interest and, although 25 percent of H's interest in the annual output of the facility will be used directly or indirectly in the trade or business of Z, a nonexempt person, under the rule of paragraph (b)(5) of this section, such portion constitutes less than a major portion of the subparagraph (5) output of the facility. If more than 25 percent of the subparagraph (5) output of the facility were to be sold to Z pursuant to the take or pay contract, the bonds would be industrial development bonds since they would be secured by H's ownership in the facility and revenues therefrom, and under the rules of paragraph (b)(5) of this section a major portion of the proceeds of the bond issue would be used in the trade or business of Z, a nonexempt person.

A "contract to take or to take or pay for" is generally understood to refer to a contract which requires the purchaser to take in all events a specified part of the output or, even if the output is not available, to pay the purchase price attributable thereto. This type of contract has the effect of transferring to the purchaser the benefits of ownership and the burdens of debt service.

If the output test is ultimately found to apply, the challenge will be to reconcile the desire of the bondholder to have as much guarantee of security for the payment of debt service as possible with the need to avoid the use of

"contracts to take or take or pay for." Attendant realities suggest that despite its willingness to participate in the financing of ANGTS and, in particular, the Conditioning Plant, the State of Alaska, acting through the Authority, will attempt to avoid a sizable drain on revenues attributable to its royalty share interest in the associated gas, and that actual State involvement will ultimately turn on the ability to service the Authority's debt without need of drawing on or pledging a significant percentage of such revenues. Alternatively, if the State is prepared to commit itself unreservedly toward financing the Project, it will likely be willing to make available other funds, e.g., oil royalties, in substitution for or in conjunction with, a portion of liquid gas revenues. In either event, there is ample reason to believe that the use of contracts to take or take or pay for output of the Project can be handled in a manner that will conform both to vital economic interests of the State of Alaska and to applicable requirements of the Code and Regulations.

Conclusion

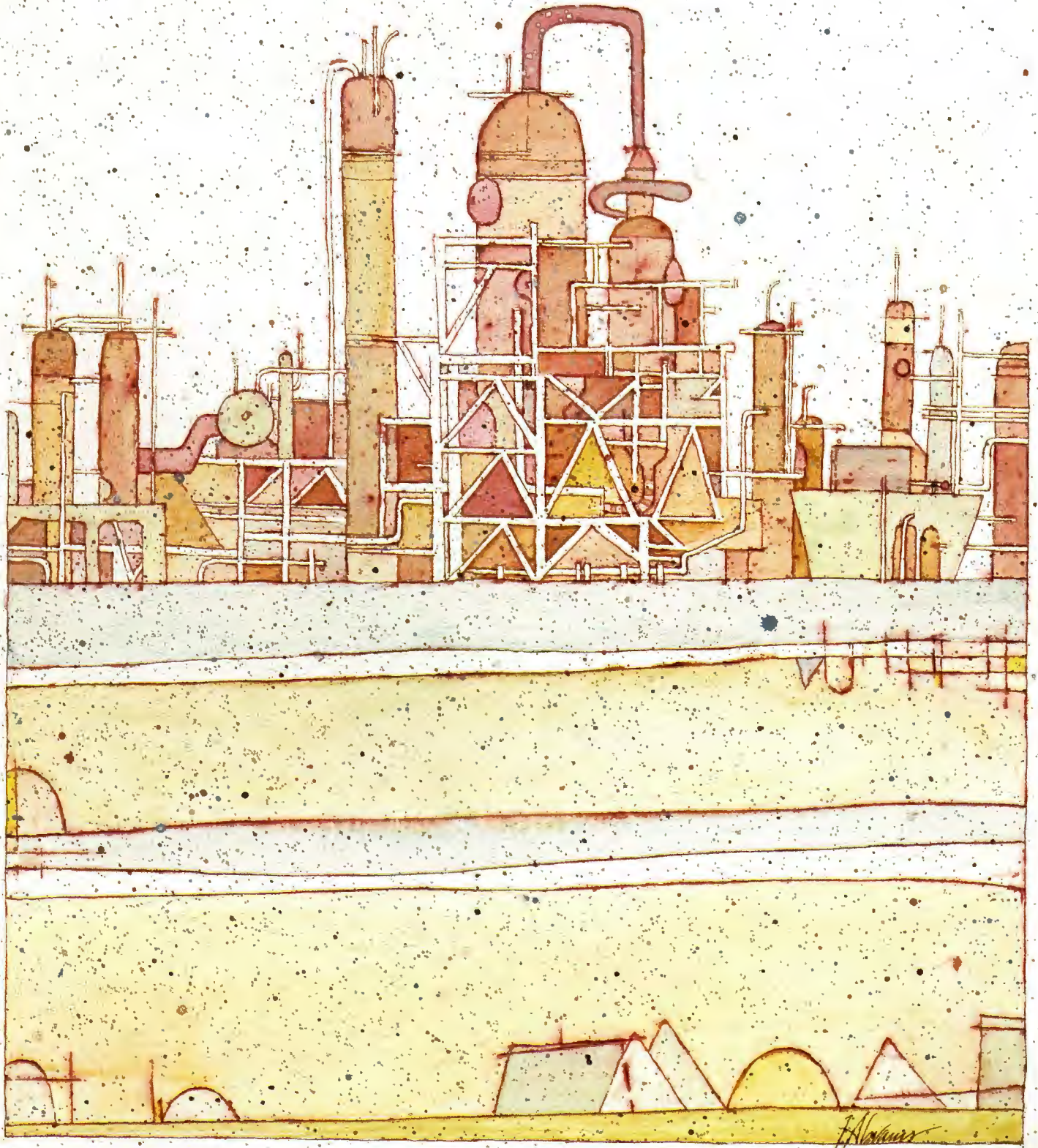
Based upon the above assumptions of fact and discussions of applicable law, we conclude that it is more likely than not that upon proper application a ruling letter would be issued by the Internal Revenue Service holding that the interest on bonds proposed to be issued by the Authority con-

stituting a political subdivision of the State to finance the construction of the natural gas conditioning facility and the gas liquids pipeline and fractionation system will be exempt from Federal income tax under section 103 of the Internal Revenue Code of 1954, as amended.

HAWKINS, DELAFIELD & WOOD

January 24, 1980

EARTH RESOURCES



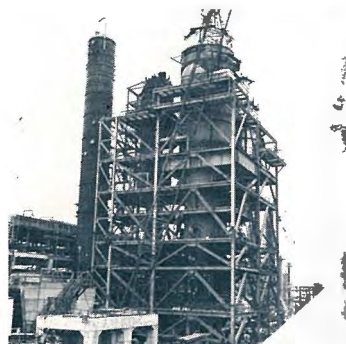
Corporate Profile

Earth Resources Company's principal businesses are the refining and marketing of petroleum products. It is also engaged in other facets of energy and resource development. ERC's Memphis refinery will double its gasoline capacity by summer 1980 to benefit customers throughout the mid-South, including 230 ERC stations in eight states. ERC also operates the only refinery in the Alaskan Interior, near Fairbanks; an Anchorage paving materials and road building firm, a Mississippi River fleet transporting petroleum products, and an Idaho silver and gold mine (subject to sale; see page 17). The common stock of Earth Resources Company is traded on the American Stock Exchange and the Pacific Stock Exchange, with the symbol ERC.

EARTH RESOURCES

1979 Annual Report

Year Ending August 31, 1979



The breadth of Delta Refining Company's \$70-million modernization is captured in this photo of construction at the midway point, with the project ahead of schedule. See page 5.



Nearly a million gallons of fuel a month flow into the tanks of hurrying, economy-minded truckers and motorists pulling into this ERC Interstate Fuelstop in northeastern Tennessee. The station is part of an increasingly successful concept for Delta Marketing Company. See page 8.



A big international cargo jet takes on fuel supplied by North Pole Refining at Fairbanks International Airport. The surge in major airline cargo/passenger stopovers provides another new avenue of opportunity for NPR. See page 11.

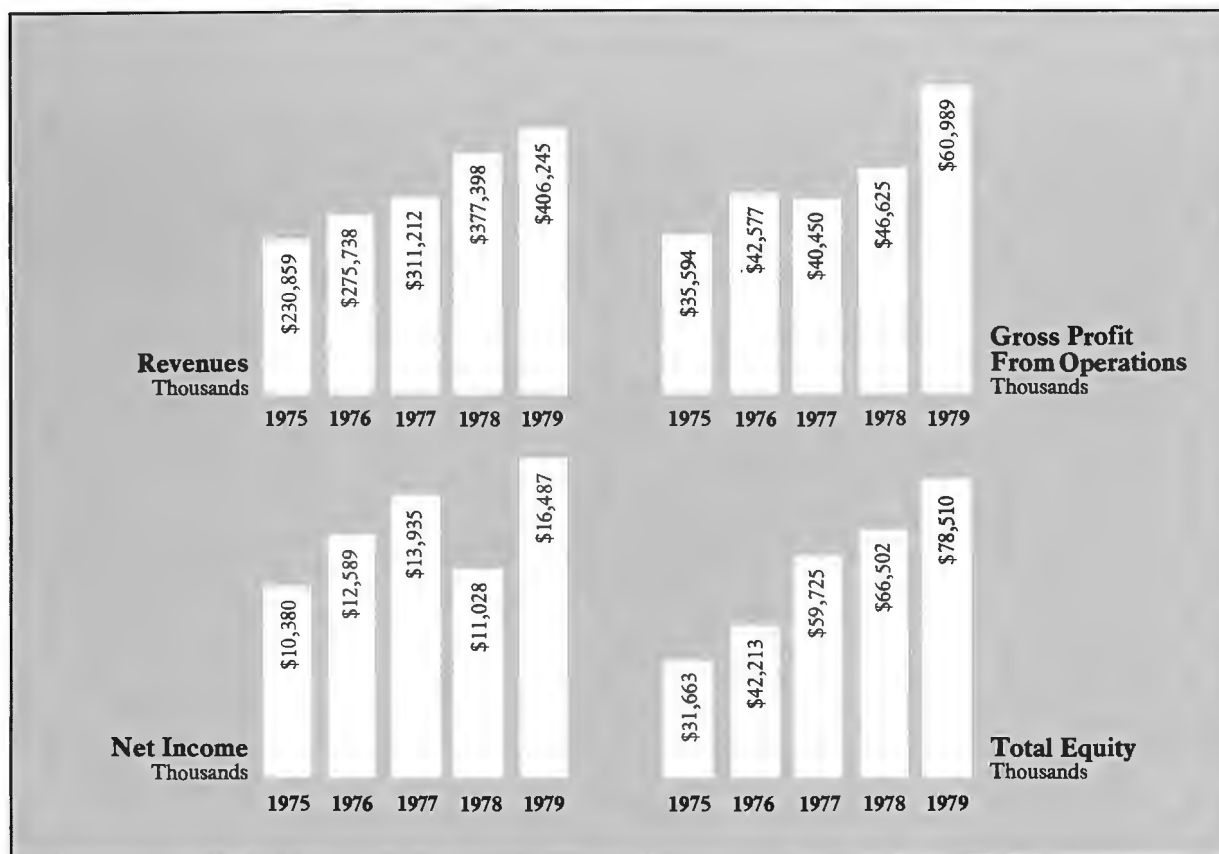


Doré "buttons" — silver with some gold—await loading into an armored car for transportation from DeLamar Silver Mine. See page 17.

CONTENTS

PAGE

Corporate Profile	Inside front cover
Highlights	2
Editorial (Letter to Shareholders)	3
Refining	5
Delta Refining Company	
Marketing	8
Delta Marketing Company	
Alaska	11
North Pole Refining, Rogers & Babler	
Mining	17
DeLamar Silver Mine, Nacimientto Copper Mine	
Financial Section	
Financial Review	19
Consolidated Financial Statements	20 — 26
Other Information	27
Five-Year Summary	28
Shareholder Information, Officers and Directors	Inside back cover



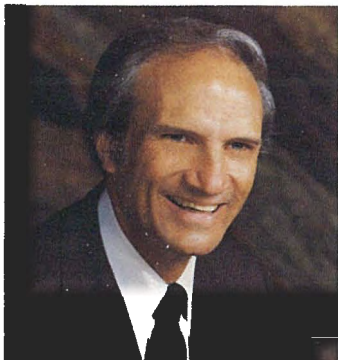
1979 IN REVIEW

Financial Highlights

	1979	1978
Revenues	\$406,245,000	\$377,398,000
Income before taxes	28,821,000	21,185,000
Net income	16,487,000	11,028,000
Earnings per common and common equivalent share	\$3.05	\$2.08
Dividends on common stock	5,262,000	5,206,000
Dividends per share	\$1.00	\$1.00
Total assets	221,637,000	166,474,000
Stockholders' equity	78,510,000	66,502,000



Earth Resources Company



Dan M. Krausse, President and Chief Executive Officer
October 22, 1979

EDITORIAL

Bold plans and aggressive management made fiscal 1979 a sparkling year for Earth Resources Company. Our profit centers' success in reaching or exceeding their own high goals set records in sales, earnings, cash flow and other significant measurements of progress. Best of all, the major factors which made 1979 a great year should be present in fiscal 1980.

► The biggest project in ERC's history — the \$70 million Memphis Refinery modernization — is scheduled to come on stream with gasoline production almost doubled in time for the summer 1980 driving season and ERC's fourth quarter. The modernization will allow production of all no-lead gasoline if desired, and the processing of crude supplies from virtually any world source. The project also will provide important tax credits.

► The Company's mid-South Interstate Fuelstops were notably successful in the year, and along with the "super pumper" Mark I stations are expanding concurrent with the planned increase in gasoline production.

► In Alaska, the northernmost refinery in the Western Hemisphere is operating smoothly and profitably, with greatly expanded commercial jet fuel sales and the excellent prospect of substantially increased volumes in fiscal 1980.

► Increasingly higher prices made silver and gold mining operations as well as the metals themselves more valuable than ever before. ERC has seized the opportunity through an agreement in principle to sell its Mining Group to a subsidiary of Dome Mines Limited for \$28 million in cash and a royalty interest for 20 years based on DeLamar Silver Mine's production and future silver and gold prices. A definitive agreement is subject to certain conditions including approval of the boards of directors of Dome Mines Limited and Earth Resources Company. Included in the proposed sale are ERC's Nacimiento Copper Mine, idle since 1975, all exploration projects, industrial minerals developments, technology and patents.

With this step Earth Resources Company will concentrate on its energy business, with a strong infusion of cash into our primary Sunbelt and Alaska growth markets. While DeLamar Silver Mine has been a proud success, it has been a relatively small segment of our Company. Its further development and that of the Mining Group would require substantial future capital.

As an energy company, ERC is in a position to attract greater investment capital on more favorable terms through concentrating on development of tangible assets rather than intangible assets.

Translating the Mining Group into cash at a time of high interest and tight credit should provide strong impetus to our growth plans, with larger potential for realization of ERC's true market value.

The Company's flexibility in responding to changing conditions has made ERC No. 1 among energy companies in average return on equity during the past five years, No. 2 in return on total capital and No. 8 in sales growth. Forbes magazine, from which these ratings are taken, also has selected ERC as No. 3 among 80 corporate "compound interest machines," referring to an extraordinary rate of return on shareholders' equity.

ERC is healthy financially as well as operationally. In fiscal 1979 working capital provided from operations increased to \$25.7 million from \$19.8 million. The year closed with cash balances of \$36.8 million and an increase in working capital to \$17.5 million.

The results achieved in fiscal 1979 and our outlook for 1980 indicate clearly that Earth Resources Company is on the move again. We are developing strategies for the '80s that combine our financial strength with the exciting opportunities discussed throughout this report.



The massive modernization project doubling Delta Refining's gasoline capacity is ahead of schedule for completion by summer 1980.

REFINING

Delta Refining Company

The largest single project in the history of Earth Resources Company — the \$70 million modernization of the Memphis Refinery — is depicted across pages 14 and 15 of this report, and in the cover design. It rates that attention because it is also the most significant project in the Company's history.


The reasons lie in two aspects of the modernization. Estimates are that by 1983, about three-fourths of all gasoline used in the United States will be no-lead. That contrasts with about one-third today. The Delta Refining Company modernization will almost double its gasoline production to approximately 32,000 barrels per day, providing the Company's 230 retail stations with an assured supply of motor fuel in time for summer 1980's peak driving season — and in time to benefit ERC's fourth quarter. The Company was one of the first refiners in the nation to commit to this scale of expansion, and therefore will be one of the first to come on stream with full no-lead capability.

Of equal importance, the Memphis modernization will allow the refinery to process crude oil supplies from almost any world source, including previously limited volumes of high-sulphur crudes. "From any world source" is more than an idle phrase. Delta's strategic site on the banks of the Mississippi River, plus ERC's own barge system, gives the refinery convenient access to domestic and foreign crudes landed at the Port of New Orleans and elsewhere on the Gulf Coast.

Delta's location helped it obtain a good flow of crude throughout fiscal 1979 despite shortages in the world market. In July the refinery began receiving about 6,000 BPD of North Slope crude on the Gulf Coast, a supply expected to increase to approximately 20,000 BPD beginning in December. The refinery also has contracted for North Sea crude. The outlook is good that present arrangements will allow ongoing profitable operation, and that Delta will not have to make spot purchases at higher cost.

At the writing of this annual report in mid-October, the Memphis modernization was about 45% complete,

ahead of schedule, and under budget. Other operations have continued to function smoothly and profitably during construction.

Delta's lifeline from the Gulf Coast crude supplies is Valley Towing Service, which operates three towboats and a string of barges along the Gulf Coast and up the Mississippi River. Valley had a soundly profitable fiscal 1979. Plans are under way to expand its capabilities to meet the needs of Delta as the modernization is completed. 



**RICHARD JOHNSON:
MEMPHIS FIRE MARSHAL**

Delta Refining's current modernization program includes building in a high-performance fire suppression system. That means close coordination with the Memphis Fire Department's Fire Prevention Bureau, headed by Fire Marshal Richard T. Johnson. He speaks enthusiastically over blueprints spread out on his desk showing Delta's subsurface injection system: "You inject an AFFF substance into the bottom of the storage tanks and it rises to the top, foams up, and smothers the fire." Chief Johnson's men work with Delta petroleum engineers to learn everything they can about the plant's system — how it functions, how it shuts down, where the hot spots could be.

Delta provides slide presentations to fire trainees about fighting fuel and refinery fires and works with training officers. They have also donated equipment to the Fire Department for in-house training and have provided all firehouses with maps of their mains system.

"Industries have to do certain things to comply with the Fire Code," says Chief Johnson, "but the Memphis Fire Department has to depend on their cooperativeness, especially in upgrading

their present plants. Delta is voluntarily increasing its water mains, monitoring systems, and adding more sub-surface injection to its existing facilities. They also keep us informed of all changes in valve cutoffs and other matters, so everyone's knowledge of the plant in an emergency remains up-to-the-minute."



**COMMANDER M. J. FOUST:
MEMPHIS COAST GUARD**

The Mississippi is a dangerous waterway, with constantly changing water levels, shifting sandbars and hairpin-bend channels. Tows may be carrying a million gallons of fuel or other regulated cargo per barge in a three to ten-barge string. Considering the immense tonnage under the operator's control, it's surprising how good the marine safety record is in the river in and around Memphis.

Commander M. J. Foust is executive officer of the Coast Guard's Marine Safety Office in Memphis, responsible for port safety and security, as well as marine and environmental protection. When Valley Towing comes up from Baton Rouge with a load of crude oil bound for Delta Refining, Commander Foust's personnel monitor the offloading.

"Delta and Valley both," says Foust, "do everything they can to prevent an oil spill. When there is one, due to a leaking gasket or equipment failure, those two companies are always very

cooperative in cleaning up. Delta has a boom there to contain any oil." Some barge lines, Foust says, are reluctant to clean up a spill, "But we've never had any problems with Valley at all."



**C. F. CRADDOCK:
PURCHASING MANAGER**

W. R. Grace & Co., an international chemical company, manufactures agricultural chemicals at a plant just north of Memphis. This facility last year purchased 3,000,000 gallons of No. 6 Fuel Oil, and half as much No. 2, from its Memphis neighbor, Delta Refining. Grace's manager of purchasing and stores, C. F. Craddock, says, "Delta has been our primary fuel oil supplier for about 25 years, and their service has been great. In times of shortage, bad weather, holidays, or whatever, they've proven their worth by supplying us whatever we need without extra charges or difficulties." In the heart of a booming agricultural region, Memphis is moving towards the 1980s by encouraging its agribusiness industries. Delta is there to help them through the energy uncertainties that may lie ahead.

Memphis' David Bowman writes for local and mid-South publications, and publishes the newsletter "Citywatching." Photos are by Jamie Laybourn.



MARKETING

Delta Marketing's thrust into Interstate Fuelstops and "super pumper" gasoline stations accelerates; sales of convenience items add profit.

MARKETING

Delta Marketing Company

Delta Marketing Company is the new name of Gasoline Marketers, Inc., operator of retail gasoline stations and Interstate Fuelstops in eight mid-South states. The name change is much more than that — it reflects a significant restructuring of ERC's Oil Group.

Previously, Delta Refining and Gasoline Marketers had been responsible for their own marketing and distribution. With the change, the new Delta Marketing division becomes responsible for the Oil Group's total wholesale and retail sales at lowest cost and maximum return to the Company. Delta Refining's task is to concentrate on providing quality products at the lowest possible manufactured cost.

There are many advantages. Among them are the elimination of duplication, more effective management of inventories, reduced transportation costs, and better management of product supply allocations.


Delta Marketing's long and distinguished history of low-cost gasoline

retailing dates back to the Thirties. Earth Resources Company acquired the nucleus of the present retail station network in 1973 with acquisition of the Red Ace and Western chains, based in Nashville. Delta Marketing's stations still operate under those names, as well as the name Delta.

Delta Marketing achieved a strong profit performance in fiscal 1979. Most stations were able to maintain regular service even in the face of the summer's severe gasoline shortages, which reduced some operating hours. Delta Refining's product support was a key element.

The division's Interstate Fuelstops were confirmed as a resounding success, and the pace of their expansion is being stepped up. Six are in operation on interstate highways in the states of Tennessee and Alabama. By the end of fiscal 1980 Delta Marketing expects to have 10 Fuelstops operating, with more in the planning stages.

Interstate Fuelstops are high-volume, low-cost, self-service diesel and gasoline fuel outlets on heavily traveled interstate routes. That combination, along with the Fuelstops' convenience items, has been a winner for Delta Marketing and ERC.

Convenience items — including milk, beer, bread, cigarettes, snack foods — are an increasingly important part of station operations. Beginning with \$7.9 million in sales in 1975, the first full year, sales built to \$20.0 million last year. A larger line of convenience items is emphasized at Delta Marketing's dealer-operator Gas Mark stations, while the company's higher volume gasoline stations — the expanding Mark I "super pumper" outlets — supplement their sales with the items. The Mark I stations, with 12 or more hose outlets, are considered Delta Marketing's station of the future. Eight are currently in operation, with an additional four Mark I outlets scheduled to open during fiscal 1980. 



**DUELL LESTER:
TRUCK DRIVER**

Duell Lester, "Red Dog" to fellow CB'ers, is an independent north-south trucker from Mason, Ohio, who stops at the Cross Plains Red Ace Fuelstop # 28 "every time I'm down here."

But Lester says he doesn't recommend the station to other truckers because "You don't have to. If they're independents they're going to stop here anyway 'cause it's good cheap fuel."

Leaning up against his leased 18-wheeler, Lester explained that independent haulers have been hit hard by fuel prices. When you spend as much as \$150 for one fill-up and only get around four and a half miles to the gallon, as Lester does, "a few cents makes a big difference."

"But you've got to be sure the fuel is good," he said, inserting the pump's nozzle into his truck's left tank. "When it gets below zero, bad diesel fuel can gel and tear up your whole engine."

Lester and other truckers on Interstate 65 at Highway 25 near the Kentucky border trust Red Ace to have that "good cheap fuel." Red Ace # 28 sells nearly a million gallons of fuel per month. Besides the "no-frills" prices, the station also provides satellite pumps so that the trucks' double tanks can be filled simultaneously in half the time.

Though price is the main reason the freight hauler of nine years keeps coming to Red Ace, he also said he likes the rain roof. And, if he does have time to stretch, he walks over to the Fuelstop's convenience store and heats up a sandwich.



**NANCY WOODALL:
NASHVILLE MOTORIST**

Mrs. Nancy Woodall "likes to get out and pump it myself," and that is exactly what she does once a week at the Madison Red Ace station in Nashville, Tennessee.

Asked when she first started going to Red Ace, Mrs. Woodall smiled and

said, "I've been going there as long as I can remember."

Her loyalty seems incongruous with today's apparent trends away from brand loyalty. But if the trend is real, Mrs. Woodall is the exception that proves the rule, saying sincerely that she wouldn't go to another station, even if it were closer and a nickel cheaper.

What has Red Ace done to keep the Woodall family coming back year after year? "Well," Mrs. Woodall began, "It's clean, and the people that work there are real friendly. I usually stop and chat a minute."

"And it's real handy when we have to run out and get something; you can get in and out without any trouble. Plus, with those roofs, you don't have to get out in the rain to pump your gas," she added.

Located near the third busiest Nashville intersection at Old Hickory Boulevard and Gallatin Pike, the Madison Red Ace station has six self-service pumps and six full-service pumps. In addition, the station carries a line of convenience items such as beer, milk, snacks and cigarettes.

Karen Zimmermann, a Nashville Banner reporter, turned free-lance writer for a day to conduct these interviews. Photos are by Steve Harbison.



*North Pole Refining
strengthens its competitive advantage
and seizes a fresh new opportunity in
aircraft fueling; Rogers & Babler
moves to improve its roadbuilding/
paving materials position.*

ALASKA

North Pole Refining

ERC's refinery in North Pole, Alaska, 14 miles from Fairbanks, enjoyed an outstanding year of smooth, successful, profitable operation, supplying most of the petroleum middle distillate product requirements for the Alaskan Interior. The most exciting development was the growth of commercial jet fuel sales and the substantial potential they hold for North Pole Refining because of NPR's unique geographical position.

North Pole Refining is the only refinery in the Alaskan Interior and the northernmost in the Western Hemisphere. It draws its Alaskan North Slope crude supply from the Trans-Alaska Pipeline just three miles away, then returns unused portions to the line.

Before NPR began operations in August 1977, Fairbanks and the Interior were entirely dependent on outside supplies, either from Alaska's other refineries more than 450 miles south, or imported from the "Lower 48." Transportation costs were high.

The extent to which Fairbanks and Interior residents have benefited from North Pole Refining is detailed in a July 1979 report entitled "North Pole Refinery Energy Impact Study," by the Fairbanks North Star Borough. In a

section on airport operations, the report says: "NPR's impact on operations at Fairbanks International Airport escalated dramatically during spring of 1979. Shortages of jet fuel on the West Coast and internationally fostered an increased interest in Fairbanks as a refueling stop for international cargo flights because of assured supplies of jet fuel from NPR."

In May 1979, Japan Air Lines and Korean Air Lines began landing 46 cargo flights a week in Fairbanks for refueling. Officials from JAL and KAL cited guaranteed supplies of locally refined jet fuel as the reason for the route changes (from Anchorage). The report also notes that Fairbanks is more directly located on transpolar air routes.

At present, North Pole Refining has contracts to supply jet fuel to JAL, KAL and Air France. Jet fuel for domestic flights is supplied to Alaska Airlines, Wien Air Alaska, Pacific Alaska Airlines, and Alaska International Air. Eielson Air Force and Fort Wainwright also use NPR jet fuel.

The immediacy of the potential at Fairbanks International Airport to add still more cargo and passenger flights resulted in the Alaska Legislature appropriating \$8.5 million for improvements there, including parking ramp expansion, bondable warehousing, and an underground hydrant fueling system in addition to terminal building improvements.

Meanwhile, North Pole Refining continues to supply, directly and indirectly, virtually all the fuel required to heat Fairbanks and the Interior's homes and businesses. As the Borough's study notes, "Possibly the greatest impact of NPR on the local economy has been an assured supply of fuel oil for the Interior." Fuel oil is used for nearly three-fourths of home heating in Fairbanks, and, says the report, "Fairbanksans have benefited from a relative decrease in fuel oil costs compared to other heating options." The other options include electricity — and in this instance Golden Valley Electric Association, the regional utility, purchases all of its turbine fuel from NPR. Electrical rates, says a GVEA spokesman, would be much higher if not for the locally produced fuel.

The Borough's comprehensive 45-page report also gives North Pole Refining a clean bill of health environmentally, citing sulphur dioxide emissions well within safe levels, a minimal level of water emissions, and effective precautions taken to avoid "ice fog."

Copies of the full report may be obtained by writing the Fairbanks North Star Borough, P.O. Box 1267, Fairbanks, Alaska 99707.

(continued, next page)





*DeLamar Silver Mine
operated at record production during
1979, producing 1,893,000 ounces of
silver and 22,000 ounces of gold.*

MINING

DeLamar Silver Mine

With silver and gold prices near historic highs, Earth Resources Company took the bold step in October 1979 of agreeing in principle to sell its Mining Group — consisting principally of DeLamar Silver Mine in Idaho — to a subsidiary of Dome Mines Limited for \$28 million in cash and a 20-year royalty on production. The sale is subject to certain conditions outlined in the Letter to Shareholders on page 3.

Essentially, management felt the time had arrived to realize optimum value to shareholders from ERC's successful investment in mining, and to concentrate the increased resources on developing our principal businesses of petroleum refining and marketing. Importantly, the royalty assures ERC a stake in future silver and gold prices.


DeLamar Silver Mine performed well in fiscal 1979 for ERC and its partners, The Superior Oil Company and Canadian Superior Mining (U.S.) Ltd. ERC, with 52.5% ownership, has been responsible for development and operation of the mine.

The year saw 1,893,000 ounces of silver and 22,000 ounces of gold sold on the world market by DeLamar. Gold reached record prices far in excess of \$400 an ounce in early October 1979 before

falling back, and silver rose to around the \$17 level. Even though gold comprised only 1% to 2% by weight of production at DeLamar, it represented about 30% of the mine's total sales in fiscal 1979.

The proposed sale to Dome Mines' subsidiary includes ERC's exploratory positions on 33,000 acres in four western states, along the trend of "Carlin-type" gold deposits.

Nacimient Copper Mine

Also included in the Dome Mines agreement is the Nacimient Copper Mine in New Mexico, in mothballs since 1975, when copper prices reached unacceptably low levels. Even though copper prices have lately bounced back, management has not felt they could provide a return adequate to ERC's requirements using conventional mining methods. However, the buyer also will acquire a process developed and tested by ERC which promises low-cost recovery of copper by solution mining and electro-winning. The Nacimient technology includes a patented process for economic production of copper concentrate from low-grade oxide ores. 

Silver and Gold Markets

Monthly Price Ranges
Cash Prices in Dollars per Troy Ounce

Silver (High)

October 15	17.57
September	16.50
August	10.47
July	9.05
June	8.58
May	8.60
April	7.85
March	7.43
February	7.75
January 1979	6.75
December	6.07
November	5.91
October	6.17
September	5.64
August 1978	3.50

Gold (High)

October 15	402.90
September	397.25
August	316.10
July	296.45
June	277.50
May	274.60
April	245.30
March	240.10
February	251.30
January 1979	233.70
December	226.00
November	193.40
October	242.60
September	217.10
August 1978	208.70



**TOM BRUNZELL:
OWYHEE COUNTY ASSESSOR**

The blood of miners runs in the veins of Tom Brunzell, Owyhee County (Idaho) Assessor.

Brunzell is impressed with what Earth Resources has done to recover some of the minerals which once brought miners in, braving the harsh winters and hostile Indians.

The mine has been a boon to the county. "Earth Resources pays 17.4% of our taxes," Brunzell says. "DeLamar is the brightest spot in the economic picture of Owyhee County."



**ROBERT SKINNER:
RANCHER**

"The mining industry and the cattleman have a lot of common interests. We are both dependent on the use of public lands," says Robert (Bob) Skinner, prominent Jordan Valley, Oregon, rancher. Skinner spoke of plans for reclamation of areas when mining work is completed, noting that cattle are already grazing some land which has been recontoured and planted.

The rancher said, "There is no doubt that the mine has stimulated local business, and it has increased enrollment in the schools. A high percentage of their (Earth Resources) employees are local people and some of these are moving into responsible positions with the company. "Mine personnel have been very active in the community; they've helped with the ambulance program and EMTs. Earth Resources helped give our children swimming lessons. A mine couple taught a class on leaded glass. And Earth Resources personnel have 'beefed up' membership in our churches."



**DR. PAUL MCCONNELL:
IDAHO/OREGON PHYSICIAN**

Dr. Paul McConnell of Caldwell, Idaho, has been serving Jordan Valley, Oregon, for some years, the only medical service provided in the tiny ranching community on the border of the two states. His practice takes him to the Catholic Parish Hall in Jordan Valley one day each week. There he treats a number of people including DeLamar Silver Mine employees and their families.

"DeLamar Mine is working toward a full-time health facility. They have a health and safety officer, and they have an EMT (Emergency Medical Technician) on every shift. Everyone there is trained in first aid and they even have their own ambulance."

The doctor commented, "I've noticed that the company encourages their people to settle down and take part in community life. It's a real stabilizer to both mine employees and Jordan Valley."

Other Activities: LMPI

Louisiana Marine Protein, Inc., is the Company's venture capital project to produce high-purity protein from plentiful trash fish usually discarded by shrimpers or considered as unmarketable. By October 1979 its semi-works plant at Golden Meadow, Louisiana, was mechanically complete, and full-scale shakedown operations were scheduled to begin soon.

As an animal rather than plant protein (such as soy concentrate), LMPI's product is potentially more beneficial in both animal and human diets. Early production already has been contracted, and expressions of interest have been received from major suppliers of animal feeds for pets, dairy and poultry farming.

ERC's current investment in LMPI is \$750,000 in debentures, convertible into approximately two-thirds of LMPI's common stock. ERC is expected to provide a \$950,000 letter of credit to be utilized for working capital and other needs.

Plans for an earlier start-up were delayed due to LMPI's reapplication for an increased federal loan guarantee of \$5.16 million to complete construction.

Chris Moore grew up on a ranch near Jordan Valley. She is now a newspaperwoman in Ontario, also on the Oregon-Idaho border.

Financial Review

Earth Resources Company's record operating results in fiscal 1979 were evidenced by substantial gains in earnings and cash flow, and in a strengthened financial position. High utilization of capacity, effective cost controls and favorable prices for petroleum products and precious metals produced the Company's highest-ever level of profitability despite the effects of inflation throughout ERC's market areas. At fiscal year-end, ERC was moving toward completion of its largest capital project, a \$70 million refinery modernization, which when placed in service next year promises even greater performance gains.

Revenues and Earnings

Revenues exceeded \$400 million for the first time, increasing 8% over 1978 to \$406.2 million. Reduced outside purchases combined with increased interdivision transfers of petroleum products resulted in optimum realizations from products distribution, as evidenced by the substantial rise in gross profits to \$61 million in 1979, a gain of 31% over last year. Strategic marketing and the relatively low-cost supply of crude oil to mid-South and Alaska operations underscore this profit gain.

Production increased at DeLamar Silver Mine to take full advantage of rising silver and gold prices in the last half of the year. Profit margins were also enhanced as the mine-mill operating efficiency increased. The recently announced proposed agreement to sell ERC's Mining Group assets to Dome Mines Limited for \$28 million in cash and a 20-year royalty from future production of DeLamar will provide a one-time substantial gain, enhancing our ability to seek new investment opportunities with prospects of high returns. The royalty stemming from this proposed agreement will give ERC continued participation in future silver and gold price strength.

Pre-tax income of \$28.8 million rose 36% above 1978 performance. Net income of \$16.5 million rose 50% over last year, reflecting a 5% lower effective income tax rate of 43% with substantial tax credits on capital spending. Prior capital investments have provided the

foundation for 1979's significant growth: North Pole Refining and DeLamar, both added to ERC's producing assets in 1977, experienced sales and profit levels beyond expectations for their early operating history.

Net earnings per share in 1979 rose to \$3.05, up 97¢ from last year and 13% above the record performance in 1976 and 1977.

Shareholder Rewards

Dividends to shareholders totaled \$5.3 million in 1979, a distribution of one-third of ERC's earnings. Shareholder returns have averaged 35% for the past five years despite 1978's earnings decline. The compound annual return to ERC shareholders, including dividends, has averaged 18.5% for the past five years. In addition, return on equity for 1979 increased to 23%, well above last year and above our industry average.

Capital Investment

At the end of 1979 total assets were \$221.6 million, one-third higher than 1978. The increase reflects substantial additions to operating assets, most notably significant progress toward 1980 completion of the Memphis Refinery modernization. When this \$70 million project is operating, ERC will be well positioned to meet the increasing demand for fuels in the mid-South.

Capital additions of \$37.7 million in 1979 were dedicated largely to the Memphis Refinery project. Expenditures for 1980 are expected to reach a record \$50 million as this program is completed in time to contribute to fiscal 1980's earnings. In addition, new transportation and marketing facilities will maximize the return to ERC on this expanded capacity.

Additions to North Pole Refining facilities are yielding generous returns as commercial air carriers and their demands for jet fuel test the operating limits of this northernmost refinery in the Western Hemisphere. Prospects are excellent for increasing jet fuel sales.

Financial Position

At the close of 1979, ERC's financial position reflected a readiness to continue the pace of operating

improvement and asset growth recorded during the year. Our strategy for funding 1979 asset additions originally was to use funds available under a new \$30 million, 9% insurance loan and amounts available under a \$16 million revolving credit agreement with the Company's commercial banks. A little more than half of 1979's capital expenditures were accomplished with outside borrowings as internally generated cash flow increased with the record earnings to strengthen our equity position in these new assets. At year-end no amounts were outstanding under the Company's revolving credit and the final \$10 million of the insurance loan was not drawn until September 1979. With cash balances exceeding \$36 million at year-end we are confident that our equity participation in 1980's record capital growth will increase.

Effective working capital and asset management complemented ERC's performance and financial position in 1979. As the Memphis refinery additions go into service we are confident that returns on operating assets and ERC's equity will continue to show improvement.

A summary of other levels of financial position achieved in 1979 follows:

- ▶ Working capital stands at \$17.5 million after significant reinvestment in long-term operating assets.
- ▶ Long-term debt of \$47.7 million increased \$13.9 million after new borrowings and scheduled repayments. The debt-to-total-capital ratio stands at 38%, reflecting a reasonable yet safe leveraging of ERC's growth at favorable interest rates in today's money markets.
- ▶ Shareholders' equity increased to \$78.5 million, a gain of 18% after dividend distributions.
- ▶ Book value per share rose to \$14.83 on the record earnings performance. The market price of ERC shares stands well above book value and currently shows strong investor interest.

While economic and energy issues will present ever-new problems, we remain confident that we are positioning ourselves to take full advantage of our potential. We continue to express our commitment to extraordinary growth in assets, earnings and shareholder rewards.

Summary of Significant Accounting Policies

EARTH RESOURCES COMPANY
AND SUBSIDIARIES

Principles of Consolidation:

The consolidated financial statements include the company's investment in the accounts of all subsidiaries and the company's pro rata share of the accounts of a mining joint venture. All intercompany balances and significant intercompany transactions have been eliminated. The cost of investments in subsidiaries has been assigned to the acquired assets based on the fair value of such assets.

Inventories:

Inventories are valued at the lower of cost or market. Cost of refinery petroleum products and crude oil inventory is determined substantially on a last-in, first-out basis. The cost of other inventories is determined primarily on a first-in, first-out basis.

Exploration, Research and Development Expenditures:

The company charges all exploration, research and development expenditures to income as incurred. Exploration costs previously expensed on projects for which commercial development is later undertaken are capitalized and assigned to the related mine investment.

Property, Plant and Equipment:

Property, plant and equipment is stated at cost. Depreciation, other than for mining facilities, is based on the straight-line method over estimated service lives of three to twenty-five years. Depreciation, depletion and amortization of mining facilities, including development costs, are based substantially on the units-of-production method.

Expenditures for maintenance and repairs are charged to income as incurred. The company capitalizes major replacements and improvements and amortizes these costs over the periods benefited. The gain or loss on assets sold or retired is included in income.

Consolidated Statement Of Income

EARTH RESOURCES COMPANY AND SUBSIDIARIES
for the years ended August 31, 1979 and 1978

	1979	1978
Net sales and other income	<u>\$406,245,000</u>	<u>\$377,398,000</u>
Costs and expenses:		
Cost of sales	345,256,000	330,773,000
Selling expenses	16,283,000	12,960,000
Exploration, research and development expenses	627,000	542,000
General and administrative expenses	11,159,000	8,603,000
Interest expense	4,099,000	3,335,000
	<u>377,424,000</u>	<u>356,213,000</u>
Income before income taxes	<u>28,821,000</u>	<u>21,185,000</u>
Provision for federal and state income taxes:		
Current	11,152,000	7,392,000
Deferred	1,182,000	2,765,000
	<u>12,334,000</u>	<u>10,157,000</u>
Net income	<u>\$ 16,487,000</u>	<u>\$ 11,028,000</u>
Earnings per common and common equivalent share	<u>\$3.05</u>	<u>\$2.08</u>
Dividends declared per share of common stock	<u>\$1.00</u>	<u>\$1.00</u>

The accompanying summary of significant accounting policies and notes are an integral part of the financial statements.

Interest Expense:

Interest and fees incurred on funds borrowed for significant construction and development projects are capitalized during the period prior to placing the new assets in economic service and are subsequently amortized to income over the life of the project.

Income Taxes:

Deferred income taxes are provided for timing differences between financial and taxable income. The allowable investment tax credit is applied as a reduction of current income tax expense.

Retirement Plans:

Costs of the company's retirement plans are provided for and funded at amounts not less than actuarially determined estimates. Unfunded past service costs are being amortized over a thirty-year period.

Consolidated Balance Sheet

EARTH RESOURCES COMPANY AND SUBSIDIARIES
August 31, 1979 and 1978

	1979	1978
Assets		
Current assets:		
Cash	\$ 5,868,000	\$ 2,194,000
Temporary cash investments	30,958,000	15,822,000
Accounts receivable, trade	26,575,000	22,512,000
Other accounts and notes receivable	9,695,000	11,967,000
Inventories, primarily crude oil and petroleum products	18,898,000	11,359,000
Prepaid expenses	953,000	1,478,000
Total current assets	92,947,000	65,332,000
Property, plant and equipment:		
Land and mineral leases	7,349,000	5,379,000
Refinery facilities	69,459,000	66,232,000
Refinery facilities under construction	29,913,000	2,086,000
Mining facilities and development costs	20,700,000	23,001,000
Other property and equipment	24,819,000	23,973,000
	152,240,000	120,671,000
Less allowance for depreciation, depletion and amortization	36,962,000	33,135,000
	115,278,000	87,536,000
Other assets:		
Notes receivable	8,815,000	9,351,000
Other	4,597,000	4,255,000
	13,412,000	13,606,000
	<u>\$221,637,000</u>	<u>\$166,474,000</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Current portion of long-term debt	\$ 2,709,000	\$ 3,268,000
Accounts payable	34,424,000	21,994,000
Accrued expenses	33,765,000	18,469,000
Federal and state income taxes payable	4,562,000	4,135,000
Total current liabilities	75,460,000	47,866,000
Long-term debt	50,361,000	36,973,000
Less current portion	2,709,000	3,268,000
	47,652,000	33,705,000
Deferred federal and state income taxes	16,059,000	14,411,000
Deferred income	3,956,000	3,990,000
Commitments and contingencies		
Stockholders' equity:		
Common stock, no par value	26,799,000	26,067,000
Paid-in capital	1,230,000	1,179,000
Retained earnings	50,559,000	39,334,000
Treasury stock, at cost	(78,000)	(78,000)
	78,510,000	66,502,000
	<u>\$221,637,000</u>	<u>\$166,474,000</u>

The accompanying summary of significant accounting policies and notes are an integral part of the financial statements.

Consolidated Statement Of Changes In Financial Position

EARTH RESOURCES COMPANY AND SUBSIDIARIES
for the years ended August 31, 1979 and 1978

	<u>1979</u>	<u>1978</u>
Working capital provided:		
From operations:		
Net income	\$16,487,000	\$11,028,000
Items not affecting working capital in the current period:		
Depreciation, depletion and amortization	6,384,000	5,844,000
Deferred income taxes	1,182,000	2,765,000
Other, net	<u>1,646,000</u>	<u>193,000</u>
Working capital provided from operations	25,699,000	19,830,000
Issuance of long-term debt	22,885,000	5,759,000
Sale of assets	2,021,000	5,179,000
Issuance of common stock	732,000	855,000
Increase in deferred income		3,990,000
Reclassification to deferred income taxes ...	466,000	
Other	<u>211,000</u>	<u>683,000</u>
	<u>52,014,000</u>	<u>36,296,000</u>
Working capital applied:		
Additions to property, plant and equipment	37,685,000	11,676,000
Reductions of long-term debt	9,046,000	3,577,000
Dividends declared on common stock	5,262,000	5,206,000
Increase in notes receivable and other assets		8,449,000
	<u>51,993,000</u>	<u>28,908,000</u>
Increase in working capital	<u>\$ 21,000</u>	<u>\$ 7,388,000</u>
Changes in components of working capital:		
Increase (decrease) in current assets:		
Cash and temporary cash investments	\$18,810,000	\$ 9,126,000
Receivables	1,791,000	7,663,000
Inventories	7,539,000	1,518,000
Prepaid expenses	(525,000)	(67,000)
	<u>27,615,000</u>	<u>18,240,000</u>
Increase (decrease) in current liabilities:		
Current portion of long-term debt	(559,000)	2,067,000
Accounts payable and accrued expenses ..	27,726,000	4,650,000
Federal and state income taxes payable ...	427,000	4,135,000
	<u>27,594,000</u>	<u>10,852,000</u>
Increase in working capital	<u>\$ 21,000</u>	<u>\$ 7,388,000</u>

The accompanying summary of significant accounting policies and notes are an integral part of the financial statements.

Consolidated Statement Of Changes In Stockholders' Equity

EARTH RESOURCES COMPANY AND SUBSIDIARIES
for the years ended August 31, 1979 and 1978

	Common Stock		Paid-In Capital	Retained Earnings	Treasury Stock	
	Number of Shares	Amount			Number of Shares	Amount
Balance, August 31, 1977	5,172,136	\$25,218,000	\$1,088,000	\$33,512,000	6,207	\$93,000
Common stock issued:						
On exercise of employee stock options	43,325	474,000				
In the acquisition of a subsidiary	36,000	381,000				
Net income				11,028,000		
Dividends declared on common stock				(5,206,000)		
Other		(6,000)	91,000		(1,000)	(15,000)
Balance, August 31, 1978	5,251,461	26,067,000	1,179,000	39,334,000	5,207	78,000
Common stock issued:						
On exercise of employee stock options	21,230	279,000				
In connection with employee stock purchase plan	9,353	155,000				
In connection with dividend reinvestment plan	15,605	298,000				
Net income				16,487,000		
Dividends declared on common stock				(5,262,000)		
Other			51,000			
Balance, August 31, 1979	5,297,649	\$26,799,000	\$1,230,000	\$50,559,000	5,207	\$78,000

The accompanying summary of significant accounting policies and notes are an integral part of the financial statements.

The Board of Directors
Earth Resources Company
Dallas, Texas

We have examined the consolidated balance sheet of Earth Resources Company and Subsidiaries as of August 31, 1979 and 1978 and the related consolidated statements of income, changes in stockholders' equity and changes in financial position for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the financial statements referred to above present fairly the consolidated financial position of Earth Resources Company and Subsidiaries as of August 31, 1979 and 1978 and the consolidated results of their operations and changes in their financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Coopers & Lybrand

Dallas, Texas
October 15, 1979

Notes To Financial Statements

EARTH RESOURCES COMPANY AND SUBSIDIARIES

Long-Term Debt and Credit Agreements:

The company and a subsidiary are party to a long-term loan agreement with certain lenders totaling \$30 million dated March 12, 1976. In connection with the loan agreement a warrant was issued for the purchase of 200,000 shares of common stock at \$14 per share, exercisable at any time prior to March 1991. The \$950,000 fair value ascribed to the warrant was charged to debt discount and credited to paid-in capital. The debt discount is being amortized over the repayment period, resulting in an effective interest rate of 11¾%. The agreement provides for payment of equal annual principal installments through March 1991. The payment of principal and interest is collateralized by Alaskan refinery assets approximating \$39 million.

In July 1978, the company entered into another \$30 million long-term loan agreement with the same lenders. Borrowings under the agreement bear interest at 9%, have been or will be used for the modernization of the company's Memphis refinery, and will be repaid in annual principal payments beginning in 1984 and continuing through 1995. The loan agreements require the company to maintain a sound financial position, including maintenance of certain working capital amounts and debt to equity ratios, and restrict certain investments and cash payments including dividends. At August 31, 1979, \$7,354,000 was available for such investments and cash payments. At August 31, 1979 amounts outstanding under the 1976 and 1978 loan agreements were \$27 million and \$20 million, respectively. On September 6, 1979 the remaining \$10 million available under the 1978 agreement was borrowed by the company.

The company also has a \$16 million revolving credit agreement with certain banks. Borrowings under the agreement bear interest at the prime rate and are due September 1, 1980. At that time the company has the option to pay or convert the amount outstanding to a term note payable in sixteen quarterly installments commencing December 1, 1981 with interest at ½ of 1% over prime. Average annual compensating balances of \$1,600,000 plus 10% of the average amount outstanding under the agreement are expected. The compensating balances are not legally restricted and are available for the company's use on a temporary basis. There were no amounts outstanding under the revolving credit agreement at August 31, 1979.

Interest totaling \$1,347,000 in 1979 and \$1,176,000 in 1978 has been capitalized in connection with the modernization of the Memphis refinery and the construction of the Alaska refinery, respectively.

Other long-term debt aggregating \$3,292,000 at August 31, 1979 bears interest at rates ranging from 5% to 9½% and is payable in installments to 1994.

Maturities of long-term debt are scheduled as follows:

Years ending August 31:

1980	\$ 2,709,000
1981	2,492,000
1982	2,474,000
1983	2,491,000
1984	2,515,000
After 1984	37,680,000
	<u>\$50,361,000</u>

Commitments and Contingencies:

The board of directors of the company has approved a capital expenditures program for fiscal 1980 of \$57 million, including \$36 million for the completion of the modernization of the Memphis refinery.

The company is obligated under long-term lease agreements primarily for land used in petroleum product marketing. The leases are generally for 10-15 years and in most cases contain renewal options. Minimum lease rental payments total approximately \$6,425,000 with annual rentals of approximately \$730,000 due during each of the next five years.

The company's petroleum operations are subject to complex governmental regulations administered by the U.S. Department of Energy (DOE). These regulations have been frequently revised and in several instances are unclear with no guiding precedents. Accordingly, in June 1979 the company filed suit against the DOE seeking clarification of certain DOE rules and regulations, and thereby attempting to establish guidelines for resolving any DOE related issues which may arise. In July 1979, the DOE issued a Notice of Probable Violation (NOPV) of their rules and regulations, alleging the company had overcharged certain of its customers during the period December 1973 through April 1974. The company is contesting the NOPV. While it is difficult to accurately predict their effect on the company's operations, in the opinion of management the resolution of any issues raised by the DOE, including those set forth in the NOPV, will not have a material adverse effect on the financial position of the company.

The company operates a refinery in the interior of Alaska and obtains Alaska North Slope crude oil from the Trans-Alaska Pipeline. Tariffs charged for the transportation of crude oil through the pipeline are subject to state and federal regulation and are presently under review by regulatory agencies. The company has made provision for the related uncertainties in the financial statements based on information presently available. In management's opinion the eventual resolution of this matter will therefore not have a material adverse effect on the financial position of the company.

Stockholders' Equity:

The company's charter authorizes 8,000,000 shares of no par common stock and 5,000,000 shares of \$10 par value preferred stock. No preferred stock has been issued.

The company has stock option plans for the issuance of 750,000 shares of common stock. The plans generally provide that exercise prices for the stock options shall be not less than 85% of the market value at the date of grant. Options for the purchase of 147,363 shares were available for grant under the plans at August 31, 1979. Options to purchase 232,593 shares, at prices ranging from \$4.04 to \$19.55 per share, were outstanding at August 31, 1979, of which 142,311 shares were exercisable.

On September 25, 1979, the board of directors declared a \$.25 per share cash dividend totaling approximately \$1,324,000 on the company's common stock payable October 15, 1979 to stockholders of record on October 5, 1979.

Income Taxes:

The provision for federal and state income taxes is summarized as follows:

	1979	1978
Current:		
Federal	\$ 9,141,000	\$6,160,000
State	<u>2,011,000</u>	<u>1,232,000</u>
	<u>\$11,152,000</u>	<u>\$7,392,000</u>
Deferred:		
Federal	\$ 770,000	\$2,385,000
State	<u>412,000</u>	<u>380,000</u>
	<u>\$ 1,182,000</u>	<u>\$2,765,000</u>

The federal provisions for 1979 and 1978 have been reduced by investment tax credits of \$2,629,000 and \$765,000, respectively.

The provision for deferred federal and state income taxes relates to timing differences between financial and tax reporting as follows:

	1979	1978
Depreciation	\$ 2,253,000	\$1,654,000
Income recognition .	<u>1,024,000</u>	<u>(1,063,000)</u>
Refinery construction	(344,000)	1,470,000
Other	<u>(1,751,000)</u>	<u>704,000</u>
	<u>\$ 1,182,000</u>	<u>\$2,765,000</u>

Following is a reconciliation of the statutory federal income tax rate with the effective income tax rate:

	1979	1978
Statutory income tax rate	46%	48%
State income taxes, net of federal income tax benefit	4	4
Investment tax credit	(9)	(4)
Other	<u>2</u>	<u></u>
Effective income tax rate	<u>43%</u>	<u>48%</u>

Earnings Per Share:

Earnings per common and common equivalent share have been computed on the basis of the weighted average number of common and common equivalent shares outstanding during the year, 5,409,938 shares in 1979 and 5,311,670 shares in 1978.

Common equivalent shares represent the net additional number of shares which would be issuable upon the exercise of stock options and a warrant to purchase common stock, assuming that the company used the proceeds received to purchase shares at the average market price for the period.

Mining Operations:

Operations at the company's New Mexico copper mine were suspended in 1975 when United States copper prices did not permit an adequate return of investment. The company is evaluating an alternative method of mining and producing copper which is expected to yield a rate of return sufficient to permit resumption of operations. At August 31, 1979, total assets of the copper mine were \$6,894,000. Management is of the opinion that the mine's potential remains undiminished and there has been no diminution in the carrying value of the assets.

Business Segments:

The company's operations and assets for the years ended August 31, 1979 and 1978 are summarized by principal business segments as follows:

	1979			1978		
	Petroleum Refining, Marketing and Transportation	All Others	Consolidated	Petroleum Refining, Marketing and Transportation	All Others	Consolidated
Net sales and other income	\$352,165,000	\$54,080,000	\$406,245,000	\$325,997,000	\$51,401,000	\$377,398,000
Operating profit	\$ 33,012,000	\$ 3,869,000	\$ 36,881,000	\$ 21,787,000	\$ 4,297,000	\$ 26,084,000
Add (deduct):						
Nonoperating income			731,000			1,699,000
Interest expense			(4,099,000)			(3,335,000)
Exploration, research and development expense			(627,000)			(542,000)
Corporate expenses			(4,065,000)			(2,721,000)
Income before taxes			\$ 28,821,000			\$ 21,185,000
Identifiable assets	\$139,270,000	\$32,625,000	\$171,895,000	\$103,177,000	\$33,567,000	\$136,744,000
Corporate assets			49,742,000			29,730,000
Total assets			\$221,637,000			\$166,474,000
Depreciation, depletion and amortization expense	\$ 4,682,000	\$ 1,702,000	\$ 6,384,000	\$ 3,940,000	\$ 1,904,000	\$ 5,844,000
Capital expenditures	\$ 33,769,000	\$ 3,916,000	\$ 37,685,000	\$ 9,979,000	\$ 1,697,000	\$ 11,676,000
	(1)	(2)		(1)	(2)	

(1) Revenues derived from refined petroleum products.

(2) Revenues derived from convenience merchandise and tire sales, silver and gold mining, paving materials and road construction.

No single customer accounted for 10% or more of the company's consolidated revenues. Corporate assets consist primarily of cash, temporary cash investments, and other assets which are administered on a centralized basis for the company and its subsidiaries.

Quarterly Financial Data:

The unaudited quarterly financial data for the years ended August 31, 1979 and 1978 shown on page 27 is an integral part of the Notes to Consolidated Financial Statements.

General Description of the Impact of Inflation (Unaudited):

The Company has experienced increased costs and expenses resulting from the inflationary pressures affecting the general economy, as well as higher costs of crude oil due to governmental action. Inflationary cost increases affect the products and services provided by the Company to varying degrees and have generally been offset by increases in selling prices to the extent possible in the competitive environment in which the Company operates. The Company has also utilized cost control and reduction programs to mitigate the effect of inflation.

The significant capital investment required in recent years to modernize the Memphis refinery and to construct and place in service the Company's Alaska refinery and its silver mine reflects to some extent the impact of inflation on capital asset costs. In addition, replacement of existing property, plant and equipment for the Company's other operations would generally require a substantially greater capital investment than the original cost of such assets. The additional capital investment principally reflects the cumulative effect of inflation on the long-lived nature of these assets.

In compliance with rules of the Securities and Exchange Commission, current replacement cost information for certain assets and expenses is to be disclosed in the Company's Annual Report Form 10-K to be filed with the Commission on or about November 29, 1979. The information has been prepared in accordance with generalized guidelines provided by the Commission and will be accompanied by appropriate cautions and comments concerning the interpretation and usefulness of the information.

Management's Discussion And Analysis of Operations

Fiscal 1979 Compared with 1978

Strong demand for petroleum products and increased cost of crude oil resulted in higher selling prices and cost of sales on lower sales volume. Memphis refinery sales prices increased 32%, while sales volume decreased 24% and cost of crude oil and purchased products were 25% and 36% greater, respectively. Retail gasoline sales volume decreased 5%, while the selling prices and cost of gasoline both increased 23%. Interdivision gasoline sales eliminated in consolidation increased 36% from higher prices and volumes. Alaska refinery operations include a significant increase in sales of commercial jet fuel. Higher silver and gold prices and increased production were recorded by the company's silver mine. Selling and administrative expenses increased from inflation and expanded operations. While income taxes rose on higher income, the effective tax rate decreased 5% due to tax credits related to increased capital spending.

Fiscal 1978 Compared with 1977

Higher sales at the Company's Memphis Refinery resulting primarily from a 10% increase in sales volume were equaled by the related increase in cost of sales, due to a 5% increase in crude oil costs. Growth in sales volume of gasoline and convenience merchandise, 4% and 20%, respectively, resulted in higher sales, cost of sales, and selling expenses from retail gasoline station operations. The 1978 sales, cost and expense increases include the results of operations of the Company's Alaska Refinery for eight months and its silver mine for the entire year. Capitalization of interest related to the Alaska Refinery ceased when the refinery became fully operational. Lower investment tax credits due to a reduced level of capital spending resulted in a 15% higher effective income tax rate.

Market and Dividend Information

ERC's common stock is traded on the American Stock Exchange. High and low sales prices and dividends per share of common stock for the years ended August 31, 1979 and 1978 are shown below:

	Sales Price of Common Stock				Dividends Per Share	
	1979		1978		1979	1978
	High	Low	High	Low		
1st Quarter	18	11¼	20	16¼	\$.25	\$.25
2nd Quarter	17¾	13½	19½	15	\$.25	\$.25
3rd Quarter	21½	15½	17½	14½	\$.25	\$.25
4th Quarter	24½	19¾	17¾	14½	\$.25	\$.25

Quarterly Financial Data

	Net Sales and Other Income	Gross Profit	Net Income	Earnings Per Share
(In thousands of dollars except per share amounts)				
Year ended August 31, 1979:				
1st Quarter	\$ 92,840	\$11,905	\$3,276	\$.62
2nd Quarter	87,204	10,067	2,087	\$.39
3rd Quarter	91,454	15,434	4,610	\$.86
4th Quarter	134,747	23,583	6,514	\$1.18
Year ended August 31, 1978:				
1st Quarter	\$ 85,513	\$ 9,715	\$2,418	\$.46
2nd Quarter	87,496	8,758	1,205	\$.22
3rd Quarter	99,112	12,049	2,894	\$.55
4th Quarter	105,277	16,103	4,511	\$.85

Five-Year Summary

Summary of Operations

Years Ended August 31 (In thousands of dollars except per share amounts)

	1979	1978	1977	1976	1975
Net sales and other income	406,245	377,398	311,212	275,738	230,859
Costs and expenses:					
Cost of sales and operating expenses	372,698	352,336	289,651	250,445	209,273
Exploration, R & D	627	542	441	712	596
Interest expense	4,099	3,335	401	899	922
	377,424	356,213	290,493	252,056	210,791
Income before taxes	28,821	21,185	20,719	23,682	20,068
Provision for federal and state income taxes	12,334	10,157	6,784	11,093	9,688
Net income	16,487	11,028	13,935	12,589	10,380
Earnings per common and common equivalent share	\$3.05	\$2.08	\$2.70	\$2.70	\$2.31
Dividends per share	\$1.00	\$1.00	\$1.00	\$1.00	\$.70
Weighted average common and common equivalent shares (000 omitted)	5,410	5,312	5,157	4,655	4,496

Summary of Financial Data

August 31 (In thousands of dollars except per share amounts)

Working capital	17,487	17,466	10,078	9,861	10,221
Capital expenditures	37,685	11,676	38,934	16,378	14,390
Total assets	221,637	166,474	139,795	99,889	90,081
Long-term debt	47,652	33,705	31,410	17,538	15,495
Stockholders' equity	78,510	66,502	59,725	42,213	31,663
Book value per share	\$14.83	\$12.68	\$11.56	\$9.21	\$7.16

Business Segment Information

(In thousands of dollars)

Net sales and other income:					
Petroleum refining, marketing and transportation (1)	352,165	325,997	276,607	253,929	214,692
All other (2)	54,080	51,401	34,605	21,809	16,167
Total	406,245	377,398	311,212	275,738	230,859
Operating profit (3):					
Petroleum refining, marketing and transportation	33,012	21,787	16,725	23,598	19,372
All other	3,869	4,297	4,703	2,999	2,954
Total	36,881	26,084	21,428	26,597	22,326
Identifiable assets (4):					
Petroleum refining, marketing and transportation	139,270	103,177	92,193	58,038	45,276
All other	32,625	33,567	32,039	24,368	18,035
Total	171,895	136,744	124,232	82,406	63,311

(1) Revenues derived from refined petroleum products.

(2) Revenues derived from convenience merchandise and tire sales, silver and gold mining, paving materials and road construction.

(3) Excludes non-recurring income, exploration, research and development expenses, interest expense and corporate expenses.

(4) Excludes corporate assets, which consist primarily of cash and temporary cash investments. No single customer accounted for 10% or more of the company's consolidated revenues. The company has no foreign operations or export sales.

Officers

Dan M. Krausse
President and Chief Executive Officer

Robert J. Donachie
Executive Vice President, Secretary

William C. Cole
Group Vice President

Neil A. Johnson
Vice President, Controller

J. W. Perkins
Vice President, Marketing

R. T. Prater
Vice President, Refining

Jules J. Ringer
Vice President, Counsel

David P. Shepard
Vice President, Treasurer

Directors

Charles J. Wyly, Jr., Dallas †
Chairman of the Board

Lloyd A. Burgess, Seattle
President, Burgess Interstate, Inc.

Harold Decker, Houston *
Oil Consultant and Investor

Rawles Fulgham, Dallas
*President,
First International Bancshares, Inc.*

Dan M. Krausse, Dallas †
*President and Chief
Executive Officer*

Dr. F. Jay Taylor, Ruston, La. *
President, Louisiana Tech University

Sam Wyly, Dallas † *
Entrepreneur

†Members of the Executive Committee. These persons
may be deemed to have been founders of the Company
under SEC rules and regulations.

*Members of the Audit Committee.

Subsidiaries & Divisions

Delta Marketing Company

Delta Refining Company

DeLamar Silver Mine

Earth Resources Company of Alaska

North Pole Refining

Rogers & Babler

Valley Towing Service, Inc.

Transfer Agent and Registrar

First National Bank in Dallas

Dividend Reinvestment Agent

Morgan Guaranty Trust Company
of New York

Dividend Reinvestment Plan
P.O. Box 3506
New York, N. Y. 10008

Principal Banks

First National Bank in Dallas

First American National Bank
of Nashville

Morgan Guaranty Trust
Company of New York

Rainier National Bank, Seattle

Annual Meeting

The Annual Meeting of shareholders of Earth Resources Company will be held at One Energy Square, Dallas, Texas, December 18, 1979, at 2:00 p.m. CST. All shareholders are cordially invited to attend.

Form 10-K and Shareholder Reports

Shareholders may obtain without charge a copy of the Company's annual report (Form 10-K) filed with the Securities and Exchange Commission by writing to:

Corporate Secretary
Earth Resources Company
1200 One Energy Square
Dallas, Texas 75206

Shareholders whose stock certificates are held in a brokerage account may wish to receive future communications directly from the Company, including annual and quarterly reports. In this way "street name" shareholders will receive information at the same time as all other investors. If you are such a shareholder and wish to take advantage of this offer, please write to the address shown above.

Shareholder Inquiries

Your inquiries about the Company's operations or affairs are invited. You are welcome to call Mr. Dan M. Krausse or Mr. Robert J. Donachie at (214) 369-2186. Please do not call collect.



Earth Resources Company